

# MWRA EMPLOYEES' RETIREMENT BOARD MEETING

## AGENDA

Thursday, January 26, 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
  - ii. Human Resources Committee: Member Thomas J. Durkin, Member Frank Zecha
  - iii. Special Committee, Stipend: Chair James M. Fleming, Member Kevin McKenna
  - iv. Job Review Committee: Member James M. Fleming, Member Thomas J. Durkin

### NEW BUSINESS

- Item 3 Approval of Minutes – VOTE
- a) December 17, 2022 Minutes
  - b) December 17, 2022 Executive Session Minutes
- Item 4 Approval of Warrants – VOTE
- a) Warrant 1-2023
  - b) Warrant 1-2023A – Payroll
- Item 5 Approval of Monthly Transfers 1-2023 – VOTE
- Item 6 Approval of December 2022 Bank Reconciliation – VOTE
- Item 7 Letter from Mass Retirees Association looking for contact information for retirees who have retired 12/31/2016 – VOTE
- Item 8 Board Chairman Election – VOTE
- Item 9 5% Local COLA Option for FY2023
- Item 10 Manager Due Diligence Presentations
- 10:30 a.m. a) Loomis Sayles – Teresa Woo
  - 10:50 a.m. b) Baillie Gifford – Michael Stirling-Aird & Larysa Bemko
- Item 11 NEPC
- a) Flash Report as of 12/31/22
  - b) Small Cap Value Equity Search Review – VOTE
    - i) Boston Partners Presentation
    - ii) Hotchkis and Wiley Presentation
    - iii) Mesirow Presentation
    - iv) Vaughan Nelson Presentation
  - c) Fixed Income Structure Review
  - d) Small Cap Growth Equity Search Ad – VOTE
  - e) Lord Abbett – Wilmington Trust Update communication

Item 12 12:30 p.m. Legal  
John Honan Section 7 application review – Executive Session under  
Purposes 1 and 7

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

- Item 99-1 Email from PERAC 1/9/2023 re. Check Scam Alert
- Item 99-2 PERAC MEMO #33/2022 – Mandatory Retirement Board Member Training – 1<sup>st</sup> Quarter, 2023
- Item 99-3 PERAC MEMO #34/2022 – 2022 Disability Data
- Item 99-4 PERAC MEMO #1/2023 – Reintroduction of Earning and Hour Limitations for All Retirees in the Public Sector
- Item 99-5 PERAC MEMO #2/2023 – 2023 Limits under Chapter 46 of the Acts of 2002
- Item 99-6 PERAC MEMO #3/2023 – 2023 Limits under Section 23 of Chapter 131 of the Acts of 2010
- Item 99-7 PERAC MEMO #4/2023 – COLA Notice
- Item 99-8 PERAC MEMO #6/2023 – Buyback and Make-up Repayment Worksheets
- Item 99-9 J.F. Lehman & Company Announces Recent Promotions and New Hires
- Item 99-10 Park Square Capital 2022 Review, Team Update, and 2023 Outlook
- Item 99-11 UBS Communication
- Item 99-12 Email re. Atlanta News Station Runs Series About Ongoing Tenant Problems with Landmark-backed Progress Residential
- Item 99-13 Octagon Communication re. Personnel Changes

**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, February 23, 2023, 10:00 a.m., Chelsea**

**MWRA EMPLOYEES' RETIREMENT BOARD MEETING  
DECEMBER 15, 2022**

A meeting of the MWRA Employees' Retirement Board was conducted in-person on Thursday, December 15, 2022. Remote access was provided to the public via Zoom, with call-in information provided on the official Meeting Notice posted to the MA Secretary of State's website. Participating in the in-person meeting were Board members James Fleming, Thomas Durkin, Kevin McKenna, and Frank Zecha, staff members Carolyn Russo, Julie McManus, and Danielle DiRuzza, and Sebastian Grzejka representing NEPC. Mr. Pappastergion participated via remote access. Mr. Fleming called the meeting to order at 10:01 a.m.

- 1) Call the meeting to order-roll call of members: Mr. Durkin, Mr. McKenna, Mr. Pappastergion, Mr. Zecha, and Mr. Fleming present.
- 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) Discussion requested by Mr. Zecha regarding amounts and types of retiree data published – Executive Session under Purpose 4, Security
- 4) Mr. David Stokes, MWRA Senior Program Manager for IS Security: Cyber Security Presentation- Executive Session under Purpose 4, Security

Mr. Stokes joined the meeting via remote access.

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

**VOTED**

to convene in Executive Session under Purpose 4 to discuss security-related issues, Agenda items #3 and #4. 5-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. A breakout room was established and the Board convened in Executive Session at 10:03 a.m.

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

**VOTED**

to return to Open Session. 5-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. The breakout room was closed, Mr. Stokes signed off the call, and the Board returned to Open Session at 10:56 a.m.

Mr. Zecha asked why the MWRAERS retirees' benefit information is on Open Checkbook, as Mr. Zecha does not believe it is required. Mr. Durkin

responded that the State has the data on Open Checkbook, and MWRA employee data is on Open Checkbook, so MWRA has retiree data on Open Checkbook as well. Mr. Zecha asked the Retirement Coordinator to try to contact Mr. Stokes because he had an additional question.

At 10:57 Mr. Fleming received a phone call and notified the Board he had to leave the meeting abruptly and unexpectedly to tend to an urgent matter. Mr. Fleming left at 10:58 a.m. Mr. Durkin assumed the duties of the Chair in Mr. Fleming's absence for the duration of the meeting.

5) Approval of Minutes – VOTE

- a) November 17, 2022 Minutes
- b) December 1, 2022 Minutes
- c) July 27, 2017 Executive Session Minutes
- d) November 16, 2017 Executive Session Minutes

Mr. Pappastergion requested that the November 17, 2022 minutes be taken up separately, because he was not at the meeting and would therefore abstain.

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

**VOTED**

to approve the minutes of the November 17, 2022 meeting. 4-0, roll call with Mr. Durkin voting yes, Mr. McKenna voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. Mr. Pappastergion is recorded as having abstained.

Mr. McKenna inquired about the 2017 Executive Session minutes. The Retirement Coordinator responded that in the course of the audit, it was discovered that she had either forgotten to do the Executive Session meeting minutes, or that they had been misfiled. She, therefore, recreated the minutes for the two Executive Sessions in question from her notes and the notes of the Executive Director.

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

**VOTED**

to approve the minutes of the December 1, 2022 special meeting as submitted by the Executive Director, and the Executive Session minutes of the July 17, 2017 and November 16, 2017 meetings as submitted by the Retirement Coordinator. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

6) Approval of Warrants – VOTE

- a) Warrant 12-2022
- b) Warrant 12-2022A – Payroll

Through the Chair Mr. McKenna asked about the payment to the MWRA in the amount of \$1,401.52. The Executive Director responded that the MWRA had compensated an employee at incorrect pay grades, resulting in an overpayment of wages in the amount of roughly \$13,000. The \$1,401.52 represents 9% and 2% excess retirement deductions withheld from salary payments made in error as determined by MWRA. The Executive Director recreated the overpayment calculation independently from the correct pay rates and came to a variance of \$2.82 in the amount payable back to MWRA, so she is satisfied that the amount due to MWRA appears to be correct.

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

**VOTED**

to approve Warrant 12-2022. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion, Mr. Zecha voting yes, and Mr. Durkin voting yes.

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

**VOTED**

to approve Warrant 12-2022A. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

7) Approval of Monthly Transfers 12-2022 – VOTE

On a motion by Mr. Zecha and seconded by Mr. McKenna:

**VOTED**

to approve the list of monthly transfers as presented and as recommended by NEPC. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

8) Acknowledgement of retirement applications under G.L. c 32 §5 – VOTE

- |    |                 |                |
|----|-----------------|----------------|
| a) | Angelo Salamone | DOR 11/17/2022 |
| b) | Robert Murphy   | DOR 11/26/2022 |

On an omnibus motion by Mr. Zecha and seconded by Mr. McKenna:

**VOTED**

to acknowledge the superannuation retirements of Angelo Salamone and Robert Murphy. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

9) Approval of November 2022 bank reconciliation – VOTE

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

**VOTED**

to approve the bank reconciliation for the month of November 2022. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

- 10) Approval of Election Officer for Election of the Second Elected Member of the MWRA Employees' Retirement Board. The Retirement Coordinator included in the Board packages the proposed timeline for the election pursuant to 840 CMR 7.00.

On a motion by Mr. Zecha and seconded by Mr. Durkin:

**VOTED**

to name the Retirement Coordinator as the Election Officer for the Second Elected Member's position, and to adopt the proposed election timeline. 3-0-1, roll call with Mr. McKenna abstaining, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

In regard to the MWRA's Board of Directors, Mr. Pappastergion informed the Board that Mr. John Carroll will be resigning after serving 27 years on the Board of Directors. If Mr. Pappastergion is made Vice-Chair of the Board of Directors as the next longest serving at 25 years, it is likely that he will no longer be the designee on the Retirement Board, since the role is traditionally given to the Secretary.

Mr. Stokes returned to the meeting via remote access. Mr. Zecha stated that the retirees' data is on Open Checkbook, with names and monthly benefit amounts. MWRAERS has had several (unsuccessful) attempts to divert retirees' direct deposits. Mr. Zecha believes the attempts may be related to the public availability of the data, and that it should no longer be posted on Open Checkbook. Given the multiple attempts, retiree security needs to take priority over transparency. Mr. Stokes responded that in his view Mr. Zecha is "dead on" in his assessment. Mr. Stokes continued that although the attempt to become more transparent through Open Checkbook was well-intentioned when it was first implemented, the level of sophistication of the bad actors is increasing, there are more of them because it is lucrative, and a site like Open Checkbook can provide bad actors "one-stop shopping" for employees' and retirees' data. Mr. Zecha thanked Mr. Stokes for coming back and for his input. Mr. Stokes signed off the meeting.

- 11) Small Cap Value Equity Search Finalists Presentations
- a) Boston Partners/Elizabeth Sheerin, John Forelli, William Supple, George Gumpert
  - b) Mesirov/Kathryn Vorisek, Leo Harmon, Thomas Hynes
  - c) Vaughan Nelson/Chris Wallis, Mark Farrell
  - d) Hotchkis & Wiley/Ryan Thomas, Pat McMenamin

Ms. Elizabeth Sheerin, Mr. William Supple, Mr. John Forelli, and Mr. George Gumpert joined the call representing Boston Partners. Mr. Grzejka cautioned the presenters that there may be members of the public and/or media on the line, and not to disseminate any information which may be considered proprietary. Mr. Supple began that Boston Partners has enjoyed a 25-year relationship with MWRAERS beginning in 1997. Mr. Supple referred the Board to page 1 of the presentation for performance, noting that Boston Partners has beat their benchmark since-inception, and the account has grown from an initial investment of \$2.6m to \$16.7m with over \$38m earned through active management over 25 years. Page 3 shows Boston Partners has offices in Boston, New York, Los Angeles, Greenbrae, and London. Page 5 shows a representative client listing. The fees have been 100bps since-inception, and Boston Partners is willing to reduce the fees to 80bps should they be chosen to continue managing the Small Cap Value mandate. Mr. Gumpert referred the Board to page 5, stressing that the investment team is robust, with dedicated industry experts, and many years of experience. Page 6 describes the selection process based on a combination of valuation, business fundamentals, and business momentum, asking what is the company's management team doing, what is their thesis, etc. and digging down. Page 9 shows that valuations are at historic lows, and have been struggling over the past ten years, but are improving now. Mr. Zecha asked for Boston Partners' rankings relative to their peers over the three and five-year periods, inquiring if they are top decile. Mr. Gumpert referred the Board to page 13 for rankings, noting that Boston Partners is 30<sup>th</sup> since-inception. (Page 13 of the presentation states in the notes that "There are 35 strategies in the U.S. Small Cap Value Equity Universe over this Since Inception period.") Mr. Gumpert noted that we are coming out of a very tough market, but history suggests that there will be a recovery. Mr. Fleming noted that diversification has proved to be protection for the portfolio. Mr. Supple stated that the Boston Partners-MWRAERS relationship has been a 25-year one, and that it should be about more than rankings. Clients should be confident that Mr. Gumpert can bring portfolio performance up, and Mr. Supple noted the Board should consider whether the members are confident Boston Partners will continue to serve. Boston Partners signed off at 11:32 a.m.

Mr. Zecha asked what is the difference in NEPC's 1 ranking assigned to the RFP finalists as opposed to the 2 ranking. Mr. Grzejka responded that it is internal, and can be affected by nuances where similarities exist. Mr. Zecha asked which firms are on NEPC's preferred placement list, and Mr. Grzejka responded Vaughan Nelson and Hotchkis and Wiley.

Mesirow Representatives Kathryn Vorisek, Leo Harmon, and Thomas Hynes joined the call. Mr. Grzejka cautioned the presenters that there may be members of the public and/or media on the line, and not to disseminate any information which may be considered proprietary. Mr. Hynes thanked the Board for the opportunity, referring the Board to page 4 for firm information. Mesirow is employee-owned, with \$14.6bn institutional AUM, including about \$70m in MA

public pension funds. The Small/Mid Cap strategies have \$836m under management. The investment team averages 25 years of experience, and the relative value strategy has generated 200bps alpha since 2004, while offering outstanding downside protection. The fund is beating the benchmark by 900 bps YTD. The investment team is also invested in the strategy. Mr. Zecha asked about peer rankings for the three and five-year periods. The Portfolio Manager, Ms. Vorisek, directed the Board to page 11 for rankings. She continued that page 9 details the investment philosophy. With a dual focus on valuation, and how outside events affect the strategy & holdings. Catalysts positive or negative can impact performance, and Mesirow seeks catalyst which will generate growth and attractive returns. The goal is to generate alpha while maintaining a lower-risk profile, and the fund has a greater than 90% upside capture with 83% downside protection over 20 years. Page 10 demonstrates the lower-risk profile relative to the benchmark. Page 11 shows that the risk profile is favorable to the competition's and is among the lowest among active managers in the space. Mr. McKenna asked if Mesirow could describe the top ten and bottom ten return generators among the fund's holdings. Ms. Vorisek referred the Board to page 25 for the top and bottom five holdings. Lantheus Holdings, Nextier Oilfield, EQT, Allegheny Technologies, and Ovintiv are the top five performers, while Plymouth Rock Technologies, F45 Training Holdings, PacWest Bancorp, Petco, and Ligand Pharmaceuticals are the bottom five performers. She noted the Fund is still outperforming the sectors, and that the top five have contributed more than the bottom five have detracted. Mr. McKenna asked how long ago the fund started increasing energy exposure, and Mr. Harmon responded about eighteen months. Mr. Harmon stated that the security selection process, "Portfolio Strategy, Stock Selection, Portfolio Construction, Management Engagement" is detailed on page 12. He described the stock selection process as "finding a good house in a good neighborhood." Mesirow looks for both financial and non-financial catalysts to accelerate earnings. The Fund consists of 70-90 holdings. Mr. Hynes directed the Board to page 16 for performance, demonstrating higher returns at lower risk, with the fund outperforming the bench over the one, three, five and ten-year periods. Page 18 shows that the fund is not significantly overweight or underweight relative to the benchmark, although they are slightly lower in Financials and slightly higher in Secular Growth. Mr. Hynes reported that Mesirow would be offering a discounted fee of 67.5 bps, with the normal fee at 85bps for the first \$25m. If the Board chose the CIT option, the fee would be 45bps all-in. Mr. Zecha asked if the special fee structure would continue "to infinity and beyond" and Ms. Vorisek responded affirmatively. Mr. Grzejka noted that there have been five or six years wherein the strategy appears to have worked against them, citing 2016 as an example. Mr. Harmon attributed 2/3 of the underperformance to a market driven by lower-quality "hot" names, and the other 1/3 to poor stock selection. Mesirow addressed it by improving the selection process. The changes made appear to have paid off in 2021 and 2022. Mr. Grzejka expressed concern over client concentration. Ms. Vorisek confirmed that one client has roughly \$320m invested of approximately \$600 total in the Fund. Mesirow thanked the Board and signed off the call at 12:04 p.m.



Mr. McKenna expressed concern that a single client owns more than half of the fund. Mr. Grzejka concurred. The fund lost a significant amount in 2016 but has remained between \$500m and \$600m since. The next presenters, Vaughan Nelson had a similar experience in 2016. The five-year numbers no longer include 2016, so they really don't tell the full story. Mr. Zecha stated that he has to leave early for a 1 p.m. meeting. Mr. Zecha stated that Mesirow looked really good, top left quadrant for higher relative returns at lower risk than their peers, but that the client concentration is concerning. Mr. Grzejka cautioned that could be a "hot dot" issue, and stated that all presenters with the exception of Boston Partners have been "hot dots" due to Boston Partners' consistency of approach. At 12:13 p.m. Attorney Gibson signed on the call. Mr. Durkin reported that the Board has two manager presentations remaining, and that he could, if he so chose, sign off and return later. Attorney Gibson stated he would return in 30 minutes and signed off.

At 12:18 p.m., Vaughan Nelson representatives Chris Wallis and Mark Farrell joined the meeting. Mr. Grzejka cautioned the presenters that there may be members of the public and/or media on the line, and not to disseminate any information which may be considered proprietary. Mr. Farrell referred the Board to page 11 for an overview of the Small Cap Value investment team. Vaughan currently has no MA public fund clients, but has researched the PERAC constraints and anticipates no issues with compliance. Page 14 shows relative performance with top decile rankings over one-year and since-inception periods, with top quartile rankings over all periods within the 23-year track record of the Fund, across varied market environments. When Small Cap lost 40% during the GFC, Vaughan Nelson was down 20%. Page 28 details the investment process, which focuses on undervalued earnings growth, undervalued assets, and undervalued dividend yield. The team seeks 50% returns over three years, achieved by finding names which the market has underestimated earnings because of where the company is in their growth cycle, which Mr. Wallis differentiated from growth investing. There is a macro overlay to the process. The team studies growth cycles to identify upturns and downturns early. Data is studied by country and by industry to determine when a slow growth period will lead to a "recessionary window." For example, in 2021 Vaughan Nelson's data indicated that the US would enter a recession and that Europe would follow, and that the process was accelerated by the energy crisis. Mr. McKenna noted that on page 20 Vaughan Nelson cites a 30-40% portfolio turnover per year, and asked about the average hold period. Mr. Farrell responded that the hold period will depend on valuations. Mr. McKenna asked how often Vaughan Nelson buys in or out, and Mr. Farrell said the frequency would depend on market volatility. Quarters 1 and 2 of 2022 market volatility was high, and Vaughan Nelson sold a higher than usual percentage of the holdings. They do not go into it with a preconceived hold period for any given name in the portfolio. Mr. McKenna asked about top ten holdings, and was referred to page 25 of the presentation. Mr. Zecha left the meeting at 12:41 p.m. Mr. Grzejka asked what happened in 2016.

Mr. Wallis responded that 2016-2018 was challenging for the fund, and they did sell into it, shifting market positioning in 2017. Mr. Grzejka asked about the fee structure, and Mr. Farrell stated the fee is a flat 90bps on all assets. The Vaughan Nelson team thanked the Board and signed off the call at 12:45 p.m.

Mr. McKenna asked about a special meeting for the Fixed Income review. Mr. Grzejka responded that the Board needs to focus first on the Small Cap Growth Search due to having reached the maximum contract term.

At 12:47 p.m. Ryan Thomas and Pat McMenemy joined the meeting on behalf of Hotchkis & Wiley. Mr. Grzejka cautioned the presenters that there may be members of the public and/or media on the line, and not to disseminate any information which may be considered proprietary. Mr. McMenemy asked Mr. Grzejka to allow him to share the presentation on his screen. He thanked the Board for the opportunity, and stated their presentation would cover why Hotchkis & Wiley should be selected, and how their process is different. Page 3 details the differentiating factors, independence and stability of the investment team, and the low fee structure relative to their peers. The firm is employee-owned, and there has been low turnover to the management team in the 17 years of the strategy. The firm currently has no MA public fund clients, but would create a separate account and anticipates no issues with the PERAC guidelines. Mr. Thomas stated that Hotchkis & Wiley's only business is asset management. There are 24 people on the investment team, and in his 15 years, 2 people have left, and one to retire. The cumulative knowledge of the team is important to the process. Page 5 shows the strategy's characteristics. There are generally 350-400 names in the portfolio, with a market capitalization of between \$100m and \$5bn. Approximately one third of the portfolio is less than \$100m, while the Russell 2000's exposure in the space is roughly 20%. Micro Cap is often ignored due to lower liquidity, but Hotchkis & Wiley accesses that part of the market without increasing liquidity risk selecting overlooked ideas with mispriced stocks in order to gain a performance edge. The team has added value over the 17 years since inception, and has found a niche in an inefficient part of the market. The fund has a style bias and a size bias, as it is more value-leaning and smaller cap size relative to the benchmark. This serves as an efficient complement to other small cap strategies. The process is described on page 10. A universe of 3000 stocks is narrowed to 600-700 names by the analysts based secular trends, and business, industry and regulatory shifts, leading to a risk-adjusted valuation. The analysts have over 20 years of experience and use models which synthesize large amounts of data, and can endorse, adjust or eliminate the names from the universe. Portfolio-level risk of the remaining 350-400 names is then assessed and managed by industry, sector, liquidity and ESG factors. The analysts send feedback so the models "learn" over time, demonstrating the importance of a stable team. A supplemental ESG test is run, looking for "red flags." ESG is considered potentially to impact the overall portfolio risk ratings. Mr. McKenna asked what weighting ESG concerns are given in the models. Mr. Thomas stated that there are no ESG exclusion factors embedded in the models.

Analysts review every name for quality, balance sheet and governance. If the sustainability of the business is jeopardized, it will affect the quality score, and Hotchkis & Wiley will be less likely to invest. 100% of selections are subject to ESG integration. Mr. McKenna asked in the universe of 3000 names, if they invest in roughly the top 10% of ranked names, how many with a low initial ESG score in the first round will end up in the portfolio. Mr. Thomas answered that the chance is very low if the ESG score doesn't change, and the name is not likely to be added back into the universe. Mr. McKenna noted that this issue has been in the news lately, and as fiduciaries, the Board is charged with making decisions based on the best returns available on behalf of the System's membership, and have to try to achieve the assumed rate of return. Mr. Thomas stated that Hotchkis & Wiley employs a third-party check for ESG concerns (MSCI), which may disagree in certain cases, such as a small bank that is CCC-rated in ESG because it does not yet have an employee development program. The issue may be a simple lack of resources rather than an actual ESG issue. Mr. Grzejka asked how many CCC-rated stocks are screened out, and Mr. Thomas responded maybe 50 out of 700 names. Mr. Grzejka commented that the portfolio is very diverse and will have greater beta relative to the market, and asked what would be a good market for the fund. Mr. Thomas responded that there are offsetting factors. In more volatile environments, the fund's process leads to a bias toward stronger balance sheets and lower leverage, and names that trade lower relative to the benchmark. Mean-reverting markets generally result in positive relative performance for Hotchkis & Wiley. Mr. McKenna asked about peer rankings. Mr. McMenamain referred the Board to page 14 of the presentation for the peer rankings, which are top quartile over the 1,3, and 5-year periods, and top decile over the 7 and 10-year periods. He reiterated that they have a stable team, and a thorough process. Mr. Thomas thanked the Board. Hotchkis & Wiley signed off at 1:17 p.m.

Mr. Durkin asked that the Board take a five-minute recess. The Board returned at 1:27 p.m.

12) NEPC

- a) Flash Report as of 11/30/22
- b) Asset Allocation Rebalance Recommendation – VOTE
- c) Small Cap Value Equity Search Review
- d) Fixed Income Structure Review

Mr. Grzejka stated that as reported on the Flash report, November was a positive month. The fund returned (10.5%) YTD through November, while PRIT's YTD is (13.2%). Baillie Gifford was up 19% for the month, but that does not make up the prior losses sustained YTD. Non-US outperformed US for the month. Fixed Income was up 3.4% MTD with Garcia Hamilton returning 4% and Lord Abbett returning 3.5% for the month. Hedge Funds were flat or slightly negative. We have \$8m cash before the \$3.5m goes out for payroll and A/P. Coho and

Octagon redemptions approved last month will go into cash on the first business day of January. Regarding the remaining Entrust Investment, Grammercy prevailed in their lawsuit before the tribunal in Peru, so hopefully the matter will be resolved soon. Mr. McKenna asked if the \$100m proceeds will go back to the LP's, and Mr. Grzejka stated that is likely to be the case, after the attorneys are paid. Mr. McKenna stated that the System already asked for the full redemption, and whether we need to put in another request. Mr. Grzejka expects that will not be necessary, and that the investment will likely be sold off, as it is now more marketable with the pending settlement.

Mr. Grzejka presented rebalance recommendations for the Board's consideration.

On a motion by Mr. McKenna and seconded by Mr. Pappastergion:

**VOTED**

to approve the list of rebalance transfers as presented and as recommended by NEPC. 3-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, and Mr. Durkin voting yes. Mr. Zecha was experiencing audio difficulties and is recorded as present. The approved transfers were as follows:

Garcia Hamilton	(3,000,000)
Cash	3,000,000

Mr. Grzejka suggested that the Fixed Income Structure review and the Small Cap Value vote (Agenda Items 12 c) and 12 d) be tabled for consideration by the full Board. Mr. Durkin concurred and asked Mr. McKenna for his input. Mr. McKenna agreed that the matter should be taken up by the full Board, but asked Mr. Grzejka if the result of the review was that NEPC is suggesting Loomis Sayles and Garcia Hamilton as the optimal pairing among existing MWRAERS Fixed Income managers, and Mr. Grzejka confirmed. Mr. McKenna asked why there is no passive, and whether we need to do a search. Mr. Grzejka responded in the negative, and stated that he had used the same method as employed in the Equity portfolio review. Actively managed Core Bonds can add 20-50bps of value. The question in both cases was whether to go passive or keep active managers. Doing so would eliminate any real alpha. The Loomis Sayles/Garcia Hamilton pairing captures the best mix of lower tracking and risk balance. If selecting mix 2 or mix 3, the Board must be very comfortable with the managers, because some years the styles will be out of favor temporarily, and the managers will need to make up for that in performance. Mr. McKenna asked if anything is missing in the proposed mix, and Mr. Grzejka stated he does not believe so. If you look at Lord Abbett vs. Garcia Hamilton, you are looking at two very different parts of the market. He questioned whether Loomis Sayles FDT has lost its edge, and what the Board's comfort level is with the existing managers. Mr. McKenna stated the managers were intended to complement each other, but they have been outperformed by other managers in the universe.

Mr. McKenna question whether the solution might be in the pairing of two new managers, and a re-weighting. Mr. Grzejka stated that Garcia Hamilton has been up when Lord Abbett is down, so he believes it is structured correctly, even though things have gone wrong in the portfolio. He questioned the need for two Core managers, or for adding passive. Mr. McKenna asked whether the Board should research other alternative and passive Fixed Income managers to see what is out there. Mr. Grzejka stated that the Board may, but that the Small Cap Growth search needs to be prioritized due to the seven-year requirement. Mr. Durkin deferred further discussion to the January meeting. Mr. Grzejka concluded the NEPC portion of the meeting at 1:48 p.m.

### 13) Legal

Attorney Gibson reported having difficulty hearing some of the discussion earlier so the Board may want to re-state prior votes. Acting Chairman Durkin stated for the record that the only vote which occurred in the past two hours was the 3-0 vote to approve a \$3m redemption to cash from Garcia Hamilton.

Attorney Gibson discussed possible implementation of C. 259 (one-time 5% COLA) and recommended that the Board seek a cost analysis from the Actuary prior to discussion and vote. In this case, implementation would also require a vote by the Board of Directors for the Authority. Mr. McKenna asked if the Board should have the Executive Director send a letter to the MWRA's Executive Director in regard to the COLA. The Executive Director responded that Chairman Fleming had already directed staff to add the matter of the COLA to the January Agenda for discussion.

Attorney Gibson reminded the Board that the 91 earnings limit waiver would be expiring at the end of the year. Many municipalities have been having difficulty filling positions, so they have been filling vacancies by calling back retirees and will be limited in their ability to continue doing so. An anti-spiking change case was heard and the decision stated that the anti-spiking provision may not be applied to employees hired prior to its passage. PERAC has expressed an intent to appeal on the basis that all of the 2009 pension reforms may be likewise affected. Chief Administrative Magistrate McGrath is leaving to become a DIA Judge, and the incoming Governor will need to name a replacement. Attorney Gibson inquired as to the status of Mr. Sean Scott's application. The Retirement Coordinator state that she logs into PROSPER looking almost daily, and there has been no decision. Counsel reported that the Commonwealth has lowered its assumed rate of return to 7% for MA State Retirement System and MA Teachers' Retirement System. There are now no Systems remaining with a return assumption of greater than 8%, and 92% are less than or equal to 7.5%. Attorney Gibson and Attorney McDonough wished the Board a happy holiday season.

Mr. Durkin stated he would entertain a motion to adjourn. Mr. McKenna asked to discuss one more issue, whether the Board should ask NEPC to dig deeper on the Fixed Income portfolio and pairings. Mr. Durkin responded that the Fixed Income matter has already been added to the January agenda for discussion.

On a motion by Mr. McKenna and seconded by Mr. Pappastergion:

**VOTED**

to adjourn the December 15, 2022 meeting of the MWRA Employees' Retirement Board. 3-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, and Mr. Durkin voting yes. The meeting was adjourned at 2:00 p.m.

The following communications were distributed to the Board for their review:

PERAC MEMO #29/2022 – 5% Local COLA Option

PERAC MEMO #30/2022 – Proposed Regulations Regarding Compliance with the IRS Code

PERAC MEMO #31/2022 – 840 CMR 10:10(3) & 10:15(1)(c) – Annual Review of Medical Testing Fee

PERAC MEMO #32/2022 – Tobacco Company List

Launch of Kayne Private Energy Income Fund III

**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.**

**The date of the next regularly scheduled Retirement Board meeting is Thursday, January 26, 2023 10:00 a.m., Chelsea, MA.**

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James M. Fleming, Elected member

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Thomas Durkin, Appointed Member

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Kevin McKenna, Elected Member

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Andrew Pappastergion

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Frank Zecha, Fifth Member



NEPC, LLC

**Firm:** Loomis, Sayles & Company, L.P.

**Strategy/Product:** Multisector Full Discretion CIT

**Client:** MWRA Employees' Retirement System

### **NEPC Manager Due Diligence Questionnaire - Update**

#### **Instructions**

In support of our upcoming meeting we ask that you please complete this due diligence questionnaire. Please provide your responses in the form of brief descriptions, lists or tables added directly to this Word document.

Thank you for taking the time to complete this questionnaire. Please note that all materials submitted in relation to MWRA Retirement System may be subject to disclosure consistent with Massachusetts Public Record laws.

#### **Firm/Organization**

**1. Have there been any changes in ownership or management in the past year?**

No.

**2. List firm AUM, net flows and accounts gained/lost for the past 5 years.**

For more details, please refer to Attachment 1.

**3. Have there been any new or discontinued products in the past year?**

Please refer below for strategy extensions/new vehicles and strategy/vehicle closings in the past year.

#### **Extensions/New Vehicles**

- Effective October 13, an 18bp share class (F) was added to the Core Plus Fixed Income CIT with a \$500 million minimum. Documents were updated to add the new share class.
- Global Equity Opportunities NHIT funding in Q422

#### **Strategy/Vehicles Closings**

- All positions in the Natixis Senior Loan Fund UCITS were liquidated in December and the Fund will close when all trades have settled.
- The Strategic Income UCITS was liquidated and closed during the fourth quarter of 2022.

**4. Are any products capacity constrained?**





Small Cap Growth: the product is closed in the institutional channels (separate account & CIT) and the mutual fund remains open at this time. We continue to closely monitor flows and activity to manage our capacity to ensure we can continue to deliver our strategy as our clients expect.

SMID Growth: capacity is limited as we would be looking to soft close the product at around \$3B.

We assess capacity using two methods, each considering the overlap between our SMID Cap Growth and our Small Cap Growth portfolios. One method is based on the liquidity needs to efficiently execute our strategy. The second is based on a regression analysis of variables impacting capacity. The two different approaches yield a similar AUM capacity for the strategy of approximately \$3.0 billion for SMID Cap Growth. In these studies we tested five portfolio characteristics that impact capacity volume: number of holdings; days-to-trade tolerance; weighted average market cap in the portfolio; turnover and percentage of shared holdings. The current levels and long-term consistency in the levels of these five characteristics are the result of the strategy's philosophy and process. We are committed to this capacity as any change could breach the integrity of the strategy.

**5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact.**

**ONGOING LITIGATIONS – FIRM LEVEL:**

Item 1. Ongoing Litigation – Firm Level:

Loomis, Sayles & Company, L.P. is defendant in a civil complaint initially filed in April 2014. The complaint alleges that Loomis Sayles misclassified a software engineer as an independent contractor, when he should have been an employee of Loomis Sayles under applicable Massachusetts statute. The complaint purports to represent a class of unnamed technology contractors the plaintiff claims were misclassified as contractors. In its answer, Loomis denied all the allegations. Loomis believes the plaintiff's case has no merit, and intends to vigorously defend its position in this matter. The plaintiff represented and certified that he was an employee in fact of a sub vendor, and his employer represented and certified to Loomis Sayles that it complied with all state and federal tax and employment laws applicable to the employment of this individual. Depositions began in January 2015. Discovery ended in late May 2015 and dispositive motions, including a motion for class certification by the plaintiff and a motion for summary judgment by Loomis Sayles, were filed at the end of June 2015. A hearing on various motions was held in September 2016. The judge denied plaintiff's motion for class certification and Loomis Sayles' motion for summary judgment. In April 2018, the trial judge issued a directed verdict in Loomis Sayles' favor, and the plaintiff appealed the verdict in May 2018. The Massachusetts Court of Appeals heard oral arguments in the case in September 2019 and in January 2020 reversed the directed verdict, remanding the case for retrial. In February 2020 Loomis Sayles appealed this decision to the Massachusetts Supreme Judicial Court. The appeal was denied, and preparations are underway for a retrial. The retrial began in September 2022.



## Item 2. Ongoing Litigation – Firm Level:

In August 2022, Loomis Sayles Trust Company, LLC (LSTC) filed a class action complaint against Citigroup in the United States District Court for the Southern District of New York alleging Citigroup's failure to properly execute trades as LSTC's broker. On March 18, 2022, Loomis Sayles engaged Citigroup to execute certain transactions on behalf of the Loomis Sayles Growth Equity Strategies (GES) portfolios. The complaint alleges that Citigroup failed to achieve best execution in connection with two large orders among the transactions resulting in harm to certain of LSTC's funds and to certain clients of Loomis, Sayles & Company, L.P. (collectively with LSTC, "Loomis Sayles"). Loomis Sayles believes Citigroup failed to meet its legal obligations to take diligent and reasonable efforts to maximize the economic benefit to LSTC's affected funds and the clients of Loomis Sayles. In the complaint, LSTC alleges that Citigroup failed to discharge its fiduciary duty, including its duty of care, by failing to achieve best execution on these orders. The complaint further alleges that Citigroup's conduct resulted in significantly dislocated prices on the executed trades. It is important to note that this complaint is specific to the failed execution of two trades and does not extend to other aspects of Loomis Sayles' work with Citigroup. Loomis Sayles intends to continue to engage constructively with Citigroup on other client matters, but determined that litigation in this instance is necessary to protect clients that were impacted by these transactions.

## 6. Describe your diversity, equity and inclusion efforts with regard to the firm and its employees.

We seek, support and value individual differences as essential for innovation, leadership, and excellent performance. We support a diverse work force and are proactive in our hiring and management practices. Women and minorities comprise an important part of our work force at many levels. Our Diversity Committee transforms our commitments into action.

We feel strongly about the importance of playing a proactive, positive role in the local community, in part through a comprehensive charitable giving program. Our charitable giving activities focus on supporting charities that work with inner-city children and families, particularly in education and health care. Loomis Sayles also encourages our employees' own charitable efforts, through firm-sponsored service days, as well as by matching their charitable donations.

### **Our Commitment in Action**

**Diversity Committee.** Loomis Sayles diversity committee is comprised of representatives from the major departments and includes two Board members and works to oversee the firm's efforts at expanding and deepening its diversity.

**Talent development and corporate training.** The firm offers programs and training focused on creating and building an inclusive environment and retaining our diverse talent. The firm participates in development programs offered by The Partnership, Inc., which provides leadership training, consulting services and networking for professional persons of color in Boston. The firm also provides harassment and diversity awareness training to management and all new hires.



**Work-life balance.** Loomis Sayles has many programs and benefits designed to help our employees maintain a positive balance between their professional and personal lives. Examples are flexible work arrangements, childcare resources, elder care benefits and on-site work-life seminars.

**Supplier diversity.** We are members of the Supplier Diversity associations, and track our vendors to identify opportunities for minority and women owned businesses.

**Charitable partnerships.** Our Charitable Giving Committee supports programs in education, healthcare, social services and the arts, working with economically disadvantaged children and their families located in the urban areas in which we work and live. Our community partners represent and serve predominantly minority populations.

We encourage continual improvement of our people, our performance and our processes. We believe this culture exhibits itself in the quality of service we offer our clients.

### Portfolio Management Team

#### 1. Have there been any changes in the portfolio management team in the past year?

Please refer below for details on changes to the Multisector Full Discretion team.

#### 2022

Effective Q4 2022, Vish Patel is no longer a member of the Loomis Sayles Full Discretion team. He had previously served as the team's emerging market corporate strategist.

#### 2. Are there any expected changes to the team in the future (planned additions or departures)?

Fred Sweeney, long time investment director for the Full Discretion team, has opted into the Loomis Sayles Voluntary Separation Program, which was initiated at the end of 2022. He will leave the firm at the end of Q1. We are evaluating replacement options for his position now. In addition to Fred, the Full Discretion team is supported by two investment directors. David Zielinski, investment director, has 24 years of investment experience. He joined Loomis Sayles and the Full Discretion team in 2020. Kristen Doyle, associate investment director, has 14 years of investment experience. She joined Loomis Sayles in 2012 and the Full Discretion team in 2014.

### Process

#### 1. Have there been significant changes in any of the areas below in the past year?

- Identification of investment ideas

There have been no significant changes in the past year.



- **Process for exploring and vetting ideas**

Please refer to the response above.

- **Portfolio trading practices including buy/sell rules**

There have been no significant changes to the buy/sell discipline of the team. For more details, please refer below.

### **Buy Discipline**

In Full Discretion strategies, portfolio managers attempt to populate portfolios with the team's best ideas guided by a top-down credit cycle framework with effective risk assessment and oversight. Securities are purchased with a long-term investment horizon with the goal to hold securities as the fundamentals and valuations improve, and the team's investment thesis unfolds.

### **Sell Discipline**

The team typically sells a security when:

- Their investment thesis has unfolded and price appreciation has been fully valued
- Factors have lead the team to modify their investment thesis and/or risk associated with the position have changed

*There is no guarantee that the investment objective will be realized or that the strategy will generate positive or excess return.*

*Diversification does not ensure a profit or guarantee against a loss.*

- **Approach to portfolio monitoring and risk management**

There have been no significant changes to portfolio monitoring or risk management in the past year. The product team constructs portfolios by selecting from a group of securities identified as potential opportunities by the Sector teams. Portfolio managers do not purchase securities unless they have undergone the research and analytical processes of the Sector teams. The factors (in order of importance) that they feel are crucial in building portfolios include:

- Security selection
- Industry selection
- Sector allocation
- Country and currency selection
- Duration and maturity structure
- Yield curve positioning



Portfolio managers also apply Loomis Sayles' Risk Model (LRM), which uses historical correlation data and Sector team forecasts and allows the team to test various investment scenarios on a real time basis. The model addresses three sources of portfolio risk: currency, yield curve and spread change. The portfolio construction process integrates several risk management systems, which monitor and measure risk in portfolios. The Product team assesses market risk by identifying macroeconomic risk factors and themes. The team monitors the global economic outlook, evaluates the US Federal Policy, and determines yield curve expectations and expectations of worldwide interest rate differentials. Loomis' quantitative analysts have developed Spread valuation tools that use econometric models for top-down valuation of spreads and allow for user estimates of macro factors and stress testing. Loomis seeks to minimize issue specific risk through fundamental research. Fixed income analysts rank issues according to the Loomis Sayles proprietary credit rating system. They look at the impact of all factors upon agency ratings, primarily S&P and Moody's. In particular, the analyst anticipates credit rating changes for the purpose of avoiding future credit downgrades and participating in upgrades. The dedicated Sector teams further augment the credit risk assessment by thoroughly analyzing each issue and only recommending what they believe are the best opportunities. The team utilizes Loomis Sayles' proprietary portfolio management system, In2!, which provides scenario analysis and stress testing of individual securities during the security selection process. It displays the major portfolio risk factors versus the contractual benchmark for each portfolio and highlights the active currency portfolio summary risk factors by country, currency, duration, sector, industry and quality. Portfolio managers use multiple scenarios, including price, spreads and curves, to assess an individual credits risk profile. In addition, sector and product teams refer to Bloomberg PORT, Citigroup's Yield Book, Bloomberg and internal analytics for scenario analysis and Monte-Carlo simulations of returns on sectors and industries. These tools are also applied to measure tracking error and return volatility of individual portfolios and composites.

## Philosophy

### 1. Describe recent changes in investment philosophy, if any.

There has been no change to our core investment philosophy or process. We believe that research is a critical foundation for investment management excellence; however, no successful strategy remains static in a world of continuous change. We continue to seek to enhance our investment capabilities and refine our investment processes. We are constantly developing new analytical tools to assist our portfolio management teams in their quest for improved performance. Our goal is to deliver performance that meets or exceeds our clients' expectations.

While our philosophy has remained the same over the years, we continually enhance our process in order to provide our best possible service and performance for our clients.

We have made enhancements over the past several years to address the market dislocations and the rapid flow of information and the fixed income group has transformed itself into a team-driven organization. The reality is, this change has been organic and evolutionary. As the economic environment and markets change in nature, we believe it is essential to continually adapt our processes to meet the challenges we face. Mastering



the art of teamwork never ends. In the quest for superior performance, we will continue to adjust and update our investment process, teams and oversight to help ensure the best outcome for our clients. Over the past several years, we have implemented product teams, sector teams, risk analysis tools, and a state-of-the-art attribution system which encompasses a global process.

*Past performance is no guarantee of future results.*

*Any investment that has the possibility for profits also has the possibility of losses, including the loss of principal.*

*There is no guarantee that the investment objective will be realized or that the strategy will generate positive or excess return.*

## Portfolio

- 1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).**

For more details, please refer to Attachment 2 – MSFD Portfolio Characteristics.

- 2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.**

For more details, please refer to Attachment 3 – MSFD Strategy Details.

- 3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.**

Securities are selected from the firm's Credit Research universe, which extends to US and foreign government bonds, mortgage and asset-backed bonds, corporate investment grade and high-yield issues, and emerging market debt. Loomis Sayles' frequently employs issues other than straight dollar-pay domestically issued debt, with a goal of enhancing return and increasing portfolio diversification. The firm makes decisions based on the overall risk, and relative value of a particular instrument, tailored to client-specific guidelines.

## Performance / Market Outlook

- 1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.**

For more details, please refer to the attached presentation.

- 2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.**



- Exposure to emerging market credit was positive, aided by selected holdings in Mexico (capital goods sector) and Chinese property developers. For China property, bond prices have been under continued pressure given delayed re-openings due to Covid and limited governmental measures taken thus far to alleviate stresses on this sector. Recently, however, we have started to see more coordinated efforts as Chinese authorities have released rounds of policies to support the property sector.
- An allocation to high yield corporate credit was a contributor to excess returns as this sector fared better than many other areas of fixed income during the quarter. In addition, a handful of our higher conviction positions in the finance companies and consumer cyclical sectors have generally outperformed the broader market.
- An underweight to US Treasuries was beneficial as this sector did not keep pace with corporate credit.
- Within investment grade credit, selected consumer cyclical and communications holdings were beneficial for returns.
- Securitized credit, particularly within ABS (asset-backed securities) was a detractor of excess performance.
- Holdings of defensive, reserve-like positions were a modest laggard as riskier asset classes outperformed.
- A small allocation to equities was a detractor, with selected communications names weighing moderately on returns

**3. Describe your market outlook and how strategy positioning is impacted by your views.**

- Initial inflation data in the beginning of the fourth quarter of 2022 came in above expectations, however, subsequent readings were moderately positive, suggesting we may have passed peak inflation. The positive news appeared to usher in optimism that perhaps the Fed's aggressive rate hiking cycle is finally working to bring inflation down. As we moved closer to the potential peak in Fed policy, risk assets stabilized and spreads on investment grade and high yield corporates finished the quarter at tighter levels.
- In our view, the credit cycle<sup>1</sup> is firmly in the late cycle stage and the risk of downturn has become more balanced. We expect growth to continue to trend lower as manufacturing and housing metrics have deteriorated, however, in our view the US consumer appears on solid footing, maintaining strong levels of excess savings and continuing to spend at a healthy rate. Labor markets remain tight. We have observed higher wages, cost of living adjustments, an elevated number of job openings and employers who are reluctant to shed workers in industries where they may have trouble getting them back which could help to support consumer confidence. We believe a healthy consumer combined with positive corporate fundamentals and a



strong banking system should help provide a floor to economic activity and support credit fundamentals to some degree.

- While Inflation has likely peaked and positive real rates should have the effect of slowing growth and rolling inflation down over time, we believe inflation will likely remain sticky and above the Fed's target throughout 2023, primarily as result of wage pressure. We now believe much of the movement from the Fed has occurred or is currently being priced into the market, which in turn may also put a cap on the Treasury curve. We are currently expecting an additional 50 bps of tightening in the first quarter of 2023, which would bring the policy rate up to 5.00% after the March meeting. In our view, the market continues to want to compress this cycle and lean towards a Fed pivot but we believe inflation is structural at this point. We find it difficult for the Fed to begin cutting rates when inflation remains above their target. As a result, we are anticipating a Fed pause after the March meeting which would likely extend into the latter stage of 2023. Throughout the year, the Fed will likely be driven by the extent to which there is firm evidence of inflation moderating and at this point, we have not eliminated the possibility that the next Fed move could be a rate hike. We expect the US 10-year bond yield to move only modestly higher from here and we continue to be positioned defensively on rate risk, but to a lesser extent than earlier in 2022.
  - We believe that value has returned to US fixed income markets. Bond structures (price, yield and spread) appear relatively attractive. While corporate bond spreads in both investment grade and high yield are currently tighter than their long-term averages, we believe overall yields remain favorable post the 2008 Great Financial Crisis (GFC). Dollar prices on bonds are also currently at post-GFC lows. We believe the combination of discount-to-par and attractive yield could be increasing the potential value opportunity in bonds. We remain mindful of the risks to the global economy, such as tighter financial conditions, slowing Chinese growth, the Eastern Europe conflict, disruptions to the global supply chain and the lingering effects of the COVID pandemic. All of the turmoil around the world leaves us with a wide range of potential outcomes for growth, inflation and central bank policy response. With the likelihood of downturn in 2023 rising, we have been holding larger than average liquid reserves and seeking to maintain an up-in-quality bias. If volatility increases and we see what we view as more attractive yields and spreads, we would consider redeploying reserves. At the same time, short-term yields have risen meaningfully and we are comfortable with how we are being compensated as we wait for opportunities to potentially develop.
- 4. Could you please include a slide in your presentation that sows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.**

Please refer to the attached presentation for more details.





NEPC, LLC

**Firm:** Loomis, Sayles & Company, L.P.

**Strategy/Product:** Loomis Sayles Small Cap Growth

**Client:** MWRA Employees' Retirement System

### **NEPC Manager Due Diligence Questionnaire - Update**

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**ONGOING LITIGATIONS – FIRM LEVEL:**

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We encourage continual improvement of our people, our performance and our processes. We believe this culture exhibits itself in the quality of service we offer our clients.

### Portfolio Management Team

**1. Have there been any changes in the portfolio management team in the past year?**

There have been no changes to the Specialty Growth Strategies investment team within the past year.

There are no contemplated team changes at this time.

**2. Are there any expected changes to the team in the future (planned additions or departures)?**

There are no expected changes to the team in the future.

### Process

**1. Have there been significant changes in any of the areas below in the past year?**

- **Identification of investment ideas**

Sources of investment ideas: traditional fundamental analysis and a proprietary growth screen. First, we leverage our experience in fundamental research and our network of industries and company contacts. The growth screen, a productivity tool, ranks the investable universe according to three criteria: relative strength, earnings power and share turnover. About 40 - 50% of our ideas are sourced through the growth screen, which we consider a productivity tool.

- **Process for exploring and vetting ideas**

Please refer to the response above.

- **Portfolio trading practices including buy/sell rules**



There have been no significant changes to the buy/sell discipline of the team. For more details, please refer below.

### **Buy Discipline**

Under-exploited stocks that are early in their growth cycles are at our preferred buy-point because the stock is not fundamentally challenged, nor is it yet a highly recognized, "hot" stock. Once we identify investment candidates that meet our investment criteria, we seek to initiate positions in stocks we believe are priced to offer a minimum 25% upside potential with a return-to-risk profile of 2:1 upside-to-downside. Our goal on purchase is to have at least a one-year holding period and preferably a multi-year holding.

### **Sell Discipline**

We actively monitor all holdings in the portfolio. A position can be sold or trimmed for several reasons including a stock attains our price target, the position grows to a portfolio weight that is beyond our fundamental level of conviction or we identify a better risk / reward opportunity. We may also sell a position when we identify a potential for deteriorating returns. We follow a stop/loss discipline based on both absolute and relative price action over the trailing four-week period, under normal market conditions.

- **Approach to portfolio monitoring and risk management**

The fund is a diversified, style pure small cap growth strategy with approximately 90-110 names. Position size is typically 0.5-2.0%. Sector weightings are limited to +/- 50% of benchmark allocation for sectors greater than 10% of the benchmark. IPOs and early stage companies are limited to a 10% weighting in the portfolio.

We believe a high conviction; active management process requires disciplined risk awareness. Our risk management is integrated into our investment process from the stock level to the portfolio level and from the buy discipline through the sell discipline.

We seek to provide outperformance over full market cycles with portfolio volatility at, or below, benchmark volatility.

***Descriptions assume normal market conditions. Numbers are approximate.***

***Diversification does not ensure a profit or guarantee against a loss.***

## **Philosophy**

### **1. Describe recent changes in investment philosophy, if any.**

Our investment philosophy and process have remained constant since inception in April 2005. We do not anticipate significant changes to either going forward.



## Portfolio

- 1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).**

For more details, please refer to Attachment 2 – Small Cap Growth Portfolio Characteristics.

- 2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.**

For more details, please refer to Attachment 3 – Small Cap Growth Strategy Details.

- 3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.**

We are a true growth manager looking to invest in small companies that we believe have a good chance to grow into larger companies. Idea generation is driven equally by our traditional methodology and our screen. Each name is thoroughly vetted through our fundamental research process and a company specific DCF is created. While we are agnostic as to where we find opportunities, given the nature of our approach, we tend to have more exposure to sectors like technology and health care, with less exposure to areas like consumer staples and materials.

There are minimum market cap, liquidity and measures of exploitation that we also utilize when initially assessing an investment; should a security not meet these thresholds we will not invest.

## Performance / Market Outlook

- 1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.**

For more details, please refer to the attached presentation.

- 2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.**

Although the Russell 2000 Growth index was up 4.13% during the quarter, the index was still down 26.4% for the year with significant volatility on both ends of the spectrum persisting throughout the year. Along with drawdowns, some of the most intense rallies that take place historically often occur during bear markets and 2022 was certainly no exception. During the quarter we had 17 extreme up/down days (at least +/-2%) for the Russell 2000 Growth index. This brings the total to 86 extreme up/down days for 2022, representing ~34% of all trading days during the year. Despite this volatility, our Small Cap Growth strategy solidly outperformed the Russell 2000 Growth index and ranked in top quartile vs. peers. More importantly, our strategy remains well ahead of its benchmark across all trailing periods through 12/31/2022.



### **Outperform**

We tend to favor quality companies with differentiated growth opportunities that we believe are positioned to benefit from longer-term, secular growth drivers. We would expect our strategy to outperform in markets where returns are driven primarily by quality, growth fundamentals and in periods when growth becomes a scarce near-term commodity.

### **Underperform**

We would expect our strategy to underperform relative to the benchmark in markets where returns are driven by low-quality stocks and in narrow markets where a sector or small group of industries drive returns.

Additionally, given the true growth approach of our investment strategy, we would generally expect to underperform when market returns are driven by more traditional value characteristics and less by growth characteristics. During such times companies with stronger growth rates and higher valuations relative to peers may underperform.

*Past performance is no guarantee of future results.*

### **3. Describe your market outlook and how strategy positioning is impacted by your views.**

With the market having gone through another quarter with meaningful volatility and little progress, it may be the right way to think about the market going forward into 2023. While the Fed may be approaching the end of its rate hikes, which would ease some concerns, it is clearly intending to keep rates at higher levels than they have in the last few cycles, which provides other concerns. Most traditional tools used to predict recessions (inverted yield curve, etc.) are pointing in that direction, but the economy continues to chug along and likely will for the first half of 2023. This pattern of half full/half empty seems to be running rampant through the financial markets and appears to be settling in, which would lead to further volatility.

The shift in leadership we referenced in our last letter continues to take shape, with Energy and Industrials continuing to show strength in the 4<sup>th</sup> quarter. The narrative to explain this is certainly digestible. With continued geopolitical uncertainty, the world continuing to open up post the pandemic, the de-globalization of the economy, the United States' fully depreciated capital equipment, and the infrastructure investments should all lead to sustainable demand for industrial, energy, and material companies. While technology performed reasonably well in the 4th quarter, there are signs of oversupply and valuations are still rich, particularly given that the sector tends to be more sensitive to higher interest rates. Regardless of which sector they reside in, we think high quality companies with the best secular growth stories and attractive valuations will likely have the most resilient estimates and be best positioned to take advantage of an improving economy when that time comes.

### **4. Could you please include a slide in your presentation that sows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.**

Please refer to the attached presentation for more details.

# MWRA Retirement System

---

JANUARY 26, 2023

## Presented By

Teresa H. Woo, CFA  
Vice President, Relationship Manager



THINK BROADLY.  
ACT DECISIVELY.



presented by:



**TERESA H. WOO, CFA**  
Vice President, Relationship Manager

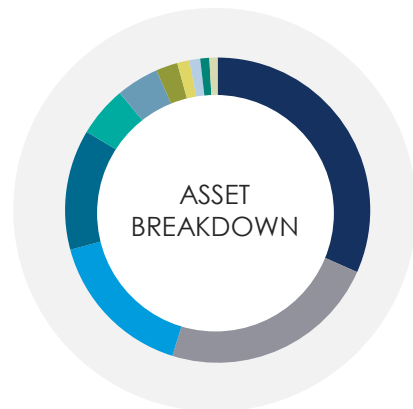
# loomis sayles at a glance

Firm Overview



## ASSETS UNDER MANAGEMENT BY CLIENT BASE

- US institutional
- Non-US institutional
- US retail
- Non-US retail

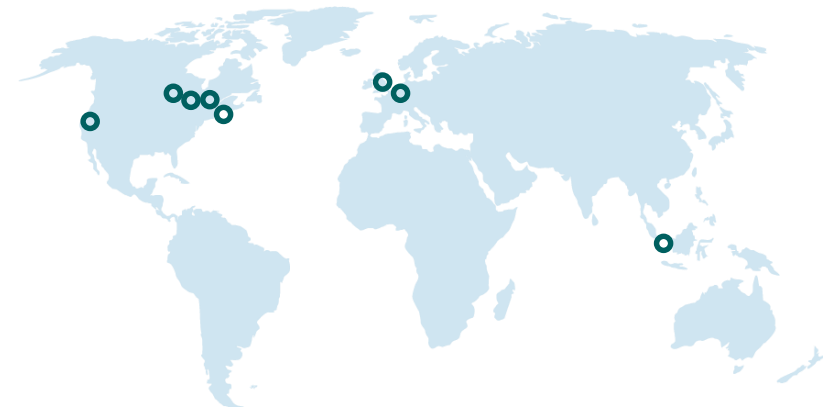


## INVESTMENT EXPERTISE ACROSS ASSET CLASSES

- Fixed income: **\$215.6 B**      Equity: **\$66.4 B**
- Investment Grade Corporates
  - Equities
  - Developed Country Treasuries
  - Mortgage & Structured Finance
  - High Yield Corporates
  - Emerging Market Debt
  - Municipals
  - Bank Loans
  - Other
  - Convertible Bonds
  - Government Related

SERVING CLIENTS WITH INTEGRITY  
& A GLOBAL PERSPECTIVE SINCE

**1926**



**BOSTON • CHICAGO •**  
**DETROIT • MINNEAPOLIS • SAN FRANCISCO**  
**LONDON • SINGAPORE • UTRECHT**

*As of 12/31/2022. The Utrecht office opened on November 1, 2020.  
Due to rounding, pie chart total may not equal 100%. Other includes cash & equivalents and derivatives.  
Total AUM includes the assets of both Loomis, Sayles & Co., LP, and Loomis Sayles Trust Company, LLC. (\$33.7 billion for the Loomis Sayles Trust Company).  
Loomis Sayles Trust Company is a wholly owned subsidiary of Loomis, Sayles & Company, L.P.*

# foundation for alpha

Firm Overview

## CREDIT RESEARCH

Alpha generation through differentiated insights

Providing insight and differentiated perspectives across the credit classes, risk spectrum, and capital structure

## EQUITY

Driving alpha through independent thinking

Active long-term strategies built on differentiated non-consensus insight

## MACRO STRATEGIES

Focused insights for investment team impact

Tailor-made research and data driven assessments of global macro investment conditions, opportunities and risks

## MORTGAGE & STRUCTURED FINANCE

Opportunities outside traditional asset classes

Deploying fundamental research to uncover hidden alpha potential in complex structured markets

## QUANTITATIVE RESEARCH & RISK ANALYSIS

Bringing together the art and science of investing

Translating market data and investor intuition into actionable signals

## TRADING

Beyond trade execution

+50 trading professionals integrated within all investment processes every step of the way

## ESG

Integrate and engage

Education and tools for investment teams to incorporate material ESG factors

## INVESTMENT RISK OVERSIGHT

Ensuring investment teams meet client objectives

A common foundation underlying all strategies:

- Sound philosophy
- Rigorous, repeatable process
- Proprietary research
- Disciplined portfolio construction
- Integrated risk management

## TECHNOLOGY

Translating data into insight

Tapping the power of our proprietary In2! technology platform, integrating more than 5 billion data points each day

## BUSINESS INFRASTRUCTURE

Specialized expertise for critical services

Integrated legal, compliance, distribution, marketing, relationship management & client service teams

# alpha engines

Firm Overview

## FIXED INCOME

ALPHA STRATEGIES	BANK LOANS	DISCIPLINED ALPHA	EMERGING MARKET DEBT	FULL DISCRETION	GLOBAL	MORTGAGE & STRUCTURED FINANCE	MUNICIPAL	PRIVATE FIXED INCOME‡	RELATIVE RETURN
Credit Asset	Senior Loans	Core	Corporate	Multisector	Global Bond	Agency MBS	Short	Investment Grade Private Credit	Short Duration
Emerging Market Debt Blended	Senior Floating Rate and Fixed Income	Intermediate Corporate	Local Currency	Multisector Credit	Global Credit	Core Securitized	Intermediate	Core Private Credit	Inter. Duration
World Credit Asset	CLOs	Intermediate Credit	Short Duration	Core Plus Full Discretion	Global Debt Unconstrained	IG Securitized Credit (ERISA)	Medium Crossover†	Opportunistic Private Credit	Core
Multi-Asset Income		Long Corporate	Asia Credit	High Yield Full Discretion	Global Disciplined Alpha**	Opportunistic Securitized Credit			Core Plus
Inflation Protected (TIPS)		Long Gov't Corp		Global High Yield					IG Corporate
Systematic Investing Strategies		Long Credit		US High Yield					IG Inter. Corp
		Global Disciplined Alpha**		High Yield Conservative					Long Corporate
				Strategic Alpha					Long Credit
									Long Gov't/Credit
<b>\$10.3 B*</b>	<b>\$2.7 B</b>	<b>\$17.1 B</b>	<b>\$3.0 B</b>	<b>\$59.3 B</b>	<b>\$26.1 B</b>	<b>\$13.2 B*</b>	<b>\$5.9 B</b>	<b>-</b>	<b>\$88.2 B</b>

## EQUITY

GROWTH EQUITY STRATEGIES	GLOBAL EMERGING MARKETS EQUITY	GLOBAL EQUITY OPPORTUNITIES	SPECIALTY GROWTH STRATEGIES	SMALL CAP VALUE
All Cap Growth	Global Emerging Markets Equity	Global Allocation	Small Cap Growth	Small Cap Value
Global Growth	Global Emerging Markets Equity Long/Short***	Global Equity Opportunities	Small/Mid Cap Growth	Small/Mid Cap Core
International Growth			Mid Cap Growth	
Large Cap Growth				
Long/Short Growth Equity				
<b>\$51.0 B</b>	<b>\$314.1 M</b>	<b>\$12.8 B</b>	<b>\$5.8 B</b>	<b>\$2.4 B</b>

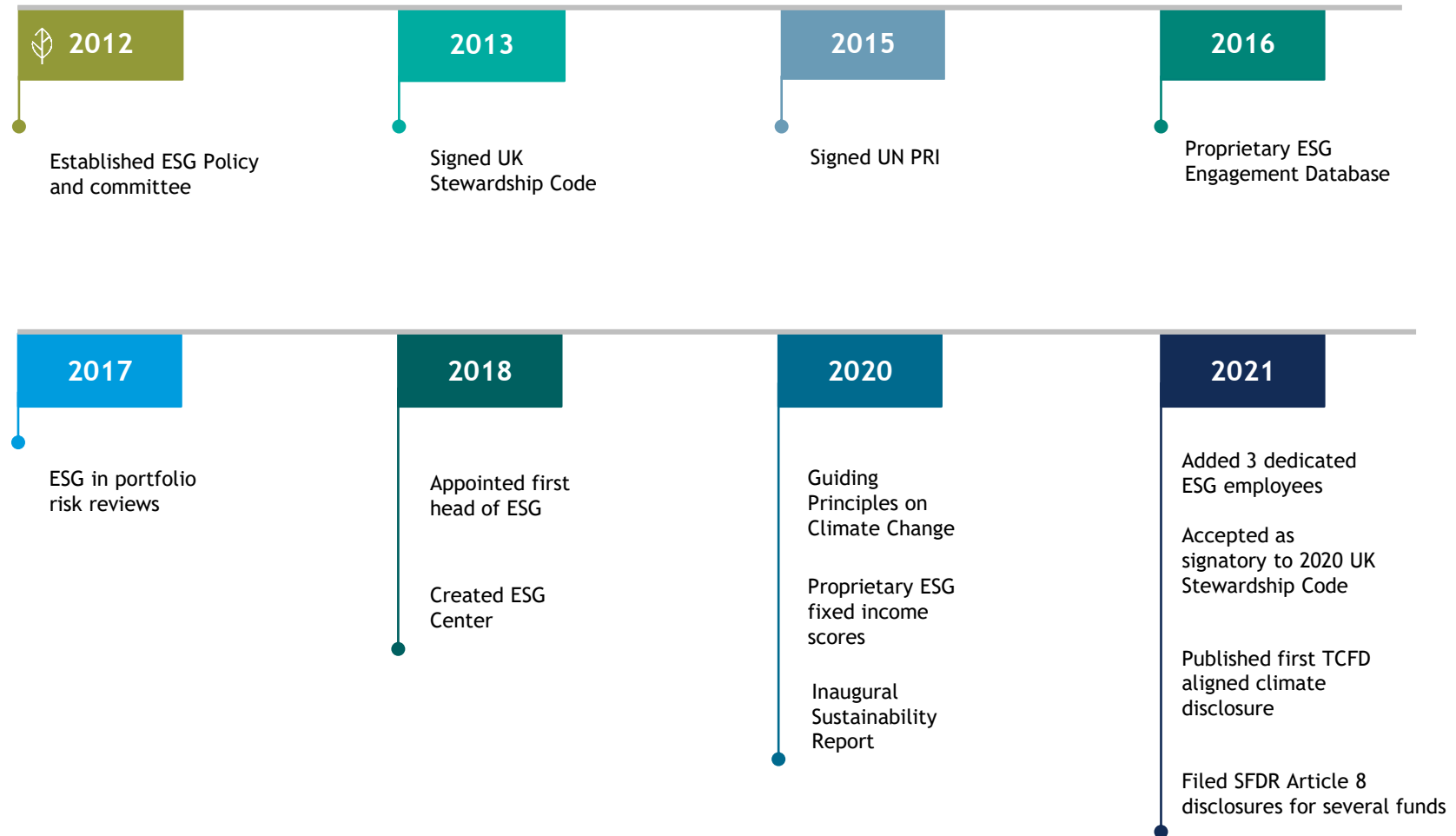
As of 12/31/2022.

\*Includes accounts that may also be counted as part of other strategies \*\*Co-managed investment strategy \*\*\*Assets include seed money from our parent company. †Accounts may be co-managed along with other teams as appropriate.

‡ The Private Fixed Income team joined the firm in January 2022.

# ESG advancement at loomis sayles


OUR APPROACH HAS BEEN FORMALIZED AND ENHANCED BY A NUMBER OF ESG INITIATIVES



As of 3/31/2022.


# full discretion investing

## TEAM BELIEFS



**The market is inefficient at pricing specific risk.**

Fundamental research paints a clearer picture of intrinsic value. We use this foundation to help identify mispriced securities when markets are short-term focused, illiquid, or irrational due to factors including fear and greed.



**A credit cycle view can help identify opportunities and risks.**

We follow a disciplined top-down framework to analyze the factors driving the macroeconomic cycle, evaluate how they might affect asset valuations, and seek to harvest credit risk premiums.



**Risk management is integral, not an add-on.**

We believe in a rigorous investment process that seeks to balance risk/reward tradeoffs effectively and integrates risk management at every step.

	MULTISECTOR				HIGH YIELD		
	STRATEGIC ALPHA	CORE PLUS FULL DISCRETION	MULTISECTOR CREDIT	MULTISECTOR FULL DISCRETION	US HIGH YIELD	GLOBAL HIGH YIELD	HIGH YIELD FULL DISCRETION
BENCHMARK	ICE BofA 3Mo Treasury Bill	BBG US Agg	BBG US Credit	BBG US Gov/Credit	BBG US Corp HY 2% Cap	ICE BofA Global High Yield	BBG US Corp High Yield
STYLE	Unconstrained	Opportunistic	Opportunistic	Opportunistic	Benchmark Aware	Benchmark Aware	Opportunistic
INCEPTION	2010	1989	2010	1989	2009	2016	1989

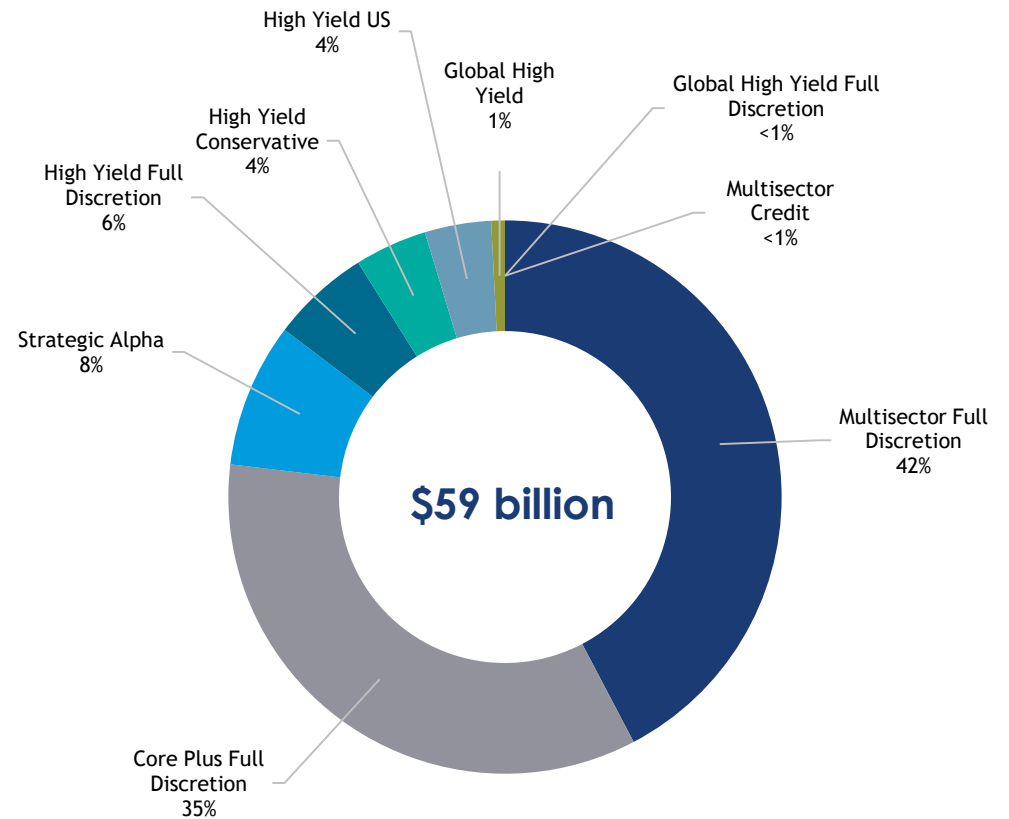
Any investment that has the possibility for profits also has the possibility of losses, including the loss of principal.  
 Views and opinions are subject to change at any time without notice. Other industry analysts and investment personnel may have different views and opinion

# full discretion product

## LOOMIS SAYLES FULL DISCRETION TEAM ASSETS UNDER MANAGEMENT

\$59 billion as of December 31, 2022

	ASSETS (\$ MILLIONS)
Multisector Full Discretion	24,785
Core Plus Full Discretion	20,267
Strategic Alpha	4,946
High Yield Full Discretion	3,379
High Yield Conservative	2,475
High Yield US	2,274
Global High Yield	468
Global High Yield Full Discretion	185
Multisector Credit	128



As of 12/31/2022. Due to rounding, pie chart total may not equal 100%.

# investment team

## HIGHLY EXPERIENCED TEAM SUPPORTED BY DEEP FIRM RESOURCES

PORTFOLIO MANAGEMENT (Years of Industry Experience/Years with the firm)

<p><b>Matt Eagan, CFA</b></p> <p>Portfolio Manager 32 / 25</p>	<p><b>Brian Kennedy</b></p> <p>Portfolio Manager 32 / 28</p>	<p><b>Elaine Stokes</b></p> <p>Portfolio Manager 35 / 34</p>	<p><b>Dan Fuss, CFA</b></p> <p>Senior Advisor 64 / 46</p>
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### KEY SUPPORT

<p><b>Strategists</b></p> <p>Todd Vandam, CFA* Bryan Hazelton, CFA Brian Hess Stephen Laplante, CFA</p> <p>Chris Romanelli, CFA Peter Sheehan Scott Darci, CFA</p>	<p><b>Investment Directors</b></p> <p>Fred Sweeney, CFA David Zielinski, CFA Kristen Doyle</p>	<p><b>Investment Analysts</b></p> <p>Shong Xiao, CFA Chidiebere Okpoebo Elizabeth Ditomasso**</p>	<p><b>Portfolio Specialists</b></p> <p>Rigas Gartaganis Boeurn Kan-Crawford</p> <p>Matt Tierney Modestas Ilkys Amy Steede</p>
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### SPECIALTY RESEARCH†

<p><b>Convertibles</b></p> <p>Rich Crable Mark Ravanese Olga Tatar, CFA</p> <p>Greg Jones, CFA Kenneth Wallace</p>	<p><b>Distressed/Restructuring</b></p> <p>Colin Wilson Murphy</p>	<p><b>Customized</b></p> <p>Nicole Ranzinger Zachary South Ryan Yackel</p>
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### SECTOR TEAMS

<ul style="list-style-type: none"> <li>• US Yield Curve</li> <li>• Global Asset Allocation</li> <li>• Developed Non-US Markets</li> <li>• Investment Grade / Global Credit</li> <li>• Mortgage &amp; Structured Finance</li> </ul>	<ul style="list-style-type: none"> <li>• US Government</li> <li>• High Yield/Bank Loans</li> <li>• Emerging Markets</li> <li>• Convertibles</li> </ul>
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### FIRM RESOURCES

<p><b>Macro Strategies</b></p> <ul style="list-style-type: none"> <li>• 2 Directors</li> <li>• Associate Director</li> <li>• Chief US Economist</li> <li>• 5 Senior Sovereign Analysts</li> <li>• 4 Sovereign Analysts</li> <li>• Senior Commodities Analyst</li> <li>• Senior Research Analyst</li> <li>• Research Analyst</li> </ul>	<p><b>Credit Research</b></p> <ul style="list-style-type: none"> <li>• Director</li> <li>• 1 Associate Director</li> <li>• Head of Municipal Research</li> <li>• Head of Convertibles Research</li> <li>• 42 Senior Analysts</li> <li>• 11 Analysts</li> <li>• 8 Research Senior Associates</li> <li>• 8 Research Associates</li> </ul>	<p><b>Mortgage &amp; Structured Finance</b></p> <ul style="list-style-type: none"> <li>• Head</li> <li>• 4 Portfolio Managers</li> <li>• 2 Strategists</li> <li>• 3 Senior Analysts</li> <li>• 3 Research Analysts</li> <li>• 3 Senior Research Associates</li> <li>• Director, MSF Trading</li> <li>• 4 MSF Traders/Tas</li> </ul>	<p><b>Fixed Income Trading</b></p> <ul style="list-style-type: none"> <li>• 27 Traders/TAs</li> <li>• Director, Portfolio Implementation</li> <li>• 18 Portfolio Specialists</li> <li>• Director, Operational Trading Risk Mgt.</li> <li>• Risk Analyst</li> </ul>	<p><b>Investment Risk and Strategy Management</b></p> <ul style="list-style-type: none"> <li>• Chief Inv. Risk Officer</li> <li>• Risk Engineer</li> <li>• Investment Risk Manager</li> <li>• 3 Senior Inv. Risk Analysts</li> <li>• 3 Inv. Risk Analysts</li> <li>• Inv. Risk Associate</li> </ul>	<p><b>Quant. Research &amp; Risk Analysis</b></p> <ul style="list-style-type: none"> <li>• Director</li> <li>• 2 Associate Directors</li> <li>• 10 Quantitative Analysts</li> </ul> <p><b>ESG</b></p> <ul style="list-style-type: none"> <li>• Head</li> <li>• Associate Director</li> <li>• Senior Climate Analyst</li> <li>• Project Associate</li> </ul>
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As of 12/31/2022.

\*Portfolio manager on the High Yield strategies and Strategic Alpha \*\*Investment Associate †Specialty Research resides within the Credit Research group.

^Full Discretion Strategies managed by this team include: Multisector Full Discretion, Strategic Income, Core Plus Full Discretion, and Investment Grade Fixed Income.

Full Discretion^



# guideline summary

## BENCHMARK

- Bloomberg Capital US Government/Credit Index

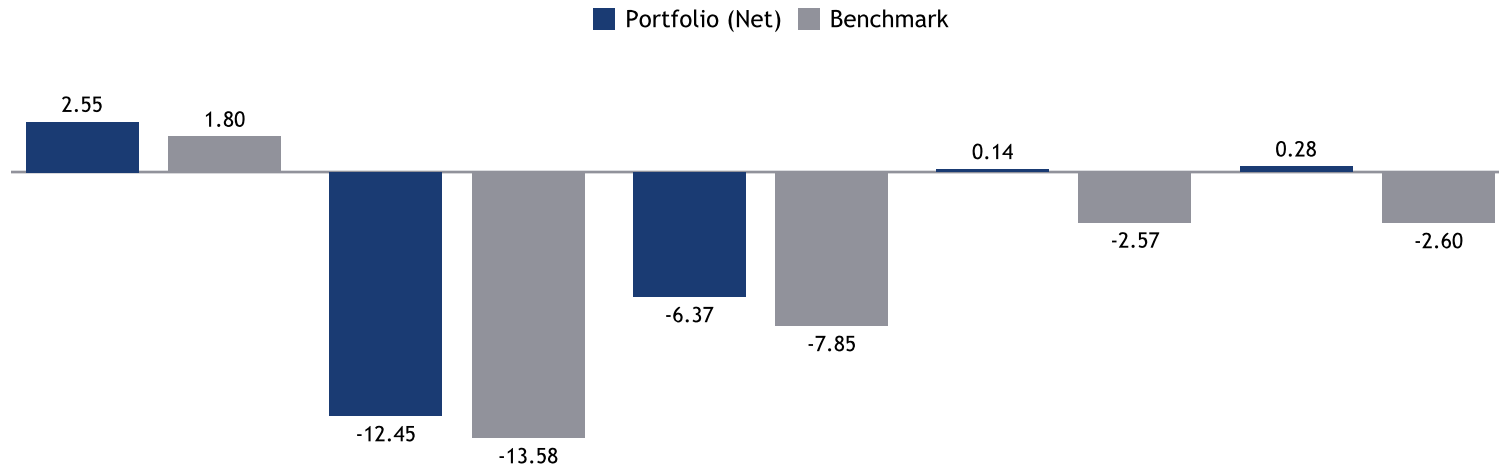
## GUIDELINES & LIMITATIONS

- Minimum Credit Quality: Account must hold at least 65% MV rated equal to or above Moody's, S&P or Fitch, Baa3/BBB-/BBB-, at the time of purchase. Loomis rating applies if security is not rated by S&P, Moody's, or Fitch.
- Split Rated Securities: Higher rating will govern split-rated securities.
- Issue: May not hold more than 5% MV in any one issue, excluding US Treasuries & Government Agencies, the Senior Floating Rate Fund LLC and the LS Full Discretion Securitized Asset Fund at the time of purchase.
- Investment Classes: The portfolio may invest up to 15% in the LS Full Discretion Institutional Securitized Fund at the time of purchase.
- Investment Classes: Account may not purchase or hold mutual funds excluding the Senior Floating Rate Fund LLC and the Loomis Sayles Full Discretion Institutional Securitized Fund
- Convertibles & Residual Equity: 10% in Common stock, at the time of purchase.
- Industry Concentration: No industry, as defined by Bloomberg Barclays Capital, except securities issued or guaranteed by the U.S. Government, its agencies, instrumentalities, or government sponsored entities will comprise more than 25% of the market value of the Fund, at the time of purchase.
- Currency: 60% minimum in US dollar denominated securities, including cash and cash equivalents, at the time of purchase.

*Guideline summary is not a complete restatement of guidelines. The slide is intended to be a summary to aid in the review process.*

# performance

## TRAILING RETURNS AS OF 12/31/2022 (%)



	QTD	1 Year	2 Years	3 Years	Since Inception 11/26/2019
Excess Return (Net)	+0.76	+1.12	+1.48	+2.71	+2.87

### PORTFOLIO VALUATION (USD)

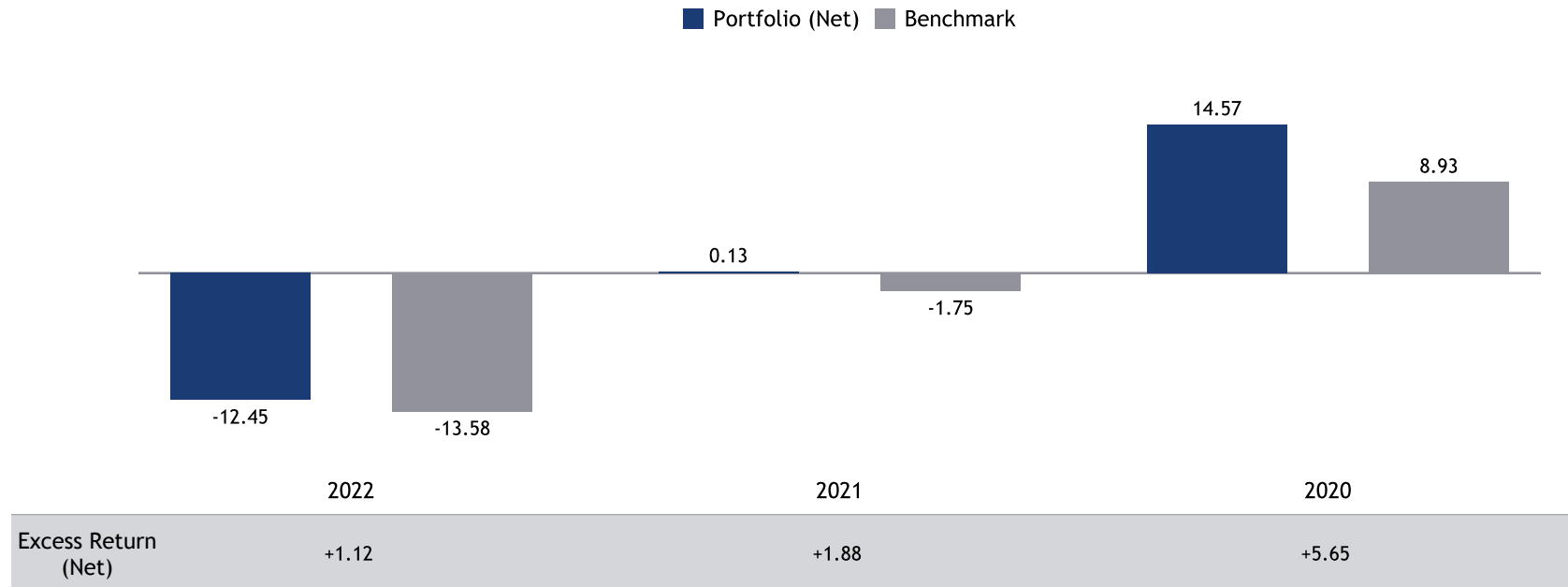
	Portfolio 11/26/2019	Portfolio 12/31/2022
Total	38,517,547	46,735,006

Benchmarks: BBG Govt Credit (11/26/2019 - 12/31/2022).  
The current benchmark is Bloomberg U.S. Government/Credit Index.



# performance

## CALENDAR YEAR RETURNS AS OF 12/31/2022 (%)



Benchmarks: BBG Govt Credit (11/26/2019 - 12/31/2022).  
The current benchmark is Bloomberg U.S. Government/Credit Index.



LOOMIS SAYLES®

Sources: Loomis, Sayles & Company, L.P. and others

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December 31, 2022

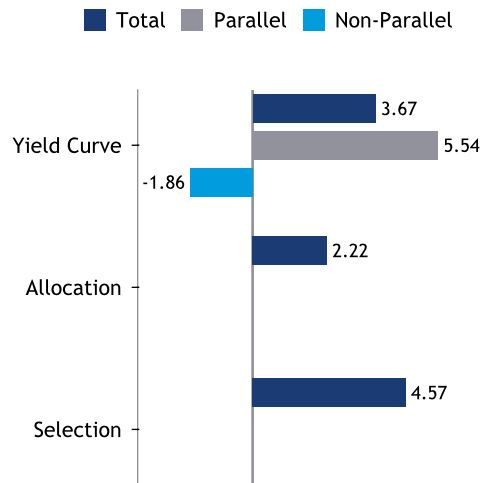
# attribution analysis

11/26/2019 TO 12/31/2022

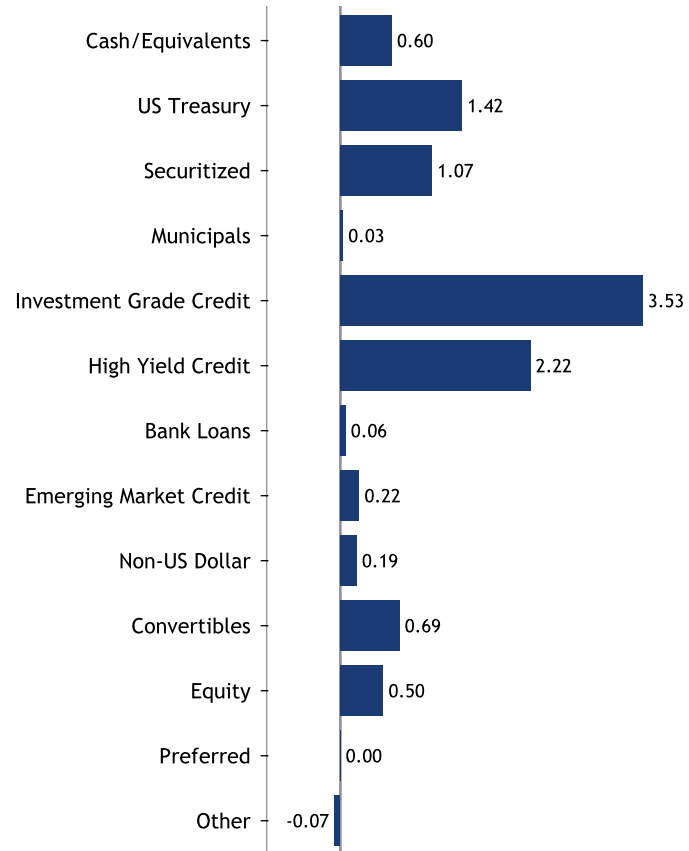
## TOTAL RETURNS

Total Return	
Portfolio Return	2.32
Benchmark Return	-7.83
Excess Return	10.15

## EXCESS RETURN ATTRIBUTION



## EXCESS RETURN ATTRIBUTION BY SECTOR



Figures on the bar chart may not add up to total excess return as they exclude impact of trading and pricing differences.  
 Other includes the following industries: Government Guarantee, Government Sponsored, and Owned No Guarantee.  
 The current benchmark is Bloomberg U.S. Government/ Credit Index.

# attribution analysis

11/26/2019 TO 12/31/2022

## SECTOR DISTRIBUTION

	Portfolio Final Weight	Benchmark Final Weight	Portfolio Average Weight	Benchmark Average Weight	Portfolio Return	Benchmark Return	Total Effect
Investment Grade Credit	33.07	37.56	36.50	39.78	-1.89	-7.78	3.53
High Yield Credit	14.86	0.01	15.66	0.00	-7.53	-0.75	2.22
US Treasury	15.29	57.90	12.63	55.09	0.11	-8.33	1.42
Securitized	20.52	0.00	19.43	0.00	0.68	-9.79	1.07
Convertibles	4.95	0.00	4.16	0.00	5.30	-7.82	0.69
Cash/Equivalents	4.75	0.00	3.28	0.00	4.47	-7.82	0.60
Equity	0.31	0.00	1.24	0.00	-55.27	-7.82	0.50
Emerging Market Credit	6.24	1.91	5.97	2.17	-7.31	-12.63	0.22
Non-US Dollar	0.02	0.00	0.68	0.00	12.67	-7.82	0.19
Bank Loans	0.00	0.00	0.44	0.00	10.82	-7.82	0.06
Municipals	0.00	0.89	0.00	0.98	-0.90	-11.00	0.03
Preferred	0.00	0.00	0.00	0.00	4.24	-7.82	0.00
Other	0.00	1.73	0.00	1.98	0.00	-4.42	-0.07

*Total Effects are impacted by sector returns, allocation shifts and market timing. Total Effect includes yield curve impact.*

*Other includes the following industries: Government Guarantee, Government Sponsored, and Owned No Guarantee.*

*The current benchmark is Bloomberg U.S. Government/ Credit Index.*



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Sources: Loomis, Sayles & Company, L.P. and others

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December 31, 2022

# attribution analysis

11/26/2019 TO 12/31/2022

## TOP 10 INDUSTRIES BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Treasuries	13.88	55.09	2.53
Consumer Non Cyclical	7.81	5.85	1.32
Capital Goods	4.43	2.05	1.05
Consumer Cyclical	7.36	2.53	1.01
Communications	10.48	3.34	0.87
Technology	4.87	3.47	0.73
Basic Industry	4.43	1.04	0.58
Banking	6.95	7.99	0.53
Home Equity	5.49	0.00	0.46
Car Loan	5.09	0.00	0.46

## BOTTOM 10 INDUSTRIES BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Financial Other	0.70	0.02	-0.37
Supranational	0.08	1.99	-0.08
Whole Business	1.15	0.00	-0.06
Government Guarantee	0.02	0.92	-0.04
Non Agency CMBS	2.12	0.00	-0.03
ABS Other	3.12	0.00	-0.01
Government Sponsored	0.10	0.78	-0.01
Student Lns	0.02	0.00	0.00
Stranded Utility	0.01	0.00	0.00
Agency CMBS	0.00	0.00	0.00

*Out-of-benchmark allocations defaulted to security selection.  
The current benchmark is Bloomberg U.S. Government/ Credit Index.*



**LOOMIS SAYLES**

Sources: Loomis, Sayles & Company, L.P. and others

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December 31, 2022

# attribution analysis

11/26/2019 TO 12/31/2022

## TOP 10 ISSUERS BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
U S Treasury	13.41	55.05	2.43
T-Mobile US Inc	1.39	0.17	0.39
Boeing Co/The	1.61	0.27	0.39
Expedia Group Inc	0.82	0.03	0.26
Palo Alto Networks Inc	0.17	0.00	0.25
Teva Pharmaceutical Industries Ltd	0.97	0.00	0.25
Morgan Stanley	0.60	0.58	0.25
Uber Technologies Inc	1.11	0.00	0.21
HCA Healthcare Inc	1.40	0.11	0.20
Kraft Heinz Co/The	0.68	0.03	0.19

## BOTTOM 10 ISSUERS BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Altice USA Inc	0.10	0.00	-0.29
CSC Holdings LLC	0.47	0.00	-0.21
Element Comm Aviation	0.03	0.00	-0.14
Kaisa Group Holdings Ltd	0.04	0.00	-0.12
Continental Resources Inc/OK	0.49	0.01	-0.11
Sunac China Holdings Ltd	0.02	0.00	-0.11
Teladoc Health Inc	0.29	0.00	-0.10
Service Properties Trust	0.14	0.00	-0.10
Logan Property Holdings Co Ltd	0.02	0.00	-0.10
Starwood Retail Property Trust	0.07	0.00	-0.09

The current benchmark is Bloomberg U.S. Government/Credit Index.



LOOMIS SAYLES®

Sources: Loomis, Sayles & Company, L.P. and others

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December 31, 2022

# attribution analysis

11/26/2019 TO 12/31/2022

## CURRENCY DISTRIBUTION

	Portfolio Weight Pre-Hedge	Portfolio Weight Post-Hedge	Currency Contribution	Bond Contribution	Hedging Effect	Total Effect
Argentine Peso	0.11	0.11	-0.07	0.25	0.00	0.18
Australian Dollar	0.01	0.01	-0.02	-0.01	0.00	-0.02
Brazilian Real	0.02	0.02	-0.02	0.00	0.00	-0.02
Canadian Dollar	0.29	0.07	0.01	0.02	-0.01	0.02
Euro	0.01	0.01	0.00	0.00	0.00	-0.01
Indian Rupee	0.18	0.18	-0.02	0.06	0.00	0.04
Malaysian Ringgit	0.04	0.04	0.00	-0.01	0.00	-0.01
Mexican Peso	0.28	0.28	0.02	0.06	0.00	0.08
New Zealand Dollar	0.01	0.01	-0.01	0.00	0.00	-0.01
Norwegian Krone	0.05	0.05	-0.01	-0.01	0.00	-0.02
Swedish Krona	0.01	0.01	0.00	0.00	0.00	-0.01
US Dollar	99.01	99.01	0.00	10.25	0.00	10.25
Unrealized FX Gain/Loss	0.00	0.00	0.00	0.00	0.00	0.00

*Weights reflect end of period holdings. Effects are as of the entire period. Bond Contribution is the sum of Country Allocation and Local Market effects.  
The current benchmark is Bloomberg U.S. Government/Credit Index.*



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December 31, 2022



# portfolio summary

AS OF 12/31/2022

	Portfolio 12/31/2022	Benchmark 12/31/2022	Portfolio 11/26/2019	Benchmark 11/26/2019		Portfolio 12/31/2022	Benchmark 12/31/2022	Portfolio 11/26/2019	Benchmark 11/26/2019
Yield to Worst (%)	6.89	4.66	3.77	2.18	AAA	24.28	63.07	29.76	61.47
Effective Duration (years)	5.87	6.33	6.04	6.93	AA	1.64	6.41	2.17	6.68
Effective Maturity (years)	6.68	8.73	8.09	9.17	A	7.56	15.18	17.04	17.62
OAS * (bps)	247	46	182	43	BAA	40.41	15.33	38.54	14.23
Coupon (%)	3.47	2.62	4.25	3.02	BA	14.32	0.00	9.02	0.00
Current Yield (%)	4.02	2.95	3.95	2.83	B	6.72	0.00	1.60	0.00
Average Quality	BAA2	AA3	A3	AA3	CAA	1.41	0.00	0.83	0.00
Number of Securities	833	8,927	414	7,391	CA	0.04	0.00	0.00	0.00
Number of Issuers	366	1,088	231	942	C	0.09	0.00	0.09	0.00
					NR	3.54	0.00	0.95	0.00

\* OAS is option adjusted spread.

Client Guideline Quality Methodology presented.

The current benchmark is Bloomberg U.S. Government/ Credit Index.



LOOMIS SAYLES®

Sources: Loomis, Sayles & Company, L.P. and others

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December 31, 2022

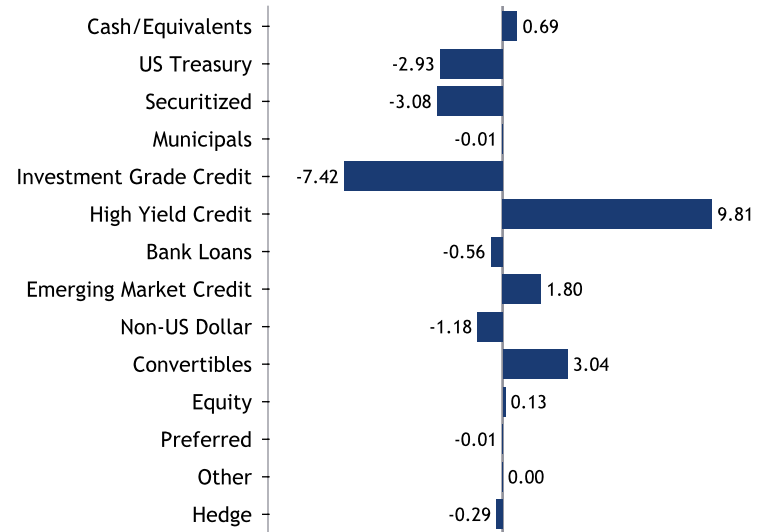
# sector allocation

11/26/2019 TO 12/31/2022 (%)

**SECTOR DISTRIBUTION**

	Portfolio 12/31/2022	Over/Under Weight
Cash/Equivalents	4.75	4.75
US Treasury	15.29	-42.62
Securitized	20.52	20.52
Municipals	0.00	-0.89
Investment Grade Credit	33.07	-4.50
High Yield Credit	14.86	14.85
Bank Loans	0.00	0.00
Emerging Market Credit	6.24	4.33
Non-US Dollar	-0.08	-0.08
Convertibles	4.95	4.95
Equity	0.31	0.31
Preferred	0.00	0.00
Other	0.00	-1.73
Hedge	0.10	0.10

**SECTOR ALLOCATION CHANGE**



*Other includes the following industries: Government Guarantee, Government Sponsored, and Owned No Guarantee.  
The current benchmark is Bloomberg U.S. Government/ Credit Index.*



# country of risk allocation

## AS OF 12/31/2022

Total Developed Countries Exposure	Portfolio Weight %	Benchmark Weight %	Total EM Countries Exposure (USD & Non USD)	Portfolio Weight %	Benchmark Weight %	Non Dollar Exposure	Portfolio Weight %	Benchmark Weight %
Developed	93.69	98.09	Emerging Markets *	6.31	1.91	Total Non USD †	0.07	0.00
Americas	86.90	91.42	Africa	1.63	0.00	Developed	0.01	0.00
United States	84.06	89.77	Zambia	0.81	0.00	Canadian Dollar	0.01	0.00
Cayman Islands	1.52	0.00	South Africa	0.70	0.00	Emerging Markets	0.06	0.00
Canada	0.86	1.64	Nigeria	0.13	0.00	Argentine Peso	0.06	0.00
Bermuda	0.46	0.01	Americas	2.30	0.97			
Asia	0.16	0.89	Mexico	1.25	0.43			
Japan	0.16	0.89	Brazil	0.78	0.07			
Europe	5.72	3.66	Argentina	0.17	0.00			
United Kingdom	1.86	1.50	Colombia	0.07	0.00			
France	1.14	0.12	Peru	0.03	0.12			
Switzerland	0.90	0.18	Other	0.00	0.35			
Norway	0.49	0.08	Asia	1.02	0.81			
Ireland	0.48	0.14	China	0.64	0.24			
Germany	0.40	0.60	Malaysia	0.19	0.00			
Italy	0.19	0.09	India	0.18	0.00			
Spain	0.15	0.20	Other	0.00	0.57			
Finland	0.11	0.00	Europe	0.00	0.06			
Other	0.00	0.74	Other	0.00	0.06			
Oceania	0.83	0.24	Middle East	1.36	0.07			
Australia	0.83	0.24	Israel	1.36	0.07			
Supranational **	0.08	1.88	Total	100.00	100.00			
Supranational	0.08	1.88						

\* Emerging markets includes countries with middle or low income economies, as designated by the World Bank, also taking into consideration capital market liquidity and accessibility.

\*\* Supranational includes debt from an entity sponsored by a combination of multiple governments to promote economic development.

† Values shown include impact of hedging, if utilized.

Due to active management, country and currency allocation will evolve over time. Due to rounding, totals may not equal 100%.

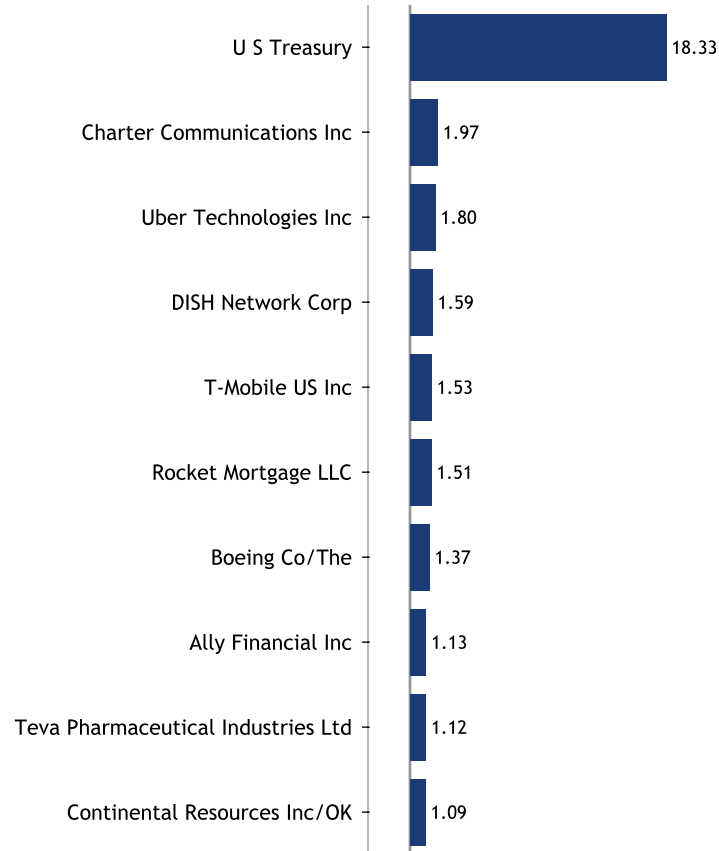
The current benchmark is Bloomberg U.S. Government/ Credit Index.



# absolute exposures by issuer

AS OF 12/31/2022 (%)

TOP TEN ABSOLUTE EXPOSURES BY ISSUER



The current benchmark is Bloomberg U.S. Government/Credit Index.



## Small Cap Growth

# specialty growth strategies

## INVESTMENT TEAM

### PORTFOLIO MANAGEMENT (years: industry/firm)

<b>Mark Burns, CFA</b>	<b>John Slavik, CFA</b>
Portfolio Manager Consumer Discretionary, Health Care 26 / 23	Portfolio Manager Technology, Industrials, Energy 31 / 17

### DEDICATED PRODUCT RESEARCH

Senior Equity Research Analyst	Senior Equity Research Analyst	Senior Equity Research Analyst	Equity Research Analyst	Senior Research Associate
<b>Chris O'Brien, CFA</b> Consumer Discretionary, Financials 29 / 9	<b>Nathaniel Roberts</b> Industrials 21 / 15	<b>Anand Vankawala</b> Health Care, Energy 13 / 5	<b>Autumn Zhong, CFA</b> Consumer Staples, Technology 6 / 1	<b>Colin Hickey</b> Health Care, Technology 3 / 3
Research Associate		Research Associate		
<b>Claudine Daneri</b> 1 / 1		<b>George Jean-Claude</b> 1 / 1		

### PRODUCT MANAGEMENT

Associate Investment Director
<b>Dmitri Raberov, CFA</b> 19 / 15

As of 12/31/2022.

# strategy overview

## TEAM HIGHLIGHTS

### Team assets under management

- \$3.7 billion – Small Cap Growth
- \$2.1 billion – Small/Mid Cap Growth
- \$716,552 – Mid Cap Growth

### Product Capacity

- Small Cap Growth – institutional separate account and collective trust currently closed to new investors; other vehicles remain open
- Small/Mid Cap Growth - approximately \$3 billion
- Mid Cap Growth – approximately \$10 billion

### Clients include

- Endowment/Foundation, Corporate, Taft-Hartley, Public Funds, Sub-advisory, Mutual Fund

*As of 12/31/2022.*

*Team assets under management are aggregated from all vehicles managed by the team. Not all vehicles are available for all investors.*

# account overview

SINCE INCEPTION 1/8/1997

MWRA Retirement System	
Initial Investment (1/8/1997)	\$2,500,000
Client Cash Additions	\$6,545,737
Client Security Additions	\$6,948,954
Client Cash Withdrawals	\$-21,000,000
Income Earned	\$923,920
Fees/Expenses/Adjustments	\$14,710
Realized Gains/Losses	\$25,283,376
Unrealized Gains/Losses	\$2,548,559
<b>Total Market Value at 12/31/2022</b>	<b>\$21,265,256</b>

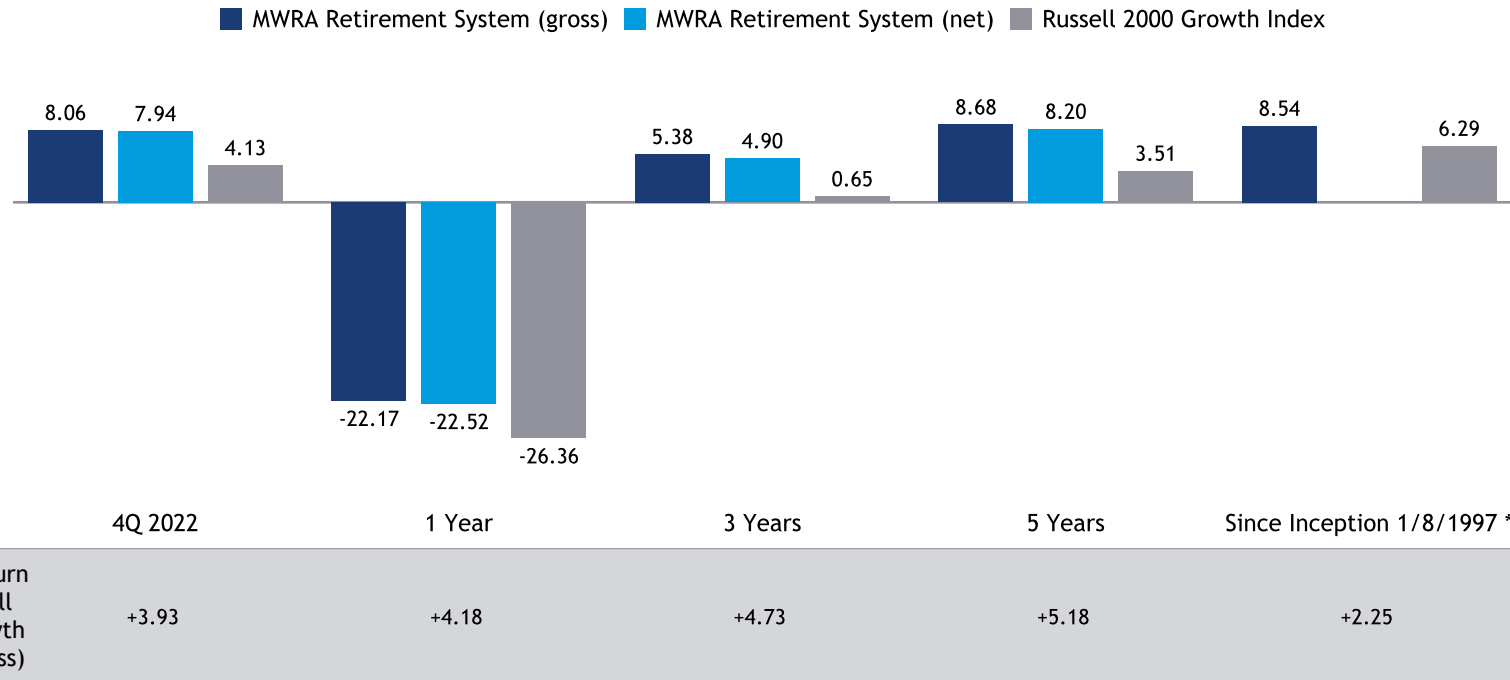
*This report is a service provided to customers of Loomis Sayles. It is for informational purposes only. It is not a recommendation to buy or sell securities. Past performance is not a guarantee of future results. Loomis Sayles believes the information contained herein is reliable but we do not guarantee its accuracy.*



# performance

## TRAILING RETURNS AS OF 12/31/2022 (%)

MWRA Retirement System



Data Source: Loomis Sayles and the Frank Russell Company.

Gross returns are net of trading costs. Net returns are gross returns less the effective management fees. Returns for multiyear periods are annualized. Returns may increase or decrease as a result of currency fluctuations.

**Past performance is no guarantee of future results.**

# market overview

## REVIEW & OUTLOOK

- 2022 can be characterized as historic given the magnitude and persistence of volatility that took place during the year and extended beyond small cap stocks
- While we expect earnings estimates to move down, with the market having discounted some of this, the magnitude of revisions will prove hard to forecast
- We believe small caps are positioned well relative to large caps as we enter 2023
- We think high quality companies with the best secular growth stories and attractive valuations will likely have the most resilient estimates and be best positioned to take advantage of an improving economy when that time comes

# performance attribution

## QUARTERLY PERFORMANCE - THROUGH 12/31/2022 (%)

Contribution from Stock Selection:	4.77%
Contribution from Sector Allocation:	-0.85%
Net Outperformance:	3.93%

Top 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
Halozyme Therapeutics, Inc.	43.90	68
Rambus Inc.	40.91	57
Weatherford Intl plc	57.70	57
Inspire Medical Systems, Inc.	42.01	57
e.l.f. Beauty, Inc.	47.00	54

Bottom 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
Advanced Drainage Systems, Inc.	-34.01	(60)
Evolent Health, Inc.	-21.85	(43)
Pacira Biosciences, Inc.	-27.41	(30)
PTC Therapeutics, Inc.	-23.96	(29)
Grid Dynamics Holdings, Inc.	-40.10	(23)

Top 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Health Care	3.49	164
Information Technology	9.88	90
Consumer Discretionary	12.92	73

Bottom 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Industrials	5.23	(30)
Communication Services	-10.28	(23)
Materials	0.00	(16)

The current benchmark is Russell 2000 Growth Index. Benchmark sectors reflect S&P GICS sectors. Information on this page reflects fund data. Where a security is bought and/or sold within the period, in-portfolio return may not equal stock's return during calendar period. Contribution to relative return reflects the sum of allocation and selection effects. Data Source: Factset.

# performance attribution

## QUARTERLY PERFORMANCE - THROUGH 12/31/2022 (%)

Sector	Portfolio			Russell 2000 Growth Index			Attribution Analysis		
	Average Weight	Total Return	Contribution to Return	Average Weight	Total Return	Contribution to Return	Allocation Effect	Selection Effect	Total Effect
Health Care	26.36	3.49	0.93	22.79	-3.24	-0.68	-0.20	1.84	1.64
Information Technology	18.80	9.88	1.75	19.61	4.91	0.90	0.02	0.89	0.90
Consumer Discretionary	10.09	12.92	1.13	11.08	5.10	0.56	-0.06	0.79	0.73
Consumer Staples	6.15	21.83	1.26	4.39	11.20	0.44	0.12	0.60	0.73
Financials	8.76	8.21	0.73	5.94	0.06	0.02	-0.12	0.71	0.59
Energy	5.08	30.41	1.28	7.49	17.39	1.15	-0.37	0.62	0.25
Utilities	0.00	0.00	0.00	1.77	0.95	0.03	0.06	0.00	0.06
Real Estate	0.00	0.00	0.00	2.22	8.73	0.18	-0.10	0.00	-0.10
Materials	0.00	0.00	0.00	4.51	7.92	0.36	-0.16	0.00	-0.16
Communication Services	1.62	-10.28	-0.19	2.39	-0.80	-0.01	0.06	-0.29	-0.23
Industrials	20.47	5.23	1.14	17.80	7.29	1.19	0.09	-0.39	-0.30
Cash	2.67	1.00	0.03	0.00	0.00	0.00	-0.19	0.00	-0.19
<b>Total</b>	<b>100.00</b>	<b>8.06</b>	<b>8.06</b>	<b>100.00</b>	<b>4.13</b>	<b>4.13</b>	<b>-0.85</b>	<b>4.77</b>	<b>3.93</b>

Attribution information reflects fund data. For periods longer than one year, all returns are annualized. Benchmark sectors reflect S&P GICS sectors. Attribution analysis is shown for account as supplemental information. Where a security is bought and/or sold within the period, in-portfolio return may not equal stock's return during calendar period. Data Source: Factset.

# performance attribution

## ONE YEAR PERFORMANCE - THROUGH 12/31/2022 (%)

Contribution from Stock Selection:	3.84%
Contribution from Sector Allocation:	0.33%
Net Outperformance:	4.17%

Top 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
e.l.f. Beauty, Inc.	66.52	80
Halozyme Therapeutics, Inc.	41.51	77
Weatherford Intl plc	40.94	48
Rambus Inc.	21.88	35
Option Care Health, Inc.	5.80	28

Bottom 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
Kornit Digital Ltd.	-74.58	(115)
MaxLinear, Inc.	-54.97	(111)
Rapid7 Inc.	-51.14	(96)
SiteOne Landscape Supply, Inc.	-51.58	(89)
Shutterstock, Inc.	-51.71	(88)

Top 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Health Care	-18.63	234
Financials	-14.87	108
Information Technology	-29.58	99

Bottom 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Materials	-53.91	(81)
Energy	32.36	(75)
Communication Services	-49.59	(33)

The current benchmark is Russell 2000 Growth Index. Benchmark sectors reflect S&P GICS sectors. Information on this page reflects fund data. Where a security is bought and/or sold within the period, in-portfolio return may not equal stock's return during calendar period. Contribution to relative return reflects the sum of allocation and selection effects. Data Source: Factset.

# performance attribution

## ONE YEAR PERFORMANCE - THROUGH 12/31/2022 (%)

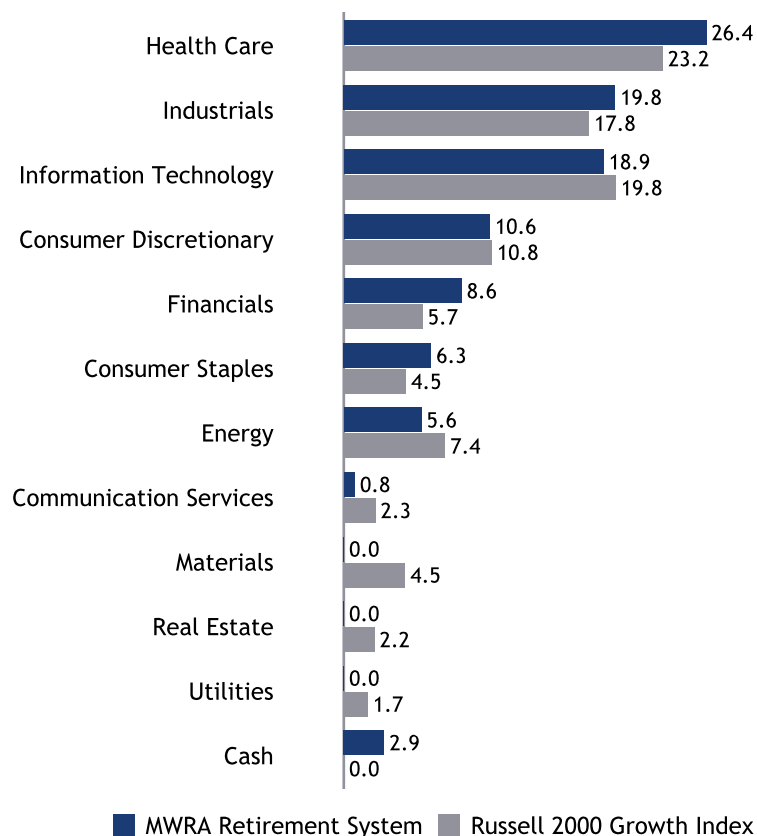
Sector	Portfolio			Russell 2000 Growth Index			Attribution Analysis		
	Average Weight	Total Return	Contribution to Return	Average Weight	Total Return	Contribution to Return	Allocation Effect	Selection Effect	Total Effect
Health Care	25.48	-18.63	-3.81	23.82	-28.16	-6.41	0.16	2.18	2.34
Financials	8.03	-14.87	-1.03	5.75	-30.32	-1.80	-0.12	1.20	1.08
Information Technology	21.31	-29.58	-7.41	21.14	-34.46	-7.94	-0.02	1.01	0.99
Consumer Staples	4.60	1.78	0.78	4.34	-8.68	-0.23	-0.01	0.63	0.63
Real Estate	0.00	0.00	0.00	2.79	-41.19	-1.47	0.46	0.00	0.46
Utilities	0.00	0.00	0.00	1.10	-19.75	-0.09	-0.01	0.00	-0.01
Industrials	19.55	-20.42	-3.92	16.79	-18.95	-2.91	0.19	-0.24	-0.05
Consumer Discretionary	12.52	-33.14	-5.63	12.56	-31.62	-4.87	-0.08	-0.19	-0.27
Communication Services	2.16	-49.59	-1.41	2.54	-39.21	-1.13	0.05	-0.38	-0.33
Energy	2.90	32.36	0.73	5.19	37.43	0.98	-0.85	0.10	-0.75
Materials	0.24	-53.91	-0.56	4.00	-11.47	-0.49	-0.34	-0.47	-0.81
Cash	3.21	1.99	0.06	0.00	0.00	0.00	0.91	0.00	0.91
<b>Total</b>	<b>100.00</b>	<b>-22.18</b>	<b>-22.18</b>	<b>100.00</b>	<b>-26.35</b>	<b>-26.35</b>	<b>0.33</b>	<b>3.84</b>	<b>4.17</b>

Attribution information reflects fund data. For periods longer than one year, all returns are annualized. Benchmark sectors reflect S&P GICS sectors. Attribution analysis is shown for account as supplemental information. Where a security is bought and/or sold within the period, in-portfolio return may not equal stock's return during calendar period. Data Source: Factset.

# comparative sector diversification

AS OF 12/31/2022 (%)

## SECTOR DISTRIBUTION



## TOP 10 HOLDINGS

	Portfolio Weight (%)
Halozyme Therapeutics Inc	2.1
WillScot Mobile Mini Holdings Corp	2.0
Casella Waste Systems Inc	2.0
Inspire Medical Systems Inc	1.9
Rambus Inc	1.9
KBR Inc	1.8
Option Care Health Inc	1.8
WNS Holdings Ltd	1.7
Axonics Inc	1.7
Albany International Corp	1.6
<b>Total</b>	<b>18.5</b>

Benchmark sectors reflect S&P GICS sectors. Data Source: Bloomberg, Russell/Mellon Analytical Serv, FactSet.

# portfolio holdings

## ACCOUNT HOLDINGS & SECTOR WEIGHTS AS OF 12/31/2022 (%)

Health Care	26.4%	Industrials (Cont'd)	19.8%	Consumer Discretionary (Cont'd)	10.6%	Communication Services (Cont'd)	0.8%
<b>Halozyme Therapeutics Inc</b>		Driven Brands Holdings Inc		Malibu Boats Inc		Shutterstock Inc	
<b>Inspire Medical Systems Inc</b>		SiteOne Landscape Supply Inc		Patrick Industries Inc			
<b>Option Care Health Inc</b>		Huron Consulting Group Inc		Papa John's International Inc			
<b>Axonics Inc</b>		Helios Technologies Inc		Installed Building Products Inc			
Merit Medical Systems Inc		Hub Group Inc		Boot Barn Holdings Inc			
Acadia Healthcare Co Inc		Marten Transport Ltd		Life Time Group Holdings Inc			
The Ensign Group Inc		ICF International Inc					
Supernus Pharmaceuticals Inc		Arcosa Inc		Financials	8.6%		
AtriCure Inc		Advanced Drainage Systems Inc		PJT Partners Inc			
Evolent Health Inc				The Bancorp Inc			
Medpace Holdings Inc		Information Technology	18.9%	Hamilton Lane Inc			
CONMED Corp		<b>Rambus Inc</b>		Lakeland Financial Corp			
NuVasive Inc		<b>WNS Holdings Ltd</b>		Kinsale Capital Group Inc			
Pacira BioSciences Inc		MACOM Technology Solutions Holdings Inc		BRP Group Inc			
Xencor Inc		Calix Inc		Ameris Bancorp			
Cutera Inc		Pure Storage Inc		Focus Financial Partners Inc			
Xenon Pharmaceuticals Inc		Silicon Laboratories Inc					
PTC Therapeutics Inc		Novanta Inc		Consumer Staples	6.3%		
Vericel Corp		EVERTEC Inc		The Simply Good Foods Co			
Inhibrx Inc		Box Inc		elf Beauty Inc			
Insmed Inc		Envestnet Inc		Primo Water Corp			
PROCEPT BioRobotics Corp		Advanced Energy Industries Inc		Inter Parfums Inc			
Alignment Healthcare Inc		Tenable Holdings Inc		BellRing Brands Inc			
ModivCare Inc		MaxLinear Inc		Sovos Brands Inc			
LivaNova PLC		Varonis Systems Inc		Hostess Brands Inc			
STAAR Surgical Co		Itron Inc					
		Model N Inc		Energy	5.6%		
Industrials	19.8%	Grid Dynamics Holdings Inc		Cactus Inc			
<b>WillScot Mobile Mini Holdings Corp</b>				Weatherford International PLC			
<b>Casella Waste Systems Inc</b>		Consumer Discretionary	10.6%	Noble Corp PLC			
<b>KBR Inc</b>		Topgolf Callaway Brands Corp		Magnolia Oil & Gas Corp			
<b>Albany International Corp</b>		Texas Roadhouse Inc		Denbury Inc			
RBC Bearings Inc		Gentherm Inc					
Applied Industrial Technologies Inc		Dorman Products Inc		Communication Services	0.8%		
McGrath RentCorp		Columbia Sportswear Co					
FTI Consulting Inc		Oxford Industries Inc					
Hexcel Corp							

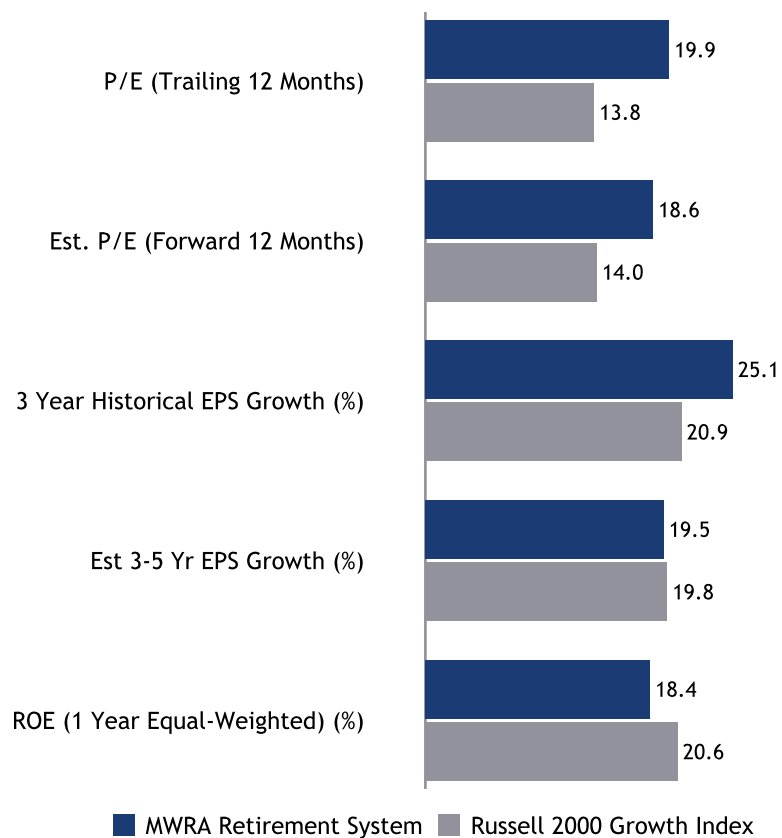
Benchmark sectors reflect S&P GICS sectors. Boldface items represent top ten holdings. Sector categorization source: FactSet. Holdings may combine more than one security from the same issuer and related depositary receipts. Data Source: Bloomberg.



# characteristics summary

AS OF 12/31/2022

## CHARACTERISTICS



## MARKET CAPITALIZATION STATISTICS

	Portfolio	Benchmark
> \$6 Billion	15.65%	7.87%
\$4 to 6 Billion	22.77%	23.63%
\$2 to 4 Billion	40.15%	37.83%
< \$2 Billion	18.49%	30.67%
Cash	2.94%	0.00%
Weighted Average (\$mm)	\$3,838	\$3,142
Median (\$mm)	\$2,922	\$1,148
Minimum (\$mm)	\$830	\$6
Maximum (\$mm)	\$9,436	\$7,930

Characteristics are shown for account as supplemental information. Due to active management, characteristics will evolve over time. Data Source: Factset

# contacts

## RELATIONSHIP MANAGEMENT

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**Results displayed in USD**  
**eVestment US Small Cap Growth Equity (Percentile Ranking)**

Created On: 2023-01-23

Percentiles				
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High  
5th Percentile  
25th Percentile  
Median  
75th Percentile  
95th Percentile  
Low  
Observations

Firm Name	Product Name	Data Source	VT	RM
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Loomis, Sayles & Company, L.P.	Small Cap Growth	IM	SA	Gross
Russell Index	Russell 2000 Growth	IM	IX	Index

Performance Data Frequency: Monthly

Percentiles				
-------------	--	--	--	--

High  
5th Percentile  
25th Percentile  
Median  
75th Percentile  
95th Percentile  
Low  
Observations

Firm Name	Product Name	Data Source	VT	RM
-----------	--------------	-------------	----	----

Loomis, Sayles & Company, L.P.	Small Cap Growth	IM	SA	Gross
Russell Index	Russell 2000 Growth	IM	IX	Index

Performance Data Frequency: Monthly

Percentiles				
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High  
5th Percentile  
25th Percentile  
Median  
75th Percentile  
95th Percentile  
Low

Observations

Firm Name	Product Name	Data Source	VT	RM
Loomis, Sayles & Company, L.P.	Small Cap Growth	IM	SA	Gross
Russell Index	Russell 2000 Growth	IM	IX	Index

Performance Data Frequency: Monthly

Returns - 1 Year (12/2022)		Annualized Alpha - 1 Year using Russell 2000 Growth (12/2022)	
-9.88		24.54	
-16.74		9.04	
-23.74		0.86	
-27.36		-3.52	
-31.35		-8.23	
-38.39		-16.09	
-58.69		-40.78	
156		156	

Returns - 1 Year (12/2022)	Rank	Annualized Alpha - 1 Year using Russell 2000 Growth (12/2022)	Rank
-22.25	16	2.06	22
-26.36	41	0.00	30

Returns - 3 Years (12/2022)		Annualized Alpha - 3 Years using Russell 2000 Growth (12/2022)	
20.61		20.10	
12.42		12.05	
7.82		7.62	
5.27		4.76	
3.16		2.70	
0.13		-0.43	
-6.97		-7.40	
154		154	

Returns - 3 Years (12/2022)	Rank	Annualized Alpha - 3 Years using Russell 2000 Growth (12/2022)	Rank
5.47	48	4.78	50
0.65	93	0.00	93

Returns - 5 Years (12/2022)		Annualized Alpha - 5 Years using Russell 2000 Growth (12/2022)	
19.62		16.36	
14.20		10.74	
9.96		6.71	
8.52		5.12	
6.49		3.18	
3.34		0.21	
0.77		-2.45	

152		152	
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Returns - 5 Years (12/2022)	Rank	Annualized Alpha - 5 Years using Russell 2000 Growth (12/2022)	Rank
8.69	46	5.27	48
3.51	94	0.00	96

Standard Deviation - 1 Year (12/2022)		Beta - 1 Year using Russell 2000 Growth (12/2022)	
18.76		0.64	
22.09		0.78	
24.47		0.89	
25.80		0.94	
27.75		1.00	
30.26		1.08	
44.00		1.53	
156		156	

Standard Deviation - 1 Year (12/2022)	Rank	Beta - 1 Year using Russell 2000 Growth (12/2022)	Rank
24.46	25	0.90	28
26.70	65	1.00	76

Standard Deviation - 3 Years (12/2022)		Beta - 3 Years using Russell 2000 Growth (12/2022)	
21.42		0.73	
23.24		0.83	
25.30		0.90	
26.58		0.96	
28.00		1.01	
32.36		1.16	
48.14		1.54	
154		154	

Standard Deviation - 3 Years (12/2022)	Rank	Beta - 3 Years using Russell 2000 Growth (12/2022)	Rank
24.95	18	0.91	28
26.57	50	1.00	70

Standard Deviation - 5 Years (12/2022)		Beta - 5 Years using Russell 2000 Growth (12/2022)	
19.02		0.74	
21.21		0.84	
23.06		0.91	
24.02		0.96	
25.71		1.02	
28.53		1.12	
40.18		1.42	

152		152	
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<b>Standard Deviation - 5 Years (12/2022)</b>	<b>Rank</b>	<b>Beta - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
22.56	15	0.91	26
23.98	49	1.00	69



Sharpe Ratio - 1 Year using FTSE 3-Month T-Bill (12/2022)		Information Ratio - 1 Year using Russell 2000 Growth (12/2022)	
-0.39		2.28	
-0.72		1.22	
-0.98		0.34	
-1.14		-0.23	
-1.28		-0.77	
-1.48		-1.71	
-1.96		-3.06	
156		156	

Sharpe Ratio - 1 Year using FTSE 3-Month T-Bill (12/2022)	Rank	Information Ratio - 1 Year using Russell 2000 Growth (12/2022)	Rank
-0.97	22	0.76	13
-1.04	32	---	---

Sharpe Ratio - 3 Years using FTSE 3-Month T-Bill (12/2022)		Information Ratio - 3 Years using Russell 2000 Growth (12/2022)	
0.77		2.08	
0.41		1.41	
0.26		0.86	
0.17		0.55	
0.09		0.31	
-0.02		-0.08	
-0.28		-1.19	
154		154	

Sharpe Ratio - 3 Years using FTSE 3-Month T-Bill (12/2022)	Rank	Information Ratio - 3 Years using Russell 2000 Growth (12/2022)	Rank
0.19	43	0.71	37
0.00	93	---	---

Sharpe Ratio - 5 Years using FTSE 3-Month T-Bill (12/2022)		Information Ratio - 5 Years using Russell 2000 Growth (12/2022)	
0.65		1.55	
0.50		1.25	
0.36		0.88	
0.30		0.65	
0.21		0.40	
0.09		-0.03	
-0.02		-0.43	

152		152	
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<b>Sharpe Ratio - 5 Years using FTSE 3-Month T-Bill (12/2022)</b>	<b>Rank</b>	<b>Information Ratio - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
0.33	38	0.87	25
0.09	94	---	---

Tracking Error - 1 Year using Russell 2000 Growth (12/2022)		Upside Market Capture - 1 Year using Russell 2000 Growth (12/2022)	
1.87		253.51	
3.99		128.25	
5.35		106.75	
6.61		89.24	
8.34		73.92	
11.66		48.87	
21.53		-2.20	
156		156	

Tracking Error - 1 Year using Russell 2000 Growth (12/2022)	Rank	Upside Market Capture - 1 Year using Russell 2000 Growth (12/2022)	Rank
5.44	29	102.24	32
0.00	1	100.00	35

Tracking Error - 3 Years using Russell 2000 Growth (12/2022)		Upside Market Capture - 3 Years using Russell 2000 Growth (12/2022)	
4.58		216.22	
5.44		138.49	
6.73		117.32	
8.18		107.15	
9.94		96.62	
12.77		86.23	
29.05		77.28	
154		154	

Tracking Error - 3 Years using Russell 2000 Growth (12/2022)	Rank	Upside Market Capture - 3 Years using Russell 2000 Growth (12/2022)	Rank
6.78	26	101.24	64
0.00	1	100.00	67

Tracking Error - 5 Years using Russell 2000 Growth (12/2022)		Upside Market Capture - 5 Years using Russell 2000 Growth (12/2022)	
3.96		183.36	
4.93		135.78	
6.16		115.74	
7.42		106.83	
8.88		98.36	
11.75		90.06	
23.61		80.33	

152		152	
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<b>Tracking Error - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>	<b>Upside Market Capture - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
5.93	22	103.86	59
0.00	1	100.00	70

<b>Downside Market Capture - 1 Year using Russell 2000 Growth (12/2022)</b>		<b>Batting Average - 1 Year using Russell 2000 Growth (12/2022)</b>	
80.34		0.83	
84.46		0.69	
95.35		0.58	
99.98		0.42	
106.42		0.33	
113.31		0.17	
130.65		0.08	
156		156	

<b>Downside Market Capture - 1 Year using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>	<b>Batting Average - 1 Year using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
93.86	20	0.50	31
100.00	51	0.00	100

<b>Downside Market Capture - 3 Years using Russell 2000 Growth (12/2022)</b>		<b>Batting Average - 3 Years using Russell 2000 Growth (12/2022)</b>	
75.29		0.75	
80.87		0.69	
89.41		0.61	
94.68		0.58	
99.00		0.53	
105.93		0.44	
125.47		0.33	
154		154	

<b>Downside Market Capture - 3 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>	<b>Batting Average - 3 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
91.22	31	0.56	55
100.00	81	0.00	100

<b>Downside Market Capture - 5 Years using Russell 2000 Growth (12/2022)</b>		<b>Batting Average - 5 Years using Russell 2000 Growth (12/2022)</b>	
75.91		0.72	
82.50		0.67	
90.01		0.62	
94.62		0.58	
98.22		0.53	
103.11		0.47	
117.71		0.45	

152		152	
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<b>Downside Market Capture - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>	<b>Batting Average - 5 Years using Russell 2000 Growth (12/2022)</b>	<b>Rank</b>
90.73	30	0.55	67
100.00	86	0.00	100

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NEPC, LLC

**Firm:** Baillie Gifford Overseas Limited

**Strategy/Product:** Baillie Gifford International Growth Fund (the “Fund”)

**Client:** Massachusetts Water Resource Authority

### **NEPC Manager Due Diligence Questionnaire - Update**

#### **Instructions**

In support of our upcoming meeting we ask that you please complete this due diligence questionnaire. Please provide your responses in the form of brief descriptions, lists or tables added directly to this Word document.

Thank you for taking the time to complete this questionnaire. Please note that all materials submitted in relation to MWRA Retirement System may be subject to disclosure consistent with Massachusetts Public Record laws.

#### **Firm/Organization**

##### **1. Have there been any changes in ownership or management in the past year?**

The main changes each year occur when partners retire or are appointed, which alters the direct ownership of Baillie Gifford & Co. Clear succession plans are always in place and this is communicated directly with clients in a timely manner. Partnership changes for the past five years are detailed below:

##### **2023 Partnership Changes**

The new partners from May 1, 2023 will be Lesley Dunn, James Dow, Toby Ross, Roddy Snell, Chris Murphy, Andrew Keiller, and Stephen Pashley.

Our one retiree as of the end of April 2023 will be Graham Laybourn.

The total number of Partners will therefore rise from 51 to 57.

##### **2022 Partnership Changes**

On May 1, 2022, eight new partners were promoted to the partnership and four partners retired.

The new partners were Julia Angeles, Jenny Davis, Lorna Kennedy, Linda Lin, Milena Mileva, Peter Singlehurst, Michael Stirling-Aird and Tom Walsh.

The retirees were James Anderson, Gerard Callahan, Lynn Dewar and Angus Franklin.

The number of partners increased from 47 to 51.





**2. List firm AUM, net flows and accounts gained/lost for the past 5 years.**

Date	Firm AUM (\$M)	Net flows (\$M)
<b>December 2022</b>	268,705	-24,796
<b>December 2021</b>	454,879	5,918
<b>December 2020</b>	445,339	-5,072
<b>December 2019</b>	289,614	2,553
<b>December 2018</b>	220,728	2,846

Source: Baillie Gifford & Co.

Year to	No. of clients gained	Value of client gains (\$M)	No. of clients lost	Value of client lost (\$M)
<b>December 2022</b>	18	6,044.09	82	6,657.23
<b>December 2021</b>	10	2,053.8	13	1,301.98
<b>December 2020</b>	14	1,549.62	15	956.32
<b>December 2019</b>	15	1,298.36	9	1,462.66
<b>December 2018</b>	18	1,712.31	8	219.32

Source: Baillie Gifford & Co.

**3. Have there been any new or discontinued products in the past year?**

The Firm has launched two new products over the past 12 months:

Strategy	Launch Dates
US Alpha	December 2022
Emerging Markets ex China	December 2021

**4. Are any products capacity constrained?**

In terms of strategies offered in the US, only the International Growth strategy is closed to new segregated enquiries, however, the strategy is open to cashflows from existing clients and to new investments in the Baillie Gifford International Growth Mutual Fund. We have a number of mature Defined Benefit pension clients in the strategy who are tending to redeem their assets over a number of years, which creates further capacity from time to time.



We believe there is no industry standard/'holy grail' approach to monitoring liquidity and capacity. By their nature, liquidity and capacity are variable over time. Our approach is to thoughtfully consider a number of different metrics at a strategy and a pan-firm level and to monitor them on an ongoing basis. This approach is subject to continual enhancement, with additional metrics incorporated into the analysis where this is considered useful:

- We consider liquidity as the time it takes to return cash to clients, with this expected to be performed promptly. When considering liquidity, it is important to return cash to clients in a manner that preserves the value of their investment, with liquidity guidelines used to support this objective.
- We consider capacity as an ongoing broad assessment of the amount of assets that can reasonably be managed within an investment strategy whilst maintaining a range of factors such as high levels of client service, investment performance and continued compliance with investment and liquidity guidelines.
- As a firm, we put the interests of existing clients first. This is our starting point when considering liquidity, and capacity. The ability for clients to give us in/outflows, not to have a reduced opportunity set, not to have market impact eroding alpha, and not to compromise client service are key considerations. We try to avoid ever having to hard close a strategy. In the past, we have closed a number of strategies well in advance of client service or liquidity constraints, and we will continue to do so, as appropriate. We know if we get this wrong, it would undermine the trust of the clients we serve, and their consultants.
- Where there is overlap between two or more strategies, it is unusual for our independent decision-making groups to want to trade at the same time. In the unusual scenario that multiple strategies wanted to exit a stock simultaneously, this would typically be for stock-specific reasons, which from experience, tends to result in liquidity increasing.

### **Strategy-level monitoring**

Liquidity considerations are monitored as an investment risk. Each strategy group has guidelines (please see below), which have been approved by our Equity Investment Risk Committee (IRC), and are monitored on an ongoing basis. The IRC has the ultimate oversight of all aspects of investment risk across all of our strategies, including liquidity.

Strategy liquidity guidelines limit the amount that can be invested in less liquid stocks and ensure that demanding expectations around the redemption of assets can be met. In conjunction with the Trading Team, liquidity is reviewed on an ongoing basis.

Each strategy also considers any pipeline of new business, the make-up of its client base, consultant concentration, the risk of mass redemptions, its market cap range, potential flows from existing clients, and client service resource.



In our experience, larger clients typically withdraw assets in-kind via a transition manager.

Notwithstanding the backdrop of significant net outflows, any strategies that reopen are within their liquidity guidelines, and we ensure we are satisfied there is sufficient capacity to reopen without compromising client service/investment returns. As part of this, consideration is given to overlap with other strategies.

Any strategies that reopen continue to have their liquidity monitored and would close in advance of any concerns in order to look after client's interests.

#### Strategy Guidelines

- No more than 10% of a strategy's assets to be deemed illiquid;
- At least 90% of a strategy's largest segregated client must be capable of being traded within 20 trading days;
- At least 90% of a strategy's largest consultant relationship must be capable of being traded within 40 trading days; and
- At least 25% of a strategy's AUM must be capable of being traded within 40 trading days.

#### US Mutual Funds – SEC Rules

- Illiquid investments limited to 15% of NAV
- An illiquid investment is one that 'cannot reasonably be sold or disposed of in current market conditions in seven calendar days or less without the sale or disposition significantly changing the market value.'
- Escalation arrangements are in place with the fund board, with exceptions to be reported to the IRC.

### **Pan-firm monitoring**

#### Rules of engagement

- No new strategy to take a holding in a stock once firm-wide holding > 250 trading days
- Existing holders can add to a stock beyond 250 trading days for cashflows, with a hard stop at 500 days

#### Oversight

- Liquidity monitoring and reporting will be managed by Business Risk, with reports provided to the IRC on a quarterly basis
- Exceptions will be reported to the IRC at the next quarterly meeting with an explanation of the occurrence and detail on how the strategy intends to return to compliance within a maximum six month period from identification. If the exception continues to be in place at the next quarter end, the strategy team will be invited to attend the next IRC meeting to justify the continued breach
- The IRC, supported through input from the Trading Department, will apply judgement,



especially for stocks that fluctuate in and out of compliance or where there is a liquidity event that distorts the liquidity profile of a stock, e.g. share issuance, IPO or M&A activity.

The strategy level liquidity guidelines (set out above) apply, plus:

- Maximum investment in a company limited to 20% of the total shares in issue (issuer level);
- Maximum investment in a company limited to 33% of the free float (share class level);
- An evaluation of the incremental trading cost impact when growing the strategy by 20%;
- An evaluation of all liquidity and capacity rules at AUM + 20%
- Maximum of 500 trading days to exit any single investment
- Evaluate impact across all strategies of AUM + 20% at firm level

Other factors, including the views of the relevant product group, the investment team and the wider Clients Department should be layered on top of the quantitative analysis.

#### Rules of engagement for company ownership

The following thresholds and rules of engagement are in place in relation to the 20% shares in issue limit:

If share ownership exceeds 15%:

- No new strategies may buy a holding if share ownership will exceed, or is above, 15%
- Holders can buy for new clients within their strategy
- Holders can add for cashflows
- Holders can make an investment decision to add to existing holdings subject to the proposed deal not taking the firm's holding above 20%

If share ownership exceeds >20%:

- Management Committee approval required

#### **5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact.**

No Baillie Gifford firm or affiliate has been the focus of any pending or ongoing litigation, formal investigation, or administrative proceedings related to money management activities.

#### **6. Describe your diversity, equity and inclusion efforts with regard to the firm and its employees.**

We have both a policy and vision for Diversity and Inclusion (D&I). Our D&I policy can be found attached as **Enclosure A**.

Through our vision for D&I we are committed to: Integrity, Learning, Accountability and Inclusion.



We are committed to living up to our Shared Beliefs and remembering our core purpose: delivering value for clients, supporting companies, and benefiting society through thoughtful long-term investment. We must strive to position ourselves as visibly in the debate around diversity as we have with other aspects of our investment approach, and lead by example.

We want to learn from thoughtful and diverse minds: from our colleagues and our employee-led networks to our external partners, our clients, the companies in which we invest, and the thought-leaders with whom we interact. As with our approach to investment, we will be led by careful consideration of what we believe to be in the best long-term interests of our clients, rather than simply following what others are doing.

Each of us has a part to play in the creation of an inclusive culture. We must support our networks in the work they do to engage with and educate our colleagues and create an environment in which every Baillie Gifford partner and employee has the confidence to be a visible and active ally for diversity.

Without inclusion, our efforts to retain and engage diverse talent will come to nothing. We must create and sustain a culture in which each of our colleagues feel they can speak up, be heard, and reach their full potential. This is how new ideas emerge, problems are solved, and mediocrity is eliminated.

Our ultimate aim is for diversity of thought and the creation of an inclusive culture, which we do not think can be approached in an overly prescriptive or tick-box manner. Both will help us to deliver value for clients, support companies, and benefit society through thoughtful long-term investment.

We are committed to making meaningful change on D&I, with a focus on transparency around D&I data, and in the articulation of our D&I vision.

We believe that ensuring progress requires both responsibility and accountability, with the tone set by our Diversity and Inclusion Group which is led by the firm's partners and senior leaders.

We are proud of what we have achieved so far but recognize that promoting diversity and inclusion is a process of continuous improvement and that there is more to be done.

More on our D&I vision can be found here: [Supporting Diversity and Inclusion | Baillie Gifford](#)

## Portfolio Management Team

### 1. Have there been any changes in the portfolio management team in the past year?

James Anderson stepped down as a Partner of Baillie Gifford on April 30, 2022, after 39 years at the firm.

James was a founding member of the International Growth Portfolio Construction Group (PCG), and he handed over the chair of the International Growth PCG in 2019.



Tom Coutts, previously the deputy, took on the lead role, with Lawrence Burns becoming deputy chair. Tom continues to lead an experienced investment team, including four partners in the firm. This succession plan has been in place for a number of years.

A strong advantage of being a partnership is the space and visibility to plan for the future, as partners signal their intended retirement plans well ahead of time.

With over 110 years of investing, Baillie Gifford is experienced in planning succession of experienced and talented investors. James left a very strong legacy, with a focus on long-term, transformational growth investing.

**2. Are there any expected changes to the team in the future (planned additions or departures)?**

There are no planned changes for the future.

**Process**

**1. Have there been significant changes in any of the areas below in the past year?**

- **Identification of investment ideas**

No changes to note.

In terms of sources of inspiration for ideas generation, we look for information outside the financial world. For instance, we engage with academia, spend time with companies' leaders and management of unlisted businesses. But most of all, we pay attention to long term duration trends, to see how the world will be in many years to come and which companies could benefit from these changes.

- **Process for exploring and vetting ideas**

No changes to note.

- **Portfolio trading practices including buy/sell rules**

No changes to note.

- **Approach to portfolio monitoring and risk management**

No changes to note.

**Philosophy**



**1. Describe recent changes in investment philosophy, if any.**

Our investment philosophy has remained the same since the inception of the strategy in 2003.

There has, however, been an evolution away from the more traditional “quality growth”, owning compounding stocks, towards “Growth with a capital G” over the past decade as we have observed the world changing. We know from our experience that a small number of winners has driven investment returns. A long-term study conducted by Professor Henrick Bessembinder provided further evidence of the tremendous skew to a group of massive winners. Understanding this asymmetry of long-term returns focused our process of finding stocks that have the potential to be in this super group, and owing them for long enough to enable the investment returns to come through. Our culture and stable partnership structure are crucial in allowing our philosophy to flourish. The partnership stability encourages the required temperament and patience in our analysts, enhancing their chances of successfully identifying companies that will ultimately boost investment returns for our clients over the long term.

**Portfolio**

**1. If not included in your meeting presentation, provide portfolio holdings, sector exposure, geographic exposure and common characteristics (yield, duration, market cap, P/E, etc.).**

Please refer to **Enclosure B** for historic portfolio holdings.

Region	December 2018 (%)	December 2019 (%)	December 2020 (%)	December 2021 (%)	December 2022 (%)
Europe (ex UK)	53.13	55.20	52.33	59.92	59.25
Emerging Markets	19.50	18.81	24.88	23.22	23.95
Developed Asia Pacific	21.21	21.02	19.14	14.39	13.91
UK	5.13	3.36	2.73	1.62	2.14
Cash and Deposits	1.03	1.60	0.92	0.85	0.75

**Source:** Baillie Gifford & Co.

**Strategy:** International Growth



Sector	December 2018 (%)	December 2019 (%)	December 2020 (%)	December 2021 (%)	December 2022 (%)
<b>Consumer Discretionary</b>	32.20	37.52	39.50	31.67	28.37
<b>Information Technology</b>	8.72	11.97	15.31	21.24	21.06
<b>Health Care</b>	8.96	10.75	13.89	12.53	14.60
<b>Communication Services</b>	16.33	12.38	10.20	8.83	8.64
<b>Financials</b>	13.70	10.46	8.00	7.49	8.46
<b>Industrials</b>	10.08	7.46	6.43	8.37	9.34
<b>Consumer Staples</b>	3.99	3.33	2.38	6.66	5.52
<b>Materials</b>	4.99	4.53	3.37	2.36	3.27
<b>Cash</b>	1.03	1.60	0.92	0.85	0.75
<b>Energy</b>	0.00	0.00	0.00	0.00	0.00
<b>Real Estate</b>	0.00	0.00	0.00	0.00	0.00
<b>Utilities</b>	0.00	0.00	0.00	0.00	0.00

Source: Baillie Gifford & Co.

Strategy: International Growth

Characteristics	December 2022
<b>Yield</b>	0.8%
<b>Average market cap</b>	80,583
<b>P/E</b>	26.3
<b>P/B</b>	4.3
<b>Historic Earnings Growth</b>	16.7%
<b>Forecast Earnings Growth</b>	5.4%
<b>Return on Equity</b>	11.2%
<b>Active Share</b>	91.4%
<b>Turnover</b>	10.6%

Source: Baillie Gifford & Co.

Strategy: International Growth





2. List strategy AUM, net flows and accounts gained/lost for the past 5 years.

Date	Strategy AUM (\$M)	Net flow (\$M)
December 2022	44,551	-662
December 2021	71,870	-1,494
December 2020	79,183	-4,200
December 2019	47,490	- 583
December 2018	35,417	-1,657

Source: Baillie Gifford & Co.

Strategy: International Growth

Year to	No. of clients gained	Value of client gains (\$M)	No. of clients lost	Value of client lost (\$M)
December 2022	0	16.86	6	84.26
December 2021	3	1,489.73	0	0.00
December 2020	1	75.00	0	0
December 2019	0	0	1	153.60
December 2018	2	197.90	1	176.99

Source: Baillie Gifford & Co.

Strategy: International Growth

3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors.

Investor	% of strategy AUM
Financial Institution	64.6
Government	7.6
Government	6.4
Government	2.4
Government	2.3

Source: Baillie Gifford & Co.



**Strategy:** International Growth

**Data:** As of December 2022

## Performance / Market Outlook

- 1. If not included in your meeting presentation, provide trailing returns as of the most recent quarter-end and calendar year returns for the past 10 years, both relative to benchmark.**

International Growth performance for the most recent quarter can be found attached as **Enclosure C**.

Calendar year performance since inception for the K share class can be found attached as **Enclosure D**.

- 2. Briefly discuss recent performance trends and identify environments in which the strategy is likely to be in or out of favor.**

### Market Environment

2022 presented a multitude of challenges to growth investors. We struggled with the interrelated stresses of a major war in Europe, global supply chain disruption, rising geopolitical tensions, inflation shocks and the abrupt change in the interest rate landscape. Unwinding 14 years of accommodative monetary policy was always likely to be painful. In this context, the International Growth strategy delivered its worst annual performance since its inception in 2003.

The rise in long term interest rates, and the higher discount factor applied to future cashflows, had a greater effect on companies earlier in their growth trajectory. Many of these businesses had also seen their valuations expand during the Covid pandemic, and many fell back sharply in the last twelve months. Those with high exposure to consumer spending also suffered, given the likelihood of a difficult near-term operating environment as pressure mounts on consumers wallets.

As active bottom-up stock pickers, our ability to add value is derived from patient ownership of exceptional growth companies. Our investment process is designed to identify a sufficient number of rare businesses and own them in size for the long term. As such, Our analysis remains focused on the long-term growth potential of each business in the strategy.

Our opinion as to which market environment is beneficial to the strategy remains consistent. We believe that share prices follow earnings and, because our investment style is biased towards growth, our companies' earnings grow faster than that of the market. This means the portfolio will do well when the market pays attention to earnings growth. Conversely, our investment style may not do well when the market puts less emphasis on long-term earnings growth.

Inflationary environments tend to be difficult for our strategy which focuses on growth stocks. During inflationary periods the market tends to apply a higher discount rate to



future earnings, and our stocks are expected to make a relatively high proportion of their future cashflow many years from now. That said, rising prices are also a spur for change and innovation which can be good news for our companies.

Deflationary environments will probably be good for the valuation of our stocks, i.e. the inverse situation. Over the long term we believe the powers of innovation are likely to be deflationary.

**3. Describe your market outlook and how strategy positioning is impacted by your views.**

A recession seems likely. This means we do have sympathy with the idea that much of the negativity is 'priced in', though clearly, that is unquantifiable. We are not macro-economic forecasters, but our central case is that we are close to the peak in interest rates and that the debate now is over half a point in either direction.

We do not change the composition of the portfolio because of the prevailing macroeconomic conditions. However, one of the greatest risks in times of poor investment performance is paralysis and we have been taking advantage of recent market volatility. We continue to seek out new ideas, both in areas where we already have investments and in newer fields. The positive side of market weakness is that it allows us to build positions in new companies, as we have done in the likes of AutoStore, Mobileye, Prysmian and Wise to name a few. All of these face large growth opportunities and while some explore familiar themes, others such as Prysmian – which supplies cables to the energy industry – move us further into less familiar growth areas. Additionally, where existing holdings continue to execute well operationally, we have used share price weakness as an opportunity to add to positions.

In terms of outlook, we believe that we live in a world where change is accelerating, and disruption is happening in many sectors of the economy powered by technology. As a result, our opportunity set of growth companies is getting richer. We are therefore more excited about the research pipeline than ever before.

**4. Could you please include a slide in your presentation that shows the MWRA's account history, initial contribution, cumulative subsequent contributions, cumulative subsequent distributions, gain/loss and current value.**

Yes, of course. BNYM are the record keeper, but we have been able to obtain, and therefore include; the initial contribution, subsequent contributions and the 31 December 2022 valuation.

# MWRA Retirement System

Michael Stirling-Aird and Larysa Bemko. January 2023



*International Growth*

Please note the fund portfolio information contained within this report is confidential, proprietary information and should be maintained as such and not disseminated. The content is intended for information purposes only and should not be disclosed to other third parties or used for the purposes of market timing or seeking to gain an unfair advantage.

# MWRA Retirement System

Initial investment on September 25 2020: \$25,000,000

Outflow on 5 April 2021: \$10,000,000

Valuation as at 31 December 2022: \$12,536,660



# Introduction

Market anxiety has meant a tough 12 months for growth investing, and your performance

Consistency of team, philosophy and process

Portfolio holdings are resilient, and we're excited about their growth prospects

In May 2023, there will be seven promotions to the partnership, and one retirement



# International Growth team

**Research team\*\***



**Robin Nelson**  
Years' experience: 6 (6)



**William Dudley**  
Years' experience: 3 (3)



**Tara Sallis**  
Year's experience: 2 (2)



**Tom Coutts**  
Chair\*  
Years' experience: 23 (23)



**Lawrence Burns**  
Deputy Chair\*  
Years' experience: 13 (13)



**Julia Angeles**  
Investment Manager\*  
Years' experience: 14 (14)



**Brian Lum**  
Investment Manager  
Years' experience: 16 (16)



**Nick Thomas**  
Client Service Director\*  
Years' experience: 24 (24)



**David Salter**  
Client Service Director\*  
Years' experience: 25 (21)

**Portfolio  
Construction Group**

**Investment specialists**



**Christel Brodie**  
Years' experience: 19 (4)



**Paul Taylor**  
Years' experience: 12 (0)

**ESG analyst**



**Cian Whelan**  
Years' experience: 8 (3)

\*Partner. \*\*Effective 31 January 2023. (Years with Baillie Gifford). ESG: Environmental, Social, Governance.

# Fund Performance

## NAV investment returns to December 31, 2022

	Fund %	Benchmark %	Difference %	Percentile ranking**
Since inception* (p.a.)	4.76	2.87	+1.89	17
Ten years (p.a.)	6.57	4.98	+1.59	22
Five years (p.a.)	1.91	1.69	+0.22	54
Three years (p.a.)	-1.09	0.53	-1.62	73
12 months	-34.43	-15.57	-18.86	92
Three months	13.01	14.37	-1.36	67

## Top and bottom five relative stock contributors to December 31, 2022

### Three months

Stock	Contribution %
Zalando	0.82
ASML	0.60
Genmab	0.55
Vestas Wind Systems	0.36
AIA	0.30
Spotify	-0.70
NIO	-0.55
MercadoLibre	-0.52
Nidec Corporation	-0.41
M3	-0.41

### 12 months

Stock	Contribution %
Genmab	0.96
argenx	0.75
AIA	0.56
Aixtron	0.54
Shopify	0.41
Spotify	-2.69
Adyen	-1.86
Zalando	-1.83
HelloFresh	-1.50
Ocado	-1.40

### Five years

Stock	Contribution %
ASML	7.26
Ferrari	3.41
M3	3.07
Genmab	2.55
MercadoLibre	2.47
Spotify	-2.59
Baidu.com†	-1.81
Rolls-Royce†	-1.50
TSMC	-1.18
Temenos	-1.17

Source: Bank of New York Mellon, StatPro, MSCI, Morningstar. Totals may not sum due to rounding. NAV returns are based on K share class of the Baillie Gifford International Growth Fund. Benchmark: MSCI ACWI ex US Index (MSCI EAFE prior to 22/11/2019).

\*March 6, 2008. \*\*Based on the I share class of the fund versus the US OE Foreign Large Growth universe. †Sold during the period.

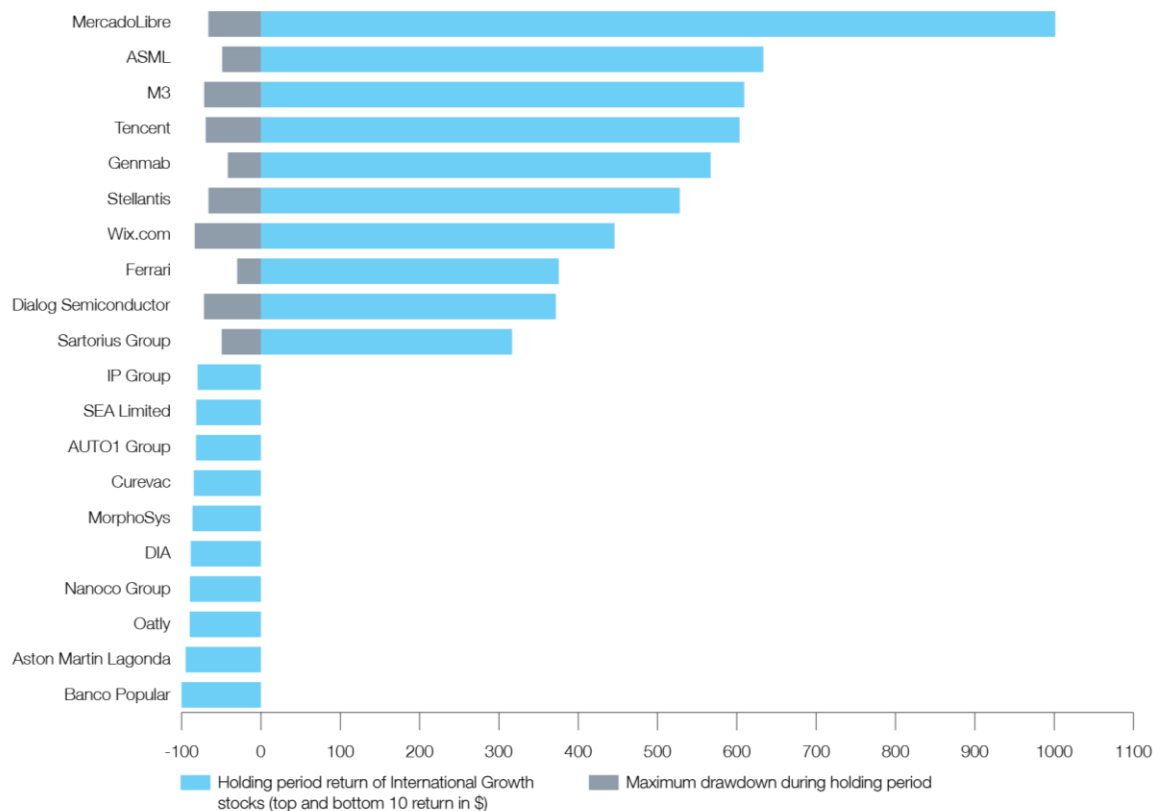
All investment strategies have the potential for profit and loss. Past performance is not a guide to future returns.



# Exceptional outliers and their inevitable drawdowns

Some stocks offer huge upside

But even the biggest wealth creators experience large drawdowns



Source: StatPro, MSCI. Based on the Baillie Gifford International Growth Composite. US dollars. December 31, 2012 to December 31, 2022. Some stocks were only held for part of the period.

MercadoLibre – 6 drawdowns >30%



ASML – 4 drawdowns >30%



M3 – 3 drawdowns >30%



○ Drawdown events

Source: Thomson Reuters Eikon. Bessembinder (2020).

## Learning from academia

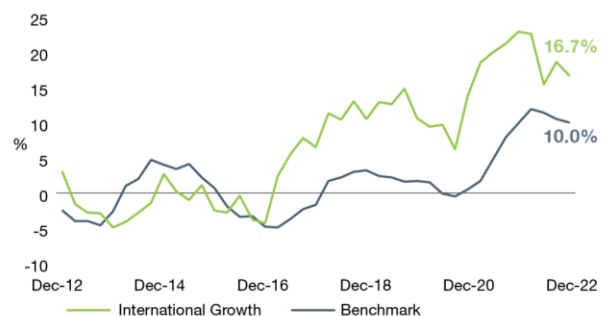
*‘Even those investments that are the most successful at long horizons typically involve painful losses over shorter horizons.’*

– Professor Hendrick Bessembinder

# Growth, portfolio resilience, style consistency

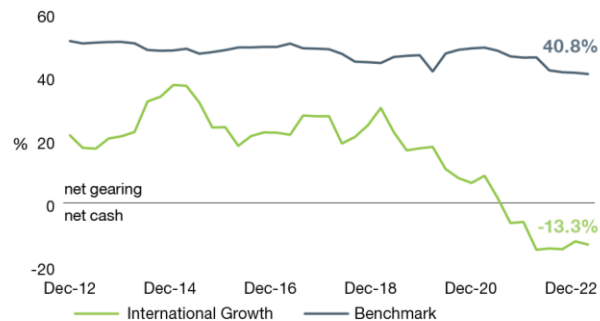
## High growth

Five years historic earnings growth (p.a.)



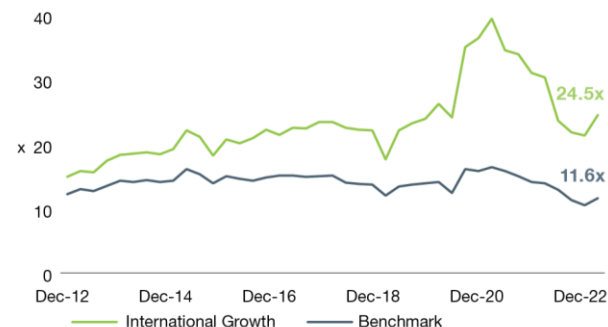
## Low gearing

Net debt/equity



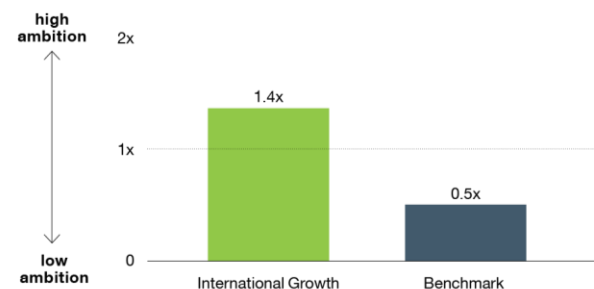
## Valuation

P/E ratio†



## High reinvestment

Reinvestment ratio\*



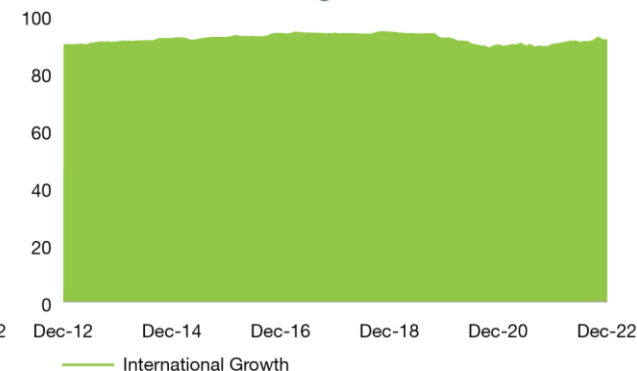
## Long termism

Portfolio turnover remains low



## Bottom up stock selection

Active share remains high
















Source: FactSet, MSCI. Based on representative International Growth portfolios. In US dollar. As at December 31, 2022.

Benchmark: MSCI ACWI ex US Index (MSCI EAFE prior to 22/11/2019).

†12 month forward estimate. \*(CAPEX – Depreciation) + R&D / Dividends and Buybacks.

Fund and benchmark P/E figures are calculated excluding negative earnings. Fund and benchmark net debt/equity figures exclude Financials.

# The portfolio

28%		36%		23%		13%	
>10 YEARS		5-10 YEARS		2-5 YEARS		<2 YEARS	
Holding	%	Holding	%	Holding	%	Holding	%
MercadoLibre	4.8	ASML 	6.6	Meituan	4.6	TSMC	2.7
Kering	4.5	Ferrari 	4.9	Adyen	4.0	Vestas Wind Systems 	1.8
Tencent 	4.1	Genmab	4.7	argenx	3.5	WuXi Biologics	1.1
L'Oréal	2.9	Delivery Hero	2.5	Spotify	2.9	Pinduoduo	0.9
AIA	2.9	Zalando	2.3	WiseTech Global	1.7	Coupang	0.9
Atlas Copco	2.8	M3	2.3	EXOR	1.6	Nu Holdings 	0.6
SMC	1.8	Sartorius Group	2.2	NIO 	1.2	GMO Payment Gateway	0.6
Aixtron	1.3	Umicore	2.0	HelloFresh	0.9	Wise 	0.6
Hong Kong Exchanges & Clearing	1.1	Wix.com	1.9	Ambu	0.8	SEA Limited	0.6
Novozymes	0.7	Nidec Corporation	1.8	Temenos	0.6	AutoStore 	0.5
HDFC	0.6	Ocado	1.5	Xero	0.5	Elastic 	0.5
Schibsted	0.4	Alibaba 	1.5	Adevinta	0.2	Prysmian 	0.5
		Kinnevik	1.0			Mobileye 	0.5
		SBI Holdings	0.6			Ganfeng Lithium 	0.5
						CyberAgent	0.5
						Oatly	0.1

Notable transactions shown six months to December 31, 2022.  New Buy  Addition  Reduction. Complete sales: CureVac, Inditex, Morphosys, Ping An Insurance, Stellantis.

As at December 31, 2022. Totals may not sum due to rounding. Cash: 0.7%.  
Holding weights and periods based on the Baillie Gifford International Growth Fund.

**Appendix**

# Supporting companies to be exceptional

## Baillie Gifford's five stewardship principles



Prioritisation of long-term value creation



A constructive and purposeful board



Long-term focused remuneration with stretching targets



Fair treatment of stakeholders



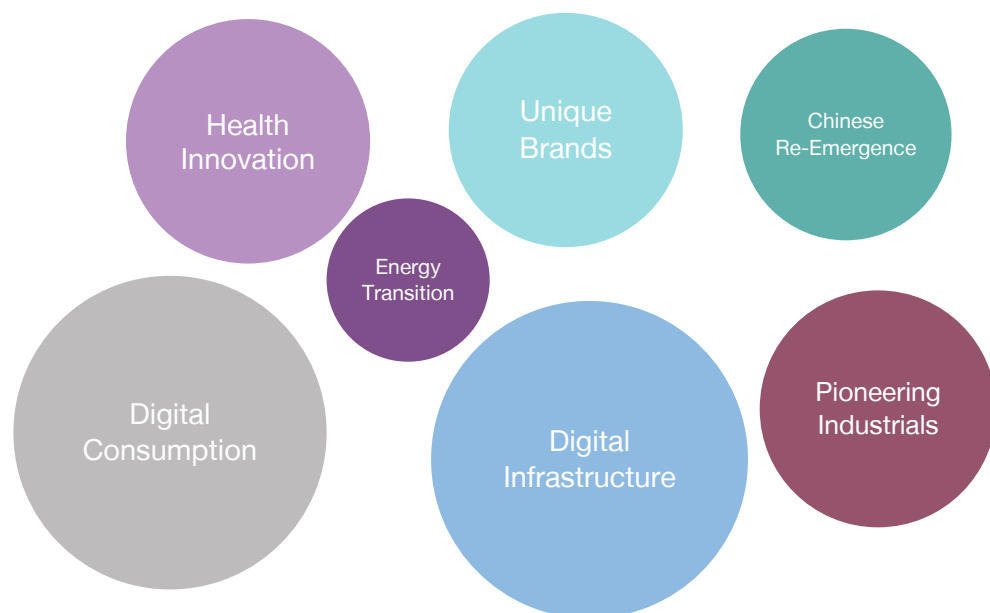
Sustainable business practices



Note: Not all companies are held across all portfolios.

# Portfolio insights

Our portfolio insights analysis is a subjective representation of the various investment themes present in the portfolio. The diagram is an output of our bottom-up stock selection, and not the result of a top down asset allocation. We classify each stock in the portfolio into a maximum of three themes out of the seven possible. We then calculate a weighted average of its holding size in the portfolio. The size of each circle reflects the sum of the weighted averages of the underlying stocks. This thematic analysis represents the underlying growth trends in the economy we are excited about both today and going forward. We believe representing the portfolio in this way is more insightful than looking at standard industry or sector classifications.



As at December 31, 2022. Based on a representative International Growth portfolio.

## Health innovation

Computing power and genetic sequencing are transforming the healthcare industry. Treatment methods and business models will change radically.

## Energy transition

We are entering a fourth energy transition driven by renewables. The variable cost of electricity will fall towards zero and disrupt traditional energy sources.

## Unique brands

Groups providing these unique brands should benefit from rising consumption in many developing markets and increased spending by the affluent.

## Chinese re-emergence

China continues to produce ambitious and innovative companies. The scale of its economy means growth runways can be long. We analyse whether companies are "going with the grain" of Chinese society.

## Digital infrastructure

The companies in this theme provide the 'picks and shovels' facilitating digitisation in many sectors of the economy.

## Digital consumption

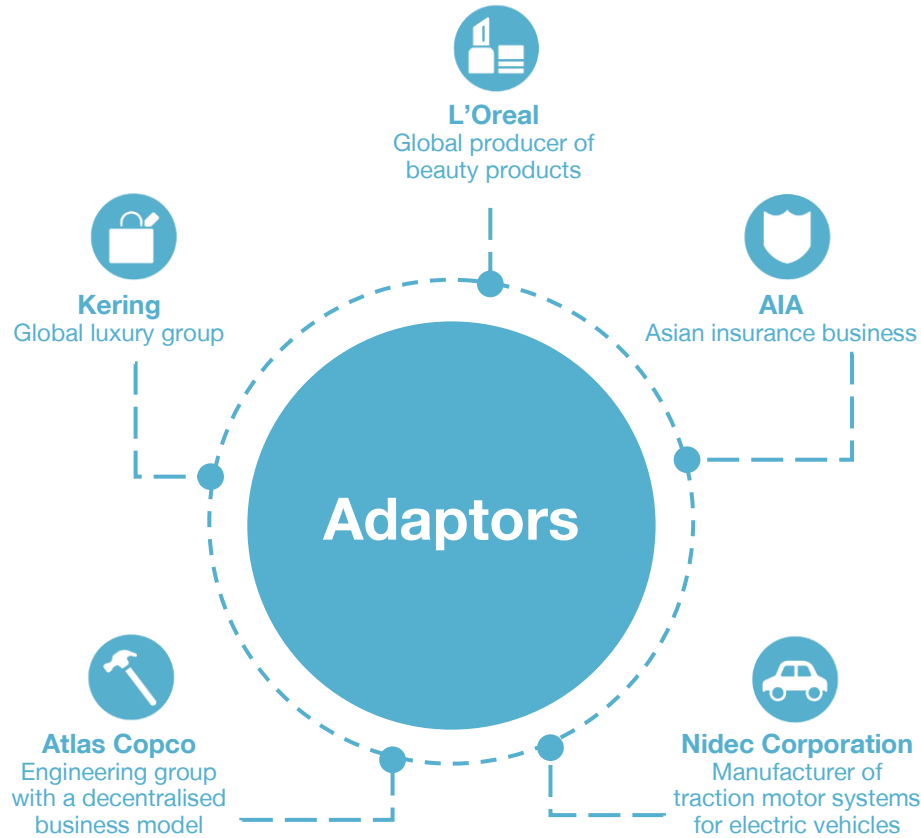
Customers' behaviours are changing. Digitally native companies are driving the rapid adoption of online services.

## Pioneering industrials

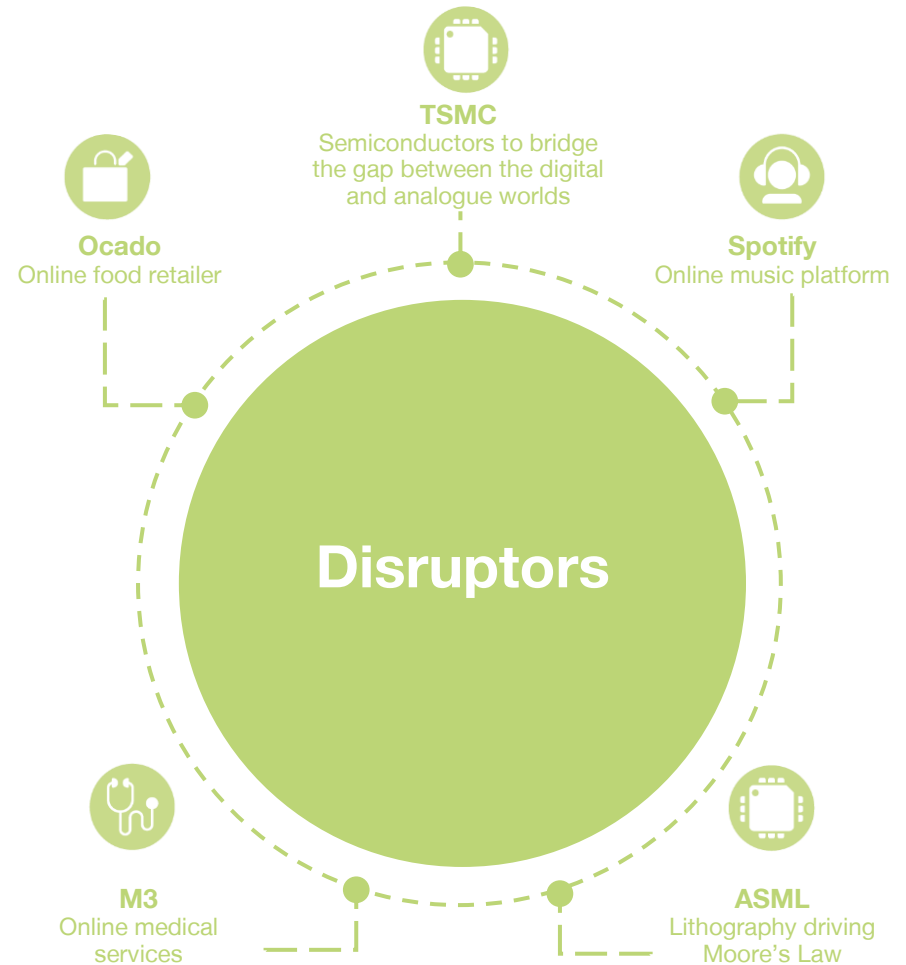
Intellectual property and engineering excellence can give companies a competitive edge that allows them to take advantage of growth opportunities.

# Adaptors and Disruptors

Evolving over time as their environments change



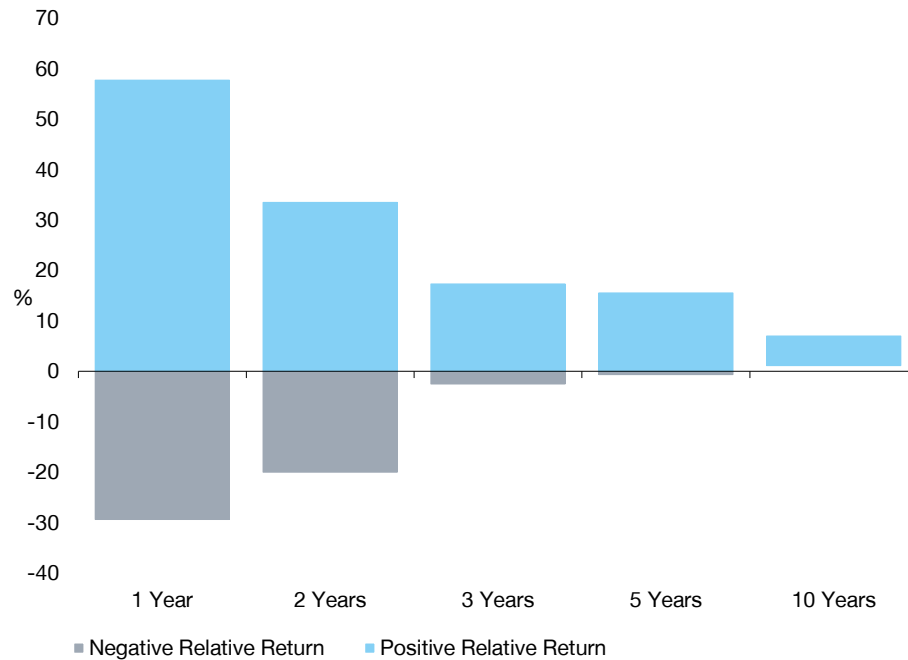
Driving change in their industry



As at December 31, 2022. Based on a representative International Growth portfolio.

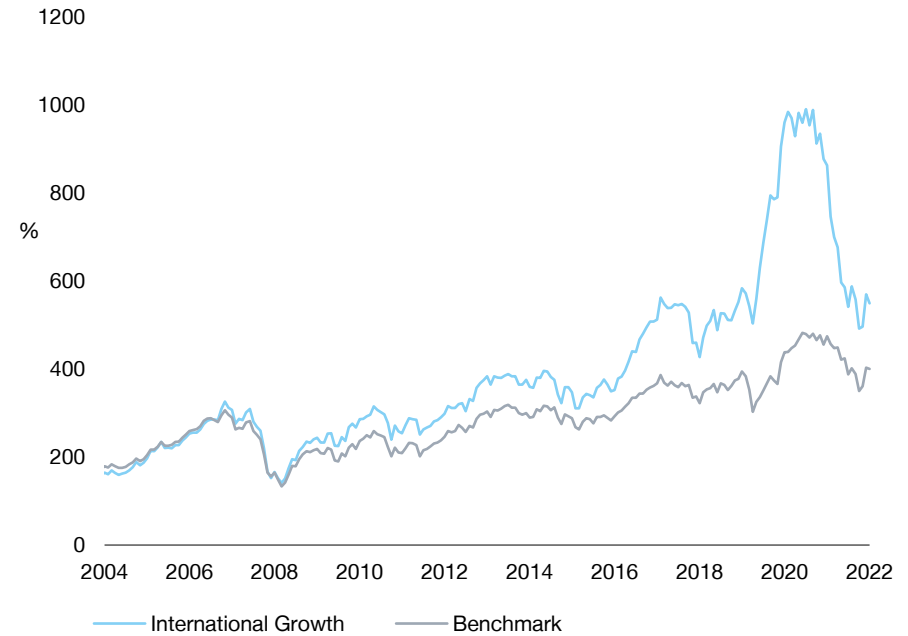
# Long-term performance

## Range of relative returns



Source: StatPro, MSCI. As at December 31, 2022. US dollar. Net of fees.  
 The figures above show annualised returns over each monthly period for the International Growth Composite (2/28/2003 to 12/31/2022) vs MSCI ACWI ex US Index (MSCI EAFE prior to 9/30/2018).

## Cumulative returns



Source: StatPro, MSCI. As at December 31, 2022. US dollar. Net of fees.  
 Based on the International Growth Composite since inception (2/28/2003) to December 31, 2022.  
 Benchmark: MSCI ACWI ex US Index (MSCI EAFE prior to 9/30/2018).



# Legal notices

All information is current and sourced from Baillie Gifford & Co unless otherwise stated.

## **Contracting Entity**

Baillie Gifford Overseas Limited

## **MSCI**

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# KEY EMPLOYMENT POLICIES

## Diversity and Inclusion

---

Global



# KEY EMPLOYMENT POLICIES

## Diversity and Inclusion Policy

Our people are our key asset. Baillie Gifford is a people business. Without our people, we would have nothing.

- We want to make sure that we have the best possible employment proposition and opportunities for everyone at Baillie Gifford to fulfil their potential.
- Great ideas can come from anywhere. We want to actively encourage diversity of backgrounds and thinking to push the firm forward.
- By embracing and including every employee's skills and talents, we make the firm stronger.

### Principles

At Baillie Gifford, we do not believe that diversity is something to think about in terms of boxes to be ticked, or quotas to be filled. It is about reducing groupthink, enhancing our connections to a global client base, and being able to recruit and retain the best talent. Our central goal of adding value for clients over the long-term requires an organisation that celebrates and supports diversity in all its facets.

Inclusion is about managing differences so that everyone has equality of opportunity. The firm recognises that sometimes this will mean treating people individually within the parameters allowed by law. This commitment is relevant to all we do, how we manage ourselves and how we deliver our services to clients.

### Policy aims

Our key aim is to ensure that Baillie Gifford offers a challenging, inclusive and respectful culture in which each of our colleagues can hope to thrive and develop over the course of their career, regardless of race, sex, ethnicity, age, sexual orientation, disability, gender reassignment, religion or belief, family status, marital or civil partnership status, and pregnancy and maternity.

- We must ensure that we have the right conditions to recruit, retain and develop excellent talent, and challenge any potential barriers to this being achieved.
- We believe in equality of opportunity and are committed to the elimination of unfair and unlawful discrimination.
- We want anyone who encounters the firm - whether they are staff, clients, prospective employees or visitors - to feel that Baillie Gifford is diverse and inclusive in its culture and aspirations.
- We recognise that we must continuously adapt, improve and invest to ensure that Baillie Gifford remains a world-class employer, and an enjoyable place to work.
- We respect the rights of individuals, including the right to hold different views and beliefs. We will not allow these differences to be manifested in a way that is hostile or degrading to others.

## **KEY EMPLOYMENT POLICIES**

- We expect commitment and involvement from all partners and staff in working towards the achievement of our aims.

### **Monitoring and Review**

It is the responsibility of our Diversity and Inclusion group, a partner-led group, to improve the way that we think about diversity and inclusion across the firm. Ongoing monitoring of the effectiveness of the policy, supporting procedures and appropriate employment legislation will be conducted by our Human Resources department.

### **Scope of the Policy**

The policy is applicable to all employees, clients, suppliers and contractors, whether permanent or temporary. The policy applies to all processes relating to employment and training and to any dealings with customers and clients.



## FUND PERFORMANCE SUMMARY

### Long Term Returns

FUND: BG MUT Intl. Growth Class 2

December 31 2022

BENCHMARK: MSCI AC World ex US (MSCI EAFE prior to 23/11/19)

	1 month	2 months	3 months	6 months	YTD	1 year	2 years % p.a.	3 years % p.a.	4 years % p.a.	5 years % p.a.	10 years % p.a.	Since Inception % p.a.
<b>NAV Return *</b>	-5.53	12.20	13.06	1.07	-34.43	-34.43	-22.95	-1.08	7.38	1.91	6.57	4.76
<b>Benchmark Return</b>	-0.71	11.03	14.37	3.16	-15.57	-15.57	-4.38	0.53	5.85	1.69	4.98	2.87
<b>Difference</b>	-4.82	1.17	-1.31	-2.09	-18.86	-18.86	-18.57	-1.61	1.54	0.22	1.59	1.89

Since Inception Date: 06 March 2008

\* NAV Return based on Share Class 2 Prices

Source: Bank of New York Mellon, StatPro and relevant underlying index provider(s)

All investment strategies have the potential for profit and loss. Past performance is not a guide to future returns.



# MONTHLY PERFORMANCE REPORT

**MWRA EMPLOYEES' RETIREMENT  
SYSTEM**

DECEMBER 31, 2022



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 (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Composite</b>	<b>631,356,508</b>	<b>-2.1</b>	<b>4.2</b>	<b>-12.4</b>	<b>4.0</b>	<b>4.7</b>	<b>6.5</b>
<i>Allocation Index</i>		-2.0	4.6	-10.7	4.7	5.3	6.9
<i>Policy Index</i>		-2.5	4.8	-11.5	5.1	5.7	7.0

20 Years As of December 31, 2022				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
<b>Composite</b>	<b>7.3</b>	<b>8.4</b>	<b>0.7</b>	<b>1.1</b>
<i>Allocation Index</i>	6.7	7.9	0.7	1.0
<i>Policy Index</i>	7.2	8.5	0.7	1.0

## Performance

- The Composite had a return of -2.1% (net) for the month, trailing the Allocation Index (-2.0%) and outperforming the Policy Index (-2.5%).
- Equities sold off in December amid recessionary fears fueled by the Federal Reserve's tighter monetary policy. In the U.S., the S&P 500 Index fell 5.8%, bringing losses for 2022 to 18.1%, the worst calendar year return since 2008. Value stocks outperformed with the Russell 1000 Value Index down 4%, finishing the year in the red at 7.5%, while the Russell 1000 Growth Index declined 7.7% ending the year 29.1% lower. Non-U.S. developed markets were up 0.1%, outperforming all other regions. The portfolio's Domestic Equity composite fell -5.2% (net) and the Non-US Equity composite was down -2.5% (net).
- In fixed income, developed market bond yields continued to face upward pressure amid the hawkish stance from central banks. In the U.S., the yield curve experienced a bear flattener with the 10- and 30-year yields rising 18 and 15 basis points, respectively. The 10-year German Bund yield also increased 58 basis points to 2.53% amid inflation pressures in the Eurozone. The Fixed Income composite fell -0.5% (net) for the month while the Bloomberg Agg and the Bloomberg US HY were down -0.5% and -0.6% respectively.
- This brings the total plan return for the trailing one-year period to -12.4% (net), while the Allocation Index and Policy Index returned -10.7% and -11.5%, 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 (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Composite</b>	<b>631,356,508</b>	<b>100.0</b>	<b>100.0</b>	<b>-2.1</b>	<b>4.2</b>	<b>-12.4</b>	<b>4.0</b>	<b>4.7</b>	<b>6.5</b>	<b>6.6</b>	<b>Jan-86</b>
Allocation Index				-2.0	4.6	-10.7	4.7	5.3	6.9		
Policy Index				-2.5	4.8	-11.5	5.1	5.7	7.0		
<b>Total Balanced</b>	<b>4,861,106</b>	<b>0.8</b>	<b>0.0</b>	<b>-1.7</b>	<b>4.1</b>	<b>-11.4</b>	<b>5.5</b>	<b>4.1</b>	<b>4.2</b>	<b>4.4</b>	<b>Dec-10</b>
PRIT Core Fund	4,861,106	0.8		-1.7	4.1	-11.4	6.0	6.2	7.8	6.7	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				-3.6	5.4	-15.8	3.8	6.0	8.1	5.9	
<b>Total Domestic Equity</b>	<b>189,135,783</b>	<b>30.0</b>	<b>31.0</b>	<b>-5.2</b>	<b>7.0</b>	<b>-19.6</b>	<b>5.9</b>	<b>8.6</b>	<b>11.4</b>	<b>7.1</b>	<b>May-99</b>
Russell 3000 Index				-5.9	7.2	-19.2	7.1	8.8	12.1	6.8	
<b>Large Cap</b>	<b>145,639,066</b>	<b>23.1</b>	<b>24.0</b>	<b>-5.3</b>	<b>6.6</b>	<b>-20.3</b>	<b>6.1</b>	<b>9.4</b>	<b>11.9</b>	<b>11.7</b>	<b>Dec-10</b>
Rhumblin Advisors S&P 500 Index Fund	60,033,275	9.5	10.0	-5.8	7.5	-18.1	7.6	9.4	12.5	8.5	Apr-97
S&P 500 Index				-5.8	7.6	-18.1	7.7	9.4	12.6	8.5	
Coho Relative Value Equity	48,892,880	7.7	7.0	-3.6	11.1	-4.2	7.9	9.0		10.6	Mar-16
Russell 1000 Value Index				-4.0	12.4	-7.5	6.0	6.7		10.2	
Polen Focused Growth	36,712,911	5.8	7.0	-6.6	-0.3	-38.0	0.8	8.9		10.8	Feb-16
Russell 1000 Growth Index				-7.7	2.2	-29.1	7.8	11.0		14.0	
<b>Small Cap</b>	<b>43,496,717</b>	<b>6.9</b>	<b>7.0</b>	<b>-5.1</b>	<b>8.7</b>	<b>-17.1</b>	<b>5.0</b>	<b>6.6</b>	<b>10.4</b>	<b>10.6</b>	<b>Dec-10</b>
Boston Partners Small Cap Value	22,229,854	3.5	3.5	-5.7	9.4	-11.7	4.5	4.3	8.4	9.9	Feb-97
Russell 2000 Value Index				-6.6	8.4	-14.5	4.7	4.1	8.5	8.5	
Loomis Sayles Small Cap Growth	21,266,863	3.4	3.5	-4.5	7.9	-22.5	4.9	8.2	11.9	6.5	Jan-97
Russell 2000 Growth Index				-6.4	4.1	-26.4	0.6	3.5	9.2	6.3	
<b>Total Non-US Equity</b>	<b>100,617,712</b>	<b>15.9</b>	<b>19.0</b>	<b>-2.5</b>	<b>11.7</b>	<b>-23.3</b>	<b>-3.4</b>	<b>-1.2</b>	<b>3.0</b>	<b>3.6</b>	<b>Mar-99</b>
<b>International Equity</b>	<b>66,194,604</b>	<b>10.5</b>	<b>12.0</b>	<b>-2.6</b>	<b>14.7</b>	<b>-21.3</b>	<b>-1.5</b>	<b>0.6</b>	<b>4.0</b>	<b>3.0</b>	<b>Sep-05</b>
SEG Baxter Street	28,091,632	4.4	5.0	-2.5	13.7	-22.3	-2.4	1.9		5.4	May-16
MSCI AC World ex USA (Net)				-0.7	14.3	-16.0	0.1	0.9		4.7	
Schroder International Alpha Trust Class 1	25,566,311	4.0	4.0	-1.3	16.7	-19.0	3.9	3.8	5.8	5.8	Mar-12
MSCI AC World ex USA (Net)				-0.7	14.3	-16.0	0.1	0.9	3.8	3.8	
Baillie Gifford International Growth Fund Class K	12,536,661	2.0	3.0	-5.5	13.0	-34.4				-13.7	Oct-20
MSCI AC World ex USA (Net)				-0.7	14.3	-16.0				2.6	
<b>Emerging Markets Equity</b>	<b>34,423,108</b>	<b>5.5</b>	<b>7.0</b>	<b>-2.2</b>	<b>6.4</b>	<b>-27.0</b>				<b>-18.7</b>	<b>Mar-21</b>
Axiom Emerging Markets Trust Class 2	16,040,874	2.5	7.0	-2.2	5.8	-31.0				-21.4	Mar-21
MSCI Emerging Markets (Net)				-1.4	9.7	-20.1				-14.5	
ABS Emerging Markets MA Fund	18,382,234	2.9		-2.2	6.8	-23.1				-20.0	Dec-21
MSCI Emerging Markets (Net)				-1.4	9.7	-20.1				-17.3	

Since inception return is 8.2% gross 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 is linked to mutual fund performance history.

Preliminary performance is subject to change once finalized.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fixed Income</b>	<b>126,614,522</b>	<b>20.1</b>	<b>20.0</b>	<b>-0.5</b>	<b>2.0</b>	<b>-11.1</b>	<b>-0.5</b>	<b>1.2</b>	<b>2.4</b>	<b>5.6</b>	<b>Mar-99</b>
Garcia Hamilton Fixed Income Aggregate	31,643,672	5.0	6.0	-1.0	1.5	-11.5	-2.3			0.3	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				-0.5	1.9	-13.0	-2.7			0.3	
Lord Abbett Core Fixed Income	34,259,229	5.4	4.0	-0.5	1.7	-13.3	-2.3			0.5	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				-0.5	1.9	-13.0	-2.7			0.3	
Loomis Sayles Multisector Full Discretion Trust	46,735,006	7.4	8.0	-0.2	2.6	-12.5	0.1	1.6	3.1	6.8	Mar-99
<i>Blmbg. U.S. Aggregate Index</i>				-0.5	1.9	-13.0	-2.7	0.0	1.1	3.9	
<i>Blmbg. U.S. Corp: High Yield Index</i>				-0.6	4.2	-11.2	0.0	2.3	4.0	6.0	
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	13,961,567	2.2	2.0	0.1	2.5	-2.2	1.9			2.2	Aug-19
<i>Credit Suisse Leveraged Loan</i>				0.4	2.3	-1.1	2.3			2.6	
Invesco Mortgage Recovery Loans Feeder Fund	15,048	0.0		0.0	0.0	-0.7	-0.6	2.6	6.1	9.9	Apr-10
<i>Blmbg. U.S. Aggregate Index</i>				-0.5	1.9	-13.0	-2.7	0.0	1.1	2.1	
<b>Total Hedge Fund</b>	<b>42,154,230</b>	<b>6.7</b>	<b>6.0</b>	<b>0.6</b>	<b>1.2</b>	<b>-2.6</b>	<b>4.3</b>	<b>3.6</b>	<b>3.7</b>	<b>3.4</b>	<b>Oct-06</b>
PRIM Portfolio Completion Strategies	15,032,294	2.4		0.4	1.5	-2.0	2.8	2.9	4.2	3.7	Oct-06
Corbin Pinehurst Partners	12,524,363	2.0		0.3	1.2	-11.3	3.5			4.1	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.3	1.8	-5.2	3.7			4.1	
UBS Neutral Alpha Strategies	13,868,875	2.2		1.2	1.0	5.0	7.2			6.3	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.3	1.8	-5.2	3.7			4.1	
Entrust Peru Wind Down	728,698	0.1		0.0	-0.4	-2.2	-1.3	-3.1		-3.2	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				0.3	1.8	-5.2	3.7	3.0		3.2	
<b>Other</b>	<b>9,964,285</b>	<b>1.6</b>	<b>0.0</b>	<b>0.3</b>	<b>0.9</b>	<b>1.4</b>	<b>0.7</b>	<b>1.3</b>	<b>0.8</b>	<b>0.7</b>	<b>Dec-10</b>
Cash Account	9,964,285	1.6		0.3	0.9	1.4	0.7	1.3	0.8	1.7	Feb-00
<i>90 Day U.S. Treasury Bill</i>				0.4	0.8	1.5	0.7	1.3	0.8	1.6	

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.

Entrust Wind Down is valued as of 11/30/22.

Preliminary performance is subject to change once finalized.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Real Estate</b>	<b>72,052,368</b>	<b>11.4</b>	<b>12.0</b>	<b>-0.3</b>	<b>-0.3</b>	<b>10.9</b>	<b>12.0</b>	<b>10.3</b>	<b>11.0</b>	<b>8.5</b>	<b>Apr-99</b>
<i>NCREIF Property Index</i>				0.0	0.0	9.4	9.4	8.2	9.2	8.9	
Morgan Stanley Prime Property (\$2.8m commitment in '95)	25,979,519	4.1		-3.7	-3.7	6.1	9.3	8.4	10.5	8.8	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	28,358,966	4.5		0.0	0.0	15.3	16.4			14.9	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	921,638	0.1		0.0	0.0	-6.0	-20.0	-7.3		-1.9	Oct-15
Landmark VI (\$2m commitment in '11)	6,499	0.0		0.0	0.0	-16.4	-6.3	-8.7	-0.2	2.2	Jul-11
Landmark VIII (\$4m commitment in '17)	2,136,606	0.3		0.0	0.0	20.1	17.9	12.2		19.8	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	367,525	0.1		0.0	0.0	-1.7	-2.0	-1.5	5.1	2.0	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	483,850	0.1		0.0	0.0	-19.6	14.3	12.7		13.3	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	4,086	0.0		0.0	0.0	24.1	5.1	9.2		9.6	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,382,202	0.2		0.0	0.0	6.7	4.2	4.3		9.1	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,565,886	0.6		0.0	0.0	3.0	8.3	10.0		10.1	Nov-17
TerraCap Partners V, LP (\$8m commitment in '22)	8,845,592	1.4		8.9	8.9					14.5	Jun-22
<b>Total Private Equity and Debt</b>	<b>85,956,502</b>	<b>13.6</b>	<b>12.0</b>	<b>0.0</b>	<b>-0.2</b>	<b>3.6</b>	<b>18.4</b>	<b>14.5</b>	<b>14.6</b>	<b>10.4</b>	<b>Apr-99</b>
<i>CJA US All PE</i>				0.0	0.0	-2.7	18.1	15.7	14.7	13.1	
<i>NASDAQ W/O Income</i>				-8.7	-1.0	-33.1	5.3	8.7	13.2	6.3	
PRIM Vintage Year 2008 (\$3m commitment in '08)	801,810	0.1		0.1	-0.7	1.0	14.5	14.0	17.9	9.9	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	73,681	0.0		-2.2	0.5	-12.0	35.7	32.0	26.0	14.3	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	460,062	0.1		-0.2	-7.1	-42.2	23.0	16.9	18.7	10.9	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	837,642	0.1		0.3	-2.9	-4.5	31.5	25.0	22.4	10.0	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	472,161	0.1		1.2	5.9	-26.3	14.2	12.9	12.5	-9.4	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,158,189	0.3		0.1	-2.2	-1.0	24.1	24.5		8.5	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,559,371	0.4		1.2	2.3	4.4	24.6	17.8		16.2	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	3,546,500	0.6		0.6	-0.2	5.2				16.8	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	2,731,766	0.4		-2.2	-4.2	-5.7				-1.1	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	966,325	0.2		-0.6	-0.6					-5.8	Apr-22
Alcentra European DLF (\$5m commitment in '14)	197,301	0.0		0.0	0.0	9.2	23.1	13.8		11.9	Jan-15
Ascent Fund IV-B (\$1m commitment in '16)	40,322	0.0		0.0	0.0	-14.7	-21.7	-20.1		-14.9	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,250,422	0.2		0.0	0.0	-14.6	-2.0	-2.3	1.9	3.9	Oct-08
Ascent VI (\$3m commitment in '15)	3,453,769	0.5		0.0	0.0	2.6	2.6	3.2		2.4	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	5,402,590	0.9		0.0	0.0	4.4	6.1	6.2		6.1	Dec-17
Invesco Fund VI (\$5m commitment in '13)	1,068,293	0.2		0.0	0.0	-21.3	31.4	22.3		18.7	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.

Preliminary performance is subject to change once finalized.



# TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,766,350	0.4		0.0	0.0	31.2	-15.4	-16.1		-4.8	Jan-16
Foundry 2007 (\$3m commitment in '07)	484,034	0.1		0.0	0.0	-3.5	30.2	4.2	12.1	19.8	Dec-07
Foundry 2010 (\$3m commitment in '10)	5,956,413	0.9		0.0	0.0	-1.0	34.0	22.0	15.1	14.3	Feb-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,105,234	0.2		0.0	0.0	-0.9	91.2	63.3		42.0	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	449,779	0.1		0.0	0.0	-0.1	10.7	4.0	9.2	8.5	Dec-10
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	32,657	0.0		0.0	0.0	-5.0	-12.9			-14.1	Oct-18
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	90,621	0.0		0.0	0.0	1.5	14.9			6.3	Oct-18
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	16,190	0.0		0.0	0.0	-22.2	192.9			121.4	Oct-18
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	74,199	0.0		0.0	0.0	-17.7	11.7			6.0	Oct-18
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	75,737	0.0		0.0	0.0	-23.4	-0.7			-3.9	Oct-18
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	23,017	0.0		0.0	0.0	-12.1	-12.6	-12.1		-10.2	Jan-17
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	90,000	0.0		0.0	0.0	-6.3	18.6			15.7	Oct-18
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	47,358	0.0		0.0	0.0	-2.2	3.3			-2.7	Oct-18
Landmark XV (\$3m commitment in '13)	649,744	0.1		0.0	0.0	-15.7	4.5	7.3		10.8	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	1,723,874	0.3		0.0	0.0	9.8	34.1	41.7		37.3	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,695,956	0.7		0.0	0.0	0.5	23.1	21.7		19.4	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,775,654	0.4		0.0	0.0	3.3	6.8			6.6	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	2,261,352	0.4		0.0	0.0	2.3	10.6			11.1	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	6,689,436	1.1		0.0	0.0	4.4				63.4	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	7,553,174	1.2		0.0	0.0	1.9				33.8	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	13,189,202	2.1		0.0	0.0	3.7				3.2	Nov-21
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)	1,848,598	0.3		0.0	0.0						Jan-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	7,787,501	1.2		0.0	0.0	11.7				1.4	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	0.5 % of Assets	4,861,106	0.8	23,819	0.5
Rhumblin Advisors S&P 500 Index Fund	0.1 % of Assets	60,033,275	9.5	30,017	0.1
Coho Relative Value Equity	0.5 % of First \$75 M 0.4 % of Next \$75 M 0.4 % Thereafter	48,892,880	7.7	244,464	0.5
Polen Focused Growth	0.7 % of Assets	36,712,911	5.8	238,634	0.6
Boston Partners Small Cap Value	1.0 % of Assets	22,229,854	3.5	222,299	1.0
Loomis Sayles Small Cap Growth	0.5 % of Assets Minimum Fee: \$45,000	21,266,863	3.4	95,701	0.4
SEG Baxter Street	1.0 % of Assets	28,091,632	4.4	280,916	1.0
Schroder International Alpha Trust Class 1	0.6 % of Assets	25,566,311	4.0	140,615	0.5
Baillie Gifford International Growth Fund Class K	0.6 % of Assets	12,536,661	2.0	75,220	0.6
Axiom Emerging Markets Trust Class 2	0.7 % of Assets	16,040,874	2.5	117,098	0.7
ABS Emerging Markets MA Fund	0.8 % of Assets	18,382,234	2.9	137,867	0.8
Garcia Hamilton Fixed Income Aggregate		31,643,672	5.0	39,555	0.1
Lord Abbett Core Fixed Income	0.2 % of Assets	34,259,229	5.4	65,093	0.2
Loomis Sayles Multisector Full Discretion Trust	0.5 % of First \$20 M 0.4 % of Next \$20 M 0.3 % Thereafter	46,735,006	7.4	200,205	0.4
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.4 % of Assets	13,961,567	2.2	55,846	0.4
Invesco Mortgage Recovery Loans Feeder Fund		15,048	0.0		
PRIM Portfolio Completion Strategies		15,032,294	2.4		
Corbin Pinehurst Partners	0.9 % of Assets	12,524,363	2.0	106,457	0.8
UBS Neutral Alpha Strategies	0.9 % of Assets	13,868,875	2.2	124,820	0.9
Entrust Peru Wind Down	0.5 % of Assets	728,698	0.1	3,643	0.5
Cash Account		9,964,285	1.6		
Morgan Stanley Prime Property (\$2.8m commitment in '95)		25,979,519	4.1		
TA Realty Core Property Fund, LP (\$15m commitment in '19)		28,358,966	4.5		
Invesco Mortgage Recovery II (\$3M commitment in '15)		921,638	0.1		
Landmark VI (\$2m commitment in '11)		6,499	0.0		
Landmark VIII (\$4m commitment in '17)		2,136,606	0.3		
StepStone Real Estate Fund II (\$2m commitment in '11)		367,525	0.1		
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)		483,850	0.1		
TA Realty Fund X LP (\$3.5m commitment in '12)		4,086	0.0		



# FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TerraCap Partners III, LP (\$2.6m commitment in '15)		1,382,202	0.2		
TerraCap Partners IV, LP (\$4m commitment in '17)		3,565,886	0.6		
TerraCap Partners V, LP (\$8m commitment in '22)		8,845,592	1.4		
PRIM Vintage Year 2008 (\$3m commitment in '08)		801,810	0.1		
PRIM Vintage Year 2009 (\$1m commitment in '09)		73,681	0.0		
PRIM Vintage Year 2010 (\$1m commitment in '10)		460,062	0.1		
PRIM Vintage Year 2011 (\$1.5m commitment in '11)		837,642	0.1		
PRIM Vintage Year 2012 (\$1m commitment in '12)		472,161	0.1		
PRIM Vintage Year 2014 (\$2m commitment in '14)		2,158,189	0.3		
PRIM Vintage Year 2017 (\$2m commitment in '17)		2,559,371	0.4		
PRIM Vintage Year 2020 (\$5m commitment in '20)		3,546,500	0.6		
PRIM Vintage Year 2021 (\$5m commitment in '21)		2,731,766	0.4		
PRIM Vintage Year 2022 (\$7.5m commitment in '22)		966,325	0.2		
Alcentra European DLF (\$5m commitment in '14)		197,301	0.0		
Ascent Fund IV-B (\$1m commitment in '16)		40,322	0.0		
Ascent Fund V (\$2m commitment in '08)		1,250,422	0.2		
Ascent VI (\$3m commitment in '15)		3,453,769	0.5		
CVI Credit Value Fund IV A LP (\$6m commitment in '17)		5,402,590	0.9		
Invesco Fund VI (\$5m commitment in '13)		1,068,293	0.2		
Kayne Energy Fund VII (\$5m commitment in '15)		2,766,350	0.4		
Foundry 2007 (\$3m commitment in '07)		484,034	0.1		
Foundry 2010 (\$3m commitment in '10)		5,956,413	0.9		
Foundry 2010 Annex (\$0.4m commitment in '15)		1,105,234	0.2		
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)		32,657	0.0		
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)		90,621	0.0		
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)		16,190	0.0		
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)		74,199	0.0		
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)		75,737	0.0		
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)		23,017	0.0		
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)		90,000	0.0		
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)		47,358	0.0		
Landmark XV (\$3m commitment in '13)		649,744	0.1		
JFL Equity Investors IV, L.P. (\$6m commitment in '16)		1,723,874	0.3		
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)		4,695,956	0.7		



# FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Park Square Credit Opportunities III (\$3m commitment in '17)		2,775,654	0.4		
Ironsides Constitution Opportunities (\$3m commitment in '18)		2,261,352	0.4		
HarbourVest Dover Street X (\$9m commitment in '20)		6,689,436	1.1		
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)		7,553,174	1.2		
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)		13,189,202	2.1		
JFL Equity Investors V, L.P. (\$9m commitment in '20)		7,787,501	1.2		
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)		1,848,598	0.3		
<b>Investment Management Fee</b>		<b>631,356,508</b>	<b>100.0</b>	<b>2,202,269</b>	<b>0.3</b>

The estimated fee for private markets, inclusive of carried interest, is ~\$3,541,145 annually, which brings the total expense ratio for privates to ~53 bps. This brings the total estimated expense ratio for MWRA to ~93 bps.





# 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% CIA US All PE.
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

# 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





# SMALL CAP VALUE EQUITY SEARCH REVIEW

MWRA RETIREMENT SYSTEM

JANUARY 26, 2023

Sebastian Grzejka, CAIA, Partner

Kiley Fischer, Sr. Consulting Analyst



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# SUMMARY OF SMALL CAP VALUE EQUITY SEARCH

- **Target fund strategy**
  - U.S. Small Cap Value strategy
  
- **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 November 15, 2022 by 5:00 PM EST.**
  - A total of 53 managers responded





# SMALL CAP VALUE FINALISTS



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# SMALL CAP VALUE EQUITY SEARCH FINALISTS

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record	Fees	Side Letter	MWRA Rating
<b>Boston Partners</b> (Incumbent)	Small Cap Value	SMA	\$2,310	\$59,468	27	0.80%	Yes	2
<b>Hotchkis and Wiley</b>	Small Cap Diversified Value	SMA	\$2,022	\$25,614	17	0.55% on first \$15M, 0.50% on next \$35M, 0.45% thereafter	Yes*	1
<b>Mesirow</b>	Mesirow Small Cap Value	SMA	\$541	\$159,178	28	0.85% on first \$25M, 0.75% on next \$25M, 0.60% on next \$50M, 0.55% thereafter	Yes	2
<b>Vaughan Nelson</b>	Small Cap Value	SMA	\$2,358	\$12,656	25	1.0% on first \$25m, 0.85% on next \$25m, 0.75% thereafter	Yes	2



Yes\* = Yes with Modifications

# FIRM AND PRODUCT SUMMARY

Firm/Product	Firm/Team Comments	Investment Style/Strategy	Performance Expectations	Portfolio Positioning	Other Comments
<b>Small Cap Value Equity</b>					
Boston Partners - BP Small Cap Value	Boston Partners is an indirect, wholly owned subsidiary of ORIX Corporation of Japan.	Strategy seeks valuation, business fundamentals, and momentum. Discussions and decisions consider trade-off between these criteria.	Fundamental strategy. Should perform well in markets when strong financial fundamentals are rewarded. Quality bias offers downside protection.	~100 - 140 stocks. Market cap range consistent with the Russell 2000 Index. Maximum sector weight is 35%.	Incumbent
Hotchkis Wiley - SCDV	Hotchkis and Wiley is owned 54% by employees, 43% passively by Stephens-H&W, and 3% by outside investors. Judd Peters and Ryan Thomes oversee the Small Cap Diversified Value strategy.	Strategy uses proprietary quantitative models to pick stocks by reverse-engineering how the fundamental industry analysts identify attractively valued stocks based on their analyses of long-run normal earnings power.	Should outperform well in fundamental value markets and struggle in growth/momentum markets. The many small positions help to mitigate the volatility that is typical of deep value managers.	350-400 stocks. The max industry weight is 15%, and max sector weight is 35%. Roughly one third of the portfolio is invested in companies with market caps below \$500 million. Annual turnover ranges from 50%-100%.	
Mesirow – Small Cap Value	Mesirow Financial Financial Holdings, Inc., is approximately 94% owned by employees and the remainder is owned by non-employee individuals with a prior or current business relationship with Mesirow.	Strategy employs a relative value philosophy that invests in attractively valued, high-quality companies with catalyst-driven earnings and cash flow growth. The portfolio uses a combination of fundamental analysis (~80% of the process) and top-down/macroeconomic factors (~20 of the process)	Fundamental strategy, which looks to outperform the Russell 2000 Value over a market cycle.	Portfolios generally hold between 70 to 90 positions, with sector weights constrained to the greater of two times the benchmark or 15% of the portfolio and market cap range consistent with the Russell 2000 Index.	
Vaughan Nelson - Small Cap Value	Houston based firm, owned 100% by Natixis Investment Managers, L.P.  Seasoned investment team led by Chris Wallis.	Strategy seeks to invest in companies that are trading at a discount to intrinsic value as a result of informational and liquidity related inefficiencies that exist in the small cap universe.	The strategy should perform well in markets where companies are rewarded for improving fundamentals, and investors are adverse to paying for stretched valuations. Given the high active share and fairly concentrated portfolio, performance may deviate from the benchmark for periods of time.	The portfolio holds 55-85 stocks. Initial position size varies from 0.5% to 3%. The portfolio is sector agnostic and will have a high active share.	



# SECTOR EXPOSURES

	Comm. Services	Consumer Disc.	Consumer Staples	Energy	Financials	Health Care	Industrials	Technology	Materials	Utilities	Real Estate
<b>Boston Partners</b>	3.5%	14.7%	3.3%	8.5%	24.6%	6.8%	19.5%	10.3%	6.8%	0.0%	2.1%
<b>Hotchkis &amp; Wiley</b>	0.7%	12.4%	1.7%	10.6%	34.4%	2.2%	18.0%	8.9%	4.6%	3.6%	2.9%
<b>Mesirow</b>	1.6%	8.7%	1.7%	6.4%	23.0%	13.8%	15.2%	7.5%	3.9%	6.1%	12.2%
<b>Vaughan Nelson</b>	0.0%	8.9%	2.3%	5.4%	16.8%	2.9%	31.7%	21.4%	7.2%	3.5%	0.0%
<b>Russell 2000 Value Index</b>	3.0%	9.7%	2.7%	5.7%	29.2%	12.0%	12.4%	5.8%	3.6%	5.2%	10.6%



Source: eVestment

As of September 30, 2022



# TRAILING PERIOD RETURNS – AS OF 12/31/22

## NET OF FEES

	Benchmark	Qtr	1 Year	3 Year	5 Year	10 Year	
<b>US Small Cap Value Equity</b>							
Boston Partners - Robeco BP SCVE	1	9.4%	-11.7%	4.5%	4.3%	8.4%	
Hotchkis & Wiley – Small Cap Diversified Value	1	14.1%	-6.2%	8.6%	6.2%	11.5%	
Mesirow - Small Cap Value Equity	1	9.9%	-4.1%	10.3%	7.0%	10.2%	
Vaughan Nelson - Small Cap Value	1	8.0%	-10.0%	8.7%	6.5%	10.3%	
<b>Actual Return</b>							
1	Russell 2000 Value		8.4%	-14.5%	4.7%	4.1%	8.5%



# CALENDAR YEAR RETURNS

## NET OF FEES

	Benchmark	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>US Small Cap Value Equity</b>											
Boston Partners	1	25.9%	2.3%	30.1%	-16.4%	10.4%	24.7%	-4.5%	3.9%	34.2%	21.9%
Hotchkis & Wiley	1	35.9%	0.3%	22.5%	-14.0%	14.3%	34.8%	-8.4%	9.3%	44.4%	19.1%
Mesirow	1	29.3%	7.5%	23.3%	-15.7%	13.5%	14.8%	-0.6%	5.6%	35.2%	10.8%
Vaughan Nelson	1	31.3%	8.7%	24.7%	-14.5%	6.7%	20.2%	0.0%	9.0%	39.0%	15.1%

<b>Actual Index Return</b>											
1	Russell 2000 Value	28.3%	4.6%	22.4%	-12.9%	7.8%	31.7%	-7.5%	4.2%	34.5%	18.1%

	Benchmark	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>US Small Cap Value Equity</b>											
Boston Partners	1	-2.4%	-2.3%	7.7%	-3.5%	2.6%	-7.1%	2.9%	-0.3%	-0.3%	3.8%
Hotchkis & Wiley	1	7.6%	-4.3%	0.1%	-1.1%	6.5%	3.1%	-0.9%	5.1%	9.8%	1.0%
Mesirow	1	1.0%	2.9%	0.9%	-2.8%	5.7%	-17.0%	6.9%	1.4%	0.7%	-7.3%
Vaughan Nelson	1	3.0%	4.1%	2.3%	-1.6%	-1.1%	-11.6%	7.5%	4.8%	4.5%	-2.9%

Manager Excess Return: > 3%, between 0% and 3%, between -0% and -3%, < -3%



# EXCESS RETURNS PERFORMANCE SUMMARY

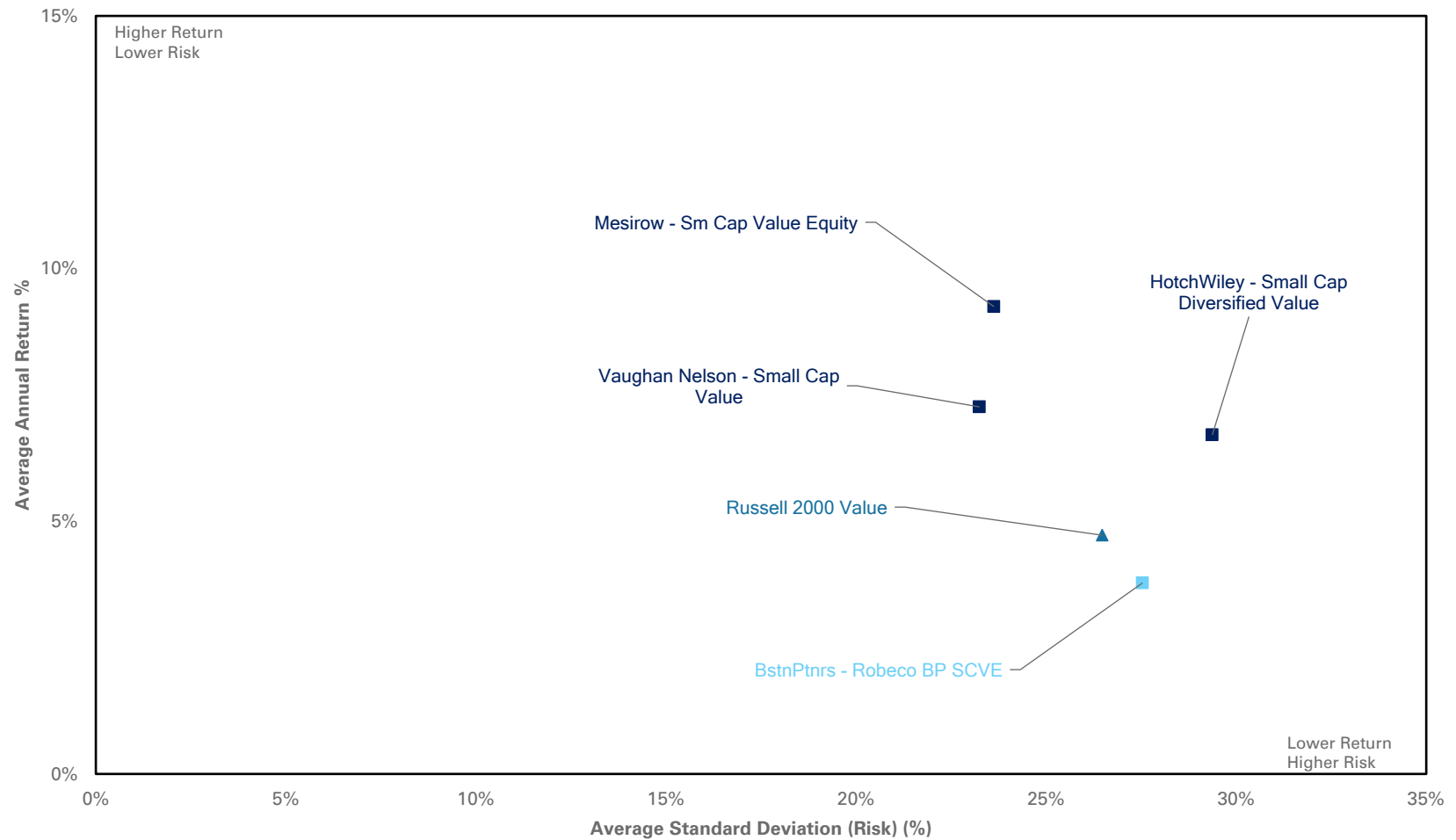
## NET OF FEES

	Primary Benchmark	# of Months (Track Record)	% Positive (Mo.)	High (Mo.)	Low (Mo.)	Average (Mo.)	% > 0.5%	Rolling 1 Yr. Rtr.		Rolling 3 Yr. Rtr.	
								> 0%	> 3%	> 0%	> 3%
<b>US Small Cap Value Equity</b>											
Boston Partners	Russell 2000 Value	240	55%	4.3%	(3.8%)	0.1%	38%	59%	24%	65%	18%
Hotchkis & Wiley	Russell 2000 Value	207	57%	11.5%	(4.7%)	0.2%	37%	60%	45%	74%	33%
Mesirow	Russell 2000 Value	240	51%	4.9%	(5.5%)	0.0%	33%	52%	26%	55%	17%
Vaughan Nelson	Russell 2000 Value	240	53%	6.2%	(5.1%)	0.2%	41%	61%	46%	76%	39%

	# of Months (Track Record)	Excess Return					Tracking Error				Information Ratio				Beta vs. Primary Benchmark
		1 Yr.	3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	
<b>US Small Cap Value Equity</b>															
Boston Partners	240	1.2%	(0.9%)	0.3%	(0.6%)	0.0%	5.5%	4.9%	4.5%	4.3%	(0.17)	0.06	(0.13)	0.00	0.98
Hotchkis & Wiley	207	4.6%	2.0%	1.3%	2.1%	2.7%	6.3%	5.4%	4.9%	4.5%	0.31	0.25	0.43	0.60	1.09
Mesirow	240	10.1%	4.5%	2.6%	0.2%	1.0%	5.6%	4.9%	4.8%	4.5%	0.81	0.54	0.05	0.23	0.86
Vaughan Nelson	240	9.6%	2.5%	2.7%	0.0%	1.8%	7.2%	6.2%	5.8%	5.6%	0.35	0.44	0.01	0.33	0.84



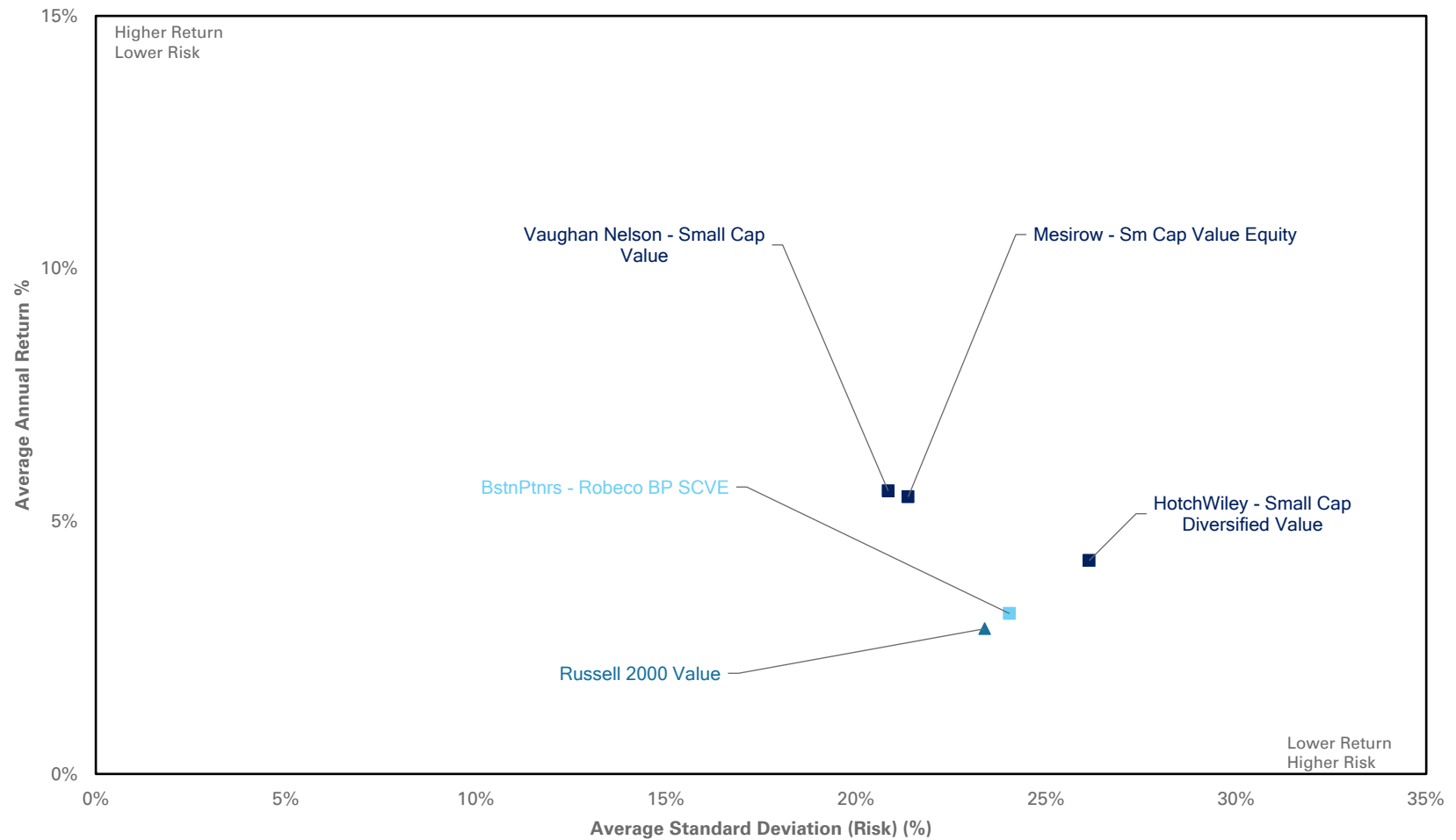
# 3 YEAR TOTAL RISK/RETURNS COMPARISON NET OF FEES



Past performance is no guarantee of future results

Performance as of September 30, 2022

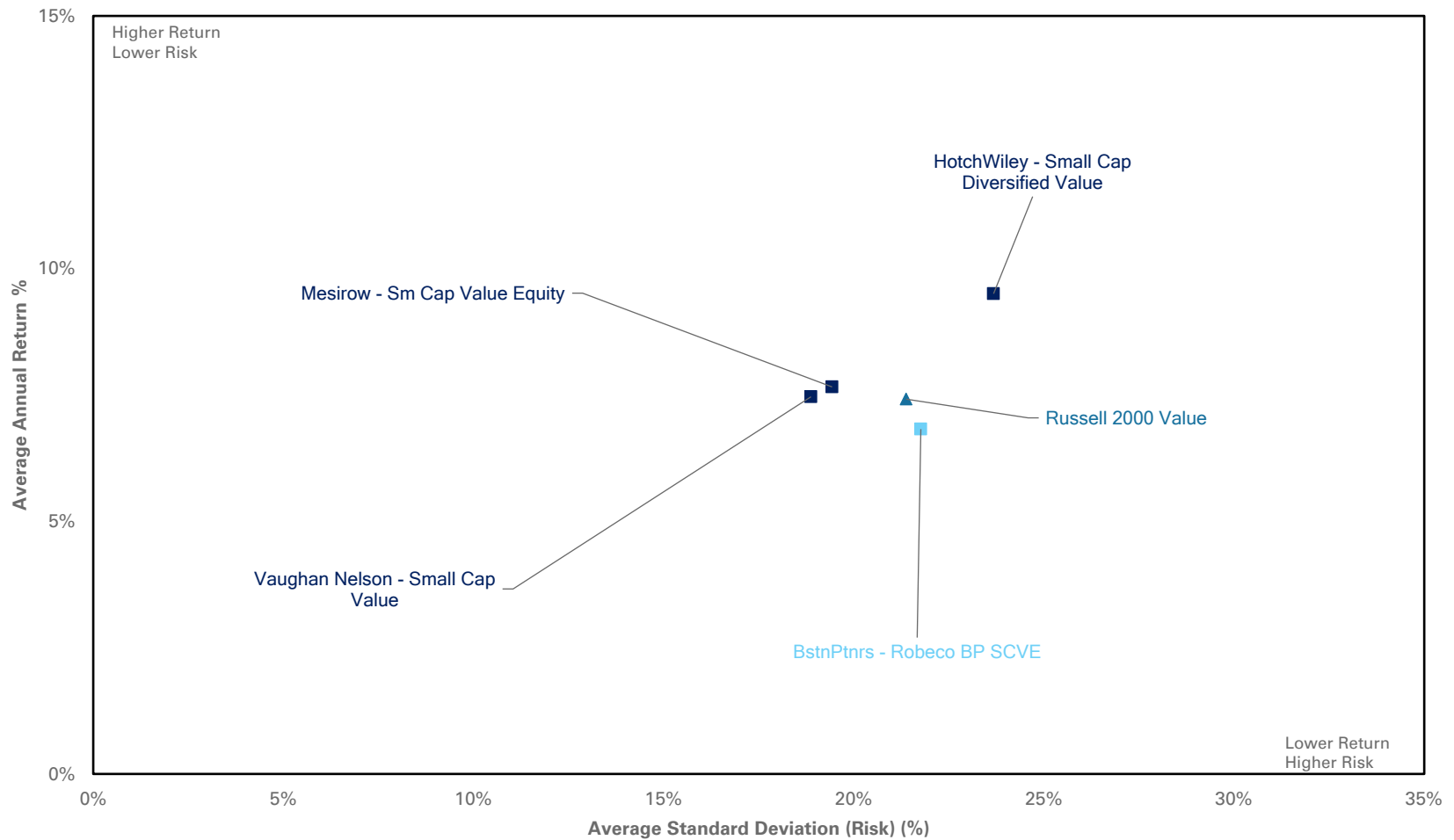
# 5 YEAR TOTAL RISK/RETURNS COMPARISON NET OF FEES



Past performance is no guarantee of future results

Performance as of September 30, 2022

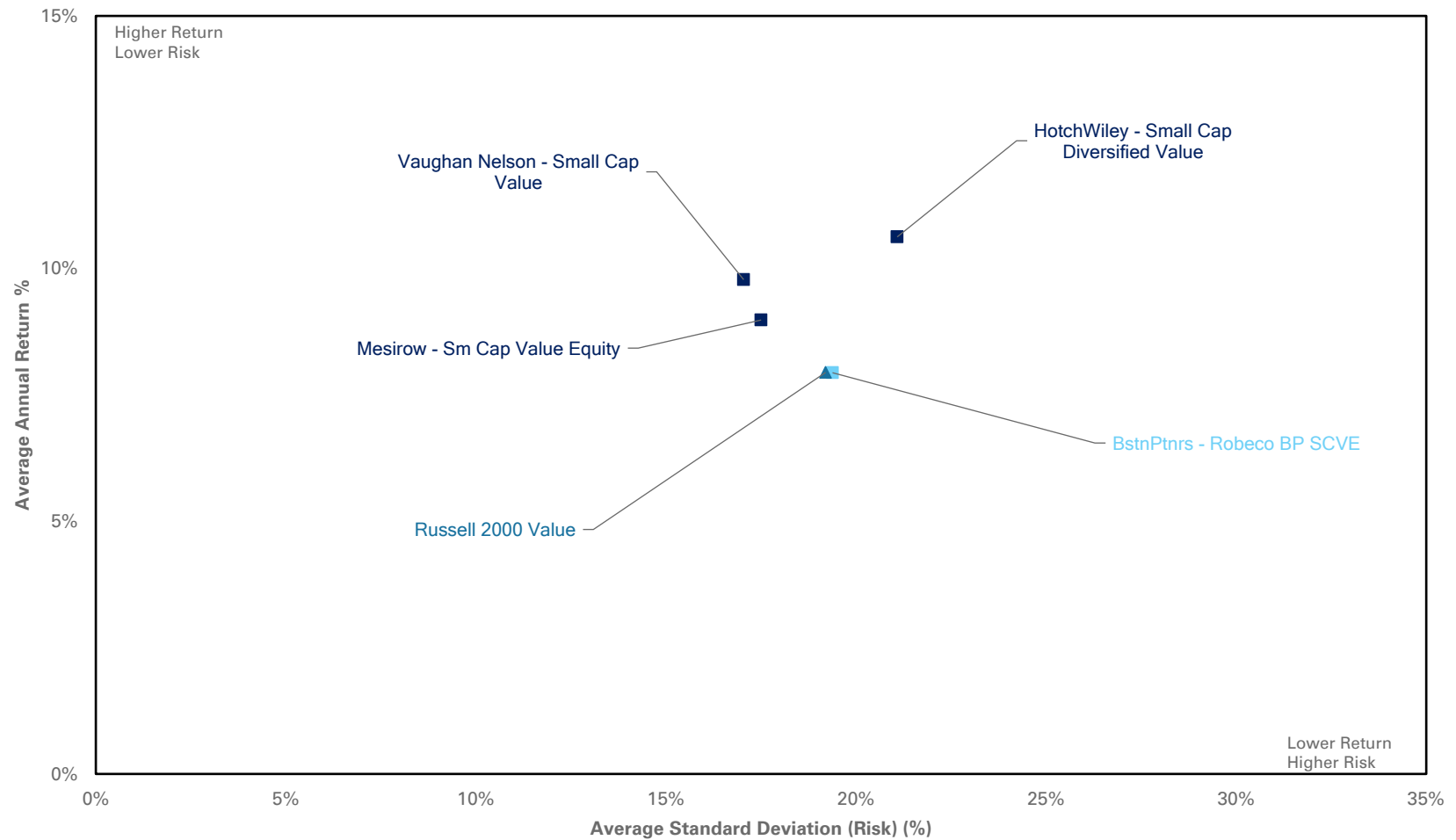
# 7 YEAR TOTAL RISK/RETURNS COMPARISON NET OF FEES



Past performance is no guarantee of future results

Performance as of September 30, 2022

# 10 YEAR TOTAL RISK/RETURNS COMPARISON NET OF FEES



Past performance is no guarantee of future results

Performance as of September 30, 2022



# APPENDIX



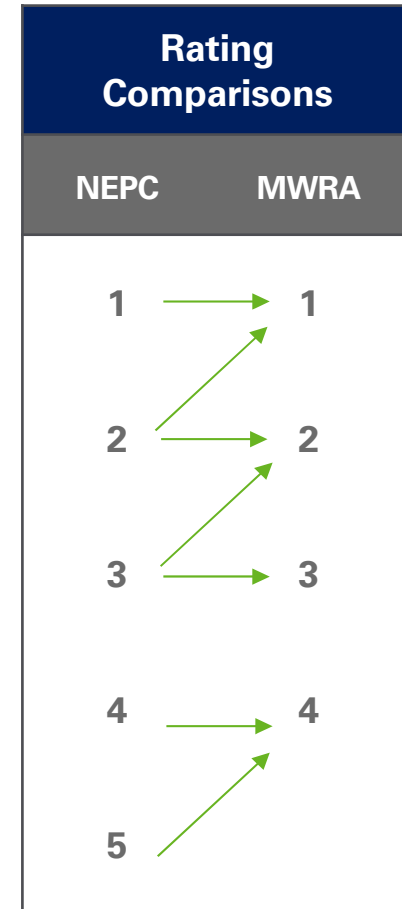
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# RATINGS SYSTEM COMPARISON

NEPC Research	
1	NEPC Research views 1-rated strategies as best ideas. The strategy has a clear investment thesis, and the manager is sufficiently resourced and incentivized to execute on the thesis. NEPC Research has high conviction that 1-rated strategies are positioned to deliver on a stated investment thesis and target return over a full investment cycle.
2	NEPC Research has a positive view of the strategy. The strategy has a clear investment thesis, and the manager is sufficiently resourced and incentivized to execute on the thesis. A single factor or mosaic of factors may lead to a 2 rating rather than a 1 rating.
3	NEPC Research has a constructive view of the strategy and believes the strategy can play an appropriate role in certain client portfolios. Through ongoing research, NEPC has not identified unreasonable risks from an organizational, process, operational or investment perspective.
4	NEPC has conducted a reasonable level of due diligence and has an unfavorable view of the strategy due to issues, weaknesses or risks that would challenge the manager's ability to execute on a stated investment thesis.
5	NEPC has conducted a reasonable level of due diligence and has significant concerns about the effectiveness or viability of the strategy. Through the due diligence process, NEPC has uncovered serious issues, weaknesses or risks that would challenge the manager's ability to execute on a stated investment thesis.

MWRA Searches (for PERAC)	
1	NEPC views these strategies as the best ideas and have high conviction in these firms and investment teams. These strategies meet all manager search requirements and are compatible with the client's portfolio.
2	Strategies that are positively viewed by NEPC and/or are existing managers for MWRA Retirement System. These strategies meet all search requirements.
3	NEPC has a positive or neutral view of these strategies. Client and search specific factors may result in a three rating.
4	Strategies that are not applicable for the current search. These strategies do not fit the search description or qualify based on the search guidelines. Strategies that demonstrate serious weaknesses or risks will also receive a 4 rating.



# SMALL CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record	Fees	Side Letter	MWRA Rating
<b>Brown Advisory</b>	Small-Cap Fundamental Value	SMA	\$1,835	\$48,606	14	0.85% (0.15% fee discount)	Yes	3
<b>Ceredex Value</b>	Small Cap Value Equity	SMA	\$1,084	\$6,608	24	55 bps	Yes	2
<b>Channing Capital</b>	Small Cap Value	SMA	\$2,283	\$2,991	16	First \$25M – 85bps, Next \$25M – 75bps, Over \$50M – 70bps	Yes	1
<b>Columbia Threadneedle</b>	Columbia Small Cap Value II	CIT	\$1,762	\$109,179	20	Net Expense Ratio: 0.70%	Yes*	3
<b>Congress</b>	Small Cap Value	SMA	\$305	\$9,608	12	65 bps on first \$25m; 60 bps on next \$25m; 50 bps thereafter	Yes	3
<b>Cove Street</b>	Classic Value Small Cap	SMA	\$263	\$388	28	0.80%	Yes	3
<b>Denali</b>	Denali Network Value Small	SMA	\$275	\$321	9	1%	Yes*	3
<b>DePrince, Race &amp; Zollo</b>	Small Cap Value	SMA	\$1,631	\$4,276	27	70bps on first \$50m, 65bps on next \$50m, 55bps thereafter	Yes	3
<b>Dimensional (DFA)</b>	US Small Cap Value Equity	MF	\$12,605	\$539,623	29	0.30%	Yes*	3
<b>Fiduciary Mgmt.</b>	FMI Small Cap Equity	SMA	\$1,960	\$12,487	42	\$0-25M: 0.85%, \$25-50M: 0.80%, \$50-100M: 0.70%, 0.60% thereafter	Yes	3
<b>Frontier</b>	Frontier Small Cap Value	SMA	\$2,003	\$8,683	24	1.00%	Yes*	3
<b>Goldman Sachs</b>	US Small Cap Value Equity Insights	CIT/MF	\$1,014	\$2,197,876	16	<b>MF:</b> Net Expense Ratio: 0.84% <b>CIT:</b> TBD	Yes*	3
<b>Heartland</b>	Small Cap Value Plus	SMA	\$513	\$1,488	14	First \$5m@1.0%, Next \$10m @ 0.85%, >\$15M negotiable	Yes	3
<b>Kayne Anderson</b>	KAR Small Cap Quality Value	SMA	\$5,038	\$45,190	24	80 bps	Yes*	2
<b>Leeward</b>	Leeward Small Cap Value	SMA	\$1,444	\$2,706	20	85 bps	Yes	3
<b>LSV</b>	U.S. Small Cap Value Equity	SMA	\$3,033	\$82,385	25	First \$25m at 75 bps, Next \$25m at 65 bps, 55 bps thereafter	Yes	3
<b>Mutual of America</b>	Disciplined Small Cap Value	SMA/C F	\$475	\$17,686	19	SMA - 90 bps MF - 80 bps	Yes	3
<b>Neumeier Poma</b>	Small Cap Value	SMA	\$1,186	\$1,187	23	1% on first \$25M, 0.80% on next \$25M, 0.70% above \$50M	Yes	3
<b>NewSouth</b>	Small Cap Value	SMA	\$557	\$2,172	37	0.90% on first \$25m, 0.85% on next \$25m, 0.75% thereafter;	Yes	3



Yes\* = Yes with Modifications

# SMALL CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record	Fees	Side Letter	MWRA Rating
Peregrine	Peregrine Small Cap Value	SMA/CF	\$1,200	\$2,374	26	SMA: 0.80% first \$100m, 0.75% next \$50m, 0.65% Balance CF: 0.70%	Yes	3
PGIM	Small Cap Value Equity	SMA	\$404	\$80,956	15	75 bps on first \$50m, 70 bps on next \$50m, 65 bps thereafter	Yes*	3
Port Capital	Small Cap Equity	SMA/CF	\$659	\$1,595	7	SMA: 100 bps on first \$15m, then 80 bps CF: 95 bps on first \$15m, then 80 bps	Yes	3
Putnam Investments	U.S. Small Cap Value Equity	SMA	\$417	\$157,473	4	80 bps	Yes	3
Pzena	Small Cap Focused Value	SMA	\$1,882	\$42,005	27	1.0% on first \$250m, 0.75% thereafter	Yes*	3
Segall Bryant & Hamill	Small Cap Value	SMA	\$1,961	\$21,512	15	70 bps	Yes	1
SouthernSun	Small Cap Strategy	SMA	\$661	\$869	19	82 bps	Yes	3
Systematic Financial	Small Cap Value Free Cash Flow	SMA	\$2,776	\$3,081	30	0.85% on first \$25M, 0.75% on next \$50M, 0.60% thereafter	Yes*	1
The London Company	Small Cap	SMA	\$692	\$29,193	23	0.70% on first \$50m; 0.55% on next \$50m; 0.50% thereafter	Yes	3
WCM	Focused Small Cap	SMA	\$971	\$65,685	10	80 bps	Yes*	3
Wellington	Small Cap Value	CF	\$359	\$1,096,540	13	0.85%	Yes*	3
Westwood	SmallCap Value	SMA	\$2,542	\$8,684	19	First \$100m at 75 bps, 70 bps thereafter	Yes	1



Yes\* = Yes with Modifications

# SMALL CAP VALUE EQUITY SEARCH RESPONSES

Firm	Fund	Vehicle	Fund AUM (MM)	Firm AUM (MM)	Track Record	Fees	Side Letter	MWRA Rating
Advisory Research	Advisory Research Partners Fund	SMA, CF	\$48	\$1,360	4	0.50% mgmt. fee & 20% perf. fee w/ 6% hurdle	Yes	4
Advisory Research	Small Cap Value	SMA	\$83	\$1,360	4	0.75%	Yes	4
Bailard	U.S. Small Cap Value	SMA	\$84	\$2,635	20	0.50%	Yes	4
CornerCap	Fundametrics Small Cap Equity	SMA	\$202	\$1,177	16	60 bps	Yes	4
Cornerstone	Opportunistic Small Cap Value	SMA	\$1	\$1,530	8	0.45% for first \$100m	Yes	4
Donald Smith & Co.	Small Cap Value Equity	SMA	\$200	\$2,270	30	100 bp on first \$25M, 85bp on next \$25M, 75bp thereafter	Yes	4
First Eagle	First Eagle US Small Cap	SMA	\$545	\$112,265	1	First \$75m 0.85%, next \$75m 0.75%, next \$300m 0.70%, 0.65% thereafter	Yes*	4
Huber	Small Cap Value	SMA, MF	\$73	\$379	15	SMA 1.25% MF: 1.35%	Yes	4
GMO	U.S. Small Cap Value	MF	\$92	\$53,932	4	0.51%	Yes*	4
Jackson Creek	U.S. Small Cap Equity	SMA	\$204	\$304	11	0.50%	Yes	4
Legion Partners	Legion Commingled Strategy	SMA	\$361	N/A	9	1% + 20% incentive (6% hurdle)	Yes	4
Monarch	Small Cap Value Equity	SMA	\$127	\$346	13	100 bps on first \$25m, then 90 bps	Yes	4
NewSouth	Small Cap Value CIT	CIT	\$0	\$2,172	N/A	Class 1 0.65% / Class 2 0.80%	Yes	4
Newton	US Small Cap Value Equity	SMA, CF, MF	\$1,913	\$98,711	23	MF: BOSYX = 1.0%, STSVX= 1.03% SMA: 70 bps CIT*: 50 bps if MWRA seeds (70 bps otherwise)	Yes	4
Oliver Luxxe	Small Cap Value Equity	SMA	\$30	\$557	5	0.80% on first \$30M, 0.75% on next \$20M, and 0.70% thereafter	Yes	4
Pacific Ridge	Small Cap Value	SMA	\$70	\$392	12	75 bps or perf. fee with a 0.10% and 1.90% max. fee	Yes	4
Penn Capital	Small Cap Value Equity	SMA	\$14	\$1,481	6	75 bps on first \$25m, 70 bps on next \$50m, 65 bps thereafter *Discounted	Yes*	4
PIMCO	PIMCO RAE US Small	MF	\$8,642	\$1,690,584	17	0.50%	No	4
Seizert	Small Cap Value	SMA	\$164	\$1,842	12	0.85%	Yes	4
Third Avenue	Small-Cap Value Strategy	MF	\$148	\$1,105	25	1.05%	No	4
Third Avenue	Small-Cap Value	SMA	\$0	\$1,105	25	First \$10m at 90 bps, next \$15m at 80 bps, next \$25m at 75 bps, then 70 bps	Yes*	4



Yes\* = Yes with Modifications

# 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.



## Massachusetts Water Resources Authority Retirement System



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**Elizabeth Sheerin**  
Relationship Manager  
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## Your Boston Partners Team



**George Gumpert, CFA**  
Senior Portfolio Manager

Mr. Gumpert is a senior portfolio manager for the Boston Partners Small Cap Value, Small Cap Value II, and Small/Mid Cap Value portfolios. Prior to managing Boston Partners small cap value portfolios, he was a research analyst and specialized in the small capitalization sectors of the equity market. Mr. Gumpert holds a B.A. degree in economics from Amherst College. He holds the Chartered Financial Analyst® designation. He has twenty-three years of investment experience.



**David C. Hinton, CFA**  
Equity Analyst

Mr. Hinton is an equity analyst with Boston Partners, specializing in the small capitalization sector of the equity market. He joined the firm from positions at Metcalf & Eddy, Inc. and LTV Steel Co. Inc. Mr. Hinton holds a B.S. degree in chemical engineering from Northwestern University and an M.B.A. degree from the Amos Tuck School of Business at Dartmouth College. He holds the Chartered Financial Analyst® designation. He has twenty years of investment experience.



**Volkan Gulen, CFA**  
Equity Analyst

Mr. Gulen is an equity analyst with Boston Partners, specializing in the small capitalization sector of the equity market. Prior to this, he specialized in the consumer products, tobacco, agriculture, business services, energy, media and advertising sectors of the equity market. He joined the firm from Fidelity Investments where he was a research analyst with coverage of the consumer, industrials, media and advertising sectors with roles spanning equity and high yield securities. Mr. Gulen holds a B.B.A. degree in finance from the University of Massachusetts, Amherst. He holds the Chartered Financial Analyst® designation and has sixteen years of investment experience.



**Carolyn M. Margiotti, CFA**  
Portfolio Analyst

Ms. Margiotti is a senior portfolio analyst for Boston Partners and has extensive experience with all of the firm's strategies. Ms. Margiotti also serves as a member of the relationship management team managing a number of the firm's key relationships. Prior to joining the firm in 2005, Ms. Margiotti was the manager of investments for PG&E Corporation where she managed over \$12 billion in pension, 401(k) and taxable trust assets. Her primary responsibilities included strategic asset allocation, investment strategy recommendations and investment manager selection and oversight. Ms. Margiotti is a former member of the Financial Women of San Francisco, served as Scholarship Committee team leader for many years. She has been an adjunct professor at the University of San Francisco and an instructor for the CFA review program. Ms. Margiotti holds a B.S. degree in industrial management and finance from Purdue University and an M.B.A. degree from the McLaren School of Business at the University of San Francisco. She holds the Chartered Financial Analyst® designation, FINRA licenses 7 and 63, and has twenty-eight years of industry experience.

# Your Boston Partners Team

**John C. Forelli, CFA**  
Director of Portfolio Research  
jforelli@boston-partners.com  
+1 (617) 832-8272

Mr. Forelli is the Director of Portfolio Research for Boston Partners. In this position, he directs our team of investment professionals in formulating, developing, and communicating the investment narrative for Boston Partners. Prior to this role, he was a senior portfolio analyst and has extensive experience with all of the firm's strategies. Mr. Forelli has 12 years of experience as a portfolio manager focused on large cap equities. He joined the firm from Independence Investments where he was large cap core portfolio manager, senior partner and member of the investment committee. Mr. Forelli was also a research analyst specializing in health care, chemical, capital goods and industrial companies. He began his career as an investment banker with Prudential Securities focusing on raising capital for emerging growth companies and merger and acquisition transactions. Mr. Forelli holds a B.A. degree in economics from Dartmouth College and an M.B.A. degree from the Tuck School of Business at Dartmouth College. He holds the Chartered Financial Analyst® designation and FINRA licenses 7 and 66. He has thirty-eight years of industry experience.

**Elizabeth Sheerin**  
Relationship Manager  
esheerin@boston-partners.com  
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Ms. Sheerin is a member of the Relationship Management team at Boston Partners and she joined this team in 2011. She works with many of our key domestic and international clients in a client service and relationship manager capacity. Prior to joining our firm, she was a Client Service Representative at Putnam Investments. She also held several financial services related internships including working for Merrill Lynch Global Wealth Management and State Street Global Advisors. She holds a B.S. degree in business management from Babson College. Ms. Sheerin has twelve years of industry experience.

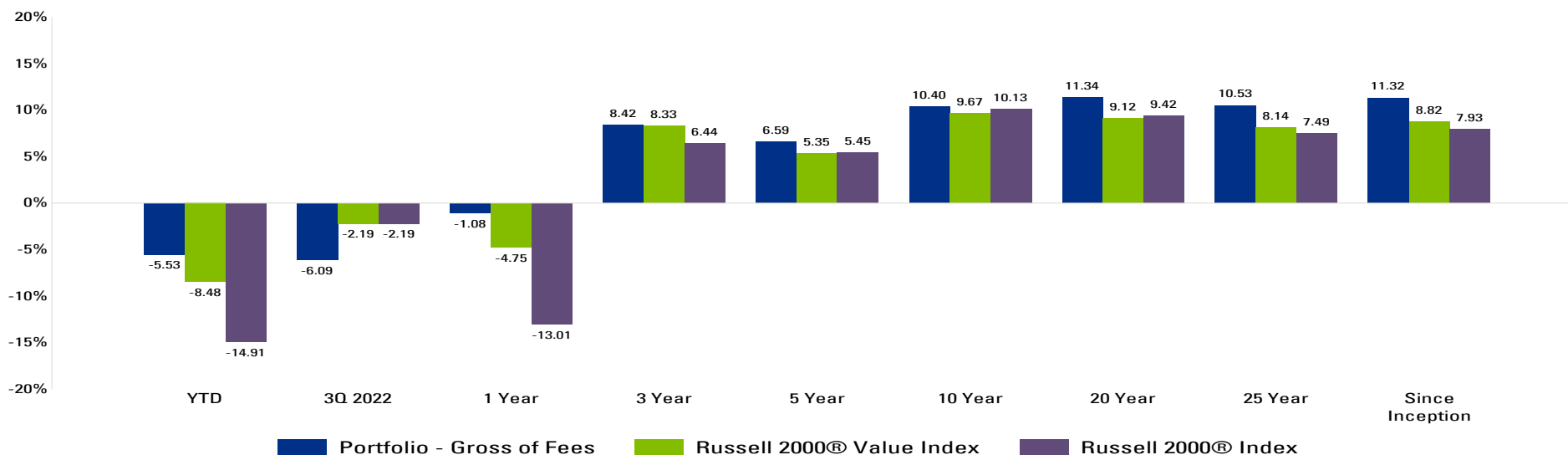
**William J. Supple**  
Head of Taft-Hartley and  
Public Funds Investor Relations  
wsupple@boston-partners.com  
+1 (617) 832-8193

Mr. Supple is in his twenty-first year with the firm, and has national Marketing and Relationship Management oversight responsibility for all Taft-Hartley and Public Sector clients. He joined the firm from Mellon Institutional Asset Management, where he was a Vice President with responsibility for Taft-Hartley clients in the Northeast and Midwest. Previously, he was Managing Director and Chief Operating Officer of the Leveraged Finance and Fixed Income Groups, and was also National Sales Manager, with BankBoston. Prior to his thirteen years at BankBoston, Mr. Supple was with Chase in New York City for six years. Mr. Supple is a former member of the Amalgamated Meatcutters and Butcher Workmen of North America, Local 2, AFL-CIO and the Service Employees International Union, Local 254 (Fenway Park Ushers). He served for seven years as a founding Trustee of the Commonwealth of Massachusetts Health Care Security Trust (Tobacco Settlement Funds). He has been elected to public office six times in Needham, MA, serving two terms as Chairman of the Trust Funds Commission, and served twelve years as an elected Town Meeting Member. Mr. Supple is a Member of the Sponsor Council of the Christian Brothers Institute of Massachusetts and is a past Chair of the Board of Directors at Catholic Memorial School. He is a Trustee of Newton Country Day School of the Sacred Heart and also served on the Finance Committee for the Jesuit's USA Northeast Province. He is a member of the Board of Advisors of the College of the Holy Cross, past Chair of the President's Council, and served as a member of the Institutional Advancement Committee of the Holy Cross Board of Trustees. Mr. Supple holds a B.A. degree (Cum Laude) from the College of the Holy Cross, an M.B.A. degree in finance from New York University, and FINRA licenses 7 and 63. Mr. Supple has over forty years of industry experience.



# Investment Performance

As of November 30, 2022



## Annualized Performance (%)

	YTD 2022	3Q 2022	1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	Since Inception*
<b>MWRA Employees Retirement System - Gross of Fees</b>	-5.53	-6.09	-1.08	8.42	6.59	10.40	9.64	11.34	11.32
<b>MWRA Employees Retirement System - Net of Fees</b>	-6.38	-6.33	-2.06	7.34	5.53	9.31	8.55	10.24	10.22
Russell 2000 Value Index	-8.48	-4.61	-4.75	8.33	5.35	9.67	7.23	9.12	8.82
Russell 2000 Index	-14.91	-2.19	-13.01	6.44	5.45	10.13	7.64	9.42	7.93

\*Inception date is February 1, 1997.

Data are preliminary, unaudited for MWRA Employees Retirement System as of November 30, 2022.

Past performance is not an indication of future results. Performance for periods over one year are annualized. Please refer to the back for other important disclosures.

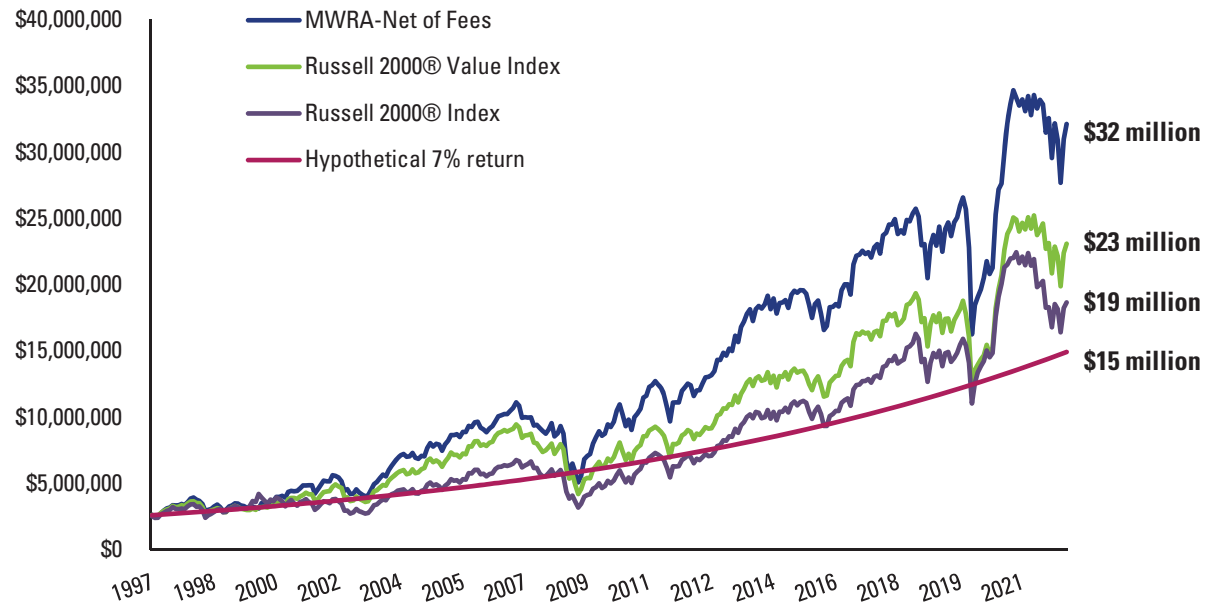
# Massachusetts Water Resources Authority Retirement System

As of November 30, 2022

## Statement of Changes

<b>Beginning Assets (2/1/97)</b>	\$2.6 M
<b>Net Cash Flows</b>	(\$16.8 M)
<b>Investment Returns</b>	\$37.7 M
<b>Current Assets (11/30/22)</b>	<b>\$23.5 M</b>

## Proposed Cumulative Growth of \$2.6 Million Investment as of November 30, 2022\*



Inception date is February 1, 1997.

\* Data as of November 30, 2022. This is a hypothetical illustration of the growth of \$2.6 million had it been invested in the Boston Partners Small Cap Value strategy on February 1, 1997. The results of this illustration may be changed depending on investment guidelines and cash flow. It assumes reinvestment of dividends and capital gains, and does not reflect sales loads, redemption fees or the effects of taxes on any capital gains and/or distributions. Past performance is not an indication of future results. A GIPS® compliant report is contained herein. 7% is a representative actuarial rate. Use of 7% is an arbitrary assumption. Results will be different with a different assumption. 7% is based on a study by Milliman Consulting in 2015 of approximately 1,300 multi-employer plans based on form 5,500 filings. Based on the conclusions of the study, 7% is a reasonable assumption for this comparison. Past performance is not an indication of future results.

# Boston Partners At a Glance

As of November 30, 2022

## Firm Profile

- Founded in 1995; offices in Boston, New York, Los Angeles, Greenbrae and London
- One investment philosophy and process across all strategies
- All established strategies have outperformed their benchmark since inception\*

## Distinguishing Characteristics

- A thriving investment ecosystem that forms a merit-based culture with common purpose and low employee turnover
- A clear alpha thesis: we consistently embed attractive value, fundamentals/quality, and momentum characteristics in portfolios
- A disciplined, time-tested investment process that utilizes comprehensive fundamental analysis combined with robust quantitative tools

## \$92.5 Billion Assets Under Management - Details

Investment Strategies	Assets(\$ Millions)
Large Cap Value, Concentrated Large Cap Value	\$31,478
Premium Equity (U.S. All-Cap Value)	\$12,529
Mid Cap Value	\$29,150
Small/Mid Cap Value	\$2,176
Small Cap Value	\$2,633
Small Cap Value II	\$944
U.S. Long/Short	\$1,180
Global, International, Concentrated International	\$10,876
Global Long/Short, International Long/Short	\$218
Emerging Markets Dynamic Equity, Emerging Markets	\$187
WPG Small Cap Value, Micro Cap Value	\$1,107
Sustainable and Socially Screened Investments**	\$18,581

\*Boston Partners' established long-only strategies have a minimum track record of 5 years. Results are net of fees. Past performance is not an indication of future results. \*\*Sustainable and Socially Screened Investments are a subset of the Assets Under Management table above, comprised of Global Sustainability; Sustainable Investment mandates; and socially screened portfolios. Organizational information can be found in the appendix.

# Boston Partners

## Representative institutional client list

### Public

Arkansas Judicial Retirement System  
California Department of Human Resources  
Charlotte Firefighters' Retirement System  
City of Clearwater Employees' Pension Fund  
City of Miami Firefighters' & Police Officers' Retirement Trust  
City of North Miami Beach General Employees, Police Officers & Firefighters  
Dallas Police & Fire Pension System  
Government of Guam Retirement Fund  
Joint Investment Committee as Trustees of the Wichita Retirement Systems  
Los Angeles City Department of Fire & Police Pensions  
Los Angeles Water & Power Employees' Retirement Plan

### Massachusetts Bay Transportation Authority Retirement Fund

Metropolitan Atlanta Rapid Transit Authority (MARTA)  
Miami Fire Fighters' Relief & Pension Fund  
Milwaukee County Employees' Retirement System

### MWRA Employees Retirement System

### Norfolk County Retirement System

Oklahoma Police Pension and Retirement System  
Phoenix City Employees' Retirement System  
Sacramento Regional Transit District  
San Luis Obispo County

### Taunton Contributory Retirement System

Texas Emergency Services Retirement System  
The Army & Air Force Exchange Service  
Town of Darien Pension Funds  
Tulare County Employees' Retirement Association

### Taft-Hartley

### Electrical Workers Pension Plan, Local 103, IBEW

Georgia Stevedore Association - ILA  
Heavy & General Laborers Locals 172 & 472  
IBEW Local 769 Management Pension Trust Fund

### IUOE Local 4 - Pension Fund

IUOE Local 30 Pension Trust Fund  
IUOE Local 132 Pension Fund

### Iron Workers District Council New England

Iron Workers Locals 40, 361 & 417  
Ironworkers National Pension Plan  
Mason Tenders' District Council Trust Funds  
Metal Trades Pension Fund  
N.R.A. – I.A.T.S.E. Local 720 Retirement Plan  
National Roofing Industry Pension Fund  
North Central States Council of Carpenters'  
PAMCAH-UA Local 675 Trust Funds

### Pipefitters Local Union 537 Annuity & Pension Funds

Plumbers and Steamfitters Local 7  
Producer-Writers Guild of America Pension Plan  
Radio, Television & Recording Arts Pension Fund  
Steamfitters' Industry Security Benefit & Pension Funds  
Teamsters Pension Trust Funds of Philadelphia  
UA Local Union 373  
UFCW - So. CA Drug Fund  
UFCW Unions & Employers Pension Plan  
Western Pennsylvania Laborers District Council

As of October 3, 2022, this list is made up of clients who have consented to disclosing their name. It is not known whether all the listed clients approve or disapprove of Boston Partners or the advisory services provided.

# Equity Investment Team

Long tenured investment team employing the same process across all strategies

## Portfolio Management and Portfolio Research

**Joseph Feeny, Jr., CFA**  
CEO, CIO, Long/Short Research  
37 years experience

**David Cohen, CFA**  
Large Cap Value  
18 years experience

**Mark Donovan, CFA**  
Large Cap Value  
41 years experience

**Stephanie McGirr**  
Large Cap Value  
20 years experience

**David Pyle, CFA**  
Large Cap Value  
27 years experience

**Joshua White, CFA**  
Large Cap Value  
16 years experience

**Duilio Ramallo, CFA**  
Premium Equity  
27 years experience

**George Gumpert, CFA**  
Small/SMID Value  
23 years experience

**Steven Pollack, CFA**  
Mid Cap Value  
38 years experience

**Christopher Hart, CFA**  
Global, International,  
Global Long/Short  
31 years experience

**Joshua Jones, CFA**  
Global, International,  
Global Long/Short  
18 years experience

**Soyoun Song**  
Global Sustainability  
17 years experience

**Paul Korngiebel, CFA**  
Emerging Markets,  
Emerging Markets Dynamic  
22 years experience

**David Kim**  
Emerging Markets,  
Emerging Markets Dynamic  
7 years experience

**Robert Jones, CFA**  
Long/Short Equity  
34 years experience

**Patrick Regan, CFA**  
Long/Short Equity  
27 years experience

**John Forelli, CFA**  
Director of Portfolio Research  
38 years experience

**Carolyn Margiotti, CFA**  
Portfolio Research  
28 years experience

**Michael McCune, CFA**  
Portfolio Research  
28 years experience

**Brandon Smith, CFA, CAIA**  
Portfolio Research  
16 years experience

**Michael Mullaney**  
Director of Global  
Markets Research  
41 years experience

**Christopher Eagan**  
Global Markets Analyst  
37 years experience

**Harry Rosenbluth, CFA**  
Senior Advisor  
41 years experience

## Fundamental and Quantitative Research

**Todd Knightly**  
Director of Fundamental Research  
33 years experience

**Jack Anton, CFA**  
Long/Short Equity Generalist  
5 years experience

**Brian Boyden, CFA, FRM, CAIA**  
Emerging Markets Equities  
24 years experience

**Scott Burgess, CFA**  
Technology, Electronics  
23 years experience

**Charles Clapp, CFA**  
Developed Non-U.S. Consumer  
7 years experience

**Tim Collard**  
Aerospace & Defense, Transportation,  
Housing & Autos  
17 years experience

**Aaron DeCoste**  
Energy, Engineering & Construction,  
Metals & Mining  
17 years experience

**Matthew Donovan**  
Emerging Markets Generalist  
1 year experience

**Paul Donovan, CFA**  
Paper & Packaging, Cable & Telecom,  
Gaming & Lodging, Chemicals  
11 years experience

**Kevin Duggan, CFA**  
Banks, Money Center  
27 years experience

**Colin Egan, CFA**  
Developed Non-U.S. Technology  
Media, Telecom, Autos  
7 years experience

**Jonah Frank**  
Equity Generalist  
1 year experience

**Trevor Frankel, CFA**  
Emerging Markets Equities  
12 years experience

**Volkan Gulen, CFA**  
Small Cap Equities  
16 years experience

**Jacklyn Y. Hall**  
Retail, Property & Casualty  
Insurance, REITs  
14 years experience

**Andrew Hatem, CFA**  
Healthcare  
27 years experience

**David Hinton, CFA**  
Small Cap Equities  
20 years experience

**Tim Horan**  
Industrials & Manufacturing,  
Home & Office Furnishings, Utilities  
25 years experience

**Jennifer Mace, CFA**  
Restaurants  
4 years experience

**Edward Odre, CFA**  
Financial Services, Life Insurance  
13 years experience

**Soyoun Song**  
Developed Non-U.S. Industrials  
17 years experience

**Edward Stansky**  
Equity Generalist  
6 years experience

**John Zhao**  
Emerging Markets Equities  
7 years experience

**Eric Connerly, CFA**  
Director of Quantitative Research  
29 years experience

**Carissa Wong, CFA**  
Director of Portfolio Risk  
Quantitative Strategies  
21 years experience

**Jason Bartlett, CFA**  
Quantitative Strategies  
20 years experience

**Pete Cady, CFA**  
Quantitative Strategies  
7 years experience

**Mark LeVie, CFA**  
Quantitative Strategies  
26 years experience

**Martin MacDonnell, CFA**  
Quantitative Strategies  
31 years experience

**Rubina Moin**  
Quantitative Strategies  
22 years experience

**Maggie Pietropaolo, CFA**  
Quantitative Strategies  
32 years experience

**Joseph Urick**  
Quantitative Strategies  
33 years experience

## Trading

**Mark Kuzminskas**  
Chief Operating Officer  
32 years experience

**Matthew Ender**  
Equity Trader  
13 years experience

**Christopher Bowker**  
Director of Equity Trading  
23 years experience

**Christopher Spaziani, CFA**  
Equity Trader  
9 years experience

**Thomas Walsh**  
Senior Equity Trader  
28 years experience

**Marlon Thompson**  
Equity Trading Assistant  
11 years experience

## Sustainability and Engagement Research

**William Butterly, Esq.**  
Director of Sustainability.  
38 years experience

**Jonathan Corning**  
Research Analyst  
1 year experience

**Marissa Rego, Esq.**  
Research Analyst  
8 years experience

**Jason Reid**  
Research Analyst  
18 years experience

**Katie Zona**  
Research Analyst  
1 year experience

# Three Circle Stock Selection Process

*In our experience, portfolios with all three characteristics tend to outperform over time*

**We buy stocks where we find the intersection of the three circles**

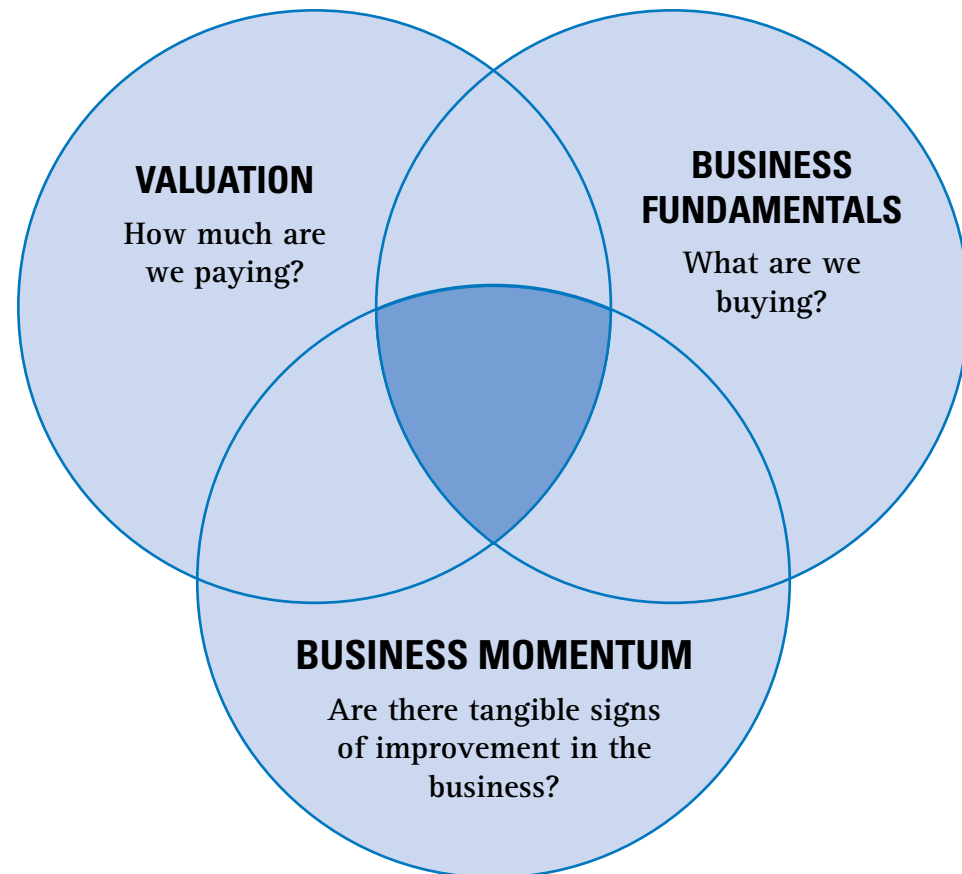


**We sell stocks due to:**

- Appreciation to target price
- Weakening business fundamentals
- A deterioration in business momentum

**Risk management begins with:**

- A value driven approach
- A well-defined sell discipline
- Portfolio diversification



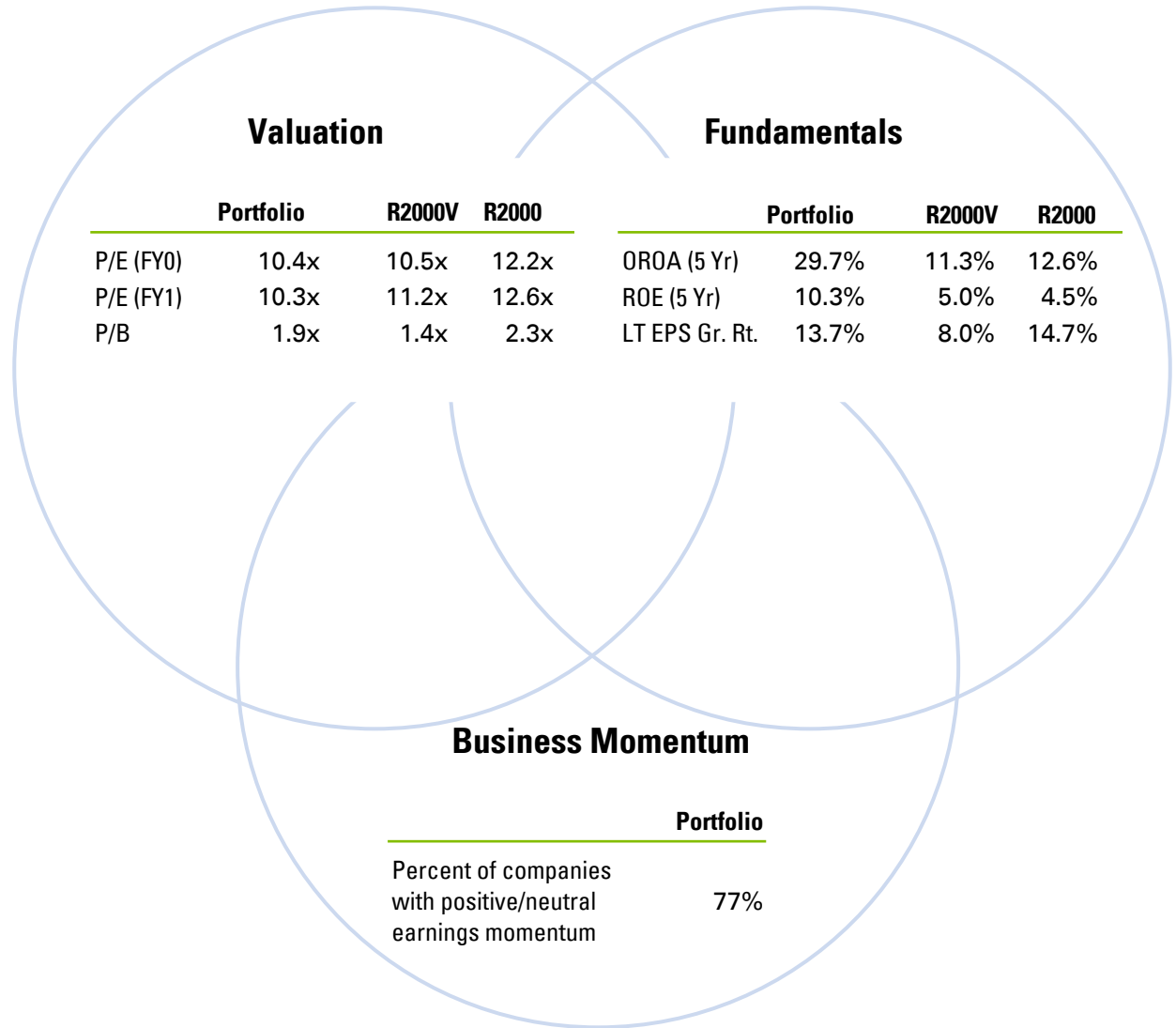
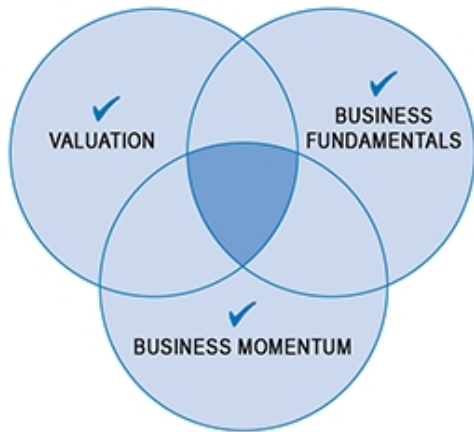
Past performance is not an indication of future results.

# Portfolio Characteristics - Small Cap Value

*A proof statement that the stock selection process results in a 'three-circle' portfolio*

## "Three Circles"

An attractive valuation, strong business fundamentals, and positive business momentum. In our experience, portfolios with all three characteristics tend to outperform over time.



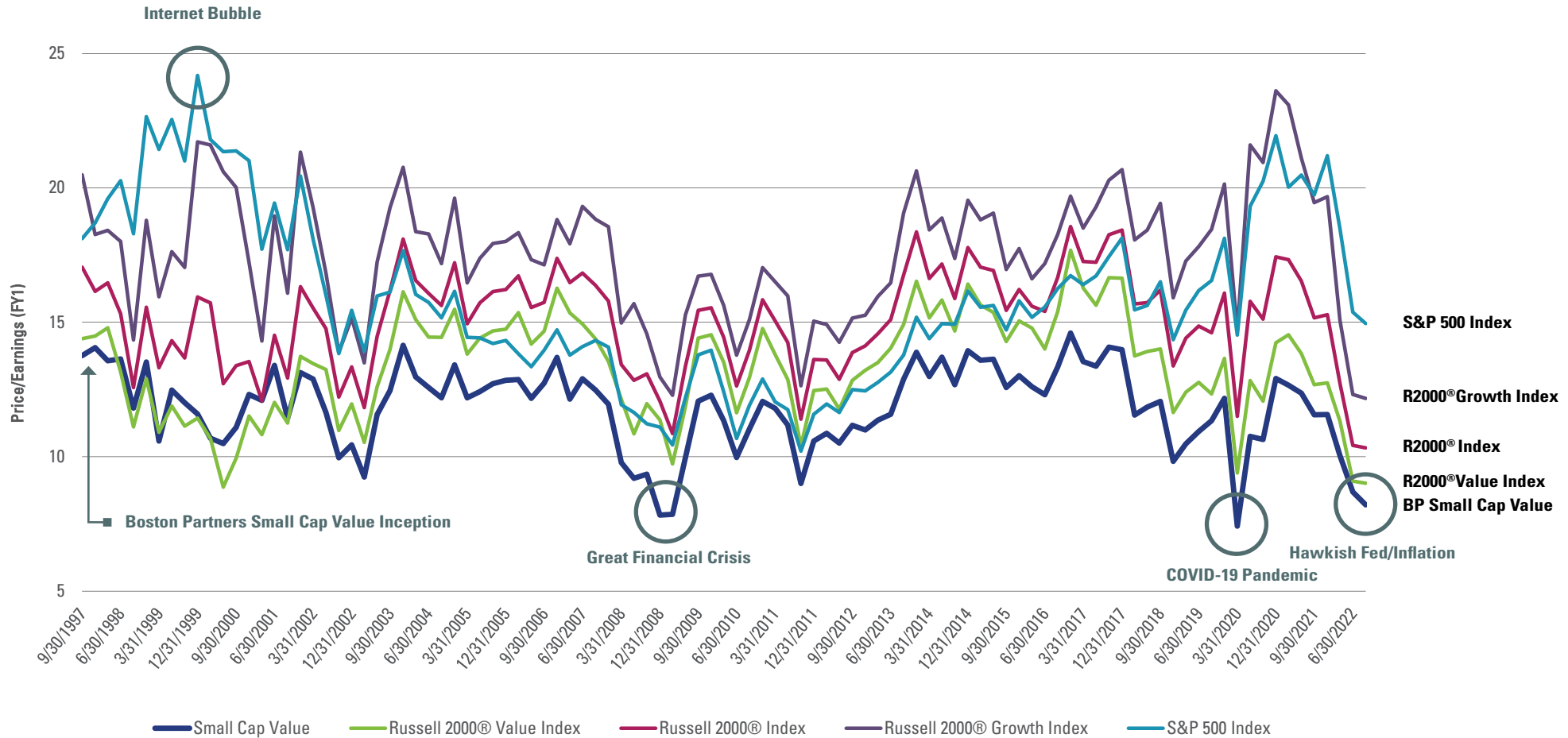
Data are for MWRA Employees Retirement System as of November 30, 2022.

FY0: current year; FY1: projected 12 months; LT EPS Growth: projected 3-5 year estimate. Earnings growth is not a measure of future performance. Past performance is not an indication of future results. Please refer to the back for other important disclosures.

# Small Cap Value Strategy Maintains a Discount

Versus the Russell 2000® Value and Russell 2000® Indices

## Price/Earnings



Data as of September 30, 2022. Inception date: July 1, 1995.

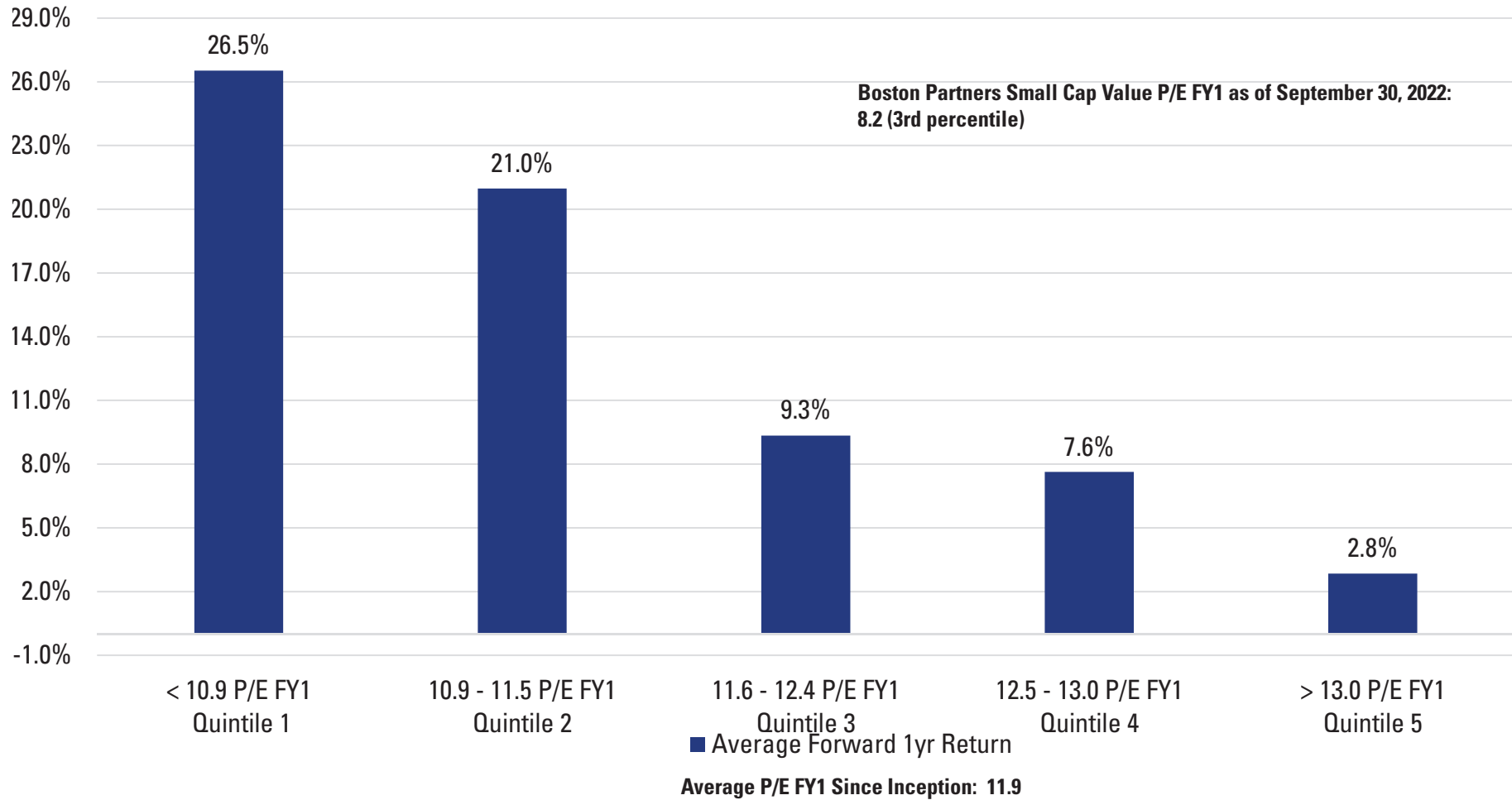
Portfolio characteristics are from a representative account in the Boston Partners Small Cap Value composite. Individual portfolio characteristics may vary. A GIPS® compliant report is contained herein. Please refer to the appendix for other important disclosures.

093022 SC PR-008



# Small Cap Value Strategy: Portfolio Valuation at Historic Lows

Valuation levels historically for the strategy and subsequent one year performance



Source: Boston Partners.

Data as of September 30, 2022. Inception date: July 1, 1995.

Returns are for the composite and are net of fees. P/E characteristics are for a representative account in the composite. Individual portfolio characteristics may vary. A GIPS® compliant report is contained herein. Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

093022 SC PR-007

# Portfolio Positioning - Small Cap Value

*Our assessment of where the opportunities exist*

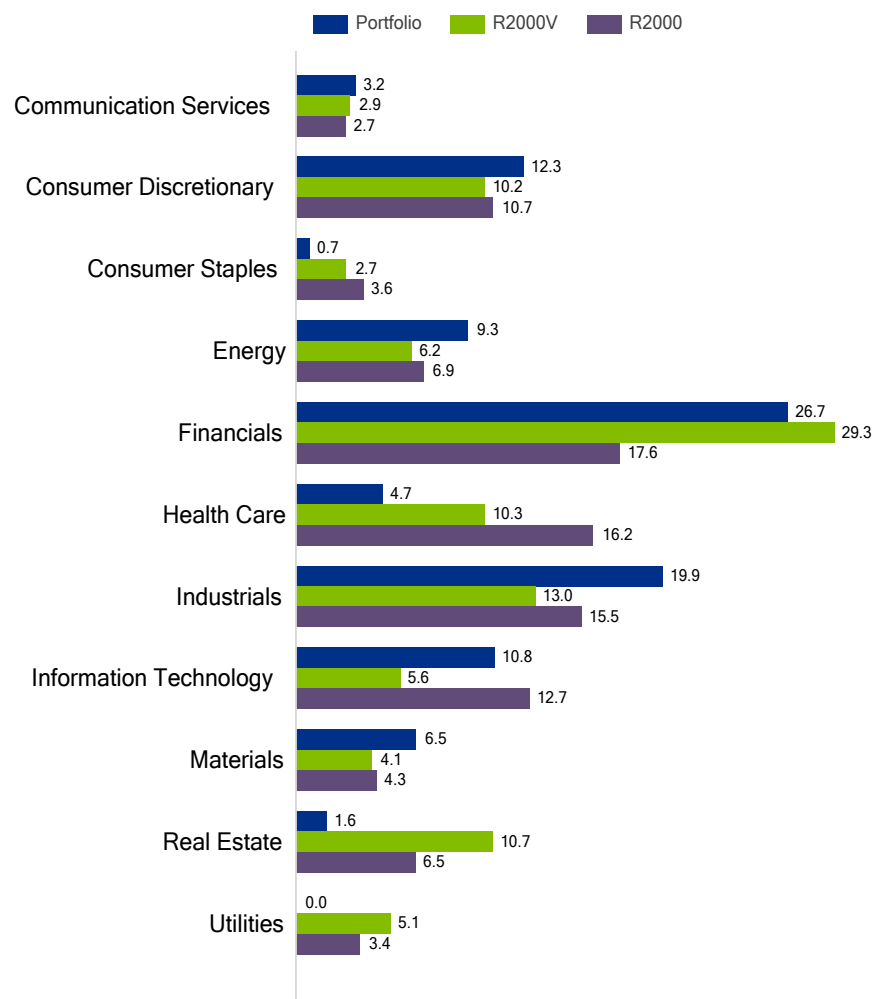
## Largest Holdings (%)

Graphic Packaging Holding Co	2.8
WESCO International Inc	2.5
SLM Corp	2.2
ABM Industries Inc	2.1
Harley-Davidson Inc	2.1
Stride Inc	1.9
Belden Inc	1.9
Insight Enterprises Inc	1.9
Nexstar Media Group Inc	1.7
Curtiss-Wright Corp	1.6
<b>Total</b>	<b>20.7</b>

## Portfolio Statistics

	Portfolio	R2000V
Number of Securities	130	1,385
Wtd. Avg. Mkt. Cap (\$M)	\$4,095	\$2,481
Dividend Yield	1.6%	2.1%
Turnover (Trailing 1 Year)	32.2%	-
Active Share	91.1%	-

## Sector Weightings (% of Portfolio)

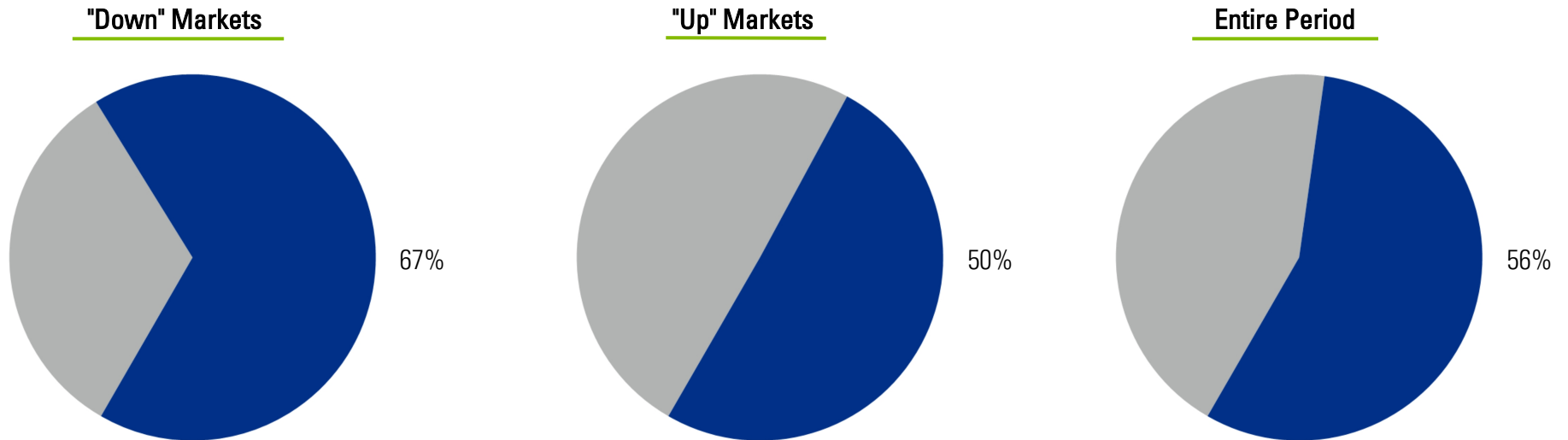


Data are for MWRA Employees Retirement System as of November 30, 2022.

Specific securities identified and described do not represent all securities purchased, sold or recommended for advisory clients. It should not be assumed that investments in these sectors or securities were or will be profitable. Please refer to the back for other important disclosures.

# Performance Through Market Cycles

*Preserved capital and compounded returns for favorable long-term performance*



■ Percentage of the time that Small Cap Value composite has outperformed the Russell 2000® Value Index.

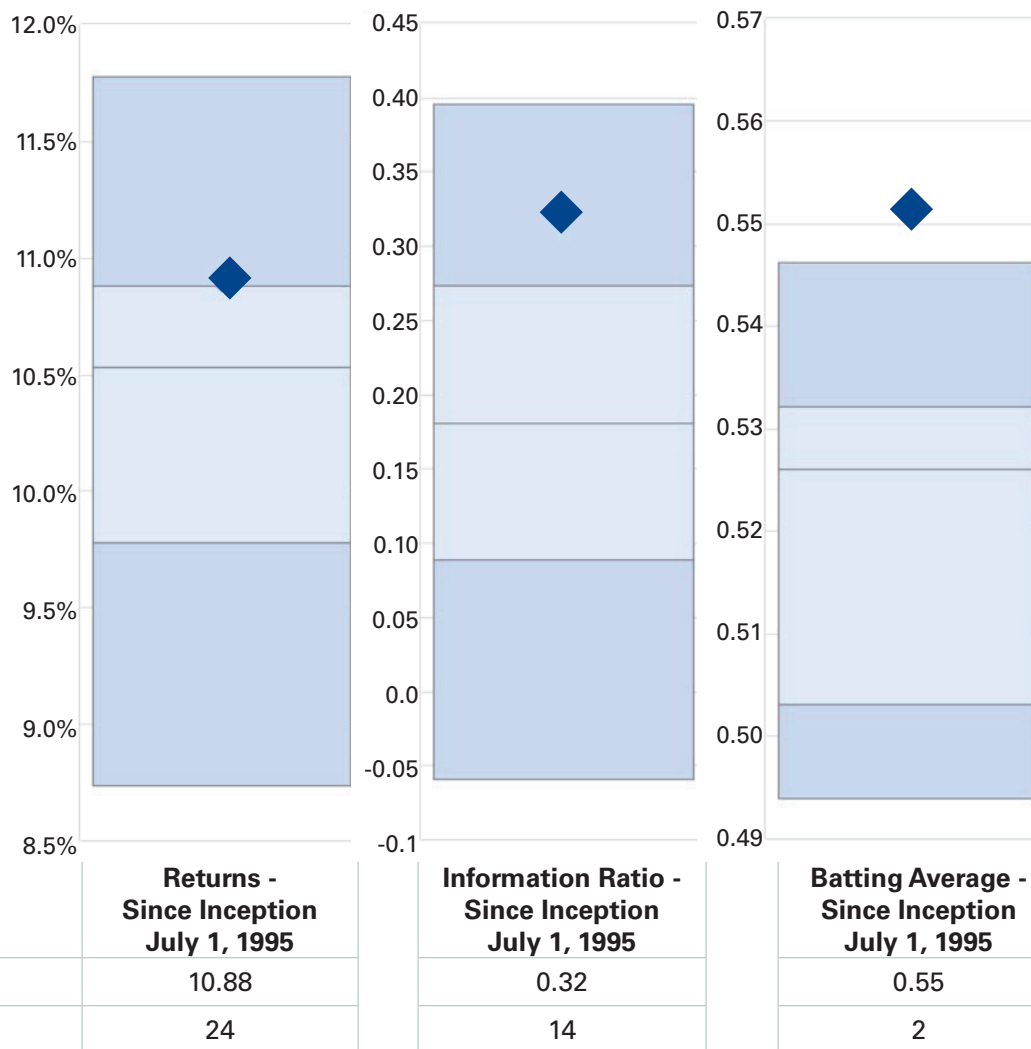
- There have been 67 months in which the Index has produced a negative return
- Composite has outperformed the Index 67% of the time
- There have been 113 months in which the Index has produced a positive return
- Composite has outperformed the Index 50% of the time
- The entire period is 180 months
- Composite has outperformed the Index 56% of the time

Data is for Small Cap Value as of September 30, 2022, for 15-year period, 180 months.

Returns reflect composite results net of fees and individual portfolio results may vary. A GIPS® compliant report is contained herein. Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

# Small Cap Value Performance and Efficiency Rankings

## ◆ Boston Partners Small Cap Value - Net of Fees



Data as of September 30, 2022. Source: eVestment U.S. Small Cap Value Equity Universe peer group rankings and quarterly observations compared to the Russell 2000® Value Index. Rankings are from 1 to 100, with 1 being the best and 100 being the worst. There are 35 strategies in the U.S. Small Cap Value Equity Universe over this Since Inception period. Batting average measures a manager's ability to meet or beat an index; it is preferable to have a higher batting average. Information ratio is defined as excess return over the benchmark divided by tracking error. Boston Partners compensates eVestment with a subscription fee that enables Boston Partners to access the eVestment database; however, Boston Partners does not specifically pay eVestment to obtain the rankings set forth above. Returns reflect composite results, are net of fees and individual portfolio results may vary. A GIPS® compliant report is contained herein. Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

# MWRA Return and Consistency Rankings

As of September 30, 2022

Performance Returns							
	YTD	3 Year	5 Year	10 Year	15 Year	20 Year	Since Inception*
MWRA Employees Retirement System - Gross of Fees	-18.70	4.91	4.18	8.93	8.10	10.96	10.75
MWRA Employees Retirement System - Net of Fees	-19.30	3.87	3.14	7.85	7.03	9.87	9.65
Russell 2000® Value Index	-21.12	4.72	2.87	7.94	5.70	8.81	8.25
<i>Relative Return – Gross of Fees</i>	<b>2.42</b>	<b>0.18</b>	<b>1.30</b>	<b>0.98</b>	<b>2.40</b>	<b>2.15</b>	<b>2.50</b>

Return Ranking							
	YTD	3 Year	5 Year	10 Year	15 Year	20 Year	Since Inception*
MWRA Employees Retirement System	38	65	50	61	27	40	30

Consistency Ranking							
	YTD	3 Year	5 Year	10 Year	15 Year	20 Year	Since Inception*
MWRA Employees Retirement System	14	46	9	29	28	14	23

Data as of September 30, 2022. Inception date is February 1, 1997. Source: eVestment U.S. Small Cap Value Equity Universe peer group rankings and quarterly observations compared to the Russell 2000® Value Index. Rankings are from 1 to 100, with 1 being the best and 100 being the worst. There are 35 strategies in the U.S. Small Cap Value Equity Universe over this Since Inception period. Consistency is Batting Average and is the percentage of time monthly returns are ahead of the index. Boston Partners compensates eVestment with a subscription fee that enables Boston Partners to access the eVestment database; however, Boston Partners does not specifically pay eVestment to obtain the rankings set forth above. Past performance is not an indication of future results. Performance is gross of fees and for periods over one year are annualized. Please refer to the back for other important disclosures.



# **Boston Partners**

## *Appendix*

# Performance Attribution - Small Cap Value

Year to Date as of November 30, 2022

GICS SECTOR	Portfolio			Russell 2000® Value Index			Attribution Analysis		
	Average Weight	Total Return	Contribution To Return	Average Weight	Total Return	Contribution To Return	Sector Allocation	Stock Selection	Total Effect
Communication Services	3.38	4.41	0.11	3.18	-35.79	-1.46	0.01	1.44	1.45
Consumer Discretionary	13.93	-17.55	-2.29	8.47	-21.74	-1.51	-0.86	0.69	-0.17
Consumer Staples	3.14	-31.73	-1.43	2.91	-1.27	-0.03	0.01	-1.13	-1.12
Energy	8.91	56.07	3.62	7.51	70.00	2.84	0.87	-0.58	0.29
Financials	25.58	-5.11	-1.02	27.58	-5.29	-0.81	-0.08	0.10	0.01
Health Care	4.92	-40.08	-2.52	9.78	-24.75	-2.13	0.88	-1.11	-0.23
Industrials	18.69	-0.63	0.25	13.82	-9.68	-1.58	0.06	1.64	1.70
Information Technology	13.30	-12.22	-2.00	5.85	-17.68	-1.08	-0.69	0.73	0.03
Materials	6.20	4.53	0.35	4.34	-7.56	-0.43	0.01	0.72	0.73
Real Estate	1.95	-34.98	-0.89	11.33	-19.16	-2.47	1.07	-0.41	0.66
Utilities	0.00	0.00	0.00	5.24	3.40	0.10	-0.64	0.00	-0.64
<b>Total</b>	<b>100.00</b>	<b>-5.82</b>	<b>-5.82</b>	<b>100.00</b>	<b>-8.54</b>	<b>-8.54</b>	<b>0.64</b>	<b>2.08</b>	<b>2.73</b>

Data are for MWRA Employees Retirement System, are gross of fees and are shown as a percentage.

Attribution is calculated by Factset using end of day security prices. Returns shown reflect equities only and exclude cash.

Past performance is not an indication of future results. Please refer to the back for other important disclosures.

# Portfolio Holdings - Small Cap Value

Position changes over time: November 2022

Key: ◆ = New Holding | ↑ = Increased Position | ↓ = Decreased Position | ⊗ = Liquidated | Unchanged

Communication Services	3.2
<span style="color: blue;">↑</span> <a href="#">TEGNA Inc</a>	0.9
Gray Television Inc	0.3
John Wiley & Sons Inc	0.3
Nexstar Media Group Inc	1.7
<span style="color: orange;">⊗</span> <a href="#">Yelp Inc</a>	0.0
Consumer Discretionary	12.3
<span style="color: blue;">↑</span> <a href="#">Buckle Inc/the</a>	0.4
<span style="color: blue;">↑</span> <a href="#">Foot Locker Inc</a>	0.6
<span style="color: blue;">↑</span> <a href="#">International Game Technology</a>	0.7
<span style="color: blue;">↑</span> <a href="#">Petco Health &amp; Wellness Co Inc</a>	0.3
<span style="color: red;">↓</span> <a href="#">Skechers USA Inc Cl A</a>	0.3
Harley-Davidson Inc	2.1
LCI Industries	0.9
Standard Motor Products Inc	0.3
Steven Madden Ltd	1.0
Stride Inc	1.9
Tempur Sealy International Inc	1.0
Topgolf Callaway Brands Corp	1.6
Travel + Leisure Co	0.7
Victoria's Secret & Co	0.6
<span style="color: orange;">⊗</span> <a href="#">American Eagle Outfitters Inc</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">Carter's Inc</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">Hanesbrands Inc</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">Six Flags Entertainment Corp</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">Thor Industries Inc</a>	0.0
Consumer Staples	0.7
Fresh Del Monte Produce Inc	0.7
<span style="color: orange;">⊗</span> <a href="#">Energizer Holdings Inc</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">Spectrum Brands Holdings Inc</a>	0.0
Energy	9.3
Cactus Inc	0.6
ChampionX Corp	0.9

Energy (cont...)	
Chord Energy Corp	0.8
Delek US Holdings Inc	0.3
Enerplus Corp	1.2
Kosmos Energy Ltd	0.8
National Energy Services Reunited	0.2
NexTier Oilfield Solutions Inc	0.6
Par Pacific Holdings Inc	0.4
PDC Energy Inc	0.4
ProPetro Holding Corp	0.4
Viper Energy Partners Lp	1.3
World Fuel Services Corp	1.4
Financials	26.7
<span style="color: green;">◆</span> <a href="#">Bgc Partners Inc</a>	0.3
<span style="color: green;">◆</span> <a href="#">Blucora Inc</a>	0.3
<span style="color: blue;">↑</span> <a href="#">Hancock Whitney Corp</a>	0.5
<span style="color: blue;">↑</span> <a href="#">Heritage Commerce Corp</a>	0.3
<span style="color: blue;">↑</span> <a href="#">Veritex Holdings Inc</a>	0.4
<span style="color: red;">↓</span> <a href="#">Artisan Partners Asset Mgmt</a>	0.0
Ameris Bancorp	0.3
Ares Commercial Real Estate Corp	0.2
Assured Guaranty Ltd	1.1
AXIS Capital Holdings Ltd	1.3
BankUnited Inc	0.7
Berkshire Hills Bancorp Inc	0.4
Blackstone Mortgage Trust Inc	0.8
Employers Holdings Inc	0.4
Essent Group Ltd	0.7
Evercore Inc	1.0
Federal Agric Mortgage Corp Cl C	0.8
First Hawaiian Inc	0.4
First Merchants Corp	0.8
Firstcash Holdings Inc	0.4
Hanover Insurance Group Inc	1.4

Financials (cont...)	
Nelnet Inc	0.7
Oceanfirst Financial Corp	0.3
PacWest Bancorp	0.8
Peapack-Gladstone Financial Co	0.5
PennyMac Financial Services Inc	0.4
PRA Group Inc	0.5
Preferred Bank	0.5
RenaissanceRe Holdings Ltd	0.5
SLM Corp	2.2
Southstate Corp	0.6
Starwood Property Trust Inc	0.8
Stonex Group Inc	0.4
Synovus Financial Corp	1.0
Umpqua Holdings Corp	0.3
Univest Financial Corp	0.3
Valley National Bancorp	0.9
Voya Financial Inc	0.5
Walker & Dunlop Inc	0.8
White Mountains Insurance Grp Ltd	1.4
Wintrust Financial Corp	1.0
Health Care	4.7
<span style="color: green;">◆</span> <a href="#">R1 Rcm Inc</a>	0.4
<span style="color: blue;">↑</span> <a href="#">AMN Healthcare Services Inc</a>	0.5
<span style="color: blue;">↑</span> <a href="#">Haemonetics Corp</a>	0.6
Amedisys Inc	0.5
Envista Holdings Corp	0.9
PetIQ Inc	0.3
Quidelortho Corp	0.2
Sotera Health Co	0.4
Syneos Health Inc	0.8
<span style="color: orange;">⊗</span> <a href="#">Owens &amp; Minor Inc</a>	0.0
Industrials	19.9

Industrials (cont...)	
<span style="color: green;">◆</span> <a href="#">Acuity Brands Inc</a>	0.4
<span style="color: blue;">↑</span> <a href="#">FTI Consulting Inc</a>	0.9
ABM Industries Inc	2.1
Allison Transmission Holdings	0.6
Altra Industrial Motion Corp	0.7
ASGN Inc	1.1
Brink's Co	0.7
BWX Technologies Inc	0.7
Curtiss-Wright Corp	1.6
EMCOR Group Inc	0.9
EnerSys	0.6
Hillenbrand Inc	0.8
Hub Group Inc	0.6
Korn Ferry	0.8
Landstar Systems Inc	0.3
Masonite International Corp	0.3
Now Inc	0.4
Resideo Technologies Inc	0.9
Science Applications Intl Corp	1.5
Terex Corp	0.4
Viad Corp	0.2
Wabash National Corp	0.6
Werner Enterprises Inc	0.4
WESCO International Inc	2.5
<span style="color: orange;">⊗</span> <a href="#">GrafTech International Ltd</a>	0.0
<span style="color: orange;">⊗</span> <a href="#">KAR Auction Services Inc</a>	0.0
Information Technology	10.8
<span style="color: green;">◆</span> <a href="#">Osi Systems Inc</a>	0.4
<span style="color: blue;">↑</span> <a href="#">Avnet Inc</a>	0.7
<span style="color: red;">↓</span> <a href="#">Insight Enterprises Inc</a>	1.9
<span style="color: red;">↓</span> <a href="#">Unisys Corp</a>	0.0
Belden Inc	1.9
CommScope Holding Co Inc	0.5

Data are for MWRA Employees Retirement System.

Values are percent of portfolio. It should not be assumed that an investment in these securities was or will be profitable.



# Portfolio Holdings - Small Cap Value

Position changes over time: November 2022

Key: ◆ = New Holding | ↑ = Increased Position | ↓ = Decreased Position | ⊘ = Liquidated | Unchanged

Information Technology (cont...)	
Concentrix Corp	1.4
InterDigital Inc	0.7
MAXIMUS Inc	0.3
NCR Corp	0.6
SMART Global Holdings Inc	0.4
SYNNEX Corp	0.8
TTEC Holdings Inc	0.6
Ultra Clean Holdings Inc	0.6
Materials	6.5
<span style="color: green;">◆</span> Ashland Inc	0.4
Cabot Corp	0.6
Ecovyst Inc	0.5
Graphic Packaging Holding Co	2.8
Ingevity Corp	0.7
Minerals Technologies Inc	0.2
Valvoline Inc	1.3
Real Estate	1.6
Cousins Properties Inc	0.8
Kennedy-Wilson Holdings Inc	0.3
Spirit Realty Capital Inc	0.5
<span style="color: orange;">⊘</span> Realogy Holdings Corp	0.0

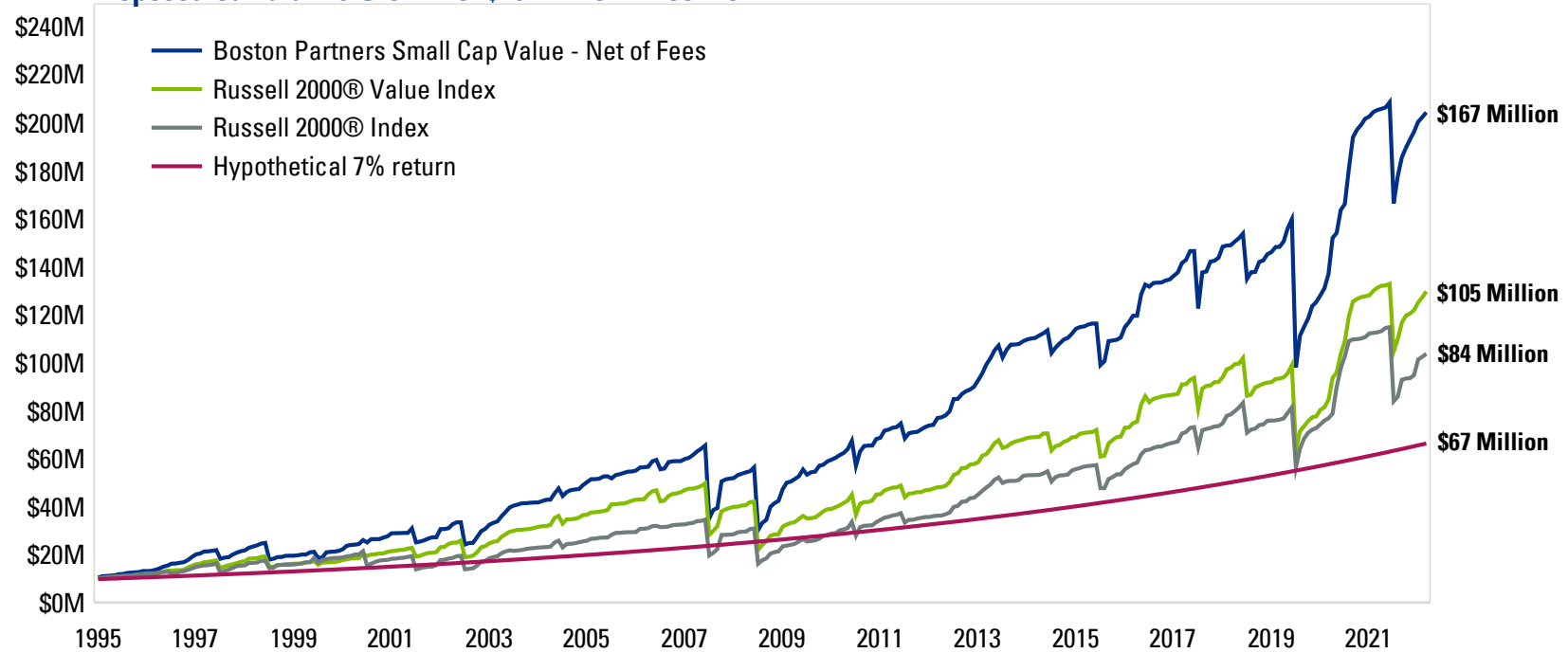
Data are for MWRA Employees Retirement System.

Values are percent of portfolio. It should not be assumed that an investment in these securities was or will be profitable.

# Benefits of Active Management

Selecting the right manager can lead to higher growth of capital

### Proposed Cumulative Growth of \$10 Million Investment



Data is for as of September 30, 2022.

This is a hypothetical illustration of the growth of \$10 million had it been invested to the Small Cap Value strategy on July 1, 1995 which assumes the reinvestment of dividends, capital gains, and a 7% representative actuarial rate. 7% is based on a 2015 Milliman Consulting study of approximately 1,300 multi-employer plan Form 5500 filings. Results would vary depending on investment guidelines, cash flow, and the assumptions mentioned. A GIPS® compliant report is contained herein.

# Massachusetts Water Resources Authority Retirement System

## *Proposed Annual Fee Schedule*

### **Massachusetts Water Resources Authority Retirement System - Small Cap Value**

0.80%	On all assets
-------	---------------

### **Small Cap Value, Small Cap Value II & Small/Mid Cap Value**

1.00%	First \$25 million of assets
0.80%	Thereafter

# Risk Management

*A clear definition with tools designed to measure intended and unintended risks*

## **"True investment risk" is a permanent impairment or loss of capital**

- True investment risk is not a statistical measure of volatility, variance or estimated tracking error
- Minimize capital losses because it takes a 100% capital gain to fully recoup a 50% loss

## **Capital impairments stem from three sources, all of which are best evaluated bottom-up, stock by stock**

- Valuation Risk – overpaying for an investment
- Balance Sheet Risk – solvency risk of the business
- Earnings Risk – earnings ultimately drive stock prices

## **We employ a multi-layered set of checks & balances designed to buffer against capital losses**

- Quantitative ranking codes of all securities have helped create portfolios with better-than-benchmark valuation, momentum and quality attributes
- Target prices for all owned stocks (upside vs. downside risk)
- Fundamental research creates a layer of objectivity for portfolio management Buy/Hold/Sell decisions
- Portfolio analysts provide monthly attribution feedback loop to portfolio managers
- Independent risk manager conducts quarterly portfolio review
- Northfield analytics utilized to monitor common factor risks
- Quantitative codes capture subtle changes in portfolio characteristics

## **There are no substitutes for Diversification and a Sell Discipline**

- The very best fundamental research and analysis will be wrong on occasion so you must *diversify*
- Keep your winners until valuation, momentum or fundamentals breakdown; when this happens cut losses quickly and *sell*

### **Sustainability and Engagement at Boston Partners:**

- Dedicated Sustainability and Engagement research team
- Total return orientation supplemented by original ESG research
- Risk avoidance and robust engagement philosophy
- Dedicated ESG Global and Global Long/Short strategies

### **Boston Partners Sustainability and Engagement Process:**

- The Boston Partners Sustainability and Engagement team produces original research and engages with our analysts and companies where we invest to address issues of concern
- Original, internal research utilized by Portfolio Managers and fundamental analyst team
- Internally developed, comprehensive proxy policy implemented by Governance Committee
- Engaged with 783 companies and voted against management in 11% of proxy votes in 2021

### **Expectations of companies we own:**

- Corporate Responsibility Report prepared using industry recognized standards such as GRI (or similar website disclosure) that provides disclosure on all material topics
- Supply chain management policy that sets standards, provides for audits, and details results
- Environmental disclosure including disclosure of GHG emissions, waste reduction efforts and water use and environmental initiatives; preferably participate in the CDP or equivalent industry reporting function
- Good corporate governance including Code of Ethics; independent chairman; rights of shareholders to call special meetings and act by written consent; recognition of diversity in its workforce; independent directors; absence of excessive compensation; equal voting rights
- Absence of recent material litigation/regulatory actions that suggest a deficient compliance, risk management or supervisory function

# Boston Partners Sustainable Portfolios

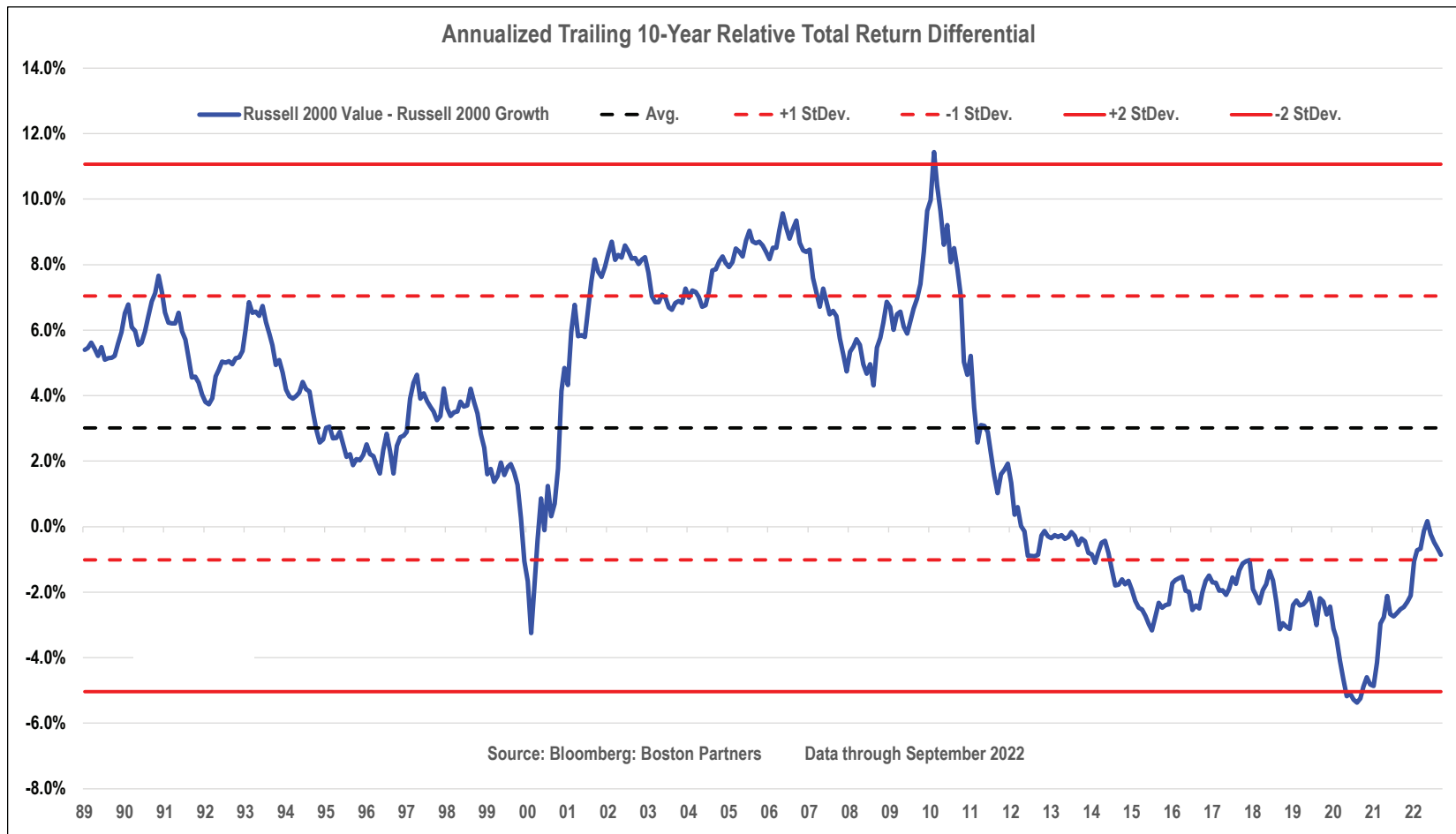
As of September 30, 2022

## Assets Under Management and Investment Vehicles

Classification	Assets	Description	Vehicle	Investment Category
Global Sustainability	\$18 mm	Total return oriented Value Style Original ESG Research	U.S. Mutual Fund Separate Account Model Delivery	Global Equity
Long/Short Global Sustainability	\$9 mm	Variable Long/Short Value style Original ESG Research	Separate Account	Global Equity Long/Short
Sustainable Investments	\$859 mm	Exclusion List ESG Research Override Client Approval	Custom Separate Account	Global Equity
UCITs Funds	\$12.5 B	Article 8 Designation Classifies as ESG Integration 3% Limit on Severe Risk Investments UN Global Governance Compact Compliant Net Zero Carbon Emissions by 2050 Exclusion List of 800+ names Moving towards 50% of portfolios to be classified as sustainable per Advisor	UCITs Custom Separate Account	U.S. Large Cap U.S. All Cap U.S. Mid Cap Global Equity
Socially Screened	\$2.4 B	Client Specific Mandate	Custom Separate Account	U.S. Large Cap U.S. All Cap U.S. Mid Cap U.S. Small Cap U.S. Small/Mid Cap Global Equity Global Equity Long/Short International ADR
<b>Total</b>	<b>\$15.8 B</b>			

# Small Cap Value Stocks are Compelling Versus Small Cap Growth Stocks

## Record return differential between Small Cap Value and Small Cap Growth



Data as of September 30, 2022.

Source: Bloomberg; Boston Partners.

Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

093022 SC PR-005

# Smaller Caps are Compelling Versus Large Cap Stocks

Small caps are selling at a 27% valuation discount to large caps

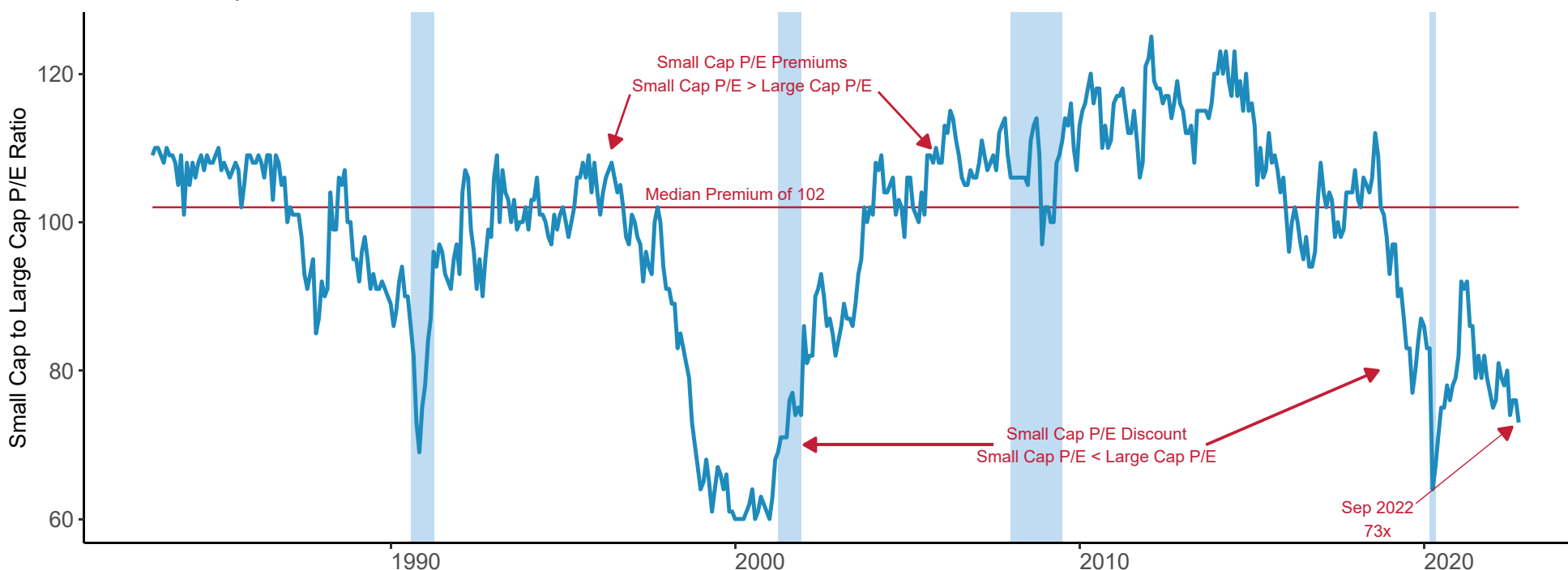
## Small Cap to Large Cap Historical P/E Ratio (x100)

Based on Non-normalized trailing operating earnings

Small Cap: Leuthold 3000 Small Cap: 15.04x

Large Cap: Leuthold 3000 Large Cap: 20.69x

Vertical bars represent recessions.



**Small caps are selling at a 27% valuation discount to large caps based on trailing operating earnings. That is the lowest relative valuation registered for Small Caps since May 2020.**

**Based on full year 2023 earnings estimates, small caps are selling at a smaller 20% discount to large caps**

Data as of September 2022.

Source: The Leuthold Group.

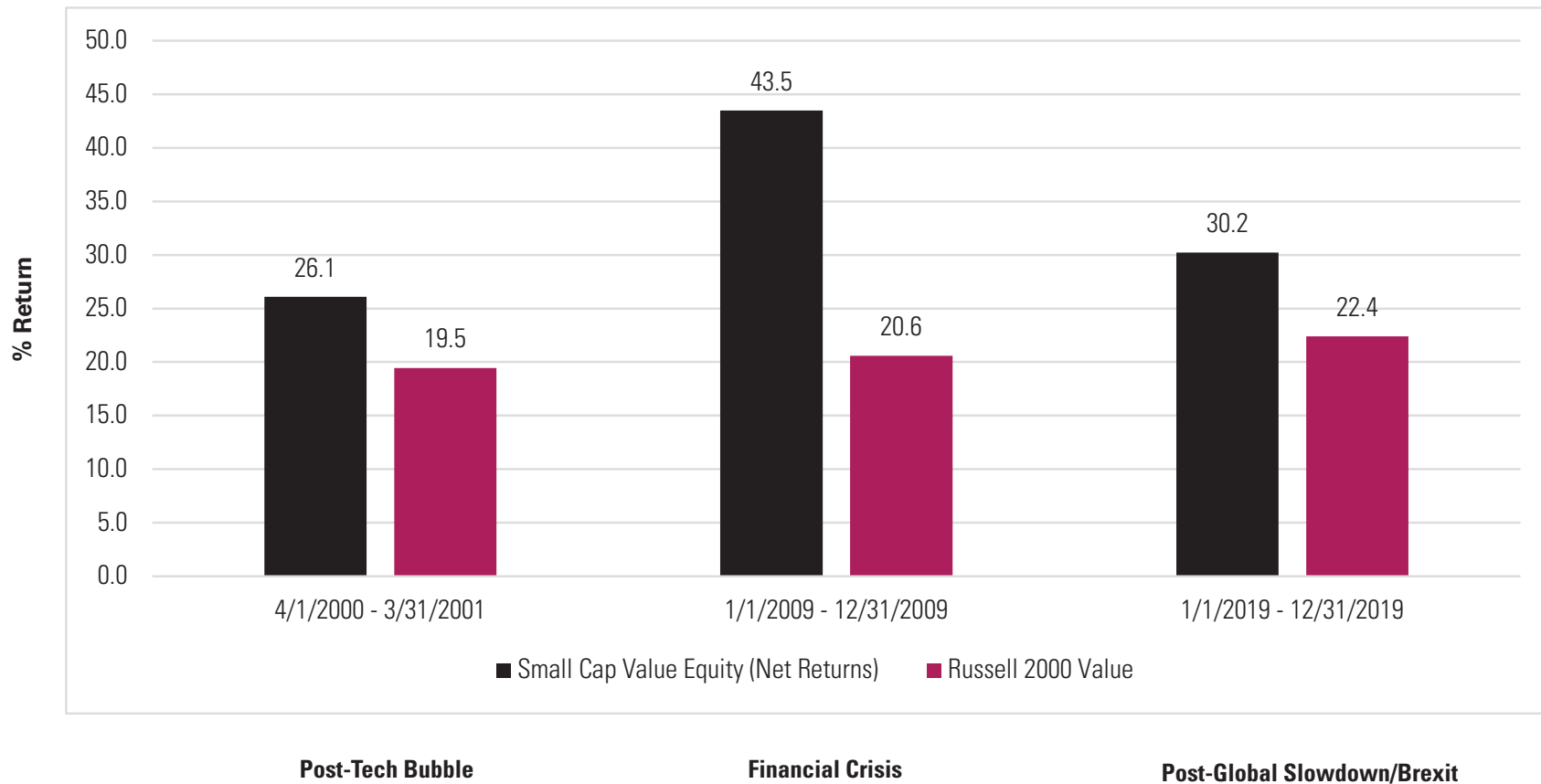
Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

093022 SC PR-006



# Sticking to our Process has Paid Off After Extreme Market Environments

## Boston Partners Small Cap Value Equity Composite (Net of Fee) and Russell 2000® Value Index



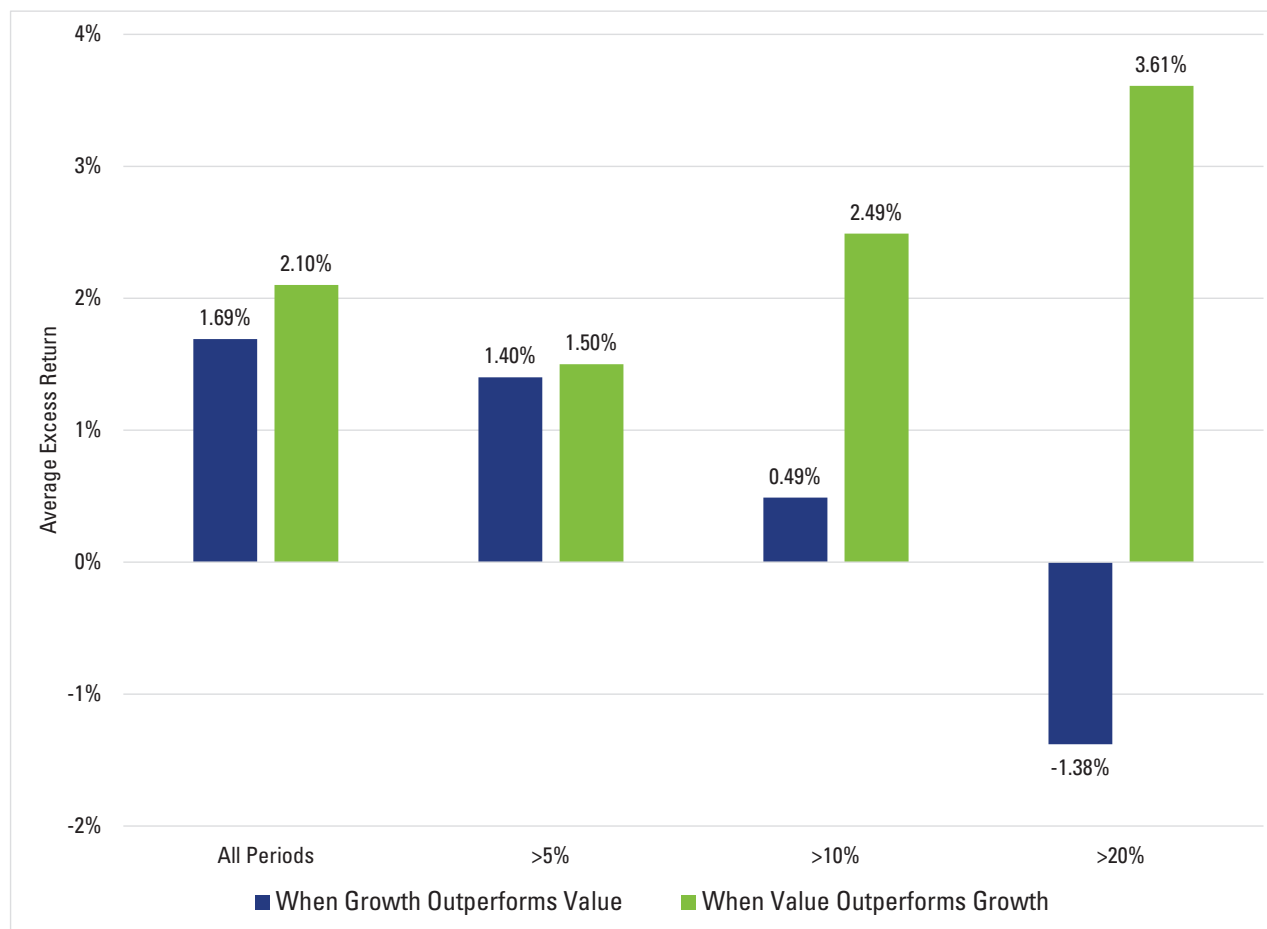
Source: Boston Partners and FactSet.

Returns reflect composite results. Past performance is not an indication of future results. A GIPS® compliant report is contained herein. Please refer to the appendix for other important disclosures.

093020 SC PR-010

# Does Boston Partners Offer Genuine Value?

Average Annual Excess Returns of Boston Partners Small Cap Value vs. Russell 2000® Value Index  
July 1995 – September 2022



Data as of September 30, 2022. Returns for the 1-year period as of September 30, 2022 are preliminary and unaudited.

Source: Morningstar Direct; Boston Partners.

Russell 2000® Growth Index and Russell 2000® Value Index were used to measure growth versus value in the chart above.

The data above includes all monthly rolling 1-year periods from July 1, 1995 through September 30, 2022. Timeline returns, other than those noted, reflect composite results, net of fees and individual portfolio results will vary. A GIPS® compliant report is contained herein. Past performance is not an indication of future results. Performance for periods over one year are annualized. Please refer to the appendix for other important disclosures.

093022 SC PR-010

# Investment Performance - Small Cap Value

As of November 30, 2022

## Annualized Performance (%)

	3Q 2022	YTD 2022	1 Year	3 Year	5 Year	10 Year	20 Year	25 Year	Since Inception*
<b>Small Cap Value - Gross of Fees</b>	-6.22	-5.85	-1.38	8.06	6.39	10.26	11.12	10.05	12.28
<b>Small Cap Value - Net of Fees</b>	-6.37	-6.43	-2.04	7.34	5.67	9.47	10.26	9.18	11.41
Russell 2000® Value Index	-4.61	-8.48	-4.75	8.33	5.35	9.67	9.12	8.14	9.55

## Calendar Year Performance (%)

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Small Cap Value - Gross of Fees</b>	26.90	3.12	31.15	-15.69	11.29	25.63	-3.77	4.76	35.27	22.85
<b>Small Cap Value - Net of Fees</b>	26.12	2.41	30.22	-16.27	10.49	24.69	-4.53	3.93	34.21	21.85
Russell 2000® Value Index	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22	34.52	18.05

\*Inception date is July 1, 1995.

Boston Partners has prepared and presented this report in compliance with the GIPS®. Returns reflect composite results and individual portfolio results will vary. Performance for periods over one year are annualized. Past performance is not an indication of future results. Please refer to the appendix for other important disclosures.

Performance (%)																		
	3Q 2022	YTD 2022	1 Year	3 Year	5 Year	10 Year	15 Year	Since Inception*	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Large Cap Value - Gross of Fees</b>	-4.84	0.61	7.48	11.70	9.37	12.26	9.03	10.87	31.03	2.59	24.18	-8.70	20.07	14.74	-4.08	11.85	37.14	21.27
<b>Large Cap Value - Net of Fees</b>	-4.92	0.32	7.14	11.35	9.03	11.91	8.65	10.50	30.63	2.27	23.79	-8.99	19.71	14.40	-4.37	11.49	36.64	20.66
Russell 1000® Value Index	-5.62	-3.65	2.42	8.40	7.86	10.97	7.18	9.31	25.16	2.80	26.54	-8.27	13.66	17.34	-3.83	13.45	32.53	17.51
S&P 500® Index	-4.88	-13.10	-9.21	10.91	10.98	13.34	9.19	9.72	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39	16.00
<b>Concentrated Large Cap Value - Gross of Fees</b>	-3.85	5.04	12.34	14.21	11.12	-	-	12.42	33.67	2.74	26.11	-8.86	13.71	-	-	-	-	-
<b>Concentrated Large Cap Value - Net of Fees</b>	-4.01	4.44	11.63	13.48	10.38	-	-	11.67	32.87	2.03	25.23	-9.51	13.32	-	-	-	-	-
Russell 1000® Value Index	-5.62	-3.65	2.42	8.40	7.86	-	-	8.59	25.16	2.80	26.54	-8.27	8.61	-	-	-	-	-
<b>Premium Equity - Gross of Fees</b>	-4.54	2.48	9.18	12.19	9.71	13.51	10.46	12.78	26.81	5.38	28.88	-11.06	18.91	15.73	1.71	13.22	39.73	16.27
<b>Premium Equity - Net of Fees</b>	-4.70	1.85	8.46	11.50	9.04	12.86	9.85	12.20	26.05	4.78	28.12	-11.60	18.22	15.08	1.15	12.65	39.04	15.72
Russell 3000® Value Index	-5.56	-3.96	1.95	8.39	7.68	10.88	7.19	9.32	25.37	2.87	26.26	-8.58	13.19	18.40	-4.13	12.70	32.69	17.55
S&P 500® Index	-4.88	-13.10	-9.21	10.91	10.98	13.34	9.19	9.72	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39	16.00
<b>Mid Cap Value - Gross of Fees</b>	-4.30	-2.20	4.53	11.08	8.68	13.36	11.17	12.98	28.03	6.55	31.26	-14.03	16.55	16.29	2.84	14.37	41.04	19.78
<b>Mid Cap Value - Net of Fees</b>	-4.38	-2.47	4.21	10.72	8.32	12.97	10.65	12.35	27.63	6.18	30.80	-14.33	16.16	15.90	2.49	14.00	40.48	18.90
Russell Midcap® Value Index	-4.93	-7.32	-1.50	8.76	7.09	10.97	8.26	10.82	28.34	4.96	27.06	-12.29	13.34	20.00	-4.78	14.75	33.46	18.51

\* Inception dates are as follows: Large Cap Value is June 1, 1995; Concentrated Large Cap Value is July 1, 2017; Premium Equity is June 1, 1995; and Mid Cap Value is May 1, 1995. Boston Partners has prepared and presented this report in compliance with the GIPS®. Returns reflect composite results and individual portfolio results will vary. Performance for periods over one year are annualized. Past performance is not an indication of future results. Please refer to the back for other important disclosures.

Performance (%)																		
	3Q 2022	YTD 2022	1 Year	3 Year	5 Year	10 Year	15 Year	Since Inception*	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Small/Mid Cap Value - Gross of Fees</b>	-6.03	-3.97	1.02	9.64	6.70	10.71	9.42	10.82	27.64	4.49	31.79	-18.56	13.64	25.35	-3.06	5.34	35.33	23.97
<b>Small/Mid Cap Value - Net of Fees</b>	-6.16	-4.49	0.43	9.00	6.06	10.01	8.66	10.04	26.90	3.87	31.01	-19.08	12.90	24.51	-3.71	4.65	34.37	23.08
Russell 2500™ Value Index	-4.50	-7.59	-2.78	8.46	6.13	9.94	7.79	9.58	27.78	4.88	23.56	-12.36	10.36	25.20	-5.49	7.11	33.32	19.21
Russell 2500™ Index	-2.82	-13.21	-10.36	7.92	7.27	10.99	8.50	9.45	18.18	19.99	27.77	-10.00	16.81	17.59	-2.90	7.07	36.80	17.88
<b>Small Cap Value - Gross of Fees</b>	-6.22	-5.85	-1.38	8.06	6.39	10.26	9.48	12.28	26.90	3.12	31.15	-15.69	11.29	25.63	-3.77	4.76	35.27	22.85
<b>Small Cap Value - Net of Fees</b>	-6.37	-6.43	-2.04	7.34	5.67	9.47	8.64	11.41	26.12	2.41	30.22	-16.27	10.49	24.69	-4.53	3.93	34.21	21.85
Russell 2000® Value Index	-4.61	-8.48	-4.75	8.33	5.35	9.67	7.23	9.55	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22	34.52	18.05
Russell 2000® Index	-2.19	-14.91	-13.01	6.44	5.45	10.13	7.64	8.59	14.82	19.96	25.52	-11.01	14.65	21.31	-4.41	4.89	38.82	16.35
<b>Small Cap Value II - Gross of Fees</b>	-5.26	-5.54	-0.96	8.01	6.15	10.48	9.40	11.59	26.95	2.37	29.43	-15.38	11.05	27.35	-3.27	5.35	36.53	24.54
<b>Small Cap Value II - Net of Fees</b>	-5.50	-6.39	-1.93	6.98	5.14	9.45	8.34	10.45	25.70	1.45	28.18	-16.19	10.05	26.21	-4.19	4.37	35.28	23.42
Russell 2000® Value Index	-4.61	-8.48	-4.75	8.33	5.35	9.67	7.23	8.00	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22	34.52	18.05
<b>Long/Short Equity - Gross of Fees</b>	-5.26	9.19	19.64	13.33	7.18	8.31	11.61	12.22	35.18	-4.03	11.75	-13.34	5.41	25.71	1.15	7.16	10.37	15.40
<b>Long/Short Equity - Net of Fees</b>	-5.33	8.53	18.83	12.36	6.19	7.22	10.18	9.94	33.92	-4.94	10.70	-14.22	4.30	24.03	0.17	6.04	9.17	14.06
S&P 500® Index	-4.88	-13.10	-9.21	10.91	10.98	13.34	9.19	7.89	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39	16.00
<b>Long/Short Research - Gross of Fees</b>	-2.66	8.53	14.17	9.02	5.90	7.67	7.48	7.65	25.45	-6.79	14.16	-9.37	11.63	5.21	3.02	8.68	19.70	14.73
<b>Long/Short Research - Net of Fees</b>	-3.01	7.13	12.56	7.55	4.52	6.31	6.13	6.31	23.67	-7.92	12.75	-10.50	10.27	3.91	1.74	7.34	18.23	13.32
S&P 500® Index	-4.88	-13.10	-9.21	10.91	10.98	13.34	9.19	8.45	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39	16.00
HFRI Equity Hedge Total Index	-2.34		-	-	-	-	-	-	11.67	17.90	13.69	-7.14	13.29	5.47	-0.97	1.81	14.27	7.41

\* Inception dates are as follows: Small/Mid Cap Value is April 1, 1999; Small Cap Value is July 1, 1995; Small Cap Value II is July 1, 1998; Long/Short Equity is August 1, 1997; and Long/Short Research is April 1, 2002. Boston Partners has prepared and presented this report in compliance with the GIPS®. Returns reflect composite results and individual portfolio results will vary. Performance for periods over one year are annualized. Past performance is not an indication of future results. Please refer to the back for other important disclosures.

Performance (%)																	
	3Q 2022	YTD 2022	1 Year	3 Year	5 Year	10 Year	Since Inception*	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Global Equity - Gross of Fees</b>	-6.92	-0.42	6.39	10.29	6.73	10.45	8.18	23.27	5.88	20.07	-12.50	21.53	9.47	1.89	5.54	35.12	17.26
<b>Global Equity - Net of Fees</b>	-7.04	-0.90	5.83	9.67	6.08	9.70	7.41	22.63	5.23	19.27	-13.10	20.67	8.65	1.11	4.74	34.11	16.37
MSCI World Index - Net	-	-14.51	-10.86	7.53	7.35	9.53	6.77	21.82	15.90	27.67	-8.71	22.40	7.51	-0.87	4.94	26.68	15.83
MSCI World Value Index - Net	-	-4.16	2.14	5.98	4.94	7.80	5.47	21.94	-1.16	21.75	-10.78	17.10	12.33	-4.82	3.69	26.62	15.51
<b>International Equity - Gross of Fees</b>	-9.95	-4.52	1.95	6.28	2.24	6.56	4.30	14.09	5.46	16.69	-18.07	26.38	0.76	3.54	-3.65	31.47	18.67
<b>International Equity - Net of Fees</b>	-10.11	-5.14	1.23	5.54	1.52	5.79	3.52	13.29	4.74	15.86	-18.67	25.48	0.01	2.77	-4.37	30.51	17.79
MSCI EAFE Index - Net	-	-14.52	-10.14	1.92	1.85	4.99	2.70	11.26	7.82	22.01	-13.79	25.03	1.00	-0.81	-4.90	22.78	17.32
MSCI EAFE Value Index - Net	-	-6.76	-1.21	1.43	0.22	3.79	1.81	10.89	-2.63	16.09	-14.78	21.44	5.02	-5.68	-5.39	22.95	17.69
<b>Global Long/Short - Gross of Fees</b>	-1.91	17.21	23.99	13.49	7.29	-	7.61	20.58	1.75	6.29	-7.68	9.60	4.34	8.73	4.36	8.96	-
<b>Global Long/Short - Net of Fees</b>	-2.40	15.10	21.56	11.26	5.17	-	5.53	18.22	-0.25	4.19	-9.53	7.44	2.28	6.59	2.55	8.02	-
MSCI World Index - Net	-	-14.51	-10.86	7.53	7.35	-	8.99	21.82	15.90	27.67	-8.71	22.40	7.51	-0.87	4.94	16.83	-
MSCI World Value Index - Net	-	-4.16	2.14	5.98	4.94	-	6.96	21.94	-1.16	21.75	-10.78	17.10	12.33	-4.82	3.69	15.74	-
HFRI Equity Hedge Total Index	-		-	-	-	-		11.67	17.90	13.69	-7.14	13.29	5.47	-0.97	1.81	8.98	-

\* Inception dates are as follows: Global Equity is July 1, 2008; International Equity is July 1, 2008; and Global Long/Short is July 1, 2013. Boston Partners has prepared and presented this report in compliance with the GIPS®. Returns reflect composite results and individual portfolio results will vary. Performance for periods over one year are annualized. Past performance is not an indication of future results. Please refer to the back for other important disclosures.

Performance (%)													
	3Q 2022	YTD 2022	1 Year	3 Year	5 Year	Since Inception*	2021	2020	2019	2018	2017	2016	2015
<b>Emerging Markets Dynamic Equity - Gross of Fees</b>	8.54	-1.54	-1.44	3.61	1.79	4.62	-4.25	13.43	19.53	-16.64	27.89	8.08	-3.67
<b>Emerging Markets Dynamic Equity - Net of Fees</b>	8.22	-2.59	-2.58	2.39	0.48	2.98	-5.37	12.08	17.82	-17.87	25.69	5.69	-5.47
MSCI Emerging Markets Index - Net	-11.57	-18.95	-17.43	0.14	-0.42	2.20	-2.54	18.31	18.42	-14.57	37.28	11.19	-17.97
HFRI Equity Hedge Total Index	-2.34		-	-	-		11.67	17.90	13.69	-7.14	13.29	5.47	-2.60
<b>Emerging Markets - Gross of Fees</b>	-6.20	-16.15	-14.19	0.59	0.25	2.12	-2.51	15.69	29.91	-20.32	14.45	-	-
<b>Emerging Markets - Net of Fees</b>	-6.42	-16.88	-15.00	-0.31	-0.67	1.18	-3.43	14.73	28.69	-21.09	13.33	-	-
MSCI Emerging Markets Index - Net	-11.57	-18.95	-17.43	0.14	-0.42	1.70	-2.54	18.31	18.42	-14.57	15.92	-	-

\* Inception dates are as follows: Emerging Markets Dynamic Equity is March 1, 2015; Emerging Markets Equity is July 1, 2017. Boston Partners has prepared and presented this report in compliance with the GIPS®. Returns reflect composite results and individual portfolio results will vary. Performance for periods over one year are annualized. Past performance is not an indication of future results. Please refer to the back for other important disclosures.

Boston Partners Global Investors, Inc. ("Boston Partners") is an Investment Adviser registered with the Securities and Exchange Commission under the Investment Advisers Act of 1940. Registration does not imply a certain level of skill or training. Boston Partners is an indirect, wholly owned subsidiary of ORIX Corporation of Japan ("ORIX"). Boston Partners updated its firm description as of November 2018 to reflect changes in its divisional structure. Boston Partners is comprised of two divisions, Boston Partners and Weiss, Peck & Greer Partners ("WPG").

Boston Partners claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS®. Boston Partners has been independently verified for the periods 2007 through 2020. Before then, Boston Partners Asset Management ("BPAM"), the previous entity name, and WPG were independently verified on an annual basis from 1995 through 2006 and 1993 through 2006, respectively. A firm that claims compliance with the GIPS® must establish policies and procedures for complying with all the applicable requirements of the GIPS®. Verification provides assurance on whether a firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS® and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report.

The composites have had a performance examination for the following periods: Boston Partners Large Cap Value Equity, 1995 to 2020; Boston Partners Premium Equity, 1995 to 2020; Boston Partners Mid Cap Value Equity, 1995 to 2006 and 2010 to 2020; Boston Partners Small/Mid Cap Value Equity, 1999 to 2020; Boston Partners Small Cap Value Equity, 1995 to 2020; Boston Partners Small Cap Value II Equity, 1998 to 2020; Boston Partners Long/Short Research, 2011 to 2020; Boston Partners Global Equity II, 2012 to 2020; Boston Partners International Equity II, 2008 to 2020; Boston Partners Global Long/Short, 2013 to 2020; Boston Partners Emerging Markets Dynamic Equity, 2016 to 2020; Boston Partners Emerging Markets Equity, 2020; and Boston Partners Global Sustainability composite, 2020. The verification and performance examination reports are available upon request. A list of composite descriptions is available upon request. GIPS® is a registered trademark of the CFA Institute. CFA Institute does not endorse or promote this

organization, nor does it warrant the accuracy or quality of the content contained herein.

Past performance is not indicative of future results. This document is not an offering of securities nor is it intended to provide investment advice. It is intended for informational purposes only.

### Composite Construction(s)

Performance results attained at Boston Partners are linked to the results achieved at BPAM beginning on January 1, 2007 in compliance with the GIPS® standards on performance record portability. Composites include all separately managed and commingled vehicles, fully discretionary, fee-paying accounts under management with a similar investment mandate. Prior to January 1, 2007 the minimum account size for inclusion in all the composites in existence noted above was \$5 million. After January 1, 2007, the minimum account size for composite inclusion was lowered to \$1 million for all composites, except for the Boston Partners Small Cap Value Equity and Small Cap Value II Equity composites; the account minimum for inclusion remained at \$5 million for those composites. No composites have a minimum account size for inclusion as of June 1, 2019. Some composites contain proprietary assets.

The inception and creation date of the Boston Partners Large Cap Value Equity composite is June 1, 1995. The strategy is composed of securities with market capitalizations primarily greater than \$3 billion and is benchmarked against Russell 1000® Value Index and the S&P 500 Index (secondary). Prior to December 1, 1995, there was no minimum market value requirement for inclusion in the Boston Partners Large Cap Value Equity composite. Accounts that did not meet the established minimum balance requirement on that date were removed.

The inception and creation date of the Boston Partners Large Cap Concentrated Equity composite is July 1, 2017. Under normal market conditions, the strategy is composed of 35 – 40 securities with market capitalizations primarily in the same capitalization range as the Russell 1000® Value Index. The composite is benchmarked against the Russell 1000® Value Index.

The inception and creation date of the Boston Partners Premium Equity composite is June 1, 1995. The strategy is a hybrid of Boston Partners' other equity products. It has the flexibility to invest across the capitalization spectrum and to invest in securities with equity-like return and risk profiles.

Boston Partners Premium Equity is benchmarked against the Russell 3000® Value Index and the S&P 500 Index (secondary). The inception and creation date of the Boston Partners Mid Cap Value Equity composite is May 1, 1995. Effective March 1, 2006, the Mid Cap Value Equity strategy is composed of securities primarily in the same market capitalization range, at time of purchase, as the Russell Midcap® Value Index. Effective January 1, 2005, the Boston Partners Mid Cap Value composite revised its benchmark from the Russell 2500™ Value Index to the Russell Midcap® Value Index. The Russell Midcap® Value Index has less of a bias toward smaller capitalization stocks and thus more accurately reflects the composition of Boston Partners holdings.

The inception and creation date of the Boston Partners Small/Mid Cap Value Equity composite is April 1, 1999. The strategy is generally composed of securities with market capitalizations, at the time of purchase, in the same market capitalization range as the Russell 2500™ Index. The composite is benchmarked against the Russell 2500™ Value Index. The Russell 2500™ Index is presented as supplemental information.

The inception and creation date of the Boston Partners Small Cap Value Equity composite is July 1, 1995. The strategy is generally composed of securities with market capitalizations, at the time of purchase, in the same market capitalization range as the Russell 2000® Index. The composite is benchmarked against the Russell 2000® Value Index. The Russell 2000® Index is presented as supplemental information. The inception date of the Boston Partners Small Cap Value II Equity composite is July 1, 1998. The composite was created in 2000. The strategy is generally composed of securities with market capitalizations, at the time of purchase, in the same market capitalization range as the Russell 2000® Index and in accordance with the product's selective investment in micro cap companies. The composite is benchmarked against the Russell 2000® Value Index.

The inception date and creation date of the Boston Partners Long/Short Equity composite is August 1, 1997. The strategy is an absolute return product that balances long and short portfolio strategies and seeks to achieve stable absolute returns with approximately half the risk of the S&P 500. However, this product is not risk neutral. It is exposed to style, capitalization, sector and short-implementation risks. Prior to October 1, 1998, the composite was managed on a non-fee paying basis. Participant results would have been



substantially different if fee waivers were not applied. The composite is benchmarked against the S&P 500 Index and the Russell 3000® Value/Russell 3000® Growth for comparative purposes only since the strategy is not correlated to equity market returns.

The inception and creation date of the **Boston Partners Long/Short Research Equity** composite is April 1, 2002. This strategy is an absolute return product that balances long and short portfolio strategies and seeks to achieve stable absolute returns with approximately half the risk of the S&P 500 Index. The strategy is benchmarked against the S&P 500 Index. The HFRI Equity Hedge (Total) Index is presented as supplemental information.

The inception and creation date of the **Boston Partners Global Equity II** composite is July 1, 2008. This strategy is unconstrained and primarily invests in equity securities in the global market without using hedges on currency. The strategy is benchmarked against the MSCI World Index-Net. Prior to August 1, 2017, the strategy was benchmarked to the MSCI World Index. Non-performance related statistics are measured against the MSCI World Index. The MSCI World Value Index-Net and the MSCI ACWI Index-Net are presented as supplemental information.

The inception date and creation date of the **Boston Partners International Equity II** composite is July 1, 2008. This strategy is unconstrained and primarily invests in non-U.S. markets without using currency hedges. The strategy is benchmarked against the MSCI EAFE Index-Net as of August 1, 2017. From July 1, 2008 to June 30, 2010 the primary benchmark was MSCI EAFE Value Index and on July 1, 2010 the primary benchmark changed to the MSCI EAFE Index. This change to the MSCI EAFE Index was made retroactively to July 1, 2008. Non-performance related statistics are measured against the MSCI EAFE Index. The MSCI EAFE Value Index-Net and the MSCI ACWI ex U.S. Index-Net are presented as supplemental information.

The inception and creation date of the **Boston Partners Global Long/Short Equity** composite is July 1, 2013. The strategy is composed of securities with market capitalizations primarily greater than \$50 million and is benchmarked against the MSCI World Index-Net. Non-performance related statistics are measured against the MSCI World Index. Prior to August 1, 2017, the strategy was benchmarked to the MSCI World Index. The MSCI World Value Index-Net and the HFRI Equity Hedge (Total) Index are presented as supplemental information.

The inception and creation of the **Boston Partners Emerging Markets Dynamic Equity** composite is March 1, 2015. The strategy is composed of securities with market capitalizations primarily greater than \$250 million and is benchmarked against the MSCI Emerging Markets Index-Net. Non-performance related statistics are measured against the MSCI Emerging Markets Index. Prior to August 1, 2017, the strategy was benchmarked to the MSCI Emerging Markets Index. The HFRI Equity Hedge (Total) Index is presented as supplemental information.

The inception and creation of the **Boston Partners Emerging Markets Equity** composite is July 1, 2017. The strategy is composed of securities with market capitalizations primarily greater than \$250 million and is benchmarked against the MSCI Emerging Markets Index-Net. Prior to August 1, 2017, the strategy was benchmarked to the MSCI Emerging Markets Index. Non-performance related statistics are measured against the MSCI Emerging Markets Index.

The inception date and creation date of the **Boston Partners Global Sustainability Composite** is November 1, 2019. This strategy is unconstrained and primarily invests in equity securities in the global market without using hedges on currency. The strategy is benchmarked against the MSCI World Index-Net. Non-performance related statistics are against MSCI World Index. The MSCI ACWI Index-Net is presented as supplemental information.

### Benchmarks

Index returns are provided for comparison purposes only to show how the composite's returns compare to a broad-based index of securities, as the indices do not have costs, fees, or other expenses associated with their performance. In addition, securities held in indices may not be similar to securities held in the composite's accounts.

The S&P 500® Index is an unmanaged index of the common stocks of 500 widely held U.S. companies.

All Russell® Indices are registered trademarks of the Frank Russell Company. The Russell® Value Indices typically measure the performance of universes of stocks displaying low price-to-book ratios and low forecasted growth values. The Russell® Growth Indices typically measure the performance of universes of stocks displaying high price-to-book ratios and high forecasted growth values. The Russell 1000® Index measures the performance of the large-cap segment of the U.S. equity universe. It includes the 1,000 largest companies in the Russell 3000® Index. The Russell 3000® Index measures

performance of the 3,000 largest U.S. companies based on total market capitalization. The Russell 2500™ and 2000® Indices measure performance of the 2,500 and 2,000 smallest companies in the Russell 3000® Index respectively. The Russell Midcap® Index measures the performance of the 800 smallest companies in the Russell 1000® Index.

The MSCI Indices cover the full range of developed, emerging and All Country MSCI International Equity Indices across all size segmentations. MSCI style indices use a multi-factor approach, which uses three variables (book value to price, 12-month forward earnings to price and dividend yield) to define the value investment style characteristics and five variables (long-term forward earnings per share ("EPS") growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-term historical sales per share growth trend) to define the growth investment style characteristics. The MSCI EAFE Index captures large and mid-cap equities across developed markets around the world, excluding the U.S. and Canada. The MSCI World Index represents large and mid-cap equity performance across 23 developed markets countries, covering approximately 85% of the free float-adjusted market capitalization in each. The MSCI Emerging Markets Index captures large and mid cap representation across 27 emerging market countries covering approximately 85% of the free float-adjusted market capitalization in each country. The MSCI ACWI (All Country World Index) captures both the MSCI World and MSCI Emerging Markets Index covering approximately 85% of the global investable equity opportunity set. The MSCI ACWI ex-U.S. Index excludes the equity opportunity set within the U.S. The HFRI Equity Hedge (Total) Index constituent funds typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities or equity derivative securities, both long and short. Constituents use a wide variety of investment processes and techniques, net exposure levels, leverage employed, holding periods, market capitalizations concentrations, and valuation ranges. Data cannot be shared or distributed without written consent.

Net total return indexes reinvest dividends after the deduction of withholding taxes, using (for international indexes) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties.

# Boston Partners

## Performance disclosures (continued)

### Calculation Methodology

Composite account returns are asset value weighted using beginning of month asset values and composite account returns are calculated on a total return, time-weighted basis using trade date valuations. Composite returns are geometrically linked on a monthly basis. Effective January 1, 2011, Boston Partners adopted a significant cash flow policy. Accounts are temporarily removed from the composite when a significant external cash flow occurs, which is typically defined as a flow that is greater than or equal to 10% of the beginning market value of an account on the day of the flow; and greater than or equal to 10% of the beginning market value of the composite for that month. An account is generally added back to the composite as of the first full month following the significant cash flow. Returns reflect the reinvestment of dividends and other earnings and are expressed in U.S. Dollars unless otherwise noted. Additional information regarding policies for valuing accounts, calculating performance, and preparing compliant reports is available upon request.

### Fees and Expenses

Composite returns are provided on a gross and net of fee basis. Composite account returns will be reduced by any fees and expenses incurred in the management of the account. Net of fee composite returns are asset weighted and reflect the deduction of management fees, which may include performance-based fees, commissions and transaction costs, and are calculated by deducting actual fees charged to the accounts in a composite. Gross composite returns are calculated by deducting commissions and transaction costs charged to accounts in a composite. Fees are applied to gross returns at month end. Actual fees may vary depending on the applicable fee schedule and account size. Additional information regarding policies for valuing accounts, calculating performance, and preparing compliant reports is available upon request. Investment advisory fees are listed herein and are fully described in Boston Partners' Form ADV, Part 2.

### Composite Dispersion

The measurement of composite dispersion is calculated by the weighted average standard deviation of the annual account gross-of-fee returns within the composite. Dispersion in composites with less than five accounts included for the entire year is not considered meaningful and is denoted with "N/A". Prior to January 1, 2007, the measurement of composite

dispersion was calculated by determining the difference between the highest and lowest annual account returns within the composite. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period. This calculation has been adopted effective with the period ended December 31, 2011.

### Large Cap Value:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev. <sup>1</sup>	Bench. 3-Yr. Std. Dev. <sup>2</sup>	% of Firm AUM
2020:	105	\$ 20.7 bn	0.27%	20.91%	19.62%	18.53%	27%
2019:	133	\$ 25.3 bn	0.29%	12.48%	11.85%	11.94%	28%
2018:	142	\$ 22.4 bn	0.19%	12.16%	10.82%	10.80%	27%
2017:	141	\$ 25.4 bn	0.33%	11.57%	10.20%	9.92%	26%
2016:	156	\$ 25.3 bn	0.23%	11.95%	10.77%	10.59%	29%
2015:	167	\$ 24.6 bn	0.16%	11.28%	10.68%	10.47%	31%
2014:	151	\$ 25.2 bn	0.11%	9.83%	9.20%	8.98%	34%
2013:	129	\$ 16.5 bn	0.62%	13.77%	12.70%	11.94%	32%
2012:	105	\$ 8.6 bn	0.24%	16.50%	15.51%	15.09%	30%
2011:	99	\$ 5.1 bn	0.23%	20.03%	20.69%	18.71%	24%

<sup>1</sup>Russell 1000<sup>®</sup> Value Index <sup>2</sup>S&P 500 Index

### Concentrated Large Cap Value:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	2	\$ 23 mm	n/a	20.77%	19.62%	0%
2019:	1	\$ 8 mm	n/a	n/a	n/a	0%
2018:	1	\$ 4 mm	n/a	n/a	n/a	0%
2017*:	1	\$ 3 mm	n/a	n/a	n/a	0%

\* 2017 performance period is from July 1.

### Premium Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev. <sup>1</sup>	Bench. 3-Yr. Std. Dev. <sup>2</sup>	% of Firm AUM
2020:	30	\$ 3.6 bn	0.32%	21.45%	19.95%	18.53%	5%
2019:	37	\$ 4.1 bn	0.12%	13.35%	12.01%	11.94%	5%
2018:	36	\$ 3.7 bn	0.11%	12.58%	11.06%	10.80%	5%
2017:	35	\$ 4.3 bn	0.17%	11.47%	10.33%	9.92%	4%
2016:	35	\$ 3.4 bn	0.10%	12.30%	10.97%	10.59%	4%
2015:	35	\$ 3.3 bn	0.09%	11.46%	10.74%	10.47%	4%
2014:	29	\$ 3.1 bn	0.14%	9.92%	9.36%	8.98%	4%
2013:	29	\$ 2.7 bn	0.53%	13.76%	12.90%	11.94%	5%
2012:	26	\$ 2.2 bn	0.17%	16.17%	15.81%	15.09%	7%
2011:	24	\$ 2.0 bn	0.19%	19.37%	21.04%	18.71%	9%

<sup>1</sup>Russell 3000<sup>®</sup> Value Index <sup>2</sup>S&P 500 Index

### Mid Cap Value:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	36	\$ 17.8 bn	0.05%	22.45%	22.62%	23%
2019:	40	\$ 20.1 bn	0.04%	13.25%	12.79%	22%
2018:	41	\$ 16.0 bn	0.16%	13.26%	11.96%	20%
2017:	36	\$ 20.9 bn	0.09%	11.56%	10.33%	21%
2016:	35	\$ 18.5 bn	0.09%	12.45%	11.30%	21%
2015:	37	\$ 15.3 bn	0.01%	10.97%	10.71%	20%
2014:	29	\$ 11.6 bn	0.12%	10.27%	9.81%	16%
2013:	16	\$ 7.6 bn	0.24%	14.83%	13.69%	15%
2012:	9	\$ 2.9 bn	0.01%	17.76%	16.76%	10%
2011:	4	\$ 1.0 bn	n/a	21.35%	22.78%	5%

### Small/Mid Cap Value:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	21	\$ 1.7 bn	0.11%	27.83%	25.05%	2%
2019:	19	\$ 1.5 bn	0.08%	15.66%	14.23%	2%
2018:	20	\$ 1.1 bn	0.19%	14.64%	13.58%	1%
2017:	18	\$ 1.3 bn	0.30%	12.72%	11.81%	1%
2016:	18	\$ 1.0 bn	0.14%	13.90%	13.17%	1%
2015:	13	\$ 814 mm	0.14%	12.21%	12.02%	1%
2014:	10	\$ 499 mm	0.08%	11.65%	11.25%	1%
2013:	7	\$ 481 mm	0.13%	15.30%	15.07%	1%
2012:	7	\$ 367 mm	0.08%	18.30%	18.41%	1%
2011:	7	\$ 327 mm	0.10%	23.85%	24.23%	2%

### Small Cap Value:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	18	\$ 1.5 bn	0.52%	27.43%	26.12%	2%
2019:	20	\$ 1.6 bn	0.34%	15.31%	15.68%	2%
2018:	20	\$ 1.3 bn	0.24%	14.79%	15.76%	2%
2017:	20	\$ 1.4 bn	0.14%	13.46%	13.97%	1%
2016:	19	\$ 1.2 bn	0.21%	14.71%	15.50%	1%
2015:	19	\$ 1.0 bn	0.19%	13.03%	13.45%	1%
2014:	18	\$ 1.1 bn	0.26%	12.36%	12.79%	2%
2013:	16	\$ 1.1 bn	0.56%	15.69%	15.82%	2%
2012:	16	\$ 957 mm	0.20%	18.66%	19.89%	3%
2011:	17	\$ 923 mm	0.08%	24.94%	26.05%	4%

# Boston Partners

## Performance disclosures (continued)

### Small Cap Value II:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	2	\$754 mm	n/a	27.47%	26.12%	1%
2019:	3	\$720 mm	n/a	15.37%	15.68%	1%
2018:	3	\$597 mm	n/a	14.78%	15.76%	1%
2017:	4	\$935 mm	n/a	13.21%	13.97%	1%
2016:	4	\$878 mm	n/a	14.36%	15.50%	1%
2015:	3	\$478 mm	n/a	12.78%	13.45%	1%
2014:	4	\$444 mm	n/a	12.11%	12.79%	1%
2013:	4	\$370 mm	n/a	15.63%	15.82%	1%
2012:	4	\$304 mm	n/a	18.46%	19.89%	1%
2011:	5	\$272 mm	0.10%	25.12%	26.05%	1%

### Long/Short Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	2	\$169 mm	n/a	12.81%	18.53%	0%
2019:	2	\$311 mm	n/a	9.53%	11.93%	0%
2018:	2	\$515 mm	n/a	9.81%	10.80%	1%
2017:	2	\$1.1 bn	n/a	9.09%	9.92%	1%
2016:	2	\$1.1 bn	n/a	9.68%	10.77%	1%
2015:	2	\$687 mm	n/a	8.41%	10.47%	1%
2014:	2	\$958 mm	n/a	6.77%	8.98%	1%
2013:	2	\$965 mm	n/a	5.46%	11.94%	2%
2012:	2	\$829 mm	n/a	11.93%	15.09%	3%
2011:	2	\$626 mm	n/a	19.85%	18.71%	3%

### Long/Short Research:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	2	\$967 mm	n/a	11.98%	18.53%	1%
2019:	2	\$3.1 bn	n/a	7.57%	11.94%	4%
2018:	2	\$4.9 bn	n/a	7.11%	10.80%	6%
2017:	2	\$7.4 bn	n/a	6.40%	9.92%	7%
2016:	2	\$6.9 bn	n/a	6.64%	10.59%	8%
2015:	1	\$7.2 bn	n/a	6.13%	10.47%	9%
2014:	1	\$6.0 bn	n/a	5.52%	8.98%	8%
2013:	1	\$2.9 bn	n/a	7.95%	11.94%	6%
2012:	1	\$492 mm	n/a	9.86%	15.09%	2%
2011:	1	\$97 mm	n/a	10.70%	18.71%	0%

### Global Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	11	\$1.6 bn	0.28%	20.80%	18.27%	2%
2019:	9	\$1.7 bn	0.15%	11.28%	11.14%	2%
2018:	9	\$1.5 bn	0.09%	11.02%	10.38%	2%
2017:	8	\$1.5 bn	0.11%	10.49%	10.23%	2%
2016:	4	\$699 mm	n/a	11.28%	10.94%	1%
2015:	3	\$438 mm	n/a	10.76%	10.80%	1%
2014:	1	\$27 mm	n/a	10.48%	10.22%	0%
2013:	2	\$66 mm	n/a	13.73%	13.52%	0%
2012:	2	\$18 mm	n/a	17.23%	16.72%	0%
2011:	1	\$8 mm	n/a	20.11%	20.15%	0%

### International Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	n/a	\$2.4 bn	0.08%	19.90%	17.90%	3%
2019:	n/a	\$1.8 bn	0.13%	11.41%	10.81%	2%
2018:	6	\$1.4 bn	0.05%	11.98%	11.24%	2%
2017:	5	\$1.2 bn	0.10%	11.31%	11.83%	1%
2016:	3	\$603 mm	n/a	11.81%	12.48%	1%
2015:	1	\$261 mm	n/a	11.07%	12.47%	0%
2014:	2	\$33 mm	n/a	11.77%	12.99%	0%
2013:	2	\$20 mm	n/a	14.28%	16.21%	0%
2012:	2	\$18 mm	n/a	18.16%	19.34%	0%
2011:	1	\$6 mm	n/a	21.73%	22.40%	0%

### Global Long/Short:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	1	\$121 mm	n/a	10.97%	18.27%	0%
2019:	1	\$558 mm	n/a	5.24%	11.14%	1%
2018:	1	\$861 mm	n/a	5.09%	10.38%	1%
2017:	1	\$1.0 bn	n/a	4.92%	10.23%	1%
2016:	1	\$868 mm	n/a	5.33%	10.94%	1%
2015:	1	\$629 mm	n/a	n/a	n/a	1%
2014:	1	\$125 mm	n/a	n/a	n/a	0%
2013*:	1	\$3 mm	n/a	n/a	n/a	0%

\* 2013 performance period is from July 1.

### Emerging Markets Dynamic Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	2	\$205 mm	n/a	12.51%	19.60%	0%
2019:	2	\$210 mm	n/a	10.80%	14.17%	0%
2018:	1	\$177 mm	n/a	9.48%	14.60%	0%
2017:	1	\$211 mm	n/a	n/a	n/a	0%
2016:	1	\$11 mm	n/a	n/a	n/a	0%
2015*:	1	\$3 mm	n/a	n/a	n/a	0%

\* 2015 performance period is from March 1.

### Emerging Markets Equity:

	# of Accts. in Comp.	Total Assets in Comp.	Comp. Dispersion	Comp. 3-Yr. Std. Dev.	Bench. 3-Yr. Std. Dev.	% of Firm AUM
2020:	1	\$19 mm	n/a	20.56%	19.60%	0%
2019:	1	\$10 mm	n/a	n/a	n/a	0%
2018:	1	\$4 mm	n/a	n/a	n/a	0%
2017*:	1	\$3 mm	n/a	n/a	n/a	0%

\* 2017 performance period is from July 1.

### Firm Assets:

Year	Assets (mm)	Year	Assets (mm)
2020:	\$77,120	2015:	\$78,363
2019:	\$89,368	2014:	\$73,250
2018:	\$81,550	2013:	\$52,334
2017:	\$99,241	2012:	\$29,023
2016:	\$87,222	2011:	\$21,098

### Other Disclosures

GICS (Global Industry Classification Standard) sector classification is used. All product characteristics and sector weightings are calculated using a representative account. Risk statistics are calculated using composite data. Account composition is subject to change and information contained in this publication may not be representative of the current account. Foreign investors may have taxes withheld. Investing involves risk including the risk of loss of principal. Value investing involves buying the stocks of companies that are out of favor or are undervalued. This may adversely affect an account's value and return. Stock values fluctuate in response to issuer, political, regulatory, market or economic developments. The value of small and mid-capitalization securities may be more volatile than those of larger issuers, but larger issuers could fall out of favor. Investments in foreign issuers may be more volatile than in the U.S. market, and international investing is subject to special risks including, but not limited to, currency risk associated with non - U.S. dollar denominated securities, which may be affected by fluctuations in currency exchange rates, political, social or economic instability, and differences in taxation, auditing and other financial practices. Investments in emerging markets may increase risks.

For those composites that utilize short selling, short sales theoretically involve unlimited loss potential since the market price of securities sold short may continuously increase. This may have the effect of increased leverage and constitutes the use of leverage. For those composites that utilize derivatives, derivative investments may involve risks such as potential

illiquid markets and additional risk of loss of principal. For those composites that utilize a sustainability criterion, that criterion may cause avoidance of certain industries or issuers causing over (under)weights relative to the benchmark and varying sensitivities to such industries and issuers.

Boston Partners participates in Initial Public Offerings (IPOs) as described in its Form ADV, Part 2. IPO contributions to performance vary from year to year depending on availability and prevailing market conditions. IPO contributions may have a significant positive effect on performance when initially purchased. Such positive performance should not be expected for future performance periods.

### Annual Fee Schedules

**Large Cap:** 70 basis points ("bp") on the first \$10 million in assets; 50 bp on the next \$40 million; 40 bp on the next \$50 million; 30 bp thereafter. **Concentrated Large Cap:** 70 bp on the first \$10 million in assets; 50 bp on the next \$40 million; 40 bp on the next \$50 million; 30 bp thereafter. **Premium Equity:** 80 bp on the first \$25 million of assets; 60 bp on the next \$25 million; 50 bp on the next \$50 million; 40 bp thereafter. **Mid Cap:** 80 bp on the first \$25 million of assets; 60 bp thereafter. **Small/Mid Cap, Small Cap, and Small Cap II:** 100 bp on the first \$25 million of assets; 80 bp thereafter. **Long/Short:** 100 bp on total assets under management; plus 20% profit participation. **Long/Short Research:** 150 bp on total assets under management. **Global Equity, International Equity, and Global Sustainability:** 75 bp on the first \$25 million in assets; 65 bp on the next \$25 million; 55 bp on the next \$50 million; 50 bp thereafter. **Global Long/Short:** 200 bp on total assets under management. **Emerging Markets Dynamic Equity:** 150 bp on total assets under management. **Emerging Markets Equity:** 95 bp on the first \$25 million in assets; 85 bp on the next \$25 million; 75 bp on the next \$50 million; 70 bp thereafter.

### Corporate Information

Boston Partners is affiliated with listed corporations through common ownership. ORIX Corporation Europe N.V. services may be offered in the U.S. through Robeco Institutional Asset Management, U.S., an SEC Registered Investment Adviser registered under the Investment Advisers Act of 1940. Transtrend products may be offered in the U.S. through Boston Partners Securities, LLC, member FINRA, SiPC. Boston Partners is authorized to transact as an Investment Adviser and maintains a Securities License by the Government of Guam Department of Revenue and Taxation. It also maintains a Certificate of Authority to transact business in Guam as a Foreign Corporation. In addition, Boston Partners is registered in Korea with the Financial Services Commission (FSC).

Ryan Thomes  
Portfolio Manager

Pat McMenamin  
Managing Director  
Institutional Client & Consultant Relations

*Small Cap Diversified Value Review*

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## MWRA EMPLOYEES' RETIREMENT SYSTEM

DECEMBER 15, 2022

# REPRESENTATIVE FIRM-WIDE CLIENT LIST

As of November 2022

## CORPORATE/PARTNERSHIP

American Airlines  
The Boeing Company  
Callan LLC (fbo DC plan)  
Consolidated Rail Corporation  
Minnesota Life Insurance Company  
SKL Investment Group, LLC  
1155 Partners, LLLP

## GOVERNMENT/PUBLIC

Florida League of Cities, Inc.  
Jackson County, Missouri Revised Pension Plan  
Minnesota State Board of Investment  
Municipal Police Employees' Retirement System  
Oklahoma Law Enforcement Retirement System  
San Diego County Employees Ret. Association  
State Board of Administration of Florida

## ADVISORY/SUB-ADVISORY (US)

American Beacon Balanced Fund  
American Beacon Diversified Fund  
American Beacon Large Cap Value Fund  
American Beacon Small Cap Value Fund  
AST Large-Cap Value Portfolio (Prudential)  
AST Small-Cap Value Portfolio (Prudential)  
Columbia Management Investment Advisers, LLC  
Empower Small Cap Value Fund  
Northern Trust Investments, Inc.  
Principal Funds, Inc. – SmallCap Value Fund II  
Vanguard Variable Ins. Fund - Diversified Value Fund  
Vanguard Windsor II Fund  
Wespath Institutional Investments LLC  
Wilmington Trust – Large Cap Value CIT  
Wilmington Trust – Small Cap Diversified Value CIT  
Wilshire Mutual Funds Large Co. Value Portfolio  
Wilshire Mutual Funds Small Co. Value Portfolio

## NON-PROFIT

Jewish Federation of Greater MetroWest N.J.  
David X. Marks Foundation  
MedStar Health, Inc.  
NTCA–The Rural Broadband Association  
Portico Benefit Services  
Rochester Regional Health  
Wespath Benefits and Investments  
Workers' Compensation Reinsurance Assoc.

## TAFT-HARTLEY & OTHER

Alaska Electrical Trust Funds  
Aldrich Wealth LP

## ADVISORY/SUB-ADVISORY (NON-US)

Alma H&W US Global Value Equity Fund  
Mercer Investment Fund 2  
Momentum GF Global Equity Fund  
Nomura Multi Managers Fund III - US Equity  
Nomura World ex Japan Equity Fund

See Endnotes for selection criteria

# INVESTMENT TEAM

As of November 2022

24

Investment Professionals

24

Avg Years of Experience

17

Avg Years with H&W

7

Research Associates

	Years of Experience:	H&W	Industry	Equity Owner
George Davis, Jr. – Executive Chairman	34	38	⊙	
Scott McBride, CFA – Chief Executive Officer	20	23	⊙	
Patty McKenna, CFA	27	36	⊙	
Jim Miles	27	34	⊙	
Stan Majcher, CFA	26	29	⊙	
David Green, CFA	25	32	⊙	
Patrick Meegan, CPA	24	32	⊙	
J.P. Flagler, CFA	23	27	⊙	
Judd Peters, CFA	22	25	⊙	
Jason Chan, CFA	21	23	⊙	
Dan McKenzie, CFA	18	18	⊙	
Hunter Doble, CFA	17	27	⊙	
Robin Henrich*	17	22	⊙	
Mark Schmidt	17	20	⊙	
Scott Rosenthal	15	22	⊙	
Noah Mayer, CFA	15	22	⊙	
Ryan Thomes, CFA	14	20	⊙	
Ray Kennedy, CFA	13	37	⊙	
Mark Hudoff	13	35	⊙	
Richard Mak, CFA	9	21	⊙	
Marshall Cowden, CFA	7	13	⊙	
Doug Campbell	5	13	⊙	
Anthony Philipp	3	14		
Michael Grigorieff	3	6		

\*Indicates equity trading

# WHY HOTCHKIS & WILEY SMALL CAP DIVERSIFIED VALUE?

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## DIFFERENTIATING FACTORS

- Penchant for finding opportunities in the smaller part of the small cap market
- We believe this creates 1) a performance edge and 2) a complementary portfolio

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## INDEPENDENCE AND STABILITY OF TEAM

- Independently owned firm, focused solely on asset management
- No PM departures in the strategy's 17-year history

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## LOW FEES

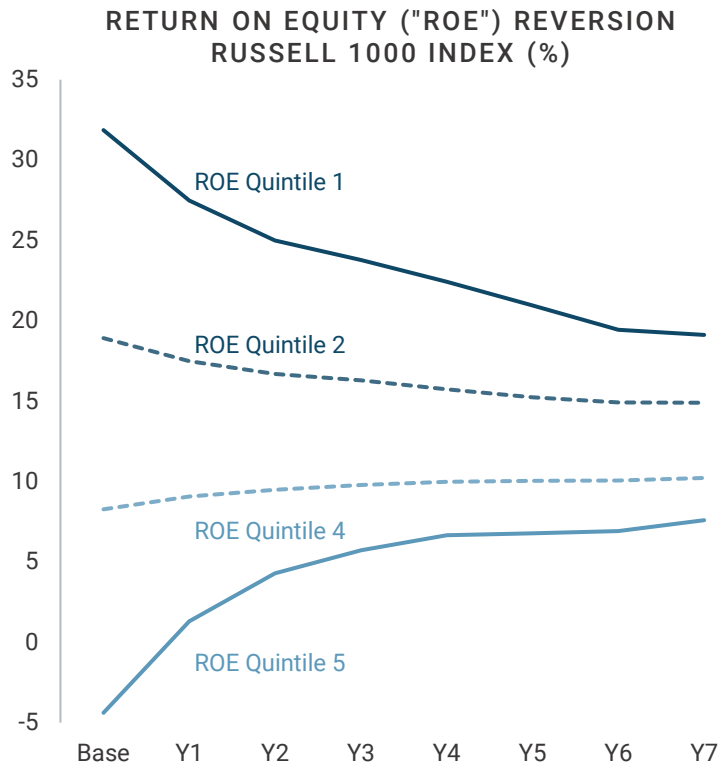
- 0.55% on first \$15 million
  - 0.50% on next \$35 million
  - 0.45% thereafter
- 

Additional information on the firm's advisory fees is provided in H&W's Form ADV Part 2



# INVESTMENT PHILOSOPHY

- Investors often extrapolate a company's value from current conditions
- This behavior disregards basic economic principles and creates short-term mispricings
- Proprietary research focused on valuation relative to long-run normal earnings can exploit these opportunities



- Leverages knowledge base of experienced research team
- Disciplined process and portfolio construction
- Bottom-up stock selection with an emphasis on identifying undervalued securities

Source: Bloomberg, H&W 1995-2018

# SMALL CAP DIVERSIFIED VALUE (“SCDV”) STRATEGY SUMMARY

As of November 2022

- SCDV blends sophisticated models to exploit valuation anomalies with fundamental reviews by our experienced research team

## STRATEGY CHARACTERISTICS

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Number of Stocks	350-400
Market Cap Range	\$100 million to ~\$5 billion (or the largest market cap in the Russell 2000 Index)
Inception Date	June 30, 2005 (17+ years)
Maximum Weight	0.4% at purchase
Rebalancing	Monthly
Max Sector Weight	35%*
Max Industry Weight	15%*

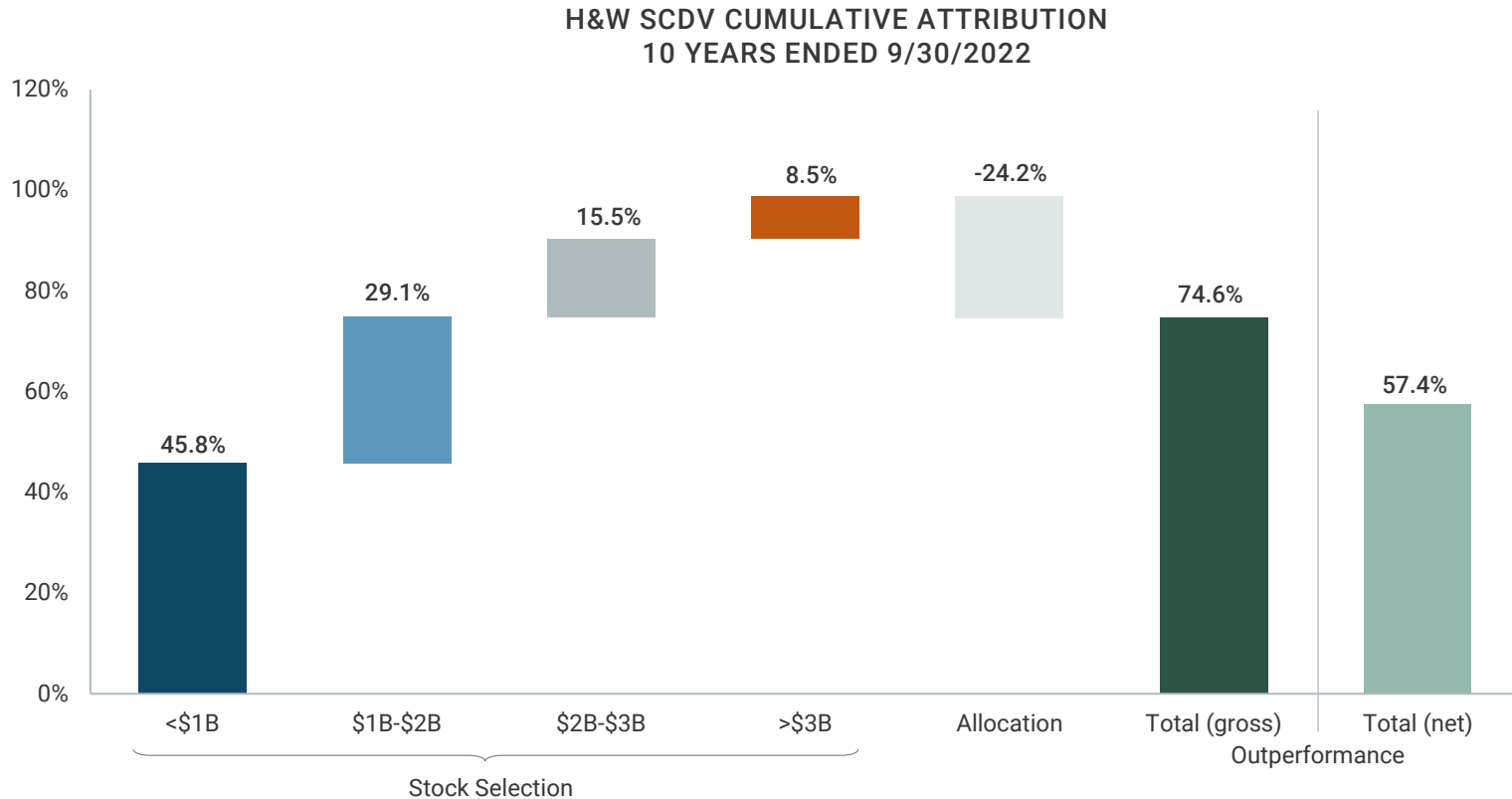
\*Or 10% above the Russell 2000 Value Index weight

*The strategy is designed for investors seeking diversified exposure to small cap value equities. In a capacity-constrained asset class, it addresses liquidity limitations while still leveraging the fundamental knowledge base of an experienced research group.*

# SCDV ATTRIBUTION BY MARKET CAP

As of September 2022

- Positive stock selection has been broad, but especially successful in micro caps



Source: Bloomberg, H&W

Performance: Small Cap Diversified Value Composite

Attribution: Representative Small Cap Diversified Value (SCDV) portfolio, gross of fees. Net of fee performance as well as results for different time periods may differ significantly; interaction effect is combined with stock selection. Client portfolio holdings may vary due to different restrictions, cash flows and other relevant considerations. Performance attribution is an analysis of the portfolio's return relative to the Russell 2000 Value Index and is calculated using daily holding information and does not reflect management fees and other transaction costs and expenses. Returns calculated using this buy-and-hold methodology can differ from actual portfolio returns due to intraday trades, cash flows, corporate actions, accrued/miscellaneous income, and trade price and closing price difference of any given security. The Carino smoothing method was used to link quarterly attribution. Additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

# SCDV ATTRIBUTION BY MARKET CAP

As of September 2022

- Positive stock selection in companies with market caps of less than \$1 billion has been a consistent source of excess return

## H&W SCDV VS. RUSSELL 2000 VALUE

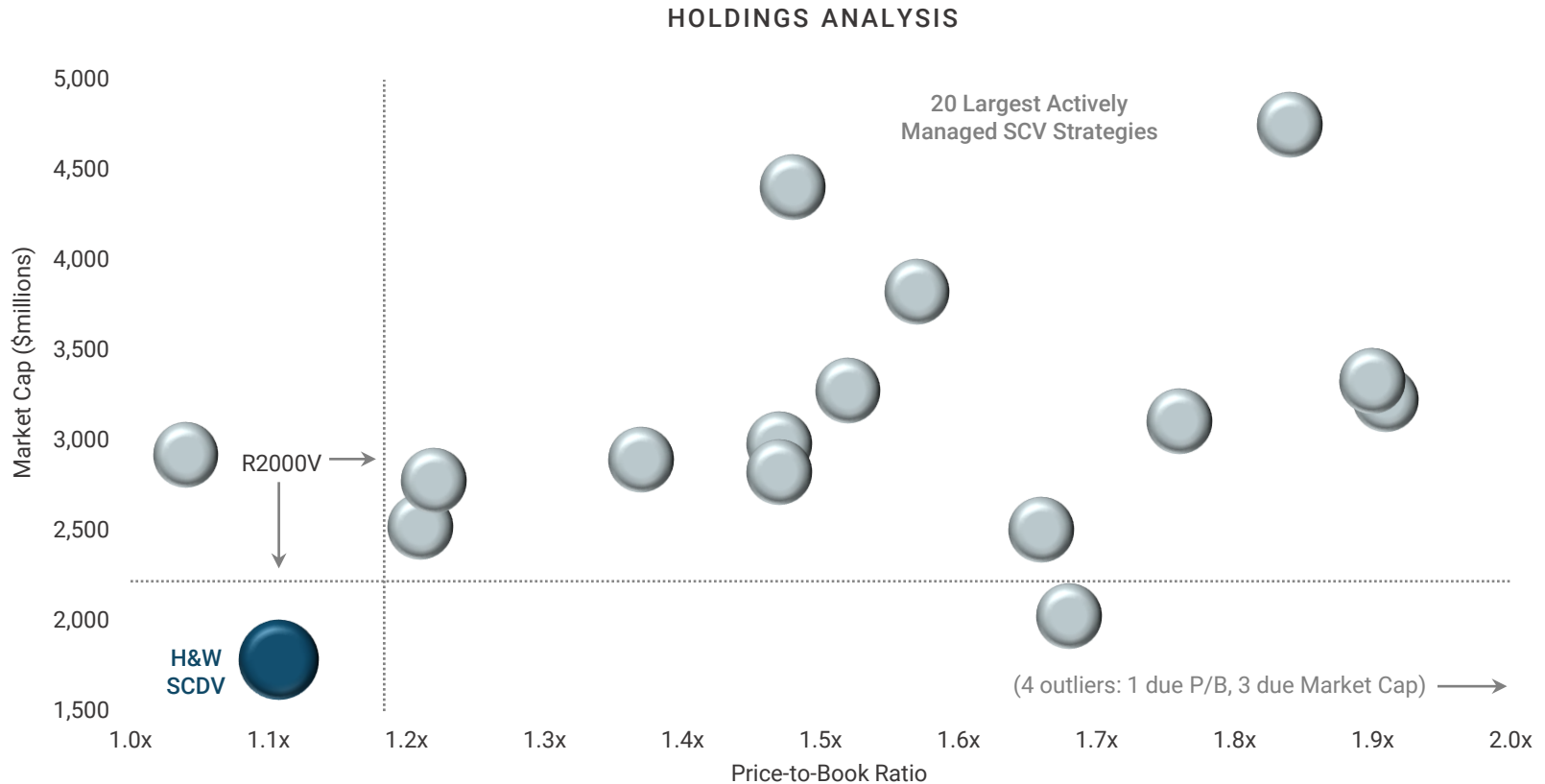
	Total Out (under) performance (%) gross of fees	Total Out (under) performance (%) net of fees	From stock selection <\$1B mkt cap (%)
Cumulative Last 10 Years	74.6%	57.4%	45.8%
YTD 2022	3.6	3.3	1.5
2021	8.3	7.7	2.1
2020	(3.7)	(4.2)	(0.4)
2019	0.8	0.3	0.5
2018	(0.6)	(0.9)	(0.3)
2017	7.1	6.4	3.7
2016	3.7	2.7	2.8
2015	(0.4)	(1.1)	1.8
2014	5.7	4.8	3.6
2013	10.6	9.2	4.2
2012	1.7	0.5	1.8

Source: Bloomberg, H&W

Performance: Small Cap Diversified Value Composite

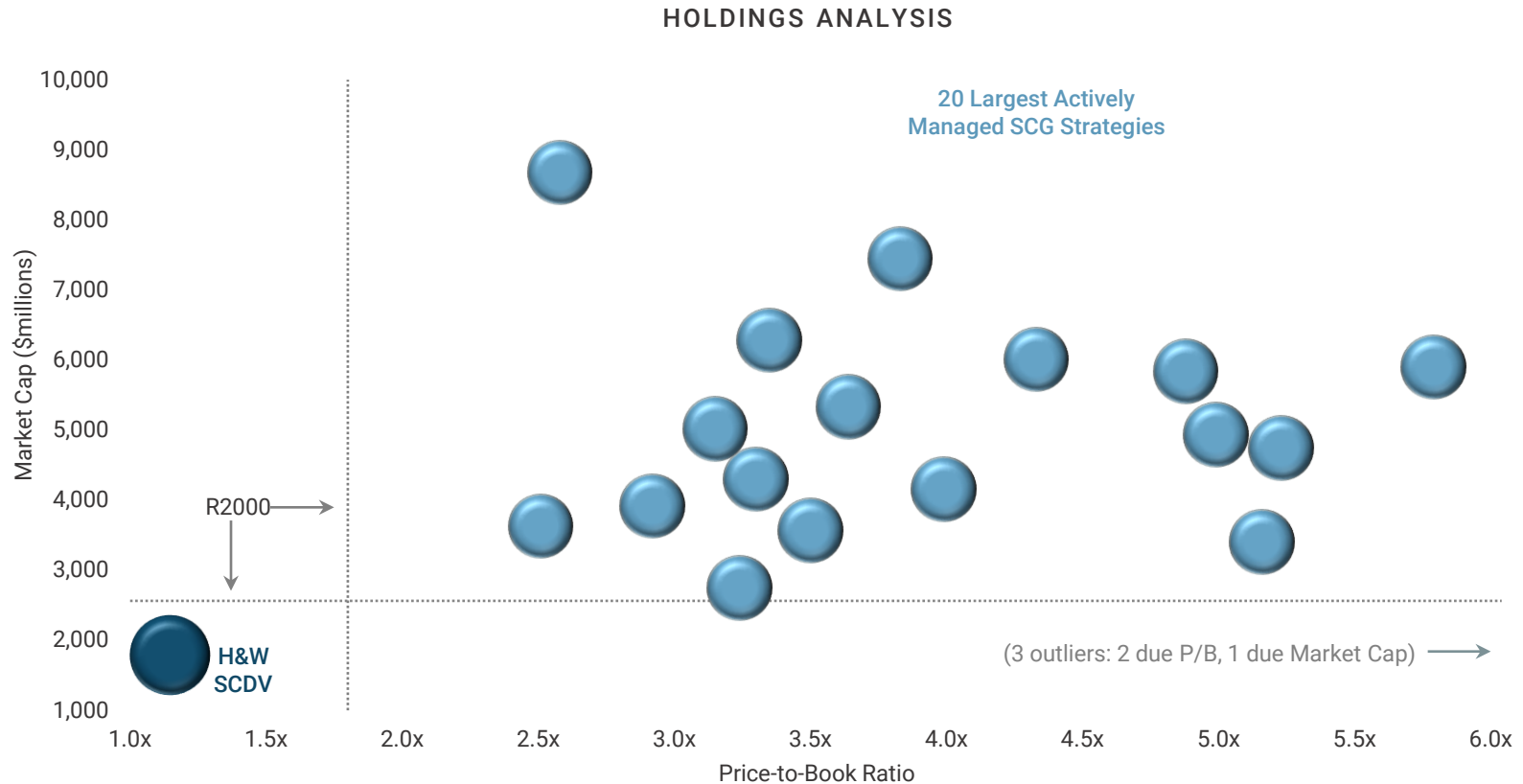
Attribution: Representative Small Cap Diversified Value (SCDV) portfolio, gross of fees. Net of fee performance as well as results for different time periods may differ significantly; interaction effect is combined with stock selection. Client portfolio holdings may vary due to different restrictions, cash flows and other relevant considerations. Performance attribution is an analysis of the portfolio's return relative to the Russell 2000 Value Index and is calculated using daily holding information and does not reflect management fees and other transaction costs and expenses. Returns calculated using this buy-and-hold methodology can differ from actual portfolio returns due to intraday trades, cash flows, corporate actions, accrued/miscellaneous income, and trade price and closing price difference of any given security. Additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

- The nature of the strategy often translates into a complementary fit with other equity managers (both style and size)



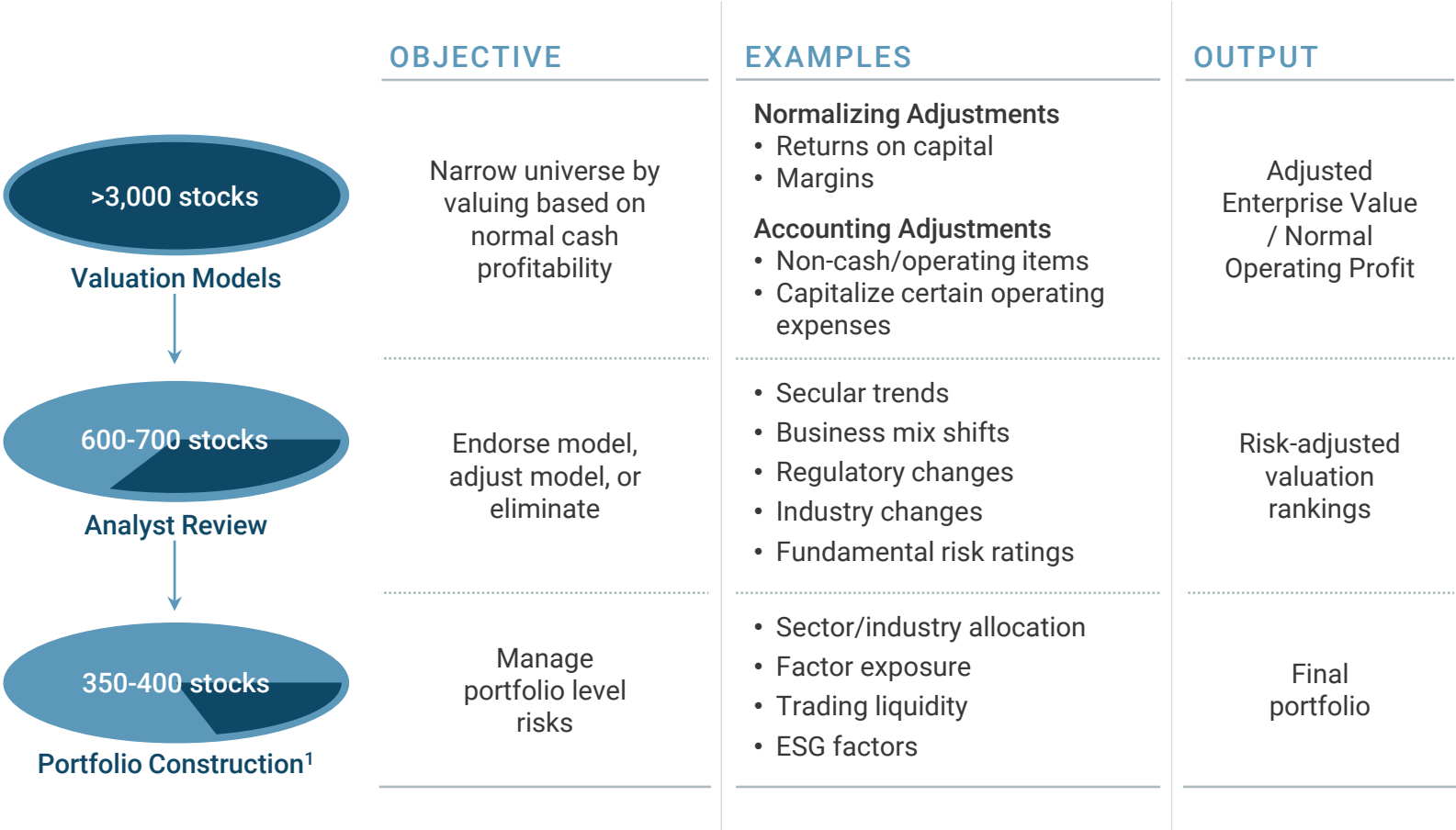
Source: 20 Largest Actively Managed Small Cap Value (SCV) Strategies based on assets selected from the eVestment SCV Category Universe. Representative Small Cap Diversified Value (SCDV) portfolio. Client portfolio holdings may vary due to different restrictions, cash flows, and other relevant considerations. Information obtained from third-party sources, which are subject to change and cannot be guaranteed. Additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

- The nature of the strategy often translates into a complementary fit with other SCG managers



Source: 20 Largest Actively Managed Small Cap Growth (SCG) Strategies based on assets selected from the eVestment SCG Category Universe. Representative Small Cap Diversified Value (SCDV) portfolio. Client portfolio holdings may vary due to different restrictions, cash flows, and other relevant considerations. Information obtained from third-party sources, which are subject to change and cannot be guaranteed. Additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

# INVESTMENT PROCESS



<sup>1</sup> ~100 @ 0.4%, ~100 @ 0.3%, ~100 @ 0.2% and ~100 @ 0.1%

# CHARACTERISTICS

As of November 2022

## Small Cap Diversified Value

	PORTFOLIO	RUSSELL 2000 VALUE	RUSSELL 2000
Price/Normal Earnings	9.8x	12.9x	14.7x
Forward Price/Earnings (FY2)	9.0x	11.1x	12.4x
Price/Book	1.3x	1.4x	2.0x
Dividend Yield	2.2%	2.1%	1.4%
Payout Yield	6.6%	4.9%	4.0%
Weighted Avg Market Cap (\$M)	\$2,175	\$2,538	\$2,947
Median Market Cap (\$M)	\$1,368	\$894	\$1,030
Number of Securities	400	1,385	1,954

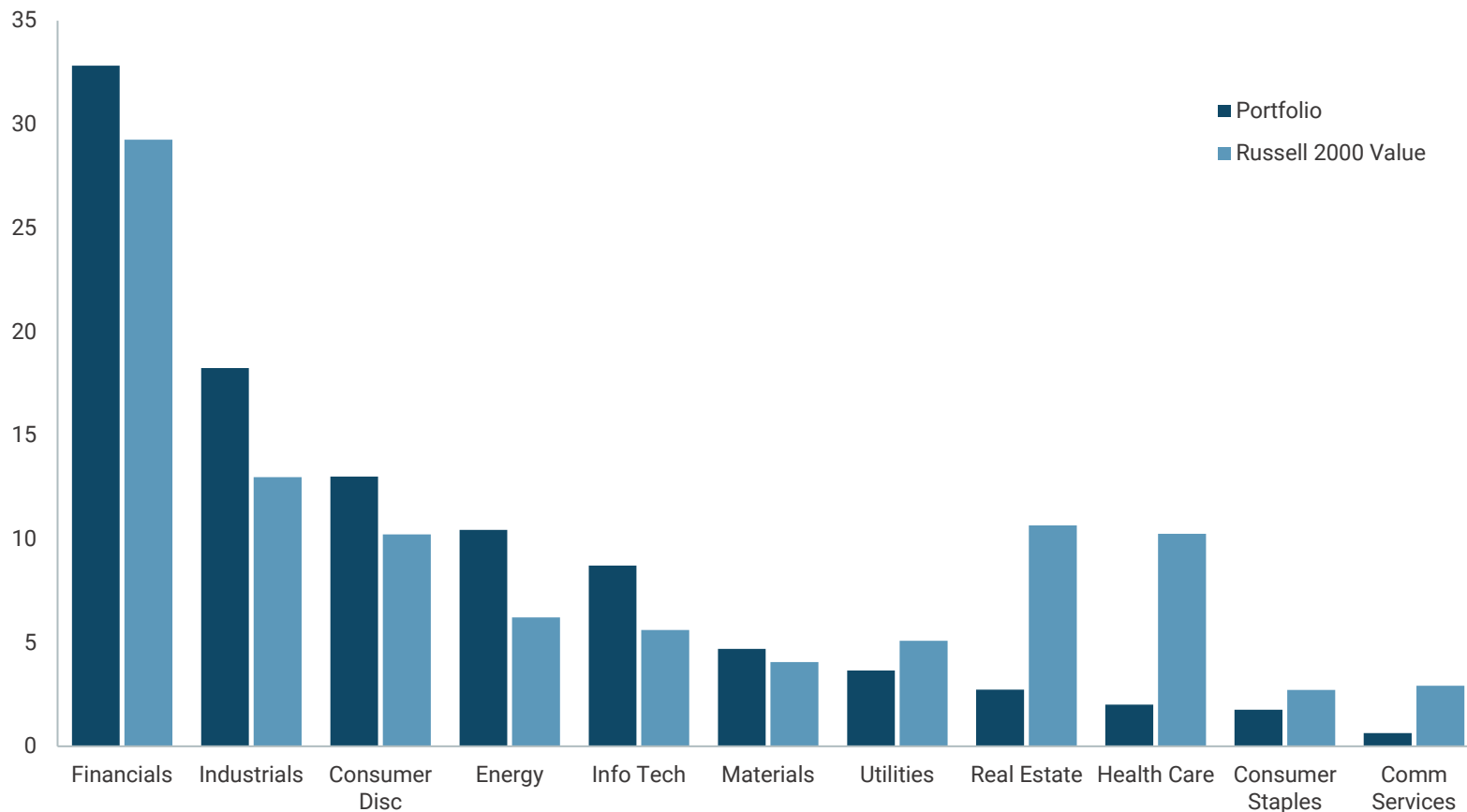
Source: Russell, Bloomberg, representative H&W Small Cap Diversified Value portfolio. Client portfolio holdings may vary due to different restrictions, cash flows, and other relevant considerations. Certain information presented is based on proprietary or third-party estimates, which are subject to change and cannot be guaranteed. Additional disclosures provided in Endnotes.



# SECTOR WEIGHTS (%)

As of November 2022

## Small Cap Diversified Value

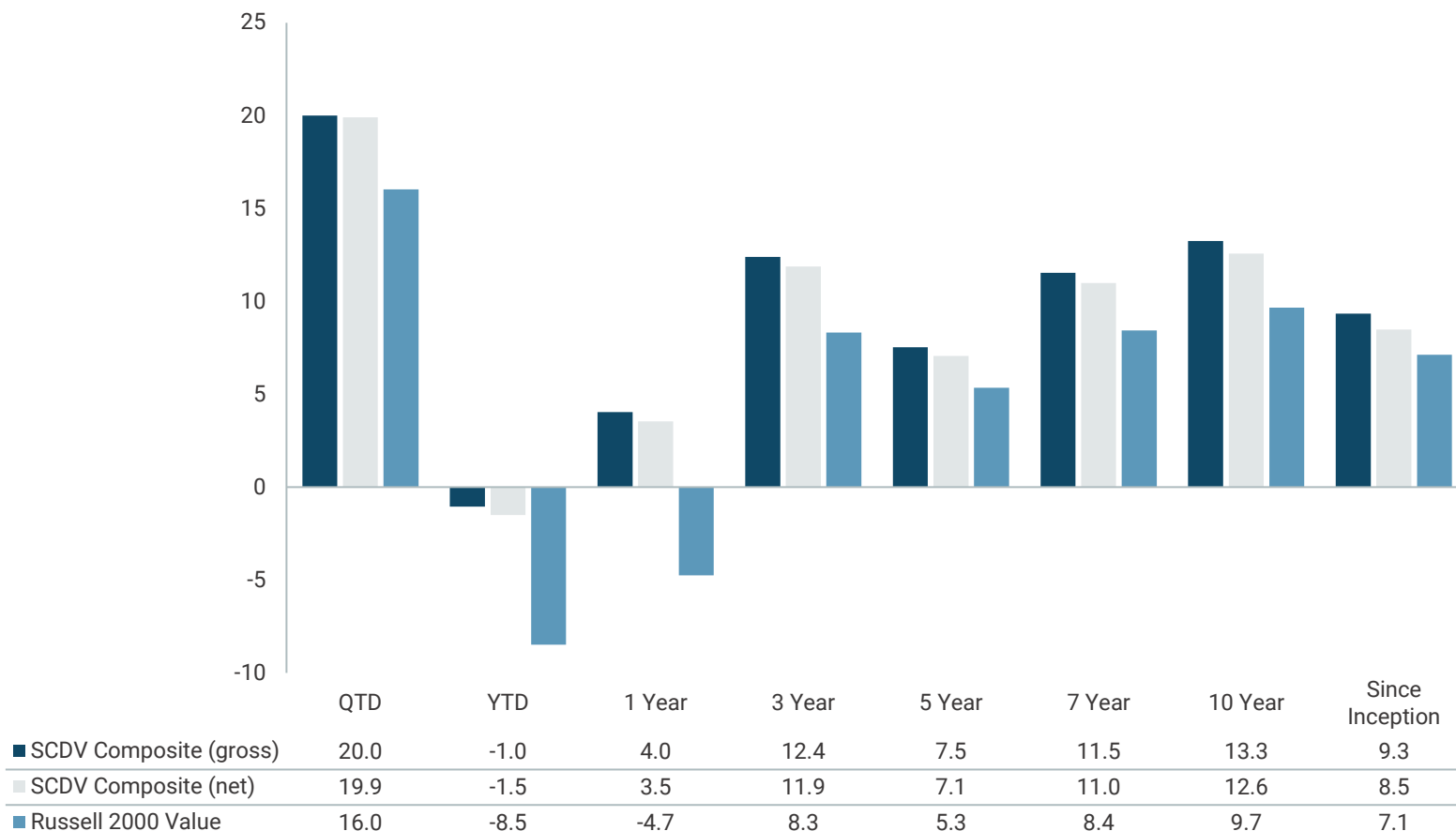


Source: Russell, Bloomberg, representative H&W Small Cap Diversified Value portfolio. Client portfolio holdings may vary due to different restrictions, cash flows, and other relevant considerations. Additional disclosures provided in Endnotes.

# COMPOSITE PERFORMANCE (%)

As of November 2022

## Small Cap Diversified Value

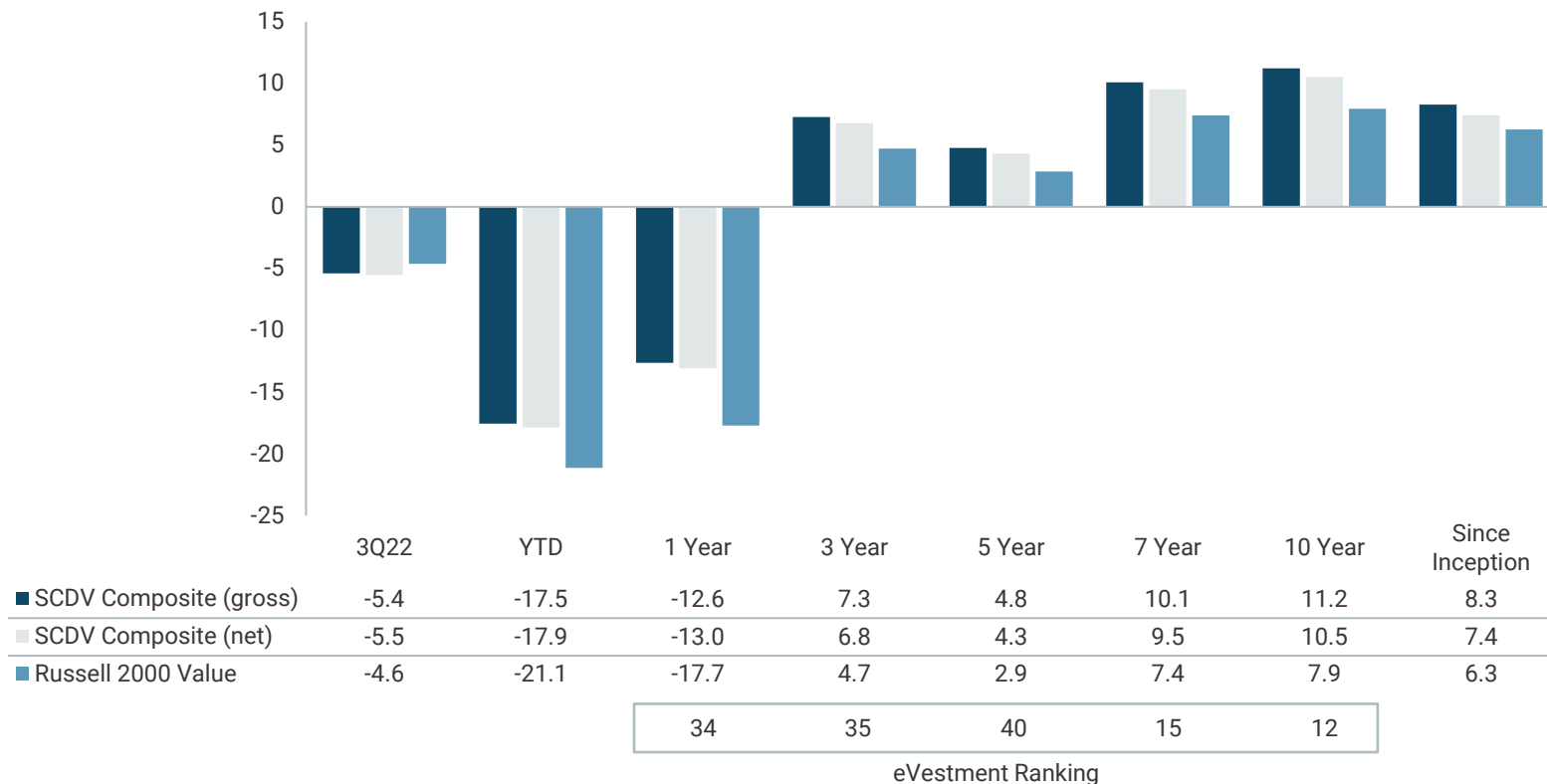


Commencement of Small Cap Diversified Value (SCDV) Composite: 7/1/05. Average annual total returns for periods greater than one year. Net performance results are presented after actual management fees (including performance-based fees if applicable) and all trading expenses but before custodial fees. See GIPS Report included at end of the presentation; additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

# COMPOSITE PERFORMANCE (%)

As of September 2022

## Small Cap Diversified Value



Ranking source: eVestment Alliance as of September 30, 2022. The peer group used to calculate this data is the eVestment US Small Cap Value Equity Universe, calculated using monthly returns, gross of fees; H&W pays a subscription fee to eVestment Alliance for access to peer rankings. There are 213, 208, 197, 190 and 179 products considered in this peer universe of US Small Cap Value Equity for 1-, 3-, 5-, 7-, and 10-year periods, respectively. eVestment collects information directly from investment management firms and other sources believed to be reliable. eVestment does not guarantee or warrant the accuracy, timeliness, or completeness of the information provided and are not responsible for any errors or omissions. Performance results may be provided with additional disclosures available on eVestment's systems and other important considerations such as fees that may be applicable.

Commencement of Small Cap Diversified Value (SCDV) Composite: 7/1/05. Average annual total returns for periods greater than one year. Net performance results are presented after actual management fees (including performance-based fees if applicable) and all trading expenses but before custodial fees. See GIPS Report included at end of the presentation; additional disclosures provided in Endnotes. Past performance is no guarantee of future performance.

# ESG HIGHLIGHTS

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**Philosophy** – Sustainable business practices are consistent with long-term shareholder value. While current practices are important, we focus on and encourage the move towards sustainable practices.

## ESG INTEGRATION



### FULLY INTEGRATED

- Evaluate material ESG issues that could affect intrinsic value or risk profile
- Incorporate ESG factors into Fundamental Risk Rating
- Portfolio-level ESG assessment
- Proxy policy incorporates ESG issues



### LIVING ESG AT H&W

- UNPRI signatory
- Formal DE&I process
- In-house staff training and development
- Community involvement

# DIVERSITY, EQUITY & INCLUSION OVERVIEW

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- H&W's Diversity, Equity & Inclusion Committee (DEIC) is comprised of senior leaders – including our CEO
- The DEIC is charged with developing, implementing and monitoring action plans tied to H&W's DEI goals
- The majority of H&W management roles are led by women and diverse team members (66%)

## DEI GOALS

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- Foster an inclusive culture with equal access to resources and opportunities
- Strive for diverse representation across departments and levels
- Ensure fair and equitable compensation practices
- Promote work/life balance
- Support our local communities

## DEI ACTIVITIES

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- Intensive recruiting outreach for diverse professionals
- MBA and undergraduate Internship program for female and other diverse candidates
- External partnerships including Robert Toigo, Women in Investing and CEO Action
- Employee training
- Vendor diversity analysis

# PROFESSIONAL STAFF BIOGRAPHIES

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## Judd Peters, CFA

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Portfolio Manager  
22 Years with H&W  
25 Years Industry Experience

Judd Peters serves as a portfolio manager on the Large Cap Fundamental Value, Large Cap Diversified Value, Small Cap Diversified Value and International Small Cap Diversified Value portfolios. He covers utilities companies and is a member of the capital goods, energy and technology sector teams.

Prior to joining the firm, Mr. Peters was an analyst in the investment banking division of Wedbush Morgan Securities. Mr. Peters, a CFA® charterholder, received his BA in Mathematics and a BS in Biochemistry from University of California, San Diego.

## Ryan Thomes, CFA

---

Portfolio Manager  
14 Years with H&W  
20 Years Industry Experience

Ryan Thomes serves as a portfolio manager on the Small Cap Diversified Value and International Small Cap Diversified Value portfolios. In addition, Ryan supports the firm's investment process by managing much of the firm's quantitative and market research effort.

Prior to joining the firm, Mr. Thomes was a global equity senior research associate for Jeffrey Slocum and Associates, Inc. He began his investment career as a research analyst at Berthel Schutter LLC. Mr. Thomes, a CFA® charterholder, received his BS in Entrepreneurial Management and Finance from the University of Minnesota.

## Pat McMenamain

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Managing Director  
Institutional Client & Consultant Relations  
28 Years with H&W  
37 Years Industry Experience

Mr. McMenamain is responsible for Sales and Client Service for corporate, public, retirement plans, Taft-Hartley, endowment and foundation funds and sub-advisory services in the Eastern United States. He joined the firm in 1994.

Prior to joining H&W, Mr. McMenamain was responsible for institutional business development for Merrill Lynch Investment Managers. Additionally, Mr. McMenamain held similar positions with Morgan Stanley Asset Management and John Hancock Financial Services. Mr. McMenamain received his BS in Economics and Business Administration from Saint Leo University. He holds FINRA Series 6, 63 and 65 registrations

# GIPS REPORT – SMALL CAP DIVERSIFIED VALUE

	% Total Return Gross of Fees	% Total Return Net of Fees	% Total Return R2000V	% Total Return R2000	No. of Accts	Internal Dispersion (%)	Comp. Assets (\$M)	Total Firm Assets (\$M)
2021	36.6	36.0	28.3	14.8	16	0.5	2,381	34,902
2020	0.9	0.4	4.6	20.0	13	0.6	1,757	31,687
2019	23.2	22.7	22.4	25.5	11	0.2	1,781	33,623
2018	-13.5	-13.8	-12.9	-11.0	7	0.1	835	27,191
2017	14.9	14.2	7.8	14.6	6	n/m	418	32,037
2016	35.4	34.5	31.7	21.3	<6	n/m	19	29,952
2015	-7.9	-8.6	-7.5	-4.4	<6	n/m	14	28,367
2014	9.9	9.0	4.2	4.9	<6	n/m	6	32,190
2013	45.1	43.7	34.5	38.8	<6	n/m	5	25,962
2012	19.7	18.6	18.1	16.4	<6	n/m	3	18,781

n/m—not considered meaningful for composites with five accounts or less for the full year.

Hotchkis and Wiley Capital Management, LLC (the “Firm” or “H&W”) claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. H&W has been independently verified for the periods October 9, 2001 through December 31, 2020. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm’s policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The Small Cap Diversified Value Composite has had a performance examination for the periods July 1, 2005 through December 31, 2020. The verification and performance examination reports are available upon request.

H&W is an independent investment management firm registered with the U.S. Securities and Exchange Commission and manages value equity and high yield assets for institutional and mutual fund investors. Its predecessor firm was established in 1980. The equity team of the predecessor firm established H&W in October 2001.

H&W refers to itself as a “registered investment adviser” in materials distributed to current and prospective clients. As a registered investment adviser with the SEC, H&W is subject to the rules and regulations adopted by the SEC under the Investment Advisers Act of 1940, as amended (the “Advisers Act”). Registration as an investment adviser is not an indication that H&W or its directors, officers, employees or representatives have attained a particular level of skill or ability.

Valuations and returns are stated in U.S. dollars. Investment returns include reinvestment of dividends, interest, and capital gains. Gross performance results are presented before management and custodial fees but after all trading expenses. Effective January 1, 2006 net performance results are presented after actual management fees (including performance-based fees if applicable) and all trading expenses but before custodial fees.

H&W’s management fees are described in Part 2A of its Form ADV. The standard Small Cap Diversified Value management fee schedule is 55 basis points on the first \$15 million, 50 basis points on the next \$35 million and 45 basis points thereafter. Internal dispersion is calculated using the equal-weighted standard deviation of all portfolios (gross returns) that were included in the Composite for the entire year. A list of composite and broad distribution pooled fund descriptions and policies for valuing investments, calculating performance, and preparing GIPS Reports are available upon request. Past performance is no guarantee of future performance. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

**Composite:** The Composite includes all Small Cap Diversified Value discretionary accounts. The Small Cap Diversified Value strategy seeks capital appreciation primarily through investments in equity securities of small capitalization companies and may invest in foreign (non-U.S.) securities. Under normal conditions, it typically will hold equity securities of approximately 300 to 400 different companies. The typical market cap range of the strategy is consistent with the market cap range of the Russell 2000® Index. Beginning May 1, 2020, accounts with significant cash flows (≥ 25% of beginning of the month assets and ≥ \$10 million in asset size) are excluded from the respective month’s composite calculation and included in the subsequent month. (Composite creation & inception date: 7/1/2005)

**Indexes:** The Russell 2000® Value Index (“R2000V”) measures the performance of those Russell 2000® companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2000® Index (“R2000”), an unmanaged index, measures the performance of the 2,000 smallest companies in the Russell 3000® Index. The indexes assume reinvestment of dividends and capital gains, and assumes no management, custody, transaction or other expenses. The value disciplines used in managing the accounts in the Composite may prevent or limit investment in major stocks in the R2000V and R2000 and returns may not be correlated to the indexes. Benchmark returns are not covered by the report of independent verifiers.

The 3-year annualized standard deviation measures the variability of the composite (using gross returns) and the benchmark(s) returns over the preceding 36-month period ended.

## 3-Year Annualized Standard Deviation (%)

	Composite	R2000V	R2000
2021	29.1	25.0	23.4
2020	29.7	26.1	25.3
2019	17.7	15.7	15.7
2018	16.7	15.8	15.8
2017	14.9	14.0	13.9
2016	15.9	15.5	15.8
2015	13.9	13.5	14.0
2014	14.0	12.8	13.1
2013	19.2	15.8	16.5
2012	23.2	19.9	20.2

# ENDNOTES

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Hotchkis & Wiley selected the representative firm-wide discretionary clients list based on objective criteria which includes the type of client (Corporate/Partnership, Non-Profit, Government/Public, Pension/Taft-Hartley and Sub-Advisory) and strategy. Clients are included on the list when the account is funded and removed from the list when the firm is notified of termination. It is not known whether the listed clients approve of H&W or the advisory services provided.

Investment returns include reinvestment of dividends, interest and capital gains. Valuation is based on trade-date information. The investment returns presented gross of fees do not reflect the deduction of investment advisory fees. Actual returns will be reduced by the amount of investment advisory fees and any other expenses, such as custody fees, incurred in the management of the account.

Over a ten-year period, for example, if a client had experienced gross returns of 10% per year, its initial US\$1,000 investment would have grown to US\$2,594.

Small Cap Diversified Value: If the client paid an annual investment management fee of 55 basis points (highest tier), its net compounded returns would have averaged 9.45% per year and its investment would have grown to US\$2,467.

Standard fees are described in Part 2A of the Form ADV of H&W.

All investments contain risk and may lose value. Investing in foreign as well as emerging markets involves additional risk such as greater volatility, political, economic, and currency risks and differences in accounting methods. Investing in value stocks presents the risk that value stocks may fall out of favor with investors and underperform growth stocks during given periods.

Investing in smaller, medium-sized and/or newer companies involves greater risks not associated with investing in large company stocks, such as business risk, significant stock price fluctuations and illiquidity.

Representative H&W portfolios are selected based on factors determined by Advisor to be “representative” of the strategy, considering such factors as (but not limited to) investment guidelines/restrictions, time period under Advisor’s discretion, and/or cash flow activities. Each portfolio’s holdings/performance in the strategy vary due to different restrictions, cash flows and other relevant considerations.

Russell Investment Group is the source and owner of the Russell Index data contained herein (and all trademarks related thereto), which may not be redistributed. The information herein is not approved by Russell. H&W and Russell sectors are based on the Global Industry Classification Standard by MSCI and S&P.

Market Disruption: The global coronavirus pandemic has caused disruption in the global economy and extreme fluctuations in global capital and financial markets. H&W is unable to predict the impact caused by coronavirus pandemic, which has the potential to negatively impact the firm’s investment strategies and investment opportunities.

Opinions expressed and/or data included in this presentation are subject to change without notice. Information based on forecasts, proprietary or third-party estimates cannot be guaranteed and are subject to change. Information obtained from independent sources is considered reliable, but H&W cannot guarantee its accuracy or completeness.

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Past performance is no guarantee of future performance.



MESIROW EQUITY MANAGEMENT

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# MWRA Retirement System December 2022

**Kathryn Vorisek**  
Head of Equity Management  
& Portfolio Manager

**Leo Harmon, CFA, CAIA**  
CIO & Portfolio Manager

**Thomas F. Hynes**  
Senior Managing Director

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IT IS NOT FOR USE WITH THE GENERAL PUBLIC AND MAY NOT BE DISTRIBUTED.

# Mesirow Equity Management (MEM)

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1. Firm overview
2. MEM equity
3. Small Cap Value performance and characteristics
4. MEM fee proposal
5. Appendix
6. Bios

# Firm overview

# About Mesirow

Mesirow is an independent financial services firm founded in 1937 and owned by employees.<sup>1</sup>

- Global headquarters in Chicago with offices worldwide; 510 employees
- Strong balance sheet with \$370M in capital<sup>2</sup> and no debt
- Institutional investment teams with specialized expertise across global asset classes
- Experience investing on behalf of MA Public Funds<sup>3</sup>:
  - We manage over \$70 million in assets across six public clients in Massachusetts

## CLIENT-ALIGNED OWNERSHIP

ensures we think and act as owners

**100%** of voting shares are held by active employees

## DIVERSIFIED INVESTMENT STRATEGIES

customized by specialist teams

**\$14.6B** in institutional assets under management

## CORPORATE RESPONSIBILITY

reflects our clients' values

**5K+** hours volunteering in Chicago neighborhoods over the last decade (2013-2022)

### WE INVEST IN WHAT MATTERS



OUR  
CLIENTS



OUR  
COMMUNITIES



OUR  
CULTURE

As of 9.30.22 unless otherwise noted. | 1. Mesirow Financial Investment Management, Inc. ("MFIM") is an investment advisory and management services firm and is an SEC-registered investment adviser, CFTC-registered commodity trading advisor ("CTA") and member of the NFA. Investment management services are provided through MFIM, Mesirow Institutional Investment, Inc. ("MIIM"), and Mesirow Financial Private Equity Advisors, Inc. ("MFPEA"), all SEC-registered investment advisors. Currency-related services are provided through MFIM (Currency Division), in its capacity as a registered CTA. | 2. As of 3.31.22 (updated annually in June). | 3. References to current clients do not imply, directly or indirectly, any recommendation of Mesirow or MEM by such entity. Please refer to the disclosure page at the end of this presentation for additional, important information.

# Corporate responsibility

Corporate responsibility has been a core value of the firm since its founding in 1937. Today, Mesirow aligns with United Nations Global Goals for Sustainable Development (SDGs) while acting as a force for social good.



## SUSTAINABILITY

Strategies that seek to help investors prosper while doing good

- Signatory, Principles for Responsible Investment (PRI)
- Signatory, FX Global Code of Conduct
- Offerings across the capital structure and investment vehicles
- LEED Platinum certified headquarters; environmental improvement initiatives



## COMMUNITY ENGAGEMENT

Investment of time, talent and financial support

- Neighborhoods: Family services, youth guidance, wrap-around support
- Education & Opportunity: Scholarship, opportunity, financial literacy
- Social justice: Tolerance, anti-gun violence, racial equity



## DIVERSITY, EQUITY AND INCLUSION

Within a collaborative, entrepreneurial culture

- Mesirow Diversity, Equity and Inclusion Council leads a Six-Point DEI Commitment
- WomenConnect, PeerConnect, PrideConnect and ParentsConnect Employee Resource Groups

### MESIROW CAUSE PILLARS <sup>1</sup>



**ENVIRONMENT**



**COMMUNITY IMPROVEMENT**



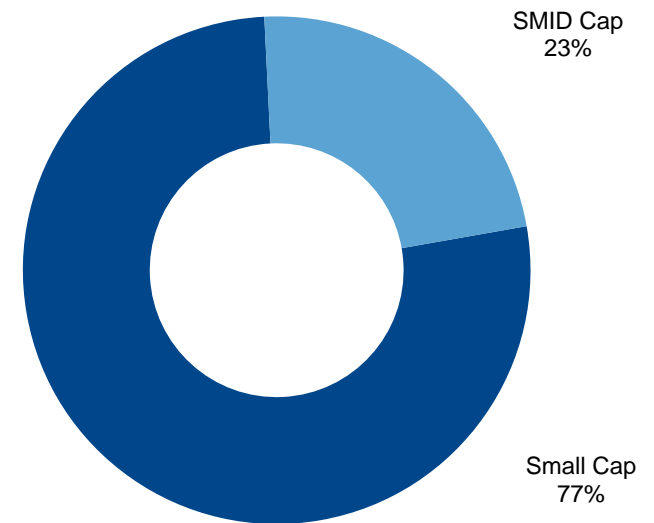
**HUMAN RIGHTS & EQUALITY**

1. For more information on how our cause pillars align with the United Nations Sustainable Development Goals, please visit <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

# MEM equity

# Mesirow Equity Management commitment

- As a division of an independent, primarily employee-owned firm, our interests are aligned with our clients which has helped us build long-term relationships
  - Average client tenure of 13 years
  - MEM investment team members are all investors in MEM strategies\*
- A proven relative value investment philosophy and a consistent approach to small and SMID cap value investing
  - Portfolio management team has worked together for almost 20 years
    - MEM Small Cap Value composite generated over 200 bps of alpha with a beta 12% lower than the benchmark since 2004<sup>1</sup>
    - All investment strategies incorporate ESG factors into our analysis
- Strong team of professionals, averaging more than 25 years of industry experience
- A sincere commitment to providing customized service to our clients
- As of November 2019, Mesirow is a Signatory for the Principles for Responsible Investment (PRI)



**Total Assets Under Management**  
**\$836.9 Million\***

\* As of 11.30.22.

Assets include Mesirow Small Company Sustainability Fund, MEM Small Company Sustainable Equity Strategy, and MEM SMID Company Sustainable Equity Strategy.

<sup>1</sup> As of 9.30.22. Past performance is not necessarily indicative of future results. The information provided above is supplemental. Please see GIPS Reports at the end of this presentation for complete performance information, including net performance and for benchmark/index definitions.

## Clients benefit from our team's deep experience



**Kathryn A. Vorisek\***  
Head of Equity Management,  
Portfolio Manager

- 36 years industry experience
- Joined in 1996



**Leo Harmon\*, CFA, CAIA**  
Chief Investment Officer,  
Portfolio Manager

- Financial Services
- 26 years industry experience
- Joined in 2003



**Andrew S. Hadland\*, CFA**  
Director of Research,  
Portfolio Manager

- Technology
- 26 years industry experience
- Joined in 2002



**John L. Nelson\*, CFA,  
FSA Credential Holder**  
Sustainability Portfolio Specialist,  
Research Analyst

- Financial Services
- 20 years industry experience
- Joined in 2014



**Eric Jacobsohn\*, CFA,  
FSA Credential Holder**  
Sustainability Portfolio Specialist,  
Research Analyst

- Capital Goods, Materials, Energy
- 18 years industry experience
- Joined in 2017



**Bashir Ahmad**  
Research Analyst

- Consumer
- 23 years industry experience
- Joined in 2021



**Caleb Ezell**  
Research Analyst

- Healthcare
- 8 years industry experience
- Joined in 2022



**Lisa Carriere Jackson\***  
Research Analyst

- Utilities
- 26 years industry experience
- Joined in 2011

As of 9.30.22.  
\*Current Mesirow shareholder.



# MEM's relative value equity philosophy

## Our Investment Philosophy

*We believe the key to generating consistent investment returns is the selection of investment opportunities that possess attractive valuations and demonstrate identifiable catalysts that are expected to generate accelerating earnings and cash flow growth.*

*We actively incorporate environmental, social, and governance factors into our investment decisions to derive favorable performance and risk characteristics for our portfolios.*

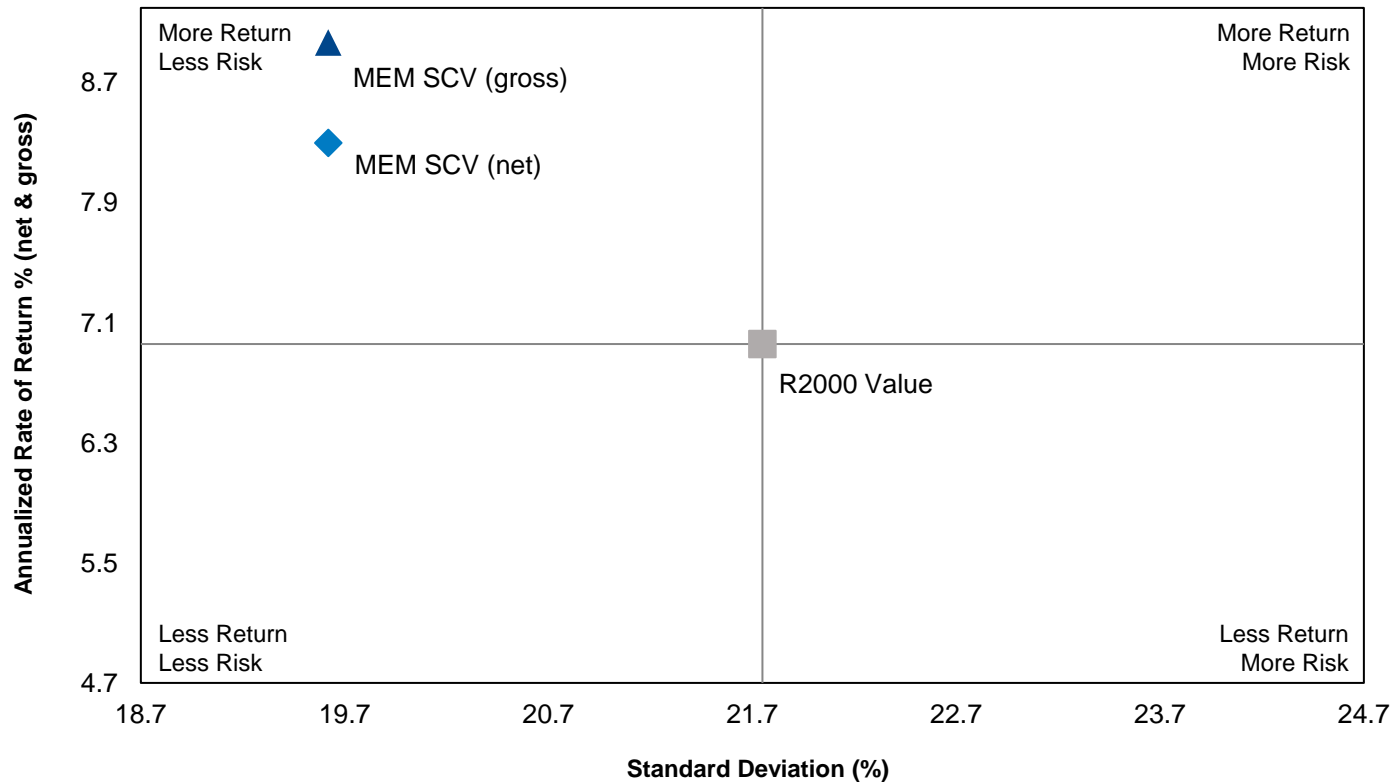
## Investment Objectives

- Generate attractive risk-adjusted returns
  - Goal is to generate 200-250bps of alpha with 80-90% of market risk
- Consistently outperform the benchmark over a market cycle
  - Outperformed in 13 of 16 years, including through 11.30.2022
- Participate in rising markets and protect capital in down markets
  - Expectation of greater than 90% upside capture combined with 80-90% downside capture

Past performance is not necessarily indicative of future results. Please see GIPS Reports at the end of this presentation for complete performance information, including net performance and for benchmark/index definitions.

# MEM Small Cap Value

## Attractive risk-adjusted returns portfolio team tenure



**SCV VS. R2000 VALUE**

Alpha	2.56
Beta	0.88
Info Ratio	0.51

Data from 1.1.04 – 9.30.22.

Source: eVestment. | Performance is annualized and shown gross and net of fees. Past performance is not necessarily indicative of future results. The information provided above is supplemental. Please see GIPS Reports at the end of this presentation for complete performance information, including benchmark/index definitions.

# Lower risk strategy has provided upside participation and downside protection

## As of September 30, 2022

MEM Small Cap Value eVestment universe rankings	QTD	YTD	ANNUALIZED			
			ONE YEAR	THREE YEARS	FIVE YEARS	TEN YEARS
Return percentile (gross) ranking	5	5	7	12	16	36
Information ratio percentile ranking	10	2	1	5	6	29

Risk metrics	STANDARD DEVIATION	RANK VS. SCV UNIVERSE	BETA	RANK VS. SCV UNIVERSE
MEM Small Cap Value Equity (net of fees)	19.60%	15	0.88	24
Russell 2000 Value Index	21.75%	59	1.00	73

Downside performance characteristics	DOWNSIDE CAPTURE	RANK VS. SCV UNIVERSE	DOWN PERIOD OUTPERFORMANCE BATTING AVERAGE	RANK VS. SCV UNIVERSE
MEM Small Cap Value Equity (net of fees)	83.11%	18	75%	20
Russell 2000 Value Index	100.00%	81	–	–

Note: Lower ranking versus Small Cap Universe represents lower risk profile (1=Best, 100=Worst)

For the period starting 1.1.04. Periods over 1 year are annualized.

Source: eVestment.

Past performance is not indicative of future results. eVestment percentile rankings are calculated gross of fees basis and includes reinvestment of all income. Performance information used to calculate risk & downside statistics is net of fees and includes reinvestment of all income. This is supplemental information only and compliments the composite presentation. Please see GIPS Reports at the end of this presentation for complete performance information, including net performance and for benchmark/index definitions.

# Investment process | a consistent, repeatable discipline



- **Fundamental analysis** identifies company-specific catalysts
- **Macro/sector catalysts** provide compass across sectors and industries
- **Construction of well diversified portfolio**

- **Selection criteria:**
  - Attractive valuation
  - Impending catalysts and strong fundamentals
  - Accelerating earnings and cash flow growth
- **Focused universe**
- **Extensive due diligence**
- **Quantitative and qualitative analysis**

- **70-90 holdings**
- Within the **market cap range** of the Russell 2000 or Russell 2500
- **Sector constraints:**
  - Greater of 2x the benchmark or 15% of portfolio
- **Security constraints:**
  - Limited to 3% of portfolio
  - Most holdings between 1-2%
- **High quality emphasis:**
  - High or improving ROIC
  - Strong financial flexibility
  - Strong management

- Proactively communicate with management teams to build awareness
- Encourage management to make incremental positive changes
- Discuss the importance of disclosure
- Routine follow up on progress and improvement

# Trends provide guidance for portfolio strategy

As of September 30, 2022

## Macro Overview

### Economic cycle

- Global economic activity is slowing
- US is marginally softer; Europe in more distress
- China activity stabilizes at lower levels
- Russia/Ukraine conflict creates risks to growth

### Monetary policy

- FED beginning to accelerate tapering process
- Fed Funds expected to increase to over 400bps
- EU/ECB balance sheet growth slowing
- Global central banks raise rates to fight inflation

### Fiscal/regulatory issues

- Fiscal spending slowing dramatically
- Odds for incremental infrastructure spending are extremely low
- No expected change in tax structure before mid-terms

### Portfolio positioning

- Looking for opportunities in more cyclical areas
- Removing/reducing European exposure with more U.S. concentration
- Rising \$USD could slow other economies
- Fundamentals more important as earnings slow
- Identifying opportunities beyond cyclical bounce
- Highlighting self-help strategies
- Emphasis on pricing power to offset incremental cost pressures

## Trends

### Industrial trends

- US industrial activity has slowed more meaningfully
- Supply chain gridlock exacerbated by war and COVID
- Input cost impact varies by end market
- Balance of early cycle cost beneficiaries and late cycle visibility

### Consumer trends

- Employment trends still positive
- Low-income workers spent savings
- Wage growth helps spending but trails inflation
- Spending shifting from hard goods to experiences
- Housing headwinds as rates and prices increase
- Bounce in autos as inventory is right-sized

### Secular trends

- Government funding for broadband and educational technology bridging the digital divide.
- Emphasis on healthcare companies that help reduce overall cost of care
- Increased electronic content in autos, capital equipment and medical devices drives demand for analog semiconductors.
- Cloud adoption driving investment in data center technologies
- Regulatory risk muted

### Other trends

- EPS revisions turning negative for 2H 2022 and 2023
- Multiples compression already reflects higher expected interest rates
- Moderation of inflation pushed into 2023

## Company Specific Drivers

- New product cycle or extensions
- New markets for existing products
- Internal restructuring
- Strength to execute through cycles
- Management changes
- Regulatory changes

The information above has been obtained from sources believed to be reliable but is not necessarily complete and its accuracy cannot be guaranteed. Any opinions expressed are subject to change without notice. Past performance is not indicative of future results. Please see the disclosures at the end of this presentation for additional, important information and for benchmark/index definitions.

# Consistent sell discipline

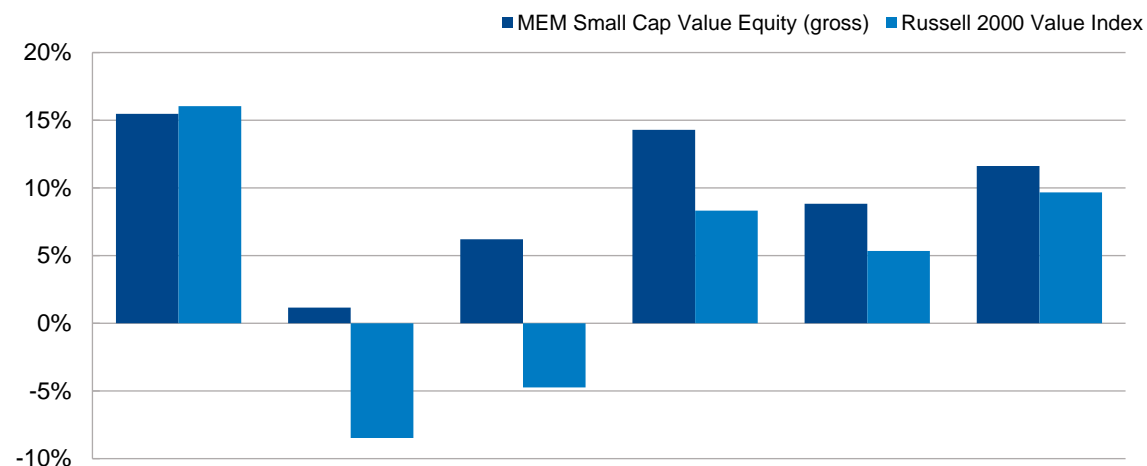
- **Price Derived**
  - Company meets specified price target with no new catalysts
  - Company exceeds product-defined market cap
- **Fundamentally Derived**
  - Catalysts fail or are extended beyond investment horizon
  - Material changes in industry/sector fundamentals
  - Stronger investment opportunity exists elsewhere
- **Risk Derived**
  - Monitor real-time macro/sector/company developments
  - Analyze performance of holdings in different environments
  - Adjust allocations to leverage portfolio strategy

The above-referenced securities and or companies have been included to illustrate the investment process utilized by MEM in the selection and liquidation of individual securities. The inclusion of these securities and or companies is not designed to convey a past specific security or company selected by MEM would have been profitable to any person. It should not be assumed that securities transactions made in the future will be profitable or will equal the performance of the securities described above. There can be no assurance that any expected returns mentioned will be achieved and materially different returns may be achieved.

# Small Cap Value performance and characteristics

# MEM Small Cap Value Equity strategy | Performance

For the period ending November 30, 2022



## Returns (%)

	QTD	YTD	ONE YEAR	THREE YEARS	FIVE YEARS	TEN YEARS
MEM Small Cap Value Equity (gross)	15.47	1.15	6.20	14.28	8.83	11.61
MEM Small Cap Value Equity (net)	15.38	0.70	5.68	13.71	8.28	11.02
Russell 2000 Value Index	16.03	-8.48	-4.75	8.32	5.34	9.66
<b>Relative performance (gross)</b>	<b>-0.56</b>	<b>9.63</b>	<b>10.95</b>	<b>5.96</b>	<b>3.49</b>	<b>1.95</b>
<b>Relative performance (net)</b>	<b>-0.65</b>	<b>9.18</b>	<b>10.43</b>	<b>5.39</b>	<b>2.94</b>	<b>1.36</b>

## Performance characteristics (gross)

	FIVE YEARS	TEN YEARS
Alpha	3.57	2.73
Beta	0.91	0.89
Information ratio	0.82	0.58

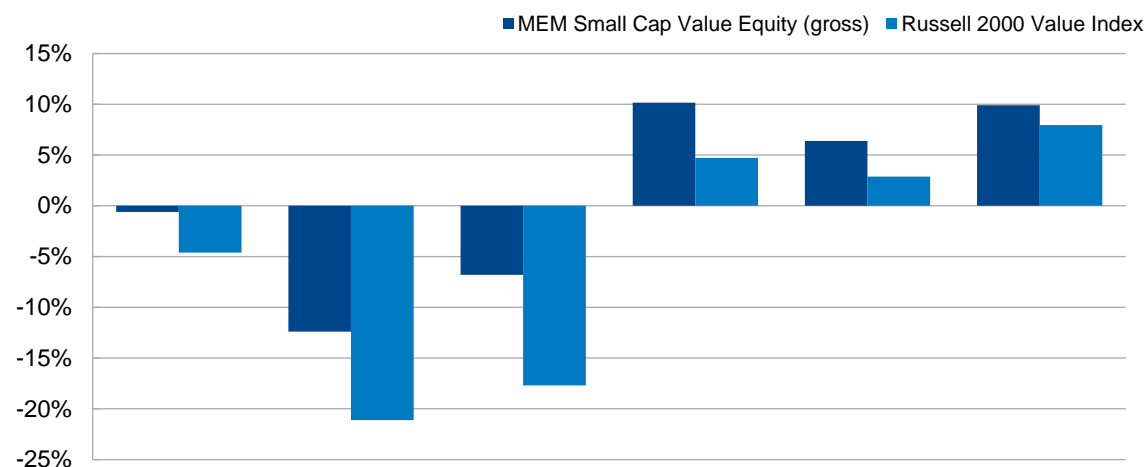
Note: Periods over 1 year are annualized.

Source: MEM, eVestment and Bloomberg. | Performance characteristics data based on quarterly observations and gross returns. | Performance results are shown gross and net of fees. Past performance is not necessarily indicative of future results. The information provided above is supplemental. Please see GIPS Reports at the end of this presentation for complete performance information, including benchmark/index definitions.



# MEM Small Cap Value Equity strategy | Performance

For the period ending September 30, 2022



Returns (%)	QTD	YTD	ONE YEAR	THREE YEARS	FIVE YEARS	TEN YEARS
MEM Small Cap Value Equity (gross)	-0.61	-12.40	-6.81	10.16	6.38	9.90
MEM Small Cap Value Equity (net)	-0.73	-12.72	-7.26	9.60	5.83	9.32
Russell 2000 Value Index	-4.61	-21.12	-17.69	4.72	2.87	7.94
<b>Relative performance (gross)</b>	<b>4.00</b>	<b>8.72</b>	<b>10.88</b>	<b>5.44</b>	<b>3.51</b>	<b>1.96</b>
<b>Relative performance (net)</b>	<b>3.88</b>	<b>8.40</b>	<b>10.43</b>	<b>4.88</b>	<b>2.96</b>	<b>1.38</b>

MEM Small Cap Value eVestment universe ranking	QTD	YTD	ONE YEAR	THREE YEARS	FIVE YEARS	TEN YEARS
Returns percentile ranking (gross)	5	5	7	12	16	36
Information ratio percentile ranking	10	2	1	5	6	29

Note: Periods over 1 year are annualized.

Source: MEM, eVestment and Bloomberg. | Performance characteristics data based on quarterly observations and gross returns. | Performance results are shown gross and net of fees. Past performance is not necessarily indicative of future results. The information provided above is supplemental. Please see GIPS Reports at the end of this presentation for complete performance information, including benchmark/index definitions.

# Sector weights & portfolio characteristics

As of September 30, 2022

Sector %	MEM SMALL CAP VALUE	RUSSELL 2000 VALUE INDEX
<b>Financial Services</b>	<b>33.6</b>	<b>39.8</b>
Financials	22.0	29.1
Real Estate	11.6	10.8
<b>Industrial Cyclicals</b>	<b>24.3</b>	<b>21.9</b>
Industrials	14.5	12.4
Energy	6.1	5.8
Materials	3.8	3.7
<b>Secular Growth</b>	<b>20.4</b>	<b>17.9</b>
Healthcare	13.2	12.1
Information Technology	7.2	5.8
<b>Consumer Groups</b>	<b>11.4</b>	<b>15.3</b>
Consumer Discretionary	8.3	9.6
Communication Services	1.5	3.0
Consumer Staples	1.6	2.7
<b>Utilities</b>	<b>5.8</b>	<b>5.1</b>
<b>Cash / Other</b>	<b>4.6</b>	<b>--</b>

Portfolio characteristics	MEM SMALL CAP VALUE	RUSSELL 2000 VALUE INDEX
Number of holdings	77	1,394
Forward price/earnings (median)	12.1x	12.2x
Year 2 EPS growth	13.0%	8.0%
Wtd. median market cap.	\$2.8 bn	\$1.8 bn
% of portfolio in Top 10	16.7%	4.7%

Source: MEM, BNY Mellon and Bloomberg.

Past performance is not necessarily indicative of future results. MEM sector weightings and portfolio characteristics are calculated from a representative account invested in the MEM Small Cap Value Equity mandate. The information provided above is supplemental. Please see GIPS Reports at the end of this presentation for complete performance information, including net performance and for benchmark/index definitions.

# MEM fee proposal

# MEM fee proposal for Massachusetts Water Resources Authority

## Standard fee schedule

### SEPARATE ACCOUNT

0.85%	On the first \$25 million
0.75%	On the next \$25 million
0.60%	On the next \$50 million
0.55%	On the balance

**\$20 million @ 0.85%      \$170,000 total**

## Proposed fee schedule

### SEPARATE ACCOUNT

0.70%	On the first \$10 million
0.65%	On the balance

**\$20 million @ 0.675%      \$135,000 total**

**Fee discount**  
relative to standard fee      **\$35,000**

### COLLECTIVE INVESTMENT TRUST

0.45%	Founders Class (First \$100 million)
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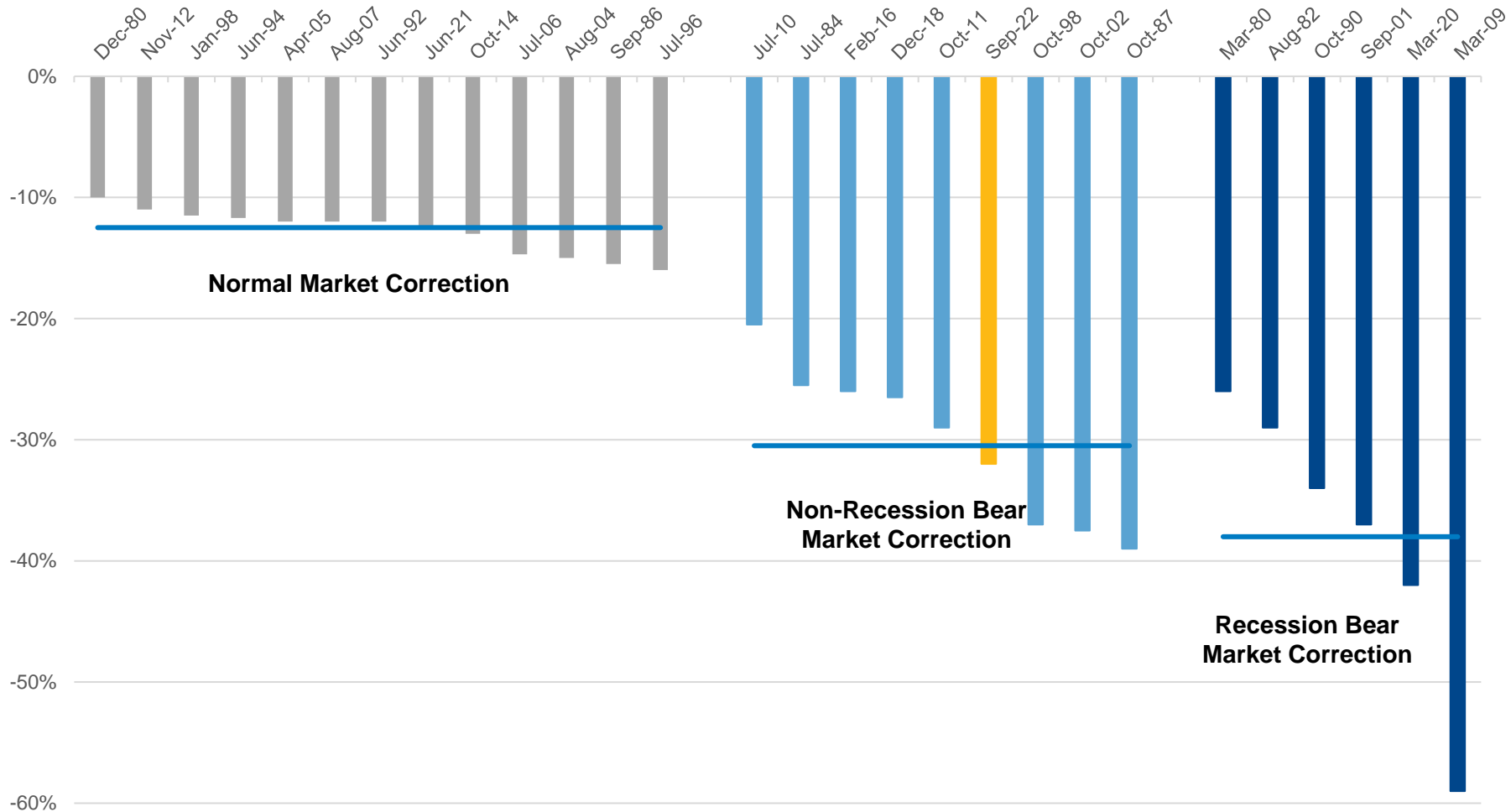
**\$20 million @ 0.45%      \$90,000 total**

**Fee discount**  
relative to standard fee      **\$80,000**

# Appendix

# Small caps down more than 30% have mostly discounted a recession

As of September 30, 2022



Source: MEM and Furey Research Partners.  
 Past performance is not indicative of future results. Please see the disclosures at the end of this presentation for additional, important information and for benchmark/index definitions.

# Small cap value | Relatively attractive vs large cap & growth

As of September 30, 2022

10-Year Annualized Returns	Value	Core	Growth
Large	9.2%	11.7%	13.7%
Mid	9.4%	10.3%	10.9%
Small	7.9%	8.6%	8.8%

Current P/E as % of 20-Year Average	Value	Core	Growth
Large	89%	98%	110%
Mid	82%	85%	97%
Small	78%	79%	67%

Relative P/E Russell 2000 vs. S&P 500



Source: MEM, FactSet, FTSE Russell, JP Morgan Asset Management, Bloomberg, and CSFB. The S&P 500 is a stock market index that tracks the stocks of 500 large-cap U.S. companies. Past performance is not indicative of future results. Please see the disclosures at the end of this presentation for additional, important information.

# Investment process | example

## Green Plains | GPRE

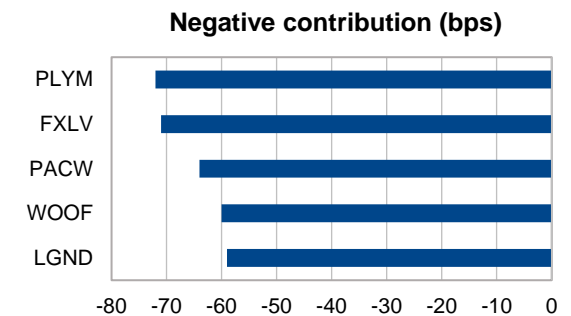
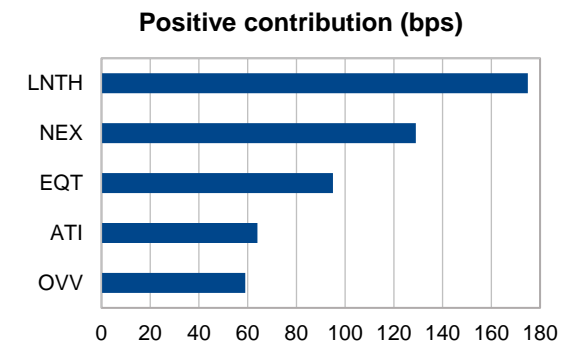
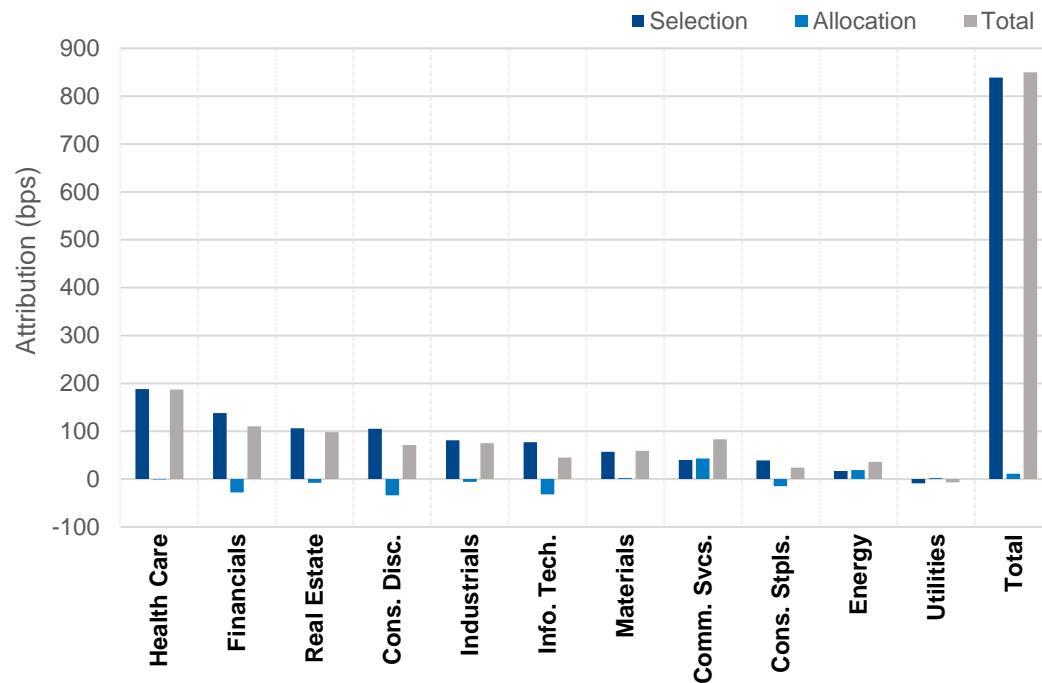
<b>Business Description</b>	<b>Traditionally, a leading commodity corn processing business (ethanol producer with dried distiller grain byproduct), GPRE is transitioning into a value-added corn agriculture derivative products company focused on innovative high-protein food ingredients and other less cyclical products (specialty alcohols and renewable diesel) that command higher margins.</b>
<b>Purchase Price</b> <b>Initial Target Price</b>	\$23.60 \$55.00 – Driven by both higher levels of EBITDA and a higher multiple from added stability
<b>Micro-Level Catalysts</b>	<ul style="list-style-type: none"> <li>• New product initiatives changes the organic growth profile from 0% to ~7%</li> <li>• Step-up in production of high-protein ingredients create significant EBITDA growth with EBITDA margins moving from low single digits to mid double digits by 2024</li> <li>• Opportunity to sell protein feed into higher-value markets (pet, aqua, &amp; dairy) increasing price/ton realization and adding incremental upside to EBITDA projections</li> <li>• Converting 2 of 13 ethanol plants to produce corn sugar technologies at higher price/gallon potentially driving an extra \$100MM of EBITDA</li> <li>• Minority ownership of Fluid Quip technology expected to increase yields for both corn oil and protein feed</li> </ul>
<b>Macro-Level Drivers</b>	<ul style="list-style-type: none"> <li>• General recovery in energy prices as demand improves and inflation expectations rise</li> <li>• Higher corn and soybean oil prices driven by increased demand for renewable diesel</li> <li>• Increased demand for protein-based products driven sourced from sustainable, animal-free methods</li> <li>• Business reclassification from commodity ethanol to agriculture technology &amp; food ingredients</li> <li>• Increased demand for clean burning energy</li> </ul>
<b>Return Expectations</b>	Expected return of 133% far exceeds minimum return requirements of 20%. Bear-case price target of mid-teens and best-case price target in the mid-70s creates dramatically positive risk/return trade-off.

The above-referenced securities and or companies have been included to illustrate the investment process utilized by MEM in the selection and liquidation of individual securities. The inclusion of these securities and or companies is not designed to convey a past specific security or company selected by MEM would have been profitable to any person. It should not be assumed that securities transactions made in the future will be profitable or will equal the performance of the securities described above. There can be no assurance that any expected returns mentioned will be achieved and materially different returns may be achieved.



# MEM Small Cap Value Equity

Attribution analysis vs Russell 2000 Value Index as of September 30, 2022 | YTD



## Return (%)

Small Cap Value	-4.6	-11.1	-21.8	-26.4	-19.8	-19.8	-16.0	-18.3	-7.4	38.1	-10.5	<b>-12.4</b>
Russell 2000 Value	-26.1	-18.2	-29.7	-35.9	-24.5	-30.1	-27.6	-42.9	-16.3	36.4	-9.1	<b>-21.1</b>

## Sector weights (%)

Small Cap Value	10.7	20.9	11.1	9.3	15.2	7.8	4.4	1.8	1.5	7.3	5.6	--
Russell 2000 Value	9.8	27.0	11.5	8.2	14.3	5.5	4.3	3.3	3.0	7.9	5.3	--

Source: MEM and Bloomberg.

Past performance is not necessarily indicative of future results. Please see GIPS Reports at the end of this presentation for complete performance information, including net performance and for benchmark/index definitions.

# Bios

## Investment team



**Kathy A. Vorisek**  
Senior Managing Director, Head of Equity Management & Portfolio Manager

As Head of Equity Management, Kathryn Vorisek directs the business and operations of Mesirow Equity Management. Kathy is a Portfolio Manager for the Small Cap Value and SMID Cap Value strategies, a role she has held since 1998. Kathy has over 35 years of industry experience. She joined Mesirow when the firm acquired Fiduciary Management Associates in 2016. At FMA, Kathy was also Senior Managing Director, Chief Investment Officer and Portfolio Manager for the Small Cap Value and SMID Cap Value strategies. Prior to joining FMA, she worked for Duff & Phelps Investment Research in Chicago. Kathy is a member of Mesirow's Board of Directors, which is responsible for overseeing the strategic direction of the firm. She is also a member of the CFA Institute, the Economics Club of Chicago, the Marquette University Finance Department Advisory Board, Women Investment Professionals, and a former board member of the CFA Society of Chicago. Kathy guides the firm's participation in the Big Shoulders Fund's "Stock Market Program" which provides education on the concepts of investing to eighth grade students in the neediest areas of inner-city Chicago and was named one of Crain's 2019 Notable Women Executives over 50. Kathy earned a BS in Finance from Marquette University and an MBA with dual concentration in Finance and International Business from the Kellogg Graduate School of Management at Northwestern University.



**Leo Harmon, CFA, CAIA**  
Senior Managing Director, Chief Investment Officer, Portfolio Manager & Chairman Emeritus of the Inclusion Council

Leo Harmon is Senior Managing Director of Mesirow Equity Management. As Chief Investment Officer, he oversees all aspects of the investment process. Leo is a Portfolio Manager for the Small Cap Value and SMID Cap Value strategies, directing the firm's research efforts. He also has analyst responsibility for bank-related companies within the Financial Services sector. Additionally, Leo serves as Chairman Emeritus of Mesirow's Diversity, Equity, and Inclusion Council which helps direct DE&I initiatives, policies, and practices for the firm. Leo has more than 25 years of industry experience. He joined Mesirow when the firm acquired Fiduciary Management Associates in 2016. At FMA Leo was Director of Research, Portfolio Manager for the Small Cap Value and SMID Cap Value strategies and a Research Analyst covering the Financial Services sector. Prior to joining FMA in 2003, he was a Portfolio Manager at Allstate Insurance, Allstate Investments LLC. Leo is a member of the National Association of Securities Professionals and the Economics Club of Chicago. He is also a member of the CFA Society of Chicago where he was appointed to the board of directors and served as Chairman. Leo has served as Chairman on the External Investment Committee for the Office of the Illinois State Treasurer. He facilitates the firm's curriculum in the Big Shoulders Fund's "Stock Market Program" which provides education on the concepts of investing to eighth grade students in the neediest areas of inner-city Chicago. Leo earned a Bachelor of Science in finance from Bradley University and a Master of Business Administration with a concentration in finance from the Fuqua School of Business at Duke University. He is a CFA® charterholder and a member of the CFA Institute.



**Andrew S. Hadland, CFA**  
Managing Director, Portfolio Manager, Director of Research

Andrew Hadland is a Managing Director in Mesirow's Equity Management group. He serves as Director of Research and Research Analyst for the small cap value and small-mid cap value strategies and provides coverage for the technology and consumer sectors. Andrew has more than 25 years of industry experience. Prior to joining Mesirow in 2016, he was a Managing Director and Research Analyst for Fiduciary Management Associates, LLC, which was acquired by Mesirow. Before that, he served as a Senior Equity Analyst at The Northern Trust Company and a Senior Analyst and Co-Portfolio manager at Conesco Capital Management. Andrew is a CFA® charterholder and member of the CFA Society of Chicago and the CFA Institute. In addition, he provides significant contribution to the firm's participation in the Big Shoulders Fund's "Stock Market Program" which provides education on the concepts of investing to eighth grade students in the neediest areas of inner-city Chicago. Andrew earned a BS in finance from Miami of Ohio University and an MBA with dual concentration in finance and equity valuation from the Kelley School of Business at Indiana University.

## Investment team



**John L. Nelson, CFA,**  
FSA Credential Holder  
Managing Director, Research Analyst, Sustainability Portfolio Specialist

John Nelson is a Managing Director in Mesirow’s Equity Management group. He serves as a Research Analyst and sustainability Portfolio Specialist for the small cap value & small-mid cap value strategies and provides coverage for the financial services sector. John has more than 19 years of industry experience. Prior to joining Mesirow in 2016, he was a Director and Research Analyst for Fiduciary Management Associates, LLC, which was acquired by Mesirow. Before that, he served as an equity Research Analyst and Portfolio Manager at Gofen and Glossberg as well as an equity Research Analyst at William Blair & Company. John is a CFA® charterholder, member of the CFA Society of Colorado and the CFA Institute, and earned the FSA Credential from the Sustainability Accounting Standards Board. In addition, he provides significant contribution to the firm’s participation in the Big Shoulders Fund’s “Stock Market Program” which provides education on the concepts of investing to eighth grade students in the neediest areas of inner-city Chicago. John earned a BA in political science and international affairs from the University of Nebraska and an MBA with dual concentration in finance and accounting from the Kelley School of Business at Indiana University.



**Eric M. Jacobsohn, CFA**  
FSA Credential Holder  
Managing Director, Research Analyst, Sustainability Portfolio Specialist

Eric Jacobsohn is a Managing Director in Mesirow’s Equity Management group. He serves as a Research Analyst and sustainability Portfolio Specialist for the small cap value and small-mid cap value strategies and provides coverage for materials and industrial-related companies. Eric has more than 17 years of industry experience. Prior to joining Mesirow in 2017, he was at Calamos Investments where he was responsible for leading the research effort for U.S. cyclicals. In this capacity, he conducted top-down and fundamental analysis on applicable sectors and made portfolio recommendations for potential investments. Before that, he was a buy-side senior equity Research Analyst at Columbia Wanger Investment Management and has also held analyst roles at William Blair & Company and Robert W. Baird & Company. Eric is a CFA® charterholder, a member of the CFA Society of Chicago and the CFA Institute and earned the FSA Credential from the Sustainability Accounting Standards Board. Eric earned a BBA in finance and real estate from the University of Wisconsin, and an MBA from the University of Chicago Booth School of Business.



**Bashir Ahmad**  
Managing Director, Research Analyst

Bashir Ahmad is a Managing Director in Mesirow Equity Management. He serves as a Research Analyst for the small cap value and small-mid cap value strategies and provides coverage for the consumer sector. Bashir has more than 20 years of industry experience. Prior to joining Mesirow in 2021, he was the Consumer Sector Head and a Senior Consumer Equity Analyst at Concentric Capital Strategies and Millennium Management, respectively. Before that, he served as a Senior Equity Analyst at Cupps Capital Management. He also previously worked in Private Equity at CapitalSpring, and in Investment Banking at Morgan Stanley and JPMorgan. Bashir earned a Bachelor of Arts, cum laude in biochemistry and geology with a minor in economics from Vassar College, and a Master of Business Administration from The Wharton School at the University of Pennsylvania.

## Investment team



**Caleb Ezell**  
Senior Vice President, Research Analyst

Caleb Ezell is a Senior Vice President in Mesirow Equity Management. Caleb has more than 5 years of financial industry experience and over 8 years of experience in the health care industry. Prior to joining Mesirow in 2022, Caleb was a Specialty Pharmaceuticals Analyst at Jefferies. Before that, he was at Stephens Inc. where he served as an Equity Research Associate covering Healthcare Services. Prior to that role he served as Director of Business Development at Claris Healthcare Inc, a digital healthcare startup, based out of Vancouver. He also previously worked at Serco Inc. while on contract with the US Patent and Trademark Office and was a Pre-Doctoral Fellow at the Center of Biomedical Research Excellence in Natural Product Neuroscience. Caleb earned a Bachelor of Arts in biochemistry and philosophy from the University of Mississippi.



**Lisa Carriere Jackson**  
Vice President, Research Analyst

Lisa Carriere Jackson is a Vice President and Research Analyst in Mesirow's Equity Management group. She has more than 21 years of industry experience. Prior to joining Mesirow in 2016, Lisa was employed at Fiduciary Management Associates, LLC, which was acquired by Mesirow. Before that, she served as a Vice President at Northern Trust Global Investments. She also previously worked at Chicago Equity Partners and SEI Investments. Lisa earned a BBA in finance from Loyola University and an MBA from DePaul University – Kellstadt Graduate School of Business.

## Global investment management distribution



**Thomas F. Hynes**  
Senior Managing Director

Tom Hynes is a senior managing director on Mesirow's Global Investment Management Distribution team. He leads the team responsible for marketing and distribution of the firm's investment capabilities to institutional investors and investment consultants in North America. Prior to his current position, Tom worked as an Investment Associate in Mesirow Private Equity, where he was responsible for due diligence and valuation analysis on direct investment opportunities. Prior to joining Mesirow in 1997, he worked in the Real Estate Asset Management division at the First National Bank of Chicago. Tom is a board member of Link Unlimited Scholars and serves on the Finance Committee for CURE (Citizens United for Research in Epilepsy). Tom earned a Juris Doctor, cum laude, from the University of Chicago Law School, a Bachelor of Arts with honors from the University of Notre Dame and an Master of Business Administration from The Kellogg School of Management at Northwestern University.

# Mesirow Financial Investment Management, Inc.

## MEM Small Cap Value Equity Composite – GIPS report

### Gross and Net of Fees Total Returns from January 1, 2012 – September 30, 2022

Year	Year End			Annual Performance Results					3-yr Annualized Dispersion		
	No. of portfolios	Composite Asset at end of period (\$MM)	Total Firm Assets <sup>(1)</sup> (\$MM)	MEM (gross) Composite (%)	MEM (net) Composite (%)	Russell 2000 Value Index (%)	Russell 2000 Index <sup>(2)</sup> (%)	Composite Dispersion (%)	MEM (gross) Composite (%)	Russell 2000 Value Index (%)	Russell 2000 Index (%)
2012	23	1,060	n/a	11.71	11.07	18.05	16.35	0.03	19.19	19.89	20.20
2013	20	1,243	n/a	36.27	35.54	34.52	38.82	0.04	15.62	15.82	16.45
2014	21	1,259	n/a	6.51	5.93	4.22	4.89	0.04	11.54	12.79	13.12
2015	20	1,077	n/a	0.27	-0.26	-7.47	-4.41	0.05	12.57	13.46	13.96
2016	18	1,091	1,684	15.76	15.13	31.74	21.31	0.05	14.37	15.50	15.76
2017	15	976	1,477	14.51	13.88	7.84	14.65	0.03	12.60	13.97	13.91
2018	15	659	789	-14.96	-15.42	-12.86	-11.01	0.04	15.00	15.76	15.79
2019	11	516	678	24.37	23.73	22.39	25.52	0.05	14.86	15.68	15.71
2020	7	501	722	8.46	7.89	4.63	19.96	0.06	23.99	26.12	25.27
2021	9	646	886	30.39	29.74	28.27	14.82	0.09	22.60	25.00	23.35
<b>2022 YTD</b>	<b>6</b>	<b>493</b>	<b>724</b>	<b>-12.40</b>	<b>-12.72</b>	<b>-21.12</b>	<b>-25.10</b>	<b>n/a</b>	<b>23.30</b>	<b>26.11</b>	<b>25.11</b>

#### Current Performance Results - PRELIMINARY

Mesirow Equity Management ("MEM") claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. MEM has been independently verified for the periods 01.01.1996 - 12.31.2021. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The Small Cap Value Equity Composite has had a performance examination for the periods 01.01.2016 - 12.31.2021. The verification and performance examination reports are available upon request.

Benchmark returns are not covered by the report of independent verifiers.

Effective 07.01.2022, MEM transferred its assets and associated composites to Mesirow Institutional Investment Management, Inc. ("MIIM"), a registered investment advisor (RIA) registered with the Securities and Exchange Commission under the Investment Advisors Act of 1940. Prior to 07.01.2022, MEM's assets and associated composites were part of Mesirow Financial Investment Management, Inc. ("MFIM"). The historical performance presented prior to the creation of MFIM was managed by MFIM or its predecessor firms prior to 01.01.2005. For purposes of claiming GIPS compliance, as of 01.01.2010 the "Firm" was further defined as the US Value Equity business unit, now defined as MEM which manages portfolios primarily for institutional investors adhering to an investment process incorporating fundamental analysis of security valuation factors and drivers. The composites within this unit vary primarily by the capitalization range of the equity securities held. MEM is comprised of the legacy entities of Mesirow Financial Investment Management - US Value Equity (the surviving entity) and Fiduciary Management Associates, LLC (the acquired entity), with each prior to this effective date being held out to the public as separate firms, and each claiming compliance with the GIPS Standards. Effective 04.01.2016, the firm was redefined and renamed for GIPS purposes to include both the legacy Mesirow Financial Investment Management - US Value Equity division and the legacy Fiduciary Management Associates, LLC division as one combined entity.

In 2016, MFIM acquired the asset management rights for all managed portfolios from an independent investment advisory firm and retained all of the principals and employees related to such portfolios. Performance results of the Small Cap Value Equity Composite at the prior firm are the performance record of the Firm.

(1) Total Firm Assets are not presented for periods prior to 2016 because the Composite was not part of the Firm.

Performance and composite inception and creation date is 07.01.1994.

# Disclosure

The Small Cap Value Equity Composite includes all institutional portfolios that invest in the small capitalization strategy with a minimum initial account size of \$1,000,000. The strategy allows for investments in equity securities of companies with market capitalizations in a range representative of constituents in the Russell 2000 Index. The strategy aims to deliver a total return primarily through long-term capital appreciation. The benchmarks for the strategy are the Russell 2000 Index and the Russell 2000 Value Index. The performance presented herein represents past performance and is no guarantee of future results. Gross returns presented are net of any withholding taxes incurred. MEM and benchmark performance reflect the reinvestment of dividends and interest income, expressed in U.S. dollars. Results are based on fully discretionary accounts under management, including those accounts no longer with the firm. The composite policy requires the temporary removal of any portfolio incurring a client-initiated significant inflow or outflow of 10% of portfolio assets. The firm maintains a complete list of composite descriptions, a list of pooled fund descriptions for limited distributions pooled funds and a list of broad distributions pooled funds, which is available upon request. Policies for valuing investments, calculating performance, and preparing GIPS Reports are available upon request.

Balanced portfolio segments were included in this composite prior to 10.01.1999 and cash was equally distributed among asset segments in their respective composites. On 06.30.2008, MEM redefined the requirements for membership in the composite to exclude accounts or carve-out segments of accounts with client mandated cash allocations in excess of 5%. The membership of this composite did not change as a result of this redefinition. On of 04.01.2009, MEM redefined the requirements for membership in the composite to exclude all carve-out accounts. The membership of this composite did not change as a result of this redefinition.

## Calculation of Risk Measures: Annual / 3 Years Dispersion

Composite internal dispersion is calculated using the asset-weighted standard deviation of annual gross returns of those portfolios that were included in the composite for the entire year. Because it is not statistically meaningful, MEM does not calculate the dispersion of annual returns for the years the composite held five or fewer accounts. Inclusion of the three-year annualized ex-post standard deviation of the composite and benchmark was added as a requirement effective 12.31.2011.

## Performance / Net of Fee Disclosure

Net of fee performance is calculated using the actual monthly fee accrued to each account in the composite as of 01.01.2010. Prior to 01.01.2010, Net of fee performance was calculated using the highest actual management fee charged to a member of the composite during the calendar year, applied monthly. Performance information that is provided gross of fees does not reflect the deduction of advisory fees. Client returns will be reduced by such fees and other expenses that may be incurred in the management of the account. Advisory fees are described in Part 2 of Form ADV of MIIM.

In presentations shown prior to 09.30.2014, net of fee performance was calculated using the actual monthly fee accrued to each account in the composite as of 04.01.2014. Prior to 04.01.2014, Net of fee performance was calculated using the highest actual management fee charged to a member of the composite during the calendar year, applied monthly.

10.01.2011 - 03.31.2014 the annual fee rate used was 0.95% which was the highest fee.  
 06.01.2011 - 09.30.2011 the annual fee rate used was 1.00%  
 01.01.2010 - 05.31.2011 the annual fee rate used was 0.90%  
 01.01.2008 - 12.31.2009 the annual fee rate used was 0.80%  
 prior to 01.01.2008 the annual fee rate used was 0.79%

## Investment Fee Disclosure

MEM requests that any third party, including investment management consultants, provide our performance data only on a one-on-one basis. Performance results are presented before management and custodial fees. As described in MEM's Form ADV, Part 2, investment management fees for the Small Cap Equity Strategy are:

0.85% on the first \$25 million  
 0.75% on the next \$25 million  
 0.60% on the next \$50 million  
 0.55% on the balance

An actual fee charged to an individual portfolio may vary by size and type of portfolio. Fees are collected quarterly, which produces a compounding effect on the total rate of return net of management fees. As an example, the effect of investment management fees on the total value of a client's portfolio assuming (a) \$1,000,000 investment, (b) portfolio return of 8% a year, and (c) 0.85% annual investment advisory fee would reduce the portfolio's value by \$8,892 in the first year, by \$51,223 over five years and \$123,351 over 10 years. Actual investment advisory fees incurred by clients will vary.

## Benchmark Definitions

The Russell 3000® Index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market. The Russell 2000 Index® offers investors access to the small-cap segment of the U.S. equity universe. The Russell 2000 is constructed to provide a comprehensive and unbiased small-cap barometer and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set. The Russell 2000 includes the smallest 2000 securities in the Russell 3000.

The Russell 2000 Value Index® offers investors access to the small-cap value segment of the U.S. equity universe. The Russell 2000 Value is constructed to provide a comprehensive and unbiased barometer of the small-cap value market. Based on ongoing empirical research of investment manager behavior, the methodology used to determine value probability approximates the aggregate small-cap value manager's opportunity set. (Source: Russell).

These indexes have been displayed as comparisons to the performance of the Small Cap Value Equity Composite.

(2) Additional Information.

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GLOBAL INVESTMENT MANAGEMENT

CAPITAL MARKETS & INVESTMENT BANKING

ADVISORY SERVICES

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Presentation to

# MWRA Retirement System

December 14, 2022

Presented by:

Chris Wallis, CFA - CEO & CIO

Mark Farrell - Managing Director, Business Development

600 Travis St., Suite 3800  
Houston, TX 77002  
713-224-2545

180 N. Stetson Ave., Suite 5525  
Chicago, IL 60601  
312-767-1803



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VAUGHAN  
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## **FIRM OVERVIEW**

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# FIRM OVERVIEW

Why Vaughan Nelson?

We believe investing is about

**offsetting future obligations**

not just having market exposure.



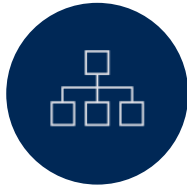
**Focus on a targeted return.** We seek investments which have the ability to generate a 50% return over three years



**We trade time for value.** A longer time horizon allows us to exploit short-term volatility and poor short-term price discovery

# FIRM OVERVIEW

Providing Financial Wellbeing Through Superior Performance



## ORGANIZATION

Founded 1970

\$12.7\* billion under management as of 9/30/2022

Domestic Equity  
International Equity  
Global Equity  
Fixed Income



## PEOPLE

54 employees

22 investment team professionals

13 Chartered Financial Analyst designations

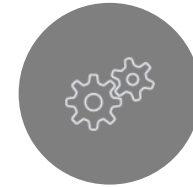
3 Ph.D.s



## PHILOSOPHY

Concentrated, high-conviction, high-active share

Temporary inefficiencies and time arbitrage create long-term opportunities



## PROCESS

Unconstrained benchmark agnostic

Rigorous, bottom-up fundamental analysis

Macro environment impacts security selection and construction

\* Number includes assets where Vaughan Nelson Investment Management does not have full unconditional trading authority. The assets consist of model portfolio relationships with third-party platforms and totaled \$1.7 billion as of 9/30/2022.

# FIRM OVERVIEW

Our Equity Strategies

## SMALL CAP VALUE

- **Benchmarked against the Russell 2000® Value Index**
- **Generally 55 to 85 positions**

## VALUE OPPORTUNITY

- Benchmarked against the Russell Midcap® Value Index and Russell 2500™ Value Index
- Generally 55 to 75 positions

## SELECT

- Benchmarked against the Russell 3000® Index and S&P 500 Index
- Generally 20 to 40 positions

## GLOBAL SMID CAP

- Benchmarked against the MSCI ACWI SMID Cap Index
- Generally 40 to 80 positions

## INTERNATIONAL SMALL CAP

- Benchmarked against the MSCI EAFE Small Cap Index
- Generally 60 to 80 positions

## EMERGING MARKETS

- Benchmarked against the MSCI Emerging Markets SMID Index
- Generally 60 to 80 positions

# FIRM OVERVIEW

## Representative List of Institutional Clients

<b>NON-PROFIT</b>	Board of Higher Education, United Methodist Church Hamill Foundation Methodist Hospital Roman Catholic Diocese of Orange Texas Medical Association The Community Foundation of Louisville Trull Foundation University of Dallas Wortham Foundation
<b>PUBLIC</b>	Austin Fire Fighters Relief and Retirement Fund Cobb County Employees' Retirement System Florida State Board of Administration Gwinnett County Public Employees Retirement System Teacher Retirement System of Texas
<b>CORPORATE</b>	Baxter International Hess Corporation Principal Global Investors Stewart Title

It is not known whether the listed clients approve or disapprove of the advisor or the advisory services provided. This is a list of institutional clients whose investment management is a matter of public record, selected because it was believed that their names would be recognized by prospective clients, without regard to performance-based criteria.



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**OUR TEAM**

# OUR TEAM

## Equity Investment Team

Portfolio Management	Title	Primary Strategy	Investment Experience	Joined Firm
<b>Dennis Alff, CFA</b>	Senior Portfolio Manager	Value Opportunity	25 years	2006
<b>Stephen Davis, CFA</b>	Portfolio Manager	Small Cap Value	17 years	2010
<b>James Eisenman, CFA, CPA</b>	Portfolio Manager	Global SMID, Small Cap Value	20 years	2005
<b>Chad Fargason, PhD</b>	Senior Portfolio Manager	Value Opportunity	22 years	2013
<b>Marco Priani, CFA, CPA</b>	Senior Portfolio Manager	International, Global SMID	21 years	2019
<b>Kevin Ross, CFA</b>	Senior Portfolio Manager	International, Global SMID	16 years	2019
<b>Chris Wallis, CFA, CPA</b>	CEO, CIO, Senior Portfolio Manager	Small Cap Value	30 years	1999
<b>Scott Weber, CFA</b>	Senior Portfolio Manager	Select	26 years	2003
Research	Title	Primary Strategy	Investment Experience	Joined Firm
<b>Benjamin Carrier, CFA</b>	Associate	Small Cap Value	8 years	2016
<b>Tyler Fry, CFA</b>	Associate	Select	8 years	2016
<b>Sundeep Khanna, CFA</b>	Vice President	Value Opportunity	17 years	2020
<b>Earl Lee, CFA</b>	Associate	Small Cap Value	10 years	2022
<b>Masa Matsumura, PhD</b>	Vice President	International, Global SMID	12 years	2020
<b>Adam Rich, CFA</b>	Vice President	Select	12 years	2016
<b>Corrine Richter</b>	Associate	Select	1 year	2021
<b>Zhongjie (Matt) Wang</b>	Associate	International, Global SMID	3 years	2022
Risk Management	Title	Primary Strategy	Investment Experience	Joined Firm
<b>Isabelle Long</b>	Associate	All Strategies	< 1 year	2022
<b>William Wojciechowski, PhD</b>	Chief Risk Officer	All Strategies	20 years	2007
ESG Analytics	Title	Primary Strategy	Investment Experience	Joined Firm
<b>Sean Lechleiter</b>	Senior Associate	All Strategies	5 Years	2022
Trading	Title	Primary Strategy	Investment Experience	Joined Firm
<b>J. D. Michael</b>	Senior Vice President	All Strategies	29 years	2006
<b>Allyson Percy</b>	Managing Director	All Strategies	24 years	1999

# OUR TEAM

## Small Capitalization Value Investment Team



**Chris Wallis, CFA, CPA**  
**CEO and CIO, Senior Portfolio Manager**

- 30 years investment management / financial analysis and accounting experience
- MBA, Harvard Business School, 1998
- BBA, Baylor University, 1991



**Benjamin Carrier, CFA**  
**Associate**

- 8 years financial analysis and accounting experience
- BBA, Baylor University, 2014, *cum laude*



**Stephen Davis, CFA**  
**Portfolio Manager**

- 17 years investment management and research experience
- BA, Rice University, 2005, *cum laude*

**Earl Lee, CFA**  
**Associate**

- 10 years investment management and financial analysis experience
- MBA, The University of Texas at Austin, 2012
- BS, Purdue University, 2007



**James Eisenman, CFA, CPA**  
**Portfolio Manager**

- 20 years financial services and accounting experience
- MAcc, Ohio State University, 2002, with Honors
- BBA, Ohio State University, 2002, with Honors

**Isabelle Long**  
**Associate**

- BS, Texas A&M University, 2022



**William Wojciechowski, PhD**  
**Chief Risk Officer**

- 20 years investment management and financial analysis experience
- PhD, Rice University, 2001
- MA, Rice University, 1999
- MS, West Virginia University, 1996
- BS, Carnegie Mellon University, 1992

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## STRATEGY PROFILE

# STRATEGY PROFILE

Consistency of Returns and Risk

eVestment U.S. Small Cap Value Universe Percentile Rank (9/30/22)					
	1 year	3 Years	5 Years	10 Years	Since Inception
<b>Returns (Gross)</b>	8	25	13	16	8
<b>Information Ratio</b>	14	32	20	21	7
<b>Sharpe Ratio</b>	7	13	9	6	1

All periods longer than 12 months are annualized. Performance data shown represents past performance and is not a guarantee of future results. See page 15 for disclosures.  
Source: GPS

# STRATEGY PROFILE

Investment Results as of 11/30/2022 (preliminary based on model)

## Investment Objective

- Long term capital appreciation through investments in small capitalization companies with a focus on a targeted return

## Investment Focus

- Companies within the market capitalization range of the Russell 2000 Value Index at time of purchase
- Companies earnings a positive return on capital, valued at a discount to their asset value or with an attractive dividend yield
- Companies that have the potential for 50% returns over a three year investment horizon

**Past performance is no guarantee of future results.**

	QTD	YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception 12/31/1999
<b>Small Cap Value (Gross)</b>	-15.58%	-2.80%	3.29%	12.99%	8.90%	9.89%	12.49%	13.65%
<b>Russell 2000 Value Index</b>	-16.03%	-8.48%	-4.75%	8.33%	5.35%	8.44%	9.67%	9.14%

All returns are presented gross-of-fees and all periods longer than 12 months are annualized.

Rounding may affect figures.

See next page for detailed composite information.

Source: OP-os



# STRATEGY PROFILE

Investment Results as of 9/30/2022

## Investment Objective

- Long term capital appreciation through investments in small capitalization companies with a focus on a targeted return

## Investment Focus

- Companies within the market capitalization range of the Russell 2000 Value Index at time of purchase
- Companies earnings a positive return on capital, valued at a discount to their asset value or with an attractive dividend yield
- Companies that have the potential for 50% returns over a three year investment horizon

**Past performance is no guarantee of future results.**

	3Q 2022	YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception 12/31/1999
<b>Small Cap Value (Gross)</b>	-4.14%	-16.02%	-7.17%	8.33%	6.66%	8.53%	10.87%	13.04%
<b>Small Cap Value (Net)</b>	-4.38%	-16.66%	-8.10%	7.26%	5.60%	7.46%	9.78%	11.94%
<b>Russell 2000 Value Index</b>	-4.61%	-21.12%	-17.69%	4.72%	2.87%	7.42%	7.94%	8.50%

All returns are presented gross/net-of-fees and all periods longer than 12 months are annualized.

Rounding may affect figures.

See next page for detailed composite information.

Source: OP-os

## Small Capitalization Value: GIPS® Composite Returns

December 31, 1999 through September 30, 2022

Past performance is no guarantee of future results.

Year	Composite (Gross)	Composite (Net)	R2000V Index	Number of Portfolios	Dispersion at End-of-Period (Std Dev)	Composite Assets at End-of-Period (\$MM-USD)	Total Firm Assets (ex. model assets) (\$MM-USD)	Entity Assets* (\$MM-USD)	Std Dev Composite (3-Yr Annlzd)	R2000V Index (3-Yr Annlzd)
YTD 2022	-16.02%	-16.66%	-21.12%	60	N/A	1,765	10,950	12,656	22.92%	26.11%
2021	32.54%	31.26%	28.27%	67	0.26%	2,340	13,490	15,481	21.82%	25.00%
2020	9.82%	8.60%	4.63%	64	1.16%	2,571	12,690	14,052	23.18%	26.12%
2019	25.95%	24.64%	22.39%	72	0.35%	2,712	11,346	13,064	14.18%	15.68%
2018	-13.59%	-14.47%	-12.86%	87	0.38%	2,663	10,078	11,425	14.15%	15.76%
2017	7.77%	6.71%	7.84%	101	0.21%	3,780	11,675	13,172	12.78%	13.97%
2016	21.37%	20.18%	31.74%	109	0.86%	3,944	11,572	12,912	13.69%	15.50%
2015	0.99%	-0.01%	-7.47%	102	0.18%	3,135	11,316	12,469	12.12%	13.46%
2014	10.12%	9.02%	4.22%	95	0.16%	3,783	9,943	11,057	10.76%	12.79%
2013	40.39%	39.02%	34.52%	100	0.36%	3,933	9,243	10,258	14.48%	15.82%
2012	16.26%	15.16%	18.05%	96	0.28%	2,902	7,273	8,071	17.60%	19.89%
2011	-2.54%	-3.48%	-5.50%	102	0.19	2,801	6,876	7,667	20.89%	26.05%
2010	25.20%	23.97%	24.50%	111	0.31	3,133	7,050	7,965	22.91%	28.37%
2009	30.36%	29.09%	20.58%	93	0.66	2,491	6,757	7,690	20.31%	25.62%
2008	-21.57%	-22.37%	-28.92%	95	0.52	1,711	5,761	6,642	16.69%	19.14%
2007	7.31%	6.25%	-9.78%	109	0.29	1,840	6,637	8,176	10.68%	12.59%
2006	20.00%	18.82%	23.48%	35	0.47	580	5,218	6,711	11.26%	12.33%
2005	11.81%	10.71%	4.71%	23	0.31	234	4,120	4,688	14.60%	14.09%
2004	20.11%	18.93%	22.25%	12	0.12	73	3,446	3,617	18.12%	17.51%
2003	53.27%	51.79%	46.03%	9	0.29	61	3,246	3,274	19.57%	18.42%
2002	-6.80%	-7.74%	-11.43%	Fewer than 5	N/A	7	3,470	3,471	20.42%	17.39%
2001	5.93%	4.99%	14.03%	Fewer than 5	N/A	8	N/A	4,247	18.37%	14.65%
2000	57.55%	56.65%	22.83%	Fewer than 5	N/A	7	N/A	3,955	19.81%	16.61%

See next page for Notes and Disclosures.

## Small Capitalization Value: GIPS® Notes and Disclosures

### NOTES:

**COMPOSITE DESCRIPTION.** This composite is comprised of all fee paying, discretionary Small Capitalization Value portfolios in excess of \$1 million under management. Small Capitalization Value is defined as a company within the market capitalization range of Russell 2000® Value Index at time of initial purchase. The benchmark is the Russell 2000® Value Index. The Russell 2000® Value Index measures the performance of small-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2000® Value Index is constructed to provide a comprehensive and unbiased barometer for the small-cap value segment. The Index is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set and that the represented companies continue to reflect value characteristics. Frank Russell Company ("Russell") is the source and owner of Russell Index data contained herein. Any further dissemination of the data is strictly prohibited. Russell is not responsible for any inaccuracy in this presentation. The composite creation and inception date is April 1997. **FIRM DEFINITION.** Vaughan Nelson Investment Management ("Vaughan Nelson") is an equity, fixed-income and balanced portfolio investment manager. Vaughan Nelson is defined as an independent investment advisory firm and is affiliated with Natrixis Investment Managers, LLC. **FEES.** Small Capitalization Value Fee Schedule: 1.00% on the first \$25 million, .85% on the next \$25 million, .75% on the remainder. **OTHER NOTES.** Performance results are presented before management fees. Results for the full historical period are time weighted. Accounts have been valued daily and portfolio returns have been weighted by using beginning-of-month market values plus daily weighted cash flow. The dispersion calculation is based on a dollar-weighted average of gross portfolio returns within the composite for the entire period. The dispersion percent of N/A indicates that the number of portfolios for the entire year were equal to five or fewer or periods of less than one year. The benchmark source is FactSet. The valuation source is Intercontinental Exchange (ICE). Benchmark returns are not covered by the report of independent verifiers.

### DISCLOSURES:

**BASIS OF PRESENTATION.** The attached information and index performance has been developed internally and/or obtained from sources, which Vaughan Nelson believes to be reliable; however, Vaughan Nelson does not guarantee the accuracy, adequacy or completeness of such information, nor does it guarantee the appropriateness of any strategy referred to for any particular investor. This document is provided for informational purposes only and should not be construed as advice or a recommendation for purchase or sale of securities. Past performance is not indicative of future results. The strategy is managed by Chris Wallis and Stephen Davis from 12/31/18, Chris Wallis, Scott Weber, Dennis Alff, and Chad Fargason from 9/30/13; and Chris Wallis and Scott Weber from 6/30/04. **COMPOSITE NOTES.** The composite for each investment strategy has specific criteria in terms of minimum portfolio size, tax status, and discretion. Portfolios meeting the stated criteria are added to the composite as of the first full quarter of investment in that composite's style. Similarly, accounts are removed from the composite after the last full quarter of management under the composite style. A list of all composites and pooled fund investment strategies offered by the firm, with a description of each strategy, is available upon request. The composite results portrayed reflect the reinvestment of dividends, capital gains, and other earnings when appropriate. **CALCULATION METHODOLOGY.** The composite performance results are time-weighted total return net of commissions and transaction costs. Valuations and returns are expressed in U.S. dollars. Vaughan Nelson consistently values all portfolios each month on a trade date basis. Policies for valuing investments, calculating performance, and preparing GIPS Report are available upon request. No composite accounts hold foreign denominated securities. This fee is divided by 12 and subtracted from the gross composite return on a monthly basis to calculate monthly net-of-fee returns. Quarterly and annual net-of-fee returns are calculated by geometrically linking these monthly returns. **COMPLIANT STATEMENT.** Vaughan Nelson claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS® Standards. Vaughan Nelson has been independently verified for the periods 12/31/97 through 6/30/22. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. The Small Cap Value composite has had a performance examination for the periods 1/1/01 through 12/31/21. The verification and performance examination reports are available upon request. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein. **PERFORMANCE DISCLOSURE.** For returns presented gross of fees, results were calculated prior to a deduction for investment management fees. Client returns will be reduced by Vaughan Nelson's investment management fees. The fee schedule is disclosed in Part 2A of Form ADV filed with the Securities and Exchange Commission. Over a period of years, deductions for annual investment management fees will reduce the compounding effect on portfolio growth. For example, assuming a 5% annual return for five years and application of the maximum annual fee of 1.00%, a total gross return of 27.63% and a total net return of 21.67% would be generated.

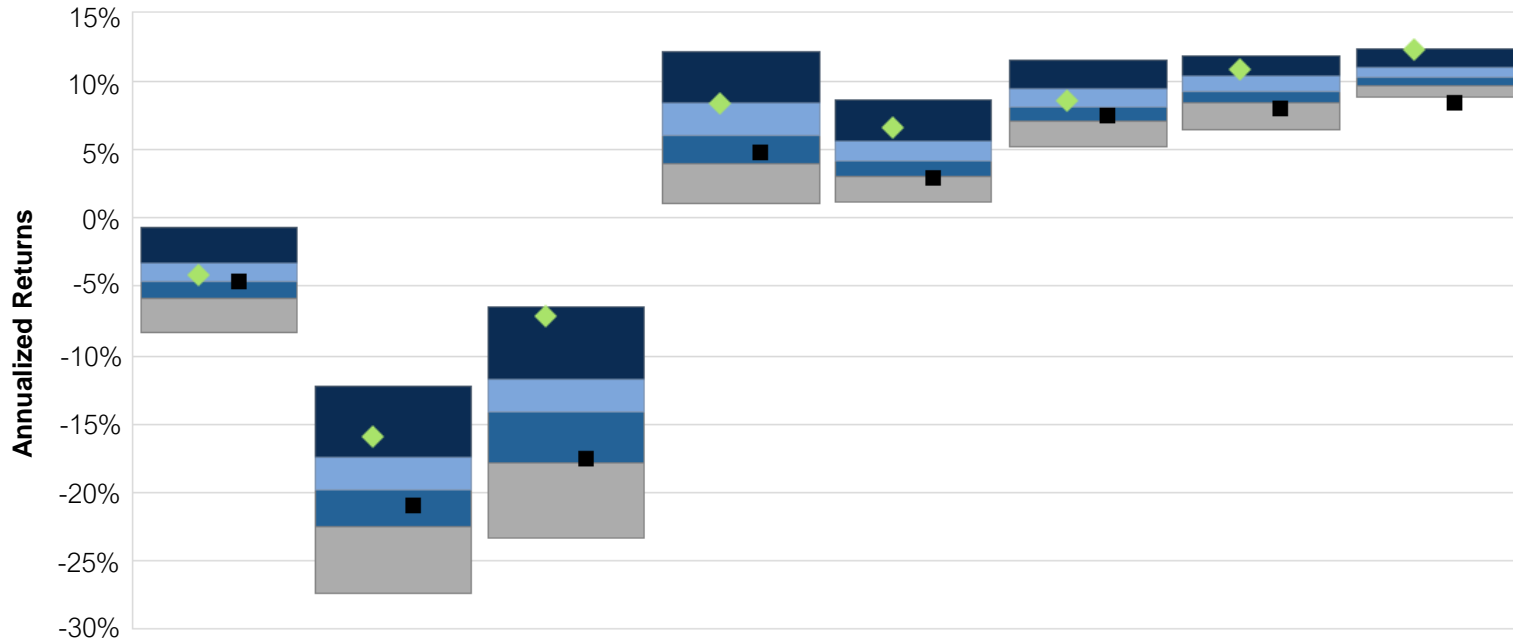
Model year-end portfolio totals were as follows: 2021 - \$2.0 billion, 2020 - \$1.4 billion; 2019 - \$1.7 billion, 2018 - \$1.3 billion; 2017 - \$1.5 billion; 2016 - \$1.3 billion, 2015 - \$1.2 billion, 2014 - \$1.1 billion, 2013 - \$1.0 billion, 2012 - \$798 million.

\* Number includes assets where Vaughan Nelson Investment Management does not have full unconditional trading authority. The assets consist of model portfolio relationships with third-party platforms and totaled \$1.7 billion as of 9/30/22. This information is presented as supplemental information to the Small Capitalization Value GIPS Report.

# STRATEGY PROFILE

eVestment Rankings as of 9/30/2022

Past performance is no guarantee of future results.



	QTR		YTD		1 Year		3 Years		5 Years		7 Years		10 Years		Since Inception 25.5 Years	
		Rk		Rk		Rk		Rk		Rk		Rk		Rk		Rk
■ 5th Percentile	-0.75		-12.30		-6.56		12.13		8.62		11.54		11.80		12.31	
■ 25th Percentile	-3.26		-17.50		-11.84		8.38		5.65		9.42		10.37		10.96	
■ Median	-4.68		-19.90		-14.22		6.04		4.20		8.08		9.24		10.31	
■ 75th Percentile	-5.92		-22.56		-17.91		3.96		3.06		7.07		8.42		9.67	
■ 95th Percentile	-8.42		--27.44		-23.43		1.03		1.11		5.23		6.44		8.82	
■ # of Observations	229		229		229		225		213		205		193		61	
◆ Small Cap Value	-4.14	42	-16.02	15	-7.17	8	8.33	26	6.65	13	8.53	39	10.87	16	12.21	7
■ Russell 2000 Value Index	-4.61	49	-21.12	63	-17.69	74	4.72	67	2.87	79	7.42	66	7.94	82	8.38	98

eVestment Alliance, LLC, and its affiliated entities (collectively, "eVestment") collect gross-of-fee investment returns directly from investment management firms and other sources believed to be reliable. eVestment then determines percentiles based on the investment return data it has collected and provides percentile rankings for investment management firms. See page 16 for composite gross-of-fee and net-of-fee investment returns for QTD, YTD, 1-yr, 3-yr, 5-yr, 10-yr, and since inception periods.

Source: eVestment

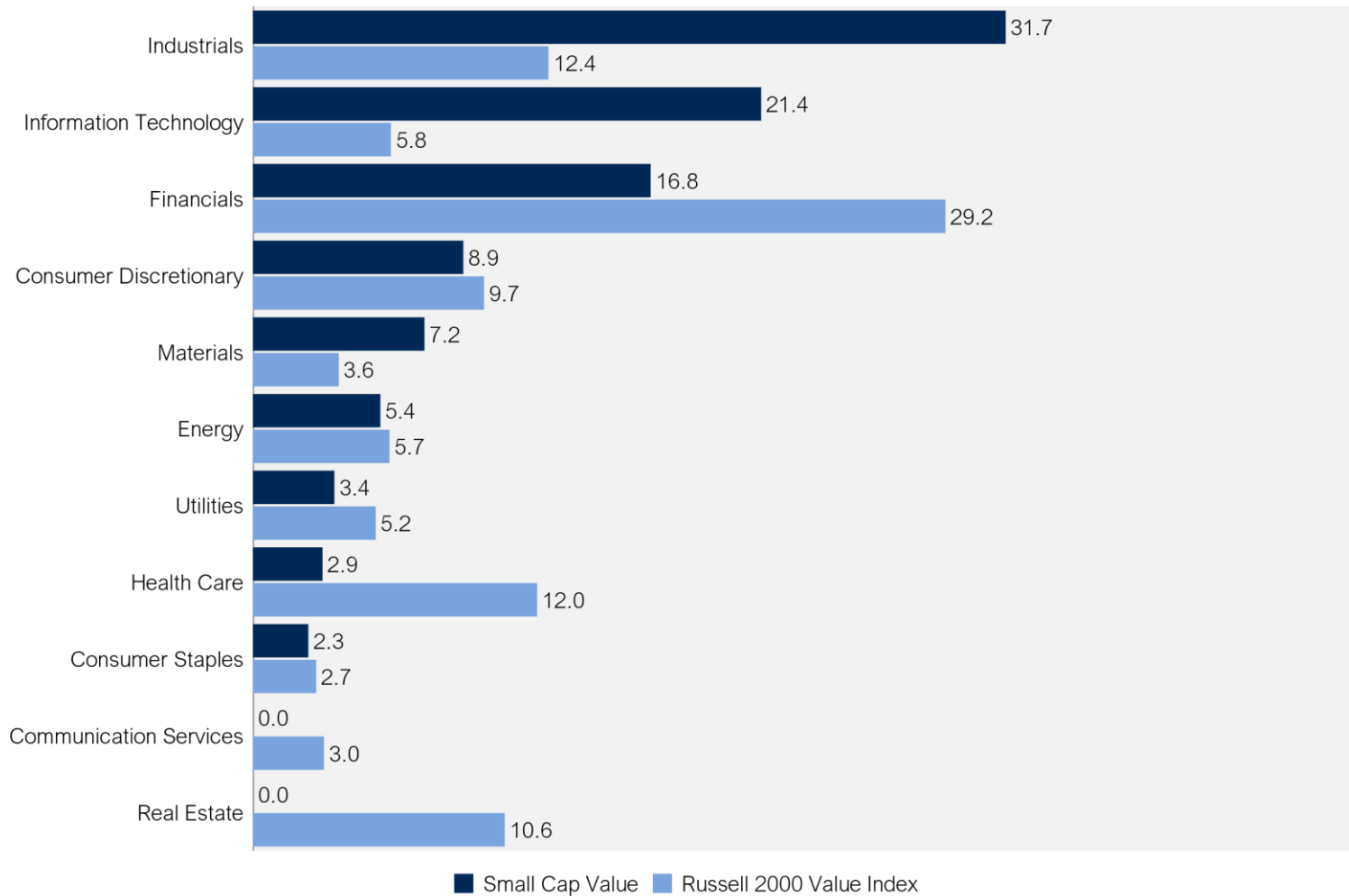
# STRATEGY PROFILE

## Portfolio Structure

<b>UNIVERSE</b>	Positions that fall within the market capitalization range of the Russell 2000 Value at time of purchase
<b>DIVERSIFICATION</b>	Generally 55-85 positions, top ten typically ~20-30% of portfolio
<b>EXPOSURE</b>	Focused on U.S. small cap markets
<b>SECTOR LIMITS</b>	Generally +/- 20% vs benchmark
<b>PORTFOLIO WEIGHTINGS</b>	Generally 5% at purchase cost maximum
<b>ACTIVE SHARE</b>	Generally greater than 90%
<b>NAME TURNOVER</b>	Generally 30-40%
<b>CURRENCY HEDGING, MARGINS, OPTIONS</b>	None

# STRATEGY PROFILE

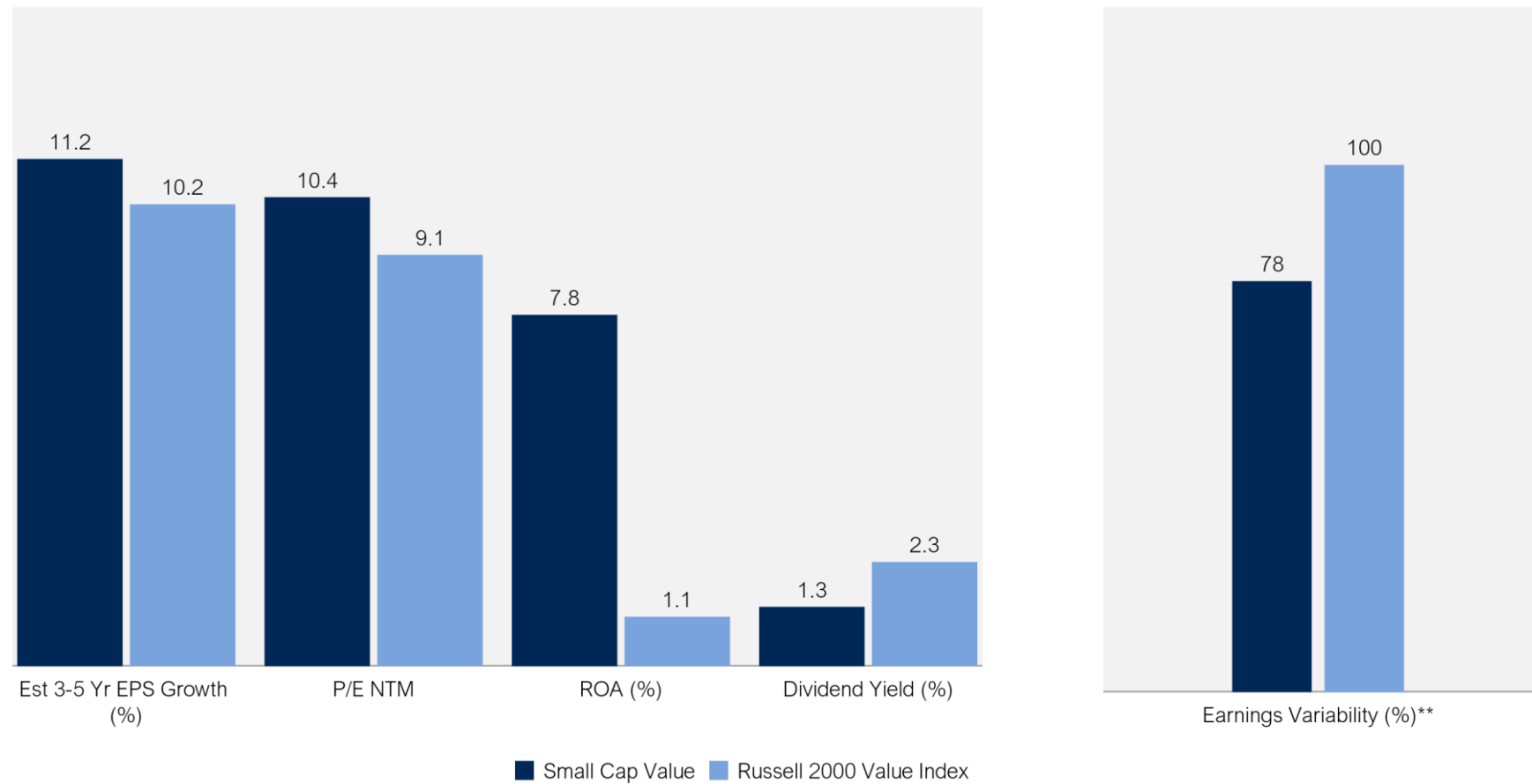
Sector Allocation as of 9/30/2022 (%)



Due to rounding, totals may not equal 100%. Excludes 6.29% cash.  
Source: FactSet

# STRATEGY PROFILE

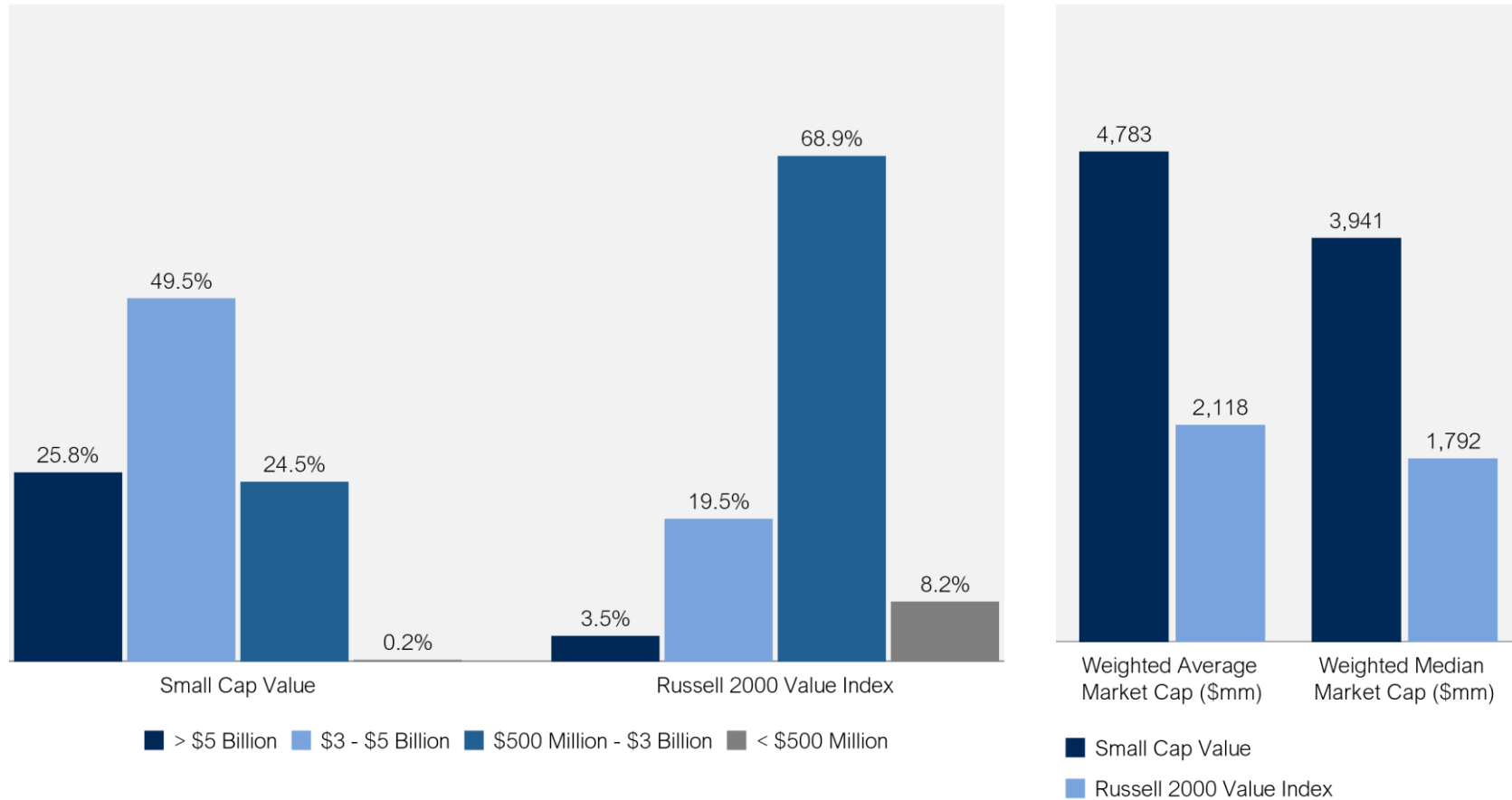
Portfolio Characteristics as of 9/30/2022



\*\* The numerical value one minus the R-squared statistic for a trend line of the most recent five years of fiscal year earnings per share. Earnings variability of the Small Cap Value portfolio is 0.42 versus 0.54 for the Russell 2000 Value Index (9/30/2017 to 9/30/2022).  
Source: FactSet

# STRATEGY PROFILE

Market Cap Allocation as of 9/30/2022



Due to rounding, totals may not equal 100%.  
Source: FactSet



# STRATEGY PROFILE

Portfolio Characteristics as of 9/30/2022

	Small Cap Value	Russell 2000 Value Index
<b>Beta*</b>	0.86	1.00
<b>Sharpe Ratio*</b>	0.27	0.08
<b>Information Ratio*</b>	0.61	N/A
<b>R-Squared*</b>	0.93	1.00
<b>Standard Deviation (%)*</b>	20.67	23.19

\* Annualized 5 years ending 9/30/2022.  
Source: eVestment

# STRATEGY PROFILE

Top Ten Holdings as of 9/30/2022

Company	Portfolio Weight (%)*
Element Solutions Inc	3.53
Insight Enterprises Inc	3.49
ExlService Holdings Inc	2.95
WNS Holdings Ltd	2.94
ASGN Inc	2.63
Cboe Global Markets Inc	2.60
GATX Corp	2.43
Federal Signal Corp	2.31
Franklin Electric Co Inc	2.28
Rambus Inc	2.11

\* Excludes 6.29% cash.

There is no assurance that any securities discussed herein will remain in an account portfolio at the time you review this Profile or securities sold have not been re-purchased. The securities discussed do not represent an account's entire portfolio and, in the aggregate, may represent only a small percentage of an account's portfolio holdings. It should not be assumed that any of the security transactions or holdings discussed were or will prove to be profitable or that the investment recommendations or decisions made in the future will be profitable or will equal the investment performance of the securities discussed herein.

Source: FactSet

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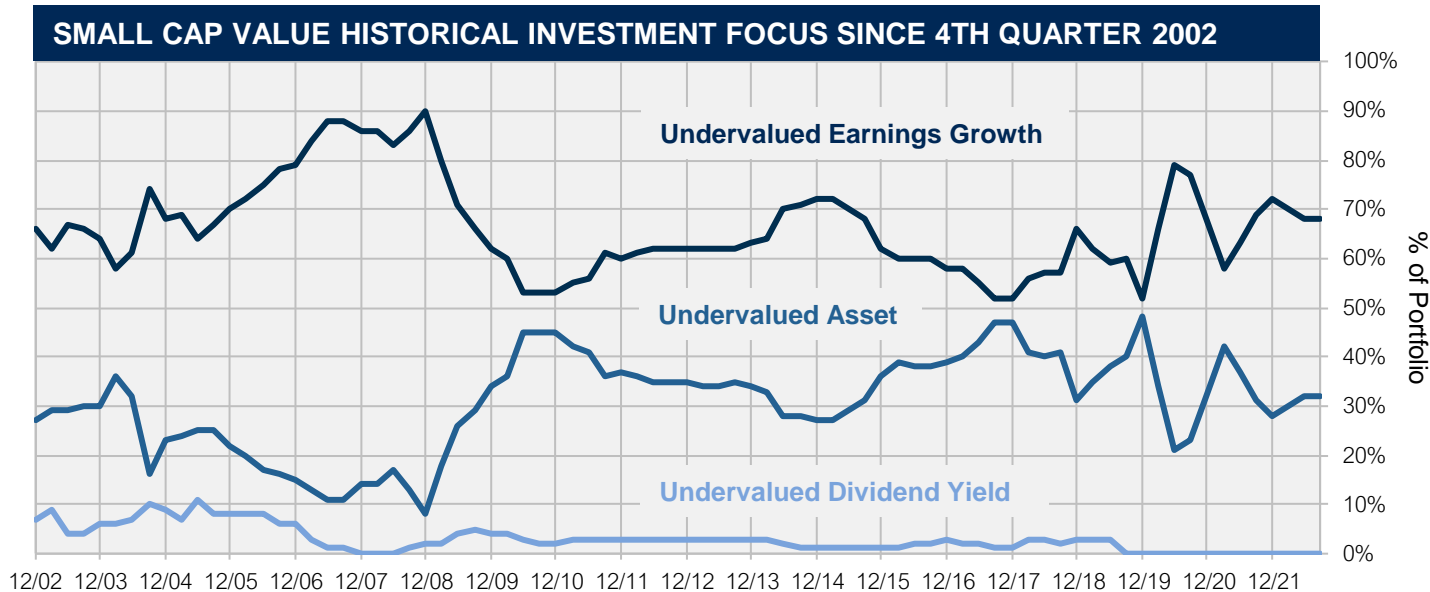
## **INVESTMENT PROCESS**

# INVESTMENT PROCESS

Three Ways to Achieve Our Targeted Return

- 1 Undervalued Earnings Growth**
  - Future redeployment of capital is not reflected in current valuation
- 2 Undervalued Asset**
  - Asset priced at a significant discount
  - Identified catalyst to close valuation gap
- 3 Undervalued Dividend Yield**
  - High secure dividend yield, typically +10%

Past performance is no guarantee of future results.



Weightings as of 9/30/22.

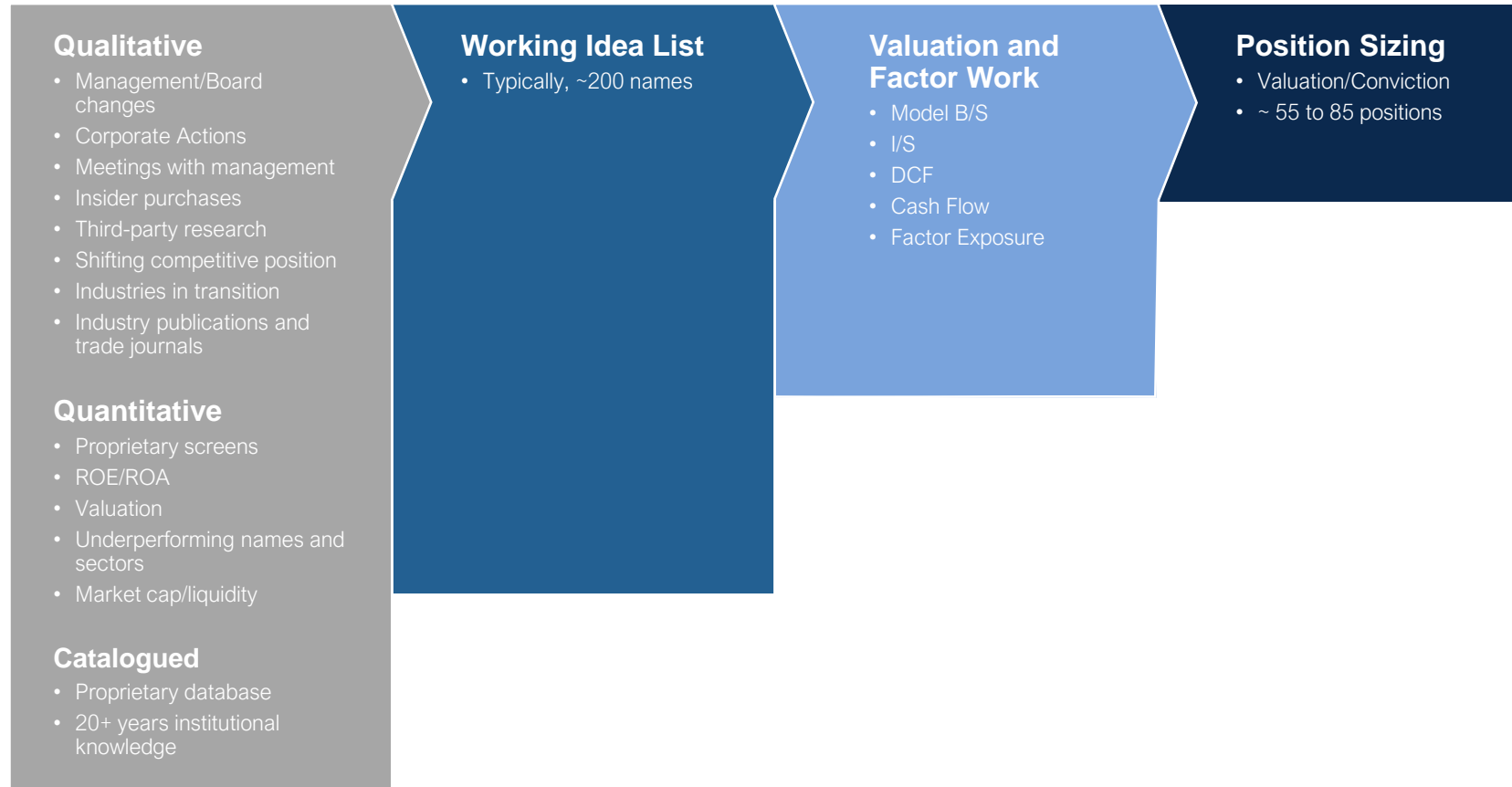
# INVESTMENT PROCESS

Stocks Meet at Least One of Three Criteria

	CONSIDERATIONS
<b>1 Undervalued Earnings Growth</b>	<ul style="list-style-type: none"><li>• Market not considering the company's ability to continue investing for extended period of time at high rates of return</li><li>• Management team with strong capital allocation track record</li><li>• Earn same to higher rate of return on redeployed earnings, thus avoiding multiple compression</li><li>• Management understands limit of reinvestment and has other means and willingness to return excess cash to shareholders</li></ul>
<b>2 Undervalued Assets</b>	<ul style="list-style-type: none"><li>• Cyclical industries at trough valuations with identifiable industry inflection</li><li>• Corporate asset and/or balance sheet restructuring</li><li>• End markets are stable to improving across cycles, not in secular decline</li><li>• Underlying return characteristics and competitive dynamics are stable to improving, avoiding "value traps"</li></ul>
<b>3 Undervalued Dividend Yield</b>	<ul style="list-style-type: none"><li>• Balance sheet not being liquidated to pay the dividend</li><li>• Stable industry dynamics</li><li>• Bulk of expected return to come from dividend</li><li>• Shareholder friendly payout policy</li></ul>

# INVESTMENT PROCESS

## Idea Generation



---

# INVESTMENT PROCESS

## Sell Discipline

- ▶ Targeted valuation reached
- ▶ Investment thesis invalidated
- ▶ Better risk-reward elsewhere
- ▶ Competitive dynamics changed
- ▶ Macro factors dictate



---

# INVESTMENT PROCESS

## Macro in the Investment Process

### Macro Information We Routinely Monitor

- Two most important influences for risk assets are inflections higher/lower in economic growth rates and inflationary pressures.
  - Utilizing third party data services, we identify growth rate cycle downturns nine-to-twelve months in advance and growth rate cycle upturns with a one-to-three-month lead time. While we are able to identify growth rate cycle upturns and downturns, we are not able to identify the magnitude of such upturns and downturns.
- This information is delineated by country as well as industrial and service sectors. For the U.S., this also includes employment conditions.
- We are also able to determine by country when a growth slowdown will lead to a “recessionary window”. A recessionary window is when economic growth is so weak that any normally recurring headwind will tip an economy into a recession.
- Depending on what level of economic activity is implied in current capital market valuations, such upturns and downturns may prove to be immaterial or quite material.
- By country we have a three plus month lead time on inflation accelerations and decelerations and can determine whether the inflation is trending or transitory.
- We also monitor liquidity, credit, and market conditions, to identify where economic trends or investment themes are unsustainable or becoming disconnected from economic reality.

### How We Incorporate Macro Info into the Investment Process

- Macro is not the driver of idea generation or portfolio construction. Idea generation and positions held in the portfolio are based on their industry and corporate outlook combined with positive asymmetrical return expectations.
- Our routine bottom-up research allows an understanding as to whether the macro environment provides tailwinds or headwinds as management seeks to execute their corporate strategy. This can help in assessing the reasonableness of our financial projections and the risk inherent in the investment thesis.
- As we construct portfolios our macroeconomic understanding informs when to add to or detract from economic risk and can assist with the timing of building or exiting positions.
- As we identify liquidity, credit, or market conditions that are unsustainable or disconnected from economic reality, we assess to what degree they could influence current or prospective portfolio holdings in a positive or negative manner. These risks are monitored to minimize exposure in the portfolios and as risks occur, we can exploit market volatility and macro unaware investors to capture investment opportunities.

---

# INVESTMENT PROCESS

Environmental, Social and Governance (ESG)

- ESG considerations are factored into our fundamental analysis to ascertain ESG issues that could be a mitigant to achieving our targeted-return objective.
- Vaughan Nelson maintains that positive management engagement, inclusive of significant and/or material ESG related factors, is a fundamental component to the investment process and contributes to better corporate performance, increased shareholder value and more accurate investment intelligence.
- Vaughan Nelson is a signatory to the United Nations Principles for Responsible Investment.



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# INVESTMENT PROCESS

## Diversity, Equality, and Inclusion

Vaughan Nelson is committed to fostering, cultivating, and preserving a culture of diversity and inclusion.



Our human capital is the most valuable asset we have. The collective sum of the individual differences, life experiences, knowledge, inventiveness, innovation, self-expression, unique capabilities, and talent that our employees invest in their work represents a significant part of not only our culture, but also our reputation and company's achievement.

Vaughan Nelson's diversity initiatives are applicable—but not limited—to our practices and policies on:

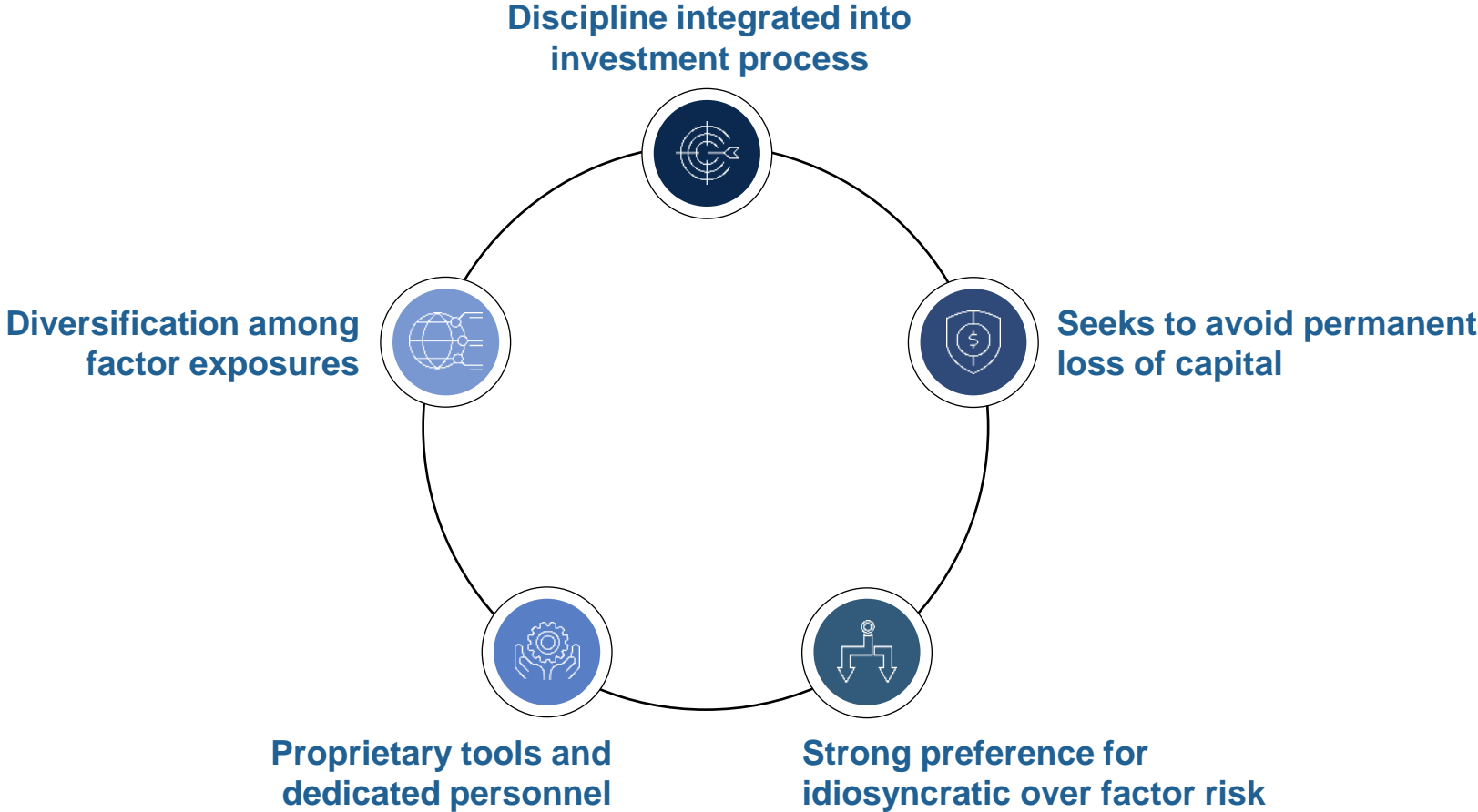
- Recruitment and selection;
- Compensation and benefits;
- Professional development and training;
- Social and recreational programs;
- Ongoing development of a work environment built on the premise of gender and diversity equality



## **RISK MANAGEMENT**

# RISK MANAGEMENT

Philosophy



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# RISK MANAGEMENT

Individual Security Level: Avoid Permanent Loss of Capital

## Financial Distress Risk

- Traditionally not well compensated, thus try to avoid
- Fundamental analysis considers pensions, contingent liabilities, realization ratios, accruals, visibility of cash flows, covenants

## Business Risk

- Can be a source of opportunities as the market often focuses on the short term
- Avoid industries in secular decline, poor quality, unproven business models, excessive leverage
- ESG integrated into the analysis of this risk as well

## Valuation Risk

- Mitigated by valuation methodology, which is driven by ROIC
- Asymmetric profile of-expected return

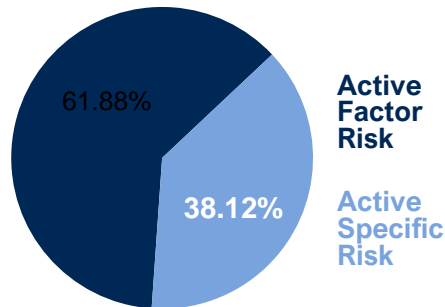
## Liquidity Risk

- Not an independent risk but an accelerator of the previous three risks
- Mitigated through diversification, investment, and position size

# RISK MANAGEMENT

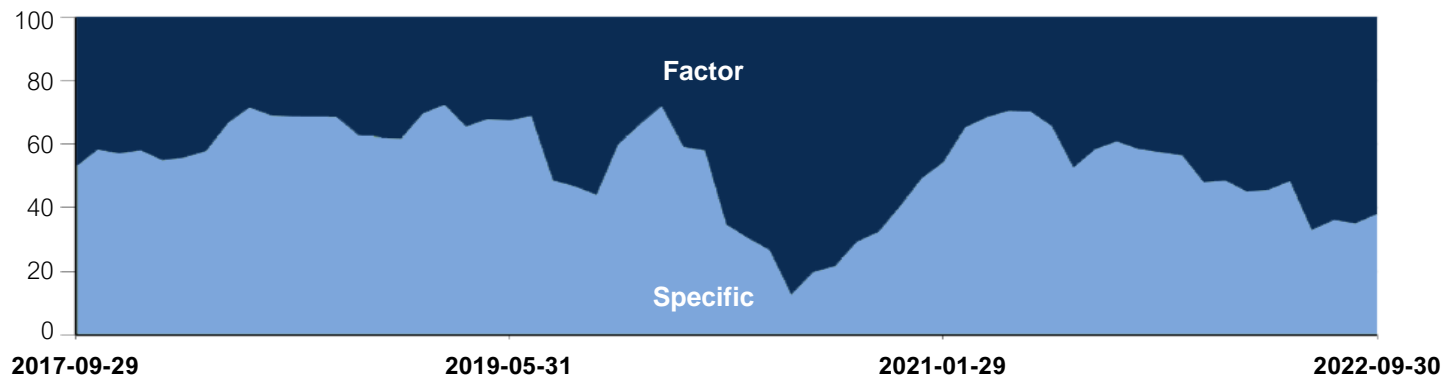
Portfolio Level: Idiosyncratic Risk Drives Returns

## Active Risk Decomposition



Risk Decompression	Active Std Dev (%)	Active % of Var	Active % of Var (Cov-Dist)
Active Risk	5.44%	100.00%	100.00%
Specific Active Risk	3.36%	38.12%	38.12%
Factor Active Risk	4.28%	61.88%	61.88%
Style	2.59%	22.79%	29.34%
Country	0.71%	1.72%	2.67%
Industry	2.64%	24.65%	25.41%
Currency	0.10%	0.10%	-0.29%
Local	0.00%	0.00%	0.00%
Market	1.04%	3.69%	4.75%

## Active Risk Decomposition (% Variance)



As of 9/30/22.

Dark blue area shows that idiosyncratic risk is predominant over time. No factor risk is dominant or large in absolute terms. We target idiosyncratic risk between 60%-80% and active risk between 300-500bps.

Source: Axioma

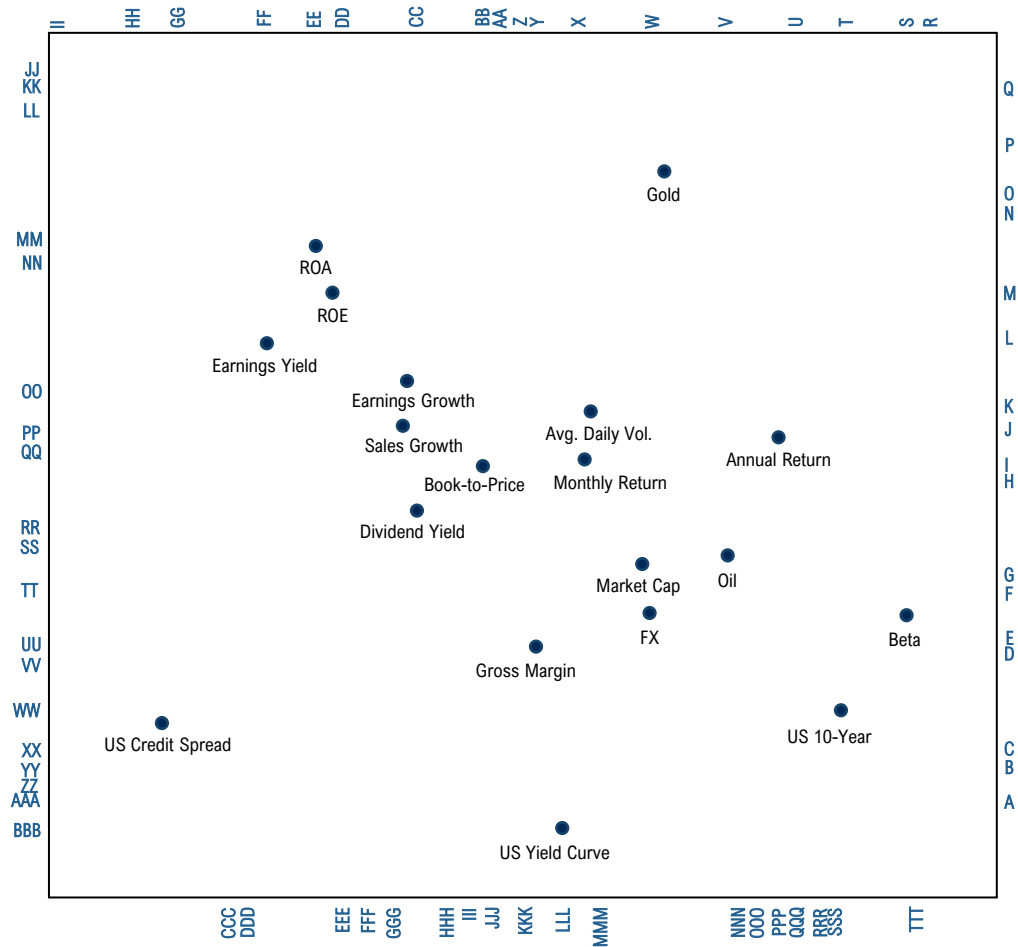
# RISK MANAGEMENT

Portfolio Level: Diversification

## Factor Exposure Shows Adequate Diversification (illustrative representation)

- Factors are plotted in relation to each other and to portfolio positions
- The closer factors and positions plot, the higher the correlation
- Positions distributed throughout the perimeter demonstrate factor diversification

Factor Representation\*: Small Cap Value = 19, Russell 2000 Value = 22



As of 9/30/22.  
 Information for illustrative purposes.  
 All information is hypothetical and does not represent the actual Small Cap Value portfolio.  
 Source: Axioma

Black dots show representative factor exposures; Blue text show Vaughan Nelson representative portfolio positions.

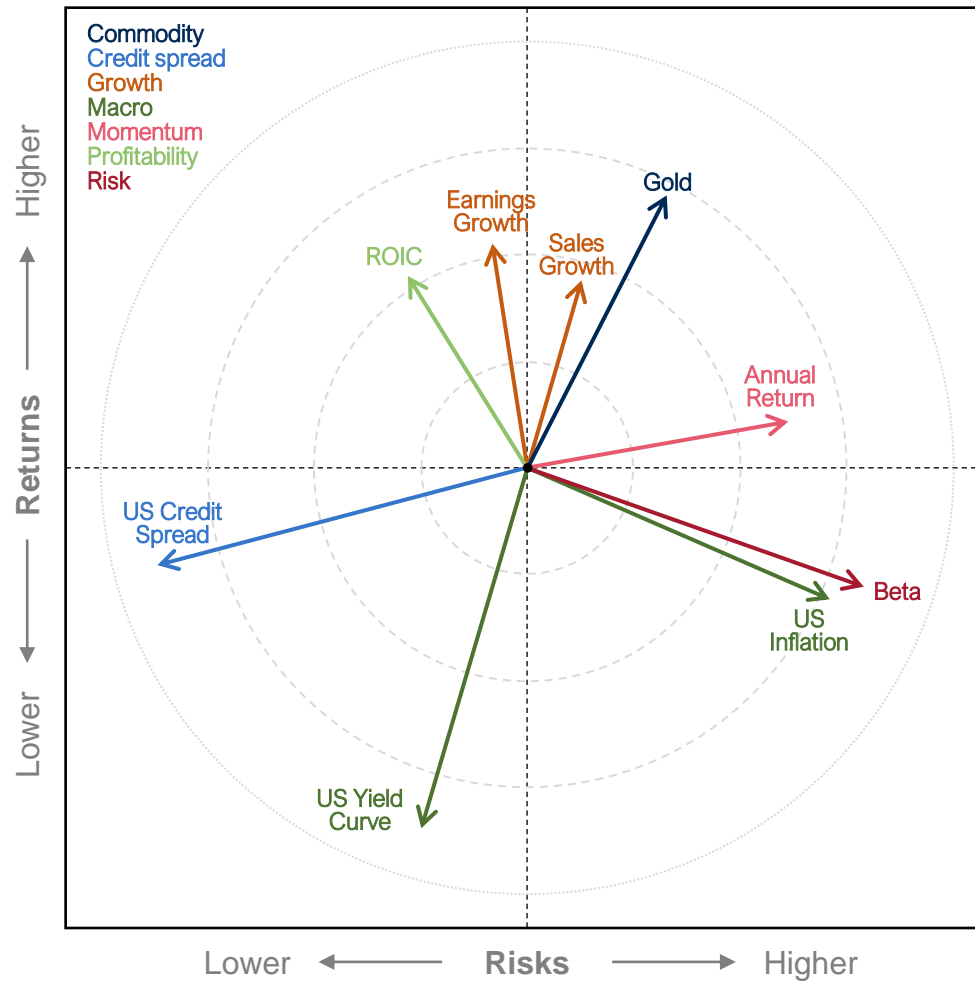
\* Represents the number of virtual independent instruments (VII) in the portfolio. VII is defined as a group of companies with highly correlated factor exposures. Each VII factor exposure is uncorrelated to all other VII's.



# RISK MANAGEMENT

Portfolio Level: Risk Space

**Vectors Indicate Strength and Direction of Factors**  
(illustrative representation)



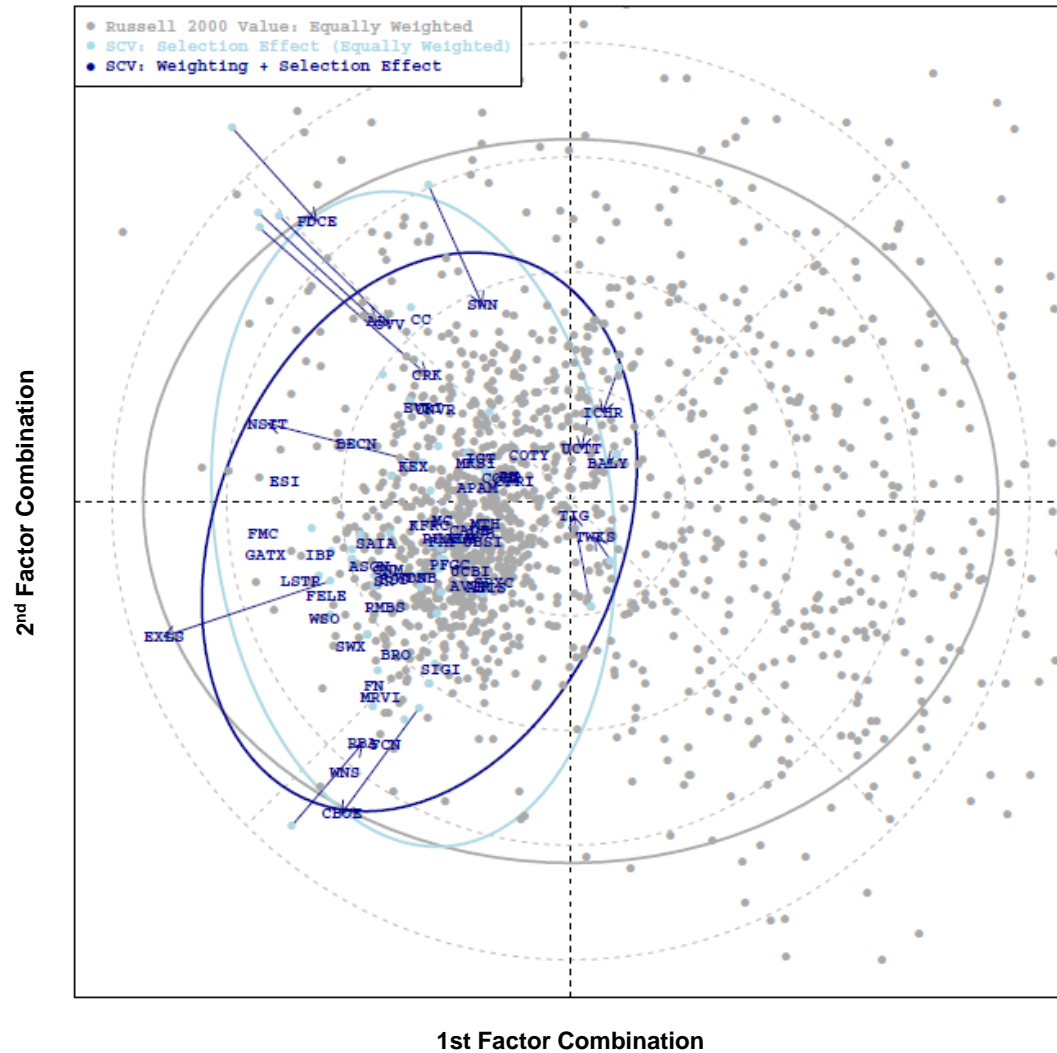
Information for illustrative purposes.  
All information is hypothetical and does not represent  
the actual Small Cap Value portfolio.  
Source: Axioma

# RISK MANAGEMENT

Portfolio Level: Our Names within the Risk Space

## Graphical Orientation of the Portfolio Within the Risk Space

- Shows if the portfolio is tilted to specific risk factors
- Helps identify positions that are individual risk outliers
- Grey dots represent positions in the benchmark. Blue tickers represent positions in the portfolio



As of 9/30/22.  
Source: Axioma

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VAUGHAN  
NELSON

**FEE SCHEDULE**

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## FEE SCHEDULE FOR MWRA

The management fee is based on a percentage of the current market value of the total portfolio; the fee is paid at the beginning of each quarter, based on the quarterly market value.

.90% on all assets



# FIXED INCOME STRUCTURE REVIEW

MWRA RETIREMENT SYSTEM

JANUARY 26, 2023

Sebastian Grzejka, CAIA, Partner  
Kiley Fischer, Senior Analyst



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# EXECUTIVE SUMMARY

- **The purpose of today's presentation is to review the current structure and implementation of the Fixed Income allocation**
  - The goal is to reaffirm the structure and consider next steps in the implementation of the exposure
  
- **Today, we want to focus on the following areas**
  - ***Fixed Income Implementation:***
    - We have provided a detailed quantitative analysis of the allocation as well as a current market outlook and overview
    - The goal is to reaffirm the existing approach, or consider adjusting the implementation that best meets the Systems goals
    - We have provided additional options for consideration to enhance the exposure
  - ***The Fixed Income Exposure was last reviewed in 2018/2019:***
    - The allocation is structured to blend high quality with yield seeking bonds
    - The Core Bond (high quality) allocation paired Garcia Hamilton and Lord Abbett
    - The Multi Sector (yield seeking) allocation complemented Loomis Sayles Full Discretion with Octagon Bank Loans
    - Over time, this pairing has performed well, however, struggled in 2022
  - ***Fixed Income Considerations:***
    - Today, the entire allocation is actively managed. Should consideration be given to indexing a part of the allocation?
    - Loomis represents the most unconstrained manager in the portfolio, resulting in strong performance historically. Should other options be considered?
    - What role does Octagon play within the allocation going forward?



# NEPC HIGH-QUALITY FIXED INCOME OUTLOOK

**The opportunity in high-quality fixed income remains supportive** with higher yields broadly lifting expected returns and a more defensive portfolio outlook

**The strategic high-quality view** offers exposure to nominal and real interest rates plus cyclical diversification benefits to the overall fixed income portfolio

**Implementation Outlook:** We maintain a bias toward higher-quality credit and recommend holding high quality short-term credit

SUB-ASSET CLASS	DYNAMIC TILT	COMMENTS
U.S. TIPS	<i>Neutral</i>	We maintain a bias toward higher-quality credit and recommend holding high quality short-term credit in the portfolio and to source the exposure from risk asset positions
Non-U.S. Govt. Bonds	<i>Unfavorable</i>	
Global IL Bonds	<i>Reduce</i>	
U.S. IG Corporate	<i>Favorable</i>	
Structured Credit	<i>Neutral</i>	



Shaded diagonal ratings reflect the asset class ratings for the previous month.



# NEPC PUBLIC MARKET CREDIT OUTLOOK

**We encourage patience with return-seeking credit** as the effect of interest rates and tight financial conditions have yet to be fully reflected in credit spreads

**The strategic view for return-seeking credit** recommends the use of high yield debt as the opportunity cost as it is the most efficient long-term beta exposure

**Implementation Outlook:** The strategic allocation size of return-seeking credit and risk tolerance inform the selection of public and private credit approaches

SUB-ASSET CLASS	DYNAMIC TILT					COMMENTS
U.S. High Yield	Unfavorable					While higher yields support the outlook for credit, we are cautious considering average credit spread levels
Levered Loans	Unfavorable					
Emerging Market Debt	Unfavorable					

REDUCE
UNFAVORABLE
NEUTRAL
FAVORABLE
ADD



Shaded diagonal ratings reflect the asset class ratings for the previous month.

# IMPLEMENTING RETURN SEEKING CREDIT

Return seeking fixed income should be thought of as a risk asset that can potentially earn a premium from dipping in credit quality, providing liquidity, understanding complexity, and capturing mis-pricings.



**Less liquid** and **more correlated to equities** in periods of market stress

**Longer recovery** periods compared to equities

## Implementation across the liquidity spectrum

Liquid	Semi-Liquid	Illiquid
Core Plus	Opportunistic Credit	Distressed Debt
Non-Traditional	Structured Credit	Asset Based Lending
Global Multi-Sector	CLOs	Growth Debt



# RETURN-SEEKING CREDIT

## EVOLVING OPPORTUNITIES

<i>Current Opportunity</i>	Alpha Opportunities	Liquidity	2022 Return
<b>Event-Driven and Special Situations</b>	<ul style="list-style-type: none"> <li>▪ Areas of corporate stress and dislocations</li> <li>▪ Tactical access - capacity and fee relief</li> </ul>	Annual	-10% to -15%
<b>Multi-Sector Credit</b>	<ul style="list-style-type: none"> <li>▪ Flexible and nimble - rotate among bonds and loans and add selectively to higher return areas</li> </ul>	Quarterly - annual	-5 to -8%
<b>High-Yield Bonds</b>	<ul style="list-style-type: none"> <li>▪ Wider spreads – but don't yet reflect a recession or dislocation, offers positive convexity</li> </ul>	Monthly-Quarterly	-9% to -11%
<b>Leveraged Loans</b>	<ul style="list-style-type: none"> <li>▪ Floating rate and high current yield, but corporates may face stress sooner</li> </ul>	Quarterly	0% to -2%
<b>CLOs</b>	<ul style="list-style-type: none"> <li>▪ Existing CLO equity benefits from turbulence in loan market</li> <li>▪ Significant spread capture in debt tranches relative to similarly rated corporates</li> </ul>	Annual	-10% to -15%
<b>Structured Credit</b>	<ul style="list-style-type: none"> <li>▪ Disruptions in mortgage market from higher rates and slower prepayments leading to historically wide basis</li> <li>▪ Technical headwinds from QT and fund flows</li> </ul>	Quarterly - annual	-5 to -8%
<b>EMD</b>	<ul style="list-style-type: none"> <li>▪ Facing headwinds with higher rates, dollar strength, commodities volatility, and economic slowdown</li> </ul>	Quarterly - annual	-10% to -20%



Year-to-date returns are representative manager strategies or indices

# UNDERSTANDING RISK IN FIXED INCOME

Strategy	Credit Risk	Spread Risk	Duration Risk	Liquidity Risk
Definition	Risk of default restructuring, etc.	Market risk of wider credit spreads	Exposure to changes in interest rates	Risk of inability to sell into an orderly market
Treasury	Light Blue	Light Blue	Yellow	Light Blue
TIPS	Light Blue	Dark Blue	Dark Blue	Dark Blue
US Aggregate	Dark Blue	Dark Blue	Dark Blue	Dark Blue
Municipals	Dark Blue	Dark Blue	Dark Blue	Dark Blue
Non-Traditional FI	Dark Blue	Dark Blue	Light Blue	Dark Blue
Global Multi-Sector	Dark Blue	Dark Blue	Dark Blue	Dark Blue
Multi-Sector Credit	Dark Blue	Dark Blue	Light Blue	Dark Blue
Bank Loans	Dark Blue	Dark Blue	Light Blue	Dark Blue
HY Credit	Dark Blue	Yellow	Dark Blue	Dark Blue
HY Municipals	Dark Blue	Yellow	Dark Blue	Dark Blue
EMD	Dark Blue	Yellow	Dark Blue	Dark Blue
Private Debt	Yellow	Dark Blue	Light Blue	Yellow





# QUANTITATIVE ANALYSIS



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# PORTFOLIO CONSTRUCTION SUMMARY

Fund	Total Fixed Income (Incumbent)	Mix 1 (Core Passive Option)	Mix 2 (Garcia/Loomis Mix)	Mix 3 (Lord Abbett/Loomis Mix)	Benchmark	Analysis Start Date	Analysis End Date
Garcia Hamilton Fixed Income - Aggregate	26%	---	52%	---	Bloomberg Barclays US Aggregate	2/28/2012	9/30/2022
Lord Abbett Core Fixed Income	26%	---	---	52%	Bloomberg Barclays US Aggregate	2/28/2012	9/30/2022
Loomis Sayles Multisector Full Discretion	37%	37%	48%	48%	Bloomberg Barclays US Aggregate	2/28/2012	9/30/2022
Octagon Senior Secured Credit	11%	11%	---	---	CS Leveraged Loan	2/28/2012	9/30/2022
Passive Bloomberg Barclays US Aggregate Index	---	52%	---	---	Bloomberg Barclays US Aggregate	2/28/2012	9/30/2022
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>			

	Total Fixed Income (Incumbent)	Mix 1 (Core Passive Option)	Mix 2 (Garcia/Loomis Mix)	Mix 3 (Lord Abbett/Loomis Mix)
<b>Active Risk and Return</b>				
Realized Alpha	1.7%	1.3%	2.1%	1.8%
Beta	0.94	0.95	0.93	0.95
Tracking Error	1.8%	1.5%	2.2%	2.3%
Diversification Ratio	1.20	1.05	1.18	1.05
Information Ratio	0.95	0.86	0.94	0.79
<b>Style and Size Regression</b>				
Duration	Neutral	Neutral	Neutral	Neutral
Quality	Moderate	Moderate	Moderate	Moderate
<b>Return Decomposition</b>				
Upside Market Capture	115.2%	112.5%	120.3%	117.9%
Downside Market Capture	86.4%	90.6%	84.6%	87.7%
Upside Alpha	2.2%	1.7%	2.8%	2.4%
Downside Alpha	1.1%	0.8%	1.2%	1.1%

The current fixed income allocation was designed to provide balanced exposure between high quality and yield seeking approaches.

All mixes exhibit good upside capture, and downside protection, however, the current structure achieves this more efficiently.

In a "core"-"satellite" approach, there is potential to achieve a more attractive risk and return profile, however, may introduce unintended tilts and overlap of exposure.

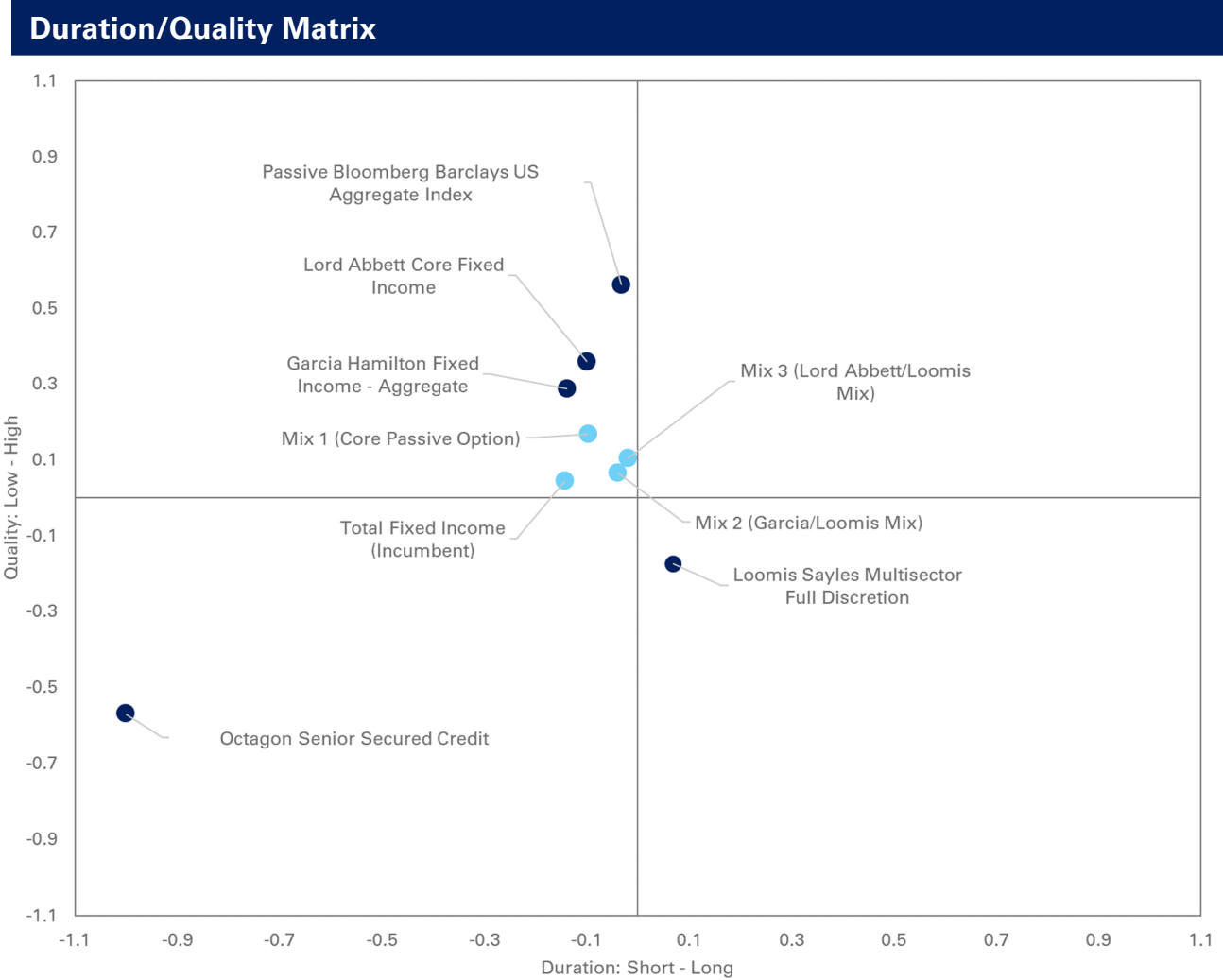
All Risk/Return statistics calculated through 09/30/22. Portfolio metrics calculated by combining fund statistics at specified weights.

Diversification Ratio defined as:  $\sum(\text{Fund Active Risk} * \text{Fund Weight}) / (\text{Total Portfolio Active Risk})$ . Higher numbers represent greater diversification.

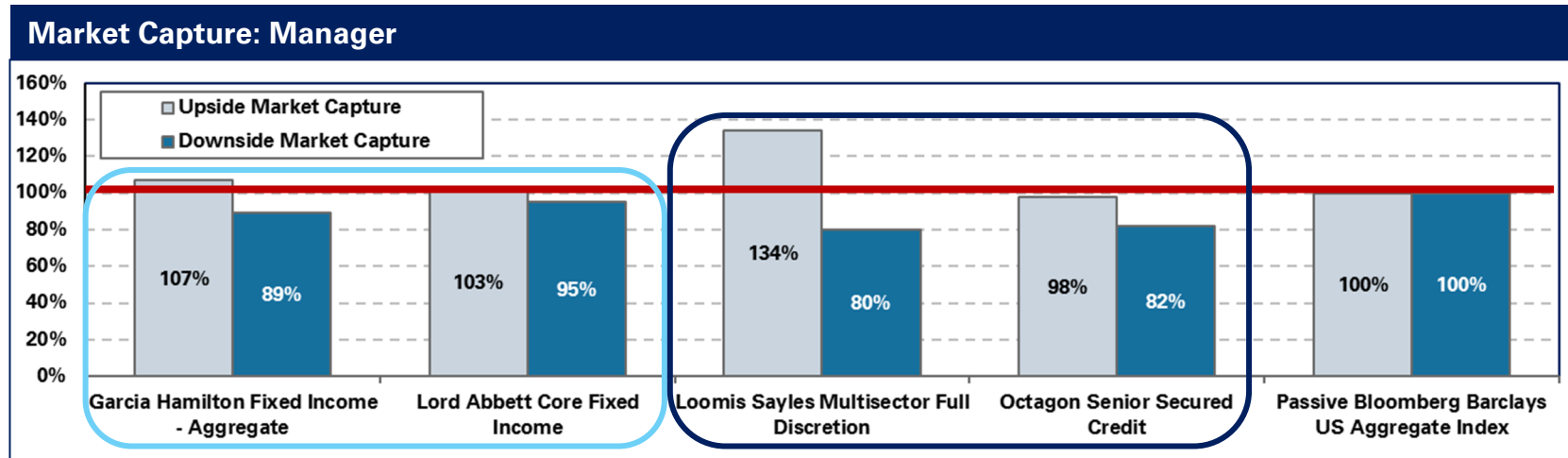
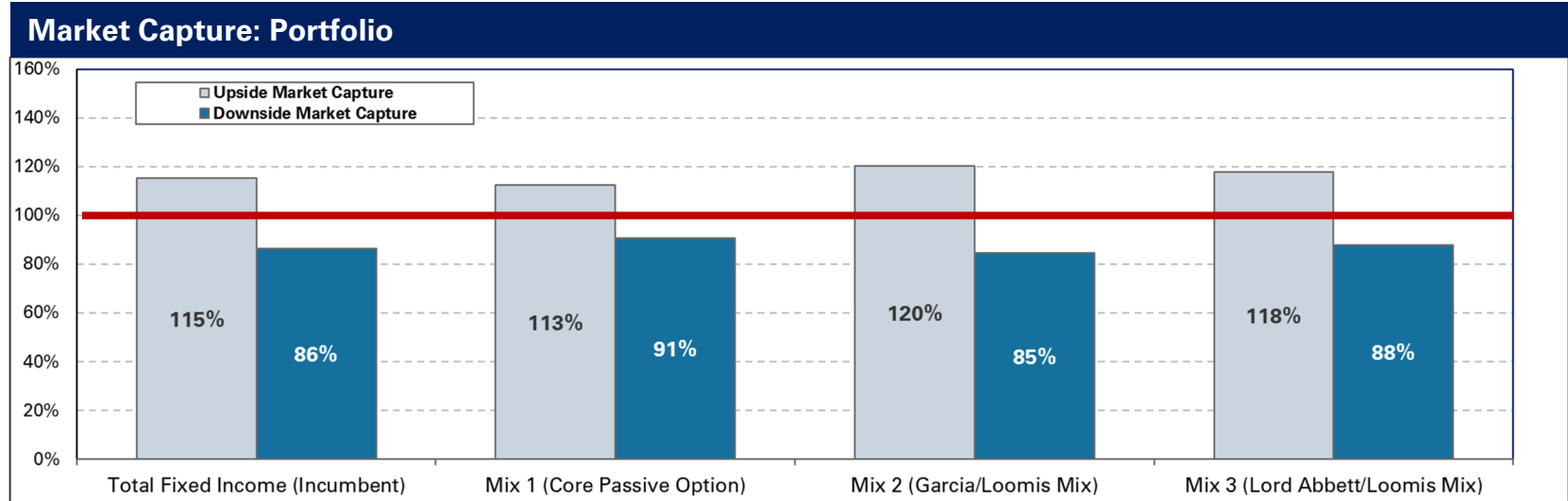
Information Ratio defined as: Realized Alpha/Tracking Error



# DURATION/QUALITY MATRIX



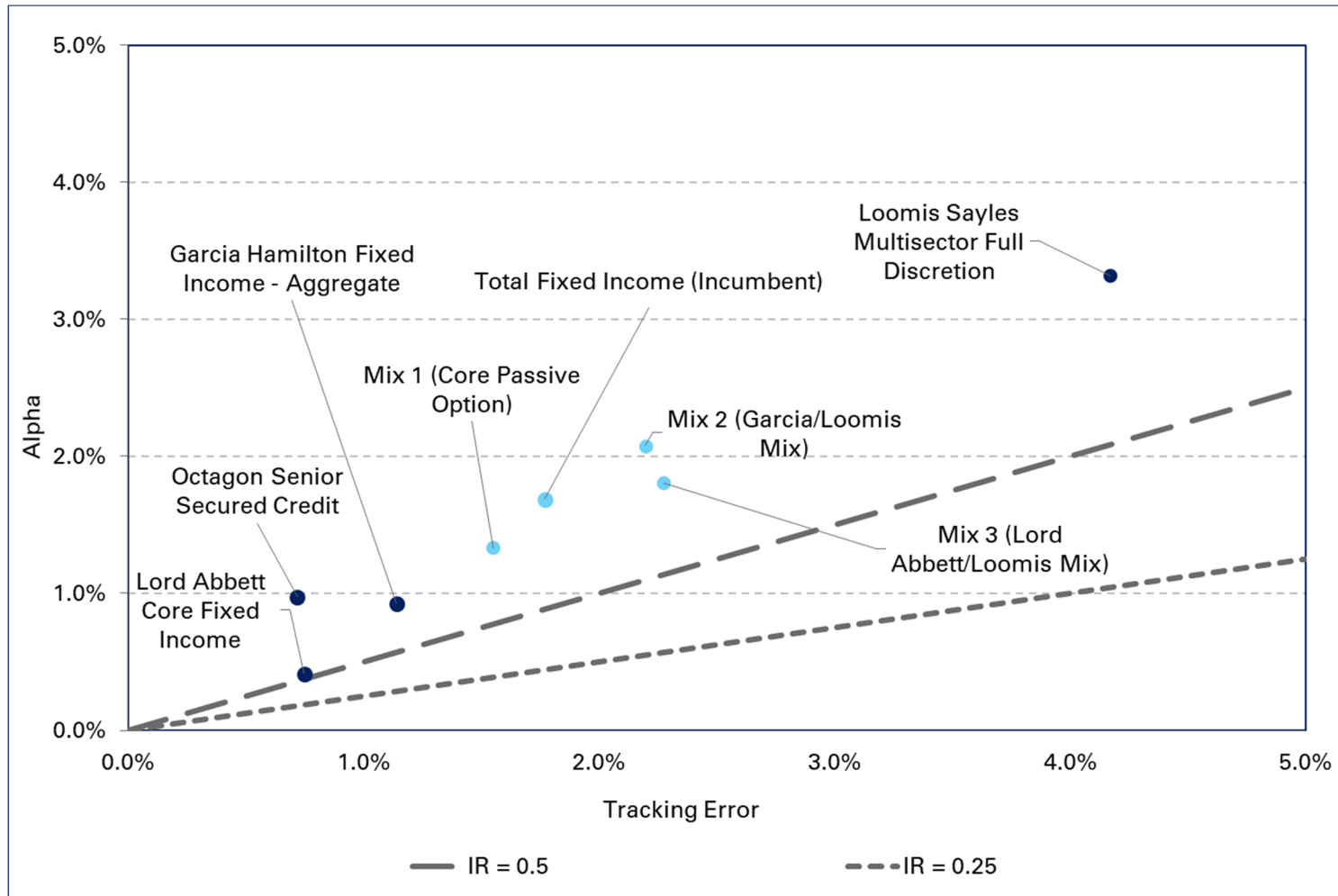
# MARKET CAPTURE





# ACTIVE RISK-RETURN

## ALPHA, TRACKING ERROR, & INFORMATION RATIO



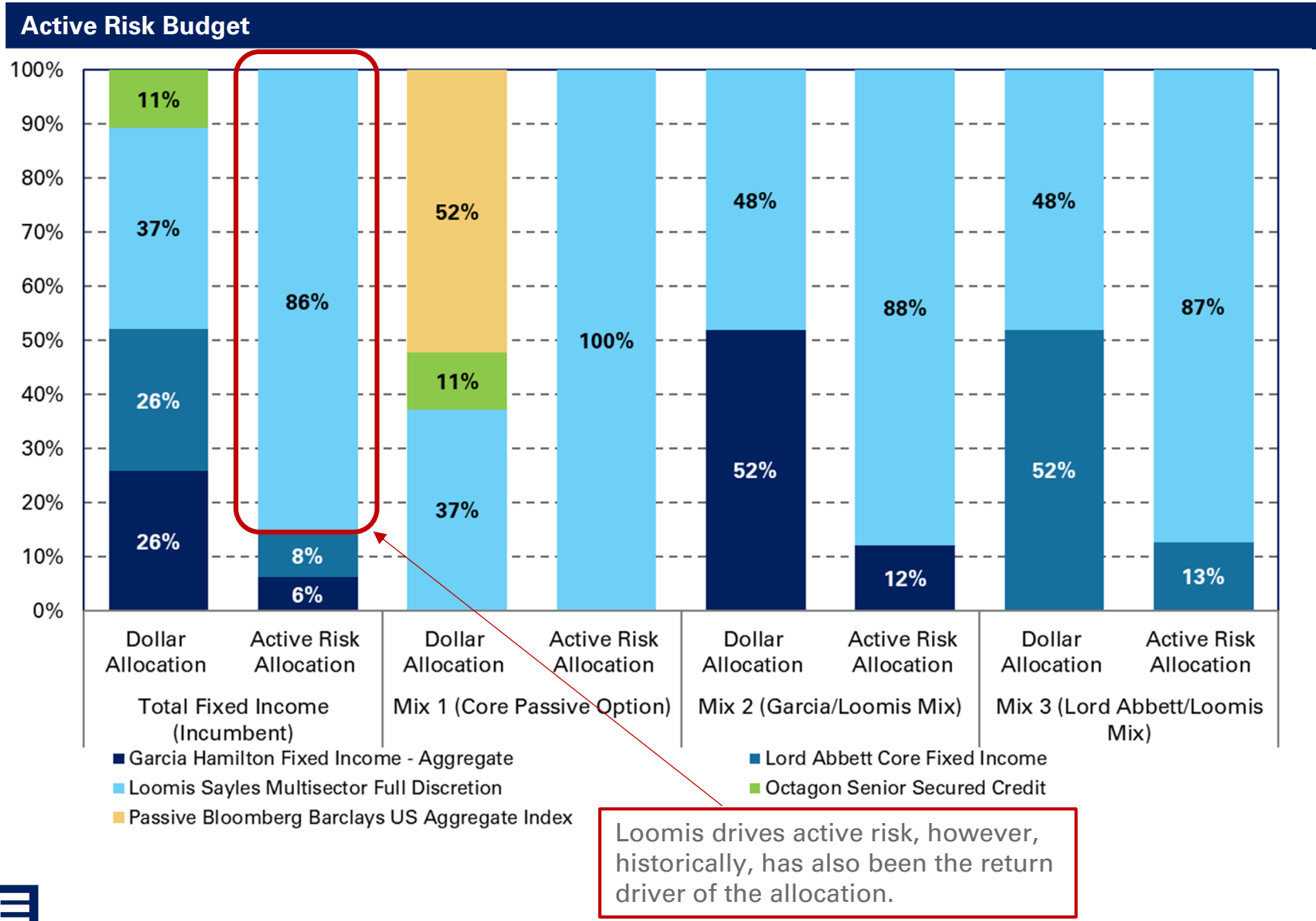
All Risk/Return statistics calculated through 09/30/22.

Benchmarks shown on page 2 (Portfolio construction summary)

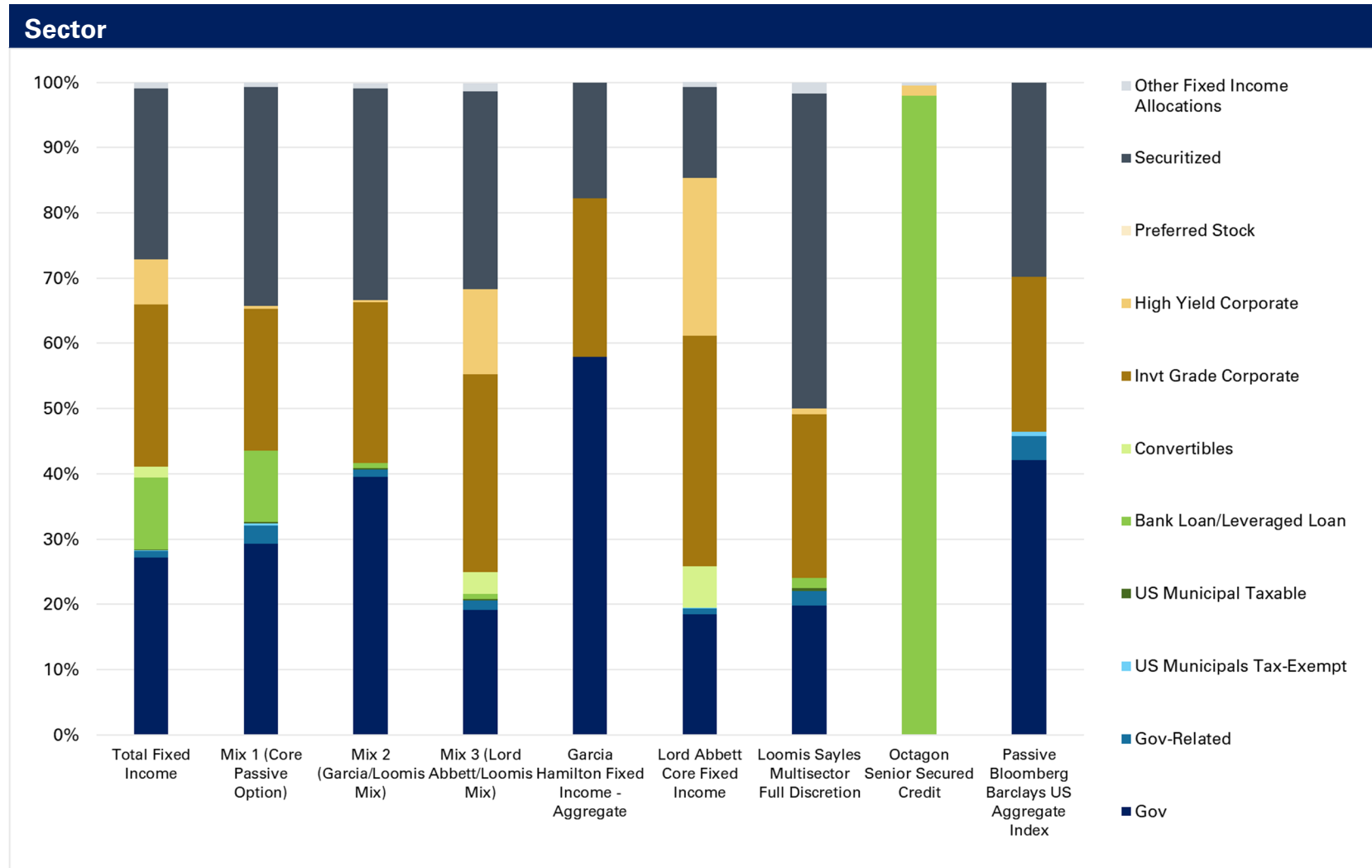
Information Ratio defined as: Realized Alpha/Tracking Error



# ACTIVE RISK BUDGET



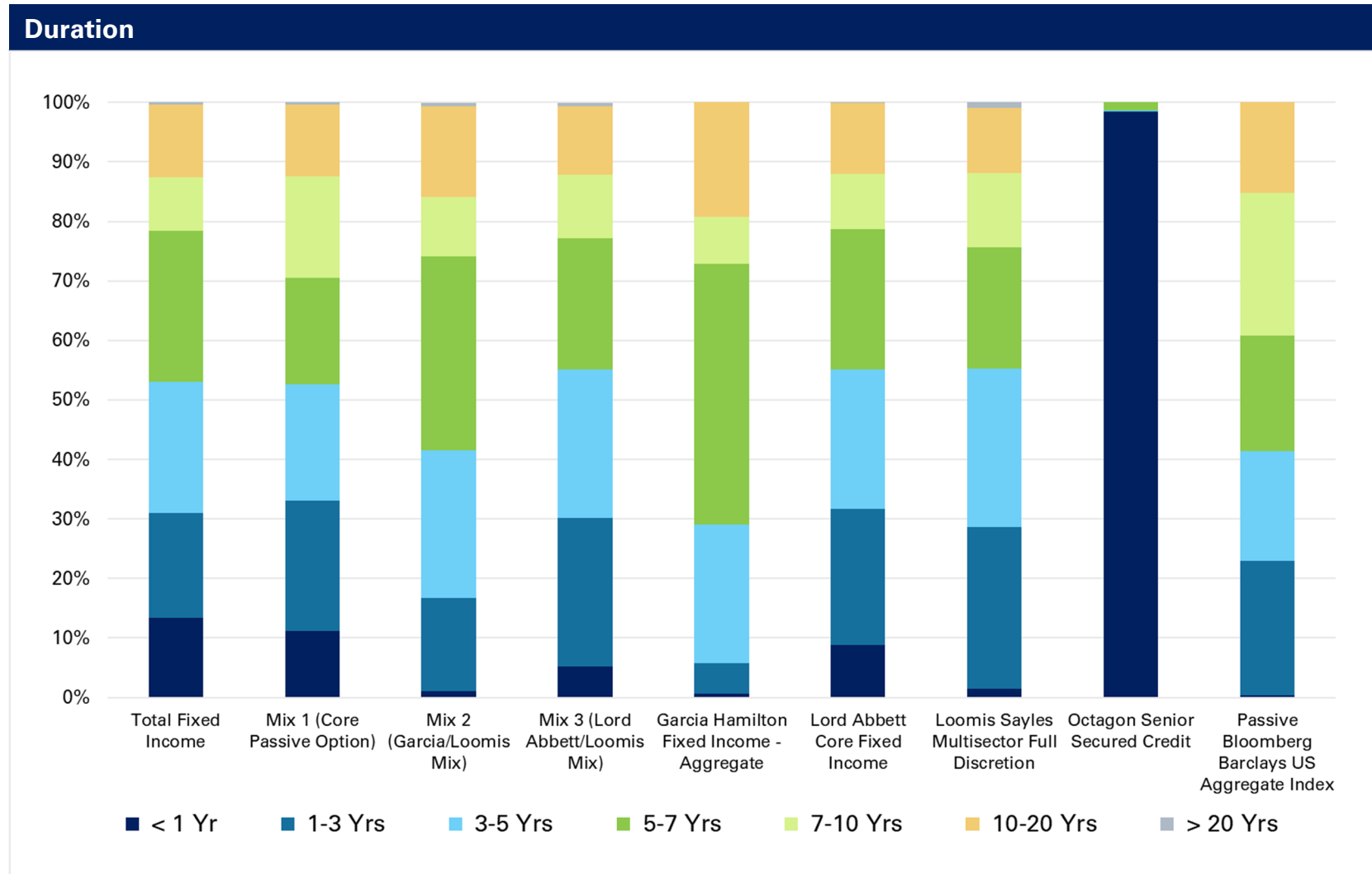
# HOLDINGS ANALYSIS



Allocations as of 09/30/2022. The Northern Trust: NT Aggregate US Bond Index Strategy was used to proxy the holdings of the Bloomberg Barclays US Aggregate Index.



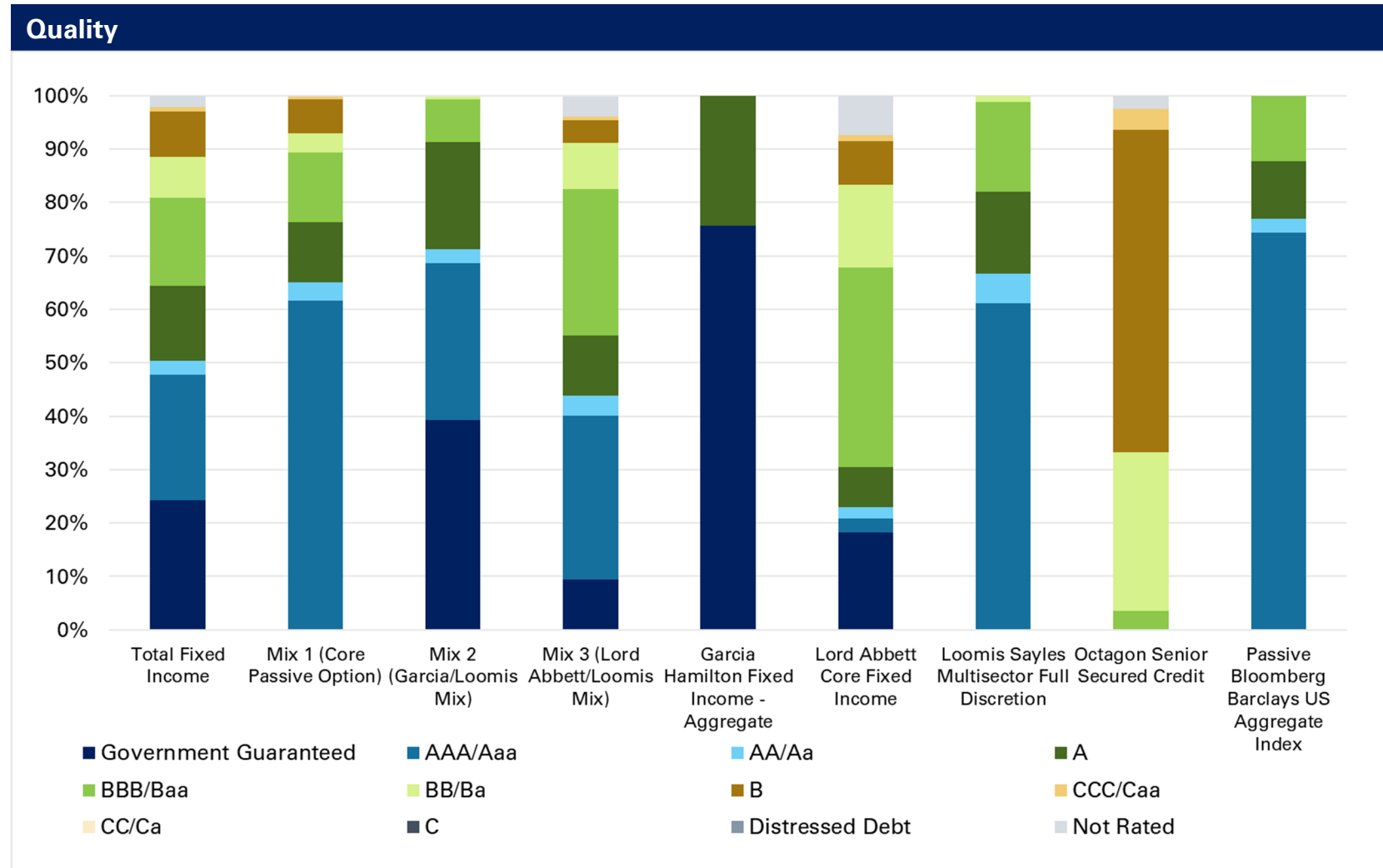
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# HOLDINGS ANALYSIS



Allocations as of 09/30/2022. The Northern Trust: NT Aggregate US Bond Index Strategy was used to proxy the holdings of the Bloomberg Barclays US Aggregate Index.

# TOTAL RETURN CORRELATIONS

Total Return	Garcia Hamilton Fixed Income - Aggregate	Lord Abbett Core Fixed Income	Loomis Sayles Multisector Full Discretion	Octagon Senior Secured Credit	Passive Bloomberg Barclays US Aggregate Index	S&P 500 Index
Garcia Hamilton Fixed Income - Aggregate	1.00					
Lord Abbett Core Fixed Income	0.95	1.00				
Loomis Sayles Multisector Full Discretion	0.66	0.72	1.00			
Octagon Senior Secured Credit	0.25	0.31	0.68	1.00		
Passive Bloomberg Barclays US Aggregate Index	0.95	0.98	0.64	0.16	1.00	
S&P 500 Index	0.31	0.31	0.70	0.64	0.24	1.00

<b>High Positive</b> ( $> 0.75$ )	<b>Moderate Positive</b> ( $0.75 - 0.25$ )	<b>Uncorrelated</b> ( $-0.25 - 0.25$ )	<b>Moderate Negative</b> ( $-0.25 - -0.75$ )	<b>High Negative</b> ( $< - 0.75$ )
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Analysis time period relative to start/end dates shown on "Portfolio Summary" page



# APPENDIX



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# FIXED INCOME: ACTIVE VS PASSIVE

Strategy	Dispersion	Performance	Passive Options?	NEPC View
Definition	Wide range of strategy returns	Median strategy outperforms benchmark net of fees	Efficient passive options available	Active / Passive Recommendation
Short Duration	Red	Grey	Green	<b>Active</b>
TIPS	Red	Red	Green	<b>Passive</b>
US Core	Red	Grey	Green	<b>Neutral</b>
US Core Plus	Grey	Green	Grey	<b>Active</b>
Municipals	Red	Grey	Grey	<b>Active</b>
Non-Traditional	Green	NA	Red	<b>Active</b>
Global Multi-Sector	Green	NA	Red	<b>Active</b>
Multi-Sector Credit	Green	NA	Red	<b>Active</b>
Bank Loans	Green	Grey	Red	<b>Active</b>
High Yield Corporate	Green	Grey	Red	<b>Active</b>
High Yield Municipal	Green	Grey	Red	<b>Active</b>
Emerging Markets Debt	Green	Grey	Red	<b>Active</b>
Structured Credit/CLO	Green	NA	Red	<b>Active</b>

 Yes

 Mixed

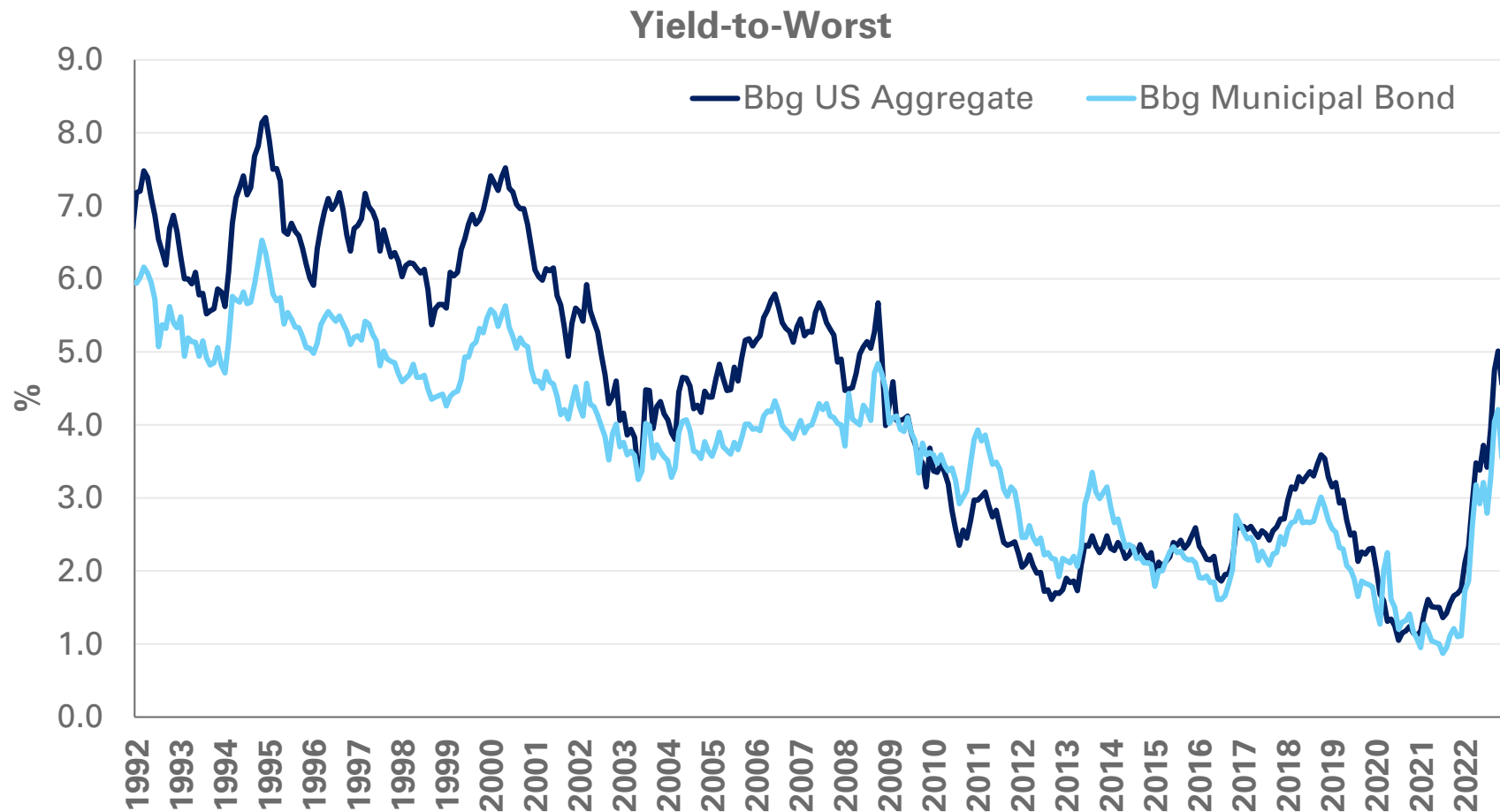
 No





# YIELDS IN CORE FI RETURN TO PRE-GFC LEVELS

OPPORTUNITY SET IS MORE ATTRACTIVE

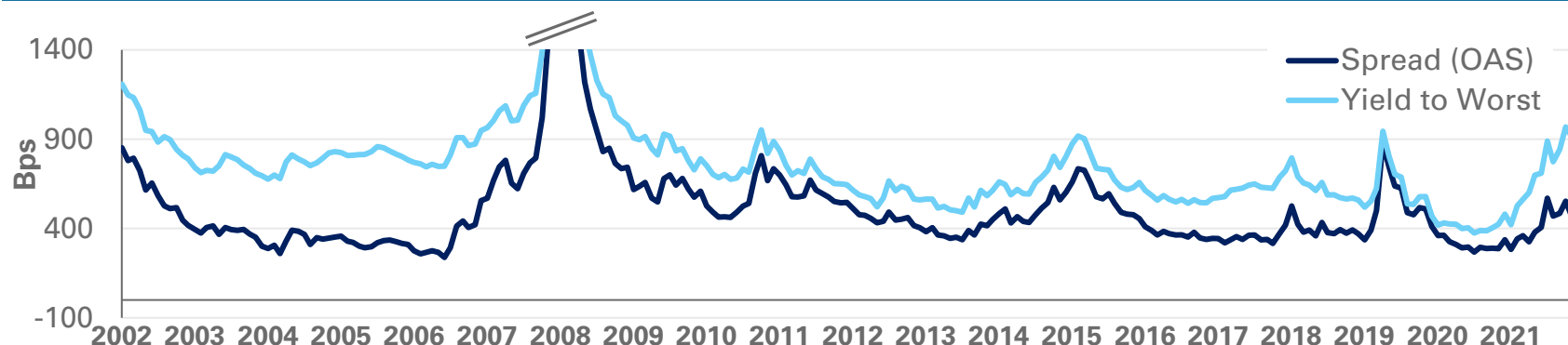


# BELOW-IG YIELDS HAVE WIDENED...

BUT EXPECT VOLATILITY

- Funds with bond and loan flexibility offer lower duration and protection from rate volatility, while capturing convexity in bonds
- Opportunistic allocations outside of corporates (typically CLO debt) can add to returns and take advantage of market dislocations
- High-yield bond spreads are trading around historical averages, not recession or dislocation levels, and can expect higher defaults and downgrades.
- Floating rate loans have provided protection from interest rate volatility and offer YTM in excess of 10%.

## High-Yield Bond Spreads and Yields



Source: JPMorgan

# FUND SUMMARY

	Garcia Hamilton Fixed Income - Aggregate	Lord Abbett Core Fixed Income	Loomis Sayles Multisector Full Discretion	Octagon Senior Secured Credit	Passive Bloomberg Barclays US Aggregate Index
<b>Total Risk and Return</b>					
Annualized Return (Since Inception)	2.0%	1.5%	3.8%	4.5%	1.1%
Annualized Standard Deviation	3.8%	3.8%	5.5%	4.3%	3.8%
<b>Active Risk and Return</b>					
Realized Alpha	0.9%	0.4%	3.3%	1.0%	0.0%
Beta	0.96	0.99	0.90	0.90	1.00
Tracking Error	1.1%	0.7%	4.2%	0.7%	0.0%
Information Ratio	0.81	0.55	0.80	1.36	---
<b>Duration and Quality Regression</b>					
Duration	Neutral	Neutral	Neutral	Very Short	Neutral
Quality	Moderate	High	Moderate	Low	High
<b>Return Decomposition</b>					
Upside Market Capture	107.4%	102.7%	134.3%	98.1%	100.0%
Downside Market Capture	89.0%	95.1%	79.7%	81.8%	100.0%



All Risk/Return statistics calculated through 09/30/22.  
Information Ratio defined as: Realized Alpha/Tracking Error

# FUND SUMMARY: TRAILING RETURNS

Fund	Analysis Start Date	Analysis End Date	Last 3 Months	YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception (Analysis Start Date)
Garcia Hamilton Fixed Income - Aggregate	2/28/2012	9/30/2022	-5.2%	-13.0%	-13.1%	-2.9%	0.0%	0.8%	1.5%	2.0%
Bloomberg Barclays US Aggregate			-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.5%	0.9%	1.1%
<i>Excess Return</i>			<i>-0.5%</i>	<i>1.6%</i>	<i>1.5%</i>	<i>0.4%</i>	<i>0.2%</i>	<i>0.2%</i>	<i>0.6%</i>	<i>0.9%</i>
Lord Abbett Core Fixed Income	2/28/2012	9/30/2022	-4.9%	-14.8%	-14.8%	-2.9%	-0.1%	0.7%	1.1%	1.5%
Bloomberg Barclays US Aggregate			-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.5%	0.9%	1.1%
<i>Excess Return</i>			<i>-0.1%</i>	<i>-0.2%</i>	<i>-0.2%</i>	<i>0.4%</i>	<i>0.2%</i>	<i>0.2%</i>	<i>0.2%</i>	<i>0.4%</i>
Loomis Sayles Multisector Full Discretion	2/28/2012	9/30/2022	-3.0%	-14.7%	-14.9%	-0.3%	1.3%	3.2%	3.2%	3.8%
Bloomberg Barclays US Aggregate			-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.5%	0.9%	1.1%
<i>Excess Return</i>			<i>1.8%</i>	<i>-0.1%</i>	<i>-0.3%</i>	<i>3.0%</i>	<i>1.6%</i>	<i>2.7%</i>	<i>2.3%</i>	<i>2.7%</i>
Octagon Senior Secured Credit	2/28/2012	9/30/2022	0.9%	-4.5%	-3.9%	2.0%	3.0%	3.9%	4.2%	4.5%
CS Leveraged Loan			1.2%	-3.3%	-2.6%	2.1%	3.0%	3.7%	3.7%	4.0%
<i>Excess Return</i>			<i>-0.3%</i>	<i>-1.2%</i>	<i>-1.2%</i>	<i>-0.2%</i>	<i>0.0%</i>	<i>0.2%</i>	<i>0.5%</i>	<i>0.5%</i>
Passive Bloomberg Barclays US Aggregate Index	2/28/2012	9/30/2022	-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.5%	0.9%	1.1%
Bloomberg Barclays US Aggregate			-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.5%	0.9%	1.1%
<i>Excess Return</i>			<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>



All Risk/Return statistics calculated through 09/30/22.

# 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 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 accurate data cannot be obtained, manager data 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. Fund performance or rankings contained in this report should not 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.



## **The MWRA Retirement System Small Cap Growth Equity Search**

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The Massachusetts Water Resource Authority Retirement System (the "System") is accepting proposals from investment firms to manage a U.S. Small Cap Growth Equity mandate for the System's ~\$650 million, defined benefit, pension fund. To be considered, candidates must be offering an active, long-only, U.S. small cap growth strategy. Core, value, and smid/mid-cap strategies will not be considered. The System anticipates investing approximately \$20 million with the manager(s). In order to be considered, the candidates must meet the following criteria.

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. Guidelines can be found in the attached links.  
<https://malegislature.gov/Laws/SessionLaws/Acts/2011/Chapter176>  
<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleIV/Chapter32>
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.

By submitting a formal response to this RFP, the Manager acknowledges that the Investor, MWRA Employees' Retirement System, is bound by both Massachusetts Open Meeting Law as governed by Massachusetts General Laws Chapter 30A § 18-25 and 940 CMR 29.00, and the Massachusetts Public Records Law as governed by Massachusetts General Laws Chapter 66 and 950 CMR 32.00. Any document submitted by the Manager to the Investor or discussed in open session at a public meeting will be presumed to be a public record unless it otherwise qualifies under an exemption as specified in the statute.

If you are interested in participating in the search, please update eVestment through 4Q 2022 at [www.evestment.com](http://www.evestment.com).

In addition, please provide NEPC with the following information:

1. A cover letter indicating your firm's interest in the search. Please include the vehicle you are proposing for this search and the fee schedule you are proposing for this mandate, as well as confirmation regarding the attached side letter.
2. An email copy of all eVestment information at the firm and product level for the proposed strategy. Please clearly indicate the product type category in which you classify your product. All historical information surrounding investment market capitalization must be included.
3. The completed Fund Summary template provided by NEPC for the strategy you are proposing.
4. Completion of the PERAC disclosure and verification forms (4), which are available on both the PERAC and NEPC website.

All questions should be directed via email to the following contact (no phone calls please). **Proposals must be submitted to [MWRAsearch@nepc.com](mailto:MWRAsearch@nepc.com) by 2:00 pm EDT, on February 13, 2023.** Proposals received after the deadline will not be considered.

MWRA Search  
NEPC, LLC  
[MWRAsearch@nepc.com](mailto:MWRAsearch@nepc.com)

**From:** [Russo, Carolyn](#)  
**To:** [McManus, Julie](#)  
**Subject:** FW: Lord Abbett - Wilmington Trust Update  
**Date:** Thursday, December 29, 2022 7:06:44 AM  
**Attachments:** [WTNA CIT Update.pdf](#)

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Julie:

Please add to Board package for January. Thanks.  
Carolyn

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**From:** Balewicz, Greg <GBALEWICZ@LordAbbett.com>  
**Sent:** Wednesday, December 28, 2022 4:08 PM  
**To:** Russo, Carolyn <Carolyn.Russo@mwra.com>  
**Cc:** Grzejka, Sebastian <SGrzejka@nepc.com>; Poulin, Timothy <TPOULIN@LordAbbett.com>;  
Gallagher, Jennifer <JGALLAGHER@LordAbbett.com>  
**Subject:** [EXTERNAL] Lord Abbett - Wilmington Trust Update

**[EXTERNAL]: This is an external email. Do not click on links or attachments if sender is unknown or if the email is unexpected.**

Good afternoon Carolyn,

I hope you are having a nice Holiday Season.

As you know, we partnered with Wilmington Trust (WT) for our Collective Investment Trusts (CIT) in order to offer vehicles with daily liquidity as alternatives to the Lord Abbett mutual funds. The MWRA Retirement System currently invests in the Lord Abbett Core Fixed Income CIT. You should be receiving a personalized copy of the attached letter directly from WT regarding an update on their CIT business. The letter outlines their decision to sell their CIT business to an affiliate of Madison Dearborn Partners, LLC (MDP). Details of the transaction are contained in the letter and should be reviewed by you carefully.

If you wish to continue with your investment in the CIT, no action is necessary. Please do not hesitate to let me know if you have any questions or concerns. We appreciate your partnership and look forward to discussing this with you further.

Kind regards,  
Greg

**Gregory Balewicz**  
*Institutional Director, U.S. Institutional*  
**Phone** 201-827-2470  
[gbalewicz@lordabbett.com](mailto:gbalewicz@lordabbett.com)





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Lord, Abbett & Co. LLC, Lord Abbett Distributor LLC



December 22, 2022

JOHN Q. SAMPLE  
123 ANY STREET  
ANYTOWN, NY 12345-6789

**Re: Change in Trustee under Trust Agreement**

Dear Plan Fiduciary or Plan Sponsor:

You are receiving this letter because you are the plan fiduciary or plan sponsor of an employee benefit plan (the "Plan") that invests in one or more collective investment trusts ("CITs") maintained under the Declarations of Trust listed on the Schedule attached to this letter (each, a "Trust Agreement" and each such trust, a "Trust"). If you are a Plan Sponsor with respect to which Wilmington Trust, N.A. ("Wilmington") is aware that a third-party manager is responsible for the decision to invest in the Trust(s) or make the Trust(s) available as an investment option for the Plan, (i) that manager will also receive this letter, (ii) any actions taken in respect of this letter will be the responsibility of that manager, and (iii) this letter is for informational purposes only. If you are not the fiduciary or sponsor of a Plan which invests in one or more of the Trusts, please contact us immediately.

If you are the plan fiduciary, you have responsibility for the Plan's investment in the CITs. The Plan's investment was made pursuant to one or more Participation Agreements between the plan fiduciary, on behalf of the Plan, and Wilmington. This letter is to inform you that on December 19, 2022, Wilmington entered into a definitive agreement to sell its collective investment trust business (the "CIT Business") to an affiliate of Madison Dearborn Partners, LLC (such affiliate, the "MDP Buyer") (the "Transaction"). In connection with the Transaction, Wilmington will form a wholly-owned, Nevada-chartered non-depository trust company (the "Successor Trust Company") and Wilmington will assign and transfer the assets and liabilities of the CIT Business to the Successor Trust Company (the "Assignment"). Following the Assignment, the Successor Trust Company will be sold to the MDP Buyer. We currently anticipate that the Transaction will be completed in the first half of 2023.

Effective as of the completion of the Assignment, the Successor Trust Company will automatically become the successor trustee under each Trust pursuant to the provision of the relevant Trust Agreement identified as the "Successor Provision" on the Schedule attached to this letter, and will thereby (i) have all the rights, powers and obligations of the trustee under the Trust (i.e., the rights, power and obligations currently allocated to Wilmington in respect of the Trust), and (ii) be deemed to have been duly appointed as an "investment manager" of the Plan investing in one or more of the Trusts under Section 3(38) of the Employee Retirement Income Security Act of 1974, as amended, with respect to the Plan.

(over, please)

The MDP Buyer has authorized us to convey the following information about how it currently intends to administer the CIT Business following the closing of the Transaction. Your Plan will be able to continue to make admissions to and withdrawals from the Trust under the same terms and conditions as prior to the closing. The MDP Buyer does not have current plans to change (i) the custodian, transfer agent or investment advisers for the Trust or (ii) senior management that currently runs the CIT Business. It is anticipated that in connection with the Assignment, your Participation Agreement(s) and each Trust Agreement will be amended to replace Wilmington with the Successor Trust Company as the "Trustee" (as such term is used in the relevant Participation Agreement and Trust Agreement). Furthermore, when the Successor Trust Company is sold to the MDP Buyer, the MDP Buyer may make certain administrative amendments to the Trust Agreement in connection with the Transaction (for example, investment fund/trust name changes, and changing governing state law to the extent not preempted by federal law) as it deems appropriate, but any such amendments would not be expected to have a material impact on the operation of the CIT Business or Trust. Following the consummation of the Assignment and the Transaction, the Trust Agreement and Participation Agreement will continue in full force and effect in accordance with their terms, subject to amendments described herein.

If you wish to continue your investment in the Trust(s) and accept the appointment of the Successor Trust Company to succeed Wilmington as the trustee of the Trust(s), you do not have to take any action. The Successor Trust Company's appointment as trustee will be effected automatically upon the effective date of the Assignment.

**If you do not wish to accept the appointment of the Successor Trust Company as successor trustee as contemplated herein, as plan fiduciary, you must:**

**(i) terminate the Participation Agreement by providing at least 30 days' advance written notice to Wilmington at [consent@wilmingtontrust.com](mailto:consent@wilmingtontrust.com).**

**AND**

**(ii) submit a request that all of the Plan's assets be withdrawn from the Trust to your Plan record keeper or other party that normally processes Trust redemption request for your Plan.**

Failure to provide the notifications set forth above by February 21, 2023 will be deemed to constitute consent to the appointment of the Successor Trust Company as trustee of the Trust.

Please note: pending withdrawal requests submitted prior to and including the date of this notice, as well as any withdrawal requests submitted following receipt of this notice will be processed in accordance with the withdrawal procedures applicable to the investment funds in which your Plan participates and the relevant Participation Agreement and Trust Agreement.

If you have any questions about the Assignment or Transaction, please submit them via e-mail to [consent@wilmingtontrust.com](mailto:consent@wilmingtontrust.com). On behalf of all of us at Wilmington, we thank you for your support.

Sincerely,

Christopher D. Randall  
Executive Vice President  
Wilmington Trust

Wilmington Trust is a registered service mark used in connection with various fiduciary and non-fiduciary services offered by Wilmington Trust, N.A. and certain other subsidiaries of M&T Bank Corporation.

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### Schedule of Trusts

Name of Trust	Date of Trust Agreement	Successor Provision (§ of Trust Agreement)
Wilmington Trust Collective Investment Trust	June 20, 2016	6.14
Wilmington Trust Collective Investment Trust II	June 20, 2016	6.14
Wilmington Trust Collective Investment Trust III	June 20, 2016	8.15
Wilmington Trust Collective Investment Trust IV	March 25, 2022	7.14
Wilmington Trust Collective Investment Trust for Stable Value Funds	July 12, 2016, amended May 11, 2018	8.4
Lazard/Wilmington Collective Trust	August 20, 2009, amended November 1, 2015 and June 20, 2016	11.4
Lazard/Wilmington Capital Allocator Series Collective Trust	August 20, 2014, amended June 20, 2016	6.01
Lazard Wilmington Global Fixed Income Collective Trust	December 1, 2014, amended June 20, 2016	6.01
Lazard/Wilmington International Equity Collective Trust	March 26, 2014, amended June 20, 2016	6.01
Lazard/Wilmington Managed Volatility Collective Trust	March 26, 2014, amended June 20, 2016	6.01
Callan Open Architecture Trust	July 18, 2018	6.16