

# MWRA EMPLOYEES' RETIREMENT BOARD MEETING

## AGENDA

Thursday, December 14, 2023 10:00 a.m.  
MWRA, 2 Griffin Way  
Chelsea, MA 02150

Item 1 10:00 a.m. Meeting called to order

### OLD BUSINESS

- Item 2 Standing Committee Reports
- i. By-Laws Committee: Member Kevin McKenna, Member Brian Peña
  - ii. Human Resources Committee: Member Frank Zecha, Member Matthew Horan
  - iii. Special Committee, Stipend: Member James M. Fleming, Member Kevin McKenna
  - iv. Job Review Committee: Member James M. Fleming, Member Frank Zecha

### NEW BUSINESS

- Item 3 Approval of November 16, 2023 Minutes – VOTE
- Item 4 Approval of Warrants – VOTE
- a) Warrant 12-2023
  - b) Warrant 12A-2023 – Payroll
- Item 5 Approval of Monthly Transfers 12-2023 – VOTE
- Item 6 Acknowledgement of retirement application under G.L. c 32 §5 – VOTE
- a) Joseph Simonini DOR 10/28/2023
  - b) Donna McMahan DOR 11/4/2023
  - c) William Lewis DOR 11/30/2023
  - d) Winslow Corbin DOR 12/2/2023
- Item 7 Acceptance of Section 7 Retirement Application re. Thomas Buckley – VOTE
- Item 8 10:15 a.m. Legal  
91A Hearings David Jackson & John Burke
- Item 9 Unit 6 Temporary Shift Differential – Regular Compensation Discussion
- Item 10 Discussion of Recent PTG Issues
- Item 11 Consulting Services RFP Discussion
- a) Dahab Associations Response
  - b) Meketa Investment Group, Inc.
  - c) New England Pension Consultants Response
  - d) Segal Marco Advisors Response
  - e) Verus Response
  - f) Wainwright Investment Counsel, LLC Response

Item 12

NEPC

- a) Flash Report as of 11/30/23
- b) Rebalancing Recommendation – VOTE
- c) Large Cap Value Search Summary Results

.....**FOR YOUR INFORMATION and REVIEW** .....

- Item 99-1 PERAC MEMO #26/2023 – 2023 Pension Fraud Prevention Campaign
- Item 99-2 PERAC MEMO #27/2023 – Current Members in Service Who Made an Election at Age 70 to Stop Contributions to the Retirement System
- Item 99-3 Foundry November 2023 LP Update

**The Board reserves the right to consider items on the agenda out of order. The listing of items is those reasonably anticipated by the Chair to be discussed received at least forty-eight (48) hours prior to the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law. Items identified for discussion in Executive Session may be conducted in open session, in addition to, or in lieu of discussion in Executive Session.**

**Date of next scheduled Retirement Board meeting is Thursday, January 25, 2024, 10:00 a.m., Chelsea**

**MWRA EMPLOYEES' RETIREMENT BOARD MEETING  
NOVEMBER 16, 2023**

A meeting of the MWRA Employees' Retirement Board was conducted in-person on Thursday, November 16, 2023. Remote access was provided to the public via Zoom, with call-in information provided on the official Meeting Notice posted to [www.mwraretirement.com](http://www.mwraretirement.com) and the MA Secretary of State's website. Participating in the in-person meeting were Board members Matthew Horan, Kevin McKenna, Brian Peña and Frank Zecha, staff members Carolyn Russo, Julie McManus and Danielle DiRuzza, and Sebastian Grzejka representing NEPC. Members of the public also attended via remote access. Mr. Horan called the meeting to order at 10:04 a.m. Mr. Fleming attended via remote access so Mr. Horan served as Chair.

- 1) Call the meeting to order-roll call of members: Mr. McKenna, Mr. Peña, Mr. Zecha, and Mr. Horan present.

Mr. Horan cautioned that Massachusetts is a two-party consent state for recordings, and stated that it is not permissible to record without the consent of the Chair.

Mr. Fleming joined the meeting at 10:05 a.m.

- 2) Standing Committee Reports
  - i. By-Laws Committee: No report
  - ii. Human Resources Committee: No report
  - iii. Special Committee, Stipend: No report
  - iv. Job Review Committee: No report

- 3) Approval of October 26, 2023 Minutes – VOTE

On a motion made by Mr. Zecha and seconded by Mr. Peña:

**VOTED**

to approve the Minutes of the October 26, 2023 meeting. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

- 4) Approval of Warrants – VOTE
  - a) Warrant 11-2023
  - b) Warrant 11A-2023 – Payroll & Annuity Savings Refund (Death)

Mr. Zecha made a motion seconded by Mr. Peña to approve the Warrants for November. Through the Chair the Executive Director asked that she be

permitted to add to Warrant 11-2023A the travel reimbursement payment to Mr. Peña for mileage to and from the PERAC Administrator's Training session, and to the National Association of State Retirement Systems for the filing fee for the PPCC award.

On a motion made by Mr. Zecha and seconded by Mr. Peña:

**VOTED**

to approve Warrants 11-2023 and 11-2023A as amended. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

5) Approval of Monthly Transfers 11-2023 – VOTE

On a motion made by Mr. McKenna and seconded by Mr. Peña:

**VOTED**

to approve the monthly transfers for November. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

6) Approval of October 2023 Bank Reconciliation – VOTE

On a motion made by Mr. Zecha and seconded by Mr. Horan:

**VOTED**

to approve the Bank of America reconciliation for September 2023. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

7) Approval of the CY2024 Retirement System Expense Budget – VOTE

On a motion made by Mr. Zecha and seconded by Mr. Fleming:

**VOTED**

to approve the CY2024 Retirement System Expense Budget. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

Mr. McKenna thanked the Executive Director for her efforts. Mr. Peña asked if the expenses are added included in the normal cost on the funding schedule. The Executive Director responded that the normal cost is separately determined as the current year's accrual be benefits for everyone in the System, but that the actuary adds the administrative expenses on top of that in each year of the schedule. (Editorial note-administrative expenses assumed by the Actuary are based on actual expenditures in prior years, and budget projections for the current year, with an assumed 3% inflation assumption. The larger portion of the Retirement System budget, representing investment-related expenses, is figured into the overall investment return assumption used for the valuation.)

Since the Board was ahead of schedule and Attorney Gibson had not yet signed on the call, the Chair took matters out of order and asked NEPC to begin the Flash Report update. Mr. Grzejka stated that the high-rate environment has been a drag on performance. The portfolio was down 1.9% overall for October, but remains positive at 1.5% year-to-date. Some managers, though negative, have still outperformed their benchmarks, or are in line with the benchmarks. Exposure to China has been driving Emerging Market performance. The Fixed Income managers are more sensitive to the rate movements. November month-to-date has seen lower than expected inflation, and the S&P is up 7% through November 15. The “higher for longer” conditions are leading to mixed results for the portfolio. Mr. Horan noted that a lot of managers have not yet reported returns for October. Mr. Grzejka concurred that the October results are “very preliminary” and that there will likely be adjustments. Mr. Zecha asked for an update on Garcia Hamilton. Mr. Grzejka stated that Mr. Garcia had come in third in the Houston mayoral primary, and is not a participant in the run-off, so he expects no impact to the fund. Mr. Zecha stated that the year is not going well. Mr. Grzejka explained that equity returns have been driven by seven names, so exposure to them will determine performance. Managers without those stocks or with lower exposure will lag. On the Fixed Income side duration has affected performance. Mr. Zecha asked whether the \$115m Fixed Income exposure is too high, given the negative returns. Mr. Grzejka reminded the Board that the Fixed Income exposure was determined as part of the overall asset allocation based on long-term expectations and is appropriate to the portfolio. The equity risk premium has certainly been compressed. Fixed Income has seen some reversal in November to date, and if rates continue to fall, the annual Asset Allocation which takes place in February would be an appropriate time to discuss its role moving forward. Mr. Zecha stated he would be available to meet in the first week in December to adjust any over-weightings. Mr. Grzejka stated that the current rebalance recommendations were intended to address that. Mr. Fleming stated that the markets have recovered in November, and Mr. Grzejka concurred, provided the turnaround lasts through month-end. Mr. McKenna remarked that this has been the perfect storm, and that it does not bode well that the fund is losing vs. its peers in timeframes up to 20 years with the exceptions of 2013 and 2017. Mr. Fleming responded that the Board’s positioning is intentionally more conservative relative to its peers, and Mr. Grzejka agreed, noting the asset allocation is different, with less exposure to Equities and Fixed Income, and more exposure to Real Estate and Private Equity. He acknowledged that the returns are frustrating, and being in the 94% percentile isn’t helping, but reminded the Board that this is the problem with “point in time” data. In five of the last ten years, MWRAERS has also doubled its return expectation. Some of the portfolio’s structure has played into the relative performance. Mr. McKenna countered that the problem may not be all structure, and that a lot of the peer group had more exposure to Fixed Income and Opportunistic. Mr. Grzejka responded that the Board has also done several searches and made several changes in the past year, and it takes time to reveal whether the moves and manager selections were productive. Mr. Grzejka

returned to the rebalance issue, and noted that the rebalance was to take some returns off the table, as well as to raise cash for payroll, expenses and capital calls. Staff has received some large calls exceeding \$3m, and the payroll and expenses comes to roughly \$3.5m, so the cash position is not high.

8) Legal Update

Attorney Gibson signed on the call at 10:25 a.m. and apologized as he had another appointment which took longer than expected. There has been no movement on the Capozzi matter. Attorney Gibson, Attorney McDonough, and two other attorneys will be meeting with the Assistant Attorney General assigned to CRAB to discuss the multi-year backlog. There has been no movement on the Vargus appeal. The bill to provide Veterans another opportunity to purchase military service remains in committee, and the legislature is now out of session until January 2. PERAC has submitted its regulation changes to the legislature for approval. The changes are deemed approved if not rejected within 45 days. Attorney Gibson recommended that the Board review the PERAC Annual Report for accuracy, as several systems he represents have found errors. PERAC released Memo #23 in regard to PFML. C. 55 of the acts of 2023 made it permissible for employees to receive earned time (sick/vacation) in conjunction with PFML payments. In Memo #23, PERAC opines that these supplemental payments may not be considered regular compensation, there should be no retirement contributions withheld, and no creditable service may be granted. The PFML payments are paid from a trust rather than by the employer for services performed by the employee, and are paid because the employee is not able to provide services to the employer. They therefore should be treated similarly to payments supplemental to Worker's Compensation pursuant to *Vernava*. Attorney Gibson noted that in contrast salary continuation programs are considered regular compensation. Mr. McKenna asked what triggered PERAC to change the Annual Report. Attorney Gibson responded that there is constant movement, PERAC is required to report on some items included such as excess earners and disabilities, but in his opinion, PERAC could do a better job in presenting the data. In the first year of MWRAERS's existence no appropriation was made, and that had previously skewed the numbers, so it's always good to double-check the information presented. Returning to the matter of PFML payments, Mr. Horan asked Attorney Gibson to clarify that employees will not receive service credit while on PFML, and Attorney Gibson confirmed Mr. Horan's understanding. PERAC's interpretation since PFML's inception in 2018 has been that PFML payments do not constitute regular compensation, but the recent memo clarifies that now that under C. 55 of the Acts of 2023 supplemental payments are allowed in conjunction with PFML, that the supplemental payments will not constitute regular compensation and therefore will not entitle members to service credit. Mr. Horan stated that a member of his staff had been advised otherwise by HR and had made a decision to use PFML based upon incorrect information. Mr. Zecha asked whether payments from a sick leave bank would be regular compensation, and Attorney Gibson stated that they would, just not

when used with PFML. Mr. Zecha reported that he attended the recent PERAC Administrators' training, and said he had a test for Attorney Gibson. He asked if he worked 9 years 10 months, left for a month leaving his funds on deposit with the System, then came back and worked two months whether he could retire, and Attorney Gibson responded affirmatively. Mr. Zecha said "then according to PERAC we'd both be wrong" because at the training PERAC stated such an employee would be subject to the two-year rule (i.e. s. 3(6)(e)). Mr. Zecha noted that the spoken word is like the wind, but wanted to question PERAC's interpretation. Attorney Gibson stated that he would address it with PERAC. Mr. McKenna stated that he has been coached repeatedly not to answer employees' questions in the hallway, but wanted to know if Attorney Gibson were to tier this, how to advise staff on PFML, and if they should be advised to use FMLA with their own paid time first, before using PFML. Attorney Gibson responded that if service credit is a concern, then yes. The Board can give up to one month credit for approve medical leave if someone has already lost service credit. Attorney Gibson stated that in the past there used to be periodic meetings with HR and Board Counsel, and that he knows Staff are in contact with HR regularly but that perhaps those periodic meetings should be brought back. Mr. McKenna and Mr. Fleming concurred. Attorney Gibson signed off the call at 10:42 a.m.

- 9) NEPC
- a) Flash Report as of 10/31/23
  - b) Rebalance Recommendation – VOTE
  - c) Large Cap Value RFP – VOTE
  - d) Custody Search Ratings – VOTE
  - e) Q3 2023 Investment Report

Mr. Grzejka returned to NEPC's portion of the agenda, specifically, to item 9 (c).

On a motion made by Mr. McKenna and seconded by Mr. Peña:

**VOTED**

to approve the Large Cap Value RFP as drafted by NEPC. 5-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

The Large Cap RFP will be posted on NEPC's site and on PERAC's. Mr. Horan asked if the responses could be shown with a side-by-side comparison to PRIT. Mr. Grzejka stated that would not be an apples to apples comparison because the PRIT General Allocation Account includes all asset classes, not just Large Cap Value. Mr. McKenna asked if the dollar amount may change. Mr. Grzejka responded in the affirmative, and said the Board has options, depending on the situation at the time of funding.

In regard to the Custody Search, NEPC updated the rankings for presentation to the Board. The Executive Director explained that PERAC requires that the rankings be based on the "highly advantageous, advantageous, not

advantageous, and not acceptable” scale, so NEPC updated their color-coded ratings to reflect this language. All responses were deemed advantageous by NEPC. Mr. Horan commented that based on overall experience, quality of services and price, M&T would be his preference. He expressed concern that given Comerica’s bid that they did not fully understand the scope of services. Mr. Zecha asked that NEPC be sure to include the required language in ratings for future searches. Through the Chair, the Executive Director added that State Street’s response to the recent incident regarding the custody services contract with Great Grey (Trustee for the Lord Abbett investment) gave her cause for concern, as State Street stated explicitly that employees are permitted to use personal cell phones to conduct official business, increasing risk for the System. Mr. Zecha added that he concurred with Mr. Horan, and that the M&T team has provided “top of the line” service consistently in all categories, and frequently works with staff to update controls as threat characteristics change.

On a motion made by Mr. Zecha and Seconded by Mr. McKenna:

**VOTED**

to adopt the updated Custodian rankings as presented by NEPC, and to select M&T Bank as the Custodian for the MWRA Employees’ Retirement System. While acknowledging that all three were ranked equally as “advantageous” overall, the personal relationship the M&T team has worked to build with staff, the extensive efforts to establish and consistently re-evaluate controls, and the track record of effective management of the large number of accounts were differentiators. Overall experience, quality, and pricing made M&T the optimal candidate. 5-0, on a roll call with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Pena voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

Mr. Grzejka reported that the deadline to commit to PRIT PEVY2024 is approaching, and would pass prior to the next meeting. A \$12m Private Equity allocation is recommended as part of the pacing plan for 2024. Mr. Zecha asked what the annual allocation to the PRIT PE sleeve has been, and Mr. Grzejka stated that previously it had been single-digits, but would now be at least \$10m. Mr. Zecha moved that a \$5m allocation be made to PRIT PEVY 2024. Mr. Horan questioned whether the intent is for only \$5m of the \$12 recommendation to go to PRIT, and asked whether the Board could go lower if the vote were for \$10m. Mr. Grzejka stated that the Board may not subsequently go lower. \$10m would be the commitment in that case. Mr. McKenna asked about the timing on the PE search if some funds were held back for a private manager. Mr. Grzejka stated that the search would probably begin after the Asset Allocation discussion in February. Mr. McKenna noted that some funds are winding down. Mr. Zecha stated he would amend his motion to make a \$10m allocation to PRIT PEVY 2024.



On a motion made by Mr. Zecha and seconded by Mr. Peña:

**VOTED**

to approve a \$10m commitment to the PRIT PEVY 2024. 4-0, with Mr. Fleming voting no, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Horan voting yes.

Mr. Horan stated that he had to sign onto another meeting and would have to leave, handing over the Chair to Mr. Zecha. Mr. Horan left the meeting at 10:53 a.m.

Mr. Zecha asked Mr. Grzejka to review the cash position with the Board, and inquired whether there is sufficient cash to get through January. Mr. Grzejka responded that after the rebalance recommendations are implemented there will be \$20m in cash, but that the Board recently received \$3.5m in calls, and another \$3.5 will be going out for payroll and accounts payable in the next few days. Mr. Zecha asked how much money is left in Octagon, and Mr. Grzejka stated that account has already been fully liquidated. Mr. McKenna stated that the Board's new opportunistic fund (i.e. LMCG Serenitas) is close to being closed to new investment and suggested adding to that account. Mr. Grzejka responded that the Board needs to be cautious about over-exposure in that area. Mr. Zecha questioned with Lord Abbett and Garcia Hamilton posting negative returns whether it might still make sense to add. He asked Mr. Grzejka to update the Board on the departure of Mr. Greg Balewicz from Lord Abbett and the impact on the account. Mr. Grzejka responded that Mr. Balewicz was the Relationship Manager but not actively engaged in portfolio management, so he did not expect any impact on the investment. He continued that roles are currently being consolidated industry-wide. Through the Chair, the Executive Director stated that she had spoken to Mr. Balewicz, and that is not how his departure was characterized to her, and Mr. Fleming stated the same. Mr. Grzejka stated he is expecting cuts industry-wide in the coming months. Mr. Zecha stated he would like NEPC to be prepared to discuss the Fixed Income portfolio at the December meeting.

Mr. Zecha extended to Mr. Fleming belated Veteran's Day wishes, and thanked him for his service. Mr. Fleming thanked Mr. Zecha for his remarks, and stated that he hopes the legislature will pass the pending Veterans' buyback legislation soon.

On a motion made by Mr. Fleming and seconded by Mr. Peña:

**VOTED**

to adjourn the November 16, 2023 meeting of the MWRA Employees' Retirement Board. 4-0, with Mr. Fleming voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, and Mr. Zecha voting yes. The meeting was adjourned at 11:00 a.m.

The following communications were distributed to the Board for review:

2022 PERAC Annual Report

PERAC MEMO # 23/2023 – Paid Family and Medical Leave (“PFML”) & Supplemental Payments

PERAC MEMO #24a/2023 – Outsourced Chief Investment Officer (OCIO) Policy

PERAC MEMO #25/2023 – Cybersecurity Training

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Matthew Horan, Acting Chair

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James Fleming, Elected Member

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Kevin McKenna, Elected Member

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Brian Peña, Ex Officio Member

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Frank Zecha, Fifth Member

# MWRA Employees' Retirement System

## Proposal for Investment Consultant Services

December 1, 2023



**DAHAB ASSOCIATES**



December 1, 2023

Board of Trustees  
MWRA Employees' Retirement System  
2 Griffen Way  
Chelsea, Massachusetts 02150

Dear Members of the Board:

We appreciate the opportunity to participate in the Massachusetts Water Resources Authority Employees' Retirement System's search for an investment consultant. Enclosed is our proposal for Investment Consultant Services.

Dahab Associates is a full-service consulting firm with offices in Bay Shore, NY; Hollywood, FL; and Franklin, MA. We are categorized as a private corporation under the laws of New York State. Since 1986, we have offered a broad range of services to public and private funds. We currently have 85 clients, 58 of which are public funds including ten located in the Commonwealth of Massachusetts. We are committed to offering the highest level of service to assist the Board in making decisions that are crucial to the System's performance.

We have a full understanding of the nature of the work requested by the Board and know that Dahab Associates will add value to the investment process. We feel that we have much to offer an engagement of this type because our only business is the provision of consulting services to our clients. To this end, our philosophy is grounded in three main principles:

- **INDEPENDENCE:** Dahab Associates' only business is investment consulting. We are not brokers nor do we manage money. In fact, we have no other financial relationship within the industry that would cause us to experience either a direct or a perceived conflict of interest. Our entire focus is on the needs and objectives of the client.
- **IN-HOUSE EXPERTISE:** Dahab Associates' special expertise is in our strong analytic and computer capabilities. Many of our clients have special restrictions, such as social issues and statutory requirements. Our performance evaluation and asset allocation software is developed in-house in order to maintain flexibility. This allows us to customize every aspect of our reports to meet the specific needs of each client account.
- **ACCESSIBLE STYLE:** Our reports and presentations are prepared with the client in mind. We pride ourselves on both the completeness of our data and on the ease with which it can be understood. Readable reports and understandable charts and tables can be the most important service we provide to our clients.

We would welcome the opportunity to work with the Board and the staff. As chief executive officer, I am authorized to make representations on behalf of Dahab Associates and bind the firm contractually. Should you have any questions I am reachable at (631) 665-6181 or wdahab@dahab.com. Thank you very much for your time. We look forward to hearing from you.

Yours,

A handwritten signature in black ink, appearing to read "William E. Dahab".

William E. Dahab, CFA  
Chief Executive Officer

I. **Background**

A. **Please provide a brief history of the firm.**

Dahab Associates, Inc. is a distinguished and reputable investment consulting firm that was established in 1986 by our chairman, Richard E. Dahab, CFA. With an extensive background in finance and technology, Rich brings over a decade of experience from Wall Street, as well as expertise in rocket guidance systems, including tracking error analysis for rocket trajectories. Notably, he was also a co-inventor of the piezoelectric line of sight corrector, a pioneering advancement in modern image stabilization. Prior to founding Dahab Associates, Rich held significant roles as a Vice President at Merrill Lynch and a Principal at A.S. Hansen (now part of Mercer). His extensive professional background serves as the foundation for the firm's unwavering commitment to excellence and expertise in investment consulting.

For more than 37 years, we have been providing a full complement of investment consulting services and research on an ongoing basis to public pension plans, jointly trustee and private corporation pension plans, endowments, foundations, and family trusts.

B. **Please identify the location of the firm's headquarters and branch offices.**

Dahab Associates' headquarters is located at 423 South Country Road, Bay Shore, New York and our satellite offices are in Franklin, Massachusetts and Hollywood, Florida. All our employees are located at our headquarters with the exception of Gregory McNeillie, Vice Chairman and Seth Lynn, Senior Consultant, who are based out of our Massachusetts office. All performance evaluation services, manager search assignments, asset allocation studies and data collection take place at our headquarters in Bay Shore, New York.

C. **Please describe the ownership structure of the entity and the number of employees.**

We are an independent investment consulting firm categorized as a private corporation under the laws of New York State. Rich Dahab owns more than 85% of the firm with employees owning the remaining equity. Our firm is not an affiliate of, nor a subsidiary of, another company. Currently, we employ 22 employees.

D. **Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc).**

None.

E. **Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.**

Dahab Associates has been providing a full complement of investment consulting services to Massachusetts public pension fund clients for over 35 years. We are very active in the Massachusetts public pension fund community through meetings with PERAC, our attendance at Massachusetts Association of Contributory Retirement Systems (MACRS) conferences, and our Massachusetts public pension fund clients. Currently we serve ten (10) Massachusetts public fund clients. We fully understand the provisions under Chapter 32 and PERAC Regulations.

Throughout our history, we have navigated our clients across various market conditions, regardless of their favorable or unfavorable nature, by providing consistent support and a focus on long-term investment perspectives. Our commitment to independence has ensured that our services are continuously aligned with the best interests of our clients.

**F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity's areas of greatest expertise.**

Dahab Associates provides a full complement of investment consulting services and special research or projects on an on-going basis. Our services include but are not limited to the following:

- Investment policy & guideline statement development & review;
- Asset allocation studies & analysis;
- Investment manager search assignments & evaluation;
- Performance evaluation & reporting;
- Quarterly or monthly performance reviews;
- Board education;
- Research;
- Special projects.

One of our greatest strengths is our analytic and computer capabilities. Many firms use outside vendors to perform the most critical pieces of work, the asset allocation model and the performance reports. We produce these reports in-house using software originally written by our founder, Richard Dahab, CFA and Thomas Donegan, CIPM. Managing Director. Our new Gen Five asset liability modeling program is the result of over a quarter century of continuous development. This evolutionary family of programs has been regularly enhanced and remains at the cutting edge of capabilities. William Dahab (Bill), CFA, CEO, developed the latest version which runs on our own "baby supercomputer." Our asset liability model runs 64 simulations simultaneously to achieve speeds previously impossible in other than a university or other high-tech setting. Having proprietary software allows us to customize all reports to meet a client's specific needs at no additional cost.

Additionally, we add the greatest value to our clients by providing steady guidance in the area of asset allocation. An estimated 90% of investment performance variability is due to the asset mix. Most boards need the information to make the right decisions in this area and to maintain a "steady course" when bombarded with advice from the media and other sources. We are very proactive in introducing our clients to ways to improve performance and gain additional diversification. Our asset liability program can run many scenarios to help the board understand all of the ramifications of a given allocation.

**G. Please identify the firms future goals, particularly how such goals may pertain to accepting new client business and overall quality of client service.**

Currently, we serve 85 clients, which is about 75% of our capacity. We are looking to expand our client numbers and maintain a capacity closer to 85%. Our client numbers will never exceed our staff capabilities, as we will always maintain this cushion of 15-25% below capacity and hire additional personnel when necessary.

**II. Operations**

**A. Please indicate whether accounts are serviced by teams or individual consultants.**

Generally, accounts are assigned two consultants as well as a financial analyst who will prepare the quarterly performance report in conjunction with the consultants. These consultants will also keep an open dialogue with our research team throughout the clients' relationship, investigating new managers or asset classes for optimal results for the System.

**B. Please indicate the average number and size of accounts per consultant or team**

The average number of accounts per consultant is approximately 11. The average account size is approximately \$187 million.

**C. Please indicate the largest number of accounts serviced by any consultant or team.**

The largest number of accounts serviced by a consultant is 18.

**D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.**

Dahab Associates can perform prompt, comprehensive and accurate reporting. On average, it will take approximately six weeks after the end of each calendar quarter to prepare and deliver the performance evaluation report. Dahab Associates receives the universe data with which to compare investment performance approximately three to four weeks after each calendar quarter. The monthly custodian statements usually arrive within four weeks after each month end.

Our performance evaluation reports include comprehensive capital markets analysis, absolute and relative performance comparisons, and a peer comparison and analysis. Our analysts review all the holdings and transactions. We calculate each portfolio's time-weighted rate of return, using monthly custodial reports. All performance is checked against the investment manager's statements. This approach of calculating returns from custodial statements and comparing account activity with manager statements allows us to pinpoint any unusual activity or errors. If any discrepancies are discovered, our analysts undertake a complete investigation to detect the origin of the problem and calculate the return. We then use proprietary software and our own in-house computer facilities to produce our quarterly performance reports.

We are very flexible when it comes to the ability to customize our performance reports because the analysis and preparation of all client reports is performed in-house, allowing us to customize reports upon request.

**E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.**

100% of our firm's revenue is derived from consulting services. We do not accept revenue from any entity other than our consulting clients. Dahab Associates does not offer any other services or products. We do not manage money for clients.

Our firm can provide any consulting service reasonably related to the System for which we are qualified.

**F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts "soft dollars" as a method of payment for services provided.**

Dahab Associates, Inc. is not a broker/dealer. We are paid in hard dollars only.

**G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.**

There is no actual or potential conflict of interest (or appearance of a conflict of interest) which may arise if Dahab Associates is selected to advise the Board. We do not have any client relationships which may inhibit our services to the Board. Our services are enhanced from our experience with our ten

Massachusetts clients as we have a thorough understanding of PERAC rules and regulations. In addition, we are members of the Massachusetts Association of Contributory Retirement Systems (MACRS).

**H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.**

None.

**I. Please indicate whether the entity sells or brokers investment vehicles.**

Dahab Associates does not sell or broker investment vehicles.

**J. Please indicate whether the entity actively manages the investment of accounts.**

Dahab Associates does not actively manage the investment of accounts.

**K. Please indicate whether the firm accepts or pays referral or finder's fees.**

Dahab Associates does not accept or pay referral or finder's fees.

**III. Investment Analysis Approach**

**A. Please outline the entity's process for:**

**1. The development of the client's overall investment policy as well as investment policy for specific asset classes.**

Gregory McNeillie, Vice-Chairman, would serve as the consultant to the MWRA Employees' Retirement System with support from Kevin Condry, CFA, CAIA, Director of Research. Greg will review the System's policies and guidelines for the total portfolio, as we believe this should be done periodically during our consulting relationship. It is important to reevaluate the assumptions and conditions and if revisions to the policy and guidelines statement are advised, he will draft policies that clearly communicate the System's goals and objectives.

He will take into consideration the System's specific objectives, constraints, and policies. Objectives and goals are generally defined in terms of return requirements and risk tolerance. Constraints are limitations on the portfolio management process within which the Board must operate in order to achieve its goals. These constraints include liquidity, time horizon, and legal or regulatory issues. Our proprietary asset allocation software allows us to customize each study to meet all the specific needs and goals of each client; thus, we can factor in any investment objective or range constraint.

As part of the review, Greg will suggest possible changes and/or enhancements. He will establish total return objectives for the total System, its components, and each investment advisor. He will then write a final version based on the comments of the fiduciaries. This task generally takes two weeks to complete.

Upon completion, investment managers will receive a copy of the statement that includes clearly defined and specific target objectives for each manager. We strictly enforce compliance with these objectives. On a continuous basis, we will reevaluate the assumptions and conditions and will propose written alternatives to the formal plan including our rationale for such recommendations.



## 2. The development of client investment objectives.

The process for recommending an overall portfolio structure is done in conjunction with a detailed Asset Allocation Analysis. The goals, amount of risk, and types of asset classes for the System are modeled and projected over a twenty- and seventy-year time horizon. This powerful model, using a Monte Carlo simulator, provides insight into the growth of the assets versus the liabilities for different combinations of asset classes. It is from this exercise that we can make recommendations to establish the portfolio structure.

Our consulting philosophy is to emphasize planning instead of reacting. We encourage our clients to prepare both short and long-term investment programs based on analysis of cash flow projections. Our goal is for our clients to be prepared with the necessary information to act in an informed and timely fashion. We help our clients to develop diversified "all weather portfolios" that can meet the client's needs in both good and bad times.

### B. Please describe the entity's asset/liability modeling capability.

Richard Dahab developed our original asset allocation software entirely in-house. The program has been recently enhanced by Bill Dahab to run in a multiprocessor environment and is currently in its fifth generation. We believe our software is among the most tested in the industry. Having proprietary software allows us to customize every study to meet each client's needs.

**Approach to Asset Allocation Assignment:** Our approach to an asset allocation assignment begins with the construction of a simple mathematical model of the liability stream and simulation of the returns that various asset combinations would achieve over time. We gather specific data from each client, including the System's time horizon, liquidity needs, funding status, appropriate risk level, and legal or regulatory constraints. This information is entered into the model to generate possible outcomes for different asset allocations. We then select three or four recommended allocations that we believe would best help the System achieve its goals. The final decision is made by the Board based on these recommendations. Additionally, we require additional estimates of mean return, risk, correlation, and alpha for each asset class included in the study.

**Monte Carlo Simulation and Asset Allocation Study Process:** The model and process used to perform an asset allocation study rely on historical data to project future returns. Our allocation simulator employs Monte Carlo simulations, analyzing hundreds of thousands of asset allocation mixes. This "Monte Carlo" type asset simulator uses a random number generator and statistical distributions to create numerous hypothetical investment experience situations. The data encompasses a range of pre-determined scenarios, along with any requested custom assumptions, providing return analysis, potential future cash levels, and the efficient frontier of the market. Each situation represents a possible return outcome over a 20-year period. All of this analysis is conducted on a 64-core, custom-built computer known as the "Jet engine," aptly named due to the 24 internal fans required to maintain a safe temperature.

**Understanding Risk and Return in Asset Allocation Study:** The purpose of an asset allocation study is to develop a comprehensive understanding of the interaction between risk and return. It does not solely aim to identify the "optimal strategy" for the System. By producing probability distributions for various outcomes during a 20-year period, the Board can identify potential pitfalls and limitations associated with different allocation policies. The trade-offs between different risk/return levels become subjective decisions, taking into account governing legislation, funding options, and the burden of varying contribution rates that the System can sustain.

**Involvement of Fiduciaries and Staff in Economic Discussions:** We actively involve the System's fiduciaries and staff in discussing the economic climate and asset return assumptions that form the foundation of our asset allocation model. Through ongoing discussions, we address topics such as the funding status, type of

workforce, and the local economic climate. This collaborative approach ensures that all relevant factors are considered, leading to a well-informed and comprehensive asset allocation strategy.

**C. Please define the entity's investment style analysis.**

Investment style analysis is based on a two-step process. The first step is to determine a manager's style based on the holdings in the portfolio, not necessarily by how they classify themselves. The review of all holdings is part of the data collection process of performance measurement. The second step is to compare the investment manager to peers of similar style. Custom universes based on style characteristics are created to complete this task. We monitor consistency and style of managers by continually reviewing their holdings to ensure that a manager is adhering to investment style and policy. Additionally, with approximately 300 distinct products utilized by our clients, we regularly review performance and can easily flag outliers and anomalies.

Our investment style analysis is determined not only by the needs of the System but also by the changing nature of the market. These two components are taken into consideration when determining the appropriate investment style for a client. In addition, style analysis is a critical part of manager evaluation. We continuously monitor the managers' holdings to ensure that they are maintaining the style for which they were hired. Style drift is often extremely detrimental to the health of the System. Style analysis is a key indicator of whether or not the structure and allocation of the total portfolio is in serious jeopardy.

**D. Please provide a listing of reports routinely supplied to clients.**

Detailed quarterly performance report  
Monthly flash reports  
Investment policy and guidelines statements  
Asset allocation studies  
Manager search assignments  
Research reports

**E. Please indicate whether the entity provides to its clients written narratives on the managers' performance, portfolio restructuring, guideline discrepancies, style deviations, etc.**

Within the comprehensive quarterly performance report, written narratives on manager performance and portfolio restructuring are covered in a quarterly stock and bond analysis prepared by the analyst monitoring the total client portfolio. Written analysis regarding guideline discrepancies and style deviations can also be included in our quarterly performance reports when these deviations are merited.

All our reports are customizable to include any information at no additional cost as the analysis and preparation of all client reports is performed in-house.

**F. Please describe the software technology, database and analysis tools used in providing services to the client.**

Dahab Associates integrates both internal and external software systems. Richard Dahab and Tom Donegan have developed our asset allocation software and our performance measurement and reporting software. We are confident that these applications have undergone some of the most rigorous testing in the industry. The use of proprietary software allows us to tailor our reports to match our clients' requirements without any extra charges. Our software is highly adaptable, modular, and undergoes quarterly updates to incorporate the latest developments in data availability and accommodate shifting client demands.

We have both proprietary and purchased manager databases. Our in-house database is qualitative with information on personnel, organization, investment philosophy, style, research, financial condition, assets,

and fees for more than 3,000 managers. In addition, we subscribe to Plan Sponsor Network. PSN tracks the monthly performance of more than 1,400 investment advisors. We have the ability to sort/screen by any criteria be it investment style, capitalization, geographic or any other specialty designation. In our manager screening process, we utilize our proprietary computer system, Nova, as well as four purchased databases, PSN, Morningstar, InvestWorks, and Eikon for mutual funds and ETFs.

For performance measurement and peer universe rankings, we subscribe to Investment Metrics (IM). Based in Darien, CT, Investment Metrics is an independent provider of investment performance analytics for institutional investors and advisors built by institutional investment consultants.

The IM universe includes information from approximately 5,000 institutional plans covering more than \$4.0 trillion in assets under advisement. The universe consists of institutional custodial data submitted by the IM consulting firms. Specialty subsets include corporate funds, public funds, Taft-Hartley funds, endowments and foundations, and healthcare funds. IM members can also construct custom universes. Portfolios are additionally assigned to investment styles on the basis of their holdings.

#### **IV. Manager Search and Due Diligence**

##### **A. Please indicate the number of money mangers currently being evaluated.**

Through both our proprietary and purchased databases, we can evaluate more than 3,000 managers. In addition, we keep an open-door policy with regard to our in-house database and manager searches and are always looking for new skilled managers.

##### **B. Please describe the criteria by which the entity decides which managers to evaluate.**

The process of evaluating external public and private market managers involves in-person interviews, detailed RFP submissions completed by the investment management firms, and tracking the investment manager's performance. We visit with money managers throughout the year both in-house and on-site. On average, we conduct approximately 400 meetings each year (in-house and on-site).

We use many quantitative and qualitative factors to evaluate managers. The variables are broken out into three groups: firm, product, and performance. **Firm** information variables include ownership, experience of key personnel, total assets and accounts, account sizes and client types. **Product** information variables include investment style, style adherence, market capitalization, buy, and sell decision-making processes, portfolio characteristics, geographic concentration, maturity, quality and sector distribution, allocation objectives and fees. The **performance** screening variables include rate of return, standard deviation, Sharpe ratio, tracking error, alpha, beta, and R-squared.

Manager performance is one of the most important factors in evaluating potential investment managers for our clients' portfolios. We are constantly searching for managers with a proven record of accomplishment who our clients would benefit from. For both manager searches and performance reporting, we compare a manager's performance not only to an appropriate benchmark, but also to a universe of other actively managed portfolios of similar style.

##### **C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.**

At Dahab Associates, we possess a comprehensive collection of both proprietary and purchased manager databases. Our in-house database, Nova, offers qualitative insights, encompassing a wide range of information for over 3,000 managers. This includes details about their personnel, organization, investment philosophy, style, research capabilities, financial condition, assets under management, and fees.

We also subscribe to Plan Sponsor Network (PSN), which provides us with monthly performance tracking for more than 1,400 investment advisors. This enables us to sort and screen advisors based on various criteria, such as investment style, capitalization, geographic focus, or any other specialized designations. In addition, we utilize Morningstar, InvestWorks, and Eikon, particularly for mutual funds and ETFs.

Our database remains up to date. PSN is updated monthly, and we continuously enrich our proprietary database by incorporating new information obtained from RFP submissions, manager meetings, and conference calls. We take pride in maintaining an open-door policy for all managers and do not charge any fees for inclusion in our database.

**D. Please describe how the due diligence evaluation of investment managers is performed.**

Our thorough evaluation process involves conducting in-person interviews, reviewing detailed RFP submissions from management firms, and utilizing both proprietary and purchased manager databases. We employ a blend of quantitative and qualitative criteria to assess investment managers. The performance of managers holds significant importance in our evaluation as we strive to identify those with a proven track record that would benefit our clients' portfolios.

In addition to performance, our due diligence process aims to uncover the story behind the numbers. Through extensive meetings with managers, we gather information that goes beyond mere performance data and includes specific insights into their products. Our qualitative approach focuses on assessing the investment team's background, investment philosophy, and various other factors. We delve into how the team perceives the current economic landscape and how it influences their portfolio construction.

We maintain ongoing communication with managers throughout the year and consistently update our database. By combining qualitative and quantitative factors, we provide our clients with a comprehensive understanding of investment managers, their products, teams, and approaches. This deeper level of comprehension enables our clients to make more informed decisions.

**E. Does the firm or consultant maintained a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.**

No. We do not maintain a preferred vendor list, either formal or informal, in performing client searches. Every search assignment is tailored to align with the client's specified criteria.

**V. Miscellaneous**

**A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.**

Dahab Associates has been providing a full complement of investment consulting services for over 37 years. Since 1988, we have been providing investment consulting services to Massachusetts public pension fund clients. We currently serve ten Massachusetts public fund clients. We work with the various boards and staff regarding investment strategy, policy and guidelines statement implementation and review, asset allocation studies, investment manager searches and evaluation, as well as performance evaluation and reporting. In addition, we have remained independent, ensuring our services are always aligned with our client's interests. Through meetings with PERAC and our relationships with our existing local clients, we are very active in the Massachusetts public pension fund community. We fully understand the provisions under Chapter 32 and PERAC Regulations. We are members of several state public retirement organizations including Massachusetts Association of Contributory Retirement Systems (MACRS).

**B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.**

The following are attributes of Dahab Associates that distinguish us from our competitors and demonstrate why we believe we are the best candidate for the Massachusetts Water Resources Authority Employees' Retirement System:

- View of Risk: Risk as defined in academia and by many consulting firms is short-term in nature, based on some statistical measure of one-year deviation around a median value. We believe this view of risk has numerous negative consequences. It tends to drive asset allocation into assets that have lower short-term volatility but also lower long-term return, making it more difficult to achieve the actuarial assumption. Risk-controlled assets tend to be more expensive, driving up fees. Our allocations favor pure equity for return and pure investment-grade fixed income for safety. Our investment philosophy on alternatives has historically centered around proposing options with lower risk profiles. Specifically, we have focused on real estate, timber, and farmland investments, which have historically provided high levels of income and reliable inflation protection. In contrast, we generally avoid investments such as hedge funds, tactical strategies, and exotic fixed income, which tend to carry higher levels of risk. By prioritizing real assets, we aim to offer our clients a portfolio that balances risk and reward and delivers steady returns over the long term. Should alternative investing include private equity, we have experience and have proposed options across the continuum of risk levels.
- Our Team: Greg McNeillie, Vice-Chairman would serve as the primary consultant and would be supported by Kevin Condy, CFA, CAIA, Director of Research. Greg has in-depth knowledge and experience in the consulting industry. He works with his clients on various investment issues and provides fresh ideas, working with Boards regarding investment policy and strategy, asset allocations, manager search assignments and results, as well as performance measurement. His primary focus is on meeting his clients' needs by coordinating investment strategies and effectively managing risks. Furthermore, he understands the importance of forming a partnership with his clients, keeping an open dialogue and being reachable should the Board or staff have questions or concerns. Kevin will be working closely with Greg to provide comprehensive support throughout the process.
- Independence: Our *only* business is the provision of investment consulting services. With no ties to any other business entity, our focus is to provide a thorough, unbiased assessment of manager performance. This objectivity is critical in the investment consulting business. Our clients can be confident that our advice is in the best interest of their System, with no conflicts of interest.
- Stability: Our business model has never varied since Rich Dahab founded our firm over 37 years ago. Our firm has never changed hands. We have never acquired another firm. We have never lost money in any full year after the company was founded. We are a reliable business partner.

**C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.**

References	Contact	Address
North Attleboro Contributory Retirement System (MA)	Mr. Craig Chapman Chairman (774) 306-2547 Chaps50@aol.com	500 East Washington Street Suite 21 North Attleboro, MA 02760
Shrewsbury Retirement System (MA)	Mr. Gregory Gatsogiannis Executive Director (508) 841-8510 GGatsogiannis@shrewsburyma.gov	100 Maple Avenue Shrewsbury, MA 01545
Taunton Contributory Retirement System (MA)	Mr. Paul Slivinski Executive Director (508) 821-1052 pslivinski@taunton-ma.gov	104 Dean Street, Suite 203 Taunton, MA 02780

**D. Please provide the names and asset values of any clients who have terminated services in the last three years.**

Former Clients	Asset Value*
Pennsylvania Municipal Retirement System (PA)	\$2,800 mm
City of Burlington Employees Retirement System (VT)	\$228 mm
Volusia County 457 Deferred Compensation Program (FL)	\$116 mm
Westchester County Community College Foundation (NY)	N/A**
Stratford Employees' Retirement System (CT)	\$265 mm
Local 305 C.I.O Pension Fund	N/A**
Sunrise Firefighters' Pension Fund (FL)	\$172 mm

\*Last known asset value.

\*\*Please note that Dahab Associates is prohibited from releasing any specific financial data for all non-public clients.

**E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.**

*Please see the appendix where we have provided a sample quarterly performance report.*

**VI. Fee Structure**

- A. Please provide a detailed description of the fee structure for the firms' services to the Board. Fees must be fixed and based on services provided, and fee proposals must include the length of time over which the proposed fee is guaranteed, as well as a statement that the fee is all-inclusive.**

Dahab Associates provides a full complement of investment consulting services. Our all-inclusive full-service retainer fee includes, but is not limited to the following services:

- Investment policy and guideline statement formulation and review
- Asset allocation studies
- All manager search assignments
- Quarterly performance measurement and analysis
- Board meetings (generally 4-6)
- Educational seminars
- All consulting time and support time
- Research
- Travel and expenses

Dahab Associates' fees are based on factors such as assets under advisement, scope of services to be provided, and complexity of the client relationship. We are paid in hard dollars only. Clients we have served as their investment consultant for a period of five years or more may be subject to previous fee schedules.

Our fee is guaranteed for seven (7) years.

**VII. Specific Board Issues**

- A. Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.**

Greg McNeillie, Vice-Chairman would serve as the primary consultant to the Massachusetts Water Resources Authority Employees' Retirement System. His role as the primary consultant is to advise and support the Board and serve as a liaison between our employees who perform the in-house work and the System. This includes the oversight of all projects completed on behalf of the System as well as the provision of analysis and recommendations regarding any changes to be made to the current structure and policies of the System. He would be supported by Kevin Condy, CFA, CAIA, Director of Research.

**Biographies:**

**Greg McNeillie** joined Dahab Associates in 1997. He was made vice-chairman in February 2013. Greg has served as Chairman of the Florida Public Pension Trustees Association Associate Advisory Board and was editor of the organizational newsletter for five years. He works in our Franklin, Massachusetts office and is a citizen appointment to the Town of Franklin OPEB Investment Trust Board.

Greg began his career in 1986 at SSGA. In addition to positions at State Street Bank and MIG Realty Advisors, Greg spent seven years at The Hannah Group, where he was Vice President of Consulting Services. While with the Hannah Group, he was primarily responsible for nineteen consulting clients totaling more than one billion dollars. Greg received his BS degree in Business Administration from Bryant University.

**Kevin Condy** joined Dahab Associates in March 2014 as a financial analyst. He was made part of the research team in November 2015. In 2020, he became Director of Research. His responsibilities include asset allocation modeling, investment manager due diligence, and undertaking special research assignments. Kevin received his BA in finance from The College of New Jersey in 2012. He received the

designation of Chartered Financial Analyst (CFA) in 2017 and Chartered Alternative Investment Analyst (CAIA) in 2019. He is a member of the CFA Institute and CAIA Association.

Having Greg and Kevin assigned to the account ensures there will always be continuity and accessibility to a consultant if one happens to be traveling or unavailable. The Board and staff can be confident that someone well versed in the needs of the System will always be reachable.

The account would also be assigned a financial analyst who would prepare the performance report each quarter in conjunction with Greg, as well as other analytical projects requested by our client. In addition, Greg will keep an open dialogue with our research team throughout our relationship with the Massachusetts Water Resources Authority, investigating new managers or asset classes for optimal results for the System.

**B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.**

Greg currently advises clients with total assets under advisement totaling over \$4.2 billion and serves eighteen clients, seven of which are located in the Commonwealth of Massachusetts. Kevin supports all clients in his role as Director of Research.

**C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.**

We will ask the Board's staff for the following: investment policy and guidelines, previous consultant's report, most recent actuarial report, and access to the previous five years of custodial and investment manager statements.



# APPENDIX





# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

Please print or type all entries in blue or black ink.

## I. Retirement Board

Retirement Board to which proposal is being submitted: MWRA Employees' Retirement Board

## 2. Service Provider

Business Name: Dahab Associates, Inc.

Address: 423 South Country Road

City: Bay Shore

State: NY

Zip: 11706

Services Being Proposed:

Dates of Services (MM/DD/YYYY) From: 01/01/2024

To: 12/31/2031

## 3. Individual Submitting Proposal

Name, First: William

Last: Dahab

Suffix:

Title: Chief Executive Officer

The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature:

Date:

11/21/23



# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name: MWRA Employees' Retirement System

Name of Retirement Board: MWRA Employees' Retirement Board

## I. Company/Entity Information:

Company/Entity Name: Dahab Associates, Inc.

CRD# (If Applicable): 108356

Address: 423 South Country Road

City: Bay Shore State: NY

Zip: 11706 Country: United States

Phone: 631-665-6181 Fax: 631-665-6813 URL: <https://www.dahab.com>

## 2. Contact Information:

Name, First: William Last: Dahab Suffix:

Title: Chief Executive Officer

Department:

Phone: 631-665-6181 Fax: 631-665-6813 Email: [wdahab@dahab.com](mailto:wdahab@dahab.com)

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City: State:

Zip: Country:



# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

Please print or type all entries in blue or black ink.

## 1. Vendor/Board Information

Name of Company/Entity: Dahab Associates, Inc.  
 Name of Fund: MWRA Employees' Retirement System  
 Retirement Board: MWRA Employees' Retirement Board

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First: William Last: Dahab Suffix:

Title: Chief Executive Officer

Signature:

Date:

11/21/23



# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board: MWRA Employees' Retirement Board

Name of Investment Manager: Dahab Associates, Inc.

## Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

## PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.

**COMPENSATION**



9191034

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?

No  Yes

(2) If **yes**, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If **yes**, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If **yes**, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If **yes**, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



9191034

(6) If **yes**, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

[Empty text box for description of services]

Additional Pages Attached:  No  Yes

(7) If **yes**, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

[Empty text box for agreements]

Additional Pages Attached:  No  Yes

(8) If **yes**, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

[Empty text box for names of providers]

Additional Pages Attached:  No  Yes

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First: William Last: Dahab Suffix:

Title of Authorized Individual: Chief Executive Officer

Signature of Authorized Individual: William E Dahab Date Signed: 11/21/23

# XYZ Defined Benefit Plan

Performance Review  
June 2023



**DAHAB ASSOCIATES**

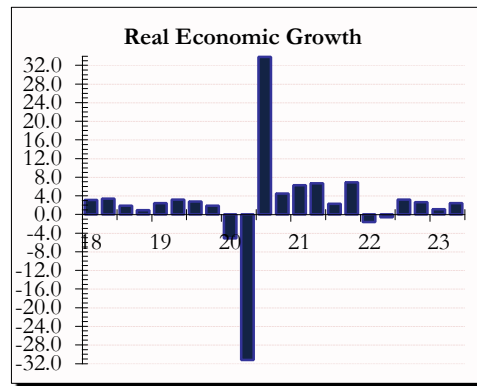


## ECONOMIC ENVIRONMENT

### Sentiment Shift

Investors entered the second quarter with heightened concerns about the possibility of a recession. However, as the quarter progressed, market participants largely became optimistic that the bear market had come to an end. The MSCI All Country World index demonstrated a substantial rise of 6.4%, resulting in a year-to-date gain of 14.3%.

Furthermore, there are positive indications of economic growth, with the first estimate of Q2 2023 GDP from the Bureau of Economic Analysis increasing at a rate of 2.4%.



Despite these encouraging signs, uncertainties persist. While inflation appears to be subsiding and corporations have largely surpassed their modest earnings expectations, the Federal Reserve remains cautious, warning of potential future rate hikes and expressing the belief that inflation has not yet been fully tamed.

As we embark on the third quarter, market outlook and sentiment are notably more positive than they have been in over a year. Nonetheless, it is essential to remain vigilant and monitor certain situations. For instance, the status of the debt ceiling is yet to be determined and could potentially impact the markets. We continue

to navigate challenges, symbolized by the metaphorical "wall of worry."

The economy and labor market have shown impressive resilience, but uncertainties persist. Labor unions are advocating for a greater share of profits amid corporations recording record earnings, and their willingness to strike poses potential risks, particularly in critical sectors like trucking and logistics.

Moreover, although inflation is receding, the effects of the Federal Reserve's unprecedented rate hikes on the economy are still uncertain. Residential real estate markets, which were initially expected to decline, have remained robust, but any downturn could rapidly impact consumer price indices.

Finally, the restart of student loan payments after a pause of over two years is a possible headwind that could influence the economy. Rising credit card debt and its potential impact on consumer budgets and discretionary company earnings need to be carefully considered. Monitoring these developments will be crucial in maintaining a comprehensive understanding of the economic landscape.

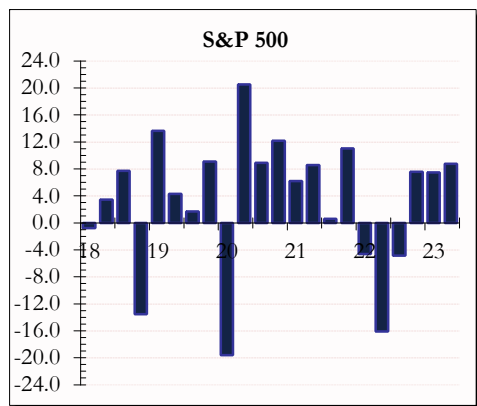
## DOMESTIC EQUITIES

### Building Momentum

The U.S. stock market continued to build off the first quarter's strong momentum and once again saw gains in the second quarter of 2023. The Russell 3000, an index that measures the broad domestic market, increased by 8.4%, while the S&P 500, which measures the performance of large-cap companies, gained 8.7%.

The Russell Mid Cap, which covers mid-cap companies, increased 4.8% and the Russell 2000, which tracks small-cap companies, gained 5.2%.

The tech-heavy Nasdaq gained 13.0% in the second quarter and had its best first half to start the year, up 32.3% as Information Technology was once again the best performing sector, up 17.2% year to date. Consumer Discretionary and Communication Services also had strong quarters, up 14.6% and 13.1% respectively, as the big seven companies continued to outperform. Apple, Microsoft, Nvidia, Alphabet, Tesla, Amazon, and Meta contributed



more than 70% of the S&P 500's return in the second quarter. All in all, nine of the 11 GICs sectors saw positive returns with only Energy and Utilities finishing in the red, down -0.9% and -2.5% respectively.

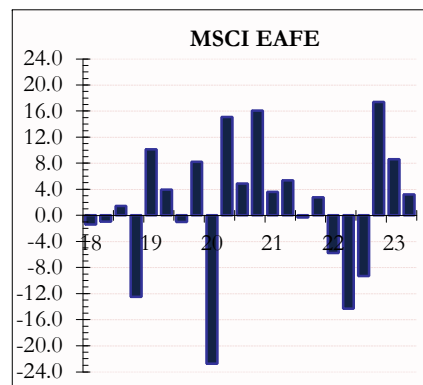
Growth stocks once again outperformed value stocks across all market capitalizations, with the largest spread in large-cap stocks. The Russell 1000 Growth finished the second quarter up 12.8% vs. 4.1% for the Russell 1000 Value, an 8.7% difference. Small cap value stocks, as measured by the Russell 2000 Value, were once again the worst performer of any of the sub-market styles. The index suffered in particular from an approximately 25% exposure

to small-cap financials, a sector that once again saw a negative return as fears continue to linger around regional banks. Regarding valuations, the gap continues to widen between large-cap companies and small-cap companies. As of June 30<sup>th</sup>, large-cap equities, using the S&P 500 as a proxy, had a trailing P/E (price-to-earnings multiple) of 23.5 while small-cap companies, using the Russell 2000 as a proxy, had a trailing P/E of 13.0.

## INTERNATIONAL EQUITIES

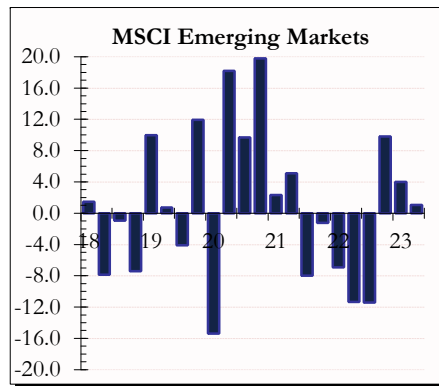
### Chugging Along

International markets continued to see gains in the second quarter of 2023, but at a slower rate than the first. The MSCI All Country World ex-US index, which tracks global markets excluding the United States, gained 2.7%.



In developed markets, the MSCI EAFE index returned 3.2%. The Far East was the strongest region, boosted by Japan's 6.4% return. The country's stock market hit its highest level in 33 years, driven by continuous buying from foreign investors since April and ongoing expectations of corporate governance reforms and structural shifts in the macro economy. European stocks showed moderate gains with France, Germany and the UK all returning between 2 and 4%. Recent data showed

that the eurozone experienced a mild recession over the winter, with GDP declines of -0.1% in both Q4 2022 and Q1 2023.



Emerging markets delivered a small gain (1.0%) over the quarter. Eastern Europe was the top region in the index at 20.3%, due to the anticipation of rate cuts as inflation eased, beginning with Hungary's cut in June. Brazil was also a top

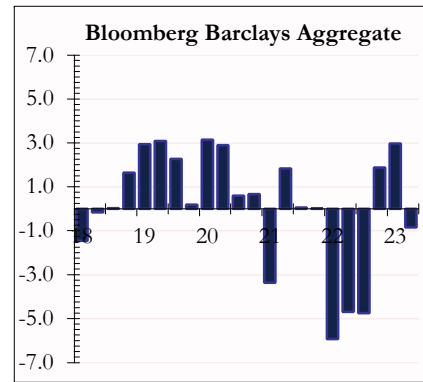
performer, returning 20.8% amid easing fiscal policy concerns, and a better-than-expected Q1 GDP print. China, the index's largest country by weighting, tempered overall performance with its -9.7% return. Tensions between the US and China were a contributing factor, as were concerns about China's economic recovery.

## BOND MARKET

### Safety is an Illusion

It was a mixed second quarter for bond investors. Funds sensitive to interest rates, such as long government and intermediate core bonds performed poorly, while lower-quality assets saw some gains. As inflation expectations fell, so did long-term yields.

The Bloomberg U.S. Aggregate Bond Index lost 0.8%, while its international counterpart the Bloomberg Global Aggregate Index fell 1.5%.



The yield on the 10-year U.S. Treasury rose to 3.8% by the end of June. Expectations of another rate hike by the Federal Reserve to tame stubbornly high inflation helped push the yield curve to its deepest inversion since

1981. Rate futures markets reflect a greater than 80% chance of a quarter-point hike in July, though there is much less conviction the Fed will proceed beyond that.

The Bloomberg Barclays High Yield Index gained 1.7%. Although investors retreated from credit-sensitive sectors as they braced for a recession, high yield bonds outperformed once again.

## CASH EQUIVALENTS

### Cash Matters Again

The three-month T-Bill returned 0.77% for the second quarter. This is the first time in 61 quarters that its return has been more than 75 basis points! Three-month treasury bills are now yielding 5.16%.

## Economic Statistics

	Current Quarter	Previous Quarter
GDP (Annualized)	2.4%	2.0%
Unemployment	3.6%	3.5%
CPI All Items Year/Year	3.0%	5.0%
Fed Funds Rate	5.0%	4.7%
Industrial Capacity Utilization	78.9%	79.5%
U.S. Dollars per Euro	1.09	1.09

## Major Index Returns

Index	Quarter	12 Months
Russell 3000	8.39	18.95
S&P 500	8.74	19.59
Russell Midcap	4.76	14.92
Russell 2000	5.20	12.31
MSCI EAFE	3.23	19.41
MSCI Emg. Markets	1.04	2.22
NCREIF ODCE	-2.68	-9.98
U.S. Aggregate	-0.84	-0.93
90 Day T-bills	0.77	1.74

## Domestic Equity Return Distributions

Quarter	Trailing Year		
	GRO	COR	VAL
LC	12.8	8.6	4.1
MC	6.2	4.8	3.9
SC	7.1	5.2	3.2

## Market Summary

- Equity markets rise
- Growth outpaces value
- Federal Reserve hesitates
- Inflation softens
- Cash has real quarterly return

## **INVESTMENT RETURN**

On June 30th, 2023, the XYZ Defined Benefit Plan was valued at \$856,120,579, representing an increase of \$25,905,054 from the March quarter's ending value of \$830,215,525. Last quarter, the Fund posted withdrawals totaling \$4,706,492, which partially offset the portfolio's net investment return of \$30,611,546. Income receipts totaling \$2,411,808 plus net realized and unrealized capital gains of \$28,199,738 combined to produce the portfolio's net investment return.

## **RELATIVE PERFORMANCE**

### **Total Fund**

For the second quarter, the Composite portfolio returned 3.7%, which was 0.5% below the Policy Index return of 4.2% and ranked in the 25th percentile of the Public Fund universe. Over the trailing year, the portfolio returned 10.4%, which was 0.4% below the benchmark's 10.8% return, ranking in the 22nd percentile. Since June 2013, the portfolio returned 8.6% annualized and ranked in the 3rd percentile. The Policy Index returned an annualized 8.6% over the same period.

### **Domestic Equity**

The domestic equity portion of the portfolio returned 7.0% last quarter; that return was 1.4% below the Russell 3000 Index's return of 8.4% and ranked in the 37th percentile of the Domestic Equity universe. Over the trailing twelve-month period, this component returned 17.6%, 1.4% below the benchmark's 19.0% performance, ranking in the 46th percentile. Since June 2013, this component returned 11.9% on an annualized basis and ranked in the 38th percentile. The Russell 3000 returned an annualized 12.3% during the same period.

### **Large Cap Equity**

During the second quarter, the large cap equity component returned 8.9%, which was 0.2% better than the S&P 500 Index's return of 8.7% and ranked in the 34th percentile of the Large Cap universe. Over the trailing year, the large cap equity portfolio returned 18.4%, which was 1.2% below the benchmark's 19.6% return, and ranked in the 50th percentile. Since June 2013, this component returned 12.2% per annum and ranked in the 56th percentile. The S&P 500 returned an annualized 12.9% over the same time frame.

### **Mid Cap Equity**

For the second quarter, the mid cap equity segment returned 5.0%, which was 0.1% better than the S&P 400 Index's return of 4.9% and ranked in the 35th percentile of the Mid Cap Core universe. Over the trailing twelve-month period, this segment's return was 15.2%, which was 2.4% below the benchmark's 17.6% return, ranking in the 66th percentile. Since June 2013, this component returned 10.4% annualized and ranked in the 60th percentile. The S&P 400 returned an annualized 10.2% during the same period.

### **Small Cap Equity**

The small cap equity segment returned 2.6% during the second quarter; that return was 2.6% below the Russell 2000 Index's return of 5.2% and ranked in the 85th percentile of the Small Cap universe. Over the trailing twelve months, the small cap equity portfolio returned 17.3%, 5.0% better than the benchmark's 12.3% performance, ranking in the 38th percentile. Since June 2013, this component returned 12.5% annualized and ranked in the 11th percentile. The Russell 2000 returned an annualized 8.2% during the same time frame.

## International Equity

During the second quarter, the international equity segment returned 3.0%, which was 0.6% better than the MSCI All Country World ex US Net Index's return of 2.4% and ranked in the 47th percentile of the International Equity universe. Over the trailing year, this segment's return was 15.0%, which was 2.3% above the benchmark's 12.7% return, and ranked in the 60th percentile. Since June 2013, this component returned 4.1% annualized and ranked in the 95th percentile. The MSCI All Country World ex US Net Index returned an annualized 4.7% over the same period.

## Real Asset

For the second quarter, the real assets component lost 1.7%, which was 0.6% below the Blended Real Assets Index's return of -1.1%. Over the trailing twelve-month period, this segment returned -0.8%, which was 1.6% above the benchmark's -2.4% performance. Since June 2013, this component returned 9.1% per annum, while the Blended Real Assets Index returned an annualized 8.1% over the same period.

## Fixed Income

In the second quarter, the fixed income segment returned -0.7%, which was 0.3% better than the Bloomberg Aggregate A-or-Better Index's return of -1.0% and ranked in the 49th percentile of the Core Fixed Income universe. Over the trailing twelve months, this segment's return was 0.0%, which was 1.4% better than the benchmark's -1.4% return, ranking in the 20th percentile. Since June 2013, this component returned 1.8% per annum and ranked in the 73rd percentile. For comparison, the Bloomberg Aggregate A-or-Better Index returned an annualized 1.3% during the same time frame.

## ASSET ALLOCATION

On June 30th, 2023, large cap equities comprised 37.6% of the total portfolio (\$321.9 million), while mid cap equities totaled 8.8% (\$75.2 million). The account's small cap equity segment was valued at \$99.1 million, representing 11.6% of the portfolio, while the international equity component's \$50.4 million totaled 5.9%. The real assets segment totaled 14.7% of the portfolio's value and the fixed income component made up 19.6% (\$167.8 million). The remaining 1.8% was comprised of cash & equivalents (\$15.5 million).

Asset Class	Current Value	Current Allocation	Min.	Max.
Domestic Equities	\$ 496,176,117	58.0	42.0%	62.0%
International Equities	\$ 50,412,822	5.9	0.0%	10.0%
Real Assets	\$ 126,226,626	14.7	0.0%	20.0%
Fixed Income	\$ 167,836,957	19.6	20.0%	50.0%
Cash	\$ 15,468,057	1.8	N/A	N/A

## EXECUTIVE SUMMARY

## PERFORMANCE SUMMARY

	Quarter	FYTD	1 Year	3 Year	5 Year	10 Year
<b>Total Portfolio - Gross</b>	3.7	14.3	10.4	8.9	7.7	8.6
<i>PUBLIC FUND RANK</i>	(25)	(44)	(22)	(18)	(8)	(3)
<b>Total Portfolio - Net</b>	3.6	13.9	9.8	8.3	7.1	8.0
Policy Index	4.2	15.3	10.8	8.3	7.8	8.6
Shadow Index	3.9	13.5	9.6	8.2	6.9	8.1
<b>Domestic Equity - Gross</b>	7.0	23.3	17.6	13.8	10.6	11.9
<i>DOMESTIC EQUITY RANK</i>	(37)	(35)	(46)	(54)	(37)	(38)
Russell 3000	8.4	24.5	19.0	13.9	11.4	12.3
<b>Large Cap Equity - Gross</b>	8.9	24.1	18.4	13.4	11.4	12.2
<i>LARGE CAP RANK</i>	(34)	(48)	(50)	(58)	(47)	(56)
S&P 500	8.7	25.7	19.6	14.6	12.3	12.9
Russell 1000G	12.8	31.9	27.1	13.7	15.1	15.7
Russell 1000V	4.1	18.2	11.5	14.3	8.1	9.2
<b>Mid Cap Equity - Gross</b>	5.0	18.5	15.2	15.1	8.1	10.4
<i>MID CAP CORE RANK</i>	(35)	(78)	(66)	(46)	(57)	(60)
S&P 400	4.9	20.6	17.6	15.4	7.8	10.2
Russell Mid	4.8	19.0	14.9	12.5	8.5	10.3
<b>Small Cap Equity - Gross</b>	2.6	24.4	17.3	14.4	9.9	12.5
<i>SMALL CAP RANK</i>	(85)	(11)	(38)	(54)	(17)	(11)
Russell 2000	5.2	14.8	12.3	10.8	4.2	8.2
<b>International Equity - Gross</b>	3.0	27.2	15.0	6.5	1.8	4.1
<i>INTERNATIONAL EQUITY RANK</i>	(47)	(54)	(60)	(71)	(89)	(95)
ACWI ex US Net	2.4	25.1	12.7	7.2	3.5	4.7
<b>Real Assets - Gross</b>	-1.7	-2.8	-0.8	10.3	8.5	9.1
Real Assets Idx	-1.1	-3.6	-2.4	8.1	6.4	8.1
75/25 ODCE TIM	-1.6	-5.9	-5.0	8.2	6.4	8.1
NCREIF ODCE	-2.7	-10.4	-10.0	8.0	6.5	8.7
<b>Fixed Income - Gross</b>	-0.7	4.1	0.0	-2.7	1.6	1.8
<i>CORE FIXED INCOME RANK</i>	(49)	(62)	(20)	(17)	(20)	(73)
Aggregate A+	-1.0	3.5	-1.4	-4.2	0.5	1.3
Aggregate Index	-0.8	4.0	-0.9	-4.0	0.8	1.5

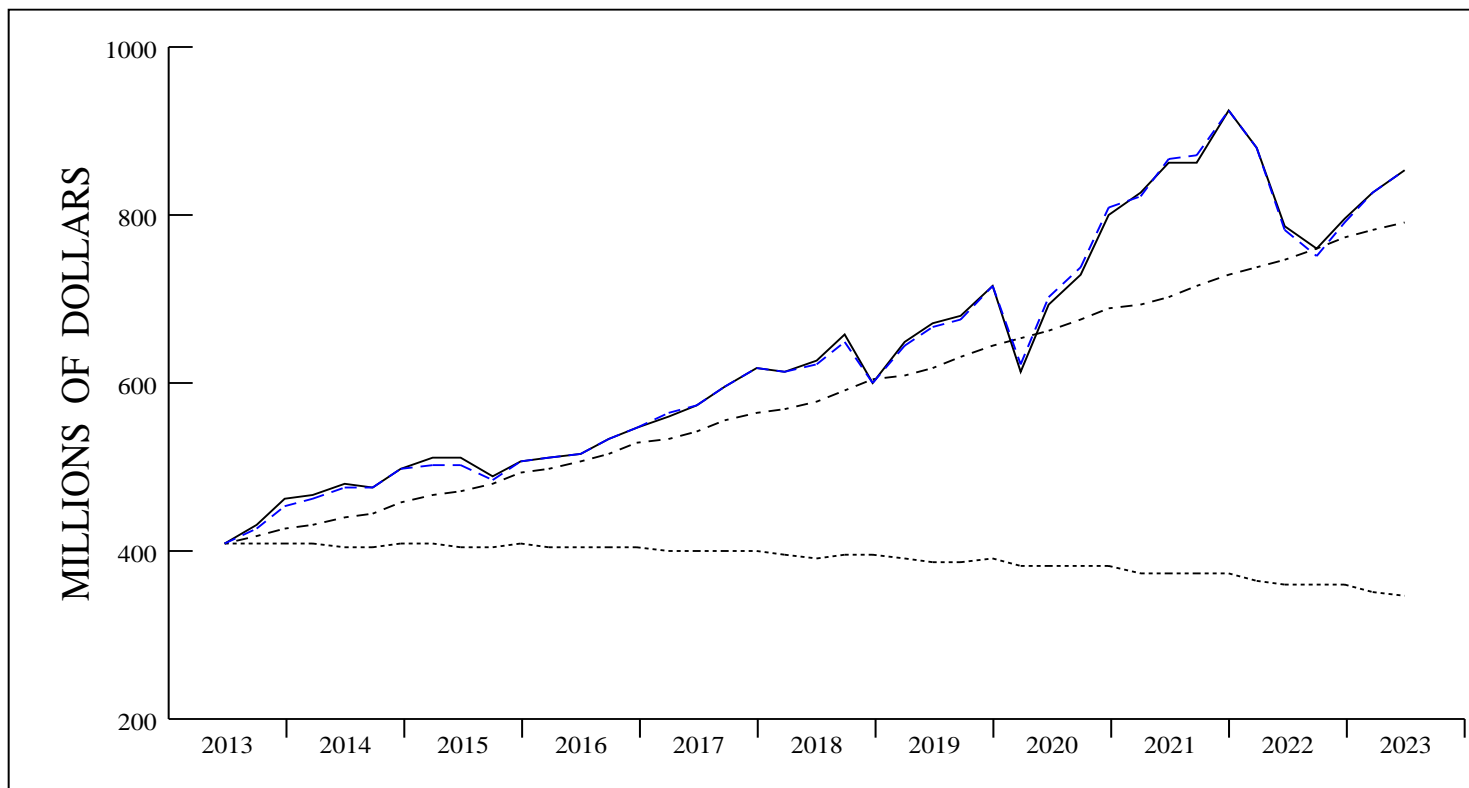
## ASSET ALLOCATION

Large Cap Equity	37.6%	\$ 321,864,118
Mid Cap Equity	8.8%	75,164,251
Small Cap	11.6%	99,147,748
Int'l Equity	5.9%	50,412,822
Real Assets	14.7%	126,226,626
Fixed Income	19.6%	167,836,957
Cash	1.8%	15,468,057
<b>Total Portfolio</b>	<b>100.0%</b>	<b>\$ 856,120,579</b>

## INVESTMENT RETURN

Market Value 3/2023	\$ 830,215,525
Contribs / Withdrawals	- 4,706,492
Income	2,411,808
Capital Gains / Losses	28,199,738
Market Value 6/2023	\$ 856,120,579

**INVESTMENT GROWTH**

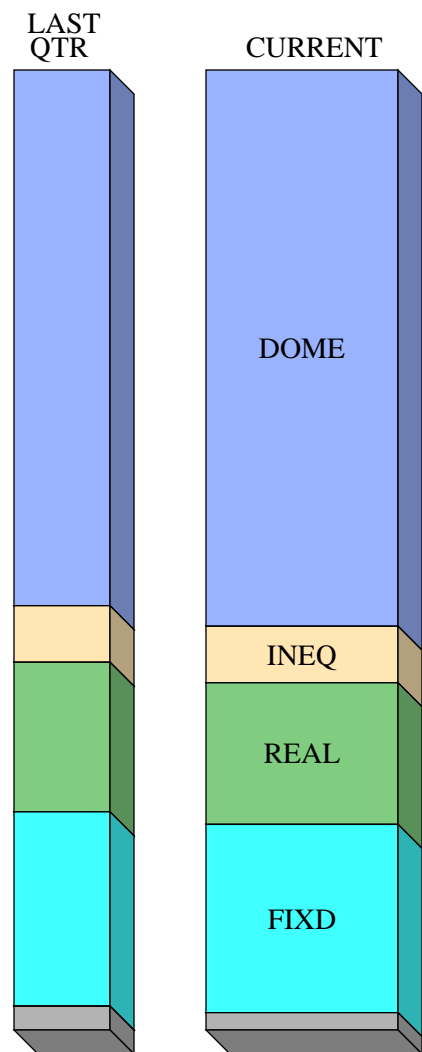


—	ACTUAL RETURN
.....	7.85%
-----	0.0%
- - - - -	POLICY INDEX

VALUE ASSUMING	
7.85% RETURN	\$ 793,564,226
POLICY IDX	\$ 856,512,357

	LAST QUARTER	PERIOD 6/13 - 6/23
BEGINNING VALUE	\$ 830,215,525	\$ 409,952,381
NET CONTRIBUTIONS	- 4,706,492	- 60,857,511
<u>INVESTMENT RETURN</u>	<u>30,611,546</u>	<u>507,025,709</u>
ENDING VALUE	\$ 856,120,579	\$ 856,120,579
INCOME	2,411,808	91,886,855
<u>CAPITAL GAINS (LOSSES)</u>	<u>28,199,738</u>	<u>415,138,854</u>
INVESTMENT RETURN	30,611,546	507,025,709





	<u>VALUE</u>	<u>PERCENT</u>	<u>TARGET</u>	<u>MIN</u>	<u>MAX</u>
<span style="color: blue;">■</span> <b>DOMESTIC EQUITY</b>	<b>\$ 496,176,117</b>	<b>58.0%</b>	<b>52.0%</b>	<b>42.0%</b>	<b>62.0%</b>
<i>LARGE CAP EQUITY</i>	321,864,118	37.6%	34.0%	----	----
<i>MID CAP EQUITY</i>	75,164,251	8.8%	8.0%	----	----
<i>SMALL CAP EQUITY</i>	99,147,748	11.6%	10.0%	----	----
<span style="color: orange;">■</span> <b>INTERNATIONAL EQUITY</b>	<b>50,412,822</b>	<b>5.9%</b>	<b>8.0%</b>	<b>0.0%</b>	<b>10.0%</b>
<span style="color: green;">■</span> <b>REAL ASSETS</b>	<b>126,226,626</b>	<b>14.7%</b>	<b>15.0%</b>	<b>0.0%</b>	<b>20.0%</b>
<span style="color: cyan;">■</span> <b>FIXED INCOME</b>	<b>167,836,957</b>	<b>19.6%</b>	<b>25.0%</b>	<b>20.0%</b>	<b>50.0%</b>
<span style="color: grey;">■</span> <b>CASH &amp; EQUIVALENT</b>	<b>15,468,057</b>	<b>1.8%</b>	<b>0.0%</b>	<b>----</b>	<b>----</b>
<b>TOTAL FUND</b>	<b>\$ 856,120,579</b>	<b>100.0%</b>			

## MANAGER PERFORMANCE SUMMARY - GROSS OF FEES

Portfolio	(Universe)	QTR	FYTD	1 Year	3 Years	5 Years	10 Years	Inception	
Composite	(Public Fund)	3.7 (25)	14.3 (44)	10.4 (22)	8.9 (18)	7.7 (8)	8.6 (3)	7.6 ----	03/97
<i>Policy Index</i>		<i>4.2 ----</i>	<i>15.3 ----</i>	<i>10.8 ----</i>	<i>8.3 ----</i>	<i>7.8 ----</i>	<i>8.6 ----</i>	<i>7.5 ----</i>	<i>03/97</i>
Domestic Equity	(Domestic Eq)	7.0 (37)	23.3 (35)	17.6 (46)	13.8 (54)	10.6 (37)	11.9 (38)	9.4 ----	03/97
<i>Russell 3000</i>		<i>8.4 ----</i>	<i>24.5 ----</i>	<i>19.0 ----</i>	<i>13.9 ----</i>	<i>11.4 ----</i>	<i>12.3 ----</i>	<i>9.0 ----</i>	<i>03/97</i>
LCC Manager	(LC Core)	10.6 (8)	24.4 (44)	19.1 (32)	14.9 (24)	13.3 (13)	13.4 (12)	9.9 ----	03/97
<i>S&amp;P 500</i>		<i>8.7 ----</i>	<i>25.7 ----</i>	<i>19.6 ----</i>	<i>14.6 ----</i>	<i>12.3 ----</i>	<i>12.9 ----</i>	<i>9.0 ----</i>	<i>03/97</i>
LCG Manager	(LC Growth)	10.2 (63)	25.9 (74)	19.7 (76)	----	----	----	-7.0 (93)	03/22
<i>Russell 1000G</i>		<i>12.8 ----</i>	<i>31.9 ----</i>	<i>27.1 ----</i>	<i>13.7 ----</i>	<i>15.1 ----</i>	<i>15.7 ----</i>	<i>0.4 ----</i>	<i>03/22</i>
LCG Index Fund	(LC Growth)	12.8 (33)	31.8 (34)	27.1 (30)	13.7 (20)	15.1 (17)	----	17.3 (11)	12/16
<i>Russell 1000G</i>		<i>12.8 ----</i>	<i>31.9 ----</i>	<i>27.1 ----</i>	<i>13.7 ----</i>	<i>15.1 ----</i>	<i>15.7 ----</i>	<i>17.3 ----</i>	<i>12/16</i>
LCV Manager	(LC Value)	3.4 (67)	16.0 (81)	11.0 (67)	13.1 (80)	5.2 (99)	----	6.3 (88)	03/17
<i>Russell 1000V</i>		<i>4.1 ----</i>	<i>18.2 ----</i>	<i>11.5 ----</i>	<i>14.3 ----</i>	<i>8.1 ----</i>	<i>9.2 ----</i>	<i>7.8 ----</i>	<i>03/17</i>
LCV Index Fund	(LC Value)	4.1 (52)	18.2 (63)	11.6 (62)	14.3 (67)	8.1 (77)	9.3 (85)	10.3 ----	09/12
<i>Russell 1000V</i>		<i>4.1 ----</i>	<i>18.2 ----</i>	<i>11.5 ----</i>	<i>14.3 ----</i>	<i>8.1 ----</i>	<i>9.2 ----</i>	<i>10.2 ----</i>	<i>09/12</i>
MCC Manager	(MC Core)	5.1 (34)	16.1 (90)	12.5 (86)	14.5 (53)	8.3 (54)	10.1 (85)	12.0 ----	12/11
<i>S&amp;P 400</i>		<i>4.9 ----</i>	<i>20.6 ----</i>	<i>17.6 ----</i>	<i>15.4 ----</i>	<i>7.8 ----</i>	<i>10.2 ----</i>	<i>11.7 ----</i>	<i>12/11</i>
MCC Index Fund	(MC Core)	4.8 (50)	20.5 (56)	17.6 (57)	15.4 (43)	7.8 (75)	10.2 (78)	8.3 ----	06/00
<i>S&amp;P 400</i>		<i>4.9 ----</i>	<i>20.6 ----</i>	<i>17.6 ----</i>	<i>15.4 ----</i>	<i>7.8 ----</i>	<i>10.2 ----</i>	<i>9.2 ----</i>	<i>06/00</i>
SCC Manager	(Small Cap)	2.5 (85)	23.3 (16)	16.5 (42)	13.9 (58)	9.6 (18)	12.1 (16)	13.4 ----	03/03
<i>Russell 2000</i>		<i>5.2 ----</i>	<i>14.8 ----</i>	<i>12.3 ----</i>	<i>10.8 ----</i>	<i>4.2 ----</i>	<i>8.2 ----</i>	<i>9.9 ----</i>	<i>03/03</i>
International Index Fd	(Intl Eq)	3.4 (36)	26.9 (57)	14.6 (63)	8.1 (56)	2.7 (80)	4.5 (92)	6.6 ----	12/02
<i>ACWI ex US Net</i>		<i>2.4 ----</i>	<i>25.1 ----</i>	<i>12.7 ----</i>	<i>7.2 ----</i>	<i>3.5 ----</i>	<i>4.7 ----</i>	<i>7.0 ----</i>	<i>12/02</i>
International Growth Mgr	(Intl Eq)	1.1 (78)	28.5 (45)	16.7 (50)	----	----	----	-13.7 (94)	06/21
<i>EAFE Growth</i>		<i>2.9 ----</i>	<i>31.7 ----</i>	<i>20.6 ----</i>	<i>6.6 ----</i>	<i>5.8 ----</i>	<i>6.8 ----</i>	<i>-4.0 ----</i>	<i>06/21</i>
Real Assets		-1.7 ----	-2.8 ----	-0.8 ----	10.3 ----	8.5 ----	9.1 ----	6.0 ----	03/06
<i>Real Assets Idx</i>		<i>-1.1 ----</i>	<i>-3.6 ----</i>	<i>-2.4 ----</i>	<i>8.1 ----</i>	<i>6.4 ----</i>	<i>8.1 ----</i>	<i>7.4 ----</i>	<i>03/06</i>
RE Manager 1		-2.2 ----	-10.6 ----	-9.1 ----	8.4 ----	7.2 ----	8.9 ----	6.5 ----	03/06
<i>NCREIF ODCE</i>		<i>-2.7 ----</i>	<i>-10.4 ----</i>	<i>-10.0 ----</i>	<i>8.0 ----</i>	<i>6.5 ----</i>	<i>8.7 ----</i>	<i>6.6 ----</i>	<i>03/06</i>
RE Manager 2		-3.9 ----	-11.1 ----	-9.9 ----	7.2 ----	6.4 ----	8.8 ----	4.7 ----	09/06
<i>NCREIF ODCE</i>		<i>-2.7 ----</i>	<i>-10.4 ----</i>	<i>-10.0 ----</i>	<i>8.0 ----</i>	<i>6.5 ----</i>	<i>8.7 ----</i>	<i>6.4 ----</i>	<i>09/06</i>
RE Manager 3		-6.1 ----	-14.9 ----	-13.6 ----	7.3 ----	7.3 ----	----	9.5 ----	09/14
<i>NCREIF ODCE</i>		<i>-2.7 ----</i>	<i>-10.4 ----</i>	<i>-10.0 ----</i>	<i>8.0 ----</i>	<i>6.5 ----</i>	<i>8.7 ----</i>	<i>8.2 ----</i>	<i>09/14</i>
Timber Manager 1		2.2 ----	13.3 ----	13.6 ----	9.7 ----	6.0 ----	----	5.0 ----	09/15
<i>NCREIF Timber</i>		<i>1.7 ----</i>	<i>8.6 ----</i>	<i>11.1 ----</i>	<i>8.7 ----</i>	<i>5.8 ----</i>	<i>5.9 ----</i>	<i>5.0 ----</i>	<i>09/15</i>
Timber Manager 2		0.6 ----	20.5 ----	20.6 ----	13.2 ----	----	----	12.1 ----	12/19
<i>NCREIF Timber</i>		<i>1.7 ----</i>	<i>8.6 ----</i>	<i>11.1 ----</i>	<i>8.7 ----</i>	<i>5.8 ----</i>	<i>5.9 ----</i>	<i>7.5 ----</i>	<i>12/19</i>
Farmland Manager		3.9 ----	15.2 ----	21.5 ----	17.9 ----	13.6 ----	----	10.3 ----	06/15
<i>NCREIF Farmland</i>		<i>0.8 ----</i>	<i>6.3 ----</i>	<i>8.4 ----</i>	<i>7.7 ----</i>	<i>6.5 ----</i>	<i>8.4 ----</i>	<i>6.9 ----</i>	<i>06/15</i>
Fixed Income	(Core Fixed)	-0.7 (49)	4.1 (62)	0.0 (20)	-2.7 (17)	1.6 (20)	1.8 (73)	4.5 ----	03/97
<i>Aggregate A+</i>		<i>-1.0 ----</i>	<i>3.5 ----</i>	<i>-1.4 ----</i>	<i>-4.2 ----</i>	<i>0.5 ----</i>	<i>1.3 ----</i>	<i>4.1 ----</i>	<i>03/97</i>
Bond Manager 1	(Core Fixed)	-0.5 (28)	3.7 (86)	0.3 (15)	-2.8 (20)	1.4 (26)	1.8 (78)	4.5 ----	03/97
<i>Blended Index</i>		<i>-0.9 ----</i>	<i>3.6 ----</i>	<i>-0.4 ----</i>	<i>-3.3 ----</i>	<i>1.1 ----</i>	<i>1.5 ----</i>	<i>4.1 ----</i>	<i>03/97</i>
Bond Manager 2	(Core Fixed)	-0.8 (77)	3.8 (83)	-0.8 (72)	----	----	----	-4.2 (36)	09/20
<i>Aggregate A+</i>		<i>-1.0 ----</i>	<i>3.5 ----</i>	<i>-1.4 ----</i>	<i>-4.2 ----</i>	<i>0.5 ----</i>	<i>1.3 ----</i>	<i>-4.7 ----</i>	<i>09/20</i>
Bond Manager 3	(Core Fixed)	-0.6 (48)	4.8 (23)	1.3 (6)	-1.1 (6)	2.5 (6)	----	2.2 (3)	12/17
<i>Aggregate Index</i>		<i>-0.8 ----</i>	<i>4.0 ----</i>	<i>-0.9 ----</i>	<i>-4.0 ----</i>	<i>0.8 ----</i>	<i>1.5 ----</i>	<i>0.4 ----</i>	<i>12/17</i>
Bond Manager 4	(Core Fixed)	-0.4 (21)	5.2 (10)	0.9 (8)	-2.5 (12)	1.8 (14)	----	1.3 (7)	12/17
<i>Aggregate Index</i>		<i>-0.8 ----</i>	<i>4.0 ----</i>	<i>-0.9 ----</i>	<i>-4.0 ----</i>	<i>0.8 ----</i>	<i>1.5 ----</i>	<i>0.4 ----</i>	<i>12/17</i>

**MANAGER RISK STATISTICS SUMMARY - THREE YEAR HISTORY**

<b>Manager</b>	<b>Benchmark</b>	<b>Alpha</b>	<b>Batting Average</b>	<b>Sharpe Ratio</b>	<b>Information Ratio</b>	<b>Up Capture</b>	<b>Down Capture</b>
Composite	Policy Index	0.62	.417	0.84	0.44	101.5	96.0
Domestic Equity	Russell 3000	0.30	.583	0.91	-0.08	98.3	97.3
LCC Manager	S&P 500	0.46	.583	0.97	0.10	103.1	103.0
LCG Index Fund	Russell 1000G	-0.02	.833	0.75	-0.87	99.8	99.9
LCV Manager	Russell 1000V	-0.28	.333	0.96	-0.67	92.6	96.4
LCV Index Fund	Russell 1000V	0.02	.917	0.99	0.72	100.1	100.0
MCC Manager	S&P 400	0.84	.417	0.92	-0.43	86.2	80.1
MCC Index Fund	S&P 400	-0.02	.833	0.88	-0.71	99.9	100.0
SCC Manager	Russell 2000	6.84	.500	0.91	0.16	96.7	73.5
International Index Fd	ACWI ex US Net	0.88	.583	0.53	0.99	103.7	98.6
Real Assets	Real Assets Idx	1.34	.750	1.70	1.24	120.3	78.1
RE Manager 1	NCREIF ODCE	0.19	.583	0.98	0.39	104.4	101.0
RE Manager 2	NCREIF ODCE	-0.40	.417	0.88	-0.47	95.1	106.6
RE Manager 3	NCREIF ODCE	-1.76	.500	0.75	-0.17	110.5	142.8
Timber Manager 1	NCREIF Timber	-20.01	.333	0.80	0.17	112.3	----
Timber Manager 2	NCREIF Timber	-10.80	.333	1.21	0.56	152.3	----
Farmland Manager	NCREIF Farmland	9.14	1.000	6.22	5.39	233.7	----
Fixed Income	Aggregate A+	1.56	.833	-0.56	1.59	150.9	92.7
Bond Manager 1	Blended Index	0.11	.583	-0.71	0.64	92.6	89.6
Bond Manager 3	Aggregate Index	2.76	.917	-0.25	1.63	164.1	82.2
Bond Manager 4	Aggregate Index	2.10	.833	-0.41	0.92	164.5	101.4

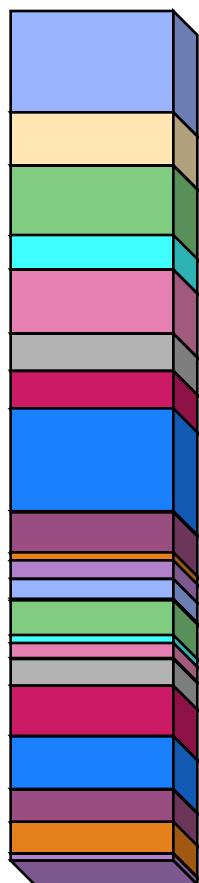
**MANAGER RISK STATISTICS SUMMARY - FIVE YEAR HISTORY**

<b>Manager</b>	<b>Benchmark</b>	<b>Alpha</b>	<b>Batting Average</b>	<b>Sharpe Ratio</b>	<b>Information Ratio</b>	<b>Up Capture</b>	<b>Down Capture</b>
Composite	Policy Index	-0.35	.500	0.57	-0.08	101.3	103.5
Domestic Equity	Russell 3000	-0.68	.550	0.58	-0.46	98.0	101.5
LCC Manager	S&P 500	1.65	.550	0.74	0.20	101.4	96.3
LCG Index Fund	Russell 1000G	-0.02	.900	0.73	-0.81	99.9	100.0
LCV Manager	Russell 1000V	-3.21	.300	0.32	-0.81	95.5	111.5
LCV Index Fund	Russell 1000V	0.05	.950	0.47	1.28	100.2	99.9
MCC Manager	S&P 400	0.89	.400	0.44	-0.02	92.1	89.6
MCC Index Fund	S&P 400	0.02	.900	0.41	0.43	100.1	99.9
SCC Manager	Russell 2000	6.16	.550	0.53	0.33	93.5	72.4
International Index Fd	ACWI ex US Net	-0.81	.400	0.19	-0.51	99.8	104.0
Real Assets	Real Assets Idx	1.67	.800	1.62	1.43	123.7	58.4
RE Manager 1	NCREIF ODCE	0.55	.750	0.95	0.71	107.6	98.4
RE Manager 2	NCREIF ODCE	0.41	.500	0.91	-0.06	98.4	98.0
RE Manager 3	NCREIF ODCE	0.10	.650	0.86	0.33	117.5	126.1
Timber Manager 1	NCREIF Timber	-8.84	.400	0.54	0.08	104.3	758.0
Farmland Manager	NCREIF Farmland	6.55	.900	3.70	2.63	203.7	----
Fixed Income	Aggregate A+	1.16	.750	0.13	0.31	110.1	85.0
Bond Manager 1	Blended Index	0.40	.550	0.12	0.17	98.2	89.6
Bond Manager 3	Aggregate Index	1.91	.750	0.28	0.47	121.3	82.2
Bond Manager 4	Aggregate Index	1.00	.800	0.15	0.38	122.4	101.4

**MANAGER RISK STATISTICS SUMMARY - TEN YEAR HISTORY**




































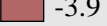









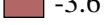































<b>Manager</b>	<b>Benchmark</b>	<b>Alpha</b>	<b>Batting Average</b>	<b>Sharpe Ratio</b>	<b>Information Ratio</b>	<b>Up Capture</b>	<b>Down Capture</b>
Composite	Policy Index	-0.28	.525	0.84	0.02	101.9	104.8
Domestic Equity	Russell 3000	-0.36	.500	0.80	-0.22	98.6	101.2
LCC Manager	S&P 500	1.12	.525	0.94	0.13	101.0	96.5
LCV Index Fund	Russell 1000V	0.07	.925	0.65	1.20	100.3	99.8
MCC Manager	S&P 400	0.60	.450	0.64	-0.13	92.1	88.9
MCC Index Fund	S&P 400	0.01	.925	0.61	0.19	100.0	100.0
SCC Manager	Russell 2000	5.98	.600	0.80	0.33	93.6	65.4
International Index Fd	ACWI ex US Net	-0.21	.500	0.32	-0.09	101.4	103.2
Real Assets	Real Assets Idx	1.41	.700	2.41	0.66	109.2	58.4
RE Manager 1	NCREIF ODCE	0.05	.600	1.66	0.12	101.0	98.4
RE Manager 2	NCREIF ODCE	0.79	.625	1.78	0.06	100.6	98.0
Fixed Income	Aggregate A+	0.70	.675	0.27	0.22	106.1	89.0
Bond Manager 1	Blended Index	0.27	.550	0.28	0.17	102.1	94.7

**MANAGER ALLOCATION AND TARGET SUMMARY**



Name	Market Value	Percent	Target	Diff	Diff \$
LCC Manager (LCC)	\$101,963,415	11.9	10.0	1.9	\$16,351,355
LCG Manager (LCG)	\$53,172,550	6.2	5.0	1.2	\$10,366,522
LCG Index Fund (LCG)	\$70,824,233	8.3	7.0	1.3	\$10,895,792
LCV Manager (LCV)	\$34,771,748	4.1	5.0	-0.9	<\$8,034,283>
LCV Index Fund (LCV)	\$64,089,248	7.5	7.0	0.5	\$4,160,808
MCC Manager (MC)	\$37,399,953	4.4	4.0	0.4	\$3,155,129
MCC Index Fund (MC)	\$38,445,573	4.5	4.0	0.5	\$4,200,749
SCC Manager (SC)	\$103,387,332	12.1	10.0	2.1	\$17,775,278
International Index Fd (INEQ)	\$41,374,186	4.8	6.5	-1.7	<\$14,273,651>
International Growth Mgr (INEQ)	\$9,038,636	1.1	1.5	-0.4	<\$3,803,173>
RE Manager 1 (REAL)	\$18,822,111	2.2	2.5	-0.3	<\$2,580,904>
RE Manager 2 (REAL)	\$20,198,887	2.4	2.5	-0.1	<\$1,204,128>
RE Manager (REAL)	\$867,233	0.1	0.0	0.1	\$867,233
RE Manager 3 (REAL)	\$35,464,231	4.1	4.0	0.1	\$1,219,408
Timber Manager 1 (TIMB)	\$8,612,192	1.0	1.0	0.0	\$50,986
Timber Manager 2 (TIMB)	\$15,135,324	1.8	2.0	-0.2	<\$1,987,088>
Farmland Manager (FARM)	\$27,126,648	3.2	3.0	0.2	\$1,443,030
Bond Manager 1 (FIXD)	\$50,597,074	5.9	7.5	-1.6	<\$13,611,967>
Bond Manager 2 (FIXD)	\$52,931,984	6.2	7.5	-1.3	<\$11,277,059>
Bond Manager 3 (FIXD)	\$33,189,245	3.9	5.0	-1.1	<\$9,616,785>
Bond Manager 4 (FIXD)	\$31,841,705	3.7	5.0	-1.3	<\$10,964,324>
R&D (CASH)	\$6,867,071	0.8	0.0	0.8	\$6,867,071
<b>Total Portfolio</b>	<b>\$856,120,579</b>	<b>100.0</b>	<b>100.0</b>	<b>----</b>	<b>\$0</b>

## MANAGER VALUE ADDED

Portfolio	Benchmark	1 Quarter	1 Year	3 Years	5 Years
LCC Manager	S&P 500	1.9 	-0.5 	0.3 	1.0 
LCG Manager	Russell 1000G	-2.6 	-7.4 	N/A	N/A
LCG Index Fund	Russell 1000G	0.0 	0.0 	0.0 	0.0 
LCV Manager	Russell 1000V	-0.7 	-0.5 	-1.2 	-2.9 
LCV Index Fund	Russell 1000V	0.0 	0.1 	0.0 	0.0 
MCC Manager	S&P 400	0.2 	-5.1 	-0.9 	0.5 
MCC Index Fund	S&P 400	-0.1 	0.0 	0.0 	0.0 
SCC Manager	Russell 2000	-2.7 	4.2 	3.1 	5.4 
International Index Fd	ACWI ex US Net	1.0 	1.9 	0.9 	-0.8 
International Growth Mgr	EAFE Growth	-1.8 	-3.9 	N/A	N/A
RE Manager 1	NCREIF ODCE	0.5 	0.9 	0.4 	0.7 
RE Manager 2	NCREIF ODCE	-1.2 	0.1 	-0.8 	-0.1 
RE Manager 3	NCREIF ODCE	-3.4 	-3.6 	-0.7 	0.8 
Timber Manager 1	NCREIF Timber	0.5 	2.5 	1.0 	0.2 
Timber Manager 2	NCREIF Timber	-1.1 	9.5 	4.5 	N/A
Farmland Manager	NCREIF Farmland	3.1 	13.1 	10.2 	7.1 
Bond Manager 1	Blended Index	0.4 	0.7 	0.5 	0.3 
Bond Manager 2	Aggregate A+	0.2 	0.6 	N/A	N/A
Bond Manager 3	Aggregate Index	0.2 	2.2 	2.9 	1.7 
Bond Manager 4	Aggregate Index	0.4 	1.8 	1.5 	1.0 
<b>Total Portfolio</b>	<b>Policy Index</b>	<b>-0.5</b> 	<b>-0.4</b> 	<b>0.6</b> 	<b>-0.1</b> 

## INVESTMENT RETURN SUMMARY - ONE QUARTER

Name	Quarter Total Return	Market Value March 31st, 2023	Net Cashflow	Net Investment Return	Market Value June 30th, 2023
LCC Manager (LCC)	10.6	92,307,801	-137,890	9,793,504	101,963,415
LCG Manager (LCG)	10.2	48,345,847	-78,551	4,905,254	53,172,550
LCG Index Fund (LCG)	12.8	62,782,692	0	8,041,541	70,824,233
LCV Manager (LCV)	3.4	33,719,052	-93,804	1,146,500	34,771,748
LCV Index Fund (LCV)	4.1	61,568,364	0	2,520,884	64,089,248
MCC Manager (MC)	5.1	35,659,643	-62,592	1,802,902	37,399,953
MCC Index Fund (MC)	4.8	36,672,901	0	1,772,672	38,445,573
SCC Manager (SC)	2.5	101,047,529	-176,807	2,516,610	103,387,332
International Index Fd (INEQ)	3.4	40,016,954	0	1,357,232	41,374,186
International Growth Mgr (INEQ)	1.1	8,936,364	0	102,272	9,038,636
RE Manager 1 (REAL)	-2.2	19,302,368	-51,904	-428,353	18,822,111
RE Manager 2 (REAL)	-3.9	21,061,521	-36,690	-825,944	20,198,887
RE Manager (REAL)	---	867,233	0	0	867,233
RE Manager 3 (REAL)	-6.1	37,838,049	-65,428	-2,308,390	35,464,231
Timber Manager 1 (TIMB)	2.2	8,669,270	-230,943	173,865	8,612,192
Timber Manager 2 (TIMB)	0.6	15,335,023	-240,465	40,766	15,135,324
Farmland Manager (FARM)	3.9	26,309,824	-213,599	1,030,423	27,126,648
Bond Manager 1 (FIXD)	-0.5	50,928,167	-24,557	-306,536	50,597,074
Bond Manager 2 (FIXD)	-0.8	53,394,224	-10,219	-452,021	52,931,984
Bond Manager 3 (FIXD)	-0.6	33,434,040	-27,776	-217,019	33,189,245
Bond Manager 4 (FIXD)	-0.4	32,001,392	-23,558	-136,129	31,841,705
R&D (CASH)	---	10,017,267	-3,231,709	81,513	6,867,071
<b>Total Portfolio</b>	<b>3.7</b>	<b>830,215,525</b>	<b>-4,706,492</b>	<b>30,611,546</b>	<b>856,120,579</b>



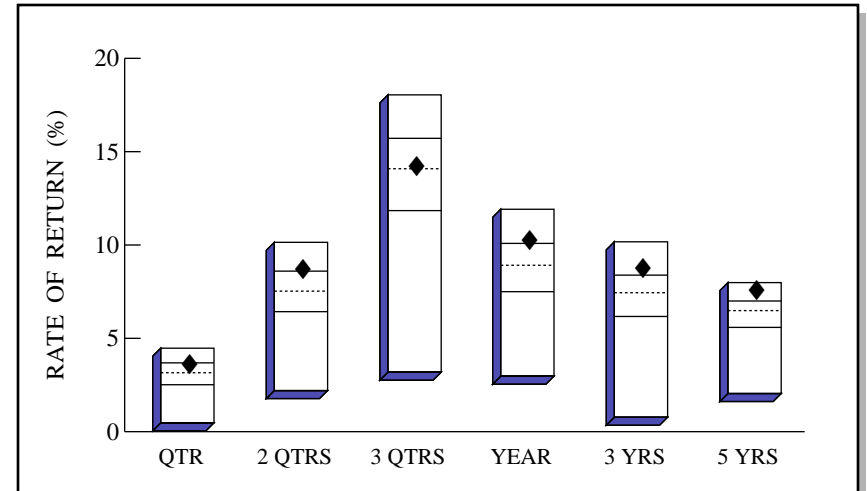
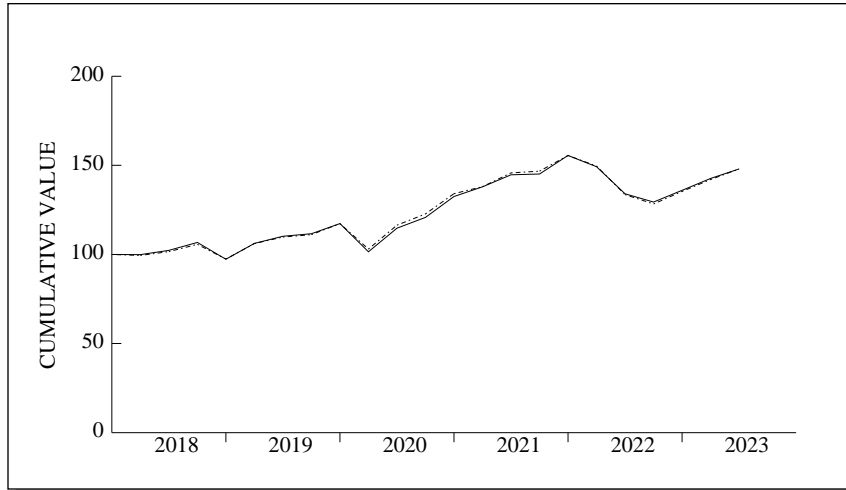
**MANAGER FEE SUMMARY - ONE QUARTER****ALL FEES ARE ESTIMATED / ACCRUED**

<b>PORTFOLIO</b>	<b>MARKET VALUE</b>	<b>GROSS RETURN</b>	<b>FEE</b>	<b>FEE %</b>	<b>NET RETURN</b>	<b>ANNUAL FEE %</b>
LCC Manager (LCC)	\$101,963,415	10.6	\$120,053	0.13	10.5	0.52
LCG Manager (LCG)	\$53,172,550	10.2	\$61,417	0.13	10.0	0.51
LCG Index Fund (LCG)	\$70,824,233	12.8	\$6,163	0.01	12.8	0.04
LCV Manager (LCV)	\$34,771,748	3.4	\$41,460	0.12	3.3	0.49
LCV Index Fund (LCV)	\$64,089,248	4.1	\$5,885	0.01	4.1	0.04
MCC Manager (MC)	\$37,399,953	5.1	\$52,919	0.15	4.9	0.59
MCC Index Fund (MC)	\$38,445,573	4.8	\$4,549	0.01	4.8	0.05
SCC Manager (SC)	\$103,387,332	2.5	\$173,982	0.17	2.3	0.69
International Index Fd (INEQ)	\$41,374,186	3.4	\$40,261	0.10	3.3	0.40
International Growth Mgr (INEQ)	\$9,038,636	1.1	\$10,746	0.12	1.0	0.48
RE Manager 1 (REAL)	\$18,822,111	-2.2	\$51,904	0.27	-2.5	1.08
RE Manager 2 (REAL)	\$20,198,887	-3.9	\$36,690	0.17	-4.1	0.70
RE Manager (REAL)	\$867,233	---	\$0	0.00	---	0.00
RE Manager 3 (REAL)	\$35,464,231	-6.1	\$66,636	0.18	-6.3	0.71
Timber Manager 1 (TIMB)	\$8,612,192	2.2	\$20,371	0.23	2.0	0.94
Timber Manager 2 (TIMB)	\$15,135,324	0.6	\$44,796	0.29	0.3	1.17
Farmland Manager (FARM)	\$27,126,648	3.9	\$212,659	0.81	3.1	3.27
Bond Manager 1 (FIXD)	\$50,597,074	-0.5	\$25,190	0.05	-0.5	0.20
Bond Manager 2 (FIXD)	\$52,931,984	-0.8	\$30,454	0.06	-0.9	0.23
Bond Manager 3 (FIXD)	\$33,189,245	-0.6	\$28,387	0.09	-0.7	0.34
Bond Manager 4 (FIXD)	\$31,841,705	-0.4	\$23,996	0.08	-0.5	0.30
R&D (CASH)	\$6,867,071	---	\$0	0.00	---	0.00
<b>Total Portfolio</b>	<b>\$856,120,579</b>	<b>3.7</b>	<b>\$1,058,518</b>	<b>0.13</b>	<b>3.6</b>	<b>0.51</b>

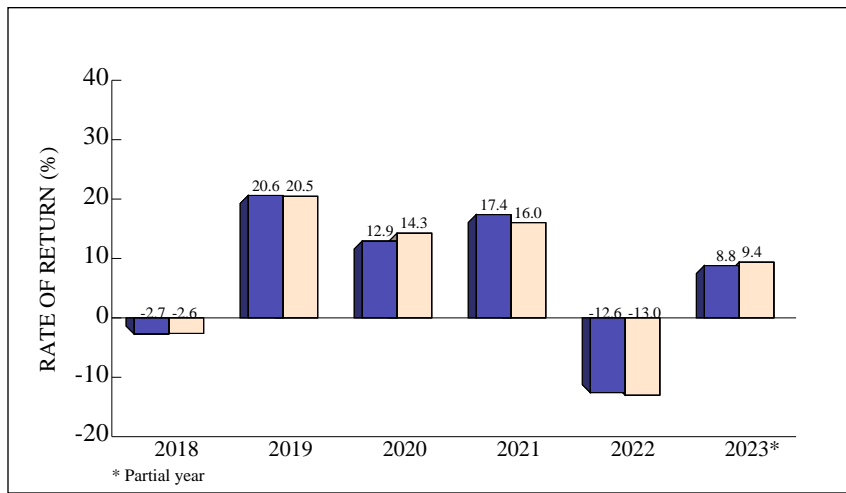
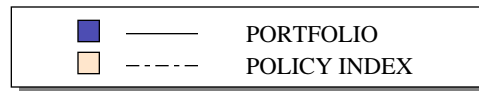
## XYZ DEFINED BENEFIT PLAN MANAGER FEE SCHEDULES

Portfolio	Fee Schedule
LCC Manager	0.55% per annum on first \$50 million, 0.50% on next \$50 million, 0.45% on next \$100 million, 0.40% thereafter
LCG Manager	0.50% per annum
LCG Index Fund	0.04% per annum on first \$50 million, 0.03% thereafter
LCV Manager	0.50% per annum on first \$50 million, 0.45% on next \$50 million, 0.40% over \$100 million
LCV Index Fund	0.04% per annum on first \$50 million, 0.03% thereafter
MCC Manager	0.60% per annum
MCC Index Fund	0.05% per annum on first \$50 million, 0.04% on next \$50 million, 0.035% thereafter
SCC Manager	0.70% per annum
International Index Fund	0.40% per annum
International Growth Manager	0.40% per annum
RE Manager 1	1.10% per annum on first \$25 million, 0.95% on next \$25 million, 0.85% on balance
RE Manager 2	1.00% of NAV per annum and 0.7% discount through January 2019
RE Manager 3	Base fee: 1.10% per annum on invested capital Incentive fee: 20% over preferred return of 8%
Timber Manager 1	0.936% per annum
Timber Manager 2	1.00% per annum
Farmland Manager	Management fee: 1.0%, plus 20% for the performance fee
Bond Manager 1	0.20% per annum on first \$50 million, 0.15% on next \$50 million, 0.125% on next \$100 million, 0.10% thereafter
Bond Manager 2	0.23% per annum on first \$50 million, 0.20% on next \$50 million, 0.17% on next \$100 million, 0.15% thereafter
Bond Manager 3	0.45% per annum on first \$10 million, 0.35% on next \$10 million, 0.25% up to \$100 million
Bond Manager 3	0.30% per annum on first \$75 million, 0.25% on next \$75 million, 0.20% thereafter

**TOTAL RETURN COMPARISONS**



Public Fund Universe

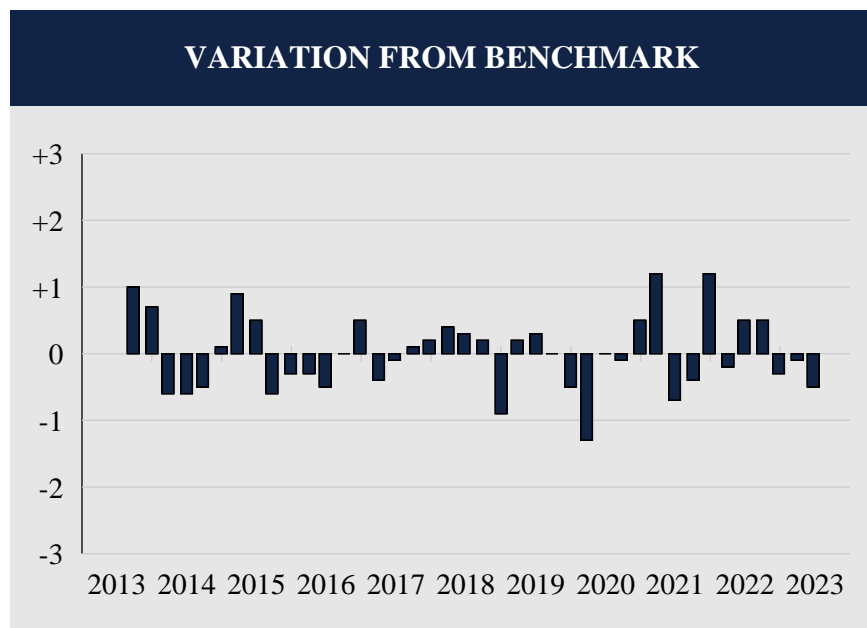


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	3.7	8.8	14.3	10.4	8.9	7.7
(RANK)	(25)	(22)	(44)	(22)	(18)	(8)
5TH %ILE	4.5	10.1	18.0	11.9	10.2	8.0
25TH %ILE	3.7	8.6	15.7	10.1	8.4	7.0
MEDIAN	3.2	7.5	14.1	8.9	7.4	6.5
75TH %ILE	2.5	6.4	11.8	7.5	6.2	5.6
95TH %ILE	0.5	2.2	3.2	3.0	0.8	2.0
<b>Policy Idx</b>	<b>4.2</b>	<b>9.4</b>	<b>15.3</b>	<b>10.8</b>	<b>8.3</b>	<b>7.8</b>

Public Fund Universe

### TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

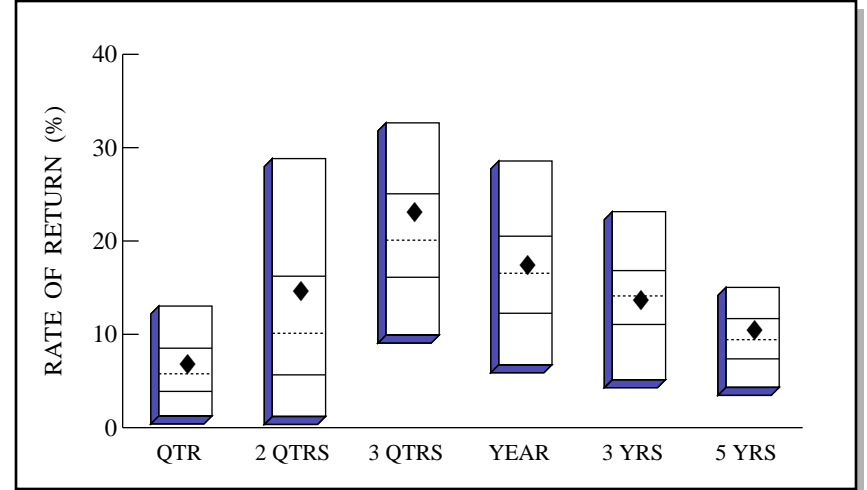
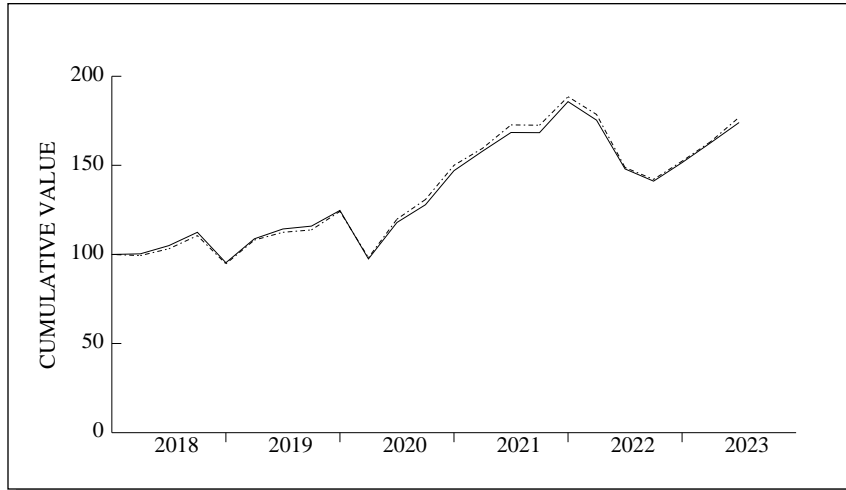
COMPARATIVE BENCHMARK: PEMBROKE POLICY INDEX



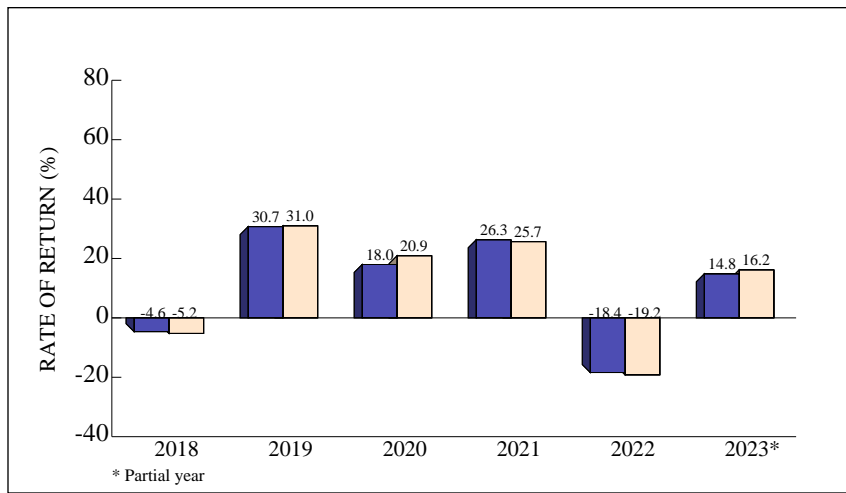
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/13	5.7	4.7	1.0
12/13	6.7	6.0	0.7
3/14	1.3	1.9	-0.6
6/14	3.1	3.7	-0.6
9/14	-0.6	-0.1	-0.5
12/14	3.5	3.4	0.1
3/15	3.1	2.2	0.9
6/15	0.6	0.1	0.5
9/15	-4.5	-3.9	-0.6
12/15	3.7	4.0	-0.3
3/16	1.0	1.3	-0.3
6/16	1.6	2.1	-0.5
9/16	3.2	3.2	0.0
12/16	2.2	1.7	0.5
3/17	3.6	4.0	-0.4
6/17	2.5	2.6	-0.1
9/17	3.3	3.2	0.1
12/17	4.2	4.0	0.2
3/18	-0.1	-0.5	0.4
6/18	2.4	2.1	0.3
9/18	4.3	4.1	0.2
12/18	-8.8	-7.9	-0.9
3/19	9.1	8.9	0.2
6/19	3.8	3.5	0.3
9/19	1.3	1.3	0.0
12/19	5.1	5.6	-0.5
3/20	-13.5	-12.2	-1.3
6/20	13.0	13.0	0.0
9/20	5.3	5.4	-0.1
12/20	9.7	9.2	0.5
3/21	4.1	2.9	1.2
6/21	4.9	5.6	-0.7
9/21	0.3	0.7	-0.4
12/21	7.2	6.0	1.2
3/22	-4.1	-3.9	-0.2
6/22	-10.1	-10.6	0.5
9/22	-3.5	-4.0	0.5
12/22	5.1	5.4	-0.3
3/23	4.9	5.0	-0.1
6/23	3.7	4.2	-0.5

<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>21</b>
<b>Quarters Below the Benchmark</b>	<b>19</b>
<b>Batting Average</b>	<b>.525</b>

**DOMESTIC EQUITY RETURN COMPARISONS**



Domestic Equity Universe



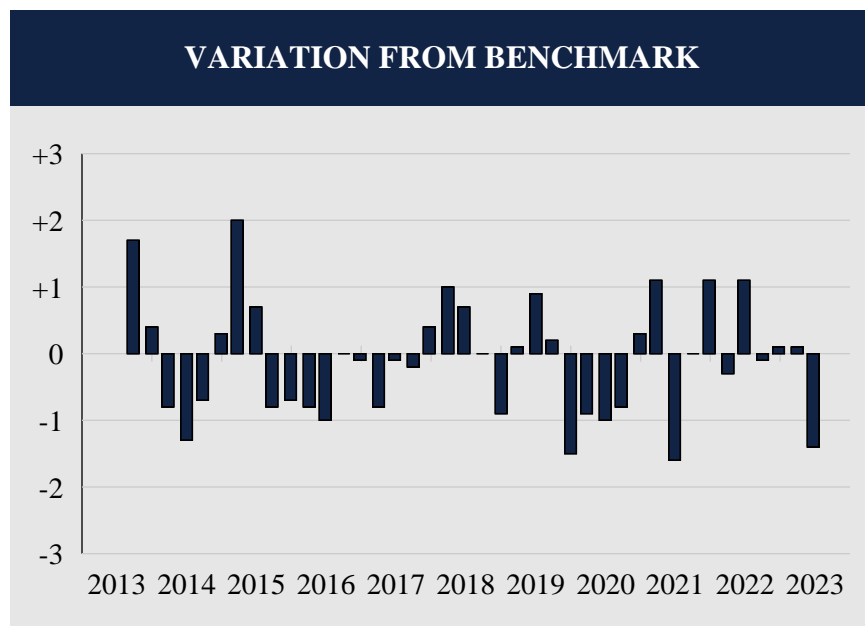
\* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	7.0	14.8	23.3	17.6	13.8	10.6
(RANK)	(37)	(31)	(35)	(46)	(54)	(37)
5TH %ILE	13.0	28.8	32.7	28.6	23.2	15.0
25TH %ILE	8.5	16.2	25.1	20.5	16.8	11.7
MEDIAN	5.8	10.1	20.1	16.6	14.1	9.4
75TH %ILE	3.9	5.7	16.1	12.3	11.1	7.4
95TH %ILE	1.3	1.2	9.9	6.7	5.2	4.3
<b>Russ 3000</b>	<b>8.4</b>	<b>16.2</b>	<b>24.5</b>	<b>19.0</b>	<b>13.9</b>	<b>11.4</b>

Domestic Equity Universe

## DOMESTIC EQUITY QUARTERLY PERFORMANCE SUMMARY

**COMPARATIVE BENCHMARK: RUSSELL 3000**

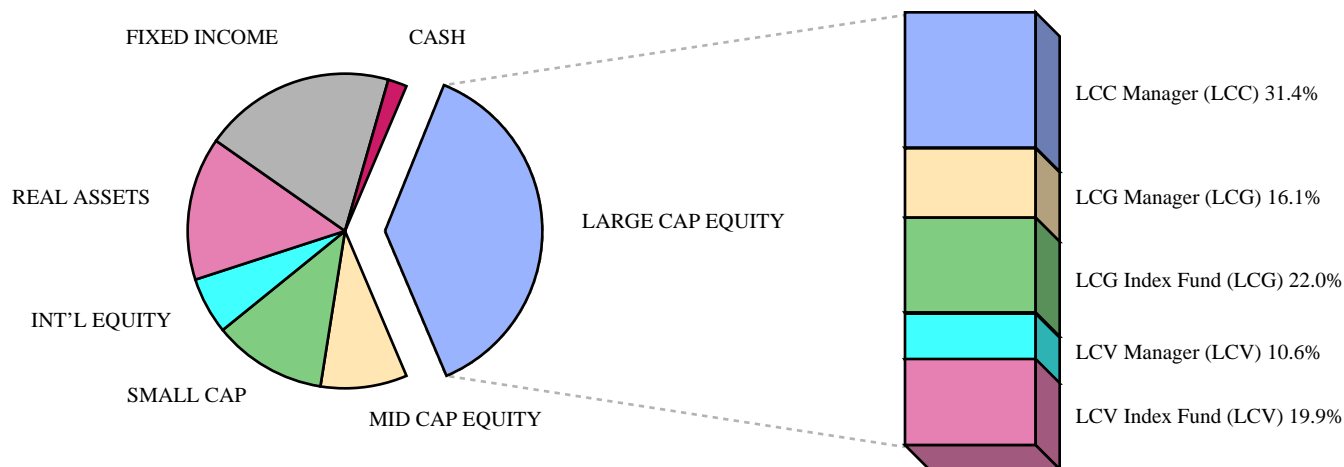


### RATES OF RETURN

Date	Portfolio	Benchmark	Difference
9/13	8.1	6.4	1.7
12/13	10.5	10.1	0.4
3/14	1.2	2.0	-0.8
6/14	3.6	4.9	-1.3
9/14	-0.7	0.0	-0.7
12/14	5.5	5.2	0.3
3/15	3.8	1.8	2.0
6/15	0.8	0.1	0.7
9/15	-8.0	-7.2	-0.8
12/15	5.6	6.3	-0.7
3/16	0.2	1.0	-0.8
6/16	1.6	2.6	-1.0
9/16	4.4	4.4	0.0
12/16	4.1	4.2	-0.1
3/17	4.9	5.7	-0.8
6/17	2.9	3.0	-0.1
9/17	4.4	4.6	-0.2
12/17	6.7	6.3	0.4
3/18	0.4	-0.6	1.0
6/18	4.6	3.9	0.7
9/18	7.1	7.1	0.0
12/18	-15.2	-14.3	-0.9
3/19	14.1	14.0	0.1
6/19	5.0	4.1	0.9
9/19	1.4	1.2	0.2
12/19	7.6	9.1	-1.5
3/20	-21.8	-20.9	-0.9
6/20	21.0	22.0	-1.0
9/20	8.4	9.2	-0.8
12/20	15.0	14.7	0.3
3/21	7.4	6.3	1.1
6/21	6.6	8.2	-1.6
9/21	-0.1	-0.1	0.0
12/21	10.4	9.3	1.1
3/22	-5.6	-5.3	-0.3
6/22	-15.6	-16.7	1.1
9/22	-4.6	-4.5	-0.1
12/22	7.3	7.2	0.1
3/23	7.3	7.2	0.1
6/23	7.0	8.4	-1.4

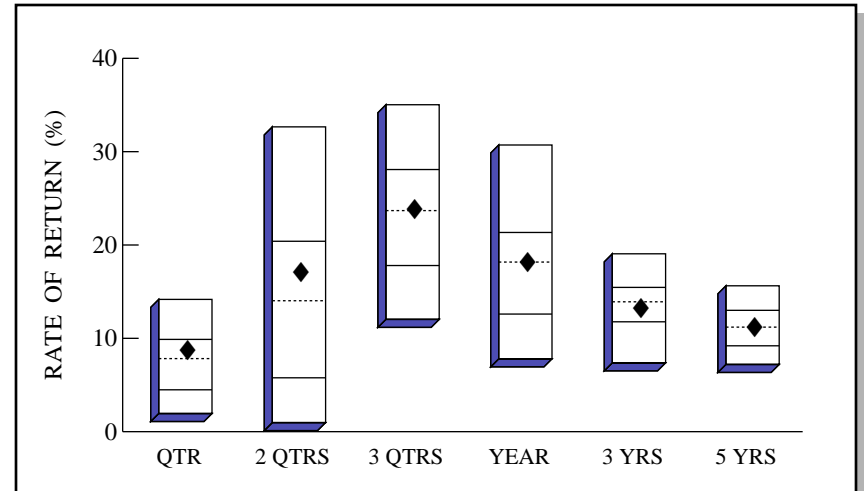
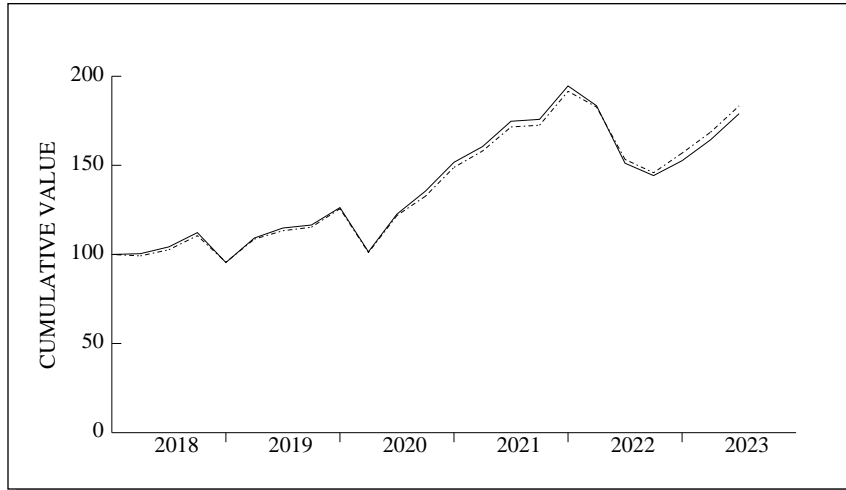
<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>20</b>
<b>Quarters Below the Benchmark</b>	<b>20</b>
<b>Batting Average</b>	<b>.500</b>

### LARGE CAP EQUITY MANAGER SUMMARY

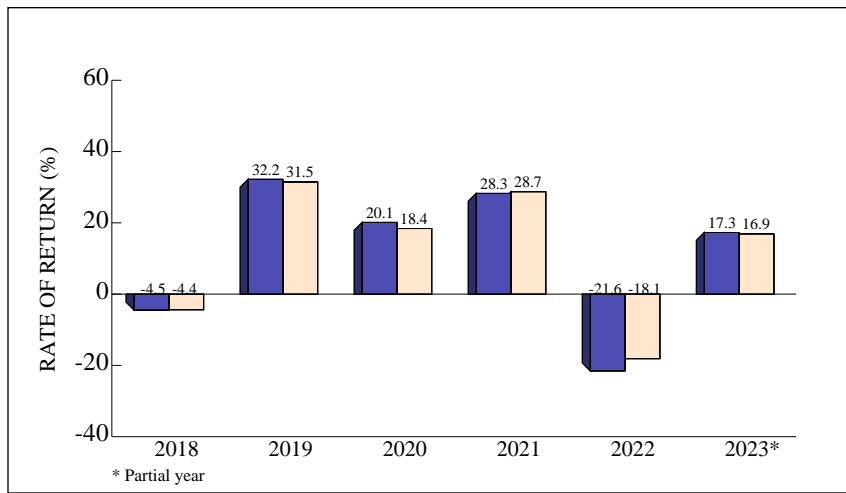


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	
LCC Manager	(Large Cap Core)	10.8 (7)	24.8 (38)	19.5 (29)	14.8 (26)	12.9 (18)	\$100,991,717
<i>S&amp;P 500</i>		<i>8.7 ---</i>	<i>25.7 ---</i>	<i>19.6 ---</i>	<i>14.6 ---</i>	<i>12.3 ---</i>	<i>---</i>
LCG Manager	(Large Cap Growth)	10.4 (62)	26.5 (72)	20.0 (73)	----	----	\$51,862,158
LCG Index Fund	(Large Cap Growth)	12.8 (33)	31.8 (34)	27.1 (30)	13.7 (20)	15.1 (17)	\$70,824,233
<i>Russell 1000 Growth</i>		<i>12.8 ---</i>	<i>31.9 ---</i>	<i>27.1 ---</i>	<i>13.7 ---</i>	<i>15.1 ---</i>	<i>---</i>
LCV Manager	(Large Cap Value)	3.4 (66)	16.2 (78)	11.1 (65)	13.3 (78)	5.2 (99)	\$34,096,762
LCV Index Fund	(Large Cap Value)	4.1 (52)	18.2 (63)	11.6 (62)	14.3 (67)	8.1 (77)	\$64,089,248
<i>Russell 1000 Value</i>		<i>4.1 ---</i>	<i>18.2 ---</i>	<i>11.5 ---</i>	<i>14.3 ---</i>	<i>8.1 ---</i>	<i>---</i>
<b>TOTAL</b>	<b>(Large Cap)</b>	<b>8.9 (34)</b>	<b>24.1 (48)</b>	<b>18.4 (50)</b>	<b>13.4 (58)</b>	<b>11.4 (47)</b>	<b>\$321,864,118</b>
<i>S&amp;P 500</i>		<i>8.7 ---</i>	<i>25.7 ---</i>	<i>19.6 ---</i>	<i>14.6 ---</i>	<i>12.3 ---</i>	<i>---</i>

### LARGE CAP EQUITY RETURN COMPARISONS



Large Cap Universe



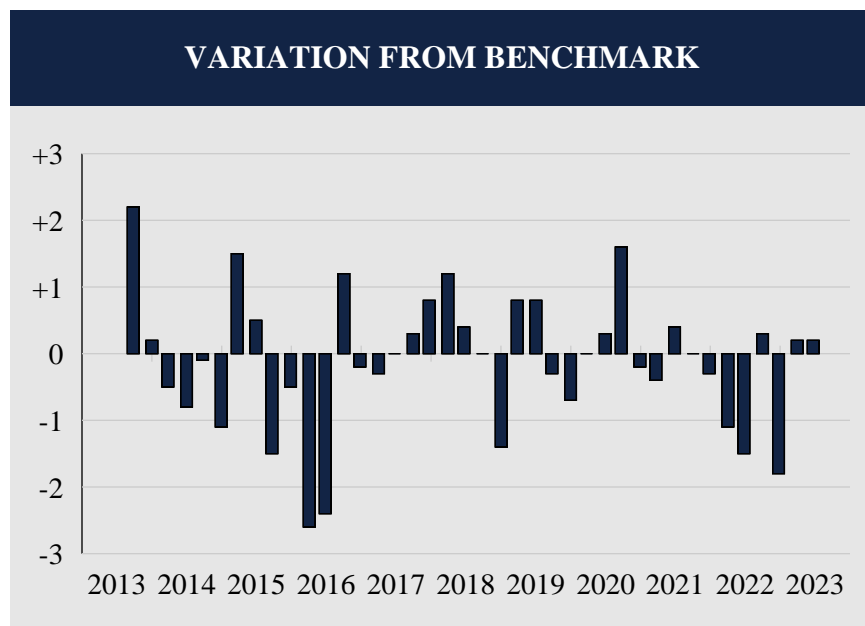
	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	8.9	17.3	24.1	18.4	13.4	11.4
(RANK)	(34)	(35)	(48)	(50)	(58)	(47)
5TH %ILE	14.2	32.7	35.0	30.7	19.1	15.6
25TH %ILE	9.9	20.4	28.1	21.4	15.5	13.0
MEDIAN	7.8	14.0	23.7	18.2	13.9	11.2
75TH %ILE	4.5	5.8	17.8	12.6	11.8	9.2
95TH %ILE	1.9	1.0	12.0	7.8	7.4	7.2
<b>S&amp;P 500</b>	<b>8.7</b>	<b>16.9</b>	<b>25.7</b>	<b>19.6</b>	<b>14.6</b>	<b>12.3</b>

Large Cap Universe



## LARGE CAP EQUITY QUARTERLY PERFORMANCE SUMMARY

**COMPARATIVE BENCHMARK: S&P 500**

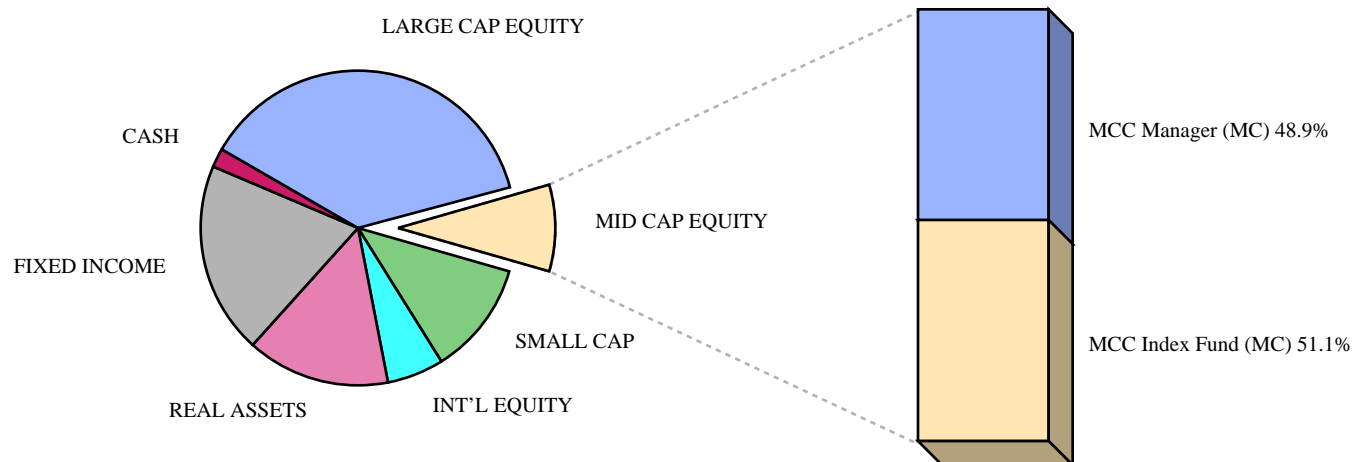


<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>21</b>
<b>Quarters Below the Benchmark</b>	<b>19</b>
<b>Batting Average</b>	<b>.525</b>

### RATES OF RETURN

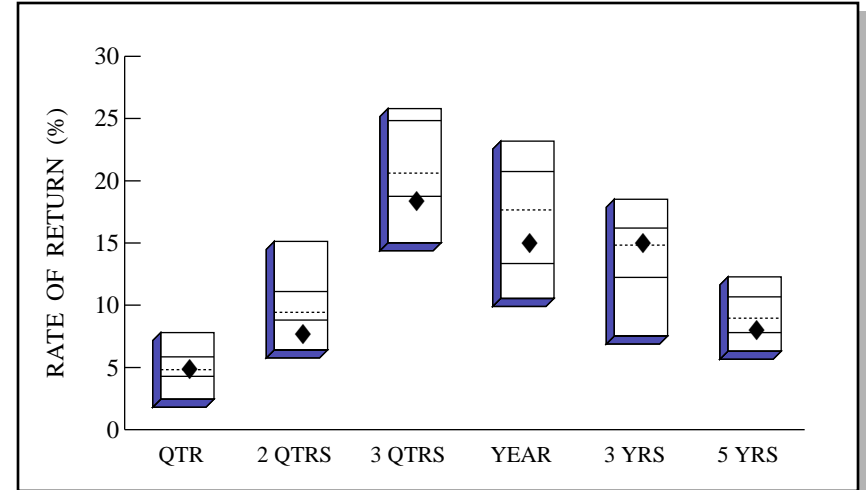
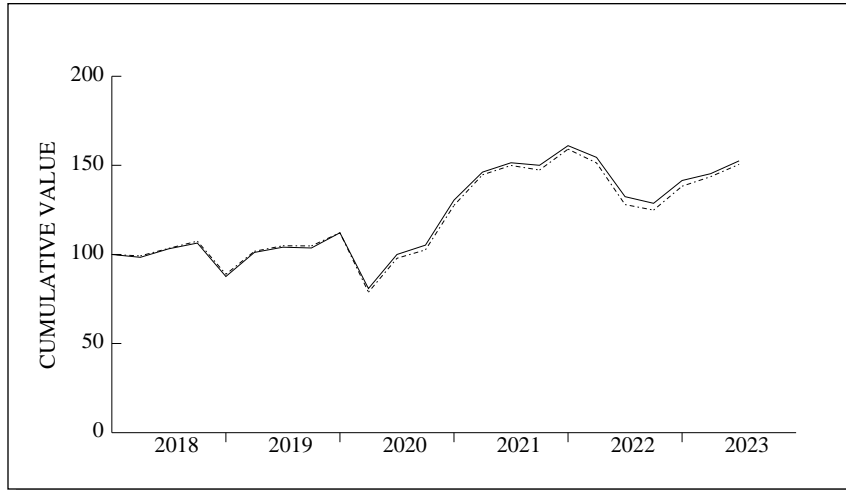
Date	Portfolio	Benchmark	Difference
9/13	7.4	5.2	2.2
12/13	10.7	10.5	0.2
3/14	1.3	1.8	-0.5
6/14	4.4	5.2	-0.8
9/14	1.0	1.1	-0.1
12/14	3.8	4.9	-1.1
3/15	2.4	0.9	1.5
6/15	0.8	0.3	0.5
9/15	-7.9	-6.4	-1.5
12/15	6.5	7.0	-0.5
3/16	-1.3	1.3	-2.6
6/16	0.1	2.5	-2.4
9/16	5.1	3.9	1.2
12/16	3.6	3.8	-0.2
3/17	5.8	6.1	-0.3
6/17	3.1	3.1	0.0
9/17	4.8	4.5	0.3
12/17	7.4	6.6	0.8
3/18	0.4	-0.8	1.2
6/18	3.8	3.4	0.4
9/18	7.7	7.7	0.0
12/18	-14.9	-13.5	-1.4
3/19	14.4	13.6	0.8
6/19	5.1	4.3	0.8
9/19	1.4	1.7	-0.3
12/19	8.4	9.1	-0.7
3/20	-19.6	-19.6	0.0
6/20	20.8	20.5	0.3
9/20	10.5	8.9	1.6
12/20	11.9	12.1	-0.2
3/21	5.8	6.2	-0.4
6/21	8.9	8.5	0.4
9/21	0.6	0.6	0.0
12/21	10.7	11.0	-0.3
3/22	-5.7	-4.6	-1.1
6/22	-17.6	-16.1	-1.5
9/22	-4.6	-4.9	0.3
12/22	5.8	7.6	-1.8
3/23	7.7	7.5	0.2
6/23	8.9	8.7	0.2

**MID CAP EQUITY MANAGER SUMMARY**

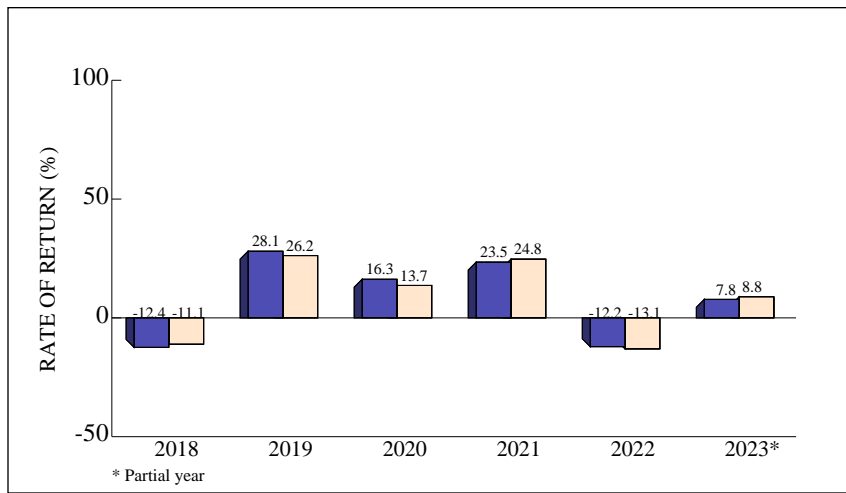


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	
MCC Manager	(Mid Cap Core)	5.1 (34)	16.4 (89)	12.6 (84)	14.7 (51)	8.4 (53)	\$36,718,678
MCC Index Fund	(Mid Cap Core)	4.8 (50)	20.5 (56)	17.6 (57)	15.4 (43)	7.8 (75)	\$38,445,573
<i>S&amp;P 400</i>		<i>4.9 ---</i>	<i>20.6 ---</i>	<i>17.6 ---</i>	<i>15.4 ---</i>	<i>7.8 ---</i>	<i>---</i>
<b>TOTAL</b>	<b>(Mid Cap Core)</b>	<b>5.0 (35)</b>	<b>18.5 (78)</b>	<b>15.2 (66)</b>	<b>15.1 (46)</b>	<b>8.1 (57)</b>	<b>\$75,164,251</b>
<i>S&amp;P 400</i>		<i>4.9 ---</i>	<i>20.6 ---</i>	<i>17.6 ---</i>	<i>15.4 ---</i>	<i>7.8 ---</i>	<i>---</i>

### MID CAP EQUITY RETURN COMPARISONS



Mid Cap Core Universe

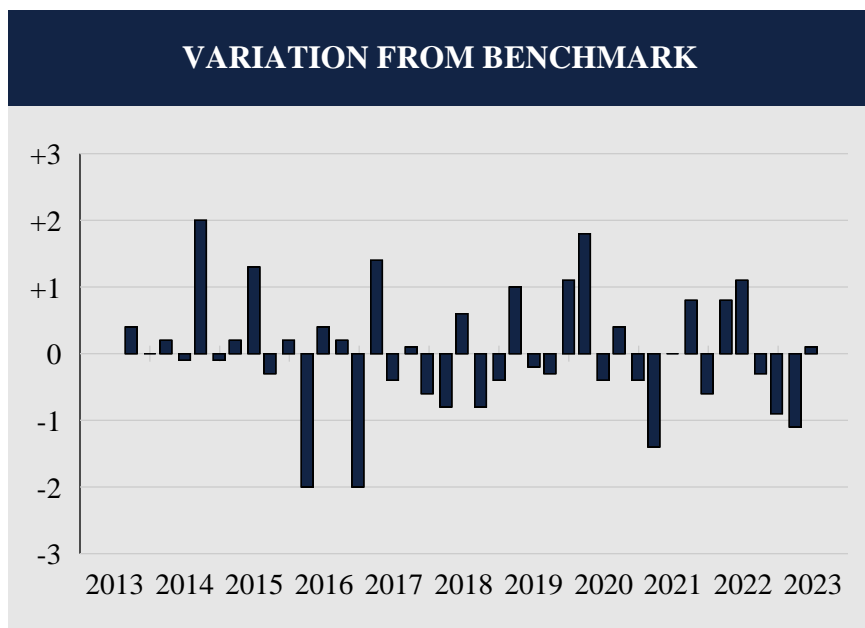


	QTR	2 QTRS	3 QTRS	YEAR	3 YRS	5 YRS
RETURN	5.0	7.8	18.5	15.2	15.1	8.1
(RANK)	(35)	(90)	(78)	(66)	(46)	(57)
5TH %ILE	7.8	15.1	25.8	23.2	18.5	12.3
25TH %ILE	5.9	11.1	24.8	20.7	16.2	10.7
MEDIAN	4.8	9.4	20.6	17.7	14.8	9.0
75TH %ILE	4.3	8.8	18.7	13.3	12.2	7.8
95TH %ILE	2.5	6.4	15.0	10.5	7.5	6.3
<b>S&amp;P 400</b>	<b>4.9</b>	<b>8.8</b>	<b>20.6</b>	<b>17.6</b>	<b>15.4</b>	<b>7.8</b>

Mid Cap Core Universe

### MID CAP EQUITY QUARTERLY PERFORMANCE SUMMARY

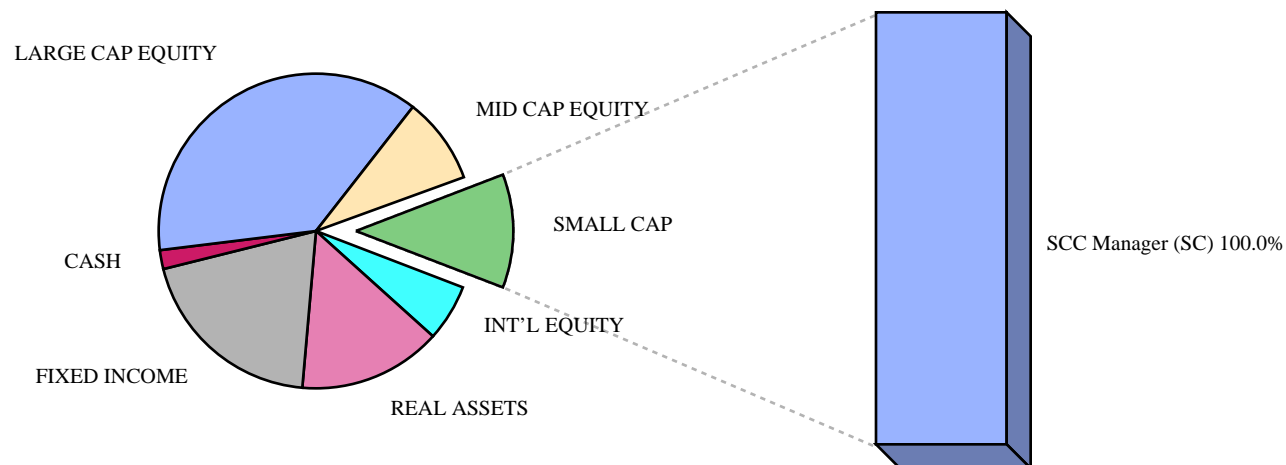
COMPARATIVE BENCHMARK: S&P 400



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/13	7.9	7.5	0.4
12/13	8.3	8.3	0.0
3/14	3.2	3.0	0.2
6/14	4.2	4.3	-0.1
9/14	-2.0	-4.0	2.0
12/14	6.2	6.3	-0.1
3/15	5.5	5.3	0.2
6/15	0.2	-1.1	1.3
9/15	-8.8	-8.5	-0.3
12/15	2.8	2.6	0.2
3/16	1.8	3.8	-2.0
6/16	4.4	4.0	0.4
9/16	4.3	4.1	0.2
12/16	5.4	7.4	-2.0
3/17	5.3	3.9	1.4
6/17	1.6	2.0	-0.4
9/17	3.3	3.2	0.1
12/17	5.7	6.3	-0.6
3/18	-1.6	-0.8	-0.8
6/18	4.9	4.3	0.6
9/18	3.1	3.9	-0.8
12/18	-17.7	-17.3	-0.4
3/19	15.5	14.5	1.0
6/19	2.8	3.0	-0.2
9/19	-0.4	-0.1	-0.3
12/19	8.2	7.1	1.1
3/20	-27.9	-29.7	1.8
6/20	23.7	24.1	-0.4
9/20	5.2	4.8	0.4
12/20	24.0	24.4	-0.4
3/21	12.1	13.5	-1.4
6/21	3.6	3.6	0.0
9/21	-1.0	-1.8	0.8
12/21	7.4	8.0	-0.6
3/22	-4.1	-4.9	0.8
6/22	-14.3	-15.4	1.1
9/22	-2.8	-2.5	-0.3
12/22	9.9	10.8	-0.9
3/23	2.7	3.8	-1.1
6/23	5.0	4.9	0.1

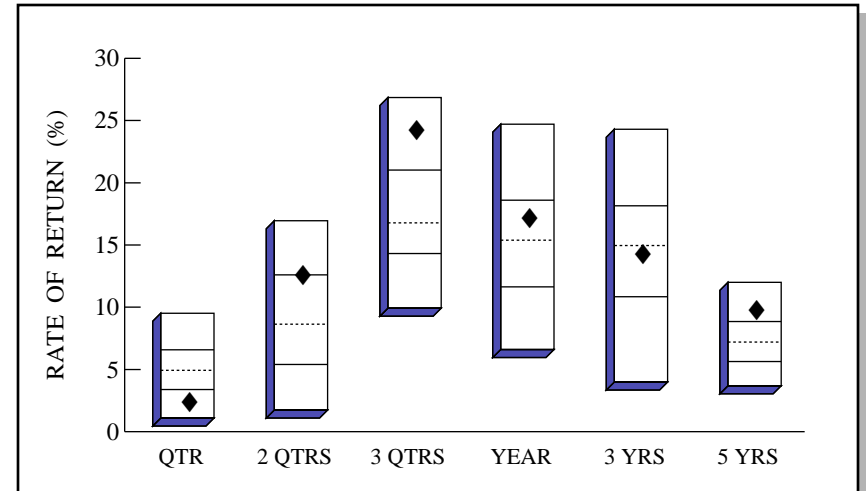
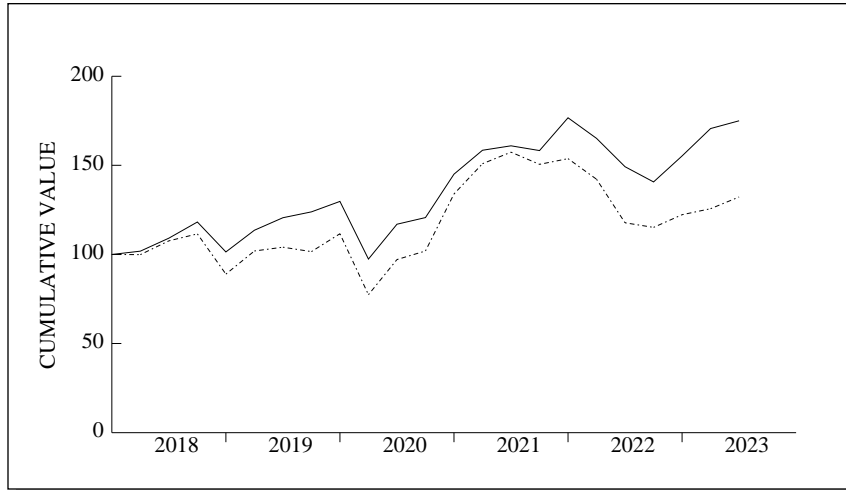
<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>21</b>
<b>Quarters Below the Benchmark</b>	<b>19</b>
<b>Batting Average</b>	<b>.525</b>

**SMALL CAP EQUITY MANAGER SUMMARY**

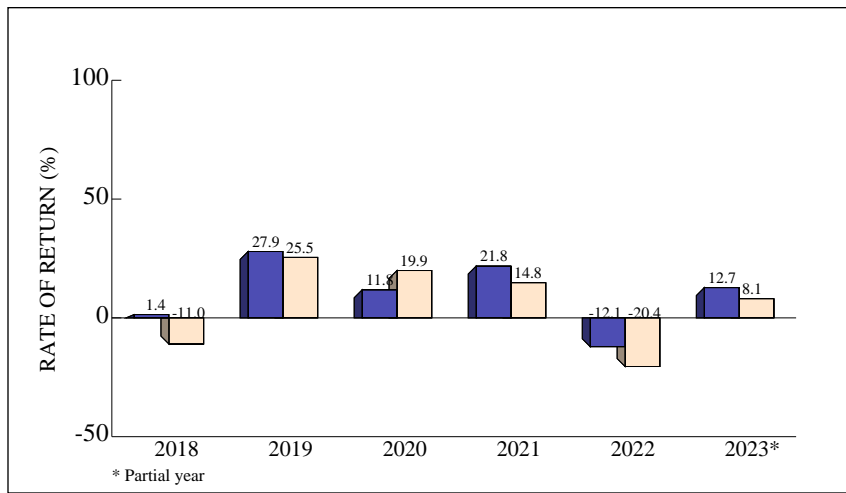


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	
SCC Manager	(Small Cap)	2.6 (85)	24.4 (11)	17.3 (38)	14.4 (54)	9.9 (17)	\$99,147,748
<i>Russell 2000</i>		<i>5.2 ---</i>	<i>14.8 ---</i>	<i>12.3 ---</i>	<i>10.8 ---</i>	<i>4.2 ---</i>	---
<b>TOTAL</b>	<b>(Small Cap)</b>	<b>2.6 (85)</b>	<b>24.4 (11)</b>	<b>17.3 (38)</b>	<b>14.4 (54)</b>	<b>9.9 (17)</b>	<b>\$99,147,748</b>
<i>Russell 2000</i>		<i>5.2 ---</i>	<i>14.8 ---</i>	<i>12.3 ---</i>	<i>10.8 ---</i>	<i>4.2 ---</i>	---

**SMALL CAP EQUITY RETURN COMPARISONS**



Small Cap Universe

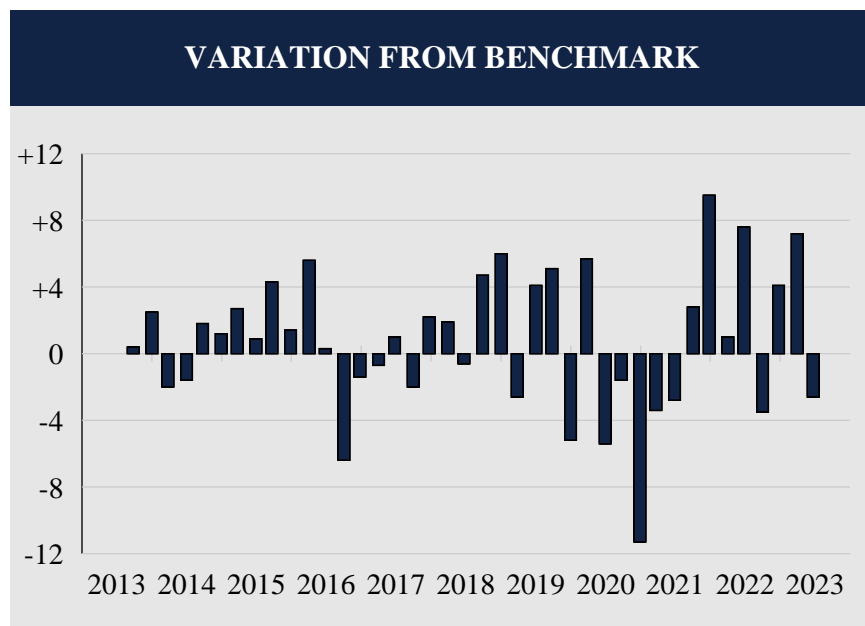


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	2.6	12.7	24.4	17.3	14.4	9.9
(RANK)	(85)	(25)	(11)	(38)	(54)	(17)
5TH %ILE	9.5	17.0	26.8	24.7	24.3	12.0
25TH %ILE	6.6	12.6	21.0	18.6	18.2	8.9
MEDIAN	4.9	8.6	16.8	15.4	15.0	7.2
75TH %ILE	3.4	5.4	14.3	11.6	10.9	5.6
95TH %ILE	1.1	1.7	9.9	6.6	4.0	3.7
<b>Russ 2000</b>	<b>5.2</b>	<b>8.1</b>	<b>14.8</b>	<b>12.3</b>	<b>10.8</b>	<b>4.2</b>

Small Cap Universe

### SMALL CAP EQUITY QUARTERLY PERFORMANCE SUMMARY

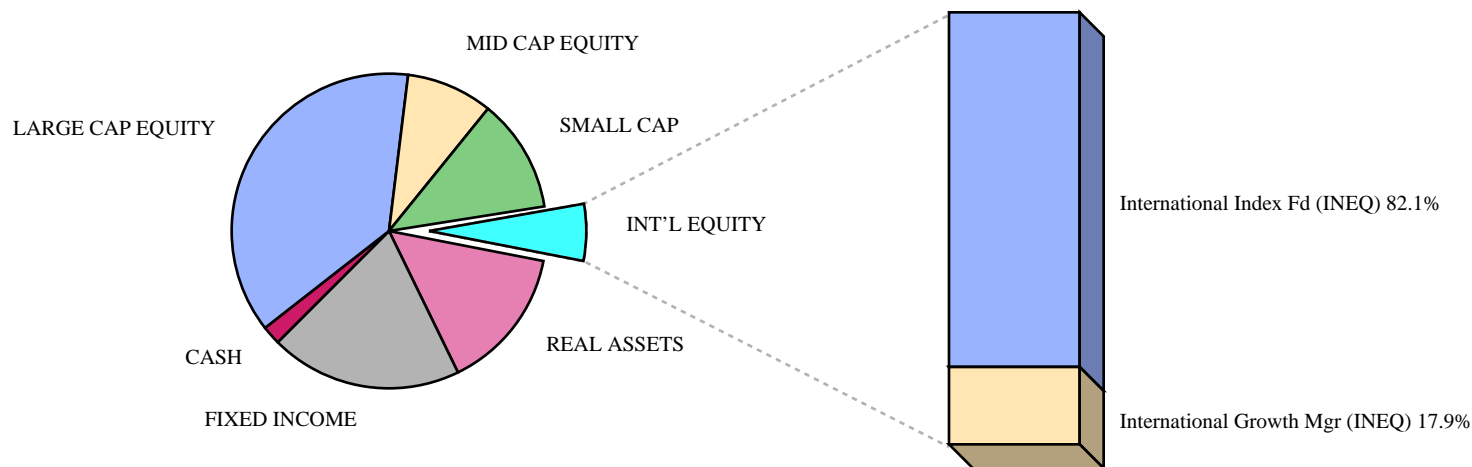
COMPARATIVE BENCHMARK: RUSSELL 2000



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/13	10.6	10.2	0.4
12/13	11.2	8.7	2.5
3/14	-0.9	1.1	-2.0
6/14	0.4	2.0	-1.6
9/14	-5.6	-7.4	1.8
12/14	10.9	9.7	1.2
3/15	7.0	4.3	2.7
6/15	1.3	0.4	0.9
9/15	-7.6	-11.9	4.3
12/15	5.0	3.6	1.4
3/16	4.1	-1.5	5.6
6/16	4.1	3.8	0.3
9/16	2.6	9.0	-6.4
12/16	7.4	8.8	-1.4
3/17	1.8	2.5	-0.7
6/17	3.5	2.5	1.0
9/17	3.7	5.7	-2.0
12/17	5.5	3.3	2.2
3/18	1.8	-0.1	1.9
6/18	7.2	7.8	-0.6
9/18	8.3	3.6	4.7
12/18	-14.2	-20.2	6.0
3/19	12.0	14.6	-2.6
6/19	6.2	2.1	4.1
9/19	2.7	-2.4	5.1
12/19	4.7	9.9	-5.2
3/20	-24.9	-30.6	5.7
6/20	20.0	25.4	-5.4
9/20	3.3	4.9	-1.6
12/20	20.1	31.4	-11.3
3/21	9.3	12.7	-3.4
6/21	1.5	4.3	-2.8
9/21	-1.6	-4.4	2.8
12/21	11.6	2.1	9.5
3/22	-6.5	-7.5	1.0
6/22	-9.6	-17.2	7.6
9/22	-5.7	-2.2	-3.5
12/22	10.3	6.2	4.1
3/23	9.9	2.7	7.2
6/23	2.6	5.2	-2.6

<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>24</b>
<b>Quarters Below the Benchmark</b>	<b>16</b>
<b>Batting Average</b>	<b>.600</b>

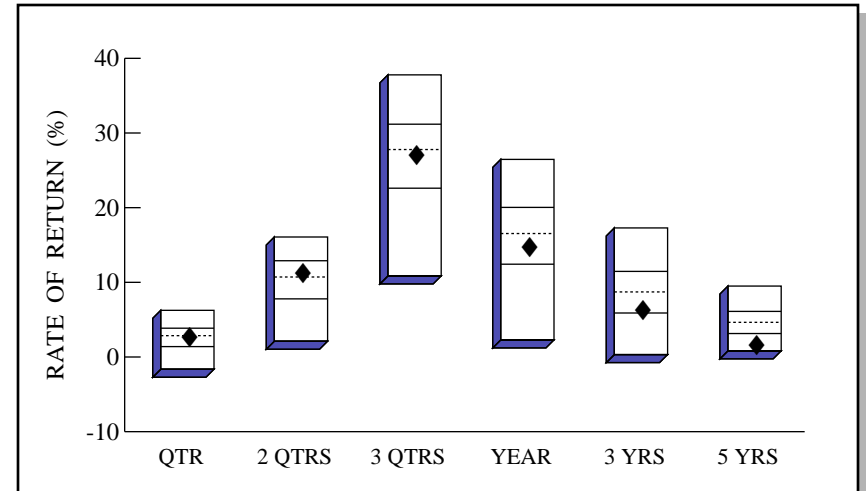
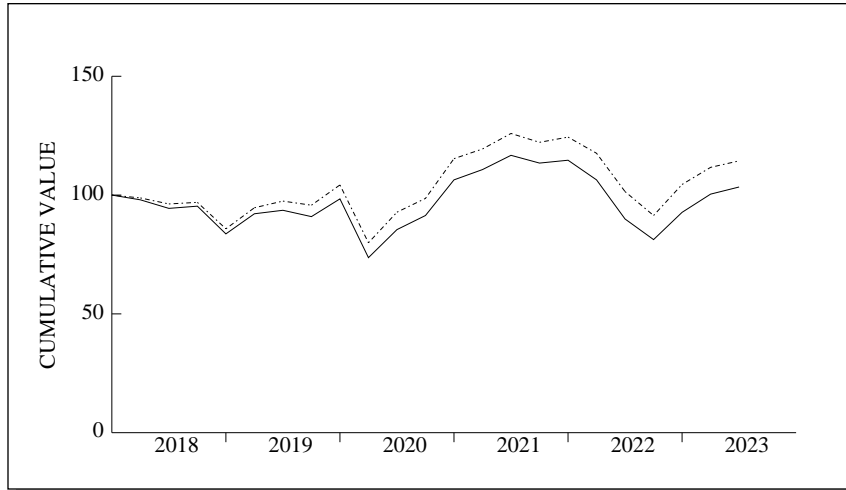
**INTERNATIONAL EQUITY MANAGER SUMMARY**



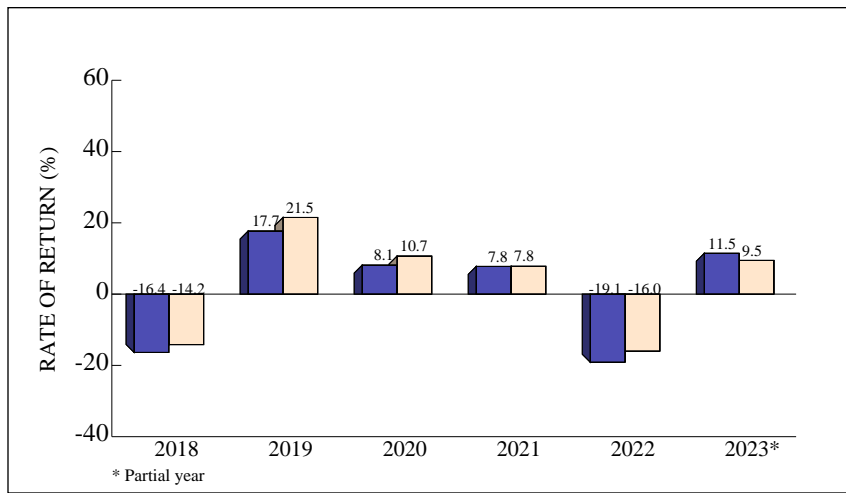
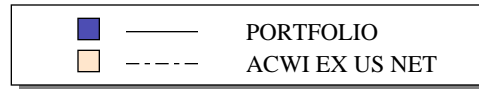
MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	
International Index Fd	(International Equity)	3.4 (36)	26.9 (57)	14.6 (63)	8.1 (56)	2.7 (80)	\$41,374,186
<i>MSCI All Country World ex US Net</i>		2.4 ----	25.1 ----	12.7 ----	7.2 ----	3.5 ----	----
International Growth Mgr	(International Equity)	1.1 (78)	28.5 (45)	16.7 (50)	---- ----	---- ----	\$9,038,636
<i>MSCI EAFE Growth</i>		2.9 ----	31.7 ----	20.6 ----	6.6 ----	5.8 ----	----
<b>TOTAL</b>	<b>(International Equity)</b>	<b>3.0 (47)</b>	<b>27.2 (54)</b>	<b>15.0 (60)</b>	<b>6.5 (71)</b>	<b>1.8 (89)</b>	<b>\$50,412,822</b>
<i>MSCI All Country World ex US Net</i>		2.4 ----	25.1 ----	12.7 ----	7.2 ----	3.5 ----	----



### INTERNATIONAL EQUITY RETURN COMPARISONS



International Equity Universe

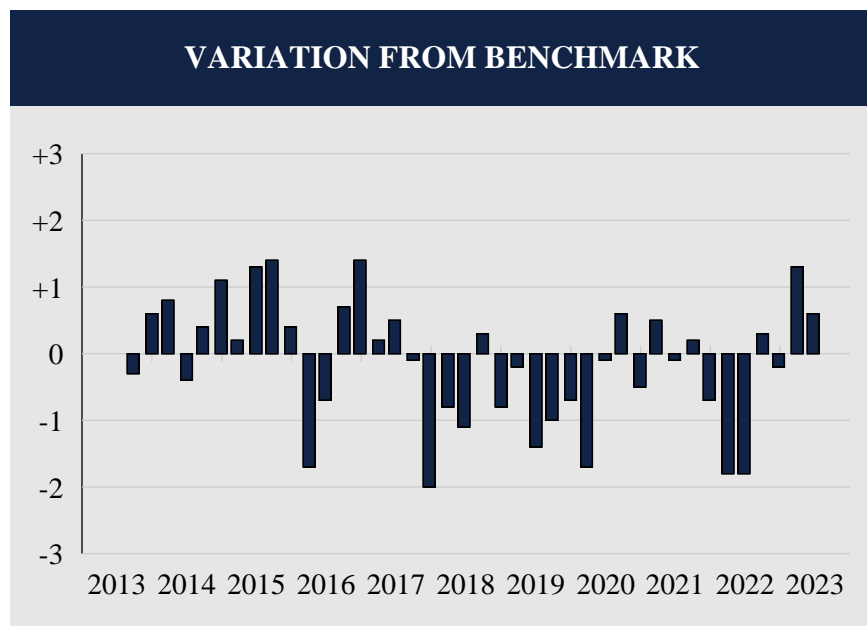


	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	3.0	11.5	27.2	15.0	6.5	1.8
(RANK)	(47)	(43)	(54)	(60)	(71)	(89)
5TH %ILE	6.2	16.1	37.8	26.5	17.3	9.5
25TH %ILE	3.9	12.9	31.2	20.1	11.5	6.1
MEDIAN	2.9	10.7	27.8	16.5	8.7	4.7
75TH %ILE	1.4	7.8	22.6	12.4	5.9	3.1
95TH %ILE	-1.6	2.1	10.9	2.3	0.3	0.8
<b>ACWI ex US N</b>	<b>2.4</b>	<b>9.5</b>	<b>25.1</b>	<b>12.7</b>	<b>7.2</b>	<b>3.5</b>

International Equity Universe

## INTERNATIONAL EQUITY QUARTERLY PERFORMANCE SUMMARY

COMPARATIVE BENCHMARK: MSCI ALL COUNTRY WORLD EX US NET

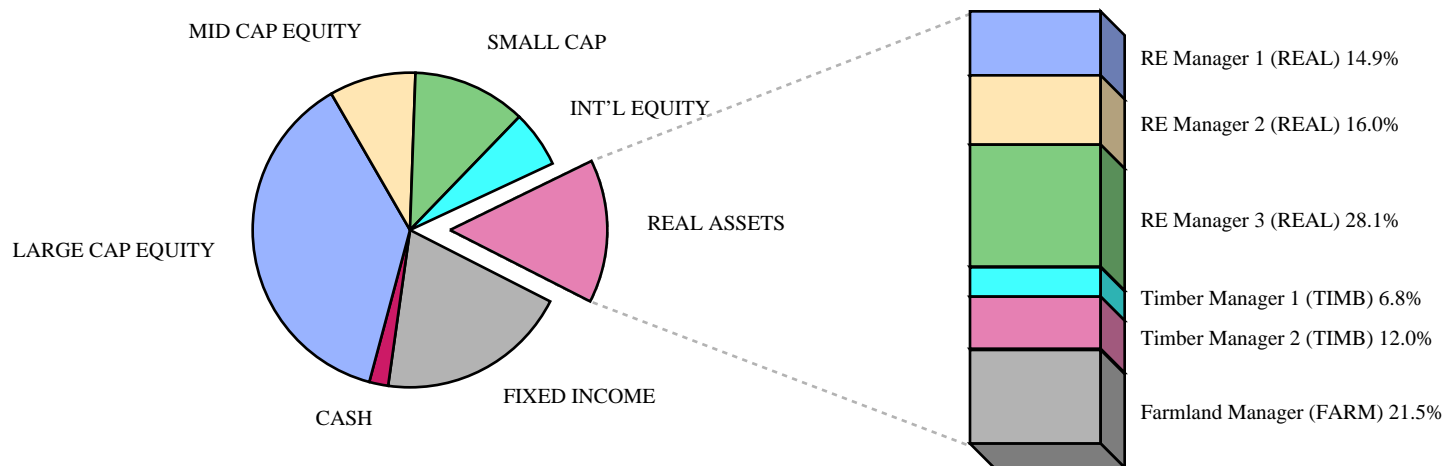


<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>19</b>
<b>Quarters Below the Benchmark</b>	<b>21</b>
<b>Batting Average</b>	<b>.475</b>

### RATES OF RETURN

Date	Portfolio	Benchmark	Difference
9/13	9.8	10.1	-0.3
12/13	5.4	4.8	0.6
3/14	1.3	0.5	0.8
6/14	4.6	5.0	-0.4
9/14	-4.9	-5.3	0.4
12/14	-2.8	-3.9	1.1
3/15	3.7	3.5	0.2
6/15	1.8	0.5	1.3
9/15	-10.8	-12.2	1.4
12/15	3.6	3.2	0.4
3/16	-2.1	-0.4	-1.7
6/16	-1.3	-0.6	-0.7
9/16	7.6	6.9	0.7
12/16	0.1	-1.3	1.4
3/17	8.1	7.9	0.2
6/17	6.3	5.8	0.5
9/17	6.1	6.2	-0.1
12/17	3.0	5.0	-2.0
3/18	-2.0	-1.2	-0.8
6/18	-3.7	-2.6	-1.1
9/18	1.0	0.7	0.3
12/18	-12.3	-11.5	-0.8
3/19	10.1	10.3	-0.2
6/19	1.6	3.0	-1.4
9/19	-2.8	-1.8	-1.0
12/19	8.2	8.9	-0.7
3/20	-25.1	-23.4	-1.7
6/20	16.0	16.1	-0.1
9/20	6.9	6.3	0.6
12/20	16.5	17.0	-0.5
3/21	4.0	3.5	0.5
6/21	5.4	5.5	-0.1
9/21	-2.8	-3.0	0.2
12/21	1.1	1.8	-0.7
3/22	-7.2	-5.4	-1.8
6/22	-15.5	-13.7	-1.8
9/22	-9.6	-9.9	0.3
12/22	14.1	14.3	-0.2
3/23	8.2	6.9	1.3
6/23	3.0	2.4	0.6

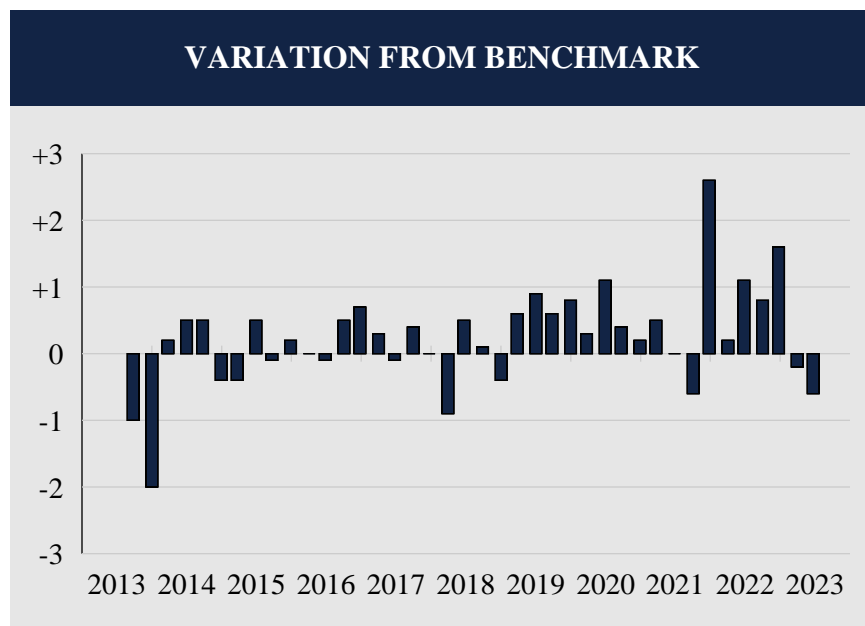
**REAL ASSETS MANAGER SUMMARY**



		COMPONENT RETURNS AND RANKINGS					
MANAGER	(UNIVERSE)	QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	MARKET VALUE
RE Manager 1		-2.2 ---	-10.6 ---	-9.1 ---	8.4 ---	7.2 ---	\$18,822,111
RE Manager 2		-3.9 ---	-11.1 ---	-9.9 ---	7.2 ---	6.4 ---	\$20,198,887
RE Manager 3		-6.1 ---	-14.9 ---	-13.6 ---	7.3 ---	7.3 ---	\$35,464,231
<i>NCREIF NFI-ODCE Index</i>		<i>-2.7 ---</i>	<i>-10.4 ---</i>	<i>-10.0 ---</i>	<i>8.0 ---</i>	<i>6.5 ---</i>	---
Timber Manager 1		2.2 ---	13.3 ---	13.6 ---	9.7 ---	6.0 ---	\$8,612,192
Timber Manager 2		0.6 ---	20.5 ---	20.6 ---	13.2 ---	---	\$15,135,324
<i>NCREIF Timber Index</i>		<i>1.7 ---</i>	<i>8.6 ---</i>	<i>11.1 ---</i>	<i>8.7 ---</i>	<i>5.8 ---</i>	---
Farmland Manager		3.9 ---	15.2 ---	21.5 ---	17.9 ---	13.6 ---	\$27,126,648
<i>NCREIF Farmland Index</i>		<i>0.8 ---</i>	<i>6.3 ---</i>	<i>8.4 ---</i>	<i>7.7 ---</i>	<i>6.5 ---</i>	---
<b>TOTAL</b>		<b>-1.7 ---</b>	<b>-2.8 ---</b>	<b>-0.8 ---</b>	<b>10.3 ---</b>	<b>8.5 ---</b>	<b>\$126,226,626</b>
<i>Blended Real Assets Index</i>		<i>-1.1 ---</i>	<i>-3.6 ---</i>	<i>-2.4 ---</i>	<i>8.1 ---</i>	<i>6.4 ---</i>	---

## REAL ASSETS QUARTERLY PERFORMANCE SUMMARY

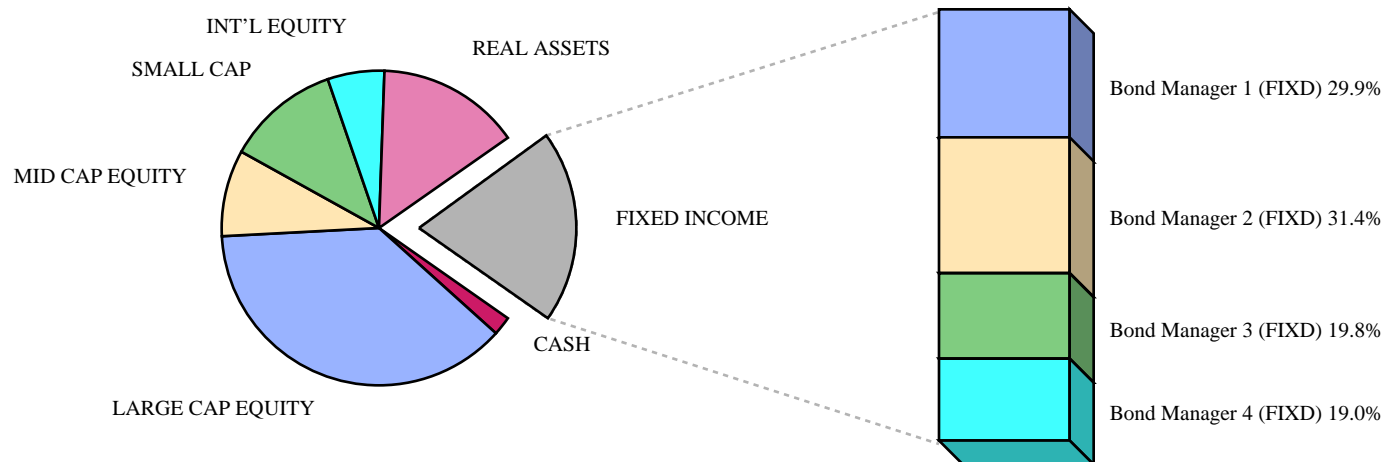
COMPARATIVE BENCHMARK: BLENDED REAL ASSETS INDEX



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/13	1.9	2.9	-1.0
12/13	2.9	4.9	-2.0
3/14	2.5	2.3	0.2
6/14	2.8	2.3	0.5
9/14	3.0	2.5	0.5
12/14	4.1	4.5	-0.4
3/15	2.4	2.8	-0.4
6/15	3.1	2.6	0.5
9/15	2.8	2.9	-0.1
12/15	3.4	3.2	0.2
3/16	1.5	1.5	0.0
6/16	1.6	1.7	-0.1
9/16	2.2	1.7	0.5
12/16	2.8	2.1	0.7
3/17	1.6	1.3	0.3
6/17	1.4	1.5	-0.1
9/17	1.8	1.4	0.4
12/17	2.1	2.1	0.0
3/18	0.9	1.8	-0.9
6/18	2.1	1.6	0.5
9/18	1.8	1.7	0.1
12/18	1.4	1.8	-0.4
3/19	1.6	1.0	0.6
6/19	1.9	1.0	0.9
9/19	1.6	1.0	0.6
12/19	2.2	1.4	0.8
3/20	0.9	0.6	0.3
6/20	0.3	-0.8	1.1
9/20	0.9	0.5	0.4
12/20	1.4	1.2	0.2
3/21	2.1	1.6	0.5
6/21	3.0	3.0	0.0
9/21	4.1	4.7	-0.6
12/21	9.1	6.5	2.6
3/22	5.8	5.6	0.2
6/22	4.6	3.5	1.1
9/22	2.0	1.2	0.8
12/22	0.2	-1.4	1.6
3/23	-1.3	-1.1	-0.2
6/23	-1.7	-1.1	-0.6

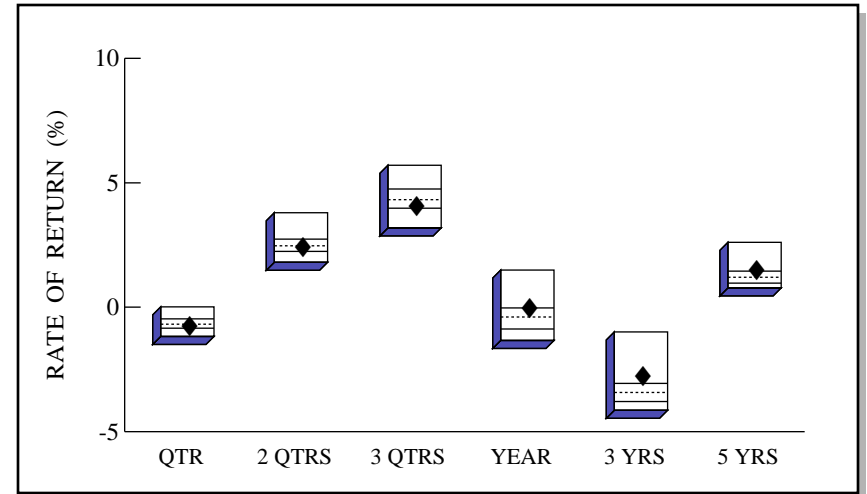
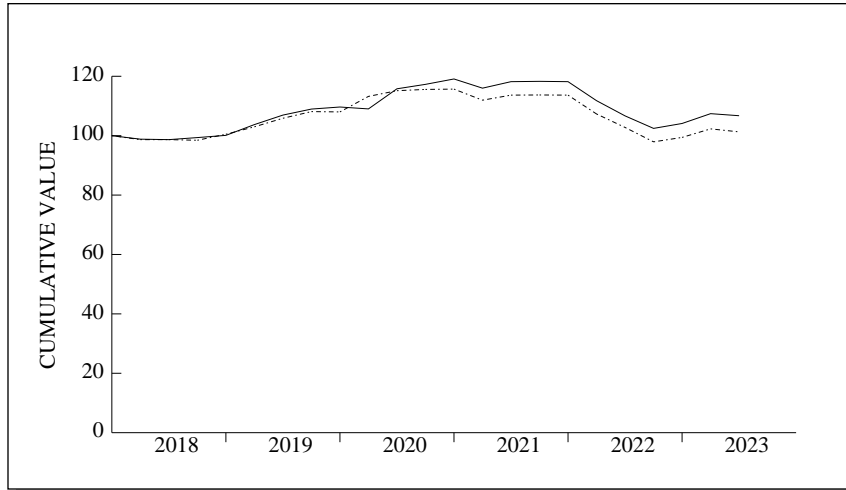
<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>28</b>
<b>Quarters Below the Benchmark</b>	<b>12</b>
<b>Batting Average</b>	<b>.700</b>

**FIXED INCOME MANAGER SUMMARY**

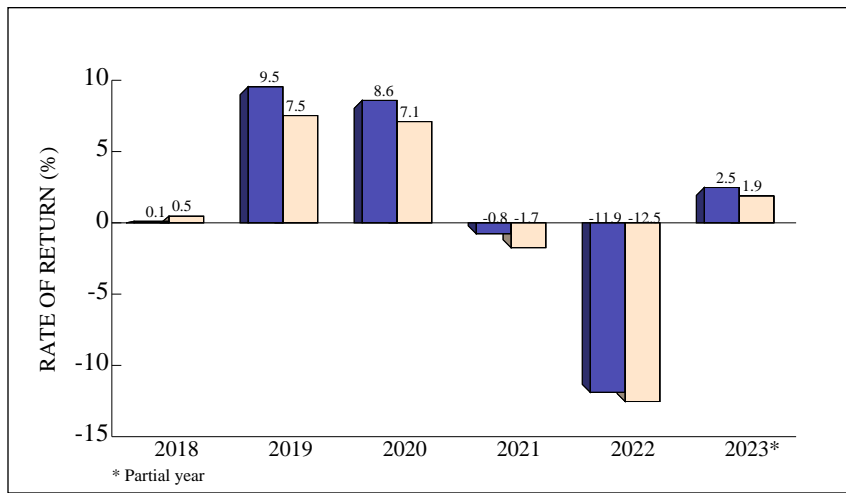
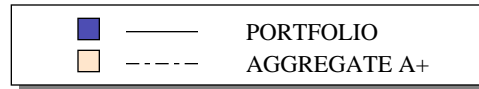


MANAGER	(UNIVERSE)	COMPONENT RETURNS AND RANKINGS					MARKET VALUE
		QTR	FYTD	1 YEAR	3 YEARS	5 YEARS	
Bond Manager 1	(Core Fixed Income)	-0.5 (34)	3.8 (84)	0.3 (15)	-2.8 (20)	1.5 (24)	\$50,116,238
<i>Blended Fixed Income Index</i>		<i>-0.9 ----</i>	<i>3.6 ----</i>	<i>-0.4 ----</i>	<i>-3.3 ----</i>	<i>1.1 ----</i>	<i>----</i>
Bond Manager 2	(Core Fixed Income)	-0.9 (79)	3.5 (90)	-1.2 (92)	---- ----	---- ----	\$52,689,769
<i>Bloomberg Aggregate A-or-Better</i>		<i>-1.0 ----</i>	<i>3.5 ----</i>	<i>-1.4 ----</i>	<i>-4.2 ----</i>	<i>0.5 ----</i>	<i>----</i>
Bond Manager 3	(Core Fixed Income)	-0.6 (48)	4.8 (23)	1.3 (6)	-1.1 (6)	2.5 (6)	\$33,189,245
Bond Manager 4	(Core Fixed Income)	-0.4 (21)	5.2 (10)	0.9 (8)	-2.5 (12)	1.8 (14)	\$31,841,705
<i>Bloomberg Aggregate Index</i>		<i>-0.8 ----</i>	<i>4.0 ----</i>	<i>-0.9 ----</i>	<i>-4.0 ----</i>	<i>0.8 ----</i>	<i>----</i>
<b>TOTAL</b>	<b>(Core Fixed Income)</b>	<b>-0.7 (49)</b>	<b>4.1 (62)</b>	<b>0.0 (20)</b>	<b>-2.7 (17)</b>	<b>1.6 (20)</b>	<b>\$167,836,957</b>
<i>Bloomberg Aggregate A-or-Better</i>		<i>-1.0 ----</i>	<i>3.5 ----</i>	<i>-1.4 ----</i>	<i>-4.2 ----</i>	<i>0.5 ----</i>	<i>----</i>

**FIXED INCOME RETURN COMPARISONS**



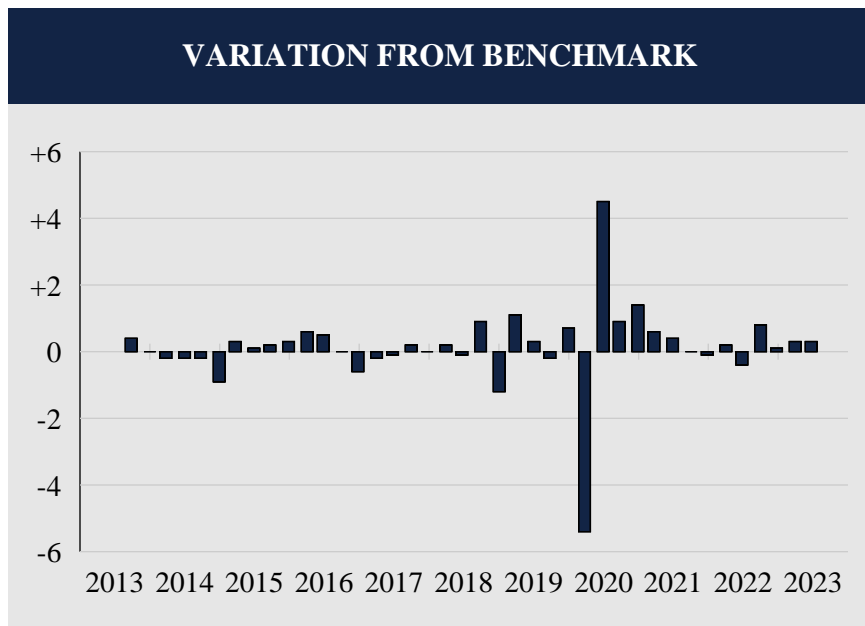
Core Fixed Income Universe



	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	-0.7	2.5	4.1	0.0	-2.7	1.6
(RANK)	(49)	(49)	(62)	(20)	(17)	(20)
5TH %ILE	0.0	3.8	5.7	1.5	-1.0	2.6
25TH %ILE	-0.5	2.7	4.8	0.0	-3.1	1.5
MEDIAN	-0.7	2.5	4.3	-0.4	-3.4	1.2
75TH %ILE	-0.8	2.2	4.0	-0.9	-3.8	1.0
95TH %ILE	-1.2	1.8	3.2	-1.3	-4.1	0.8
<b>Agg A+</b>	<b>-1.0</b>	<b>1.9</b>	<b>3.5</b>	<b>-1.4</b>	<b>-4.2</b>	<b>0.5</b>

Core Fixed Income Universe

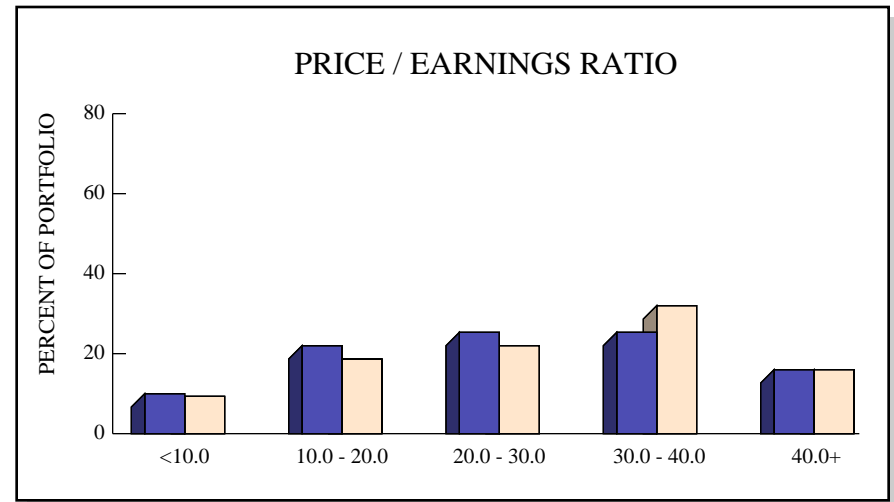
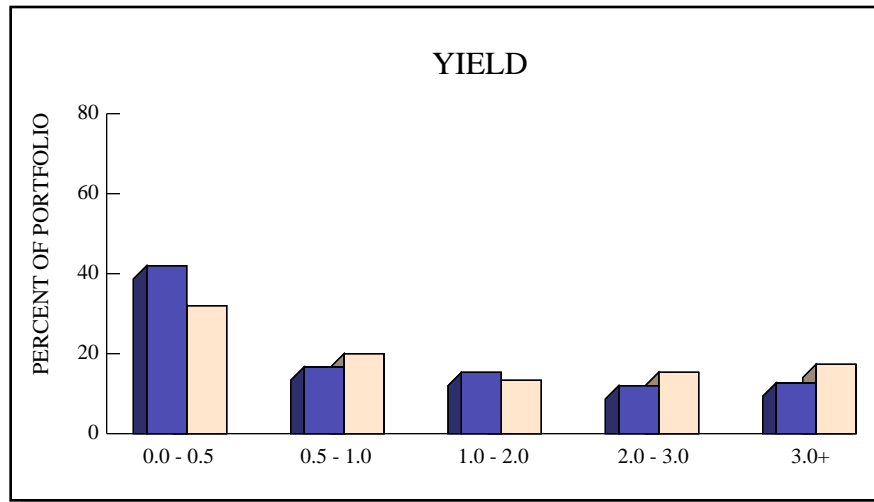
**FIXED INCOME QUARTERLY PERFORMANCE SUMMARY**  
**COMPARATIVE BENCHMARK: BLOOMBERG AGGREGATE A-OR-BETTER**



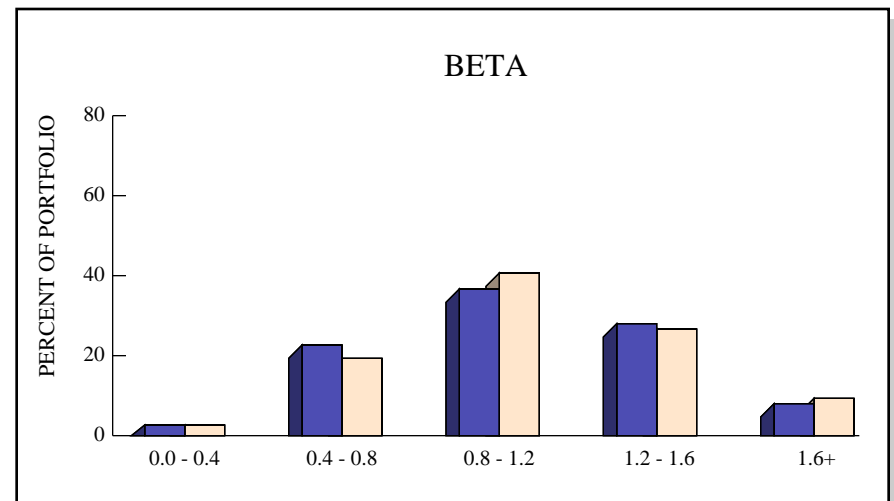
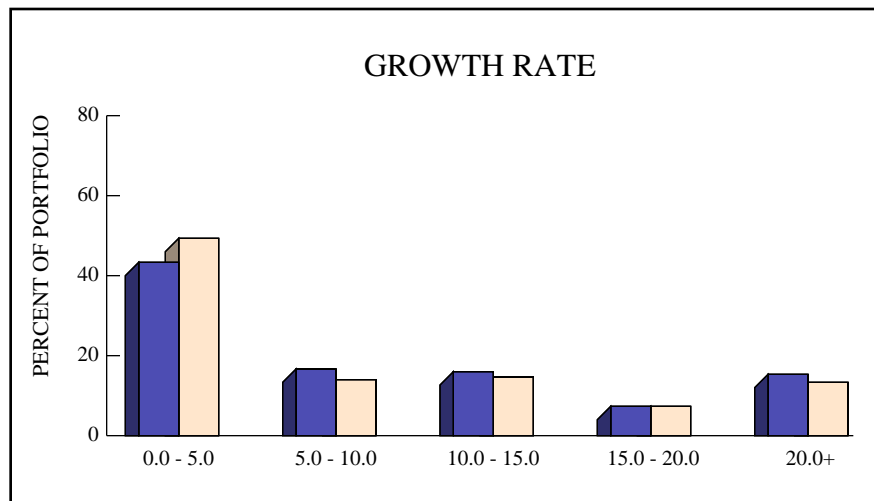
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/13	0.9	0.5	0.4
12/13	-0.3	-0.3	0.0
3/14	1.4	1.6	-0.2
6/14	1.7	1.9	-0.2
9/14	0.0	0.2	-0.2
12/14	1.0	1.9	-0.9
3/15	1.8	1.5	0.3
6/15	-1.4	-1.5	0.1
9/15	1.7	1.5	0.2
12/15	-0.2	-0.5	0.3
3/16	3.5	2.9	0.6
6/16	2.4	1.9	0.5
9/16	0.2	0.2	0.0
12/16	-3.6	-3.0	-0.6
3/17	0.5	0.7	-0.2
6/17	1.2	1.3	-0.1
9/17	0.9	0.7	0.2
12/17	0.2	0.2	0.0
3/18	-1.2	-1.4	0.2
6/18	-0.1	0.0	-0.1
9/18	0.7	-0.2	0.9
12/18	0.8	2.0	-1.2
3/19	3.6	2.5	1.1
6/19	3.1	2.8	0.3
9/19	1.9	2.1	-0.2
12/19	0.6	-0.1	0.7
3/20	-0.6	4.8	-5.4
6/20	6.2	1.7	4.5
9/20	1.3	0.4	0.9
12/20	1.5	0.1	1.4
3/21	-2.6	-3.2	0.6
6/21	1.9	1.5	0.4
9/21	0.1	0.1	0.0
12/21	-0.1	0.0	-0.1
3/22	-5.4	-5.6	0.2
6/22	-4.6	-4.2	-0.4
9/22	-3.9	-4.7	0.8
12/22	1.6	1.5	0.1
3/23	3.2	2.9	0.3
6/23	-0.7	-1.0	0.3

<b>Total Quarters Observed</b>	<b>40</b>
<b>Quarters At or Above the Benchmark</b>	<b>27</b>
<b>Quarters Below the Benchmark</b>	<b>13</b>
<b>Batting Average</b>	<b>.675</b>

**STOCK CHARACTERISTICS**

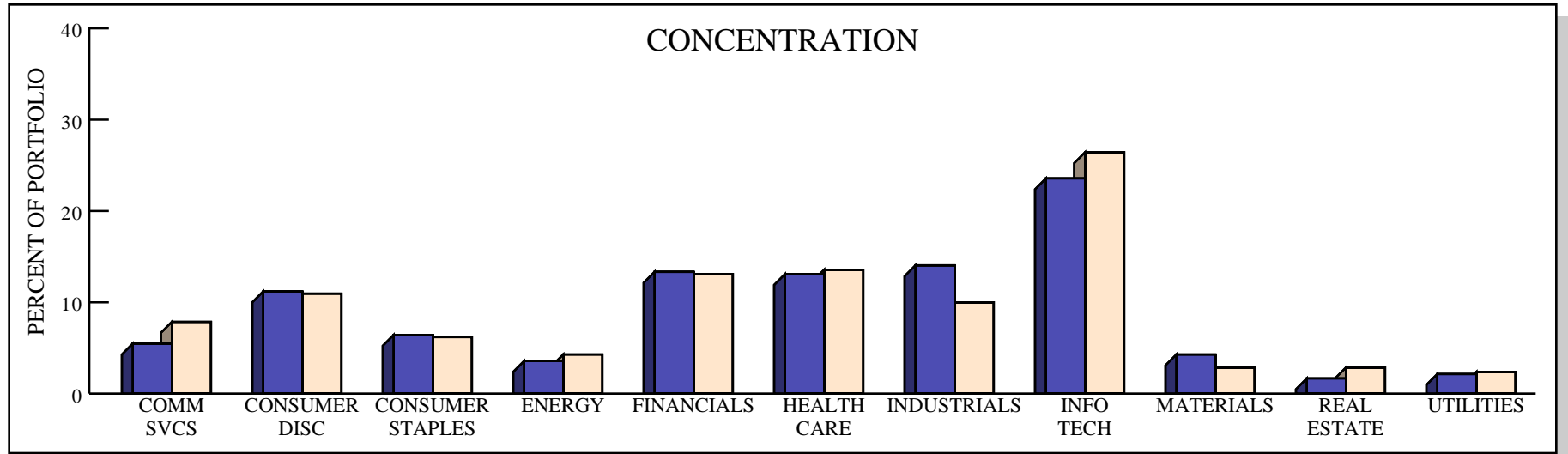


	# HOLDINGS	YIELD	GROWTH	P/E	BETA
PORTFOLIO	1,164	1.2%	5.5%	29.2	1.07
RUSSELL 3000	2,989	1.5%	5.6%	31.0	1.08

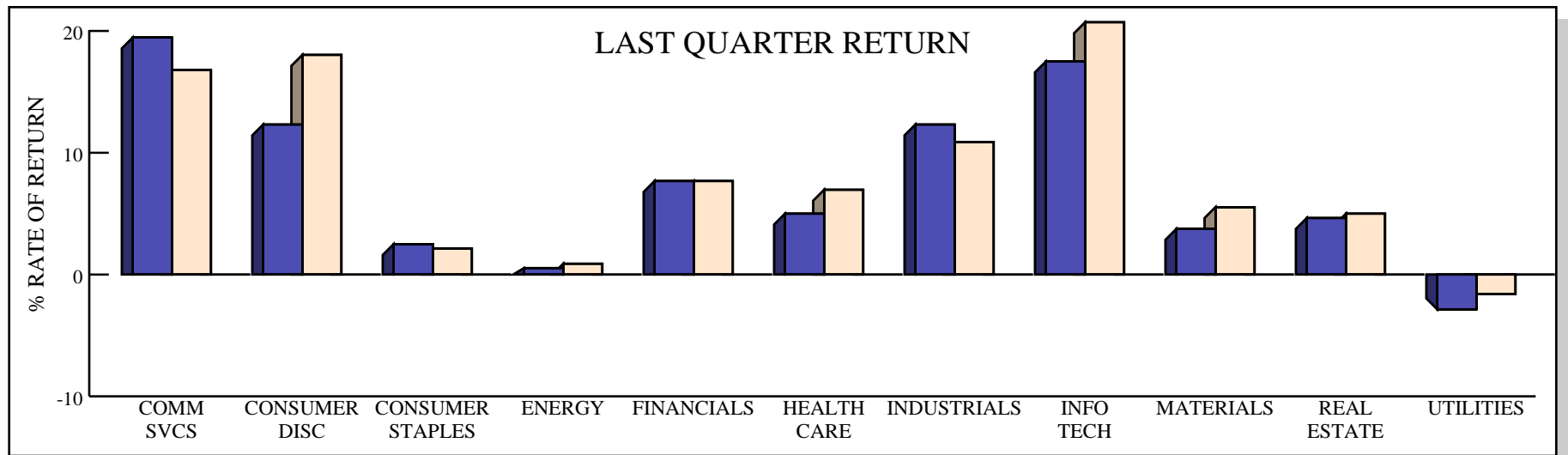




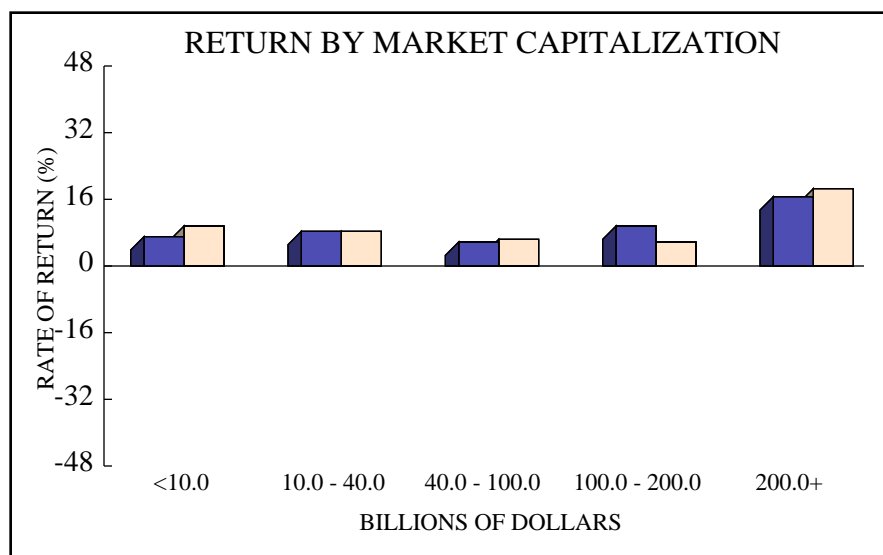
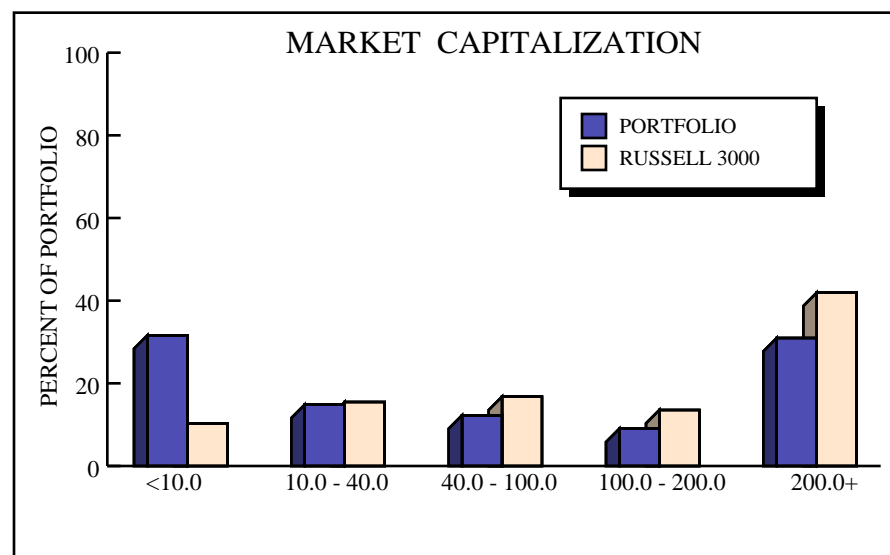
**STOCK INDUSTRY ANALYSIS**



■ PORTFOLIO      ■ RUSSELL 3000



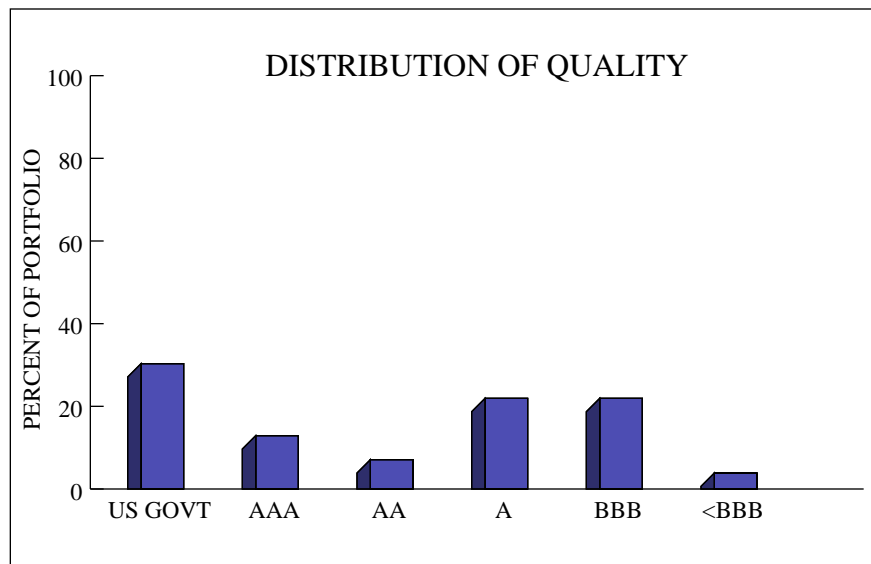
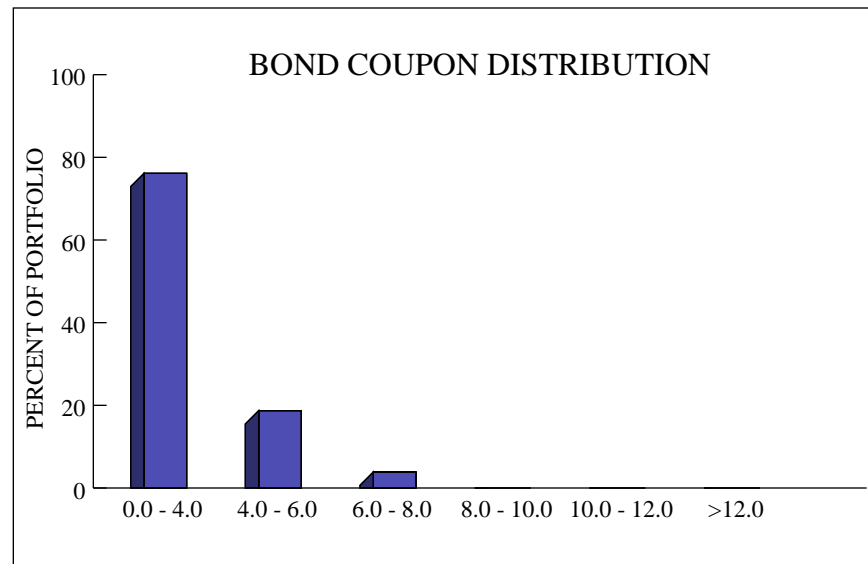
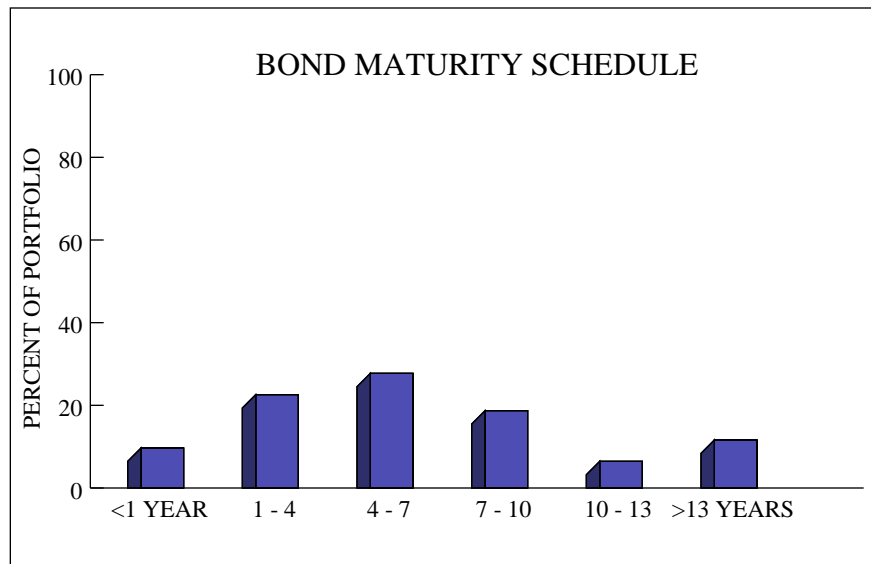
**TOP TEN HOLDINGS**



**TOP TEN EQUITY HOLDINGS**

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	MICROSOFT CORP	\$ 18,359,193	3.70%	20.2%	Information Technology	\$ 2532.1 B
2	APPLE INC	16,870,929	3.40%	19.6%	Information Technology	3050.9 B
3	AMAZON.COM INC	13,922,187	2.81%	27.8%	Consumer Discretionary	1337.5 B
4	ALPHABET INC	6,610,193	1.33%	18.6%	Communication Services	816.7 B
5	UNITEDHEALTH GROUP INC	6,553,046	1.32%	2.7%	Health Care	447.5 B
6	VISA INC	6,228,150	1.26%	7.0%	Financials	486.6 B
7	NVIDIA CORP	6,048,340	1.22%	54.5%	Information Technology	1044.9 B
8	SERVICENOW INC	5,909,114	1.19%	27.8%	Information Technology	114.5 B
9	ALPHABET INC	5,678,574	1.14%	19.4%	Communication Services	710.6 B
10	NETFLIX INC	5,510,089	1.11%	30.2%	Communication Services	195.8 B

**BOND CHARACTERISTICS**



	<b>PORTFOLIO</b>	<b>AGGREGATE A+</b>
No. of Securities	1092	9,255
Duration	5.03	6.20
YTM	5.54	4.68
Average Coupon	3.13	2.70
Avg Maturity / WAL	7.41	8.23
Average Quality	AA	AAA-AA

## APPENDIX - MAJOR MARKET INDEX RETURNS

<b>Economic Data</b>	<b>Style</b>	<b>QTR</b>	<b>FYTD</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
Consumer Price Index	Economic Data	1.1	2.8	3.0	5.8	3.9	2.7
<b>Domestic Equity</b>	<b>Style</b>	<b>QTR</b>	<b>FYTD</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
Russell 3000	Broad Equity	8.4	24.5	19.0	13.9	11.4	12.3
S&P 500	Large Cap Core	8.7	25.7	19.6	14.6	12.3	12.9
Russell 1000	Large Cap	8.6	25.1	19.4	14.1	11.9	12.6
Russell 1000 Growth	Large Cap Growth	12.8	31.9	27.1	13.7	15.1	15.7
Russell 1000 Value	Large Cap Value	4.1	18.2	11.5	14.3	8.1	9.2
Russell Mid Cap	Midcap	4.8	19.0	14.9	12.5	8.5	10.3
Russell Mid Cap Growth	Midcap Growth	6.2	23.9	23.1	7.6	9.7	11.5
Russell Mid Cap Value	Midcap Value	3.9	16.2	10.5	15.0	6.8	9.0
Russell 2000	Small Cap	5.2	14.8	12.3	10.8	4.2	8.2
Russell 2000 Growth	Small Cap Growth	7.1	18.2	18.5	6.1	4.2	8.8
Russell 2000 Value	Small Cap Value	3.2	11.1	6.0	15.4	3.5	7.3
<b>International Equity</b>	<b>Style</b>	<b>QTR</b>	<b>FYTD</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
MSCI All Country World ex US	Foreign Equity	2.7	25.6	13.3	7.7	4.0	5.2
MSCI EAFE	Developed Markets Equity	3.2	31.6	19.4	9.5	4.9	5.9
MSCI EAFE Growth	Developed Markets Growth	2.9	31.7	20.6	6.6	5.8	6.8
MSCI EAFE Value	Developed Markets Value	3.5	31.6	18.2	12.1	3.6	4.8
MSCI Emerging Markets	Emerging Markets Equity	1.0	15.4	2.2	2.7	1.3	3.3
<b>Domestic Fixed Income</b>	<b>Style</b>	<b>QTR</b>	<b>FYTD</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
Bloomberg Aggregate Index	Core Fixed Income	-0.8	4.0	-0.9	-4.0	0.8	1.5
Bloomberg Gov't Bond	Treasuries	-1.4	2.3	-2.1	-4.1	0.9	1.2
Bloomberg Credit Bond	Corporate Bonds	-0.3	6.7	1.4	-2.3	2.4	2.9
Intermediate Aggregate	Core Intermediate	-0.8	3.4	-0.6	-2.9	0.8	1.3
ML/BoA 1-3 Year Treasury	Short Term Treasuries	-0.6	1.7	0.0	-1.1	0.9	0.7
Bloomberg High Yield	High Yield Bonds	1.7	9.8	9.1	2.5	3.0	4.2
<b>Alternative Assets</b>	<b>Style</b>	<b>QTR</b>	<b>FYTD</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
Bloomberg Global Treasury Ex US	International Treasuries	-1.8	9.0	-0.7	-6.4	-2.8	-0.9
NCREIF NFI-ODCE Index	Real Estate	-2.7	-10.4	-10.0	8.0	6.5	8.7
HFRI FOF Composite	Hedge Funds	1.5	4.5	4.1	5.2	3.4	3.4

**APPENDIX - DISCLOSURES**

- \* Comparative universes are provided to Dahab Associates by third party vendor Investment Metrics. Dahab Associates has no ability to modify the underlying data within universes by selective exclusion or any other means. The IM Public Fund Universe contains more than two hundred participants.
- \* The Policy Index is a policy-weighted passive index constructed as follows:  
For all periods through 12/31/2007:  

50.0% Russell 3000	10.0% MSCI EAFE Net	40.0% Bloomberg Aggregate Bond Index
--------------------	---------------------	--------------------------------------

  
For all periods from 1/1/2008 to 5/31/2015:  

52.0% Russell 3000	30.0% Bloomberg Aggregate Bond Index	
8.0% MSCI EAFE Net	7.5% NCREIF-ODCE Index	
2.5% NCREIF Timber		

  
For all periods since 6/1/2015:  

52.0% Russell 3000	25.0% Bloomberg Aggregate Bond Index	
8.0% MSCI EAFE Net	9.0% NCREIF-ODCE Index	
3.0% NCREIF Timber	3.0% NCREIF Farmland	
- \* The shadow index is a customized index that matches your portfolio's asset allocation on a quarterly basis. This index was calculated using the following asset classes and corresponding benchmarks:  

Domestic Equity	Russell 3000
Large Cap Equity	S&P 500
Mid Cap Equity	S&P 400
Small Cap Equity	Russell 2000
International Equity	MSCI All Country World ex US Net
Real Assets	Blended Real Assets Index
Fixed Income	Bloomberg Aggregate A-or-Better
Cash & Equivalent	90 Day T Bill
- \* The Blended Real Assets Index is comprised of 60% NCREIF-ODCE, 20% NCREIF Timber, and 20% NCREIF Farmland.
- \* The Blended Fixed Income Index is comprised of 50% Bloomberg Gov/Credit and 50% Intermediate Gov/Credit.

**APPENDIX - DISCLOSURES**

- \* Dahab Associates utilizes data provided by a custodian and other vendors it believes are reliable. However, it cannot assume responsibility for errors and omissions therefrom.
- \* All returns were calculated on a time-weighted basis, and are gross of fees unless otherwise noted.
- \* All returns for periods greater than one year are annualized.
- \* Dahab Associates uses the modified duration measure to present average duration.
- \* All values are in US dollars.

Please note

The following section includes only two of the individual manager performance reports that would normally follow the composite performance report.

In the interest of brevity, we have included performance reviews for one domestic equity manager and one bond manager.

XYZ DEFINED BENEFIT PLAN  
LCG MANAGER  
PERFORMANCE REVIEW  
JUNE 2023



## **INVESTMENT RETURN**

On June 30th, 2023, the XYZ Defined Benefit Plan's LCG Manager portfolio was valued at \$53,172,550, representing an increase of \$4,826,703 from the March quarter's ending value of \$48,345,847. Last quarter, the Fund posted withdrawals totaling \$78,551, which partially offset the portfolio's net investment return of \$4,905,254. Income receipts totaling \$59,209 plus net realized and unrealized capital gains of \$4,846,045 combined to produce the portfolio's net investment return.

## **RELATIVE PERFORMANCE**

### **Total Fund**

For the second quarter, this portfolio returned 10.2%, which was 2.6% below the Russell 1000 Growth Index's return of 12.8% and ranked in the 63rd percentile of the Large Cap Growth universe. Over the trailing year, the portfolio returned 19.7%, which was 7.4% below the benchmark's 27.1% return, ranking in the 76th percentile. Since March 2022, the portfolio returned -7.0% annualized and ranked in the 93rd percentile. The Russell 1000 Growth returned an annualized 0.4% over the same period.

## **ASSET ALLOCATION**

At the end of the second quarter, large cap equities comprised 97.5% of the total portfolio (\$51.9 million), while cash & equivalents totaled 2.5% (\$1.3 million).

## **EQUITY ANALYSIS**

Last quarter, the portfolio was invested across five of the eleven industry sectors shown in our analysis. Relative to the Russell 1000 Growth Index, the portfolio was most notably overweight in three of five sectors, while it was absent from Consumer Staples, Energy, Industrials, Materials, Real Estate, and Utilities sectors.

The Equity portfolio underperformed the benchmark in three of five sectors. Only the Communication Services and Consumer Discretionary sectors outperformed. At the end of the quarter, the benchmark beat the portfolio by 2.6%.

## **INVESTMENT RETURN**

Initial Investment	\$	52,984,799
Cash Flow	\$	(254,717)
Investment Return	\$	<u>442,468</u>
Ending Value	\$	<u>53,172,550</u>

**EXECUTIVE SUMMARY**

**PERFORMANCE SUMMARY**

	Quarter	FYTD	1 Year	3 Year	5 Year	Since 03/22
<b>Total Portfolio - Gross</b>	10.2	25.9	19.7	----	----	-7.0
<i>LARGE CAP GROWTH RANK</i>	(63)	(74)	(76)	----	----	(93)
<b>Total Portfolio - Net</b>	10.0	25.5	19.1	----	----	-7.5
Russell 1000G	12.8	31.9	27.1	13.7	15.1	0.4
<b>Large Cap Equity - Gross</b>	10.4	26.5	20.0	----	----	-7.1
<i>LARGE CAP GROWTH RANK</i>	(62)	(72)	(73)	----	----	(93)
Russell 1000G	12.8	31.9	27.1	13.7	15.1	0.4

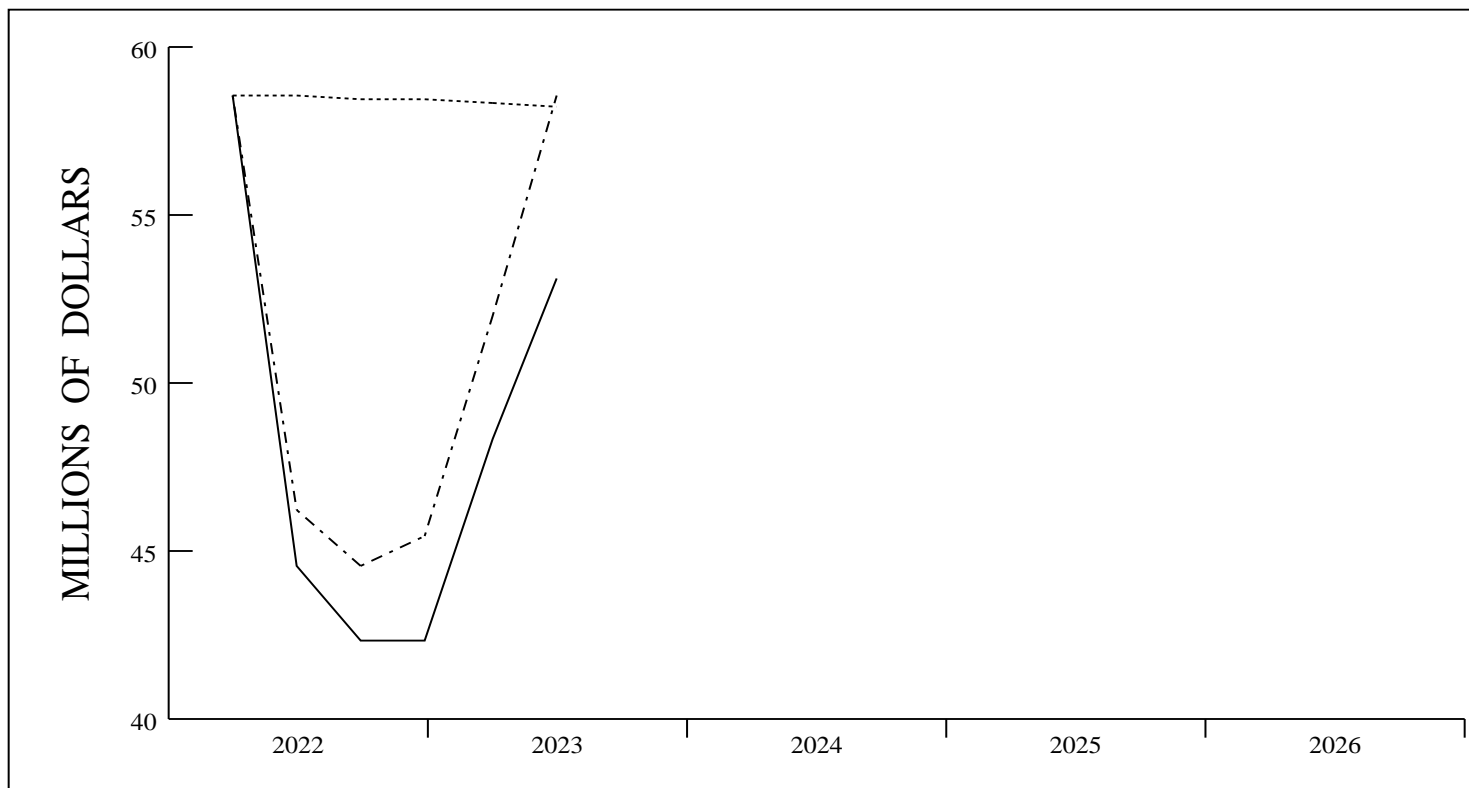
**ASSET ALLOCATION**

Large Cap Equity	97.5%	\$ 51,862,158
Cash	2.5%	1,310,392
<b>Total Portfolio</b>	<b>100.0%</b>	<b>\$ 53,172,550</b>

**INVESTMENT RETURN**

Market Value 3/2023	\$ 48,345,847
Contribs / Withdrawals	- 78,551
Income	59,209
Capital Gains / Losses	4,846,045
Market Value 6/2023	\$ 53,172,550

**INVESTMENT GROWTH**

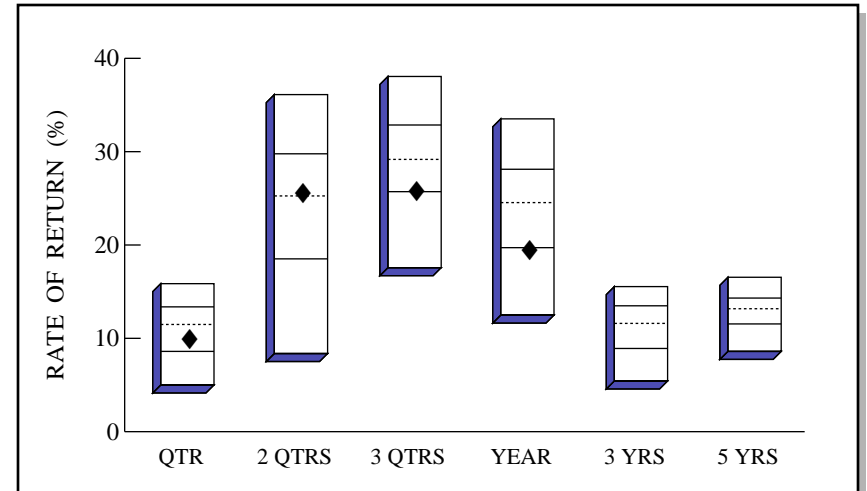
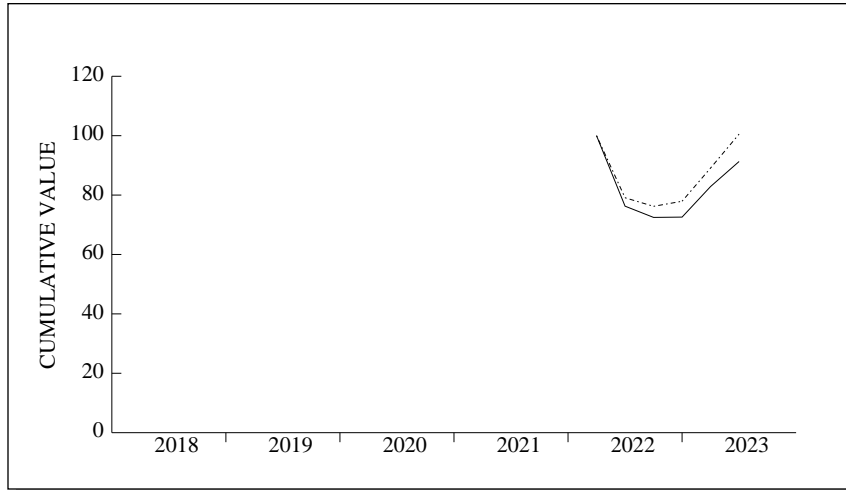


——— ACTUAL RETURN  
 - - - - - RUSSELL 1000G  
 ..... 0.0%

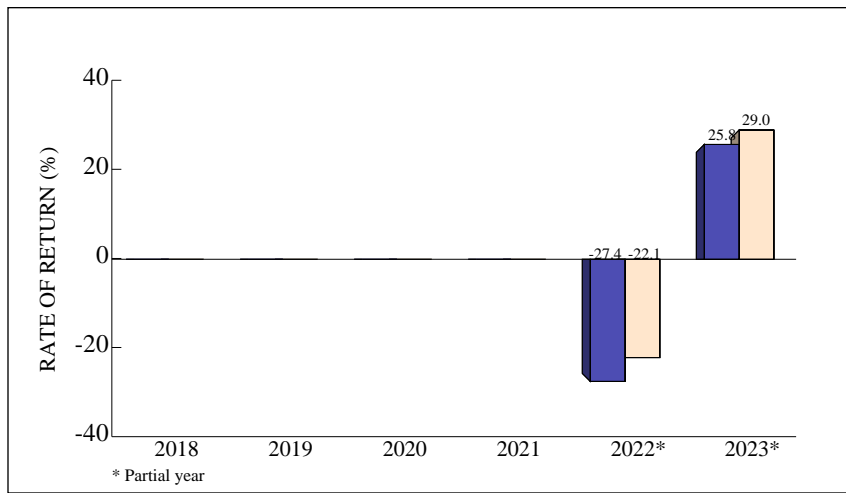
VALUE ASSUMING  
 RUSS 1000G     \$ 58,577,123

	LAST QUARTER	PERIOD 3/22 - 6/23
BEGINNING VALUE	\$ 48,345,847	\$ 58,578,377
NET CONTRIBUTIONS	- 78,551	-254,717
<u>INVESTMENT RETURN</u>	<u>4,905,254</u>	<u>- 5,151,110</u>
ENDING VALUE	\$ 53,172,550	\$ 53,172,550
INCOME	59,209	261,568
<u>CAPITAL GAINS (LOSSES)</u>	<u>4,846,045</u>	<u>- 5,412,678</u>
INVESTMENT RETURN	4,905,254	- 5,151,110

**TOTAL RETURN COMPARISONS**



Large Cap Growth Universe



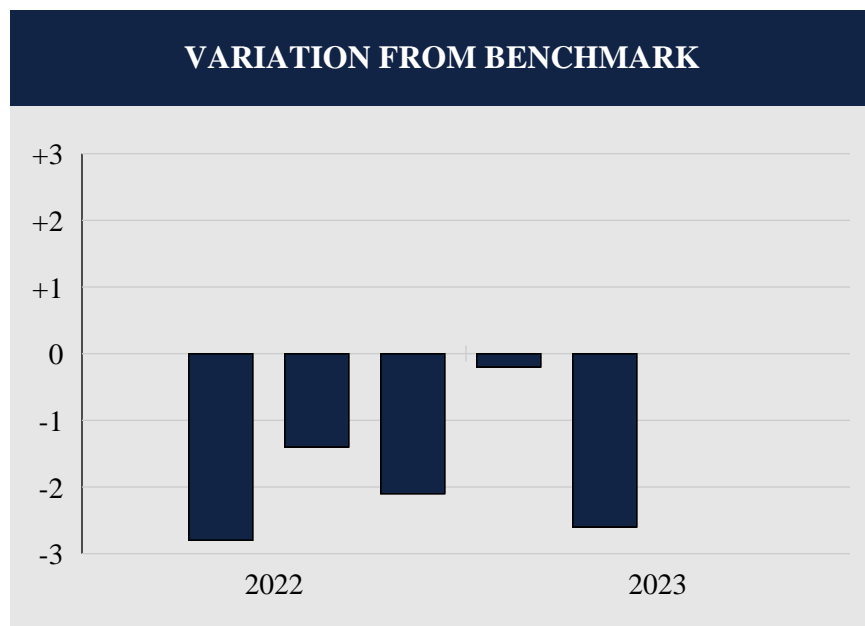
\* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	10.2	25.8	25.9	19.7	----	----
(RANK)	(63)	(48)	(74)	(76)	----	----
5TH %ILE	15.9	36.1	38.1	33.5	15.6	16.5
25TH %ILE	13.4	29.8	32.9	28.1	13.5	14.3
MEDIAN	11.5	25.3	29.2	24.6	11.6	13.2
75TH %ILE	8.6	18.5	25.7	19.7	8.9	11.5
95TH %ILE	5.0	8.4	17.6	12.5	5.4	8.6
<b>Russ 1000G</b>	<b>12.8</b>	<b>29.0</b>	<b>31.9</b>	<b>27.1</b>	<b>13.7</b>	<b>15.1</b>

Large Cap Growth Universe

### TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

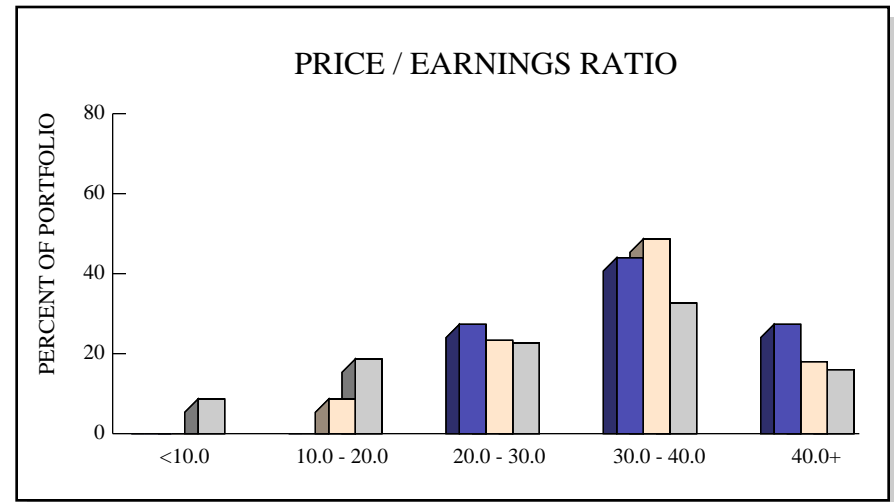
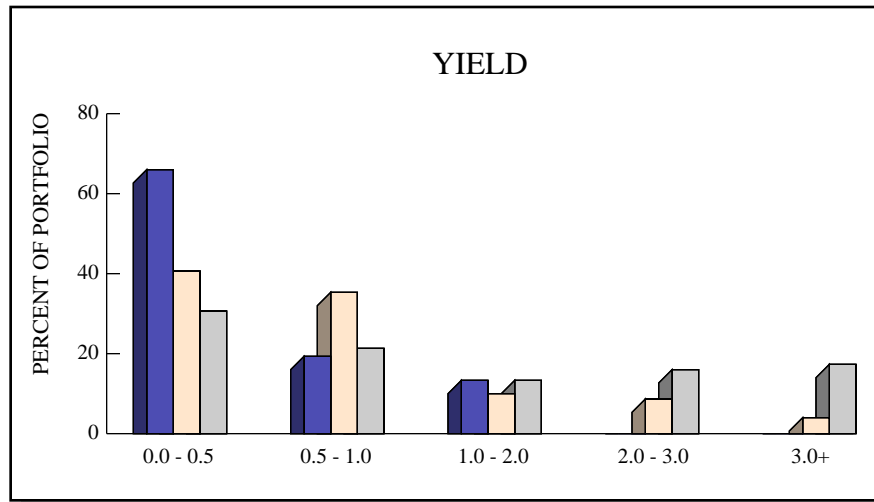
COMPARATIVE BENCHMARK: RUSSELL 1000 GROWTH



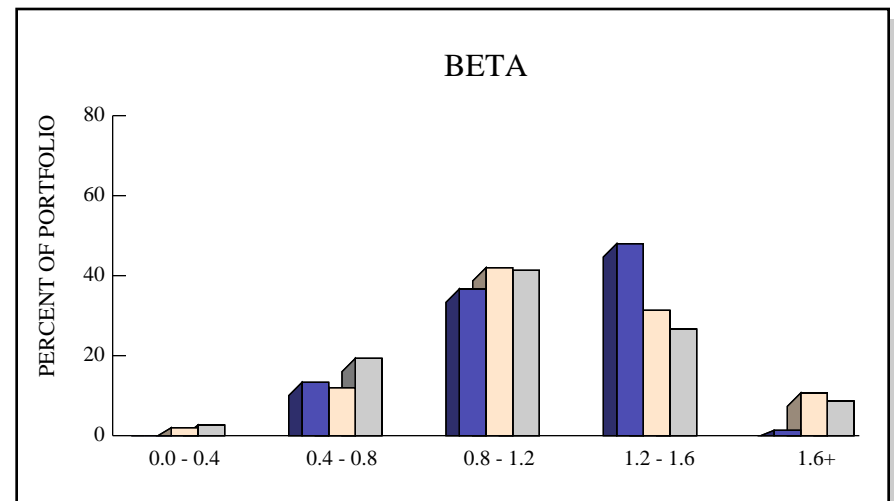
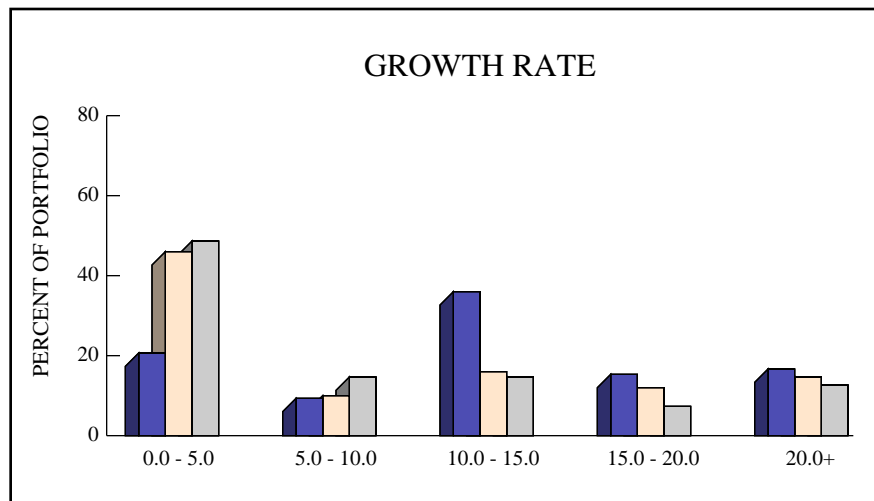
RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
6/22	-23.7	-20.9	-2.8
9/22	-5.0	-3.6	-1.4
12/22	0.1	2.2	-2.1
3/23	14.2	14.4	-0.2
6/23	10.2	12.8	-2.6

<b>Total Quarters Observed</b>	<b>5</b>
<b>Quarters At or Above the Benchmark</b>	<b>0</b>
<b>Quarters Below the Benchmark</b>	<b>5</b>
<b>Batting Average</b>	<b>.000</b>

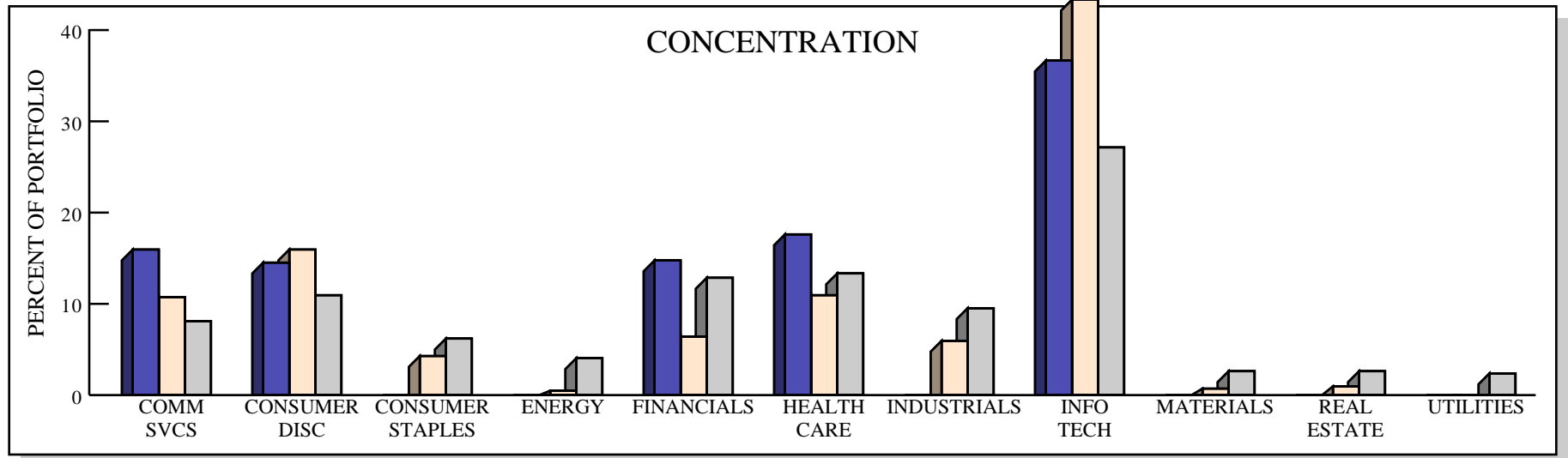
**STOCK CHARACTERISTICS**



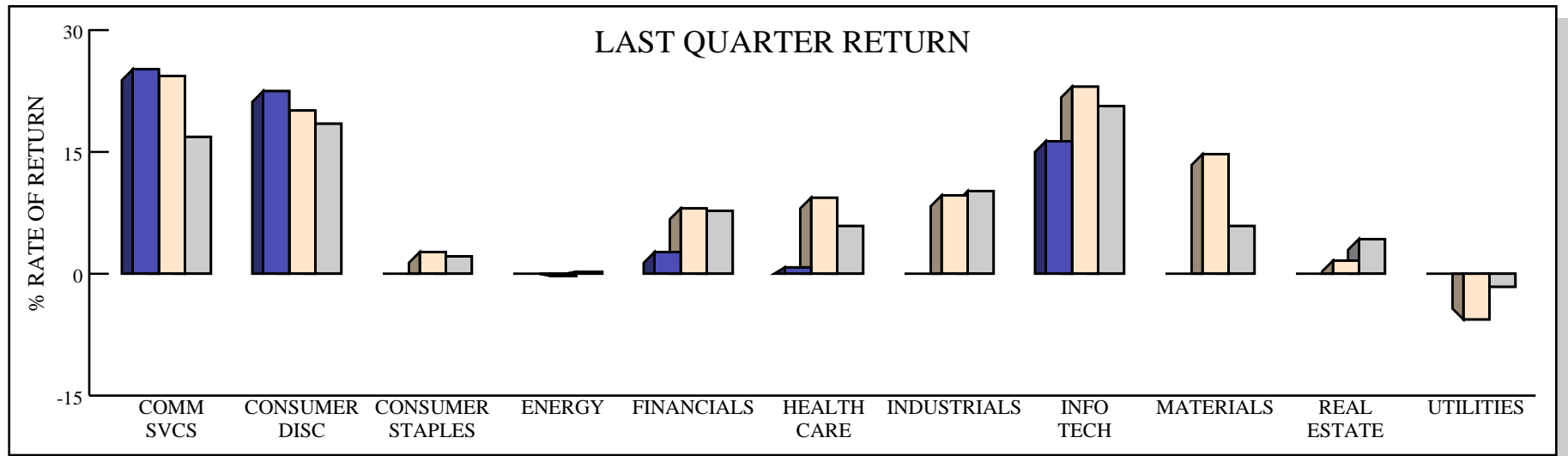
	# HOLDINGS	YIELD	GROWTH	P/E	BETA
<span style="color: blue;">■</span> PORTFOLIO	22	0.4%	12.5%	37.7	1.12
<span style="color: orange;">■</span> RUSSELL 1000G	443	0.8%	9.0%	36.5	1.14
<span style="color: gray;">■</span> RUSSELL 1000	1,006	1.5%	5.6%	31.4	1.07



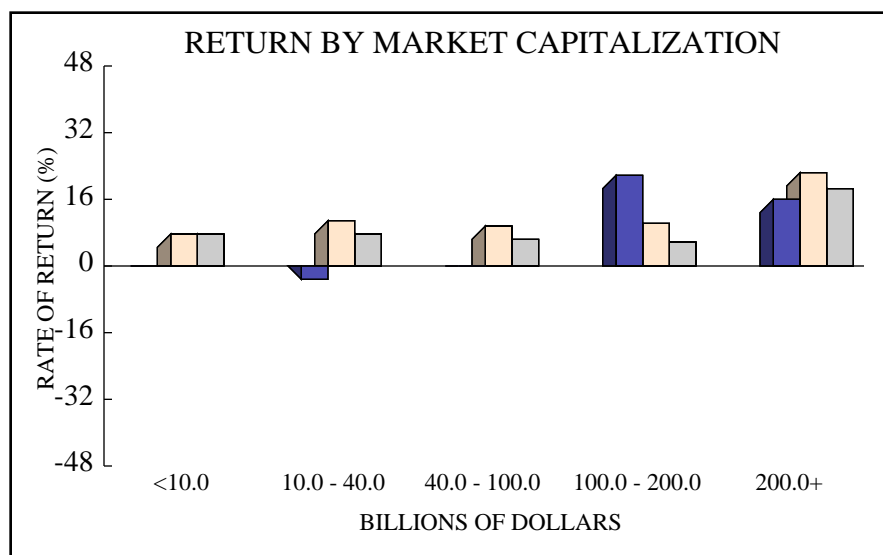
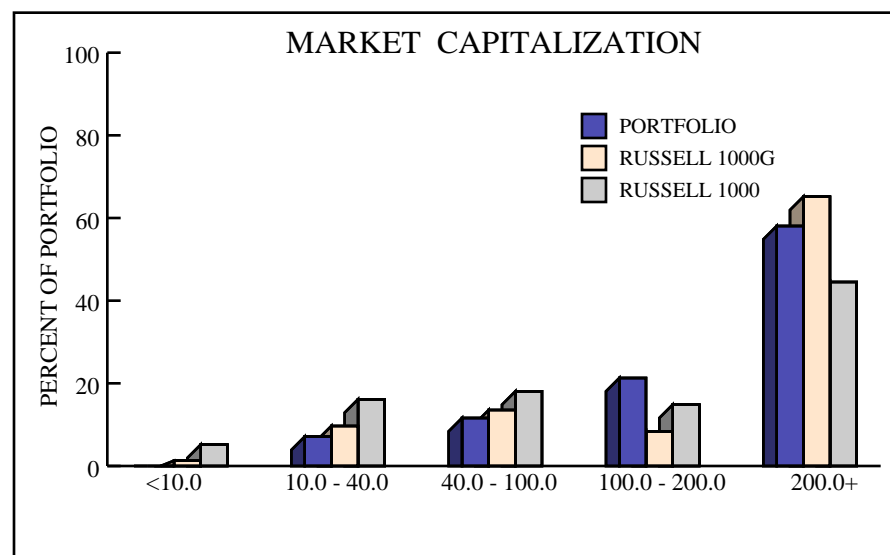
**STOCK INDUSTRY ANALYSIS**



■ PORTFOLIO     
 ■ RUSSELL 1000G     
 ■ RUSSELL 1000



**TOP TEN HOLDINGS**



**TOP TEN EQUITY HOLDINGS**

RANK	NAME	VALUE	% EQUITY	RETURN	INDUSTRY SECTOR	MKT CAP
1	AMAZON.COM INC	\$ 6,187,277	11.93%	27.8%	Consumer Discretionary	\$ 1337.5 B
2	NETFLIX INC	4,393,888	8.47%	30.2%	Communication Services	195.8 B
3	ALPHABET INC	3,641,197	7.02%	19.4%	Communication Services	710.6 B
4	SERVICENOW INC	3,352,713	6.46%	27.8%	Information Technology	114.5 B
5	MICROSOFT CORP	3,185,752	6.14%	20.2%	Information Technology	2532.1 B
6	ADOBE INC	3,039,073	5.86%	28.0%	Information Technology	222.9 B
7	MASTERCARD INC	2,674,833	5.16%	9.7%	Financials	372.7 B
8	VISA INC	2,515,388	4.85%	7.0%	Financials	486.6 B
9	SALESFORCE INC	2,399,491	4.63%	7.5%	Information Technology	205.8 B
10	PAYPAL HOLDINGS INC	2,150,174	4.15%	-10.3%	Financials	74.5 B



XYZ DEFINED BENEFIT PLAN  
BOND MANAGER 3  
PERFORMANCE REVIEW  
JUNE 2023

## INVESTMENT RETURN

On June 30th, 2023, the XYZ Defined Benefit Plan's Bond Manager 3 portfolio was valued at \$33,189,245, a decrease of \$244,795 from the March ending value of \$33,434,040. Last quarter, the account recorded total net withdrawals of \$27,776 in addition to \$217,019 in net investment losses. Because there were no income receipts during the second quarter, the portfolio's net investment losses were entirely made up of capital losses (realized and unrealized).

## RELATIVE PERFORMANCE

### **Total Fund**

*The Blended Fixed Income Index is comprised of 50% Barclays Gov/Credit and 50% Intermediate Gov/Credit.*

During the second quarter, this portfolio declined by 0.6%, which was 0.2% above the Bloomberg Aggregate Index's return of -0.8% and ranked in the 48th percentile of the Core Fixed Income universe. Over the trailing twelve-month period, this portfolio returned 1.3%, which was 2.2% above the benchmark's -0.9% return, and ranked in the 6th percentile. Since June 2018, the portfolio returned 2.5% per annum and ranked in the 6th percentile. For comparison, the Bloomberg Aggregate Index returned an annualized 0.8% over the same period.

## BOND ANALYSIS

At the end of the quarter, approximately 25% of the total bond portfolio was comprised of USG quality securities. The remainder of the portfolio consisted of corporate securities, rated AAA through less than BBB, giving the portfolio an overall average quality rating of AA-A. The average maturity of the portfolio was 7.37 years, less than the Bloomberg Barclays Aggregate Index's 8.60-year maturity. The average coupon was 3.24%.

## INVESTMENT RETURN

Initial Investment	\$	24,000,000
Cash Flow	\$	5,312,331
Investment Return	\$	<u>3,876,914</u>
Ending Value	\$	<u><u>33,189,245</u></u>

**EXECUTIVE SUMMARY**

**PERFORMANCE SUMMARY**

	Quarter	FYTD	1 Year	3 Year	5 Year
<b>Total Portfolio - Gross</b>	-0.6	4.8	1.3	-1.1	2.5
<i>CORE FIXED INCOME RANK</i>	(48)	(23)	( 6)	( 6)	( 6)
<b>Total Portfolio - Net</b>	-0.7	4.6	0.9	-1.5	2.2
Aggregate Index	-0.8	4.0	-0.9	-4.0	0.8
<b>Fixed Income - Gross</b>	-0.6	4.8	1.3	-1.1	2.5
<i>CORE FIXED INCOME RANK</i>	(48)	(23)	( 6)	( 6)	( 6)
Aggregate Index	-0.8	4.0	-0.9	-4.0	0.8

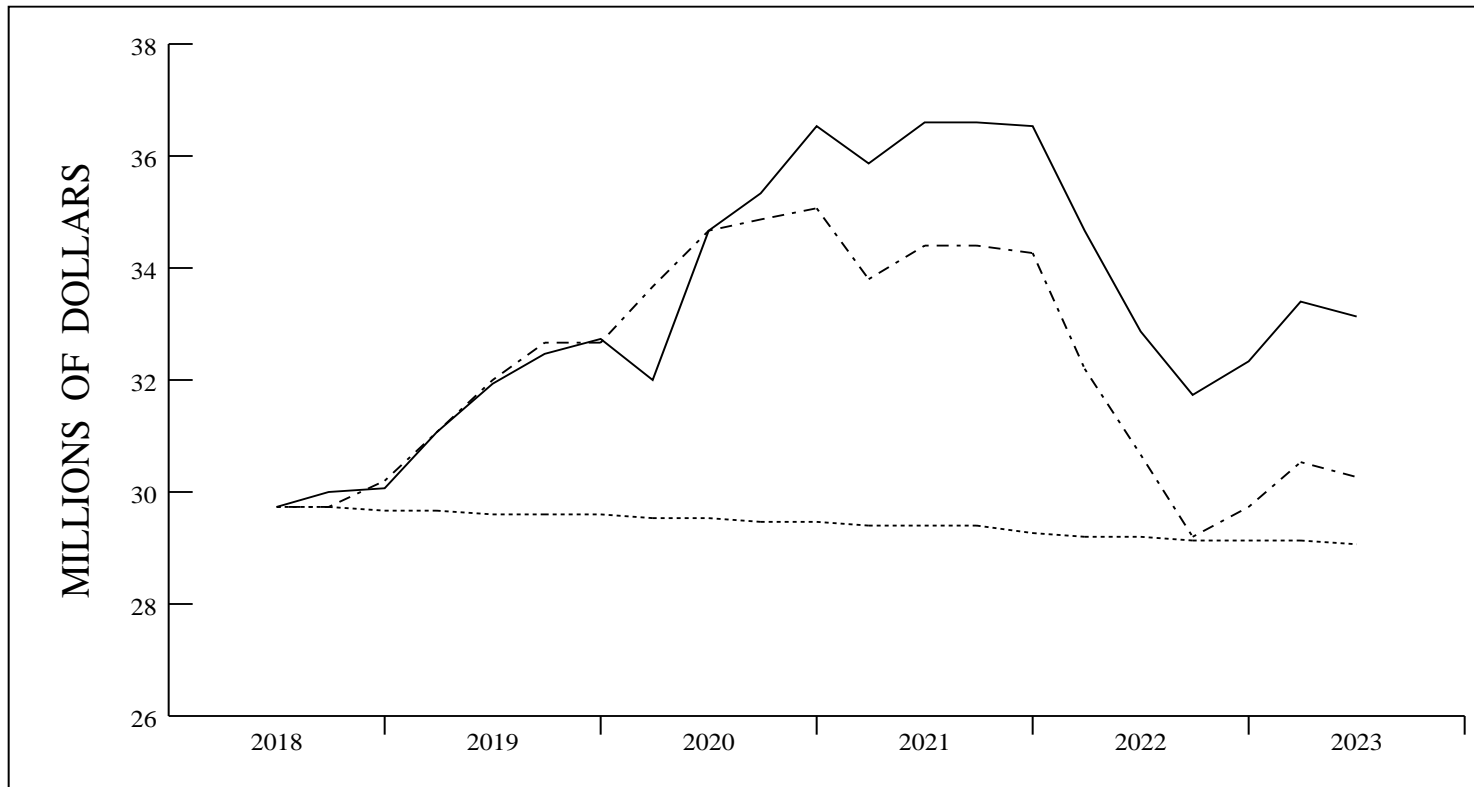
**ASSET ALLOCATION**

Fixed Income	100.0%	\$ 33,189,245
Total Portfolio	100.0%	\$ 33,189,245

**INVESTMENT RETURN**

Market Value 3/2023	\$ 33,434,040
Contribs / Withdrawals	- 27,776
Income	0
Capital Gains / Losses	-217,019
Market Value 6/2023	\$ 33,189,245

**INVESTMENT GROWTH**

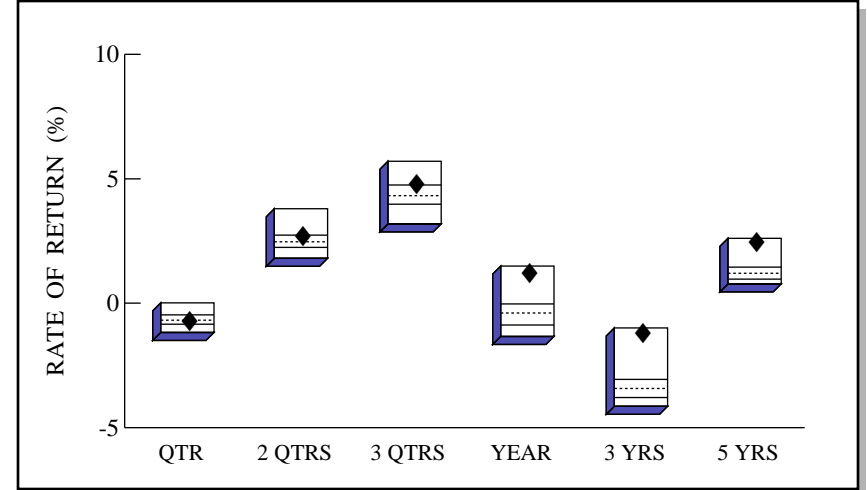
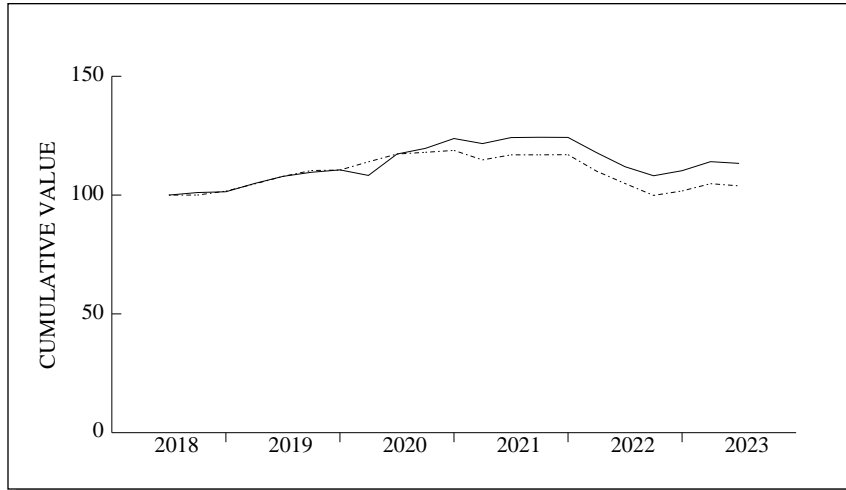


— ACTUAL RETURN  
 - - - AGGREGATE INDEX  
 ..... 0.0%

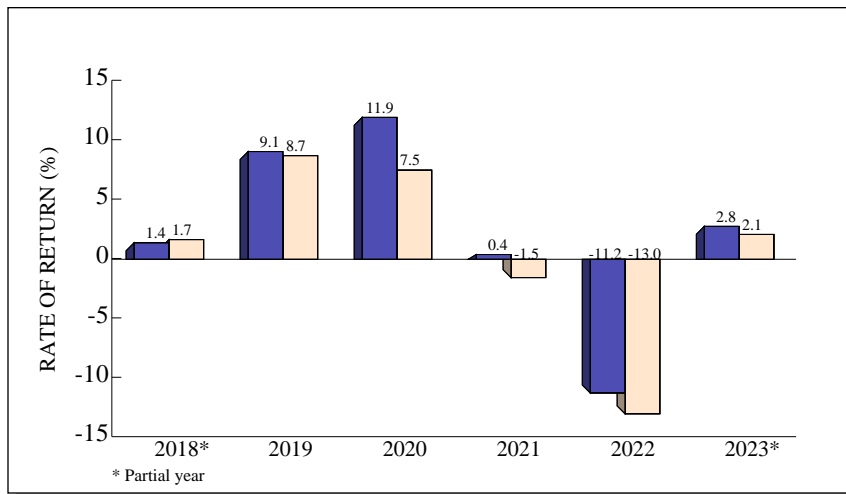
VALUE ASSUMING  
 AGG \$ 30,312,338

	LAST QUARTER	FIVE YEARS
BEGINNING VALUE	\$ 33,434,040	\$ 29,770,367
NET CONTRIBUTIONS	- 27,776	-656,833
INVESTMENT RETURN	-217,019	4,075,711
ENDING VALUE	\$ 33,189,245	\$ 33,189,245
INCOME	0	0
CAPITAL GAINS (LOSSES)	-217,019	4,075,711
INVESTMENT RETURN	-217,019	4,075,711

**TOTAL RETURN COMPARISONS**



Core Fixed Income Universe



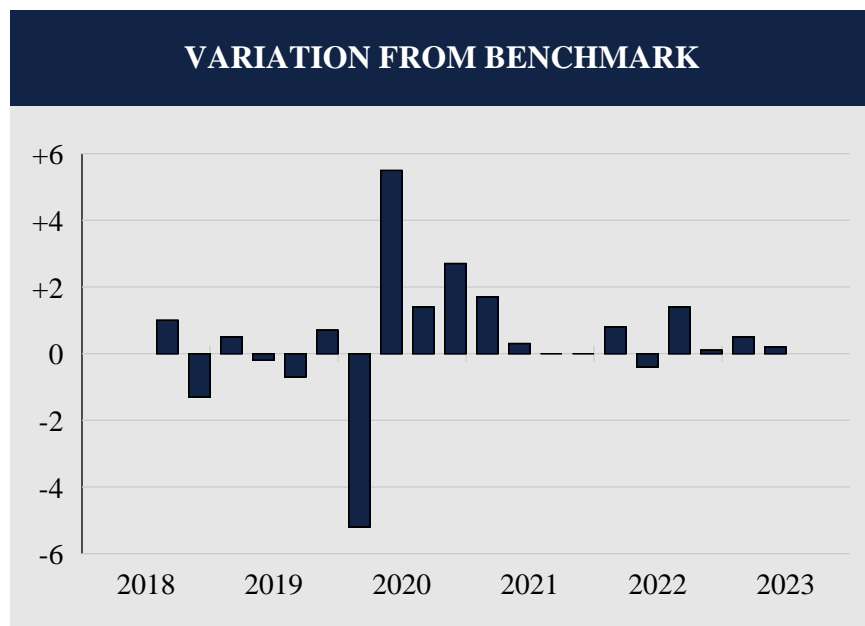
\* Partial year

	QTR	2 QTRS	3 QTRS	YEAR	-----ANNUALIZED-----	
					3 YRS	5 YRS
RETURN	-0.6	2.8	4.8	1.3	-1.1	2.5
(RANK)	(48)	(24)	(23)	(6)	(6)	(6)
5TH %ILE	0.0	3.8	5.7	1.5	-1.0	2.6
25TH %ILE	-0.5	2.7	4.8	0.0	-3.1	1.5
MEDIAN	-0.7	2.5	4.3	-0.4	-3.4	1.2
75TH %ILE	-0.8	2.2	4.0	-0.9	-3.8	1.0
95TH %ILE	-1.2	1.8	3.2	-1.3	-4.1	0.8
<b>Agg</b>	<b>-0.8</b>	<b>2.1</b>	<b>4.0</b>	<b>-0.9</b>	<b>-4.0</b>	<b>0.8</b>

Core Fixed Income Universe

### TOTAL PORTFOLIO QUARTERLY PERFORMANCE SUMMARY

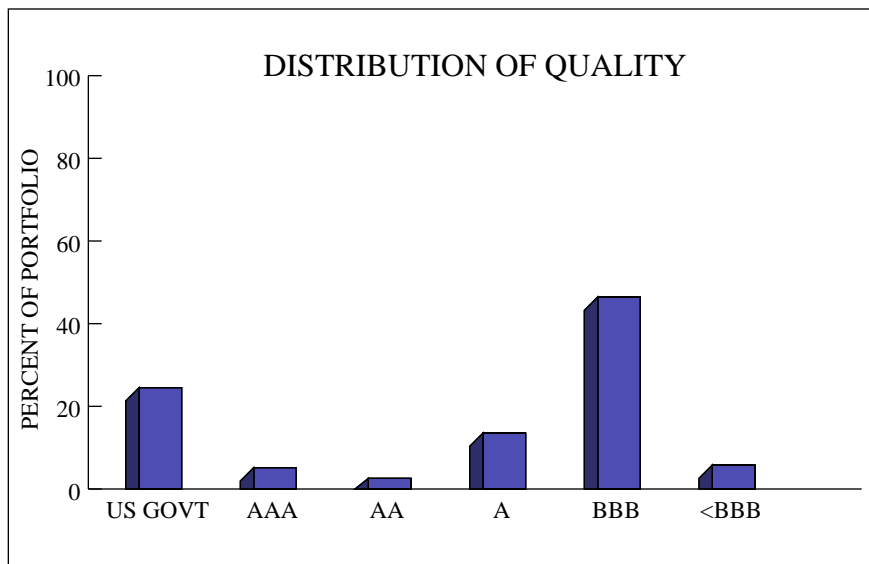
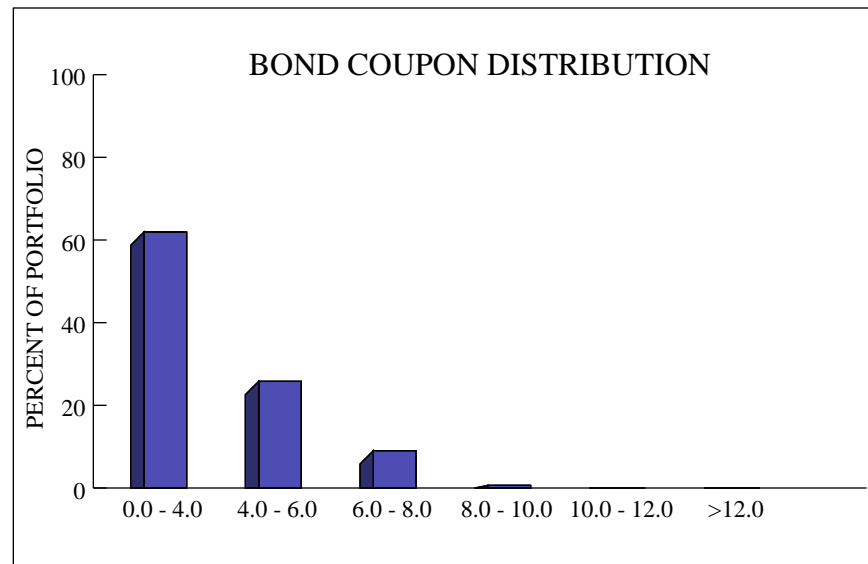
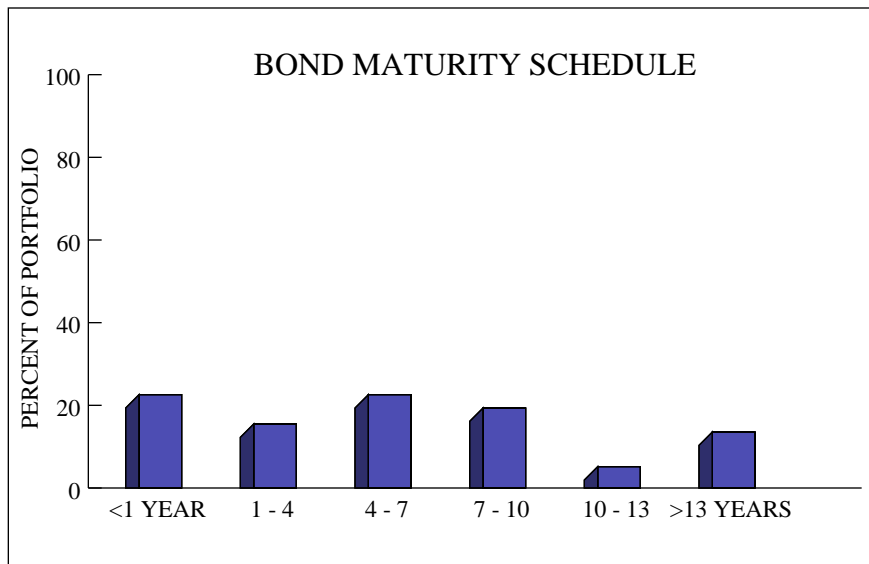
COMPARATIVE BENCHMARK: BLOOMBERG AGGREGATE INDEX



RATES OF RETURN			
Date	Portfolio	Benchmark	Difference
9/18	1.0	0.0	1.0
12/18	0.3	1.6	-1.3
3/19	3.4	2.9	0.5
6/19	2.9	3.1	-0.2
9/19	1.6	2.3	-0.7
12/19	0.9	0.2	0.7
3/20	-2.1	3.1	-5.2
6/20	8.4	2.9	5.5
9/20	2.0	0.6	1.4
12/20	3.4	0.7	2.7
3/21	-1.7	-3.4	1.7
6/21	2.1	1.8	0.3
9/21	0.1	0.1	0.0
12/21	0.0	0.0	0.0
3/22	-5.1	-5.9	0.8
6/22	-5.1	-4.7	-0.4
9/22	-3.4	-4.8	1.4
12/22	2.0	1.9	0.1
3/23	3.5	3.0	0.5
6/23	-0.6	-0.8	0.2

<b>Total Quarters Observed</b>	<b>20</b>
<b>Quarters At or Above the Benchmark</b>	<b>15</b>
<b>Quarters Below the Benchmark</b>	<b>5</b>
<b>Batting Average</b>	<b>.750</b>

**BOND CHARACTERISTICS**



	<b>PORTFOLIO</b>	<b>AGGREGATE INDEX</b>
No. of Securities	763	13,362
Duration	4.25	6.31
YTM	6.37	4.81
Average Coupon	3.24	2.88
Avg Maturity / WAL	7.37	8.60
Average Quality	AA-A	AA

## Item 1 – Cover Page

# DAHAB ASSOCIATES, INC.

423 SOUTH COUNTRY ROAD  
BAY SHORE, NY 11706  
(631) 665-6181  
<https://www.dahab.com>

Date of this Brochure: 03/29/2023

This Brochure provides information about the qualifications and business practices of Dahab Associates, Inc. (“DAI”). If you have any questions about the contents of this Brochure, please contact us at (631) 665-6181 and/or [suzanne@dahab.com](mailto:suzanne@dahab.com). The information in this Brochure has not been approved or verified by the United States Securities and Exchange Commission or by any state securities authority.

Dahab Associates, Inc. is a registered investment adviser. Registration of an Investment Adviser does not imply any level of skill or training. The oral and written communications of an Adviser provide you with information about which you determine to hire or retain an Adviser.

In the past we have offered or delivered information about our qualifications and business practices to clients on at least an annual basis. Pursuant to SEC Rules, we will ensure that you receive a summary of any material changes to this and subsequent Brochures **within 120 days of the close of our business’ fiscal year**. We may further provide other ongoing disclosure information about material changes as necessary.

Currently, our Brochure may be requested by contacting Suzanne Houlihan, Chief Compliance Officer at (631) 665-6181 or [suzanne@dahab.com](mailto:suzanne@dahab.com). Our Brochure is also available on our website <https://www.dahab.com>, free of charge. We will further provide you with a new Brochure as necessary based on changes or new information, at any time, without charge.

Additional information about Dahab Associates, Inc. also is available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov). The SEC’s website also provides information about any persons affiliated with DAI who are registered, or are required to be registered, as investment adviser representatives of DAI.



## Item 2 – Material Changes

There have been no material changes since our last annual brochure dated **March 30, 2022**.

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## Item 4 – Advisory Business

### A. Describe your advisory firm, including how long you have been in business. Identify your principal owner(s).

Dahab Associates, Inc. was founded in January 1986 by Richard E. Dahab, CFA, to provide investment consulting services to public pension plans, jointly trustee and private corporation pension plans, endowments, foundations, and family trusts. Dahab Associates has been providing investment consulting services on an ongoing basis to all retainer clients for more than 37 years.

We are an independent investment consulting firm categorized as a private corporation under the laws of New York State. DAI is not an affiliate of, nor a subsidiary of another company. The firm is completely independent and is not affiliated with any investment manager or broker dealer.

In September 2005, Mr. Dahab established an equity ownership program offering in aggregate a maximum of 30% of the firm's total equity. Professionals were invited to participate in the program. Currently, Richard Dahab, CFA, Chairman owns more than 85% of the firm with employees owning the remaining equity.

### B. Describe the types of advisory services you offer. If you hold yourself out as specializing in a particular type of advisory service, such as financial planning, quantitative analysis, or market timing, explain the nature of that service in greater detail. If you provide investment advice only with respect to limited types of investments, explain the type of investment advice you offer, and disclose that your advice is limited to those types of investments.

Dahab Associates provides a full complement of investment consulting services and special research or projects on an on-going basis. Our services include but are not limited to the following:

- Investment policy & guideline statement development & review;
- Asset allocation studies & analysis;
- Investment manager search assignments & evaluation;
- Performance evaluation & reporting;
- Quarterly or monthly performance reviews;
- Trustee education;
- Research.

#### Investment policy & guideline statement development & review:

With new client relationships, we need to familiarize ourselves with existing policies and procedures. This requires a review of the Fund's Investment Policies and Procedures and, if necessary, making reasoned recommendations for amendments.

If a policy and guidelines statement does not exist, we will write a draft based on our modeling work and discussions with the Board. Depending on the Fund's level of complexity, this task generally takes two weeks to complete.

Upon completion, investment managers will receive a copy of the statement that includes clearly defined and specific target objectives for each manager. We strictly enforce compliance with these objectives.

On a continuous basis, we will reevaluate the assumptions and conditions and will propose written alternatives to the formal plan including our rationale for such recommendations.

Asset allocation studies and analysis:

An asset allocation study is conducted to develop an understanding of the interaction between risk and return. Our proprietary asset allocation software can include an unlimited number of asset classes to generate hundreds of thousands of different investment scenarios. These scenarios are then ranked by probability of reaching the actuarial rate of return at the 50%, 75% and 95% confidence levels.

We will identify possible pitfalls and limitations to different allocation policies. The trade-offs between different risk/return levels are then a subjective decision within the context of the governing legislation, funding options, and the burden of varying contribution rates sustainable by the Fund. Upon receiving the most recent actuarial report, an asset allocation study usually requires about six weeks to complete.

Investment manager search assignments and evaluation:

Dahab Associates specializes in independent manager search services. With no ties to any other business entity, we are able to maintain complete objectivity. Our focus is to provide a thorough, unbiased assessment of manager performance. We regularly interview managers and maintain ongoing discussions with the investment management community in order to remain keenly aware of changes within these organizations that can have future impact.

Dahab Associates does not work from a list of preferred managers when conducting manager searches. Every search assignment begins with screening an open database for candidates that match the criteria requested by the client.

We post all our clients' manager search request for proposals (RFPs) on our website. They are free for all managers to download and submit responses. This open RFP process allows us to help our clients identify promising investment managers who have not yet reached the radar screen of other consultants. Following screening, detailed analysis and comparisons are generated to evaluate potential candidates.

Performance evaluation and reporting:

On a quarterly basis, Dahab Associates will provide the Board with an executive summary and comprehensive investment performance reports. Both the summary and comprehensive report will contain performance analysis and total rates of return (gross and net-of-fees) for the Fund and each manager by asset class, management style within asset class, and individually managed portfolio. The Board will be provided quarterly with an ongoing five-year and three-year history of investment performance numbers by individual manager and for the total Fund.

Detailed client reports are generated on a quarterly basis. Dahab Associates receives the universe data with which to compare investment performance approximately three to four weeks after each calendar quarter. The monthly custodian statements usually arrive within four weeks after each month end. It will take approximately six weeks after the end of each calendar quarter to prepare and deliver the performance evaluation report.

Quarterly or monthly performance reviews:

Dahab Associates customarily attends four to six meetings per year to summarize individual money managers' performance and compare it to Board expectations as well as address any questions or concerns of the Board. We will attend all meetings requested by the client assuming a reasonable amount of advance notice is given, allowing time to arrange or rearrange schedules and secure travel arrangements.

Trustee education:

We provide a variety of educational opportunities for clients. We provide on-site training and educational programs for clients. We conduct our own research, put together programs, and prepare attendee materials. Typically, these sessions have been to provide broad fundamentals of investing to new Trustees.

Dahab Associates offers six education modules encompassing twenty topics that provide comprehensive Board education. We also provide contemporary educational topics in response to the changing investment environment; these address more current topics that affect our clients' pension funds. We will prepare a presentation on any relevant topic requested by our client.

Research:

Dahab Associates offers in-depth research capabilities combined with a staff of experienced and seasoned professionals. We have access to an extensive array of resources including an in-house library, proprietary databases, subscription databases, web-based data, and a vast network of professional contacts from which to draw. We also subscribe to several publications, participate in conference calls, and attend conferences to keep us up to date on industry and market trends.

Our research staff continuously investigates new investment products, firms, strategies as an ongoing qualitative and quantitative function. We are pro-active in identifying, evaluating, and communicating new investment opportunities and maintain an open-door policy for investment managers.

**C. Explain whether (and, if so, how) you tailor your advisory services to the individual needs of *clients*. Explain whether *clients* may impose restrictions on investing in certain securities or types of securities.**

Dahab Associates tailors our advisory services to the individual needs of our clients in every service that we provide. Some of the most basic factors that we consider when customizing our services from client to client are the client's funding status, investment needs, sophistication, liabilities, and current structure. We use these variables to edit or create the investment policy and guidelines, to perform asset allocation studies, to conduct manager searches and all our reports are customized to address the clients' needs and requests. We are very flexible when it comes to the ability to customize our reports because the analysis and preparation for all the services that we provide is performed in-house, allowing us to customize reports upon request at no additional fee. Changes can be requested at any time; however, we require a reasonable amount of time to implement the changes prior to generating the report.

**D. If you participate in *wrap fee programs* by providing portfolio management services, (1) describe the differences, if any, between how you manage wrap fee accounts and how you manage other accounts, and (2) explain that you receive a portion of the wrap fee for your services.**

Dahab Associates does not participate in wrap fee programs.

**E. If you manage *client* assets, disclose the amount of *client* assets you manage on a *discretionary basis* and the amount of *client* assets you manage on a *non-discretionary basis*. Disclose the date "as of" which you calculated the amounts.**

Dahab Associates does not manage client assets.

## Item 5 – Fees and Compensation

### A. Describe how you are compensated for your advisory services. Provide your fee schedule. Disclose whether the fees are negotiable.

All our firm's revenue is generated from the provision of investment consulting services. Dahab Associates is not affiliated with any investment manager, brokerage firm, or any other third-party service provider. As a matter of policy and practice, DAI does not have any formal or informal arrangements or commitments to utilize research, research-related products or other services obtained from broker-dealers, or third parties, on a soft dollar commission basis.

DAI works on a full-service retainer basis for the majority of its client relationships. The all-inclusive full-service retainer fee includes, but is not limited to the following services:

- Investment policy and guideline statement formulation and review
- Asset allocation studies
- All manager search assignments
- Performance measurement and analysis
- Quarterly Trustee meetings
- Educational seminars
- All consulting time and support time
- Travel and expenses

Dahab Associates' fees are based on factors such as assets under advisement, scope of services to be provided, and complexity of the client relationship. We generally require a minimum annual fee of \$32,000. We also offer services on a per-project or per-assignment basis. All fees are subject to negotiation and fixed fees may be employed where required by law.

DAI is paid in hard dollars only. Clients that have employed us as their investment consultant for a period of five years or more may be subject to previous fee schedules.

### B. Describe whether you deduct fees from *clients'* assets or bill *clients* for fees incurred. If *clients* may select either method, disclose this fact. Explain how often you bill *clients* or deduct your fees.

Dahab Associates does not have discretion or custody of client assets. DAI bills clients for fees incurred on a quarterly basis if such an arrangement has been made.

- C. Describe any other types of fees or expenses *clients* may pay in connection with your advisory services, such as custodian fees or mutual fund expenses. Disclose that *clients* will incur brokerage and other transaction costs, and direct *clients* to the section(s) of your *brochure* that discuss brokerage.**

Dahab Associates' clients do not pay any other types of fees or expenses in connection with our advisory services.

- D. If your *clients* either may or must pay your fees in advance, disclose this fact. Explain how a *client* may obtain a refund of a pre-paid fee if the advisory contract is terminated before the end of the billing period. Explain how you will determine the amount of the refund.**

The specific manner in which fees are charged by Dahab Associates is established in a client's written agreement with the firm. DAI will generally bill its fees on a quarterly basis. DAI will be compensated either through direct cash payment from the clients or by payment from a registered broker/dealer based on a fully disclosed, written arrangement between the client and the broker/dealer. Compensation is payable in advance or in arrears subject to negotiation. If payment is made in advance, the client may terminate the agreement with DAI by written notice and receive a pro rata refund based on work in progress and/or work completed. Any unpaid fees will be due and payable.

- E. If you or any of your *supervised persons* accepts compensation for the sale of securities or other investment products, including asset-based sales charges or service fees from the sale of mutual funds, disclose this fact and respond to Items 5.E.1, 5.E.2, 5.E.3 and 5.E.4.**

Dahab Associates does not sell securities or other investment products.



## Item 6 – Performance-Based Fees and Side-By-Side Management

If you or any of your *supervised persons* accepts *performance-based fees* – that is, fees based on a share of capital gains on or capital appreciation of the assets of a *client* (such as a *client* that is a hedge fund or other pooled investment vehicle) – disclose this fact. If you or any of your *supervised persons* manage both accounts that are charged a *performance-based fee* and accounts that are charged another type of fee, such as an hourly or flat fee or an asset-based fee, disclose this fact. Explain the conflicts of interest that you or your *supervised persons* face by managing these accounts at the same time, including that you or your *supervised persons* have an incentive to favor accounts for which you or your *supervised persons* receive a *performance-based fee*, and describe generally how you address these conflicts.

Dahab Associates does not charge any performance-based fees (fees based on a share of capital gains on or capital appreciation of the assets of a client).

## Item 7 – Types of Clients

Describe the types of *clients* to whom you generally provide investment advice, such as individuals, trusts, investment companies, or pension plans. If you have any requirements for opening or maintaining an account, such as a minimum account size, disclose the requirements.

Dahab Associates provides investment consulting services to public pension plans, jointly trustee and private corporation pension plans, foundations, endowments, and family trusts.

## Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss

- A. Describe the methods of analysis and investment strategies you use in formulating investment advice or managing assets. Explain that investing in securities involves risk of loss that *clients* should be prepared to bear.

Dahab Associates offers advice regarding the asset allocation, types of investment strategies, and the investment managers that use them to implement an investment program. DAI does not manage any money. The investment managers will perform the actual security analysis.

- B. For each significant investment strategy or method of analysis you use, explain the material risks involved. If the method of analysis or strategy involves significant or unusual risks, discuss these risks in detail. If your primary strategy involves frequent trading of securities, explain how frequent trading can affect investment performance, particularly through increased brokerage and other transaction costs and taxes.**

Risk can be evaluated in many ways. There are various types of investment risk including market, inflation, business, credit, maturity, legislative, and global risk. Investing in securities involves risk of loss that clients should be prepared to bear.

Investment risk is dealt with in our asset allocation model. Our proprietary asset allocation software has proven to be an effective way for clients to understand how to balance risk and return. The primary risk associated with asset allocation recommendations is that past returns cannot predict future returns.

We add the greatest value to our clients by providing steady guidance in the area of asset allocation. An estimated 90% of investment performance variability is due to the asset mix. Most clients need information to make the right decisions in this area in order to maintain a "steady course" when bombarded with advice from the media and other sources. We are very proactive in introducing our clients to ways to improve performance and gain additional diversification.

After working with the client to form investment guidelines and an asset allocation, we evaluate performance measurement. It is this evaluation that allows us to monitor and control investment risk. We continually monitor the guidelines that have been established and we take action when necessary to remain within those guidelines.

- C. If you recommend primarily a particular type of security, explain the material risks involved. If the type of security involves significant or unusual risks, discuss these risks in detail.**

Not applicable.

## **Item 9 – Disciplinary Information**

**If there are legal or disciplinary events that are material to a client’s or prospective client’s evaluation of your advisory business or the integrity of your management, disclose all material facts regarding those events.**

Registered investment advisers are required to disclose all material facts regarding any legal or disciplinary events that would be material to your evaluation of Dahab Associates

or the integrity of the firm’s management. Dahab Associates has no information applicable to this Item.

### Item 10 – Other Financial Industry Activities and Affiliations

Not applicable. Dahab Associates and its management persons do not participate in any other financial industry activities nor do we have any affiliations.

### Item 11 – Code of Ethics

- A. If you are an SEC-registered adviser, briefly describe your code of ethics adopted pursuant to SEC rule 204A-1 or similar state rules. Explain that you will provide a copy of your code of ethics to any *client* or prospective *client* upon request.**

Dahab Associates’ Code of Ethics (“Code”) is designed to comply with Rule 204A-1 under the Investment Advisers Act of 1940 (“Advisers Act”).

The Code establishes rules of conduct for all employees of DAI and is designed to among other things govern personal securities trading activities in the accounts of employees. The Code is based upon the principle that DAI and its employees owe a fiduciary duty to DAI’s clients to conduct their affairs, including their personal securities transactions, in such a manner as to avoid (i) serving their own personal interests ahead of clients, (ii) taking inappropriate advantage of their position with the firm and (iii) any actual or potential conflicts of interest or any abuse of their position of trust and responsibility.

The Code is designed to ensure that the high ethical standards long maintained by DAI continue to be applied. The purpose of the Code is to preclude activities which may lead to or give the appearance of conflicts of interest, insider trading and other forms of prohibited or unethical business conduct.

Pursuant to Section 206 of the Advisers Act, both DAI and its employees are prohibited from engaging in fraudulent, deceptive, or manipulative conduct. Compliance with this section involves more than acting with honesty and good faith alone. It means that DAI has an affirmative duty of utmost good faith to act solely in the best interest of its clients.

DAI and its employees are subject to the following specific fiduciary obligations when dealing with clients:

- The duty to have a reasonable, independent basis for the investment advice provided;

- The duty to ensure that investment advice is suitable to meeting the client's individual objectives, needs and circumstances; and
- A duty to be loyal to clients.

In meeting its fiduciary responsibilities to its clients, DAI expects every employee to demonstrate the highest standards of ethical conduct for continued employment with DAI. Strict compliance with the provisions of the Code shall be considered a basic condition of employment with DAI. The firm's reputation for fair and honest dealing with its clients has taken considerable time to build. This standing could be seriously damaged as the result of even a single securities transaction being considered questionable in light of the fiduciary duty owed to our clients. Employees are urged to seek the advice of the Chief Compliance Officer regarding any questions about the Code or the application of the Code to their individual circumstances. Employees should also understand that a material breach of the provisions of the Code may constitute grounds for disciplinary action, including termination of employment with DAI.

The provisions of the Code are not all-inclusive. Rather, they are intended as a guide for employees of DAI in their conduct. In those situations where an employee may be uncertain as to the intent or purpose of the Code, he/she is advised to consult with the Chief Compliance Officer. The Chief Compliance Officer may grant exceptions to certain provisions contained in the Code only in those situations when it is clear beyond dispute that the interests of our clients will not be adversely affected or compromised. All questions arising in connection with personal securities trading should be resolved in favor of the client even at the expense of the interests of employees.

The Chief Compliance Officer administers and enforces compliance with our Code.

Clients and prospective clients can obtain a copy of Dahab Associates' Code of Ethics by calling (631) 665-6181 or contacting Suzanne Houlihan at [suzanne@dahab.com](mailto:suzanne@dahab.com).

- B. If you or a *related person* recommends to *clients*, or buys or sells for *client* accounts, securities in which you or a *related person* has a material financial interest, describe your practice and discuss the conflicts of interest it presents. Describe generally how you address conflicts that arise.**

**Examples: (1) You or a *related person*, as principal, buys securities from (or sells securities to) your *clients*; (2) you or a *related person* acts as general partner in a partnership in which you solicit *client* investments; or (3) you or a *related person* acts as an investment adviser to an investment company that you recommend to *clients*.**

Not applicable.

- C. If you or a *related person* invests in the same securities (or related securities, *e.g.*, warrants, options or futures) that you or a *related person* recommends to *clients*, describe your practice and discuss the conflicts of interest this presents and generally how you address the conflicts that arise in connection with personal trading.**

Not applicable.

- D. If you or a *related person* recommends securities to *clients*, or buys or sells securities for *client* accounts, at or about the same time that you or a *related person* buys or sells the same securities for your own (or the *related person's* own) account, describe your practice and discuss the conflicts of interest it presents. Describe generally how you address conflicts that arise.**

Not applicable.

## Item 12 – Brokerage Practices

Dahab Associates is not a broker dealer.

## Item 13 – Review of Accounts

- A. Indicate whether you periodically review *client* accounts or financial plans. If you do, describe the frequency and nature of the review, and the titles of the *supervised persons* who conduct the review.**

Dahab Associates reviews client accounts on a regular, quarterly, semi-annual, or annual basis as established in advance with the client.

- B. If you review *client* accounts on other than a periodic basis, describe the factors that trigger a review.**

Not applicable.

- C. Describe the content and indicate the frequency of regular reports you provide to *clients* regarding their accounts. State whether these reports are written.**

Reviews may include calculations of rates of return, comparisons, and analyses utilizing both fundamental and modern portfolio theory of the individual and aggregate securities on a regular, quarterly, semi-annual, or annual basis as established in advance with the client. Performance review reports are written.

## Item 14 – *Client Referrals and Other Compensation*

- A. If someone who is not a *client* provides an economic benefit to you for providing investment advice or other advisory services to your *clients*, generally describe the arrangement, explain the conflicts of interest, and describe how you address the conflicts of interest. For purposes of this Item, economic benefits include any sales awards or other prizes.**

Not applicable. Dahab Associates does not have any arrangements where someone who is not a client provides an economic benefit to the firm for providing investment advice to our clients.

- B. If you or a *related person* directly or indirectly compensates any *person* who is not your *supervised person* for *client* referrals, describe the arrangement and the compensation.**

**Note: If you compensate any *person* for *client* referrals, you should consider whether SEC rule 206(4)-3 or similar state rules regarding solicitation arrangements and/or state rules requiring registration of *investment adviser representatives* apply.**

Not applicable. DAI does not directly or indirectly compensate anyone for client referrals.

## Item 15 – *Custody*

**If you have *custody* of *client* funds or securities and a qualified custodian sends quarterly, or more frequent, account statements directly to your *clients*, explain that *clients* will receive account statements from the broker-dealer, bank or other qualified custodian and that *clients* should carefully review those statements. If your *clients* also receive account statements from you, your explanation must include a statement urging *clients* to compare the account statements they receive from the qualified custodian with those they receive from you.**

Not applicable. Dahab Associates does not have custody of client funds or securities.

Clients should receive statements on at least a quarterly basis from the broker dealer, bank or other qualified custodian that holds and maintains the client's investment assets.

DAI urges clients to carefully review such statements and compare such official custodial records to the account reports that we may provide to you. Our reports may vary from custodial statements based on accounting procedures, reporting dates, or valuation methodologies of certain securities.

## Item 16 – Investment Discretion

**If you accept *discretionary authority* to manage securities accounts on behalf of *clients*, disclose this fact and describe any limitations *clients* may (or customarily do) place on this authority. Describe the procedures you follow before you assume this authority (e.g., execution of a power of attorney).**

Not applicable. Dahab Associates does not have discretionary authority over any client accounts.

## Item 17 – Voting *Client* Securities

- A. If you have, or will accept, authority to vote *client* securities, briefly describe your voting policies and procedures, including those adopted pursuant to SEC rule 206(4)-6. Describe whether (and, if so, how) your *clients* can direct your vote in a particular solicitation. Describe how you address conflicts of interest between you and your *clients* with respect to voting their securities. Describe how *clients* may obtain information from you about how you voted their securities. Explain to *clients* that they may obtain a copy of your proxy voting policies and procedures upon request.**

Not applicable. Dahab Associates does not have any authority to and does not vote proxies on behalf of advisory clients.

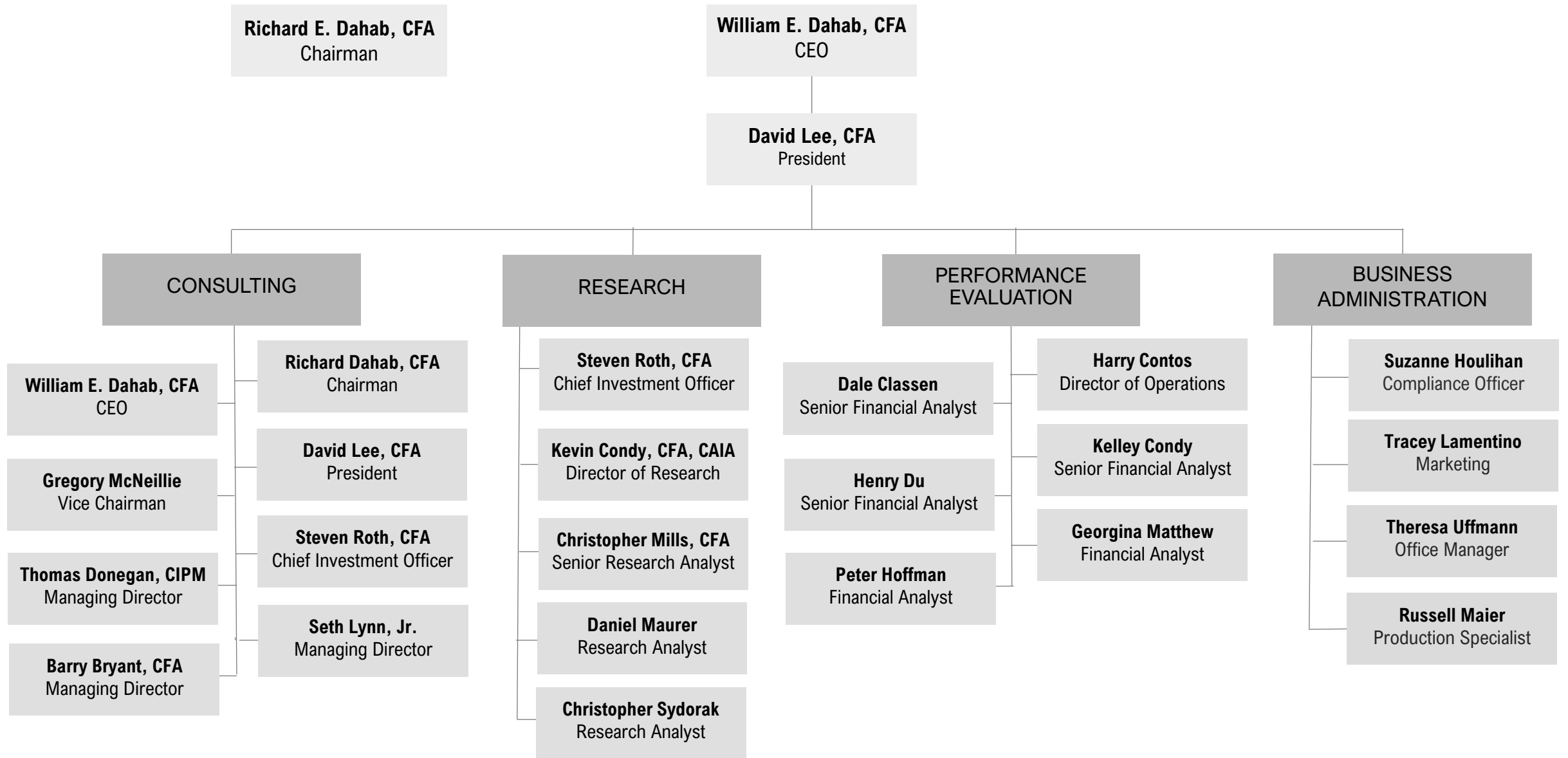
- B. If you do not have authority to vote *client* securities, disclose this fact. Explain whether *clients* will receive their proxies or other solicitations directly from their custodian or a transfer agent or from you, and discuss whether (and, if so, how) *clients* can contact you with questions about a particular solicitation.**

Clients retain the responsibility for receiving and voting proxies for any and all securities maintained in client portfolios. Clients should receive their proxies directly from their custodian. DAI may provide advice to clients regarding the clients' voting of proxies. Clients can contact us via phone or email if they have questions about a particular solicitation.

## Item 18 – Financial Information

Registered investment advisers are required in this Item to provide you with certain financial information or disclosures about DAI's financial condition. DAI has no financial commitment that impairs its ability to meet contractual and fiduciary commitments to clients and has not been the subject of a bankruptcy proceeding.

# Organizational Information for Dahab Associates, Inc





# DAHAB ASSOCIATES, INC.

## BIOGRAPHICAL INFORMATION

### CONSULTANTS

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**Richard E. Dahab, CFA**  
**Chairman**  
**Principal**

Richard E. Dahab, CFA, is the chairman of Dahab Associates. He has been an investment consultant for more than forty years. Prior to founding Dahab Associates in 1986, he was a vice president at Merrill Lynch running its investment consulting service in the Mid-Atlantic States and a principal at A.S. Hansen (now part of Mercer).

Rich earned an AB degree in astrophysics (cum laude) from Princeton University in 1973 and an MBA degree in finance from Fordham University in 1978. He received the designation of Chartered Financial Analyst (CFA) in 1981.

**William E. Dahab, CFA**  
**Chief Executive Officer**  
**Principal**

William E. Dahab, CFA, was named Chief Executive Officer of Dahab Associates in September 2022. He joined Dahab Associates as a member of the research team in 2009 and subsequently Director of Research. In 2017, he was made a managing director and field consultant.

Bill received his AB degree in astrophysics from Princeton University, cum laude, in 2007. He received the designation of Chartered Financial Analyst (CFA) in 2013 and is a member of CFA Institute.

**David Lee, CFA**  
**President**  
**Principal**

David Lee, CFA, joined Dahab Associates in 2002 and brought with him more than six years of investment experience. David began his career in 1996 at Gruntal & Co. He has held analytical and sales positions at Morgan Stanley, Multex.com and Spectra Securities Software. David became Dahab Associates' President in February 2013. Prior to this he served as the Chief Investment Officer and Director of Manager Research/Consultant.

David received a BS in biochemistry from the State University of New York at Stony Brook in 1995. He received the designation of Chartered Financial Analyst (CFA) in 2000. David is a member of the CFA Institute and has previously served on the Florida Public Pension Trustees Association Advisory Board where he frequently spoke at meetings and events.

**Gregory A. McNeillie**  
**Vice-Chairman**  
**Principal**

Gregory A. McNeillie is a senior consultant with Dahab Associates. He is responsible for new business development as well as servicing existing clients. Greg joined Dahab Associates in 1997.

Greg began his career in 1986 at SSGA. In addition to positions at State Street Bank and MIG Realty Advisors, Greg spent seven years at The Hannah Group, where he was Vice President of Consulting Services. While with the Hannah Group, he was primarily responsible for nineteen consulting clients totaling more than one billion dollars. He is a member of the Florida Public Pension Trustees Association Advisory Board, served as chairperson of the FPPTA and was the editor of the organizational newsletter. Greg received his BS degree in Business Administration from Bryant University.

**Steven Roth, CFA**  
**Chief Investment Officer**  
**Principal**

Steven Roth, CFA, joined Dahab Associates in December 2007 and brought with him seven years of investment experience. Steve began his career at American Fund Advisors as an analyst for the John Hancock Technology Mutual Fund. He has also held analyst positions at Kaufman Brothers and Global Securitization Services. As CIO, Steve provides guidance on investment management decisions for the firm, in addition to his role as consultant.

Steve earned a BS in geology and an MBA in finance from Hofstra University. He received the designation of Chartered Financial Analyst (CFA) in 2013 and is a member of CFA Institute. He is also a member of the Florida Public Pension Trustees Association (FPPTA) and frequent speaker at their Trustees' school. Steve is a member of the FPPTA Education Committee. He is also called upon to speak at numerous finance conferences across the country.

**Thomas Donegan, CIPM**  
**Managing Director**  
**Principal**

Thomas Donegan, CIPM, joined Dahab Associates in 1997 as a financial analyst. Tom rose through the organization to head the firm's client services, research, product development and performance analysis division, serving as Director of Operations and subsequently folding those responsibilities into his role as Chief Operating Officer. In addition to his responsibilities as COO, Tom served as a consultant for over five years before he transitioned to a full-time consultant in July 2012. Tom received a BA degree in psychology and economics from the State University of New York at Geneseo in 1991 and earned an MBA in finance from Adelphi University in 1996. He earned the Certificate of Investment Performance Measurement (CIPM) in 2008.

**Barry Bryant, CFA**  
**Managing Director**

Barry Bryant, CFA, joined Dahab Associates in 2004. Prior to joining Dahab Associates, he spent 16 years on Wall Street as a specialty retail analyst at Goldman Sachs, Drexel Burnham Lambert, and Prudential Securities and Ladenberg Thalmann before becoming director of research at Rodman and Renshaw, Inc.

Barry earned an AB degree in management science/accounting from Duke University in 1978 and an MBA in finance from Vanderbilt University in 1983. He received the designation of Chartered Financial Analyst (CFA) in 1987.

**Seth Lynn, Jr.**  
**Managing Director**  
**Principal**

Seth Lynn joined Dahab Associates in 2012 having spent over 30 years as an institutional investment manager. His responsibilities include developing new business as well as servicing existing clients. Until 2009 Seth was chairman of Byram Capital Management, a small-cap value equity manager he founded in 2002. Prior to that, he spent 15 years with, and ultimately became president and CEO of Axe-Houghton. Seth began his career with Bankers Trust Company where, at various times during his 9-year tenure, he served as a research analyst, fixed-income manager, active large-cap manager and head of index funds and investment technology.

Seth received his BA from Yale University in 1971 and his MBA in investment management from the Wharton School of the University of Pennsylvania in 1975. Over the years he has been asked to speak at numerous institutional investing conferences and has contributed to a number of books and articles on domestic and international investing, indexing, and investment technology.

## RESEARCH AND OPERATIONS TEAM

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**Suzanne Houlihan**  
**Chief Compliance Officer**  
**Director of Human Resources**

Suzanne Houlihan joined Dahab Associates in June 2012. As Chief Compliance Officer and Director of Human Resources, she is responsible for overseeing and managing compliance issues and regulatory requirements, as well as governing the policies and processes of the firm. She also supports the firm's marketing and RFP response process. From 1992-2000, Suzanne worked at Morgan Stanley, where for six years she was the assistant to the president of the firm. She received an AB in history from Saint Anselm College.

**Harry Contos**  
**Director of Operations**  
**Financial Analyst**

Harry Contos joined Dahab Associates in 2013 as a financial analyst. In 2018, he became Assistant Director of Operations. In this role, he assists in overseeing the financial analysis of all client portfolios and production of performance reports in addition to his responsibility as a financial analyst. As an analyst, he is responsible for data processing, statistical calculation, and performance report generation. Harry graduated from Fordham University in 2011 with a BA in economics.

**Kevin Condy, CFA, CAIA**  
**Director of Research**

Kevin Condy, CFA, CAIA, joined Dahab Associates in March 2014 as a financial analyst. He was made part of the research team in November 2015. His responsibilities include generating asset allocation studies, meeting with investment managers, analyzing investment manager RFP submissions, and undertaking special research assignments. Kevin received his BS in finance from The College of New Jersey in 2012. He received the designation of Chartered Financial Analyst (CFA) in 2017 and is a member of CFA Institute. He also holds the Chartered Alternative Investment Analyst (CAIA) designation and is a member of the CAIA Association.

**Christopher Mills, CFA**  
**Senior Research Analyst**

Christopher Mills, CFA, joined Dahab Associates in August 2005. His responsibilities include meeting with investment managers, analyzing investment manager RFP submissions, undertaking special research projects and providing research and support to the consulting team. Chris received a BS in finance from Siena College in 2003. He received the designation of Chartered Financial Analyst (CFA) in 2019 and is a member of CFA Institute.

**Dan Maurer**  
**Research Analyst**

Daniel Maurer joined Dahab Associates in April 2006. His responsibilities include meeting with investment managers, analyzing investment manager RFP submissions, and undertaking special research assignments. Dan holds a BS in economics from the Wharton School of Business and an MBA in finance from Hofstra University.

**Christopher Sydorak**  
**Research Analyst**

Christopher Sydorak joined Dahab Associates in 2015 as a financial analyst. He was made part of the research team in 2017. His responsibilities include meeting with investment managers, analyzing investment manager RFP submissions, and undertaking special research assignments. Chris graduated from Stony Brook University in May 2015 with a BA in economics.

**Tracey Lamentino**  
**Marketing**

Tracey Lamentino originally joined Dahab Associates in 1992 and rejoined in 2013 as a financial analyst. Since 2019 she has been a part of the marketing team, responsible for the RFP response process. Tracey earned her BS in management from SUNY Binghamton in 1988.

**Dale Classen**  
**Senior Financial Analyst**

Dale Classen joined Dahab Associates in February 2006 as part of the production team and soon became a financial analyst responsible for data processing, statistical calculation, and performance report generation. From 2012 through 2019, he was Director of Operations. In addition to his role as financial analyst, he is in charge of the firm's IT and systems. Dale received a BA in psychology from Stony Brook University.

**Kelley Condy**  
**Senior Financial Analyst**

Kelley Condy joined Dahab Associates in 2012 as a member of the production team and became a financial analyst in 2013. She is a part of the team responsible for data processing, statistical calculation, and performance report generation. Kelley earned her BS in business administration, with a concentration in finance, from University of Southern New Hampshire in 2021.

**Henry Du**  
**Senior Financial Analyst**

Henry Du joined Dahab Associates in March 1998. He is an important member of the team responsible for data processing, statistical calculation, and performance report generation. Henry earned a BBA in finance and investment from Bernard M. Baruch College.

**Georgina Matthew**  
**Financial Analyst**

Georgina Coffey joined Dahab Associates in 2019. She is a part of the team responsible for data processing, statistical calculation, and performance report generation. Georgina graduated from Mercy College in 2012 with a BA in the Arts and a minor in literature.

**Peter Hoffman**  
**Financial Analyst**

Peter joined Dahab Associates in 2021. He is part of the team responsible for data processing, statistical calculation, and performance report generation. Peter graduated from Union College in 2021 with a BA in economics.

**Russell Maier**  
**Production Specialist**

Russell has been working with Dahab Associates since 2011 as a production specialist in charge of producing performance reports. From 2019 to 2021 he was a financial analyst and responsible for data processing, statistical calculation, and performance report generation.

Via Email: [Carolyn.russo@mwra.com](mailto:Carolyn.russo@mwra.com)

November 29, 2023

Ms. Carolyn Russo, Executive Director  
MWRA Employees' Retirement System  
2 Griffin Way  
Chelsea, MA 02150

**Re: Request for Proposal for Investment Consultant Services**

Dear Ms. Russo:

Meketa Investment Group (Meketa) respectfully submits the enclosed proposal to provide Investment Consultant Services to the MWRA Employees' Retirement System (the System). We are a full-service investment consultant and advisory firm advising on \$1.8 trillion in assets for 248 clients, serving public funds, corporations, Taft-Hartley funds, endowments, foundations, and healthcare/non-profit organizations.

Below are areas which we believe to be our firm's key strengths and competitive advantages:

**Massachusetts Public Fund Experience** – Meketa has been advising Massachusetts public retirement systems since 1998. We actively participate in MACRS events and advise 14 Massachusetts public fund clients. We have extensive experience dealing with Massachusetts General Laws and PERAC's investment regulatory requirements.

**Local Presence** – Our local presence allows us to be available to the Board at a moment's notice. We provide timely and detailed responses to all inquiries from our clients, and we attend all meetings at which our presence is requested. The System's Board can be assured of personal attention from the consultant team in Westwood.

**Client Success** – Our clients' results is the greatest measure of our success. Our work has helped clients control costs, reduce risks, and achieve outstanding investment results. The firm was hired by its first client in 1978, a relationship which continues to this day. We are pleased that our annual client turnover has averaged less than 3% and we believe that this speaks to the level of satisfaction achieved by our clients.

We are excited about the prospect of working with the MWRA Employees' Retirement System and look forward to the possibility of presenting our capabilities. If you have any questions, please do not hesitate to call me at (781) 471-3500. Thank you for your time and consideration.

Sincerely,



Lisa M. Rubin  
Managing Principal/Director of Marketing

enclosures

**Proposal for  
Investment Consultant Services**

**MWRA Employees'  
Retirement System**

**Submitted:**  
December 1, 2023





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## Questionnaire

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## QUESTIONNAIRE

Each Respondent is required to provide the following information in regard to the firm and its representatives. To avoid an unacceptable rating, do not skip questions; use "None" or "N/A" where applicable.

### I. Background

#### A. Please provide a brief history of the firm.

Meketa was founded in 1974 as an investment partnership. In 1978, the firm was incorporated under Massachusetts law and became registered with the Securities and Exchange Commission as an investment adviser in 1979. Meketa has been in business continuously for 45 years.

The firm originated by providing investment strategy and systems advice to the Harvard Management Company (Harvard University Endowment). The firm was hired by its first pension fund client in 1978, a relationship that continues to this day. Meketa has grown steadily and consults on over \$1.8 trillion in assets for 248 clients (as of September 30, 2023).

We began consulting for public funds in 1998, when we were hired by our first public pension fund, which also remains a client today. Currently, we consult on over \$1.6 trillion for 95 public fund clients, located throughout the country. We understand the public fund marketplace and the Board's responsibilities to the retirees, as well as their missions and goals.

#### B. Please identify the location of the firm's headquarters and branch offices.

Meketa's office locations are as follows:

**Headquarters (Boston, MA)**

80 University Avenue  
Westwood, MA 02090  
781.471.3500

**West Coast Office (San Diego, CA)**

5796 Armada Drive, Suite 110  
Carlsbad, CA 92008  
760.795.3450

**Southeast Office (Miami, FL)**

5200 Blue Lagoon Drive, Suite 120  
Miami, FL 33126  
305.341.2900

**Pacific Northwest Office (Portland, OR)**

2175 NW Raleigh Street, Suite 300A  
Portland, OR 97210  
503.226.1050

**Midwest Office (Chicago, IL)**

One E. Wacker Drive, Suite 1210  
Chicago, IL 60601  
312.474.0900

**New York Office**

48 Wall Street, 11th Floor  
New York, NY 10005  
212.918.4783

**London, U.K.**

25 Green Street  
London W1K 7AX U.K.  
+44 0203.841.6255



**C. Please describe the ownership structure of the entity and the number of employees.**

Meketa is an S-corporation independently owned by 72 senior professionals who are all active in the firm.

**D. Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc.**

Meketa has had two subsidiaries for many years, Meketa Investments London Ltd. and Meketa Fiduciary Management, LLC. At this time, we are in the process of creating a new subsidiary within Meketa, called Meketa Capital, to focus on bringing the institutional investment capabilities of Meketa to the individual investor marketplace through Registered Investment Advisors.

**E. Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.**

Meketa has been providing pension consulting services to tax-exempt organizations for 45 years. The firm began consulting for public pension fund clients in 1998, when we were hired by a Massachusetts public retirement system, which remains a client today. Currently, we consult on over \$1.6 trillion for 95 public fund clients located throughout the country.

As mentioned, Meketa has been advising Massachusetts public retirement systems since 1998. We actively participate in MACRS events and currently advise 14 Massachusetts public fund clients. Our headquarters is located in Westwood, Massachusetts and we are committed to continue to serve the local marketplace and expect our growth in servicing Massachusetts public funds to increase. We understand the public fund marketplace and the Board's responsibilities to the Retirement System, as well as their mission and goals. Public funds are a significant area of focus for our firm.

**F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity's areas of greatest expertise.**

Meketa is a full-service investment consulting and advisory firm. We work with clients on both a full retainer and project basis, and our services are available on a non-discretionary (investment consulting) or discretionary (Outsourced CIO) basis. Our expertise falls into three primary categories: General Investment Consulting Services, Alternatives Consulting Services, and Discretionary (Outsourced CIO) Investment Services.

Our Massachusetts public fund clients particularly appreciate our expertise regarding features of investment programs unique to the Commonwealth. Examples include deep familiarity with PRIM's investment program (via segmented portfolios as well as the overall portfolio), navigating regulatory requirements specific to building an investment program (e.g., Chapter 68, Chapter 176 compliance), and serving as an advocate to the investment community and State government to make Systems' investment programs more effective and efficient.



Our General Investment Consulting Services include all work related to the long-term planning and positioning of client portfolios, including:

Strategic Investment Advice	Fund Coordination
<ul style="list-style-type: none"><li>• Initial Fund Review</li><li>• Investment Policy</li><li>• Asset Allocation</li><li>• Liability &amp; Liquidity Studies</li><li>• Manager Selection &amp; Evaluation</li><li>• Performance &amp; Fund Evaluations</li><li>• Risk Monitoring</li><li>• Manager Guidelines</li><li>• Board Education</li><li>• Client Reporting</li></ul>	<ul style="list-style-type: none"><li>• Manager Fee Negotiations</li><li>• Supervising Manager Transitions</li><li>• Cash Flow Coordination</li><li>• Asset Transfer Coordination</li><li>• Crisis Response Planning</li><li>• Custodian Selection &amp; Evaluation</li></ul>

**G. Please identify the firms future goals, particularly how such goals may pertain to accepting new client business and overall quality of client service.**

Meketa is strong financially. We have grown our client base and resources consistently over the past four decades. We continue to expand our presence globally. This growth has positioned us as a leading institutional consulting firm with even greater resources to serve clients better than ever.

We anticipate that Meketa will continue to grow as an internationally recognized firm, due to the high level of service we provide to our clients. We intend to continue to expand the ownership of the firm to other senior professionals. We have a long-standing commitment to excellence and will never compromise the quality of our work in order to grow, accepting new assignments only if we believe we can offer client services of the highest caliber. Our firm increases staffing in advance of additional work from existing or new clients. We are consistent in supporting our investment professionals with a strong infrastructure of people and technology (both hardware and software).

We recognize that the investment universe for institutions is increasingly complex. The market for services and capital has become global and investment strategies have proliferated. To keep pace in this environment, Meketa has grown its research resources and continues to do so prospectively. We feel that powerful insights can be gained by following all asset classes on a global basis. The increased hunger for non-market generated investment returns, or "alpha," led us to dedicate resources to private market and alternative research. Our experience over the past two decades in this space has been very positive and, as such, will propel continued commitments to this area of the firm.

We pay close attention to the ratio of our client growth and staff. Our consulting practice has been intentionally and proactively staffed to handle more clients than we currently advise. Assuming continued moderate growth in staff and in the marketplace, we could add several more clients and still be able to provide the same intensive service that we currently provide.



## **II. Operations**

### **A. Please indicate whether accounts are serviced by teams or individual consultants.**

Meketa utilizes a team structure that provides each client with multiple investment professionals familiar with the account at all times. This results in a built-in back-up function, improved quality control, and effective and efficient client service. Client accounts are serviced by consultants and dedicated investment analysts who are closely involved in the day-to-day business of the client and who meet regularly with the consultants on issues of strategy. This team approach ensures that a number of experienced individuals are familiar with the circumstances and complexities of each client's account. It also ensures that we are able to meet with clients in person on a schedule that best meets their needs.

Recognizing that each client may require different levels of service, we provide customized services tailored to their needs. With many of our client relationships, we have become an extension of their Board and its Staff.

Meketa views our relationship with each client as a collaborative partnership. We believe that an open dialogue and transparent approach with clients is paramount to a successful consulting relationship. We welcome client participation and would be pleased to customize the relationship based on the specific preferences of the Board.

### **B. Please indicate the average number and size of accounts per consultant or team.**

Meketa maintains a low average client-to-consultant ratio (5:1), and we expand our staff in anticipation of future client business. Based on the workload of each client relationship, lead consultants are assigned 3 to 8 relationships, on average. We believe that this workload is below industry averages. We work with our consultants to make sure that they have a balanced workload, and we ensure that no consultant or analyst assumes a client load that would compromise his or her availability or attention to detail. Therefore, we expand our staff in anticipation of future client business.

### **C. Please indicate the largest number of accounts serviced by any consultant or team.**

Meketa does not have a limit on the amount of assets or number of clients any one consultant would service. We are fully staffed to handle an influx of new business, and fully expect to continue to grow to meet the demand for our services. As stated in our response to question B above, based on the workload of each client relationship, lead consultants are assigned three to eight relationships, on average. The depth and quality of our investment staff allow for a high level of client service.

We provide timely and detailed responses to all inquiries from our clients. Each of our clients is assured personal attention from one of several consultants, analysts, and support staff. We attend all meetings at which our presence is requested, and our responsibilities related to other clients will never interfere with our charge to provide the most comprehensive, personalized consulting services possible for the client.



**D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.**

All of our reports are created in-house by our staff. Meketa uses Investment Metrics' PARis platform for performance reporting. The PARis platform allows us to streamline certain processes for performance measurement and investment reporting. Through this tool, we have access to a rich suite of analytics and to critical daily portfolio information. To ensure accuracy, our data staff performs a thorough reconciliation of custodian and manager-reported data using both internal reconciliation tools, as well as reports provided by PARis. Our internal system, QuantM, is integrated with other tools we utilize to collect index data and client specific information (i.e., FactSet).

**E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.**

One hundred percent of our firm's revenue is derived from providing either investment advisory or discretionary consulting services to clients.

**F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts "soft dollars" as a method of payment for services provided.**

We do not have any affiliations with brokerage firms, nor do we have any broker-dealer relationships. We do not receive soft dollars or any brokerage commissions. Our primary line of business is providing investment consulting and advisory services. We work only for our clients, and are paid directly by our clients. As a result, we limit potential conflicts of interest and can provide clients with objective investment information and advice.

**G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.**

Meketa does not foresee any conflicts of interest if selected to advise the Board.

**H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.**

Meketa does not receive fees from any investment managers. We do not receive soft dollars or any brokerage commissions.

**I. Please indicate whether the entity sells or brokers investment vehicles.**

Meketa does not sell or broker investment vehicles. Meketa is not affiliated with any money management firms or broker-dealers.



**J. Please indicate whether the entity actively manages the investment of accounts.**

In certain cases, Meketa provides discretionary private and public markets advisory services, where we act as an investment manager of managers. With our discretionary clients, we are able to implement changes without Board approval, which can be beneficial to the fund. With the growing complexity of global financial markets, many plan sponsors consider discretionary management as a potentially more efficient and effective way to manage their assets.

Meketa does not provide brokerage, trust, or actuarial services. We are an independent firm deliberately structured as such to avoid conflicts and control the objectivity of our services. We also note that do not use proprietary internally managed funds, as we believe these present an inherent conflict of interest.

**K. Please indicate whether the firm accepts or pays referral or finder's fees.**

There are no circumstances under which our firm or any individual in our firm receives compensation, finder's fees, or any other benefit from investment managers or third parties. We work only for our clients and are paid directly by our clients. All of the firm's revenue is a result of consulting services.

**III. Investment Analysis Approach**

**A. Please outline the entity's process for:**

**1. The development of the client's overall investment policy as well as investment policy for specific asset classes.**

Meketa has been developing and reviewing investment policies and strategies for clients for four decades. Our evaluation begins with a comprehensive Initial Fund Review of each new client. This includes an examination of the client's existing Investment Policy Statement, asset allocation policy and asset allocation structure; a review of actuarial reports; interviews with the client's investment managers and an examination of their guidelines and fees; and an assessment of the client's custody relationship(s) and fee structure, among other issues. We report to the Board an assessment of each separate issue, make appropriate recommendations, and prioritize these recommendations within a timeframe of six to thirty-six months for implementation. The resulting Initial Fund Review document is typically in excess of sixty pages in length and becomes a useful guide – essentially a business plan - for framing discussions and decision-making for the trustees and consultant.

We believe our role with respect to investment policy development is two-fold: to assist clients in setting their objectives, and to assist clients in achieving those objectives through the development of investment policies and manager guidelines that reflect real-world experience.

The identification and clarification of client objectives includes:

- explicit statement of the purposes of the assets,
- definition of the appropriate time horizon for the assets,





- identification of the degree of liquidity necessary and the funding patterns of the asset pool, and
- review of any legal, tax or special circumstances (e.g., issuance of POB) that affect the investment of the assets.

Once the client's objectives and constraints are identified, a relevant investment policy can be developed. Given that the asset allocation will be the primary determinant of the investment pool's risk and return characteristics, our investment policies focus on that area.

Investment policy development includes:

- extensive evaluation of risk and return attributes for various asset allocations,
- identification of a target asset allocation that best achieves the client's objectives, given their constraints,
- identification of appropriate ranges around which the long-term asset allocation may fluctuate, and
- description of the procedures for monitoring and adjusting the asset allocation over time.

The result of this process is an investment policy statement that describes the fund's return expectations, the types of investment risks that can be assumed, and the rules used to measure these returns and risks. Most importantly, this document includes our recommendations for a long-term asset mix for the fund.

Following the Initial Fund Review and investment policy development, we work with clients on how best to implement long-term strategy, address specialist manager roles, use passive management, and employ active manager guidelines. The written manager guidelines describe in detail the type of investment services that the fund needs to meet its investment objectives.

The investment policy statement and all manager guidelines will be reviewed regularly to ensure that their objectives and constraints remain relevant. Further, these documents will be reviewed whenever significant developments in the circumstances of the fund occur. Specifically, the investment policy statement will be reviewed upon each actuarial valuation, and manager guidelines will be updated whenever a new manager is hired or the mandate changes for an existing manager. Finally, our quarterly fund evaluation will include an asset summary page that compares each fund's actual asset allocation to its target allocation.

The firm also develops a number of different investment strategy/policy statements, each customized to our clients' specific needs.

## **2. The development of client investment objectives.**

Upon being hired by a new client, our first step is to undertake a comprehensive Initial Fund Review of each plan. The Initial Fund Review includes an examination of the client's existing Investment Policy Statement, asset allocation policy and asset allocation structure; a review of actuarial reports; interviews with the client's investment managers, and an examination of their guidelines and fees; and an assessment of the client's custody relationship(s), and fee structure, among other things. We report our assessment of each separate issue to the Board and prioritize



these action items within a timeframe for implementation. The Initial Fund Review typically is completed within the first 30 days for a discretionary client.

We believe our role with respect to investment policy development is two-fold: to assist clients in setting their objectives, and to assist clients in achieving those objectives through the development of investment policies and manager guidelines that reflect real-world experience. The identification and clarification of client objectives includes:

- explicit statement of the purposes of the assets,
- definition of the appropriate time horizon for the assets,
- clear definition of various parties involved (e.g. board, staff, investment committee, Meketa) roles and responsibilities
- identification of the degree of liquidity necessary and the cash flow patterns of the asset pool, and
- review of any legal, tax, or special circumstances that affect the investment of the assets<sup>11</sup>.

Once the client's objectives and constraints are identified, a relevant investment policy can be developed. Given that the asset allocation will be a primary determinant of the fund's risk and return characteristics, our investment policies focus on that area.

Investment policy development includes:

- extensive evaluation of risk and return attributes for various asset allocations,
- identification of a target asset allocation that best achieves the client's objectives, given their constraints,
- identification of appropriate ranges around which the long-term asset allocation may fluctuate, and
- description of the procedures for monitoring and adjusting the asset allocation over time.

The result of this process is an investment policy statement that describes the fund's return expectations, the types of investment risks that can be assumed, and the rules used to measure these returns and risks. Most importantly, this document includes our recommendations for a long-term asset mix for the fund. The investment policy statement and asset allocation should be reviewed either annually, or every 1 to 3 years to help ensure that the objectives and constraints remain relevant. Further, these items should be reviewed whenever significant developments in the circumstances of the fund occur.

Once the Initial Fund Review is completed, we work with clients on how best to implement long-term strategy, addressing specialist manager roles, use of passive management, and active manager guidelines. The written Manager Guidelines describe in detail the type of investment services that the fund needs to meet its investment objectives. These manager guidelines list the types of investments to be made and the degree of risk that is acceptable.



**B. Please describe the entity's asset/liability modeling capability.**

Matching investments (assets) with liabilities has long been a strength of our firm, and an area in which we have produced pioneering work. For example, for a number of clients we have created highly specialized Safety Reserve® portfolios designed to guarantee that benefit payments can be made even in a worst-case economic and market scenario. The purpose of the Safety Reserve® is to ensure that all operating expenses and benefits will be paid on time regardless of market environments. The creation of a Safety Reserve® portfolio involves the very precise matching of assets and liabilities, and demonstrates our firm's great strength in this area.

Working with a fund's actuaries or investment office, we calculate the assets required to make all benefit payments on time, even in an economic catastrophe. We assume, for example, a precipitous decline in the stock and corporate bond markets, combined with a sudden increase in early retirements and lump-sum withdrawals. We then create a special portfolio of Treasury bonds matched to the resulting worst-case liabilities, and covering a period of three to six years. This Safety Reserve® portfolio could then be used to pay benefits under the worst-case assumption without recourse to the fund's other assets. Knowing that they have a solid Safety Reserve® protecting all near term benefit payments allows clients to invest the remaining fund assets in a more aggressive manner in order to maximize long-term returns.

**C. Please define the entity's investment style analysis.**

In performing our investment style analysis, we evaluate the actual investments of all investment managers. Equity manager portfolios are analyzed from the perspectives of company size, fundamental characteristics (price-earnings ratio, price-book value ratio, dividend yield, historical and projected earnings growth rates), industry concentration, and individual stock concentration. Fixed income manager portfolios are analyzed from the perspectives of interest-rate sensitivity (duration), credit quality, and sector diversification.

Our multi-faceted analysis represents a sophisticated form of return attribution. For example, we are able to determine accurately whether a manager's superior results are due to security selection, top-down macro judgments, or the assumption of high levels of risk. This process helps ensure that our clients' funds are never subjected to excessive risk levels.

Monthly, Meketa collects client information from a variety of sources including custody banks, investment managers, database providers, and news services. This data is used to audit, reconcile, and number check our clients' portfolio performance and holdings. At the aggregate level, we then evaluate performance relative to appropriate benchmarks, both industry and peer. The appropriate use of benchmarks is crucial in the analysis and evaluation of both current and prospective investment managers.

Utilizing a third-party database of equity fundamentals, we calculate each portfolio's fundamental characteristics (price-earnings, price-book value, dividend yield, historical earnings growth, and projected earnings growth) to determine the actual investment style of the manager.



We segregate the portfolio by capitalization to determine any tendency toward larger or smaller stocks. We divide the portfolio into industries to see if the manager is placing hidden industry bets, or exposing the fund to undue industry-specific risks.

One of these third-party databases is FactSet, a leading provider of global financial and economic information, including fundamental financial data on tens of thousands of companies worldwide. Combining more than 250 databases into a dedicated service, FactSet provides tools to download, combine, and manipulate financial data for investment analysis. We incorporate FactSet products into its stable of commercial and proprietary analytical tools.

**D. Please provide a listing of reports routinely supplied to clients.**

In addition to quarterly and monthly performance evaluation reports, we routinely provide the following reports to clients: 1) Initial Fund Review; 2) Investment Policy Statement; 3) Manager Guidelines; 4) Asset Allocation Study; 5) Manager Search Reviews; 6) Global Macroeconomic Newsletter; 7) White Papers. Other reports and communication routinely supplied to our clients include: 1) Capital Markets Review/Outlook; 2) Meketa Investment Perspectives Conference Call Series / Webinars; 3) Ongoing review of portfolio vs. Investment Policy Statement.

**E. Please indicate whether the entity provides to its clients written narratives on the managers' performance, portfolio restructuring, guideline discrepancies, style deviations, etc.**

Meketa prepares a detailed written status report for each client every quarter, which includes both an Executive Summary and an Aggregate Fund Performance section. This report, which can be up to seventy pages in length, is not a simple, computerized scorecard. Instead, our report is a thorough summary of all of the important information trustees need to do their job. It is written in straightforward terms and contains recommendations where appropriate. Most client reports include comprehensive updates in the following areas: 1) Executive Summary; 2) Aggregate Fund Performance; 3) Aggregate Asset Allocation; 4) Aggregate Fund Structure; 5) Individual Manager Reviews; and 6) Markets Outlook / World Markets Review. Reports can be run for selected periods, as requested. We present our reports to the trustees in person. When asked, we do not hesitate to make specific recommendations. That is our job.

**F. Please describe the software technology, database and analysis tools used in providing services to the client.**

Meketa utilizes the following databases for performance measurement: FactSet, Bloomberg, eVestment Alliance, Morningstar, Investment Metrics' PARis platform, Preqin, and our internal proprietary database.

FactSet is a leading provider of global financial and economic information, including fundamental financial data on tens of thousands of companies worldwide. Combining more than 250 databases into a dedicated service, FactSet provides tools to download, combine, and manipulate financial data for investment analysis. We incorporate FactSet products into its stable of commercial and proprietary analytical tools. Bloomberg is a major provider of financial market news, and data. Morningstar provides information on approximately 6,000 mutual funds. eVestment Alliance



represents over 1,100 investment managers and more than 6,100 investment products. PARis’ Plan Universe database provides us with an institutional plan sponsor peer universe consisting of over 4,500 plans totaling \$6.9 trillion in assets as of December 31, 2022. The Meketa database, which represents the performance histories of our clients and their investment managers, includes nearly 1,000 investment portfolios.

**IV. Manager Search and Due Diligence**

**A. Please indicate the number of money managers currently being evaluated.**

Meketa is continuously evaluating potential and current investment managers. We perform over 1,000 manager meetings per year. On average, we meet with and review approximately 200 to 300 investment managers annually. In most cases, we will not recommend a candidate manager without a comprehensive review and an on-site or virtual visit, including meetings with the senior investment professionals responsible for the product under consideration.

Meketa utilizes three distinct investment manager databases. Two are third-party databases that include over 3,000 managers and over 10,000 investment products (including mutual funds). These third-party databases are updated at least quarterly and include both performance and data concerning the managers’ operations. We also compile our own manager database which consists of approximately of 2,000 managers and 3,500 of their respective investment products.

The table below shows the approximate number of managers and products within our databases.

Asset Class	Number of Managers/Products
US Equity	1,200/4,500
International Equity	600/1,700
Global Equity	750/2,050
US Fixed Income	500/2,600
International/Global Fixed Income	350/1,400
Private Equity	2,000/3,700
Private Debt	700/1,200
Real Assets (Infrastructure, Commodities, and Natural Resources)	800/1,200
Hedge Funds	4,000/10,000
Real Estate	900/1,700

**B. Please describe the criteria by which the entity decides which managers to evaluate.**

Meketa has specific, strict criteria to identify manager candidates for our clients. We ensure that the most appropriate managers have been identified for each client for each search, by utilizing our tools and resources. As described below, we evaluate a manager’s strategy and process, resources and performance, and fees:

**Investment Strategy** – We analyze each manager’s investment strategy from a number of perspectives. Managers utilize bottom-up and top-down strategies, growth- and value-based



strategies, fundamental and technical strategies, quantitative and qualitative strategies, and varying blends of strategies. We evaluate each strategy and its likelihood of producing superior investment returns in the future.

**Investment Process** – We evaluate the process behind the implementation of each manager's investment strategy to ensure that it is clearly articulated, consistently applied, cohesive, and efficient. An inadequate process can lead to poor or delayed investment decisions.

**Investment Resources** – We evaluate each organization's structure to ensure stability and depth. In today's turbulent environment, when it is common for key personnel to leave an investment organization without warning, it is important to ensure that the talent pool is sufficiently deep to withstand personnel departures.

**Investment Performance** – We evaluate the performance record of each manager, including relative and absolute total returns. Also, returns are evaluated to determine the risk inherent in the investment strategy and the "fit" of the particular strategy within the existing investment plan.

**Operating Costs** – We evaluate all the costs involved in implementing an investment strategy. The surest way to produce a higher investment return is to lower management fees and other operating costs.

- C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.**

As mentioned above in Question A, Meketa utilizes three distinct investment manager databases. Two are third-party databases that include over 3,000 managers and over 10,000 investment products (including mutual funds). These third-party databases are updated at least quarterly and include both performance and data concerning the managers' operations. We also use our proprietary manager database which is updated continually. Meketa does not charge a fee for inclusion in our database. All three databases are described below.

**Internal Proprietary Manager Database** – Our internal database consists of approximately 2,000 investment managers and over 3,500 of their respective investment products. This database is updated continuously. Note, however, that we do not rely on a roster of favorite, or preferred, managers. Instead, each search is conducted in an open, competitive manner, consistent with our role as a fiduciary. We do not charge a fee for inclusion, nor do we sell information from our database.

**Morningstar Direct** – Morningstar Direct provides information on a broad range of investments including over 6,000 mutual funds and commingled vehicles, a breadth of index data, economic data, and individual security data.

**eVestment Alliance** – Meketa has purchased a customized database from eVestment Alliance that includes in-depth profiles of virtually the entire universe of institutional investment managers, plus the range of products they offer. eVestment Alliance represents over 1,100 investment managers and more than 6,100 investment products.



**D. Please describe how the due diligence evaluation of investment managers is performed.**

**Public Markets Manager Due Diligence Process:**

Meketa uses a rigorous manager search and selection process when evaluating public market managers. During the first phase, we gather information and perform our initial analysis, casting a wide net and reviewing multiple databases to screen for managers. In addition, our research staff meets with investment managers on an ongoing basis, both in-house and on-site, documenting all meetings in our internal, proprietary research system. We leverage the institutional knowledge of our consultants, some of whom have been working in the industry for twenty or thirty years, and research managers our clients suggest. Every search we do for a client is customized and based on the needs of the client. We do have a list of high conviction public market managers in each asset class who have gone through our multi-stage research process. These managers have been fully researched and vetted by our senior investment professionals and, if appropriate, will be considered in new searches, although we still include a wide variety of other managers in this process.

Once we have defined the relevant manager universe and selected a set of managers that we believe are appropriate for the client, the second phase of the research process begins. In many instances, we have previously met with some of the managers and have some knowledge of the firm, but to really understand them and the manager's capabilities, we believe it is very important to do at least one on-site visit. These visits are exhaustive and may last for several hours. Depending on the firm's structure, our research staff meets with the portfolio managers, multiple analysts, senior management, and members of the operations staff.

When analyzing a manager, we want to understand what the investment team really does and how they work, to determine if their investment approach makes sense, if it has been effective, and to develop a high degree of confidence in the manager's future success. During the course of our manager due diligence process, we evaluate five important elements: organization, investment team, investment philosophy, investment process and risk management, and performance and fees.

During the third and final phase of the manager search and due diligence process, the investment analyst presents the manager to each respective asset class investment committee. Presentation materials will include the manager analysis, the manager's presentation, a request for proposal (RFP) completed by the manager and other relevant supporting documentation. This weekly meeting is a forum for the final vetting of managers. Once the presentation is complete and all questions answered, the committee members vote on whether the manager should be presented to the client and/or be added to our "bullpen" in the appropriate asset class.

When asked, we do not hesitate to make specific recommendations, because we believe that is our job. All recommendation decisions are made by committees, comprised of senior investment professionals at the firm. For each search, a comprehensive manager search document is constructed which details our evaluation process and the key attributes of each finalist, including strengths and weaknesses. All managers are evaluated within the context of a client's overall investment policy.



## **Private Markets Due Diligence Process**

Meketa's private markets investment process has four stages: Initial Screening, Phase I Analysis, Phase II Analysis, and Phase III Analysis. Members of Meketa's Private Markets team conduct the due diligence process.

### **Initial Screening**

As a result of our research efforts and the strong network we have developed, Meketa historically has received documentation on the majority of partnerships deemed to be of institutional quality. Most often, we will receive a Private Placement Memorandum (PPM), but other documents or marketing materials may initiate due diligence. Proactively, we seek documents on all attractive investments identified via databases, trade publications, relationships, and conferences. As documents are received, investment terms are entered into our customized Vantage Deal Manager database. Investments are then assigned to team members who will serve as "Sponsors," driving the day-to-day due diligence for the investment opportunity.

### **Phase I**

Phase I analysis determines whether or not an investment has attractive characteristics and if it fits within our clients' strategy and portfolio structure. For each investment, a Sponsor prepares a Phase I Review, a three- to five-page summary report of the opportunity that is automatically assembled from populated fields in the deal flow module of our software system, Vantage Deal Manager. On roughly a weekly basis, Research Team meetings are conducted where the most recently created Phase I Reviews are discussed. A Sponsor leads a discussion of the investment and receives input on its perceived strengths and weaknesses. At this point, a decision is made by the Research Team on whether to pursue a meeting with the manager in our offices. As with all decisions that are part of our process, this will be recorded in our database.

If the view is favorable, then the Sponsor conducts a meeting with key investment professionals, and records it with comprehensive notes that are distributed to the Research Team and placed in the database. The investment is then discussed again by the Research Team, which seeks consensus in order to advance it to the next phase.

### **Phase II**

Phase II analysis probes competitive advantages in the market ahead and seeks generally to answer the question: "What is special about this opportunity?" In this phase of due diligence, we seek to know the professionals making the investment, their strategy, and their track record in extreme detail. Analysis continues by sending our comprehensive Due Diligence Questionnaire (DDQ) to the target manager, reviewing the DDQ response, making preliminary reference calls, and scheduling an onsite visit with key professionals. These visits typically involve four to seven hours of meeting professionals, discussing questions that remain from the DDQ, and touring the facilities is possible. When appropriate, the negotiation of investment terms begins at this stage. The Meketa attendees record their impressions from each meeting in the database where they are viewed by the Research Team.





If favorable information is obtained from the onsite visit, then work is begun on an Investment Memorandum, a fifty- to seventy-page document that explores the opportunity in greater detail. If, for example, a fund has already made investments after a first closing, these early investments are examined. Reference checks are completed. The Sponsor will present the investment to the Research Team for advancement to Phase III, along with a recommended size of investment.

In certain cases, Meketa has adapted our manager due diligence process to include increased use of tele- and video-conferences, enhanced reference and background checks, and leveraging our existing broad coverage of the spectrum of private markets opportunities. We continue to work on behalf of our clients and to evaluate attractive opportunities as they are presented with the same rigor of due diligence we have exercised in the past. Tele- and video-conferences often allow for the expansion of our interviewing teams and access to a greater number of professionals at the target manager. Absent travel logistics, we are able to schedule these conferences generally for longer periods of time, often held over multiple sessions, and covering a wider range of subjects. Meketa continues to develop a deep level of understanding of the risk/reward profiles of private markets offerings and, in turn, a high level of conviction in our recommendations.

### **Phase III**

Phase III Analysis seeks to resolve any remaining questions/concerns with the investment. At this stage, the Investment Memorandum is reviewed further and amended with any additional analysis requested by the Research Committee. During Phase III, each sponsor completes reference calls and documents the results. Background checks are performed on key professionals, and legal documents are sent to counsel for review and suggested revisions.

After these three stages, all investment opportunities are presented at the Private Markets Research Committee for final review and approval. The members of this committee are the most senior members of the firm focusing on private markets.

**E. Does the firm or consultant maintained a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.**

No. Meketa does not rely solely on a preferred list or a stable of top-flight managers to meet our client's objectives. We follow the universe of institutional quality asset classes, including domestic equity, developed foreign equity, emerging markets equity, fixed income, real assets, hedge funds, and other alternatives.

### **V. Miscellaneous**

**A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.**

Meketa has extensive experience dealing Massachusetts General Laws regarding Prudent Investor Act including PERAC's investment regulatory requirements. As the investment regulations governing the System and their interpretation are continuously subject to change,



Meketa works closely with PERAC and legal counsel to ensure the System is in compliance with all regulations.

Topics specific to Massachusetts Public Retirement Systems we have discussed with clients include but are not limited to optimizing tracking error versus MassPRIM for the purpose of Chapter 68 compliance, negotiation of fiduciary terms for Chapter 176 compliance, immunization of portfolio liabilities in the context of an MassPRIM-focused portfolio, consultation on funding schedules and actuarial rates of return, among others.

We recognize that a thorough understanding of all laws, rules, and regulations that apply to the System is a critical part of meeting our fiduciary duty. We work with clients to issue written guidelines for each manager, which address all relevant laws and regulations, mandated investment styles (i.e., small capitalization value), and specific prohibitions mandated by PERAC and expressed by the client. Our ongoing investment review includes monitoring of performance, statutory and PERAC regulations compliance, and manager guideline compliance.

**B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.**

Our Alternatives Consulting Services involve all of the work required to create custom investment programs for alternative asset classes (private equity, private debt, infrastructure, real estate, natural resources, and hedge funds), including:

Program Design	Program Implementation
<ul style="list-style-type: none"> <li>• Strategic Planning &amp; Policy Development</li> <li>• Pacing Analysis</li> <li>• Partnership Analysis</li> <li>• Negotiating Terms and Fees</li> <li>• Client Communication</li> <li>• Board Education</li> <li>• Client Reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Cash Flow Coordination</li> <li>• Program Monitoring and Review</li> <li>• Annual GP Meeting Attendance</li> <li>• Partnership Amendments</li> <li>• Advisory Board Representation</li> </ul>

Our Discretionary Services include all general investment and alternatives consulting services mentioned above.

**C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.**

The Board of Trustees may contact the references below. We kindly ask to be notified prior to calling these individuals.

**Client Name:** Plymouth County Retirement Association  
**Contact Name/Title:** Mr. Peter Manning, Investment Officer  
**Address:** 60 Industrial Park Road  
Plymouth, MA 02360  
**Telephone Number:** (508) 237-1575



**Client Name:** Town of Norwood Retirement System  
**Contact Name/Title:** Ms. Debra Wilkes, Board Administrator  
**Address:** 566 Washington Street  
 Norwood, MA 02062  
**Telephone Number:** (781) 762-1240 x157

**Client Name:** Massachusetts Housing Finance Authority  
**Contact Name/Title:** Mr. Joseph Petty, Executive Secretary  
**Address:** One Beacon Street, 27th Floor  
 Boston, MA 02108  
**Telephone Number:** (617) 854-1871

**D. Please provide the names and asset values of any clients who have terminated services in the last three years.**

The table below provides the list of clients who did not renew their contracts with Meketa over the last three years, ending September 1, 2023. This list excludes clients who merged into larger funds, liquidated funds, or where Meketa resigned from the account.

Client Name	Assets at Termination	Reason for Termination
Montana University System	\$1.1 B	Effective August 23, 2023, the Montana University System replaced Meketa as their consultant for their 401(a) and 403(b) Plans as a result of a competitive RFP bid process due to our contract expiring.
Iron Workers of Western Pennsylvania	\$529 M	Effective May 31, 2023, the Iron Workers of Western Pennsylvania replaced Meketa as their consultant as a result of a competitive RFP bid process.
Amica Mutual Insurance Company	\$407 M	Effective March 31, 2023, AMICA Mutual Insurance Company ended its contract with Meketa to provide private market investment services for their alternatives portfolio after building out their internal staff.
PACE Industry-Union Management	\$1.5 B	Effective March 31, 2023, PACE Industry-Union Management replaced Meketa as their OCIO as a result of a competitive RFP bid process issued after receiving SFA money.
Society for Human Resource Management	\$162 M	Effective December 31, 2022, the Society for Human Resource Management replaced Meketa as their consultant as a result of a competitive RFP bid process.
South Carolina Retirement System Investment Commission	\$38 B	Effective September 30, 2022, the South Carolina Retirement System Investment Commission replaced Meketa as their consultant as a result of a competitive RFP bid process which was issued due to our contract expiring.



<b>Client Name</b>	<b>Assets at Termination</b>	<b>Reason for Termination</b>
Michigan BAC Fringe Benefit Funds	\$327 M	After the Michigan BAC Health Care Fund merged into another local health plan, the Board issued an RFP and replaced Meketa as the Funds’ consultant as a result of a competitive RFP bid process effective May 31, 2022.
Heat and frost Insulators and Allied Workers Local Union No. 25	\$89 M	Effective July 31, 2021, the Heat and Frost Insulators and Allied Workers Local 25 Pension Fund, Defined Contribution Pension Plan, and Health & Welfare Plan replaced Meketa as their consultant.
California Community Foundation	\$1.3 B	Effective June 30, 2021, California Community Foundation transitioned from a general consulting relationship to an OCIO relationship, therefore replacing Meketa as their general consultant, with an OCIO provider.

**E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.**

Please refer to Appendix A for a sample performance report.

**VI. Fee Structure**

**A. Please provide a detailed description of the fee structure for the firms’ services to the Board. Fees must be fixed and based on services provided, and fee proposals must include the length of time over which the proposed fee is guaranteed, as well as a statement that the fee is all-inclusive.**

Please refer to the separately sealed envelope for fees.

**VII. Specific Board Issues**

**A. Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.**

If retained, the proposed consulting team would be Daniel Dynan, Alexandra Wallace Stone, and Will Duryea .The proposed lead consultant will attend a Board interview. Please find the team’s biographies below:

**Daniel R. Dynan, CFA, CAIA – Managing Principal/Consultant**

Mr. Dynan joined Meketa in 2009 and has been in the financial services industry since 2003. He serves as a consultant on various defined benefit, defined contribution, and endowment funds, with public, Taft-Hartley, corporate, and non-profit plan sponsors. His consulting work includes investment policy design and asset allocation modeling, in addition to the analysis of investment manager and total fund performance. Mr. Dynan is a member of Meketa’s Consulting Leadership Committee and Pension Practice Group.



Mr. Dynan has been a guest speaker at a number of industry events, including the IFEBP Trustees School, the Opal Public Funds East Conference, the Mid Atlantic Plan Sponsors Annual Trustee Educational Conference, the Florida Public Pension Fund Trustee School, and the CFA Society San Diego.

Prior to joining the firm, Mr. Dynan held positions at Merrill Lynch & Co. and Bear, Stearns & Co., where he was responsible for the development of asset allocation and wealth preservation strategies for high-net-worth individuals.

He received his undergraduate degree in Economics from the College of the Holy Cross. Mr. Dynan holds the Chartered Financial Analyst® designation and is a member of the CFA Society Boston and the CFA Institute. Mr. Dynan also holds the Chartered Alternative Investment Analyst (CAIA) designation and is a member of the CAIA Association®.

#### **Alexandra Wallace Stone, CFA – Managing Principal/Consultant**

Ms. Wallace Stone joined Meketa in 2008. She serves as a consultant on various Taft-Hartley, public, and corporate defined benefit and defined contribution plans. Ms. Wallace Stone's consulting work includes investment policy design, strategic asset allocation modeling, investment education, investment manager analysis, and fund performance analysis. She is a member of Meketa's Defined Contribution Practice Group and founded and co-chairs the Emerging and Diverse Manager Committee.

Ms. Wallace Stone graduated from the University of Massachusetts Amherst with a bachelor's degree in Economics and French, and a minor in Political Science. Prior to joining the firm, she studied International Relations at the accredited University of Virginia's Semester at Sea Program.

She holds the Chartered Financial Analyst® designation. Ms. Wallace Stone is a member of the CFA Institute and the CFA Society Boston.

#### **Will Duryea – Managing Principal/Consultant**

Mr. Duryea joined Meketa in 2017 and has been in the investment industry since 2014. He serves as a consultant on various defined benefit, defined contribution, and health & welfare funds, with Taft-Hartley, public, and non-profit clients. His work includes developing asset allocation and investment policies, as well as providing oversight of client portfolios. Mr. Duryea is a member of Meketa's Strategic Asset Allocation/Risk Management Committee.

Prior to joining the firm, he held positions at MFS Investment Management working with the firm's broker-dealer and independent advisor clients. Mr. Duryea received his bachelor's degree from Tufts University, and is currently pursuing the Chartered Financial Analyst® designation. He is an SEC- and MSRB-registered Municipal Advisor Representative (Series 50).

**B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.**

All of Meketa's services are provided on a team basis. Meketa is committed to ensuring that each client receives the attention of experienced consulting staff members. We utilize a team approach



to servicing client accounts which ensures that several experienced individuals are familiar with the circumstances and complexities of each client's account. This approach also ensures that we can meet with clients in person on a schedule that best meets their needs. Mr. Dynan currently serves as primary consultant for 8 clients, Ms. Stone serves 5 and Mr. Duryea 4. Each of our clients is assured personal attention from one of several consultants, analysts, and support staff. We are committed to ensuring that each client receives the attention of experienced consulting staff members. We utilize a team approach, which ensures that a number of experienced individuals are familiar with the circumstances and complexities of each client's account. This approach also ensures that we are able to meet with clients in person on a schedule that best meets their needs.

**C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.**

Upon hire, we send a detailed questionnaire to the client's custodian bank, investment managers, former consultant, and other vendors. We request background information, including market values, cash flows, performance, portfolio holdings, strategy descriptions, and investment professional biographies. We then work to reconcile and verify the integrity of this information.

Following reconciliation of historical performance, we assess how well-suited the current manager roster is to the client's investment objectives and constraints. In addition to rigorous quantitative analysis, we look closely at the personnel, strategy, and resources provided by each manager. During the Initial Review, representatives from Meketa typically conduct on-site due diligence visits.

Concurrently, we work with the fund office to obtain summary plan documents, custodian and manager contracts, quarterly reports from the prior consultant, manager guidelines, brokerage agreements, meeting minutes, meeting schedules, and trustee contact information. We also discuss how to most effectively structure our working relationship with the fund office and client, determining communication preferences and operational requirements.

## **PERAC Required Forms**

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# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name: MWRA Employees' Retirement System

Name of Retirement Board: MWRA Employees' Retirement System

## I. Company/Entity Information:

Company/Entity Name: Meketa Investment Group, Inc.

CRD# (If Applicable):

Address: 80 University Ave

City: Westwood

State: MA

Zip: 02090

Country: U.S.A.

Phone: 781-471-3500

Fax: 781-471-3411

URL: [www.meketa.com](http://www.meketa.com)

## 2. Contact Information:

Name, First: Lisa

Last: Rubin

Suffix:

Title: Managing Principal, Director of Marketing

Department: Marketing

Phone: 781-471-3500

Fax: 781-471-3411

Email: [lrubin@meketa.com](mailto:lrubin@meketa.com)

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City:

State:

Zip:

Country:





# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

Please print or type all entries in blue or black ink.

## I. Retirement Board

Retirement Board to which proposal is being submitted: MWRA Employees' Retirement System

## 2. Service Provider

Business Name: Meketa Investment Group, Inc.

Address: 80 University Ave

City: Westwood

State: MA

Zip: 02090

Services Being Proposed: Investment Consultant Services

Dates of Services (MM/DD/YYYY)

From: TBD

To: TBD

## 3. Individual Submitting Proposal

Name, First: Lisa

Last: Rubin

Suffix:

Title: Managing Principal/ Director of Marketing

The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

November 20, 2023



# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board: MWRA Employees' Retirement System

Name of Investment Manager: Meketa Investment Group, Inc.

## Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

## PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.

**COMPENSATION**



9191034

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?  No  Yes

(2) If yes, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If yes, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If yes, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If yes, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



9191034

(6) If yes, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

[Empty text box for response to question 6]

Additional Pages Attached:  No  Yes

(7) If yes, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

[Empty text box for response to question 7]

Additional Pages Attached:  No  Yes

(8) If yes, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

[Empty text box for response to question 8]

Additional Pages Attached:  No  Yes

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First: Lisa Last: Rubin Suffix:

Title of Authorized Individual: Managing Principal/Director of Marketing Operations

Signature of Authorized Individual:

*Lisa Rubin*

Date Signed: November 20, 2023



# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

**Please print or type all entries in blue or black ink.**

## 1. Vendor/Board Information

Name of Company/Entity: Meketa Investment Group, Inc.  
 Name of Fund: MWRA Employees' Retirement System  
 Retirement Board: MWRA Employees' Retirement System

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First: Lisa

Last: Rubin

Suffix:

Title: Director Of Marketing

Signature

Date:

November 20, 2023

**Fee Proposal (*See Separately Sealed Envelope*)**

---

## **Appendix A**

### **Sample Performance Report**

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## Client Example

December 31, 2021

Quarterly Review

*Portions of this report have been redacted to ensure  
the security of certain confidential or sensitive information*



## Agenda

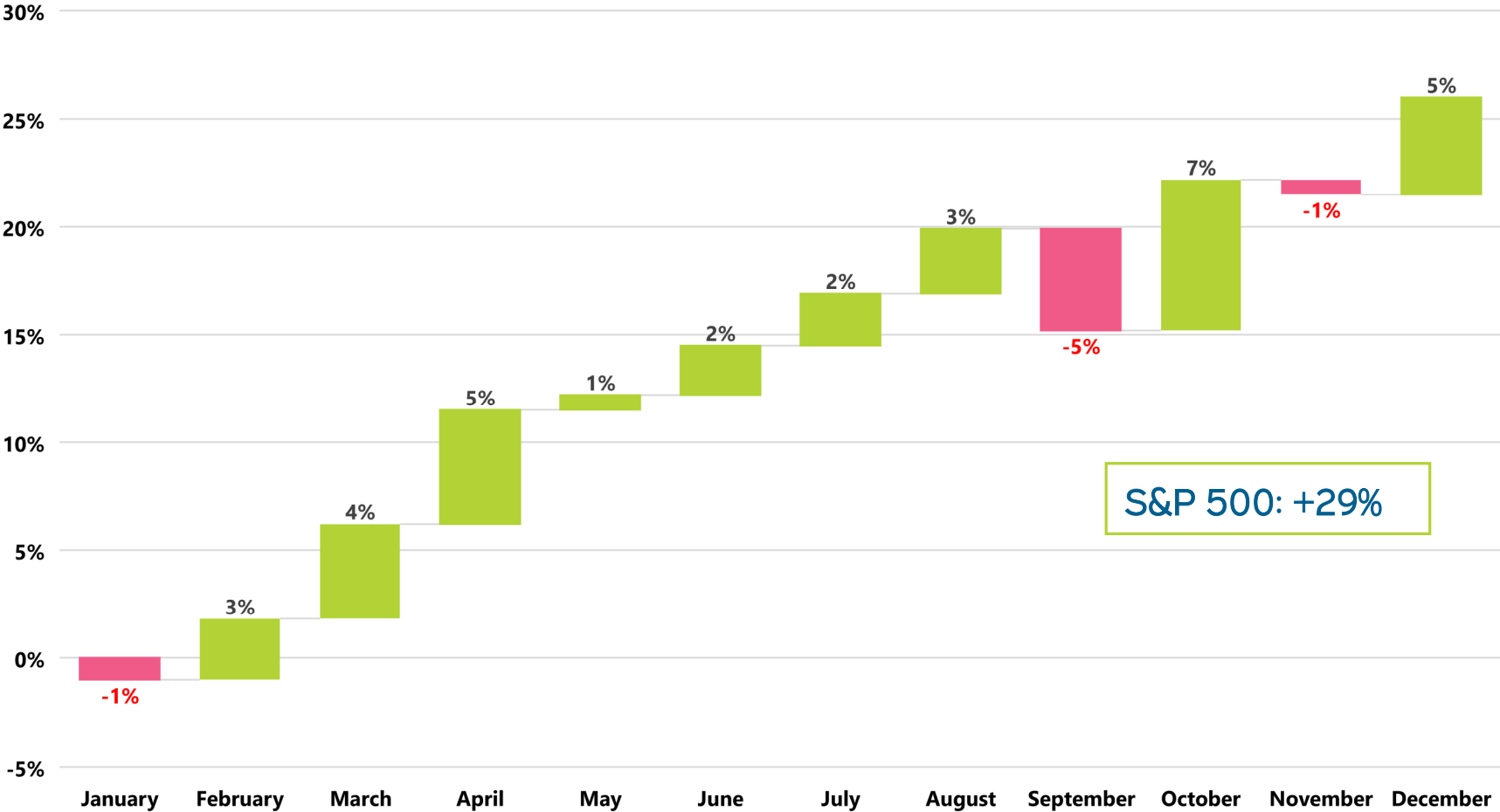
1. 2021 Markets Review
2. Executive Summary
3. 4Q21 Investment Report
4. Appendix
  - Disclaimer, Glossary and Notes

## 2021 Markets Review

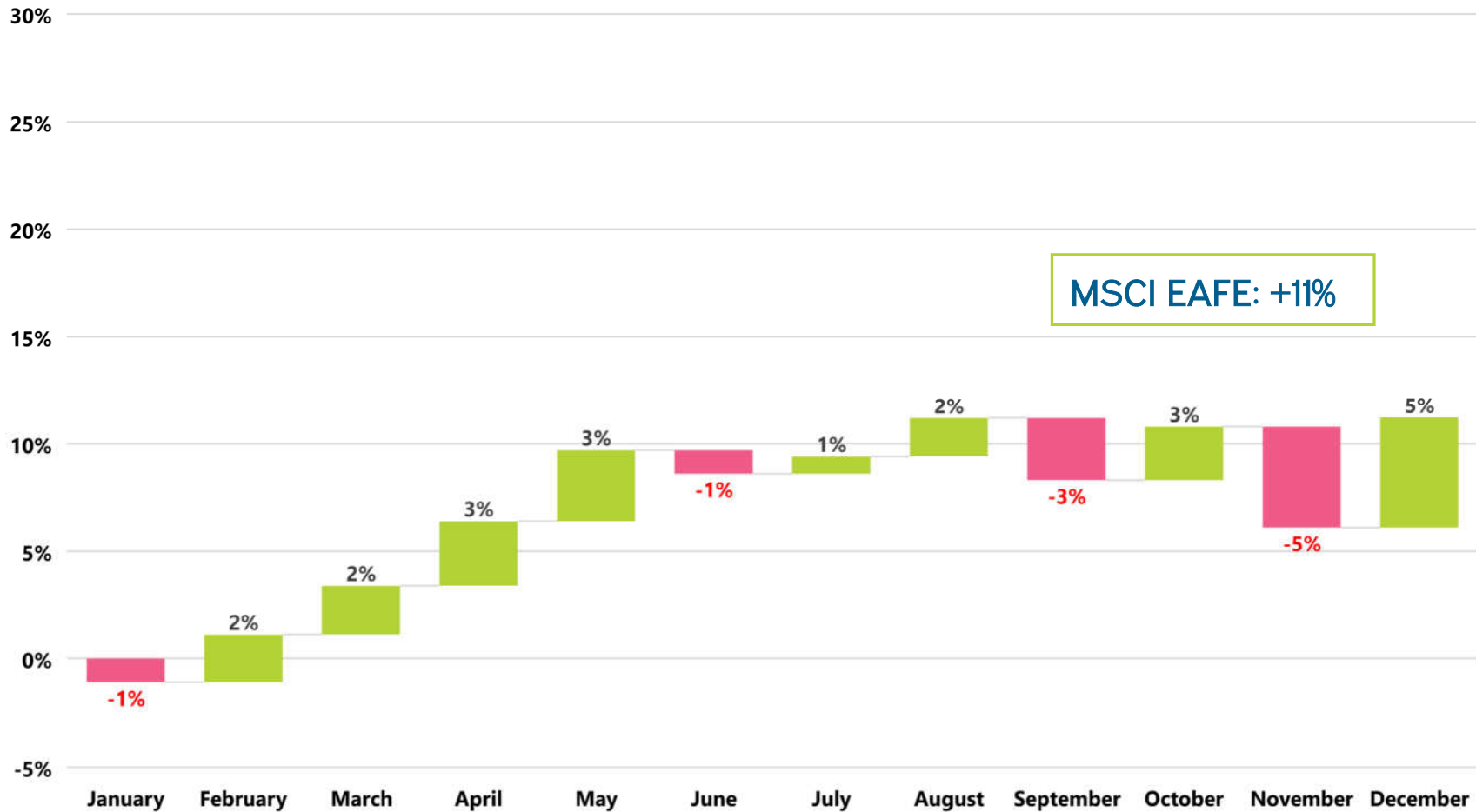
## 2021 Key Events

Month	Event
1 - January	January 6 riot on the U.S. Capital, Joe Biden sworn in as U.S. President. GameStop “meme” stock frenzy
2 - February	OPEC+ supply restraints drive oil prices up
3 - March	\$1.9 trillion virus relief spending bill signed, extending stimulus payments and unemployment benefits
4 - April	Most Americans over 18 years old become eligible for vaccines
5 - May	CPI starts breaking records (0.9% month-over-month, and 3.0% year over year). CDC lifts mask mandate
6 - June	Delta variant emerges in U.K.
7 - July	Chinese stocks tumble from govt. clampdown on select industries. U.S. bonds rise as Delta variant spreads
8 - August	Taliban takes over Afghanistan. U.S. withdraws troops. U.S. jobs reports shows strongest gain in nearly a year
9 - September	Chinese real estate debt crises (Evergrande) spooks global equity markets. Gridlock in Washington (upcoming debt ceiling and infrastructure bill disagreements)
10 - October	Fed Reserve minutes signal start of tapering of monthly bond purchases. Energy prices up on supply chain issues.
11 - November	Omicron variant emerges. U.S. House of Reps passes toned-down \$555 billion bipartisan infrastructure bill.
12 - December	Fed doubles the pace of tapering and new dot plot shows median projection of three rate hikes in 2022. U.S. CPI hits 6.8%.

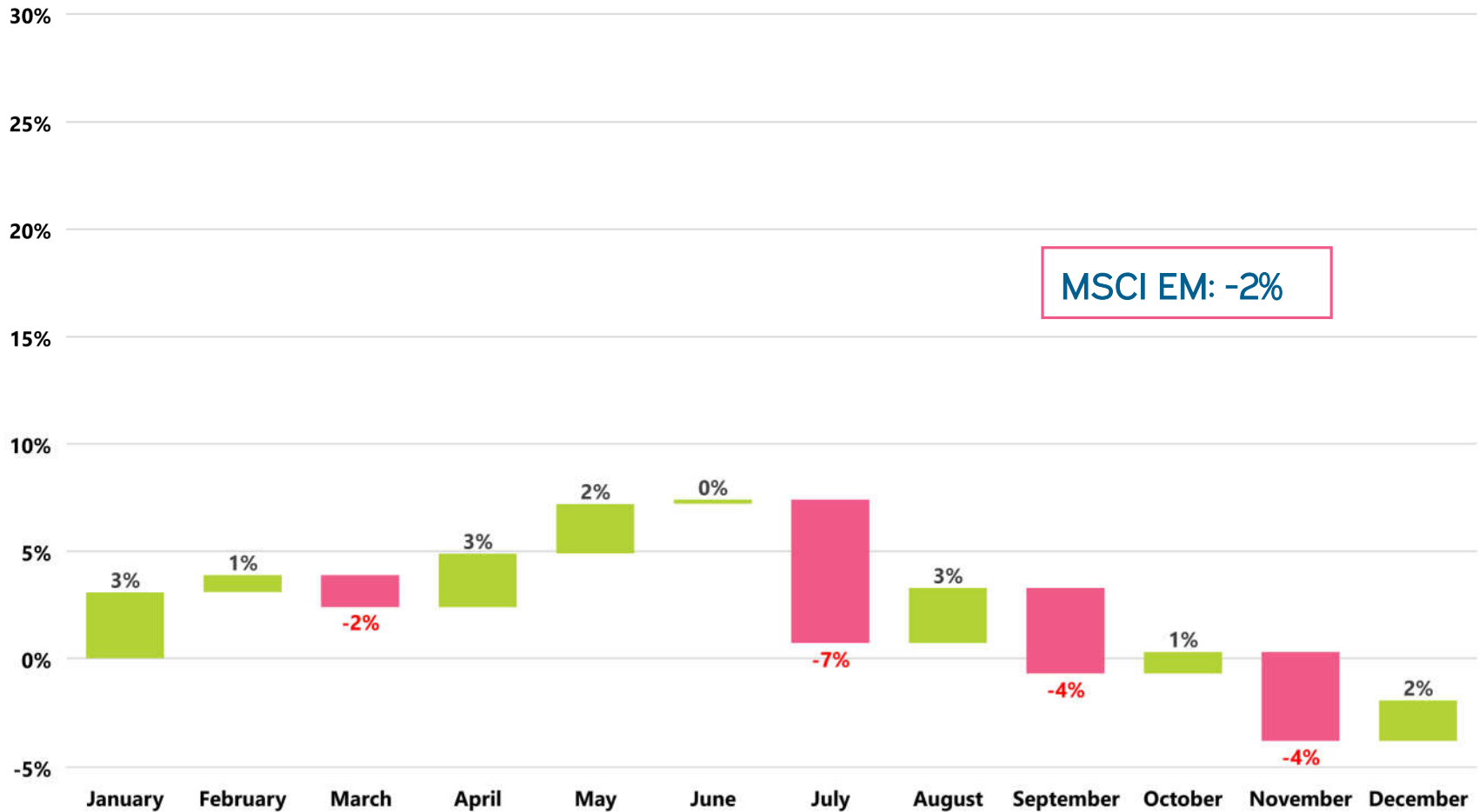
**S&P 500**



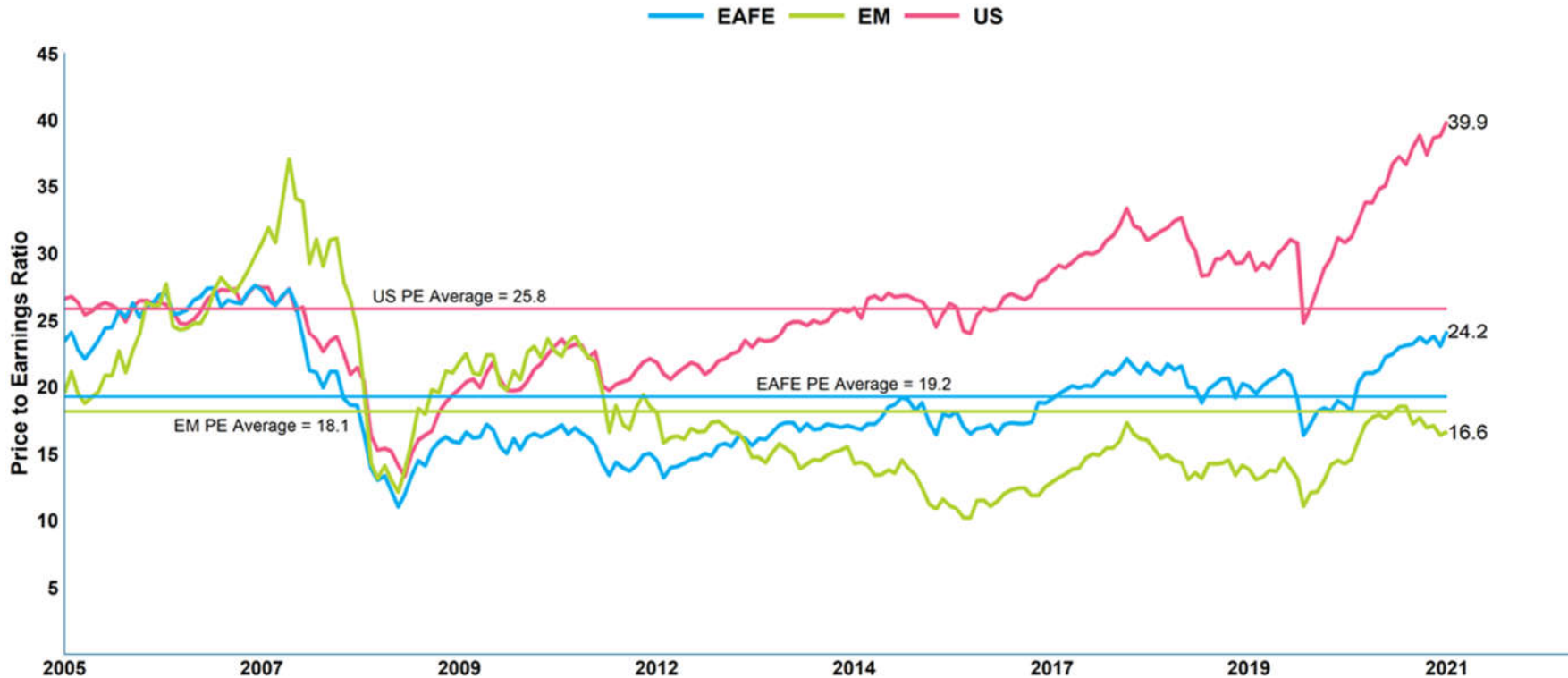
## MSCI EAFE



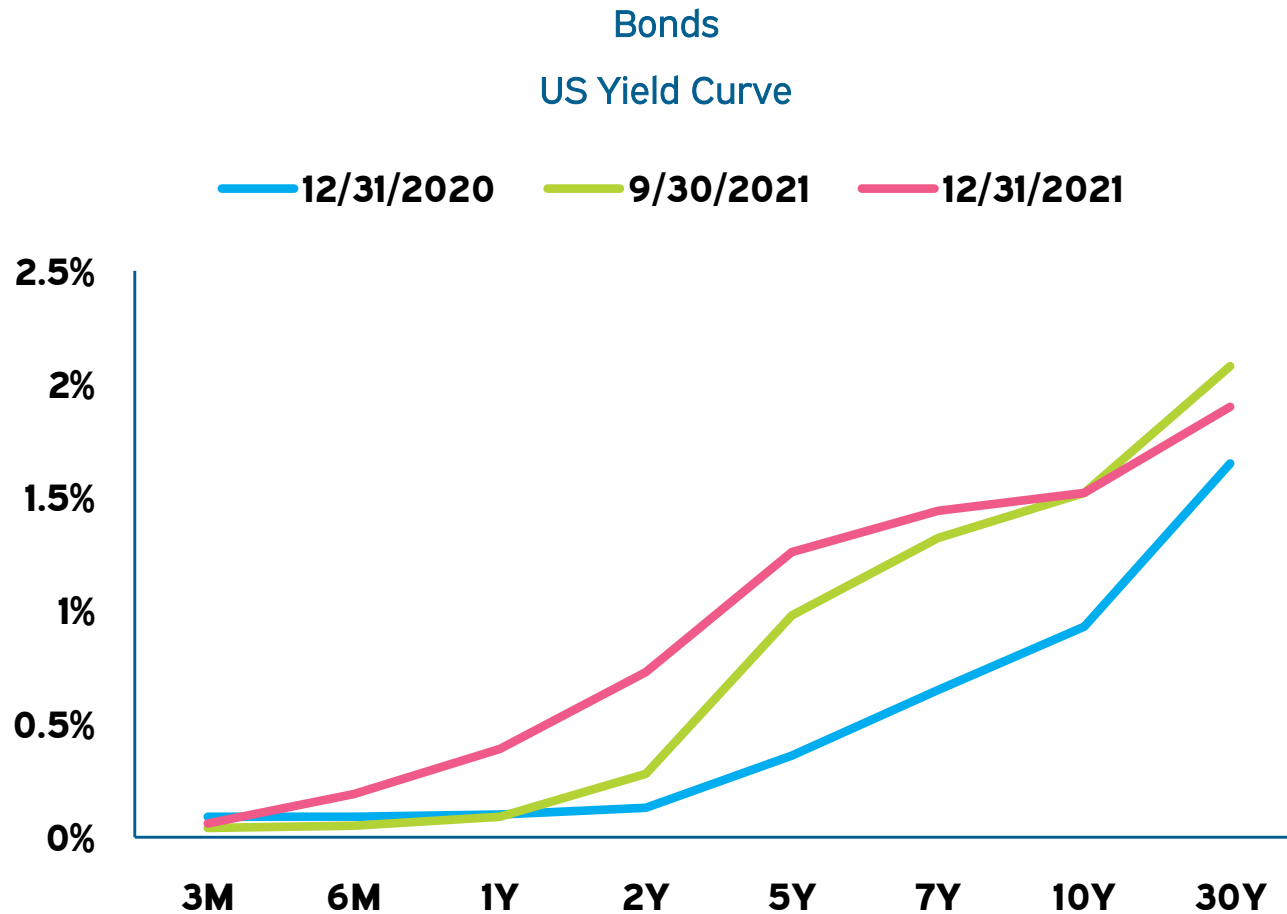
## MSCI EM



Valuations  
Equity Cyclically Adjusted P/E Ratios



- Particularly in the US, valuations have seen a steep rise and remain well above long-term averages (near +2 standard deviations). Valuations in international markets have also been on an upward trend but are less extended compared to the US.



- During the first half of 2021, the yield curve steepened on higher growth and inflation expectations but flattened in the third quarter with yields rising in the middle of the curve while the long-end fell.



## **Executive Summary**

### Fiscal Year 2021 Executive Summary

Category	Results	Notes
Total Fund Performance	Positive	+17.5% ( \$195 mm investment gain)
Performance vs. Benchmarks	Positive	+17.5 vs. 14.4% (static) and 14.9% (dynamic)
Performance vs. Peers <sup>1</sup>	Outperformed	+17.5% vs. 14.2% median (10 <sup>th</sup> percentile)
Asset Allocation Attribution Effects	Additive	Overweight private equity was additive
Active Public Managers vs. Benchmarks	Outperformed	7 of 13 active managers beat respective benchmarks (after fees)
Active Public Managers vs. Peer Groups	Mixed	6 of 12 <sup>2</sup> active managers beat peer group median (after fees)
Compliance with Targets	In Compliance	All exposure within policy ranges

<sup>1</sup> InvMetrics Public DB >\$1 bb net.

<sup>2</sup> Excludes Aberdeen EMD. No appropriate peer group for Aberdeen blended currency emerging market debt. Peer groups only exist for local currency or USD strategies.

### 4Q 21 Executive Summary

Category	Results	Notes
Total Fund Performance	Positive	+3.2% ( \$40 mm investment gain)
Performance vs. Benchmarks	Mixed	+3.2% vs. 3.2% (static) and 2.9% (dynamic)
Performance vs. Peers <sup>1</sup>	Underperformed	+3.2% vs. 4.0% median (79 <sup>th</sup> percentile)
Asset Allocation Attribution Effects	Additive	Overweight private equity was additive
Active Public Managers vs. Benchmarks	Outperformed	8 of 13 active managers beat respective benchmarks (after fees)
Active Public Managers vs. Peer Groups	Outperformed	7 of 12 <sup>2</sup> active managers beat peer group median (after fees)
Compliance with Targets	In Compliance	All exposure within policy ranges

<sup>1</sup> InvMetrics Public DB >\$1 bb net.

<sup>2</sup> Excludes Aberdeen EMD. No appropriate peer group for Aberdeen blended currency emerging market debt. Peer groups only exist for local currency or USD strategies.

## Peer Rankings

- The Fund ranks in the top quartile of \$1 billion+ plans over nearly all time periods.

### 4Q21 -- (S&P 500 was +11.0%)

As of 12/31/21	4Q 21	1 YR	3 YR	5 YR	10 YR
Peer Ranking	79	10	24	12	20

### 3Q21 -- (S&P 500 was +0.6%)

As of 9/30/21	3Q 21	1 YR	3 YR	5 YR	10 YR
Peer Ranking	5	6	5	11	19

### 2Q21 -- (S&P 500 was +8.5%)

As of 6/30/21	2Q 21	1 YR	3 YR	5 YR	10 YR
Peer Ranking	17	20	14	12	27

### 1Q21 -- (S&P 500 was +6.2%)

As of 3/31/21	1Q 21	1 YR	3 YR	5 YR	10 YR
Peer Ranking	28	66	35	25	41

### 4Q20 -- (S&P 500 was +12.1%)

As of 12/31/20	4Q 20	1 YR	3 YR	5 YR	10 YR
Peer Ranking	35	20	20	22	34

### 3Q20 -- (S&P 500 was +8.9%)

As of 9/30/20	3Q 20	1 YR	3 YR	5 YR	10 YR
Peer Ranking	22	44	34	25	41

## Peer Rankings (continued)

2Q20 -- (S&P 500 was +20.5%)

As of 6/30/20	2Q 20	1 YR	3 YR	5 YR	10 YR
Peer Ranking	99	62	54	38	54

1Q20 -- (S&P 500 was -19.6%)

As of 3/31/20	1Q 20	1 YR	3 YR	5 YR	10 YR
Peer Ranking	5	8	8	8	25

4Q19 -- (S&P 500 was +9.1%)

As of 12/31/19	4Q 19	1 YR	3 YR	5 YR	10 YR
Peer Ranking	71	73	19	19	45

3Q19 -- (S&P 500 was +1.7%)

As of 9/30/19	3Q 19	1 YR	3 YR	5 YR	10 YR
Peer Ranking	7	13	24	21	46

2Q19 -- (S&P 500 was +4.3%)

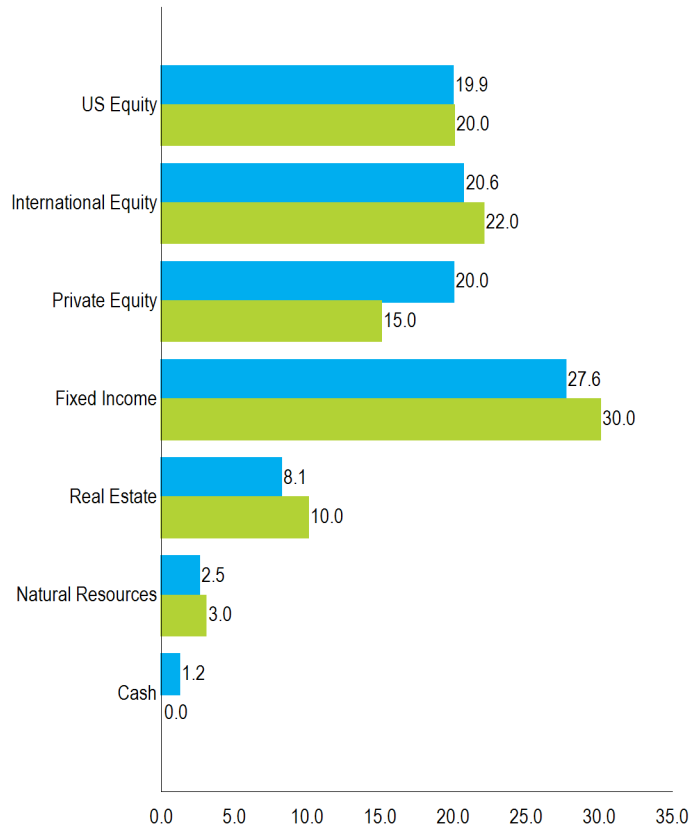
As of 6/30/19	2Q 19	1 YR	3 YR	5 YR	10 YR
Peer Ranking	84	51	30	25	62

# 4Q21 Investment Report

## Fund Summary

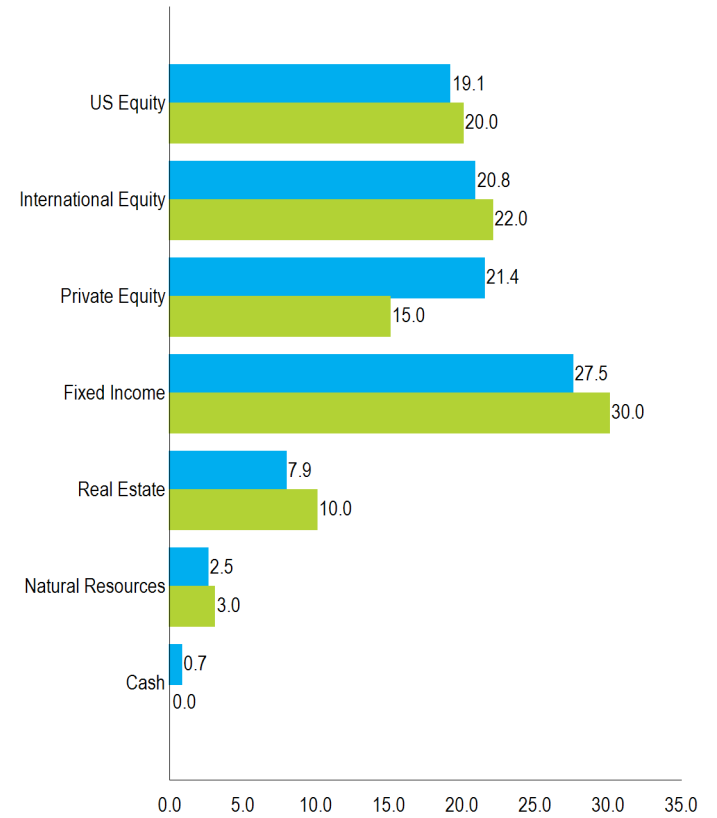
### Fund Summary | As of December 31, 2021

**Actual vs Target Allocation (%)**  
As of December 31, 2021



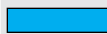





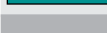
Actual Policy

**Actual vs Target Allocation (%)**  
As of September 30, 2021

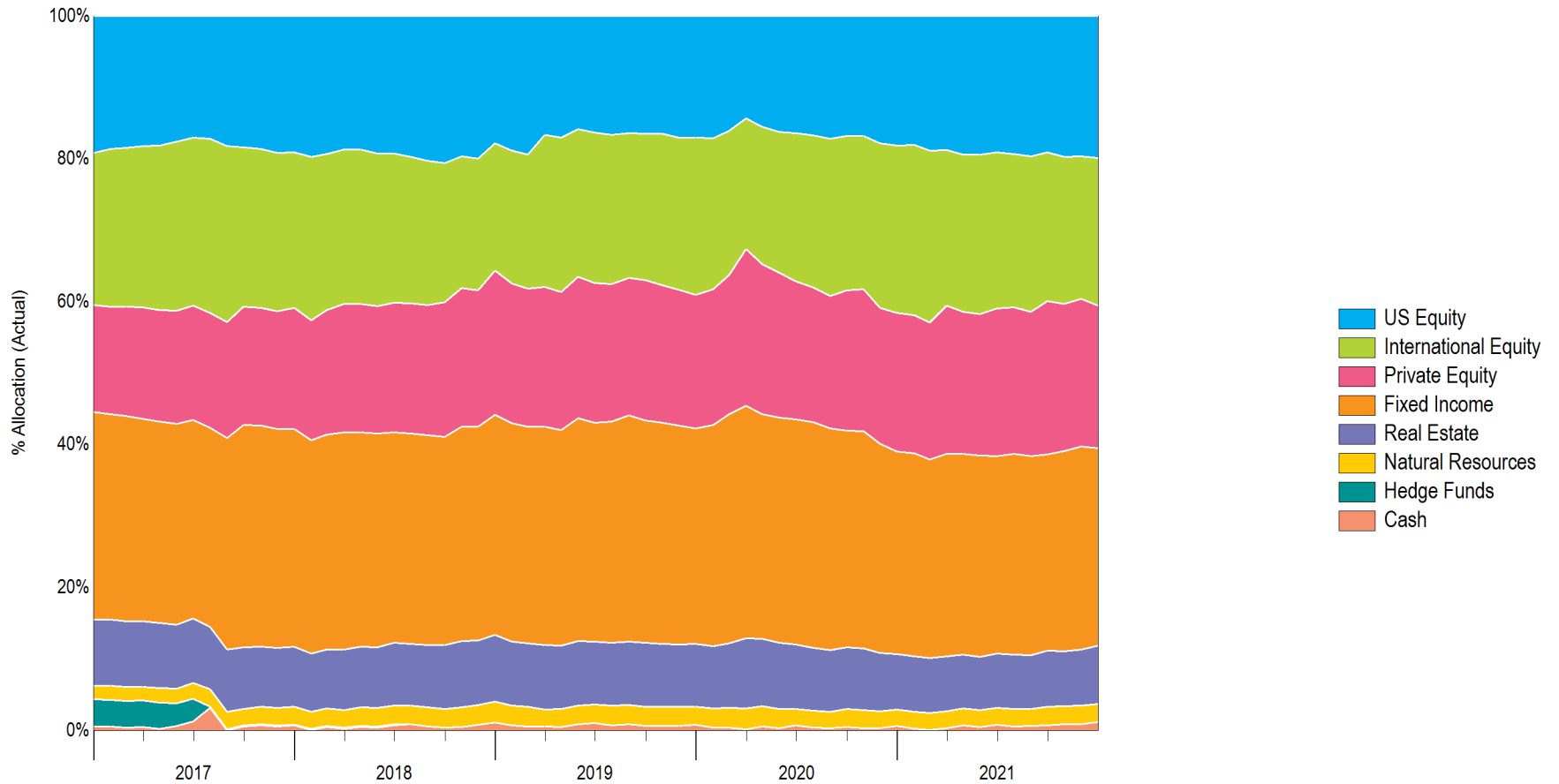


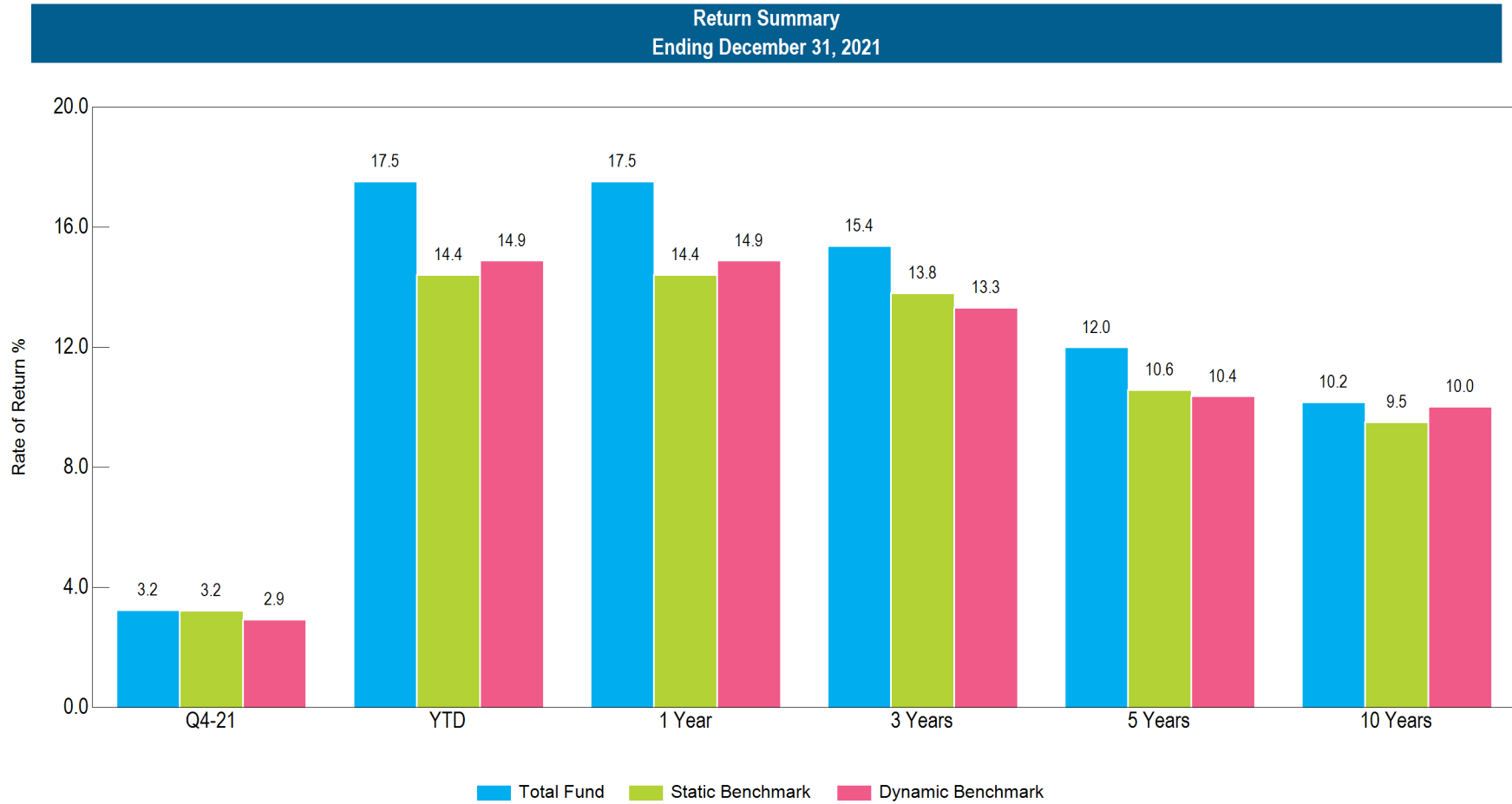
Actual Policy



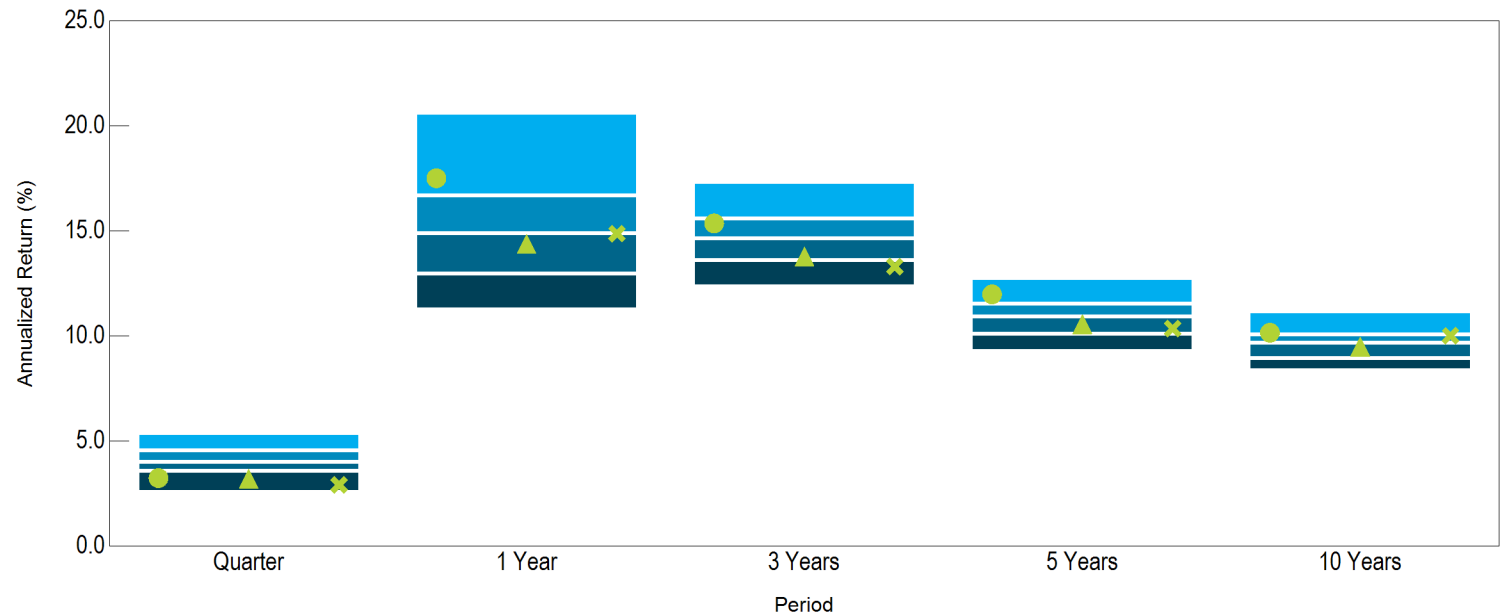
Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?	
 US Equity	\$255,952,421	20%	20%	13% - 27%	Yes	
 International Equity	\$265,256,816	21%	22%	15% - 29%	Yes	
 Private Equity	\$256,558,761	20%	15%	5% - 25%	Yes	
 Fixed Income	\$355,210,844	28%	30%	20% - 40%	Yes	
 Real Estate	\$104,678,664	8%	10%	0% - 20%	Yes	
 Natural Resources	\$32,500,388	3%	3%	0% - 5%	Yes	
 Cash	\$15,171,431	1%	0%	0% - 5%	Yes	
<b>Total</b>	<b>\$1,285,329,325</b>	<b>100%</b>	<b>100%</b>			

Asset Allocation History  
5 Years Ending December 31, 2021





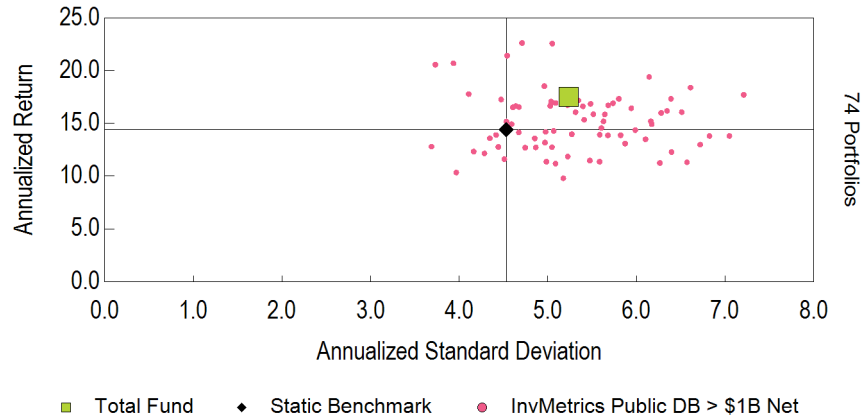
#### InvMetrics Public DB > \$1B Net Accounts



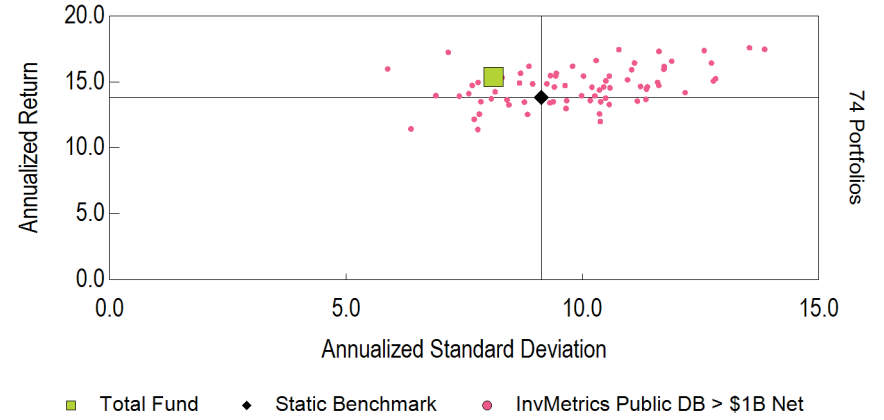
	Return (Rank)									
5th Percentile	5.4		20.6		17.3		12.8		11.2	
25th Percentile	4.6		16.7		15.6		11.6		10.1	
Median	4.0		14.9		14.7		10.9		9.7	
75th Percentile	3.6		13.0		13.6		10.1		9.0	
95th Percentile	2.6		11.3		12.4		9.3		8.4	
# of Portfolios	75		74		74		74		68	
● Total Fund	3.2	(82)	17.5	(14)	15.4	(32)	12.0	(14)	10.2	(22)
▲ Static Benchmark	3.2	(83)	14.4	(54)	13.8	(71)	10.6	(62)	9.5	(59)
✕ Dynamic Benchmark	2.9	(91)	14.9	(51)	13.3	(88)	10.4	(68)	10.0	(29)

### Fund Summary | As of December 31, 2021

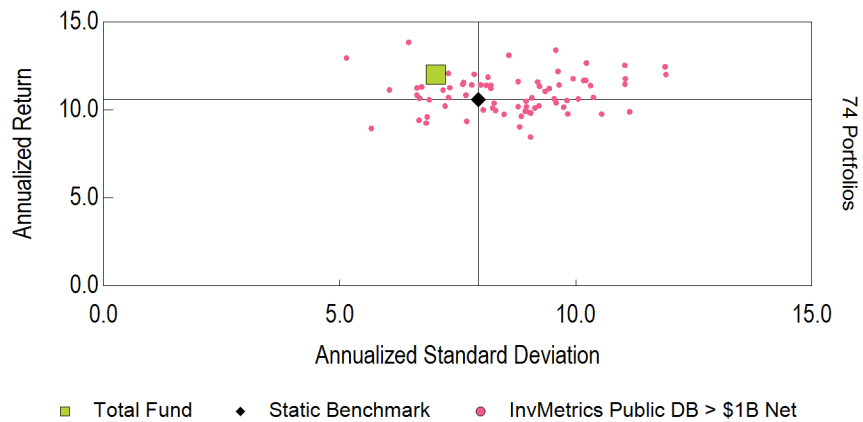
Annualized Return vs. Annualized Standard Deviation  
1 Year Ending December 31, 2021



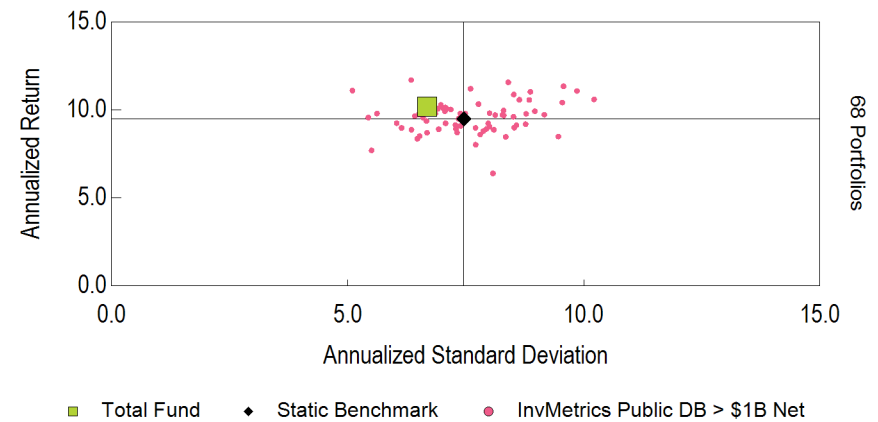
Annualized Return vs. Annualized Standard Deviation  
3 Years Ending December 31, 2021



Annualized Return vs. Annualized Standard Deviation  
5 Years Ending December 31, 2021



Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2021



Asset Class Performance Summary (Net of Fees)									
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
<b>Total Fund</b>	<b>1,285,329,325</b>	<b>100.0</b>	<b>3.2</b>	<b>17.5</b>	<b>15.4</b>	<b>12.0</b>	<b>10.2</b>	<b>7.7</b>	<b>Mar-97</b>
<i>Static Benchmark</i>			3.2	14.4	13.8	10.6	9.5	--	Mar-97
<i>Dynamic Benchmark</i>			2.9	14.9	13.3	10.4	10.0	--	Mar-97
<b>Domestic Equity</b>	<b>255,952,421</b>	<b>19.9</b>	<b>8.0</b>	<b>24.6</b>	<b>23.4</b>	<b>16.1</b>	<b>14.6</b>	<b>9.3</b>	<b>Mar-97</b>
<i>Russell 3000</i>			9.3	25.7	25.8	18.0	16.3	9.9	Mar-97
<b>International Equity</b>	<b>265,256,816</b>	<b>20.6</b>	<b>-1.0</b>	<b>4.1</b>	<b>14.4</b>	<b>11.1</b>	<b>8.6</b>	<b>6.4</b>	<b>Mar-97</b>
<i>Spliced International Equity Benchmark</i>			1.8	7.8	13.2	9.6	7.3	5.9	Mar-97
<b>Private Equity</b>	<b>256,558,761</b>	<b>20.0</b>	<b>6.1</b>	<b>56.5</b>	<b>29.8</b>	<b>24.4</b>	<b>17.9</b>	<b>19.1</b>	<b>May-10</b>
<i>Private Equity Benchmark</i>			-0.6	29.9	14.8	14.9	16.5	16.3	May-10
<b>Fixed Income</b>	<b>355,210,844</b>	<b>27.6</b>	<b>0.1</b>	<b>0.0</b>	<b>6.2</b>	<b>4.4</b>	<b>3.5</b>	<b>5.0</b>	<b>Mar-97</b>
<i>Bloomberg US Aggregate TR</i>			0.0	-1.5	4.8	3.6	2.9	5.0	Mar-97
<b>Real Estate</b>	<b>104,678,664</b>	<b>8.1</b>	<b>7.5</b>	<b>20.2</b>	<b>8.1</b>	<b>8.1</b>	<b>9.1</b>	<b>4.1</b>	<b>Dec-07</b>
<i>NCREIF Property Index</i>			6.2	17.7	8.4	7.8	9.3	6.6	Dec-07
<b>Natural Resources</b>	<b>32,500,388</b>	<b>2.5</b>	<b>1.6</b>	<b>15.9</b>	<b>-3.3</b>	<b>1.3</b>	<b>--</b>	<b>1.7</b>	<b>Feb-13</b>
<i>S&amp;P North American Natural Resources TR</i>			8.1	39.9	10.1	1.3	1.3	0.7	Feb-13
<b>Cash</b>	<b>15,171,431</b>	<b>1.2</b>							

### Fund Summary | As of December 31, 2021

Trailing Net Performance										
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
<b>Total Fund</b>	<b>1,285,329,325</b>	<b>100.0</b>	<b>--</b>	<b>3.2</b>	<b>17.5</b>	<b>15.4</b>	<b>12.0</b>	<b>10.2</b>	<b>7.7</b>	<b>Mar-97</b>
<i>Static Benchmark</i>				3.2	14.4	13.8	10.6	9.5	--	Mar-97
<i>Dynamic Benchmark</i>				2.9	14.9	13.3	10.4	10.0	--	Mar-97
<i>InvMetrics Public DB &gt; \$1B Net Median</i>				4.0	14.9	14.7	10.9	9.7	7.6	Mar-97
<i>InvMetrics Public DB &gt; \$1B Net Rank</i>				82	14	32	14	22	43	Mar-97
<b>Domestic Equity</b>	<b>255,952,421</b>	<b>19.9</b>	<b>19.9</b>	<b>8.0</b>	<b>24.6</b>	<b>23.4</b>	<b>16.1</b>	<b>14.6</b>	<b>9.3</b>	<b>Mar-97</b>
<i>Russell 3000</i>				9.3	25.7	25.8	18.0	16.3	9.9	Mar-97
<i>eV All US Equity Net Median</i>				7.4	25.2	22.6	14.9	14.4	10.8	Mar-97
<i>eV All US Equity Net Rank</i>				43	53	46	44	47	88	Mar-97
<b>Westwood Capital Large Cap Value</b>	<b>31,768,443</b>	<b>2.5</b>	<b>12.4</b>	<b>9.2</b>	<b>23.8</b>	<b>17.8</b>	<b>13.2</b>	<b>13.2</b>	<b>9.4</b>	<b>Oct-01</b>
<i>Russell 1000 Value</i>				7.8	25.2	17.6	11.2	13.0	8.6	Oct-01
<i>eV US Large Cap Value Equity Net Median</i>				8.1	26.8	18.3	12.1	13.1	9.1	Oct-01
<i>eV US Large Cap Value Equity Net Rank</i>				28	73	56	33	46	43	Oct-01
<b>Westfield Small/Mid Cap Growth</b>	<b>76,787,068</b>	<b>6.0</b>	<b>30.0</b>	<b>2.9</b>	<b>16.2</b>	<b>28.2</b>	<b>20.6</b>	<b>16.2</b>	<b>14.2</b>	<b>Nov-02</b>
<i>Russell 2500 Growth</i>				0.2	5.0	25.1	17.7	15.7	13.0	Nov-02
<i>eV US Small-Mid Cap Growth Equity Net Median</i>				2.5	12.7	27.8	20.6	16.0	12.8	Nov-02
<i>eV US Small-Mid Cap Growth Equity Net Rank</i>				45	41	47	50	45	21	Nov-02

### Fund Summary | As of December 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Vaughan Nelson Small Cap Value	67,460,465	5.2	26.4	10.3	31.0	21.5	10.5	--	12.1	Jan-16
<i>Russell 2000 Value</i>				4.4	28.3	18.0	9.1	12.0	12.6	Jan-16
<i>eV US Small Cap Value Equity Net Median</i>				6.3	28.8	19.1	9.6	12.3	12.3	Jan-16
<i>eV US Small Cap Value Equity Net Rank</i>				5	41	22	38	--	51	Jan-16
SSgA S&P 500	79,936,445	6.2	31.2	11.0	28.6	26.0	18.4	16.5	10.5	Feb-04
<i>S&amp;P 500</i>				11.0	28.7	26.1	18.5	16.6	10.6	Feb-04
<i>eV US Large Cap Equity Net Median</i>				9.0	26.0	23.4	16.3	14.8	10.4	Feb-04
<i>eV US Large Cap Equity Net Rank</i>				20	28	35	34	28	47	Feb-04
<b>International Equity</b>	<b>265,256,816</b>	<b>20.6</b>	<b>20.6</b>	<b>-1.0</b>	<b>4.1</b>	<b>14.4</b>	<b>11.1</b>	<b>8.6</b>	<b>6.4</b>	<b>Mar-97</b>
<i>Spliced International Equity Benchmark</i>				1.8	7.8	13.2	9.6	7.3	5.9	Mar-97
Baillie Gifford International Growth Fund	39,265,842	3.1	14.8	-4.6	-9.4	26.6	19.5	13.1	13.4	May-09
<i>MSCI ACWI ex USA</i>				1.8	7.8	13.2	9.6	7.3	8.2	May-09
<i>MSCI EAFE</i>				2.7	11.3	13.5	9.5	8.0	8.4	May-09
<i>eV ACWI ex-US All Cap Core Eq Net Median</i>				3.0	10.0	16.9	12.1	9.2	9.8	May-09
<i>eV ACWI ex-US All Cap Core Eq Net Rank</i>				99	99	1	1	2	2	May-09
Sanderson International Value	53,113,986	4.1	20.0	1.3	7.4	9.5	6.3	--	5.4	Feb-13
<i>MSCI EAFE Value</i>				1.2	10.9	7.8	5.3	5.8	3.9	Feb-13
<i>MSCI EAFE</i>				2.7	11.3	13.5	9.5	8.0	6.5	Feb-13
<i>eV EAFE All Cap Value Net Median</i>				2.3	11.3	10.6	6.9	7.0	5.9	Feb-13
<i>eV EAFE All Cap Value Net Rank</i>				75	87	73	80	--	61	Feb-13



### Fund Summary | As of December 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Highclere International Small Cap	55,065,077	4.3	20.8	-2.2	8.3	13.8	9.4	10.2	9.1	Dec-09
<i>MSCI EAFE Small Cap</i>				0.1	10.1	15.6	11.0	10.8	9.2	Dec-09
<i>S&amp;P EPAC Under USD2 Billion NR USD</i>				-1.8	8.1	13.2	8.8	9.0	7.6	Dec-09
<i>eV EAFE Small Cap Equity Net Median</i>				0.4	12.7	15.5	11.0	11.5	10.4	Dec-09
<i>eV EAFE Small Cap Equity Net Rank</i>				86	78	70	79	77	64	Dec-09
SSgA MSCI EAFE Fund	43,061,040	3.4	16.2	2.7	11.4	13.9	9.8	--	6.8	Feb-13
<i>MSCI EAFE</i>				2.7	11.3	13.5	9.5	8.0	6.5	Feb-13
<i>eV EAFE Core Equity Net Median</i>				2.4	12.5	14.6	10.2	9.0	7.3	Feb-13
<i>eV EAFE Core Equity Net Rank</i>				46	57	62	55	--	63	Feb-13
DFA Emerging Markets Value	36,056,126	2.8	13.6	0.4	12.4	8.2	8.3	4.6	3.3	Dec-09
<i>MSCI Emerging Markets Value NR USD</i>				-0.4	4.0	7.1	7.0	3.3	2.9	Dec-09
<i>MSCI Emerging Markets</i>				-1.3	-2.5	10.9	9.9	5.5	4.6	Dec-09
<i>eV Emg Mkts All Cap Value Equity Net Median</i>				-0.1	3.1	10.6	9.2	5.5	4.9	Dec-09
<i>eV Emg Mkts All Cap Value Equity Net Rank</i>				26	16	84	67	71	90	Dec-09
TT Emerging Markets Equity	38,694,744	3.0	14.6	-3.0	-1.0	--	--	--	9.7	Apr-19
<i>MSCI Emerging Markets</i>				-1.3	-2.5	10.9	9.9	5.5	8.2	Apr-19
<i>eV Emg Mkts Equity Net Median</i>				-0.9	0.4	12.8	10.2	6.1	9.7	Apr-19
<i>eV Emg Mkts Equity Net Rank</i>				78	58	--	--	--	50	Apr-19

### Fund Summary | As of December 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
<b>Private Equity</b>	<b>256,558,761</b>	<b>20.0</b>	<b>20.0</b>	<b>6.1</b>	<b>56.5</b>	<b>29.8</b>	<b>24.4</b>	<b>17.9</b>	<b>19.1</b>	<b>May-10</b>
<i>Private Equity Benchmark</i>				-0.6	29.9	14.8	14.9	16.5	16.3	May-10
<b>Fixed Income</b>	<b>355,210,844</b>	<b>27.6</b>	<b>27.6</b>	<b>0.1</b>	<b>0.0</b>	<b>6.2</b>	<b>4.4</b>	<b>3.5</b>	<b>5.0</b>	<b>Mar-97</b>
<i>Bloomberg US Aggregate TR</i>				0.0	-1.5	4.8	3.6	2.9	5.0	Mar-97
SSgA Bond Fund	95,906,849	7.5	27.0	0.0	-1.6	4.8	3.5	2.8	3.9	Jan-04
<i>Bloomberg US Aggregate TR</i>				0.0	-1.5	4.8	3.6	2.9	4.0	Jan-04
<i>eV US Core Fixed Inc Net Median</i>				-0.1	-1.5	5.2	3.8	3.2	4.2	Jan-04
<i>eV US Core Fixed Inc Net Rank</i>				33	56	78	76	83	77	Jan-04
Loomis Sayles Core Plus Fixed Income	60,684,499	4.7	17.1	-0.2	-1.1	6.4	4.8	--	4.3	Jul-15
<i>Bloomberg US Aggregate TR</i>				0.0	-1.5	4.8	3.6	2.9	3.3	Jul-15
<i>eV US Core Plus Fixed Inc Net Median</i>				0.0	-0.4	5.9	4.3	3.9	4.0	Jul-15
<i>eV US Core Plus Fixed Inc Net Rank</i>				85	81	35	18	--	27	Jul-15
Aberdeen Emerging Markets Bond Fund	78,002,609	6.1	22.0	-1.6	-4.0	5.1	4.0	--	3.6	Dec-14
<i>JP Morgan EMBI Global Diversified</i>				-0.4	-1.8	5.9	4.7	5.3	4.5	Dec-14
<i>50% JPM EMBI GD, 25% JPM GBI EM GD, 25% CMBI Broad</i>				-1.2	-3.3	5.1	4.4	4.4	3.8	Dec-14
SSGA TIPS	61,999,875	4.8	17.5	2.3	5.9	8.4	5.3	--	3.6	Aug-14
<i>Bloomberg US TIPS TR</i>				2.4	6.0	8.4	5.3	3.1	3.7	Aug-14
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>				2.2	5.7	8.3	5.4	3.1	3.6	Aug-14
<i>eV US TIPS / Inflation Fixed Inc Net Rank</i>				19	33	46	61	--	49	Aug-14

### Fund Summary | As of December 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Pyramis Tactical Bond Fund	38,465,272	3.0	10.8	0.6	1.2	7.8	5.6	--	5.1	Aug-13
<i>Bloomberg US Aggregate TR</i>				0.0	-1.5	4.8	3.6	2.9	3.2	Aug-13
<i>eV US Core Plus Fixed Inc Net Median</i>				0.0	-0.4	5.9	4.3	3.9	3.9	Aug-13
<i>eV US Core Plus Fixed Inc Net Rank</i>				5	7	2	3	--	2	Aug-13
Pacific Asset Management Bank Loans	20,151,741	1.6	5.7	0.9	5.2	--	--	--	4.2	Dec-19
<i>Credit Suisse Leveraged Loans</i>				0.7	5.4	5.4	4.3	4.8	4.7	Dec-19
<i>Bank Loan MStar MF Median</i>				0.6	4.6	4.8	3.7	4.2	3.8	Dec-19
<i>Bank Loan MStar MF Rank</i>				10	30	--	--	--	35	Dec-19
<b>Real Estate</b>	<b>104,678,664</b>	<b>8.1</b>	<b>8.1</b>	<b>7.5</b>	<b>20.2</b>	<b>8.1</b>	<b>8.1</b>	<b>9.1</b>	<b>4.1</b>	<b>Dec-07</b>
<i>NCREIF Property Index</i>				6.2	17.7	8.4	7.8	9.3	6.6	Dec-07
Clarion Partners Lion Properties Fund	82,581,223	6.4	78.9	7.6	22.4	9.7	9.2	10.5	6.7	Apr-05
<i>NCREIF ODCE Equal Weighted (Net)</i>				7.4	21.9	8.9	8.2	9.7	7.0	Apr-05
<b>Natural Resources</b>	<b>32,500,388</b>	<b>2.5</b>	<b>2.5</b>	<b>1.6</b>	<b>15.9</b>	<b>-3.3</b>	<b>1.3</b>	<b>--</b>	<b>1.7</b>	<b>Feb-13</b>
<i>S&amp;P North American Natural Resources TR</i>				8.1	39.9	10.1	1.3	1.3	0.7	Feb-13
<b>Cash</b>	<b>15,171,431</b>	<b>1.2</b>	<b>1.2</b>							
Cash	15,171,431	1.2	100.0							

### Fund Summary | As of December 31, 2021

Calendar Year Performance										
	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
<b>Total Fund</b>	<b>17.5</b>	<b>12.9</b>	<b>15.7</b>	<b>-2.0</b>	<b>17.0</b>	<b>7.1</b>	<b>1.3</b>	<b>4.8</b>	<b>16.1</b>	<b>13.3</b>
<i>Static Benchmark</i>	14.4	11.3	15.8	-3.6	16.4	9.6	-0.1	5.7	15.1	12.6
<i>Dynamic Benchmark</i>	14.9	10.5	14.6	-3.1	16.1	8.4	0.4	5.4	21.2	14.2
<b>Domestic Equity</b>	<b>24.6</b>	<b>16.5</b>	<b>29.4</b>	<b>-7.9</b>	<b>21.8</b>	<b>9.9</b>	<b>0.2</b>	<b>10.0</b>	<b>31.3</b>	<b>16.9</b>
<i>Russell 3000</i>	25.7	20.9	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4
Westwood Capital Large Cap Value	23.8	3.9	27.3	-5.7	20.4	10.9	-0.1	11.9	29.6	16.0
<i>Russell 1000 Value</i>	25.2	2.8	26.5	-8.3	13.7	17.3	-3.8	13.5	32.5	17.5
Westfield Small/Mid Cap Growth	16.2	34.2	35.2	-7.6	31.0	3.4	-4.1	7.8	37.2	19.5
<i>Russell 2500 Growth</i>	5.0	40.5	32.7	-7.5	24.5	9.7	-0.2	7.1	40.6	16.1
Vaughan Nelson Small Cap Value	31.0	9.6	25.0	-14.1	6.8	20.7	--	--	--	--
<i>Russell 2000 Value</i>	28.3	4.6	22.4	-12.9	7.8	31.7	-7.5	4.2	34.5	18.0
SSgA S&P 500	28.6	18.3	31.5	-4.4	21.8	12.0	1.4	13.7	32.3	15.9
<i>S&amp;P 500</i>	28.7	18.4	31.5	-4.4	21.8	12.0	1.4	13.7	32.4	16.0
<b>International Equity</b>	<b>4.1</b>	<b>17.6</b>	<b>22.4</b>	<b>-15.9</b>	<b>34.0</b>	<b>5.0</b>	<b>-4.4</b>	<b>-4.4</b>	<b>19.7</b>	<b>18.1</b>
<i>Spliced International Equity Benchmark</i>	7.8	10.7	21.5	-14.2	27.2	4.5	-5.7	-3.9	15.3	16.8
Baillie Gifford International Growth Fund	-9.4	63.0	37.3	-17.3	45.5	1.4	-2.9	-6.4	29.9	17.6
<i>MSCI ACWI ex USA</i>	7.8	10.7	21.5	-14.2	27.2	4.5	-5.7	-3.9	15.3	16.8
<i>MSCI EAFE</i>	11.3	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3

### Fund Summary | As of December 31, 2021

	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Sanderson International Value	7.4	1.5	20.5	-18.2	26.1	2.5	-5.5	-2.3	--	--
<i>MSCI EAFE Value</i>	10.9	-2.6	16.1	-14.8	21.4	5.0	-5.7	-5.4	23.0	17.7
<i>MSCI EAFE</i>	11.3	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3
Highclere International Small Cap	8.3	10.2	23.5	-18.8	30.9	10.3	6.5	-4.4	24.6	20.2
<i>MSCI EAFE Small Cap</i>	10.1	12.3	25.0	-17.9	33.0	2.2	9.6	-4.9	29.3	20.0
<i>S&amp;P EPAC Under USD2 Billion NR USD</i>	8.1	13.7	18.0	-19.6	30.8	3.5	9.0	-4.3	23.6	16.8
SSgA MSCI EAFE Fund	11.4	8.2	22.4	-13.5	25.3	1.3	-0.6	-4.7	--	--
<i>MSCI EAFE</i>	11.3	7.8	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3
DFA Emerging Markets Value	12.4	2.7	9.6	-11.9	33.8	19.8	-18.8	-4.4	-4.4	18.7
<i>MSCI Emerging Markets Value NR USD</i>	4.0	5.5	12.0	-10.7	28.1	14.9	-18.6	-4.1	-5.1	15.9
<i>MSCI Emerging Markets</i>	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2
TT Emerging Markets Equity	-1.0	19.8	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	-2.5	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2
<b>Private Equity</b>	<b>56.5</b>	<b>20.4</b>	<b>16.1</b>	<b>15.8</b>	<b>17.7</b>	<b>9.4</b>	<b>12.7</b>	<b>23.3</b>	<b>7.7</b>	<b>6.2</b>
<i>Private Equity Benchmark</i>	29.9	12.6	3.4	5.4	25.4	15.3	4.4	17.1	36.3	19.4
<b>Fixed Income</b>	<b>0.0</b>	<b>8.3</b>	<b>10.5</b>	<b>-2.0</b>	<b>5.6</b>	<b>6.9</b>	<b>-2.1</b>	<b>3.1</b>	<b>-2.4</b>	<b>8.3</b>
<i>Bloomberg US Aggregate TR</i>	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2
SSgA Bond Fund	-1.6	7.5	8.7	0.0	3.5	2.6	0.5	5.9	-2.2	4.2
<i>Bloomberg US Aggregate TR</i>	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2
Loomis Sayles Core Plus Fixed Income	-1.1	11.3	9.4	-0.4	5.4	6.9	--	--	--	--
<i>Bloomberg US Aggregate TR</i>	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2

### Fund Summary | As of December 31, 2021

	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
<b>Aberdeen Emerging Markets Bond Fund</b>	-4.0	5.0	15.1	-7.5	13.0	13.3	-2.7	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	-1.8	5.3	15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4
<i>50% JPM EMBI GD, 25% JPM GBI EM GD, 25% CMBI Broad</i>	-3.3	5.2	14.2	-3.9	10.9	10.4	-1.3	3.1	-5.2	16.8
<b>SSGA TIPS</b>	5.9	10.9	8.3	-1.3	3.0	4.6	-1.5	--	--	--
<i>Bloomberg US TIPS TR</i>	6.0	11.0	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0
<b>Pyramis Tactical Bond Fund</b>	1.2	9.3	13.2	-0.9	5.9	10.4	-1.8	5.3	--	--
<i>Bloomberg US Aggregate TR</i>	-1.5	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2
<b>Pacific Asset Management Bank Loans</b>	5.2	2.6	--	--	--	--	--	--	--	--
<i>Credit Suisse Leveraged Loans</i>	5.4	2.8	8.2	1.1	4.2	9.9	-0.4	2.1	6.2	9.4
<b>Real Estate</b>	20.2	-0.6	5.6	8.6	7.5	7.8	13.1	10.5	10.5	9.4
<i>NCREIF Property Index</i>	17.7	1.6	6.4	6.7	7.0	8.0	13.3	11.8	11.0	10.5
<b>Clarion Partners Lion Properties Fund</b>	22.4	1.4	6.3	9.2	8.0	9.3	15.7	12.3	11.8	9.9
<i>NCREIF ODCE Equal Weighted (Net)</i>	21.9	0.8	5.2	7.3	6.9	8.3	14.2	11.4	12.4	9.9
<b>Natural Resources</b>	15.9	-9.9	-13.4	2.1	15.7	8.6	-6.3	6.7	--	--
<i>S&amp;P North American Natural Resources TR</i>	39.9	-19.0	17.6	-21.1	1.2	30.9	-24.3	-9.8	16.5	2.2
<b>Cash</b>										
Cash										

Statistics Summary					
5 Years Ending December 31, 2021					
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Sharpe Ratio	Tracking Error
Total Fund	12.0%	7.0%	0.5	1.6	3.1%
Static Benchmark	10.6%	7.9%	--	1.2	0.0%
Domestic Equity	16.1%	16.8%	-0.5	0.9	3.5%
Russell 3000	18.0%	16.0%	--	1.1	0.0%
Westwood Capital Large Cap Value	13.2%	15.0%	0.6	0.8	3.4%
Russell 1000 Value	11.2%	16.5%	--	0.6	0.0%
Westfield Small/Mid Cap Growth	20.6%	19.8%	0.5	1.0	5.5%
Russell 2500 Growth	17.7%	19.7%	--	0.8	0.0%
Vaughan Nelson Small Cap Value	10.5%	19.2%	0.2	0.5	6.4%
Russell 2000 Value	9.1%	21.7%	--	0.4	0.0%
SSgA S&P 500	18.4%	15.4%	-1.4	1.1	0.0%
S&P 500	18.5%	15.4%	--	1.1	0.0%
International Equity	11.1%	16.2%	0.5	0.6	3.0%
Spliced International Equity Benchmark	9.6%	14.8%	--	0.6	0.0%
Baillie Gifford International Growth Fund	19.5%	19.0%	0.9	1.0	10.6%
MSCI ACWI ex USA	9.6%	14.8%	--	0.6	0.0%
Sanderson International Value	6.3%	16.8%	0.3	0.3	3.5%

Fund Summary | As of December 31, 2021

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Sharpe Ratio	Tracking Error
MSCI EAFE Value	5.3%	17.2%	--	0.2	0.0%
Highclere International Small Cap	9.4%	15.8%	-0.6	0.5	2.9%
MSCI EAFE Small Cap	11.0%	16.8%	--	0.6	0.0%
SSgA MSCI EAFE Fund	9.8%	14.8%	2.1	0.6	0.1%
MSCI EAFE	9.5%	14.8%	--	0.6	0.0%
DFA Emerging Markets Value	8.3%	18.5%	0.3	0.4	3.8%
MSCI Emerging Markets Value NR USD	7.0%	17.1%	--	0.3	0.0%
Private Equity	24.4%	10.8%	0.6	2.2	17.2%
Private Equity Benchmark	14.9%	15.0%	--	0.9	0.0%
Fixed Income	4.4%	4.2%	0.3	0.8	3.1%
Bloomberg US Aggregate TR	3.6%	3.1%	--	0.8	0.0%
SSgA Bond Fund	3.5%	3.1%	-0.5	0.8	0.1%
Bloomberg US Aggregate TR	3.6%	3.1%	--	0.8	0.0%
Loomis Sayles Core Plus Fixed Income	4.8%	3.4%	0.8	1.1	1.6%
Bloomberg US Aggregate TR	3.6%	3.1%	--	0.8	0.0%
Aberdeen Emerging Markets Bond Fund	4.0%	10.2%	-0.3	0.3	2.2%
JP Morgan EMBI Global Diversified	4.7%	8.8%	--	0.4	0.0%
SSGA TIPS	5.3%	3.5%	-1.1	1.2	0.1%
Bloomberg US TIPS TR	5.3%	3.5%	--	1.2	0.0%
Pyramis Tactical Bond Fund	5.6%	5.2%	0.5	0.9	4.4%
Bloomberg US Aggregate TR	3.6%	3.1%	--	0.8	0.0%



**Fund Summary | As of December 31, 2021**

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Sharpe Ratio	Tracking Error
Real Estate	8.1%	5.1%	0.2	1.4	1.8%
NCREIF Property Index	7.8%	4.3%	--	1.5	0.0%
Clarion Partners Lion Properties Fund	9.2%	5.4%	1.1	1.5	1.0%
NCREIF ODCE Equal Weighted (Net)	8.2%	5.1%	--	1.4	0.0%
Natural Resources	1.3%	13.6%	0.0	0.0	31.2%
S&P North American Natural Resources TR	1.3%	27.5%	--	0.0	0.0%

## Fund Detail

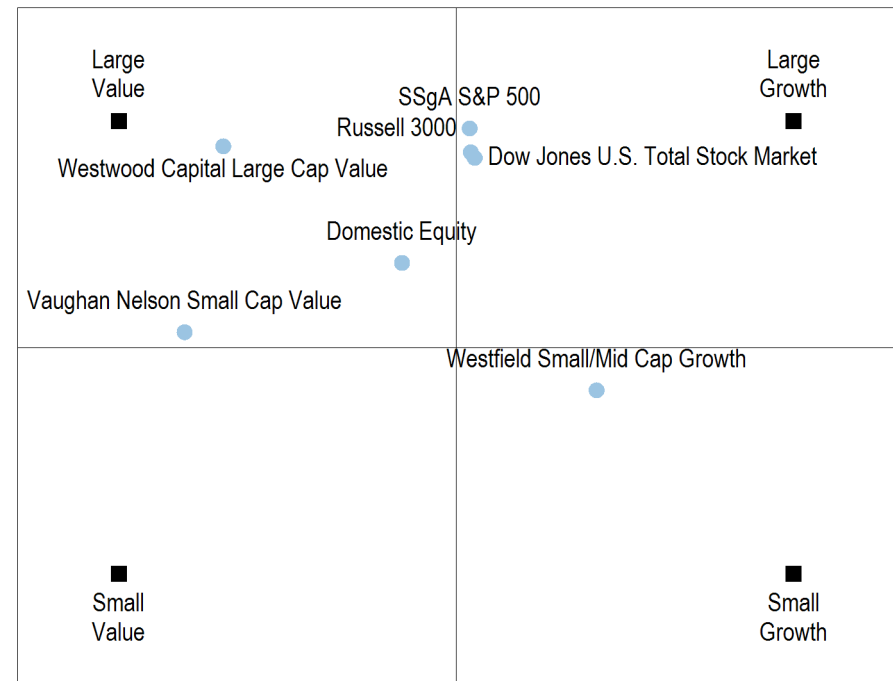
## Domestic Equity

### Domestic Equity | As of December 31, 2021

#### Asset Allocation on December 31, 2021

	Actual	Actual
Westwood Capital Large Cap Value	\$31,768,443	12.4%
Westfield Small/Mid Cap Growth	\$76,787,068	30.0%
Vaughan Nelson Small Cap Value	\$67,460,465	26.4%
SSgA S&P 500	\$79,936,445	31.2%
<b>Total</b>	<b>\$255,952,421</b>	<b>100.0%</b>

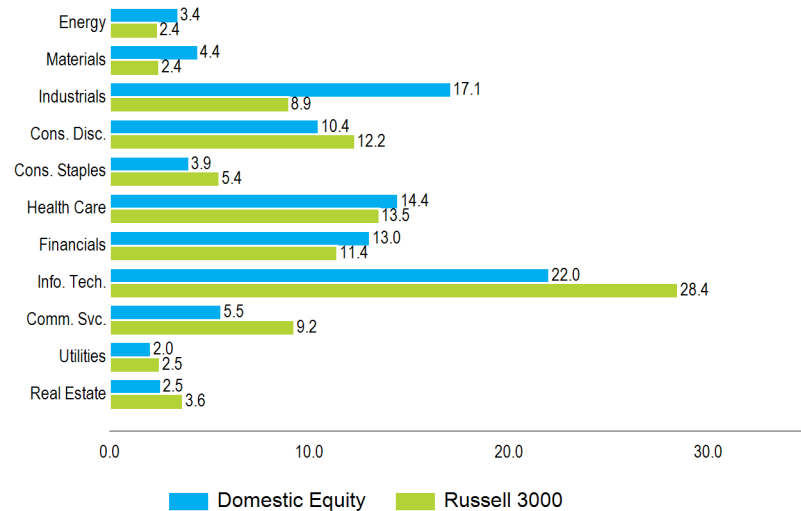
#### Domestic Equity Style Map 3 Years Ending December 31, 2021



### Domestic Equity | As of December 31, 2021

Domestic Equity Characteristics			
	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	256.0	--	236.7
Number Of Holdings	619	3065	618
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	250.5	568.6	205.9
Median Market Cap (\$B)	27.5	2.8	25.6
P/E Ratio	23.1	24.9	22.4
Yield	1.1	1.3	1.1
EPS Growth - 5 Yrs.	19.8	20.4	18.1
Price to Book	3.9	4.5	3.7

#### Sector Allocation (%) vs Russell 3000



#### Top 10 Holdings

MICROSOFT CORP	2.4%
APPLE INC	2.2%
LPL FINANCIAL HOLDINGS INC	1.3%
AMAZON.COM INC	1.1%
MKS INSTRUMENTS INC	1.1%
FMC CORP.	1.0%
ALPHABET INC	0.9%
INSIGHT ENTERPRISES INC	0.9%
AVANTOR INC	0.9%
SAIA INC	0.9%
<b>Total</b>	<b>12.7%</b>

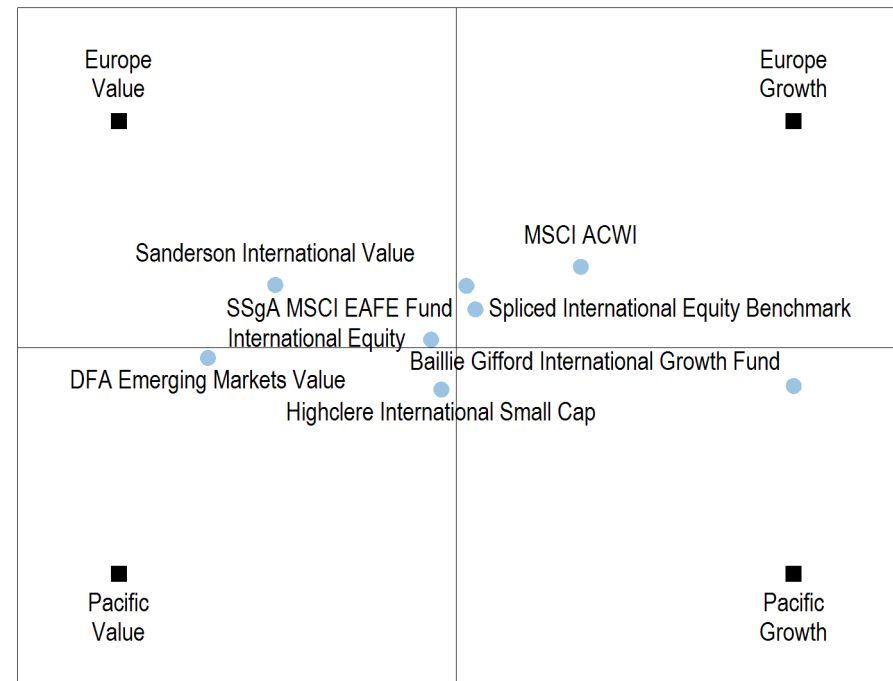
# International Equity

### International Equity | As of December 31, 2021

#### Asset Allocation on December 31, 2021

	Actual	Actual
Baillie Gifford International Growth Fund	\$39,265,842	14.8%
Sanderson International Value	\$53,113,986	20.0%
Highclere International Small Cap	\$55,065,077	20.8%
SSgA MSCI EAFE Fund	\$43,061,040	16.2%
DFA Emerging Markets Value	\$36,056,126	13.6%
TT Emerging Markets Equity	\$38,694,744	14.6%
<b>Total</b>	<b>\$265,256,816</b>	<b>100.0%</b>

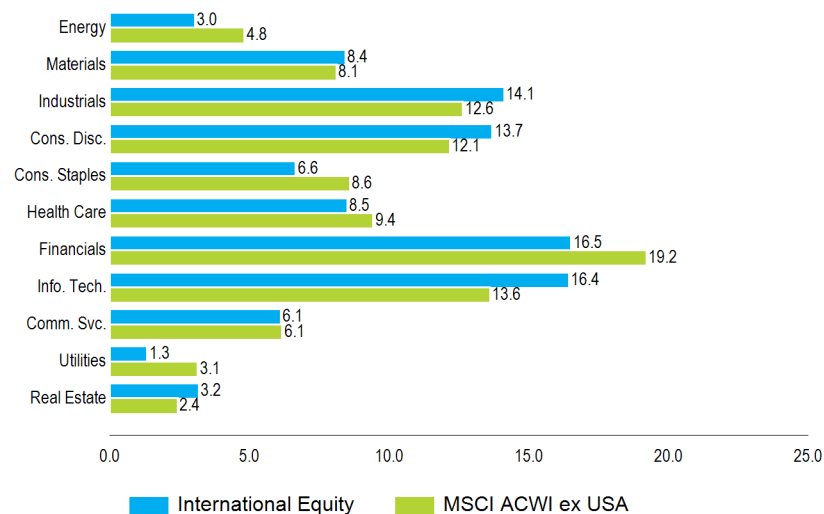
#### International Equity Style Map 3 Years Ending December 31, 2021



### International Equity | As of December 31, 2021

Total International Equity Characteristics			
	Portfolio	Index	Portfolio
	Q4-21	Q4-21	Q3-21
<b>Market Value</b>			
Market Value (\$M)	265.3	--	257.8
Number Of Holdings	4322	2330	4302
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	74.0	98.9	73.9
Median Market Cap (\$B)	1.3	10.3	1.3
P/E Ratio	13.6	15.3	13.6
Yield	2.3	2.6	2.5
EPS Growth - 5 Yrs.	13.9	13.3	13.9
Price to Book	2.6	2.7	2.6

#### Sector Allocation (%) vs MSCI ACWI ex USA



#### Top 10 Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.8%
ASML HOLDING NV	1.5%
SAMSUNG ELECTRONICS CO LTD	1.2%
TENCENT HOLDINGS LTD	1.2%
ALIBABA GROUP HOLDING LTD	1.0%
PING AN INSURANCE GROUP	0.9%
FERRARI NV	0.8%
NESTLE SA, CHAM UND VEVEY	0.8%
ADYEN N.V	0.8%
MERCADOLIBRE INC	0.8%
<b>Total</b>	<b>10.9%</b>



**Total International Equity Region Allocation**

vs MSCI ACWI ex USA

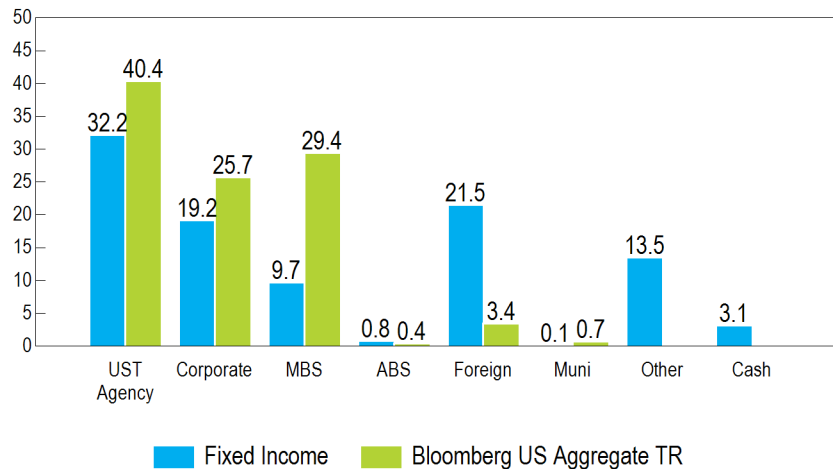
Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	7.5%	-7.5%
United States	1.4%	0.0%	1.4%
Europe Ex U.K.	31.0%	32.5%	-1.6%
United Kingdom	10.0%	9.3%	0.7%
Pacific Basin Ex Japan	7.7%	7.1%	0.6%
Japan	16.8%	14.3%	2.5%
Emerging Markets	31.2%	28.7%	2.5%
Other	2.0%	0.6%	1.4%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

## Fixed Income

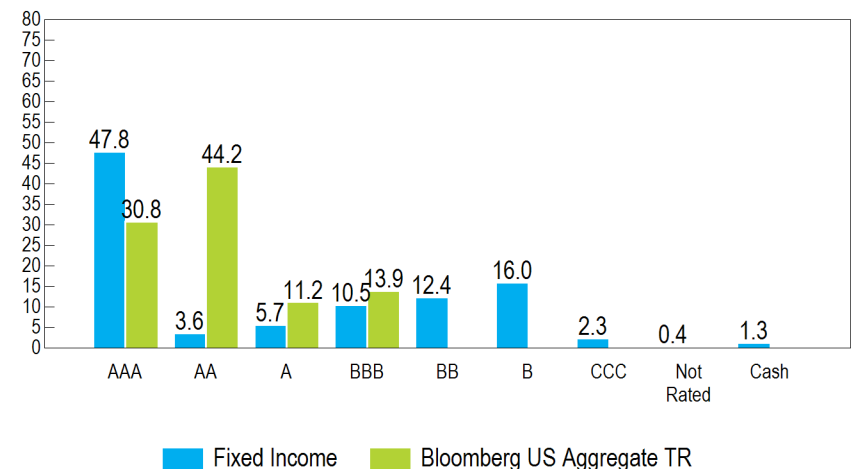
Asset Allocation on December 31, 2021		
	Actual	Actual
SSgA Bond Fund	\$95,906,849	27.0%
Loomis Sayles Core Plus Fixed Income	\$60,684,499	17.1%
Aberdeen Emerging Markets Bond Fund	\$78,002,609	22.0%
SSGA TIPS	\$61,999,875	17.5%
Pyramis Tactical Bond Fund	\$38,465,272	10.8%
Pacific Asset Management Bank Loans	\$20,151,741	5.7%
<b>Total</b>	<b>\$355,210,844</b>	<b>100.0%</b>

Total Fixed Income Characteristics vs. Bloomberg US Aggregate TR			
	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
Fixed Income Characteristics			
Yield to Maturity	3.2	1.7	2.9
Average Duration	5.7	6.8	5.9
Average Quality	A	AA	A
Weighted Average Maturity	9.0	13.8	9.0

### Sector Allocation

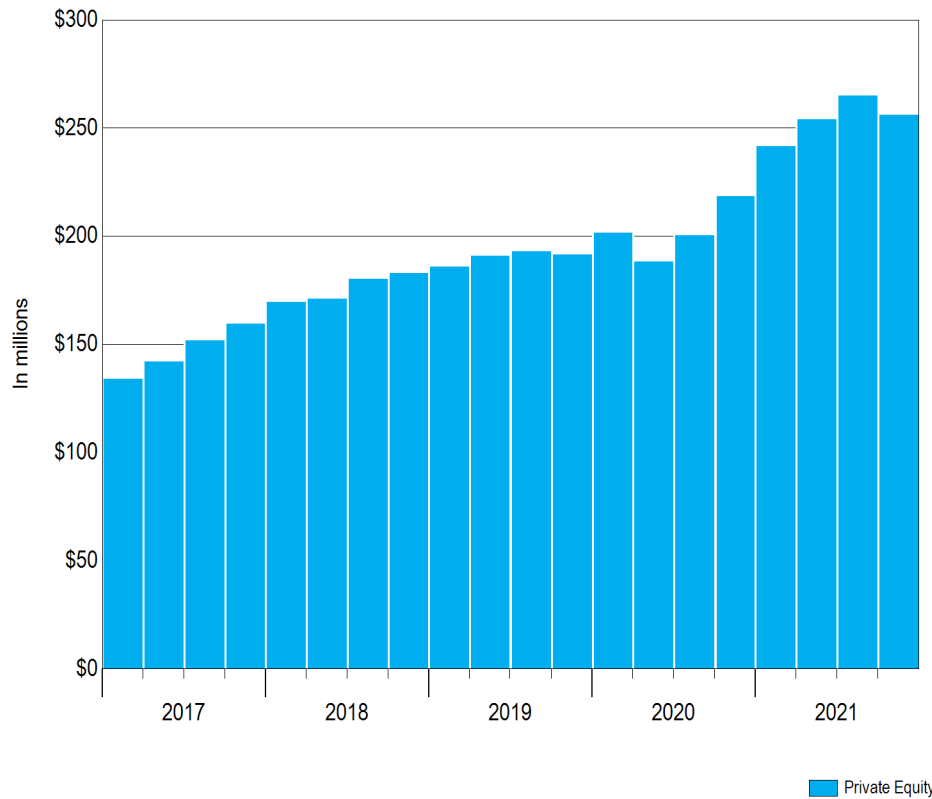


### Credit Quality Allocation

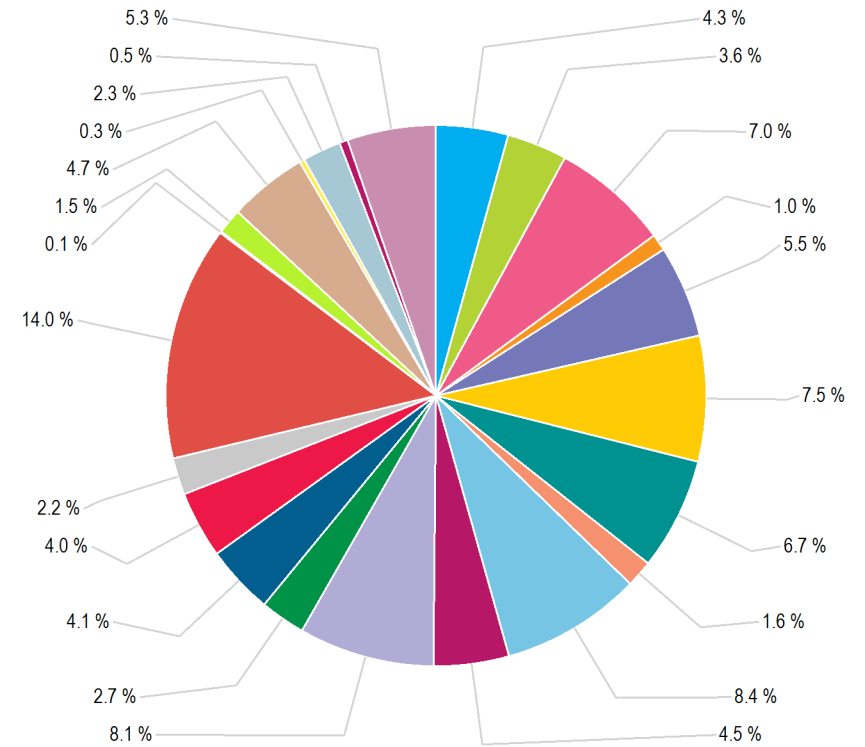


## Private Equity Assets

Market Value History



Current Allocation



Partnership	Focus	Type	Vintage Year
Manager A	Special Situations	Fund of Funds	2009
Manager B	Secondary Market	Fund of Funds	2009
Manager C	Secondary Market	Fund of Funds	2009
Manager D	Venture	Fund of Funds	2010
Manager E	Buyout	Fund of Funds	2011
Manager F	Venture	Fund of Funds	2011
Manager G	Diversified	Fund of Funds	2011
Manager H	Buyout	Fund of Funds	2012
Manager I	Secondary Market	Fund of Funds	2012
Manager J	Co-investments	Fund of Funds	2013
Manager K	Co-investments	Fund of Funds	2013
Manager L	Venture	Fund of Funds	2013
Manager M	Buyout	Fund of Funds	2012
Manager N	Venture	Fund of Funds	2013
Manager O	Buyout	Fund of Funds	2014
Manager P	Secondary Market	Fund of Funds	2014
Manager Q	Buyout	Fund of Funds	2015
Manager R	Private Debt	Direct Fund	2015
Manager S	Special Situations	Fund of Funds	2015
Manager T	Diversified	Fund of Funds	2016
Manager U	Co-investments	Fund of Funds	2017
Manager V	Venture	Fund of Funds	2018
Manager W	Secondary Market	Fund of Funds	2020

### Private Equity Assets

Partnership	Committed (\$mm)	Called (\$mm)	Distributed (\$mm)	Fair Value (\$mm)	nIRR <sup>1</sup> (%)	Vintage Year	TVPI Multiple
Manager A	7.0	6.2	8.5	0.7	10.9	2009	1.5
Manager B	3.0	2.5	4.9	0.2	17.8	2009	2.0
Manager C	3.0	3.0	1.4	1.3	-1.4	2009	0.9
Manager D	12.5	11.7	25.5	19.2	22.8	2010	3.8
Manager E	10.0	9.2	9.1	10.2	13.3	2011	2.1
Manager F	7.5	6.8	17.2	11.7	26.6	2011	4.3
Manager G	10.0	10.2	4.0	11.1	7.6	2011	1.5
Manager H	8.6	7.9	9.2	5.5	16.9	2012	1.9
Manager I	10.0	7.5	8.6	4.0	14.4	2012	1.7
Manager J	10.0	10.6	13.6	6.0	13.4	2013	1.8
Manager K	10.0	9.7	14.3	6.9	19.7	2013	2.2
Manager L	7.5	6.9	10.2	17.2	28.9	2013	4.0
Manager M	10.0	10.0	11.2	9.3	18.5	2012	2.1
Manager N	7.5	6.8	8.1	20.9	30.3	2013	4.3
Manager O	15.0	17.2	21.8	14.1	26.6 <sup>2</sup>   20.7 <sup>2</sup>	2014	2.1
Manager P	10.0	8.8	9.4	4.1	14.2	2014	1.5
Manager Q	15.0	14.0	10.2	18.0	23.0	2015	2.0
Manager R	20.0	19.3	21.0	2.6	7.0	2015	1.2
Manager S	10.0	8.8	2.9	12.1	13.1	2015	1.7
Manager T	40.0	31.5	14.7	35.9	16.2	2016	1.6
Manager U	10.0	8.1	8.5	10.5	24.7	2017	2.3
Manager V	10.0	7.6	0.0	13.6	52.5 <sup>2</sup>	2018	1.8
Manager W	40.0	15.1	3.0	21.7	93.9	2020	1.6
<b>Total</b>	<b>286.6</b>	<b>239.4</b>	<b>237.3</b>	<b>256.6</b>			<b>2.1x</b>

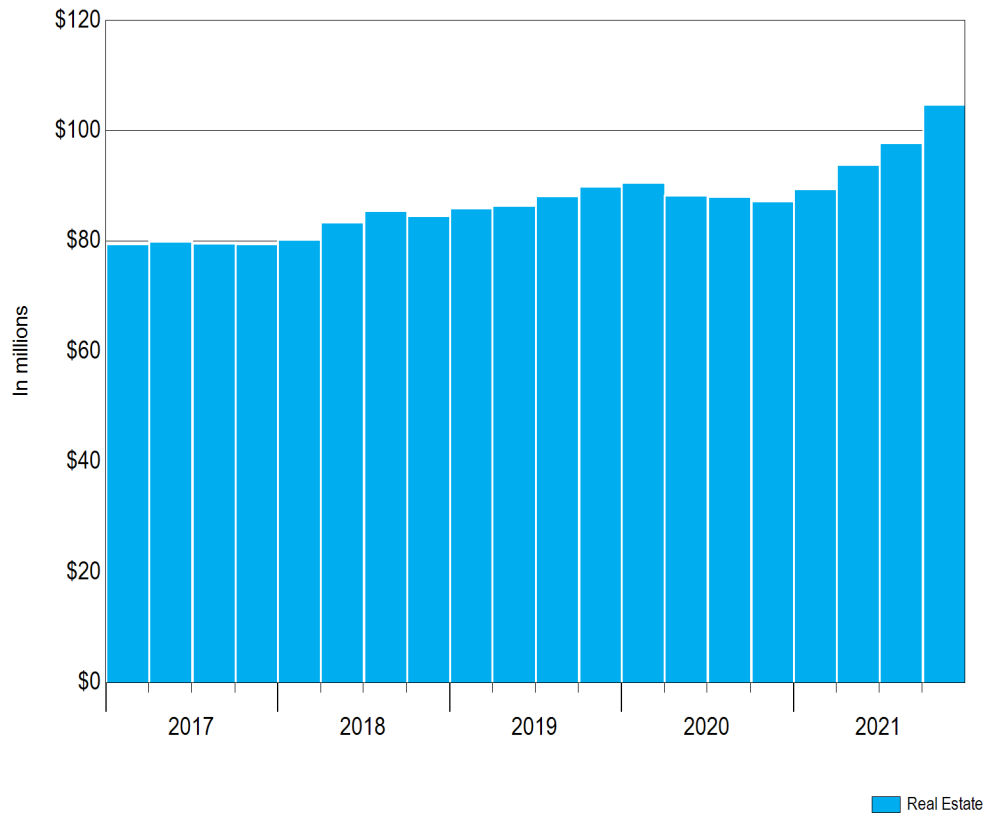
<sup>1</sup> All performance figures are reported directly from managers, net of fees, as of 9/30/21, unless otherwise noted.

<sup>2</sup> As of 6/30/2021

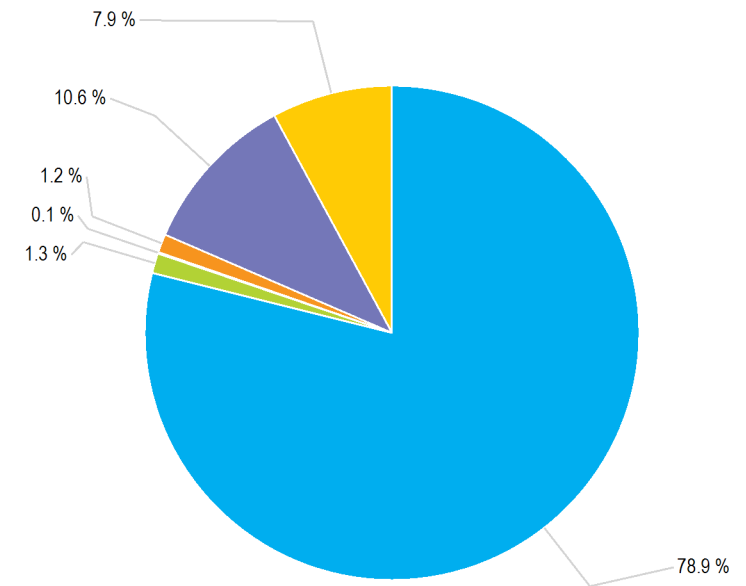
## **Real Estate Assets**



Market Value History



Current Allocation



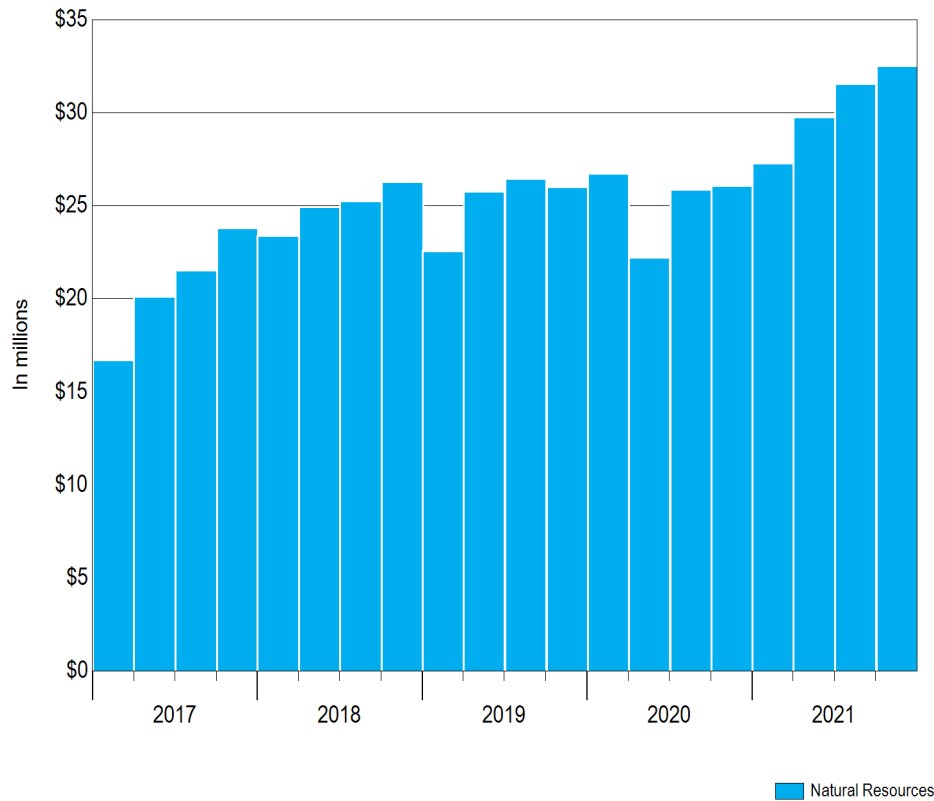
Partnership	Focus	Type	Vintage Year	TVPI Multiple
Manager A	U.S. Distressed	Fund of Funds	2009	1.3
Manager B	Real Estate Debt	Fund of Funds	2009	1.3
Manager C	Global	Fund of Funds	2011	1.3
Manager D	Global	Fund of Funds	2015	1.3
Manager E	Global	Fund of Funds	2017	1.2
				<b>1.3x</b>

Partnership	Committed (mm)	Called (mm)	Distributed (mm)	Fair Value (mm)	nIRR <sup>1</sup> (%)
Manager A	\$12.0	\$11.2	\$15.1	\$0.1	7.3
Manager B	\$12.0	\$11.3	\$13.6	\$1.4	8.5
Manager C	\$6.7	\$5.8	\$6.5	\$1.2	6.7
Manager D	\$15.0	\$12.6	\$8.4	\$8.3	7.2
Manager E	\$15.0	\$8.7	\$0.0	\$11.1	11.7
<b>Total</b>	<b>\$60.7</b>	<b>\$49.6</b>	<b>\$43.6</b>	<b>\$22.1</b>	

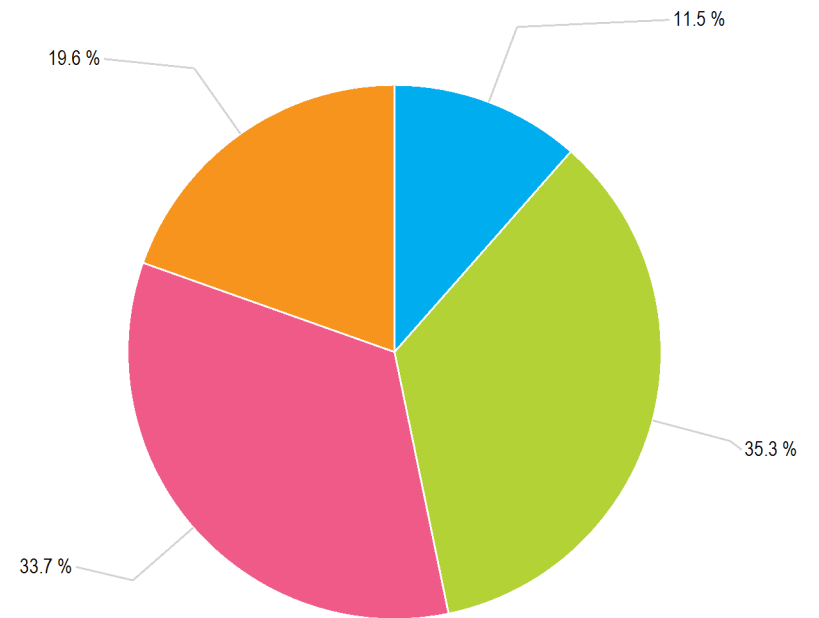
<sup>1</sup> Performance figures are reported directly from manager, net of fees, as of 9/30/2021.

## **Natural Resources Assets**

Market Value History



Current Allocation



Natural Resources Assets

Partnership	Vintage Year	Committed (mm)	Called (mm)	Distributed (mm)	Fair Value (mm)	Net IRR <sup>1</sup> %	TVPI Multiple
Manager A	2012	\$7.5	\$7.7	\$4.0	\$3.7	-1.2	1.0
Manager B	2013	\$15.0	\$15.0	\$3.5	\$11.5	-0.8	1.0
Manager C	2016	\$10.0	\$9.4	\$0.3	\$11.0	7.2	1.2
Manager D	2018	\$10.0	\$4.7	\$0.2	\$6.4	25.0	1.4
<b>Total</b>		<b>\$42.5</b>	<b>\$36.8</b>	<b>\$8.0</b>	<b>\$32.5</b>		<b>1.2x</b>

<sup>1</sup> Performance figures are reported directly from manager, net of fees, as of 9/30/2021.

# Portfolio Reviews

### Westwood Capital Large Cap Value | As of December 31, 2021

#### Account Information

Account Name	Westwood Capital Large Cap Value
Account Structure	Separate Account
Investment Style	Active
Inception Date	10/01/01
Account Type	US Equity
Benchmark	Russell 1000 Value
Universe	eV US Large Cap Value Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Westwood Capital Large Cap Value	9.2	23.8	23.8	17.8	13.2	13.2	9.4	Oct-01
Russell 1000 Value	7.8	25.2	25.2	17.6	11.2	13.0	8.6	Oct-01
eV US Large Cap Value Equity Net Median	8.1	26.8	26.8	18.3	12.1	13.1	9.1	Oct-01
eV US Large Cap Value Equity Net Rank	28	73	73	56	33	46	43	Oct-01

#### Top 10 Holdings

CVS HEALTH CORP	3.5%
UNITEDHEALTH GROUP INC	3.4%
CISCO SYSTEMS INC	3.2%
MICROSOFT CORP	3.1%
SCHWAB (CHARLES) CORP	3.1%
WALMART INC	2.9%
EATON CORP PLC	2.8%
GOLDMAN SACHS GROUP INC (THE)	2.8%
CONOCOPHILLIPS	2.7%
MICROCHIP TECHNOLOGY INC	2.7%
<b>Total</b>	<b>30.2%</b>

#### Westwood Capital Large Cap Value Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	31.8	--	29.1
Number Of Holdings	46	852	45
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	265.1	167.3	228.9
Median Market Cap (\$B)	95.2	15.0	90.7
P/E Ratio	21.0	19.0	20.1
Yield	1.6	1.9	1.6
EPS Growth - 5 Yrs.	16.4	13.6	14.0
Price to Book	3.2	2.8	2.9
<b>Sector Distribution</b>			
Energy	8.3	4.5	8.5
Materials	2.1	3.9	0.0
Industrials	12.7	11.6	12.1
Consumer Discretionary	6.8	5.4	9.9
Consumer Staples	5.0	7.4	5.2
Health Care	15.5	18.2	16.0
Financials	21.5	20.9	20.0
Information Technology	12.5	10.3	12.5
Communication Services	6.3	7.4	7.4
Utilities	4.3	5.2	4.3
Real Estate	4.5	5.2	4.0

### Westfield Small/Mid Cap Growth | As of December 31, 2021

#### Account Information

Account Name	Westfield Small/Mid Cap Growth
Account Structure	Separate Account
Investment Style	Active
Inception Date	11/01/02
Account Type	US Equity
Benchmark	Russell 2500 Growth
Universe	eV US Small-Mid Cap Growth Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Westfield Small/Mid Cap Growth	2.9	16.2	16.2	28.2	20.6	16.2	14.2	Nov-02
<i>Russell 2500 Growth</i>	0.2	5.0	5.0	25.1	17.7	15.7	13.0	Nov-02
<i>eV US Small-Mid Cap Growth Equity Net Median</i>	2.5	12.7	12.7	27.8	20.6	16.0	12.8	Nov-02
<i>eV US Small-Mid Cap Growth Equity Net Rank</i>	45	41	41	47	50	45	21	Nov-02

#### Top 10 Holdings

ATKORE INC	2.9%
DOUGLAS EMMETT INC	2.6%
AMERICAN FINANCIAL GROUP INC	2.6%
CATALENT INC	2.5%
ICON PLC	2.5%
ADVANCED DRAINAGE SYSTEMS INC	2.4%
HUBSPOT INC	2.4%
BIO-RAD LABORATORIES INC	2.3%
TREX CO INC	2.3%
FIVE BELOW INC	2.3%
<b>Total</b>	<b>24.9%</b>

#### Westfield Small/Mid Cap Growth Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	76.8	--	74.6
Number Of Holdings	61	1471	62
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	13.1	8.4	12.3
Median Market Cap (\$B)	10.5	1.9	10.3
P/E Ratio	24.3	28.4	24.6
Yield	0.6	0.5	0.6
EPS Growth - 5 Yrs.	30.0	22.4	27.4
Price to Book	5.1	6.0	5.3
<b>Sector Distribution</b>			
Energy	1.5	2.0	1.3
Materials	4.5	3.2	3.8
Industrials	21.9	15.0	17.6
Consumer Discretionary	11.8	15.4	12.5
Consumer Staples	0.0	2.7	0.0
Health Care	20.3	22.3	25.9
Financials	8.2	5.7	7.3
Information Technology	22.6	28.3	24.5
Communication Services	2.8	2.2	2.6
Utilities	0.0	0.4	0.0
Real Estate	3.7	2.8	2.4



### Vaughan Nelson Small Cap Value | As of December 31, 2021

#### Account Information

Account Name	Vaughan Nelson Small Cap Value
Account Structure	Separate Account
Investment Style	Active
Inception Date	1/01/16
Account Type	US Equity
Benchmark	Russell 2000 Value
Universe	eV US Small Cap Value Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Vaughan Nelson Small Cap Value	10.3	31.0	31.0	21.5	10.5	--	12.1	Jan-16
<i>Russell 2000 Value</i>	4.4	28.3	28.3	18.0	9.1	12.0	12.6	Jan-16
<i>eV US Small Cap Value Equity Net Median</i>	6.3	28.8	28.8	19.1	9.6	12.3	12.3	Jan-16
<i>eV US Small Cap Value Equity Net Rank</i>	5	41	41	22	38	--	51	Jan-16

#### Top 10 Holdings

INSIGHT ENTERPRISES INC	3.5%
ELEMENT SOLUTIONS INC	3.5%
EXLSERVICE HOLDINGS INC	3.0%
SYNEOS HEALTH INC	2.9%
MOLINA HEALTHCARE INC.	2.8%
ASGN INC	2.6%
LPL FINANCIAL HOLDINGS INC	2.5%
PERFORMANCE FOOD GROUP COMPANY	2.4%
CAPRI HOLDINGS LTD	2.4%
CHEMOURS CO (THE)	2.1%
<b>Total</b>	<b>27.7%</b>

#### Vaughan Nelson Small Cap Value Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	67.5	--	61.0
Number Of Holdings	67	1449	66
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	6.8	3.0	6.1
Median Market Cap (\$B)	4.8	1.1	4.6
P/E Ratio	19.7	14.2	17.8
Yield	1.0	1.7	1.0
EPS Growth - 5 Yrs.	17.8	14.3	16.6
Price to Book	2.7	1.8	2.6
<b>Sector Distribution</b>			
Energy	4.0	6.5	5.5
Materials	7.5	4.6	6.9
Industrials	24.6	15.2	23.9
Consumer Discretionary	8.1	8.0	8.4
Consumer Staples	5.6	3.0	5.0
Health Care	8.5	10.4	8.6
Financials	17.2	26.5	18.4
Information Technology	17.2	5.7	15.4
Communication Services	2.8	3.4	3.4
Utilities	2.7	5.0	2.8
Real Estate	0.0	11.6	0.0

### SSgA S&P 500 | As of December 31, 2021

#### Account Information

Account Name	SSgA S&P 500
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	2/01/04
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Large Cap Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
SSgA S&P 500	11.0	28.6	28.6	26.0	18.4	16.5	10.5	Feb-04
S&P 500	11.0	28.7	28.7	26.1	18.5	16.6	10.6	Feb-04
eV US Large Cap Equity Net Median	9.0	26.0	26.0	23.4	16.3	14.8	10.4	Feb-04
eV US Large Cap Equity Net Rank	20	28	28	35	34	28	47	Feb-04

#### Top 10 Holdings

APPLE INC	6.9%
MICROSOFT CORP	6.3%
AMAZON.COM INC	3.6%
ALPHABET INC	2.2%
TESLA INC	2.1%
ALPHABET INC	2.0%
META PLATFORMS INC	2.0%
NVIDIA CORPORATION	1.8%
BERKSHIRE HATHAWAY INC	1.4%
UNITEDHEALTH GROUP INC	1.2%
<b>Total</b>	<b>29.4%</b>

#### SSgA S&P 500 Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	79.9	--	72.0
Number Of Holdings	506	504	505
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	666.9	670.5	554.9
Median Market Cap (\$B)	34.5	34.6	30.7
P/E Ratio	26.2	26.2	25.5
Yield	1.3	1.3	1.4
EPS Growth - 5 Yrs.	19.9	19.8	18.5
Price to Book	4.9	4.9	4.5
<b>Sector Distribution</b>			
Energy	2.7	2.6	2.7
Materials	2.6	2.5	2.5
Industrials	7.8	7.7	8.0
Consumer Discretionary	12.5	13.1	12.4
Consumer Staples	5.9	6.3	5.8
Health Care	13.3	13.0	13.3
Financials	10.7	10.9	11.4
Information Technology	29.2	28.6	27.7
Communication Services	10.2	10.2	11.3
Utilities	2.5	2.4	2.4
Real Estate	2.7	2.7	2.6

### Baillie Gifford International Growth Fund | As of December 31, 2021

#### Account Information

Account Name	Baillie Gifford International Growth Fund
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	5/01/09
Account Type	Non-US Stock Developed
Benchmark	MSCI ACWI ex USA
Universe	eV ACWI ex-US All Cap Core Eq Net

#### Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	S.I. Date
	(%)	(%)	(%)	(%)	(%)	(%)	
Baillie Gifford International Growth Fund	-4.6	-9.4	26.6	19.5	13.1	13.4	May-09
MSCI ACWI ex USA	1.8	7.8	13.2	9.6	7.3	8.2	May-09
MSCI EAFE	2.7	11.3	13.5	9.5	8.0	8.4	May-09
eV ACWI ex-US All Cap Core Eq Net Median	3.0	10.0	16.9	12.1	9.2	9.8	May-09
eV ACWI ex-US All Cap Core Eq Net Rank	99	99	1	1	2	2	May-09

#### Top 10 Holdings

ASML HOLDING NV	7.6%
FERRARI NV	5.3%
MERCADOLIBRE INC	5.0%
ADYEN N.V	4.9%
TENCENT HOLDINGS LTD	4.7%
KERING	4.6%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	4.0%
ZALANDO SE	3.5%
SPOTIFY TECHNOLOGY S.A	3.4%
GENMAB A/S	3.0%
<b>Total</b>	<b>46.1%</b>

#### Baillie Gifford EAFE Fund Characteristics

	Portfolio	Index	Portfolio
	Q4-21	Q4-21	Q3-21
<b>Market Value</b>			
Market Value (\$M)	39.3	--	41.1
Number Of Holdings	53	828	52
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	129.4	85.5	125.6
Median Market Cap (\$B)	32.5	14.7	38.6
P/E Ratio	31.4	17.1	25.8
Yield	0.5	2.7	0.5
EPS Growth - 5 Yrs.	20.1	11.8	22.5
Price to Book	7.1	2.8	7.0
<b>Sector Distribution</b>			
Energy	0.0	3.4	0.0
Materials	2.4	7.6	2.8
Industrials	8.4	16.2	7.6
Consumer Discretionary	31.7	12.5	33.6
Consumer Staples	6.4	10.3	3.8
Health Care	12.5	12.8	13.5
Financials	7.5	16.9	7.3
Information Technology	21.2	9.7	20.7
Communication Services	8.8	4.5	9.1
Utilities	0.0	3.4	0.0
Real Estate	0.0	2.8	0.0

### Sanderson International Value | As of December 31, 2021

#### Account Information

Account Name	Sanderson International Value
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/13
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE Value
Universe	eV EAFE All Cap Value Net

#### Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	S.I.
	(%)	(%)	(%)	(%)	(%)	(%)	Date
Sanderson International Value	1.3	7.4	9.5	6.3	--	5.4	Feb-13
MSCI EAFE Value	1.2	10.9	7.8	5.3	5.8	3.9	Feb-13
MSCI EAFE	2.7	11.3	13.5	9.5	8.0	6.5	Feb-13
eV EAFE All Cap Value Net Median	2.3	11.3	10.6	6.9	7.0	5.9	Feb-13
eV EAFE All Cap Value Net Rank	75	87	73	80	--	61	Feb-13

#### Top 10 Holdings

SAMSUNG ELECTRONICS CO LTD	3.2%
DEUTSCHE POST AG	3.1%
CRH PLC	2.8%
UBS GROUP AG	2.7%
PING AN INSURANCE GROUP	2.7%
CASH - USD	2.5%
HOYA CORP	2.5%
COMPAGNIE DE SAINT GOBAIN SA	2.3%
NESTLE SA, CHAM UND VEVEY	2.3%
BRAMBLES LTD	2.2%
<b>Total</b>	<b>26.5%</b>

#### Sanderson International Value Characteristics

	Portfolio	Index	Portfolio
	Q4-21	Q4-21	Q3-21
<b>Market Value</b>			
Market Value (\$M)	53.1	--	52.4
Number Of Holdings	76	828	79
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	64.6	85.5	65.7
Median Market Cap (\$B)	16.5	14.7	14.4
P/E Ratio	12.5	17.1	13.0
Yield	3.3	2.7	3.7
EPS Growth - 5 Yrs.	13.0	11.8	9.9
Price to Book	2.0	2.8	2.0
<b>Sector Distribution</b>			
Energy	1.0	3.4	1.0
Materials	8.4	7.6	8.2
Industrials	18.2	16.2	18.1
Consumer Discretionary	7.0	12.5	7.6
Consumer Staples	9.6	10.3	8.1
Health Care	10.6	12.8	12.3
Financials	25.0	16.9	26.4
Information Technology	8.2	9.7	7.4
Communication Services	7.7	4.5	6.9
Utilities	0.7	3.4	1.0
Real Estate	0.0	2.8	0.0

### Highclere International Small Cap | As of December 31, 2021

#### Account Information

Account Name	Highclere International Small Cap
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	12/01/09
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE Small Cap
Universe	eV EAFE Small Cap Equity Net

#### Portfolio Performance Summary

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	S.I.
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
Highclere International Small Cap	-2.2	8.3	8.3	13.8	9.4	10.2	9.1	Dec-09
MSCI EAFE Small Cap	0.1	10.1	10.1	15.6	11.0	10.8	9.2	Dec-09
S&P EPAC Under USD2 Billion NR USD	-1.8	8.1	8.1	13.2	8.8	9.0	7.6	Dec-09
eV EAFE Small Cap Equity Net Median	0.4	12.7	12.7	15.5	11.0	11.5	10.4	Dec-09
eV EAFE Small Cap Equity Net Rank	86	78	78	70	79	77	64	Dec-09

#### Top 10 Holdings

WATCHES OF SWITZERLAND GROUP PLC	1.3%
AFREECATV CO LTD	1.2%
QT GROUP OYJ	1.1%
ULVAC INC	1.1%
KNOW IT	1.1%
G-7 HOLDINGS	1.0%
ADVANCED WIRELESS SEMICONDUCTOR CO	1.0%
EIKEN CHEMICAL	1.0%
KOMICO LTD	0.9%
SANWA HOLDINGS CORP	0.9%
<b>Total</b>	<b>10.6%</b>

#### Highclere International Small Cap Characteristics

	Portfolio	Index	Portfolio
	Q4-21	Q4-21	Q3-21
<b>Market Value</b>			
Market Value (\$M)	55.1	--	56.3
Number Of Holdings	177	2371	177
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	1.5	3.5	1.5
Median Market Cap (\$B)	1.0	1.5	1.0
P/E Ratio	16.8	16.0	17.7
Yield	2.0	2.3	1.9
EPS Growth - 5 Yrs.	9.5	9.1	7.6
Price to Book	2.6	2.4	2.4
<b>Sector Distribution</b>			
Energy	1.3	1.7	2.2
Materials	4.9	9.3	4.9
Industrials	22.1	23.2	22.1
Consumer Discretionary	15.2	12.7	15.1
Consumer Staples	6.2	5.4	5.9
Health Care	9.2	6.7	9.9
Financials	8.5	10.6	7.8
Information Technology	16.2	10.7	15.1
Communication Services	6.0	4.5	5.3
Utilities	0.7	3.0	0.6
Real Estate	8.7	12.2	8.9

### SSgA MSCI EAFE Fund | As of December 31, 2021

#### Account Information

Account Name	SSgA MSCI EAFE Fund
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	2/01/13
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE Core Equity Net

#### Portfolio Performance Summary

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	S.I.
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
SSgA MSCI EAFE Fund	2.7	11.4	11.4	13.9	9.8	--	6.8	Feb-13
MSCI EAFE	2.7	11.3	11.3	13.5	9.5	8.0	6.5	Feb-13
eV EAFE Core Equity Net Median	2.4	12.5	12.5	14.6	10.2	9.0	7.3	Feb-13
eV EAFE Core Equity Net Rank	46	57	57	62	55	--	63	Feb-13

#### Top 10 Holdings

NESTLE SA, CHAM UND VEVEY	2.2%
ASML HOLDING NV	2.0%
ROCHE HOLDING AG	1.7%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.3%
TOYOTA MOTOR CORP	1.1%
NOVO NORDISK 'B'	1.1%
NOVARTIS AG	1.1%
ASTRAZENECA PLC	1.0%
SONY GROUP CORPORATION	0.9%
SAP SE	0.8%
<b>Total</b>	<b>13.3%</b>

#### SSgA MSCI EAFE Fund Characteristics

	Portfolio	Index	Portfolio
	Q4-21	Q4-21	Q3-21
<b>Market Value</b>			
Market Value (\$M)	43.1	--	32.2
Number Of Holdings	845	828	848
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	85.7	85.5	80.0
Median Market Cap (\$B)	14.6	14.7	14.1
P/E Ratio	17.2	17.1	18.0
Yield	2.7	2.7	2.7
EPS Growth - 5 Yrs.	12.2	11.8	10.3
Price to Book	2.9	2.8	2.8
<b>Sector Distribution</b>			
Energy	3.3	3.4	3.5
Materials	7.5	7.6	7.3
Industrials	16.0	16.2	15.7
Consumer Discretionary	12.3	12.5	12.6
Consumer Staples	10.2	10.3	10.2
Health Care	12.6	12.8	12.6
Financials	16.8	16.9	17.2
Information Technology	9.6	9.7	9.7
Communication Services	4.4	4.5	4.7
Utilities	3.4	3.4	3.3
Real Estate	2.8	2.8	2.9

### DFA Emerging Markets Value | As of December 31, 2021

#### Account Information

Account Name	DFA Emerging Markets Value
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	12/01/09
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets Value NR USD
Universe	eV Emg Mkts All Cap Value Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DFA Emerging Markets Value	0.4	12.4	12.4	8.2	8.3	4.6	3.3	Dec-09
MSCI Emerging Markets Value NR USD	-0.4	4.0	4.0	7.1	7.0	3.3	2.9	Dec-09
MSCI Emerging Markets	-1.3	-2.5	-2.5	10.9	9.9	5.5	4.6	Dec-09
eV Emg Mkts All Cap Value Equity Net Median	-0.1	3.1	3.1	10.6	9.2	5.5	4.9	Dec-09
eV Emg Mkts All Cap Value Equity Net Rank	26	16	16	84	67	71	90	Dec-09

#### Top 10 Holdings

RELIANCE INDUSTRIES LTD	2.9%
CHINA CONSTRUCTION BANK CORP	2.3%
SK HYNIX INC	1.5%
PING AN INSURANCE GROUP	1.3%
HON HAI PRECISION INDUSTRY CO LTD	1.2%
ALIBABA GROUP HOLDING LTD	1.2%
INDUSTRIAL & COMMERCIAL BANK OF CHINA LTD	1.1%
BAIDU INC	1.0%
VALE SA	1.0%
KB FINANCIAL GROUP INC	0.9%
<b>Total</b>	<b>14.4%</b>

#### DFA Emerging Markets Value Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	36.1	--	35.9
Number Of Holdings	3238	906	3216
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	35.5	69.6	36.2
Median Market Cap (\$B)	0.5	6.7	0.5
P/E Ratio	7.7	9.0	8.2
Yield	3.7	3.7	3.8
EPS Growth - 5 Yrs.	14.4	12.4	14.6
Price to Book	1.7	2.1	1.7
<b>Sector Distribution</b>			
Energy	10.3	6.8	11.2
Materials	14.7	10.9	15.0
Industrials	9.0	5.7	9.0
Consumer Discretionary	9.5	11.9	8.7
Consumer Staples	3.0	4.7	2.9
Health Care	2.6	2.6	2.6
Financials	27.3	26.9	26.5
Information Technology	13.4	18.4	12.3
Communication Services	3.3	5.6	3.3
Utilities	1.7	3.7	2.0
Real Estate	5.0	2.8	5.5

### TT Emerging Markets Equity | As of December 31, 2021

#### Account Information

Account Name	TT Emerging Markets Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/19
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts Equity Net

#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
TT Emerging Markets Equity	-3.0	-1.0	-1.0	--	--	--	9.7	Apr-19
MSCI Emerging Markets	-1.3	-2.5	-2.5	10.9	9.9	5.5	8.2	Apr-19
eV Emg Mkts Equity Net Median	-0.9	0.4	0.4	12.8	10.2	6.1	9.7	Apr-19
eV Emg Mkts Equity Net Rank	78	58	58	--	--	--	50	Apr-19

#### Top 10 Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	9.5%
SAMSUNG ELECTRONICS CO LTD	3.8%
SAMSUNG ELECTRONICS CO LTD	3.7%
ALIBABA GROUP HOLDING LTD	3.4%
TENCENT HOLDINGS LTD	3.4%
H D F C BANK LTD	2.8%
DELTA ELECTRONICS INC	2.6%
SK HYNIX INC	2.5%
CEMEX SAB DE CV	2.5%
ICICI BANK	2.4%
<b>Total</b>	<b>36.6%</b>

#### TT Emerging Markets Equity Characteristics

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Market Value</b>			
Market Value (\$M)	38.7	--	39.9
Number Of Holdings	65	1413	66
<b>Characteristics</b>			
Weighted Avg. Market Cap. (\$B)	166.2	139.7	166.9
Median Market Cap (\$B)	18.2	7.2	8.0
P/E Ratio	13.0	12.3	10.6
Yield	1.7	2.4	2.7
EPS Growth - 5 Yrs.	19.8	15.8	27.0
Price to Book	2.8	2.8	3.0
<b>Sector Distribution</b>			
Energy	4.2	5.6	0.0
Materials	14.6	8.6	11.2
Industrials	5.9	5.1	4.8
Consumer Discretionary	7.7	13.5	24.0
Consumer Staples	2.9	5.9	1.8
Health Care	1.5	4.2	2.3
Financials	14.8	19.4	10.5
Information Technology	33.0	22.7	19.8
Communication Services	5.6	10.7	8.6
Utilities	1.7	2.4	0.9
Real Estate	1.5	2.0	6.9



### SSgA Bond Fund | As of December 31, 2021

#### Account Information

Account Name	<b>SSgA Bond Fund</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>1/01/04</b>
Account Type	<b>US Fixed Income Investment Grade</b>
Benchmark	<b>Bloomberg US Aggregate TR</b>
Universe	<b>eV US Core Fixed Inc Net</b>

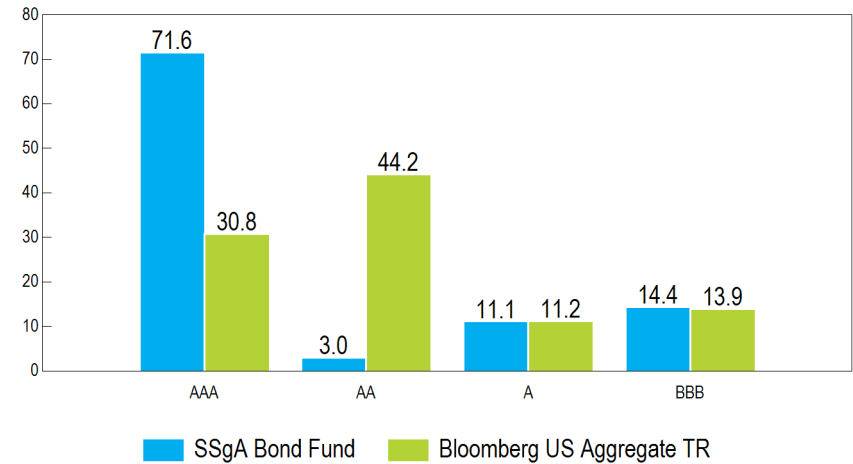
#### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
SSgA Bond Fund	0.0	-1.6	4.8	3.5	2.8	3.9	Jan-04
Bloomberg US Aggregate TR	0.0	-1.5	4.8	3.6	2.9	4.0	Jan-04
eV US Core Fixed Inc Net Median	-0.1	-1.5	5.2	3.8	3.2	4.2	Jan-04
eV US Core Fixed Inc Net Rank	33	56	78	76	83	77	Jan-04

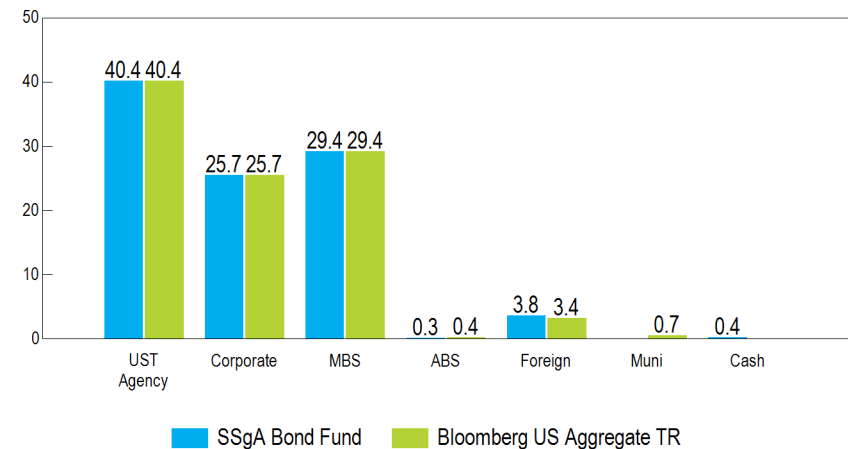
#### SSgA Bond Fund Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Fixed Income Characteristics</b>			
Yield to Maturity	1.8	1.7	1.6
Average Duration	6.8	6.8	6.7
Average Quality	AA	AA	AA
Weighted Average Maturity	8.6	13.8	8.4

#### Credit Quality Allocation



#### Sector Allocation



### Loomis Sayles Core Plus Fixed Income | As of December 31, 2021

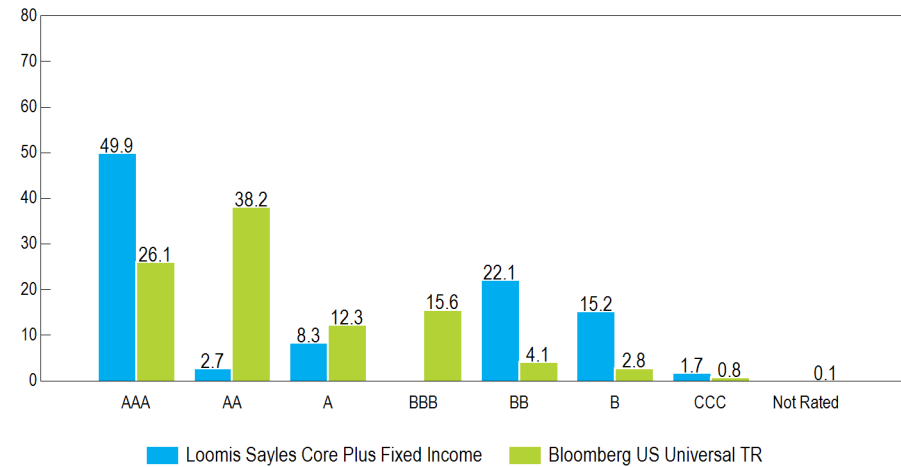
#### Account Information

Account Name	<b>Loomis Sayles Core Plus Fixed Income</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>7/01/15</b>
Account Type	<b>US Fixed Income Investment Grade</b>
Benchmark	<b>Bloomberg US Aggregate TR</b>
Universe	<b>eV US Core Plus Fixed Inc Net</b>

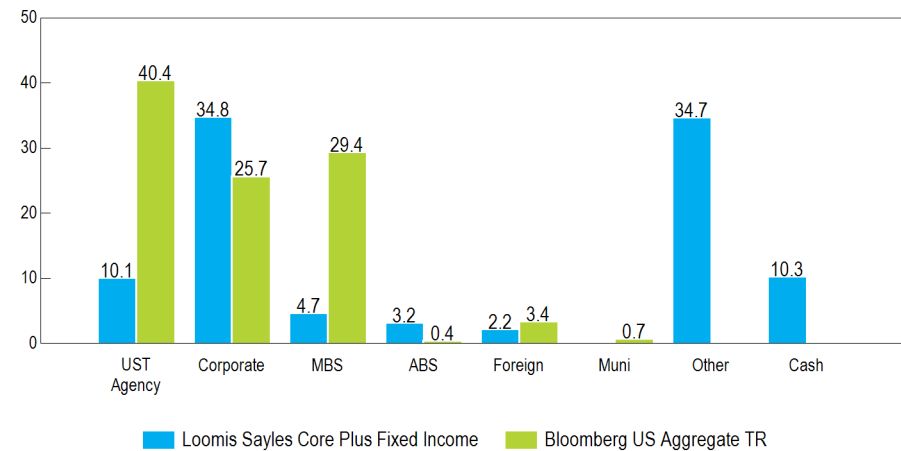
#### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Loomis Sayles Core Plus Fixed Income	-0.2	-1.1	6.4	4.8	--	4.3	Jul-15
Bloomberg US Aggregate TR	0.0	-1.5	4.8	3.6	2.9	3.3	Jul-15
eV US Core Plus Fixed Inc Net Median	0.0	-0.4	5.9	4.3	3.9	4.0	Jul-15
eV US Core Plus Fixed Inc Net Rank	85	81	35	18	--	27	Jul-15

#### Credit Quality Allocation



#### Sector Allocation



#### Loomis Sayles Core Plus Fixed Income Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
Fixed Income Characteristics			
Yield to Maturity	2.6	1.7	2.5
Average Duration	--	6.8	5.6
Average Quality	BBB	AA	BBB
Weighted Average Maturity	7.8	13.8	7.4

### Aberdeen Emerging Markets Bond Fund | As of December 31, 2021

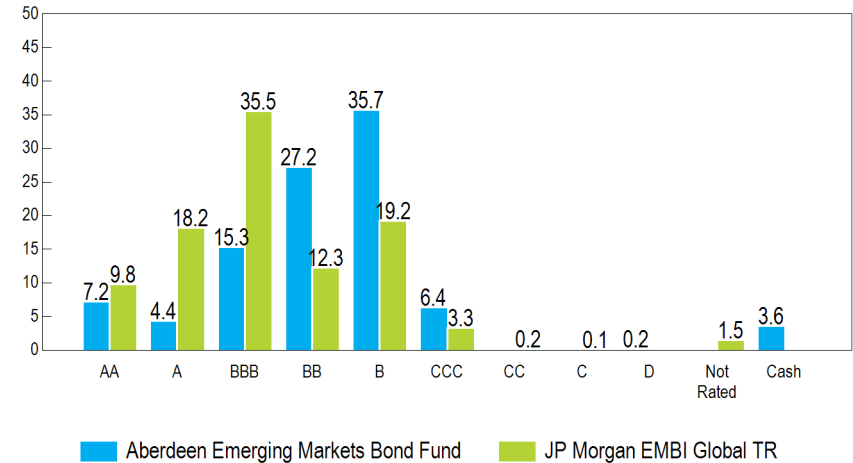
#### Account Information

Account Name	<b>Aberdeen Emerging Markets Bond Fund</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>12/01/14</b>
Account Type	<b>International Emerging Market Debt</b>
Benchmark	<b>JP Morgan EMBI Global Diversified</b>
Universe	

#### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Aberdeen Emerging Markets Bond Fund	-1.6	-4.0	5.1	4.0	--	3.6	Dec-14
<i>JP Morgan EMBI Global Diversified</i>	-0.4	-1.8	5.9	4.7	5.3	4.5	Dec-14
<i>50% JPM EMBI GD, 25% JPM GBI EM GD, 25% CMBI Broad</i>	-1.2	-3.3	5.1	4.4	4.4	3.8	Dec-14

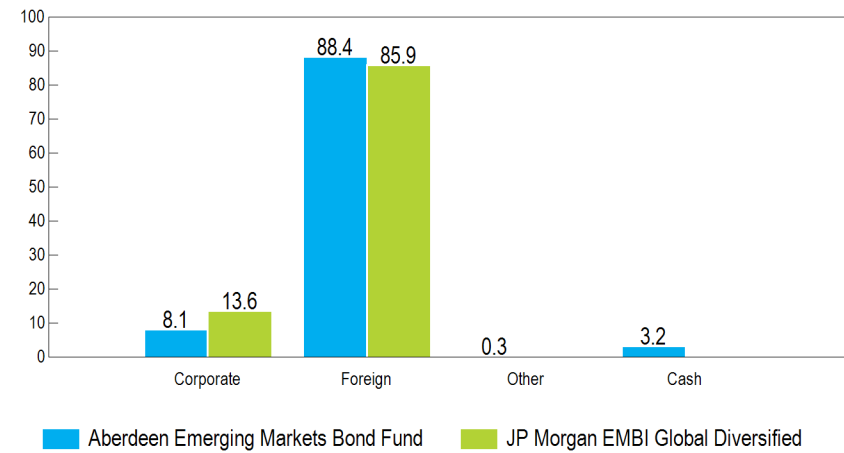
#### Credit Quality Allocation



#### Aberdeen Emerging Markets Bond Fund Characteristics vs. JP Morgan EMBI Global TR

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Fixed Income Characteristics</b>			
Yield to Maturity	6.8	4.4	6.1
Average Duration	7.0	8.1	6.9
Average Quality	BB	BBB	BB
Weighted Average Maturity	12.1	13.0	11.9

#### Sector Allocation



#### Account Information

Account Name	<b>SSGA TIPS</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>8/01/14</b>
Account Type	<b>US Inflation Protected Fixed</b>
Benchmark	<b>Bloomberg US TIPS TR</b>
Universe	<b>eV US TIPS / Inflation Fixed Inc Net</b>

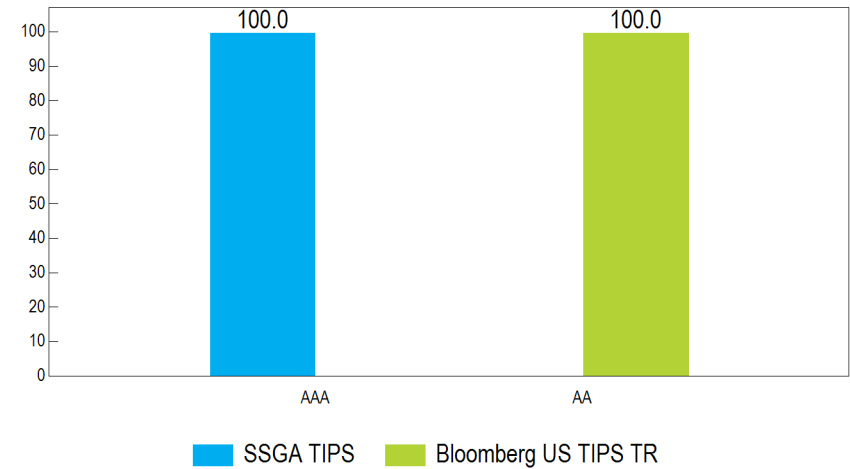
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
SSGA TIPS	2.3	5.9	5.9	8.4	5.3	--	3.6	Aug-14
Bloomberg US TIPS TR	2.4	6.0	6.0	8.4	5.3	3.1	3.7	Aug-14
eV US TIPS / Inflation Fixed Inc Net Median	2.2	5.7	5.7	8.3	5.4	3.1	3.6	Aug-14
eV US TIPS / Inflation Fixed Inc Net Rank	19	33	33	46	61	--	49	Aug-14

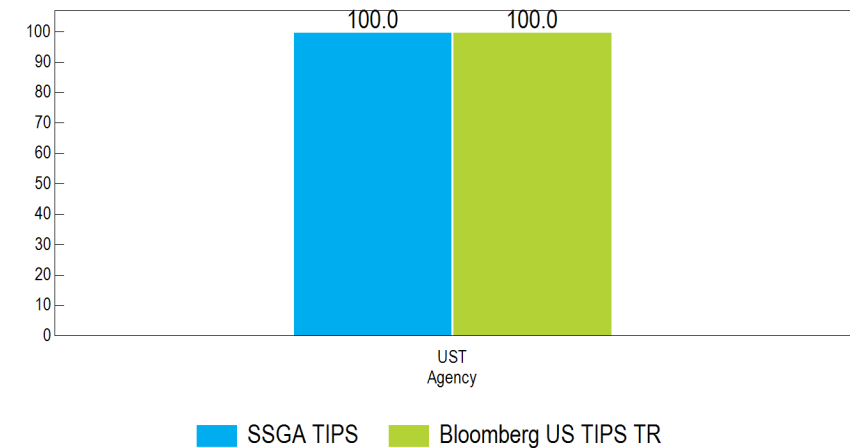
#### SSGA TIPS Characteristics vs. Bloomberg US TIPS TR

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Fixed Income Characteristics</b>			
Yield to Maturity	1.3	1.2	1.2
Average Duration	4.4	7.5	5.5
Average Quality	AAA	AA	AAA
Weighted Average Maturity	8.0	8.0	8.2

#### Credit Quality Allocation



#### Sector Allocation



### Pyramis Tactical Bond Fund | As of December 31, 2021

#### Account Information

Account Name	<b>Pyramis Tactical Bond Fund</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>8/01/13</b>
Account Type	<b>US Fixed Income High Yield</b>
Benchmark	<b>Bloomberg US Aggregate TR</b>
Universe	<b>eV US Core Plus Fixed Inc Net</b>

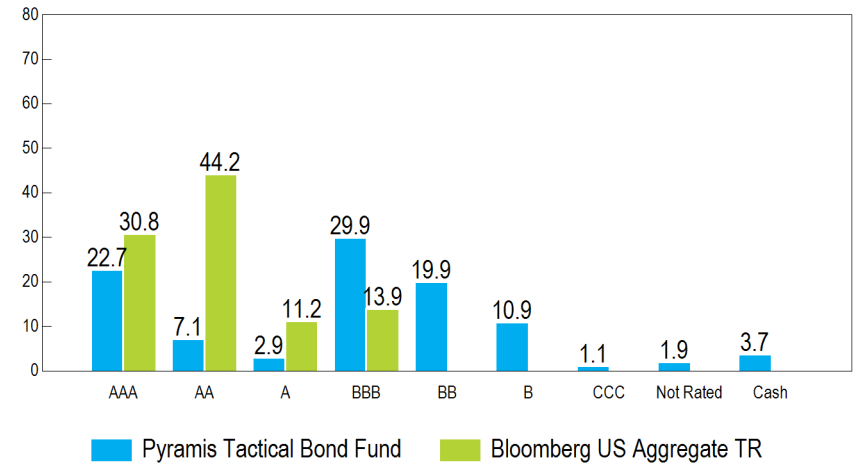
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Pyramis Tactical Bond Fund	0.6	1.2	1.2	7.8	5.6	--	5.1	Aug-13
<i>Bloomberg US Aggregate TR</i>	0.0	-1.5	-1.5	4.8	3.6	2.9	3.2	Aug-13
<i>eV US Core Plus Fixed Inc Net Median</i>	0.0	-0.4	-0.4	5.9	4.3	3.9	3.9	Aug-13
<i>eV US Core Plus Fixed Inc Net Rank</i>	5	7	7	2	3	--	2	Aug-13

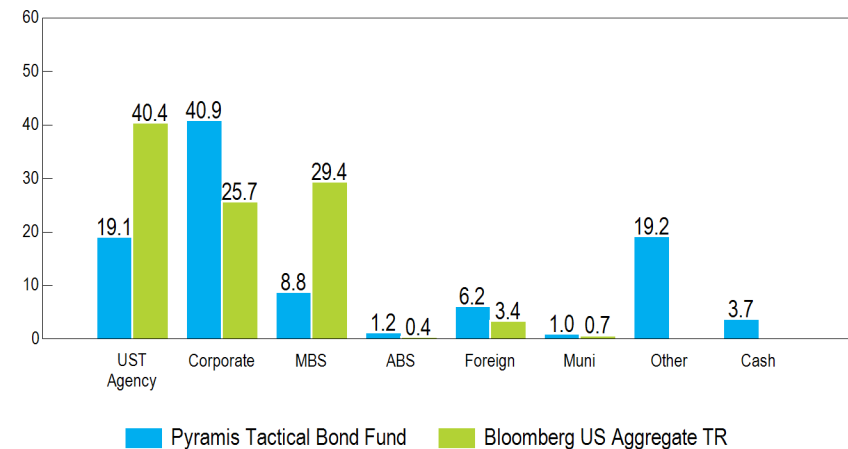
#### Pyramis Tactical Bond Fund Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q4-21	Index Q4-21	Portfolio Q3-21
<b>Fixed Income Characteristics</b>			
Yield to Maturity	3.1	1.7	3.0
Average Duration	5.3	6.8	6.5
Average Quality	BBB	AA	BBB
Weighted Average Maturity	10.0	13.8	11.6

#### Credit Quality Allocation



#### Sector Allocation



### Pacific Asset Management Bank Loans | As of December 31, 2021

#### Account Information

Account Name	<b>Pacific Asset Management Bank Loans</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>12/01/19</b>
Account Type	<b>US Fixed Income</b>
Benchmark	<b>Credit Suisse Leveraged Loans</b>
Universe	<b>Bank Loan MStar MF</b>

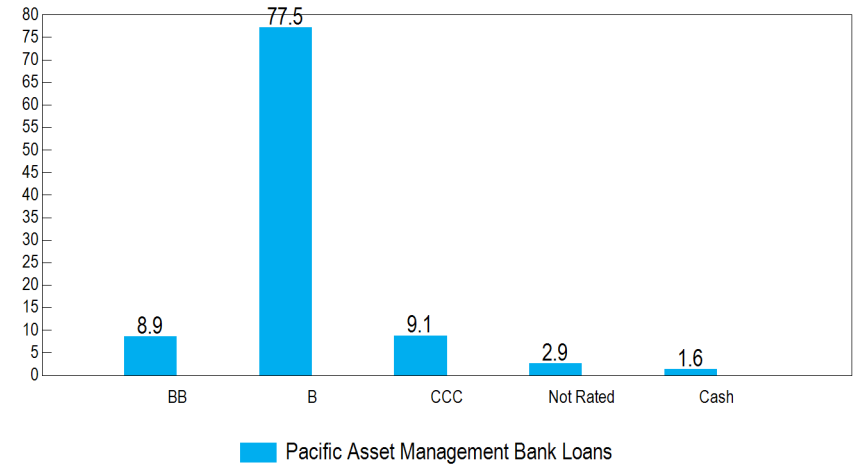
#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Pacific Asset Management Bank Loans	0.9	5.2	5.2	--	--	--	4.2	Dec-19
<i>Credit Suisse Leveraged Loans</i>	0.7	5.4	5.4	5.4	4.3	4.8	4.7	Dec-19
<i>Bank Loan MStar MF Median</i>	0.6	4.6	4.6	4.8	3.7	4.2	3.8	Dec-19
<i>Bank Loan MStar MF Rank</i>	10	30	30	--	--	--	35	Dec-19

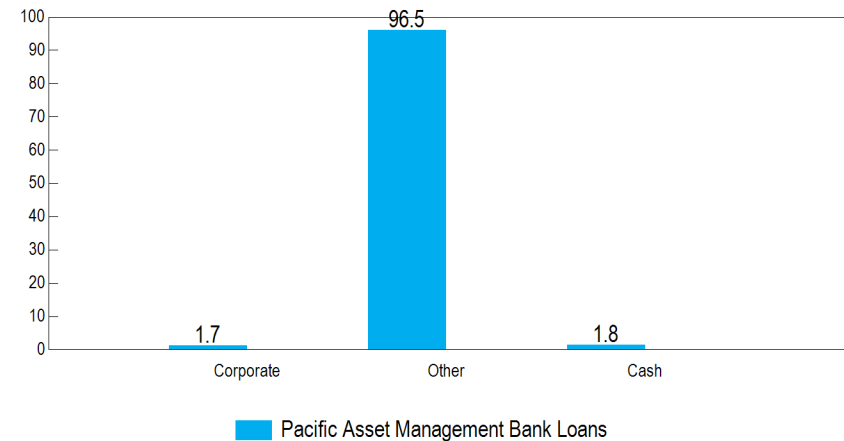
#### Pacific Asset Management Bank Loans Characteristics

	Portfolio Q4-21	Portfolio Q3-21
<b>Fixed Income Characteristics</b>		
Yield to Maturity	4.5	4.4
Average Duration	0.3	0.3
Average Quality	B	B
Weighted Average Maturity	4.8	4.8

#### Credit Quality Allocation



#### Sector Allocation

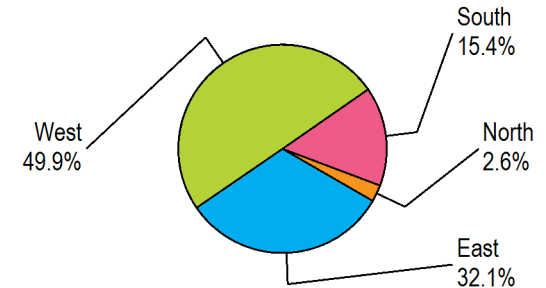


### Clarion Partners Lion Properties Fund | As of December 31, 2021

#### Account Information

Account Name	Clarion Partners Lion Properties Fund
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/05
Account Type	Real Estate
Benchmark	NCREIF ODCE Equal Weighted (Net)
Universe	

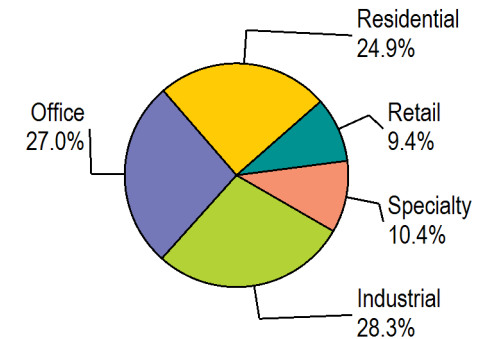
#### Geographic Diversification Allocation as of December 31, 2021



#### Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Clarion Partners Lion Properties Fund	7.6	22.4	22.4	9.7	9.2	10.5	6.7	Apr-05
NCREIF ODCE Equal Weighted (Net)	7.4	21.9	21.9	8.9	8.2	9.7	7.0	Apr-05

#### Property Type Allocation Allocation as of December 31, 2021



Clarion Partners Lion Properties Fund characteristics are as of September 30, 2021.

Investment Expense Analysis

As Of December 31, 2021

Name	Market Value	% of Portfolio	Estimated Fee	Estimated Fee Value
Westwood Capital Large Cap Value	\$31,768,443	3.6%	0.50%	\$158,842
Westfield Small/Mid Cap Growth	\$76,787,068	8.8%	0.39%	\$299,470
Vaughan Nelson Small Cap Value	\$67,460,465	7.7%	0.88%	\$593,453
SSgA S&P 500	\$79,936,445	9.1%	0.01%	\$10,494
Baillie Gifford International Growth Fund	\$39,265,842	4.5%	0.61%	\$239,522
Sanderson International Value	\$53,113,986	6.1%	0.78%	\$414,627
Highclere International Small Cap	\$55,065,077	6.3%	1.11%	\$610,618
SSgA MSCI EAFE Fund	\$43,061,040	4.9%	0.06%	\$25,837
DFA Emerging Markets Value	\$36,056,126	4.1%	0.41%	\$147,830
TT Emerging Markets Equity	\$38,694,744	4.4%	0.80%	\$309,558
SSgA Bond Fund	\$95,906,849	10.9%	0.03%	\$28,772
Loomis Sayles Core Plus Fixed Income	\$60,684,499	6.9%	0.28%	\$171,711
Aberdeen Emerging Markets Bond Fund	\$78,002,609	8.9%	0.45%	\$351,012
SSGA TIPS	\$61,999,875	7.1%	0.03%	\$18,600
Pyramis Tactical Bond Fund	\$38,465,272	4.4%	0.34%	\$130,782
Pacific Asset Management Bank Loans	\$20,151,741	2.3%	0.41%	\$82,622
<b>Total</b>	<b>\$876,420,081</b>	<b>100.0%</b>	<b>0.41%</b>	<b>\$3,593,749</b>



# Appendix

## **Disclaimer, Glossary, and Notes**

WE HAVE PREPARED THIS REPORT FOR THE SOLE BENEFIT OF THE FUND.

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

**Disclaimer, Glossary, and Notes**

**Credit Risk:** Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Jensen's Alpha:** A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**Market Capitalization:** For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

**Market Weighted:** Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

**Maturity:** The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

**Price-Book Value (P/B) Ratio:** The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

**Disclaimer, Glossary, and Notes**

**Price-Earnings (P/E) Ratio:** A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**STIF Account:** Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

**Tracking Error:** A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Disclaimer, Glossary, and Notes

**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

**Yield to Worst:** The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

**NCREIF Property Index (NPI):** Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

**NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE):** Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.  
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.



**Sebastian Grzejka, CAIA**  
Partner

**Michael P. Sullivan**  
Partner

December 1, 2023

Carolyn Russo  
Executive Director  
MWRA Employees' Retirement System  
2 Griffin Way  
Chelsea, MA 02150

**RE: Investment Consulting Solution for MWRA Employees' Retirement System ("MWRA")**

Dear Carolyn:

On behalf of Mike and myself, we are pleased to submit our proposal to continue our relationship with the MWRA and build on the partnership we have enjoyed for over 20 years. As you are aware, NEPC has been providing investment consulting services since 1986 and has proudly partnered with the System since 1999. Over that time, the market and regulatory environment has evolved, however, our commitment to providing a stable partner and successful guidance along the way has not. Looking forward, we are excited about the opportunity to continue our partnership well into the future! In that regard, as you complete your evaluation, we would ask you to consider the following points that differentiate NEPC from the competition.

1. We are one of the largest **independent** investment consulting firms in the industry. We advise 420 retainer clients with \$1.6 trillion in assets<sup>1</sup>. Our growth is attributed to the high-quality results our clients have achieved and our high service model.
2. We have a **dedicated public fund team** that advises 71 public funds representing \$775 billion in assets<sup>2</sup>. These team members have spent virtually their entire careers working with Public Fund clients. Further, we proudly work with a half dozen Massachusetts Public Retirement Systems, with some of our relationships extending out to 35 years. Accordingly, through this experience, we are thoroughly familiar with M.G.L. Chapter 32 and the subsequent 840 C.M.R. investment regulations. Further, NEPC is a member of MACRS and has presented at the conferences on investment related topics in the past. Lastly, our team is in constant contact with PERAC and keenly aware of their regulatory process. In fact, NEPC has regularly shared our views on both the current and past investment-related regulations with PERAC.

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<sup>1</sup> As of 10/1/2023, includes 99 clients with OCIO assets of \$83.1 billion.

<sup>2</sup> As of 10/1/2023

3. NEPC research is **award winning**<sup>3</sup>. We have one of the largest research staffs among independent firms and have subject matter specialists in all facets of traditional and alternative investments.
  - NEPC's Head of Investment Manager Research, Sarah Samuels, CFA, CAIA, Partner, was named one of Pension & Investments **Influential Women in Institutional Investing** in 2023, and as **Advisor of the Year** by With Intelligence for the organization's 2022 Allocator Prizes.
  - NEPC was awarded **General Investment Consultant of the Year** (AuA over \$20BN) at the Pension Bridge Institutional Asset Management Awards 2020.
  - Allan Martin, a Partner on the public fund team, was named in CIO magazine's "The Knowledge Brokers 2023", "The Knowledge Brokers 2020" and "The Knowledge Brokers 2018" editions as one of the **world's most influential investment consultants**. In 2018, he was named **consultant of the year** at the CIO Innovation Awards.
  - In 2019, Kevin Leonard, Partner, Practice Group Director (Public Fund and Taft-Hartley), was named in CIO magazine's "The Knowledge Brokers 2019" edition as one of the **world's most influential investment consultants**.
4. We are **thought leaders**, guiding our collective client base to **outperform** the Investment Metrics/ICC median<sup>4</sup> in 31 of the 37 years since our founding in 1986.

Thank you in advance for your consideration and we hope to have the opportunity to present our investment consulting capabilities to you in person. Should you have any questions, please call us at (617) 374-1300.

Best regards,

A handwritten signature in dark ink, appearing to read "Sebastian Bynska", followed by a stylized flourish.

Enclosures

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<sup>3</sup> Please see Disclosures for important disclosures related to awards and recognitions.

<sup>4</sup> The median fund in the \$2.2 trillion Investment Metrics Universe (or the ICC Universe through 2011) represents average performance among a nationwide sample of plan sponsor results.





DECEMBER 2023

# INVESTMENT CONSULTING SOLUTION

MWRA Employees' Retirement  
System ("MWRA")

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## EXECUTIVE SUMMARY

NEPC was founded in 1986 on three main principles: maintain **independence**, provide **proactive solutions**, and serve our clients with **seasoned professionals**. This focus, combined with client performance, has allowed us to provide investment consulting services to our clients for **37 years**.



**100%**  
Independently owned  
by 46 partners

**100% employee owned** NEPC is neither an affiliate nor a subsidiary nor otherwise affiliated with a larger corporate parent. Our independence ensures our impartiality, aligning our interests with the success of our clients. We do not accept any form of compensation other than the consulting

fees paid by our clients.

At NEPC, we've created a thriving company culture that appeals to the industry's finest talent — with **359 professionals** nationwide.

NEPC's consulting business is divided into distinct practice areas. We work with **71 public fund clients** representing \$775 billion in assets. Public funds account for 50% of NEPC's clients' total assets. These funds are served by our dedicated Public Fund team of 20 investment professionals, including 6 partners.

### How We Help Our Clients

Our dedicated Public Fund Consulting Team has deep knowledge of asset allocation, asset liability hedging as well as a proactive strategic approach, which understands the nuances specific to the public fund marketplace. Everything we do is driven by our passion to gain a clear understanding of your situation and deliver investment advice specific to your needs.



- 124 CLIENT SERVICES
- 69 RESEARCH
- 80 PERFORMANCE REPORTING
- 86 OPERATIONS & SUPPORT



We assess our clients' progress against their own unique goals and objectives as well as versus peer group results across multiple metrics.

To help our public fund clients build **customized investment programs** that meet their unique investment goals and fulfill their fiduciary obligations, we incorporate data from the plan's actuarial valuation statements when performing our comprehensive **asset liability studies**. As a result, we can forecast the impact of changes to fund provisions, workforce, and actuarial assumptions on funding and contributions. Additionally, our **risk budgeting and scenario analysis** tools allow plan sponsors to test alternative asset allocations under multiple economic environments to confidently build an investment program that meets their needs.



In response to our clients' growing concern about **liquidity**, we've developed an analysis that enables us to examine each client's current and projected liquidity needs, and to profile the potential sources of these needs. We're careful to define these liquidity needs not only as actuarial forecasts of contributions vs. benefit payments, but also as forecasts of the liquidity needs rising from their alternative asset programs. This gives our clients a complete picture of their liquidity profile, which then becomes a key factor in determining how much exposure their portfolio can handle within illiquid asset classes.

## Investing Is Complex, But We Love Every Part



Superior investing is grounded in superior research and knowledge. NEPC has built one of the largest dedicated research teams in the consulting industry. The Research Group comprises 19% of NEPC's total work force and plays an integral role in supporting client relationships. Be it searching for the next investment strategy for your portfolio, considering a mosaic of perspectives while constructing portfolios, or monitoring existing managers, our mission is to provide sound financial advice. When you work with us, you get:

- A **boutique consulting experience** backed by a 69-person research team
- **Second-level thinking**, drawing conclusions in a non-linear way, considering interacting and convoluted outcomes and staying one or two steps ahead of the market. This can many times be unconventional and is necessary to outperform
- A forward-looking, multi-faceted asset allocation process that involves a comprehensive understanding of risk
- Actionable investment advice based on original, on-the-ground research and a comprehensive and exhaustive due diligence process
- A **Discovery Platform** dedicated to uncovering the next great investment idea off the beaten path of traditional areas of focus
- An open mind, relentless curiosity, **diversity in thought and experience**, and a vibrant mix of ideas
- Investment opportunities across the entire liquidity spectrum, not just within a single asset class
- **Independent and unbiased insights** on public market and alternative assets, market and economic events, and industry trends

We are proactive in bringing new ideas and investment opportunities to clients and are viewed as a thought leader in our field. We provide our ideas to our clients, through our **annual asset allocation letter**, **quarterly market outlook**, **quarterly market webinar**, **quarterly asset class review**, **monthly pension monitor** and **monthly market commentary**, as well as through **client webinars**, our **investment conference**, and **blogs** that focus on topical issues and key investment topics including new investment opportunities.

Employees as of 10/1/2023, clients as of 10/1/2023

## RESPONSE TO QUESTIONNAIRE

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### A. Background

#### A. Please provide a brief history of the firm.

NEPC, LLC has been providing investment consulting services since 1986. NEPC was founded on three main principles: strive to maintain **independence**, provide **proactive counsel** to help our clients exceed their goals and objectives, and service our clients with **seasoned professionals**.

NEPC takes pride in our long record of success providing independent, objective investment counsel to our clients. Clients can be confident in NEPC's integrity, as our revenue model is completely aligned with our clients' interests and goals. NEPC receives **100% of our revenue** exclusively from providing advisory consulting and OCIO services to our clients. NEPC's client-focused approach, paired with our experience and deep research resources, helps to ensure that we will continue to meet our clients' needs, through all types of market conditions.

#### B. Please identify the location of the firm's headquarters and branch offices.

NEPC maintains offices across the country in Atlanta, Georgia; Charlotte, North Carolina; Chicago, Illinois; Las Vegas, Nevada; Portland, Oregon, and San Francisco, California, with our headquarters located at:

NEPC, LLC  
255 State Street  
Boston, MA 02109  
Telephone: (617) 374-1300  
Facsimile: (617) 374-1313  
Website: www.nepc.com

In the second half of 2023, NEPC will be opening an international office in London predominantly for conducting research.

#### C. Please describe the ownership structure of the entity and the number of employees.

NEPC is a Limited Liability Company (LLC). Since inception in 1986, NEPC has been 100% employee-owned and is therefore neither an affiliate nor a subsidiary nor otherwise affiliated with a larger corporate parent. Recognizing the need for thoughtful succession planning and potential distractions caused by ownership, NEPC has already completed the difficult task of intergenerational ownership transition. Today, ownership is shared among 46 partners; no partner owns more than 6% of the firm.

We have an active process that allows for the annual distribution of firm equity, which ensures continuity and stability through the ongoing transition of the firm's ownership to future generations. In fact, there are new Partners added almost every year - proving our structure is designed for stability and continuity.

In the current world of industry consolidation, our thoughtful approach to the business model sets NEPC apart from many of our competitors who are just now addressing the critical challenge of intergenerational ownership transfer and management continuity. In the recent industry acquisition frenzy, we have had opportunities to sell and have solidly affirmed that we have no intention of selling our firm. NEPC's sole focus on **investment consulting**, while being 100% employee owned, assures our clients that we will be able to continue doing what we love for many years to come.

NEPC has a staff of 359 professional employees<sup>5</sup>. We have 77 senior client service professionals supported by 47 client service analysts. Separately, NEPC's research team includes 48 senior

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<sup>5</sup> As of 10/1/2023



investment professionals and 21 investment analysts. We have 19 investment operations specialists that support the OCIO business, as well as a legal and compliance team of 5 that supports the overall firm as well as legal support for OCIO implementation. We have 80 professionals dedicated to performance measurement services. There are 24 members of our staff who are responsible for operations, financial reporting, human resources, marketing, and sales. Additionally, 26 members of our staff are responsible for our systems and data governance, and 12 employees have administrative responsibilities.

We are organized by practice teams to provide specialized consulting services to different client types. NEPC has seven consulting practice teams devoted to Taft-Hartley, Public Funds, Endowment/Foundation, Healthcare Organizations, Corporations, Private Wealth Clients and Defined Contribution Plans.

**D. Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc).**

NEPC has four client relationships with companies that have a money manager subsidiary whereby we (a) provide advice regarding their employee retirement plan or (b) provide research and advice connected to the selection of third-party investment managers. These relationships contribute less than 1% to our annual revenue and are fully disclosed when we conduct manager searches. The fees NEPC receives from these relationships are not affected by a rating that may be assigned by our research team, or by investments made by clients.

We also use the services of investment management firms to manage our employee Profit Sharing and 401(k) Plans.

**E. Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.**

NEPC has been providing investment consulting services for 37 years. We consult to 420 clients with total assets of \$1.6 trillion<sup>6</sup>, \$775 billion of this total is in the public fund segment of the market. NEPC works with the following six public employee retirement funds in Massachusetts:

Massachusetts Public Fund Clients:	Market Value (\$million)	Client Since:
Town of Belmont, MA	152	9/1/88
Boston Retirement System	8,597	7/1/04
Boston Water and Sewer Commission	183	6/1/99
Mass. Water Resources Authority	656	2/1/99
Medford Contributory Retirement System	229	5/1/99
Confidential Public Fund	94,396	4/1/11

Accordingly, we are thoroughly familiar with M.G.L. Chapter 32 and the subsequent 840 C.M.R. investment regulations. Our staff is familiar with the PERAC waiver process and has regularly shared our views on both the current and past investment-related regulations with PERAC.

In addition to our knowledge of Massachusetts Public Pension Investments, NEPC is a member and active participant in the Massachusetts Association of Contributory Retirement Systems (MACRS), a resource for the 106 retirement boards in Massachusetts.

**F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity’s areas of greatest expertise.**

NEPC offers a full suite of investment consulting services. On an ongoing basis our consulting services address every phase of the investment process, including:

<sup>6</sup> As of 10/1/2023, includes 99 clients with OCIO assets of \$83.1 billion.



- Investment policy development and risk control, for the Plan which includes both public markets and alternative assets;
- Asset allocation, both asset-based and liability-driven which also includes risk budgeting, scenario analysis and liquidity analysis;
- Extensive experience and expertise in designing and implementing alternative asset programs;
- Innovative solutions to investment needs (Portfolio construction (i.e. portfolio equity reviews), private equity and debt, real estate and real assets, hedging strategies, and risk budgeting);
- Investment manager and custodian searches for both public markets and alternative assets;
- Due diligence on managers and investment products;
- Education and research focused on diverse investment managers;
- Performance analysis for the total Plan, each asset class, and each manager;
- OCIO services, and:
- Client education.

Areas of expertise include asset allocation, which makes extensive use of risk budgeting techniques, asset liability matching strategies, and our alternative research capabilities. All these items are expanded upon in greater detail later in this proposal.

**G. Please identify the firms future goals, particularly how such goals may pertain to accepting new client business and overall quality of client service.**

NEPC’s organizational goal or mission is to be the Consultant of Choice for institutional investors and investment professionals in the industry. To achieve this, we strive to be proactive, innovative, and exceed client expectations. We think the following are key in enabling NEPC to achieve its goal:

- 1) **Independence** – In this era of consolidation in the investment consulting industry, the Partnership at NEPC has repeatedly affirmed our desire to remain independent. We believe we offer, and will continue to offer, a superior product due in part to our independence and single focus on delivering exceptional consulting services to our clients. In a consolidating industry, our ownership structure has allowed us to attract individuals and teams from other consultants.
- 2) **Controlled Growth** – This involves maintaining the proper balance among our human resources, the services we provide, and the selective addition of new clients. We are very sensitive to the servicing requirements of current and prospective clients and have regularly turned down new business opportunities. For Public Funds, where our size and reputation ensure we are included in most major searches, we regularly decline to bid on roughly half of the opportunities.
- 3) **Attract and Retain Extraordinarily Well-Qualified Personnel** – As our business has grown, we have added professional, technical, and administrative personnel, both “home grown” and from competitors (41 current consultants/researchers joined from competing firms).
- 4) **Continue to Invest and Enhance Service and Research Capabilities** – Our clients benefit from our ability to source great ideas from our deep research team and our scale via lower costs and efficiencies.



## B. Operations

### A. Please indicate whether accounts are serviced by teams or individual consultants.

NEPC's clients are supported on a team basis to ensure continuity of service and to keep up to date on client actions. Typically, at least two of our representatives are present at each client meeting.

### B. Please indicate the average number and size of accounts per consultant or team

**The firm's client-to-client service consultant ratio is 6:1 – one of the lowest in the industry.** We proudly maintain a level that is significantly below industry averages, and we believe doing so allows us to provide superior service for our clients.

**Importantly, the average of six clients per client service consultant does not include our research professionals.** Most of our competitors include their research personnel in their client coverage which we believe can materially misstate the true coverage clients should enjoy from a well-resourced firm.

### C. Please indicate the largest number of accounts serviced by any consultant or team.

We limit the number of accounts per consultant based on the client's complexity and servicing needs. We decline new business when we determine that we cannot maintain our service standards without first hiring additional consultants and support staff. In 2022, we declined to respond to 64 RFP submissions.

We have carefully grown our consulting and technical staff to service our existing client base and to accommodate future growth. Therefore, we only succeed and grow if our clients are happy, and their needs have been met.



We are organized by practice teams to provide specialized consulting services to different client types. NEPC has seven consulting practice teams devoted to Public Funds, Taft-Hartley, Endowment/Foundation, Healthcare Organizations, Corporations, Private Wealth Clients, and Defined Contribution Plans.

### D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.

Quarterly reports are produced on a cycle that generally begins around the 15<sup>th</sup> business day after quarter-end. The timing of report delivery for your investment program will depend on portfolio complexity and the sources of data. In addition, monthly flash reports are generally available beginning seven business days after month-end, again depending on portfolio complexity and on the receipt of custodian data.



In addition to the quarterly performance reports, a current market update, asset allocation overview, manager searches, and educational materials can and will be prepared in support of meetings. Our goal is not only to provide a performance recap, but also to focus on current market information and forward-looking ideas that may benefit the portfolio.

NEPC uses Confluence Technologies' PARis report/performance calculation engine to internally calculate client performance. The PARis advanced performance reporting platform provides extensive portfolio diagnostics and streamlines data collection from investment managers and custodians. To provide our clients with plan-level peer analysis, NEPC uses Confluence Technologies' Investment Metrics universe with 3,250 plans totaling over \$2.2 trillion in assets. This data is drawn from 52 independent investment consulting firms, including NEPC. For manager-level comparisons, NEPC utilizes the eVestment and MorningStar databases, which are the industry's most comprehensive universes.

This is a service that we have provided in a timely and accurate manner since the onset of our relationship.

**E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.**

Advisory investment consulting and Outsourced Chief Investment Officer (OCIO) services are NEPC's sole lines of business; therefore, 100% of our revenues are a result of providing advisory investment consulting and OCIO services to our clients.

**F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts "soft dollars" as a method of payment for services provided.**

No, NEPC does not act as a broker/dealer.

**G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.**

We are unaware of any potential conflicts of interest that would be created in serving MWRA Retirement System. **You should never wonder if your interests are first and foremost when working with your consultant.** NEPC strives to avoid and mitigate conflicts of interest whenever possible, and we have structured our business model with this in mind. Examples of our focus on mitigating potential conflicts of interest include the following:

- We do not have a complicated business model which can inhibit the ability of clients to understand fee transparencies and potential conflicts
- We do not have divisions or ownership in firms that offer proprietary, fee-generating investment products
- We do not provide brokerage services
- We do not offer actuarial services
- We do not accept or pay referral fees, finder's fees, or other commissions for placing managers with clients or for any other activity
- We do not incent our consultants to switch clients to a higher-fee service model
- We do not charge investment managers for inclusion in our manager search databases
- All fees paid to NEPC are cash-based and we do not accept any soft dollars
- We do not provide management consulting to investment management firms to help them with strategic decision-making and product positioning
- Our investment conference is not subsidized by investment managers



NEPC has an Allocation Policy that is applied whenever NEPC receives advance notice that any investment product (i) has limited capacity and/or may close in the relatively near future, or (ii) will be subject to a change in terms for investments made after a particular date. This policy ensures that clients are granted a fair and reasonable opportunity to invest in the product prior to the closure or change in terms.

Our business model has been designed to mitigate potential conflicts of interests so that we maintain our independence and objectivity and align our interests with those of our clients.

**H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.**

We do not pay or receive commissions or accept referral fees or finder's fees from investment managers. As previously mentioned, NEPC has four client relationships with companies that have a money manager subsidiary whereby we provide advice regarding their employee retirement plan, or provide research and advice connected to the selection of third-party investment managers.

**I. Please indicate whether the entity sells or brokers investment vehicles.**

NEPC launched Access Vehicles for our **OCIO clients** beginning in October 2021. These vehicles allow our OCIO clients to further benefit from our scale through potentially lower investment manager fees and administrative costs. In late 2021 we launched global equity vehicle and emerging markets equity vehicles, then we launched a US small cap vehicle in April 2023 and a diversified credit vehicle in July 2023. All vehicles have two parallel offerings to accommodate ERISA and non-ERISA clients. We intend to introduce additional access vehicles for our clients in the years to come. **NEPC does not receive revenue from these vehicles to ensure there are no conflicts in offering these vehicles to our clients, and there is no requirement or financial incentive to transfer to the Access Vehicles.**

**J. Please indicate whether the entity actively manages the investment of accounts.**

We do not provide trust, actuarial or brokerage services. NEPC provides OCIO services for certain clients as an extension of our traditional consulting business. Under this service, we primarily determine asset allocation, and select and implement investment managers and certain strategies for our clients, based on the client's goals and objectives. We do not trade or otherwise manage individual securities.

**K. Please indicate whether the firm accepts or pays referral or finder's fees.**

NEPC does not accept manager referral fees or charge fees to include managers in our firm's database or in manager searches. We believe to do so would create an irreconcilable conflict of interest. The manager referral fee can be considered an additional layer of fees tied to the involvement of an additional party to the manager selection process. NEPC has always avoided these types of arrangements. In addition, NEPC seeks to negotiate the lowest fees and most favorable terms for our clients.

**C. Investment Analysis Approach**

**A. Please outline the entity's process for:**

- a. The development of the client's overall investment policy as well as investment policy for specific asset classes.**
- b. The development of client investment objectives.**

We believe that a well-conceived investment policy statement is the cornerstone of a successful investment program and provides a beneficial element of continuity. The development of appropriate policies involves the management of competing interests. Critical inputs include risk tolerance from the perspective of both the Board and Staff, legal constraints and investment restrictions, funded status, liquidity needs, stability of returns and time horizon. This type of effort is important, since the investment policy statement is the vehicle that we use to truly



customize each investment program to the unique needs, risk tolerances and return requirements of each client.

NEPC would continue to work with System to refine the existing investment policy statement, ensuring best practices are maintained and proper risk controls are in place. On an ongoing basis, the Policies will be reviewed and revised, as necessary.

**B. Please describe the entity's asset/liability modeling capability.**

**Analytic Tools and Market Data** - All our asset allocation and asset-liability analysis begins with forward looking assumptions of risk, return, and correlation. Our asset class assumptions and economic scenario forecasts are internally generated for forward-looking ten-year time periods. All assumptions rely on building blocks and market factors unique to each asset class based on a wide range of capital market data. For example, the return assumption for US Large Cap Equities is based on building blocks of real economic growth, inflation, dividend yield, and valuation. The return expectation for US Corporate Investment Grade Bonds is based on current Treasury yields, the forward yield curve as priced by the market, current credit spread levels, and a forecast of how spreads will adjust over a 10-year period. Risk and correlation assumptions are based on expectations for the market environment and expected dynamics of relationships across asset classes. All assumptions are updated quarterly along with economic scenarios, which forecast various economic environments over a five-year period.

Our asset allocation studies are based on an analysis of both assets and liabilities. We use multiple tools for asset allocation modeling. Our proprietary asset/liability model was developed by NEPC, with stochastic functionality supported by Lumivero @RISK. NEPC's asset/liability model can be customized to particular benefit formulas and actuarial assumptions. Using participant data, we project plan costs based on our internally generated economic forecasts. We have internally developed our risk budgeting model, which re-characterizes asset allocation into its component risks, both on an asset-only, and an asset-liability basis.

Risk budgeting and Scenario Analysis rely on NEPC proprietary models. Additional supplemental tools such as Factor Analysis, Liquidity Analysis, and Active Risk Budgeting also rely on proprietary NEPC models. Rather than focusing simply on the single summary term of total portfolio volatility, we determine the contribution to the portfolio's volatility from each underlying asset class. This allows us to understand not just the total level of risk, but also the sources of risk. We find that portfolios with 60% or more in equity investments will have more than 90% of their overall portfolio volatility sourced from equity returns. In other words, performance of the broad equity market will determine the overall direction of the plan's return. Through this approach, we have counseled clients to strive for more balance in their portfolio's risk allocation, leading to asset allocations that are more resilient when equity markets decline.

Collectively, the mosaic of multiple asset allocation models produces a more comprehensive and robust framework for evaluating current and alternative asset allocations, producing portfolios less dependent on a single asset class such as equities for long-term returns and more resilient to market downturns.

NEPC's Asset Allocation Team directs all of the firm's efforts in performing asset allocation and asset-liability studies and leads the development of the firm's asset class return, risk, and correlation assumptions. Since asset allocation is the primary driver of success, we believe it is important to understand, analyze and challenge assumptions to create more efficient portfolios. We do this by staffing this team with very senior members of the firm. NEPC's Asset Allocation professionals are dedicated entirely to performing asset-liability studies and asset allocation analysis for our clients' portfolios utilizing our extensive suite of tools and researching innovative approaches that might enhance our current approach. These professionals are dedicated to performing asset allocation studies and have limited client responsibilities, allowing them to focus and specialize on this important area. The following is the team of individuals:



- Timothy McCusker, FSA, CFA, CAIA, Partner, Chief Investment Officer
- Phillip Nelson, CFA, Partner, Head of Asset Allocation
- Jennifer Appel, CFA, Senior Investment Director
- Robert Goldthorpe, ASA, Investment Director
- Jack Yuan, Investment Director
- The Asset Allocation Team is supported by the Asset Allocation Committee, comprised of representatives from Research and Consulting and chaired by James Reichert, CFA, Partner, Senior Director of Portfolio Strategy.

**Asset-Liability Study Process** - The process for developing investment policy using asset/liability modeling is outlined below:

- 1) We begin with your current actuarial valuation report so that we may obtain the funding policies, demographics, benefits formulas, and other actuarial assumptions to be used in our asset-liability modeling.
- 2) We evaluate current benefit obligations and forecast the future liabilities of the Plan, using your current actuarial assumptions and the actual demographic characteristics of your participants (we do not use proxies).
- 3) Next, we develop expected risk and return profiles for the Plan's current asset mix and several alternative asset strategies. Our model can accommodate multiple asset classes, but we believe that the highest value from asset-liability studies comes from identifying and prioritizing key allocation opportunities, so we will not, for example, try to optimize a small cap allocation to the nearest 1%.
- 4) Once our liability analyses (including analyses of age-service distributions, separation ratios, employee migration and demographic characteristics, male and female mortality characteristics, and other actuarial factors) and asset forecasts are completed, we integrate these projections. The asset/liability model combines the asset structures (item 3 above) with the liability projections (item 2 above) to forecast the financial status of the pension plan. The resultant comparisons help the client determine which investment alternatives have the best probability of generating the returns and earnings necessary to fund the obligations of the Plan and possibly allow for benefit increases and/or contribution reductions. Projections include benefit payments, contributions, GASB accounting calculations, and funded status (assets compared with liabilities) over the next ten years.
- 5) With the model, we can conduct "what if" scenarios to determine the impact of changes in actuarial assumptions on the Plan's liability stream (future benefit and expense obligations). We have the capability to demonstrate the impact of plan changes (benefit formula or assumption changes, work force growth, or earnings assumption, for example) on contributions, funded status, and benefit payments for all asset mixes.
- 6) We then prepare a detailed report on our findings and recommendations. The report includes our inputs and assumptions, projections of liabilities, asset class returns, risk levels, yield and correlation assumptions, optimal combinations of asset classes, and projections of assets, contributions, benefit payments, and funded status.

**Strategic versus Tactical Asset Allocation** - Our investment philosophy combines long-term strategic asset allocation with tactical and opportunistic approaches. The primary driver of results is the strategic implementation, but there are periods of time when we feel it is appropriate to make tactical recommendations to either protect assets or take advantage of opportunities.

We believe in a multi-faceted asset allocation process that incorporates the dynamics of the markets.



- **Long-Term:** Review strategic asset allocation at least annually to allow for the integration of market driven assumptions. We deliver forward-looking quarterly market observations, investment actions and asset class assumptions to all clients. Annually, we identify areas of opportunity that may be under-represented in the long-term strategic targets and reduce existing allocations that may have less risk-adjusted return potential. This review is facilitated through our quarterly update to our ten-year capital market expectations and actions for clients.
- **Near-Term:** Utilize flexible, unconstrained mandates, such as unconstrained fixed income or global equity, to capture the shorter-term, liquid opportunities. We seek to identify and execute “Current Opportunities” across asset classes and the liquidity spectrum publishing these as soon as they are identified. Many investment programs may not be equipped to take advantage of these shorter-term opportunities, but skilled investment managers have demonstrated the ability to tactically allocate across markets and add a unique source of alpha to an investment program. We will also make recommendations to our clients on portfolio positions versus the strategic target based on our market outlook and our dynamic tilts recommendations.

**Dynamic Tilts** To highlight an example of how we can support tactical asset allocation as desired, we provide an overview below of our Dynamic Tilts. Dynamic Tilts reflect our active views for global public market asset classes with a time horizon of less than 24 months and can be expressed within the parameters of the investment policy. The asset class tilts represent NEPC’s active views over the strategic asset allocation targets. Dynamic Tilts may be used to deploy excess portfolio cash, guide rebalancing, and to reinforce market opportunities. Ratings are reviewed by the Asset Allocation Committee monthly and implemented in client portfolios if appropriate. Please refer to Tab 3 for NEPC’s overall Dynamic Tilts as of October 31, 2023.

**C. Please define the entity’s investment style analysis.**

We utilize returns-based factor analysis to monitor a manager’s style. This regression technique is based on analysis of the historical returns of the aggregate portfolio versus a passive set of market indices representing the major asset classes. The regression technique is applied to rolling periods of historical returns and provides a clearer picture of a fund’s asset class exposure.

On the equity side, we both categorize and monitor consistency of style through our equity style spectrum analysis. The equity style spectrum analysis is used to quantify the investment approach of each managed portfolio in the universe, and to group portfolios with similar styles of investing. The style spectrum included in each quarterly performance report provides a map based on Capitalization (y-axis) and Style (x-axis), the two most important determinants of domestic equity performance. This map is divided into nine distinct groupings based on Capitalization (small, medium, and large) versus Style (Growth, Core and Value). The goal of this exhibit is to identify gaps and overlap in the allocation among styles, while depicting the magnitude of each manager’s style bias. In addition, Style Spectrum measures changes in an investment manager’s style bias over time (each quarter, for a period of eight trailing quarters), to appropriately capture “style drift”.

Our fixed income styles are organized by geographic location, underlying sectors, credit quality and duration.

**D. Please provide a listing of reports routinely supplied to clients.**

Depending on the level of services required, clients generally receive liability-based asset allocation studies (every three to five years), asset-based asset allocation studies (as requested), manager and custodian search reports (as needed), due diligence, quarterly investment performance analysis (IPA) reports, monthly investment performance flash reports, educational materials, and NEPC research (ongoing). While this list provides a general overview of what



clients can expect, its not meant to be exhaustive. We understand that each client situation may be different and require other solutions, in addition to those listed above.

**E. Please indicate whether the entity provides to its clients written narratives on the managers’ performance, portfolio restructuring, guideline discrepancies, style deviations, etc.**

At NEPC, we believe that robust portfolio analytics are important in measuring the performance of a client’s portfolio. NEPC’s performance reports focus on helping clients make informed decisions on their investment programs.

Our comprehensive quarterly Investment Performance Analysis (IPA) reports include Total Fund, asset class, sub-asset class and manager-level performance, asset allocation, attribution, and risk statistics. Importantly, the analytics can be conducted on both a holdings basis (if position detail is available) and a returns basis, meaning the analytics reflect what the managers are invested in, as well as how the portfolio has performed, which can be affected by a multitude of non-holdings related factors.

Ultimately, our philosophy regarding performance reporting and evaluation is best described as an extensive, multi-faceted approach. Our IPA report tracks performance and risk analytics (such as Sharpe Ratio, Sortino Ratio, Standard Deviation, Tracking Error, Information Ratio, Beta, Alpha, Upside and Downside Capture) and allows for the verification of manager performance against stated mandates and identification of potential “style drift”. Our reports also compare funds and managers to their respective peer universes for performance and risk analytics. The PARis platform calculates portfolio attribution both at the Total Fund and manager level to measure the effectiveness of manager selection and Total Fund performance. Attribution is calculated based on the beginning of the period (month or quarter) market values and assumes a “buy and hold” methodology. Attribution is broken down into 1) Manager Selection Effect; 2) Asset Allocation Effect, and 3) Interaction Effect.

NEPC works closely with clients in recommending both asset class and manager benchmarks based on both qualitative and quantitative measures to provide a measuring stick against which the manager can be evaluated. The assignment of this benchmark can also be thought of as the first level of risk management – as you are monitoring the manager’s ability to stay true to the mandate for which it was hired. The PARis platform has over 1,000 benchmarks from which to choose.

We typically create custom indexes for our clients to isolate policy and structural decisions from manager contribution. For example, at the overall Fund level, we create and track an “Allocation Index” and a “Policy Index”. The Allocation Index is calculated from the Fund’s actual asset allocation combined with appropriate asset class benchmark returns. The Policy Index is calculated from the Fund’s policy targets as stated in the Investment Policy Statement combined with appropriate asset class benchmark returns.

Accordingly, the Policy Index represents the returns the Fund would have earned had the commitment to each asset class matched the target allocation, and had each allocation earned the benchmark rate of return. We rank the Policy Index to evaluate the “correctness” of the Fund’s asset allocation policy. The Allocation Index reflects returns of the actual asset allocation and benchmark returns. Comparing it to the Policy Index tells us the benefit (or detriment) to the Fund due to structural weighting differences away from policy. Finally, the Fund’s Composite return is the all-in return for the Fund. Comparing it to the Allocation Index demonstrates the contribution from active management (security selection).

**F. Please describe the software technology, database and analysis tools used in providing services to the client.**

NEPC is continually enhancing our information technology capabilities. NEPC systems are the responsibility of the Chief Technology Officer with oversight from the Digital Business Steering Committee. This Committee governs information technology investments. In the coming years,



NEPC will continue to invest to implement technologies to continually improve data governance, employee productivity, and the overall quality of our services.

We use both commercially available and proprietary technology packages including Lumivero @Risk, Morningstar, eVestment, and Plan Sponsor Network for screening for mutual funds and investment managers. We have used a combination of these proprietary tools with investments in outside tools – Bloomberg, FactSet, and others, to customize our approach based on client needs. In the past year, we moved our proprietary asset allocation tool to a customized SpotFire platform. We use the PARis platform for performance measurement.

Technology has been used by NEPC to enhance learning and communication with our colleagues and clients. We use webinars routinely for both internal and client presentations. We have video capability built into our laptops which allows us to virtually connect with individuals when they are on the road. We also make extensive use of survey tools to gather feedback from both clients and employees so we can evaluate the effectiveness of meetings and our initiatives.

NEPC is actively investing and growing our client portal capabilities. For example, ClientHUB provides our clients with access to their portfolio information, NEPC research, client deliverables, and access to their client service team. NEPC's clients have access to meeting notes and write-ups for all of their managers, market values, performance reports, manager due diligence on NEPC's public markets manager focused placement lists, and the most recent research pieces authored by NEPC. ClientHUB is accessible via compatible web browsers on computers, tablets, and smartphones. It also acts as an archive for portfolio-specific documents and as a research tool for portfolio-specific investments. NEPC is continuously investing to expand the interactive capabilities of ClientHUB. Future features include asset allocation modeling, Enterprise Resource Management, and historical performance information.

## **D. Manager Search and Due Diligence**

### **A. Please indicate the number of money managers currently being evaluated.**

NEPC tracks approximately 13,000 products/strategies in our internal manager database. Please see our response to section C below for further detail.

### **B. Please describe the criteria by which the entity decides which managers to evaluate.**

Our overall criteria for including investment managers in a search:

- An ownership structure and business strategy that aligns clients' interests with the investment managers' interests. Appropriate alignment of interests includes compensation that aligns with employee contribution and significant employee investment in the fund, careful consideration for the tradeoffs of capacity management and alpha potential, management of succession matters, and the managers' investment of personal capital.
- An identifiable investment thesis that will allow the manager to generate excess returns. If we can't articulate a manager's edge, we do not recommend the strategy.
- Appropriate understanding of, and appropriate procedures for, all types of risk that may be present in the strategy (i.e., market risk, factor risk, operational risk, key person risk, etc.)
- An experienced team that has worked together effectively. Investment management success is highly dependent on people working together; therefore, it is incumbent upon NEPC to confirm that key people and teams are likely to stay in place over the course of the investment period.
- A well-documented investment and operations process. Firms that have strong processes should be better positioned from a risk management perspective.
- A track record that is consistent with the manager's approach and our expectations of their performance over multiple market cycles. Understanding how a manager will perform in



different market cycles is important so that expectations are clearly established, and clients understand the potential outcomes.

- Deep evaluation of the track record, including, among other things, proprietary frameworks to understand whether a manager’s performance is attributable to luck vs. skill, the likelihood of success going forward, and an evaluation of “true skill” when factoring in various market betas.
- Finally, any manager that is recommended to a client should fit the appropriate risk profile that the Board has discussed with NEPC. This will typically include factors such as liquidity, fees, tracking error, concentration, and alignment amongst other considerations.

Further detail on the due diligence process is found in section D below.

**C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.**

NEPC utilizes multiple vendor-supplied external databases and has also long maintained a unique and robust **proprietary database** of our research on investment managers. NEPC’s database, or Research Management System (RMS), houses our qualitative views on a broad group of investment managers, as well as more in-depth analysis and commentary on NEPC’s **Focused Placement List (“FPL”)** and high-exposure investment managers. Our database includes due diligence observations and assessments, one-on-one manager meeting write-ups, investment theses, and key historical data regarding products, personnel, organizational changes, and our own 48-hour notification letters. The table below provides the breadth of coverage of NEPC’s database:

**NEPC’s Manager Database**

	Tracked Products/Strategies*	Unique Managers by Asset Class for Tracked Products/Strategies	Focused Placement List Products/Strategies
US Equity	1,344	389	113
US Fixed Income	1,189	267	89
International Equity – Developed	401	171	56
Global Equity	472	212	37
Global Fixed Income	345	113	18
Global Balanced (includes US)	138	64	16
Emerging Markets Equity	186	110	30
Emerging Markets Fixed Income	52	28	9
Target Date	127	26	12
Other Public Markets	67	55	10
Hedge Funds	510	305	60
Private Equity**	4,697	2,609	326
Private Debt**	1,362	685	117
Real Estate**	1,206	512	131
Real Assets**	901	570	98
<b>TOTAL</b>	<b>12,997</b>	<b>6,116</b>	<b>1,122</b>

As of 12/31/2022

\*Includes all unique products and strategies tracked in NEPC’s database on which NEPC has developed an opinion (Due Diligence Rating of 1 through 5, with 1 being the highest conviction). Private equity, real estate and real assets categories include all products/strategies tracked in NEPC’s internal database (including Not Rated).

\*\*Private equity, real estate and real asset funds generally have 12-18 month marketing windows.





Most of the systems we use to analyze investment managers and their performance records are proprietary analytics tools developed exclusively by NEPC. NEPC also uses the eVestment database and Morningstar to provide data on public market asset managers. For alternative assets, NEPC utilizes the Preqin and Pitchbook databases to supplement the private markets funds tracked in our client portfolios. Through eVestment, NEPC also has access to the HFR database. The HFR database includes hedge funds, fund of funds, managed futures, and liquid alternative investment products.

Importantly, NEPC does **not** charge fees to include managers in our investment manager database or searches, nor does eVestment, our third-party database vendor, charge managers to be included in its database. We believe to do so would create an irreconcilable conflict of interest.

**D. Please describe how the due diligence evaluation of investment managers is performed.**

NEPC seeks to identify top-tier investment managers through the **ongoing** work of our experienced and dedicated 69-person research staff<sup>7</sup>. Our search for a manager does not begin with the client assignment. It is a thorough and continuous process as detailed below.

NEPC's research process begins with our research team sourcing investment opportunities by utilizing both investment database reviews and cultivated networks. NEPC screens our proprietary internal databases and external databases for managers that meet NEPC's internally developed criteria. The parameters consider the uniqueness of each asset class.

Next, our researchers conduct further diligence on investment strategies by combining both qualitative and quantitative analysis.

- **Quantitative Analysis:** Our quantitative analysis looks at NEPC proprietary factors, attribution, and relative metrics to determine whether a manager's returns are due to luck or skill.
- **Investment Process:** We evaluate the investment edge, team, and repeatability of the investment process.
- **Alignment of Incentives:** NEPC conducts a comprehensive review of the investment firm to better understand the stability of the business as well as the alignment between portfolio management team, officers, and the client.

NEPC rates investment strategies across approximately 20 distinct categories on a 1-5 scale, with the aggregate score deciding whether the strategy deserves an overall 1- or 2- rating. Only 1- and 2-rated strategies are on our **Focused Placement Lists (FPLs)**.

Finally, the strategy goes through a vetting session with NEPC's centralized **Marketable Investment Committee** for further peer review. The Marketable Investment Committee is responsible for monitoring, reviewing, and approving all public markets and hedge fund investment managers held by our clients. The six-member Marketable Investment Committee is composed of Partners and key senior leaders of the firm from both investment research and consulting and is Chaired by Sebastian Grzejka. The Marketable Investment Committee meets bi-weekly to review prospective investment opportunities and due diligence events. A majority vote is required for strategies to be added to or removed from our Focused Placement List (FPL) or for status changes. Any outstanding issues/questions from the vetting session are pursued by the research team and readdressed to the Committee. Upon approval of the Marketable Investment Committee a strategy is considered rated on a 1-5 scale, with a 1 rating being the highest rating. We do not seek to evaluate all strategies but focus our time on identifying strategies we believe will provide superior investment performance overtime.

Additionally, NEPC's **Due Diligence Sub-Committee ("DDSC")** acts as an extension of the Marketable Investment Committee, tasked with monitoring 3-, 4-, 5- and non-rated public market

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<sup>7</sup> As of 10/1/2023

and hedge fund strategies covered by the Client Strategy Team. The DDSC is made up of three members, led by the Marketable Investment Committee Chair, and meets weekly with the Client Strategy Team and select Investment Research team members to review and approve any events or due diligence status or ratings changes. Importantly, a summary of all discussions and approvals are reported to the Marketable Investment Committee at its next regularly scheduled meeting. This parallel process ensures regular oversight of all manager exposures at NEPC. A unique step in the process is the concurrent review of strategies by our **Operational Due Diligence (“ODD”)** team, which has veto authority should their review uncover any items of significant concern. The ODD team is primarily focused on hedge fund research.

**Manager Evaluation Criteria** Our overall criteria for evaluating investment managers include:

Qualitative Analysis		
Quantitative Analysis	Investment Process	Alignment of Incentives
We use proprietary tools to facilitate second-level thinking, which helps us identify true skill.	We focus on identifying the investment edge of a strategy and determining whether it is sustainable and repeatable. We also evaluate whether the team is resourced sufficiently to support the investment process.	We spend significant time understanding whether the client and the manager are aligned.
<ul style="list-style-type: none"> <li>▪ <b>Second-Level Thinking</b></li> <li>▪ <b>Luck vs. skill</b></li> <li>▪ <b>Likelihood of success</b></li> <li>▪ <b>Alpha expectations</b></li> <li>▪ <b>Performance</b> <ul style="list-style-type: none"> <li>- Absolute</li> <li>- Relative</li> <li>- Peer Comparison</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>People &amp; Resources</b> <ul style="list-style-type: none"> <li>- Portfolio Managers &amp; Analysts</li> <li>- Additional Resources</li> </ul> </li> <li>▪ <b>Investment Philosophy, Strategy &amp; Process</b> <ul style="list-style-type: none"> <li>- Investment edge/thesis</li> <li>- Investment Philosophy</li> <li>- Research Process</li> <li>- Portfolio Construction</li> <li>- Risk Management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Business strategy</b></li> <li>▪ <b>Viability/profitability</b></li> <li>▪ <b>Succession planning</b></li> </ul>

When a client and its consulting team decide that a manager search is appropriate, we typically prepare a manager search book of vetted managers from NEPC’s Focused Placement List (FPL). Vetted managers are recommended based on their fit with your goals, objectives, and their pairing within your portfolio. We determine goals and objectives through our interactions and ongoing surveys with you. We rely on many of the tools from our Portfolio Construction team in determining fit within a portfolio including our proprietary active risk budgeting tool and other quantitative tools including factor analysis. This process helps size the managers within the context of the overall portfolio. We will discuss the managers with the staff and Board and will also make recommendations on the manager(s) who will best fit the portfolio. Some of our clients choose to meet with the managers prior to making the final selection and we will coordinate those meetings.

Occasionally, new managers or strategies may be sourced through our clients or publicly advertised RFP processes, which result in investment ideas that might not be on our radar. We welcome these introductions and this type of partnership with our clients. We will consider strategies identified through this process along with managers that have been approved and are on our focused placement list. Of note, there is no additional cost associated with these requests should the number of requests remain within reason. What’s most important to us, is partnering with clients to find the best ideas to drive investment returns. There are many examples of managers in the Retirement System’s portfolio, which were identified in this way.



**E. Does the firm or consultant maintained a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.**

As mentioned previously, NEPC rates investment strategies across approximately 20 distinct categories on a 1-5 scale, with the aggregate score deciding whether the strategy deserves an overall 1- or 2- rating. Only 1- and 2-rated strategies are on our **Focused Placement Lists (FPLs)**. For the MWRA, we do not believe this has an impact as all searches are publicly advertised, with the results ultimately reviewed by and voted on by the Board.

**E. Miscellaneous**

**A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.**

NEPC is thoroughly familiar with M.G.L. Chapter 32 and the subsequent 840 C.M.R. investment regulations. As an active participant in the MACRS Conferences, NEPC is a regular participant and presenter at the conferences on investment and regulatory related topics. Our staff is familiar with the PERAC waiver process and has regularly shared our views on both the current and past investment-related regulations with PERAC. Further, NEPC staff regularly participates in PERAC Roundtable discussions and actively offers PERAC feedback on new and existing investment regulations.

In addition to our knowledge of Massachusetts Public Pension Investments, NEPC is a member and active participant in the Massachusetts Association of Contributory Retirement Systems (MACRS), a resource for the 106 retirement boards in Massachusetts.

Lastly, we work with over a half dozen Massachusetts Public Retirement Systems, including the MWRA, which provides us key insights into the performance, funding and regulatory landscape in the State.

**B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.**

We believe our **client-focused approach** distinguishes NEPC from our competitors and we would highlight the following attributes as relevant to MWRA. NEPC is:

1. **Independent** - NEPC's independence and employee ownership empowers our consultants to provide investment counsel free of conflict and aligned with the best interests of clients and the beneficiaries they serve.
2. **Research-Driven** - Driven by proprietary research and deep industry experience, NEPC's investment philosophy is optimized to meet the goals of our clients.
3. **Forward-Looking** - We partner with our clients to develop innovative and dynamic investment portfolios.
4. **Creative** - We sit at the convergence of creativity and research, bringing into clear focus the strategies enabling clients to realize their long-term vision.
5. **Focused** - NEPC works with clients to navigate today's complex markets to deliver on the retirement promise for their employees. NEPC's **dedicated public fund team** provides comprehensive investment solutions backed by an independent research team to solve our clients' unique investing challenges. They assess clients' progress against their own unique goals and objectives as well as versus peer group results across multiple metrics.
6. **Expert in ESG, Impact Investing and DEI** - NEPC has been at the forefront of ESG and impact investing. We have significant experience in this area through our work with similar clients. Further, NEPC is committed to DEI as a cultural value and in supporting our clients in their DEI goals.

Lastly, we have enjoyed a long tenured and stable relationship with the System. In fact, Sebastian has worked with the MWRA for over 15 years and is keenly aware of the goals,



objectives, risks and concerns of the System. We believe this type of stability and rapport can help lead to successful outcomes.

**C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.**

Our clients are our only customers, and we have grown substantially through their referrals over the years. While we submit client references per your request, we respectfully request that you not contact them without notifying us first.

**New Castle County**

Mr. Frank Benevento, Pension Administrator  
87 Reads Way  
New Castle, DE 19720-1648  
(302) 395-5188

**City of Boston Trust Funds**

Ms. Maureen Garceau  
City of Boston Treasury Department  
Boston City Hall, Room M5  
Boston, MA 02201  
(617) 635-3066

**Boston Retirement System**

Mr. John Kelly, Investment Analyst  
State Boston Retirement System  
1 Boston City Hall, Room 816  
Boston, MA 02201  
(617) 635-2805

**Medford Contributory Retirement System**

Mr. Rick Jordan, City of Medford Board Chair  
City Hall, Room 215  
Medford, MA 02155  
(781) 789-4177

**D. Please provide the names and asset values of any clients who have terminated services in the last three years.**

In the last three calendar years, NEPC has had an average annual client retention rate of 95.4%. We take our clients’ satisfaction seriously.

Due to NEPC’s contractual obligation with our clients, we cannot disclose specific information about our current or former clients without their consent. See table below.

	Year Ending 10/1/2023	Year Ending 10/1/2022	Year Ending 10/1/2023
Total # of Clients Gained*	22	20	22
Reason for Termination*			
Resigned by NEPC or NEPC opted not to rebid	0	0	0
Decided not to use a consultant	2	0	2
Outsourced to a 3rd party/OCIO provider	0	1	0
Rebid the contract and hired someone else	9	12	9
Change at client (merger, fund termination, etc.)^	1	3	1
Total # of Clients Lost*	12	16	12

\* Clients represent all institutional retainer clients with assets in excess of \$100 million (NEPC’s target market).

^ Client losses due to reasons outside of NEPC’s control.



**E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.**

Please refer to Tab 4 for a sample quarterly performance report.

**F. Specific Board Issues**

**A. Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.**

If we are chosen as your investment consultant, your service team will consist of Sebastian Grzejka, CAIA, Partner, and Michael P. Sullivan, Partner. They will be supported by a dedicated Consulting Analyst, a dedicated Performance Analyst, and dedicated Research Specialists where appropriate.

**Sebastian Grzejka, CAIA  
Partner**

Sebastian joined NEPC in 2005 and began his career in the investment industry in 2003. Sebastian works with a variety of clients, servicing Endowments and Foundations, Public Funds and Healthcare institutions. He has extensive experience carrying out asset allocation studies, manager searches, performance measurement and various technical projects to support his clients.

In addition to his client activities, Sebastian is the Chair of the Marketable Investment Committee, which is responsible for reviewing, vetting and approving all prospective public markets and hedge fund investment strategies as well as to deciding on action following any manager due diligence events. Additionally, Sebastian is a member of the Fixed Income Advisory Group. The focus of this group is to work with NEPC research to review, update and enhance our views on specific asset classes, as well as determine which managers best represent our viewpoints. Lastly, Sebastian is also a member of NEPC's OCIO Committee, which provides oversight for all NEPC's OCIO relationships.

Prior to joining NEPC, Sebastian worked at Smith Barney in their mutual fund analytics group. At Smith Barney, his role was to review and analyze that proper procedures were followed in the accounting of client mutual funds. Prior to that, Sebastian worked at Putnam Investments as a client specialist.

Sebastian holds a B.S.B.A. from the University of Massachusetts. He currently holds the Chartered Alternative Investment Analyst designation.

**Michael P. Sullivan  
Partner**

Michael joined NEPC in 2006, with his career in the investment industry beginning in 2001. Michael's consulting responsibilities since 2006 include servicing Taft-Hartley and public pension funds. Michael works with clients to help them build out all facets of their investment program. Michael has been a member of the Asset Allocation Committee, Impact Investing Committee, and Small Cap Equity Advisory Group.

Prior to joining NEPC, Michael was a Senior Analyst Account Manager at International Data Corporation where he supported research requests for financial clients and acted as liaison between analysts and clients. Prior to that, Michael was an Advisor Representative at State Street Corporation, where his responsibilities included the monitoring of daily trade settlement, assisting with account reconciliation, and the preparation of customized monthly performance reports for investment managers. Michael previously worked at International Data Corporation as an analyst.

Michael earned an M.S. degree in Finance from Boston College in 2005 and a B.A. in Business from Saint Anselm College in 2001.



**B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.**

Sebastian currently serves as the primary consultant on 7 client accounts, including the MWRA Retirement System, and Mike currently serves as the primary account on 7 client accounts.

**C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.**

Given MWRA is a current client, if we were retained there would be no transition process needed.

## DISCLOSURES

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### Awards and Recognitions Disclosure

- Pensions & Investments Influential Women in Institutional Investing 2023 (Inaugural class). Pensions & Investments provides news, events and serves as a data source for money managers, investment consultants and institutional investors. P&I covers the investment activities of defined benefit plans, defined contribution plans, endowments and foundations and the investment consultants and investment managers that serve them. Winners were selected by an advisory board of leading investors and key industry executives. NEPC did not pay a fee in connection with this award.
- With Intelligence Allocator Prizes 2022. With Intelligence is a global business information organization focused on the asset management industry that offers products such as HFM, EurekaHedge and Fundmap. Winners were selected by a panel of institutional investment leaders. NEPC did not pay a fee in connection with this award.
- Pension Bridge Institutional Asset Management Awards 2020. For more information, please visit <https://iamanagementawards.awardstage.com/#!/judging-methodology--criteria>.
- CIO's Most Influential Investment Consultants/Knowledge Brokers: CIO Magazine interviews pension and non-profit CIOs, asset managers and former consultants to approximate what it calls "the hierarchy of today's institutional consultant industry". The results should not be considered a recommendation of any specific firm or individual consultant. For more information, please visit CIO Magazine's web site at <https://www.ai-cio.com/lists/>
- These rating or awards may not be representative of any one client's experience with NEPC. Any rating or award is representative of NEPC's past performance only and is not indicative of NEPC's future performance, nor does it indicate an endorsement of NEPC. NEPC did not pay any of these organizations to be considered for an award.
- An award presented to a client of NEPC is not a recognition of NEPC's performance and should not be considered an endorsement of NEPC.

### Information Disclosure

- Investment Metrics Plan Universe - As of 12/31/2022, the Investment Metrics Universe contained actual, custodian-supplied and audited data on over 3,250 plan sponsors, representing roughly \$2.2 trillion in assets. This data is drawn from 52 independent investment consulting firms, including NEPC.
- ICC Universe - Through 2011, universe rankings were based on the ICC Universe, which was populated by 12 independent investment consulting firms, including NEPC, and supplemented by many of the performance measurement clients of State Street Bank.
- NEPC's OCIO assets of \$83.1 billion as of 10/1/2023 include clients that receive full OCIO services as well as those that receive partial OCIO services, including operational support. OCIO assets reported on Form ADV are \$63.6 billion, which includes NEPC's Access Vehicles.
- Certain information, including that relating to market indices, was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This document may contain confidential or proprietary information and is intended only for the designated recipient(s). If you are not a designated recipient, you may not copy or distribute this document.

### Alternative Investment Disclosure

It is important that investors understand the following characteristics of non-public market investment strategies including hedge funds, real estate, real assets and private equity:

- Performance can be volatile and investors could lose all or a substantial portion of their investment.
- Leverage and other speculative practices may increase the risk of loss.
- Past performance may be revised due to the revaluation of investments.
- These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms.



- A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value.
- These funds are not subject to the same regulatory requirements as registered investment vehicles.
- Managers may not be required to provide periodic pricing or valuation information to investors.
- These funds may have complex tax structures and delays in distributing important tax information.
- These funds often charge high fees.
- Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy.





## APPENDIX B: DYNAMIC TILTS

<p>We recommend <b>reducing S&amp;P 500 and U.S. mega-cap equity exposure</b>, while maintaining U.S. large-cap value positions</p>
<p>Evaluate the risk-return benefit of fixed income; <b>we suggest increasing exposure to U.S. high yield and adding U.S. TIPS</b> to capitalize on the current real rate environment</p>
<p>We <b>encourage maintaining portfolio-level duration in-line with policy targets</b>; we remain comfortable <b>holding greater levels of cash</b> to heighten portfolio liquidity levels</p>

ASSET CLASS	DYNAMIC TILT					COMMENTS
Public Equity	<i>Unfavorable</i>	■	■	■	■	<p>We recommend increasing exposure to higher carry assets, such as U.S. high yield bonds and real assets.</p> <p>With the normalization of real interest rates, we encourage introducing a dedicated U.S. TIPS exposure to policy targets</p>
Safe-Haven Fixed Income	<i>Neutral</i>	■	■	■	■	
High-Quality Fixed Income	<i>Neutral</i>	■	■	■	■	
Return-Seeking Credit	<i>Favorable</i>	■	■	■	■	
Public Real Assets	<i>Favorable</i>	■	■	■	■	

	SUB-ASSET CLASS	DYNAMIC TILT	COMMENTS		
PUBLIC EQUITY	U.S. Large-Cap	<i>Reduce</i>	We recommend reducing S&P 500 and U.S. mega-cap exposure in favor of high yield credit, while maintaining U.S. value positions.  We suggest tilting equity exposure to global equity strategies and encourage greater usage of active equity approaches.		
	U.S. Small-Cap	<i>Neutral</i>			
	EAFE Large-Cap	<i>Neutral</i>			
	EAFE Small-Cap	<i>Unfavorable</i>			
	EM Large-Cap	<i>Neutral</i>			
	EM Small-Cap	<i>Unfavorable</i>			
	DM Currency Hedge	<i>Neutral</i>			
SAFE-HAVEN	Cash	<i>Favorable</i>	We encourage maintaining portfolio-level duration in-line with policy targets		
	U.S. Treasury	<i>Neutral</i>			
	Municipal Bonds	<i>Neutral</i>			
HIGH-QUALITY	U.S. TIPS	<i>Add</i>	Lower volatility portfolios may benefit from higher strategic allocations to high-quality fixed income. We encourage introducing a dedicated U.S. TIPS exposure to policy targets.		
	Non-U.S. Gov't Bonds	<i>Unfavorable</i>			
	Global IL Bonds	<i>Unfavorable</i>			
	U.S. IG Corporate	<i>Neutral</i>			
	Structured Credit	<i>Neutral</i>			
RETURN-SEEKING	U.S. High Yield	<i>Add</i>	We recommend increasing exposure to higher carry assets, such as U.S. high yield bonds		
	Levered Loans	<i>Neutral</i>			
	Emerging Market Debt	<i>Unfavorable</i>			
REAL ASSETS	Commodity Futures	<i>Favorable</i>	We foresee a favorable environment for real assets amid a backdrop of elevated inflation and resilient economic growth; heightened geopolitical tensions pose a risk for commodity supply levels		
	Gold	<i>Unfavorable</i>			
	Natural Resource Equity	<i>Favorable</i>			
	Infrastructure Equity	<i>Favorable</i>			
	REITs	<i>Neutral</i>			
	<b>REDUCE</b>	<b>UNFAVORABLE</b>	<b>NEUTRAL</b>	<b>FAVORABLE</b>	<b>ADD</b>

Shaded diagonal ratings reflect the asset class ratings for the previous month.

Please note: All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

This memo should not be considered customized investment advice. Please contact NEPC for advice specific to your investment program. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.



# QUARTERLY PERFORMANCE REPORT

CLIENT ABC

AS OF SEPTEMBER 30, 2021

NEPC Public Funds Team



PROPRIETARY & CONFIDENTIAL

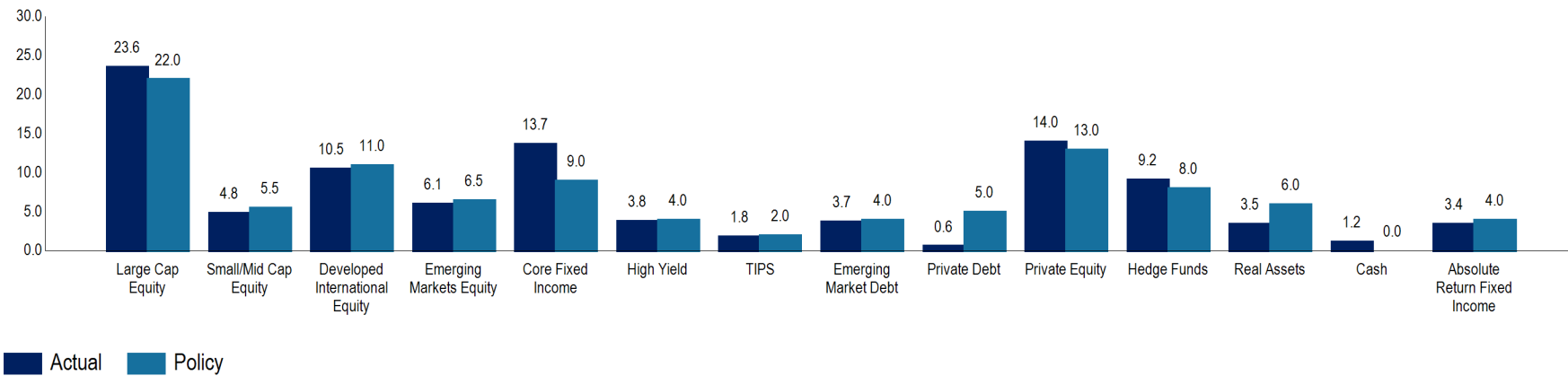
# Client ABC

## TOTAL FUND PERFORMANCE SUMMARY (GROSS)

Ending September 30, 2021

	Market Value	3 Mo Rank	YTD Rank	1 Yr Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank	Inception	Inception Date						
<b>Total Fund Composite</b>	<b>\$1,443,823,611</b>	<b>1.3%</b>	<b>21</b>	<b>11.4%</b>	<b>33</b>	<b>21.5%</b>	<b>56</b>	<b>11.6%</b>	<b>26</b>	<b>11.1%</b>	<b>28</b>	<b>10.2%</b>	<b>45</b>	<b>7.9%</b>	<b>Apr-97</b>
<i>Policy Index</i>		1.4%	18	9.7%	56	19.4%	85	10.6%	51	9.7%	76	9.2%	74	7.7%	Apr-97
<i>Allocation Index</i>		1.4%	18	10.1%	48	20.9%	70	--	--	--	--	--	--	--	Apr-97
<i>InvMetrics Public DB &gt; \$1B Gross Median</i>		0.4%		9.9%		21.9%		10.6%		10.4%		10.1%		7.6%	Apr-97

Actual vs Target Allocation (%)

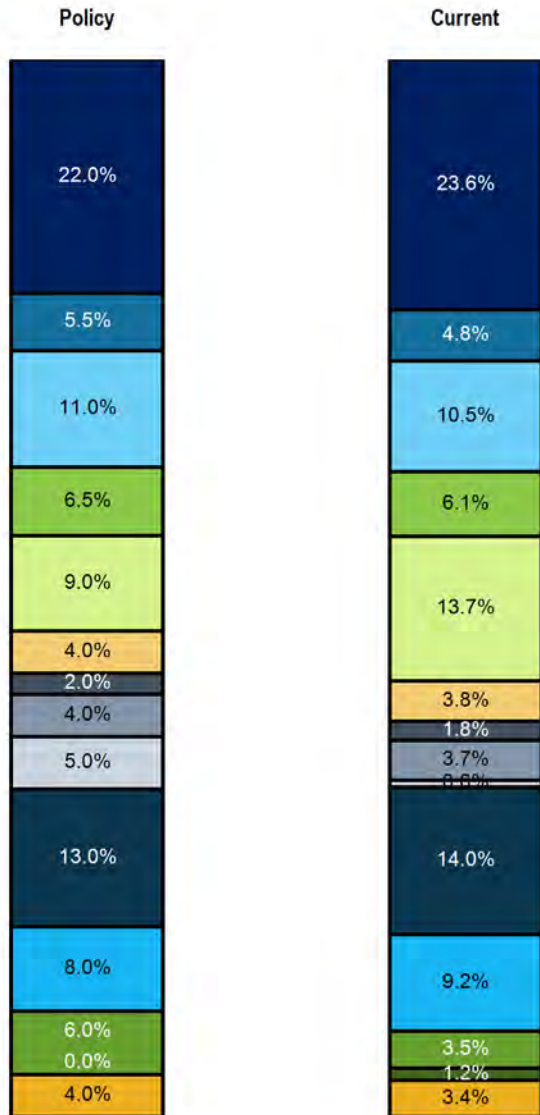


Fiscal year end 6/30.



# Client ABC

## ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target				
	Current	Policy	Current	Difference*
Large Cap Equity	\$340,856,523	22.0%	23.6%	1.6%
Small/Mid Cap Equity	\$69,875,706	5.5%	4.8%	-0.7%
Developed International Equity	\$151,707,832	11.0%	10.5%	-0.5%
Emerging Markets Equity	\$87,679,974	6.5%	6.1%	-0.4%
Core Fixed Income	\$197,943,901	9.0%	13.7%	4.7%
High Yield	\$55,208,333	4.0%	3.8%	-0.2%
TIPS	\$26,412,746	2.0%	1.8%	-0.2%
Emerging Market Debt	\$54,143,210	4.0%	3.7%	-0.3%
Private Debt	\$9,091,716	5.0%	0.6%	-4.4%
Private Equity	\$201,737,518	13.0%	14.0%	1.0%
Hedge Funds	\$132,179,996	8.0%	9.2%	1.2%
Real Assets	\$50,284,966	6.0%	3.5%	-2.5%
Cash	\$17,138,629	0.0%	1.2%	1.2%
Absolute Return Fixed Income	\$49,562,560	4.0%	3.4%	-0.6%
<b>Total</b>	<b>\$1,443,823,611</b>	<b>100.0%</b>	<b>100.0%</b>	

\*Difference between Policy and Current Allocation



# Client ABC

## TOTAL FUND PERFORMANCE SUMMARY (GROSS)

	Ending September 30, 2021										
	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund Composite</b>	<b>1,443,823,611</b>	<b>100.0</b>	<b>100.0</b>	<b>1.3</b>	<b>11.4</b>	<b>21.5</b>	<b>11.6</b>	<b>11.1</b>	<b>10.2</b>	<b>7.9</b>	<b>Apr-97</b>
<i>Policy Index</i>				1.4	9.7	19.4	10.6	9.7	9.2	7.7	Apr-97
<i>Allocation Index</i>				1.4	10.1	20.9	--	--	--	--	Apr-97
<b>Total US Equity Composite</b>	<b>410,732,229</b>	<b>28.4</b>	<b>27.5</b>	<b>-0.6</b>	<b>14.5</b>	<b>31.6</b>	<b>14.5</b>	<b>17.1</b>	<b>17.1</b>	<b>9.6</b>	<b>Jul-97</b>
<i>Russell 3000</i>				-0.1	15.0	31.9	16.0	16.9	16.6	9.0	Jul-97
<i>US Equity Allocation Index</i>				-0.3	14.3	31.9	15.5	16.6	16.5	--	Jul-97
<b>Total International Equity</b>	<b>239,387,806</b>	<b>16.6</b>	<b>17.5</b>	<b>-2.3</b>	<b>7.2</b>	<b>25.2</b>	<b>11.2</b>	<b>11.2</b>	<b>8.7</b>	<b>5.6</b>	<b>Jul-97</b>
<i>MSCI ACWI ex USA</i>				-3.0	5.9	23.9	8.0	8.9	7.5	5.1	Jul-97
<b>Total Fixed Income Composite</b>	<b>383,270,751</b>	<b>26.5</b>	<b>23.0</b>	<b>0.0</b>	<b>-0.6</b>	<b>2.7</b>	<b>6.3</b>	<b>4.1</b>	<b>4.4</b>	<b>5.4</b>	<b>Jul-97</b>
<i>Fixed Income Policy Index</i>				0.1	-1.6	-0.9	5.4	2.9	3.0	5.1	Jul-97
<b>Total Real Assets Composite</b>	<b>50,284,966</b>	<b>3.5</b>	<b>6.0</b>	<b>6.2</b>	<b>12.1</b>	<b>11.4</b>	<b>2.9</b>	<b>6.8</b>	<b>6.8</b>	<b>6.8</b>	<b>Jul-03</b>
<i>NCREIF Property Index 1 Qtr. Lag</i>				3.6	6.6	7.4	5.5	6.1	8.8	8.4	Jul-03
<b>Cash Composite</b>	<b>17,138,629</b>	<b>1.2</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.9</b>	<b>0.4</b>	<b>1.2</b>	<b>Dec-03</b>
<i>91 Day T-Bills</i>				0.0	0.0	0.0	1.0	1.1	0.6	1.2	Dec-03
<b>Hedge Fund Composite</b>	<b>132,179,996</b>	<b>9.2</b>	<b>8.0</b>	<b>2.4</b>	<b>7.5</b>	<b>12.8</b>	<b>6.7</b>	<b>6.3</b>	<b>5.8</b>	<b>5.4</b>	<b>Jan-11</b>
<i>HFRI FOF: Conservative Index</i>				1.1	7.0	13.2	5.4	4.9	4.0	3.4	Jan-11
<b>Private Equity Composite</b>	<b>205,378,430</b>	<b>14.2</b>	<b>13.0</b>	<b>11.4</b>	<b>45.3</b>	<b>58.4</b>	<b>27.3</b>	<b>23.5</b>	<b>17.8</b>	<b>15.9</b>	<b>Jul-08</b>
<i>CJA US All PE (1 Qtr Lag)</i>				13.5	39.5	53.9	20.8	19.5	15.3	12.8	Jul-08
<b>Private Debt</b>	<b>5,450,804</b>	<b>0.4</b>	<b>5.0</b>	<b>1.6</b>	<b>12.8</b>	<b>12.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.1</b>	<b>Jun-20</b>
<i>S&amp;P/LSTA Leveraged Loan TR</i>				1.1	4.4	8.4	4.1	4.6	4.9	10.2	Jun-20

Fiscal year end 6/30.

All history prior to 3/1/2019 was provided by prior consultant.



# Client ABC

## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Fund Composite</b>	<b>1,443,823,611</b>	<b>100.0</b>	<b>100.0</b>	<b>1.3</b>	<b>21</b>	<b>11.4</b>	<b>33</b>	<b>21.5</b>	<b>56</b>	<b>11.6</b>	<b>26</b>	<b>11.1</b>	<b>28</b>	<b>10.2</b>	<b>45</b>	<b>7.9</b>	<b>Apr-97</b>
Policy Index				1.4	18	9.7	56	19.4	85	10.6	51	9.7	76	9.2	74	7.7	Apr-97
Allocation Index				1.4	18	10.1	48	20.9	70	--	--	--	--	--	--	--	Apr-97
InvMetrics Public DB > \$1B Gross Median				0.4		9.9		21.9		10.6		10.4		10.1		7.6	Apr-97
<b>Total Equity Composite</b>	<b>650,120,035</b>	<b>45.0</b>	<b>45.0</b>	<b>-1.3</b>	<b>69</b>	<b>11.6</b>	<b>60</b>	<b>29.2</b>	<b>49</b>	<b>13.1</b>	<b>48</b>	<b>14.6</b>	<b>37</b>	<b>13.6</b>	<b>40</b>	<b>8.1</b>	<b>Apr-00</b>
MSCI ACWI IMI				-1.1	65	11.4	62	28.9	51	12.4	55	13.1	54	12.0	64	5.7	Apr-00
eV All Global Equity Gross Median				-0.6		12.6		29.0		12.9		13.5		12.9		8.0	Apr-00
<b>Total US Equity Composite</b>	<b>410,732,229</b>	<b>28.4</b>	<b>27.5</b>	<b>-0.6</b>	<b>57</b>	<b>14.5</b>	<b>65</b>	<b>31.6</b>	<b>63</b>	<b>14.5</b>	<b>46</b>	<b>17.1</b>	<b>35</b>	<b>17.1</b>	<b>32</b>	<b>9.6</b>	<b>Jul-97</b>
Russell 3000				-0.1	46	15.0	62	31.9	63	16.0	36	16.9	39	16.6	41	9.0	Jul-97
US Equity Allocation Index				-0.3	50	14.3	66	31.9	63	15.5	40	16.6	42	16.5	43	--	Jul-97
eV All US Equity Gross Median				-0.3		16.0		35.7		14.0		15.4		15.9		10.5	Jul-97
<b>Large Cap Composite</b>	<b>340,856,523</b>	<b>23.6</b>	<b>22.0</b>	<b>-0.2</b>	<b>60</b>	<b>16.3</b>	<b>43</b>	<b>31.7</b>	<b>41</b>	<b>15.3</b>	<b>47</b>	<b>17.1</b>	<b>40</b>	<b>17.1</b>	<b>35</b>	<b>9.8</b>	<b>Apr-01</b>
Russell 1000				0.2	47	15.2	57	31.0	46	16.4	40	17.1	40	16.8	40	9.0	Apr-01
eV US Large Cap Equity Gross Median				0.1		15.7		30.3		14.8		16.0		16.0		9.6	Apr-01
Fund J	97,495,425	6.8		-2.3	93	20.2	24	44.3	18	8.9	81	11.7	64	15.0	23	10.0	May-00
Russell 1000 Value				-0.8	61	16.1	63	35.0	54	10.1	65	10.9	77	13.5	70	7.5	May-00
eV US Large Cap Value Equity Gross Median				-0.5		17.4		35.9		10.7		12.4		14.1		9.0	May-00
Fund P	126,680,427	8.8		0.9	46	14.7	44	26.8	56	21.2	50	22.7	38	19.4	42	18.2	Jul-10
Russell 1000 Growth				1.2	37	14.3	52	27.3	50	22.0	39	22.8	36	19.7	36	19.0	Jul-10
eV US Large Cap Growth Equity Gross Median				0.7		14.3		27.3		21.2		21.7		19.1		18.3	Jul-10
Fund D	116,680,672	8.1		0.6	35	15.9	47	30.0	53	--	--	--	--	--	--	20.8	Dec-19
S&P 500				0.6	35	15.9	47	30.0	53	16.0	43	16.9	42	16.6	41	20.8	Dec-19
eV US Large Cap Equity Gross Median				0.1		15.7		30.3		14.8		16.0		16.0		19.2	Dec-19





# Client ABC

## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Small/Mid Cap Composite</b>	<b>69,875,706</b>	<b>4.8</b>	<b>5.5</b>	<b>-3.0</b>	<b>85</b>	<b>5.9</b>	<b>95</b>	<b>30.8</b>	<b>91</b>	<b>11.6</b>	<b>62</b>	<b>16.9</b>	<b>36</b>	<b>17.2</b>	<b>25</b>	<b>12.7</b>	<b>Apr-93</b>
<i>Russell 2500</i>				-2.7	81	13.8	68	45.0	51	12.5	53	14.3	53	15.3	57	10.9	Apr-93
<i>eV US Small-Mid Cap Equity Gross Median</i>				-0.9		16.8		45.5		12.7		14.6		15.6		12.4	Apr-93
<b>Fund R</b>	<b>26,044,381</b>	<b>1.8</b>		<b>-3.8</b>	<b>96</b>	<b>4.6</b>	<b>93</b>	<b>27.2</b>	<b>87</b>	<b>14.6</b>	<b>81</b>	<b>19.6</b>	<b>63</b>	<b>18.6</b>	<b>45</b>	<b>13.3</b>	<b>Jun-06</b>
<i>Russell 2500 Growth</i>				-3.5	96	4.8	92	32.0	72	16.0	71	18.2	70	17.2	65	11.5	Jun-06
<i>eV US Small-Mid Cap Growth Equity Gross Median</i>				0.0		10.7		37.2		18.9		20.8		18.3		13.1	Jun-06
<b>Fund Q</b>	<b>24,091,699</b>	<b>1.7</b>		<b>-2.9</b>	<b>75</b>	<b>22.1</b>	<b>54</b>	<b>58.9</b>	<b>52</b>	<b>8.6</b>	<b>62</b>	<b>13.0</b>	<b>31</b>	<b>15.1</b>	<b>31</b>	<b>12.1</b>	<b>Apr-93</b>
<i>Russell 2000 Value</i>				-3.0	75	22.9	48	63.9	35	8.6	64	11.0	62	13.2	76	10.2	Apr-93
<i>eV US Small Cap Value Equity Gross Median</i>				-1.7		22.5		59.1		9.6		11.5		14.2		12.7	Apr-93
<b>Fund F</b>	<b>19,739,627</b>	<b>1.4</b>		<b>-2.3</b>	<b>59</b>	<b>-5.3</b>	<b>99</b>	<b>14.6</b>	<b>99</b>	<b>12.1</b>	<b>87</b>	<b>19.1</b>	<b>56</b>	<b>20.6</b>	<b>18</b>	<b>18.7</b>	<b>Aug-11</b>
<i>Russell 2000 Growth</i>				-5.7	91	2.8	88	33.3	79	11.7	89	15.3	91	15.7	88	13.1	Aug-11
<i>eV US Small Cap Growth Equity Gross Median</i>				-1.7		10.6		39.8		17.2		19.7		18.5		15.7	Aug-11
<b>Total International Equity</b>	<b>239,387,806</b>	<b>16.6</b>	<b>17.5</b>	<b>-2.3</b>	<b>65</b>	<b>7.2</b>	<b>60</b>	<b>25.2</b>	<b>56</b>	<b>11.2</b>	<b>48</b>	<b>11.2</b>	<b>55</b>	<b>8.7</b>	<b>79</b>	<b>5.6</b>	<b>Jul-97</b>
<i>MSCI ACWI ex USA</i>				-3.0	79	5.9	77	23.9	64	8.0	76	8.9	81	7.5	92	5.1	Jul-97
<i>eV ACWI ex-US All Cap Equity Gross Median</i>				-1.8		8.2		26.2		10.9		11.6		10.7		7.5	Jul-97
<b>International Developed Markets Composite</b>	<b>151,707,832</b>	<b>10.5</b>	<b>11.0</b>	<b>-1.2</b>	<b>67</b>	<b>8.3</b>	<b>68</b>	<b>26.1</b>	<b>56</b>	<b>10.4</b>	<b>33</b>	<b>10.4</b>	<b>41</b>	<b>9.1</b>	<b>65</b>	<b>4.8</b>	<b>Mar-08</b>
<i>MSCI EAFE</i>				-0.4	48	8.3	68	25.7	60	7.6	65	8.8	68	8.1	85	3.6	Mar-08
<i>eV All EAFE Equity Gross Median</i>				-0.5		9.7		26.9		8.5		9.6		9.8		5.4	Mar-08
<b>Fund L</b>	<b>76,742,569</b>	<b>5.3</b>		<b>-0.9</b>	<b>59</b>	<b>12.1</b>	<b>26</b>	<b>32.1</b>	<b>23</b>	<b>5.3</b>	<b>89</b>	<b>7.0</b>	<b>90</b>	<b>7.0</b>	<b>97</b>	<b>2.7</b>	<b>Dec-07</b>
<i>MSCI EAFE</i>				-0.4	48	8.3	68	25.7	60	7.6	65	8.8	68	8.1	85	2.8	Dec-07
<i>eV All EAFE Equity Gross Median</i>				-0.5		9.7		26.9		8.5		9.6		9.8		4.5	Dec-07
<b>Fund C</b>	<b>74,965,263</b>	<b>5.2</b>		<b>-1.5</b>	<b>75</b>	<b>4.7</b>	<b>92</b>	<b>20.9</b>	<b>87</b>	<b>14.5</b>	<b>8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>13.2</b>	<b>May-18</b>
<i>MSCI EAFE</i>				-0.4	48	8.3	68	25.7	60	7.6	65	8.8	68	8.1	85	6.0	May-18
<i>eV All EAFE Equity Gross Median</i>				-0.5		9.7		26.9		8.5		9.6		9.8		6.7	May-18



# Client ABC

## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>International Emerging Markets Composite</b>	<b>87,679,974</b>	<b>6.1</b>	<b>6.5</b>	<b>-4.2</b>	<b>28</b>	<b>5.4</b>	<b>33</b>	<b>23.7</b>	<b>47</b>	<b>12.5</b>	<b>36</b>	<b>12.6</b>	<b>22</b>	<b>7.6</b>	<b>52</b>	<b>7.2</b>	<b>Feb-06</b>
MSCI Emerging Markets				-8.1	70	-1.2	71	18.2	72	8.6	70	9.2	66	6.1	84	5.5	Feb-06
eV Emg Mkts Equity Gross Median				-6.7		2.1		22.8		10.3		10.2		7.7		7.2	Feb-06
Fund I	43,728,980	3.0		-5.1	33	-0.8	69	15.2	83	--	--	--	--	--	--	19.2	Dec-18
MSCI Emerging Markets				-8.1	70	-1.2	71	18.2	72	8.6	70	9.2	66	6.1	84	11.1	Dec-18
eV Emg Mkts Equity Gross Median				-6.7		2.1		22.8		10.3		10.2		7.7		13.0	Dec-18
Fund A	43,950,994	3.0		-3.2	22	12.2	15	--	--	--	--	--	--	--	--	12.2	Jan-21
MSCI Emerging Markets Value NR USD				-5.1	33	4.4	37	28.4	30	4.8	96	6.9	91	3.8	99	4.4	Jan-21
eV Emg Mkts Equity Gross Median				-6.7		2.1		22.8		10.3		10.2		7.7		2.1	Jan-21
<b>Total Fixed Income Composite</b>	<b>383,270,751</b>	<b>26.5</b>	<b>23.0</b>	<b>0.0</b>	<b>83</b>	<b>-0.6</b>	<b>71</b>	<b>2.7</b>	<b>35</b>	<b>6.3</b>	<b>36</b>	<b>4.1</b>	<b>40</b>	<b>4.4</b>	<b>39</b>	<b>5.4</b>	<b>Jul-97</b>
Bloomberg US Aggregate TR				0.1	69	-1.6	90	-0.9	94	5.4	51	2.9	66	3.0	66	5.0	Jul-97
eV All US Fixed Inc Gross Median				0.1		0.1		1.3		5.4		3.6		3.7		5.1	Jul-97
<b>Core Fixed Income Composite</b>	<b>224,356,647</b>	<b>15.5</b>	<b>11.0</b>	<b>0.1</b>	<b>51</b>	<b>-0.3</b>	<b>14</b>	<b>1.7</b>	<b>9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>6.5</b>	<b>Mar-19</b>
Bloomberg US Aggregate TR				0.1	62	-1.6	81	-0.9	84	5.4	88	2.9	92	3.0	95	5.2	Mar-19
eV US Core Fixed Inc Gross Median				0.1		-1.1		0.0		6.0		3.5		3.7		5.9	Mar-19
Fund H	96,991,184	6.7		0.0	83	-0.6	71	2.1	42	6.5	33	4.5	34	4.6	35	4.8	May-10
Bloomberg US Aggregate TR				0.1	69	-1.6	90	-0.9	94	5.4	51	2.9	66	3.0	66	3.5	May-10
eV All US Fixed Inc Gross Median				0.1		0.1		1.3		5.4		3.6		3.7		4.1	May-10
Fund N	100,952,716	7.0		-0.1	92	-0.7	75	0.6	64	6.2	37	3.9	45	4.0	44	4.2	May-10
PIMCO Blended Benchmark				-0.7	99	-2.3	94	-1.6	97	5.1	56	2.8	70	2.9	67	3.5	May-10
eV All US Fixed Inc Gross Median				0.1		0.1		1.3		5.4		3.6		3.7		4.1	May-10
Fund O	26,412,746	1.8		1.8	31	3.5	74	5.1	73	7.4	59	4.3	74	3.1	76	4.0	Nov-09
Bloomberg US TIPS TR				1.8	31	3.5	65	5.2	66	7.4	51	4.3	72	3.1	75	4.1	Nov-09
eV US TIPS / Inflation Fixed Inc Gross Median				1.7		3.6		5.5		7.5		4.4		3.3		4.2	Nov-09



# Client ABC

## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Emerging Markets Debt Composite</b>	<b>54,143,210</b>	<b>3.7</b>	<b>4.0</b>	<b>-2.9</b>	<b>87</b>	<b>-6.1</b>	<b>90</b>	<b>5.7</b>	<b>54</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.8</b>	<b>Mar-19</b>
JP Morgan GBI EM Global Diversified TR USD				-3.1	92	-6.4	92	2.6	92	3.7	90	2.1	91	1.1	95	1.8	Mar-19
eV All Emg Mkts Fixed Inc Gross Median				-0.8		-1.3		5.9		6.0		4.4		5.5		5.4	Mar-19
Fund G	54,143,210	3.7		-2.9	87	-6.1	90	5.7	54	5.0	71	3.6	67	--	--	6.3	Oct-15
JP Morgan GBI EM Global Diversified TR USD				-3.1	92	-6.4	92	2.6	92	3.7	90	2.1	91	1.1	95	4.4	Oct-15
eV All Emg Mkts Fixed Inc Gross Median				-0.8		-1.3		5.9		6.0		4.4		5.5		6.3	Oct-15
<b>Absolute Return Fixed Income</b>	<b>49,562,560</b>	<b>3.4</b>	<b>4.0</b>	<b>0.5</b>	<b>22</b>	<b>2.2</b>	<b>25</b>	<b>4.7</b>	<b>26</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.8</b>	<b>Mar-20</b>
3-Month Libor Total Return USD				0.0	76	0.1	51	0.2	79	1.3	99	1.4	98	0.9	99	0.3	Mar-20
eV All US Fixed Inc Gross Median				0.1		0.1		1.3		5.4		3.6		3.7		2.4	Mar-20
Fund M	49,562,560	3.4		0.5	22	2.2	25	4.7	26	--	--	--	--	--	--	2.8	Mar-20
3-Month Libor Total Return USD				0.0	76	0.1	51	0.2	79	1.3	99	1.4	98	0.9	99	0.3	Mar-20
eV All US Fixed Inc Gross Median				0.1		0.1		1.3		5.4		3.6		3.7		2.4	Mar-20
<b>High Yield</b>	<b>55,208,333</b>	<b>3.8</b>	<b>4.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>0.4</b>	<b>Sep-21</b>
Bloomberg US High Yield TR				0.9	--	4.5	--	11.3	--	6.9	--	6.5	--	7.4	--	0.0	Sep-21
Fund B	55,208,333	3.8		--	--	--	--	--	--	--	--	--	--	--	--	0.4	Sep-21
ICE BofA US HY Master II Constnd TR				0.9	45	4.7	43	11.5	39	6.6	66	6.3	58	7.3	61	0.0	Sep-21
eV US High Yield Fixed Inc Gross Median				0.9		4.5		10.7		7.0		6.5		7.4		0.1	Sep-21
<b>Total Real Assets Composite</b>	<b>50,284,966</b>	<b>3.5</b>	<b>6.0</b>	<b>6.2</b>	<b>--</b>	<b>12.1</b>	<b>--</b>	<b>11.4</b>	<b>--</b>	<b>2.9</b>	<b>--</b>	<b>6.8</b>	<b>--</b>	<b>6.8</b>	<b>--</b>	<b>6.8</b>	<b>Jul-03</b>
NCREIF Property Index 1 Qtr. Lag				3.6	--	6.6	--	7.4	--	5.5	--	6.1	--	8.8	--	8.4	Jul-03
<b>Cash Composite</b>	<b>17,138,629</b>	<b>1.2</b>		<b>0.0</b>	<b>--</b>	<b>0.0</b>	<b>--</b>	<b>0.0</b>	<b>--</b>	<b>0.9</b>	<b>--</b>	<b>0.9</b>	<b>--</b>	<b>0.4</b>	<b>--</b>	<b>1.2</b>	<b>Dec-03</b>
91 Day T-Bills				0.0	--	0.0	--	0.0	--	1.0	--	1.1	--	0.6	--	1.2	Dec-03

Fund B funded in 8/2021



# Client ABC

## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Hedge Fund Composite</b>	<b>132,179,996</b>	<b>9.2</b>	<b>8.0</b>	<b>2.4</b>	--	<b>7.5</b>	--	<b>12.8</b>	--	<b>6.7</b>	--	<b>6.3</b>	--	<b>5.8</b>	--	<b>5.4</b>	<b>Jan-11</b>
<i>HFRI FOF: Conservative Index</i>				1.1	--	7.0	--	13.2	--	5.4	--	4.9	--	4.0	--	3.4	Jan-11
Fund K	71,479,232	5.0		3.6	--	7.4	--	12.2	--	6.5	--	6.0	--	5.4	--	5.4	Jan-11
<i>HFRI FOF: Conservative Index</i>				1.1	--	7.0	--	13.2	--	5.4	--	4.9	--	4.0	--	3.4	Jan-11
Fund E	60,700,764	4.2		1.1	--	7.4	--	13.3	--	6.8	--	6.5	--	6.1	--	5.4	Mar-11
<i>HFRI FOF: Conservative Index</i>				1.1	--	7.0	--	13.2	--	5.4	--	4.9	--	4.0	--	3.3	Mar-11
<b>Private Equity Composite</b>	<b>205,378,430</b>	<b>14.2</b>	<b>13.0</b>	<b>11.4</b>	--	<b>45.3</b>	--	<b>58.4</b>	--	<b>27.3</b>	--	<b>23.5</b>	--	<b>17.8</b>	--	<b>15.9</b>	<b>Jul-08</b>
<i>C/A US All PE (1 Qtr Lag)</i>				13.5	--	39.5	--	53.9	--	20.8	--	19.5	--	15.3	--	12.8	Jul-08
<b>Private Debt</b>	<b>5,450,804</b>	<b>0.4</b>	<b>5.0</b>	<b>1.6</b>	--	<b>12.8</b>	--	<b>12.8</b>	--	--	--	--	--	--	--	<b>10.1</b>	<b>Jun-20</b>
<i>S&amp;P/LSTA Leveraged Loan</i>				1.1	--	4.4	--	8.4	--	4.1	--	4.6	--	4.9	--	10.2	Jun-20

Fiscal year ends 6/30.

Policy index consists of: 22% Russell 1000 / 5.5% Russell 2500 / 11% MSCI EAFE / 6.5% MSCI Emerging Markets / 9% Bloomberg US Aggregate TR / 2% Bloomberg US TIPS TR / 4% 3-Month Libor Total Return USD / 4% JP Morgan GBI EM Global Diversified TR USD / 5% S&P/LSTA Leveraged Loan TR / 4% Bloomberg US High Yield TR / 6% NCREIF Property Index 1 Qtr. Lag / 8% HFRI FOF: Conservative Index / 13% Private Equity Composite.

Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

Fixed Income Policy index consists of: 100% Bloomberg US Aggregate TR.

Real Estate, Real Assets and Private Equity investments are valued as of 6/30/2021 and adjusted for capital calls and distributions through 9/30/2021.

All history prior to 3/1/2019 was provided by Prior Consultant



# Client ABC

## ASSET ALLOCATION VS. POLICY TARGETS

Allocation vs. Targets and Policy As Of September 30, 2021				
	Current Balance	Current Allocation	Target	Difference
Large Cap Equity	\$340,856,523	23.6%	22.0%	1.6%
Small/Mid Cap Equity	\$69,875,706	4.8%	5.5%	-0.7%
Developed International Equity	\$151,707,832	10.5%	11.0%	-0.5%
Emerging Markets Equity	\$87,679,974	6.1%	6.5%	-0.4%
Core Fixed Income	\$197,943,901	13.7%	9.0%	4.7%
High Yield	\$55,208,333	3.8%	4.0%	-0.2%
TIPS	\$26,412,746	1.8%	2.0%	-0.2%
Emerging Market Debt	\$54,143,210	3.7%	4.0%	-0.3%
Private Debt	\$9,091,716	0.6%	5.0%	-4.4%
Private Equity	\$201,737,518	14.0%	13.0%	1.0%
Hedge Funds	\$132,179,996	9.2%	8.0%	1.2%
Real Assets	\$50,284,966	3.5%	6.0%	-2.5%
Cash	\$17,138,629	1.2%	0.0%	1.2%
Absolute Return Fixed Income	\$49,562,560	3.4%	4.0%	-0.6%
<b>Total</b>	<b>\$1,443,823,611</b>	<b>100.0%</b>	<b>100.0%</b>	

Allocation vs. Targets and Policy As Of June 30, 2021				
	Current Balance	Current Allocation	Target	Difference
Large Cap Equity	\$341,629,067	24.0%	22.0%	2.0%
Small/Mid Cap Equity	\$62,417,543	4.4%	5.5%	-1.1%
Developed International Equity	\$150,952,806	10.6%	11.0%	-0.4%
Emerging Markets Equity	\$91,653,012	6.4%	6.5%	-0.1%
Core Fixed Income	\$258,078,971	18.1%	9.0%	9.1%
High Yield	--	--	4.0%	-4.0%
TIPS	\$25,957,129	1.8%	2.0%	-0.2%
Emerging Market Debt	\$47,745,133	3.4%	4.0%	-0.6%
Private Debt	\$6,798,124	0.5%	5.0%	-4.5%
Private Equity	\$187,407,324	13.2%	13.0%	0.2%
Hedge Funds	\$139,003,453	9.8%	8.0%	1.8%
Real Assets	\$47,281,812	3.3%	6.0%	-2.7%
Cash	\$15,495,729	1.1%	0.0%	1.1%
Absolute Return Fixed Income	\$49,351,490	3.5%	4.0%	-0.5%
<b>Total</b>	<b>\$1,423,771,594</b>	<b>100.0%</b>	<b>100.0%</b>	



# ANALYTICS DEFINITIONS

**Asset Allocation Effect** - Measures the ability to effectively allocate their portfolio's assets to various asset classes. The allocation effect determines whether the overweighting or underweighting of asset classes relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is overweighted in an asset class that outperforms the benchmark. Negative allocation occurs when the portfolio is overweighted in an asset class that underperforms the benchmark and underweighted in an asset class that outperforms the benchmark.

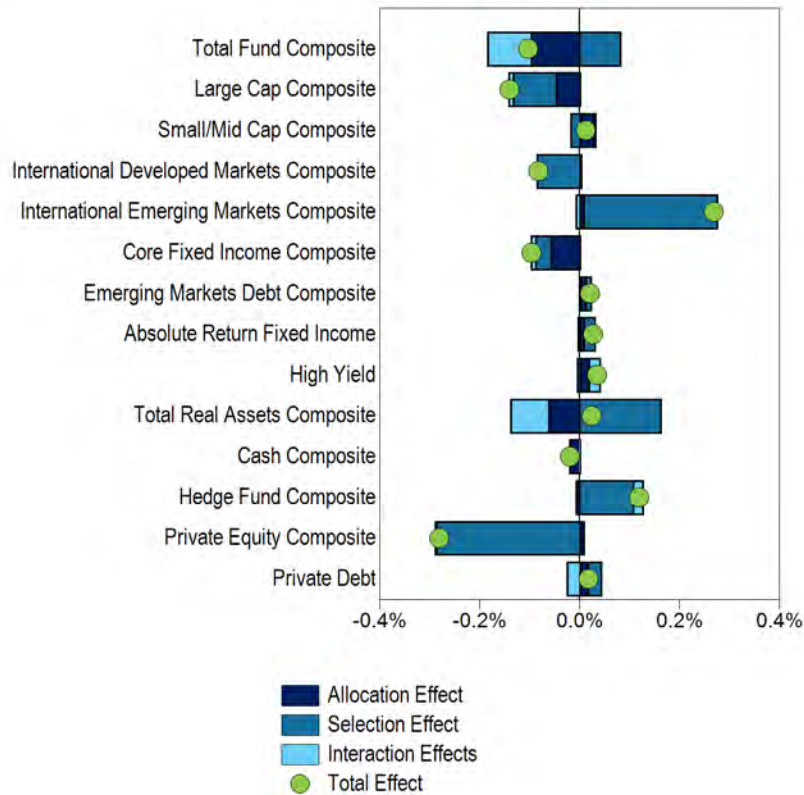
**Selection Effect** - Measures the ability to select managers within a given asset class relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by plan's allocation to the asset class. The weight of the manager in the portfolio determines the size of the effect -- the larger the manager, the larger the effect is, positive or negative.

**Interaction Effect** - The interaction effect measures the combined impact of manager selection and manager allocation decisions within an asset class. For example, if client had superior manager selection and overweighted that particular asset class, the interaction effect is positive. If client had superior manager selection, but underweighted that asset class, the interaction effect is negative. In this case, client did not take advantage of the superior manager selection by allocating more assets to that asset class.

# Client ABC

## TOTAL FUND ATTRIBUTION ANALYSIS (GROSS)

Attribution Effects  
3 Months Ending September 30, 2021



Attribution Summary  
3 Months Ending September 30, 2021

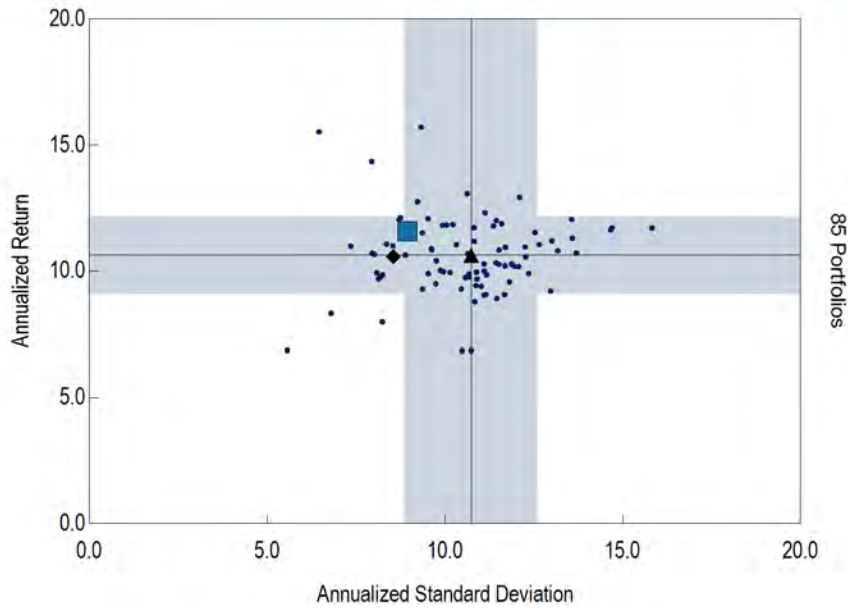
	Policy Weight	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Large Cap Composite	22.0%	-0.2%	0.2%	-0.4%	-0.1%	0.0%	0.0%	-0.1%
Small/Mid Cap Composite	5.5%	-3.0%	-2.7%	-0.3%	0.0%	0.0%	0.0%	0.0%
International Developed Markets Composite	11.0%	-1.2%	-0.4%	-0.8%	-0.1%	0.0%	0.0%	-0.1%
International Emerging Markets Composite	6.5%	-4.2%	-8.1%	3.9%	0.3%	0.0%	0.0%	0.3%
Core Fixed Income Composite	11.0%	0.1%	0.4%	-0.3%	0.0%	-0.1%	0.0%	-0.1%
Emerging Markets Debt Composite	4.0%	-2.9%	-3.1%	0.2%	0.0%	0.0%	0.0%	0.0%
Absolute Return Fixed Income	4.0%	0.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%
High Yield	4.0%	0.4%	0.5%	-0.1%	0.0%	0.0%	0.0%	0.0%
Total Real Assets Composite	6.0%	6.2%	3.6%	2.6%	0.2%	-0.1%	-0.1%	0.0%
Cash Composite	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hedge Fund Composite	8.0%	2.4%	1.1%	1.4%	0.1%	0.0%	0.0%	0.1%
Private Equity Composite	13.0%	11.4%	13.5%	-2.2%	-0.3%	0.0%	0.0%	-0.3%
Private Debt	5.0%	1.6%	1.1%	0.5%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>-0.1%</b>	<b>0.1%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-0.1%</b>



# Client ABC

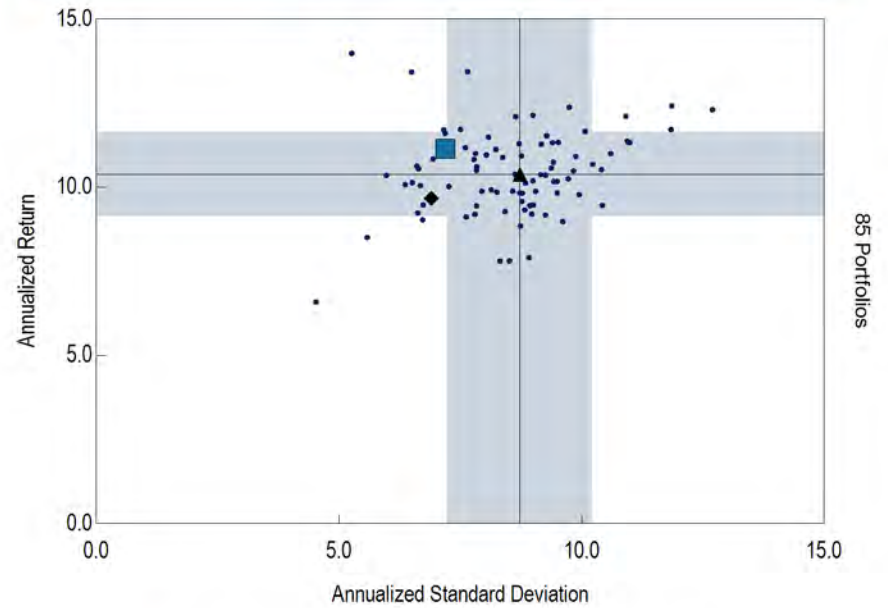
## TOTAL FUND RISK/RETURN (GROSS)

3 Years Ending September 30, 2021



- Total Fund Composite
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

5 Years Ending September 30, 2021



- Total Fund Composite
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

3 Years Ending September 30, 2021

	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio	Sortino Ratio
Total Fund Composite	11.57%	8.95%	1.18	1.54
Policy Index	10.58%	8.55%	1.12	1.42

5 Years Ending September 30, 2021

	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio	Sortino Ratio
Total Fund Composite	11.13%	7.19%	1.40	1.65
Policy Index	9.66%	6.90%	1.24	1.50

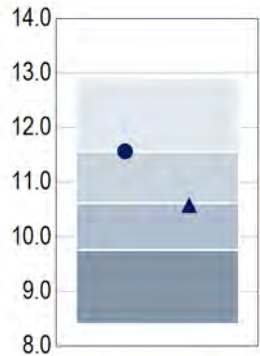




# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross  
3 Years

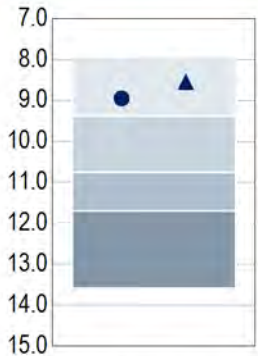
Anlzd Return



● Total Fund Composite  
Value 11.57  
Rank 26  
▲ Policy Index  
Value 10.58  
Rank 51

Universe  
5th %tile 12.89  
25th %tile 11.57  
Median 10.63  
75th %tile 9.77  
95th %tile 8.42

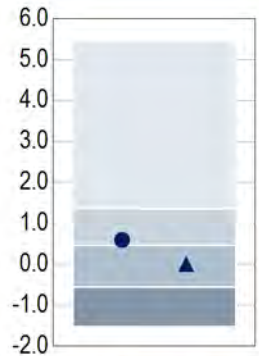
Anlzd Standard Deviation



● Total Fund Composite  
Value 8.95  
Rank 21  
▲ Policy Index  
Value 8.55  
Rank 16

Universe  
5th %tile 7.94  
25th %tile 9.36  
Median 10.74  
75th %tile 11.68  
95th %tile 13.58

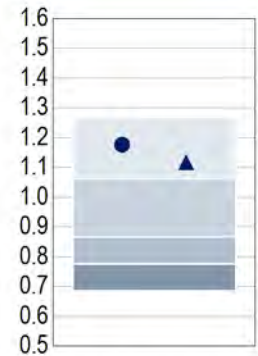
Anlzd Alpha



● Total Fund Composite  
Value 0.59  
Rank 45  
▲ Policy Index  
Value 0.00  
Rank 66

Universe  
5th %tile 5.43  
25th %tile 1.37  
Median 0.48  
75th %tile -0.54  
95th %tile -1.52

Sharpe Ratio



● Total Fund Composite  
Value 1.18  
Rank 13  
▲ Policy Index  
Value 1.12  
Rank 17

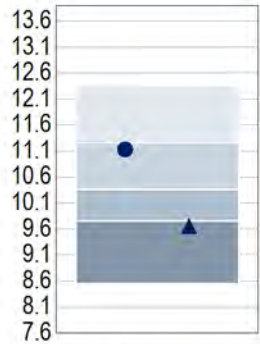
Universe  
5th %tile 1.27  
25th %tile 1.06  
Median 0.87  
75th %tile 0.78  
95th %tile 0.69



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross  
5 Years

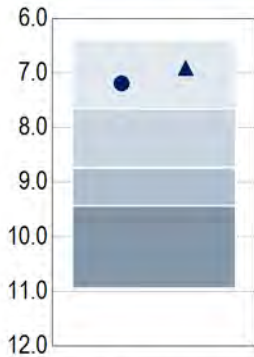
Anlzd Return



● Total Fund Composite	
Value	11.13
Rank	28
▲ Policy Index	
Value	9.66
Rank	76

Universe	
5th %tile	12.36
25th %tile	11.27
Median	10.38
75th %tile	9.77
95th %tile	8.57

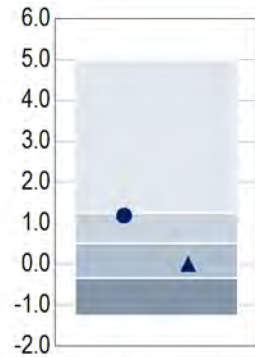
Anlzd Standard Deviation



● Total Fund Composite	
Value	7.19
Rank	20
▲ Policy Index	
Value	6.90
Rank	16

Universe	
5th %tile	6.39
25th %tile	7.65
Median	8.73
75th %tile	9.42
95th %tile	10.94

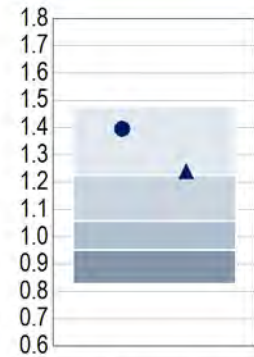
Anlzd Alpha



● Total Fund Composite	
Value	1.18
Rank	28
▲ Policy Index	
Value	0.00
Rank	65

Universe	
5th %tile	5.01
25th %tile	1.28
Median	0.52
75th %tile	-0.33
95th %tile	-1.25

Sharpe Ratio



● Total Fund Composite	
Value	1.40
Rank	14
▲ Policy Index	
Value	1.24
Rank	25

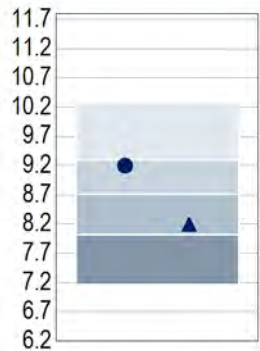
Universe	
5th %tile	1.48
25th %tile	1.23
Median	1.06
75th %tile	0.95
95th %tile	0.83



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross  
7 Years

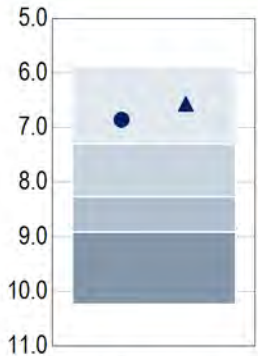
Anlzd Return



● Total Fund Composite  
Value 9.20  
Rank 33  
▲ Policy Index  
Value 8.20  
Rank 65

Universe  
5th %tile 10.28  
25th %tile 9.31  
Median 8.73  
75th %tile 8.02  
95th %tile 7.18

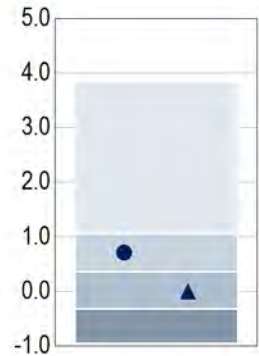
Anlzd Standard Deviation



● Total Fund Composite  
Value 6.85  
Rank 19  
▲ Policy Index  
Value 6.56  
Rank 13

Universe  
5th %tile 5.89  
25th %tile 7.27  
Median 8.25  
75th %tile 8.90  
95th %tile 10.23

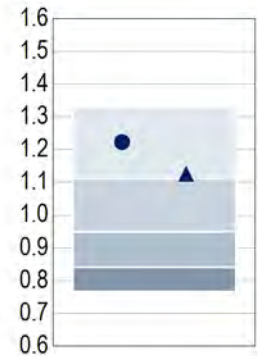
Anlzd Alpha



● Total Fund Composite  
Value 0.71  
Rank 32  
▲ Policy Index  
Value 0.00  
Rank 65

Universe  
5th %tile 3.86  
25th %tile 1.06  
Median 0.37  
75th %tile -0.31  
95th %tile -0.94

Sharpe Ratio



● Total Fund Composite  
Value 1.22  
Rank 12  
▲ Policy Index  
Value 1.13  
Rank 23

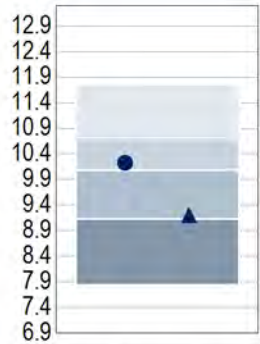
Universe  
5th %tile 1.33  
25th %tile 1.11  
Median 0.95  
75th %tile 0.84  
95th %tile 0.77



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross  
10 Years

Anlzd Return

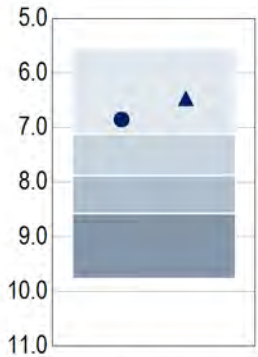


- Total Fund Composite  
Value 10.23  
Rank 45
- ▲ Policy Index  
Value 9.21  
Rank 74

Universe

5th %tile	11.76
25th %tile	10.74
Median	10.09
75th %tile	9.15
95th %tile	7.85

Anlzd Standard Deviation

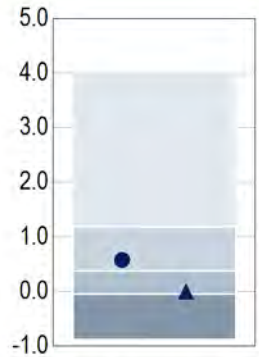


- Total Fund Composite  
Value 6.85  
Rank 19
- ▲ Policy Index  
Value 6.46  
Rank 9

Universe

5th %tile	5.54
25th %tile	7.10
Median	7.87
75th %tile	8.56
95th %tile	9.76

Anlzd Alpha

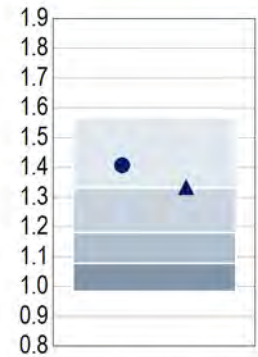


- Total Fund Composite  
Value 0.58  
Rank 35
- ▲ Policy Index  
Value 0.00  
Rank 71

Universe

5th %tile	4.05
25th %tile	1.19
Median	0.39
75th %tile	-0.04
95th %tile	-0.87

Sharpe Ratio



- Total Fund Composite  
Value 1.41  
Rank 14
- ▲ Policy Index  
Value 1.33  
Rank 25

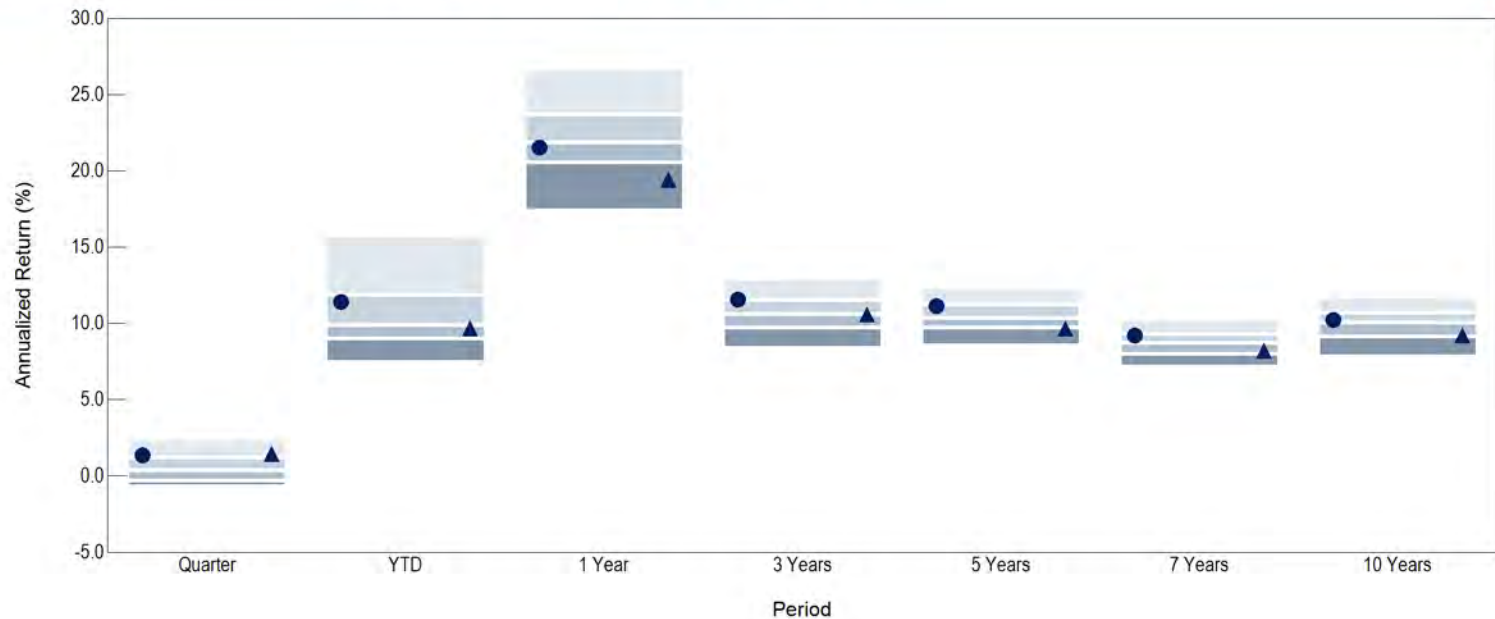
Universe

5th %tile	1.57
25th %tile	1.33
Median	1.18
75th %tile	1.08
95th %tile	0.99



# TOTAL RETURN SUMMARY VS. PEER UNIVERSE (GROSS)

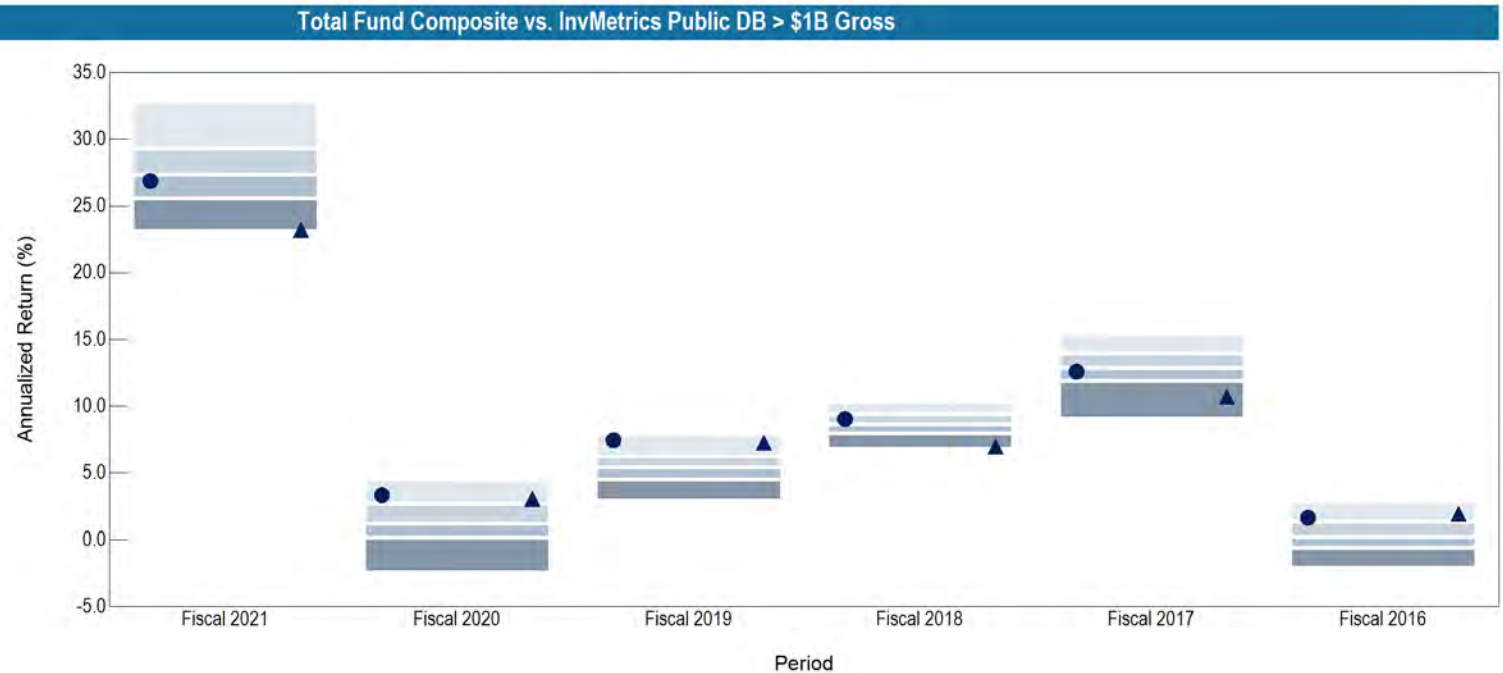
Total Fund Composite vs. InvMetrics Public DB > \$1B Gross



	Return (Rank)													
5th Percentile	2.4		15.8		26.7		12.9		12.4		10.3		11.8	
25th Percentile	1.2		11.9		23.7		11.6		11.3		9.3		10.7	
Median	0.4		9.9		21.9		10.6		10.4		8.7		10.1	
75th Percentile	-0.2		9.0		20.6		9.8		9.8		8.0		9.1	
95th Percentile	-0.6		7.5		17.4		8.4		8.6		7.2		7.9	
# of Portfolios	85		85		85		85		85		84		80	
● Total Fund Composite	1.3	(21)	11.4	(33)	21.5	(56)	11.6	(26)	11.1	(28)	9.2	(33)	10.2	(45)
▲ Policy Index	1.4	(18)	9.7	(56)	19.4	(85)	10.6	(51)	9.7	(76)	8.2	(65)	9.2	(74)



# FISCAL RETURN SUMMARY VS. PEER UNIVERSE (GROSS)



	Return (Rank)											
5th Percentile	32.8		4.5		7.9		10.3		15.3		2.8	
25th Percentile	29.4		2.7		6.2		9.4		14.0		1.4	
Median	27.4		1.2		5.4		8.7		12.9		0.3	
75th Percentile	25.6		0.2		4.5		8.0		11.9		-0.6	
95th Percentile	23.2		-2.4		2.9		6.8		9.1		-2.1	
# of Portfolios	78		82		88		62		108		91	
● Total Fund Composite	26.9	(55)	3.3	(16)	7.4	(9)	9.0	(35)	12.6	(61)	1.6	(22)
▲ Policy Index	23.2	(95)	3.0	(17)	7.2	(14)	7.0	(91)	10.7	(91)	1.9	(15)

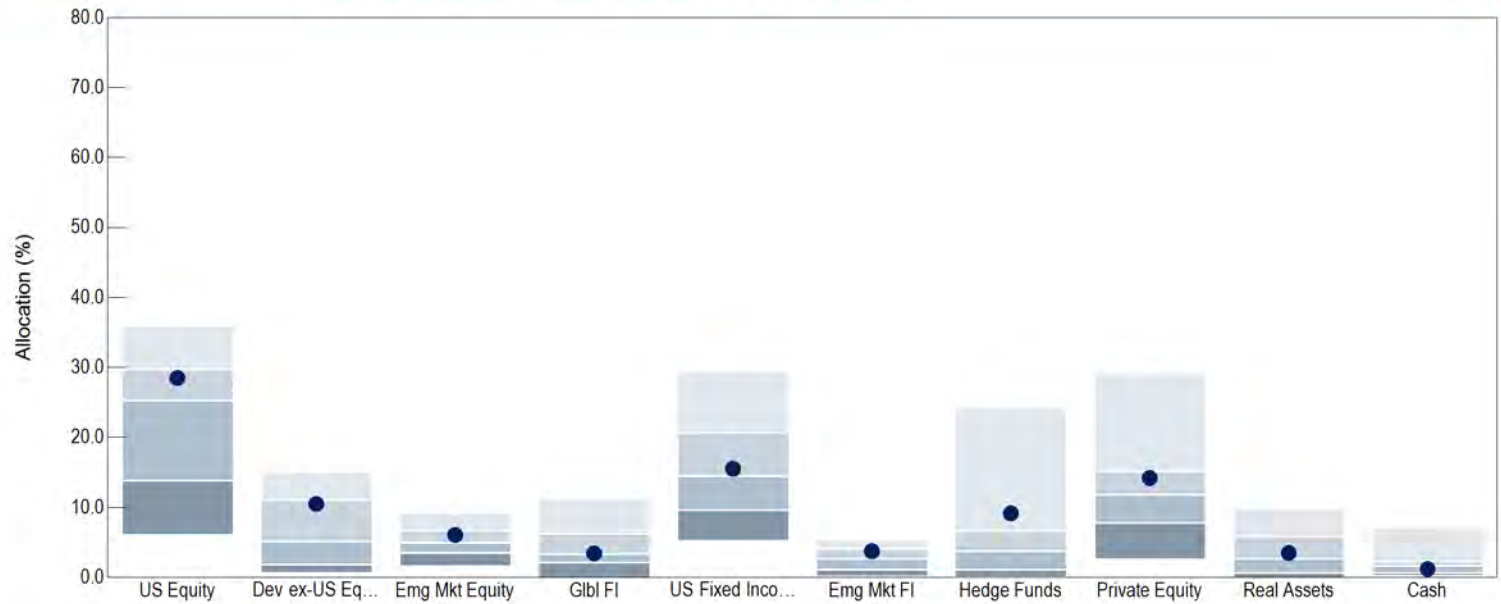
Fiscal year ends 6/30.



# Client ABC

## TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB > \$1B Gross

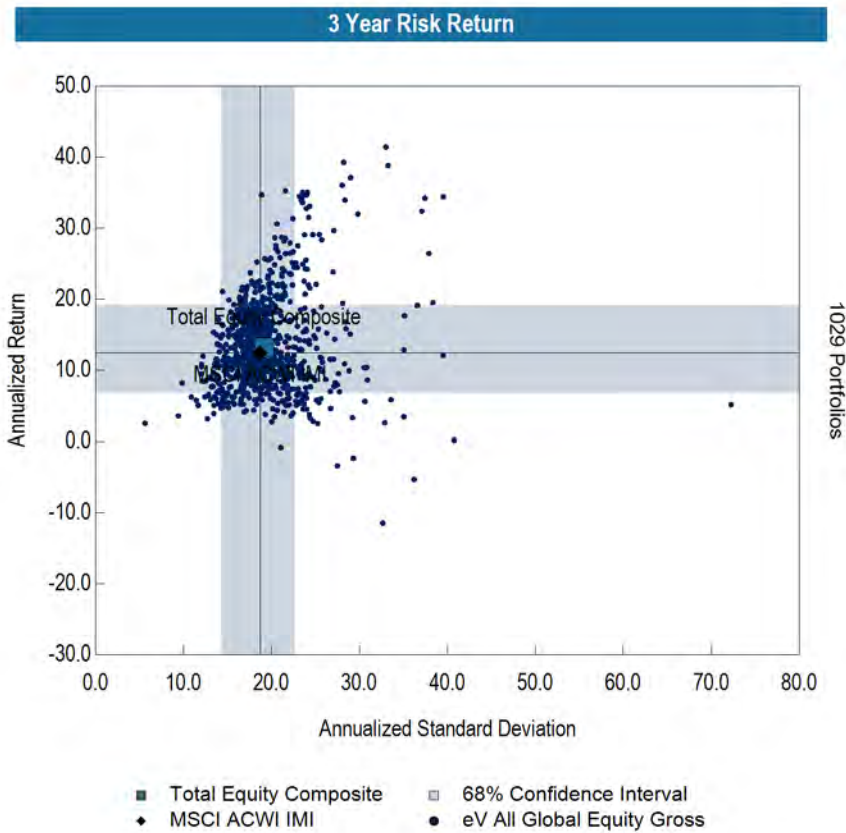


	Allocation (Rank)																			
5th Percentile	35.9	15.1	9.3	11.3	29.4	5.4	24.2	29.2	9.8	7.1										
25th Percentile	29.7	11.1	6.8	6.3	20.7	4.1	6.7	15.2	5.8	2.4										
Median	25.3	5.2	5.1	3.4	14.6	2.7	3.9	11.9	2.8	1.8										
75th Percentile	14.0	2.0	3.6	2.2	9.7	1.2	1.2	7.9	0.8	0.8										
95th Percentile	6.2	0.7	1.7	0.0	5.4	0.2	0.1	2.7	0.0	0.2										
# of Portfolios	48	29	41	27	46	27	37	49	30	55										
● Total Fund Composite	28.4	(34)	10.5	(30)	6.1	(38)	3.4	(50)	15.5	(43)	3.7	(31)	9.2	(17)	14.2	(33)	3.5	(44)	1.2	(62)



# Client ABC

## TOTAL EQUITY COMPOSITE





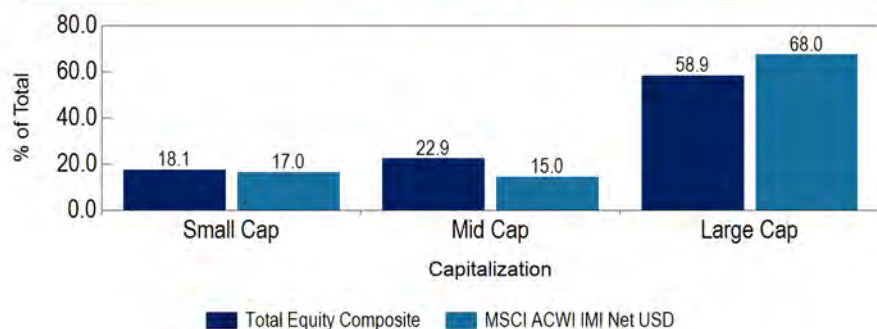
# Client ABC

## TOTAL EQUITY COMPOSITE

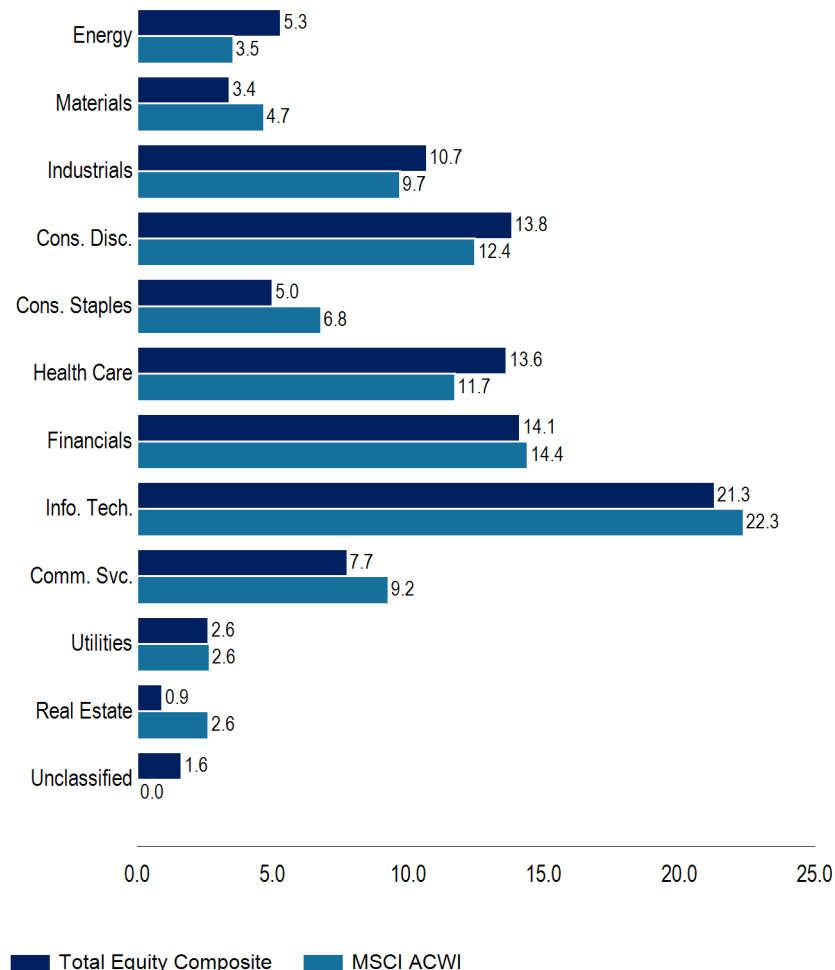
Characteristics		
	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	850	9,217
Weighted Avg. Market Cap. (\$B)	204.7	310.0
Median Market Cap. (\$B)	22.2	2.3
Price To Earnings	19.0	20.1
Price To Book	3.6	3.5
Price To Sales	2.2	2.2
Return on Equity (%)	17.9	17.3
Yield (%)	2.1	1.9
Beta	1.0	1.0
R-Squared	1.0	1.0

	Portfolio Q3-21	Index Q3-21
<b>Region Weighting</b>		
Americas	47.16	60.77
Europe	24.61	18.70
Asia/Pacific	26.67	18.79
Other	1.56	1.74

### Market Capitalization As of September 30, 2021



### Equity Sector Allocation



# Client ABC

## TOTAL EQUITY COMPOSITE

Top Ten Holdings	
APPLE INC	1.7%
MICROSOFT CORP	1.6%
ASML HOLDING NV	1.2%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.2%
ALPHABET INC	1.2%
AMAZON.COM INC	1.1%
CASH - USD	1.0%
UNITED OVERSEAS BANK LTD	0.8%
META PLATFORMS INC	0.8%
NVIDIA CORPORATION	0.8%

Top Positive Contributors		
	Relative Contribution %	Return %
CHINA RESOURCES POWER HOLDINGS CO LTD	0.2%	113.9%
ALIBABA GROUP HOLDING LTD	0.1%	-35.5%
ICON PLC	0.1%	26.8%
ALPHABET INC	0.1%	9.5%
TENCENT HOLDINGS LTD	0.1%	-21.2%
FUJIFILM HOLDINGS CORP	0.1%	17.0%
SHIMANO INC	0.1%	24.2%
NIBE INDUSTRIER AB, MARKARYD	0.1%	20.2%
ASCENDIS PHARMA AS	0.1%	21.2%
SERVICENOW INC	0.1%	13.2%

Top Negative Contributors		
	Relative Contribution %	Return %
ZALANDO SE	-0.1%	-23.9%
WH GROUP LTD	-0.1%	-20.0%
ZENDESK INC	-0.1%	-19.4%
ASOS PLC	-0.1%	-40.8%
WULIANGYE ORD A	-0.1%	-25.5%
MODERNA INC	-0.1%	63.8%
BANCO DO BRASIL ON	-0.1%	-15.3%
WESTERN DIGITAL CORP	-0.1%	-20.7%
PETROLEO BRASILEIRO S.A.-PETROBRAS	-0.1%	-10.5%
VALE SA	-0.1%	-31.3%

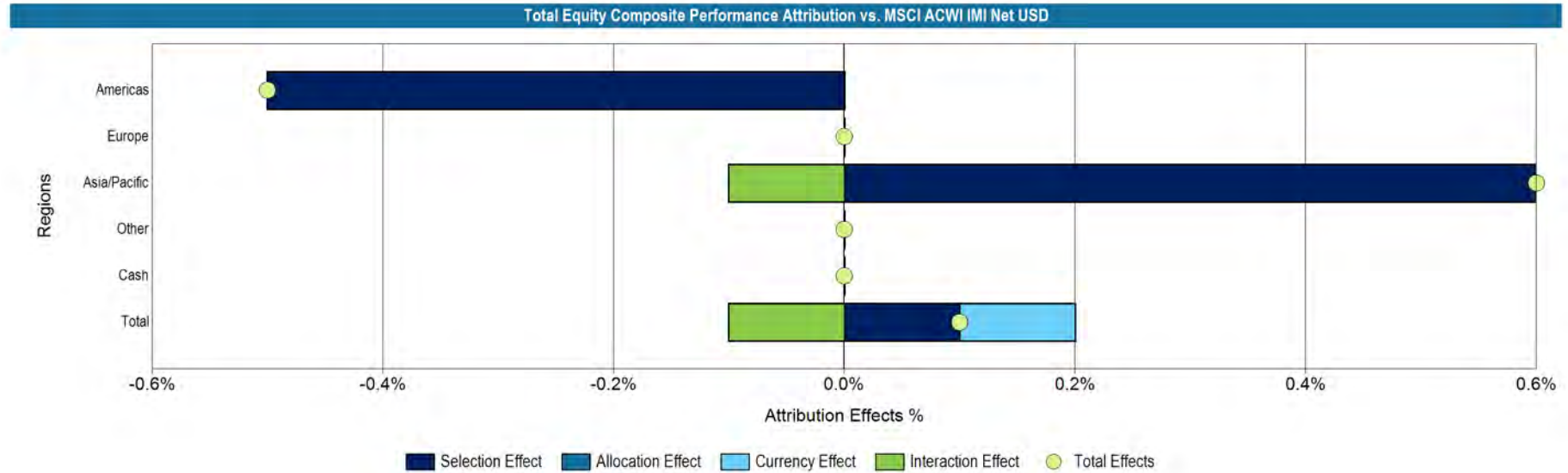
	Equity Sector Attribution						Returns		Sector Weights		
	Total Effects	Selection Effect	Attribution Effects		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark		
			Allocation Effect								
Energy	0.1%	0.0%	0.4%		-0.3%	4.4%	12.6%	3.7%	0.1%		
Materials	-0.4%	-0.1%	0.0%		-0.3%	-7.8%	2.0%	4.5%	1.6%		
Industrials	-0.3%	0.0%	-0.3%		0.0%	-3.7%	-3.9%	10.6%	5.0%		
Consumer Discretionary	-0.8%	-1.1%	0.0%		0.3%	-5.4%	0.9%	12.7%	18.2%		
Consumer Staples	-0.2%	-0.1%	0.0%		-0.1%	-2.2%	1.2%	5.2%	2.2%		
Health Care	-0.5%	-0.4%	0.2%		-0.3%	0.5%	6.1%	12.4%	8.0%		
Financials	0.1%	0.0%	0.4%		-0.3%	2.8%	4.8%	13.6%	2.0%		
Information Technology	-0.2%	-0.3%	0.0%		0.1%	0.3%	1.4%	23.7%	44.4%		
Communication Services	-0.3%	-0.4%	0.0%		0.2%	-1.9%	1.3%	8.8%	16.2%		
Utilities	0.0%	--	--		--	9.1%	--	2.3%	0.0%		
Real Estate	0.0%	0.0%	0.0%		0.0%	-1.8%	-1.3%	1.1%	2.3%		
Cash	0.0%	0.0%	0.0%		0.0%	0.0%	--	1.2%	0.0%		
<b>Portfolio</b>	<b>-2.4%</b>	<b>=</b>	<b>-2.5%</b>	<b>+</b>	<b>0.8%</b>	<b>+</b>	<b>-0.8%</b>	<b>-0.8%</b>	<b>1.4%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## TOTAL EQUITY COMPOSITE



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-1.0%	-0.3%	63.9%	61.9%	-0.5%	0.0%	0.0%	0.0%	-0.5%
Europe	-0.7%	-0.9%	16.4%	17.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Asia/Pacific	-0.2%	-3.4%	18.0%	19.7%	0.6%	0.0%	0.0%	-0.1%	0.6%
Other	0.1%	2.4%	0.5%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.0%	--	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-0.8%</b>	<b>-1.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>-0.1%</b>	<b>0.1%</b>
<b>Totals</b>									
Developed	-0.5%	-0.1%	86.7%	87.2%	-0.6%	0.0%	0.2%	0.0%	-0.4%
Emerging*	-3.0%	-7.1%	12.1%	12.8%	0.6%	0.0%	0.0%	0.0%	0.5%
Cash	0.0%	--	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



# Client ABC

## TOTAL EQUITY COMPOSITE

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
Brazil*	1.8%	0.7%	-13.9%	-19.5%
Canada	0.1%	2.9%	8.0%	-1.9%
Mexico*	0.3%	0.2%	16.6%	1.2%
United States	61.6%	57.9%	-0.8%	0.0%
<b>Total-Americas</b>	<b>63.9%</b>	<b>61.9%</b>	<b>-1.0%</b>	<b>-0.3%</b>
<b>Europe</b>				
Czech Republic*	0.1%	0.0%	15.3%	16.0%
Denmark	0.2%	0.6%	-9.9%	2.0%
Finland	0.2%	0.3%	-13.6%	-4.2%
France	1.8%	2.7%	-5.7%	-1.5%
Germany	1.3%	2.3%	-6.8%	-3.5%
Ireland	1.2%	0.2%	4.6%	0.8%
Italy	0.7%	0.7%	-1.8%	-0.5%
Luxembourg	0.2%	0.0%	-18.2%	-1.0%
Netherlands	1.0%	1.1%	6.8%	3.5%
Poland*	0.4%	0.1%	5.2%	2.8%
Portugal	0.2%	0.1%	9.4%	4.5%
Russia*	1.2%	0.4%	7.7%	9.8%
Spain	0.9%	0.6%	0.0%	-2.6%
Sweden	1.5%	1.1%	4.7%	-1.4%
Switzerland	0.9%	2.4%	-6.5%	-2.8%
United Kingdom	4.7%	3.9%	-2.1%	-0.1%
<b>Total-Europe</b>	<b>16.4%</b>	<b>17.1%</b>	<b>-0.7%</b>	<b>-0.9%</b>

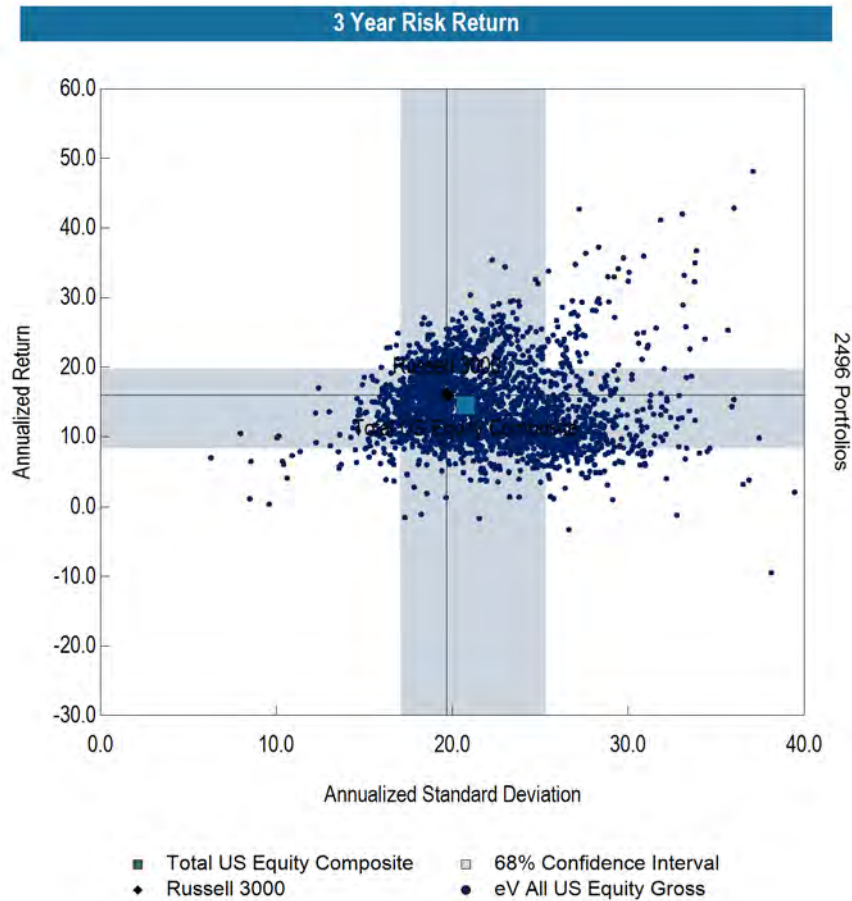
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
Australia	0.5%	2.0%	-11.0%	-2.1%
China*	2.7%	4.4%	-8.5%	-17.9%
Hong Kong	2.5%	0.8%	-1.0%	-9.8%
India*	1.8%	1.4%	11.3%	12.9%
Indonesia*	0.1%	0.1%	12.1%	10.1%
Japan	6.1%	6.3%	5.0%	4.6%
Korea*	1.9%	1.8%	-12.4%	-11.4%
New Zealand	0.3%	0.1%	3.4%	2.8%
Singapore	0.7%	0.3%	1.6%	-0.3%
Taiwan*	1.2%	1.9%	-3.4%	-1.7%
Thailand*	0.2%	0.2%	1.3%	-3.1%
<b>Total-AsiaPacific</b>	<b>18.0%</b>	<b>19.7%</b>	<b>-0.2%</b>	<b>-3.4%</b>
<b>Other</b>				
Israel	0.1%	0.2%	8.0%	3.2%
South Africa*	0.3%	0.5%	-2.1%	-4.1%
Turkey*	0.1%	0.0%	-1.2%	2.0%
<b>Total-Other</b>	<b>0.5%</b>	<b>1.4%</b>	<b>0.1%</b>	<b>2.4%</b>
<b>Totals</b>				
Developed	86.7%	87.2%	-0.5%	-0.1%
Emerging*	12.1%	12.8%	-3.0%	-7.1%
Cash	1.2%		0.0%	

Country\* = Emerging Markets



# Client ABC

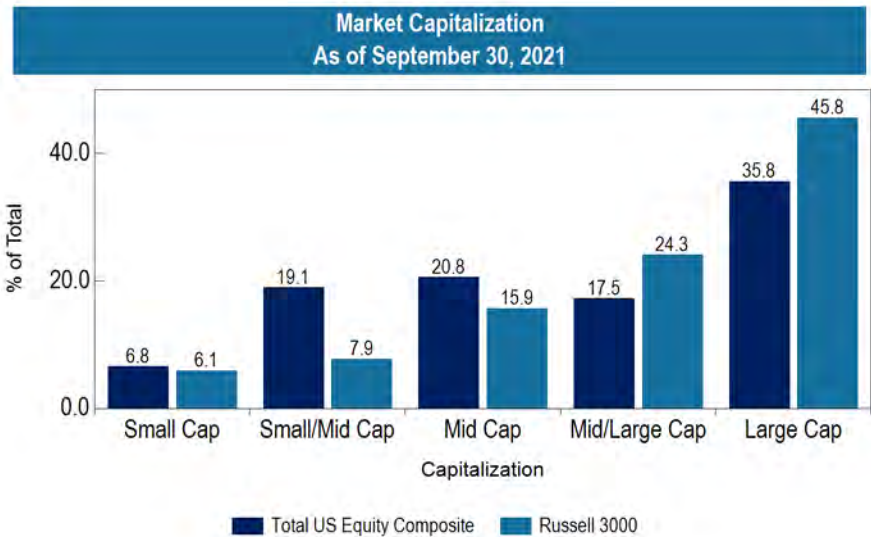
## TOTAL US EQUITY COMPOSITE



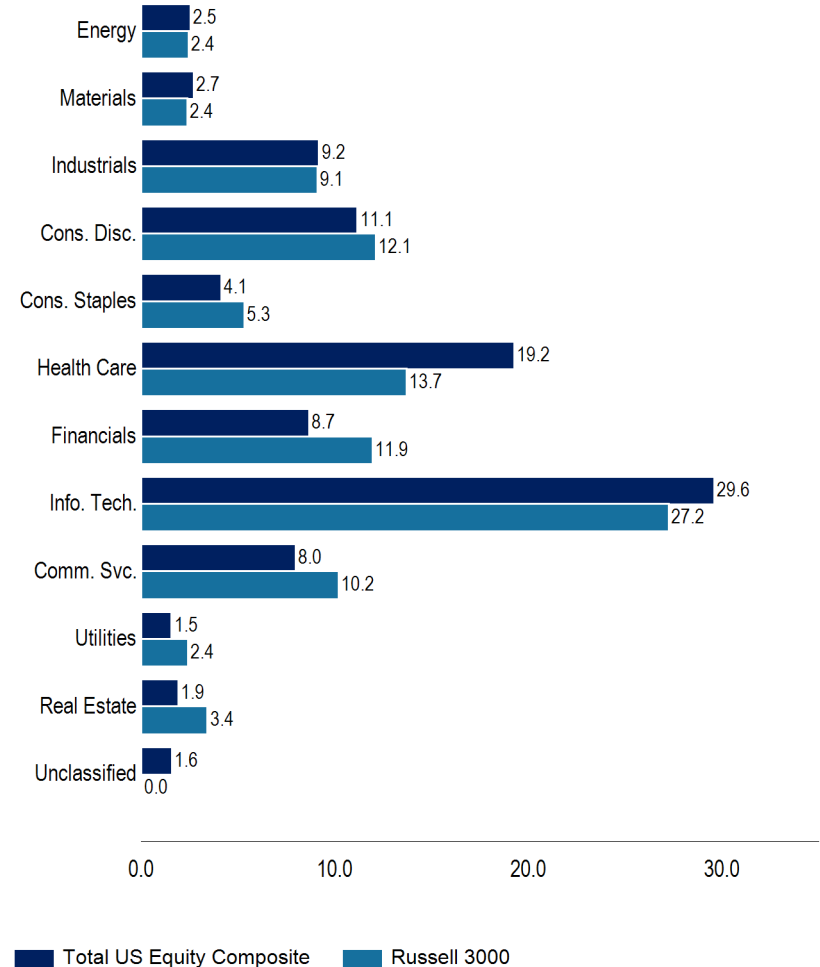
# Client ABC

## TOTAL US EQUITY COMPOSITE

Characteristics		
	Portfolio	Russell 3000
Number of Holdings	637	3,049
Weighted Avg. Market Cap. (\$B)	358.3	466.6
Median Market Cap. (\$B)	21.1	2.6
Price To Earnings	28.2	24.0
Price To Book	5.0	4.3
Price To Sales	3.9	3.2
Return on Equity (%)	20.9	20.9
Yield (%)	1.0	1.3
Beta	1.1	1.0
R-Squared	1.0	1.0



### Equity Sector Allocation



# Client ABC

## TOTAL US EQUITY COMPOSITE

Top Ten Holdings	
APPLE INC	3.8%
MICROSOFT CORP	3.6%
ALPHABET INC	2.7%
AMAZON.COM INC	2.4%
META PLATFORMS INC	1.4%
TESLA INC	1.1%
BIO-TECHNE CORP	1.0%
ABIOMED INC	0.9%
NVIDIA CORPORATION	0.9%
BERKSHIRE HATHAWAY INC	0.9%

Top Positive Contributors		
	Relative Contribution %	Return %
ICON PLC	0.1%	26.8%
ALPHABET INC	0.1%	9.5%
ASCENDIS PHARMA AS	0.1%	21.2%
SERVICENOW INC	0.1%	13.2%
BIO-RAD LABORATORIES INC	0.1%	15.8%
THERMO FISHER SCIENTIFIC INC	0.1%	13.3%
PAYCOM SOFTWARE INC	0.1%	36.4%
SALESFORCE.COM INC	0.1%	11.0%
COSTCO WHOLESALE CORP	0.1%	13.8%
INTUIT INC.	0.1%	10.2%

Top Negative Contributors		
	Relative Contribution %	Return %
MODERNA INC	-0.1%	63.8%
ZENDESK INC	-0.1%	-19.4%
WESTERN DIGITAL CORP	-0.1%	-20.7%
GLAUKOS CORP	-0.1%	-43.2%
BIOGEN INC	-0.1%	-18.3%
ALPHABET INC	-0.1%	6.3%
TESLA INC	-0.1%	14.1%
HUMANA INC.	-0.1%	-11.9%
APPLIED MATERIALS INC	-0.1%	-9.4%
FIDELITY NATIONAL INFORMATION SERVICES INC	-0.1%	-13.8%

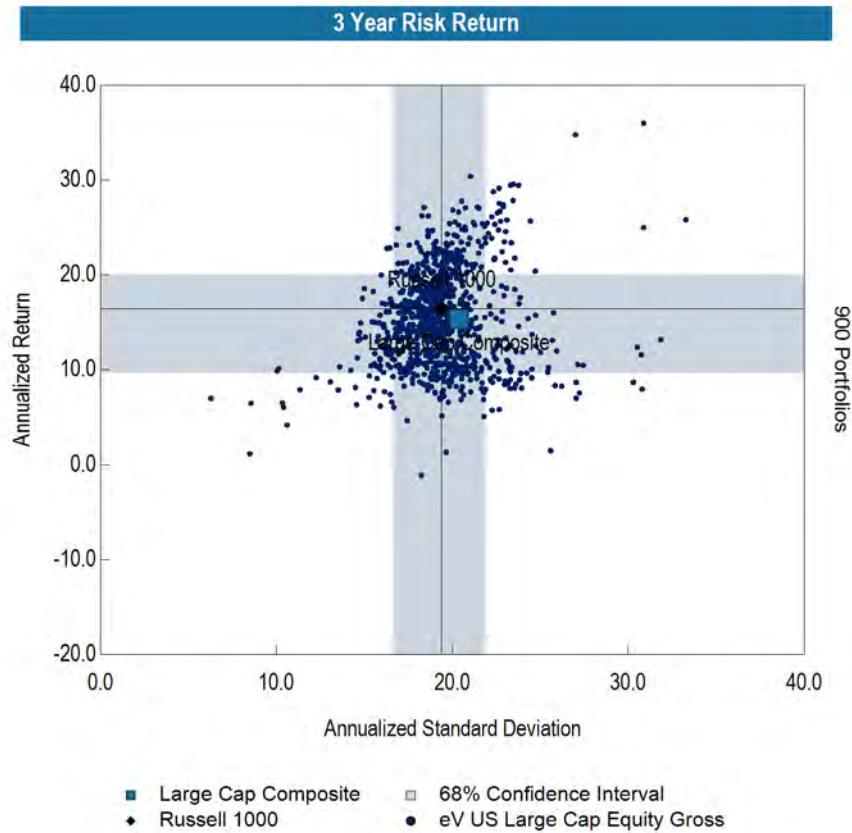
	Equity Sector Attribution								Returns		Sector Weights	
	Total Effects	Selection Effect	Attribution Effects		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
			Allocation Effect									
Energy	0.0%	0.0%	0.0%	0.0%	0.0%	-1.3%	-2.0%	2.3%	2.5%			
Materials	-0.1%	0.0%	-0.1%	0.0%	0.0%	-6.0%	-4.6%	4.0%	2.5%			
Industrials	-0.2%	-0.2%	0.0%	0.0%	0.0%	-6.0%	-4.3%	9.7%	9.5%			
Consumer Discretionary	-0.2%	-0.2%	0.0%	0.0%	0.0%	-2.8%	-0.9%	11.8%	12.1%			
Consumer Staples	0.1%	0.1%	0.0%	0.0%	0.0%	1.4%	-0.8%	4.4%	5.3%			
Health Care	0.2%	0.1%	0.0%	0.0%	0.0%	1.3%	0.3%	14.8%	13.6%			
Financials	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	2.8%	11.1%	11.7%			
Information Technology	-0.3%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.9%	28.8%	26.7%			
Communication Services	0.1%	0.2%	0.0%	0.0%	0.0%	1.2%	-0.3%	9.2%	10.2%			
Utilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.0%	1.4%	2.4%			
Real Estate	-0.1%	-0.1%	0.0%	0.0%	0.0%	-1.8%	0.7%	1.7%	3.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.8%	0.0%			
<b>Portfolio</b>	<b>-0.4%</b>	<b>=</b>	<b>-0.3%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>0.0%</b>	<b>-0.5%</b>	<b>-0.1%</b>	<b>100.0%</b>	<b>100.0%</b>	

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## LARGE CAP COMPOSITE



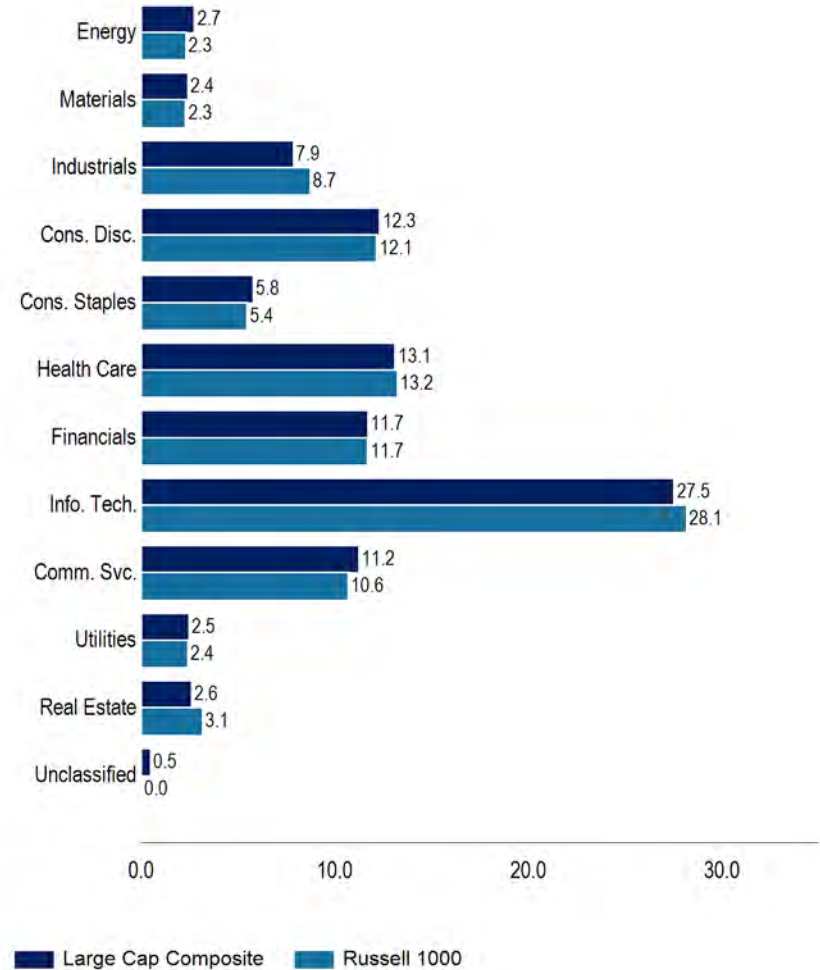


# Client ABC

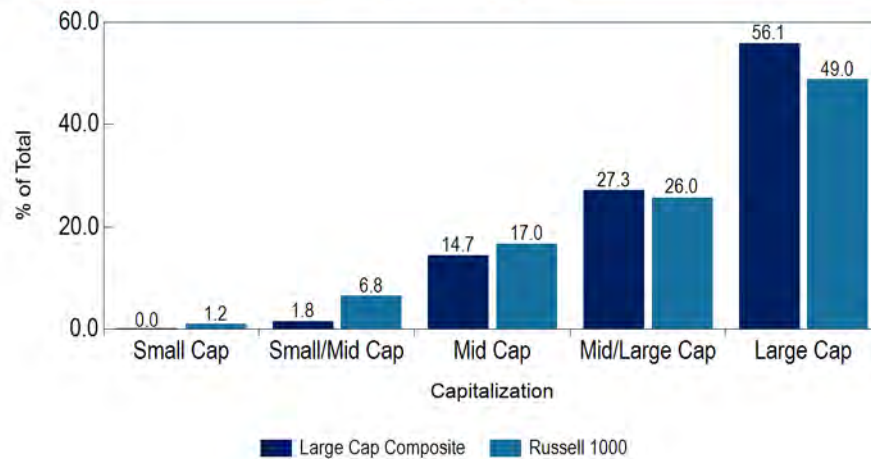
## LARGE CAP COMPOSITE

Characteristics		
	Portfolio	Russell 1000
Number of Holdings	528	1,025
Weighted Avg. Market Cap. (\$B)	555.0	497.9
Median Market Cap. (\$B)	30.3	15.5
Price To Earnings	25.1	24.7
Price To Book	4.5	4.5
Price To Sales	3.5	3.5
Return on Equity (%)	29.9	24.8
Yield (%)	1.4	1.4
Beta	1.0	1.0
R-Squared	1.0	1.0

### Equity Sector Allocation



### Market Capitalization As of September 30, 2021



# Client ABC

## LARGE CAP COMPOSITE

Top Ten Holdings	
APPLE INC	6.0%
MICROSOFT CORP	5.8%
ALPHABET INC	4.2%
AMAZON.COM INC	3.9%
META PLATFORMS INC	2.2%
TESLA INC	1.7%
NVIDIA CORPORATION	1.4%
BERKSHIRE HATHAWAY INC	1.4%
JPMORGAN CHASE & CO	1.3%
JOHNSON & JOHNSON	1.2%

Top Positive Contributors		
	Relative Contribution %	Return %
ICON PLC	0.1%	26.8%
ALPHABET INC	0.1%	9.5%
ASCENDIS PHARMA AS	0.1%	21.2%
SERVICENOW INC	0.1%	13.2%
BIO-RAD LABORATORIES INC	0.1%	15.8%
THERMO FISHER SCIENTIFIC INC	0.1%	13.3%
SALESFORCE.COM INC	0.1%	11.0%
COSTCO WHOLESALE CORP	0.1%	13.8%
INTUIT INC.	0.1%	10.2%
MORGAN STANLEY	0.1%	6.9%

Top Negative Contributors		
	Relative Contribution %	Return %
MODERNA INC	-0.1%	63.8%
ZENDESK INC	-0.1%	-19.4%
WESTERN DIGITAL CORP	-0.1%	-20.7%
BIOGEN INC	-0.1%	-18.3%
HUMANA INC.	-0.1%	-11.9%
APPLIED MATERIALS INC	-0.1%	-9.4%
FIDELITY NATIONAL INFORMATION SERVICES INC	-0.1%	-13.8%
ALPHABET INC	-0.1%	6.3%
TESLA INC	-0.1%	14.1%
FMC CORP.	-0.1%	-14.9%

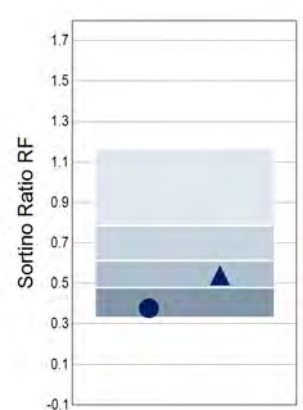
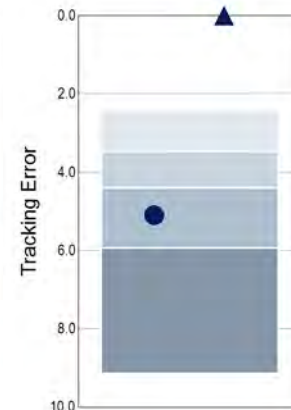
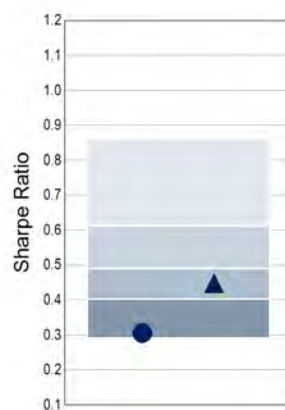
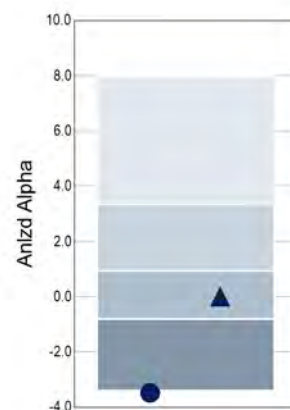
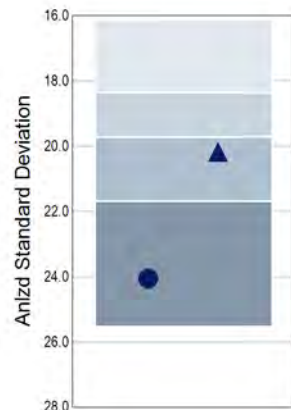
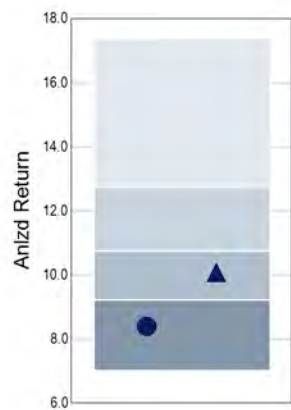
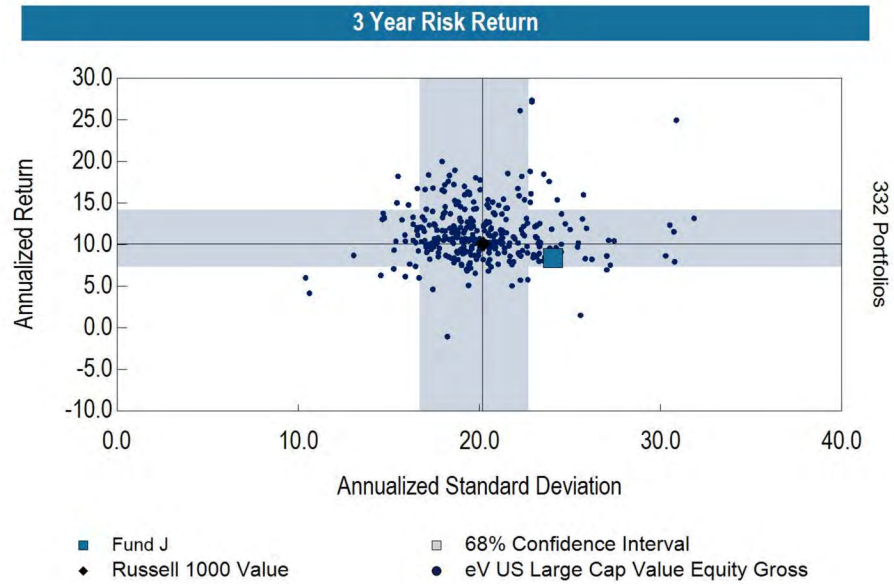
Equity Sector Attribution											
	Total Effects	Selection Effect	Attribution Effects				Returns		Sector Weights		
			Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	0.1%	0.0%	0.0%	0.5%	-2.5%	2.2%	2.4%			
Materials	-0.2%	-0.1%	-0.1%	0.0%	-6.7%	-4.5%	4.1%	2.4%			
Industrials	-0.1%	-0.1%	0.0%	0.0%	-6.1%	-4.5%	9.0%	9.2%			
Consumer Discretionary	-0.3%	-0.3%	0.0%	0.0%	-2.6%	-0.5%	12.5%	12.2%			
Consumer Staples	0.1%	0.1%	0.0%	0.0%	1.7%	-0.7%	4.8%	5.5%			
Health Care	0.2%	0.2%	0.0%	0.0%	2.9%	1.5%	13.1%	13.1%			
Financials	0.0%	0.0%	0.0%	0.0%	2.7%	2.9%	11.7%	11.5%			
Information Technology	-0.3%	-0.3%	0.0%	0.0%	-0.2%	1.0%	28.6%	27.7%			
Communication Services	0.2%	0.2%	0.0%	0.0%	1.7%	0.0%	10.5%	10.7%			
Utilities	0.0%	0.0%	0.0%	0.0%	0.7%	1.3%	1.6%	2.4%			
Real Estate	-0.1%	-0.1%	0.0%	0.0%	-1.8%	0.9%	1.5%	3.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.5%	0.0%			
<b>Portfolio</b>	<b>-0.5%</b>	<b>=</b>	<b>-0.4%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>0.2%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

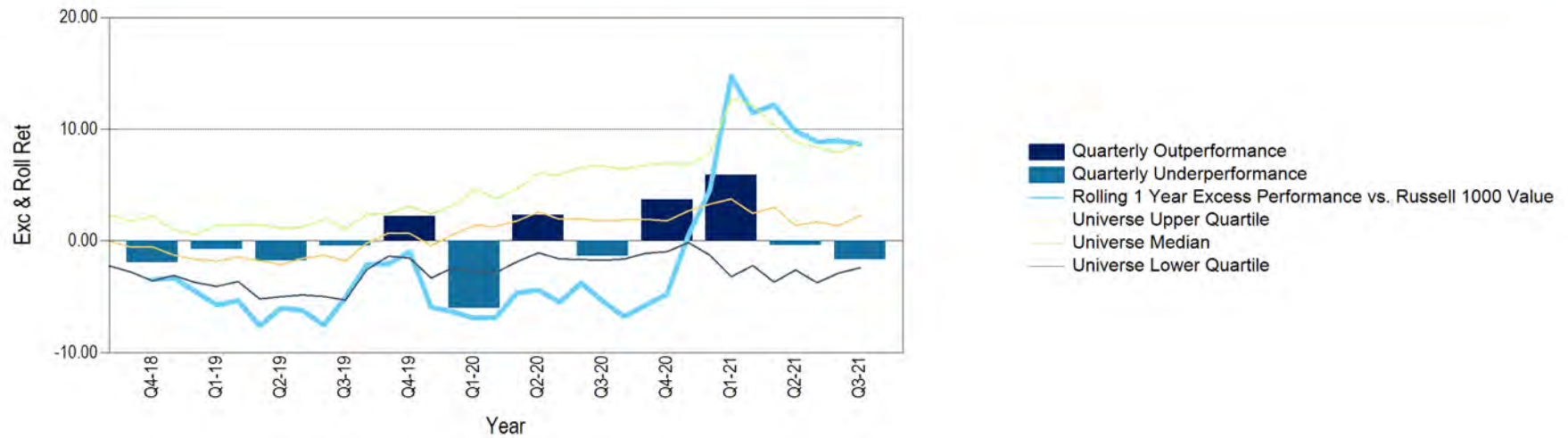
## FUND J



# Client ABC

## FUND J

Annualized Excess Performance



eV US Large Cap Value Equity Gross Return Comparison



# Client ABC

## FUND J

Top Ten Holdings	
MERCK & CO INC	12.1%
AMERICAN FINANCIAL GROUP INC	11.2%
ANNALY CAPITAL MANAGEMENT INC	6.2%
BRISTOL-MYERS SQUIBB CO	6.0%
ALTRIA GROUP INC	4.6%
SIXTH STREET SPECIALTY LENDING INC	4.6%
HP INC	3.6%
KIMBERLY-CLARK CORP	3.5%
ALLSTATE CORP (THE)	3.4%
MEDICAL PROPERTIES TRUST INC	3.3%

Top Positive Contributors		
	Relative Contribution %	Return %
HCA HEALTHCARE INC	0.2%	17.6%
PENSKE AUTOMOTIVE GROUP INC	0.1%	34.0%
ORACLE CORP	0.1%	12.3%
PILGRIM'S PRIDE CORP	0.1%	31.1%
ARCH COAL INC	0.1%	62.8%
HILL-ROM HOLDINGS INC	0.1%	32.3%
KROGER CO. (THE)	0.1%	6.1%
FIFTH THIRD BANCORP	0.1%	11.8%
AMERIPRISE FINANCIAL INC	0.1%	6.6%
HARTFORD FINANCIAL SERVICES GROUP INC. (THE)	0.1%	14.0%

Top Negative Contributors		
	Relative Contribution %	Return %
FEDEX CORP.	-0.1%	-26.3%
FOOT LOCKER INC.	-0.1%	-25.7%
GENERAL MOTORS CO	-0.1%	-10.9%
BIG LOTS INC	-0.1%	-33.9%
APPLIED MATERIALS INC	-0.1%	-9.4%
AMGEN INC	-0.1%	-12.1%
B. RILEY FINANCIAL INC	-0.1%	-19.5%
PULTEGROUP INC	-0.1%	-15.6%
OSHKOSH CORP	-0.1%	-17.6%
MASTEC INC.	-0.1%	-18.7%

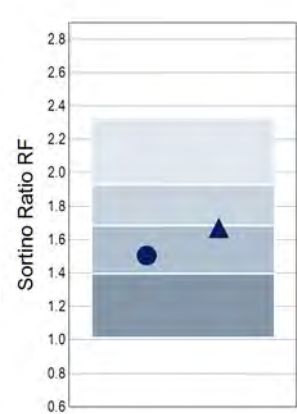
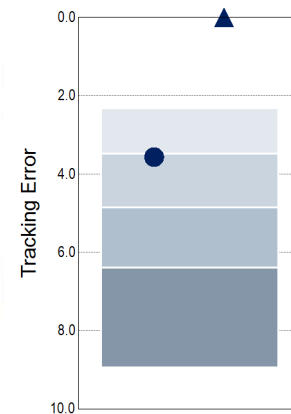
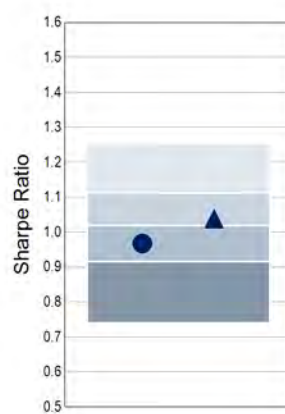
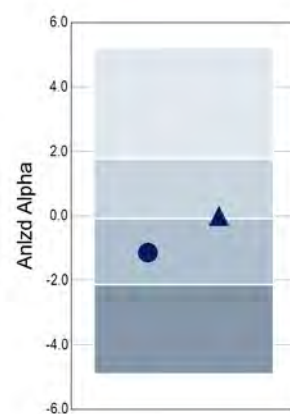
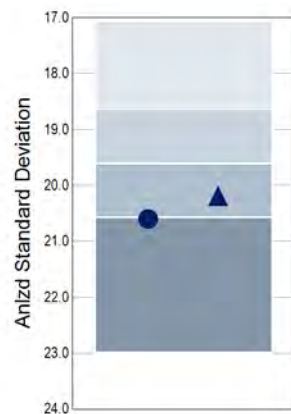
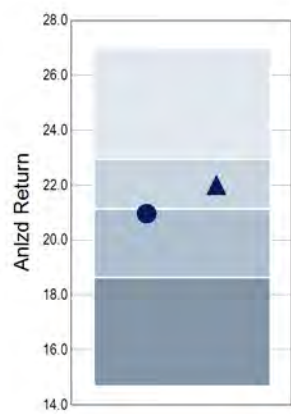
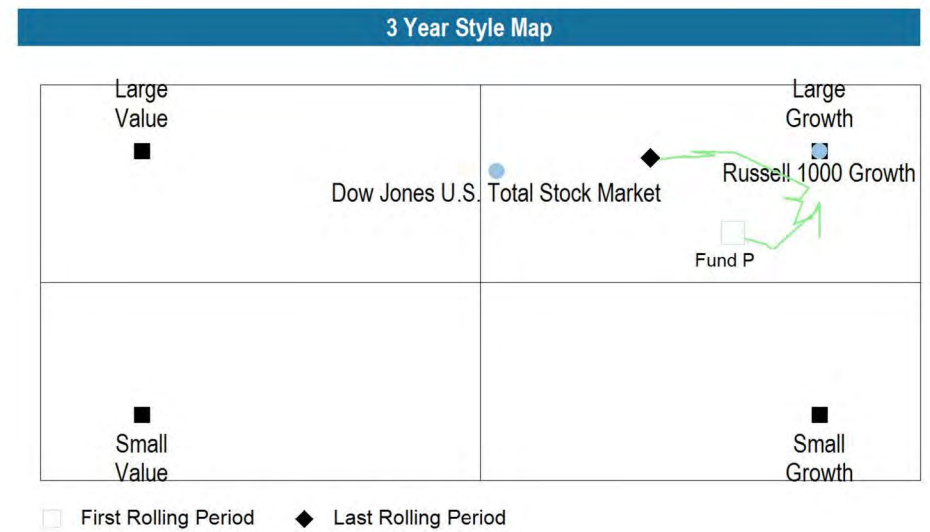
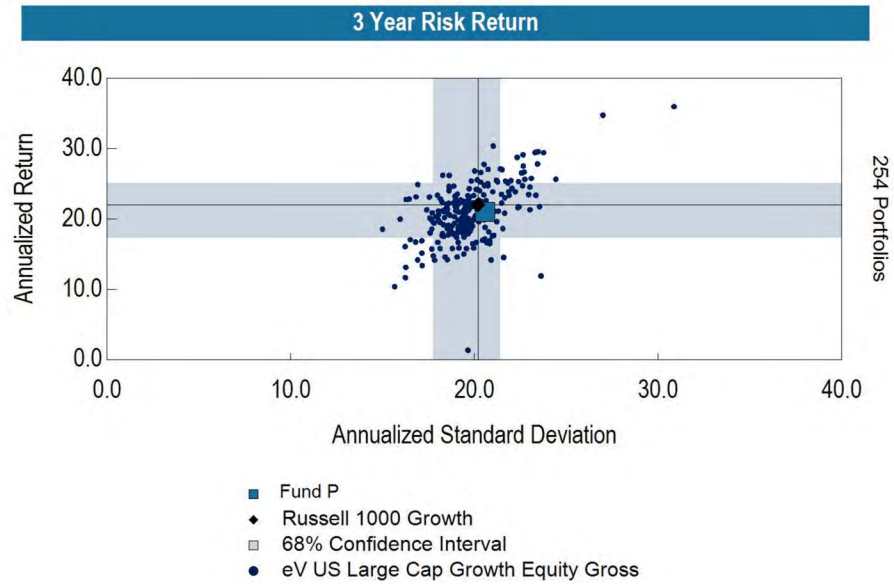
Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.0%	0.0%	0.0%	0.0%		-2.3%	-2.7%	2.8%	4.6%		
Materials	-0.1%	0.0%	-0.1%	0.0%		-4.3%	-5.0%	7.3%	3.8%		
Industrials	-0.3%	-0.4%	0.0%	0.1%		-7.3%	-3.8%	10.7%	12.2%		
Consumer Discretionary	-0.6%	-0.3%	-0.1%	-0.3%		-7.4%	-2.5%	10.7%	5.4%		
Consumer Staples	0.0%	0.0%	0.0%	0.0%		-1.2%	-1.2%	7.0%	7.2%		
Health Care	-0.1%	-0.1%	0.0%	0.0%		-0.4%	0.3%	13.0%	17.3%		
Financials	0.1%	0.0%	0.1%	0.0%		2.3%	2.5%	24.1%	21.1%		
Information Technology	-0.3%	-0.2%	0.0%	-0.1%		-4.5%	-2.4%	13.1%	10.4%		
Communication Services	0.1%	0.1%	0.1%	0.0%		-1.9%	-3.2%	6.2%	8.6%		
Utilities	-0.1%	-0.1%	0.0%	0.0%		-0.4%	1.3%	2.7%	4.9%		
Real Estate	-0.2%	-0.4%	-0.1%	0.2%		-5.6%	2.2%	2.2%	4.6%		
Cash	0.0%	0.0%	0.0%	0.0%		0.0%	--	0.3%	0.0%		
<b>Portfolio</b>	<b>-1.6%</b>	<b>=</b>	<b>-1.3%</b>	<b>+</b>	<b>-0.2%</b>	<b>+</b>	<b>0.0%</b>	<b>-2.4%</b>	<b>-0.8%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

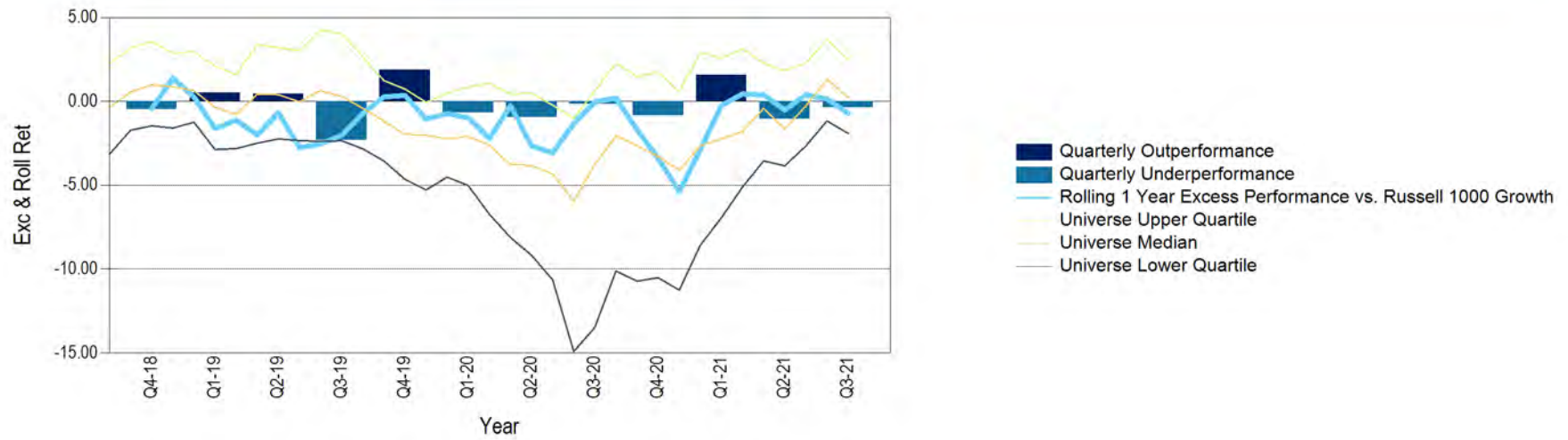
## FUND P



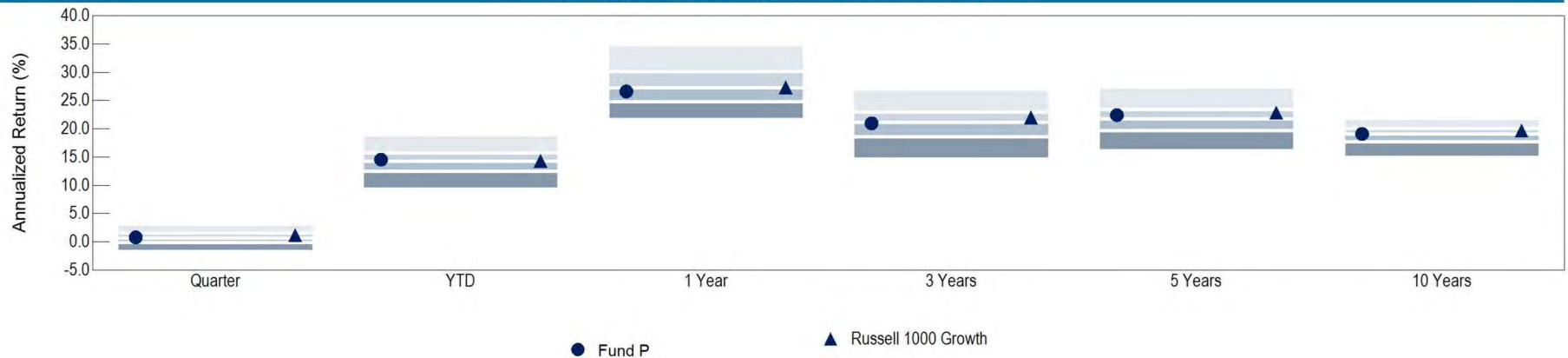
# Client ABC

## FUND P

Annualized Excess Performance



eV US Large Cap Growth Equity Gross Return Comparison



# Client ABC

## FUND P

Top Ten Holdings	
APPLE INC	9.4%
ALPHABET INC	7.7%
AMAZON.COM INC	6.2%
MICROSOFT CORP	5.7%
META PLATFORMS INC	4.9%
VISA INC	3.4%
SALESFORCE.COM INC	3.1%
SERVICENOW INC	2.9%
COSTCO WHOLESALE CORP	2.5%
WORKDAY INC	2.4%

Top Positive Contributors		
	Relative Contribution %	Return %
ICON PLC	0.4%	26.8%
ALPHABET INC	0.4%	9.5%
THERMO FISHER SCIENTIFIC INC	0.3%	13.3%
SALESFORCE.COM INC	0.3%	11.0%
ASCENDIS PHARMA AS	0.3%	21.2%
BIO-RAD LABORATORIES INC	0.3%	15.8%
SERVICENOW INC	0.3%	13.2%
COSTCO WHOLESALE CORP	0.2%	13.8%
INTUIT INC.	0.2%	10.2%
MORGAN STANLEY	0.1%	6.9%

Top Negative Contributors		
	Relative Contribution %	Return %
ZENDESK INC	-0.3%	-19.4%
WESTERN DIGITAL CORP	-0.3%	-20.7%
BIOGEN INC	-0.3%	-18.3%
HUMANA INC.	-0.2%	-11.9%
FIDELITY NATIONAL INFORMATION SERVICES INC	-0.2%	-13.8%
TESLA INC	-0.2%	14.1%
MICRON TECHNOLOGY INC.	-0.2%	-16.4%
MICROSOFT CORP	-0.2%	4.3%
UNION PACIFIC CORP	-0.2%	-10.4%
FMC CORP.	-0.2%	-14.9%

Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.1%	0.0%	0.0%	0.1%		12.1%	0.6%	1.0%	0.2%		
Materials	-0.4%	-0.1%	-0.1%	-0.2%		-13.6%	-2.9%	3.0%	1.0%		
Industrials	-0.2%	0.0%	-0.1%	0.0%		-6.7%	-6.0%	8.2%	6.4%		
Consumer Discretionary	-0.2%	-0.3%	0.0%	0.1%		-1.7%	0.1%	14.0%	18.6%		
Consumer Staples	0.3%	0.5%	0.0%	-0.2%		13.8%	0.4%	2.2%	3.9%		
Health Care	0.6%	0.3%	0.1%	0.2%		7.2%	3.6%	13.3%	9.1%		
Financials	0.0%	0.0%	0.0%	0.0%		6.9%	7.2%	1.9%	2.3%		
Information Technology	-0.8%	-0.8%	0.0%	0.0%		-0.1%	1.8%	41.9%	44.0%		
Communication Services	0.1%	0.1%	0.0%	0.0%		3.1%	2.1%	13.4%	12.7%		
Utilities	0.0%	--	0.0%	--		--	0.0%	0.0%	0.0%		
Real Estate	0.1%	--	0.1%	--		--	-2.2%	0.0%	1.7%		
Cash	0.0%	0.0%	0.0%	0.0%		0.0%	--	1.1%	0.0%		
<b>Portfolio</b>	<b>-0.4%</b>	<b>=</b>	<b>-0.3%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>-0.1%</b>	<b>0.7%</b>	<b>1.1%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.

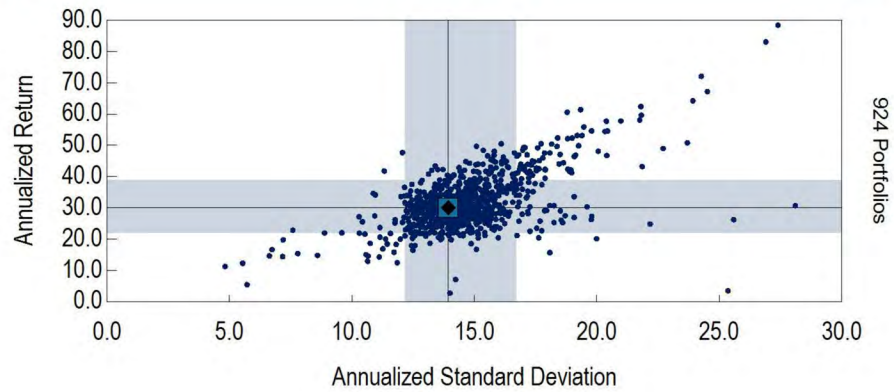




# Client ABC

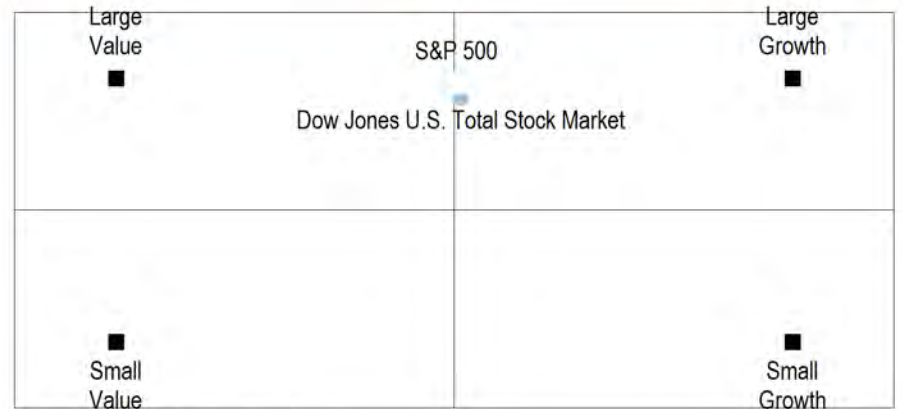
## FUND D

1 Year Risk Return

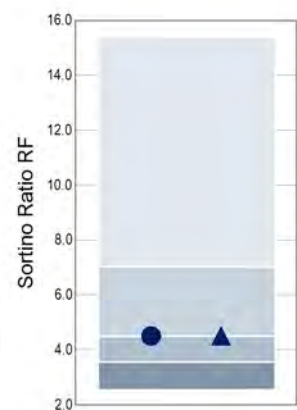
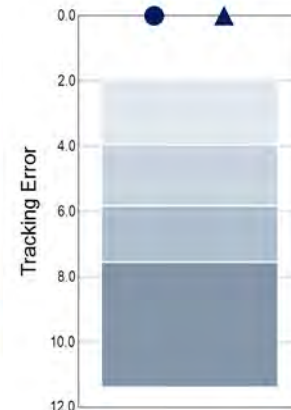
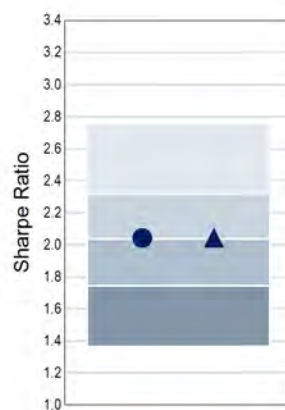
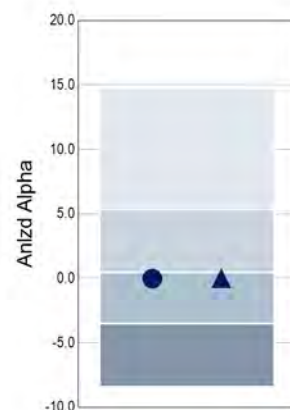
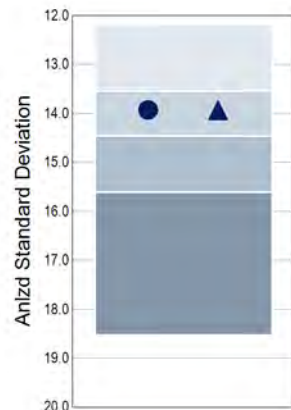
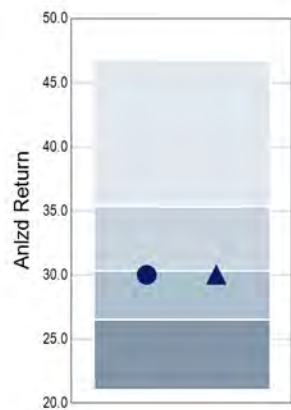


- Fund D
- ◆ S&P 500
- 68% Confidence Interval
- eV US Large Cap Equity Gross

1 Year Style Map



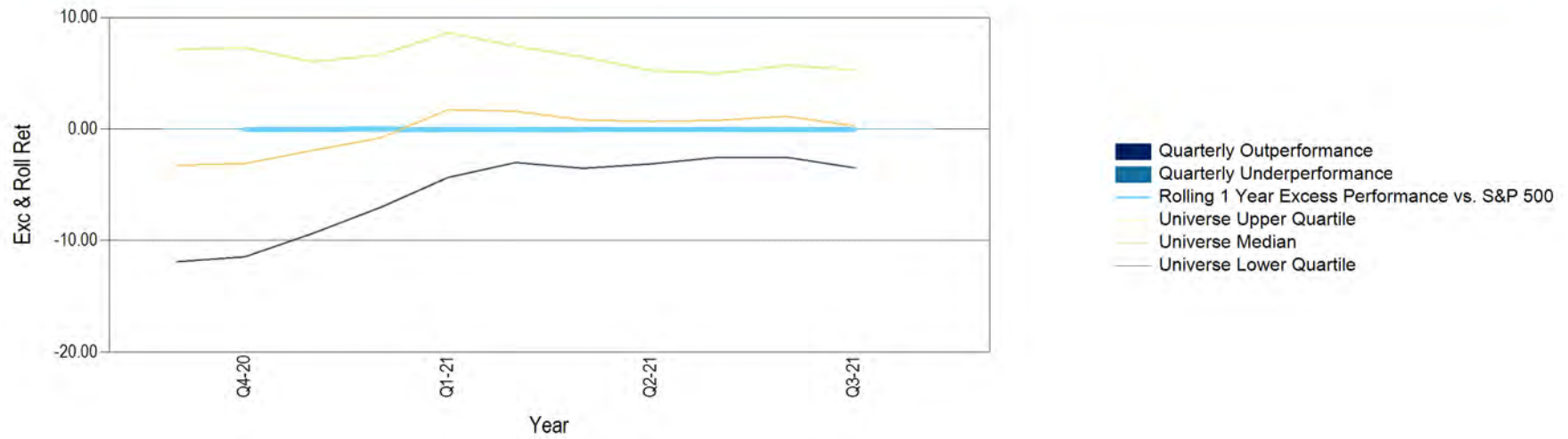
■ First Rolling Period ◆ Last Rolling Period



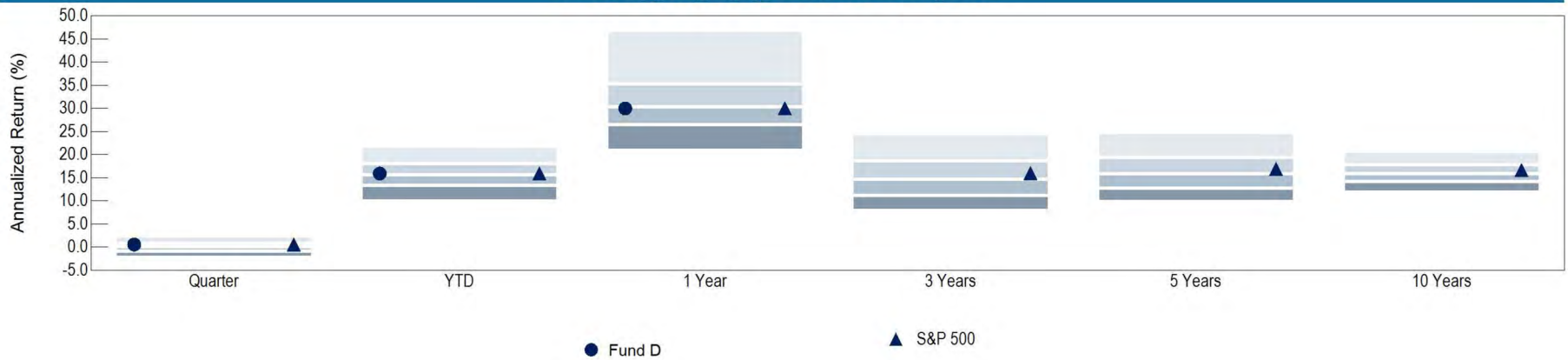
# Client ABC

## FUND D

Annualized Excess Performance



eV US Large Cap Equity Gross Return Comparison



# Client ABC

## FUND D

Top Ten Holdings	
APPLE INC	6.1%
MICROSOFT CORP	5.8%
ALPHABET INC	4.2%
AMAZON.COM INC	3.9%
META PLATFORMS INC	2.2%
TESLA INC	1.7%
NVIDIA CORPORATION	1.4%
BERKSHIRE HATHAWAY INC	1.4%
JPMORGAN CHASE & CO	1.3%
JOHNSON & JOHNSON	1.2%

Top Positive Contributors		
	Relative Contribution %	Return %
T-MOBILE US INC	0.0%	-11.8%
AMAZON.COM INC	0.0%	-4.5%
LAS VEGAS SANDS CORP	0.0%	-30.5%
MICROSOFT CORP	0.0%	4.3%
ALPHABET INC	0.0%	9.5%
THE KRAFT HEINZ CO	0.0%	-8.7%
GAP INC	0.0%	-32.3%
NETFLIX INC	0.0%	15.6%
HORMEL FOODS CORP	0.0%	-13.7%
WALMART INC	0.0%	-0.8%

Top Negative Contributors		
	Relative Contribution %	Return %
TESLA INC	0.0%	14.1%
ORACLE CORP	0.0%	12.3%
ALPHABET INC	0.0%	6.3%
HCA HEALTHCARE INC	0.0%	17.6%
MORGAN STANLEY	0.0%	6.9%
DANAHER CORP	0.0%	13.5%
PAYPAL HOLDINGS INC	0.0%	-10.7%
APPLE INC	0.0%	3.5%
FORTINET INC	0.0%	22.6%
REPUBLIC SERVICES INC.	0.0%	9.5%

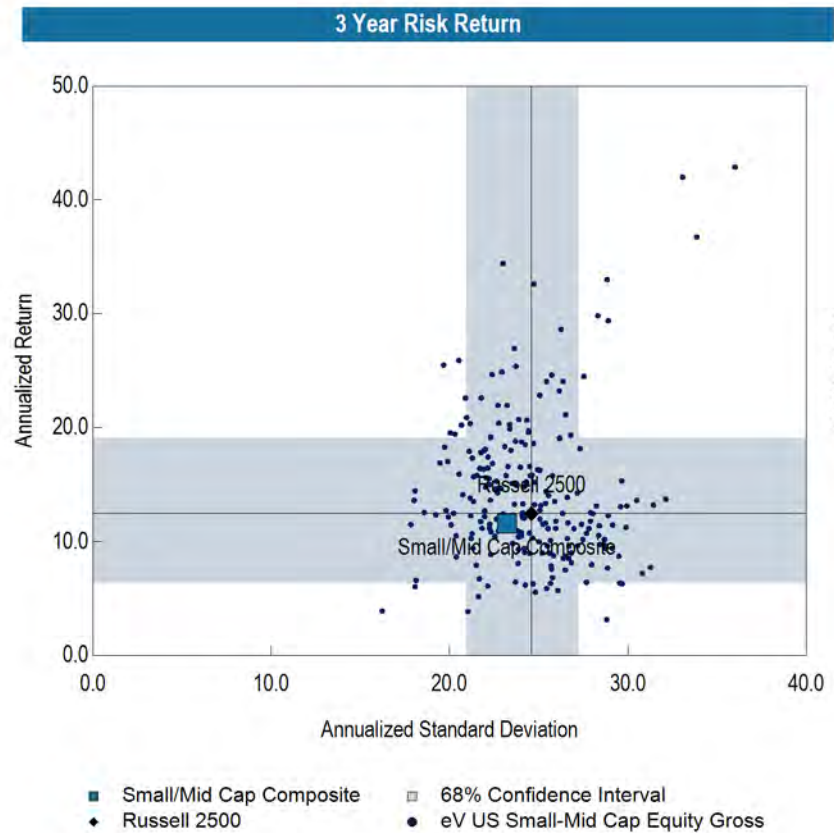
Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.0%	0.0%	0.0%	0.0%		-1.8%	-1.7%	2.8%	2.8%		
Materials	0.0%	0.0%	0.0%	0.0%		-3.5%	-3.4%	2.6%	2.5%		
Industrials	0.0%	0.0%	0.0%	0.0%		-4.2%	-4.1%	8.5%	8.4%		
Consumer Discretionary	0.0%	0.0%	0.0%	0.0%		-0.1%	-0.1%	12.2%	13.0%		
Consumer Staples	0.0%	0.0%	0.0%	0.0%		-0.3%	-0.6%	5.8%	6.4%		
Health Care	0.0%	0.0%	0.0%	0.0%		1.0%	1.1%	12.8%	12.5%		
Financials	0.0%	0.0%	0.0%	0.0%		2.7%	2.6%	11.7%	11.5%		
Information Technology	0.0%	0.0%	0.0%	0.0%		1.3%	1.4%	27.3%	26.8%		
Communication Services	0.0%	0.0%	0.0%	0.0%		1.6%	1.4%	11.1%	11.2%		
Utilities	0.0%	0.0%	0.0%	0.0%		1.7%	1.7%	2.4%	2.3%		
Real Estate	0.0%	0.0%	0.0%	0.0%		0.9%	0.9%	2.6%	2.5%		
Cash	0.0%	0.0%	0.0%	0.0%		0.0%	--	0.1%	0.0%		
<b>Portfolio</b>	<b>0.0%</b>	<b>=</b>	<b>0.0%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>0.0%</b>	<b>0.5%</b>	<b>0.5%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## SMALL/MID CAP COMPOSITE

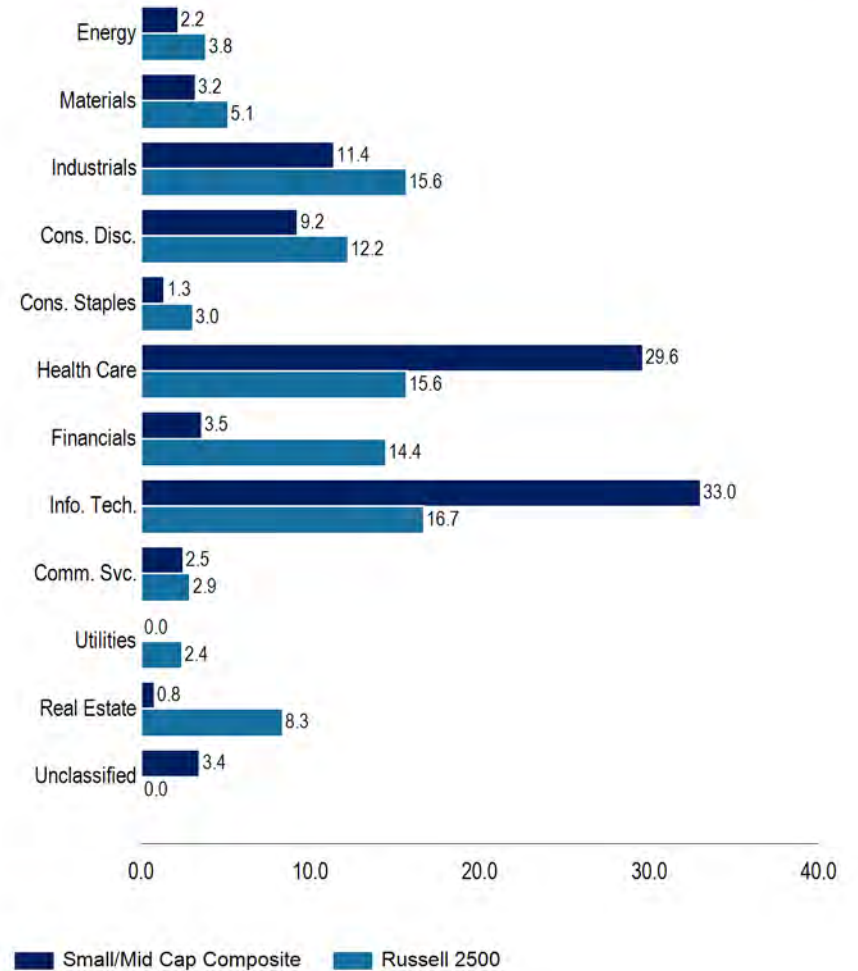


# Client ABC

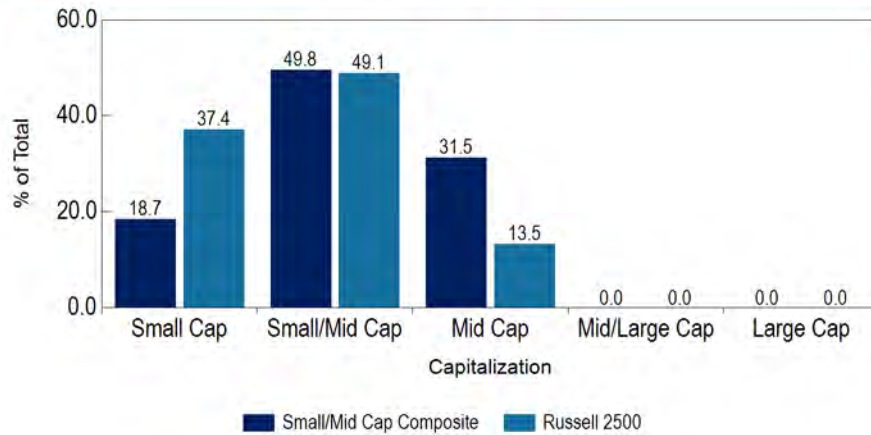
## SMALL/MID CAP COMPOSITE

Characteristics		
	Portfolio	Russell 2500
Number of Holdings	119	2,530
Weighted Avg. Market Cap. (\$B)	10.8	7.4
Median Market Cap. (\$B)	7.1	1.8
Price To Earnings	43.4	18.8
Price To Book	6.3	3.0
Price To Sales	5.2	2.1
Return on Equity (%)	7.0	6.5
Yield (%)	0.3	1.2
Beta	0.9	1.0
R-Squared	1.0	1.0

### Equity Sector Allocation



### Market Capitalization As of September 30, 2021



# Client ABC

## SMALL/MID CAP COMPOSITE

Top Ten Holdings	
BIO-TECHNE CORP	2.5%
ABIOMED INC	2.4%
CASH - USD	2.1%
ALARM.COM HOLDINGS INC	2.1%
DYNATRACE INC	1.8%
GUIDEWIRE SOFTWARE INC	1.8%
BUILDERS FIRSTSOURCE INC	1.7%
PAYCOM SOFTWARE INC	1.6%
CROWN HOLDINGS INC	1.5%
CHARLES RIVER LABORATORIES INTERNATIONAL INC	1.5%

Top Positive Contributors		
	Relative Contribution %	Return %
PAYCOM SOFTWARE INC	0.5%	36.4%
DATADOG INC	0.4%	35.8%
REPLIGEN CORP	0.1%	44.8%
HORIZON THERAPEUTICS PUBLIC LTD CO	0.1%	17.0%
PURE STORAGE INC	0.1%	28.8%
DYNATRACE INC	0.1%	21.5%
BIO-TECHNE CORP	0.1%	7.7%
BUILDERS FIRSTSOURCE INC	0.1%	21.3%
VOCERA COMMUNICATIONS INC	0.1%	14.8%
ANAPLAN INC	0.1%	14.2%

Top Negative Contributors		
	Relative Contribution %	Return %
GLAUKOS CORP	-0.5%	-43.2%
Q2 HOLDINGS INC	-0.3%	-21.9%
INOGEN INC	-0.2%	-33.9%
10X GENOMICS INC	-0.2%	-25.7%
PROS HOLDINGS INC	-0.2%	-22.1%
APPFOLIO INC	-0.2%	-14.7%
CARDIOVASCULAR SYSTEMS INC	-0.2%	-23.0%
DMC GLOBAL INC	-0.1%	-34.3%
ALARM.COM HOLDINGS INC	-0.1%	-7.7%
PROTO LABS INC	-0.1%	-27.5%

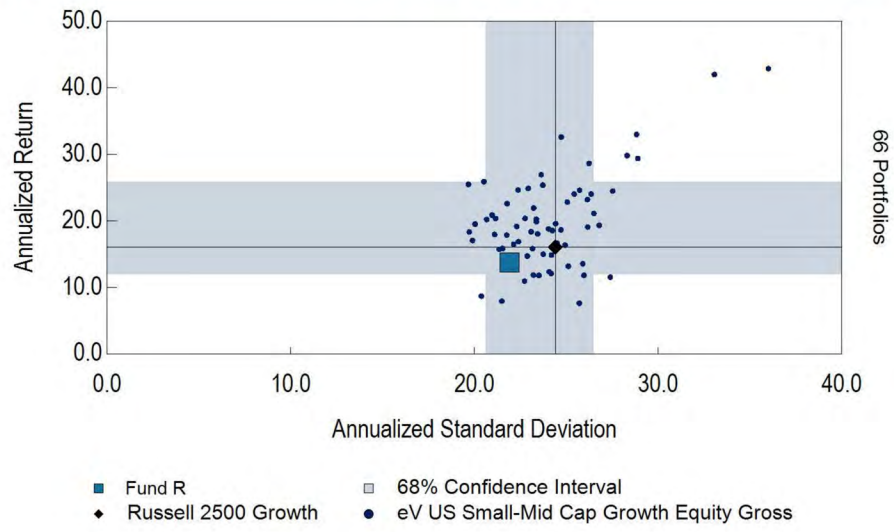
Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	-0.4%	-0.4%	0.0%	0.1%		-9.0%	3.4%	2.8%	3.6%		
Materials	0.1%	0.1%	0.0%	0.0%		-2.1%	-3.4%	3.5%	5.3%		
Industrials	-0.2%	-0.3%	0.0%	0.0%		-5.7%	-3.8%	13.4%	15.9%		
Consumer Discretionary	0.3%	0.2%	0.2%	-0.1%		-4.7%	-6.2%	8.4%	12.7%		
Consumer Staples	0.2%	0.2%	0.1%	-0.1%		-2.5%	-7.6%	1.9%	3.2%		
Health Care	0.1%	0.2%	-0.2%	0.1%		-3.4%	-4.5%	24.2%	15.7%		
Financials	0.0%	0.4%	-0.3%	-0.2%		5.3%	2.2%	8.1%	13.8%		
Information Technology	0.8%	0.3%	0.2%	0.2%		0.9%	-0.8%	30.1%	16.3%		
Communication Services	0.1%	0.0%	0.1%	0.0%		-11.4%	-11.0%	2.0%	3.1%		
Utilities	0.0%	-0.1%	0.0%	0.1%		-9.0%	-3.1%	0.5%	2.4%		
Real Estate	-0.2%	-0.2%	-0.1%	0.1%		-1.9%	0.0%	2.7%	8.1%		
Cash	0.1%	0.0%	0.1%	0.0%		0.0%	--	2.4%	0.0%		
<b>Portfolio</b>	<b>0.7%</b>	<b>=</b>	<b>0.3%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>0.4%</b>	<b>-2.0%</b>	<b>-2.6%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.

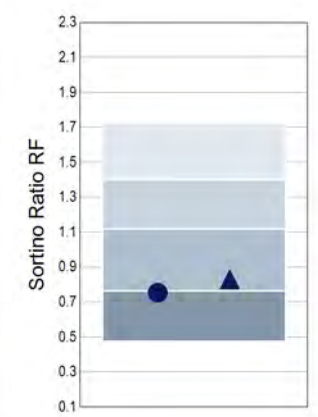
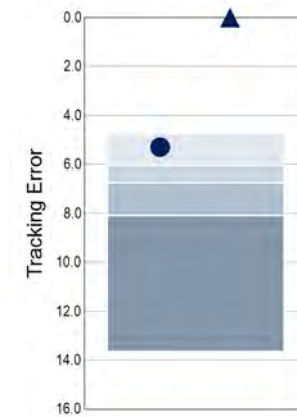
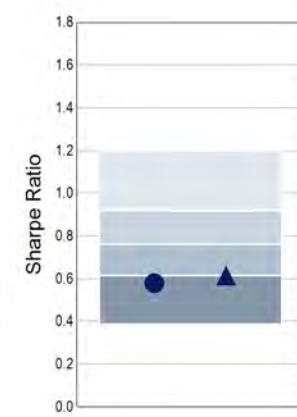
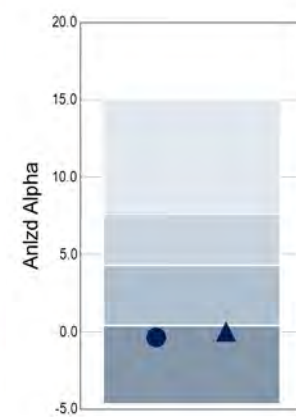
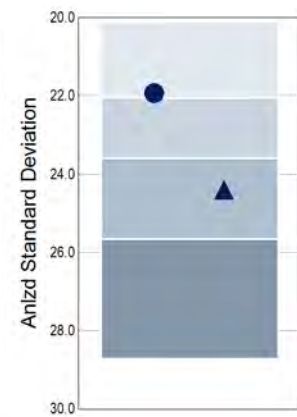
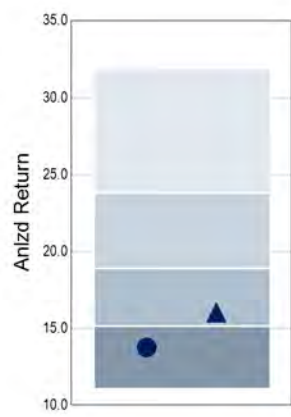
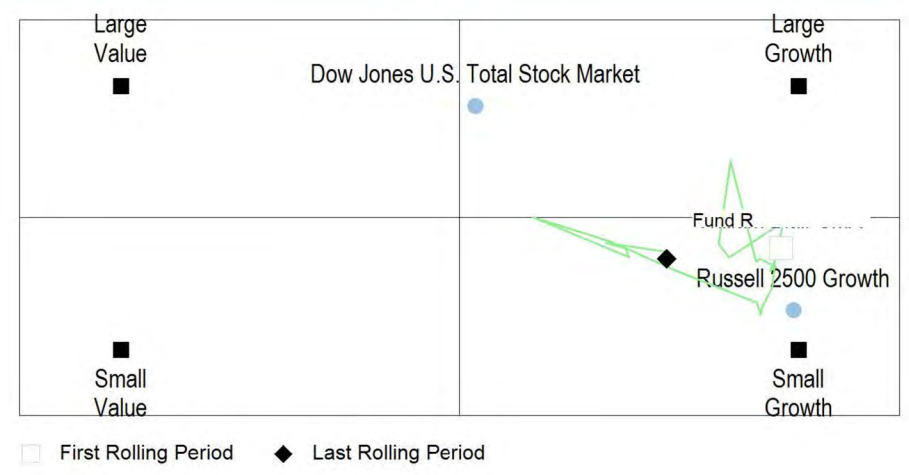


# Client ABC FUND R

3 Year Risk Return

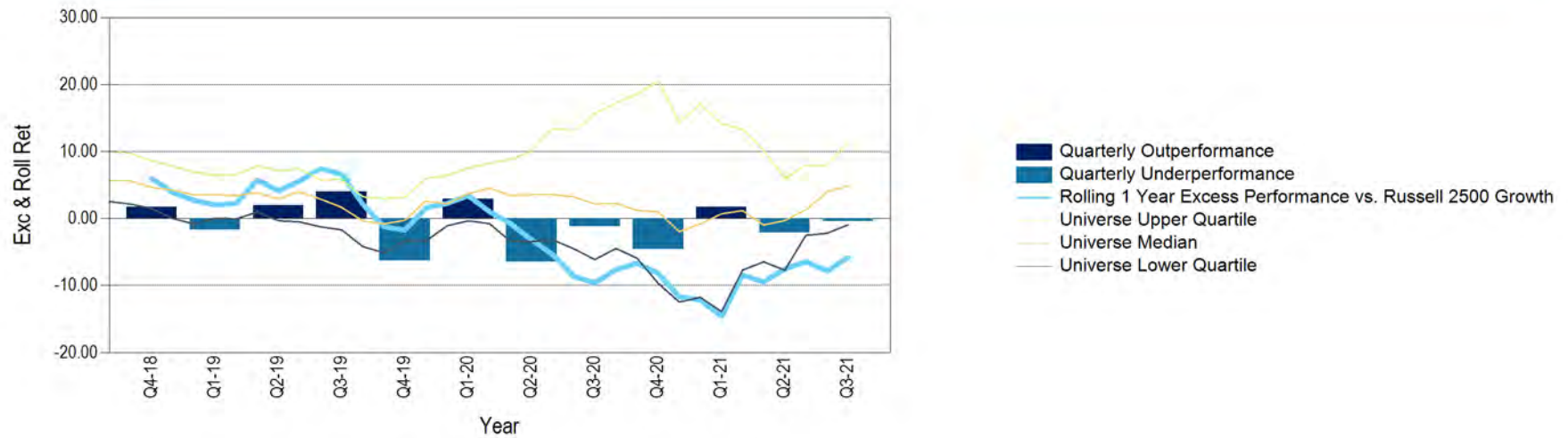


3 Year Style Map



# Client ABC FUND R

Annualized Excess Performance



eV US Small-Mid Cap Growth Equity Gross Return Comparison





# Client ABC FUND R

Top Ten Holdings	
DYNATRACE INC	2.6%
BUILDERS FIRSTSOURCE INC	2.4%
CASH - USD	2.3%
CROWN HOLDINGS INC	2.2%
CHARLES RIVER LABORATORIES INTERNATIONAL INC	2.2%
BROOKS AUTOMATION INC	2.1%
BWX TECHNOLOGIES INC	2.1%
BIO-TECHNE CORP	2.1%
TREX CO INC	2.1%
AXON ENTERPRISE INC	2.0%

Top Positive Contributors		
	Relative Contribution %	Return %
BUILDERS FIRSTSOURCE INC	0.4%	21.3%
HORIZON THERAPEUTICS PUBLIC LTD CO	0.4%	17.0%
PURE STORAGE INC	0.4%	28.8%
DYNATRACE INC	0.4%	21.5%
NICE LTD	0.2%	14.8%
CAMECO CORP	0.2%	13.3%
WORKIVA INC	0.2%	26.6%
WESTERN ALLIANCE BANCORPORATION	0.2%	17.6%
VERACYTE INC	0.2%	16.2%
CHARLES RIVER LABORATORIES INTERNATIONAL INC	0.1%	11.6%

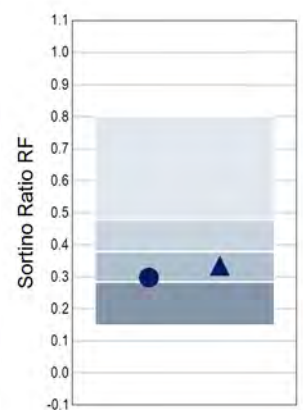
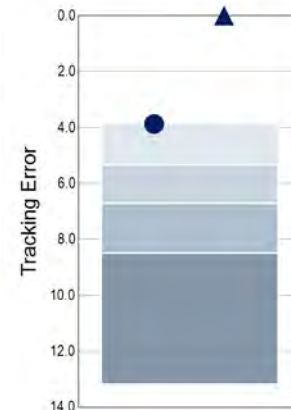
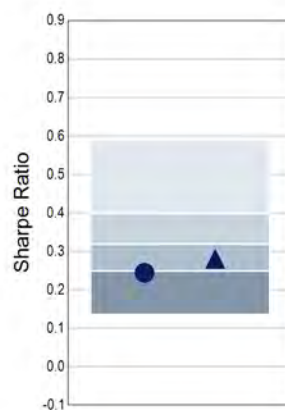
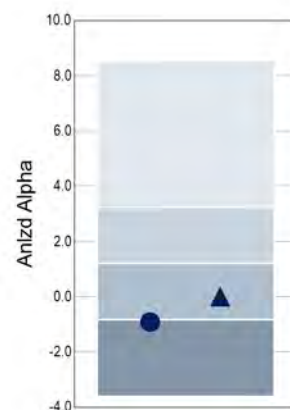
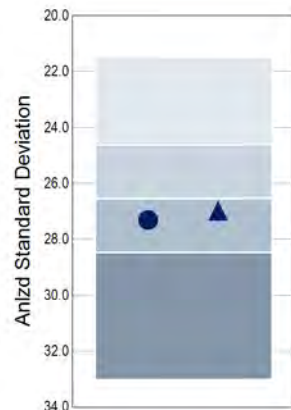
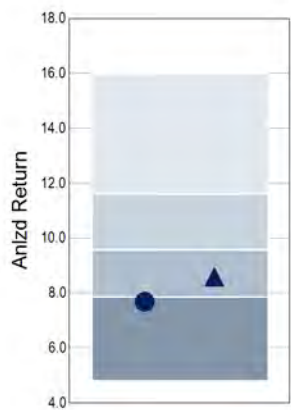
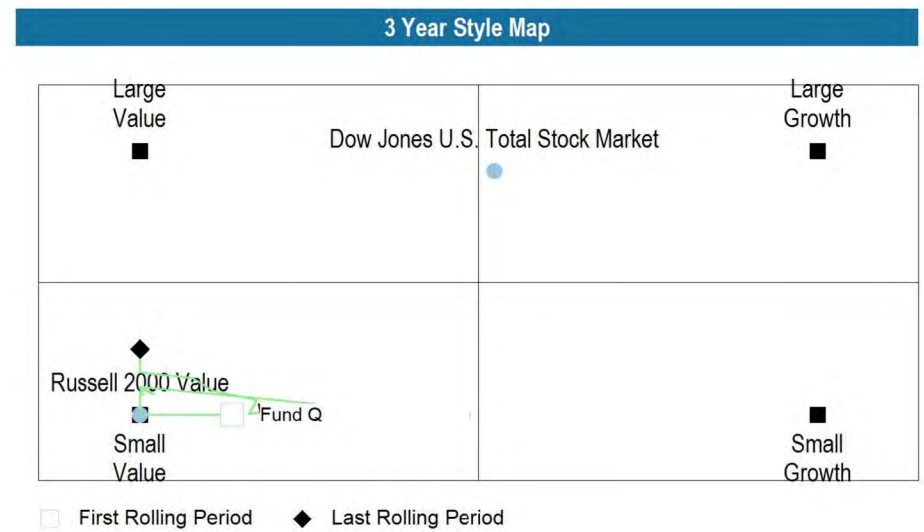
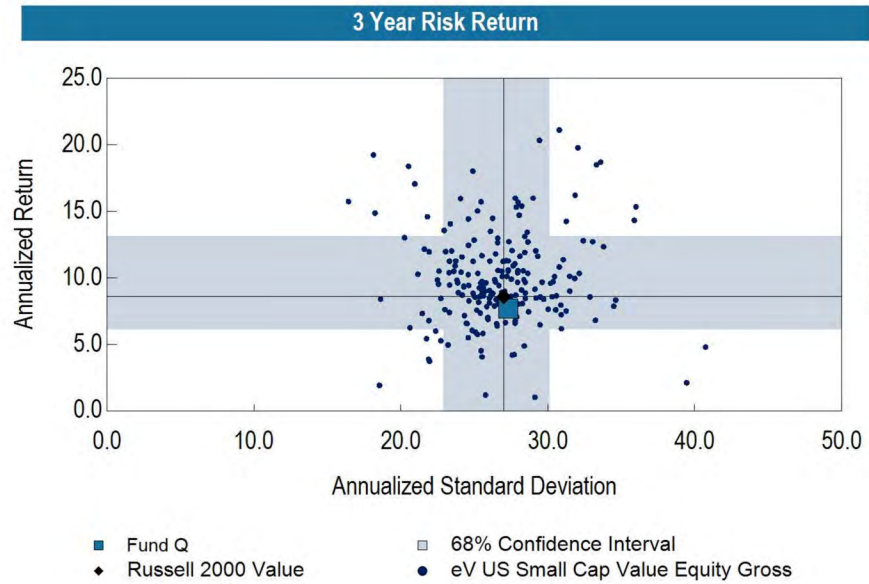
Top Negative Contributors		
	Relative Contribution %	Return %
AMEDISYS INC	-0.4%	-39.1%
MERCURY SYSTEMS INC	-0.4%	-28.5%
BRINK'S CO (THE)	-0.3%	-17.4%
ZYNGA INC	-0.3%	-29.2%
HEALTH EQUITY INC	-0.3%	-19.5%
STEM INC	-0.3%	-33.7%
GODADDY INC	-0.2%	-19.8%
LESLIES INC	-0.2%	-25.3%
10X GENOMICS INC	-0.2%	-25.7%
NEW FORTRESS ENERGY INC	-0.2%	-26.5%

Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.0%	0.0%	0.0%	0.0%		-3.0%	-4.2%	3.3%	1.9%		
Materials	0.2%	0.2%	0.0%	0.1%		-2.0%	-7.2%	4.2%	3.2%		
Industrials	-0.2%	-0.2%	0.0%	0.0%		-4.8%	-3.3%	17.2%	13.8%		
Consumer Discretionary	-0.1%	-0.2%	0.0%	0.0%		-5.6%	-4.6%	12.0%	15.7%		
Consumer Staples	0.6%	1.0%	0.2%	-0.5%		17.0%	-14.5%	1.5%	3.1%		
Health Care	1.7%	1.7%	0.0%	0.1%		0.2%	-6.4%	26.7%	25.2%		
Financials	0.1%	0.2%	-0.1%	0.0%		8.9%	5.0%	4.1%	4.7%		
Information Technology	0.4%	0.5%	-0.1%	0.0%		2.4%	0.6%	24.9%	26.8%		
Communication Services	0.1%	0.2%	-0.1%	0.1%		-10.5%	-16.8%	3.6%	2.8%		
Utilities	0.0%	--	0.0%	--		--	2.9%	0.0%	0.4%		
Real Estate	-0.1%	0.1%	-0.1%	0.0%		5.5%	2.6%	1.0%	2.5%		
Cash	0.0%	0.0%	0.0%	0.0%		0.0%	--	1.4%	0.0%		
<b>Portfolio</b>	<b>2.8%</b>	<b>=</b>	<b>3.4%</b>	<b>+</b>	<b>-0.2%</b>	<b>+</b>	<b>-0.4%</b>	<b>-0.7%</b>	<b>-3.6%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



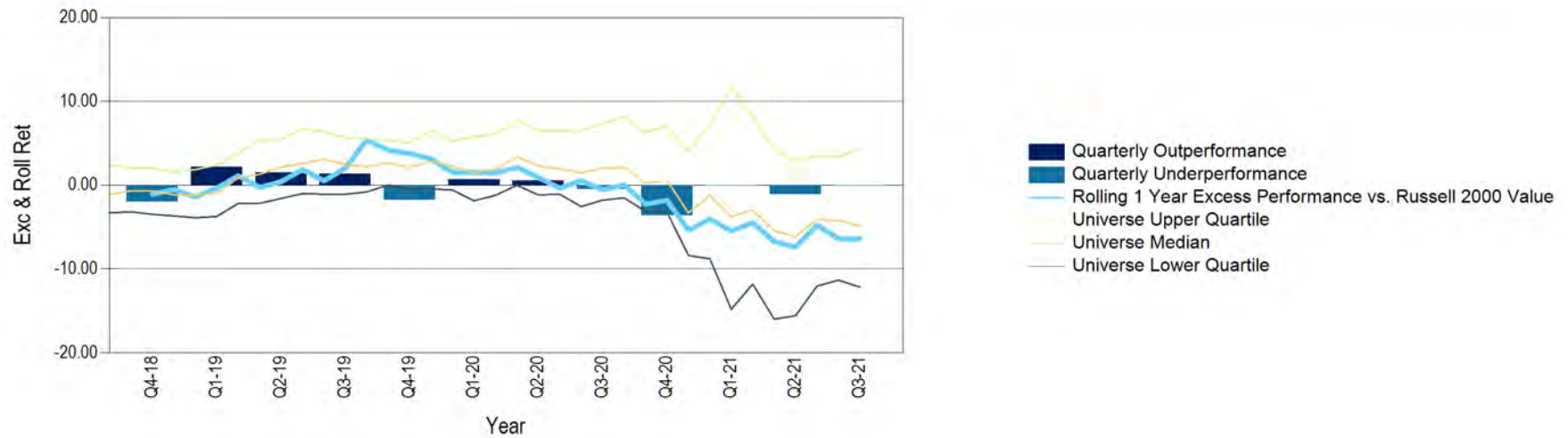
# Client ABC FUND Q



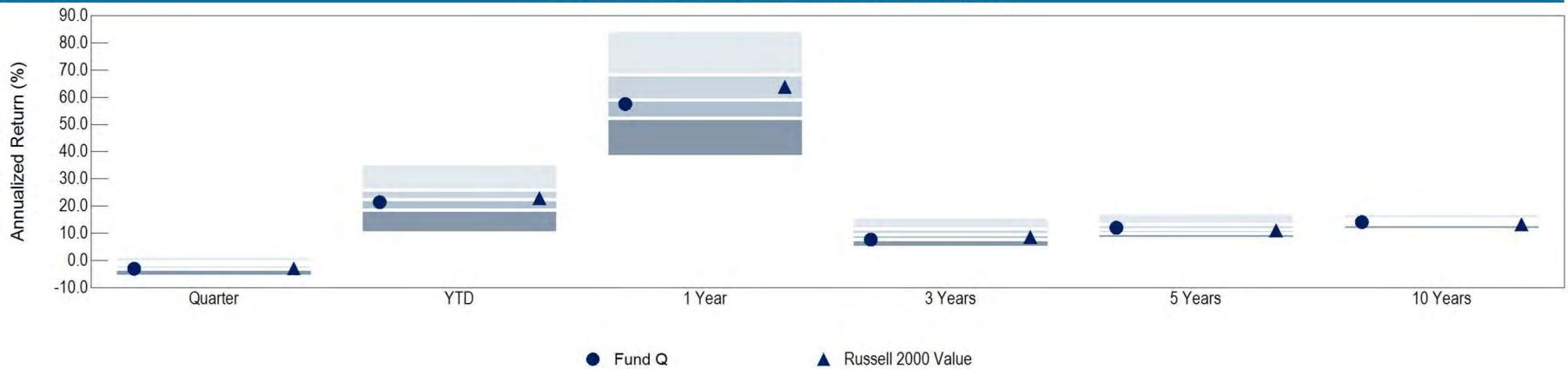
# Client ABC

## FUND Q

Annualized Excess Performance



eV US Small Cap Value Equity Gross Return Comparison

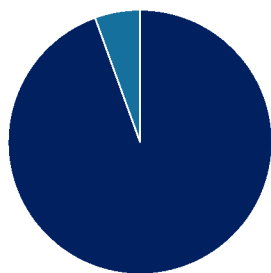


# Client ABC

## FUND Q

### Mutual Fund Allocation as of March 31, 2021

Cash



US Stock

### Portfolio Fund Information as of March 31, 2021

Ticker	BSMRX
Morningstar Category	Mid-Cap Blend
Average Market Cap (\$mm)	7,715.1
Net Assets (\$mm)	0.2
% Assets in Top 10 Holdings	20.1
Total Number of Holdings	72
Manager Name	Mark T. Leslie
Manager Tenure	9
Expense Ratio	0.9%
Closed to New Investors	No

### Fund Characteristics as of March 31, 2021

Sharpe Ratio (3 Year)	0.4
Average Market Cap (\$mm)	7,715.1
Price/Earnings	18.2
Price/Book	2.1
Price/Sales	2.1
Price/Cash Flow	12.5
Dividend Yield	2.0
Number of Equity Holdings	71
R-Squared (3 Year)	1.0
Alpha (3 Year)	0.0%

### Top Holdings as of March 31, 2021

KANSAS CITY SOUTHERN	2.4%
WESTERN ALLIANCE BANCORP	2.4%
THE INTERPUBLIC GROUP OF COMPANIES INC	2.1%
THE TORO CO	2.1%
WESTINGHOUSE AIR BRAKE TECHNOLOGIES CORP	2.0%
TOPBUILD CORP	2.0%
SVB FINANCIAL GROUP	1.9%
CHART INDUSTRIES INC	1.8%
PULTEGROUP INC	1.8%
FORTUNE BRANDS HOME & SECURITY INC	1.7%

### Sector Allocation as of March 31, 2021

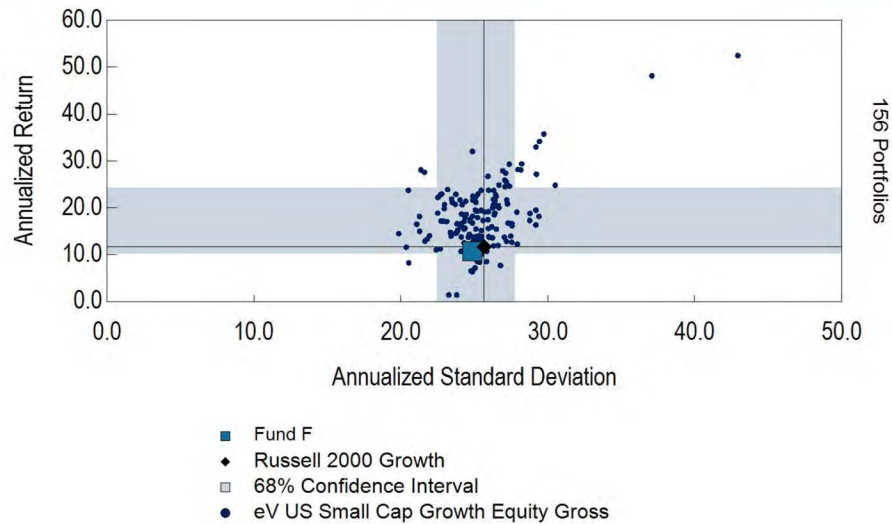
BASIC MATERIALS	5.8%
COMMUNICATION SERVICES	3.6%
CONSUMER CYCLICAL	12.1%
CONSUMER DEFENSIVE	5.0%
ENERGY	4.3%
FINANCIAL SERVICES	23.3%
HEALTHCARE	6.5%
INDUSTRIALS	21.1%
REAL ESTATE	10.5%
TECHNOLOGY	4.5%
UTILITIES	3.4%



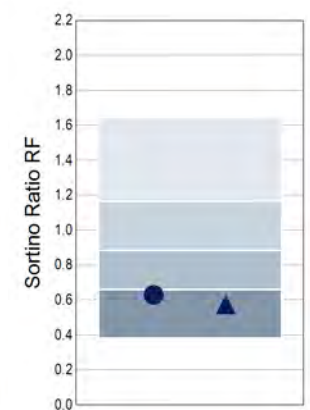
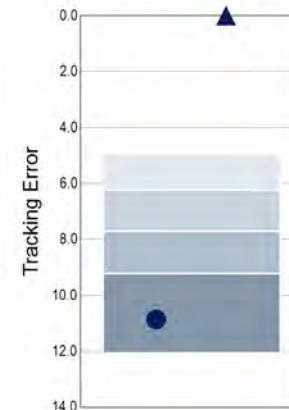
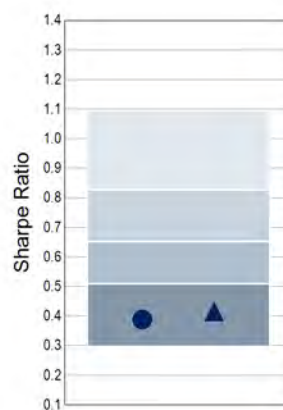
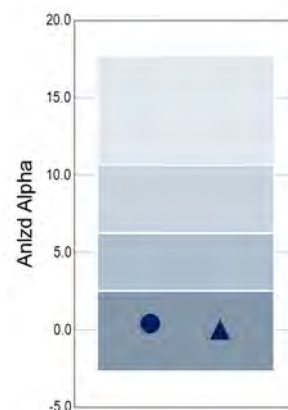
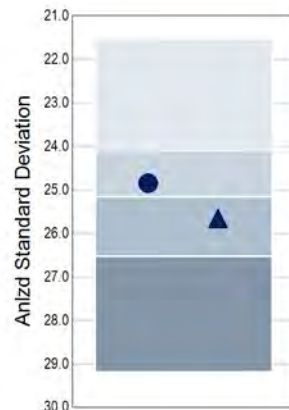
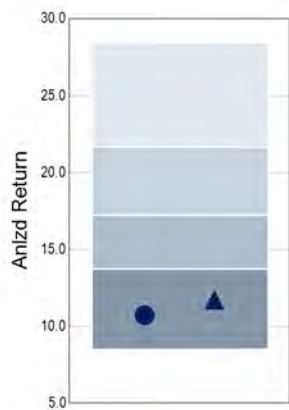
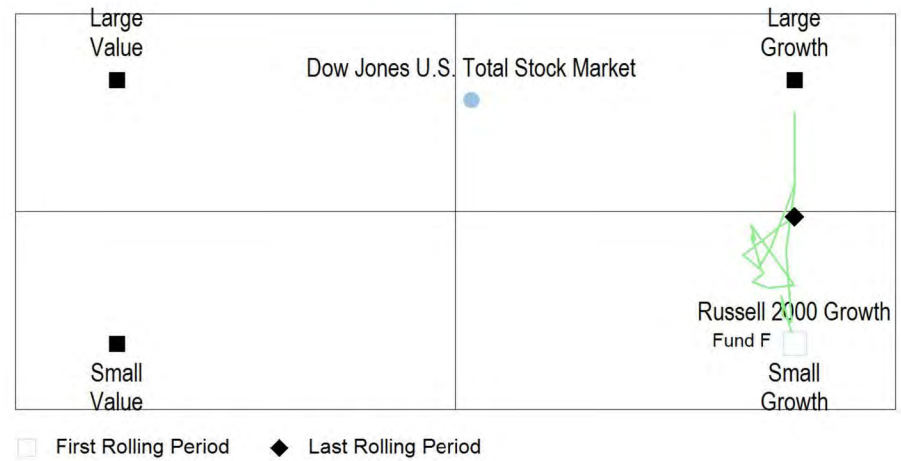
# Client ABC

## FUND F

3 Year Risk Return



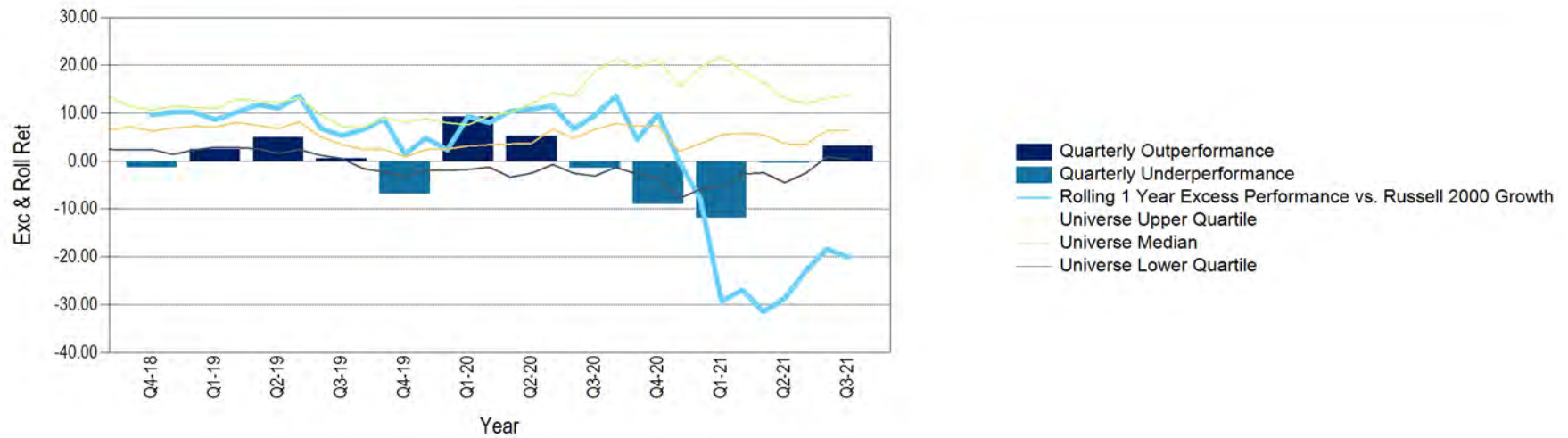
3 Year Style Map



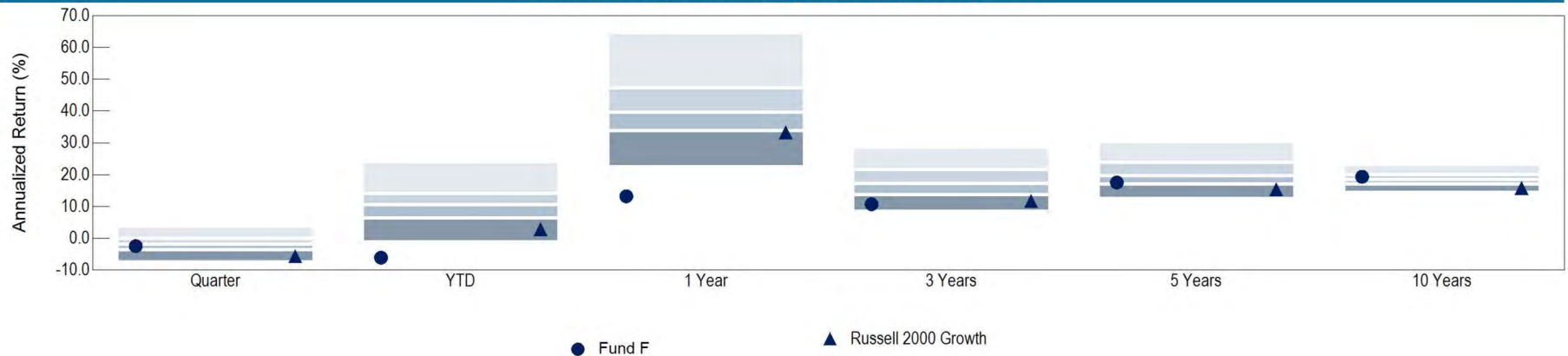
# Client ABC

## FUND F

Annualized Excess Performance



eV US Small Cap Growth Equity Gross Return Comparison



# Client ABC

## FUND F

Top Ten Holdings	
PAYCOM SOFTWARE INC	5.7%
DATADOG INC	4.8%
COGNEX CORP	4.6%
VEEVA SYSTEMS INC	4.5%
MANHATTAN ASSOCIATES INC	4.4%
ALARM.COM HOLDINGS INC	4.4%
ABIOMED INC	4.2%
TYLER TECHNOLOGIES INC	4.1%
ANSYS INC	3.8%
BIO-TECHNE CORP	3.7%

Top Positive Contributors		
	Relative Contribution %	Return %
PAYCOM SOFTWARE INC	1.5%	36.4%
DATADOG INC	1.3%	35.8%
REPLIGEN CORP	0.7%	44.8%
VOCERA COMMUNICATIONS INC	0.4%	14.8%
ANAPLAN INC	0.3%	14.2%
BIO-TECHNE CORP	0.3%	7.7%
QUIDEL CORP	0.2%	10.2%
MANHATTAN ASSOCIATES INC	0.2%	5.7%
TANDEM DIABETES CARE INC	0.2%	22.6%
ABIOMED INC	0.2%	4.3%

Top Negative Contributors		
	Relative Contribution %	Return %
GLAUKOS CORP	-1.6%	-43.2%
Q2 HOLDINGS INC	-0.7%	-21.9%
INOGEN INC	-0.6%	-33.9%
PROS HOLDINGS INC	-0.5%	-22.1%
APPFOLIO INC	-0.5%	-14.7%
CARDIOVASCULAR SYSTEMS INC	-0.5%	-23.0%
DMC GLOBAL INC	-0.5%	-34.3%
PROTO LABS INC	-0.4%	-27.5%
10X GENOMICS INC	-0.4%	-25.7%
VEEVA SYSTEMS INC	-0.4%	-7.3%

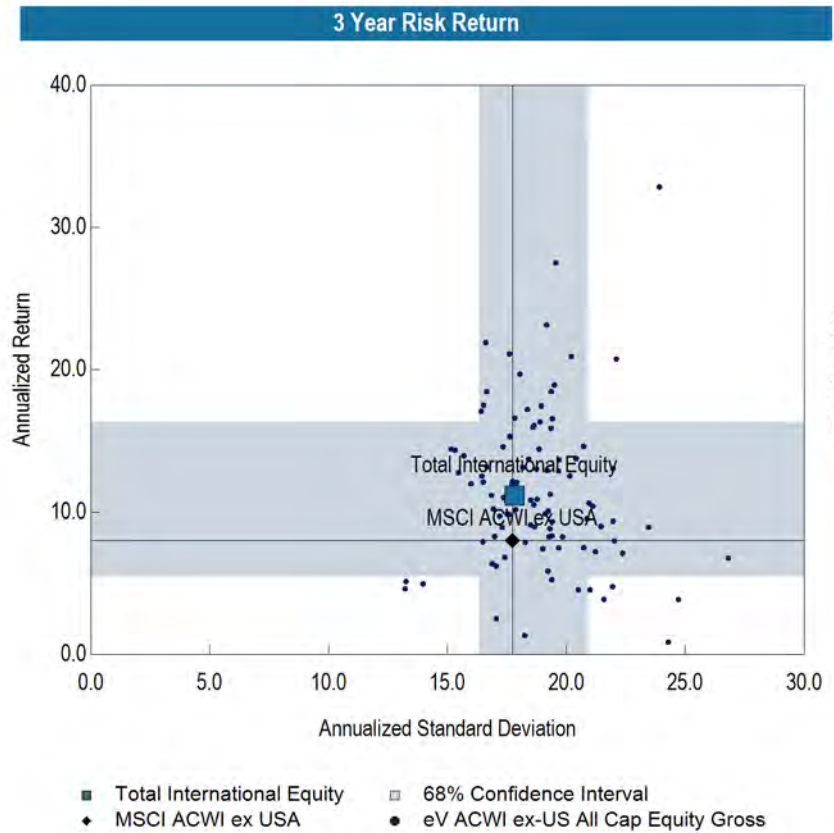
Equity Sector Attribution											
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.5%	-0.7%	0.0%	0.2%	-34.3%	-1.1%	1.4%	2.1%			
Materials	0.2%	0.5%	0.0%	-0.3%	10.5%	-6.2%	0.9%	2.9%			
Industrials	-1.1%	-3.7%	-0.6%	3.2%	-27.5%	0.0%	1.7%	13.3%			
Consumer Discretionary	0.1%	--	0.1%	--	--	-6.2%	0.0%	15.2%			
Consumer Staples	0.0%	--	0.0%	--	--	-5.8%	0.0%	3.6%			
Health Care	1.8%	1.8%	-0.6%	0.5%	-5.6%	-11.7%	39.7%	30.6%			
Financials	-0.2%	--	-0.2%	--	--	-1.3%	0.0%	4.9%			
Information Technology	2.5%	0.4%	1.4%	0.6%	1.0%	-1.1%	52.2%	21.4%			
Communication Services	0.2%	--	0.2%	--	--	-11.5%	0.0%	3.0%			
Utilities	0.0%	--	0.0%	--	--	6.9%	0.0%	0.3%			
Real Estate	-0.1%	--	-0.1%	--	--	0.0%	0.0%	2.7%			
Cash	0.2%	0.0%	0.2%	0.0%	0.0%	--	4.1%	0.0%			
<b>Portfolio</b>	<b>3.0%</b>	<b>=</b>	<b>-1.6%</b>	<b>+</b>	<b>0.3%</b>	<b>+</b>	<b>4.3%</b>	<b>-2.6%</b>	<b>-5.5%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## TOTAL INTERNATIONAL EQUITY





# Client ABC

## TOTAL INTERNATIONAL EQUITY

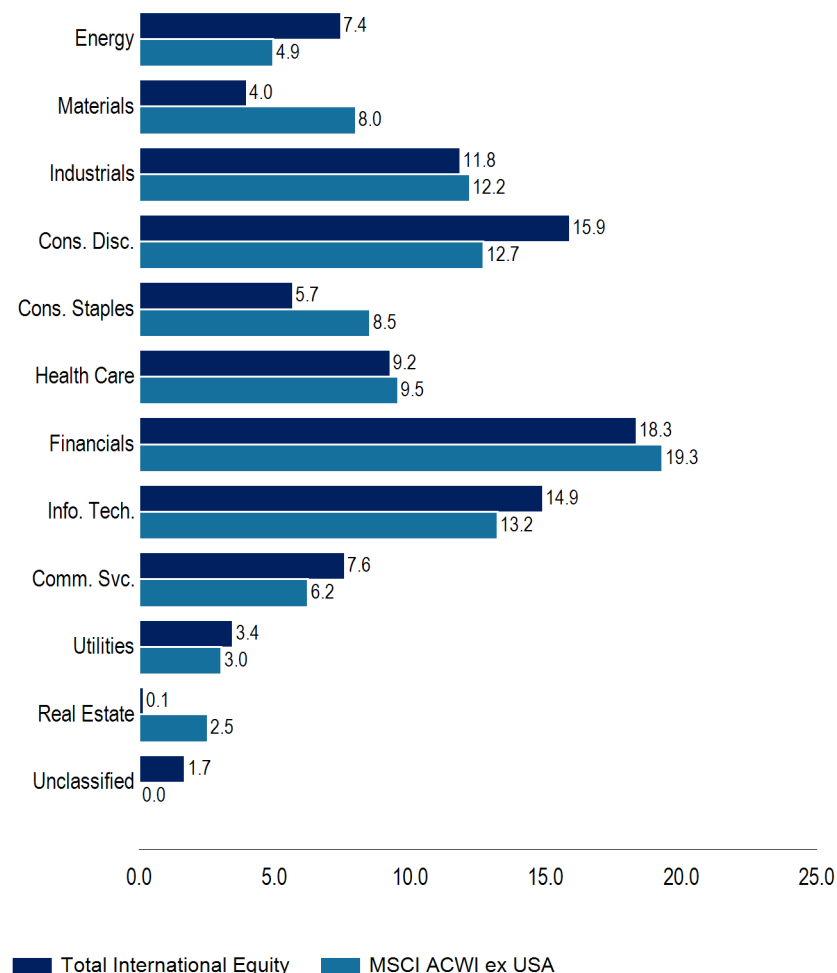
Characteristics		
	Portfolio	MSCI ACWI ex USA
Number of Holdings	220	2,348
Weighted Avg. Market Cap. (\$B)	79.8	94.6
Median Market Cap. (\$B)	26.9	10.3
Price To Earnings	13.6	15.8
Price To Book	2.7	2.7
Price To Sales	1.4	1.5
Return on Equity (%)	14.6	13.6
Yield (%)	3.0	2.6
Beta	1.0	1.0
R-Squared	1.0	1.0

Region Weighting	Portfolio Q3-21	Index Q3-21
Americas	8.44	9.73
Europe	42.07	41.74
Asia/Pacific	47.34	45.08
Other	2.16	3.45

**Market Capitalization**  
As of September 30, 2021



**Equity Sector Allocation**



# Client ABC

## TOTAL INTERNATIONAL EQUITY

Top Ten Holdings	
ASML HOLDING NV	2.2%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.1%
UNITED OVERSEAS BANK LTD	1.5%
PETROLEO BRASILEIRO S.A.- PETROBRAS	1.3%
SAMSUNG ELECTRONICS CO LTD	1.2%
CASH - USD	1.2%
METTLER-TOLEDO INTERNATIONAL INC	1.2%
SANOFI	1.1%
ROYAL DUTCH SHELL PLC	1.1%
GLAXOSMITHKLINE PLC	1.1%

Top Positive Contributors		
	Relative Contribution %	Return %
CHINA RESOURCES POWER HOLDINGS CO LTD	0.6%	113.9%
ALIBABA GROUP HOLDING LTD	0.3%	-35.5%
TENCENT HOLDINGS LTD	0.2%	-21.2%
FUJIFILM HOLDINGS CORP	0.2%	17.0%
SHIMANO INC	0.2%	24.2%
NIBE INDUSTRIER AB, MARKARYD	0.2%	20.2%
AVANZA BANK HOLDING AB	0.1%	13.4%
ROYAL DUTCH SHELL PLC	0.1%	16.7%
JBS SA	0.1%	21.8%
ASML HOLDING NV	0.1%	9.0%

Top Negative Contributors		
	Relative Contribution %	Return %
ZALANDO SE	-0.3%	-23.9%
WH GROUP LTD	-0.2%	-20.0%
ASOS PLC	-0.2%	-40.8%
WULIANGYE ORD A	-0.2%	-25.5%
BANCO DO BRASIL ON	-0.1%	-15.3%
PETROLEO BRASILEIRO S.A.- PETROBRAS	-0.1%	-10.5%
VALE SA	-0.1%	-31.3%
CK HUTCHISON HOLDINGS LTD	-0.1%	-13.1%
MELCO RESORTS & ENTERTAINMENT LTD	-0.1%	-38.2%
SPOTIFY TECHNOLOGY S A	-0.1%	-18.2%

Equity Sector Attribution											
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.2%	0.0%	0.2%	0.0%	8.0%	7.1%	6.3%	4.6%			
Materials	-0.1%	-0.4%	0.1%	0.2%	-10.1%	-5.3%	5.3%	8.3%			
Industrials	-0.1%	-0.2%	0.0%	0.0%	-0.5%	0.6%	12.2%	11.7%			
Consumer Discretionary	0.2%	0.3%	0.0%	0.0%	-9.1%	-11.1%	14.2%	13.8%			
Consumer Staples	-0.2%	-0.3%	0.0%	0.1%	-6.4%	-3.3%	6.6%	8.5%			
Health Care	0.0%	-0.1%	0.0%	0.1%	-2.2%	-1.9%	8.4%	9.3%			
Financials	0.2%	0.3%	0.0%	-0.1%	2.6%	1.3%	17.8%	18.5%			
Information Technology	0.3%	0.3%	0.0%	0.0%	1.5%	-0.8%	15.1%	13.0%			
Communication Services	0.0%	0.1%	-0.1%	0.0%	-8.0%	-9.3%	8.1%	6.6%			
Utilities	0.6%	0.5%	0.0%	0.1%	14.9%	-1.6%	3.8%	3.0%			
Real Estate	0.1%	0.1%	0.1%	-0.1%	-1.3%	-6.4%	0.2%	2.6%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	1.9%	0.0%			
<b>Portfolio</b>	<b>1.3%</b>	<b>=</b>	<b>0.6%</b>	<b>+</b>	<b>0.3%</b>	<b>+</b>	<b>0.4%</b>	<b>-1.4%</b>	<b>-2.7%</b>	<b>100.0%</b>	<b>100.0%</b>

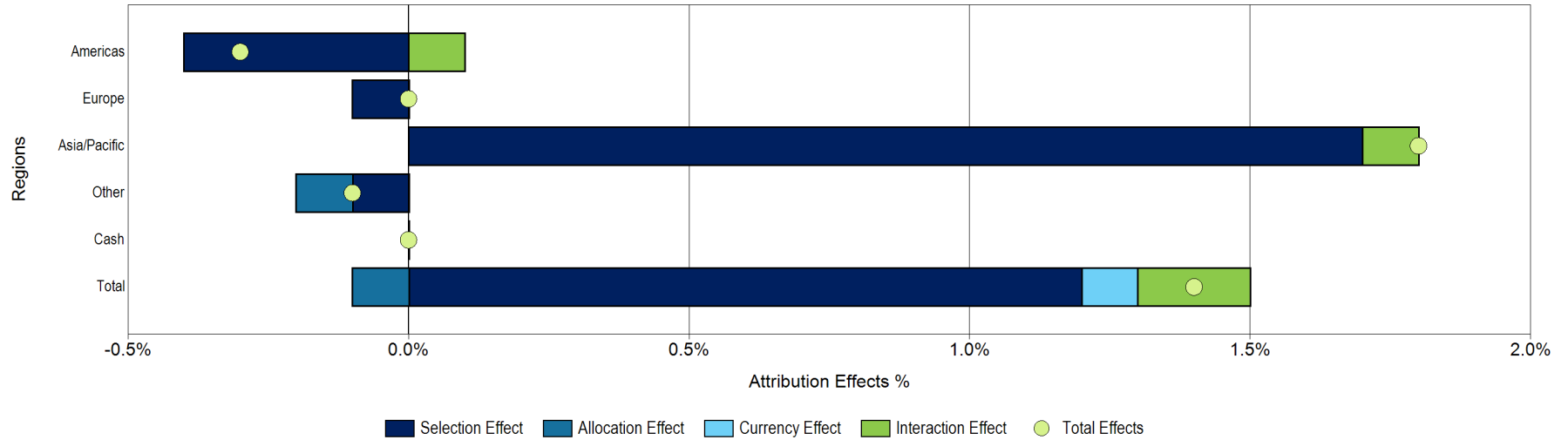
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## TOTAL INTERNATIONAL EQUITY

Total International Equity Performance Attribution vs. MSCI ACWI ex USA



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-9.4%	-5.0%	7.6%	9.5%	-0.4%	0.0%	0.0%	0.1%	-0.3%
Europe	-1.2%	-1.1%	40.5%	41.0%	-0.1%	0.0%	0.0%	0.0%	0.0%
Asia/Pacific	-0.2%	-4.1%	48.9%	46.4%	1.7%	0.0%	0.0%	0.1%	1.8%
Other	-1.9%	2.5%	1.2%	3.0%	-0.1%	-0.1%	0.0%	0.0%	-0.1%
Cash	0.0%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-1.3%</b>	<b>-2.7%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1.2%</b>	<b>-0.1%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>1.4%</b>
<b>Totals</b>									
Developed	-0.3%	-0.5%	65.9%	68.7%	-0.1%	-0.1%	0.2%	0.0%	0.1%
Emerging*	-3.5%	-7.7%	32.3%	31.3%	1.4%	-0.1%	-0.1%	0.0%	1.3%
Cash	0.0%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



# Client ABC

## TOTAL INTERNATIONAL EQUITY

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
Brazil*	4.8%	1.6%	-13.9%	-20.0%
Mexico*	0.2%	0.5%	0.0%	1.8%
United States	2.6%	0.0%	-1.7%	0.3%
<b>Total-Americas</b>	<b>7.6%</b>	<b>9.5%</b>	<b>-9.4%</b>	<b>-5.0%</b>
<b>Europe</b>				
Czech Republic*	0.1%	0.0%	15.3%	16.2%
Denmark	0.5%	1.6%	-9.9%	2.7%
Finland	0.5%	0.7%	-13.6%	-3.1%
France	4.9%	7.1%	-5.7%	-1.6%
Germany	3.5%	5.8%	-6.8%	-4.0%
Italy	1.9%	1.5%	-1.8%	-0.9%
Luxembourg	0.6%	0.0%	-18.2%	-2.7%
Netherlands	2.7%	2.7%	7.3%	3.6%
Poland*	1.1%	0.2%	5.2%	1.8%
Portugal	0.4%	0.1%	9.4%	3.9%
Russia*	3.2%	1.0%	7.7%	10.3%
Spain	2.5%	1.5%	0.0%	-3.2%
Sweden	4.0%	2.3%	4.7%	-2.5%
Switzerland	2.1%	6.1%	-7.8%	-3.3%
United Kingdom	12.5%	8.9%	-2.3%	-0.2%
<b>Total-Europe</b>	<b>40.5%</b>	<b>41.0%</b>	<b>-1.2%</b>	<b>-1.1%</b>

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
Australia	1.3%	4.4%	-11.0%	-2.7%
China*	7.3%	11.7%	-8.5%	-17.9%
Hong Kong	6.8%	2.0%	-1.0%	-9.3%
India*	5.0%	3.1%	11.3%	12.8%
Indonesia*	0.3%	0.3%	12.1%	10.1%
Japan	16.6%	14.3%	5.0%	4.9%
Korea*	5.3%	4.1%	-12.4%	-12.7%
New Zealand	0.7%	0.1%	3.4%	2.6%
Singapore	1.9%	0.7%	2.0%	0.0%
Taiwan*	3.2%	4.4%	-3.4%	-1.4%
Thailand*	0.6%	0.5%	1.3%	-2.5%
<b>Total-AsiaPacific</b>	<b>48.9%</b>	<b>46.4%</b>	<b>-0.2%</b>	<b>-4.1%</b>
<b>Other</b>				
South Africa*	0.9%	1.1%	-2.1%	-4.9%
Turkey*	0.3%	0.1%	-1.2%	2.0%
<b>Total-Other</b>	<b>1.2%</b>	<b>3.0%</b>	<b>-1.9%</b>	<b>2.5%</b>
<b>Totals</b>				
Developed	65.9%	68.7%	-0.3%	-0.5%
Emerging*	32.3%	31.3%	-3.5%	-7.7%
Cash	1.9%		0.0%	

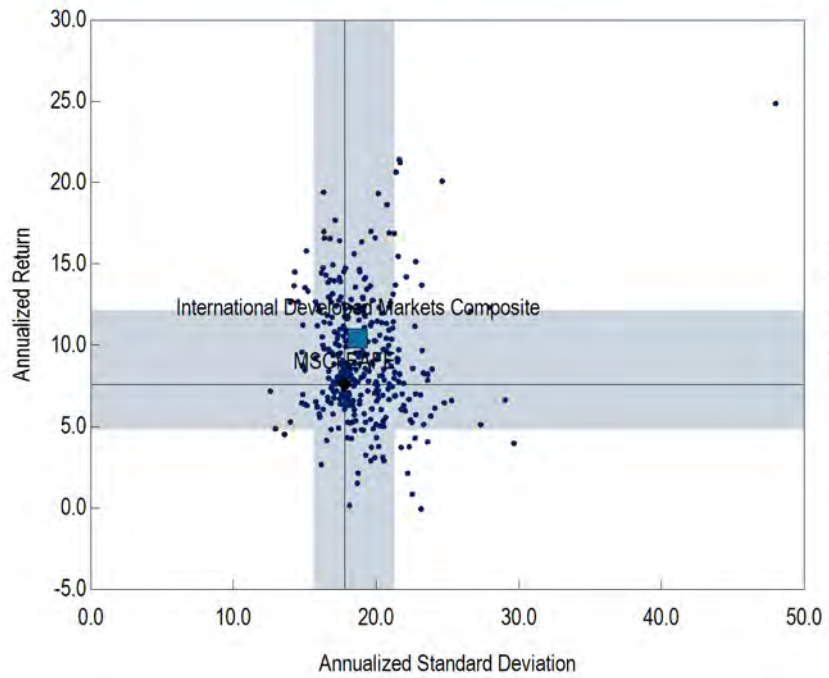
Country\* = Emerging Markets



# Client ABC

## INTERNATIONAL DEVELOPED MARKETS COMPOSITE

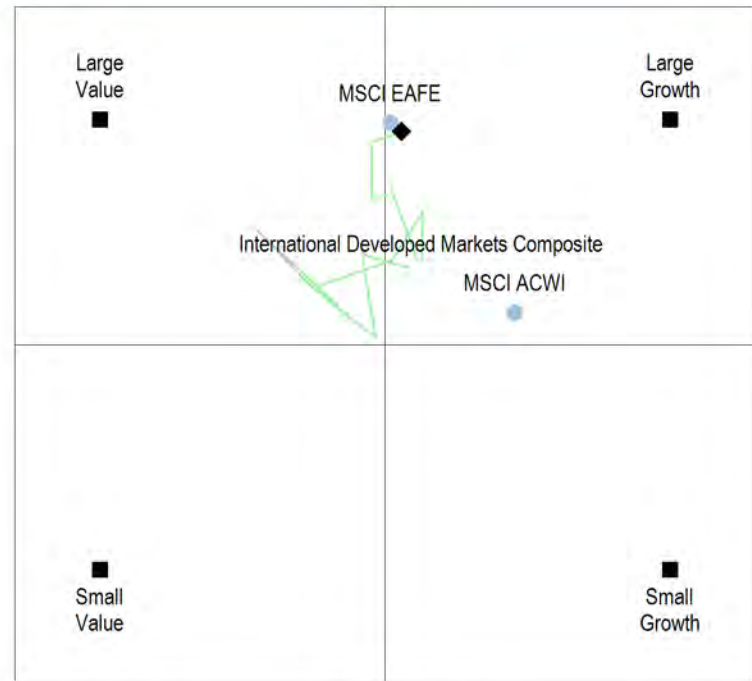
### 3 Year Risk Return



373 Portfolios

- International Developed Markets Composite
- ◆ MSCI EAFE
- 68% Confidence Interval
- eV All EAFE Equity Gross

### 3 Year Style Analysis



- First Rolling Period
- ◆ Last Rolling Period



# Client ABC

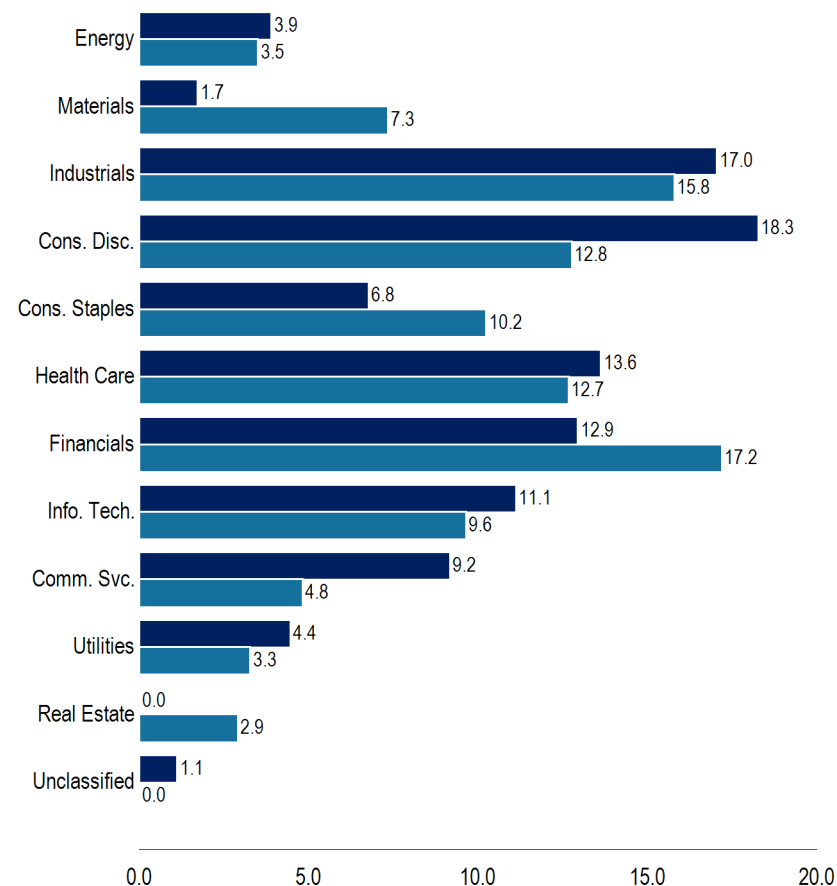
## INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Characteristics		
	Portfolio	MSCI EAFE
Number of Holdings	116	842
Weighted Avg. Market Cap. (\$B)	61.3	79.8
Median Market Cap. (\$B)	26.9	14.4
Price To Earnings	18.1	17.8
Price To Book	2.7	2.8
Price To Sales	1.5	1.5
Return on Equity (%)	15.5	13.6
Yield (%)	2.6	2.7
Beta	1.0	1.0
R-Squared	1.0	1.0

	Portfolio Q3-21	Index Q3-21
Region Weighting		
Americas	3.31	0.57
Europe	56.99	63.33
Asia/Pacific	39.11	35.25
Other	0.59	0.85



### Equity Sector Allocation



International Developed Markets Composite MSCI EAFE



# Client ABC

## INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Top Ten Holdings	
UNITED OVERSEAS BANK LTD	2.4%
ASML HOLDING NV	2.3%
METTLER-TOLEDO INTERNATIONAL INC	1.9%
SANOFI	1.7%
ROYAL DUTCH SHELL PLC	1.7%
GLAXOSMITHKLINE PLC	1.7%
FUJIFILM HOLDINGS CORP	1.7%
NIBE INDUSTRIER AB, MARKARYD	1.7%
SCOTTISH AND SOUTHERN ENERGY PLC	1.7%
LLOYDS BANKING GROUP PLC	1.6%

Top Positive Contributors		
	Relative Contribution %	Return %
FUJIFILM HOLDINGS CORP	0.3%	17.0%
SHIMANO INC	0.3%	24.2%
NIBE INDUSTRIER AB, MARKARYD	0.3%	20.2%
AVANZA BANK HOLDING AB	0.2%	13.4%
ROYAL DUTCH SHELL PLC	0.2%	16.7%
TECHTRONIC INDUSTRIES CO LTD	0.1%	14.7%
NEMETSCHKE SE	0.1%	37.4%
ENI SPA	0.1%	14.4%
IMCD NV	0.1%	20.5%
OLYMPUS CORP	0.1%	10.7%

Top Negative Contributors		
	Relative Contribution %	Return %
ZALANDO SE	-0.4%	-23.9%
ASOS PLC	-0.3%	-40.8%
WH GROUP LTD	-0.2%	-20.0%
CK HUTCHISON HOLDINGS LTD	-0.2%	-13.1%
SPOTIFY TECHNOLOGY S.A	-0.2%	-18.2%
COCHLEAR LTD	-0.1%	-14.9%
KINGFISHER PLC	-0.1%	-9.7%
JARDINE MATHESON HOLDINGS LTD	-0.1%	-16.4%
CIE FINANCIERE RICHEMONT AG, ZUG	-0.1%	-12.0%
SANOFI	-0.1%	-8.1%

	Equity Sector Attribution										
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.2%	0.1%	0.1%	0.0%	12.6%	9.1%	3.8%	3.2%			
Materials	0.4%	-0.2%	0.3%	0.3%	-8.8%	-5.5%	1.9%	7.9%			
Industrials	-0.3%	-0.2%	0.0%	0.0%	-0.1%	1.3%	17.9%	15.5%			
Consumer Discretionary	-0.8%	-0.4%	-0.2%	-0.2%	-6.2%	-3.1%	18.0%	13.0%			
Consumer Staples	0.1%	-0.1%	0.1%	0.1%	-4.4%	-3.4%	6.9%	10.6%			
Health Care	-0.3%	-0.3%	0.0%	0.0%	-1.7%	0.5%	12.7%	12.4%			
Financials	-0.1%	-0.2%	-0.1%	0.2%	1.0%	1.9%	12.0%	16.8%			
Information Technology	0.4%	0.3%	0.1%	0.1%	8.5%	5.1%	10.9%	9.2%			
Communication Services	-0.3%	-0.1%	-0.1%	-0.1%	-4.2%	-2.9%	9.9%	4.9%			
Utilities	0.0%	0.1%	0.0%	0.0%	-2.1%	-4.4%	4.4%	3.4%			
Real Estate	0.1%	--	0.1%	--	--	-3.0%	0.0%	3.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	1.6%	0.0%			
<b>Portfolio</b>	<b>-0.6%</b>	<b>=</b>	<b>-1.2%</b>	<b>+</b>	<b>0.2%</b>	<b>+</b>	<b>0.4%</b>	<b>-0.8%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>

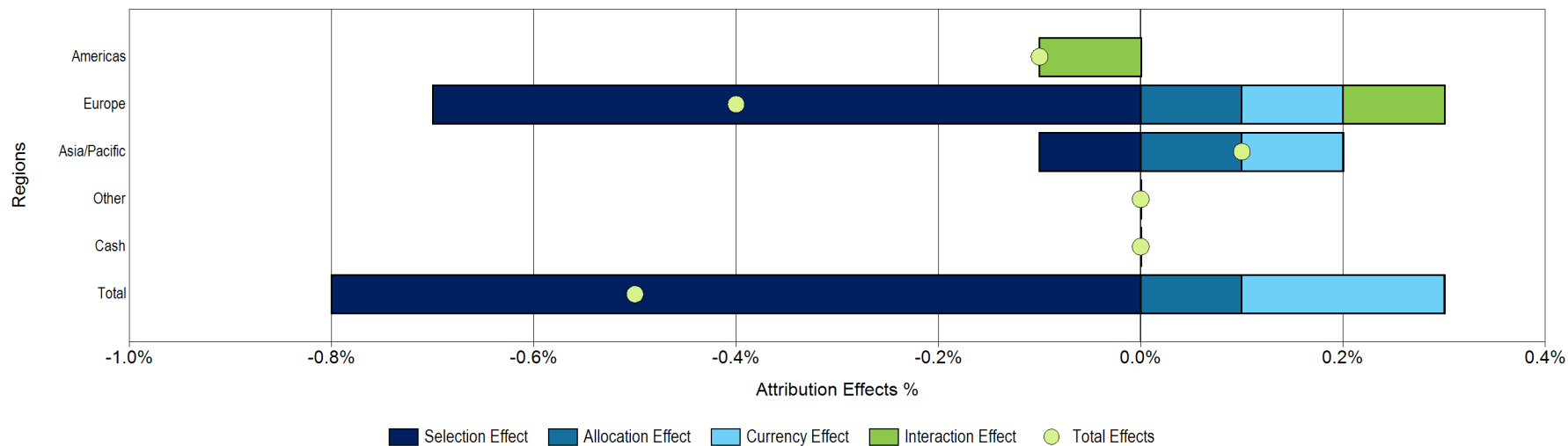
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC

## INTERNATIONAL DEVELOPED MARKETS COMPOSITE

International Developed Markets Composite Performance Attribution vs. MSCI EAFE



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-2.3%	--	2.2%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Europe	-2.5%	-1.4%	56.2%	64.4%	-0.7%	0.1%	0.1%	0.1%	-0.4%
Asia/Pacific	1.9%	1.8%	40.1%	35.0%	-0.1%	0.1%	0.1%	0.0%	0.1%
Other	--	2.9%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Cash	0.0%	--	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-0.7%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-0.8%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>-0.5%</b>
<b>Totals</b>									
Developed	-0.7%	-0.2%	96.9%	100.0%	-0.6%	0.0%	0.2%	0.0%	-0.4%
Emerging*	-1.8%	--	1.5%	0.0%	0.0%	0.0%	0.0%	-0.1%	0.0%
Cash	0.0%	--	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%





## Client ABC

# INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
United States	2.2%	0.0%	-2.3%	0.3%
<b>Total-Americas</b>	<b>2.2%</b>	<b>0.0%</b>	<b>-2.3%</b>	<b>--</b>
<b>Europe</b>				
Denmark	0.8%	2.6%	-9.9%	2.7%
Finland	0.8%	1.1%	-13.6%	-3.1%
France	7.9%	11.5%	-5.7%	-1.6%
Germany	5.6%	9.4%	-6.8%	-4.0%
Italy	3.0%	2.5%	-1.8%	-0.9%
Luxembourg	1.0%	0.0%	-18.2%	-0.2%
Netherlands	3.1%	4.4%	6.6%	3.6%
Portugal	0.7%	0.2%	9.4%	3.9%
Spain	3.5%	2.5%	-1.1%	-3.2%
Sweden	6.4%	3.7%	4.7%	-2.0%
Switzerland	3.4%	9.8%	-7.8%	-3.3%
United Kingdom	19.9%	14.4%	-2.2%	-0.2%
<b>Total-Europe</b>	<b>56.2%</b>	<b>64.4%</b>	<b>-2.5%</b>	<b>-1.4%</b>

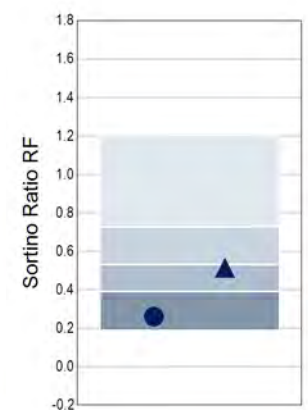
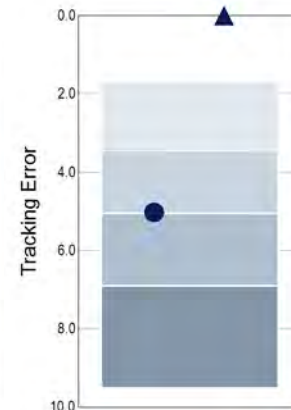
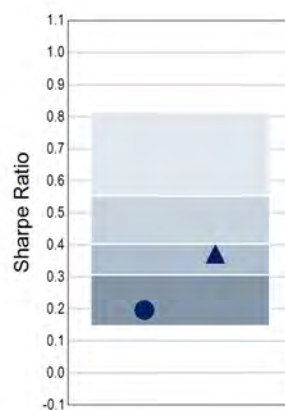
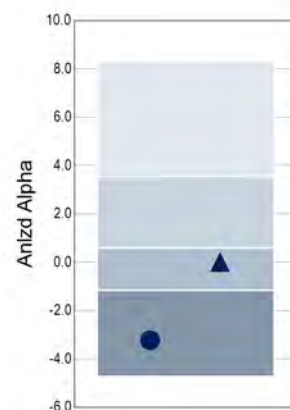
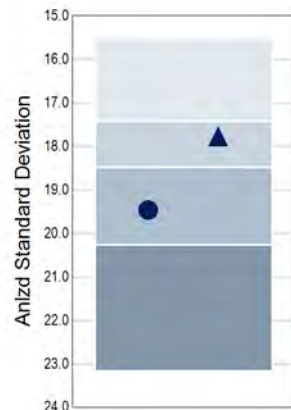
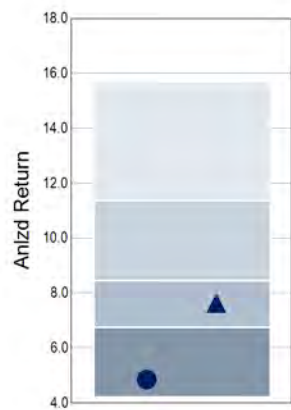
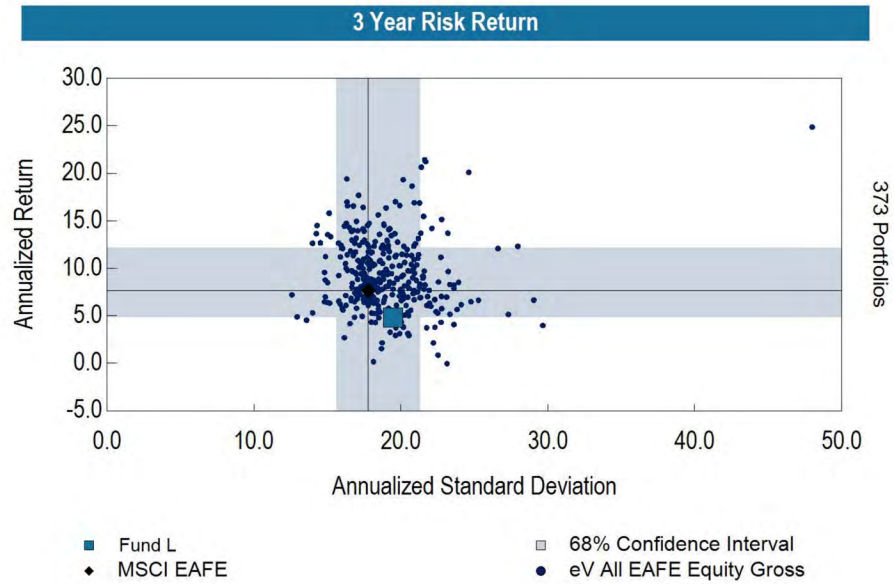
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
Australia	2.1%	7.2%	-11.0%	-2.7%
Hong Kong	5.6%	3.3%	-7.7%	-9.3%
Japan	26.9%	23.2%	5.0%	4.9%
New Zealand	1.2%	0.2%	3.4%	2.6%
Singapore	2.9%	1.1%	2.4%	0.0%
Taiwan*	1.5%	0.0%	-1.8%	-1.4%
<b>Total-AsiaPacific</b>	<b>40.1%</b>	<b>35.0%</b>	<b>1.9%</b>	<b>1.8%</b>
<b>Totals</b>				
Developed	96.9%	100.0%	-0.7%	-0.2%
Emerging*	1.5%	0.0%	-1.8%	--
Cash	1.6%		0.0%	

Country\* = Emerging Markets



# Client ABC

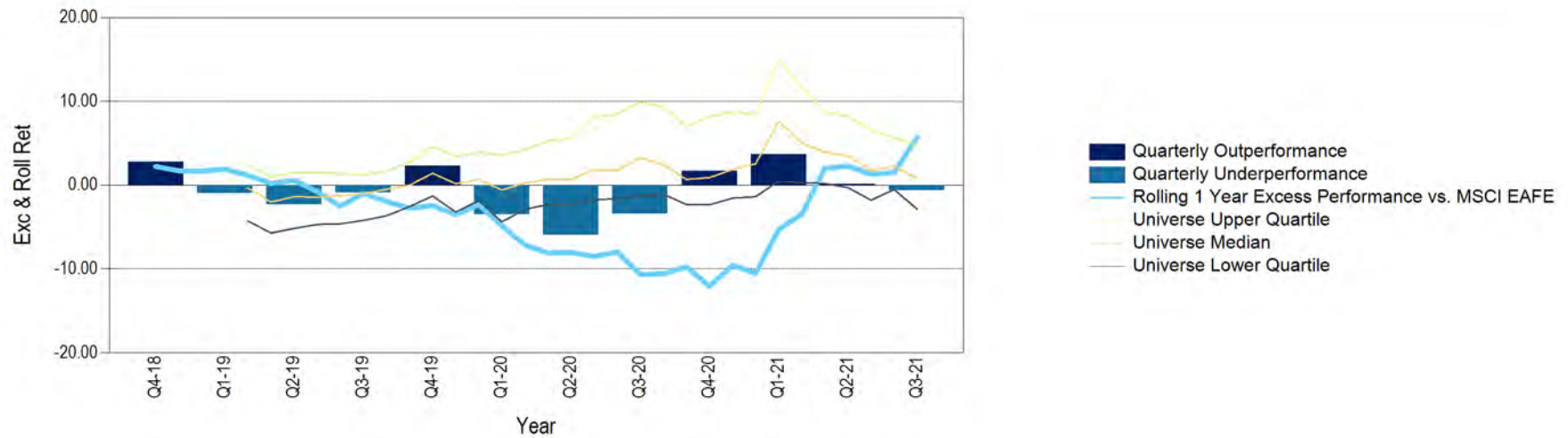
## FUND L



# Client ABC

## FUND L

Annualized Excess Performance



eV All EAFE Equity Gross Return Comparison



# Client ABC

## FUND L

Top Ten Holdings	
SANOFI	3.5%
ROYAL DUTCH SHELL PLC	3.4%
GLAXOSMITHKLINE PLC	3.4%
FUJIFILM HOLDINGS CORP	3.3%
SCOTTISH AND SOUTHERN ENERGY PLC	3.3%
LLOYDS BANKING GROUP PLC	3.2%
BANCO SANTANDER SA	3.1%
UNITED OVERSEAS BANK LTD	3.1%
HONDA MOTOR CO LTD	3.1%
SONY GROUP CORPORATION	2.9%

Top Positive Contributors		
	Relative Contribution %	Return %
FUJIFILM HOLDINGS CORP	0.5%	17.0%
ROYAL DUTCH SHELL PLC	0.4%	16.7%
ENI SPA	0.2%	14.4%
TOKIO MARINE HOLDINGS INC	0.2%	19.4%
SONY GROUP CORPORATION	0.2%	14.9%
TESCO PLC	0.2%	11.1%
SCOTTISH AND SOUTHERN ENERGY PLC	0.2%	6.3%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	0.2%	7.9%
BP PLC	0.1%	7.0%

Top Negative Contributors		
	Relative Contribution %	Return %
WH GROUP LTD	-0.5%	-20.0%
CK HUTCHISON HOLDINGS LTD	-0.4%	-13.1%
SANOFI	-0.2%	-8.1%
KINGFISHER PLC	-0.2%	-9.7%
JARDINE MATHESON HOLDINGS LTD	-0.2%	-16.4%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	-0.2%	-15.0%
TELIA COMPANY AB	-0.1%	-7.0%
ISS A/S	-0.1%	-9.9%
BANCO SANTANDER SA	-0.1%	-4.8%
EVONIK INDUSTRIES AG	-0.1%	-5.7%

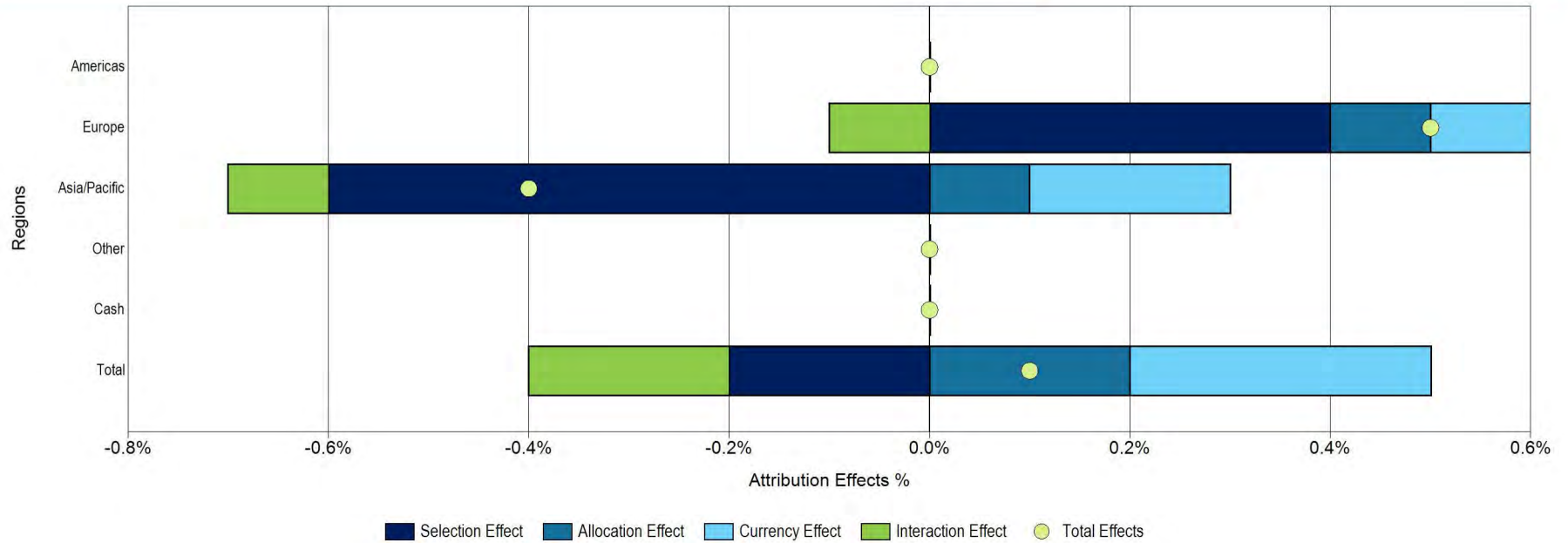
	Equity Sector Attribution										
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.6%	0.1%	0.4%	0.1%	13.1%	9.1%	7.2%	3.2%			
Materials	0.4%	0.0%	0.3%	0.1%	-5.7%	-5.5%	2.5%	7.9%			
Industrials	-1.2%	-1.3%	0.0%	0.1%	-6.3%	1.3%	15.1%	15.5%			
Consumer Discretionary	0.4%	0.3%	0.0%	0.1%	-0.2%	-3.1%	11.9%	13.0%			
Consumer Staples	0.0%	-0.3%	0.1%	0.2%	-6.0%	-3.4%	6.7%	10.6%			
Health Care	-0.6%	-0.5%	0.0%	-0.1%	-3.7%	0.5%	14.4%	12.4%			
Financials	0.0%	0.0%	-0.1%	0.1%	1.8%	1.9%	13.8%	16.8%			
Information Technology	0.1%	-0.1%	0.1%	0.1%	5.2%	5.1%	10.9%	9.2%			
Communication Services	0.2%	0.2%	-0.1%	0.1%	1.2%	-2.9%	8.1%	4.9%			
Utilities	-0.1%	0.1%	-0.2%	0.0%	-2.1%	-4.4%	8.7%	3.4%			
Real Estate	0.1%	--	0.1%	--	--	-3.0%	0.0%	3.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.8%	0.0%			
<b>Portfolio</b>	<b>-0.1%</b>	<b>=</b>	<b>-1.5%</b>	<b>+</b>	<b>0.6%</b>	<b>+</b>	<b>0.8%</b>	<b>-0.4%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC FUND L

Fund L vs. MSCI EAFE



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	--	--	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Europe	-0.9%	-1.4%	55.7%	64.4%	0.4%	0.1%	0.1%	-0.1%	0.5%
Asia/Pacific	0.9%	1.8%	43.5%	35.0%	-0.6%	0.1%	0.2%	-0.1%	-0.4%
Other	--	2.9%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Cash	0.0%	--	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-0.1%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-0.2%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>-0.2%</b>	<b>0.1%</b>
<b>Totals</b>									
Developed	-0.1%	-0.2%	96.3%	100.0%	-0.1%	0.0%	0.3%	0.0%	0.2%
Emerging*	-1.8%	--	2.9%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Cash	0.0%	--	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



# Client ABC

## FUND L

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Europe</b>				
Denmark	1.5%	2.6%	-9.9%	2.7%
France	9.1%	11.5%	-2.0%	-1.6%
Germany	2.5%	9.4%	-5.7%	-4.0%
Italy	6.0%	2.5%	-1.8%	-0.9%
Spain	5.0%	2.5%	-3.3%	-3.2%
Sweden	2.2%	3.7%	-7.0%	-2.0%
Switzerland	4.4%	9.8%	-5.5%	-3.3%
United Kingdom	25.0%	14.4%	2.6%	-0.2%
<b>Total-Europe</b>	<b>55.7%</b>	<b>64.4%</b>	<b>-0.9%</b>	<b>-1.4%</b>

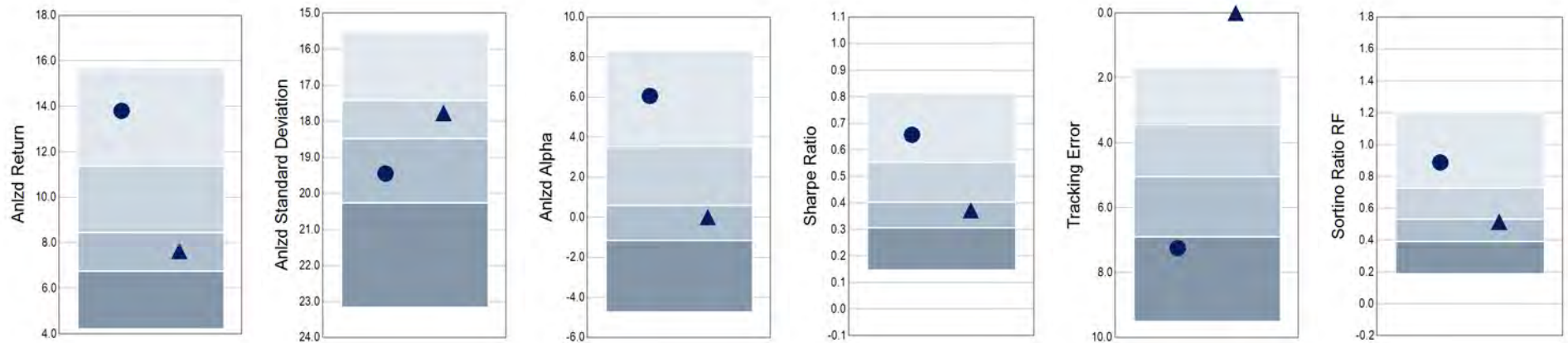
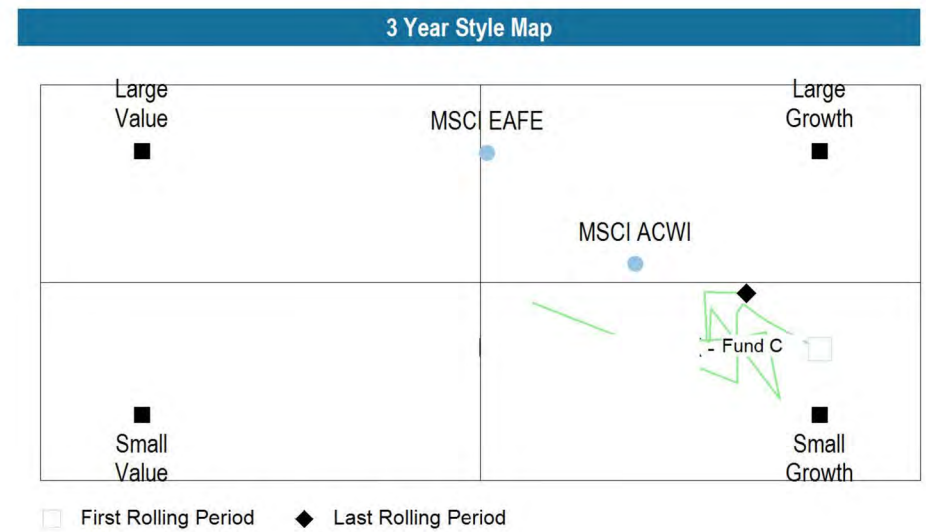
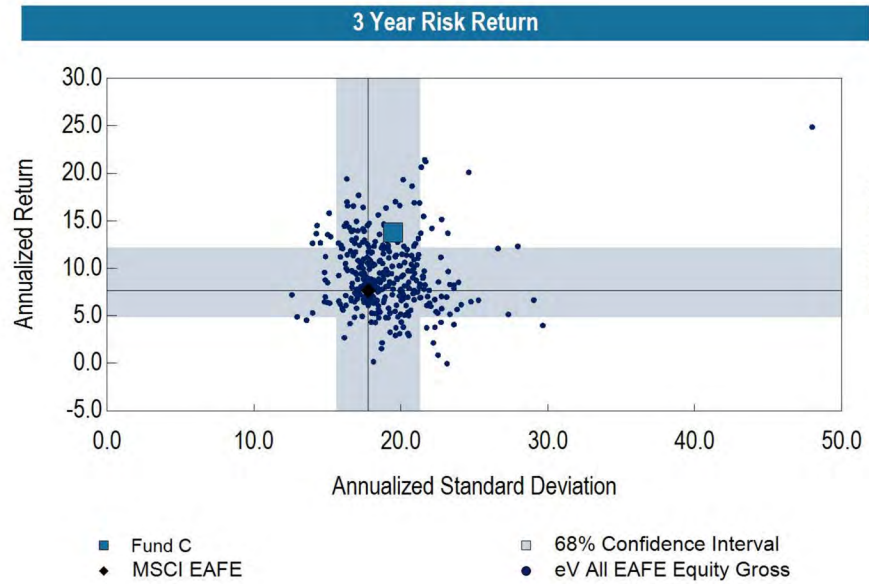
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
Australia	0.3%	7.2%	5.3%	-2.7%
Hong Kong	6.1%	3.3%	-16.1%	-9.3%
Japan	30.0%	23.2%	4.3%	4.9%
Singapore	4.1%	1.1%	2.8%	0.0%
Taiwan*	2.9%	0.0%	-1.8%	-1.4%
<b>Total-AsiaPacific</b>	<b>43.5%</b>	<b>35.0%</b>	<b>0.9%</b>	<b>1.8%</b>
<b>Totals</b>				
Developed	96.3%	100.0%	-0.1%	-0.2%
Emerging*	2.9%	0.0%	-1.8%	--
Cash	0.8%		0.0%	

Country\* = Emerging Markets



# Client ABC

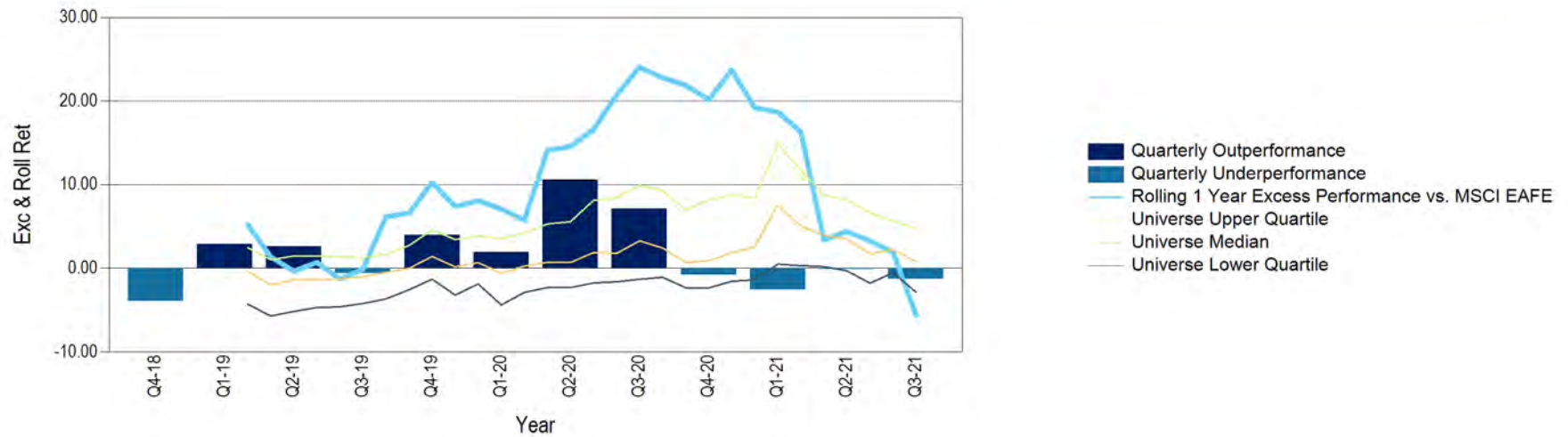
## FUND C



# Client ABC

## FUND C

Annualized Excess Performance



eV All EAFE Equity Gross Return Comparison





# Client ABC

## FUND C

Top Ten Holdings	
ASML HOLDING NV	4.6%
METTLER-TOLEDO INTERNATIONAL INC	3.8%
NIBE INDUSTRIER AB, MARKARYD	3.4%
AVANZA BANK HOLDING AB	3.2%
SHIMANO INC	3.0%
SARTORIUS SHS.PREF.	3.0%
ZALANDO SE	2.9%
ATLAS COPCO AB	2.8%
AIA GROUP LTD	2.6%
OLYMPUS CORP	2.5%

Top Positive Contributors		
	Relative Contribution %	Return %
SHIMANO INC	0.6%	24.2%
NIBE INDUSTRIER AB, MARKARYD	0.5%	20.2%
AVANZA BANK HOLDING AB	0.4%	13.4%
TECHTRONIC INDUSTRIES CO LTD	0.3%	14.7%
NEMETSCHKE SE	0.2%	37.4%
OLYMPUS CORP	0.2%	10.7%
ASML HOLDING NV	0.2%	9.0%
IMCD NV	0.2%	20.5%
BECHTLE AG, GAILDORF	0.2%	11.0%
RECRUIT HOLDINGS CO LTD	0.2%	24.5%

Top Negative Contributors		
	Relative Contribution %	Return %
ZALANDO SE	-0.9%	-23.9%
ASOS PLC	-0.6%	-40.8%
SPOTIFY TECHNOLOGY S.A	-0.4%	-18.2%
COCHLEAR LTD	-0.3%	-14.9%
CIE FINANCIERE RICHEMONT AG, ZUG	-0.2%	-12.0%
KERING	-0.2%	-18.3%
KONE OYJ	-0.2%	-13.6%
JOHNSON MATTHEY PLC	-0.2%	-14.6%
SOFTBANK GROUP CORP	-0.2%	-16.8%
HARGREAVES LANSDOWN	-0.2%	-9.5%

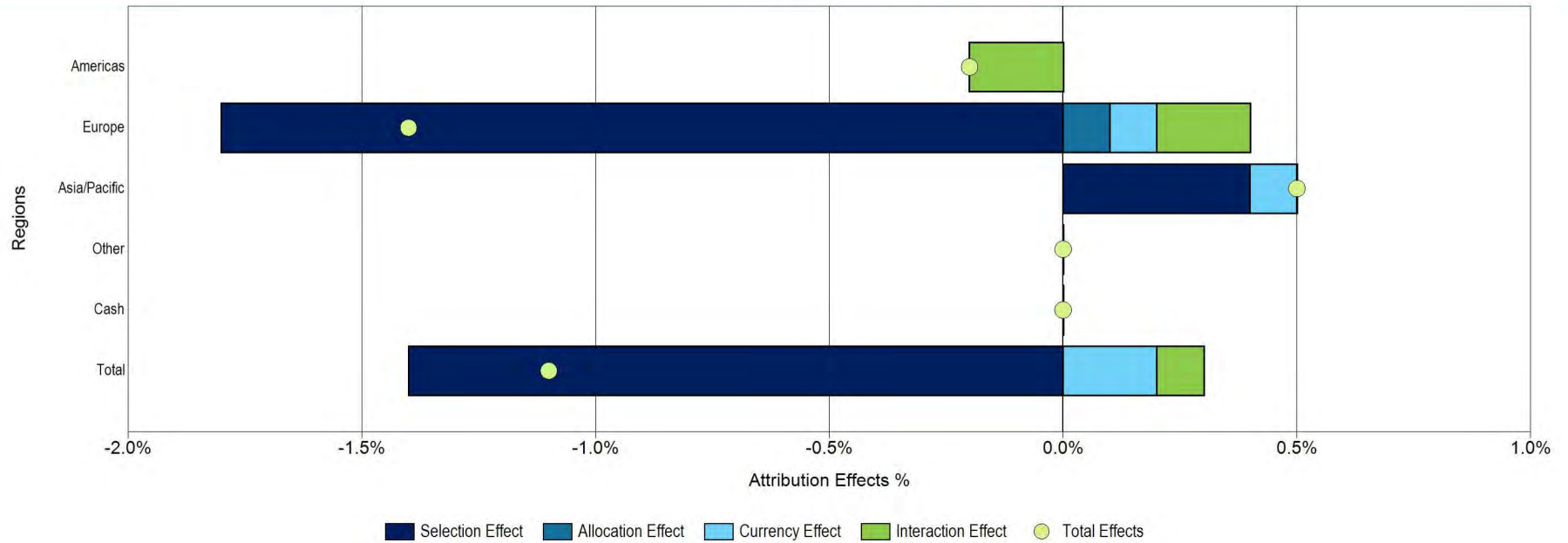
Equity Sector Attribution											
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.2%	-0.3%	0.3%	2.4%	9.1%	0.3%	3.2%			
Materials	0.3%	-0.7%	0.3%	0.7%	-14.6%	-5.5%	1.4%	7.9%			
Industrials	0.7%	0.5%	0.1%	0.1%	4.6%	1.3%	20.7%	15.5%			
Consumer Discretionary	-2.0%	-0.8%	-0.3%	-0.9%	-9.3%	-3.1%	24.3%	13.0%			
Consumer Staples	0.2%	0.0%	0.1%	0.1%	-2.9%	-3.4%	7.0%	10.6%			
Health Care	0.1%	0.0%	0.0%	0.1%	0.9%	0.5%	11.0%	12.4%			
Financials	-0.2%	-0.4%	-0.2%	0.3%	-0.2%	1.9%	10.2%	16.8%			
Information Technology	0.8%	0.7%	0.1%	0.0%	11.8%	5.1%	11.0%	9.2%			
Communication Services	-0.9%	-0.2%	-0.2%	-0.5%	-8.1%	-2.9%	11.8%	4.9%			
Utilities	0.2%	--	0.1%	--	--	-4.4%	0.0%	3.4%			
Real Estate	0.1%	--	0.1%	--	--	-3.0%	0.0%	3.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	2.4%	0.0%			
<b>Portfolio</b>	<b>-1.1%</b>	<b>=</b>	<b>-1.3%</b>	<b>+</b>	<b>-0.2%</b>	<b>+</b>	<b>0.4%</b>	<b>-1.3%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC FUND C

Fund C Performance Attribution vs. MSCI EAFE



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-2.3%	--	4.4%	0.0%	0.0%	0.0%	0.0%	-0.2%	-0.2%
Europe	-4.2%	-1.4%	56.6%	64.4%	-1.8%	0.1%	0.1%	0.2%	-1.4%
Asia/Pacific	3.2%	1.8%	36.6%	35.0%	0.4%	0.0%	0.1%	0.0%	0.5%
Other	--	2.9%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Cash	0.0%	--	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-1.3%</b>	<b>-0.2%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-1.4%</b>	<b>0.0%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>-1.1%</b>
<b>Totals</b>									
Developed	-1.3%	-0.2%	97.6%	100.0%	-1.2%	0.0%	0.2%	0.0%	-1.0%
Cash	0.0%	--	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



# Client ABC

## FUND C

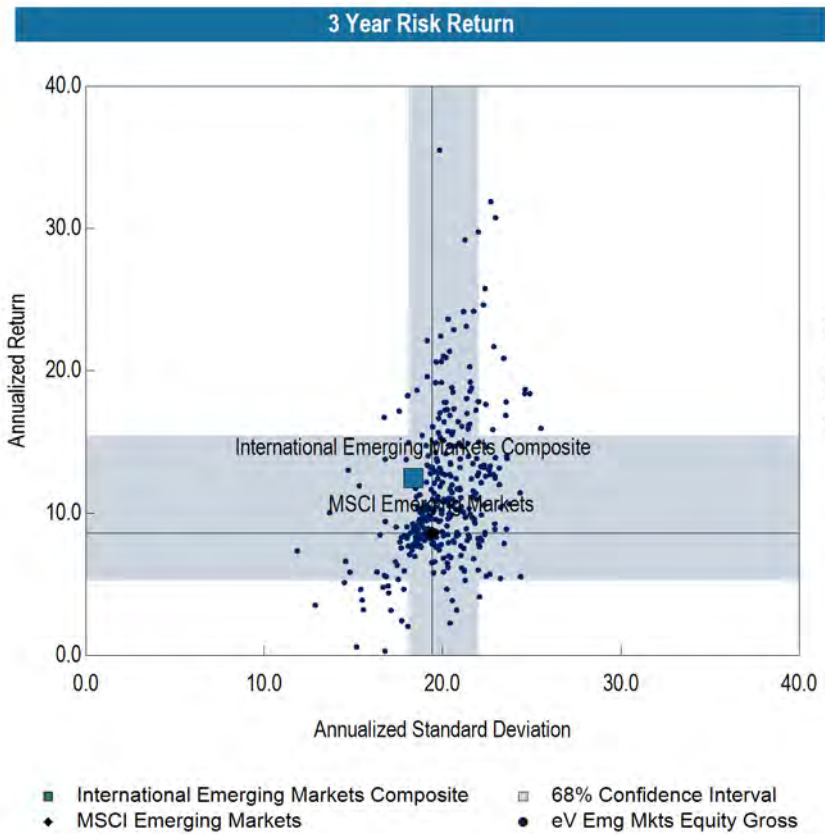
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
United States	4.4%	0.0%	-2.3%	0.3%
<b>Total-Americas</b>	<b>4.4%</b>	<b>0.0%</b>	<b>-2.3%</b>	<b>--</b>
<b>Europe</b>				
Finland	1.6%	1.1%	-13.6%	-3.1%
France	6.7%	11.5%	-10.9%	-1.6%
Germany	8.8%	9.4%	-7.2%	-4.0%
Luxembourg	2.1%	0.0%	-18.2%	-0.2%
Netherlands	6.3%	4.4%	6.6%	3.6%
Portugal	1.5%	0.2%	9.4%	3.9%
Spain	1.9%	2.5%	4.7%	-3.2%
Sweden	10.7%	3.7%	7.2%	-2.0%
Switzerland	2.4%	9.8%	-12.0%	-3.3%
United Kingdom	14.8%	14.4%	-10.3%	-0.2%
<b>Total-Europe</b>	<b>56.6%</b>	<b>64.4%</b>	<b>-4.2%</b>	<b>-1.4%</b>

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
Australia	3.9%	7.2%	-12.3%	-2.7%
Hong Kong	5.0%	3.3%	2.6%	-9.3%
Japan	23.8%	23.2%	5.9%	4.9%
New Zealand	2.3%	0.2%	3.4%	2.6%
Singapore	1.6%	1.1%	1.5%	0.0%
<b>Total-AsiaPacific</b>	<b>36.6%</b>	<b>35.0%</b>	<b>3.2%</b>	<b>1.8%</b>
<b>Totals</b>				
Developed	97.6%	100.0%	-1.3%	-0.2%
Cash	2.4%		0.0%	

Country\* = Emerging Markets



# INTERNATIONAL EMERGING MARKETS COMPOSITE



# Client ABC

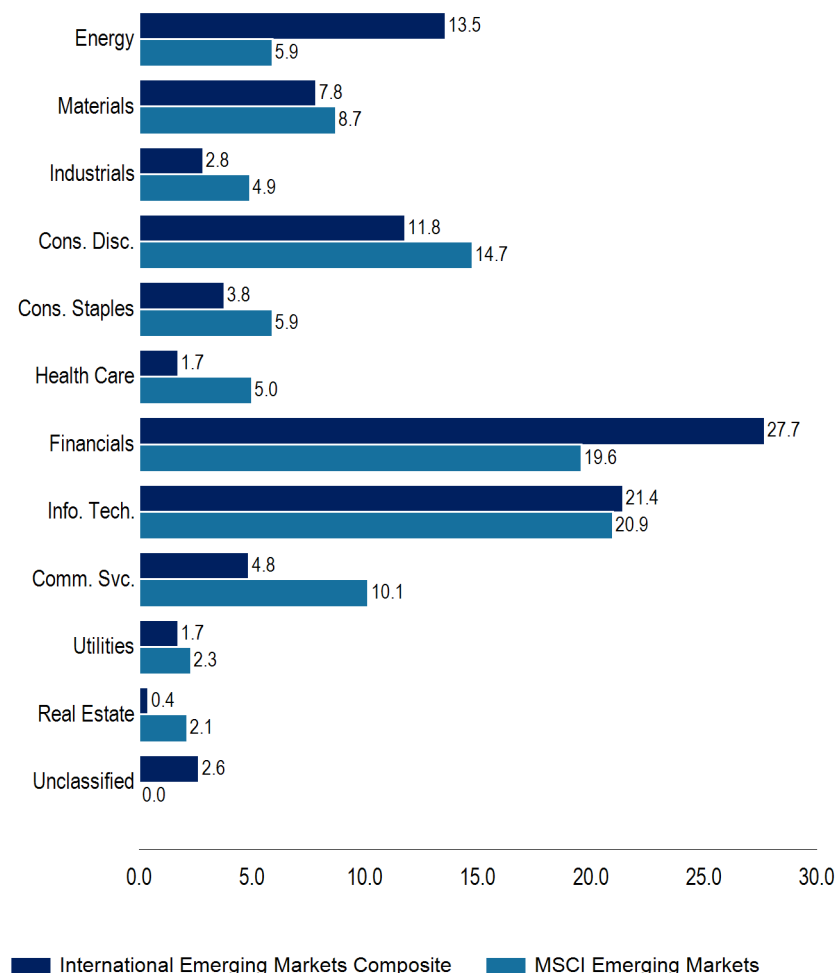
## INTERNATIONAL EMERGING MARKETS COMPOSITE

Characteristics		
	Portfolio	MSCI Emerging Markets
Number of Holdings	109	1,415
Weighted Avg. Market Cap. (\$B)	113.4	136.2
Median Market Cap. (\$B)	28.9	7.1
Price To Earnings	9.6	13.3
Price To Book	2.5	2.8
Price To Sales	1.0	1.5
Return on Equity (%)	15.3	13.4
Yield (%)	3.8	2.5
Beta	0.9	1.0
R-Squared	0.9	1.0

	Portfolio Q3-21	Index Q3-21
Region Weighting		
Americas	17.29	7.80
Europe	16.29	5.48
Asia/Pacific	61.56	76.86
Other	4.86	9.85



### Equity Sector Allocation



# Client ABC

## INTERNATIONAL EMERGING MARKETS COMPOSITE

Characteristics		
	Portfolio	MSCI Emerging Markets
Number of Holdings	109	1,415
Weighted Avg. Market Cap. (\$B)	113.4	136.2
Median Market Cap. (\$B)	28.9	7.1
Price To Earnings	9.6	13.3
Price To Book	2.5	2.8
Price To Sales	1.0	1.5
Return on Equity (%)	15.3	13.4
Yield (%)	3.8	2.5
Beta	0.9	1.0
R-Squared	0.9	1.0

Top Positive Contributors		
	Relative Contribution %	Return %
CHINA RESOURCES POWER HOLDINGS CO LTD	1.5%	113.9%
ALIBABA GROUP HOLDING LTD	1.2%	-35.5%
TENCENT HOLDINGS LTD	0.7%	-21.2%
JBS SA	0.3%	21.8%
GAZPROM PJSC	0.2%	37.0%
ASML HOLDING NV	0.2%	9.0%
CHINA SHENHUA ENERGY CO LTD	0.2%	19.4%
HOUSING DEVELOPMENT FINANCE CORP LTD	0.2%	11.5%
CHINA MERCHANTS PORT HOLDINGS CO LTD	0.2%	19.5%

Top Negative Contributors		
	Relative Contribution %	Return %
WULIANGYE ORD A	-0.5%	-25.5%
BANCO DO BRASIL ON	-0.4%	-15.3%
PETROLEO BRASILEIRO S.A.-PETROBRAS	-0.4%	-10.5%
MELCO RESORTS & ENTERTAINMENT LTD	-0.3%	-38.2%
VALE SA	-0.3%	-31.3%
HELLO GROUP INC	-0.3%	-30.9%
ALIBABA GROUP HOLDING LTD	-0.3%	-34.7%
FILA HOLDINGS CORPORATION	-0.3%	-29.9%
VALE SA	-0.2%	-32.4%

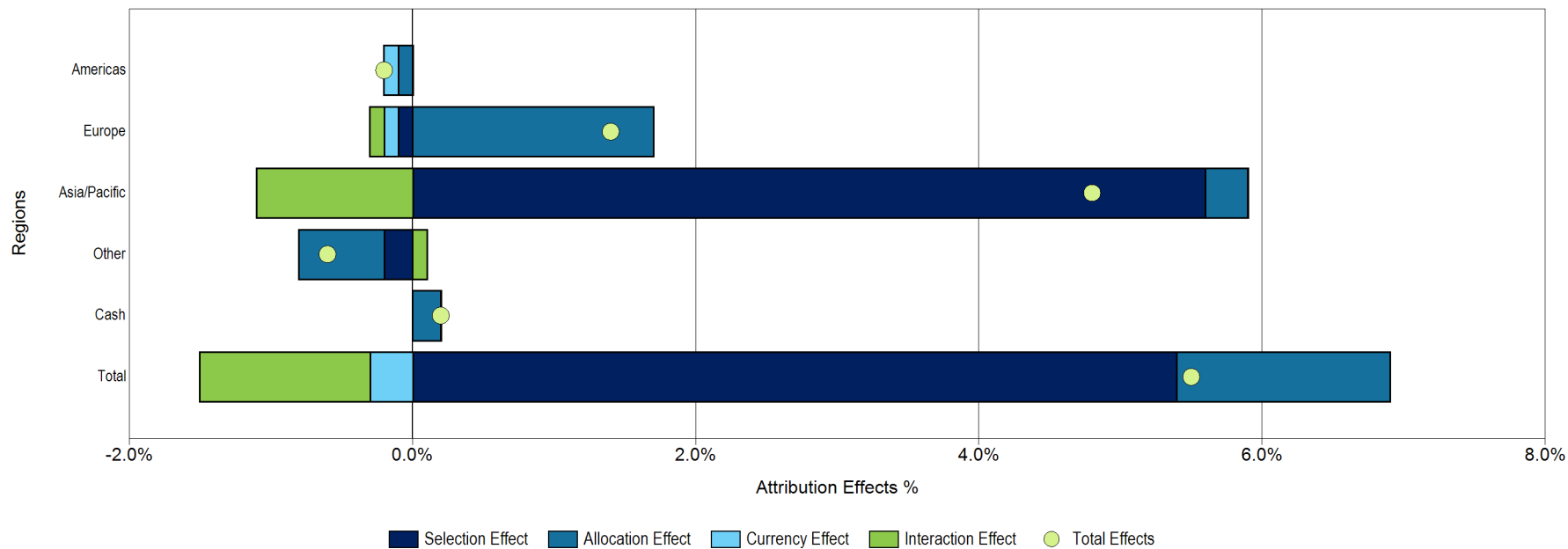
Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.4%	-0.3%	0.9%	-0.2%		5.2%	9.6%	10.3%	5.0%		
Materials	-0.6%	-0.5%	0.1%	-0.2%		-10.4%	-4.4%	10.9%	8.4%		
Industrials	0.0%	-0.1%	-0.1%	0.1%		-4.7%	-4.8%	3.1%	4.6%		
Consumer Discretionary	1.8%	0.5%	1.5%	-0.2%		-19.8%	-22.8%	8.0%	17.6%		
Consumer Staples	-0.4%	-0.3%	0.0%	-0.1%		-9.9%	-4.0%	6.2%	5.6%		
Health Care	0.3%	0.2%	0.2%	-0.1%		-7.8%	-12.8%	1.6%	5.1%		
Financials	1.4%	0.7%	0.8%	-0.1%		3.7%	1.4%	27.1%	17.8%		
Information Technology	0.3%	0.3%	0.0%	0.0%		-4.2%	-5.5%	21.8%	20.5%		
Communication Services	0.3%	-0.5%	0.5%	0.3%		-19.5%	-15.5%	5.2%	11.0%		
Utilities	1.5%	0.9%	0.2%	0.5%		56.0%	8.1%	2.9%	2.0%		
Real Estate	0.2%	0.3%	0.1%	-0.2%		-1.3%	-15.7%	0.6%	2.3%		
Cash	0.2%	0.0%	0.2%	0.0%		0.0%	--	2.3%	0.0%		
<b>Portfolio</b>	<b>5.4%</b>	<b>=</b>	<b>1.3%</b>	<b>+</b>	<b>4.4%</b>	<b>+</b>	<b>-0.3%</b>	<b>-2.4%</b>	<b>-7.8%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# INTERNATIONAL EMERGING MARKETS COMPOSITE

International Emerging Markets Composite Performance Attribution vs. MSCI Emerging Markets



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-10.9%	-13.0%	16.4%	7.8%	0.0%	-0.1%	-0.1%	0.0%	-0.2%
Europe	6.9%	8.7%	15.0%	4.2%	-0.1%	1.7%	-0.1%	-0.1%	1.4%
Asia/Pacific	-2.3%	-9.2%	63.3%	79.4%	5.6%	0.3%	0.0%	-1.1%	4.8%
Other	-1.9%	2.4%	3.0%	8.6%	-0.2%	-0.6%	0.0%	0.1%	-0.6%
Cash	0.0%	--	2.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
<b>Total</b>	<b>-2.3%</b>	<b>-7.8%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>5.4%</b>	<b>1.5%</b>	<b>-0.3%</b>	<b>-1.2%</b>	<b>5.5%</b>
<b>Totals</b>									
Developed	4.2%	--	15.4%	0.0%	0.0%	0.0%	-0.1%	1.8%	1.7%
Emerging*	-3.6%	-7.8%	82.2%	100.0%	4.7%	0.0%	-0.2%	-0.8%	3.7%
Cash	0.0%	--	2.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%



## Client ABC

# INTERNATIONAL EMERGING MARKETS COMPOSITE

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
Brazil*	12.6%	5.2%	-13.9%	-20.0%
Mexico*	0.5%	1.7%	0.0%	1.8%
United States	3.2%	0.0%	-1.1%	0.3%
<b>Total-Americas</b>	<b>16.4%</b>	<b>7.8%</b>	<b>-10.9%</b>	<b>-13.0%</b>
<b>Europe</b>				
Czech Republic*	0.4%	0.1%	15.3%	16.2%
Netherlands	2.0%	0.0%	9.0%	3.4%
Poland*	2.9%	0.7%	5.2%	1.8%
Russia*	8.4%	3.0%	7.7%	10.3%
Spain	0.9%	0.0%	6.9%	-3.2%
United Kingdom	0.4%	0.0%	-19.0%	-0.2%
<b>Total-Europe</b>	<b>15.0%</b>	<b>4.2%</b>	<b>6.9%</b>	<b>8.7%</b>

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
China*	19.1%	37.6%	-8.5%	-18.0%
Hong Kong	8.6%	0.0%	6.0%	-9.4%
India*	13.1%	9.9%	11.3%	12.8%
Indonesia*	0.8%	1.1%	12.1%	10.1%
Korea*	13.9%	13.3%	-12.4%	-12.7%
Singapore	0.3%	0.0%	-4.6%	0.0%
Taiwan*	5.9%	14.0%	-4.1%	-1.4%
Thailand*	1.6%	1.6%	1.3%	-2.5%
<b>Total-AsiaPacific</b>	<b>63.3%</b>	<b>79.4%</b>	<b>-2.3%</b>	<b>-9.2%</b>
<b>Other</b>				
South Africa*	2.4%	3.5%	-2.1%	-4.9%
Turkey*	0.7%	0.2%	-1.2%	2.0%
<b>Total-Other</b>	<b>3.0%</b>	<b>8.6%</b>	<b>-1.9%</b>	<b>2.4%</b>
<b>Totals</b>				
Developed	15.4%	0.0%	4.2%	--
Emerging*	82.2%	100.0%	-3.6%	-7.8%
Cash	2.4%		0.0%	

Country\* = Emerging Markets

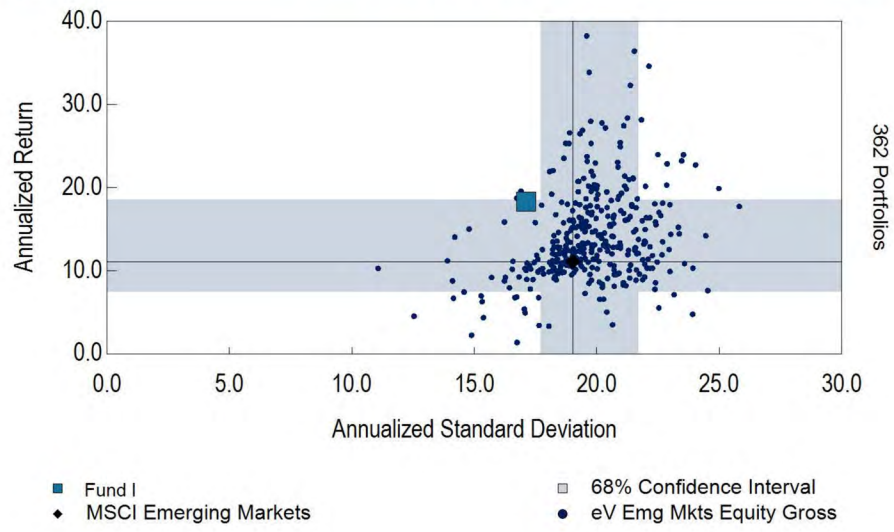




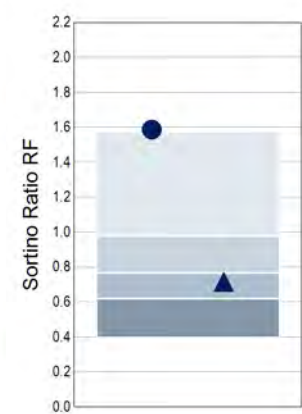
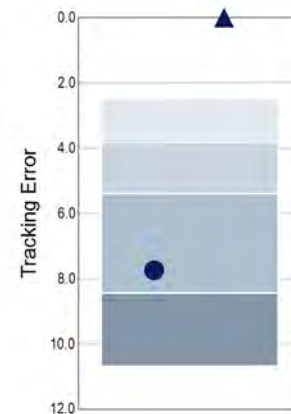
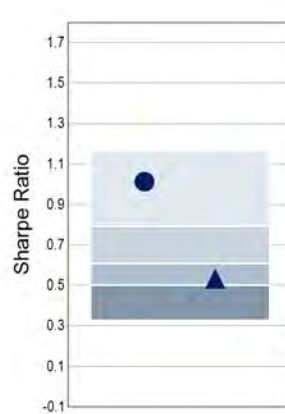
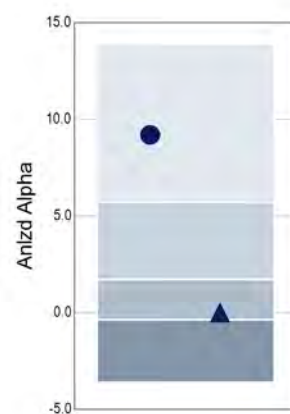
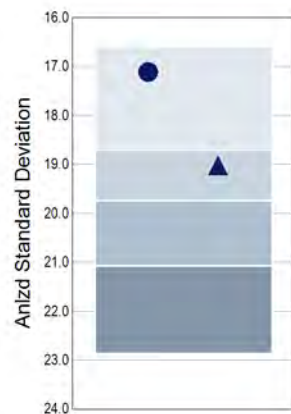
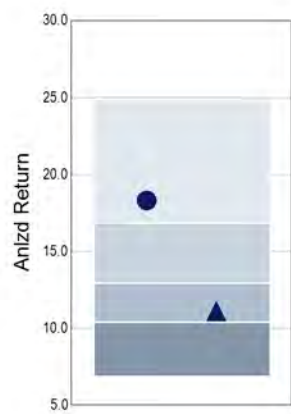
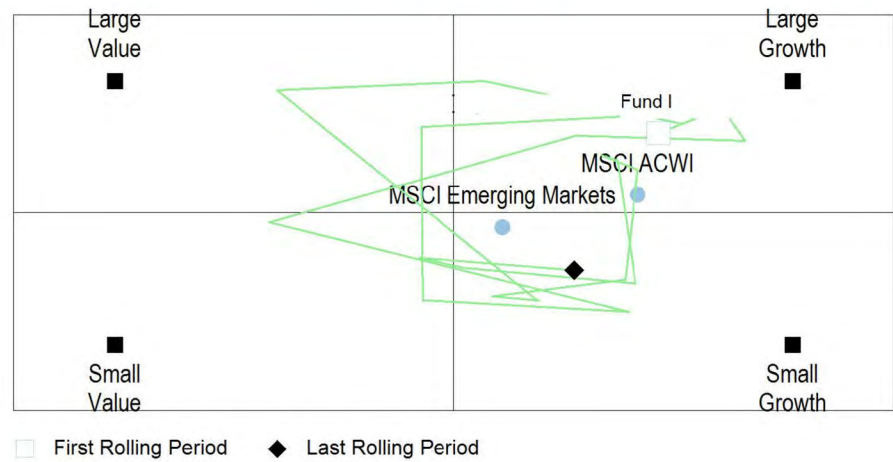
# Client ABC

## FUND I

Since Inception Risk Return



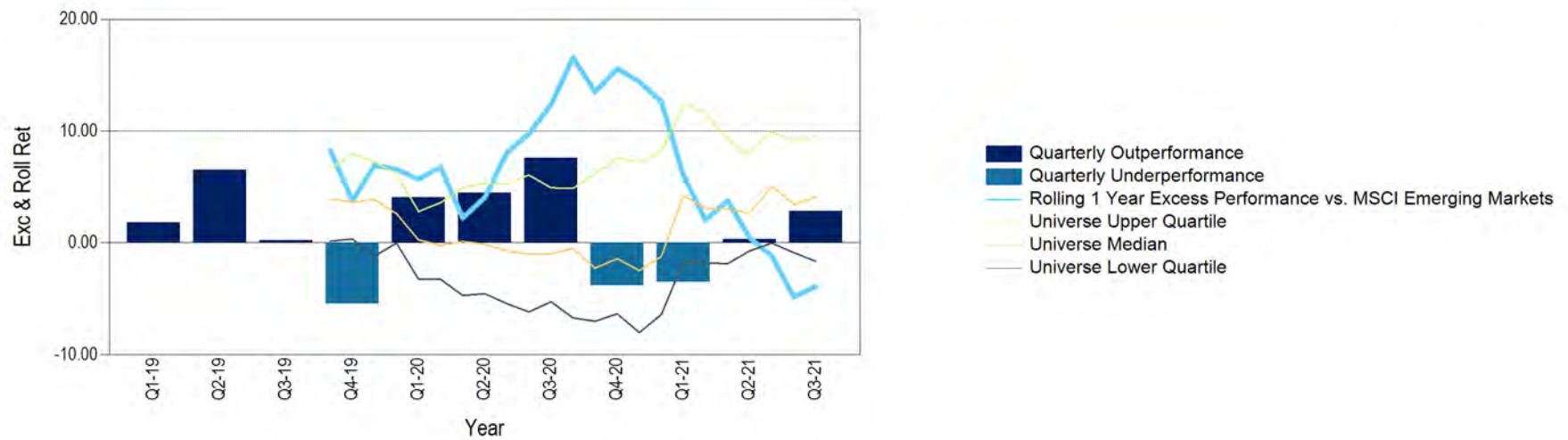
Since Inception Style Map



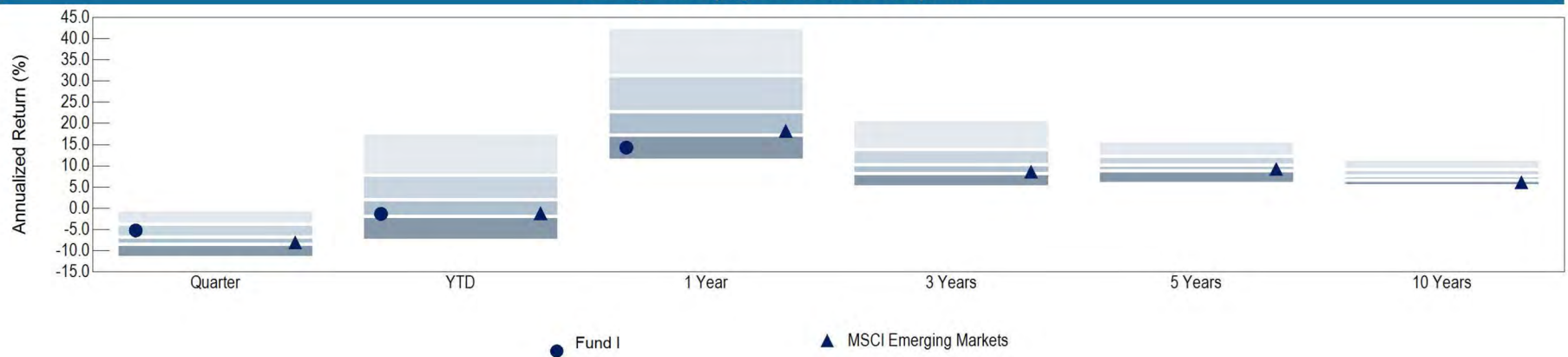
# Client ABC

## FUND I

Annualized Excess Performance



eV Emg Mkts Equity Gross Return Comparison



# Client ABC

## FUND I

Top Ten Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.8%
HOUSING DEVELOPMENT FINANCE CORP LTD	4.9%
INFOSYS LTD	4.6%
SBERBANK OF RUSSIA	4.2%
SAMSUNG ELECTRONICS CO LTD	4.1%
ASML HOLDING NV	4.0%
RELIANCE INDUSTRIES LTD	3.8%
NVIDIA CORPORATION	3.6%
CASH - USD	3.1%
CHINA MERCHANTS BANK CO LTD	3.0%

Top Positive Contributors		
	Relative Contribution %	Return %
RELIANCE INDUSTRIES LTD	0.4%	19.6%
HOUSING DEVELOPMENT FINANCE CORP LTD	0.4%	11.5%
SBERBANK OF RUSSIA	0.4%	12.3%
ASML HOLDING NV	0.4%	9.0%
BAJAJ FINANCE LTD	0.3%	28.0%
TENCENT HOLDINGS LTD	0.3%	-21.2%
INFOSYS LTD	0.2%	5.0%
ROSNEFT OIL COMPANY	0.1%	8.6%
OIL COMPANY LUKOIL	0.1%	6.5%

Top Negative Contributors		
	Relative Contribution %	Return %
WULIANGYE ORD A	-0.9%	-25.5%
VALE SA	-0.9%	-31.3%
ALIBABA GROUP HOLDING LTD	-0.6%	-34.7%
VALE SA	-0.5%	-32.4%
BANCO BRADESCO SA BRAD	-0.4%	-23.3%
COUNTRY GARDEN SERVICES HOLDINGS COMPANY LIMITED	-0.4%	-26.9%
PETROLEO BRASILEIRO S.A.- PETROBRAS	-0.3%	-10.5%
AMOREPACIFIC CORP	-0.3%	-32.2%
LAM RESEARCH CORP	-0.3%	-12.3%

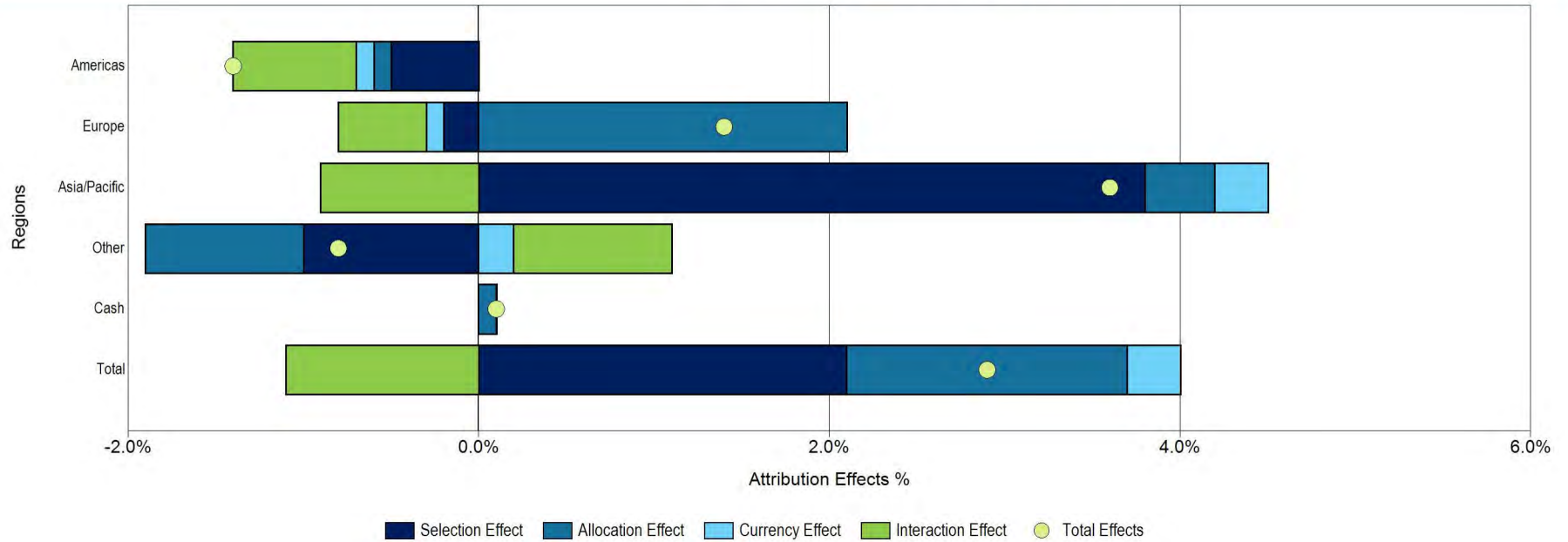
Equity Sector Attribution											
	Total Effects	Selection Effect	Attribution Effects				Returns		Sector Weights		
			Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.5%	-0.3%	1.1%	-0.3%	5.2%	9.6%	11.2%	5.0%			
Materials	-1.7%	-1.2%	0.2%	-0.8%	-18.3%	-4.4%	13.3%	8.4%			
Industrials	-0.4%	-0.7%	-0.1%	0.3%	-18.5%	-4.8%	2.8%	4.6%			
Consumer Discretionary	2.3%	-0.5%	2.3%	0.6%	-24.9%	-22.8%	3.0%	17.6%			
Consumer Staples	-1.2%	-1.1%	0.1%	-0.2%	-21.5%	-4.0%	6.9%	5.6%			
Health Care	0.4%	0.5%	0.2%	-0.3%	-1.7%	-12.8%	1.4%	5.1%			
Financials	1.2%	0.6%	0.4%	0.1%	4.8%	1.4%	22.8%	17.8%			
Information Technology	1.5%	1.0%	0.2%	0.3%	-0.7%	-5.5%	29.0%	20.5%			
Communication Services	0.2%	-0.5%	0.4%	0.2%	-19.7%	-15.5%	6.1%	11.0%			
Utilities	-0.2%	0.0%	-0.3%	0.0%	10.7%	8.1%	0.2%	2.0%			
Real Estate	0.3%	0.3%	0.1%	-0.1%	-1.3%	-15.7%	1.2%	2.3%			
Cash	0.1%	0.0%	0.1%	0.0%	0.0%	--	2.1%	0.0%			
<b>Portfolio</b>	<b>2.9%</b>	<b>=</b>	<b>-1.8%</b>	<b>+</b>	<b>4.7%</b>	<b>+</b>	<b>0.0%</b>	<b>-4.9%</b>	<b>-7.8%</b>	<b>100.0%</b>	<b>100.0%</b>

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



# Client ABC FUND I

Fund I Performance Attribution vs. MSCI Emerging Markets



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-16.7%	-13.0%	19.0%	7.8%	-0.5%	-0.1%	-0.1%	-0.7%	-1.4%
Europe	5.1%	8.7%	17.2%	4.2%	-0.2%	2.1%	-0.1%	-0.5%	1.4%
Asia/Pacific	-4.1%	-9.2%	60.9%	79.4%	3.8%	0.4%	0.3%	-0.9%	3.6%
Other	-9.6%	2.4%	0.7%	8.6%	-1.0%	-0.9%	0.2%	0.9%	-0.8%
Cash	0.0%	--	2.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
<b>Total</b>	<b>-4.9%</b>	<b>-7.8%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>2.1%</b>	<b>1.6%</b>	<b>0.3%</b>	<b>-1.1%</b>	<b>2.9%</b>
<b>Totals</b>									
Developed	-1.9%	--	14.7%	0.0%	0.0%	0.0%	-0.2%	0.9%	0.7%
Emerging*	-5.5%	-7.8%	83.1%	100.0%	1.9%	0.0%	0.5%	-0.3%	2.1%
Cash	0.0%	--	2.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%



# Client ABC

## FUND I

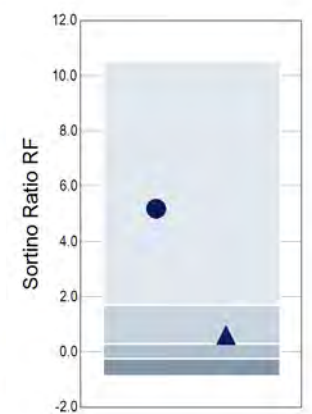
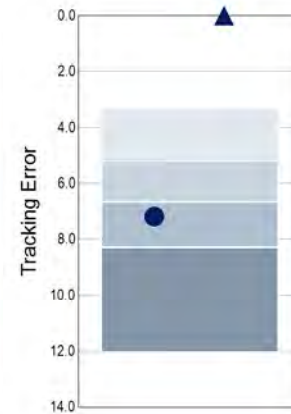
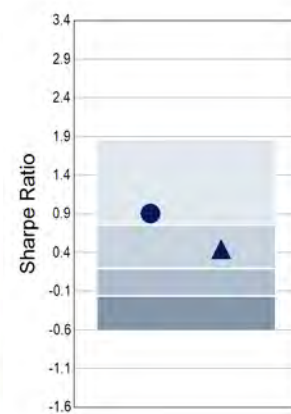
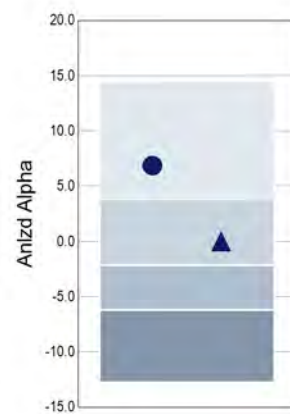
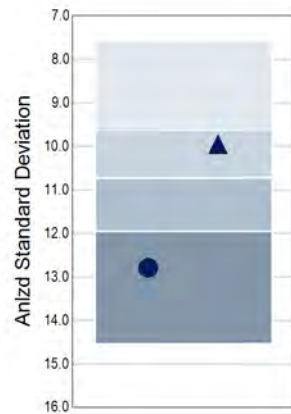
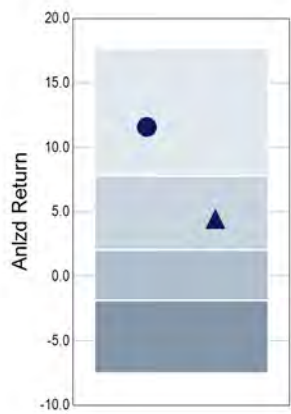
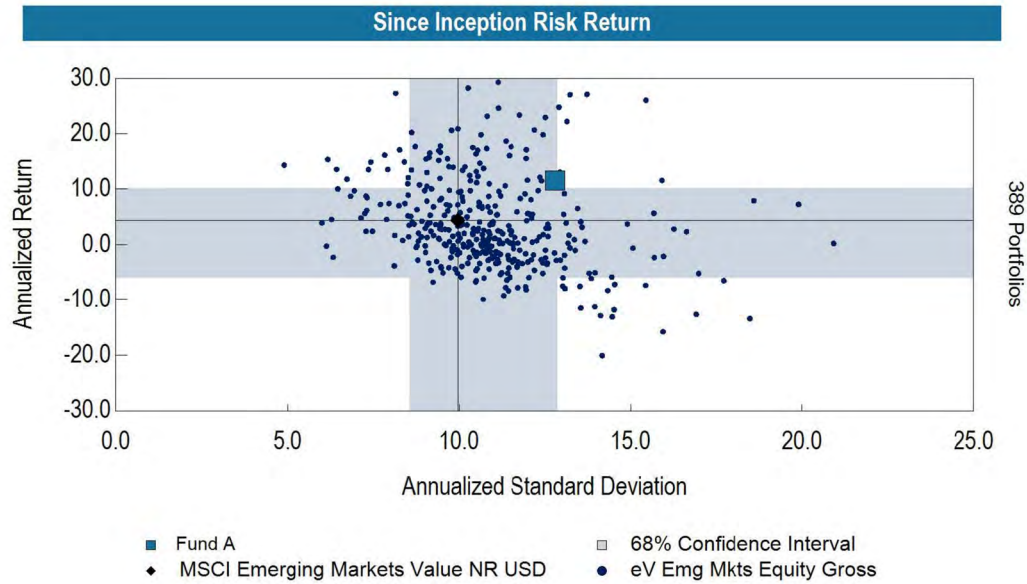
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
Brazil*	13.8%	5.2%	-21.7%	-20.0%
United States	5.2%	0.0%	-3.3%	0.3%
<b>Total-Americas</b>	<b>19.0%</b>	<b>7.8%</b>	<b>-16.7%</b>	<b>-13.0%</b>
<b>Europe</b>				
Netherlands	4.1%	0.0%	9.0%	3.4%
Russia*	10.6%	3.0%	4.9%	10.3%
Spain	1.8%	0.0%	6.9%	-3.2%
United Kingdom	0.7%	0.0%	-19.0%	-0.2%
<b>Total-Europe</b>	<b>17.2%</b>	<b>4.2%</b>	<b>5.1%</b>	<b>8.7%</b>

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
China*	21.2%	37.6%	-15.0%	-18.0%
Hong Kong	2.9%	0.0%	-15.9%	-9.4%
India*	19.7%	9.9%	11.9%	12.8%
Indonesia*	0.8%	1.1%	18.2%	10.1%
Korea*	8.3%	13.3%	-14.1%	-12.7%
Taiwan*	8.0%	14.0%	-2.4%	-1.4%
<b>Total-AsiaPacific</b>	<b>60.9%</b>	<b>79.4%</b>	<b>-4.1%</b>	<b>-9.2%</b>
<b>Other</b>				
Turkey*	0.7%	0.2%	-9.6%	2.0%
<b>Total-Other</b>	<b>0.7%</b>	<b>8.6%</b>	<b>-9.6%</b>	<b>2.4%</b>
<b>Totals</b>				
Developed	14.7%	0.0%	-1.9%	--
Emerging*	83.1%	100.0%	-5.5%	-7.8%
Cash	2.2%		0.0%	

Country\* = Emerging Markets



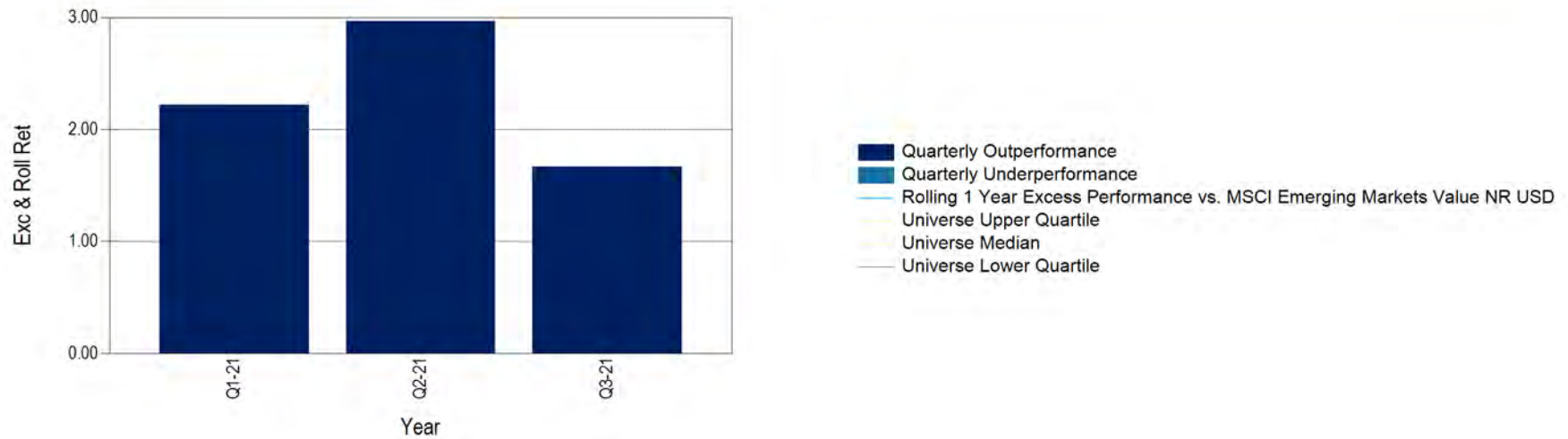
# Client ABC FUND A



# Client ABC

## FUND A

### Annualized Excess Performance



### eV Emg Mkts Equity Gross Return Comparison



# Client ABC

## FUND A

Top Ten Holdings	
PETROLEO BRASILEIRO S.A.- PETROBRAS	4.3%
BAIDU INC	4.0%
BANCO DO BRASIL ON	4.0%
ALIBABA GROUP HOLDING LTD	3.5%
PICC PROPERTY & CASUALTY CO LTD	3.4%
ALROSA PJSC	3.1%
SK HYNIX INC	3.0%
GREE ELECT.APP. 'A'(SEC)	3.0%
POSCO	2.8%
SAMSUNG ELECTRONICS CO LTD	2.7%

Top Positive Contributors		
	Relative Contribution %	Return %
CHINA RESOURCES POWER HOLDINGS CO LTD	3.0%	113.9%
ALIBABA GROUP HOLDING LTD	0.6%	-35.5%
JBS SA	0.6%	21.8%
GAZPROM PJSC	0.4%	37.0%
CHINA SHENHUA ENERGY CO LTD	0.3%	19.4%
BAIDU INC	0.3%	-24.6%
CHINA MERCHANTS PORT HOLDINGS CO LTD	0.3%	19.5%
PICC PROPERTY & CASUALTY CO LTD	0.3%	10.8%
NINGBO HUAXIANG ELECTRICAL	0.2%	11.7%
DB INSURANCE CO LTD	0.2%	11.0%

Top Negative Contributors		
	Relative Contribution %	Return %
SK HYNIX INC	-0.7%	-22.7%
BANCO DO BRASIL ON	-0.7%	-15.3%
MELCO RESORTS & ENTERTAINMENT LTD	-0.6%	-38.2%
HELLO GROUP INC	-0.6%	-30.9%
FILA HOLDINGS CORPORATION	-0.6%	-29.9%
PETROLEO BRASILEIRO S.A.- PETROBRAS	-0.4%	-10.5%
NASPERS LTD	-0.4%	-20.9%
WH GROUP LTD	-0.4%	-20.0%
WONIK IPS CO LTD	-0.3%	-22.8%

	Equity Sector Attribution										
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	-0.3%	0.5%	-0.1%	5.2%	8.8%	9.3%	5.9%			
Materials	0.5%	0.4%	0.0%	0.1%	2.1%	-3.2%	8.4%	8.9%			
Industrials	0.3%	0.5%	0.0%	-0.1%	7.2%	-3.1%	3.3%	5.6%			
Consumer Discretionary	0.6%	0.3%	0.3%	-0.1%	-18.6%	-20.6%	13.1%	14.9%			
Consumer Staples	0.4%	0.4%	0.0%	-0.1%	4.6%	-1.4%	5.5%	4.4%			
Health Care	0.1%	0.0%	0.1%	0.0%	-12.3%	-13.2%	1.9%	3.2%			
Financials	1.1%	1.5%	0.2%	-0.6%	2.9%	-0.1%	31.5%	27.5%			
Information Technology	-1.0%	-1.1%	0.0%	0.1%	-11.3%	-4.2%	14.5%	17.0%			
Communication Services	-0.6%	-1.1%	0.0%	0.5%	-19.3%	-4.7%	4.3%	6.9%			
Utilities	3.1%	1.5%	0.3%	1.3%	57.9%	7.0%	5.6%	3.0%			
Real Estate	0.1%	--	0.1%	--	--	-7.8%	0.0%	2.9%			
Cash	0.1%	0.0%	0.1%	0.0%	0.0%	--	2.5%	0.0%			
<b>Portfolio</b>	<b>4.8%</b>	<b>=</b>	<b>2.1%</b>	<b>+</b>	<b>1.6%</b>	<b>+</b>	<b>1.0%</b>	<b>0.2%</b>	<b>-4.6%</b>	<b>100.0%</b>	<b>100.0%</b>

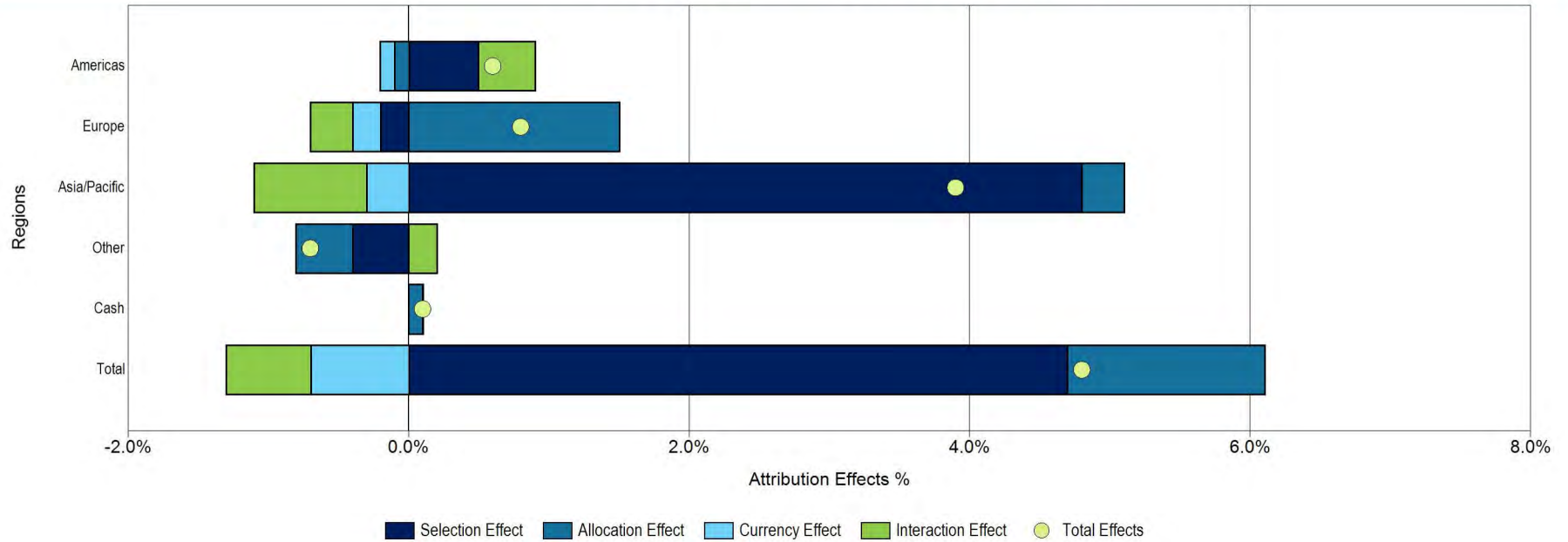
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.





# Client ABC FUND A

Fund A Performance Attribution vs. MSCI Emerging Markets Value NR USD



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
<b>Totals</b>									
Americas	-3.2%	-11.0%	13.8%	8.1%	0.5%	-0.1%	-0.1%	0.4%	0.6%
Europe	9.4%	14.6%	12.8%	4.5%	-0.2%	1.5%	-0.2%	-0.3%	0.8%
Asia/Pacific	-0.7%	-6.2%	65.5%	78.5%	4.8%	0.3%	-0.3%	-0.8%	3.9%
Other	-0.9%	6.0%	5.3%	8.8%	-0.4%	-0.4%	0.0%	0.2%	-0.7%
Cash	0.0%	--	2.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
<b>Total</b>	<b>0.2%</b>	<b>-4.6%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>4.7%</b>	<b>1.4%</b>	<b>-0.7%</b>	<b>-0.6%</b>	<b>4.8%</b>
<b>Totals</b>									
Developed	9.6%	--	16.1%	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%
Emerging*	-1.6%	-4.6%	81.4%	100.0%	4.1%	0.0%	-0.7%	-0.8%	2.6%
Cash	0.0%	--	2.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%



# Client ABC

## FUND A

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>Americas</b>				
Brazil*	11.5%	5.5%	-4.7%	-16.9%
Mexico*	1.0%	1.8%	0.0%	3.0%
United States	1.3%	0.0%	7.5%	0.3%
<b>Total-Americas</b>	<b>13.8%</b>	<b>8.1%</b>	<b>-3.2%</b>	<b>-11.0%</b>
<b>Europe</b>				
Czech Republic*	0.8%	0.1%	15.3%	12.3%
Poland*	5.7%	0.7%	5.2%	5.8%
Russia*	6.3%	3.4%	12.4%	17.5%
<b>Total-Europe</b>	<b>12.8%</b>	<b>4.5%</b>	<b>9.4%</b>	<b>14.6%</b>

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
<b>AsiaPacific</b>				
China*	17.0%	36.5%	-0.5%	-13.2%
Hong Kong	14.2%	0.0%	10.4%	-9.4%
India*	6.5%	10.3%	9.3%	11.0%
Indonesia*	0.8%	1.1%	6.1%	11.3%
Korea*	19.4%	13.2%	-11.7%	-10.8%
Singapore	0.6%	0.0%	-4.6%	0.0%
Taiwan*	3.9%	13.9%	-7.4%	0.8%
Thailand*	3.1%	1.6%	1.3%	0.9%
<b>Total-AsiaPacific</b>	<b>65.5%</b>	<b>78.5%</b>	<b>-0.7%</b>	<b>-6.2%</b>
<b>Other</b>				
South Africa*	4.7%	3.8%	-2.1%	6.2%
Turkey*	0.6%	0.2%	8.8%	1.0%
<b>Total-Other</b>	<b>5.3%</b>	<b>8.8%</b>	<b>-0.9%</b>	<b>6.0%</b>
<b>Totals</b>				
Developed	16.1%	0.0%	9.6%	--
Emerging*	81.4%	100.0%	-1.6%	-4.6%
Cash	2.5%		0.0%	

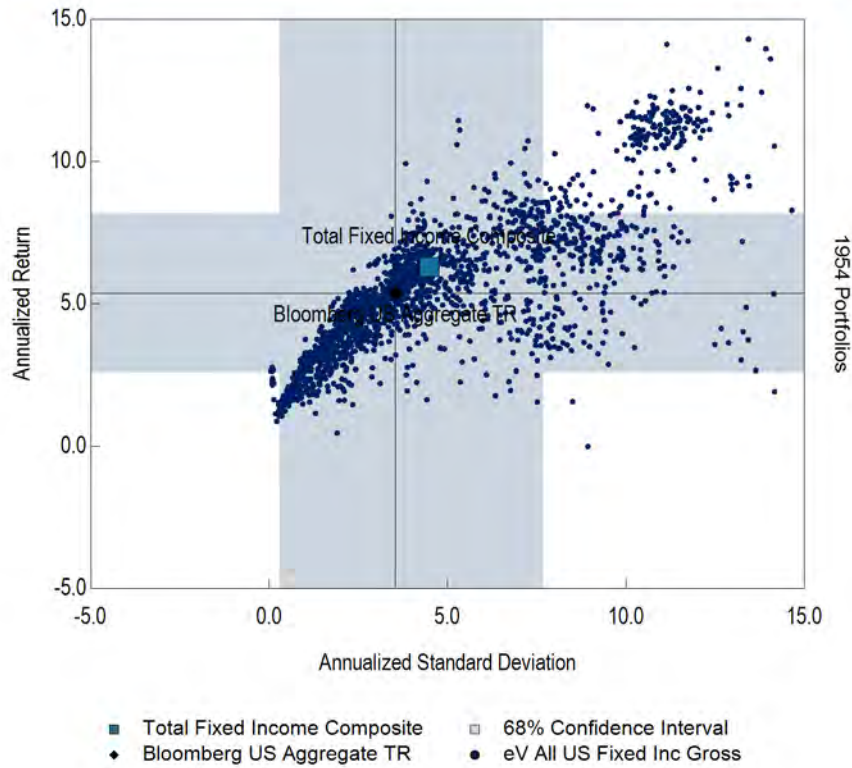
Country\* = Emerging Markets



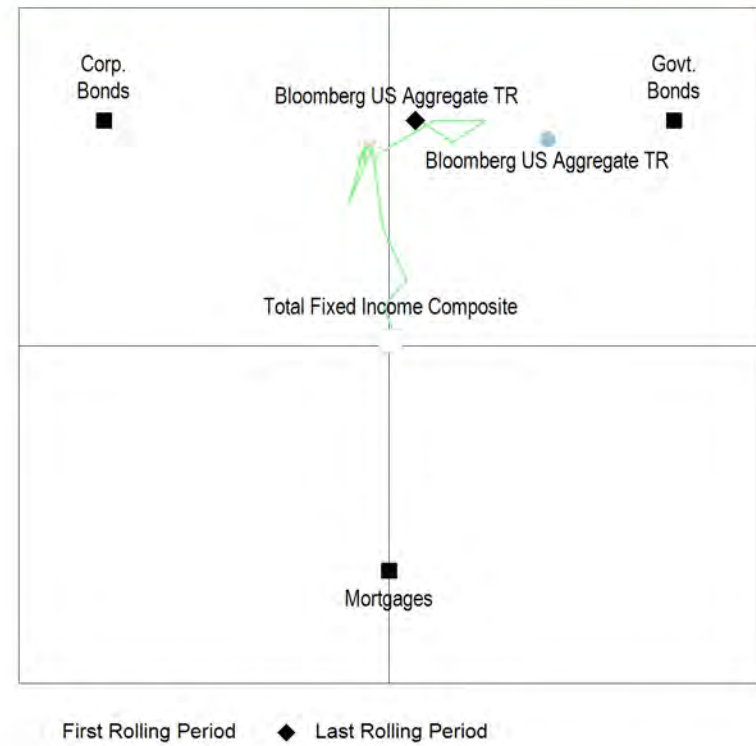
# Client ABC

## TOTAL FIXED INCOME COMPOSITE

### 3 Year Risk Return

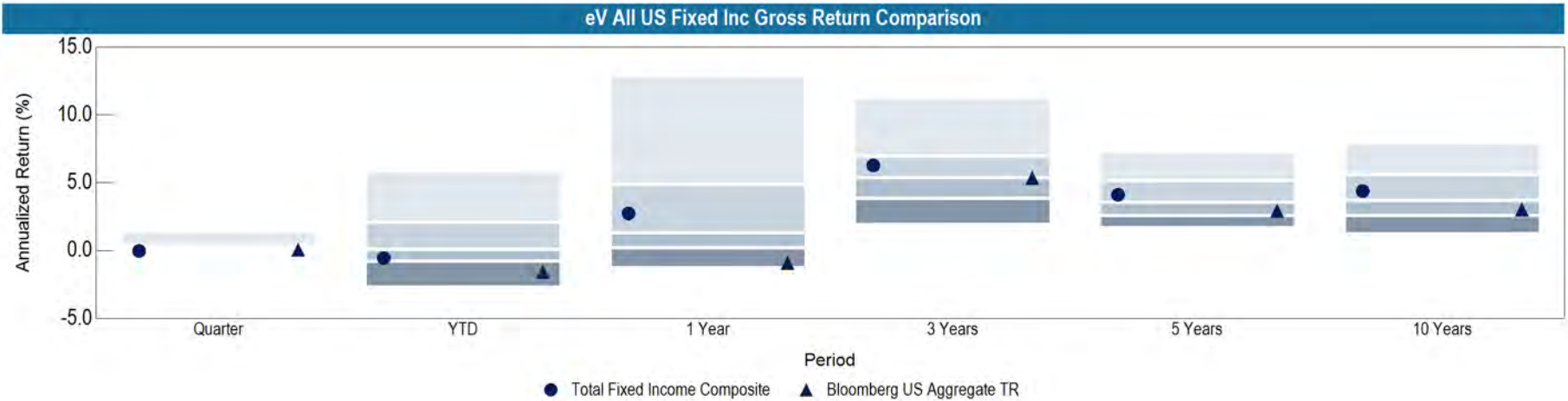
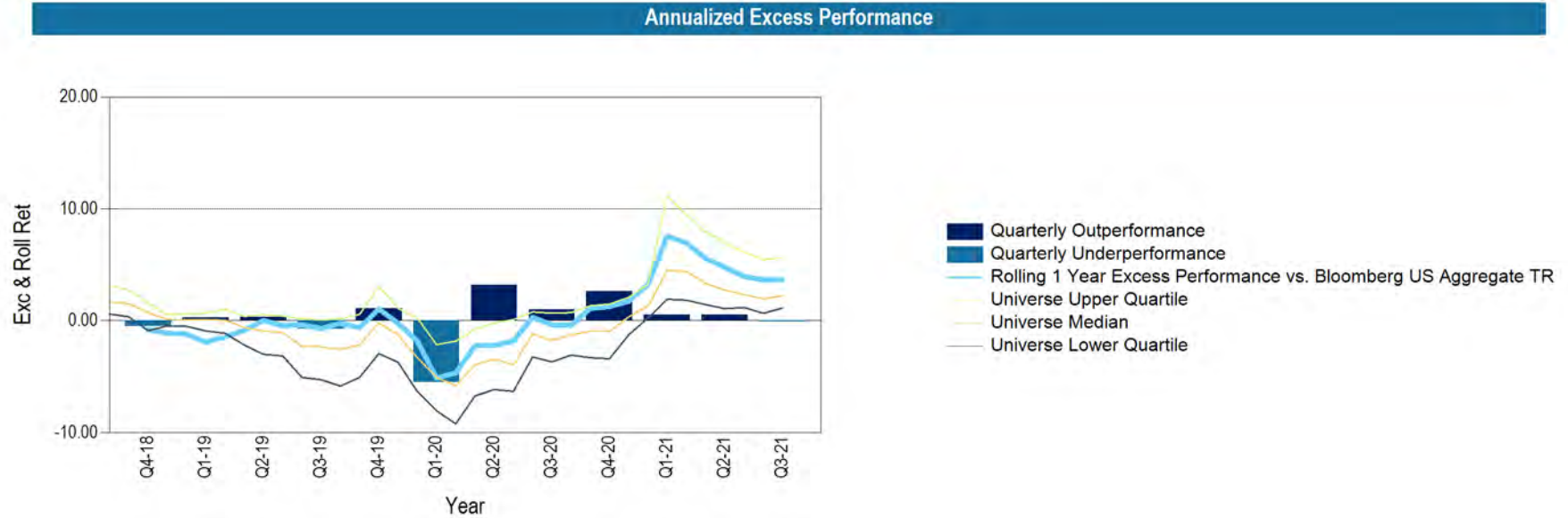


### 3 Year Style Analysis



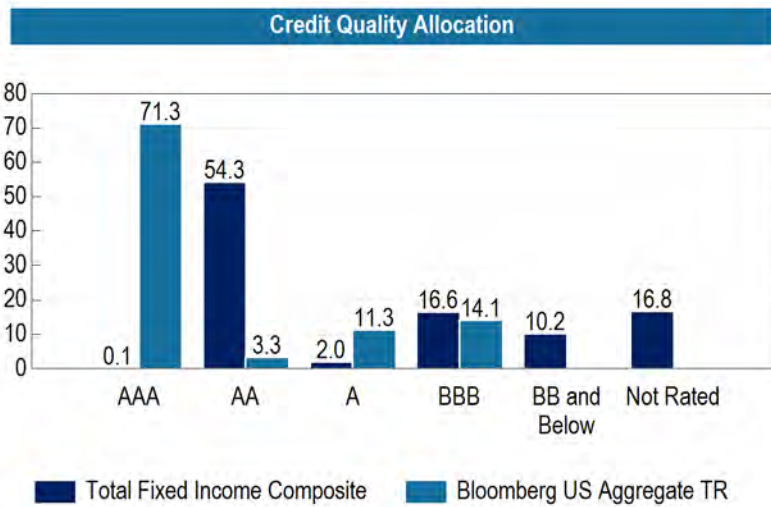
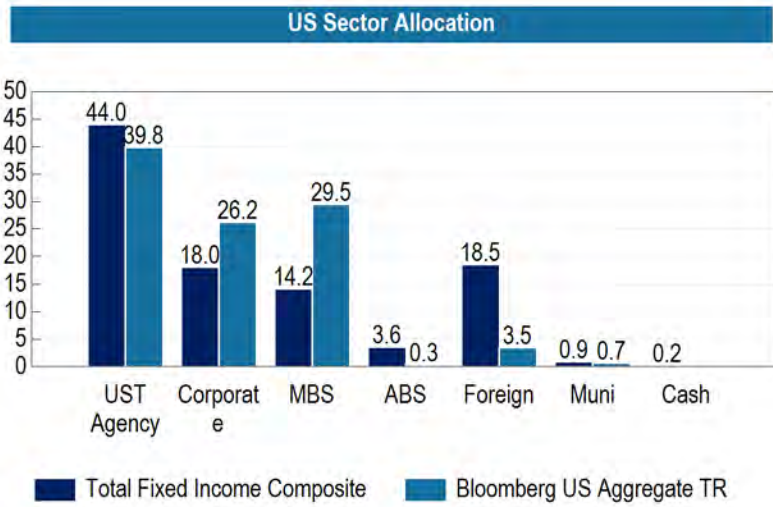
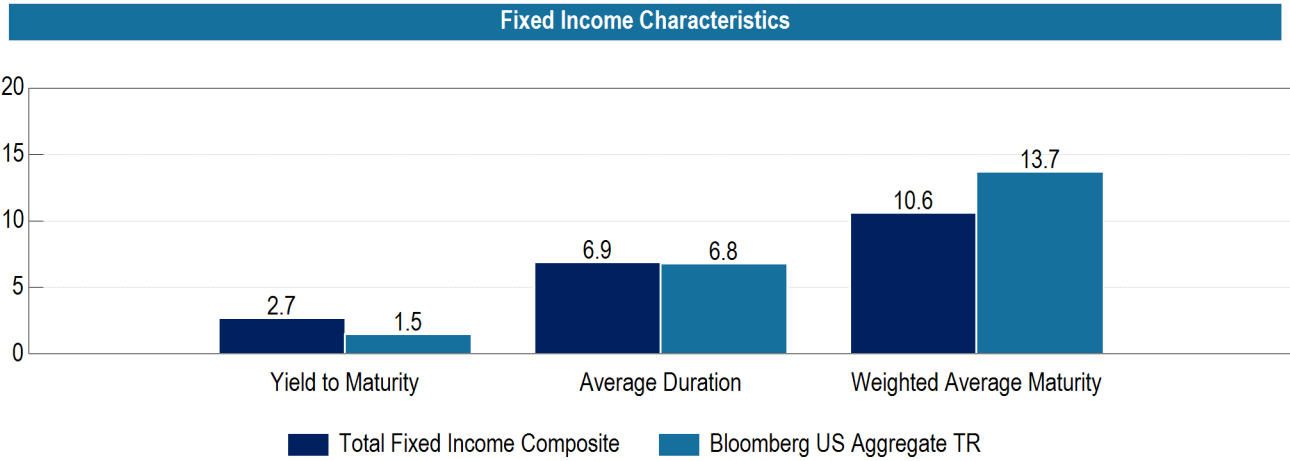
# Client ABC

## TOTAL FIXED INCOME COMPOSITE



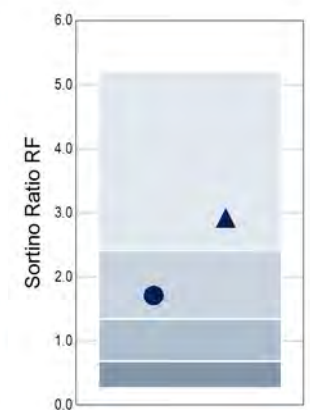
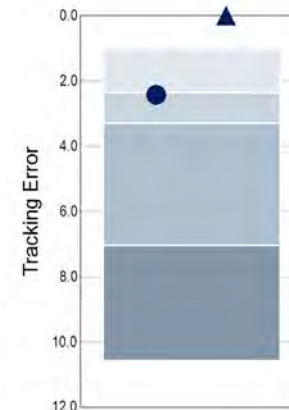
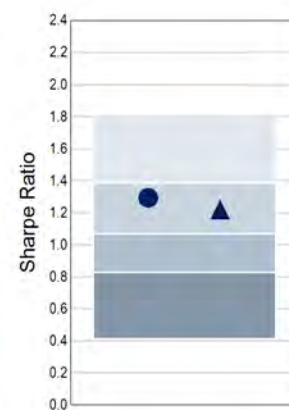
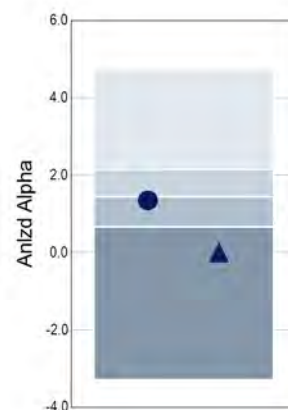
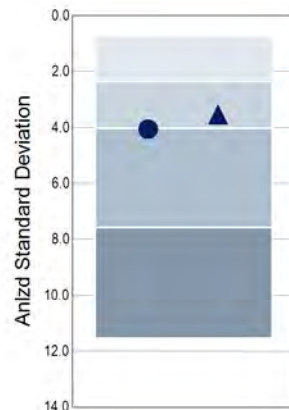
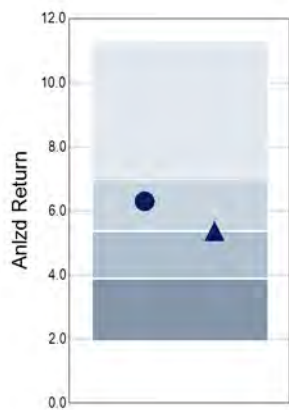
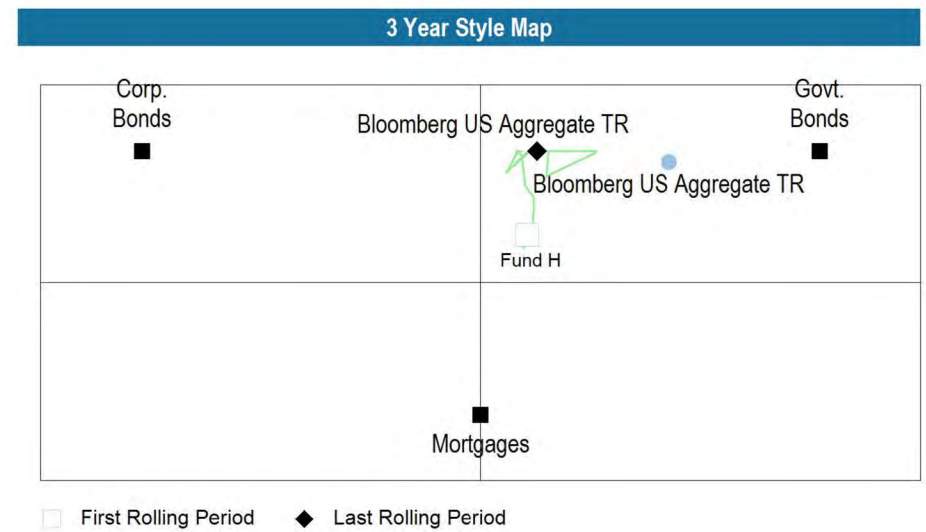
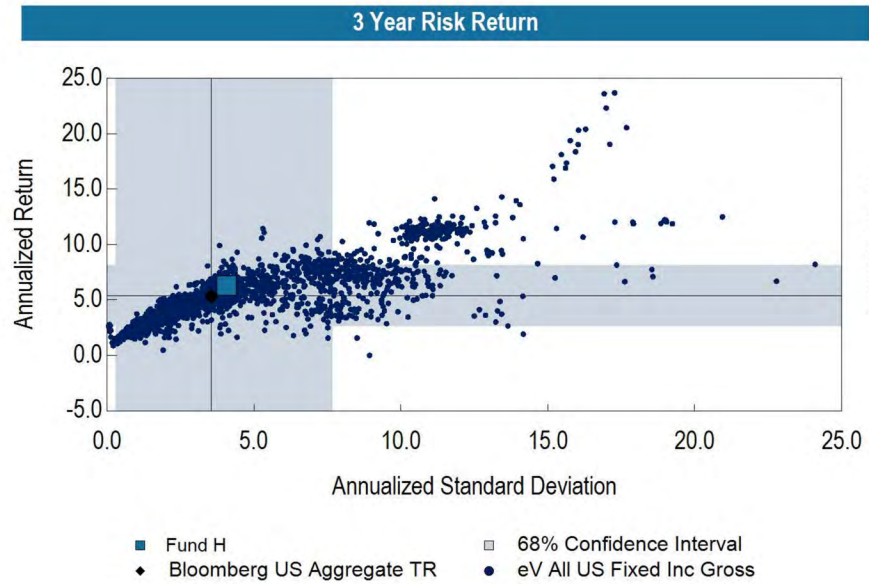
# Client ABC

## TOTAL FIXED INCOME COMPOSITE



# Client ABC

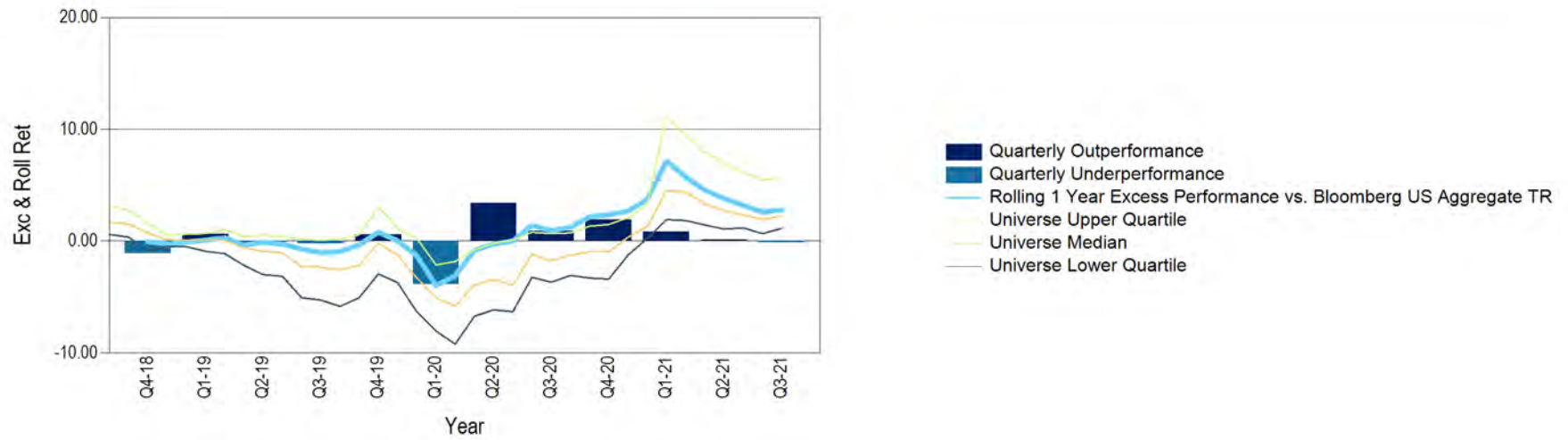
## FUND H



# Client ABC

## FUND H

### Annualized Excess Performance

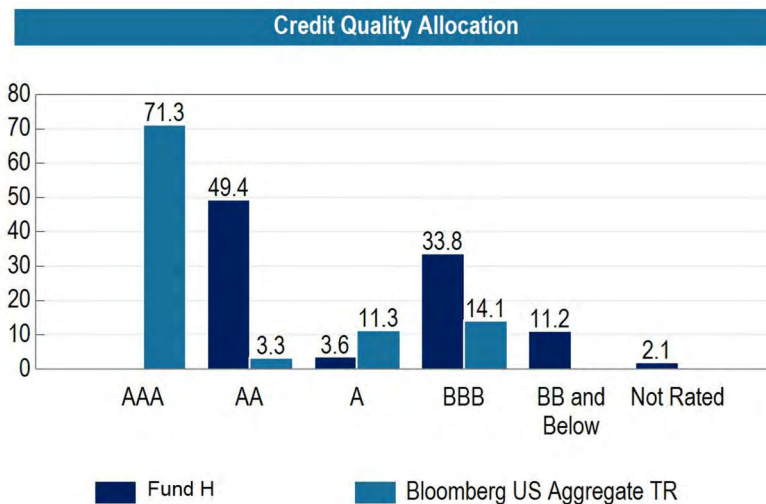
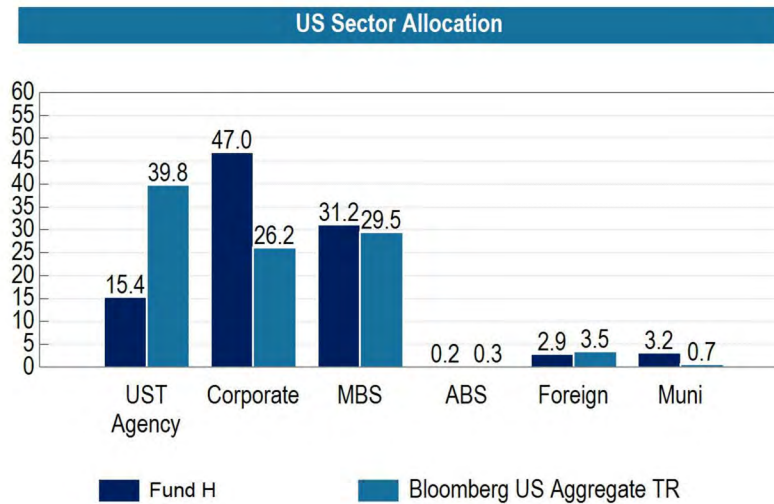
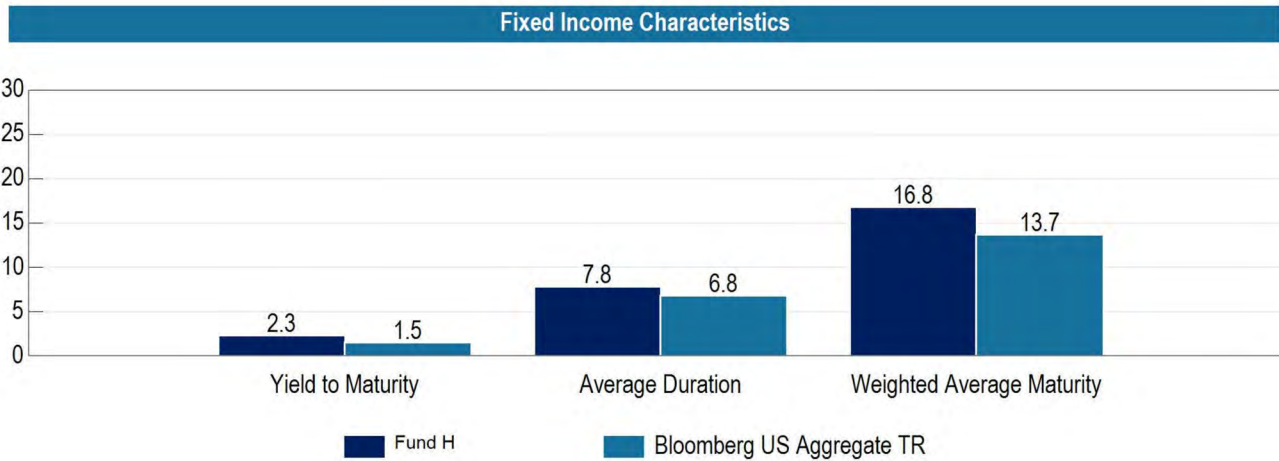


### eV All US Fixed Inc Gross Return Comparison



# Client ABC

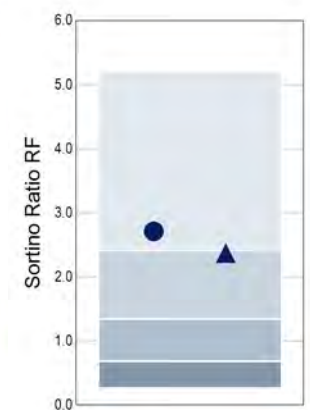
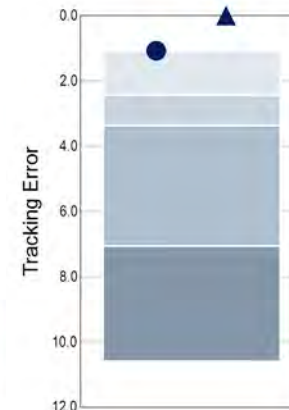
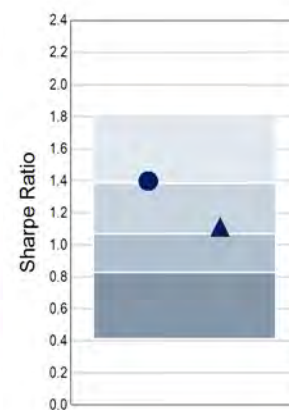
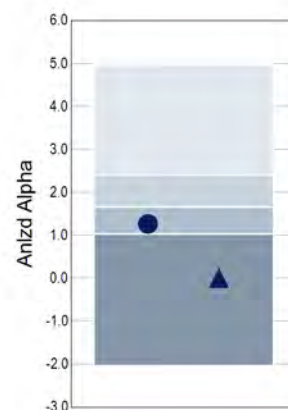
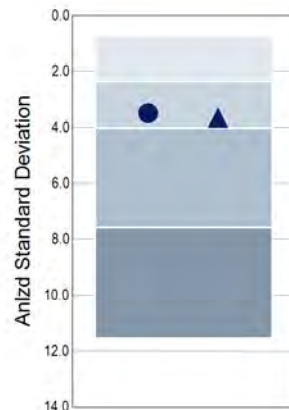
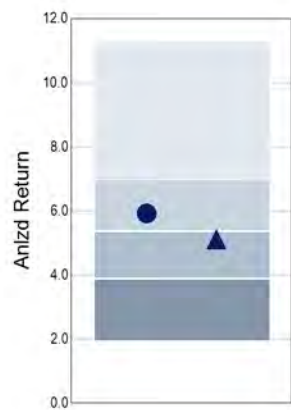
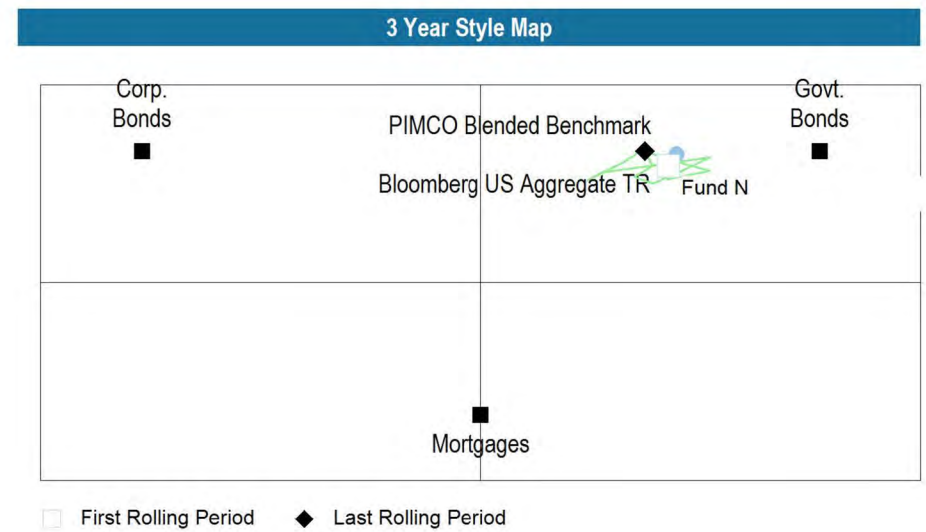
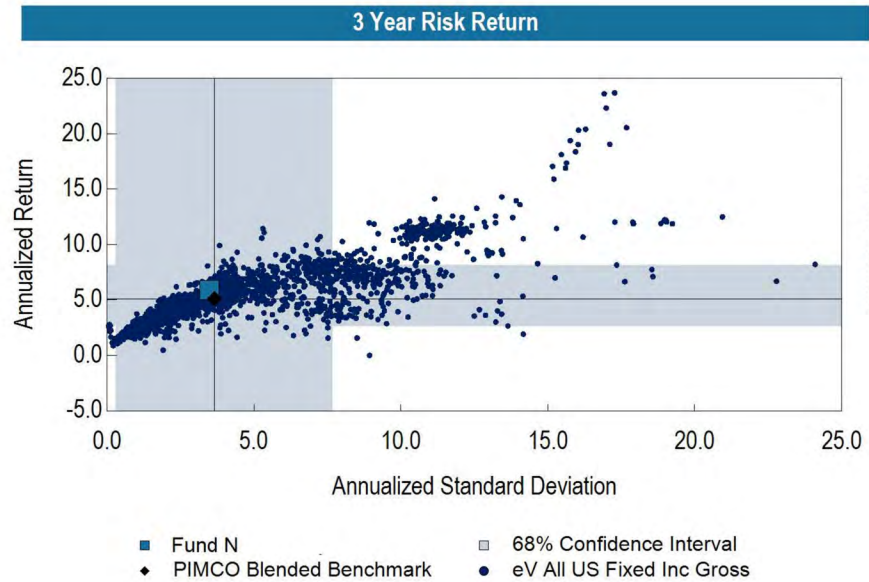
## FUND H





# Client ABC

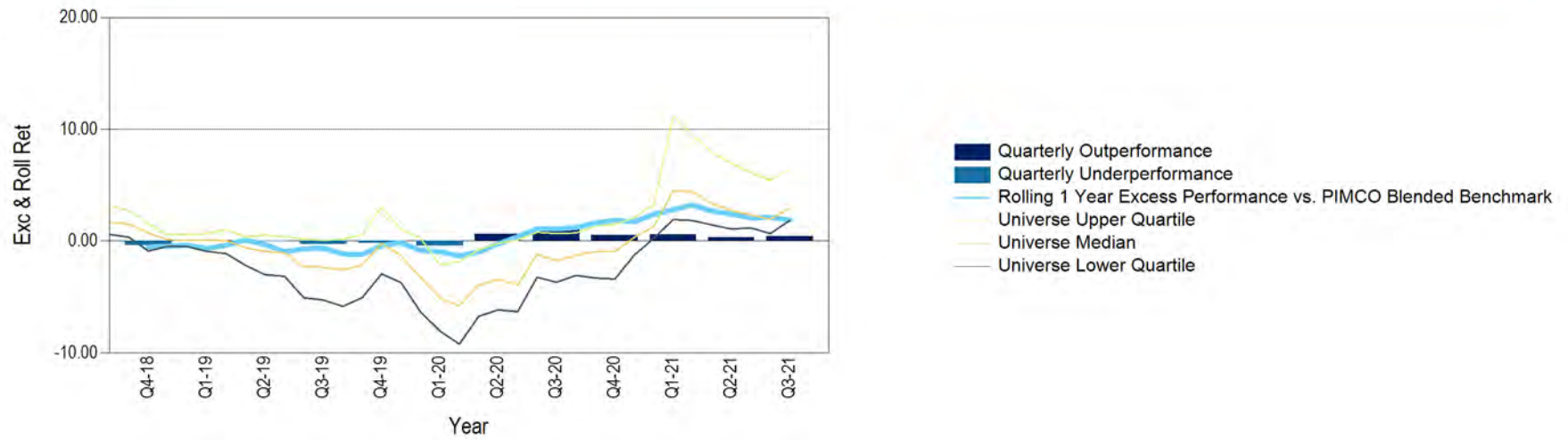
## FUND N



# Client ABC

## FUND N

Annualized Excess Performance

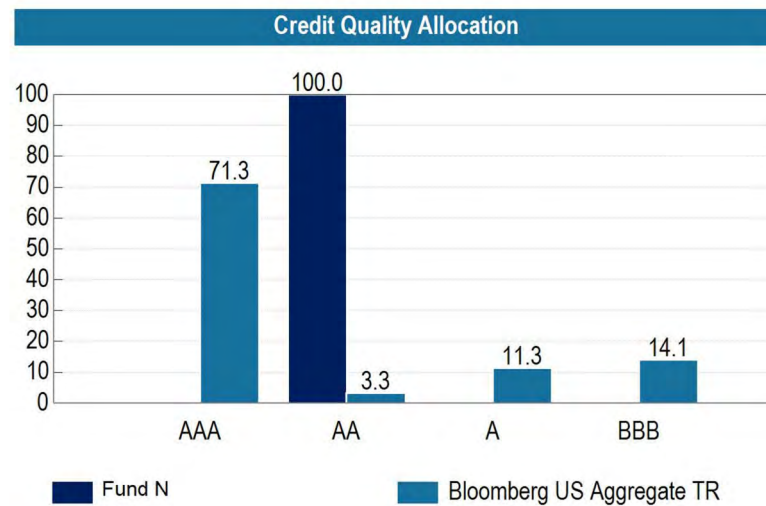
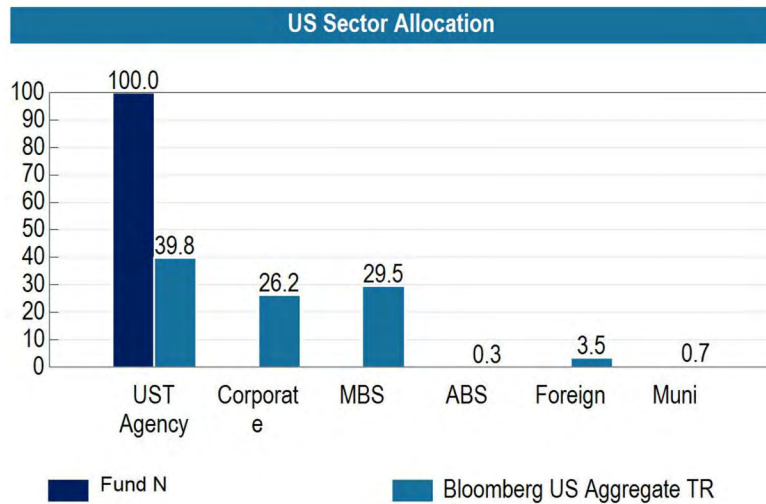
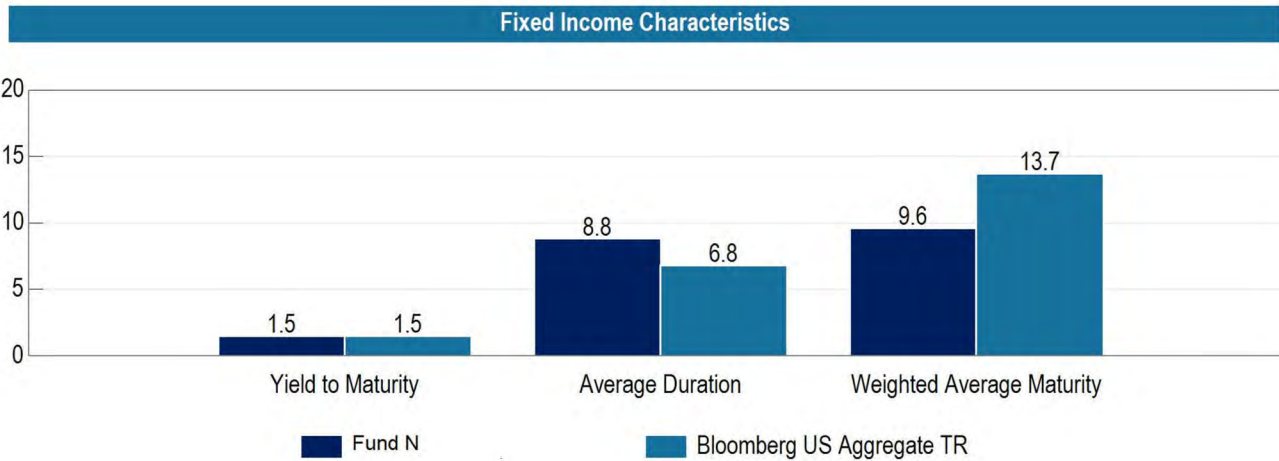


eV All US Fixed Inc Gross Return Comparison

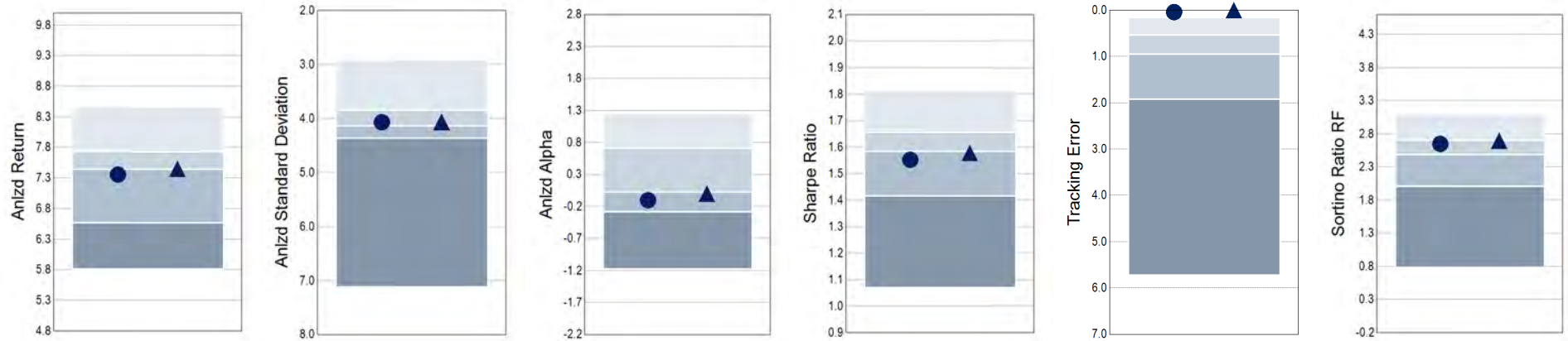
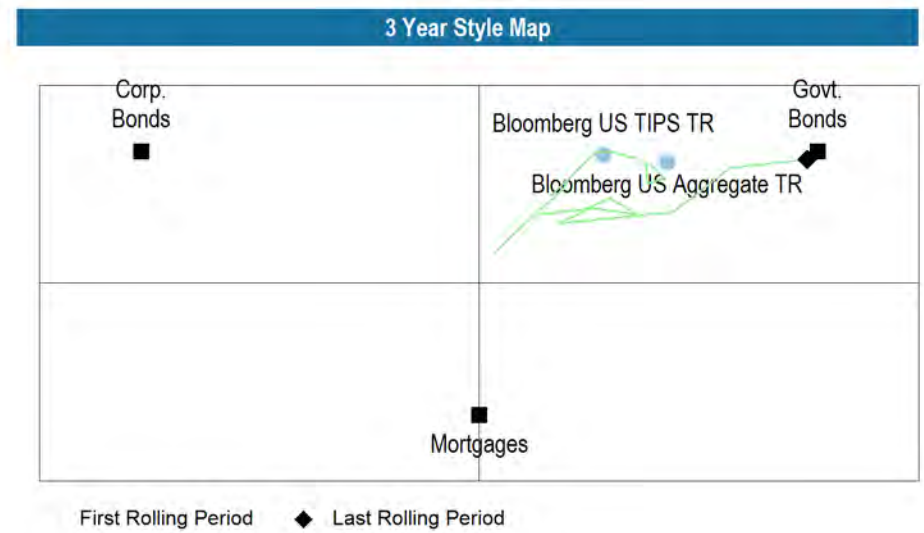
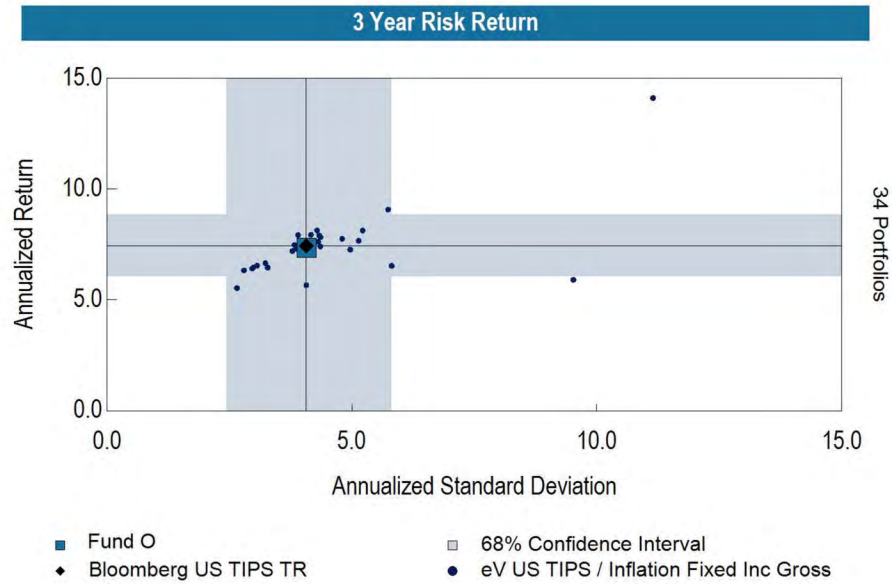


# Client ABC

## FUND N



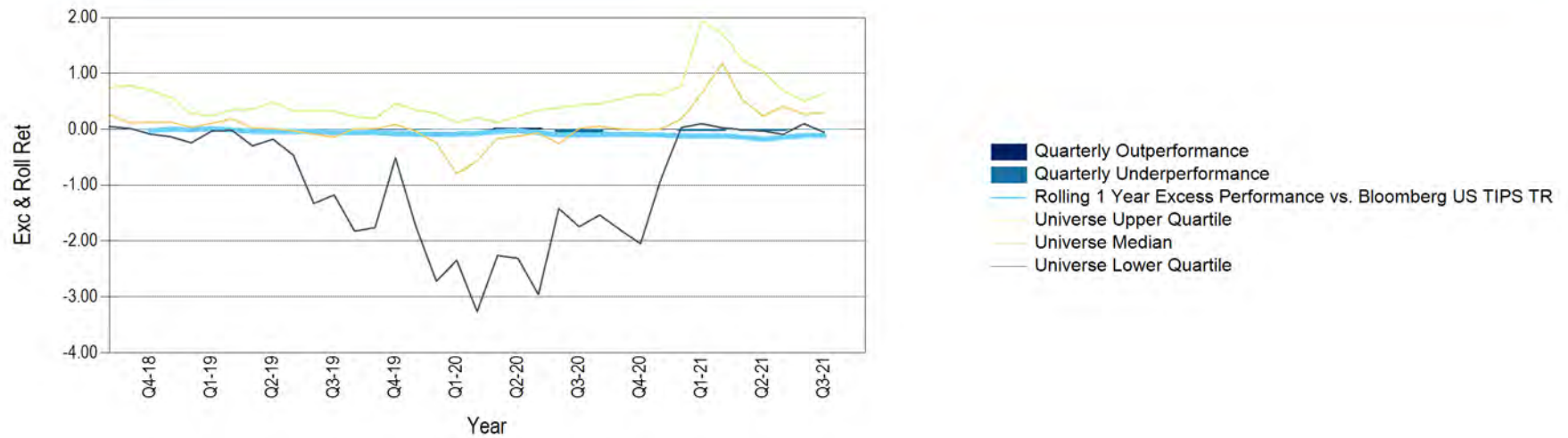
# Client ABC FUND O



# Client ABC

## FUND O

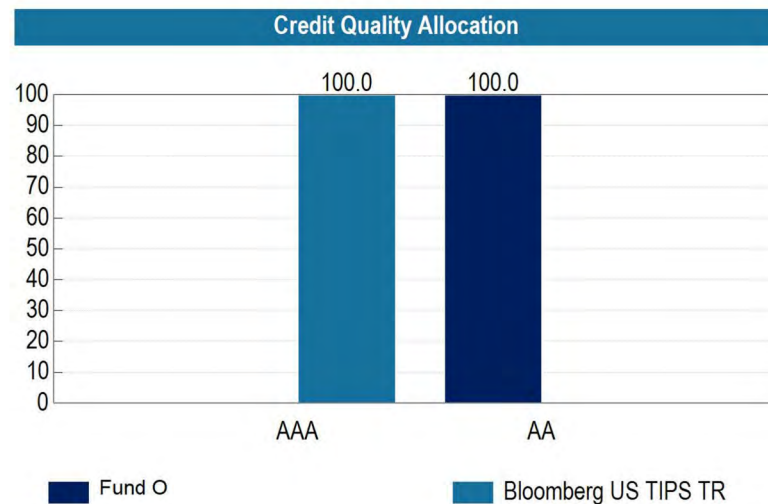
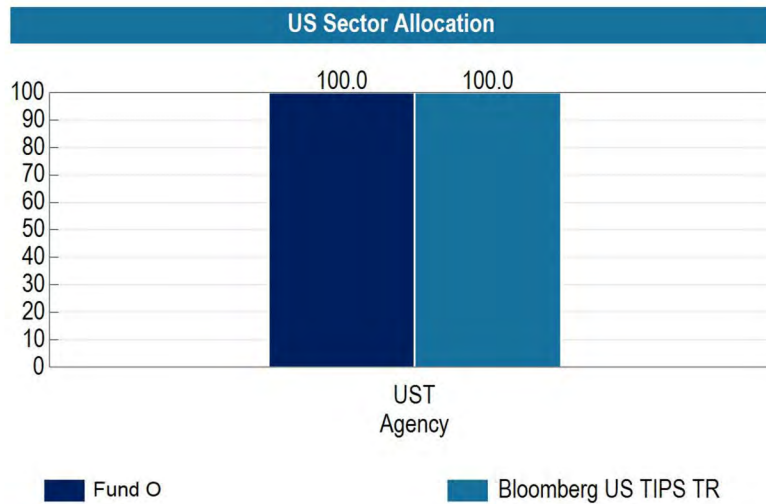
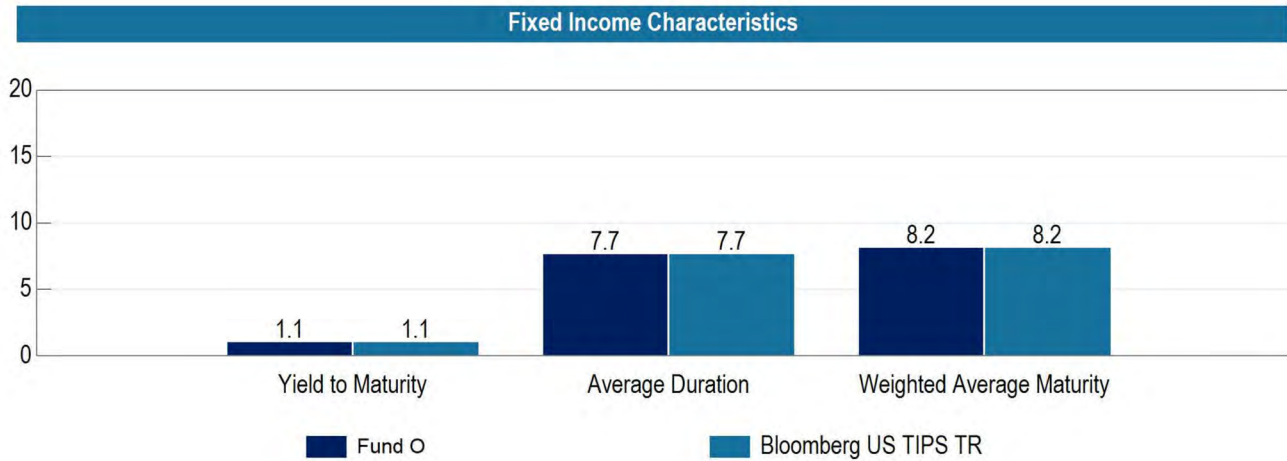
Annualized Excess Performance



eV US TIPS / Inflation Fixed Inc Gross Return Comparison

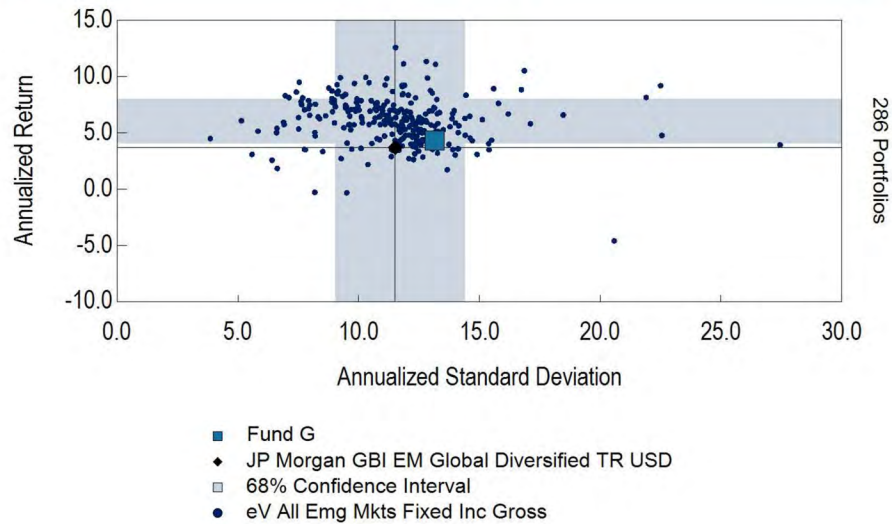


# Client ABC FUND O

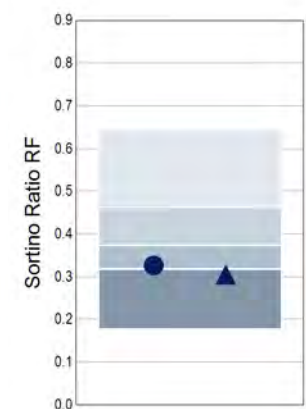
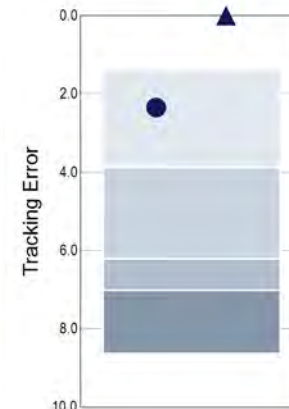
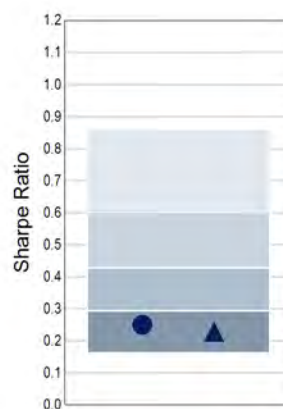
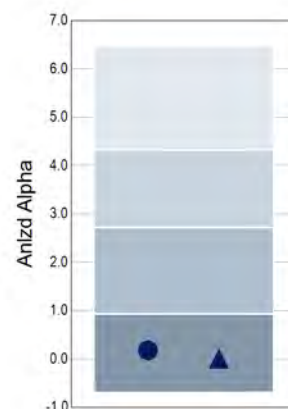
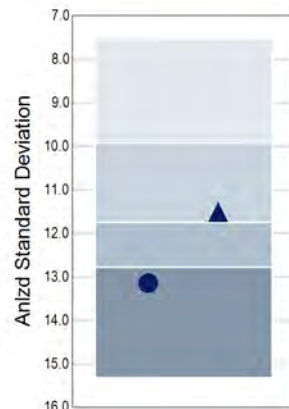
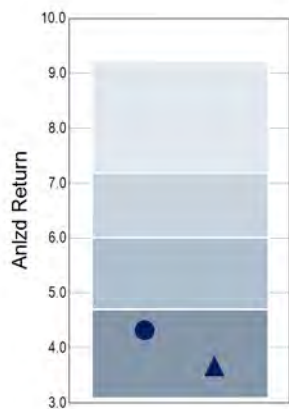
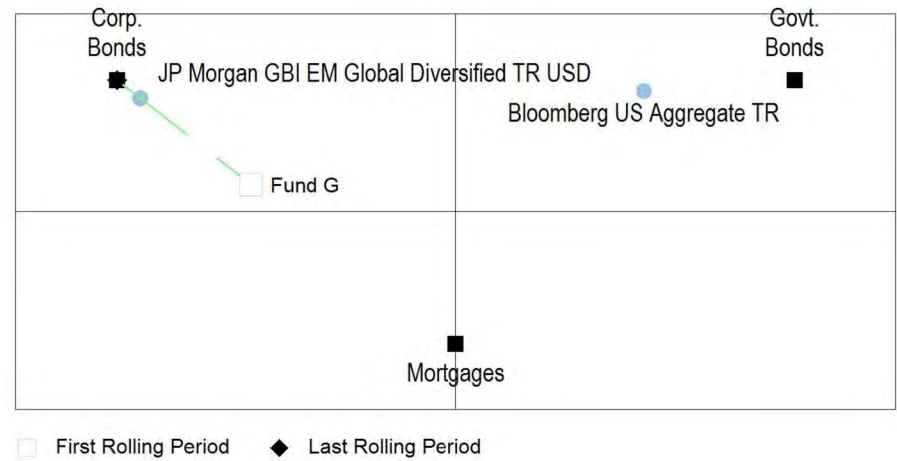


# Client ABC FUND G

3 Year Risk Return



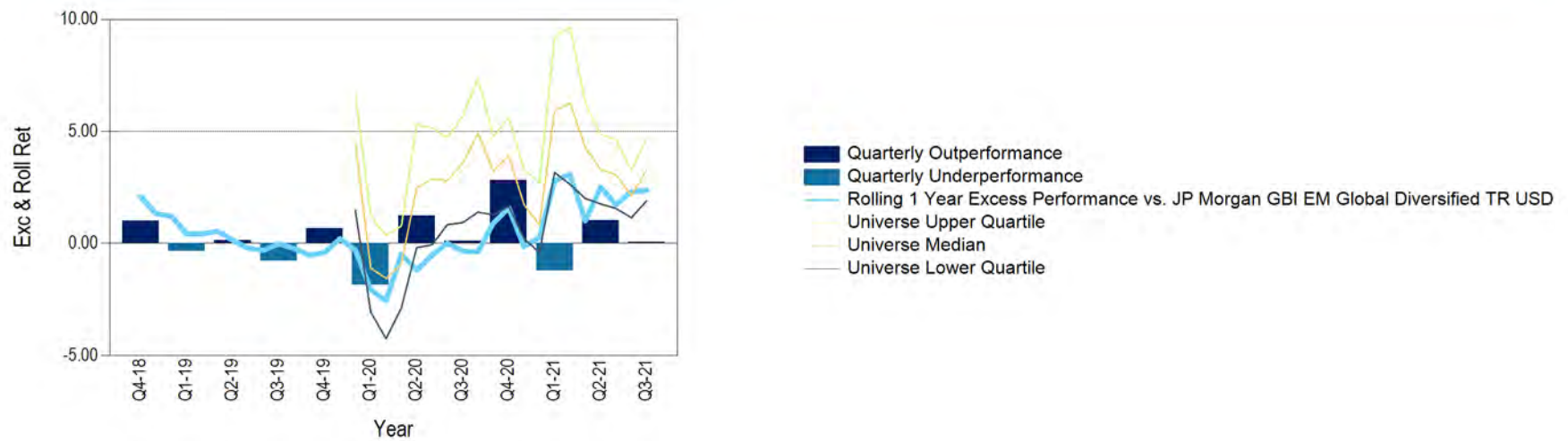
3 Year Style Map



# Client ABC

## FUND G

### Annualized Excess Performance

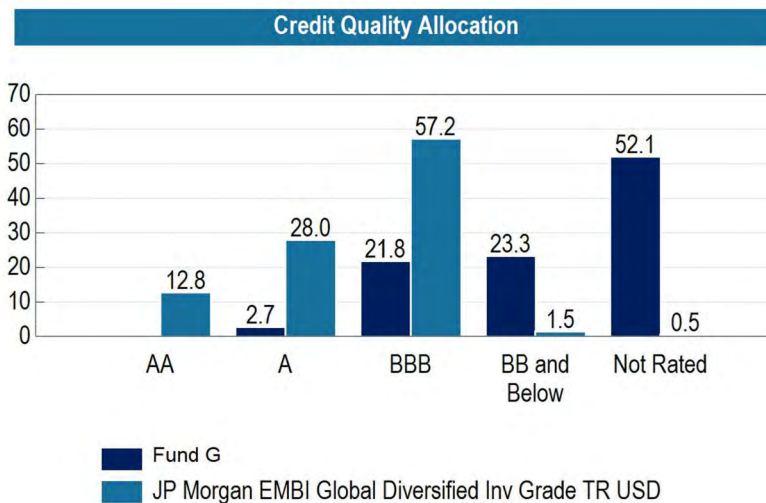
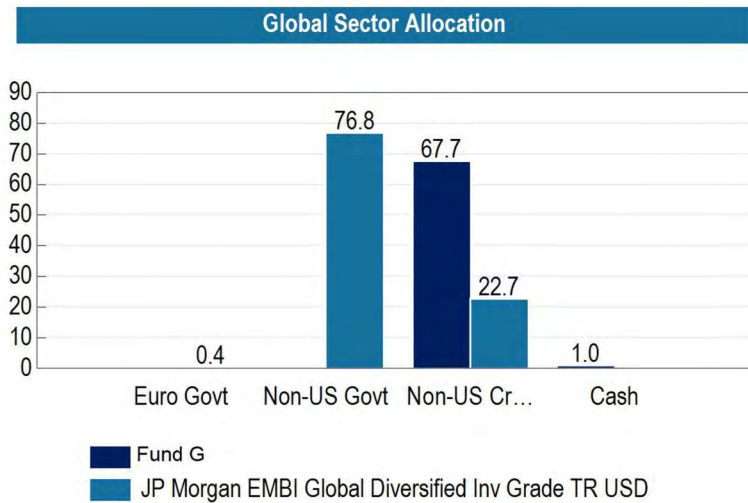
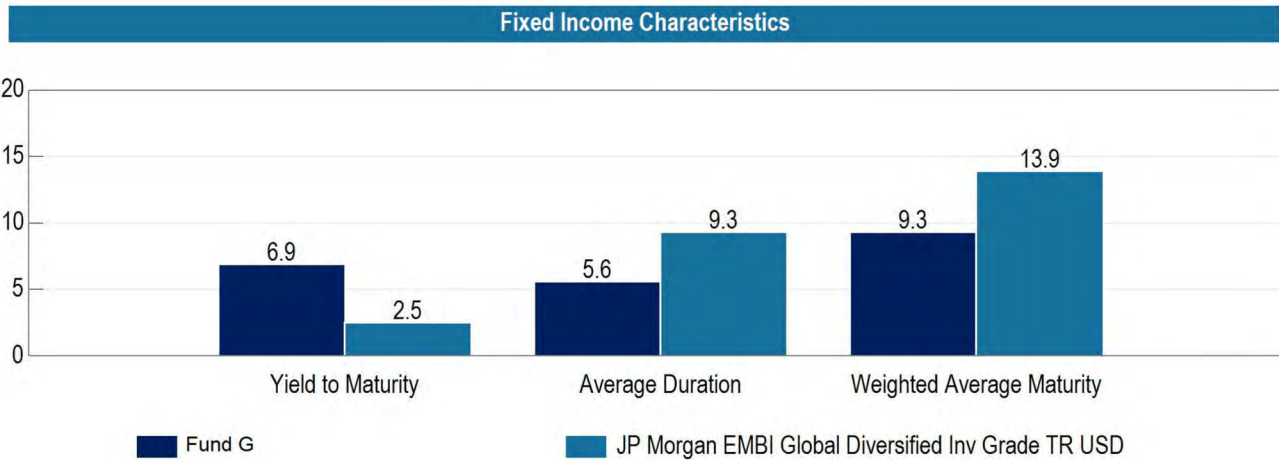


### eV All Emg Mkts Fixed Inc Gross Return Comparison





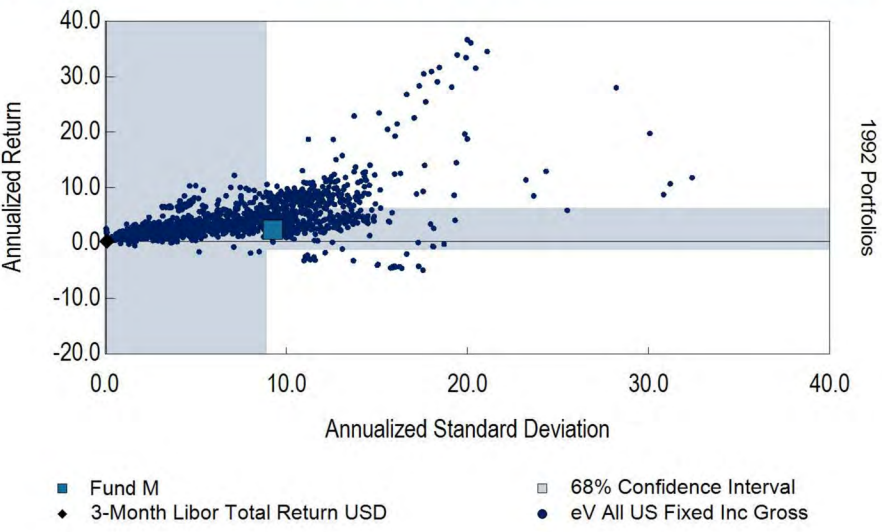
# Client ABC FUND G



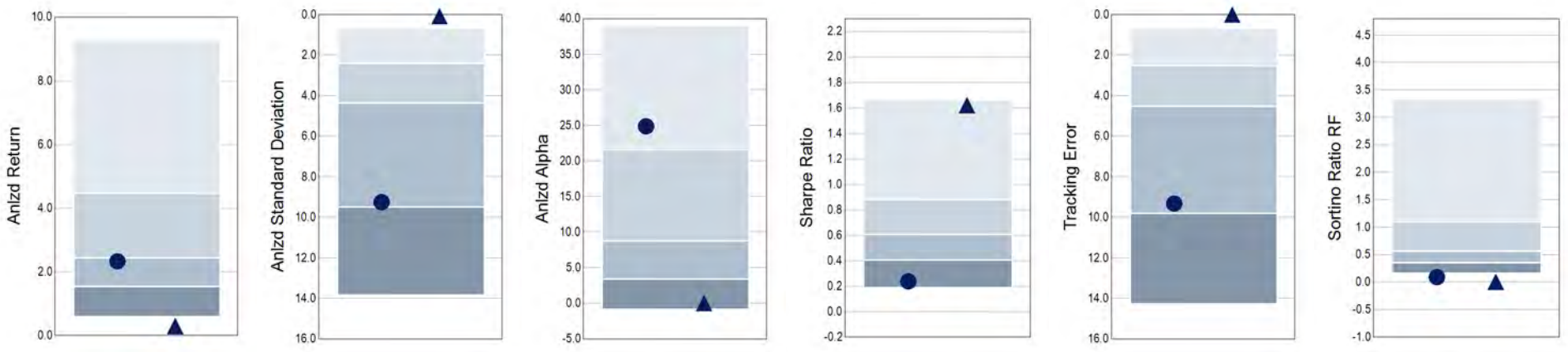
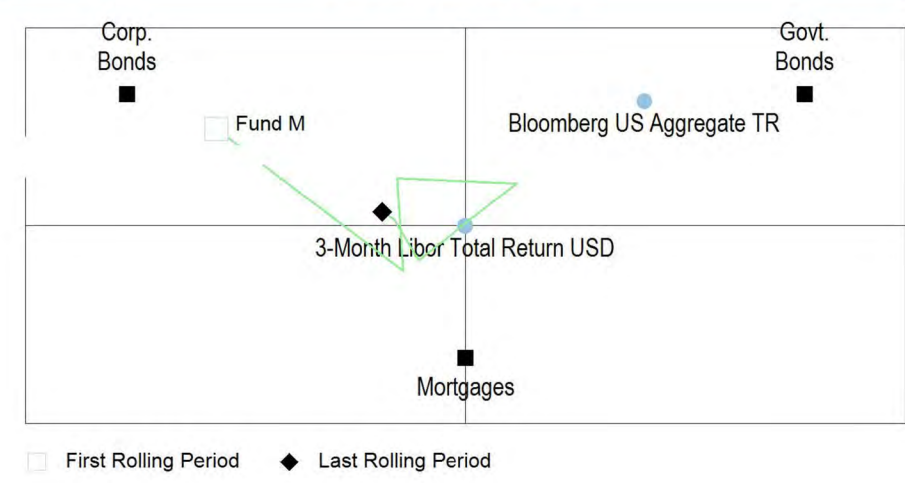
# Client ABC

## FUND M

Since Inception Risk Return



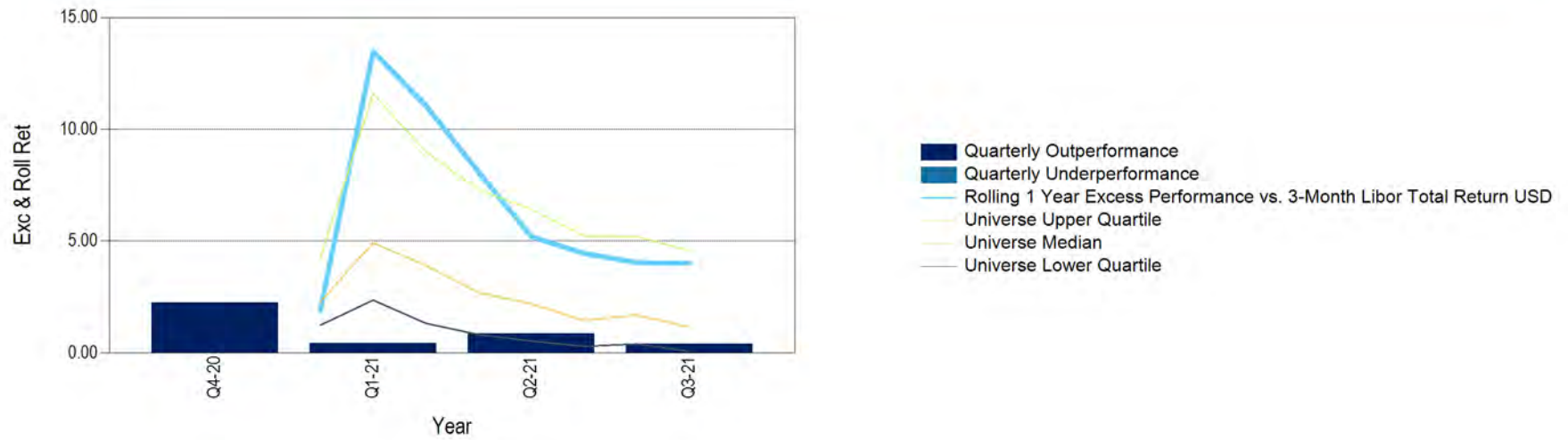
Since Inception Style Map



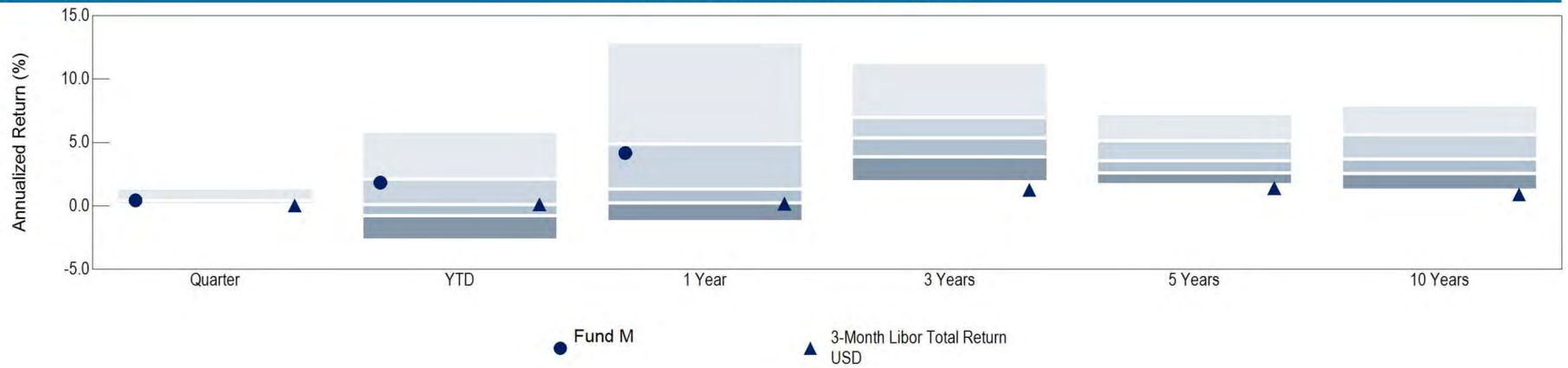
# Client ABC

## FUND M

Annualized Excess Performance



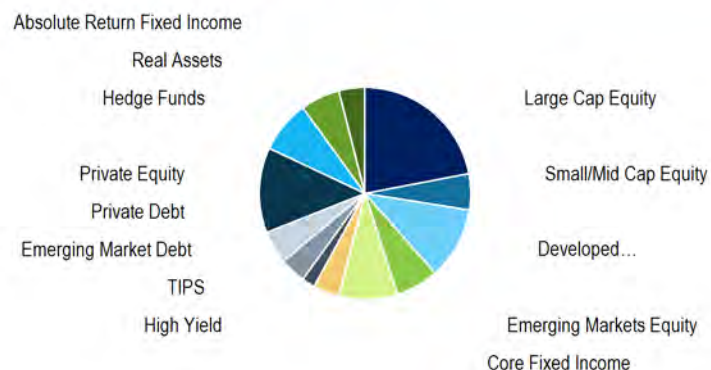
eV All US Fixed Inc Gross Return Comparison



# Client ABC

## FUND M

### Target Allocation



### Top Holdings as of September 30, 2021

GRIFOLS ESCROW ISSUER S A U	13.1%
2 YEAR TREASURY NOTE FUTURE DEC 21	7.9%
10 YEAR TREASURY NOTE FUTURE DEC 21	5.4%
EURO BOBL FUTURE DEC 21	4.3%
ULTRA 10 YEAR US TREASURY NOTE FUTURE DEC 21	3.3%
5 YEAR TREASURY NOTE FUTURE DEC 21	3.0%
GRIFOLS ESCROW ISSUER S A U	3.0%
EURO BUND FUTURE DEC 21	2.0%
UNITED STATES TREASURY BILLS 0.03617%	1.5%
EURO SCHATZ FUTURE DEC 21	1.3%

### Fund Information as of September 30, 2021

Fund Name	PAYDEN ABSOLUTE RETURN BOND SI
Ticker	PYAIX
Morningstar Category	Nontraditional Bond
Benchmark	3-Month Libor Total Return USD
Expense Ratio	0.5%
Fund Assets (\$mm)	880.3
Share Class Inception Date	11/6/2014
Manager Tenure	7

### Credit Quality as of September 30, 2021

AAA	8.0%
AA	5.0%
A	7.0%
BBB	26.0%
BB	19.0%
B	10.0%
Below B	0.0%
Not Rated	25.0%

### Maturities as of September 30, 2021

1 to 3 Years	4.9%
3 to 5 Years	12.7%
5 to 7 Years	12.1%
7 to 10 Years	26.3%
10 to 15 Years	11.7%
15 to 20 Years	10.4%
20 to 30 Years	13.6%
Greater than 30 Years	0.4%



# GLOSSARY OF INVESTMENT TERMINOLOGY

- **# of Portfolios/Observations<sup>1</sup>**
  - The total number of data points that make up a universe or sample
- **Allocation Index<sup>3</sup>**
  - The Allocation Index measures the value added to (or subtracted from) each portfolio by active management. It is calculated monthly: The portfolio weight allocated to each category from the prior month-end is multiplied by a specified market index return.
- **Asset Allocation Effect<sup>2</sup>**
  - Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.
- **Agency Bonds (Agencies)<sup>3</sup>**
  - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk- high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.
- **Asset Backed Securities (ABS)<sup>3</sup>**
  - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.
- **Attribution<sup>3</sup>**
  - Attribution is an analytical technique used to evaluate the performance of a portfolio relative to a benchmark. A proper attribution highlights where value was added or subtracted as a result of the manager's decisions.
- **Average Effective Maturity<sup>4</sup>**
  - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.
  - For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.
- **Batting Average<sup>1</sup>**
  - A measurement representing an investment manager's history in surpassing an index  
**Formula:** *Divide the number of days (or months, quarters, etc.) in which the manager beat or matched the index by the total number of days (or months, quarters, etc.) in the time period, and multiply that factor by 100.*
- **Brinson Fachler (BF) Attribution<sup>1</sup>**
  - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.



# GLOSSARY OF INVESTMENT TERMINOLOGY

- **Brinson Hood Beebower (BHB) Attribution<sup>1</sup>**
  - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.
- **Corporate Bond (Corp)<sup>4</sup>**
  - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.
- **Correlation<sup>1</sup>**
  - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.
- **Coupon<sup>4</sup>**
  - The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."
- **Currency Effect<sup>1</sup>**
  - The effect that changes in currency exchange rates over time affect excess performance.
- **Derivative Instrument<sup>3</sup>**
  - A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.
- **Downside Deviation<sup>1</sup>**
  - The standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns.  
**Formula:** *Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.*
- **Duration<sup>3</sup>**
  - Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.
- **Equity/Debt/Cash Ratio<sup>1</sup>**
  - The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. a 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).
- **Foreign Bond<sup>3</sup>**
  - A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.
- **Hard Hurdle<sup>5</sup>**
  - A rate of return that, once beaten, allows a fund manager to charge a performance fee on returns above the specified hurdle rate.
- **High-Water Mark<sup>4</sup>**
  - The highest value that an investment fund/account has reached. This term is often used in the context of fund manager compensation, which is performance-based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.



# GLOSSARY OF INVESTMENT TERMINOLOGY

- **Hurdle Rate<sup>4</sup>**
  - The minimum rate of return on an investment required for a manager to collect incentive fees from the investor, which is usually tied to a benchmark..
- **Interaction Effect<sup>2</sup>**
  - The Interaction Effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with either effect.
- **Median<sup>3</sup>**
  - The value that exceeds one-half of the values in a population and that is exceeded by one-half of the values. The median has a percentile rank of 50.
- **Modified Duration<sup>3</sup>**
  - The percentage change in the price of a fixed income security that results from a change in yield.
- **Mortgage Backed Securities (MBS)<sup>3</sup>**
  - Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages..
- **Municipal Bond (Muni)<sup>4</sup>**
  - A debt security issued by a state, municipality or county to finance its capital expenditures.
- **Net Investment Change<sup>1</sup>**
  - The change in an investment after accounting for all Net Cash Flows.
- **Performance Fee<sup>4</sup>**
  - A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.
- **Policy Index<sup>3</sup>**
  - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in the investment policy statement.
- **Price to Book (P/B)<sup>4</sup>**
  - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".
- **Price to Earnings (P/E)<sup>3</sup>**
  - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).
- **Price to Sales (P/S)<sup>4</sup>**
  - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.
- **Quartile<sup>3</sup>**
  - One of four segments of a distribution. The top quartile consists of observations that rank from 1 to 25, the second quartile consists of observations that rank between 25 and 50, etc.
- **Rank<sup>3</sup>**
  - The relative position of a single observation in a larger population. Universe rankings range from 1 to 100, with 1 being the best and 100 the worst.



Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net

# GLOSSARY OF INVESTMENT TERMINOLOGY

- **Return on Equity (ROE)<sup>4</sup>**
  - The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.
- **Selection (or Manager) Effect<sup>2</sup>**
  - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect: The larger the sector, the larger the effect, positive or negative..
- **Soft Hurdle<sup>5</sup>**
  - A rate of return that, once beaten, allows a fund manager to charge a performance fee based on the entire annualized return..
- **Tiered Fee<sup>1</sup>**
  - A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first \$10M invested, 0.90% on the next \$10M, and 0.80% on the remaining balance).
- **Total Effect<sup>2</sup>**
  - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.
- **Total Return<sup>1</sup>**
  - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over the time period.
- **Universe<sup>3</sup>**
  - The list of all assets eligible for inclusion in a portfolio, or group of portfolios eligible for inclusion in a distribution.
- **Upside Deviation<sup>1</sup>**
  - Standard Deviation of Positive Returns.
- **Weighted Average Market Cap<sup>4</sup>**
  - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500..
- **Yield (%)<sup>3</sup>**
  - The current yield of a security is the current indicated annual dividend rate divided by current price
- **Yield to Maturity<sup>3</sup>**
  - The discount rate that equates the present value of cash flows, both principal and interest, to market price





# GLOSSARY OF INVESTMENT TERMINOLOGY

## RISK STATISTICS

- **Alpha**
  - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.
- **Alpha Jensen**
  - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.
- **Annualized Excess Return Over Benchmark**
  - Annualized fund return minus the annualized benchmark return for the calculated return.
- **Annualized Return**
  - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12-month time span
- **Beta**
  - Measure the volatility of systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance
- **Information Ratio**
  - A measure of the risk adjusted return of a financial security, asset, or portfolio  
**Formula:**  
*(Annualized Return of Portfolio - Annualized Return of Benchmark) / Annualized Standard Deviation(Period Portfolio Return - Period Benchmark Return). To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.*
- **R-Squared**
  - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.
- **Sharpe Ratio**
  - A measure of the excess return or risk premium per unit of a risk in an investment asset or trading strategy.  
**Formula:**  
*Annualized Return of Portfolio - Annualized Return of Risk Free) / Annualized Standard Deviation (Portfolio Returns)*
- **Sortino Ratio**
  - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.  
**Formula:**  
*Calculation Average (X-Y)/Downside Deviation (X-Y) \* 2 Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)*
- **Standard Deviation**
  - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.  
**Formula:**  
*(Annualized Return of Portfolio - Annualized Arithmetic Average of the Portfolio Returns) Squared / The number of periods- 1)*



Source: InvestorForce

# GLOSSARY OF INVESTMENT TERMINOLOGY

## RISK STATISTICS

### ▪ Tracking Error

- Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

**Formula:**

Tracking Error = Standard Deviation (X-Y) \*  $\sqrt{(\# \text{ of periods per year})}$

Where X = periods portfolio return and Y = the period's BM return

For monthly returns, the periods per year = 12

For quarterly returns, the periods per year = 4

### ▪ Treynor Ratio

- A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility

**Formula:**

(Portfolio Average Return - Average Return of Risk-Free Rate)/Portfolio Beta

### ▪ Up/Down Capture Rati

- A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

**Upside Capture:**

*Total Return (Fund Returns) / Total Returns (BM Return) when Period Benchmark Return is  $\geq 0$*

**Downside Capture:**

*Total Return (Fund Returns) / Total Returns (BM Return) when Benchmark Return  $< 0$*



# DISCLAIMERS & DISCLOSURES

Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

NEPC’s preferred data source is the plan’s custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.

All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

The opinions presented herein represent the good faith views of NEPC as of the date of this presentation and are subject to change at any time. Neither fund performance nor universe rankings contained in this report should be considered a recommendation by NEPC.

This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv





PROPRIETARY & CONFIDENTIAL



# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board: MWRA

Name of Investment Manager: NEPC, LLC

## Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

## PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

**PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.**

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.



9191034

## COMPENSATION

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?

No  Yes

(2) If **yes**, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If **yes**, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If **yes**, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If **yes**, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



(6) If **yes**, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

Additional Pages Attached:  No  Yes

(7) If **yes**, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

Additional Pages Attached:  No  Yes

(8) If **yes**, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First: Michael Last: Manning Suffix:

Title of Authorized Individual: Managing Partner

Signature of Authorized Individual: 

Date Signed: 11/28/2023



# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

Please print or type all entries in blue or black ink.

## 1. Retirement Board

Retirement Board to which proposal is being submitted: MWRA

## 2. Service Provider

Business Name: NEPC, LLC

Address: 255 State Street

City: Boston

State: MA

Zip: 02109

Services Being Proposed: Investment Consulting Services

Dates of Services (MM/DD/YYYY)

From: TBD

To: TBD

## 3. Individual Submitting Proposal

Name, First: Michael

Last: Manning

Suffix:

Title: Managing Partner

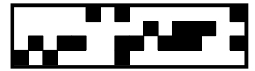
The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature:

Date:

11/28/2023





# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name: MWRA EMPLOYEES' RETIREMENT SYSTEM

Name of Retirement Board: MWRA Employees' Retirement Board

## 1. Company/Entity Information:

Company/Entity Name: NEPC, LLC

CRD# (If Applicable): 110562

Address: 255 State Street

City: Boston

State: MA

Zip: 02109

Country: United States

Phone: (617) 374-1300

Fax: (617) 374-1313

URL: www.nepc.com

## 2. Contact Information:

Name, First: Sebastian

Last: Grzejka, CAIA

Suffix:

Title: Partner

Department: Investment Consultant

Phone: (617) 374-1300

Fax: (617) 374-1313

Email: SGrzejka@nepc.com

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City:

State:

Zip:

Country:



# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

Please print or type all entries in blue or black ink.

## 1. Vendor/Board Information

Name of Company/Entity: NEPC, LLC  
Name of Fund: MWRA Employees' Retirement System  
Retirement Board: MWRA Employees' Retirement Board

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First: Michael Last: Manning Suffix:   
Title: Managing Partner  
Signature: *Michael P. Manning* Date: 11/28/2023



# MWRA Employees' Retirement System

## Investment Consultant Services

12/1/23 / Julian Regan, Senior Vice President

November 30, 2023

Carolyn Russo, Executive Director  
MWRA Retirement System  
2 Griffin Way  
Chelsea, MA 02150

**Re: Investment Consultant Services**

Dear Ms. Russo:

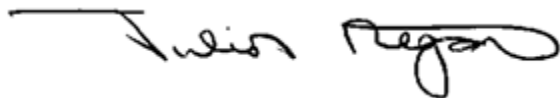
Segal Marco provides expert advice to institutional clients whose assets total over \$600 billion. We specialize in advising jointly trustee, governmental and public agency plans, including retirement systems governed by applicable provisions of Chapter 32 of the General Laws of Massachusetts. Our proposed team includes experts, whose experience includes advising multiple public retirement systems, serving as public sector executive directors and regulators, developing asset allocation strategies, investment policies and managing risk. Our team members have also served in financial management roles in state government authorities, including in Massachusetts. Our experience providing similar services to public pension funds places us in a strong position for this assignment due to our:

- **Long History of Helping Public Sector Clients:** Segal Marco has been providing investment-consulting services since our inception in 1969. We consult to 87 public sector plans representing \$110 billion in combined plan assets.
- **Broad Investment Expertise.** Our technical resources and capabilities extend beyond investments to include expertise in asset/liability studies, governance and policy, risk oversight, rebalancing, compliance, and regulatory and legislative matters.
- **Research-Driven Methodology and Proven Results.** We maintain research teams dedicated exclusively to research of capital markets and investment managers, resulting in success for our clients' programs.
- **Independence and Stability.** Our status as an independent firm owned by employees enables us to provide unbiased consulting, as distinct from competitors who are influenced to meet expectations of public earnings announcements.
- **Proactive Education of Public Sector Clients.** Through publications, webinars, and videos, we share our insights and keep our clients informed of the latest news and trends. Our expertise is evidenced by our development of NCPERS Best Governance Practices for Public Retirement Systems, presentations to Massachusetts Association of Contributory Retirement Systems (MACRS), and publications for the IFEBP, among other groups.
- **ESG Integration; Diversity, Equity and Inclusion.** We integrate Environmental, Social and Governance (ESG) into our service, vote proxies and engage public companies on board diversity, executive compensation and a range of issues.

- **Senior-Level Account Attention.** Our consulting team has direct experience developing investment policy statements for governmental and public plans, as well as prior financial management experience.
- **Competitive fees.** The firm's overall resources and centralized research allows Segal Marco to be efficient and pass savings on to our clients. Recognizing the increasing pressure on public agency budgets in the aftermath of COVID-19, we are in a strong position to offer the System a cost-effective arrangement.

Thank you again for considering us for this important assignment and the opportunity to work with the System. If you have any questions or need additional information regarding our proposed services and related fees, please feel free to reach out at your convenience. We look forward to participating in the next phase of your procurement process.

Sincerely,

A handwritten signature in black ink that reads "Julian Regan". The signature is written in a cursive style with a long horizontal line extending to the left.

Julian Regan  
Senior Vice President  
Public Sector Market Leader

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# Proposal Certification

*By responding to this Request for Proposals, the Investment Consultant agrees and certifies as follows:*

- That the selected firm and the staff providing services to the System is knowledgeable and in compliance with the provisions of Chapter 32 of the general Laws, and with 840 CMR and will remain so for the duration of any agreement;*

Segal Marco agrees and certifies.

- That the selected firm and staff providing services to the System are aware of the requirements of the Massachusetts Open Meeting Law, Public Records Law, and Conflict of Interest Law and will remain so for the duration of the agreement; and*

Segal Marco and its proposed staff are aware of these requirements and will remain so for the duration of the agreement.

- That the Consultant assigned to the System by and on behalf of the selected firm is a registered investment adviser as defined in the Investment Advisers Act of 1940, and will remain so for the duration of the agreement.*

Segal Marco is a registered investment adviser as defined by the Investment Advisors Act of 1940 and will remain so for duration of the agreement.

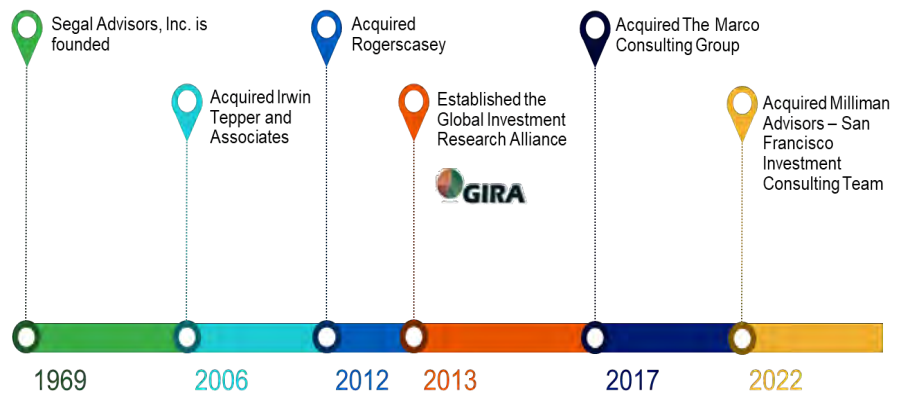
# Proposal Questionnaire

Each Respondent is required to provide the following information in regard to the firm and its representatives. To avoid an unacceptable rating, do not skip questions; use “None” or “N/A” where applicable.

## I. Background

A. Please provide a brief history of the firm.

Segal Advisors, Inc. d/b/a Segal Marco Advisors (“Segal Marco”) was established in 1969 when our parent company, Segal, saw a need to provide independent and unbiased investment consulting advice to retirement programs. Segal Marco provides investment solutions to institutional investors, including government, corporate and multi-employer plans, endowments and foundations, and non-profit operating pools.



B. Please identify the location of the firm’s headquarters and branch offices.

We are headquartered in New York City with offices in the following locations:

<b>Atlanta, GA</b> 400 Galleria Parkway, Suite 1470 Atlanta, GA 30339 # of Staff: 6	<b>Boston, MA</b> 116 Huntington Avenue 8 <sup>th</sup> Floor Boston, MA 02116-5744 # of Staff: 9	<b>Braintree, MA</b> 25 Braintree Hill Office Park Suite 103 Braintree, MA 02184 # of Staff: 4
<b>Chicago, IL</b> 550 W. Washington Blvd. Suite 900 Chicago, IL 60606-1724 # of Staff: 44	<b>Cleveland, OH</b> 1300 East Ninth Street Suite 1900 Cleveland, OH 44114-1593 # of Staff: 5	<b>Denver, CO</b> 7951 E. Maplewood Avenue Suite 327 Greenwood Village, CO 80111-4774 # of Staff: 3
<b>Hartford, CT</b> 30 Waterside Drive, Suite 300 Farmington, CT 06032-3069 # of Staff: 3	<b>New York, NY (Headquarters)</b> 333 West 34 <sup>th</sup> Street New York, NY 10001-2402 # of Staff: 34	<b>Toronto, ON</b> 45 St. Clair Avenue, West Toronto, ON M4V 1K9 # of Staff: 4
<b>Washington, DC</b> 1800 M Street, NW Suite 900S Washington, DC 20036-5880 # of Staff: 1		



In addition, we have an employee located in Dublin, Ireland that is research-focused with an emphasis on United Kingdom and Europe based investment managers.

*C. Please describe the ownership structure of the entity and the number of employees.*

Segal Marco is the investment consulting arm and a wholly owned subsidiary of Segal, a privately held HR and Benefits Consulting corporation owned entirely by its active senior employees including employees of Segal Marco. Segal is comprised of three divisions as summarized below:



Our teams help a wide range of industries. No matter who you are, we can assist you with:

Administration and  
Technology  
Consulting  
Benefit Audit  
Solutions  
Compensation and  
Career Strategies  
Compliance

Health and Welfare  
Benefits  
HR and Benefits  
Technology  
Insurance  
Organizational  
Effectiveness  
Retirement Benefits

Benefits Communication  
Communication Strategy  
Personalized Benefit  
Statements  
Surveys and Focus Groups  
Website and Portal Design

Advisory Investment Solutions  
Corporate Governance  
and Proxy Voting  
Defined Contribution  
Consulting  
Discretionary Consulting



**Not any solution—your solution. Personalized advice and help.**

*D. Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc.*

We have no such relationships.

*E. Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.*

Segal Marco Advisors possesses direct experience working with state and local government entities in the Commonwealth of Massachusetts, including with systems governed by applicable sections of MGL Chapter 32. Nationally, we interact with public plan officials through organizations such as the National Conference on Public Employee Retirement Systems (NCPERS), National Association of State Retirement Administrators (NASRA) and Council on Institutional Investors (CII), among others.

### Public Sector Leadership

Our parent company, Segal currently performs health, retirement and/or defined contribution consulting for 36 states, including entities in the state of New York, the 10 largest U.S. cities, the District of Columbia, the U.S. Virgin Islands and Puerto Rico. Segal Marco Advisors provides investment consulting to a number of public retirement systems governed by MGL Chapter 32, as well as to governmental plans nationally.

## Massachusetts-based Public Fund Clients

Our Massachusetts-based public and quasi-public retirement system clients include the following:

- Bristol County Retirement System
- Cambridge Retirement Board
- City of Holyoke, MA Retirement Board
- Danvers Contributory Retirement System,
- Massachusetts Bay Transportation Authority (MBTA) Retirement Fund
- New Bedford Retirement Board
- Norfolk County Retirement System (Corporate Governance and Proxy Voting Services only)

*F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity's areas of greatest expertise.*

### Traditional Investment Consulting Services - 3(21)

<p><b>Asset Allocation, Investment Structure and Policy Design</b></p> <ul style="list-style-type: none"> <li>• Confirm objectives and risk parameters</li> <li>• Conduct efficient frontier modeling</li> <li>• Determine specific asset allocation targets/ranges</li> <li>• Spending policy analysis</li> <li>• Determine risk tolerance</li> <li>• Establish active/passive mix</li> <li>• Determine types and numbers of managers</li> <li>• Identify appropriate benchmarks</li> </ul>	<p><b>Performance Reporting, Analysis, and Manager Monitoring</b></p> <ul style="list-style-type: none"> <li>• Monthly and quarterly reporting</li> <li>• Assess performance against peers and benchmarks</li> <li>• Provide risk analysis</li> <li>• Present capital markets review</li> <li>• Provide insight into manager skill through performance attribution and risk decomposition analysis</li> <li>• Benchmark managers to analyze style</li> </ul>
<p><b>Investment Manager Evaluation and Selection</b></p> <ul style="list-style-type: none"> <li>• Establish selection criteria</li> <li>• Evaluate existing managers</li> <li>• Identify candidates</li> <li>• Provide quantitative/qualitative data on managers</li> <li>• Intensive review of finalists</li> <li>• Retain or transition managers and establish manager guidelines</li> <li>• Provide transaction cost analysis</li> <li>• Negotiate fees</li> </ul>	<p><b>Non-Traditional Investments</b></p> <ul style="list-style-type: none"> <li>• Structure investments in non-traditional asset classes including private equity, hedge funds, and hard assets such as timber and real estate</li> <li>• Evaluate appropriate vehicles, strategies, and styles in each area</li> <li>• Perform business due diligence</li> <li>• Provide investment process due diligence</li> <li>• Quarterly reporting and analysis</li> <li>• Ongoing monitoring</li> </ul>
<p><b>Asset/Liability Analysis</b></p> <ul style="list-style-type: none"> <li>• Discuss capital markets</li> <li>• Construct the liability model</li> </ul>	<p><b>Ongoing Program Monitoring and Consulting</b></p>

- Select candidate portfolios
- Prepare asset/liability simulations
- Analyze results and recommend asset allocation

- Respond to questions and issues raised by staff and board
- Identify opportunities for consideration by board
- Provide independent research opinions and papers
- Provide continuous monitoring of managers and overall program

## Areas of expertise

Segal Marco is a recognized leader in providing investment consulting services to retirement and post-retirement funds and maintains a specialty public sector group who meet regularly to discuss a variety of topics such as market trends and current themes affecting public pension plans. However, we do not operate in silos, but instead have a committed focus to our clients both ERISA and non-ERISA plans, as well as endowments and foundations. This allows us to share best practices and lessons learned across the marketplace with all clients. We are not limited by one viewpoint. Additionally, unlike other competitors who are exiting the business or shifting their goals due to corporate realignments, Segal Marco remains committed to the unique needs of the public sector market and looks forward to moderate growth in the area

Finally, our independent status enables us to provide unbiased consulting, which differentiates us from competitors whose decisions are influenced by their corporate ownership and alliances. Additionally, unlike other competitors who are exiting the business or shifting their goals due to corporate realignments, Segal Marco remains committed to the unique needs of the public fund market.

*G. Please identify the firms future goals, particularly how such goals may pertain to accepting new client business and overall quality of client service.*

We have a controlled growth strategy that adds new consultants for every 10 to 12 client relationships. We continue to be directed by our guiding philosophy-- to operate in a clear and transparent fashion, developing a mutual rewarding partnership not only with Staff but each client Board as well. We actively engage in reviewing our consultants' book of business while promoting and assessing growth of our business. We also seek to develop our consultants through education training and mentoring. While we do not have a specific limitation on the number of clients we will accept, our overall goal is to ensure all clients receive the level and frequency of consulting support needed to ensure a mutually rewarding relationship. This primary goal subsequently impacts a consultant's overall client assignments

## II. Operations

*A. Please indicate whether accounts are serviced by teams or individual consultants.*

Accounts are serviced by a consulting team.

*B. Please indicate the average number and size of accounts per consultant or team*

Our consultants work with on average 8-12 engagements, but this number varies according to client need and plan complexity.

*C. Please indicate the largest number of accounts serviced by any consultant or team.*

A consultant may at a given time service a number of accounts that may exceed the average. In these cases, however, a number of the plans are typically of modest size, so service requirements are modest, allowing us to maintain high quality, cost-effective service.

*D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.*

Our approach is very collaborative and involves a close working relationship with clients. This begins with the initial evaluation of each client's investment program, which ultimately seeks to:

- Define the roles and expectations of each party involved with portfolio decision-making
- Reconcile the policy's stated return objective and with the current asset allocation's expected return and volatility
- Assess liquidity needs and other portfolio constraints
- Determine the tolerance for risk; identify sources of unknown or uncompensated risk
- Evaluate each composite portfolio's investment structure and the individual investment managers within the asset mix
- Assess the appropriateness of total fund, composite and individual strategy performance benchmarks.

We also have numerous controls in place to ensure the accuracy and consistency of our work and advice deliverables. Our internal quality control standards require a three-stage production and review process of the work performed. We assign a consulting team to every client account to assure that a consultant familiar with the account will always be available for meetings and have in place a checks and balances system whereby there are at least two professionals overseeing and monitoring the work being produced for the account. Through this client service team, the firm makes checks and balances for quality control an organic feature of the consulting process. All meetings, significant phone calls, and other contacts with the client are documented in file memoranda that are shared with the team. In the course of keeping one another informed about client developments, the team members go through an automatic quality-review procedure.

### **Quality Control**

Segal Marco's Quality Committee meets quarterly to report on quality control issues. In addition, we maintain a number of committees populated by various Segal Marco employees and management personnel that provide oversight and quality control with respect to various aspects of our business. We maintain review mechanisms of client programs to ensure they adhere to Segal Marco policies, including the Manager Review Committee Meeting and Fiduciary Investment Review Committee. Our Chief Compliance Officer (CCO) is responsible for

monitoring and enforcing employee compliance. The CCO reports to the Board of Directors of Segal Marco to document compliance.

*E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.*

100% of our services are related to investment consulting. We do offer discretionary consulting as a 3(38) advisor as well.

*F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts "soft dollars" as a method of payment for services provided.*

Not applicable for Segal Marco.

*G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.*

We are aware of no potential or actual conflict of interest.

*H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.*

Not applicable for Segal Marco.

*I. Please indicate whether the entity sells or brokers investment vehicles.*

Not applicable for Segal Marco.

*J. Please indicate whether the entity actively manages the investment of accounts.*

Our discretionary services team does provide investment management as a 3(38) advisor.

*K. Please indicate whether the firm accepts or pays referral or finder's fees.*

Not applicable for Segal Marco.

### **III. Investment Analysis Approach**

*A. Please outline the entity's process for:*

- 1. The development of the client's overall investment policy as well as investment policy for specific asset classes.*

We take a holistic approach to helping clients develop investment policies and objectives, one that encompasses the asset allocation, liability structure and cost structure of sponsoring a health benefits plan. We create a model (using our proprietary software) of the Plan's liabilities

and cash flows to demonstrate the impact of various investment strategies. Our investment policy recommendation process involves three phases:

- Understanding the Plan’s liabilities and liquidity needs
- Determining client risk tolerances
- Implementing an effective and efficient strategy.

## *2. The development of client investment objectives.*

Since there are no absolute “right answers” to building a successful investment program, we explain the tradeoffs associated with each investment decision. For example, investment policy discussion issues can include passive versus active management, appropriate asset allocation strategies, style analysis within asset categories, target asset mix, rebalancing methodologies and leveraging cost-saving efficiencies. We work extensively with clients to develop, refine and implement appropriate manager guidelines as part of the written investment policy statement.



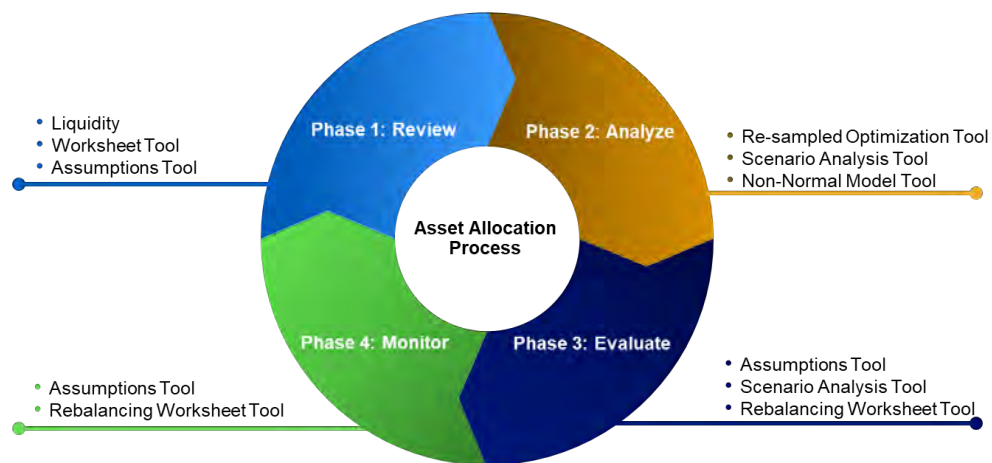
Through the designation of a target asset mix and a target performance benchmark, we define the Fund’s proper asset allocation within an acceptable range of expected risk and return parameters, permissible investment vehicles and management style. Once these issues are clearly defined, we review with the Trustees the current structure of the investment program for external consistency and highlight any observed strengths or weaknesses. In reviewing investment programs, we study the Plan’s cash flow and expense characteristics with the goal of establishing overall investment policy guidelines and performance objectives. The study includes:

- A review of experience reports to understand the Plan’s annual cash flow requirements
- Developing and/or reviewing projections of annual contributions vs. spending and expense disbursements.
- Preparing discussions and analyses which:
  - Describe the risk and return characteristics of various investment categories;
  - Discuss the Plan’s ability to bear the risk associated with portfolios comprising various combinations of asset categories;
  - Address the advantages and disadvantages of alternative ways to divide responsibilities among investment managers; and
  - Provide comment on the advantages and disadvantages of alternative asset classes and specialty managers.

The end product is a draft of investment policy guidelines and our suggestions on management structure, which we present to the Trustees for review, input and adoption. We view the

investment policy statement as a living document that should be reviewed at least annually or as a result of any major change to the investment program.

## Approach to Asset Allocation for Defined Benefit Plans



For pension plans, the most crucial issues to consider are the overall objectives coupled with the risk tolerance of the respective plan. We want to understand liability structure, work with the Trustees to establish a risk tolerance, and implement a suitable, diversified, and cost-effective investment strategy. The liability structure dictates the amount of risk it is reasonable to assume in target asset allocation and the allowable investments held therein. In contrast, a Trustee directed annuity plan's investment program will not be informed by liability structure in the same manner. Each of the following steps in our Asset Allocation Process is interactive with the client:

- Explaining our recommended asset classes
- Evaluating possible performance of the portfolios under a variety of economic scenarios based on investment return objectives, risk tolerance, current targets and ranges, and other selected objectives
- Modeling portfolio returns in deterministic scenarios (e.g., where year-by-year asset class relationships are specified and the resultant portfolio performance is determined) or stochastic scenarios (e.g., the model generates 1,000 capital market scenarios that are consistent with specific asset class assumptions)
- Making strategic asset allocation recommendations that include recommended allocations to each asset class
- Reviewing the portfolio each quarter and determining when rebalancing is appropriate
- Reviewing the shorter-term outlooks for each asset class and considering the implementation options, whether long/short or illiquid/liquid structure
- Ensuring our clients are aware of the macroeconomic themes that are important to understand

Mean variance optimization is a useful tool when constructing asset allocation policies but only captures risk as measured by standard deviation (volatility) of the portfolio and does not capture other risks. In our modeling, we focus on creating a diversified investment portfolio that maximizes return for a given level of risk over a 10 year and 20-year period. We then overlay

other risk metrics (such as liquidity risk) to determine the potential impact of additional allocations to alternatives. We use price discovery as much as possible in determining the market's views of risk. In developing risk assumptions, we start by using implied volatility estimates found in option instruments with high liquidity and transaction volume. These estimates may be supplemented with historical and forward-looking adjustments where necessary.

For asset classes that exhibit non-normal return distributions due to illiquidity or absence of an investable index such as closed-end real estate, private infrastructure, and private equity, returns of a representative index are unsmoothed to provide a public market risk equivalency where applicable. The advice we provide is highly customized to reflect each client's unique circumstances and specific portfolio needs. Depending on the outcome of discussions that confirm or revise investment risk/return objectives, the target strategic asset allocation and the portfolio's structural composition, we recommend changes to the:

- Number of managers used in the portfolio to reduce concentration, strategy or manager specific risk or to reduce portfolio complexity, management fees, etc.
- Level of diversification in each composite asset class and sub-asset class portfolio relative to each asset's class full return opportunity set or on the basis of introducing complementary investment approaches
- Total portfolio active risk and where it is taken
- Sector, style, issuer and market capitalization exposures
- Type of vehicle used
- Level of discretion given to individual managers to take non-benchmark risk, invest across multiple sectors or asset classes.

*B. Please describe the entity's asset/liability modeling capability.*

We typically recommend that our retirement system clients conduct detailed asset/liability study every 3 to 5 years to generate more robust, typically stochastic, modeling of the cash flows and multiple paths of potential asset returns to assess probable outcomes. We use our proprietary **Segal Marco Advisors Risk SysTem, SMART** proprietary model for asset liability modeling. Our process starts by getting to know your Plan and performing an in-depth liability and liquidity analysis based on the unique demographics of your Plan. These findings help us define the constraints we use when constructing the investment portfolio and provides us insight on defining the risk tolerances of the Plan. Once this analysis has been completed and discussed with trustees, various asset mix options designed to meet the Plan's objectives are constructed and various stochastic and stress-tested models are discussed and reviewed with the board. The last step is determining the appropriate portfolio structure and implementation, including manager selection.

Our proprietary asset class assumption methodology incorporates a top-down (Capital Asset Pricing Model or "CAPM" reverser optimization) and bottom-up (yield curve for bonds and equity building block for U.S. equities) analysis of asset class characteristics. No single methodology dominates our process, but rather each is used in a system of "checks and balances" as we review historical relationships in the context of future expectations. Risk, return, correlations and yields are projected on a forward-looking basis in equilibrium, *i.e.* irrespective of business



market cycles. In addition to our Risk System, our proprietary asset class assumption methodology incorporates a top-down (Capital Asset Pricing Model or “CAPM” reverse optimization) and bottom-up (yield curve for bonds and equity building block for U.S. equities) analysis of asset class characteristics. No single methodology dominates our process, but rather each is used in a system of “checks and balances” as we review historical relationships in the context of future expectations. Risk, return, correlations and yields are projected on a forward-looking basis in equilibrium, i.e., irrespective of business market cycles.

Our proprietary asset allocation model is based on the concept of an efficient frontier. Segal Marco employs a forward-looking building block methodology that:

- Takes into account current market and economic conditions when building expected return assumptions and risk premiums.
- Analyzes historical data when developing standard deviation assumptions for each asset class as well as the underlying correlation matrix.
- Employs stochastic modeling, generally referred to as Monte Carlo simulation, to ensure that our clients understand the range of possible outcomes, and the probability of their occurrence under various target allocation scenarios.

For modeling expected returns, we primarily utilize a forward-looking approach reflecting current quantitative market data such as:

- Real yields
- Inflation expectations
- Dividend yields
- P/E ratios
- Credit spreads

We continuously monitor asset allocation throughout the year, which includes all elements of our clients’ investment program – investment policy, strategy, manager guidelines, performance, and asset mix – providing proactive recommendations and insights, as appropriate.

### *C. Please define the entity’s investment style analysis.*

Investment managers are grouped into peer groups, and this is typically driven by a variety of factors such as style or capitalization. These classifications are made during the research and due diligence process after it becomes clear what peer group an investment manager belongs. These classifications are also validated through holdings and returns-based analyses as well as through investment programs such as Northfield Analytics, eVestment Alliance and Morningstar Direct. We utilize the following categories:

#### **U.S. Equity:**

- Enhanced Index
- Large Cap Core
- Large Cap Value
- Large Cap Growth
- Mid Cap Core
- Mid Cap Growth

#### **Fixed Income:**

- Convertibles
- Core Fixed Income
- Core Plus Fixed Income
- High Yield
- Inflation Protected / TIPs
- Municipal

#### **Other Categories:**

- Balanced Funds
- Commodities / Gold
- Global Funds
- Infrastructure
- Socially Responsible

- Mid Cap Value
- Small Mid Cap Core
- Small Mid Cap Value
- Small Mid Cap Growth
- Small Cap Core
- Small Cap Value
- Small Cap Growth
- All Cap Core
- All Cap Value
- All Cap Growth
- International Equity
- Enhanced Index
- Developed Core
- Developed Growth
- Developed Value
- Canadian Equity
- Canadian Balanced
- Emerging Markets
- Global Equity
- Small Cap
- Pacific Basin
- Japan
- Short Duration
- Intermediate Duration
- Multisector
- Bank Loans
- Synthetic GIC/Stable Value
- International Fixed Income
- Emerging Debt
- Global Fixed Income
- International Fixed Income
- Hedge Funds (direct and fund of funds)
- Private Equity (direct and fund of funds)
- Private Credit
- REITS
- Real Estate
- Timber

We monitor manager style adherence in three ways:

- **Holdings-based analysis** – Managers’ individual holdings are loaded monthly into our analytical systems, and various financial characteristics are produced for review and further analysis.
- **Returns-based analysis** – Long-term monthly manager returns are subject to regression analysis to determine the “best fit” of passive indices to the data. Deviations from expected exposure are further investigated.
- **Northfield risk analysis** – Individual holdings are entered into sophisticated software that provides a forward-looking prospective into where the manager, or group of managers, is taking risk versus their assigned benchmark. Based on the portfolio’s current holdings, the portfolio’s expected tracking error and source of that tracking error is calculated. This is not only important from the prospective of understanding a manager’s strategy, but also important understanding it over time.

We compare the performance results and risk measures of your Plan, each major asset category, and each investment manager to those of relevant benchmark indices (as specified by the investment policy statement), customized benchmarks and universes of other similar professionally managed accounts.

*D. Please provide a listing of reports routinely supplied to clients.*

We provide quarterly performance reports with monthly “flash” reports in the interim.

E. Please indicate whether the entity provides to its clients written narratives on the managers' performance, portfolio restructuring, guideline discrepancies, style deviations, etc.

Yes.

F. Please describe the software technology, database and analysis tools used in providing services to the client.

We utilize the PARis performance measurement system to produce our performance reports. Performance is typically provided at the total portfolio, asset class, and individual manager level and can be highly customizable to suit our client's needs. We have the ability to aggregate and disaggregate all components of the total portfolio for any time period requested, assuming we have been provided the historical data in question. Performance reports consist of data, charts and narrative analyses, as well as proactive recommendations as needed.

We can provide prior years of performance before our engagement date, but it is wholly dependent on the prior investment consulting firm providing us with the data.

## IV. Manager Search and Due Diligence

A. Please indicate the number of money managers currently being evaluated.

The first column in the table below represents the universe of investment managers to which we have access. The Recommended column shows only the number of products on our Recommend list. Segal Marco monitors the Recommend products on an ongoing basis to ensure that over time they continue to represent our best ideas for client investment. Managers are not charged for inclusion.

Style	Segal Marco Database <sup>1</sup>	Products Broadly Covered <sup>5</sup>	Recommended Products
U.S. Equity	3,663 <sup>2</sup>	731	175
International/Global/ Emerging Market Equity	3,376 <sup>2</sup>	524	136
U.S. Fixed Income	2,490 <sup>2</sup>	831	168
International/ Global Fixed Income	1,361 <sup>2</sup>	168	65
Hedge Funds/GTAA	457	242	84
Private Equity	1,256 <sup>3</sup>	490	203
Hard Assets	995 <sup>4</sup>	551	242
	<b>13,598</b>	<b>3,537</b>	<b>1,073</b>

<sup>1</sup> Individual active products in database. In addition, Segal Marco has access to over 23,000 mutual fund and institutional products via Morningstar Direct & Lipper.

<sup>2</sup> eVestment Alliance data

<sup>3</sup> Venture Economics and Segal Marco data

<sup>4</sup> Includes eVestment Alliance, Prequin and Segal Marco data

<sup>5</sup> Enhanced research familiarity

*B. Please describe the criteria by which the entity decides which managers to evaluate.*

We use a proprietary research model to identify top-tier managers. This process, named Manager Research and Ranking (MR<sup>2</sup>), provides a disciplined approach to due diligence evaluations.

Our manager selection process is anchored by three primary elements:

- Excellent sourcing of best ideas through the leveraging of established industry relationships and networks, and the development and management of an active manager pipeline
- A well-conceived and proprietary due diligence framework (MR<sup>2</sup>) made up of 7 core principle drivers of manager success and subsets of 34 related quantitative and qualitative evaluative factors
- An approval process that incorporates senior cross-functional investment expertise and further reflects high standards of fiduciary governance.



In order to be considered “top tier”, a manager must rank highly in the Seven Principles we deem critical to investment management success.

*C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.*

No investment managers pay a fee or any other type of compensation to be included in Segal Marco’s database. Our manager searches are a continual process of searching for, screening, and evaluating managers to find those with the qualitative and quantitative characteristics critical to successful investment management. Our Alpha Research Group is responsible for investment manager monitoring and the analysis of new manager products and strategies. Our initial manager screening process is typically not connected with any particular search but is, rather, a continual process of searching for, screening, meeting with, and evaluating managers in an attempt to find new and different managers which demonstrate the qualitative and quantitative characteristics critical to successful investment management. Our Alpha Research Group has the goal of achieving the broadest possible coverage of the universe. Manager names are typically sourced through internal research and database screens, client referrals, general industry knowledge, or manager-initiated meetings.

We have a proprietary database where we store our investment manager information in our Client Management System (CMS). Holding manager profiles and our internal research notes and important manager communications, CMS is populated using our MR<sup>2</sup> process (outlined above) and supplemented with information purchased from external databases. Our research group has over a 1,300 meetings per year to gather information on various investment

managers. In addition, we subscribe and has access to several outside manager databases, including:

- **eVestment Alliance and InvestWorks** – Manager databases for traditional asset classes covering well over 1,800 firms and 6,400 products
- **ThomsonONE** – Private Equity manager source with more than 24,000 fund profiles and more than 13,000 firm profiles
- **Preqin** – Real Estate and Infrastructure database with data/profile access to more than 1,000 real estate and 280 infrastructure fund managers
- **Morningstar Direct & Lipper** – Access to more than 23,000 mutual fund and institutional products
- **Northfield Analytics** – Performance attribution and risk assessment to delineate the principal factors contributing to investment return and risk starting at the security level and aggregating to the sector and segment level for items like security selection, sector weighting, income/yield and style.
- **Bloomberg Terminal** – A powerful and flexible platform that provides real-time data, news and analytics.
- **PARIS Performance Metrics** – A sophisticated performance-reporting system developed in-house and now resident with a third-party vendor

The combination of applications described above allows us to monitor, compare and contrast the investment results, styles and capabilities of literally thousands of investment managers, mutual funds and investment products. Our proprietary database includes all types of managers ranging from traditional (all equity and bond styles) to non-traditional (real estate, infrastructure, private equity, private credit, timber, and various types of hedge funds).

We also utilize an approved manager list. Our Recommended managers represent our best ideas in investment management. Management firms are selected through our manager rating process. The monitoring of managers is an ongoing exercise, which involves meetings, conference calls and other points of contact to determine if a rating change is warranted. We have approximately 1000 managers / products on our Recommend list currently. This list is fairly stable, but firms are added or moved among our Recommended, Not Recommended and Sell categories. Being added to the Recommend list requires successful completion of the rigorous process described above with a rating then developed by the assigned analyst team and presented to the Alpha Manager Review Committee for final approval. That Committee, chaired by the head of the Alpha Group, also includes the firm's CEO and CIO. The Committee meets weekly.

*D. Please describe how the due diligence evaluation of investment managers is performed.*

Our manager due diligence process includes a review of various documents provided by the firm, including, but not limited to audited financials, ADV (if applicable), quarterly reports, private placement memorandum, due diligence questionnaire, policies and procedures, disaster recovery policy, valuation policy, and performance information. A fund manager also completes a Segal Marco RFI that requests cash flow data for all predecessor funds, and the performance (IRR, DPI and TVPI) as reported by the fund manager is verified by Segal Marco. All documents

provided by the fund manager are thoroughly reviewed by our research analysts to verify information that was provided verbally, as well as comparing similar information that may be contained in several documents. Part of the due diligence process is to discuss the information contained in these documents with the fund manager, to make sure the information is accurate. The validity of the managers' performance records is verified by combining and comparing information on the quality of composites submitted and actual performance on client accounts with information contained in our database and in managers' marketing materials. In addition, we spot check the managers' actual clients to determine their similarity to reported composites.

We also review SEC Form ADV and look for GIPS compliance and audit statements. We do not independently verify returns presented by managers for marketing purposes; however, in our questionnaires we do request copies of independent performance audits if they are available. We also request independent audit verification and performance attribution, as available from the manager. Also, through ongoing monitoring, Segal Marco maintains relationships with managers in order to monitor the changes in people, philosophy, ownership, consistency, process, style drift, poor performance, and distractions that are likely to affect the money manager's ability to accomplish its objective. Qualitative issues are important because they often are the leading indicators of future underperformance. Our qualitative evaluation is overlaid with our quantitative tools.

*E. Does the firm or consultant maintained a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.*

We are open to evaluating all managers of interest to a client. We do maintain a list of recommended managers, as described in response to Question A.

## **V. Miscellaneous**

*A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.*

We understand the needs of Massachusetts' public sector retirement plans, having helped a number of large county and municipal systems achieve their investment objectives. Segal Marco also is knowledgeable of and in compliance with the applicable provisions of Chapter 32, §§ 23 and 23B, as amended by Chapter 176 of the Acts of 2011, and with the Investment Regulations promulgated by PERAC. As evidenced by our prior responses, we work with a number of Massachusetts public retirement systems to develop and implement long-term asset allocation strategies within the framework provided by applicable provisions of Chapter 32 and PERAC regulations.

*B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.*

Depending on the level of fiduciary/discretionary investment functions that a plan requires, a solution has the option to include any of the elements of our traditional consulting services and/or from our full discretionary services.

## Discretionary Investment Consulting Services- 3(38)

<b>Functional Responsibilities:</b>	<b>Full Portfolio Discretion</b>	<b>Partial Portfolio Full Discretion*</b>	<b>3/21</b>
Asset allocation structure	SMA/Client	Client	Client
Investment manager selection	SMA	SMA**	Client
Development and Maintenance of Statement of Investment Policy (SOIP)	SMA/Client	Client	Client
Rebalancing consistent with SOIP	SMA	SMA**	Client
Day-to-day investment administration	SMA	SMA**	Client
Reports and communication	Monthly Reports	Quarterly Reports and Periodic Flashes	Quarterly Reports and Periodic Flashes
Contract review	SMA	SMA**	Fund Counsel

\*Sample terms: To be negotiated at on-set of relationship and detailed in client investment policy

\*\*Only for discretionary portion of the portfolio; client maintains fiduciary authority for all other portions of the portfolio.

### **Environmental, Social and Governance (ESG) Consulting**

Segal Marco has actively worked with clients to meet their ESG needs for more than 25 years. Over the last three years, we have significantly expanded our ESG consulting services. As evidence of our commitment to ESG, we have included on the System's, Maureen O'Brien, who is chair of our firm's ESG committee. While each client is unique in terms of their approach to implementing a responsible investment policy, we have developed a process to assist them in this endeavor. Beginning with education and moving through several steps including identification of program goals and objectives through manager selection and monitoring of ESG or SRI activities, we are well prepared to assist clients in establishing an approach that fits their particular objectives and considerations. Our broad investment manager database and expertise allows us to execute ESG screens while identifying strong investment manager candidates.

We also have a dedicated corporate governance and proxy voting team that actively coordinates with other institutional investors and engages corporations regarding their practices and votes client proxies in support of issues regarding these topics (please see next section).

The application of ESG factors by asset managers is one of the 34 elements that we formally assess in our seven principle MR2 process. We capture this information as part of our due diligence process and report upon these factors as part of that evaluation. We have included as an exhibit an article, *How ESG Impacts the Financial Markets*, that Ms. O'Brien and Mr. Regan authored for the Georgetown University Center for Retirement Initiatives in July 2021.

### **Corporate Governance and Proxy Voting**

Segal Marco also offers in-house consulting support for proxy voting. We report annually, or more frequently as requested by clients. Our team votes proxies for approximately 6,000 companies every year and engages them directly on a variety of issues important to our clients. We cast proxy votes on behalf of benefit plans that receive ongoing consulting services and for

clients that subscribe to our firm exclusively for corporate governance and proxy voting services. Our proxy voting service is supported by strong technology and reporting capabilities while the success of engagement work is attributable to a seasoned staff and an earned reputation for influencing public companies towards improved governance.

### **Fund Governance, Fiduciary Education and Reporting**

Depending on our clients' needs, we assist staff and board members in the following areas encompassed by internal fund governance, fiduciary education and reporting:

- Strategic planning, policy development and stakeholder (member) communications
- Fiduciary education and training
- Assistance in preparing reports (Annual Comprehensive Financial Report)

*C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.*

#### **Bristol County Retirement System**

Roxanne Donovan  
 645 County Street  
 Taunton, MA 02780  
 (508) 824-4029  
[rdonovan@bristolcountyretirement.org](mailto:rdonovan@bristolcountyretirement.org)

#### **Massachusetts Bay Transportation Authority (MBTA)**

John P. Barry, Interim Executive Director  
 One Washington Mall  
 Boston, MA 02108  
 (617) 316-3800  
[jbarry@mbta.com](mailto:jbarry@mbta.com)

#### **Cambridge Retirement System**

Ellen Philbin, Executive Director  
 125 Cambridge Park Drive  
 Cambridge, MA 02140-2369  
 (617) 868-3401  
[Director@cambridgeretirementma.gov](mailto:Director@cambridgeretirementma.gov)

*D. Please provide the names and asset values of any clients who have terminated services in the last three years.*

Out of respect for our former clients' expectation of privacy, we do not provide client name or assets but can provide detail on reasons for termination and number of total clients lost in the last three years.

	2022	2021	2020
<b># of Clients lost</b>	<b>6</b>	<b>5</b>	<b>6</b>
<i>Change in client contact</i>	2		
<i>Mergers</i>			
<i>Competitive bid</i>	4	5	3



	2022	2021	2020
Political			1
Service no longer needed			2
Plan Termination			

E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.

Sample report provided in the Exhibits section.

## VI. Fee Structure

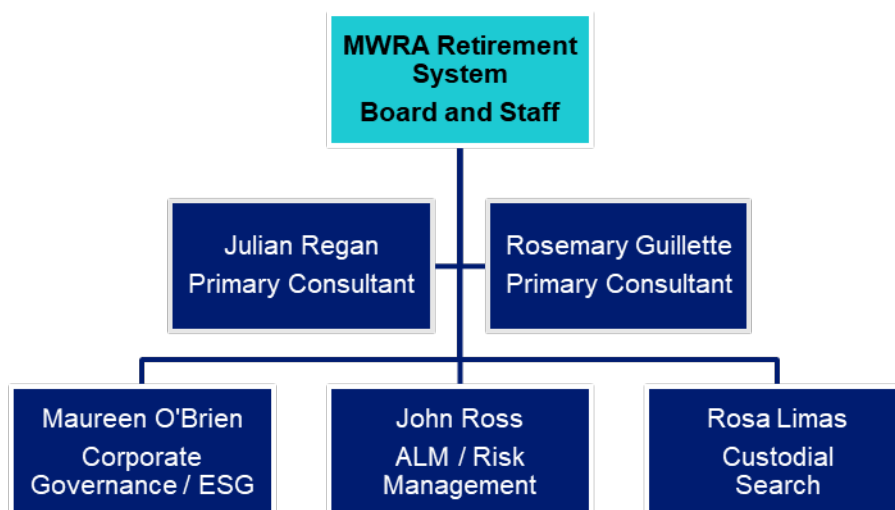
A. Please provide a detailed description of the fee structure for the firms' services to the Board. Fees must be fixed and based on services provided, and fee proposals must include the length of time over which the proposed fee is guaranteed, as well as a statement that the fee is all-inclusive.

Please refer to separately submitted Fee proposal per RFP instructions.

## VII. Specific Board Issues

A. Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.

Please see below employees who would be assigned to the account. We provide full biographies for the Lead Consultant and team members in the Exhibits section.



*B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.*

The lead consultant currently works on a team that services eight traditional investment consulting client relationships and three discretionary consulting client relationships. In all cases, the lead consultant services the clients with a co-lead consultant or supporting consulting who shares responsibilities. A number of these client relationships include modest sized plans with modest service requirements.

*C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.*

As part of our service implementation process, we would typically receive the following information, along with other information as authorized by the Board. To assist the System's staff, we would draft authorization letters to receive data from investment managers and custodian:

- Historical investment performance and cash flow data
- Monthly, quarterly and annual portfolio holdings, performance and attribution reports
- Updates from investment managers on regulatory filings, management changes and other material developments
- Regulatory compliance reports as needed
- Actuarial data, asset liability modeling data, cash flow projections and experience studies
- Contacts at service providers and investment managers as authorized by staff

# | Exhibits

## Team biographies

### Julian Regan

*Senior Vice President and Public Sector*

*Market Leader, Boston*

**Project Role: Primary Consultant**



#### Expertise

Julian is a Senior Vice President and the Public Sector Market Leader in Segal Marco Advisors' Boston office. He has over 25 years of investment industry experience. Julian serves on Segal Marco Advisors' Environmental, Social, and Governance (ESG) Committee and helps to lead the firm initiatives in the public sector. He serves as lead investment consultant to a number of major multiemployer, public sector and union plan sponsors.

#### Professional background

Prior to joining the firm, Julian served in leadership and risk oversight roles in the private and public sectors.

Between 2001 and 2006, he served as Executive Director for the New York State Deferred Compensation Board, where he ran the State's then \$8 billion supplemental retirement plan and helped develop regulations that governed 250 local plans. Prior to that, Julian served as Assistance General Manager and Budget Director at Massachusetts Bay Transportation Authority (MBTA) and Vice President, Retirement Risk at Fidelity Institutional Retirement Services Company. In addition, Julian is a former state and local government appointee to the Internal Revenue Service (IRS) Advisory Committee on Tax-Exempt and Government Entities.

#### Education/professional designations

Julian received his BSBA and MBA from Suffolk University and studied at Georgetown University.

Julian serves on the International Foundation of Employee Benefit Plans (IFEBP) Investment Management Committee and is a member of the NAGDCA 2021 Publications Task Force. He previously served on the IFEBP Financial Education/Retirement Security Expert Panel.

Julian is a 2008 recipient of the IRS Tax-Exempt and Government Entities "Commissioner's Award" and a 2004 "Plan Sponsor of the Year" award recipient.

#### Publications/speeches

Julian is co-author of the National Conference on Public Employee Retirement Systems (NCPERS) *Best Governance Practices for Public Retirement Systems* and author of *Is Your Pension Plan Measuring Up?* He is also a contributing author to the IFEBP *Trustee Handbook* and a frequent author and speaker for other leading industry organizations.

## Rosemary Elly Guillette

*Vice President and Senior Consultant, Boston*

**Project Role: Co-Primary Consultant**



### Expertise

Rosemary is a Vice President and Senior Consultant with over 20 years of retirement consulting experience. She specializes in public sector plans with a focus on both defined contribution and defined benefit plans. Rosemary helps clients develop efficient plan structures that take full advantage of the various asset class options available to defined benefit plans, including value added real estate/opportunistic, hedge fund of funds, private equity funds, private credit funds and absolute return strategies.

### Professional background

Prior to joining Segal Marco Advisors, Rosemary specialized in estate planning, advising high net worth individuals at two prominent insurance companies.

### Education/professional designations

Rosemary is a *magna cum laude* graduate of Regis College with a BA in Mathematics and a BA in Economics. She spent an undergraduate semester at American University studying Economic Policy. Rosemary has also studied Statistical Modeling at the Institute for Advanced Study (IAS) in Princeton, NJ.

Rosemary is a member of the National Association of Securities Professionals (NASP). Rosemary is currently serving as an Advisor to the Women In Leadership Program at the University of Tennessee, Knoxville.

### Publications/speeches

Rosemary is a regular speaker at many public fund conferences and events throughout the country including the National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

Rosemary Elly Guillette  
[rguillette@segalmarco.com](mailto:rguillette@segalmarco.com)  
931.359.8143  
[segalmarco.com](http://segalmarco.com)

## Rosa Limas

*Vice President and Director, Chicago*

**Project Role: Custodial Search Consultant**



### Expertise

Rosa is a Vice President and Director in Segal Marco Advisors' Chicago office and has 30 years of consulting and institutional custody experience. She manages custodian services for the firm, utilizing her well-developed network across many custodial providers, to evaluate custodian banks and direct search activities. Within this role, she evaluates multiple aspects of custody banks, including securities lending programs, transition management, benefit processing, fees and custom reporting solutions. Rosa is also responsible for the due diligence of Defined Contribution (DC) and Defined Benefit consulting services, including providing research support for DC investment vehicles, such as mutual funds, ETFs, target-date funds and custom investment programs.

Rosa serves as Chair of Segal's Diversity, Equity and Inclusion (DEI) Committee, leading in the education, communication and implementation of our firm's DEI initiatives. She is also a founding member of Segal Marco's Diversity Investing Working Committee, dedicated to the research, advocacy and incorporation of small, emerging and minority-owned organizations in clients' portfolios. In addition, she supports Segal Marco's Corporate Governance Practice, leading corporate engagements on board diversity and informing the firm's approach on proxy voting to promote diversity. Rosa has also been named a "2021 DEI Rising Star" by the Defined Contribution Institutional Investment Association.

### Professional background

Rosa's prior consulting and banking experience includes heading an institutional trust department, treasury management, trade processing and performance evaluation.

### Education/professional designations

Rosa received her BS in Finance and Business Administration from DePaul University in Chicago.

### Publications/speeches

Rosa has made frequent speeches at industry conferences on DEI and custody topics, highlighting the importance of recognizing and utilizing available talent across the investment industry. She has been quoted in industry publications, including *Chief Investment Officer* and *Fundfire* on these topics. In addition, Rosa co-authored a research paper entitled, "[Disrupting the Status Quo.](#)"

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## Maureen O'Brien

*Senior Vice President, Director of Corporate Governance and Proxy Voting, Chicago*

**Project Role: Governance/ESG Consultant**



### Expertise

Maureen is a Senior Vice President and Director of Corporate Governance and Proxy Voting in Segal Marco Advisors' Chicago office. She has extensive experience in shareholder advocacy and specializes in engaging companies on behalf of investors.

### Professional background

Prior to joining Segal Marco Advisors, Maureen was Head of Engagement at Conflict Risk Network, where she held dialogues with companies operating in Sudan and other conflict zones. She also served as Research Director at the Center for Political Accountability, a non-profit, non-partisan organization, where she promoted transparency in corporate political spending. Maureen co-founded LINC Negotiations, a Washington, DC-based consultancy that provides training in negotiation and mediation.

### Education/professional designations

Maureen received her BA in International Studies at the University of Missouri and her MS in International Conflict Resolution from American University in Washington, DC.

### Publications/speeches

Recent presentations and publications include:

- "Workers Need a Seat at the Table as Companies Tackle the Environmental Transition," Segal Marco article, July 6, 2021
- "How Shareholder Engagement on D&I Is Driving Change," panel discussion at CleanTechIQ Conference, August 12, 2021
- Segal Marco Advisors' 2020 Annual Corporate Governance Report

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**John A. Ross, Jr.**

*Senior Vice President, Co-Head of ALM and Risk Management, Hartford*

**Project Role: Risk Consultant**



## Expertise

John is a Senior Vice President and the Co-Head of the ALM and Risk Management Group in Segal Marco Advisors' Hartford office. He has over 25 years of experience in the investment industry within a professional career that spans nearly 35 years.

John co-leads the Risk Management Research Group, which is responsible for the ongoing monitoring of long-, intermediate- and short-term views on strategic asset classes, anticipating macro investment themes and formulating capital markets assumptions and objective-driven investing. The Risk Management Research Group leads the firm-wide effort of establishing model portfolios and incorporating best ideas related to asset allocation implementation.

John also manages the team of professionals responsible for the completion of client asset allocation and asset liability studies. He is a member of the firm's Investment Committee charged with defining, formulating and communicating quarterly and annual capital market outlooks, views and opinions to clients. John serves as one of the primary liaisons for the firm as a member of the Global Investment Research Alliance. He is also an ex-officio member of the firm's Manager Review Committee with oversight and compliance responsibility for all managers recommended by Segal Marco.

## Professional background

Prior to joining Segal Marco Advisors, John worked for over 12 years at International Paper, formerly Champion International Corporation. In his most recent position, he was a Senior Associate in the Trust Funds Management Group responsible for manager evaluations, quantitative and qualitative analysis on private equity offerings and managing the administration of a \$2 billion corporate trust fund. Before that, he worked at Xerox Corporation as a Credit Analyst.

## Education/professional designations

John graduated with a BS degree in Economics from the State University of New York, College at Cortland.

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## PERAC forms

# Vendor Certification



# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

Please print or type all entries in blue or black ink.

## 1. Retirement Board

Retirement Board to which proposal is being submitted:

## 2. Service Provider

Business Name:

Address:

City:

State:

Zip:

Services Being Proposed:

Dates of Services (MM/DD/YYYY)

From:

To:

## 3. Individual Submitting Proposal

Name, First:

Last:

Suffix:

Title:

The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature: 

Date:

# New Vendor Contact Form



# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name:

Name of Retirement Board:

## 1. Company/Entity Information:

Company/Entity Name:

CRD# (If Applicable):

Address:

City:

State:

Zip:

Country:

Phone:

Fax:

URL:

## 2. Contact Information:

Name, First:

Last:

Suffix:

Title:

Department:

Phone:

Fax:

Email:

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City:

State:

Zip:

Country:

# New Vendor Disclosure Form



# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

Please print or type all entries in blue or black ink.

## 1. Vendor/Board Information

Name of Company/Entity:

Name of Fund:

Retirement Board:

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First:

Last:

Suffix:

Title:

Signature:

*Julian Regan*

Date:

## Placement Agent Statement for Investment Managers)





# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board:

Name of Investment Manager:

### Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

### PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

**PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.**

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.



**COMPENSATION**

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?  No  Yes

(2) If **yes**, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If **yes**, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If **yes**, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If **yes**, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



(6) If **yes**, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

Additional Pages Attached:  No  Yes

(7) If **yes**, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

Additional Pages Attached:  No  Yes

(8) If **yes**, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First: \_\_\_\_\_ Last: \_\_\_\_\_ Suffix: \_\_\_\_\_

Title of Authorized Individual: \_\_\_\_\_

Signature of Authorized Individual:

Julian Regan

Date Signed:

\_\_\_\_\_

# Sample Publication

How ESG Impacts the Financial Markets

# How ESG Makes its Impact on Financial Markets

By Maureen O'Brien and Julian Regan

To date, 2021 has proven a banner year for environmental, social, and governance (ESG) considerations in investing. ESG is an umbrella term meant to capture the multitude of data points that give investors information about a company or asset that traditional financial reporting does not capture. A company's water use, the fairness of its labor practices, and the portion of corporate directors who maintain business ties to the CEO are examples of ESG factors that investors may consider. ESG factors may be considered material to an investment either because firms with superior ESG characteristics provide the potential for strong risk-adjusted returns or because an ESG weakness signals risk that might detract from performance.



Maureen O'Brien

Climate change is among several dominant themes in ESG investing. Regardless of the issue, investors generally have three options to consider when evaluating an ESG risk, such as a company's failure to assess and disclose the impacts of a low-carbon economy on its future business operations.

- **First**, an investor can monitor the risk.
- **Second**, an investor may choose to divest itself of weak performers, an option sometimes described as the "Wall Street Walk."
- **Third**, an investor may hold shares in the firm or asset and engage management to encourage improvement. Proxy voting and engagement on corporate governance through the submission of shareholder proposals are long-standing tools for ESG incorporation. These approaches are often referred to as active ownership.



Julian Regan

## Active Ownership: One Mechanism of ESG

This year **active ownership saw dramatic success at Exxon Mobil and Chevron**. Activist hedge fund Engine No. 1, holder of 0.02% of shares outstanding in Exxon Mobil, sought four seats on the company's 12-member board. Engine No. 1 ran a slate of candidates to oppose the incumbent directors and overturned three board seats. The three candidates who received enough votes to be seated brought environmental and operational expertise to the board. Engine No. 1 convinced enough shareholders that Exxon Mobil's preparedness for the energy transition was lacking. The new directors are tasked with moving Exxon more aggressively in the direction of diversifying energy sources.

On the same day of the activist fight at Exxon Mobil, May 26, a majority of Chevron shareholders voted in favor of a shareholder proposal that Chevron cut emissions.

A third development on the same day further marked a trend in expectations of carbon emitters: A court in The Hague ordered **Royal Dutch Shell to cut its global carbon emissions** by 45% by 2030.

## The Mainstreaming of ESG

ESG incorporation by money managers has seen a steady and steep increase in the past decade and a half. Total U.S. assets under management that considered ESG factors grew from \$639 billion in 1995 to \$17 trillion in 2020, according to the **2020 Trends Report issued by the U.S. Forum for Sustainable and Responsible Investment**. The 2020 figure represented 33% of total U.S. assets under professional management, and the top issues considered in descending order were climate change/carbon, anti-corruption, board issues, sustainable natural resources/agriculture, and executive pay, according to the report. As further evidence of ESG incorporation, a **2017 CFA Institute survey** found that 73% of respondents considered ESG criteria in investment decision-making and analysis. Not surprisingly, governance, which investors considered before the term ESG proliferated, represented the most commonly cited set of factors in the survey.

### Retirement Plans and ESG Incorporation

Defined benefit (DB) plans, which held **\$10.5 trillion of U.S. retirement assets** as of the first quarter of 2021, have incorporated ESG at a faster pace than have defined contribution (DC) plans until the recent past. One explanation for the difference is that larger DB plans can invest in equities more frequently through separate accounts, giving plan sponsors control over proxy voting and the submission of shareholder proposals. In contrast, as of the first quarter of this year, **66% of the nation's \$6.9 trillion in 401(k) plan assets** were held in mutual funds, effectively ceding proxy voting as a tool of ESG to investment managers for the portion of these assets invested in equities.

Perhaps for pragmatic reasons, investment companies have historically refrained from taking the active shareholder approach that DB plan sponsors have taken. This may be changing as mutual fund companies introduce scores of new ESG strategies and face challenges in demonstrating ESG incorporation to institutional asset owners' consultants.

### ESG Adoption Mechanisms

In considering ESG adoption, retirement plan sponsors arguably have four mechanisms for implementation at their disposal:

- Adoption of investment policy provisions that document ESG criteria;
- Inclusion of ESG considerations in selecting investment managers;
- Proxy voting; and
- Shareholder engagement.

While data vary on incorporation through these mechanisms, the following findings are evidence for increasing adoption, as well as a wide range of conclusions about the current state of play in plan types and asset classes.

### Defined Benefit Plans

- Public pension funds reportedly accounted for 54% of the \$6.2 trillion in institutional investor assets that incorporated ESG, according to the 2020 U.S. SIF Foundation survey.
- In Europe, consultants estimate that **89% of pension funds take ESG risks into account** in their investment approaches.
- According to a 2020 study, **16 of 74 U.S. public funds, or 22%, mentioned ESG in their publicly available documents**, while other surveys indicate a higher level of incorporation.
- A **survey cited in *Pensions & Investments*** found investors are incorporating ESG beyond public equities into fixed income (60%), real estate (43%), and infrastructure investment decisions.

While corporate retirement plans may report a more-modest level of ESG adoption, many have voted proxies as a long-standing practice, as have their public and multiemployer counterparts.

### Defined Contribution Plans

While DC plans may integrate ESG through a range of mechanisms, a common approach is to offer a dedicated ESG option under the plan's investment menu. Whatever the approach, the following statistics paint a picture of slower, but accelerating, adoption:

- **In 2018, the Principles for Responsible Investment** reported that between 2% and 8% of DC plans offered ESG investment options;
- In 2020, Morningstar reported that while only 4.5% of DC plans offered a sustainable (ESG) option, **22% are incorporating ESG factors into their traditional options**;
- A PGIM survey found that **24% of plan sponsors indicate they have taken action to incorporate ESG into their plans** over the last three years, while 52% said they had not; and
- **A 2018 Natixis survey** found that 82% of DC plan respondents wanted investments in their plans that reflected their values.

## Conclusion

ESG incorporation has evolved since it was launched with divestment campaigns in the 1970s and 1980s, guided by the McBride Principles' focus on religious discrimination in Northern Ireland and divestment from South African companies during apartheid.

Regulatory uncertainty, inconsistency in definitions, and metrics pose challenges for the uptake in ESG. However, the direction of ESG toward a set of mainstream considerations for performance and risk assessment is clear. A **survey** cited in *Pensions & Investment* found that more than half of respondents incorporated ESG factors as part of their fiduciary duty and 38% saw it as helping to generate excess return. Pragmatism, fiduciary duty, and a new generation of investors' interest in making a positive impact through their portfolios will continue to drive the trend.

*Maureen O'Brien is Vice President and Corporate Governance Director, Segal Marco Advisors.*

*Julian Regan is Senior Vice President and Public Sector Market Leader, Segal Marco Advisors.*

*The Segal Company and Segal Marco Advisors, a wholly owned subsidiary of Segal, are supporters of the Center for Retirement Initiatives. The views and opinions expressed in this blog post are the views of the authors and do not reflect any policy or position of the Center for Retirement Initiatives.*

June 2021, 21-04

## Additional Resources

CFA Institute, **Global Perceptions of Environmental, Social, and Governance (ESG) Issues in Investing, 2017.**

Steven Godeke, Sarah Cleveland, and Scott Budde (Godeke Consulting); Will Martindale and Colleen Orr (Principles for Responsible Investment), **Untangling Stakeholders for Broader Impact: ERISA Plans and ESG Incorporation.**

US SIF Foundation, **2020 Report on US Sustainable and Impact Investing Trends.**

# Sample Reports





ABC Retirement System

# Analysis of Investment Performance

Period Ending March 31, 2021

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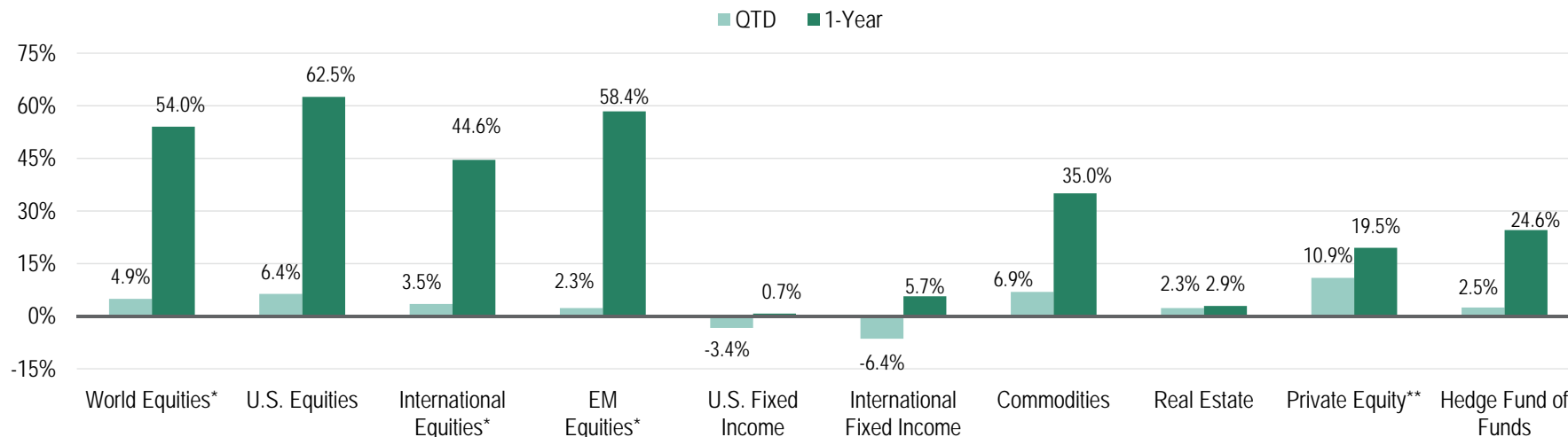
# Q1 2021 IN REVIEW

**A Synopsis of the Financial Market Environment**

May 2021

# Q1 2021 In Review

## Summary of Investment Returns



## Quarterly Synopsis

- World equity markets rose in Q1. Continuing vaccinations and hopes for improving global demand boosted stocks.
- U.S. equity was solidly positive. More stimulus, an improving employment market and a growing vaccination rate all helped.
- International equities also rose, but more moderately than the US as the vaccination rate in Europe has been lower.
- Emerging market equity increased as hopes for global growth grew, though a stronger USD was a burden.
- U.S. fixed income was lower. Longer-term yields were higher amid U.S. stimulus and an improving economy.
- Non-U.S. fixed income fell. A strong USD hurt unhedged non-US debt.
- Hedge funds increased. Event driven strategies performed best in the quarter.
- Commodities posted a strong gain amid hopes that global demand would pick up as COVID vaccines are approved and distributed.

\* Net Dividends Reinvested

\*\* Performance as of Q3 2020 because more recent performance data is not yet available.

Sources: Investment Metrics, Thomson One, FactSet

# Q1 2021 Index Returns

Asset Class	Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
World Equity	MSCI World <sup>1</sup>	4.92	4.92	54.03	12.81	13.36	9.88
U.S. Equity	Russell 3000	6.35	6.35	62.53	17.12	16.64	13.79
Non-U.S. Equity	MSCI EAFE <sup>1</sup>	3.48	3.48	44.57	6.02	8.85	5.52
Emerging Market Equity	MSCI EM <sup>1</sup>	2.29	2.29	58.39	6.48	12.07	3.65
U.S. Fixed Income	Bloomberg Barclays U.S. Aggregate	-3.37	-3.37	0.71	4.65	3.10	3.44
Non-U.S. Fixed Income	FTSE <sup>2</sup> Non-U.S. WGBI (Unhedged)	-6.42	-6.42	5.65	0.88	1.99	1.11
Commodities	Bloomberg Commodity Index	6.92	6.92	35.04	-0.20	2.31	-6.28
Real Estate	NFI-ODCE <sup>3</sup>	2.25	2.25	2.91	5.29	6.52	9.81
Private Equity	Thomson Reuters US Private Equity <sup>4</sup>	10.92	13.05	19.50	15.70	14.20	14.30
Hedge Funds	HFRI Fund of Funds Composite	2.47	2.47	24.56	5.64	5.74	3.48

<sup>1</sup> Net Dividends Reinvested

<sup>2</sup> Formerly Citigroup Non-U.S. WGBI. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were all rebranded to FTSE by July 31, 2018.

FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

<sup>3</sup> NCREIF Fund Index (NFI) – Open End Diversified Core Equity (ODCE)

<sup>4</sup> Performance as of Q3 2020 because more recent performance data is not yet available.

Sources: Investment Metrics, Thomson One, FactSet

# Q1 2021 Index Returns

Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
S&P 500®	6.17	6.17	56.35	16.78	16.29	13.91
Russell 1000	5.91	5.91	60.59	17.31	16.66	13.97
Russell 1000 Growth	0.94	0.94	62.74	22.80	21.05	16.63
Russell 1000 Value	11.26	11.26	56.09	10.96	11.74	10.99
Russell 2000	12.70	12.70	94.85	14.76	16.35	11.68
Russell 2000 Growth	4.88	4.88	90.20	17.16	18.61	13.02
Russell 2000 Value	21.17	21.17	97.05	11.57	13.56	10.06
Russell 3000	6.35	6.35	62.53	17.12	16.64	13.79
MSCI EAFE*	3.48	3.48	44.57	6.02	8.85	5.52
MSCI World*	4.92	4.92	54.03	12.81	13.36	9.88
MSCI EM*	2.29	2.29	58.39	6.48	12.07	3.65

Fixed-Income Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Bbg Bar U.S. Aggregate	-3.37	-3.37	0.71	4.65	3.10	3.44
Bbg Bar U.S. Govt/Credit	-4.28	-4.28	0.86	4.99	3.36	3.70
Bbg Bar U.S. Intermediate Govt/Credit	-1.86	-1.86	2.01	4.36	2.75	2.88
Bbg Bar U.S. L/T Govt/Credit	-10.41	-10.41	-2.05	7.14	5.47	6.98
Bbg Bar U.S. Government	-4.14	-4.14	-4.26	4.10	2.25	2.83
Bbg Bar U.S. Credit	-4.45	-4.45	7.88	5.95	4.67	4.83
Bbg Bar U.S. Mortgage-Backed Securities	-1.10	-1.10	-0.09	3.75	2.43	2.85
Bbg Bar U.S. Corporate High Yield	0.85	0.85	23.72	6.84	8.06	6.48
FTSE Non-U.S. WGBI (Unhedged)***	-6.42	-6.42	5.65	0.88	1.99	1.11
FTSE 3-Month T-Bill***	0.02	0.02	0.21	1.45	1.15	0.60

Other Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Hueler Stable Value	0.46	0.46	2.11	2.32	2.16	2.08
Bloomberg Commodity	6.92	6.92	35.04	-0.20	2.31	-6.28
HFRI Fund of Funds Composite	2.47	2.47	24.56	5.64	5.74	3.48
NCREIF NFI-ODCE	2.25	2.25	2.91	5.29	6.52	9.81
Thomson Reuters Private Equity**	10.92	13.05	19.50	15.70	14.20	14.30

\* Net Dividends Reinvested

\*\* Performance reported as of Q1 2020 because more recent performance data is not yet available.

\*\*\*Formerly Citigroup Non-U.S. WGBI. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were all rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG / Sources: eVestment Alliance, Hueler Analytics, Investment Metrics, Thomson One, FactSet

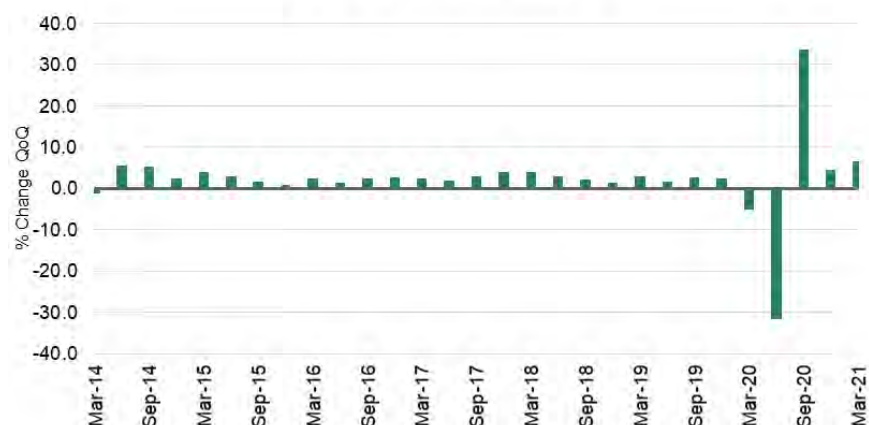


# Q1 2021 In Review: U.S. Economy

## GDP Growth

- U.S. GDP growth rose 6.4% in Q1 over the prior quarter, slightly beating market expectations. YOY GDP rose 0.4%.
- A greater pace in COVID vaccinations nationwide, as well as more consumer spending with fiscal stimulus, boosted the economy in the first quarter.
- Consumer spending was greatest on big-ticket items like autos and furniture.
- Federal government spending, residential fixed investment, and state and local government spending all were higher.

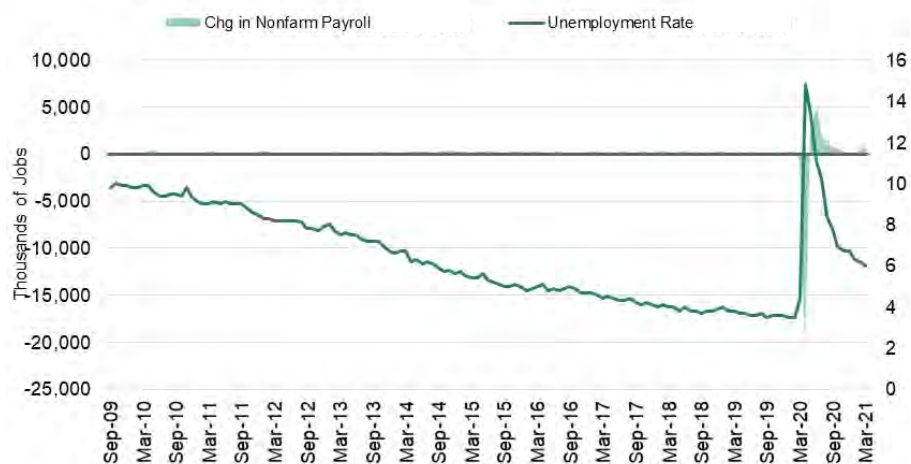
### U.S. Real GDP Growth



## Employment Picture

- The unemployment rate was 6.0% in March, a decline from its Q4 level and a pandemic low. Nonfarm payrolls rose by 1.6 million over the quarter. The job market continued to recover from its COVID-related losses earlier in the year, though unemployment remains solidly above its pre-pandemic level.
- The leisure and hospitality sector gained the most in March (280k), as bars and restaurants continue to reopen. Public and private education (190k) and construction (110k) were sectors where jobs grew.
- Despite these gains, the U.S. remains about 8.4 million jobs short of its February 2020 level.

### U.S. Nonfarm Payrolls and Unemployment Rate



Source this page: FactSet

# Q1 2021 In Review: U.S. Economy

## Consumer Confidence and Spending

- Sentiment rose in Q1 as consumer optimism ramped up along with COVID vaccinations. The Conference Board's Consumer Confidence Index increased from 88.6 at the end of December to 109.7 at the end of March.
- Personal consumption expenditures rose in February\*.



## Retail Sales

- Retail sales were up 9.8% from one year ago.
- A new set of stimulus checks sent to consumers from the U.S. government helped send sales higher in March. A brightening jobs picture may have led to boosted sales as well.
- The bar and restaurant industry saw a 13.4% surge in sales, as many of those establishments continue to reopen. Sporting goods spending was up 23.5%, while clothing and accessories rose 18.3%.

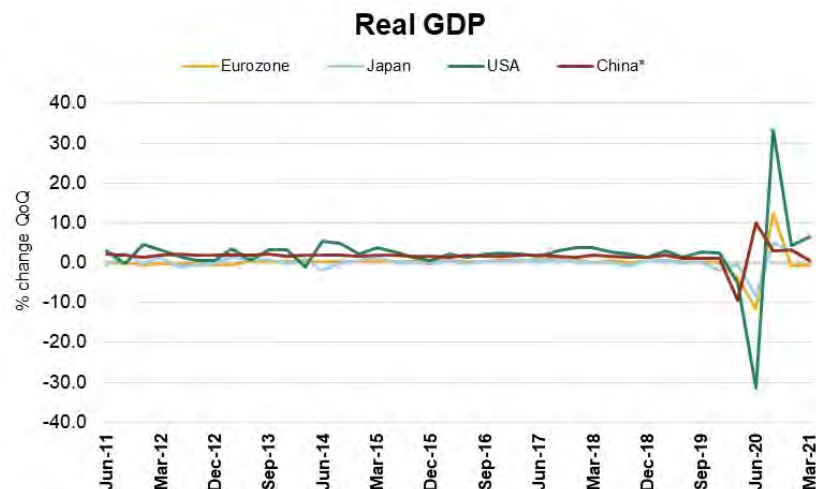


\*The most recent data available.  
Source this page: FactSet

# Q1 2021 In Review: Global Economy

## World GDP Growth

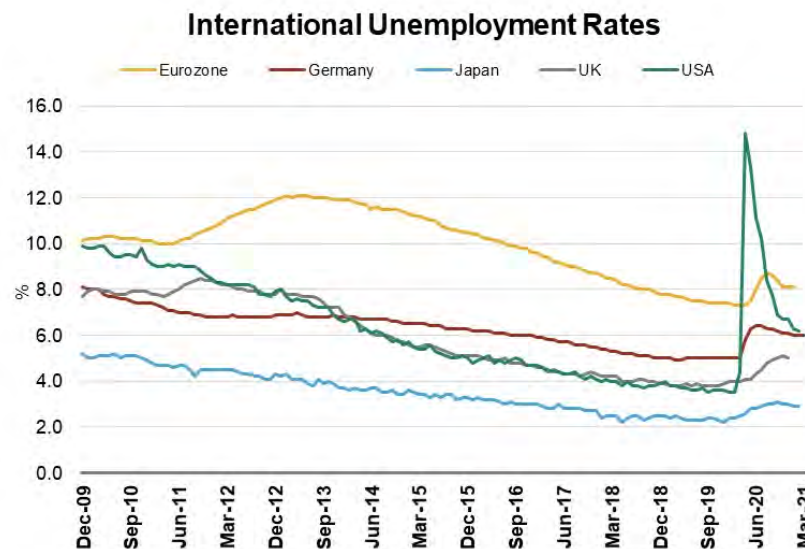
- GDP growth in the Eurozone fell -0.6% in Q1 2021 (QOQ). Countries implemented new lockdowns amid another wave of COVID infections, which rendered a fresh hit to economic growth in the region.
- China's GDP rose 0.6% QOQ in Q1, and at a record YOY pace of 19%. The country's economy continues to bounce back after its pandemic downturn.
- Japan's GDP rose 2.3% QOQ in Q4\*\*. Capital expenditure and household consumption both rose in the quarter.
- U.S. GDP rose 6.4% in Q1.



Note that the figures in the graph above represent the percent change in real GDP from the previous quarter, not the annual growth rate of these economies.

## Global Employment Picture

- Eurozone unemployment fell slightly to 8.1% in March 2021, a bit better than market expectations but still with 13.2 million total unemployed.
- Germany and Netherlands had two of the lowest unemployment rates in the EU, with higher rates seen in Spain (15.3%) and Italy (10.1%).
- Japan's unemployment rate declined to 2.6% in March, a better than expected new low after the pandemic downturn.



\*Quarter over quarter data calculations began in 2011.

\*\*Most recent data available.

Source this page: FactSet

# Q1 2021 in Review: Global Equity Overview

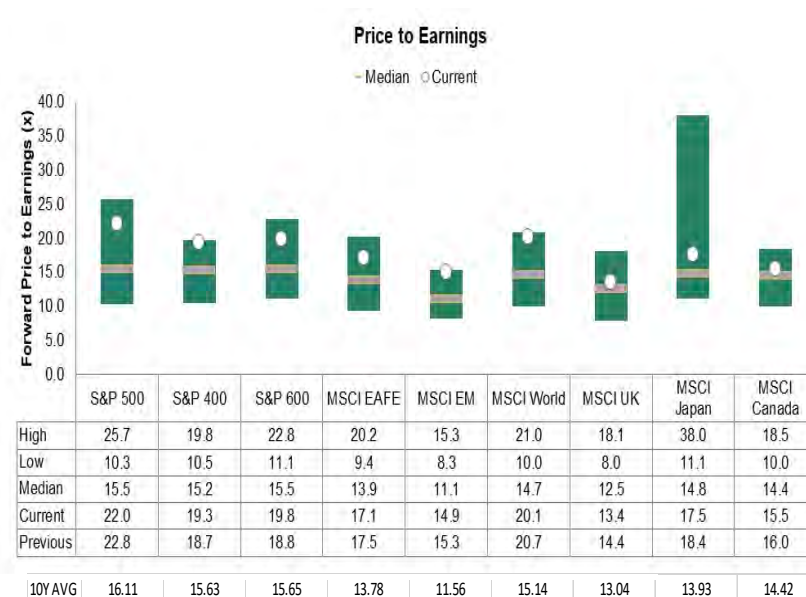
Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
S&P 500	6.17	6.17	56.35	16.78	16.29	13.91
MSCI Europe, Australasia and Far East (EAFE)*	3.48	3.48	44.57	6.02	8.85	5.52
MSCI Emerging Markets (EM)*	2.29	2.29	58.39	6.48	12.07	3.65

All data in the table are percentages.

\* Net dividends reinvested

## Global Equity Performance and Valuations

- All markets saw positive returns for the quarter, as global economies continued their recovery from the Covid-19 pandemic. U.S. markets (+6.2%) led developed international (+3.5%) and emerging markets (+2.3%).
- Equity markets remained resilient during the quarter as Covid-19 vaccination campaigns continued to ramp up, despite several European countries reinstating some restrictions after hospitalizations continued to rise.
- Valuations, using price-to-earnings as a proxy, are elevated in most regions, with the MSCI World, S&P 400, and MSCI EM near their 20-year highs. UK and Canadian equities remain near their long-term median, however.



Source this page: FactSet

Data range is from 3/31/00-3/31/21. P/E ratios are forward 12 months.

# Q1 2021 in Review: U.S. Equity

U.S. Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
S&P 500	6.17	6.17	56.35	16.78	16.29	13.91
Russell 1000	5.91	5.91	60.59	17.31	16.66	13.97
Russell 1000 Growth	0.94	0.94	62.74	22.80	21.05	16.63
Russell 1000 Value	11.26	11.26	56.09	10.96	11.74	10.99
Russell 2000	12.70	12.70	94.85	14.76	16.35	11.68
Russell 2000 Growth	4.88	4.88	90.20	17.16	18.61	13.02
Russell 2000 Value	21.17	21.17	97.05	11.57	13.56	10.06
Russell Midcap	8.14	8.14	73.64	14.73	14.67	12.47
Russell 3000	6.35	6.35	62.53	17.12	16.64	13.79

All data in the tables are percentages.

## Performance

- Congress passed further stimulus during the first quarter with the \$1.9 trillion American Rescue Plan which, coupled with improving economic indicators and progress on the country's mass vaccination campaign, helped lead consumer sentiment to its highest level since March 2020.
- Increased confidence in the health of the U.S. economy benefitted stocks typically tied to cyclical recoveries such as value and small cap, as the Russell 2000 (+12.7%) outperformed the Russell 1000 (+5.9%) and value indices outperformed their growth counterparts across the market cap spectrum (Russell 2000 Value +21.2% vs Growth +4.9% and Russell 1000 Value +11.3% vs. Growth +0.9%).
- All sectors within the S&P saw positive returns in Q1, with predominately value oriented sectors Energy (+30.9%), Financials (+16.0%) and Industrials (+11.4%) leading the index, while Consumer Staples (+1.2%) and Technology (+2.0%) saw the lowest returns.

Sources this page: Investment Metrics, FactSet

S&P 500 Sector Returns	QTD	1-Year
Cons. Disc.	3.11	70.29
Cons. Staples	1.15	28.38
Energy	30.85	75.16
Financials	15.99	67.50
Healthcare	3.18	34.04
Industrials	11.41	69.61
IT	1.97	66.61
Materials	9.08	78.29
Telecom	8.08	60.88
Real Estate	9.02	32.03
Utilities	2.80	19.42

# Q1 2021 in Review: International Equity

MSCI International Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
World ex. U.S.	4.04	4.04	45.86	6.34	8.92	5.21
EAFE	3.48	3.48	44.57	6.02	8.85	5.52
EAFE Local Currency	7.59	7.59	36.56	7.07	8.82	7.50
Europe	4.08	4.08	44.95	5.65	8.18	5.08
Europe ex U.K.	3.46	3.46	48.56	7.16	9.49	5.65
U.K.	6.19	6.19	33.54	0.92	4.33	3.26
Japan	1.57	1.57	39.73	6.32	10.47	7.20
Pacific Asia ex Japan	4.62	4.62	53.96	7.13	9.55	5.02

All data in the tables are percentages and net dividends reinvested.

## Performance

- International developed markets returned roughly 4.0% during Q1, which was behind US markets by roughly 2.1%, but outperformed emerging markets by 1.7%.
- The U.K. had a strong quarter, returning 6.2% with the combination of timely fiscal stimulus paired with a successful vaccine rollout.
- Japan (+1.6%) faced challenges, primarily from lack of available Covid-19 vaccines. The country required more clinical vaccine trials than any other country, giving it a delayed start. Japan also suspended its travel subsidy, which along with rising infection rates caused retail and consumption activity to remain sluggish.
- Energy was the leading sector within the MSCI EAFE benchmark, returning roughly 10.6%, while Financials (+9.7%) followed closely behind. Healthcare (-3.9%), Consumer Staples (-2.6%) and Utilities (-2.6%) were the only sectors to finish negative for the quarter.

MSCI EAFE Sector Returns	QTD	1-Year
Consumer Disc.	5.81	67.32
Cons. Staples	-2.63	18.96
Energy	10.56	25.64
Financials	9.73	54.14
Healthcare	-3.94	17.40
Industrials	5.42	58.89
IT	2.43	59.75
Materials	5.19	73.33
Telecom	3.86	42.64
Utilities	-2.56	28.24
Real Estate	2.53	31.83

Sources this page: Investment Metrics, FactSet

# Q1 2021 in Review: Emerging Market Equity

MSCI EM Equity Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Emerging Markets	2.29	2.29	58.39	6.48	12.07	3.65
EM Local Currency	3.96	3.96	52.99	9.29	12.88	6.95
Asia	2.16	2.16	60.13	9.45	14.48	6.63
EMEA	8.06	8.06	52.22	-0.51	5.24	-1.44
Latin America	-5.32	-5.32	50.08	-6.05	4.04	-4.05

All data in the tables are percentages and net dividends reinvested.

## Performance

- Despite lagging behind developed markets in rolling out vaccine programs, emerging market performance was positive in Q1, returning roughly 2.3%.
- Latin America was negative for the quarter (-5.3%) as every major Latin American country reimposed lockdowns at the beginning of the year as cases of the virus spiked.
- The EMEA region was strong, returning 8.1% as the leading contributor of the broader emerging markets index. Energy producer Saudi Arabia factored into the positive performance with the help of stronger oil prices and the tightening of that country's budget deficit.
- Materials (+9.1%) was the leading contributor within the MSCI EM index in Q1, followed by Real Estate (+5.9%) and Telecom (+5.6%). Healthcare (-4.6%), Consumer Discretionary (-3.1%) and Consumer Staples (-2.8%) were the only sectors to finish negative for the quarter.

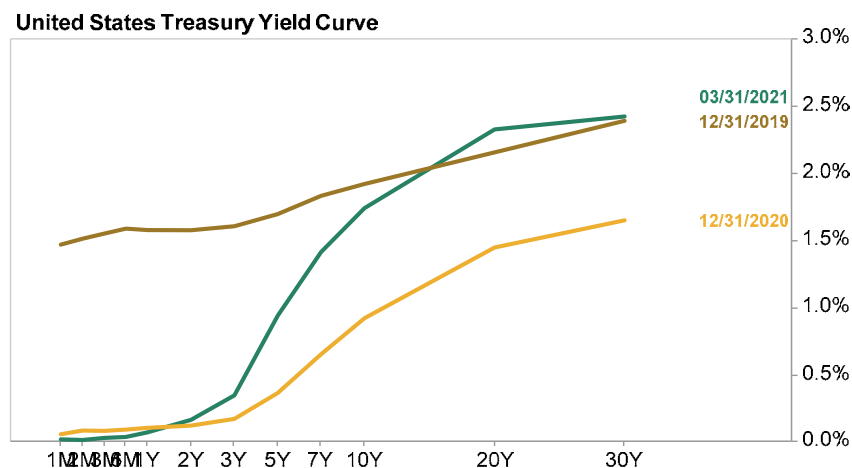
Sources this page: Investment Metrics, FactSet

MSCI EM Sector Returns	QTD	1-Year
Cons. Disc.	-3.14	61.54
Cons. Staples	-2.76	34.12
Energy	2.82	44.63
Financials	3.24	37.43
Healthcare	-4.56	59.38
Industrials	2.73	49.91
IT	4.68	103.94
Materials	9.10	96.45
Telecom	5.58	48.87
Utilities	1.84	30.44
Real Estate	5.93	20.20

# Q1 2021 In Review: Fixed Income Overview

## Yield Curve

- Shorter-term rates fell, while the curve steepened over the mid-section and longer rates flattened.
- Shorter-maturity yields declined, with the 1- and 6-month Treasury falling by 7 basis points and 3 basis points respectively over the prior quarter. The 1-year Treasury ended the quarter yielding 0.07%, representing a 3 basis point decrease over the prior quarter.
- Longer yields rose significantly, beginning at the 3-year point and continuing across the curve, with the 20-year yield showing an increase of 86 basis points over the prior quarter. The 30-year yield ended the quarter at 2.41%, a 76 basis point increase over end of Q4 2020.

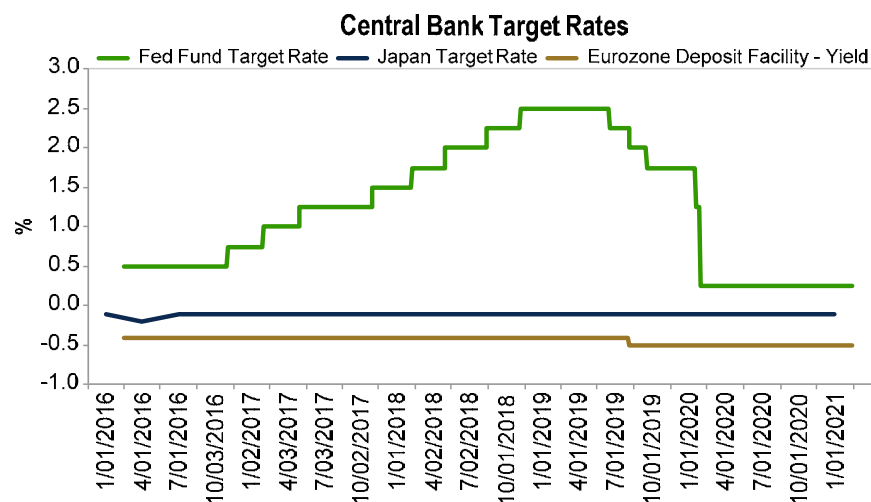


## Monetary Policies/Global Interest Rates

- Central bank deposit rates remained negative in Japan and Europe.
- Despite rate cuts in 2020, the Fed continues to eschew negative rates. The U.S. policy rate hovers above those of the Eurozone and Japan, at 0-0.25%.
- Rates in the U.S. remain unchanged since the prior quarter as the pandemic persists.

Interest Rates	Fed Funds Rate	EZ Deposit Facility Rate
Average	5.06	0.88
Max	20.00	3.75
Min	0.25	-0.50

Source this page: FactSet





# Q1 2021 In Review: U.S. Fixed Income

U.S. Fixed Income Indices*	QTD	YTD	1-Year	3-Year	5-Year	10-Year
U.S. Aggregate	-3.37	-3.37	0.71	4.65	3.10	3.44
Government/Credit	-4.28	-4.28	0.86	4.99	3.36	3.70
Government	-4.14	-4.14	-4.26	4.10	2.25	2.83
Investment Grade Corporate	-4.65	-4.65	8.73	6.20	4.91	5.04
Investment Grade CMBS	-2.10	-2.10	4.86	5.26	3.57	4.06
U.S. Corporate High Yield	0.85	0.85	23.72	6.84	8.06	6.48
FTSE** 3-Month T-Bill	0.02	0.02	0.21	1.45	1.15	0.60
Hueler Stable Value	0.55	1.73	2.37	2.34	2.14	2.13

\* Bloomberg Barclays Indices, unless otherwise noted.

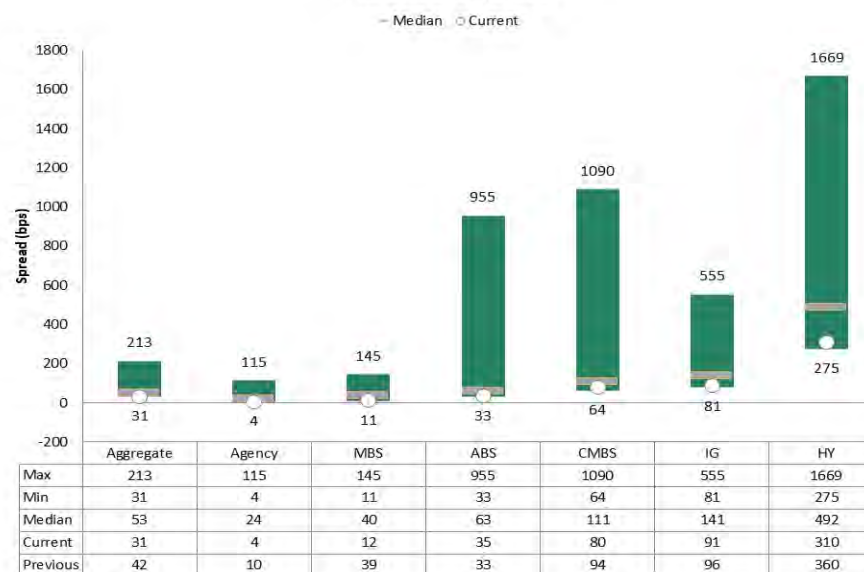
\*\* Formerly Citigroup. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

All data in the table are percentages.

## Performance and Spreads

- The U.S. Aggregate Index was negative in Q1 with all sectors but U.S. High Yield, T-Bills, and Stable Value generating negative returns.
- U.S. High Yield had the strongest sector performance of 0.85% followed by Stable Value at 0.55%. U.S. Investment Grade experienced the weakest performance in Q1 at -4.65%.
- Domestic fixed income spreads tightened across all sectors relative to the prior quarter except ABS, with U.S. High Yield showing the largest decrease.

Fixed Income Spreads



Sources this page: Investment Metrics, Hueler Analytics, FactSet

Data range is from 9/29/00-3/31/21

# Q1 2021 In Review: International Fixed Income

Global Fixed Income Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Bloomberg Barclays Global Aggregate	-4.46	-4.46	4.67	2.80	2.66	2.23
Bloomberg Barclays Global Aggregate (Hgd)	-2.47	-2.47	1.50	4.32	3.29	3.94
FTSE Non-U.S. WGBI*	-6.42	-6.42	5.65	0.88	1.99	1.11
FTSE Non-U.S. WGBI (Hgd)	-2.39	-2.39	0.85	4.01	3.30	4.38
JPM EMBI Global Diversified**	-4.54	-4.54	16.00	4.04	5.05	5.63
JPM GBI-EM Global Diversified***	-6.68	-6.68	13.03	-0.79	3.08	0.51

All data in the table are percentages.

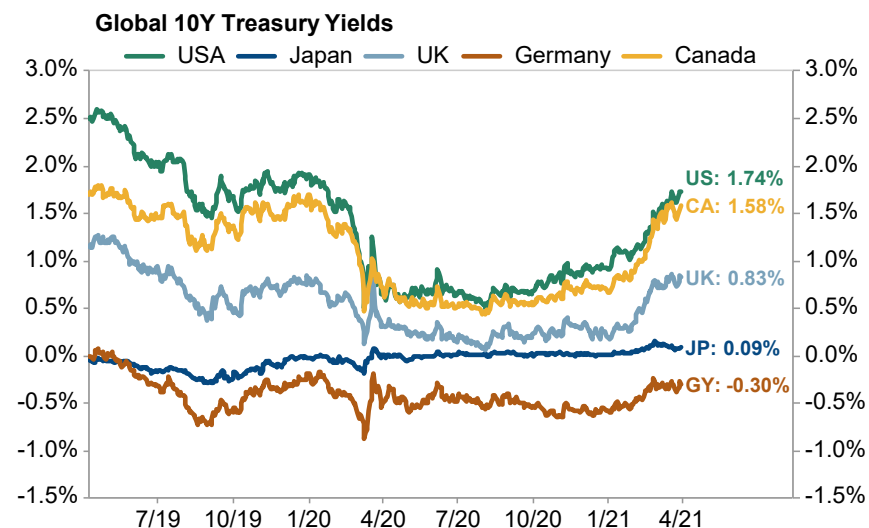
\* Formerly Citigroup. The FTSE Non-U.S. World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment grade sovereign bonds excluding the U.S.

\*\* The JP Morgan Emerging Market Bond Index (EMBI) Global Diversified index measures government bonds in hard currencies.

\*\*\* The JP Morgan Government Bond Index – Emerging Markets (GBI-EM) Global Diversified index measures government bonds in local currencies.

## Global Performance and Yields

- Government yields rose in Q1 in the U.S., Japan, UK, and Canada.
- Central banks globally have implemented more stimulus measures as the pandemic continues. Interest rates remain low worldwide.
- The U.S. dollar appreciated relative to the yen and depreciated relative to the British pound and euro.
- Emerging markets were down YTD and ended the quarter with negative returns.



Sources this page: FactSet, Investment Metrics

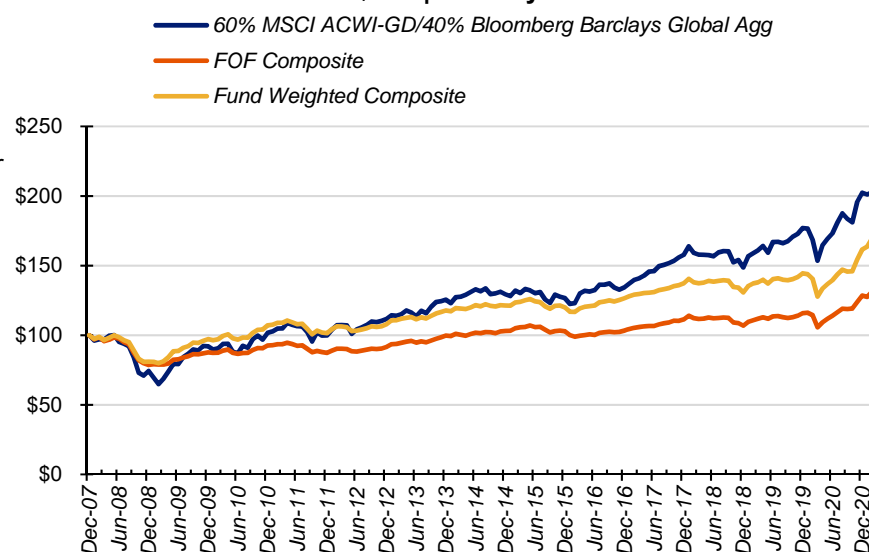
# Q1 2021 In Review: Absolute Return Strategies

HFRI Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Fund of Funds Composite	1.9	1.9	23.8	5.4	5.6	3.4
Fund Weighted Composite	6.0	6.0	34.0	7.6	7.5	4.6
Event Driven	8.2	8.2	38.9	7.5	8.3	5.1
Equity Hedge	7.1	7.1	47.8	9.9	10.2	5.9
Macro	4.1	4.1	11.5	4.4	2.6	1.5
Emerging Markets	2.9	2.9	37.0	4.6	8.2	3.3
Relative Value	3.7	3.7	19.5	4.5	5.4	4.5

## Hedge Fund Performance

- The HFRI Fund Weighted Composite gained 6.0% in Q1. Event-Driven – up 8.2% -- was the leading strategy, while hedge funds focused on emerging markets – up 2.9% -- were the laggards.
- Event Driven strategies delivered varied results in the quarter, ranging from up 5.0% in Credit Arbitrage to up 10.0% in Special Situations. Activist and Distressed/Restructuring focused strategies were each up over 8.0%. Merger Arbitrage delivered 5.6%.
- Hedge funds focused on emerging markets experienced a wide range of results in the quarter. Funds focused on India delivered strong gains, up 10.0% in the period, while funds focused across Latin America lost roughly - 4.7%.
- Notably, after certain hedge funds experienced outsized negative results in January as a result of a short squeeze in select heavily shorted single-name stocks, the Equity Hedge index concluded the quarter among single-strategy leaders, posting a 7.1% return in Q1.
- The Fund of Funds Composite gained 1.9% in Q1. The peer group outperformed the 60% MSCI ACWI / 40% Bloomberg Barclays Global Aggregate blended index, which gained 1.0%.

**HFR Fund Weighted and Fund of Funds Composite Growth of \$100 | January 2008 - March 2021**



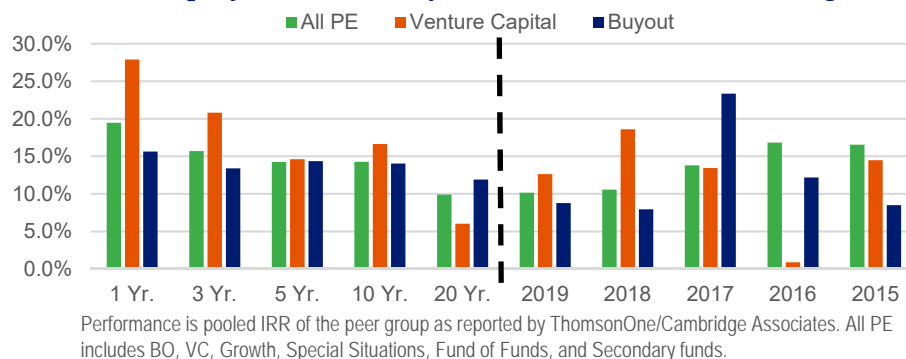
Sources this page: eVestment

# Q1 2021 In Review: Private Equity

## Performance

- The total return for private equity funds, comprising performance across all strategies, was 19.5% over the 1-year period ending Q3 2020.
- The 3-, 5-, 10-, and 20-year returns for US private equity funds were 15.7%, 14.2%, 14.3% and 9.9%, respectively, as of 9/30/2020.
- There was a slight pull back in performance during the first quarter of 2020 due to the pandemic, but private equity managers continued to perform in the third quarter. Recent vintages of venture capital managers continue to outperform buyout and growth managers.

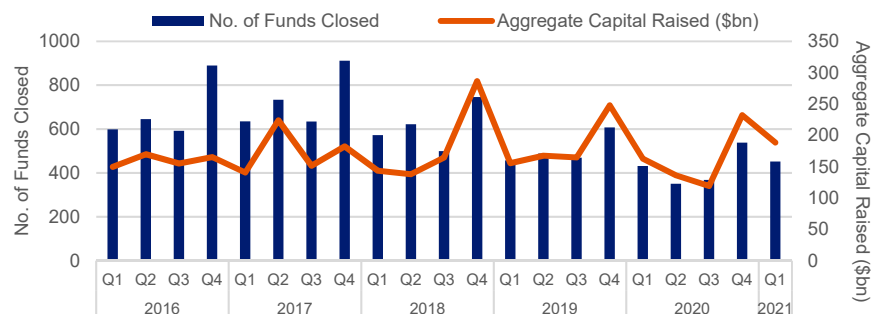
Private Equity Performance by Investment Horizon and Vintage Year



## Fundraising

- Globally, private equity funds raised approximately \$188.5 billion across 452 funds in Q1 2021. It is below the average number of funds over the past 21 quarters.
- As of April 2021, there were 4,579 private equity funds raising capital targeting an aggregate \$914 billion.

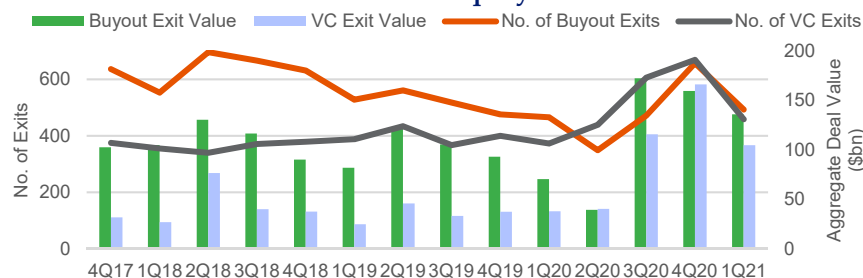
Global Quarterly Private Equity Fundraising, Q1 2016 – Q1 2021



## Exit Activity

- Both buyout and venture activity and value saw a dramatic rebound in 3Q and 4Q 2020 while tapering off slightly in Q1 2021.
- A small year over year decrease in 2020 aggregate buyout exit value (-10%) and exit activity (-7%) was countered by a dramatic increase in venture capital exits (up 31% for 2020 compared to 2019), and value (up by 155%).

Global Private Equity Exits



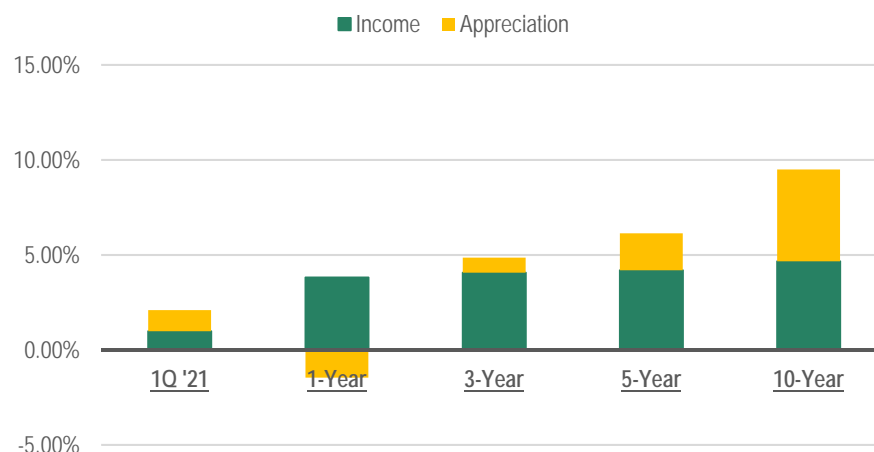
Sources this page: Thomson Reuters, Preqin. All data is as of the latest available. Performance data was final as of 9/30/20 and fundraising and exit data as of Q1 2021.

# Q1 2021 In Review: Real Estate

## Real Estate Performance\*

- NFI-ODCE returned 2.09% (gross) for the quarter, while the NCREIF-NPI returned 1.72% and the NAREIT Equity REIT Index returned 8.32%.
- Income for the NFI-ODCE was 98 bps for the quarter. Appreciation of assets accounted for the remaining 111 bps return.
- In the U.S., for the first quarter of 2021 retail sector appreciation was -1.51%, apartment sector appreciation was 0.79%, office sector appreciation was -0.14% and industrial sector appreciation was 3.63%. For the same time period, retail sector income was 1.06%, apartment sector income was 0.90%, office sector income was 1.13% and industrial sector income was 1.08%.
- In the U.S., the return for the first quarter of 2021 by region was: East (1.33%), Midwest (1.12%), South (1.69%) and West (2.15%).

NCREIF Fund Index (NFI) Open-End Diversified Core (ODCE) Real Estate Performance

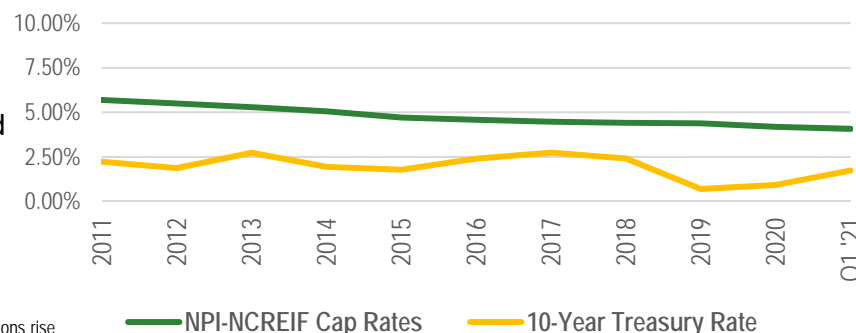


The NFI-ODCE (Open-end Diversified Core Equity) is defined by NCREIF as a fund-level cap-weighted, gross of fee, time-weighted return index with an inception date of December 31, 1977.

## Real Estate Capitalization Rates\* vs. Treasuries

- Cap rates compressed 15 bps in the fourth quarter to 4.03%, and operating income improved, but remained negative in the quarter at -1.44%.
- The 10-year Treasury averaged 1.34% in the first quarter, and ended the quarter at 1.73%. As a result, the Q1 2021 spread between the 10-year Treasury rate and cap-rates tightened 95 bps from the previous quarter to 230 bps.

Capitalization Rates & 10-Year U.S. Treasury Rates

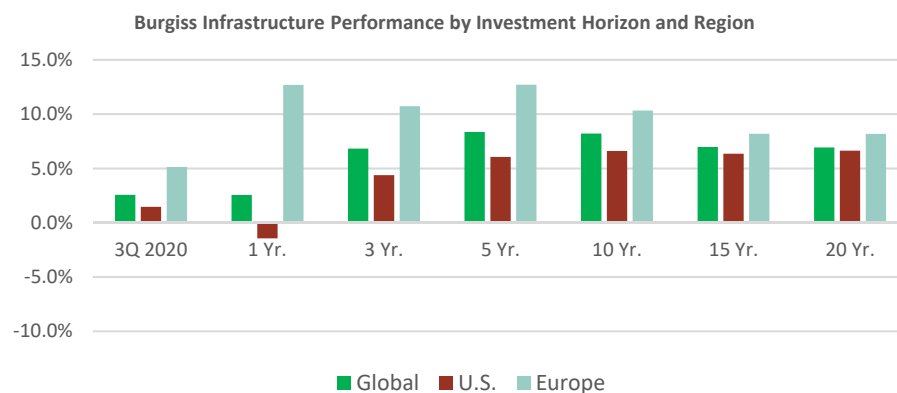


\*A cap rate is the potential rate of return on a real estate investment. Assuming no change in net operating income, real estate valuations rise when cap rates fall. Comparing cap rates to the 10-year U.S. Treasury provides investors with an estimated spread for expected returns from real estate (higher risk) vs. fixed rate bond (lower risk) investments. NFI-ODCE returns are preliminary performance. Sources this page: NCREIF, NPI, FRED Economic Data (Federal Reserve Bank of St Louis)

# Q1 2021 In Review: Infrastructure

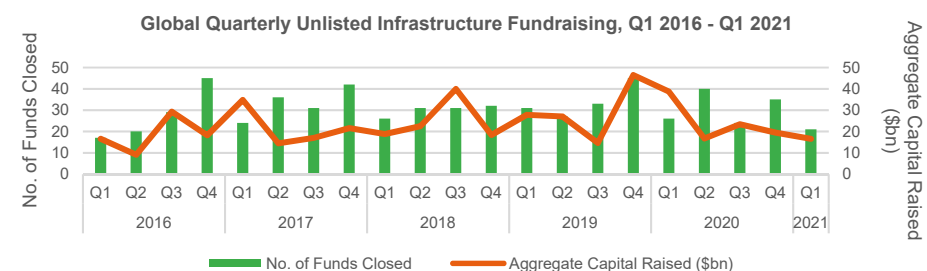
## Performance

- The total return for U.S. private infrastructure funds was 1.5% in Q3 2020\* and 2.5% over the 1-year period ending 9/30/2020.
- On a relative basis, U.S. private infrastructure had the weakest returns in the third quarter (1.5%) while European funds posted a strong positive return of 5.1% and the global composite return was 2.6% in Q3.
- The 3-, 5-, 10-, 15-, and 20-year returns for U.S. private infrastructure funds were 1.8%, 3.3%, 6.0%, 5.6%, 5.9%, respectively, at the end of Q3 2020.
- Public infrastructure registered a 2.2% return in Q3 2020 and -11.0% YTD, as per the FTSE Global Core Infrastructure 50/50 Index. Trailing 1-, 3-, 5-year returns are -7.6%, 3.5% and 7.7%, respectively, with trailing volatility of 27.7%, 17.1%, and 14.2%.



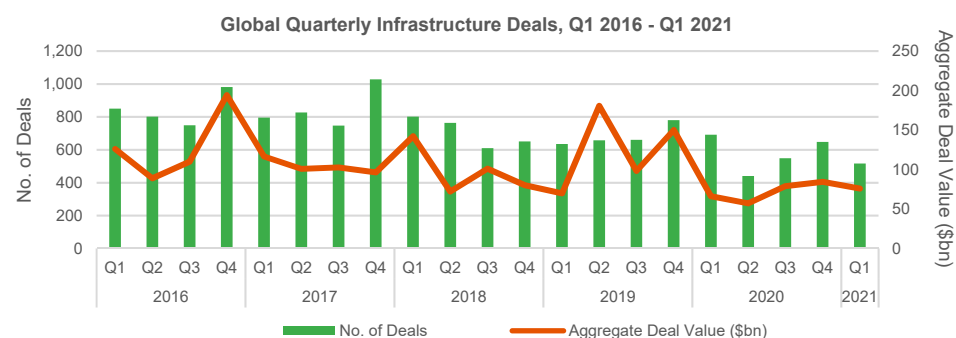
## Fundraising

- Fundraising fell 15% in 2020 relative to 2019, due to the hurdles with fundraising rather than a decrease in investor appetite.
- In Q1 of 2021, six funds closed above \$1bn in fund size, with a strong focus in Europe raising just shy of \$9bn relative to North Americas \$3bn.
- Funds continue to have longer duration fundraises as the proportion of funds taking 19 months or longer to close in 2020 increased by 27 percent when compared to 2019.



## Deal Activity

- The asset class showed its resilience in Q4, with deal activity rebounding to its pre-pandemic levels.
- 2020 exemplified that more established markets are more fit with handling market disruptions as Europe maintained momentum of deal flow, increasing its share of 38% in 2019 to 41% of deals in 2020 whereas Asia and ROW saw a 25% drop in 2019 and 2020.
- Telecom had the strongest demand growth, doubling its average share of quarterly deal growth (from 4% to 9%) as the pandemic continues to keep workers remote.



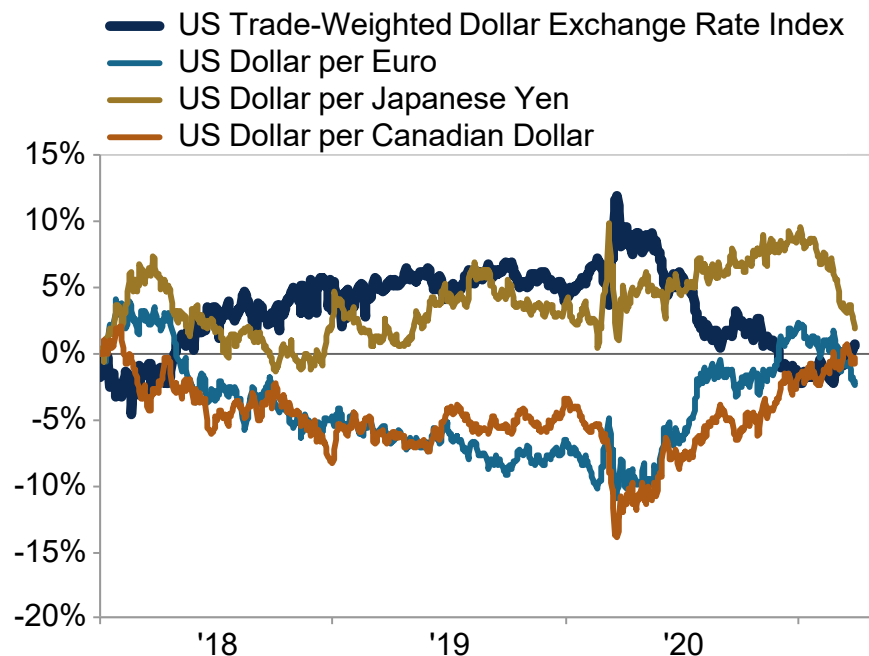
\*Most recent data available from Burgiss Privatel as of 3Q 2020. Preliminary returns Source: Preqin

# Q1 2021 In Review: Commodities and Currencies

BCOM Indices	QTD	YTD	1-Year	3-Year	5-Year	10-Year
Bloomberg Commodity Index (BCOM)	6.92	6.92	35.04	-0.20	2.31	-6.28
Energy	17.32	17.32	37.44	-13.62	-4.26	-14.75
Agriculture	6.81	6.81	38.02	3.05	0.36	-5.26
Industrial Metals	7.49	7.49	53.35	4.73	10.31	-2.86
Precious Metals	-9.26	-9.26	15.25	8.56	6.05	-0.76
Livestock	10.44	10.44	17.69	-4.58	-4.96	-4.94

## Commodity and Currency Highlights

- The Bloomberg Commodity Index had another strong quarter in Q1 2021. Energy (+17.3%) made the biggest gain. Prices for Brent crude and gasoline rose with higher global demand.
- Livestock (+10.4%) and industrial metals (+7.5%) also rose. Livestock prices were higher with increasing demand worldwide. Industrial metals were up on strong performance by aluminum and copper.
- The US dollar was higher in Q1 as economic news continued to improve. The euro and the Canadian dollar rose against the USD while the yen declined against it.



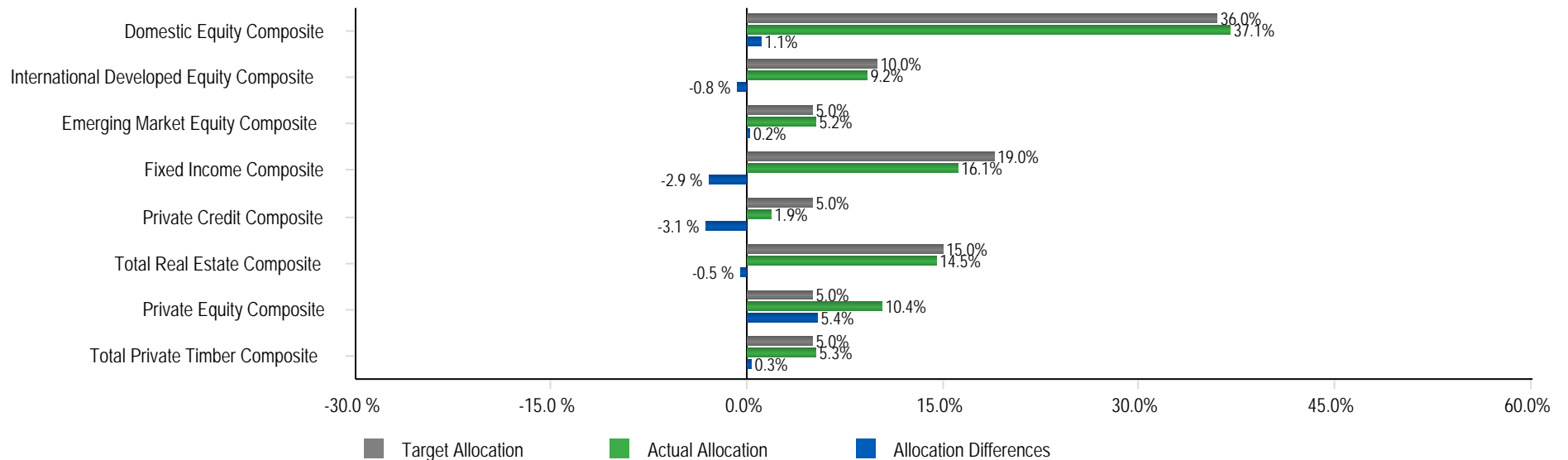
Source this page: FactSet

## Total Fund Composite



Allocation vs. Targets

	Market Value (\$)	% of Portfolio	Policy (%)	Differences (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund Composite	2,055,458,945	100.0	100.0	0.0		
Domestic Equity Composite	762,442,816	37.1	36.0	1.1	21.0	51.0
International Developed Equity Composite	189,708,505	9.2	10.0	-0.8	5.0	15.0
Emerging Market Equity Composite	107,910,286	5.2	5.0	0.2	2.0	8.0
Fixed Income Composite	331,744,633	16.1	19.0	-2.9	9.0	29.0
Private Credit Composite	38,959,187	1.9	5.0	-3.1	2.0	8.0
Total Real Estate Composite	297,890,070	14.5	15.0	-0.5	10.0	20.0
Private Equity Composite	214,064,574	10.4	5.0	5.4	2.0	8.0
Total Private Timber Composite	109,824,233	5.3	5.0	0.3	2.0	8.0



## Asset Allocation Comparison as of March 31, 2021

### TARGET ALLOCATIONS

<u>EQUITIES</u>		
Large Cap Equity	22.00%	\$452,200,968
Mid Cap Equity	7.00%	\$143,882,126
Small Cap Equity	7.00%	\$143,882,126
International Equity	10.00%	\$205,545,895
Emerging Equity Market	5.00%	\$102,772,947
<b>EQUITIES TOTAL</b>	<b>51.00%</b>	<b>\$1,048,284,062</b>

### FIXED INCOME

<b>FIXED INCOME TOTAL</b>	<b>19.00%</b>	<b>\$390,537,200</b>
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### PRIVATE CREDIT

<b>PRIVATE CREDIT TOTAL</b>	<b>5.00%</b>	<b>\$102,772,947</b>
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### REAL ESTATE

Core Real Estate	4.00%
Value Add Real Estate	4.00%

### CURRENT ALLOCATIONS

					<u>3/31/2021</u>		
SSGA- S&P 500 Index			11.10%		\$228,182,205		
T. Rowe Price - Large Cap Growth			5.70%		\$117,156,710		
AJO - Large Cap Value			0.00%		\$0		
Aristotle - Large Cap Value			5.38%		\$110,542,934		
<b>Large Cap Equity</b>	<b>22.00%</b>	<b>\$452,200,968</b>	<b>22.18%</b>	<b>\$455,881,849</b>	<b>0.18%</b>	<b>14-34%</b>	
TimesSquare - Mid Cap Growth			3.58%		\$73,554,070		
Iridian Mid Cap Value			3.85%		\$79,095,114		
<b>Mid Cap Equity</b>	<b>7.00%</b>	<b>\$143,882,126</b>	<b>7.43%</b>	<b>\$152,649,184</b>	<b>0.43%</b>	<b>3-13%</b>	
Emerald - Small Cap Growth			3.79%		\$77,942,796		
Wedge - Small Cap Value			3.70%		\$75,968,987		
<b>Small Cap Equity</b>	<b>7.00%</b>	<b>\$143,882,126</b>	<b>7.49%</b>	<b>\$153,911,783</b>	<b>0.49%</b>	<b>3-13%</b>	
Artisan Partners - International Growth			4.76%		\$97,862,705		
Alliance Bernstein - International Value			4.47%		\$91,845,800		
<b>International Equity</b>	<b>10.00%</b>	<b>\$205,545,895</b>	<b>9.23%</b>	<b>\$189,708,505</b>	<b>-0.77%</b>	<b>5-15%</b>	
JP Morgan			5.25%		\$107,910,286		
<b>Emerging Market Equity</b>	<b>5.00%</b>	<b>\$102,772,947</b>	<b>5.25%</b>	<b>\$107,910,286</b>	<b>0.25%</b>	<b>2-8%</b>	
<b>EQUITIES TOTAL</b>	<b>51.00%</b>	<b>\$1,048,284,062</b>	<b>51.57%</b>	<b>\$1,060,061,607</b>			

Fidelity - Core Fixed			4.62%		\$94,960,942		
Metropolitan West - Intermediate Fixed			4.53%		\$93,028,490		
Voya Bank Loans			4.52%		\$92,921,953		
Pugh - Core Fixed			1.24%		\$25,520,115		
Semper - Mortgages			1.23%		\$25,313,133		
<b>FIXED INCOME TOTAL</b>	<b>19.00%</b>	<b>\$390,537,200</b>	<b>16.14%</b>	<b>\$331,744,633</b>	<b>-2.86%</b>	<b>9-29%</b>	

	<u>Committed</u>	<u>Contributions</u>	<u>Distributions</u>				
Brightwood Capital SBIC III	\$5,000,000	N/A	N/A	0.00%			
Crescent Private Credit Partners	\$20,000,000	\$30,663,006	\$15,256,045	0.80%	\$16,537,589		
Golub Capital Partners 12, LP	\$20,000,000	\$11,000,000	\$1,262,120	0.54%	\$11,000,000		
Oaktree MMDL	\$20,000,000	\$14,640,000	\$4,106,000	0.56%	\$11,421,598		
<b>PRIVATE CREDIT TOTAL</b>	<b>5.00%</b>	<b>\$102,772,947</b>	<b>1.90%</b>	<b>\$38,959,187</b>	<b>-3.10%</b>	<b>2-8%</b>	

	<u>Committed</u>	<u>Contributions</u>	<u>Distributions</u>				
JP Morgan SPF	N/A	N/A	N/A	2.31%	\$47,439,309		
TA Realty Core Property Fund	\$45,000,000	\$45,000,000	\$5,018,452	2.56%	\$52,702,586		
Heitman Value Partners III	\$20,000,000	\$18,851,068	\$24,023,249	0.10%	\$2,065,486		
Heitman Value Partners IV	\$20,000,000	\$11,127,148	\$2,385,966	0.52%	\$10,669,543		
Heitman Value Partners V (Pending Funding)	\$25,000,000	N/A	N/A	0.00%			
Allegis*	\$9,000,000	\$9,198,106	\$11,338,326	0.00%	\$0		
TA Realty X**	\$7,500,000	\$7,501,451	\$11,291,244	0.04%	\$813,543		
TA Realty XI	\$25,000,000	\$25,000,000	\$9,274,818	1.26%	\$25,939,126		
TA Realty XII	\$20,000,000	\$12,000,000	\$423,170	0.51%	\$10,572,029		
TA Realty (New Fund - Pending Funding)	\$25,000,000	N/A	N/A	0.00%			
Angelo Gordon Core Plus Realty Fund III	\$10,000,000	\$9,457,227	\$14,947,467	0.04%	\$772,532		
Angelo Gordon Core Plus Realty Fund IV	\$25,000,000	\$23,728,387	\$6,312,500	1.15%	\$23,578,019		
Angelo Gordon (New Fund - Pending Funding)	\$12,500,000	N/A	N/A	0.00%			

**Asset Allocation Comparison as of March 31, 2021**

**TARGET ALLOCATIONS**

Opportunistic Real Estate	4.00%	
REIT	3.00%	
<b>REAL ESTATE TOTAL</b>	<b>15.00%</b>	<b>\$308,318,842</b>
<b>PRIVATE EQUITY</b>		
Fund of Funds - Hybrid		
Secondaries		
Venture Capital		
<b>PRIVATE EQUITY TOTAL</b>	<b>5.00%</b>	<b>\$102,772,947</b>
<b>TIMBER</b>		
<b>TIMBER TOTAL</b>	<b>5.00%</b>	<b>\$102,772,947</b>
<b>CASH</b>		
<b>CASH TOTAL</b>	<b>0.00%</b>	<b>\$0</b>

**CURRENT ALLOCATIONS**

							<b>DIFF.</b>	<b>RANGES</b>
AEW Partners V	\$5,000,000	\$4,473,871	\$4,915,387	0.00%	\$7,689			
WCP Real Estate Fund IV**	\$20,000,000	\$32,336,000	\$25,818,967	0.78%	\$16,059,466			
WCP Real Estate Fund V	\$20,000,000	\$3,400,000	N/A	0.17%	\$3,400,000			
Northwood Real Estate Partners IV**	\$20,000,000	\$25,501,890	\$18,974,540	1.00%	\$20,617,215			
Northwood Real Estate Partners VIII**	\$20,000,000	\$12,567,430	\$4,907,432	0.34%	\$6,896,663			
Angelo Gordon Realty Fund IX	\$25,000,000	\$23,318,273	\$7,092,368	1.14%	\$23,356,356			
Angelo Gordon Realty Value Fund X	\$20,000,000	\$9,297,721	\$0	0.49%	\$10,117,574			
Angelo Gordon (New Fund - Pending Funding)	\$12,500,000	N/A	N/A	0.00%				
CenterSquare U.S. Real Estate Securities	N/A	N/A	N/A	2.09%	\$42,882,934			
<b>REAL ESTATE TOTAL</b>				<b>14.49%</b>	<b>\$297,890,070</b>	<b>-0.51%</b>	<b>10-20%</b>	
		<i>Committed</i>	<i>Contributions</i>	<i>Distributions</i>				
BlackRock Diversified Private Equity V	\$25,000,000	\$18,966,775	\$4,093,115	1.17%	\$23,976,583			
BlackRock Private Equity Partners VII US	\$25,000,000	\$19,337,351	\$3,275,430	1.05%	\$21,569,065			
Lexington Middle Market IV	\$25,000,000	\$11,329,839	\$2,308,514	0.52%	\$10,715,300			
Lexington Capital Partners VIII	\$15,000,000	\$13,572,415	\$9,465,929	0.48%	\$9,763,681			
Pomona VIII**	\$15,000,000	\$9,635,611	\$12,492,193	0.07%	\$1,399,994			
Pomona IX	\$15,000,000	\$7,619,761	\$3,269,071	0.31%	\$6,293,975			
Horsley Bridge XI Venture	\$25,000,000	\$23,550,000	\$0	2.17%	\$44,574,116			
Horsley Bridge XII Venture	\$20,000,000	\$14,618,000	\$0	0.92%	\$18,900,508			
TrueBridge-Kauffman Fellows Endowment Fund IV	\$25,000,000	\$23,250,000	\$2,117,619	2.65%	\$54,489,565			
TrueBridge Capital Partners Fund V	\$20,000,000	\$15,800,000	\$0	1.09%	\$22,381,787			
<b>PRIVATE EQUITY TOTAL</b>				<b>10.41%</b>	<b>\$214,064,574</b>	<b>5.41%</b>	<b>2-8%</b>	
		<i>Committed</i>	<i>Contributions</i>	<i>Distributions</i>				
Molpus Woodlands Fund IV	\$30,000,000	\$27,542,264	\$2,388,678	1.15%	\$23,621,465			
Molpus Woodlands Fund V	\$15,000,000	\$12,900,000	\$200,387	0.77%	\$15,922,550			
Stafford International Timberland VIII	\$30,000,000	\$32,762,190	\$6,183,221	1.51%	\$31,135,521			
BTG Pactual OE US Timberland Fund, LP	\$30,000,000	\$30,000,000	\$1,311,473	1.63%	\$33,593,919			
Eastern Timberland Opportunities III, LP	\$15,000,000	\$9,909,898	\$4,480,389	0.27%	\$5,550,778			
<b>TIMBER TOTAL</b>				<b>5.34%</b>	<b>\$109,824,233</b>	<b>0.34%</b>	<b>2-8%</b>	
Internal Account				0.14%	\$2,914,642			
<b>CASH TOTAL</b>				<b>0.14%</b>	<b>\$2,914,642</b>			
<b>TOTAL</b>	<b>100%</b>	<b>\$2,055,458,945</b>	<b>TOTAL</b>	<b>100%</b>	<b>\$2,055,458,945</b>			

\*Entered its wind-down phase during 2015

\*\*Contributions/distributions are added at cost through March 31, 2021

	Beginning Market Value (\$)	Net Cash Flows (\$)	Net Investment Change (\$)	Ending Market Value (\$)
Total Fund Composite	1,999,082,795	594,901	55,781,250	2,055,458,945
Domestic Equity Composite	721,782,737	-3,899,199	44,559,278	762,442,816
SSgA S&P 500 Index NL	214,890,349		13,291,856	228,182,205
T. Rowe Price	119,379,622	-5,120,134	2,897,222	117,156,710
Aristotle	92,544,216	8,335,191	9,663,527	110,542,934
Times Square Capital Mgmt	75,526,457	-2,138,422	166,035	73,554,070
Iridian	74,000,141	-190,044	5,285,017	79,095,114
Wedge Capital	65,070,423	-163,035	11,061,600	75,968,987
Emerald Advisers	79,872,394	-4,128,689	2,199,091	77,942,796
International Developed Equity Composite	174,246,445	10,705,474	4,756,586	189,708,505
Artisan Partners	97,282,054	-171,801	752,452	97,862,705
Alliance Bernstein	76,964,391	10,877,275	4,004,134	91,845,800
Emerging Market Equity Composite	108,794,074	-3,000,000	2,116,212	107,910,286
JP Morgan Emerging Markets Equity Focused	108,794,074	-3,000,000	2,116,212	107,910,286
Fixed Income Composite	335,718,572	-216,643	-3,757,296	331,744,633
Fidelity	97,716,972		-2,756,030	94,960,942
Metropolitan West Asset Mgmt	94,408,835	-66,615	-1,313,730	93,028,490
Pugh Capital	26,430,133	-16,424	-893,594	25,520,115
Semper Capital	25,467,901	-31,628	-123,140	25,313,133
Voya	91,694,730	-101,976	1,329,199	92,921,953
Private Credit Composite	34,470,598	4,303,685	184,904	38,959,187
Crescent Private Credit Partners	14,976,308	1,561,281		16,537,589
Oaktree Middle-Market Direct Lending Fund, L.P.	8,916,694	2,320,000	184,904	11,421,598
Golub Capital Partners 12, LP	10,577,596	422,404		11,000,000
Public Real Estate Composite	98,610,482	-520,362	2,051,774	100,141,895
JP Morgan SPF	46,574,303		865,006	47,439,309
TA Realty Core Property Fund	52,036,180	-520,362	1,186,769	52,702,586

	Beginning Market Value (\$)	Net Cash Flows (\$)	Net Investment Change (\$)	Ending Market Value (\$)
REIT Composite	39,561,440	-56,389	3,377,883	42,882,934
CenterSquare U.S. Real Estate Securities	39,561,440	-56,389	3,377,883	42,882,934
Private Real Estate Composite	159,684,650	-6,371,371	1,551,963	154,865,241
AEW Partners V	11,173		-3,484	7,689
AG Core Plus Realty Fund III, L.P.	1,436,763	-664,231		772,532
AG Core Plus Realty Fund IV, L.P.	25,765,519	-2,187,500		23,578,019
AG Realty Fund IX	24,543,857	-1,187,501		23,356,356
AG Realty Value Fund X	8,367,574	1,750,000		10,117,574
Heitman Value Partners III	1,761,722	-2,419	306,183	2,065,486
Heitman Value Partners IV	10,675,680	-859,128	852,991	10,669,543
Northwood Real Estate Partners IV	21,103,682	-486,467		20,617,215
Northwood RE Partners VIII	6,113,774	782,889		6,896,663
TA Realty Fund X	788,235		25,308	813,543
TA Realty Fund XI	26,443,638	-1,849,987	1,345,475	25,939,126
TA Realty Fund XII	10,251,654	1,745,514	-1,425,139	10,572,029
Westport Real Estate Fund IV	22,421,379	-6,812,541	450,629	16,059,466
Westport Real Estate Fund V		3,400,000		3,400,000
Private Equity Composite	214,092,318	-27,744		214,064,574
BlackRock Diversified Private Equity V	24,757,831	-781,248		23,976,583
BlackRock Private Equity Partners VII US, LP	21,569,065			21,569,065
Horsley Bridge XI Venture, L.P.	44,574,116			44,574,116
Horsley Bridge XII Venture, L.P.	17,482,508	1,418,000		18,900,508
Lexington Middle Market Investors IV, LP	10,523,166	192,134		10,715,300
Lexington Capital Partners VIII, L.P.	10,391,261	-627,580		9,763,681
Pomona Capital VIII	1,399,994			1,399,994
Pomona Capital IX	6,505,406	-211,431		6,293,975
TrueBridge Fund IV	56,107,184	-1,617,619		54,489,565
TrueBridge Fund V	20,781,787	1,600,000		22,381,787

	Beginning Market Value (\$)	Net Cash Flows (\$)	Net Investment Change (\$)	Ending Market Value (\$)
Timber Composite Closed-End	74,802,555	1,406,245	21,514	76,230,314
Molpus Woodlands Fund IV, L.P.	23,621,465			23,621,465
Molpus Woodlands Fund V	16,122,937	-200,387		15,922,550
Stafford Int'l Timberland VIII	31,135,521			31,135,521
Eastern Timberland Opportunities III LP (ETO III)	3,922,632	1,606,632	21,514	5,550,778
Timber Composite Open-End	32,678,569		915,349	33,593,919
BTG Pactual Open Ended Core US Timberland Fund (OEF)	32,678,569		915,349	33,593,919
Cash Account	4,640,354	-1,728,794	3,082	2,914,642

	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
Beginning Market Value	1,999,082,795	1,999,082,795	1,787,784,379	1,570,322,698	1,670,176,188	1,409,182,850	1,382,224,477	1,118,513,310
Net Cash Flows	594,901	594,901	-975,280	-62,518,620	-142,822,101	-230,619,955	-307,941,436	-412,221,920
Net Investment Change	55,781,250	55,781,250	268,649,846	547,654,867	528,104,858	876,896,050	981,175,904	1,349,167,555
Ending Market Value	2,055,458,945	2,055,458,945	2,055,458,945	2,055,458,945	2,055,458,945	2,055,458,945	2,055,458,945	2,055,458,945
<b>Performance (%)</b>								
	2.9	2.9	15.1	35.7	10.8	11.4	9.1	9.6

	Allocation		Performance (%)									
	Market Value (\$)	% of Portfolio	Quarter	Year To Date	Oct-2020 To Mar-2021	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Total Fund Composite	2,055,458,945	100.0	2.9	2.9	15.1	35.7	10.8	11.4	9.1	9.6	9.5	Jan-90
<i>Policy Index</i>			<i>3.7</i>	<i>3.7</i>	<i>14.2</i>	<i>34.9</i>	<i>10.2</i>	<i>10.7</i>	<i>8.9</i>	<i>9.2</i>	<i>8.3</i>	
Domestic Equity Composite	762,442,816	37.1	6.4	6.4	25.5	67.3	15.6	16.2	12.2	12.8	10.8	Jan-03
<i>Russell 3000 Index</i>			<i>6.3</i>	<i>6.3</i>	<i>22.0</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>	<i>13.4</i>	<i>13.8</i>	<i>11.2</i>	
International Developed Equity Composite	189,708,505	9.2	2.7	2.7	15.6	41.5	4.4	8.0	5.0	6.2	7.4	Jan-03
<i>MSCI EAFE (Net)</i>			<i>3.5</i>	<i>3.5</i>	<i>20.1</i>	<i>44.6</i>	<i>6.0</i>	<i>8.8</i>	<i>4.8</i>	<i>5.5</i>	<i>7.6</i>	
Emerging Market Equity Composite	107,910,286	5.2	1.7	1.7	25.7	72.1	13.0	17.2	10.5	6.8	6.7	Dec-10
<i>MSCI EM (net)</i>			<i>2.3</i>	<i>2.3</i>	<i>22.4</i>	<i>58.4</i>	<i>6.5</i>	<i>12.1</i>	<i>6.6</i>	<i>3.7</i>	<i>4.4</i>	
Fixed Income Composite	331,744,633	16.1	-1.1	-1.1	0.7	8.4	4.9	4.0	3.7	3.9	5.0	Jan-03
<i>Fixed Income Index</i>			<i>-1.4</i>	<i>-1.4</i>	<i>0.0</i>	<i>6.0</i>	<i>4.4</i>	<i>3.5</i>	<i>3.3</i>	<i>3.4</i>	<i>3.9</i>	
Public Real Estate Composite	100,141,895	4.9	2.1	2.1	4.9	4.1	6.5	7.5	9.0	10.6	8.5	Jan-03
<i>NCREIF ODCE Equal Weighted</i>			<i>2.3</i>	<i>2.3</i>	<i>3.7</i>	<i>2.9</i>	<i>5.3</i>	<i>6.5</i>	<i>8.5</i>	<i>9.8</i>	<i>7.6</i>	
REIT Composite	42,882,934	2.1	8.5	8.5	21.6	38.1	10.5	5.9	8.2	8.6	14.2	Jul-09
<i>FTSE NAREIT Equity REIT Index</i>			<i>8.9</i>	<i>8.9</i>	<i>21.5</i>	<i>37.8</i>	<i>9.5</i>	<i>5.3</i>	<i>7.7</i>	<i>8.6</i>	<i>13.7</i>	
Timber Composite Open-End	33,593,919	1.6	2.8	2.8	6.3	8.6					7.1	Jan-19
<i>NCREIF Timberland Index</i>			<i>0.8</i>	<i>0.8</i>	<i>1.3</i>	<i>1.5</i>	<i>1.7</i>	<i>2.5</i>	<i>3.7</i>	<i>4.5</i>	<i>1.3</i>	



	Allocation		Performance (%)									
	Market Value (\$000)	%	1 Quarter	Year To Date	Oct-2020 To Mar-2021	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
SSgA S&P 500 Index NL	228,182		6.2	6.2	19.1	56.4	16.8	16.3	13.6	13.9	15.7	07/01/2010
<i>S&amp;P 500</i>			<i>6.2</i>	<i>6.2</i>	<i>19.1</i>	<i>56.4</i>	<i>16.8</i>	<i>16.3</i>	<i>13.6</i>	<i>13.9</i>	<i>15.7</i>	
IM U.S. Large Cap Core Equity (SA+CF) Median			6.7	6.7	20.3	57.2	16.2	16.1	13.3	13.8	15.6	
SSgA S&P 500 Index NL Rank			62	62	65	54	41	45	39	39	44	
T. Rowe Price	117,157		4.1	4.1	18.0	69.3	23.4	24.7			20.0	01/01/2015
<i>Russell 1000 Growth Index</i>			<i>0.9</i>	<i>0.9</i>	<i>12.4</i>	<i>62.7</i>	<i>22.8</i>	<i>21.0</i>	<i>17.5</i>	<i>16.6</i>	<i>17.7</i>	
IM U.S. Large Cap Growth Equity (SA+CF) Median			2.3	2.3	13.7	60.3	21.5	20.1	16.5	15.9	16.6	
T. Rowe Price Rank			24	24	19	17	30	7			10	
Aristotle	110,543		9.9	9.9								12/01/2020
<i>Russell 1000 Value Index</i>			<i>11.3</i>	<i>11.3</i>	<i>29.3</i>	<i>56.1</i>	<i>11.0</i>	<i>11.7</i>	<i>9.4</i>	<i>11.0</i>	<i>15.5</i>	
IM U.S. Large Cap Value Equity (SA+CF) Median			11.6	11.6	29.9	61.4	11.9	13.0	10.4	11.8	16.3	
Aristotle Rank			67	67								
Times Square Capital Mgmt	73,554		0.2	0.2	18.2	66.1	20.6	19.3	14.5	15.0	17.2	07/01/2009
<i>Russell Midcap Growth Index</i>			<i>-0.6</i>	<i>-0.6</i>	<i>18.3</i>	<i>68.6</i>	<i>19.4</i>	<i>18.4</i>	<i>14.4</i>	<i>14.1</i>	<i>17.1</i>	
IM U.S. Mid Cap Growth Equity (SA+CF) Median			1.5	1.5	21.1	72.2	20.9	19.5	15.1	14.7	17.6	
Times Square Capital Mgmt Rank			67	67	73	74	53	57	61	47	67	
Iridian	79,095		7.1	7.1	33.3	80.1	10.6	11.5			8.7	08/01/2015
<i>Russell Midcap Value Index</i>			<i>13.1</i>	<i>13.1</i>	<i>36.1</i>	<i>73.8</i>	<i>10.7</i>	<i>11.6</i>	<i>9.3</i>	<i>11.1</i>	<i>9.9</i>	
IM U.S. Mid Cap Value Equity (SA+CF) Median			13.9	13.9	39.5	77.1	11.3	12.6	10.1	11.7	10.5	
Iridian Rank			96	96	80	36	64	73			89	
Wedge Capital	75,969		17.0	17.0	53.6	84.9	9.0	10.4	8.5	10.2	12.1	06/01/1994
<i>Russell 2000 Value Index</i>			<i>21.2</i>	<i>21.2</i>	<i>61.6</i>	<i>97.1</i>	<i>11.6</i>	<i>13.6</i>	<i>8.9</i>	<i>10.1</i>	<i>10.4</i>	
IM U.S. Small Cap Value Equity (SA+CF) Median			18.9	18.9	54.6	92.9	11.2	13.2	9.5	11.1	12.6	
Wedge Capital Rank			63	63	56	66	78	89	75	78	73	
Emerald Advisers	77,943		2.6	2.6	29.4	88.2	18.8	20.0			13.3	08/01/2015
<i>Russell 2000 Growth Index</i>			<i>4.9</i>	<i>4.9</i>	<i>35.9</i>	<i>90.2</i>	<i>17.2</i>	<i>18.6</i>	<i>12.8</i>	<i>13.0</i>	<i>13.2</i>	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.9	5.9	34.7	96.3	22.4	21.9	15.2	15.3	16.6	
Emerald Advisers Rank			76	76	72	64	68	62			81	

	Allocation		Performance (%)					Inception Date				
	Market Value (\$000)	%	1 Quarter	Year To Date	Oct-2020 To Mar-2021	1 Year	3 Years		5 Years	7 Years	10 Years	Since Inception
Artisan Partners	97,863		0.8	0.8	8.7	35.3	7.5	9.3	5.8	7.8	7.4	10/01/1999
<i>MSCI EAFE Growth Index (Net)</i>			-0.6	-0.6	12.5	42.6	9.8	10.8	7.2	7.2	4.4	
IM International Growth Equity (SA+CF) Median			1.1	1.1	17.0	56.5	10.5	12.6	8.5	8.7	7.5	
Artisan Partners Rank			60	60	97	99	79	92	92	65	55	
Alliance Bernstein	91,846		5.1	5.1	25.2	49.9	0.9	6.4	4.0	4.5	0.8	01/01/2008
<i>MSCI EAFE Value Index (Net)</i>			7.4	7.4	28.7	45.7	1.8	6.6	2.2	3.7	1.1	
IM International Large Cap Value Equity (SA+CF) Median			6.1	6.1	25.6	52.0	5.7	9.0	5.2	6.2	4.2	
Alliance Bernstein Rank			63	63	53	60	93	91	74	86	97	
JP Morgan Emerging Markets Equity Focused	107,910		1.7	1.7	25.7	72.1	13.0	17.2	10.5	6.8	6.5	01/01/2011
<i>MSCI EM (net)</i>			2.3	2.3	22.4	58.4	6.5	12.1	6.6	3.7	3.8	
IM Emerging Markets Equity (SA+CF) Median			3.4	3.4	24.8	64.7	7.0	12.7	7.3	5.3	5.3	
JP Morgan Emerging Markets Equity Focused Rank			75	75	39	28	12	10	13	25	25	
Fidelity	94,961		-2.8	-2.8	-1.0	6.4	6.1	4.4	4.3	4.4	5.1	08/01/2006
<i>Bloomberg Barclays U.S. Aggregate</i>			-3.4	-3.4	-2.7	0.7	4.7	3.1	3.3	3.4	4.3	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			-3.2	-3.2	-2.1	3.4	5.3	3.8	3.8	4.0	4.8	
Fidelity Rank			26	26	17	15	8	11	11	19	31	
Metropolitan West Asset Mgmt	93,028		-1.4	-1.4	-0.5	4.1	5.1	3.5	3.2	3.4	5.0	07/01/1999
<i>Bloomberg Barclays Intermed. U.S. Government/Credit</i>			-1.9	-1.9	-1.4	2.0	4.4	2.8	2.8	2.9	4.4	
IM U.S. Intermediate Duration (SA+CF) Median			-1.6	-1.6	-0.8	3.7	4.6	3.2	3.1	3.3	4.7	
Metropolitan West Asset Mgmt Rank			28	28	34	42	16	27	40	33	18	
Pugh Capital	25,520		-3.4	-3.4	-2.2	2.5					6.7	11/01/2018
<i>Bloomberg Barclays U.S. Aggregate</i>			-3.4	-3.4	-2.7	0.7	4.7	3.1	3.3	3.4	6.2	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			-3.2	-3.2	-2.1	3.4	5.3	3.8	3.8	4.0	6.9	
Pugh Capital Rank			70	70	56	68					61	
Semper Capital	25,313		-0.5	-0.5	0.7	7.9					4.9	11/01/2018
<i>Bloomberg Barclays U.S. Mortgage Backed Securities</i>			-1.1	-1.1	-0.9	-0.1	3.7	2.4	2.9	2.8	4.9	
IM U.S. Mortgage Backed Bonds (SA+CF) Median			-0.6	-0.6	0.1	2.0	4.0	3.3	3.5	3.7	5.2	
Semper Capital Rank			44	44	34	29					58	

	Allocation		Performance (%)					Inception Date				
	Market Value (\$000)	%	1 Quarter	Year To Date	Oct-2020 To Mar-2021	1 Year	3 Years		5 Years	7 Years	10 Years	Since Inception
Voya	92,922		1.4	1.4	4.8	17.6	3.4	4.5			3.7	05/01/2015
<i>S&amp;P/LSTA Leveraged Loan Index</i>			1.8	1.8	5.7	20.7	4.1	5.3	3.9	4.3	4.1	
IM U.S. Bank Loans (SA+CF) Median			1.7	1.7	5.3	18.3	4.0	5.1	4.0	4.5	4.1	
Voya Rank			67	67	74	59	72	88			78	
CenterSquare U.S. Real Estate Securities	42,883		8.5	8.5	21.6	38.1	10.7				9.2	02/01/2018
<i>FTSE NAREIT Equity REIT Index</i>			8.9	8.9	21.5	37.8	9.5	5.3	7.7	8.6	7.5	
IM U.S. REIT (SA+CF) Median			8.3	8.3	18.7	35.9	10.8	6.8	8.9	9.5	8.9	
CenterSquare U.S. Real Estate Securities Rank			40	40	29	19	60				45	
JP Morgan SPF	47,439		1.9	1.9	3.8	1.7	4.5	5.8	7.8	9.7	7.3	04/01/1990
<i>NCREIF ODCE Equal Weighted</i>			2.3	2.3	3.7	2.9	5.3	6.5	8.5	9.8	7.1	
TA Realty Core Property Fund	52,703		2.3	2.3	5.9	6.3	8.2				10.1	03/01/2018
<i>NCREIF ODCE Equal Weighted</i>			2.3	2.3	3.7	2.9	5.3	6.5	8.5	9.8	5.9	
BTG Pactual Open Ended Core US Timberland Fund (OEF)	33,594		2.8	2.8	6.3	8.6					7.1	01/01/2019
<i>NCREIF Timberland Index</i>			0.8	0.8	1.3	1.5	1.7	2.5	3.7	4.5	1.3	
Cash Account	2,915		0.1	0.1	0.1	0.4	1.6	1.2	0.9	0.7	2.9	07/01/1993
<i>90 Day U.S. Treasury Bill</i>			0.0	0.0	0.1	0.1	1.5	1.2	0.9	0.6	2.4	

	Allocation		Performance (%)								Inception Date
	Market Value (\$000)	%	1 Quarter	Oct-2020 To Mar-2021	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	
Total Fund Composite	2,055,459	100.0	2.9	15.1	35.7	10.8	11.4	9.1	9.6	9.5	01/01/1990
<i>Policy Index</i>			<i>3.7</i>	<i>14.2</i>	<i>34.9</i>	<i>10.2</i>	<i>10.7</i>	<i>8.9</i>	<i>9.2</i>	<i>8.3</i>	
Domestic Equity Composite	762,443	37.1	6.4	25.5	67.3	15.6	16.2	12.2	12.8	10.8	01/01/2003
<i>Russell 3000 Index</i>			<i>6.3</i>	<i>22.0</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>	<i>13.4</i>	<i>13.8</i>	<i>11.2</i>	
International Developed Equity Composite	189,709	9.2	2.7	15.6	41.5	4.4	8.0	5.0	6.2	7.4	01/01/2003
<i>MSCI EAFE (Net)</i>			<i>3.5</i>	<i>20.1</i>	<i>44.6</i>	<i>6.0</i>	<i>8.8</i>	<i>4.8</i>	<i>5.5</i>	<i>7.6</i>	
Emerging Market Equity Composite	107,910	5.2	1.7	25.7	72.1	13.0	17.2	10.5	6.8	6.5	01/01/2011
<i>MSCI EM (net)</i>			<i>2.3</i>	<i>22.4</i>	<i>58.4</i>	<i>6.5</i>	<i>12.1</i>	<i>6.6</i>	<i>3.7</i>	<i>3.8</i>	
Fixed Income Composite	331,745	16.1	-1.1	0.7	8.4	4.9	4.0	3.7	3.9	5.0	01/01/2003
<i>Fixed Income Index</i>			<i>-1.4</i>	<i>0.0</i>	<i>6.0</i>	<i>4.4</i>	<i>3.5</i>	<i>3.3</i>	<i>3.4</i>	<i>3.9</i>	
Public Real Estate Composite	100,142	4.9	2.1	4.9	4.1	6.5	7.5	9.0	10.6	8.5	01/01/2003
<i>NCREIF ODCE Equal Weighted</i>			<i>2.3</i>	<i>3.7</i>	<i>2.9</i>	<i>5.3</i>	<i>6.5</i>	<i>8.5</i>	<i>9.8</i>	<i>7.6</i>	
REIT Composite	42,883	2.1	8.5	21.6	38.1	10.5	5.9	8.2	8.6	14.2	07/01/2009
<i>FTSE NAREIT Equity REIT Index</i>			<i>8.9</i>	<i>21.5</i>	<i>37.8</i>	<i>9.5</i>	<i>5.3</i>	<i>7.7</i>	<i>8.6</i>	<i>13.7</i>	
Timber Composite Open-End	33,594	1.6	2.8	6.3	8.6					7.1	01/01/2019
<i>NCREIF Timberland Index</i>			<i>0.8</i>	<i>1.3</i>	<i>1.5</i>	<i>1.7</i>	<i>2.5</i>	<i>3.7</i>	<i>4.5</i>	<i>1.3</i>	

## Comparative Performance - IRR

	Market Value (\$)	%	1 Quarter	Oct-2020 To Mar-2021	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
Private Credit Composite	38,959,187	1.9	0.5	5.6	19.5					9.7	07/01/2019
Private Real Estate Composite	154,865,241	7.5	1.0	6.9	8.5	8.3	9.3	10.4	11.4	14.6	07/31/2009
Private Equity Composite	214,064,574	10.4	0.0	20.7	37.7	22.4	19.9	18.6		18.7	01/22/2014
Timber Composite Closed -End	76,230,314	3.7	0.0	1.8	2.4	2.7	3.0			2.8	09/04/2015

	Market Value (\$)	%	1 Quarter	Oct-2020 To Mar-2021	1 Year	3 Years	5 Years	7 Years	Since Inception	Inception Date
<b>Private Credit</b>										
Private Credit Composite	38,959,187	1.9	0.5	5.6	19.5				9.7	07/01/2019
Crescent Private Credit Partners	16,537,589	0.8	0.0	5.1	15.9				8.1	07/18/2019
Oaktree Middle-Market Direct Lending Fund, L.P.	11,421,598	0.6	1.8	5.9	16.8				12.3	07/10/2019
Golub Capital Partners 12, LP	11,000,000	0.5	0.0	5.9	25.3				9.9	07/01/2019
<b>Private Real Estate</b>										
Private Real Estate Composite	154,865,241	7.5	1.0	6.9	8.5	8.3	9.3	10.4	14.6	07/31/2009
AG Core Plus Realty Fund III, L.P.	772,532	0.0	0.0	-7.0	-17.6	-5.6	2.6	21.6	18.5	06/20/2011
AG Core Plus Realty Fund IV, L.P.	23,578,019	1.1	0.0	3.9	4.8	8.1	7.8		7.3	06/23/2015
AG Realty Fund IX	23,356,356	1.1	0.0	1.8	3.0	6.9	8.2		8.2	04/29/2016
AG Realty Value Fund X	10,117,574	0.5	0.0	7.3	15.5				9.3	06/10/2019
TA Realty Fund X	813,543	0.0	3.2	3.5	0.6	13.9	12.0	12.8	12.7	01/17/2013
TA Realty Fund XI	25,939,126	1.3	5.2	11.0	17.2	11.8			10.5	05/25/2016
TA Realty Fund XII	10,572,029	0.5	-13.9	-10.7	-11.6				-17.2	03/27/2020
Northwood Real Estate Partners IV	20,617,215	1.0	0.0	17.1	22.4	12.3	14.8	14.0	13.5	01/28/2014
Northwood RE Partners VIII	6,896,663	0.3	0.0	9.0	-21.4	-4.5			-4.8	02/09/2018
Heitman Value Partners III	2,065,486	0.1	17.4	17.0	13.9	11.5	15.4	14.5	14.5	04/22/2014
Heitman Value Partners IV	10,669,543	0.5	8.2	17.6	20.1				12.0	07/23/2018
Westport Real Estate Fund IV	16,059,466	0.8	2.4	4.5	7.3	7.4	8.8	8.5	8.5	04/14/2014
Westport Real Estate Fund V	3,400,000	0.2							0.0	03/11/2021
<b>Private Equity</b>										
Private Equity Composite	214,064,574	10.4	0.0	20.7	37.7	22.4	19.9	18.6	18.7	01/22/2014
BlackRock Diversified Private Equity V	23,976,583	1.2	0.0	5.2	5.3	8.2	9.8	8.6	7.7	02/11/2014
BlackRock Private Equity Partners VII US, LP	21,569,065	1.0	0.0	8.3	22.0	13.4			13.7	07/25/2017
Horsley Bridge XI Venture, L.P.	44,574,116	2.2	0.0	28.6	46.2	28.6	23.5		22.4	07/01/2015
Horsley Bridge XII Venture, L.P.	18,900,508	0.9	0.0	14.2	32.3	18.3			17.3	12/08/2017
Lexington Middle Market Investors IV, LP	10,715,300	0.5	0.0	13.3	25.8				15.6	12/21/2018
Lexington Capital Partners VIII, L.P.	9,763,681	0.5	0.0	9.5	18.0	7.5	13.1		15.6	01/08/2015
Pomona Capital VIII	1,399,994	0.1	0.0	0.0	47.1	10.2	13.9	12.7	19.2	01/22/2014
Pomona Capital IX	6,293,975	0.3	0.0	0.0	22.3	15.5			20.0	12/31/2016
TrueBridge Fund IV	54,489,565	2.7	0.0	37.5	67.4	41.8	33.6		33.2	02/02/2016
TrueBridge Fund V	22,381,787	1.1	0.0	27.0	53.2	30.3			30.3	03/23/2018
<b>Private Timber Composite Closed-End</b>										
Private Timber Composite	76,230,314	3.7	0.0	1.8	2.4	2.7	3.0		2.8	09/04/2015
Molpus Woodlands Fund IV, L.P.	23,621,465	1.1	0.0	-6.0	-8.8	-3.4	-1.1		-1.2	09/04/2015
Molpus Woodlands Fund V	15,922,550	0.8	0.0	4.1	6.3				18.7	11/15/2019
Stafford Int'l Timberland VIII	31,135,521	1.5	0.0	7.4	9.9	5.3			5.9	12/27/2017
Eastern Timberland Opportunities III LP (ETO III)	5,550,778	0.3	0.5	1.5	6.3				2.4	01/27/2020

	Performance (%)										
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Fund Composite	14.4	19.4	-2.9	17.2	7.4	1.0	8.2	20.1	14.2	1.0	14.4
<i>Policy Index</i>	<i>12.4</i>	<i>18.2</i>	<i>-2.8</i>	<i>15.1</i>	<i>9.2</i>	<i>1.6</i>	<i>7.9</i>	<i>18.6</i>	<i>12.9</i>	<i>1.4</i>	<i>14.1</i>
Domestic Equity Composite	21.0	29.8	-7.8	22.7	10.4	-0.1	9.3	33.9	16.1	0.4	17.0
<i>Russell 3000 Index</i>	<i>20.9</i>	<i>31.0</i>	<i>-5.2</i>	<i>21.1</i>	<i>12.7</i>	<i>0.5</i>	<i>12.6</i>	<i>33.6</i>	<i>16.4</i>	<i>1.0</i>	<i>16.9</i>
International Developed Equity Composite	4.4	25.3	-15.7	30.6	-3.8	0.0	-1.5	27.3	20.5	-12.1	6.3
<i>MSCI EAFE (Net)</i>	<i>7.8</i>	<i>22.0</i>	<i>-13.8</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>	<i>-4.9</i>	<i>22.8</i>	<i>17.3</i>	<i>-12.1</i>	<i>7.8</i>
Emerging Market Equity Composite	30.4	24.6	-11.0	39.9	15.1	-14.1	-0.2	-4.2	18.4	-17.0	
<i>MSCI EM (net)</i>	<i>18.3</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>	<i>-2.2</i>	<i>-2.6</i>	<i>18.2</i>	<i>-18.4</i>	<i>18.9</i>
Fixed Income Composite	6.7	8.2	0.8	3.4	4.6	0.4	5.3	-0.6	7.3	6.2	9.2
<i>Fixed Income Index</i>	<i>5.9</i>	<i>7.9</i>	<i>0.5</i>	<i>3.2</i>	<i>4.3</i>	<i>-0.1</i>	<i>4.7</i>	<i>-1.5</i>	<i>4.1</i>	<i>6.9</i>	<i>6.4</i>
Public Real Estate Composite	3.5	7.2	10.9	7.2	8.4	15.2	11.1	15.9	12.1	17.0	14.2
<i>NCREIF ODCE Equal Weighted</i>	<i>1.6</i>	<i>6.1</i>	<i>8.3</i>	<i>7.8</i>	<i>9.3</i>	<i>15.2</i>	<i>12.4</i>	<i>13.4</i>	<i>11.0</i>	<i>16.0</i>	<i>16.1</i>
REIT Composite	-4.0	26.6	-4.6	4.9	5.2	3.9	32.1	1.7	17.7	8.0	30.1
<i>FTSE NAREIT Equity REIT Index</i>	<i>-8.0</i>	<i>26.0</i>	<i>-4.6</i>	<i>5.2</i>	<i>8.5</i>	<i>3.2</i>	<i>30.1</i>	<i>2.5</i>	<i>18.1</i>	<i>8.3</i>	<i>27.9</i>
Timber Composite Open-End	6.9	6.1									
<i>NCREIF Timberland Index</i>	<i>0.8</i>	<i>1.3</i>	<i>3.2</i>	<i>3.6</i>	<i>2.6</i>	<i>5.0</i>	<i>10.5</i>	<i>9.7</i>	<i>7.8</i>	<i>1.6</i>	<i>-0.1</i>

	Performance (%)										
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
SSgA S&P 500 Index NL	18.4	31.5	-4.4	21.9	12.0	1.5	13.7	32.4	16.1	2.1	
<i>S&amp;P 500</i>	<i>18.4</i>	<i>31.5</i>	<i>-4.4</i>	<i>21.8</i>	<i>12.0</i>	<i>1.4</i>	<i>13.7</i>	<i>32.4</i>	<i>16.0</i>	<i>2.1</i>	<i>15.1</i>
IM U.S. Large Cap Core Equity (SA+CF) Median	17.2	30.1	-5.2	21.9	10.6	1.4	13.4	33.0	15.6	2.0	14.9
SSgA S&P 500 Index NL Rank	44	34	39	50	33	49	43	58	44	49	
T. Rowe Price	40.5	29.1	4.5	38.2	3.5	10.7					
<i>Russell 1000 Growth Index</i>	<i>38.5</i>	<i>36.4</i>	<i>-1.5</i>	<i>30.2</i>	<i>7.1</i>	<i>5.7</i>	<i>13.1</i>	<i>33.5</i>	<i>15.3</i>	<i>2.6</i>	<i>16.7</i>
IM U.S. Large Cap Growth Equity (SA+CF) Median	34.7	33.8	-0.9	28.2	4.7	5.1	12.0	34.6	15.2	0.3	16.1
T. Rowe Price Rank	26	86	10	5	60	12					
Aristotle											
<i>Russell 1000 Value Index</i>	<i>2.8</i>	<i>26.5</i>	<i>-8.3</i>	<i>13.7</i>	<i>17.3</i>	<i>-3.8</i>	<i>13.5</i>	<i>32.5</i>	<i>17.5</i>	<i>0.4</i>	<i>15.5</i>
IM U.S. Large Cap Value Equity (SA+CF) Median	5.3	27.3	-8.3	17.3	14.6	-2.3	12.1	33.9	15.6	0.6	14.6
Aristotle Rank											
Times Square Capital Mgmt	34.6	38.5	-3.4	23.7	8.8	1.7	6.4	38.6	20.0	-0.7	19.3
<i>Russell Midcap Growth Index</i>	<i>35.6</i>	<i>35.5</i>	<i>-4.8</i>	<i>25.3</i>	<i>7.3</i>	<i>-0.2</i>	<i>11.9</i>	<i>35.7</i>	<i>15.8</i>	<i>-1.7</i>	<i>26.4</i>
IM U.S. Mid Cap Growth Equity (SA+CF) Median	35.3	35.8	-4.3	25.4	5.6	1.0	8.7	36.4	15.1	-1.0	26.8
Times Square Capital Mgmt Rank	55	35	43	63	24	42	71	36	15	46	92
Iridian	21.3	33.3	-22.9	23.8	4.8						
<i>Russell Midcap Value Index</i>	<i>5.0</i>	<i>27.1</i>	<i>-12.3</i>	<i>13.3</i>	<i>20.0</i>	<i>-4.8</i>	<i>14.7</i>	<i>33.5</i>	<i>18.5</i>	<i>-1.4</i>	<i>24.8</i>
IM U.S. Mid Cap Value Equity (SA+CF) Median	5.9	28.9	-12.7	15.6	18.2	-3.2	11.8	36.5	17.1	-0.9	22.6
Iridian Rank	2	12	99	5	100						
Wedge Capital	-1.2	26.6	-14.1	6.4	28.4	-3.3	8.7	37.6	18.3	-1.2	24.6
<i>Russell 2000 Value Index</i>	<i>4.6</i>	<i>22.4</i>	<i>-12.9</i>	<i>7.8</i>	<i>31.7</i>	<i>-7.5</i>	<i>4.2</i>	<i>34.5</i>	<i>18.1</i>	<i>-5.5</i>	<i>24.5</i>
IM U.S. Small Cap Value Equity (SA+CF) Median	5.2	25.1	-14.2	11.6	26.8	-4.3	5.7	38.1	17.6	-3.2	27.5
Wedge Capital Rank	83	32	50	86	37	43	17	55	45	37	70

# ABC Retirement System

## Comparative Performance Calendar Years

As of March 31, 2021

	Performance (%)										
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
<b>Emerald Advisers</b>	38.9	30.6	-11.4	28.8	10.1						
<i>Russell 2000 Growth Index</i>	34.6	28.5	-9.3	22.2	11.3	-1.4	5.6	43.3	14.6	-2.9	29.1
IM U.S. Small Cap Growth Equity (SA+CF) Median	40.5	28.5	-4.3	23.7	11.4	-0.7	4.3	45.5	14.8	-1.2	28.8
Emerald Advisers Rank	55	44	88	25	58						
<b>Artisan Partners</b>	4.7	31.2	-10.7	32.6	-8.3	-3.7	0.6	27.6	26.3	-6.1	6.8
<i>MSCI EAFE Growth Index (Net)</i>	18.3	27.9	-12.8	28.9	-3.0	4.1	-4.4	22.5	16.9	-12.1	12.2
IM International Growth Equity (SA+CF) Median	21.1	28.3	-14.8	32.6	-0.3	3.3	-3.3	22.9	20.0	-11.9	14.5
Artisan Partners Rank	99	26	18	50	97	95	18	30	5	8	93
<b>Alliance Bernstein</b>	3.6	18.5	-21.0	28.5	1.5	4.8	-4.1	27.0	14.1	-18.0	5.8
<i>MSCI EAFE Value Index (Net)</i>	-2.6	16.1	-14.8	21.4	5.0	-5.7	-5.4	23.0	17.7	-12.2	3.2
IM International Large Cap Value Equity (SA+CF) Median	5.0	21.2	-14.6	26.0	4.3	-2.0	-4.0	23.2	18.1	-10.9	10.8
Alliance Bernstein Rank	59	71	96	26	76	12	51	22	83	94	81
<b>JP Morgan Emerging Markets Equity Focused</b>	30.4	24.6	-11.0	39.9	15.1	-14.1	-0.2	-4.2	18.4	-17.0	
<i>MSCI EM (net)</i>	18.3	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
IM Emerging Markets Equity (SA+CF) Median	18.1	19.4	-15.2	36.8	10.4	-12.7	0.0	1.0	20.5	-18.0	21.9
JP Morgan Emerging Markets Equity Focused Rank	20	26	14	32	19	61	53	87	69	39	
<b>Fidelity</b>	10.5	9.7	-0.1	4.2	4.6	0.2	6.5	-1.2	6.6	7.9	9.0
<i>Blmbg. Barc. U.S. Aggregate</i>	7.5	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	8.5	9.2	0.1	4.0	3.1	0.8	6.1	-1.6	5.9	7.8	7.2
Fidelity Rank	6	24	71	37	10	87	32	32	31	41	11
<b>Metropolitan West Asset Mgmt</b>	7.7	7.1	1.4	2.5	2.1	0.6	4.0	0.1	8.0	3.5	9.0
<i>Blmbg. Barc. Intermed. U.S. Government/Credit</i>	6.4	6.8	0.9	2.1	2.1	1.1	3.1	-0.9	3.9	5.8	5.9
IM U.S. Intermediate Duration (SA+CF) Median	6.8	6.9	0.9	2.6	2.4	1.3	3.6	-0.5	5.0	5.9	6.4
Metropolitan West Asset Mgmt Rank	20	44	19	51	68	92	35	23	7	95	7



# ABC Retirement System

## Comparative Performance Calendar Years

As of March 31, 2021

	Performance (%)										
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Pugh Capital	8.6	8.9									
<i>Blmbg. Barc. U.S. Aggregate</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>	<i>6.0</i>	<i>-2.0</i>	<i>4.2</i>	<i>7.8</i>	<i>6.5</i>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	8.5	9.2	0.1	4.0	3.1	0.8	6.1	-1.6	5.9	7.8	7.2
Pugh Capital Rank	47	65									
Semper Capital	4.5	5.8									
<i>Blmbg. Barc. U.S. Mortgage Backed Securities</i>	<i>3.9</i>	<i>6.4</i>	<i>1.0</i>	<i>2.5</i>	<i>1.7</i>	<i>1.5</i>	<i>6.1</i>	<i>-1.4</i>	<i>2.6</i>	<i>6.2</i>	<i>5.4</i>
IM U.S. Mortgage Backed Bonds (SA+CF) Median	4.2	6.6	1.3	3.6	2.4	1.7	6.4	-0.8	4.8	6.2	7.9
Semper Capital Rank	40	78									
Voya	1.4	8.5	0.8	3.6	8.4						
<i>S&amp;P/LSTA Leveraged Loan Index</i>	<i>3.1</i>	<i>8.6</i>	<i>0.4</i>	<i>4.1</i>	<i>10.2</i>	<i>-0.7</i>	<i>1.6</i>	<i>5.3</i>	<i>9.7</i>	<i>1.5</i>	<i>10.2</i>
IM U.S. Bank Loans (SA+CF) Median	2.4	8.8	0.8	4.4	9.5	0.7	2.0	6.2	10.0	3.1	10.4
Voya Rank	85	64	54	94	81						
CenterSquare U.S. Real Estate Securities	-4.0	27.1									
<i>FTSE NAREIT Equity REIT Index</i>	<i>-8.0</i>	<i>26.0</i>	<i>-4.6</i>	<i>5.2</i>	<i>8.5</i>	<i>3.2</i>	<i>30.1</i>	<i>2.5</i>	<i>18.1</i>	<i>8.3</i>	<i>27.9</i>
IM U.S. REIT (SA+CF) Median	-4.4	28.1	-4.1	6.4	7.0	4.8	31.5	2.5	17.9	9.5	29.0
CenterSquare U.S. Real Estate Securities Rank	48	64									
JP Morgan SPF	1.4	4.4	8.0	7.2	8.4	15.2	11.1	15.9	12.1	16.0	14.2
<i>NCREIF ODCE Equal Weighted</i>	<i>1.6</i>	<i>6.1</i>	<i>8.3</i>	<i>7.8</i>	<i>9.3</i>	<i>15.2</i>	<i>12.4</i>	<i>13.4</i>	<i>11.0</i>	<i>16.0</i>	<i>16.1</i>
TA Realty Core Property Fund	5.5	9.9									
<i>NCREIF ODCE Equal Weighted</i>	<i>1.6</i>	<i>6.1</i>	<i>8.3</i>	<i>7.8</i>	<i>9.3</i>	<i>15.2</i>	<i>12.4</i>	<i>13.4</i>	<i>11.0</i>	<i>16.0</i>	<i>16.1</i>
BTG Pactual Open Ended Core US Timberland Fund (OEF)	6.9	6.1									
<i>NCREIF Timberland Index</i>	<i>0.8</i>	<i>1.3</i>	<i>3.2</i>	<i>3.6</i>	<i>2.6</i>	<i>5.0</i>	<i>10.5</i>	<i>9.7</i>	<i>7.8</i>	<i>1.6</i>	<i>-0.1</i>
Cash Account	0.8	2.1	2.2	0.7	0.4	0.2	0.1	0.1	0.1	0.1	0.3
<i>90 Day U.S. Treasury Bill</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>	<i>0.9</i>	<i>0.3</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>

	Performance (%)											
	FYTD 2021	FYTD 2020	FYTD 2019	FYTD 2018	FYTD 2017	FYTD 2016	FYTD 2015	FYTD 2014	FYTD 2013	FYTD 2012	FYTD 2011	
Total Fund Composite	15.1	7.7	4.5	9.8	14.0	9.8	0.9	11.1	15.0	21.4	0.1	
<i>Policy Index</i>	<i>14.2</i>	<i>7.7</i>	<i>3.4</i>	<i>9.3</i>	<i>12.9</i>	<i>10.9</i>	<i>1.2</i>	<i>10.8</i>	<i>13.8</i>	<i>19.4</i>	<i>0.9</i>	
Domestic Equity Composite	25.5	11.7	0.3	16.3	21.0	10.9	-0.6	14.8	22.8	30.1	-0.6	
<i>Russell 3000 Index</i>	<i>22.0</i>	<i>15.0</i>	<i>2.9</i>	<i>17.6</i>	<i>18.7</i>	<i>15.0</i>	<i>-0.5</i>	<i>17.8</i>	<i>21.6</i>	<i>30.2</i>	<i>0.5</i>	
International Developed Equity Composite	15.6	0.1	0.2	1.8	19.5	8.1	-7.3	6.3	26.4	19.7	-11.4	
<i>MSCI EAFE (Net)</i>	<i>20.1</i>	<i>0.5</i>	<i>-1.3</i>	<i>2.7</i>	<i>19.1</i>	<i>6.5</i>	<i>-8.7</i>	<i>4.3</i>	<i>23.8</i>	<i>13.8</i>	<i>-9.4</i>	
Emerging Market Equity Composite	25.7	17.8	6.1	0.9	23.2	21.4	-16.5	3.7	1.0	17.5		
<i>MSCI EM (net)</i>	<i>22.4</i>	<i>10.5</i>	<i>-2.0</i>	<i>-0.8</i>	<i>22.5</i>	<i>16.8</i>	<i>-19.3</i>	<i>4.3</i>	<i>1.0</i>	<i>16.9</i>	<i>-16.1</i>	
Fixed Income Composite	0.7	5.6	7.8	0.9	1.7	5.2	2.4	4.1	-0.1	7.7	4.7	
<i>Fixed Income Index</i>	<i>0.0</i>	<i>5.2</i>	<i>7.5</i>	<i>0.5</i>	<i>1.4</i>	<i>4.6</i>	<i>2.3</i>	<i>3.2</i>	<i>-1.2</i>	<i>4.8</i>	<i>4.5</i>	
Public Real Estate Composite	4.9	2.8	7.3	10.6	7.6	9.7	14.5	12.1	14.9	12.4	19.2	
<i>NCREIF ODCE Equal Weighted</i>	<i>3.7</i>	<i>1.7</i>	<i>6.2</i>	<i>8.8</i>	<i>7.8</i>	<i>10.6</i>	<i>14.8</i>	<i>12.4</i>	<i>12.5</i>	<i>11.8</i>	<i>18.0</i>	
REIT Composite	21.6	-15.3	18.7	5.0	-1.2	16.9	11.8	14.0	4.8	33.9	-0.5	
<i>FTSE NAREIT Equity REIT Index</i>	<i>21.5</i>	<i>-18.2</i>	<i>18.4</i>	<i>3.8</i>	<i>0.7</i>	<i>19.9</i>	<i>9.9</i>	<i>13.1</i>	<i>5.9</i>	<i>32.6</i>	<i>1.0</i>	
Timber Composite Open-End	6.3	1.1										
<i>NCREIF Timberland Index</i>	<i>1.3</i>	<i>0.2</i>	<i>2.1</i>	<i>4.0</i>	<i>3.3</i>	<i>3.3</i>	<i>9.3</i>	<i>10.4</i>	<i>9.7</i>	<i>2.2</i>	<i>0.3</i>	

	Performance (%)										
	FYTD 2021	FYTD 2020	FYTD 2019	FYTD 2018	FYTD 2017	FYTD 2016	FYTD 2015	FYTD 2014	FYTD 2013	FYTD 2012	FYTD 2011
SSgA S&P 500 Index NL	19.1	15.2	4.3	17.9	18.7	15.5	-0.6	19.7	19.4	30.2	1.2
<i>S&amp;P 500</i>	<i>19.1</i>	<i>15.1</i>	<i>4.3</i>	<i>17.9</i>	<i>18.6</i>	<i>15.4</i>	<i>-0.6</i>	<i>19.7</i>	<i>19.3</i>	<i>30.2</i>	<i>1.1</i>
IM U.S. Large Cap Core Equity (SA+CF) Median	20.3	12.6	3.3	17.3	18.7	13.4	0.1	19.2	20.6	29.6	1.2
SSgA S&P 500 Index NL Rank	65	37	39	42	51	21	62	45	62	42	50
T. Rowe Price	18.0	36.5	2.2	28.7	31.4	10.6					
<i>Russell 1000 Growth Index</i>	<i>12.4</i>	<i>37.5</i>	<i>3.7</i>	<i>26.3</i>	<i>21.9</i>	<i>13.8</i>	<i>3.2</i>	<i>19.1</i>	<i>19.3</i>	<i>29.2</i>	<i>3.8</i>
IM U.S. Large Cap Growth Equity (SA+CF) Median	13.7	33.3	3.8	24.4	20.8	11.7	3.6	18.2	20.3	27.7	1.4
T. Rowe Price Rank	19	32	65	23	2	64					
Aristotle											
<i>Russell 1000 Value Index</i>	<i>29.3</i>	<i>-5.0</i>	<i>4.0</i>	<i>9.5</i>	<i>15.1</i>	<i>16.2</i>	<i>-4.4</i>	<i>18.9</i>	<i>22.3</i>	<i>30.9</i>	<i>-1.9</i>
IM U.S. Large Cap Value Equity (SA+CF) Median	29.9	-3.3	2.4	11.8	17.9	13.6	-3.3	18.4	23.7	28.1	-1.0
Aristotle Rank											
Times Square Capital Mgmt	18.2	23.5	8.7	20.7	17.5	11.0	2.4	14.7	27.7	31.9	-3.8
<i>Russell Midcap Growth Index</i>	<i>18.3</i>	<i>23.2</i>	<i>5.2</i>	<i>21.1</i>	<i>17.8</i>	<i>11.2</i>	<i>1.4</i>	<i>14.4</i>	<i>27.5</i>	<i>26.7</i>	<i>0.8</i>
IM U.S. Mid Cap Growth Equity (SA+CF) Median	21.1	23.5	6.0	22.1	18.8	8.4	3.0	11.4	27.5	26.2	1.2
Times Square Capital Mgmt Rank	73	51	25	55	64	30	56	23	47	12	79
Iridian	33.3	6.3	-2.7	-0.8	20.3	10.0					
<i>Russell Midcap Value Index</i>	<i>36.1</i>	<i>-7.3</i>	<i>1.6</i>	<i>8.8</i>	<i>13.4</i>	<i>17.3</i>	<i>-2.1</i>	<i>17.5</i>	<i>27.8</i>	<i>29.3</i>	<i>-2.4</i>
IM U.S. Mid Cap Value Equity (SA+CF) Median	39.5	-7.5	0.9	9.5	17.0	15.2	-0.9	15.8	28.9	28.9	-1.4
Iridian Rank	80	6	77	99	20	83					
Wedge Capital	53.6	-18.6	-4.7	7.8	16.8	17.5	2.8	10.9	30.6	30.9	-3.5
<i>Russell 2000 Value Index</i>	<i>61.6</i>	<i>-14.9</i>	<i>-8.2</i>	<i>9.3</i>	<i>20.5</i>	<i>18.8</i>	<i>-1.6</i>	<i>4.1</i>	<i>27.0</i>	<i>32.6</i>	<i>-6.0</i>
IM U.S. Small Cap Value Equity (SA+CF) Median	54.6	-13.2	-6.6	9.1	20.6	15.7	0.8	7.0	31.0	31.1	-2.9
Wedge Capital Rank	56	87	37	67	81	37	33	20	54	52	54

	Performance (%)										
	FYTD 2021	FYTD 2020	FYTD 2019	FYTD 2018	FYTD 2017	FYTD 2016	FYTD 2015	FYTD 2014	FYTD 2013	FYTD 2012	FYTD 2011
Emerald Advisers	29.4	22.5	-9.1	23.2	24.5	4.5					
<i>Russell 2000 Growth Index</i>	<i>35.9</i>	<i>15.7</i>	<i>-9.6</i>	<i>21.1</i>	<i>21.0</i>	<i>12.1</i>	<i>4.0</i>	<i>3.8</i>	<i>33.1</i>	<i>31.2</i>	<i>-1.1</i>
IM U.S. Small Cap Growth Equity (SA+CF) Median	34.7	21.1	-5.9	26.9	21.3	11.7	3.8	4.4	34.0	30.8	1.1
Emerald Advisers Rank	72	48	69	68	25	89					
Artisan Partners	8.7	4.3	7.9	5.4	16.5	8.0	-9.8	7.2	24.5	30.4	-7.9
<i>MSCI EAFE Growth Index (Net)</i>	<i>12.5</i>	<i>13.4</i>	<i>2.2</i>	<i>5.8</i>	<i>15.7</i>	<i>9.5</i>	<i>-4.7</i>	<i>2.9</i>	<i>23.3</i>	<i>14.8</i>	<i>-8.8</i>
IM International Growth Equity (SA+CF) Median	17.0	17.4	-0.6	5.0	20.7	9.6	-4.4	5.2	21.8	18.8	-8.3
Artisan Partners Rank	97	90	5	46	87	67	92	27	35	1	47
Alliance Bernstein	25.2	-5.5	-8.3	-1.9	23.1	8.1	-4.2	5.1	28.7	8.3	-14.9
<i>MSCI EAFE Value Index (Net)</i>	<i>28.1</i>	<i>-11.9</i>	<i>-4.9</i>	<i>-0.4</i>	<i>22.5</i>	<i>3.5</i>	<i>-12.6</i>	<i>5.7</i>	<i>24.3</i>	<i>12.6</i>	<i>-10.0</i>
IM International Large Cap Value Equity (SA+CF) Median	25.6	-4.9	-3.2	1.5	20.9	8.4	-9.5	5.8	22.9	15.5	-8.6
Alliance Bernstein Rank	53	55	91	88	35	54	20	59	13	93	94
JP Morgan Emerging Markets Equity Focused	25.7	17.8	6.1	0.9	23.2	21.4	-16.5	3.7	1.0	17.5	
<i>MSCI EM (net)</i>	<i>22.4</i>	<i>10.5</i>	<i>-2.0</i>	<i>-0.8</i>	<i>22.5</i>	<i>16.8</i>	<i>-19.3</i>	<i>4.3</i>	<i>1.0</i>	<i>16.9</i>	<i>-16.1</i>
IM Emerging Markets Equity (SA+CF) Median	24.8	9.8	0.0	-2.6	22.6	17.5	-17.3	6.5	4.4	18.2	-15.0
JP Morgan Emerging Markets Equity Focused Rank	39	25	16	16	45	24	43	76	77	57	
Fidelity	-1.0	9.1	10.2	-0.7	1.0	7.1	2.3	4.9	-0.8	7.3	5.9
<i>Blmbg. Barc. U.S. Aggregate</i>	<i>-2.7</i>	<i>7.0</i>	<i>10.3</i>	<i>-1.2</i>	<i>0.1</i>	<i>5.2</i>	<i>2.9</i>	<i>4.0</i>	<i>-1.7</i>	<i>5.2</i>	<i>5.3</i>
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-2.1	7.5	10.4	-0.7	0.6	5.7	3.0	4.5	-1.2	6.6	5.3
Fidelity Rank	17	5	76	42	36	9	86	34	27	36	16
Metropolitan West Asset Mgmt	-0.5	7.0	8.7	-0.4	0.8	3.4	2.2	3.1	0.7	8.2	1.8
<i>Blmbg. Barc. Intermed. U.S. Government/Credit</i>	<i>-1.4</i>	<i>6.3</i>	<i>8.2</i>	<i>-1.0</i>	<i>0.2</i>	<i>3.5</i>	<i>2.7</i>	<i>2.2</i>	<i>-0.5</i>	<i>4.4</i>	<i>3.4</i>
IM U.S. Intermediate Duration (SA+CF) Median	-0.8	6.5	8.0	-0.4	0.7	3.9	2.7	2.9	-0.3	5.6	3.6
Metropolitan West Asset Mgmt Rank	34	23	9	53	42	78	77	38	12	7	98

	Performance (%)										
	FYTD 2021	FYTD 2020	FYTD 2019	FYTD 2018	FYTD 2017	FYTD 2016	FYTD 2015	FYTD 2014	FYTD 2013	FYTD 2012	FYTD 2011
Pugh Capital	-2.2	7.6									
<i>Blmbg. Barc. U.S. Aggregate</i>	-2.7	7.0	10.3	-1.2	0.1	5.2	2.9	4.0	-1.7	5.2	5.3
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-2.1	7.5	10.4	-0.7	0.6	5.7	3.0	4.5	-1.2	6.6	5.3
Pugh Capital Rank	56	47									
Semper Capital	0.7	3.9									
<i>Blmbg. Barc. U.S. Mortgage Backed Securities</i>	-0.9	4.4	7.8	-0.9	0.3	3.6	3.4	3.8	-1.2	3.7	5.6
IM U.S. Mortgage Backed Bonds (SA+CF) Median	0.1	4.3	7.9	0.0	1.1	3.8	3.5	4.4	-0.2	5.8	5.8
Semper Capital Rank	34	61									
Voya	4.8	0.0	3.1	5.4	4.5	5.1					
<i>S&amp;P/LSTA Leveraged Loan Index</i>	5.7	1.1	3.1	5.2	5.3	5.5	0.9	3.8	5.0	11.3	1.8
IM U.S. Bank Loans (SA+CF) Median	5.3	0.9	3.6	5.4	5.2	5.6	2.1	4.2	6.0	11.8	3.1
Voya Rank	74	72	69	54	91	66					
CenterSquare U.S. Real Estate Securities	21.6	-15.2	19.1								
<i>FTSE NAREIT Equity REIT Index</i>	21.5	-18.2	18.4	3.8	0.7	19.9	9.9	13.1	5.9	32.6	1.0
IM U.S. REIT (SA+CF) Median	18.7	-12.9	18.9	4.6	1.2	18.9	11.8	14.2	5.3	32.9	2.1
CenterSquare U.S. Real Estate Securities Rank	29	75	48								
JP Morgan SPF	3.8	1.8	3.9	8.0	7.6	9.7	14.5	12.1	14.9	12.4	18.1
<i>NCREIF ODCE Equal Weighted</i>	3.7	1.7	6.2	8.8	7.8	10.6	14.8	12.4	12.5	11.8	18.0
TA Realty Core Property Fund	5.9	3.7	10.5								
<i>NCREIF ODCE Equal Weighted</i>	3.7	1.7	6.2	8.8	7.8	10.6	14.8	12.4	12.5	11.8	18.0
BTG Pactual Open Ended Core US Timberland Fund (OEF)	6.3	1.1									
<i>NCREIF Timberland Index</i>	1.3	0.2	2.1	4.0	3.3	3.3	9.3	10.4	9.7	2.2	0.3
Cash Account	0.1	1.2	2.2	1.8	0.5	0.3	0.3	0.1	0.1	0.1	0.1
<i>90 Day U.S. Treasury Bill</i>	0.1	1.1	2.4	1.6	0.6	0.2	0.0	0.0	0.1	0.0	0.1

	Allocation		Performance (%)					Inception Date		
	Market Value (\$000)	%	1 Quarter	Year To Date	Oct-2020 To Mar-2021	1 Year	3 Years		5 Years	Since Inception
Total Fund Composite	2,055,459	100.0	2.8	2.8	14.9	35.2	10.4	10.9	9.3	01/01/1990
<i>Policy Index</i>			3.7	3.7	14.2	34.9	10.2	10.7	8.3	
SSgA S&P 500 Index NL	228,182	11.1	6.2	6.2	19.1	56.3	16.8	16.3	15.7	07/01/2010
<i>S&amp;P 500</i>			6.2	6.2	19.1	56.4	16.8	16.3	15.7	
T. Rowe Price	117,157	5.7	4.0	4.0	17.8	68.7	22.9	24.2	19.5	01/01/2015
<i>Russell 1000 Growth Index</i>			0.9	0.9	12.4	62.7	22.8	21.0	17.7	
Aristotle	110,543	5.4	9.8	9.8						12/01/2020
<i>Russell 1000 Value Index</i>			11.3	11.3	29.3	56.1	11.0	11.7	15.5	
Times Square Capital Mgmt	73,554	3.6	0.0	0.0	17.8	64.9	19.7	18.4	16.2	07/01/2009
<i>Russell Midcap Growth Index</i>			-0.6	-0.6	18.3	68.6	19.4	18.4	17.1	
Iridian	79,095	3.8	6.9	6.9	32.7	78.4	9.5	10.5	7.8	08/01/2015
<i>Russell Midcap Value Index</i>			13.1	13.1	36.1	73.8	10.7	11.6	9.9	
Wedge Capital	75,969	3.7	16.7	16.7	52.9	83.3	8.0	9.4	11.4	06/01/1994
<i>Russell 2000 Value Index</i>			21.2	21.2	61.6	97.1	11.6	13.6	10.4	
Emerald Advisers	77,943	3.8	2.4	2.4	29.0	87.0	18.0	19.3	12.6	08/01/2015
<i>Russell 2000 Growth Index</i>			4.9	4.9	35.9	90.2	17.2	18.6	13.2	
Artisan Partners	97,863	4.8	0.6	0.6	8.3	34.3	6.7	8.5	6.7	10/01/1999
<i>MSCI EAFE Growth Index (Net)</i>			-0.6	-0.6	12.5	42.6	9.8	10.8	4.4	
Alliance Bernstein	91,846	4.5	5.0	5.0	24.8	49.1	0.3	5.8	0.2	01/01/2008
<i>MSCI EAFE Value Index (Net)</i>			7.4	7.4	28.1	45.7	1.8	6.6	1.1	
JP Morgan Emerging Markets Equity Focused	107,910	5.2	1.6	1.6	25.2	70.9	12.0	16.3	5.6	01/01/2011
<i>MSCI EM (net)</i>			2.3	2.3	22.4	58.4	6.5	12.1	3.8	

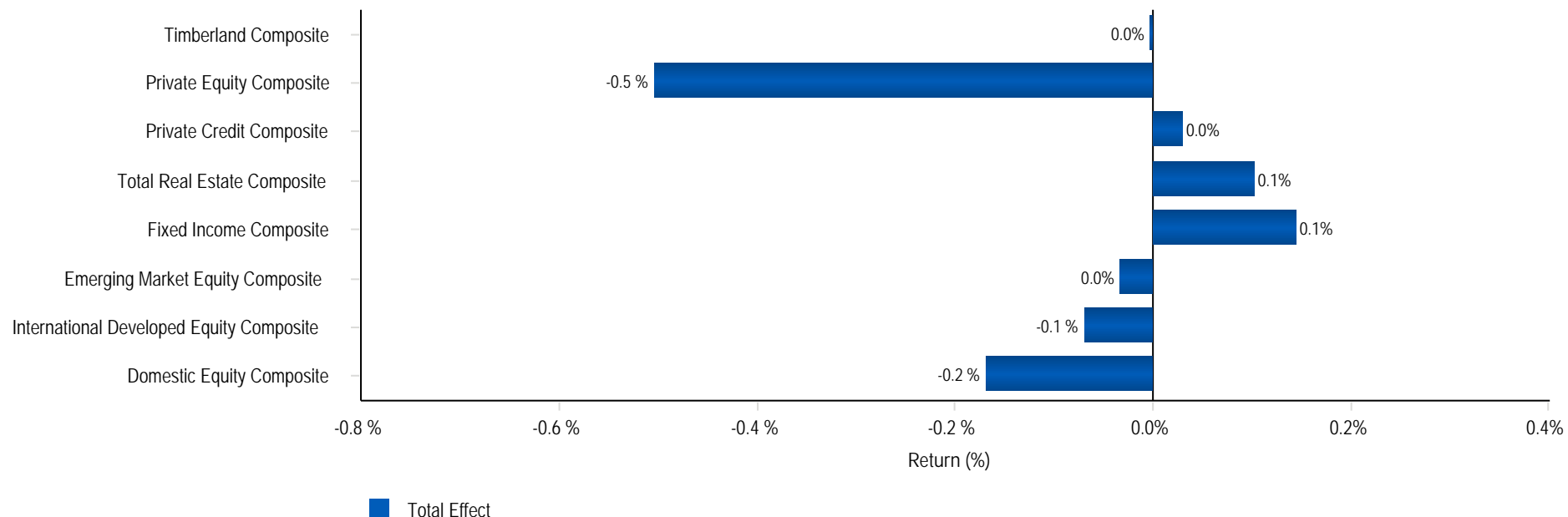
# ABC Retirement System

## Performance Net Of Fees

As of March 31, 2021

	Allocation		Performance (%)					1	3	5	Since	Inception
	Market Value (\$000)	%	1 Quarter	Year To Date	Oct-2020 To Mar-2021	Year	Years					
Fidelity <i>Blmbg. Barc. U.S. Aggregate</i>	94,961	4.6	-2.9	-2.9	-1.1	6.2	5.9	4.3	5.0	08/01/2006		
			-3.4	-3.4	-2.7	0.7	4.7	3.1	4.3			
Metropolitan West Asset Mgmt <i>Blmbg. Barc. Intermed. U.S. Government/Credit</i>	93,028	4.5	-1.5	-1.5	-0.6	3.8	4.8	3.2	4.8	07/01/1999		
			-1.9	-1.9	-1.4	2.0	4.4	2.8	4.4			
Pugh Capital <i>Blmbg. Barc. U.S. Aggregate</i>	25,520	1.2	-3.4	-3.4	-2.3	2.3			6.5	11/01/2018		
			-3.4	-3.4	-2.7	0.7	4.7	3.1	6.2			
Semper Capital <i>Blmbg. Barc. U.S. Mortgage Backed Securities</i>	25,313	1.2	-0.6	-0.6	0.5	7.4			4.5	11/01/2018		
			-1.1	-1.1	-0.9	-0.1	3.7	2.4	4.9			
Voya <i>S&amp;P/LSTA Leveraged Loan Index</i>	92,922	4.5	1.3	1.3	4.6	17.1	3.0	4.0	3.3	05/01/2015		
			1.8	1.8	5.7	20.7	4.1	5.3	4.1			
CenterSquare U.S. Real Estate Securities <i>FTSE NAREIT Equity REIT Index</i>	42,883	2.1	8.4	8.4	21.3	37.4	10.0		8.6	02/01/2018		
			8.9	8.9	21.5	37.8	9.5	5.3	7.5			
JP Morgan SPF <i>NCREIF ODCE Equal Weighted</i>	47,439	2.3	1.6	1.6	3.3	0.7	3.5	4.8	6.8	04/01/1990		
			2.3	2.3	3.7	2.9	5.3	6.5	7.1			
TA Realty Core Property Fund <i>NCREIF ODCE Equal Weighted</i>	52,703	2.6	2.3	2.3	5.9	6.3	8.2		10.1	03/01/2018		
			2.3	2.3	3.7	2.9	5.3	6.5	5.9			
BTG Pactual Open Ended Core US Timberland Fund (OEF) <i>NCREIF Timberland Index</i>	33,594	1.6	2.8	2.8	6.3	8.6			7.1	01/01/2019		
			0.8	0.8	1.3	1.5	1.7	2.5	1.3			
Cash Account <i>90 Day U.S. Treasury Bill</i>	2,915	0.1	0.1	0.1	0.1	0.4	1.6	1.2	2.2	07/01/1993		
			0.0	0.0	0.1	0.1	1.5	1.2	2.4			

Total Fund Attribution Analysis

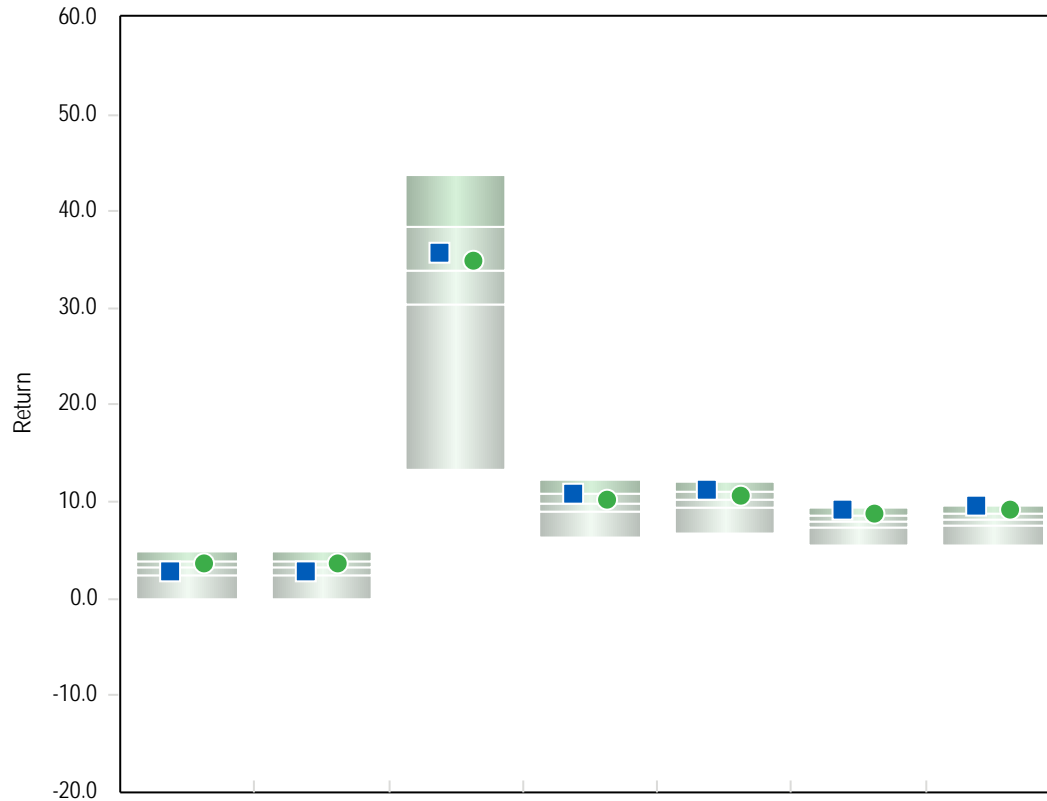


Attribution Summary

	Actual Weight (%)	Index Weight (%)	Active Weight (%)	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Total Effect (%)
Domestic Equity Composite	36.2	36.0	0.2	6.4	6.9	-0.5	-0.2	0.0	-0.2
International Developed Equity Composite	8.7	10.0	-1.3	2.7	3.5	-0.8	-0.1	0.0	-0.1
Emerging Market Equity Composite	5.5	5.0	0.5	1.7	2.3	-0.5	0.0	0.0	0.0
Fixed Income Composite	16.8	19.0	-2.2	-1.1	-1.4	0.2	0.0	0.1	0.1
Total Real Estate Composite	14.9	15.0	-0.1	2.4	1.7	0.7	0.1	0.0	0.1
Private Credit Composite	1.7	5.0	-3.3	0.5	1.8	-1.3	0.0	0.1	0.0
Private Equity Composite	10.7	5.0	5.7	0.0	6.2	-6.2	-0.7	0.2	-0.5
Timberland Composite	5.4	5.0	0.4	0.9	0.8	0.1	0.0	0.0	0.0
Total Fund Composite	100.0	100.0	0.0	2.9	3.4	-0.5	-0.8	0.3	-0.5



All Public Plans-Total Fund



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Total Fund Composite	2.9 (60)	2.9 (60)	35.7 (41)	10.8 (26)	11.4 (15)	9.1 (12)	9.6 (8)
● Policy Index	3.7 (30)	3.7 (30)	34.9 (46)	10.2 (41)	10.7 (34)	8.9 (18)	9.2 (15)

5th Percentile	4.9	4.9	43.8	12.2	12.1	9.5	9.7
1st Quartile	3.8	3.8	38.3	10.8	11.0	8.6	8.9
Median	3.2	3.2	33.9	9.8	10.2	8.0	8.2
3rd Quartile	2.4	2.4	30.4	8.9	9.4	7.3	7.6
95th Percentile	0.0	0.0	13.3	6.4	6.7	5.5	5.6
Population	556	556	547	502	482	463	431

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	11.9	12.6
Minimum Return	-13.3	-13.6
Return	11.4	10.7
Cumulative Return	71.2	66.3
Active Return	0.6	0.0
Excess Return	10.3	9.7

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	103.4	100.0
Down Market Capture	97.8	100.0

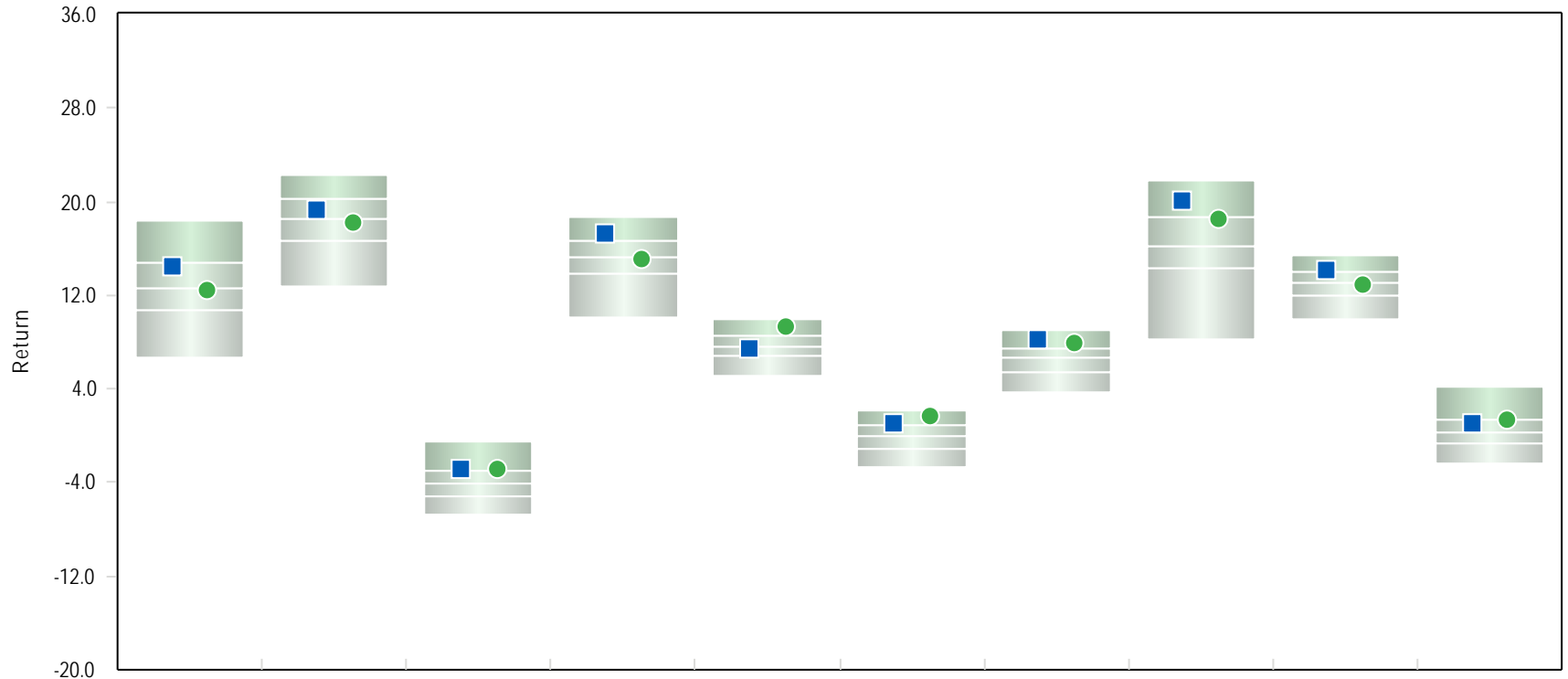
Risk / Return Summary Statistics

Standard Deviation	11.0	10.9
Alpha	0.6	0.0
Active Return/Risk	0.1	0.0
Tracking Error	1.2	0.0
Information Ratio	0.5	-
Sharpe Ratio	0.9	0.9

Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

All Public Plans-Total Fund



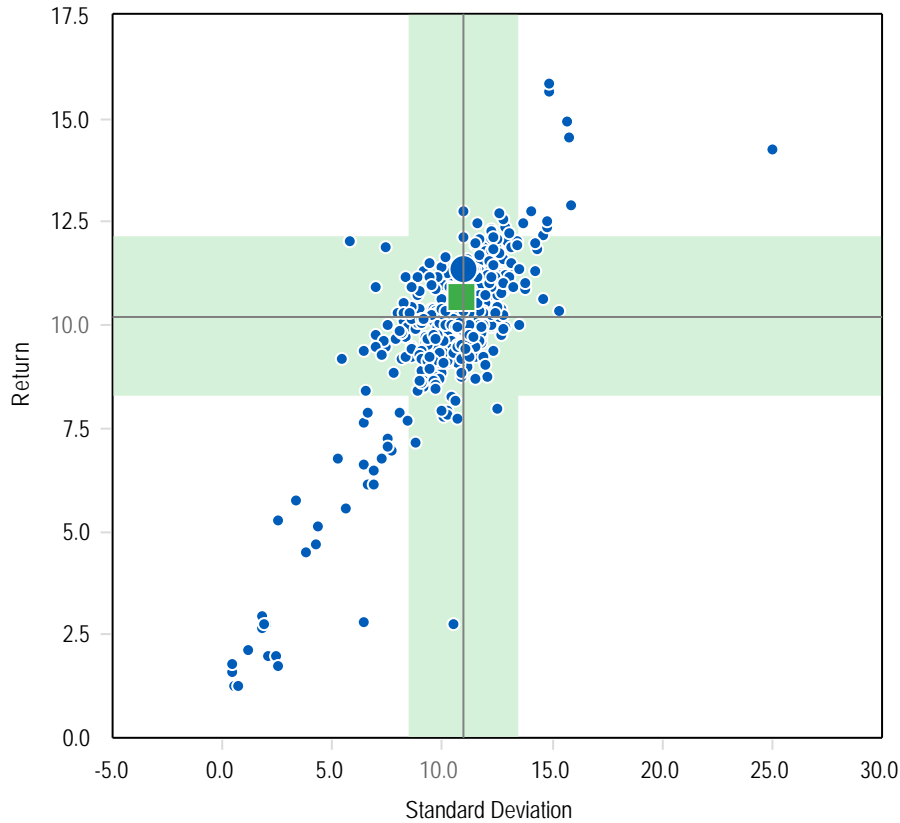
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
■ Total Fund Composite	14.4 (28)	19.4 (40)	-2.9 (23)	17.2 (16)	7.4 (61)	1.0 (18)	8.2 (12)	20.1 (13)	14.2 (22)	1.0 (32)
● Policy Index	12.4 (53)	18.2 (56)	-2.8 (21)	15.1 (54)	9.2 (12)	1.6 (11)	7.9 (17)	18.6 (26)	12.9 (53)	1.4 (27)

5th Percentile	18.4	22.2	-0.5	18.6	10.0	2.1	9.0	21.9	15.4	4.2
1st Quartile	14.7	20.3	-3.0	16.7	8.5	0.9	7.4	18.7	14.0	1.4
Median	12.6	18.6	-4.2	15.3	7.7	-0.1	6.6	16.3	13.0	0.3
3rd Quartile	10.8	16.7	-5.2	13.9	6.8	-1.1	5.4	14.2	12.0	-0.7
95th Percentile	6.7	12.8	-6.7	10.1	5.1	-2.7	3.7	8.3	9.9	-2.4

Population	630	636	512	325	339	317	268	266	262	250
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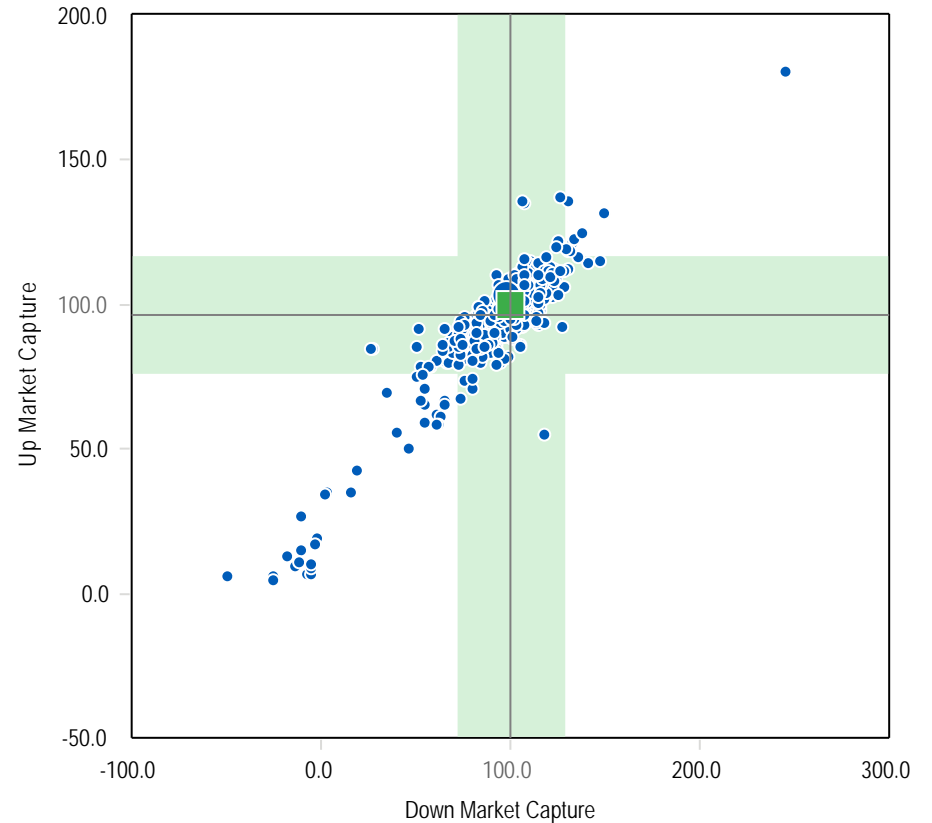
Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

5 Years Annualized Return vs. Annualized Standard Deviation



	Return	Standard Deviation
● Total Fund Composite	11.4	11.0
■ Policy Index	10.7	10.9
— Median	10.2	11.0
Population	482	482

5 Years Upside Capture Ratio vs. Downside Capture Ratio



	Up Market Capture	Down Market Capture
● Total Fund Composite	103.4	97.8
■ Policy Index	100.0	100.0
— Median	96.5	100.5
Population	482	482

The shaded area is one sigma range from the median.

# ABC Retirement System

## Total Fund Cash Flow History - Calendar Years

Since Inception Ending March 31, 2021

Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Net Investment Change (\$)	Ending Market Value (\$)	Return %
From 12/2002	693,501,946	-2,333,035	143,568,764	834,737,675	20.7
2004	834,737,675	-8,315,782	95,275,520	921,697,413	11.5
2005	921,697,413	-15,556,208	61,422,007	967,563,213	6.8
2006	967,563,213	-16,903,094	140,963,044	1,091,623,163	14.8
2007	1,091,623,163	-14,056,360	81,309,697	1,158,876,500	7.5
2008	1,158,876,500	-3,874,226	-316,624,288	838,377,986	-27.3
2009	838,377,986	-35,891,662	180,840,518	983,326,842	22.9
2010	983,326,842	-38,955,027	137,078,398	1,081,450,213	14.4
2011	1,081,450,213	-27,266,439	9,546,711	1,063,730,485	1.0
2012	1,063,730,485	-41,186,439	149,234,969	1,171,779,015	14.2
2013	1,171,779,015	-41,680,552	232,576,351	1,362,674,813	20.1
2014	1,362,674,813	-28,369,023	109,596,112	1,443,901,903	8.2
2015	1,443,901,903	-51,493,141	14,849,340	1,407,258,102	1.0
2016	1,407,258,102	-50,348,735	102,292,486	1,459,201,853	7.4
2017	1,459,201,853	-64,478,397	247,135,346	1,641,858,802	17.2
2018	1,641,858,802	28,337,625	-79,603,815	1,590,592,611	-2.9
2019	1,590,592,611	-89,497,603	303,614,180	1,804,709,188	19.4
2020	1,804,709,188	-56,917,897	251,291,504	1,999,082,795	14.4
To 03/2021	1,999,082,795	594,901	55,781,250	2,055,458,945	2.9

Gain/Loss includes income received and change in accrued income for the period.

From Date	To Date	Benchmark
<b>Total Fund Composite</b>		
10/01/2018	Present	27% S&P 500, 3.5% Russell Midcap Growth Index, 3.5% Russell Midcap Value Index, 3.5% Russell 2000 Growth Index, 3.5% Russell 2000 Value Index, 10% MSCI EAFE (Net), 5% MSCI EM (net), 14% Blmbg. Barc. Intermed. U.S. Government/Credit, 15% NCREIF Property Index, 5% NCREIF Timberland Index, 10% S&P/LSTA Leveraged Loan Index
06/01/2015	10/01/2018	24% S&P 500, 4% Russell Midcap Growth Index, 4% Russell Midcap Value Index, 4% Russell 2000 Growth Index, 4% Russell 2000 Value Index, 10% MSCI EAFE (Net), 5% MSCI EM (net), 15% Blmbg. Barc. Intermed. U.S. Government/Credit, 15% NCREIF Property Index, 5% NCREIF Timberland Index, 5% S&P/LSTA Leveraged Loan Index, 5% S&P 500 + 4%
12/01/2013	06/01/2015	24% S&P 500, 4% Russell Midcap Growth Index, 4% Russell Midcap Value Index, 4% Russell 2000 Growth Index, 4% Russell 2000 Value Index, 10% MSCI EAFE (Net), 5% MSCI EM (net), 20% Blmbg. Barc. Intermed. U.S. Government/Credit, 15% NCREIF Property Index, 5% NCREIF Timberland Index, 5% S&P 500 + 4%
01/01/2011	12/01/2013	32% S&P 500, 4% Russell Midcap Growth Index, 4% Russell Midcap Value Index, 4% Russell 2000 Growth Index, 4% Russell 2000 Value Index, 10% MSCI EAFE (Net), 5% MSCI EM (net), 27% Blmbg. Barc. Intermed. U.S. Government/Credit, 2.5% NCREIF ODCE Equal Weighted, 2.5% FTSE NAREIT Composite REIT, 5% NCREIF Property Index
01/01/2008	01/01/2011	35% S&P 500, 9% MSCI EAFE (Net), 30% Blmbg. Barc. Intermed. U.S. Government/Credit, 2.5% FTSE NAREIT Composite REIT, 5% NCREIF Property Index, 4% Russell Midcap Growth Index, 4% Russell Midcap Value Index, 4% Russell 2000 Growth Index, 4% Russell 2000 Value Index, 2.5% NCREIF ODCE Equal Weighted
01/01/2004	01/01/2008	29% S&P 500, 10% MSCI EAFE (Net), 40% Blmbg. Barc. Intermed. U.S. Government/Credit, 2.5% FTSE NAREIT Composite REIT, 2.5% NCREIF Property Index, 4% Russell Midcap Growth Index, 4% Russell Midcap Value Index, 4% Russell 2000 Growth Index, 4% Russell 2000 Value Index
01/01/1979	01/01/2004	32% S&P 500, 10% Russell 2000 Index, 10% MSCI EAFE (Net), 10% Blmbg. Barc. U.S. Aggregate, 33% Blmbg. Barc. Intermed. U.S. Government/Credit, 2.5% FTSE NAREIT Composite REIT, 2.5% NCREIF Property Index
<b>SSgA S&amp;P 500 Index NL</b>		
07/31/2010	Present	S&P 500
<b>T. Rowe Price</b>		
01/31/2015	Present	Russell 1000 Growth Index
<b>Aristotle</b>		
01/31/2021	Present	Russell 1000 Value Index
<b>Iridian</b>		
08/31/2015	Present	Russell Midcap Value Index
<b>Wedge Capital</b>		
06/30/1994	Present	Russell 2000 Value Index
<b>Times Square Capital Mgmt</b>		
07/31/2009	Present	Russell Midcap Growth Index

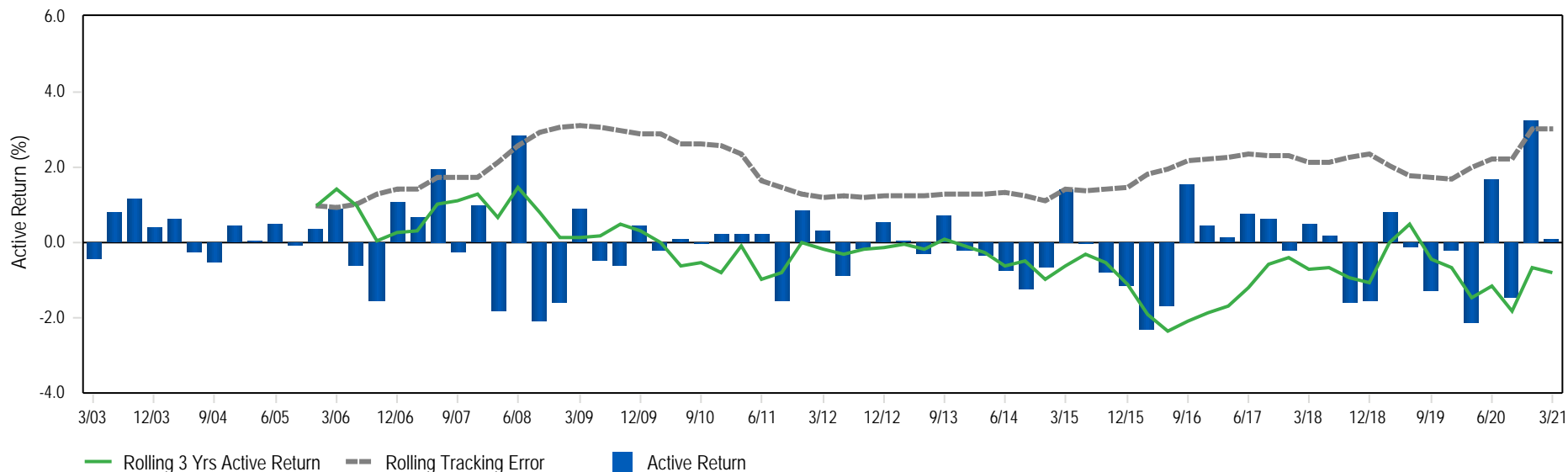
From Date	To Date	Benchmark
Emerald Advisers		
08/31/2015	Present	Russell 2000 Growth Index
Artisan Partners		
10/31/1999	Present	MSCI EAFE Growth Index (Net)
Alliance Bernstein		
01/31/2008	Present	MSCI EAFE Value Index (Net)
JP Morgan Emerging Markets Equity Focused		
12/31/2010	Present	MSCI EM (net)
Fidelity		
08/31/2006	Present	Blmbg. Barc. U.S. Aggregate
Metropolitan West Asset Mgmt		
07/31/1999	Present	Blmbg. Barc. Intermed. U.S. Government/Credit
Pugh Capital		
11/30/2018	Present	Blmbg. Barc. U.S. Aggregate
Semper Capital		
11/30/2018	Present	Blmbg. Barc. U.S. Mortgage Backed Securities
Voya		
05/31/2015	Present	S&P/LSTA Leveraged Loan Index
JP Morgan SPF		
04/30/1990	Present	NCREIF ODCE Equal Weighted
TA Realty Core Property Fund		
03/31/2018	Present	NCREIF ODCE Equal Weighted
CenterSquare U.S. Real Estate Securities		
02/28/2018	Present	FTSE NAREIT Equity REIT Index
BTG Pactual Open Ended Core US Timberland Fund (OEF)		
01/31/2019	Present	NCREIF Timberland Index
Cash Account		
07/31/1993	Present	90 Day U.S. Treasury Bill

## Domestic Equity Composite

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
Domestic Equity Composite					
Beginning Market Value	721,782,737	721,782,737	512,639,528	715,658,711	628,043,341
Net Cash Flows	-3,899,199	-3,899,199	-74,809,776	-213,511,446	-341,839,520
Income	845,267	845,267	4,456,055	17,283,850	30,215,071
Gain/Loss	43,714,011	43,714,011	320,157,009	243,011,701	446,023,924
Ending Market Value	762,442,816	762,442,816	762,442,816	762,442,816	762,442,816

Rolling Return and Tracking Error

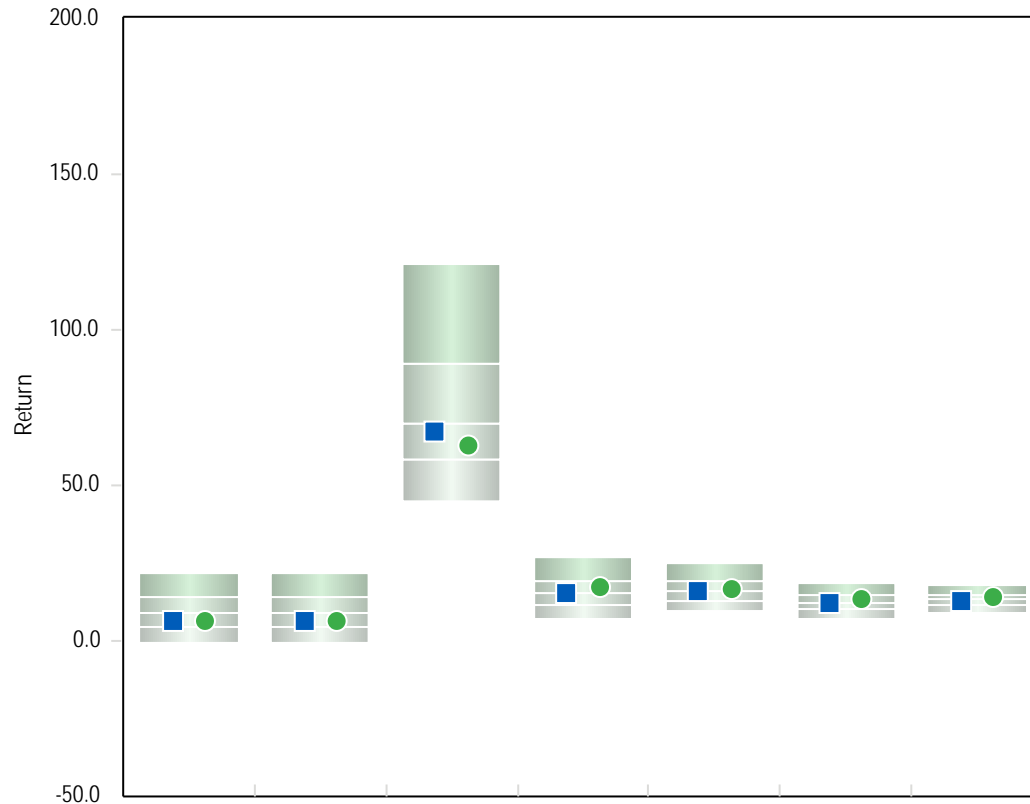


Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
Domestic Equity Composite	6.4	6.4	67.3	15.6	16.2
Russell 3000 Index	6.3	6.3	62.5	17.1	16.6
Difference	0.1	0.1	4.8	-1.5	-0.4



IM U.S. Equity (SA+CF)



■ Domestic Equity Composite  
● Russell 3000 Index

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Domestic Equity Composite	6.4 (64)	6.4 (64)	67.3 (55)	15.6 (50)	16.2 (48)	12.2 (52)	12.8 (56)
Russell 3000 Index	6.3 (65)	6.3 (65)	62.5 (65)	17.1 (40)	16.6 (43)	13.4 (38)	13.8 (42)

5th Percentile	21.8	21.8	121.2	27.0	25.3	18.6	17.6
1st Quartile	14.4	14.4	89.3	19.3	18.9	14.6	14.9
Median	9.3	9.3	69.9	15.5	16.0	12.3	13.2
3rd Quartile	4.7	4.7	58.4	11.6	13.0	10.0	11.5
95th Percentile	-0.5	-0.5	44.9	7.1	9.3	7.0	9.1
Population	1,924	1,924	1,918	1,881	1,816	1,733	1,583

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	14.1	13.2
Minimum Return	-15.8	-13.8
Return	16.2	16.6
Cumulative Return	111.7	115.9
Active Return	-0.2	0.0
Excess Return	15.3	15.5

Risk Summary Statistics

Beta	1.1	1.0
Up Market Capture	100.8	100.0
Down Market Capture	103.8	100.0

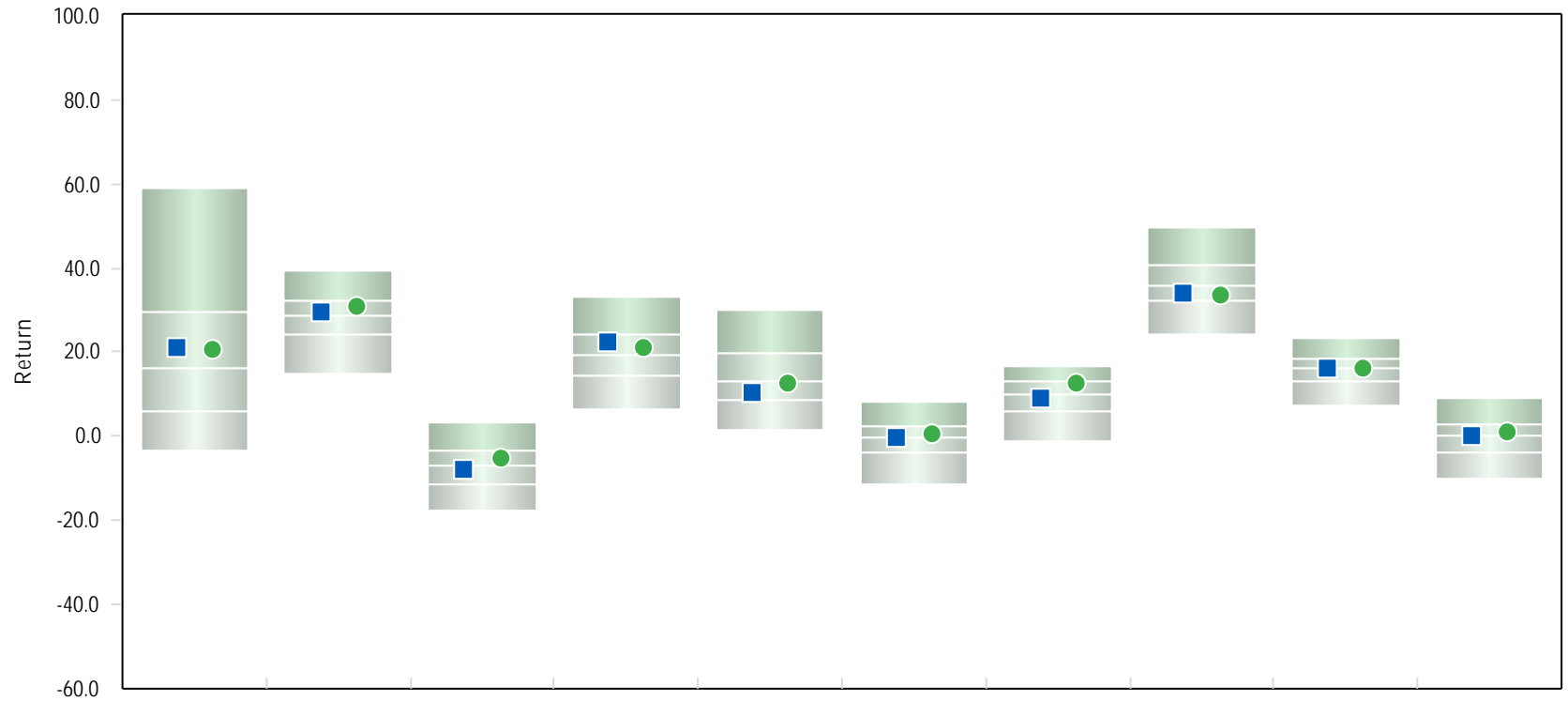
Risk / Return Summary Statistics

Standard Deviation	16.4	15.4
Alpha	-1.1	0.0
Active Return/Risk	0.0	0.0
Tracking Error	2.5	0.0
Information Ratio	-0.1	-
Sharpe Ratio	0.9	1.0

Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

IM U.S. Equity (SA+CF)



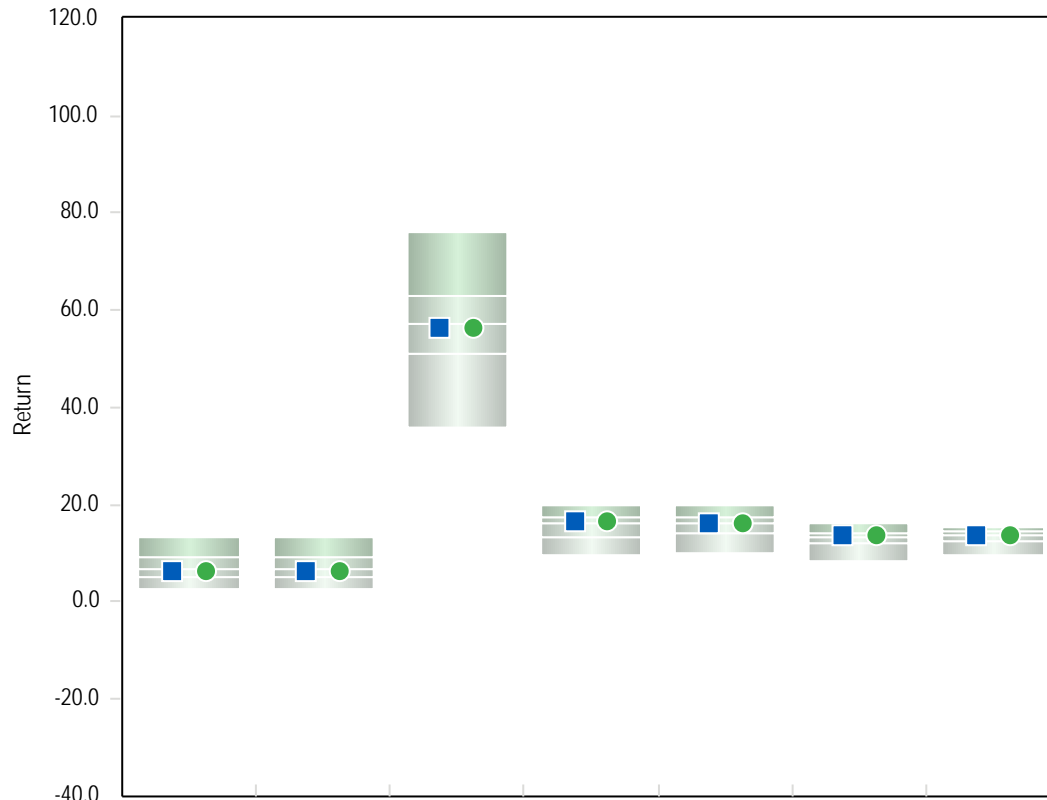
	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
■ Domestic Equity Composite	21.0 (38)	29.8 (43)	-7.8 (54)	22.7 (32)	10.4 (66)	-0.1 (47)	9.3 (55)	33.9 (63)	16.1 (49)	0.4 (48)
● Russell 3000 Index	20.9 (38)	31.0 (35)	-5.2 (39)	21.1 (42)	12.7 (52)	0.5 (42)	12.6 (32)	33.6 (65)	16.4 (45)	1.0 (42)

5th Percentile	58.8	39.3	3.2	32.9	30.2	8.1	16.7	49.6	23.6	9.1
1st Quartile	29.7	32.4	-3.4	24.2	19.7	2.6	13.3	40.6	18.4	3.0
Median	16.3	28.6	-7.0	19.3	13.1	-0.5	10.0	35.8	16.0	0.0
3rd Quartile	6.0	24.4	-11.6	14.5	8.5	-3.8	5.9	32.3	13.0	-3.7
95th Percentile	-3.3	15.0	-17.8	6.4	1.4	-11.3	-1.2	24.4	7.2	-10.0

Population	2,061	2,248	2,456	2,548	2,678	2,803	2,895	2,943	3,029	3,131
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Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

IM U.S. Large Cap Core Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ SSgA S&P 500 Index NL	6.2 (62)	6.2 (62)	56.4 (54)	16.8 (41)	16.3 (45)	13.6 (39)	13.9 (39)
● S&P 500	6.2 (63)	6.2 (63)	56.4 (55)	16.8 (40)	16.3 (45)	13.6 (40)	13.9 (41)

5th Percentile	13.3	13.3	76.1	20.1	19.8	16.4	15.4
1st Quartile	9.3	9.3	62.8	17.5	17.2	14.2	14.5
Median	6.7	6.7	57.2	16.2	16.1	13.3	13.8
3rd Quartile	5.2	5.2	50.9	13.5	14.2	12.1	12.7
95th Percentile	2.5	2.5	35.9	9.5	10.0	8.6	9.6

Population	205	205	205	201	198	189	171
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	12.8	12.8
Minimum Return	-12.4	-12.4
Return	16.3	16.3
Cumulative Return	112.8	112.7
Active Return	0.0	0.0
Excess Return	15.1	15.1

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	100.1	100.0
Down Market Capture	100.2	100.0

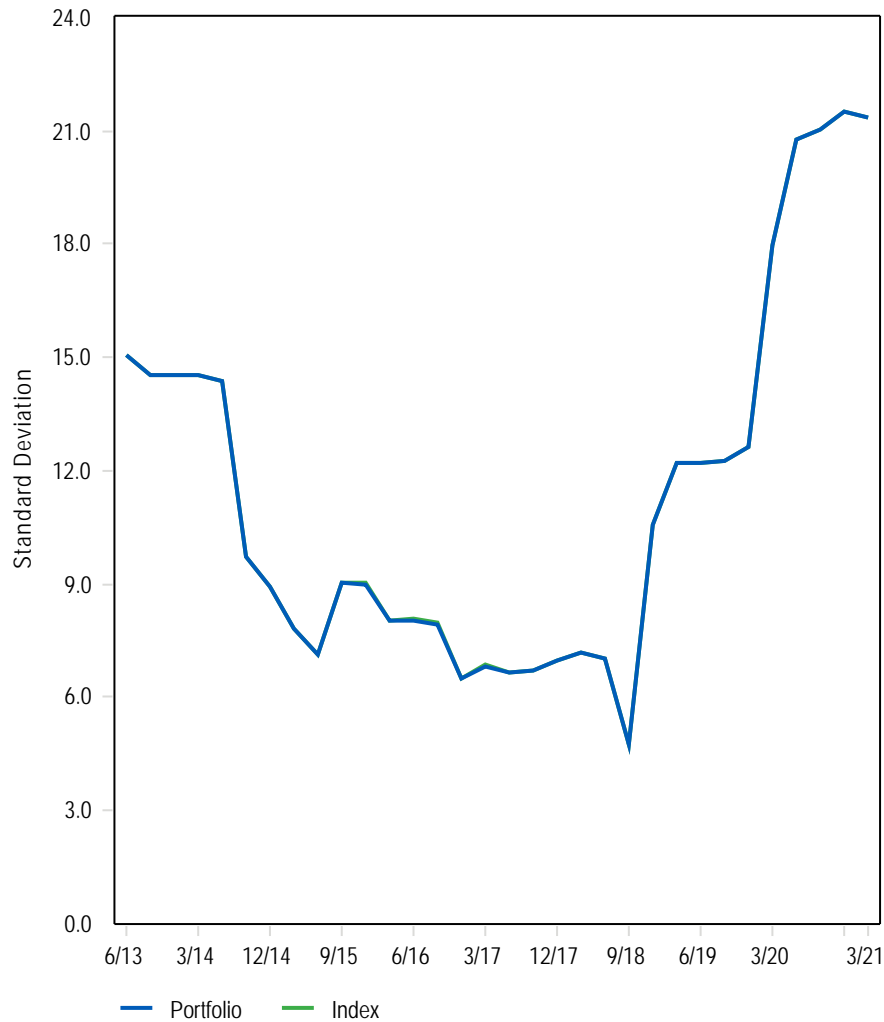
Risk / Return Summary Statistics

Standard Deviation	14.8	14.8
Alpha	0.0	0.0
Active Return/Risk	0.0	0.0
Tracking Error	0.1	0.0
Information Ratio	0.3	-
Sharpe Ratio	1.0	1.0

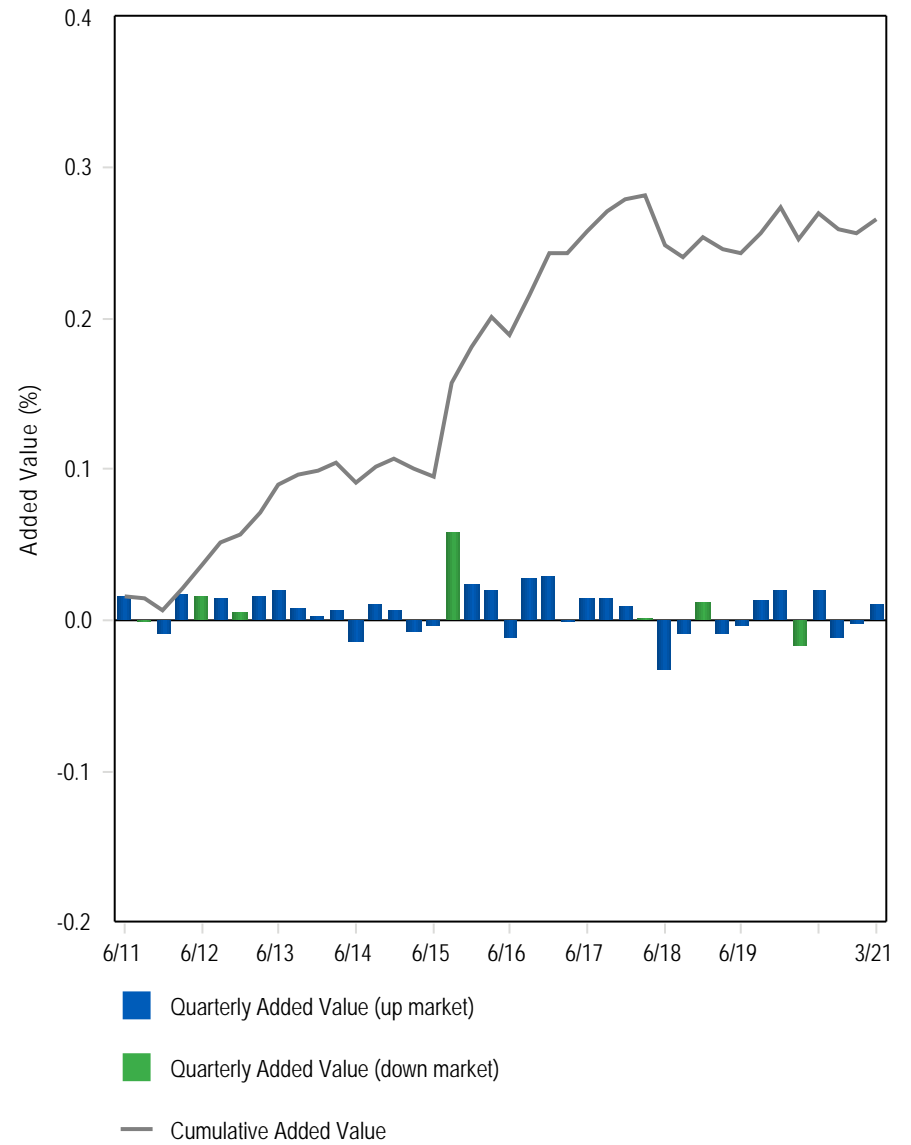
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



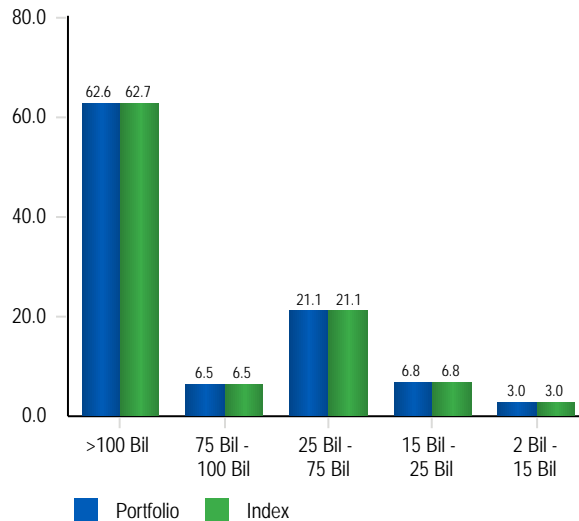
Quarterly and Cumulative Excess Performance



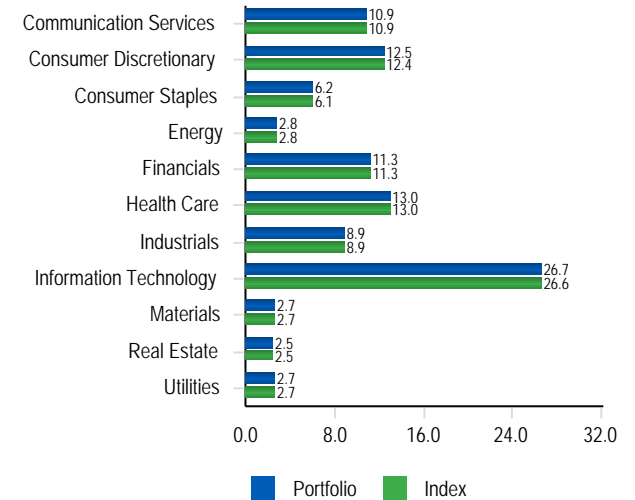
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	29.9	29.9
Forecast P/E	22.5	22.5
Price/Book ratio	4.5	4.5
Wtd. Avg. Mkt. Cap (\$B)	461.09	461.17
Median Mkt. Cap (\$B)	29.44	29.46
5 Yr. EPS Growth Rate (%)	17.3	17.3
Current Yield (%)	1.5	1.5
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	1.0	1.0
Debt to Equity (%)	164.7	164.8
Forecast EPS Growth - Long-Term	15.7	15.7
Return on Equity (%)	10.0	9.9

Distribution of Market Capitalization (%)



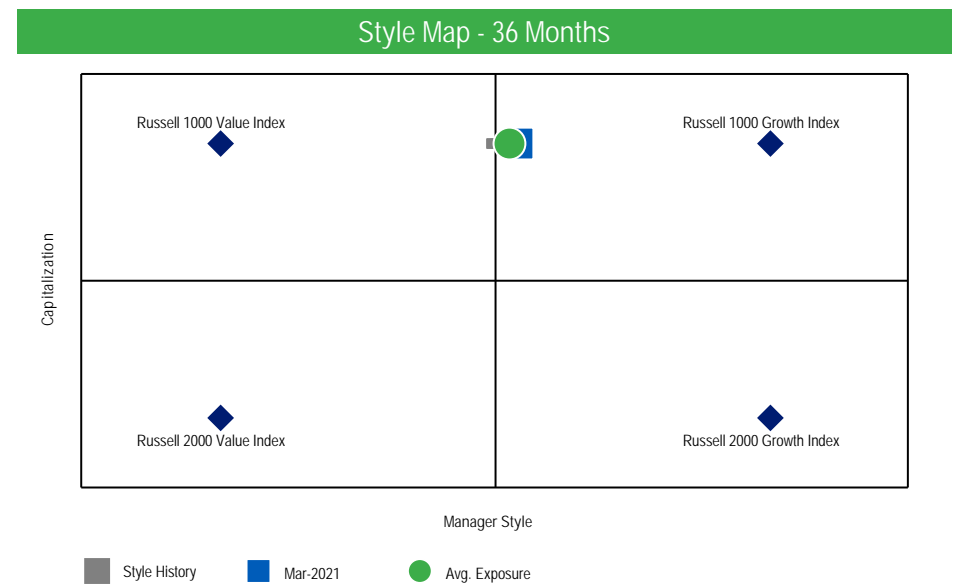
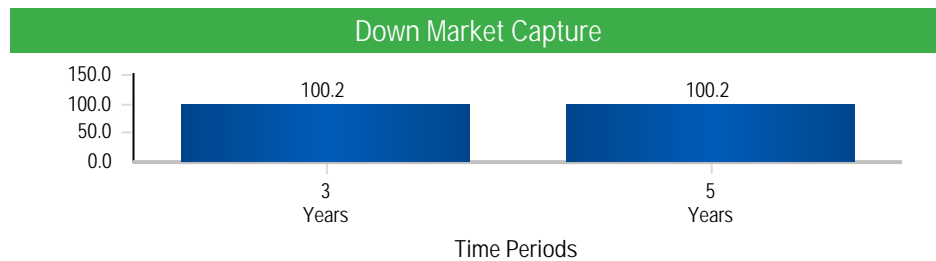
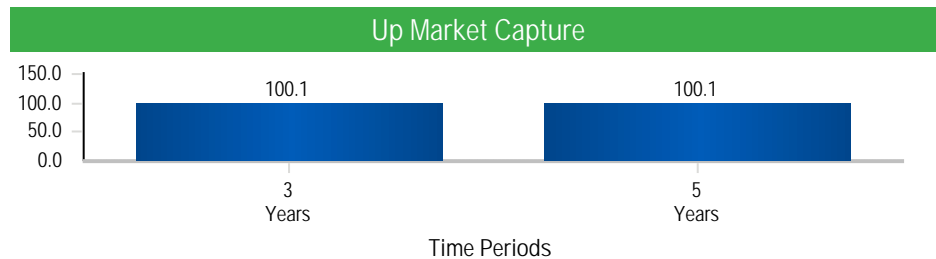
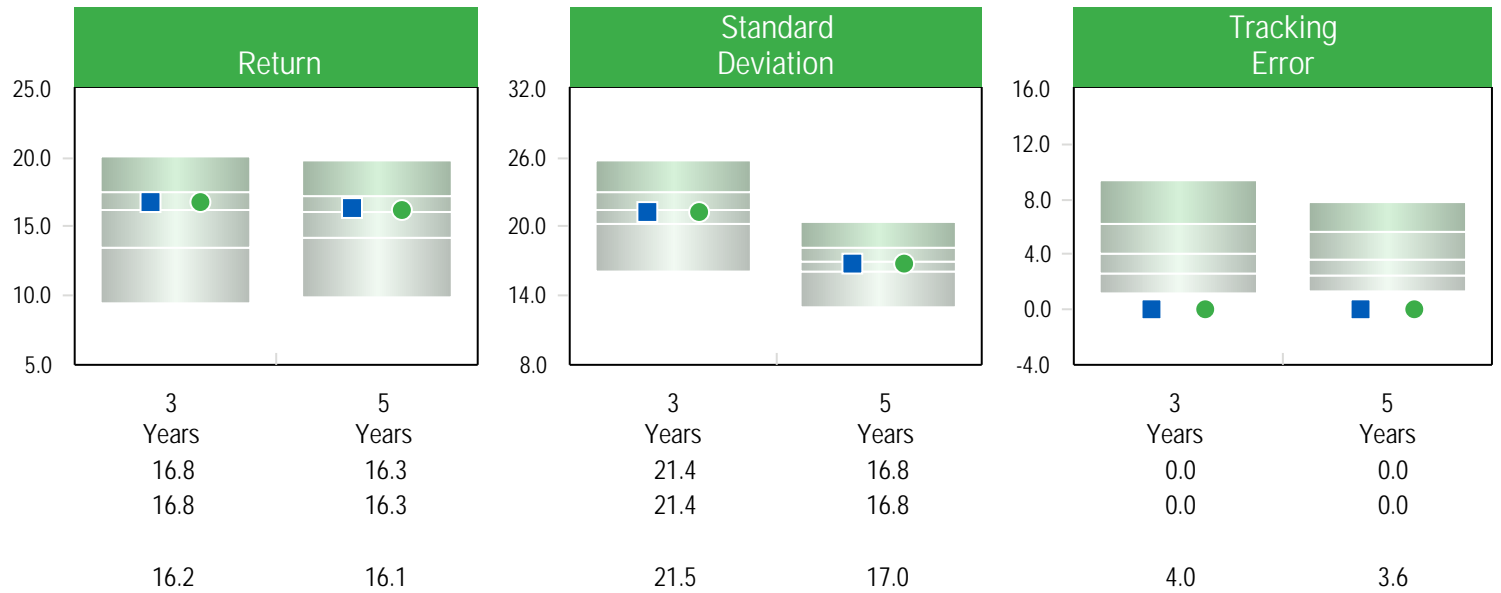
Sector Weights (%)



SSgA S&P 500 Index NL Performance Attribution vs. S&P 500

Performance — 1 Quarter Ending March 31, 2021

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	10.8	10.8	8.1	8.1	0.0	0.0	0.0	0.0
Consumer Discretionary	12.7	12.7	3.2	3.2	0.0	0.0	0.0	0.0
Consumer Staples	6.5	6.5	1.2	1.1	0.0	0.0	0.0	0.0
Energy	2.3	2.3	30.2	30.2	0.0	0.0	0.0	0.0
Financials	10.4	10.4	16.0	16.0	0.0	0.0	0.0	0.0
Health Care	13.5	13.5	3.2	3.2	0.0	0.0	0.0	0.0
Industrials	8.4	8.4	11.4	11.4	0.0	0.0	0.0	0.0
Information Technology	27.6	27.6	2.1	2.1	0.0	0.0	0.0	0.0
Materials	2.6	2.6	8.9	8.9	0.0	0.0	0.0	0.0
Real Estate	2.4	2.4	9.0	9.0	0.0	0.0	0.0	0.0
Utilities	2.8	2.8	2.8	2.8	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>6.2</b>	<b>6.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>



IM U.S. Large Cap Growth Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ T. Rowe Price	4.1 (24)	4.1 (24)	69.3 (17)	23.4 (30)	24.7 (7)	-	-
● Russell 1000 Growth Index	0.9 (72)	0.9 (72)	62.7 (39)	22.8 (34)	21.0 (40)	17.5 (31)	16.6 (31)

5th Percentile	7.2	7.2	80.0	27.0	25.1	20.4	19.3
1st Quartile	4.0	4.0	65.6	24.0	21.9	17.9	16.9
Median	2.3	2.3	60.3	21.5	20.1	16.5	15.9
3rd Quartile	0.6	0.6	55.0	19.2	18.0	14.8	14.7
95th Percentile	-2.2	-2.2	48.6	15.0	14.4	11.9	12.9

Population	225	225	225	224	214	208	196
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	16.1	14.8
Minimum Return	-10.1	-9.8
Return	24.7	21.0
Cumulative Return	201.1	159.9
Active Return	3.0	0.0
Excess Return	22.3	19.3

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	103.2	100.0
Down Market Capture	83.5	100.0

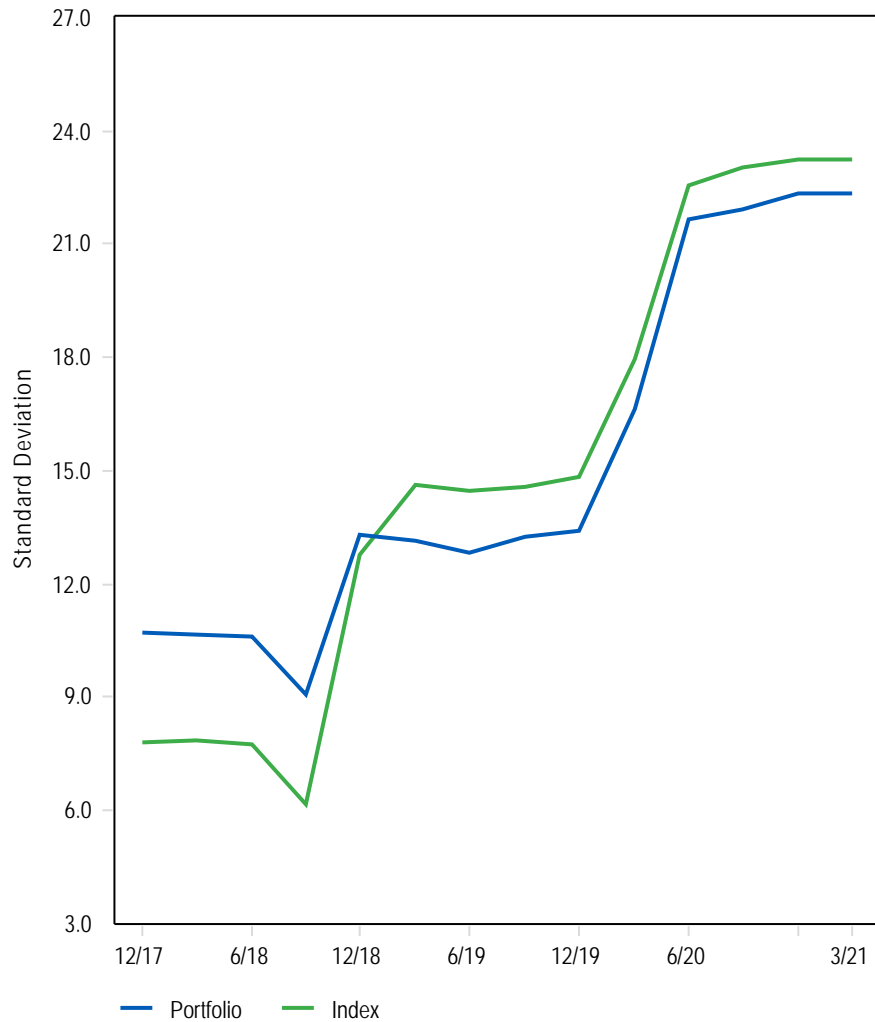
Risk / Return Summary Statistics

Standard Deviation	15.9	15.7
Alpha	3.5	0.0
Active Return/Risk	0.2	0.0
Tracking Error	4.1	0.0
Information Ratio	0.7	-
Sharpe Ratio	1.4	1.2

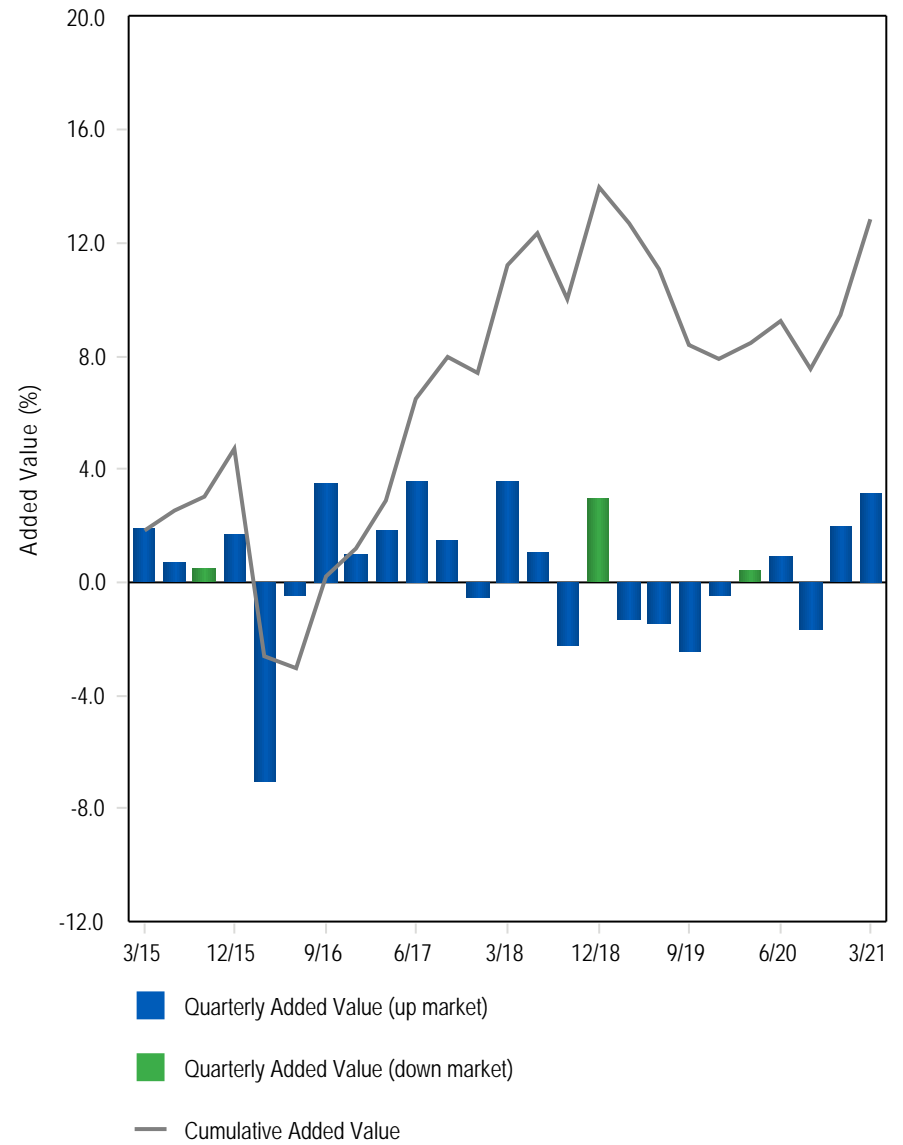
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

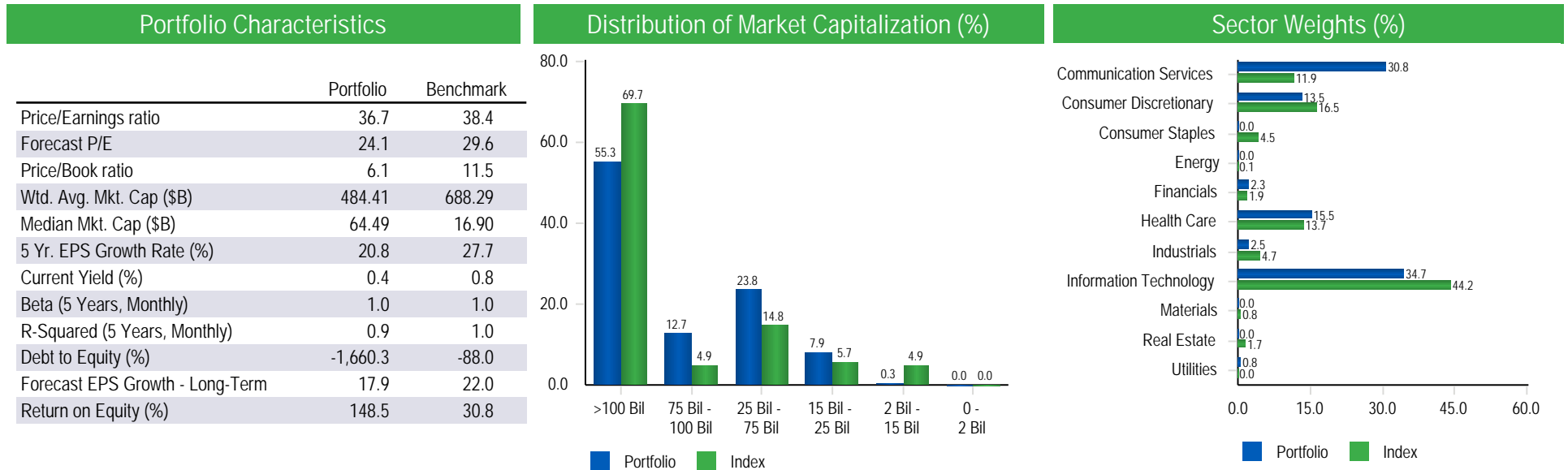
Rolling 3 Years Annualized Standard Deviation



Quarterly and Cumulative Excess Performance

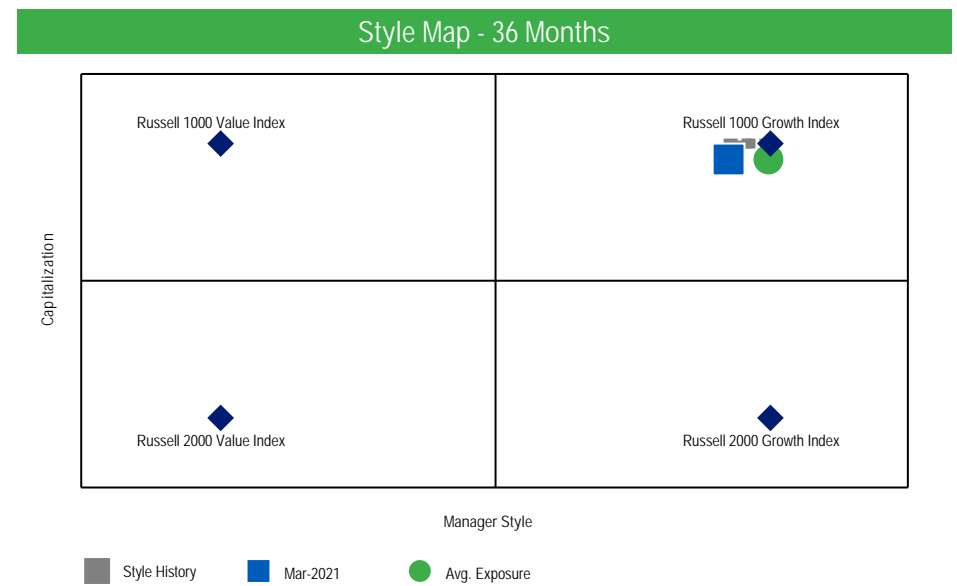
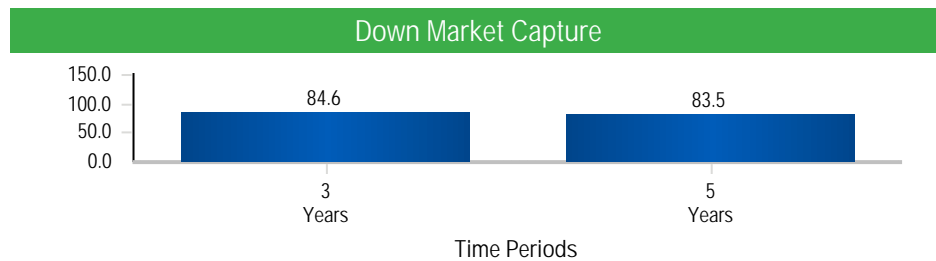
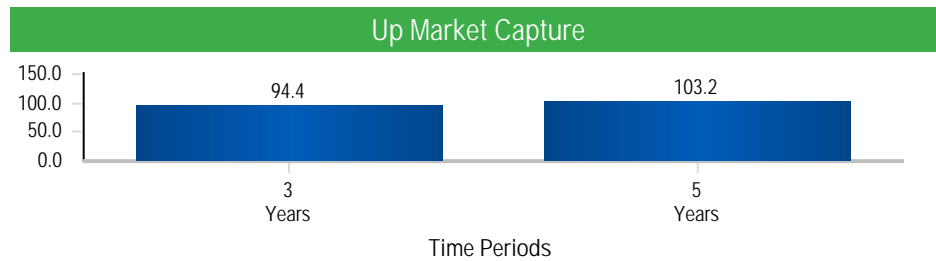




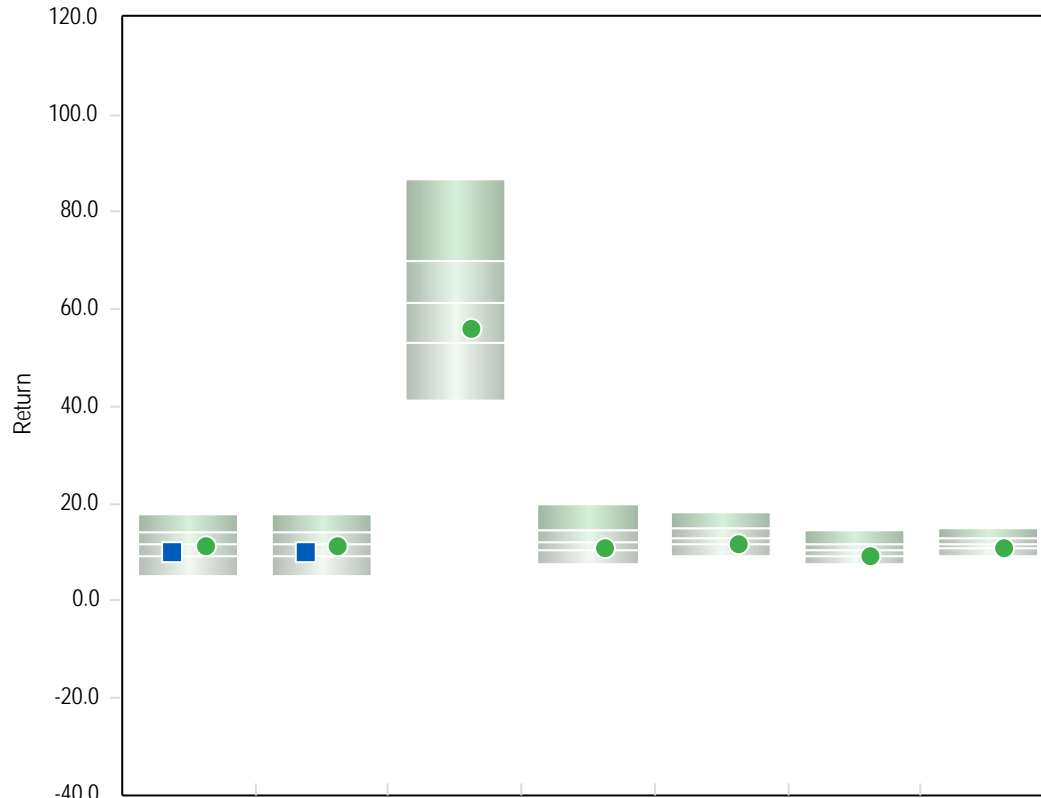


T. Rowe Price Performance Attribution vs. Russell 1000 Growth Index

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	23.8	11.1	7.7	8.5	-0.1	0.9	-0.1	0.8
Consumer Discretionary	21.5	16.7	-1.2	-0.9	0.0	-0.1	0.0	-0.2
Consumer Staples	0.0	4.5	0.0	-0.7	0.0	0.1	0.0	0.1
Energy	0.0	0.1	0.0	19.6	0.0	0.0	0.0	0.0
Financials	1.9	1.9	15.1	2.7	0.2	0.0	0.0	0.2
Health Care	14.1	13.6	3.1	1.4	0.2	0.0	0.0	0.2
Industrials	2.1	4.5	2.2	3.7	-0.1	-0.1	0.0	-0.1
Information Technology	35.6	45.2	-1.5	-0.7	-0.4	0.2	0.1	-0.1
Materials	0.0	0.8	0.0	0.9	0.0	0.0	0.0	0.0
Real Estate	0.0	1.6	0.0	7.0	0.0	-0.1	0.0	-0.1
Utilities	1.0	0.0	-1.5	1.3	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>1.8</b>	<b>1.0</b>	<b>-0.1</b>	<b>0.9</b>	<b>0.0</b>	<b>0.8</b>



IM U.S. Large Cap Value Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Aristotle	9.9 (67)	9.9 (67)	-	-	-	-	-
Russell 1000 Value Index	11.3 (56)	11.3 (56)	56.1 (67)	11.0 (62)	11.7 (77)	9.4 (73)	11.0 (72)

5th Percentile	17.9	17.9	86.7	20.0	18.4	14.4	15.1
1st Quartile	14.4	14.4	69.8	14.6	14.9	11.5	12.8
Median	11.6	11.6	61.4	11.9	13.0	10.4	11.8
3rd Quartile	9.2	9.2	53.1	10.3	11.8	9.4	10.9
95th Percentile	5.2	5.2	41.1	7.4	9.4	7.4	9.3

Population	262	262	262	259	256	249	225
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Risk Return Statistics - 3 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	-	13.5
Minimum Return	-	-17.1
Return	-	11.0
Cumulative Return	-	36.6
Active Return	-	0.0
Excess Return	-	11.0

Risk Summary Statistics

Beta	-	1.0
Up Market Capture	-	100.0
Down Market Capture	-	100.0

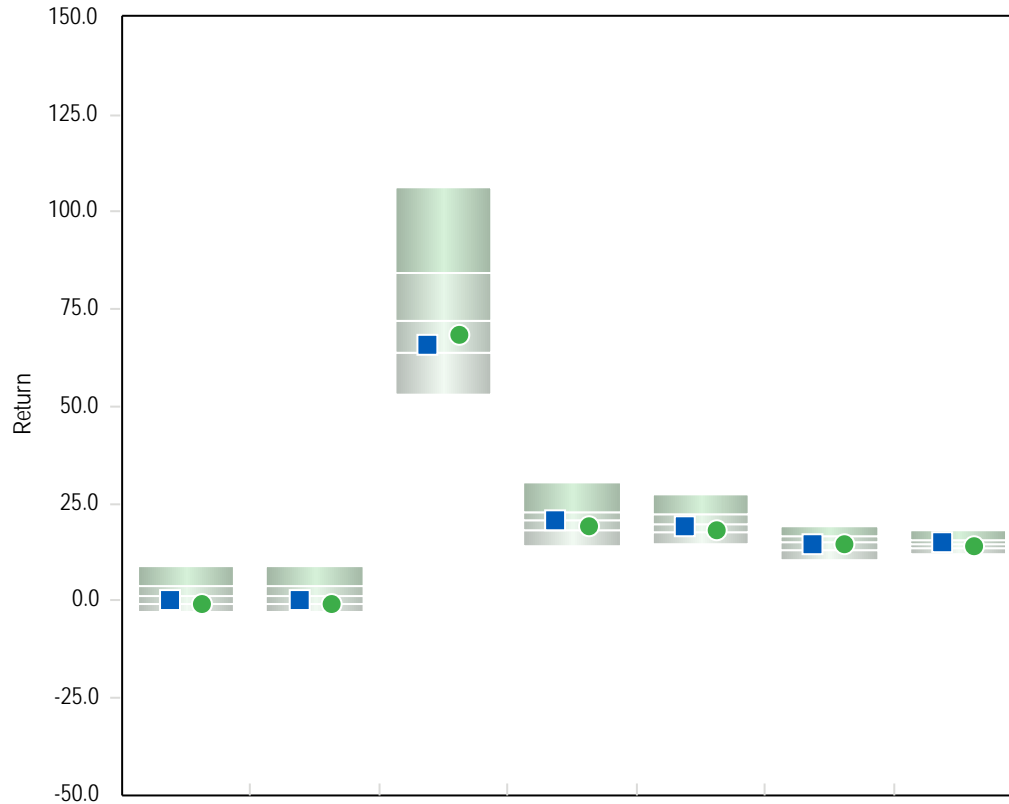
Risk / Return Summary Statistics

Standard Deviation	-	19.7
Alpha	-	0.0
Active Return/Risk	-	0.0
Tracking Error	-	0.0
Information Ratio	-	-
Sharpe Ratio	-	0.6

Correlation Statistics

R-Squared	-	1.0
Actual Correlation	-	1.0

IM U.S. Mid Cap Growth Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Times Square Capital Mgmt	0.2 (67)	0.2 (67)	66.1 (74)	20.6 (53)	19.3 (57)	14.5 (61)	15.0 (47)
● Russell Midcap Growth Index	-0.6 (74)	-0.6 (74)	68.6 (64)	19.4 (59)	18.4 (68)	14.4 (66)	14.1 (59)

5th Percentile	8.8	8.8	106.3	30.6	27.3	19.3	18.0
1st Quartile	4.0	4.0	84.4	23.0	22.2	16.5	15.8
Median	1.5	1.5	72.2	20.9	19.5	15.1	14.7
3rd Quartile	-0.7	-0.7	63.8	18.0	17.7	13.2	13.4
95th Percentile	-2.8	-2.8	52.9	14.2	14.4	10.6	11.9

Population	74	74	73	72	72	69	66
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	13.4	15.7
Minimum Return	-15.0	-14.9
Return	19.3	18.4
Cumulative Return	142.1	132.5
Active Return	0.6	0.0
Excess Return	17.9	17.3

Risk Summary Statistics

Beta	0.9	1.0
Up Market Capture	95.7	100.0
Down Market Capture	84.5	100.0

Risk / Return Summary Statistics

Standard Deviation	15.9	17.2
Alpha	2.4	0.0
Active Return/Risk	0.0	0.0
Tracking Error	3.5	0.0
Information Ratio	0.2	-
Sharpe Ratio	1.1	1.0

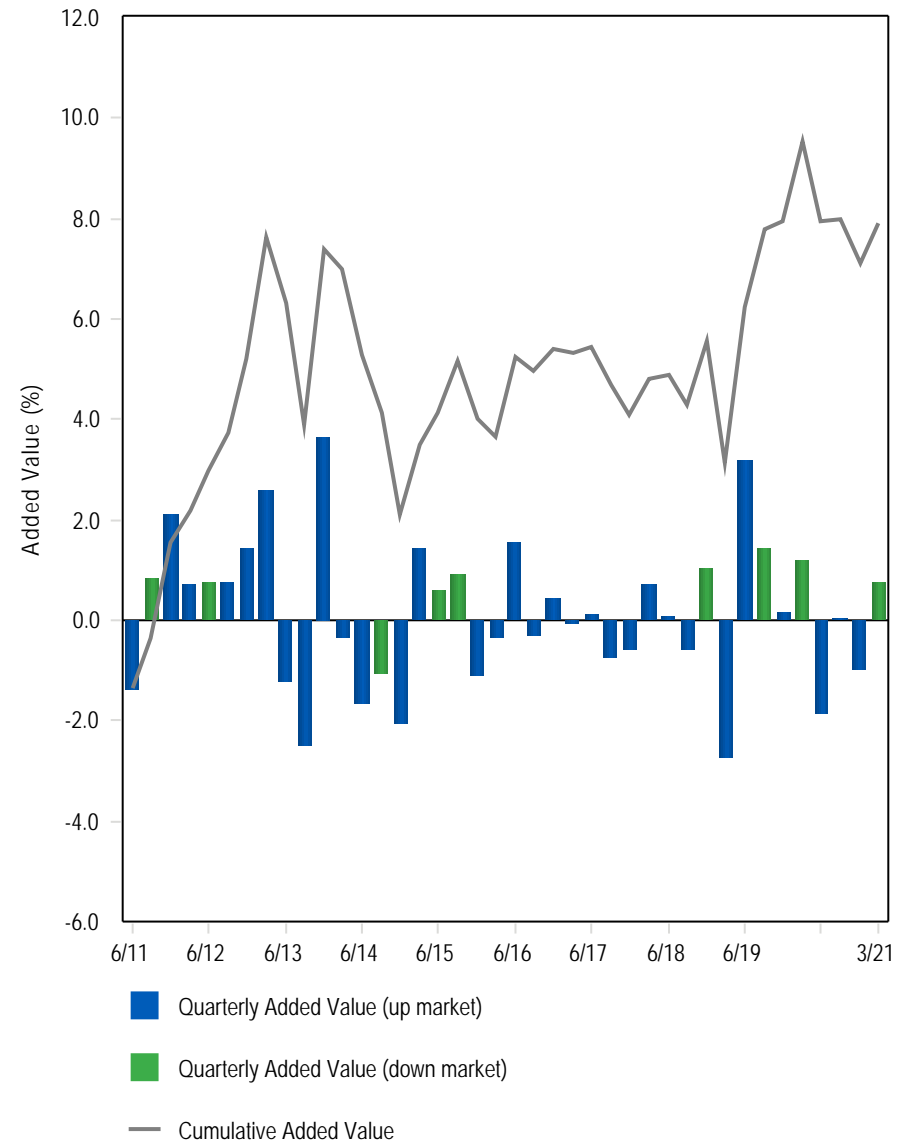
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



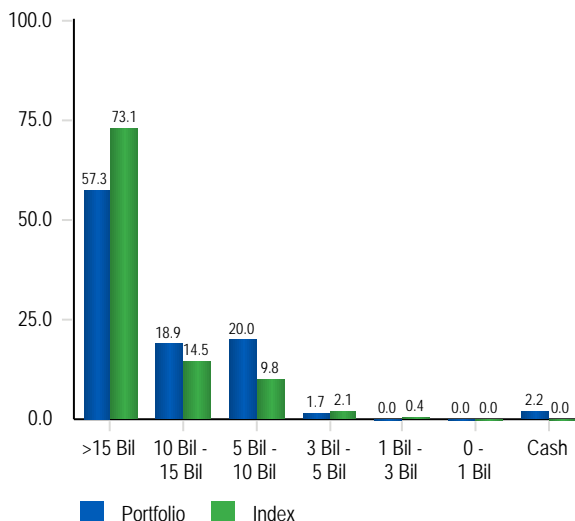
Quarterly and Cumulative Excess Performance



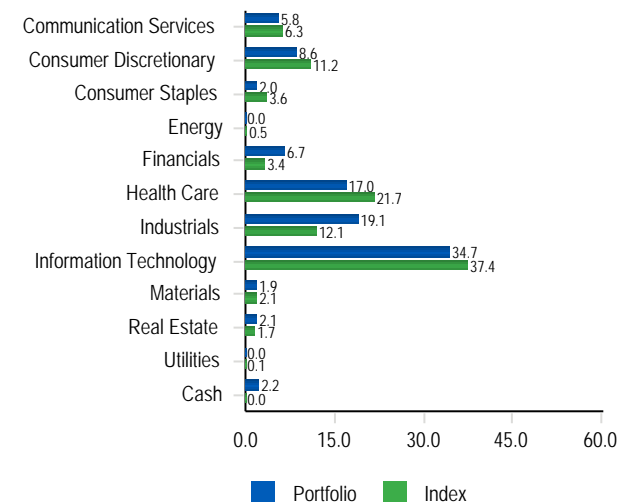
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	34.0	39.9
Forecast P/E	27.1	30.5
Price/Book ratio	5.7	9.7
Wtd. Avg. Mkt. Cap (\$B)	20.26	23.95
Median Mkt. Cap (\$B)	15.87	12.08
5 Yr. EPS Growth Rate (%)	17.1	22.5
Current Yield (%)	0.5	0.5
Beta (5 Years, Monthly)	0.9	1.0
R-Squared (5 Years, Monthly)	1.0	1.0
Debt to Equity (%)	200.4	-1,326.9
Forecast EPS Growth - Long-Term	15.7	20.0
Return on Equity (%)	9.5	112.3

Distribution of Market Capitalization (%)



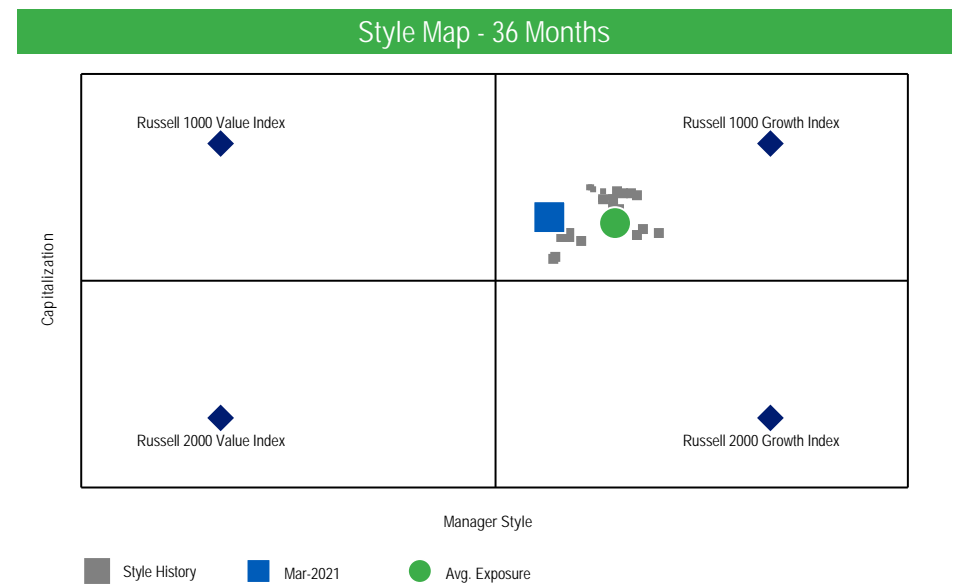
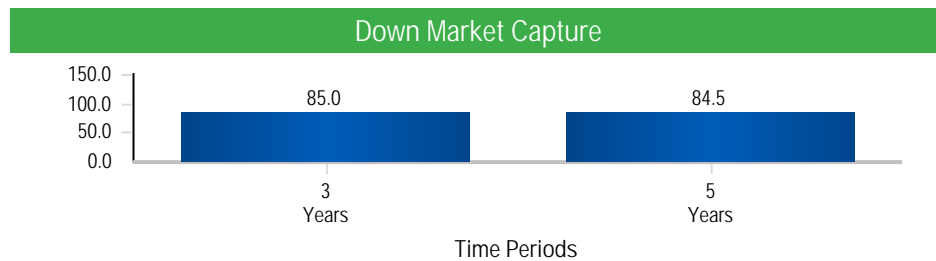
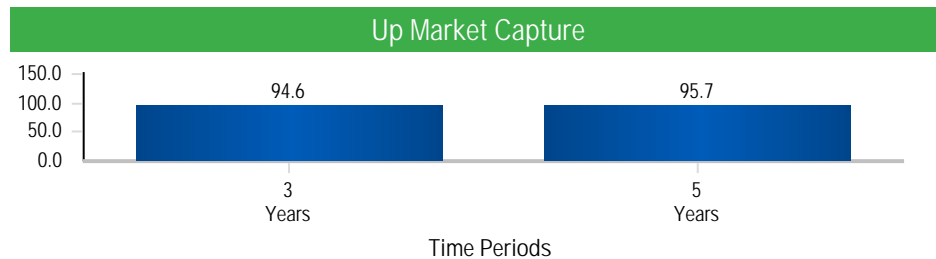
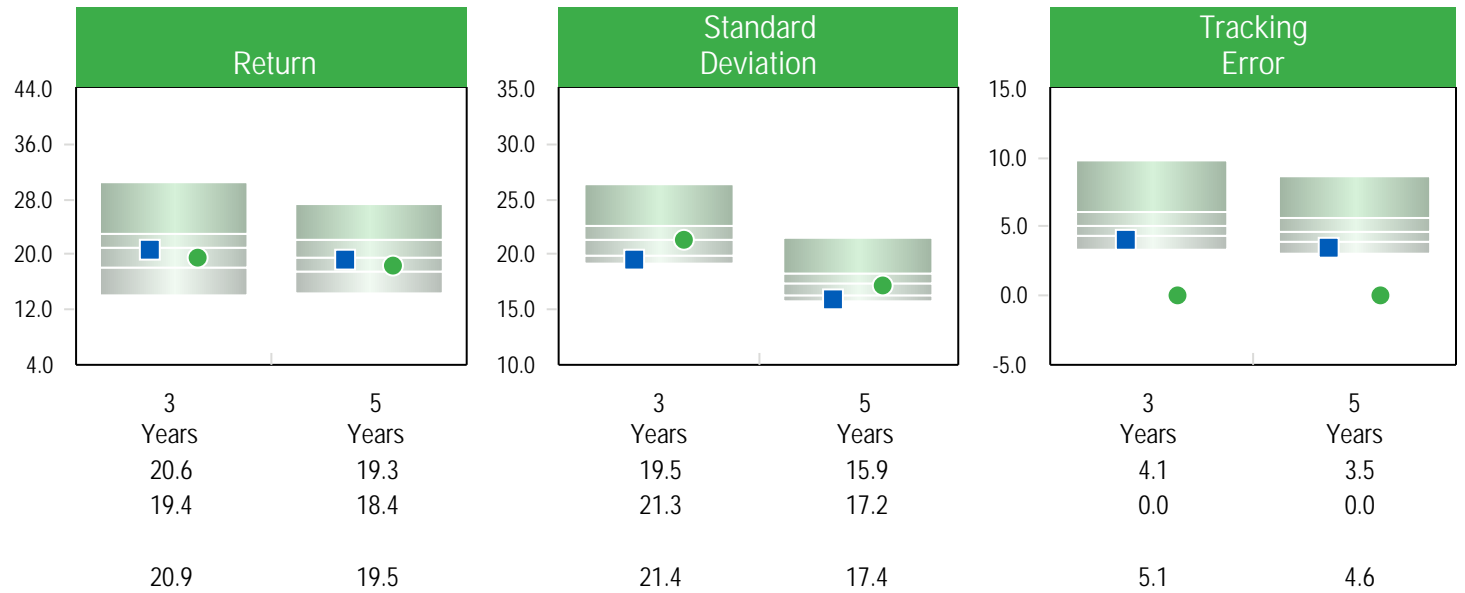
Sector Weights (%)



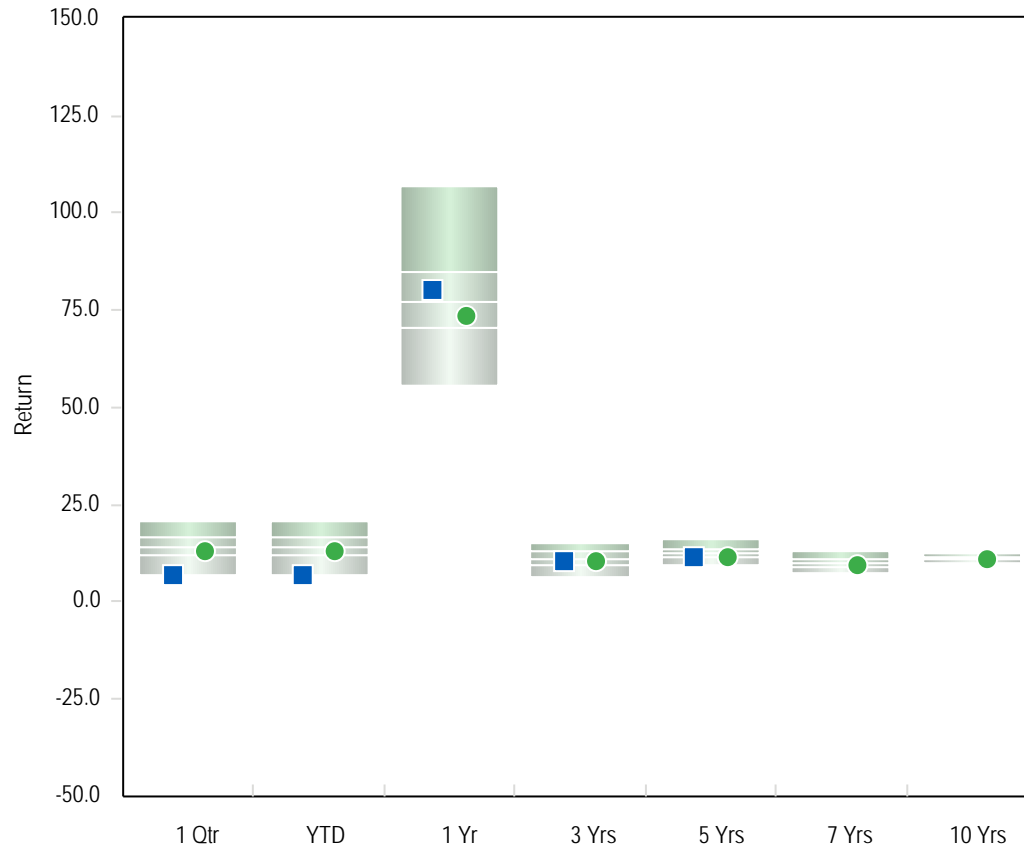
Times Square Capital Mgmt Performance Attribution vs. Russell Midcap Growth Index

Performance — 1 Quarter Ending March 31, 2021

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			Total
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	
Communication Services	7.1	6.7	6.0	-4.1	0.7	0.0	0.0	0.7
Consumer Discretionary	9.1	10.3	9.6	7.0	0.3	-0.1	0.0	0.1
Consumer Staples	1.0	3.4	-1.3	0.9	-0.1	0.0	0.1	-0.1
Energy	0.0	0.4	0.0	19.6	0.0	-0.1	0.0	-0.1
Financials	5.9	3.5	-0.3	-1.6	0.0	0.0	0.0	0.1
Health Care	16.9	21.6	-0.2	-0.7	0.1	0.0	0.0	0.1
Industrials	15.6	11.7	-2.1	0.9	-0.3	0.1	-0.1	-0.4
Information Technology	39.5	38.9	-3.3	-3.2	0.0	0.0	0.0	0.0
Materials	2.7	2.1	4.2	1.1	0.1	0.0	0.0	0.1
Real Estate	2.1	1.3	-1.4	21.9	-0.3	0.2	-0.2	-0.3
Utilities	0.0	0.1	0.0	1.3	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.3</b>	<b>-0.5</b>	<b>0.4</b>	<b>0.0</b>	<b>-0.2</b>	<b>0.2</b>



IM U.S. Mid Cap Value Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Iridian	7.1 (96)	7.1 (96)	80.1 (36)	10.6 (64)	11.5 (73)	-	-
Russell Midcap Value Index	13.1 (58)	13.1 (58)	73.8 (60)	10.7 (62)	11.6 (71)	9.3 (67)	11.1 (72)

5th Percentile	20.8	20.8	106.8	15.2	16.0	12.9	13.2
1st Quartile	16.4	16.4	85.1	13.0	13.8	10.9	12.5
Median	13.9	13.9	77.1	11.3	12.6	10.1	11.7
3rd Quartile	11.9	11.9	70.3	9.7	11.5	8.9	11.0
95th Percentile	7.1	7.1	55.8	6.4	9.3	7.4	9.9
Population	67	67	67	67	64	62	59

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	16.8	14.0
Minimum Return	-19.2	-22.7
Return	11.5	11.6
Cumulative Return	72.6	73.1
Active Return	0.1	0.0
Excess Return	11.7	11.6

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	97.8	100.0
Down Market Capture	95.4	100.0

Risk / Return Summary Statistics

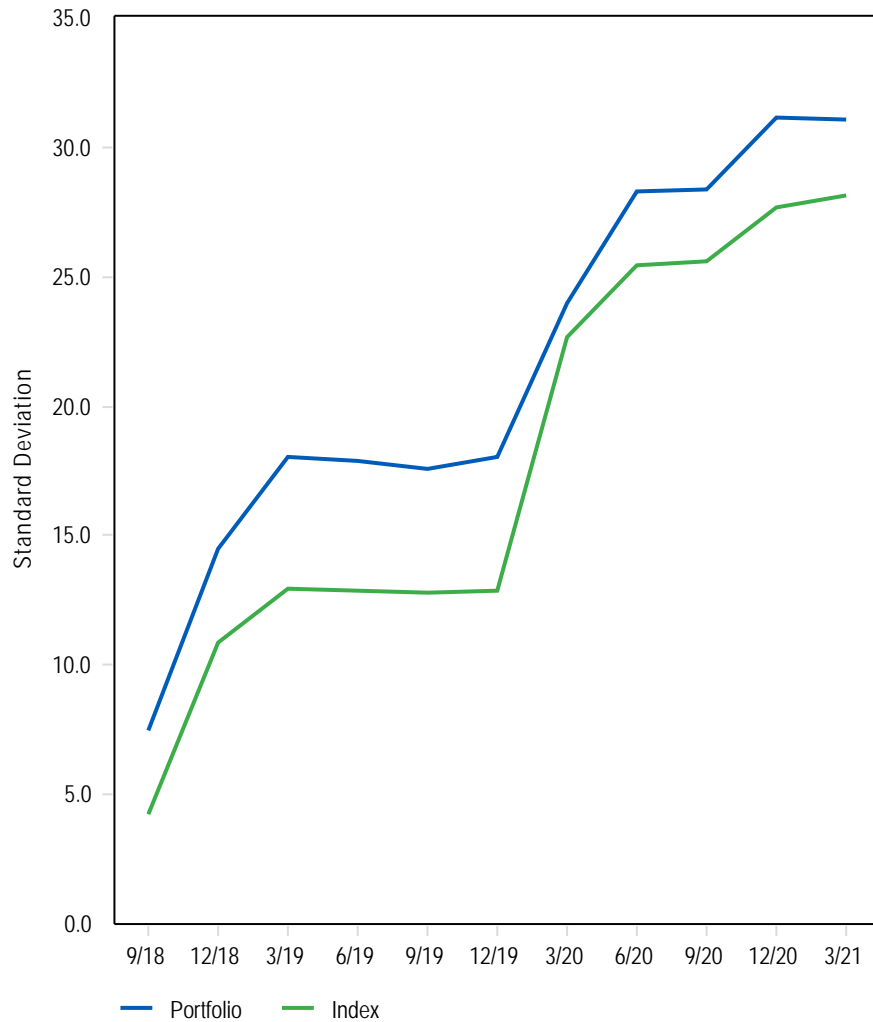
Standard Deviation	19.5	18.3
Alpha	0.2	0.0
Active Return/Risk	0.0	0.0
Tracking Error	6.9	0.0
Information Ratio	0.0	-
Sharpe Ratio	0.6	0.6

Correlation Statistics

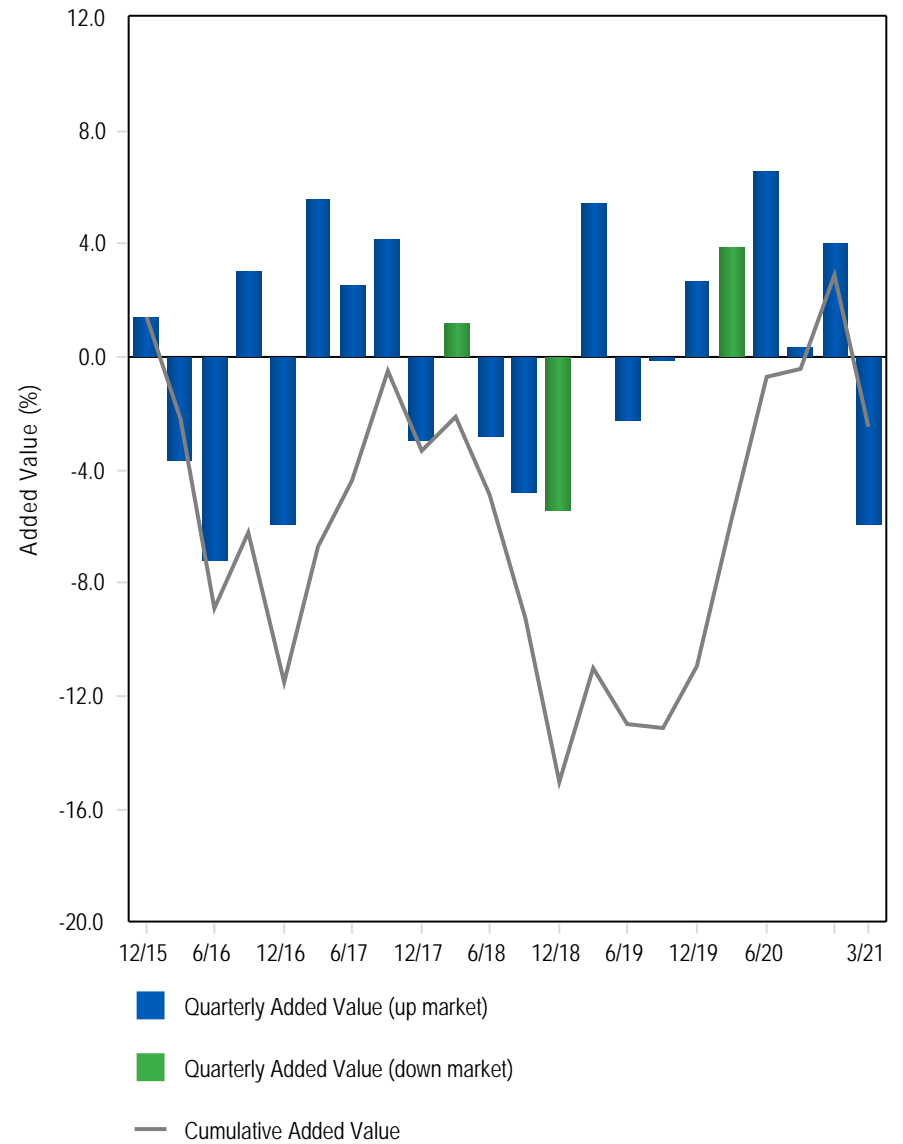
R-Squared	0.9	1.0
Actual Correlation	1.0	1.0



Rolling 3 Years Annualized Standard Deviation



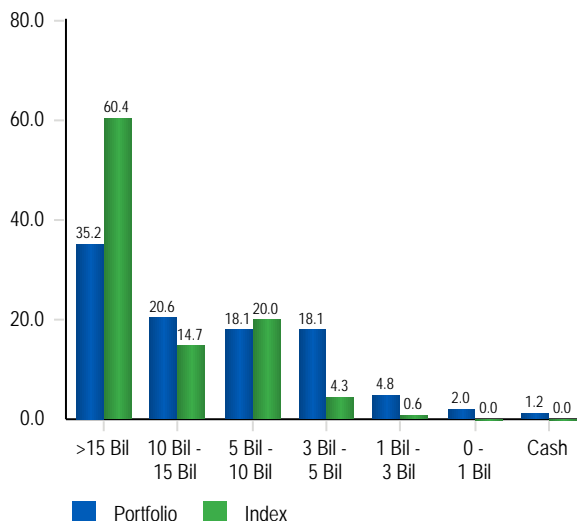
Quarterly and Cumulative Excess Performance



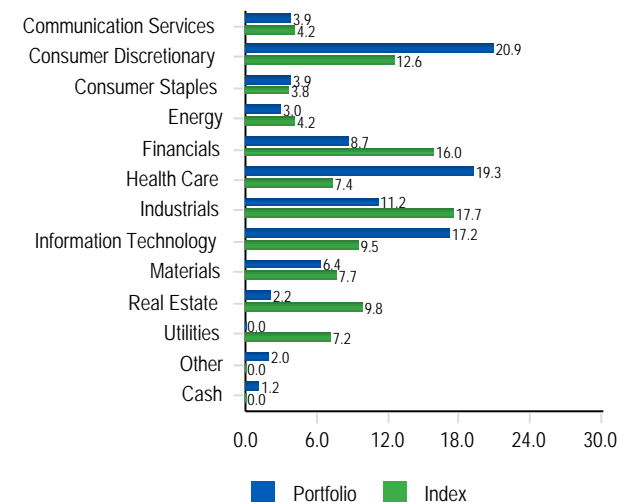
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	27.1	23.9
Forecast P/E	15.9	18.2
Price/Book ratio	3.1	2.7
Wtd. Avg. Mkt. Cap (\$B)	15.70	20.28
Median Mkt. Cap (\$B)	10.72	9.67
5 Yr. EPS Growth Rate (%)	30.8	7.9
Current Yield (%)	0.5	1.7
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	0.9	1.0
Debt to Equity (%)	-37.5	88.1
Forecast EPS Growth - Long-Term	20.1	11.1
Return on Equity (%)	-0.4	3.2

Distribution of Market Capitalization (%)



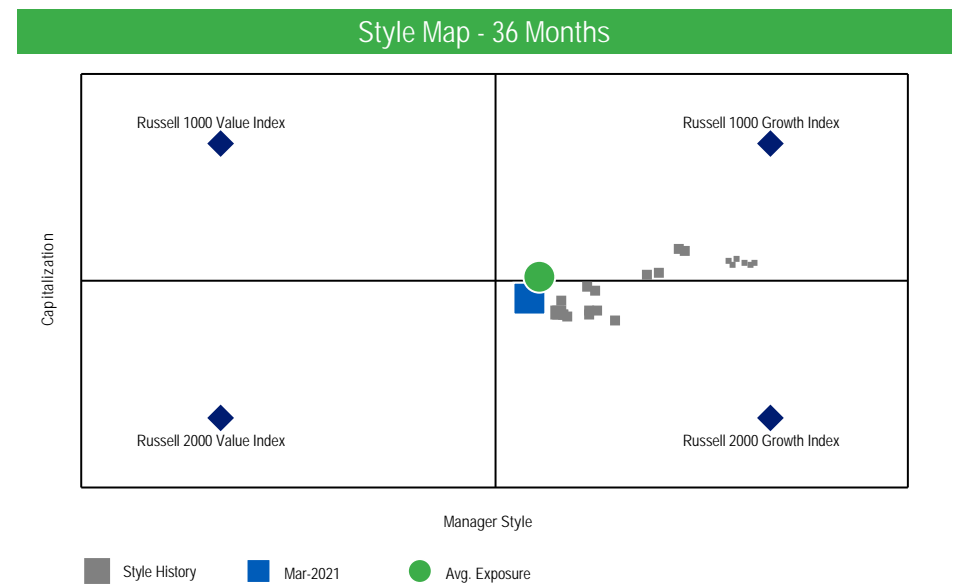
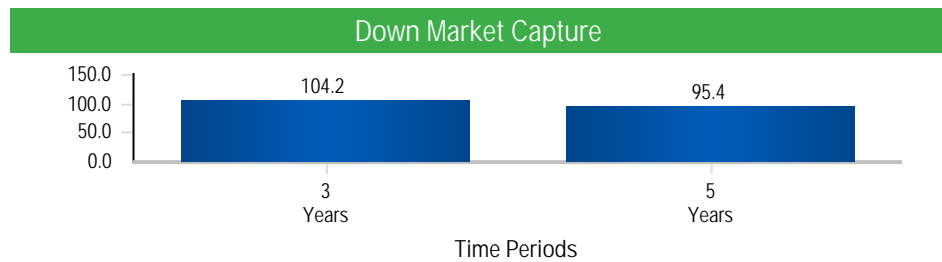
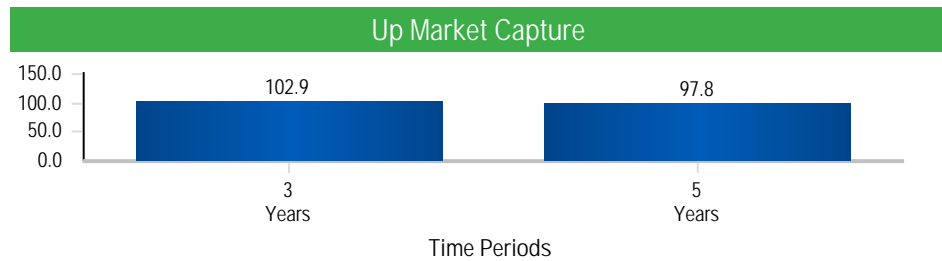
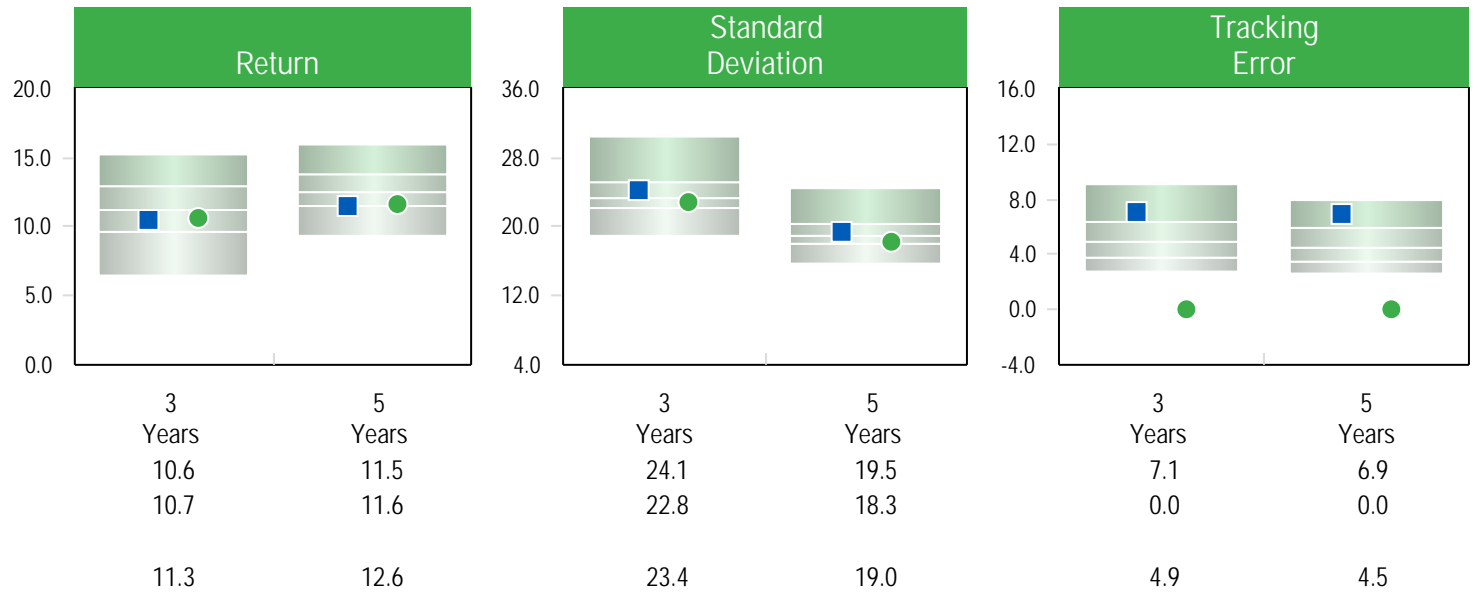
Sector Weights (%)



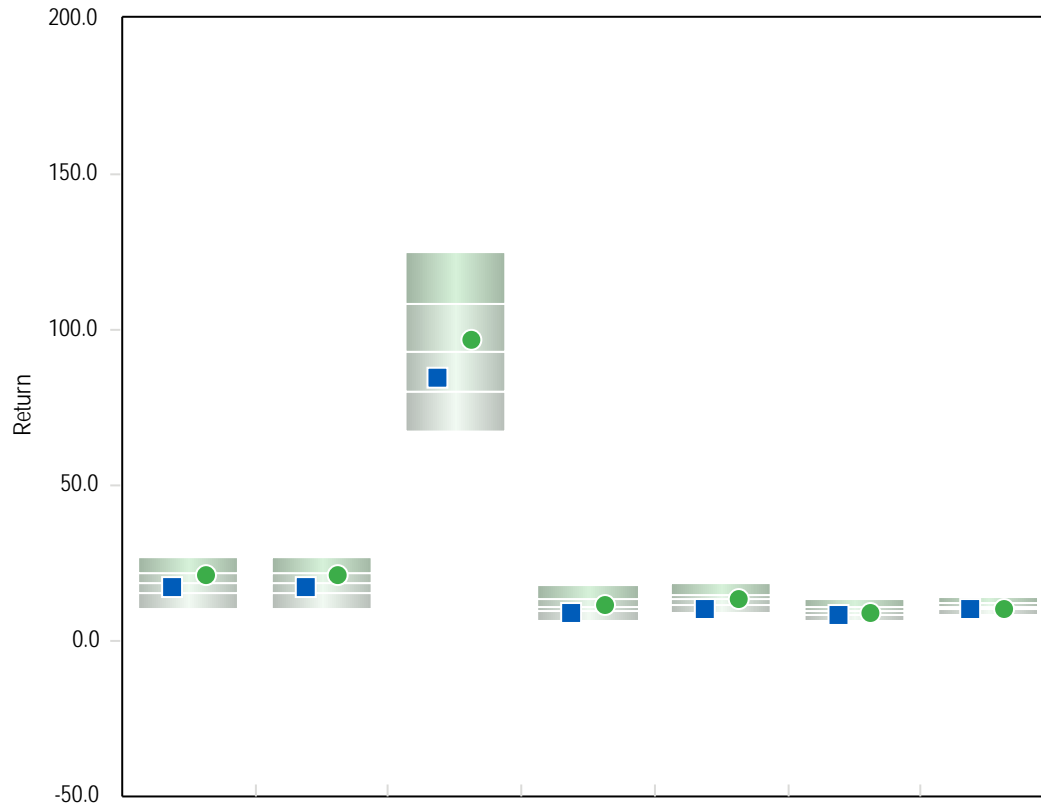
Iridian Performance Attribution vs. Russell Midcap Value Index

Performance — 1 Quarter Ending March 31, 2021

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			Total
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	
Communication Services	5.6	4.0	7.4	15.6	-0.3	0.0	-0.1	-0.4
Consumer Discretionary	24.7	12.1	14.4	17.7	-0.4	0.6	-0.4	-0.2
Consumer Staples	3.8	3.9	4.7	9.2	-0.2	0.0	0.0	-0.2
Energy	0.0	3.8	0.0	27.6	0.0	-0.6	0.0	-0.6
Financials	9.8	15.5	6.1	18.7	-2.0	-0.3	0.7	-1.5
Health Care	20.0	7.9	1.1	2.9	-0.1	-1.2	-0.2	-1.6
Industrials	12.5	17.2	12.5	14.1	-0.3	0.0	0.1	-0.3
Information Technology	15.6	10.3	4.3	9.6	-0.5	-0.2	-0.3	-1.0
Materials	5.4	7.4	3.4	15.0	-0.9	0.0	0.2	-0.7
Real Estate	1.7	10.0	34.7	10.4	2.4	0.2	-2.0	0.6
Utilities	0.0	8.0	0.0	3.7	0.0	0.8	0.0	0.8
Other	1.0	0.0	4.8	0.0	0.0	-0.1	0.0	-0.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>8.0</b>	<b>13.1</b>	<b>-2.2</b>	<b>-0.9</b>	<b>-2.0</b>	<b>-5.1</b>



IM U.S. Small Cap Value Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Wedge Capital	17.0 (63)	17.0 (63)	84.9 (66)	9.0 (78)	10.4 (89)	8.5 (75)	10.2 (78)
● Russell 2000 Value Index	21.2 (30)	21.2 (30)	97.1 (42)	11.6 (45)	13.6 (46)	8.9 (63)	10.1 (83)

5th Percentile	26.7	26.7	125.3	18.2	18.4	13.2	13.9
1st Quartile	21.6	21.6	108.6	13.5	15.0	10.8	12.4
Median	18.9	18.9	92.9	11.2	13.2	9.5	11.1
3rd Quartile	15.2	15.2	80.4	9.4	11.4	8.5	10.3
95th Percentile	10.1	10.1	67.0	6.7	9.3	6.1	8.6

Population	181	181	179	173	170	167	154
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	16.5	19.3
Minimum Return	-27.1	-24.7
Return	10.4	13.6
Cumulative Return	64.3	88.9
Active Return	-2.6	0.0
Excess Return	11.5	14.1

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	93.7	100.0
Down Market Capture	101.9	100.0

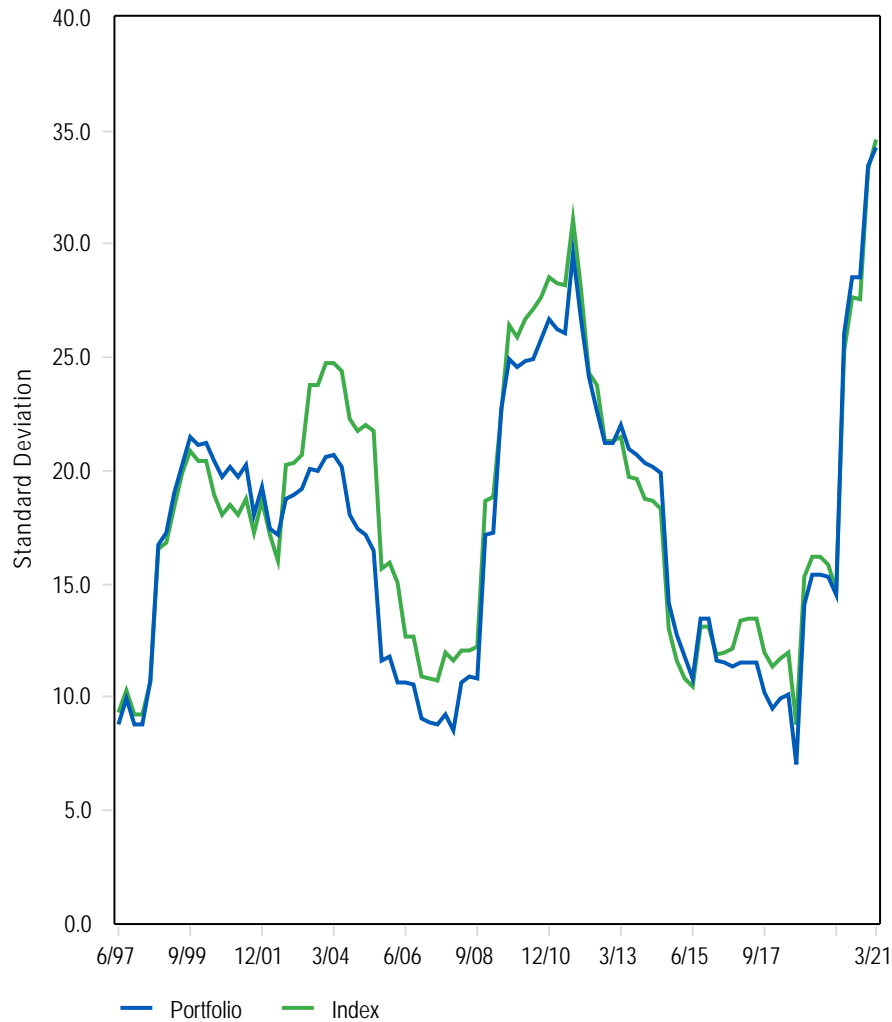
Risk / Return Summary Statistics

Standard Deviation	22.7	22.1
Alpha	-2.7	0.0
Active Return/Risk	-0.1	0.0
Tracking Error	4.2	0.0
Information Ratio	-0.6	-
Sharpe Ratio	0.5	0.6

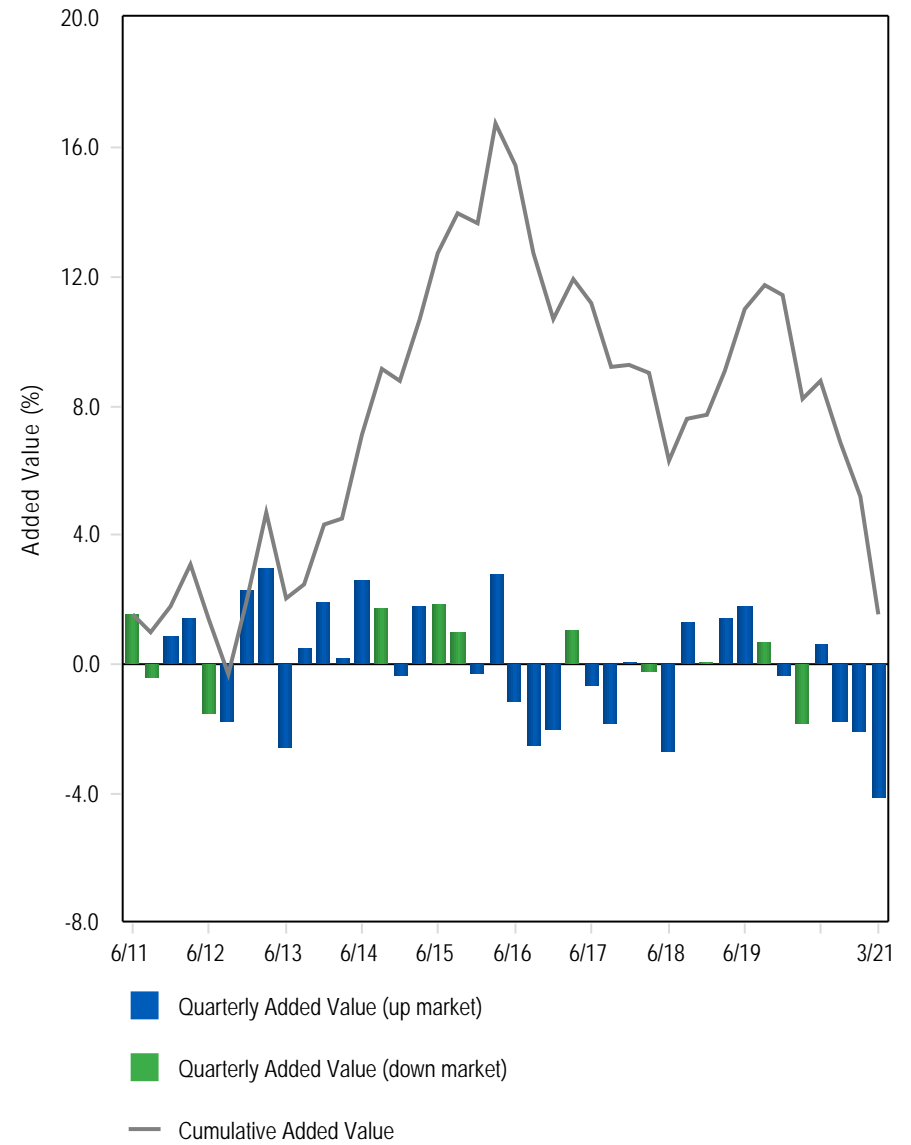
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



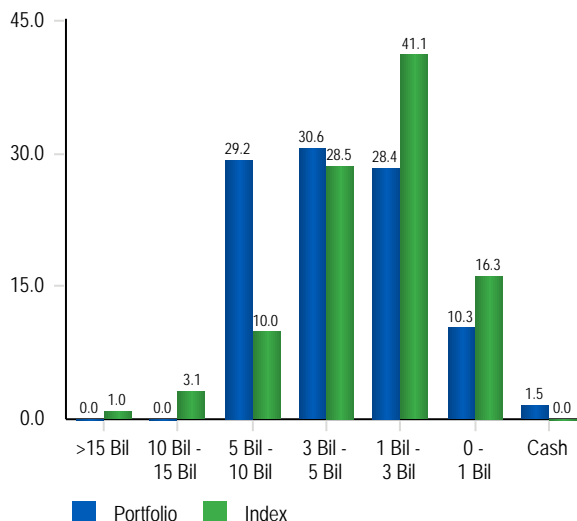
Quarterly and Cumulative Excess Performance



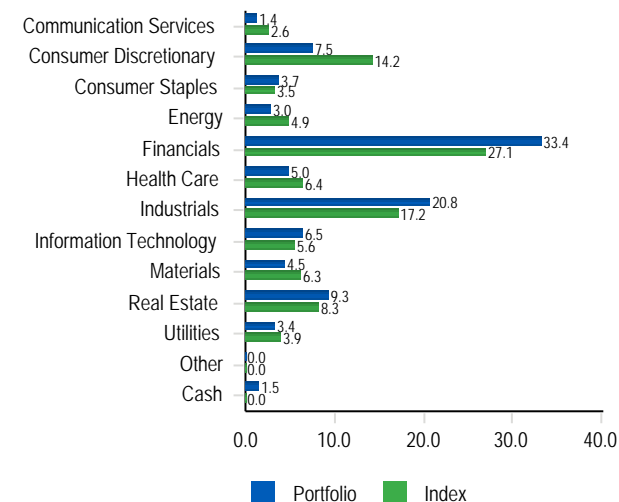
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	20.1	17.4
Forecast P/E	16.6	15.5
Price/Book ratio	2.0	2.0
Wtd. Avg. Mkt. Cap (\$B)	3.83	3.15
Median Mkt. Cap (\$B)	3.22	0.91
5 Yr. EPS Growth Rate (%)	5.9	7.6
Current Yield (%)	1.6	1.5
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	1.0	1.0
Debt to Equity (%)	103.2	334.3
Forecast EPS Growth - Long-Term	12.9	16.8
Return on Equity (%)	1.6	4.9

Distribution of Market Capitalization (%)

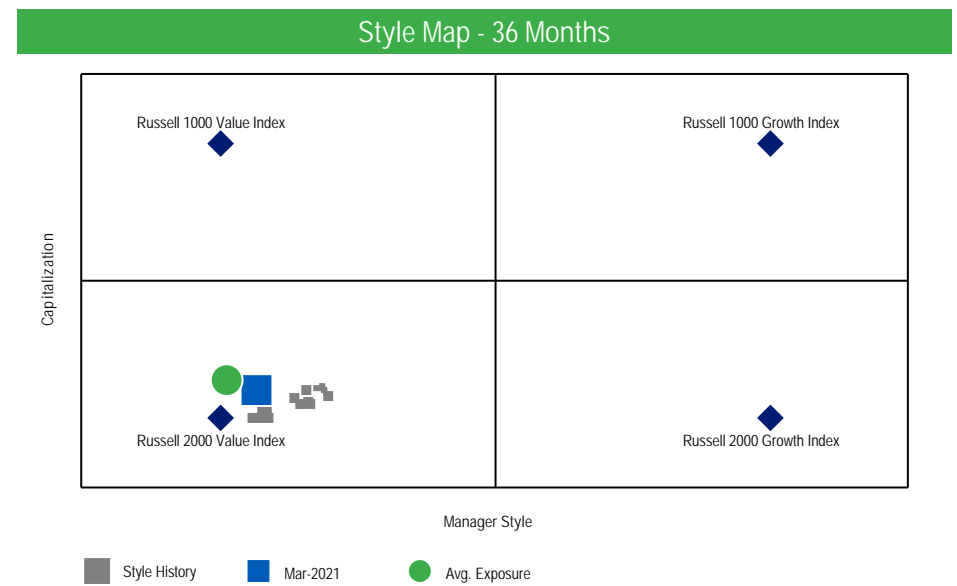
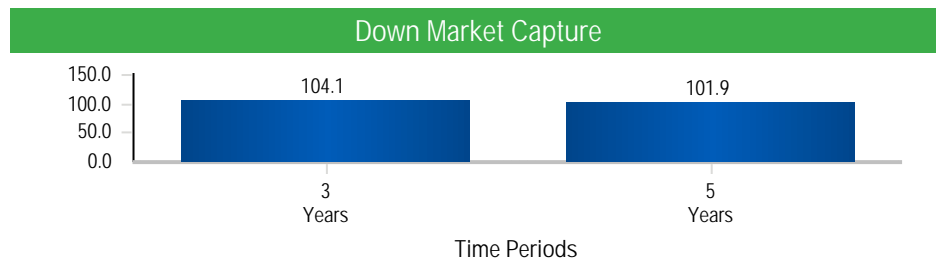
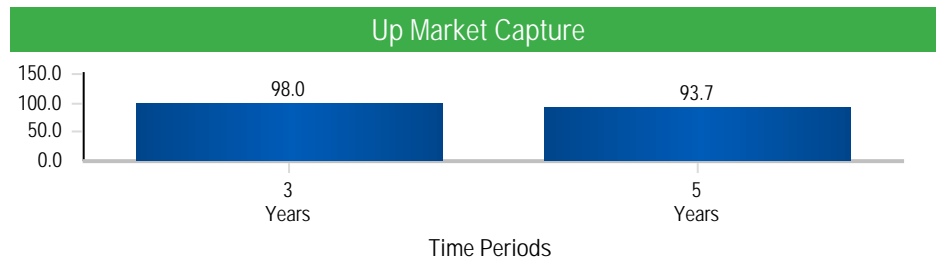
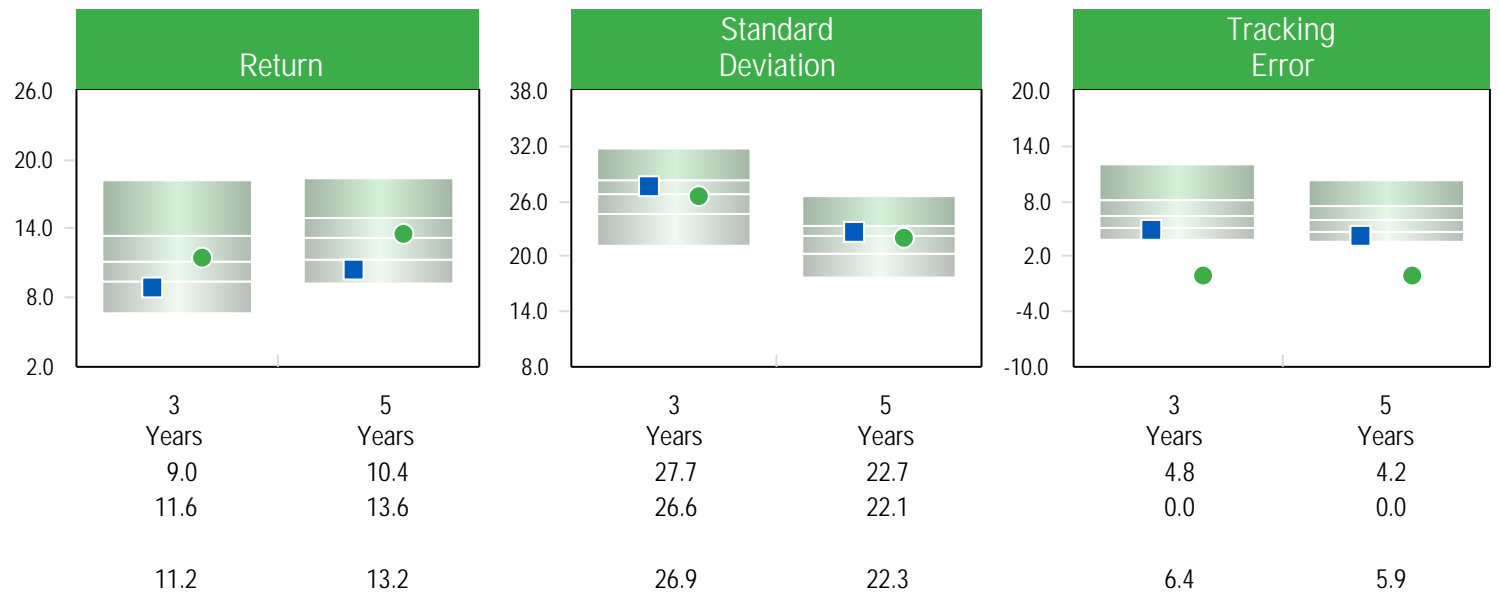


Sector Weights (%)

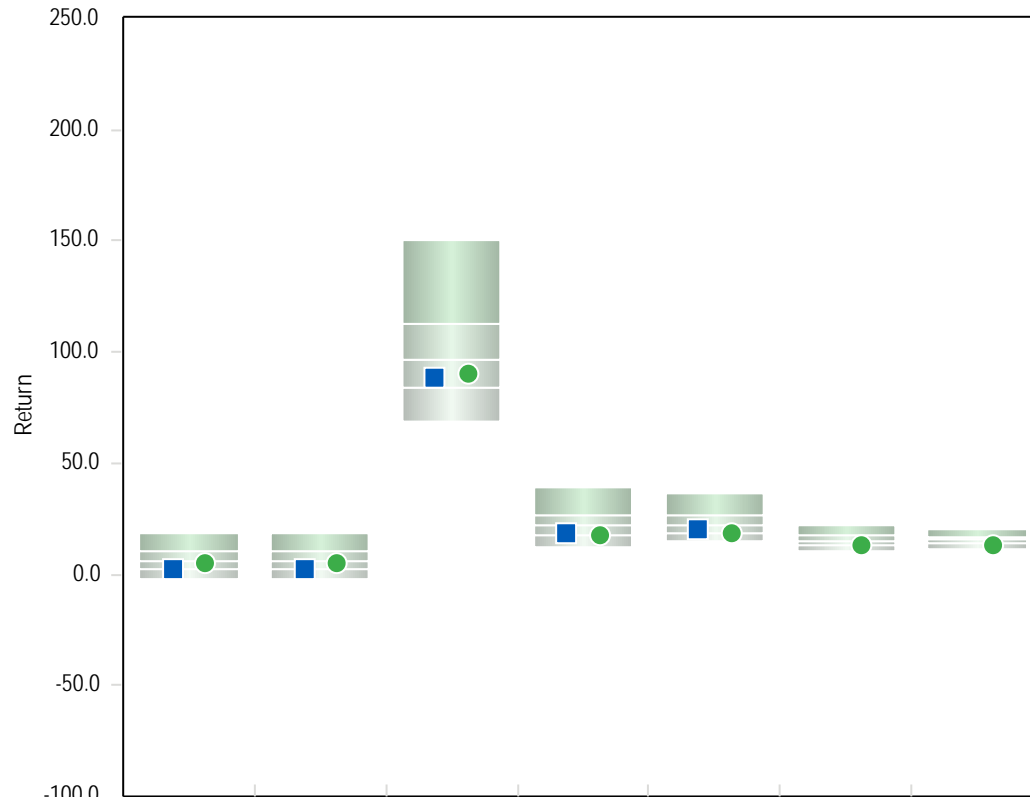


Wedge Capital Performance Attribution vs. Russell 2000 Value Index

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	1.2	2.4	35.3	20.3	0.4	0.0	-0.2	0.2
Consumer Discretionary	7.6	12.7	16.8	36.1	-2.4	-0.8	1.0	-2.2
Consumer Staples	3.5	3.6	22.2	18.7	0.1	0.0	0.0	0.1
Energy	2.1	4.2	32.9	42.0	-0.4	-0.4	0.2	-0.6
Financials	33.0	27.7	21.2	20.6	0.2	0.0	0.0	0.2
Health Care	5.5	6.3	11.2	16.3	-0.3	0.0	0.0	-0.2
Industrials	19.0	17.0	17.1	19.0	-0.3	0.0	0.0	-0.4
Information Technology	9.9	6.5	9.4	13.7	-0.3	-0.3	-0.1	-0.7
Materials	4.7	6.2	10.0	22.2	-0.8	0.0	0.2	-0.6
Real Estate	10.1	9.1	5.5	12.4	-0.6	-0.1	-0.1	-0.8
Utilities	3.5	4.4	12.4	5.7	0.3	0.1	-0.1	0.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>16.4</b>	<b>21.1</b>	<b>-4.2</b>	<b>-1.4</b>	<b>0.9</b>	<b>-4.7</b>



IM U.S. Small Cap Growth Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Emerald Advisers	2.6 (76)	2.6 (76)	88.2 (64)	18.8 (68)	20.0 (62)	-	-
● Russell 2000 Growth Index	4.9 (57)	4.9 (57)	90.2 (57)	17.2 (80)	18.6 (73)	12.8 (80)	13.0 (81)

5th Percentile	18.8	18.8	150.2	38.7	36.4	22.3	20.2
1st Quartile	10.8	10.8	113.0	26.8	26.2	17.2	16.7
Median	5.9	5.9	96.3	22.4	21.9	15.2	15.3
3rd Quartile	2.6	2.6	84.2	17.8	18.2	12.9	13.9
95th Percentile	-1.9	-1.9	68.7	11.8	14.7	10.3	11.5

Population	152	152	150	148	142	136	130
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	15.7	17.6
Minimum Return	-18.9	-19.1
Return	20.0	18.6
Cumulative Return	149.3	134.7
Active Return	1.2	0.0
Excess Return	19.4	18.2

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	100.7	100.0
Down Market Capture	94.1	100.0

Risk / Return Summary Statistics

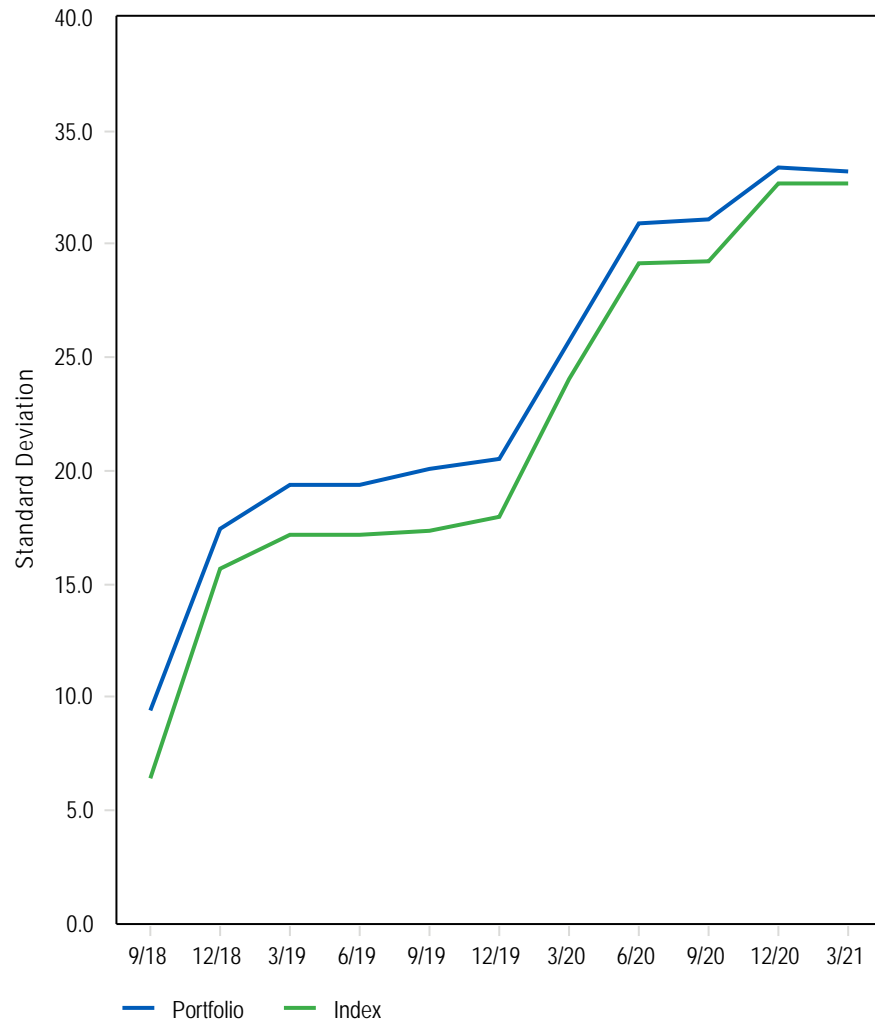
Standard Deviation	20.6	20.5
Alpha	1.8	0.0
Active Return/Risk	0.1	0.0
Tracking Error	5.1	0.0
Information Ratio	0.2	-
Sharpe Ratio	0.9	0.9

Correlation Statistics

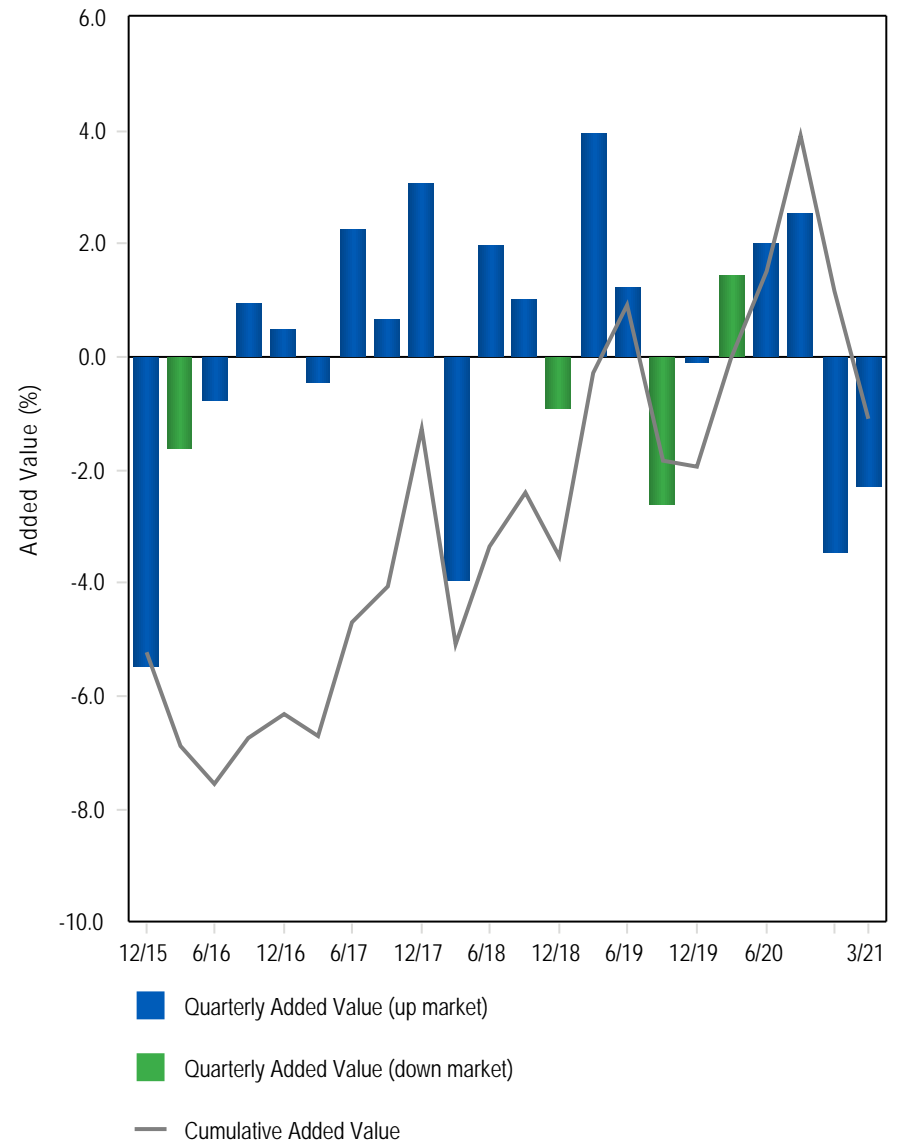
R-Squared	0.9	1.0
Actual Correlation	1.0	1.0

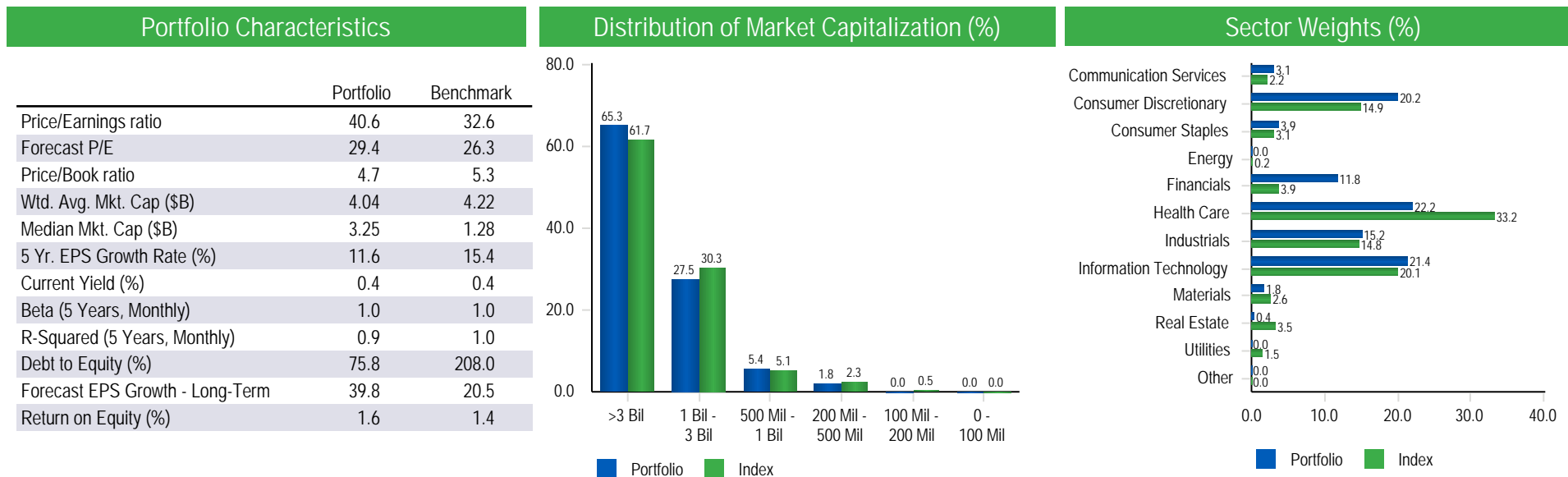


Rolling 3 Years Annualized Standard Deviation



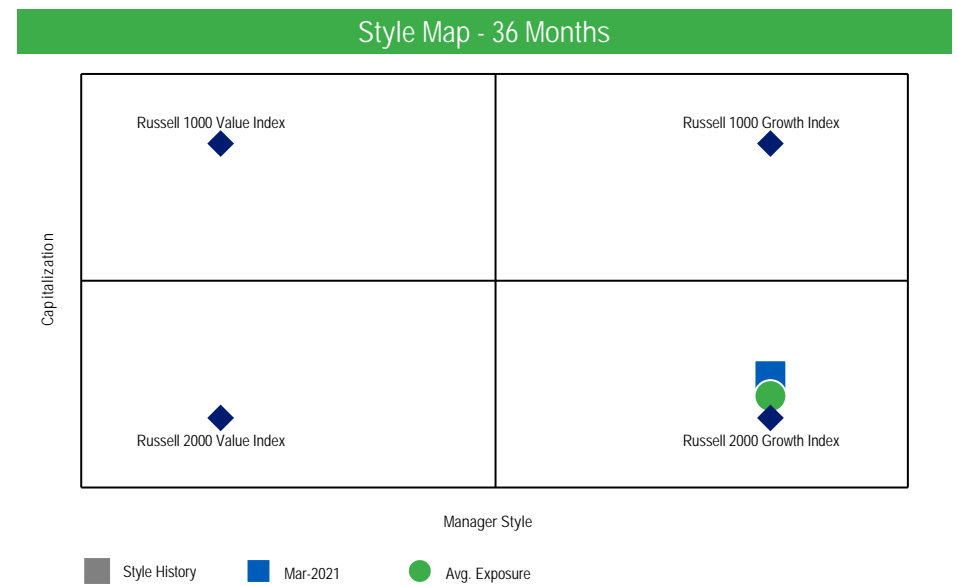
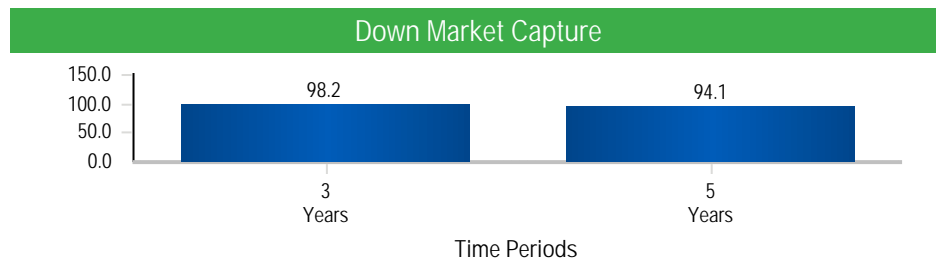
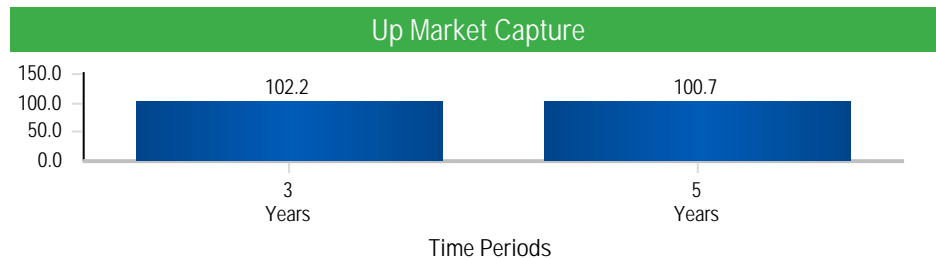
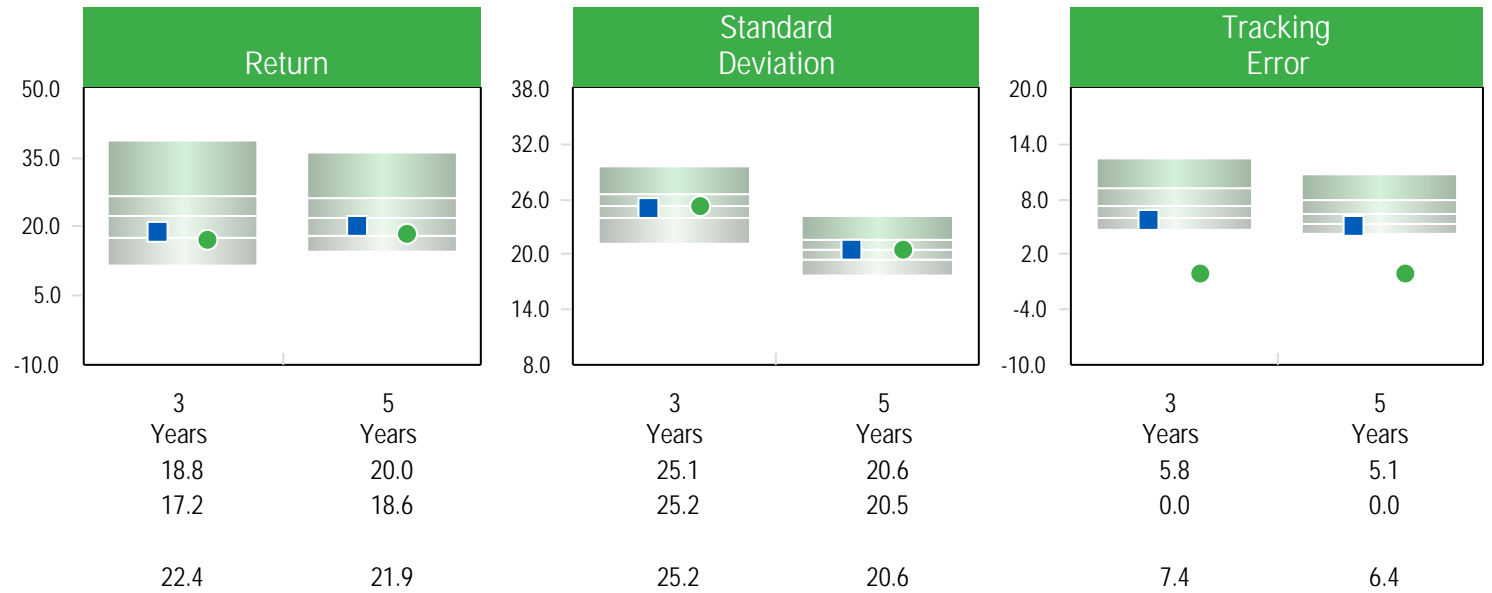
Quarterly and Cumulative Excess Performance





Emerald Advisers Performance Attribution vs. Russell 2000 Growth Index

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	2.5	2.3	7.7	2.1	0.1	0.0	0.0	0.1
Consumer Discretionary	19.5	13.3	12.6	18.5	-0.8	0.8	-0.4	-0.3
Consumer Staples	5.8	2.9	4.8	11.9	-0.2	0.2	-0.2	-0.2
Energy	1.1	0.2	-14.1	39.8	-0.1	0.3	-0.5	-0.3
Financials	8.1	4.1	7.4	2.7	0.2	-0.1	0.2	0.3
Health Care	25.5	34.4	-10.4	-1.9	-2.9	0.6	0.8	-1.6
Industrials	15.3	13.8	10.4	12.0	-0.2	0.1	0.0	-0.1
Information Technology	21.1	21.4	-3.7	2.2	-1.3	0.0	0.0	-1.2
Materials	1.1	2.5	17.9	13.4	0.1	-0.1	-0.1	-0.1
Real Estate	0.0	3.6	0.0	4.7	0.0	0.0	0.0	0.0
Utilities	0.0	1.6	0.0	-0.5	0.0	0.1	0.0	0.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>1.7</b>	<b>5.0</b>	<b>-5.1</b>	<b>2.0</b>	<b>-0.2</b>	<b>-3.3</b>

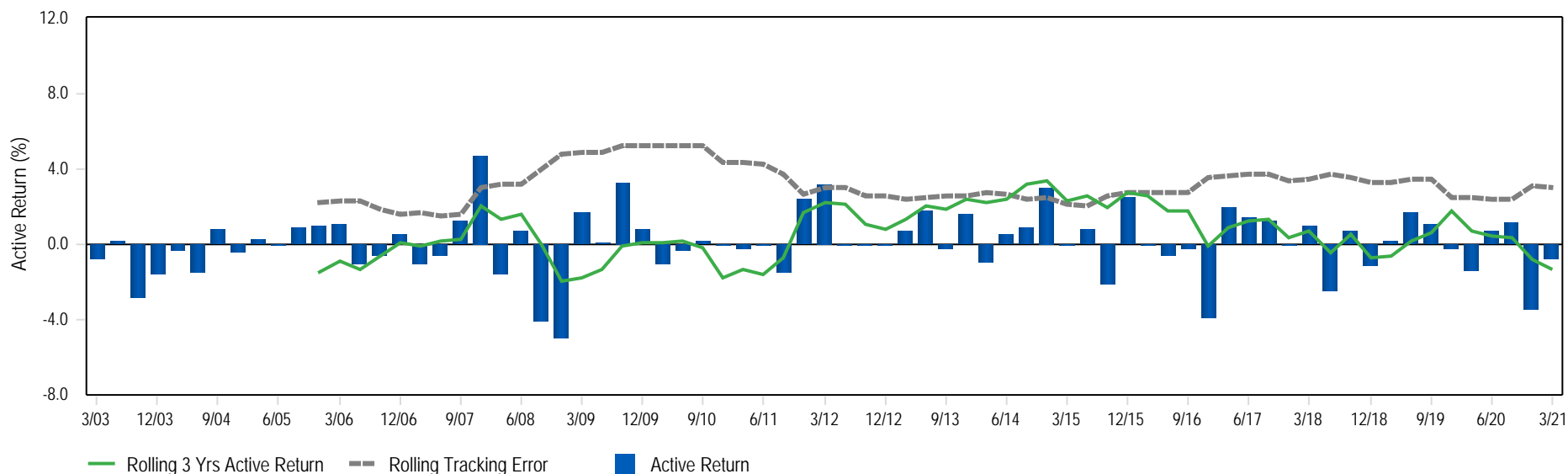


## International Developed Equity Composite

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
International Developed Equity Composite					
Beginning Market Value	174,246,445	174,246,445	127,057,425	172,113,554	139,073,571
Net Cash Flows	10,705,474	10,705,474	9,946,830	-4,181,448	-10,862,733
Income	1,189,561	1,189,561	3,473,838	10,716,303	17,814,959
Gain/Loss	3,567,025	3,567,025	49,230,412	11,060,096	43,682,707
Ending Market Value	189,708,505	189,708,505	189,708,505	189,708,505	189,708,505

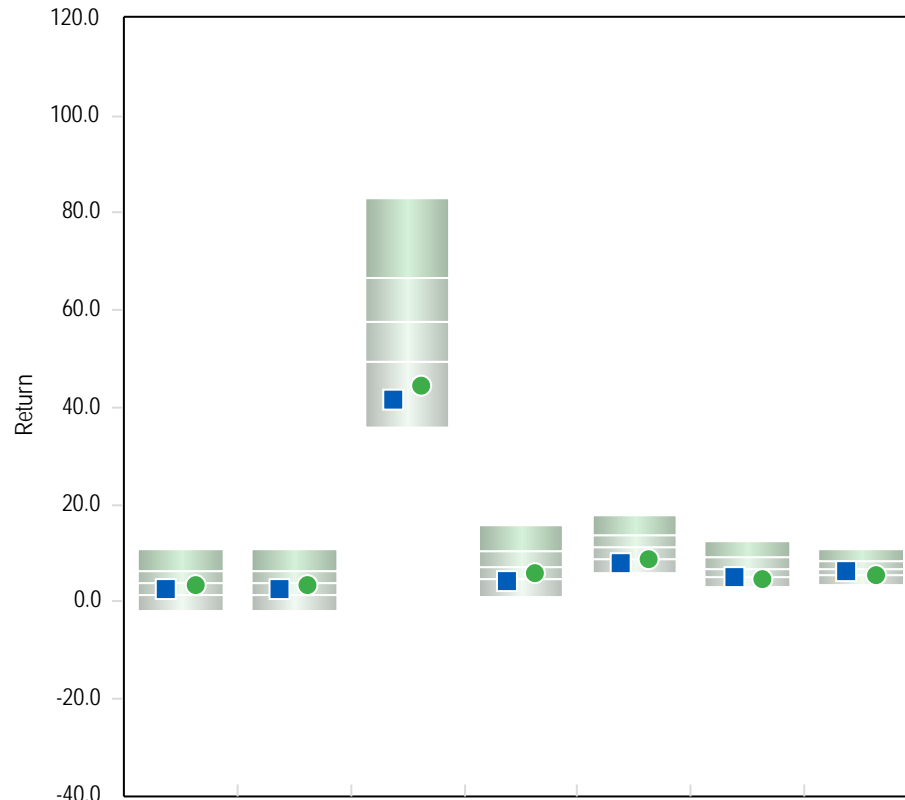
Rolling Return and Tracking Error



Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
International Developed Equity Composite	2.7	2.7	41.5	4.4	8.0
MSCI EAFE (Net)	3.5	3.5	44.6	6.0	8.8
Difference	-0.8	-0.8	-3.1	-1.6	-0.8

IM International Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
International Developed Equity Composite	2.7 (64)	2.7 (64)	41.5 (89)	4.4 (78)	8.0 (82)	5.0 (80)	6.2 (63)
MSCI EAFE (Net)	3.5 (55)	3.5 (55)	44.6 (86)	6.0 (63)	8.8 (75)	4.8 (83)	5.5 (76)

5th Percentile	10.8	10.8	83.2	16.0	17.8	12.5	11.1
1st Quartile	6.3	6.3	66.6	10.5	13.8	9.2	8.5
Median	3.8	3.8	57.8	7.0	11.1	6.9	6.9
3rd Quartile	1.5	1.5	49.3	4.7	8.8	5.3	5.6
95th Percentile	-1.8	-1.8	35.7	0.9	5.9	3.2	3.6

Population	920	920	915	876	836	750	615
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	12.1	15.5
Minimum Return	-15.4	-13.3
Return	8.0	8.8
Cumulative Return	46.7	52.8
Active Return	-0.8	0.0
Excess Return	7.7	8.4

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	100.4	100.0
Down Market Capture	105.8	100.0

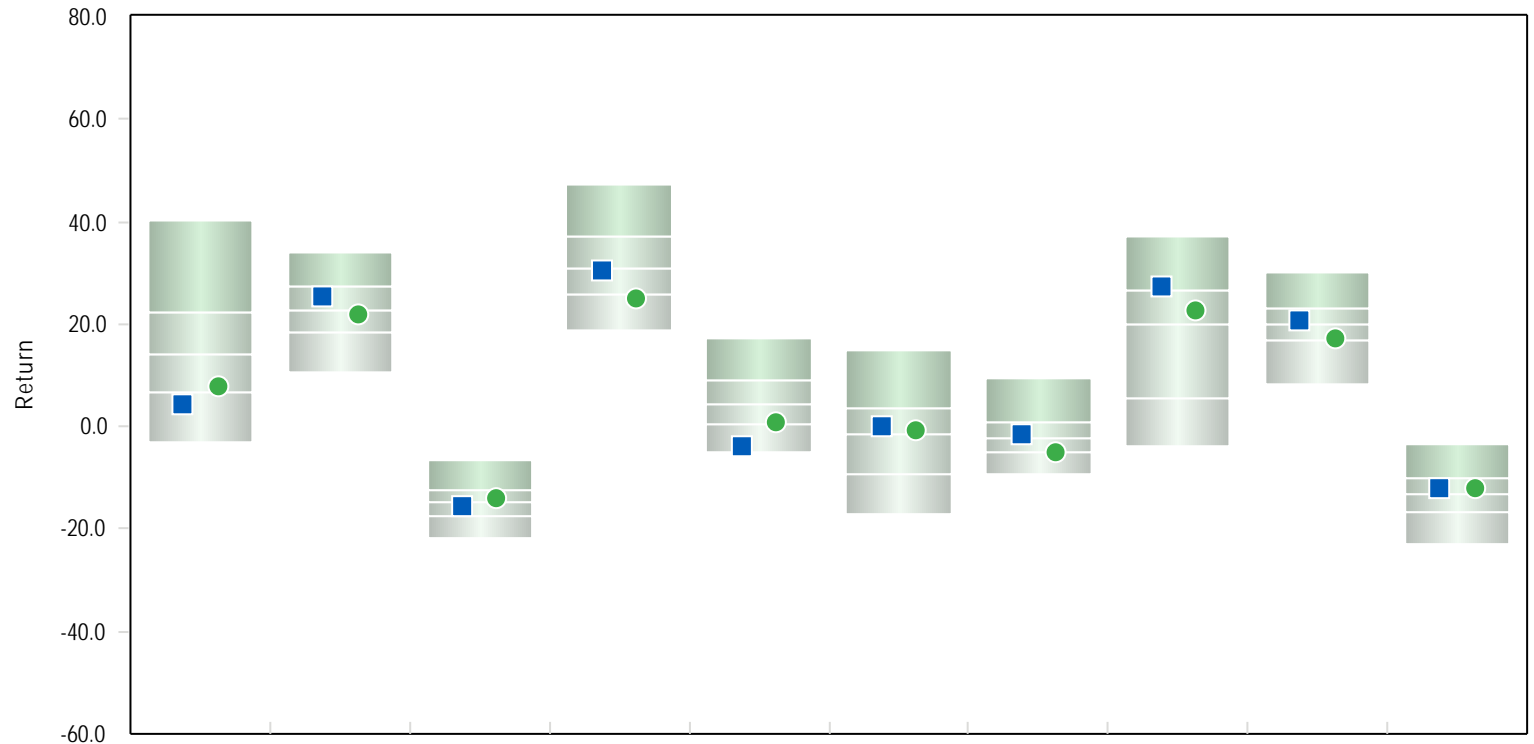
Risk / Return Summary Statistics

Standard Deviation	15.0	14.6
Alpha	-0.8	0.0
Active Return/Risk	-0.1	0.0
Tracking Error	3.1	0.0
Information Ratio	-0.2	-
Sharpe Ratio	0.5	0.6

Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

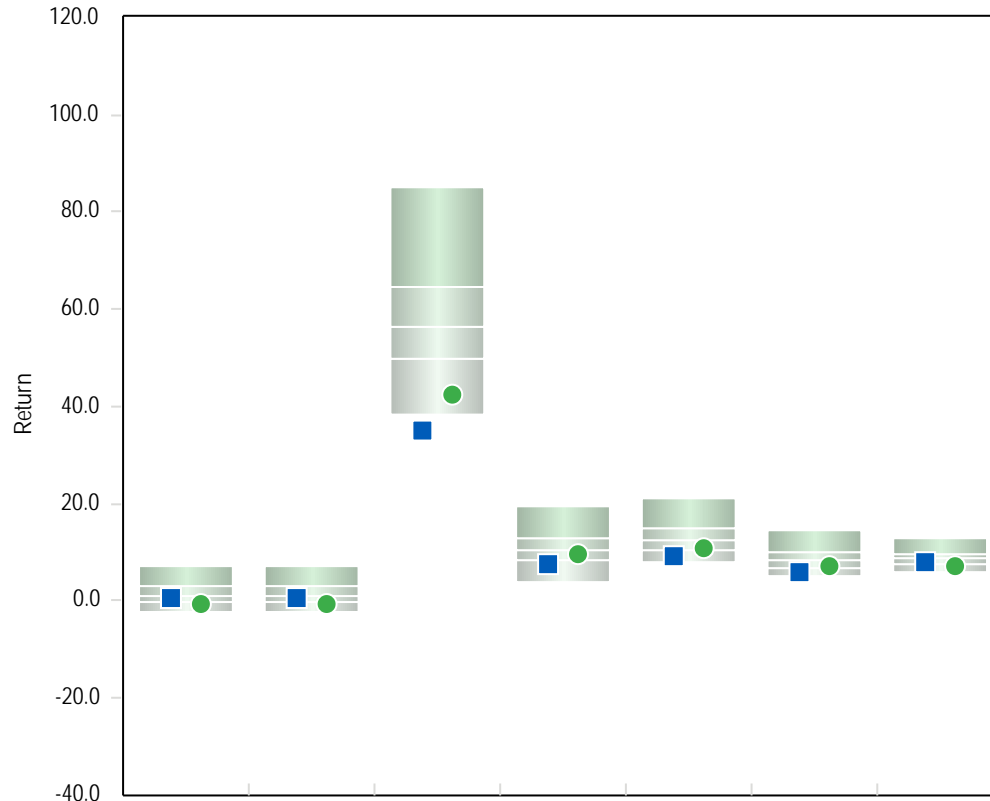
IM International Equity (SA+CF)



	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
■ International Developed Equity Composite	4.4 (82)	25.3 (35)	-15.7 (58)	30.6 (51)	-3.8 (93)	0.0 (43)	-1.5 (43)	27.3 (23)	20.5 (45)	-12.1 (43)
● MSCI EAFE (Net)	7.8 (71)	22.0 (55)	-13.8 (38)	25.0 (80)	1.0 (71)	-0.8 (48)	-4.9 (75)	22.8 (41)	17.3 (70)	-12.1 (43)
5th Percentile	40.4	33.8	-6.7	47.3	17.1	14.9	9.4	37.2	30.2	-3.5
1st Quartile	22.5	27.2	-12.4	37.0	9.2	3.6	1.0	26.7	23.1	-10.1
Median	14.0	22.6	-14.8	30.8	4.2	-1.7	-2.4	19.9	19.9	-13.1
3rd Quartile	6.6	18.5	-17.4	25.7	0.3	-9.3	-5.0	5.4	16.8	-16.7
95th Percentile	-3.1	10.4	-21.8	18.6	-5.0	-17.0	-9.4	-3.9	8.1	-23.1
Population	1,005	1,102	1,156	1,192	1,222	1,257	1,253	1,229	1,212	1,202

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.

IM International Growth Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Artisan Partners	0.8 (60)	0.8 (60)	35.3 (99)	7.5 (79)	9.3 (92)	5.8 (92)	7.8 (65)
● MSCI EAFE Growth Index (Net)	-0.6 (77)	-0.6 (77)	42.6 (85)	9.8 (59)	10.8 (68)	7.2 (69)	7.2 (78)

5th Percentile	7.2	7.2	85.2	19.4	21.1	14.8	13.1
1st Quartile	3.2	3.2	64.7	13.1	15.0	10.1	9.6
Median	1.1	1.1	56.5	10.5	12.6	8.5	8.7
3rd Quartile	-0.4	-0.4	49.7	8.3	10.3	6.8	7.4
95th Percentile	-2.4	-2.4	38.3	4.0	7.8	5.2	6.1

Population	138	138	138	136	131	121	103
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	9.0	12.3
Minimum Return	-13.9	-9.2
Return	9.3	10.8
Cumulative Return	55.7	67.3
Active Return	-1.3	0.0
Excess Return	8.7	10.1

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	99.0	100.0
Down Market Capture	108.4	100.0

Risk / Return Summary Statistics

Standard Deviation	14.2	13.4
Alpha	-1.3	0.0
Active Return/Risk	-0.1	0.0
Tracking Error	4.7	0.0
Information Ratio	-0.3	-
Sharpe Ratio	0.6	0.7

Correlation Statistics

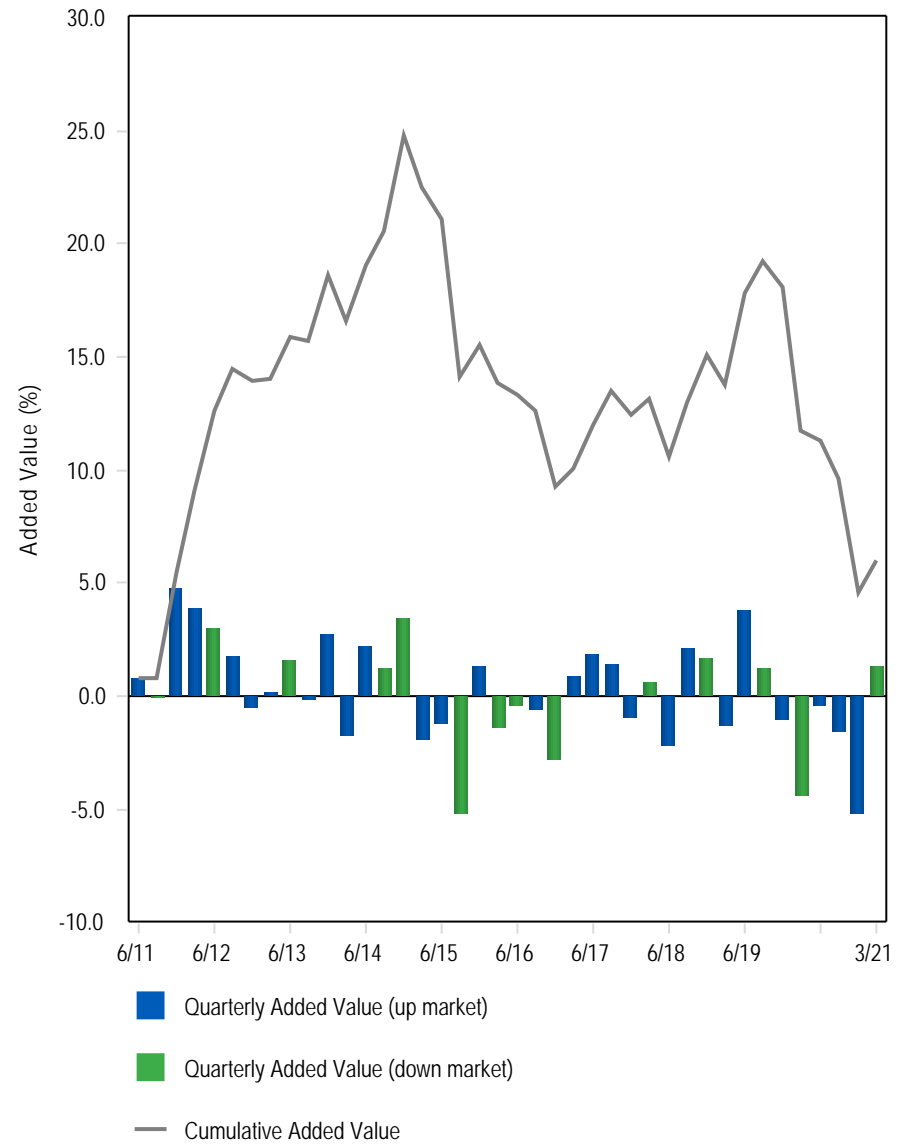
R-Squared	0.9	1.0
Actual Correlation	1.0	1.0



Rolling 3 Years Annualized Standard Deviation



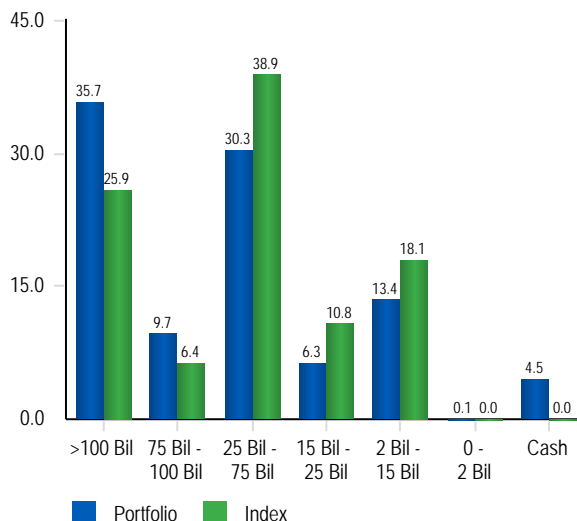
Quarterly and Cumulative Excess Performance



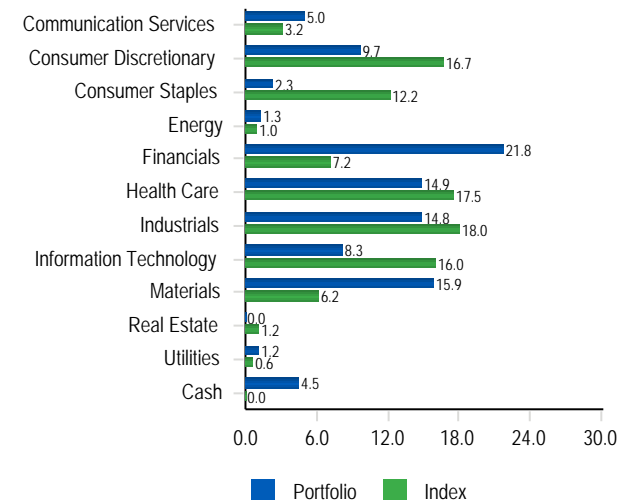
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	22.3	32.2
Forecast P/E	16.1	25.1
Price/Book ratio	3.2	4.1
Wtd. Avg. Mkt. Cap (\$B)	116.98	85.11
Median Mkt. Cap (\$B)	39.32	12.89
5 Yr. EPS Growth Rate (%)	9.5	8.8
Current Yield (%)	1.6	1.4
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	0.9	1.0
Debt to Equity (%)	142.9	73.5
Forecast EPS Growth - Long-Term	12.0	14.4
Return on Equity (%)	-4.9	4.7

Distribution of Market Capitalization (%)



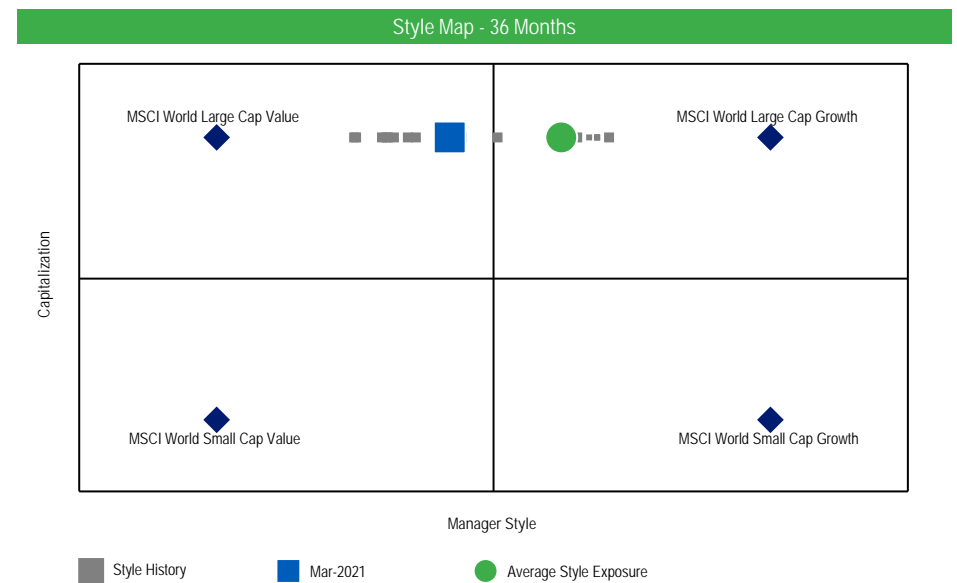
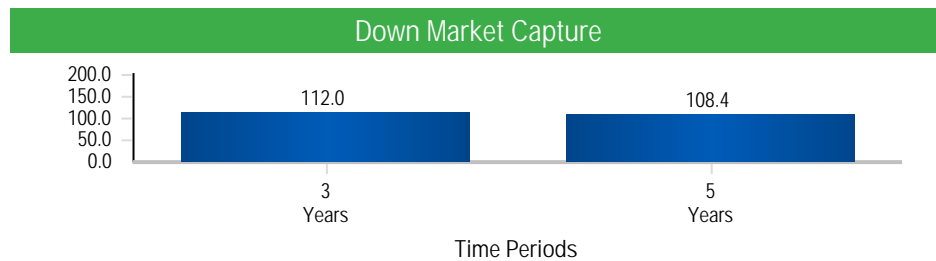
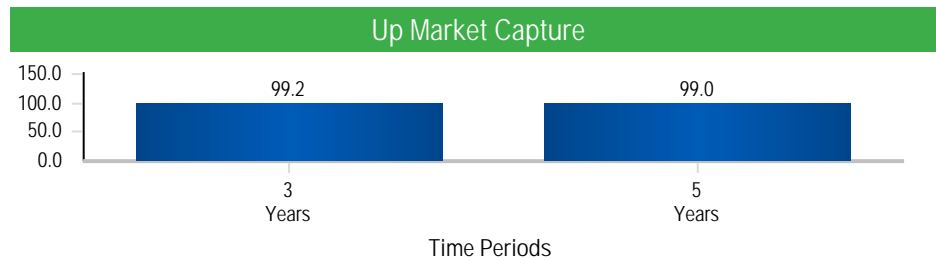
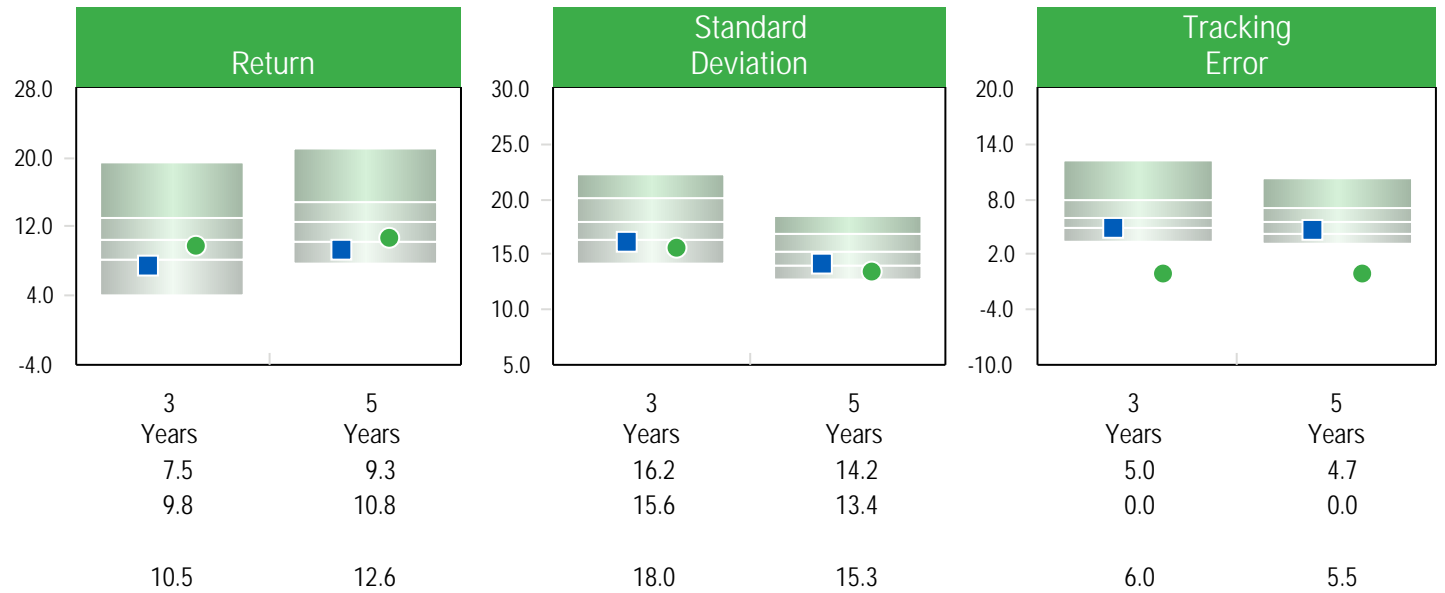
Sector Weights (%)



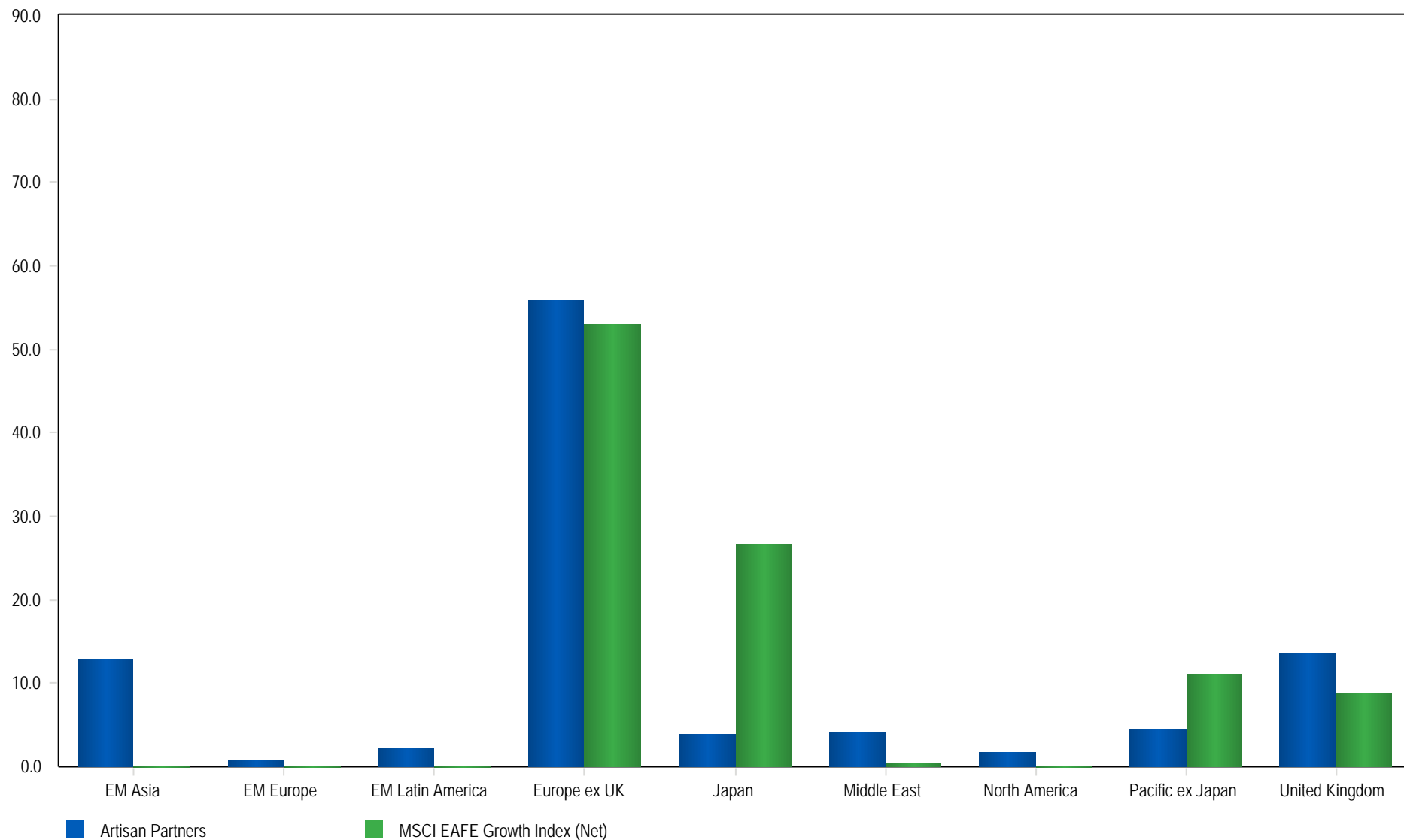
Artisan Partners Performance Attribution vs. MSCI EAFE Growth Index (Net)

Performance — 1 Quarter Ending March 31, 2021

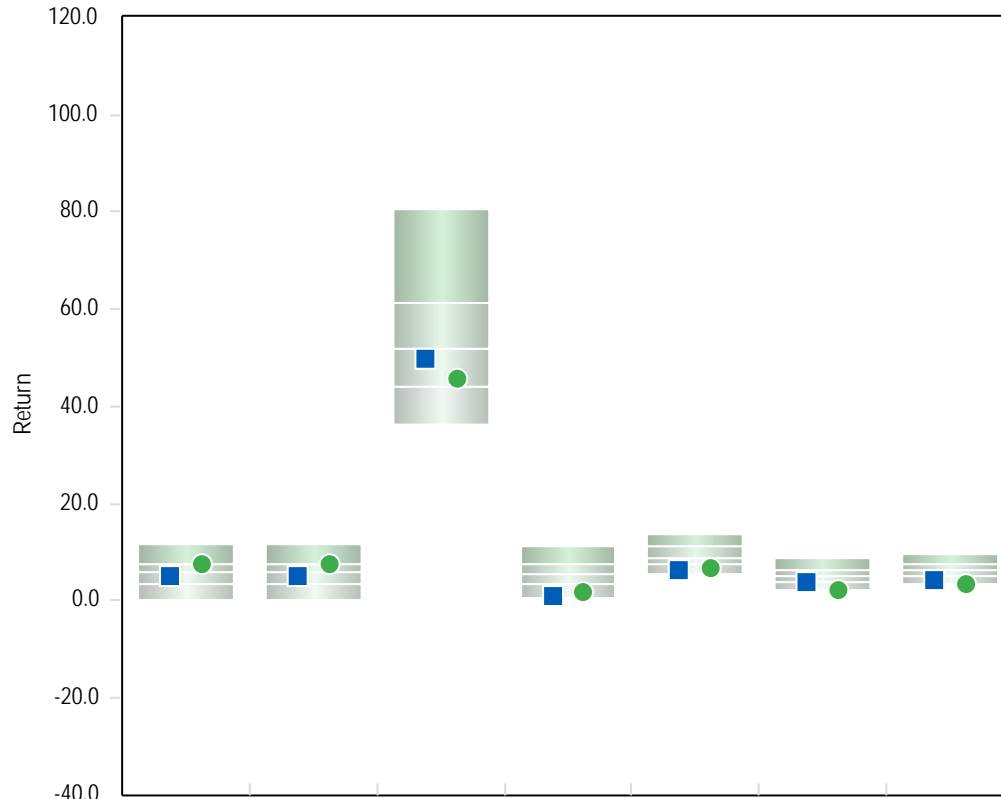
	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Stock	Sector	Attribution		Total
	Portfolio	Benchmark	Portfolio	Benchmark			Interaction		
Communication Services	5.8	3.4	8.8	-4.4	0.4	-0.1	0.3	0.7	
Consumer Discretionary	8.6	16.3	0.1	1.8	-0.3	-0.2	0.1	-0.3	
Consumer Staples	4.3	12.7	-5.2	-4.2	-0.1	0.3	0.1	0.3	
Energy	1.3	1.0	0.8	0.1	0.0	0.0	0.0	0.0	
Financials	17.2	7.1	1.1	1.9	-0.1	0.3	-0.1	0.1	
Health Care	17.0	18.3	-9.9	-4.7	-1.0	0.1	0.1	-0.8	
Industrials	11.0	17.5	7.7	2.8	0.9	-0.2	-0.3	0.3	
Information Technology	17.3	15.5	0.1	1.6	-0.2	0.0	0.0	-0.2	
Materials	16.2	6.2	3.2	-0.6	0.2	0.0	0.4	0.6	
Real Estate	0.0	1.3	0.0	-6.2	0.0	0.1	0.0	0.1	
Utilities	1.4	0.7	-9.4	-15.9	0.0	-0.1	0.0	0.0	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>0.1</b>	<b>-0.6</b>	<b>0.0</b>	<b>0.1</b>	<b>0.6</b>	<b>0.7</b>	



Allocation



IM International Large Cap Value Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Alliance Bernstein	5.1 (62)	5.1 (62)	49.9 (60)	0.9 (93)	6.4 (91)	4.0 (74)	4.5 (86)
MSCI EAFE Value Index (Net)	7.4 (27)	7.4 (27)	45.7 (72)	1.8 (88)	6.6 (87)	2.2 (96)	3.7 (96)

5th Percentile	11.5	11.5	80.7	11.4	13.8	8.9	9.7
1st Quartile	7.8	7.8	61.2	7.4	11.1	6.3	7.5
Median	6.0	6.0	52.0	5.7	9.0	5.2	6.2
3rd Quartile	3.7	3.7	44.0	3.3	7.4	4.0	5.2
95th Percentile	0.3	0.3	36.4	0.8	5.5	2.3	3.7

Population	136	136	135	132	124	116	104
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	16.5	18.9
Minimum Return	-17.5	-17.7
Return	6.4	6.6
Cumulative Return	36.4	37.5
Active Return	-0.2	0.0
Excess Return	6.5	6.7

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	98.1	100.0
Down Market Capture	98.2	100.0

Risk / Return Summary Statistics

Standard Deviation	16.9	17.0
Alpha	0.1	0.0
Active Return/Risk	0.0	0.0
Tracking Error	4.2	0.0
Information Ratio	0.0	-
Sharpe Ratio	0.4	0.4

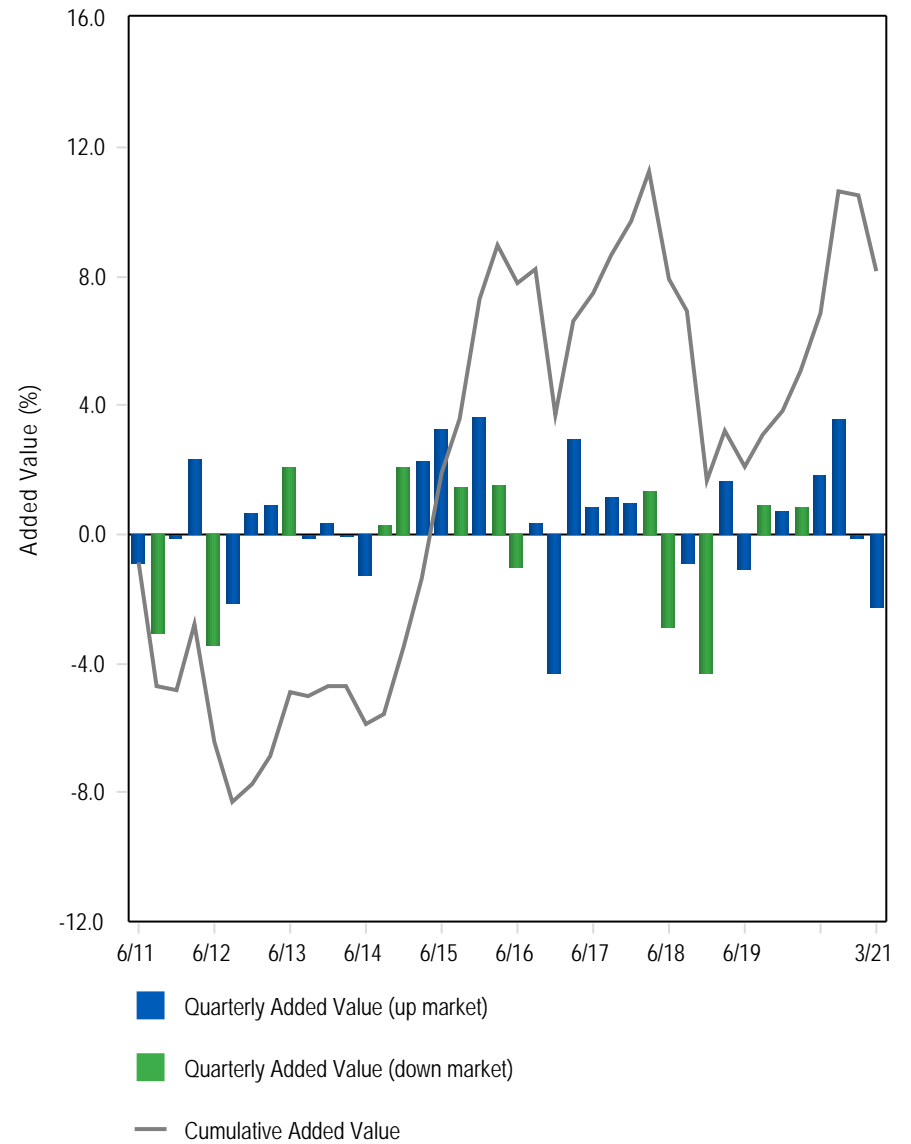
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



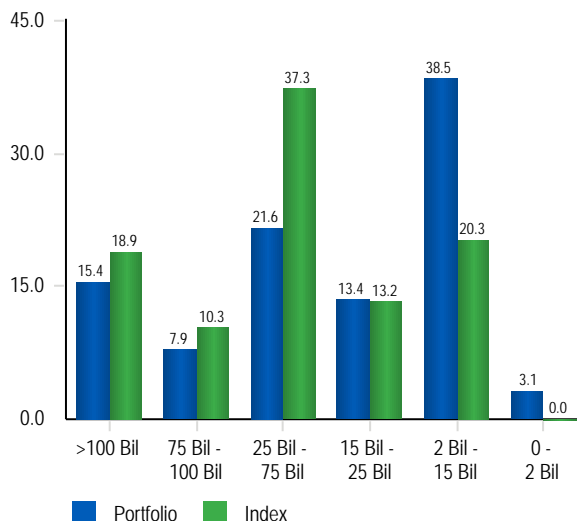
Quarterly and Cumulative Excess Performance



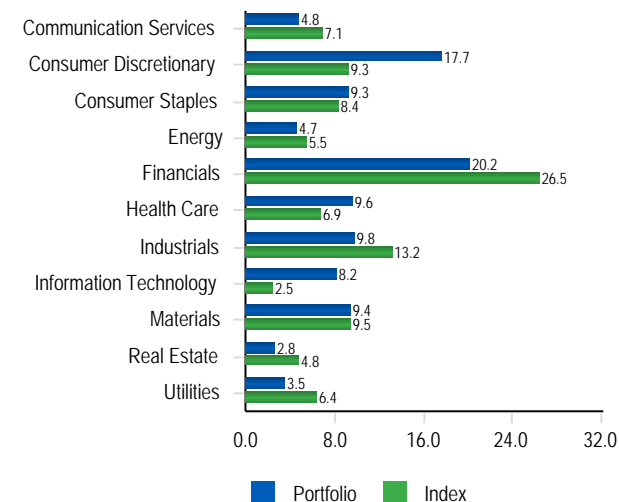
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	18.4	17.5
Forecast P/E	14.1	12.8
Price/Book ratio	2.3	1.8
Wtd. Avg. Mkt. Cap (\$B)	50.86	58.56
Median Mkt. Cap (\$B)	15.72	12.04
5 Yr. EPS Growth Rate (%)	3.6	-1.8
Current Yield (%)	2.7	3.3
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	0.9	1.0
Debt to Equity (%)	99.1	145.5
Forecast EPS Growth - Long-Term	12.0	11.9
Return on Equity (%)	3.6	2.6

Distribution of Market Capitalization (%)



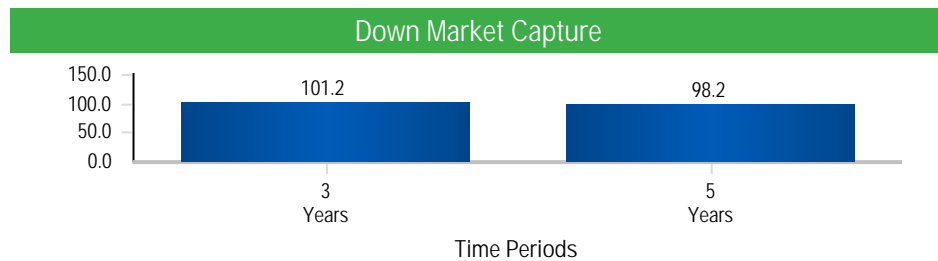
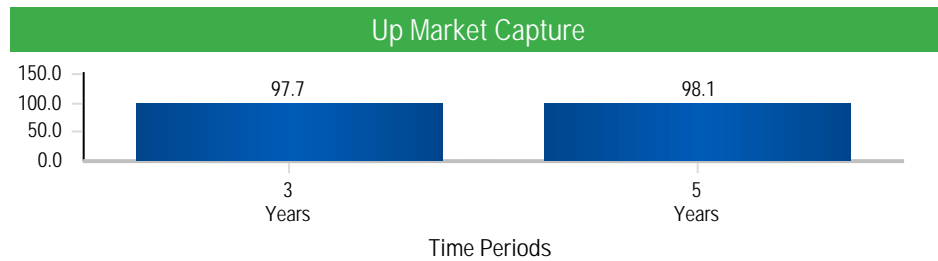
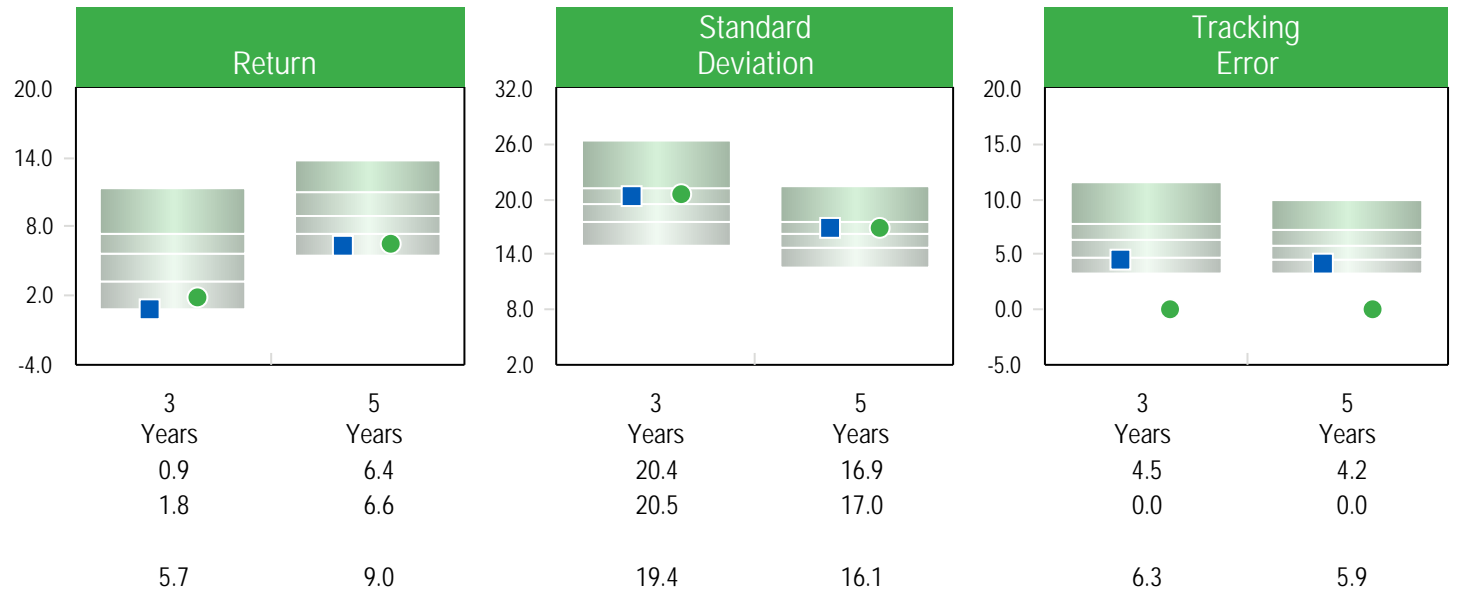
Sector Weights (%)



Alliance Bernstein Performance Attribution vs. MSCI EAFE Value Index (Net)

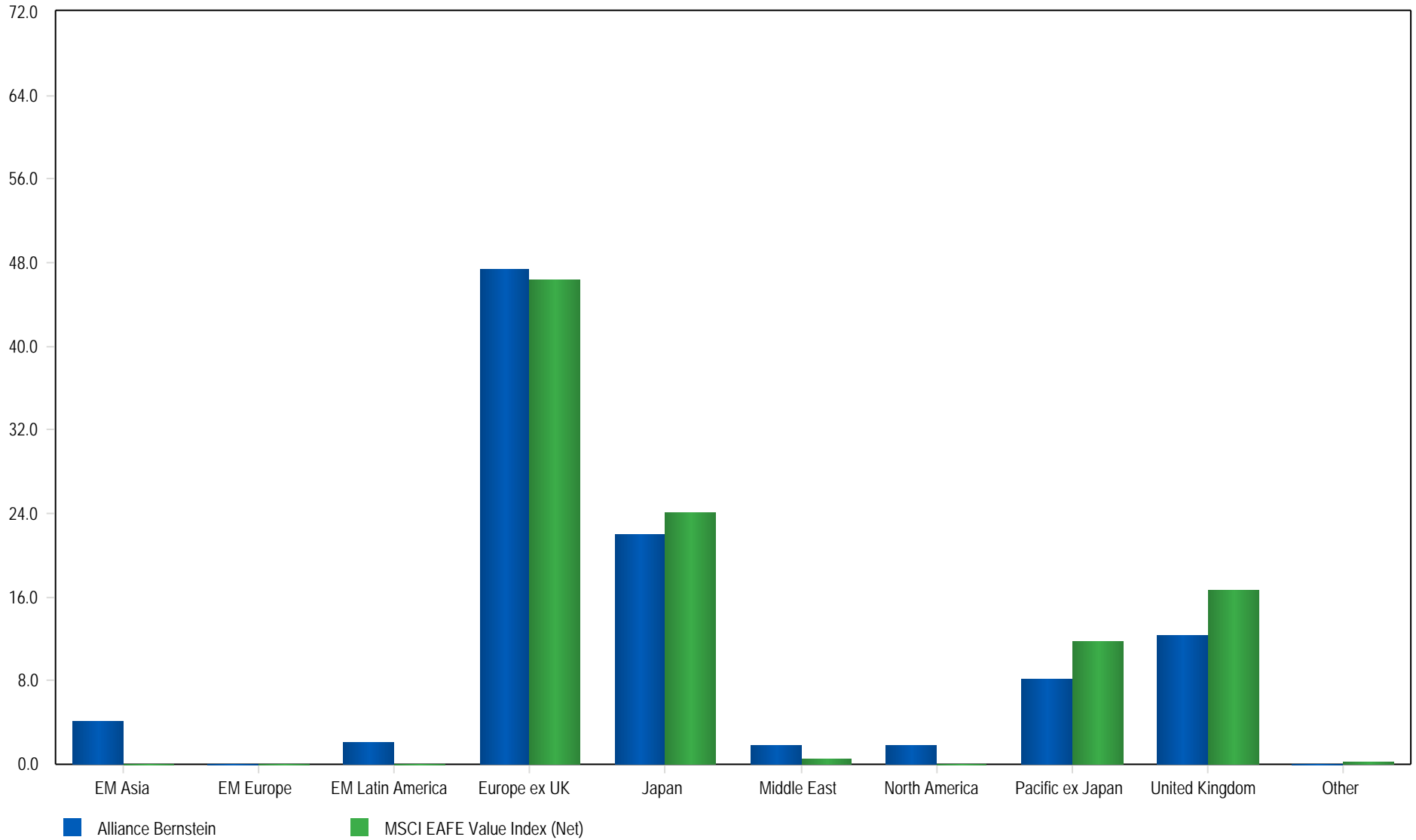
Performance — 1 Quarter Ending March 31, 2021

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	5.1	7.0	-2.2	7.7	-0.7	0.0	0.2	-0.5
Consumer Discretionary	15.3	8.9	6.2	11.9	-0.5	0.3	-0.4	-0.6
Consumer Staples	9.5	9.2	1.2	-0.7	0.2	0.0	0.0	0.2
Energy	4.1	5.2	12.7	12.8	0.0	-0.1	0.0	-0.1
Financials	16.9	25.4	10.7	11.9	-0.3	-0.4	0.1	-0.6
Health Care	10.9	7.5	0.7	-1.5	0.2	-0.3	0.1	-0.1
Industrials	12.6	13.0	7.6	9.1	-0.2	0.0	0.0	-0.2
Information Technology	10.2	2.5	4.1	6.9	-0.1	0.0	-0.2	-0.3
Materials	9.4	9.5	6.3	9.0	-0.2	0.0	0.0	-0.2
Real Estate	2.6	4.9	-4.6	4.9	-0.5	0.1	0.2	-0.2
Utilities	3.4	7.0	-3.9	-1.2	-0.2	0.3	0.1	0.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>5.1</b>	<b>7.5</b>	<b>-2.3</b>	<b>-0.2</b>	<b>0.1</b>	<b>-2.4</b>





Allocation

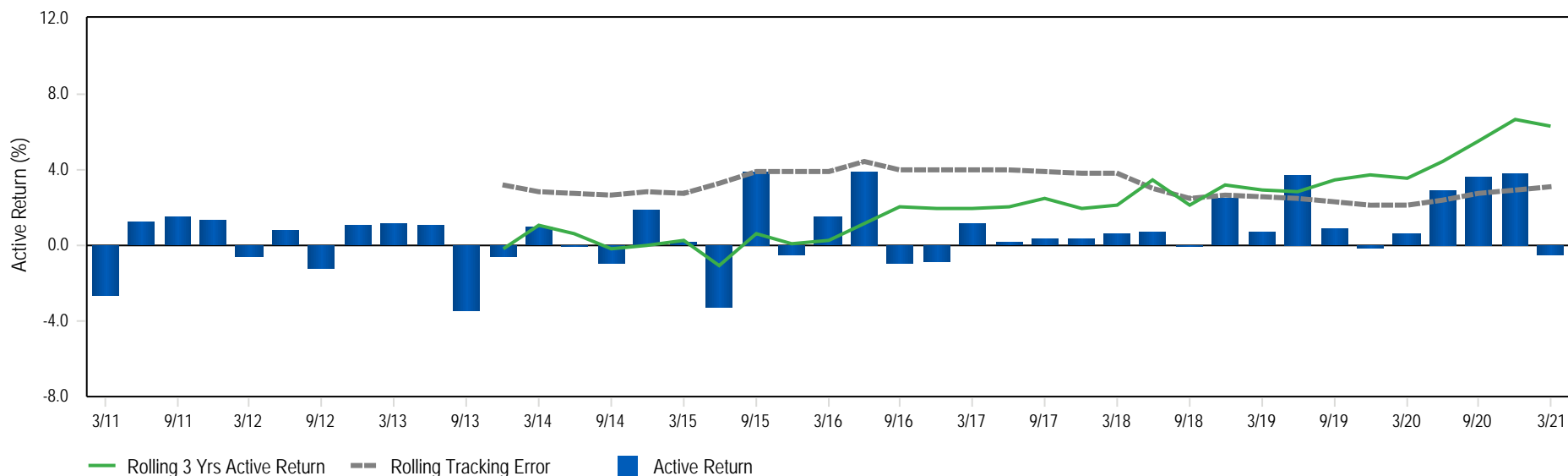


## Emerging Market Equity Composite

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
Emerging Market Equity Composite					
Beginning Market Value	108,794,074	108,794,074	72,012,387	85,062,892	52,970,781
Net Cash Flows	-3,000,000	-3,000,000	-14,000,000	-13,000,000	-10,265,821
Income					
Gain/Loss	2,116,212	2,116,212	49,897,899	35,847,394	65,205,326
Ending Market Value	107,910,286	107,910,286	107,910,286	107,910,286	107,910,286

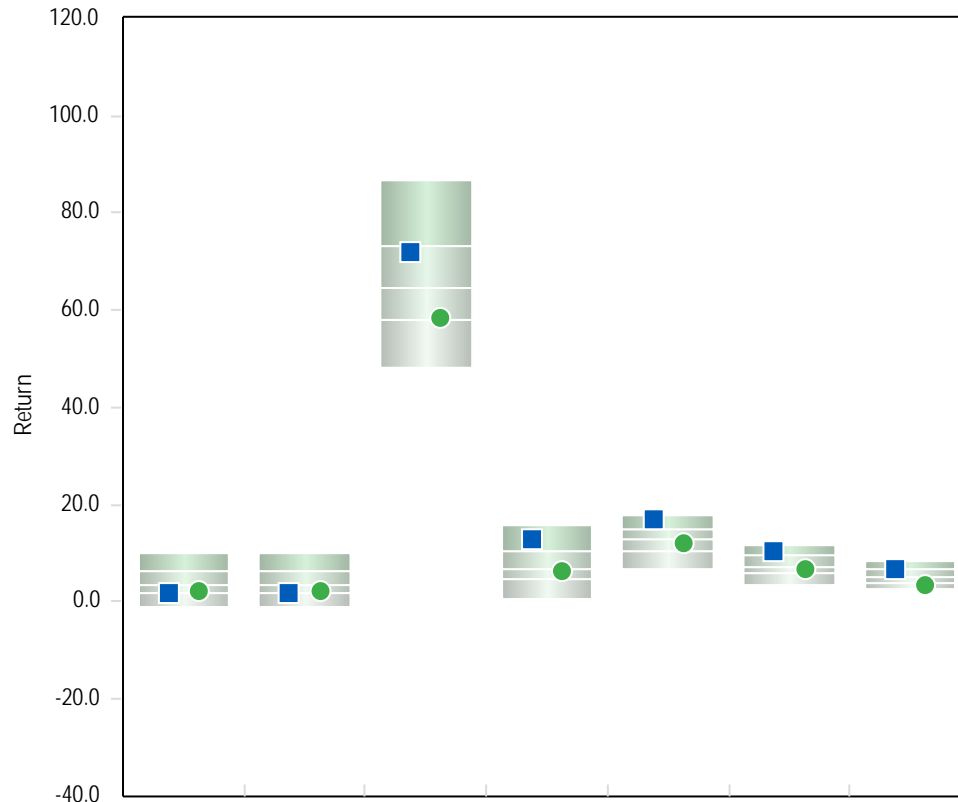
Rolling Return and Tracking Error



Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
Emerging Market Equity Composite	1.7	1.7	72.1	13.0	17.2
MSCI EM (net)	2.3	2.3	58.4	6.5	12.1
Difference	-0.6	-0.6	13.7	6.5	5.1

IM Emerging Markets Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Emerging Market Equity Composite	1.7 (75)	1.7 (75)	72.1 (29)	13.0 (12)	17.2 (11)	10.5 (13)	6.8 (25)
● MSCI EM (net)	2.3 (69)	2.3 (69)	58.4 (73)	6.5 (55)	12.1 (58)	6.6 (66)	3.7 (84)

5th Percentile	10.2	10.2	86.6	15.8	18.0	11.8	8.6
1st Quartile	6.2	6.2	73.1	10.4	15.1	9.4	6.8
Median	3.5	3.5	64.7	7.0	12.7	7.3	5.3
3rd Quartile	1.7	1.7	58.1	4.7	10.5	6.1	4.1
95th Percentile	-1.0	-1.0	48.4	0.8	6.8	3.5	2.7
Population	259	259	257	242	232	203	145

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	10.6	9.2
Minimum Return	-16.4	-15.4
Return	17.2	12.1
Cumulative Return	120.8	76.8
Active Return	4.6	0.0
Excess Return	16.2	11.6

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	111.5	100.0
Down Market Capture	92.2	100.0

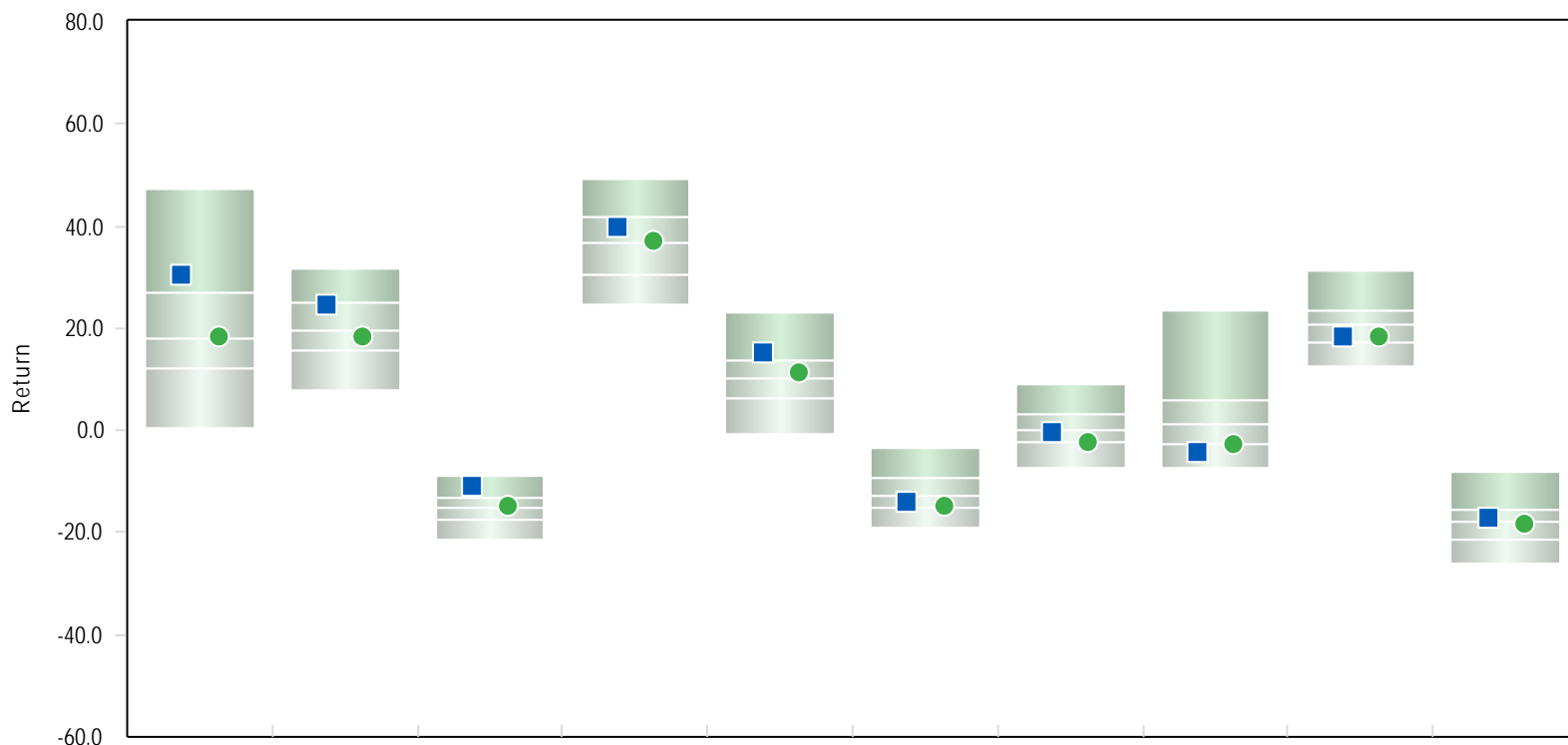
Risk / Return Summary Statistics

Standard Deviation	16.6	16.3
Alpha	4.7	0.0
Active Return/Risk	0.3	0.0
Tracking Error	3.6	0.0
Information Ratio	1.3	-
Sharpe Ratio	1.0	0.7

Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

IM Emerging Markets Equity (SA+CF)

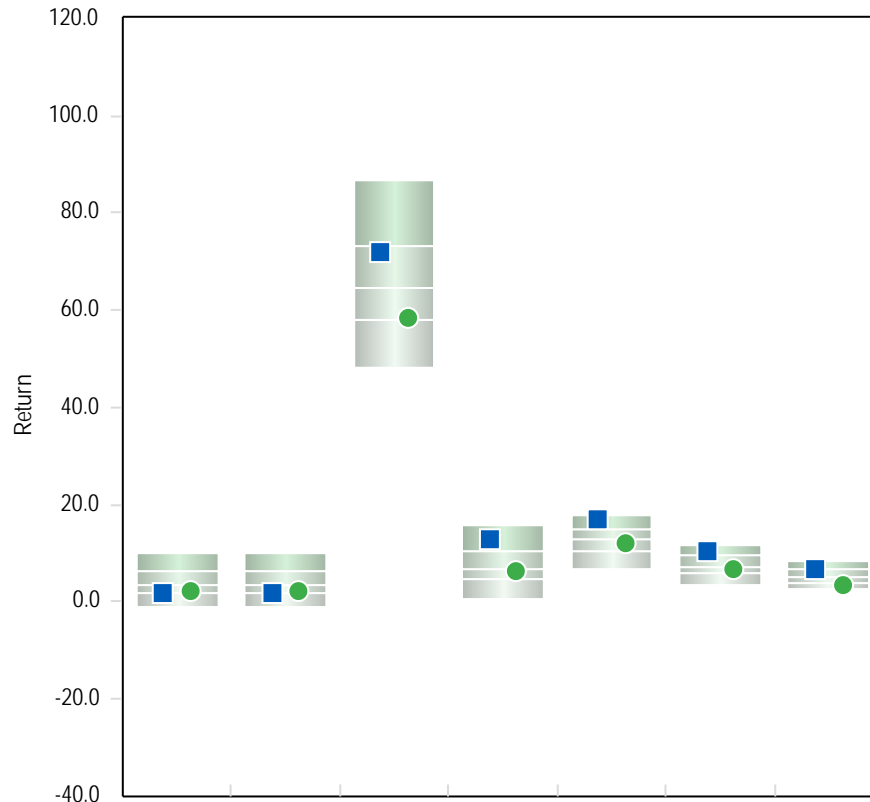


	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
■ Emerging Market Equity Composite	30.4 (20)	24.6 (26)	-11.0 (14)	39.9 (32)	15.1 (19)	-14.1 (61)	-0.2 (53)	-4.2 (87)	18.4 (69)	-17.0 (39)
● MSCI EM (net)	18.3 (48)	18.4 (61)	-14.6 (42)	37.3 (45)	11.2 (44)	-14.9 (69)	-2.2 (73)	-2.6 (75)	18.2 (70)	-18.4 (53)

5th Percentile	47.2	31.5	-9.0	49.2	23.1	-3.5	9.0	23.4	31.3	-8.0
1st Quartile	26.8	25.0	-13.3	41.8	13.6	-9.3	3.1	5.9	23.6	-15.6
Median	18.1	19.5	-15.2	36.8	10.4	-12.7	0.0	1.0	20.6	-18.0
3rd Quartile	12.1	15.6	-17.5	30.3	6.5	-15.3	-2.4	-2.6	17.3	-21.4
95th Percentile	0.6	7.8	-21.4	24.6	-0.9	-19.1	-7.3	-7.2	12.7	-26.0
Population	278	319	326	339	349	350	343	320	288	273

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

IM Emerging Markets Equity (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ JP Morgan Emerging Markets Equity Focused	1.7 (75)	1.7 (75)	72.1 (29)	13.0 (12)	17.2 (11)	10.5 (13)	6.8 (25)
● MSCI EM (net)	2.3 (69)	2.3 (69)	58.4 (73)	6.5 (55)	12.1 (58)	6.6 (66)	3.7 (84)

5th Percentile	10.2	10.2	86.6	15.8	18.0	11.8	8.6
1st Quartile	6.2	6.2	73.1	10.4	15.1	9.4	6.8
Median	3.5	3.5	64.7	7.0	12.7	7.3	5.3
3rd Quartile	1.7	1.7	58.1	4.7	10.5	6.1	4.1
95th Percentile	-1.0	-1.0	48.4	0.8	6.8	3.5	2.7
Population	259	259	257	242	232	203	145

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	10.6	9.2
Minimum Return	-16.4	-15.4
Return	17.2	12.1
Cumulative Return	120.8	76.8
Active Return	4.6	0.0
Excess Return	16.2	11.6

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	111.5	100.0
Down Market Capture	92.2	100.0

Risk / Return Summary Statistics

Standard Deviation	16.6	16.3
Alpha	4.7	0.0
Active Return/Risk	0.3	0.0
Tracking Error	3.6	0.0
Information Ratio	1.3	-
Sharpe Ratio	1.0	0.7

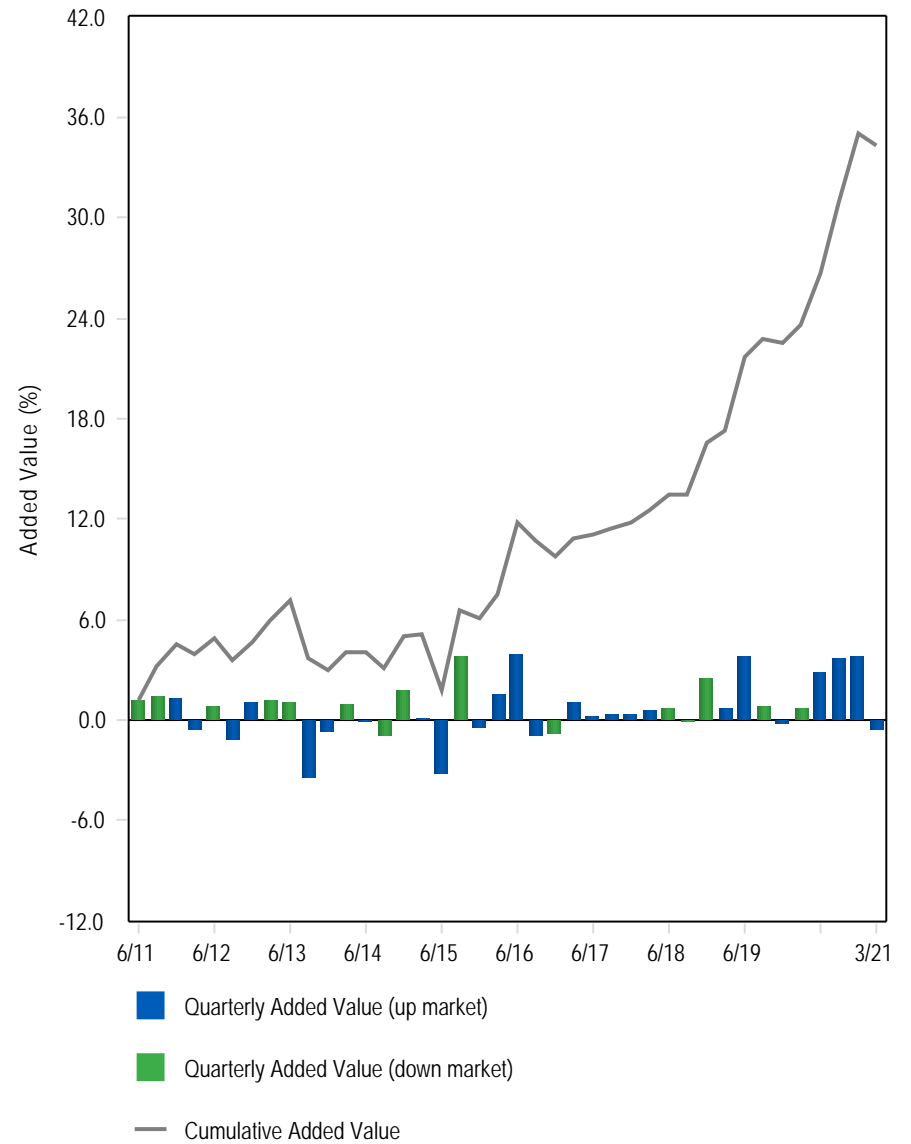
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



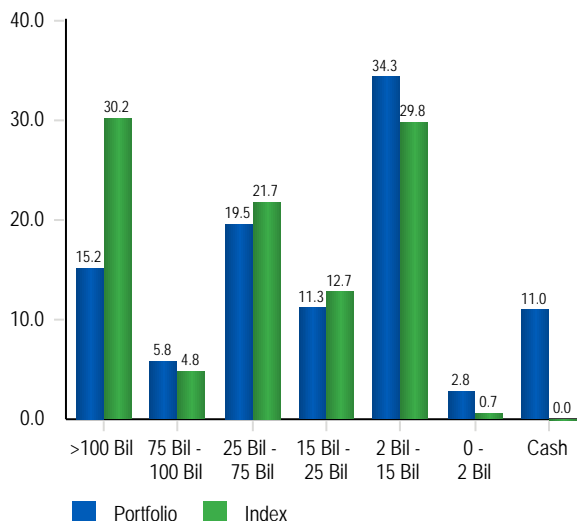
Quarterly and Cumulative Excess Performance



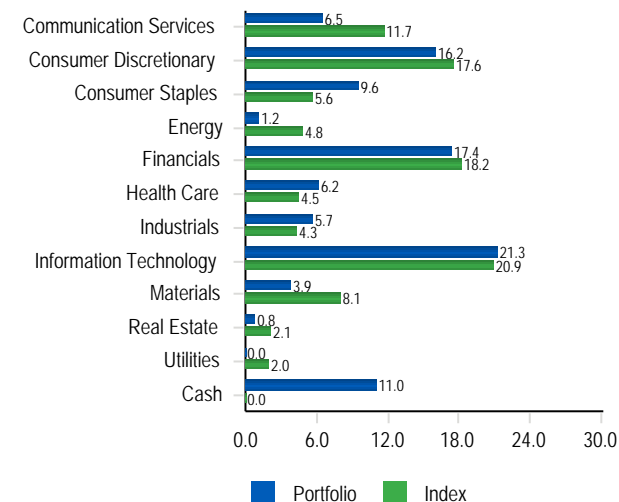
Portfolio Characteristics

	Portfolio	Benchmark
Price/Earnings ratio	35.6	19.0
Forecast P/E	24.2	11.0
Price/Book ratio	5.7	3.1
Wtd. Avg. Mkt. Cap (\$B)	72.18	167.15
Median Mkt. Cap (\$B)	15.12	6.70
5 Yr. EPS Growth Rate (%)	17.7	11.6
Current Yield (%)	0.9	1.9
Beta (5 Years, Monthly)	1.0	1.0
R-Squared (5 Years, Monthly)	1.0	1.0
Debt to Equity (%)	70.1	72.5
Forecast EPS Growth - Long-Term	24.0	22.7
Return on Equity (%)	3.8	4.8

Distribution of Market Capitalization (%)



Sector Weights (%)

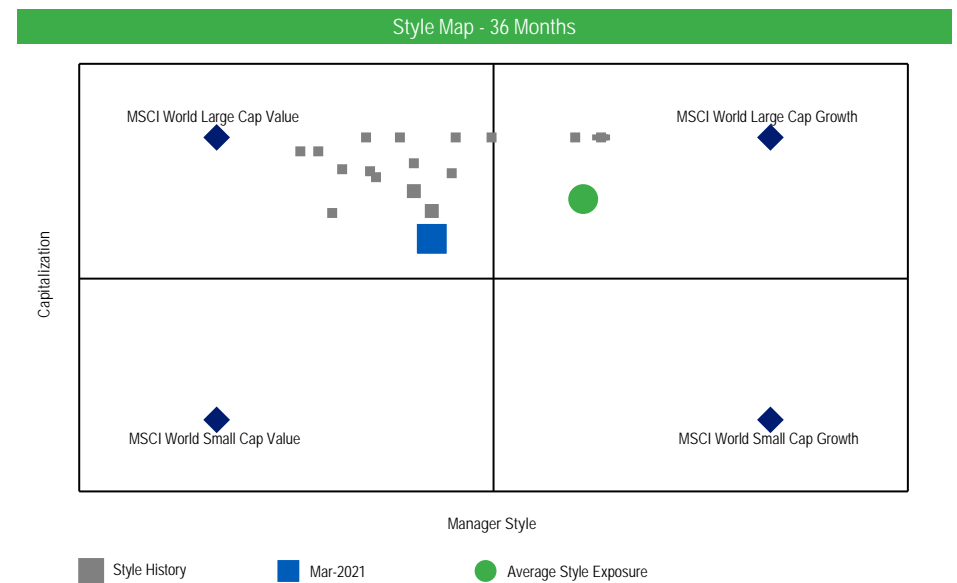
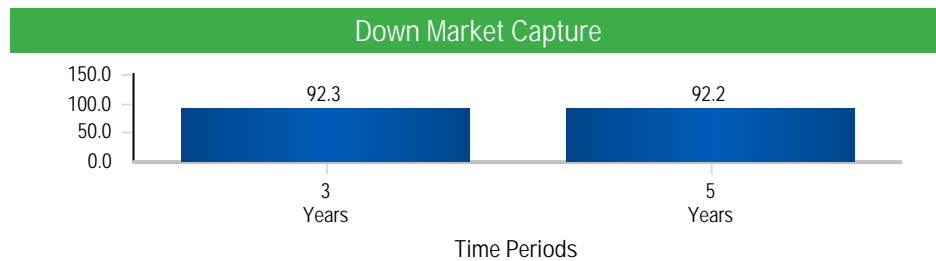
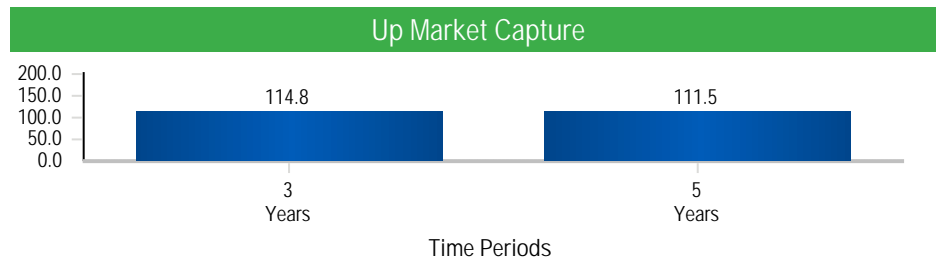
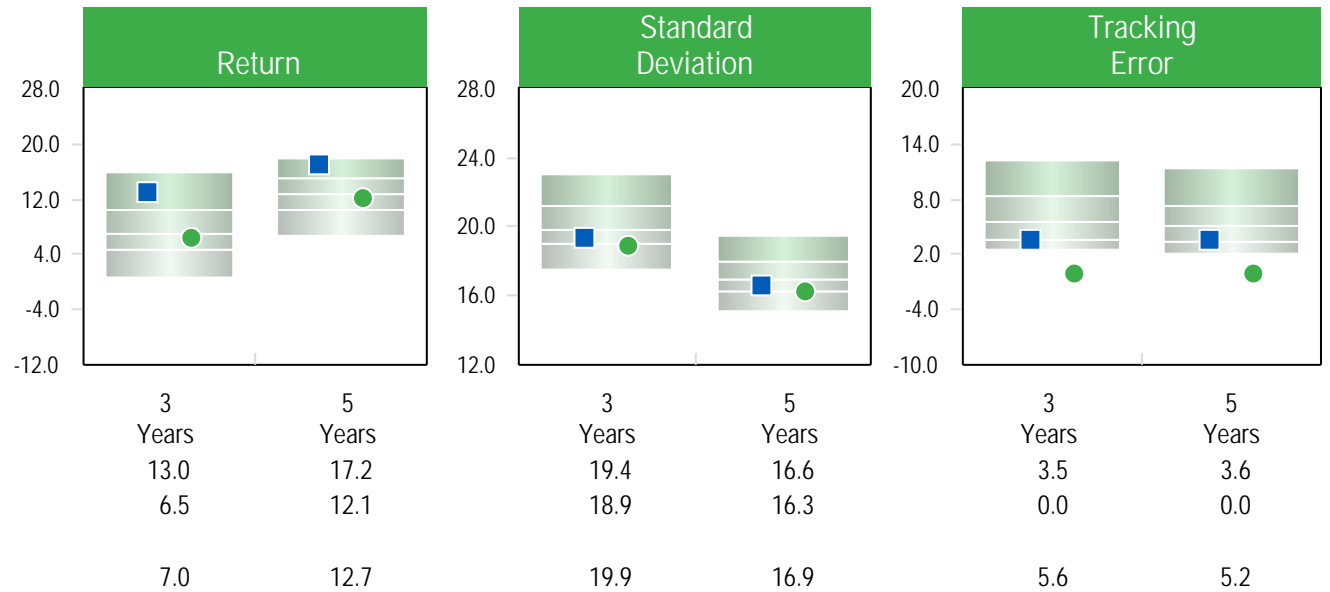


JP Morgan Emerging Markets Equity Focused Performance Attribution vs. MSCI EM (net)

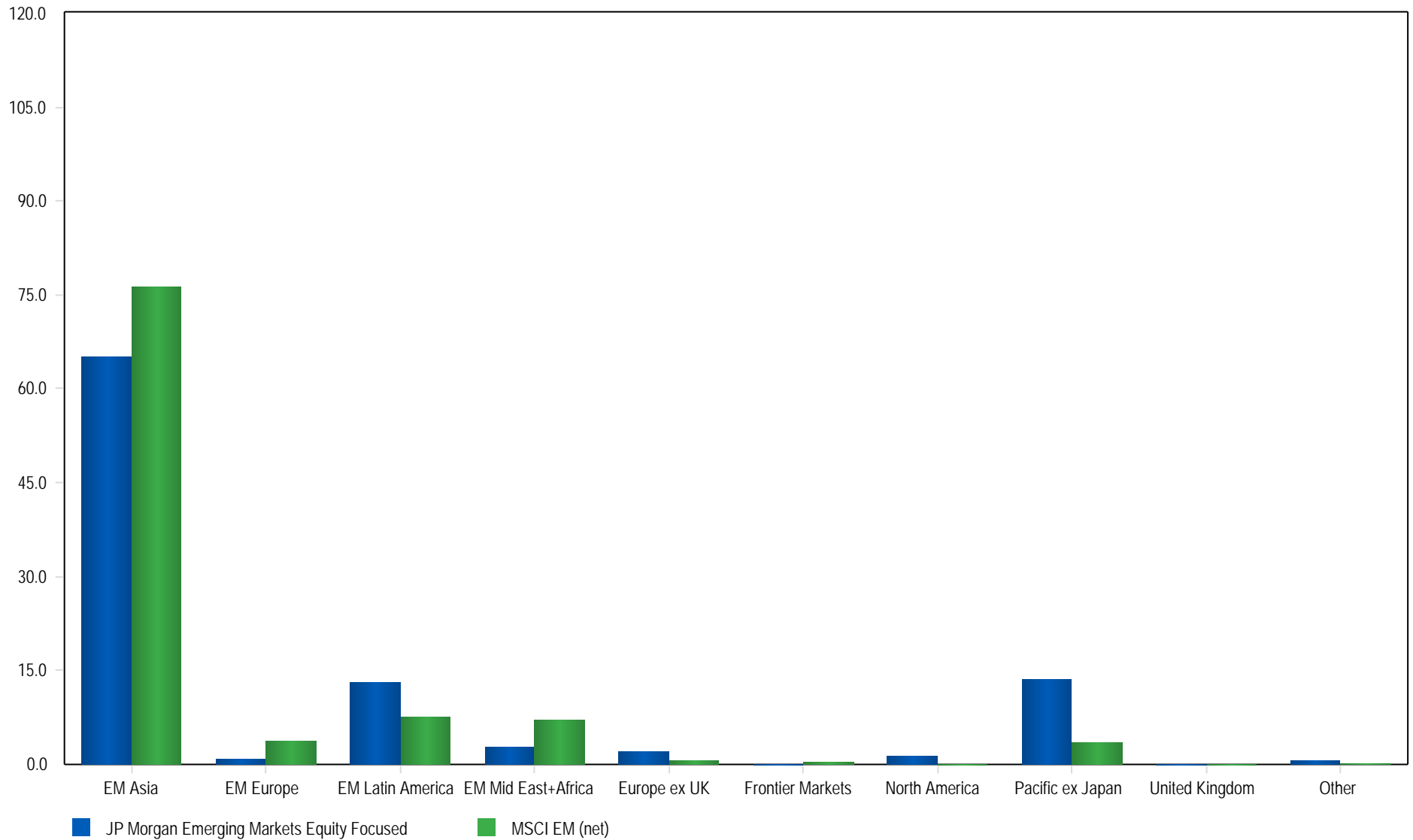
Performance — 1 Quarter Ending March 31, 2021

	Allocation — 01/01/2021		Performance — 1 Quarter Ending March 31, 2021		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Stock	Sector	Interaction	Total
Communication Services	15.9	11.6	10.5	6.5	0.5	0.2	0.2	0.8
Consumer Discretionary	19.8	18.3	-7.0	-3.0	-0.7	-0.1	-0.1	-0.9
Consumer Staples	13.1	5.9	-3.6	-1.7	-0.1	-0.3	-0.1	-0.6
Energy	0.0	5.0	0.0	3.1	0.0	0.0	0.0	0.0
Financials	28.0	18.0	-3.3	3.4	-1.2	0.1	-0.7	-1.8
Health Care	1.8	4.7	-5.6	-4.4	-0.1	0.2	0.0	0.2
Industrials	3.6	4.3	10.9	3.3	0.3	0.0	-0.1	0.3
Information Technology	16.7	20.5	3.7	4.9	-0.3	-0.1	0.0	-0.3
Materials	1.1	7.6	-8.4	9.8	-1.4	-0.5	1.2	-0.7
Real Estate	0.0	2.1	0.0	6.4	0.0	-0.1	0.0	-0.1
Utilities	0.0	2.0	0.0	1.9	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.3</b>	<b>2.7</b>	<b>-2.9</b>	<b>-0.6</b>	<b>0.5</b>	<b>-3.0</b>





Allocation

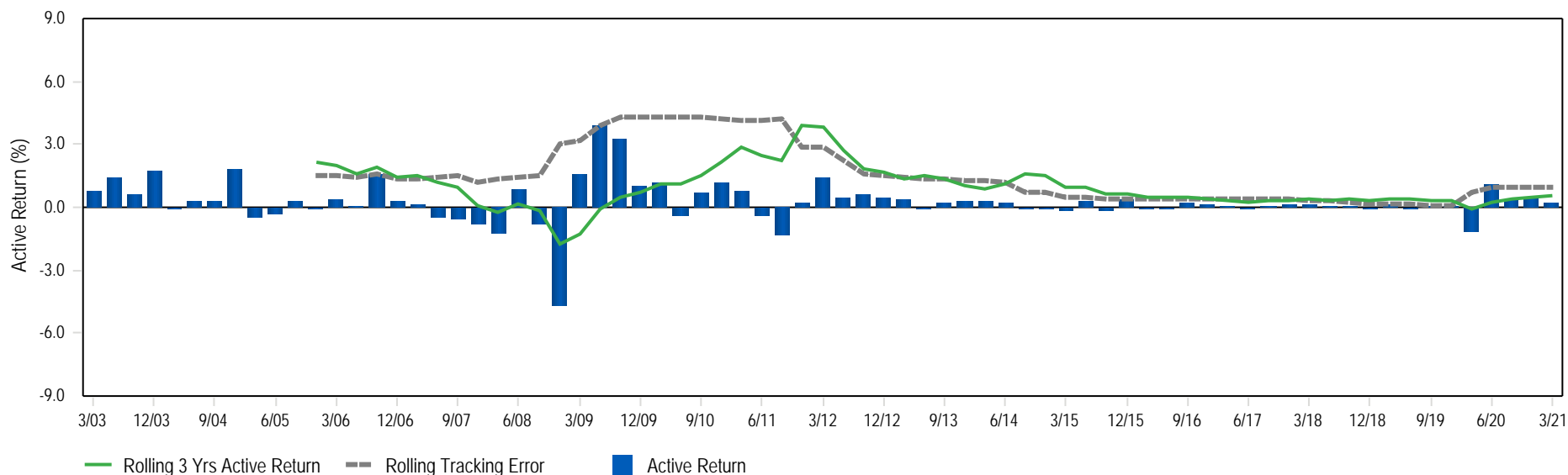


## Fixed Income Composite

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
Fixed Income Composite					
Beginning Market Value	335,718,572	335,718,572	322,281,554	313,053,416	331,108,795
Net Cash Flows	-216,643	-216,643	-16,832,621	-29,671,262	-64,220,255
Income	954,701	954,701	8,705,421	23,660,082	36,293,981
Gain/Loss	-4,711,997	-4,711,997	17,590,279	24,702,397	28,562,112
Ending Market Value	331,744,633	331,744,633	331,744,633	331,744,633	331,744,633

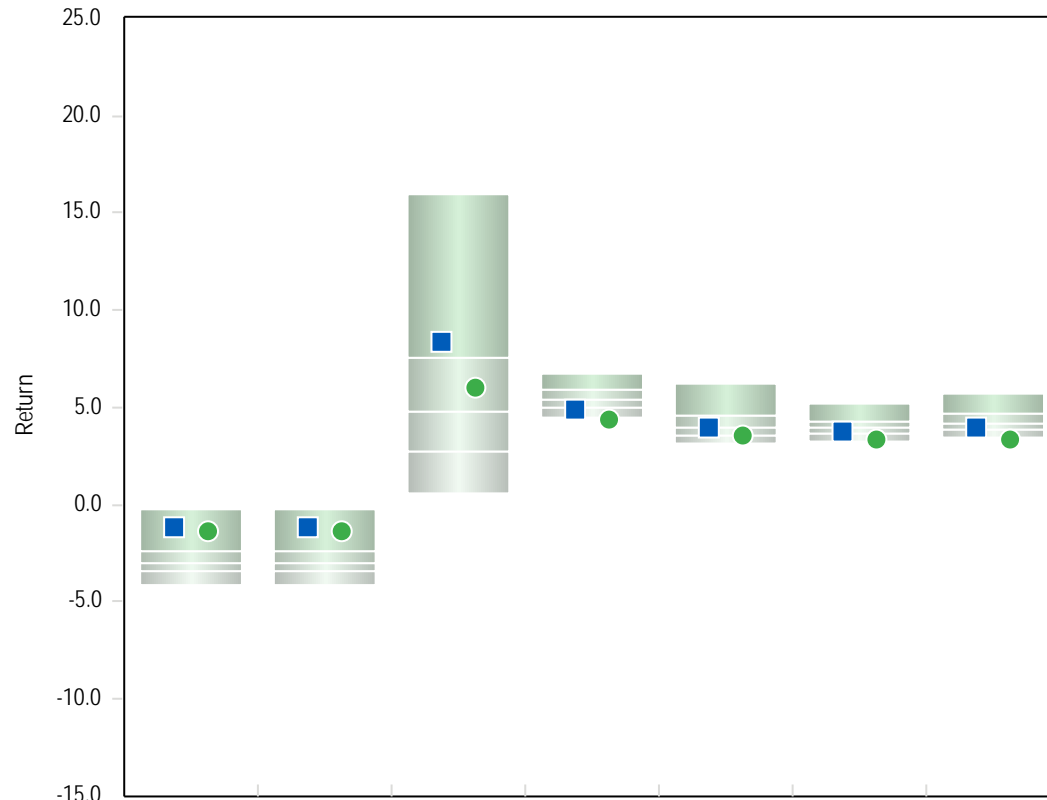
Rolling Return and Tracking Error



Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs
Fixed Income Composite	-1.1	-1.1	8.4	4.9	4.0
Fixed Income Index	-1.4	-1.4	6.0	4.4	3.5
Difference	0.3	0.3	2.4	0.5	0.5

IM U.S. Broad Market Fixed Income (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fixed Income Composite	-1.1 (10)	-1.1 (10)	8.4 (20)	4.9 (79)	4.0 (51)	3.7 (68)	3.9 (69)
● Fixed Income Index	-1.4 (12)	-1.4 (12)	6.0 (40)	4.4 (96)	3.5 (78)	3.3 (94)	3.4 (98)

5th Percentile	-0.3	-0.3	16.0	6.7	6.3	5.2	5.7
1st Quartile	-2.4	-2.4	7.5	5.9	4.6	4.3	4.7
Median	-3.0	-3.0	4.7	5.4	4.0	4.0	4.2
3rd Quartile	-3.4	-3.4	2.7	5.0	3.6	3.6	3.8
95th Percentile	-4.1	-4.1	0.6	4.4	3.1	3.2	3.4

Population	302	302	302	295	287	282	270
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	2.8	2.3
Minimum Return	-4.5	-3.5
Return	4.0	3.5
Cumulative Return	21.7	18.9
Active Return	0.5	0.0
Excess Return	2.8	2.3

Risk Summary Statistics

Beta	1.1	1.0
Up Market Capture	110.2	100.0
Down Market Capture	103.9	100.0

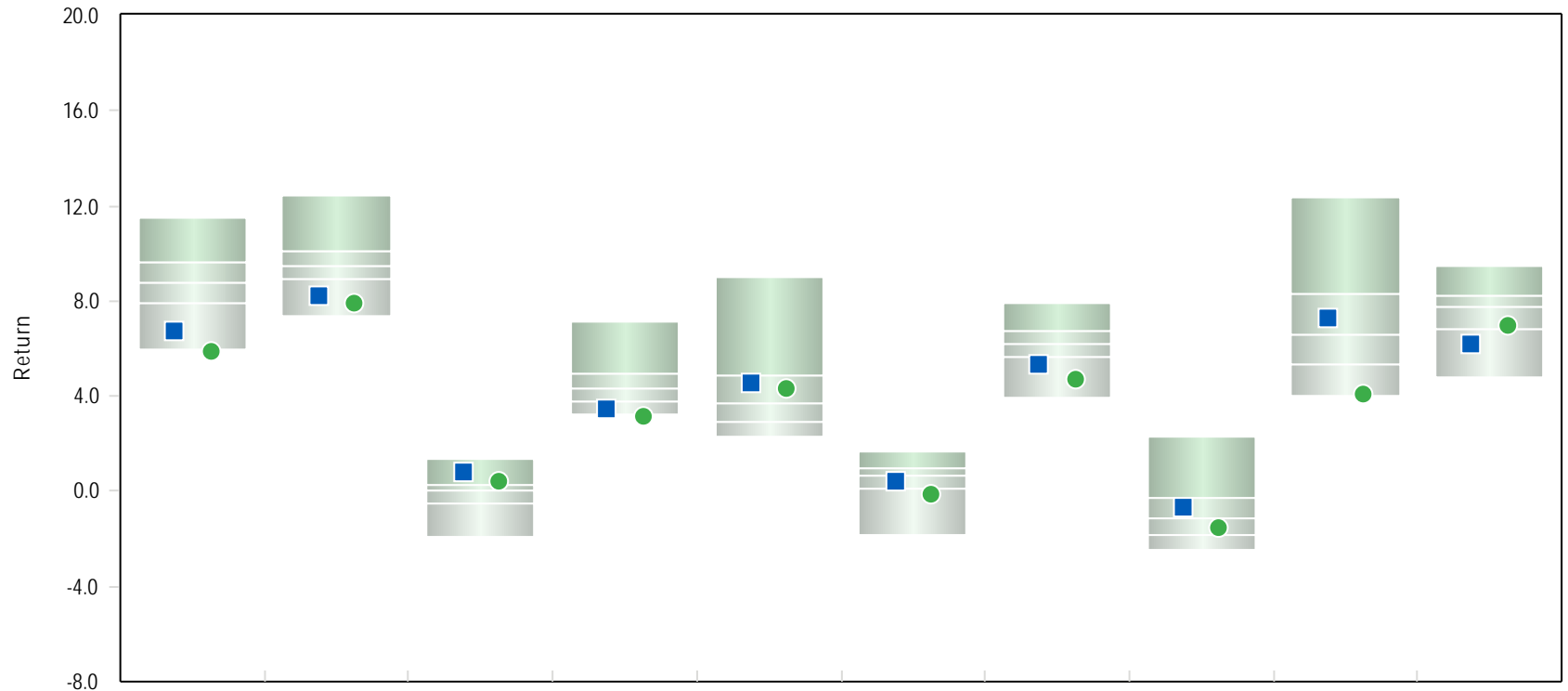
Risk / Return Summary Statistics

Standard Deviation	3.2	2.7
Alpha	0.0	0.0
Active Return/Risk	0.2	0.0
Tracking Error	0.6	0.0
Information Ratio	0.8	-
Sharpe Ratio	0.9	0.8

Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

IM U.S. Broad Market Fixed Income (SA+CF)



	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
■ Fixed Income Composite	6.7 (93)	8.2 (91)	0.8 (10)	3.4 (91)	4.6 (31)	0.4 (67)	5.3 (85)	-0.6 (33)	7.3 (40)	6.2 (87)
● Fixed Income Index	5.9 (96)	7.9 (95)	0.5 (18)	3.2 (96)	4.3 (36)	-0.1 (83)	4.7 (91)	-1.5 (64)	4.1 (95)	6.9 (73)

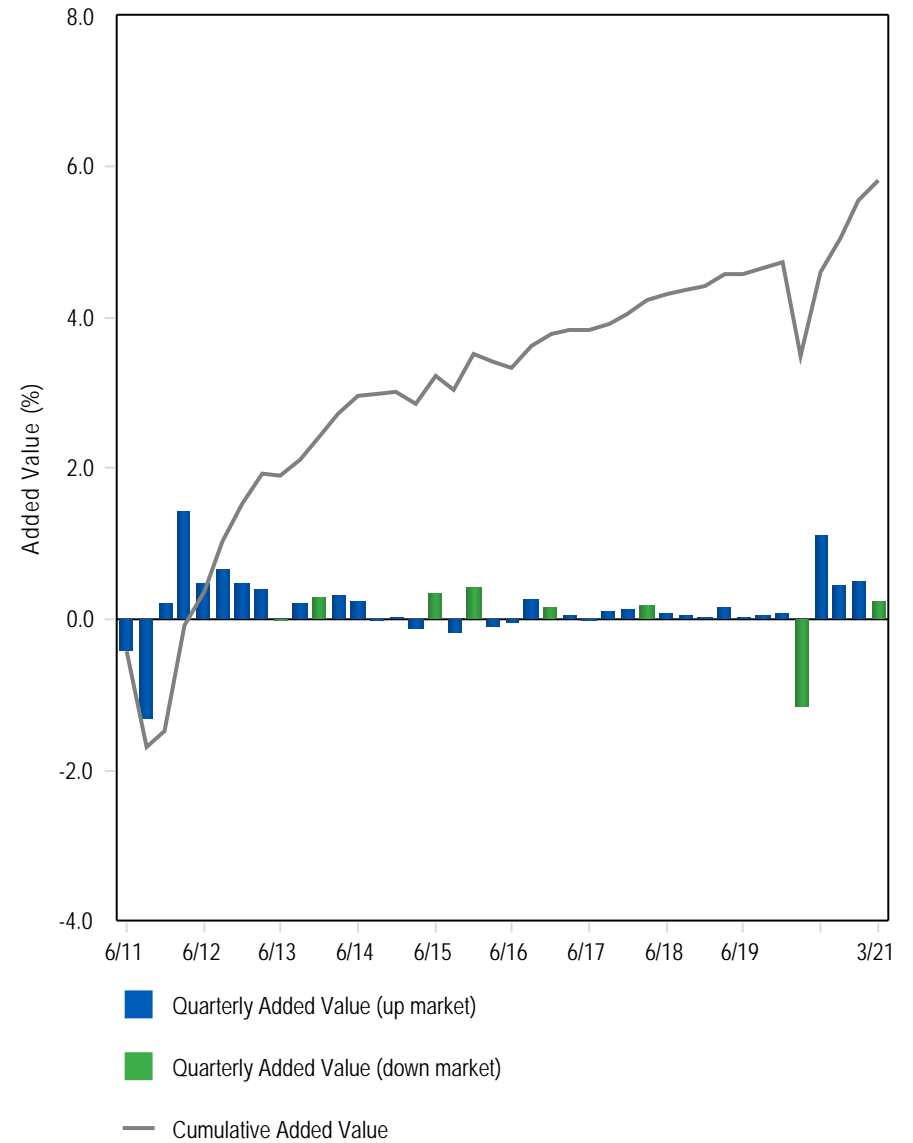
5th Percentile	11.5	12.4	1.3	7.1	9.0	1.7	7.9	2.3	12.3	9.5
1st Quartile	9.6	10.1	0.3	5.0	4.9	1.0	6.8	-0.3	8.3	8.2
Median	8.8	9.5	0.0	4.3	3.7	0.6	6.2	-1.1	6.6	7.7
3rd Quartile	7.9	8.9	-0.5	3.8	3.0	0.1	5.7	-1.9	5.4	6.8
95th Percentile	6.0	7.4	-1.9	3.2	2.3	-1.8	3.9	-2.4	4.0	4.8
Population	317	334	351	360	371	387	409	426	445	451

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

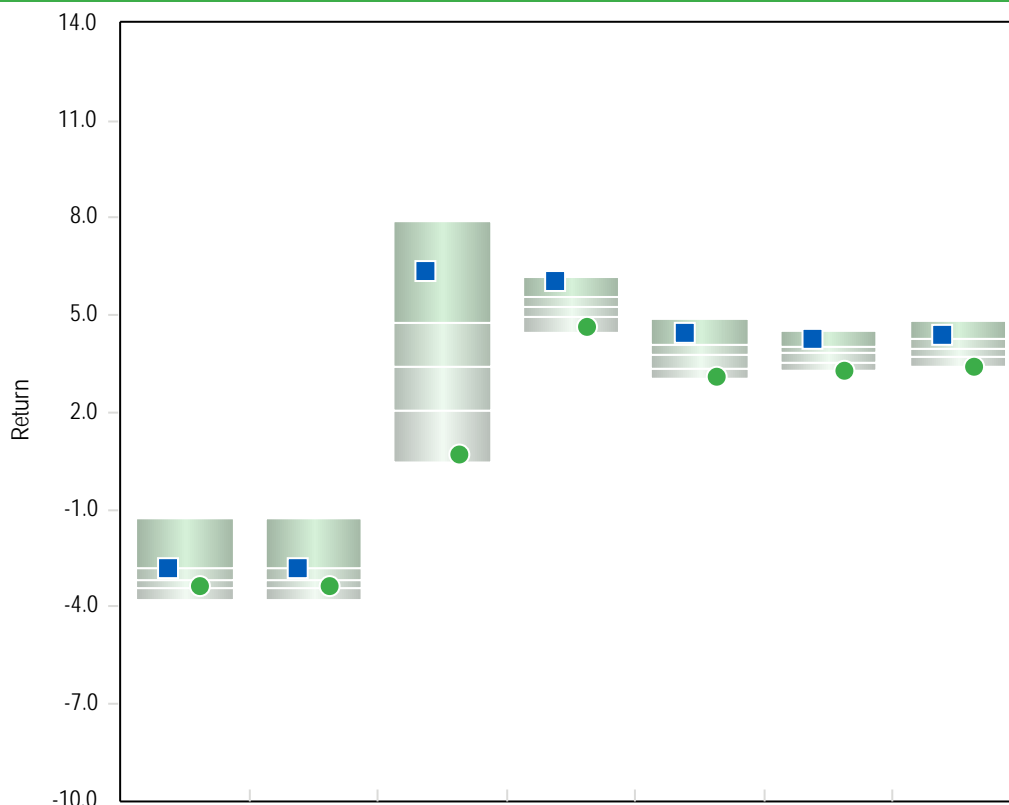
Rolling 3 Years Annualized Standard Deviation



Quarterly and Cumulative Excess Performance



IM U.S. Broad Market Core Fixed Income (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity	-2.8 (26)	-2.8 (26)	6.4 (15)	6.1 (8)	4.4 (11)	4.3 (11)	4.4 (19)
● Blmbg. Barc. U.S. Aggregate	-3.4 (69)	-3.4 (69)	0.7 (92)	4.7 (93)	3.1 (93)	3.3 (94)	3.4 (93)

5th Percentile	-1.3	-1.3	7.9	6.2	4.9	4.5	4.8
1st Quartile	-2.8	-2.8	4.7	5.6	4.1	4.1	4.3
Median	-3.2	-3.2	3.4	5.3	3.8	3.8	4.0
3rd Quartile	-3.4	-3.4	2.0	4.9	3.4	3.5	3.7
95th Percentile	-3.8	-3.8	0.5	4.5	3.1	3.3	3.4

Population	135	135	135	132	130	128	121
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	2.9	2.6
Minimum Return	-2.5	-2.4
Return	4.4	3.1
Cumulative Return	24.3	16.5
Active Return	1.3	0.0
Excess Return	3.3	1.9

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	118.6	100.0
Down Market Capture	93.4	100.0

Risk / Return Summary Statistics

Standard Deviation	3.6	3.3
Alpha	1.2	0.0
Active Return/Risk	0.4	0.0
Tracking Error	1.3	0.0
Information Ratio	1.0	-
Sharpe Ratio	0.9	0.6

Correlation Statistics

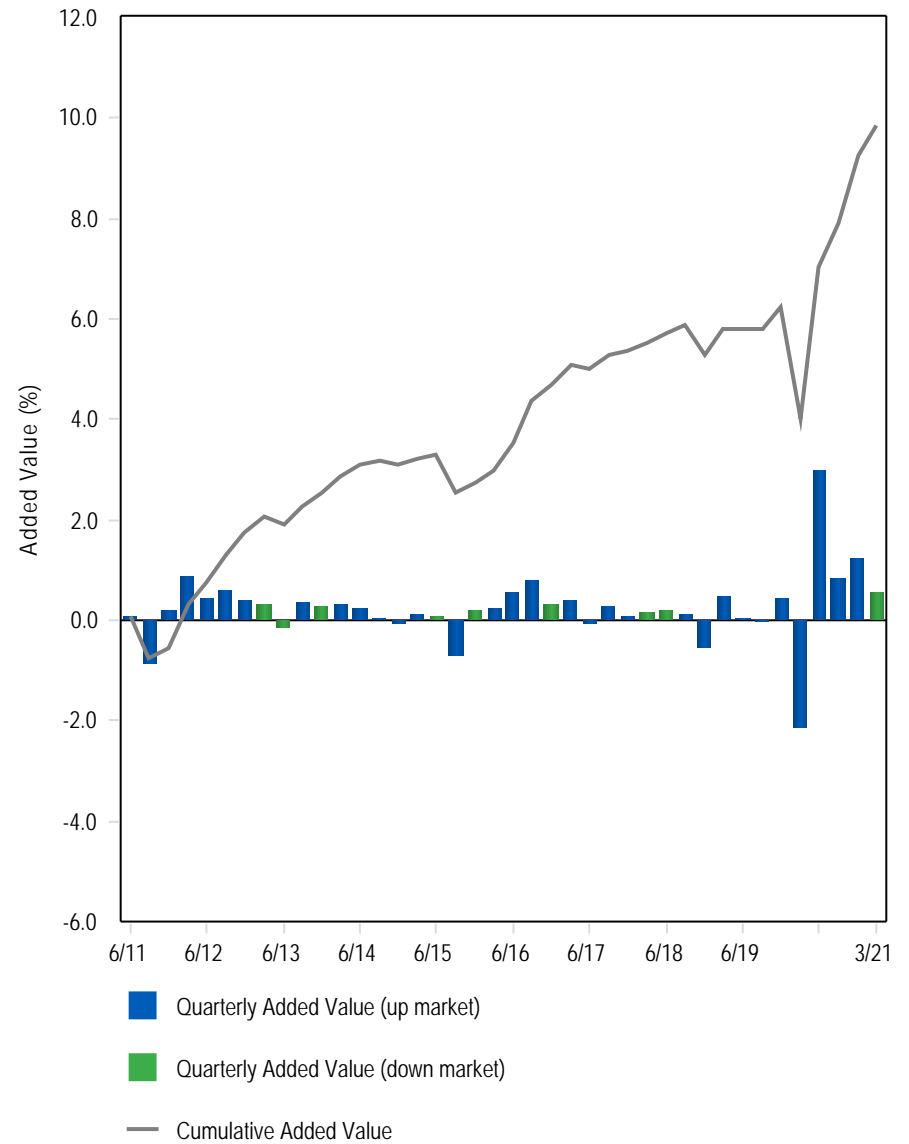
R-Squared	0.8	1.0
Actual Correlation	0.9	1.0



Rolling 3 Years Annualized Standard Deviation



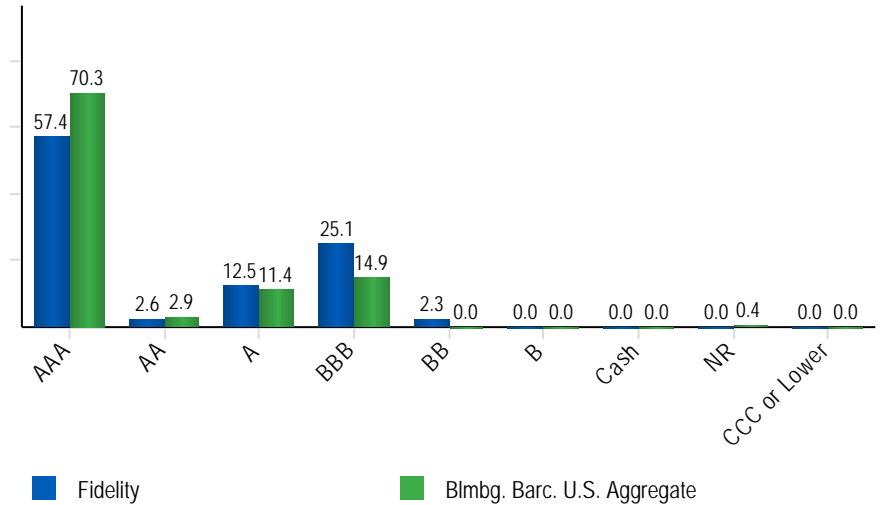
Quarterly and Cumulative Excess Performance



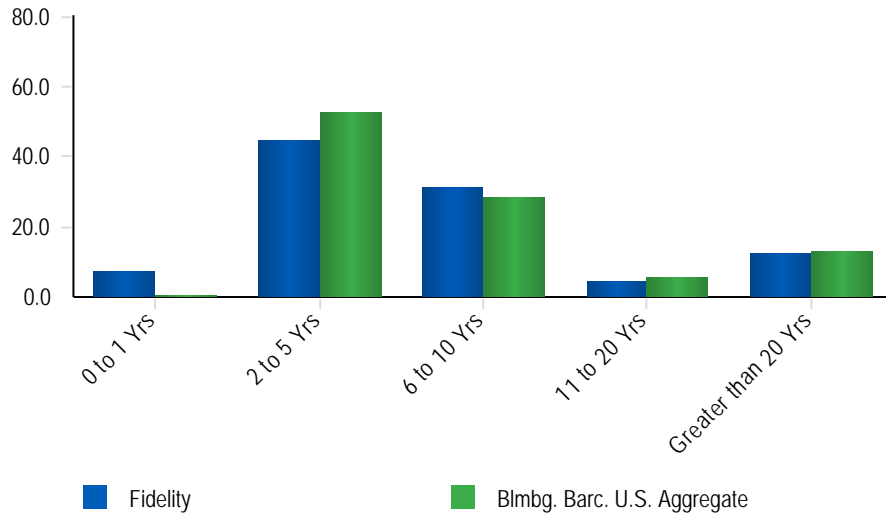
Portfolio Characteristics

	Portfolio	Benchmark
Effective Duration	6.2	6.8
Avg. Maturity	8.2	8.1
Avg. Quality	AA-	AA
Yield To Maturity (%)	1.8	1.6

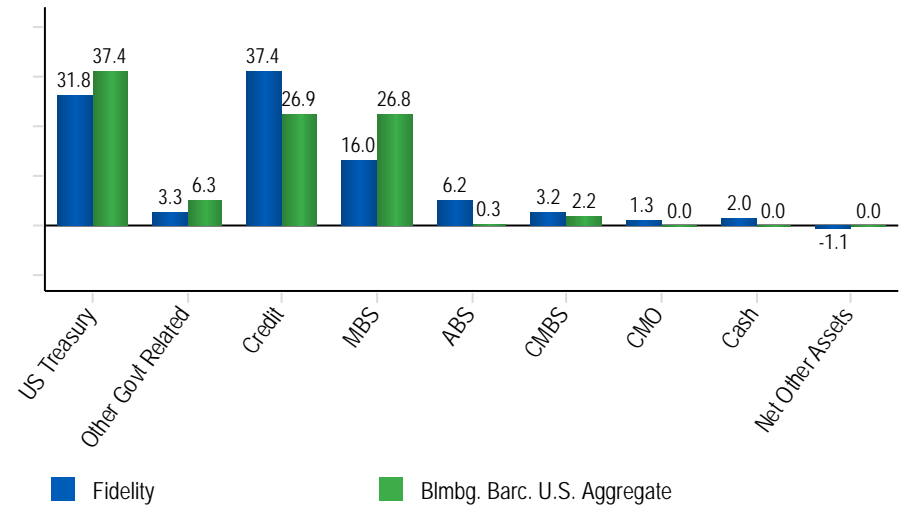
Credit Quality Distribution (%)

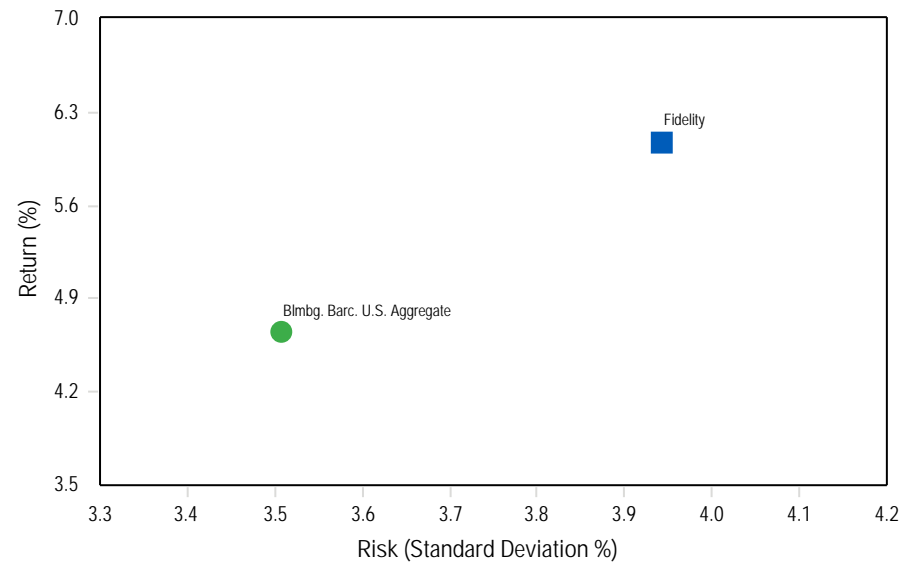
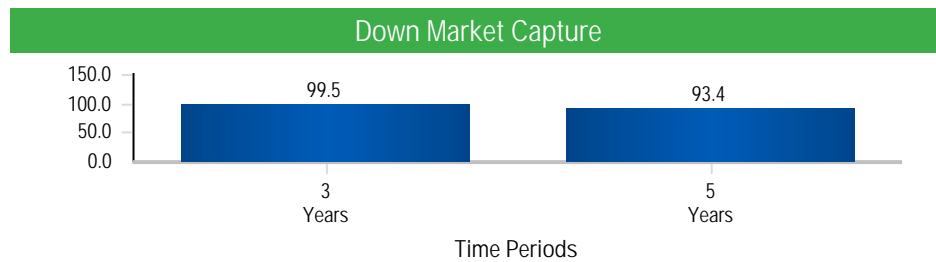
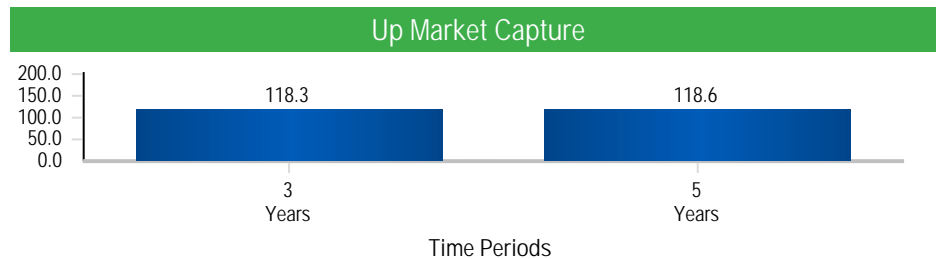
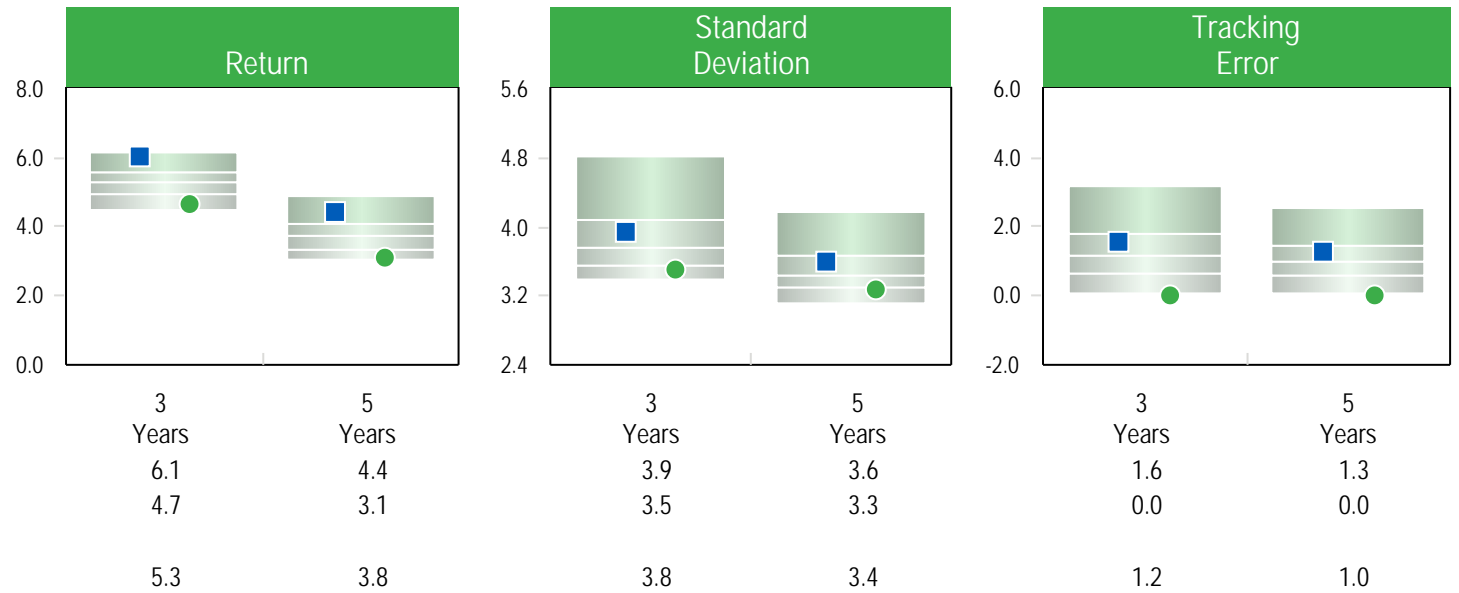


Maturity Distribution (%)

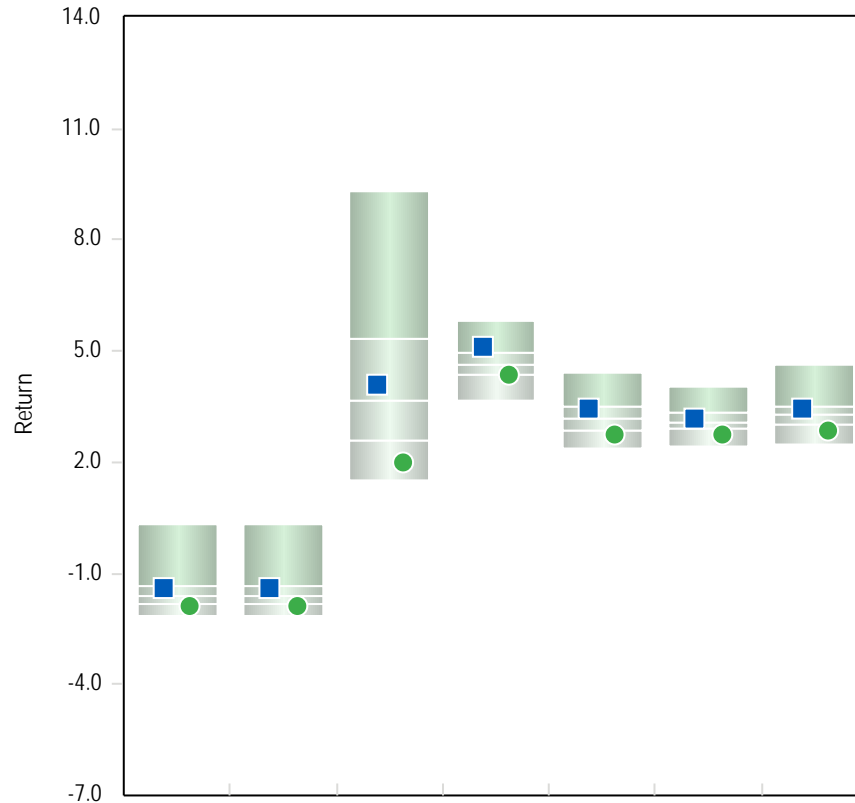


Sector Distribution (%)





IM U.S. Intermediate Duration (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Metropolitan West Asset Mgmt	-1.4 (28)	-1.4 (28)	4.1 (42)	5.1 (16)	3.5 (27)	3.2 (40)	3.4 (33)
● Blmbg. Barc. Intermed. U.S. Government/Credit	-1.9 (77)	-1.9 (77)	2.0 (86)	4.4 (76)	2.8 (85)	2.8 (85)	2.9 (84)

5th Percentile	0.3	0.3	9.3	5.8	4.4	4.0	4.6
1st Quartile	-1.3	-1.3	5.3	5.0	3.5	3.3	3.5
Median	-1.6	-1.6	3.7	4.6	3.2	3.1	3.3
3rd Quartile	-1.8	-1.8	2.6	4.4	2.8	2.9	3.0
95th Percentile	-2.2	-2.2	1.5	3.7	2.4	2.4	2.5
Population	153	153	152	152	150	146	138

Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	1.7	1.8
Minimum Return	-1.5	-1.7
Return	3.5	2.8
Cumulative Return	18.6	14.5
Active Return	0.7	0.0
Excess Return	2.3	1.6

Risk Summary Statistics

Beta	1.0	1.0
Up Market Capture	108.0	100.0
Down Market Capture	82.0	100.0

Risk / Return Summary Statistics

Standard Deviation	2.3	2.3
Alpha	0.8	0.0
Active Return/Risk	0.3	0.0
Tracking Error	0.4	0.0
Information Ratio	1.6	-
Sharpe Ratio	1.0	0.7

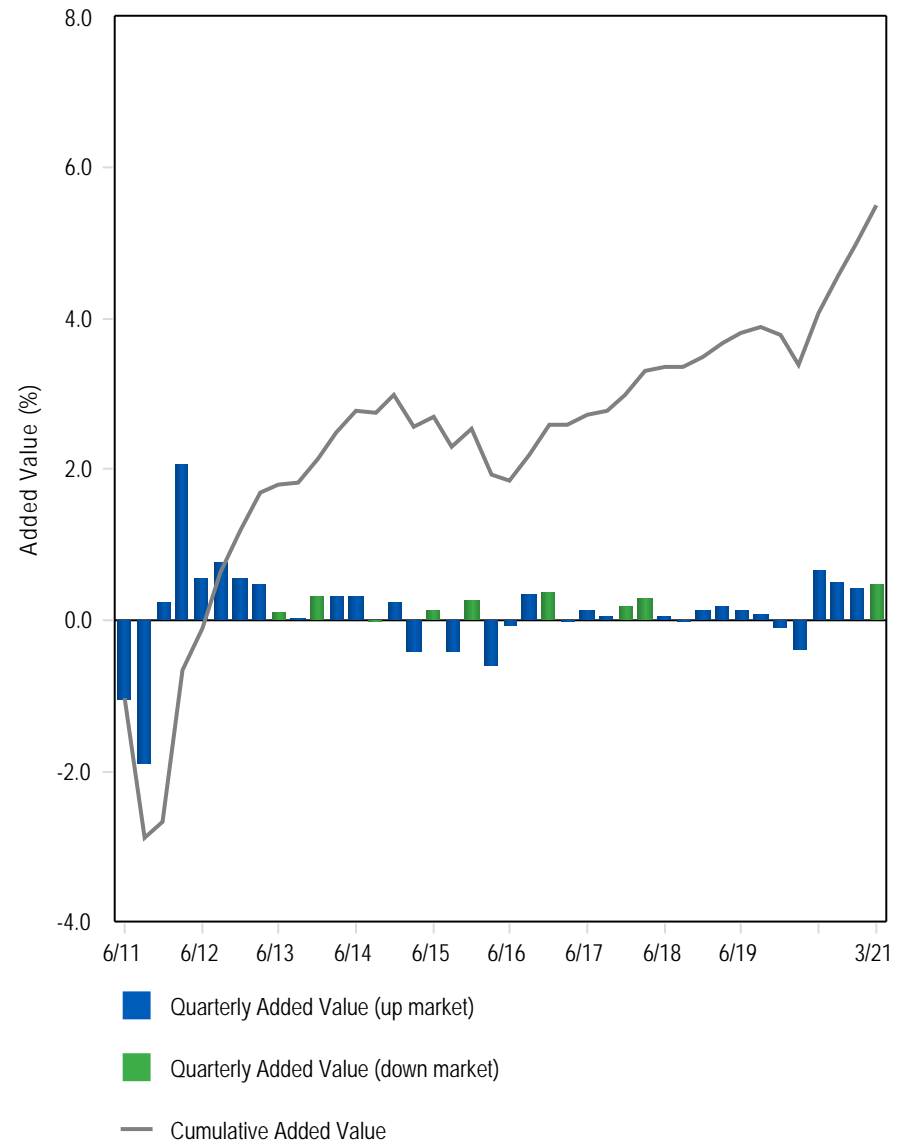
Correlation Statistics

R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



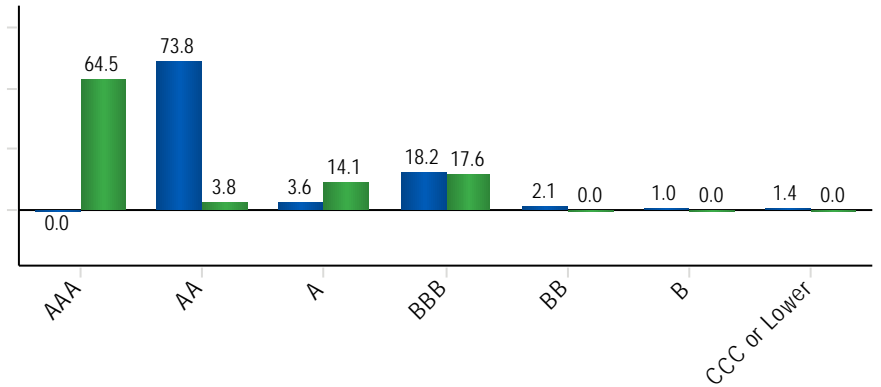
Quarterly and Cumulative Excess Performance



Portfolio Characteristics

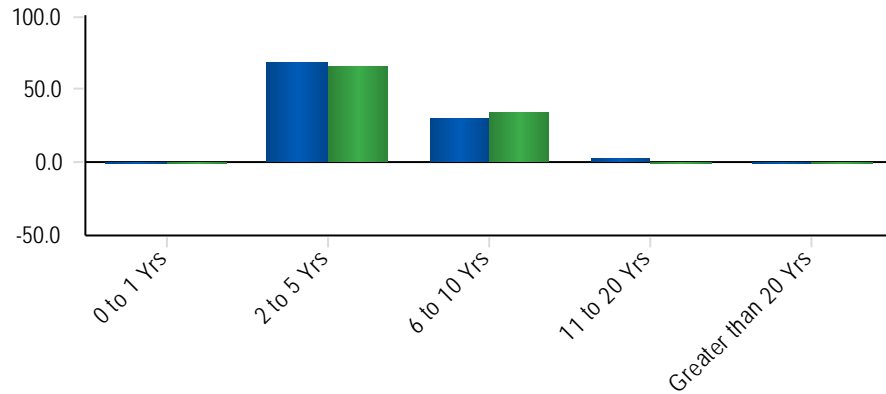
	Portfolio	Benchmark
Effective Duration	4.1	4.2
Avg. Maturity	4.9	4.4
Avg. Quality	AA-	AA
Yield To Maturity (%)	1.3	1.0

Credit Quality Distribution (%)



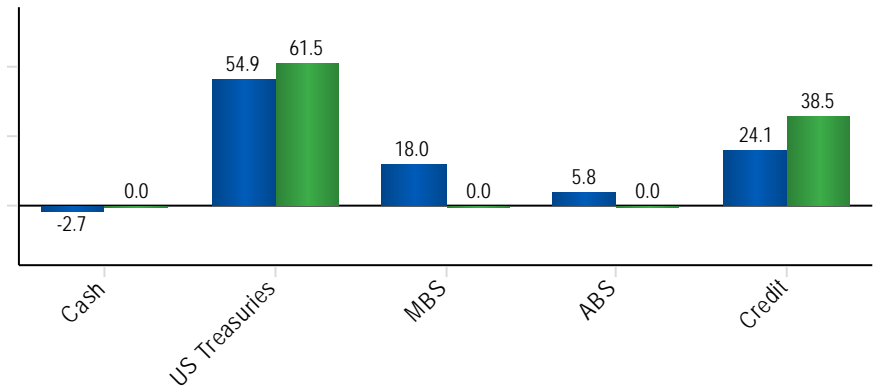
Metropolitan West Asset Mgmt  
Blmbg. Barc. Intermed. U.S. Government/Credit

Maturity Distribution (%)

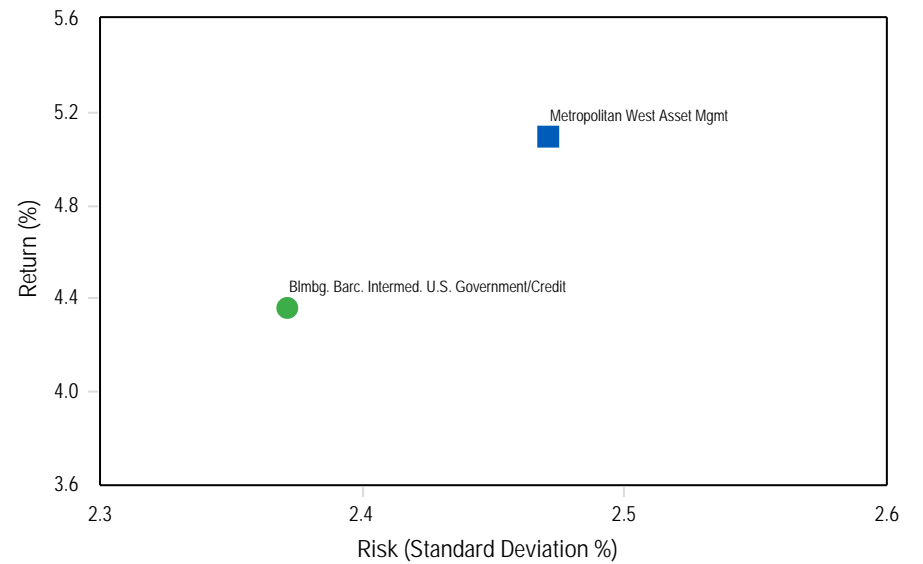
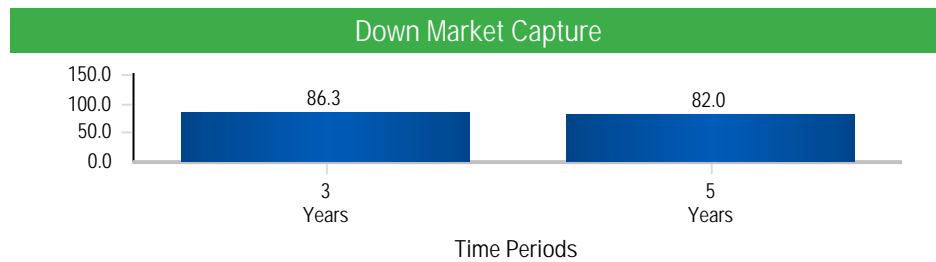
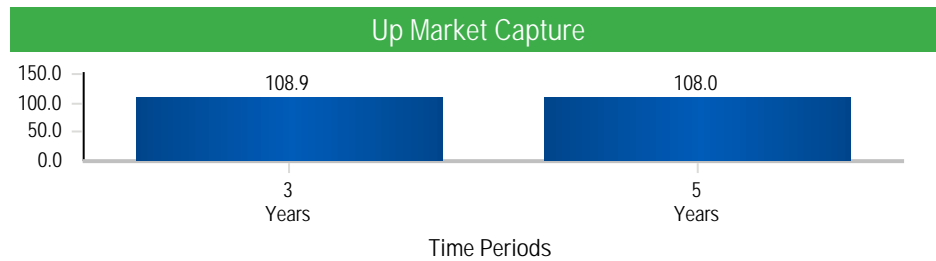
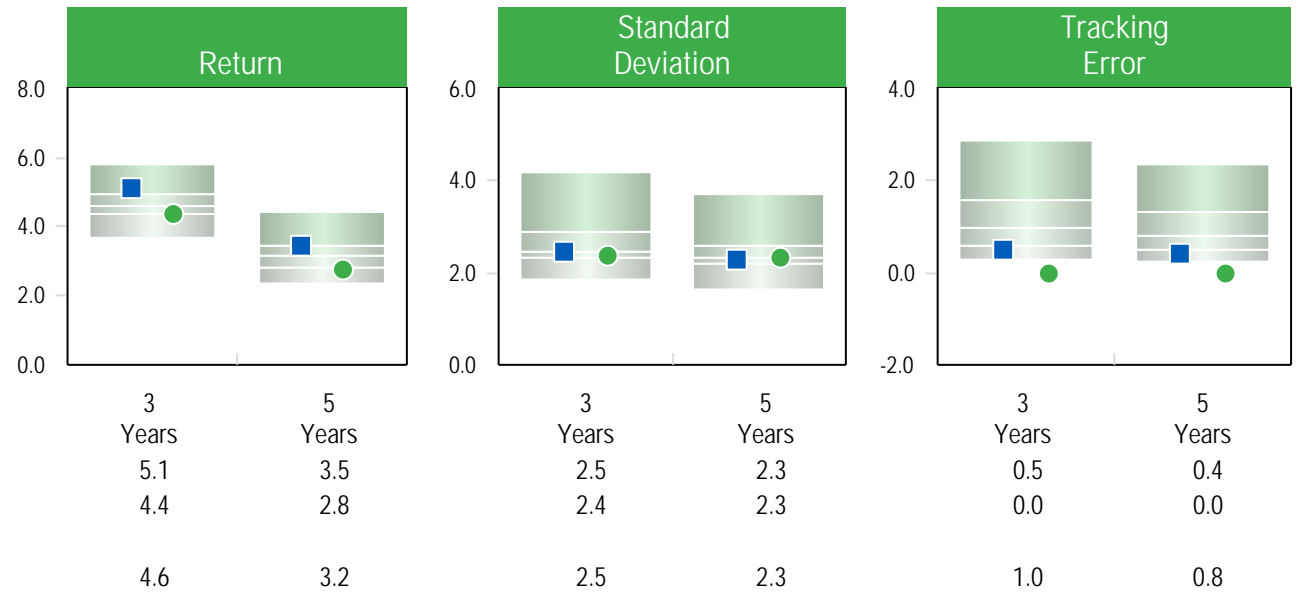


Metropolitan West Asset Mgmt  
Blmbg. Barc. Intermed. U.S. Government/Credit

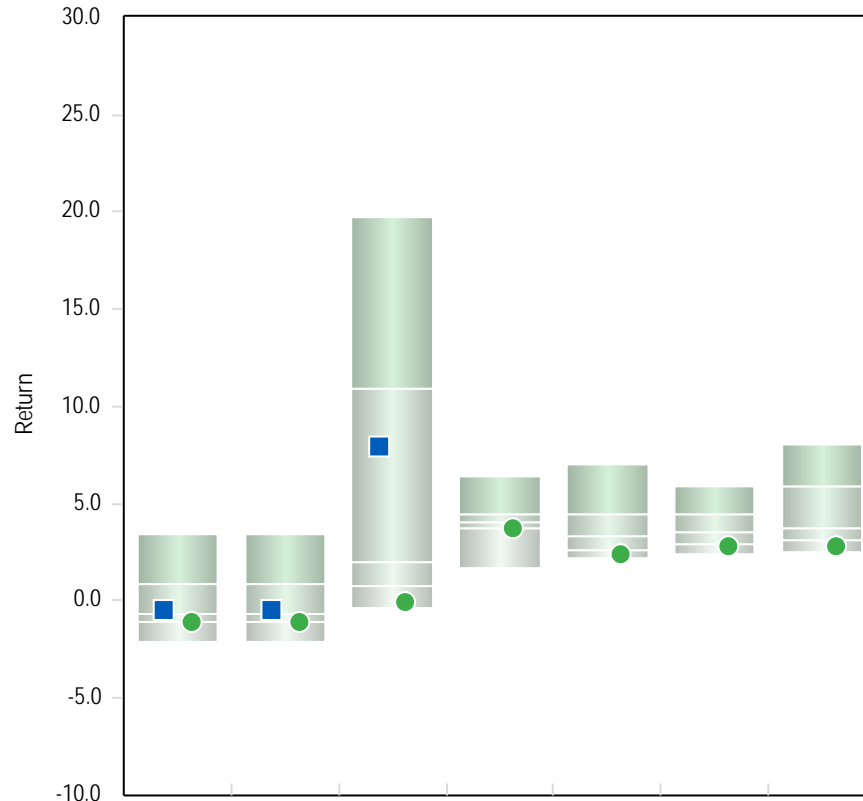
Sector Distribution (%)



Metropolitan West Asset Mgmt  
Blmbg. Barc. Intermed. U.S. Government/Credit



IM U.S. Mortgage Backed Bonds (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Semper Capital	-0.5 (44)	-0.5 (44)	7.9 (29)	-	-	-	-
● Blmbg. Barc. U.S. Mortgage Backed Securities	-1.1 (73)	-1.1 (73)	-0.1 (94)	3.7 (81)	2.4 (82)	2.9 (81)	2.8 (85)

5th Percentile	3.4	3.4	19.8	6.4	7.1	5.9	8.0
1st Quartile	0.8	0.8	10.9	4.5	4.5	4.4	5.8
Median	-0.6	-0.6	2.0	4.0	3.3	3.5	3.7
3rd Quartile	-1.1	-1.1	0.8	3.8	2.6	3.0	3.1
95th Percentile	-2.1	-2.1	-0.3	1.7	2.2	2.4	2.5
Population	42	42	42	41	39	38	37

Risk Return Statistics - 1 Year

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	1.8	0.6
Minimum Return	-0.7	-0.7
Return	7.9	-0.1
Cumulative Return	7.9	-0.1
Active Return	7.8	0.0
Excess Return	7.6	-0.2

Risk Summary Statistics

Beta	-	1.0
Up Market Capture	-	100.0
Down Market Capture	-	100.0

Risk / Return Summary Statistics

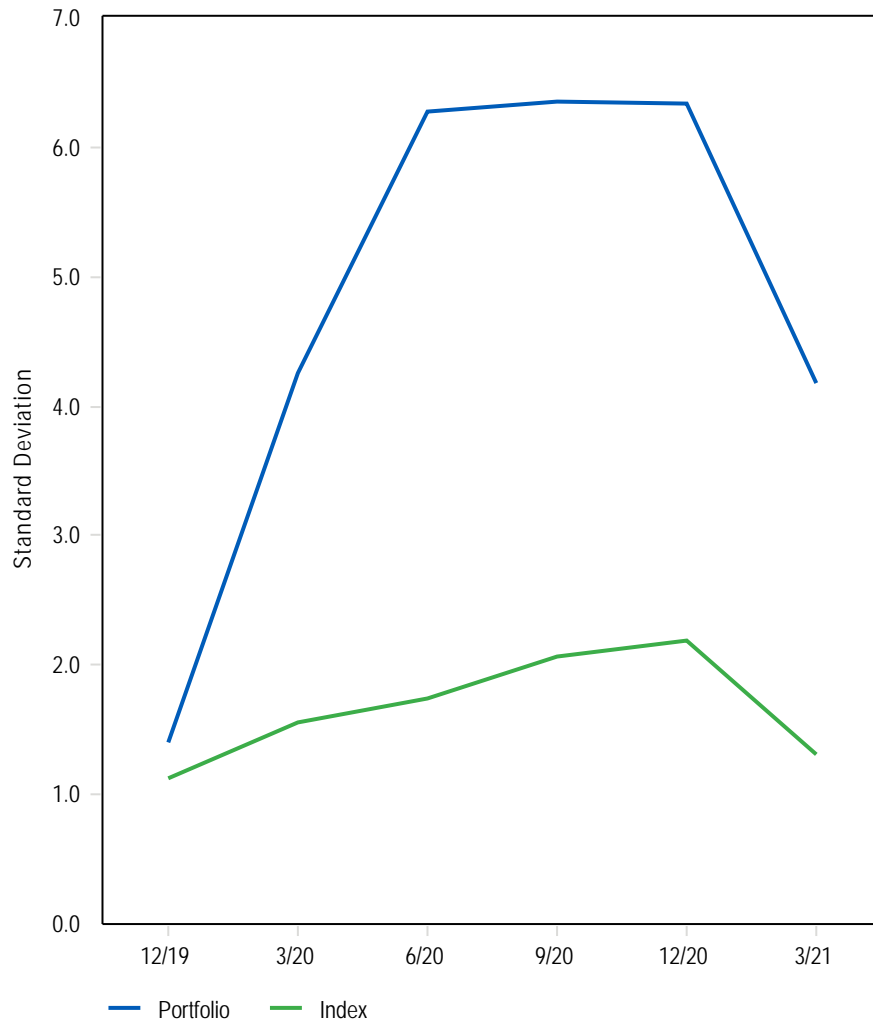
Standard Deviation	2.6	1.1
Alpha	8.1	0.0
Active Return/Risk	3.0	0.0
Tracking Error	2.0	0.0
Information Ratio	3.8	-
Sharpe Ratio	2.9	-0.2

Correlation Statistics

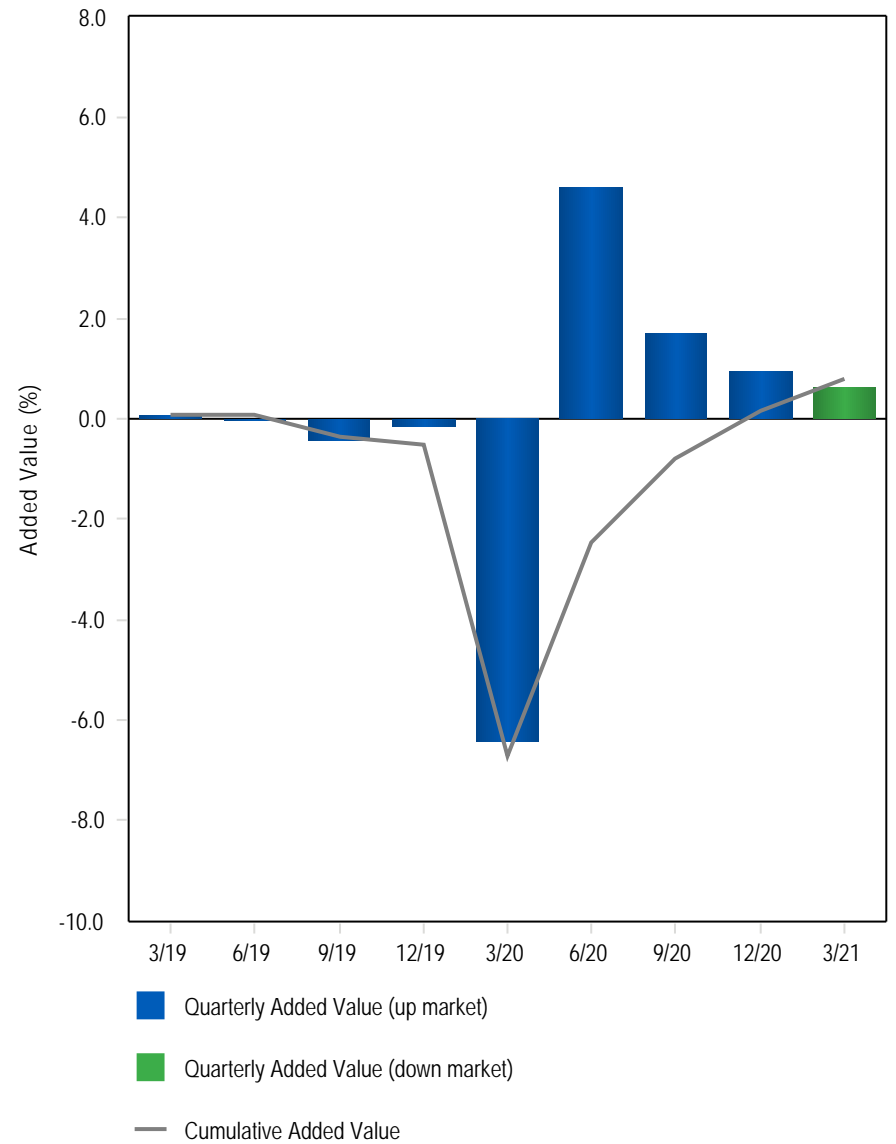
R-Squared	0.4	1.0
Actual Correlation	0.7	1.0



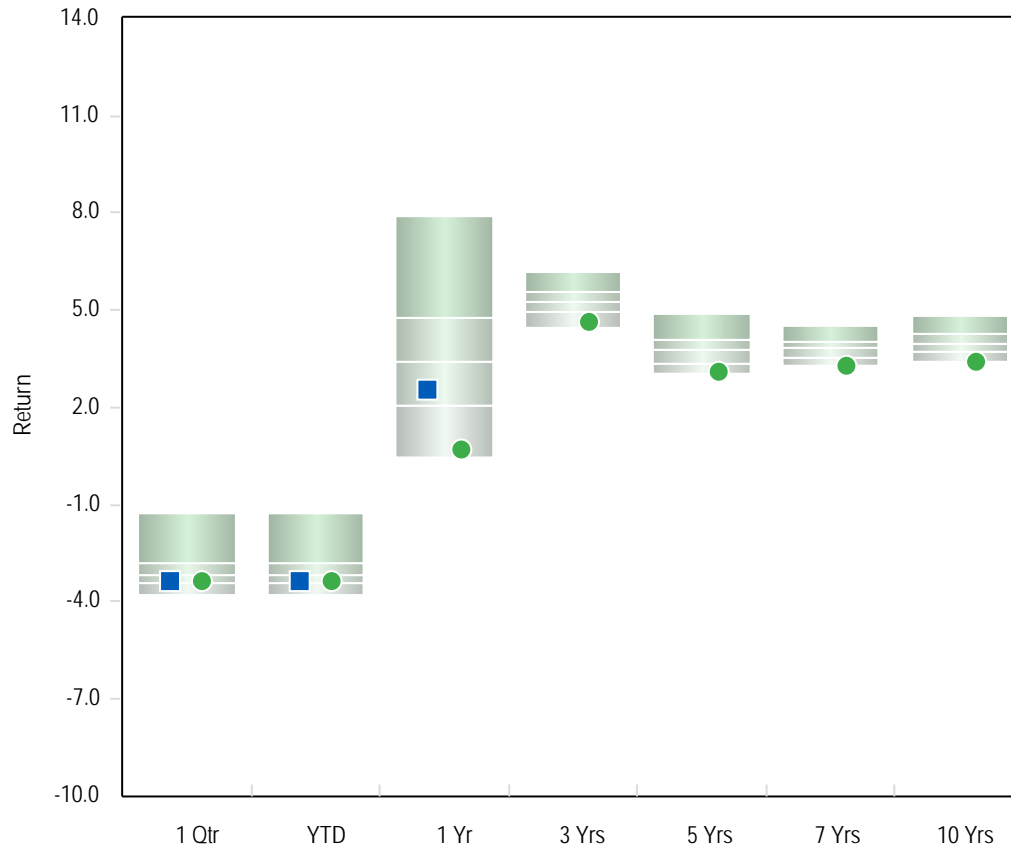
Rolling 1 Year Annualized Standard Deviation



Quarterly and Cumulative Excess Performance



IM U.S. Broad Market Core Fixed Income (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Pugh Capital	-3.4 (70)	-3.4 (70)	2.5 (68)	-	-	-	-
● Blmbg. Barc. U.S. Aggregate	-3.4 (69)	-3.4 (69)	0.7 (92)	4.7 (93)	3.1 (93)	3.3 (94)	3.4 (93)

5th Percentile	-1.3	-1.3	7.9	6.2	4.9	4.5	4.8
1st Quartile	-2.8	-2.8	4.7	5.6	4.1	4.1	4.3
Median	-3.2	-3.2	3.4	5.3	3.8	3.8	4.0
3rd Quartile	-3.4	-3.4	2.0	4.9	3.4	3.5	3.7
95th Percentile	-3.8	-3.8	0.5	4.5	3.1	3.3	3.4

Population	135	135	135	132	130	128	121
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Risk Return Statistics - 1 Year

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	2.5	1.8
Minimum Return	-1.6	-1.4
Return	2.5	0.7
Cumulative Return	2.5	0.7
Active Return	1.8	0.0
Excess Return	2.5	0.6

Risk Summary Statistics

Beta	1.2	1.0
Up Market Capture	135.4	100.0
Down Market Capture	102.2	100.0

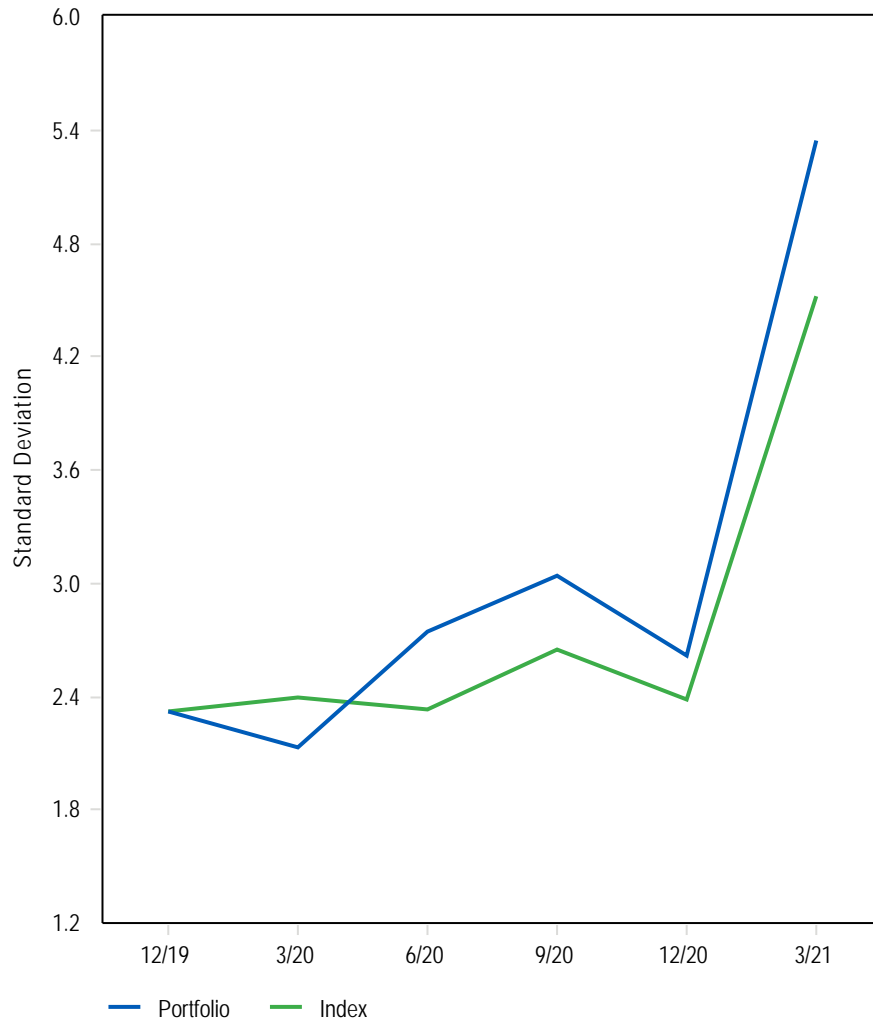
Risk / Return Summary Statistics

Standard Deviation	4.2	3.5
Alpha	1.7	0.0
Active Return/Risk	0.4	0.0
Tracking Error	0.8	0.0
Information Ratio	2.2	-
Sharpe Ratio	0.6	0.2

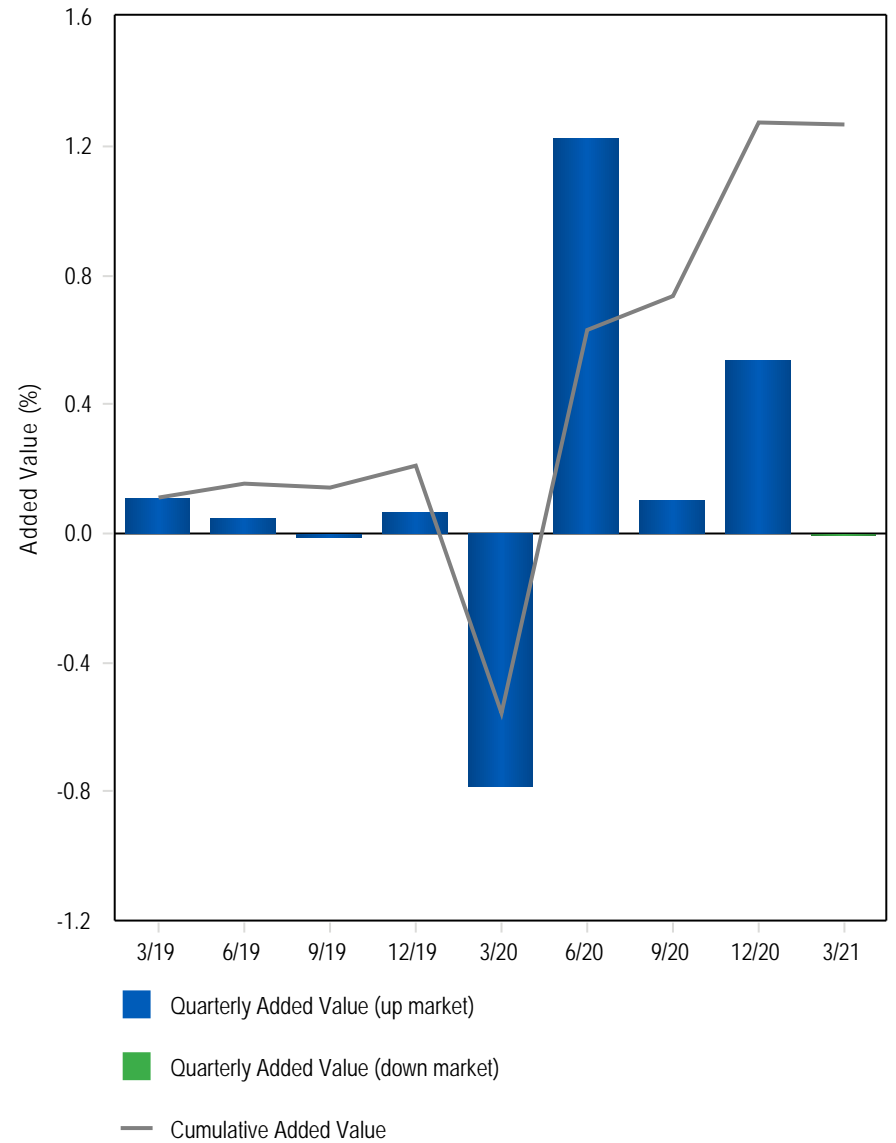
Correlation Statistics

R-Squared	-	1.0
Actual Correlation	-	1.0

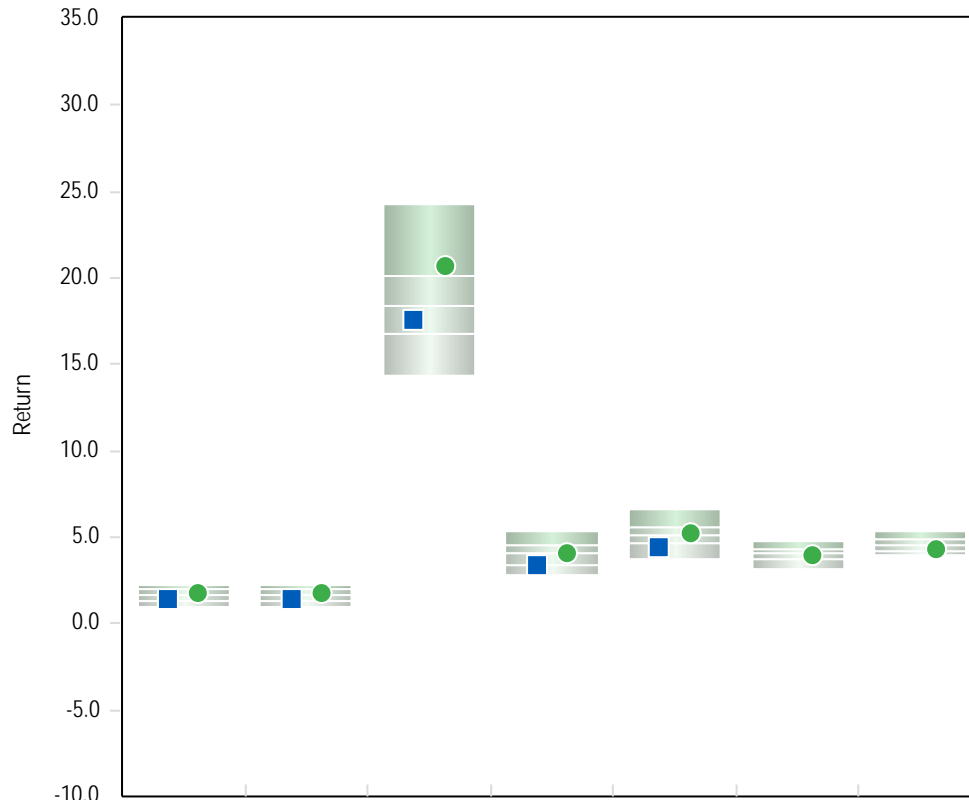
Rolling 1 Year Annualized Standard Deviation



Quarterly and Cumulative Excess Performance



IM U.S. Bank Loans (SA+CF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Voya	1.4 (67)	1.4 (67)	17.6 (59)	3.4 (72)	4.5 (88)	-	-
● S&P/LSTA Leveraged Loan Index	1.8 (42)	1.8 (42)	20.7 (19)	4.1 (45)	5.3 (39)	3.9 (59)	4.3 (73)

5th Percentile	2.3	2.3	24.2	5.4	6.7	4.8	5.4
1st Quartile	2.1	2.1	20.1	4.5	5.6	4.4	4.9
Median	1.7	1.7	18.3	4.0	5.1	4.0	4.5
3rd Quartile	1.4	1.4	16.8	3.4	4.7	3.7	4.2
95th Percentile	1.0	1.0	14.3	2.8	3.8	3.2	4.0

Population	47	47	47	46	44	44	37
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Risk Return Statistics - 5 Years

Return Summary Statistics

	Portfolio	Benchmark
Maximum Return	4.3	4.5
Minimum Return	-11.7	-12.4
Return	4.5	5.3
Cumulative Return	24.4	29.4
Active Return	-0.8	0.0
Excess Return	3.4	4.2

Risk Summary Statistics

Beta	0.9	1.0
Up Market Capture	90.2	100.0
Down Market Capture	98.0	100.0

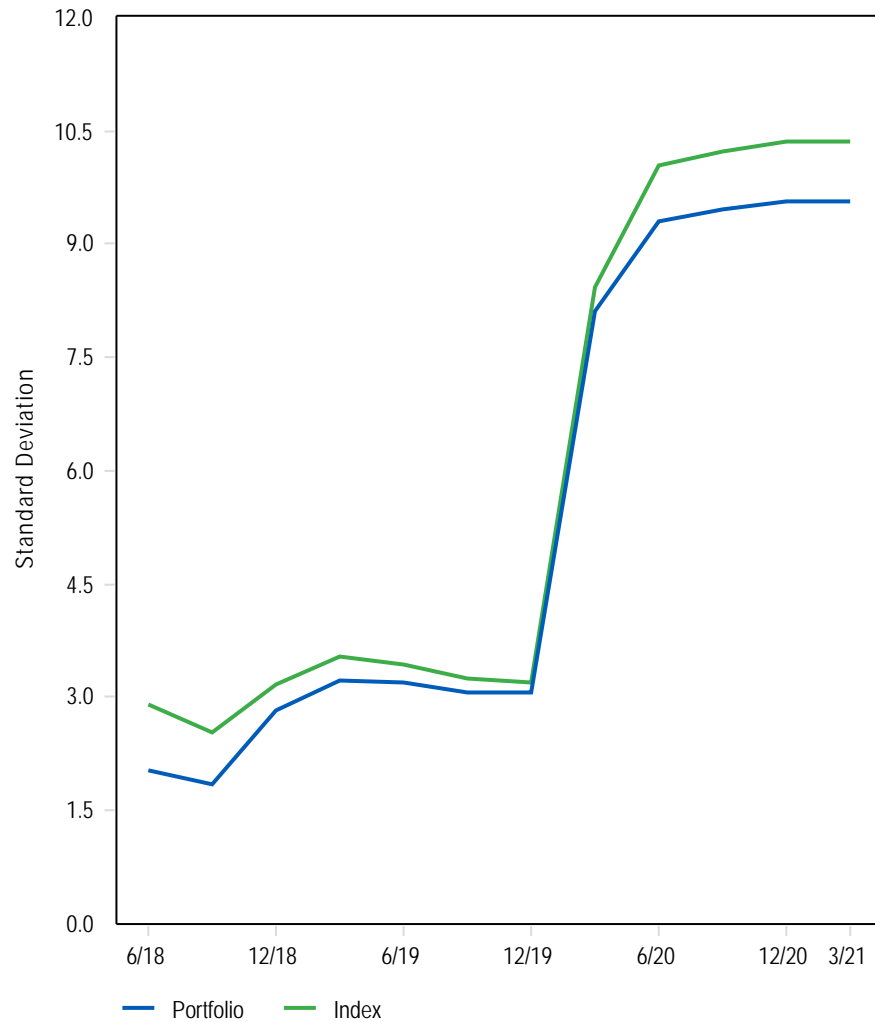
Risk / Return Summary Statistics

Standard Deviation	6.4	6.8
Alpha	-0.5	0.0
Active Return/Risk	-0.1	0.0
Tracking Error	0.7	0.0
Information Ratio	-1.1	-
Sharpe Ratio	0.5	0.6

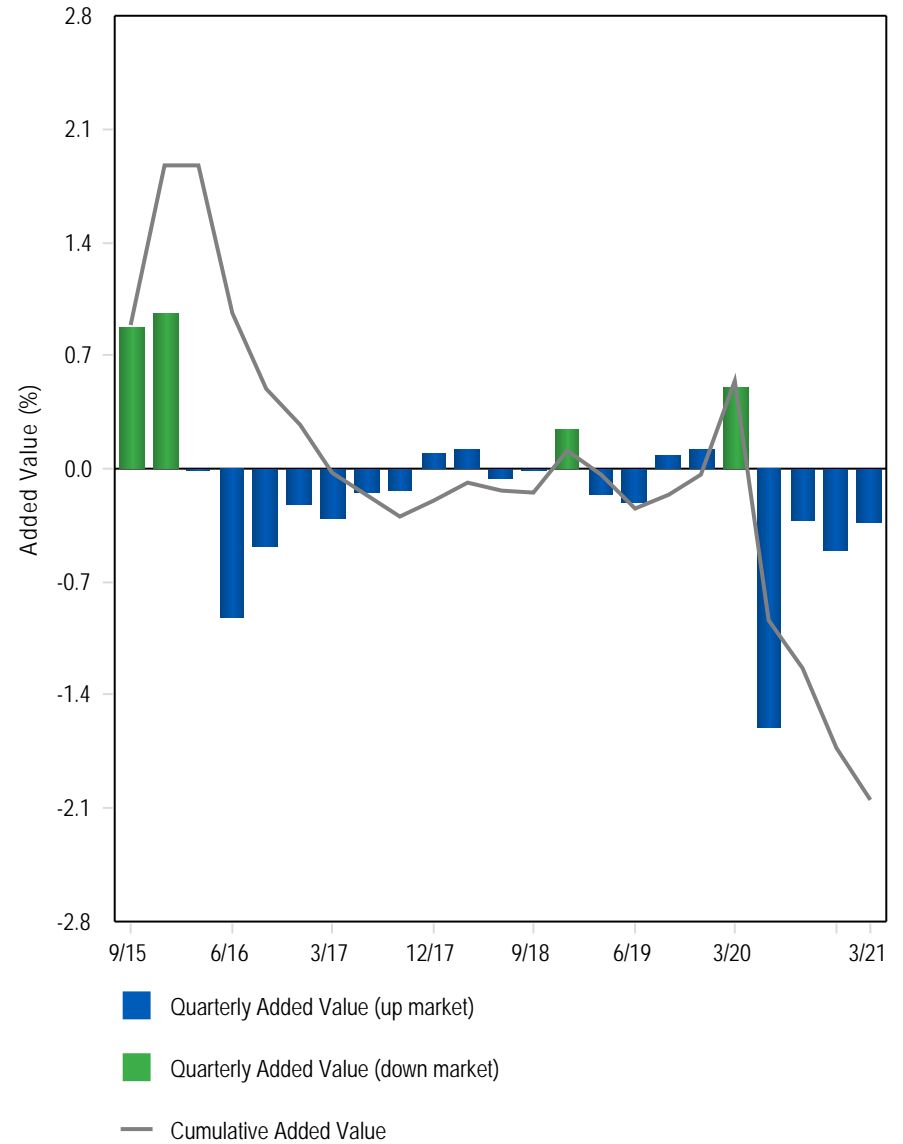
Correlation Statistics

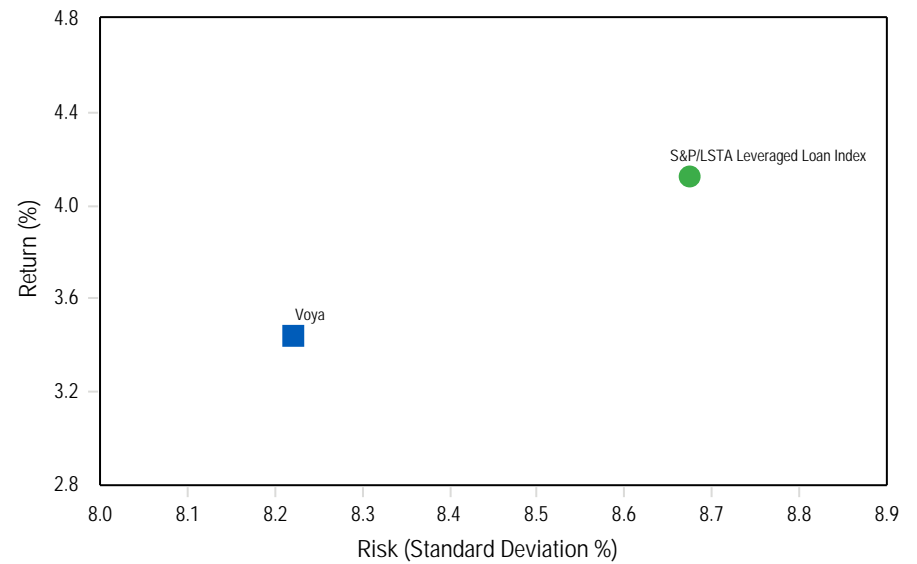
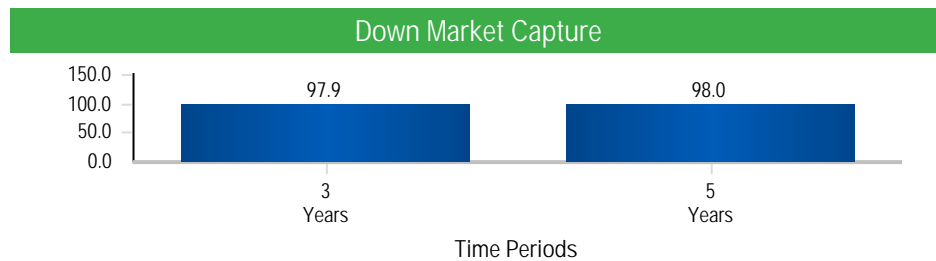
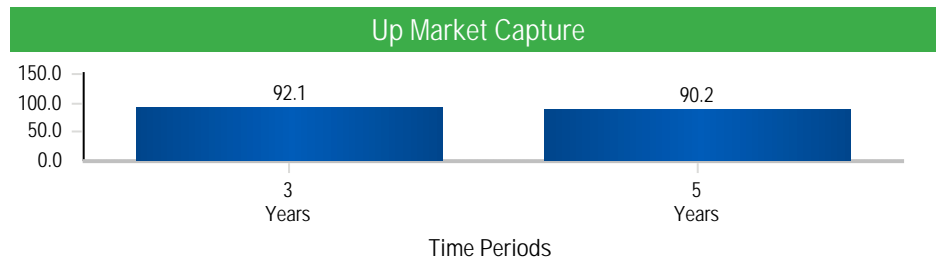
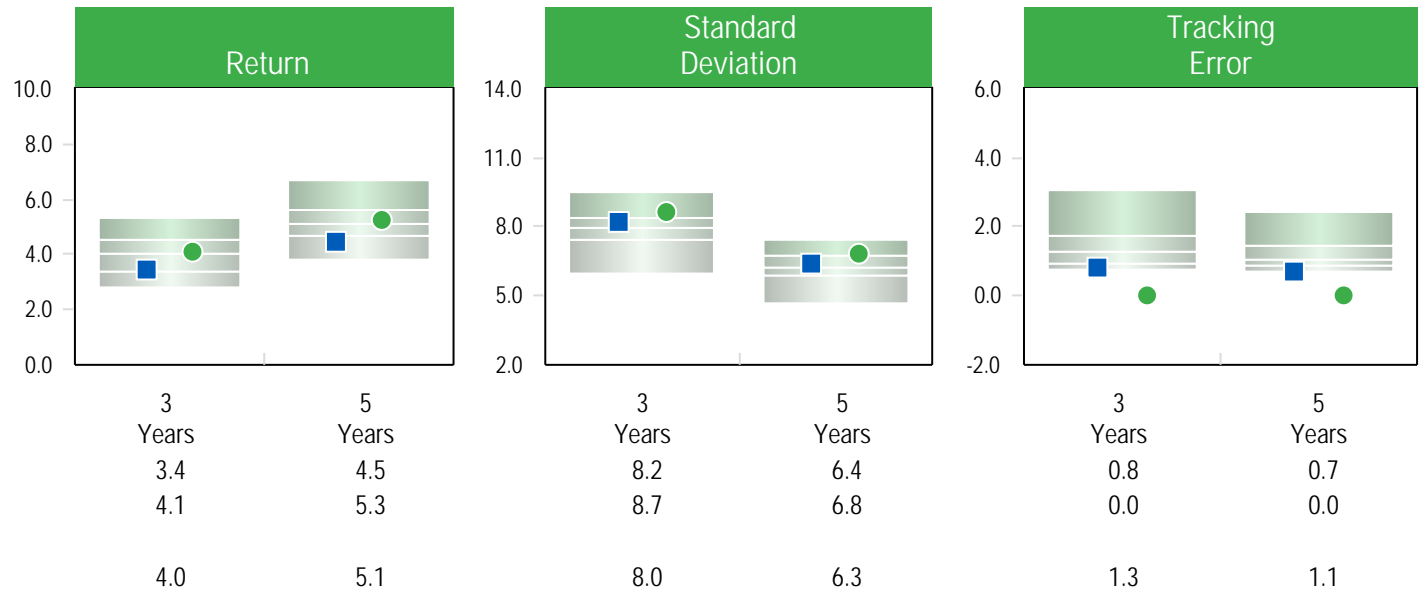
R-Squared	1.0	1.0
Actual Correlation	1.0	1.0

Rolling 3 Years Annualized Standard Deviation



Quarterly and Cumulative Excess Performance



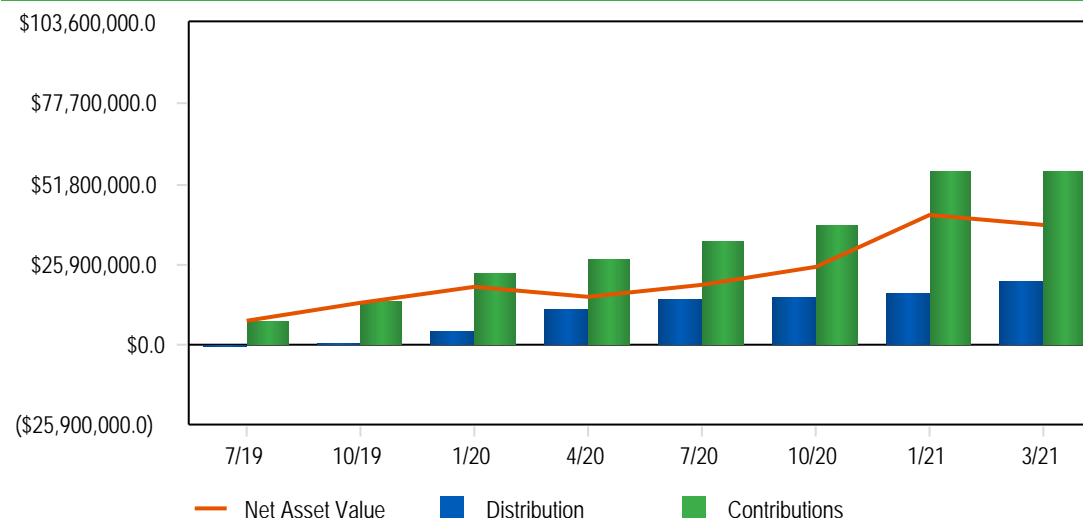


## Private Credit Composite

Cash Flow Summary

Capital Committed:	\$60,000,000
Total Contributions:	\$56,303,006
Remaining Capital Commitment:	\$18,603,956
Total Distributions:	\$20,624,165
Market Value:	\$38,959,187
Inception Date:	07/01/2019
Inception IRR:	9.7
TVPI:	1.1

Cash Flow Analysis



Private Credit Composite

Partnerships	Investment Type	Vintage Year	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple	DPI Multiple
Oaktree Middle-Market Direct Lending Fund, L.P.	Partnership	2019	Structured Finance	20,000,000	14,640,000	4,106,000	11,421,598	12.3	1.1	0.3
Crescent Private Credit Partners	Partnership	2019	Credit	20,000,000	30,663,006	15,256,045	16,537,589	8.1	1.0	0.5
Golub Capital Partners 12, LP	Partnership	2017	Credit	20,000,000	11,000,000	1,262,120	11,000,000	9.9	1.1	0.1
Private Credit Composite	Total Fund		Hybrid	60,000,000	56,303,006	20,624,165	38,959,187	9.7	1.1	0.4



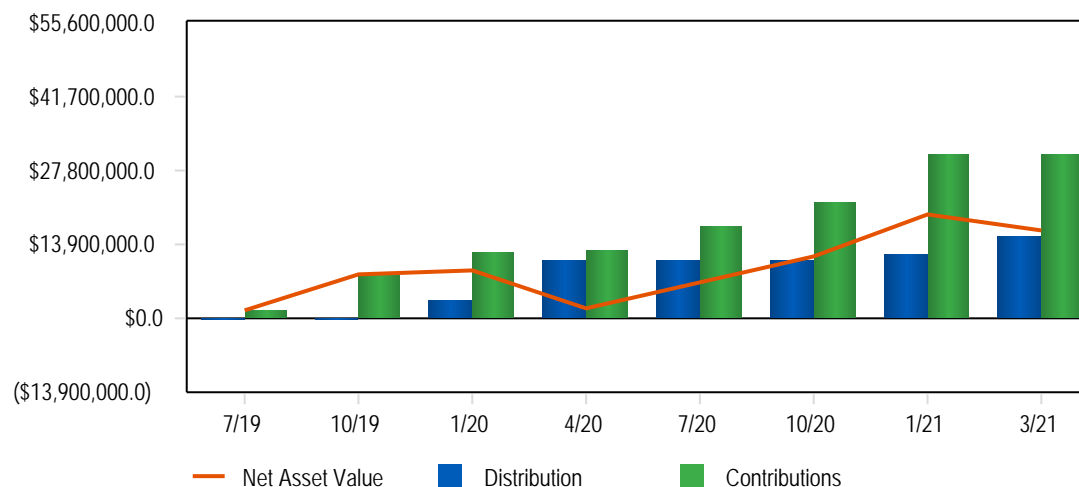
Fund Information

Type of Fund:	Partnership	Vintage Year:	2019
Strategy Type:	Credit	Management Fee:	85bps for 1st closers; 100bps for all other investors. Carried interest of 10% over a hurdle of 6% (unlevered) and 7% (levered).
Preferred Return:	8%	Inception:	04/01/2019
Final Close:	04/01/2020		
Investment Strategy:	Investment Strategy Description: Originate senior debt of middle market companies with a focus on Unitranche securities. Target private equity-backed transactions of companies between \$35-75m of EBITDA. The Fund is U.S. focused and expects to make 20-30 investments. Target returns for investors are 8-10% (unlevered) and 10-13% (levered).		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$30,663,006
Remaining Capital Commitment:	\$1,283,956
Total Distributions:	\$15,256,045
Market Value:	\$16,537,589
Inception Date:	07/18/2019
Inception IRR:	8.1
TVPI:	1.0
DPI:	0.5

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

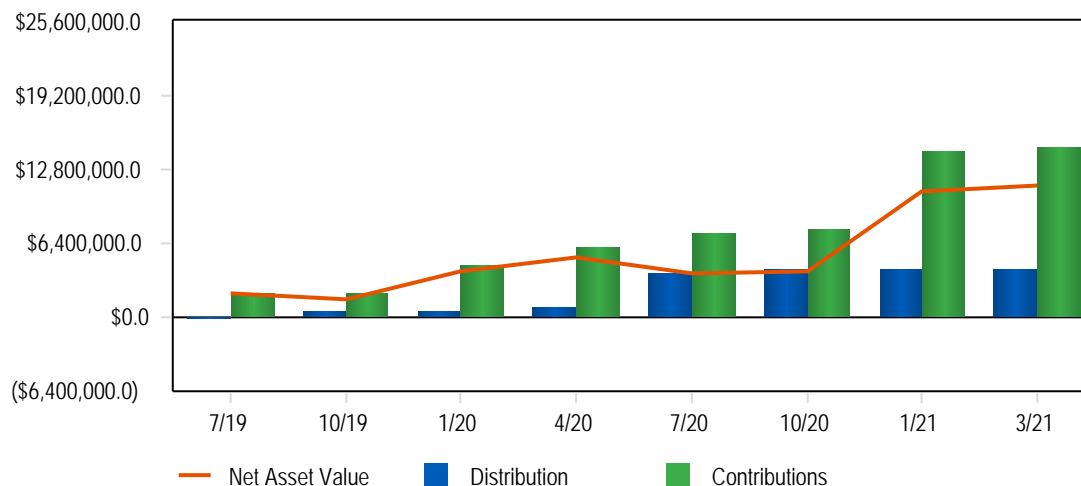
Fund Information

Type of Fund:	Partnership	Vintage Year:	2019
Strategy Type:	Structured Finance	Management Fee:	0.85
Preferred Return:	TBD	Inception:	07/01/2019
Final Close:	June 2019		
Investment Strategy:	The Strategy will only invest in North America with a special focus on sponsored-backed transactions within the lower to core middle market segment. While the strategy will invest flexibly across the capital structure, the portfolio will primarily consist of first lien and unitranche (75%) while the remaining 25% will be comprised of junior debt (second lien/ mezzanine, equity). We take comfort in the fact that Oaktree's private debt team also manages junior debt (Mezzanine) as a stand-alone dedicated business, so we believe this flexible approach to investing lends itself well with the team's expertise and skill set. It also distinguishes this offering from others in the marketplace.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$14,640,000
Remaining Capital Commitment:	\$8,320,000
Total Distributions:	\$4,106,000
Market Value:	\$11,421,598
Inception Date:	07/10/2019
Inception IRR:	12.3
TVPI:	1.1
DPI:	0.3

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

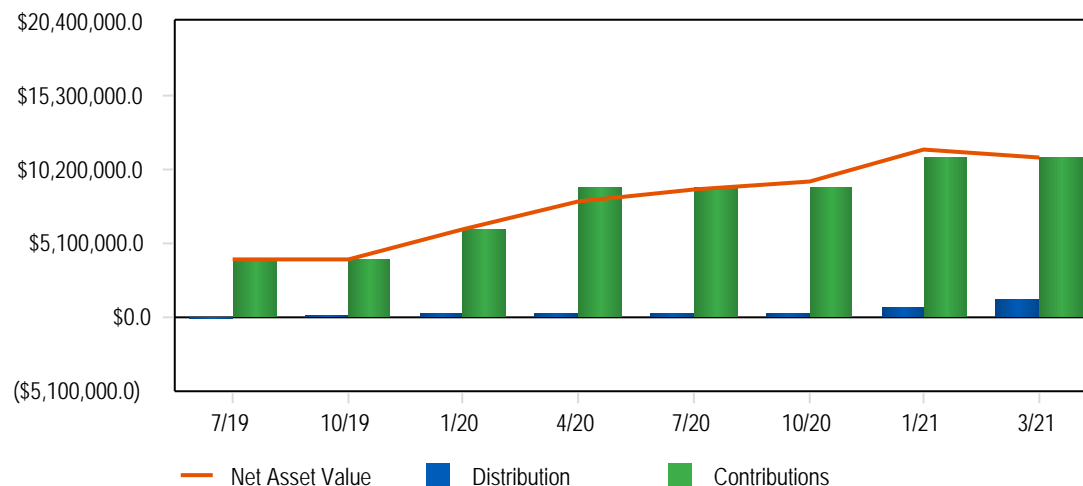
Fund Information

Type of Fund:	Partnership	Vintage Year:	2017
Strategy Type:	Credit	Management Fee:	1.25% of the fair value of the Fund's investments, excluding cash and cash equivalents.
Preferred Return:	8.0%	Inception:	01/01/2017
Final Close:	07/01/2018		
Investment Strategy:	The Fund's primary investment objective is to achieve a high level of current income and attractive risk-adjusted returns, relative to more liquid fixed income alternatives, with an emphasis on the preservation of capital. The Fund seeks to achieve its objectives primarily by obtaining indirect leveraged exposure to: (i) U.S. middle market, senior secured, floating rate loans (and some, usually related, equity co-investments) directly originated by GC Finance; and (ii) secondarily, broadly syndicated loans primarily acquired from unaffiliated third parties (such as middle market and broadly syndicated loans, together, the "Underlying Loans"). The Fund may also invest in opportunistic investments such as corporate debt securities and interests in securitized assets.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$11,000,000
Remaining Capital Commitment:	\$9,000,000
Total Distributions:	\$1,262,120
Market Value:	\$11,000,000
Inception Date:	07/01/2019
Inception IRR:	9.9
TVPI:	1.1
DPI:	0.1

Cash Flow Analysis

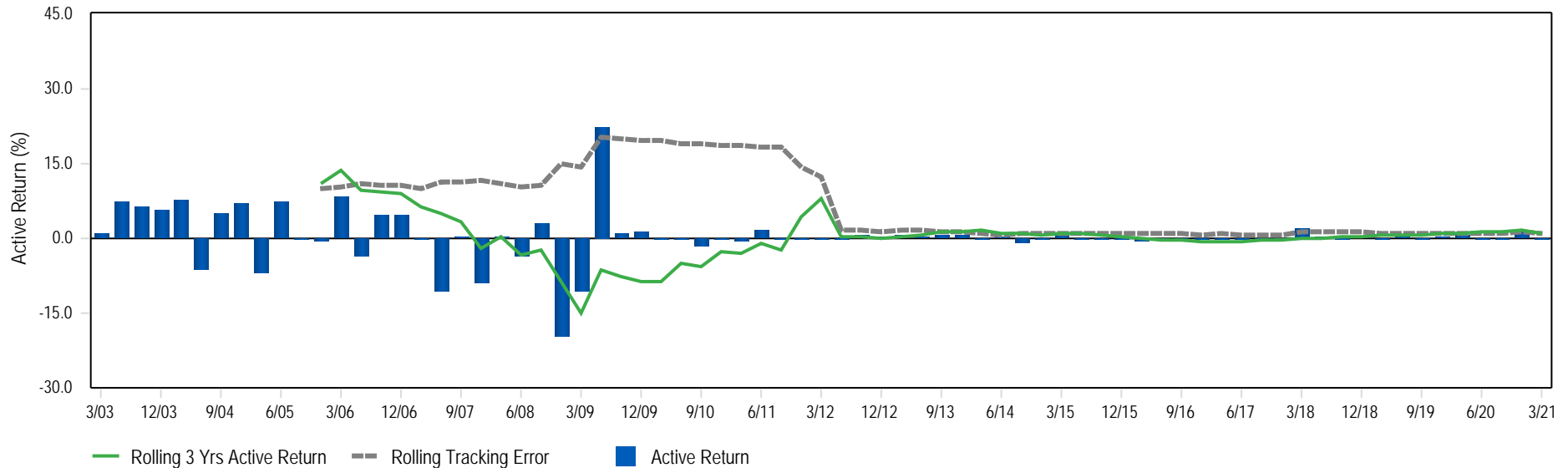


Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

## Public Real Estate Composite

	Gain / Loss				
	1 Quarter	Year To Date	1 Year	3 Years	5 Years
Public Real Estate Composite					
Beginning Market Value	98,610,482	98,610,482	98,251,904	115,485,094	74,532,329
Net Cash Flows	-520,362	-520,362	-2,052,879	-33,018,452	-6,018,452
Income					
Gain/Loss	2,051,774	2,051,774	3,942,870	17,675,253	31,628,017
Ending Market Value	100,141,895	100,141,895	100,141,895	100,141,895	100,141,895

Rolling Return and Tracking Error



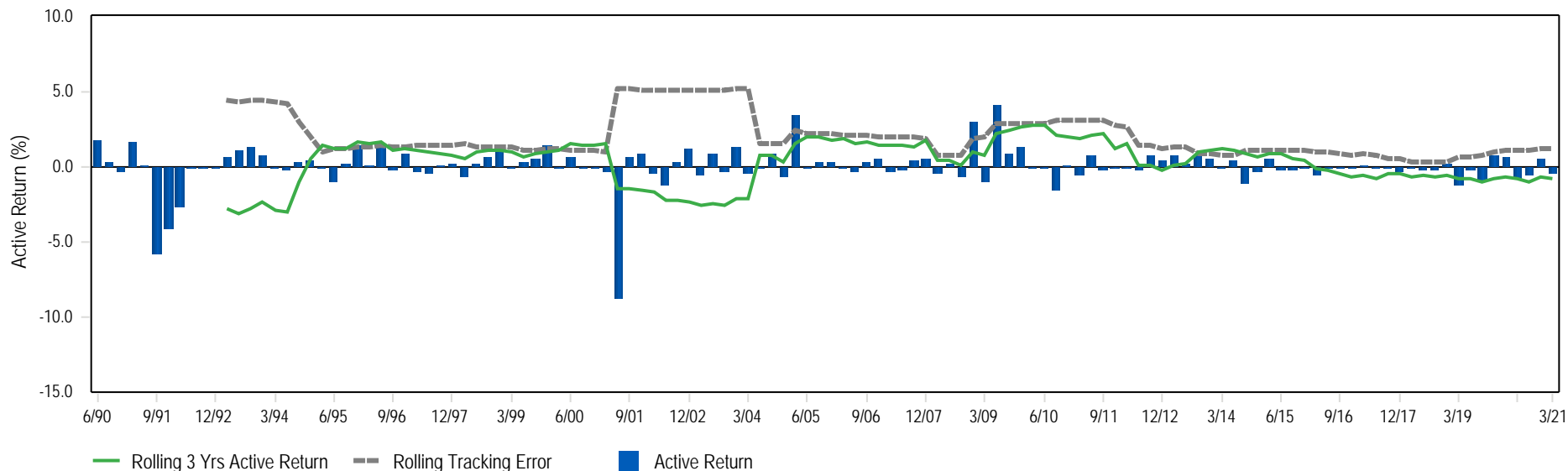
Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Public Real Estate Composite	2.1	2.1	4.1	6.5	7.5	9.0	10.6
NCREIF ODCE Equal Weighted	2.3	2.3	2.9	5.3	6.5	8.5	9.8
Difference	-0.2	-0.2	1.2	1.2	1.0	0.5	0.8

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
JP Morgan SPF					
Beginning Market Value	46,574,303	46,574,303	46,639,840	86,864,519	74,532,329
Net Cash Flows				-46,000,000	-46,000,000
Income					
Gain/Loss	865,006	865,006	799,468	6,574,790	18,906,979
Ending Market Value	47,439,309	47,439,309	47,439,309	47,439,309	47,439,309

Rolling Return and Tracking Error



Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
JP Morgan SPF	1.9	1.9	1.7	4.5	5.8	7.8	9.7
NCREIF ODCE Equal Weighted	2.3	2.3	2.9	5.3	6.5	8.5	9.8
Difference	-0.4	-0.4	-1.2	-0.8	-0.7	-0.7	-0.1

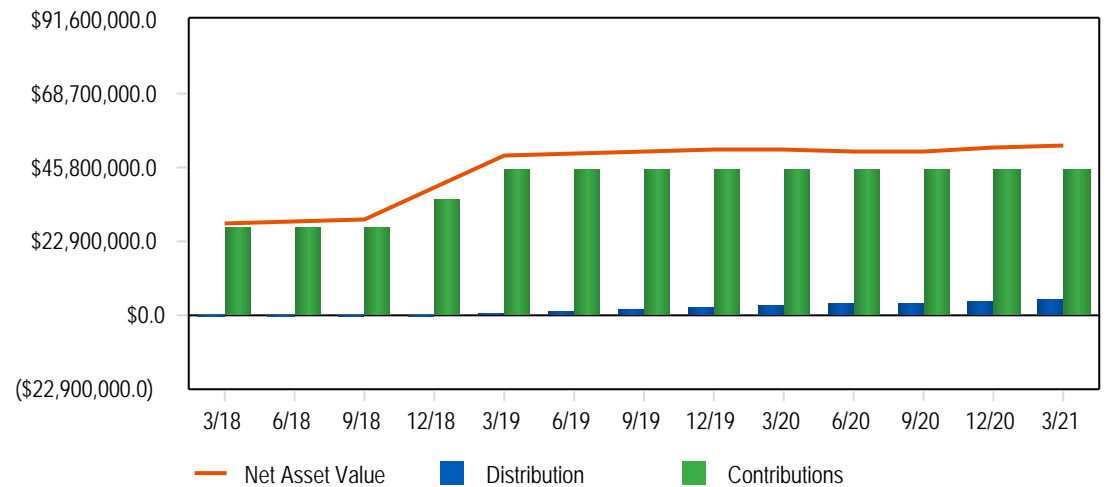
Fund Information

Type of Fund:	Partnership	Vintage Year:	2015
Strategy Type:	Core Real Estate	Management Fee:	70bps management fee in perpetuity on first \$750M of capital committed
Preferred Return:		Inception:	02/01/2018
Final Close:			
Investment Strategy:	Build and operate a first-class portfolio of institutional quality real estate assets and generate consistent top quartile performance versus the NFI-ODCE.		

Cash Flow Summary

Capital Committed:	\$45,000,000
Total Contributions:	\$45,000,000
Remaining Capital Commitment:	
Total Distributions:	\$5,018,452
Market Value:	\$52,702,586
Inception Date:	03/29/2018
Inception IRR:	9.9
TVPI:	1.3
DPI:	0.1

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

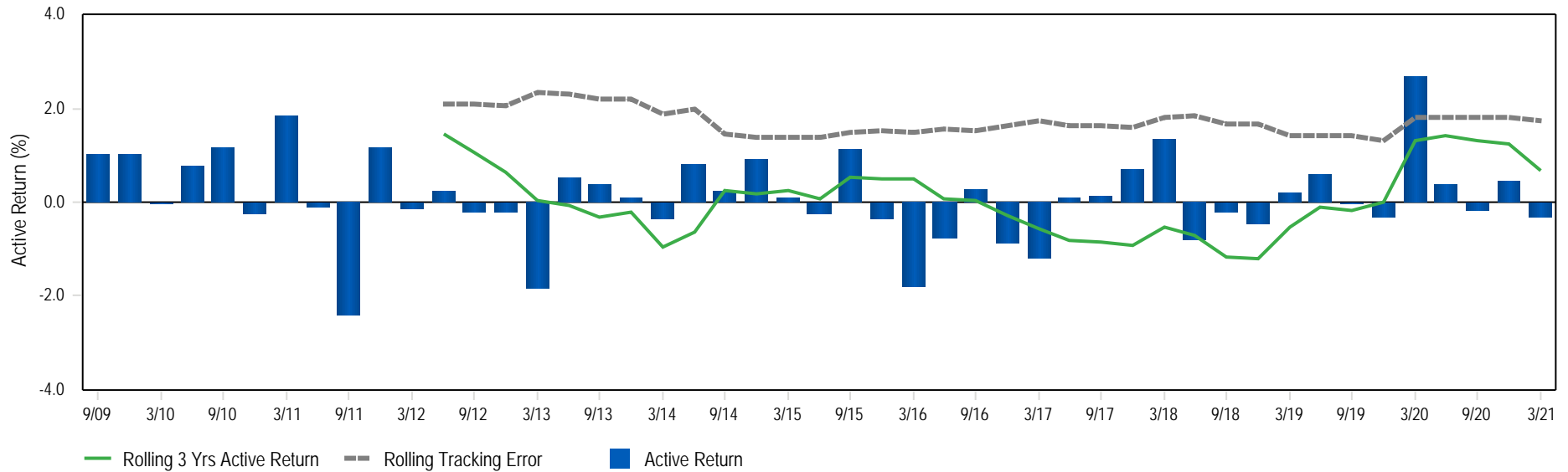
## REIT Composite



Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
REIT Composite					
Beginning Market Value	39,561,440	39,561,440	31,963,793	39,073,571	68,107,859
Net Cash Flows	-56,389	-56,389	-1,056,389	-9,056,389	-38,474,727
Income					
Gain/Loss	3,377,883	3,377,883	11,975,530	12,865,752	13,249,802
Ending Market Value	42,882,934	42,882,934	42,882,934	42,882,934	42,882,934

Rolling Return and Tracking Error



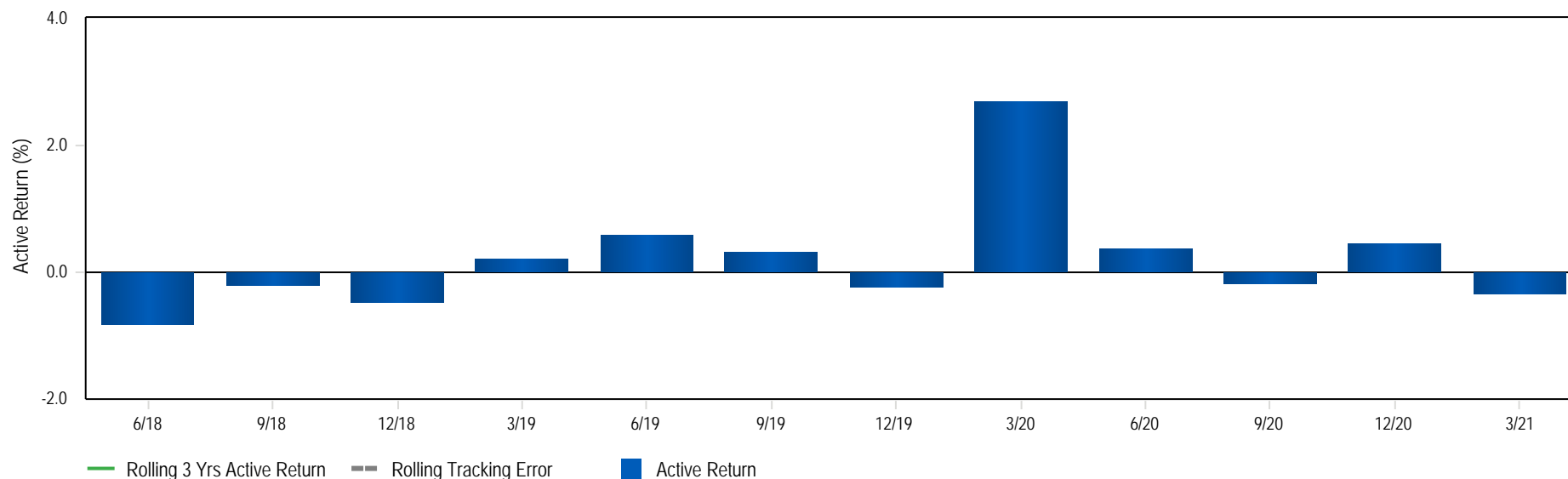
Performance

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
REIT Composite	8.5	8.5	38.1	10.5	5.9	8.2	8.6
FTSE NAREIT Equity REIT Index	8.9	8.9	37.8	9.5	5.3	7.7	8.6
Difference	-0.4	-0.4	0.3	1.0	0.6	0.5	0.0

Gain / Loss

	1 Quarter	Year To Date	1 Year	3 Years	5 Years
CenterSquare U.S. Real Estate Securities					
Beginning Market Value	39,561,440	39,561,440	31,963,793	39,073,571	
Net Cash Flows	-56,389	-56,389	-1,056,389	-9,056,389	
Income					
Gain/Loss	3,377,883	3,377,883	11,975,530	12,865,752	
Ending Market Value	42,882,934	42,882,934	42,882,934	42,882,934	

Rolling Return and Tracking Error



Performance

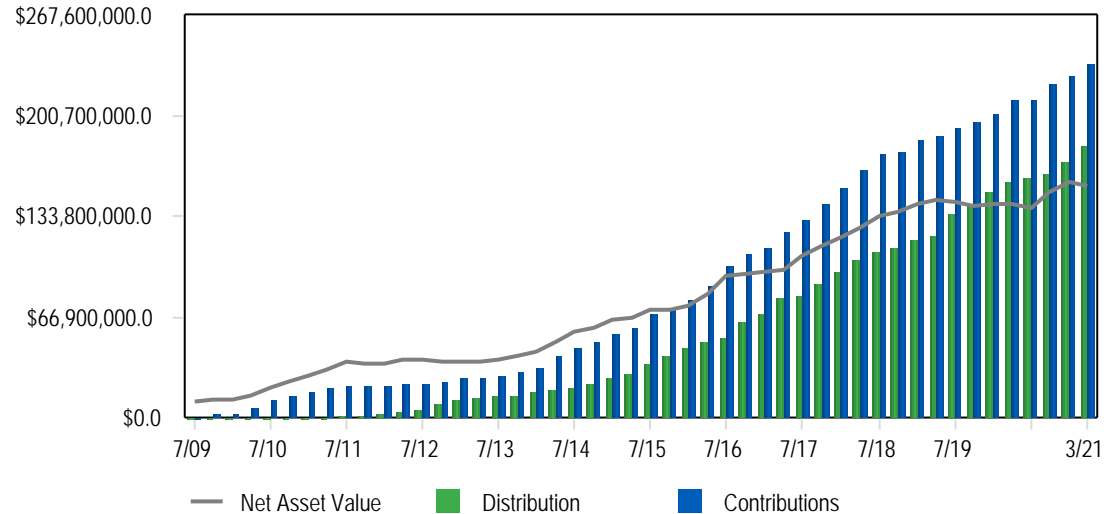
	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
CenterSquare U.S. Real Estate Securities	8.5	8.5	38.1	10.7			
FTSE NAREIT Equity REIT Index	8.9	8.9	37.8	9.5	5.3	7.7	8.6
Difference	-0.4	-0.4	0.3	1.2			

## Private Real Estate Composite

Cash Flow Summary

Capital Committed:	\$295,500,000
Total Contributions:	\$256,686,988
Remaining Capital Commitment:	\$83,243,846
Total Distributions:	\$198,600,168
Market Value:	\$154,865,241
Inception Date:	07/31/2009
Inception IRR:	14.6
TVPI:	1.4

Cash Flow Analysis



Private Real Estate Portfolio

Partnerships	Investment Type	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple
Allegis	Other	Value-Add Real Estate	9,000,000	9,198,106	11,338,326		2.5	1.2
JMB/Heitman					12,899,287		0.0	0.0
TA Realty Fund IX	Partnership	Value-Add Real Estate	20,000,000	20,000,000	32,042,003		10.4	1.6
Heitman Value Partners			9,000,000	8,928,416	11,953,445		6.3	1.3
AEW Partners V	Partnership	Opportunistic Real Estate	5,000,000	4,473,871	4,915,387	7,689	2.0	1.1
AG Core Plus Realty Fund III, L.P.	Partnership	Core Real Estate	10,000,000	9,457,227	14,947,467	772,532	18.5	1.7
TA Realty Fund X	Partnership	Value-Add Real Estate	7,500,000	7,501,451	11,291,244	813,543	12.7	1.6
Heitman Value Partners III	Partnership	Value-Add Real Estate	20,000,000	18,851,068	24,023,249	2,065,486	14.5	1.4
Westport Real Estate Fund V			20,000,000	3,400,000		3,400,000	0.0	1.0
Northwood RE Partners VIII	Partnership	Value-Add Real Estate	20,000,000	12,567,430	4,907,432	6,896,663	-4.8	0.9
AG Realty Value Fund X	Partnership	Value-Add Real Estate	20,000,000	9,297,721		10,117,574	9.3	1.1
TA Realty Fund XII	Partnership	Value-Add Real Estate	20,000,000	12,000,000	423,170	10,572,029	-17.2	0.9
Heitman Value Partners IV	Direct	Value-Add Real Estate	20,000,000	11,127,148	2,385,966	10,669,543	12.0	1.2
Westport Real Estate Fund IV	Partnership	Opportunistic Real Estate	20,000,000	32,336,000	25,818,967	16,059,466	8.5	1.3
Northwood Real Estate Partners IV	Partnership	Value-Add Real Estate	20,000,000	25,501,890	18,974,540	20,617,215	13.5	1.6

Partnerships	Investment Type	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple
AG Realty Fund IX	Partnership	Opportunistic Real Estate	25,000,000	23,318,273	7,092,368	23,356,356	8.2	1.3
AG Core Plus Realty Fund IV, L.P. PE version	Partnership	Value-Add Real Estate	25,000,000	23,728,387	6,312,500	23,578,019	7.3	1.3
TA Realty Fund XI	Partnership	Value-Add Real Estate	25,000,000	25,000,000	9,274,818	25,939,126	10.5	1.4
Private Real Estate Composite	Total Fund	Hybrid	295,500,000	256,686,988	198,600,168	154,865,241	14.6	1.4

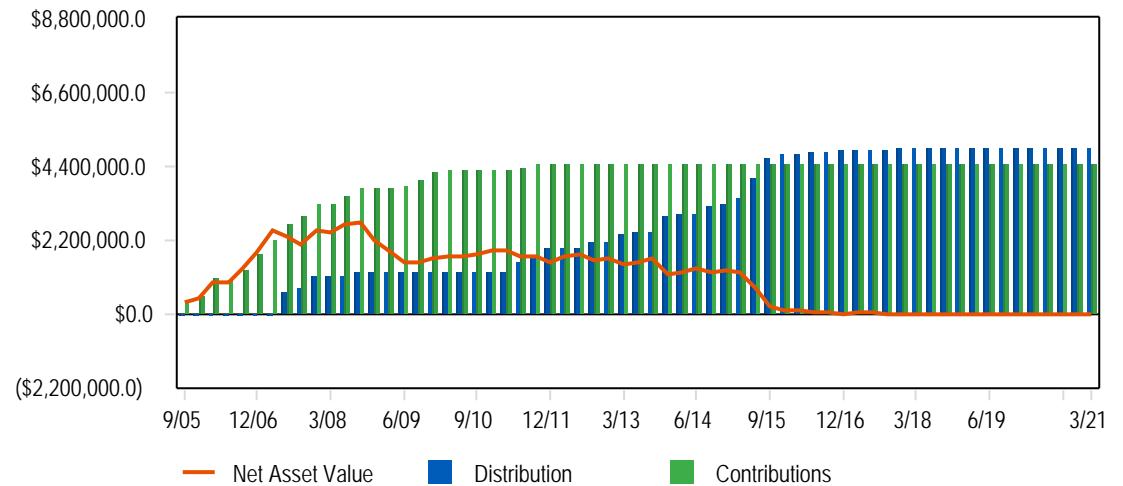
Fund Information

Type of Fund:	Partnership	Vintage Year:	2005
Strategy Type:	Opportunistic Real Estate	Management Fee:	1.25% of committed capital
Preferred Return:	50%/50% over 9% until 80%/20%	Inception:	03/01/2005
Final Close:	03/31/2006		
Investment Strategy:	AEW Partners V, LP will seek to earn risk adjusted returns by identifying and capitalizing on inefficiencies and arbitrage opportunities in the real estate and capital markets and also engaging in development of assets or the acquisition of under performing assets and actively manage these assets' capitalization, market positioning, leasing and operation in order to maximize value.		

Cash Flow Summary

Capital Committed:	\$5,000,000
Total Contributions:	\$4,473,871
Remaining Capital Commitment:	\$514,506
Total Distributions:	\$4,915,387
Market Value:	\$7,689
Inception Date:	08/30/2005
Inception IRR:	2.0
TVPI:	1.1
DPI:	1.1

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

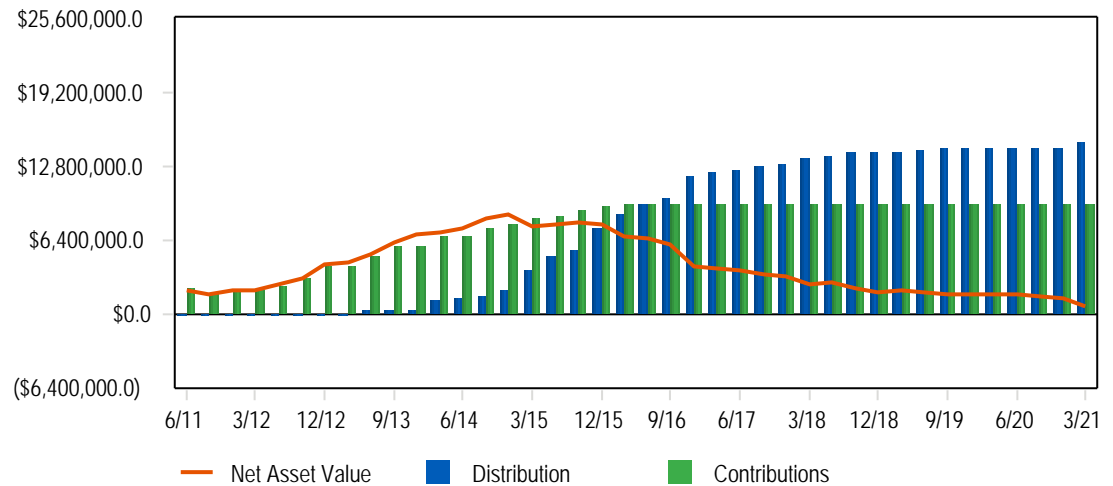
Fund Information

Type of Fund:	Partnership	Vintage Year:	2011
Strategy Type:	Core Real Estate	Management Fee:	0.75% of unfunded capital during the commitment period; 1.5% of net funded capital for investors < \$10 million or 1.25% of net funded capital for investors = \$10 million
Preferred Return:	8%	Inception:	12/13/2010
Final Close:	03/30/2012		
Investment Strategy:	The fund's investment strategy is to acquire equity interests in high-quality in-fill assets which are likely to appreciate over time. The Fund will focus on sub-performing office, retail, apartment and industrial real estate, predominantly located in the largest U.S. markets, where sub-performance can be corrected with relatively low risk. The firm typically purchases assets from owners who lack the capital, the patience or the expertise to improve cash flow and value.		

Cash Flow Summary

Capital Committed:	\$10,000,000
Total Contributions:	\$9,457,227
Remaining Capital Commitment:	\$2,126,530
Total Distributions:	\$14,947,467
Market Value:	\$772,532
Inception Date:	06/20/2011
Inception IRR:	18.5
TVPI:	1.7
DPI:	1.6

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

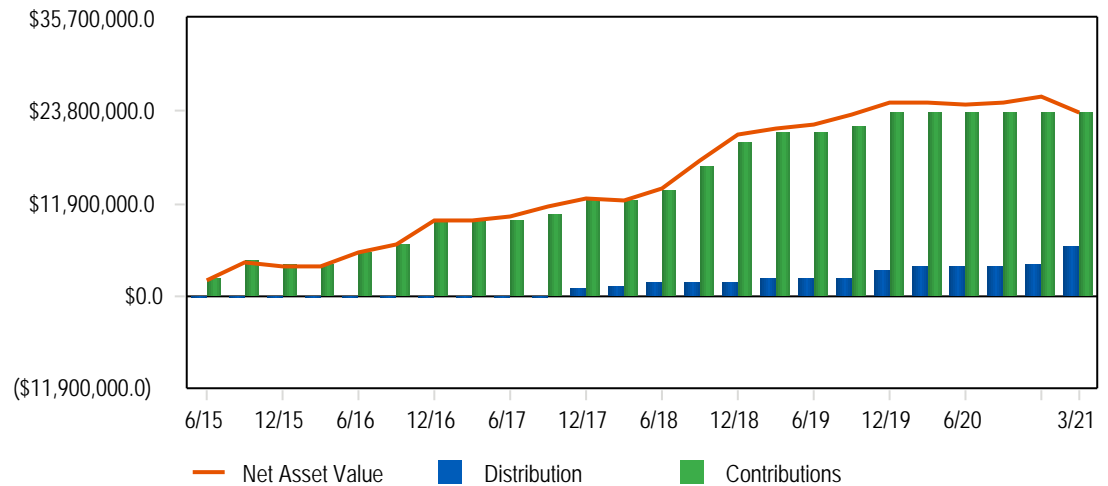
Fund Information

Type of Fund:	Partnership	Vintage Year:	2015
Strategy Type:	Value-Add Real Estate	Management Fee:	1.0% on committed plus 1.5% of net invested capital during the IP, 1.5% thereafter.
Preferred Return:	8%	Inception:	10/30/2014
Final Close:	11/24/2015		
Investment Strategy:	The fund's investment strategy is to acquire equity interests in high-quality in-fill assets which are likely to appreciate over time. The Fund will focus on sub-performing office, retail, apartment and industrial real estate, predominantly located in the largest U.S. markets, where sub-performance can be corrected with relatively low risk. The firm typically purchases assets from owners who lack the capital, the patience or the expertise to improve cash flow and value.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$23,728,387
Remaining Capital Commitment:	\$2,183,125
Total Distributions:	\$6,312,500
Market Value:	\$23,578,019
Inception Date:	06/23/2015
Inception IRR:	7.3
TVPI:	1.3
DPI:	0.3

Cash Flow Analysis



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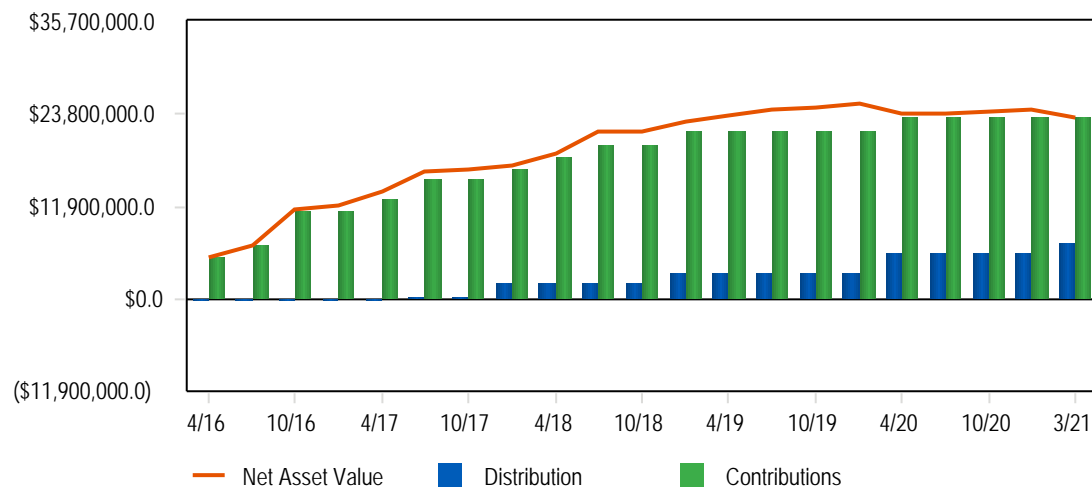
Fund Information

Type of Fund:	Partnership	Vintage Year:	2015
Strategy Type:	Opportunistic Real Estate	Management Fee:	1.5% on committed plus 1.5% of net invested capital during the IP, 1.5% thereafter.
Preferred Return:	9%	Inception:	12/08/2014
Final Close:	6/30/2016		
Investment Strategy:	The fund's investment strategy is to acquire sub-performing and distressed real estate assets which Angelo, Gordon believes can benefit from its value-add approach to repositioning and stabilizing properties. The firm typically purchases assets from owners who lack the capital, the patience or the expertise to improve cash flow and value. The assets are often attractively priced due to the lack of current cash flow, difficulty in obtaining debt financing, complexity of analysis and inefficiency of the sale process.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$23,318,273
Remaining Capital Commitment:	\$2,912,500
Total Distributions:	\$7,092,368
Market Value:	\$23,356,356
Inception Date:	04/29/2016
Inception IRR:	8.2
TVPI:	1.3
DPI:	0.3

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

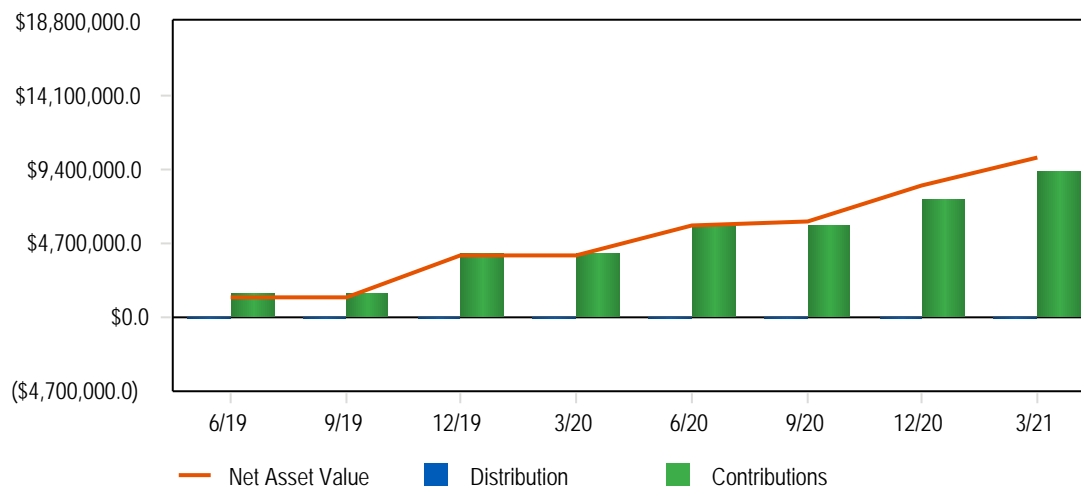
Fund Information

Type of Fund:	Partnership	Vintage Year:	2018
Strategy Type:	Value-Add Real Estate	Management Fee:	1.0% on unfunded commitment, 1.5% on funded commitments during investment period; 1.5% on funded commitments thereafter
Preferred Return:	8%	Inception:	08/01/2018
Final Close:	05/10/2019		
Investment Strategy:	Over the life of the Fund, Angelo Gordon will pursue strategies from light value add (improved operations, lease-up, renovation) to heavy value add (major repositioning, change of use, and ground-up development). Ground-up development is undertaken very infrequently and only where risk can be mitigated. The Fund's strategy emphasizes the purchase of underperforming and undervalued real estate assets, which they believe can benefit from active asset management to reposition and stabilize properties. The firm typically purchases assets from owners who lack the capital, patience, incentives or expertise to improve cash flow and value. The assets are often attractively priced due to the lack of current cash flow, difficulty in obtaining debt financing, complexity of execution, and/or inefficiency of the sale process. Due to AG's bottom up approach, there are no specific property sector or geographic targets and no restrictions. However, AG is very mindful of diversification and is careful not to become overly concentrated in any one area or property type. With regard to geographic diversification, AG will focus on the largest markets within the US, as they like to have a liquid market in which to exit their assets. As with prior Realty funds, AG Realty Value Fund X, will have an allocation to Europe and Asia of up to 20%.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$9,297,721
Remaining Capital Commitment:	\$10,550,000
Total Distributions:	
Market Value:	\$10,117,574
Inception Date:	06/10/2019
Inception IRR:	9.3
TVPI:	1.1
DPI:	0.0

Cash Flow Analysis



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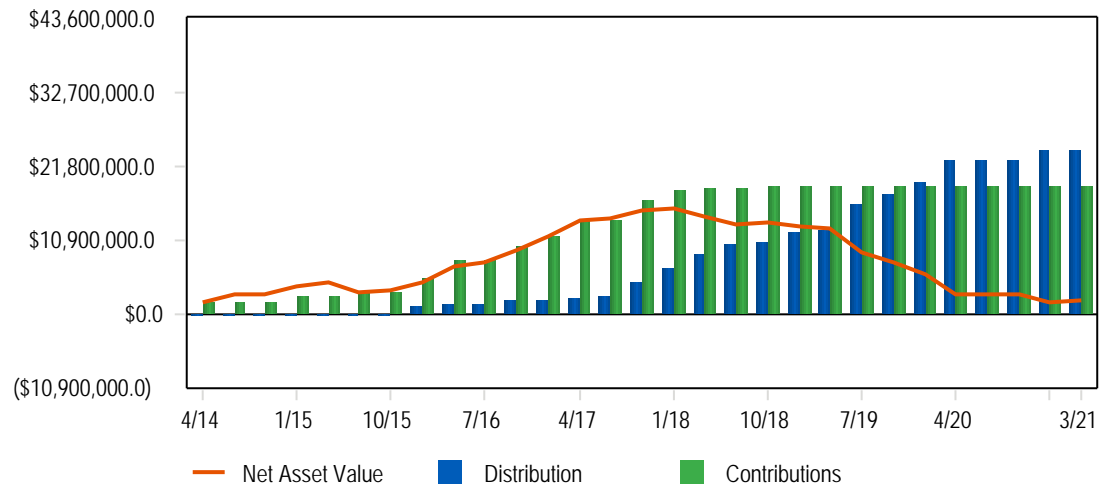
Fund Information

Type of Fund:	Partnership	Vintage Year:	2013
Strategy Type:	Value-Add Real Estate	Management Fee:	0.90% of Invested Capital Base
Preferred Return:	9%	Inception:	07/25/2013
Final Close:	04/25/2015		
Investment Strategy:	To construct a diversified portfolio of assets and property-level joint ventures with strong operating partners through value creation strategies focused on physical, operational or financial transformation of assets. The Fund will invest across all property types, including a meaningful exposure to specialty assets. We expect the Fund to deliver a high component of income to investors while generating attractive mid-teen returns.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$18,851,068
Remaining Capital Commitment:	\$4,927,175
Total Distributions:	\$24,023,249
Market Value:	\$2,065,486
Inception Date:	04/22/2014
Inception IRR:	14.5
TVPI:	1.4
DPI:	1.3

Cash Flow Analysis



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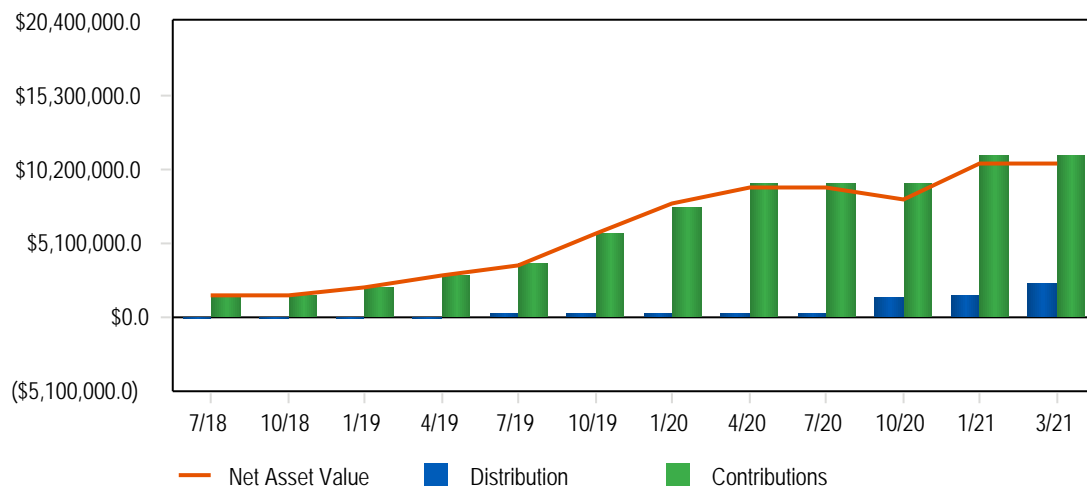
Fund Information

Type of Fund:	Direct	Vintage Year:	2018
Strategy Type:	Value-Add Real Estate	Management Fee:	125 bps on assets < \$75m, 100 bps on assets equal to or > \$75m, 85 bps on assets equal to or > \$150m, 20% of profit only after investors receive an IRR of 9%, no catch up
Preferred Return:	9%	Inception:	02/01/2018
Final Close:	3/20/19		
Investment Strategy:	The objective of the Fund is to provide investors with attractive risk-adjusted returns of 12-14%, net of all fees and other sponsor compensation (14%-16% gross). The strategy seeks to capitalize on utilization of Heitman’s extensive research, real estate and capital markets expertise to identify emerging investment opportunities and trends before they are fully appreciated by the broader market and to execute investment strategies that capitalize on those opportunities.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$11,127,148
Remaining Capital Commitment:	\$9,055,775
Total Distributions:	\$2,385,966
Market Value:	\$10,669,543
Inception Date:	07/23/2018
Inception IRR:	12.0
TVPI:	1.2
DPI:	0.2

Cash Flow Analysis



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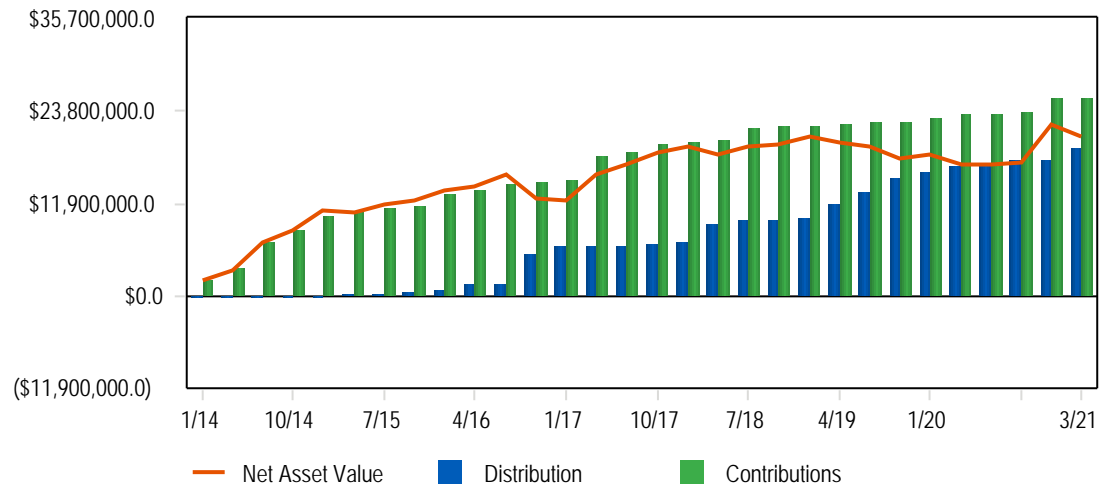
Fund Information

Type of Fund:	Partnership	Vintage Year:	2013
Strategy Type:	Value-Add Real Estate	Management Fee:	2% for first 5 years; 1% thereafter.
Preferred Return:	6%	Inception:	08/01/2007
Final Close:	12/31/2013		
Investment Strategy:	Northwood opportunistically pursues real estate investments on a global basis by investing in various levels of the capital structures of real estate assets and companies, with a particular focus on major metropolitan areas of the U.S. and super-regional markets in Europe. Within these markets, Northwood focuses on assembling a portfolio that is diversified across multiple property types and fits the investment strategy of seeking investments that have limited downside risk, while generating attractive risk-adjusted returns with upside potential through capital appreciation or repositioning.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$25,501,890
Remaining Capital Commitment:	\$13,472,650
Total Distributions:	\$18,974,540
Market Value:	\$20,617,215
Inception Date:	01/28/2014
Inception IRR:	13.5
TVPI:	1.6
DPI:	0.7

Cash Flow Analysis



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Fund Information

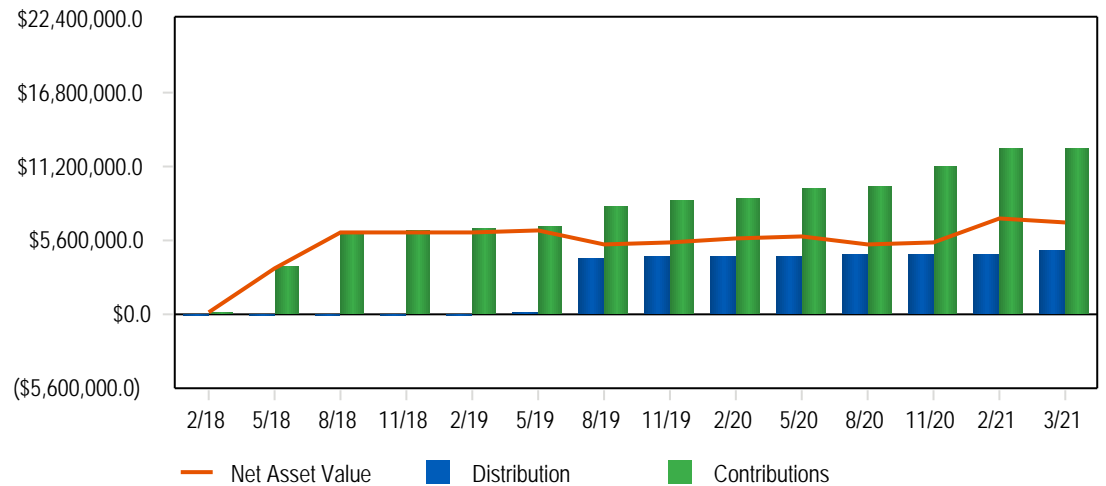
Type of Fund:	Partnership	Vintage Year:	2017
Strategy Type:	Value-Add Real Estate	Management Fee:	1.5%
Preferred Return:	6%	Inception:	10/01/2017
Final Close:	12/31/2017		

Investment Strategy: Northwood opportunistically pursues real estate investments on a global basis by investing in various levels of the capital structures of real estate assets and companies, with a particular focus on major metropolitan areas of the U.S. and super-regional markets in Europe. Within these markets, Northwood focuses on assembling a portfolio that is diversified across multiple property types and fits the investment strategy of seeking investments that have limited downside risk, while generating attractive risk-adjusted returns with upside potential through capital appreciation or repositioning.

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$12,567,430
Remaining Capital Commitment:	\$12,340,002
Total Distributions:	\$4,907,432
Market Value:	\$6,896,663
Inception Date:	02/09/2018
Inception IRR:	-4.8
TVPI:	0.9
DPI:	0.4

Cash Flow Analysis



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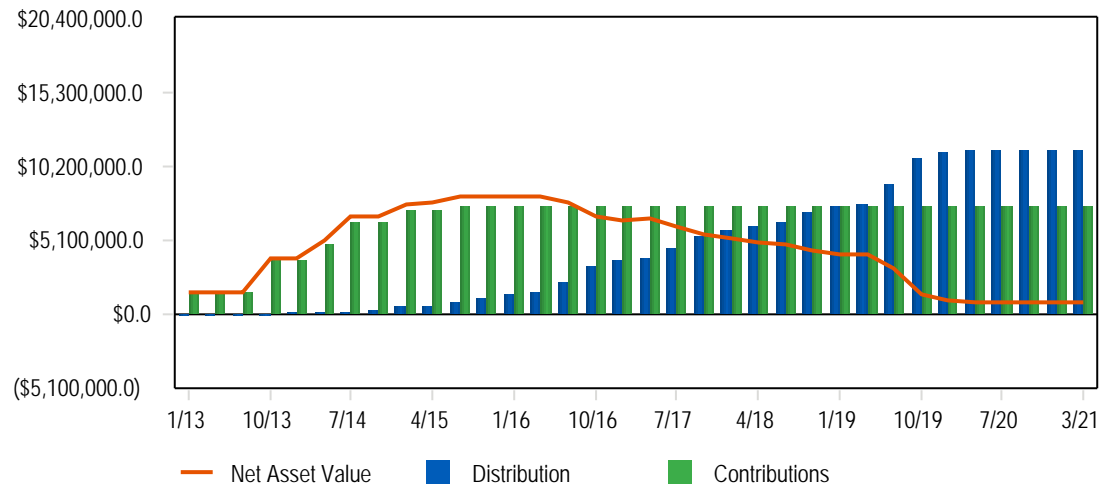
Fund Information

Type of Fund:	Partnership	Vintage Year:	2012
Strategy Type:	Value-Add Real Estate	Management Fee:	0.50% in year 1, 0.80% in year 2, 1.10% in year 3, all based upon total committed capital; then 1.20% in year 4, 1.25% in year 5, 1.20% in year 6, 1.00% in year 7 and 0.60% thereafter, all based upon Aggregate Invested Equity plus related reserves.
Preferred Return:	9%	Inception:	03/05/2012
Final Close:	04/22/2013		
Investment Strategy:	TA Realty is a value investor focused on pursuing the steady growth of income produced by real estate investments while minimizing downside risk. Since inception, TA Realty has not altered its mandate, maintaining a consistent investment philosophy through fluctuating real estate and economic cycles. TA Realty focuses on creating diversified real estate portfolios that can generate strong cash flow, benefit from an intensive asset management approach and result in the long-term creation of value over the life of a fund. TA Realty targets small to medium-sized industrial, office, retail and multifamily properties in major U.S. supply-constrained markets that present the opportunity to acquire property below replacement cost, convert the value-add opportunity and increase cash flow. TA Realty has developed a sourcing network of local real estate and professional service providers who provide local expertise during the property repositioning process and are a significant source of off-market deal flow for TA Realty.		

Cash Flow Summary

Capital Committed:	\$7,500,000
Total Contributions:	\$7,501,451
Remaining Capital Commitment:	
Total Distributions:	\$11,291,244
Market Value:	\$813,543
Inception Date:	01/17/2013
Inception IRR:	12.7
TVPI:	1.6
DPI:	1.5

Cash Flow Analysis



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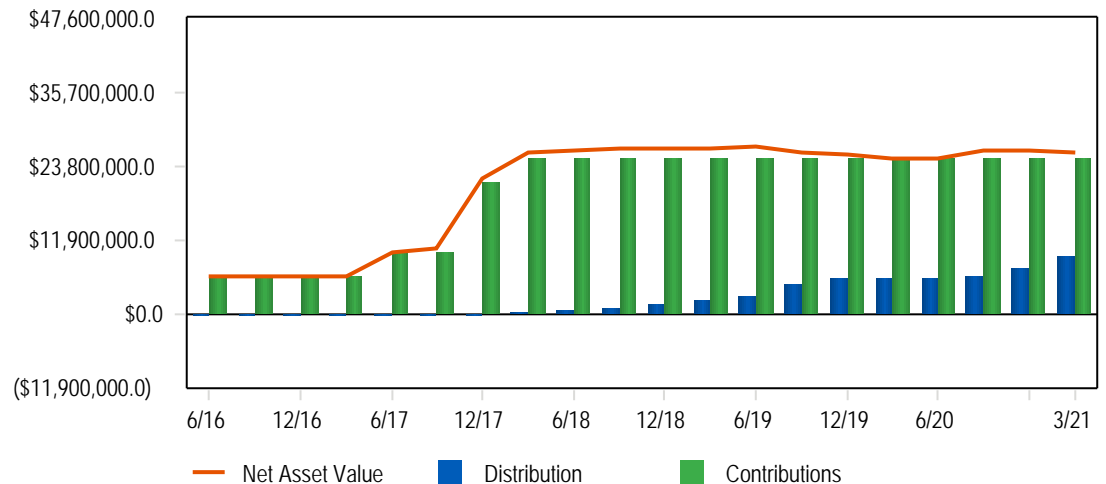
Fund Information

Type of Fund:	Partnership	Vintage Year:	2015
Strategy Type:	Value-Add Real Estate	Management Fee:	Year 1: 0.50%; Year 2: 0.85%; Year 3: 1.15%. Thereafter, based on aggregate invested equity: Year 4: 1.20%, Year 5: 1.25%, Year 6: 1.20%, Year 7: 1.00%, and 0.60% thereafter
Preferred Return:	9%	Inception:	07/02/2015
Final Close:	05/31/2017		
Investment Strategy:	TA Realty is a value investor focused on pursuing the steady growth of income produced by real estate investments while minimizing downside risk. Since inception, TA Realty has not altered its mandate, maintaining a consistent investment philosophy through fluctuating real estate and economic cycles. TA Realty focuses on creating diversified real estate portfolios that can generate strong cash flow, benefit from an intensive asset management approach and result in the long-term creation of value over the life of a fund. TA Realty targets small to medium-sized industrial, office, retail and multifamily properties in major U.S. supply-constrained markets that present the opportunity to acquire property below replacement cost, convert the value-add opportunity and increase cash flow. TA Realty has developed a sourcing network of local real estate and professional service providers who provide local expertise during the property repositioning process and are a significant source of off-market deal flow for TA Realty.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$25,000,000
Remaining Capital Commitment:	
Total Distributions:	\$9,274,818
Market Value:	\$25,939,126
Inception Date:	05/25/2016
Inception IRR:	10.5
TVPI:	1.4
DPI:	0.4

Cash Flow Analysis



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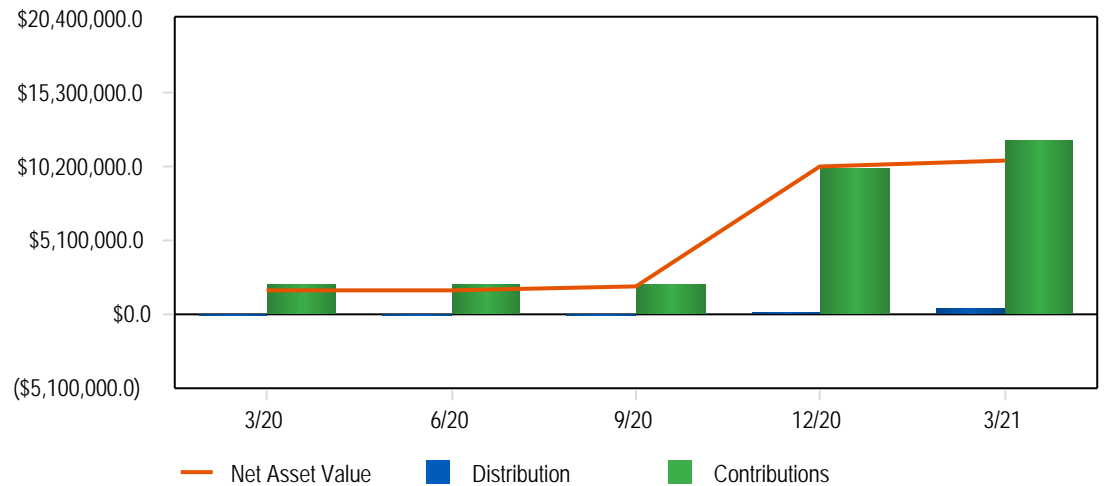
Fund Information

Type of Fund:	Partnership	Vintage Year:	2018
Strategy Type:	Value-Add Real Estate	Management Fee:	0.50% in year 1, 0.85% in year 2, 1.15% in year 3, all based upon capital commitments; then 1.20% in year 4, 1.25% in year 5, 1.20% in year 6, 1.00% in year 7 and 0.60% thereafter; based on Aggregate Invested Equity, as defined.
Preferred Return:	2%-14% gross IRR (before management fees and carried interest) and 10%-12% net I	Inception:	06/29/2018
Final Close:	2/28/2020		
Investment Strategy:	TA Realty is a value investor focused on pursuing the steady growth of income produced by real estate investments while minimizing downside risk. Since inception, it has maintained a consistent investment philosophy during multiple real estate and economic cycles. The Firm is focused on creating diversified real estate portfolios that generate strong cash flow, benefit from an active asset management approach and result in the long-term creation of value over the life of a fund. TA Realty seeks real estate investments with characteristics that allow us to dynamically add value over time, maximizing both income and property value while also protecting cash flow and moderating overall portfolio risk.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$12,000,000
Remaining Capital Commitment:	\$8,000,000
Total Distributions:	\$423,170
Market Value:	\$10,572,029
Inception Date:	03/27/2020
Inception IRR:	-17.2
TVPI:	0.9
DPI:	0.0

Cash Flow Analysis



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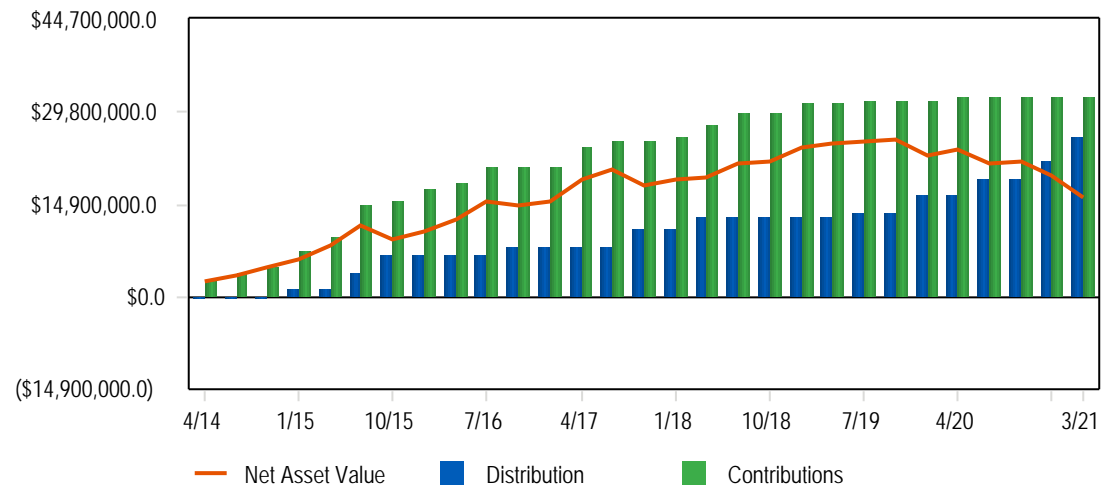
Fund Information

Type of Fund:	Partnership	Vintage Year:	2014
Strategy Type:	Opportunistic Real Estate	Management Fee:	0.375% (1.50% per annum) of the aggregate capital commitments of the Limited Partners.
Preferred Return:	8%	Inception:	05/01/2013
Final Close:	12/31/2015		
Investment Strategy:	WCP Real Estate Fund IV, L.P. (the "Fund") is the tenth consecutive distressed and opportunistic real estate fund raised by Russel Bernard, Sean Armstrong, Wm. Gregory Geiger, Scott Chernoff, Peter Aronson, Jordan Socaransky and Marc Porosoff (the "Senior Investment Team"). The fund will primarily invest in distressed and opportunistic real estate properties and debt that present potential for significant capital appreciation. The Fund is generally \$5-50 million in size with target gross returns of 15-18%.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$32,336,000
Remaining Capital Commitment:	\$490,000
Total Distributions:	\$25,818,967
Market Value:	\$16,059,466
Inception Date:	04/14/2014
Inception IRR:	8.5
TVPI:	1.3
DPI:	0.8

Cash Flow Analysis



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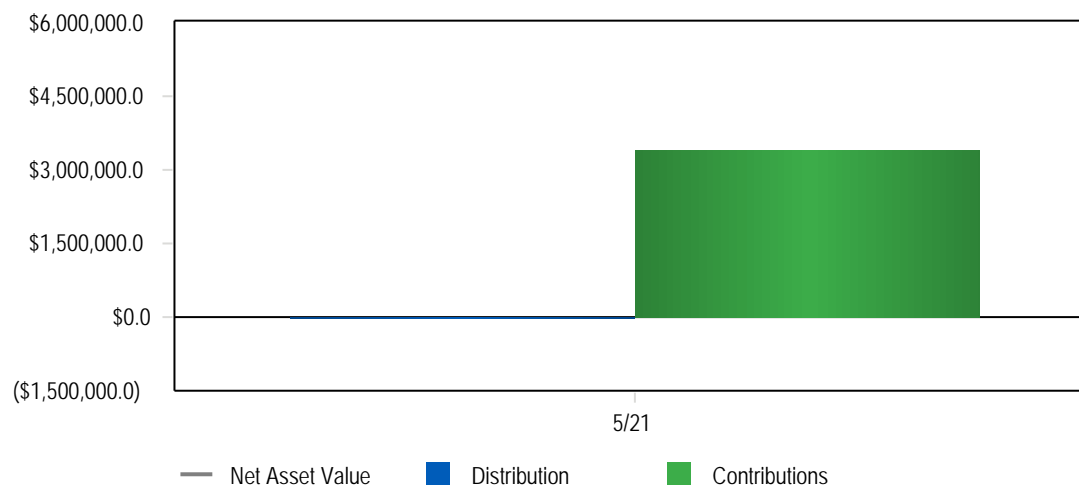
Fund Information

Type of Fund:	Direct	Vintage Year:	2021
Strategy Type:	Opportunistic Real Estate	Management Fee:	1.5% of LP's unreturned capital contributions during the investment period; 1.5% of the cost basis of the investments held by the Fund thereafter.
Preferred Return:	8%	Inception:	10/15/2020
Final Close:	12/01/2022		
Investment Strategy:	The Fund will target distressed and opportunistic investments in both debt (senior and/or subordinated debt, both public and private) and equity real estate across a number of different sectors, with a specific focus on housing and industrial.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$3,400,000
Remaining Capital Commitment:	\$16,600,000
Total Distributions:	
Market Value:	\$3,400,000
Inception Date:	03/11/2021
Inception IRR:	0.0
TVPI:	1.0
DPI:	0.0

Cash Flow Analysis



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## Private Equity Composite

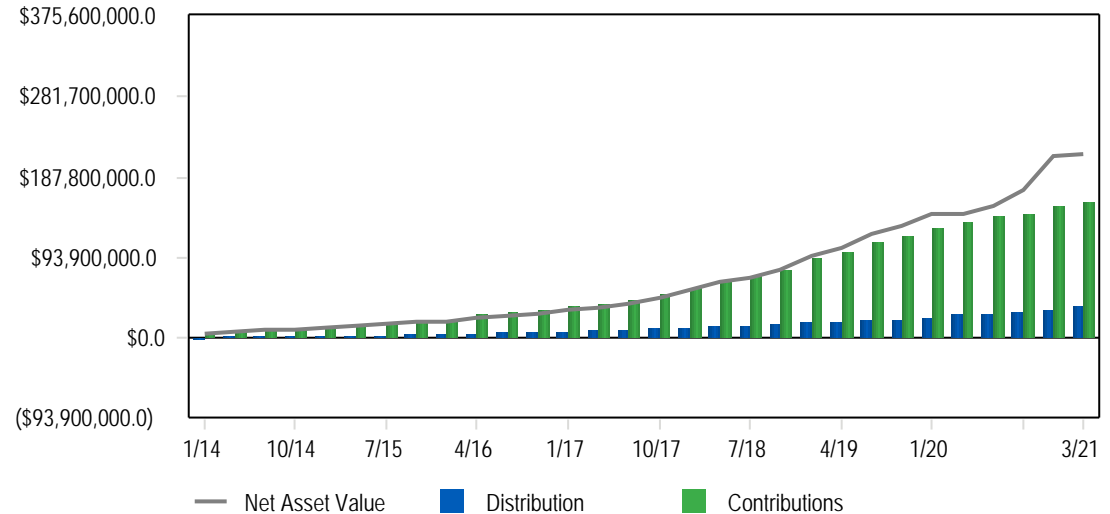
Cash Flow Summary

Capital Committed: \$210,000,000  
 Total Contributions: \$157,679,932  
 Remaining Capital Commitment: \$57,799,797

Total Distributions: \$37,021,871  
 Market Value: \$214,064,574

Inception Date: 01/22/2014  
 Inception IRR: 18.7  
 TVPI: 1.6  
 Direct Alpha: 1.7

Cash Flow Analysis



Private Equity Portfolio

Partnerships	Investment Type	Vintage Year	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple	DPI Multiple	Direct Alpha
Pomona Capital VIII	Partnership	2012	Secondaries	15,000,000	9,635,611	12,492,193	1,399,994	19.2	1.5	1.3	8.1
BlackRock Diversified Private Equity V	Fund Of Funds	2012	Hybrid	25,000,000	18,966,775	4,093,115	23,976,583	7.7	1.5	0.2	-6.1
Lexington Capital Partners VIII, L.P.	Fund Of Funds	2014	Secondaries	15,000,000	13,572,415	9,465,929	9,763,681	15.6	1.4	0.7	0.3
Horsley Bridge XI Venture, L.P.	Fund Of Funds	2015	Venture Capital	25,000,000	23,550,000		44,574,116	22.4	1.9	0.0	4.4
TrueBridge Fund IV	Fund Of Funds	2015	Venture Capital	25,000,000	23,250,000	2,117,619	54,489,565	33.2	2.4	0.1	13.3
Lexington Middle Market Investors IV, LP	Fund Of Funds	2017	Secondaries	25,000,000	11,329,839	2,308,514	10,715,300	15.6	1.2	0.2	-10.1
Horsley Bridge XII Venture, L.P.	Fund Of Funds	2017	Venture Capital	20,000,000	14,618,000		18,900,508	17.3	1.3	0.0	-4.4
BlackRock Private Equity Partners VII US, LP	Fund Of Funds	2016	Hybrid	25,000,000	19,337,531	3,275,430	21,569,065	13.7	1.3	0.2	-4.3
Pomona Capital IX	Partnership	2016	Secondaries	15,000,000	7,619,761	3,269,071	6,293,975	20.0	1.3	0.4	-3.1
TrueBridge Fund V	Fund Of Funds	2017	Venture Capital	20,000,000	15,800,000		22,381,787	30.3	1.4	0.0	3.7
Private Equity Composite	Total Fund		Hybrid	210,000,000	157,679,932	37,021,871	214,064,574	18.7	1.6	0.2	1.7

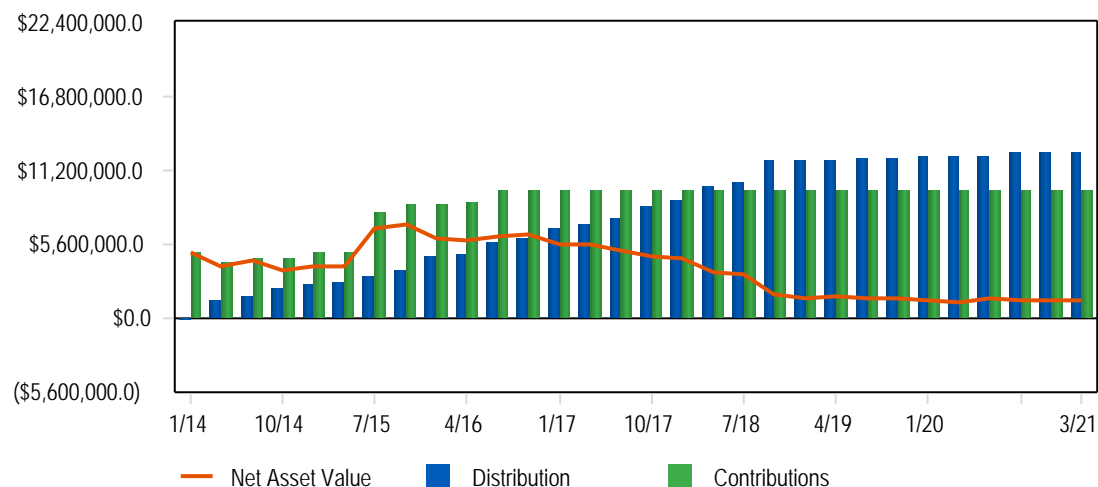
Fund Information

Type of Fund:	Partnership	Vintage Year:	2012
Strategy Type:	Secondaries	Management Fee:	1.25% per annum of total commitments from initial closing date calendar quarter; 1.0% per annum of total commitments from the first day of immediately succeeding calendar quarter through 9 years; 0.75 per annum thereafter.
Preferred Return:	8%, compounded annually	Inception:	10/31/2012
Final Close:	4Q 2013		
Investment Strategy:	Pomona's current secondary investment strategy began with Fund VII and was developed after the financial crisis of 2008. This strategy allows the firm to be selective, avoid competition and gain greater purchasing power and contains four key elements: seek niche opportunities which are less competitive and where the in-house expertise and core knowledge in industry segments provides an analytical edge; focus on middle market size opportunities which allows the firm to "cherry pick" investments and avoid large auctions; purchase high quality assets with a focus on managers that have a discernible edge; and build a diversified portfolio, which is a key risk mitigating factor.		

Cash Flow Summary

Capital Committed:	\$15,000,000
Total Contributions:	\$9,635,611
Remaining Capital Commitment:	\$5,647,957
Total Distributions:	\$12,492,193
Market Value:	\$1,399,994
Inception Date:	01/22/2014
Inception IRR:	19.2
TVPI:	1.5
DPI:	1.3

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

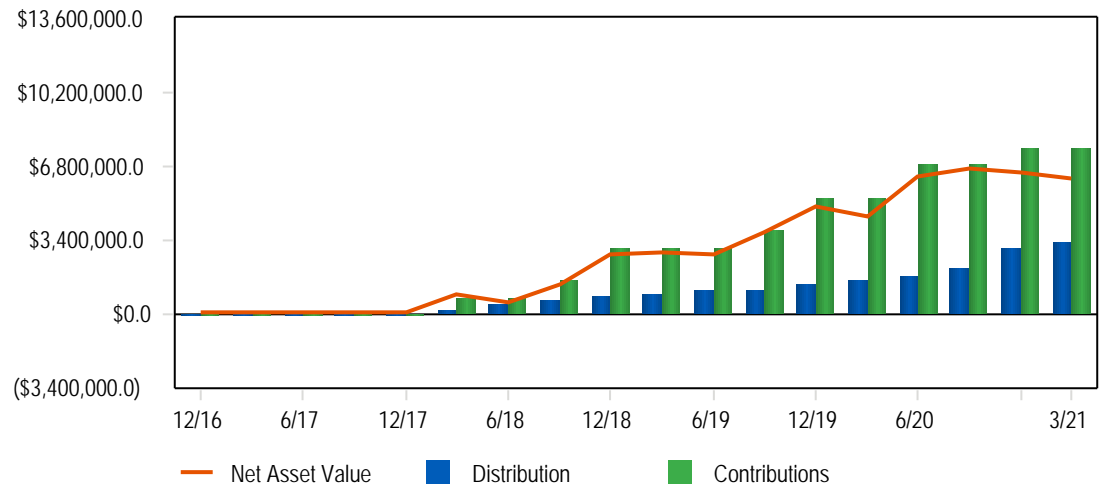
Fund Information

Type of Fund:	Partnership	Vintage Year:	2016
Strategy Type:	Secondaries	Management Fee:	Years 1-4 1.25%; Years 5-6 1%; Years 7-9 0.85%; Year 10 0.50%
Preferred Return:	8%	Inception:	07/15/2016
Final Close:	06/29/2018		
Investment Strategy:	The core tenet of Pomona's investment strategy is that it will seek to target mature assets with meaningful growth potential, identifiable near-term liquidity events, and a measure of downside protection in middle-market-sized transactions purchased at compelling discounts. Pomona targets seasoned assets managed by established fund managers with track records of growing businesses and achieving exits at gains to their most recent valuations. Often, assets at this point have substantially de-levered, are demonstrating positive operating performance, and are preparing for liquidity events. Pomona also seeks to provide access to high-quality private equity managers that are typically closed to new limited partners, restrictive with transfer consent, rarely traded on the secondary market and where the Firm has had a track record of longstanding relationships. Pomona focuses on purchasing high-quality assets at better than market prices. It maintains a disciplined pricing approach in its effort to provide a margin of safety on the downside and to enhance return on the upside.		

Cash Flow Summary

Capital Committed:	\$15,000,000
Total Contributions:	\$7,619,761
Remaining Capital Commitment:	\$9,453,724
Total Distributions:	\$3,269,071
Market Value:	\$6,293,975
Inception Date:	12/31/2016
Inception IRR:	20.0
TVPI:	1.3
DPI:	0.4

Cash Flow Analysis



Due to the inconsistencies in reporting methodologies among managers, we do not report on Capital Invested, Management Fees, Expenses and Interest. However, the Market Value is net of all fees and expenses, and Total Contributions reflects interest paid.

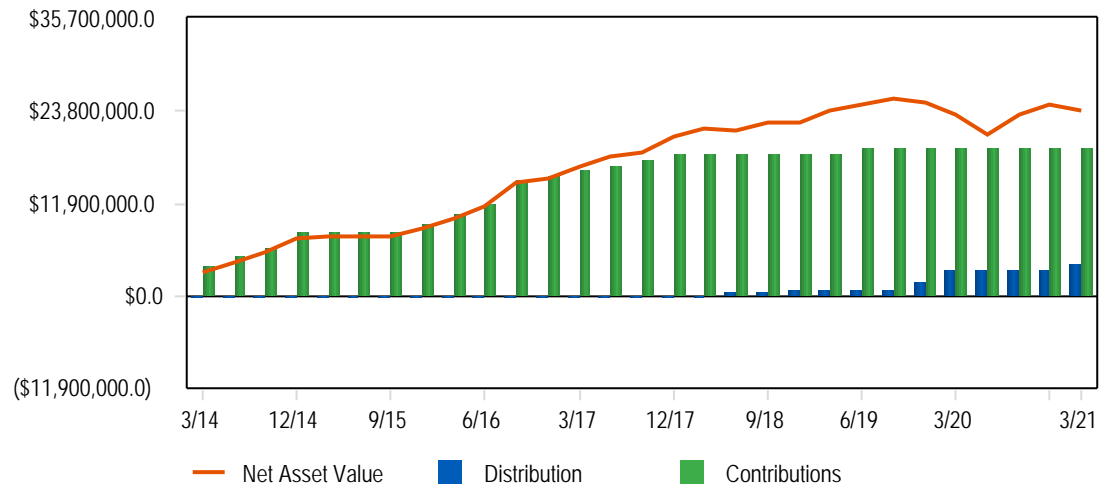
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2012
Strategy Type:	Hybrid	Management Fee:	0.65% on committed capital during the investment period and on invested capital thereafter
Preferred Return:	5% on primaries, 10% on secondary investments and 17.5% on direct co-investments	Inception:	03/21/2012
Final Close:	07/31/2014		
Investment Strategy:	Designed to provide capital appreciation through diversified private equity funds and direct co-investments with General Partners. Primary funds are up to 75% of the investment program, direct co-investments can be up to 30%, and secondary investments can be up to 15%. BlackRock emphasizes its experience in direct co-investments, where it looks to systematically source, and "cherry pick" ideas from the best General Partners. BlackRock looks to use direct co-investments as a diversification, risk mitigation, and alpha generation tool. The allocation to secondary funds is seen as opportunistic.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$18,966,775
Remaining Capital Commitment:	\$6,156,002
Total Distributions:	\$4,093,115
Market Value:	\$23,976,583
Inception Date:	02/11/2014
Inception IRR:	7.7
TVPI:	1.5
DPI:	0.2

Cash Flow Analysis



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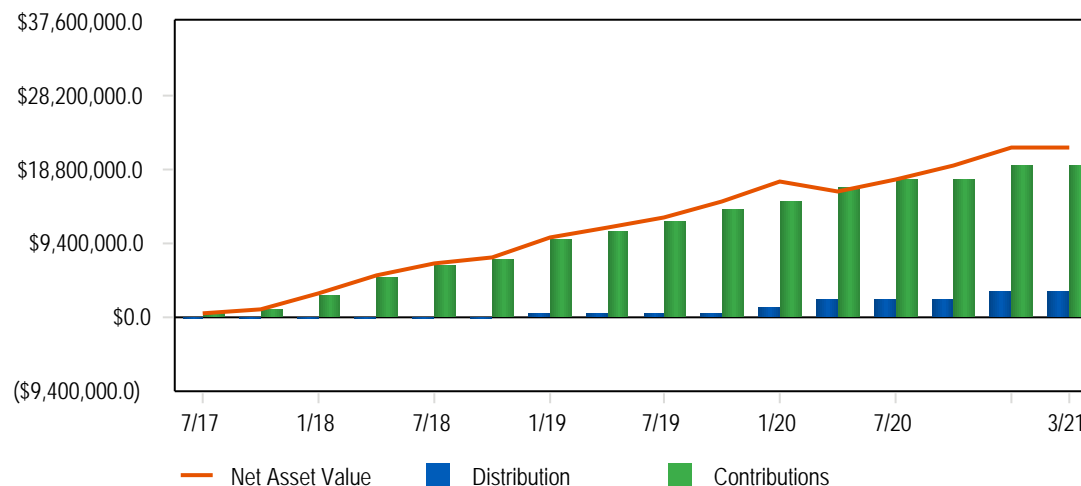
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2016
Strategy Type:	Hybrid	Management Fee:	0.60% per annum of the aggregate amounts committed to primaries and co-investments and the transaction value
Preferred Return:	8% per annum	Inception:	06/01/2017
Final Close:	8/31/2017		
Investment Strategy:	Designed to seek to generate attractive capital appreciation through investments in a diversified private equity core portfolio consisting of high quality and often difficult to access investments. The Program will seek to invest in buyouts including growth investments, special situations including turnaround, and venture capital; in interests of funds purchased from the sponsors of such funds ("Primary Investments"); may invest in secondary investment opportunities, including directly or indirectly acquiring interests in private equity funds, other than in the context of the original fundraising, from investor(s) in such funds ("Secondary Investments"), and selective co-investments alongside private equity fund managers ("Co-Investments"). The Program will aim to create a portfolio of investments which are diversified across North America, Europe and Rest of World (which may include Asia-Pacific, Latin America and other markets). Commitments may be invested on a short term basis (for example in cash or government bonds) for purposes including cash management or to invest Commitments pending the completion of an underlying investment or the making of a distribution.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$19,337,531
Remaining Capital Commitment:	\$6,242,408
Total Distributions:	\$3,275,430
Market Value:	\$21,569,065
Inception Date:	07/25/2017
Inception IRR:	13.7
TVPI:	1.3
DPI:	0.2

Cash Flow Analysis



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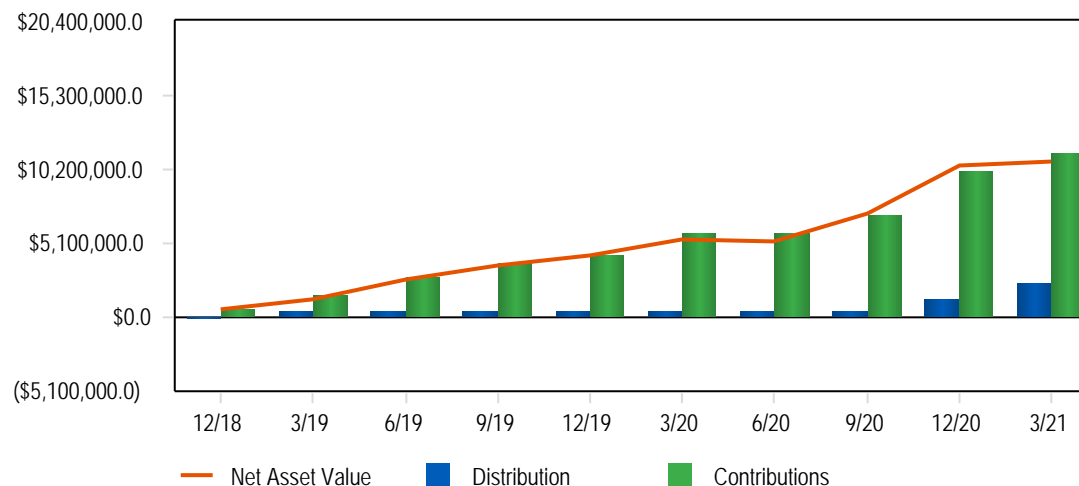
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2017
Strategy Type:	Secondaries	Management Fee:	During investment period: 1% of committed capital
Preferred Return:	7%	Inception:	12/01/2018
Final Close:	9/30/2017		
Investment Strategy:	Lexington Middle Market Investors IV ("LMMI IV") will focus on creating a diversified portfolio of established small to mid market buyout funds through the secondary market that are less than 50% funded. The fund will tend to focus on interests in U.S. partnerships but will be able to invest up to 25% of the portfolio in non-U.S. small to mid buyout funds. While the LMMI strategy targets early secondary opportunities, Lexington is able to invest up to 20% of the fund into primary funds. The team believes that this ability could positively impact the fund in terms of generating returns, establishing relationships and promoting deal flow.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$11,329,839
Remaining Capital Commitment:	\$13,670,161
Total Distributions:	\$2,308,514
Market Value:	\$10,715,300
Inception Date:	12/21/2018
Inception IRR:	15.6
TVPI:	1.2
DPI:	0.2

Cash Flow Analysis



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Fund Information

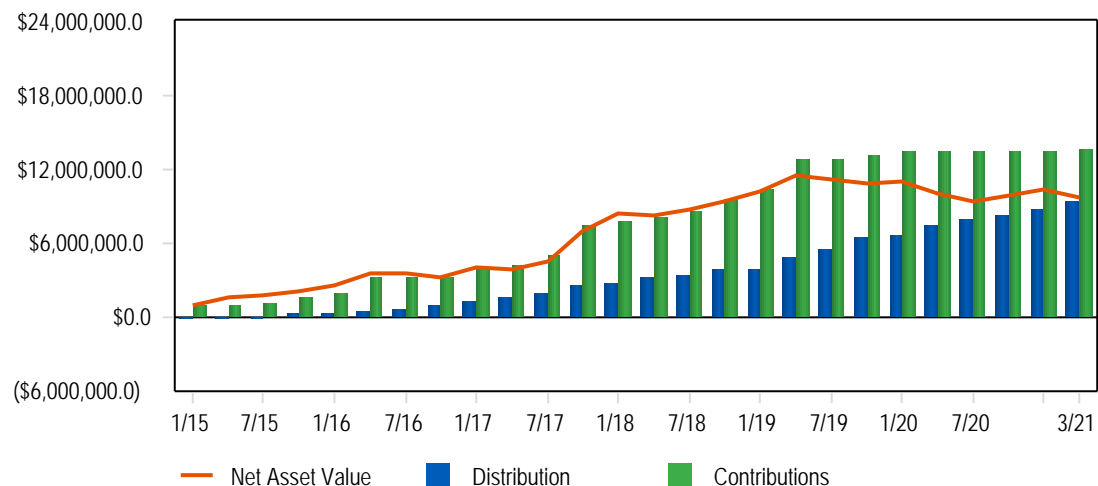
Type of Fund:	Fund Of Funds	Vintage Year:	2014
Strategy Type:	Secondaries	Management Fee:	1%
Preferred Return:	7%	Inception:	01/01/2014
Final Close:	04/17/2015		

Investment Strategy: Lexington Capital Partners VIII (“LCP VIII”) will focus on acquiring mature portfolios of global buyout, mezzanine and venture capital partnership interests. While LCP VIII is expected to concentrate on acquiring portfolios of interests in global private investment funds, it will also consider a full range of transaction types, including direct secondary investments, hedge fund private equity assets, institutional equity co-investments (directs), capital financial spin-outs and private investment fund recapitalizations. Typically, LCP VIII will target a Limited Partnership interest which is 75% - 80% funded (i.e., drawn down), and five years in age which represents an approximate inflexion point where the private equity fund has begun to turn around or is about to enter its liquidity phase. At times, LCP VIII will consider acquiring a “tail-end” partnership interest which is fully funded, but represents an excellent “unrealized” portfolio. The anticipated portfolio allocation for LCP VIII will be approximately 60% buyouts (including 25% Western Europe), 15% venture capital, 12% growth equity, 5% infrastructure, 3% energy and 5% credit. Geographically, the Fund is expected to be 65% U.S., 25% Western Europe and 10% Asia/Rest of World.

Cash Flow Summary

Capital Committed:	\$15,000,000
Total Contributions:	\$13,572,415
Remaining Capital Commitment:	\$3,347,545
Total Distributions:	\$9,465,929
Market Value:	\$9,763,681
Inception Date:	01/08/2015
Inception IRR:	15.6
TVPI:	1.4
DPI:	0.7

Cash Flow Analysis



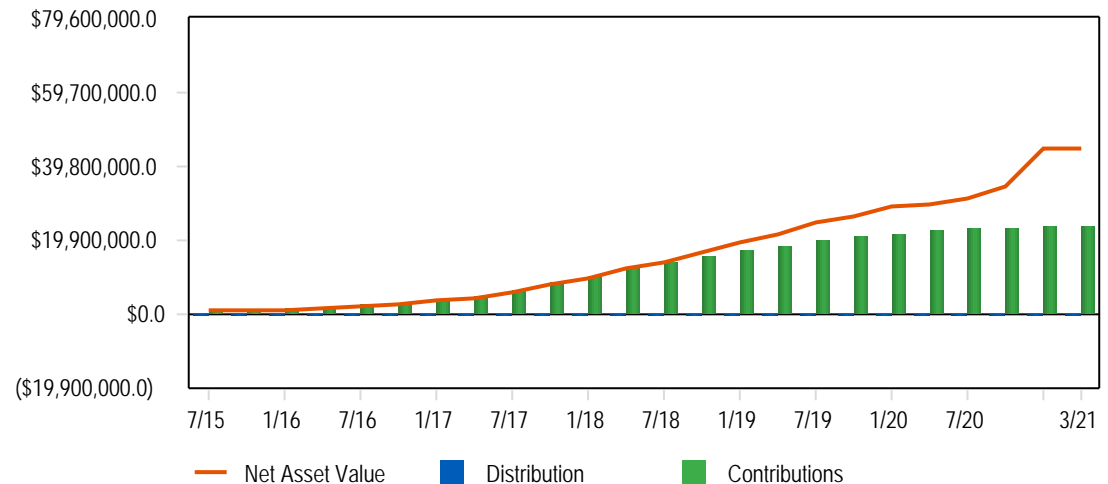
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2015
Strategy Type:	Venture Capital	Management Fee:	100 bps for first \$25M; 75 bps for \$25M to \$50M; 50 bps for \$50M to \$100M; 40 bps for \$100M to \$200M; 30 bps for greater than \$200M (Based on Committed Capital)
Preferred Return:	The Fund has no carried interest, nor preferred return	Inception:	01/26/2015
Final Close:	04/30/2015		
Investment Strategy:	Horsley Bridge XI Venture, L.P. ("HB XI Venture") represents the first Horsley Bridge fund that will combine early-stage investments in the core markets of the U.S., Europe and China in a singular vehicle. The decision to raise a global fund is a function of Limited Partners expressing interest in achieving global venture capital exposure through a single commitment. The transition also reflects a venture capital ecosystem that has become increasingly more global and interconnected, with billion dollar companies forming across all regions. The structure is complementary to the Horsley Bridge model of a single global investment team and the team possesses the global presence and expertise to execute a global strategy successfully.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$23,550,000
Remaining Capital Commitment:	\$1,450,000
Total Distributions:	
Market Value:	\$44,574,116
Inception Date:	07/01/2015
Inception IRR:	22.4
TVPI:	1.9
DPI:	0.0

Cash Flow Analysis



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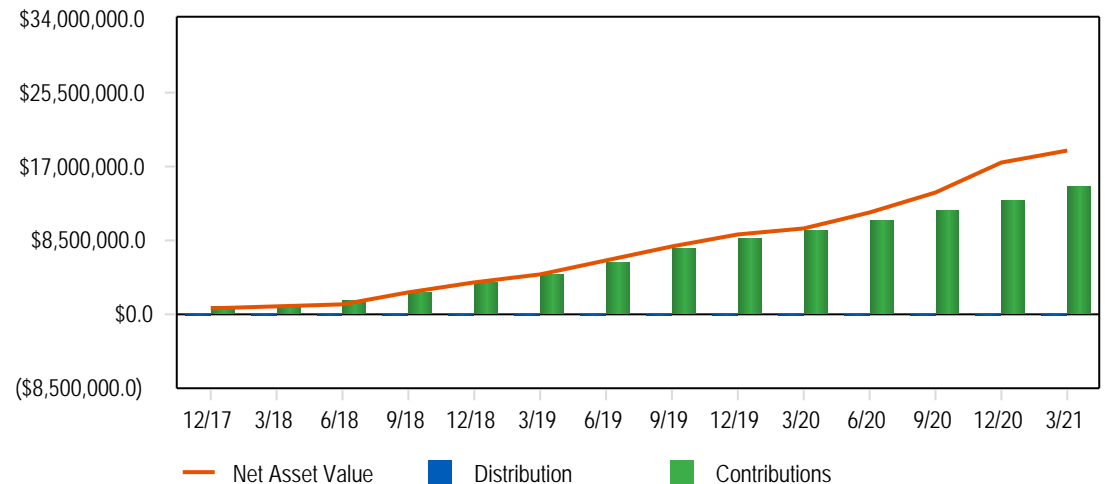
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2017
Strategy Type:	Venture Capital	Management Fee:	100bps on first \$25M of investment, 75bps on next \$25M, 50bps on next \$50M, 40bps on next \$100M, 30bps on investments over \$200M
Preferred Return:	No Carried Interest	Inception:	05/24/2017
Final Close:	12/8/2017		
Investment Strategy:	Horsley Bridge XII Venture is a Private Equity Fund-of-Funds focused on Global Early Stage Venture Capital. The fund is expected to have approximately 30 venture investments, commit capital over approximately 3 years, and include primary, secondary, and co-investment. Horsley Bridge XII Venture is a Private Equity Fund-of-Funds focused on Global Early Stage Venture Capital.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$14,618,000
Remaining Capital Commitment:	\$5,382,000
Total Distributions:	
Market Value:	\$18,900,508
Inception Date:	12/08/2017
Inception IRR:	17.3
TVPI:	1.3
DPI:	0.0

Cash Flow Analysis



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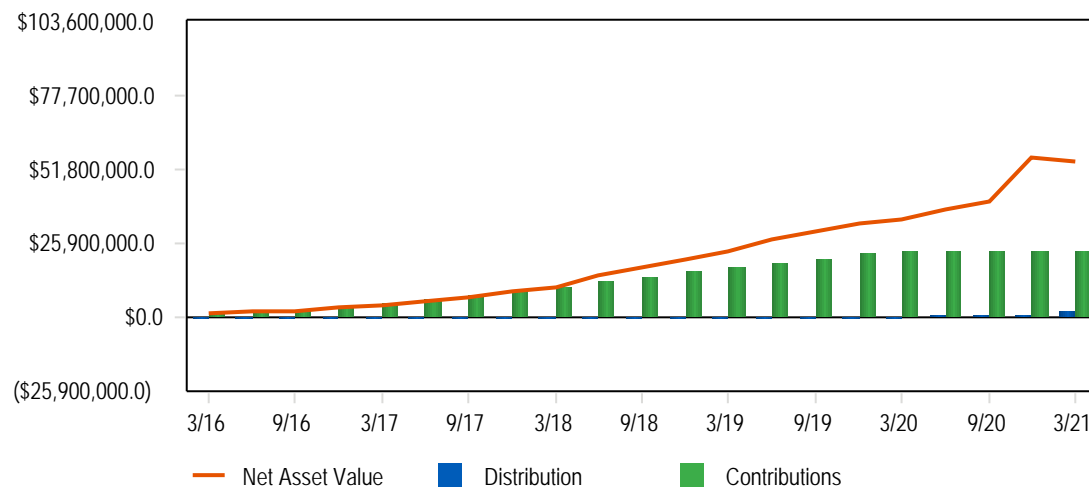
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2015
Strategy Type:	Venture Capital	Management Fee:	1.00% of aggregate commitments.
Preferred Return:	N/A	Inception:	07/10/2015
Final Close:	01/12/2016		
Investment Strategy:	TrueBridge Fund IV seeks to create a concentrated portfolio of investments in top-tier venture capital partnerships, and to a lesser extent, elite growth equity funds as well as directly in select venture-backed companies.		

Cash Flow Summary

Capital Committed:	\$25,000,000
Total Contributions:	\$23,250,000
Remaining Capital Commitment:	\$2,250,000
Total Distributions:	\$2,117,619
Market Value:	\$54,489,565
Inception Date:	02/02/2016
Inception IRR:	33.2
TVPI:	2.4
DPI:	0.1

Cash Flow Analysis



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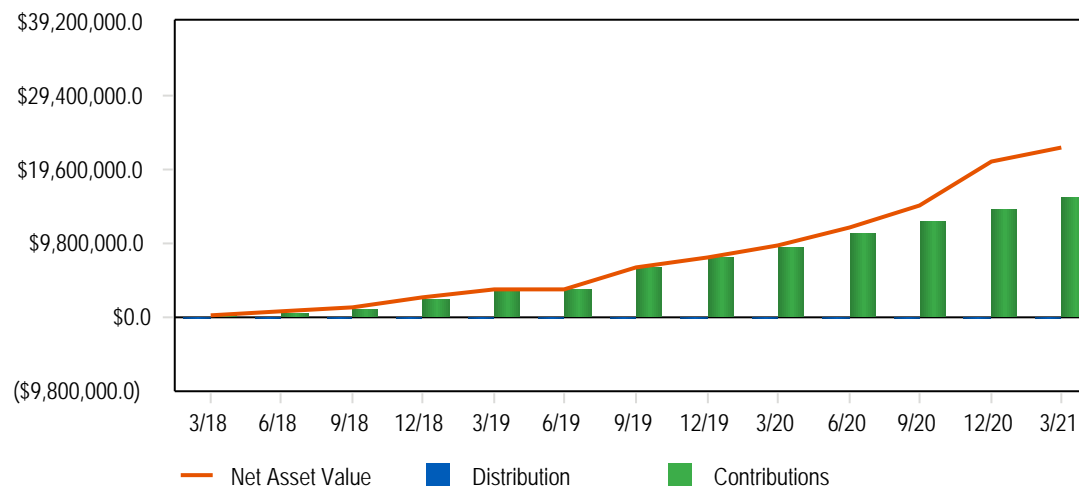
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2017
Strategy Type:	Venture Capital	Management Fee:	1% of aggregate commitments
Preferred Return:		Inception:	06/01/2017
Final Close:	6/30/2017		
Investment Strategy:	TrueBridge Fund V seeks to create a concentrated portfolio of investments in top-tier venture capital partnerships, and to a lesser extent, elite growth equity funds as well as directly in select venture-backed companies.		

Cash Flow Summary

Capital Committed:	\$20,000,000
Total Contributions:	\$15,800,000
Remaining Capital Commitment:	\$4,200,000
Total Distributions:	
Market Value:	\$22,381,787
Inception Date:	03/23/2018
Inception IRR:	30.3
TVPI:	1.4
DPI:	0.0

Cash Flow Analysis



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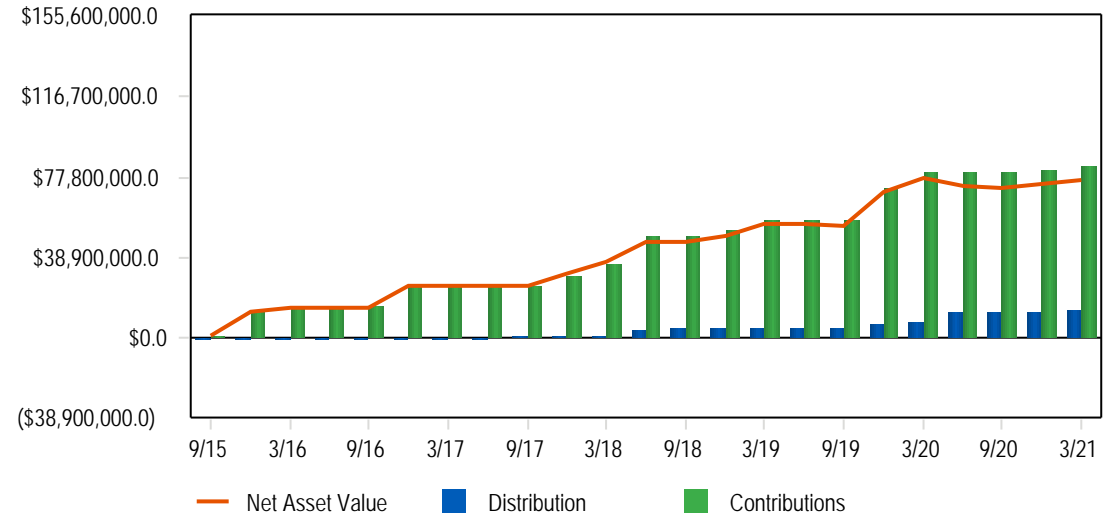
## Timber Composite Closed-End



Cash Flow Summary

Capital Committed:	\$90,000,000
Total Contributions:	\$83,114,352
Remaining Capital Commitment:	\$14,684,196
Total Distributions:	\$13,252,675
Market Value:	\$76,230,314
Inception Date:	09/04/2015
Inception IRR:	2.8
TVPI:	1.1

Cash Flow Analysis



Timber Composite Closed-End

Partnerships	Investment Type	Vintage Year	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple	DPI Multiple
Molpus Woodlands Fund IV, L.P.	Partnership	2015	Timber	30,000,000	27,542,264	2,388,678	23,621,465	-1.2	0.9	0.1
Stafford Int'l Timberland VIII	Fund Of Funds	2016	Timber	30,000,000	32,762,190	6,183,221	31,135,521	5.9	1.1	0.2
Eastern Timberland Opportunities III LP (ETO III)	Partnership	2020	Timber	15,000,000	9,909,898	4,480,389	5,550,778	2.4	1.0	0.5
Molpus Woodlands Fund V	Partnership	2019	Timber	15,000,000	12,900,000	200,387	15,922,550	18.7	1.3	0.0
Timber Composite Closed-End	Total Fund		Hybrid	90,000,000	83,114,352	13,252,675	76,230,314	2.8	1.1	0.2

Fund Information

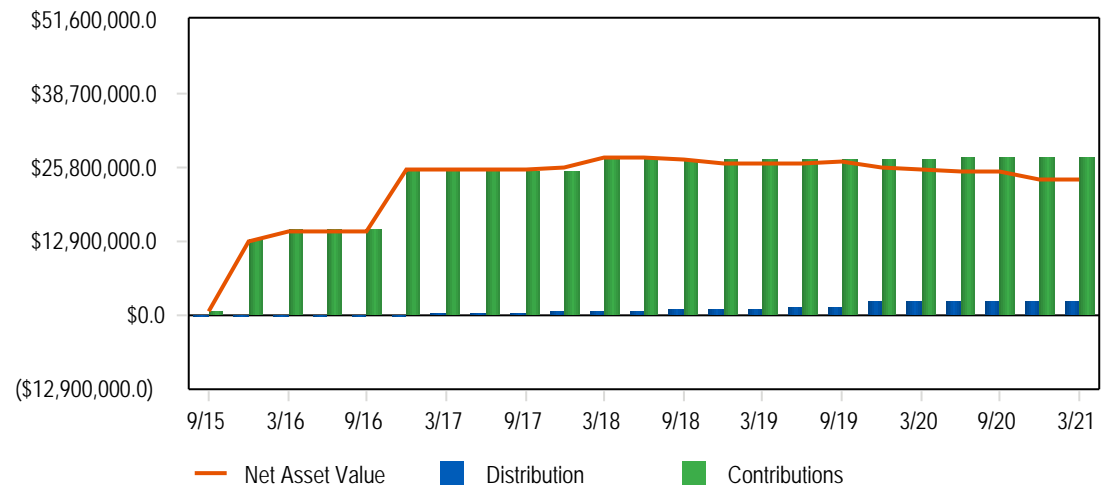
Type of Fund:	Partnership	Vintage Year:	2015
Strategy Type:	Timber	Management Fee:	1% on called capital during the investment period, on fair
Preferred Return:	7%	Inception:	10/22/2013
Final Close:	10/22/2014		

Investment Strategy: Molpus Woodlands is a fully independent and vertically integrated timberland investment management organization (TIMO) focused exclusively on making investments in North American timberlands, both softwoods and hardwoods. Molpus Woodlands Fund IV will acquire and actively manage a diverse portfolio of timberland properties diversified by geography, species, age class and end market. The fund expects to be 50% allocated to emerging growth opportunities and 50% to income potential opportunities. Emerging growth opportunities such as younger pre-merchantable stands and young merchantable stands offer the potential for higher appreciation through higher biological growth through intensive silviculture practices. The acquisition of more mature timber stands provides higher income potential as it allows the team to start harvesting trees as they approach economic maturity. Molpus expects to acquire between five to ten transactions; however, they do not have maximum constraints placed on deal size. If a large transaction is sufficiently diversified across all relevant metrics then it will be considered for investment. Generally, however, the fund is expected to invest between \$25 million and \$200 million in any given transaction.

Cash Flow Summary

Capital Committed:	\$30,000,000
Total Contributions:	\$27,542,264
Remaining Capital Commitment:	\$2,457,736
Total Distributions:	\$2,388,678
Market Value:	\$23,621,465
Inception Date:	09/04/2015
Inception IRR:	-1.2
TVPI:	0.9
DPI:	0.1

Cash Flow Analysis



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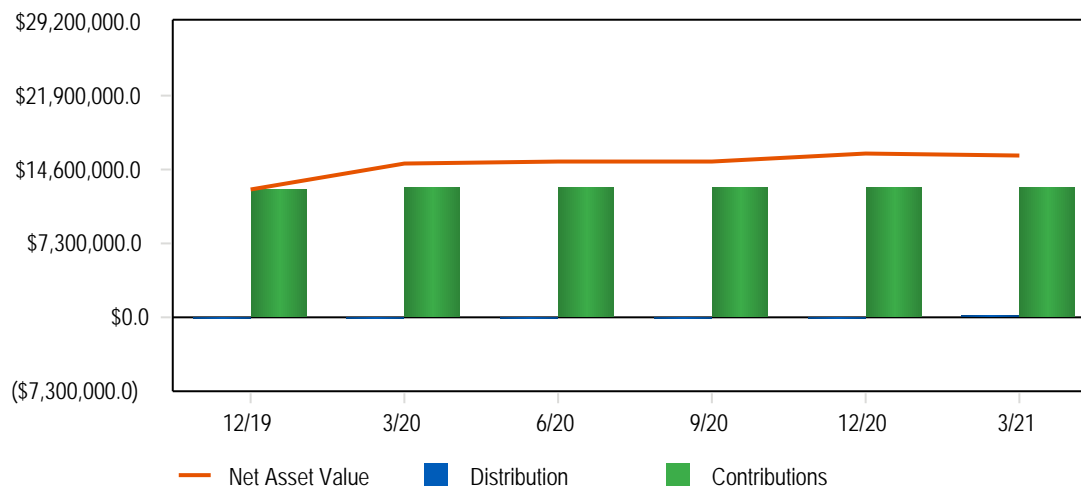
Fund Information

Type of Fund:	Partnership	Vintage Year:	2019
Strategy Type:	Timber	Management Fee:	1% on called capital through 36 months; fair market value thereafter
Preferred Return:	7%	Inception:	03/01/2018
Final Close:	06/14/2019		
Investment Strategy:	Molpus Woodlands is a fully independent and vertically integrated timberland investment management organization (TIMO) focused exclusively on making investments in North American timberlands, both softwoods and hardwoods. Molpus Woodlands Fund IV will acquire and actively manage a diverse portfolio of timberland properties diversified by geography, species, age class and end market. The fund expects to be 50% allocated to emerging growth opportunities and 50% to income potential opportunities. Emerging growth opportunities such as younger pre-merchantable stands and young merchantable stands offer the potential for higher appreciation through higher biological growth through intensive silviculture practices. The acquisition of more mature timber stands provides higher income potential as it allows the team to start harvesting trees as they approach economic maturity. Molpus expects to acquire between five to ten transactions; however, they do not have maximum constraints placed on deal size. If a large transaction is sufficiently diversified across all relevant metrics then it will be considered for investment. Generally, however, the fund is expected to invest between \$25 million and \$200 million in any given transaction.		

Cash Flow Summary

Capital Committed:	\$15,000,000
Total Contributions:	\$12,900,000
Remaining Capital Commitment:	\$2,100,000
Total Distributions:	\$200,387
Market Value:	\$15,922,550
Inception Date:	11/15/2019
Inception IRR:	18.7
TVPI:	1.3
DPI:	0.0

Cash Flow Analysis



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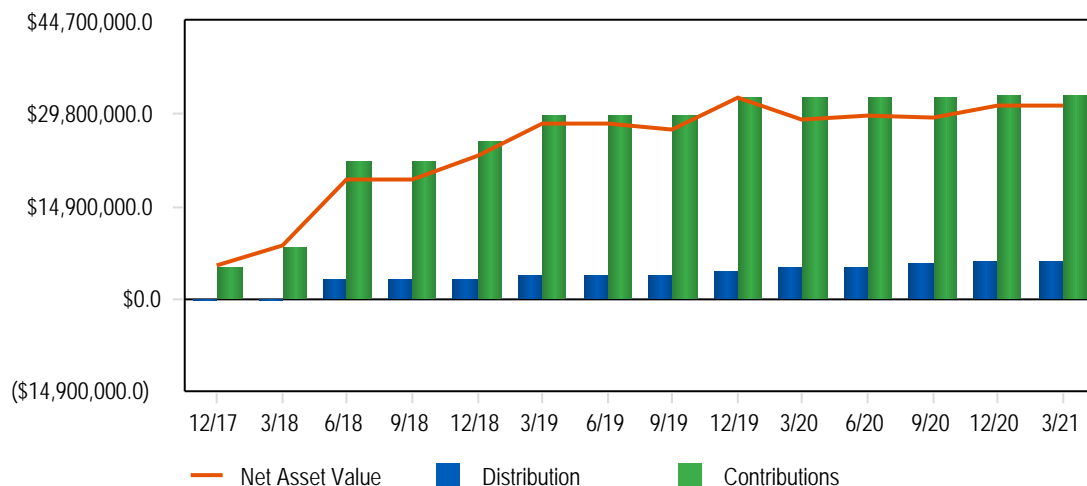
Fund Information

Type of Fund:	Fund Of Funds	Vintage Year:	2016
Strategy Type:	Timber	Management Fee:	For \$30 million the fee is 90 basis points, at \$50 million fees drop to 75 basis points, and at \$125 million to 60 basis points
Preferred Return:	6%	Inception:	10/01/2016
Final Close:	04/30/2018		
Investment Strategy:	Stafford International Timberland VIII is a unique timberlands offering in that it invests across secondaries, co-investment positions, and primary investments on a global basis. As such, the Fund offers investors access to a pool of timberland investments that are diversified by species, strategy, geography and manager. Fund VIII, expects to have a large concentration in secondary positions (approx. 50%), followed by primary investments (approx. 20%), co-investment (approx. 15%), separate accounts (approx. 10%), and other, such as equity positions in TIMOs (approx. 5%). The team will invest on a global basis with a focus on major developed markets around the world and a smaller allocation to niche geographies. There is no other timberlands fund in the timber universe that implements such a strategy. The team has significant experience implementing this strategy.		

Cash Flow Summary

Capital Committed:	\$30,000,000
Total Contributions:	\$32,762,190
Remaining Capital Commitment:	\$609,000
Total Distributions:	\$6,183,221
Market Value:	\$31,135,521
Inception Date:	12/27/2017
Inception IRR:	5.9
TVPI:	1.1
DPI:	0.2

Cash Flow Analysis



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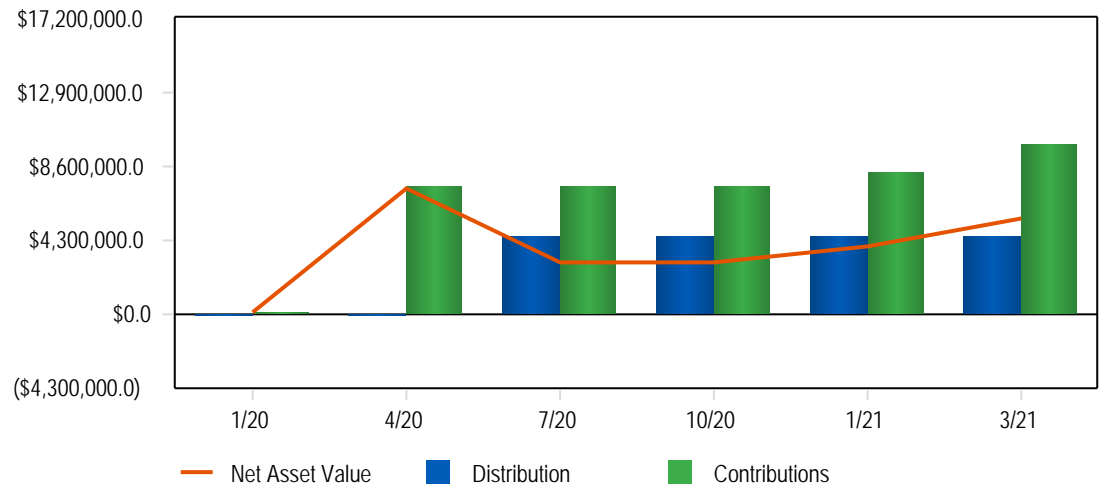
Fund Information

Type of Fund:	Partnership	Vintage Year:	2020
Strategy Type:	Timber	Management Fee:	0.85%
Preferred Return:	7% net	Inception:	12/27/2019
Final Close:	12/27/2020		
Investment Strategy:	Middle-market (\$10-\$75 million asset size) timberland acquisitions in the Eastern U.S. with an emphasis on the U.S. South.		

Cash Flow Summary

Capital Committed:	\$15,000,000
Total Contributions:	\$9,909,898
Remaining Capital Commitment:	\$9,517,460
Total Distributions:	\$4,480,389
Market Value:	\$5,550,778
Inception Date:	01/27/2020
Inception IRR:	2.4
TVPI:	1.0
DPI:	0.5

Cash Flow Analysis



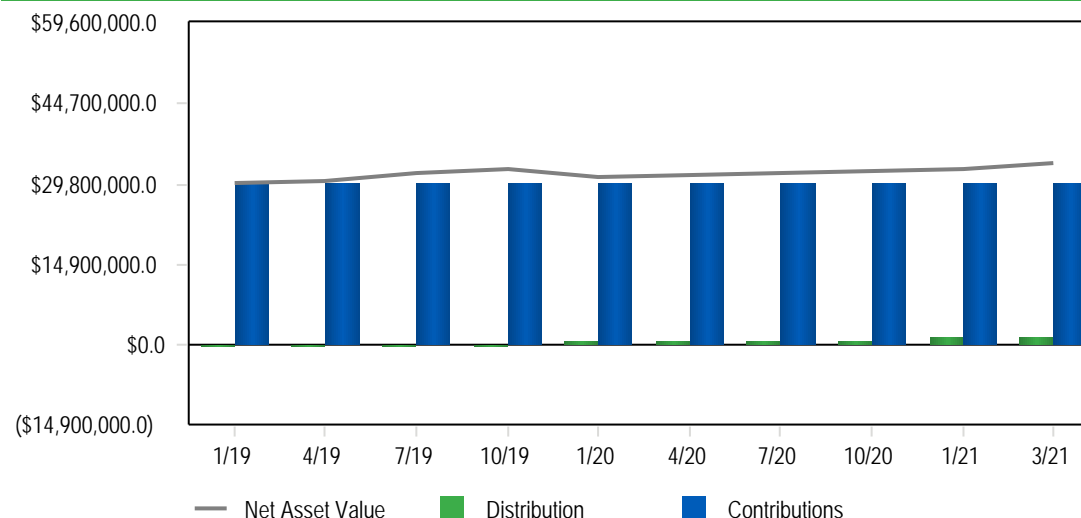
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## Timber Composite Open-End

Cash Flow Summary

Capital Committed:	\$30,000,000
Total Contributions:	\$30,000,000
Remaining Capital Commitment:	
Total Distributions:	\$1,311,473
Market Value:	\$33,593,919
Inception Date:	01/02/2019
Inception IRR:	7.1
TVPI:	1.2

Cash Flow Analysis



Timber Composite Open-End Portfolio

Partnerships	Investment Type	Investment Strategy	Capital Committed (\$)	Total Contribution (\$)	Total Distribution (\$)	Market Value (\$)	IRR (%)	TVPI Multiple
BTG Pactual Open Ended Core US Timberland Fund (OEF)	Partnership	Timber	30,000,000	30,000,000	1,311,473	33,593,919	7.1	1.2
Timber Composite Open-End	Total Fund	Hybrid	30,000,000	30,000,000	1,311,473	33,593,919	7.1	1.2

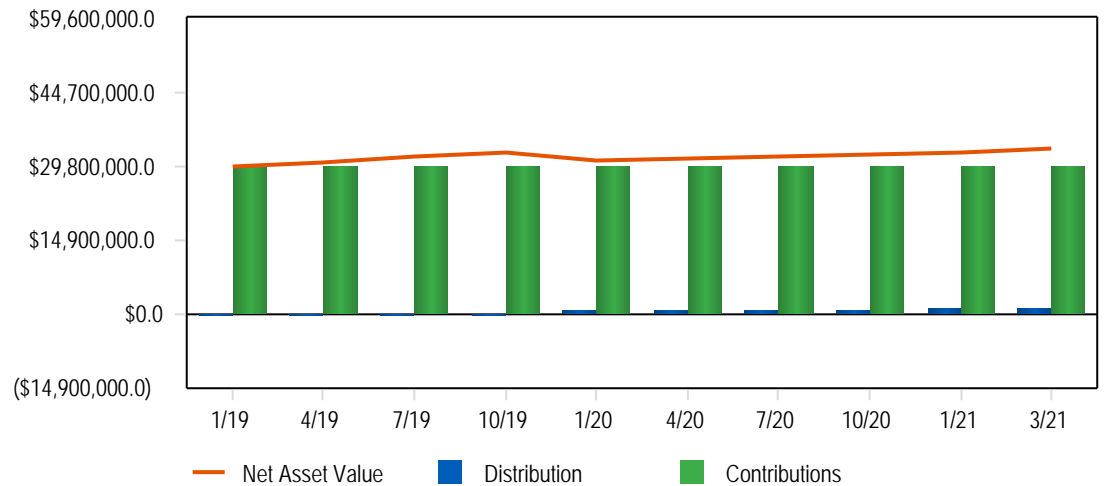
Fund Information

Type of Fund:	Partnership	Vintage Year:	2019
Strategy Type:	Timber	Management Fee:	1% based on third-party NAV
Preferred Return:		Inception:	01/01/2019
Final Close:			
Investment Strategy:	OEF is focused on a long-term, core investment strategy in U.S. commercial timberland assets. The Fund seeks to gain exposure to the key characteristics of core U.S. timberland investments: scale, stability, and diversity. OEF will follow a disciplined strategy driven by an environment of robust Fund acquisition activity, a recovering housing market, historically low land prices, consistent demand of commodity hardwoods, and forecasted elevated Pacific Northwest timber demand.		

Cash Flow Summary

Capital Committed:	\$30,000,000
Total Contributions:	\$30,000,000
Remaining Capital Commitment:	
Total Distributions:	\$1,311,473
Market Value:	\$33,593,919
Inception Date:	01/02/2019
Inception IRR:	7.1
TVPI:	1.2
DPI:	0.0

Cash Flow Analysis



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## Investment Manager Roster

**Investment Manager Roster as of March 31, 2021**

Manager	Date	Assets Under Management*	Assignment	Benchmark	Stated Style	Fee Structure	Annual Dollar Fee	Observed Style	Average Fee	Universe Median Fee
SSGA S&P 500 NL	3/31/2021	\$228,182,205	Equity Only	S&P 500 Index	S&P 500 Index	2 bps on all assets	\$45,636	LC Core Equity	0.02%	0.08%
T. Rowe Price	3/31/2021	\$117,156,710	Equity Only	Russell 1000 Growth	LC Growth Equities	40 bps on all assets when assets exceed \$100M	\$468,627	LC Growth Equity	0.40%	0.50%
Aristotle	3/31/2021	\$110,542,934	Equity Only	Russell 1000 Value	LC Value Equities	45 bps on first \$50M, 40 bps on next \$50M, 35 bps on balance	\$467,172	LC Value Equity	0.42%	0.54%
Times Square	3/31/2021	\$73,554,070	Equity Only	Russell Mid Cap Growth	Mid Cap Growth	80 bps on first \$50M, 70 bps on next \$50M, 60 bps on balance	\$564,878	MC Growth Equity	0.77%	0.70%
Iridian	3/31/2021	\$79,095,114	Equity Only	Russell Mid Cap Value	Mid Cap Value	100 bps on first \$50M, 75 bps on next \$50M, 65 bps on balance	\$718,213	MC Value Equity	0.91%	0.65%
Wedge Capital	3/31/2021	\$75,968,987	Equity Only	Russell 2000 Value	Small Cap Value	80 bps on all assets	\$607,752	SC Value Equity	0.80%	0.85%
Emerald	3/31/2021	\$77,942,796	Equity Only	Russell 2000 Growth	Small Cap Growth	80 bps on first \$10M, 60 bps on balance	\$487,657	SC Growth Equity	0.63%	0.85%
Artisan Partners	3/31/2021	\$97,862,705	International Equity	MSCI EAFE Growth Index	International Equity	80 bps on first \$50M, 60 bps on next \$50M, 50 bps on balance	\$687,176	International Equity	0.70%	0.75%
AllianceBernstein	3/31/2021	\$91,845,800	International Equity	MSCI EAFE Value Index	International Equity	60 bps on first \$25M, 55 bps on next \$25M, 50 bps on next \$50M, 40 bps on remainder	\$496,729	International Equity	0.54%	0.70%
JP Morgan Emerging	3/31/2021	\$107,910,286	Emerging Markets	MSCI EM Index	Emerging Markets	90 bps on first \$50M, 85 bps on balance	\$942,237	Emerging Markets	0.87%	0.85%
Fidelity	3/31/2021	\$94,960,942	Fixed Income	Bloomberg Barclays Aggregate Bond	Fixed Income	20 bps on first \$50M, 17.5 bps on next \$50M, 10 bps thereafter	\$182,461	Fixed Income	0.19%	0.29%
Metropolitan West/ TCW	3/31/2021	\$93,028,490	Fixed Income	Bloomberg Barclays Intermediate Gov't/Credit Bond	Fixed Income	35 bps on first \$25M, 25 bps on next \$75M, 20 bps thereafter	\$261,057	Fixed Income	0.28%	0.29%
Pugh	3/31/2021	\$25,520,115	Fixed Income	Bloomberg Barclays Aggregate Bond	Fixed Income	25 bps on first \$100M, 15 bps over \$100M	\$63,800.29	Fixed Income	0.25%	0.31%
Semper	3/31/2021	\$25,313,133	Fixed Income	Bloomberg Barclays U.S. Mortgage Backed Securities	Fixed Income	50 bps on first \$25M, 35 bps on next \$25M-\$50M, 30 bps over \$50M	\$126,096	Fixed Income	0.50%	0.35%
Voya	3/31/2021	\$92,921,953	Fixed Income	S&P/LSTA Leveraged Loan	Fixed Income	45 bps on first \$100M, 38 bps on next \$150M, 35 bps on next \$250M, 20 bps thereafter	\$418,149	Fixed Income	0.45%	0.50%
Crescent Private Credit Partners	3/31/2021 <sup>1</sup>	\$16,537,589	Private Credit	N/A	Private Credit	85 bps on invested assets, 10% preferred return over a 7% hurdle	\$140,570	Private Credit	0.85%	N/A
Oaktree MMDL	3/31/2021	\$11,421,598	Private Credit	N/A	Private Credit	85 bps on all assets	\$97,084	Private Credit	0.85%	N/A
Golub Capital Partners 12, LP	3/31/2021 <sup>1</sup>	\$11,000,000	Private Credit	N/A	Private Credit	125 bps on all assets	\$137,500	Private Credit	1.25%	N/A
CenterSquare U.S. Real Estate Securities	3/31/2021 <sup>1</sup>	\$42,882,934	Real Estate	MSCI REIT	Public Real Estate	55 bps on first \$50M, 50 bps on next \$100M, 45 bps in excess of \$100M	\$235,856	Public Real Estate	0.55%	0.70%
JP Morgan SPF	3/31/2021 <sup>1</sup>	\$47,439,309	Real Estate	NCREIF ODCE	Real Estate	100 bps participant's prorate share of NAV	\$474,393	Real Estate	1.00%	0.75% - 1.50%
TA Realty Core Property Fund	3/31/2021 <sup>1</sup>	\$52,702,586	Real Estate	NCREIF ODCE	Real Estate	70 bps on all assets	\$368,918	Real Estate	0.70%	0.75% - 1.50%
Heitman Value Partners III	3/31/2021 <sup>1</sup>	\$2,065,486	Real Estate	NCREIF Property Index	Real Estate	90 bps of invested capital base, 20% of profit incentive distribution after investors receive 100% of their original capital distribution, plus a 9% preferred return on that capital	\$26,294	Real Estate	1.27%	1.00% - 1.50%
Heitman Value Partners IV	3/31/2021 <sup>1</sup>	\$10,669,543	Real Estate	NCREIF Property Index	Real Estate	90 bps of invested capital base, 20% of profit incentive distribution after investors receive 100% of their original capital distribution, plus a 9% preferred return on that capital	\$102,227	Real Estate	0.96%	1.00% - 1.50%
AEW Partners V	3/31/2021 <sup>1</sup>	\$7,689	Real Estate	NCREIF Property Index	Real Estate	125 bps on net equity invested	\$96	Real Estate	1.25%	1.00% - 1.50%

**Investment Manager Roster as of March 31, 2021**

Manager	Date	Assets Under Management*	Assignment	Benchmark	Stated Style	Fee Structure	Annual Dollar Fee	Observed Style	Average Fee	Universe Median Fee
TA Realty X	3/31/2021 <sup>1</sup>	\$813,543	Real Estate	NCREIF Property Index	Real Estate	50 bps year 1, 80 bps year 2, 110 bps year 3, all based upon total committed capital; then 120 bps year 4, 125 bps year 5, 120 bps year 6, 100 bps year 7, 60 bps thereafter on Aggregate Invested Equity plus Related Reserves	\$90,000	Real Estate	1.20%	1.00% - 1.50%
TA Realty XI	3/31/2021 <sup>1</sup>	\$25,939,126	Real Estate	NCREIF Property Index	Real Estate	50 bps year 1, 85 bps year 2, 115 bps year 3, all based upon capital commitments; then 120 bps year 4, 125 bps year 5, 120 bps year 6, 100 bps year 7, 60 bps thereafter on Aggregate Invested Equity plus Related Reserves	\$300,000	Real Estate	1.20%	1.00% - 1.50%
TA Realty XII	3/31/2021 <sup>1</sup>	\$10,572,029	Real Estate	NCREIF Property Index	Real Estate	50 bps year 1, 85 bps year 2, 115 bps year 3, all based upon capital commitments; then 120 bps year 4, 125 bps year 5, 120 bps year 6, 100 bps year 7, 60 bps thereafter on Aggregate Invested Equity plus Related Reserves	\$125,000	Real Estate	0.50%	1.00% - 1.50%
AG Core Plus Realty Fund III	3/31/2021 <sup>1</sup>	\$772,532	Real Estate	NCREIF Property Index	Real Estate	75 bps on unfunded capital during commitment period, 125 bps on net funded capital	\$134,164	Real Estate	1.34%	1.00% - 1.50%
AG Core Plus Realty Fund IV	3/31/2021 <sup>1</sup>	\$23,578,019	Real Estate	NCREIF Property Index	Real Estate	100 bps on unfunded capital during commitment period, 150 bps on net funded capital	\$377,757	Real Estate	1.51%	1.00% - 1.50%
AG Realty Fund IX	3/31/2021 <sup>1</sup>	\$23,356,356	Real Estate	NCREIF Property Index	Real Estate	150 bps on committed capital during investment period, 150 bps on net funded capital after investment period	\$375,000	Real Estate	1.50%	1.00% - 1.50%
AG Realty Value Fund X	3/31/2021 <sup>1</sup>	\$10,117,574	Real Estate	NCREIF Property Index	Real Estate	100 bps on unfunded capital during commitment period, 150 bps on net funded capital after investment period	\$200,000	Real Estate	1.00%	1.00% - 1.50%
Northwood Real Estate Partners IV	3/31/2021 <sup>1</sup>	\$20,617,215	Real Estate	NCREIF Property Index	Real Estate	200 bps on committed capital for first 5 years, after the investment period the fee is reduced to 100 bps on committed capital	\$200,000	Real Estate	1.00%	1.00% - 1.50%
Northwood Real Estate Partners VIII	3/31/2021 <sup>1</sup>	\$6,896,663	Real Estate	NCREIF Property Index	Real Estate	150 bps on committed capital for first 5 years, after the investment period the fee is reduced to 100 bps on committed capital	\$300,000	Real Estate	1.50%	1.00% - 1.50%
Westport Real Estate Fund IV	3/31/2021 <sup>1</sup>	\$16,059,466	Real Estate	NCREIF Property Index	Real Estate	150 bps on committed capital	\$300,000	Real Estate	1.50%	1.00% - 1.50%
Westport Real Estate Fund V	3/31/2021 <sup>1</sup>	\$3,400,000	Real Estate	NCREIF Property Index	Real Estate	100 bps on drawn capital and 15% carried interest above an 8% preferred return	\$34,000	Real Estate	1.00%	1.00% - 1.50%
Pomona Capital VIII	3/31/2021 <sup>1</sup>	\$1,399,994	Private Equity	S&P 500 Index	Private Equity	125 bps on committed capital	\$187,500	Private Equity	1.25%	1.00% - 2.00%
Pomona Capital IX	3/31/2021 <sup>1</sup>	\$6,293,975	Private Equity	S&P 500 Index	Private Equity	125 bps on committed capital	\$187,500	Private Equity	1.25%	1.00% - 2.00%
BlackRock Diversified PE V	3/31/2021 <sup>1</sup>	\$23,976,583	Private Equity	S&P 500 Index	Private Equity	75 bps on committed capital, 5% carried interest on primaries	\$187,500	Private Equity	0.75%	1.00% - 2.00%
BlackRock PE Partners VII US, L.P.	3/31/2021 <sup>1</sup>	\$21,569,065	Private Equity	S&P 500 Index	Private Equity	65 bps on committed capital during the investment period and on invested capital thereafter, 5% carried interest on primaries	\$162,500	Private Equity	0.65%	1.00% - 2.00%
Lexington Capital Partners IV	3/31/2021 <sup>1</sup>	\$10,715,300	Private Equity	S&P 500 Index	Private Equity	Average fee over a 10 year life of 0.69%	\$189,744	Private Equity	1.26%	1.00% - 2.00%
Lexington Capital Partners VIII	3/31/2021 <sup>1</sup>	\$9,763,681	Private Equity	S&P 500 Index	Private Equity	Average fee over a 10 year life of 0.69%	\$102,068	Private Equity	0.68%	1.00% - 2.00%
Horsley Bridge XI Venture	3/31/2021 <sup>1</sup>	\$44,574,116	Private Equity	S&P 500 Index	Private Equity	100 bps on first \$25M, 75 bps on next \$25M-\$50M, 50 bps on next \$50M-\$100M, 40bps on next \$100M-\$200M, 30 bps thereafter	\$396,806	Private Equity	0.89%	1.00% - 2.00%
Horsley Bridge XII Venture	3/31/2021 <sup>1</sup>	\$18,900,508	Private Equity	S&P 500 Index	Private Equity	100 bps on first \$25M, 75 bps on next \$25M-\$50M, 50 bps on next \$50M-\$100M, 40bps on next \$100M-\$200M, 30 bps thereafter	\$189,005	Private Equity	1.00%	1.00% - 2.00%

### Investment Manager Roster as of March 31, 2021

Manager	Date	Assets Under Management*	Assignment	Benchmark	Stated Style	Fee Structure	Annual Dollar Fee	Observed Style	Average Fee	Universe Median Fee
TrueBridge-Kauffman Fellows Endowment Fund IV	3/31/2021 <sup>1</sup>	\$54,489,565	Private Equity	S&P 500 Index	Private Equity	100 bps per annum on committed capital for the first 6 years, steps down 10% a year thereafter	\$250,000	Private Equity	1.00%	1.00% - 2.00%
TrueBridge Capital Partners Fund V	3/31/2021 <sup>1</sup>	\$22,381,787	Private Equity	S&P 500 Index	Private Equity	100 bps per annum on committed capital for the first 6 years, steps down 10% a year thereafter	\$200,000	Private Equity	1.00%	1.00% - 2.00%
Molpus Woodlands Fund IV	3/31/2021 <sup>1</sup>	\$23,621,465	Timber	NCREIF Timberland Index	Timber	94 bps per annum based on called capital plus any leverage utilized through 36 months after Final Closing and 94 bps of Fair Market Value thereafter	\$221,026	Timber	0.94%	0.75% - 1.50%
Molpus Woodlands Fund V	3/31/2021 <sup>1</sup>	\$15,922,550	Timber	NCREIF Timberland Index	Timber	100 bps per annum based on called capital plus any leverage utilized through 36 months after Final Closing and 100 bps of Fair Market Value thereafter	\$159,226	Timber	1.00%	0.75% - 1.50%
Stafford International Timberland VIII	3/31/2021 <sup>1</sup>	\$31,135,521	Timber	NCREIF Timberland Index	Timber	90 bps per annum based on commitments below \$50 million	\$270,000	Timber	0.90%	0.75% - 1.50%
BTG Pactual OE US Timberland Fund, LP	3/31/2021 <sup>1</sup>	\$33,593,919	Timber	NCREIF Timberland Index	Timber	100 bps per annum based on committed capital during investment period; 100 bps per annum of total invested equity capital thereafter	\$300,000	Timber	1.00%	0.75% - 1.50%
Eastern Timberland Opportunities III LP	3/31/2021 <sup>1</sup>	\$5,550,778	Timber	NCREIF Timberland Index	Timber	85 bps of Net Asset Value	\$47,182	Timber	0.85%	0.75% - 1.50%
<b>Total</b>		<b>\$2,052,544,304</b>					<b>\$13,606,556</b>		<b>0.66%</b>	

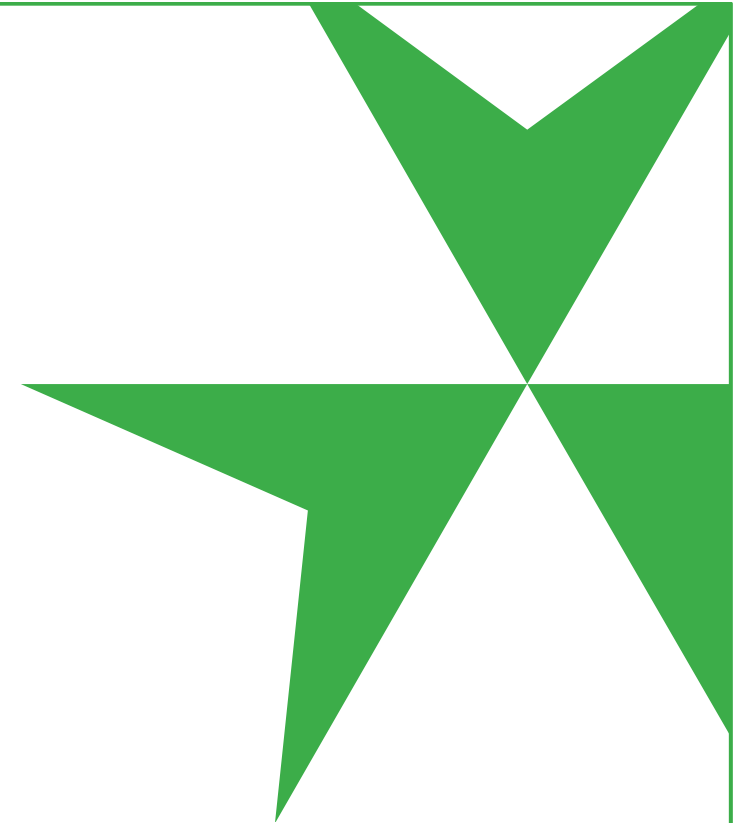
\* Does not include the in house cash account and residuals

\*\* Performance fees are estimated

<sup>1</sup> Contributions/distributions are added to the December 31, 2020 market value at cost through March 31, 2021 since the 3/31 values are not available yet

## Statistics Definition

Statistics	Definition
Return	- Compounded rate of return for the period.
Standard Deviation	- A statistical measure of the range of a portfolio's performance, the variability of a return around its average return over a specified time period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.
Alpha	- A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market, or a portfolio's non-systematic return.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.
R-Squared	- The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Square means a higher correlation of the portfolio's performance to the appropriate benchmark.
Tracking Error	- A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.
Information Ratio	- Measured by dividing the active rate of return by the tracking error. The higher the Information Ratio, the more value-added contribution by the manager.
Active Return	- Arithmetic difference between the managers return and the benchmark return over a specified time period.
Up Market Capture	- The ratio of average portfolio return over the benchmark during periods of positive benchmark return. Higher values indicate better product performance.
Down Market Capture	- The ratio of average portfolio return over the benchmark during periods of negative benchmark return. Lower values indicate better product performance.



Implementing Illiquid Investments – Due Diligence, Pacing and Design

# Sample

Jeffrey C. Boucek, CFA

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**Segal Marco Advisors**

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# Private Markets Portfolio Construction

## *Our Philosophy*

**Three core principles—tailored to specific client objectives and parameters—lead to optimal private markets program.**

### **Proactive Manager Research**

- Targeted sourcing program to continuously enhance breadth and depth of global private markets investment manager and opportunity set
- Integrate effects of prevailing macro conditions on private market managers' value propositions to prioritize focus and develop pipeline

### **Consistent Allocations**

- Make regular commitments to annual program aligned with strategic funding roadmap to achieve specified allocation targets
- Ensure high quality manager exposure, as well as appropriate vintage year and manager diversification
- While market timing or short term “fad” chasing is inherently risky – trend recognition and flexibility to consider appropriate adjustments to commitment plan is critical

### **Portfolio of Fewer, High Conviction Managers**

- Retaining diversity by strategy and geography is critical
- Manager selection remains paramount
- Larger – but rational – commitment sizes provides scaled impact on portfolio, the potential for fee savings and enhanced implementation cost efficiency

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# Private Markets Portfolio Construction

## *Our Framework*

- Define Key Program Objectives
  - Achieve target allocation within reasonable trajectory
  - Ultimately become self-funding (i.e. distributions fund capital calls)
  - Diversify sources of risk and return at the Total Plan level
  - Experience cost effective delivery
- Develop prudent, diversified “core” base, coupled with “satellite” or more opportunistic allocation, by combining top-down macro analysis with a bottom-up fundamental manager selection
  - Create foundational core to ensure capture of long-term expected asset class return
  - Emphasize strategic themes in the foundation supported by a strong long-term dynamic
  - Complement with targeted, niche opportunities to capture nuanced market inefficiencies, providing additional source of less correlated alpha
- Consider underlying exposures and risk tolerance of the broader Plan; maximize contribution of private markets to overall risk/return profile
- Vehicle selection dependent on program size, objectives, liquidity constraints and tax considerations



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# Sample: PE Portfolio Construction & Implementation

## *Step 1: Review of Current Portfolio*

### **Portfolio Observations**

- Corporate Finance/Buyout-centric construction, dominated by mega/large cap
- Reasonably geographically balanced between U.S./North America and Non-U.S., with Western Europe being the largest Non-U.S. component
- Relatively concentrated vintage year pacing with approximately 60% of total capital committed to five years
- Minimal primary Venture Capital allocation, though some exposure through legacy FOF
- Concentrated manager exposure within Growth Equity
- Meaningful allocation to “all weather”-oriented Special Situations managers, most of which are still in capital draw mode
- Secondaries commitments consist of mostly traditional, mega/large sponsorship
- Tech, healthcare and industrial are leading industry sector exposures

Note: Observations are based on sample client portfolio and for illustrative purposes only.

# Sample: PE Portfolio Construction & Implementation

## Step 2: Develop Private Equity Commitment Plan

Record Date	12/31/2018
Rollforward Date	03/31/2019

Total Plan AuM \$	\$ 5,752,000,000
Rollforward Total Plan AuM \$	\$ 6,244,700,000

Asset Class	Actual - \$ PE	Actual - % PE	Policy Target - % PE	Policy Target - \$ PE	Δ Policy Target/Actual \$	Δ Policy Target/Actual %
Private Equity	\$ 385,434,578	6.70%	9.0%	\$ 600,000,000	\$ (214,565,422)	-2.3%

Total Plan Net Liability Growth Rate	7.00%	PE Portfolio Growth Target \$	\$ 726,072,980
Target Private Equity Allocation %	9.0%	Net PE Growth Target	\$ 320,669,445
2019 PE CMA Assumptions (Compound)	9.8%	Net PE Growth Multiple	1.9x

Private Equity Portfolio Growth Target	YE 2018	YE 2019	YE 2020	YE 2021	YE 2022	YE 2023
Est. Total Plan NAV	\$ 5,752,000,000	\$ 6,154,640,000	\$ 6,585,464,800	\$ 7,046,447,336	\$ 7,539,698,650	\$ 8,067,477,555
Est. Total Benefit Payments	\$ (247,336,000)	\$ (279,084,001)	\$ (284,282,482)	\$ (297,659,256)	\$ (311,868,258)	\$ (327,212,692)
Est. Legacy PE Portfolio NAV	\$ 385,434,578	\$ 430,581,625	\$ 458,822,039	\$ 464,618,850	\$ 446,471,471	\$ 405,403,535
Est. PE Policy Target (9% of Total Plan)	\$ 517,680,000	\$ 553,917,600	\$ 592,691,832	\$ 634,180,260	\$ 678,572,878	\$ 726,072,980
Δ PE Target \$	\$ (132,245,422)	\$ (123,335,975)	\$ (133,869,793)	\$ (169,561,410)	\$ (232,101,407)	\$ (320,669,445)
Calendar Year - PE Committed \$	\$ 139,932,786	\$ 213,450,000	\$ 240,000,000	\$ 240,000,000	\$ 240,000,000	\$ 240,000,000
Est. PE NAV	\$ 385,434,578	\$ 435,785,925	\$ 488,577,861	\$ 550,491,723	\$ 630,634,244	\$ 726,502,591
PE % Total Plan	6.7%	7.1%	7.4%	7.8%	8.4%	9.0%
Target PE \$ +/-	\$ (132,245,422)	\$ (118,131,675)	\$ (104,113,971)	\$ (83,688,537)	\$ (47,938,635)	\$ 429,611
Target PE % +/-	-2.3%	-1.9%	-1.6%	-1.2%	-0.6%	0.0%

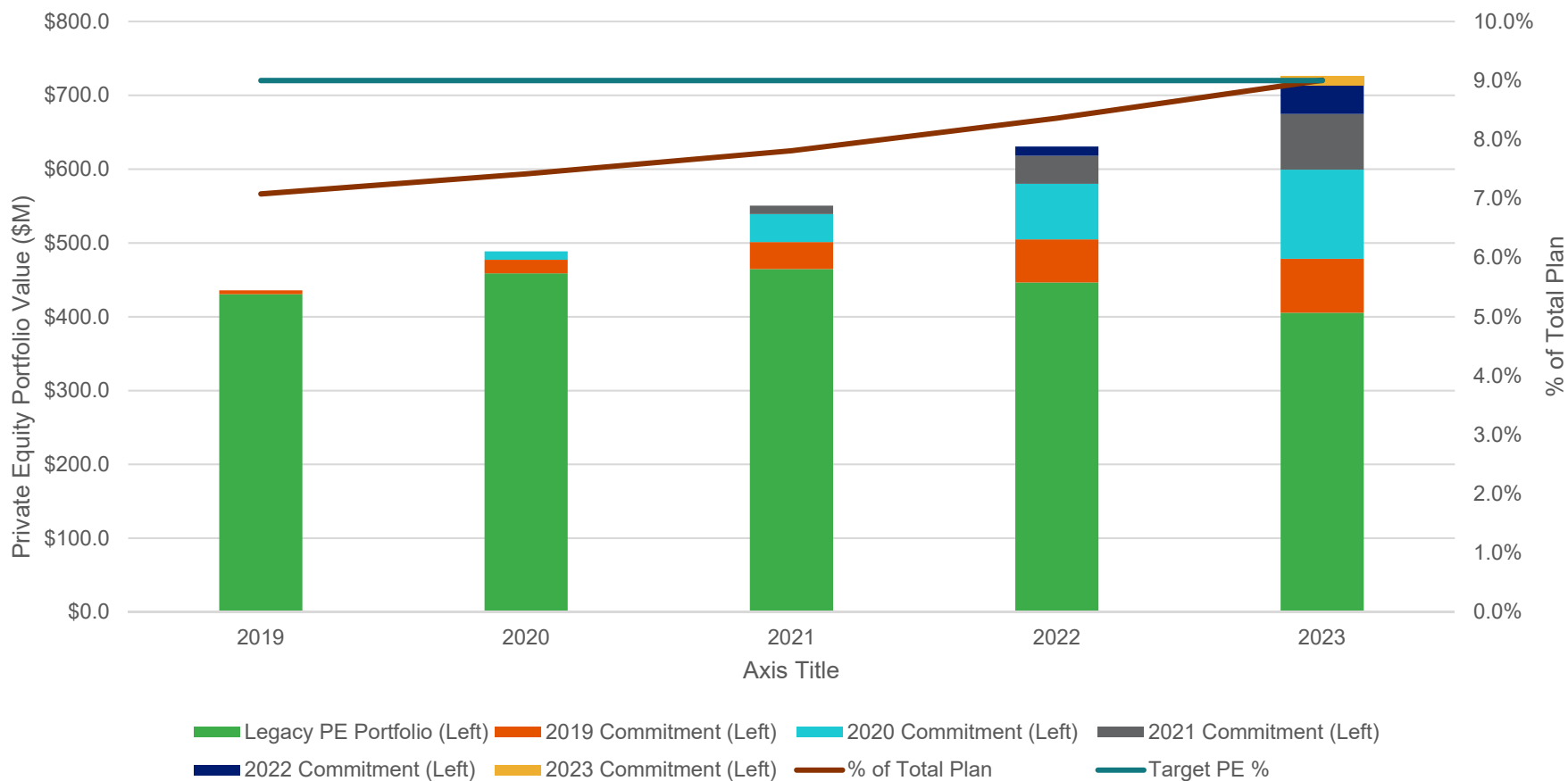
<u>Private Equity:</u>						
Over Commitment Factor	1.5x	\$ 1,089,109,470	\$ 217,821,893.98	\$ 43,564,378.80		
	<u>YE 2018</u>	<u>YE 2019</u>	<u>YE 2020</u>	<u>YE 2021</u>	<u>YE 2022</u>	<u>YE 2023</u>
<b>Calendar Year - PE Committed \$</b>	<b>\$139,932,786</b>	<b>\$213,450,000</b>	<b>\$240,000,000</b>	<b>\$240,000,000</b>	<b>\$240,000,000</b>	<b>\$240,000,000</b>
Legacy Committed	\$139,932,786	\$93,450,000	\$ -	\$ -	\$ -	\$ -
SMA Committed	\$ -	\$ 120,000,000	\$ 240,000,000	\$ 240,000,000	\$ 240,000,000	\$ 240,000,000
# Funds Committed	12	12	8	8	8	8
Ave. Commitment Size	\$11,661,066	\$17,787,500	\$30,000,000	\$30,000,000	\$30,000,000	\$30,000,000
Avg. Commit. Size %	0.2%	0.3%	0.5%	0.4%	0.4%	0.4%
Cumulative Private Equity Commitments*	\$ -	\$120,000,000	\$360,000,000	\$600,000,000	\$840,000,000	\$1,080,000,000

Note: Sample client portfolio. For illustrative purposes only.

# Sample: PE Portfolio Construction & Implementation

## Step 2: Develop Private Equity Commitment Plan

Private Equity Cash Flow Analysis (9% Policy Target)



	2019	2020	2021	2022	2023
<b>Total</b>	<b>\$210M</b>	<b>\$240M</b>	<b>\$240M</b>	<b>\$240M</b>	<b>\$240M</b>
<b>Estimated Allocation</b>	<b>7.1%</b>	<b>7.4%</b>	<b>7.8%</b>	<b>8.4%</b>	<b>9.0%</b>

Note: Sample client portfolio. For illustrative purposes only.

# Sample: PE Portfolio Construction & Implementation

## Step 3: Create Portfolio Road Map

	2019	2020
Buyout	\$30 - 60M	\$30 - 60M
Secondaries	\$20 - 40M	\$0 - 30M
Special Situations / Credit	\$30 - 60M	\$60 - 90M
Venture Capital/Growth Equity	\$60 - 100M	\$40 - 100M
<b>Total</b>	<b>\$210M</b>	<b>\$240M</b>

- Reinforce global Corp Finance/Buyout core
  - Increase exposure to small and mid-market cap, along with larger average commitment sizes
  - Emphasis on managers with deep domain expertise, integration of investment and operational expertise
- Meaningfully increase primary Venture Capital allocation
  - Focus on innovation with bias to Tech, Healthcare/Bioscience, Telecomm & Media and Consumer, and Seed/Early Stage bias
- Diversify Growth Equity manager selection, and increase commitment level to adjust for distributions from existing investments
- Maintain robust Special Situations allocation on a global basis for up/down market capture
  - Diversify strategically to complement “all weather” commitments
- Continue evergreen commitments to Secondaries to provide J-Curve insurance and enhance rolling vintage year diversification, given current concentrated profile
  - Include small and mid-market funds and consider specialized investments such as Venture Capital only and “Direct” Secondaries
- Maintain flexibility to adjust 2020 Road Map as market conditions and cash flow assumptions evolve

Note: Sample client portfolio. For illustrative purposes only.

# Sample: Portfolio Construction & Implementation

## Step 4: Manager Selection

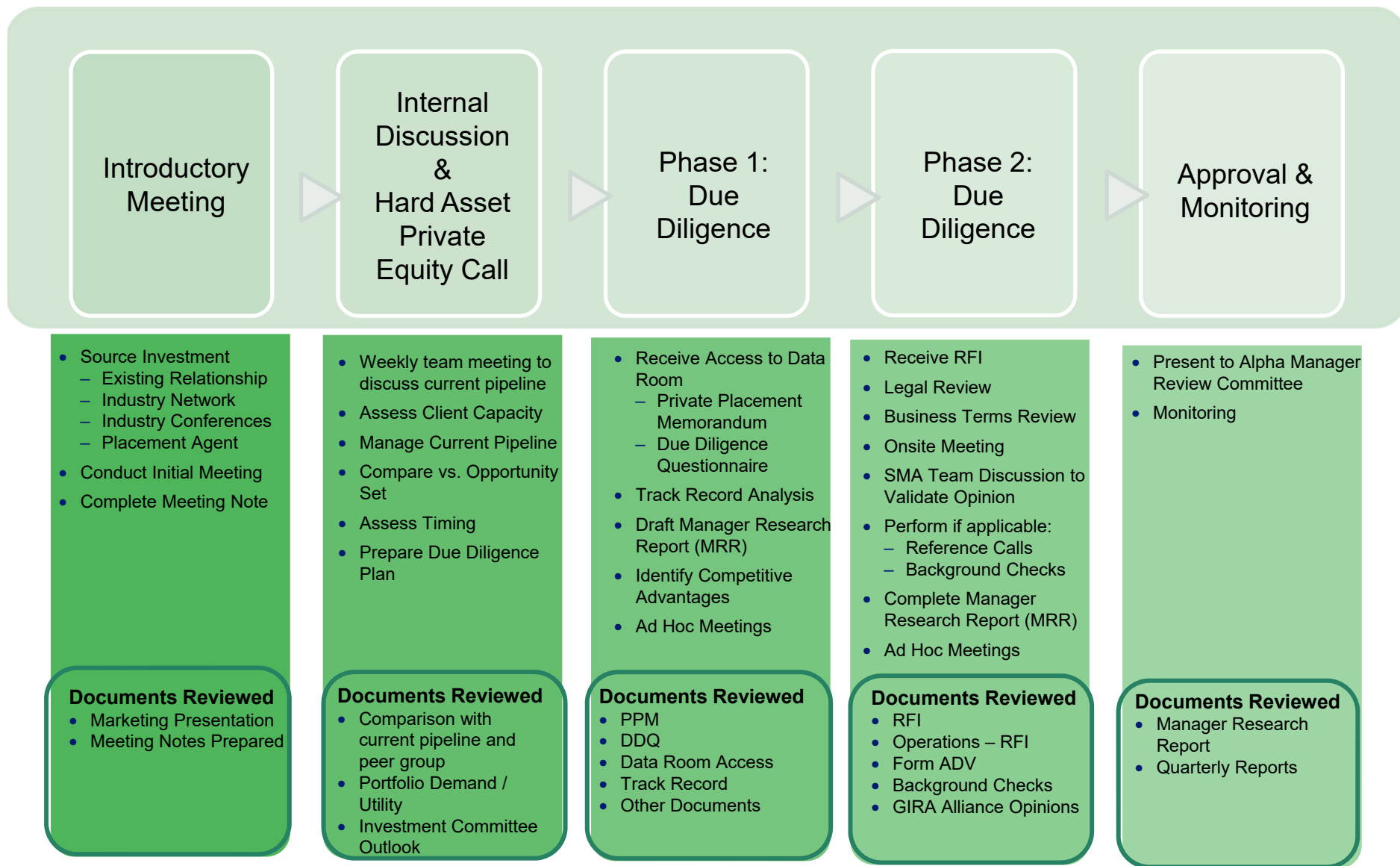
Year	Fund	Strategy	Region
1H 2019	Artis Ventures III	Venture	North America
1H 2019	Endeavour Fund	Venture	North America
1H 2019	Polaris Partners IX	Venture	North America
1H 2019	LGT CSSO II	Secondary	Global
1H 2019	Whitehorse Liquidity III	Secondary	Global
1H 2019	Corrum Aviation Investors 2018	Private Credit	Global
1H 2019	Hahn & Co. III	Buyout/Growth	Global/Asia
1H 2019	InvestIndustrial	Buyout	S. Europe/Global
1H 2019	LM Equity Partners V	Buyout	Global
1H 2019	JLL Partners V	Buyout	North America
1H 2019	HIG Middle Market Fund III	Buyout	North America
1H 2019	Gryphon Partners V	Buyout	North America
2H 2019	KPS V	Special Situations	North America
2H 2019	Bayside Loan Opportunity V	Special Situations	Europe
2H 2019	KPS LMMBO	Special Situations	North America
2H 2019	Charlesbank Equity Partners X	Buyout	North America
2H 2019	ABRY IX	Buyout	North America
2H 2019	Searchlight III	Buyout	Global
2H 2019	Juggernaut Capital Partners IV	Buyout	North America
2H 2019	Varde Fund XIII	Special Situations	Europe
2H 2019	Sun Capital Partners	Special Situations	North America
2H 2019	Insight Equity III	Special Situations	North America
2H 2019	Rhone Capital	Buyout	Europe
2H 2019	CDH Fund VI	Growth	China
2H 2019	Archipelago Capital Fund I	Growth	SE Asia
1H 2020	FP Credit Opportunities	Private Credit	North America
1H 2020	Lightspeed	Venture	Global
1H 2020	Crosslink Partners IX	Venture	North America
1H 2020	Hellman & Friedman Capital Partners X	Buyout	North America
1H 2020	Resolute Fund V	Buyout	Global
1H 2020	Berkshire Fund X	Buyout	Global
1H 2020	MidOcean VI	Buyout	Global
1H 2020	Sterling Group V	Buyout	Global
1H 2020	ACON Equity Partners V	Buyout	North America
1H 2020	Nordic Capital	Buyout	Nordic Region
1H 2020	OrbiMed Asia Partners IV	Growth	Asia
2H 2020	Hidden Harbor Capital Partners II	Buyout	North America
2H 2020	MB Special Opportunities Fund II	Special Situations	Europe
2H 2020	ComVest Investment Partners VI	Special Situations	North America
2H 2020	SVP Special Situations IV	Special Situations	Global
2H 2020	SAIF Partners V	Growth	Asia
2H 2020	Lombard Asia IV	Growth	Asia

Year	Fund	Strategy	Region
1H 2021	THL IX	Buyout	North America
1H 2021	Trilantic Capital Partners VII	Buyout	North America
2H 2021	Excellere Partners IV	Buyout	Europe
2022-2023	BC Partners	Buyout	Europe
2022-2023	J-STAR Fund V	Buyout	Japan
2022-2023	SK Capital Partners VI	Buyout	North America
2022-2023	Littlejohn V	Special Situations	North America
2022-2023	Arsenal Capital Partners VI	Buyout	North America
2022-2023	Blue Wave Capital Fund V	Special Situations	North America
2022-2023	Castiljae V	Special Situations	North America
2022-2023	Francisco Partners VI	Buyout	North America
2022-2023	JC Flowers V	Buyout	Global
2022-2023	TSG 9	Buyout	North America
2022-2023	SAIF India Fund VII	Growth	India
2022-2023	Sofinnova Venture Partners XI	Venture	Global
2022-2023	Clarus Ventures V	Venture	Global
2022-2023	Lightspeed Venture Partners IV	Venture	Global
2022-2023	Redpoint Ventures VIII	Venture	North America
2022-2023	Forebright New Opportunities Fund II	Growth	China

SAMPLE PIPELINE REPORT

Note: For illustrative purposes only.

# Illiquid Asset Investment Process



# Operational Due Diligence Framework

As part of Segal Marco's due diligence, the following operational items are evaluated:

## **Legal & Regulatory Compliance Policies & Procedures**

- Regulatory agencies the firm/fund are subject to; Team and/or employee (s) whom monitor compliance/report to regulatory agencies; Review and assess RIA, CRD, SEC, Form PF, etc. to ensure accuracy, timely reporting, and reconciliation of all stated filing information with manager provided DDQs and on-site interviews; Global regulatory compliance; Internal/external legal counsel; Corporate governance, ESG/Impact, UN PRI; AML/KYC

## **Middle & Back Office Infrastructure**

- Tracking all investments, cash flows, performance, and underlying company detail; Portfolio performance; Benchmarking and analytics; Custom reporting; Public stock monitoring and liquidation; Outline and details/names of individuals responsible for cash management policies and procedures; Cyber security protocols; Any prior cybersecurity breaches, back up facilities in place; BC/RC policies and procedures

## **Valuation & Cash Management Policies**

- Treasury: Managing bank, brokerage, and custody relationships; Daily cash management; Foreign currency management; Credit line management; Capital call/distribution to/from investors; Incoming and outgoing wire transfer activity
- Portfolio Operations: Primary operations point of contact; Tracking investments, cash flows, performance, and underlying company detail; Portfolio performance; Asset/liability management

## **Tax Management & Vehicle Structure**

- Global tax compliance and planning for the firm, funds, accounts, and portfolio investments; Annual tax reporting to investors; Structuring for products, customized client solutions and investments
- Fund & Vehicle Structure: Tax implications; Parallel fund structure; Credit quality assessment; Most Favored Nation provisions; Tax-exempt status; ERISA status; Side-letters; Fiduciary responsibility

## **Other Operational Due Diligence Items**

- Side Letters; parallel, feeder, other alternative investment vehicles; LP concentration; investor documentation requirements for fund credit facilities; qualified custodian assessment; AMLP documentation requirements; UBTI exposure parameters/limitations; Reliance on "fraction rule"

## **Documents Reviewed**

- Quarterly/annual reports for each active fund; Audited financial statements for all active funds; Most recent audited financial statements for the firm; Forms ADV I & II; SAS 70; Qualified opinion on audited performance of strategies; GIPS verification letter; Copy of SEC Investment Adviser Examination letter or comments on exam findings; Policies and Procedures Manuals for operations, security pricing, and proxy voting; BC/DR & Code of Ethics Manuals; Listing of any processes that are outsourced, what company is used and how often the contract is reviewed; Limited Partner references, CEOs of portfolio companies in funds and GPs firm co-invests with; Generic DDQ with information on current fund offering; Valuation Policy; PPM

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**ABC Pension**

# **Asset / Liability Modeling**

**Stochastic Analysis**

*Presented by:*

*Jeffrey Boucek, CFA - Senior Vice President*

*David Palmerino, FSA, CFA – Vice President, Risk Management*

*Robert Hungerbuhler – Consultant*

# Objectives

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- The study aims to help the ABC Pension determine an appropriate strategic asset allocation for the defined benefit plan.
  
- The study evaluates the impact of shifts in the Current Target asset allocation on specific liability objectives and metrics.
  
- The primary investment objective of the Plan is to ensure, over the long-term life of the Plan the following:
  - To provide an adequate pool of assets to support the benefit obligations to participants, retirees and beneficiaries.
  - To improve the Plans' funded status, therefore providing the opportunity to reduce employer contributions and ultimately to improve benefit levels.
  - To achieve a prudent level of investment return and portfolio risk, consistent with the Plan's projected cash flow needs and the Board's risk tolerance and preferences.
  
- The results highlight tradeoffs across varying projected economic outcomes and between different allocations, ultimately to prioritize and tailor the allocation to the Plan's investment objectives.

# Executive Summary

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- ABC remains extremely well-funded (~115%), in particular when compared to other public pension systems.
- The current target allocation is relatively well diversified, albeit with a high public equity component. While this bias has served the Plan very well, particularly over the past 10 years, future long term results may be different.
- Since the last ALM Study was conducted, expectations for a lower return environment have driven asset class assumptions lower.
- In consideration of these adjustments, coupled with an ever-changing investment landscape; an Asset/Liability Study was undertaken to analyze and assess the appropriateness of both the current allocation as well as various additional portfolios.
- Additional portfolio considerations are designed to provide adequate levels of return without undue volatility in returns, contributions and funded ratio.

# Executive Summary

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- This study considers six different strategic asset allocations (including the current policy allocation) for plan assets and compares the relative merits of each both quantitatively and qualitatively.
  - The alternative portfolios are described in detail in the body of the report.
- Quantitative analysis focuses on a comparison of stochastic modeling (multiple scenario analysis) output for key asset-liability variables, namely, funded percentage. A high-level overview of those **10 year** results is below:

Funded %	Current	Port 1	Port 2	Port 3	Port 4	Port 5
Median	96%	103%	96%	99%	100%	105%
Worst Case	42%	36%	46%	45%	44%	45%

- Based solely on quantitative considerations, there is compelling evidence that the current portfolio can be improved, in median and worst case scenarios, by moving to any of the candidate portfolios other than Port 1 (based on funded status).
  - These portfolios offer improved “worst case” outcomes with the same to improved median results. Port 2 has the same median results but the most improved downside relative to the other portfolios. Port 5 has the most improved median and consequently overall “upside” results with improved “worst case” as well.
- The decision is not solely a quantitative one; however, and qualitative considerations must also be weighed.
  - Port 2 thru 5 include increased exposure to more illiquid asset classes than does the current portfolio, adding an element of liquidity risk (particularly in down-markets) and also an element of complexity.

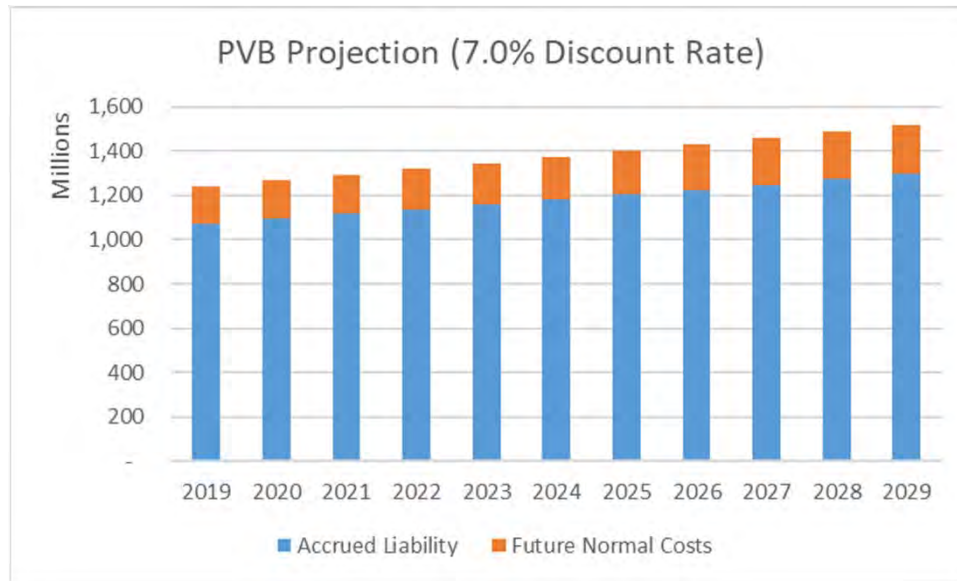
# Background

Census Data	01-Oct-2018	01-Oct-2019
Active Participants	2,581	2,581
Terminated Participants	105	N/A
Retired Participants	2,364	N/A
Average Active Payroll (\$)	55,570	57,098
Total Participants	5,050	N/A
Funding Metrics		
Market Value of Assets	1,232,532,846	1,227,583,359
Actuarial Value of Assets (AVA)	1,172,618,765	1,205,121,712
Discount Rate	7.00%	7.00%
Present Value Future Benefits	1,209,161,723	1,238,031,061
Actuarial Accrued Liability (AAL)	1,045,751,504	1,070,884,223
Unfunded AAL (UAAL)	(126,867,261)	(134,237,489)
Funded Ratio (AVA / AAL)	112%	113%
Entry Age Normal Cost	21,456,529	22,153,866
Normal Cost % of Payroll	15%	15%
Contributions % of Payroll	12%	12%

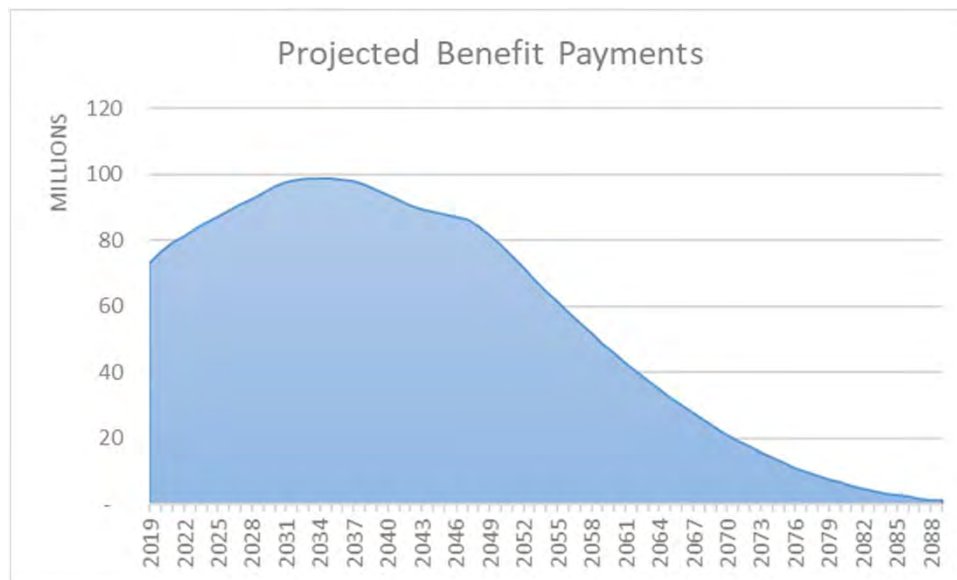
- The plan is very well funded, with estimated market value of assets at about 115% of the accrued liability at October 1, 2019
- The funding policy is to contribute 12% of payroll annually – evenly divided among employee and employer contributions
- The cost of benefits accruing each year (the normal cost) is approximately 15% of payroll

- The October 1, 2019 figures are estimated
- Projections presume a stable active headcount and that total payroll increases with the inflation assumption of 3.25%
- The projections do not incorporate any assumption changes discussed in the recently completed experience investigation

# Projected Liabilities



- The Present Value of Benefits (PVB) includes both past service liability (accrued liability), and the liability attributable to future service accruals for then active participants (future normal costs)



- Estimated projected future benefit payments for current participants, based on information provided by the actuary

## Liability and Cost Projections

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- Liability projections were produced by Segal Marco Advisors solely for use in the comparison of alternative asset allocations and should only be considered appropriate for that purpose
- They should not be considered reliable or authoritative estimates of future liabilities or costs, but we believe the estimates are reasonable for the stated purpose of comparing alternative asset allocations, and are based on standard actuarial techniques
- The projected liability estimates are based on the October 1, 2018 valuation report published by the actuary and also projected benefit payments supplied by the actuary, but a number of simplifications were made:
  - » Total compensation is assumed to increase by the inflation assumption of 3.25% per year and the entry age normal cost is therefore projected to increase at about 3.25% per year
  - » Entry age normal accrued liability is then rolled forward with normal cost and projected benefit payments – no provision is made for new entrants as they enter with no accrued liability
  - » Present value of future benefits was rolled forward with interest cost and projected benefit payments and increased by about 1.3% each year to account for new entrants who will enter the plan to replace terminating or retiring employees (the model was calibrated such that present value of future normal costs grow at a “reasonable” rate of about 2.0-2.5% per year)

# Roll Forward Liability Projections

Year	PVB	EANAAL	EANC	Payroll	Benefits
2019	1,238,031,061	1,070,884,223	22,153,866	148,087,373	73,155,861
2020	1,265,902,736	1,093,834,439	22,873,867	152,900,212	76,629,549
2021	1,292,653,610	1,115,566,304	23,617,268	157,869,469	79,259,088
2022	1,319,081,360	1,136,893,265	24,384,829	163,000,227	81,361,235
2023	1,345,718,858	1,158,358,682	25,177,336	168,297,735	83,460,060
2024	1,372,594,334	1,180,002,377	25,995,599	173,767,411	85,364,470
2025	1,399,939,111	1,202,065,608	26,840,456	179,414,852	87,085,068
2026	1,427,993,302	1,224,796,443	27,712,771	185,245,834	88,994,338
2027	1,456,626,722	1,248,075,719	28,613,436	191,266,324	90,732,528
2028	1,486,076,043	1,272,149,230	29,543,373	197,482,480	92,643,969
2029	1,516,236,921	1,296,924,576	30,503,532	203,900,660	94,517,627
2030	1,547,217,990	1,322,522,332	31,494,897	210,527,432	96,205,951
2031	1,579,292,556	1,349,225,276	32,518,481	217,369,573	97,480,637
2032	1,612,981,652	1,377,573,361	33,575,332	224,434,084	98,162,198
2033	1,649,039,449	1,408,331,226	34,666,530	231,728,192	98,525,282
2034	1,687,996,373	1,442,033,932	35,793,192	239,259,358	98,725,716
2035	1,730,264,668	1,479,093,907	36,956,471	247,035,287	98,680,326
2036	1,776,379,330	1,520,039,767	38,157,556	255,063,934	98,361,992
2037	1,826,949,770	1,565,466,475	39,397,677	263,353,512	97,734,318
2038	1,882,675,939	1,616,049,623	40,678,101	271,912,501	96,690,292
2039	1,944,430,293	1,672,624,213	42,000,140	280,749,658	95,290,817

- PVB: Present Value of Future Benefits
- EANAAL: Entry Age Normal Actuarial Accrued Liability
- EANC: Entry Age Normal Cost



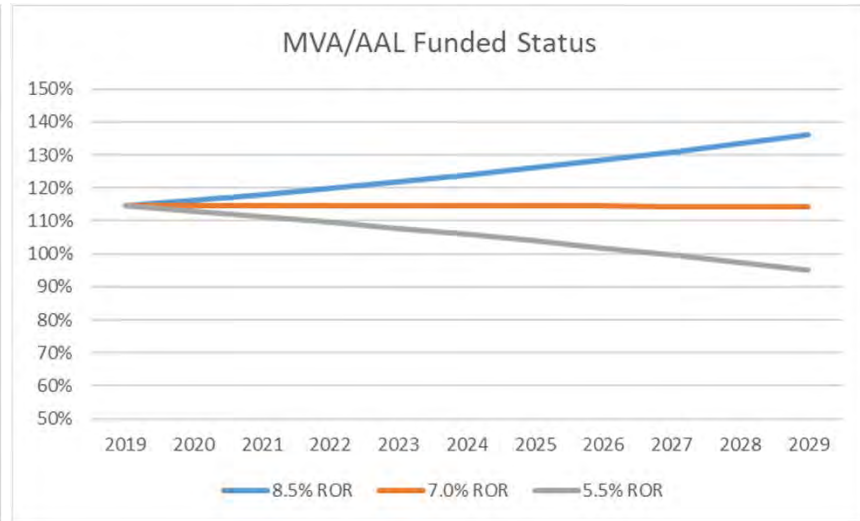
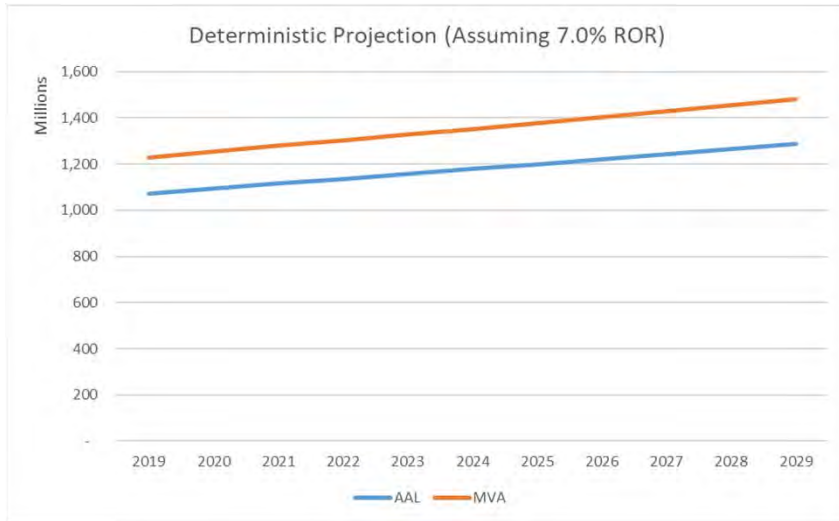
# Current Portfolio

## Asset and Product Mixes

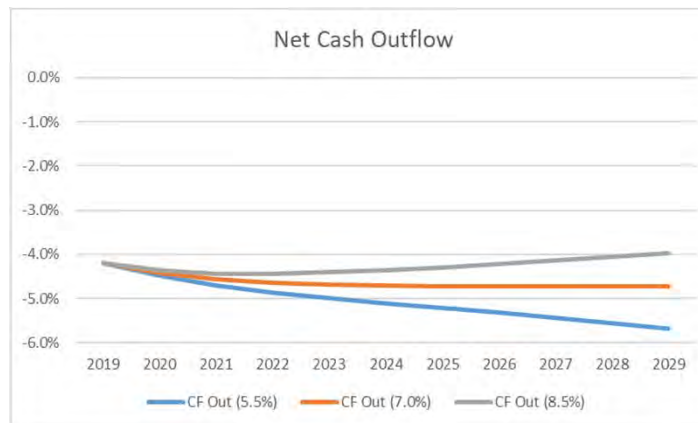
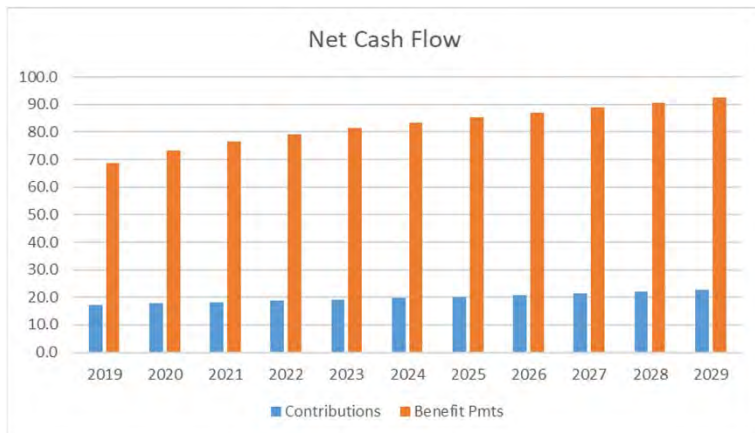
	Current Policy
US Equity	50.0%
International	10.0%
<b>Total Equity</b>	<b>60.0%</b>
Core Fixed Income	25.0%
Global Fixed Income	5.0%
<b>Total Fixed Income</b>	<b>30.0%</b>
Hedge Fund of Funds	5.0%
Real Estate	5.0%
<b>Total Alternative</b>	<b>10.0%</b>
<b>20 Year Expected Return (Arithmetic)</b>	<b>6.6%</b>
<b>20 Year Expected Return (Geometric)</b>	<b>6.1%</b>
<b>Standard Deviation</b>	<b>10.5%</b>
<b>Sharpe Ratio</b>	<b>0.38</b>

- This table is based on 2020 SMA capital market assumptions which were finalized in February
- Expected returns are generally lower than 2019 assumptions driven mainly by the dramatic dip in bond yields over the prior 12 months and therefore lower outlook for fixed income returns
- Using our capital markets model, median results for the current portfolio will trail the expected rate of return used for actuarial valuation purposes (7.0%)
- The median results in our simulations for the current portfolio will correspond with a compound return of 6.1%

# Deterministic (Single Scenario) Projections

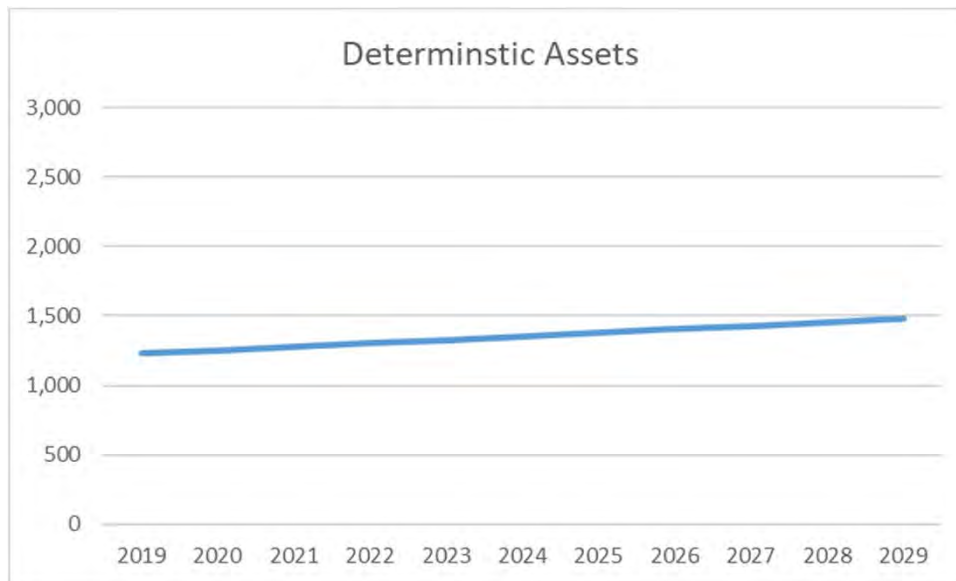


- Assuming the plan earns 7.0%, the market value of assets (MVA) will continue to exceed the accrued liability (AAL) for the foreseeable future
- The rate of return can have a dramatic impact on future funded status, the plan would become underfunded if the rate of return is 5.5%
- These charts assume that both the employees and employer contributes 6% of pay (each) for each plan year

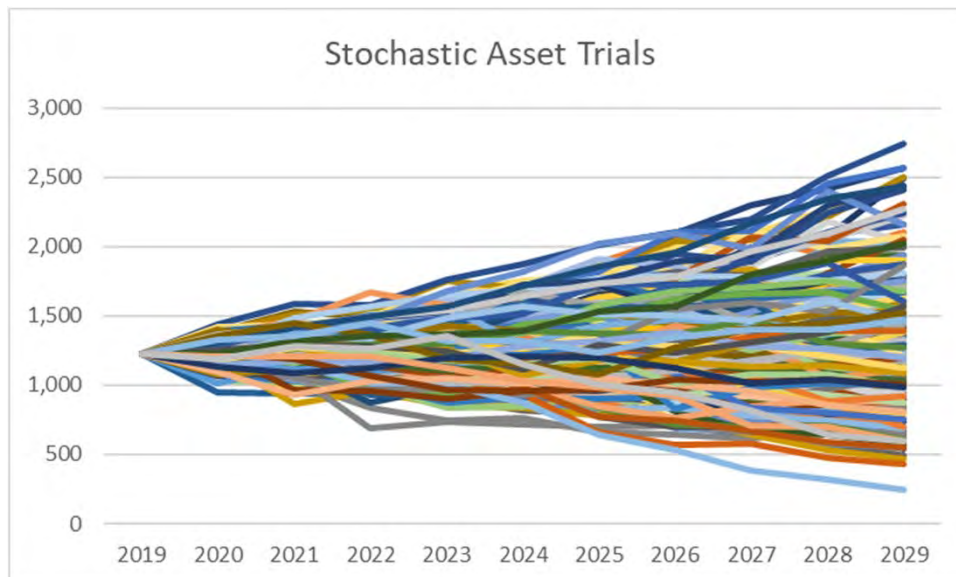


- The plan will have material net cash outflows over the next decade
- The extent of the net cash outflow may be exacerbated in poor return environments

# Explanation of Deterministic vs. Stochastic Projections

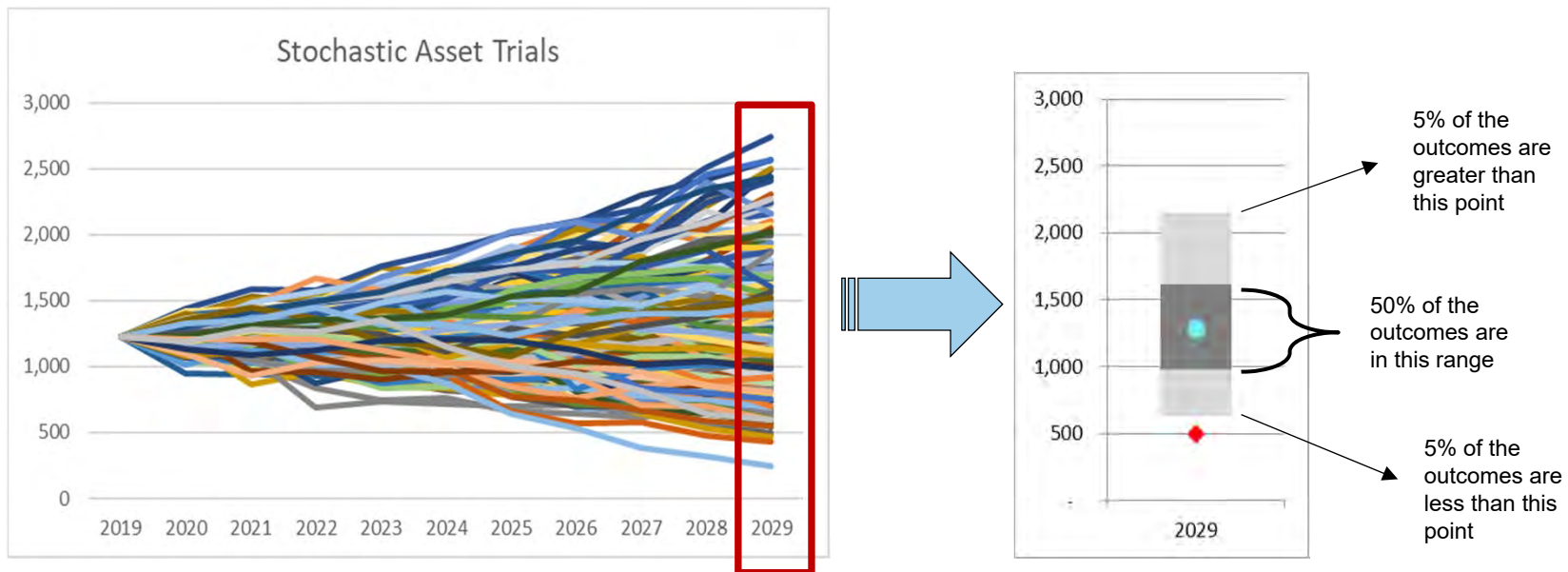


- Deterministic (single scenario) projections convey *expectation* and directional trend, but give no sense of the possible volatility of results
- They are *simpler and easier* to understand but are difficult to use in assessing alternatives and do not measure risk/reward trade-offs



- Stochastic (multiple scenario) projections produce a distribution of results so *expectation* and *volatility* around expected results can be calculated
- They are *complex* and require many assumptions but are superior in terms of aiding decisions that require the weighing of *risk/reward* trade-offs
- Typically 2,000 trials are run

# Explanation of Deterministic vs. Stochastic Projections

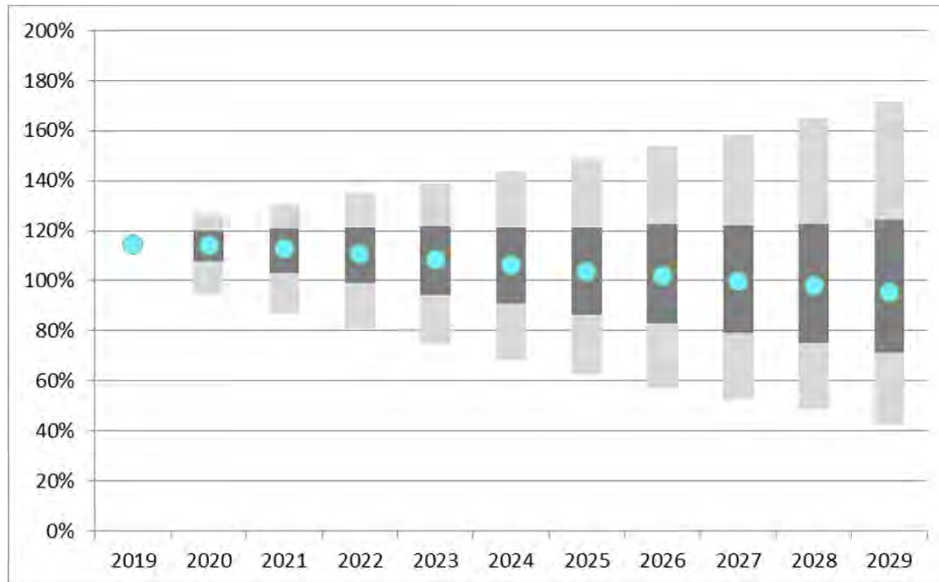
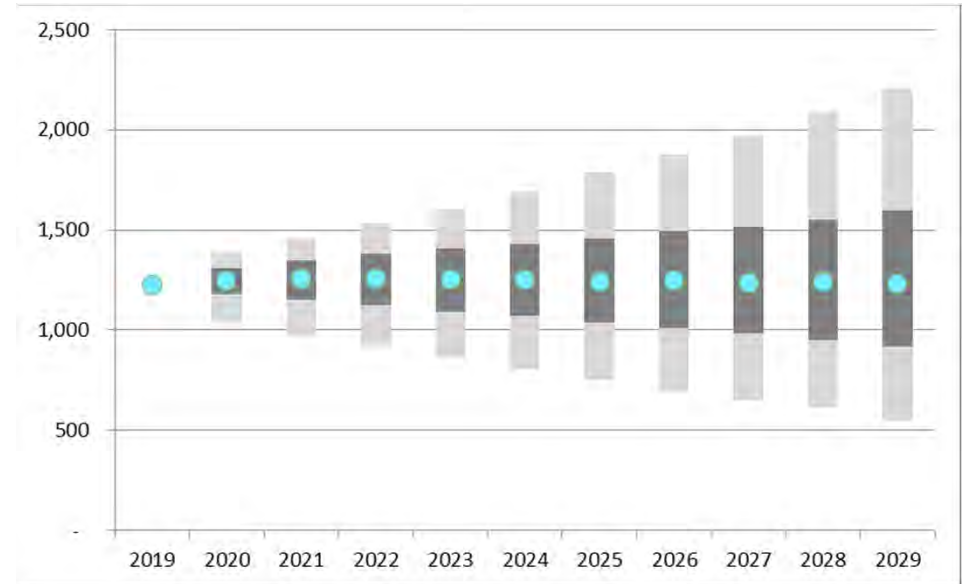


- Stochastic projection results can be summarized as distributions and statistics can be calculated
- The **median** is represented by the blue dot at the center of the distribution
- The **red** diamond is the average of the 100 worst trials (lower 5% tail)
- Other percentile results are calculated as well

# Stochastic Projections – Current Portfolio

## Market Value of Assets (\$m)

- Assets are expected to remain relatively stable in terms of total dollar value over the next 10 years
- There is a 5% chance assets are \$546m or less by 2029; and a 50% chance they are in the range of \$916m to \$1,600m
- All stochastic projections assume that total contributions of 12% of pay are made each year



10yr Cmpd Returns - Simulated	20yr Cmpd Returns - Simulated
10.57%	10.35%
7.71%	7.92%
5.57%	6.03%
3.29%	3.99%
-0.13%	0.88%

## Funded Percentage

- Market value of assets compared to actuarial accrued liability
- The plan is expected to remain at or near fully funded in the median, and there is a 50% chance the funded status in 10-years is in the range of 71% to 125%
- These median results trail the results of the deterministic projection - there is less than 50% chance the current asset allocation earns a 7% rate of compound return according to our capital market assumptions

# Candidate Portfolios

## Asset and Product Mixes

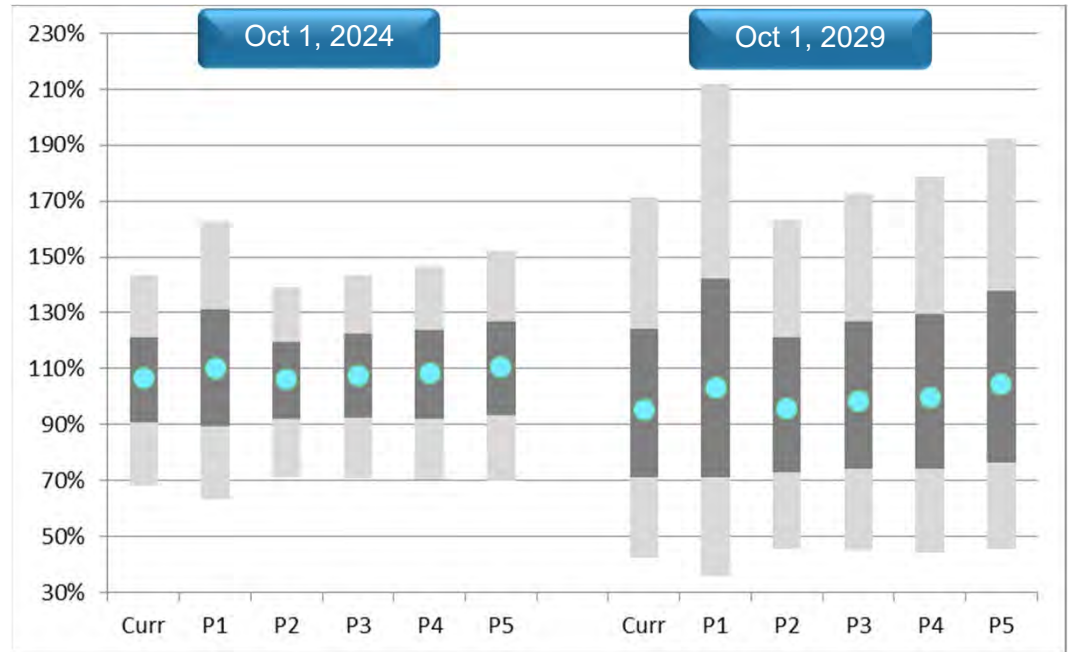
	Current	Port 1	Port 2	Port 3	Port 4	Port 5
US Equity	50.0%	65.0%	42.5%	45.0%	47.5%	42.5%
International	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Emerging Market Equity						5.0%
<b>Total Equity</b>	<b>60.0%</b>	<b>75.0%</b>	<b>52.5%</b>	<b>55.0%</b>	<b>57.5%</b>	<b>57.5%</b>
Core Fixed Income	25.0%	10.0%	27.5%	22.5%	20.0%	17.5%
Emerging Market Debt						5.0%
Global Fixed Income	5.0%	5.0%	5.0%	5.0%	5.0%	
<b>Total Fixed Income</b>	<b>30.0%</b>	<b>15.0%</b>	<b>32.5%</b>	<b>27.5%</b>	<b>25.0%</b>	<b>22.5%</b>
MACS		5.0%	5.0%	5.0%	5.0%	5.0%
Hedge Fund of Funds	5.0%					
Private Credit			2.5%	5.0%	5.0%	7.5%
Real Estate	5.0%	5.0%	7.5%	7.5%	7.5%	7.5%
<b>Total Alternative</b>	<b>10.0%</b>	<b>10.0%</b>	<b>15.0%</b>	<b>17.5%</b>	<b>17.5%</b>	<b>20.0%</b>
<b>20 Year Expected Return (Arithmetic)</b>	<b>6.6%</b>	<b>7.5%</b>	<b>6.5%</b>	<b>6.8%</b>	<b>6.9%</b>	<b>7.4%</b>
<b>20 Year Expected Return (Geometric)</b>	<b>6.1%</b>	<b>6.7%</b>	<b>6.1%</b>	<b>6.3%</b>	<b>6.4%</b>	<b>6.8%</b>
<b>Standard Deviation</b>	<b>10.5%</b>	<b>13.4%</b>	<b>9.5%</b>	<b>10.0%</b>	<b>10.5%</b>	<b>10.9%</b>
<b>Sharpe Ratio</b>	<b>0.38</b>	<b>0.36</b>	<b>0.41</b>	<b>0.42</b>	<b>0.41</b>	<b>0.43</b>

New assumptions for 2020 generally resulted in return expectations at the portfolio level dropping by 30bps, and a small reduction to expected volatility

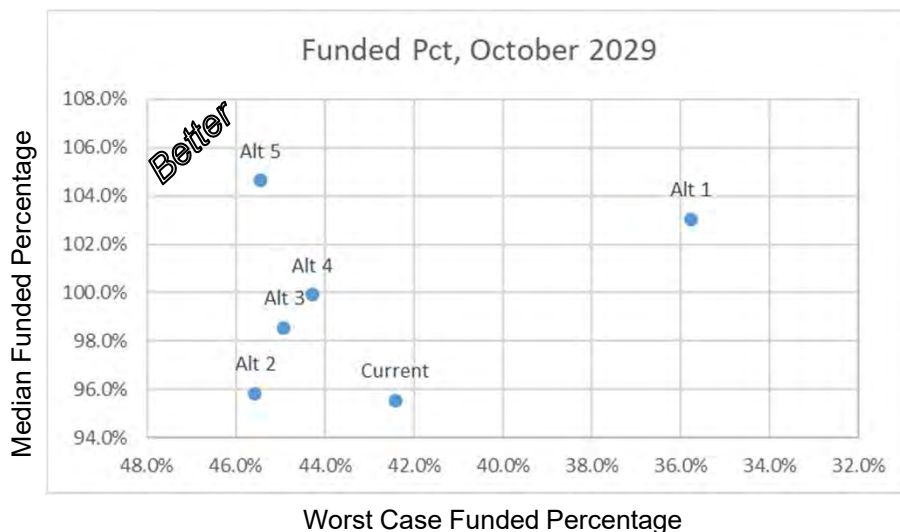
- **Portfolio 1:** Uses current asset classes but introduces **MACS** as a replacement for Hedge Fund of Funds and increases equities to improve return expectations.
- **Portfolio 2:** Introduces **Private Credit** at a modest allocation and increases Real Estate. This portfolio offers the *same return* expectation as the current portfolio but with *less volatility*.
- **Portfolio 3:** Takes the Private Credit allocation up to 5%. Offers improved performance with much improved volatility measure.
- **Portfolio 4:** Includes Private Credit and increased Real Estate. This portfolio offers the *same volatility* with a *higher return*.
- **Portfolio 5:** Most diversified portfolio with *highest return* and *highest volatility*. Includes **Emerging Market Equity and Debt** as well as increased Alternatives to a maximum of 20%.

# Stochastic Projections – Candidate Portfolios

- **Funded percentage** is charted to the right for each alternative portfolio
- The same information is conveyed slightly differently in the bottom chart
- All offer some improvement compared with the current portfolio
- Portfolios 2-5 are able to achieve better median results AND better worst case results by adding alternative asset classes to the portfolio

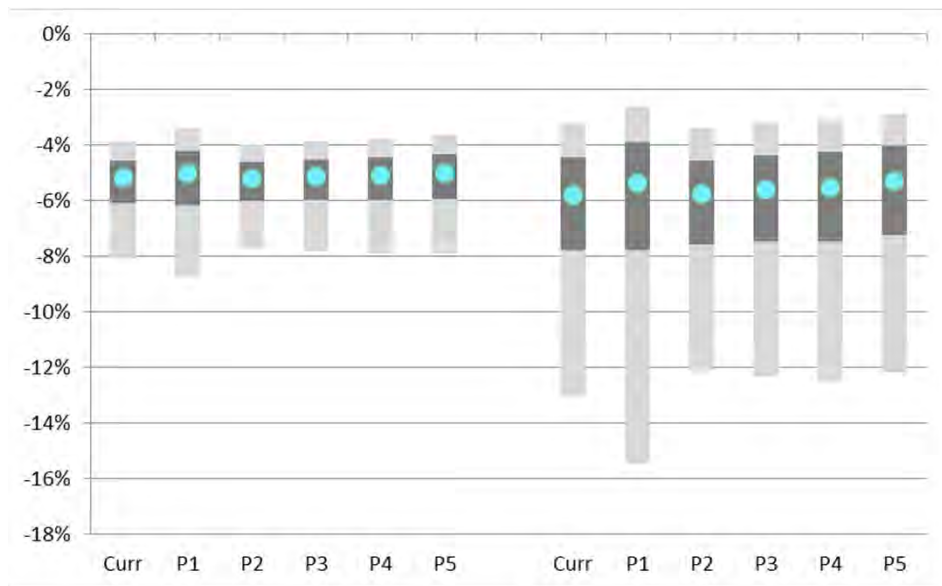
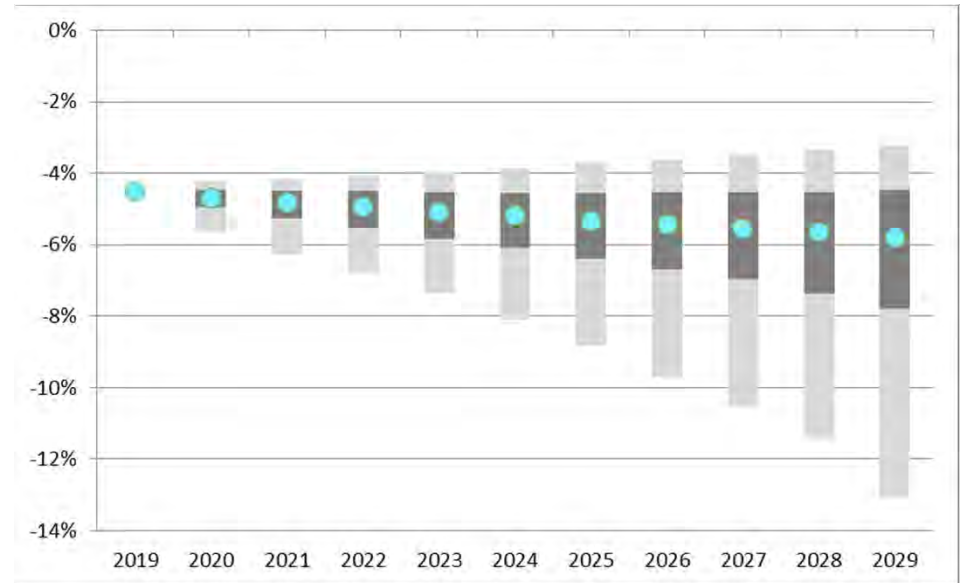


Curr	P1	P2	P3	P4	P5
172%	212%	163%	173%	179%	192%
124%	142%	121%	127%	130%	138%
<b>96%</b>	<b>103%</b>	<b>96%</b>	<b>99%</b>	<b>100%</b>	<b>105%</b>
71%	71%	73%	74%	74%	76%
42%	36%	46%	45%	44%	45%



# Stochastic Projections

Net Cash Outflow Percentage  
Current Portfolio



Net Cash Outflow Percentage  
Candidate Portfolios

- Five Years
- Ten Years



# APPENDIX

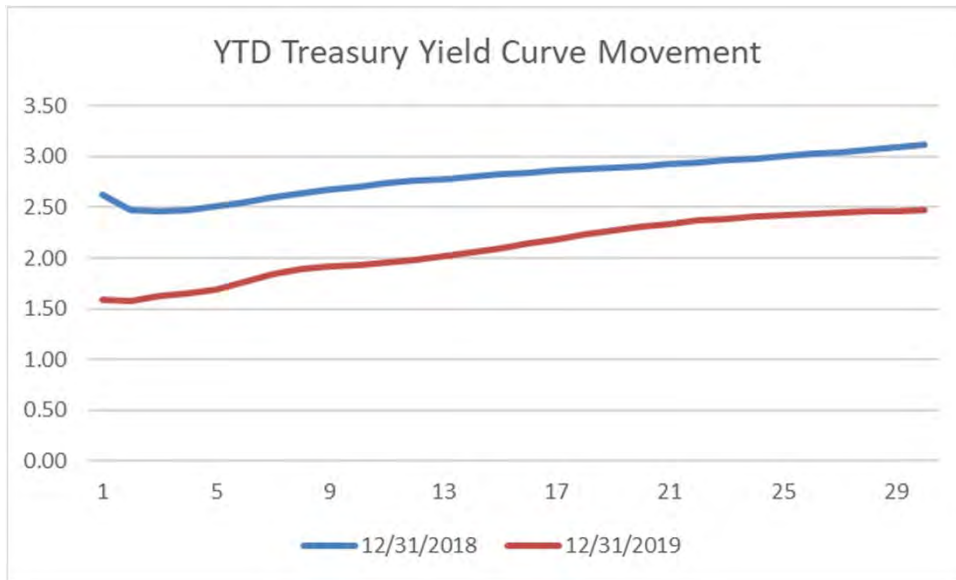


# Additional Portfolios

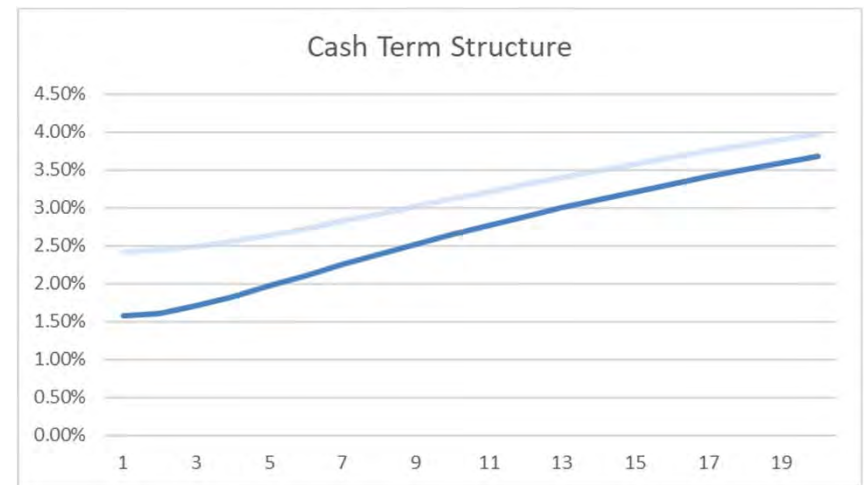
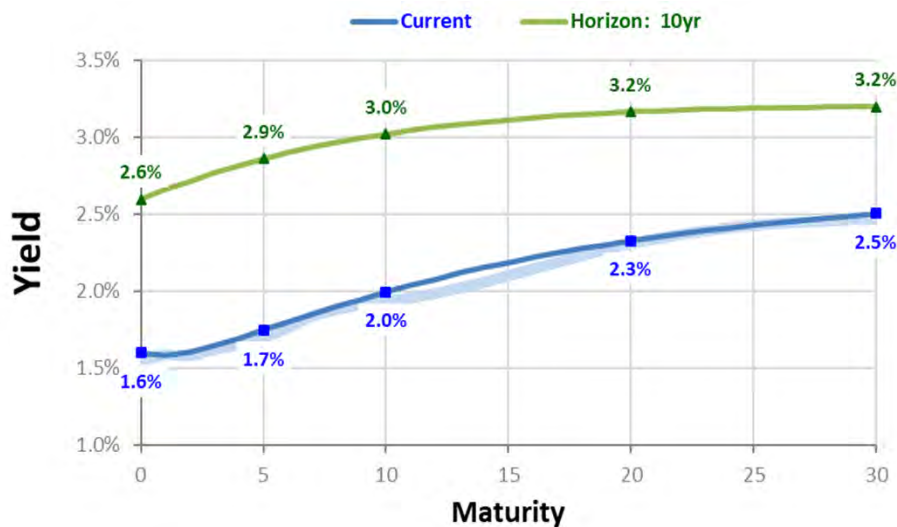
## Asset and Product Mixes

	Current	Add'l Port 1	Add'l Port 2	Add'l Port 3	Add'l Port 4	Add'l Port 5
US Equity	50.0%	30.0%	35.0%	37.0%	33.0%	35.0%
International	10.0%	6.0%	7.0%	10.0%	7.0%	10.0%
Emerging Market Equity		4.0%	3.0%	3.0%	5.0%	5.0%
<b>Total Equity</b>	<b>60.0%</b>	<b>40.0%</b>	<b>45.0%</b>	<b>50.0%</b>	<b>45.0%</b>	<b>50.0%</b>
Core Fixed Income	25.0%	25.0%	25.0%	22.5%	20.0%	19.0%
High Yield		3.0%	2.5%	2.5%		
Emerging Market Debt		5.0%	2.5%		5.0%	3.0%
Global Fixed Income	5.0%	7.0%	5.0%	5.0%	5.0%	3.0%
<b>Total Fixed Income</b>	<b>30.0%</b>	<b>40.0%</b>	<b>35.0%</b>	<b>30.0%</b>	<b>30.0%</b>	<b>25.0%</b>
MACS		5.0%	5.0%	5.0%	7.0%	7.0%
Hedge Fund of Funds	5.0%					
Private Equity			2.5%		3.0%	3.5%
Private Credit		3.0%	2.5%	2.5%	3.0%	3.5%
Real Estate - Core	5.0%	5.0%	5.0%	5.0%	6.0%	6.0%
Real Estate - Value Add		2.0%	2.0%	2.5%	2.0%	2.0%
Infrastructure		5.0%	3.0%	5.0%	4.0%	3.0%
<b>Total Alternative</b>	<b>10.0%</b>	<b>20.0%</b>	<b>20.0%</b>	<b>20.0%</b>	<b>25.0%</b>	<b>25.0%</b>
<b>20 Year Expected Return (Arithmetic)</b>	<b>6.6%</b>	<b>6.5%</b>	<b>6.7%</b>	<b>6.8%</b>	<b>7.0%</b>	<b>7.3%</b>
<b>20 Year Expected Return (Geometric)</b>	<b>6.1%</b>	<b>6.1%</b>	<b>6.3%</b>	<b>6.4%</b>	<b>6.6%</b>	<b>6.8%</b>
<b>Standard Deviation</b>	<b>10.5%</b>	<b>8.8%</b>	<b>9.4%</b>	<b>9.9%</b>	<b>9.9%</b>	<b>10.5%</b>
<b>Sharpe Ratio</b>	<b>0.38</b>	<b>0.43</b>	<b>0.43</b>	<b>0.42</b>	<b>0.44</b>	<b>0.44</b>

# 2020 Capital Market Assumptions



- Treasury yields fell by more than 60 bps across the yield curve during 2019
- While this had a positive impact on bond returns during 2019, this has a deleterious impact on expected *future* bonds returns
- The basic building block for our capital market assumptions for all asset classes is our expectation for “cash” returns over the horizon
- Cash model based on 12/31/2019 Treasury bond yields is presented below
- Our long-term expected cash return is 2.65%, about 50bps lower than last year



# 2020 Capital Market Assumptions – Core Fixed Income

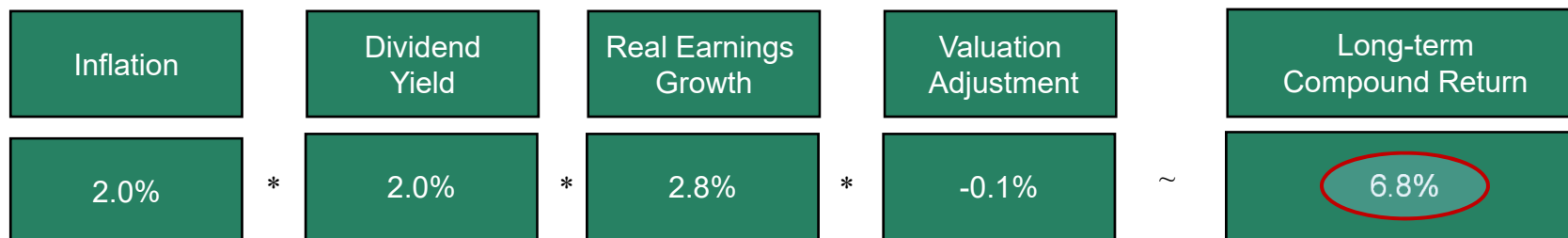


- Current yield is a very good predictor of core fixed income returns 7-years forward
- Yield on Bloomberg Barclays US Aggregate Bond Index at December 2019 is ~2.3% -- we would therefore expect core fixed income to return about 2.3% over the next 6-7 years
- Year-over-year our return expectation for fixed income is down about 80bps. 50bps from lower expected cash return and another 30bps because the expected term premium and credit spreads are both lower than a year ago as well

# 2020 Capital Market Assumptions – Equity Building Blocks – U.S. Large Cap Equity

Historical Annualized Return (Dec/Dec)	90 Day T-Bills	S&P 500 (US Large Cap Equity)	Premium	Realized Volatility (Annual)
1969-2019	5.0%	10.6%	5.6%	15.0%
1989-2019	2.9%	10.0%	7.1%	14.2%
1999-2019	1.7%	6.1%	4.4%	14.5%
2009-2019	0.6%	13.6%	13.0%	12.5%
2020 CMA Long-term				
20-year proj.	2.7%	6.8%	4.1%	17.0%

- Our equity risk premium is conservative compared to realized risk premiums over historical periods
- Current implied volatility for S&P500 options is about 17% for long-dated ATM options



- 6.8% long-term median return with 17.0% annual volatility implies a mean annualized **(arithmetic) return of 8.2%**
- With long-term cash assumption of 2.7%, the implied arithmetic risk premium for US large cap equity is 5.5%

# 2020 Capital Market Assumptions – Asset Class Time Varying Returns

Arithmetic Returns by Asset Class	5yr	10yr	15yr	20yr
Cash	1.74%	2.06%	2.37%	2.65%
Stable Value	1.84%	2.16%	2.47%	2.75%
Short Duration	1.84%	2.16%	2.47%	2.75%
Intermediate Duration	1.89%	2.21%	2.52%	2.80%
Inflation Linked Bonds	2.24%	2.56%	2.87%	3.15%
Core Fixed Income	2.24%	2.56%	2.87%	3.15%
Dev. Mkts. Fixed Income (U)	1.94%	2.26%	2.57%	2.85%
Bank Loans	4.24%	4.56%	4.87%	5.15%
High Yield	4.74%	5.06%	5.37%	5.65%
Emerging Markets Debt (50% LC)	5.24%	5.56%	5.87%	6.15%
Global Fixed Income (U)	2.33%	2.66%	2.97%	3.25%
Long -Term Fixed Income	2.34%	2.66%	2.97%	3.25%
Municipal Bonds	3.24%	3.56%	3.87%	4.15%
US Equity	7.49%	7.81%	8.12%	8.40%
Large Cap	7.24%	7.56%	7.87%	8.15%
Mid Cap	7.84%	8.16%	8.47%	8.75%
Small Cap	8.24%	8.56%	8.87%	9.15%
Developed Equity (U)	8.14%	8.46%	8.77%	9.05%
International Small Cap	9.24%	9.56%	9.87%	10.15%
Emerging Markets Equity	10.09%	10.41%	10.72%	11.00%
Global Equity (U)	7.78%	8.10%	8.41%	8.69%
Global REITs	6.69%	7.01%	7.32%	7.60%
MACS	5.74%	6.06%	6.37%	6.65%
Private Equity	11.49%	11.81%	12.12%	12.40%
Private Credit	8.24%	8.56%	8.87%	9.15%
Hedge Fund of Funds	4.40%	4.72%	5.04%	5.32%
Hedge Funds- Equity Long/Short	5.74%	6.06%	6.37%	6.65%
Hedge Funds- Credit-Event -Driven	5.79%	6.11%	6.42%	6.70%
Hedge Funds- Global Macro	4.99%	5.31%	5.62%	5.90%
Hedge Funds- Activist	6.24%	6.56%	6.87%	7.15%
Hedge Funds- Opportunistic	6.49%	6.81%	7.12%	7.40%
Commodities	5.39%	5.71%	6.02%	6.30%
Real Estate (UL)	5.59%	5.91%	6.22%	6.50%
Real Estate - Value Add	8.09%	8.41%	8.72%	9.00%
Real Estate - Opportunistic	10.14%	10.46%	10.77%	11.05%
Real Estate Debt	4.04%	4.36%	4.67%	4.95%
Timber	5.94%	6.26%	6.57%	6.85%
Farmland	7.39%	7.71%	8.02%	8.30%
Oil & Gas	11.64%	11.96%	12.27%	12.55%
Infrastructure	6.84%	7.16%	7.47%	7.75%

Geometric Median Returns by Asset Class	5yr	10yr	15yr	20yr
Cash	1.71%	2.03%	2.34%	2.62%
Stable Value	1.81%	2.13%	2.44%	2.72%
Short Duration	1.79%	2.12%	2.43%	2.71%
Intermediate Duration	1.81%	2.13%	2.44%	2.72%
Inflation Linked Bonds	2.09%	2.41%	2.72%	3.00%
Core Fixed Income	2.09%	2.41%	2.72%	3.00%
Dev. Mkts. Fixed Income (U)	1.45%	1.77%	2.08%	2.36%
Bank Loans	3.93%	4.26%	4.57%	4.85%
High Yield	4.27%	4.59%	4.90%	5.18%
Emerging Markets Debt (50% LC)	4.67%	4.99%	5.30%	5.58%
Global Fixed Income (U)	2.06%	2.38%	2.69%	2.97%
Long -Term Fixed Income	1.81%	2.13%	2.44%	2.72%
Municipal Bonds	3.08%	3.40%	3.71%	3.99%
US Equity	6.07%	6.39%	6.69%	6.97%
Large Cap	5.92%	6.24%	6.55%	6.83%
Mid Cap	6.21%	6.53%	6.84%	7.11%
Small Cap	5.99%	6.30%	6.61%	6.88%
Developed Equity (U)	6.52%	6.83%	7.14%	7.42%
International Small Cap	7.00%	7.32%	7.63%	7.90%
Emerging Markets Equity	7.58%	7.89%	8.19%	8.47%
Global Equity (U)	6.39%	6.70%	7.01%	7.29%
Global REITs	5.29%	5.61%	5.91%	6.19%
MACS	5.36%	5.68%	5.99%	6.27%
Private Equity	9.30%	9.61%	9.92%	10.19%
Private Credit	7.83%	8.15%	8.46%	8.74%
Hedge Fund of Funds	4.24%	4.56%	4.87%	5.16%
Hedge Funds- Equity Long/Short	5.27%	5.59%	5.90%	6.18%
Hedge Funds- Credit-Event -Driven	5.50%	5.82%	6.13%	6.42%
Hedge Funds- Global Macro	4.69%	5.01%	5.32%	5.60%
Hedge Funds- Activist	5.55%	5.87%	6.18%	6.46%
Hedge Funds- Opportunistic	6.07%	6.39%	6.70%	6.98%
Commodities	3.55%	3.87%	4.17%	4.45%
Real Estate (UL)	4.94%	5.26%	5.57%	5.85%
Real Estate - Value Add	7.04%	7.36%	7.67%	7.95%
Real Estate - Opportunistic	8.67%	8.99%	9.30%	9.58%
Real Estate Debt	3.77%	4.09%	4.40%	4.68%
Timber	5.49%	5.82%	6.13%	6.41%
Farmland	6.59%	6.91%	7.22%	7.50%
Oil & Gas	7.83%	8.14%	8.45%	8.72%
Infrastructure	6.00%	6.32%	6.63%	6.91%

**Disclaimer**

All numbers represent Segal Marco Advisors' forward looking asset class assumptions, and as such, reflect estimates as of a certain date. These assumptions are not a guarantee of future performance, do not reflect high levels of uncertainty and are subject to change without notice.

# 2020 Capital Market Assumptions – Correlation

Asset Class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
1 Cash	1	-0.83	0.01	0.03	0.01	0.06	0.08	-0.11	-0.07	-0.01	0.07	0.07	-0.01	-0.05	-0.04	-0.05	-0.08	-0.04	-0.07	-0.01	-0.03	0.02	-0.14	-0.04	-0.26	-0.08	-0.07	-0.14	0.00	-0.10	-0.08	0.03	-0.52	-0.18	-0.12	-0.04	-0.34	-0.27	-0.11	0.03	
2 Stable Value	-0.83	1	0.10	0.08	0.10	0.04	-0.04	0.18	0.14	0.05	-0.01	-0.02	0.02	0.04	0.03	0.06	0.08	0.02	0.05	0.03	0.01	0.01	0.16	0.11	0.41	0.06	0.05	0.17	0.03	0.07	0.06	0.05	0.43	-0.04	0.01	0.26	0.15	0.13	0.13	-0.01	
3 Short Duration	0.01	0.10	1	0.97	0.76	0.90	0.55	-0.06	0.15	0.38	0.68	0.70	0.64	-0.13	-0.12	-0.12	-0.21	-0.01	-0.03	0.08	-0.08	0.24	0.19	-0.23	0.03	-0.06	-0.11	-0.08	0.28	-0.22	-0.06	0.03	0.08	-0.11	-0.23	0.71	-0.06	-0.31	-0.17	0.28	
4 Intermediate Duration	0.03	0.08	0.97	1	0.81	0.96	0.54	-0.14	0.14	0.38	0.68	0.82	0.73	-0.18	-0.16	-0.16	-0.26	-0.06	-0.07	0.05	-0.12	0.23	0.17	-0.33	-0.03	-0.09	-0.16	-0.13	0.30	-0.26	-0.09	-0.03	0.10	-0.08	-0.24	0.69	-0.02	-0.33	-0.21	0.28	
5 Inflation Linked Bonds	0.01	0.10	0.76	0.81	1	0.80	0.54	0.08	0.29	0.46	0.66	0.71	0.60	-0.02	-0.01	-0.01	-0.09	0.10	0.22	0.04	0.35	0.30	-0.18	0.09	0.08	0.02	0.06	0.37	-0.10	0.08	0.13	0.07	-0.10	-0.20	0.60	-0.06	-0.33	0.02	0.37		
6 Core Fixed Income	0.06	0.04	0.90	0.96	0.80	1	0.52	-0.16	0.09	0.33	0.65	0.92	0.76	-0.21	-0.20	-0.20	-0.28	-0.10	-0.11	0.00	-0.16	0.21	0.13	-0.38	-0.10	-0.11	-0.21	-0.18	0.33	-0.29	-0.11	-0.10	0.09	-0.07	-0.23	0.67	-0.03	-0.28	-0.25	0.27	
7 Dev. Mkts. Fixed Income (U)	0.08	-0.04	0.55	0.54	0.54	0.52	1	0.04	0.30	0.64	0.97	0.42	0.37	0.16	0.18	0.15	0.02	0.35	0.37	0.42	0.28	0.46	0.37	-0.11	-0.07	0.14	0.19	0.12	0.34	0.06	0.14	0.39	0.10	0.08	0.20	0.40	-0.20	-0.26	0.06	0.53	
8 Bank Loans	-0.11	0.18	-0.06	-0.11	0.08	-0.16	0.04	1	0.77	0.34	0.07	-0.21	-0.14	0.60	0.59	0.62	0.58	0.61	0.63	0.54	0.63	0.50	0.56	0.68	0.71	0.61	0.67	0.79	0.12	0.60	0.61	0.46	-0.14	-0.09	0.16	0.35	-0.02	-0.01	0.57	0.47	
9 High Yield	-0.07	0.14	0.15	0.14	0.29	0.09	0.30	0.77	1	0.64	0.37	0.03	0.04	0.73	0.72	0.73	0.66	0.78	0.75	0.75	0.78	0.73	0.77	0.61	0.53	0.69	0.78	0.86	0.26	0.67	0.69	0.60	-0.15	-0.10	0.12	0.43	0.03	-0.06	0.66	0.69	
10 Emerging Markets Debt (50% LC)	-0.01	0.05	0.38	0.38	0.46	0.33	0.64	0.34	0.64	1	0.69	0.24	0.31	0.46	0.47	0.46	0.33	0.65	0.60	0.77	0.58	0.73	0.70	0.19	0.21	0.42	0.52	0.51	0.28	0.36	0.42	0.54	-0.07	-0.01	0.15	0.41	-0.07	-0.17	0.37	0.72	
11 Global Fixed Income (U)	0.07	-0.01	0.68	0.68	0.66	0.65	0.97	0.07	0.37	0.69	1	0.53	0.47	0.18	0.20	0.17	0.04	0.39	0.39	0.45	0.30	0.53	0.44	-0.09	-0.02	0.19	0.22	0.17	0.38	0.08	0.19	0.38	0.10	0.06	0.17	0.54	-0.15	-0.26	0.07	0.58	
12 Long-Term Fixed Income	0.07	-0.02	0.70	0.82	0.71	0.92	0.42	-0.21	0.03	0.24	0.53	1	0.74	-0.25	-0.24	-0.24	-0.32	-0.17	-0.17	-0.08	-0.21	0.15	0.06	-0.48	-0.19	-0.15	-0.27	-0.24	0.34	-0.33	-0.15	-0.19	0.11	-0.01	-0.19	0.52	0.03	-0.25	-0.28	0.20	
13 Municipal Bonds	-0.01	0.02	0.64	0.73	0.60	0.76	0.37	-0.14	0.04	0.31	0.47	0.74	1	-0.15	-0.14	-0.13	-0.21	-0.05	-0.06	0.01	-0.10	0.21	0.12	-0.36	-0.15	-0.05	-0.15	-0.13	0.24	-0.22	-0.05	-0.13	0.15	0.09	-0.16	0.45	0.13	-0.29	-0.26	0.24	
14 US Equity	-0.05	0.04	-0.13	-0.18	-0.02	-0.21	0.16	0.60	0.73	0.46	0.18	-0.25	-0.15	1	1.00	0.98	0.92	0.84	0.82	0.75	0.96	0.73	0.82	0.79	0.35	0.82	0.92	0.81	0.36	0.83	0.82	0.54	-0.02	0.15	0.45	0.12	0.14	0.17	0.66	0.69	
15 Large Cap	-0.04	0.03	-0.12	-0.16	-0.01	-0.20	0.18	0.59	0.72	0.47	0.20	-0.24	-0.14	1.00	1	0.96	0.88	0.85	0.82	0.75	0.97	0.73	0.83	0.77	0.34	0.81	0.91	0.79	0.38	0.82	0.81	0.53	-0.03	0.15	0.44	0.12	0.13	0.17	0.63	0.70	
16 Mid Cap	-0.05	0.06	-0.12	-0.16	-0.01	-0.20	0.15	0.62	0.73	0.46	0.17	-0.24	-0.13	0.98	0.96	1	0.95	0.82	0.81	0.74	0.93	0.75	0.80	0.80	0.37	0.82	0.93	0.82	0.34	0.84	0.82	0.54	0.00	0.14	0.45	0.15	0.15	0.16	0.68	0.68	
17 Small Cap	-0.08	0.08	-0.21	-0.26	-0.09	-0.28	0.02	0.58	0.66	0.33	0.04	-0.32	-0.21	0.92	0.88	0.95	1	0.72	0.73	0.65	0.80	0.84	0.65	0.69	0.80	0.32	0.75	0.88	0.76	0.24	0.84	0.75	0.48	0.05	0.18	0.46	0.06	0.20	0.19	0.70	0.55
18 Developed Equity (U)	-0.04	0.02	-0.01	-0.06	0.09	-0.10	0.35	0.61	0.78	0.65	0.39	-0.17	-0.05	0.84	0.85	0.82	0.72	1	0.95	0.84	0.95	0.79	0.88	0.73	0.38	0.82	0.88	0.82	0.36	0.75	0.82	0.58	0.02	0.17	0.49	0.24	0.11	0.10	0.59	0.76	
19 International Small Cap	-0.07	0.05	-0.03	-0.07	0.10	-0.11	0.37	0.63	0.75	0.60	0.39	-0.17	-0.06	0.82	0.82	0.81	0.73	0.95	1	0.83	0.91	0.77	0.84	0.71	0.39	0.84	0.90	0.83	0.34	0.77	0.84	0.57	0.10	0.20	0.55	0.25	0.08	0.12	0.59	0.69	
20 Emerging Markets Equity	-0.01	0.03	0.08	0.05	0.22	0.00	0.42	0.54	0.75	0.77	0.45	-0.08	0.01	0.75	0.75	0.74	0.65	0.84	0.83	1	0.83	0.80	0.85	0.61	0.34	0.73	0.85	0.76	0.33	0.69	0.73	0.62	-0.11	0.01	0.37	0.28	-0.05	0.05	0.59	0.72	
21 Global Equity (U)	-0.03	0.01	-0.08	-0.12	0.04	-0.16	0.28	0.63	0.78	0.58	0.30	-0.21	-0.10	0.96	0.97	0.93	0.84	0.95	0.91	0.83	1	0.80	0.88	0.78	0.37	0.85	0.94	0.84	0.39	0.82	0.85	0.59	-0.01	0.16	0.48	0.19	0.11	0.14	0.65	0.76	
22 Global REITs	0.02	0.01	0.24	0.23	0.35	0.21	0.46	0.50	0.73	0.73	0.53	0.15	0.21	0.73	0.73	0.75	0.65	0.79	0.77	0.80	0.80	1	0.81	0.52	0.24	0.64	0.73	0.66	0.40	0.65	0.64	0.52	0.02	0.13	0.38	0.42	0.09	0.07	0.47	0.84	
23 MACS	-0.14	0.16	0.19	0.17	0.30	0.13	0.37	0.56	0.77	0.70	0.44	0.06	0.12	0.82	0.83	0.80	0.69	0.88	0.84	0.85	0.88	0.81	1	0.69	0.40	0.85	0.85	0.78	0.58	0.69	0.85	0.57	0.05	0.08	0.40	0.39	0.16	0.18	0.55	0.77	
24 Private Equity	-0.04	0.11	-0.23	-0.33	-0.18	-0.38	-0.11	0.68	0.61	0.19	-0.09	-0.48	-0.36	0.79	0.77	0.80	0.80	0.73	0.71	0.61	0.78	0.52	0.69	1	0.54	0.81	0.84	0.79	0.31	0.77	0.81	0.54	-0.01	0.09	0.48	0.15	0.07	0.33	0.64	0.47	
25 Private Credit	-0.26	0.41	0.03	-0.03	0.09	-0.10	-0.07	0.71	0.53	0.21	-0.02	-0.19	-0.15	0.35	0.34	0.37	0.32	0.38	0.39	0.34	0.37	0.24	0.40	0.54	1	0.47	0.44	0.63	0.08	0.36	0.47	0.24	-0.09	-0.25	-0.02	0.39	-0.06	-0.04	0.36	0.20	
26 Hedge Fund of Funds	-0.08	0.06	-0.06	-0.09	0.08	-0.11	0.14	0.61	0.69	0.42	0.19	-0.15	-0.05	0.82	0.81	0.82	0.75	0.82	0.84	0.73	0.85	0.64	0.85	0.81	0.47	1	0.92	0.88	0.54	0.75	1.00	0.48	0.01	0.10	0.45	0.23	0.11	0.26	0.55	0.57	
27 Hedge Funds- Equity Long/Short	-0.07	0.05	-0.11	-0.16	0.02	-0.21	0.19	0.67	0.78	0.52	0.22	-0.27	-0.15	0.92	0.91	0.93	0.88	0.88	0.90	0.85	0.94	0.73	0.85	0.84	0.44	0.92	1	0.91	0.36	0.86	0.92	0.60	-0.03	0.10	0.46	0.17	0.06	0.18	0.71	0.64	
28 Hedge Funds- Credit-Event-Driven	-0.14	0.17	-0.08	-0.13	0.06	-0.18	0.12	0.79	0.86	0.51	0.17	-0.24	-0.13	0.81	0.79	0.82	0.76	0.82	0.83	0.76	0.84	0.66	0.78	0.79	0.63	0.88	0.91	1	0.27	0.79	0.88	0.59	-0.10	-0.04	0.28	0.28	0.02	0.12	0.72	0.57	
29 Hedge Funds- Global Macro	0.00	0.03	0.28	0.30	0.37	0.33	0.34	0.12	0.26	0.28	0.38	0.34	0.24	0.36	0.38	0.34	0.24	0.36	0.34	0.33	0.39	0.40	0.58	0.31	0.08	0.54	0.36	0.27	1	0.22	0.54	0.25	0.17	0.13	0.38	0.36	-0.07	0.27	0.06	0.42	
30 Hedge Funds- Activist	-0.10	0.07	-0.22	-0.26	-0.10	-0.29	0.06	0.60	0.67	0.36	0.08	-0.33	-0.22	0.83	0.82	0.84	0.84	0.75	0.77	0.69	0.82	0.65	0.69	0.77	0.36	0.75	0.86	0.79	0.22	1	0.75	0.47	0.00	0.09	0.47	0.08	0.04	0.28	0.63	0.53	
31 Hedge Funds- Opportunistic	-0.08	0.06	-0.06	-0.09	0.08	-0.11	0.14	0.61	0.69	0.42	0.19	-0.15	-0.05	0.82	0.81	0.82	0.75	0.82	0.84	0.73	0.85	0.64	0.85	0.81	0.47	1.00	0.92	0.88	0.54	0.75	1	0.48	0.01	0.10	0.45	0.23	0.11	0.26	0.55	0.57	
32 Commodities	0.03	0.05	0.03	-0.03	0.13	-0.10	0.39	0.46	0.60	0.54	0.38	-0.19	-0.13	0.54	0.53	0.54	0.48	0.58	0.57	0.62	0.59	0.52	0.57	0.54	0.24	0.48	0.60	0.59	0.25	0.47	0.48	1	-0.08	-0.09	0.23	0.13	-0.29	-0.05	0.65	0.48	
33 Real Estate (U)	-0.52	0.43	0.08	0.10	0.07	0.09	0.10	-0.14																																	



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

RFP for Investment Consultant Services – Technical Proposal  
MWRA Employees' Retirement System

**VERUSINVESTMENTS.COM**  
SEATTLE 206-622-3700  
LOS ANGELES 310-297-1777  
SAN FRANCISCO 415-362-3484  
PITTSBURGH 412-996-8854  
CHICAGO 312-815-5228

**Mr. Mark Brubaker, CFA**  
Managing Director and Senior Consultant

**Mr. Michael Patalsky, CFA**  
Managing Director and Senior Consultant



I. Background

A. Please provide a brief history of the firm.

Verus was founded in 1986, which is the same year we started providing a full range of investment consulting services to institutional investors. In 2011, Verus started offering discretionary advisory services as OCIO, specialty risk advisory services, and holdings-based risk reporting services. Today, Verus advises 156 clients with over \$950 billion in total assets across a variety of sectors, including 29 public funds. In 2021 and 2022, *P&I Magazine* ranked Verus as one of the Top 10 Consultants in the U.S. in terms of assets under advisement. Verus' headquarters are in Seattle, and we have regional offices in Los Angeles, San Francisco, Pittsburgh, and Chicago.

B. Please identify the location of the firm's headquarters and branch offices.

Our headquarters are located at 800 Fifth Avenue, Suite 3900, Seattle, Washington 98104. We have regional offices in San Francisco, Los Angeles, Pittsburgh, and Chicago.

C. Please describe the ownership structure of the entity and the number of employees.

**Ownership structure.** Verus is a sub-chapter S corporation incorporated in the State of Washington. The firm is 100% owned by its active employees and has no parent, subsidiaries, joint ventures, or affiliations with any other company. 35 employees across functional groups are shareholders. Our ownership structure aligns our business interests with that of our clients to ensure independence, especially in manager selection.

**Personnel.** We currently have 92 employees, 81 of whom are investment professionals, broken down into the following functional groups. Our research, investment, and operational teams support consultants with delivering the services required by their clients.

Functional Group	Number	Functional Group	Number
General and Private Markets Consultants	28	Performance Analytics	15
Consulting Associates	6	Legal & Operations	3
Strategic Research & Risk Advisory	5	IT & Systems Development	4
Manager Research (Public and Private Markets)	17	Marketing	4
Portfolio Management	3	Administration and Support	7

D. Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc).

None.

E. Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.

Verus has been providing a full range of consulting services to public funds for 37 years. We currently serve as general and/or specialty consultant to 29 public funds with more than \$850 billion in combined total assets. Among our clients are 13 state-level retirement systems, including the states of Florida, Indiana, Massachusetts, Missouri, New Mexico, Oklahoma, South Carolina, Wisconsin, Tennessee, West Virginia, Illinois Police, and Pennsylvania School. We serve as general consultant to 10 county retirement systems, as well as municipal funds, fire & police funds, and public transportation agencies. Our current public fund relationships average 10.2 years, with 48% of them over 10 years, and in the process we have helped them to grow assets, improve funded status, expand into alternative asset classes, innovate and apply best practices especially in risk management, and trustee education on a wide variety of governance issues, investment strategies and new asset classes.

With respect to public funds in the State of Massachusetts, Verus has been consulting to the Massachusetts Pension Reserves Investment Board since January 2021. Mark Brubaker, the proposed lead consultant for

MWRA ERS, served as lead consultant for the Massachusetts Port Authority Employees' Retirement System for over 20 years at his prior firm. He also served as lead consultant to the retirement systems of the Town of Arlington and Town of Brookline. He is well versed on G.L. C. 32, and 840 CMR and all PERAC requirements. At Verus, he is part of the team that serves Mass PRIM.

Verus has also served as project consultant to state-level retirement systems like CalPERS, Arizona State Retirement System, New Jersey Division of Investment, Florida State Board of Administration, New York Common Fund, and Virginia Retirement System. As project pool consultant to CalPERS, we have conducted risk management studies and due diligence reviews of private equity managers.

**F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity's areas of greatest expertise.**

We customize every full retainer relationship per the specific requirements of each client as embodied in its Scope of Services. There are certain services that are almost always included in every full retainer relationship we provide to pension plan and retirement plan clients, which include the following:

- Quarterly review of macroeconomic and capital markets
- Investment Policies and Asset Allocation Structure
  - Asset Allocation Study
  - Asset-Liability Study
  - Investment Structure Analysis
  - Investment Policy Review
  - Assistance with Policy-Related Issues (e.g., Benchmarking, Rebalancing, Manager Guidelines)
- Investment Manager Searches
  - Manager Research (Public and Alternative Assets)
  - Monitoring and Reporting on Quantitative and Qualitative Issues
  - Manager Searches & Recommendations
- Performance Evaluation
  - Global Capital Markets Reviews
  - Performance Measurement, Evaluation, Reporting (Public and Alternative Assets)
  - Returns-Based Performance Attribution
  - Risk Reporting
- On-Site Consultation
  - Meeting attendance (Board and Investment Committee)
  - Trustee Education Sessions Driven by Topics of Interest
- General Consulting Services and Special Requests
  - Support with Ad-Hoc Requests
  - Access to Thought Leadership and Educational Resources

In addition to these standard services, we offer the following optional services:

- Risk Advisory Services
- Private Markets Consulting Services (Private Equity, Private Credit, Real Assets)
- Discretionary OCIO Services

**G. Please identify the firms future goals, particularly how such goals may pertain to accepting new client business and overall quality of client service.**

We will pursue growth organically across our diversified client base and achieve strategic goals built on three principles: (1) promoting strong and healthy client relationships based on trust and loyalty; (2) delivering successful client outcomes using actionable research and differentiated practices; and (3) attracting and retaining exceptional talent who embodies the core values of our firm. During the past three years, we have

added staffing resources to our senior consulting, public and private markets research, and portfolio management teams. We have also added several internally developed and external software and databases to our consulting toolkit. Although we have always been a national organization, we are expanding our physical presence beyond the West Coast. In May 2020, we opened a regional office in Pittsburgh, PA, and in April 22, we hired two senior consultants to establish an office in Chicago. In the past five years, we have devoted resources to expanding research capabilities related to ESG/SRI and emerging and diverse manager outreach.

### II. Operations

#### A. Please indicate whether accounts are serviced by teams or individual consultants.

We always follow a team approach for every client account. A team consists of (1) a primary team that has one or more lead consultant, a backup consultant, in some cases, a strategic adviser, and a consulting associate; and (2) a support team that consists of appropriate research and investment personnel.

#### B. Please indicate the average number and size of accounts per consultant or team

Our current client-to-consultant ratio is 6-to-1.

#### C. Please indicate the largest number of accounts serviced by any consultant or team.

We do not set limits on the number of clients per consultant, but firm leadership manages workload and advises on teams for new client relationships. We group our consulting staff by sector teams (i.e., public, not for profit, Taft-Hartley, and corporate), and assignments are matched with consultants' experience or specialization. A consulting associate provides teams with technical support and assistance with deliverables.

#### D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.

There are **several levels of quality control** in our organization – at the individual level through self-performance appraisal, at the functional group level through manager supervision, at the client sector level through sector team leader supervision and peer review, and at the firm-wide level through Verus' internal committees.

Quality control, peer review, and consistency of advice are governed and overseen by our Investment Committee, Alternative Investments Committee, and OCIO Investment Committee, which are composed of senior consultants and firm leadership. The Committees guide, oversee, and approve the intellectual content embodied in our consultants' advice and recommendations, as well as the tools used in portfolio construction.

**In performance reporting**, our performance analysts verify and reconcile returns with the custodian and/or individual manager. If a return discrepancy is identified, the analyst reconciles our calculation with the manager calculation. If the discrepancy is due to incorrect pricing or trading information, we contact the custodian bank and a revised statement is requested, and the manager return is revised accordingly. If the discrepancy is due to a price source or accounting method difference, the performance will not be revised, and the discrepancy is noted in the performance report. Reports are reviewed by the head of team and individual consultants. **In manager research**, the external databases used by Verus for initial screens maintain their own platforms and practices for collecting and verifying manager information, using various methodologies like real-time data checks, multi-step vetting, etc. Internally, our Public and Private Research teams verify manager information as an integral part of our manager research directly via telephone, in-person, and on-sites, as appropriate.

#### E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.

100% of our total revenue is derived from consulting services, which we provide on a non-discretionary or discretionary basis in the role of OCIO. As of 12/31/2022, non-discretionary services accounted for 85% of total revenue and OCIO services accounted for 15%.

- F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts “soft dollars” as a method of payment for services provided.

We have no affiliates, and Verus is not a broker/dealer. We do not accept “soft dollars” or commission recapture dollars as a means of payment for our fees.

- G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.

We do not anticipate any conflict of interest in serving as general consultant to the System. Verus maintains a Code of Ethics that sets forth standards of professional behavior as well as conflict of interest policy. Our Code of Ethics sets forth policies and procedures to mitigate potential conflicts-of-interest or even the appearance of conflicts. It is monitored and enforced by our Chief Compliance Officer. Verus does not receive direct or indirect compensation from any of our clients' providers. We do not sponsor any proprietary funds or wrap programs. We have a zero “de minimus” rule for acceptance of gifts from third parties. We maintain a robust monitoring and disclosure system for potential conflicts, including ongoing forensic testing, regular training of employees, and 100% annual employee attestation regarding compliance with policies & procedures. With respect to our OCIO services, we mitigate any potential conflict between our non-discretionary and discretionary lines of business by: (1) Leaving the choice of service model entirely to our clients. Our consultants will not advise consulting clients to change to OCIO. (2) Adopting policies and procedures regarding the fair and equitable allocation of limited capacity investment opportunities without preference to either service model.

- H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.

None. Our Code of Ethics prohibits it.

- I. Please indicate whether the entity sells or brokers investment vehicles.

No.

- J. Please indicate whether the entity actively manages the investment of accounts.

No. In a non-discretionary client relationship, such as the one we are proposing to the System, our role is purely advisory. In discretionary relationships where we serve as OCIO, Verus implements client portfolios in accordance with their Board-approved IPS and Strategic Asset Allocation using an open architecture of managers and funds that are selected by our OCIO team. Verus does not use any proprietary funds for OCIO.

- K. Please indicate whether the firm accepts or pays referral or finder's fees.

No. Our Code of Ethics prohibits it.

### III. Investment Analysis Approach

- A. Please outline the entity's process for: (1) The development of the client's overall investment policy as well as investment policy for specific asset classes. (2) The development of client investment objectives.

**IPS review process.** The review and updating of the investment policy statement will serve as the culmination of the strategic planning process where we will examine, as a whole, the results of the various planning activities (i.e., strategic asset allocation study, risk factors analysis, manager structure analysis, liquidity analyses, benchmark analysis, etc.) and set forth our conclusions within a policy document that states the goals of the investment program, and guides all parties regarding their responsibilities and performance expectations. We will collaborate with your staff and Board to assess the completeness of the current policy

statement and determine whether any allowable changes would be beneficial in improving the risk-adjusted performance of the investment program. This would include, but not limited to, the following:

- Assess objectives and mission statement relative to the investment strategy.
- Review governance practices being used for appropriateness, given the Plans' structures and investment objectives.
- Review controls in place for monitoring the investment program, including appropriate risk management and compliance and the roles and responsibilities of interested parties.
- Evaluate benchmarks used for measuring portfolio performance.
- Assess appropriateness of target strategic asset allocation percentages and ranges (a more in-depth assessment of targets would follow a formal asset allocation study).
- Review rebalancing procedures.
- Review investment restrictions, and whether these unnecessarily constrain flexibility.
- Assess "risk budget" at each level: strategy (broad asset allocation); asset class structure (within asset classes); implementation (at the portfolio level) and whether it is being "spent" efficiently.

**Communicating manager expectations.** The IPS will also serve as the main tool for communicating expectations to investment managers and other parties involved in plan administration as well as to external stakeholders. We assist in setting forth specific manager policies and benchmarks with respect to critical issues that include, but are not limited to, the following: Performance objectives and benchmarks, evaluation time periods, sector limitations, eligible and prohibited securities, quality restrictions, proxy voting policies, diversification requirements, communication and reporting requirements, records maintenance policies. It is important that the System and its managers agree on guidelines to ensure that both parties have a clear understanding of the relationship from the outset. Establishing clear and reasonable performance expectations and risk parameters for each manager provides a framework for evaluating results and skill levels. Investment manager guidelines must support, and be consistent with, the Investment Policy Statement document. The guidelines should also support the manager structure and policy objectives of each portfolio.

**Frequency of review.** We recommend annual reviews of investment policy and strategic asset allocation. A review does not require a complete overhaul of the policy, but at a minimum it should determine whether the policy and asset allocation remain consistent with your portfolios' risk tolerances and return objectives. Unless there are significant long-term market implications, and absent any changes regarding risk tolerances and return objectives, we would expect minimal to no changes annually.

### **B. [Please describe the entity's asset/liability modeling capability.](#)**

We customize asset-liability analysis to provide in-depth risk breakdowns and comparisons or "what if" scenarios, including analyzing the impact of various drawdown effects, different employer contribution scenarios, and assumption shocks. Our powerful calculations engine can apply both deterministic and stochastic styles of informational forecasting.

**Asset allocation modeling.** The asset-liability study will begin by incorporating two key elements that will drive the asset allocation modeling process: (1) Verus' proprietary 10-year capital market assumptions, and (2) the findings of a formal analysis of the System's Enterprise Risk Tolerance and Objectives (ERTO), which would define the System's return objectives and appetite for risk-taking, which your consultants will identify in a survey of key your decision-makers and staff. The ERTO customizes the results of the asset-liability study to your unique objectives and constraints. Verus' asset allocation methodology will construct alternative optimal mixes using a multi-faceted process that includes (1) stochastic modeling, (2) risk budgeting, (3) scenario analysis, (4) stress testing, and (5) risk decomposition to determine an optimal solution for the client while considering the client's risk tolerance, investment objectives, and anticipated spending and cash inflows. Our process favors diversification by economic regime with investment into assets that consider the effects of inflation, deflation, and periods of high and low economic growth. We believe in globally diversified portfolios and appropriately sized allocations to alternatives that benefit from anticipated alpha and premiums associated

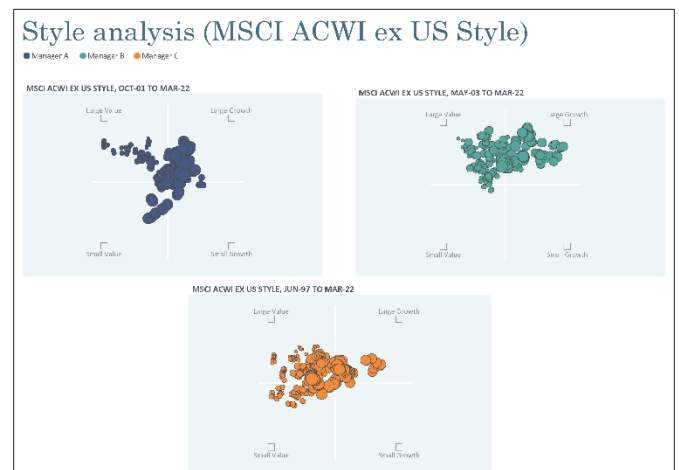
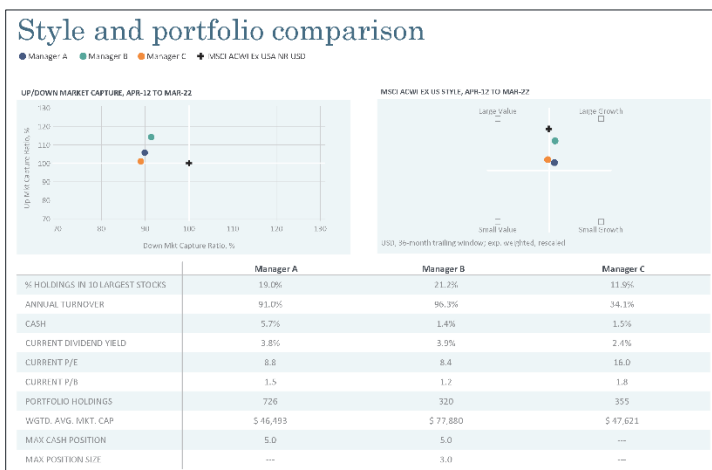
with illiquidity. We will examine risk in policy portfolios using MSCI BarraOne relative to five prominent risk factors: equity risk, interest rate risk, credit risk, inflation risk, and currency risk. Once a policy portfolio is adopted, we overlay our research to determine if any strategic or opportunistic tilts are warranted.

**Liability modeling.** The main tool that we will use to model liabilities is Winklevoss ProVal. We will work closely with your actuary to obtain and analyze underlying valuation assumptions and data. The liability modeling process will begin with your most recent actuarial valuation and approved assumptions (such as mortality, retirement rates, salary scale, etc.). We incorporate these assumptions and run a parallel valuation to ensure that our projections are in line with the actuarial projection. From this point we can build the infrastructure needed to display a liability “what if” scenario (if mortality is assumed to be worse, if the plan were to be closed, if plan growth is x%, etc.) and integrate the results with a stochastic projection of financial markets.

**Asset-liability Integration.** With assets and liabilities loaded into the software, we begin modeling them in tandem, and analyze the impact of different asset portfolios on key metrics that have been identified. This information can be further integrated with the broader objectives of the plan, for example a target funded level over a specified time horizon. From this point the analysis can shift depending on the plan’s objectives. If the plan seeks to gradually de-risk its portfolio over time, Verus’ glidepath methodology uses the asset liability projection data in a calculation which acts as a baseline for constructing a set of portfolios that lower the market risk of the plan while supporting its long-term objectives. To model liquidity, we use a liquidity model built on the Basel III banking regulations to help our clients manage liquidity. This framework combines portfolio liquidity with cash flow data and market scenario analysis to arrive at a well-tested and understood allocation for illiquid assets. For further analysis on ways to manage liquidity, Verus’ Cashflow Driven Investing (CDI) framework further integrates the asset liability study with plan objectives and the benefits associated with a range of cashflow management within the plan.

C. Please define the entity’s investment style analysis.

We can classify products into investment styles using multiple methodologies. Our third-party databases use the manager’s self-evaluation of style, and we can screen on a variety of descriptors of style (value/growth spectrum, maturity ranges and sector concentrations, regional and country weightings, market capitalization concentrations, etc.). We overlay the managers’ self-evaluation of style with our own return-based style analysis using MPI Stylus and use the same tool to independently confirm that a manager conforms to its own definition of style. In quarterly reports, we show returns-based style maps for equities and fixed income. All managers in a given broad asset class are typically depicted in one style chart. In manager search reports, we compare manager candidate’s styles and each candidate’s style history, as shown in the snapshots below for an international equity search:



**D. Please provide a listing of reports routinely supplied to clients.**

We provide retirement plan clients with the following reports as part of our standard services:

Report	Frequency
Investment Policy Statement	Annual review and as needed
Asset Allocation Study	Annually and as needed
Asset-Liability Study	Every 3-5 years or as needed
Capital Market Assumptions	Annually with monthly updates
Manager Structure Analysis	As needed
Manager Search Report	As needed
Investment Manager Due Diligence Writeups	As needed or produced
Investment Performance Report	Quarterly, usually 30 to 45 days after quarter-end
Investment Performance Update	Monthly, usually around the 15 <sup>th</sup> of each month
QDIA Review (DC Plans)	Annually or as needed
Fee and Expense Benchmarking Analysis (DC Plans)	Annually or as needed
Investment Landscape (Review of capital markets)	Quarterly, as print or webinar audio recording
Active Management Environment Outlook	Annually
Private Equity Outlook	Annually
Real Assets Outlook	Annually
Topic-of-Interest Research Papers	As produced, usually 2-3 a month
Reports for Special Projects (e.g., Transition Management Report, Liquidity Analysis, Active Risk Budgeting Analysis)	As needed
Trustee Education Presentations	As needed

**E. Please indicate whether the entity provides to its clients written narratives on the managers' performance, portfolio restructuring, guideline discrepancies, style deviations, etc.**

Yes. Our Quarterly Investment Performance Report is fully customizable to the information requirements of our clients' staffs and boards. Aside from a Total Fund Summary page, which is standard, a performance report may contain a narrative written by the consultant that describes the highlights of the quarter, including the items listed above, sources of total fund overperformance/underperformance, headwinds/tailwinds that impacted individual manager performance, key portfolio changes that occurred during the period, and any issues of concern. In addition to these quarterly narratives, our consultants update clients of material events in clients' manager organizations that may potentially impact future performance as they occur and the action that will be taken by our research teams (e.g., onsite due diligence). We also update clients on market and geopolitical events that could potentially affect our clients' portfolios on a regular basis (e.g., our CIO's quarterly client webinar on the market environment, monthly market updates) or as they occur through special client bulletins from our research teams (e.g., COVID webinar, collapse of Silicon Valley Bank).

**F. Please describe the software technology, database and analysis tools used in providing services to the client.**

Verus uses a variety of internally developed and externally sourced tools including, but not limited to, the following. We have an in-house, three-person IT & Systems Development team that maintains and vets the tools used for consulting:

## MWRA EMPLOYEES' RETIREMENT SYSTEM

Modeling techniques and tools used	Purpose
<b>Strategic Asset Allocation</b>	
Enterprise Risk Tolerance and Objectives (ERTO) Survey Toolkit	Collect data from the MWRA staff and Board to define key metrics for customizing the SAA to your objectives, risk tolerance, constraints, and permissible investments.
Verus Capital Market Assumptions	10-year and 30-year risk/return forecasts and correlations for stochastic analysis.
Liquidity Analysis Tool	Establish limits on 5-year liquidity profile of the portfolio and control risk from uncertainties associated with ability to convert investments to cash.
Monte Carlo Simulation	Stochastic analysis to determine optimal asset mix alternatives.
Scenario Analysis	Test behavior of asset mixes against extreme economic environments (e.g., recession or stagflation).
Tail Risk Analysis / Stress Testing	Determine sensitivity of asset mixes to tail risk and hypothetical market dislocations.
Risk Factor Evaluation	Analyze asset mixes relative to five prominent risk factors found in most all asset classes: equity risk, interest rate risk, credit risk, inflation risk, and currency risk.
Rebalancing Tool	Assess and optimize rebalancing policy by back testing historical performance under various rebalancing assumptions.
Primary external tools	MSCI BarraOne, MPI, Winklevoss ProVal
<b>Portfolio Structure Analysis</b>	
Active Risk Budgeting Tool	Assess active risk contribution at each level of the investment program (manager, asset class, portfolio) and determine target risk budget.
Tracking Error Tool	Evaluate unintended, compensated or uncompensated tracking error in portfolio in terms of benchmark mismatches, active class weights vs. SAA weights, and active manager bets (i.e., benchmark risk, allocation risk, and manager risk).
Primary external tools used	MSCI BarraOne, MPI
<b>Investment product selection</b>	
eVestment, Morningstar Direct, PitchBook, Aksia, RMS	Primary initial screening databases for public markets, private markets (private equity, private credit, real assets), and hedge funds.
MPI, Style Research	Manager style analysis
MSCI BarraOne	Manager risk analysis
MSCI ESG Ratings, MSCI Holdings-based analysis, MSCI ESG Fund Analyzer, Bloomberg Sustainability	Assessment of manager ESG characteristics
Solovis, Thomson Reuter C A, Hedge Fund Research, Private Informant, Thomson One VentureXpert	Supplementary resources for alternative investments
<b>Performance measurement</b>	
Investment Metrics Portfolio Analytics Reporting (PARis)	Performance measurement platform and primary total fund performance peer universe
eVestment and Morningstar	Manager performance peer universe
Various market indices	Benchmarking



IV. Manager Search and Due Diligence

A. Please indicate the number of money managers currently being evaluated.

There are over 3,800 managers in eVestment, which serves as our primary initial screening universe. Of these, 501 of them are categorized as “Covered” by Public Markets Research, which means that our researchers have met with these managers and/or have completed written assessments during the past 36 months. Based on the AUM reported by managers in eVestment, the managers covered by our research teams represent about \$44.2 trillion in AUM, which is about 41% of the total AUM of the eVestment universe. In terms of the number of managers, we currently cover 13% of the investible universe in eVestment.

B. Please describe the criteria by which the entity decides which managers to evaluate.

In deciding which managers to evaluate, our manager research process will focus on finding robust investment products with a reliable, repeatable approach capable of producing an excess return over the long term. Investment products we recommend will be subjected to a multi-stage vetting process. We will use multiple lenses to evaluate managers and products to ensure that they can add value over multiple business cycles and meet various client requirements based on differentiating characteristics around five key principles that guide our investment due diligence process, as follows:

Evaluation criteria	Key characteristics looked for	Why it matters
Alignment	<p><b>The investment product is supported by a robust and stable organizational and team structure.</b></p> <p>Successful managers have stable teams with investment professionals that stick around for the long term, and structure themselves to encourage that. They have fee structures and a business model that is aligned with their clients, not just focused on short term monetization.</p>	Hiring stable managers who focus their business on asset management, reward investment professionals for investment performance, and employ appropriate fee structures can give you greater confidence in their ability to invest on your behalf for the long term and makes it less likely that you will have to change managers because the key investment managers leave.
Edge	<p><b>The manager has articulated an inefficiency or market-based belief that informs its process.</b></p> <p>Successful managers have a clear, well understood, and credible approach to adding value that is obviously more than just marketing speak – it should be a natural part of how they talk about what they do, and it should make sense.</p>	A clearly understandable investment edge allows you to be confident that satisfactory results come from skill not luck. It allows you to understand how the manager might fit with other managers in your portfolio.
Implementation	<p><b>The manager has described an investment approach which is sensible, repeatable.</b></p> <p>Successful managers implement their ideas in a way that matches how they generate their ideas. Their trading approach matches their investment edge, and they have appropriate resources (people and technology) in place to capture the value they are generating.</p>	A great investment story that does not end up in your portfolio does you no good. Confirming that a manager implements well helps you have confidence that you will benefit from the edge that they have.
Optimal Use of Risk	<p><b>The manager has an effective framework to assess and manage risk inherent in its process.</b></p>	Optimal risk management helps you have confidence that the manager will not give you unexpected negative surprises. It helps you

Evaluation criteria	Key characteristics looked for	Why it matters
	Successful managers take risks in ways that fit with the edge they claim, understand the risks they are taking, and avoid unneeded risks. The tools they use to measure and manage that risk will depend on their investment process, but they should possess a risk culture in line with their investment process.	budget your risk and allows you to maximize the return you get from the risk you take in your portfolio.
Understandable Performance	<p><b>Historical and future performance sensitivities are consistent with the manager's process.</b></p> <p>Successful managers have performance patterns that make sense given the edge that they claim. The results they produce align with the edge they claim they have. They are able to explain past performance, and those explanations make sense and are consistent with the performance they predict for the future.</p>	Understandable performance helps you build confidence that the manager's results are due to skill not luck, and that they really understand what they are delivering. Understanding how a manager is likely to perform in different environments helps you build efficient portfolios, and helps you deliver better outcomes.

C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.

Verus uses a combination of internally developed and third-party databases to screen the broad universe of managers and investment products:

Name of database	Purpose
RMS	Internally developed database that serves as a repository of meeting notes and due diligence materials. Contains data on all actively covered and recommended products and managers and other managers that are not rated but our research and/or consulting teams have been met with or conducted due diligence.
eVestment Analytics	Primary database for initial screening universe of public assets.
Morningstar Direct	Primary database for initial screening universe of public assets.
PitchBook	Primary database for initial screening universe of private assets (private equity, private credit, real assets)
Aksia	Initial screening universe and operational due diligence of hedge funds

In addition to the databases that we use for initial screening, we use the following externally sourced tools for evaluating manager characteristics and performance: MPI (style analysis), MSCI BarraOne (risk analysis), MSCI ESG Ratings, MSCI holdings-based analysis, MSCI ESG Fund Analyzer (ESG profiles), and Investment Metrics (performance verification) .

Managers do not pay a fee to be included in our manager searches or the external databases that we use for initial screening. To be included in these databases, a manager simply needs to submit and maintain organization and performance data to any of the external databases that we use.

The following table lists the estimated number of investment products from a variety of external sources, notably eVestment and PitchBook.

Asset Class	No. of Investment Products
U.S. Equity	4,744
Non-U.S. Equity	4,147
U.S. Fixed Income	3,362
Global Equity	5,174
Global Fixed Income	1,970
Listed Real Assets (Public)	39
MLPs	83
Infrastructure	1,067
REITS	337
Mutual Funds	8,987
Hedge Funds, Absolute Return & Hedge Fund of Funds	3,500
Private Equity (Direct Partnerships)	23,283
Private Real Estate (Direct Partnerships)	3,313
Private Real Assets (Direct Partnerships)	693

We can screen these databases for a variety of data points such as organizational information, investment professional statistics and biographies, asset breakdown by product and client type, representative client list, asset and personnel turnover, diversity and demographic statistics at the firm and investment team levels, detail on investment approaches (style, strategy, portfolio characteristics, fees, etc.), absolute and relative performance, risk statistics, composite detail, and account dispersion.

D. Please describe how the due diligence evaluation of investment managers is performed.

## Public markets

RESEARCH TEAM IDENTIFIES UNIQUE ADVANTAGES	MANAGER UNIVERSE
<p><b>Broad Criteria</b></p> <ul style="list-style-type: none"> <li>Client need</li> <li>Market dynamics</li> <li>Verus initiatives</li> </ul>	<p><b>Sourcing Public markets universe</b> 19,000 products</p>
<p><b>Idea Generation</b></p> <ul style="list-style-type: none"> <li>Industry events and networking</li> <li>Targeted screens</li> <li>Inbound manager communications</li> <li>Emerging/Diverse manager outreach</li> </ul>	<p><b>Number of products</b> US Equity 3,500 Non-US Equity 3,500 Fixed Income 3,000</p>
<p><b>Investigation</b></p> <ul style="list-style-type: none"> <li>Virtual and in-person meetings</li> <li>Examination of information from industry contacts</li> <li>Review of performance-based and portfolio analytics</li> <li>Evaluation of vehicles and fees</li> </ul>	<p><b>New ideas &amp; ongoing monitoring</b> 600+ meetings per year</p>
<p><b>Differentiators We Seek</b></p> <ul style="list-style-type: none"> <li>Aligns to client interests</li> <li>Demonstrates an edge</li> <li>Implements repeatable market insights</li> <li>Optimizes risk accordingly</li> <li>Communicates understandable performance expectations</li> </ul>	<p>200+ recommended</p>

In the latter stages of our process to identify recommended products, we focus on qualitative aspects of managers and strategies that cannot be captured by statistics alone. We devote substantial time and resources

to engaging the portfolio managers and analysts to articulate their philosophy, approach, reasoning and culture of risk taking. We meet with all managers that we recommend, either at our offices, onsite, or both. On-sites are an important component of our due diligence process. We conduct onsite due diligence visits to all managers that we recommend to clients to meet with key personnel and decision makers, inspect back office and operational resources, and enhance our working relationship with face-to-face interaction.

**E. Does the firm or consultant maintained a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.**

Verus uses a rating system to communicate our conviction in investment products to consultants and their clients. Manager ratings are communicated to clients as they are determined and when rating upgrades or downgrades occur and the justification for these actions. Investment products are rated based on insight gained from using the five evaluation criteria – Alignment, Investment Edge, Implementation, Optimal Use of Risk, and Understandable Performance. The rating system is applied to products across all asset classes, including alternative investments. There are two components to the rating:

Component	Rating Symbol	Defining Characteristics
Institutional Quality Rating	IQ	The product meets or exceeds the standards of fiduciary care required by institutional investors and is suitable for use in clients' portfolios.
Conviction Rating	1 to 5	Represents the conviction of our research teams in the distinguishing qualities of the product relative to its peers, with 1 as the highest rating and 5 the lowest.

The table below shows the ratings that may be assigned to an investment product and their respective characteristics:

Rating	Institutional Quality?	Conviction Level	Defining Characteristics	Recommendations
IQ1	Yes	Very High	Earns Verus' highest conviction. Above-average characteristics most likely to achieve the strategy's desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios
IQ2	Yes	High	Maintains Verus' high conviction. Above-average characteristics most likely to achieve strategy's desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios
IQ3	Yes	Positive	Meets institutional quality standards that can achieve desired investment results. Strengths outweigh weaknesses.	While IQ1 or IQ2 rated products are generally preferable, certain client needs may be better addressed by a highly specialized IQ3 product

Rating	Institutional Quality?	Conviction Level	Defining Characteristics	Recommendations
4	No	Low	Concerns with the product's ability to meet institutional quality standards.	Clients should re-evaluate and only retain if there are specific strong reasons for client-specific suitability. Product must be monitored closely to ensure that it consistently plays its designated role in the portfolio successfully.
5	No	Very Low	Significant issues inhibit the product's ability to meet institutional quality standards.	Verus recommends immediate termination.

There are currently 326 recommended investment products across a range of asset classes, both public and private. (See discussion of manager rating system in Question IV.E below.) Investment products that are rated IQ3 are deemed to be Institutional Quality products that, while not recommended, may be suitable for use to address certain specialized needs of clients. Following is a breakdown of recommended products by broad asset class as well as IQ3 products:

Asset class	No. of recommended products rated IQ1 or IQ2	No. of products rated IQ3
US Equities	38	173
Non-US Equities	75	95
Fixed Income	67	148
Balanced/Multi-Asset	12	14
Hedge Funds	39	30
Real Estate	23	6
Private Markets (Private Equity, Private Credit, Private Real Assets)	72	184

**V. Miscellaneous**

**A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.**

PERAC requires Massachusetts public retirement systems to issue RFPs and solicit competitive bids for all investment mandates across all asset classes. The systems may also invest in Mass PRIM through the core and/or segmented programs.

Regarding funding, retirement systems are required to develop funding schedules, subject to the approval of the actuary, that are expected to eliminate the unfunded actuarial liability no later than June 30, 2040. According to the most recent PERAC report, MWRA ERS was 89% funded as of FY 2022 and has adopted a 12.05% total increasing funding schedule to achieve fully funded status by 2030.

Verus would work closely with the MWRA ERS Board to design an investment strategy that is aligned with this goal and also the Board's overall risk tolerance.

**B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.**

We would like to briefly address each of the items in the System's evaluation criteria to demonstrate how Verus will be the best fit as the System's general consultant:

- **Strength, stability, and longevity of the entity.** Verus has been providing a full range of general consulting services to public pension funds for 37 years and has demonstrated consistent growth over time, not only in terms of assets under advisement but personnel and consulting resources. During the past 10 years, total personnel has grown from 53 employees in 2013 to 92 today, and total assets under advisement have grown from \$41 billion to \$950 billion over the same period. We have expanded our regional presence to the Midwest and the East Coast, opening offices in Chicago and Pittsburgh, which will serve as the servicing location for the System.
- **Experience and knowledge of Massachusetts pension fund investments, statutory provisions and regulations.** Mark Brubaker and Mike Patalsky are well versed on PERAC regulations and the requirements that investment managers must meet to manage investments for public retirement systems in the state of Massachusetts. Mark worked with the Massachusetts Port Authority Employees' Retirement System to make them the first retirement system to invest in Mass PRIM's segmented program, making investments in private equity and real estate.
- **Experience with Massachusetts public pension systems and regulatory agencies.** Mark Brubaker and Michael Patalsky will serve as the primary consultants for the MWRA ERS relationship. Mark and Mike have extensive experience working with Massachusetts public retirement systems. They worked together as the consulting team serving the Massachusetts Port Authority Employees' Retirement System for over 10 years at their prior firm. Both have extensive experience with G.L. C. 32, and 840 CMR and all PERAC requirements. Mark also serves on the Verus consulting team that is currently working with Mass PRIM. He also served as lead consultant for the retirement systems of the towns of Arlington and Brookline at his prior firm.
- **Length of time the entity and/or individuals has worked as a team or unit.** Mark Brubaker and Mike Patalsky both joined Verus to establish the Pittsburgh office and have worked as a team at Verus for three years. Before then, they worked together at Wilshire Associates for over 10 years and have partnered in many public fund client relationships, including Massachusetts Port Authority Employees' Retirement System, Ohio Bureau of Workers Compensation, and Montgomery County (MD) Employees' Retirement System. The private markets consultant for the System, Chris Shelby, also joined the Pittsburgh office from Wilshire Associates 3 years ago and has been collaborating with Mark and Mike for 8 years on several client accounts, assisting with their private assets portfolios.
- **Scope of research available to monitor and provide the services required.** Verus has the experience, expertise, and research resources to provide all the services required in the System's Scope of Work.

Task	Comments
<p>1. Prepare and present to the Board at least annually a written plan establishing investment objectives and propose a target asset mix (Asset Allocation Plan).</p>	<p>Verus has been assisting public retirement systems with developing and maintaining their IPS and strategic asset allocation for 37 years. We specialize in strategic planning based on a client's unique enterprise risk tolerance and objectives and maintain research resources for Strategic Research and Risk Advisory. We maintain internally developed 10- and 30-year capital market assumptions that drive our asset allocation process, which uses a multi-faceted process that includes (1) stochastic modeling, (2) risk budgeting, (3) scenario analysis, (4) stress testing, (5) active risk budgeting, and (6) multi-factor risk decomposition.</p> <p>We will conduct a comprehensive review of the System's asset allocation on an annual basis using Verus' Capital Market Assumptions to ensure the portfolio remains appropriately positioned to meet the System's objectives. We will also review the System's investment structure to ensure that the portfolio's active risk and fees are focused on segments of the market where we collectively have the highest conviction for long-term manager outperformance on a net-of-fee basis. Lastly, we will assist the System with monitoring and maintaining its IPS.</p>

Task	Comments
2. Attend monthly Board meetings virtually and in person as needed.	Lead consultant Mark Brubaker will attend meetings, and Mike Patalsky will be available in his absence or as required. Other Verus personnel will be available to attend meetings as may be required (e.g., trustee educational presentations). The consulting team and Verus' research personnel will be available to assist and answer questions from the System. At the start of our engagement, your consultants will identify topics of education that may be beneficial to trustees that will be undertaken during the course of our engagement with the System.
3. Provide monthly analysis of the System's Investment Managers of actual and relative performance, compliance with the PERAC's regulations, and adherence to the Manager's agreement with the Board.	We will provide the System with comparative quarterly performance reporting and monthly performance updates at the total fund, asset class, and individual manager levels. The main performance platform and source of information for total fund rankings and peer universes will be Investment Metrics' Portfolio Analytics Reporting (PARis), which will be supplemented by eVestment and Morningstar for individual manager rankings. Performance will be calculated and verified by Verus' in-house, 15-person Portfolio Analytics Group. Verus will set up an electronic data feed with the System's custodian bank to facilitate data collection.
4. Conduct PERAC-compliant searches for managers and custody service providers in accordance with established search and evaluation procedures as directed by the Board.	Verus conducts an average of 120 manager searches a year across a wide range of public assets and alternative investments. We have two dedicated teams for manager research: Public Markets Research (public assets and hedge funds research), and Private Markets Research (private equity, private credit, real assets). We will assist the System with identifying institutional quality investment products from the Verus database that demonstrate a proven, repeatable approach for producing net-of-fee outperformance over the long-term. Verus will assist with sourcing, evaluating, selecting, and monitoring of managers and investment products. We will also assist with structuring the investment program (public and private markets asset classes) in a manner that seeks to enhance the diversification and return potential of the portfolio. For private markets asset classes (private equity and private credit), we will assist with structuring a fund-of-funds investment program that provides broad strategy diversification and aligns with the implementation approach utilized presently.
5. Provide additional reporting and analysis (e.g. annual actuarial reports, ACFR, and PERAC ASFC).	We routinely assist our pension fund clients with the preparation of annual reports and statements of financial condition and work closely with their actuaries to prepare annual valuations and will be available to assist with any ad hoc special projects that may arise. We will serve as a functioning unit of the System's Staff, providing support as needed.

- **Ability of firm and/or individuals to provide information updates and clarification of new and pending legislation.** Mark Brubaker and Mike Patalsky are well versed on PERAC regulations and have provided clients with information updates and clarification of new and pending legislation since Mark started working with his first PERAC client in 1997.
- **Depth and completeness of reports.** Quality control protocols are implemented firm-wide at the individual level through self-performance appraisal, at the functional group level through manager supervision, at the client sector level through sector team leader supervision and peer review, and at the firm-wide level through Verus' internal committees. Your lead consultant also reviews the completeness of all work performed. Dedicated research teams create the intellectual content that form the basis of our investment strategy and client recommendations, ensuring consistency of advice across the firm. We devote considerable resources to study global capital movements and market trends, maintain asset class coverage across a wide range of traditional and alternative investments, source new investment ideas and recommend meticulously vetted investment products and strategies, and provide client staffs and trustees with useful education on topics that directly address their concerns. In our client satisfaction survey, we have been rated highly for the quality of research and deliverables provided to our clients.

- **Data and reports presented in a clear and concise format.** Our performance reports can be presented both in summary format and/or full technical format, based on the preference of our clients. Most reports are presented in PowerPoint format for conciseness and clarity. Our consultants regard themselves as communicators who can present complex investment ideas in a manner that can be understood and appreciated by non-investment professionals who often sit in pension boards.
- **Commitment to attend regular and special meetings of the Board beyond those established by the Minimum Criteria.** As an extension of the System's staff in the services of its Board, the System's consultants are committed to maintaining flexibility in attending meetings.
- **High level of client satisfaction.** High client satisfaction is best demonstrated by our client tenure, which averages 15 years. 67% of our clients have retained Verus for more than 10 years, and 37% have retained us for more than 20 years. We have the resources of a large firm, but the values of a boutique organization. Our clients receive personalized, not cookie-cutter, advice. In our most recent client satisfaction survey that was administered by an outside party, we were ranked highly by our clients in the following categories: Responsiveness (4.7 out of 5), Policy and Strategy Expertise (4.6 out of 5), Knowledge of Portfolio History (4.6 out of 5), General Personality Fit (4.6 out of 5), and Tenured Experience (4.6 out of 5).

**C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.**

Following are three client references of the consulting team for MWRA. As a courtesy to our clients, we would appreciate receiving at least 48 hours' notice if MWRA will contact them so we can let them know beforehand.

**Massachusetts PRIM**  
 Mr. Jay Leu  
 Chief Risk Officer  
 84 State Street, Suite 250  
 Boston, MA 02109  
 (617) 946-8415  
[jleu@mapension.com](mailto:jleu@mapension.com)

**Pennsylvania Public School Retirement System**  
 Mr. Jason Davis  
 Board Member  
 5 North Fifth Street  
 Harrisburg, PA 17101  
 (717) 720-4749  
[jasontpsg@gmail.com](mailto:jasontpsg@gmail.com)

**South Carolina Retirement Investment Commission**  
 Mr. Robert Feinstein  
 Managing Director  
 1201 Main Street, Floor 15  
 Columbia, SC 29201  
 (803) 737-6809  
[rfeinstein@rsic.sc.gov](mailto:rfeinstein@rsic.sc.gov)

**D. Please provide the names and asset values of any clients who have terminated services in the last three years.**

Year	Client Type	Assets \$M	Reason
2021	None		
2022	Public fund	\$47,489	Chose legacy provider in RFP process
	Private wealth trust	\$143	Stopped using a consultant
	Educational foundation	\$133	Wanted to use a BIPOC provider
	Not-for-profit healthcare	\$1,256	Chose another provider in RFP process
	Religious charity	\$87	Stopped using a consultant
	Taft-Hartley trust	\$588	Chose another provider in RFP process
	Not-for-profit healthcare	\$1,166	Acquired
	Not-for-profit healthcare	\$500	Replaced all vendors retained 10+ years
2023	Taft-Hartley trust	\$204	Chose another provider in RFP process

**E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.**

We are providing the following reports customarily supplied to our clients:



- Quarterly Investment Performance Report **Tab II** of Appendix
- Monthly Investment Performance Update **Tab III** of Appendix
- Annual Private Equity Outlook **Tab IV** of Appendix
- Annual Real Asset Outlook **Tab V** of Appendix
- Annual Capital Markets Assumptions **Tab VI** of Appendix

**VI. Fee Structure**

- A.** Please provide a detailed description of the fee structure for the firms' services to the Board. Fees must be fixed and based on services provided, and fee proposals must include the length of time over which the proposed fee is guaranteed, as well as a statement that the fee is all-inclusive.

Our Fee Proposal is submitted in a separate sealed envelope per the RFP Instructions.

**VII. Specific Board Issues**

- A.** Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.

**Primary team.** The primary consulting team for the System will be composed of the following:

Name	Role with the System	Location	Years Industry	Years Firm	Education
Mark Brubaker, CFA, Managing Director	Lead consultant	Pittsburgh	33	3.5	MBA, CFA
Mike Patalsky, CFA, Managing Director	Secondary consultant	Pittsburgh	25	2.5	MBA, CFA

**Mark Brubaker** will serve as lead consultant to the System. He will primarily be responsible for coordinating the delivery of investment consulting services required by this RFP, ensuring the completeness and quality of all work performed. He will serve as primary contact for this engagement and attend all Board meetings and investment-related ad hoc or special meetings and will attend a Board interview. As backup consultant, **Mike Patalsky** will actively collaborate with this engagement and will be available to attend meetings in Mr. Brubaker's absence. A key member of the team will be **Chris Shelby, Jr., CFA**, Managing Director for Private Markets, who will serve as private markets consultant. He will lead the design, implementation, and monitoring of the System's private portfolio and provide trustee education on the asset class, as required (see Support Team below for his details).

**Support team.** The primary consulting team will be supported by key members of our research and investment teams who will coordinate and supervise the work of research analysts within their respective teams, as follows:

Name and title	Role with the System	Office Location	Years industry	Years firm	Education
Chris Shelby, Jr., CFA Managing Director, Private Markets	Private markets consultant	Pittsburgh	16	2.5	BA, CFA
Evan Benedict Senior Consulting Associate	Consulting support	Pittsburgh	9	3	BS
Ian Toner, CFA Chief Investment Officer	Development of firm-wide investment strategy	Seattle	33	10	MA Oxon (Hons), CFA
Marianne Feeley, CFA Managing Director, Public Markets	Manager research oversight, public markets	Seattle	33	8	MBA, CFA

## MWRA EMPLOYEES' RETIREMENT SYSTEM

Name and title	Role with the System	Office Location	Years industry	Years firm	Education
Paul Kreiselmaier, CFA Director, Hedge Funds	Hedge funds research	Seattle	29	6	MBA, CFA
Thomas Garrett, CFA, CAIA, FRM Director, Strategic Research	Global capital markets research. Development of capital markets assumptions used in asset allocation	Seattle	10	10	MBA, CFA, CAIA, FRM
Dan Hougard, FSA Associate Director, Actuarial Services	Asset-liability modeling, actuarial support	Seattle	7	1	BA, FSA
Danny Sullivan, CAIA, FRM Consultant, Risk	Risk management and risk reporting	Seattle	13	13	MBA, CAIA, FRM
Justin Hatley Director, Performance Analytics	Performance measurement oversight	Seattle	19	19	MBA
Jonathan Henderson Director, Operations	Operational due diligence	Seattle	24	13	BA
Kraig McCoy, CFA CFO/COO	Operations oversight	Seattle	23	10	BA, CFA
Warren Spencer, JD, LLM Chief Legal Officer	Legal and compliance	Seattle	30	9	JD, LLM

Biographies of the consulting team for the System are provided in **Tab XXX** of the Appendix.

**B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.**

Mr. Brubaker currently has seven clients as lead or co-lead consultant, and Mr. Patalasky has four.

Consultant	Client name	Asset Size	Role
Mark Brubaker, CFA	AbbVie, Inc.	\$639 Million	Lead Consultant
	Association for Cultural Interchange	\$143 Million	Lead Consultant
	Indiana Public Retirement System	\$45 Billion	Co-Lead Consultant
	Public School Emp Ret System of Pennsylvania	\$70 Billion	Lead Consultant
	South Carolina Retirement Investment Commission	\$40 Billion	Co-Lead Consultant
	Tennessee Consolidated Ret. System	\$79 Billion	Co-Lead Consultant
	West Virginia Investment Mgmt Board	\$23 Billion	Co-Lead Consultant
Mike Patalasky, CFA	Oklahoma Public Employees Retirement System	\$13 Billion	Lead Consultant
	South Carolina Retirement Investment Commission	\$41 Billion	Co-Lead Consultant
	Alcoa Corp.	\$613 Million	Lead Consultant
	Sullivan Family of Companies	\$179 Million	Lead Consultant
	Public School Emp Ret System of Pennsylvania	\$70 Billion	Secondary Consultant

**C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.**

At the start of the engagement, we will require the cooperation of your staff and trustees to assess the investment objectives, characteristics, and risk tolerance of the System. We will also require assistance procuring materials and documents from your former consultant, actuary, and custodian (e.g., actuarial report, investment policy statement, last four quarterly performance reports, custodial agreements, plan documents, most recent custodian and manager statements, custodial asset worksheet, manager documents, etc.). To backload performance, we will need the following data from your consultant or custodian:

- Investment full name for each manager
- Investment asset class for each manager
- Investment asset style for each manager
- Investment benchmark (primary index) for each manager
- Inception date for each manager
- Inception amount of each manager
- Monthly balances since inception for all managers – where applicable separate manager data by asset class (Total, U.S. Equity, U.S. Fixed Income, Int'l Equity, etc.)
- Monthly and quarterly returns (net and gross) since inception for all managers – where applicable separate manager data by asset class (Total, U.S. Equity, U.S. Fixed Income, Int'l Equity, etc.)
- Monthly balances since inception for all asset class composites
- Monthly and quarterly returns (net and gross) since inception for all asset class composites
- Monthly and quarterly returns (net and gross) for total portfolio since inception
- Monthly balances for total portfolio since inception
- Monthly inflows / outflows for each manager
- Monthly inflows / outflows for the total portfolio
- Monthly historical Policy Index returns and its allocation (current and historical)
- List of terminated investments with date hired and terminated with market values for both milestones
- Manager account #'s (if applicable)
- Copies of last 4 quarterly consultant performance reports
- Copies of last year of monthly statements for underlying managers
- Fee history for each manager (fee schedule or expense ratio)
- For LPs only: Copies of subscription docs and PPMs
- Manager contact information (contact name, address, phone # and e-mail)
- Custodian and/or 3rd party administrator contacts information

# Primary consulting team for MWRA

# Biographical information



## Mark Brubaker, CFA

### Managing Director | Senior Consultant

Mr. Brubaker is primarily responsible for providing strategic investment advice to help ensure clients meet their long-term investment objectives. He also serves on the Verus management committee, OCIO investment committee, and is a shareholder of the firm. For more than thirty years, Mr. Brubaker has served endowments and foundations, corporate and public pension funds, hospitals and insurance companies. He has worked closely with Boards of Directors, Investment Committees, executives and staff in developing asset allocation policy, implementing optimal portfolio structure across all asset classes, evaluating and recommending investment managers and providing topical investment research and education.

#### Contact:

T: 412.784.6678

F: 206.622.0548

[mbrubaker@verusinvestments.com](mailto:mbrubaker@verusinvestments.com)

Prior to joining Verus in 2020, Mr. Brubaker was the Head of Wilshire's OCIO Solutions Group. He was also a member of the Wilshire Board of Directors, the Wilshire Consulting Investment Committee and the Wilshire Manager Research Oversight Committee. He joined Wilshire in 1997, originally serving as an investment consultant to large institutional investors.

Prior to joining Wilshire, he worked at Westinghouse Electric Corporation, where he was responsible for over \$9 billion in defined benefit, defined contribution, and foundation assets. He also served as a Managing Director for PNC Asset Management where he led the OCIO business for their large client segment.

He earned a bachelor of arts (BA) in economics from Yale University and holds a master's degree in business administration (MBA) from Carnegie Mellon University. Mr. Brubaker earned a Chartered Financial Analyst (CFA) designation and is active in the CFA Society of Pittsburgh.

# Biographical information



**Contact:**

T: 412.784.6678

F: 206.622.0548

[mpatalsky@verusinvestments.com](mailto:mpatalsky@verusinvestments.com)

## Michael Patalsky, CFA

### Managing Director | Senior Consultant

Mr. Patalsky has over 23 years of experience advising institutional investors on managing their asset portfolios. His experience spans all functions of asset management across a variety of client types, including asset allocation/portfolio strategy development, risk management, asset-class level portfolio structuring, and investment manager due diligence and selection with public and private investments. He is also a member of the alternative investments committee.

Mr. Patalsky was previously Director of Investments at Willis Towers Watson, where he served as lead consultant to both investment advisory and OCIO clients. He was a managing director and principal at Wilshire Associates, where he had a nine-year career advising Fortune 500 corporations, university foundations, other non-profits, and public funds. Other previous experience includes working in PPG Industries, Inc.'s Benefits Investment and Financing group, managing about \$5 billion in pension, defined contribution, and foundation assets, and at Hewitt Associates in their Defined Contribution Services practice.

Mr. Patalsky graduated from University of Notre Dame with a bachelor of business administration degree in finance. He holds a master's degree in business administration (MBA) from Carnegie Mellon University Tepper School of Business and is a Chartered Financial Analyst (CFA) charterholder.

# Support team for MWRA

# Biographical information



## Christopher Shelby, Jr., CFA

### Managing Director | Private Markets

Mr. Shelby provides investment advice to clients to help implement and maintain private markets portfolios and is a member of the private markets investment team. Mr. Shelby focuses on the sourcing of investment opportunities, performing due diligence, monitoring investments, and generating investment content. Mr. Shelby's coverage spans the private markets with a focus on private credit and private equity strategies with additional responsibilities across venture capital, growth equity, and real assets.

Prior to joining Verus in 2021, Mr. Shelby was a Senior Vice President at Wilshire Advisors where he was a member of the Private Markets Group. Mr. Shelby's responsibilities included both the sourcing, due diligence, execution, and monitoring of primary, secondary, and co-investment opportunities across private markets asset classes. Additionally, Mr. Shelby worked with Wilshire's client base to provide private markets consulting services including investment pacing, portfolio construction, and ongoing monitoring and education.

Mr. Shelby graduated from the University of Pittsburgh with Summa Cum Laude honors earning a bachelor of science (BS) degree in business administration, majoring in finance with a minor in economics. He is a CFA Charterholder and a member of the CFA Society of Pittsburgh.

#### Contact:

T: 412.784.6678

F: 206.622.0548

[cshelby@verusinvestments.com](mailto:cshelby@verusinvestments.com)



# Biographical information



## Evan Benedict

### Senior Consulting Associate

Mr. Benedict provides consulting support services based out of the Pittsburgh office. His primary responsibilities include assisting clients, collaborating with consultants to prepare deliverables, and in-depth portfolio analysis. Mr. Benedict has serviced a wide variety of clients, most notably corporate defined benefit and contribution plans.

Prior to joining Verus, Mr. Benedict was an Associate at Wilshire, where he worked for over six years. Mr. Benedict supported several senior consultants and was responsible for preparing meeting deliverables, reviewing and disseminating ongoing reporting, and responding to client inquiries.

Mr. Benedict graduated from the University of Pittsburgh with a bachelor of science degree (BS) in business administration with a major in finance.

#### Contact:

T: 412.784.6678

F: 206.622.0548

[ebenedict@verusinvestments.com](mailto:ebenedict@verusinvestments.com)

# Biographical information



**Contact:**

T: 206.622.3700

F: 206.622.0548

[itoner@verusinvestments.com](mailto:itoner@verusinvestments.com)

## Ian Toner, CFA

### Chief Investment Officer

Mr. Toner is responsible for the overall investment and risk output at Verus, for both discretionary and non-discretionary clients. Mr. Toner is responsible for the final determination of the firm's overall investment positioning. He is also a member of the Verus management committee, investment and alternative investment committees, and is a shareholder of the firm.

He joined Verus in 2013 from Russell Investments, where he was most recently Director, Capital Markets Research, with responsibility for research and marketing across the trading floor businesses of Russell globally. Before Russell Investments he was an executive director at UBS Investment Bank in London, and a vice president at both Schroder Salomon Smith Barney and InterSec Research Corp. Earlier in his career he worked on the sell-side of the institutional markets in London, covering European equity markets.

Mr. Toner has a degree in Law from the University of Oxford in the United Kingdom and is a CFA charterholder (Chartered Financial Analyst). He is a regular author and speaker on a range of investment topics. He is a member of the Audit / Finance Committee of The Medina Foundation in Seattle. He is also a member of the CFA Institute and the CFA Society of Seattle. He is a former board member at the Seattle Metropolitan Chamber of Commerce, where he co-chaired the finance & audit committee. Mr. Toner was formerly a trustee of the Charles Wright Academy and former chair of the endowment committee. He has been happily married to his wife, Heather, for nearly 30 years, and is the proud father of two children.

# Biographical information



**Contact:**

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## Marianne Feeley, CFA

### Managing Director | Public Markets

Ms. Feeley has over thirty years of investment experience and oversees public markets research at Verus. Additionally, she conducts asset class related research within the international equity segment and focuses on manager research process issues. She is also a shareholder of the firm.

Prior to joining Verus in 2015, Ms. Feeley spent 18 years in various manager research roles at Mercer Investments. She functioned as a generalist researcher in the firm's Chicago office, as a specialist responsible for global and emerging markets equity manager research in London and as a leader of the Asia Pacific manager research team while based in Sydney, Australia. She began her investment career with Fuji Securities as a research associate.

Ms. Feeley graduated from Loyola University with a bachelor of science (BS) degree, majoring in biology and psychology, and holds a master's degree in business administration (MBA) from the University of Chicago with a specialization in finance. She is a CFA charterholder (Chartered Financial Analyst) and a member of the CFA Institute.

# Biographical information



## Paul Kreiselmaier, CFA

**Director | Hedge Funds**

Mr. Kreiselmaier has over 20 years of investment experience in various roles in both manager due diligence and quantitative research and portfolio management. At Verus, he is primarily responsible for investment strategy, due diligence, portfolio construction recommendations and relationship building across the hedge fund universe, and oversight of the firm's hedge fund program.

Prior to joining Verus, he was a senior research analyst at Russell Investments where he was responsible for evaluating, recommending and monitoring hedge fund managers for inclusion in client portfolios. He began his career at Russell evaluating US large cap equity and Global Tactical Asset Allocation (GTAA) managers. He also worked at Mellon Capital Management where he held both research and portfolio management related roles focused on both equity and GTAA mandates.

Mr. Kreiselmaier graduated from Trinity University with a bachelor of arts (BA) degree in economics. He also holds a master's degree in business administration (MBA) from the University of Texas at Austin. He is a CFA charterholder (Chartered Financial Analyst) and a member of both the CFA Institute and the CFA Society of Seattle. Mr. Kreiselmaier is also a member of the Chicago Quantitative Alliance (CQA).

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# Biographical information



## Thomas Garrett, CFA, FRM, CAIA

### Managing Director | Strategic Research

Mr. Garrett is responsible for leading the firm's capital markets research efforts, including the creation and oversight of market reviews and outlooks, topical white papers, and capital market forecasts and models. He directs the development of both shorter-term and longer-term top-down portfolio views in collaboration with portfolio management, research, and consulting staff. Mr. Garrett oversees the publication of research materials on topics such as capital market opportunities, strategic asset allocation, and active management. He is a shareholder of the firm. Prior to joining Verus, he held a career in the life insurance industry where he served as underwriting manager.

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Mr. Garrett earned a bachelor of arts degree (BA) from the University of Washington with a dual concentration in finance and marketing, with honors, and a master's degree in business administration (MBA) from Seattle University. He holds the Financial Risk Manager (FRM) designation and is a CFA (Chartered Financial Analyst) and CAIA (Chartered Alternative Investment Analyst) charterholder. Mr. Garrett is a past President of CFA Society Seattle, and currently serves on the boards of CFA Society Seattle, CAIA Seattle, and the Seattle Metropolitan Chamber of Commerce.

# Biographical information



## Dan Hougard, FSA

### Associate Director | Actuarial Services

Mr. Hougard joined Verus in 2023. He is responsible for providing thought leadership around asset and liability modeling and works with consultants to design and produce asset/liability studies.

Prior to joining Verus, Mr. Hougard worked for WTW for six years as an actuarial consulting associate. During his tenure at WTW, he produced actuarial valuations, supported pension plan sponsors in meeting their financial reporting requirements, and provided strategic analysis related to asset allocation and liability settlement decisions.

Mr. Hougard received his bachelor's degree in business administration (BBA) from the University of Wisconsin-Madison with degrees in Actuarial Science, Finance, and Risk Management. He is a Fellow of the Society of Actuaries (FSA).

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# Biographical information



## Danny Sullivan, FRM, CAIA

### Consultant

Mr. Sullivan began his career with Verus in 2011 and is primarily responsible for providing risk focused consulting services to clients. This includes advising clients on the objectives, governance, implementation and execution of effective risk management as part of their overall investment process. He is also a shareholder of the firm.

Previously, Mr. Sullivan was a senior risk analyst and was responsible for risk management and measurement of client portfolios. He has experience in risk implementations and maintenance of multi-asset portfolios. He has also has experience modeling alternative asset portfolios including: Private Equity, Real Estate, Risk Parity, and Alternative Beta.

Mr. Sullivan holds a master's in business administration (MBA) from Seattle University and a bachelor of science (BS) in economics from the University of Washington. He holds the Financial Risk Manager (FRM) designation and the Chartered Alternative Investment Analyst (CAIA) designation.

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# Biographical information



## Justin Hatley

**Director | Performance Analytics**

Mr. Hatley joined Verus in 2004 where he held roles in analytics and consulting in the firm prior to being promoted to head the analytics team. His primary responsibilities include providing leadership and resources to ensure efficient and high quality performance reporting, mentoring analysts to advance their knowledge and skills, and acting as a liaison to management and consultants to continually enhance the analytics function and client experience. He is also a shareholder of the firm.

Mr. Hatley received a bachelor of science (BS) degree in finance from the University of Idaho and holds a master's degree in business administration (MBA) from Seattle University. He has been an active volunteer for the Nordstrom scholarship committee.

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# Biographical information



## Jonathan Henderson

### Director | Operations

Mr. Henderson's primary responsibilities include development and implementation of operational process and procedures for the firm's discretionary management functions, management and administration of middle and back office operations, including trading and trade systems with the discretionary platform and oversight of the firm's investment manager operational due diligence program.

Prior to joining Verus in 2010, Mr. Henderson worked in the investment services field first with Bank of America investment services where he held various positions involving many aspects of brokerage services including advisory sales, securities trading and operations. Mr. Henderson was recognized with a President's Club award in 2004. He then worked for Washington First International Bank (now East West Bank) providing corporate trust and investment management services to the bank's high net-worth clientele. Mr. Henderson was instrumental in establishing and developing the trust and investment advisory platform and with the ongoing day to day management, including securities trading, portfolio modeling and relationship management.

Mr. Henderson graduated from the University of Washington with a bachelor of arts degree (BA) in economics.

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# Biographical information



## Kraig McCoy, CFA

**Chief Financial Officer | Chief Operating Officer**

Mr. McCoy is responsible for planning, implementing and managing all financial-related activities of the firm, in addition to overseeing information technology, human resources and legal services. He is chair of the OCIO investment committee and sits on the management committee, where he helps execute all strategic and tactical issues as they relate to both the non-discretionary and discretionary services. He also sits on the Verus OCIO investment management committee and is a shareholder of the firm.

Prior to joining Verus in 2013, Mr. McCoy held the position of controller at BGI, a private investment firm in Kirkland, where he was responsible for all financial accounting of the investment management business and overseeing the operations/treasury division, where he managed the back and middle office functions of the investment operations team. Mr. McCoy also served as corporate controller for Silver Creek Capital Management, LLC, an alternative investment firm that manages fund of hedge fund portfolios.

Before Silver Creek, Mr. McCoy helped launch Tahoma Capital, LLC, a global multi-strategy hedge fund. He spent five years with Quellos Group, LLC, where he was an associate director in the corporate finance department and acted as chief financial officer, as well as the financial and operational principal of Quellos' broker/dealer. His past experience also includes over five years as an audit professional with Arthur Andersen LLP. He currently serves as president on the board of directors of Boyer Children's Clinic.

Mr. McCoy received a bachelor of arts degree (BA) in business administration from the University of Washington. He is a CFA charterholder (Chartered Financial Analyst) and is a Washington State CPA (Inactive). He is also a member of the CFA Institute and CFA Society of Seattle.

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# Biographical information



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## Warren Spencer, JD, LLM

### Chief Legal Counsel | Chief Compliance Officer

Mr. Spencer has more than 20 years of legal experience relating to asset management services, investment funds, and mergers and acquisitions. He began counsel to Verus in 2012 and became Chief Legal Counsel and Chief Compliance Officer in 2014.

Prior to Verus, Mr. Spencer served as a legal and tax advisor to institutional clients regarding investment funds, asset acquisitions and mergers from his offices in London and Seattle. He previously held the position of chief legal officer for Ophrys, LLC. During his tenure with Ophrys LLC, he provided legal and tax advice regarding investment funds, asset backed financing pools, financial asset purchase agreements, hedge fund agreements, equity subscriptions, and debt financing.

Prior to joining Ophrys, LLC, he served as in-house legal counsel for Klesch & Company, Ltd, a private investment firm based in Geneva, London and Moscow. His responsibilities included legal and tax analysis regarding acquisitions, mergers, joint ventures and disposals, UK collective investment programs, and contractual agreements for the purchase and sale of corporate and sovereign debt.

Mr. Spencer is a Sloan Fellow of the London Business School, holds an LLM (tax law) from the University of Florida (Levin) College of Law in Gainesville, Florida, a Juris Doctor (JD) degree from Willamette University College of Law in Salem, Oregon, and has a BA (Phi Beta Kappa) in economics from the University of Washington. He is a member of both the Washington State Bar and Oregon State Bar associations.

APPENDIX

Tab II – Quarterly Investment Performance Report

# Sample Public DB Plan

Investment Performance Review  
Period Ending: June 30, 2023



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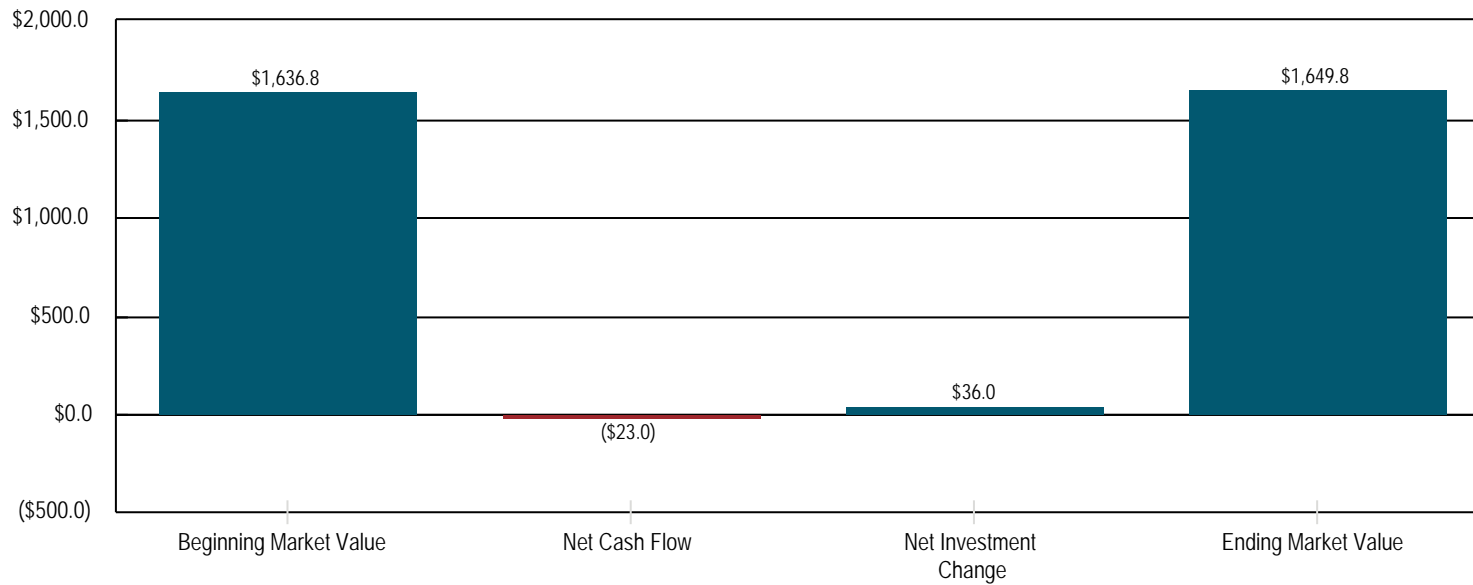
SAN FRANCISCO 415.362.3484

Total Fund  
Portfolio Reconciliation

Sample Public DB Plan  
Period Ending: June 30, 2023

Portfolio Reconciliation

	Last Three Months	One Year
Beginning Market Value	1,636,811,255	1,576,995,970
Net Cash Flow	-23,025,927	-20,061,782
Net Investment Change	36,043,535	92,872,553
Ending Market Value	1,649,828,863	1,649,828,863

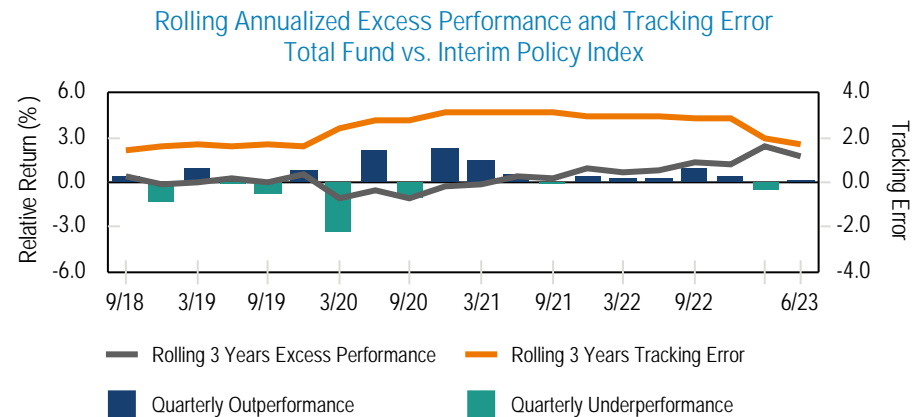
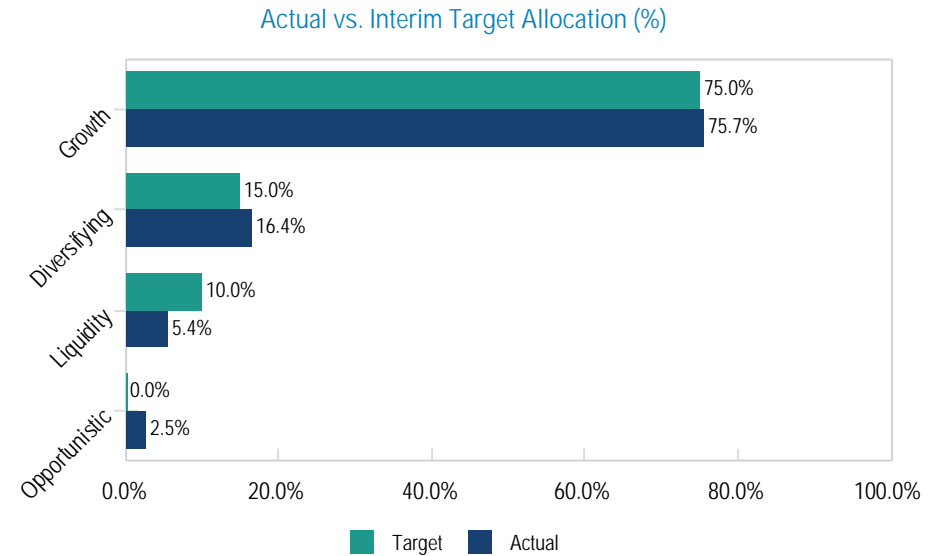


Contributions and withdrawals may include intra-account transfers between managers/funds.

# Total Fund Executive Summary (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs
<b>Total Fund</b>	<b>2.3</b>	<b>5.3</b>	<b>6.1</b>	<b>8.6</b>	<b>6.6</b>
<i>Interim Policy Index</i>	<i>2.1</i>	<i>5.6</i>	<i>5.0</i>	<i>6.9</i>	<i>6.0</i>
<i>FFP SAA Index</i>	<i>2.1</i>	<i>5.1</i>	<i>3.6</i>	<i>10.4</i>	<i>8.4</i>
<b>Total Growth</b>	<b>3.1</b>	<b>6.3</b>	<b>7.6</b>	<b>13.1</b>	<b>9.1</b>
<i>Custom Growth Benchmark</i>	<i>3.6</i>	<i>7.5</i>	<i>8.0</i>	<i>11.1</i>	<i>8.8</i>
<b>Total Public Equity</b>	<b>5.3</b>	<b>12.4</b>	<b>19.3</b>	<b>13.6</b>	<b>10.0</b>
<i>Russell 3000 Index</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>
<b>Total Domestic Equity</b>	<b>6.2</b>	<b>12.1</b>	<b>20.5</b>	<b>15.7</b>	<b>11.4</b>
<i>Russell 3000 Index</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>
<b>Total International Equity</b>	<b>4.2</b>	<b>12.9</b>	<b>17.6</b>	<b>10.9</b>	<b>8.4</b>
<i>MSCI AC World ex USA Index</i>	<i>2.7</i>	<i>9.9</i>	<i>13.3</i>	<i>7.7</i>	<i>4.0</i>
<b>Total Private Equity</b>	<b>2.9</b>	<b>3.5</b>	<b>-2.2</b>	<b>28.2</b>	<b>19.1</b>
<i>Private Equity Benchmark</i>	<i>2.9</i>	<i>3.5</i>	<i>-2.2</i>	-	-
<b>Total Private Credit</b>	<b>2.4</b>	<b>3.7</b>	<b>1.6</b>	<b>12.3</b>	<b>7.9</b>
<i>Private Credit Benchmark</i>	<i>2.4</i>	<i>3.7</i>	<i>1.6</i>	-	-
<b>Total Real Estate</b>	<b>-1.8</b>	<b>-4.5</b>	<b>-8.5</b>	<b>6.9</b>	<b>5.7</b>
<i>NCREIF Property Index</i>	<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>
<b>Total Risk Diversifying</b>	<b>-0.1</b>	<b>3.1</b>	<b>2.6</b>	<b>-1.3</b>	<b>0.7</b>
<i>Total Risk Diversifying Benchmark</i>	<i>-1.3</i>	<i>1.9</i>	<i>-1.7</i>	<i>-5.1</i>	<i>0.0</i>
<b>Total Domestic Fixed Income</b>	<b>0.3</b>	<b>3.7</b>	<b>2.7</b>	<b>-0.5</b>	<b>2.5</b>
<i>Bloomberg U.S. Aggregate Index</i>	<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>
<b>Total Global Fixed</b>	<b>-1.5</b>	<b>1.3</b>	<b>2.2</b>	<b>-3.8</b>	<b>-2.5</b>
<i>FTSE World Government Bond Index</i>	<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>
<b>Total Liquidity</b>	<b>0.5</b>	<b>1.6</b>	<b>1.8</b>	<b>0.3</b>	<b>1.0</b>
<i>90 Day U.S. Treasury Bill</i>	<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>
<b>Total Cash</b>	<b>0.5</b>	<b>1.6</b>	<b>1.8</b>	<b>0.3</b>	<b>1.0</b>
<i>90 Day U.S. Treasury Bill</i>	<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>
<b>Total Opportunistic</b>	<b>5.8</b>	<b>7.2</b>	<b>1.1</b>	<b>9.8</b>	<b>6.0</b>
<i>Russell 3000 + 3%</i>	<i>9.2</i>	<i>17.9</i>	<i>22.5</i>	<i>17.3</i>	<i>14.7</i>

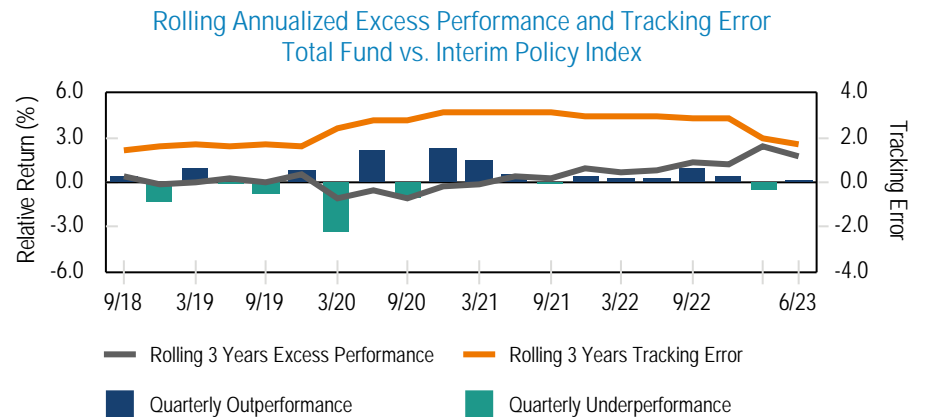
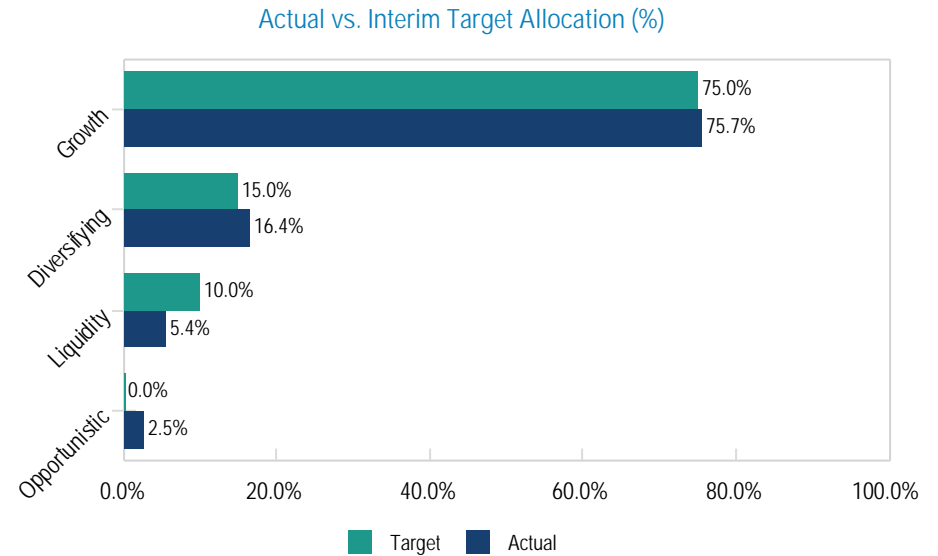


Interim Policy Index as of 1/1/2023: 21% Russell 3000, 17% MSCI ACWI ex-US (Gross), 8% Bloomberg U.S. Aggregate, 5% Bloomberg US Treasury 7-10 yr, 4% Bloomberg US TIPS 5+ Year, 6% FTSE World Govt Bond Index, 9% NCREIF Property Index, 10% Actual Private Equity Return, 8% Actual Private Credit Return, 6% 90-day T-Bills, 6% Manager O. FFP SAA Index as of 1/1/2021: 30% MSCI ACWI, 8% Bloomberg U.S. Treasury 7-10 yr, 7% Bloomberg U.S. TIPS, 4% 91 day T-Bills, 6% Bloomberg U.S. Govt/Credit 1-3 yr, 18% Actual Private Equity Return, 12% Actual Private Credit Return, 15% NCREIF Property Index. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter.

# Total Fund Executive Summary (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs
<b>Total Fund</b>	<b>2.2</b>	<b>5.1</b>	<b>5.8</b>	<b>8.3</b>	<b>6.2</b>
<i>Interim Policy Index</i>	<i>2.1</i>	<i>5.6</i>	<i>5.0</i>	<i>6.9</i>	<i>6.0</i>
<i>FFP SAA Index</i>	<i>2.1</i>	<i>5.1</i>	<i>3.6</i>	<i>10.4</i>	<i>8.4</i>
<b>Total Growth</b>	<b>3.0</b>	<b>6.1</b>	<b>7.3</b>	<b>12.7</b>	<b>8.7</b>
<i>Custom Growth Benchmark</i>	<i>3.6</i>	<i>7.5</i>	<i>8.0</i>	<i>11.1</i>	<i>8.8</i>
<b>Total Public Equity</b>	<b>5.1</b>	<b>12.1</b>	<b>18.6</b>	<b>12.9</b>	<b>9.4</b>
<i>Russell 3000 Index</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>
<b>Total Domestic Equity</b>	<b>6.1</b>	<b>11.8</b>	<b>20.0</b>	<b>15.2</b>	<b>10.9</b>
<i>Russell 3000 Index</i>	<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>
<b>Total International Equity</b>	<b>4.0</b>	<b>12.5</b>	<b>16.9</b>	<b>10.2</b>	<b>7.7</b>
<i>MSCI AC World ex USA Index</i>	<i>2.7</i>	<i>9.9</i>	<i>13.3</i>	<i>7.7</i>	<i>4.0</i>
<b>Total Private Equity</b>	<b>2.9</b>	<b>3.5</b>	<b>-2.2</b>	<b>28.2</b>	<b>19.1</b>
<i>Private Equity Benchmark</i>	<i>2.9</i>	<i>3.5</i>	<i>-2.2</i>	-	-
<b>Total Private Credit</b>	<b>2.4</b>	<b>3.7</b>	<b>1.6</b>	<b>12.3</b>	<b>7.9</b>
<i>Private Credit Benchmark</i>	<i>2.4</i>	<i>3.7</i>	<i>1.6</i>	-	-
<b>Total Real Estate</b>	<b>-1.8</b>	<b>-4.5</b>	<b>-8.5</b>	<b>6.9</b>	<b>5.7</b>
<i>NCREIF Property Index</i>	<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>
<b>Total Risk Diversifying</b>	<b>-0.2</b>	<b>2.9</b>	<b>2.2</b>	<b>-1.7</b>	<b>0.3</b>
<i>Total Risk Diversifying Benchmark</i>	<i>-1.3</i>	<i>1.9</i>	<i>-1.7</i>	<i>-5.1</i>	<i>0.0</i>
<b>Total Domestic Fixed Income</b>	<b>0.2</b>	<b>3.5</b>	<b>2.5</b>	<b>-0.8</b>	<b>2.1</b>
<i>Bloomberg U.S. Aggregate Index</i>	<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>
<b>Total Global Fixed</b>	<b>-1.7</b>	<b>0.9</b>	<b>1.4</b>	<b>-4.5</b>	<b>-3.2</b>
<i>FTSE World Government Bond Index</i>	<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>
<b>Total Liquidity</b>	<b>0.5</b>	<b>1.6</b>	<b>1.8</b>	<b>0.3</b>	<b>1.0</b>
<i>90 Day U.S. Treasury Bill</i>	<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>
<b>Total Cash</b>	<b>0.5</b>	<b>1.6</b>	<b>1.8</b>	<b>0.3</b>	<b>1.0</b>
<i>90 Day U.S. Treasury Bill</i>	<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>
<b>Total Opportunistic</b>	<b>5.8</b>	<b>7.2</b>	<b>1.1</b>	<b>9.8</b>	<b>6.0</b>
<i>Russell 3000 + 3%</i>	<i>9.2</i>	<i>17.9</i>	<i>22.5</i>	<i>17.3</i>	<i>14.7</i>



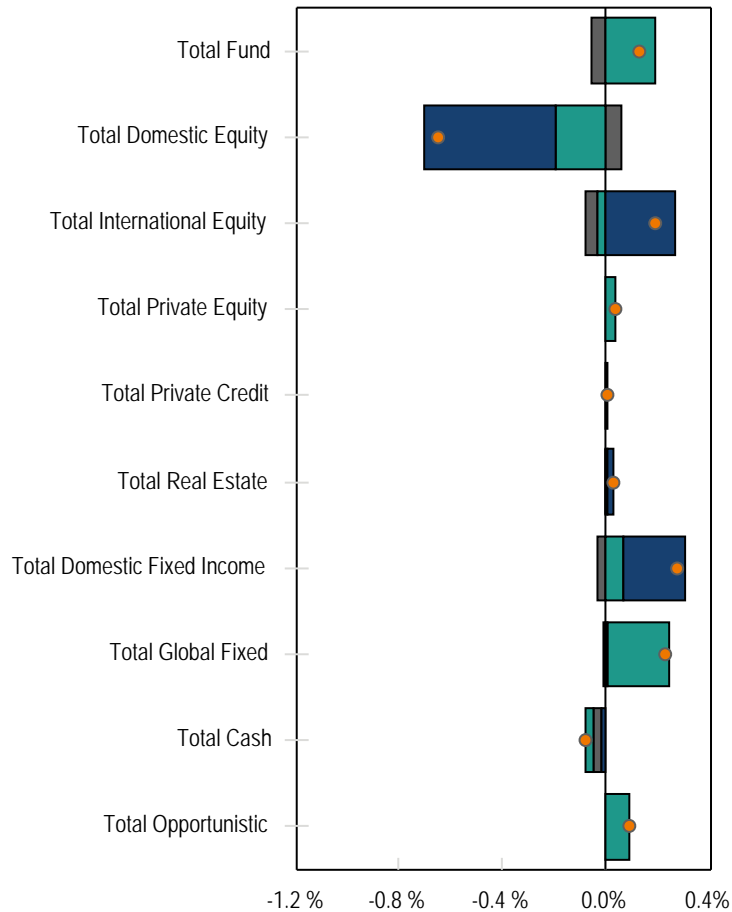
Interim Policy Index as of 1/1/2023: 21% Russell 3000, 17% MSCI ACWI ex-US (Gross), 8% Bloomberg U.S. Aggregate, 5% Bloomberg US Treasury 7-10 yr, 4% Bloomberg US TIPS 5+ Year, 6% FTSE World Govt Bond Index, 9% NCREIF Property Index, 10% Actual Private Equity Return, 8% Actual Private Credit Return, 6% 90-day T-Bills, 6% Manager O. FFP SAA Index as of 1/1/2021: 30% MSCI ACWI, 8% Bloomberg U.S. Treasury 7-10 yr, 7% Bloomberg U.S. TIPS, 4% 91 day T-Bills, 6% Bloomberg U.S. Govt/Credit 1-3 yr, 18% Actual Private Equity Return, 12% Actual Private Credit Return, 15% NCREIF Property Index. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter.



# Total Fund Attribution Analysis (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Attribution Effects  
3 Months Ending June 30, 2023



■ Selection Effect    ■ Allocation Effect  
■ Interaction Effect    ● Total Effects

Performance Attribution  
3 Months Ending June 30, 2023

	3 Mo
Wtd. Actual Return	2.2
Wtd. Index Return	2.1
<b>Excess Return</b>	<b>0.1</b>
Selection Effect	0.0
Allocation Effect	0.2
Interaction Effect	-0.1

Attribution Summary  
3 Months Ending June 30, 2023

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	6.1	8.4	-2.3	-0.5	-0.2	0.1	-0.6
Total International Equity	4.0	2.7	1.4	0.3	0.0	0.0	0.2
Total Private Equity	2.9	2.9	0.0	0.0	0.0	0.0	0.0
Total Private Credit	2.4	2.4	0.0	0.0	0.0	0.0	0.0
Total Real Estate	-1.8	-2.0	0.2	0.0	0.0	0.0	0.0
Total Domestic Fixed Income	0.2	-1.0	1.3	0.2	0.1	0.0	0.3
Total Global Fixed	-1.7	-1.8	0.1	0.0	0.2	0.0	0.2
Total Cash	0.5	1.2	-0.7	0.0	0.0	0.0	-0.1
Total Opportunistic	5.8	9.2	-3.4	0.0	0.1	0.0	0.1
<b>Total Fund</b>	<b>2.2</b>	<b>2.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.2</b>	<b>-0.1</b>	<b>0.1</b>

Attribution does not account for effects of overlay program. Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

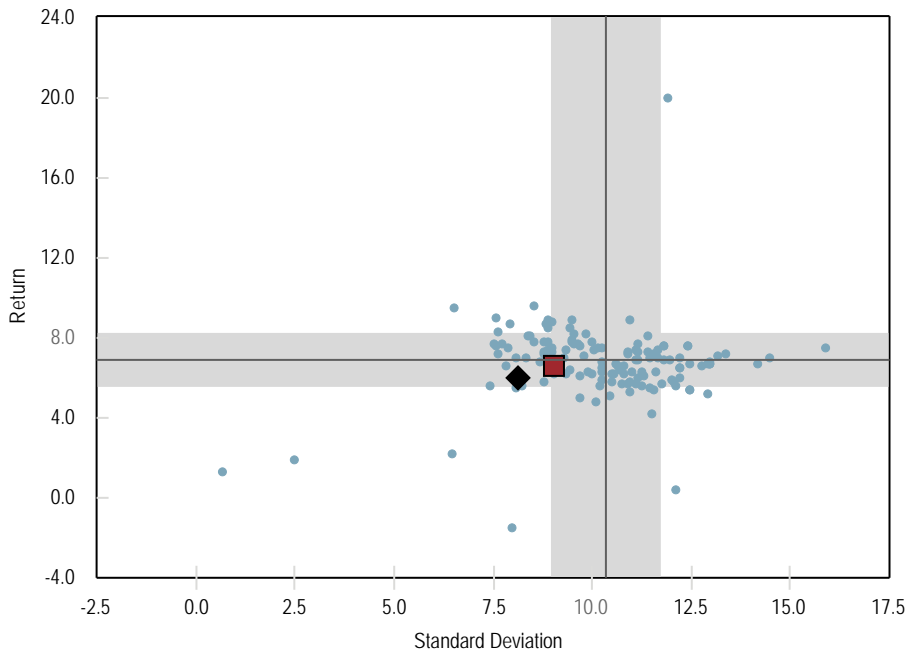
# Total Fund

## Risk Analysis - 5 Years (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	6.62	0.65	9.05	0.23	1.08	2.33	0.94	0.58	0.30	110.75	110.36

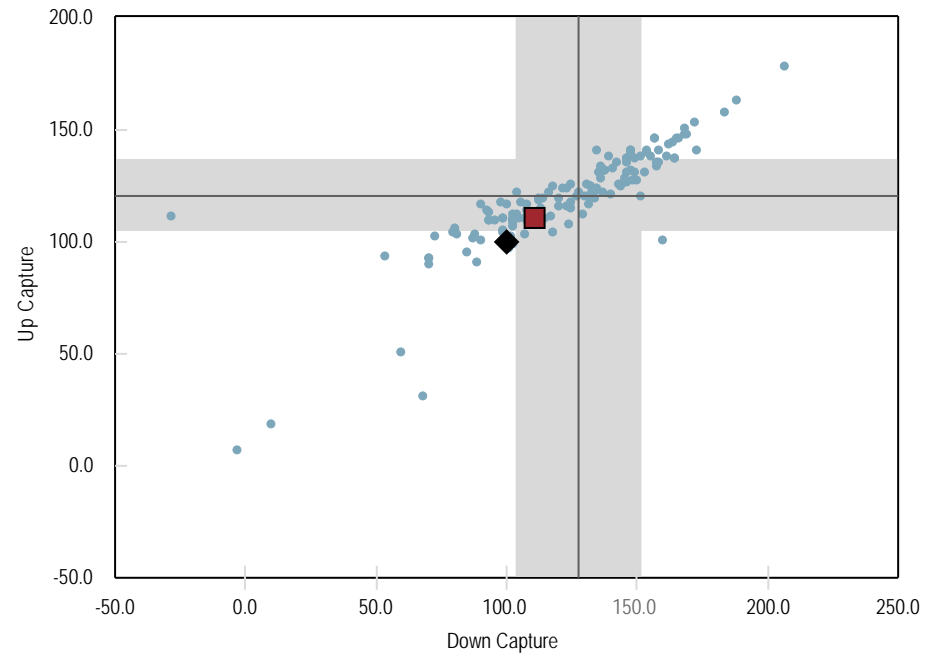
Annualized Return vs. Annualized Standard Deviation



All Public Plans > \$1B-Total Fund

	Return	Standard Deviation
Total Fund	6.62	9.05
Interim Policy Index	5.97	8.15
Median	6.86	10.35
Population	138	138

Up Capture vs. Down Capture



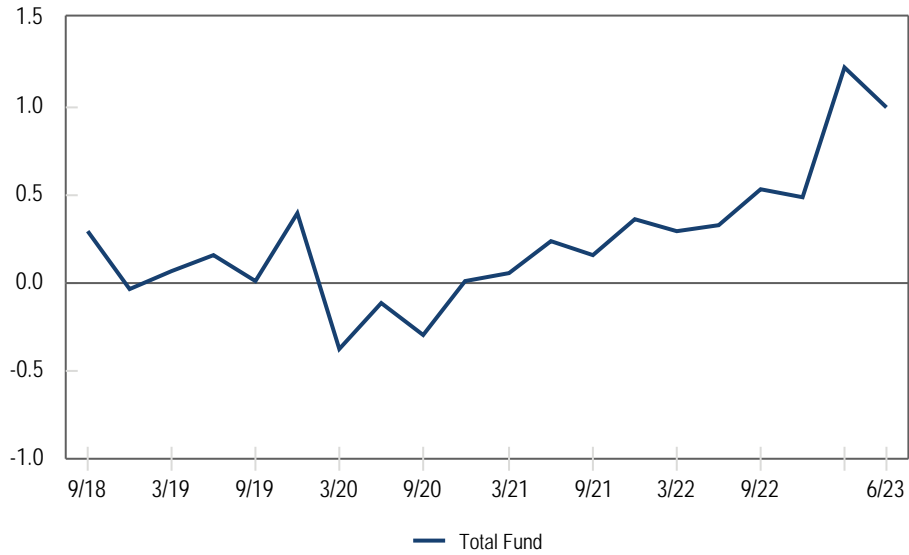
All Public Plans > \$1B-Total Fund

	Up Capture	Down Capture
Total Fund	110.75	110.36
Interim Policy Index	100.00	100.00
Median	120.81	127.35
Population	138	138

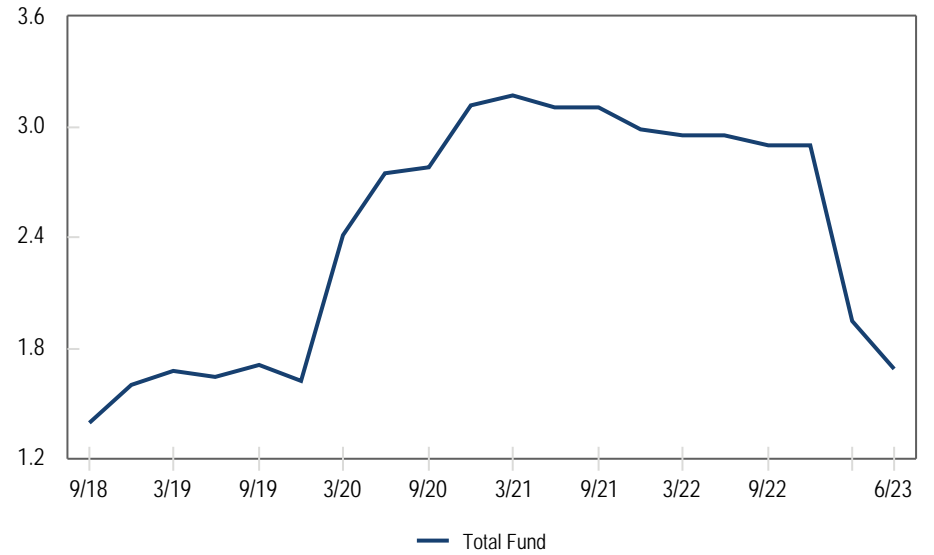
Total Fund  
Rolling Risk Statistics (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

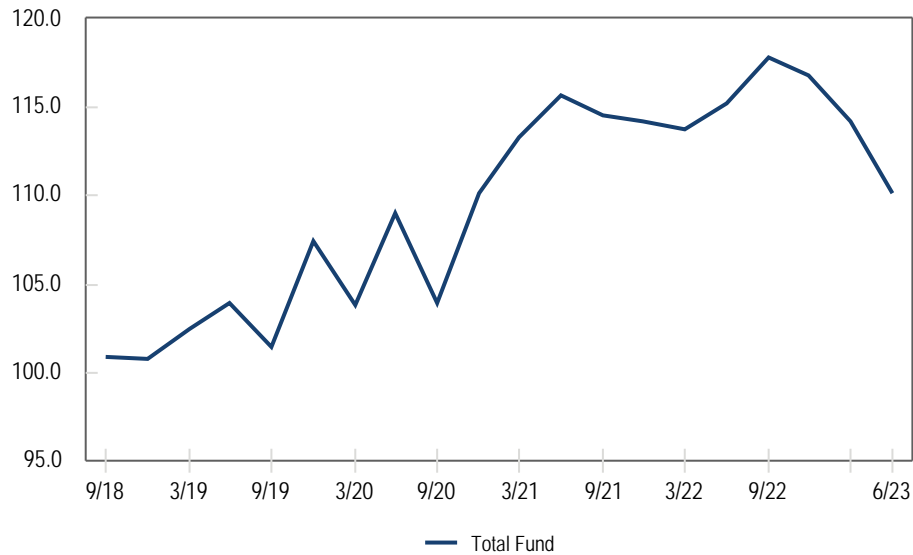
Rolling 3 Years Information Ratio



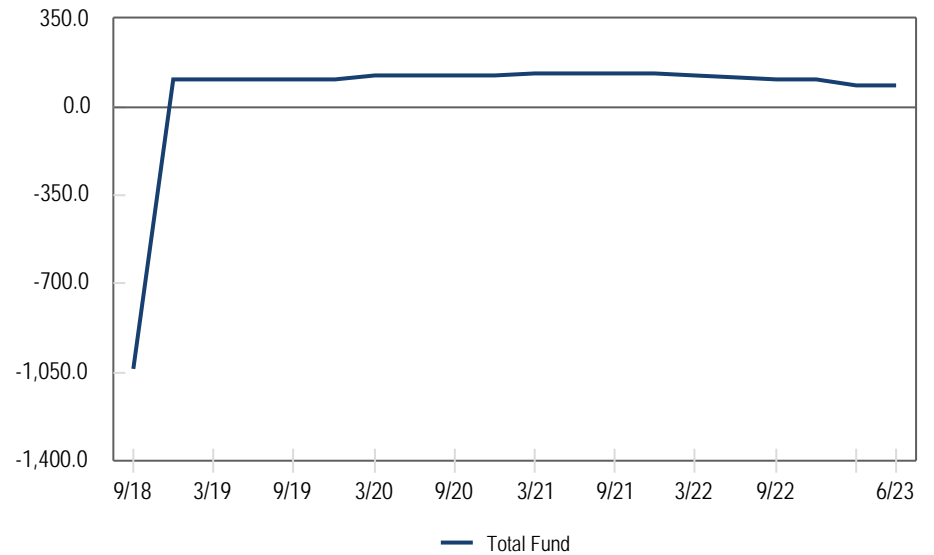
Rolling 3 Years Tracking Error



Rolling 3 Years Up Capture



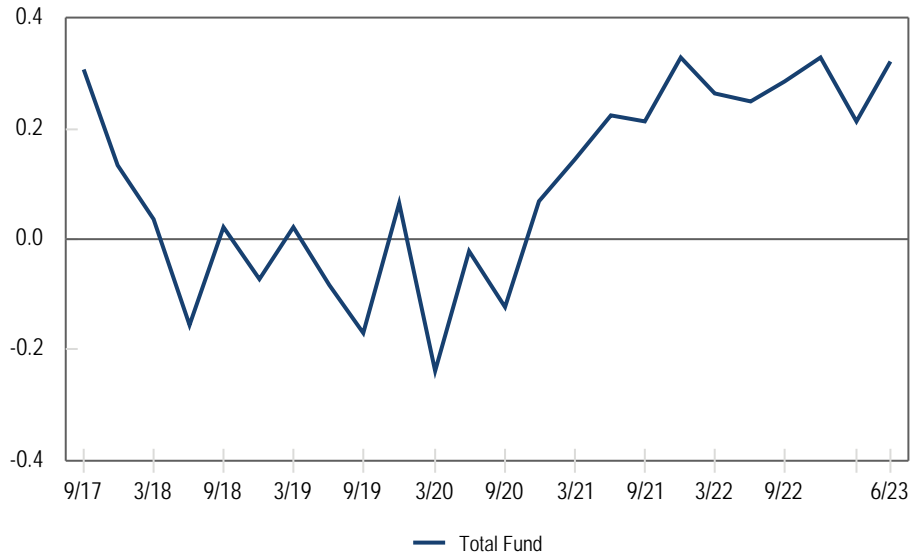
Rolling 3 Years Down Capture



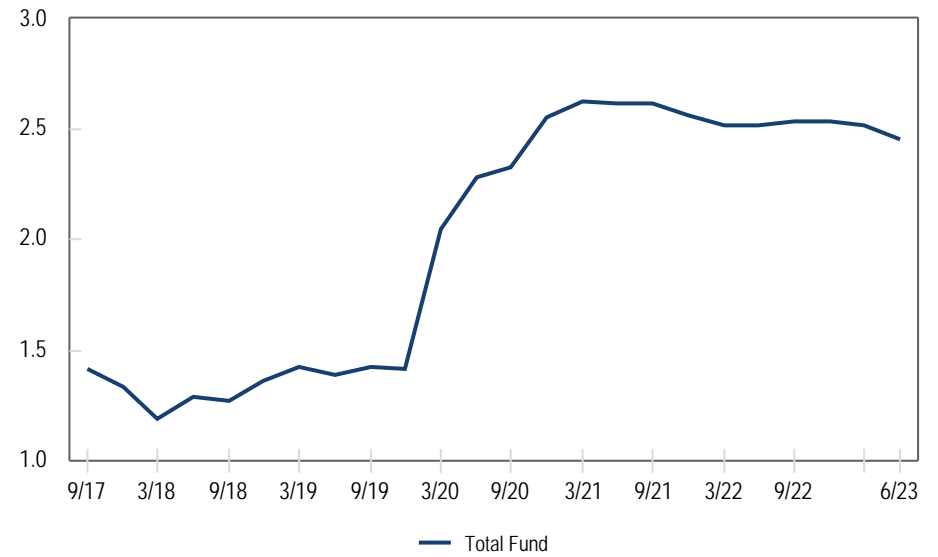
Total Fund  
Rolling Risk Statistics (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

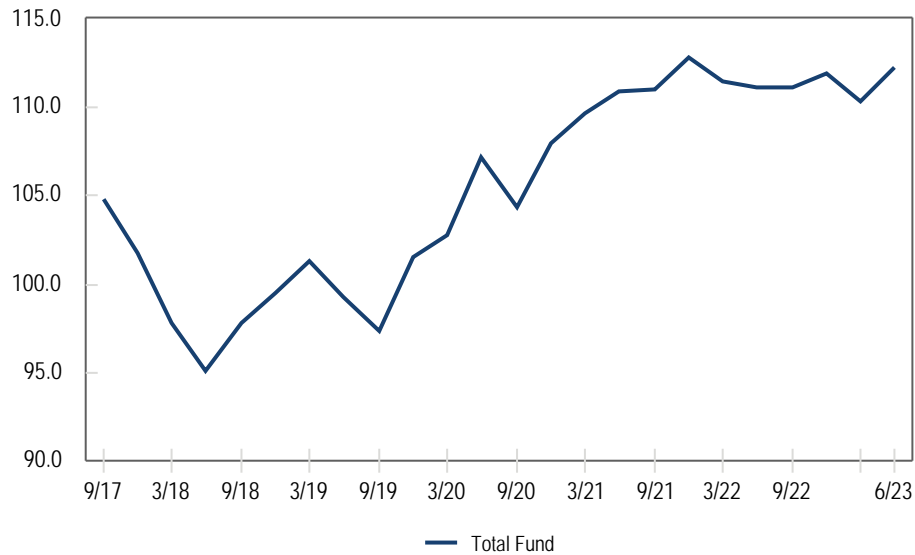
Rolling 5 Years Information Ratio



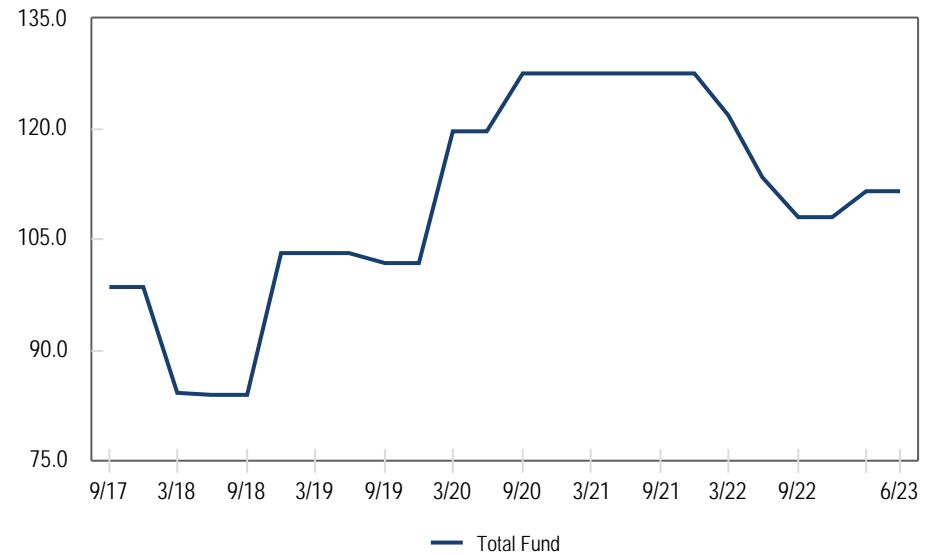
Rolling 5 Years Tracking Error



Rolling 5 Years Up Capture



Rolling 5 Years Down Capture



# Total Fund Performance Summary (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
<b>Total Fund</b>	1,649,828,863	100.0	2.3	5.3	6.1	8.6	6.6	6.7	-7.8	15.4	9.6	16.3	-3.1		Feb-07
<i>Interim Policy Index</i>			2.1	5.6	5.0	6.9	6.0	6.5	-9.6	12.9	10.3	15.3	-2.1		
<i>FFP SAA Index</i>			2.1	5.1	3.6	10.4	8.4	-	-6.7	21.4	11.5	12.6	3.0		
<i>InvMetrics Public DB &gt; \$1B Rank</i>			79	85	83	46	58	82	24	53	76	73	43		
<b>Total Growth</b>	1,167,455,782	70.8	3.1	6.3	7.6	13.1	9.1	9.2	-7.2	23.6	11.2	20.3	-4.0		
<i>Custom Growth Benchmark</i>			3.6	7.5	8.0	11.1	8.8	8.9	-8.4	19.6	13.4	19.5	-2.8		
<b>Total Public Equity</b>	611,995,337	37.1	5.3	12.4	19.3	13.6	10.0	10.1	-13.4	20.3	16.5	29.8	-9.0		
<i>Russell 3000 Index</i>			8.4	16.2	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2		
<i>InvMetrics Public DB Total Equity Rank</i>			40	49	1	1	1	2	3	4	34	15	37		
<b>Total Domestic Equity</b>	342,294,632	20.7	6.2	12.1	20.5	15.7	11.4	12.3	-10.4	25.3	13.7	29.4	-5.2		
<i>Russell 3000 Index</i>			8.4	16.2	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2		
<i>InvMetrics Public DB US Equity Rank</i>			92	80	4	7	23	29	5	58	93	75	40		
<b>Manager A</b>	95,527,084	5.8	2.2	4.8	16.2	17.5	9.5	10.7	-3.0	28.3	4.4	25.5	-6.6	8.7	Dec-07
<i>S&amp;P 500 Index</i>			8.7	16.9	19.6	14.6	12.3	12.9	-18.1	28.7	18.4	31.5	-4.4	9.5	
<i>eV US Large Cap Core Equity Rank</i>			98	93	59	7	85	87	4	46	97	85	77		
<b>Manager B</b>	91,772,420	5.6	13.8	38.1	41.0	13.1	14.9	-	-27.0	19.4	32.8	32.7	-1.7	17.4	Jan-17
<i>Russell 1000 Growth Index</i>			12.8	29.0	27.1	13.7	15.1	-	-29.1	27.6	38.5	36.4	-1.5	16.9	
<i>eV US Large Cap Growth Equity Rank</i>			22	3	1	32	19	-	40	81	61	67	60		
<b>Manager C</b>	75,182,684	4.6	4.7	4.4	12.0	17.6	9.3	-	-3.8	30.9	2.4	24.3	-8.5	9.8	Feb-17
<i>Russell 1000 Value Index</i>			4.1	5.1	11.5	14.3	8.1	-	-7.5	25.2	2.8	26.5	-8.3	8.0	
<i>eV US Large Cap Value Equity Rank</i>			40	56	53	23	52	-	36	20	66	79	57		
<b>Manager D</b>	79,812,444	4.8	4.1	5.4	14.7	14.2	10.3	12.9	-7.9	23.0	11.4	35.1	-4.5	15.4	Sep-10
<i>Russell 2500 Index</i>			5.2	8.8	13.6	12.3	6.5	9.4	-18.4	18.2	20.0	27.8	-10.0	11.7	
<i>eV US Small-Mid Cap Equity Rank</i>			66	87	59	57	22	9	14	58	62	13	25		
<b>Total International Equity</b>	269,700,705	16.3	4.2	12.9	17.6	10.9	8.4	7.8	-17.4	15.1	19.4	30.2	-12.2		
<i>MSCI AC World ex USA Index</i>			2.7	9.9	13.3	7.7	4.0	5.2	-15.6	8.3	11.1	22.1	-13.8		
<i>InvMetrics Public DB Global ex-US Equity Rank</i>			12	22	13	9	1	4	56	7	5	1	24		
<b>Manager E</b>	136,362,199	8.3	4.5	11.1	15.4	13.5	5.5	6.0	-6.2	11.7	2.8	23.6	-17.5	3.5	Dec-07
<i>MSCI AC World ex USA Value</i>			3.3	8.8	13.0	11.2	3.3	4.3	-8.0	11.1	-0.2	16.5	-13.4	1.8	
<i>eV ACWI ex-US All Cap Value Eq Rank</i>			10	50	51	32	14	34	11	43	49	30	92		
<b>Manager F</b>	133,338,507	8.1	3.9	15.0	20.2	7.8	10.2	-	-28.2	18.5	34.0	36.7	-6.7	12.2	Feb-17
<i>MSCI AC World ex USA Growth</i>			2.1	11.0	13.7	4.3	4.4	-	-22.8	5.4	22.6	27.8	-14.1	6.8	
<i>eV ACWI ex-US All Cap Growth Eq Rank</i>			18	36	24	23	1	-	58	7	37	14	1		

Since Inception ranking is from the beginning of the first complete month of performance. *Manager AB* terminated 3/22/2019. *Manager AC* funded 3/31/2019. *Manager AD* liquidated as of 12/19/2019. *Manager K* funded 3/25/2020. *Manager AA* funded 4/16/2020. *Manager AE* liquidated as of 9/30/2020. *Manager AF* funded 7/14/2021. *Manager S* funded 7/16/2021. *Manager T* funded 9/1/2021. Effective 1/01/2017, only traditional asset classes (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund  
Performance Summary (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
<b>Total Private Equity</b>	166,000,114	10.1													
Manager G	12,413,256	0.8													
Manager H	82,754,068	5.0													
Manager I	21,600,917	1.3													
Manager J	32,568,603	2.0													
Manager K	16,663,270	1.0													
<b>Total Private Credit</b>	153,530,393	9.3													
Manager L	69,099,266	4.2													
Manager M	84,431,127	5.1													
<b>Total Real Estate</b>	235,929,937	14.3	-1.8	-4.5	-8.5	6.9	5.7	8.3	6.7	18.7	1.1	4.3	7.5		
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7		
Manager N	155,875,653	9.4	-1.6	-4.5	-10.5	6.7	5.1	7.8	4.3	20.2	0.5	3.4	7.0	5.5	Mar-08
<i>NCREIF-ODCE</i>			-2.7	-5.8	-10.0	8.0	6.5	8.7	7.5	22.2	1.2	5.3	8.3	5.6	
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7	6.0	
Manager O	80,054,284	4.9	-2.2	-4.6	-4.0	7.0	7.3	-	12.3	14.0	3.8	7.3	9.1	7.7	Jul-16
<i>NCREIF-ODCE</i>			-2.7	-5.8	-10.0	8.0	6.5	-	7.5	22.2	1.2	5.3	8.3	7.0	
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	-	5.5	17.7	1.6	6.4	6.7	6.2	
<b>Total Risk Diversifying</b>	351,835,944	21.3	-0.1	3.1	2.6	-1.3	0.7	1.6	-11.6	-1.5	6.6	8.8	-1.8		
<i>Total Risk Diversifying Benchmark</i>			-1.3	1.9	-1.7	-5.1	0.0	1.1	-14.6	-3.2	7.5	8.7	0.0		
<b>Total Domestic Fixed Income</b>	270,875,586	16.4	0.3	3.7	2.7	-0.5	2.5	2.7	-9.6	0.9	8.1	9.9	0.4		
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0		
<i>InvMetrics Public DB US Fixed Income Rank</i>			10	5	15	9	15	24	15	15	69	23	34	-	
Manager P	410,160	0.0	-4.8	-2.1	-4.4	-5.3	0.3	-	-14.1	-1.6	9.4	10.2	0.3	0.5	Feb-17
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0	0.9	
<i>eV US Core Fixed Inc Rank</i>			100	100	100	100	100	-	95	77	24	10	25		
Manager Q	60,874,556	3.7	0.2	3.4	2.2	-1.4	2.4	-	-10.5	-0.5	9.9	10.2	0.1	2.5	Jan-17
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0	0.9	
<i>eV US Core Fixed Inc Rank</i>			3	3	3	3	2	-	11	21	14	10	41		
Manager R	68,058,774	4.1	3.4	7.3	11.9	6.3	4.6	-	-0.2	5.6	3.0	9.1	1.0	4.6	Sep-14
<i>Morningstar LSTA US Leveraged Loan</i>			3.1	6.5	10.7	6.3	4.1	-	-0.8	5.2	3.1	8.6	0.4	4.1	
<i>eV US Float-Rate Bank Loan Fixed Inc Rank</i>			15	10	11	38	18	-	25	42	47	42	37		
Manager S	78,767,203	4.8	-1.4	1.8	-2.1	-	-	-	-12.5	-	-	-	-	-6.1	Jul-21
<i>Bloomberg U.S. Treasury: 7-10 Year</i>			-1.8	1.6	-3.1	-	-	-	-14.9	-	-	-	-	-7.6	
<i>eV Global Government Fixed Inc Rank</i>			49	51	64	-	-	-	28	-	-	-	-		

Since Inception ranking is from the beginning of the first complete month of performance. *Manager AB* terminated 3/22/2019. *Manager AC* funded 3/31/2019. *Manager AD* liquidated as of 12/19/2019. *Manager K* funded 3/25/2020. *Manager AA* funded 4/16/2020. *Manager AE* liquidated as of 9/30/2020. *Manager AF* funded 7/14/2021. *Manager S* funded 7/16/2021. *Manager T* funded 9/1/2021. Effective 1/01/2017, only traditional asset classes (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund  
Performance Summary (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Manager T	62,764,893	3.8	-1.4	2.1	-1.3	-	-	-	-11.9	-	-	-	-	-4.8	Sep-21
<i>Blmbg. U.S. TIPS</i>			<i>-1.4</i>	<i>1.9</i>	<i>-1.4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-11.8</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-4.9</i>	
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			<i>50</i>	<i>18</i>	<i>67</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>81</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>		
Total Global Fixed	80,960,358	4.9	-1.5	1.3	2.2	-3.8	-2.5	-1.3	-16.8	-7.0	6.7	7.4	-4.3		
<i>FTSE World Government Bond Index</i>			<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>	<i>-0.5</i>	<i>-18.3</i>	<i>-7.0</i>	<i>10.1</i>	<i>5.9</i>	<i>-0.8</i>		
Manager U	36,893,170	2.2	-2.5	1.0	-0.4	-1.7	-	-	-13.5	-4.0	-	-	-	-1.7	Jul-20
<i>FTSE Non-U.S. World Government Bond</i>			<i>-2.1</i>	<i>1.5</i>	<i>-2.6</i>	<i>-7.8</i>	<i>-</i>	<i>-</i>	<i>-22.1</i>	<i>-9.7</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-7.8</i>	
<i>eV All Global Fixed Inc Rank</i>			<i>95</i>	<i>87</i>	<i>80</i>	<i>57</i>	<i>-</i>	<i>-</i>	<i>55</i>	<i>70</i>	<i>-</i>	<i>-</i>	<i>-</i>		
Manager V	44,067,188	2.7	-0.7	1.5	4.4	-5.6	-	-	-19.9	-9.5	3.2	-	-	-5.1	Apr-19
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMH+</i>			<i>1.9</i>	<i>5.0</i>	<i>8.3</i>	<i>-1.8</i>	<i>-</i>	<i>-</i>	<i>-13.6</i>	<i>-3.9</i>	<i>3.9</i>	<i>-</i>	<i>-</i>	<i>-0.7</i>	
<i>eV All Emg Mkts Fixed Inc Rank</i>			<i>99</i>	<i>97</i>	<i>90</i>	<i>100</i>	<i>-</i>	<i>-</i>	<i>95</i>	<i>97</i>	<i>86</i>	<i>-</i>	<i>-</i>		
Total Liquidity	89,161,143	5.4	0.5	1.6	1.8	0.3	1.0	1.7	-1.0	0.3	1.5	2.1	1.6		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Total Cash	89,161,143	5.4	0.5	1.6	1.8	0.3	1.0	1.6	-1.0	0.3	1.5	2.1	1.6		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Manager W	33,566,976	2.0	-0.4	1.3	0.5	-	-	-	-4.3	-	-	-	-	-1.8	Jul-21
<i>Blmbg. 1-3 Year Gov/Credit index</i>			<i>-0.4</i>	<i>1.1</i>	<i>0.5</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-3.7</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-1.6</i>	
<i>Short-Term Bond Rank</i>			<i>82</i>	<i>86</i>	<i>87</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>49</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>		
Manager X	36,723,154	2.2	1.2	1.7	2.0	1.1	1.5	1.1	0.4	0.8	1.9	2.2	1.5		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Manager Y	18,871,013	1.1	0.9	1.7	2.6	-	-	-	0.9	-	-	-	-	1.3	Jun-21
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.5</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.8</i>	
Total Opportunistic	41,375,995	2.5													
Manager Z	3,199,533	0.2													
Manager AA	38,176,461	2.3													

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Total Fund  
Performance Summary (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
<b>Total Fund</b>	1,649,828,863	100.0	2.2	5.1	5.8	8.3	6.2	6.3	-8.1	14.9	9.2	15.8	-3.5		Feb-07
<i>Interim Policy Index</i>			2.1	5.6	5.0	6.9	6.0	6.5	-9.6	12.9	10.3	15.3	-2.1		
<i>FFP SAA Index</i>			2.1	5.1	3.6	10.4	8.4	-	-6.7	21.4	11.5	12.6	3.0		
<b>Total Growth</b>	1,167,455,782	70.8	3.0	6.1	7.3	12.7	8.7	8.7	-7.5	23.1	10.8	19.9	-4.4		
<i>Custom Growth Benchmark</i>			3.6	7.5	8.0	11.1	8.8	8.9	-8.4	19.6	13.4	19.5	-2.8		
<b>Total Public Equity</b>	611,995,337	37.1	5.1	12.1	18.6	12.9	9.4	9.5	-13.9	19.6	15.9	29.1	-9.5		
<i>Russell 3000 Index</i>			8.4	16.2	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2		
<b>Total Domestic Equity</b>	342,294,632	20.7	6.1	11.8	20.0	15.2	10.9	11.8	-10.8	24.6	13.1	28.7	-5.7		
<i>Russell 3000 Index</i>			8.4	16.2	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2		
<b>Manager A</b>	95,527,084	5.8	2.1	4.6	15.7	17.0	9.1	10.2	-3.4	27.8	3.9	25.0	-7.0	8.3	Dec-07
<i>S&amp;P 500 Index</i>			8.7	16.9	19.6	14.6	12.3	12.9	-18.1	28.7	18.4	31.5	-4.4	9.5	
<b>Manager B</b>	91,772,420	5.6	13.7	37.8	40.4	12.6	14.4	-	-27.4	18.9	32.3	32.1	-2.1	16.8	Jan-17
<i>Russell 1000 Growth Index</i>			12.8	29.0	27.1	13.7	15.1	-	-29.1	27.6	38.5	36.4	-1.5	16.9	
<b>Manager C</b>	75,182,684	4.6	4.6	4.2	11.6	17.1	8.8	-	-4.2	30.4	2.0	23.8	-8.9	9.4	Feb-17
<i>Russell 1000 Value Index</i>			4.1	5.1	11.5	14.3	8.1	-	-7.5	25.2	2.8	26.5	-8.3	8.0	
<b>Manager D</b>	79,812,444	4.8	3.9	5.0	13.8	13.4	9.4	12.1	-8.7	22.0	10.5	34.1	-5.3	14.6	Sep-10
<i>Russell 2500 Index</i>			5.2	8.8	13.6	12.3	6.5	9.4	-18.4	18.2	20.0	27.8	-10.0	11.7	
<b>Total International Equity</b>	269,700,705	16.3	4.0	12.5	16.9	10.2	7.7	7.1	-17.9	14.4	18.6	29.3	-12.8		
<i>MSCI AC World ex USA Index</i>			2.7	9.9	13.3	7.7	4.0	5.2	-15.6	8.3	11.1	22.1	-13.8		
<b>Manager E</b>	136,362,199	8.3	4.3	10.7	14.7	12.8	4.9	5.3	-6.8	11.0	2.1	22.8	-18.0	3.0	Dec-07
<i>MSCI AC World ex USA Value</i>			3.3	8.8	13.0	11.2	3.3	4.3	-8.0	11.1	-0.2	16.5	-13.4	1.8	
<b>Manager F</b>	133,338,507	8.1	3.8	14.6	19.5	7.1	9.5	-	-28.6	17.7	33.1	35.8	-7.4	11.5	Feb-17
<i>MSCI AC World ex USA Growth</i>			2.1	11.0	13.7	4.3	4.4	-	-22.8	5.4	22.6	27.8	-14.1	6.8	

Since Inception ranking is from the beginning of the first complete month of performance. *Manager AB* terminated 3/22/2019. *Manager AC* funded 3/31/2019. *Manager AD* liquidated as of 12/19/2019. *Manager K* funded 3/25/2020. *Manager AA* funded 4/16/2020. *Manager AE* liquidated as of 9/30/2020. *Manager AF* funded 7/14/2021. *Manager S* funded 7/16/2021. *Manager T* funded 9/1/2021.



Total Fund  
Performance Summary (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
<b>Total Private Equity</b>	166,000,114	10.1													
Manager G	12,413,256	0.8													
Manager H	82,754,068	5.0													
Manager I	21,600,917	1.3													
Manager J	32,568,603	2.0													
Manager K	16,663,270	1.0													
<b>Total Private Credit</b>	153,530,393	9.3													
Manager L	69,099,266	4.2													
Manager M	84,431,127	5.1													
<b>Total Real Estate</b>	235,929,937	14.3	-1.8	-4.5	-8.5	6.9	5.7	7.9	6.7	18.7	1.1	4.3	7.5		
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7		
Manager N	155,875,653	9.4	-1.6	-4.5	-10.5	6.7	5.1	7.4	4.3	20.2	0.5	3.4	7.0	5.0	Mar-08
<i>NCREIF-ODCE</i>			-2.7	-5.8	-10.0	8.0	6.5	8.7	7.5	22.2	1.2	5.3	8.3	5.6	
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	7.8	5.5	17.7	1.6	6.4	6.7	6.0	
Manager O	80,054,284	4.9	-2.2	-4.6	-4.0	7.0	7.3	-	12.3	14.0	3.8	7.3	9.1	7.6	Jul-16
<i>NCREIF-ODCE</i>			-2.7	-5.8	-10.0	8.0	6.5	-	7.5	22.2	1.2	5.3	8.3	7.0	
<i>NCREIF Property Index</i>			-2.0	-3.8	-6.6	6.8	5.9	-	5.5	17.7	1.6	6.4	6.7	6.2	
<b>Total Risk Diversifying</b>	351,835,944	21.3	-0.2	2.9	2.2	-1.7	0.3	1.2	-12.0	-2.0	6.1	8.4	-2.2		
<i>Total Risk Diversifying Benchmark</i>			-1.3	1.9	-1.7	-5.1	0.0	1.1	-14.6	-3.2	7.5	8.7	0.0		
<b>Total Domestic Fixed Income</b>	270,875,586	16.4	0.2	3.5	2.5	-0.8	2.1	2.4	-9.9	0.5	7.7	9.5	0.0		
<i>Bimbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	1.5	-13.0	-1.5	7.5	8.7	0.0		
Manager P	410,160	0.0	-4.9	-2.3	-4.7	-5.6	0.0	-	-14.4	-1.8	9.1	9.9	0.1	0.2	Feb-17
<i>Bimbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0	0.9	
Manager Q	60,874,556	3.7	0.1	3.2	1.8	-1.8	2.0	-	-10.9	-0.9	9.4	9.7	-0.3	2.0	Feb-17
<i>Bimbg. U.S. Aggregate Index</i>			-0.8	2.1	-0.9	-4.0	0.8	-	-13.0	-1.5	7.5	8.7	0.0	0.9	
Manager R	68,058,774	4.1	3.3	7.1	11.5	5.9	4.3	-	-0.5	5.2	2.6	8.7	0.7	4.3	Sep-14
<i>Morningstar LSTA US Leveraged Loan</i>			3.1	6.5	10.7	6.3	4.1	-	-0.8	5.2	3.1	8.6	0.4	4.1	
Manager S	78,767,203	4.8	-1.4	1.8	-2.1	-	-	-	-12.5	-	-	-	-	-6.1	Jul-21
<i>Bimbg. U.S. Treasury: 7-10 Year</i>			-1.8	1.6	-3.1	-	-	-	-14.9	-	-	-	-	-7.6	

Since Inception ranking is from the beginning of the first complete month of performance. *Manager AB* terminated 3/22/2019. *Manager AC* funded 3/31/2019. *Manager AD* liquidated as of 12/19/2019. *Manager K* funded 3/25/2020. *Manager AA* funded 4/16/2020. *Manager AE* liquidated as of 9/30/2020. *Manager AF* funded 7/14/2021. *Manager S* funded 7/16/2021. *Manager T* funded 9/1/2021.

Total Fund  
Performance Summary (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Manager T	62,764,893	3.8	-1.4	2.1	-1.3	-	-	-	-11.9	-	-	-	-	-4.8	Sep-21
<i>Blmbg. U.S. TIPS</i>			<i>-1.4</i>	<i>1.9</i>	<i>-1.4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-11.8</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-4.9</i>	
Total Global Fixed	80,960,358	4.9	-1.7	0.9	1.4	-4.5	-3.2	-1.8	-17.5	-7.7	6.0	6.9	-4.7		
<i>FTSE World Government Bond Index</i>			<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>	<i>-0.5</i>	<i>-18.3</i>	<i>-7.0</i>	<i>10.1</i>	<i>5.9</i>	<i>-0.8</i>		
Manager U	36,893,170	2.2	-2.6	0.7	-0.9	-2.2	-	-	-14.0	-4.4	-	-	-	-2.2	Jul-20
<i>FTSE Non-U.S. World Government Bond</i>			<i>-2.1</i>	<i>1.5</i>	<i>-2.6</i>	<i>-7.8</i>	<i>-</i>	<i>-</i>	<i>-22.1</i>	<i>-9.7</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-7.8</i>	
Manager V	44,067,188	2.7	-0.9	1.0	3.3	-6.5	-	-	-20.7	-10.4	2.1	-	-	-6.1	Apr-19
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELM+</i>			<i>1.9</i>	<i>5.0</i>	<i>8.3</i>	<i>-1.8</i>	<i>-</i>	<i>-</i>	<i>-13.6</i>	<i>-3.9</i>	<i>3.9</i>	<i>-</i>	<i>-</i>	<i>-0.7</i>	
Total Liquidity	89,161,143	5.4	0.5	1.5	1.6	0.2	1.0	1.6	-1.2	0.2	1.5	2.1	1.6		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Total Cash	89,161,143	5.4	0.5	1.5	1.6	0.2	1.0	1.6	-1.2	0.2	1.5	2.1	1.6		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Manager W	33,566,976	2.0	-0.6	1.0	0.0	-	-	-	-4.7	-	-	-	-	-2.3	Jul-21
<i>Blmbg. 1-3 Year Gov/Credit index</i>			<i>-0.4</i>	<i>1.1</i>	<i>0.5</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-3.7</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-1.6</i>	
Manager X	36,723,154	2.2	1.2	1.7	2.0	1.1	1.5	1.1	0.4	0.8	1.9	2.2	1.5		
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>1.3</i>	<i>1.6</i>	<i>1.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.7</i>	<i>2.3</i>	<i>1.9</i>		
Manager Y	18,871,013	1.1	0.9	1.7	2.6	-	-	-	0.9	-	-	-	-	1.3	Jun-21
<i>90 Day U.S. Treasury Bill</i>			<i>1.2</i>	<i>2.3</i>	<i>3.6</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.5</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>1.8</i>	
Total Opportunistic	41,375,995	2.5													
Manager Z	3,199,533	0.2													
Manager AA	38,176,461	2.3													

Since Inception ranking is from the beginning of the first complete month of performance. *Manager AB* terminated 3/22/2019. *Manager AC* funded 3/31/2019. *Manager AD* liquidated as of 12/19/2019. *Manager K* funded 3/25/2020. *Manager AA* funded 4/16/2020. *Manager AE* liquidated as of 9/30/2020. *Manager AF* funded 7/14/2021. *Manager S* funded 7/16/2021. *Manager T* funded 9/1/2021.

Investment Manager  
Performance Analysis - 3 & 5 Years (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Manager A	16.99	2.39	16.58	4.44	0.85	9.54	0.69	0.97	0.22	95.35	61.96
Manager B	12.64	-1.09	22.11	-0.89	1.01	6.43	0.92	0.61	-0.11	98.66	103.41
Manager C	17.11	2.81	16.47	1.78	1.06	3.01	0.97	0.98	0.89	108.94	87.94
Manager D	13.37	1.08	16.15	3.67	0.76	7.03	0.91	0.79	0.04	90.47	73.81
Manager E	12.76	1.60	18.90	0.89	1.06	3.14	0.98	0.67	0.53	107.27	97.61
Manager F	7.12	2.84	21.51	2.66	1.13	5.74	0.94	0.38	0.59	121.18	104.91
Manager P	-5.61	-1.64	6.61	-1.39	1.07	2.64	0.84	-1.03	-0.62	107.91	128.47
Manager Q	-1.77	2.20	5.76	2.23	0.99	1.15	0.96	-0.52	1.96	143.48	83.37
Manager R	5.94	-0.38	4.26	-0.04	0.95	0.86	0.96	1.17	-0.43	94.79	97.45
Manager N	6.71	-1.28	7.84	-0.79	0.94	1.52	0.97	0.66	-0.81	85.77	88.14
Manager O	6.97	-1.02	8.13	0.51	0.82	4.90	0.67	0.67	-0.20	84.12	75.46
Manager V	-6.54	-4.72	14.87	-3.74	1.39	5.23	0.95	-0.47	-0.82	121.65	163.77

5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Manager A	9.06	-3.24	21.83	-2.43	0.99	8.55	0.85	0.45	-0.30	89.28	98.48
Manager B	14.42	-0.72	22.67	0.43	0.92	5.97	0.94	0.65	-0.15	93.06	90.79
Manager C	8.81	0.71	21.98	0.29	1.08	3.38	0.98	0.43	0.32	106.88	103.55
Manager D	9.42	2.87	23.07	3.49	0.84	7.23	0.94	0.45	0.25	94.60	79.37
Manager E	4.87	1.56	23.44	1.47	1.10	3.55	0.99	0.26	0.57	113.12	103.38
Manager F	9.49	5.10	23.25	4.85	1.10	5.42	0.95	0.45	1.00	123.34	95.53
Manager P	-0.02	-0.79	6.68	-0.80	1.10	2.85	0.82	-0.20	-0.25	108.30	128.47
Manager Q	2.01	1.25	5.63	1.33	0.91	2.59	0.80	0.11	0.48	112.15	83.37
Manager R	4.27	0.14	6.76	0.97	0.78	2.19	0.97	0.43	-0.01	90.97	81.73
Manager N	5.13	-1.36	6.36	-1.00	0.95	1.41	0.95	0.54	-0.94	84.06	95.10
Manager O	7.32	0.82	6.34	2.26	0.77	4.10	0.64	0.86	0.19	96.45	56.14

Private Markets  
Non Marketable Securities Overview

Sample Public DB Plan  
Period Ending: June 30, 2023

Vintage	Manager & Fund Name	Estimated 6/30 Market Value <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>5</sup>	IRR Date
2011	Manager G	\$12,413,256	\$20,000,000	\$17,050,000	85%	\$2,950,000	\$25,286,164	\$12,413,256	148.3%	221.1%	18.4%	3/31/23
2018	Manager I	\$21,600,917	\$20,000,000	\$15,600,000	78%	\$4,400,000	\$5,399,227	\$21,486,685	34.6%	173.1%	25.2%	3/31/23
2010	Manager Z <sup>4</sup>	\$3,199,533	\$20,000,000	\$21,593,388	108%	-\$1,593,388	\$25,959,476	\$3,199,533	120.2%	135.0%	5.9%	3/31/23
2016	Manager M	\$84,431,127	\$152,500,000	\$104,457,815	68%	\$48,042,185	\$45,527,949	\$83,861,207	43.6%	124.4%	8.7%	12/31/22
2017	Manager H	\$82,754,068	\$65,000,000	\$52,410,796	81%	\$12,589,204	\$13,095,363	\$88,315,813	25.0%	182.9%	24.5%	6/30/22
2020	Manager K	\$16,663,270	\$20,000,000	\$12,609,392	63%	\$7,390,608	\$0	-	0.0%	132.1%	-	-
2020	Manager AA	\$38,176,461	\$60,000,000	\$52,635,032	88%	\$7,364,968	\$23,673,861	\$38,536,961	45.0%	117.5%	9.7%	3/31/23
2022	Manager J <sup>7</sup>	\$32,568,603	\$76,000,000	\$31,000,000	41%	\$45,000,000	\$0	-	0.0%	105.1%	-	-
2022	Manager L <sup>7</sup>	\$69,099,266	\$95,000,000	\$68,521,260	72%	\$26,478,740	\$0	-	0.0%	100.8%	-	-
2022	Manager AG <sup>7</sup>	\$0	\$9,000,000	\$0	0%	\$9,000,000	\$0	-	-	-	-	-

**Total Alternative Illiquids** \$360,906,502 \$537,500,000 \$375,877,684 70% \$161,622,316 \$138,942,040 \$247,813,455 65.9% 102.9%

**% of Portfolio (Market Value)** 21.9%

	Management Fee	Admin Fee	Interest Expense	Expense	Total Expense <sup>6</sup>
Manager G	\$40,372	\$0	\$0	\$3,123	\$43,495
Manager I	\$46,557	\$0	\$0	\$34,918	\$81,475
Manager Z	\$6,261	\$0	\$0	\$1,169	\$7,430
Manager M	\$0	\$0	\$0	\$44,750	\$44,750
Manager H	\$0	\$0	\$0	\$0	\$0
Manager K	\$0	\$0	\$0	\$0	\$0
Manager AA	\$129,226	\$0	\$0	\$26,731	\$155,957
Manager L	\$55,480	\$0	\$0	\$41,477	\$96,957
Manager J	\$252,247	\$0	\$0	\$85,862	\$338,109
Manager AG	\$0	\$0	\$0	\$0	\$0
	\$530,143	\$0	\$0	\$238,030	<span style="border: 1px solid black; padding: 2px;">\$768,173</span>

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

<sup>2</sup>(TVPI) is equal to (market value + capital returned) / capital called

<sup>3</sup>Last known market value + capital calls - distributions

<sup>4</sup>Investment period ended, capital called includes recycled capital. Liquidated as of June 2020.

<sup>5</sup>Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest.

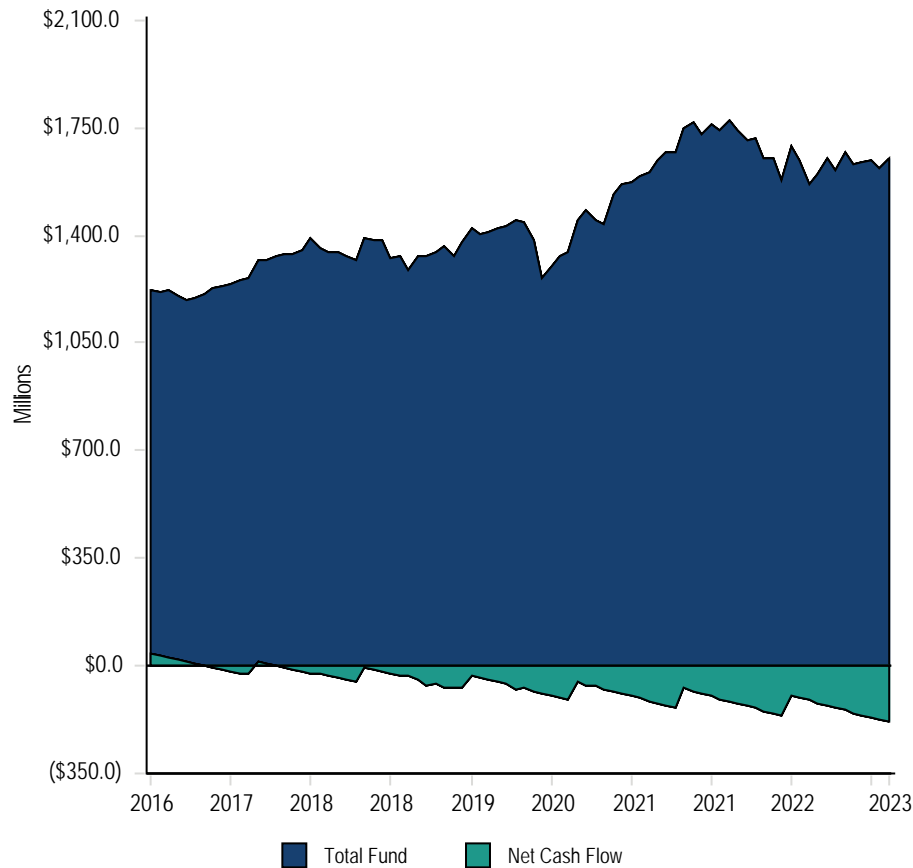
<sup>6</sup>All fees and expenses are for 1Q 2023.

<sup>7</sup>Manager I, J, L, and AG sleeve reflects the 1st year's commitment estimate as scheduled in Manager I, J, L, and AG tactical plan for the \$770m private markets program.

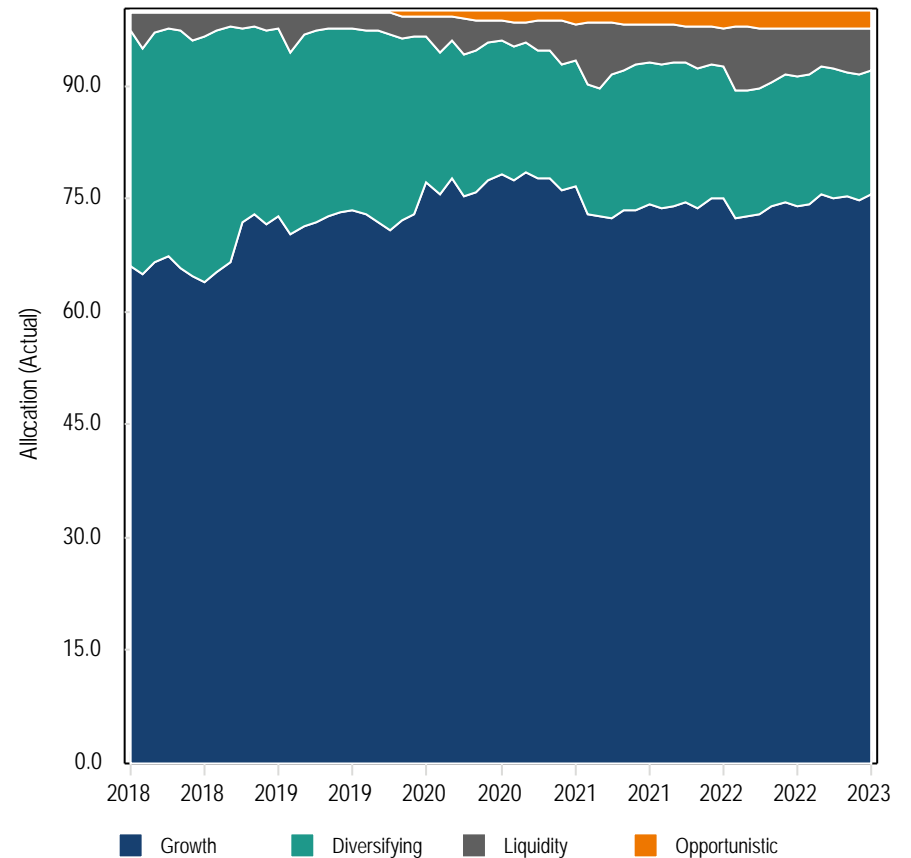
# Total Fund Asset Allocation History

Sample Public DB Plan  
Period Ending: June 30, 2023

Market Value History

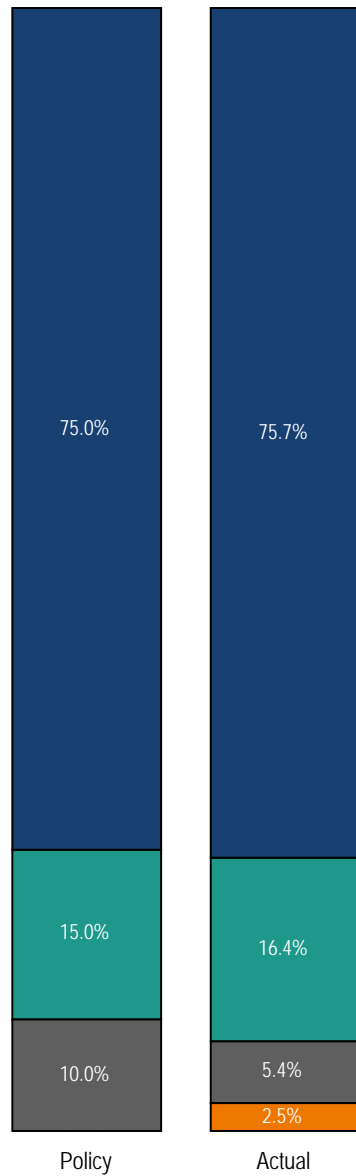


Asset Allocation History



Total Fund  
Asset Allocation vs. Policy

Sample Public DB Plan  
Period Ending: June 30, 2023



	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (\$)	Policy Range (%)	Within IPS Range?
■ Growth	1,248,416,139	75.7	75.0	11,044,492	25.0 - 95.0	Yes
■ Diversifying	270,875,586	16.4	15.0	23,401,256	5.0 - 30.0	Yes
■ Liquidity	89,161,143	5.4	10.0	-75,821,743	5.0 - 20.0	Yes
■ Opportunistic	41,375,995	2.5	0.0	41,375,995	0.0 - 10.0	Yes
<b>Total</b>	<b>1,649,828,863</b>	<b>100.0</b>	<b>100.0</b>			

Total Fund  
Investment Fund Fee Analysis

Sample Public DB Plan  
Period Ending: June 30, 2023

Account	Fee Schedule	Market Value As of June 30, 2023	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Manager O	1.25 % of First \$10 M 1.20 % of Next \$15 M 1.10 % of Next \$25 M 1.00 % Thereafter	80,054,284	4.85	880,543	1.10
Manager V	1.00 % of Assets	44,067,188	2.67	440,672	1.00
Manager D	0.80 % of First \$50 M 0.70 % of Next \$100 M 0.60 % Thereafter	79,812,444	4.84	608,687	0.76
Manager P	0.28 % of First \$100 M 0.26 % Thereafter	410,160	0.02	1,148	0.28
Manager T	0.02 % of First \$100 M 0.02 % of Next \$300 M 0.01 % Thereafter	62,764,893	3.80	14,122	0.02
Manager C	0.40 % of Assets	75,182,684	4.56	300,731	0.40
Manager U	0.45 % of First \$50 M 0.40 % of Next \$50 M 0.35 % Thereafter	36,893,170	2.24	166,019	0.45
Manager X		36,723,154	2.23	-	-
Manager Q	0.41 % of Assets	60,874,556	3.69	249,586	0.41
Manager E	0.62 % of Assets	136,362,199	8.27	845,446	0.62
Manager I	Minimum Fee: \$282,000	21,600,917	1.31	282,000	1.31
Manager G	Minimum Fee: \$200,000	12,413,256	0.75	200,000	1.61
Manager L		69,099,266	4.19	-	-
Manager J		32,568,603	1.97	-	-

Manager I, J, L, and AG, Manager Z and Manager W fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. Manager K and H fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m. Manager AA 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions (4) TCS 1.0% on unfunded commitments, 1.5% on remaining capital contributions.

# Total Fund Investment Fund Fee Analysis

Sample Public DB Plan  
Period Ending: June 30, 2023

Account	Fee Schedule	Market Value As of June 30, 2023	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Manager Y		18,871,013	1.14	-	-
Manager N	0.92 % of First \$100 M 0.80 % of Next \$150 M 0.70 % of Next \$250 M 0.50 % Thereafter	155,875,653	9.45	1,367,005	0.88
Manager Z	Minimum Fee: \$300,000	3,199,533	0.19	300,000	9.38
Manager B	0.45 % of First \$100 M 0.40 % Thereafter	91,772,420	5.56	412,976	0.45
Manager R	0.37 % of Assets	68,058,774	4.13	251,817	0.37
Manager K		16,663,270	1.01	-	-
Manager H		82,754,068	5.02	-	-
Manager A	0.40 % of Assets	95,527,084	5.79	382,108	0.40
Manager W	0.50 % of Assets	33,566,976	2.03	167,835	0.50
Manager M		84,431,127	5.12	-	-
Manager AA		38,176,461	2.31	-	-
Manager S	0.04 % of First \$50 M 0.03 % Thereafter	78,767,203	4.77	28,630	0.04
Manager F	0.70 % of Assets	133,338,507	8.08	933,370	0.70
<b>Investment Management Fee</b>		<b>1,649,828,863</b>	<b>100.00</b>	<b>7,832,695</b>	<b>0.47</b>

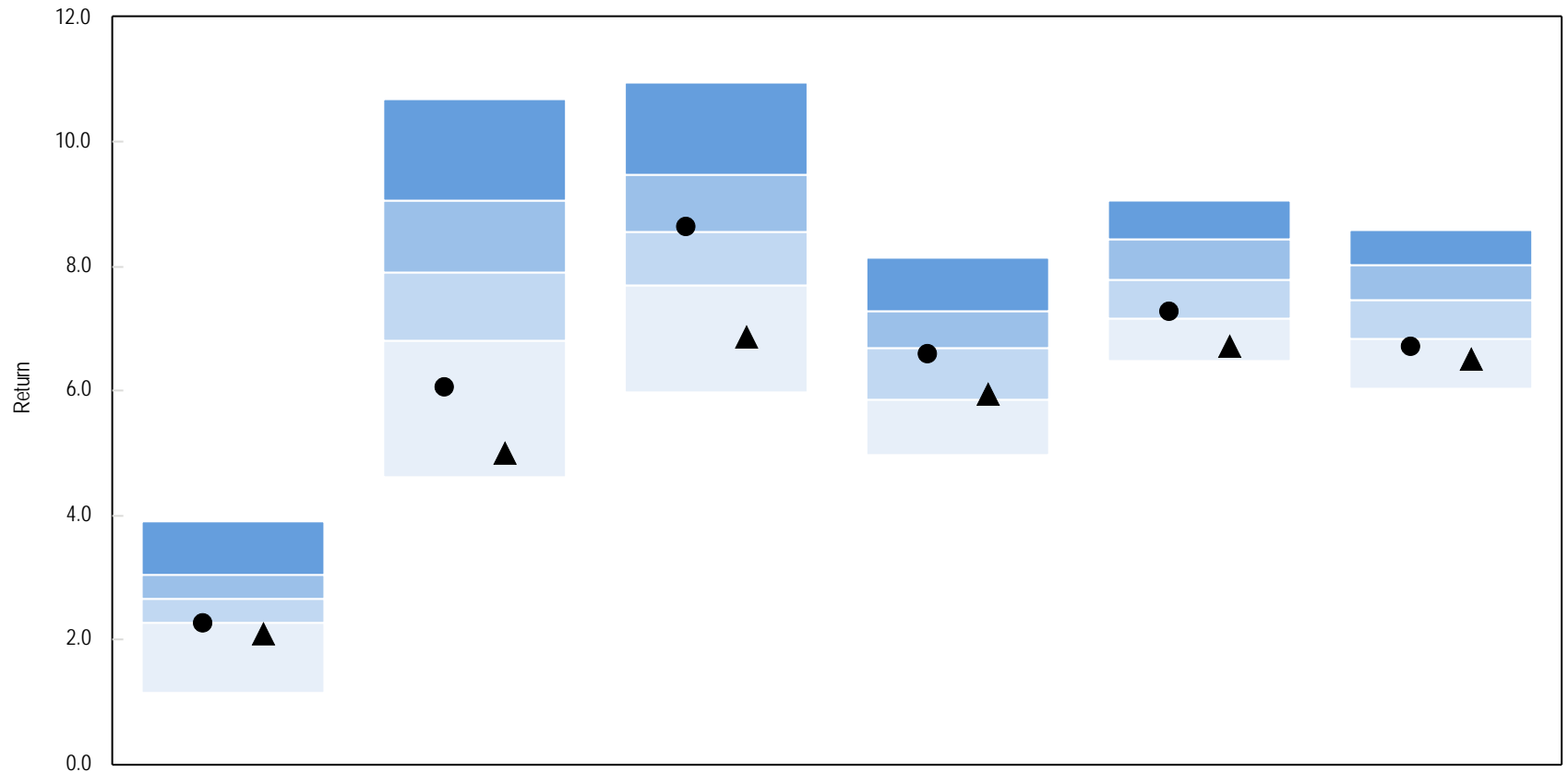
*Manager I, J, L, and AG, Manager Z and Manager W* fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. *Manager K and H* fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m. *Manager AA* 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions (4) TCS 1.0% on unfunded commitments, 1.5% on remaining capital contributions.



Total Fund  
Peer Universe Comparison: Cumulative Perf (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Total Fund vs. InvMetrics Public DB > \$1B

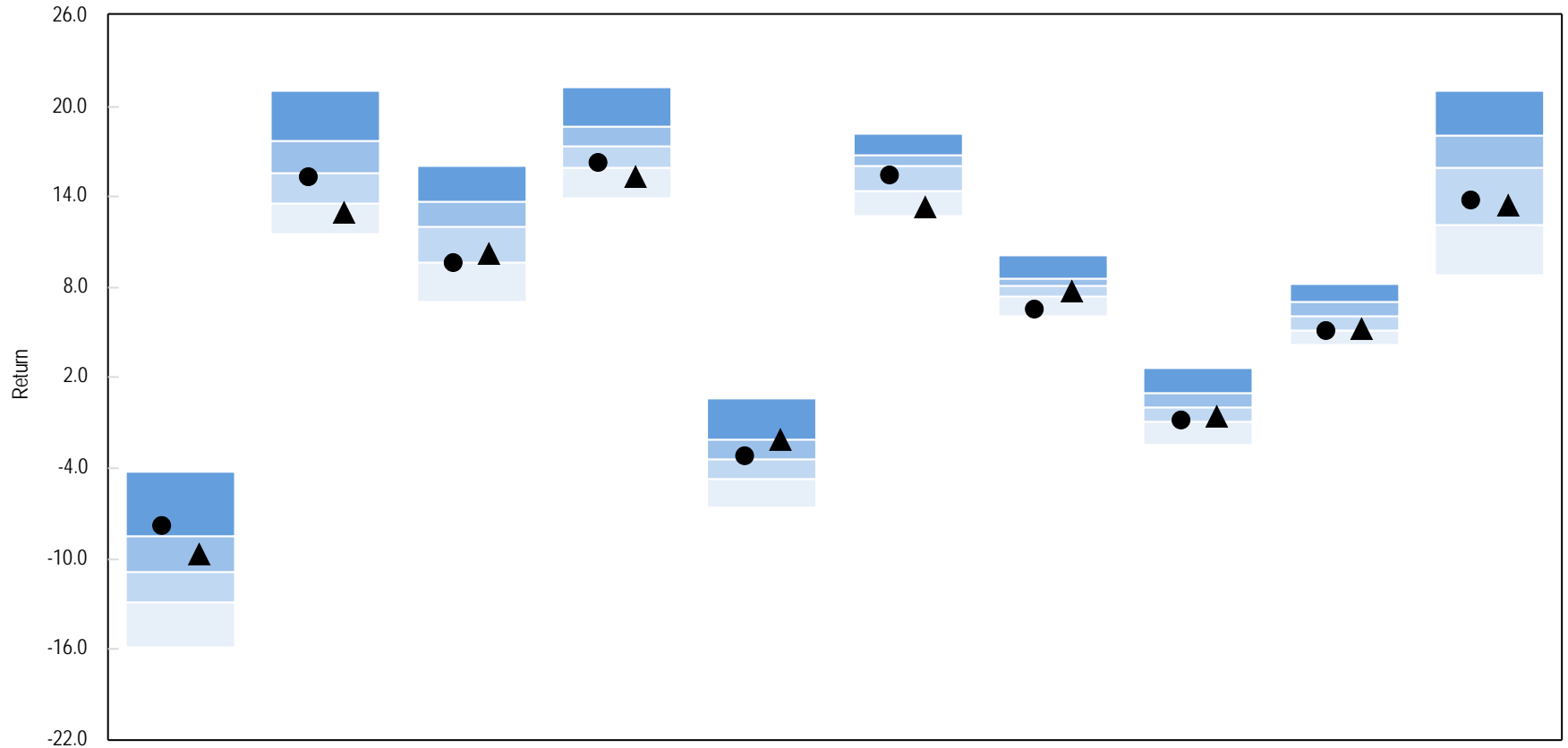


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	2.27 (79)	6.07 (83)	8.64 (46)	6.62 (58)	7.29 (68)	6.74 (82)
▲ Interim Policy Index	2.11 (80)	5.02 (94)	6.87 (92)	5.97 (74)	6.71 (92)	6.52 (90)
5th Percentile	3.90	10.69	10.97	8.16	9.08	8.60
1st Quartile	3.04	9.07	9.47	7.30	8.44	8.03
Median	2.68	7.90	8.58	6.70	7.78	7.48
3rd Quartile	2.30	6.81	7.72	5.87	7.17	6.84
95th Percentile	1.15	4.61	5.97	4.99	6.50	6.03
Population	103	99	89	88	87	83

Total Fund  
Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

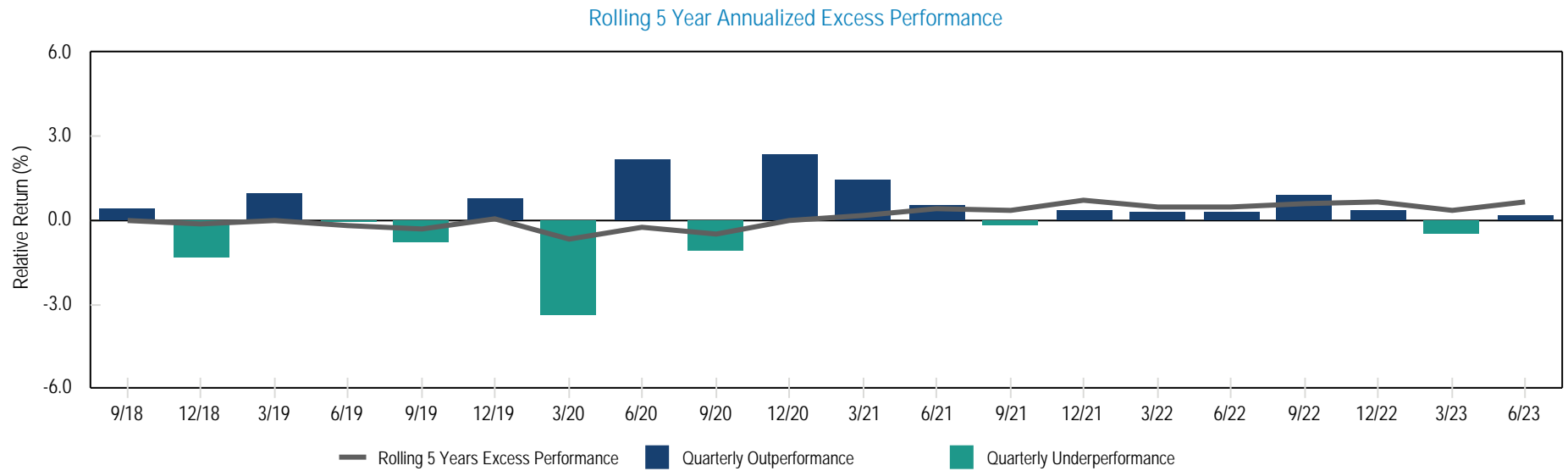
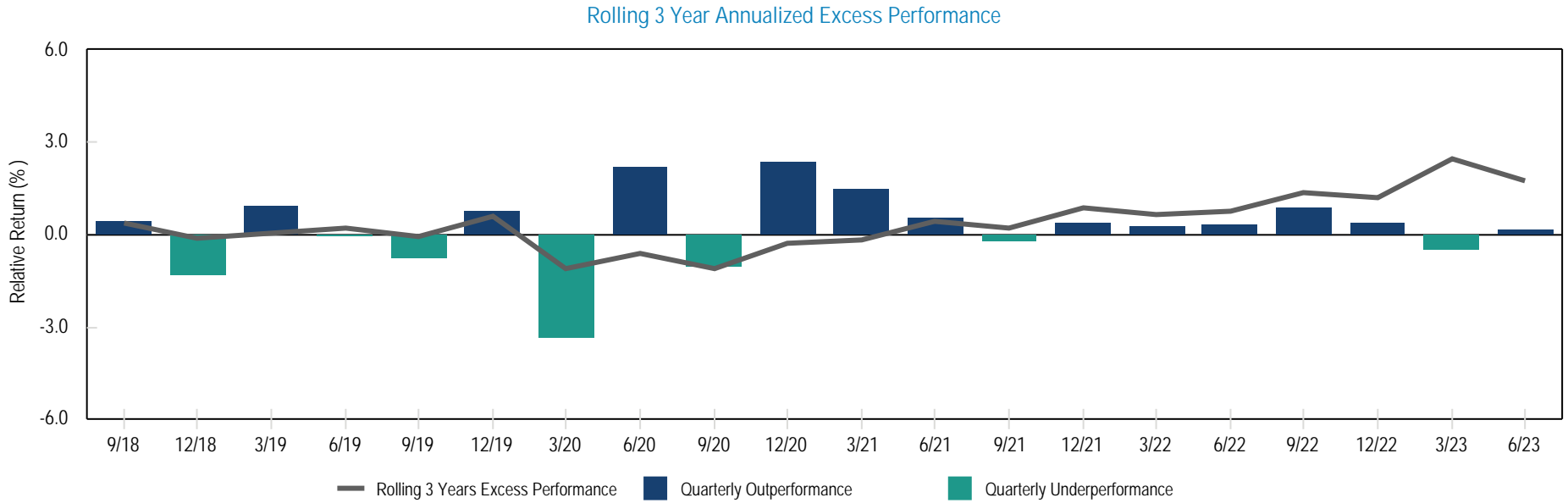
Total Fund vs. InvMetrics Public DB > \$1B



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Total Fund	-7.84 (24)	15.35 (53)	9.63 (76)	16.29 (73)	-3.12 (43)	15.47 (60)	6.55 (94)	-0.81 (74)	5.15 (75)	13.85 (71)
▲ Interim Policy Index	-9.62 (37)	12.93 (85)	10.26 (70)	15.33 (87)	-2.09 (25)	13.29 (94)	7.78 (66)	-0.52 (64)	5.23 (72)	13.39 (72)
5th Percentile	-4.27	21.07	16.08	21.26	0.68	18.13	10.17	2.61	8.27	20.97
1st Quartile	-8.47	17.69	13.66	18.69	-2.14	16.81	8.63	1.00	7.06	18.02
Median	-10.84	15.54	12.05	17.32	-3.37	16.02	8.08	0.03	6.15	15.98
3rd Quartile	-12.84	13.53	9.66	15.94	-4.75	14.36	7.38	-0.89	5.13	12.15
95th Percentile	-15.78	11.55	7.08	13.85	-6.60	12.78	6.06	-2.43	4.20	8.83
Population	121	154	167	130	111	121	125	121	119	109

Total Fund  
Rolling Return Analysis (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023



## Domestic Equity

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# Total Domestic Equity Asset Class Overview (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Domestic Equity</b>	<b>342,294,632</b>	<b>6.2</b>	<b>12.1</b>	<b>20.5</b>	<b>15.7</b>	<b>11.4</b>	<b>12.3</b>	<b>-10.4</b>	<b>25.3</b>	<b>13.7</b>	<b>29.4</b>	<b>-5.2</b>
<i>Russell 3000 Index</i>		<i>8.4</i>	<i>16.2</i>	<i>19.0</i>	<i>13.9</i>	<i>11.4</i>	<i>12.3</i>	<i>-19.2</i>	<i>25.7</i>	<i>20.9</i>	<i>31.0</i>	<i>-5.2</i>
<i>InvMetrics Public DB US Equity Rank</i>		<i>92</i>	<i>80</i>	<i>4</i>	<i>7</i>	<i>23</i>	<i>29</i>	<i>5</i>	<i>58</i>	<i>93</i>	<i>75</i>	<i>40</i>
<b>Manager A</b>	<b>95,527,084</b>	<b>2.2</b>	<b>4.8</b>	<b>16.2</b>	<b>17.5</b>	<b>9.5</b>	<b>10.7</b>	<b>-3.0</b>	<b>28.3</b>	<b>4.4</b>	<b>25.5</b>	<b>-6.6</b>
<i>S&amp;P 500 Index</i>		<i>8.7</i>	<i>16.9</i>	<i>19.6</i>	<i>14.6</i>	<i>12.3</i>	<i>12.9</i>	<i>-18.1</i>	<i>28.7</i>	<i>18.4</i>	<i>31.5</i>	<i>-4.4</i>
<i>eV US Large Cap Core Equity Rank</i>		<i>98</i>	<i>93</i>	<i>59</i>	<i>7</i>	<i>85</i>	<i>87</i>	<i>4</i>	<i>46</i>	<i>97</i>	<i>85</i>	<i>77</i>
<b>Manager B</b>	<b>91,772,420</b>	<b>13.8</b>	<b>38.1</b>	<b>41.0</b>	<b>13.1</b>	<b>14.9</b>	<b>-</b>	<b>-27.0</b>	<b>19.4</b>	<b>32.8</b>	<b>32.7</b>	<b>-1.7</b>
<i>Russell 1000 Growth Index</i>		<i>12.8</i>	<i>29.0</i>	<i>27.1</i>	<i>13.7</i>	<i>15.1</i>	<i>-</i>	<i>-29.1</i>	<i>27.6</i>	<i>38.5</i>	<i>36.4</i>	<i>-1.5</i>
<i>eV US Large Cap Growth Equity Rank</i>		<i>22</i>	<i>3</i>	<i>1</i>	<i>32</i>	<i>19</i>	<i>-</i>	<i>40</i>	<i>81</i>	<i>61</i>	<i>67</i>	<i>60</i>
<b>Manager C</b>	<b>75,182,684</b>	<b>4.7</b>	<b>4.4</b>	<b>12.0</b>	<b>17.6</b>	<b>9.3</b>	<b>-</b>	<b>-3.8</b>	<b>30.9</b>	<b>2.4</b>	<b>24.3</b>	<b>-8.5</b>
<i>Russell 1000 Value Index</i>		<i>4.1</i>	<i>5.1</i>	<i>11.5</i>	<i>14.3</i>	<i>8.1</i>	<i>-</i>	<i>-7.5</i>	<i>25.2</i>	<i>2.8</i>	<i>26.5</i>	<i>-8.3</i>
<i>eV US Large Cap Equity Rank</i>		<i>70</i>	<i>81</i>	<i>77</i>	<i>11</i>	<i>77</i>	<i>-</i>	<i>16</i>	<i>18</i>	<i>87</i>	<i>88</i>	<i>79</i>
<b>Manager D</b>	<b>79,812,444</b>	<b>4.1</b>	<b>5.4</b>	<b>14.7</b>	<b>14.2</b>	<b>10.3</b>	<b>12.9</b>	<b>-7.9</b>	<b>23.0</b>	<b>11.4</b>	<b>35.1</b>	<b>-4.5</b>
<i>Russell 2500 Index</i>		<i>5.2</i>	<i>8.8</i>	<i>13.6</i>	<i>12.3</i>	<i>6.5</i>	<i>9.4</i>	<i>-18.4</i>	<i>18.2</i>	<i>20.0</i>	<i>27.8</i>	<i>-10.0</i>
<i>eV US Small-Mid Cap Equity Rank</i>		<i>66</i>	<i>87</i>	<i>59</i>	<i>57</i>	<i>22</i>	<i>9</i>	<i>14</i>	<i>58</i>	<i>62</i>	<i>13</i>	<i>25</i>

U.S. Effective Style Map  
3 Years Ending June 30, 2023



U.S. Effective Style Map  
5 Years Ending June 30, 2023



Total Domestic Equity  
Asset Class Overview (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Domestic Equity</b>	342,294,632	6.1	11.8	20.0	15.2	10.9	11.8	-10.8	24.6	13.1	28.7	-5.7
<i>Russell 3000 Index</i>		8.4	16.2	19.0	13.9	11.4	12.3	-19.2	25.7	20.9	31.0	-5.2
<b>Manager A</b>	95,527,084	2.1	4.6	15.7	17.0	9.1	10.2	-3.4	27.8	3.9	25.0	-7.0
<i>S&amp;P 500 Index</i>		8.7	16.9	19.6	14.6	12.3	12.9	-18.1	28.7	18.4	31.5	-4.4
<b>Manager B</b>	91,772,420	13.7	37.8	40.4	12.6	14.4	-	-27.4	18.9	32.3	32.1	-2.1
<i>Russell 1000 Growth Index</i>		12.8	29.0	27.1	13.7	15.1	-	-29.1	27.6	38.5	36.4	-1.5
<b>Manager C</b>	75,182,684	4.6	4.2	11.6	17.1	8.8	-	-4.2	30.4	2.0	23.8	-8.9
<i>Russell 1000 Value Index</i>		4.1	5.1	11.5	14.3	8.1	-	-7.5	25.2	2.8	26.5	-8.3
<b>Manager D</b>	79,812,444	3.9	5.0	13.8	13.4	9.4	12.1	-8.7	22.0	10.5	34.1	-5.3
<i>Russell 2500 Index</i>		5.2	8.8	13.6	12.3	6.5	9.4	-18.4	18.2	20.0	27.8	-10.0

Total Domestic Equity  
Correlation Matrix

Sample Public DB Plan  
Period Ending: June 30, 2023

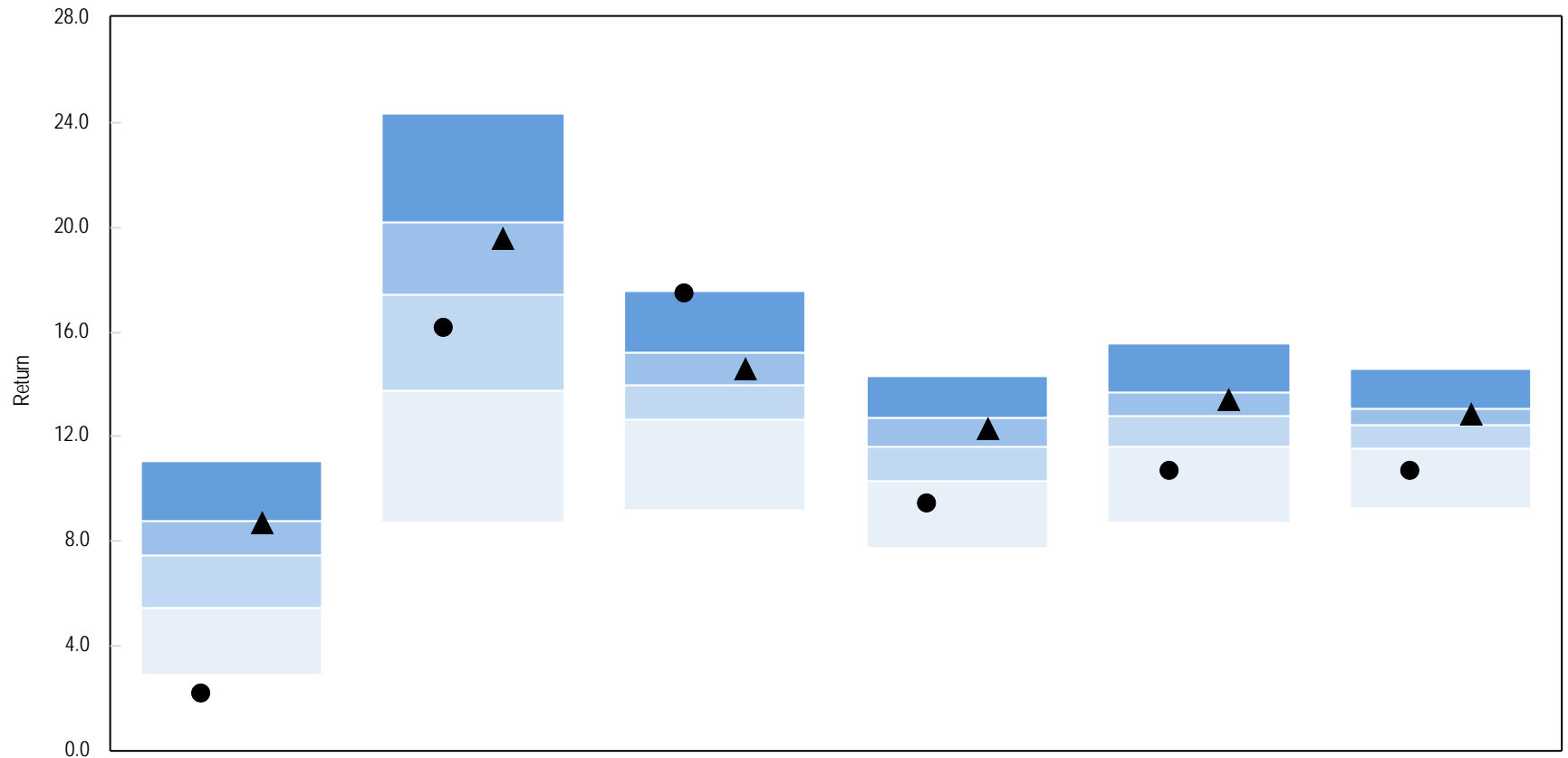
Correlation Matrix  
1 Year Ending June 30, 2023

	Total Domestic Equity	PIMCO RAE US	Loomis Sayles Large Cap Growth	Boston Partners Large Cap Value	Atlanta Capital Mgmt	Russell 3000 Index
Total Domestic Equity	1.00					
Manager A	0.91	1.00				
Manager B	0.53	0.17	1.00			
Manager C	0.93	0.95	0.18	1.00		
Manager D	0.92	0.97	0.16	1.00	1.00	
Russell 3000 Index	0.88	0.60	0.82	0.69	0.66	1.00

Manager A  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager A vs. eV US Large Cap Core Equity Gross Universe



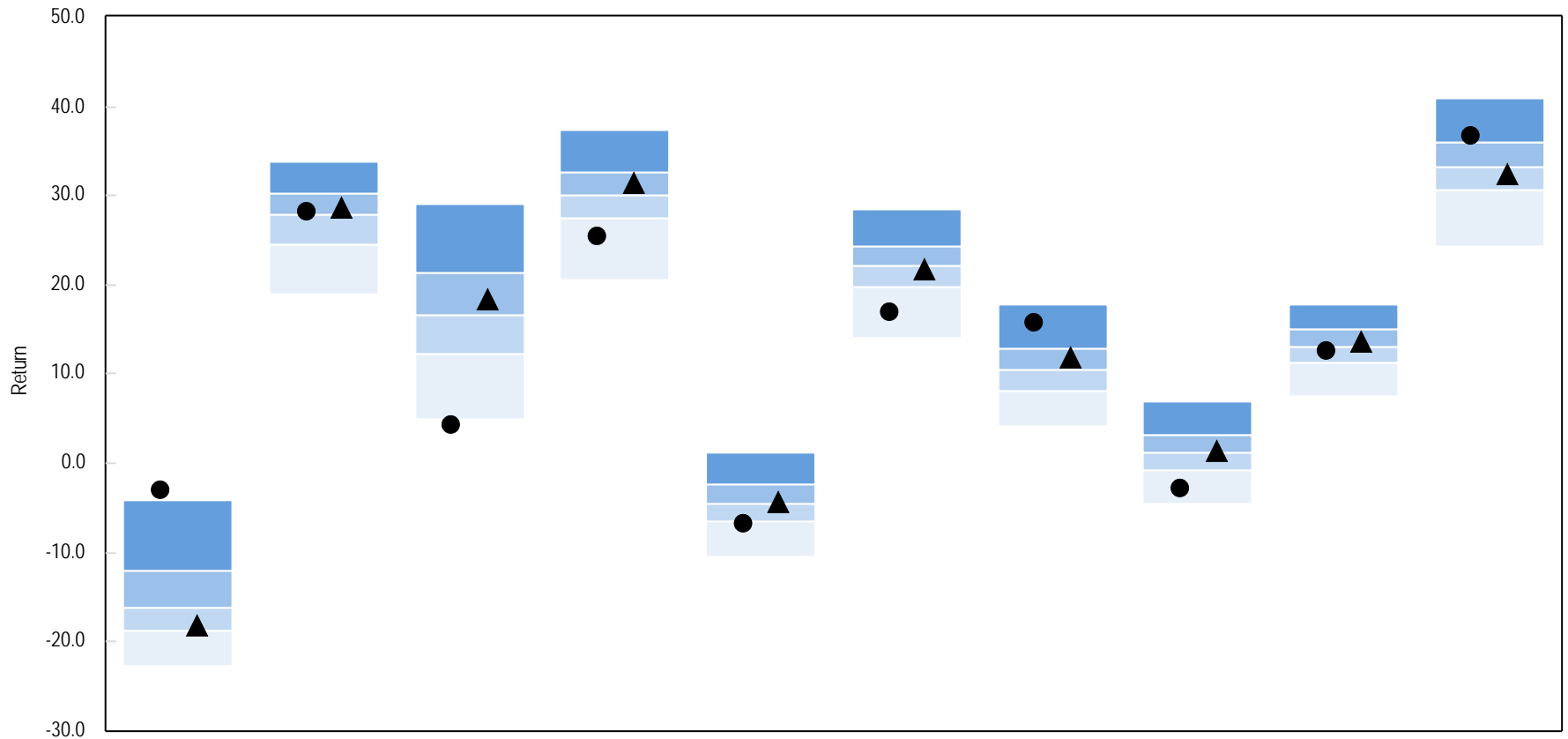
	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager A	2.20 (98)	16.21 (59)	17.46 (7)	9.50 (85)	10.69 (87)	10.70 (87)
▲ S&P 500 Index	8.74 (26)	19.59 (31)	14.60 (38)	12.31 (35)	13.38 (36)	12.86 (35)
5th Percentile	11.05	24.36	17.54	14.30	15.57	14.59
1st Quartile	8.77	20.18	15.23	12.74	13.70	13.07
Median	7.45	17.44	13.97	11.64	12.79	12.44
3rd Quartile	5.49	13.78	12.67	10.33	11.64	11.54
95th Percentile	2.88	8.72	9.17	7.74	8.69	9.24
Population	367	367	359	340	309	278



# Manager A Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Manager A vs. eV US Large Cap Core Equity Gross Universe

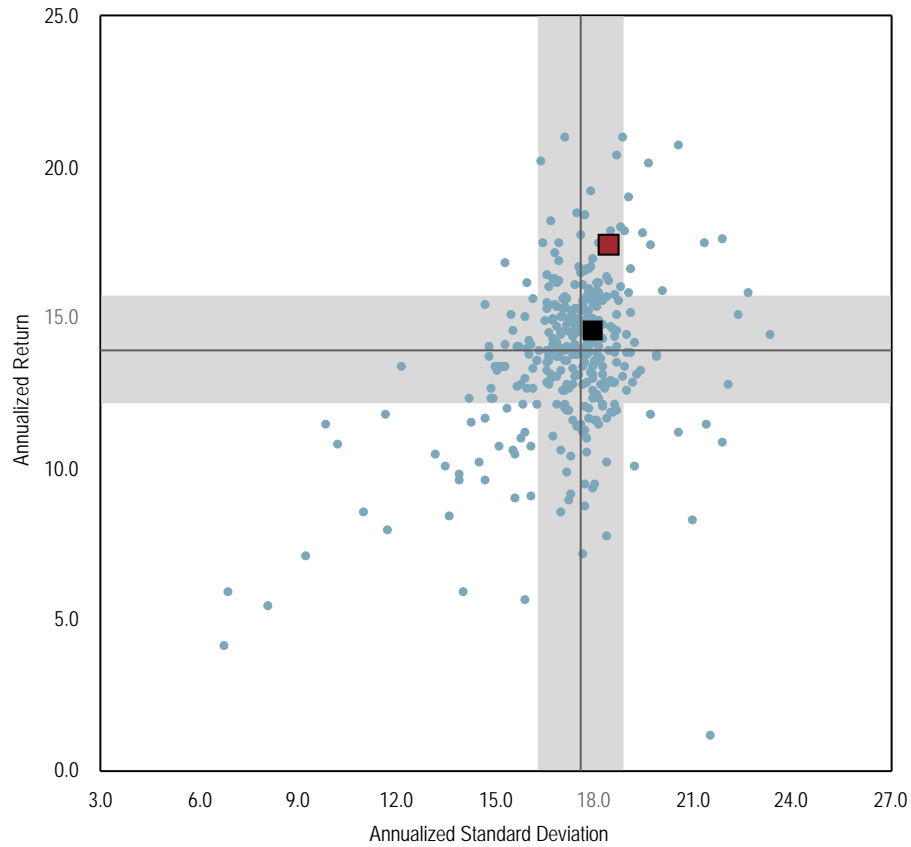


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager A	-2.97 (4)	28.29 (46)	4.35 (97)	25.52 (85)	-6.64 (77)	17.01 (90)	15.87 (9)	-2.65 (87)	12.67 (56)	36.69 (20)
▲ S&P 500 Index	-18.11 (67)	28.71 (41)	18.40 (43)	31.49 (36)	-4.38 (48)	21.83 (54)	11.96 (36)	1.38 (49)	13.69 (41)	32.39 (58)
5th Percentile	-4.10	33.87	29.02	37.32	1.19	28.43	17.86	6.94	17.88	40.97
1st Quartile	-12.03	30.21	21.39	32.59	-2.33	24.34	12.80	3.21	15.04	36.05
Median	-16.17	27.82	16.68	30.08	-4.61	22.15	10.56	1.26	13.07	33.14
3rd Quartile	-18.79	24.61	12.27	27.45	-6.48	19.74	8.19	-0.77	11.27	30.56
95th Percentile	-22.75	18.97	5.00	20.66	-10.36	14.00	4.24	-4.62	7.62	24.26
Population	393	415	437	459	476	486	492	504	512	515

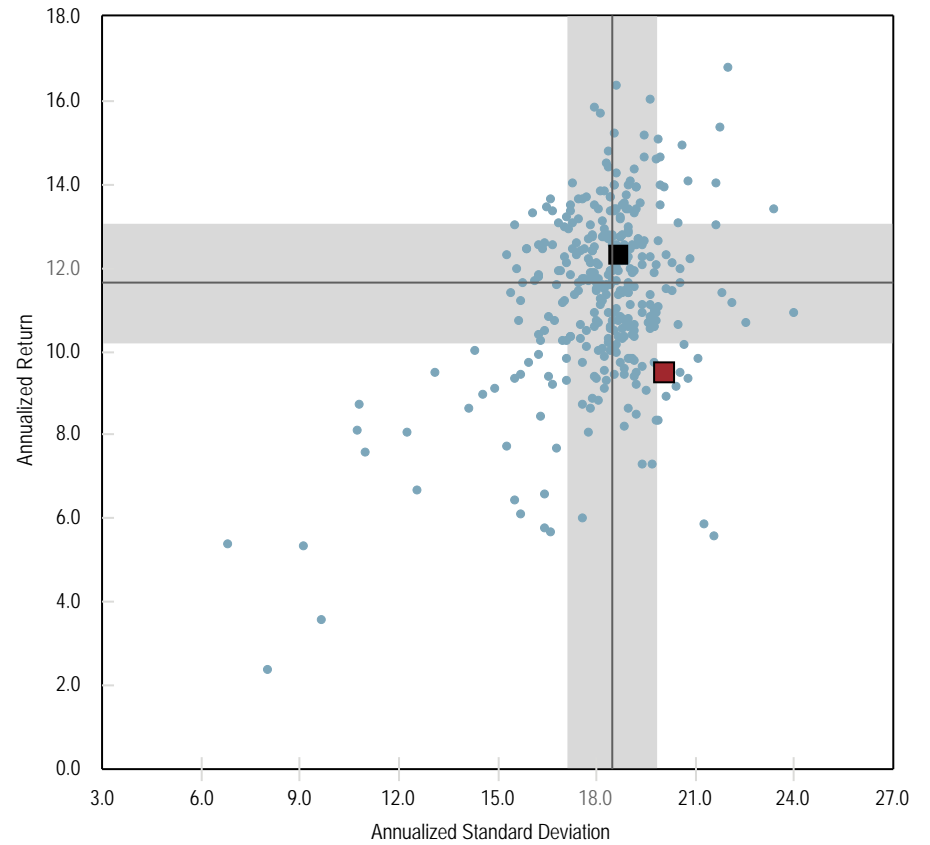
Manager A  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager A	17.46	18.40	0.90
■ S&P 500 Index	14.60	17.93	0.78

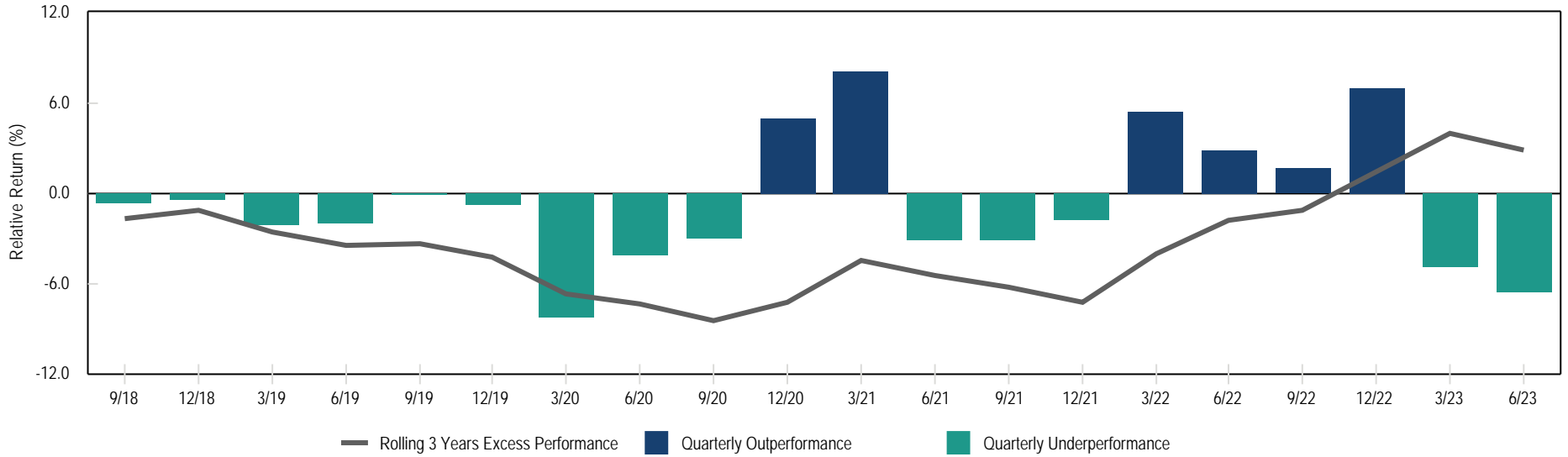
5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager A	9.50	20.07	0.48
■ S&P 500 Index	12.31	18.64	0.64

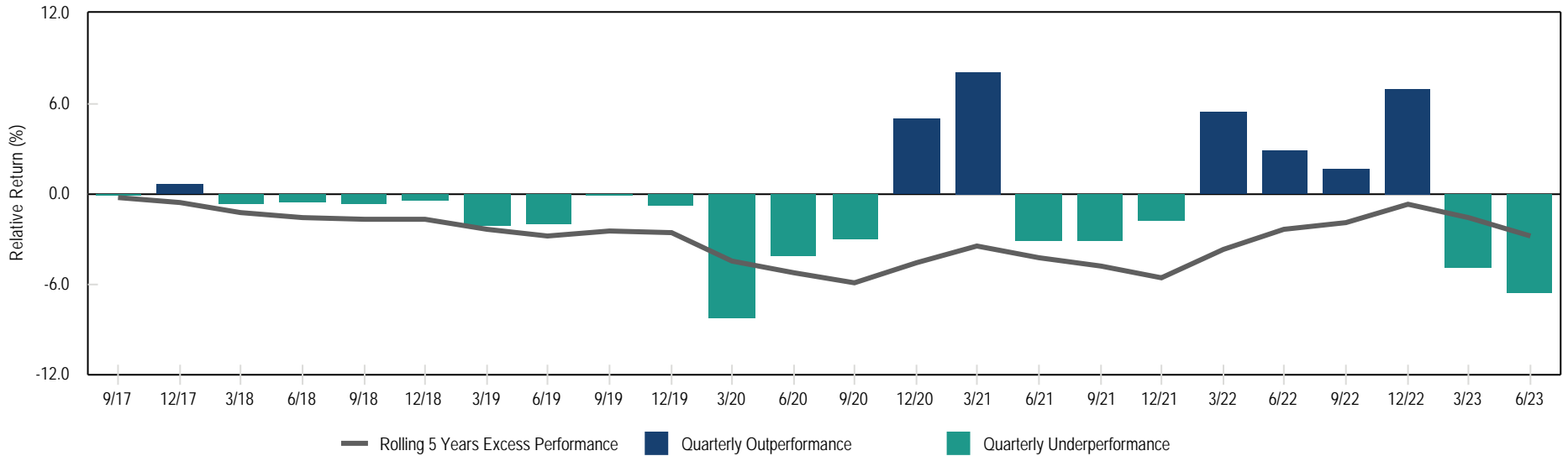
Manager A  
 Rolling Return Analysis (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Rolling 3 Years Annualized Excess Performance



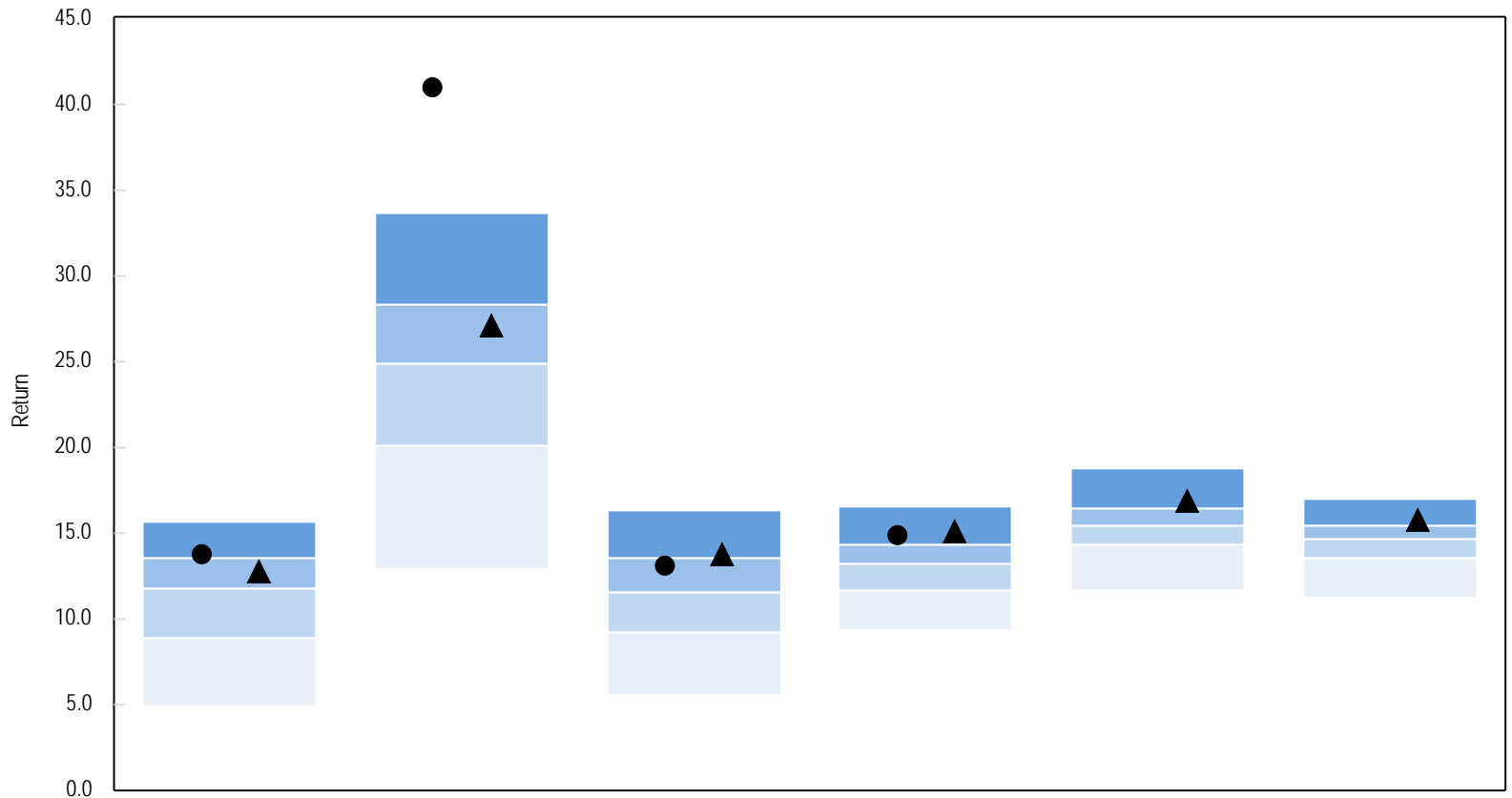
Rolling 5 Years Annualized Excess Performance



Manager B  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager B vs. eV US Large Cap Growth Equity Gross Universe

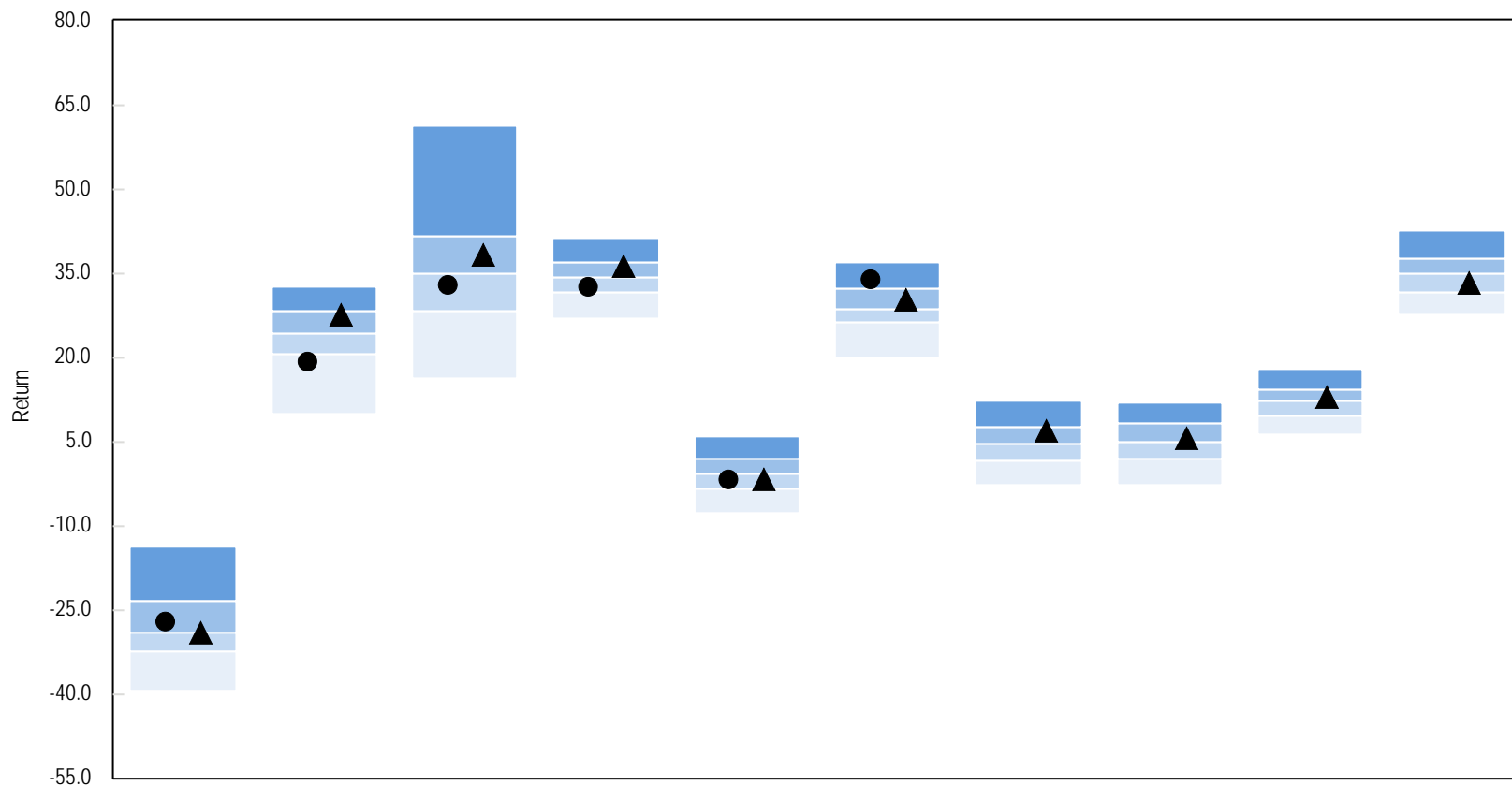


	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager B	13.80 (22)	40.99 (1)	13.15 (32)	14.94 (19)	-	-
▲ Russell 1000 Growth Index	12.81 (36)	27.11 (33)	13.73 (22)	15.14 (16)	16.91 (19)	15.74 (19)
5th Percentile	15.64	33.65	16.32	16.51	18.73	17.00
1st Quartile	13.51	28.37	13.50	14.32	16.47	15.46
Median	11.74	24.85	11.52	13.20	15.39	14.69
3rd Quartile	8.93	20.14	9.17	11.71	14.37	13.60
95th Percentile	4.84	12.85	5.53	9.36	11.66	11.25
Population	273	273	271	263	242	230

# Manager B Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

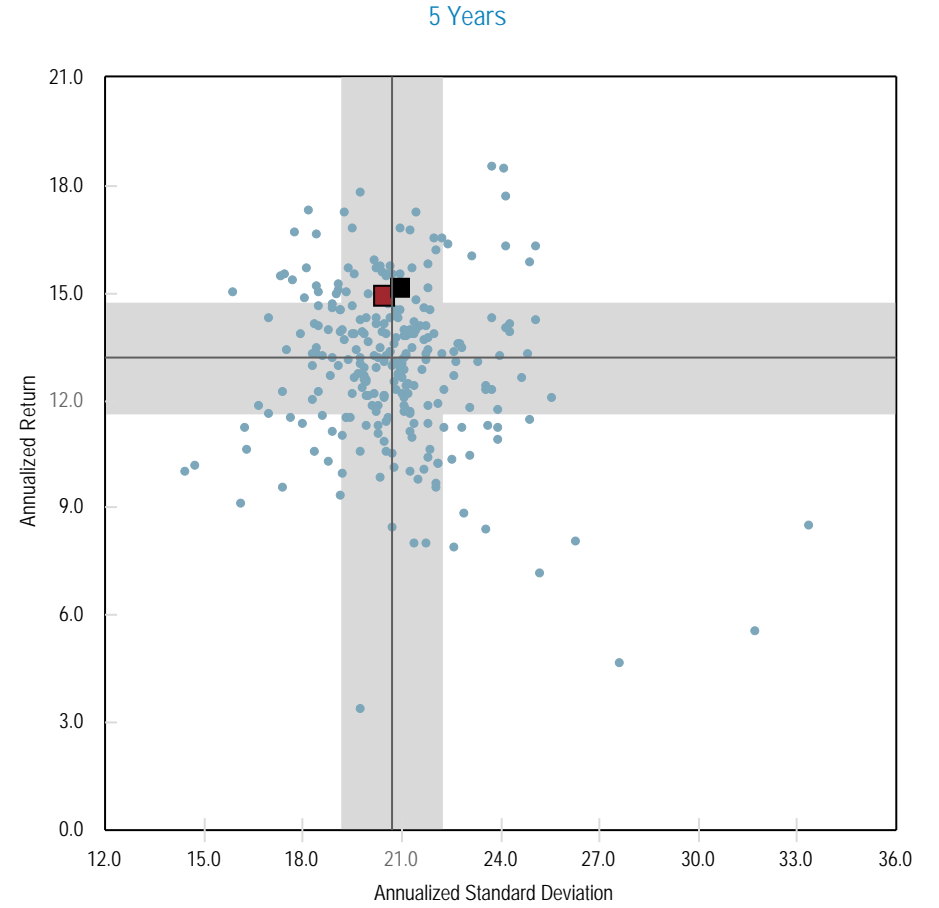
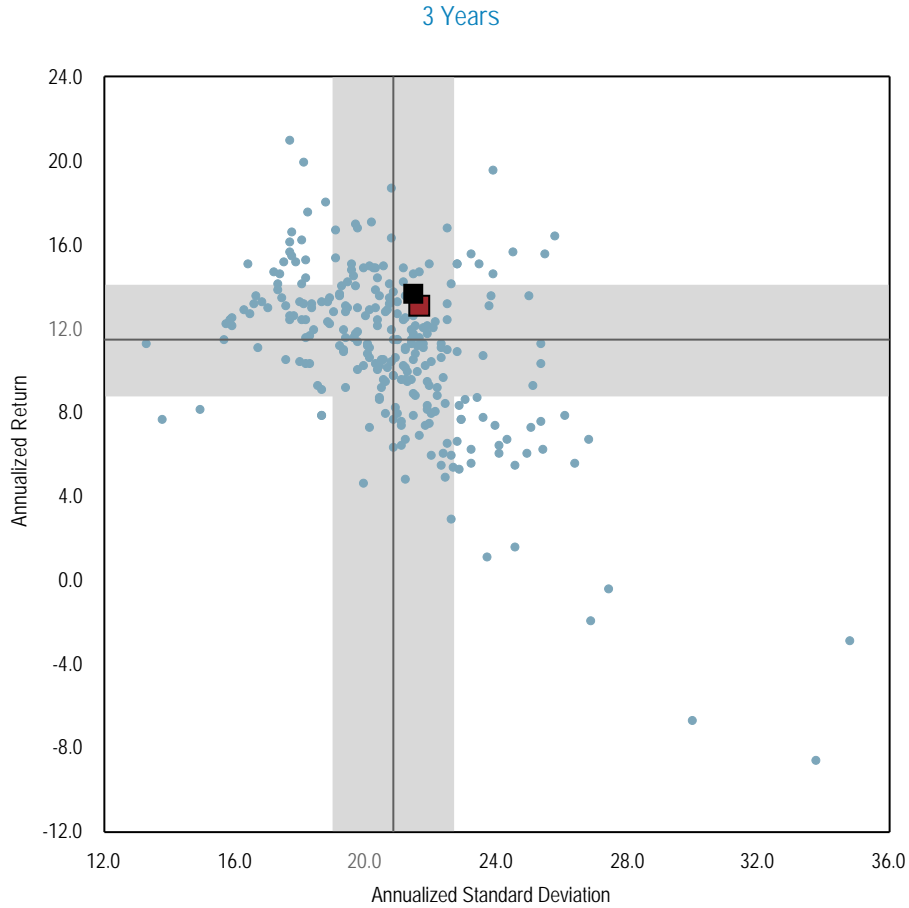
Manager B vs. eV US Large Cap Growth Equity Gross Universe



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager B	-27.05 (40)	19.38 (81)	32.85 (61)	32.69 (67)	-1.66 (60)	34.07 (16)	-	-	-	-
▲ Russell 1000 Growth Index	-29.14 (51)	27.60 (30)	38.49 (34)	36.39 (31)	-1.51 (59)	30.21 (42)	7.08 (27)	5.67 (46)	13.05 (40)	33.48 (62)
5th Percentile	-13.68	32.53	61.34	41.49	6.10	37.01	12.34	11.89	17.87	42.70
1st Quartile	-23.42	28.47	41.81	37.13	1.84	32.46	7.53	8.18	14.41	37.62
Median	-29.03	24.40	34.89	34.19	-0.54	28.80	4.63	4.99	12.17	34.88
3rd Quartile	-32.50	20.59	28.35	31.62	-3.39	26.22	1.80	2.05	9.73	31.52
95th Percentile	-39.43	10.01	16.19	27.05	-7.74	20.08	-2.50	-2.70	6.22	27.56
Population	286	292	307	318	328	331	348	364	382	390

Manager B  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023



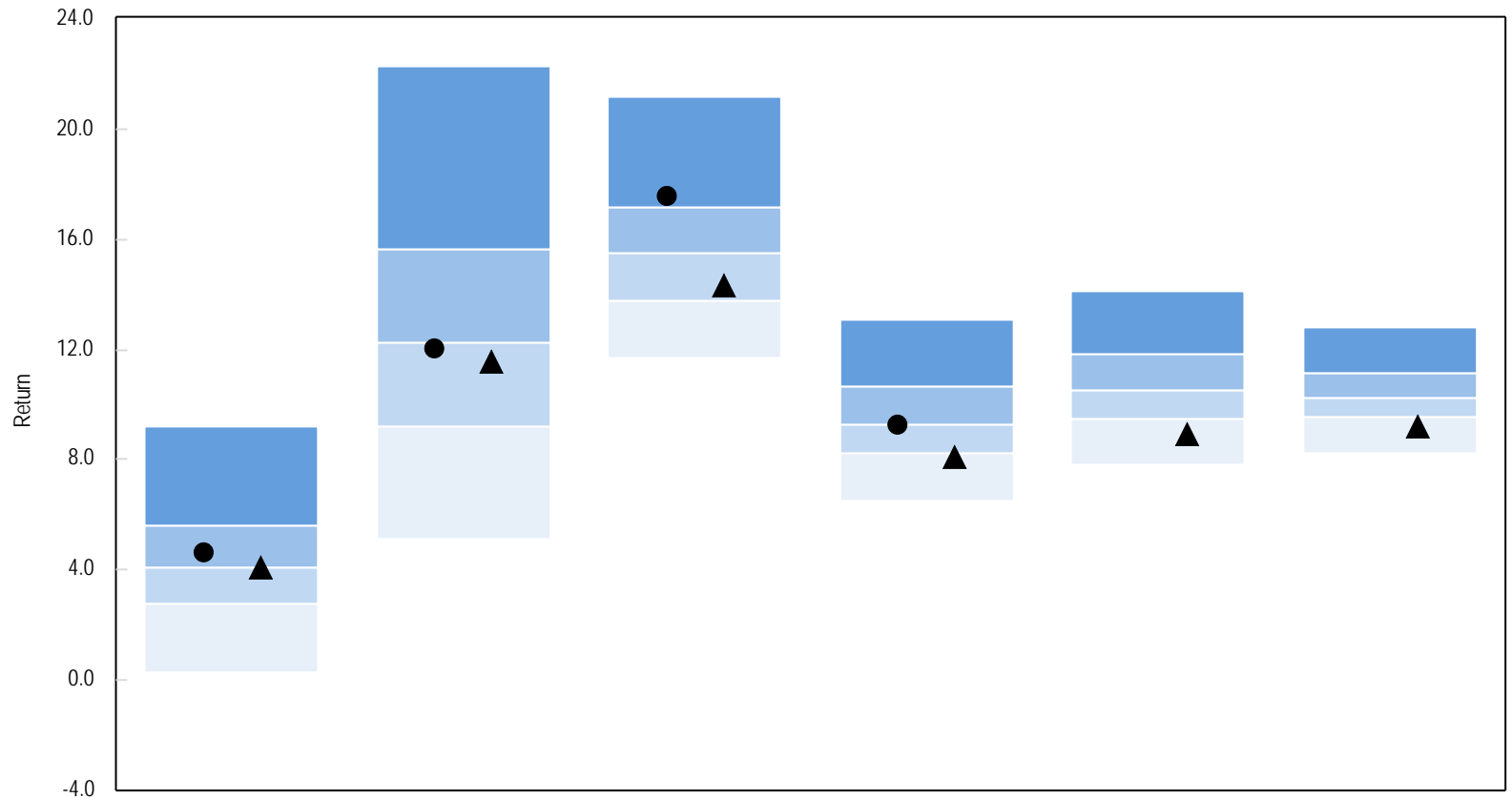
	Return	Standard Deviation	Sharpe Ratio
■ Manager B	13.15	21.61	0.63
■ Russell 1000 Growth Index	13.73	21.41	0.65

	Return	Standard Deviation	Sharpe Ratio
■ Manager B	14.94	20.47	0.71
■ Russell 1000 Growth Index	15.14	20.97	0.71

Manager C  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager C vs. eV US Large Cap Value Equity Gross Universe

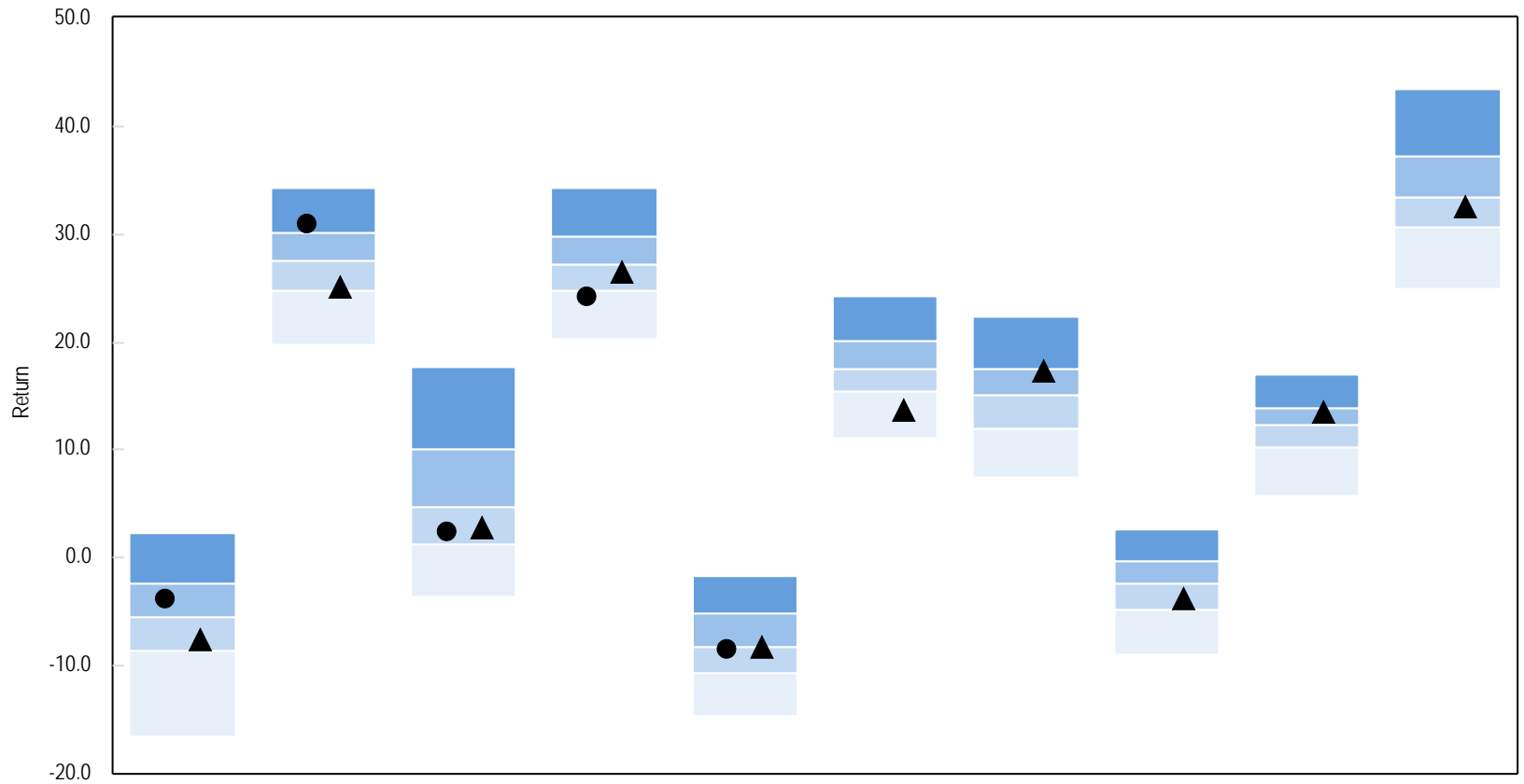


	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager C	4.66 (40)	12.04 (53)	17.58 (23)	9.25 (52)	-	-
▲ Russell 1000 Value Index	4.07 (50)	11.54 (58)	14.30 (68)	8.11 (78)	8.94 (85)	9.22 (83)
5th Percentile	9.23	22.24	21.18	13.05	14.10	12.81
1st Quartile	5.62	15.64	17.17	10.69	11.86	11.14
Median	4.06	12.25	15.48	9.29	10.53	10.23
3rd Quartile	2.78	9.18	13.77	8.22	9.49	9.54
95th Percentile	0.30	5.15	11.73	6.53	7.81	8.26
Population	382	382	368	360	345	326

Manager C  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager C vs. eV US Large Cap Value Equity Gross Universe



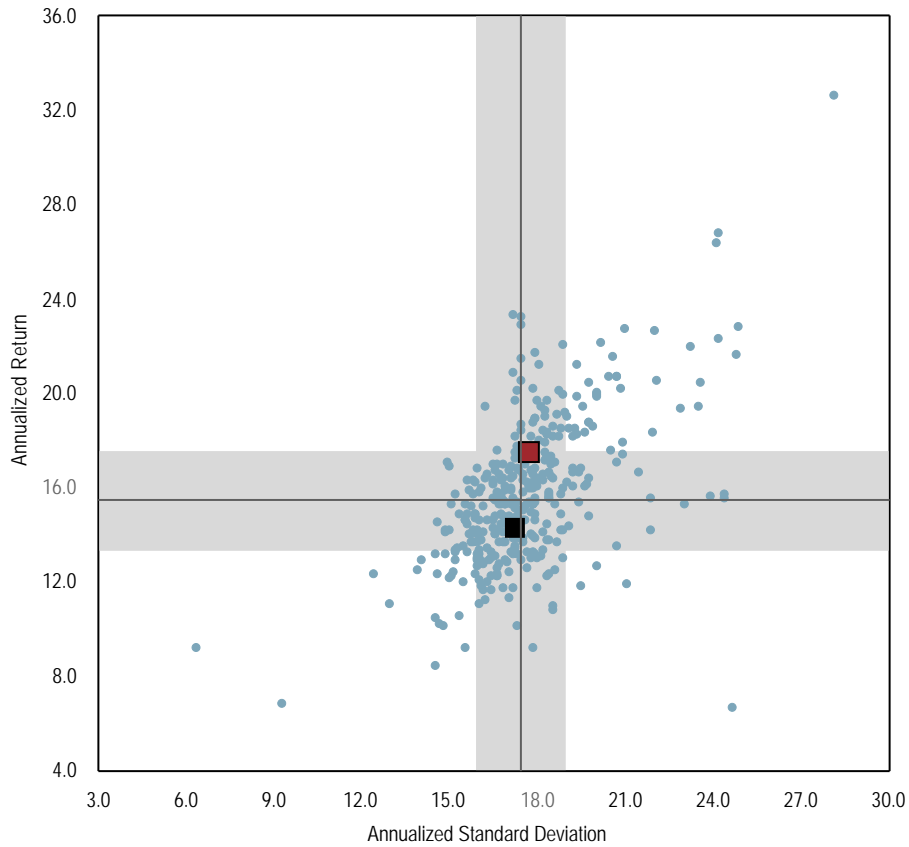
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager C	-3.81 (36)	30.92 (20)	2.42 (66)	24.28 (79)	-8.50 (57)	-	-	-	-	-
▲ Russell 1000 Value Index	-7.54 (69)	25.16 (73)	2.80 (64)	26.54 (56)	-8.27 (53)	13.66 (88)	17.34 (26)	-3.83 (70)	13.45 (34)	32.53 (58)
5th Percentile	2.38	34.34	17.63	34.35	-1.65	24.27	22.29	2.67	16.91	43.43
1st Quartile	-2.39	30.13	10.06	29.83	-5.19	20.06	17.52	-0.22	13.88	37.13
Median	-5.42	27.61	4.64	27.17	-8.18	17.44	15.01	-2.28	12.25	33.39
3rd Quartile	-8.51	24.70	1.30	24.72	-10.75	15.35	11.99	-4.72	10.24	30.72
95th Percentile	-16.58	19.83	-3.59	20.34	-14.67	11.18	7.50	-8.98	5.71	24.98
Population	398	408	415	445	468	479	493	513	512	519



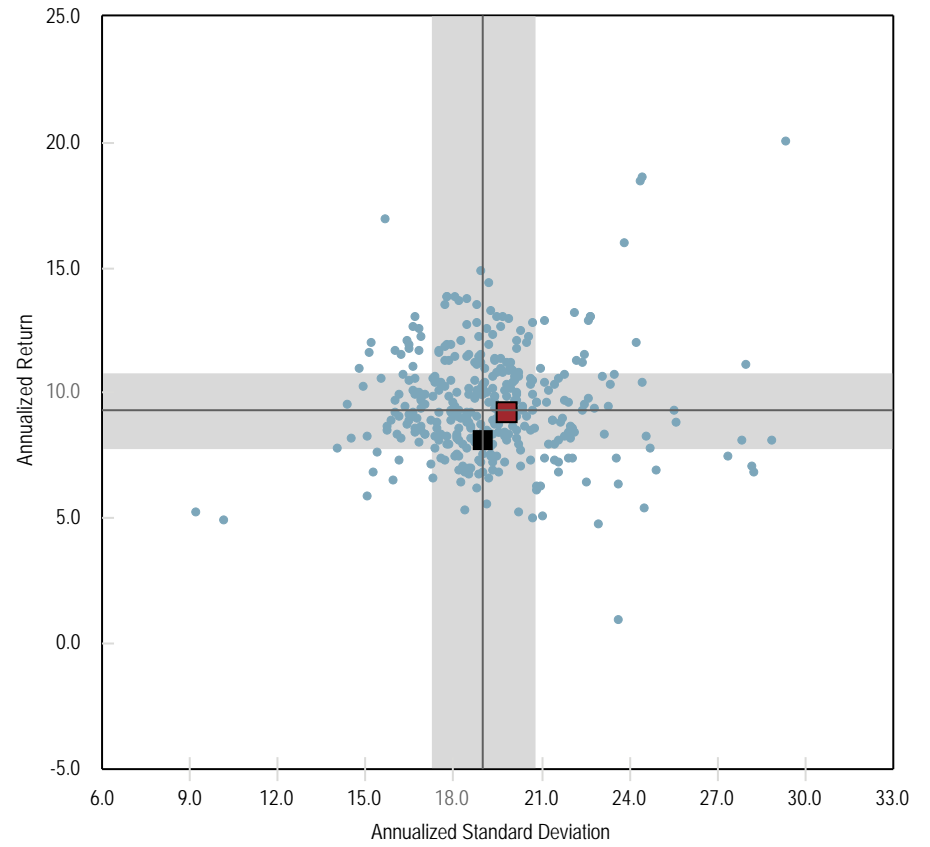
Manager C  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager C	17.58	17.68	0.93
■ Russell 1000 Value Index	14.30	17.20	0.79

5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager C	9.25	19.77	0.47
■ Russell 1000 Value Index	8.11	18.96	0.43

# Manager D

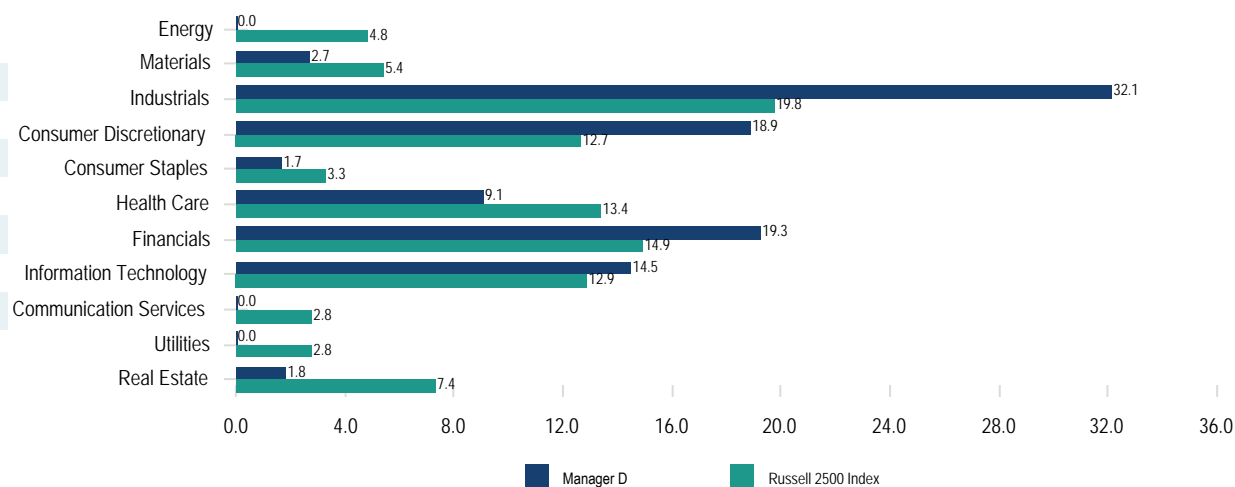
## Manager Portfolio Overview

Sample Public DB Plan  
Period Ending: June 30, 2023

### Characteristics

	Portfolio	Benchmark
Number of Stocks	53	2,503
Wtd. Avg. Mkt. Cap \$B	11.1	6.2
Median Mkt. Cap \$B	11.3	1.3
Price/Earnings ratio	26.29	13.16
Price/Book ratio	3.58	2.68
Return on Equity (%)	4.89	-2.88
Current Yield (%)	0.80	1.62
Beta (5 Years, Monthly)	0.84	1.00
R-Squared (5 Years, Monthly)	0.90	1.00

### Sector Allocation (%)



### Largest Equity Holdings

	Wgt (%)	Return (%)
Carlisle Cos Inc	4.49	13.89
Aramark	4.00	20.60
CACI International Inc	3.78	15.04
Teleflex Inc	3.54	-4.32
Brown & Brown Inc	3.45	20.10
Markel Group Inc	3.32	8.28
Landstar System Inc	3.28	7.59
Envista Holdings Corp	3.26	-17.22
Dolby Laboratories Inc	3.10	-1.72
SEI Investments Co	3.08	4.35

### Top Contributors

	Wgt (%)	Return (%)	Contr (%)
Aramark	3.42	20.60	0.70
Lennox International Inc.	2.05	30.21	0.62
Brown & Brown Inc	2.61	20.10	0.52
Carlisle Cos Inc	3.59	13.89	0.50
Booz Allen Hamilton Holding Corporation	2.15	20.94	0.45
CACI International Inc	2.63	15.04	0.40
Manhattan Associates Inc	1.09	29.08	0.32
Markel Group Inc	2.78	8.28	0.23
Broadridge Financial Solutions Inc	1.66	13.52	0.22
Deckers Outdoor Corp	1.24	17.38	0.22

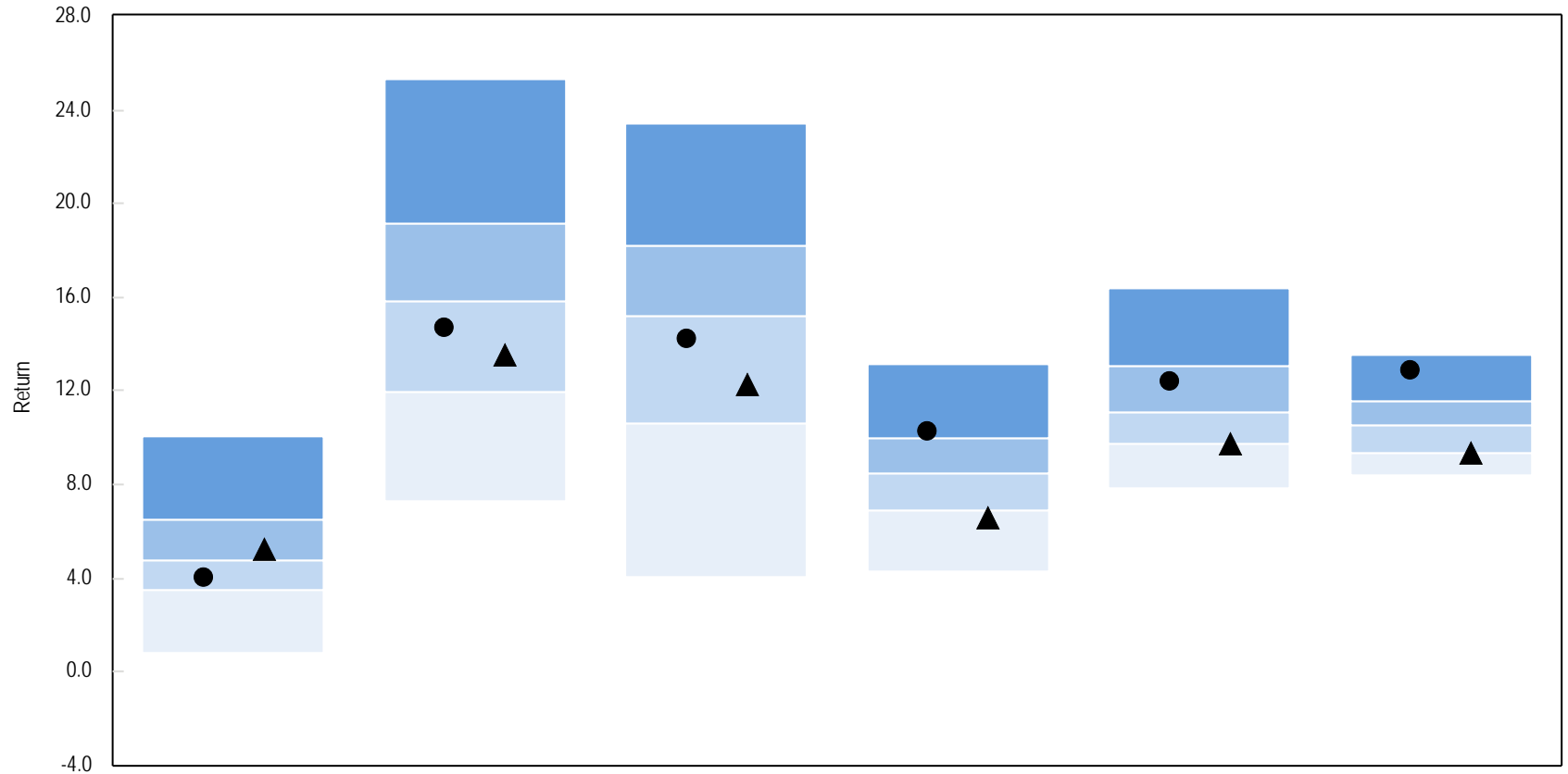
### Bottom Contributors

	Wgt (%)	Return (%)	Contr (%)
Envista Holdings Corp	3.58	-17.22	-0.62
Burlington Stores Inc	2.05	-22.12	-0.45
Columbia Sportswear Co	2.17	-14.07	-0.30
Ulta Beauty Inc	1.54	-13.76	-0.21
Berkley (W.R.) Corp	4.56	-4.16	-0.19
Teleflex Inc	3.37	-4.32	-0.15
Acuity Brands Inc.	1.35	-10.68	-0.14
IDEX Corp	1.86	-6.54	-0.12
GoDaddy Inc	2.60	-3.33	-0.09
Morningstar Inc	2.32	-3.25	-0.08

Manager D  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager D vs. eV US Small-Mid Cap Equity Gross Universe

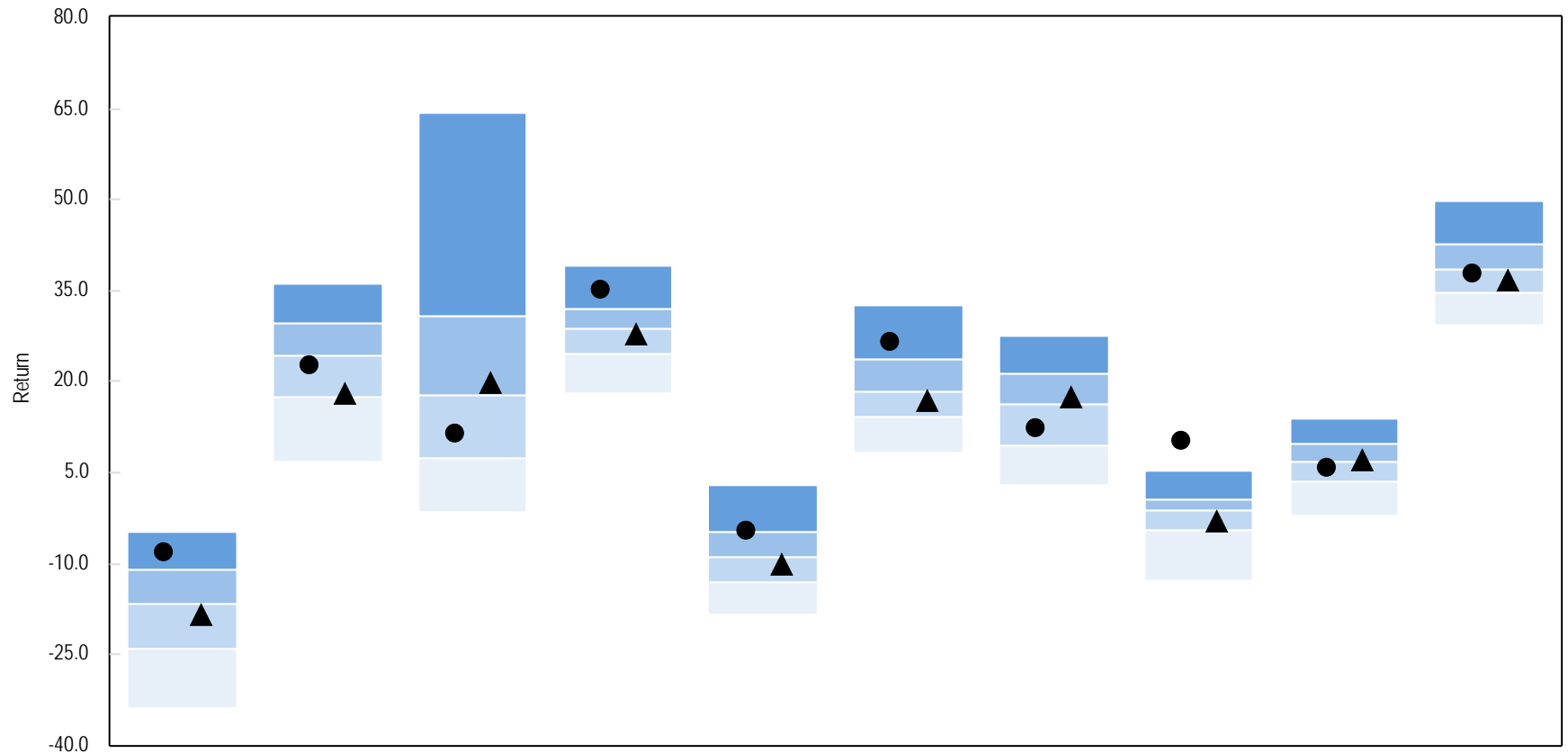


	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager D	4.07 (66)	14.71 (59)	14.25 (57)	10.27 (22)	12.42 (31)	12.94 (9)
▲ Russell 2500 Index	5.22 (44)	13.58 (67)	12.29 (68)	6.55 (79)	9.71 (77)	9.38 (74)
5th Percentile	10.10	25.30	23.46	13.16	16.41	13.55
1st Quartile	6.49	19.18	18.20	9.97	13.08	11.53
Median	4.77	15.82	15.17	8.48	11.07	10.54
3rd Quartile	3.50	11.96	10.64	6.92	9.79	9.36
95th Percentile	0.85	7.30	4.08	4.33	7.89	8.42
Population	251	251	241	222	192	160

Manager D  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

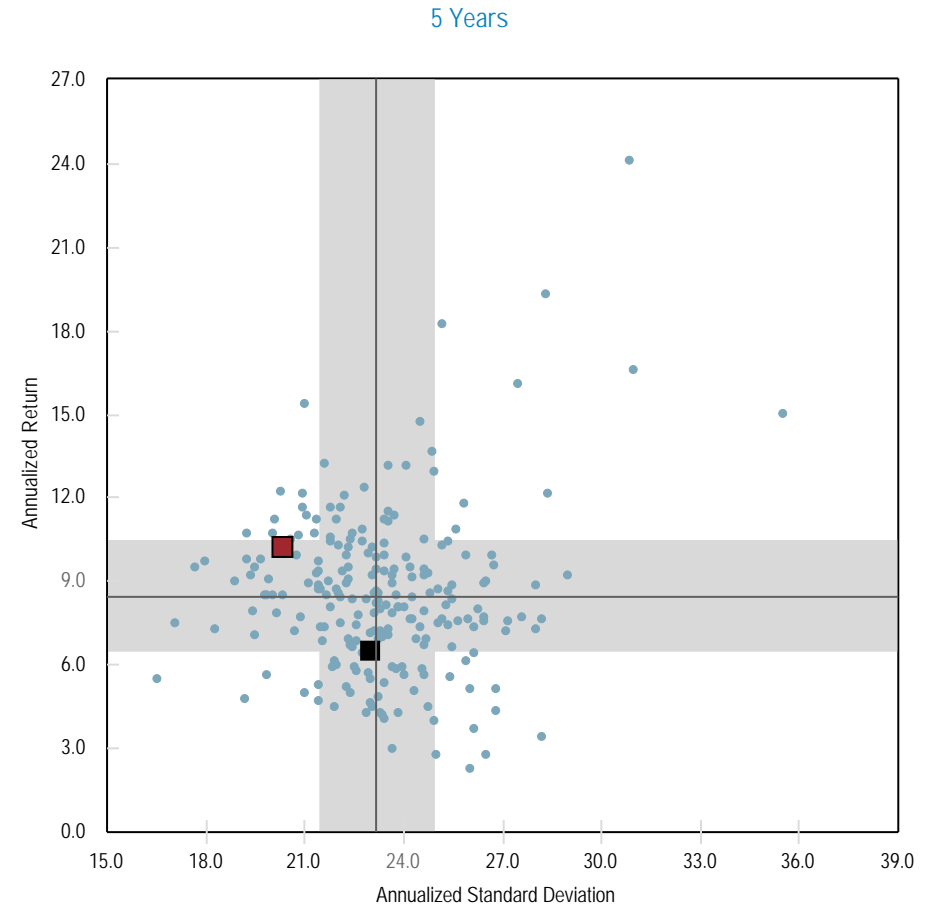
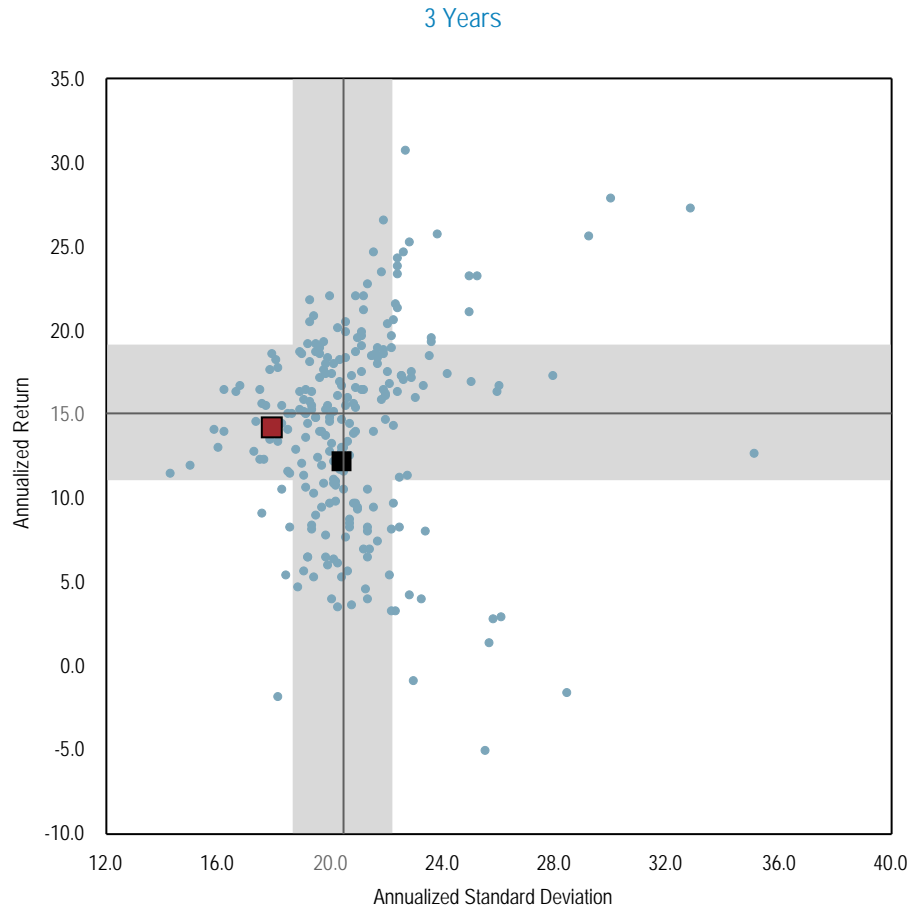
Manager D vs. eV US Small-Mid Cap Equity Gross Universe



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager D	-7.95 (14)	22.96 (58)	11.41 (62)	35.12 (13)	-4.52 (25)	26.58 (15)	12.58 (64)	10.44 (1)	5.83 (58)	37.85 (55)
▲ Russell 2500 Index	-18.37 (58)	18.18 (73)	19.99 (45)	27.77 (57)	-10.00 (56)	16.81 (60)	17.59 (40)	-2.90 (67)	7.07 (48)	36.80 (61)
5th Percentile	-4.74	36.15	64.35	39.07	2.94	32.51	27.46	5.45	13.97	49.83
1st Quartile	-11.02	29.66	30.78	32.08	-4.62	23.73	21.19	0.68	9.71	42.73
Median	-16.58	24.24	17.66	28.87	-8.96	18.24	16.31	-1.26	6.76	38.52
3rd Quartile	-23.95	17.58	7.37	24.50	-13.00	14.13	9.40	-4.35	3.63	34.57
95th Percentile	-33.71	6.85	-1.46	18.14	-18.32	8.28	2.90	-12.78	-2.13	29.34
Population	261	270	275	280	293	283	285	289	287	292

Manager D  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023



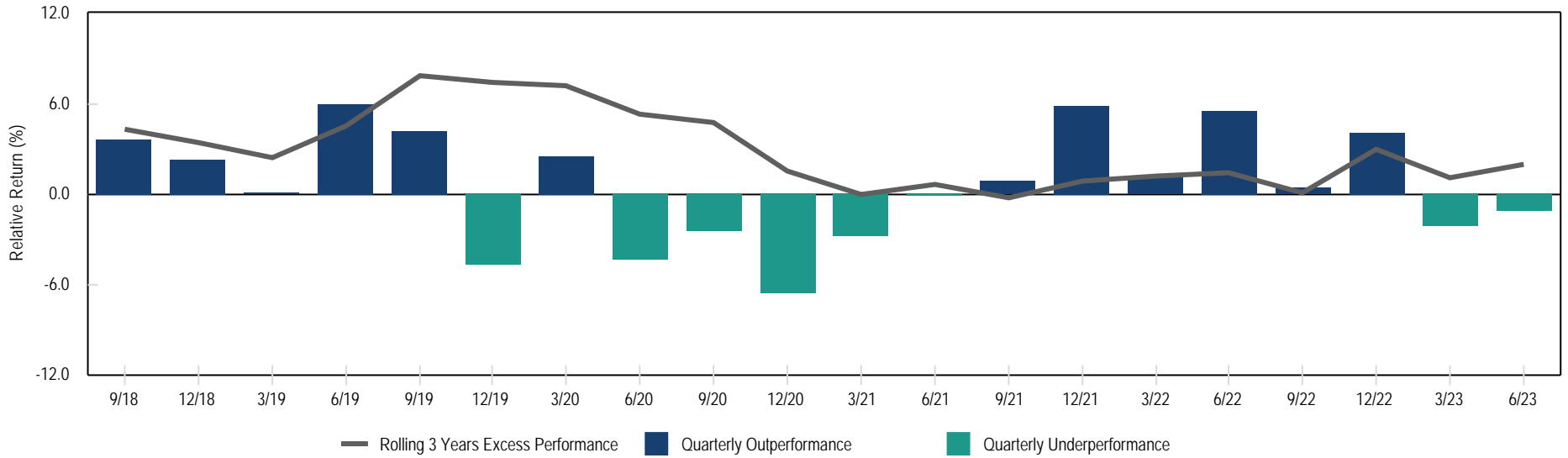
	3 Years	Standard	Sharpe
	Return	Deviation	Ratio
■ Manager D	14.25	17.91	0.76
■ Russell 2500 Index	12.29	20.38	0.61

	5 Years	Standard	Sharpe
	Return	Deviation	Ratio
■ Manager D	10.27	20.34	0.51
■ Russell 2500 Index	6.55	23.00	0.33

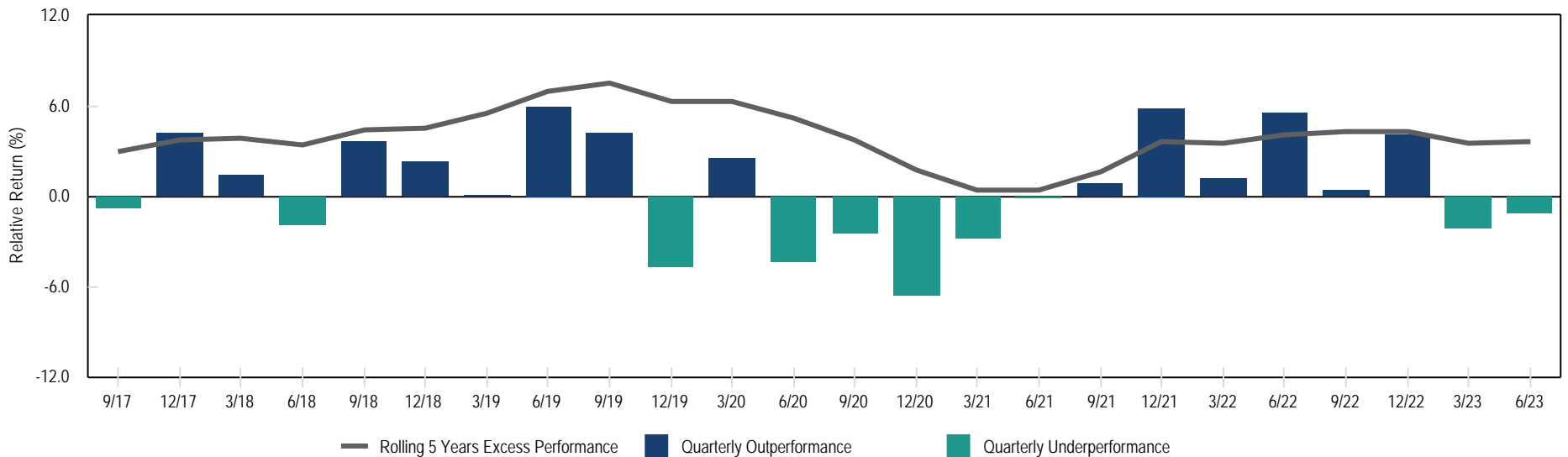
Manager D  
 Rolling Return Analysis (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Rolling 3 Years Annualized Excess Performance



Rolling 5 Years Annualized Excess Performance



# International Equity

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# Total International Equity Asset Class Overview (Gross of Fees)

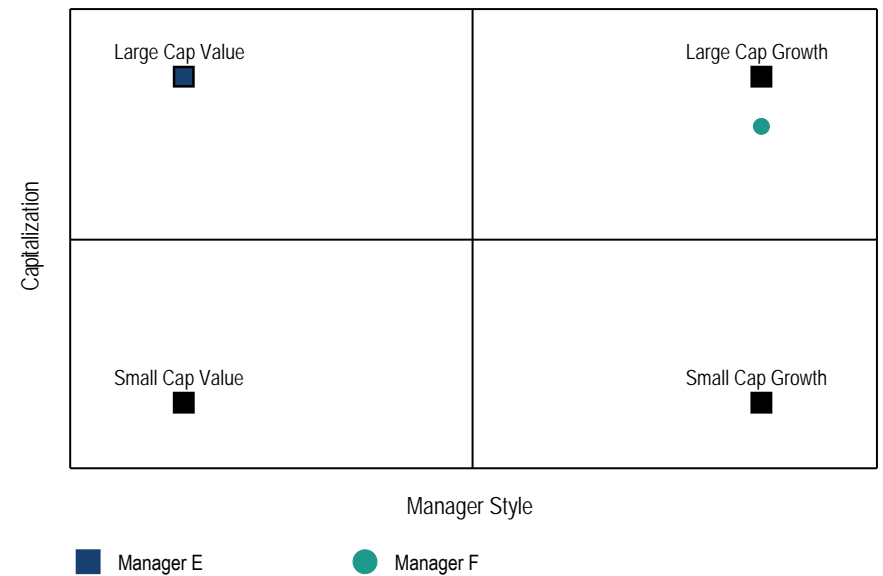
Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total International Equity</b>	<b>269,700,705</b>	<b>4.2</b>	<b>12.9</b>	<b>17.6</b>	<b>10.9</b>	<b>8.4</b>	<b>7.8</b>	<b>-17.4</b>	<b>15.1</b>	<b>19.4</b>	<b>30.2</b>	<b>-12.2</b>
<i>MSCI AC World ex USA Index</i>		<i>2.7</i>	<i>9.9</i>	<i>13.3</i>	<i>7.7</i>	<i>4.0</i>	<i>5.2</i>	<i>-15.6</i>	<i>8.3</i>	<i>11.1</i>	<i>22.1</i>	<i>-13.8</i>
<i>InvMetrics Public DB Global ex-US Equity Rank</i>		<i>12</i>	<i>22</i>	<i>13</i>	<i>9</i>	<i>1</i>	<i>4</i>	<i>56</i>	<i>7</i>	<i>5</i>	<i>1</i>	<i>24</i>
<b>Manager E</b>	<b>136,362,199</b>	<b>4.5</b>	<b>11.1</b>	<b>15.4</b>	<b>13.5</b>	<b>5.5</b>	<b>6.0</b>	<b>-6.2</b>	<b>11.7</b>	<b>2.8</b>	<b>23.6</b>	<b>-17.5</b>
<i>MSCI AC World ex USA Value</i>		<i>3.3</i>	<i>8.8</i>	<i>13.0</i>	<i>11.2</i>	<i>3.3</i>	<i>4.3</i>	<i>-8.0</i>	<i>11.1</i>	<i>-0.2</i>	<i>16.5</i>	<i>-13.4</i>
<i>eVACWI ex-US All Cap Value Eq Rank</i>		<i>10</i>	<i>50</i>	<i>51</i>	<i>32</i>	<i>14</i>	<i>34</i>	<i>11</i>	<i>43</i>	<i>49</i>	<i>30</i>	<i>92</i>
<b>Manager F</b>	<b>133,338,507</b>	<b>3.9</b>	<b>15.0</b>	<b>20.2</b>	<b>7.8</b>	<b>10.2</b>	<b>-</b>	<b>-28.2</b>	<b>18.5</b>	<b>34.0</b>	<b>36.7</b>	<b>-6.7</b>
<i>MSCI AC World ex USA Growth</i>		<i>2.1</i>	<i>11.0</i>	<i>13.7</i>	<i>4.3</i>	<i>4.4</i>	<i>-</i>	<i>-22.8</i>	<i>5.4</i>	<i>22.6</i>	<i>27.8</i>	<i>-14.1</i>
<i>eVACWI ex-US All Cap Growth Eq Rank</i>		<i>18</i>	<i>36</i>	<i>24</i>	<i>23</i>	<i>1</i>	<i>-</i>	<i>58</i>	<i>7</i>	<i>37</i>	<i>14</i>	<i>1</i>

EAFE Effective Style Map  
3 Years Ending June 30, 2023



EAFE Effective Style Map  
5 Years Ending June 30, 2023





Total International Equity  
 Asset Class Overview( Net of Fees)

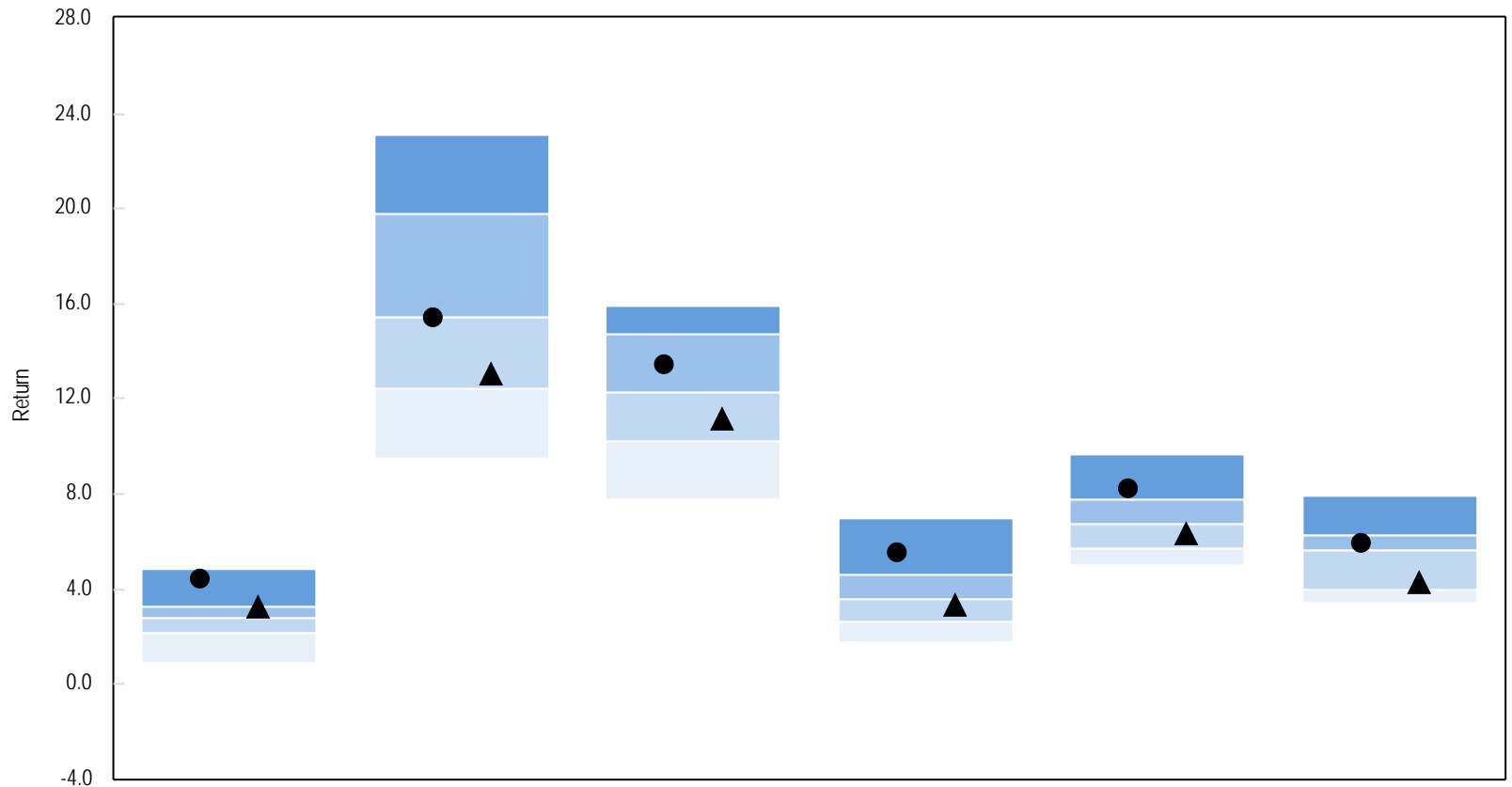
Sample Public DB Plan  
 Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
Total International Equity	269,700,705	4.0	12.5	16.9	10.2	7.7	7.1	-17.9	14.4	18.6	29.3	-12.8
<i>MSCI AC World ex USA Index</i>		<i>2.7</i>	<i>9.9</i>	<i>13.3</i>	<i>7.7</i>	<i>4.0</i>	<i>5.2</i>	<i>-15.6</i>	<i>8.3</i>	<i>11.1</i>	<i>22.1</i>	<i>-13.8</i>
Manager E	136,362,199	4.3	10.7	14.7	12.8	4.9	5.3	-6.8	11.0	2.1	22.8	-18.0
<i>MSCI AC World ex USA Value</i>		<i>3.3</i>	<i>8.8</i>	<i>13.0</i>	<i>11.2</i>	<i>3.3</i>	<i>4.3</i>	<i>-8.0</i>	<i>11.1</i>	<i>-0.2</i>	<i>16.5</i>	<i>-13.4</i>
Manager F	133,338,507	3.8	14.6	19.5	7.1	9.5	-	-28.6	17.7	33.1	35.8	-7.4
<i>MSCI AC World ex USA Growth</i>		<i>2.1</i>	<i>11.0</i>	<i>13.7</i>	<i>4.3</i>	<i>4.4</i>	<i>-</i>	<i>-22.8</i>	<i>5.4</i>	<i>22.6</i>	<i>27.8</i>	<i>-14.1</i>

Manager E  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager E vs. eV ACWI ex-US All Cap Value Eq Gross Universe

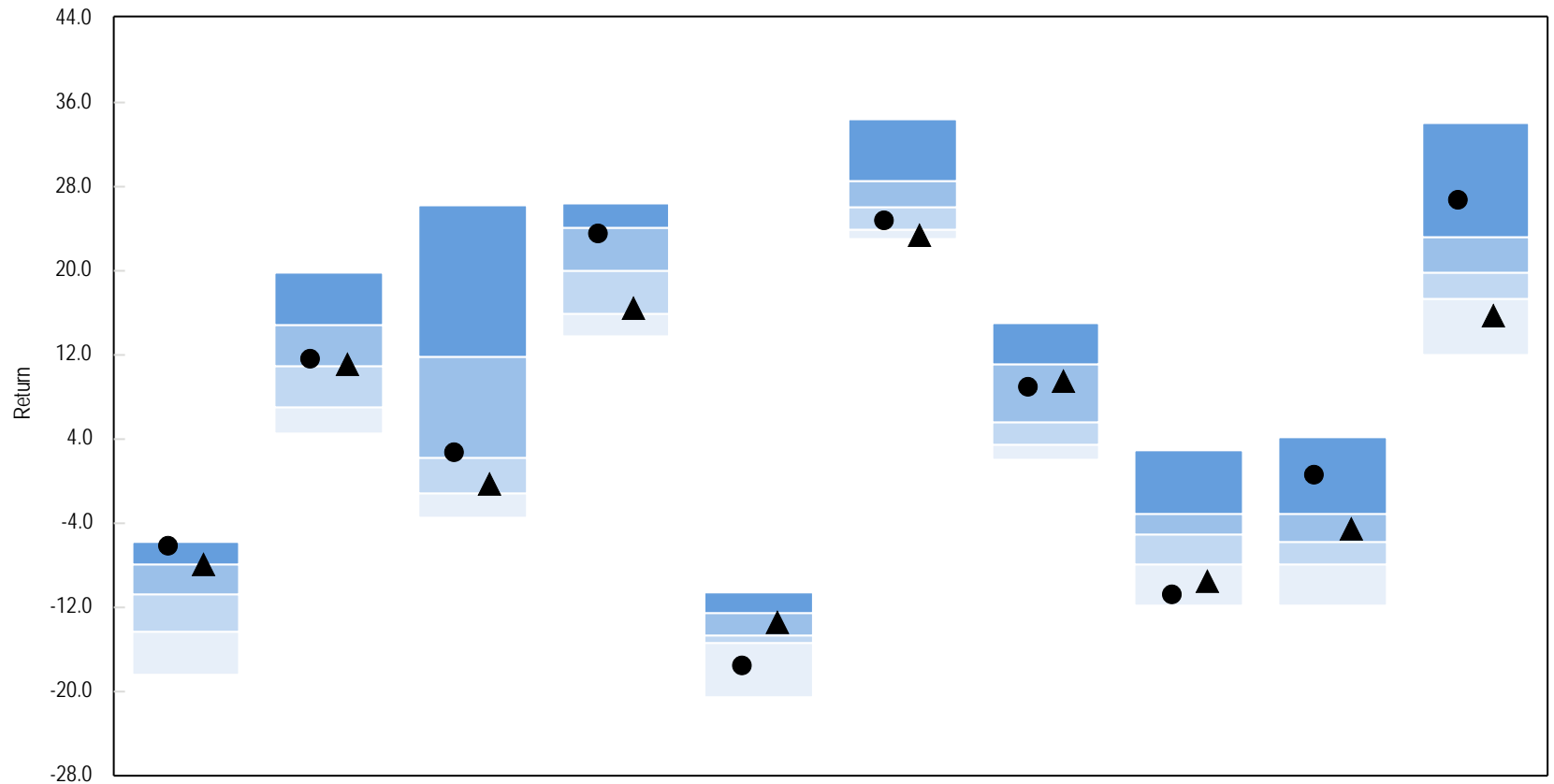


	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager E	4.47 (10)	15.42 (51)	13.48 (32)	5.54 (14)	8.21 (22)	5.97 (34)
▲ MSCI AC World ex USA Value	3.28 (26)	13.03 (68)	11.16 (58)	3.31 (55)	6.36 (53)	4.32 (70)
5th Percentile	4.86	23.13	15.88	7.00	9.64	7.92
1st Quartile	3.29	19.75	14.70	4.61	7.74	6.30
Median	2.82	15.47	12.26	3.57	6.75	5.60
3rd Quartile	2.17	12.44	10.21	2.63	5.73	3.97
95th Percentile	0.86	9.52	7.81	1.75	4.99	3.44
Population	25	25	23	21	18	17

# Manager E Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Manager E vs. eV ACWI ex-US All Cap Value Eq Gross Universe

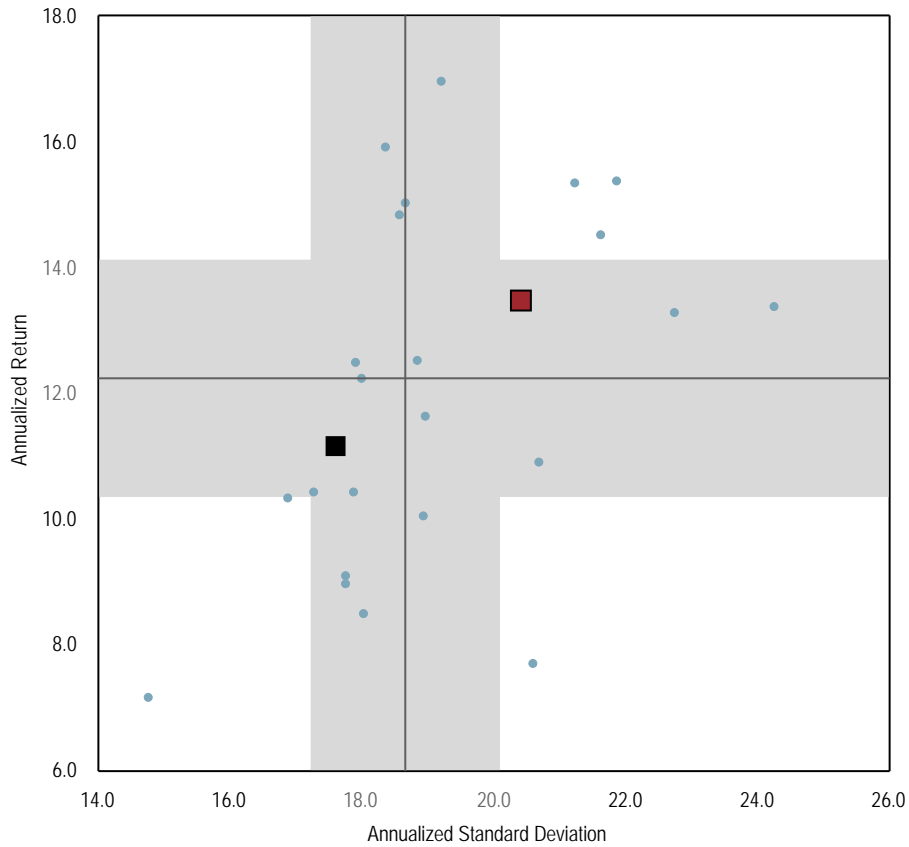


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager E	-6.19 (11)	11.70 (43)	2.75 (49)	23.58 (30)	-17.46 (92)	24.74 (60)	8.96 (37)	-10.78 (89)	0.56 (18)	26.72 (15)
▲ MSCI AC World ex USA Value	-7.95 (25)	11.13 (48)	-0.21 (67)	16.45 (74)	-13.45 (32)	23.35 (83)	9.59 (36)	-9.59 (85)	-4.60 (44)	15.65 (81)
5th Percentile	-5.78	19.79	26.21	26.39	-10.64	34.42	15.02	2.88	4.20	34.01
1st Quartile	-7.96	14.76	11.84	24.14	-12.58	28.48	11.04	-3.13	-3.04	23.24
Median	-10.76	10.89	2.16	20.06	-14.59	25.99	5.52	-5.07	-5.77	19.77
3rd Quartile	-14.29	7.03	-1.18	15.85	-15.31	23.97	3.49	-7.95	-7.86	17.38
95th Percentile	-18.40	4.48	-3.51	13.81	-20.59	22.99	2.06	-11.84	-11.79	11.94
Population	24	26	27	26	24	22	21	21	22	22

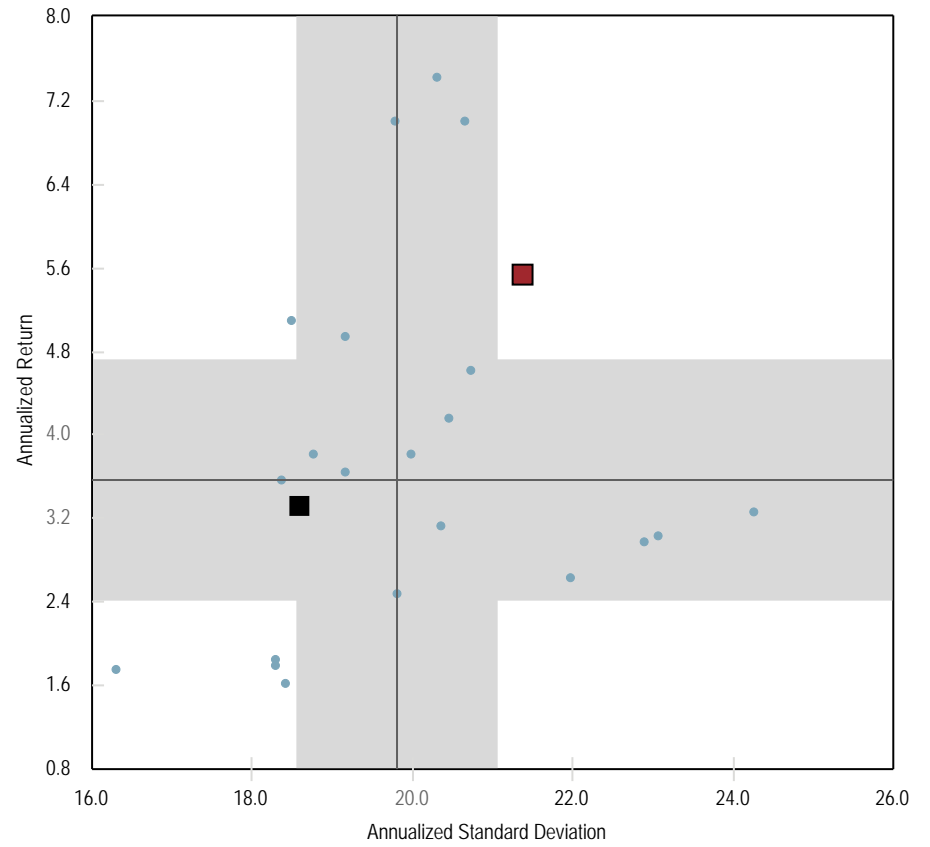
Manager E  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager E	13.48	20.41	0.66
■ MSCI AC World ex USA Value	11.16	17.61	0.62

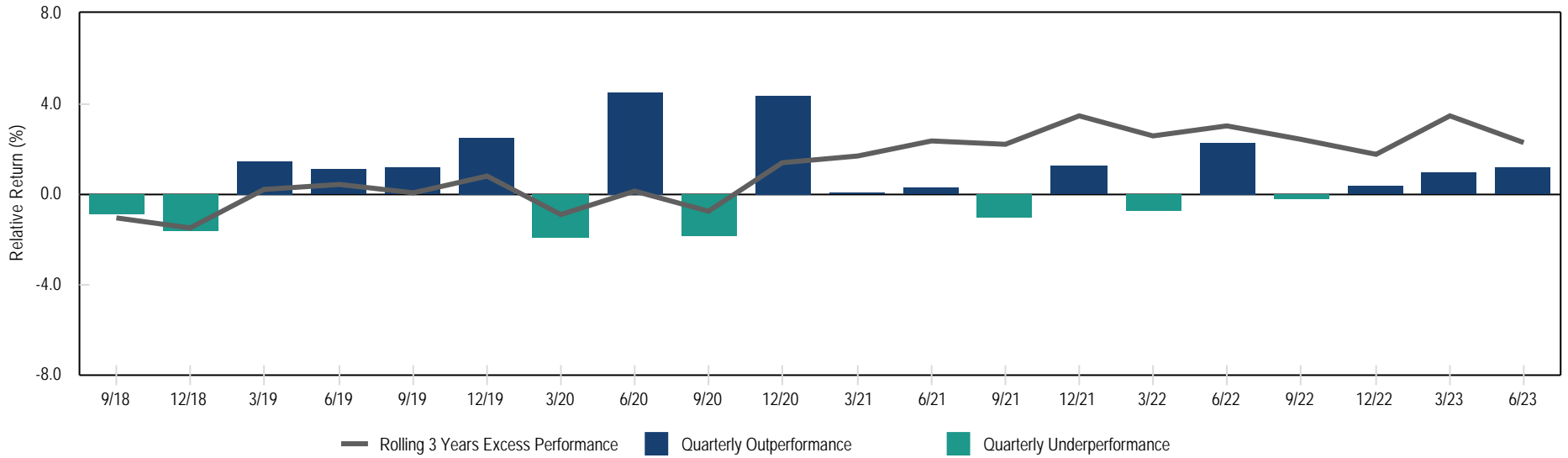
5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager E	5.54	21.37	0.29
■ MSCI AC World ex USA Value	3.31	18.58	0.19

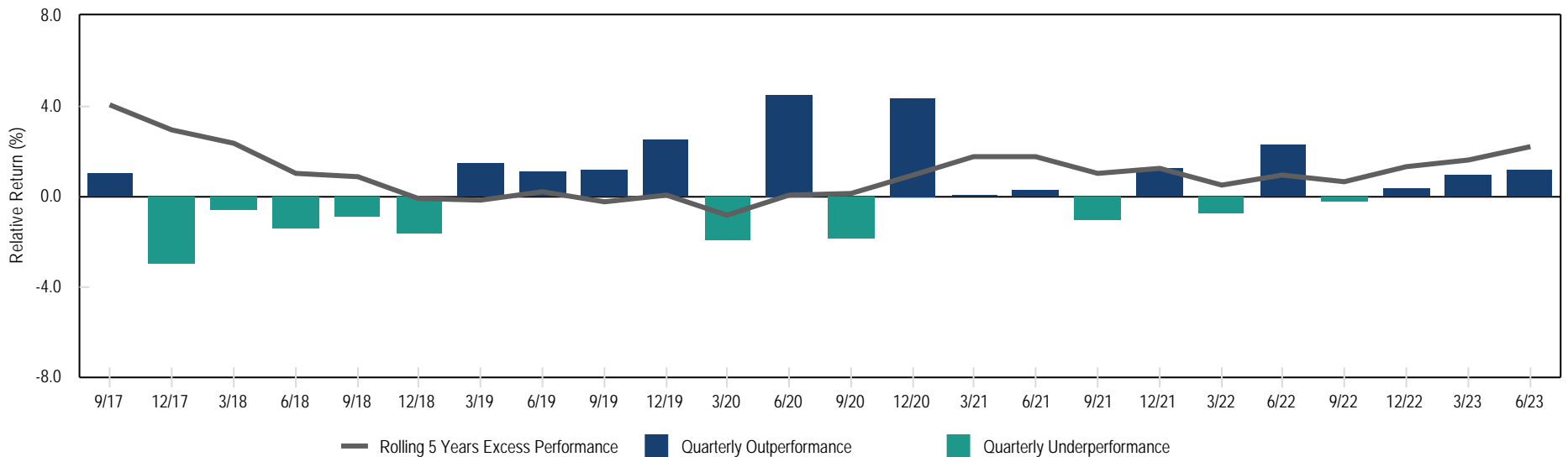
Manager E  
 Rolling Return Analysis (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Rolling 3 Years Annualized Excess Performance



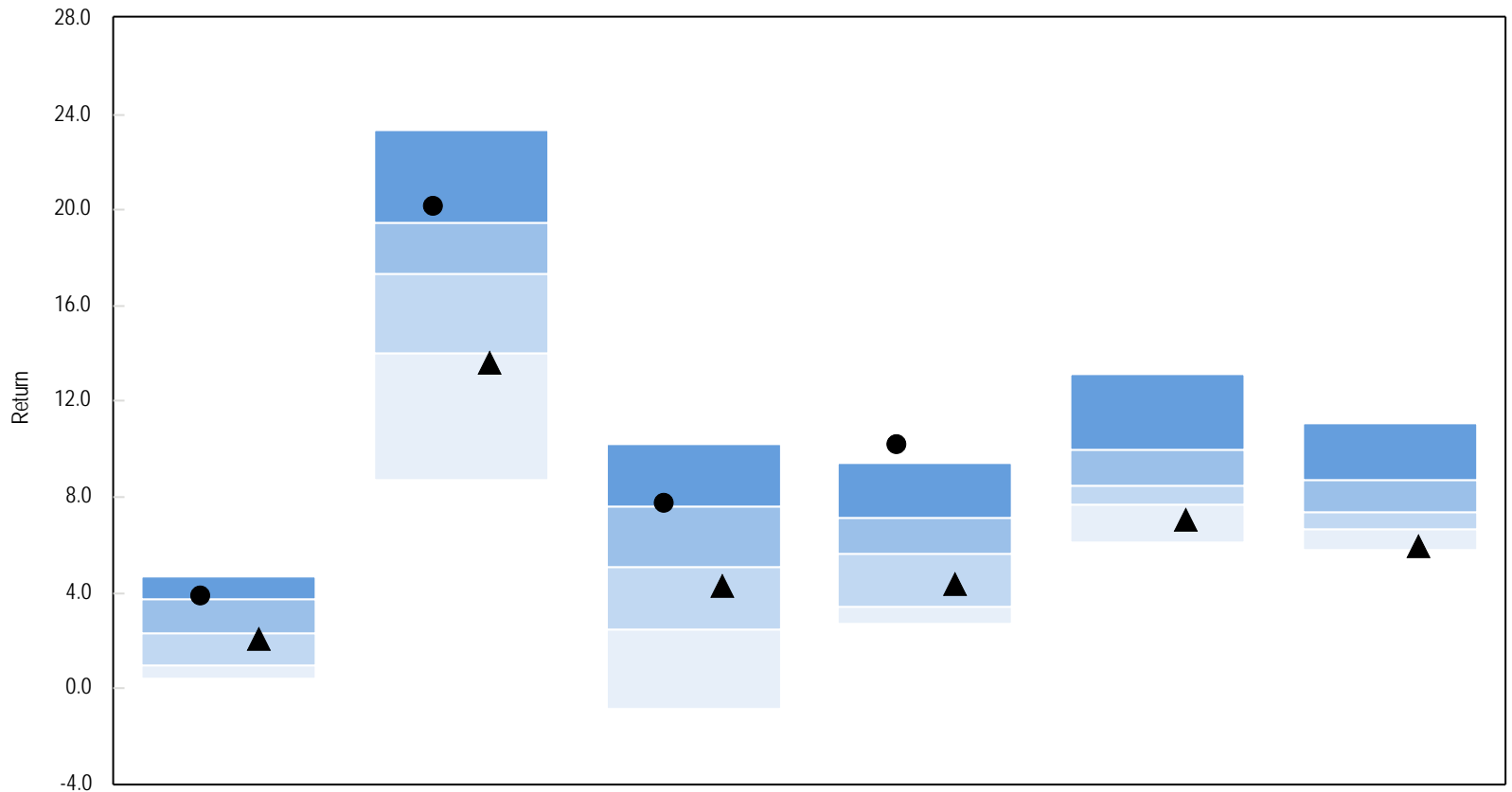
Rolling 5 Years Annualized Excess Performance



Manager F  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager F vs. eV ACWI ex-US All Cap Growth Eq Gross Universe

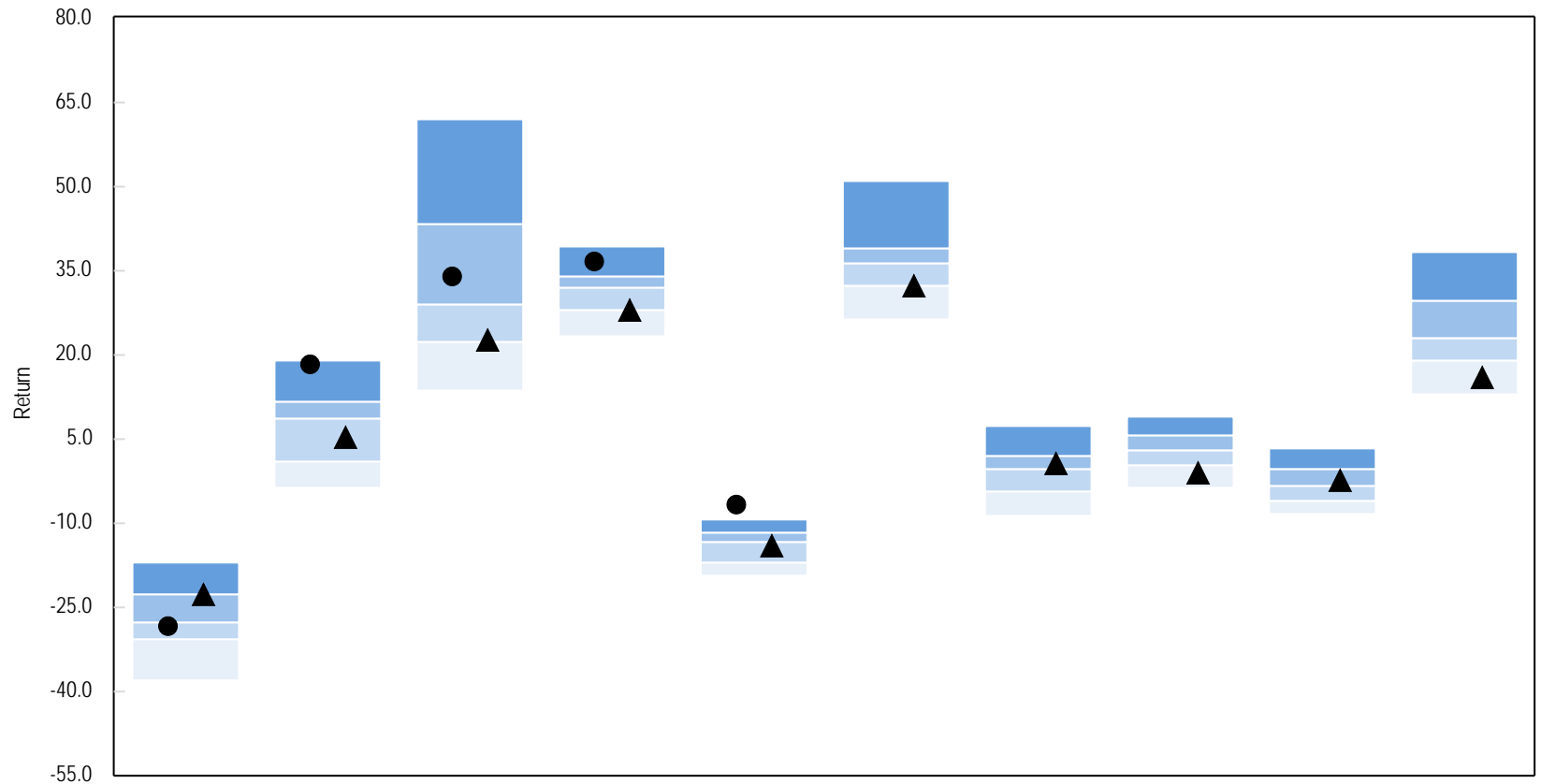


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager F	3.94 (18)	20.21 (24)	7.80 (23)	10.21 (1)	-	-
▲ MSCI AC World ex USA Growth	2.08 (64)	13.65 (77)	4.27 (64)	4.39 (62)	7.05 (83)	5.96 (93)
5th Percentile	4.67	23.35	10.26	9.45	13.15	11.10
1st Quartile	3.72	19.43	7.58	7.16	9.97	8.69
Median	2.34	17.36	5.08	5.65	8.48	7.39
3rd Quartile	0.98	14.01	2.48	3.42	7.72	6.68
95th Percentile	0.40	8.75	-0.82	2.73	6.12	5.83
Population	31	31	30	29	26	24

# Manager F Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Manager F vs. eV ACWI ex-US All Cap Growth Eq Gross Universe

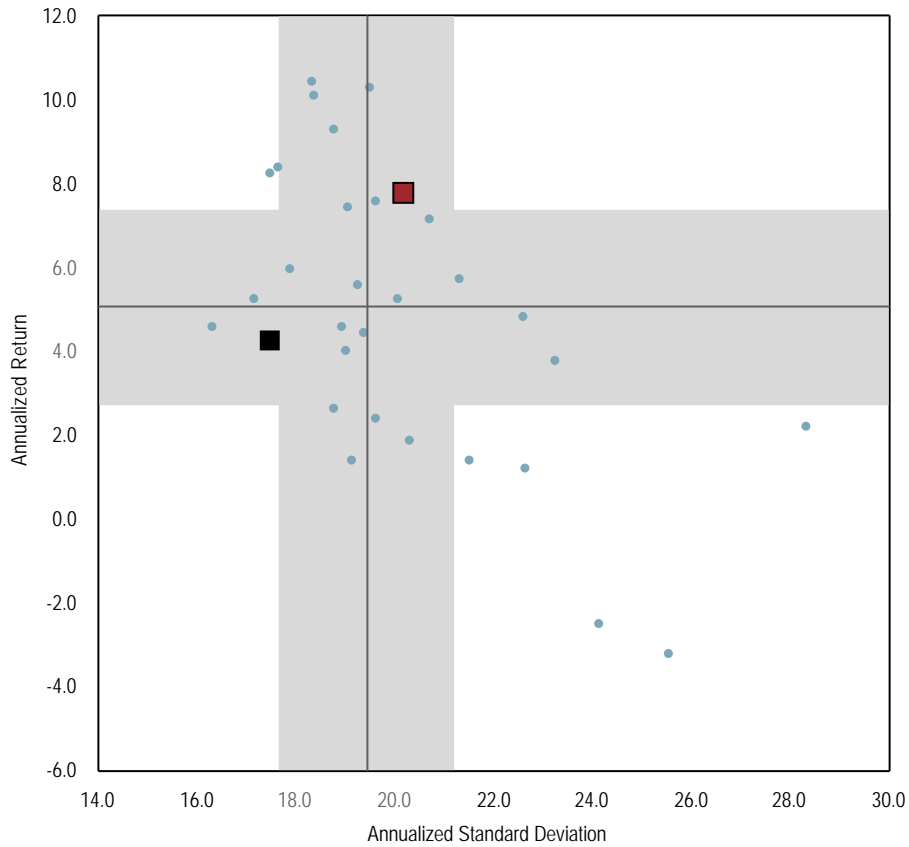


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager F	-28.19 (58)	18.49 (7)	34.02 (37)	36.70 (14)	-6.70 (1)	-	-	-	-	-
▲ MSCI AC World ex USA Growth	-22.80 (26)	5.37 (67)	22.56 (75)	27.84 (76)	-14.10 (51)	32.47 (72)	0.50 (43)	-0.91 (84)	-2.29 (41)	15.86 (84)
5th Percentile	-17.06	19.16	62.10	39.44	-9.47	51.07	7.48	8.85	3.31	38.17
1st Quartile	-22.63	11.67	43.40	34.14	-11.81	39.15	2.06	5.67	-0.20	29.70
Median	-27.66	8.62	28.96	31.92	-13.46	36.23	-0.30	3.12	-3.41	23.06
3rd Quartile	-30.71	0.99	22.46	28.06	-16.88	32.32	-4.22	0.37	-6.01	19.03
95th Percentile	-37.85	-3.61	13.63	23.48	-19.45	26.48	-8.60	-3.63	-8.23	13.03
Population	32	34	34	35	33	31	31	32	32	32

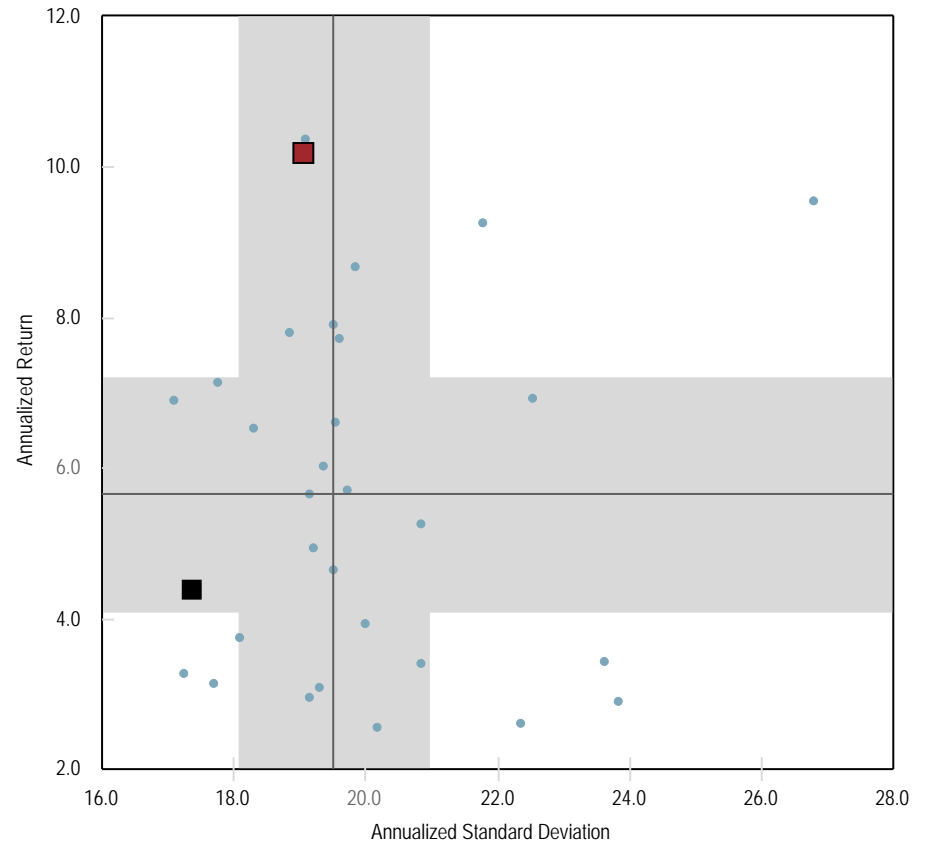
Manager F  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager F	7.80	20.18	0.41
■ MSCI AC World ex USA Growth	4.27	17.47	0.26

5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager F	10.21	19.04	0.53
■ MSCI AC World ex USA Growth	4.39	17.35	0.25



## Domestic Fixed Income

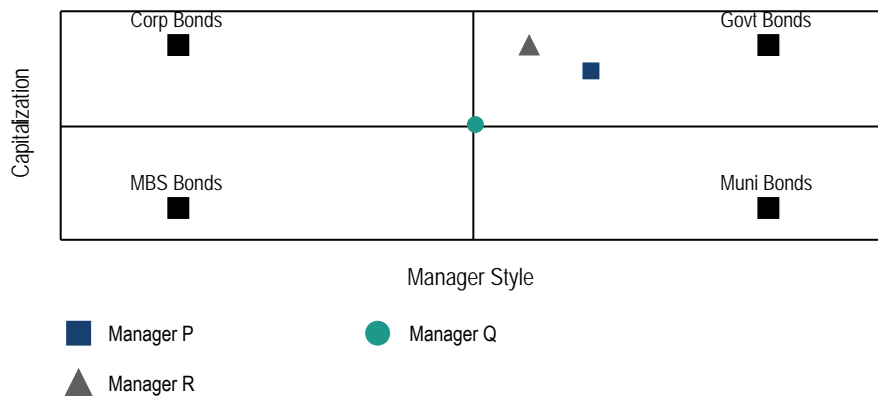
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# Total Domestic Fixed Income Asset Class Overview (Gross of Fees)

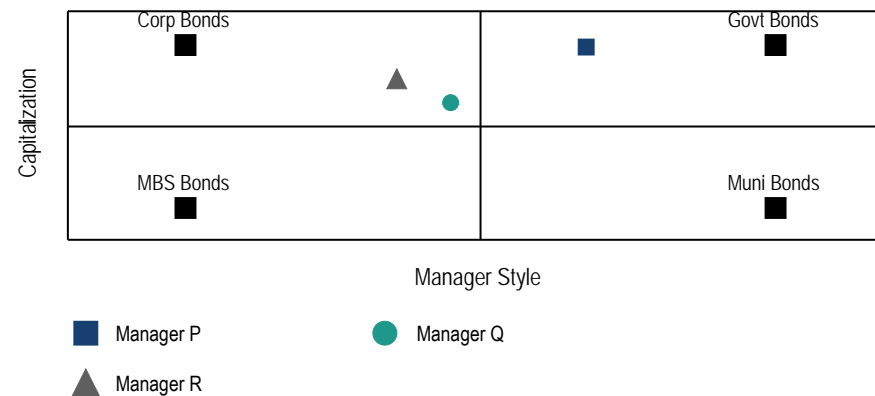
Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Domestic Fixed Income</b>	<b>270,875,586</b>	<b>100.0</b>	<b>0.3</b>	<b>3.7</b>	<b>2.7</b>	<b>-0.5</b>	<b>2.5</b>	<b>2.7</b>	<b>-9.6</b>	<b>0.9</b>	<b>8.1</b>	<b>9.9</b>	<b>0.4</b>
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>1.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
<i>InvMetrics Public DB US Fixed Income Rank</i>			<i>10</i>	<i>5</i>	<i>15</i>	<i>9</i>	<i>15</i>	<i>24</i>	<i>15</i>	<i>15</i>	<i>69</i>	<i>23</i>	<i>34</i>
<b>Manager P</b>	<b>410,160</b>	<b>0.2</b>	<b>-4.8</b>	<b>-2.1</b>	<b>-4.4</b>	<b>-5.3</b>	<b>0.3</b>	<b>-</b>	<b>-14.1</b>	<b>-1.6</b>	<b>9.4</b>	<b>10.2</b>	<b>0.3</b>
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>-</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
<i>eV US Core Fixed Inc Rank</i>			<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>-</i>	<i>95</i>	<i>77</i>	<i>24</i>	<i>10</i>	<i>25</i>
<b>Manager Q</b>	<b>60,874,556</b>	<b>22.5</b>	<b>0.2</b>	<b>3.4</b>	<b>2.2</b>	<b>-1.4</b>	<b>2.4</b>	<b>-</b>	<b>-10.5</b>	<b>-0.5</b>	<b>9.9</b>	<b>10.2</b>	<b>0.1</b>
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>-</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
<i>eV US Core Fixed Inc Rank</i>			<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	<i>2</i>	<i>-</i>	<i>11</i>	<i>21</i>	<i>14</i>	<i>10</i>	<i>41</i>
<b>Manager R</b>	<b>68,058,774</b>	<b>25.1</b>	<b>3.4</b>	<b>7.3</b>	<b>11.9</b>	<b>6.3</b>	<b>4.6</b>	<b>-</b>	<b>-0.2</b>	<b>5.6</b>	<b>3.0</b>	<b>9.1</b>	<b>1.0</b>
<i>Morningstar LSTA US Leveraged Loan</i>			<i>3.1</i>	<i>6.5</i>	<i>10.7</i>	<i>6.3</i>	<i>4.1</i>	<i>-</i>	<i>-0.8</i>	<i>5.2</i>	<i>3.1</i>	<i>8.6</i>	<i>0.4</i>
<i>eV US Float-Rate Bank Loan Fixed Inc Rank</i>			<i>15</i>	<i>10</i>	<i>11</i>	<i>38</i>	<i>18</i>	<i>-</i>	<i>25</i>	<i>42</i>	<i>47</i>	<i>42</i>	<i>37</i>
<b>Manager S</b>	<b>78,767,203</b>	<b>29.1</b>	<b>-1.4</b>	<b>1.8</b>	<b>-2.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-12.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Blmbg. U.S. Treasury: 7-10 Year</i>			<i>-1.8</i>	<i>1.6</i>	<i>-3.1</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-14.9</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>eV US Government Fixed Inc Rank</i>			<i>81</i>	<i>55</i>	<i>76</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>80</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Manager T</b>	<b>62,764,893</b>	<b>23.2</b>	<b>-1.4</b>	<b>2.1</b>	<b>-1.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-11.9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Blmbg. U.S. TIPS</i>			<i>-1.4</i>	<i>1.9</i>	<i>-1.4</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-11.8</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<i>eV US TIPS / Inflation Fixed Inc Rank</i>			<i>50</i>	<i>18</i>	<i>67</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>81</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>

Fixed Income Effective Style Map  
3 Years Ending June 30, 2023



Fixed Income Effective Style Map  
5 Years Ending June 30, 2023



# Total Domestic Fixed Income Asset Class Overview (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Domestic Fixed Income</b>	<b>270,875,586</b>	<b>100.0</b>	<b>0.2</b>	<b>3.5</b>	<b>2.5</b>	<b>-0.8</b>	<b>2.1</b>	<b>2.4</b>	<b>-9.9</b>	<b>0.5</b>	<b>7.7</b>	<b>9.5</b>	<b>0.0</b>
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>1.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
Manager P	410,160	0.2	-4.9	-2.3	-4.7	-5.6	0.0	-	-14.4	-1.8	9.1	9.9	0.1
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>1.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
Manager Q	60,874,556	22.5	0.1	3.2	1.8	-1.8	2.0	-	-10.9	-0.9	9.4	9.7	-0.3
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>2.1</i>	<i>-0.9</i>	<i>-4.0</i>	<i>0.8</i>	<i>1.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>
Manager R	68,058,774	25.1	3.3	7.1	11.5	5.9	4.3	-	-0.5	5.2	2.6	8.7	0.7
<i>Morningstar LSTA US Leveraged Loan</i>			<i>3.1</i>	<i>6.5</i>	<i>10.7</i>	<i>6.3</i>	<i>4.1</i>	<i>4.1</i>	<i>-0.8</i>	<i>5.2</i>	<i>3.1</i>	<i>8.6</i>	<i>0.4</i>
Manager S	78,767,203	29.1	-1.4	1.8	-2.1	-	-	-	-12.5	-	-	-	-
<i>Blmbg. U.S. Treasury: 7-10 Year</i>			<i>-1.8</i>	<i>1.6</i>	<i>-3.1</i>	<i>-6.0</i>	<i>0.6</i>	<i>1.3</i>	<i>-14.9</i>	<i>-3.1</i>	<i>10.0</i>	<i>8.5</i>	<i>0.9</i>
Manager T	62,764,893	23.2	-1.4	2.1	-1.3	-	-	-	-11.9	-	-	-	-
<i>Blmbg. U.S. TIPS</i>			<i>-1.4</i>	<i>1.9</i>	<i>-1.4</i>	<i>-0.1</i>	<i>2.5</i>	<i>2.1</i>	<i>-11.8</i>	<i>6.0</i>	<i>11.0</i>	<i>8.4</i>	<i>-1.3</i>

## 1 Year Correlation Matrix

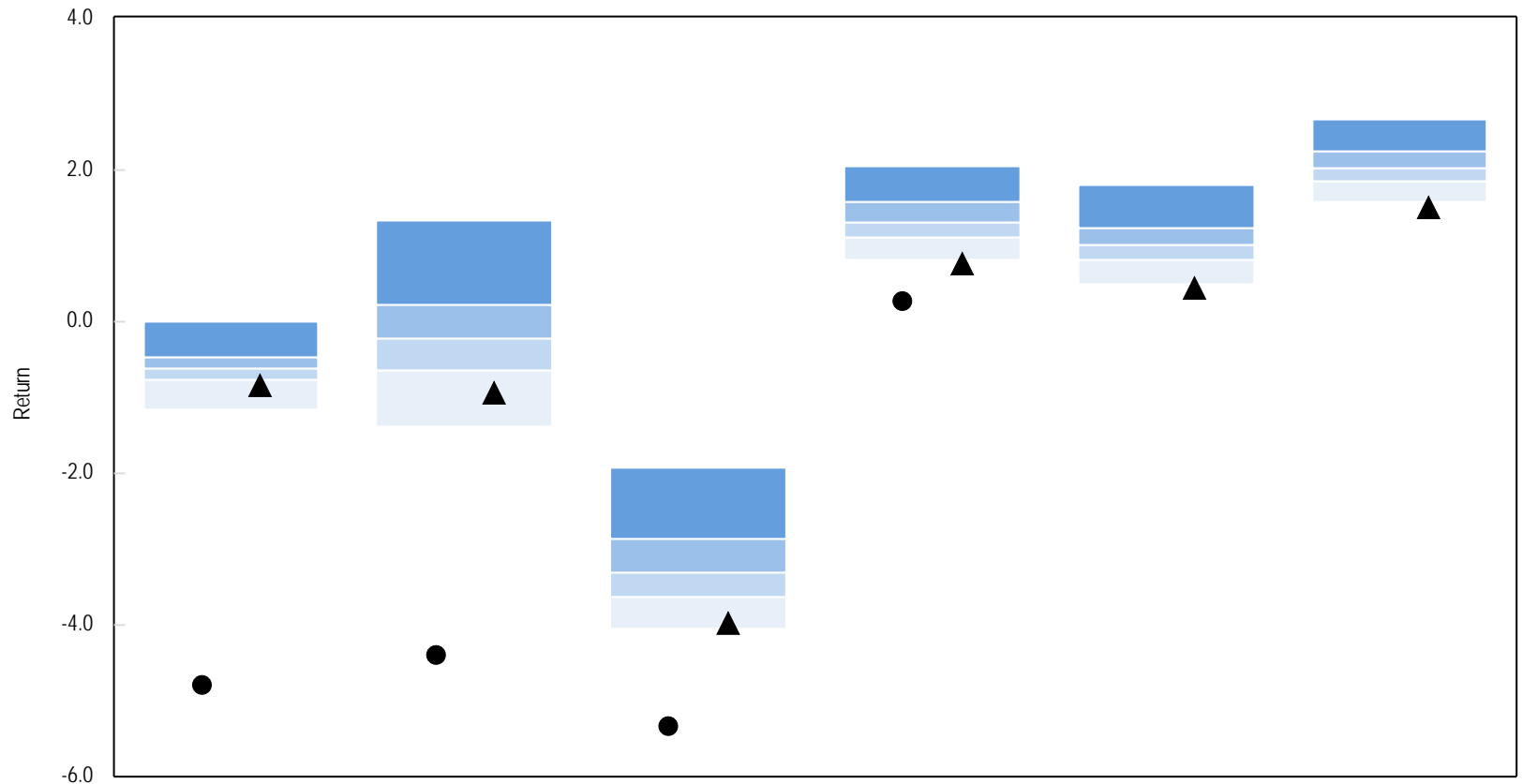
	Total Domestic Fixed Income	BlackRock Core Bond	Dodge & Cox Income Fund	Pacific Asset Corporate Loan	Blmbg. U.S. Aggregate Index
Total Domestic Fixed Income	1.00				
Manager P	0.84	1.00			
Manager Q	0.99	0.84	1.00		
Manager R	0.88	0.50	0.86	1.00	
Blmbg. U.S. Aggregate Index	1.00	0.86	1.00	0.86	1.00

Manager AH liquidated in 12/28/18. Manager AI liquidated 3/11/19. Manager AJ funded 8/26/19. Manager AK liquidated 12/28/2021.

Manager P  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager P vs. eV US Core Fixed Inc Gross Universe

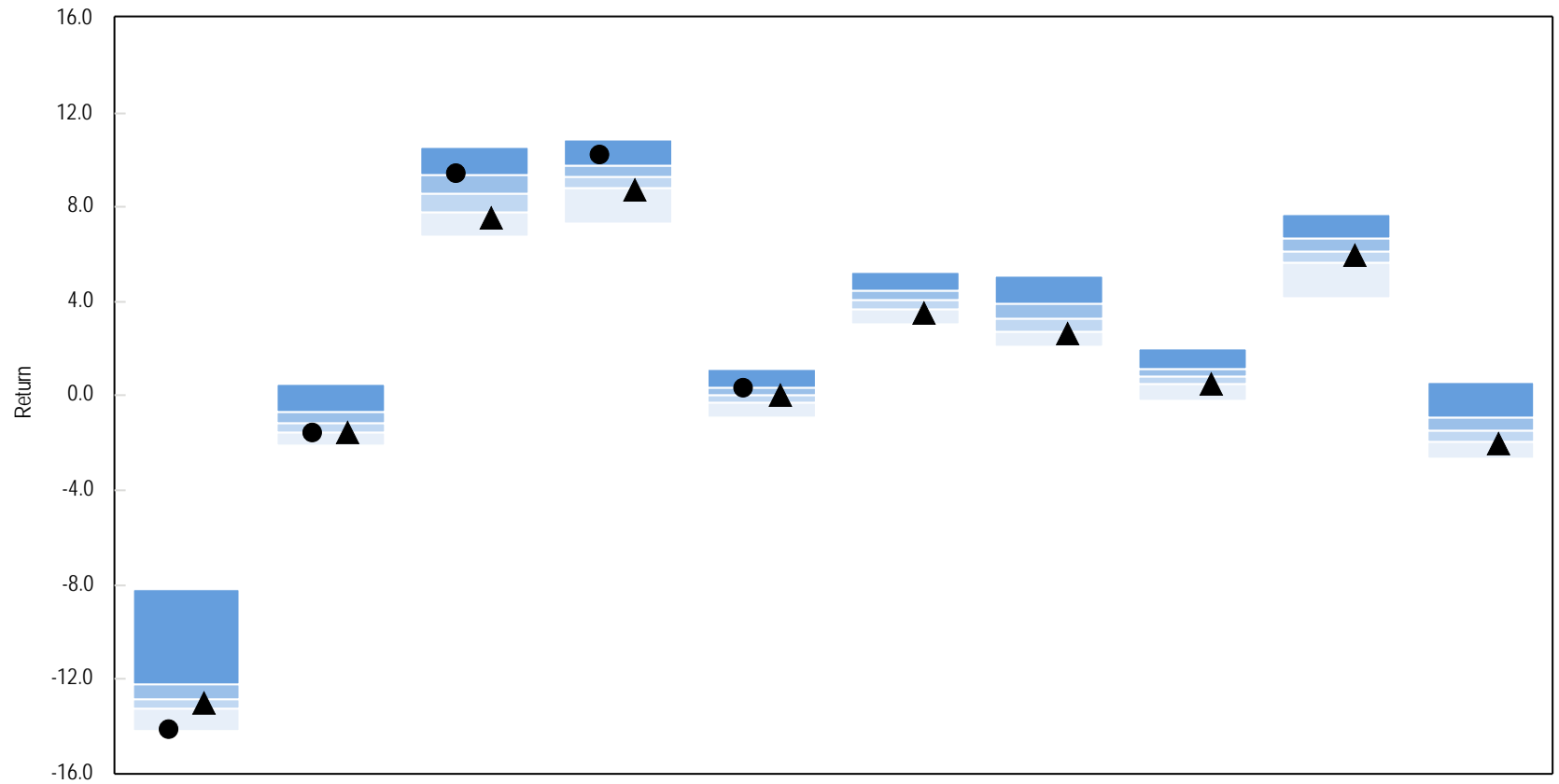


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager P	-4.78 (100)	-4.39 (100)	-5.33 (100)	0.27 (100)	-	-
▲ Blmbg. U.S. Aggregate Index	-0.84 (84)	-0.94 (85)	-3.97 (94)	0.77 (96)	0.44 (97)	1.52 (97)
5th Percentile	0.00	1.33	-1.94	2.06	1.79	2.65
1st Quartile	-0.47	0.23	-2.88	1.59	1.23	2.24
Median	-0.62	-0.22	-3.32	1.32	1.00	2.03
3rd Quartile	-0.78	-0.64	-3.63	1.10	0.82	1.85
95th Percentile	-1.15	-1.38	-4.05	0.82	0.50	1.59
Population	231	230	221	212	207	200

Manager P  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager P vs. eV US Core Fixed Inc Gross Universe

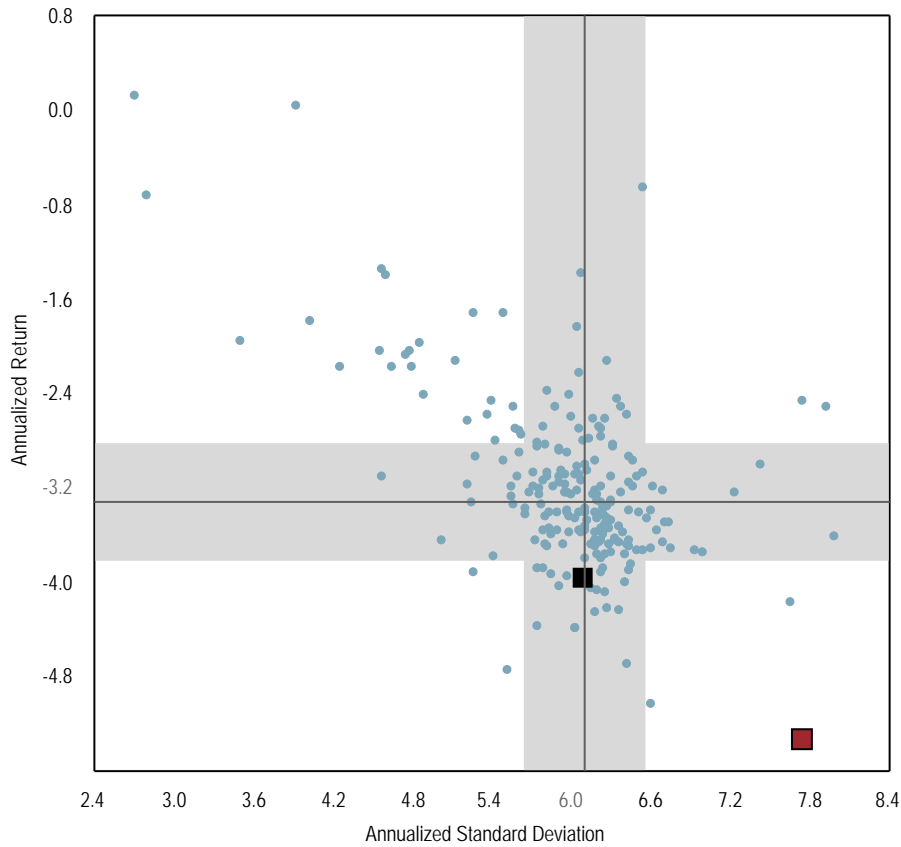


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager P	-14.11 (95)	-1.56 (77)	9.42 (24)	10.24 (10)	0.35 (25)	-	-	-	-	-
▲ Blmbg. U.S. Aggregate Index	-13.01 (64)	-1.55 (77)	7.51 (85)	8.72 (78)	0.01 (53)	3.54 (84)	2.65 (80)	0.55 (74)	5.97 (62)	-2.02 (79)
5th Percentile	-8.21	0.50	10.57	10.86	1.11	5.25	5.09	2.02	7.70	0.58
1st Quartile	-12.20	-0.64	9.38	9.76	0.34	4.48	3.91	1.18	6.68	-0.91
Median	-12.82	-1.14	8.57	9.31	0.03	4.07	3.27	0.84	6.16	-1.47
3rd Quartile	-13.26	-1.53	7.79	8.84	-0.28	3.70	2.75	0.53	5.66	-1.92
95th Percentile	-14.22	-2.11	6.76	7.30	-0.87	3.06	2.11	-0.17	4.14	-2.68
Population	246	255	258	264	271	281	283	288	298	311

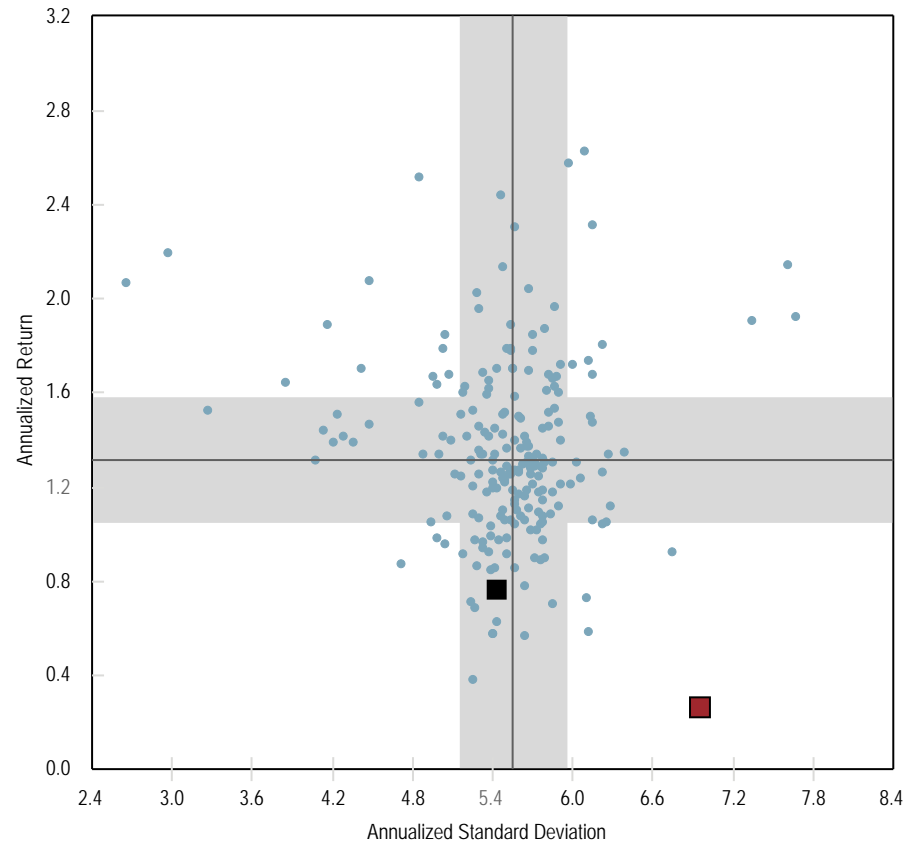
Manager P  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager P	-5.33	7.73	-0.83
■ Blmbg. U.S. Aggregate Index	-3.97	6.09	-0.85

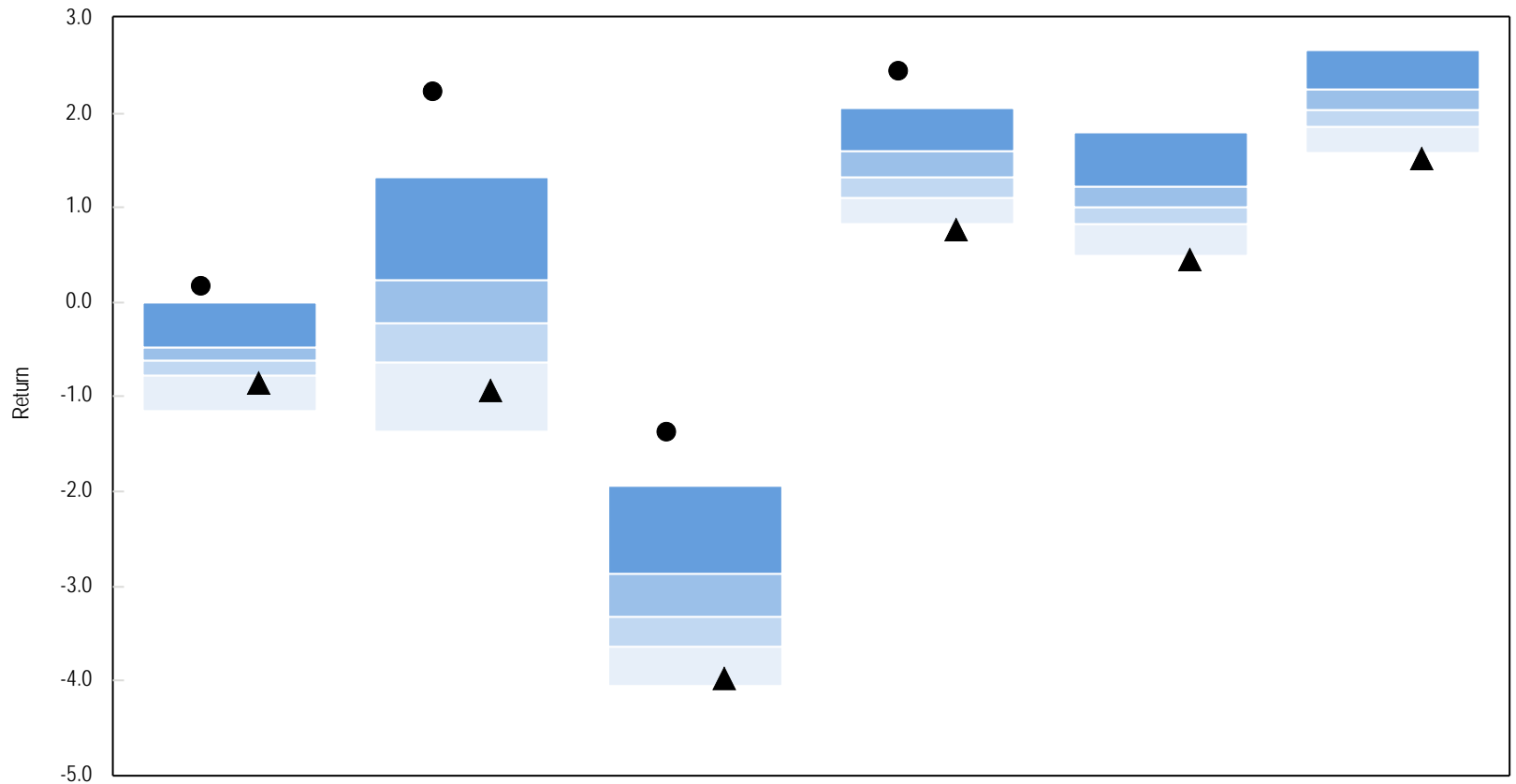
5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager P	0.27	6.95	-0.15
■ Blmbg. U.S. Aggregate Index	0.77	5.43	-0.12

Manager Q  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager Q vs. eV US Core Fixed Inc Gross Universe

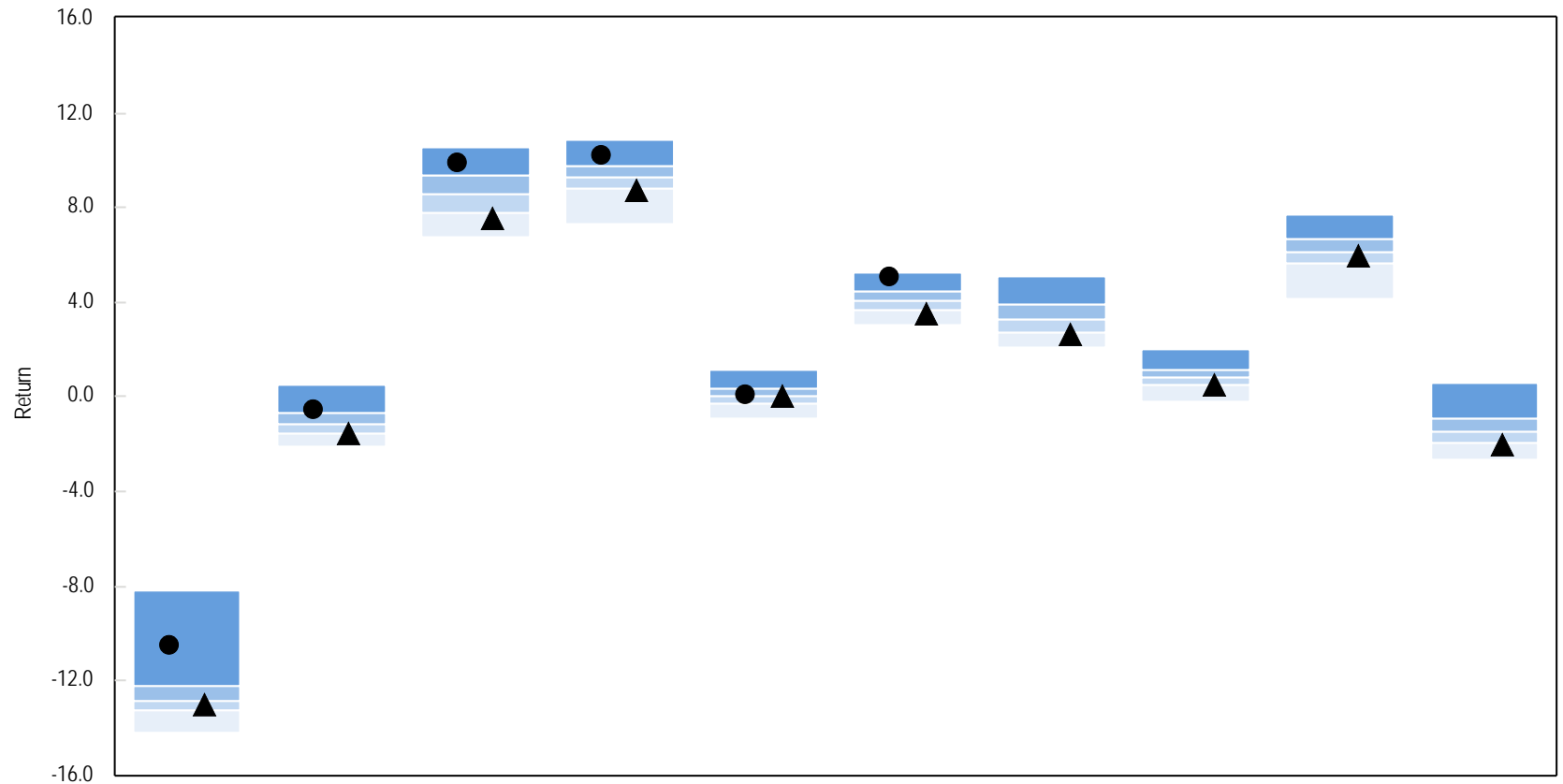


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager Q	0.18 (3)	2.23 (3)	-1.36 (3)	2.44 (2)	-	-
▲ Blmbg. U.S. Aggregate Index	-0.84 (84)	-0.94 (85)	-3.97 (94)	0.77 (96)	0.44 (97)	1.52 (97)
5th Percentile	0.00	1.33	-1.94	2.06	1.79	2.65
1st Quartile	-0.47	0.23	-2.88	1.59	1.23	2.24
Median	-0.62	-0.22	-3.32	1.32	1.00	2.03
3rd Quartile	-0.78	-0.64	-3.63	1.10	0.82	1.85
95th Percentile	-1.15	-1.38	-4.05	0.82	0.50	1.59
Population	231	230	221	212	207	200

Manager Q  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager Q vs. eV US Core Fixed Inc Gross Universe



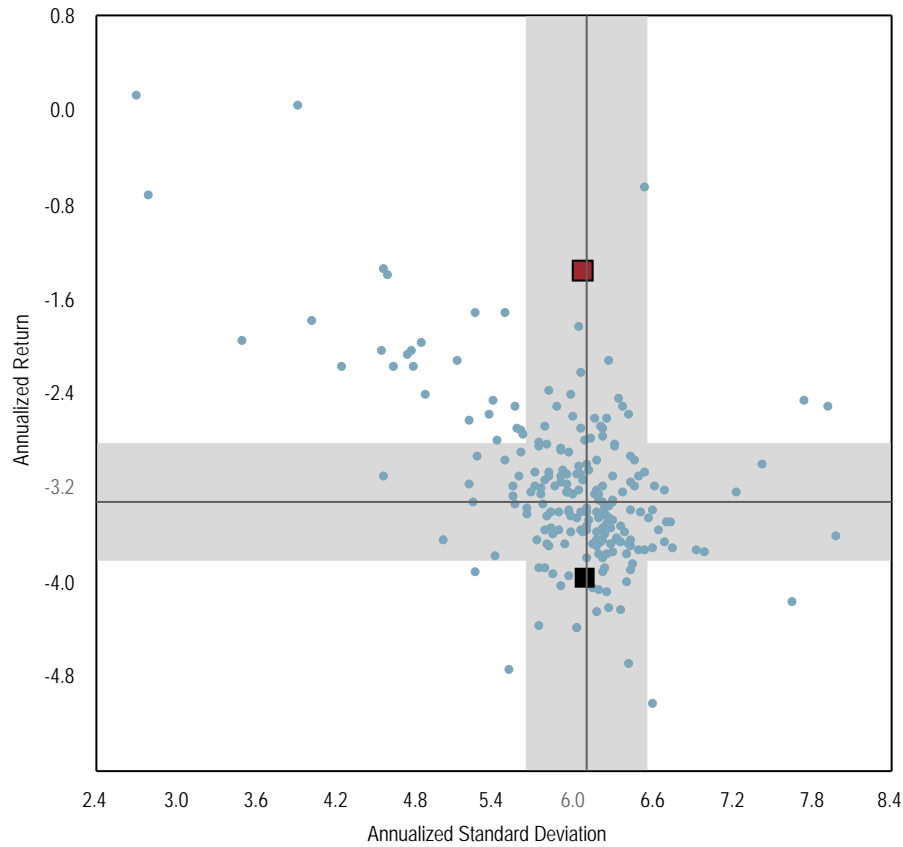
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager Q	-10.50 (11)	-0.49 (21)	9.91 (14)	10.20 (10)	0.12 (41)	5.12 (6)	-	-	-	-
▲ Blmbg. U.S. Aggregate Index	-13.01 (64)	-1.55 (77)	7.51 (85)	8.72 (78)	0.01 (53)	3.54 (84)	2.65 (80)	0.55 (74)	5.97 (62)	-2.02 (79)
5th Percentile	-8.21	0.50	10.57	10.86	1.11	5.25	5.09	2.02	7.70	0.58
1st Quartile	-12.20	-0.64	9.38	9.76	0.34	4.48	3.91	1.18	6.68	-0.91
Median	-12.82	-1.14	8.57	9.31	0.03	4.07	3.27	0.84	6.16	-1.47
3rd Quartile	-13.26	-1.53	7.79	8.84	-0.28	3.70	2.75	0.53	5.66	-1.92
95th Percentile	-14.22	-2.11	6.76	7.30	-0.87	3.06	2.11	-0.17	4.14	-2.68
Population	246	255	258	264	271	281	283	288	298	311



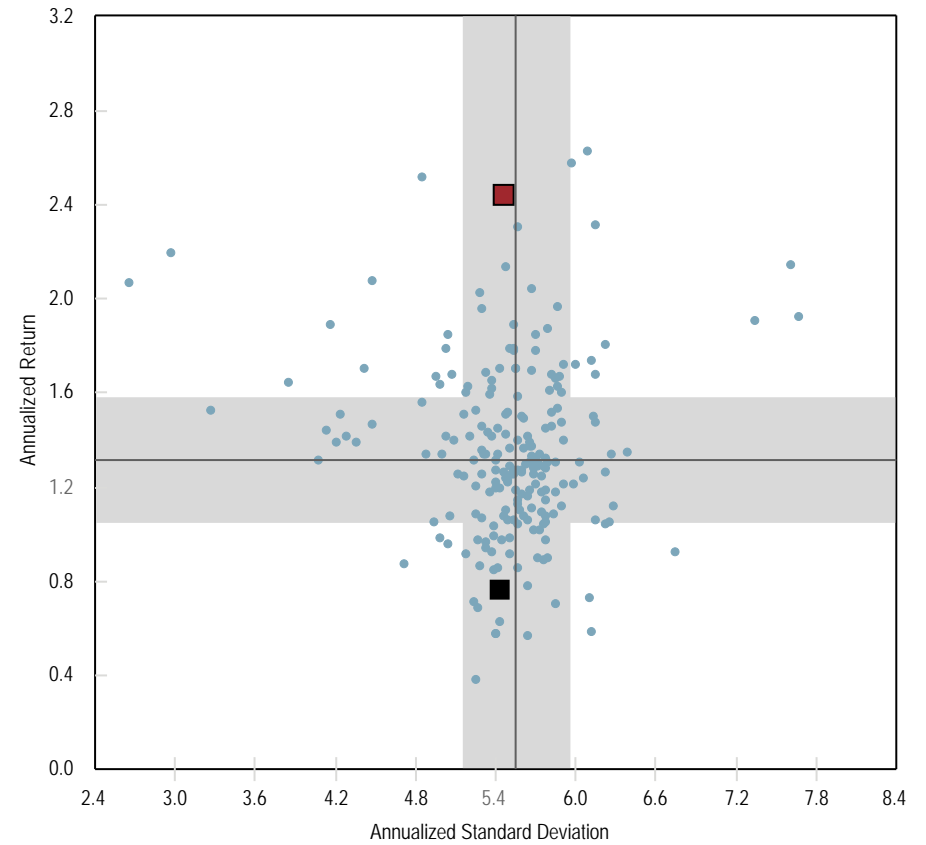
Manager Q  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager Q	-1.36	6.06	-0.41
■ Blmbg. U.S. Aggregate Index	-3.97	6.09	-0.85

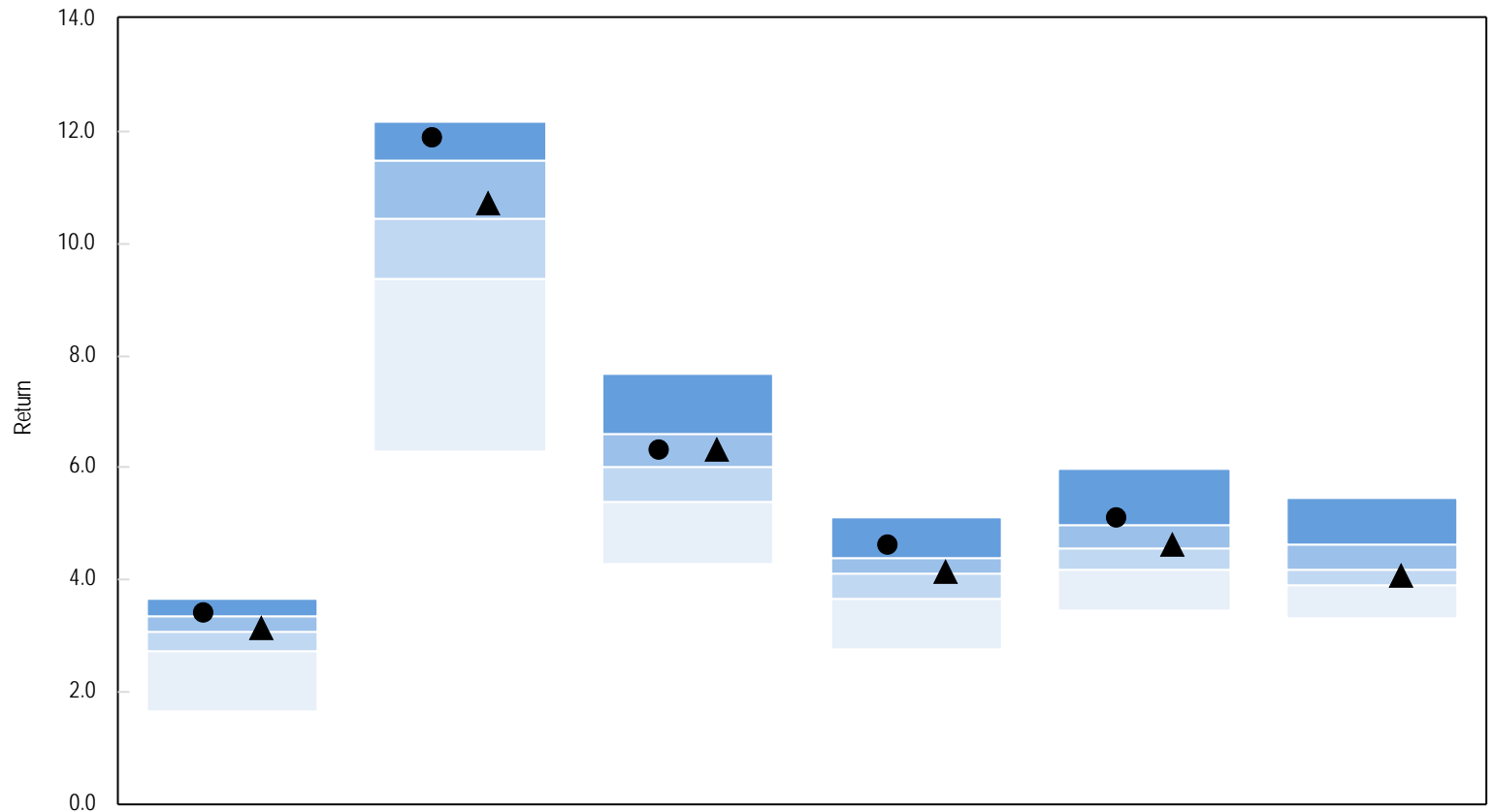
5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager Q	2.44	5.46	0.19
■ Blmbg. U.S. Aggregate Index	0.77	5.43	-0.12

Manager R  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager R vs. eV US Float-Rate Bank Loan Fixed Inc Gross Universe

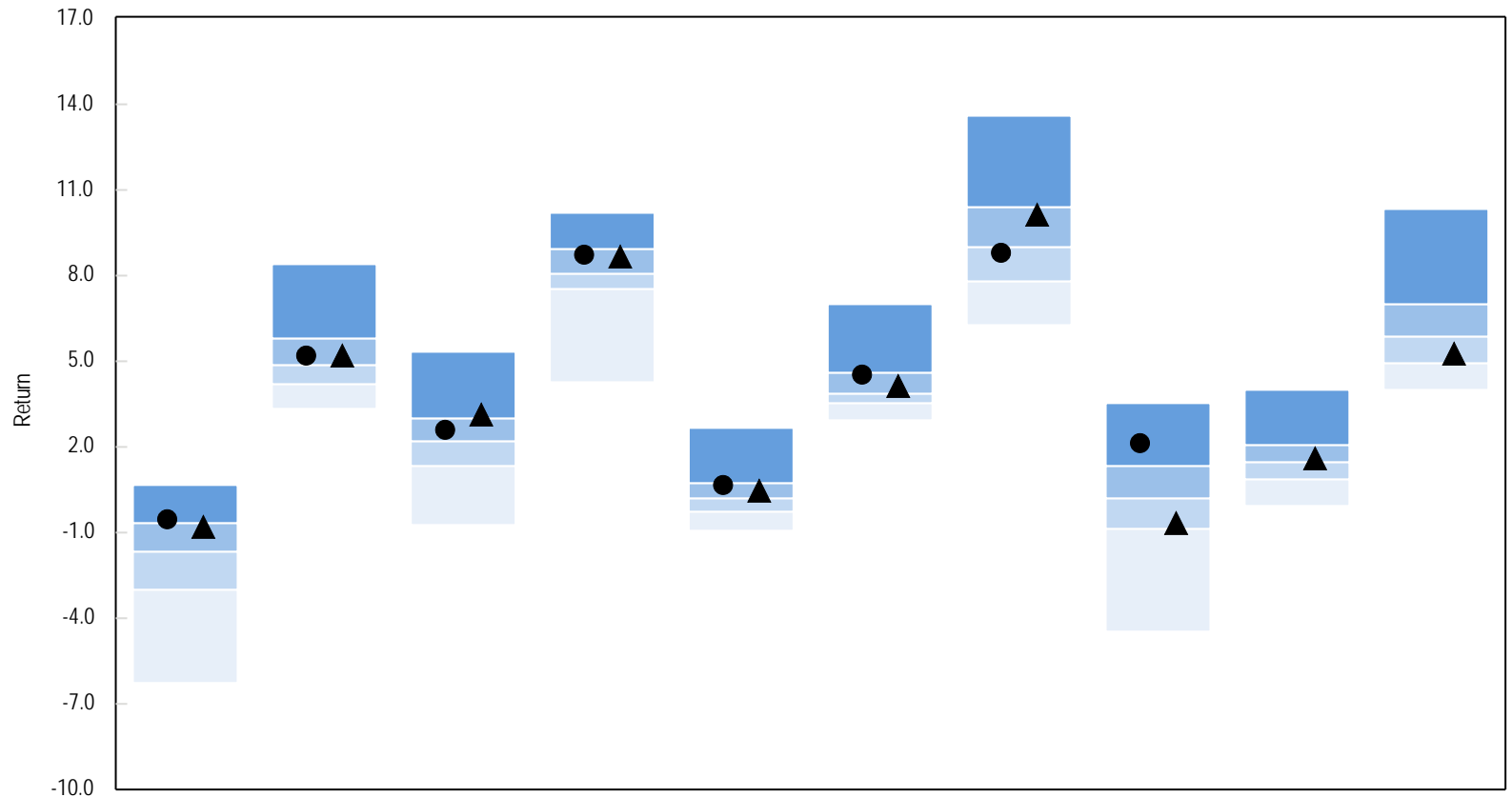


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager R	3.43 (15)	11.89 (11)	6.33 (38)	4.64 (18)	5.11 (20)	-
▲ Morningstar LSTA US Leveraged Loan	3.15 (41)	10.71 (43)	6.31 (38)	4.13 (50)	4.63 (43)	4.07 (63)
5th Percentile	3.68	12.18	7.66	5.11	5.99	5.47
1st Quartile	3.37	11.46	6.61	4.37	4.97	4.62
Median	3.06	10.43	6.01	4.10	4.57	4.20
3rd Quartile	2.75	9.38	5.38	3.66	4.17	3.90
95th Percentile	1.67	6.29	4.29	2.77	3.46	3.32
Population	89	88	86	85	79	71

# Manager R Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

Manager R vs. eV US Float-Rate Bank Loan Fixed Inc Gross Universe

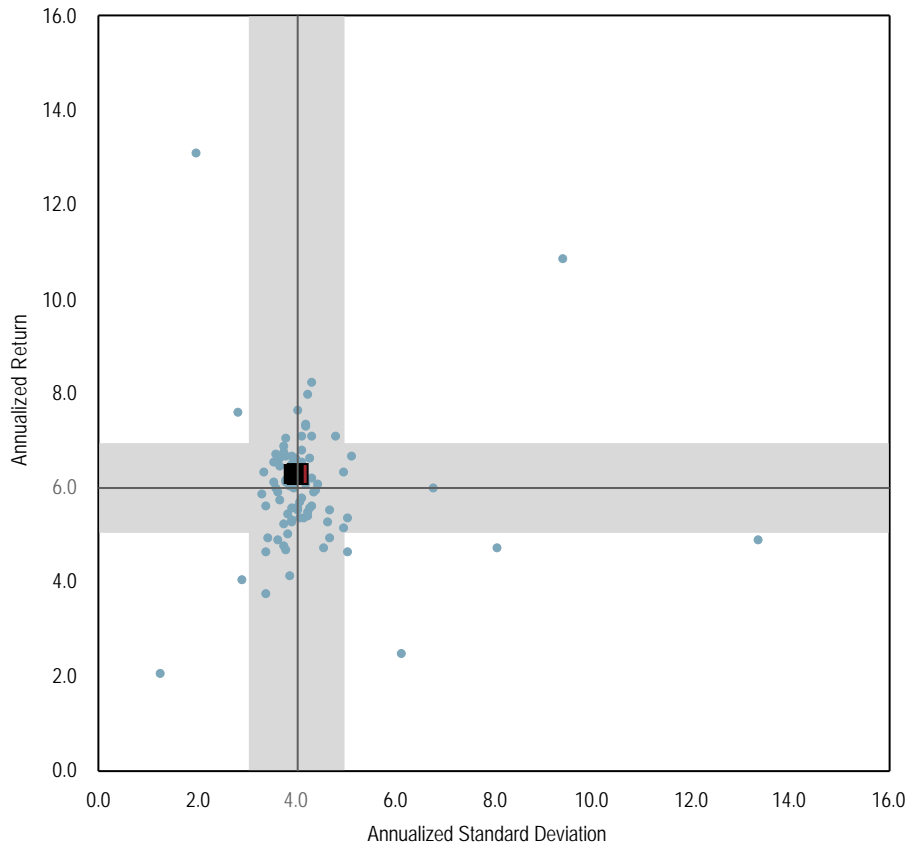


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager R	-0.53 (21)	5.19 (39)	2.61 (37)	8.75 (29)	0.69 (28)	4.56 (27)	8.83 (53)	2.11 (11)	-	-
▲ Morningstar LSTA US Leveraged Loan	-0.77 (28)	5.20 (39)	3.12 (23)	8.64 (35)	0.44 (41)	4.12 (45)	10.16 (30)	-0.69 (71)	1.60 (46)	5.29 (68)
5th Percentile	0.70	8.39	5.36	10.23	2.65	7.02	13.60	3.52	4.01	10.32
1st Quartile	-0.67	5.83	3.02	8.91	0.75	4.58	10.38	1.34	2.05	6.99
Median	-1.64	4.85	2.22	8.07	0.21	3.90	8.99	0.21	1.46	5.85
3rd Quartile	-3.01	4.20	1.31	7.51	-0.26	3.51	7.83	-0.84	0.86	4.93
95th Percentile	-6.29	3.31	-0.75	4.26	-0.94	2.93	6.28	-4.46	-0.08	4.00
Population	93	98	106	107	112	110	113	110	109	93

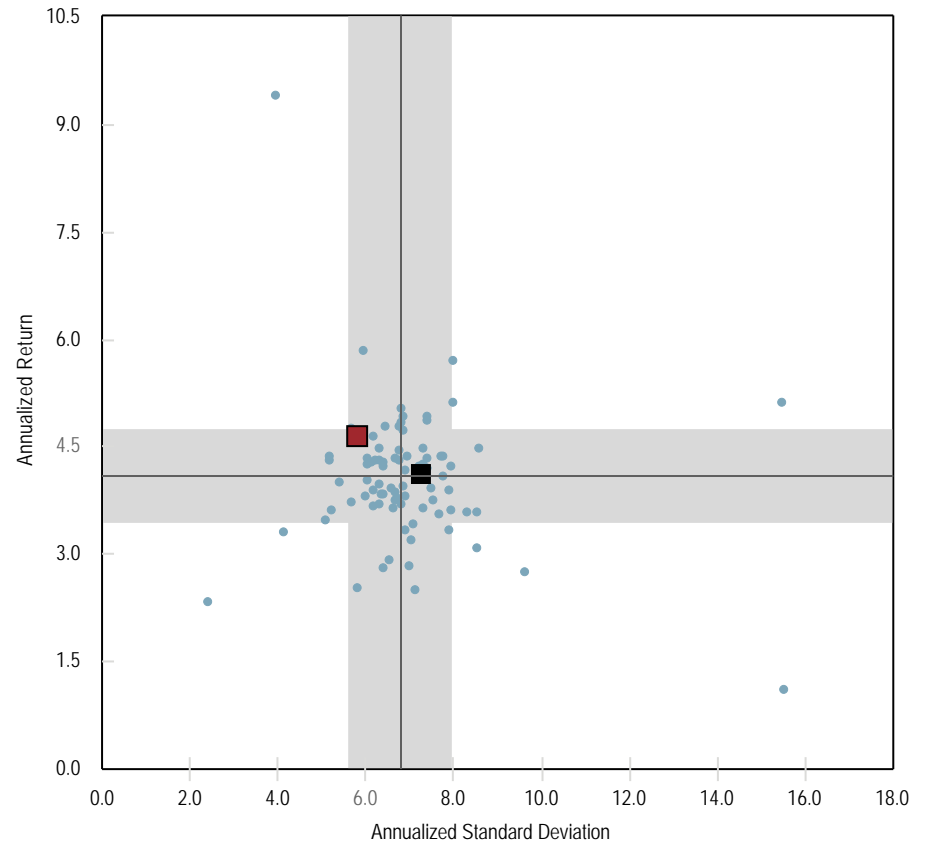
Manager R  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

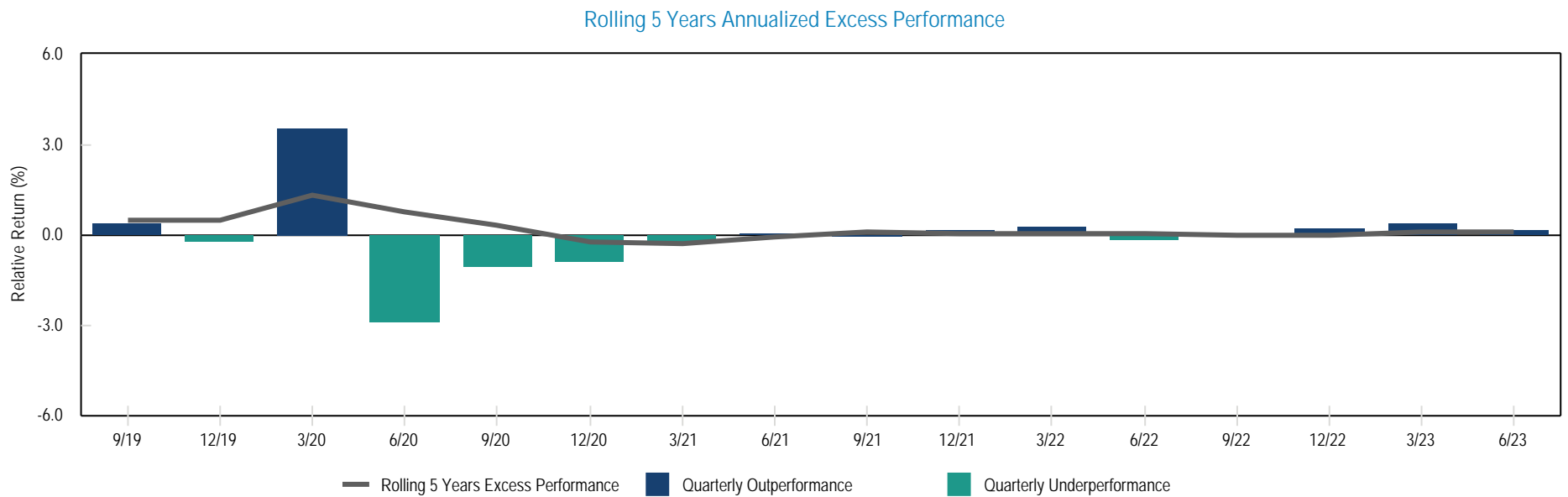
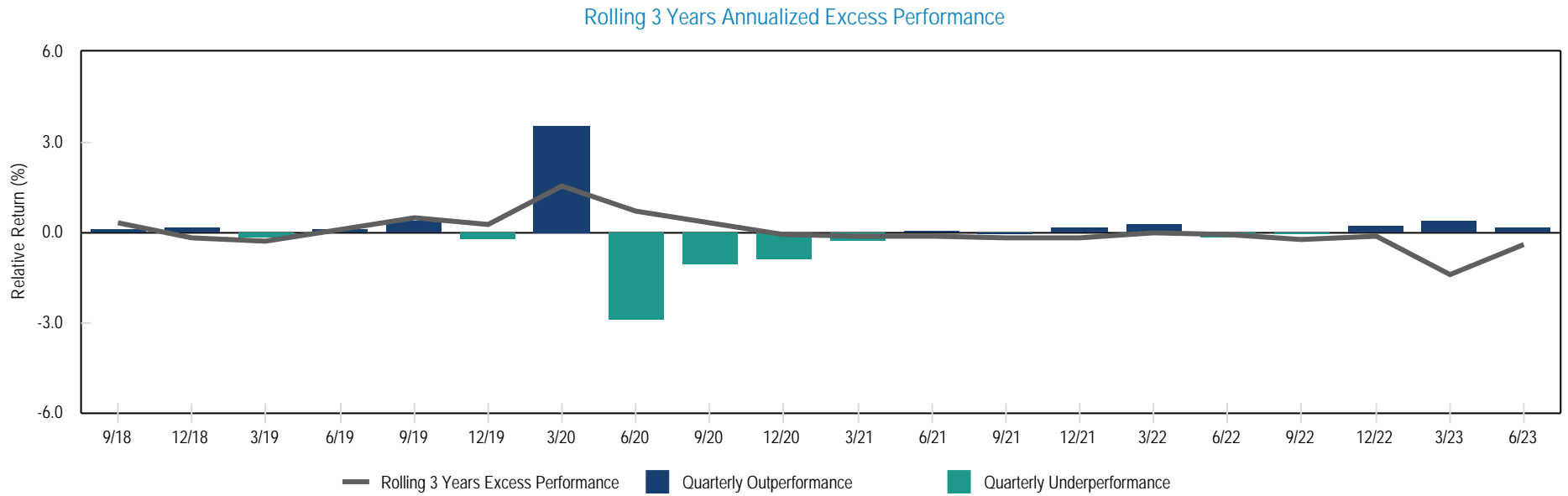
	Return	Standard Deviation	Sharpe Ratio
■ Manager R	6.33	4.04	1.24
■ Morningstar LSTA US Leveraged Loan	6.31	3.97	1.26

5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager R	4.64	5.81	0.54
■ Morningstar LSTA US Leveraged Loan	4.13	7.27	0.38

Manager R  
 Rolling Return Analysis (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023



# Global Fixed Income

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Total Global Fixed Income  
Asset Class Overview (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Global Fixed</b>	<b>80,960,358</b>	<b>-1.5</b>	<b>1.3</b>	<b>2.2</b>	<b>-3.8</b>	<b>-2.5</b>	<b>-1.3</b>	<b>-16.8</b>	<b>-7.0</b>	<b>6.7</b>	<b>7.4</b>	<b>-4.3</b>
<i>FTSE World Government Bond Index</i>		<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>	<i>-0.5</i>	<i>-18.3</i>	<i>-7.0</i>	<i>10.1</i>	<i>5.9</i>	<i>-0.8</i>
<b>Manager U</b>	<b>36,893,170</b>	<b>-2.5</b>	<b>1.0</b>	<b>-0.4</b>	<b>-1.7</b>	<b>-</b>	<b>-</b>	<b>-13.5</b>	<b>-4.0</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>FTSE Non-U.S. World Government Bond</i>		<i>-2.1</i>	<i>1.5</i>	<i>-2.6</i>	<i>-7.8</i>	<i>-3.7</i>	<i>-</i>	<i>-22.1</i>	<i>-9.7</i>	<i>10.8</i>	<i>5.3</i>	<i>-1.8</i>
<i>eV All Global Fixed Inc Rank</i>		<i>95</i>	<i>87</i>	<i>80</i>	<i>57</i>	<i>-</i>	<i>-</i>	<i>55</i>	<i>70</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Manager V</b>	<b>44,067,188</b>	<b>-0.7</b>	<b>1.5</b>	<b>4.4</b>	<b>-5.6</b>	<b>-</b>	<b>-</b>	<b>-19.9</b>	<b>-9.5</b>	<b>3.2</b>	<b>-</b>	<b>-</b>
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		<i>1.9</i>	<i>5.0</i>	<i>8.3</i>	<i>-1.8</i>	<i>-</i>	<i>-</i>	<i>-13.6</i>	<i>-3.9</i>	<i>3.9</i>	<i>-</i>	<i>-</i>
<i>eV All Emg Mkts Fixed Inc Rank</i>		<i>99</i>	<i>95</i>	<i>87</i>	<i>100</i>	<i>-</i>	<i>-</i>	<i>95</i>	<i>94</i>	<i>80</i>	<i>-</i>	<i>-</i>

Manager AH liquidated in 12/28/18. Manager AI liquidated 3/11/19. Manager AJ funded 8/26/19. Manager AK liquidated 12/28/2021.

Total Global Fixed Income  
Asset Class Overview (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Global Fixed</b>	<b>80,960,358</b>	<b>-1.7</b>	<b>0.9</b>	<b>1.4</b>	<b>-4.5</b>	<b>-3.2</b>	<b>-1.8</b>	<b>-17.5</b>	<b>-7.7</b>	<b>6.0</b>	<b>6.9</b>	<b>-4.7</b>
<i>FTSE World Government Bond Index</i>		<i>-1.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>-6.5</i>	<i>-2.0</i>	<i>-0.5</i>	<i>-18.3</i>	<i>-7.0</i>	<i>10.1</i>	<i>5.9</i>	<i>-0.8</i>
<b>Manager U</b>	<b>36,893,170</b>	<b>-2.6</b>	<b>0.7</b>	<b>-0.9</b>	<b>-2.2</b>	<b>-</b>	<b>-</b>	<b>-14.0</b>	<b>-4.4</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>FTSE Non-U.S. World Government Bond</i>		<i>-2.1</i>	<i>1.5</i>	<i>-2.6</i>	<i>-7.8</i>	<i>-3.7</i>	<i>-</i>	<i>-22.1</i>	<i>-9.7</i>	<i>10.8</i>	<i>5.3</i>	<i>-1.8</i>
<b>Manager V</b>	<b>44,067,188</b>	<b>-0.9</b>	<b>1.0</b>	<b>3.3</b>	<b>-6.5</b>	<b>-</b>	<b>-</b>	<b>-20.7</b>	<b>-10.4</b>	<b>2.1</b>	<b>-</b>	<b>-</b>
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		<i>1.9</i>	<i>5.0</i>	<i>8.3</i>	<i>-1.8</i>	<i>-</i>	<i>-</i>	<i>-13.6</i>	<i>-3.9</i>	<i>3.9</i>	<i>-</i>	<i>-</i>

1 Year Correlation Matrix

	Total Global Fixed	Manager U	Manager V	FTSE World Government Bond Index
Total Global Fixed	1.00			
Manager U	0.97	1.00		
Manager V	0.98	0.91	1.00	
FTSE World Government Bond Index	0.91	0.97	0.82	1.00

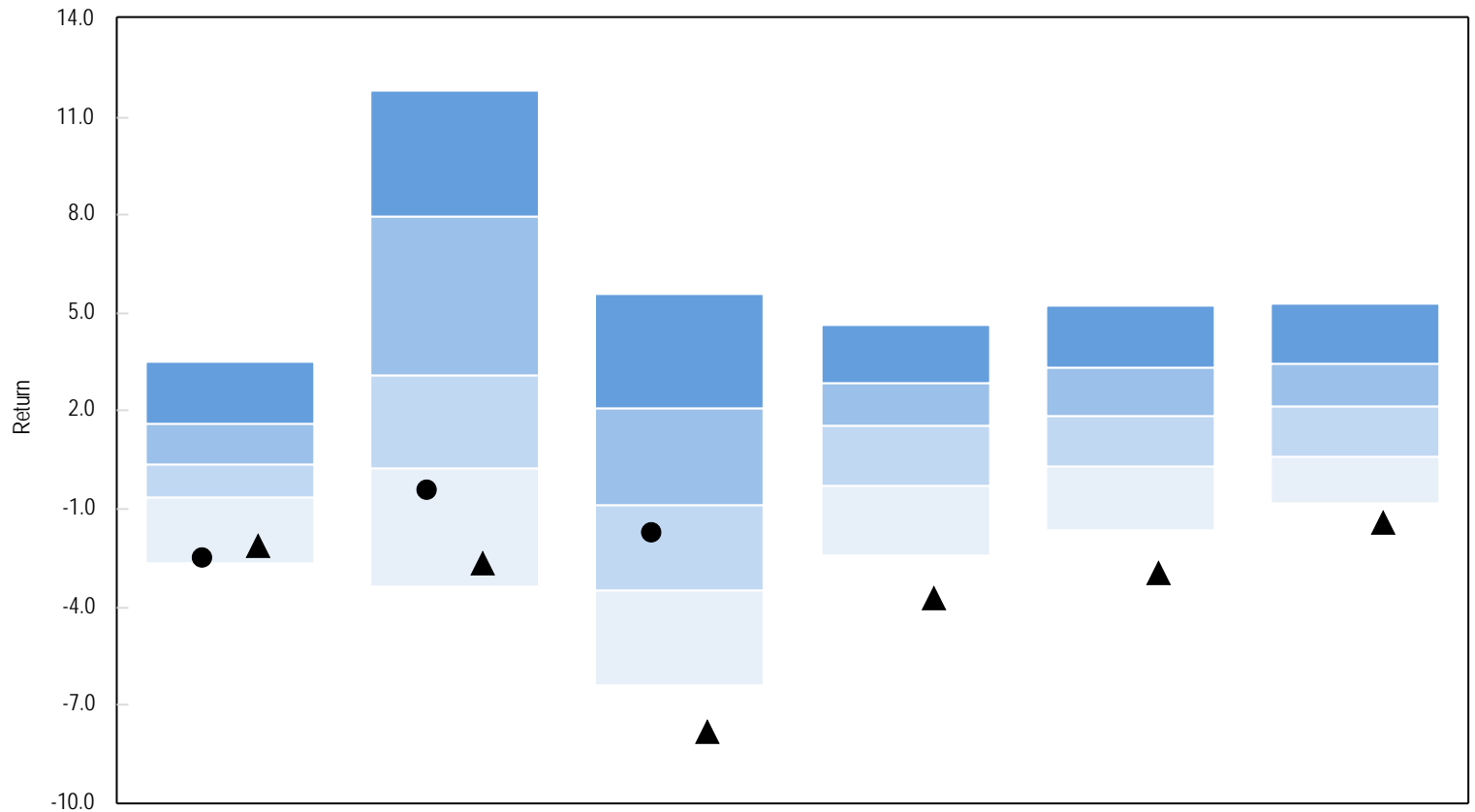
Manager AH liquidated in 12/28/18. Manager AI liquidated 3/11/19. Manager AJ funded 8/26/19. Manager AK liquidated 12/28/2021.



Manager U  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager U vs. eV All Global Fixed Inc Gross Universe

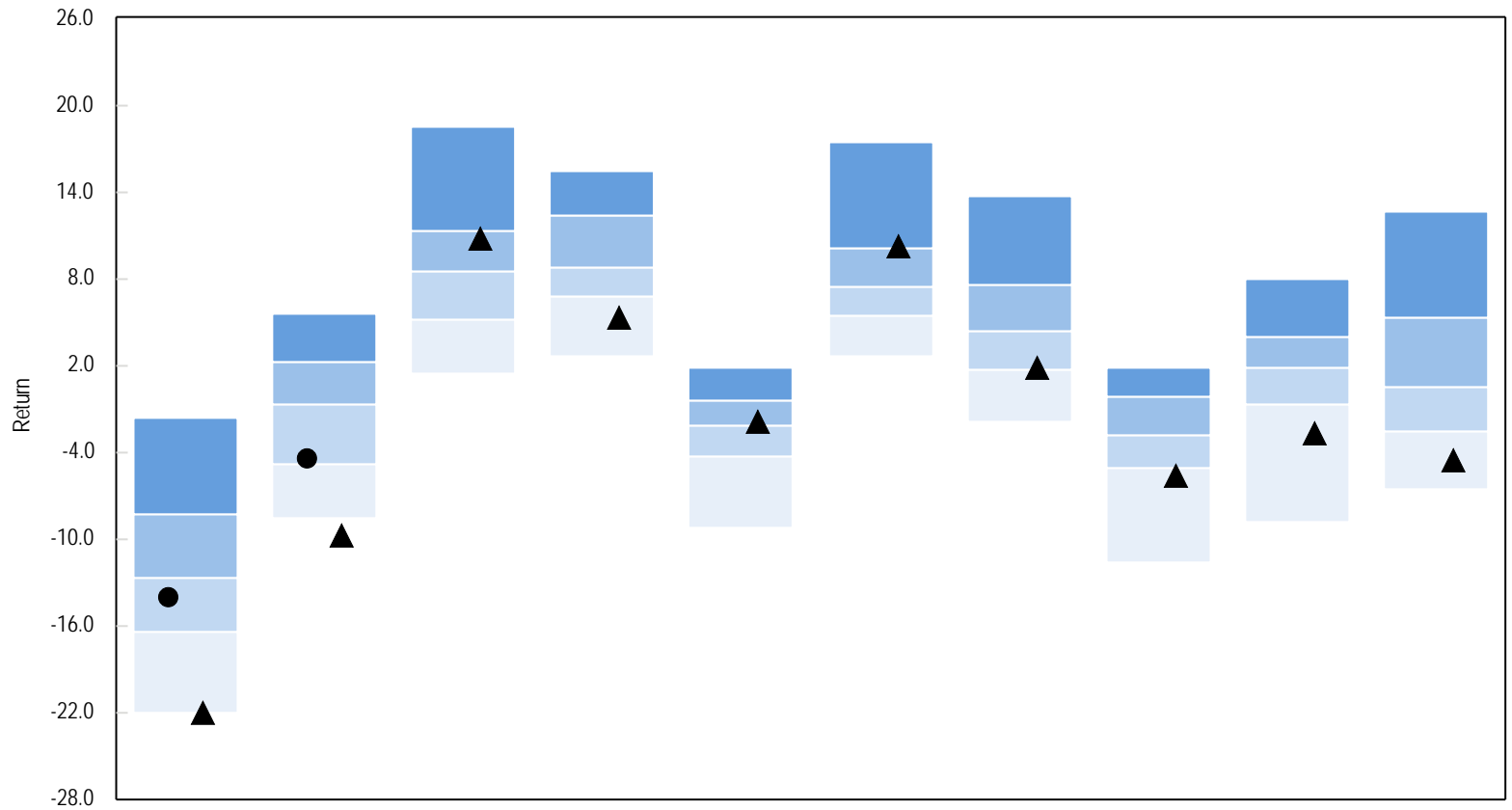


	3 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager U	-2.48 (95)	-0.38 (80)	-1.72 (57)	-	-	-
▲ FTSE Non-U.S. World Government Bond	-2.12 (92)	-2.63 (94)	-7.81 (99)	-3.75 (99)	-2.96 (99)	-1.40 (98)
5th Percentile	3.51	11.80	5.56	4.67	5.22	5.31
1st Quartile	1.60	7.93	2.09	2.84	3.32	3.48
Median	0.38	3.07	-0.88	1.53	1.86	2.14
3rd Quartile	-0.62	0.28	-3.48	-0.30	0.28	0.59
95th Percentile	-2.65	-3.37	-6.41	-2.42	-1.66	-0.80
Population	767	766	723	667	597	470

Manager U  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager U vs. eV All Global Fixed Inc Gross Universe

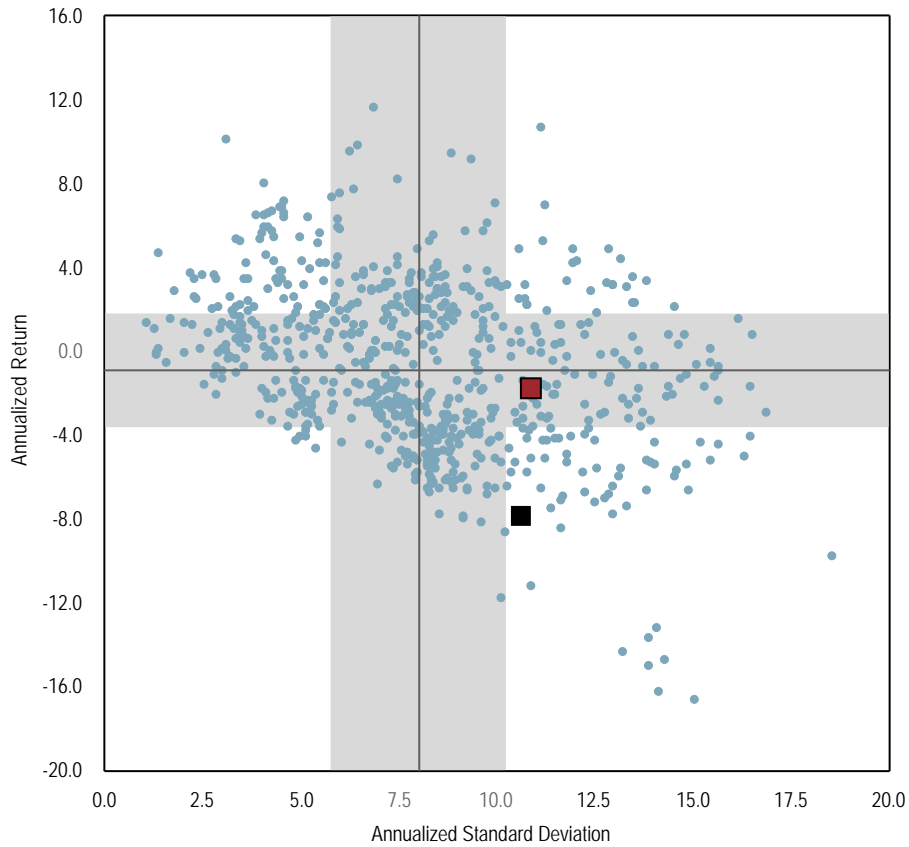


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager U	-14.00 (59)	-4.38 (72)	-	-	-	-	-	-	-	-
▲ FTSE Non-U.S. World Government Bond	-22.07 (96)	-9.68 (98)	10.78 (30)	5.32 (85)	-1.82 (45)	10.33 (25)	1.81 (75)	-5.54 (78)	-2.68 (83)	-4.56 (89)
5th Percentile	-1.55	5.66	18.54	15.42	1.92	17.48	13.74	1.84	8.06	12.61
1st Quartile	-8.29	2.21	11.31	12.34	-0.34	10.17	7.61	-0.19	3.98	5.36
Median	-12.63	-0.69	8.51	8.84	-2.15	7.53	4.39	-2.74	1.89	0.54
3rd Quartile	-16.44	-4.74	5.16	6.83	-4.33	5.52	1.75	-5.02	-0.61	-2.52
95th Percentile	-22.05	-8.47	1.52	2.70	-9.27	2.67	-1.90	-11.56	-8.81	-6.47
Population	565	584	589	580	591	578	572	560	528	486

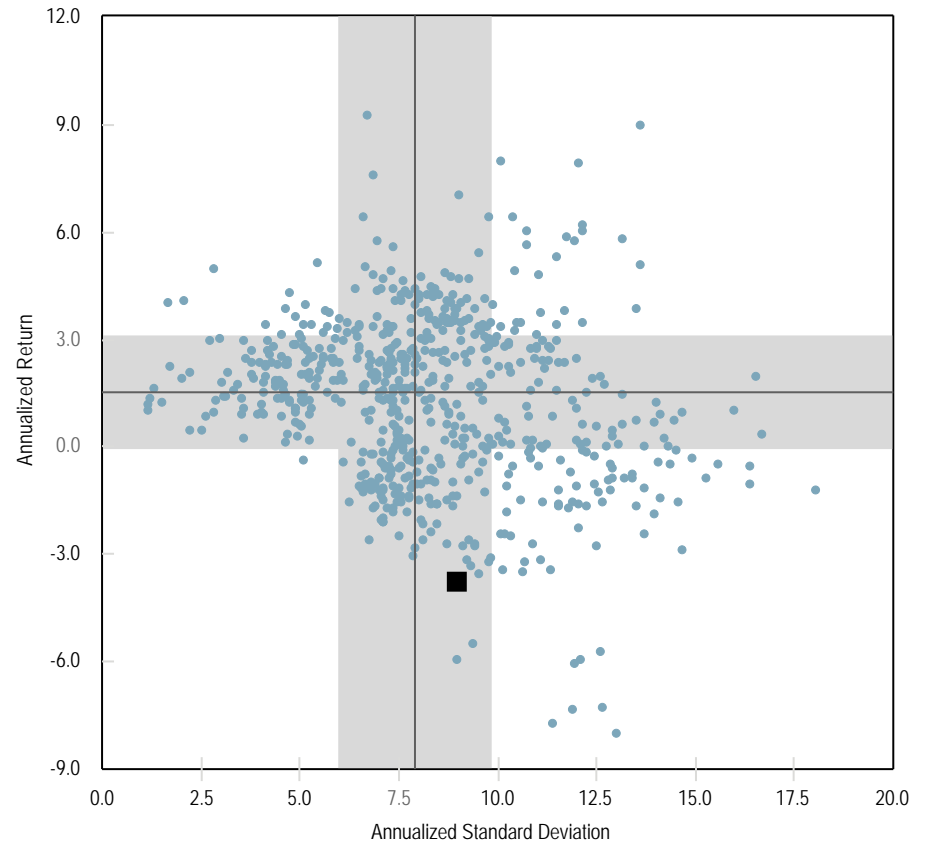
Manager U  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager U	-1.72	10.88	-0.22
■ FTSE Non-U.S. World Government Bond	-7.81	10.63	-0.83

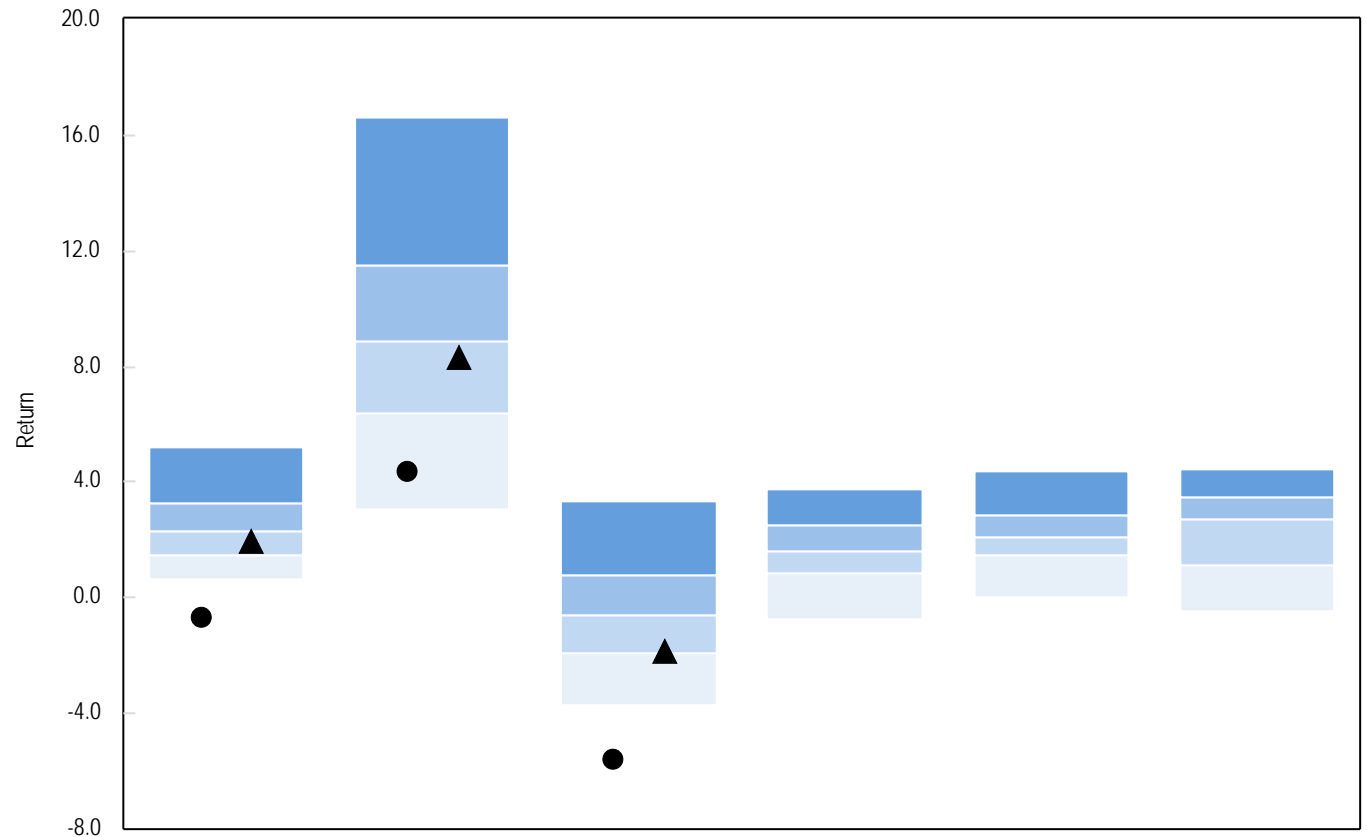
5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager U	-	-	-
■ FTSE Non-U.S. World Government Bond	-3.75	8.98	-0.55

Manager V  
 Manager Performance Comparisons (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager V vs. eV All Emg Mkts Fixed Inc Gross Universe

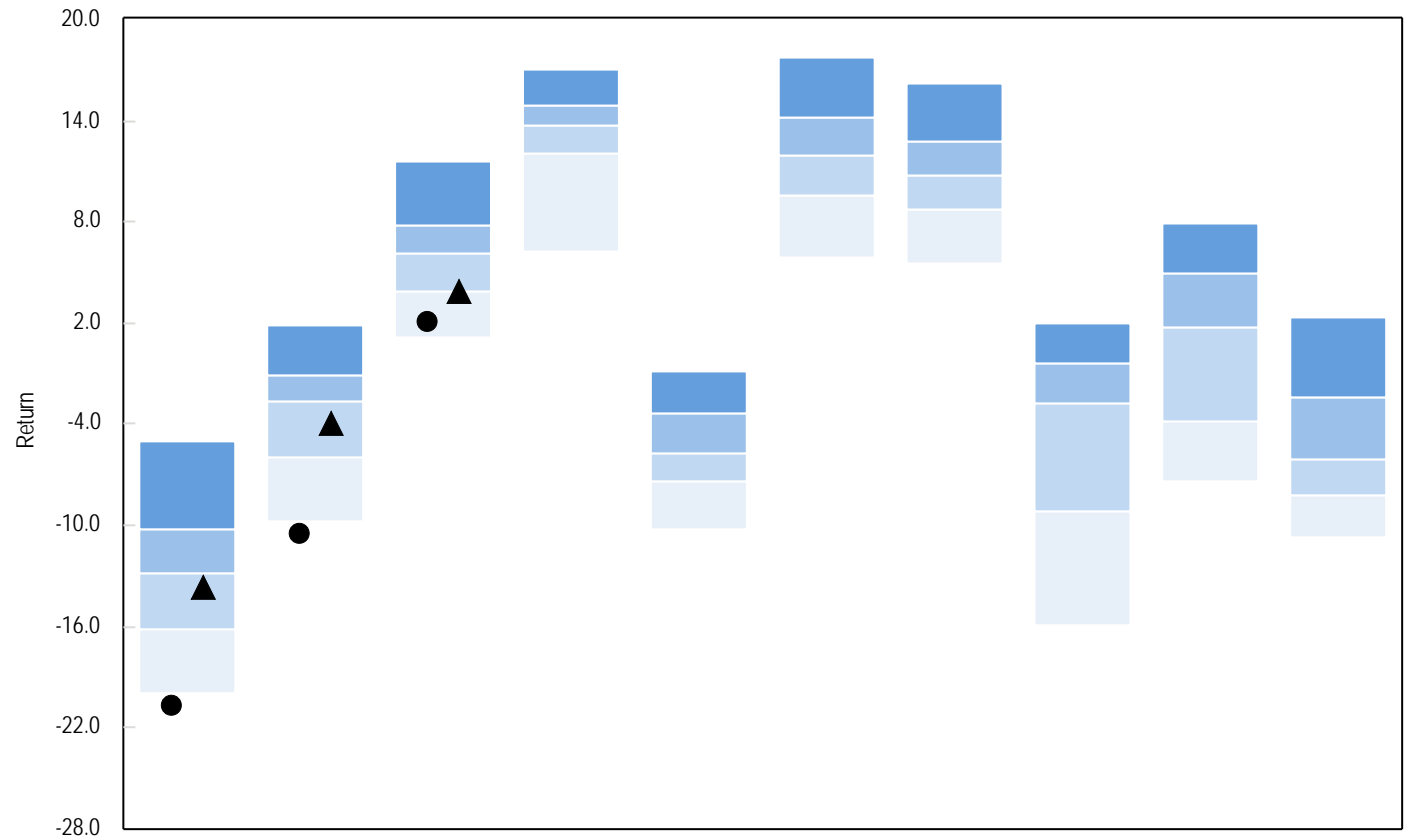


	Quarter	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Manager V	-0.65 (99)	4.38 (90)	-5.60 (100)	-	-	-
▲ 50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+	1.92 (61)	8.35 (56)	-1.82 (75)	-	-	-
5th Percentile	5.20	16.60	3.36	3.78	4.40	4.46
1st Quartile	3.28	11.50	0.79	2.49	2.86	3.49
Median	2.28	8.90	-0.60	1.61	2.12	2.69
3rd Quartile	1.50	6.39	-1.91	0.84	1.50	1.15
95th Percentile	0.65	3.07	-3.72	-0.76	0.00	-0.45
Population	393	393	370	333	301	236

Manager V  
 Consecutive Performance Comparison (Gross of Fees)

Sample Public DB Plan  
 Period Ending: June 30, 2023

Manager V vs. eV All Emg Mkts Fixed Inc Gross Universe

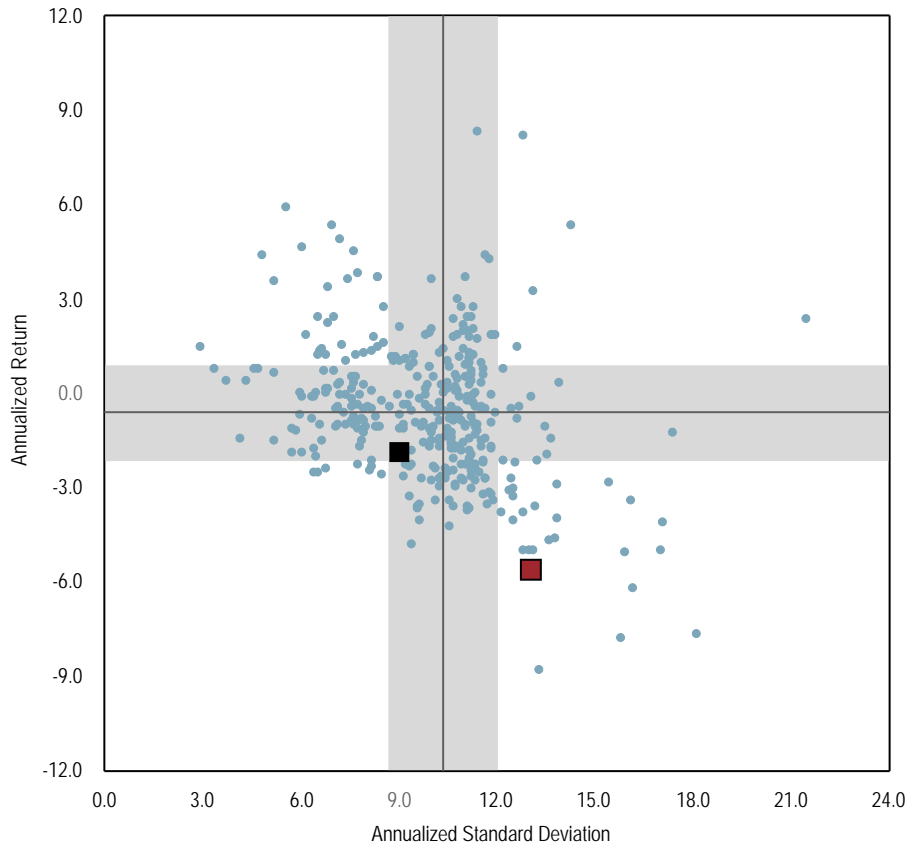


	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Manager V	-20.67 (96)	-10.40 (98)	2.13 (92)	-	-	-	-	-	-	-
▲ 50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+	-13.63 (58)	-3.88 (62)	3.86 (76)	-	-	-	-	-	-	-
5th Percentile	-5.02	1.89	11.63	17.06	-0.88	17.72	16.19	2.03	7.87	2.35
1st Quartile	-10.21	-1.07	7.83	14.95	-3.32	14.25	12.76	-0.34	4.98	-2.40
Median	-12.80	-2.69	6.16	13.67	-5.74	11.99	10.73	-2.77	1.69	-6.09
3rd Quartile	-16.17	-5.91	3.92	12.10	-7.39	9.55	8.75	-9.16	-3.87	-8.19
95th Percentile	-19.94	-9.72	1.10	6.29	-10.19	5.91	5.56	-15.87	-7.35	-10.74
Population	306	324	329	325	318	305	292	276	262	223

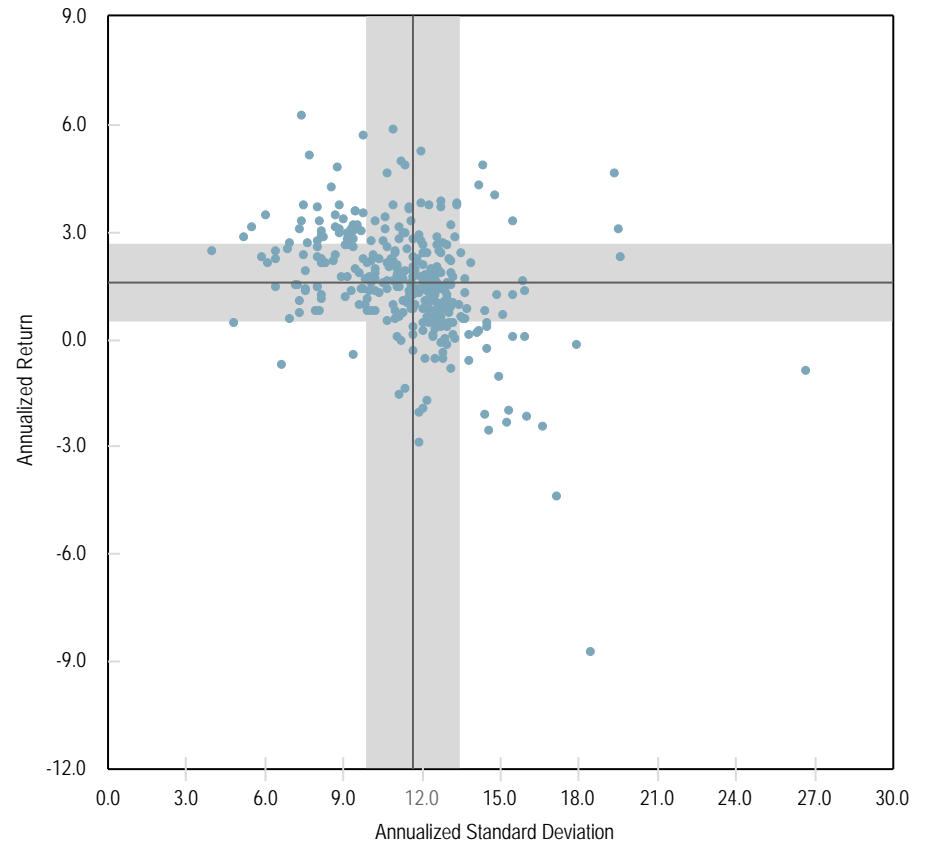
Manager V  
Risk vs. Return (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

3 Years



5 Years



3 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager V	-5.60	13.05	-0.48
■ 50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+	-1.82	9.03	-0.30

5 Years

	Return	Standard Deviation	Sharpe Ratio
■ Manager V	-	-	-
■ 50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+	-	-	-

Total Real Estate  
Asset Class Overview (Gross of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Real Estate</b>	<b>235,929,937</b>	<b>100.0</b>	<b>-1.8</b>	<b>-4.5</b>	<b>-8.5</b>	<b>6.9</b>	<b>5.7</b>	<b>8.3</b>	<b>6.7</b>	<b>18.7</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>
<b>Manager N</b>	<b>155,875,653</b>	<b>66.1</b>	<b>-1.6</b>	<b>-4.5</b>	<b>-10.5</b>	<b>6.7</b>	<b>5.1</b>	<b>7.8</b>	<b>4.3</b>	<b>20.2</b>	<b>0.5</b>	<b>3.4</b>	<b>7.0</b>
<i>NCREIF-ODCE</i>			<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.7</i>	<i>7.5</i>	<i>22.2</i>	<i>1.2</i>	<i>5.3</i>	<i>8.3</i>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>
<b>Manager O</b>	<b>80,054,284</b>	<b>33.9</b>	<b>-2.2</b>	<b>-4.6</b>	<b>-4.0</b>	<b>7.0</b>	<b>7.3</b>	<b>-</b>	<b>12.3</b>	<b>14.0</b>	<b>3.8</b>	<b>7.3</b>	<b>9.1</b>
<i>NCREIF-ODCE</i>			<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.7</i>	<i>7.5</i>	<i>22.2</i>	<i>1.2</i>	<i>5.3</i>	<i>8.3</i>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>

Manager O is lagged one quarter

Total Real Estate  
Asset Class Overview (Net of Fees)

Sample Public DB Plan  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2022	2021	2020	2019	2018
<b>Total Real Estate</b>	<b>235,929,937</b>	<b>100.0</b>	<b>-1.8</b>	<b>-4.5</b>	<b>-8.5</b>	<b>6.9</b>	<b>5.7</b>	<b>7.9</b>	<b>6.7</b>	<b>18.7</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>
<b>Manager N</b>	<b>155,875,653</b>	<b>66.1</b>	<b>-1.6</b>	<b>-4.5</b>	<b>-10.5</b>	<b>6.7</b>	<b>5.1</b>	<b>7.4</b>	<b>4.3</b>	<b>20.2</b>	<b>0.5</b>	<b>3.4</b>	<b>7.0</b>
<i>NCREIF-ODCE</i>			<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.7</i>	<i>7.5</i>	<i>22.2</i>	<i>1.2</i>	<i>5.3</i>	<i>8.3</i>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>
<b>Manager O</b>	<b>80,054,284</b>	<b>33.9</b>	<b>-2.2</b>	<b>-4.6</b>	<b>-4.0</b>	<b>7.0</b>	<b>7.3</b>	<b>-</b>	<b>12.3</b>	<b>14.0</b>	<b>3.8</b>	<b>7.3</b>	<b>9.1</b>
<i>NCREIF-ODCE</i>			<i>-2.7</i>	<i>-5.8</i>	<i>-10.0</i>	<i>8.0</i>	<i>6.5</i>	<i>8.7</i>	<i>7.5</i>	<i>22.2</i>	<i>1.2</i>	<i>5.3</i>	<i>8.3</i>
<i>NCREIF Property Index</i>			<i>-2.0</i>	<i>-3.8</i>	<i>-6.6</i>	<i>6.8</i>	<i>5.9</i>	<i>7.8</i>	<i>5.5</i>	<i>17.7</i>	<i>1.6</i>	<i>6.4</i>	<i>6.7</i>

Manager O is lagged one quarter



# Total Fund Data Sources and Methodology

Sample Public DB Plan  
Period Ending: June 30, 2023

## Performance Return Calculations

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year. Effective 1/01/2017, only traditional asset classes (public equity, public fixed income, REITs) investment management fees will be included in the gross of returns calculation.

## Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

## Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

## Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
Manager A	11/30/2007	J.P. Morgan	Manager N	3/6/2008	Manager N
Manager B	12/31/2016	J.P. Morgan	Manager AE	8/31/2013	Manager AE
Manager C	1/31/2017	Manager C	Manager X	-	Manager X
Manager D	8/31/2010	J.P. Morgan	Manager G	2011 <sup>1</sup>	Manager G
Manager E	12/6/2007	J.P. Morgan	Manager I	-	Manager I
Manager F	2/15/2017	Manager F	Manager L	-	Manager L
Manager P	1/19/2017	J.P. Morgan	Manager J	-	Manager J
Manager Q	1/19/2017	Deutsche Bank	Manager Z	2010 <sup>1</sup>	Manager Z
Manager R	9/1/2014	Deutsche Bank	Manager AF	2010 <sup>1</sup>	Manager AF
Manager S	7/16/2021	Manager S	Manager O	6/22/2016	Manager O
Manager T	9/1/2021	BlackRock	Manager M	2016 <sup>1</sup>	Manager M
Manager U	6/24/2020	J.P. Morgan	Manager H	2017 <sup>1</sup>	Manager H
Manager V	3/31/2019	Manager V	Manager K	3/25/2020	Manager K
Manager W	7/14/2021	Manager W	Manager AA	4/16/2020	Manager AA

<sup>1</sup> Represents fund vintage year.

## Policy & Custom Index Composition

Policy Index (1/1/2023-Current)	21% Russell 3000, 17% MSCI ACWI ex-US (Gross), 8% Bloomberg U.S. Aggregate, 6% FTSE World Govt Bond Index, 5% Bloomberg US Treasury 7-10 yr, 4% Bloomberg US TIPS 5+ Year, 9% NCREIF Property Index, 10% Private Equity Benchmark, 8% Private Credit Benchmark, 6% 90 Day T-Bill, 6% Manager O.
Policy Index (1/1/2022-12/31/2022)	21% Russell 3000, 17% MSCI ACWI ex-US (Gross), 12% Bloomberg U.S. Aggregate, 7% FTSE World Govt Bond Index, 4% Bloomberg US Treasury 7-10 yr, 3% Bloomberg US TIPS 5+ Year, 11% NCREIF Property Index, 10% Private Equity Benchmark, 7% Private Credit Benchmark, 6% 90 Day T-Bill, 2% Manager O.
Policy Index (1/1/2021-12/31/2021)	23% Russell 3000, 20% MSCI ACWI ex-US (Gross), 12% Bloomberg U.S. Aggregate, 11% FTSE World Govt Bond Index, 3% Bloomberg US Treasury 7-10 yr, 2% Bloomberg US TIPS, 15% NCREIF Property Index, 5% Private Equity Benchmark, 5% Private Credit Benchmark, 2% Bloomberg US Govt/Credit 1-3 yr, 2% 90 Day T-Bill.
Policy Index (10/1/2020-12/31/2020)	21% Russell 3000, 21% MSCI ACWI ex-US (Gross), 31% Bloomberg U.S. Aggregate, 17% NCREIF Property Index, 1% Russell 3000, 4 Private Equity Benchmark, 5% Private Credit Benchmark.
Policy Index (4/1/2020-9/30/2020)	21% Russell 3000, 21% MSCI ACWI ex-US (Gross), 31% Bloomberg U.S. Aggregate, 17% NCREIF Property Index, 5% Russell 3000+ 300 bps (lagged), 5% Bloomberg High Yield +2% (lagged).
Policy Index (1/1/2017-3/31/2020)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps (lagged), 5% Bloomberg High Yield +2% (lagged).
Policy Index (10/1/2016-12/31/2016)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps, 5% Bloomberg High Yield +2% (lagged).
Policy Index (7/1/2014-9/30/2016)	23% Russell 3000, 22% MSCI ACWI ex-US (Gross), 35% Bloomberg U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (7/1/2013-6/30/2014)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (4/1/2011-6/30/2013)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 20% Bloomberg U.S. Aggregate, 5% Citi World Gov't Bond, 5% Barclays US TIPS, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Private Equity Index (1/1/2017-10/1/2020)	Russell 3000 +3% (Lagged)
Private Equity Index (6/1/2011-12/31/2016)	Russell 3000 +3%
Private Equity Benchmark and Private Credit Benchmarks are equal to the actual private equity and private credit returns, respectively.	
Custom Growth Benchmark (1/1/2021-Present)	30.8% Russell 3000, 25% MSCI ACWI Gross, 14.71% Private Equity Benchmark, 10.29% Private Credit Benchmark, 16.18% NCREIF Property Index, 2.94% Manager O
Custom Risk Diversifying Benchmark (1/1/2021-Present)	46.15% Bloomberg U.S. Aggregate Index, 26.92% FTSE World Government Bond Index, 15.38% Bloomberg US Treasury: 7-10 Year, 11.54% Bloomberg US TIPS

## Other Disclosures

# Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as:  $\text{excess return} / \text{tracking error}$ .

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

## Disclaimer

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The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

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Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.

APPENDIX

Tab III – Monthly Investment Performance Update

# Sample Monthly Flash Report

Investment Performance Review

Period Ending: June 30, 2023



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Total Fund  
Executive Summary (Gross of Fees) - Preliminary

P.S.E.W. Pension Fund  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	1 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs
<b>Total Fund</b>	<b>1,125,884,421</b>	<b>100.0</b>	<b>3.0</b>	<b>3.0</b>	<b>6.1</b>	<b>8.1</b>	<b>9.6</b>	<b>7.2</b>
<i>Policy Index</i>			2.8	2.8	7.0	8.2	7.6	6.6
<b>Total U.S. Equity</b>	<b>400,151,296</b>	<b>35.5</b>	<b>7.3</b>	<b>7.3</b>	<b>12.3</b>	<b>16.7</b>	<b>14.6</b>	<b>10.3</b>
Manager A	88,693,931	7.9	6.8	6.8	16.7	19.4	14.1	11.9
<i>Russell 1000 Index</i>			6.8	6.8	16.7	19.4	14.1	11.9
Manager B	75,437,535	6.7	6.0	6.0	30.9	27.3	10.1	12.3
<i>Russell 1000 Growth Index</i>			6.8	6.8	29.0	27.1	13.7	15.1
Manager C	73,684,038	6.5	8.1	8.1	1.8	8.5	18.3	8.3
<i>Russell 1000 Value Index</i>			6.6	6.6	5.1	11.5	14.3	8.1
Manager D	86,227,436	7.7	7.0	7.0	7.4	12.9	18.8	10.6
<i>Russell 1000 Value Index</i>			6.6	6.6	5.1	11.5	14.3	8.1
Manager E	37,341,780	3.3	8.1	8.1	12.4	21.7	8.3	8.6
<i>Russell 2500 Growth Index</i>			7.9	7.9	13.4	18.6	6.6	7.0
Manager F	38,766,576	3.4	9.5	9.5	5.3	13.1	18.1	6.3
<i>Spliced Small Cap Value Index</i>			9.5	9.5	5.3	13.0	18.1	6.2
<b>Total Int'l Equity</b>	<b>157,199,827</b>	<b>14.0</b>	<b>5.4</b>	<b>5.4</b>	<b>11.5</b>	<b>17.3</b>	<b>10.7</b>	<b>5.2</b>
Manager G	79,990,510	7.1	4.5	4.5	12.5	16.3	6.0	4.8
<i>MSCI AC World ex USA</i>			4.5	4.5	9.5	12.7	7.2	3.5
Manager H	77,209,317	6.9	6.4	6.4	10.4	18.3	16.7	4.7
<i>MSCI EAFE Index</i>			4.6	4.6	12.1	19.4	9.5	4.9
<b>Total U.S. Fixed</b>	<b>236,400,125</b>	<b>21.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.9</b>	<b>3.4</b>	<b>1.6</b>	<b>3.2</b>
Manager I	65,533,647	5.8	-0.1	-0.1	2.4	2.0	-1.0	1.7
<i>Bloomberg U.S. Intermediate Govt/Corp.</i>			-0.7	-0.7	1.5	-0.1	-2.5	1.2
Manager J	71,710,376	6.4	-0.1	-0.1	2.1	2.7	2.4	3.6
<i>FTSE Mortgage</i>			-0.4	-0.4	1.5	-1.6	-3.9	0.0
Manager K	33,077,032	2.9	-0.5	-0.5	1.9	-1.8	-0.1	2.5
<i>Blmbg. U.S. TIPS</i>			-0.3	-0.3	1.9	-1.4	-0.1	2.5
Manager L	22,618,933	2.0	0.0	0.0	3.5	7.7	6.5	-
<i>Morningstar LSTA US Leveraged Loan</i>			2.3	2.3	6.5	10.7	6.3	4.1
Manager M	377,229	0.0	0.0	0.0	-	-	-	-
<i>Morningstar LSTA US Leveraged Loan</i>			2.3	2.3	6.5	10.7	6.3	4.1
Manager N	43,082,908	3.8	0.8	0.8	5.5	8.3	-	-
<i>Blmbg. U.S. Aggregate Index</i>			-0.4	-0.4	2.1	-0.9	-4.0	0.8

Policy Index: 29% S&P 500, 7% Russell 2500, 15% Bloomberg U.S. Aggregate, 15% MSCI EAFE, 7% CITI BIG Mortgage, 15% NCREIF ODCE, 10% HFRI Fund of Fund Composite, 2% 91 Day T-Bills. FY: 5/31. Manager X liquidated 10/21/2019. Manager W liquidated 7/31/2020. Manager N funded on 6/16/2022. Manager N, Manager P, and Manager U MV as of 3/31/2023 adjusted for any capital calls and distributions. Manager M market value is the initial call which occurred on 5/10/2023.

Total Fund  
Executive Summary (Gross of Fees) - Preliminary

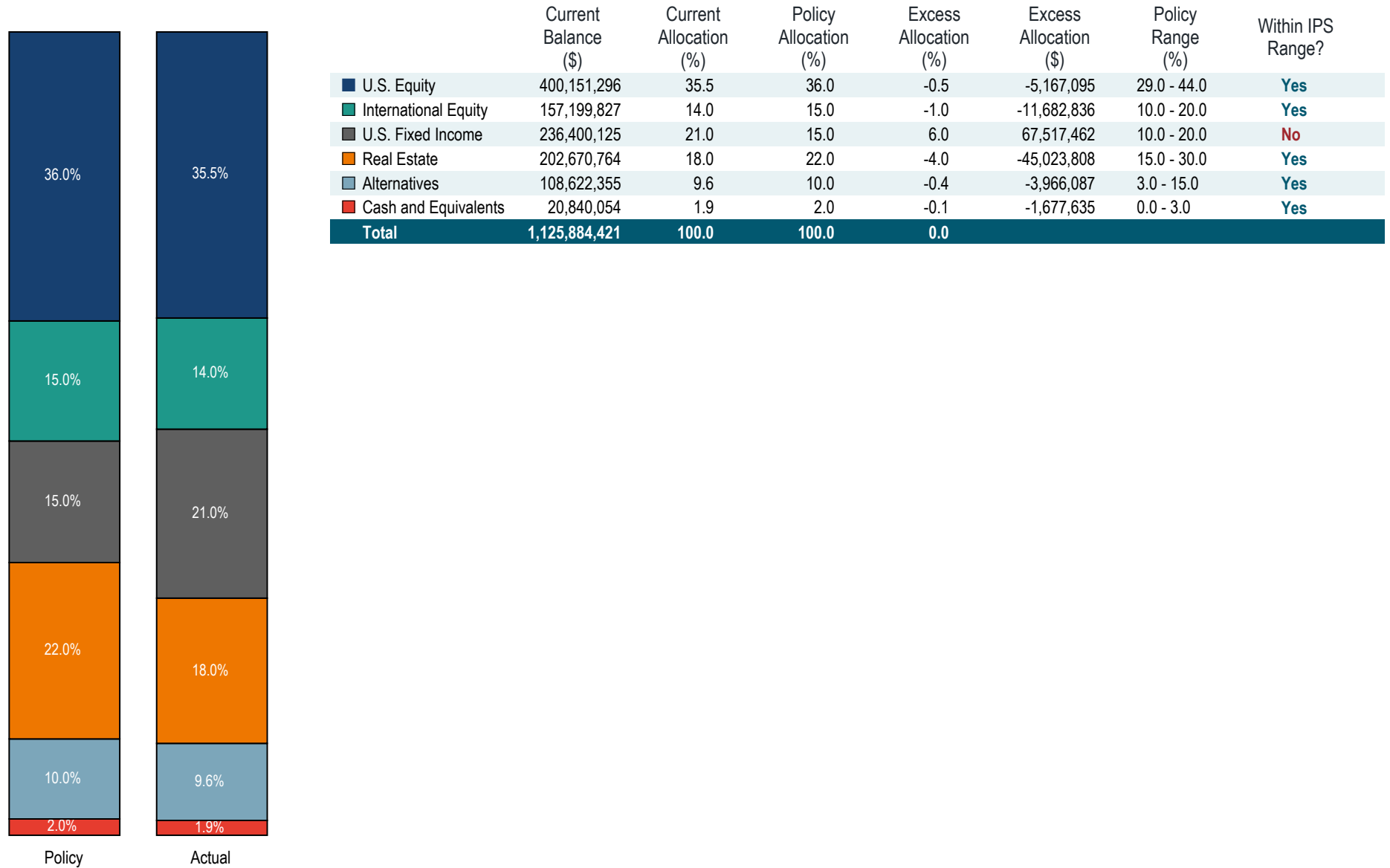
P.S.E.W. Pension Fund  
Period Ending: June 30, 2023

	Market Value	% of Portfolio	1 Mo	Fiscal YTD	YTD	1 Yr	3 Yrs	5 Yrs
<b>Total Real Estate</b>	<b>202,670,764</b>	<b>18.0</b>	<b>-2.2</b>	<b>-2.2</b>	<b>-3.1</b>	<b>-4.1</b>	<b>9.8</b>	<b>8.3</b>
Manager O	56,286,114	5.0	-4.6	-4.6	-7.0	-11.1	7.5	6.0
NCREIF ODCE			-2.7	-2.7	-5.8	-10.0	8.0	6.5
Manager P	23,343,545	2.1	0.0	0.0	0.9	3.5	-	-
NCREIF ODCE			-2.7	-2.7	-5.8	-10.0	8.0	6.5
Manager Q	32,899,002	2.9	-2.2	-2.2	-4.2	-2.2	16.1	11.8
NCREIF ODCE			-2.7	-2.7	-5.8	-10.0	8.0	6.5
Manager R	90,142,103	8.0	-1.3	-1.3	-0.8	-1.4	8.7	8.7
NCREIF ODCE			-2.7	-2.7	-5.8	-10.0	8.0	6.5
<b>Total Alternatives</b>	<b>108,622,355</b>	<b>9.6</b>	<b>2.2</b>	<b>2.2</b>	<b>3.4</b>	<b>3.4</b>	<b>6.6</b>	<b>4.9</b>
Manager S	75,917,898	6.7	2.5	2.5	4.4	5.6	8.0	5.7
HFRI Fund of Funds Composite Index			1.1	1.1	2.2	3.6	5.0	3.3
Manager T	23,815,401	2.1	2.1	2.1	2.7	-0.8	4.5	3.8
HFR Risk Parity Vol 10 Institutional Index			2.0	2.0	4.0	0.0	0.5	1.6
Manager U	8,889,056	0.8	0.0	0.0	-2.3	-2.5	1.7	-
HFRI Fund of Funds Composite Index			1.1	1.1	2.2	3.6	5.0	3.3
<b>Total Cash</b>	<b>20,840,054</b>	<b>1.9</b>	<b>0.4</b>	<b>0.4</b>	<b>2.0</b>	<b>3.2</b>	<b>1.1</b>	<b>1.3</b>
Manager V	20,408,543	1.8	0.4	0.4	2.0	3.2	1.1	1.3
90 Day U.S. Treasury Bill			0.5	0.5	2.3	3.6	1.3	1.6

Policy Index: 29% S&P 500, 7% Russell 2500, 15% Bloomberg U.S. Aggregate, 15% MSCI EAFE, 7% CITI BIG Mortgage, 15% NCREIF ODCE, 10% HFRI Fund of Fund Composite, 2% 91 Day T-Bills. FY: 5/31. Manager X liquidated 10/21/2019. Manager W liquidated 7/31/2020. Manager N funded on 6/16/2022. Manager N, Manager P, and Manager U MV as of 3/31/2023 adjusted for any capital calls and distributions. Manager M market value is the initial call which occurred on 5/10/2023.

Total Fund  
Asset Allocation vs. Policy

P.S.E.W. Pension Fund  
Period Ending: June 30, 2023





Total Fund  
Portfolio Reconciliation

P.S.E.W. Pension Fund  
Period Ending: June 30, 2023

	Portfolio Reconciliation		
	Last Month	Fiscal Year-To-Date	One Year
Beginning Market Value	\$1,092,579,892	\$1,092,579,892	\$1,040,022,133
Contributions	\$6,354,580	\$6,354,580	\$76,213,787
Withdrawals	-\$5,936,033	-\$5,936,033	-\$72,076,174
Net Cash Flow	\$418,547	\$418,547	\$4,137,612
Net Investment Change	\$32,885,983	\$32,885,983	\$81,881,367
Ending Market Value	\$1,125,884,421	\$1,125,884,421	\$1,125,884,421
Net Change	\$33,304,529	\$33,304,529	\$85,862,288

*Net Investment Change includes fees and expenses.*

Total Fund  
Cash Flow by Manager

P.S.E.W. Pension Fund  
Period Ending: June 30, 2023

	Beginning Market Value	Contributions	Withdrawals	Transfer In	Transfer Out	Net Cash Flows	Net Investment Change	Ending Market Value
Manager G	\$76,609,681	\$0	\$0	\$0	\$0	\$0	\$3,380,829	\$79,990,510
Manager O	\$59,045,943	\$0	\$0	\$0	\$0	\$0	-\$2,759,829	\$56,286,114
Manager V	\$20,806,242	\$6,354,580	-\$5,936,033	\$1,520,899	-\$2,420,000	-\$480,555	\$82,855	\$20,408,543
Manager C	\$68,175,829	\$0	\$0	\$0	\$0	\$0	\$5,508,209	\$73,684,038
Manager H	\$72,549,143	\$0	\$0	\$0	\$0	\$0	\$4,660,174	\$77,209,317
Manager D	\$80,655,300	\$0	\$0	\$0	\$0	\$0	\$5,572,136	\$86,227,436
Manager U	\$9,320,567	\$0	\$0	\$0	-\$431,511	-\$431,511	\$0	\$8,889,056
Manager T	\$23,326,600	\$0	\$0	\$0	\$0	\$0	\$488,801	\$23,815,401
Manager P	\$20,923,545	\$0	\$0	\$2,420,000	\$0	\$2,420,000	\$0	\$23,343,545
Manager S	\$74,100,261	\$0	\$0	\$0	\$0	\$0	\$1,817,637	\$75,917,898
Manager L	\$24,139,832	\$0	\$0	\$0	-\$1,520,899	-\$1,520,899	\$0	\$22,618,933
Manager M	\$377,229	\$0	\$0	\$0	\$0	\$0	\$0	\$377,229
Manager N	\$42,759,939	\$0	\$0	\$0	\$0	\$0	\$322,969	\$43,082,908
Manager Q	\$33,654,509	\$0	\$0	\$0	\$0	\$0	-\$755,507	\$32,899,002
Manager A	\$83,082,148	\$0	\$0	\$0	\$0	\$0	\$5,611,783	\$88,693,931
Manager B	\$71,185,053	\$0	\$0	\$0	\$0	\$0	\$4,252,483	\$75,437,535
Manager K	\$33,232,485	\$0	\$0	\$0	\$0	\$0	-\$155,453	\$33,077,032
Manager F	\$35,397,932	\$0	\$0	\$0	\$0	\$0	\$3,368,643	\$38,766,576
Manager I	\$65,583,884	\$0	\$0	\$0	\$0	\$0	-\$50,237	\$65,533,647
Manager J	\$71,804,101	\$0	\$0	\$0	\$0	\$0	-\$93,725	\$71,710,376
Manager R	\$91,293,482	\$0	\$0	\$0	\$0	\$0	-\$1,151,379	\$90,142,103
Manager E	\$34,556,187	\$0	\$0	\$0	\$0	\$0	\$2,785,593	\$37,341,780
<b>Total</b>	<b>\$1,092,579,892</b>	<b>\$6,354,580</b>	<b>-\$5,936,033</b>	<b>\$4,372,410</b>	<b>-\$4,372,410</b>	<b>\$418,547</b>	<b>\$32,885,983</b>	<b>\$1,125,884,421</b>

Manager N funded on 6/16/2022. Net Investment Change includes fees and expenses.

# Total Fund Investment Fund Fee Analysis

P.S.E.W. Pension Fund  
Period Ending: June 30, 2023

Name	Asset Class	Identifier	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Manager A	U.S. Equity Large Cap		0.08 % of Assets	\$88,693,931	\$70,955	0.08
Manager B	U.S. Equity Large Cap Growth	MNGRB	0.55 % of Assets	\$75,437,535	\$414,906	0.55
Manager C	U.S. Equity Large Cap Value		0.50 % of Assets	\$73,684,038	\$368,420	0.50
Manager D	U.S. Equity Large Cap Value	MNGRD	0.51 % of Assets	\$86,227,436	\$439,760	0.51
Manager E	U.S. Equity Small/Mid Cap		0.95 % of First \$10 M 0.80 % of Next \$20 M 0.75 % of Next \$20 M 0.70 % of Next \$50 M 0.65 % of Next \$100 M 0.60 % Thereafter	\$37,341,780	\$310,063	0.83
Manager F	U.S. Equity Small Cap	MNGRF	0.06 % of Assets	\$38,766,576	\$23,260	0.06
Manager G	International Equity	MNGRG	0.47 % of Assets	\$79,990,510	\$375,955	0.47
Manager H	International Equity	MNGRH	0.28 % of Assets	\$77,209,317	\$216,186	0.28
Manager I	U.S. Fixed Income		0.30 % of First \$20 M 0.25 % of Next \$100 M 0.00 % Thereafter	\$65,533,647	\$173,834	0.27
Manager J	Domestic Fixed Income Mortgage		0.50 % of Assets	\$71,710,376	\$358,552	0.50
Manager K	U.S. Fixed Income Real Return	MNGRK	0.07 % of Assets	\$33,077,032	\$23,154	0.07
Manager L	U.S. Fixed Income		0.50 % of Assets	\$22,618,933	\$113,095	0.50
Manager M	U.S. Fixed Income		0.50 % of Assets	\$377,229	\$1,886	0.50
Manager N	U.S. Fixed Income		0.50 % of Assets	\$43,082,908	\$215,415	0.50
Manager O	Real Estate		0.86 % of Assets	\$56,286,114	\$481,809	0.86
Manager P	Real Estate		1.00 % of Assets	\$23,343,545	\$233,435	1.00
Manager Q	Real Estate		1.00 % of Assets	\$32,899,002	\$328,990	1.00
Manager R	Real Estate		1.00 % of Assets	\$90,142,103	\$901,421	1.00
Manager S	Absolute Return	MNGRS	0.89 % of Assets	\$75,917,898	\$671,873	0.89
Manager T	Alternative Investment		0.38 % of First \$250 M 0.35 % of Next \$500 M 0.33 % of Next \$250 M 0.30 % Thereafter	\$23,815,401	\$89,308	0.38
Manager U	Hedge Funds		Performance Based 1.25 and 10.00	\$8,889,056	\$111,113	1.25
Manager V	Cash and Equivalents	MNGRV	0.18 % of Assets	\$20,408,543	\$36,735	0.18
<b>Total Fund</b>				<b>\$1,125,884,421</b>	<b>\$5,960,127</b>	<b>0.53</b>

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus. Manager U has a 1.25% management fee with a 10% performance fee and a 7.5% hurdle rate. Manager P annual fee shown is base fee only. Manager N funded on 6/16/2022. All data are preliminary.

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Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.

APPENDIX

Tab IV – Annual Private Equity Outlook



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

OCTOBER 2023  
Private Equity Outlook

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— Higher rates for longer			
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		— Verus private equity philosophy	
		— Historical returns by geography & approach	

# Observations driving Verus outlook

## Executive summary

### **Private equity deal activity remains weak in the face of rising interest rates.**

Rising interest rates and falling public market indexes in 2022 are having a direct impact on the current pricing environment. In many cases, with the cost of debt rising, the proportion of equity has also risen. Multiples are coming down, and, until a more stable environment has been established, deal activity will likely remain subdued. Though deal activity is down broadly, transactions for high quality assets and add-ons still occur.

**Exit activity is down a considerable margin, year over year.** Considering falling market values, sponsors are opting to retain their portfolio companies instead of selling them at less favorable prices. Public listings were closed due to the decline in public equities and risk premiums in 2022, but upcoming IPOs and market rebound could lead to increased IPO activity.

**A higher rate for longer scenario may benefit prospective investors.** Deal activity may pick up alongside motivations borne out of stress and liquidity in a weak macro-environment. Investors who can creatively handle complex situations and cater to seller preferences may find opportunities in stressed situations. Buyers will have leverage in these negotiations and will push for friendlier deal terms and may benefit from discounted purchase prices. We expect distressed opportunities to increase but not to the level of prior market downturns.

**With decreasing premiums on risk, reduced inflows to private equities have occurred.** Fundraising has decreased across most of U.S. Private Equity and Venture Capital, especially in the late-stage. LPs who remain active may find a multitude of benefits from the tough fundraising environment, and GPs who remain active may find less competitive markets to be beneficial.

**Direct lending is more attractive than prior years despite increasing attention from the investor community.** Floating rate debt benefits from higher base rates. Pullback from bank broadly syndicated loans has culminated into opportunities for Private Credit lenders who now have more power in negotiating wider spreads, better documentation, and stronger downside protection. Increasing attention to the space from GPs and both institutional and retail investors may eventually lead to future overcrowding. In this upcoming environment, it may prove prudent to select managers who are focused on less trafficked market segments and have the ability and experience of managing credits that may worsen in poor macroenvironments.

**Liquidity needs may result in an uptick of alternatives to full monetization events.** Fundraising difficulties have caused GPs to lean into alternative avenues of generating liquidity for their existing LP base, one being continuation vehicles. GP-led secondary investors may benefit from persisting capital overhang that may widen with increasing GP-led supply. The execution of minority sales may also increase for GPs who desire to prolong their ownership in anticipation of a more favorable exit environment.

**Industry-wide efforts in DEI and ESG are gaining traction.** Many fund managers have begun to incorporate Diversity, Equity and Inclusion (DEI) and Environmental, Social, and Governance (ESG) policies and programs into both corporate governance and investment strategies, although there remains mixed perspectives on the extent to which these considerations should factor in investment decisions. Despite traction in DEI initiatives, representation amongst senior ranks will take time to culminate.



# Summary of findings

# Summary of findings (cont.)

Outlook		
Unattractive	Neutral	Attractive

Strategy	Stage	'22	'23	Commentary	
Buyout	U.S.	Small/Mid Mkt			<p>Market instability can affect small businesses, making owners more likely to sell even as valuations decline. The difficult macroeconomic situation is leading larger funds to pursue smaller acquisitions. Companies are focusing on improving their businesses instead of growing, so add-on activity will continue to be a path to exit for the smaller market.</p> <p>Managers who focus on value can handle complex situations and benefit from market distress. The current macro environment suits growth managers who invest in minority positions with small checks and no debt financing. It also suits managers who can provide creative, non-dilutive solutions to companies in need of liquidity.</p>
		Large Mkt			<p>Interest rate rises will impact over-levered, large market companies and deter capital deployment, resulting in return degradation. Economic challenges create buying opportunities, but with higher interest rates and surplus cash, GPs need to be cautious, leading to more capital concentration for quality companies. Given their scale and cost cutting optionality, large market companies may find resiliency through a downturn.</p>
	Euro			<p>The headwinds troubling the pan-European market may lead to valuation resets to prior marks that crept higher in certain regions (e.g. UK and Nordics). Fragmented capital markets and resilient fundraising may limit European investors' chances to benefit from the buying opportunity.</p>	
Venture Capital	Early Stage			<p>Companies must prove progress in product development, product-market fit, and strong traction to get equity financing. With dwindling capital availability and more stringent deal terms, investors wield an upper hand at the deal negotiation table.</p>	
	Late Stage			<p>Headwinds continue to challenge the market. Late-stage deal activity is being pressured due to the closed IPO window and high demand for capital. Market narratives of strong returns during downturns haven't convinced traditional and nontraditional investors due to unclear VC deal metrics. VCs are investing carefully in companies that are strong enough to survive and have a clear path to high growth. Investors must be weary of valuation pullbacks in a prolonged higher rate environment.</p>	

# Summary of findings

## Outlook

Unattractive	Neutral	Attractive

Strategy	Stage	'22	'23	Commentary
Private Credit	Senior Debt			Lenders are benefitting from higher base rates and pricing at wider spreads, better documentation, and more protection without having to take on risky borrowers. New capital inflows may compress spreads and loosen covenants / terms, although any overcrowding effect is yet to be seen in the figures currently observed, such as fundraising and total spreads over base rates. Regardless of any newfound competition, differentiated and narrowly focused strategies may mitigate competition.
	Subordinated Capital			Higher returns can be achieved through increased equity participation and higher spreads, but this also comes with higher risk. Borrowers are increasingly using subordinated debt for financing acquisitions and growth capital. The pricing for this investment has gotten better with some structures offering cash payments instead of in-kind payments.
	Credit Opportunities			Attractive pricing and target returns in niche markets with less correlated drivers and better risk-adjusted returns benefit credit opportunities. Flexible capital solutions help borrowers with liquidity challenges and company growth initiatives since senior lenders have tighter underwriting standards. Companies are now opting for private financing instead of relying on regional banks.
	Stressed / Distressed			We remain positive on investment managers who can generate strong returns through all economic cycles, with an expectation that returns may increase alongside stress and/or distressed opportunities. A meaningful distressed for control (“DFC”) opportunity is not yet broadly present and the likelihood of one in the coming years is uncertain. Strong companies have options to stay afloat and lenders are more willing to amend and extend loans to troubled companies, reducing the distressed opportunity set. Irrespective of market environment, we find the distressed for control thesis to be less compelling given the execution risk and volatility, though we remain favorable on special situations funds that could execute on distressed for control as a smaller allocation of a total fund that can execute on stress.
Secondaries				More supply is expected in GP-led secondaries because of challenges, such as unfavorable exit markets, maturity walls, capital needs, and prolonged ownership desires, while there may be less supply in LP-led secondaries due to a diminishing denominator effect. Discounts have risen YoY to a point where deal activity has picked up. Secondaries remain a strong option for budding private equity programs in need of a J-curve mitigant and immediate diversification.

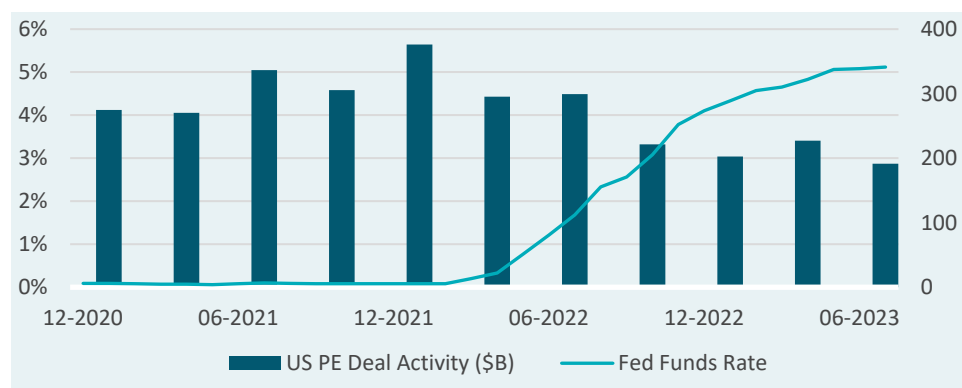
# Spotlight

# Spotlight – Higher rates for longer

## Existing portfolios impacted...

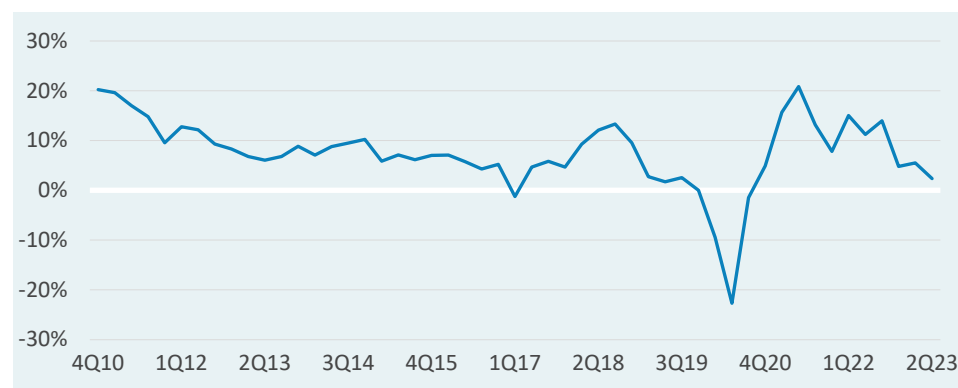
- Private equity valuations fell as a result of a multitude of factors, such as public equity drawdowns in 2022 and decreasing investor premiums on risk, deterring private equity sellers from transacting.
- Even if bid-asks spreads narrow with the public market’s rebound in 2023, costlier debt financing deters the consummation of leveraged buyouts as returns are harder to come by. It also increases the cost for companies with existing debt, increasing stress for particularly over-levered businesses unable to sustain margins amidst a falling earnings environment. Interest coverage averaged 3x for issuers levered less than 4x and 1.5x for borrowers levered more than 6x (Pitchbook LCD).
- Owners of second-rate assets who are motivated to sell may acquiesce in negotiation to buyers. GPs seeking to generate distributions in a difficult fundraising environment will be impacted the most. We expect these challenges to continue in a prolonged higher rates scenario.
- Ultimately, capital deployment, monetization, and unrealized valuations are all impacted by the rising rate environment and will likely result in return degradation for most active funds. With costlier debt, changes to existing holdings’ value-add plans and new deal underwriting will have to occur to maintain return expectations. Managers with difficulty deploying capital will magnify fee drag for LPs.

U.S. PE DEAL ACTIVITY VS COSTLIER DEBT



Source: Pitchbook Q2 2023 & Fed Reserve System

U.S. LEVERAGED LOAN ISSUERS – QUARTERLY EBITDA GROWTH



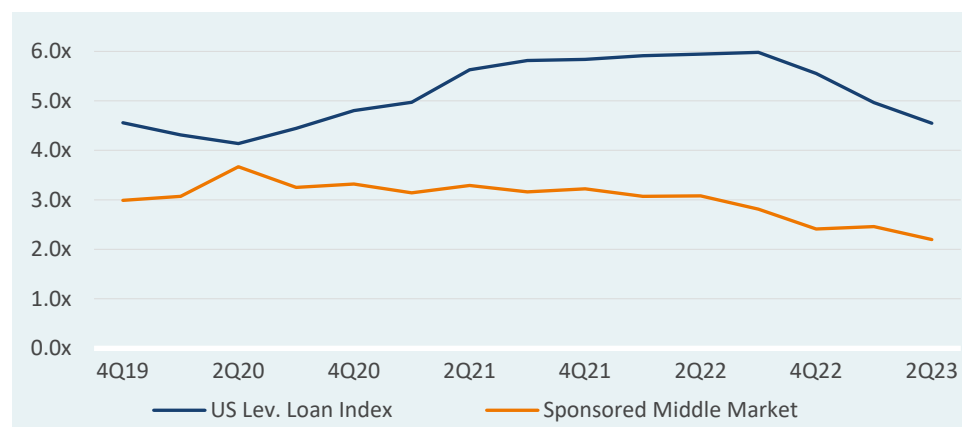
Source: Pitchbook LCD Q2 2023

# Spotlight – Higher rates for longer (cont.)

...to the benefit of prospective investors in a higher rates for longer scenario

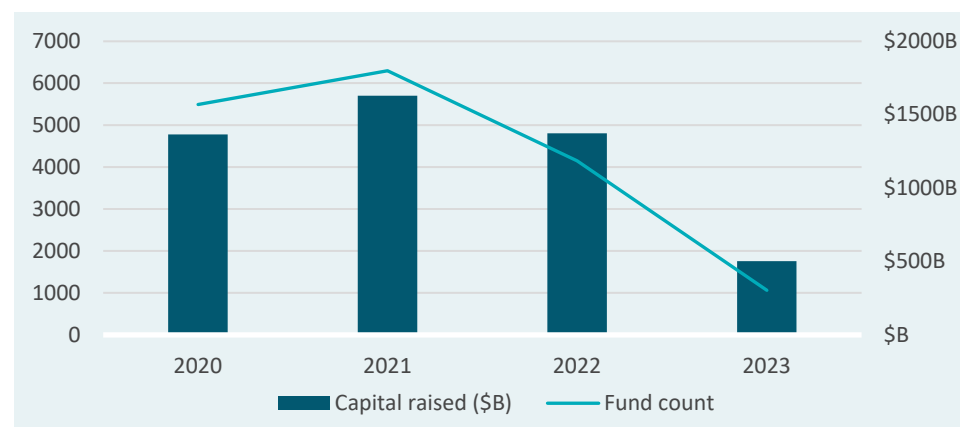
- Headwinds for existing asset owners may become tailwinds for prospective ones.
- Although buyers haven't been able to take advantage of valuation resets yet due to bid-ask spreads, seller motivations borne out of stress and liquidity may spur deal activity. These scenarios will allow for friendlier buyer terms and a widening deal funnel for managers who can identify and execute through complexity.
- Add-ons may be looked towards as an avenue to maintain capital deployment and buttress slowing organic growth as owners consolidate value in anticipation of narrowing bid-ask spreads.
- The tough fundraising environment benefits prospective LPs, acting as a hurdle to AUM growth, core competency shifts, blind pool risk, and access constraints.
- Prospective deal makers should find benefits from a less competitive market. Beneficiaries will include not just equity investors, such as early-stage VCs with the ability to pivot from a growth at all cost to a sustainable growth mindset or an operationally-focused lower middle market buyout investor acquiring from outside traditional channels, but also private credit lenders who find opportunity in incumbent lender pullback from portfolio company support.

## INTEREST COVERAGE (EBITDA / INTEREST EXPENSE)



Source: LCD / Pitchbook Q2 23 & Lead Left / Refinitiv Q2 23

## PRIVATE CAPITAL FUNDRAISING



Source: Pitchbook Q2 2023

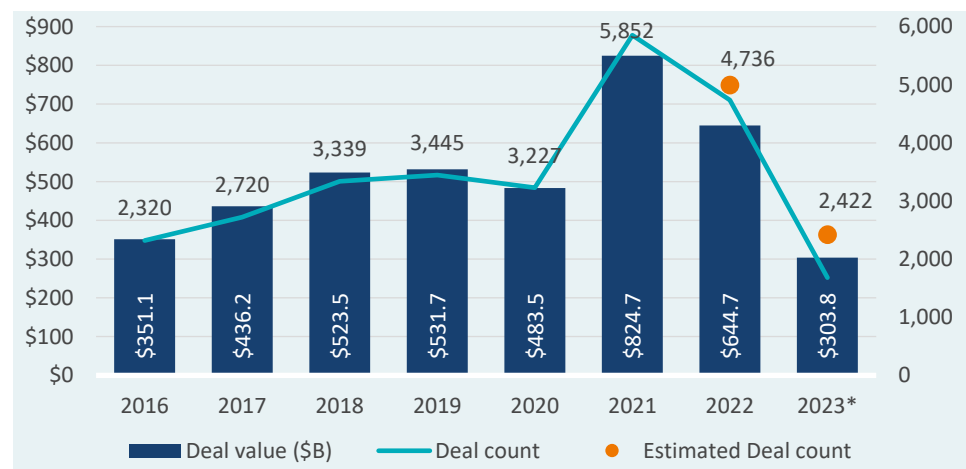
# Buyouts

# U.S. buyout – Small/middle market

## Purchase price multiples in correction mode

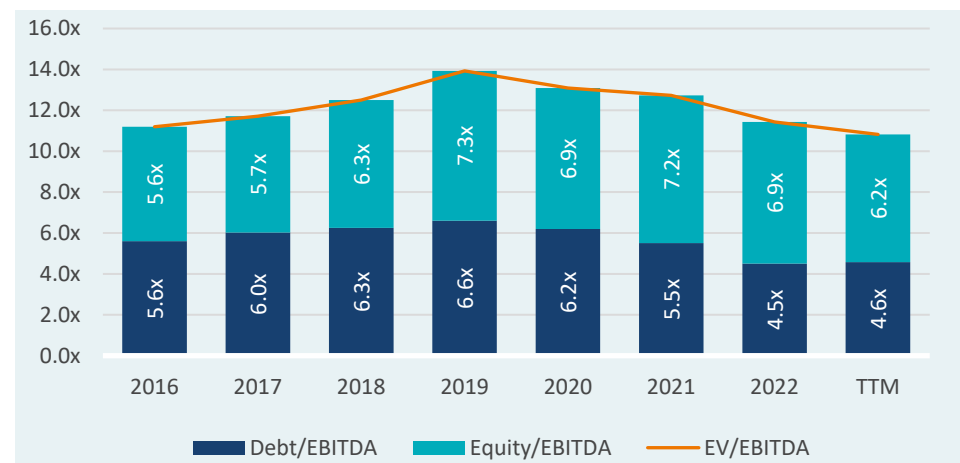
- Private equity deal activity in the middle market has decreased in five of the last six quarters and remains unstable. Since peaking in Q4 2021, quarterly volumes are down 12% by deal count and 49% by deal value.
- Using enterprise value (EV) to EBITDA as a metric, middle market PE buyout multiples peaked at 13.9x in 2019 and have slid down to 10.8x in the past year. On an EV-to-revenue basis, the broader measure inclusive of technology peaked at 3.3x in 2021 before falling to 2.3x in the trailing 12 months.
- Leverage multiples across buyouts have remained constant at 4.6x in 2023 vs. the range of 5.5x to 6.6x over prior years. A recession and higher interest payments can harm small and middle market companies, highlighting the importance of an experienced management team.

DEAL ACTIVITY BY COUNT AND VALUE



Source: Pitchbook Q1 2023

MEDIAN EV/EBITDA MULTIPLES



Source: Pitchbook Q1 2023

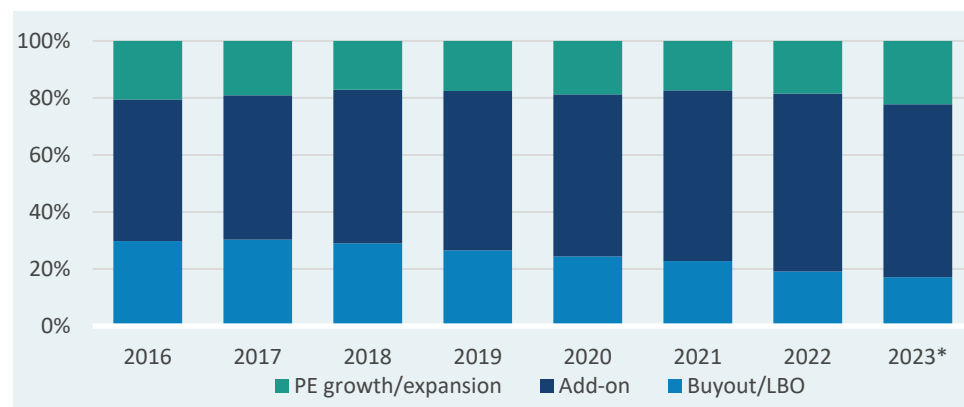


# U.S. buyout – Small/middle market (cont.)

## Amid the rise of add-ons, sponsor to sponsor deals decline

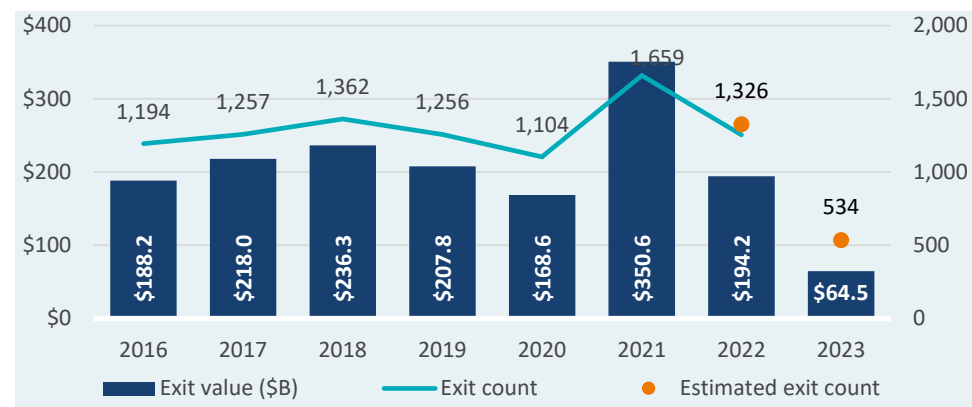
- PE managers have had to adapt to facilitate smaller deals that are easier to finance. Many are add-ons, which have helped to keep the PE flywheel spinning during this period of tight credit and market dislocation.
- Add-on investments allow sponsors to continue deploying capital while taking down deal size and bidding time until lending markets can support larger platform buyouts. When executed well, an add-on can accelerate the top and bottom line for the acquiring company, providing revenue and cost synergy and creating value for the PE owner and potential buyer. Smaller add-ons are easier to finance since they can use the existing credit lines of the larger platform.
- Growth equity deals continue to see increased deal activity and unlike larger deals, don't rely on debt but on a PE firm's ability to apply active management to increase company growth and returns through operational leverage instead of financial leverage.
- Sponsor-to-sponsor exit activity decreased because of various challenges. Private equity firms were cautious in their dealmaking, resulting in fewer sponsor transactions. Lending market disruptions limited the ability of GPs to take on big deals, causing a slowdown in sponsor-to-sponsor exit activity.
- Recent developments indicate IPOs may soon recover, while PE exits remained silent in this area. Interest rate and valuation volatility could make PE investors cautious about exit options.

DEAL ACTIVITY COUNT BY TYPE



Source: Pitchbook Q2 2023

EXIT ACTIVITY



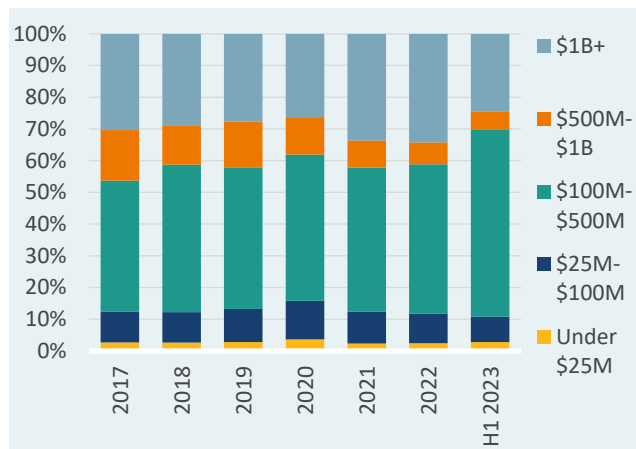
Source: Pitchbook Q2 2023

# U.S. buyout – Large market

## Lack of funding and exit opportunities

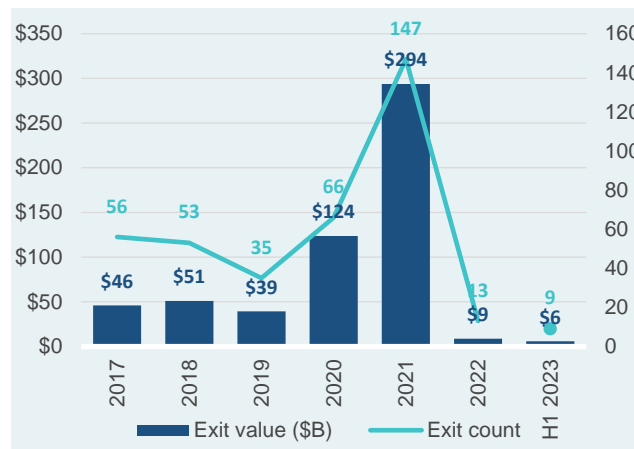
- Historically a steady returner, the large segment of the buyout market may experience near term return degradation because of costlier debt financing, resulting in a deterrence to new deal activity. This notion is proven by the decrease in 1H 2023 activity (deals above \$1.0B in value, as a % of all buyout activity, decreased from 34% in both 2021 and 2022 to 25% in 2023).
- Holding periods may be extended due to unfavorable exit markets, particularly the IPO market to which the large market has closest proximity.
- Exits may see additional headwinds should the FTC continue their propensity of blocking mergers and acquisitions.
- Despite headwinds, the larger market does offer some resiliency in persistent turmoil given their scale and opportunities for cost-cutting.
- Mega funds are receiving less buyout allocation dollars, mitigating implications that may arise from undue fund size growth and competition.

DEAL FLOW (\$) BY SIZE



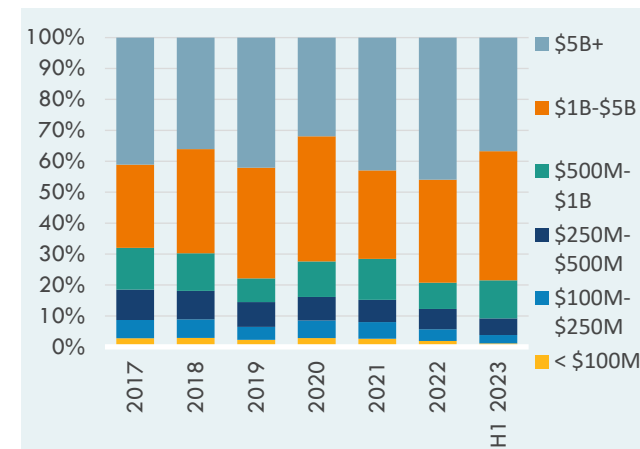
Source: Pitchbook Q2 23

EXITS BY PUBLIC LISTING



Source: Pitchbook Q2 23

FUNDS RAISED (\$) BY SIZE



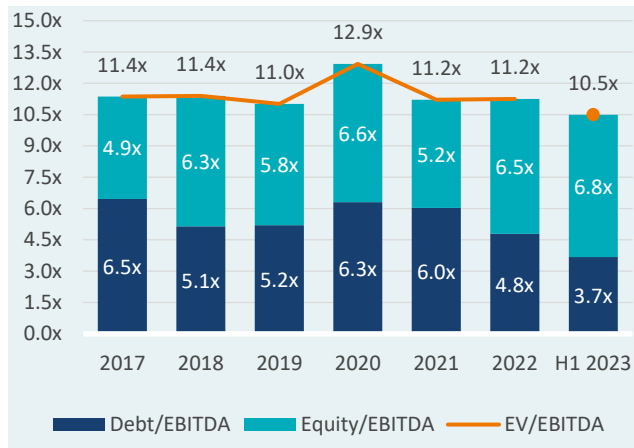
Source: Pitchbook Q2 23

# European buyout

## Resilience in broader fundraising

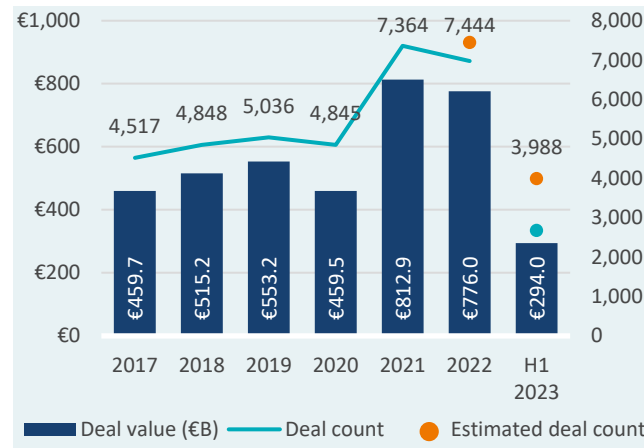
- Investment return prospects in Europe may be less resilient to headwinds than the U.S., especially with the proximity to wide-effecting geopolitical conflict and fragmented capital markets. Leverage multiples for new deals decreased significantly, from 6.0x to 2021 to 3.7x in 2023, acting as a hurdle to investment performance endeavors.
- The current pace of fundraising may indicate a shorter window for discounted purchase prices relative to the U.S. markets. Interestingly, fundraising activity in Europe is on pace to reach pre-2021 level of activity, albeit in a more concentrated vintage.
- On a YoY run-rate basis, deal value decreased across all regions (46% in Southern Europe, 30% in DACH, 22% in UK & Ireland, 16% in Central & Eastern Europe, 15% in Nordics, and 12% in France & Benelux). France exhibited the most relative resilience with value falling 7%.
- With the passing of ELTIF and ELTIF 2.0, access to the European Private Markets is made easier for retail investors. Although meaningful inflows from the investor class may take years to materialize, new market participants may benefit from favorable exit environments in the long-term.

### VALUATIONS: DEBT & EQUITY ENTRY MULTIPLES



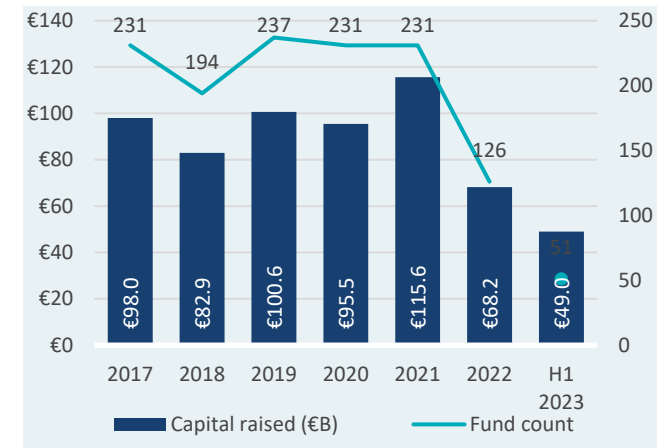
Source: Pitchbook Q2 23

### VALUATION AND DEAL ACTIVITY



Source: Pitchbook Q2 23

### FUNDRAISING



Source: Pitchbook Q2 23

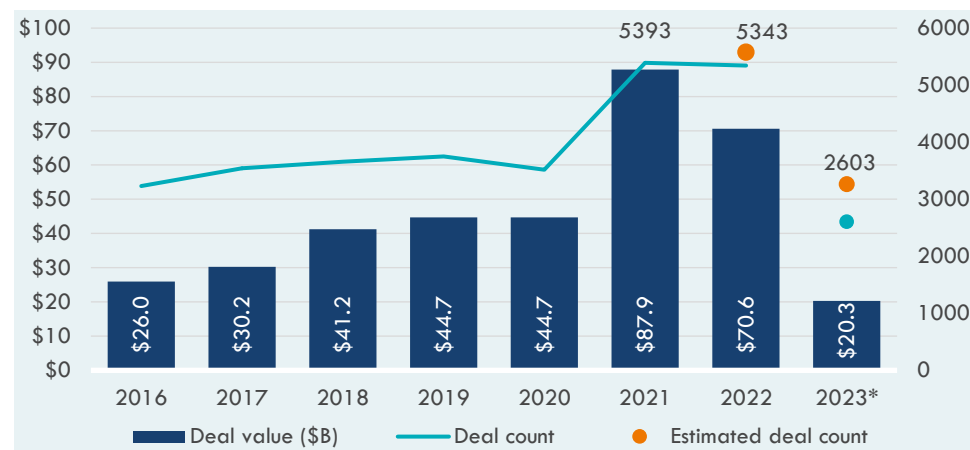
# Venture capital

# Venture capital – Early stage

## Deal speed continues to slow, despite availability of cash

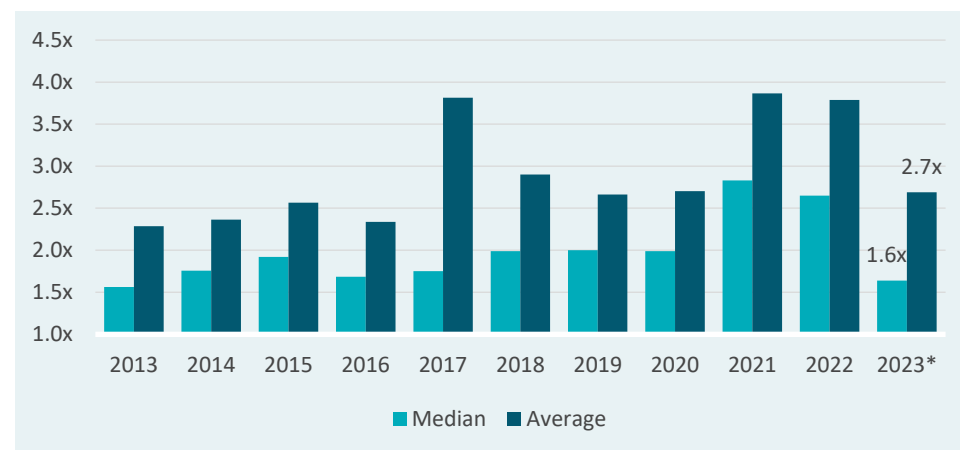
- Lack of liquidity and pressure on late-stage values is impacting early-stage deals. Early-stage deal size and pre-money valuations are lower than recent record highs.
- Amid a harsh equity financing environment, the bar for raising an early-stage VC round has gone up across the board. Investors supplied only \$1.00 for every \$1.50 sought by startups in the first half of 2023. This capital-demand to-supply ratio is the second-highest level seen in over 10 years.
- Startups are giving up more equity and adding structure to deal terms to extend their cash runway, as there are no hints of a market rebound and founders want to preserve valuations. Companies need to show progress in product development, product-market fit, and strong traction to secure equity financing.
- The increasing competitiveness in securing venture debt is pushing founders to be more accepting of this new norm. The collapse of banks specializing in early-stage startup lending has decreased the number of lenders willing to take on risks, making it harder for startups to find funding.
- The compression in early-stage and seed deal metrics in the last 18 months has negatively impacted value progression between stages. The decline in early-stage step-ups will negatively impact GPs by limiting the extent to which they can mark up their portfolios between rounds. Managers without strong networks and investment records may have a harder time raising funds, especially if they don't have paper gains to show LPs.

U.S. EARLY-STAGE VC ANNUALIZED DEAL ACTIVITY



Source: Pitchbook NVCA Venture Monitor as of June 2023

MEDIAN AND AVERAGE EARLY-STAGE VC VALUATION STEP-UP BY YEAR



Source: Pitchbook Q2 2023 U.S. VC Valuations Report

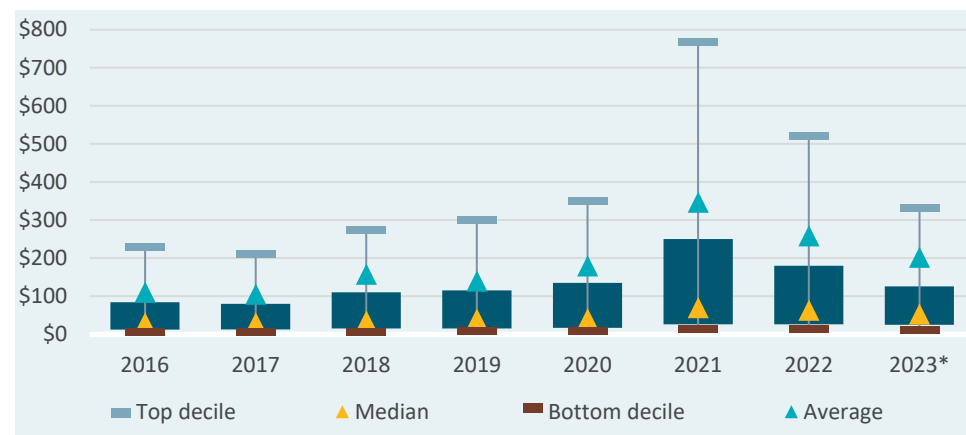
# Venture capital – Late stage

## Falling valuations

- The closed IPO window and high demand for capital continue to put pressure on late-stage deals. While they do not represent all possible exits, they signal that hold times may be extending, forming a headwind in performance.
- Amid a harsh financing and public exit environment, many late-stage startups have opted to preserve cash and raise insider rounds to cope with market turbulence. However, runway extensions are not a sustainable solution for late-stage startups that need to demonstrate growth momentum. Current late-stage funds may not have sufficient cash reserves to back portfolio companies and are discerning about additional investments, highlighting the requirement for new dollars deployed into portfolio companies.

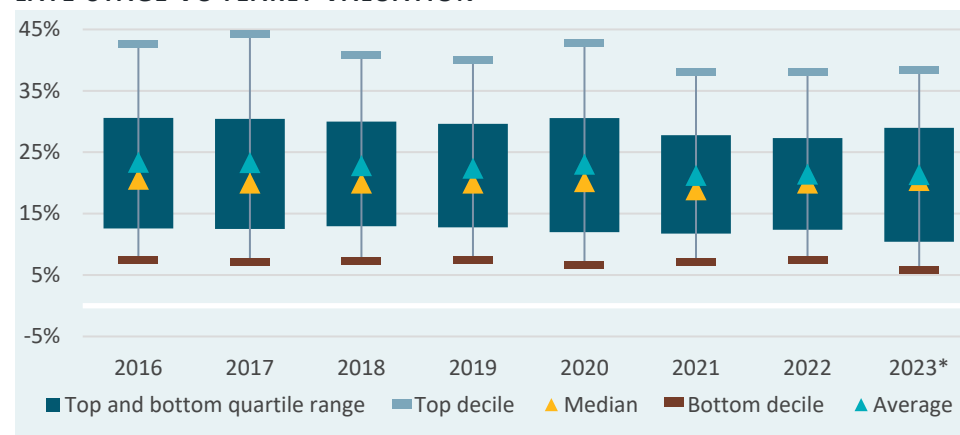
- Value creation between rounds has also been heavily impacted, meaning GPs will have a tougher time raising their next fund.
- Startups at the venture-growth stage face challenges due to limited liquidity avenues, less interest from nontraditional investors, and increased scrutiny of growth-focused business models.
- As valuations decline, cash-rich companies have a chance to acquire valuable assets and intellectual property; however, organizations may choose to conserve capital and observe the potential for an economic recession.

**LATE-STAGE PRE MONEY VALUATION DOWN 30.3% YEAR OVER YEAR**



Source: Pitchbook NVCA Venture Monitor as of June 2023

**LATE-STAGE VC YEARLY VALUATION**



Source: Pitchbook Q2 2023 U.S. VC Valuations Report

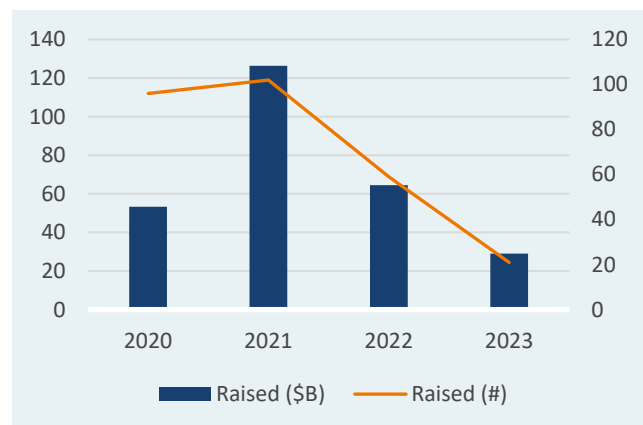
# Private credit

# Private credit

## The opportunity in Direct Lending still relatively attractive

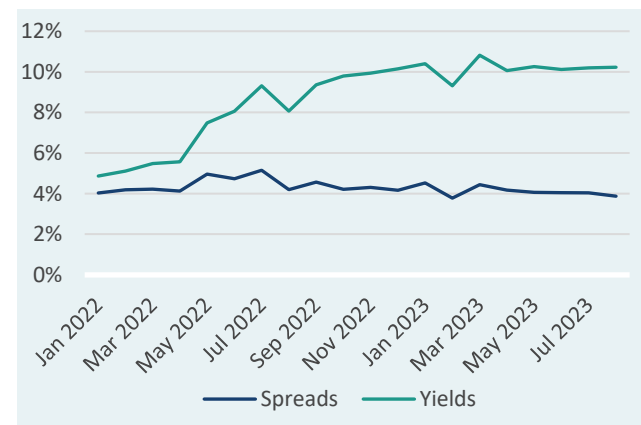
- Limited bank broadly syndicated activity has driven sponsors to private markets for credit solutions. LPs have also caught wind of the opportunity, with some increasing their allocation target to private credit. Because of increasing investor attention, concerns about overcrowding are warranted.
- Direct lending fundraising is significantly lower than prior years. There were 21 funds raised in 1H 2023, much less than the 59 and 102 raised in 2022 and 2021, respectively. A similar trend was observed on dollars raised. This is due in part to LPs having to pace to private credit targets over a multi-year horizon. Slowdown on the institutional level is offset somewhat by traction in BDCs, which are more readily accessible for retail.
- At the private company level, demand for debt remains at a record high, with \$140B in loans coming due at the end of 2025.
- From a returns perspective, the strategy is more attractive now than before when interest rates were low and equity realizations were strong. Brand new loans comprise higher total yields and stronger lender protections. In August 2023, LCD reported quality borrowers having to pay a 10.5% yield to maturity.
- Spreads above base rates are relatively consistent since January 2022, with recent marginal compression potentially indicating an uptick in competition. Despite newfound competition, base rates in a higher rate for longer environment will be attractive relative to years prior.
- In this upcoming environment, it may prove prudent to select managers who are focused on less trafficked market segments and have the ability and experience of managing credits through poor macroenvironments.

### DIRECT LENDING FUNDRAISING



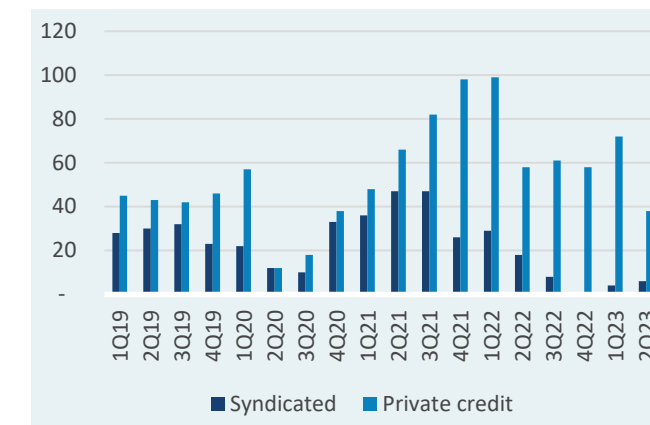
Source: Pitchbook Q2 23

### U.S. LEVERAGED LOANS SPREADS & YIELDS



Source: Pitchbook /LCD August 2023

### LBO FINANCING ACTIVITY: BSL VS PC



Source: Pitchbook/LCD Q2 23

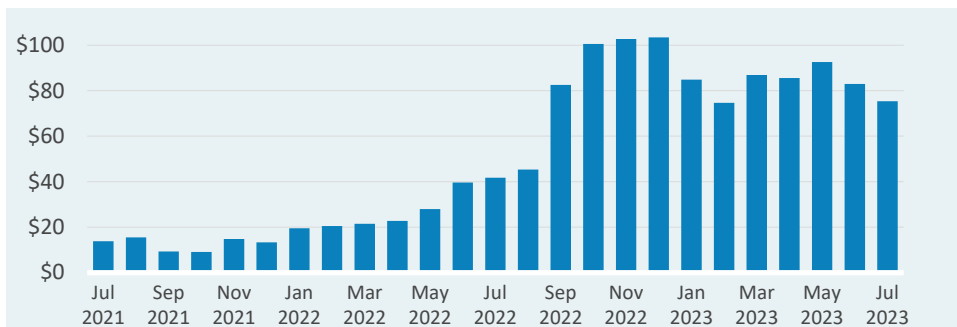


# Private credit (cont.)

## Distressed opportunity trending higher since 2021... but not in a straight line

- With increasing market sentiment of a dislocation opportunity, competition for distressed loans has increased. Despite increasing sentiment, a distressed opportunity akin to the Global Financial Crisis or the COVID-19 dislocation is not present yet. Comparing year-end 2022 to July 2023, outstanding U.S. distressed bank loan volume fell from \$103B to \$75B, with \$16B of the delta attributed to defaults. From June to September this year, the LSTA Lev. Loan Index default rate dropped from 1.71% to 1.27%. Though a meaningful investable opportunity for distressed isn't here yet... it may come in the foreseeable future alongside the persistence of poor economic conditions.
- Distressed figures are trending higher from 2021 and some key markers, such as the treasury yield inversion, do indicate future economic stress, giving credence to market sentiment.
  - As of June 2023, the U.S. bank leveraged loan default rate is up 143 bps YoY and beginning to brush against the 10-year average of 1.86% (Morningstar LSTA U.S. Leveraged Loan Index). S&P Global Ratings predicts an uptick to 2.75% (by issuer count) by June 2024.
  - Moody's Analytics predicts U.S. Speculative Grade bonds will reach a 6% annualized default rate by end of 2023, up from ~4% in August 2023.

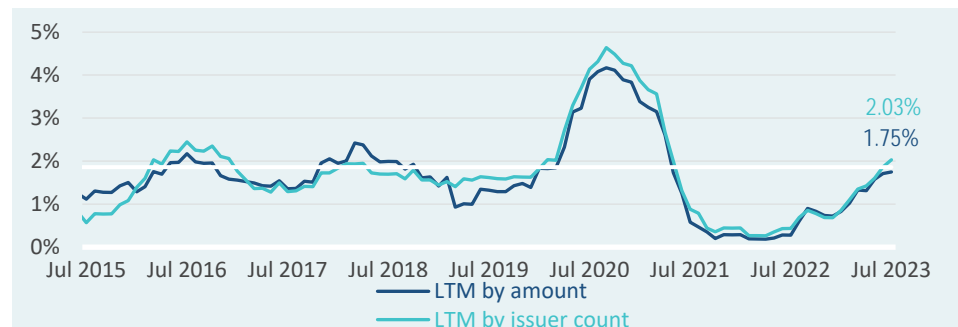
### OUTSTANDING U.S. DISTRESSED LOAN VOLUME



Source: Pitchbook LCD July 2023 / Morningstar LSTA U.S. Leveraged Loan Index

- We remain positive on investment managers who can generate strong returns through all economic cycles, with an expectation that returns may increase alongside stress and/or distressed opportunities:
  - Relatively liquid strategies targeting stressed opportunities are currently seeing an uptick in actionable opportunities, a trend that should persist in a downturn and interim periods of market volatility. These strategies offer investors quicker distributions and a potential offset over time to headwinds in public markets, both equities and fixed income.
  - A meaningful distressed for control (“DFC”) opportunity is not yet broadly present and the likelihood of one in the coming years is uncertain. The distressed opportunity will fluctuate with the number of financing options fundamentally strong companies can rely on to stay afloat. From May to August of this year, S&P U.S. HY Corporate Bond Index’s distressed ratio was down to 6.8% from 9.3%. Although DFC may outperform in distressed environments, the strategy has historically produced lukewarm results in other environments. Irrespective of market environment, we find the distressed for control thesis to be less compelling given the execution risk and volatility, though we remain favorable on special situations funds that could pivot to DFC as a smaller allocation of the total fund.

### U.S. LEVERAGED LOAN DEFAULT RATE



Source: Pitchbook LCD July 2023 / Morningstar LSTA U.S. Leveraged Loan Index

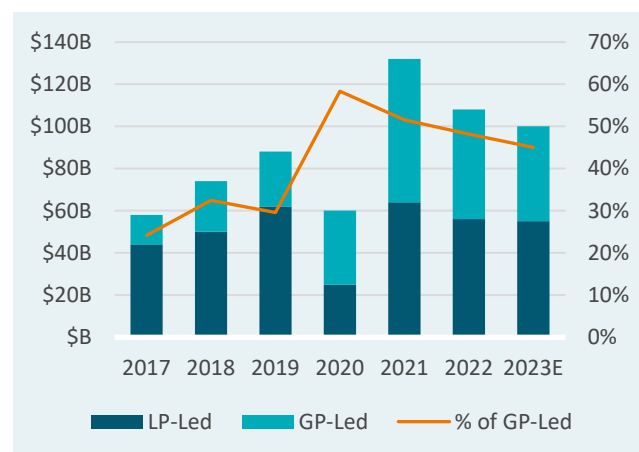
# Secondaries

# Global secondaries

## Increasing supply of GP-led transactions due to liquidity crunch

- The denominator effect, whereby an entire portfolio’s value decreases due to a portion of the portfolio, narrowed with recent public market rebounds, resulting in less growth (relative to 2022) in the supply of LP-led transactions.
- The supply of GP-led transactions may increase as GP’s seek liquidity amidst a challenging exit environment, which may persist in a higher rates for longer scenario.
- Although discounts have narrowed from 2022, they remain higher than historical levels and may solve for bid-ask spreads, spurring deal activity.
- Capital overhang at 2.3x continues to remain at post pandemic levels, allowing buyers of secondaries to exercise discipline on asset quality and transaction dynamics such as sponsor alignment and pricing.
- With funds hitting maturity walls and bid-asks spreads for directs remaining elevated, continuation vehicles usage trended higher, taking 80% share of all GP-led deals. The increase in continuation vehicles, an investment vehicle used by investment managers solely to buy one or multiple assets from one of their existing funds, may potentially increase return expectations for diversified secondary portfolios.

### DEAL FLOW AND MARKET VOLUME



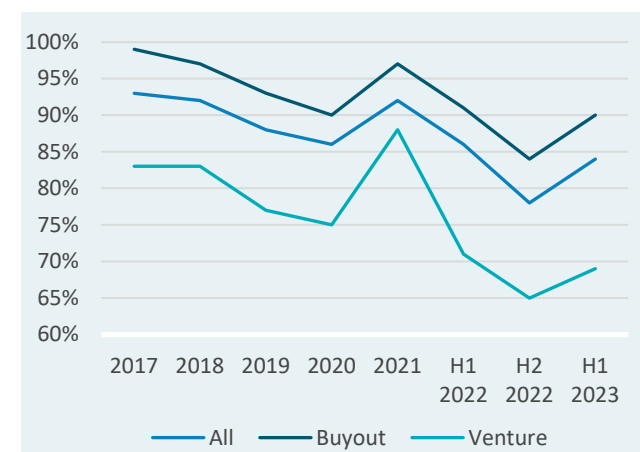
Source: Jefferies, Global Secondary Market Review – July 2023

### SECONDARY MARKET OVERHANG



Source: Jefferies, Global Secondary Market Review – July 2023

### DISCOUNTS ON LP PORTFOLIO SECONDARIES



Source: Jefferies, Global Secondary Market Review – July 2023

# ESG / DEI

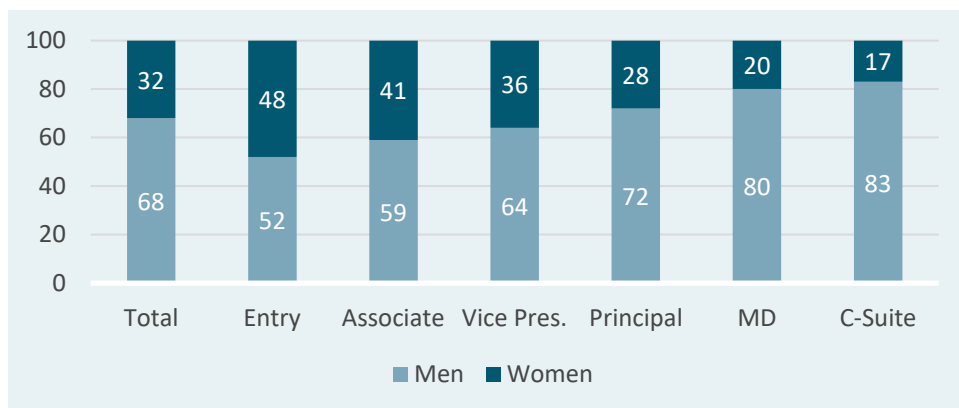
# Diversity, equity, and inclusion

## Increased DEI awareness across the industry

- DEI advocacy and action continues to increase across the industry, leading to further diversity representation. For example, the U.K. has shown considerable traction in this regard. Women representation in senior investment roles in U.K. incorporated firms with \$100M+ in AUM nearly doubling from 6% in 2018 to 11% in 2023 (BVCA and Level 20) and women representation amongst the partner level in VC increasing from 11% in 2016 to 19% in 2022 (Deloitte).
- Changes in diversity amongst senior leadership in established PE firms has been slow but is notably increasing within the junior ranks (women in mid-level roles in UK PE increased YoY from 20% to 24% and in junior-level roles, 33% to 38% (BVCA and Level 20)).
- A survey conducted across ILPA DIA signatories observed meaningful participation in DEI-minded practices, such as the conduction of unconscious bias training (60%+) and implementing diversity targets for applicant pools

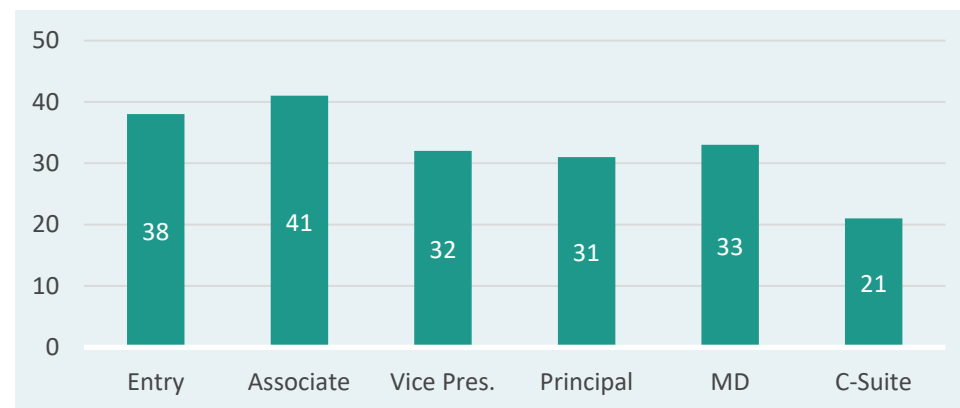
- when communicating with recruiters (75%). Private equity firms are increasingly partnering with Employee Resource Groups, such as NASP, PEWIN, SEO, Toigo, and WAVE, who will assist in diversity recruitment (22%), and reaching out directly to college students (12%).
- Growth in ILPA DIA membership can be used as a proxy for industry wide DEI awareness. The endeavor launched in December 2020 with 46 founding signatories and has grown to 279+ organizations. A similar trend can be observed in VC. In a Deloitte survey (315 GPs), VC firms with a diversity strategy increased from 15% in 2016 to 44% in 2020, and VC firms with an inclusion strategy increased from 17% in 2016 to 44% in 2022.
- Female founders are finding increased success raising capital for startups from Venture Capital. Companies with at least one female founder constituted 28.1% of U.S. VC deal values, up from 17.6% in 2022.

**GENDER REPRESENTATION BY ROLE IN PE GLOBALLY (%)**



Source: McKinsey 2022

**SHARE OF NON-WHITE EXTERNAL HIRES IN U.S. AND CANADA (%)**



Source: McKinsey 2022

# Environmental, social, and governance

## Some traction in ESG implementation across the industry

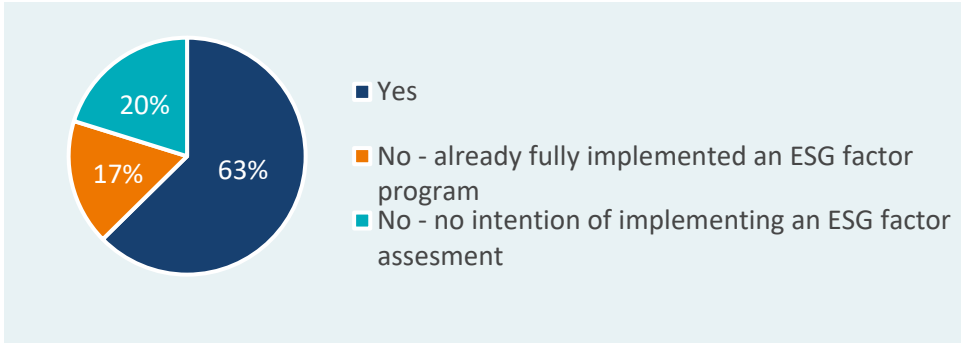
- ESG implementation has increased in recent years with LPs requiring GPs to incorporate ESG considerations in long-term investment decisions, although there is a considerable portion of the LP community who are indifferent. A Pitchbook survey of 178 LPs reported 69% of respondents currently have or are having plans to include a fund manager’s implementation of an ESG risk factor framework as part of their diligence. In 2021, 15% of respondents had no plans of doing so. This number increased to 31% in 2023.
- ESG implementation amongst GPs has increased alongside LP attention, with 80% of respondents (210 GPs) either planning to or have already increased attention to ESG risk factors in their respective internal and investment processes. Respondents’ key focus area in regards to sustainability in an investment context consisted of ESG impacts (58%), improving investment returns (23%), improving portfolio company performance (12%), and mitigating risks (8%). The results suggest the necessity of LP deliberation regarding the purpose of an ESG fund commitment.
- PRI signatories may be used as a proxy to ESG prevalence in the industry. The number of GPs who are PRI signatories has grown from 155 in 2010 to 2,341 in 2023, now representing \$2.5 trillion in capital raised. There are limitations in this proxy as not all GPs with an ESG program are PRI signatories and not every PRI signatory have a strong practice to ESG alignment. PRI signatories have simply made a commitment to the PRI and to ESG (Pitchbook).
- Impact investing (i.e. allocating with dual goals of achieving financial returns and ESG promotion) is gaining traction, with 63% of Pitchbook survey respondents offering Impact strategies and another 13% in process of developing an Impact strategy. Energy, Climate, and Agriculture are receiving the most focus.
- With Federal regulators taking a pro-ESG stance since 2021, anti-ESG legislation on the state level received considerable traction and 19 bills became law as of June of 2023 (Pleiades Strategy). Anti-ESG regulation may deter ESG adoption in some pockets of the industry.

**LPS PLANS TO INCREASE ATTENTION TO GP ESG IMPLEMENTATION**



Source: Pitchbook 2022 year-end

**GP PLANS TO INCREASE ATTENTION TOWARDS ESG RISK FACTORS**



Source: Pitchbook 2022 year-end

# Appendix

# Verus private equity philosophy

- Private equity is a long-term asset class:
  - Funds deploy capital into new investments over a three- to five-year period
  - After investment, portfolio companies are held for a period of four to seven years on average prior to exit
  - This typical investment course drives fund lives to often last beyond 10 years, during which significant changes can occur
- To address this phenomenon, investors generally “average in” to the market by building portfolios of discrete private equity funds over multiple vintage years
- For these reasons, significant tactical shifts are not easily implemented in private markets portfolios
- Our top-down review of the asset class incorporates current trends, which if sustained, can potentially impact returns over the long term

We believe that careful manager selection is the primary driver of returns

That said, macro and top-down conditions have the potential to impact portfolio returns over the long term



# Detailed returns by geography

Pooled Returns by Geography	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
U.S. All Private Equity *	(7.4)	20.9	18.5	16.7	14.1	4,382	3,378.5
Europe All Private Equity *	(8.4)	15.2	14.1	13.3	14.7	865	937.9
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
<b>Outperformance vs. Public Index</b>							
U.S. All Private Equity *	11.8	13.8	9.7	4.5	4.2		
Europe All Private Equity *	6.7	13.8	12.3	8.7	8.3		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

Source: Refinitiv as of December 31, 2022

# Pooled returns by implementation approach

Pooled Returns by Implementation Approach	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>U.S. Pooled Returns</b>							
U.S. All Private Equity Direct*	(7.4)	20.9	18.5	16.7	14.1	4,382	3,378.5
U.S. Fund of Funds	(11.5)	25.5	19.9	15.3	11.4	519	173.0
U.S. Secondary Funds	(4.2)	18.8	15.8	13.4	13.3	253	254.6
<b>Europe Pooled Returns</b>							
Europe All Private Equity Direct*	(8.4)	15.2	14.1	13.3	14.7	865	937.9
Europe Fund of Funds	(12.3)	13.0	10.7	9.9	9.4	67	31.4
Europe Secondary Funds	(12.8)	10.2	9.7	12.0	13.3	40	20.7
<b>Global Pooled Returns</b>							
Global All Private Equity Direct**	(13.3)	13.9	11.2	11.4	10.6	216	286.3
Global Fund of Funds **	(17.5)	17.3	15.2	13.0	12.0	85	35.7
Global Secondary Funds **	(7.4)	15.3	13.0	14.3	12.9	25	36.8
<b>All Region Pooled Returns</b>							
All Regions Private Equity Direct*	(7.8)	18.3	16.2	15.1	13.7	6,489	5,129.5
All Regions Fund of Funds	(12.0)	21.4	17.3	14.1	11.2	745	266.8
All Regions Secondary Funds	(14.4)	23.3	22.1	18.5	15.6	415	454.3
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
MSCI ACWI	(18.4)	4.0	5.2	8.0	8.0		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

\*\* Global Funds invest across the globe, without any targeted regions for investment.

Source: Refinitiv as of December 31, 2022

# Pooled returns outperformance

Outperformance vs. Public Index	1 Year	3 Year	5 Year	10 Year	20 Year
<b>U.S. Outperformance</b>					
U.S. All Private Equity Direct*	11.8	13.8	9.7	4.5	4.2
U.S. Fund of Funds	7.7	18.4	11.1	3.1	1.6
U.S. Secondary Funds	15.0	11.7	7.0	1.2	3.4
<b>Europe Outperformance</b>					
Europe All Private Equity Direct*	6.7	13.8	12.3	8.7	8.3
Europe Fund of Funds	2.7	11.6	8.8	5.3	2.9
Europe Secondary Funds	2.3	8.8	7.8	7.4	6.8
<b>Global Outperformance</b>					
Global All Private Equity Direct**	5.1	9.9	5.9	3.4	2.6
Global Fund of Funds **	0.9	13.3	9.9	5.0	4.0
Global Secondary Funds **	10.9	11.3	7.8	6.3	-
<b>All Region Outperformance</b>					
All Regions Private Equity Direct*	10.6	14.3	10.9	7.1	5.7
All Regions Fund of Funds	6.3	17.4	12.0	6.1	3.1
All Regions Secondary Funds	4.0	19.3	16.9	10.6	7.6

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

\*\* Global Funds invest across the globe, without any targeted regions for investment.

Source: Refinitiv as of December 31, 2022

# U.S. returns

U.S. Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
U.S. Venture Capital	(20.8)	24.9	22.5	18.7	12.2	2,344	588.2
U.S. Growth Equity	(14.4)	23.3	22.1	18.5	15.6	415	454.3
U.S. Buyouts	(0.3)	20.0	17.5	16.9	15.2	1,081	1,762.6
U.S. Debt-Related	5.3	15.3	12.3	11.3	11.8	542	573.5
<b>U.S. All Private Equity *</b>	<b>(7.4)</b>	<b>20.9</b>	<b>18.5</b>	<b>16.7</b>	<b>14.1</b>	<b>4,382</b>	<b>3,378.5</b>
<b>Public Index</b>							
S&P 500	(18.1)	7.7	9.4	12.6	9.8		
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
Bloomberg Aggregate	(13.0)	(2.7)	0.0	1.1	3.1		
<b>Outperformance</b>							
All PE Outperformance*	11.8	13.8	9.7	4.5	4.2		
Debt-Related Outperformance	18.3	18.0	12.3	10.3	8.7		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

Source: Refinitiv as of December 31, 2022

# Europe returns

Europe Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
Europe Venture	(18.9)	31.5	28.8	20.6	12.3	199	43.4
Europe Growth Equity	(9.2)	19.2	17.5	15.1	15.1	65	26.3
Europe Buyouts	(8.1)	15.2	14.2	13.4	15.5	508	750.2
Europe Debt-Related	(0.9)	5.9	5.7	7.3	7.7	93	118.1
<b>Europe All Private Equity *</b>	<b>(8.4)</b>	<b>15.2</b>	<b>14.1</b>	<b>13.3</b>	<b>14.7</b>	<b>865</b>	<b>937.9</b>
<b>Public Index</b>							
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
Bloomberg Pan-Europe TR	(23.9)	(7.1)	(2.9)	0.2	2.4		
<b>Outperformance</b>							
All PE Outperformance*	6.7	13.8	12.3	8.7	8.3		
Debt-Related Outperformance	23.0	12.9	8.6	7.2	5.3		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

Source: Refinitiv as of December 31, 2022

# Sub-asset class returns

U.S. Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
U.S. Venture Capital	(20.8)	24.9	22.5	18.7	12.2	2,344	588.2
U.S. Growth Equity	(14.4)	23.3	22.1	18.5	15.6	415	454.3
U.S. Buyouts	(0.3)	20.0	17.5	16.9	15.2	1,081	1,762.6
U.S. Debt-Related	5.3	15.3	12.3	11.3	11.8	542	573.5
<b>U.S. All Private Equity *</b>	<b>(7.4)</b>	<b>20.9</b>	<b>18.5</b>	<b>16.7</b>	<b>14.1</b>	<b>4,382</b>	<b>3,378.5</b>

Europe Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
Europe Venture	(18.9)	31.5	28.8	20.6	12.3	199	43.4
Europe Growth Equity	(9.2)	19.2	17.5	15.1	15.1	65	26.3
Europe Buyouts	(8.1)	15.2	14.2	13.4	15.5	508	750.2
Europe Debt-Related	(0.9)	5.9	5.7	7.3	7.7	93	118.1
<b>Europe All Private Equity *</b>	<b>(8.4)</b>	<b>15.2</b>	<b>14.1</b>	<b>13.3</b>	<b>14.7</b>	<b>865</b>	<b>937.9</b>

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

Source: Refinitiv as of December 31, 2022

# Sub-asset class returns – Fund of funds

Fund of Funds by Geography	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
U.S. Fund of Funds	(11.5)	25.5	19.9	15.3	11.4	519	173.0
Europe Fund of Funds	(12.3)	13.0	10.7	9.9	9.4	67	31.4
Global Fund of Funds **	(17.5)	17.3	15.2	13.0	12.0	85	35.7
<b>All Fund of Funds</b>	<b>(12.0)</b>	<b>21.4</b>	<b>17.3</b>	<b>14.1</b>	<b>11.2</b>	<b>745</b>	<b>266.8</b>
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
MSCI ACWI	(18.4)	4.0	5.2	8.0	8.0		
<b>Outperformance</b>							
U.S. Fund of Funds <sup>(1)</sup>	7.7	18.4	11.1	3.1	1.6		
Europe Fund of Funds <sup>(2)</sup>	4.9	13.8	10.5	5.5	2.4		
Global Fund of Funds ** <sup>(3)</sup>	(17.5)	17.3	15.2	13.0	12.0		

\*\* Global Funds invest across the globe, without any targeted regions for investment.

(1) Performance vs. Russell 3000 index.

(2) Performance vs. MSCI Europe index.

(3) Performance vs. MSCI ACWI index.

Source: Refinitiv as of December 31, 2022

# Sub-asset class returns – Fund of funds (cont.)

Fund of Funds by Sub Asset Class <sup>(1)</sup>	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
U.S. Buyout Fund of Funds	(1.4)	18.0	13.9	12.7	11.0	191	66.8
U.S. Venture Capital Fund of Funds	(20.6)	27.7	22.3	17.1	11.4	200	59.9
U.S. Venture Capital & Buyout Fund of Funds	(0.0)	28.7	22.1	16.3	12.3	128	46.3
<b>U.S. Fund of Funds</b>	<b>(11.5)</b>	<b>25.5</b>	<b>19.9</b>	<b>15.3</b>	<b>11.4</b>	<b>519</b>	<b>173.0</b>
Europe Buyout Fund of Funds	(13.6)	9.8	8.1	8.9	9.1	55	25.3
Europe VC & Buyout Fund of Funds	(11.3)	16.9	14.7	13.2	11.1	10	5.9
<b>Europe Fund of Funds</b>	<b>(12.3)</b>	<b>13.0</b>	<b>10.7</b>	<b>9.9</b>	<b>9.4</b>	<b>67</b>	<b>31.4</b>
Global Buyout Fund of Funds **	(9.1)	7.8	6.6	9.3	10.8	50	21.0
Global Venture Capital Fund of Funds **	(20.8)	25.0	24.6	21.8	18.2	19	10.2
Global VC & Buyout Fund of Funds **	(13.5)	12.3	11.6	10.8	9.3	16	4.4
<b>Global Fund of Funds **</b>	<b>(17.5)</b>	<b>17.3</b>	<b>15.2</b>	<b>13.0</b>	<b>12.0</b>	<b>85</b>	<b>35.7</b>

Fund of Funds by Sub Asset Class <sup>(1)</sup>	1 Year	3 Year	5 Year	10 Year	20 Year
<b>Public Index</b>					
Russell 3000	(19.2)	7.1	8.8	12.1	9.9
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5
MSCI ACWI	(18.4)	4.0	5.2	8.0	8.0
<b>Outperformance vs. Public Index</b>					
U.S. Buyout Fund of Funds <sup>(2)</sup>	17.8	10.9	5.2	0.6	1.2
U.S. Venture Capital Fund of Funds <sup>(2)</sup>	(1.4)	20.7	13.5	5.0	1.5
U.S. Venture Capital & Buyout Fund of Funds <sup>(2)</sup>	19.2	21.7	13.3	4.1	2.5
<b>U.S. Fund of Funds <sup>(2)</sup></b>	<b>7.7</b>	<b>18.4</b>	<b>11.1</b>	<b>3.1</b>	<b>1.6</b>
Europe Buyout Fund of Funds <sup>(3)</sup>	1.5	8.4	6.2	4.3	2.6
Europe VC & Buyout Fund of Funds <sup>(3)</sup>	3.7	15.6	12.9	8.6	4.6
<b>Europe Fund of Funds <sup>(3)</sup></b>	<b>2.7</b>	<b>11.6</b>	<b>8.8</b>	<b>5.3</b>	<b>2.9</b>
<b>Global Fund of Funds ** <sup>(4)</sup></b>	<b>0.9</b>	<b>13.3</b>	<b>9.9</b>	<b>5.0</b>	<b>4.0</b>

\*\* Global Funds invest across the globe, without any targeted regions for investment.

(1) All Fund of Funds may occasionally co-invest in private companies and/or invest in secondary transactions.

Europe and Asia Venture Capital Fund of Funds have less than 3 funds and therefore included in the All Europe and Asia FoF pooled returns.

(2) Performance vs. Russell 3000 index.

(3) Performance vs. MSCI Europe index.

(4) Performance vs. MSCI ACWI index.

Source: Refinitiv as of December 31, 2022



# Sub-asset class returns – Secondaries

Secondary Funds	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>Private Equity Pooled Returns</b>							
U.S. Secondary Funds	(4.2)	18.8	15.8	13.4	13.3	253	254.6
Europe Secondary Funds	(12.8)	10.2	9.7	12.0	13.3	40	20.7
Global Secondary Funds **	(7.4)	15.3	13.0	14.3	12.9	25	36.8
<b>All Secondary Funds <sup>(2)</sup></b>	<b>(14.4)</b>	<b>23.3</b>	<b>22.1</b>	<b>18.5</b>	<b>15.6</b>	<b>415</b>	<b>454.3</b>
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
MSCI ACWI	(18.4)	4.0	5.2	8.0	8.0		
<b>Outperformance</b>							
U.S. Secondary Funds	15.0	11.7	7.0	1.2	3.4		
Europe Secondary Funds	2.3	8.8	7.8	7.4	6.8		
Global Secondary Funds **	10.9	11.3	7.8	6.3	4.9		

\*\* Global Funds invest across the globe, without any targeted regions for investment.

(2) Regions that have less than 3 funds are only included in the All Secondary Funds pooled returns.

Source: Refinitiv as of December 31, 2022

# Geography and approach

Pooled Returns by Geography	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
U.S. All Private Equity *	(7.4)	20.9	18.5	16.7	14.1	4,382	3,378.5
Europe All Private Equity *	(8.4)	15.2	14.1	13.3	14.7	865	937.9
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
<b>Outperformance vs. Public Index</b>							
U.S. All Private Equity *	11.8	13.8	9.7	4.5	4.2		
Europe All Private Equity *	6.7	13.8	12.3	8.7	8.3		

Pooled Returns by Implementation Approach	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
<b>U.S. Pooled Returns</b>							
U.S. All Private Equity Direct*	(7.4)	20.9	18.5	16.7	14.1	4,382	3,378.5
U.S. Fund of Funds	(11.5)	25.5	19.9	15.3	11.4	519	173.0
U.S. Secondary Funds	(4.2)	18.8	15.8	13.4	13.3	253	254.6
<b>Europe Pooled Returns</b>							
Europe All Private Equity Direct*	(8.4)	15.2	14.1	13.3	14.7	865	937.9
Europe Fund of Funds	(12.3)	13.0	10.7	9.9	9.4	67	31.4
Europe Secondary Funds	(12.8)	10.2	9.7	12.0	13.3	40	20.7
<b>Global Pooled Returns</b>							
Global All Private Equity Direct**	(13.3)	13.9	11.2	11.4	10.6	216	286.3
Global Fund of Funds **	(17.5)	17.3	15.2	13.0	12.0	85	35.7
Global Secondary Funds **	(7.4)	15.3	13.0	14.3	12.9	25	36.8
<b>All Region Pooled Returns</b>							
All Regions Private Equity Direct*	(7.8)	18.3	16.2	15.1	13.7	6,489	5,129.5
All Regions Fund of Funds	(12.0)	21.4	17.3	14.1	11.2	745	266.8
All Regions Secondary Funds	(14.4)	23.3	22.1	18.5	15.6	415	454.3
<b>Public Index</b>							
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
MSCI ACWI	(18.4)	4.0	5.2	8.0	8.0		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.  
Source: Refinitiv as of December 31, 2022

# Geography and approach (cont.)

## Outperformance vs. Public Index

	1 Year	3 Year	5 Year	10 Year	20 Year
<b>U.S. Outperformance</b>					
U.S. All Private Equity Direct*	11.8	13.8	9.7	4.5	4.2
U.S. Fund of Funds	7.7	18.4	11.1	3.1	1.6
U.S. Secondary Funds	15.0	11.7	7.0	1.2	3.4
<b>Europe Outperformance</b>					
Europe All Private Equity Direct*	6.7	13.8	12.3	8.7	8.3
Europe Fund of Funds	2.7	11.6	8.8	5.3	2.9
Europe Secondary Funds	2.3	8.8	7.8	7.4	6.8
<b>Global Outperformance</b>					
Global All Private Equity Direct**	5.1	9.9	5.9	3.4	2.6
Global Fund of Funds **	0.9	13.3	9.9	5.0	4.0
Global Secondary Funds **	10.9	11.3	7.8	6.3	-
<b>All Region Outperformance</b>					
All Regions Private Equity Direct*	10.6	14.3	10.9	7.1	5.7
All Regions Fund of Funds	6.3	17.4	12.0	6.1	3.1
All Regions Secondary Funds	4.0	19.3	16.9	10.6	7.6

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

\*\* Global Funds invest across the globe, without any targeted regions for investment.

Source: Refinitiv as of December 31, 2022

# Geographies with outperformance

U.S. Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
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## Private Equity Pooled Returns

U.S. Venture Capital	(20.8)	24.9	22.5	18.7	12.2	2,344	588.2
U.S. Growth Equity	(14.4)	23.3	22.1	18.5	15.6	415	454.3
U.S. Buyouts	(0.3)	20.0	17.5	16.9	15.2	1,081	1,762.6
U.S. Debt-Related	5.3	15.3	12.3	11.3	11.8	542	573.5
<b>U.S. All Private Equity *</b>	<b>(7.4)</b>	<b>20.9</b>	<b>18.5</b>	<b>16.7</b>	<b>14.1</b>	<b>4,382</b>	<b>3,378.5</b>

## Public Index

S&P 500	(18.1)	7.7	9.4	12.6	9.8		
Russell 3000	(19.2)	7.1	8.8	12.1	9.9		
Bloomberg Aggregate	(13.0)	(2.7)	0.0	1.1	3.1		

## Outperformance

All PE Outperformance*	11.8	13.8	9.7	4.5	4.2		
Debt-Related Outperformance	18.3	18.0	12.3	10.3	8.7		

Europe Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
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## Private Equity Pooled Returns

Europe Venture	(18.9)	31.5	28.8	20.6	12.3	199	43.4
Europe Growth Equity	(9.2)	19.2	17.5	15.1	15.1	65	26.3
Europe Buyouts	(8.1)	15.2	14.2	13.4	15.5	508	750.2
Europe Debt-Related	(0.9)	5.9	5.7	7.3	7.7	93	118.1
<b>Europe All Private Equity *</b>	<b>(8.4)</b>	<b>15.2</b>	<b>14.1</b>	<b>13.3</b>	<b>14.7</b>	<b>865</b>	<b>937.9</b>

## Public Index

MSCI Europe	(15.1)	1.4	1.9	4.6	6.5		
Bloomberg Pan-Europe TR	(23.9)	(7.1)	(2.9)	0.2	2.4		

## Outperformance

All PE Outperformance*	6.7	13.8	12.3	8.7	8.3		
Debt-Related Outperformance	23.0	12.9	8.6	7.2	5.3		

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.

Source: Refinitiv as of December 31, 2022

# Geographies with sub-asset classes excluding outperformance

Pooled Returns by Geography	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
U.S. All Private Equity *	(7.4)	20.9	18.5	16.7	14.1	4,382	3,378.5
Europe All Private Equity *	(8.4)	15.2	14.1	13.3	14.7	865	937.9

U.S. Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
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## Private Equity Pooled Returns

U.S. Venture Capital	(20.8)	24.9	22.5	18.7	12.2	2,344	588.2
U.S. Growth Equity	(14.4)	23.3	22.1	18.5	15.6	415	454.3
U.S. Buyouts	(0.3)	20.0	17.5	16.9	15.2	1,081	1,762.6
U.S. Debt-Related	5.3	15.3	12.3	11.3	11.8	542	573.5
<b>U.S. All Private Equity *</b>	<b>(7.4)</b>	<b>20.9</b>	<b>18.5</b>	<b>16.7</b>	<b>14.1</b>	<b>4,382</b>	<b>3,378.5</b>

Europe Pooled Returns	1 Year	3 Year	5 Year	10 Year	20 Year	Fund Count	Total Capitalization (\$B)
-----------------------	--------	--------	--------	---------	---------	------------	----------------------------

## Private Equity Pooled Returns

Europe Venture	(18.9)	31.5	28.8	20.6	12.3	199	43.4
Europe Growth Equity	(9.2)	19.2	17.5	15.1	15.1	65	26.3
Europe Buyouts	(8.1)	15.2	14.2	13.4	15.5	508	750.2
Europe Debt-Related	(0.9)	5.9	5.7	7.3	7.7	93	118.1
<b>Europe All Private Equity *</b>	<b>(8.4)</b>	<b>15.2</b>	<b>14.1</b>	<b>13.3</b>	<b>14.7</b>	<b>865</b>	<b>937.9</b>

\* All Private Equity excludes Natural Resource, Infrastructure, Real Estate, Fund of Funds and Secondary Funds.  
Source: Refinitiv as of December 31, 2022

APPENDIX

Tab V – Annual Real Asset Outlook



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

JUNE 2023  
Real Assets Outlook

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# Key themes

# Key themes for 2023

## Observations driving our outlook

### What's next for inflation...

In our Outlook last year, we said the following “We believe inflation will likely begin falling later in 2022” and though that turned out to be true, we came to that conclusion because we believed the Fed would choke off the pressures of inflation. Coming into 2023, it appeared as though inflation would continue to retreat lower, albeit slowly, but unexpected price increases have complicated the picture. There are now banking instability issues, geopolitics, a softening economy and a dozen other headline issues weighing on investors' minds. But staying on inflation, we believe the Fed will do what it says and keep policy tight until inflation returns to their target level. We do not want to be on the other side of that trade. We expect rates to stay higher for longer and that could present challenges and opportunities across private markets which have broadly failed to adjust equity values for the new higher rate environment.

### Dislocations in real estate

Market dynamics within real estate have shifted dramatically over the last year. The multi-decade decline in interest rates that have provided a tailwind in real estate reversed in mid-2022. Cap rates are typically correlated with changes in interest rates over the long term, however private real estate cap rates have not kept pace with the move to higher rates recently, reflecting reluctance to mark assets to the new rate regime. Transactions have slowed the last three quarters with wide bid-ask spreads persisting. Over the near term, we expect rising cap rates, slower growth and higher borrowing costs to continue to pressure private real estate valuations and likely trigger pockets of stress and distress. Further compounding issues, banks and other lenders have pulled back from the market creating a financing gap for asset owners.

### Values remain elevated across infrastructure

Infrastructure was one of the few bright spots in 2022 as valuations held-up and transaction activity was robust. In a year when inflation and rising interest rates depressed equity and debt valuations, slowed transaction activity and disrupted capital markets, real assets (excl. real estate) performed remarkably well. The issue we see today is that valuations are stretched, debt costs are going up, but equity valuations have yet to adjust to a higher interest rate environment. A slowing of transaction activity would be one sign that sponsors are becoming more price sensitive. Until we see valuations adjust lower, especially in core/core plus infrastructure, we would be cautious about putting fresh capital into the asset class.

### Declining interest in natural resources looks to continue

Commodity-related investments experienced a marked rebound in performance in 2021 and 2022, following years of disappointing performance. It was a vindication of sorts, in that when inflation finally took hold, the asset class delivered on the promise of providing an inflation hedge. After years of declining interest from investors, oil and gas companies rode high as they outperformed every other sector in the equity universe. And yet, with all this renewed attention, the fundraising environment for natural resource funds remains bleak. The challenging market for exits among oil/gas companies, the global trends in ESG and the declining rate of inflation, among other factors, has resulted in muted interest from institutional investors.

# Outlook summary

# Outlook summary

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Core real estate</b>	Core real estate was up 7.5% in 2022, primarily due to a strong start to the year in the first two quarters. The momentum has shifted however, as rising interest rates have put downward pressure on valuations. The appraisal process has been slow to recognize this as transactions have been falling since the 3 <sup>rd</sup> quarter of 2022, hampering the ability to find comparable sales. Redemption queues are as high as they've been since the GFC. We expect further write-downs to hit core real estate funds in 2023.	<ul style="list-style-type: none"> <li>— Cap rates have not yet fully adjusted to the new higher interest rate environment. 4<sup>th</sup> quarter of 2022 saw a modest adjustment, but we expect more to come over the next several quarters</li> <li>— Core real estate returns tend to have high correlation to overall GDP growth. There are risks to weakening fundamentals if a recession materializes.</li> </ul>	<p>We recommend clients continue to rebalance/reduce exposure to core ODCE funds where possible, although redemption exit queues are in place for most funds.</p> <p>We recommend continued diversification into alternative property types to reduce existing exposures to office, which may face longer term challenges.</p>	<b>Negative</b>
<b>Value-add real estate</b>	Transaction levels have slowed down dramatically as wide bid-ask spreads are persisting. Value-add GPs are seeing few opportunities right now as sellers are still reluctant to transact at the clearing prices currently being offered. Increasing borrowing costs will likely apply pressure on returns for strategies reliant upon higher leverage. An economic slowdown is expected to reduce rent growth opportunities.	<ul style="list-style-type: none"> <li>— Rising interest rates will increase borrowing costs on higher leveraged value-add strategies, pressuring total returns.</li> <li>— Slowing rent growth as the economy cools has the potential to further reduce forecasted returns</li> </ul>	We continue to favor strategies with limited focus on office and those less reliant on high leverage. Asset management value-add will be important as cap rate compression and market growth will be less reliable sources of return. Patience will be a virtue for management teams as transactions, when they happen today, have yet to fully adjust for higher borrowing costs.	<b>Neutral</b>
<b>Opportunistic real estate</b>	Over the last couple of years, pockets of stress have occurred in Covid-19 affected sectors such as office, retail and hospitality. The rising interest rate environment is producing stress and distress across the real estate spectrum as the cost of financing balloons, loan-to-values move up and lenders pull out of the market. Borrowers will be forced to get creative with financing as they often lack fresh equity capital and want to minimize their dilution. Preferred equity gap financing, structured solutions and investments in debt may see attractive opportunities. We could see the reemergence of NPL portfolios in Europe as banks shed assets to shore-up their balance sheets.	<ul style="list-style-type: none"> <li>— Rising interest rates will increase borrowing costs on higher leveraged strategies, pressuring total returns.</li> <li>— Competition could be a challenge as large sums of capital have been raised waiting for this opportunity to emerge.</li> <li>— Increasing construction costs due to materials and labor may pressure development strategies.</li> </ul>	<p>Non-core funds with vintage years during periods of economic stress tend to be some of the best performing vintages. The impact from higher rates will likely create more attractive entry points. Loans coming due at higher borrowing costs and at higher loan-to-values sets the stage for opportunities to provide rescue capital.</p> <p>GPs with experience in distressed situations and those able to be flexible up and down the cap stack are viewed favorably.</p>	<b>Positive</b>
<b>Real estate debt</b>	Lending rates have increased, both from floating rate base rates as well as spreads. Traditional lending sources (banks and insurance companies) are retreating from writing loans as they move to reduce risk across their balance sheets. The wall of maturities coming due over the next few years will need refinancing and private lenders are well positioned to take advantage of the opportunity.	<ul style="list-style-type: none"> <li>— Rising rates, while generally positive for lending strategies, could also decrease transaction volumes and therefore increase competition for deals.</li> <li>— Loan defaults are also on the horizon so having capabilities to structure workouts will be important</li> </ul>	Senior lending strategies look attractive as borrowing costs have risen, both in base rates and spreads. Private capital providers look attractive as there will be less competition from traditional lending sources.	<b>Positive</b>

# Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
REITs	REITs were down 27.0% in 2022, reflecting an implied cap rate increase across sectors. REITs rallied back in early 2023, erasing about half of the loss they experienced in 2022 but have more recently sold-off again as financials have come under pressure. While REITs valuations are somewhat pricing in a higher rate environment, we would not characterize the current valuations as cheap or compelling.	<ul style="list-style-type: none"> <li>REITs have higher leverage than core real estate</li> <li>Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short periods.</li> <li>REITs are sensitive to economic decline and general equity market volatility.</li> </ul>	Verus believes REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage and higher exposures to non-core sectors. Active management is preferred. REIT valuations are currently at a slight discount; however, this has been volatile and difficult to time. If we see a substantial sell-off in 2023, we could pivot to a positive outlook, but we are not there yet.	Neutral
Commodities	Commodities had another impressive year in 2022, led by the energy sector, which was up +36% for the year. The asset classes final year returns masked what was a highly volatile year as Fed rate rises began putting pressure on inflation forces. While still early in the year, commodities are experiencing selling pressure as central banks continue to tighten monetary policy in order to stamp out inflation.	<ul style="list-style-type: none"> <li>Central banks have signaled their primary goal is to contain inflation which, if successful, would be a headwind for commodities.</li> <li>Investors have benefitted from steep backwardation in oil-related commodities, but as front month contracts move lower, the curve trade is likely to erode.</li> </ul>	Verus does not view commodity futures as an attractive asset class to hold long term. As an inflation hedge, commodities are one of the best exposures to own that benefits from early stages of inflation. We are even more cautious about a position in commodities this year and would consider reallocating some of your exposure to more attractive segments of the market.	Negative
TIPS	Rising inflation has led to positive total returns and outperformance of TIPS relative to nominal bonds. Breakeven rates have risen sharply following the lows in 2020, especially in 5-year break-evens. Currently, TIPS have a negative yield and are susceptible to rising rates though that can be offset if inflation continues to exceed market expectations. The other concern is the unwinding of the Fed balance sheet where TIPS are widely held, putting additional selling pressure on the bonds.	<ul style="list-style-type: none"> <li>Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS.</li> <li>Continued low rates creates a high cost of carry.</li> </ul>	Low absolute current yields and uncertain inflation expectations has led to low total return expectations for TIPS, especially relative to other real asset investment opportunities. If inflation continues higher, TIPS could provide protection to portfolios.	Neutral

# Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Core Infrastructure</b>	Performance in core infrastructure was strong in 2022, as capital flowed into the sector and valuations improved, especially for energy-related assets. Along with performance, the high inflationary environment increased LP interest in the asset class. Fundraising continues to increase as more managers offer evergreen fund structures. We expect the higher interest rate environment to be a headwind to valuations and would not be surprised to see write-downs beginning to ripple through the open-end market in 2023. While relatively resilient to recessionary forces, sub-sectors linked to GDP like transportation and logistics may also face challenges.	<ul style="list-style-type: none"> <li>— Strong fundraising trends in infrastructure has elevated valuations and increased competition for high quality assets.</li> <li>— Infrastructure assets provide varying degrees of inflation protection. While some assets have contracted annual revenue increases tied to CPI, many others have pre-determined increases at 2-3% or no adjustments at all.</li> <li>— Core assets are sensitive to interest rates and with inflation trending down, increased costs of capital could erode margins and push valuations lower.</li> </ul>	Entry today is less attractive given rich valuations and an elevated interest rate environment. We prefer allocations to value-add, although core can still maintain defense characteristics from sectors less exposed to GDP risk. We would recommend waiting on new commitments to core open-end infrastructure funds until we get a better sense for the path of interest rates and/or we begin to see funds adjust valuations lower to account for the higher cost of capital environment.	<b>Negative</b>
<b>Value-add Infrastructure</b>	Transaction activity has been robust the past 12 months, despite the rising rate environment. As inflation slows and cost of capital stays elevated, we would expect that to cool as buyers adjust valuations lower. There remains a significant capital need for more modern infrastructure in order to keep up with the digital economy and electrification of the grid. We would be cautious about strategies that expose investors to technology risk and/or commercialization risk in both sectors.	<ul style="list-style-type: none"> <li>— Many GPs that have been successful in the sector have grown rapidly, raising \$15+ billion-dollar funds. Deploying this amount of capital while still delivering alpha becomes a challenge for most private market managers.</li> <li>— Increased interest rates will have two affects: eroding margins as the cost of debt increases and increasing cap rates as investors demand a higher equity return. The change in expectations around what is “market value” is likely to slow transactions.</li> </ul>	The asset class offers a compelling return profile that aligns well with long duration pools of capital. Value-add infrastructure comes with higher operational/execution risk than core so investors should expect a broader range of outcomes and greater emphasis on manager selection. Given the shift in interest rate environment, we expect valuations to improve but that transition could be bumpy.	<b>Neutral</b>
<b>Energy Transition</b>	New development projects of renewable assets will continue to accelerate as solar and wind farms are now the cheapest form of new build electricity. Outside of traditional solar & wind, there are potentially higher returning opportunities for newer technologies such as battery storage and CC&S. Policies like the Inflation Reduction Act will act as a catalyst, increasing adoption and making technologies more viable. Growth in electric vehicles is expected to strain our existing power generation capabilities and transmission infrastructure which presents an investment opportunity but does challenge the transition away from hydrocarbons.	<ul style="list-style-type: none"> <li>— The market is becoming more competitive with over 4x as much capital fundraised today as compared to the last decade.</li> <li>— Several approaches that reduce our carbon emissions such as green hydrogen and carbon capture technology are nascent and commercially unproven. Investments in this space will take venture-like risk and rely on significant cost reductions as well as favorable policy regimes to be successful.</li> </ul>	Energy demand growth will increase opportunities in the energy transition sector but the opportunity to achieve an attractive return remains difficult given competition. Sectors like EV infrastructure and Distributed Energy Resources offer decreased technology risk and attractive markets for growth. Tailwinds for the strategy make for interesting opportunities though we are seeing risk underpriced in the marketplace so backing the right manager will be critical.	<b>Neutral</b>

# Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Oil & Gas	<p>Much of what we wrote about Oil/Gas investing in 2022 still applies now. The one crucial difference is that tightening central bank policy now brings demand uncertainty and higher financing costs for producers. Reinvestment in new oil &amp; gas supply is still an issue, even with higher commodity prices, as E&amp;P companies favor returning cash to investors and governments place additional burdens on hydrocarbon extraction. There remains tailwinds in favor of commodity producers but the demand picture from slowing economic activity adds additional risk. We still believe that private markets capital that funded a lot of the growth in energy production will continue to shrink as institutions shift capital towards cleaner forms of energy.</p>	<ul style="list-style-type: none"> <li>Oil/gas producers made record profits in 2022, though those are set to come down as commodity prices fall and operating costs skyrocket. The temptation to allocate capital to the sector is understandable but for private capital investors, we still believe the exit risk is too high for us to gain comfort. Older oil/gas funds are still struggling for liquidity and absent a complete reversal of a low carbon future, we think that will only get worse 7-10 years down the road as funds investing today look for an exit.</li> <li>Longer-term, oil demand is expected to decline as non-carbon sources of power outcompete hydrocarbons.</li> </ul>	<p>Higher commodity prices continue to reward owners of commodity producers with record profits. There was a time when investing in oil/gas funds was a reasonable strategy, albeit highly cyclical. Today, the challenges in liquidity, regulatory policy and demand uncertainty make underwriting formidable. For investors with a confident view on the direction of energy commodity prices, we would consider public market investment opportunities in E&amp;P over an illiquid private fund investment.</p>	Negative
Midstream Energy / MLPs	<p>Midstream indices were up around 30% in 2022, outperforming most other sectors. The last two Outlooks highlighted the challenges that private midstream funds would face in deploying capital to traditional gathering and processing deals and that was largely accurate. Public midstream companies are outcompeting private funds with a lower cost of capital and the opportunity set is narrower today than it was 10 years ago. While we were negative on the midstream asset class last year, we still find it challenging to recommend an investment in an asset class with long-term demand uncertainty.</p>	<ul style="list-style-type: none"> <li>The public midstream market appears stronger and more attractive than it has been in recent years but the long-term outlook for the asset class remains weak. The near-term performance for the asset class is likely to be attractive but tactical trades into the asset class have been incredibly challenging to time. After two years of exceptionally high returns, MLPs are still trailing listed infrastructure by a wide margin on a 5-, 7- and 10-year basis.</li> </ul>	<p>We retain a negative outlook for midstream energy, despite the positive tailwinds that higher oil/gas prices could bring to this sector in the near-term. Longer-term, we think the unknown risks remain too high for our comfort.</p>	Negative

# Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Mining	<p>There has been a lot of hype around demand growth in industrial metals as the transition to clean energy moves forward. Notable price jumps in metals/minerals like Lithium, Cobalt and Copper over the past few years as demand has surged lend credibility to the story. We see the same long-term trends as others and have been positive on the sector for many years. Industrial metals did soften in 2022 and are down so far in 2023 though long-term the tailwinds of demand appear intact. That said, a global economic slowdown and uncertainty around China consumption has put near-term pressure on many mining commodities. We still prefer the tailwinds of mining to petroleum but would not be surprised if prices cool off in 2023.</p>	<ul style="list-style-type: none"> <li>— Global GDP growth and the economy in China are the two biggest risks in the sector. China represents a disproportionately large buyer of industrial metals, so its economy and industrial output have a large impact on metal prices.</li> <li>— Recycling, substitution and more efficient extraction methods are always a concern as commodity prices move higher. High commodity prices tend to end the same way, with lower commodity prices as either demand falls or with unexpected surges in supply.</li> <li>— Investors need to be keenly aware of the jurisdictions that they have exposure to, and the companies track record on ESG issues.</li> </ul>	<p>Longer-term, we believe the demand outlook looks favorable for several industrial metals. We would not be surprised to see near-term price weakness as new supply comes online but that could be a more interesting entry point. The mining majors are flush with cash which could trigger an M&amp;A cycle which would be good for the junior miners. However, there are a host of idiosyncratic risks in funding mining operations outside of the macro-economic environment. We will look for skilled GPs with a track record of successfully managing these risks while generating attractive returns.</p>	Positive
Timberland	<p>Timberland was up 12.9% in 2022, most of which was appreciation driven. Unlike other commodity sectors that experienced meaningfully higher prices, sawtimber prices, at least for southern pine, were up a modest 1.6% in 2022. Income, as a component of the NCREIF Timberland return, was actually lower in 2022 than it was in 2021. Land values went up in 2022 due to lower discount rates but we question how sustainable that will be if cash flows are flat to negative YoY. Housing starts have collapsed in the past 12 months as mortgage rates more than doubled, which is a bearish sign for lumber demand. Overall, we do not see returns keeping up with their 2021 and 2022 levels for the asset class.</p>	<ul style="list-style-type: none"> <li>— Projected lower inflation levels, slowing housing construction and higher input costs are just some of the issues creating headwinds for the asset class. The Southern U.S. timber region has yet to see the sawtimber price appreciation that other regions have experienced and appear set to miss out on the surging lumber prices that hit consumer the last few years.</li> <li>— Liquidity has been an issue for the asset class for the better part of a decade and fundraising trends have yet to improve to the point that we could see transactions becoming robust.</li> </ul>	<p>Despite the last two years of above average returns, we would continue to avoid allocations to timberland. There are more attractive options available in real assets and many that have cash flows that justify the higher valuation. Fundraising has been slow to non-existent for closed-end timber funds for several years which has resulted in a slow transaction market.</p>	Negative



# Outlook summary (continued)

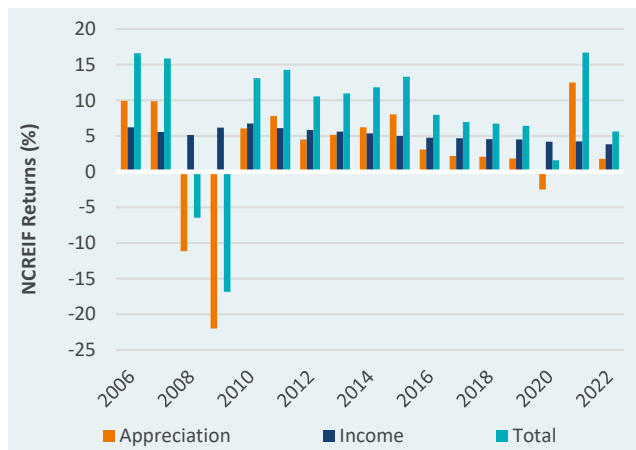
Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Agriculture</b>	<p>After several years of flat cropland prices, 2021 and 2022 saw a meaningful jump in land values on the back of higher commodity prices. Supply disruptions from Covid and more recently, the War in Ukraine, sent grain prices to multi-decade highs that have begun to stabilize in 2023. Fundraising has been slow in the last few years as income returns remained unattractive, and investors favored other asset classes. Still, agriculture investments remain a reasonable hedge against inflation and provide a stable return profile from land appreciation and yield. Structural drivers are making agriculture more attractive as global demand rises and the amount of arable land remains relatively stable.</p>	<ul style="list-style-type: none"> <li>— Agriculture is a highly illiquid asset class that is not suited to tactical investment opportunities. The asset class does look more attractive today, relative to recent history, but enthusiasm should be tempered given the long hold periods (&gt;10 years) and volatile commodity prices. We would recommend diversifying across crop types and geography within the U.S.</li> <li>— The War in Ukraine has revealed the extent to which Eastern Europe and Ukraine have been major suppliers of certain grains and their disruptions impact on global commodities. It has also highlighted the risk that comes from investing outside stable markets like the U.S. While Ukraine was not a preferred destination for U.S. institutional investors in agriculture, the returns available in emerging economies are not high enough to overcome the currency and economic/political risk.</li> </ul>	<p>Agriculture crops are broadly broken down into row and permanent crops with row crops benefiting the most from recent supply disruptions. Row crops also make up around 75% of all acreage planted in the U.S. so liquidity and market depth is greater, relative to permanent crops. That said, row crops have lower income potential and less value-add optionality. For investors seeking pure-play cropland investments, we would recommend diversifying across row and permanent crops focused on the U.S. market. The fragmented nature of farmland in the U.S. has made scaling a challenge so we would be weary of strategies seeking to deploy large pools of capital (&gt;\$1B). We also view agriculture investments where crop and land are a component of a broader value-add investment strategy as attractive.</p>	<b>Neutral</b>

# Current conditions and outlooks

# Real estate performance – Recent history

- Core real estate (NFI-ODCE Index) was up 7.5% in 2022, primarily due to a strong start to the year in the first two quarters. The momentum has shifted however as rising interest rates have put downward pressure on valuations. Returns turned negative in 4Q'22 (-5.0%) and continued in 1Q'23 (-3.3%). We expect further write-downs to hit core real estate funds in 2023.
- Property type sector dispersion remained high in 2022 with industrial (+14.6%) and multifamily (+7.1%) leading the way. Office and retail were the laggards with office turning negative at -3.4%.
- Public real estate securities (REITs) were early to recognize the changing landscape within real estate. In 2022, REITs were down 26.9% (Wilshire REIT Index). Valuations have rebounded a little in early 2023 with REITs returning a positive 2.3% in 1Q'23.
- Non-core real estate vintage funds have historically outperformed during recessionary years and early recovery periods (e.g., 2000-2003 and 2009-2011) as market dislocations created attractive entry valuations. Given the recent stress in the market, current non-core vintages could be attractive, especially opportunistic strategies with a focus on distress.

**NCREIF PROPERTY INDEX RETURNS (CORE)**



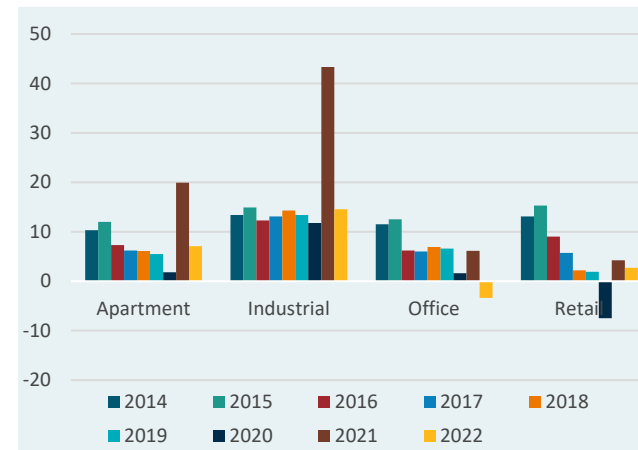
Source: NCREIF, as of 12/31/22

**VINTAGE YEAR MEDIAN RETURN (%)  
NON-CORE REAL ESTATE**



Source: Thomason Reuters, as of 9/30/22

**CORE SECTOR ANNUAL RETURNS (%)**

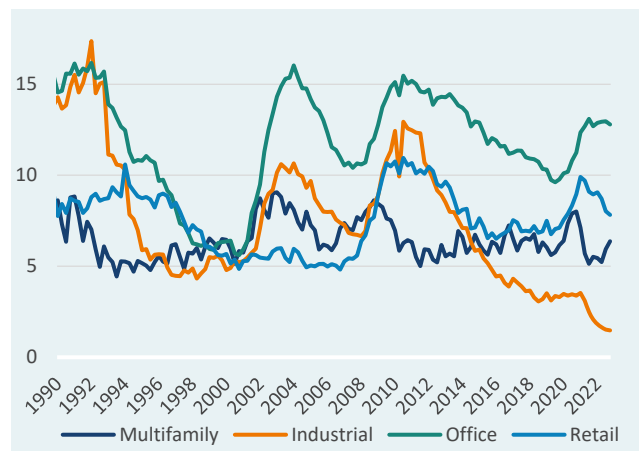


Source: NCREIF, as of 12/31/22

# Real estate fundamentals

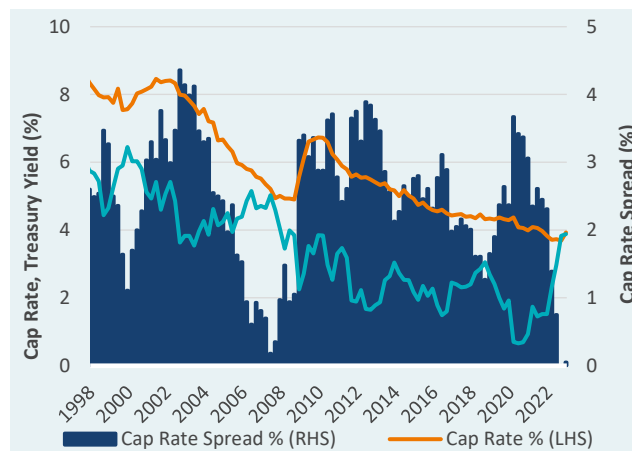
- Private real estate fundamentals have remained relatively steady in terms of vacancy rates and rental growth, with the office sector being a notable exception.
- Cap rates spreads however, have shrunk to zero as cap rates have yet to fully adjust to the higher interest rate environment. While cap rates and interest rates do not trade in lock step over shorter time periods, they generally correlate with each other over the long run. Since mid 2022, interest rates have climbed 2.5%, while cap rates have climbed only 0.5% combined in Q4'22 and Q1'22. The valuation process tends to lag, and we expect upward pressure on cap rates to continue through 2023.
- Vacancy rates for office have stayed elevated as the sector remains under pressure from continued work from home trends. Vacancy rates for industrial, retail and multifamily remain low, although there has been an uptick over the last couple of quarters.
- NOI growth has come down from the highs of 2021 and early 2022 but remain positive for all sectors including office, although office has been bouncing around zero.

VACANCY BY PROPERTY TYPE



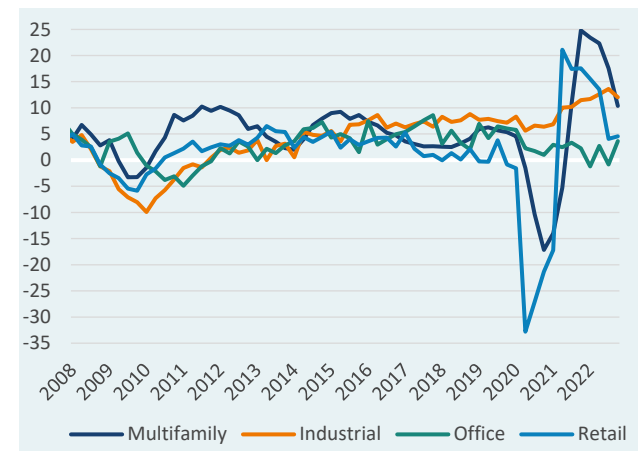
Source: NCREIF, as of 12/31/22

CAP RATE SPREADS



Source: FRED, NCREIF, as of 12/31/22

4-QTR ROLLING NOI GROWTH (%) BY PROPERTY TYPE

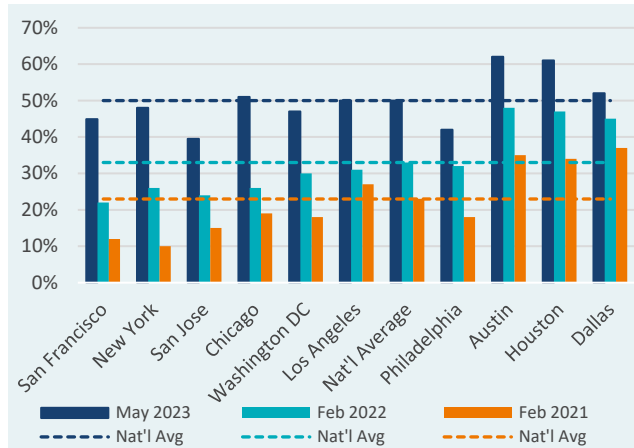


Source: NCREIF, as of 12/31/22

# Challenges in office

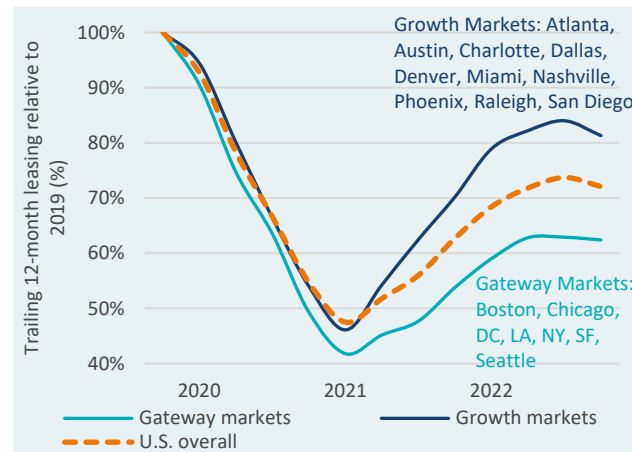
- Employees have increased office utilization from a year ago with the pandemic in the rearview mirror, however structural shifts remain with most companies embracing a hybrid work environment. Physical occupancy remains around 50% of pre-covid levels.
- Domestic migration has aided some office markets with stronger leasing volumes relative to gateway markets. Even growthier markets are still experiencing a decline in leasing relative to pre-pandemic levels.
- We continue to see a bifurcation in demand with new leasing activity gravitating towards newer office buildings with more attractive amenities. Office buildings delivered since 2015 have experienced positive net absorption since Covid began while all other buildings are facing net tenant outflows.
- The leasing cycle for office tends to average 5-7 years, so many leases are still paying at pre-pandemic levels. We are in the midst of the rental re-pricing as well as overall asset valuation uncertainty. It will take several years to work through the system and fully reset pricing. Capital seeking investment in the office sector has dried up and re-financing is a challenge as lenders are all reducing exposures to the sector.

## OFFICE PHYSICAL USAGE TRENDS



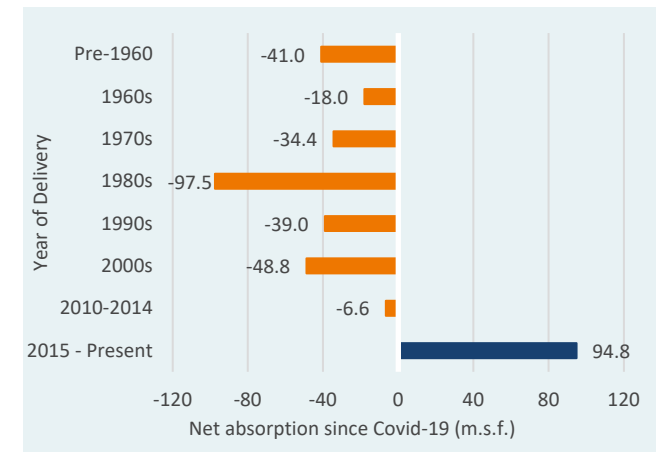
Source: Kastle, 5/8/23

## REGIONAL LEASING VOLUME TRACKING OFFICE RE-ENTRY



Source: JLL, March 2023

## FLIGHT TO QUALITY – NET LEASING ACTIVITY

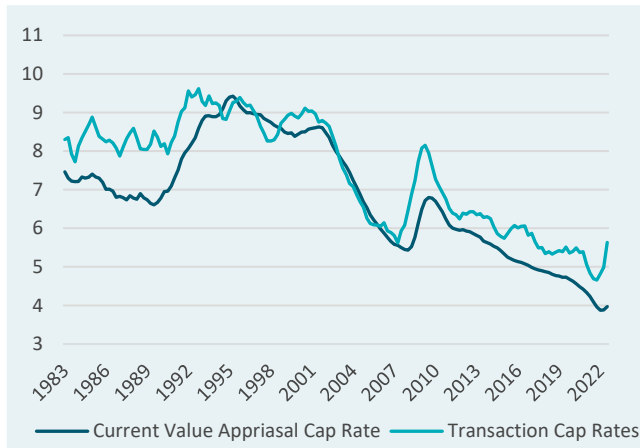


Source: JLL, March 2023

# Cap rates

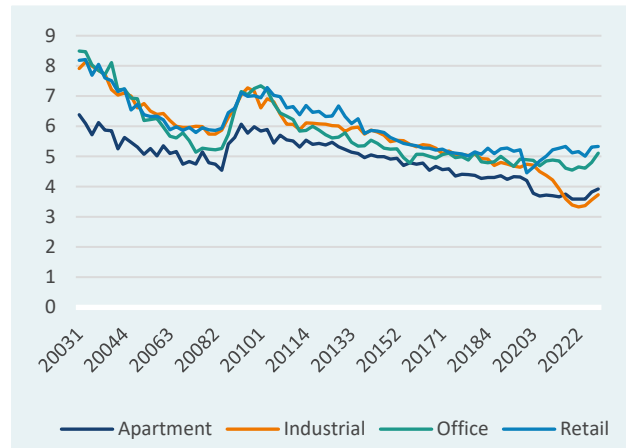
- Private real estate appraisal cap rates have been slow to react to the rising interest rate environment. This is not atypical, as the appraisal process generally lags when there is a decline in transaction volumes and fewer comparable sales or “comps” for appraisers to use as a data set.
- For transactions that are taking place, there is a widening gap with appraised values indicated there is more downside to come in private valuations as they adjust to “market”.
- We have also seen a widening gap over the last several years between property types as industrial and multifamily have been more in favor with investors versus office and retail. There has been a small uptick in cap rates for all property types over the last couple of quarters.
- We can also look to the public real estate markets for an idea of where cap rates are heading. We have seen implied cap rates move higher in the REIT market, lending additional credence to our view that cap rates in private real estate are set to move further this year. Usually, implied cap rates are more volatile but can be a leading indicator directionally as they are quicker to respond than the appraisal process.

**PRIVATE CAP RATES (4-QTR MOVING AVERAGES)**



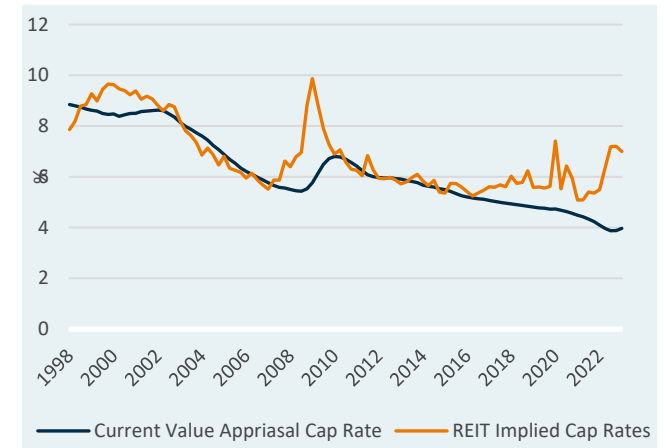
Source: NCREIF, 3/31/2023

**CURRENT VALUE CAP RATES BY PROPERTY TYPE**



Source: NCREIF, 3/31/2023

**PRIVATE CAP RATES VS REIT IMPLIED CAP RATES**



Source: NCREIF, JPMorgan, March 2023

# Real estate – New supply and absorption

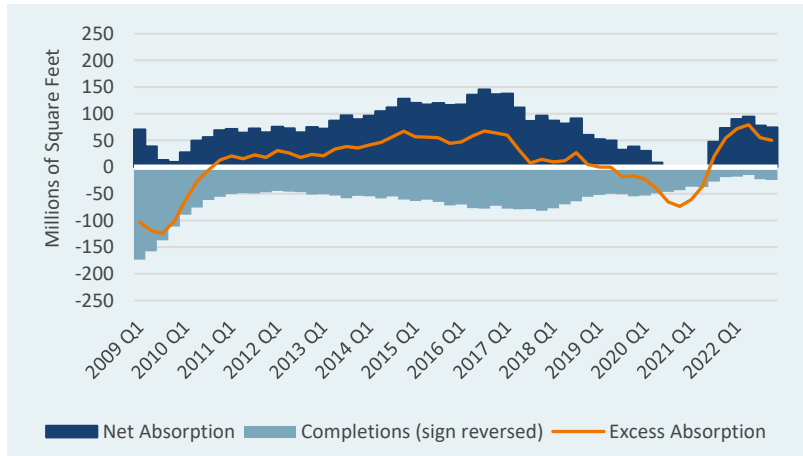
Demand has declined recently while new completions remains elevated.

Office remains severely oversupplied as demand has fallen off and completions in process pre-Covid continue to deliver.

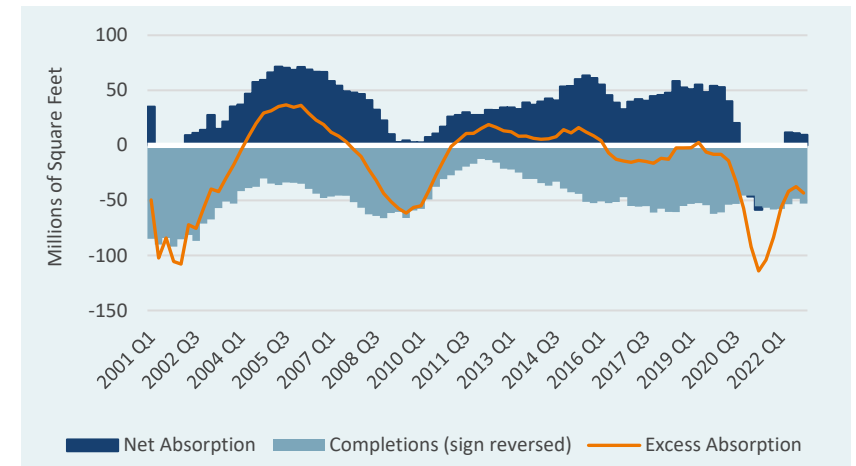
Demand has dropped recently for multi-family and industrial while completions remain elevated. Net absorption has turned negative on multifamily and is now flat in industrial.

Retail is the one bright spot for this metric, as new completions remain muted while leasing activity has picked up.

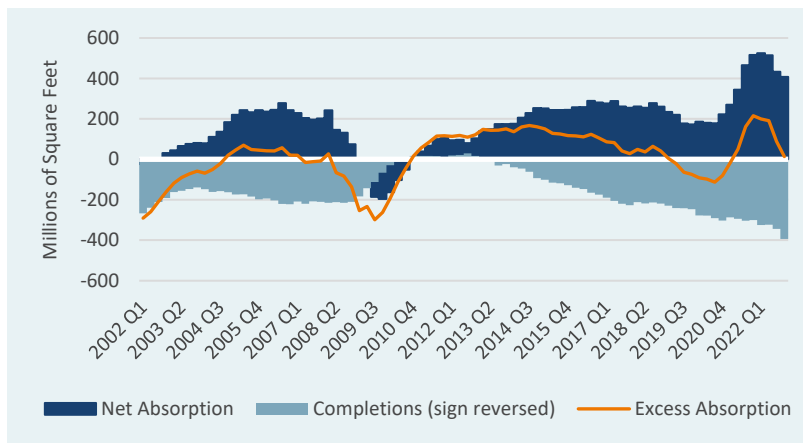
## RETAIL



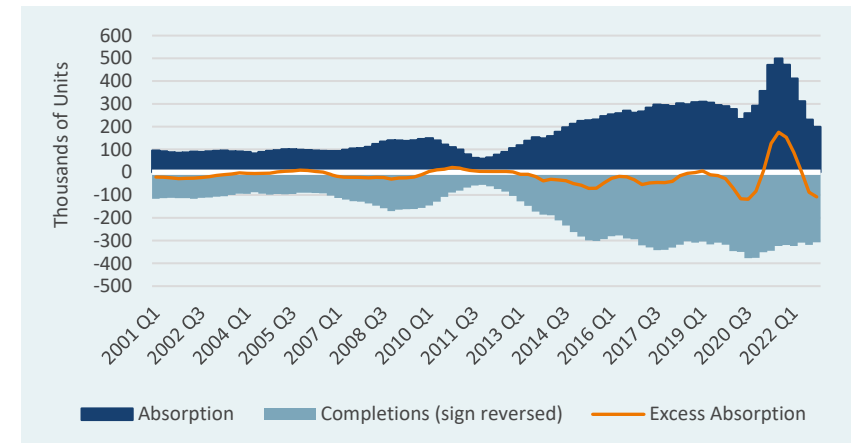
## OFFICE



## INDUSTRIAL



## MULTIFAMILY

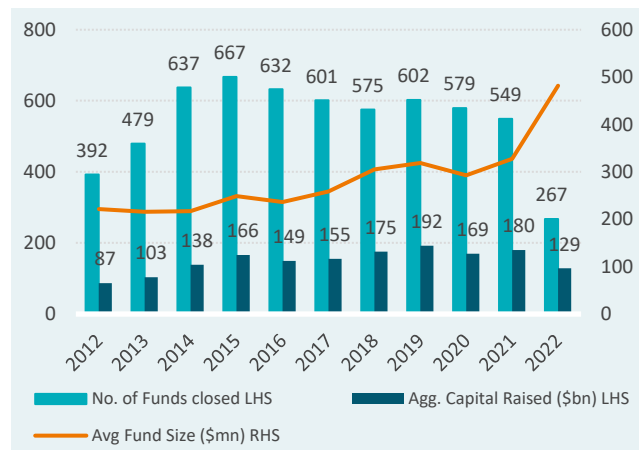


Source: American Realty Advisors utilizing CoStar data as of 12/31/22

# Real estate fundraising

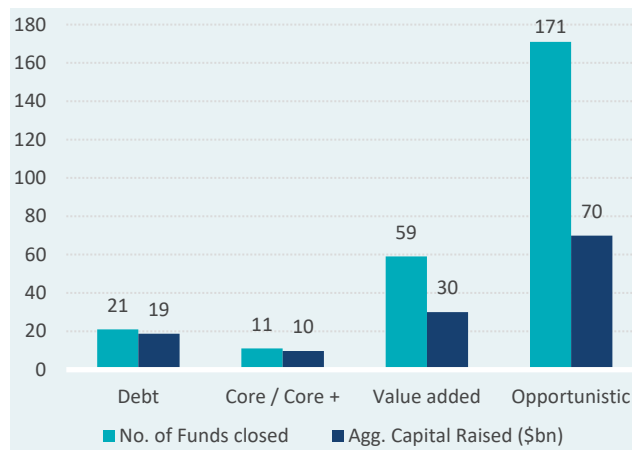
- The number of funds closed declined substantially over the last year with the total amount of capital raised coming down slightly, leading to a much higher average fund size.
- Dry powder in the closed-end fund space has come down in recent years off record highs but remain elevated. Transaction volumes declined in the second half of 2022.
- The majority of closed-end funds that closed the last couple of years were targeting opportunistic and distressed strategies, a shift from prior years where value add was substantially higher.
- Current core real estate open-end fund redemption queues total over \$33 billion from 20 core funds that Verus recently surveyed, which has grown more than two-fold in the last year. Core funds are in the process of re-pricing, delivering negative returns, and with some investor's overweight real estate, redemption activity has hit levels not seen since the GFC.

**HISTORICAL PRIVATE REAL ESTATE CLOSED-END FUNDRAISING (\$B)**



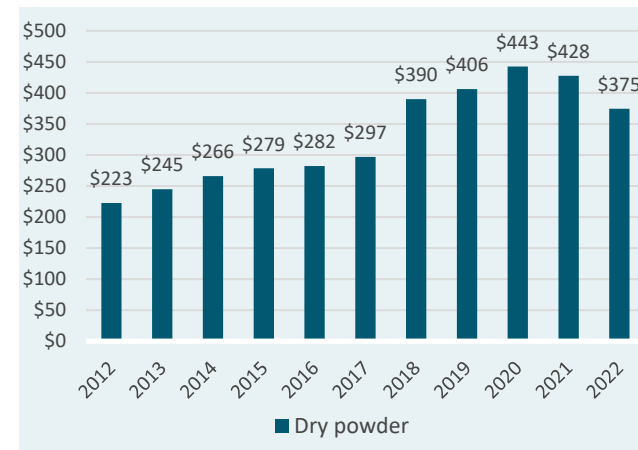
Source: Pitchbook, as of 12/31/22

**2022 PRIVATE REAL ESTATE CLOSED-END FUNDRAISING (\$B) BY STRATEGY**



Source: Pitchbook, as of 12/31/22 (Opportunistic includes Distressed)

**DRY POWDER (\$B) – CLOSED-END FUNDS**



Source: Pitchbook, 12/31/2022



# Real estate debt

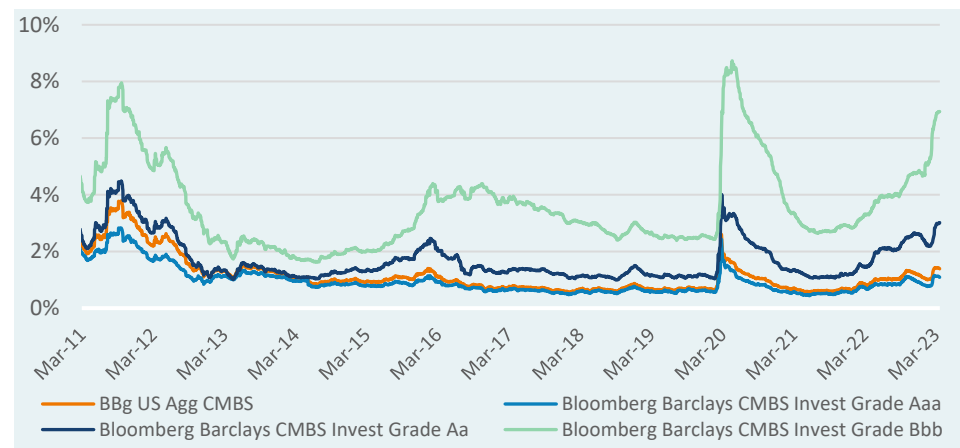
- Lending standards have tightened up for all loan types. Private lending spreads have widened, and lenders are requiring more conservative loan-to-values for new loans. CMBS spreads for most tranches have steadily increased over the last year.
- Rising interest rates are benefitting floating rate lending strategies going forward. Base rates have increased significantly as the Secured Overnight Financing Rate (SOFR) has risen from near zero to over 5% in the last year.
- Within real estate debt strategies, we are less favorable about the riskier segment of the loan market (i.e. construction loans, structured equity, etc.) as LTVs come down and lenders become owners. Having the capital and operational capabilities to assume ownership is necessary in this market environment.
- We would also caution that some evergreen debt strategies are experiencing defaults/write-downs and are likely to see additional valuation pressures, especially in the office sector.
- Transaction volumes have fallen off over the last several quarters, although for deals that are taking place, private capital is facing less competition from traditional lenders (banks and insurance companies) as many are de-risking their portfolios.

## PRIVATE LENDING SPREADS

	Stable Asset Whole Loans	Transitional Asset Whole Loans	Lower Risk Mezzanine	Transitional Asset Mezzanine & Preferred Equity	Developmental Asset Mezzanine & Preferred Equity
Capital Stack	0 - 60%	0 - 75%	50-65%	65-85%	65 - 85%
	LTV	LTV	LTV	LTC	LTC
Duration	2-5 Years	2-5 Years	2-7 Years	2-4 Years	2-4 Years
Typical Lending Spreads	SOFR + 1.5-2.0%	SOFR + 2.85 – 4.50%	SOFR + 4.0-6.0%	SOFR + 6.0 - 8.0%	SOFR + 12-15%

Source: PGIM, as of 3/31/23

## CMBS SPREADS

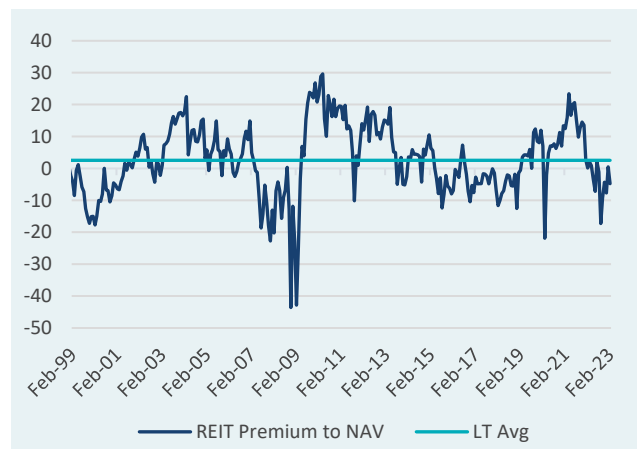


Source: Bloomberg, as of 3/22/2023

# REITs

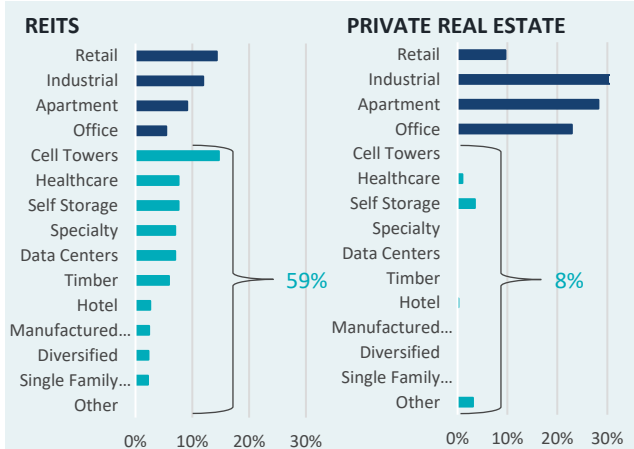
- REITs were earlier than private real estate in experiencing valuation adjustments in 2022, when interest rates began to rise. U.S. REITs were down 24% for the full year in 2022 but have seen a slight recovery in 1Q 2023 of +3%.
- REITs traded at a steep discount to NAV for much of the 2<sup>nd</sup> half of 2022, however a slight recovery in early 2023 has them now trading at less of a discount to NAV.
- Sector dispersion continues to be high, although most major sectors were off significantly in 2023 (office, industrial, apartments, healthcare and self-storage were all down over 22%.) Some segments of retail (shopping centers and free standing) were down less, only 7% and 13%. Office continues to be the biggest laggard, down 38% in 2022 and down another 16% in 1Q 2023.
- REITs do offer differentiated exposures vs private core real estate. Outside of the four main property types, core real estate exposure to niche property types is 8%, while REIT exposure to those same niche sectors is almost 60%.
- We are neutral on REITs given only modest discounts to NAV (which is likely overvalued) but given volatility in the asset class, that could change to positive if we see a deep drawdown later this year.

## REIT PREMIUM TO NAV



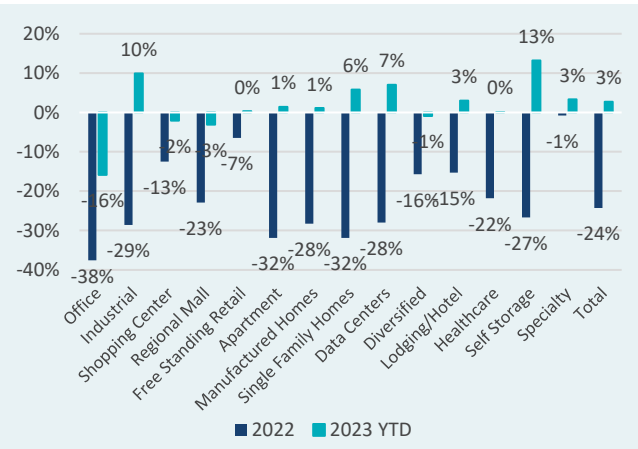
Source: JPMorgan, as of 2/28/23

## NICHE SECTOR WEIGHTS IN REITS VS PRIVATE RE



Source: NCREIF, FTSE, as of 12/31/22

## REIT PERFORMANCE BY SUB SECTOR



Source: Duff & Phelps, Bloomberg, as of 3/31/2023

# Commodities

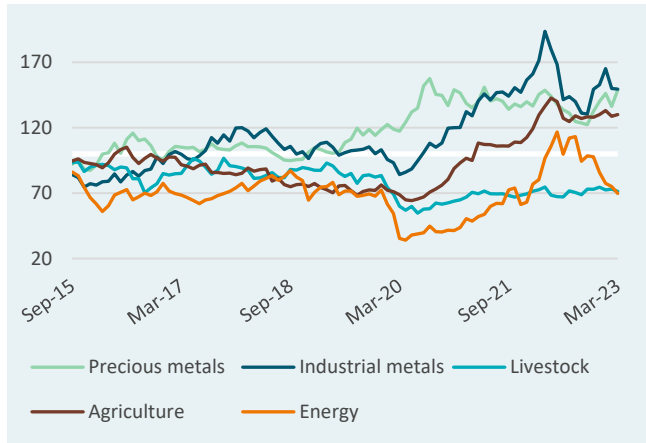
- Commodities were one of the few bright spots in 2022, up 16% for the year, led by energy commodities. During the first quarter of 2023, prices reversed themselves as inflation slowed and demand fell.
- The roll return component of the index remains positive though that has seen a sharp versal in 2023 and could turn negative if supply stocks build up across petroleum commodities.
- Commodities have been a rewarding asset class to own over the last 2 years, but we don't see those returns being sustained. We moved towards a negative outlook this year in commodities, as we see better opportunities to allocate investor capital.

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(0.2)	(5.4)	(5.4)	(12.5)	20.8	5.4	(1.7)
Bloomberg Agriculture	1.0	0.0	0.0	(3.6)	23.7	8.4	(0.5)
Bloomberg Energy	(6.9)	(18.7)	(18.7)	(25.1)	25.4	(1.5)	(9.2)
Bloomberg Grains	3.3	(2.4)	(2.4)	(7.8)	21.5	7.7	(2.0)
Bloomberg Industrial Metals	(0.3)	(2.1)	(2.1)	(22.1)	21.1	5.9	2.1
Bloomberg Livestock	(2.3)	(4.3)	(4.3)	(2.8)	6.0	(2.6)	(3.0)
Bloomberg Petroleum	(2.5)	(5.9)	(5.9)	(4.8)	49.4	6.6	(4.3)
Bloomberg Precious Metals	9.2	6.3	6.3	(0.4)	8.3	7.1	0.3
Bloomberg Softs	0.2	9.3	9.3	(2.3)	23.4	7.1	(1.6)

Source: Morningstar, as of 3/31/23

## SECTOR PERFORMANCE



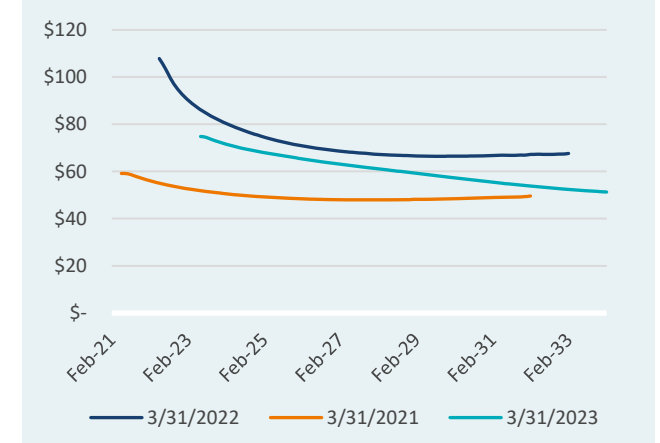
Source: Bloomberg, as of 3/31/2023

## ROLL RETURN



Source: Bloomberg, as of 3/31/2023

## CURVE SHAPE (WTI)

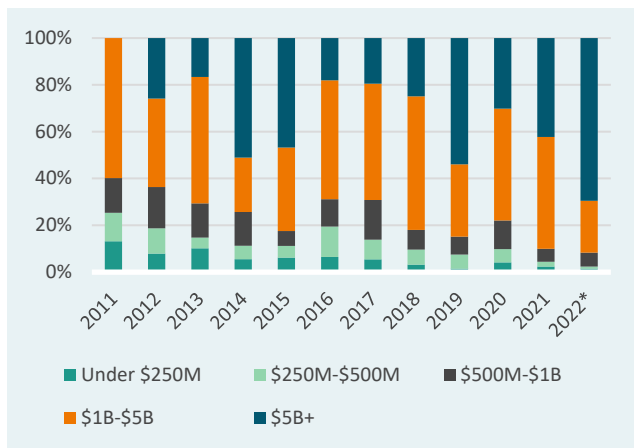


Source: Bloomberg, as of 3/31/23

# Private infrastructure

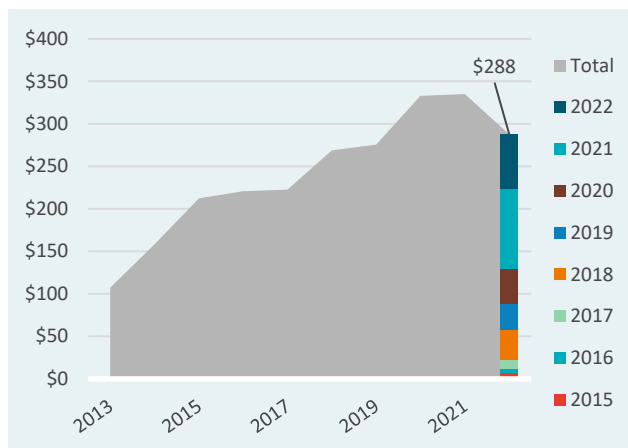
- Infrastructure fundraising slowed in 2022, much like we saw across other private market asset classes. Despite falling short of the all-time high-water mark for fundraising set in 2021, infrastructure continues to absorb much of the capital allocated to real assets. Several fundraising trends have come center stage: Mega-funds are the new normal with eight managers reaching a final close above \$5B in the year. Moreover, the top 10 managers by size make up 80% of the capital raised; Digitization and decarbonization focused funds made up nearly 50% of funds raised; Geographically, North America is in favor accounting for ~70% of fundraising.
- Dry powder is down relative to the last two years in part due to a slower fundraising and managers ability to take down larger deals. After a strong start, deal volumes declined 27% at the tail end of 2022 as financing became more expensive and economic uncertainty weighed on the market.
- Returns over the last year in infrastructure outperformed nearly all other private asset classes. In this regard, Infrastructure delivered on one of its key goals, to provide inflation protected returns. Going forward, we see headwinds for the asset class as higher financing costs, slowing inflation and slowing GDP growth become priced into what are fairly rich valuations.

INFRASTRUCTURE FUNDRAISE BY FUND SIZE (%)



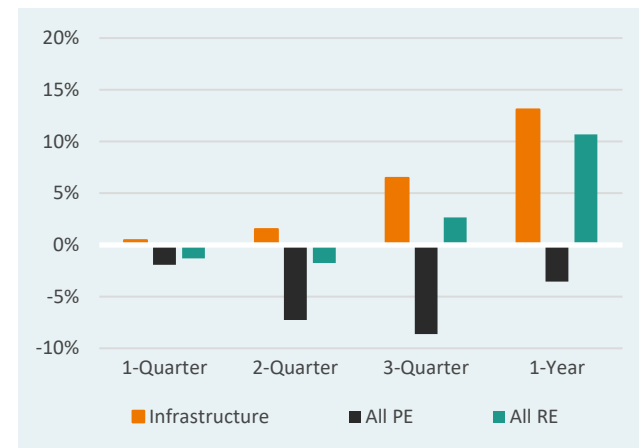
Source: Pitchbook, as of 9/30/2022

INFRASTRUCTURE MANAGER BY FUND SIZE



Source: Pitchbook, as of 9/30/2022

Q3 '22 TRAILING POOLED IRR

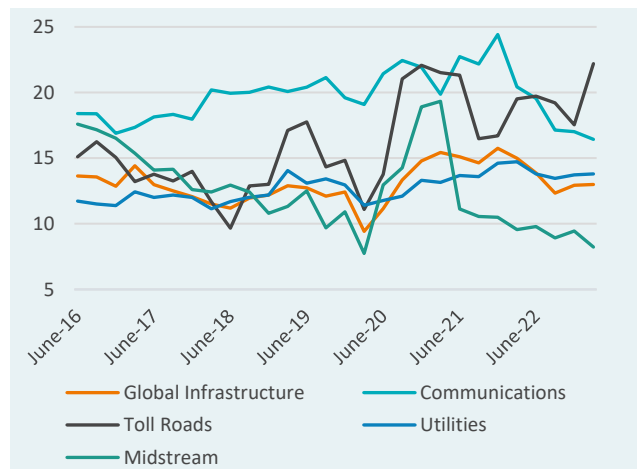


Source: Refinitiv C/A, as of 9/30/2022

# Private infrastructure (continued)

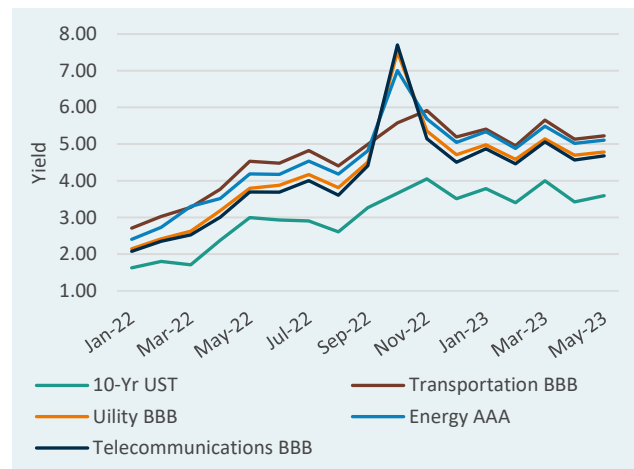
- Inflation brought forth a regime change in the cost of capital, a stark difference from the previous period of low interest rates, the impact of which has yet to be reflected in equity values. If rates stay elevated, discount rate increases should flow through to valuations. We expect that assets priced on ultra low interest rates and have bond-like fixed cash flows will be particularly susceptible to changing discount rates (ex. PPA contracts).
- Non-core infrastructure is arguably more sensitive to the rising cost of capital because of exposure to floating rate, non-investment grade debt. This can be somewhat offset by higher growth in cash flows and value-add potential by management teams. One trend we have noticed is the blurring of lines between infrastructure and traditional private equity buyouts as new industries around growing themes are added to the mix: Energy Transition, Healthcare, Waste and Digital Infrastructure have all been added into the fold. While many assets have infrastructure characteristics, many managers are accepting a period of significant investment and negative cash flow, along with development, technology, and commercial risks.
- Sector divergence is likely to be meaningful as we anticipate a decline in GDP over the coming quarters. Some areas of transportation that only recently recovered from pandemic impacts, are likely to feel the weight of recession forces as global trade slows. Telecommunications has data growth tailwinds, though valuations could come under pressure. Utilities and Social infrastructure should remain resilient.

## INFRASTRUCTURE VALUATIONS – EV/EBITDA



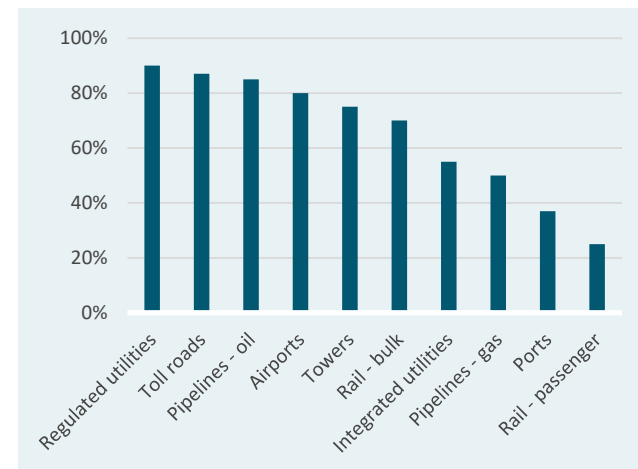
Source: Bloomberg; Dow Jones Brookfield; S&P Indices, as of 3/31/2023

## RISING COST OF CAPITAL



Source: Bloomberg; ICE BofA Indices, as of 3/31/2023

## DEGREE OF INFLATION PROTECTION BY SECTOR

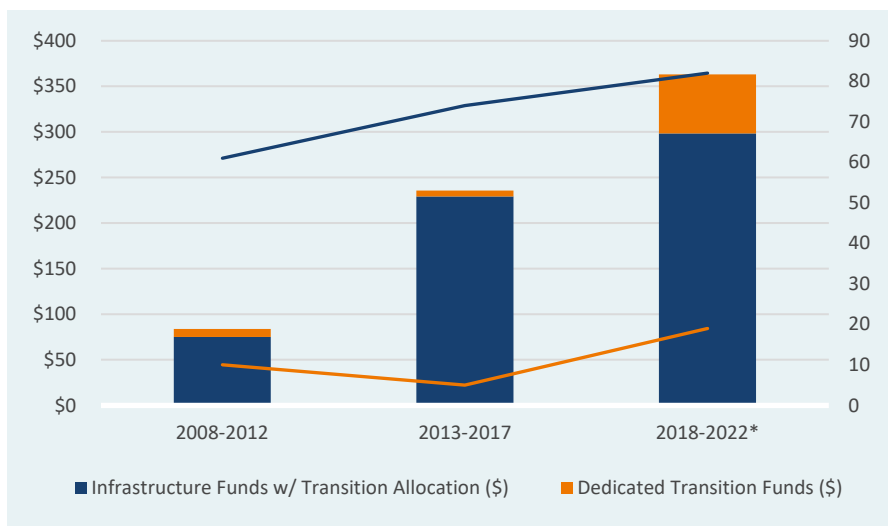


Source: First Sentier Investors

# Infrastructure – Energy transition

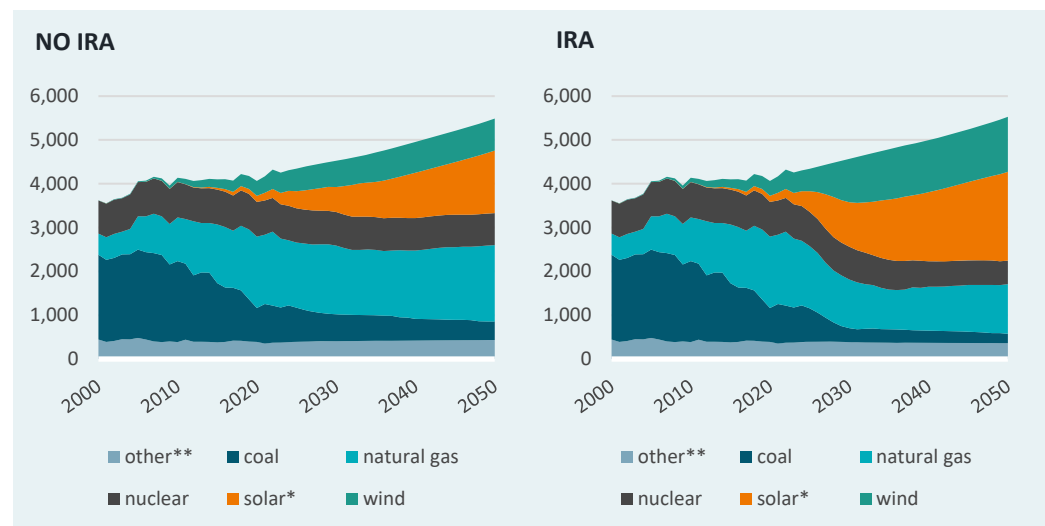
- Fundraising within energy transition infrastructure has ballooned over the past four years. Capital is coming from both infrastructure managers starting new sector focused strategies, while other are allocating a portion of their general infrastructure strategies to invest in clean energy themes. From 2018 to 2022, \$65B was raised for sustainable infrastructure as compared to the prior eight-year period ('08-'17) that raised \$6.5 billion. This doesn't account for the 82 general infrastructure funds which broadly plan to invest some portion of their capital in sustainable infrastructure. While the scale of capital needed to meet clean energy goals is vast, we see risk being underpriced and likely disappointing returns in the future for less experienced managers.
- Policy initiatives like the Bipartisan Infrastructure Bill (BIL) (2021) and the Inflation Reduction Act (IRA) (2022) have created an estimated \$400 billion in energy and climate funding, most of which is in the form of tax credits aimed at catalyzing private investment in clean energy, transportation and manufacturing. The IRA bill is widely considered to be the most consequential legislation ever passed for the clean energy industry.
- For the first time in 30 years electricity demand growth is estimated to increase to 2-4% a year, driven by the plug-in of the transportation sector (EV's). Growing energy demand, pared with net zero emissions targets will create large opportunities for renewables and the infrastructure required to deliver those electrons.

**FUNDRAISING IN ENERGY TRANSITION (\$B)**



Source: Pitchbook, as of 12/31/2022

**U.S. NET ELECTRICITY GENERATION BY FUEL (BILLION KW-HOURS)**

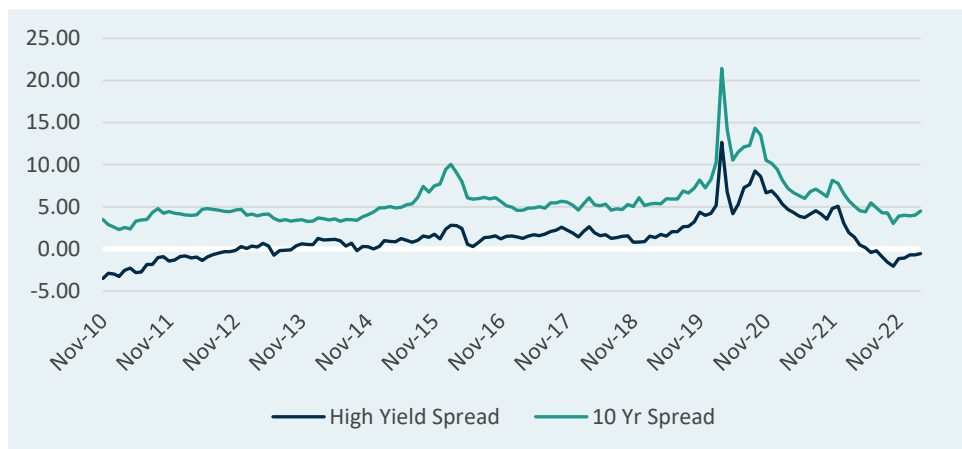


Source: Annual Energy Outlook 2023

# Midstream energy/MLPs

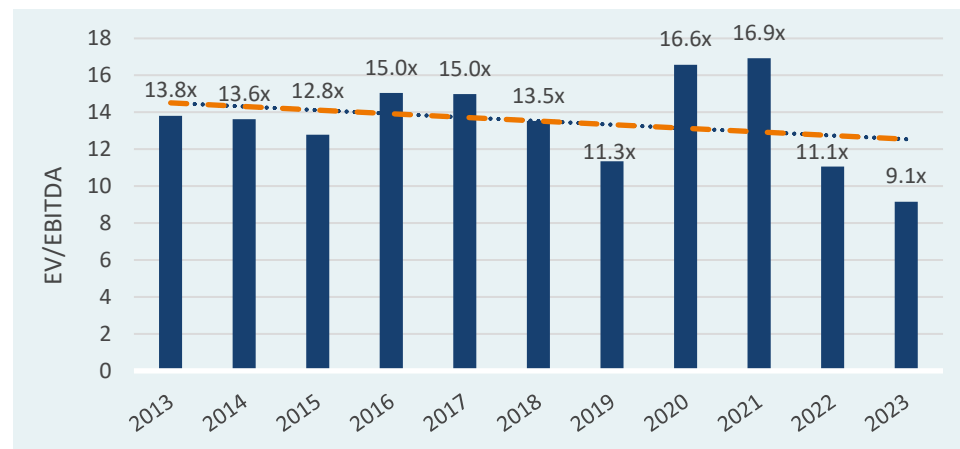
- Midstream energy stocks were up 31.0% in 2022. For the second year in a row, energy midstream stocks, had strong returns on both a relative and absolute return basis. Strong commodity prices led to growing volumes in both gas and oil, leading to higher earnings and at the same time, investor interest in companies that could deliver more near-term cash flows.
- Yields for listed midstream companies now trade slightly below high yield bonds but at a premium to Treasuries. The recent shift lower in relative yields is a function of the dramatic increase in interest rates but does reduce the relative attractiveness of the sectors yield income. We remain concerned about the long-term viability of the asset class and future growth opportunities.
- EV cars are not a fad or strictly the domain of green conscious consumers. They simply are more practical and efficient than ICE vehicles. With roughly 50% of oil demand coming from motor vehicle use, that is a powerful headwind for the suppliers of oil. Even if oil will be with us for decades to come, we struggle to justify a dedicated allocation to a commodity with growth headwinds when there are many other investment opportunities available.
- Natural gas does not face the same obvious demand challenges and, in fact, has strong tailwinds around export in the U.S. While some greener fuels like hydrogen could displace natural gas, that outcome is far from certain. That fact does not change our view though, that the midstream asset class fails to offer a compelling long-term investment thesis.

## MLP SPREADS VS HIGH YIELD & TREASURIES



Source: Bloomberg, as of 3/31/2023

## MIDSTREAM VALUATIONS (EV/EBITDA)

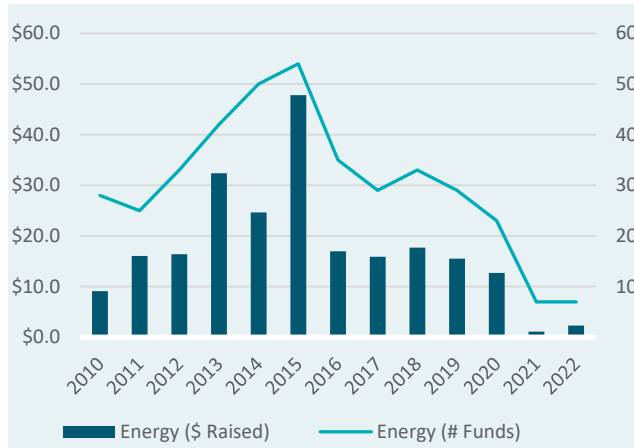


Source: Bloomberg; Alerian MLP Index, as of 3/31/2023

# Energy – Oil/gas

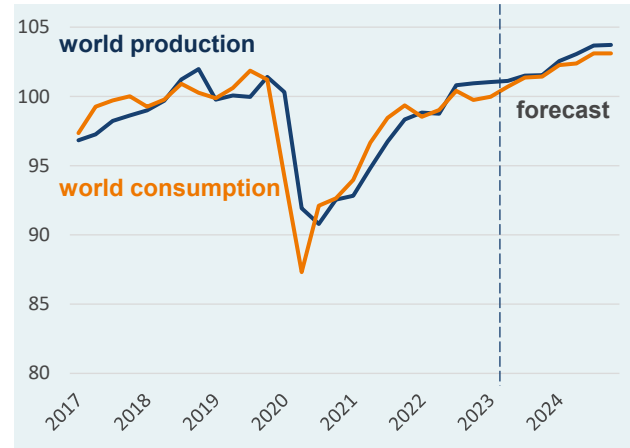
- According to Pitchbook figures, fundraising within oil/gas funds remains challenging though we have seen a notable uptick in traditional oil/gas GPs coming back to market for the first time in 5+ years. The spike in commodity prices and subsequent move higher in portfolio valuations has given confidence to the industry that some LPs will revisit allocating to oil and gas upstream funds. We expect that the top 3 or 4 GPs in the sector will find investors though fundraising is slow and could be challenged further if oil prices move lower from here.
- Some good news on the exit front, we have seen a few deals completed in 2023, mostly in the Permian basin. Strategics appear to be testing the M&A market by going after the most attractive assets in the Permian basin. With natural gas prices collapsing back down to \$2/MMBtu, liquidity for gas heavy assets is likely to remain elusive. If the oil/gas funds are able to raise new capital, we would not be surprised to see them buying some of these legacy sponsor-backed companies which would create an exit for older funds, though new capital has to wonder who will buy from them down the road.
- The problem of liquidity and the transition away from hydrocarbons remain existential threats to the private oil/gas sector. We could see a role for natural gas for decades to come but oil demand appears more in doubt. Electric vehicles are more efficient, require less maintenance and if we can resolve some of the supply chain challenges, will displace combustion engines globally. Investors interested in exposure to oil/gas would be better off in public market securities than illiquid private funds.

FUNDRAISING IN OIL/GAS



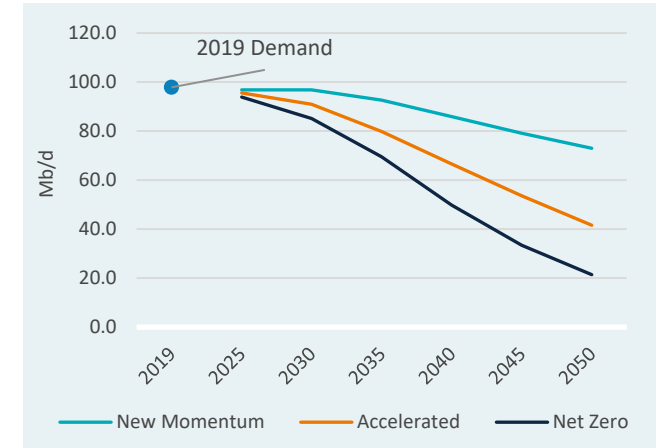
Source: Pitchbook, as of 12/31/2022

WORLD OIL PRODUCTION & CONSUMPTION\*



Source: EIA; \*includes all liquid fuels

GLOBAL OIL DEMAND FORECAST UNDER LOWER CARBON EMISSION SCENARIOS



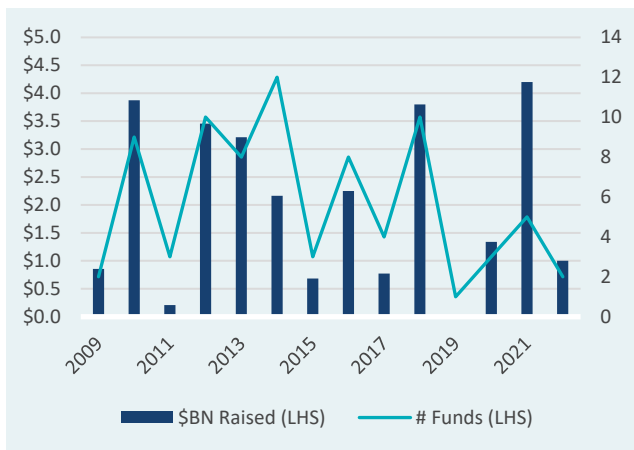
Source: BP Energy Outlook 2023



# Metals and mining

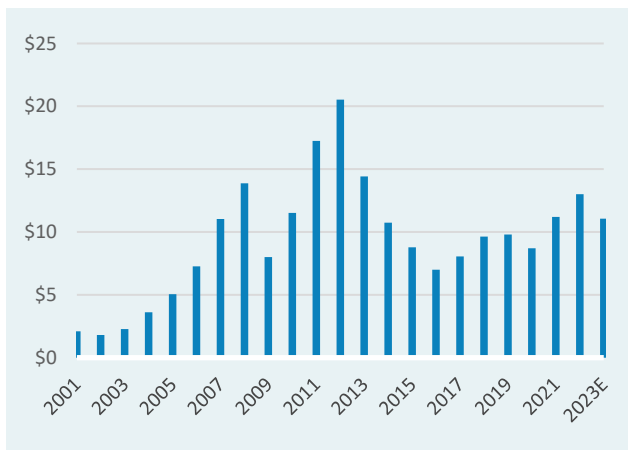
- Fundraising in the private equity mining segment picked up some in 2021 with a couple large funds in market, but subsequently declined in 2022. Raising equity capital in metals and mining has been a challenge since the global financial crisis but that has worsened in the last 5 years. We have seen some investor interest in royalty/streaming funds and in mining lending, where we have deployed client capital, but even that niche market is a small opportunity.
- After a modest recovery from a cyclical low in 2016, non-ferrous mining exploration budgets have been on the upswing, hitting a recent peak in 2022. Budgets are expected to decline in 2023, though the consensus is that more spending will be needed to meet future demand for metals/minerals important to clean energy. Prices moved lower in 2022 for industrial metals and are likely to face near-term headwinds if economic activity slows. Precious metals, on the other hand, have rallied the last several months as the banking crisis fueled the buying of safe-haven assets.
- We are more bullish on base/industrial metals which longer-term will benefit from a shift away from fossil fuels. We are less bullish on bulk and energy-related commodities. Our overall outlook within mining is positive with a notable challenge in finding enough investment opportunities that meet our underwriting criteria.

**FUNDRAISING IN MINING**



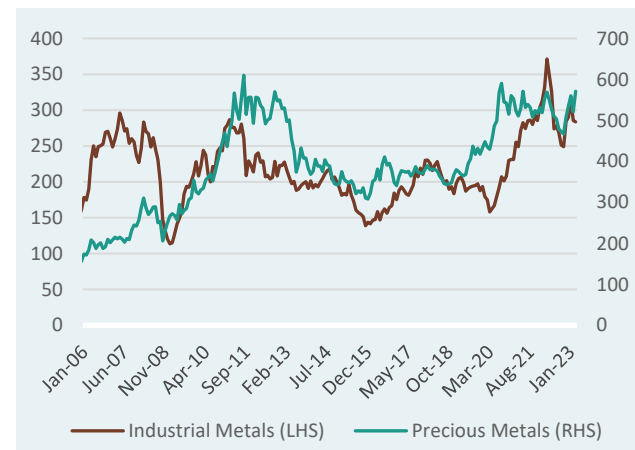
Source: Pitchbook, as of 12/31/2022

**CAPITAL EXPENDITURE IN MINING (\$B)**



Source: S&P Global Market Intelligence; Non-Ferrous budget

**METAL PRICES**

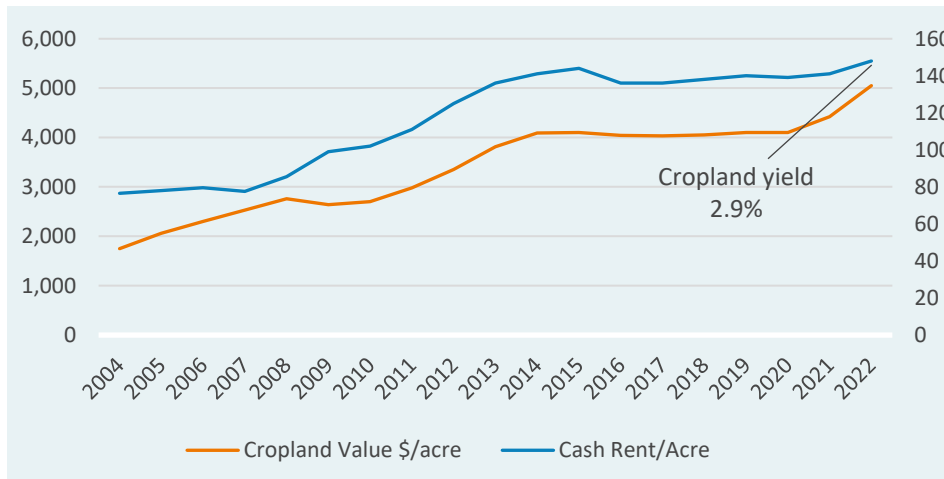


Source: Bloomberg, as of 3/31/2022

# Agriculture

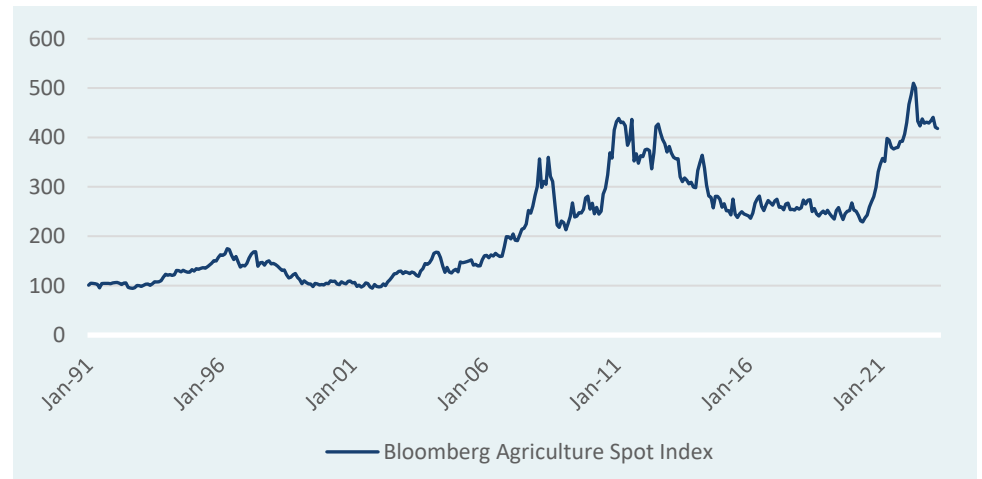
- Cropland values nationally rose in 2022 to \$5,050/acre, an increase of more than 14% over the prior years 8.0% rise. This is a notable change since 2015 when farmland values leveled off in a low agriculture price market. Verus has been generally bearish on farmland investments as income yields have trended around 3.0% and a catalyst for appreciation was lacking. The War in Ukraine and the subsequent global disruption in Ag crop supply chains has put a premium on stable countries with certainty of supply. Elevated crop prices is likely to reverse somewhat in the coming years but there is an improved outlook for Ag investing in the U.S. and certain other OECD countries.
- In the row crop segment, higher crop prices sent land values up double digits in many markets, though most expect elevated corn, wheat and soybean prices to come down. Permanent crops on the other hand, have seen land values come down or stay flat, as nut prices and citrus have declined for varying reasons. Ag investing is notoriously challenging, as the last 10 years have shown, with weather, tariffs, wars and changing consumer habits all playing a role in the asset classes returns. We believe diversifying across crop types and looking for strategies that can invest in post-farmgate assets is the best way to mitigate idiosyncratic events and capture a higher return.
- Following several years of poor returns in Agriculture, row crop assets spiked in value with higher crop prices. While we do not see the asset class as an overly compelling buying opportunity, on a relative basis, the Ag market looks more attractive today than in prior years.

## U.S. NATIONAL CROPLAND VALUES VS CASH RENTS



Source: USDA, as of 12/31/2022

## BLOOMBERG AGRICULTURE PRICES



Source: Bloomberg, as of 3/31/2023

# Appendix

# Detailed returns by asset class

<b>Pooled Returns by asset class</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>	<b>10 Year</b>
NCREIF ODCE	7.5%	9.9%	8.7%	10.1%
Refinitiv Real Estate – Value-Add	8.5%	10.9%	10.1%	11.4%
Pitchbook Real Estate - Value-Add	19.3%	13.6%	12.4%	12.8%
Refinitiv Global Infrastructure	9.4%	10.8%	10.3%	10.7%
Refinitiv Global Natural Resources	25.2%	8.7%	5.1%	3.6%
Pitchbook Oil/Gas	33.7%	11.7%	6.9%	4.9%
Pitchbook Mining	8.6%	4.1%	2.3%	2.9%
NCREIF Timberland	12.9%	7.5%	5.4%	5.8%
NCREIF Farmland	9.6%	6.8%	6.4%	8.8%
<b>Public Index (as of 12/31/22)</b>				
Russell 3000	-19.2%	7.1%	8.8%	12.1%
MSCI ACWI	-18.0%	4.5%	5.8%	8.5%
S&P Global Infrastructure	-0.2	1.7%	3.9%	6.5%
S&P Global Natural Resources	10.3%	11.6%	7.3%	4.9%
FTSE NAREIT Global	-23.6%	-5.1%	-0.1%	3.4%
FTSE NAREIT U.S.	-24.9%	-1.0%	3.0%	6.0%

Source: Refinitiv C/A as of September 30, 2022; Pitchbook as of September 30, 2022; NCREIF as of December 31, 2022

# The role of real assets

	Strategy	GDP sensitivity	Inflation sensitivity	Income orientation	Return enhancing	Risk reducing	Liquidity
Privately-traded real assets	Private real estate core	High	Moderate	High	Moderate	Moderate	Moderate
	Private real estate value added	High	Low	Moderate	High	Low	Low
	Private real estate opportunistic	High	Low	Low	High	Low	Low
	Private infrastructure	Moderate	Moderate	High	Moderate	Moderate	Low
	Timber	Low	Low	Low	Moderate	High	Low
	Farmland / agriculture	Low	Moderate	Moderate	High	High	Low
Publicly-traded real assets	TIPS	Low	Moderate	Low	Low	High	High
	Commodity futures	Moderate	High	Low	Low	Moderate	High
	REITs	Moderate	Low	Moderate	High	Low	High
	MLPs	Moderate	Moderate	High	High	Moderate	High
	Listed infrastructure	Moderate	Moderate	Moderate	High	Low	High
	Natural resources equity	Moderate	High	Low	High	Low	High

Note: the summary above was determined using historical averages and correlations on a relative basis within each category. It is important to note that investments within these asset classes are often heterogeneous and may possess different qualities and sensitivities (see Appendix for further details).

Magnitude	Low/None	Moderate	High

# Glossary of terms

**Adjusted Funds From Operations (AFFO):** A measurement which is helpful in analyzing real estate investment trusts (REITs). The AFFO typically equals the trust's funds from operations (FFO) but is adjusted for ongoing capital expenditures which are necessary for upkeep of the REIT's assets.

**Backwardation:** Also, sometimes called normal backwardation, is the market condition where the price of a commodities forward or futures contract is trading below the expected spot price at maturity.

**Capitalization Rates:** The rate of return of a real estate investment, which is calculated by dividing the property's net operating income by the property's purchase price.

**Core Real Estate:** This category of real estate will include a preponderance of stabilized properties. Core real estate should achieve relatively high income returns and exhibit relatively low volatility. Core real estate funds tend to use less leverage.

**Consumer Price Index (CPI):** A measure of purchasing power and inflation that takes the average prices of a basket of consumer goods and services, such as food, medical care, and transportation, and compares the same basket of goods in terms of prices to the same period in a previous year. Changes in CPI are used to assess price changes associated with the cost of living.

**Contango:** When the futures price of a commodity is above the expected future spot price. A futures or forward curve is upward sloping when the market is in contango.

**Double Promote:** A joint venture private equity structure is considered to have a "double promote" if the sponsor of a project is in fact comprised of two separate parties who each have a profit waterfall agreement or cash flow disbursements.

**Dry Powder:** Investment reserves raised by investment funds to cover future obligations or to purchase assets in the future.

**GDP:** The total value of all services and goods produced within a country's borders, for a given time period. This calculation includes both private and public consumption, government expenditures, investments, along with total exports net of total imports.

**Internal Rate of Return (IRR):** the IRR is the discount rate that equates the present value of cash outflows (investment) with the present value of cash inflows (return of capital). IRR is often referred to as a dollar-weighted rate of return that accounts for the timing of cash inflows and outflows.

**LIBOR:** Is a benchmark rate that some of the world's largest banks charge each other for short-term loans. It stands for London Interbank Offered Rate and serves as the first step in calculating interest rates on various loans throughout the world.

**Master Limited Partnerships (MLPs):** A limited partnership structure which is publicly traded on an exchange. MLPs combine the tax benefits of a limited partnership with the liquidity of publicly traded securities. To qualify as an MLP, the entity must generate 90% of its income from the production, processing and transportation of oil, natural gas and coal.

**Net Operating Income (NOI):** A calculation which is used to analyze real estate investments that generate income. NOI is the property's annual income generated by operations after deducting all expenses incurred from those operations. The growth rate in NOI is a common metric used in determining the health of a property.

**OPEC:** The Organization of Petroleum Exporting Countries (OPEC) is a group consisting of 12 of the world's major oil-exporting nations. OPEC is a cartel that aims to manage the supply of oil in an effort to influence the price of oil on the world market.

**Opportunistic Real Estate:** An opportunistic fund is one that includes preponderantly non-core assets. The fund as a whole is expected to derive most of its return from property appreciation which may result in volatile returns. These funds may employ a variety of tools such as development, significant leasing risk and potentially high leverage.

**Real Estate Investment Trusts (REITs):** A REIT is a company that owns and operates commercial real estate properties. REITs can be publicly traded or privately held. There are two main type of REITs: Equity REITs which generate income from the operation of properties, and Mortgage REITs, which invest in mortgages or mortgage securities.

# Glossary of terms (continued)

**Timber Investment Management Organizations (TIMOs):** A management group that invests in timberland assets for institutional investors. TIMOs will purchase, manage and sell various timberland properties on behalf of investors.

**Treasury Inflation Protected Securities (TIPS):** A treasury bond that is adjusted to eliminate the effects of inflation on interest and principal payments, as measured by the Consumer Price Index (CPI). TIPS are issued in terms of five, ten and twenty years and are auctioned twice per year.

**Value-Added Real Estate:** A value-added real estate fund often holds a combination of core assets and other assets characterized by less dependable cash flows. These strategies are likely to have moderate lease exposure and employ moderate leverage. Consequentially, these strategies seek significant returns from property appreciation and typically exhibit moderate volatility.

**Vacancy Rates:** The vacancy rate is calculated as the total number of unoccupied units of a property divided by the total units of the property, at a particular point in time.

**Vintage Year:** Represents the year the first capital call or portfolio company investment was made. .

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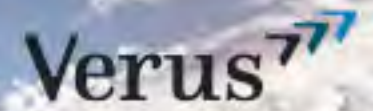
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## APPENDIX

### Tab VI – Annual Capital Markets Assumptions



Verus<sup>777</sup>

NOVEMBER 2022

2023 Capital Market Assumptions



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

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# Summary

# Methodology

## CORE INPUTS

- We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	75% * current federal funds rate + 25% * U.S. 10-year Treasury yield	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Levered gross return (LIBOR + spread + original issuance discounts) – management fees – carried interest	Estimated volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 3%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

\*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Equities</b>								
U.S. Large	S&P 500	6.5%	7.6%	15.6%	0.21	0.28	0.76	0.79
U.S. Small	Russell 2000	5.4%	7.5%	21.5%	0.10	0.20	0.42	0.49
International Developed	MSCI EAFE	9.1%	10.5%	17.8%	0.33	0.40	0.21	0.27
International Small	MSCI EAFE Small Cap	9.2%	11.3%	22.1%	0.27	0.36	0.29	0.36
Emerging Markets	MSCI EM	8.5%	11.2%	25.2%	0.21	0.31	0.02	0.10
Global Equity	MSCI ACWI	7.4%	8.7%	17.1%	0.23	0.32	0.47	0.52
Global Equity ex-US	MSCI ACWI ex-US	9.0%	10.7%	19.9%	0.29	0.37	0.16	0.23
Private Equity	CA U.S. Private Equity	9.2%	12.1%	25.8%	0.23	0.34	-	-
Private Equity Direct	CA U.S. Private Equity	10.2%	13.0%	25.8%	0.27	0.38	-	-
Private Equity (FoF)	CA U.S. Private Equity	8.2%	11.1%	25.8%	0.19	0.30	-	-
<b>Fixed Income</b>								
Cash	30 Day T-Bills	3.3%	3.3%	1.2%	-	-	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5-10	4.1%	4.3%	5.6%	0.14	0.18	0.06	0.08
U.S. Treasury	Bloomberg Treasury 7-10 Year	3.8%	4.0%	7.1%	0.07	0.10	(0.02)	0.01
Long U.S. Treasury	Bloomberg Treasury 20+ Year	3.8%	4.6%	13.2%	0.04	0.10	(0.01)	0.05
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	2.2%	2.7%	10.0%	(0.11)	(0.06)	(0.47)	(0.44)
Global Aggregate	Bloomberg Global Aggregate	3.0%	3.2%	6.7%	(0.05)	(0.01)	(0.30)	(0.28)
Core Fixed Income	Bloomberg U.S. Aggregate Bond	4.3%	4.4%	4.6%	0.22	0.24	0.05	0.07
Core Plus Fixed Income	Bloomberg U.S. Universal	4.6%	4.7%	4.6%	0.28	0.30	0.17	0.14
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1-3 Year	3.9%	4.0%	3.7%	0.16	0.19	0.11	0.11
Short-Term Credit	Bloomberg Credit 1-3 Year	4.3%	4.4%	3.7%	0.27	0.30	0.40	0.40
Long-Term Credit	Bloomberg Long U.S. Credit	5.3%	5.9%	11.0%	0.18	0.24	0.11	0.16
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	6.4%	7.0%	11.2%	0.28	0.33	0.44	0.47
Bank Loans	S&P/LSTA Leveraged Loan	6.8%	7.2%	9.2%	0.38	0.42	0.53	0.54
Global Credit	Bloomberg Global Credit	4.5%	4.8%	7.9%	0.15	0.19	0.00	0.03
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	8.9%	9.4%	10.7%	0.52	0.57	0.05	0.09
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	7.0%	7.7%	12.3%	0.30	0.36	(0.28)	(0.23)
Private Credit	S&P LSTA Leveraged Loan Index	8.2%	9.0%	13.0%	0.38	0.44	-	-
Private Credit (Direct Lending - Unlevered)	S&P LSTA Leveraged Loan Index	6.8%	7.2%	9.2%	0.38	0.42	-	-
Private Credit (Direct Lending - Levered)	S&P LSTA Leveraged Loan Index	9.1%	10.1%	15.3%	0.38	0.44	-	-
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	8.5%	9.4%	13.8%	0.38	0.44	-	-
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	9.0%	10.0%	15.1%	0.38	0.44	-	-
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.1%	12.7%	29.1%	0.20	0.32	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Other</b>								
Commodities	Bloomberg Commodity	5.7%	6.9%	16.3%	0.15	0.22	(0.20)	(0.13)
Hedge Funds	HFRI Fund Weighted Composite	4.6%	4.9%	7.7%	0.17	0.21	0.70	0.71
Hedge Fund of Funds	HFRI Fund of Funds Composite	3.6%	3.9%	7.7%	0.04	0.08	-	-
Hedge Funds (Equity Style)	Custom HFRI Benchmark Mix*	7.4%	8.4%	14.6%	0.28	0.35	-	-
Hedge Funds (Credit Style)	Custom HFRI Benchmark Mix*	7.1%	7.5%	9.8%	0.39	0.43	-	-
Hedge Funds (Asymmetric Style)	Custom HFRI Benchmark Mix*	4.8%	4.9%	4.8%	0.31	0.33	-	-
Real Estate Debt	Bloomberg CMBS IG	5.2%	5.5%	7.5%	0.25	0.29	0.26	0.28
Core Real Estate	NCREIF Property	5.8%	6.5%	12.6%	0.20	0.25	1.94	1.87
Value-Add Real Estate	NCREIF Property + 200bps	7.8%	8.9%	15.5%	0.29	0.36	-	-
Opportunistic Real Estate	NCREIF Property + 300bps	8.8%	10.8%	21.3%	0.26	0.35	-	-
REITs	Wilshire REIT	5.8%	7.5%	19.4%	0.13	0.22	0.32	0.40
Global Infrastructure	S&P Global Infrastructure	7.8%	9.1%	17.3%	0.26	0.34	0.28	0.35
Risk Parity**	S&P Risk Parity 10% Vol Index	8.3%	8.8%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	1.6%	1.7%	3.4%	(0.49)	(0.46)	0.20	0.21
Inflation		2.5%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

\*To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro

\*\*The Risk Parity forecast shown here assumes a 10% target volatility strategy. We recommend customizing this forecast to the target volatility specifications of the risk parity strategy that an investor wishes to model. Please speak with your Verus consultant for customization needs.

# Correlation assumptions

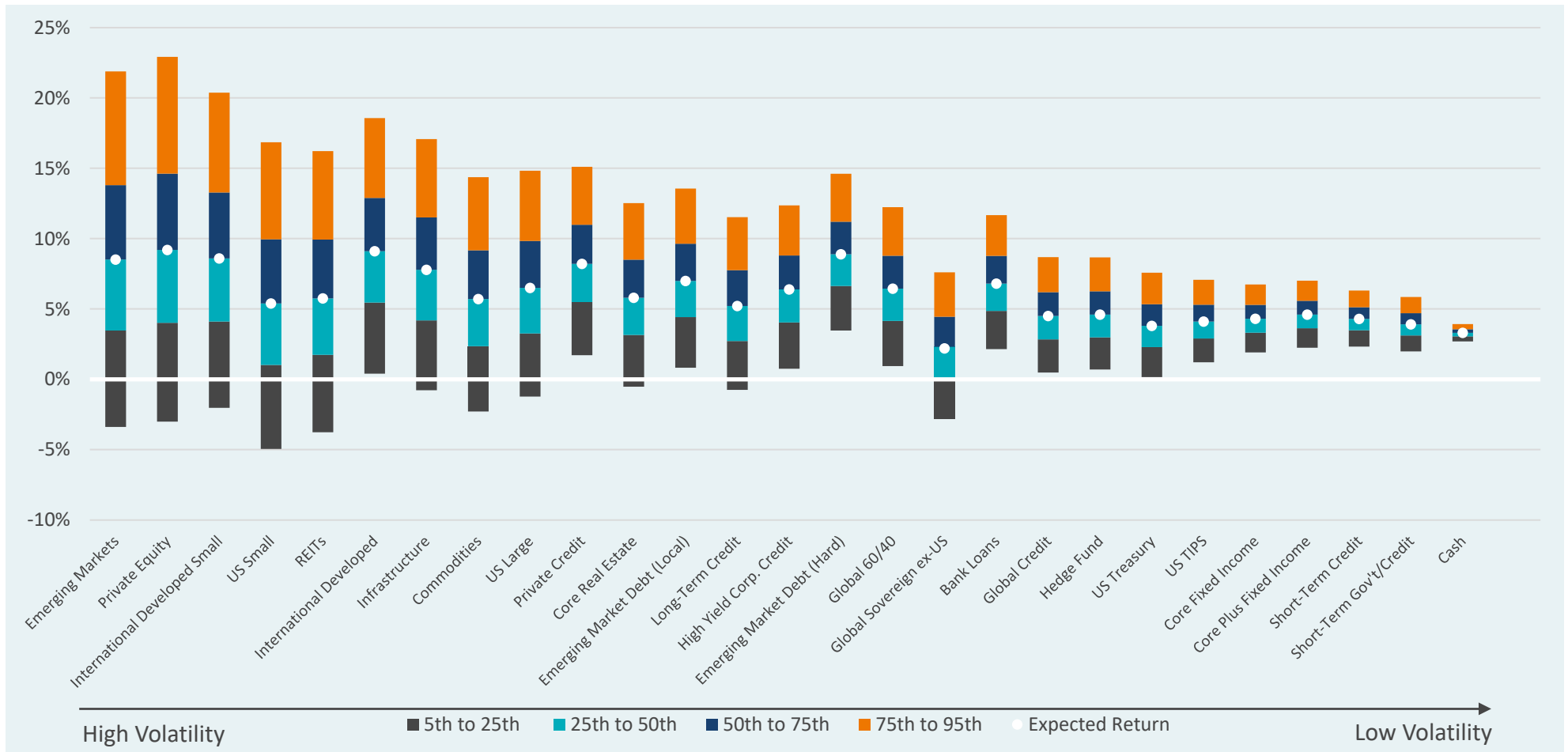
	Cash	US Large	US Small	Intl Large	Intl Small	EM	Global Equity	PE	US TIPS	US Treasury	Global Sovereign ex-US	US Core	Core Plus	Short-Term Gov't/Credit	Short-Term Credit	Long-Term Credit	US HY	Bank Loans	Global Credit	EMD USD	EMD Local	Commodities	Hedge Funds	Real Estate	REITs	Infrastructure	Risk Parity	Currency Beta		
Cash	1.0																													
US Large	-0.2	1.0																												
US Small	-0.2	0.9	1.0																											
Intl Large	-0.2	0.9	0.8	1.0																										
Intl Small	-0.3	0.9	0.8	1.0	1.0																									
EM	-0.2	0.7	0.6	0.8	0.8	1.0																								
Global Equity	-0.2	1.0	0.9	1.0	0.9	0.8	1.0																							
PE	-0.2	0.7	0.6	0.6	0.6	0.6	0.7	1.0																						
US TIPS	0.0	0.4	0.3	0.4	0.4	0.4	0.4	0.2	1.0																					
US Treasury	0.2	0.0	-0.1	0.0	0.0	0.0	0.0	-0.2	0.8	1.0																				
Global Sovereign ex-US	0.1	0.0	-0.2	-0.1	-0.1	0.0	-0.1	-0.2	0.7	0.9	1.0																			
US Core	0.0	0.3	0.2	0.4	0.4	0.5	0.4	0.1	0.7	0.6	0.5	1.0																		
Core Plus	0.1	0.3	0.2	0.3	0.3	0.3	0.3	0.0	0.8	0.9	0.9	0.7	1.0																	
Short-Term Gov't/Credit	0.0	0.4	0.3	0.4	0.4	0.4	0.4	0.1	0.9	0.8	0.8	0.7	1.0	1.0																
Short-Term Credit	0.2	0.1	0.1	0.2	0.2	0.2	0.2	-0.1	0.7	0.8	0.6	0.6	0.8	0.8	1.0															
Long-Term Credit	0.0	0.4	0.4	0.5	0.5	0.5	0.5	0.0	0.7	0.5	0.4	0.6	0.8	0.8	0.8	1.0														
US HY	0.0	0.5	0.4	0.5	0.5	0.5	0.5	0.1	0.7	0.6	0.7	0.6	0.8	0.9	0.6	0.7	1.0													
Bank Loans	-0.2	0.8	0.8	0.8	0.8	0.7	0.8	0.5	0.5	0.1	0.1	0.5	0.4	0.6	0.3	0.7	0.6	1.0												
Global Credit	-0.3	0.6	0.7	0.6	0.7	0.6	0.7	0.5	0.3	-0.2	-0.2	0.2	0.1	0.3	0.0	0.5	0.4	0.8	1.0											
EMD USD	-0.1	0.6	0.5	0.7	0.7	0.7	0.7	0.4	0.6	0.3	0.3	0.6	0.6	0.7	0.4	0.7	0.7	0.8	0.7	1.0										
EMD Local	0.0	0.5	0.4	0.7	0.6	0.8	0.6	0.4	0.5	0.2	0.1	0.6	0.4	0.5	0.3	0.5	0.5	0.7	0.5	0.8	1.0									
Commodities	-0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.3	0.2	-0.3	-0.3	0.2	-0.1	0.0	-0.1	0.2	0.1	0.5	0.5	0.3	0.4	1.0								
Hedge Funds	-0.2	0.8	0.9	0.9	0.9	0.8	0.9	0.6	0.3	-0.2	-0.2	0.3	0.1	0.3	0.0	0.5	0.4	0.8	0.8	0.7	0.6	0.5	1.0							
Real Estate	-0.2	0.6	0.5	0.5	0.5	0.4	0.6	0.4	0.2	-0.1	-0.1	0.2	0.0	0.1	-0.1	0.1	-0.1	0.4	0.4	0.4	0.4	0.3	0.5	1.0						
REITs	-0.2	0.7	0.6	0.6	0.6	0.5	0.7	0.5	0.6	0.3	0.3	0.4	0.5	0.5	0.2	0.5	0.6	0.6	0.5	0.6	0.5	0.3	0.6	0.7	1.0					
Infrastructure	-0.2	0.8	0.7	0.8	0.8	0.7	0.8	0.7	0.5	0.1	0.0	0.5	0.3	0.5	0.2	0.5	0.6	0.8	0.7	0.7	0.7	0.5	0.8	0.3	0.7	1.0				
Risk Parity	-0.2	0.7	0.7	0.8	0.7	0.7	0.8	0.4	0.6	0.1	0.1	0.4	0.4	0.5	0.2	0.6	0.6	0.8	0.7	0.8	0.6	0.6	0.8	0.4	0.7	0.8	1.0			
Currency Beta	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	1.0	

Note: as of 9/30/22 - Correlation assumptions are based on the last ten years. Private Equity and Real Estate correlations are especially difficult to model – we have therefore used BarraOne correlation data to strengthen these correlation estimates.



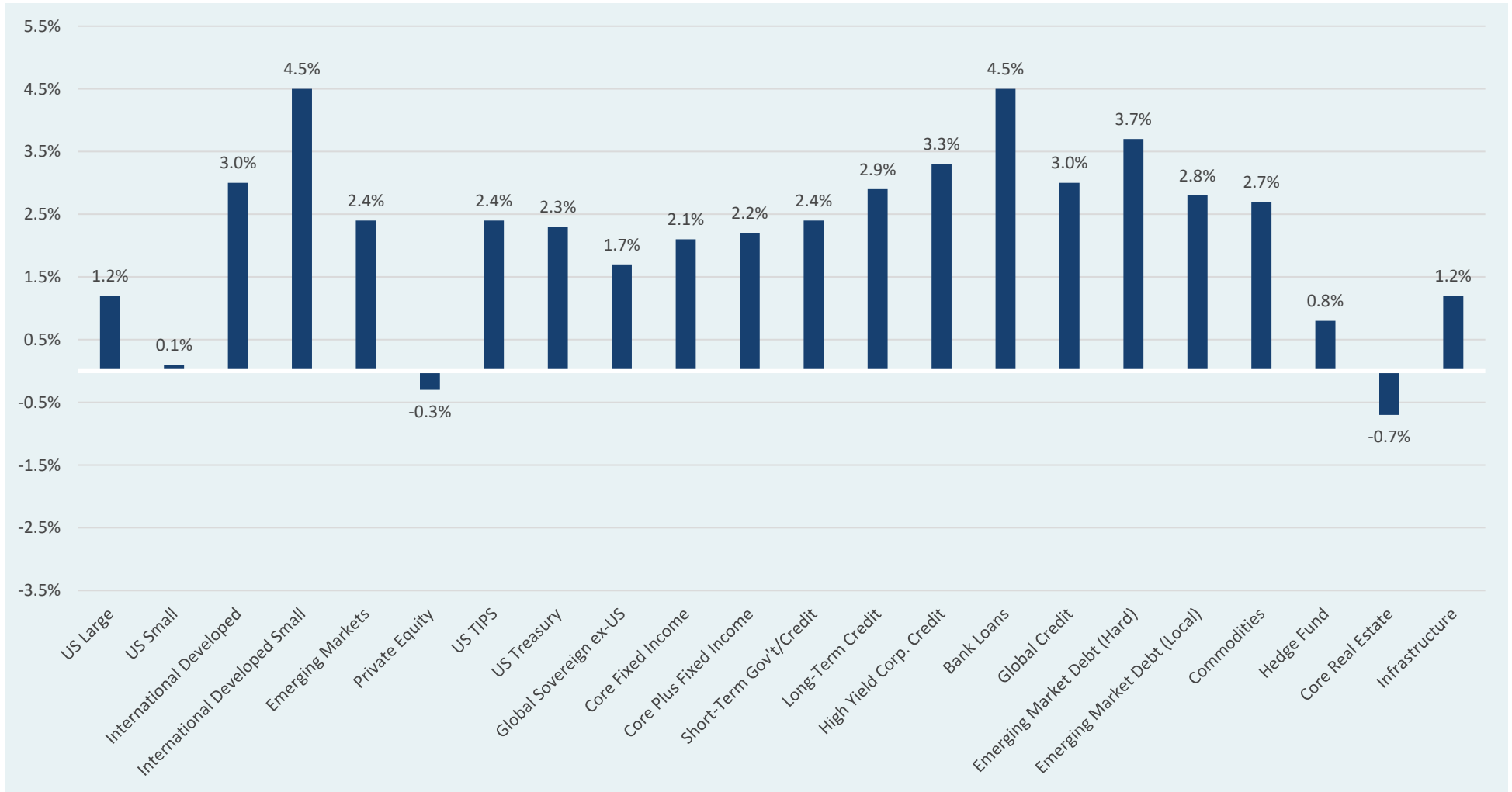
# Range of likely 10-year outcomes

## 10-YEAR RETURN 90% CONFIDENCE INTERVAL



Source: Verus, MPI

# 2023 vs. 2022 return forecast



Source: Verus, as of 9/30/22

# Relevant forecast changes

- The year 2022 may later be recognized as the turning point to the *low return environment* narrative of the past decade. As global central banks have hiked interest rates fairly aggressively, risk asset valuations have fallen closer to long-term average levels, and inflation picked up, the prospective returns of many asset classes improved substantially. These dynamics are on display within the Verus 2023 Capital Market Assumptions. Readers will notice large gains in the expected returns of fixed income assets, moderate gains in equity forecasts, and improvements in some real assets, given the greater risk premiums offered by markets today.
- Inflation expectations increased mid-year but later receded as markets, households, and economists generally believed inflation would fall back to normal levels. The U.S. TIPS breakeven inflation rate fell from 2.37% to 2.15%, as inflation expectations suggest a quick return to normalcy. Household inflation expectations (University of Michigan) began and ended the year at 2.7%. The Survey of Professional Forecasters also increased from 2.4% to 2.8%. This resulted in our inflation forecast remaining unchanged at 2.5%.
- Credit spreads were mixed over the year. Higher risk bond spreads steadily marched upward as the Federal Reserve took a more aggressive stance on rate hikes and its fight against inflation, which has generated concerns around an imminent recession. High yield spreads jumped from 323 bps to 517 bps. Core fixed income spreads tightened over the year from 81 bps to 57 bps.
- The long end of the yield curve increased substantially, as the 10-year U.S. Treasury yield moved from 1.49% to 3.83%. The curve is now flat or slightly inverted (depending on the measure), with the effective federal funds rate at 2.6%. An inverted curve has historically suggested recession is near.
- Emerging market hard and local currency debt forecasts moved higher. Hard currency-denominated debt spreads to U.S. Treasury yields rose from 392 to 523 bps. The yield of local-denominated debt increased from 4.5% to 7.3%.

All data cited above is as of 9/30/22

# Inflation

# Inflation

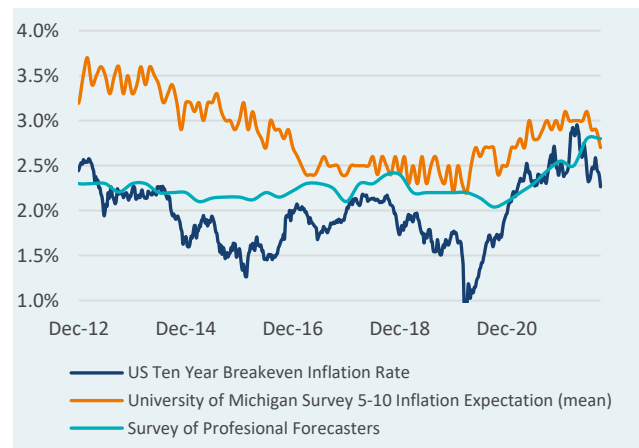
We use a weighted average of market expectations (50%), consumer expectations (25%), and professional forecasts (25%) to create a 10-year inflation forecast. The market's expectations for 10-year inflation can be inferred by taking the difference between the U.S. 10-year Treasury yield and the 10-year Treasury Inflation-Protected (TIPS) yield (referred to as the breakeven inflation rate).

Long term inflation expectations have been mixed throughout the year. Household inflation expectations (University of Michigan) have moderated along with market-priced inflation (U.S. TIPS Breakeven

Rates), though the Survey of Professional Forecasters which suggests an increase in long-term inflation expectations. At a broader level, all of these indicators agree in their assumption that inflation will fall to a relatively normal 2-3% for the next ten years.

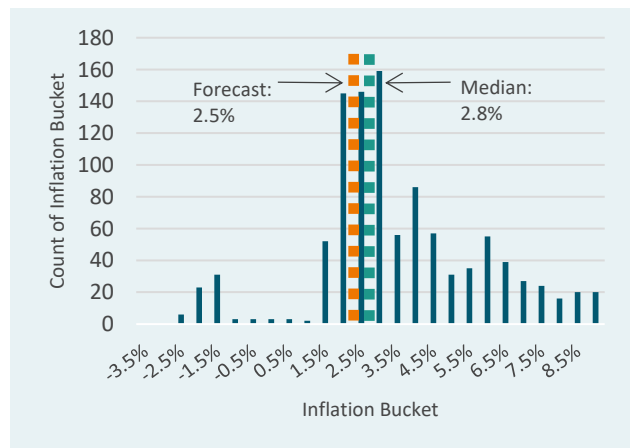
Our inflation forecast was unchanged at 2.5%.

## INFLATION EXPECTATIONS



Source: U. of Michigan, Philly Fed, as of 9/30/22

## U.S. 10-YR ROLLING AVERAGE INFLATION



Source: Bloomberg, as of 9/30/22 – since 1923

## FORECAST

	10-Year Forecast
University of Michigan Survey (25% weight)	+2.7%
Survey of Professional Forecasters (25% weight)	+2.8%
US 10-Year TIPS Breakeven Rate (50% weight)	+2.2%
<b>Inflation Forecast</b>	<b>2.5%</b>

Source: Verus, as of 9/30/22

# Fixed income

# Cash

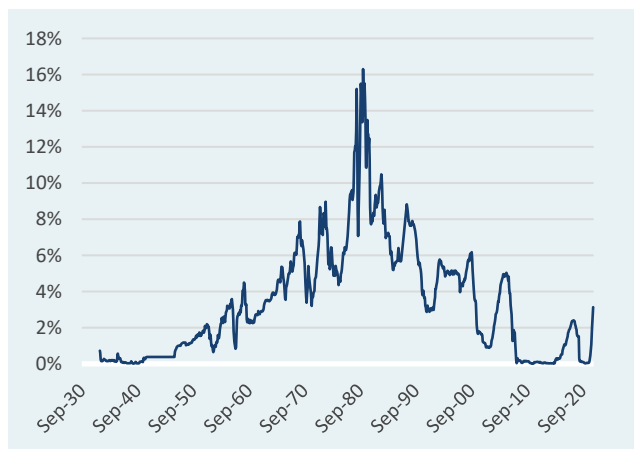
The U.S. Treasury yield ramped up significantly from late 2021 as the Federal Reserve became increasingly aggressive in its tightening efforts. The Federal Funds Rate range was lifted from 0-0.25% to 3.00-3.25% during this time.

Throughout 2021 it seemed that the yield of cash had decoupled from the rate of inflation in many developed markets as near-zero interest rates and relatively high inflation resulted in deeply negative rates on an inflation-adjusted basis. Central banks have now hiked cash rates to levels not seen in nearly fifteen years.

We believe that the current federal funds rate, as well as the steepness of the U.S. Treasury yield curve, may provide guidance regarding the future longer-term cash return. We place a 75% forecasting weight on the current federal funds rate and a 25% weight to the 10-year U.S. Treasury.

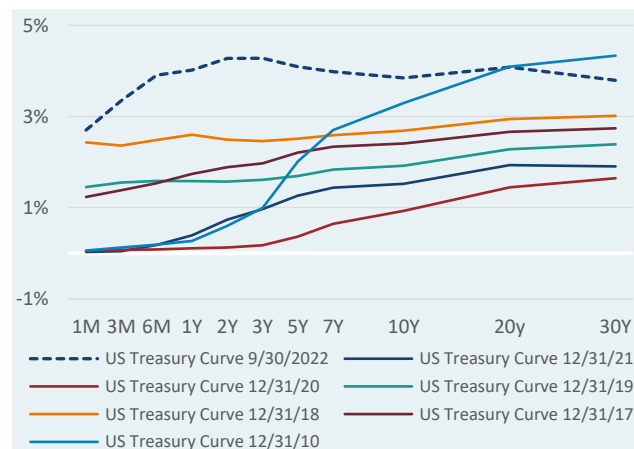
Applying these relationships result in a 10-year cash forecast of 3.3%.

**CASH YIELD (3-MONTH T-BILL)**



Source: FRED, as of 9/30/22

**U.S. TREASURY YIELD CURVE**



Source: Bloomberg, as of 9/30/22

**FORECAST**

	10-Year Forecast
Cash	+3.3%
Inflation Forecast	-2.5%
Real Return	0.8%

Source: Verus, as of 9/30/22

# Rates

We forecast the return of 10-year U.S. Treasuries and 30-year U.S. Treasuries based on the current yield of 10- and 30-year U.S. Treasuries, assuming all cash flows are reinvested at the current yield. While the current yield of 10-year Treasuries has historically been a strong predictor of next ten-year performance, it is important to note that 30-year Treasury return is highly dependent on the future path of interest rates, given the very high bond duration of this exposure. In other words, a ten-year forecast of 30-year U.S. Treasuries is accompanied by more forecasting uncertainty.

U.S. Treasury yields are no longer materially higher than other developed

nations as central banks work to stamp out high inflation in their local economies.

Developed world central banks have pivoted away from extremely loose policies that were enacted to fight the pandemic-induced recession to tighter policies. For the first time in a long time, central banks are removing liquidity from the global financial system and in many cases unwinding their very large balance sheets.

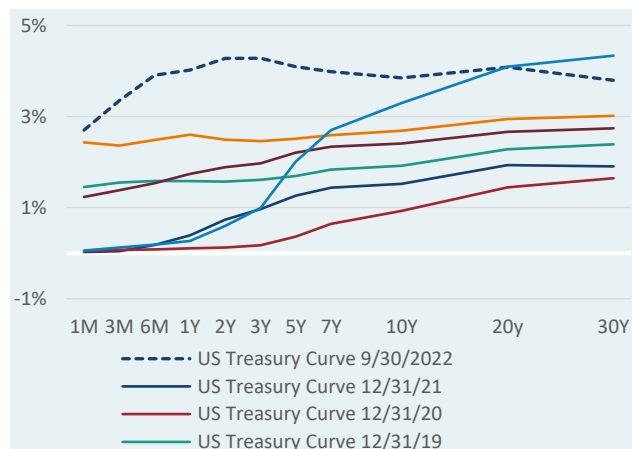
Our expectations are for a 3.8% return over the next ten years, in line with the current U.S. 10-year Treasury yield.

**U.S. 10-YR TREASURY YIELD**



Source: Bloomberg, as of 9/30/22

**U.S. TREASURY YIELD CURVE**



Source: Bloomberg, as of 9/30/22

**FORECAST**

	10-Year Forecast		10-Year Forecast
U.S. 10-Year Treasury	+3.8%	U.S. 30-Year Treasury	+3.8%
Inflation Forecast	-2.5%	Inflation Forecast	-2.5%
Real Return	+1.4%	Real Return	+1.4%

Source: Verus, as of 9/30/22



# Real rates

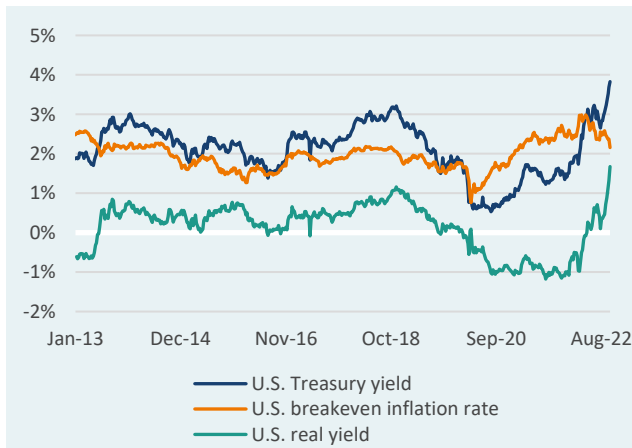
TIPS provide high sensitivity to duration (interest rate risk) over short periods and track inflation (CPI) fairly well over longer periods. Changing inflation expectations, demand for inflation protection, and rate movements contribute to the price movement of TIPS. Currently, investors appear to expect higher inflation to be temporary, but also expect that inflation will be higher in the next decade than the most recent decade.

The long end of the yield curve increased substantially as the 10-year U.S. Treasury climbed from 1.5% to 3.8%. As inflation has begun to

moderate, inflation expectations have fallen significantly. The breakeven inflation rate rose from 2.37% to nearly 3.0% in April, but ended September at 2.15%—now effectively pricing in a quick return to normalcy.

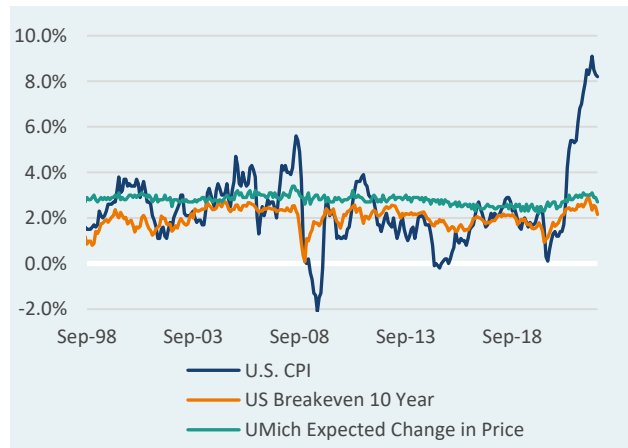
To arrive at a nominal 10-year forecast, we add the current real TIPS yield to our 10-year inflation forecast. Our real rates forecast remains in negative territory as both Treasury yields and priced inflation has risen.

## NOMINAL YIELD VS. REAL



Source: Bloomberg, as of 9/30/22

## INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/22

## FORECAST

	10-Year Forecast
U.S. 10-Year TIPS Real Yield	+1.7%
Inflation Forecast	+2.5%
Nominal Return	4.1%

Source: Verus, as of 9/30/22

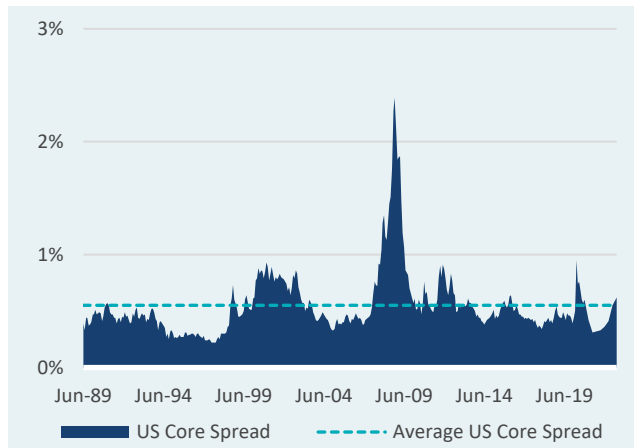
# Core fixed

Credit fixed income return is composed of a bond term premium (duration) and credit spread. The bond term premium is represented by the 10-year U.S. Treasury yield.

We use default rates and credit spreads for each respective fixed income category to provide our 10-year return forecast. Our default rate assumption is derived from a variety of sources, including historical data and academic research. The effective default that is subtracted from the return forecast is based on our assumed default and recovery rates.

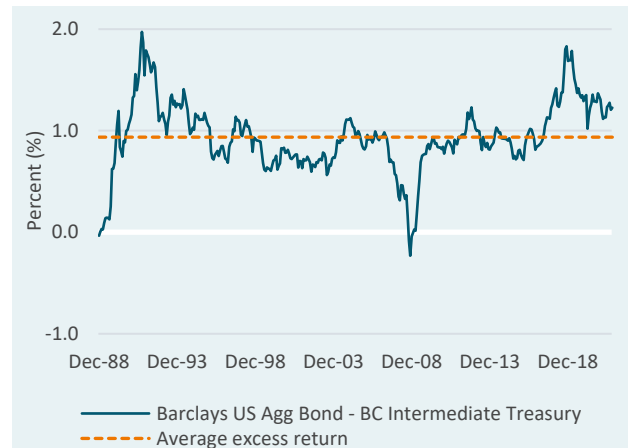
Core fixed income spreads contracted from 81 bps to 57 bpx over the year and remain materially below the 30-year average of 1.25%. Higher interest rates have substantially increased our core fixed income expectations, while slightly tighter credit spreads had an opposing effect. Our forecast increased from 2.2% to 4.3% during the year.

**U.S. CORE CREDIT SPREAD**



Source: Bloomberg, as of 9/30/22

**ROLLING EXCESS RETURN (10-YR)**



Source: Bloomberg, as of 9/30/22

**FORECAST**

	<b>10-Year Forecast</b>
Bloomberg U.S. Option-Adjusted Spread	+0.6%
Effective Default	-0.1%
U.S. 10-Year Treasury	+3.8%
Nominal Return	4.3%
Inflation Forecast	-2.5%
Real Return	1.8%

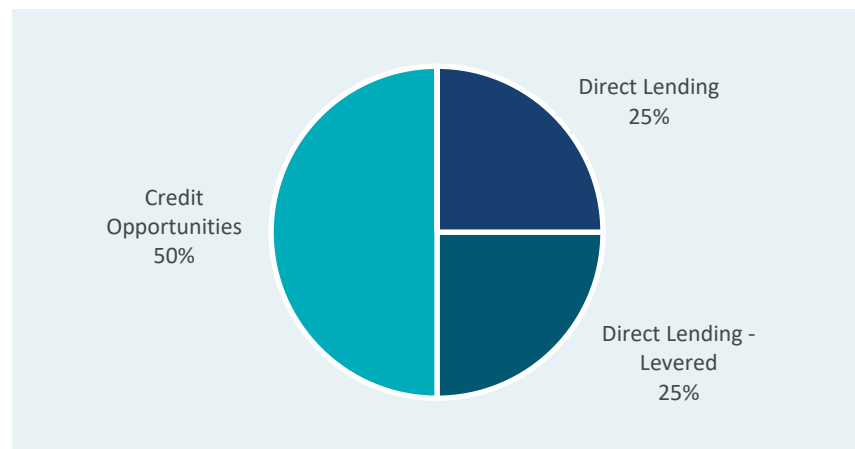
Source: Verus, as of 9/30/22

# Private credit

The spectrum of private credit is broad and the types of investments in this asset class can differ considerably in terms of return expectations and risks involved. To reflect the disparate characteristics of this asset class, our private credit forecast assumes a diversified portfolio comprised of 25% direct lending, 25% direct lending with fund-level leverage, and 50% credit opportunities strategies. Our resulting private credit forecast is a result of our combined expectations for each of these exposure types.

We follow a building block approach to build return expectations.

## PRIVATE CREDIT WEIGHTS



Source: Verus

Direct lending expected return is a product of interest rates, a floating rate, loss adjusted credit spread above SOFR, plus original issuance discounts, minus management fees and carried interest. Direct lending with fund-level leverage includes these same building blocks but is adjusted for the added spread from leverage and the costs of that leverage. The expected return of credit opportunities strategies is a result of interest rates (U.S. Treasury yield), credit spread, original issuance discounts, minus management fees and carried interest, with an adjustment for added spread from leverage and the costs of that leverage. Further details of this methodology is provided on the next page.

## FORECAST

	10-Year Forecast
Credit Opportunities (50% weight)	8.5%
Direct Lending – Unlevered (25% weight)	6.8%
Direct Lending – Levered (25% weight)	9.1%
Private Credit Weighted Return Forecast	8.2%
Inflation Forecast	-2.5%
Real Return	5.7%

Source: Verus, as of 9/30/22 – assuming universe weights as indicated by left-hand chart  
Please reach out to your Verus consultant for Private Credit universe forecast methodology

# Private credit

Below we illustrate the specific building blocks of our private credit forecasts. The build up method is used to calculate a gross investment level return, which is adjusted to account for fund level leverage, management fees, and carried interest.

	Direct Lending –Unlevered	Direct Lending – Levered		Credit Opportunities*		Junior Capital / Mezzanine		Distressed
Base Interest Rate	2.5%	2.5%	Base Interest Rate	2.5% - 3.2%	Fixed Rate Coupon	8.5%	Return expectations for distressed have been developed on a range bound basis given the diversity of strategies included in the asset class:  Distressed strategies are highly opportunistic by nature and returns are primarily, if not entirely, driven by capital appreciation limiting the ability to use a build up method.  Distressed strategies typically target 10%+ net returns, but market conditions often weigh heavily into the overall performance.  Periods of market volatility, dislocation, and economic downturns generally provide a more attractive investment environment for distressed strategies where outperformance may be expected.  Historically, median fund level net returns have ranged between 9-10% although top to bottom quartile dispersion is has been wide historically.	
Spread	5.5%	5.5%	Spread	4.5% - 9.0%	Paid-In-Kind Coupon	3.5%		
Original Issuance Discount <i>Amortized over 3 years</i>	2.3%	2.3%	Original Issuance Discount <i>Amortized over 3 years</i>	2.0% - 2.5%	Annualized Equity Upside	0.8%		
<b>Gross Return</b>	<b>8.8%</b>	<b>8.8%</b>	<b>Gross Return</b>	<b>7.7% - 13.0%</b>	<b>Gross Return</b>	<b>12.8%</b>		
Leverage Cost	NA	5.3%	Leverage Cost	5.3%	Leverage Cost	NA		
Leverage Level	0.0x	1.0x	Leverage Level	0.3x – 0.5x	Leverage Level	0.0x		
<b>Levered Gross Return</b>	<b>8.8%</b>	<b>12.3%</b>	<b>Levered Gross Return</b>	<b>8.9% - 15.4%</b>	<b>Levered Gross Return</b>	<b>12.8%</b>		
Effective Management Fees	1.0%	1.8%	Effective Management Fees	1.5% - 2.0%	Effective Management Fees	1.5%		
Carried Interest	0.7%	1.3%	Carried Interest	1.1% - 2.7%	Carried Interest	2.3%		
<b>Total Net Return</b>	<b>6.8%</b>	<b>9.1%</b>	<b>Total Net Return</b>	<b>8.5%</b>	<b>Total Net Return</b>	<b>9.0%</b>	<b>Total Net Return</b>	<b>9.1%</b>

\*Return expectations for credit opportunities have been developed on a range-bound basis given the diversity of strategies included in the asset class. Values represent the mid-point estimate of those ranges. For Credit Opportunities, our return assumption is the midpoint of the total net return range of 6.3% - 10.7%.

Source: Verus

# Credit summary

	Core	Long-Term Credit	Global Credit*	High Yield*	Bank Loans*	EM Debt (USD)	EM Debt (Local)	Private Credit	Real Estate Debt
<b>Index</b>	Bloomberg U.S. Aggregate	Bloomberg U.S. Long Credit	Bloomberg Global Credit	Bloomberg U.S. High Yield	S&P LSTA	JPM EMBI	JPM GBI-EM	N/A	N/A
<b>Method</b>	OAS + U.S. 10-Year	OAS + U.S. 10-Year	OAS + Global 10-Year Treasuries	OAS + U.S. 10-Year	LIBOR + Spread	OAS + U.S. 10-Year	Current Yield	Build up method using Direct Lending (unlevered), Direct Lending (levered), Opportunistic Credit**	LIBOR + Spread***
<b>Spread to</b>	Intermediate U.S. Treasury	Long-Term U.S. Treasury	Global Long-Term Treasuries	Intermediate U.S. Treasury	LIBOR	Intermediate U.S. Treasury	-	-	LIBOR
<b>Default Assumption</b>	-0.5%	-4.5%	-	-	-	-0.5%	-0.5%	-	-3.7%
<b>Recovery Assumption</b>	80%	95%	-	-	-	60%	40%	-	47%
<b>Spread</b>	0.6%	1.8%	2.0%	5.2%	6.0%	5.2%	-	-	4.0%
<b>Yield</b>	-	-	-	-	-	-	7.3%	-	-
<b>Risk Free Yield</b>	3.8%	3.8%	3.5%	3.8%	3.8%	3.8%	-	-	3.1%
<b>Effective Default</b>	-0.1%	-0.2%	-1.0%	-2.6%	-3.0%	-0.2%	-0.3%	-	-2.0%
<b>Nominal Return</b>	4.3%	5.4%	4.5%	6.4%	6.8%	8.9%	7.0%	8.2%	5.2%
<b>Inflation Forecast</b>	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
<b>Real Return</b>	1.8%	2.9%	2.1%	4.0%	4.3%	6.4%	4.6%	5.7%	2.6%

\*We assume half of the spread of higher risk credit will be lost to defaults, as this has roughly been the case throughout history.

\*\*We assume 25% Direct Lending (Unlevered), 25% Direct Lending (Levered), 50% Credit Opportunities – please refer to the previous page for more information.

\*\*\*Spread is determined based on a survey of real estate debt managers

# Equities

# Equities

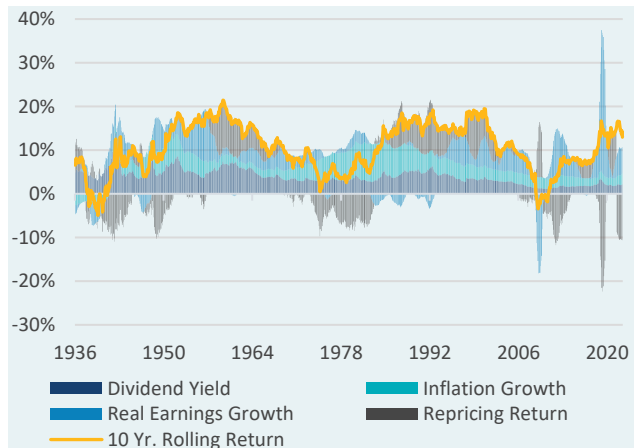
Investment returns in the equity space can be broken down into earnings growth, dividend yield, inflation, and repricing. Over the very long-term, repricing represents a small portion of return to equity investors, but over shorter time frames, the impacts on return can vary considerably.

If investors are willing to pay more for earnings, it could signal that investors are more confident in positive earnings growth going forward, while the opposite is true if investors pay less for earnings. It is somewhat surprising that investor confidence varies so much given that the long-term earnings growth is relatively stable.

Investor confidence in earnings growth can be measured using both the Shiller P/E ratio and the trailing 12-month P/E ratio. We take an average of these two valuations metrics when determining our repricing assumption. In short, if the P/E ratio is too high (low) relative to history, we expect future returns to be lower (higher) than the long-term average. Implicit in this analysis is the assumption that P/E multiples will exhibit mild mean reversion over 10 years.

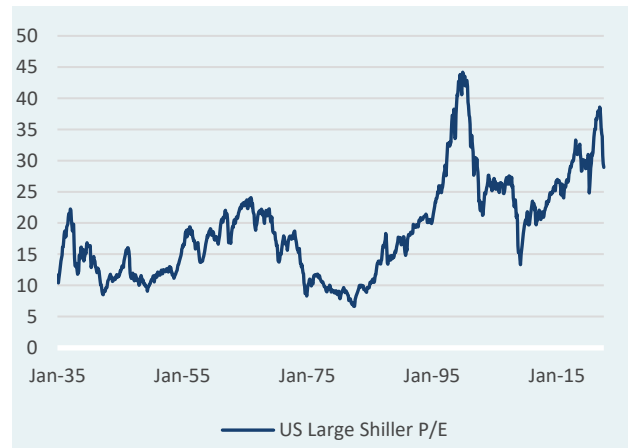
We make a conservative repricing estimate given how widely repricing can vary over time. We then skew the repricing adjustment because the percentage change in index price is larger with each incremental rise in valuations when P/E multiples are low, compared to when they are high.

## TRAILING 10-YR S&P 500 RETURN COMPOSITION



Source: Shiller, Standard & Poor's, as of 6/30/22

## U.S. LARGE SHILLER P/E



Source: Shiller, S&P 500, as of 7/31/22

## P/E REPRICING ASSUMPTION

Average P/E Percentile Bucket	Lower P/E	Upper P/E	Repricing Assumption
Lower 10%	-	10	2.00%
10% - 20%	10	13	1.50%
20% - 30%	13	15	0.75%
30% - 45%	15	18	0.50%
45% - 55%	18	19	0.0%
55% - 70%	19	21	-0.25%
70% - 80%	21	22	-0.50%
80% - 90%	22	24	-0.75%
Top 10%	24	-	-1.00%

Source: Verus

# Global equity

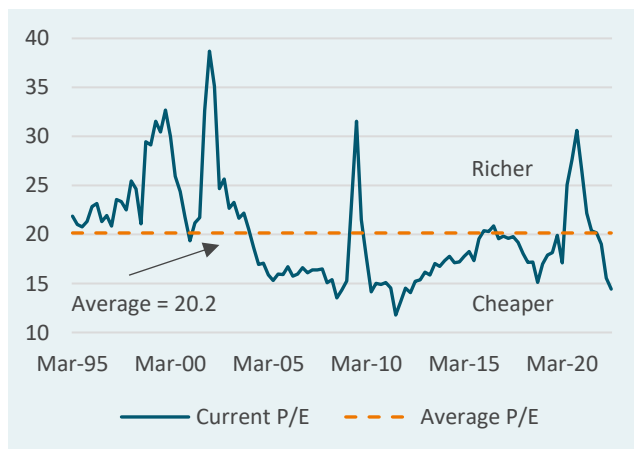
Global Equity is a combination of U.S. large, international developed, and emerging market equities. We can therefore combine our existing return forecasts for each of these asset classes to arrive at our global equity return forecast.

We use the MSCI ACWI Index as our benchmark for global equity and apply the country weights of this index to determine the weightings for our global equity return calculation. As with other equity asset classes, we use the historical standard deviation of the benchmark (MSCI ACWI Index) for our volatility forecast.

The valuation of global equities are driven by the richness/cheapness of the underlying markets, as indicated by the current price-to-earnings ratio.

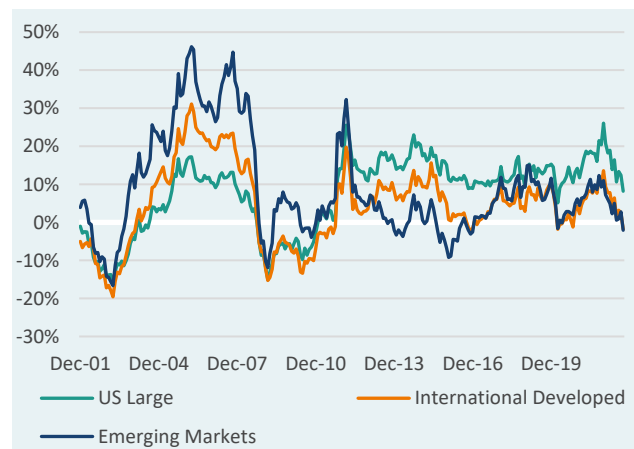
Our return building blocks produce a local return forecast for international equities. For investors who wish to incorporate market implied currency movements into the return forecast, please see the adjustments and explanation in the Appendix.

## GLOBAL EQUITY P/E RATIO HISTORY



Source: MSCI, Bloomberg, as of 9/30/22

## MARKET PERFORMANCE (3-YR ROLLING)



Source: MSCI, Standard & Poor's, as of 9/30/22

## FORECAST

Market	Weight	CMA return
U.S. Large	64%	6.5%
Developed Large	25%	9.1%
Emerging Markets	10%	8.5%
<b>Global Equity Forecast</b>		<b>7.4%</b>

Source: Verus, weights rescaled to equal 100%, as of 9/30/22



# Equity summary

	U.S. Large	U.S. Small	EAFE	EAFE Small	EM
Index	S&P 500	Russell 2000	MSCI EAFE Large	MSCI EAFE Small	MSCI EM
Method	Building Block Approach: current dividend yield + historical average real earnings growth + inflation on earnings + repricing				
Current Shiller P/E Ratio	28.5	45.1	14.1	-	8.8
Regular P/E Ratio	17.6	107.5	11.6	12.0	9.8
2022 Shiller P/E Change	-25.6%	-29.1%	-33.9%	-	-30.8%
2022 Regular P/E Change	-30.0%	-40.8%	-39.2%	-76.8%	-35.9%
Current Shiller P/E Percentile Rank	80%	88%	12%	-	7%
Current Regular P/E Percentile Rank	54%	97%	10%	4%*	2%
Average of P/E Methods' Percentile Rank <i>(lower percentile = cheaper valuations)</i>	67%	88%	11%	4%*	5%
2022 YTD Return	-23.9%	-25.1	-27.1%	-32.1%	-27.2%
Shiller PE History	1982	1988	1982	Not Enough History	2005
Long-Term Average Shiller P/E	23.6	33.0	22.3	-	14.5
Current Dividend Yield	1.8%	1.5%	3.8%	3.4%	3.6%
Long-Term Average Real Earnings Growth	2.4%	2.4%**	1.6%	1.6%**	0.5%
Inflation on Earnings	2.5%	2.5%	2.2%	2.2%	2.5%
Repricing Effect (Estimate)	-0.3%	-1.0%	1.5%	2.0%	2.0%
Nominal Return	6.5%	5.4%	9.1%	9.2%	8.5%
Inflation Forecast	2.5%	2.5%	2.5%	2.5%	2.5%
Real Return	4.0%	2.7%	6.6%	6.7%	6.0%

Data as of 9/30/22

\*Average trailing P/E from previous 12 months (25% weight) and current P/E (75% weight) are blended into one P/E metric, which is then percentile ranked relative to long-term history. This is done to reduce reliance on a single price multiple, as insufficient data history is available to calculate Shiller P/E for this asset class.

\*\*Due to data limitations, we assume small cap earnings growth will equal the earnings growth of large cap in each respective market

NOTE: For all equities, we exclude data prior to 1972, which allows for a more appropriate comparison between data sets

# Private equity

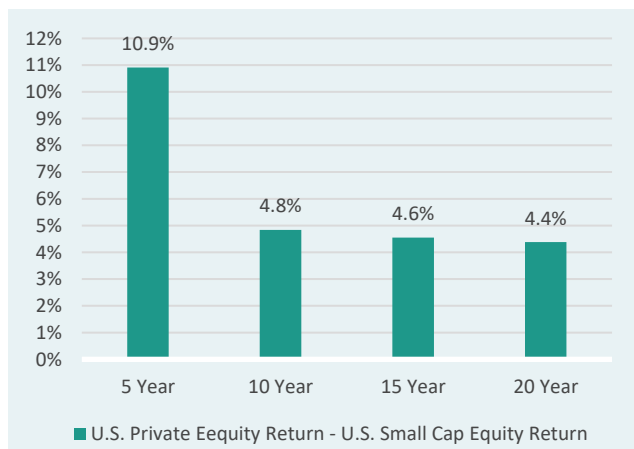
Private equity and public equity returns have been correlated historically because the underlying economic forces driving these asset class returns are quite similar. The return relationship between the two can vary in the short-term, but over the long-term investors have received a premium, driven by leverage, concentrated factor exposure (smaller and undervalued companies), skill, and possibly illiquidity. Historically, the beta of private equity relative to public equity has been high. We use a beta assumption of 1.85 to U.S. large cap equities in our forecast.

Readers may notice that our private equity return forecast fell slightly in 2022 while other equity forecasts increased. Given the recent notable rise

in cash rates, the cost of leverage for private equity strategies has jumped considerably. The higher cost of leverage was the reason for this change.

Private equity performance typically differs based on the implementation approach. We provide a 10-year forecast for the entire private equity universe of 9.5%. Direct private equity programs have historically outperformed the broader universe by approximately 1.0%, so we add 1.0% to our direct private equity forecast to reflect this historical outperformance. Private equity fund-of-fund (FoF) programs have historically lagged the universe by 1.0%, so we subtract 1.0% from our forecast accordingly to arrive at this forecast.

## PRIVATE EQUITY EXCESS RETURN (PE – U.S. SMALL CAP EQUITY)



Source: CA, Russell, as of 3/31/22

## PRIVATE EQUITY IMPLEMENTATION FORECASTS\*

	10-Year Forecast
Private Equity Universe Forecast	9.2%
Private Equity FoF Forecast*	8.2%
Private Equity Direct Forecast*	10.2%

Source: Verus, as of 9/30/22

## PRIVATE EQUITY UNIVERSE FORECAST

	10-Year Forecast
U.S. Large Cap Forecast	+6.5%
1.85 Beta Multiplier	+2.7%
Nominal Return	9.2%
Inflation Forecast	-2.5%
Real Return	6.7%

Source: Verus, as of 9/30/22

\*Private Equity FoF and Private Equity Direct forecasts are based off the actual historical return difference between these strategies and the overall Private Equity Universe. Fund of Funds have historically underperformed the overall Private Equity Universe by 1%, and Direct funds have historically outperformed the overall Private Equity Universe by 1%. Please reach out for more details around this methodology.

# Real assets / alternatives

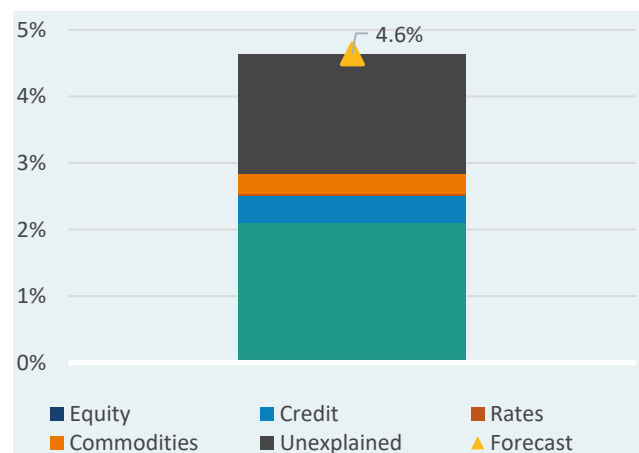
# Hedge funds

Hedge fund performance variation through time can be partly explained by public market betas (ex: equity, rates, credit, etc.) and partly explained by non-public sources of return (ex: alternative betas, skill, luck). Certain hedge funds can be mostly explained by public market betas, while others are driven mostly by non-public sources of return. We do not believe hedge funds should be thought of as an asset class, and in most cases we recommend benchmarking and modeling individual hedge funds in line with the underlying asset class exposure set (equity hedge funds modeled as equity exposure, fixed income hedge funds modeled as fixed income exposure, etc.) Our forecast for “hedge funds” that we show here can be thought of as a forecast of the broad universe of hedge funds.

To forecast hedge fund returns, we identified the portion of historical hedge fund performance that can be attributed to public market betas, and the portion of hedge fund returns that cannot be attributed to public market beta. This means our forecast has two components: the public market return (explained return) and the non-public market return (unexplained return).

To forecast the public market beta portion of hedge funds, we take the historical sensitivity of hedge funds to equity, rates, credit, and commodities and pair these with our current 10-year public market forecasts for each asset class. To forecast the non-public market return portion of hedge funds (unexplained return) we simply assume the historical performance contribution of these sources will continue.

## HEDGE FUND FORECAST



Source: Verus, as of 9/30/22

## HEDGE FUND PUBLIC MARKET SOURCES OF RETURN (EXPLAINED RETURN)

Equity
Rates
Credit
Commodities

## HEDGE FUND NON-PUBLIC SOURCES OF RETURN (UNEXPLAINED RETURN)

Alternative betas
Skill
Luck

Source: Verus

## FORECAST

	10-Year Forecast
Public Market % of Return	+2.8%
Non-Public Market % of Return	+1.8%
<b>Nominal Return</b>	<b>+4.6%</b>
Inflation Forecast	-2.5%
<b>Real Return</b>	<b>2.2%</b>

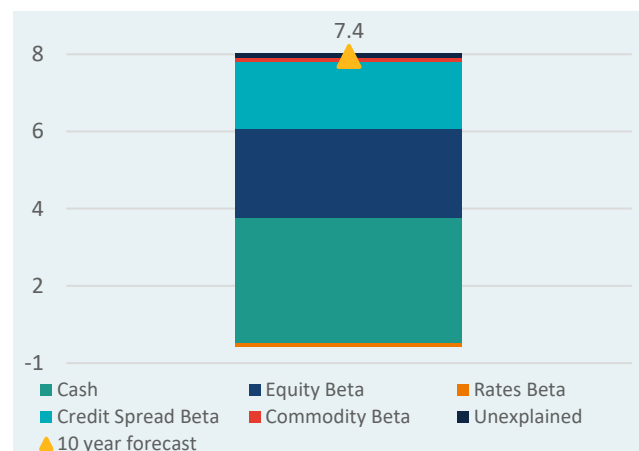
Source: Verus, as of 9/30/22

# Hedge fund styles

As mentioned, we do not believe hedge funds should be thought of as an asset class, and in most situations we recommend benchmarking and modeling individual hedge funds in line with the underlying asset class exposure set. In line with this view, we forecast three broad hedge fund categories - equity hedge funds, credit hedge funds, and asymmetric hedge funds. To forecast hedge fund returns, we identified the portion of historical hedge fund performance that can be attributed to public market betas, and the portion of hedge fund returns that cannot be attributed to public market beta. This means our forecast has two components: the public market return (explained return) and the non-public market return (unexplained return).

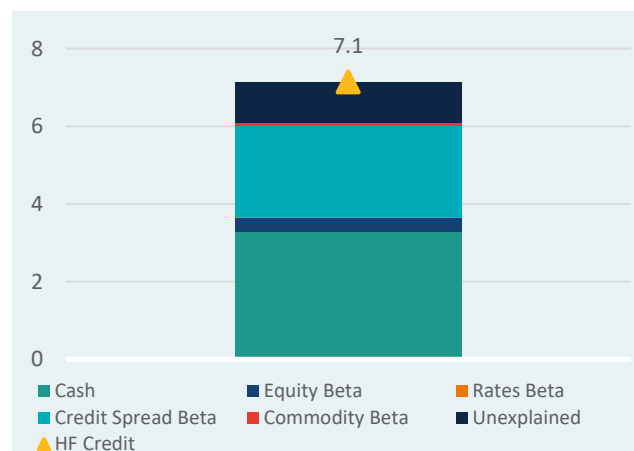
In practice, we believe hedge funds that have both identifiable core capabilities and persistent high correlations to equities fit equity sleeves. We take a similar approach with credit hedge funds and fixed income sleeves. Funds designed to have little persistent relationship with public market exposures while exhibiting a high degree of tactical or opportunistic trading behaviors fall into a third category, which we call Asymmetric hedge funds. Our forecast for “hedge funds” that we show here match the use cases outlined above as opposed to a broad universe approach.

**HEDGE FUND: EQUITY**



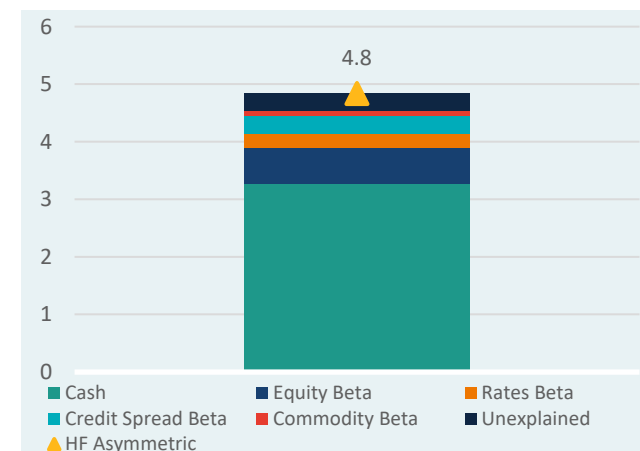
Source: Verus

**HEDGE FUND: CREDIT**



Source: Verus

**HEDGE FUND: ASYMMETRIC**



Source: Verus

# Private core real estate/REITS

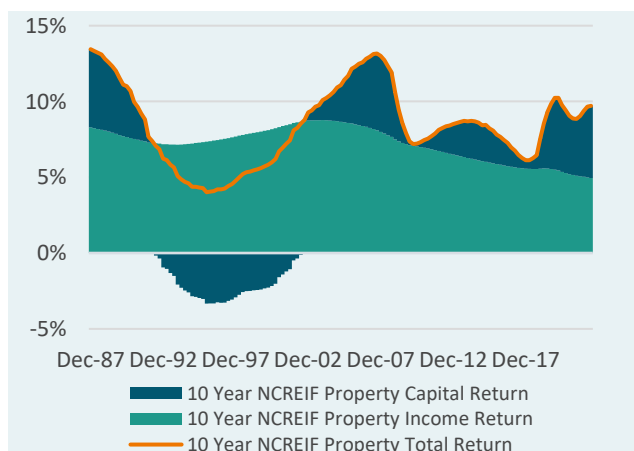
Performance of the NCREIF property index can be decomposed into an income return (cap rate) and capital return. The return coming from income has historically been more stable than the return derived from capital changes.

The cap rate is the ratio of earnings less expenses to price and does not include extraordinary expenses. A more accurate measure of the yield investors receive should include non-recurring capital expenditures; we assume a 2.0% capex expenditure. We also assume income growth will roughly equal the rate of broad economic growth, and we use GDP forecasts as an estimate for future income growth.

Private real estate and REITs have provided very similar returns over the long-term. Investors should be careful when comparing risk-adjusted returns of publicly traded assets to returns of appraisal priced assets, due to data problems and smoothing effects. While private real estate appears to be less volatile than REITs, the true risks to investors are likely very similar.

We assume the effects of leverage and liquidity offset each other. Therefore, our return forecast is the same for private real estate and REITs.

## TRAILING 10-YR NCREIF RETURN COMPOSITION



Source: NCREIF, as of 6/30/22

## PRIVATE REAL ESTATE

	Private Real Estate 10-Year Forecast
Current Cap Rate	+3.7%
Real Income Growth	+1.6%
Capex Assumption	-2.0%
Inflation	+2.5%
Nominal Return	5.8%
Inflation Forecast	-2.5%
Real Return	+3.3%

Source: Verus, as of 9/30/22

## REITS

	10-Year Forecast
Nominal Return Forecast	5.8%
Inflation Forecast	-2.5%
Real Return	3.3%

Source: Verus, as of 9/30/22

# Value-add & opportunistic real estate

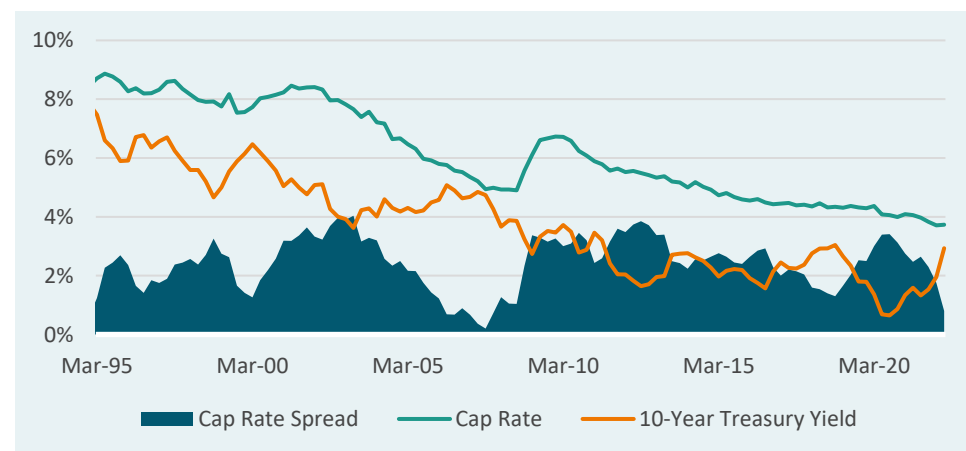
Value-add real estate includes properties which are in need of renovation, repositioning, and/or lease-up. Properties may also be classified as value-add due to their lower quality and/or location. Opportunistic real estate can also include development and distressed or very complex transactions. Greater amounts of leverage are usually employed within these strategies. Leverage increases beta (risk) by expanding the purchasing power of property managers via a greater debt load, which magnifies gains or losses. Increased debt also results in greater interest rate sensitivity. An increase/decrease in interest rates may result in a write-up/write-down of fixed rate debt, since debt holdings are typically marked-to-market.

Performance of value-add real estate is composed of the underlying private

real estate market returns, plus a premium for additional associated risk, which is modeled here as 200 bps above our core real estate return forecast. Performance of opportunistic real estate strategies rests further out on the risk spectrum, and is modeled as 300 bps above the core real estate return forecast.

Additional expected returns above core real estate are justified by the higher inherent risk of properties which need improvement (operational or physical), price discounts built into properties located in non-core markets, illiquidity, and the ability of real estate managers to potentially source attractive deals in this less-than-efficient marketplace.

## CAP RATE SPREADS



Source: NCREIF, Bloomberg, as of 6/30/22

## FORECAST

	Value-Add 10-Year Forecast	Opportunistic 10-Year Forecast
Premium above core	+2.0%	+3.0%
Current Cap Rate	+3.7%	+3.7%
Real Income Growth	+1.6%	+1.6%
Capex Assumption	-2.0%	-2.0%
Inflation	+2.5%	+2.5%
Nominal Return	7.8%	8.8%
Inflation Forecast	-2.5%	-2.5%
Real Return	5.3%	6.3%

Source: Verus, as of 9/30/22

# Infrastructure

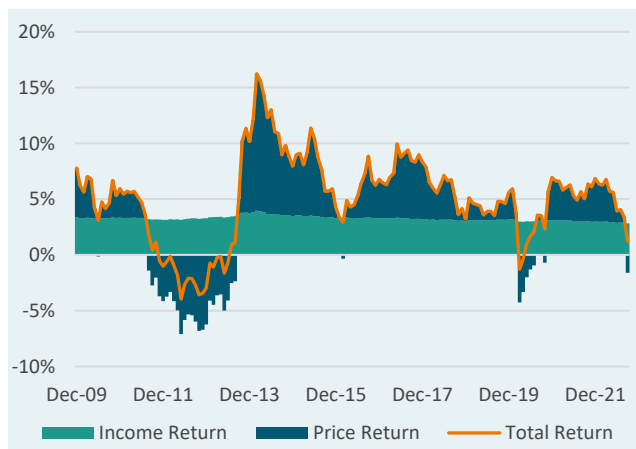
Infrastructure includes a variety of investment types across a subset of industries. There is not one definition for what can be included within infrastructure. Due to the availability of data, we use publicly-traded infrastructure to build up an infrastructure forecast. We believe this forecast can reasonably be used for both private- and publicly-traded infrastructure investments.

The asset class has grown dramatically during the last decade as investors sought assets that might provide more attractive yield relative to fixed income along with the potential for inflation protection.

Similar to real estate investment, income plays a significant role in the returns which investors receive. Income yields jumped during 2022 as prices fell alongside the broad market selloff.

This asset class is generally believed to provide investors with exposure to broad economic growth. Therefore, we use past ten year developed economy real GDP growth as a proxy for future expected infrastructure income growth.

## 5-YR ROLLING RETURN COMPOSITION



Source: S&P Global Infrastructure Index, as of 9/30/22

## ADVANCED ECONOMY REAL GDP GROWTH



Source: IMF, as of 9/30/22

## FORECAST

	10-Year Forecast
Global Inflation	+2.4%
Yield	+3.9%
Income Growth	+1.6%
Nominal Return	7.8%
U.S. Inflation Forecast	-2.5%
Real Return	5.4%

Source: Verus, as of 9/30/22



# Commodities

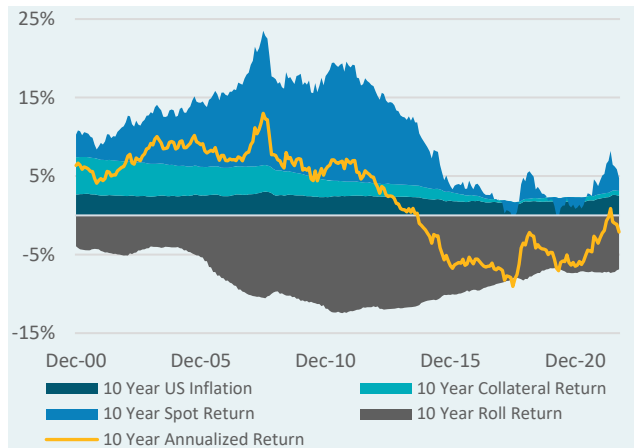
Commodity returns can be decomposed into three sources: collateral return (cash), spot changes (inflation), and roll yield.

Roll return is generated by either backwardation or contango present in futures markets. Backwardation occurs when the futures price is below the spot price, which results in positive yield. Contango occurs when the futures price is above the spot price, and this results in a loss to commodity investors. Historically, futures markets have fluctuated between backwardation and contango but with a net-zero effect over the very long-term (since 1877). Therefore, roll return is assumed to

be zero in our forecast. Over the most recent 10-year period, roll return has been negative, though this is likely the result of multiple commodity crises and a difficult market environment.

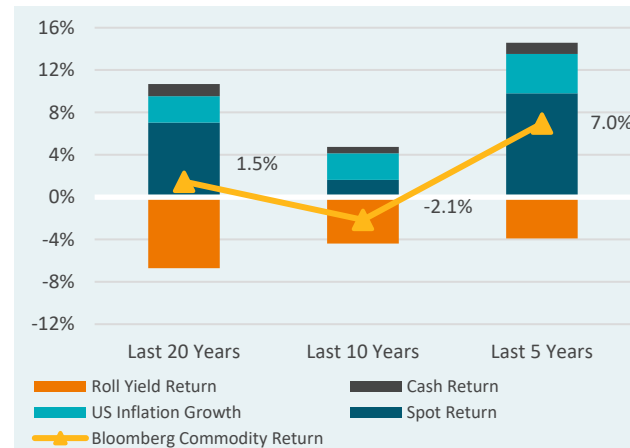
Our 10-year commodity forecast combines collateral (cash) return with spot return (inflation) to arrive at the nominal return, and subtracts out inflation to arrive at the real return.

**TRAILING 10YR BLOOMBERG COMMODITY RETURN COMPOSITION (%)**



Source: MPI, Bloomberg, as of 9/30/22

**BLOOMBERG COMMODITY RETURN COMPOSITION (%)**



Source: MPI, Bloomberg, as of 9/30/22

**FORECAST**

	10-Year Forecast
Collateral Return (Cash)	+3.3%
Roll Return	+0.0%
Spot Return (Inflation)	+2.5%
Nominal Return	5.7%
Inflation Forecast	-2.5%
Real Return	3.3%

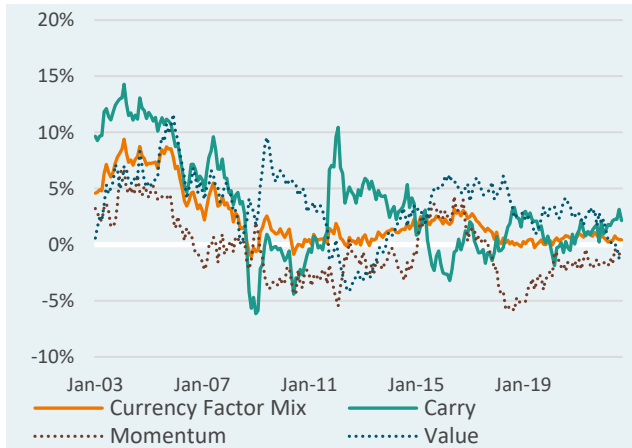
Source: Verus, as of 9/30/22

# Currency beta

Currency beta is a long-short portfolio of G10 currencies constructed by investing in three equally weighted factors: carry, momentum, and value. A significant amount of academic research has concluded that these factors demand a risk premium in the currency market. Studies have also shown that currency beta explains a high portion of active currency managers' returns, indicating it may be a good neutral starting point or benchmark for currency investing. Currency beta portfolios gain exposure to the carry, momentum, and value factors in a systematic and transparent manner. For more detailed information on currency beta, please contact your consultant.

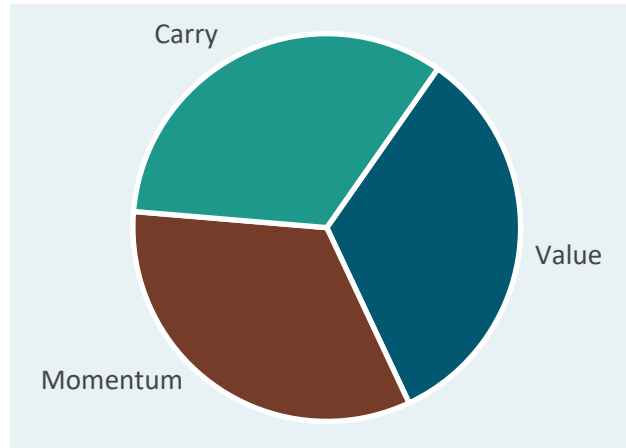
We model each factor in the currency beta portfolio separately, and then take a weighted average to get an overall return forecast. For the carry portfolio, the main driver of returns is the yield an investor receives from holding currencies with relatively higher interest rates. We therefore use a 12-month average of the portfolio's yield as the expected return. For value, our return forecast assumes a certain level of mean reversion to PPP fair value based on historical data. Lastly, for momentum, we simply assume the average historical return due to lack of long-term fundamental return drivers. Short-term volatility levels typically drive returns in the momentum portfolio, which is difficult to model in a 10-year return forecast.

## 3-YEAR ROLLING PERFORMANCE



Source: MSCI, as of 9/30/22

## CURRENCY BETA CONSTRUCTION



Source: Verus

## RETURN FORECAST

Factor	Weight	Return Forecast	Weighted return
Carry	33.3%	1.73%	0.6%
Momentum	33.3%	-0.25%	-0.1%
Value	33.3%	2.93%	1.0%
<b>Currency Beta</b>			<b>1.6%</b>

Source: Verus, as of 9/30/22

# Risk parity

Risk parity is built upon the philosophy of allocating to risk premia rather than to asset classes. Because risk parity by definition aims to diversify risk, the actual asset allocation can appear very different from traditional asset class allocation.

We model risk parity using an assumed Sharpe Ratio of 0.5, which considers the historical performance of risk parity. This assumed Sharpe Ratio is higher than other asset class forecasts, but is consistent with these forecasts because *portfolios* of assets tend to deliver materially higher Sharpe Ratios than individual assets. An assumed Sharpe Ratio of 0.5 brings us to an expected return of 8.3%.

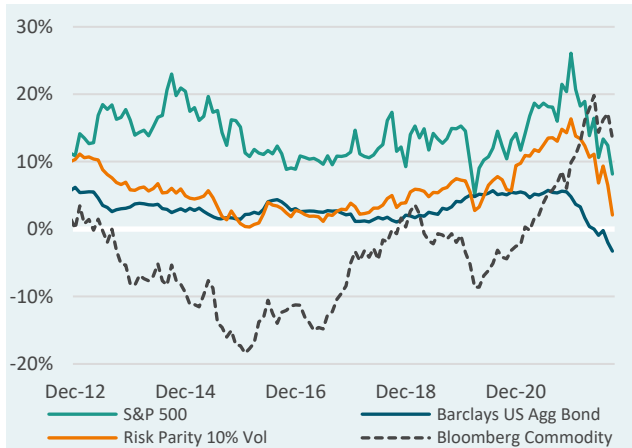
The expected return of Risk Parity is determined by this Sharpe Ratio

forecast, along with a 10% volatility assumption.

We used the S&P Risk Parity 10% Volatility Index to represent risk parity correlations relative to the behaviors of each asset class. Risk parity funds are suggested to be better able to withstand various difficult economic environments - reducing volatility without sacrificing return, over longer periods.

It is difficult to arrive at a single model for risk parity, since strategies can differ significantly across firms/strategies. Risk parity almost always requires explicit leverage. The amount of leverage will depend on the specific strategy implementation style, as well as expected correlations and volatility.

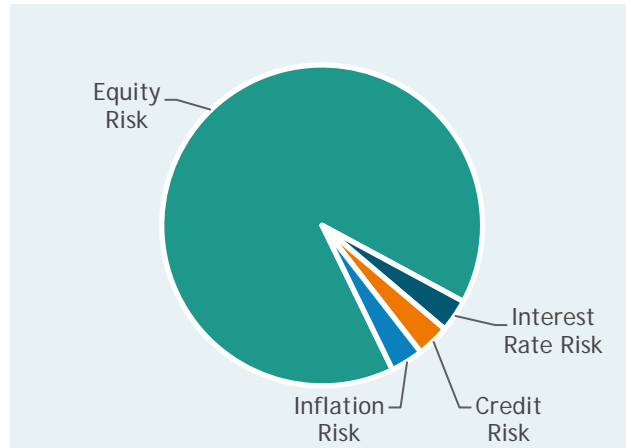
## VS. TRADITIONAL ASSET CLASSES (3YR ROLLING)



Source: MPI, as of 9/30/22

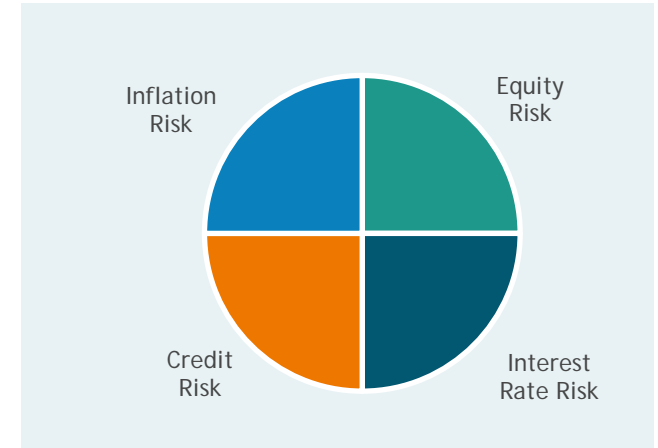
Note: Risk parity is modeled here as S&P Risk Parity 10% Vol Index

## TRADITIONAL ASSET ALLOCATION



Source: Verus

## RISK PARITY



Source: Verus

# Appendix

# 30-year return & risk assumptions

- Occasionally investors may have a specific need for longer-term capital market forecasts. We have developed a set of 30-year assumptions to meet those needs.
- The return forecasts below have been constructed using our existing building block approach, but with longer-term inputs. Risks and correlations are estimated using the same approach as our 10-year forecasts, using full-history autocorrelation-adjusted realized risk and past 10 year realized correlations.
- These return figures must be thought of separately from our 10-year forecasts, and are not meant to imply performance for the 20 years *beyond* our 10-year forecasts.
- Please reach out to your Verus consultant with questions regarding whether 30-year Capital Market Assumptions might be appropriate for your needs.

Asset Class	Index Proxy	Thirty Year Return Forecast		Standard Deviation	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)
		Geometric	Arithmetic	Forecast		
<b>Equities</b>						
U.S. Large	S&P 500	6.3%	7.4%	15.6%	0.19	0.26
U.S. Small	Russell 2000	5.7%	7.8%	21.5%	0.11	0.21
International Developed	MSCI EAFE	8.1%	9.5%	17.8%	0.27	0.35
International Small	MSCI EAFE Small Cap	7.9%	10.1%	22.1%	0.21	0.31
Emerging Markets	MSCI EM	6.9%	9.7%	25.2%	0.14	0.25
Global Equity	MSCI ACWI	8.5%	9.8%	17.1%	0.30	0.38
Global Equity ex-US	MSCI ACWI ex-US	7.9%	9.6%	19.9%	0.23	0.32
Private Equity	CA U.S. Private Equity	8.8%	11.7%	25.8%	0.21	0.33
Private Equity (Direct)	CA U.S. Private Equity	9.8%	12.7%	25.8%	0.25	0.36
Private Equity (Fund of Funds)	CA U.S. Private Equity	7.8%	10.7%	25.8%	0.17	0.29
<b>Fixed Income</b>						
Cash	30 Day T-Bills	3.3%	3.3%	1.2%	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5 - 10	3.8%	4.0%	5.6%	0.09	0.13
U.S. Treasury	Bloomberg Treasury 7-10 Year	3.8%	4.0%	7.1%	0.07	0.10
Long U.S. Treasury	Bloomberg U.S. Treasury 20+ Year	3.8%	4.6%	13.2%	0.04	0.10
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	2.6%	3.1%	10.0%	(0.07)	(0.02)
Global Aggregate	Bloomberg Global Aggregate	3.0%	3.2%	6.7%	(0.04)	(0.01)
Core Fixed Income	Bloomberg U.S. Aggregate Bond	4.6%	4.7%	4.6%	0.28	0.30
Core Plus Fixed Income	Bloomberg U.S. Corporate IG	5.1%	5.2%	4.6%	0.39	0.41
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1 - 3 year	3.9%	4.0%	3.7%	0.16	0.19
Short-Term Credit	Bloomberg Credit 1-3 Year	4.6%	4.7%	3.7%	0.35	0.38
Long-Term Credit	Bloomberg Long U.S. Credit	5.3%	5.9%	11.0%	0.18	0.24
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	6.5%	7.1%	11.2%	0.29	0.34
Bank Loans	S&P/LSTA Leveraged Loan	5.9%	6.3%	9.2%	0.28	0.33
Global Credit	Bloomberg Global Credit	2.8%	3.1%	7.9%	(0.06)	(0.03)
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	8.2%	8.7%	10.7%	0.46	0.50
Emerging Markets Debt (Local)	JPM GBI EM Global Diversified	7.0%	7.7%	12.3%	0.30	0.36
Private Credit	S&P LSTA Leveraged Loan Index	8.2%	9.0%	13.0%	0.38	0.44
Private Credit (Direct Lending - Unlevered)	S&P LSTA Leveraged Loan Index	6.8%	7.2%	9.2%	0.38	0.42
Private Credit (Direct Lending - Levered)	S&P LSTA Leveraged Loan Index	9.1%	10.1%	15.3%	0.38	0.44
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	8.5%	9.4%	13.8%	0.38	0.44
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	9.0%	10.0%	15.1%	0.38	0.44
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.1%	12.7%	29.1%	0.20	0.32

*Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.*

# 30-year return & risk assumptions

- Occasionally investors may have a specific need for longer-term capital market forecasts. We have developed a set of 30-year assumptions to meet those needs.
- The return forecasts below have been constructed using our existing building block approach, but with longer-term inputs. Risks and correlations are estimated using the same approach as our 10-year forecasts, using full-history autocorrelation-adjusted realized risk and past 10 year realized correlations.
- These return figures must be thought of separately from our 10-year forecasts, and are not meant to imply performance for the 20 years *beyond* our 10 year forecasts.
- Please reach out to your Verus consultant with questions regarding whether 30-year Capital Market Assumptions might be appropriate for your needs.

Asset Class	Index Proxy	Thirty Year Return Forecast		Standard Deviation		
		Geometric	Arithmetic	Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)
<b>Other</b>						
Commodities	Bloomberg Commodity	5.3%	6.5%	16.3%	0.12	0.20
Hedge Funds	HFRI Fund Weighted Composite	4.9%	5.2%	7.7%	0.21	0.25
Hedge Fund of Funds	HFRI Fund of Funds Composite	3.9%	4.2%	7.7%	0.08	0.12
Hedge Fund (Equity Style)	Custom HFRI Benchmark Mix*	8.2%	9.2%	14.6%	0.34	0.40
Hedge Fund (Credit Style)	Custom HFRI Benchmark Mix*	7.4%	7.8%	9.8%	0.42	0.46
Hedge Fund (Asymmetric Style)	Custom HFRI Benchmark Mix*	5.0%	5.1%	4.8%	0.35	0.38
Real Estate Debt	Bloomberg IG CMBS	5.2%	5.5%	7.5%	0.25	0.29
Core Real Estate	NCREIF Property	5.7%	6.4%	12.6%	0.19	0.25
Value-Add Real Estate	NCREIF Property + 200bps	7.7%	8.8%	15.5%	0.28	0.35
Opportunistic Real Estate	NCREIF Property + 400bps	8.7%	10.7%	21.3%	0.25	0.35
REITs	Wilshire REIT	5.7%	7.4%	19.4%	0.12	0.21
Global Infrastructure	S&P Global Infrastructure	8.1%	9.4%	17.3%	0.28	0.35
Risk Parity**	Risk Parity	8.3%	8.8%	10.0%	0.50	0.55
Currency Beta	MSCI Currency Factor Mix Index	1.6%	1.7%	3.4%	(0.49)	(0.46)
Inflation		2.1%	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

\*To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro

\*\*The Risk Parity forecast shown here assumes a 10% target volatility strategy. We recommend customizing this forecast to the target volatility specifications of the risk parity strategy that an investor wishes to model. Please speak with your Verus consultant for customization needs.

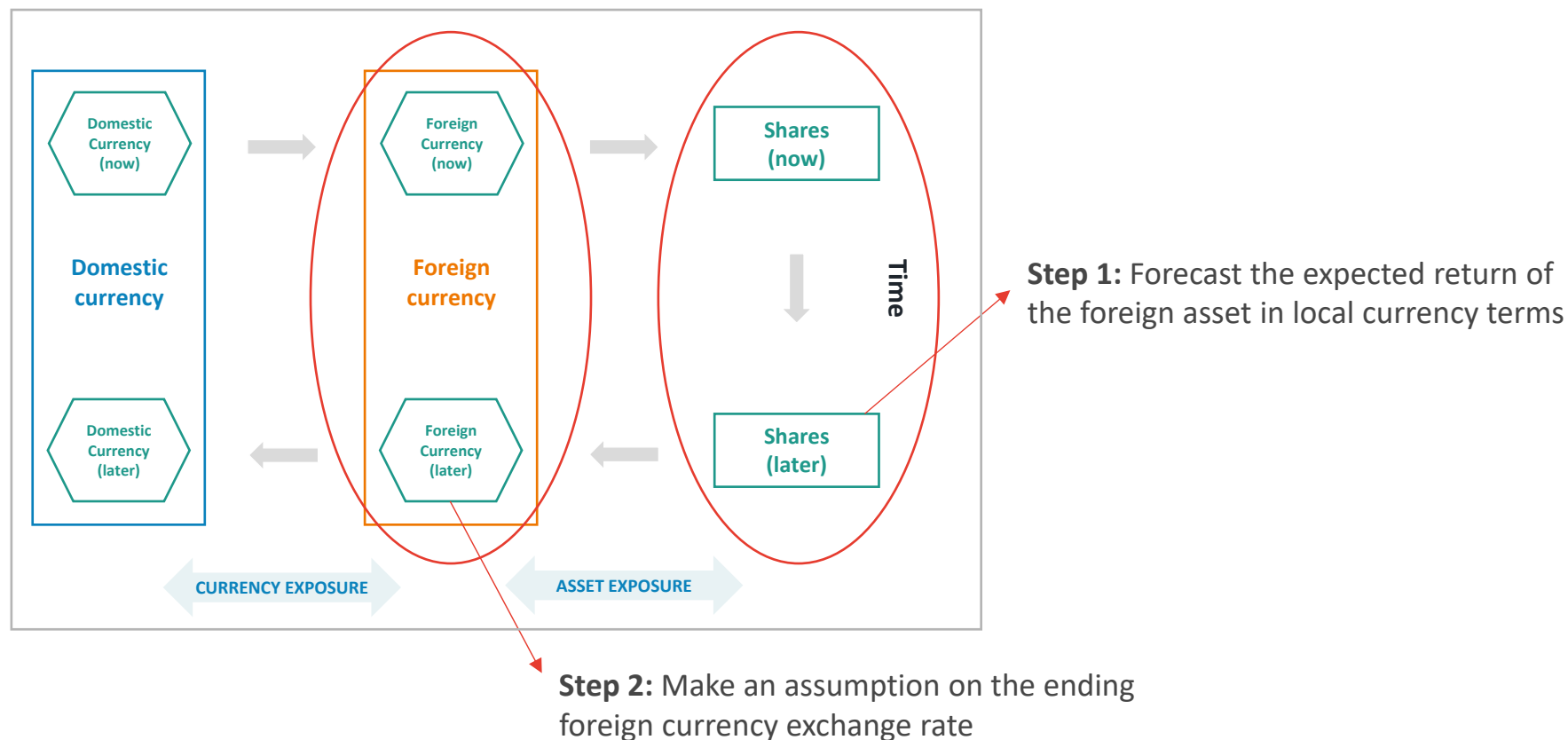
# 10-year return forecasts with currency adjustment

Asset Class	Index Proxy	Ten Year Return Forecast (Geometric)			Standard Deviation Forecast
		Pre-Currency Adjustment	Currency Adjustment	CMA Forecast	
<b>Equities</b>					
International Developed Equity Unhedged	MSCI EAFE	9.1%	1.7%	10.8%	17.8%
International Developed Equity Hedged	MSCI EAFE Hedged	9.1%	1.7%	10.8%	15.6%
International Small Equity Unhedged	MSCI EAFE Small Cap	9.2%	1.7%	10.9%	22.1%
International Small Equity Hedged	MSCI EAFE Small Cap Hedged	9.2%	1.7%	10.9%	19.1%
<b>Fixed Income</b>					
Global Sovereign ex U.S. Unhedged	Bloomberg Global Treasury ex U.S.	2.2%	1.7%	3.9%	10.0%
Global Sovereign ex U.S. Hedged	Bloomberg Global Treasury ex U.S. Hedged	2.2%	1.7%	3.9%	4.6%
Global Credit Unhedged	Bloomberg Global Credit	4.5%	0.2%	4.7%	7.9%
Global Credit Hedged	Bloomberg Global Credit Hedged	4.5%	0.2%	4.7%	5.6%

The currency adjustment is the market implied price change for major currency pairs based on forward contract pricing. Since the market implied spot price change and the cost/gain from hedging are both derived from pricing in the forward market, they are one and the same. Therefore, the currency adjustment is the same for both unhedged and hedged forecasts. See the following slides for the more detail on the currency adjustment methodology.

# Explanation of the currency adjustment

Our fundamental building block approach produces a return forecast in local currency. In order to create useable forecasts for non-U.S. dollar-denominated assets, we must make an assumption about future foreign exchange rates.

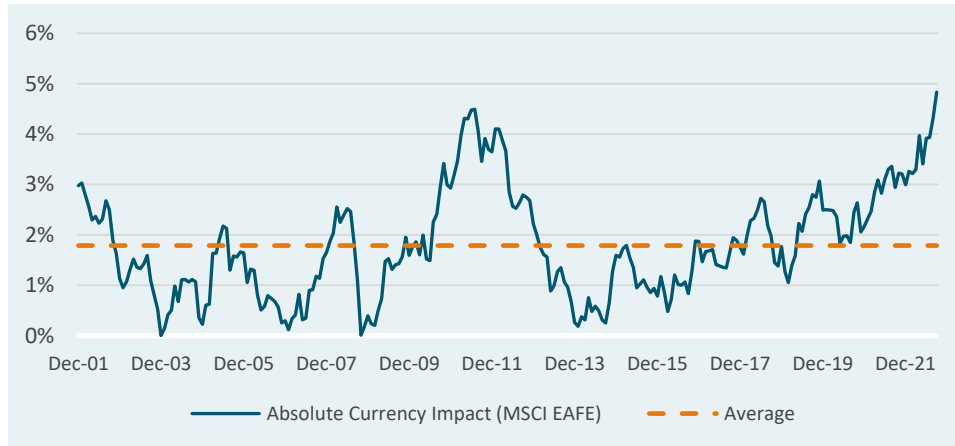




# Explanation of the currency adjustment

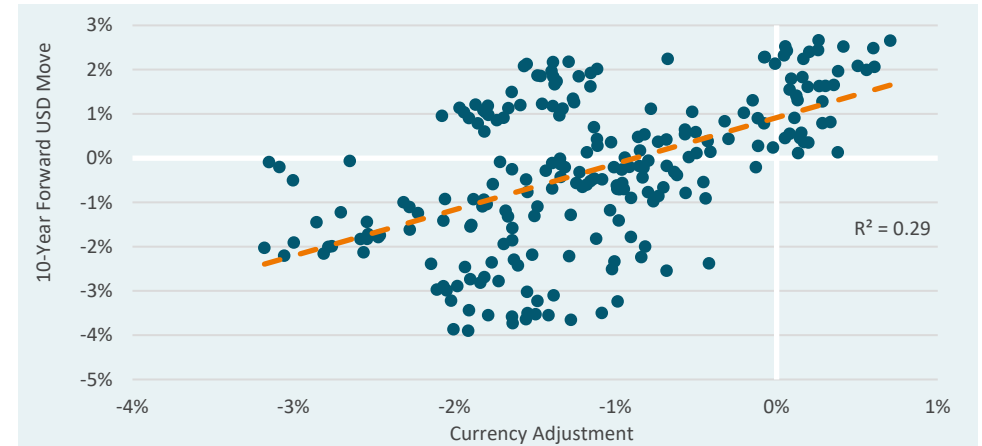
- There are two options to adjust a local currency return forecast to a U.S. dollar forecast: make a specific exchange rate forecast or take market pricing based on the forward curve
  - It is important to note that ignoring currency is making a specific assumption that the current exchange rate will be unchanged over the next 10 years, which has rarely been the case throughout history
- Markets price future exchange rates in the forward market, which represents the SPOT currency price for FORWARD delivery
- Forward currency contracts are priced based on the interest rate differential between two currencies – interest rate differentials reflect a significant amount of information, including growth, inflation, and monetary policy expectations
- A currency with a higher interest rate is priced to depreciate relative to a currency with a lower interest rate
- We adjust our local currency return forecasts based on forward market pricing because we believe this is the neutral, “no opinion” position, rather than making a specific forecast
- Historically, this currency adjustment has had a positive relationship with 10-year forward exchange rate movements

## 10-YEAR ROLLING ABSOLUTE CURRENCY PERFORMANCE IMPACT



Source: Verus, MSCI, as of 9/30/22

## CURRENCY ADJUSTMENT VS. FORWARD USD MOVEMENT



Source: Verus, Bloomberg, using data since 1989, based on the MSCI EAFE Index

# Autocorrelation adjustment

- We adjust all volatility forecasts that use the long-term historical volatility for autocorrelation.
- Autocorrelation occurs when the future returns of a time series are described (positively correlated) by past returns.
- Time series with positive autocorrelation exhibit artificially low volatility, while time series with negative autocorrelation exhibit artificially high volatility.
- Many asset classes that we tested showed positive autocorrelation, meaning the volatility forecasts that we use in the forecasting process are too low for those asset classes.
- The result of this process was that several asset classes have higher volatility forecasts than if we had made no adjustment for autocorrelation.

Autocorrelation has been shown to be statistically significant across many asset classes, which implies an adjustment is appropriate

# Hedge fund style regression details

- We forecast hedge fund styles by assuming that historical exposure to market “betas” will hold in the future. Historical beta exposure is calculated using a 10-year regression, which is displayed below.
- The “unexplained” component below is the portion of historical hedge fund returns that were not explained by public betas. This portion of return is likely comprised of a combination of unique/alternative betas, hedge fund alpha, and idiosyncratic return.

HEDGE FUND EQUITY	
	<i>Beta Coefficients</i>
Intercept	0.08
Equity Beta	0.55
Rates Beta	-0.15
Credit Spread Beta	0.69
Commodity Beta	0.05
Unexplained return	0.11

HEDGE FUND CREDIT	
	<i>Beta Coefficients</i>
Intercept	0.26
Equity Beta	0.09
Rates Beta	0.03
Credit Spread Beta	0.90
Commodity Beta	0.04
Unexplained	1.05

HEDGE FUND ASYMMETRIC	
	<i>Beta Coefficients</i>
Intercept	0.02
Equity Beta	0.15
Rates Beta	0.42
Credit Spread Beta	0.13
Commodity Beta	0.04
Unexplained	0.30

*Note: We have trimmed the “unexplained” component of Hedge Fund Credit by 50%. We assume that the secular falling interest rate environment has resulted in a historic tailwind to credit performance which will not persist in the future as it is unlikely that interest rates head into deeply negative territory.*

# Notices & disclosures

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RFP for Investment Consultant Services – Technical Proposal  
MWRA Employees' Retirement System

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CHICAGO 312-815-5228

**Mr. Mark Brubaker, CFA**  
Managing Director and Senior Consultant

**Mr. Michael Patalsky, CFA**  
Managing Director and Senior Consultant

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December 1, 2023

Ms. Carolyn Russo  
Executive Director  
MWRA Employees' Retirement System  
2 Griffin Way  
Chelsea, MA 02150

Dear Ms. Russo,

Verus is pleased to submit our proposal to provide investment advisory services to the MWRA Employees' Retirement System. We are providing one sealed copy of our proposal per the RFP instructions. Following is our firm information:

Proposer Name:	Verus Advisory, Inc.
Address:	800 Fifth Avenue, Suite 3900, Seattle, WA 98104
Telephone:	(206) 622-3700
Fax:	(206) 622-0548

The undersigned, Warren Spencer, JD, LLM, is authorized to contractually bind Verus into a consulting relationship with the System. The signer's contact address is also the address of our corporate headquarters.

Mr. Warren Spencer, JD, LLM  
Chief Legal Officer and Chief Compliance Officer  
(206) 622-3700 – Telephone  
[wspencer@verusinvestments.com](mailto:wspencer@verusinvestments.com)

The primary contact for the RFP is Mr. Mark Brubaker, CFA, who is also in our Pittsburgh office:

Mr. Mark Brubaker, CFA  
Managing Director and Senior Consultant  
412-996-8854  
[mbrubaker@verusinvestments.com](mailto:mbrubaker@verusinvestments.com)

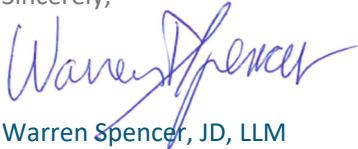
We would like to make the following statements regarding our proposal:

1. Verus and the consultants who will be providing services to the System are knowledgeable and in compliance with the provisions of Chapter 32 of the general Laws, and with 840 CMR and will remain so for the duration of any agreement.
2. Verus and the consultants who will be providing services to the System are aware of the requirements of the Massachusetts Open Meeting Law, Public Records Law, and Conflict of Interest Law and will remain so for the duration of the agreement.
3. Verus is a registered investment adviser as defined in the Investment Advisers Act of 1940 and will remain so for the duration of the agreement. Our SEC File No. is 801-33895. The consultants who will

provide services to the System will be doing so in furtherance of the Verus registration as a registered investment advisor with the SEC.

Please do not hesitate to contact us if you have questions regarding our proposal or require additional information.

Sincerely,



Warren Spencer, JD, LLM

Chief Legal Officer | Chief Compliance Officer





# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

**Please print or type all entries in blue or black ink.**

## 1. Vendor/Board Information

Name of Company/Entity:

Name of Fund:

Retirement Board:

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First:  Last:  Suffix:

Title:

Signature: Waverly Spencer Date:



# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board:

Name of Investment Manager:

## Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

## PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

**PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.**

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.

**COMPENSATION**



9191034

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?

No  Yes

(2) If **yes**, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If **yes**, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If **yes**, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If **yes**, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



(6) If **yes**, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

Additional Pages Attached:  No  Yes

(7) If **yes**, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

Additional Pages Attached:  No  Yes

(8) If **yes**, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First:  Last:  Suffix:

Title of Authorized Individual:

Signature of Authorized Individual:

*Waverly Spencer*

Date Signed:



# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name:

Name of Retirement Board:

## 1. Company/Entity Information:

Company/Entity Name:

CRD# (If Applicable):

Address:

City:

State:

Zip:

Country:

Phone:

Fax:

URL:

## 2. Contact Information:

Name, First:

Last:

Suffix:

Title:

Department:

Phone:

Fax:

Email:

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City:

State:

Zip:

Country:



# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

**Please print or type all entries in blue or black ink.**

## 1. Retirement Board

Retirement Board to which proposal is being submitted:

## 2. Service Provider

Business Name:

Address:

City:

State:

Zip:

Services Being Proposed:

Dates of Services (MM/DD/YYYY)

From:

To:

## 3. Individual Submitting Proposal

Name, First:

Last:

Suffix:

Title:

The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature:

Date:



December 1, 2023

Ms. Carolyn Russo  
Executive Director  
MWRA Employees' Retirement System  
2 Griffin Way  
Chelsea, MA 02150

WAINWRIGHT  
INVESTMENT  
COUNSEL, LLC

Dear Ms. Russo,

Wainwright Investment Counsel, LLC appreciates the opportunity to present this Request for Proposal to provide Investment Consulting Services to the MWRA Employees' Retirement Board. The enclosed Request for Proposal is a firm and irrevocable offer that will stand for at least one year from the date of submission. The contents of this proposal are true and accurate, and Wainwright has not made any knowingly false statements in this proposal. The proposal is predicated on acceptance of all terms and conditions.

If the opportunity to serve as consultant to the MWRA Employees' Retirement Board is extended to our firm, I would act as your primary contact. Please be assured that the Board of Trustees' assignment will be treated as a top priority and met with the highest quality of service. Our firm and consulting team would bring an extraordinarily strong combination of commitment, capabilities and experience to the MWRA Employees' Retirement Board.

In addition, we believe we can serve you in a highly professional, competent and creative manner to address the varied needs of your Retirement Plan as we have for all of our clients. Again, we appreciate the opportunity to present our credentials to the Board of Trustees. If you have any questions or require additional information, please contact me directly at (617) 531-3123 or via email at [mdwyer@winvcounsel.com](mailto:mdwyer@winvcounsel.com).

Sincerely,

Michael F. Dwyer  
Senior Vice President  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, MA 02108-4494  
617-531-3100 (main)  
Email: [mdwyer@winvcounsel.com](mailto:mdwyer@winvcounsel.com)

ONE BOSTON PLACE  
BOSTON, MA 02108

TEL: 617.531.3100  
FAX: 617.531.3140

Enclosures

# Proposal for Investment Consultant Services

*Prepared for*

MWRA Employees' Retirement System



Submitted by

Wainwright Investment Counsel, LLC  
One Boston Place, 41st Floor  
Boston, MA 02108  
[www.winvcounsel.com](http://www.winvcounsel.com)

December 2023





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### I. Background

- A. Please provide a brief history of the firm.

Wainwright Investment Counsel, LLC (“Wainwright” or the “Firm”) is an SEC registered investment adviser. The Firm is privately held and majority employee owned with no one member owning more than 25% of the capital of the Firm.

Boston-based Wainwright was established in 1994 as the asset management department within H.C. Wainwright & Co. (“H.C. Wainwright”). H.C. Wainwright was established in 1868 as an investment banking and brokerage firm, and later developed a reputation as a leading investment research firm.

In 1999, Wainwright completed a management buyout from H.C. Wainwright, and has since operated as an independent, majority employee-owned firm. Wainwright has been providing comprehensive investment advisory services across traditional and alternative asset classes (e.g., hedge funds, private equity, real estate, real assets) to institutional and individual clients since its inception.

Those services generally consist of portfolio evaluation and analysis, Investment Policy Statement (“IPS”) drafting, asset allocation modeling and portfolio construction, investment manager selection, performance reporting and investment monitoring.

Wainwright has assets under management, discretionary and advisory, of approximately \$4.6 billion on behalf of 211 clients, including a number of Massachusetts public defined benefit plans. Assets are estimated, as of June 30, 2023.

- B. Please identify the location of the firm’s headquarters and branch offices.

Wainwright’s sole office is in Boston, MA.

- C. Please describe the ownership structure of the entity and the number of employees.

Wainwright is privately held, majority owned and controlled by its 15 full time employees.

- D. Please identify any financial relationships with other entities (e.g., insurance company, brokerage firm, commercial bank, investment firm, etc).



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Wainwright is the administrative manager for the Wainwright Renaissance Fund 1, L.P. (the "Wainwright Renaissance Fund"), a Delaware limited partnership, and is also 100% owner of the general partner of this fund. Wainwright receives a fee for the administrative management services it provides to the Wainwright Renaissance Fund. The Wainwright Renaissance Fund invests substantially all of its assets into the Renaissance Institutional Equities Fund LLC ("RIEF"). While Wainwright does not recommend or solicit any state regulated pension fund client to invest in the Wainwright Renaissance Fund, Wainwright may recommend an institutional client consider an investment directly into RIEF. RIEF does not compensate Wainwright if an institutional client invests directly into RIEF.

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC ("WCAP"), which is registered as a Commodity Pool Operator registered with the U.S. Commodity Futures Trading Commission and is a member of the National Futures Association. WCAP, as the general partner of the Wainwright Renaissance Fund 1, L.P. and the Wainwright Global Capital, L.P., will receive a performance-based incentive fee allocation out of the net profits (if any) of the strategy. Performance-based fees are typically calculated and assessed on an annual basis as set forth in the fund's Offering Documents. Wainwright does not recommend or solicit any state regulated pension fund clients to invest in the Wainwright Renaissance Fund. WCAP shall not have any involvement with the Commonwealth of Massachusetts MWRA Employees' Retirement System's consulting engagement nor shall WCAP receive any compensation related to such engagement.

Wainwright Global Capital, LP, a Cayman Islands partnership, is a wholly-owned subsidiary of Wainwright that is intended to provide services to clients located outside of the United States. WCAP is the general partner of Wainwright Global Capital, LP. This entity is not currently engaged in any business or investment activities and has been dormant since its 2012 inception.

Wainwright has a wholly-owned subsidiary, WFS, LLC ("WFS"), that is an SEC registered broker-dealer and a member of FINRA and SIPC. Most of Wainwright's employees are registered representatives of WFS. WFS' primary business activity is to facilitate private placement transactions. WFS, the broker-dealer affiliate of Wainwright, is the non-exclusive placement agent for the Wainwright Renaissance Fund. Wainwright employees who are registered representatives of WFS, LLC receive production compensation for the sale of certain investment products, such as private funds, that may or may not be held by Wainwright clients. WFS shall not have any involvement with the Commonwealth of Massachusetts MWRA Employees' Retirement System's consulting engagement nor shall WFS receive any compensation related to such engagement.

None of these wholly owned subsidiaries are relevant to the services requested, but additional information is available upon request.



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- E. Please list experience providing investment consulting services to public pension plans, and in particular to MA public pension plans.

Wainwright has been providing Advisory Consulting Services to defined benefit plans since 1994, and has expertise in regards to the management of these assets, structuring of Investment Policy Statements ("IPS") and doing so in the context of the applicable actuarial data (i.e., funded ratio, unfunded liabilities, etc.).

Wainwright has 11 defined benefit plan clients that are either state or municipal pension plans, Independent Public Authorities, Post Employment Benefic Plans, or Pension & Profit Sharing Plans.

Of those, 10 are public pension plans, and four are public pension plans in Massachusetts. The average and maximum size of those Massachusetts plans as of June 30, 2023 was \$441 million and \$1.3 billion, respectively. Public pension plans represent 59% of Wainwright's client base.

- F. Please list services provided to clients in a full-service consulting relationship. Indicate any services which may be considered the entity's areas of greatest expertise.

Wainwright provides comprehensive Advisory Consulting Services across traditional and alternative asset classes (e.g., hedge funds, private equity, real estate, real assets).

Our core competency is Advisory Consulting Services, consisting of providing comprehensive customized advice including, but not limited to: portfolio evaluation and analysis, IPS drafting, asset allocation modeling and portfolio construction, investment manager selection, performance reporting and investment monitoring.

- G. Please identify the firm's future goals, particularly how such goals may pertain to accepting new client accepting new client business and overall quality of client service.

Wainwright endeavors to grow its revenue and earnings through thoughtful and deliberate client solicitation and selection. We are a boutique advisor, not a mass market firm. Wainwright currently has 211 clients and targets adding several meaningful clients annually. This reasonable approach to growth will allow the Firm to maintain its high level of service. Wainwright believes that a high level of service is rewarded through the long standing nature of many of its institutional clients



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## II. Operations

- A. Please indicate whether accounts are serviced by teams or individual consultants.

Teams. Each client is assigned 1) a lead consultant, 2) an analyst and 3) an operations specialist. Each team member is supported by another department employee as necessary.

- B. Please indicate the average number and size of accounts per consultant or team

On average, Wainwright's consultants service 26 clients with assets of \$575 million.

- C. Please indicate the largest number of accounts serviced by any consultant or team.

60.

- D. Please describe the entity's ability to perform prompt, comprehensive, and accurate reporting.

Wainwright believes that, as a best practice, performance reporting for public plans should be performed by the plan's custodian, the official book of record for the assets held in the account. This process, which is inexpensive, tends to protect the client when it comes to accuracy as well as safety from potential cybersecurity issues.

Wainwright provides additional oversight of the custodian's reporting, discussed and reviewed at regularly scheduled meetings with the Retirement Board.

- E. Please indicate the percentage of revenues derived from consulting services. List other services or products which are offered. Indicate whether the entity or any affiliate manages money for clients.

Approximately 89% of Wainwright's revenue is derived from non-discretionary, investment advisory services (i.e., Advisory Consulting Services).

The remaining revenue is mostly derived from Discretionary Management Services, with the minority derived from two private placements associated with Wainwright and Wainwright's wholly-owned subsidiary, WFS. Neither of these private placements are applicable to this proposal, but more information is available upon request and in the attached Form ADV (Attachment 1).



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- F. Please indicate whether the entity or any affiliate is a broker/dealer, and whether the entity trades for client accounts through this broker/dealer. Indicate whether the firm accepts "soft dollars" as a method of payment for services provided.

Wainwright has a wholly-owned subsidiary, WFS, LLC ("WFS"), that is an SEC registered broker-dealer and a member of FINRA and SIPC. Most of Wainwright's employees are registered representatives of WFS. WFS' primary business activity is to facilitate private placement transactions. WFS, the broker-dealer affiliate of Wainwright, is the non-exclusive placement agent for the Wainwright Renaissance Fund 1, L.P. Wainwright employees who are registered representatives of WFS, LLC receive production compensation for the sale of certain investment products, such as private funds, that may or may not be held by Wainwright clients. WFS shall not have any involvement with the Commonwealth of Massachusetts MWRA Employees' Retirement System's consulting engagement nor shall WFS receive any compensation related to such engagement.

Additional information is available upon request.

Wainwright does not accept soft dollars for our services.

- G. Please explain in detail any potential or actual conflict of interest (or appearance of a conflict of interest) which may arise if the entity is selected to advise the Board. Include other client relationships which may inhibit or enhance services to the Board.

There are no potential or actual conflicts of interest which exist or which Wainwright anticipates may arise if it were selected.

- H. Please describe any circumstance under which the entity or its employees receive fees or remuneration in any form from investment managers.

Wainwright affiliate Wainwright Capital Partners, LLC ("WCAP") is the general partner of the Wainwright Renaissance Fund 1, LP ("WREN"). WREN invests substantially all of its assets into a single investment, the Renaissance Institutional Equities Fund LLC Series BB ("RIEF").

Wainwright is not affiliated with RIEF or any of RIEF's affiliates. Neither Wainwright nor any of its affiliates or related persons have any involvement in the day-to-day management of the portfolio positions or trading within RIEF. Wainwright serves as the Administrative Manager of WREN. Wainwright receives a fee for the administrative management services it provides to WREN. These



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services include management of WREN's operations, supervising the administrator, analyzing and reporting WREN's performance to its limited partners, and performing various administrative and back office services for WREN. Wainwright shall not be responsible for determining whether an investment in RIEF is appropriate or continues to be appropriate for WREN.

*Wainwright does not recommend or solicit any state regulated pension fund clients to invest in WREN. Where appropriate and in limited circumstances, Wainwright may recommend an institutional client consider an investment directly into RIEF.*

For any clients of Wainwright (or its affiliates) that consider an investment of \$5 million or more into WREN there is an actual or potential conflict of interest since that client may be eligible to invest directly into RIEF (with its lower aggregate fees and more favorable redemption terms) versus making an investment into WREN. Prior to making a \$5 million or more investment in WREN, Wainwright reviews the advantages and disadvantages of the subscription terms of an investment in RIEF versus WREN and provides that evaluation in writing to the prospective investor.

Wainwright receives performance-based fees indirectly through WFS in connection with WFS' private placement services, including its role as placement agent for WREN. A portion of the performance-based fees and other compensation earned by WFS from its private placement services is paid to registered representatives of WFS (who are also employees or supervised persons of Wainwright) as production compensation.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund or manager to which WFS, WCAP or any other Wainwright-affiliated entity would receive compensation from the fund or manager.

I. Please indicate whether the entity sells or brokers investment vehicles.

As described in the previous question, there are two products which Wainwright or its affiliated broker-dealer, WFS, act as private placement agent. The revenues derived from these activities represent less than 5% of Wainwright's revenue and, as noted, Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which either Wainwright or an affiliated entity would receive compensation. Neither of these private placements are applicable to this engagement, but more information is available upon request and in the attached Form ADV (Attachment 1).



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J. Please indicate whether the entity actively manages the investment of accounts.

Yes.

K. Please indicate whether the firm accepts or pays referral or finder's fees.

Wainwright has entered into one or more written agreements under which an unaffiliated Solicitor or Promoter ("Solicitor") may refer certain individuals and institutions ("Prospects") with which the Solicitor has a relationship and who the Solicitor believes may be interested in one or more of the services offered by Wainwright.

In exchange for such referrals, provided the Prospect becomes a fee-paying client, Wainwright pays cash compensation directly to the Solicitor. This creates a material conflict of interest with the referred clients. The terms of such compensation by Wainwright to the Solicitor are disclosed to the Prospect through a Solicitor Disclosure Statement prior to entering into any agreement with Wainwright.

The investment advisory and other fees Wainwright charges to Prospects referred by Solicitor are not impacted by the existence of the referral arrangement Wainwright has with Solicitor. Prospects who become clients of Wainwright shall do not pay higher fees and charges to Wainwright as a result of the solicitation arrangement between Wainwright and Solicitor.

No cash or non-cash compensation shall be provided for any testimonial or endorsement not specifically covered by a dually executed written agreement.

Wainwright has three active solicitation agreements wherein Wainwright does or potentially will pay referral fees to the solicitors on a fully disclosed basis. Wainwright has approximately nine clients which were referred by these solicitation agreements, and none are public pension plans.





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### III. Investment Analysis Approach

A. Please outline the entity's process for:

1. The development of the client's overall investment policy as well as investment policy for specific asset classes.

At the outset of any new relationship, Wainwright will have a detailed discussion with the Board regarding portfolio liquidity needs, time horizon, funded ratio and risk tolerances. Wainwright carefully considers these inputs, along with return objectives, to develop an Investment Policy Statement ("IPS"). Steps Wainwright follows in developing or updating an IPS are as follows:

- **Analyze Portfolio Liquidity Needs:** Wainwright will develop an understanding of the liquidity needs, both current and forecast, that the portfolio would be expected to satisfy (e.g., benefit payments), as well as any offsetting inflows to the portfolio. A thorough understanding of the most recent actuarial report is critical to this analysis.
- **Determine Portfolio Time Horizon:** While pension assets are generally managed on a very long-term time horizon, in perpetuity effectively, Wainwright will review the portfolio's most pension plan's most recent actuarial report to determine its appropriate time horizon.
- **Understand Portfolio Funding Ratio:** Wainwright will develop an understanding of the Plan's funding ratio (i.e., assets relative to the present value of liabilities) and its trending levels. The funding ratio, which illustrates the Plan's capacity to satisfy its obligations, is a critical component to determining the appropriate asset allocation.
- **Analyze Portfolio Risk Tolerance:** The constraints and factors noted above are among those used in determining the portfolio's risk-tolerance, or more specifically tolerance for loss. While risk is often defined as the standard deviation of a stream of returns, it may be better defined otherwise, such as the maximum loss the portfolio is able to withstand, or a minimum portfolio value not to be breached. In addition to the factors above, Wainwright will also consult with the Board to discuss any unique factors not previously identified that could potentially impact the portfolio's risk tolerance.

2. The development of client investment objectives.



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Investment objectives are, in effect, a byproduct of the portfolio's investment constraints. Portfolios which are heavily constrained via the factors noted prior are generally, as a result, invested more conservatively. Conversely, lightly constrained portfolios can generally be invested more aggressive. Regardless, the objectives are a function of the constraints.

**B. Please describe the entity's asset/liability modeling capability.**

Wainwright will conduct an asset allocation study based on the objectives and constraints of the Plan and present several alternative strategic asset allocations to the Board. Asset allocation models are developed using simulations of historical risk and return data, as well as forecasted data. Initially, this modeling may include solely index-based return and risk data, but may be broadened to consider expected returns and risk for certain investment managers with extensive track records. Wainwright will work with the Board to determine the most appropriate asset allocation to satisfy the Plan's various constraints, and determine the portfolio's expected rate of return. The resulting data may be incorporated into the Investment Policy Statement.

Wainwright-advised portfolios are typically broadly diversified across a wide variety of asset classes (e.g., equities, fixed income, real estate, hedged strategies, private equity), investment management styles (e.g., value, growth, fundamental, quantitative) and capitalizations (e.g., small-caps, large-caps). Accordingly, Wainwright has significant expertise in selecting all types of alternative investment managers, including, but not limited to, real estate, private equity, and hedged strategies. Wainwright also has experience with transition management services to reduce the costs of switching from one manager to another, where applicable.

Important considerations in those models include the Plan's liquidity characteristics (e.g., net benefit payments), time horizon, funding status, risk tolerance, and any other unique circumstances which apply. A thorough understanding of the Plan's actuarial report is critical to that process.

The asset allocation models are created using mean-variance optimization software, specifically the commercial product Morningstar Direct, the inputs of which are the asset classes' expected return, volatility, and covariance. These inputs may alternatively be created using historical (ex-post) or forecasted (ex-ante) data, each with their own respective costs and benefits.

Wainwright presents several alternative asset allocations to its client's Pension Committee, along with a recommendation, with the objective of selecting that portfolio with the maximum expected return subject to the clients' constraints and risk tolerances.



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As part of this process, Wainwright typically illustrates the historical experience of these model portfolios, based on index-level returns, as we find this particularly useful in illustrating how various portfolios behave in different capital market environments.

Wainwright typically includes the following asset classes in the asset allocation process:

<u>Domestic Equities</u>	<u>Foreign Equities</u>	<u>Alternatives *</u>
Small Cap	Developed Markets	Hedge Funds
Mid Cap	Emerging Markets	Private Equity
Large Cap	Small Cap	Real Estate
Value & Growth		Infrastructure

\* Subject to the constraints of the client.

C. Please define the entity's investment style analysis.

Within domestic equities, for example, style analysis can be defined broadly as "value" or "growth," a function of the underlying holdings' price relative to their earnings, assets and dividends, and their growth profile. It can also be defined more specifically, for instance "momentum," "quality" and "low volatility" are investment factors or "styles" which have gained relevance in recent years. Within private equity, styles differ from leveraged buyouts to growth equity to venture capital and more. Within all asset classes, wherever possible, Wainwright endeavors to structure broadly diversified portfolios for its clients, across asset classes and styles and size.

D. Please provide a listing of reports routinely supplied to clients.

Quarterly performance reports inclusive of the following:

- Time-weighted returns, income and expenses, purchase and sales;
- Asset allocation worksheets (target asset allocation vs. actual);
- Market commentary;
- "Flash" performance reports as preferred;
- Private Equity / Real Estate Analysis (e.g., committed capita, drawn capital, unfunded liability, multiple, IRR); and
- Other reports upon client request.

E. Please indicate whether the entity provides to its clients written narratives on the managers' performance, portfolio restructuring, guideline discrepancies, style deviations, etc.



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Yes.

- F. Please describe the software technology, database and analysis tools used in providing services to the client.

Wainwright uses the following tools to provide services to our clients:

- **Morningstar Direct**, which provides data on approximately 290,000 open end mutual funds, 17,000 exchange traded funds, 12,000 separately managed account offerings, and 3,000 hedge funds. Morningstar Direct is also used to develop strategic allocations and the optimization of portfolios.
- **eVestment Alliance**, which provides data on approximately 6,800 hedge funds and alternatives, 16,000 mutual funds and exchange traded funds, 101 real estate offerings.
- **Bloomberg**, which provides data on approximately 113,000 mutual funds, exchange traded fund and closed end fund offerings, 3,100 hedge funds, 1,000 private equity funds, 1,000 separately managed account offerings.

In addition, Wainwright has a reservoir of RFP responses from procurements it has conducted on behalf of its clients, which function as due diligence questionnaires that provide a high level of detail regarding managers and processes. Wainwright leverages the use of these questionnaires for the benefit of all the Firm's clients.

### IV. Manager Search and Due Diligence

- A. Please indicate the number of money managers currently being evaluated.

Wainwright is currently evaluating six real estate managers on behalf of a private client. In addition, Wainwright has evaluated 24 new managers to date this year and by year-end will have re-evaluated approximately 180 products in which our clients are already invested per our research monitoring policies.

- B. Please describe the criteria by which the entity decides which managers to evaluate.

Managers are evaluated based upon client need. Wainwright endeavors to build broadly diversified portfolios constituted from institutional quality investment product. Managers and, more broadly,



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asset classes are selected based upon 1) attractive expected returns, 2) diversification benefits (i.e., risk reduction) or 3) both.

- C. Please describe the selection of the database of managers for performance comparison. Please indicate whether managers pay a fee to be in the database. Indicate the number of managers in the database.

Wainwright's investment philosophy is based on a belief that structuring the appropriate strategic asset allocation for its clients, grounded in their unique constraints and objectives, and maintaining that portfolio construct over time, provides the highest probability of satisfying those constraints and objectives.

Wainwright uses the following tools to evaluate investment funds and managers:

- **Morningstar Direct**, which provides data on approximately 290,000 open end mutual funds, 17,000 exchange traded funds, 12,000 separately managed account offerings, and 3,000 hedge funds.
- **eVestment Alliance**, which provides data on approximately 6,800 hedge funds and alternatives, 16,000 mutual funds and exchange traded funds, over 100 real estate offerings.
- **Bloomberg**, which provides data on approximately 113,000 mutual funds, exchange traded fund and closed end fund offerings, 3,100 hedge funds, 1,000 private equity funds, 1,000 separately managed account offerings.

In addition, Wainwright has a reservoir of RFP responses from procurements it has conducted on behalf of its clients, which function as due diligence questionnaires that provide a high level of detail regarding managers and processes. Wainwright leverages the use of these questionnaires for the benefit of all the Firm's clients.

- D. Please describe how the due diligence evaluation of investment managers is performed.

Wainwright follows a sequential due diligence process that typically begins with Wainwright issuing a request for proposal ("RFP") on the client's behalf. RFPs serve as a due diligence questionnaire and in them Wainwright requests detailed information regarding:

- Firm background



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- Background of investment professionals
- Description of investment strategy
- Description of portfolio construction
- Description of risk controls
- Personnel turnover
- Historical performance
- AUM and trend
- Description of trading capabilities
- Description of deal flow & idea generation
- Valuation procedures (if applicable)
- Exit strategies (if applicable)
- Fees and applicable terms
- Client service capabilities
- Pending legal or regulatory action

After reviewing the RFPs, Wainwright rates each fund as either “Highly Advantageous”, “Advantageous” or “Not Advantageous.” We then discuss our findings with the client and typically recommend as many as three of the managers rated as “Highly Advantageous” on which to conduct additional due diligence.

The firm proceeds by conducting an initial meeting or conference call with the manager(s) to discuss and elaborate on the material included in the RFP. In our discussion, Wainwright collects detailed information on firm history, firm personnel, investment strategy, risk controls, historical performance, etc. to assess whether there is a potentially good fit for our client. Following the meeting (or discussion), the investment professional prepares a written summary of the discussion with the manager. Wainwright will also obtain and review Form ADV Part 2A for the manager and will complete a FINRA BrokerCheck on the investment manager, which will become part of the research file. In the case of hedge fund and private equity partnerships, Wainwright will also obtain and review the offering and subscription documentation for the offering. In the case of a hedge fund and/or a traditional separately managed account manager, Wainwright will, review the performance reported by the fund/manager to assess performance compared to relative benchmarks and follow up with the fund manager with any questions. In the case of a private equity partnership (or similar structure), Wainwright will review the deals that have been committed to for the subject fund as well as those that are under review as potential fund investments.

After conducting this additional due diligence process, Wainwright will make an investment recommendation to the client.



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Please note that the process above applies to the typical governmental defined benefit plans which Wainwright advises. Wainwright's process is flexible, though, and if the Plan's circumstances should require a different investment selection process, that can be accommodated. Specifically, Wainwright has significant experience advising retirement plans whose assets are exclusively invested in mutual funds and exchange-traded funds. In such instances, our investment selection process tends to be more quantitative in nature, based upon screens and various performance analytics which can be discussed with the Board in greater detail, if it wishes.

- E. Does the firm or consultant maintain a preferred vendor list, either formal or informal, in performing client searches? If so describe the impact, if any, on the provision of services to the client.

Wainwright has approximately 400 third-party investment managers on its Research and Due Diligence Committee ("RDC") approved list. That list evolves deliberately, subject to the investment manager's performance, corporate stability and the capital market opportunity set. Those RDC-approved managers are institutional quality and invest across the traditional (i.e., stocks, bonds) and alternative (i.e., hedged strategies, private equity, real estate, venture capital, etc.) asset classes. Wainwright is oftentimes able to access investment managers at negotiated discounts to their stated minimum investment levels due to the Firm's long-standing presence in the institutional advisory business and the relationships that has afforded.

With respect to how having an approved list would affect the client, Wainwright issues RFP's on behalf of our clients as required per stated regulations so as to preserve our objectivity to our clients and make sure they are receiving the most appropriate managers for their portfolios. The managers on our approved list have been fully vetted by our investment committee and we would recommend managers from our approved list to our clients only if deemed in the best interest of these clients.

### V. Miscellaneous

- A. Please indicate any special knowledge of the investment or funding issues affecting Massachusetts public retirement systems.

Wainwright is an expert on the matter of managing public, defined benefit plans, and has great familiarity with Massachusetts systems. It has no special knowledge of the investment or funding issues affecting those systems.

- B. Please list any services or attributes not mentioned in this Request for Proposals which the Board should consider.



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Wainwright believes that the tenure of its professionals, both in the industry and at the firm, are competitive advantages which have contributed to the long-term retention of many of our public pension clientele. Related, it believes that its high level of client service is a differentiating characteristic relative to its competitors.

- C. Please provide three (3) client references, including the names, addresses and telephone numbers of contact persons.

**Client Reference**

Town of Saugus Retirement System  
Town Hall Annex, 25R Main Street  
Saugus, MA 01906

**Contact**

Ann Quinlan  
508-558-2903  
aquinlan@saugusretirement.org

Town of Falmouth Retirement System  
80 Davis Straits, Suite 102  
Falmouth, MA 02540

Francis St. Germaine  
508-457-0578  
kip@falmouthretirementma.gov

Norfolk County, MA Retirement System  
480 Neponset St # 15A  
Canton, MA 02021

Kathleen Kiely-Becchetti  
781-821-0664  
kkb@norfolkcrs.com

- D. Please provide the names and asset values of any clients who have terminated services in the last three years.

The following public pension client relationships were terminated within the last three years:

**Client**

Town of Webster, MA Retirement System  
Massachusetts Convention Center Authority

**Value**

\$57 million  
\$54 million

Wainwright does not provide these details as it relates to its non-public pension clientele.

- E. Please provide one copy of a Client Report which is representative of the reports customarily supplied to clients.

See Attachment 2.





**MWRA Employees' Retirement System**  
Proposal for Investment Consultant Services  
Submitted by Wainwright Investment Counsel, LLC  
December 2023

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## **VI. Fee Structure**

- A. Please provide a detailed description of the fee structure for the firms' services to the Board. Fees must be fixed and based on services provided, and fee proposals must include the length of time over which the proposed fee is guaranteed, as well as a statement that the fee is all-inclusive.

Please see our fee proposal that we have submitted in a separate sealed envelope.

## **VII. Specific Board Issues**

- A. Please identify and provide credentials of those employees who would be assigned to the account. The Lead Consultant should be prepared to attend a Board interview.

**Mike Dwyer - Senior Vice President, Investment Advisor**

Mr. Dwyer has over 40 years of industry experience and has been with Wainwright and its predecessor firm, H.C. Wainwright, since 1990. Prior to that, Mr. Dwyer held various sales and client service positions at a number of financial services and advisory firms. Mr. Dwyer holds a B.S. from Providence College and completed the IMCA Certified Investment Management Analyst Program at the Wharton School at the University of Pennsylvania in 1996. He holds the FINRA Series 7, 63 and 65 licenses.

**Jeff Fabrizio - Director of Research, Investment Advisor**

Mr. Fabrizio oversees the research efforts at Wainwright and also works with institutional and private clients. He joined Wainwright as an analyst and advisor to institutional and private clients, and has been the firm's Director of Research since 2013. Mr. Fabrizio was an analyst at H.C. Wainwright from 1998 to 1999 and before that, a quantitative analyst at Putnam Investments from 1996 to 1997. He has a M.S. in finance from Bentley College, an M.S. in engineering from Tufts University and a B.S.E.T. (Bachelor of Science in Engineering Technology) from Wentworth Institute of Technology. Mr. Fabrizio passed Level II of the Chartered Financial Analyst® examination in 2001, and holds the FINRA Series 7 and 66 licenses.

**Paul Perdigao - Director of Operations**

In addition to his managerial functions, Mr. Perdigao is responsible for the reporting for many of Wainwright's institutional accounts. He is also the AML Compliance Officer for WFS, LLC,



## MWRA Employees' Retirement System

Proposal for Investment Consultant Services

Submitted by Wainwright Investment Counsel, LLC

December 2023

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Wainwright's wholly-owned registered broker-dealer.\* He has a B.S. in finance from Merrimack College and holds the FINRA Series 7, 24, 57, 63, 65 and 99 licenses.

\*Wainwright has a wholly owned subsidiary, WFS, LLC that is an SEC registered broker-dealer and a member of FINRA and SIPC.

- B. Please provide a description of the current account load of the Consultant and support staff to be assigned to the account.

Mike Dwyer currently has responsibility for approximately 40 client relationships, including two Massachusetts and one Rhode Island public pension plans. He is supported by an analyst and operations specialist in all cases.

- C. Please describe in detail the type of information you expect to be receiving from the Board's staff, its investment managers and custodian.

Wainwright would expect to receive the Retirement Plan's more recent investment reports, whether from its Custodian or prior consultant, along with its most recent actuarial reports.

From its investment managers, Wainwright would require standard reporting output: performance reports, appraisals, fact sheets or monthly / quarterly reports, etc.



**MWRA Employees' Retirement System**  
Proposal for Investment Consultant Services  
Submitted by Wainwright Investment Counsel, LLC  
December 2023

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**Appendix 1**

Wainwright Investment Counsel, LLC

Part 2A of Form ADV

Brochure

March 31, 2023

One Boston Place, 41<sup>st</sup> Floor  
Boston, Massachusetts 02108  
Telephone: 617-531-3100  
[www.winvcounsel.com](http://www.winvcounsel.com)

This firm brochure (this “Brochure”) provides information about the qualifications and business practices of Wainwright Investment Counsel, LLC (hereinafter, “Wainwright,” or the “Firm” or “our” or “us”). If you have any questions about the contents of this Brochure, please contact Wainwright at 617-531-3100 or [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com). The information in this Brochure has not been approved nor verified by the United States Securities and Exchange Commission (“SEC”) or by any state securities authority. An investment adviser’s registration with the SEC does not imply a certain level of skill or training. Wainwright’s Chief Compliance Officer is Margaret L. Leonard.

Additional information about Wainwright is also available on the SEC’s website at <https://adviserinfo.sec.gov/firm/summary/108711>.

## Item 2 – Material Changes

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The following information provides clients with a summary of material changes since the previous annual update of Wainwright’s Form ADV Part 2A (“Brochure”) updated on March 30, 2022. This Brochure describes the current range of services that Wainwright provides to clients and to update applicable disclosures. Wainwright has no material changes since the last annual update.

Wainwright will provide you with a complete Brochure as necessary based on changes or new information, at any time, without charge. A copy of Wainwright’s Brochure may be requested by contacting [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com), or by calling Wainwright at 617-531-3100.

Additional information about Wainwright is also available via the SEC’s website <https://adviserinfo.sec.gov/firm/summary/108711>. The SEC’s website also provides information about any persons affiliated with the firm who are registered, or are required to be registered, as investment adviser representatives. An investment adviser’s registration with the SEC does not imply a certain level of skill or training.

**Item 3 – Table of Contents**

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## **Item 4 – Advisory Business**

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Wainwright is an investment adviser registered with the SEC with its principal place of business located in Boston, Massachusetts. Wainwright has been providing investment advice since 1999. The Firm is privately held and majority employee owned and no one member owns or has contributed more than 25% of the capital of the Firm.

Wainwright provides a broad range of investment advisory and consulting services to its clients. Below is a summary of the services that Wainwright offers to clients.

Wainwright provides discretionary and non-discretionary investment advice to U.S.: individuals; high net worth individuals; family offices; endowments; trusts; estates; foundations; corporations and other business entities; pooled investment vehicles including hedge funds and other investment partnerships; charitable and tax-exempt institutions; pension, profit-sharing, 401(k) and other plans that are subject to the Employee Retirement Income Security Act of 1974, as amended (“ERISA”); employee benefit plans; and state and municipal governmental pension and post-employment benefit plans. Wainwright additionally provides discretionary and non-discretionary investment advice and sub-advisory services to non-U.S. foundations, corporations and banks.

Wainwright has clients domiciled both within and outside of the United States.

### **4.1. Investment Policy Statement Preparation**

At the inception of each Advisory Consulting or Discretionary Management Services relationship, Wainwright will review and discuss each client's prior investment history, as well as other relevant information, background and circumstances. The results are used to develop a customized investment policy statement (“IPS”) or investment strategy framework that reflects the client’s stated investment objective, tolerance for risk, investment time horizon, liquidity needs, tax considerations, legal and regulatory considerations, and any unique circumstances that may apply (e.g., investment restrictions). Additionally, any parameters or restrictions for the management of the account will be established. The IPS or investment strategy framework sets forth criteria for target asset allocation, selection of managers, securities and investment vehicles as well as the procedures and timing interval for monitoring investment performance. See also *Item 13 – Review of Accounts*.

## 4.2. Types of Investments

Wainwright’s investment advice and recommendations are not limited to any specific product or service offered by a particular company or financial institution and will generally include advice for the following types of securities and instruments:

- Exchange-listed securities
- Securities traded over-the-counter
- Foreign issuers
- Corporate debt securities (other than commercial paper)
- Municipal securities
- United States governmental securities
- Options contracts on securities
- Futures contracts on intangibles
- Interests in partnerships investing in real estate and other assets<sup>1</sup>
- Interests in partnerships investing in private equity<sup>1</sup>
- Interests in partnerships, hedge funds or hedge funds-of-funds<sup>1</sup>
- Investment company securities (mutual funds)

At the client’s request, alternative investments may be recommended, which could include, but not be limited to: hedge funds and funds-of-funds; private equity funds and funds-of-funds; venture capital funds and funds-of-funds; private real estate funds and funds-of-funds; or separately managed accounts.

Investing in securities involves the potential for a risk of loss that clients should be prepared to bear. Because some types of investments involve certain additional degrees of risk, they will only be recommended or implemented consistent with the client’s investment objectives, risk tolerance, liquidity, and other constraints.

Based on client circumstances and preferences, reasonable restrictions or constraints for investing in certain types of securities, instruments, types of securities or industry sectors may be applied. These restrictions will be considered when making investment recommendations to the client. Any investment guidelines or restrictions must be agreed to by the client and Wainwright.

## 4.3. Types of Investment Vehicles

Clients obtain exposure to a particular investment manager through a broad range of investment vehicles and instruments including, but not limited to, hedge funds and funds-of-funds; private equity funds and funds-of-funds; venture capital funds and funds-of-funds; private real estate funds and funds-of-funds; separately managed accounts; and mutual funds or exchange traded funds (“ETFs”). To the extent that it is consistent with the Advisory Consulting Services client’s IPS or investment strategy framework, Wainwright may recommend that a client invest in one or more of the types of securities and investment vehicles listed in Item 4.2 above.

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<sup>1</sup> Interests in partnerships investing in private funds are not generally available for client accounts managed on a discretionary basis.



#### **4.4. Advisory Consulting Services to Pension Plans and Other Clients**

Wainwright provides Advisory Consulting Services on a non-discretionary basis whereby the client retains the ultimate authority to decide whether to accept, modify or reject the investment recommendation. A non-discretionary account requires prior authorization or instruction from the client to effect each transaction; however, Wainwright typically plays a key role in communicating the client's instructions to the relevant custodians, administrators and managers to communicate the client's instructions, to arrange, effect or otherwise facilitate the purchase or sale of the recommended investments, including subscriptions in private funds and the allocation of separately managed account assets among managers, and to ensure that each client's investment decisions are appropriately implemented.

Wainwright's Advisory Consulting Services are customized to the requirements of each client, and the scope and duration of the services provided to a particular client is implemented through a written Advisory Consulting Services agreement between the client and the Firm. Wainwright and the client may mutually agree to change the scope of the services at any time. In very limited circumstances, Wainwright may also provide assistance in obtaining valuations with regard to assets that are not freely transferable and Wainwright shall fully disclose any such valuations within the client report containing such valuations.

Advisory Consulting Services clients may provide Wainwright information imposing reasonable restrictions or constraints such as for limitations for investing in certain securities, instruments, types of securities or industry sectors. These restrictions will be considered when making investment recommendations to the Advisory Consulting Services client. Any investment guidelines and restrictions must be agreed to by the client and Wainwright.

Unless by mutual agreement and understanding, an Advisory Consulting Services portfolio will not be advised for tax risk tolerance considerations.

##### **4.4.1. Asset Allocation Strategy**

Wainwright assists its clients in developing an overall asset allocation strategy that is consistent with the client's stated goals and objectives and determined based on the client's particular circumstances. If appropriate, this asset allocation strategy is incorporated within the client's IPS or investment strategy framework. The Firm will monitor the asset allocation strategy on an ongoing basis, or as otherwise specified by the client, and will make periodic recommendations that the assets be reallocated or rebalanced based on various considerations such as market factors and the client's financial circumstances.

#### 4.4.2. Manager Selection and Evaluation

Wainwright performs searches to identify and evaluate investment managers whose portfolio management styles are appropriate for a particular client based on that client's investment objectives, risk tolerance and asset allocation strategy. Once the Firm has recommended an investment manager, and the Advisory Consulting Services client has accepted that recommendation, Wainwright will monitor, on an ongoing basis, each of those selected investment managers.

If Wainwright determines that a selected manager is not providing sufficient, adequate or appropriate investment management services to Wainwright's Advisory Consulting Services client, Wainwright will recommend that the client consider limiting or terminating the investment manager's services. If a manager or investment is terminated, Wainwright may recommend another investment manager using the same manager selection and evaluation process as outlined above or Wainwright may recommend that no replacement manager be added to the portfolio.

Advisory Consulting Services clients are responsible for making the ultimate decision whether to select, hire or terminate a particular manager or to invest in a particular investment recommended by Wainwright. For a full description of the services offered by a particular manager and full and fair disclosures of the recommended manager's conflicts of interest, clients should refer to each recommended manager's Form ADV, due diligence questionnaire, prospectus or offering documents, as applicable<sup>2</sup>.

Wainwright's Research and Due Diligence Committee ("RDC") has overall responsibility for coordinating and centralizing the initial and ongoing manager due diligence and research activities related to Wainwright's Advisory Consulting Services.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see Item 4.7) or any fund with which it, or WFS, LLC, Wainwright's wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

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<sup>2</sup> Offering documents include, but are not limited to, a prospectus or confidential private placement offering memorandum, subscription agreement, limited partnership or shareholder agreement (collectively, "offering documents").

## 4.5. Discretionary Management Services

In a Discretionary Management Services arrangement, Wainwright will have investment discretion over the purchase and sale of securities and other instruments in the client's Discretionary Management Services account. For each Discretionary Management Services account Wainwright will determine which securities to buy or sell<sup>3</sup>, the number of shares to be bought or sold and the timing of the transaction. Each Discretionary Management Services client agrees to grant Wainwright discretionary trading authority by way of its written Discretionary Management Services agreement which includes, but is not limited to, a description of the terms of Wainwright's Discretionary Management Services, a description of Wainwright's compensation for those services and important disclosures.

Funds to which Wainwright provides Hedge Fund Advisory Services and funds for which Wainwright or WFS, LLC receive compensation are not eligible investments for accounts over which Wainwright exercises discretionary trading authority. Discretionary Management Services clients wishing to invest in those funds may do so through a separate and distinct Advisory Consulting Services account.

Private funds and investments that require a subscription agreement<sup>4</sup> and separately managed accounts are not eligible investments for accounts over which Wainwright exercises discretionary trading authority. Discretionary Management Services clients wishing to invest in those funds or strategies may do so through a separate and distinct Advisory Consulting Services account.

Unless by mutual agreement and understanding, a Discretionary Management Services portfolio will not be managed for tax risk tolerance considerations.

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<sup>3</sup> The buying or selling activity could include the purchase or sale of a listed option and the initiation of (or the covering of) a short sale.

<sup>4</sup> Private funds include, but are not limited to, hedge funds and funds-of-funds, private equity funds and funds-of-funds, venture capital funds and funds-of-funds, private real estate funds and funds-of-funds.

## **4.6. Sub-Advisory Investment Management Services**

### **4.6.1. Discretionary Sub-Advisory Investment Management Services**

Wainwright provides Discretionary Sub-Advisory Investment Management Services whereby Wainwright has discretionary trading authority over each of the Client Sub-Accounts. Wainwright provides one or more models of varying investment objectives, needs, circumstances and risk tolerance, each a “Strategy” to the Discretionary Sub-Advisory Master Account who in turn offers the Strategy to its Client Sub-Accounts based on their investment objectives, needs, circumstances and risk tolerance. Each of the Client Sub-Accounts agrees to grant Wainwright discretionary trading authority by way of its agreement with the Discretionary Sub-Advisory Master Account. Wainwright has investment discretion over the purchase and sale of securities and other instruments in the Client Sub-Account according to the Strategy. For each Strategy, Wainwright will determine which securities to buy or sell<sup>5</sup>, the number of shares to be bought or sold and the timing of the transaction. Wainwright has no obligation to evaluate or complete any suitability or financial analysis regarding any particular Client Sub-Account.

Funds to which Wainwright provides Hedge Fund Advisory Services and funds for which Wainwright or WFS, LLC receive compensation are not eligible investments for accounts over which Wainwright exercises discretionary trading authority. Discretionary Management Services clients wishing to invest in private funds may do so through a separate and distinct Advisory Consulting Services agreement.

### **4.6.2. Non-Discretionary Sub-Advisory Investment Management Services**

Wainwright provides Non-Discretionary Sub-Advisory Consulting Services on a non-discretionary basis whereby Wainwright provides one or more models of varying investment objectives, needs, circumstances and risk tolerance, each a “Strategy” to the Client who in turn offers the Strategy to its Client Sub-Accounts based on their investment objectives, needs, circumstances and risk tolerance. The Client, and each of the Client Sub-Accounts, retains the ultimate authority to decide whether to accept, modify or reject the investment recommendation according to the investment objectives, needs, circumstances and risk tolerance of the Strategy.

## **4.7. Hedge Fund Advisory Services**

Wainwright provides discretionary advice and/or certain other services to a privately offered fund, as described in further detail below.

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<sup>5</sup> The buying or selling activity could include the purchase or sale of a listed option and the initiation of (or the covering of) a short sale.

Funds to which Wainwright provides Hedge Fund Advisory Services and funds for which Wainwright or WFS, LLC receive compensation are not eligible investments for accounts over which Wainwright exercises discretionary trading authority. Discretionary Management Services clients wishing to invest in those funds may do so through a separate and distinct Advisory Consulting Services agreement.

#### 4.7.1. Wainwright Capital Partners, LLC

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC (“WCAP”), which is registered as a Commodity Pool Operator registered with the U.S. Commodity Futures Trading Commission (“CFTC”) and is a member of the National Futures Association (“NFA”). WCAP is the general partner of the Wainwright Renaissance Fund 1, L.P., a Delaware limited partnership (the “Wainwright Renaissance Fund”) and the Wainwright Global Capital, LP, a Cayman Islands partnership. WCAP is a “related person” of Wainwright due to Wainwright’s 100% ownership of WCAP. Eric Bertonazzi, CEO and Chairman of the Board of Managers of Wainwright, is a managing member, principal and associated person of WCAP and controls its management and operations. Paul Martins, Chief Financial Officer, Chief Administrative Officer and a member of the Board of Managers of Wainwright, is a principal of WCAP, and controls the management and operations of WCAP. Gustavo Aristizabal, President and a member of the Board of Managers of Wainwright, is Chief Compliance Officer and a principal of WCAP, and controls the management and operations of WCAP. Stephen Barrett is a member of the Board of Managers of Wainwright and a principal of WCAP. Additional information about Eric Bertonazzi, Gustavo Aristizabal and Stephen Barrett can be found in Wainwright’s Form ADV Part 2B Brochure Supplement (the “Brochure Supplement”). Additional information about Paul Martins is available upon request.

Wainwright is the Administrative Manager of the Wainwright Renaissance Fund and is responsible for providing certain administrative services to the fund for which Wainwright is compensated by the Wainwright Renaissance Fund. Additional details about those services are available upon request.

#### 4.7.1.1. Wainwright Renaissance Fund 1, L.P.

The Wainwright Renaissance Fund invests substantially all of its assets into a single investment: the Renaissance Institutional Equities Fund LLC Series BB (“RIEF”).

Wainwright is not affiliated with RIEF or any of RIEF’s affiliates. Neither Wainwright nor any of its affiliates or related persons have any involvement in the day-to-day management of the portfolio positions or trading within RIEF. Wainwright serves as the Administrative Manager of the Wainwright Renaissance Fund. Wainwright receives a fee for the administrative management services it provides to the Wainwright Renaissance Fund. These services include management of the Wainwright Renaissance Fund’s operations, supervising the administrator, analyzing and reporting the Wainwright Renaissance Fund’s performance to its limited partners, and performing various administrative and back office services for the Wainwright Renaissance Fund. Wainwright shall not be responsible for determining whether an investment in RIEF is appropriate or continues to be appropriate for the Wainwright Renaissance Fund.

Wainwright does not recommend or solicit any state regulated pension fund clients to invest in the Wainwright Renaissance Fund. Where appropriate and in limited circumstances, Wainwright may recommend an institutional client consider an investment directly into RIEF.

For any clients of Wainwright (or its affiliates) that consider an investment of \$5 million or more into the Wainwright Renaissance Fund there is an actual or potential conflict of interest since that client may be eligible to invest directly into RIEF (with its lower aggregate fees and shorter, more favorable redemption terms) versus making an investment into the Wainwright Renaissance Fund. Prior to making a \$5 million or more investment in the Wainwright Renaissance Fund, Wainwright reviews the advantages and disadvantages of the subscription terms of an investment in RIEF versus the Wainwright Renaissance Fund and provide that evaluation in writing to the prospective investor.

#### 4.7.2. Wainwright Global Capital, LP

Wainwright Global Capital, LP, a Cayman Islands partnership, is a wholly-owned subsidiary of Wainwright that is intended to provide services to clients located outside of the United States. WCAP is the general partner of Wainwright Global Capital, LP. This entity is not currently engaged in any business or investment activities and has been dormant since its 2012 inception.

#### 4.7.3. Wainwright Renaissance International Fund, Ltd.

Wainwright Renaissance International Fund, Ltd., an exempted company formed under the laws of the Cayman Islands, was established to allow non-U.S. investors, as well as U.S. tax-exempt investors, the opportunity to obtain exposure to Renaissance Institutional Equities Fund International L.P. The Wainwright Renaissance International Fund, Ltd. is not currently engaged in any business or investment activities and has been dormant since 2010.

### **4.8. Asset Allocation Strategies Consulting Services**

Wainwright has in the past provided, and may provide again in the future, Asset Allocation Strategy Consulting Services to the corporate sponsor of a defined contribution plan in an advisory capacity.

### **4.9. Ad-Hoc Management Consulting Services**

Wainwright also provides Ad-Hoc Management Consulting Services in the form of customized projects, educational workshops and/or materials based on its industry knowledge and/or familiarity with best practices. Such services are typically limited in nature and based on the communicated needs of the client.

### **4.10. Assets Under Management and Assets Under Advisement**

As of December 31, 2022, Wainwright had regulatory assets under management of:

- Advisory Consulting (non-discretionary): \$4,307,364,000
- Discretionary Management Services: \$80,601,000

## **Item 5 – Fees and Compensation**

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Wainwright receives compensation for providing Advisory Consulting and Discretionary Management Services, including Discretionary Sub-Advisory Investment Management Services, by charging a fee on the client's assets under management, investment performance, or a combination of both. Wainwright receives compensation for Ad-Hoc Management Consulting Service arrangements based on the scope and services to be provided by Wainwright. Fixed fee arrangements may also be available under certain circumstances such as for providing model investment strategy portfolios or in certain Advisory Consulting or Discretionary Management Service engagements. The specific manner for which fees are charged by Wainwright is described within each client's written agreement with Wainwright. All fees and fee arrangements are subject to negotiation.

### **5.1. Valuation of Securities**

A potential conflict of interest exists when an investment adviser bases its fee calculations on its own security or portfolio valuations. To mitigate this possibility, market values maintained in Wainwright's portfolio accounting system are reconciled to the qualified custodian statements on at least a monthly basis. Wainwright has adopted policies and procedures which are reasonably designed to value client securities and assets in a manner that is current, fair, and accurate.

#### **5.1.1. Liquid Securities and Hedge Funds**

Unless otherwise disclosed, the value of securities and assets held by clients of Wainwright are reported to Wainwright by third parties which include, but are not limited to, banks, qualified custodians and fund administrators. Wainwright deems these sources to be reliable and does not independently audit or guarantee the accuracy of the data.

#### **5.1.2. Hard to Price Holdings Including Private Equity and Real Estate Holdings**

For periods which private equity statements are not yet available, private equity holdings are carried at the last published valuation provided by the manager plus or minus contributions or distributions between that valuation date and the date the fee is calculated. Client fees will be calculated using the last published valuation and, with limited exception, those calculations will not be adjusted in future periods.

## 5.2. Fees for Advisory Consulting and Discretionary Management Services

Fees for Advisory Consulting and Discretionary Management Services, including Sub-Advisory Investment Management Services, are generally calculated as a fixed percentage of the market value of assets under management on the last business day of the quarter. Asset-based fee schedules are generally tiered, offering breakpoints for larger account balances and, while quoted on an annual basis, are, with limited exception, calculated and assessed on a quarterly basis, in arrears. Advisory Consulting or Discretionary Management Services fees may also be calculated using another method, such as the average of assets under management during the quarter or on a fixed annualized fee basis, upon mutual agreement with the client. Wainwright may, by mutual agreement with the client, take into consideration the total asset value of the account combined with the asset values of any affiliated Advisory Consulting and Discretionary Management Services client account(s).

In cases where Wainwright's fee is paid in advance, and in the event of the termination during a quarter, Wainwright shall retain only a pro rata portion of the quarterly fees paid in advance based on the actual number of days in the quarter from the first day of the quarter through and including the termination date. The remaining balance of the prepaid fees for such quarter shall be promptly refunded.

Account minimums are subject to negotiation.

The standard annual fee schedule for Advisory Consulting Services is:

- 1.50% on the first \$1.0 million of account assets.
- 0.50% for assets between \$1.0 million and \$5.0 million.
- 0.40% for assets above \$5.0 million.

The annualized asset-based fee schedule for Discretionary Management Services clients generally ranges from 0.5% to 1.5% of account assets. If by written agreement between the Discretionary Management Services client and the Firm, eligible Discretionary Management Services clients may also be charged a performance-based fee. See *Item 6 – Performance-Based Fees and Side-By-Side Management* below for additional information about performance-based fees.

Adjustments to advisory fees may be made to an Account in the event that, during a quarter, the sum of all deposits to the Account minus all withdrawals from the Account by the Client results in a net deposit to or withdrawal from the Account of greater than \$50,000, and represents more than 10% of the value of the Account as of the beginning of the quarter. In such cases, the pro-rated fee adjustment is calculated to reflect the application of the advisory fee to each deposit, and a reduction of the advisory fee for each withdrawal, based on the number of days the applicable assets are in the Account during the quarter.



Private funds for which Wainwright or WFS, LLC receive compensation (e.g., the Wainwright Renaissance Fund or any other non-Wainwright affiliated fund) are included in the assets under management of an Advisory Consulting or Discretionary Management Services account but are generally excluded from Wainwright's Advisory Consulting or Discretionary Management Services fee calculations. In the limited circumstances where such private funds are included in the aforementioned fee calculations, the client typically receives the benefit of a discounted Wainwright Advisory Consulting or Discretionary Management Services fee.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see Item 4.7) or any fund with which it, or WFS, LLC, Wainwright's wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

Clients may elect to be billed for their fees or they may authorize their qualified custodian to debit fees directly from their investment account(s) and credit those fees to Wainwright. See Item 15 – Custody.

Advisory Consulting and Discretionary Management Services fees will be pro-rated if services begin after the first day, or end before the last day, of a billing period. Upon termination, any unearned portion of any prepaid payment will be refunded in a timely manner, and any earned portion of any arrears arrangement will be due and payable. Clients may terminate their Advisory Consulting or Discretionary Management Services agreements in writing, according to the specific terms of their respective agreement. Wainwright does not assess termination charges.

Asset-based fees create an incentive for Wainwright to over-estimate the value of securities and assets held in client accounts in order to receive higher compensation on an inflated market value. Inaccurate valuations would also inflate client account performance which is also calculated based on the value of securities and assets held in client accounts. Wainwright's clients may be harmed if the Firm uses inaccurate or inappropriate valuations for securities and assets held in client accounts. Wainwright has adopted policies and procedures which are reasonably designed to minimize actual or potential conflicts of interest for fee arrangements.

### **5.3. Performance-Based Fees for Discretionary Management Services**

Eligible Discretionary Management Services clients may negotiate performance-based fee arrangements with Wainwright on a case-by-case basis and such arrangements must be established by a written agreement between the Discretionary Management Services client and the Firm. Performance-based fees are based on the performance or capital appreciation of the investment assets of a client over a pre-determined period of time (e.g., a calendar year). Performance-based fees are offered in lieu of, or in addition to, asset-based fees. See Item 6 - Performance-Based Fees and Side-By-Side Management for additional information about performance-based fees.

Performance-based fees create an incentive for Wainwright to recommend investments that are riskier or more speculative in an effort to maximize potential returns. Wainwright and its supervised persons may be perceived to have an incentive to devote more resources toward managing accounts for which it charges a performance-based fee over other types of client accounts that are not charged a performance-based fee, such as Advisory Consulting Services clients. Wainwright addresses these conflicts through its private placement pre-approval procedures and oversight by the Firm's Enterprise Risk Management Committee, the Investment Policy & Risk Management Committee, and Wainwright's CEO.

Any performance-based fee arrangements will be in accordance with SEC Rule 205-3 and any applicable exemptions thereunder.

#### **5.4. Fees for Hedge Fund Advisory Services**

Wainwright or its affiliates receive both asset-based management and performance-based fees for its Hedge Fund Advisory Services. Methods for calculating management and performance-based fees relating to Hedge Fund Advisory Services are set forth in each respective fund's offering documents. Wainwright or its affiliates reserve the right to waive, reduce, rebate, or calculate differently, for the benefit of the investor, the management fee, administrative services fee and/or performance fee with respect to any investor in a fund to which Wainwright provides Hedge Fund Advisory Services (e.g., the Wainwright Renaissance Fund).

Performance-based fees are typically billed on an annual basis as set forth in each respective fund's offering documents. Upon redemption prior to a calendar year end, the earned portion of any performance-based fee will be due and payable in accordance with the fund's offering documents. Any performance-based fee arrangements will be calculated and assessed in accordance with the fund's offering documents and applicable rules and regulations including any available exemptions thereunder.

See *Item 6 – Performance-Based Fees and Side-By-Side Management* for additional information about performance-based fees.

##### **5.4.1. Wainwright Renaissance Fund 1, L.P.**

Wainwright receives a quarterly management fee for the management and administrative services it provides to the Wainwright Renaissance Fund. These services include management of the Wainwright Renaissance Fund's operations, supervising the administrator, analyzing and reporting the Wainwright Renaissance Fund's performance to its limited partners, and performing various administrative and back office services for the Wainwright Renaissance Fund.

Management fees, while quoted on an annual basis, are calculated and assessed on a quarterly basis, in advance, as set forth in the fund's offering documents. WCAP, as the general partner of the Wainwright Renaissance Fund, will receive a performance-based incentive fee allocation out of the net profits (if any) of the strategy. Performance-based fees are typically calculated and assessed on an annual basis as set forth in the fund's offering documents.

The quarterly management and administrative services fees and annual performance-based fees are calculated by the Fund's third-party administrator for payment to Wainwright and WCAP, respectively.

#### 5.4.2. Wainwright Global Capital, LP

This entity is not currently engaged in any business or investment activities and Wainwright does not receive any fees for services provided.

#### 5.4.3. Wainwright Renaissance International Fund, Ltd.

This entity is not currently engaged in any business or investment activities and Wainwright does not receive any fees for services provided.

### **5.5. Fees for Asset Allocation Strategies Consulting Services**

Wainwright has in the past received, and may again receive in the future, fixed fees for providing asset allocation strategy consulting services to the corporate sponsor of a defined contribution plan.

### **5.6. Fees for Ad-Hoc Management Consulting and Additional Services**

Wainwright will receive fees for providing Ad-Hoc Management Consulting Services in the form of customized projects. Fees for Ad-Hoc Consulting Management Services are charged on a fixed fee basis. Fees for additional services are negotiated on a client-by-client and project-by-project basis based on the scope of services as set forth in the written agreement with the client.

### **5.7. Fees for Wainwright Acting as Solicitor or Promoter**

Wainwright has in the past received, and may again receive in the future, asset-based and performance-based and other advisory fees in its capacity as a Solicitor or Promoter for introducing clients to unaffiliated third-party registered investment advisers (see Item 14 – Client Referrals and Other Compensation).

### **5.8. Additional Client Expenses**

Clients of Wainwright will incur additional fees and expenses charged by their respective custodians and broker-dealers for providing services to the client's account. Such fees will be dependent on the investments in the client's account and include, but are not limited to, custodial fees, transaction costs, brokerage commissions and mutual fund expenses. Clients will also incur certain other charges imposed by custodians, brokers, third-party investment managers and other third-parties, such as interest charges, ticket charges, deferred sales charges, odd-lot differentials, transfer taxes, wire transfer and electronic fund fees, overnight delivery fees and other fees and taxes on brokerage accounts and securities transactions. Clients are responsible for the payment of these costs and expenses.

Mutual funds (including money market mutual funds or other cash equivalents), exchange-traded funds, investment advisers and private funds also charge management and/or performance-based fees, as the case may be, which are disclosed in that fund's prospectus or offering documents. Such charges, fees and commissions are exclusive of, and in addition to, fees paid for Wainwright's services. Wainwright does not receive or share in any compensation related to these additional fees or expenses.

### **5.9. Compensation to Registered Representatives of WFS, LLC**

Wainwright has a wholly-owned subsidiary, WFS, LLC, that is an SEC registered broker-dealer and a member of FINRA and SIPC. Most of Wainwright's supervised persons are registered representatives of WFS, LLC. WFS, LLC's primary business activity is to facilitate private placement transactions.

Wainwright supervised persons who are registered representatives of WFS, LLC receive production compensation for the sale of certain investment products, such as private funds, that may or may not be held by Wainwright clients. The receipt of this compensation creates a conflict of interest and gives Wainwright supervised persons who are registered representatives of WFS, LLC an incentive to recommend investment products based on compensation received, rather than on a client's specific needs or investment objectives. Wainwright addresses this conflict through its private placement pre-approval procedure, oversight by the Firm's Enterprise Risk Management Committee and oversight by the Firm's Investment Policy & Risk Management Committee. With limited exception, private product offerings for which Wainwright or WFS, LLC receives compensation are generally excluded from Wainwright's Advisory Consulting or Discretionary Management Services fee calculations.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see *Item 4.7*) or any fund with which it, or WFS, LLC, Wainwright's wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

Please see *Item 12 – Brokerage Practices* for more information.

### **5.10. Compensation to WCAP**

WCAP, as the general partner of the Wainwright Renaissance Fund, will receive a performance-based incentive fee allocation out of the net profits (if any) of the strategy. Performance-based fees are typically calculated and assessed on an annual basis as set forth in the fund's offering documents. The quarterly management and administrative services fees and annual performance-based fee are calculated by the Fund's third-party administrator for payment to Wainwright and WCAP, respectively.

## **Item 6 – Performance-Based Fees and Side-By-Side Management**

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In addition to asset-based or fixed fees, eligible Discretionary Management Services clients may also be charged a performance-based fee (see *Item 5 – Fees and Compensation* above). Performance-based fees are based on the performance or capital appreciation of the investment assets of a client over a pre-determined period of time (e.g., calendar year). Performance-based fees are offered in lieu of, or in addition to, asset-based fees.

### **6.1. Performance-Based Fees for Discretionary Management or Hedge Fund Advisory Services**

Performance-based fee arrangements for eligible Discretionary Management Services clients may be negotiated with Wainwright on a case-by-case basis and such arrangements must be established by a written agreement between the Discretionary Management Services client and the Firm. Performance-based fees are offered in lieu of, or in addition to, asset-based fees. Any performance-based fee arrangement will be in accordance with SEC Rule 205-3 and any applicable exemptions thereunder.

### **6.2. Conflicts of Interest**

Performance-based fees create an incentive for Wainwright to recommend investments that are riskier or more speculative in an effort to maximize potential returns. Wainwright and its supervised persons may be perceived to have an incentive to devote more resources toward managing accounts for which it charges a performance-based fee over other types of client accounts that are not charged a performance-based fee, such as Advisory Consulting Services clients. Wainwright addresses these conflicts through its private placement pre-approval procedures and oversight by the Firm's Enterprise Risk Management Committee, the Investment Policy & Risk Management Committee, and Wainwright's CEO.

### **6.3. Side-by-Side Management**

The practice of managing two or more client portfolios which pay different fees, including but not limited to performance-based fees, is known as "side-by-side management." Wainwright recognizes that side-by-side management can create an incentive for Wainwright to advantage one client at the expense of another client with the intention of maximizing the fees Wainwright collects for its services or enhancing a particular portfolio or composite's performance. Wainwright has policies and procedures in place to mitigate these risks. These include the following policies which are contained in this Brochure:

- *Aggregation and Allocation for Advisory Consulting Services Accounts and Aggregation and Allocation for Discretionary Management Services Accounts* which establishes procedures for fair and appropriate allocation of investment opportunities;
- *Fees and Billing Procedures*, which identify the conflicts of interest and incorporates controls for calculating and billing client fees;
- *Review of Accounts*, which outlines the process for monitoring portfolios for adherence to client risk constraints; and

- *Valuation of Securities*, which mitigates the risk that Wainwright could value a client asset incorrectly.

#### **6.4. Discretionary Management Services Clients**

Eligible Discretionary Management Services clients may negotiate performance-based fee arrangements with Wainwright. Performance-based fee arrangements must be established by a written agreement between the Discretionary Management Services client and the Firm.

#### **6.5. Hedge Fund Advisory Services**

Wainwright or its affiliates receive both asset-based management and performance-based fees for its Hedge Fund Advisory Services described above in *Item 4 – Advisory Business* as well as for other unaffiliated private funds. Methods for calculating asset-based management and performance-based fees relating to Hedge Fund Advisory Services are set forth in each respective fund’s offering documents.

Performance-based fees are typically billed on an annual basis as set forth in each respective fund’s offering documents. Upon redemption prior to a calendar year end, the earned portion of any performance-based fee will be due and payable in accordance with the fund’s offering documents. Any performance-based fee arrangements will be calculated and assessed in accordance with the fund’s offering documents and applicable rules and regulations including any available exemptions thereunder.

A portion of the performance-based fees and other compensation earned by WFS, LLC from its private placement services is paid to registered representatives of WFS, LLC (who are also supervised persons of Wainwright) as production compensation.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see *Item 4.7*) or any fund with which it, or WFS, LLC, Wainwright’s wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

Wainwright or its affiliates reserve the right to waive, reduce, rebate, or calculate differently, for the benefit of the investor, the management fee, administrative services fee and/or performance fee with respect to any investor in a fund to which Wainwright provides Hedge Fund Advisory Services (e.g., the Wainwright Renaissance Fund or any other non-Wainwright affiliated fund).

#### **6.6. Wainwright as Solicitor or Promoter**

Wainwright has in the past received, and may again receive in the future, asset-based and performance-based and other advisory fees in its capacity as a Solicitor or Promoter for introducing clients to unaffiliated third-party registered investment advisers (see *Item 14 – Client Referrals and Other Compensation*).

## **Item 7 – Types of Clients**

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Wainwright provides discretionary and non-discretionary investment advice to U.S.: individuals; high net worth individuals; family offices; endowments; trusts; estates; foundations; corporations and other business entities; pooled investment vehicles including hedge funds and other investment partnerships; charitable and tax-exempt institutions; pension, profit-sharing, 401(k) and other plans that are subject to the Employee Retirement Income Security Act of 1974, as amended (“ERISA”); employee benefit plans; and state and municipal governmental pension and post-employment benefit plans. Wainwright additionally provides discretionary and non-discretionary investment advice and sub-advisory services to non-U.S. foundations, corporations and banks.

The Firm has clients domiciled both within and outside of the United States.

## **Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss**

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### **8.1. Methods of Analysis and Investment Strategies**

#### **8.1.1. Advisory Consulting Services**

Wainwright employs the following methods of analysis and recommends an investment strategy using the following steps:

*Determine Current Exposure:* Review the client’s current portfolio and analyze the existing portfolio’s investment characteristics by asset class, strategy and style. This analysis typically includes, but is not limited to, weightings by asset class, expected returns and risk metrics.

*Formulate Investment Policy Statement (“IPS”) or Investment Strategy Framework:* Work with the client and coordinate the development of an IPS or investment strategy framework which defines an investor’s investment objectives, tolerance for risk, investment time horizon, liquidity needs, tax considerations, legal and regulatory considerations, and any unique circumstances that may apply. These considerations are critical in determining a client’s target asset allocation and constructing a suitable portfolio. A client may request a formal written IPS or the parameters and considerations may be memorialized through informal communications.

*Asset Allocation Analysis:* Examine Wainwright’s capital market assumptions for each asset class and integrate them with specific investment policy objectives. Generate model portfolios to evaluate different asset class scenarios for client consideration.

*Manager Due Diligence:* Perform manager due diligence employing both quantitative and qualitative metrics. The analysis may include, but is not limited to: performance; style specificity; asset growth; volatility of returns; downside risk; firm history; portfolio characteristics; and manager expertise.

*Portfolio Construction:* Construct the client portfolio according to the results of the asset allocation analysis and the IPS/investment strategy framework inputs, both of which require client input. Portfolios will be constructed with some combination of mutual funds, exchange traded funds, single stocks, or separately managed accounts. In addition, if eligible and appropriate, alternative investments including limited partnerships, private funds or other pooled investment vehicles may be included within the portfolio construction process. Typically alternative investment vehicles hold hedged strategies, real estate, private credit or private equity assets, amongst other things.

*Portfolio Monitoring:* Review client accounts and provide quarterly reports. Some of the specific metrics Wainwright evaluates include: active versus passive strategies, risk target in a specific asset class, pre-existing exposures, investment manager style, risk adjusted returns, tax considerations, separate versus commingled account management, tracking error, and correlation among managers and strategies.

#### 8.1.2. Advisory Consulting and Discretionary Management Services

Depending on a particular client engagement, Wainwright may use any of the following methods of analysis in Advisory Consulting and Discretionary Management Services accounts:

*Lack of Control for Discretionary Assets:* Once the assets of the Client are allocated to the account pursuant to a Discretionary Investment Advisory Agreement, the Client will not control the individual investments made by Wainwright, their choice of investments or other investment decisions, which are totally within the control and discretion of Wainwright pursuant to the terms of the executed Discretionary Investment Advisory Agreement between the Client and Wainwright.

*Fundamental Analysis:* Wainwright attempts to measure, and recommends managers who attempt to measure, the intrinsic value of a security by looking at economic and financial factors (including the overall economy, industry conditions, and the financial condition and management of the issuer itself) to determine if the issuer is underpriced (indicating it may be a good time to buy) or overpriced (indicating it may be time to sell). Fundamental analysis does not attempt to anticipate market movements. This presents a potential risk, as the price of a security can move up or down along with the overall market regardless of the economic and financial factors considered in evaluating the security.

*Technical Analysis:* Wainwright analyzes, and recommends managers who attempt to analyze, past market movements and applies that analysis to the present in an attempt to recognize recurring patterns of investor behavior and anticipate future price movement. Technical analysis does not consider the underlying financial condition of an issuer. This presents the risk that a poorly managed or financially unsound issuer may underperform regardless of market conditions.

#### 8.1.3. Hedge Fund Advisory Services

Wainwright employs similar but not identical methods of analysis to its Hedge Fund Advisory Services as it does for its Advisory Consulting or Discretionary Management Services, subject to the investment objectives and investment restrictions set forth in each fund's offering documents.



#### 8.1.4. Ad-Hoc Management Consulting and Additional Services

The methods of analysis for Wainwright's Ad-Hoc Management Consulting and other services will vary depending on the scope of the Ad-Hoc engagement.

### **8.2. Material Risk Factors**

*Investment activities involve a significant degree of risk. The performance of any investment is subject to numerous factors which are neither within the control of, nor predictable by Wainwright. Such factors include a wide range of economic, political, competitive, technological and other conditions (including acts of terrorism and war or regional/global pandemic) that may affect investments in general or specific industries or companies. The investment decisions made and the actions taken in managing client assets will be subject to various market, liquidity, currency, economic, political and other risks. Investing in securities involves risk of loss that clients should be prepared to bear. The investment performance and the success of any investment strategy or particular investment can never be predicted or guaranteed, and the value of a client's investments will fluctuate due to market conditions and other factors. Investments may lose value and past performance is never a guarantee of future results.*

The information contained in this Brochure cannot disclose every potential risk associated with an investment strategy, nor all of the risks applicable to a particular manager, security or investment. Rather, it is a general description of the nature and risks of the Advisory Consulting and Discretionary Management Services provided by Wainwright and the related investments.

This summary is qualified in its entirety by reference to the prospectuses and offering documents that apply to the funds that Wainwright recommends and/or in which a client invests. Clients should carefully read those prospectuses and/or offering documents before making an investment in any fund.

#### 8.2.1. General Risks

*Risks of Investing in Securities:* Securities markets are volatile and investing in securities involves the risk of loss that clients should be prepared to bear. Wainwright cannot guarantee that the strategies offered will be able to achieve a particular level of return or maintain a particular risk profile.

Risks vary by client according to their investment objectives, guidelines, liquidity needs or risk tolerances and not every strategy or portfolio will be exposed to each of the risks described in this Brochure. This list is not intended to be exhaustive of all of the risks associated with investing in strategies or securities that are recommended by Wainwright.

*Market Risk:* The direction of the capital markets (*i.e.*, stock, credit, interest rate, real estate, private equity, volatility, etc.) are difficult to predict and are dependent upon changes in a number of factors, including, but not limited to, interest rates, inflation, and a host of additional economic and political factors. There is always a risk that the capital markets as a whole will decline, bringing down the value of individual securities regardless of their fundamental characteristics. Market risk is also known as systematic risk or undiversifiable risk. This risk is both unpredictable and impossible to completely eliminate.

*Investment Advisor Selection Risk:* The investment performance of a client's investment program will vary with the success or failure of the investment advisor that a client selects to manage their assets. An investment advisor's past performance is not indicative of future results. Current and prospective clients should not assume that the future performance of any specific investment advisor, investment strategy, recommendation or investment will be profitable.

*Asset Allocation Risk:* A portfolio that holds large cash positions may deviate from the stated benchmark and could underperform as a result. Differences in the security holdings and weights of a portfolio versus the strategy benchmark will result in disparities between a portfolio's performance relative to its benchmark.

A portfolio may perform better or worse than a similarly managed account for various reasons including, but not limited to, the frequency and timing of rebalancing and trading each portfolio and the size and number of positions in each portfolio.

*Portfolio Concentration Risk:* Strategies that are concentrated in only a few securities, sectors or industries, regions or countries or asset classes could expose a portfolio to greater risk and may cause the portfolio value to fluctuate more widely than a portfolio that is diversified. Overexposure to certain sectors or asset classes may prove to be detrimental to an investor if there is a negative sector move.

*Company Specific Risk:* The risk related to a firm's business plans, stock valuation, profitability, accounting practices, growth strategy, and other factors particular to a company rather than to the overall market. Some of these risks cannot be predicted, such as the retirement or death of a senior executive, which may lead to negative performance in the future.

*Stock, Security, ETF or Fund Selection Risk:* The risk that an investor chooses a security that underperforms the market for unanticipated reasons. There can be no assurance that investors will ever come to realize the value of some of these investments, and that the investment will ever increase in value. During this time, the investor may have funds locked up in an underperforming investment, which presents an opportunity cost for other investments.

*Timing Risk:* The risk that an investment performs poorly after its purchase or better after its sale. Moreover, if a redemption is required by the investor, the investor may face a loss due to poor overall market performance or security performance at that time.

*Data Risk:* Wainwright's securities analysis relies on data that is provided by third-party vendors and publically available sources of information. Information that is incomplete, inaccurate or outdated would affect the efficacy of that analysis.

*Counterparty Risk:* A portfolio is subject to risk with respect to the counterparties. Risks affecting counterparties such as brokers, custodians, clearing banks or agents, escrow agents or issuers, foreign exchanges or securities lending programs could result in failure by the counterparty to honor its obligations. A portfolio may experience significant delays in obtaining any recovery (including recovery of posted collateral) during insolvency, bankruptcy or other reorganization proceedings and might realize only a limited recovery or no recovery at all. If the credit rating of a counterparty is lowered, a portfolio would be exposed to any increased credit risk associated with that counterparty.

*Credit Risk:* The credit rating of an issuer of a security is based on, among other things, the issuer's historical financial condition and the rating agencies' investment analyses at the time of rating. An actual or perceived deterioration of the ability of an issuer to meet its obligations would have an adverse effect on the value of the issuer's securities.

*Liquidity Risk:* Low trading volume, large positions or legal restrictions are some conditions which could limit or prevent a portfolio from selling particular securities or closing positions at desirable prices. Securities that are relatively liquid when acquired could become illiquid over time. The sale of any such illiquid investment might be possible only at substantial discounts or might not be possible at all. Further, such investments may be difficult to value.

*Global and National Crisis Risk:* Ongoing or future global or national crises including, but not limited to, pandemic, cyberattack, sabotage, terrorism, and acts of war could result in disruptions to the economies of many nations, individual companies, and can negatively impact global markets in an unforeseeable manner. Such disruptions include, but are not limited to: travel restrictions; quarantines; supply chain disruptions; and workforce inefficiencies, absenteeism, distraction or general anxiety. Such unpredictable, but no longer unprecedented, crises may exacerbate other pre-existing political, social, and economic risks in certain countries. The impact of such crises may be quick, severe and of unknowable duration. Ongoing or future crises could result in the temporary or permanent disruption of Wainwright's ability to provide investment advice and volatility in the financial markets and could have a negative impact on investment performance.

### 8.2.2. Investment Risks

*Equity Securities:* Equity instruments are subject to equity market risk, which is the risk that common stock prices will fluctuate over short or even extended periods. Equity securities generally have greater price volatility than fixed income securities. The market price of equity securities may increase or decrease, sometimes rapidly or unpredictably. Equity securities may decline in value due to factors affecting markets generally, particular industries, sectors or geographic regions represented in those markets, or individual security concerns.

*Debt or Fixed Income Securities:* Debt securities are affected by changes in interest rates. When interest rates rise, the value of debt securities are likely to decrease. Conversely, when interest rates fall, the values of debt securities are likely to increase. The values of debt securities are also affected by changes in the credit rating or financial condition of the issuing entities.

*Master Limited Partnerships (“MLPs”):* MLPs are limited partnerships that trade on securities exchanges similar to stocks. Issuers of MLPs are not subject to income tax, and shareholders in MLPs are "limited partners" in the company. The issuers' special tax designation allows MLPs to avoid the double taxation that dividend paying corporations are subject to (*i.e.*, corporation pays income tax, shareholder pays income tax on dividends). MLPs are generally in the oil and gas industries, providing infrastructure (*i.e.*, movement, storage, refining), and exhibit high correlation to oil and gas exploration and production companies. MLPs typically have significant debt and distribute the bulk of free cash flow to investors in order to maintain their non-taxable “pass thru” status. These characteristics contribute to risk.

*Risks Associated with Exchange Traded Funds (“ETFs”) and Exchange Traded Notes (“ETNs”):* ETFs and ETNs are, by definition, portfolios of securities, and although the unsystematic risk associated with investments in ETFs and ETNs may be low relative to investments in securities of individual issuers, there are events that can trigger sharp, and sometimes adverse, price movements in ETFs and ETNs that are not related to movements of the markets in general. These events include, but are not limited to, unanticipated dividends, changes to regular dividend amounts, announcements of rights offerings and possible unexpected revisions to the net asset values of the ETF and ETN. ETFs are subject to market risk, whereas ETNs are subject to both market risk and the credit risk of the issuer of the ETN.

Further, certain Wainwright accounts may hold (or short sell) positions in certain volatility-related ETFs and ETNs, and certain of those securities may be leveraged or have prices which are inversely related to an underlying index or benchmark. These instruments pose unique risks which include, amongst other things, market risk, compounding risk (*e.g.*, the effect of daily compounding of returns may result in returns over periods of longer than a single day which will likely differ in amount and possibly even direction from the underlying benchmark), potential “acceleration” or “termination” events associated with rapidly declining Net Asset Value (“NAV”), and the extreme price volatility. Acceleration or termination could result in a substantial or total loss of investment. See *Borrowing and Leverage Risk*.

*Borrowing and Leverage Risk:* If permitted by a client’s investment guidelines and by mutual agreement with the client, a portfolio may purchase securities on margin, engage in short sales, borrow money or use derivatives, each of which will cause the portfolio to be leveraged. Leverage exaggerates the effect on a portfolio’s value for any increase or decrease in the market value of the portfolio’s investment value. Leveraging will also create interest expenses for a portfolio which can exceed the investment return from the borrowed funds.

*Short Sales:* If permitted by a client’s investment guidelines and by mutual agreement with the client, a portfolio may engage in short selling. Wainwright makes no assurance that a strategy utilizing short sales will be profitable. A short sale is effected by selling a security which the seller does not own, or selling a security which the seller owns but which it does not deliver upon consummation of the sale. In order to make delivery to the buyer of a security sold short, the prime broker or custodian on behalf of the seller must borrow the security. In so doing, it incurs the obligation to replace that security, whatever its price may be, at the time it is required to deliver it to the lender. The seller must also pay to the lender of the security any dividends or interest payable on the security during the borrowing period and may have to pay a premium to borrow the security. This obligation must, unless the seller then owns or has the right to obtain, without payment, securities identical to those sold short, be collateralized by a deposit of cash and/or marketable securities with the lender. Short selling is subject to theoretically unlimited risk of loss because there is no limit on how much the price of a security may appreciate before the “short” position is closed out.

Further, short sales of securities involve a form of investment leverage and the amount of the portfolio’s potential loss is theoretically unlimited. See *Borrowing and Leverage Risk*.

*Options Trading:* If permitted by a client’s investment guidelines and by mutual agreement with the client, a portfolio may engage in options strategies. The the buyer of an option pays a premium which entitles it to buy (in the case of a call) or sell (in the case of a put), from or to the the seller, a specified number of securities at a specified price, during the specified period. Options are speculative in that the whole cost of a purchased option is lost at expiration unless the price of the underlying security has moved in the anticipated direction, above or below the option’s “strike” price as the case may be, and the option is exercised. Liability is limited to the premium paid for the option. An option writer (or seller) becomes obligated to purchase or sell the options contract or the underlying securities at a specified price during a specified period. In exchange for the premium received upon writing an option, the Client bears the risk of loss from adverse price movements in the underlying contracts or the underlying security so long as the position remains open. In the case of a sold option, the seller could have unlimited risk exposure or the potential for a significant loss.

Options are complicated and risky investments because they require an investor not only to anticipate whether the price of a security is going up or down, but also anticipate the amount and timing of that movement. This requires a sophisticated understanding of the underlying security, as well as the particular options strategy being employed to speculate or hedge a security.

Before engaging in options trading, a client must acknowledge that they have carefully read and understand the Agreement and the booklet entitled “Characteristics and Risks of Standardized Options” (<https://www.theocc.com/Company-Information/Documents-and-Archives/Options-Disclosure-Document>), and has consulted with their applicable legal, tax and financial advisors.

*Futures Contract Risk:* If permitted by a client's investment guidelines and by mutual agreement with the client, a portfolio may engage in futures strategies. The use of futures, for hedging or other purposes, involves risk and could result in lower returns or losses in a client account. There is a risk that a derivative may not be well correlated with the security, index or currency to which it relates. Daily exchange limits on the price movement of a futures contract may make trading or closing out a position difficult or impractical. It is possible that a client could lose more than the cash amount invested in the derivative. Additional information about the risks related to futures strategies is available upon request.

*Preferred Equity:* Holders of preferred equity are positioned between the bondholders and common stockholders within a company's capital structure. Preferred equity is subordinate to various other levels of debt, so if a company declares bankruptcy, the holders of preferred equity will not receive payment until all of the company's secured creditors and bondholders have received payment. Also, like debt securities, the values of preferred equities are closely related to interest rates. Typically, the longer the maturity, the more the preferred equity is affected by changes in interest rates.

*Foreign Markets:* Investments in foreign companies and overseas markets may involve unique risks, including, but not limited to, risks relating to changes in currency exchange rates, political, economic and social events, varying market operations and less information. Additional information about the risks related to investing in foreign, emerging and frontier markets is available upon request.

*Alternative Investments:* In addition, if eligible and appropriate, alternative investments including limited partnerships, private funds or other pooled investment vehicles may be included within the portfolio construction process. Alternative investments involve additional risks that clients must consider. Lock-up periods and other terms obligate investors to commit their capital investment for a minimum period of time, typically no less than one or two years and sometimes up to 10 or more years. Illiquidity is considered to be the most substantial risk and will restrict the ability of an investor to liquidate an investment early regardless of the success of the investment. Alternative investments are subject to lagged valuations, which is to say their values are not received daily, but typically quarterly or monthly, anywhere from 15 to 75 days after the respective month- or quarter-end. There may be limited availability of suitable benchmarks for comparison of performance; historical performance data may also be limited. In some cases, there may be a lack of transparency and regulation providing an additional layer of risk. Some alternative investments may involve use of leverage and other speculative techniques. As a result, some alternative investments may carry substantial, additional risks, which may result in the loss of some or all of the investment. For tax-exempt investors, use of leverage and certain other strategies will result in adverse tax consequences, such as the possibility of unrelated business taxable income as defined under the U.S. Internal Revenue Service Code.

### 8.2.3. Procedural and Operational Risks

*Key Personnel Risk:* The death, disability, or departure of key investment personnel, or other changes to the Wainwright Investment Committee, could have a material effect on our ability to monitor the investment recommendations by the Firm and could adversely affect our ability to effectively implement those strategies.

*Operational Risk:* Portfolios are exposed to operational risk introduced through human intervention or the failure of automated processes. Operational risks include, but are not limited to, reconciliation errors, trading the wrong security, trading a security for an unintended portfolio or purchasing a security that a portfolio was intended to sell, or vice versa.

*System Failures and Reliance on Technology Risks:* Wainwright's operations rely on technology, including hardware, software, telecommunications, internet-based platforms, and other electronic systems. Additionally, some of the technology used is provided by third-party service providers and is, therefore, beyond Wainwright's direct control. Wainwright seeks to ensure adequate backups of hardware, software, telecommunications, internet-based platforms, and other electronic systems, through its vendor due diligence procedures but there is no guarantee that any or all third-party service provider risks will be mitigated. In addition, natural disasters, power interruptions and other events may cause system failures, which will require the use of backup systems. Backup systems may not operate as well as the systems that they back-up and may fail to properly operate, especially when used for an extended period. To reduce the impact a system failure may have, Wainwright continually evaluates its backup and disaster recovery systems and performs periodic testing of its backup systems operations. Despite our continued monitoring, hardware, telecommunications, or other electronic systems malfunctions may be unavoidable and result in consequences such as the inability to execute client transactions or monitor client accounts. See Item 12 – Brokerage Practices and Item 13 – Review of Accounts.

*Cybersecurity Risk:* A portfolio is susceptible to operational and informational security risks due to the increased use of the Internet. In general, cyber incidents can result from deliberate attacks or unintentional events. Cyberattacks include, but are not limited to, infection by computer viruses or other malicious software code, gaining unauthorized access to systems, networks, or devices through “hacking” or other means for the purpose of misappropriating assets or sensitive information, corrupting data, or causing operational disruption. Cybersecurity failures or breaches of third-party service providers may cause disruptions at third-party service providers and impact Wainwright's business operations, potentially resulting in: financial losses; the inability to transact business; violations of applicable privacy and other laws, regulatory fines, or penalties; reputational damage; unanticipated expenses or other compensation costs; and/or additional compliance costs. Wainwright has an established business continuity and disaster recovery plan and related cybersecurity procedures designed to prevent or reduce the impact of such risks, there are inherent limitations in such plans and systems due in part to the evolving nature of technology and cyberattack tactics.

*Adherence to IPS or Investment Strategy Framework Risk:* Client relationships with portfolio specific investment objectives, guidelines, restrictions or risk tolerances are exposed to the risk that these goals are not achievable or that the portfolio unpredictably deviates from those guidelines or limitations.

## **Item 9 – Disciplinary Information**

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Registered investment advisers are required to provide information about any legal or disciplinary events that would be material to a client’s evaluation of Wainwright or the integrity of its management. Wainwright has no disciplinary events to disclose.

## **Item 10 – Other Financial Industry Activities and Affiliations**

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Wainwright has a wholly-owned subsidiary, WFS, LLC that is an SEC registered broker-dealer and a member of FINRA and SIPC. Most of Wainwright’s supervised persons are registered representatives of WFS, LLC. WFS, LLC’s primary business activity is to facilitate private placement transactions. Please see *Item 5 – Fees and Compensation and Item 12 – Brokerage Practices* for additional information. Additional details about WFS can be found at <https://brokercheck.finra.org/firm/summary/116778>.

Wainwright has several affiliations and interests in various limited partnerships and limited liability companies, as described in *Item 4 – Advisory Business*.

Wainwright and WFS, LLC receive additional compensation in connection with certain managers or funds that are recommended to Advisory Consulting Services clients. For additional information, please refer to *Item 4.7* and *Item 14 – Client Referrals and Other Compensation*.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see *Item 4.7*) or any fund with which it, or WFS, LLC, Wainwright’s wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC (“WCAP”), which is registered as a Commodity Pool Operator registered with the U.S. Commodity Futures Trading Commission and is a member of the National Futures Association. WCAP is the general partner of the Wainwright Renaissance Fund 1, L.P., a Delaware limited partnership (the “Wainwright Renaissance Fund”) and the Wainwright Global Capital, LP, a Cayman Islands partnership. Please see *Item 4.7* for additional information.



## **Item 11 – Code of Ethics, Participation or Interest in Client Transactions and Personal Trading**

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### **11.1. Code of Ethics and Personal Trading**

As is required by SEC Rule 204A-1 under the Advisers Act, Wainwright has adopted a Code of Ethics (the “Code”) for its supervised persons which describes, among other things, the Firm’s fiduciary duty to its clients and standards of conduct for its supervised persons. Wainwright has policies and procedures in place for: the protection of personal and confidential information; the prevention of illegal insider trading; gifts and entertainment; contributions to elected officials; and personal securities trading practices. All supervised persons of Wainwright receive annual compliance training on Wainwright’s compliance policies and procedures and are required to annually certify that they have received, read, understood, and will comply with those policies, including the Code and Wainwright’s Supplemental Wainwright Organization Policies and Procedures. Revisions, updates, or amendments to the Code are distributed to all supervised persons of Wainwright in a timely manner. A copy of Wainwright’s Code and certain supplemental policies are available to any client or prospective client, free of charge, upon request.

#### **11.1.1. Protection of Personal and Confidential Information**

Wainwright has adopted written policies and procedures that address physical, technical, and administrative safeguards for the protection of customer data, personnel records, and other personal, confidential or proprietary information (collectively, “confidential information”). Wainwright’s policies and procedures are reasonably designed to:

- Ensure the security and privacy of any confidential information in Wainwright’s possession;
- Protect against any anticipated threats or hazards to the security or integrity of any confidential information in Wainwright’s possession;
- Protect against unauthorized access to, or use of, any confidential information in Wainwright’s possession that could result in substantial harm or inconvenience to Wainwright or any client or investor who is a natural person; and
- Protect against unauthorized access to, or distribution of, sensitive or confidential information.

Wainwright has controls in place that are reasonably designed to restrict access to confidential information to those Wainwright supervised persons who need to know that information in the course of their job responsibilities.

#### **11.1.2. Prevention of Illegal Insider Trading**

It is a violation of federal law to purchase or sell securities (or options to purchase or sell securities) of any company based upon material non-public information (“inside information”) or to share such inside information with another person who may use the information for their own profit or to avoid a loss.

Wainwright has implemented policies and procedures designed to identify and monitor employee personal trading for evidence of insider trading.

All Wainwright supervised persons shall annually certify that they have received, read, understood, and will comply Wainwright's Insider Trading Policy and applicable rules.

#### 11.1.3. Gifts and Entertainment

Wainwright has a responsibility to ensure that gifts and entertainment do not create conflicts of interest or the appearance of impropriety that could reflect negatively on Wainwright and its business relationships. Wainwright supervised persons are prohibited from accepting, offering, giving, or providing any gift, entertainment, prize, benefit, compensation, or consideration that could reasonably be expected to compromise their independence and/or objectivity.

Wainwright has implemented policies and procedures to report gifts and entertainment given to, or received by, Wainwright or its employees and supervised persons and to identify conflicts and prevent prohibited activities.

#### 11.1.4. Contributions to Elected Officials

SEC Rule 206(4)-5 defines "pay-to-play" as the practice of making contributions and related payments to elected or labor union officials in order to influence the awarding of lucrative contracts for the management of public pension or labor union plan assets or similar government investment accounts.

Wainwright has policies which prohibit its covered associates from making contributions or related payments to elected or labor union officials at the local, state and federal levels.

#### 11.1.5. Personal Securities Trading Practices

Rule 204A-1 requires, among other things, certain supervised persons of a registered investment adviser to report their personal securities transactions to the adviser including initial and annual holdings and quarterly transactions reports. Wainwright's Personal Transactions and Holdings Policy is intended to prevent conflicts of interest, or the appearance of a conflict of interest, with the investment advice it provides to its clients.

Wainwright supervised persons may buy or sell the same securities for their personal accounts that Wainwright may also recommend to its Advisory Consulting or Discretionary Management Services clients, or funds to which Wainwright or its affiliates provide hedge fund advisory services. With limited exception, Wainwright supervised persons must obtain pre-clearance prior

to executing a transaction in any Personal Account<sup>6</sup> in which they have a beneficial interest<sup>7</sup>. Unless by specific exception, personal investments must be held for a minimum of thirty (30) calendar days to reduce the incentive for short-term trading and maintain focus on Wainwright's core responsibilities to its clients.

Wainwright's CCO, or their designee, is primarily responsible for providing trade pre-clearance and reviewing and monitoring the personal transactions of Wainwright employees and supervised persons.

#### 11.1.5.1. Blackout Periods

Wainwright reserves the right to implement security or fund specific personal account transaction blackout periods for buying and selling securities or funds in personal accounts when investment recommendations are amended by the Research and Due Diligence Committee ("RDC"). Wainwright shall allow sufficient time for any RDC recommendation to be disseminated to its Advisory Consulting Services clients before the blackout is lifted and Wainwright supervised persons may buy or sell those securities for their personal account(s).

### **11.2. Principal and Agency Cross Trades in Discretionary Management Services Accounts**

Wainwright does not engage in principal or agency cross transactions for any client account. Wainwright does not cross trade between any client accounts or affiliated funds.

## **Item 12 – Brokerage Practices**

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Wainwright has a wholly-owned subsidiary, WFS, LLC, that is an SEC registered broker-dealer and a member of FINRA and SIPC. Most of Wainwright's supervised persons are registered representatives of WFS, LLC. WFS, LLC's primary business activity is to facilitate private placement transactions.

Wainwright does not receive research or related products or services, other than execution-only services, from any broker-dealer or third-party in connection with client transactions. In certain limited circumstances, and where it will be advantageous to the client, Wainwright may request for the benefit of its client(s), an ETF provider or their designated broker, to create shares at net asset value in consideration of the order size, size of the fund, average trading volume and market availability.

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<sup>6</sup> It should be noted that although exempt from pre-clearance requirements, Personal Accounts which are also Wainwright client accounts (e.g., where an investment advisory agreement has been executed) are not exempt from the holdings and transactions reporting requirements.

<sup>7</sup> Wainwright Personnel who are physically and functionally involved in the day-to-day operations of Wainwright or who may have access to information about current client transactions are considered "access persons" and are subject to the Personal Securities Trading Practices. These individuals are presumed to be a beneficial owner of securities that are held by their immediate family members residing in the access person's household.

With limited exception<sup>8</sup>, Wainwright does not negotiate client commissions paid to broker-dealers to execute client transactions. Wainwright does not select broker-dealers for Advisory Consulting or Discretionary Management Services client securities transactions (see *Item 16 – Investment Discretion*). Client securities transactions are typically executed through the executing broker-dealer affiliated with, or preferred by, the client’s qualified custodian. For example, if the client’s qualified custodian is State Street Corporation, brokerage trades will typically be routed for execution at State Street Global Markets as that custodian’s preferred executing broker. Similarly, a client account that utilizes Pershing Advisor Solutions, LLC or Interactive Brokers LLC as the qualified custodian, will likely have brokerage executions routed through that custodian’s preferred executing broker.

#### 12.1. **Pershing Advisor Solutions, LLC**

Pershing Advisor Solutions, LLC (“PAS”) represents the largest, by number of accounts, of all of the custodial relationships for Wainwright clients. Wainwright has an agreement with PAS whereby PAS makes available products and services to Wainwright’s clients including, but not limited to, clearing, custody or other brokerage services. In consideration of this relationship, PAS provides services to Wainwright and its clients that include, but are not limited to, software and other technology that (i) provides access to client account data (such as trade confirmations and account statements); (ii) facilitates trade execution and allocation and aggregation of trade orders for multiple client accounts; (iii) provide research, pricing and other market data; (iv) facilitates payment of Wainwright fees from its clients’ accounts that are custodied at PAS Advisor Solutions, LLC; and (v) assists with back-office functions, recordkeeping and client reporting. These services do not represent any economic benefit to Wainwright as Wainwright would not be compelled to purchase these services at its own expense in the absence of this relationship. Wainwright has periodically negotiated lower standard client commission rates with PAS.

In the situation where a client elects to custody their assets at PAS, Wainwright will have trade authority to route discretionary or non-discretionary trade orders to Pershing, LLC for that client’s account. Wainwright does not require any client to use PAS. Clients may engage another qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

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<sup>8</sup> Wainwright has negotiated commission rates for brokerage executions routed through Pershing LLC through its agreement with Pershing Advisor Solutions, LLC.

## 12.2. **Interactive Brokers LLC**

Wainwright has an agreement with Interactive Brokers LLC (“IBKR”) whereby IBKR makes available products and services to Wainwright’s clients including, but not limited to, clearing, custody or other brokerage services. Wainwright makes this arrangement available as an accommodation to clients who for whom Pershing Advisor Solutions, LLC is unable to provide such services (*e.g.*, certain non-U.S. clients). In consideration of this relationship, IBKR provides services to Wainwright and its clients that include, but are not limited to, software and other technology that (i) provides access to client account data (such as trade confirmations and account statements); (ii) facilitates trade execution and allocation and aggregation of trade orders for multiple client accounts; (iii) facilitates payment of Wainwright fees from its clients’ accounts that are custodied at IBKR; and (iv) assists with back-office functions, recordkeeping and client reporting. These services do not represent any economic benefit to Wainwright as Wainwright would not be compelled to purchase these services at its own expense in the absence of this relationship.

In the situation where a client elects to custody their assets at IBKR, Wainwright will have trade authority to route discretionary or non-discretionary trade orders to IBKR for that client’s account. Clients may engage another qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

## 12.3. **Charles Schwab & Co., Inc.**

Wainwright has an agreement with Charles Schwab & Co., Inc. (“Schwab”) whereby Schwab makes available products and services to Wainwright’s clients including, but not limited to, clearing, custody or other brokerage services. In consideration of this relationship, Schwab provides services to Wainwright and its clients that include, but are not limited to, software and other technology that (i) provides access to client account data (such as trade confirmations and account statements); (ii) facilitates trade execution and allocation and aggregation of trade orders for multiple client accounts; (iii) facilitates payment of Wainwright fees from its clients’ accounts that are custodied at Schwab; and (iv) assists with back-office functions, recordkeeping and client reporting. These services do not represent any economic benefit to Wainwright as Wainwright would not be compelled to purchase these services at its own expense in the absence of this relationship.

In the situation where a client elects to custody their assets at Schwab, Wainwright will have trade authority to route discretionary or non-discretionary trade orders to Schwab for that client’s account. Clients may engage another qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

## 12.4. **Client Accounts at Other Custodians**

Clients may engage a qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion. Services provided will vary.

Unless by special arrangement and direct instruction by the client, Wainwright does not have authority to route discretionary or non-discretionary trade orders for a client's account that is held away from the client's custodian. Wainwright makes no assurances as to the quality of the execution services provided by those executing brokers.

#### 12.5. **Aggregation and Allocation for Advisory Consulting Services Accounts**

Trade orders for Advisory Consulting Services clients are entered (or facilitated, as the case may be) within a reasonable time from when the instruction or authorization is received from the Advisory Consulting Services client. Although multiple Advisory Consulting Services client accounts may purchase or sell the same securities on the same day, orders will not necessarily be aggregated due to the timing of client acceptance of recommendations throughout the day. In such circumstances, prices will deviate across client Advisory Consulting Services accounts.

#### 12.6. **Aggregation and Allocation for Discretionary Management Accounts**

Allocation procedures will be fair, equitable, and determined in advance of trading in a specific security on any given day. Wainwright manages multiple Discretionary Management Services accounts that may purchase or sell (or short or cover) the same securities at the same time. Where possible, Wainwright will aggregate orders for the purchase or sale of the same security for each respective IAR's Discretionary Management Services clients transacting that day at that custodian<sup>9</sup>. In such cases, each participating client will receive the average execution price at that custodian. Each participating client will pay a brokerage commission and other charges imposed by their custodian (e.g., ticket charges, odd-lot differentials). With limited exception, partial order executions will be allocated on a pro-rata basis among the participating portfolios at that custodian in proportion to their pre-determined participation in the aggregated order.

#### 12.7. **Aggregation and Allocation for Hedge Fund Advisory Services Accounts**

Wainwright does not effect trade orders on behalf of any fund to which it provides Hedge Fund Advisory Services.

#### 12.8. **Soft Dollars**

Wainwright does not engage in soft dollar activity, including permitted soft dollar arrangements or mixed use arrangements.

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<sup>9</sup> Situations may arise where, unbeknownst to one another, one IAR executes trades for their discretionary accounts while another uses discretion to transact in the same security. Such trades might not be aggregated with other IAR accounts and could even be opposite sides of a transaction.

## 12.9. Execution Quality (Best Execution)

Wainwright has a fiduciary duty to seek best execution for any transactions it routes for any client account over which it has trade authority (discretion). Best execution has been defined by the SEC as the execution of securities transactions for clients in such a manner that the clients' total cost or proceeds in each transaction is the most favorable under the circumstances.<sup>10</sup>

## 12.10. Mutual Fund Share Class Selection

Neither Wainwright nor its supervised persons receive service fees or asset-based sales charges in connection with transactions in mutual funds. Nonetheless, Wainwright recognizes its fiduciary duty to identify and recommend the most advantageous mutual fund share classes for purchase in clients' accounts which may or may not be limited to the lowest cost share class eligible to the client. When purchasing a mutual fund on behalf of a client, Wainwright shall review the share classes approved for use by its clients to determine if a more cost effective share class is available than those share classes that are currently held by any client. Considerations which will influence Wainwright's recommendations include, but are not limited to, liquidity, expense ratios, the client's investment time horizon and distribution requirements.

## Item 13 – Review of Accounts

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All written account reports must be reviewed and approved by the CCO, or their designee, prior to distribution reviewed and approved by the CCO, or their designee, prior to distribution.

## 13.1. Advisory Consulting and Discretionary Management Services

At the inception of each Advisory Consulting or Discretionary Management Services client relationship, Wainwright's Investment Adviser Representatives or consultants ("IARs") shall prepare (or assist the client in preparing) an investment policy statement ("IPS") or investment strategy framework that reflects the client's stated investment objective and parameters for the management of the account. This information is the basis for performing client account reviews and will be modified if the objectives, tolerance for risk, investment time horizon, liquidity needs, tax considerations, or other unique circumstances of the client change. See *Item 4.1 - Investment Policy Statement Preparation* above. Wainwright conducts at least quarterly reviews for all Advisory Consulting and Discretionary Management Services client accounts and provides at least quarterly written account reports as set forth in the Firm's Advisory Consulting or Discretionary Management Services agreement with the client. Account reviews include, but are not limited to, market fluctuations, significant events, client needs and client objectives.

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<sup>10</sup> General Information on the Regulation of Investment Advisers, Division of Investment Management modified March 11, 2011: <http://www.sec.gov/divisions/investment/iaregulation/memoia.htm>.

All clients receive, at a minimum, a quarterly written report containing asset values and performance information. Quarterly written reports include, but are not limited to: market value by asset class, instrument or investment, as applicable; the percentage each investment represents in the entire portfolio; monthly or quarterly returns; and year-to-date return for each portfolio and/or investment. In certain client engagements, and as mutually agreed upon by the client and Wainwright, a client may also receive customized daily, weekly or monthly reports. The investment results presented in client reports may exclude certain recommendations made by Wainwright that were not accepted by a client or, alternately, may include investment decisions made by a client without a recommendation by Wainwright. Clients will also receive asset valuation reports and/or performance information directly from an underlying manager, such as for a private fund, or their qualified custodian. Certain other information may be provided upon request.

Additional information provided to clients could include, but is not limited to: Financial Market Highlights for the quarter; selected index returns for the period; an asset allocation summary; geographic composition; portfolio liquidity; hedge or private fund investment market value summary; statistical analysis of monthly returns; portfolio composition by asset class; portfolio composition by manager; performance by asset class; and performance attribution metrics.

An objective review for Advisory Consulting and Discretionary Management Services accounts is conducted on a semi-annual basis (or more or less frequently as deemed necessary by Wainwright) by Wainwright's Investment Policy & Risk Management Committee in order to evaluate the alignment between the client's investment philosophy and their existing portfolio. These periodic reviews take into consideration liquidity, investment time horizon, and recent changes to a client's investment objectives, risk tolerance, and/or any other factors deemed pertinent for that particular client, such as tax or legal considerations.

### **13.2. Discretionary Management Services**

For Discretionary Management Services accounts, portfolios are reviewed no less frequently than monthly by the IAR and their supervisor. The IAR, with the assistance of the analyst team and/or the Operations Department, will conduct more frequent reviews as the result of either a triggering event (*i.e.*, extreme market volatility or significant events affecting the client's financial situation) or at the request of the client.

### **13.3. Hedge Fund Advisory Services**

All investors in the Wainwright Renaissance Fund receive from an independent third-party administrator a: (i) monthly statement and (ii) quarterly net asset value statement. Additionally, audited financial statements prepared in accordance with Generally Accepted Accounting Principles by an independent accounting firm are distributed to investors on an annual basis.



## **Item 14 – Client Referrals and Other Compensation**

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### **14.1. Client Referrals to Wainwright**

Wainwright has entered into one or more written agreements under which an unaffiliated Solicitor or Promoter (“Solicitor”) has agreed to refer certain individuals and institutions (“Prospects”) with which the Solicitor has a relationship and who the Solicitor believes may be interested in one or more of the services offered by Wainwright (see *Item 4.7*).

The Solicitor shall disclose that it is not a current client of Wainwright or an investor in any fund managed by Wainwright and that it is not authorized to provide investment advice on behalf of Wainwright.

In making referrals to Wainwright, Solicitors shall describe Wainwright and its services in general terms. Solicitors shall not hand out any written communications, advertising, or performance advertising material with regard to Wainwright that is not provided by Wainwright or first approved in writing by Wainwright. Solicitors may also provide any information about Wainwright that is contained in this Brochure and both the Wainwright Form CRS and the WFS Form CRS.

In exchange for such referrals, Wainwright pays cash compensation directly to the Solicitor. This creates a material conflict of interest. The terms of such compensation by Wainwright to the Solicitor shall be disclosed to the Prospect through a Solicitor Disclosure Statement prior to entering into any agreement for Advisory Consulting, Discretionary Management Services, or Hedge Fund Advisory Services.

The investment advisory and other fees Wainwright charges to Prospects referred by Solicitor are not impacted by the existence of the referral arrangement Wainwright has with Solicitor. Thus, Prospects who become clients of Wainwright do not have to pay more fees and charges to Wainwright as a result of the solicitation arrangement between Wainwright and Solicitor.

No cash or non-cash compensation shall be provided for any testimonial or endorsement not specifically covered by a dually executed written agreement.

### **14.2. Solicitation or Promoter Arrangements for Hedge Fund Advisory Services**

WFS, LLC, the broker-dealer affiliate of Wainwright, is the non-exclusive placement agent for the Wainwright Renaissance Fund. WFS, LLC receives a placement fee under the Wainwright Renaissance Fund’s private placement agreement for any investor that invests in such fund as a result of WFS, LLC’s sales efforts. Please refer to *Item 4 – Advisory Business* for details regarding the Wainwright Renaissance Fund.

WFS LLC currently acts in the capacity of a Solicitor or Promoter or private placement agent for affiliated and unaffiliated private funds and receives compensation as a result. The nature and amount of the compensation arrangement is prescribed in the respective Solicitor and/or placement agent agreement. Any testimonial or endorsement by WFS shall be a recommendation subject to Regulation Best Interest.

Wainwright does not recommend or solicit any state regulated pension fund client to invest in any fund to which it provides Hedge Fund Advisory Services (see *Item 4.7*) or any fund with which it, or WFS, LLC, Wainwright's wholly-owned broker-dealer subsidiary, has a solicitation or private placement arrangement.

### **14.3. Wainwright Acting as Solicitor or Promotor**

Wainwright has entered into one or more written agreements under which Wainwright will act as Solicitor or Promoter ("Solicitor") and shall receive cash compensation from an registered investment adviser not affiliated with Wainwright ("Unaffiliated Adviser") for promoting or endorsing the services of the Unaffiliated Adviser to certain individuals and institutions ("Prospects") with which Wainwright has an existing relationship and who Wainwright believes may be interested in one or more of the services offered by the Unaffiliated Adviser.

In acting as Solicitor, Wainwright shall disclose that it is not a current client of the Unaffiliated Adviser and that it is not authorized to provide investment advice on behalf of the Unaffiliated Adviser.

In exchange for such referrals, Wainwright shall receive cash compensation directly from the Unaffiliated Adviser. This creates a material conflict of interest. The terms of such compensation to Wainwright from the Unaffiliated Adviser shall be disclosed to the Prospect through a Solicitor Disclosure Statement

No cash or non-cash compensation shall be provided for any testimonial or endorsement not specifically covered by a dually executed written agreement.

## **Item 15 – Custody**

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### **15.1. Advisory Consulting and Discretionary Management Services**

Clients of Wainwright must retain a broker-dealer, bank, or other qualified custodian of its choice to take possession of its investment assets. With limited exception, as described here, neither Wainwright nor its supervised persons may accept, hold or accept authority to obtain possession of, directly or indirectly, any client funds or securities. Wainwright will not intentionally take custody of client funds or securities, including cash. Wainwright's authority with respect to the client's qualified custodian is principally limited to issuing instructions to effect or settle trades, transfer monies upon client authorization, corporate actions instructions and, if authorized, direct debiting of its Advisory Consulting or Discretionary Management Services fees.

Wainwright urges its clients to carefully review and compare their custodian statements to any portfolio statements provided by Wainwright and report any material discrepancies to both parties. Clients should contact Wainwright directly if they believe that there is an error in their statement or if they are not receiving at least quarterly custodian statements.

Except as described below, Wainwright shall not have actual, or constructive, custody of client assets.

## **15.2. Deduction of Advisory Fees**

Wainwright will be deemed to have custody as a result of its authority to notify the applicable custodian of the client's instruction to deduct its Advisory Consulting or Discretionary Management Services fees from client accounts and remit that fee directly to Wainwright. This arrangement is authorized between the client and their qualified custodian.

## **15.3. Capacity as General Partner**

Wainwright Capital Partners, LLC ("WCAP") is deemed to have custody of the Wainwright Renaissance Fund's assets by virtue of its capacity as the general partner of the fund. By extension, Wainwright is deemed to have custody through WCAP, a wholly-owned subsidiary of Wainwright, and as the Administrative Manager of the Wainwright Renaissance Fund. WCAP and Wainwright rely on the annual audit exemption provided under Rule 206(4)-2 of the Investment Advisers Act of 1940 as amended, with respect to the Wainwright Renaissance Fund.

## **15.4. Capacity as Trustee**

In a limited number of circumstances, Investment Adviser Representatives of Wainwright hold a position of trust such as in the capacity as trustee or as a board member<sup>11</sup> for client accounts as a result of a family or personal relationship with the client and not as a result of employment with Wainwright. Wainwright is not deemed to have custody of these client assets. All such activity must receive prior approval from their immediate supervisor and the CCO of Wainwright and is discussed within the context of the Wainwright Investment Policy & Risk Management Committee semi-annual review and at the ERISA & Position of Trust Oversight Committee quarterly meeting.

## **15.5. Pershing Advisor Solutions, LLC**

Wainwright recommends Pershing Advisor Solutions, LLC to clients requesting guidance on the selection of their custodian. In doing so, Wainwright takes into account the availability of certain products and services and other arrangements provided by this custodian. Wainwright considers the intrinsic value of these products and services when making this recommendation and does not rely solely on the nature, cost or quality of custody and brokerage services provided by this custodian, which creates a potential conflict of interest. See *Item 12 – Brokerage Practices* for additional information.

In the situation where a client elects to custody their assets at PAS or another custodian acceptable to Wainwright, Wainwright shall have trade authority to route

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<sup>11</sup> If a supervised or related person of Wainwright is appointed as trustee solely as a result of a family or personal relationship with the grantor or beneficiary of the trust, and not as a result of employment with Wainwright, the role of the supervised person as trustee should not be imputed to Wainwright; thus Wainwright should not be deemed to have custody of such client's assets and therefore Wainwright should not be subject to the custody rule.

In the situation where a client elects to custody their assets at Pershing Advisor Solutions, LLC, or another custodian acceptable to Wainwright, Wainwright shall have trade authority to route discretionary or non-discretionary trade orders through a trade execution platform provided by Pershing Advisor Solutions, LLC for execution by Pershing, LLC. Wainwright does not require any client to use any custodian recommended by Wainwright. Clients may engage another custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

#### **15.6. Interactive Brokers LLC**

In certain situations, Wainwright will recommend Interactive Brokers LLC to clients requesting guidance on the selection of their custodian (*e.g.*, non-U.S. clients). In doing so, Wainwright takes into account the availability of certain products and services and other arrangements provided by this custodian. Wainwright does not rely solely on the nature, cost or quality of custody and brokerage services provided by this custodian, which creates a potential conflict of interest.

In the situation where a client elects to custody their assets at Interactive Brokers LLC, Wainwright shall have trade authority to route discretionary or non-discretionary trade orders through a trade execution platform provided by Interactive Brokers LLC for execution. Unless otherwise directed, Interactive Brokers LLC will select the market/dealer to which to route Customer's orders. Wainwright does not require any client to use any custodian recommended by Wainwright. Clients may engage another custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

#### **15.7. Charles Schwab & Co., Inc**

Wainwright has an agreement with Charles Schwab & Co., Inc (“Schwab”) whereby Schwab makes certain products and services available to Wainwright and its clients. In doing so, Wainwright takes into account the availability of certain products and services and other arrangements provided by this custodian. Wainwright considers the intrinsic value of these products and services when making this recommendation and does not rely solely on the nature, cost or quality of custody and brokerage services provided by this custodian, which creates a potential conflict of interest. See Item 12 – Brokerage Practices for additional information.

In the situation where a client elects to custody their assets at Schwab, Wainwright shall have trade authority to route discretionary or non-discretionary trade orders through a trade execution platform provided by Schwab. Unless otherwise directed, Schwab will select the market/dealer to which to route Customer’s orders. Wainwright does not require any client to use any custodian recommended by Wainwright. Clients may engage another qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion.

#### **15.8. Other Custodians**

Clients may engage a qualified custodian and/or executing broker-dealer that is acceptable to Wainwright at their discretion. Services provided will vary.

## **Item 16 – Investment Discretion**

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### **16.1. Advisory Consulting Services**

Wainwright provides Advisory Consulting Services on a non-discretionary basis whereby the Investment Adviser Representative will make investment recommendations to the client and the client retains the ultimate authority to decide whether to accept, modify or reject the investment recommendation. A non-discretionary account requires prior authorization or instruction from the client to effect each transaction. Wainwright typically plays a key role in communicating the client's instructions to the relevant custodians, administrators and managers to communicate the client's instructions, to arrange, effect or otherwise facilitate the purchase or sale of the recommended investments, including subscriptions in private funds and the allocation of separately managed account assets among managers, and to ensure that each client's investment decisions are appropriately implemented.

### **16.2. Discretionary Management Services**

Discretionary Management Services clients delegate investment discretion to Wainwright through a written Discretionary Management Services agreement. Discretionary authority allows Wainwright to determine which securities to buy or sell<sup>12</sup>, the number of shares to be bought or sold, and the timing of the transaction. Each Discretionary Management Services client agrees to grant Wainwright discretionary trading authority by way of its written Discretionary Management Services agreement which includes, but is not limited to, a description of the terms of Wainwright's Discretionary Management Services, a description of Wainwright's compensation for those services and important disclosures. See *Item 15 – Custody*.

While a Discretionary Management Services client will have the ultimate authority to select an executing broker-dealer for their respective account, Wainwright is available to provide guidance or recommendations with regard to the selection of an executing broker-dealer. Each account's Investment Adviser Representatives and their supervisor is primarily responsible for oversight and review of the Discretionary Management Services account. Wainwright's Investment Policy & Risk Management Committee supplements this oversight through semi-annual client account reviews. See *Item 13 – Review of Accounts* for additional information.

### **16.3. Hedge Fund Advisory Services**

#### **16.1.1. Wainwright Renaissance Fund 1, L.P.**

The Wainwright Renaissance Fund invests substantially all of its assets into a single investment: the Renaissance Institutional Equities Fund LLC Series BB ("RIEF") (see *Item 4.7*).

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<sup>12</sup> The buying or selling activity could include the purchase or sale of a listed option and the initiation of (or the covering of) a short sale.

Wainwright is not affiliated with RIEF or any of RIEF's affiliates. Neither Wainwright nor any of its affiliates or related persons have any involvement in the day-to-day management of the portfolio positions or trading within RIEF. Wainwright serves as the Administrative Manager of the Wainwright Renaissance Fund.

## **Item 17 – Voting Client Securities**

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### **17.1. Advisory Consulting Services**

Without the prior written consent by the CEO and CCO and the authority granted by the Advisory Consulting Services client, Wainwright shall not vote proxies on behalf of its Advisory Consulting Services clients. Advisory Consulting Services clients will retain voting responsibility and will receive proxy materials directly from their custodian(s). These clients may contact Wainwright's CCO with questions about a particular solicitation or ballot. Otherwise, Wainwright shall not take any action or render any advice with respect to the voting of proxies solicited by, or with respect to, the securities held by Advisory Consulting Services clients.

Wainwright shall not vote proxies on behalf of any state regulated pension fund or ERISA client.

### **17.2. Discretionary Management Services**

In limited circumstances, and with the prior written consent of the CEO and CCO and the authority granted by the Discretionary Management Services client, Wainwright will accept authority to vote proxies on behalf of Discretionary Management Services clients. Otherwise, Discretionary Management Services clients will retain voting responsibility and will receive proxy materials directly from their custodian(s). These clients may contact Wainwright's CCO with questions about a particular solicitation or ballot. Otherwise, Wainwright shall not take any action or render any advice with respect to the voting of proxies solicited by, or with respect to, the securities held by Wainwright's Discretionary Management Services clients.

The Firm maintains policies and procedures with respect to those instances where it votes client securities. Additional information is available upon request at 617-531-3100 or [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com).

### **17.3. Hedge Fund Advisory Services**

Wainwright shall not vote proxies on behalf of any fund to which it provides Hedge Fund Advisory Services.

#### **17.4. Class Actions and Other Legal Proceedings**

From time to time, clients may receive notices of class action litigation, bankruptcy proceedings and settlements involving a security held in a client portfolio. These notices provide the client the opportunity, as a shareholder, to participate in the proposed litigation or the settlement of claims. The responsibility and authority for responding to class actions and other legal proceedings rests solely with the registered shareholder or legally appointed agent (*i.e.* custodian) of the client or the client's attorney. The decision regarding whether to file a proof of claim in a class action settlement or other legal proceeding is a question involving legal judgment. Neither Wainwright nor its affiliates provide legal advice or represent or facilitate class action claims or participate in other legal proceedings on behalf of clients. Furthermore, Wainwright and its affiliates do not instruct or give advice as to whether or not a client should participate as a member of a class action lawsuit or participate in other legal proceedings and will not file claims on behalf of its clients. For any client who determines they wish to participate as a member of the class, upon request, Wainwright will provide supporting documentation pertaining to their account that may be helpful and/or required in order for the client to file a proof of claim. Any claims forwarded by a client to Wainwright will not be returned to the client and Wainwright will not submit such claim on behalf of the client. Clients are strongly urged to consult with appropriate legal counsel before evaluating, responding to and participating in any class action litigation or other legal proceedings.

#### **Item 18 – Financial Information**

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Registered investment advisers are required to provide certain financial information or disclosures about their financial condition. Wainwright has no financial commitment that would impair its ability to meet contractual and fiduciary commitments to its clients, and has not been the subject of any bankruptcy proceeding.

# **Wainwright Investment Counsel, LLC**

## **Part 2B of Form ADV**

### **Brochure Supplement**

September 28, 2023

One Boston Place, 41<sup>st</sup> Floor  
Boston, Massachusetts 02108-4494  
Telephone: 617-531-3100  
[www.winvcounsel.com](http://www.winvcounsel.com)

This firm ADV Part 2B Brochure Supplement (the “Brochure Supplement”) provides information about the qualifications and business and other background of individuals that provide investment advice for clients of Wainwright Investment Counsel, LLC (hereinafter, “Wainwright,” or “the Firm” or “we” or “our” or “us”). If you have any questions about the contents of this Brochure Supplement, please contact us at 617-531-3100 or [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com). The information in this Brochure Supplement has not been approved or verified by the United States Securities and Exchange Commission (“SEC”) or by any state securities authority.

Wainwright is registered with the SEC as an investment adviser. Registration as an investment adviser does not imply any level of skill or training. The oral and written communications of an adviser provide you with information that will assist you in determining to hire or retain an adviser.

Additional information about Wainwright is also available on the SEC’s website at <https://adviserinfo.sec.gov/firm/summary/108711>.



# Eric Bertonazzi

## Supervised Person's Name and Business Address

Eric Bertonazzi,  
Chairman of Wainwright Board, Chief Executive Officer and Chief Investment Officer, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Eric Bertonazzi that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

## Educational Background

Clemson University – Ph.D. Candidate in Economics (All But Dissertation)\*

Clemson University – B.S. in Economics (1990)

*\*Mr. Bertonazzi has successfully completed all Ph.D. coursework and related examinations in the field of Economics and as a result has achieved the status of Ph.D. candidate (also referred to as "All But Dissertation").*

## Business Experience for Preceding Five Years

2013 – Present      Chairman, Chief Executive Officer and Chief Investment Officer  
**Wainwright Investment Counsel, LLC**

1999 – 2013      President and Chief Investment Officer  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

## Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Eric Bertonazzi (*Continued*)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Bertonazzi is a registered representative of WFS.

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC (“WCAP”), which is registered as a commodity pool operator registered with the U.S. Commodity Futures Trading Commission and is a member of the National Futures Association. Mr. Bertonazzi is the Manager and a Principal and Associated Person of WCAP.

### **Additional Compensation**

Mr. Bertonazzi currently receives additional compensation in connection with his affiliations with WFS and WCAP.

### **Supervision**

Mr. Bertonazzi has overall responsibility for the investment advice given to clients by advisors employed by Wainwright. His telephone number is 617-531-3100. Mr. Bertonazzi is not directly supervised by any one person; however, the advice he provides to his clients is monitored through regular reviews by Wainwright’s President and Deputy Chief Investment Officer and periodic reviews by Wainwright’s Chief Compliance Officer and/or Chief Risk Officer for adherence to Wainwright’s policies and procedures.

The name and contact information for the persons responsible for supervising Mr. Bertonazzi’s advisory activities: Gustavo Aristizabal, 617-531-3100 and Matthew Seney, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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# Gustavo Aristizabal

## Supervised Person's Name and Business Address

Gustavo Aristizabal  
Member of Wainwright Board, President and Corporate Secretary, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41st Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100,  
Fax: 617-531-3140

This Brochure Supplement provides information about Gustavo Aristizabal that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

## Educational Background

Northeastern University – Economics (All But Dissertation)\*

Universidad EAFIT, Medellín, Colombia – B.S. in Business (1994)

*\*Mr. Aristizabal has successfully completed all Ph.D. coursework and related examinations in the field of Economics at Northeastern University and as a result has achieved the status of "All But Dissertation". It should be noted however that Mr. Aristizabal will likely not defend a dissertation and obtain a Ph.D.*

## Business Experience for Preceding Five Years

2013 – Present      President and Corporate Secretary  
**Wainwright Investment Counsel, LLC**

2013 – 2016      Chief Operating Officer  
**Wainwright Investment Counsel, LLC**

2003 – 2013      Director of Research  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

*{Continued on the following page}*

## **Gustavo Aristizabal (Continued)**

### **Disciplinary Information**

Not applicable.

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Aristizabal is the Chief Executive Officer and the Branch Office Manager of WFS.

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC (“WCAP”), which is registered as a commodity pool operator registered with the U.S. Commodity Futures Trading Commission and is a member of the National Futures Association. Mr. Aristizabal is the Chief Compliance Officer and a Principal of WCAP.

### **Additional Compensation**

Mr. Aristizabal receives additional compensation in connection with his affiliation with WFS and does not currently receive additional compensation in connection with his affiliation with WCAP, although he could receive additional compensation in the future.

### **Supervision**

Wainwright’s Chief Investment Officer and Deputy Chief Investment Officer supervise Mr. Aristizabal and monitor the advice Mr. Aristizabal provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines. His telephone number is 617-531-3100. Furthermore, the advice Mr. Aristizabal provides to his clients is monitored through periodic reviews by Wainwright’s Chief Compliance Officer and/or Chief Risk Officer for adherence to Wainwright’s policies and procedures.

The name and contact information for the persons responsible for supervising Mr. Aristizabal’s advisory activities: Eric Bertonazzi, 617-531-3100 and Matthew Seney, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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## Matthew Seney, CFA

### Supervised Person's Name and Business Address

Matthew Seney, CFA  
Chief Operating Officer, Deputy Chief Investment Officer, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Matthew Seney that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

### Educational Background

F.W. Olin School of Business at Babson College – M.B.A. (2005)

CFA Institute – Chartered Financial Analyst (2001)

Babson College – B.S. in Investments (1999)

### Business Experience for Preceding Five Years

2016 – Present	Chief Operating Officer <b>Wainwright Investment Counsel, LLC</b>
2013 – Present	Deputy Chief Investment Officer <b>Wainwright Investment Counsel, LLC</b>
2006 – 2013	Vice President and Senior Investment Analyst <b>Wainwright Investment Counsel, LLC</b>

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

### Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Matthew Seney, CFA (Continued)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Seney is a registered representative of WFS.

Mr. Seney serves as trustee for a trust which is a client of Wainwright and which stems from a longstanding personal relationship that Mr. Seney has with the client and for which he receives no compensation in his capacity as a trustee. Mr. Seney is a seasonal ski instructor for which he receives nominal compensation as well as discounted season ski passes and program membership for his family.

### **Additional Compensation**

Mr. Seney receives additional compensation in connection with his affiliation with WFS. Mr. Seney also receives compensation in connection with his Other Business Activities unless otherwise noted above.

### **Supervision**

Wainwright’s Chief Investment Officer and President supervise Mr. Seney and monitor the advice Mr. Seney provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines.

The name and contact information for the persons responsible for supervising Mr. Seney’s advisory activities: Eric Bertonazzi, 617-531-3100 and Gustavo Aristizabal, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Chartered Financial Analyst (CFA): Chartered Financial Analysts are licensed by the CFA Institute to use the CFA designation. CFA certification requirements:

- Hold a bachelor’s degree from an accredited institution or have equivalent education or work experience.
- Successful completion of all three exam levels of the CFA Program.
- Have 48 months of acceptable professional work experience in the investment decision making process.
- Fulfill society requirements, which vary by society. Unless you are upgrading from affiliate membership, all societies require two sponsor statements as part of each application; these are submitted online by your sponsors.
- Agree to adhere to and sign the Member’s Agreement, a Professional Conduct Statement, and any additional documentation requested by CFA Institute.

# Jeffrey Fabrizio

## Supervised Person's Name and Business Address

Jeffrey Fabrizio  
Director of Research, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Jeffrey Fabrizio that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

## Educational Background

Bentley College – M.S. in Finance (2000)

Tufts University – M.S. in Engineering (1996)

Wentworth Institute of Technology – B.S. in Engineering Technology (1994)

## Business Experience for Preceding Five Years

2013 – Present      Director of Research  
**Wainwright Investment Counsel, LLC**

2006 – 2013      Vice President and Managing Analyst  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

## Disciplinary Information

Not applicable.

*{Continued on the following page}*

## Jeffrey Fabrizio (*Continued*)

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC ("WFS"), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Fabrizio is a registered representative of WFS.

Mr. Fabrizio periodically engages in outside business activities consisting of property and real estate pursuits that include: rehabilitation of houses, sale of said properties and "handyman" work to be done on weekends; and ownership and maintenance of rental property. Mr. Fabrizio is also periodically compensated for playing with a musical band. Mr. Fabrizio participates as a volunteer committee member of the Permanent Building Committee for the Town of Norwell, MA. The committee is tasked primarily with overseeing the restoration and/or renovation of town buildings. All of Mr. Fabrizio's outside business activities take place outside of market hours.

### **Additional Compensation**

Mr. Fabrizio receives additional compensation in connection with his affiliation with WFS. Mr. Fabrizio receives additional compensation in connection with his Other Business Activities unless otherwise noted above.

### **Supervision**

Wainwright's President and Deputy Chief Investment Officer supervise Mr. Fabrizio and monitor the advice Mr. Fabrizio provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel's stated guidelines.

The name and contact information for the person responsible for supervising Mr. Fabrizio's advisory activities: Gustavo Aristizabal, 617-531-3100 and Matthew Seney, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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## Donald (Don) Ross

### Supervised Person's Name and Business Address

Donald Ross  
Managing Director, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Donald Ross that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

### Educational Background

University of Pennsylvania, Wharton School – M.B.A. (1972)

University of North Carolina at Chapel Hill – B.A. in History (1970)

### Business Experience for Preceding Five Years

1999 – Present      Managing Director  
                                         **Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

### Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Donald (Don) Ross (*Continued*)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Ross is a registered representative of WFS.

Mr. Ross maintains outside business activities with various organizations, all of which are performed outside of market hours. These include as the Chairman of the Board of Directors for Stuart Land & Cattle Co of Virginia, which is a client of Wainwright, and for which Mr. Ross is compensated as a director. Mr. Ross is the trustee emeritus and former Chairman of the Board of Trustees of the Newport Preservation Society, RI, and is Chairman of their Investment Committee. Mr. Ross serves as trustee/co-trustee for five trusts, which are clients of Wainwright, all of which stem from longstanding personal relationships. Mr. Ross is compensated as a trustee/co-trustee for three appointments and does not receive compensation for two trustee appointments.

### **Additional Compensation**

Mr. Ross does not currently receive additional compensation in connection with his affiliation with WFS although he could receive additional compensation in the future. Mr. Ross receives additional compensation in connection with his Other Business Activities unless otherwise noted above.

### **Supervision**

Wainwright’s President and Deputy Chief Investment Officer supervise Mr. Ross and monitor the advice Mr. Ross provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines.

The name and contact information for the person responsible for supervising Mr. Ross’s advisory activities: Gustavo Aristizabal, 617-531-3100 and Matthew Seney, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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## Michael (Mike) F. Dwyer

### Supervised Person's Name and Business Address

Michael F. Dwyer  
Senior Vice President, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Michael Dwyer that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

### Educational Background

Providence College – B.S. in Business Management (1977)

### Business Experience for Preceding Five Years

1999 – Present      Senior Vice President  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

### Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Michael (Mike) F. Dwyer (*Continued*)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Dwyer is a registered representative of WFS.

### **Additional Compensation**

Mr. Dwyer receives additional compensation in connection with his affiliation with WFS.

### **Supervision**

Wainwright’s Deputy Chief Investment Officer and President supervise Mr. Dwyer and monitor the advice Mr. Dwyer provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines.

The name and contact information for the persons responsible for supervising Mr. Dwyer’s advisory activities: Matthew Seney, 617-531-3100 and Gustavo Aristizabal, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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## Salim M. Khanachet

### Supervised Person's Name and Business Address

Salim M. Khanachet  
Vice President, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Salim M. Khanachet that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

### Educational Background

Boston College – B.A. in Philosophy and Economics (2006)

### Business Experience for Preceding Five Years

2013 – Present      Vice President  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

### Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Salim M. Khanachet (*Continued*)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Khanachet is a registered representative of WFS.

Mr. Khanachet is a member of the Alumni Counsel Executive Committee for the Buckingham Browne and Nichols School. Mr. Khanachet is co-author and co-owner of a screenplay for which he and his partner are identifying potential producers. All of Mr. Khanachet’s outside business activities take place outside of market hours.

### **Additional Compensation**

Mr. Khanachet does not currently receive additional compensation in connection with his affiliation with WFS although he could receive additional compensation in the future. Mr. Khanachet does not currently receive additional compensation in connection with his Other Business Activities.

### **Supervision**

Wainwright’s Chief Investment Officer and President supervise and monitor the advice Mr. Khanachet provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines.

The name and contact information for the persons responsible for supervising Mr. Khanachet’s advisory activities: Eric Bertonazzi, 617-531-3100 and Gustavo Aristizabal, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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## Stephen Barrett

### Supervised Person's Name and Business Address

Stephen Barrett  
Member of Wainwright Board, Investment Advisor  
Wainwright Investment Counsel, LLC  
One Boston Place, 41<sup>st</sup> Floor  
Boston, Ma 02108-4494  
Phone: 617-531-3100  
Fax: 617-531-3140

This Brochure Supplement provides information about Stephen Barrett that supplements the Wainwright Brochure. You should have received a copy of that Brochure. Please contact [Compliance@winvcounsel.com](mailto:Compliance@winvcounsel.com) if you did not receive Wainwright's Brochure or if you have any questions about the contents of this Supplement.

### Educational Background

The College of William & Mary – B.A. in Economics and Fine Arts (1963)

### Business Experience for Preceding Five Years

2005–Present      Investment Advisor Representative  
**Wainwright Investment Counsel, LLC**

Although Wainwright does not have specific educational or business requirements for its personnel providing investment advice to clients, it generally requires an undergraduate college degree in business, accounting, finance or related areas, or equivalent investment advisory experience.

### Disciplinary Information

Not applicable.

*{Continued on the following page}*

## **Stephen Barrett (*Continued*)**

### **Other Business Activities**

Wainwright has a wholly-owned subsidiary, WFS, LLC (“WFS”), which is a broker-dealer registered with the SEC and a member of FINRA and SIPC. Mr. Barrett is a registered representative of WFS.

Wainwright has a wholly-owned subsidiary, Wainwright Capital Partners, LLC (“WCAP”), which is registered as a commodity pool operator registered with the U.S. Commodity Futures Trading Commission and is a member of the National Futures Association. Mr. Barrett is a Principal of WCAP.

### **Additional Compensation**

Mr. Barrett does not currently receive additional compensation in connection with his affiliation with WFS or WCAP although he could receive additional compensation in the future.

### **Supervision**

Wainwright’s Chief Investment Officer supervises Mr. Barrett and monitors the advice Mr. Barrett provides to his clients through regular reviews of client accounts for adherence to Wainwright Investment Counsel’s stated guidelines.

The name and contact information for the person responsible for supervising Mr. Barrett’s advisory activities: Eric Bertonazzi, 617-531-3100.

### **Requirement for State-Registered Advisers**

Not applicable.

### **Professional Credentials**

Not applicable.

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**MWRA Employees' Retirement System**  
Proposal for Investment Consultant Services  
Submitted by Wainwright Investment Counsel, LLC  
December 2023

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**Appendix 2**



*Portfolio Update Presentation*  
*Prepared For*

# **Sample Retirement System**

*Submitted by*

**Wainwright Investment Counsel, LLC**  
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Boston, MA 02108

On

**August 2023**

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# WAINWRIGHT INVESTMENT COUNSEL, LLC FINANCIAL MARKETS HIGHLIGHTS

Second Quarter 2023

The artificial intelligence (“AI”) wave washed over investors during the quarter, and the companies seemingly best positioned to benefit performed remarkably. TV personality Jim Cramer coined this group of Alphabet, Amazon, Apple, Meta, Microsoft, Nvidia and Tesla the Magnificent Seven. With quarterly returns ranging from 16.3% (Alphabet) to 52.3% (Nvidia), they drove the tech-heavy NASDAQ 100 index to a 15.4% quarterly gain, bringing its six-month return to 39.4%. At quarter-end the Magnificent Seven constituted ~28% of the S&P 500 index, were its largest seven holdings, and vaulted the index to an 8.7% quarterly gain.

This narrow market leadership is concerning to some, a lack of “breadth” portending trouble underneath the market’s surface. Perhaps. It could also come to pass that the stocks representing the remaining ~70% of the S&P 500 take the reins and drive the market higher. The healthcare, consumer staples, energy, financials, real estate and utility sectors made up ~40% of the S&P 500 as of quarter-end, and on average they were down for the first half of 2023. If those sectors begin to exhibit signs of life, the stock market could certainly continue to exhibit strong momentum, bad “breadth” and all.

To be clear, not only mega-sized technology company stocks were up during the quarter. Small company stocks returned 5.2%, mid-sized company stocks 4.9%, international stocks 3.0% and emerging market stocks 0.9%. Growth stocks tended to outperform value stocks, but the latter were up nicely. Sector wise, technology, communications and consumer discretionary stocks

performed best, while utility, energy and consumer staples stocks were flat to down.

Very high quality US Treasury and Agency bonds were marginally down during the quarter, while corporate bonds were generally up. The Federal Reserve (“Fed”) raised the target range for its short-term fed funds rate to 5.0% to 5.25% at its May confab, but paused on its rate-hiking cycle at its June meeting. The Fed’s continued “tightening” of monetary policy, using higher rates to induce savings and inhibit credit-based investment, has successfully slowed inflation, though it remains at elevated levels. The May reading on consumer prices was +4% for the trailing 12 months, compared to +9% one year ago. Progress remains to get to the Fed’s inflation target of ~2%, and thus the median expectation amongst the Fed’s Open Market Committee participants is for two more rate increases this year, to a range of 5.50% to 5.75% for fed funds by year-end. Nonetheless, with yields on short-term US Treasury bills about 5% and inflation about 4%, inflation-adjusted rates (*i.e.*, “real” interest rates) are about 1%, dramatically improved from this time last year.

You have to break a few eggs to make an omelet, the saying goes; the Fed’s unprecedented interest rate hiking cycle took down several banks that poorly managed their interest rate risk, and there remains significant uncertainty in the commercial real estate market. Many loans are so-called “balloon” structures that inherently assume payback via refinancing at term end, typically five years. A rolling loan gathers no loss, real estate

**Selected Index Returns (%) as of June 30, 2023 (Source: Morningstar Direct). 3, 5, 10 year returns are annualized.**

	<u>Apr.</u>	<u>May</u>	<u>Jun.</u>	<u>QTR</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
<b>S&amp;P 500</b>	1.56	0.43	6.61	8.74	16.89	19.59	14.61	12.31	12.86
<b>S&amp;P 400</b>	-0.78	-3.19	9.16	4.85	8.84	17.61	15.44	7.79	10.21
<b>Russell 2000</b>	-1.80	-0.92	8.13	5.21	8.09	12.31	10.83	4.21	8.26
<b>Wilshire U.S. REIT Index</b>	0.84	-2.83	5.43	3.31	6.74	-0.31	8.55	4.40	6.39
<b>MSCI EAFE</b>	2.82	-4.23	4.55	2.95	11.67	18.77	8.94	4.39	5.41
<b>MSCI Emerging Markets</b>	-1.13	-1.68	3.80	0.90	4.89	1.75	2.32	0.93	2.95
<b>Bloomberg U.S. Aggregate Bond</b>	0.61	-1.09	-0.36	-0.84	2.09	-0.94	-3.97	0.77	1.52
<b>Bloomberg High Yield</b>	1.00	-0.92	1.67	1.75	5.38	9.06	3.14	3.36	4.43

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# WAINWRIGHT INVESTMENT COUNSEL, LLC FINANCIAL MARKETS HIGHLIGHTS

Second Quarter 2023

bankers quip, but that may simply be untenable given the state of lower quality office, suburban office and retail space. The bulk of commercial real estate loans reside on regional bank balance sheets, so this story is unfolding. As for residential real estate, the trend has been remarkably resilient considering that mortgage rates have nearly tripled since the lows of January 2021.

On the economic front, Q1 GDP came in at 2.0% and unemployment remains historically low at 3.7%. Optimists will point to the Atlanta Fed's "GDPNow" estimate forecasting ~2.0% Q2 growth for validation. Pessimists will cite today's inverted yield curve, with longer dated bonds yielding less than short-dated maturities, as a reliable predictor of storm clouds on the horizon. Our advice: follow corporate earnings, which are trending favorably.

Wainwright wishes you a happy summer season. For those looking for some beach reading, might we suggest Morgan Housel's The Psychology of Money. It reads, "Doing well with money isn't necessarily about what you know. It's about how you behave. And behavior is hard to teach, even to really smart people." The book is plain spoken, easy to read, and particularly beneficial to younger people, in our view.

**Selected Index Returns (%) as of June 30, 2023 (Source: Morningstar Direct). 3, 5, 10 year returns are annualized.**

	<u>Apr.</u>	<u>May</u>	<u>Jun.</u>	<u>QTR</u>	<u>YTD</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
<b>S&amp;P 500</b>	1.56	0.43	6.61	8.74	16.89	19.59	14.61	12.31	12.86
<b>S&amp;P 400</b>	-0.78	-3.19	9.16	4.85	8.84	17.61	15.44	7.79	10.21
<b>Russell 2000</b>	-1.80	-0.92	8.13	5.21	8.09	12.31	10.83	4.21	8.26
<b>Wilshire U.S. REIT Index</b>	0.84	-2.83	5.43	3.31	6.74	-0.31	8.55	4.40	6.39
<b>MSCI EAFE</b>	2.82	-4.23	4.55	2.95	11.67	18.77	8.94	4.39	5.41
<b>MSCI Emerging Markets</b>	-1.13	-1.68	3.80	0.90	4.89	1.75	2.32	0.93	2.95
<b>Bloomberg U.S. Aggregate Bond</b>	0.61	-1.09	-0.36	-0.84	2.09	-0.94	-3.97	0.77	1.52
<b>Bloomberg High Yield</b>	1.00	-0.92	1.67	1.75	5.38	9.06	3.14	3.36	4.43

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# Selected Indices

As of 6/30/2023

## Trailing Period Returns

Index Name	June	QTD	YTD	2022	One Year	Three Years	Five Years	Ten Years
<b>Large Cap Indices</b>								
S&P 500	6.61%	8.74%	16.89%	-18.11%	19.59%	14.60%	12.31%	12.86%
Russell 1000 Value	6.64%	4.07%	5.12%	-7.54%	11.54%	14.30%	8.11%	9.22%
Russell 1000 Growth	6.84%	12.81%	29.02%	-29.14%	27.11%	13.73%	15.14%	15.74%
<b>Mid Cap Indices</b>								
Russell Mid Cap	8.34%	4.76%	9.01%	-17.32%	14.92%	12.50%	8.46%	10.32%
Russell Mid Cap Value	8.67%	3.86%	5.23%	-12.03%	10.50%	15.04%	6.84%	9.03%
Russell Mid Cap Growth	7.73%	6.23%	15.94%	-26.72%	23.13%	7.63%	9.71%	11.53%
Russell 2500 Growth	7.89%	6.41%	13.38%	-26.21%	18.58%	6.56%	7.00%	10.38%
<b>Small Cap Indices</b>								
Russell 2000	8.13%	5.21%	8.09%	-20.44%	12.31%	10.82%	4.21%	8.26%
Russell 2000 Value	7.94%	3.18%	2.50%	-14.48%	6.01%	15.43%	3.54%	7.29%
Russell 2000 Growth	8.29%	7.05%	13.55%	-26.36%	18.53%	6.10%	4.22%	8.83%
<b>International Equity Indices</b>								
MSCI EAFE	4.55%	2.95%	11.67%	-14.45%	18.77%	8.93%	4.39%	5.41%
MSCI EM	3.80%	0.90%	4.89%	-20.09%	1.75%	2.32%	0.93%	2.95%
<b>Fixed Income Indices</b>								
Bloomberg US Agg Bond	-0.36%	-0.84%	2.09%	-13.01%	-0.94%	-3.96%	0.77%	1.52%
Bloomberg US Corp High Yield	1.67%	1.75%	5.38%	-11.19%	9.06%	3.13%	3.36%	4.43%
Bloomberg US Govt 1-3 Yr	-0.50%	-0.58%	1.00%	-3.81%	0.17%	-1.11%	0.93%	0.76%
<b>Hedge Fund Indices</b>								
HFRI Fund of Funds Comp	1.16%	1.52%	2.27%	-5.31%	3.67%	5.04%	3.32%	3.39%
HFRI Equity Hedge	2.94%	2.97%	5.55%	-10.13%	7.49%	8.91%	5.44%	5.64%
<b>Other Indices</b>								
S&P North American Nat Res	7.37%	-0.12%	-2.92%	34.07%	12.33%	26.04%	5.40%	3.55%
Bloomberg Commodity	4.04%	-2.56%	-7.79%	16.09%	-9.61%	17.82%	4.73%	-0.99%
Alerian MLP	4.21%	5.45%	9.77%	30.92%	30.60%	30.73%	6.17%	0.91%

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# Selected Indices

## Annual Returns 2013-2022

Index Name	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Large Cap Indices</b>										
S&P 500	-18.11%	28.71%	18.40%	31.49%	-4.39%	21.84%	11.94%	1.40%	13.69%	32.39%
Russell 1000 Value	-7.54%	25.16%	2.80%	26.54%	-8.27%	13.66%	17.34%	-3.83%	13.45%	32.53%
Russell 1000 Growth	-29.14%	27.60%	38.49%	36.39%	-1.51%	30.21%	7.08%	5.67%	13.05%	33.48%
<b>Mid Cap Indices</b>										
Russell Mid Cap	-17.32%	22.58%	17.10%	30.54%	-9.06%	18.52%	13.80%	-2.44%	13.22%	34.76%
Russell Mid Cap Value	-12.03%	28.34%	4.96%	27.06%	-12.29%	13.34%	20.00%	-4.78%	14.75%	33.46%
Russell Mid Cap Growth	-26.72%	12.73%	35.59%	35.47%	-4.75%	25.27%	7.33%	-0.20%	11.90%	35.74%
Russell 2500 Growth	-26.21%	5.04%	40.47%	32.65%	-7.47%	24.46%	9.73%	-0.19%	7.05%	40.65%
<b>Small Cap Indices</b>										
Russell 2000	-20.44%	14.82%	19.96%	25.52%	-11.03%	14.66%	21.29%	-4.40%	4.89%	38.82%
Russell 2000 Value	-14.48%	28.27%	4.63%	22.39%	-12.86%	7.84%	31.74%	-7.47%	4.22%	34.52%
Russell 2000 Growth	-26.36%	2.83%	34.63%	28.48%	-9.31%	22.17%	11.32%	-1.38%	5.60%	43.30%
<b>International Equity Indices</b>										
MSCI EAFE	-14.45%	11.26%	7.82%	22.01%	-13.79%	25.03%	1.00%	-0.81%	-4.90%	22.78%
MSCI EM	-20.09%	-2.54%	18.31%	18.44%	-14.58%	37.28%	11.19%	-14.92%	-2.19%	-2.60%
<b>Fixed Income Indices</b>										
Bloomberg US Agg Bond	-13.01%	-1.54%	7.51%	8.72%	0.01%	3.54%	2.59%	0.60%	5.97%	-2.02%
Bloomberg US Corp High Yield	-11.19%	5.28%	7.11%	14.32%	-2.08%	7.50%	17.13%	-4.47%	2.45%	7.44%
Bloomberg US Govt 1-3 Yr	-3.81%	-0.60%	3.14%	3.59%	1.58%	0.45%	0.87%	0.57%	0.64%	0.37%
<b>Hedge Fund Indices</b>										
HFR1 Fund of Funds Comp	-5.31%	6.17%	10.88%	8.39%	-4.02%	7.77%	0.51%	-0.27%	3.37%	8.96%
HFR1 Equity Hedge	-10.13%	11.67%	17.89%	13.71%	-7.14%	13.29%	5.47%	-0.97%	1.81%	14.28%
<b>Other Indices</b>										
S&P North American Nat Res	34.07%	39.94%	-19.01%	17.63%	-21.07%	1.23%	30.87%	-24.28%	-9.77%	16.49%
Bloomberg Commodity	16.09%	27.11%	-3.12%	7.69%	-11.25%	1.70%	11.77%	-24.66%	-17.01%	-9.52%
Alerian MLP	30.92%	40.17%	-28.69%	6.56%	-12.42%	-6.52%	18.31%	-32.59%	4.80%	27.58%

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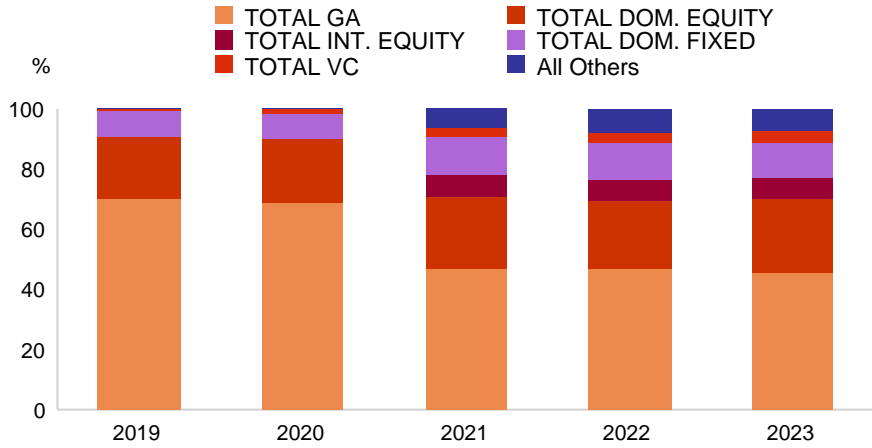


Sample Retirement System

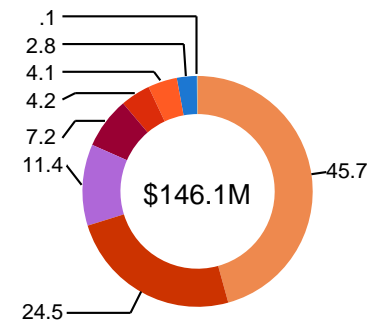
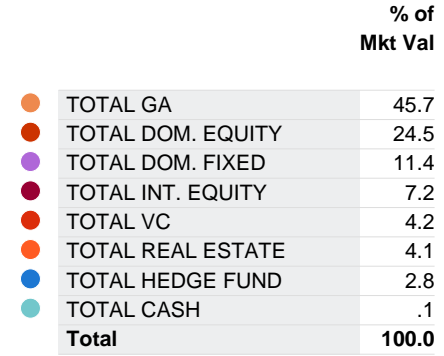
# Your Performance Statement

Investment activity through 06/30/2023

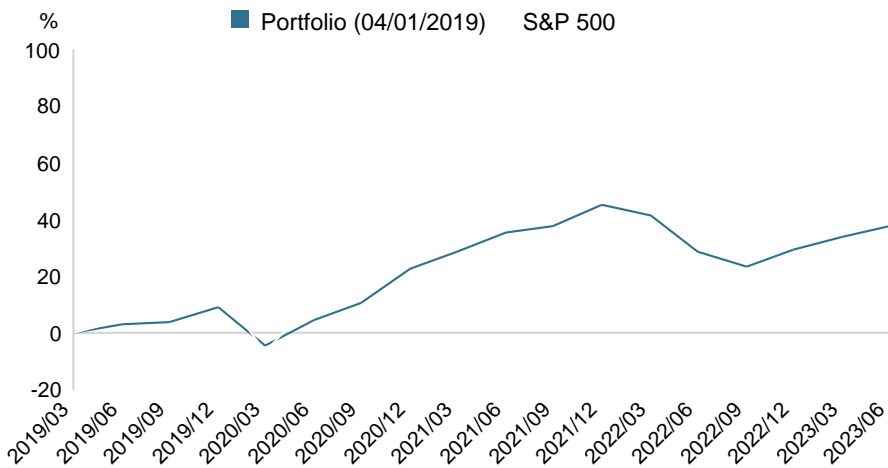
Performance



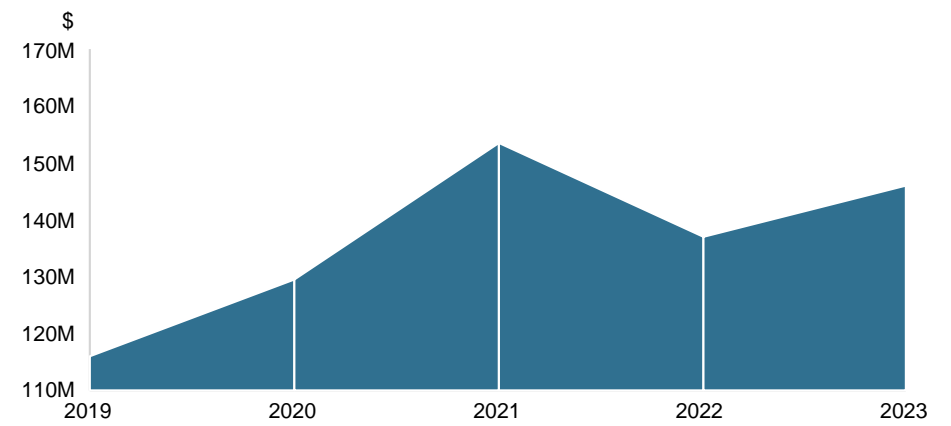
Asset Allocation



Cumulative Return-Gross



Value Added Over Time



# Summary of Performance Gross

Sample Retirement System

June 30, 2023

Managed Since: April 01, 2019

## Summary of Performance

	Market Value	1 Month	3 Months	Year to Date (6 Months)	1 Year	3 Years
Total Fund	146,082,696	3.24	2.83	6.51	7.43	9.64
TOTAL GENERAL ALLOCATION	66,737,091	2.57	2.76	6.55	5.71	9.61
PRIM GENERAL ALLOCATION FUND	66,737,091	2.57	2.76	6.55	5.71	9.61
PRIM TOTAL CORE		2.39	2.66	6.64	8.97	7.72
TOTAL EQUITY	46,296,245	6.70	4.68	9.75	15.69	13.94
TOTAL DOMESTIC EQUITY	35,723,117	7.39	4.95	8.53	14.15	13.64
RHUMBLINE RUSSELL 1000 PL FD	12,100,373	6.75	8.58	16.69	19.40	14.14
Russell 1000		6.75	8.58	16.68	19.36	14.09
LMCG MIDCAP CORE	12,626,615	8.48	4.91	6.43	11.85	13.84
Russell Midcap		8.34	4.76	9.01	14.92	12.50
S&P Midcap 400		9.16	4.85	8.84	17.61	15.44
ARISTOTLE SMALL CAP EQ	9,878,865	7.19	1.06	2.01	10.71	12.59
Russell 2000		8.13	5.21	8.09	12.31	10.82
LORD ABBETT SM CAP EQ II CL R	1,117,264	4.10	3.16	12.01		
Russell 2000 Growth		8.29	7.05	13.55	18.53	6.10
TOTAL INTERNATIONAL EQUITY	10,573,127	4.42	3.78	14.11	21.19	
MFS INSTL INTL EQUITY FUND	10,573,127	4.42	3.78	14.11	21.19	
MSCI EAFE		4.55	2.95	11.67	18.77	8.93
TOTAL DOMESTIC FIXED INCOME	16,646,246	.24	-.12	2.72	1.34	-3.66
RHUMBLINE CORE BOND PL IND FD	11,922,669	-.35	-.71	2.04	-.90	-4.04
Barclays Capital US Aggregate		-.36	-.84	2.09	-.94	-3.96
LORD ABBETT HIGH YIELD	4,723,577	1.75	1.40	4.50	7.49	
Barclays US Corporate High Yield Bond		1.67	1.75	5.38	9.06	3.14
TOTAL REAL ESTATE	6,017,874	-1.00	-.63	-2.15	-3.13	
NCREIF Property		-1.98	-1.98	-3.76	-6.60	5.67
PRIM CORE REAL ESTATE FUND	6,017,874	-1.00	-.63	-2.15	-3.13	
TOTAL VENTURE CAP	6,148,992	.05	2.28	3.16	-1.30	34.64
PRIM PRIVATE EQ VINT YR 2019	5,097,827	.00	2.33	3.19	-1.38	34.64
PRIM PRIVATE EQ VINT YR 2022	1,051,165	.31	2.08	3.04	-.18	
Cambridge Associates US Private Equity		.00	.00	2.69	3.34	19.88

Summary of Performance

	Market Value	1 Month	3 Months	Year to Date (6 Months)	1 Year	3 Years
TOTAL HEDGE FUND	4,122,067	1.25	1.85	3.55	4.39	
HFRI Fund of Funds Composite Index		1.19	1.52	2.29	3.68	4.97
PRIM HEDGE FUNDS	4,122,067	1.25	1.85	3.55	4.39	
TOTAL CASH	114,181	.06	.29	.51	.81	.31
CUSTODY MONEY MARKET	11,668	.00	.01	.03	.04	.03
PRIM CASH FUND	102,513	.12	.67	1.25	1.94	.81
FTSE 3 Month T-bill		.43	1.25	2.39	3.75	1.33

# Summary of Performance Net

Sample Retirement System

June 30, 2023

Managed Since: April 01, 2019

## Summary of Performance

	Market Value	1 Month	Year to Date	1 Year	3 Years	Inception to Date	Sector Inception
Net of Fees	146,082,696	3.24	6.49	7.39	9.59	7.82	04/01/2019
TOTAL GENERAL ALLOCATION NET	66,737,091	2.57	6.55	5.71	9.61	7.99	04/01/2019
PRIM GENERAL ALLOCATION FUND NET	66,737,091	2.57	6.55	5.71	9.37	7.83	04/01/2019
PRIM TOTAL CORE		2.39	6.64	8.97	7.72	7.13	04/01/2019
TOTAL EQUITY NET	46,296,245	6.70	9.75	15.68	13.92	9.50	04/01/2019
TOTAL DOMESTIC EQUITY NET	35,723,117	7.39	8.52	14.13	13.62	9.29	04/01/2019
RHUMBLINE RUSSELL 1000 PL FD	12,100,373	6.75	16.66	19.34	14.08	12.41	04/01/2019
Russell 1000		6.75	16.68	14.14	12.40	11.55	04/01/2019
LMCG MIDCAP CORE NET	12,626,615	8.48	6.43	11.85	13.84	9.54	04/01/2019
Russell Midcap		8.34	9.01	9.42	10.67	7.87	04/01/2019
S&P Midcap 400		9.16	8.84	11.82	13.51	8.35	04/01/2019
ARISTOTLE SMALL CAP EQ NET	9,878,865	7.19	2.01	10.71	12.59	5.89	04/01/2019
Russell 2000		8.13	8.09	6.29	8.81	4.95	04/01/2019
LORD ABBETT SM CAP EQ II CL R NET	1,117,264	4.10	12.01			12.01	01/01/2023
Russell 2000 Growth		8.29	13.55			13.55	01/01/2023
TOTAL INTERNATIONAL EQUITY NET	10,573,127	4.42	14.11	21.19		4.00	04/01/2021
MFS INSTL INTL EQUITY FUND NET	10,573,127	4.42	14.11	21.19		4.00	04/01/2021
MSCI EAFE		4.55	11.67	18.24		1.00	04/01/2021
TOTAL DOMESTIC FIXED INCOME NET	16,646,246	.24	2.70	1.31	-3.70	.15	04/01/2019
RHUMBLINE CORE BOND PL IND FD NET	11,922,669	-.35	2.01	-.95	-4.09	-.13	04/01/2019
Barclays Capital US Aggregate		-.36	2.09	-1.45	-4.13	-.29	04/01/2019
LORD ABBETT HIGH YIELD NET	4,723,577	1.75	4.50	7.49		-2.44	04/01/2021
Barclays US Corporate High Yield Bond		1.67	5.38	7.44		-1.69	04/01/2021
TOTAL REAL ESTATE NET	6,017,874	-1.00	-2.15	-3.13		9.73	07/01/2021
NCREIF Property		-1.98	-3.76	-6.60		4.83	07/01/2021
PRIM CORE REAL ESTATE FUND	6,017,874	-1.00	-2.15	-3.13		9.73	07/01/2021
TOTAL VENTURE CAP NET	6,148,992	.05	3.16	-1.30	34.64	20.70	04/01/2019
PRIM PRIVATE EQ VINT YR 2019 NET	5,097,827	.00	3.19	-1.38	34.64	20.69	04/01/2019
PRIM PRIVATE EQ VINT YR 2022 NET	1,051,165	.31	3.04	-.18		-4.31	03/01/2022
Cambridge Associates US Private Equity		.00	2.69	3.34	19.88	17.27	04/01/2019

Summary of Performance

	Market Value	1 Month	Year to Date	1 Year	3 Years	Inception to Date	Sector Inception
TOTAL HEDGE FUND NET	4,122,067	1.25	3.55	4.39		1.51	07/01/2021
HFRI Fund of Funds Composite Index		1.19	2.29	3.68		-1.12	07/01/2021
PRIM HEDGE FUNDS	4,122,067	1.25	3.55	4.39		1.51	07/01/2021
TOTAL CASH NET	114,181	.06	.51	.81	.31	.99	04/01/2019
CUSTODY MONEY MARKET NET	11,668	.00	.03	.04	.03	.29	04/01/2019
PRIM CASH FUND NET	102,513	.12	1.25	1.94	.81	1.93	04/01/2019
FTSE 3 Month T-bill		.43	2.39	3.74	1.32	1.44	04/01/2019

Portfolio Inception: 04/01/2019

### Summary of Private Equity Commitments and Drawdowns

*All data shown below was provided by the Pension Reserves Investment Management Board unless otherwise noted.*

	Committed Capital [1]	Undrawn Capital	Drawn Capital, \$	Drawn Capital, % [2]	Market Value	Distributions	Total Value	Gain/ Loss [3]	Total Value To Paid-In Capital [4]
PRIM Vintage Year 2019	\$4,712,828	\$947,396	\$3,765,432	79.90%	\$5,097,827	\$1,114,279	\$6,212,106	\$2,446,674	1.65
PRIM Vintage Year 2022	\$3,637,884	\$2,618,333	\$1,019,551	28.03%	\$1,051,165	(\$674)	\$1,050,491	\$30,940	1.03
<b>Totals</b>	<b>\$8,350,712</b>	<b>\$3,565,729</b>	<b>\$4,784,983</b>	<b>57.30%</b>	<b>\$6,148,992</b>	<b>\$1,113,605</b>	<b>\$7,262,597</b>	<b>\$2,477,614</b>	

#### NOTES

[1] Committed Capital represents the adjusted commitment as provided by the PRIM Board.

The original commitments were as follows: PRIM Alternative Investments 2019: \$5,000,000; PRIM Alternative Investments 2022: \$5,000,000.

[2] As a percentage of commitment.

[3] Gain/loss on drawn capital only.

[4] Total Value to Paid-In Capital (TVPI) was calculated by Wainwright Investment Counsel, LLC. Please note, TVPI is calculated as the Total Value divided by Drawn Capital.

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## DISCLAIMER

The information contained herein is provided for informational and discussion purposes only and is not, and may not be relied on, in any manner, as legal, tax, accounting or regulatory advice nor does this constitute an offer to sell or a solicitation of an offer to buy any securities and may not be used or relied upon in connection with any offer or sale of securities.

Wainwright makes no guarantee that your investment objectives will be achieved. The historical performance results shown may reflect actions taken other than those recommended by Wainwright. You recognize that any recommendations provided by Wainwright involve Wainwright's judgment and that Wainwright's views regarding the economy, the securities markets or other specialized areas, like all predictions of future events, cannot be guaranteed to be accurate. The information herein reflects prevailing market conditions and Wainwright's judgment as of this date, all of which are subject to change without notice.

Any financial transaction involves a variety of potential significant risks and issues. Before entering into any financial transaction, you should ensure that you fully understand the terms, have evaluated the risks and have determined that the transaction is appropriate for you in all respects.

Additional information is available upon request.





**MWRA Employees' Retirement System**  
Proposal for Investment Consultant Services  
Submitted by Wainwright Investment Counsel, LLC  
December 2023

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**Appendix 3**



# Vendor Contact Information

Please print or type all entries in blue or black ink.

Fund Name: Wainwright Investment Counsel, LLC ( Investment Consultant )

Name of Retirement Board: MWRA Employees' Retirement Board

## 1. Company/Entity Information:

Company/Entity Name: Wainwright Investment Counsel, LLC

CRD# (if Applicable): 108711

Address: One Boston Place

City: Boston

State: MA

Zip: 02108

Country: US

Phone: 617-531-3100

Fax: 617-531-3140

URL: <https://www.winvcounsel.com>

## 2. Contact Information:

Name, First: Michael

Last: Dwyer

Suffix: Mr.

Title: Senior Vice President

Department:

Phone: 617-531-3100

Fax: 617-531-3140

Email: [mdwyer@winvcounsel.com](mailto:mdwyer@winvcounsel.com)

## 3. Contact Address:

Same as Company Address?  No  Yes

Address:

City:

State:

Zip:

Country:



# Vendor Certification

In all circumstances Massachusetts Law (Chapter 32, Section 23B) requires service providers to complete this form and submit it to the retirement board. The board must file the completed form with PERAC. In the case of investment managers upon acknowledgement from PERAC that this and other filings have been received, the board may retain the service provider.

Please print or type all entries in blue or black ink.

## 1. Retirement Board

Retirement Board to which proposal is being submitted: MWRA Employees' Retirement Board

## 2. Service Provider

Business Name: Wainwright Investment Counsel, LLC

Address: One Boston Place

City: Boston

State: MA

Zip: 02108

Services Being Proposed: Investment Consulting Services

Dates of Services (MM/DD/YYYY)

From: 12/01/23

To: 12/31/29

## 3. Individual Submitting Proposal

Name, First: Michael

Last: Dwyer

Suffix: Mr.

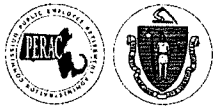
Title: Senior Vice President

The undersigned certifies that this proposal has been made and submitted in good faith and without collusion or fraud with any person. As used in this certification, the word "person" shall mean a natural person, business, partnership, corporation, union, committee, club or other organization, entity or group of individuals.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

December 1, 2023



# Placement Agent Statement For Investment Managers

Please print or type all entries in blue or black ink.

PERAC Guidelines require investment managers to submit information to the retirement board regarding relationships with placement agents. For purposes of this process, the following definitions apply:

**“Manager”**, investment partners with whom retirement boards do business, including, but not limited to, general partners, investment managers, sponsors of hedge funds, private equity funds, real estate funds, infrastructure funds and any entity which a retirement board delegates discretionary investment authority.

**“Placement agent”**, any person or entity hired, employed, engaged, retained by or acting on behalf of or otherwise receiving remuneration from a manager or another placement agent as a finder, solicitor, marketer, consultant, broker or other intermediary in relation to the investment of assets of Massachusetts public pension systems, including any person or entity which provides proactive consultant services concerning the changing political and policy environment in New England and nationally as it relates to retirement plans, notwithstanding the description of such services as informational consulting services only not involving the referral of investment advisory services, provided, however, this policy shall not apply with respect to in house employees of investment managers.

Name of Retirement Board: MWRA Employees' Retirement Board

Name of Investment Manager: Wainwright Investment Counsel, LLC

## Reason for Submission:

- Responding to an RFP or solicitation
- Amendment to an existing agreement
- Discussion other than informal, general discussion that could lead to a response to an RFP or amendment to an existing agreement

## PENALTIES

PERAC shall withhold regulatory approvals and acknowledgments if:

- a. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent and/or entity acting as a placement agent that the manager has used is not registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority or, if appropriate, the Commodity Futures Trading Commission; and,
- b. The placement agent and/or entity acting as a placement agent information disclosure or other information reveals that the placement agent does not possess three years experience in the investment field.

PERAC shall prohibit any manager or placement agent from soliciting new investments from any board for a period to be determined by the Commission after the manager or placement agent has committed a material violation of this regulation.

In addition, under the mandatory provisions of contracts the following remedies are available to the retirement board if “the manager knew or should have known of any material inaccuracy or omission in the placement agent information disclosure or any other violation” of the Placement Agent Policy:

- a. The reimbursement of any management or advisory fees paid by the board for the prior two years or an amount equal to the amounts paid or promised to be paid to the placement agent as a result of the board investment whichever is greater.
- b. The authority to immediately terminate the investment management contract or other agreement with the manager without penalty, to withdraw without penalty from a limited partnership, limited liability company or other investment vehicle, or to cease making further capital contributions (and paying any fees on these recalled commitments) to the limited partnership, limited liability company or other investment vehicle without penalty.

**COMPENSATION**



9191034

(1) Has the Investment Manager or any, employee, agent or affiliate compensated or agreed to compensate, directly or indirectly any person or entity to act as a placement agent in connection with investment by the Massachusetts public pension systems?

No  Yes

(2) If yes, please provide (below or in an attachment) a description of any and all compensation of any kind provided or agreed to be provided to a placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems, including the nature, timing and value thereof.

Additional Pages Attached:  No  Yes

(3) If yes, please provide a statement (below or in an attachment) that the placement agent has a minimum of three years experience in the investment field.

Additional Pages Attached:  No  Yes

(4) If yes, please provide a statement (below or in an attachment) that the placement agent and/or entity acting as a placement agent is registered with the Securities and Exchange Commission or the Financial Industry Regulatory Authority, or, if appropriate, the Commodity Futures Trading Commission and the details of such registration.

Additional Pages Attached:  No  Yes

(5) If yes, please attach a resume for each placement agent detailing the person's education, professional designations, regulatory licenses and investment and work experience. If any such person is a current or former member of a retirement board, employee or consultant or immediate family of such a person that fact should be specifically noted.

Additional Pages Attached:  No  Yes



9191034

(6) If yes, please provide a description of the services (below or in an attachment) to be performed by the placement agent and/or entity acting as a placement agent and a statement as to whether the placement agent is used by the manager with all prospective clients or only a subset of clients or only Massachusetts public pension fund clients.

Additional Pages Attached:  No  Yes

(7) If yes, please attach a written copy of any and all agreements between the manager and the placement agent and/or entity acting as a placement agent in connection with investment by Massachusetts' public pension systems.

Additional Pages Attached:  No  Yes

(8) If yes, in the event that any current or former Massachusetts public pension system board members, employees, consultants or other service providers have suggested the retention of the placement agent, the names of any current or former Massachusetts public pension system board members, employees, consultants or other service providers who suggested the retention of the placement agent (below or in an attachment).

Additional Pages Attached:  No  Yes

I attest under the penalties of perjury that the above statements and statements provided in attachments, if any, are true.

Name of Authorized Individual: First: Michael

Last: Dwyer

Suffix: Mr.

Title of Authorized Individual: Senior Vice President

Signature of Authorized Individual:

Michael Dwyer

Date Signed: December 1, 2023



# Vendor Disclosures (as required by G.L. c. 32 §23 & 23B)

Please submit completed form and any attachments to PERAC and the retirement board on or before March 1st. Failure to do so may subject the Fund/Entity to sanctions pursuant to Chapter 32, Section 21A. Please attach additional sheets if necessary.

Please print or type all entries in blue or black ink.

## I. Vendor/Board Information

Name of Company/Entity: Wainwright Investment Counsel, LLC

Name of Fund:

Retirement Board: MWRA Employees' Retirement Board

## 2. Compensation PAID: No Yes

Recipient of Compensation	Form of Compensation	Value of Compensation
CBIZ MHM, Inc. (Previously CBIZ Tofias)	USD Currency (i.e., check)	\$22,261.08
Mack & Co. LLC	USD Currency (i.e., wire transfer)	\$16,962.52

Additional Pages Attached:  No  Yes

## 3. Compensation RECEIVED: No Yes

Source of Compensation	Form of Compensation	Value of Compensation
Maltese Capital Mgmt, LLC (WFS, LLC)	USD Currency (i.e., wire transfer)	\$10,105.00

Additional Pages Attached:  No  Yes

## 4. Conflict of Interest? No Yes

If yes, please advise:

Additional Pages Attached:  No  Yes

## 5. Declaration and Signature

I make this disclosure pursuant to G.L. c.32, §23 and/or 23B in order to comply with the requirement that an entity providing investment services to a retirement board disclose to the Commission and the retirement board compensation, in whatever form, paid, or expected to be paid, and received, or expected to be received, directly or indirectly by the entity or a related person to others in connection with the entities services to the retirement board or any other client to whom the same service is provided. In addition, I make this disclosure of any conflict of interest that may have or could reasonably be expected to impair the ability to render unbiased and objective advice to the retirement board.

Name, First: Michael

Last: Dwyer

Suffix:

Title: Senior Vice President

Signature:

Date: December 1, 2023

# MONTHLY PERFORMANCE REPORT

**MWRA EMPLOYEES' RETIREMENT  
SYSTEM**

NOVEMBER 30, 2023



PROPRIETARY & CONFIDENTIAL



# GOALS & OBJECTIVES

## Investment Return Objective

“Its primary goal is to provide promised benefits to participants and beneficiaries of the MWRA Employees’ Retirement system. Plan assets should be equal to or greater than the present value of the projected benefit obligations (“fully funded”). When Plan assets are less than the present value of projected benefit obligations, a schedule will be established and a plan will be in place to meet a fully funded status. When achieving return objectives required to fully fund the system, the Board is intent on controlling risk. Consistency of returns and risk of loss are primary considerations. The Board has also determined that the annual performance of plan assets should not vary substantially from returns achieved by other public pension funds with similar goals and objectives.”

## Return Expectations

The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **Time Horizon:** Return assumptions will be based on a ten-year time horizon with a detailed review and analysis to be made at least annually to monitor allocations and assumptions. Should a manager deviate from proscribed mandate or expected risk and return profile by a consequential degree, that manager may be reevaluated at any time.
- **Liquidity Needs:** Presently contributions exceed plan withdrawals to provide benefits, payouts, and/or plan expenses. Portfolio liquidity will be managed based on the cash flow needs of the System.
- **Regulatory Considerations:** Assets of this Fund shall be invested in a manner consistent with the fiduciary standards established under Code of Massachusetts Regulations 840 (“840 CMR”). The Board shall also use as precedent the Employee Retirement Income Security Act (ERISA).

# EXECUTIVE SUMMARY

	Market Value (\$)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Composite</b>	<b>662,325,370</b>	<b>5.1</b>	<b>6.7</b>	<b>4.2</b>	<b>3.2</b>	<b>6.1</b>	<b>5.7</b>
<i>Allocation Index</i>		5.1	7.5	5.0	4.2	6.8	6.2
<i>Policy Index</i>		5.5	8.2	5.2	4.6	7.3	6.6

20 Years As of November 30, 2023				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>Composite</b>	<b>7.3</b>	<b>8.5</b>	<b>0.7</b>	<b>1.0</b>
<i>Allocation Index</i>	6.7	8.0	0.7	1.0
<i>Policy Index</i>	7.2	8.6	0.7	1.0

## Performance

- The Composite had a preliminary return of 5.1% (net) for the month, in line with the Allocation Index of 5.1 and underperforming the Policy Index of 5.5%.
- In equities, the S&P 500 Index added 9.1% in November, pushing year-to-date returns to 20.8%. U.S. small-cap stocks also gained 9.1%, as measured by the Russell 2000 Index; small-cap names exhibit greater interest rate sensitivity and have underperformed significantly on a year-to-date basis. Outside the U.S., the MSCI EAFE and MSCI Emerging Markets Indexes returned 9.3% and 8%, respectively. The portfolio's Domestic Equity composite returned 9.0% (net) and the Non-US Equity composite was up 9.6% (net).
- In fixed income, the 10-year U.S. Treasury yields fell 52 basis points. The downward move in interest rates fueled a rally across fixed-income assets, with longer-duration indexes posting the largest gains: the Bloomberg Aggregate Bond Index added 4.5%, while the Bloomberg Long Treasury Index rose 9.2%. In credit, option-adjusted spreads tightened, reflecting broad risk-on sentiment. The spread on the Bloomberg U.S. High Yield Corporate Bond Index fell 67 basis points to 370, fueling gains of 4.5% in November. The Fixed Income composite returned 4.4% (net) for the month while the Bloomberg Agg and the Bloomberg US HY returned 4.5% and 4.5%, respectively.
- This brings the total plan return for the trailing one-year period to 4.2% (net), while the Allocation Index and Policy Index both returned 5.0% and 5.2%, respectively.

Returns for 20 years Risk/Return and Statistics Summary are gross of fees. Since inception return is 8.2% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Composite</b>	<b>662,325,370</b>	<b>100.0</b>	<b>100.0</b>	<b>5.1</b>	<b>6.7</b>	<b>4.2</b>	<b>3.2</b>	<b>6.1</b>	<b>5.7</b>	<b>6.6</b>	<b>Jan-86</b>
Allocation Index				5.1	7.5	5.0	4.2	6.8	6.2		
Policy Index				5.5	8.2	5.2	4.6	7.3	6.6		
<b>Total Balanced</b>	<b>3,710,164</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>4.6</b>	<b>2.8</b>	<b>5.0</b>	<b>6.0</b>	<b>4.2</b>	<b>4.5</b>	<b>Dec-10</b>
PRIT Core Fund	3,710,164	0.6	0.0	0.0	7.4	5.6	6.0	7.7	7.3	6.8	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				7.3	12.9	8.8	4.1	8.0	7.8	6.2	
<b>Total Domestic Equity</b>	<b>198,455,665</b>	<b>30.0</b>	<b>31.0</b>	<b>9.0</b>	<b>13.6</b>	<b>7.7</b>	<b>5.5</b>	<b>9.8</b>	<b>9.7</b>	<b>7.4</b>	<b>May-99</b>
Russell 3000 Index				9.3	19.6	12.6	8.3	11.8	11.2	7.3	
<b>Large Cap</b>	<b>153,349,168</b>	<b>23.2</b>	<b>24.0</b>	<b>9.5</b>	<b>16.7</b>	<b>10.5</b>	<b>6.2</b>	<b>10.9</b>	<b>10.6</b>	<b>12.2</b>	<b>Dec-10</b>
Rhumblin Advisors S&P 500 Index Fund	63,061,645	9.5	10.0	9.1	20.7	13.8	9.7	12.5	11.7	9.0	Apr-97
S&P 500 Index				9.1	20.8	13.8	9.8	12.5	11.8	9.0	
Coho Relative Value Equity	48,107,126	7.3	7.0	8.1	-1.7	-5.3	4.7	7.0		9.1	Mar-16
Russell 1000 Value Index				7.5	5.6	1.4	8.3	7.5		9.7	
Polen Focused Growth	42,180,397	6.4	7.0	11.7	35.1	26.2	2.2	12.2		13.8	Feb-16
Russell 1000 Growth Index				10.9	36.6	26.2	8.9	16.4		16.9	
<b>Small Cap</b>	<b>45,106,497</b>	<b>6.8</b>	<b>7.0</b>	<b>7.3</b>	<b>3.6</b>	<b>-1.7</b>	<b>3.3</b>	<b>6.4</b>	<b>7.2</b>	<b>10.1</b>	<b>Dec-10</b>
Loomis Sayles Small Cap Growth	22,154,138	3.3	3.5	7.2	3.7	-0.9	-1.1	6.0	8.2	6.4	Jan-97
Russell 2000 Growth Index				9.1	6.0	-0.8	-4.3	4.2	6.2	6.3	
Mesirow Small Cap Value Equity CIT - Founders Class	22,952,359	3.5	3.5	7.4						-0.4	Apr-23
Russell 2000 Value Index				9.0						2.6	
<b>Total Non-US Equity</b>	<b>107,905,241</b>	<b>16.3</b>	<b>19.0</b>	<b>9.6</b>	<b>6.4</b>	<b>3.7</b>	<b>-4.9</b>	<b>1.7</b>	<b>1.6</b>	<b>3.6</b>	<b>Mar-99</b>
<b>International Equity</b>	<b>70,116,574</b>	<b>10.6</b>	<b>12.0</b>	<b>10.6</b>	<b>7.2</b>	<b>4.4</b>	<b>-3.6</b>	<b>3.2</b>	<b>2.5</b>	<b>3.1</b>	<b>Sep-05</b>
SEG Baxter Street	28,787,461	4.3	5.0	10.1	2.5	-0.1	-5.2	3.1		5.0	May-16
MSCI AC World ex USA (Net)				9.0	10.1	9.3	1.7	5.1		5.4	
Schroder International Alpha Trust Class 1	28,531,052	4.3	4.0	9.7	11.0	9.6	2.0	7.5	5.2	6.3	Mar-12
MSCI AC World ex USA (Net)				9.0	10.1	9.3	1.7	5.1	3.4	4.4	
Baillie Gifford International Growth Fund Class K	12,798,061	1.9	3.0	14.0	10.2	4.1	-11.6			-7.2	Oct-20
MSCI AC World ex USA (Net)				9.0	10.1	9.3	1.7			5.0	

Since inception return is 6.6% Net of fees. Prior to 1999, performance history does not capture separate net and gross returns.

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to the transition to the CIT investment vehicle is linked to mutual fund performance history.

Preliminary performance is subject to change once finalized.

Entrust Peru is preliminary.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Markets Equity</b>	<b>37,788,667</b>	<b>5.7</b>	<b>7.0</b>	<b>7.8</b>	<b>4.6</b>	<b>2.3</b>				<b>-11.5</b>	<b>Mar-21</b>
Axiom Emerging Markets Trust Class 2	17,960,668	2.7	7.0	8.2	1.8	-0.4				-14.3	Mar-21
<i>MSCI Emerging Markets (Net)</i>				8.0	5.7	4.2				-8.1	
ABS Emerging Markets MA Fund	19,827,999	3.0		7.4	7.1	4.8				-8.3	Dec-21
<i>MSCI Emerging Markets (Net)</i>				8.0	5.7	4.2				-7.2	
<b>Total Fixed Income</b>	<b>134,717,394</b>	<b>20.3</b>	<b>20.0</b>	<b>4.4</b>	<b>3.0</b>	<b>2.5</b>	<b>-2.6</b>	<b>2.0</b>	<b>2.4</b>	<b>5.5</b>	<b>Mar-99</b>
Garcia Hamilton Fixed Income Aggregate	31,721,176	4.8	6.0	5.3	0.0	-1.0	-4.7	0.2		0.2	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				4.5	1.6	1.2	-4.5	0.7		0.6	
Lord Abbett Core Fixed Income	40,184,791	6.1	4.0	4.4	2.2	1.7	-4.1	1.0		0.8	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				4.5	1.6	1.2	-4.5	0.7		0.6	
Loomis Sayles Multisector Full Discretion Trust	50,546,521	7.6	8.0	4.9	3.6	3.3	-2.8	2.7	2.8	6.6	Mar-99
<i>Blmbg. U.S. Aggregate Index</i>				4.5	1.6	1.2	-4.5	0.7	1.4	3.8	
<i>Blmbg. U.S. Corp: High Yield Index</i>				4.5	9.4	8.7	1.4	4.1	4.3	6.2	
LMCG Serenitas Credit Gamma Offshore	12,249,520	1.8		0.1						1.8	Sep-23
<i>HFRI Relative Value (Total) Index</i>				1.5						1.7	
<i>Blmbg. U.S. Aggregate Index</i>				4.5						0.3	
Invesco Mortgage Recovery Loans Feeder Fund	15,385	0.0		0.0	0.4	1.1	-0.1	0.3	5.8	9.3	Apr-10
<i>Blmbg. U.S. Aggregate Index</i>				4.5	1.6	1.2	-4.5	0.7	1.4	2.1	
<b>Total Hedge Fund</b>	<b>39,809,072</b>	<b>6.0</b>	<b>6.0</b>	<b>1.0</b>	<b>6.4</b>	<b>5.9</b>	<b>4.6</b>	<b>4.8</b>	<b>3.1</b>	<b>3.5</b>	<b>Oct-06</b>
PRIM Portfolio Completion Strategies	12,717,380	1.9		0.0	5.4	5.8	5.3	3.9	3.7	3.8	Oct-06
Corbin Pinehurst Partners	13,912,671	2.1		2.2	10.5	11.4	4.1	5.8		5.5	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				1.8	3.6	4.0	2.6	4.2		4.1	
UBS Neutral Alpha Strategies	13,128,301	2.0		0.7	4.5	6.9	6.4	6.7		6.3	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				1.8	3.6	4.0	2.6	4.2		4.1	
Entrust Peru Wind Down	50,719	0.0		0.0	-23.4	-93.0	-58.8	-42.8		-37.6	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				1.8	3.6	4.0	2.6	4.2		3.3	
<b>Other</b>	<b>13,519,064</b>	<b>2.0</b>	<b>0.0</b>	<b>0.3</b>	<b>4.6</b>	<b>4.9</b>	<b>2.0</b>	<b>1.9</b>	<b>1.3</b>	<b>1.0</b>	<b>Dec-10</b>
Cash Account	13,519,064	2.0		0.3	4.6	4.9	2.0	1.9	1.3	1.9	Feb-00
<i>90 Day U.S. Treasury Bill</i>				0.4	4.5	4.9	2.0	1.8	1.2	1.7	

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

Preliminary performance is subject to change once finalized.

# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Real Estate</b>	<b>68,972,146</b>	<b>10.4</b>	<b>12.0</b>	<b>0.0</b>	<b>-2.5</b>	<b>-5.2</b>	<b>10.2</b>	<b>8.0</b>	<b>9.5</b>	<b>7.9</b>	<b>Apr-99</b>
<i>NCREIF Property Index</i>				0.0	-5.1	-8.4	6.0	5.3	7.4	8.2	
Morgan Stanley Prime Property (\$2.8m commitment in '95)	24,644,518	3.7		0.0	-3.5	-7.0	8.1	6.4	8.9	8.3	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	25,244,567	3.8		0.0	-1.9	-7.3	12.7			9.8	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	644,706	0.1		0.0	-27.6	-40.7	-31.2	-18.4		-7.8	Oct-15
Landmark VI (\$2m commitment in '11)	5,866	0.0		0.0	-9.3	-9.4	-6.5	-10.4	-2.3	1.3	Jul-11
Landmark VIII (\$4m commitment in '17)	1,984,460	0.3		0.0	-3.4	-5.7	17.5	12.2		15.5	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	361,718	0.1		0.0	1.4	-1.1	0.0	-2.5	3.5	1.8	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	473,317	0.1		0.0	1.7	19.8	22.7	15.3	13.8	14.0	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,589,564	0.2		0.0	-1.3	15.0	8.6	7.7		9.9	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,518,882	0.5		0.0	-4.1	-1.3	7.5	8.0		8.3	Nov-17
TerraCap Partners V, LP (\$8m commitment in '22)	8,504,546	1.3		0.0	0.0	4.3				6.4	Jun-22
TA Realty Value XIII	2,000,000	0.3									Dec-23
<b>Total Private Equity and Debt</b>	<b>95,236,624</b>	<b>14.4</b>	<b>12.0</b>	<b>0.0</b>	<b>5.2</b>	<b>6.4</b>	<b>20.2</b>	<b>13.9</b>	<b>14.7</b>	<b>10.4</b>	<b>Apr-99</b>
<i>CJA US All PE</i>				0.0	5.5	6.8	17.4	14.5	14.0	12.9	
<i>NASDAQ W/O Income</i>				10.7	35.9	24.1	5.3	14.2	13.4	7.4	
PRIM Vintage Year 2008 (\$3m commitment in '08)	868,631	0.1		0.0	22.5	22.7	24.6	15.7	18.9	10.7	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	51,633	0.0		0.0	-5.8	-7.8	18.8	24.7	23.6	12.8	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	365,509	0.1		0.0	-13.1	-13.2	8.2	8.7	15.5	9.0	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	758,392	0.1		0.0	3.2	3.5	31.3	21.3	22.4	9.5	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	431,960	0.1		0.0	4.2	5.4	6.0	11.3	13.2	-8.3	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,004,120	0.3		0.0	1.9	2.0	19.3	19.5		7.9	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,592,270	0.4		0.0	6.9	8.2	25.4	19.1		15.0	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	4,499,436	0.7		0.0	3.2	3.8	16.8			13.4	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	4,022,399	0.6		0.0	6.5	4.2	1.3			1.3	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	1,971,242	0.3		0.0	4.1	3.5				-1.1	Apr-22
PRIM Vintage Year 2023 (\$10m commitment in '23)	574,272	0.1		0.0						-1.0	May-23
Alcentra European DLF (\$5m commitment in '14)	208,355	0.0		0.0	4.8	5.6	27.4	13.5		11.3	Jan-15
Ascent Fund IV-B (\$1m commitment in '16)	20,242	0.0		0.0	-1.4	-49.8	-30.3	-29.8		-20.9	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,274,437	0.2		0.0	1.0	1.9	2.4	-1.3	1.9	3.8	Oct-08
Ascent VI (\$3m commitment in '15)	3,174,297	0.5		0.0	-2.6	-10.6	1.4	-1.1		0.7	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	4,624,990	0.7		0.0	6.2	8.6	11.0	6.8		6.6	Dec-17
Invesco Fund VI (\$5m commitment in '13)	548,079	0.1		0.0	-28.8	-34.5	0.5	6.3	10.8	10.4	Jul-13

Importantly, all returns in this report, including those of the private real estate managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

TA Realty Value XIII was funded in November.

All Prim accounts are preliminary.

Preliminary performance is subject to change once finalized.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,565,334	0.4		0.0	-5.1	-2.0	21.3	-17.9		-4.5	Jan-16
Foundry 2007 (\$3m commitment in '07)	205,925	0.0		0.0	-0.6	-57.5	1.9	-20.0	2.3	12.4	Dec-07
Foundry 2010 (\$3m commitment in '10)	5,901,587	0.9		0.0	-0.3	-1.2	23.6	18.8	13.1	13.1	Feb-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,100,130	0.2		0.0	0.0	-0.5	51.3	54.1		36.5	Sep-15
Pinebridge PEP V (\$6.23m commitment in '07)	290,916	0.0		0.0	1.1	-1.7	1.3	1.6	6.5	6.6	Dec-10
Pinebridge (AIG) PEP V Asia (\$.55m commitment)	29,864	0.0		0.0	-5.9	-8.6	-10.7	-13.7		-13.3	Oct-18
Pinebridge (AIG) PEP V Europe (\$1.6m commitment)	3,271	0.0		0.0	2.1	3.1	-15.5	97.7		93.4	Oct-18
Pinebridge (AIG) PEP V Large Market US Buyout (\$.7m commitment)	89,305	0.0		0.0	16.1	27.3	8.9	10.3		9.9	Oct-18
Pinebridge (AIG) PEP V Preferred Participation Fund (\$.5m commitment)	59,460	0.0		0.0	-13.1	-21.5	-8.2	-7.9		-7.7	Oct-18
Pinebridge (AIG) PEP V Secondary (\$.6m commitment)	15,403	0.0		0.0	-8.1	-16.0	-14.4	-15.1		-11.2	Jan-17
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$.9m commitment)	52,801	0.0		0.0	3.4	2.8	6.2	13.9		13.4	Oct-18
Pinebridge (AIG) PEP V US Venture (\$.48m commitment)	40,812	0.0		0.0	2.3	-13.8	-2.5	-5.2		-5.0	Oct-18
Landmark XV (\$3m commitment in '13)	592,329	0.1		0.0	-2.1	-3.9	7.0	3.1	9.4	9.3	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	2,302,229	0.3		0.0	27.9	27.9	41.1	40.1		36.4	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,885,206	0.7		0.0	14.0	15.9	19.2	21.4		19.1	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,723,889	0.4		0.0	5.2	7.7	7.4	8.2		6.8	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,481,666	0.2		0.0	8.0	11.0	11.3	11.6		11.2	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	7,511,986	1.1		0.0	4.4	7.2	27.6			46.5	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	7,785,098	1.2		0.0	3.2	5.1	25.2			25.5	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	12,688,150	1.9		0.0	4.2	3.0				3.2	Nov-21
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)	5,794,346	0.9		0.0	7.4	15.4					Jan-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	11,417,570	1.7		0.0	14.6	29.1	13.1			9.2	Sep-20

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

# FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49 % of Assets	3,710,164	0.56	18,180	0.49
Rhumblin Advisors S&P 500 Index Fund	0.04 % of Assets	63,061,645	9.52	25,225	0.04
Coho Relative Value Equity	0.50 % of First \$75 M 0.40 % of Next \$75 M 0.35 % Thereafter	48,107,126	7.26	240,536	0.50
Polen Focused Growth	0.65 % of Assets	42,180,397	6.37	274,173	0.65
Loomis Sayles Small Cap Growth	0.45 % of Assets Minimum Fee: \$45,000	22,154,138	3.34	99,694	0.45
SEG Baxter Street	1.00 % of Assets	28,787,461	4.35	287,875	1.00
Schroder International Alpha Trust Class 1	0.55 % of Assets	28,531,052	4.31	156,921	0.55
Baillie Gifford International Growth Fund Class K	0.60 % of Assets	12,798,061	1.93	76,788	0.60
Axiom Emerging Markets Trust Class 2	0.77 % of Assets	17,960,668	2.71	138,297	0.77
ABS Emerging Markets MA Fund	0.75 % of Assets	19,827,999	2.99	148,710	0.75
Garcia Hamilton Fixed Income Aggregate		31,721,176	4.79	39,651	0.13
Lord Abbett Core Fixed Income	0.19 % of Assets	40,184,791	6.07	76,351	0.19
Loomis Sayles Multisector Full Discretion Trust	0.39 % of First \$50 M 0.30 % Thereafter	50,546,521	7.63	196,640	0.39
Mesirow Small Cap Value Equity CIT - Founders Class	0.45 % of Assets	22,952,359	3.47	103,286	0.45
Invesco Mortgage Recovery Loans Feeder Fund		15,385	0.00		
PRIM Portfolio Completion Strategies		12,717,380	1.92		
Corbin Pinehurst Partners	0.85 % of Assets	13,912,671	2.10	118,258	0.85
UBS Neutral Alpha Strategies	0.90 % of Assets	13,128,301	1.98	118,155	0.90
Entrust Peru Wind Down	0.50 % of Assets	50,719	0.01	254	0.50
LMCG Serenitas Credit Gamma Offshore	Performance Based 1.50 and 20.00	12,249,520	1.85	183,743	1.50
Cash Account		13,519,064	2.04		
Morgan Stanley Prime Property (\$2.8m commitment in '95)		24,644,518	3.72		
TA Realty Core Property Fund, LP (\$15m commitment in '19)		25,244,567	3.81		
TA Realty Value XIII		2,000,000	0.30		
Invesco Mortgage Recovery II (\$3M commitment in '15)		644,706	0.10		
Landmark VI (\$2m commitment in '11)		5,866	0.00		
Landmark VIII (\$4m commitment in '17)		1,984,460	0.30		
StepStone Real Estate Fund II (\$2m commitment in '11)		361,718	0.05		
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)		473,317	0.07		
TerraCap Partners III, LP (\$2.6m commitment in '15)		1,589,564	0.24		

# FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TerraCap Partners IV, LP (\$4m commitment in '17)		3,518,882	0.53		
TerraCap Partners V, LP (\$8m commitment in '22)		8,504,546	1.28		
PRIM Vintage Year 2008 (\$3m commitment in '08)		868,631	0.13		
PRIM Vintage Year 2009 (\$1m commitment in '09)		51,633	0.01		
PRIM Vintage Year 2010 (\$1m commitment in '10)		365,509	0.06		
PRIM Vintage Year 2011 (\$1.5m commitment in '11)		758,392	0.11		
PRIM Vintage Year 2012 (\$1m commitment in '12)		431,960	0.07		
PRIM Vintage Year 2014 (\$2m commitment in '14)		2,004,120	0.30		
PRIM Vintage Year 2017 (\$2m commitment in '17)		2,592,270	0.39		
PRIM Vintage Year 2020 (\$5m commitment in '20)		4,499,436	0.68		
PRIM Vintage Year 2021 (\$5m commitment in '21)		4,022,399	0.61		
PRIM Vintage Year 2022 (\$7.5m commitment in '22)		1,971,242	0.30		
PRIM Vintage Year 2023 (\$10m commitment in '23)		574,272	0.09		
Alcentra European DLF (\$5m commitment in '14)		208,355	0.03		
Ascent Fund IV-B (\$1m commitment in '16)		20,242	0.00		
Ascent Fund V (\$2m commitment in '08)		1,274,437	0.19		
Ascent VI (\$3m commitment in '15)		3,174,297	0.48		
CVI Credit Value Fund IV A LP (\$6m commitment in '17)		4,624,990	0.70		
Invesco Fund VI (\$5m commitment in '13)		548,079	0.08		
Kayne Energy Fund VII (\$5m commitment in '15)		2,565,334	0.39		
Foundry 2007 (\$3m commitment in '07)		205,925	0.03		
Foundry 2010 (\$3m commitment in '10)		5,901,587	0.89		
Foundry 2010 Annex (\$0.4m commitment in '15)		1,100,130	0.17		
Pinebridge (AIG) PEP V Asia (\$.55m commitment)		29,864	0.00		
Pinebridge (AIG) PEP V Europe (\$1.6m commitment)		3,271	0.00		
Pinebridge (AIG) PEP V Large Market US Buyout (\$.7m commitment)		89,305	0.01		
Pinebridge (AIG) PEP V Preferred Participation Fund (\$.5m commitment)		59,460	0.01		
Pinebridge (AIG) PEP V Secondary (\$.6m commitment)		15,403	0.00		
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$.9m commitment)		52,801	0.01		
Pinebridge (AIG) PEP V US Venture (\$.48m commitment)		40,812	0.01		
Landmark XV (\$3m commitment in '13)		592,329	0.09		
JFL Equity Investors IV, L.P. (\$6m commitment in '16)		2,302,229	0.35		
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)		4,885,206	0.74		
Park Square Credit Opportunities III (\$3m commitment in '17)		2,723,889	0.41		



# FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Ironsides Constitution Opportunities (\$3m commitment in '18)		1,481,666	0.22		
HarbourVest Dover Street X (\$9m commitment in '20)		7,511,986	1.13		
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)		7,785,098	1.18		
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)		12,688,150	1.92		
JFL Equity Investors V, L.P. (\$9m commitment in '20)		11,417,570	1.72		
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)		5,794,346	0.87		
<b>Investment Management Fee</b>		<b>662,325,370</b>	<b>100.00</b>	<b>2,302,734</b>	<b>0.35</b>

# NOTES

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balances, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Preliminary Total Composite net of fee since inception return is 6.6% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.2% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 02/01/2022.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index Consists of: 24% S&P 500, 7% Russell 2000, 12% MSCI ACWI IMI, 7% MSCI Emerging Markets, 12% Bloomberg US Aggregate TR, 8% Bloomberg US Universal TR, 6% HFRI Fund of Funds Composite Index, 12% NCREIF Property Index, 12% CJA US All PE.
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.
- 9 - All Private Market managers are final as of 6/30/23, and cash adjusted through 11/30/2023.

# DISCLAIMERS & DISCLOSURES

Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

NEPC’s preferred data source is the plan’s custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.

All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.

The opinions presented herein represent the good faith views of NEPC as of the date of this presentation and are subject to change at any time. Neither fund performance nor universe rankings contained in this report should be considered a recommendation by NEPC.

This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv

## Estimated Asset Allocation Rebalance Summary

December 8, 2023

	Market Value	Weight in Fund	Target Weight	Recommendation	New Market Value	New Weight
<b>Composite</b>	<b>\$666,520,656</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$0</b>	<b>\$666,520,656</b>	<b>100.0%</b>
<b>Total Balanced</b>	<b>\$3,710,164</b>	<b>0.6%</b>	<b>0.0%</b>	<b>\$0</b>	<b>\$3,710,164</b>	<b>0.6%</b>
PRIT Core Fund	\$3,710,164	0.6%	0.0%	\$0	\$3,710,164	0.6%
<b>Total Domestic Equity</b>	<b>\$201,036,241</b>	<b>30.2%</b>	<b>31.0%</b>	<b>-\$2,000,000</b>	<b>\$199,036,241</b>	<b>29.9%</b>
Rhumblin Advisors S&P 500 Index Fund	\$63,566,138	9.5%	10.0%	-\$1,000,000	\$62,566,138	9.4%
Coho Relative Value	\$48,848,739	7.3%	7.0%	\$0	\$48,848,739	7.3%
Polen Focused Growth	\$42,491,622	6.4%	7.0%	-\$2,000,000	\$40,491,622	6.1%
Mesirow Smcall Cap Value	\$23,595,025	3.5%	3.5%	\$0	\$23,595,025	3.5%
Loomis Sayles Small Cap Growth	\$22,534,717	3.4%	3.5%	\$1,000,000	\$23,534,717	3.5%
<b>Total International Equity</b>	<b>\$108,031,942</b>	<b>16.2%</b>	<b>19.0%</b>	<b>\$0</b>	<b>\$108,031,942</b>	<b>16.2%</b>
SEG - Baxter Street Fund	\$28,787,461	4.3%	5.0%	\$0	\$28,787,461	4.3%
Schroders International Alpha	\$28,531,052	4.3%	4.0%	\$0	\$28,531,052	4.3%
Baillie Gifford	\$12,924,762	1.9%	3.0%	\$0	\$12,924,762	1.9%
Axiom Emerging Markets	\$17,960,668	2.7%	3.5%	\$0	\$17,960,668	2.7%
ABS Emerging Markets Strategic Portfolio	\$19,827,999	3.0%	3.5%	\$0	\$19,827,999	3.0%
<b>Total Equity</b>	<b>\$309,068,183</b>	<b>46.4%</b>	<b>50.0%</b>	<b>-\$2,000,000</b>	<b>\$307,068,183</b>	<b>46.1%</b>
<b>Total Fixed Income</b>	<b>\$135,928,629</b>	<b>20.4%</b>	<b>20.0%</b>	<b>-\$2,500,000</b>	<b>\$133,428,629</b>	<b>20.0%</b>
Garcia Hamilton	\$32,098,594	4.8%		-\$2,500,000	\$29,598,594	4.4%
Lord Abbett	\$40,538,417	6.1%	10.0%	-\$2,000,000	\$38,538,417	5.8%
Loomis Sayles Multi Sector Bonds	\$51,026,713	7.7%	8.0%	\$0	\$51,026,713	7.7%
LMCG Serenitas	\$12,249,520	1.8%	2.0%	\$2,000,000	\$14,249,520	2.1%
Invesco Mortgage Recovery	\$15,385	0.0%	0.0%	\$0	\$15,385	0.0%
<b>Total Hedge Fund</b>	<b>\$39,809,071</b>	<b>6.0%</b>	<b>6.0%</b>	<b>\$0</b>	<b>\$39,809,071</b>	<b>6.0%</b>
PRIM Absolute Return Fund	\$12,717,380	1.9%		\$0	\$12,717,380	1.9%
Corbin Pinehurst Partners	\$13,912,671	2.1%		\$0	\$13,912,671	2.1%
UBS Neutral Alpha Strategies	\$13,128,301	2.0%		\$0	\$13,128,301	2.0%
Entrust Peru Winddown	\$50,719	0.0%		\$0	\$50,719	0.0%
<b>Total Real Estate</b>	<b>\$68,972,146</b>	<b>10.3%</b>	<b>12.0%</b>	<b>\$0</b>	<b>\$68,972,146</b>	<b>10.3%</b>
TA Realty Core	\$25,244,567	3.8%		\$0	\$25,244,567	3.8%
Morgan Stanley PPF	\$24,644,518	3.7%		\$0	\$24,644,518	3.7%
<b>Total Private Equity</b>	<b>\$95,236,624</b>	<b>14.3%</b>	<b>12.0%</b>	<b>\$0</b>	<b>\$95,236,624</b>	<b>14.3%</b>
<b>Cash</b>	<b>\$13,795,839</b>	<b>2.1%</b>	<b>0.0%</b>	<b>\$4,500,000</b>	<b>\$18,295,839</b>	<b>2.7%</b>
M&T Cash	\$13,795,839	2.1%	0.0%	\$4,500,000	\$18,295,839	2.7%

# LARGE CAP VALUE EQUITY SEARCH SEARCH RESULTS

MWRA RETIREMENT SYSTEM

DECEMBER 14, 2023

Sebastian Grzejka, CAIA, Partner

Francesca LoVerde, Sr. Consulting Analyst



# SUMMARY OF LARGE CAP VALUE EQUITY SEARCH

- **Target fund strategy**
  - U.S. Large Cap Value
- **Advertised requirements for the search:**
  1. Candidates must have familiarity with and agree to comply (in writing) with Massachusetts G.L. Chapter 32 and Chapter 176 of the Acts of 2011. Additionally, candidates must have familiarity and agree to comply with the reporting and investment guidelines administered by PERAC.
  2. Candidates must read and agree to the attached side letter pertaining to mandatory contractual language, based on the guidelines above.
  3. Candidates must be registered with the SEC or Massachusetts Secretary of State.
  4. Preference will be given to candidates who have at least \$500 million in assets in the fund that is being suggested, however, this is subject to the Board's discretion.
  5. Preference will be given to Funds that have a live track record of at least three years, however, this is subject to the Board's discretion
- **Responses were due on December 1, 2023 by 5:00 PM EST**
  - A total of 53 managers responded, with select managers proposing multiple vehicles

# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Acadian Asset Management LLC	US Value Equity	SMA	\$383	\$97,395	24.0	Systematic Large Cap Value - Russell 1000 Value	104	0.50%	Yes
American Century Investment Management, Inc.	U.S. Value Yield	SMA	\$11,854	\$207,833	30.1	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	100	0.575%	Yes w/ modifications
American Century Investment Management, Inc.	U.S. Value Yield	CIT	\$11,854	\$207,833	30.1	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	100	0.54%	No
Argent Capital Management, LLC	Argent Dividend Select	SMA	\$662	\$2,915	20.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	31	0.35%	Yes
Aristotle Capital Management, LLC	Value Equity	CIT	\$1,369	\$47,914	7.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	41	0.39%	Yes w/ modifications
Artisan Partners Limited Partnership	Artisan Value Equity Strategy	SMA	\$3,722	\$136,495	18.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	39	0.60%	Yes w/ modifications
Artisan Partners Limited Partnership	Artisan Select Equity Strategy	SMA	\$308	\$136,495	3.0	Fundamental, Bottom-up All Cap Value - S&P 500	22	0.65%	Yes w/ modifications
Barksdale Investment Management (certified WBE)	Diversified Value Equity	SMA	\$120	\$3,709	18.8	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	60	0.35%	Yes
Beutel, Goodman & Company Ltd.	Beutel Goodman U.S. Large Cap Value	Mutual Fund	\$1,587	\$32,662	5	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	30	0.56%	Yes w/ modifications
Beutel, Goodman & Company Ltd.	Beutel Goodman U.S. Large Cap Value	SMA	\$7,216	\$32,662	38	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	30	0.50%	Yes w/ modifications
Beutel, Goodman & Company Ltd.	Beutel Goodman U.S. Large Cap Value	CIT	0	\$32,662	0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	30	0.50%	Yes w/ modifications

Artisan: Artisan is willing to enter into an IMA with contractual language substantially similar to that in the Sample Side Letter and reserves the right to further negotiate at contracting

Beutel: Beutel serves as the sub-advisor for Brown Advisory – Beutel Goodman Large-Cap Value Mutual Fund, a '40 Act fund which is distributed in the United States by ALPS Distributors, Inc. The U.S. Large Cap Value Total AUM includes our main U.S. Large Cap Value model assets (Institutional Separate Account, Pooled Funds, SMA/WRAP, Private Wealth U.S. Large Cap Value assets) and the U.S. Large Cap Value within our Balanced strategy. The CIT for the strategy is pending formation. Beutel is open to discussing a Founders fee for this vehicle with the MWRAERS.



# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Boston Partners Global Investors, Inc. ("Boston Partners")	Boston Partners Concentrated Large Cap Value Equity	SMA	\$43	\$88,237	6.4	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	39	0.45%	Yes
Boston Partners Global Investors, Inc. ("Boston Partners")	Boston Partners Large Cap Value Equity	SMA	\$29,364	\$88,237	28.6	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	89	0.45%	Yes
Brandes Investment Partners, L.P.	Brandes U.S. Value Equity	CIT or SMA	\$2,250	\$21,808	32.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	52	0.47%	Yes
Brandywine Global Investment Management, LLC	Classic Large Cap Value	SMA	\$5,910	\$56,010	19.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	60	0.30%	Yes
Bright Investments	Bright US Large Cap Strategy	SMA	\$100	\$114	7.0	Fundamental, Bottom-up Large Cap Value - S&P 500 Pure Value	20	0.49%	Yes
Cambiar Investors, LLC	Cambiar Large Cap Value	SMA	\$341	\$3,230	25	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	36	0.30%	Yes w/ modifications
ClearBridge Investments, LLC	ClearBridge Large Cap Value Strategy	SMA	\$6,563	\$155,224	33.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	45	0.475%	Yes w/ modifications
ClearBridge Investments, LLC	ClearBridge Value Equity Strategy	SMA	\$2,879	\$155,224	41.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	63	0.475%	Yes w/ modifications
Coho Partners, Ltd.	Coho Relative Value Equity	SMA	\$4,024	\$4,956	23.0	Fundamental, Bottom-up Large Cap Relative Value - S&P 500	29	0.50%	Yes
Columbia Threadneedle Investments	Columbia Focused Large Cap Value	CIT	Strategy: \$3,670 Fund: \$142	\$589,238	Strategy: 25 Fund: 2	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	37	0.40%	Yes w/ modifications
Cornerstone Investment Partners, LLC	Concentrated 30	SMA	\$1,316	\$1,697	22.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	30	0.35%	Yes





# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Diamond Hill Capital Management, Inc.	Diamond Hill Large Cap	SMA	\$15,738	\$24,983	22.9	Fundamental, Bottom-up Large Cap Value - Russell 1000	53	0.54%	Yes w/ modifications
Dodge & Cox	Dodge & Cox U.S. Equity Strategy	Mutual Fund (DODGX)	\$92,427	\$337,371	58.0	Fundamental, Bottom-up Large Cap Relative Value - S&P 500	77	0.51%	Yes w/ modifications
Dodge & Cox	Dodge & Cox U.S. Equity Strategy	SMA	\$21,697	\$337,371	58.0	Fundamental, Bottom-up Large Cap Relative Value - S&P 500	77	SMA minimum is \$60M. Effective fee ~0.48%	Yes
Eagle Capital Management, LLC	Eagle Equity	SMA	\$24,915	\$24,915	34.8	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	26	0.775%	Yes w/ modifications
Epoch Investment Partners, Inc. (TD Epoch)	TD Epoch U.S. Value	SMA	\$1,226	\$27,485	22.2	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	60	0.475%	Yes
Epoch Investment Partners, Inc. (TD Epoch)	TD Epoch U.S. Shareholder Yield	SMA	\$2,104	\$27,485	11.25	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	96	0.475%	Yes
Grantham, Mayo, Van Otterloo & Co. LLC ("GMO")	GMO U.S. Opportunistic Value Strategy	Mutual Fund - Class III	Mutual Fund: \$402 Strategy: \$1,575	\$57,765	2.0	Top Down, Quantitative Deep Value - S&P 1500	157	0.48%	Yes w/ modifications
Great Lakes Advisors, LLC	Fundamental Equity Large Cap Value strategy	SMA	\$2,815	\$16,499	23	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	74	0.55%	Yes
Hotchkis & Wiley	Large Cap Diversified Value	SMA	\$14,254	\$29,241	23.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	73	0.545%	Yes w/ modifications
Huber Capital Management	Select Large Cap Value	SMA & Mutual Fund	\$251	\$454	16.0	Fundamental, Bottom-up Large Cap Deep Value - Russell 1000 Value	47	SMA: 0.75% Mutual Fund: 0.99%	Yes

Dodge & Cox: The SMA minimum for Dodge & Cox is \$60 million dollars.

Eagle: Has reviewed the side letter provided, and are generally amenable to the terms therein, subject to further legal review prior to mandate funding



# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Invesco	Invesco Large Cap Value	CIT	\$16,043	\$1,487,276	27.0	Fundamental, Bottom-up Large Cap Deep Value - Russell 1000 Value	79	0.29%	Yes w/ modifications
Invesco	Invesco Large Cap Value	Mutual Fund	\$9,923	\$1,487,276	24.0	Fundamental, Bottom-up Large Cap Deep Value - Russell 1000 Value	79	0.45%	No
Lazard Asset Management LLC	Lazard US Equity Value	SMA	\$908	\$193,555	22.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	70	0.30%	--
The London Company	Income Equity	SMA	\$19,251	\$30,419	23.8	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	30	0.33%	Yes
Longfellow Investment Management Co., LLC	U.S Equity Income	SMA	\$111	\$16,046	10.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	97	0.30%	Yes w/ modifications
LSV Asset Management	Large Cap Value Equity (U.S.)	SMA	\$21,159	\$90,136	29.0	Quantitative, Bottom-up Large Cap Deep Value - Russell 1000 Value	177	0.55%	Yes w/ modifications
Lyrical Asset Management LP	Lyrical U.S. Value Equity - CS	SMA	\$3,077	\$6,055	14.8	Fundamental, Bottom-up Mid-Large Cap Deep Value - S&P 500 Value	34	0.60%	Yes
Macquarie Asset Management	US Large Cap Value Equity	SMA	\$12,125	\$573,473	19.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	33	0.60%	Yes w/ modifications
Manulife Investment Management	US Large Cap Value	SMA	\$716	\$427,505	13.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	52	0.40%	Yes w/ modifications
Manulife Investment Management	John Hancock Large Cap Value Trust (P1 Shares)	CIT	N/A; fund has not launched.	\$427,505	N/A; fund has not launched	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	52	0.30%	Yes w/ modifications

Lazard: Lazard respectfully submits that the side letter is inapplicable, given the proposed SMA. Should we be granted the mandate, we would engage in a review and negotiation of an IMA.

Lyrical: Performance figures prior to August 2013 reflect the model, hypothetical results for a hypothetical portfolio pursuing the Market Capitalization Weighted Investment Guidelines

Manulife: The minimum account size for SMA is \$25 million and the fee schedule provided above would cover the investment management related services only. For the CIT, the Trustee Fee is an "all-in" fee which includes both Management Fee and Administrative Expenses. Minimum Account size for P1 shares is \$30 million. Request clarification on side letter.



# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
M.D. Sass, Inc.	Concentrated Value	SMA	\$708	\$5,469	4.8	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	19	0.82%	Yes
MFS Institutional Advisors, Inc. (MFSI)	MFS Large Cap Value Equity	SMA	\$76,556	\$555,652	34.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	72	0.45%	Yes w/ modifications
Mondrian Investment Partners Limited	Mondrian U.S. Large Cap Equity	SMA	\$11	\$46,266	16.8	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	33	0.225%	Yes w/ modifications
Neuberger Berman	Large Cap Value Strategy	SMA	\$16,359	\$438,635	16.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	66	0.65%	Yes w/ modifications
Newton Investment Management North America	US Dynamic Large Cap Value	SMA	\$3,263	\$102,090	29.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	74	0.40%	Yes
Newton Investment Management North America	US Dynamic Large Cap Value	Mutual Fund	\$3,233	\$102,090	22.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	74	0.68%	Yes
Newton Investment Management North America	US Dynamic Large Cap Value	Commingled	\$423	\$102,090	14.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	74	0.40%	Yes
Poplar Forest Capital, LLC	Partners Strategy	SMA	\$1,053	\$1,128	16.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	30	0.70%	Yes
Putnam Investments	Putnam U.S. Large Cap Value Equity strategy	Commingled	\$4,518	\$166,379	5.2	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	70	0.38%	Yes w/ modifications
Pzena Investment Management, LLC	Pzena Large Cap Value	SMA	\$6,668	\$56,409	11	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	53	0.40%	Yes

Neuberger Berman: Have read and generally agree with the side letter, however; we would require guidance on certain provisions, as well as clarification from MWRA regarding the requirements of the annual disclosures under Massachusetts General Laws Chapter 32, § 23B (k)(1)(c) and (d)

Putnam: Please note, Putnam Large Cap Value Trust incepted on July 3, 2018. The overarching strategy, Putnam U.S. Large Cap Value Equity strategy incepted on December 31, 1992 and has assets totaling \$32.1 billion.



# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Seizert Capital Partners	Large Cap Value	SMA	\$1,107	\$1,979	20.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	35	0.475%	Yes
SKBA Capital Management, LLC	ValuePlus	SMA	\$535	\$593	34	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	54	0.425%	Yes
Sound Shore Management, Inc	Large Cap Value	SMA	\$1,730	\$2,718	45.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	38	0.60%	Yes
The TCW Group, Inc.	TCW Relative Value Large Cap	SMA	\$1,973	\$202,486	28.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	46	0.36%	Yes
Tocqueville Asset Management LP	Tax Exempt Multi Cap Equity	SMA	\$1,414	\$6,854	30.0	Fundamental, Bottom-up Large Cap Core - Russell 1000	80	0.65%	Yes
Unison Asset Management LLC	Unison Equity Select	SMA	\$27	\$182	5.8	Fundamental, Mid-Large Cap Value - Russell 1000 Value	24	0.50%	Yes
Voya Investment Management Co. LLC (Voya IM)	Voya Large Cap Value	Mutual Fund	\$642	\$305,784	13.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	61	0.74%	Yes w/ modifications
Voya Investment Management Co. LLC (Voya IM)	Voya Large Cap Value	CIT	\$383	\$305,784	13.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	61	0.48%	Yes w/ modifications
V-Square Quantitative Management LLC	V-Square MSCI USA Value with Quality Tilt Strategy	SMA	New proposed Strategy	\$627	New proposed Strategy	Systematic/Index	N/A	0.20%	Yes
Vulcan Value Partners	Vulcan Value Large Cap	SMA	\$3,841	\$7,340	16.5	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	29	0.60%	Yes

Sound Shore: Performance fee option available. Base fee of 0.25% and an incentive participation fee of 25% of the performance over the Russell 1000 Value on a rolling 3-year average basis

TCW: The side letter terms can be accommodated through an investment management agreement for the proposed separate account

Voya: CIT fee does not include administrative and operating expenses. For the CIT, In the event we are selected to manage this mandate, we would be willing to agree to the side letter. However, there are certain provisions where the language would need to be revised or clarified, specifically provisions contemplating a Most Favored Nations clause. Nevertheless, we would be willing to negotiate in good faith to reach a mutually satisfactory agreement, using the side letter as the basis for those discussions.



# LARGE CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record (Yrs)	Approach, Style & Benchmark	Number of Holdings: 9-30-23	Proposed Fee (\$50M)	Side Letter
Vulcan Value Partners	Vulcan Value Focus	SMA	\$1,249	\$7,340	16.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	12	0.60%	Yes
WEDGE Capital Management, L.L.P.	WEDGE Large Cap Value	SMA	\$122	\$7,011	39.0	Fundamental, Bottom-up Large Cap Value - Russell 1000 Value	34	0.54%	Yes
WEDGE Capital Management, L.L.P.	WEDGE QVM: Large Cap Value	SMA	\$3,904	\$7,011	29.0	Quantitative, Bottom-up Large Cap Value - Russell 1000 Value	146	0.45%	Yes w/ modifications
Westwood Management Corp.	Westwood LargeCap Value	SMA, CIT	\$3,485	\$11,490	36.8	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	49	0.50%	Yes
Woodley Farra Manion Portfolio Management Inc	Woodley Farra Core Value	SMA	\$1,293	\$1,572	28.0	Fundamental, Bottom-up Large Cap Relative Value - Russell 1000 Value	27	0.35%	Yes
Zacks Investment Management	Zacks Dividend Strategy	SMA	\$7,602	\$14,883	19.0	Quantitative, Bottom-up Large Cap Relative Value - Russell 1000 Value	66	0.45%	Yes

# NEPC DISCLOSURES

Past performance is no guarantee of future results.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

Some of the information presented herein has been obtained from external sources NEPC believes to be reliable. While NEPC has exercised reasonable professional care in preparing this content, we cannot guarantee the accuracy of all source information contained within.

The opinions presented herein represent the good faith views of NEPC as of the publication date and are subject to change at any time.

This presentation contains summary information regarding the investment management approaches described herein but is not a complete description of the investment objectives, portfolio management and research that supports these approaches. This analysis does not constitute a recommendation to implement any of the aforementioned approaches.

