MWRA EMPLOYEES' RETIREMENT BOARD MEETING

AGENDA

Wednesday, February 23, 2022 10:00 a.m.
MWRA, 2 Griffin Way
Via Remote Participation

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 – Per Mr. Zecha's request at the January meeting, staff pay adjustments scheduled for discussion

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 91A Termination Hearing (may require Executive Session)

Item 4 Approval of Minutes – VOTE
- a) January 27, 2022 Minutes
- b) January 27, 2022 Executive Session Minutes

Item 5 Approval of Warrants – VOTE
- a) Warrant 2-2022
- b) Warrant 2-2022A – Payroll

Item 6 Approval of Monthly Transfers 2-2022 – VOTE

Item 7 Acknowledgement of retirement applications under G.L. c 32 §5 – VOTE
- a) Doreen Thornton DOR 1/10/2022
- b) Thomas Surette DOR 1/15/2022
- c) Zhanfei Gao DOR 1/22/2022
- d) Michael F. Flynn DOR 1/29/2022
- e) Thomas Brown DOR 2/1/2022

Item 8 Approval of Richard Dalton's buyback of prior Town of Winthrop employment (1/1/1980 – 8/31/1980), 8 months creditable service – VOTE

Item 9 Approval of FY23 COLA – VOTE

Item 10 Manager Due Diligence Presentations
- 10:30 a.m. a) Loomis Sayles
- 10:50 a.m. b) PA Capital
- 11:10 a.m. c) Ascent
- 11:30 a.m. d) Garcia Hamilton

Item 11 NEPC

a) Asset Allocation Review & Outlook
b) Flash Report as of 1/31/2022
c) Q4 Performance Report
d) Real Estate Search Book
e) Polen Investment Objectives, Guidelines & Restrictions

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

Item 99-1 PERAC MEMO #8/2022 – Actuarial Data

Item 99-2 Analysis of H-257/S-1668

Item 99-3 The Patriot Ledger article regarding Quincy Retirement Board

Item 99-4 Email regarding Ares Management acquisition of rental home company Front Yard Residential

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, March 31, 2022, 10:00 a.m., Chelsea

MASSACHUSETTS WATER RESOURCES AUTHORITY EMPLOYEES' RETIREMENT BOARD MEETING JANUARY 27, 2022

A meeting of the MWRA Employees' Retirement Board was conducted remotely on Thursday, January 27, 2022. Remote access was provided to the public via Zoom, with call-in information provided on the official Meeting Notice posted to mwraretirement.com and the MA Secretary of State's website. Participating in the remote meeting were Board members Thomas Durkin, Kevin McKenna, Andrew Pappastergion, and Frank Zecha, and staff members Carolyn Russo, Julie McManus, and Danielle DiRuzza. Mr. Fleming was absent due to medical reasons. Representatives from NEPC, Sebastian Grzejka and Kiley Fisher, as well as members of the public attended. Mr. Durkin called the meeting to order at 10:06 a.m.

1) Call the meeting to order-roll call of members: Mr. Durkin, Mr. McKenna, Mr. Pappastergion, and Mr. Zecha present via remote access.

2) Standing Committee Reports
   i. By-Laws Committee: No report
   ii. Human Resources Committee: No Report

   Mr. Zecha stated that due to the fact that there will be several upcoming high-level Retirement System positions opening locally in the next few months with very few qualified applicants, he recommends that the Board consider raising the pay of the Executive Director to $145,000 and the Retirement Coordinator to $125,000-$127,000 in order to try to prevent losing staff to other Systems. The Retirement Coordinator has not had a raise since July 2019, and although historically the position has received raises according to Unit 6 contracts, he does not see the need for the Board to further delay. Mr. Zecha asked that the matter be placed on the agenda for the February meeting, and Mr. Durkin agreed to place it on next month's agenda.

   iii. Special Committee, Stipend: No report
   iv. Job Review Committee: No report

3) Approval of Minutes of December 16, 2021 meeting – VOTE

   Mr. McKenna questioned the wording in regard to the discussion of the Member Services Coordinator's salary, about his asking to add step increases. The Executive Director recalled from her notes that Mr. McKenna requested to amend Mr. Zecha's motion, and Mr. Zecha declined. Mr. Fleming expressed that his intention is that the Board use the Unit 6 contract as a guide only, but that future raises for staff may be left to, and awarded at, the Board's discretion.

On a motion made by Mr. Pappastergion and seconded by Mr. McKenna:
VOTED
to approve the December 16, 2021 regular Meeting Minutes and Executive Session Minutes as submitted by the Executive Director. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

4) Approval of Warrants – VOTE

a) Warrant 12-2021

On a motion made by Mr. Pappastergion and seconded by Mr. Zecha:
VOTED
to approve Warrant 1-2022. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

b) Warrant 1-2022A – Payroll

Mr. McKenna requested that on the completion of the payroll that the Retirement Coordinator send the Board a copy of Warrant 01-2022A.

On a motion made by Mr. Pappastergion and seconded by Mr. Zecha:
VOTED
to approve Warrant 1-2022A. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

5) Approval of Monthly Transfers 1-2022 – VOTE

On a motion by Mr. McKenna and seconded by Mr. Zecha:
VOTED
to approve the 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.

Mr. McKenna asked about expected capital calls. The Executive Director reported that we received a capital call from Constitution in the amount of just over $10,000,000 for the new CoInvestment VI Fund, from Carval in the amount of $300,000, and from PRIM in the amount of approximately $70,000 for PEVY2022, all due the first week of February.

6) Acknowledgement of retirement applications under G.L. c 32 §5

a)	Michael DiMeco	DOR 1/4/2022
b)	Thomas Lestrade	DOR 1/4/2022
c)	Patricia Sullivan	DOR 1/4/2022
d)	Godfrey Ezeigwe	DOR 1/8/2022

e) Joseph Barrett DOR 1/9/2022

On an omnibus motion by Mr. McKenna and seconded by Mr. Pappastergion:
<u>VOTED</u>
to acknowledge the s. 5 retirements as detailed above. 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 Bank of America Cash Reconciliations – VOTE

a) December 2020
b) January 2021
c) February 2021
d) March 2021
e) April 2021
f) May 2021
g) June 2021
h) July 2021
i) August 2021
j) September 2021
k) October 2021
l) November 2021
m) December 2021

On a motion by Mr. McKenna and seconded by Mr. Pappastergion:
<u>VOTED</u>
to approve the Bank of America Cash Reconciliations as listed above. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

Mr. Durkin asked if the Executive Director had any comments, and the Executive Director stated only that the new Member Services Coordinator hit the ground running and promptly caught up on all of the outstanding reconciliations.

8) Manager Due Diligence Presentations

The following managers underwent an annual investment manager review pursuant to 840 CMR 16.07. The managers presented performance and investment reports detailing the manager's activities, which the Board reviewed.

Select Equity Group
TerraCap
PineBridge
Boston Partners

Ms. Kerry Dempsey joined the call on behalf of SEG. Mr. Grzejka cautioned Ms. Dempsey that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Ms. Dempsey reported that SEG is now over $50bn assets under management. The firm has closed the small/mid cap fund to new investments. The team has been stable, with 9 portfolio managers including the 5 original ones and 17 qualitative analysts. 2021 was a rough year, with a net return of 3% as opposed to 7.8% for the bench (MSCI ACWI ex US). SEG attributes much of the underperformance to a run experienced by lower quality businesses driven by cyclicals in which SEG does not invest. SEG estimates that 5% of the 7.8% is attributable to cyclicals such as banks, energy and materials. Vaccine progress lagged in non-US markets, non-US currencies have weakened, and the USD is the most expensive it's been since 2003. However, SEG maintains a positive outlook for 2022. Mr. McKenna asked if most of the underperformance is due to energy, and Ms. Dempsey reiterated that 5% of the benchmark's return was attributable to energy, banks and materials. Mr. Grzejka asked about the impact of inflation on the materials sector. Ms. Dempsey responded that SEG seeks businesses with 10% fee cash flow, and that the bigger concern right now is labor and wage inflation, particularly in critical businesses. Higher costs will be passed along. Payment processors were down in 2021, but those hurt last year are now expecting mid to high single-digit growth, so it may be a good entry point. Consumers have capital, and travel and leisure are expected to pick up. The EU was locked down to a greater extent that the US, so double-digit organic growth is expected. Back office automation ("Productivity Improvers") was underweight but is now expanding, and this area is expected to comprise roughly 10% of the portfolio. Mr. McKenna asked if Experian is part of this growth. Ms. Dempsey responded that with growing mortgages, credit cards, etc., assessing creditworthiness is growing. SEG is sector and geography agnostic; rather they seek high quality businesses. About 50% of the fund's investments are in the EU, with additional investments in North America (Canada). The fund is underweight Asia ex-Japan, and increased the exposure in Japan from 5% to 8%. The fund is underweight China as well, decreasing exposure to Alibaba and Tencent in response to regulatory crackdowns by the Chinese government, but increased exposure to JD.com (ecommerce China). Mr. Zecha asked about SEG's peer rankings over the 1 and 3 year periods. Ms. Dempsey responded that the one-year numbers would likely be released soon, but would expect 4th quartile, and that over the 3 and 5 year periods SEG would likely fall in the 1st or 2nd quartile. Ms. Dempsey signed off the call at 10:46 a.m.

Mr. McKenna noted the lack of exposure to energy and financials in SEG and asked Mr. Grzejka if the System has exposure through Schroders, and whether we evaluate sectors for overall exposure. Mr. Grzejka noted that growth managers tend to underweight energy & financials, but noted quality of revenues is a bigger issue than sectors. Globally energy is out of favor with ESG integration, but emerging markets will still have exposure.

At 10:50 Mr. Stephen Hagenbuckle, Mr. Nicholas Vician and Mr. Joseph Connolly joined the call from Terracap. Mr. Grzejka cautioned the participants that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Connolly began by thanking the Board for the confidence and for contributing to Terracap's growth. Fund III has already had 17 distributions, and IV has had 18. Distributions have been made every 2 months for the six years the System has invested with Terracap. Mr. Hagenbuckle expects that the Forest Park property deal will close in March. The Tampa Oaks property is expected to be sold in April. The net IRR through September on Fund III is 13.8% and on Fund IV is 20.6%. The System has invested a total of $2.6m in Fund III, has had distributions in the amount of $2.1m and has remaining value of $1.6m as of 9/30/21. The System has invested $4m in Fund IV, has received $1.7m in distributions, and has remaining value of $3.4m. The remaining values are expected to be marked up with the 12/31 reporting. The Northwoods property is expected to generate a 40% IRR on the expected sale in April or May, and proceeds from the Breckenridge sale are expected in June. Mr. McKenna asked how Covid and urban migration has affected the markets and consequently the funds' positions. Mr. Hagenbuckle stated that Terracap invests in the markets which have experienced inbound migration, increasing demand and decreasing supply. This has consequently driven lease rates and property values up, benefitting the funds. Terracap does not have exposure in the areas such as California and New York experiencing significant outbound migration. Mr. McKenna asked how Terracap has dealt with exposure to office with the rise of telework. Mr. Vician commented that there was office exposure in prior funds but none is expected in Fund V. However, there have also been inbound corporate migrations for businesses seeking more favorable tax environments, and moving with the workforce, which have benefitted Terracap as well. Mr. Hagenbuckle summarized that it is a good time to be in real estate, particularly because the cost of new construction remains high, and Terracap was positioned early in the right markets. The local markets know Terracap is reliable, reputable and efficient in deals, so they enjoy an advantage with brokers as a result. Mr. Durkin asked about the impact of rising interest rates. Mr. Hagenbuckle stated that interest rate expectations are underwritten into every acquisition plan. Terracap is expecting rate increases of .5%-.75% in 2022. Mr. McKenna noted that at the time of the initial investment Terracap had six employees and asked whether Terracap has expanded to scale with their growth. Mr. Hagenbuckle commented that at the time the System invested in Fund III Terracap was in southwest Florida only, and has now expanded to Tampa, Atlanta and Denver, and is planning to add a new office in either Dallas or Phoenix. They are up to 26 employees, and expect to hire a few more in the near term. Eleven are coinvestors, so there is an alignment with the investors' interests. Terracap thanked the Board for its continued support. Mr. Zecha stated that he appreciates Terracap's work in making the Funds a success, and noted that it seems 90% of his retirees who relocate go to Florida, so Terracap was ahead of the curve. Terracap representatives signed off the call at 11:17 a.m.

Mr. Zecha asked Mr. Grzejka where we are on fees overall, because PRIT is at about 60bps. Mr. Grzejka stated that the System is at about 57-58bps. Mr. Zecha stated that since we are not paying more fees than PRIT, are returns an “apples to apples” comparison, and Mr. Grzecha answered affirmatively.

Olivier Kelleher and Shannen Simmons joined the call representing Pinebridge. Mr. Grzejka cautioned the participants that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Kelleher noted that is not a big concern, since the PEP V fund is winding down and not making new investments. PEP V has approximately $785m in remaining value spread over eight sleeves. MWRAERS invested in the core, comprised of all eight sleeves with vintage years from 2005 to 2008. As of 6/30, PEP V has a Net IRR of 7.6%. Mr. Kelleher said Pinebridge had an increase in liquidations in 2021, and distributions of approximately $380,000 are expected to be forthcoming. The Asia sleeve has been one of the most volatile and poorest performers, and the CoInvestment sleeve has also not performed to expectations. Mr. Grzejka stated that we are now 13 years post GFC (Global Financial Crisis of 2008), and that the fund is largely harvested, and asked what is the strategy moving forward, and what is the approximate remaining value. Mr. Kelleher expects that Pinebridge will continue to liquidate assets, and would consider a sale on the secondary market if conditions were right. Mr. Kelleher and Ms. Simmons signed off at 11:31 a.m.

The Chair declared a recess, with a return at 11:40 a.m.

Mr. William Supple, Mr. John Forelli, and Ms. Elizabeth Sheerin joined the call on behalf of Boston Partners. Mr. Grzejka cautioned the participants that there are members of the public and/or media on the call, and to avoid discussion of any materials which may be considered proprietary. Mr. Supple began by thanking the Board for its continued support, and noted the extensive experience of the team. Mr. Supple directed the Board to page 1 of the presentation, which shows performance. Since inception, Boston Partners has outperformed the Russell 2000 value index by roughly 1.5%, although underperforming in the most recent quarter and one-year periods. The fund’s one-year return was 26.16% net of fees as opposed to 28.27% for the Russell 2000 value. The chart on page 3 of the presentations shows the value of the fund’s active management over time. Boston Partners will not outperform every quarter, but has done so in 80% of months over the last fifteen years. Mr. Zecha asked about peer rankings over the one, three, and five-year periods. Mr. Supple directed the Board to page 12, which shows that Boston Partners is in the 38th percentile over the fifteen-year period, but that he does not have the one, three and five-year numbers available. Mr. McKenna noted how prominent the ESG materials are, and that they seem to take precedence over performance in the materials. He asked about the returns of the ESG-focused products. Mr. Supple stated that Boston Partners currently has $18.7m invested in ESG/“Socially Screened” investments. He reported that the fund is comprised of stocks which have already met or exceeded Boston Partners’ quality parameters. The businesses are then run through the ESG screen, and the EGS fund is comprised of the remaining names. Page 4 shows the ESG team. Screens may include carbon, treatment of employees, materials sourcing, etc. Mr. McKenna asked what is the appropriate benchmark for ESG funds, and Mr. Supple responded that the market doesn't really know yet. Interest in ESG funds has been gradual, and the strategy has not yet proved itself to be a way to outperform. Mr. McKenna commented that the strategy is restrictive, and that a fiduciary's responsibility is to achieve the best performance for the fund. Mr. Supple noted that since the companies have already met the quality screens, MWRAERS already has some ESG exposure in the existing fund. Ms. Sheerin reported that there have been no changes to the Small Cap Value team. They have added to the research team. The small cap value strategy now has $2.6bn AUM as of 12/31, and is in the process of onboarding twelve new clients. Mr. Forelli asked that the Board turn to page 6 to review the selection process. Boston Partners is buying names with higher return on assets and return on equity relative to the index. The maximum position size is 3%, 132 holdings currently, both intended to diversify away risk. The portfolio is well-positioned for the current environment of rising inflation and interest rates. The fund is currently over-weight in energy, financials, and discretionary, and underweight in utilities, healthcare and biotech, which have seen declining revenues. Mr. Grzejka asked about sector weight guides. Mr. Forelli stated that there is about a 35% sector maximum, but that the portfolio is general not that concentrated. The fund has maintained "old value tech names" because they are earning money, such as NCR which was formerly a cash register giant but now focuses on ATM's. FANGS have performed well, better than Small Cap. Mr. Supple was able to retrieve 3 and 5-year peer numbers and stated that Boston Partners is roughly at the 52nd and 56th percentile respectively vs. their value peer group. Mr. Grzejka asked Mr. Supple to comment on the Bright Health purchase. Mr. Forelli reported that the stock did experience a correction falling from $15 per share to $7 per share, and that they purchased it at $7. The holding has fallen further but Boston Partners believes the company has a good management team in place, is being punished in the short-term, but is expected to recover. Mr. Forelli noted that it is MWRAERS' 25th year with Boston, and extended the firm's thanks for the commitment. Representatives of Boston Partners signed off the call at 12:14 p.m.

The Board determined each manager continues to operate in a manner represented when retained and outlined in the agreement between the Board and the manager.

Mr. Grzejka clarified that the reason for the Bright Health question was that the Executive Director had alerted him that Bright Health's pre-IPO financials are the subject of a securities litigation action, and the question was intended to ascertain that proper due diligence was done regarding the purchase.

9) NEPC

a) Flash Report as of 12/31/2021
b) Rebalance Recommendation – VOTE
c) Real Estate Search Review
d) Polen Capital Focus Growth Strategy – Guideline

Regarding the Flash report, the System had a great year and is up about 13%, with none of the private equity and only some of the real estate reporting in for Q4. Large Cap was up over 24% on the one-year (top 15% in the universe) with Rhumbline S&P finishing at 28.6%. Coho performed as expected. Polen lagged its benchmark, but higher rates tend to affect more adversely growth equity. January 2022 to date has favored value by a large margin. Loomis Sayles has added value to the small cap portfolio coming in at 10.5% for the year. Rising rates have hurt Non-US Equity. Baillie Gifford in particular was hurt by their buy and hold discipline, while Schroders outperformed their benchmark. Emerging markets are finally at target, now that ABS has been funded. Octagon and Loomis Sayles performed well in Fixed Income. The PRIT Hedge Fund returned 9.5% for the year, with Corbin coming in at 8.5%.

The Asset Allocation discussion is scheduled for the February meeting. Mr. McKenna asked about the Peru court proceedings concerning Entrust and underlying manager Grammercy. Mr. Grzejka stated that he would follow up, because there was supposed to have been a hearing in October regarding the value of the remaining assets. Mr. McKenna asked about the expected outcome. Mr. Grzejka responded that it is difficult to predict but the preferred outcome for the System is that Grammercy prevails. Mr. Zecha asked about NEPC's expectations for January, and Mr. Grzejka predicted that the fund will be down 3-3.5% as a whole. NEPC maintains that the managers are doing what they've been hired to do, but that it has been a tough year thus far. Mr. Zecha asked whether over time the Board should consider rebalancing twice per year. Mr. Grzejka stated that the Board currently reviews the asset allocation annually and rebalances monthly. The asset allocation is a long-term strategy and is not intended to predict or address short-term outcomes. The System would not likely benefit from reacting to short-term information rather than adhering to a well-though out long-term discipline.

Mr. Grzejka stated that Constitution had surprised us with the largest and fastest capital call for a new fund the System's ever had. The Executive Director stated that they had called roughly $10m or 80% of the $12m commitment to CoInvestment Fund VI, Carval called $300,000 and PRIT VY2022 roughly $70,000, leaving us very low on cash, $2-3m after the calls and payroll go out. Mr. Grzejka stated that the rebalance is intended to restore cash necessary for the next two or three months of operating needs. Mr. McKenna asked about the TIPS position. Mr. Grzejka stated that the short-term goal is 50% of target or 2% and the long-term outlook will be addressed in the asset allocation discussion in February. He noted that real rates are currently negative, and is concerned that as rates rise TIPS will be more negatively affected than bonds. The System experienced a 9% return in an environment of a 3% return expectation in 2020, and last year pulled some of the excess returns off the table. The TIPS exposure adds to the portfolio's liquidity overall, but is not at this point "moving the needle" at only 2.1% of the portfolio.

On a motion made by Mr. Pappastergion and seconded by Mr. McKenna:
VOTED
to accept the rebalance recommendations as presented by NEPC. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

Mr. Grzejka went through the preliminary Value Add RE RFP response report. Several opportunistic managers responded, and although the language intentionally was left broad, it did specifically exclude opportunistic funds and secondaries. Mr. Grzejka asked about the Board's position on focused managers, because Aegon's is a Value-add apartment and multifamily-focused strategy. Mr. Durkin asked whether that is the area in which Terracap is focused, and what would happen if the pendulum swings back the other way. Mr. McKenna agreed, but stated that he likes Terracap's experience, and that Terracap has already dialed back their expectations for Fund V. Mr. Grzejka noted that it is significant that in V multifamily apartment/multifamily is only part of a more broad strategy, rather than a singular focus. Mr. McKenna likened the shift to that of the "last mile" properties" and stated that office may ultimately rebound due to a shift back toward in-person work. Mr. Durkin asked if the matter of selecting candidates for interviews is before the Board. NEPC's recommendation is that the Board eliminate any manager which did not comply with the RFP or which did not fit the strategy sought, they will return in February with more in-depth research, and at that time the Board may be better informed in order to select finalists. Mr. McKenna asked about Sculptor. Mr. Grzejka described the fund as mezzanine debt, and as a focused shorter-duration strategy. Mr. McKenna questioned if that presents default risk, and Mr. Grzejka responded affirmatively. Mr. Durkin stated that might be OK with fixed-rates, but Mr. Grzejka noted that most tend to be floating rate. NEPC's recommendation is to eliminate Cohen, Continental, CrossHarbor and Rockpoint since they presented opportunistic strategies, and Aegon, Elion, Greystar and Sculptor as focused strategies.

On a motion by Mr. Zecha and seconded by Mr. McKenna:
VOTED
to accept NEPC's recommendation to eliminate the opportunistic managers in accordance with the RFP's language, but to leave in the

focused managers and include them in the deeper research to be presented by NEPC in February.

Mr. Grzejka asked the Executive Director to address the Board regarding the Polen Investment Guidelines. The Executive Director reported that the day after the December meeting, Polen informed her that they saw an opportunity and would like to purchase an additional holding, which would put them over the 25-security limit for the account. Because the matter was time-sensitive, the Executive Director consulted the Chair who said to give Polen the temporary authority to do so, and to add it to the January agenda. Polen is ultimately requesting the flexibility to go up by 5 holdings total to a maximum of 30, in order to better de-risk the portfolio. She added that Polen was supposed to have submitted an amended agreement in time for the meeting, but they have not.

On a motion made by Mr. Zecha and seconded by Mr. McKenna:
VOTED
to table the matter of revising Polen's investment guideline and for Mr. Grzejka to seek clarification from Polen. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes.

10) Update on Retirement Office Access

Mr. McKenna inquired as to the reason why an individual appeared to have tried the door several times in succession. The Executive Director reported that the person works for Viscom and was testing the alarm system that particular day, and that staff were present.

11) Legal

a) John Burke Section 7 Review
b) Attorney David Hass Motions
c) 91A Termination Hearing (if matter is not resolved)

Attorney Gibson recommended that the Board convene in Executive Session under Purpose 1 to conduct the review of Mr. John Burke's application for accidental disability retirement. The Retirement Coordinator asked whether the Board wanted to take the 91A matter first since she expects the discussion to be brief. However, since the member was not already on the call and did not respond immediately to attempts by the Retirement Coordinator to Contact him, the Board proceeded with the regular order of business. Mr. Durkin asked if the next item is a hearing. Board Counsel clarified that the matter is a review rather than a hearing, that the member may be offered a hearing by the Board but one is not required, and that hearings have different notice requirements for the parties.

On a motion by Mr. McKenna and seconded by Mr. Pappastergion:
VOTED
to convene in Executive Session under Purposes 1 and 7 to discuss an application for accidental disability filed by Mr. John Burke, and to conduct a 91A compliance review regarding accidental disability retiree David Jackson. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes. The Board convened in Executive Session at 1:00 pm.

The Board reconvened in open session at 1:31pm.

On a motion by Mr. McKenna and seconded by Mr. Pappastergion:
VOTED
to convene in Executive Session under Purpose 3 to discuss ongoing litigation in the Stanton matter. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes. The Board convened in Executive Session at 1:32 pm.

The Board returned to open session at 1:46 p.m.

Attorney Gibson reported on the COLA notice, and the fact that this year the Employer does not need to be notified in advance due to the fact that the CPI/SSA COLA exceeds 3%. Mr. Durkin asked the Executive Director if she had already sent notification to the Employer, and she stated that she did not recall having done so. The Retirement Coordinator reported having sent the notice to the Employer even though it is not required in order to remain consistent with prior years' practice.

Counsel discussed the most recent PERAC cybersecurity incident memo. He stated that the System's Executive Director has done an excellent job in taking additional measures to better secure funds, and documenting the steps for the record. The most recent incident involved an outside entity's gaining control over a town's servers, along with the email accounts of several key Town as well as Retirement personnel. The attempt to access funds was thwarted by person-to-person contact between the Board Staff and the Custodian, demonstrating the benefits of those personal relationships, which are becoming scarce in the banking and finance realms.

The SJC took the O'Leary case for review before the Appeals Court Could issue a ruling, so the SJC will be deciding the case.

The House has reported favorably out of committee the bill to permit vacation sell-back provisions in place prior to 2018.

The Appeals court has issued a decision determining that forfeiture is not an excessive fine in the *Bisignani* case, even though Mr. Bisignani did not personally benefit from the conduct, due to breach of public trust.

Mr. Durkin noted that there is a live stream available to hear oral arguments and asked Attorney Gibson to provide the Board with the O'Leary hearing dates.

The Executive Director reported that she had spoken to Segal Actuary Lisa Vandermark in regard to the 1/1/22 Valuation yesterday. She asked whether the Authority anticipates that the contracts will be settled at 2.5%, 2.5% and 3% for 7/1/20, 7/1/21, and 7/1/22 because the expectations will be included in the normal cost component. Mr. Durkin confirmed that is his understanding. The Executive Director asked whether we should instruct Segal to use a higher percentage to encompass steps, which will increase as well. Mr. Durkin asked Mr. Zecha for his thoughts regarding the increases. Mr. Zecha stated that since the Executive Director spent over five years in the Actuarial Unit at PERA running valuations, that he would defer to her suggestion and direct Segal to use 3% annual increases. Whereas staffing levels are currently well below the norm, the Executive Director inquired as to whether it is the Authority's intent to bring staffing back up to its previous levels in the near term, noting that it is a difficult prospect given the current labor market. The Executive Director noted in her discussions with Ms. Vandermark the higher than expected attrition seems to be a widespread problem rather than one unique to MWRA. Mr. Durkin stated it is the Authority's intention to bring staffing back up to the prior level of 1150 as recommended by MWRA's employment consultant, and that the Tunnel Redundancy group may even be increased by up to 13 employees. Mr. McKenna asked Mr. Durkin from a budgetary standpoint what would be a palatable increase, because if these assumptions are not adjusted now, there could potentially be a significant year-over year appropriation increase with the 1/1/23 Valuation. The Executive Director asked about the Investment Return Assumption, and asked whether the Board would consider a reduction to 6.75%. In discussing this matter with Ms. Vandermark, the Executive Director suggested that Ms. Vandermark attend the Asset Allocation discussion at the February meeting, in order to be sure Segal's expectations and NEPC's expectations are in alignment and cooperatively assist the Board in determining whether 6.9% is realistic and appropriate for MWRAERS as a long-term assumption. Mr. Durkin indicated that it is his intent to remain at 6.9%. Mr. Zecha suggested that the Board instruct the Executive Director to have Segal move forward with the valuation using assumed 3% retroactive annual salary adjustments effective July 1, 2020 and July 1, 2021 in order to reduce the future volatility of the appropriation, and a return assumption of 6.9%, with the understanding that the Board may later request that Segal run the numbers using a lower rate. The Executive Director asked for confirmation that this is the intention of the full Board, and the members agreed.

On a motion by Mr. Zecha and seconded by Mr. Pappastergion:
VOTED
to adjourn the January 27, 2022 meeting of the MWRA Employees' Retirement Board. 4-0, roll call with Mr. McKenna voting yes, Mr. Pappastergion voting yes, Mr. Zecha voting yes, and Mr. Durkin voting yes. The meeting was adjourned at 2:07 p.m.

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

PERAC MEMO #34/2021 – 2021 Disability Data
PERAC MEMO #35/2021 – 840 CMR 10:10(3) & 10:15(1)(c) – Annual Review of Medical Testing Fee
PERAC MEMO #1/2022 – Fraud Attempt
People's Merger
PERAC MEMO #2/2022 – 2022 Limits under Chapter 46 of the Acts of 2002
PERAC MEMO #3/2022 – 2022 Limits under Section 23 of Chapter 131 of the Acts of 2010
PERAC MEMO #4/2022 – COLA Notice
PERAC MEMO #4a/2022 – Clarification of Previous COLA Notice Memo
PERAC MEMO #5/2022 – 2022 Interest Rate set at 0.1%
PERAC MEMO #6/2022 – Mandatory Retirement Board Member Training – 1st Quarter 2022
PERAC MEMO #7/2022 – Buyback and Make-up Repayment Worksheets
JF Lehman Personnel Update
ABS Global Investments Announcement

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 Wednesday, February 23, 2022, 10:00 a.m., Chelsea

James M. Fleming, Elected member

Thomas Durkin, Appointed Member

Kevin McKenna, Elected Member

Andrew Pappastergion, Ex-Officio Member

Frank Zecha, Fifth Member

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

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?

On January 1, 2019, Natixis Investment Managers transferred ownership of McDonnell Investment Management ("McDonnell") to Loomis Sayles. Based outside Chicago, McDonnell specializes in municipal and taxable bond strategies and manages $9.6 billion in assets (as of June 30, 2019). On June 30, 2019, McDonnell's operations and municipal portfolio management team were integrated into Loomis Sayles. The McDonnell municipal portfolio management team will continue to operate out of the Oakbrook Terrace, Illinois, office under the Loomis Sayles name. The management of McDonnell's core/taxable fixed income strategies transitioned to the Loomis Sayles Relative Return team. This integration provides Loomis, Sayles with key strategic municipal capabilities and additional expertise to serve the insurance market, and provides McDonnell's clients with an enhanced offering backed by Loomis Sayles' expansive investing, research and operational capabilities. These changes did not impact the management or operations of Loomis Sayles.

In November 2020, Loomis Sayles established the Loomis, Sayles & Company, L.P. - Dutch Branch in Utrecht, Netherlands. The investment team for Loomis Sayles' Euro Credit investment strategies operates from this branch. The Dutch Branch is registered with the Dutch Chamber of Commerce under its own name, but it is not a separate legal entity from Loomis, Sayles & Company, L.P.

Additionally, in February 2021, Groupe BPCE, the second largest banking group in France and ultimate parent of Loomis Sayles, announced its intention to make a tender offer to purchase all currently outstanding public shares of Natixis ("Natixis'"), a French bank. Groupe BPCE already directly owns approximately 71% of Natixis, with the remaining 29% being publicly traded in France (Ticker: KN). Natixis indirectly owns 100% of Loomis Sayles. Completion of the tender offer is expected during the second half of 2021. BPCE has indicated that the transaction is not expected to impact the business or management of the asset management businesses under Natixis Investment Managers, LLC ("Natixis

LLC'"). The transaction will not constitute a change of control for Loomis Sayles under applicable US laws and regulations.

Other than as described above, there have been no mergers, acquisitions, or ventures over the past five years and none are presently contemplated. There are no other changes to Loomis Sayles' corporate or ownership structure anticipated at the present time.

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

For more details, please refer to Attachment 1 – Firm Details.

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

- The Loomis Sayles Euro Credit Fund (UCITS) launched in January 2021
- The Loomis Sayles Euro High Yield Fund (UCITS) launched in February 2021
- The NHIT: EM Blended Debt Total Return launched in January 2021
- The Loomis Sayles Sustainable Euro Credit Fund (UCITS) launched in May 2021
- A Completion Management strategy funded on January 3, 2022
- NHIT: CLO Trust - New fund documents effective January 6, 2022, but won't fund until CPFI trust guidelines allow

Strategy/Vehicles Closings

- The NHIT: US STRIPS Trust was liquidated and closed this quarter
- The Institutional High Income UCITS was liquidated and closed this quarter
- The Credit Dislocation Fund is scheduled to close and return assets to its investors. After consideration of current and expected market conditions, the investment opportunity is no longer deemed compelling going forward. The Fund returned close to 10% through the end of May 2021, taking advantage of favorable market conditions at the time of launch a year ago. We intend to effect a withdrawal of all investor accounts as of the Funds' net asset value on July 30, 2021 in accordance with the terms of each Fund's Limited Partnership Agreement

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.

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

Item 1. Ongoing Litigation – Firm Level:

In July 2011, the Loomis Sayles Credit Alpha Fund (the “Fund”) was named as a defendant along with all former shareholders of the Tribune Corporation (the “Company”) that received cash in exchange for shares of the Company in a public-to-private leveraged buyout in 2007 (the “LBO”). The Fund received $1,190,000 for the shares it owned at the time of the LBO. Within one year of the LBO, the company filed for Chapter 11 bankruptcy. Pre-bankruptcy bondholders and unsecured creditors seek to recover all amounts paid to the shareholder defendants (“Defendants”) in connection with the LBO, with pre-bankruptcy interest, alleging that the LBO constituted a fraudulent conveyance by the Company. The entirety of this litigation has been consolidated in federal district court in New York. A settlement offer, which would have involved Defendants agreeing to repay 57.2% of the proceeds received, was rejected on the advice of counsel as premature, at the high end of the range of reasonableness, and not in the best interests of the Fund. In May 2014, Ropes & Gray, on behalf of shareholder defendants (including Loomis) filed a Global Motion to Dismiss in the federal district court. In March 2016, the United States Court of Appeals for the Second Circuit upheld the federal district court’s dismissal of the plaintiffs’ claim of constructive fraudulent conveyance. The plaintiffs appealed this decision to the Supreme Court of the United States, which declined to hear the case. In January 2017, the federal district court dismissed the plaintiffs’ second claim, for intentional fraudulent conveyance. This decision is subject to appeal. In February 2018 the U.S. Supreme Court issued a decision on the constructive fraudulent conveyance issue in a case from another circuit, which led to remand of the Second Circuit decision in the Tribune case. In June 2018, the federal district court judge required all parties in the various litigations that are part of Tribune to consider ways to pursue a global mediation process. Mediation occurred in the spring of 2019 and was unsuccessful. In December 2019, the Second Circuit upheld its previous dismissal of the plaintiffs’ claim of constructive fraudulent conveyance, and in February 2020 denied plaintiffs’ petition for rehearing. In April 2021 the U.S. Supreme Court denied plaintiffs’ petition for a writ of certiorari, and the Second Circuit’s dismissal of the constructive fraudulent conveyance claim is final. In January 2020 the plaintiffs appealed the January 2017 dismissal of the intentional fraudulent conveyance claim, and in August 2021 the Second Circuit affirmed the dismissal. In September 2021 plaintiffs filed a petition for rehearing *en banc* in the Second Circuit, which petition was denied in October 2021. In January 2022, plaintiffs filed a petition for certiorari seeking review by the U.S. Supreme Court.

Item 2. 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 is scheduled to begin in September 2022.

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. Everyone at our firm is accountable for living our diversity vision and creating an inclusive environment that values all of our employees, clients, suppliers and affiliates. 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:

Loomis Sayles' diversity committee transforms the company's commitment into action. The group is comprised of representatives from the major departments and includes two Board members. Examples of the firm's commitment to diversity include: (1) long-range diversity planning with the assistance of a leading consulting firm; (2) talent development; (3) work-life balance programs; (4) diversity training; (5) a supplier diversity program; and (6) a sustained commitment to diversity recruiting.

OUR MISSION:

At Loomis Sayles, we believe in a workplace culture that acknowledges, supports, and invests in the diversity of all its members. This is critical in order to fulfill the investment needs of our clients worldwide, manage the complexity of our dynamic and global business and build a community where all employees have an equal opportunity to expand on their potential. We define diversity as spanning all dimensions of identity, including but not limited to race, ethnicity, nationality, gender identity & expression, physical & mental ability, military status, sexual identity & orientation, marital status, religion, socioeconomic background and age.

We recognize the path toward diversity, equity and inclusion of all persons across all levels of our organization, and in the financial services industry, will be an ongoing and extensive process. Despite these challenges, we are committed to fostering an environment where all employees are represented, respected, valued and empowered to apply all of the dimensions of their identities to enrich Loomis Sayles as a whole.

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.

Community Partnerships. Our mission supports programs in education, healthcare, social services and the arts, working with economically disadvantaged children and their families located in the areas in which we work and live.

Portfolio Management Team

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

The current portfolio management team, Mark Burns and John Slavik, have managed the Loomis Sayles Small Cap Growth portfolio since the strategy's inception in April 2005. During the time periods listed below, the team added five new dedicated research analysts:

- 2007: Nathaniel Roberts joined the team as a dedicated analyst.
- 2008: James Lamb joined the team as a dedicated analyst.
- 2013: Chris O'Brien joined the team as a dedicated analyst.
- 2014: Alex Galperin joined the team as a dedicated analyst. In addition, product management responsibilities transitioned to Noreen Drohan, product manager for the Small Cap Growth strategies.
- 2017: Alex Galperin left to pursue another opportunity.
- 2017: Anand Vankawala joined the team as a dedicated analyst.
- 2019: Samuel Eneh and Colin Hickey joined the team as investment associates.

Alex Galperin, a research analyst on the Small Cap Growth/SMID Cap Growth team, left the firm during Q1 2017 to pursue another opportunity. This was the first investment professional departure in 12 years.

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% 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.

For more details on the top 5 institutional investors, please refer to the table below.

Investor Type	% of Strategy AUM
Non-Corporate	5.88%
Multi Employer	5.15%
Health Care	4.17%
Health Care	2.38%
Corporate	1.67%

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.**

   The fourth quarter performance represented the ultimate manifestation of the changing market dynamics and almost the mirror image of the fourth quarter a year ago. All major sectors within the portfolio - consumer discretionary, health care, industrials, and technology - produced significant excess return, with the majority coming from stock selection. It was no longer about owning the riskiest, highest valued, unprofitable names, but about owning the best accelerating growth stories with high quality business models and improving profitability. Because of this, our strategy was able to outperform its benchmark.

   The fourth quarter's outperformance was primarily due to stock selection across many sectors, with notable strength in information technology, health care, industrials, and consumer discretionary. On an individual basis, MaxLinear, Silicon Laboratories, and Calix were top contributors to performance. Semiconductor company, MaxLinear performed well this quarter due to a strong quarterly report which put revenue and margins nicely ahead of consensus and gave encouraging guidance that suggests the core organic growth profile of the business can remain elevated above expectations. Silicon Laboratories reported their first quarter as a standalone Internet of Things Semiconductor developer after selling their Industrial & Automotive business to Skyworks. The results were materially above expectations, especially the gross margin, leading analysts to reconsider the profitability potential of the new business model. Calix went against the trend of their SMID Cap Telecommunications Equipment peers by reporting a strong quarter, despite supply chain challenges. Management's transition of the business from a traditional hardware model to a recurring revenue model is gaining traction and accelerating growth.

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.**

   As the economy continues to move through mid-cycle, we expect the market trends we saw in 4Q21 to continue; namely, a broader market that is driven by earnings growth. And while we always seem to enter every year thinking there is considerable uncertainty that certainly seems to hold true for 2022. As we move through this year we will need to contend with a Federal Reserve removing liquidity from the system, lingering COVID-19 effects, an economy that likely slows just as the supply chain begins to rectify itself, mid-term elections, and the list goes on. We believe under these circumstances that quality will remain an important investment factor. We also believe that after 3 years of ~20% (+/-) compounded annual returns in small/mid cap stocks, we are due for a breather and expect returns to be quite muted in 2022. However, given the broadening of the market, continued low stock correlations and earnings being the key driver for stocks, active management should have an edge. We look forward to navigating this environment and producing strong risk adjusted returns for our clients. Thank you and we appreciate your continued support. We wish you all the best in 2022.

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: Multisector Full Discretion CIT

Client: MWRA Employees' Retirement System

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

Item 1. Ongoing Litigation – Firm Level:
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Item 2. 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 is scheduled to begin in September 2022.

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. Everyone at our firm is accountable for living our diversity vision and creating an inclusive environment that values all of our employees, clients, suppliers and affiliates. 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:

Loomis Sayles' diversity committee transforms the company's commitment into action. The group is comprised of representatives from the major departments and includes two Board members. Examples of the firm's commitment to diversity include: (1) long-range diversity planning with the assistance of a leading consulting firm; (2) talent development; (3) work-life balance programs; (4) diversity training; (5) a supplier diversity program; and (6) a sustained commitment to diversity recruiting.

OUR MISSION:

At Loomis Sayles, we believe in a workplace culture that acknowledges, supports, and invests in the diversity of all its members. This is critical in order to fulfill the investment needs of our clients worldwide, manage the complexity of our dynamic and global business and build a community where all employees have an equal opportunity to expand on their potential. We define diversity as spanning all dimensions of identity, including but not limited to race, ethnicity, nationality, gender identity & expression, physical & mental ability, military status, sexual identity & orientation, marital status, religion, socioeconomic background and age.

We recognize the path toward diversity, equity and inclusion of all persons across all levels of our organization, and in the financial services industry, will be an ongoing and extensive process. Despite these challenges, we are committed to fostering an environment where all employees are represented, respected, valued and empowered to apply all of the dimensions of their identities to enrich Loomis Sayles as a whole.

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.

Community Partnerships. Our mission supports programs in education, healthcare, social services and the arts, working with economically disadvantaged children and their families located in the areas in which we work and live.

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.

Effective March 1, 2021 Dan Fuss came off as a named portfolio manager on the Loomis Sayles Full Discretion strategies. He remains on the Full Discretion team as a Senior Advisor providing insights on topics he has followed for the last six decades including monetary policy, geopolitical issues, military events, climate change, and the global flow of funds.

Effective August 2, 2021 David Zielinkski joined the Full Discretion team as an Investment Director. He will support the team along with Fred Sweeney and Kristen Doyle.

Kyra Fecteau left Loomis Sayles on May 14, 2021 to pursue another opportunity. Kyra, who joined the Mortgage and Structured Finance (MSF) team in 2015, was a portfolio manager and investment strategist for MSF team strategies, and a securitized Strategist for the Full Discretion Team.

Effective May 14, 2021 Stephen LaPlante was promoted to Securitized Strategist on the Full Discretion team. Stephen serves as a portfolio manager and strategist for the Mortgage and Structured Finance Team.

Effective Q1 2021 Kenneth Johnson, Investment Director on the Full Discretion team, left the firm to pursue another opportunity. Fred Sweeney, Investment Director, and Kristen Doyle, Associate Investment Director, are both continuing in their respective roles.

Effective 1Q21, Chidiebere Okpoebo joined the Full Discretion team as an investment analyst from trading where he was a high yield trading assistant.

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**

     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 our full discretion strategies, portfolio managers attempt to populate portfolios with securities of companies that we believe are fundamentally sound, have growth potential, exhibit a yield advantage and are mispriced in the market place. The managers apply the output from our Sector Teams in order to prioritize "buy'" candidates. The team examines current valuations, risk levels and long-term security outlook generally over the prospective three to five year period.

     We generally limit our investment in a single issuer to approximately 0-3% of the portfolio (at the time of purchase). We normally do not buy issues smaller than $150 million in gross size – as they limit our ability to build meaningful positions. Exceptions are made when we identify a significant relative value opportunity.

     We do not have stated limits on the current credit quality ratings assigned to the securities it buys for Multisector Full Discretion portfolios. A typical portfolio would aim to be widely diversified amongst the following market sectors: high yield corporate. Investment grade corporates, emerging market corporates, non-US dollar denominated sovereign and supranational debt, structured finance, and convertible securities. This is an example only and subject to change due to account objectives, client guidelines, and market conditions, among other factors.

     Sell Discipline

     The team typically sells a security when:

- It is no longer consistent with macro themes and strategies
- It is no longer attractive on a relative value basis, given the inherent risks
- Risk management considerations arise

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 Full Discretion 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 are crucial in building Full Discretion 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.

Top-down scenario analysis using our proprietary system drives the team's assessment of structural risk. LRM addresses three primary sources of risk:

- Currency
- Yield Curve
- Changes in Spreads

The LRM has the capability to evaluate 35 currencies on a hedged and un-hedged basis relative to a base currency. Using four distinct maturity ranges, the LRM also monitors exposure to local market curves, allowing portfolio managers to gauge shift and twist effects. Finally, the LRM analyzes changes in spreads relative to duration-matched Treasuries in local currency.

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.

Loomis Sayles proprietary portfolio management system In2! 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.

In2! is a proprietary tool, developed in-house to calculate portfolio and composite analytics, measure tracking error and return volatility of individual portfolios, evaluate absolute and relative risk/return versus a benchmark, monitor issuer and sector allocations in absolute and relative terms, and help to uncover new buy ideas.

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. Since 2002, we have implemented product teams, sector teams, risk analysis tools, and a state-of-the-art attribution system which encompasses a global process.

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, 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.

   For more details on the top 5 institutional investors, please refer to the table below.

Investor Type	**% of Strategy AUM**
Corporate	6.36%
Corporate	6.29%
Public	3.92%
Public	1.61%
Public	1.42%

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.

4th quarter 2021 Performance Trends

a. Emerging market corporate credit weighed on excess return. Here, underperformance was driven by holdings in Chinese property names as this sector came under pressure amid falling sale prices and tighter restrictions.
b. The strategy is targeting an overall duration shorter than that of the benchmark, and we utilized Treasury futures to assist with meeting this objective. Given interest rate movements during the quarter, these derivative positions detracted, with most of the underperformance occurring in November.
c. Convertible securities were a laggard as selected communications holdings were negatively impacted by increasing concerns about competition in the cable and wireless sectors.
d. Exposure to equity securities, particularly in the technology, banking and transportation sectors, was a positive contributor as stock markets were able to look through the disruption caused by the Omicron variant and posted strong gains for the period.
e. An allocation to high yield corporate credit was beneficial for performance, aided by consumer cyclical and finance company names.

Our process tends to perform better in both an up market and a horizontal / flat market. Our ability to recognize good relative value has added additional yield, and issue selection and use of non-benchmark sectors has historically produced capital gains. Historically, issue selection and opportunistic use of non-benchmark sectors have added alpha.

Underperformance versus the benchmark may occur during an illiquid market when prices are declining due to near term deteriorating credit fundamentals or event-driven market technicals. The market may not adequately reflect the long-term value supporting the issues. Generally speaking, our portfolios are well diversified and deploy many opportunity sets that may be less correlated to the markets and can, in times of market stress, provide some relief from price erosion.

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

- In our view, the macroeconomic outlook remains positive, as a healthy consumer, strong corporate fundamentals and relatively easy financial conditions have continued to be a tailwind to economic activity. Although confirmed Covid-19 cases spiked at the end of 2021, driven largely by the Omicron variant, we do not expect a material disruption in the demand for goods and services going forward. We believe US growth will remain above its long-term trend and unemployment will likely fall as wage growth draws participants back into the workforce. This macroeconomic backdrop appears positive for risk assets, however, elevated inflation readings have increased the risk of a central bank policy mistake. Any tightening of policy to fight inflation will need to balance the impact to growth, which has lingering uncertainties related to Covid-19, slowing Chinese growth (and deleveraging within its property sector) and ongoing global supply chain disruptions. While we do not expect the tightening cycle to put growth at risk, we do believe market volatility could potentially increase provided that the market reprices evolving central bank policies globally.

- Under our base case of economic expansion, we believe inflation will remain elevated and above the Federal Reserve's target throughout 2022. The Fed's hawkish pivot to concern over inflation could drive a faster tapering of asset purchases, which should conclude in March, before the anticipated liftoff in the benchmark fed funds rate in the second quarter. The pace and magnitude of rate hikes will largely be dependent on whether inflation eases throughout the year provided that supply chain disruptions subside. We anticipate that interest rates will likely move higher and remain defensive on interest rate risk, positioned shorter than broad market benchmarks from a duration perspective to help minimize any negative performance impact from rising rates.

- We believe we are currently in the expansion phase of the credit cycle1 with credit fundamentals, technical factors and default expectations continuing to appear attractive. We remain "pro risk" on credit exposure for higher carry potential and believe that individual issuer selection will be key in seeking to deliver attractive performance in 2022. Strong corporate profits, debt repayment and continued strong investor appetite for yield could help to provide a tailwind to credit markets. From a sector perspective, we are targeting those that have strong carry potential, less interest rate sensitivity and positive convexity (i.e. a favorable risk/reward profile in a changing rate environment). As such, we currently favor high yield corporates and convertible securities, as well as securitized debt, which can provide diversification away from pure corporate risk, attractive yield potential and shorter duration profiles.

- During the quarter, credit markets were generally resilient to a significant hawkish pivot in Fed policy as well as concerns over Chinese growth, which could indicate that there is a strong demand for yield. We believe this dynamic will likely hold going forward given our outlook that downgrades, defaults and losses will trend meaningfully below long-term averages. Given our macroeconomic expectations and credit cycle outlook, in our view embracing credit risk over interest rate risk is a reasonable approach for 2022. We recognize, however, that valuations have been elevated, credit spreads have been through their long-term averages and market volatility will likely increase as Fed policy evolves. As a result, we have built flexibility into our portfolios in seeking to take advantage of opportunities that may arise as a result of short-term disruptions.

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

PRESENTED BY:
Joseph Beauparlant, CFA
Vice President, Relationship Manager

LOOMIS | SAYLES

February 24, 2022

www.loomissayles.com | One Financial Center Boston, MA 02111
617 482-2450 | BOSTON CHICAGO DETROIT SAN FRANCISCO LONDON SINGAPORE UTRECHT

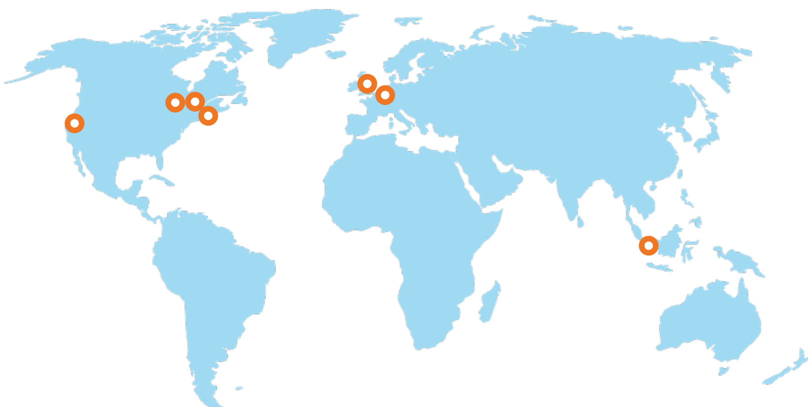
presented by:

JOSEPH BEAUPARLANT, CFA
Vice President, Relationship Manager

LOOMIS SAYLES®

loomis sayles at a glance

Serving clients **with integrity** and a **global perspective** since **1926**



BOSTON • CHICAGO • DETROIT • SAN FRANCISCO

LONDON • SINGAPORE • UTRECHT

AUM by client base

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

Investment expertise across asset classes

Fixed income: **$256.3 B** Equity: **$106.7 B**

- Investment Grade Corporates
- Equities
- Developed Country Treasurys
- Mortgage & Structured Finance
- High Yield Corporates
- Emerging Market Debt
- Municipals
- Other
- Bank Loans
- Convertible Bonds
- Government Related

As of 12/31/2021. 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. ($40.2 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

CREDIT RESEARCH	EQUITY	MACRO STRATEGIES	MORTGAGE & STRUCTURED FINANCE	QUANTITATIVE RESEARCH & RISK ANALYSIS
Alpha generation through differentiated insights	*Driving alpha through independent thinking*	*Focused insights for investment team impact*	*Opportunities outside traditional asset classes*	*Bringing together the art and science of investing*
Providing insight and differentiated perspectives across the credit classes, risk spectrum, and capital structure	Active long-term strategies built on differentiated non-consensus insight	Tailor-made research and data driven assessments of global macro investment conditions, opportunities and risks	Uncovering hidden alpha in complex structured markets	Generating signals that can identify risk patterns and opportunities

TRADING	ESG	INVESTMENT RISK OVERSIGHT	TECHNOLOGY	BUSINESS INFRASTRUCTURE
Beyond trade execution	*Integrate and engage*	*Ensuring investment teams are meeting client needs & expectations*	*Translating data into insight*	*Allowing investors to remain focused on alpha generation*
+50 trading professionals integrated within all investment processes every step of the way	Training and tools for investment teams to assess material ESG factors	A common foundation underlying all strategies: • Sound philosophy • Rigorous, repeatable process • Proprietary research • Disciplined portfolio construction • Integrated risk management	Tapping the power of our proprietary In2! technology platform, integrating more than 5 billion data points each day	Legal, compliance, distribution, marketing, relationship management, & client services

alpha engines

FIXED INCOME

ALPHA STRATEGIES	BANK LOANS	DISCIPLINED ALPHA	EMERGING MARKET DEBT	FULL DISCRETION	GLOBAL	MORTGAGE & STRUCTURED FINANCE	MUNICIPAL	PRIVATE CREDIT‡	RELATIVE RETURN
Credit Asset Emerging Market Debt Blended World Credit Asset Multi-Asset Income Inflation Protected (TIPS) Systematic Investing Strategies	Senior Loans Senior Floating Rate and Fixed Income CLOs	Core Intermediate Corporate Long Corporate Long Gov't Corp Long Credit Global Disciplined Alpha**	Corporate Local Currency Short Duration Asia Credit	Multisector Multisector Credit Core Plus Full Discretion High Yield Full Discretion Global High Yield US High Yield High Yield Conservative Strategic Alpha	Global Bond Global Credit Global Debt Unconstrained Global Disciplined Alpha**	Agency MBS Core Securitized IG Securitized Credit (ERISA) High Yield Securitized Credit Private Debt and Equity	Short Intermediate Medium Crossover†	Investment Grade Private Credit Opportunistic Private Credit	Short Duration Inter. Duration Core Core Plus IG Corporate IG Inter. Corp Long Corporate Long Credit Long Gov't/Credit Custom LDI
$11.3 B*	$5.0 B	$19.5 B	$3.4 B	$69.1 B	$34.8 B	$14.9 B*	$8.2 B	-	$102.5 B

EQUITY

GROWTH EQUITY STRATEGIES	GLOBAL EMERGING MARKETS EQUITY	GLOBAL EQUITY OPPORTUNITIES	SPECIALTY GROWTH STRATEGIES	SMALL CAP VALUE
All Cap Growth Global Growth International Growth Large Cap Growth Long/Short Growth Equity	Global Emerging Markets Equity Global Emerging Markets Equity Long/Short	Global Allocation Global Equity Opportunities	Small Cap Growth Small/Mid Cap Growth Mid Cap Growth	Small Cap Value Small/Mid Cap Core
$84.9 B	$153.4 M***	$10.6 B	$7.9 B	$3.2 B

As of 12/31/2021.
**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 Credit team joined the firm in January 2022.

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ESG advancement at loomis sayles

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

2012
- Established ESG Policy and committee

2013
- Signed UK Stewardship Code

2015
- Signed UN PRI

2016
- Proprietary ESG engagement database

2017
- ESG in portfolio risk reviews

2018
- Appointed Director of ESG
- Created ESG Data Center

2020
- Guiding Principles on Climate Change
- Proprietary ESG fixed income scores
- Inaugural Sustainability Report

2021
- Added 3 dedicated ESG employees
- Accepted as signatory to 2020 UK Stewardship Code

As of 8/31/2021.

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 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 harvest credit risk premiums.

Risk management is integral, not an add-on.

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

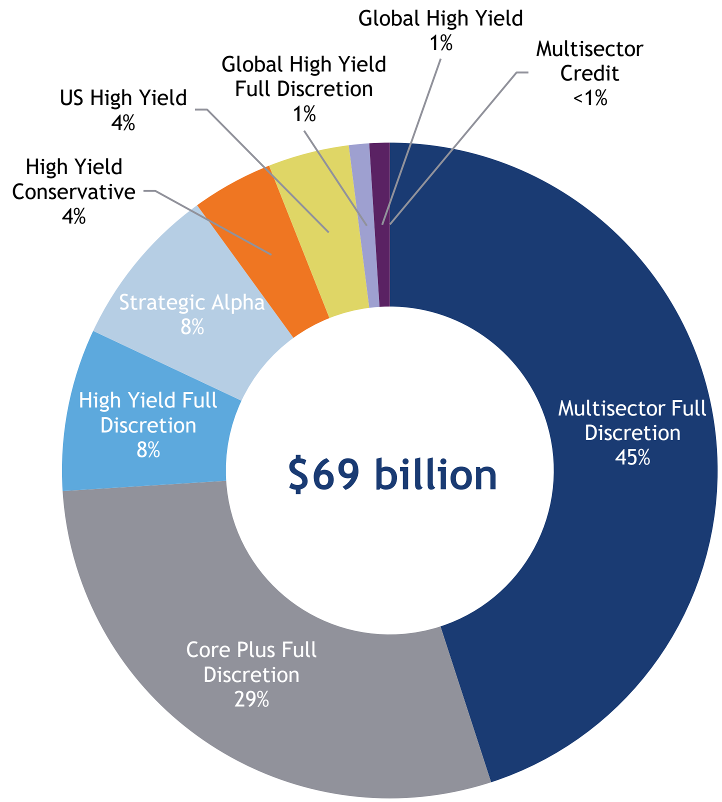
	MULTISECTOR				HIGH YIELD		
	STRATEGIC ALPHA	CORE PLUS FULL DISCRETION	MULTISECTOR CREDIT	MULTISECTOR FULL DISCRETION	US HIGH YIELD	GLOBAL HIGH YIELD	HIGH YIELD FULL DISCRETION
BENCHMARK	ICE BofA USD 3m LIBOR	BBG US Agg	BBG US Credit	BBG US Gov/Credit	BBG US Corp HY 2% Cap	ICE BofA Global High Yield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

full discretion product

LOOMIS SAYLES FULL DISCRETION TEAM ASSETS UNDER MANAGEMENT

$69 billion as of December 31, 2021

	ASSETS ($ millions)
Multisector Full Discretion	31,154
Core Plus Full Discretion	19,807
High Yield Full Discretion	5,489
Strategic Alpha	5,408
US High Yield	2,786
High Yield Conservative	2,991
Global High Yield	639
Global High Yield Full Discretion	376
Multisector Credit	162



As of 12/31/2021. Due to rounding, pie chart total may not equal 100%.

LOOMIS | SAYLES®

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investment team

HIGHLY EXPERIENCED TEAM SUPPORTED BY DEEP FIRM RESOURCES

Full Discretion^

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

Matt Eagan, CFA	Brian Kennedy	Elaine Stokes	Dan Fuss, CFA
Portfolio Manager	Portfolio Manager	Portfolio Manager	Senior Advisor
31 / 24	31 / 27	34 / 33	63 / 45

KEY SUPPORT

Strategists
- Todd Vandam, CFA*
- Bryan Hazelton, CFA
- Brian Hess
- Stephen Laplante, CFA
- Vishal Patel, CFA
- Chris Romanelli, CFA
- Peter Sheehan
- Scott Darci, CFA

Investment Directors
- Fred Sweeney, CFA
- David Zielinski, CFA
- Kristen Doyle

Investment Analysts
- Shong Xiao, CFA
- Chidiebere Okpoebo
- Elizabeth Ditomasso**

Portfolio Specialists
- Rigas Gartaganis
- Boeurn Kan-Crawford
- Matt Tierney
- Modestas Ilkys
- Amy Steede

SPECIALTY RESEARCH†

Convertibles
- Rich Crable
- Mark Ravanesi
- Olga Tatar, CFA
- Greg Jones, CFA
- Kenneth Vallace

Distressed/Restructuring
- Colin Wilson Murphy
- Matt Sabourin

Customized
- Nicole Ranzinger
- Zachary South
- Ryan Yackel

SECTOR TEAMS

- US Yield Curve
- Global Asset Allocation
- Developed Non-US Markets
- Investment Grade / Global Credit
- Mortgage & Structured Finance
- US Government
- High Yield/Bank Loans
- Emerging Markets
- Convertibles

FIRM RESOURCES

Macro Strategies
- 2 Directors
- Associate Director
- Chief US Economist
- 5 Senior Sovereign Analysts
- 2 Sovereign Analysts
- Senior Commodities Analyst
- Senior Research Analyst
- Research Analyst
- 2 Senior Research Associates

Credit Research
- Director
- 2 Associate Directors
- Head of Municipal Research
- Head of Convertibles Research
- 38 Senior Analysts
- 11 Analysts
- 10 Research Senior Associates
- 5 Research Associates

Mortgage & Structured Finance
- Head
- Head of Research and Private Credit
- 3 Portfolio Managers
- 3 Strategists
- 3 Senior Analysts
- Research Analyst
- 2 Senior Research Associates
- Director, MSF Trading
- 4 MSF Traders/Tas

Fixed Income Trading
- 26 Traders/TAs
- Director, Portfolio Implementation
- 18 Portfolio Specialists
- Director, Operational Trading Risk Mgt.
- Risk Analyst

Investment Risk and Strategy Management
- Chief Inv. Risk Officer
- Deputy Chief Inv. Risk Officer/Model Risk Officer
- Risk Engineer
- Investment Risk Manager
- Senior Inv. Risk Analyst
- 4 Inv. Risk Analysts
- Inv. Risk Associate

Quant. Research & Risk Analysis
- Director
- 2 Associate Directors
- 10 Quantitative Analysts

ESG
- Senior Analyst
- Marketing Manager
- Project Associate

As of 12/31/2021
**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.

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FIT0825
MALR028133
1628178400

guideline summary

BENCHMARK

- Bloomberg Capital US Government/Credit Index

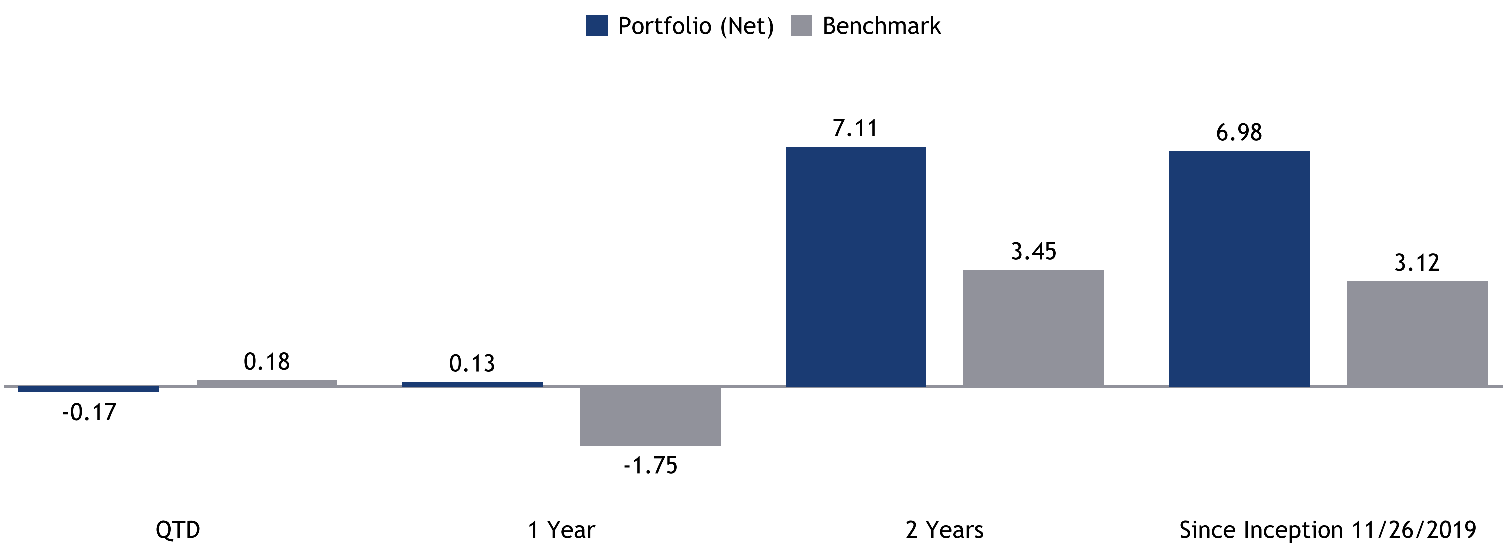
GUIDELINES & LIMITATIONS

- 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 12/31/2021 (%)



	QTD	1 Year	2 Years	Since Inception 11/26/2019
Excess Return (Net)	-0.36	+1.88	+3.66	+3.86

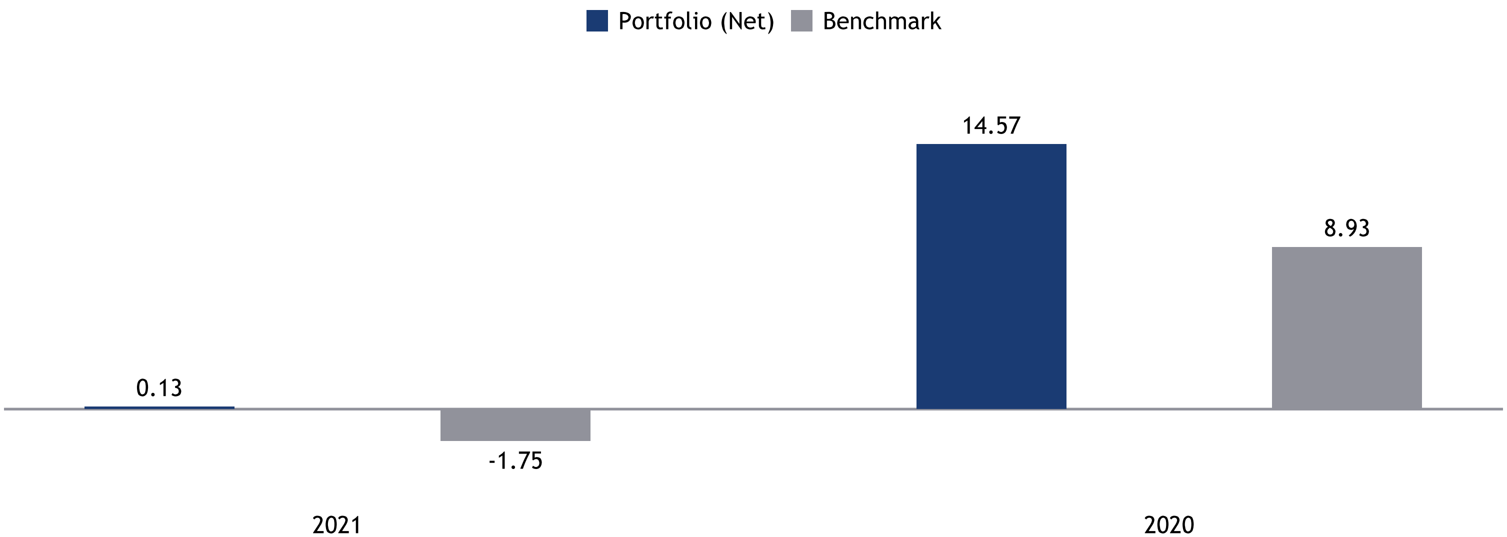
PORTFOLIO VALUATION (USD)

	Portfolio 12/31/2020	Portfolio 12/31/2021
Total	49,758,220	56,814,596

Benchmarks: BBG Govt Credit (11/26/2019 - 12/31/2021).
The current benchmark is Bloomberg U.S. Government/Credit Index.

performance

CALENDAR YEAR RETURNS AS OF 12/31/2021 (%)



	2021	2020
Excess Return (Net)	+1.88	+5.65

Benchmarks: BBG Govt Credit (11/26/2019 - 12/31/2021).
The current benchmark is Bloomberg U.S. Government/Credit Index.

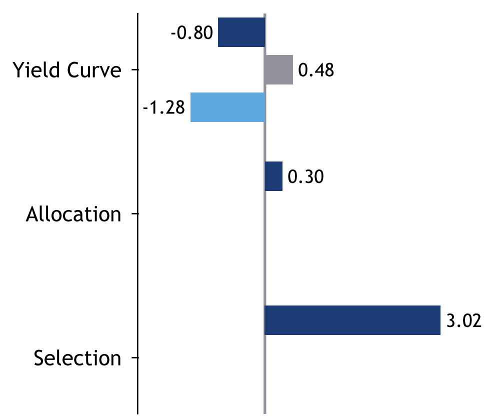
attribution analysis

12/31/2020 TO 12/31/2021

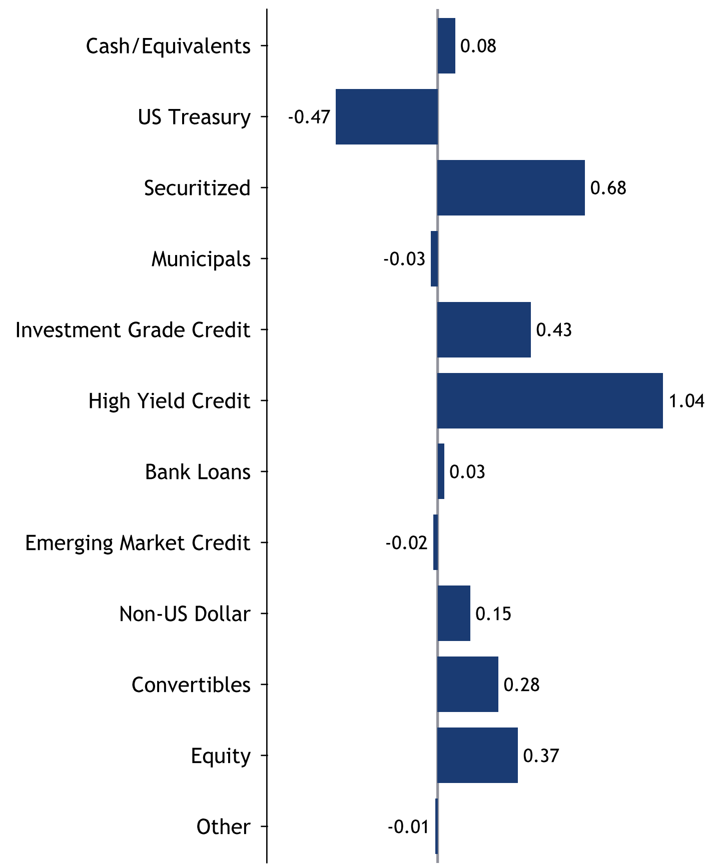
TOTAL RETURNS

	Total Return
Portfolio Return	0.58
Benchmark Return	-1.75
Excess Return	2.33

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

attribution analysis

12/31/2020 TO 12/31/2021

SECTOR DISTRIBUTION

	Portfolio Final Weight	Benchmark Final Weight	Portfolio Average Weight	Benchmark Average Weight	Portfolio Return	Benchmark Return	Total Effect
High Yield Credit	20.41	0.00	17.77	0.00	4.49	0.11	1.04
Securitized	19.98	0.00	18.66	0.00	2.50	-1.75	0.68
Investment Grade Credit	28.81	39.79	35.33	40.84	0.31	-1.05	0.43
Equity	2.60	0.00	1.76	0.00	25.01	-1.75	0.37
Convertibles	4.81	0.00	5.37	0.00	3.57	-1.75	0.28
Non-US Dollar	1.53	0.00	0.90	0.00	10.45	-1.75	0.15
Cash/Equivalents	2.75	0.00	2.30	0.00	3.38	-1.75	0.08
Bank Loans	0.77	0.00	0.65	0.00	3.16	-1.75	0.03
Other	0.00	1.92	0.00	2.11	0.00	-1.32	-0.01
Emerging Market Credit	7.90	2.07	6.98	2.21	-2.19	-2.72	-0.02
Municipals	0.00	0.99	0.00	1.01	0.00	1.45	-0.03
US Treasury	10.44	55.22	10.28	53.83	-4.28	-2.32	-0.47

Total Effects are impacted by sector returns, allocation shifts and market timing. Total Effect includes yield curve impact.
The current benchmark is Bloomberg U.S. Government/Credit Index.

attribution analysis

12/31/2020 TO 12/31/2021

TOP 10 INDUSTRIES BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Technology	4.74	3.67	0.42
Consumer Cyclical	8.45	2.55	0.36
Consumer Non Cyclical	8.62	6.01	0.23
ABS Other	3.08	0.00	0.19
Basic Industry	4.75	1.06	0.18
Capital Goods	5.40	2.16	0.18
Finance Companies	4.25	0.42	0.18
Banking	7.14	7.91	0.17
Utility Other	0.12	0.07	0.15
Home Equity	5.61	0.00	0.15

BOTTOM 10 INDUSTRIES BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Financial Other	0.85	0.03	-0.14
Government Sponsored	0.10	0.76	-0.02
Treasuries	10.73	53.83	-0.02
Supranational	0.14	2.04	-0.01
Credit Card	0.21	0.00	0.00
Industrial Other	0.06	0.18	0.00
Sovereign	0.66	1.59	0.01
Owned No Guarantee	1.09	1.73	0.01
Communications	10.81	3.51	0.01
Brokerage Asset Managers Exchanges	0.66	0.46	0.03

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

attribution analysis

12/31/2020 TO 12/31/2021

TOP 10 ISSUERS BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Palo Alto Networks Inc	0.37	0.00	0.20
Whiting Petroleum Corp	0.12	0.00	0.15
Kraft Heinz Co/The	0.97	0.00	0.13
Provincia DE Buenos Aire	0.05	0.00	0.09
Bunge Ltd	0.38	0.02	0.09
Uber Technologies Inc	1.18	0.00	0.08
Expedia Group Inc	1.03	0.03	0.07
Boeing Co/The	2.36	0.34	0.07
General Motors Co	0.86	0.27	0.06
DISH Network Corp	1.10	0.00	0.05

BOTTOM 10 ISSUERS BY TOTAL EFFECT

	Portfolio Weight	Benchmark Weight	Total Effect
Teladoc Health Inc	0.37	0.00	-0.10
T-Mobile US Inc	1.54	0.19	-0.08
Kaisa Group Holdings Ltd	0.02	0.00	-0.05
Merck & Co Inc	0.17	0.12	-0.05
Viatris Inc	0.33	0.08	-0.04
2020 Cash Exch Trust	0.19	0.00	-0.04
U S Treasury	10.32	53.83	-0.03
Yuzhou Group Holdings Co Ltd	0.01	0.00	-0.03
Shimao Group Holdings Ltd	0.04	0.00	-0.03
Amazon.com Inc	0.11	0.25	-0.03

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

attribution analysis

12/31/2020 TO 12/31/2021

CURRENCY DISTRIBUTION

	Portfolio Weight Pre-Hedge	Portfolio Weight Post-Hedge	Currency Contribution	Bond Contribution	Hedging Effect	Total Effect
Argentine Peso	0.08	0.08	0.10	0.04	0.00	0.14
Canadian Dollar	0.26	0.08	0.01	0.01	0.00	0.01
Indian Rupee	0.42	0.42	0.00	0.02	0.00	0.02
Mexican Peso	0.41	0.41	0.02	0.00	0.00	0.02
US Dollar	98.82	98.82	0.00	2.33	0.00	2.33
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.

portfolio summary

AS OF 12/31/2021

	Portfolio 12/31/2021	Benchmark 12/31/2021	Portfolio 12/31/2020	Benchmark 12/31/2020
Yield to Worst (%)	2.97	1.67	2.66	1.07
Effective Duration (years)	4.22	7.57	7.54	7.68
Effective Maturity (years)	6.48	9.69	10.08	9.80
OAS * (bps)	168	38	184	42
Coupon (%)	3.41	2.35	3.79	2.65
Current Yield (%)	3.27	2.23	3.48	2.38
Average Quality	BAA2	AA3	BAA2	AA3
Number of Securities	970	8,529	682	8,183
Number of Issuers	435	1,059	329	996

Quality	Portfolio 12/31/2021	Benchmark 12/31/2021	Portfolio 12/31/2020	Benchmark 12/31/2020
AAA	16.36	60.83	14.07	57.80
AA	2.82	6.60	3.03	6.57
A	7.26	16.13	11.28	18.98
BAA	43.55	16.45	47.38	16.63
BA	16.56	0.00	14.33	0.02
B	6.99	0.00	5.11	0.00
CAA	0.76	0.00	1.25	0.00
CA	0.07	0.00	0.06	0.00
C	0.17	0.00	0.03	0.00
NR	5.46	0.00	3.45	0.00

** OAS is option adjusted spread.*
Client Guideline Quality Methodology presented.
The current benchmark is Bloomberg U.S. Government/Credit Index.

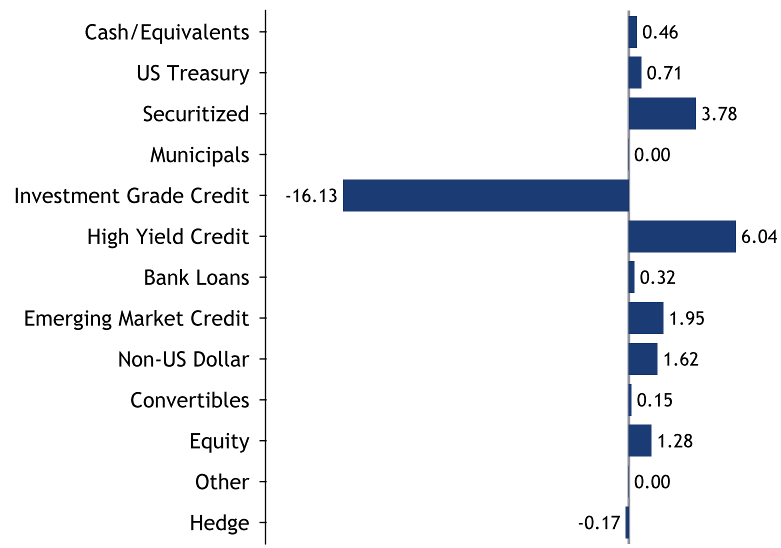
sector allocation

12/31/2020 TO 12/31/2021 (%)

SECTOR DISTRIBUTION

	Portfolio 12/31/2021	Over/Under Weight
Cash/Equivalents	2.75	2.75
US Treasury	10.44	-44.78
Securitized	19.98	19.98
Municipals	0.00	-0.99
Investment Grade Credit	28.81	-10.98
High Yield Credit	20.41	20.41
Bank Loans	0.77	0.77
Emerging Market Credit	7.90	5.83
Non-US Dollar	1.39	1.39
Convertibles	4.81	4.81
Equity	2.60	2.60
Other	0.00	-1.92
Hedge	0.14	0.14

SECTOR ALLOCATION CHANGE



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

country of risk allocation

AS OF 12/31/2021

Total Developed Countries Exposure	Portfolio Weight %	Benchmark Weight %
Developed	90.45	97.94
Americas	84.59	90.76
United States	82.87	89.11
Canada	0.62	1.63
Cayman Islands	0.61	0.00
Bermuda	0.49	0.02
Asia	0.16	0.91
Japan	0.16	0.91
Europe	4.78	4.06
United Kingdom	1.67	1.60
France	0.95	0.17
Ireland	0.48	0.18
Norway	0.47	0.09
Germany	0.43	0.62
Belgium	0.39	0.38
Spain	0.15	0.20
Netherlands	0.11	0.36
Finland	0.10	0.00
Italy	0.03	0.12
Other	0.00	0.34
Oceania	0.85	0.24
Australia	0.85	0.24
Supranational **	0.07	1.97
Supranational	0.07	1.97

Total EM Countries Exposure (USD & Non USD)	Portfolio Weight %	Benchmark Weight %
Emerging Markets *	9.55	2.06
Africa	1.16	0.01
South Africa	0.67	0.00
Zambia	0.36	0.00
Nigeria	0.13	0.00
Other	0.00	0.01
Americas	4.24	1.07
Mexico	2.97	0.45
Brazil	0.80	0.09
Colombia	0.22	0.00
Argentina	0.18	0.00
Chile	0.04	0.12
Peru	0.03	0.18
Other	0.00	0.23
Asia	2.42	0.83
China	1.17	0.28
South Korea	0.62	0.16
India	0.42	0.00
Malaysia	0.21	0.00
Other	0.00	0.39
Europe	0.00	0.07
Other	0.00	0.07
Middle East	1.62	0.08
Israel	1.18	0.08
Saudi Arabia	0.25	0.00
United Arab Emirates	0.19	0.00
Supranational **	0.11	0.00
Supranational	0.11	0.00
Total	100.00	100.00

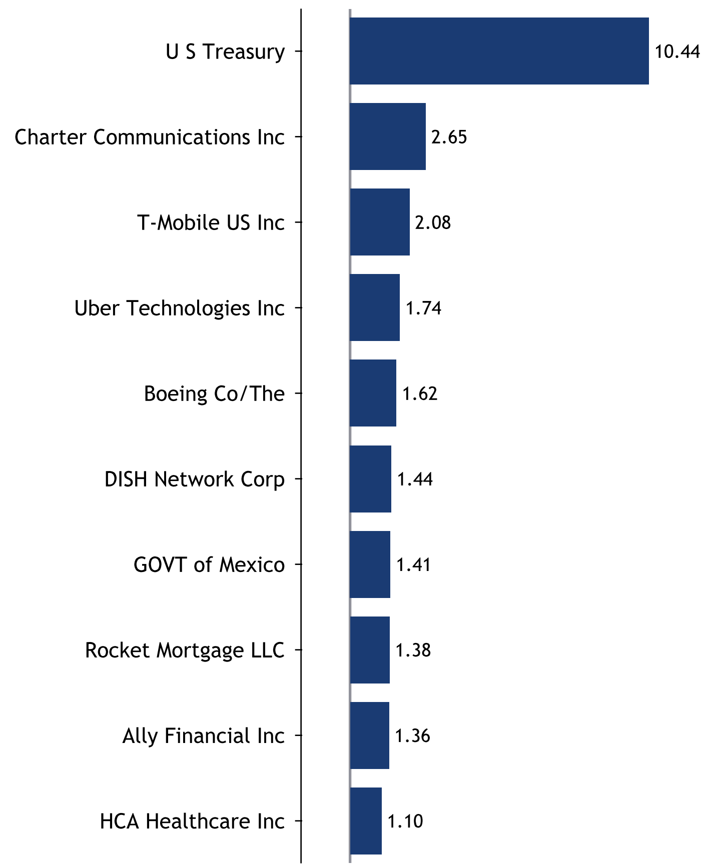
Non Dollar Exposure	Portfolio Weight %	Benchmark Weight %
Total Non USD †	1.62	0.00
Developed	0.06	0.00
Canadian Dollar	0.06	0.00
Emerging Markets	1.55	0.00
Mexican Peso	0.75	0.00
Indian Rupee	0.73	0.00
Argentine Peso	0.07	0.00

** Emerging markets includes countries with middle or low income economies, as designed 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 12/31/2021 (%)

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)

Mark Burns, CFA	John Slavik, CFA
Portfolio Manager	Portfolio Manager
Consumer Discretionary, Health Care	Technology, Industrials, Energy
25 / 22	30 /16

DEDICATED PRODUCT RESEARCH

Senior Equity Research Analyst	Senior Equity Research Analyst	Senior Equity Research Analyst	Senior Equity Research Analyst	Equity Research Analyst
James Lamb, CFA	Chris O'Brien, CFA	Nathaniel Roberts	Anand Vankawala	Autumn Zhong, CFA
Communication Services, Technology	Consumer Discretionary, Financials	Industrials	Health Care, Energy	Consumer Discretionary, Consumer Staples
17 /13	28 / 8	20 /14	12 / 4	5 / <1

Senior Research Associate	Research Associate
Colin Hickey	Claudine Daneri De Leon
2 / 2	<1 / <1

PRODUCT MANAGEMENT

Associate Investment Director	Product Associate
Dmitri Raberov, CFA	George Jean-Claude
18 / 14	<1 / <1

As of 2/1/2022.

strategy overview

TEAM HIGHLIGHTS

Team assets under management

- $5.1 billion – Small Cap Growth
- $2.8 billion – Small/Mid Cap Growth
- $6.7 million – 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 12/31/2021.
Team assets under management are aggregated from all vehicles managed by the team. Not all vehicles are available for all investors.

account overview

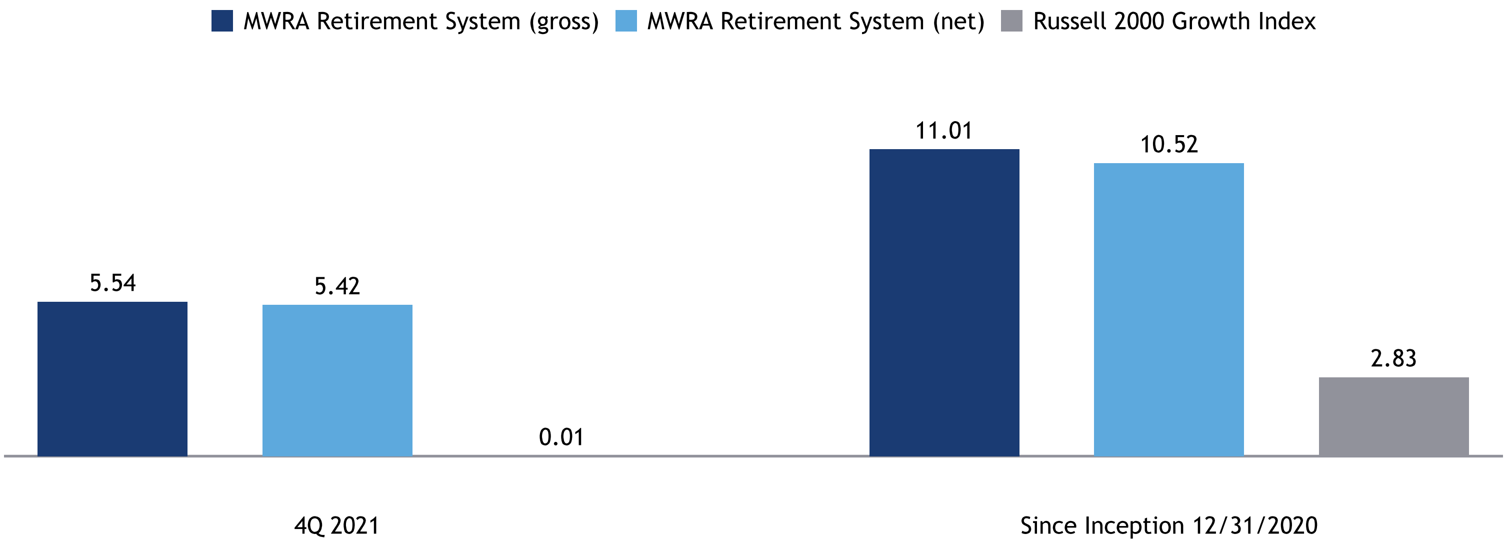
SINCE INCEPTION 1/8/1997

MWRA Retirement System	
Initial Investment (1/8/1997)	$2,500,000
Client Cash Additions	$5,545,737
Client Security Additions	$6,948,954
Client Cash Withdrawals	$-21,000,000
Income Earned	$828,054
Fees/Expenses/Adjustments	$14,111
Realized Gains/Losses	$25,624,619
Unrealized Gains/Losses	$8,176,529
Total Market Value at 12/31/2021	**$26,138,006**

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 12/31/2021 (%)



	4Q 2021	Since Inception 12/31/2020
Excess return vs. Russell 2000 Growth Index (gross)	+5.53	+8.18

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

- Since the Fed made it clear about their stance on liquidity early on in the year, the market has been driven by earnings growth/revisions as multiples contracted and areas of excess were sold
- Rising rates and falling stock correlations meant the market no longer had time for low quality and long duration assets. It was no longer about owning the riskiest, high valued, unprofitable names, but about owning the best accelerating growth stories with high quality business models and improving profitability
- Quality was strong and high beta was weak. The portfolio tends to be higher quality and lower beta, so factors were a tailwind during the quarter
- As the economy continues to move through mid-cycle, we expect the market trends we saw in 4Q21 to continue; namely, a broader market that is driven by earnings growth
- There remains uncertainties that we will need to contend with such as a Federal Reserve removing liquidity from the system, lingering COVID-19 effects, an economy that likely slows just as the supply chain begins to rectify itself, mid-term elections, and the list goes on
- However, given the broadening of the market, continued low stock correlations and earnings being the key driver for stocks, active management should have an edge

performance attribution

QUARTERLY PERFORMANCE - THROUGH 12/31/2021 (%)

Contribution from Stock Selection:	4.82%
Contribution from Sector Allocation:	0.69%
Net Outperformance:	5.51%

Top 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
MaxLinear, Inc.	53.08	68
Silicon Laboratories Inc.	47.27	51
Calix, Inc.	61.78	42
SiteOne Landscape Supply, Inc.	21.46	40
Boot Barn Holdings, Inc.	38.46	38

Bottom 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
HealthEquity, Inc.	-31.69	(34)
Freshpet Inc.	-34.73	(34)
Phreesia, Inc.	-32.48	(29)
NeoGenomics, Inc.	-29.27	(27)
AeroVironment, Inc.	-32.83	(26)

Top 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Information Technology	13.50	182
Health Care	-8.24	126
Industrials	14.68	119

Bottom 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Real Estate	0.00	(39)
Consumer Staples	1.83	(13)
Financials	5.36	(7)

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 12/31/2021 (%)

	Portfolio			Russell 2000 Growth Index			Attribution Analysis		
Sector	Average Weight	Total Return	Contribution to Return	Average Weight	Total Return	Contribution to Return	Allocation Effect	Selection Effect	Total Effect
Information Technology	22.96	13.50	2.97	22.70	5.13	1.05	0.04	1.78	1.82
Health Care	23.62	-8.24	-1.68	26.99	-11.36	-2.89	0.42	0.84	1.26
Industrials	18.97	14.68	2.53	14.96	9.73	1.19	0.37	0.82	1.19
Consumer Discretionary	17.07	5.51	0.86	14.70	-0.46	-0.19	0.00	1.01	1.01
Communication Services	1.67	15.61	0.13	2.90	-9.30	-0.25	0.12	0.38	0.50
Materials	1.04	40.12	0.29	3.04	2.66	0.06	-0.03	0.31	0.28
Energy	0.95	1.36	0.03	2.23	-1.01	-0.02	0.03	0.04	0.07
Utilities	0.00	0.00	0.00	0.33	14.18	0.04	-0.03	0.00	-0.03
Financials	7.28	5.36	0.35	5.50	9.05	0.41	0.18	-0.24	-0.07
Consumer Staples	3.50	1.83	0.06	3.67	5.67	0.21	-0.02	-0.11	-0.13
Real Estate	0.00	0.00	0.00	3.00	13.93	0.40	-0.39	0.00	-0.39
Cash	2.93	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	5.53	5.53	100.00	0.02	0.02	0.69	4.82	5.51

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 12/31/2021 (%)

Contribution from Stock Selection:	6.51%
Contribution from Sector Allocation:	1.43%
Net Outperformance:	7.94%

Top 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
MaxLinear, Inc.	97.41	99
Kornit Digital Ltd.	70.82	96
SiteOne Landscape Supply, Inc.	52.73	84
Advanced Drainage Systems, Inc.	63.47	77
WillScot Mobile Mini Holdings Corp.	76.26	76

Bottom 5 Contributing Issuers	Total Return (%)	Contribution to Total Return (BPS)
Q2 Holdings, Inc.	-37.22	(57)
Mercury Systems, Inc.	-40.25	(52)
LHC Group, Inc.	-34.41	(50)
HealthEquity, Inc.	-36.54	(50)
NeoGenomics, Inc.	-36.63	(44)

Top 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Health Care	-11.15	428
Industrials	26.39	152
Communication Services	61.20	114

Bottom 3 Contributing Sectors to Relative Return	Total Return (%)	Contribution to Relative Return (BPS)
Real Estate	0.00	(52)
Consumer Staples	6.03	(23)
Financials	12.64	(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

ONE YEAR PERFORMANCE - THROUGH 12/31/2021 (%)

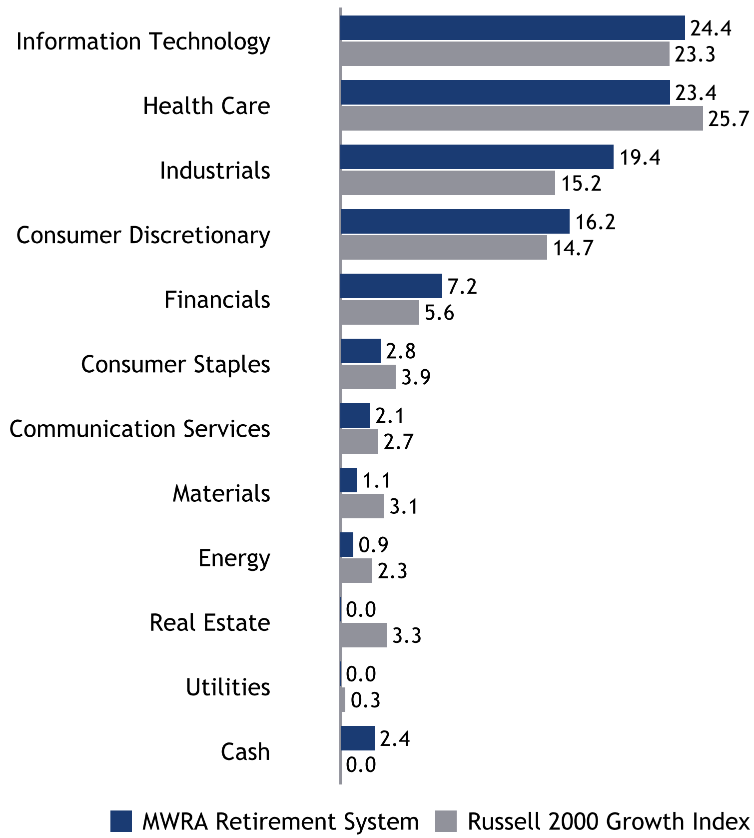
	Portfolio			Russell 2000 Growth Index			Attribution Analysis		
Sector	Average Weight	Total Return	Contribution to Return	Average Weight	Total Return	Contribution to Return	Allocation Effect	Selection Effect	Total Effect
Health Care	27.36	-11.15	-2.23	30.60	-21.24	-6.02	1.01	3.27	4.28
Industrials	19.00	26.39	4.42	14.50	20.98	2.65	0.76	0.75	1.52
Communication Services	1.17	61.20	0.48	2.55	-12.52	-0.43	0.31	0.83	1.14
Consumer Discretionary	15.78	24.48	2.94	14.83	16.82	1.84	-0.14	1.19	1.05
Information Technology	22.19	19.22	3.97	21.44	13.63	2.56	-0.05	0.79	0.75
Materials	0.34	35.13	0.20	2.82	11.44	0.20	-0.10	0.29	0.19
Utilities	0.00	0.00	0.00	0.89	22.33	0.10	0.12	0.00	0.12
Energy	0.44	-10.67	0.00	1.16	70.43	-0.01	0.00	0.00	0.00
Financials	6.48	12.64	0.75	4.62	18.05	0.71	0.13	-0.29	-0.16
Consumer Staples	3.68	6.03	0.26	3.38	19.60	0.54	0.09	-0.33	-0.23
Real Estate	0.00	0.00	0.00	3.22	25.29	0.71	-0.52	0.00	-0.52
Cash	3.57	0.04	0.00	0.00	0.00	0.00	-0.18	0.00	-0.18
Total	100.00	10.78	10.78	100.00	2.84	2.84	1.43	6.51	7.94

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 12/31/2021 (%)

SECTOR DISTRIBUTION



TOP 10 HOLDINGS

	Portfolio Weight (%)
MaxLinear Inc	2.0
SiteOne Landscape Supply Inc	2.0
Kornit Digital Ltd	1.9
Rapid7 Inc	1.8
MACOM Technology Solutions Holdings Inc	1.7
WillScot Mobile Mini Holdings Corp	1.7
Advanced Drainage Systems Inc	1.7
Casella Waste Systems Inc	1.6
Silicon Laboratories Inc	1.6
Shutterstock Inc	1.6
Total	**17.5**

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

portfolio holdings

ACCOUNT HOLDINGS & SECTOR WEIGHTS AS OF 12/31/2021 (%)

Information Technology	24.4%
MaxLinear Inc	
Rapid7 Inc	
MACOM Technology Solutions Holdings Inc	
Silicon Laboratories Inc	
WNS Holdings Ltd	
Rambus Inc	
Silicon Motion Technology Corp	
Pure Storage Inc	
EVERTEC Inc	
Calix Inc	
Novanta Inc	
Varonis Systems Inc	
Envestnet Inc	
Blackline Inc	
Q2 Holdings Inc	
Perficient Inc	
Itron Inc	
Advanced Energy Industries Inc	
Tenable Holdings Inc	
Radware Ltd	
nLight Inc	
Squarespace Inc	

Health Care	23.4%
Inspire Medical Systems Inc	
AtriCure Inc	
CONMED Corp	
Evolent Health Inc	
Halozyme Therapeutics Inc	
Axonics Inc	
CryoPort Inc	
Medpace Holdings Inc	
Merit Medical Systems Inc	
Pacira BioSciences Inc	
Option Care Health Inc	

Health Care (Cont'd)	23.4%
Natera Inc	
NuVasive Inc	
Blueprint Medicines Corp	
Xencor Inc	
PTC Therapeutics Inc	
Supernus Pharmaceuticals Inc	
Insmed Inc	
Bicycle Therapeutics PLC	
SpringWorks Therapeutics Inc	
STAAR Surgical Co	
The Ensign Group Inc	
ModivCare Inc	
Replimune Group Inc	
Vericel Corp	
HealthEquity Inc	
NeoGenomics Inc	
Phreesia Inc	
BioCryst Pharmaceuticals Inc	
Sutro Biopharma Inc	

Industrials	19.4%
SiteOne Landscape Supply Inc	
Kornit Digital Ltd	
WillScot Mobile Mini Holdings Corp	
Advanced Drainage Systems Inc	
Casella Waste Systems Inc	
KBR Inc	
Hub Group Inc	
Helios Technologies Inc	
UFP Industries Inc	
The Shyft Group Inc	
Albany International Corp	
RBC Bearings Inc	
Kratos Defense & Security Solutions Inc	
Simpson Manufacturing Co Inc	

Industrials (Cont'd)	19.4%
McGrath RentCorp	

Consumer Discretionary	16.2%
Shutterstock Inc	
Fox Factory Holding Corp	
Boot Barn Holdings Inc	
Wingstop Inc	
Papa John's International Inc	
Dorman Products Inc	
Installed Building Products Inc	
Columbia Sportswear Co	
Gentherm Inc	
Patrick Industries Inc	
Texas Roadhouse Inc	
Malibu Boats Inc	
Frontdoor Inc	
Oxford Industries Inc	
Life Time Group Holdings Inc	
Chuy's Holdings Inc	

Financials	7.2%
Hamilton Lane Inc	
Focus Financial Partners Inc	
PJT Partners Inc	
The Bancorp Inc	
Lakeland Financial Corp	
Ameris Bancorp	
BRP Group Inc	
Kinsale Capital Group Inc	

Consumer Staples	2.8%
The Simply Good Foods Co	
elf Beauty Inc	

Consumer Staples (Cont'd)	2.8%
Primo Water Corp	

Communication Services	2.1%
TechTarget Inc	
Cargurus Inc	

Materials	1.1%
Ranpak Holdings Corp	

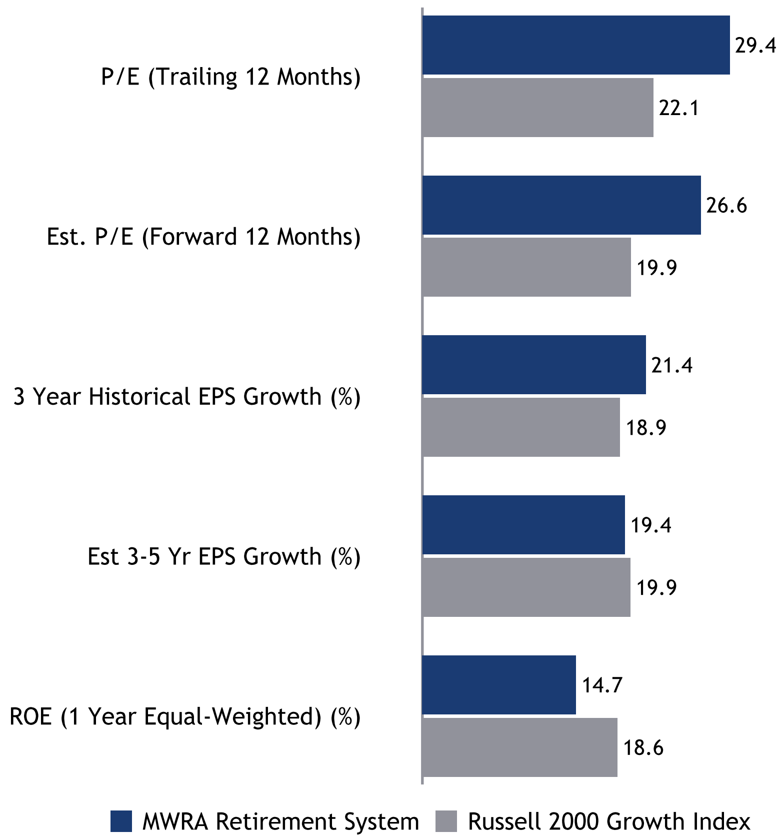
Energy	0.9%
Cactus Inc	

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. DataSource: Bloomberg.

characteristics summary

AS OF 12/31/2021

CHARACTERISTICS



MARKET CAPITALIZATION STATISTICS

	Portfolio	Benchmark
> $6 Billion	23.57%	18.78%
$4 to 6 Billion	28.27%	28.93%
$2 to 4 Billion	34.21%	29.03%
< $2 Billion	11.55%	23.25%
Cash	2.41%	0.00%
Weighted Average ($mm)	$4,550	$4,071
Median ($mm)	$3,620	$1,260
Minimum ($mm)	$596	$32
Maximum ($mm)	$10,830	$13,898

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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Eden Blakeley
Administrative Assistant
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eblakeley@loomissayles.com

AUM		
2021	$	363,027,456,918
2020	$	347,751,715,703
2019	$	297,212,225,305
2018	$	249,717,867,435
2017	$	268,085,854,762

NET FLOWS		
2021	$	6,539,656,351.65
2020	$	4,141,023,833.57
2019	$	9,720,433,113.65
2018	$	(2,896,586,181.60)
2017	$	1,376,016,809.00

ACCOUNTS GAINED/LOST	
2021	-2
2020	60
2019	-23
2018	-36
2017	6

As of Date	Entity	Benchmark
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged
12/31/2021	MWRA Retirement System	Russell 2000 Growth, USD, 0% Hedged

Metric	acct	bench
Comp Years to Effective Maturity	0.00	0.00
Comp Effective Duration	0.00	0.00
Comp Mod Duration to Worst	0.00	0.00
Comp Effective Yield	0.27	0.56
Current Yield	0.24	0.56
Coupon	0.00	0.00
Market Value USD	26,138,006	0
Comp Convexity	0.00	0.00
Comp Yield to Maturity	0.27	0.56
Comp OAS	0	0
Comp Yield to Worst	0.27	0.56
Rating - Best Loomis Split Numeric	9.76	1.76
Rating - Best Loomis Split	CAA1	NR
Number of Issues Ex Hedges	99	1,246

STRATEGY AUM		
2021	$	5,050,105,354.08
2020	$	4,899,972,754.75
2019	$	3,256,082,668.23
2018	$	2,246,460,414.87
2017	$	2,289,084,159.18

STRATEGY NET FLOWS		
2021	$	76,399,381.05
2020	$	241,919,868.96
2019	$	304,712,863.51
2018	$	32,961,359.53
2017	$	(10,135,445.26)

STRATEGY ACCOUNTS GAINED/LOST	
2021	3
2020	1
2019	10
2018	1
2017	1

As of Date	Entity
12/31/2021	MWRA Employees' Retirement System
12/31/2021	MWRA Employees' Retirement System
12/31/2021	MWRA Employees' Retirement System
12/31/2021	MWRA Employees' Retirement System
12/31/2021	MWRA Employees' Retirement System
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12/31/2021	MWRA Employees' Retirement System
12/31/2021	MWRA Employees' Retirement System

Benchmark	Metric
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Years to Effective Maturity
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Effective Duration
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Mod Duration to Worst
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Effective Yield
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Current Yield
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Coupon
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Market Value USD
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Convexity
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Yield to Maturity
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp OAS
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Comp Yield to Worst
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Rating - Best Loomis Split Numeric
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Rating - Best Loomis Split
Bloomberg U.S. Government/Credit, USD, 0% Hedged	Number of Issues Ex Hedges

acct	bench
6.48	9.69
4.22	7.57
4.29	7.48
2.97	1.69
3.27	2.23
3.37	2.35
56,814,359	18,760,223,276
0.40	1.18
3.05	1.70
168	38
2.97	1.67
17.11	22.76
BAA2	AA3
970	8,529

STRATEGY AUM		
2021	$	31,154,314,101.81
2020	$	31,590,476,217.70
2019	$	32,130,285,560.89
2018	$	32,352,325,311.49
2017	$	37,373,576,927.65

STRATEGY NET FLOWS		
2021	$	479,499,743.42
2020	$	(386,580,988.54)
2019	$	639,326,299.38
2018	$	662,489,146.89
2017	$	15,069,879.84

STRATEGY ACCOUNTS GAINED/LOST	
2021	1
2020	7
2019	13
2018	1
2017	6

NEPC, LLC

Firm: PA Capital, LLC

Strategy/Product: Private Equity Co-Investments; PA Small Company Coinvestment Fund ("PASCCIF")

Client: Massachusetts Water Resources Authority Employees' Retirement System ("MWRA")

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?

Effective March 31, 2022, after 10+ years of collaboration, PA Capital will formally merge as one unified company along with its two affiliated boutiques, GoldPoint Partners and Madison Capital Funding, under New York Life Investments Alternatives (NYLIA).

PA Capital, LLC is a wholly owned subsidiary of New York Life Investments Alternatives, LLC, a wholly owned subsidiary of New York Life Insurance Company through New York Life Investment Management Holdings, LLC.

We believe that the recent organizational changes will provide a much deeper leadership team, investment team, and ultimately better stability with clear lines of succession across the company. Importantly, we believe this merger will create a world class private markets firm with significant reach across the middle market.

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

As of December 31, 2021, PA manages more than $7.7 billion of assets. The upcoming merged organization of PA Capital, Madison Capital, and GoldPoint Partners have a combined $35 billion[1] in assets under management.

[1] As of September 30, 2021.

Please refer to the table below for PA Capital's net flows over the past 5 years. Data as of year-end for each year portrayed.

Year	Net Flows	Total # of Accounts
2017	$672,107,953	1162
2018	$430,178,138	1110
2019	$573,508,629	1165
2020	$630,087,608	1085
2021	$849,817,088	1355

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

   None.

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

   None.

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

   None.

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

   PA Capital leverages the resources and efforts of its parent company regarding diversity, equity and inclusion through New York Life's Office of Diversity and Inclusion. The Office of Diversity and Inclusion promotes equal employment opportunity and workforce diversity, strengthens diverse procurement practices, engages in community outreach, and works to support a culture that continuously evolves by actively welcoming and respecting different backgrounds and points of view for the benefit of New York Life and its employees. New York Life currently offers seven employee resource groups targeted at diversity, equity, and inclusion. These resource groups embody the strength and spirit of its culture, and help foster an environment in which differences and unique perspectives are encouraged and valued. These groups support internal and external engagement by focusing on four pillars: Awareness & Advocacy, Professional Development, Community Outreach, and Talent Acquisition. The seven groups include the Asian Pacific Circle; BOLD: Black Organization for Leadership and Development; Enable (disability-focused organization); LEAD: Latinos for Excellence, Advancement & Development; NYL Pride; NYL Vets; and The Women's Initiative.

New York Life designed the Coming Together Series to encourage respectful dialogue and to promote a safe workplace forum for employees to share their perspectives and feelings on challenging issues. In November 2016, in response to several national news headlines related to race and law enforcement, the Office of Diversity & Inclusion and the Black Organization for Leadership & Development Employee Resource Group co-sponsored an event that brought employees together to engage in a first-time, company-sponsored discussion on race relations. Since then, NYL has built a comprehensive program that includes ongoing companywide discussions featuring timely topics, a courageous conversation toolkit, guest speakers, and the sponsorship of related research projects. Through these sessions, employees learn how to approach and discuss tough social issues to better understand and connect with each other, leading to a more inclusive workplace. With robust support from senior leadership and high participation across the company, the Coming Together Series has been instrumental in shaping NYL's culture of inclusion and setting it apart as a diversity and inclusion leader in the industry.

In order to promote diversity specifically within the private equity industry, NYLIA recently launched its Social Advancement Fund ("SAF")[2]. SAF, which is sub-advised by PA Capital, targets buyout and growth fund investments in emerging managers led by minorities, women, and other underrepresented groups, as well as co-investment opportunities. SAF seeks to back the first or second institutional funds of diverse managers, where we believe the impact on the manager's future fundraising success can be most meaningful. This focus complements PA's long-term emphasis on identifying and accessing promising emerging managers, which have historically delivered outsized returns for PA.

Portfolio Management Team

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

Yusuf Hamza joined PA Capital as an Associate in September 2021. Yusuf focuses on direct investments and co-investments in Low Mid Market companies and growth equity, buyout and turnaround fund investments. He is also involved in all aspects of private equity investment sourcing, due diligence, and monitoring.

[2] The Social Advancement Fund, LP is managed by New York Life Investments Alternatives LLC ("NYLIA" or the "Investment Manager"), a registered investment adviser under the U.S. Investment Advisers Act of 1940 , and is sub-advised by PA Capital LLC ("PA") . In December 2021, NYLIA announced plans to combine PA and two other of its relying advisers into NYLIA to form a single asset manager, which will then be renamed. As such, the role of sub-advisor for PA will be temporary as PA will become part of NYLIA. This combination is expected to close at the end of Q1 2022.

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

   As previously described, PA Capital recently announced its plan to merge with Madison Capital Funding and GoldPoint Partners effective March 31, 2022. As part of the merged business, the Private Equity Fund and Co-Investment Team will increase in size to 21 professionals. Importantly, Richard Wiltshire (Managing Director) will continue as Head of Co-Investments for the combined business which will ensure continuity to the existing process as all co-investment sourcing and due diligence efforts remain under his direction.

Process

1. **Have there been significant changes in any of the areas below in the past year?**
   - **Identification of investment ideas**
   - **Process for exploring and vetting ideas**
   - **Portfolio trading practices including buy/sell rules**
   - **Approach to portfolio monitoring and risk management**

   None.

Philosophy

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

   None.

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 meeting presentation materials.

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

   As of December 31, 2021, PA's private equity assets under management are ~$5.3 billion. Of the combined $35 billion in assets under management for the new company, ~$16 billion is considered as private equity assets under management.

   Please refer to the table below for net flows over the past 5 years, specific to the co-investment program. Data as of year-end for each year portrayed.

Year	Net Flows
2017	$65,850,000
2018	$0
2019	$0
2020	$25,000,000
2021	$131,765,000

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

   Please refer to the tables below for the requested information.

Investor Type	% of Strategy AUM
Corporate	26.3%
Foundation / Endowment	9.8%
HNW / Family Office	26.7%
Pension / Retirement	14.9%
Public / Taft-Hartley	22.3%

Data includes full co-investment program and is as of December 31, 2021.

Top 5 Investors (Strategy)	% of Strategy AUM
Client #1 (Public)	11.9%
Client #2 (Pension)	5.5%
Client #3 (Taft-Hartley)	5.0%
Client #4 (Family Office)	4.7%
Client #5 (Corporate)	4.7%

Data includes full co-investment program and is as of December 31, 2021.

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.**

   Please refer to meeting presentation materials for benchmark comparisons.

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

   PASCCIF is currently in its sixth year (from the first call date) and now entering its harvest period. As of September 30, 2021, the Fund has eight (8) full or partial realizations currently generating a combined 3.3x gross MOIC. In the aggregate, the Fund has returned ~60% of invested capital to date[3]. The remaining investments in the portfolio have an average hold period of 3.4 years.

Following a more than 40% increase in value in 2020, the Fund is up 27% through September 30, 2021. Accelerating financial performance of companies (vs. multiple expansion) is driving the value growth as revenue and EBITDA have increased 31% and 35%, respectively over the last year. PASCCIF, including all realized and unrealized investments, is currently marked at a 2.0x net MOIC and a 26% net IRR; top quartile on both an MOIC and IRR basis.

PA expects continued liquidity in the first half of 2022 through portfolio company sales and recapitalizations. Areas of heightened monitoring for the Firm includes businesses that are exposed to rising labor and commodity costs given the current macro environment. While most businesses have been able to pass along these costs, there is typically a lag which has temporarily impacted financial performance in some cases. Overall, businesses are conservatively capitalized with leverage across the portfolio of 4.0x net debt/EBITDA.

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

Notwithstanding the brief period beginning in the middle of March 2020 through September 2020 wherein the global pandemic caused a "sudden stop" for economies, businesses, and capital markets in the U.S. and abroad, we have seen a continued rise in M&A activity, availability of leverage, and valuations across the private equity landscape. In fact, the metrics that we track through our proprietary data sets, as well as publicly available information on the market, suggest that valuations for private companies are at their highest levels since the Global Financial Crisis. In some regards this is perplexing given what has transpired over the last 12-18 months, particularly challenges we've seen across several industries that were most materially impacted by the economic shutdown, but low interest rates and central bank liquidity are continuing to drive investors (corporations, sovereigns, institutions, and individuals) into risk assets, with U.S. private equity and private credit being primary beneficiaries as measured by capital flows and dry powder. On a relative basis, we believe this backdrop continues to be favorable and supports PA's strategy of focusing on the U.S. Low Mid-Market ("LMM") where we have decades of experience investing through various economic and M&A cycles alongside proven sponsors. While the current environment is favorable, we believe that the LMM provides more consistently attractive private equity performance in more uncertain environments as well. At a macro level, the LMM offers investors:

[3] As of February 14, 2022.

Attractive Supply/Demand Characteristics: PA believes the LMM is characterized by a small but stable capital base focused on a large supply of potential investments. Further, on a relative basis as compared to other segments of the private equity markets, PA believes the LMM presents (i) a less efficient, more fragmented supply of potential investments and (ii) a more consistent supply of potential investments over macroeconomic and capital market cycles due to the influence of the human condition (e.g., death, divorce, succession issues, etc.) in the closely-held entrepreneur/founder/family ownership structures that are prevalent in this segment of the market.

Value Creation Predicated on Business Building: Targeted fund managers in the LMM seek to generate returns for investors primarily through earnings growth of underlying portfolio companies. More specifically, PA's Co-Investment Program will seek investments with underlying fund managers that are focused on business building. PA defines business building-focused fund managers as those that are adept at investing in entrepreneur/founder/family-owned companies or orphan divisions of larger companies and leading those businesses through transitions to that of larger, institutionally owned, professionally managed companies that can be profitably sold upstream to a wider universe of strategic and financial buyers.

Lower Purchase Prices and Conservative Capital Structures: On a relative basis, transactions in the LMM are characterized by lower purchase prices and more conservative capital structures (i.e., less financial leverage) as compared to other segments of the private equity markets that are more dependent on capital market conditions and/or financial engineering for success.

Robust Exit Options: Exit activity from fund managers focused on the LMM tends to be less cyclical than that of many other segments of the private equity markets due to a lack of dependence on the public equity markets (i.e., the IPO window) and robust buy-side demand for professionalized small companies from larger private equity funds and corporate buyers. In the current market environment, exit options in the LMM are augmented by significant levels of capital overhang with financial buyers managing large funds and near record levels of cash on corporate balance sheets.

From a micro perspective, PA's investment team remains defensive while acknowledging that we cannot "time the market." We believe our focus on programmatically investing in high quality businesses at fair valuations with resilient capital structures alongside proven sponsors and management teams will result in portfolios that maintain strong downside protection while still enabling the opportunity to achieve attractive absolute and relative returns. This focused strategy is consistent with how PA built the PACIF IV Program portfolio (includes MWRA's commitment to PASCCIF), which saw an appreciation in value each quarter of 2020 through Q3 2021 and increased more than 115% over this period driven by fundamental revenue and earnings growth (as opposed to multiple expansion). PA's most recent co-investment offering, PASCCIF II, which made its first investment in July 2020, has followed the same strategy. To date, PASCCIF II has invested or committed more than $105M to 21 platforms with diversity across end markets and sponsors. The majority of these investments were "priced" at attractive valuations based on earnings that had not been adjusted for COVID-related headwinds. The portfolio is seeing strong growth early in the companies' hold periods, with combined portfolio revenue and EBITDA up 42% and 52%[4], respectively, relative to these metrics at the time of investment.

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.**

   Please refer to meeting presentation materials.

[4] Based on information provided by the underlying companies and while PA believes the information to be accurate, it has not been independently verified.

MWRA Employees' Retirement System

Client Update & PASCCIF Portfolio Review

February 2022

PA Capital

A NEW YORK LIFE INVESTMENTS COMPANY

Important Information

In General. We have prepared this document solely for informational purposes. You should not rely upon it or use it to form the definitive basis for any decision, contract, commitment or action whatsoever. We make no warranties or representations of any kind with respect to the attached information. In no event shall PA Capital, LLC be liable for any use of or reliance on such information or for any inaccuracies or errors in such information. A decision to purchase any securities should be made by you based solely upon the information contained in the final offering document relating to such securities. PA Capital, LLC is not undertaking to provide impartial investment advice, or to give advice in a fiduciary capacity, in connection with your actual or potential investment. These materials are not intended to constitute legal, tax or accounting advice or investment recommendations. Prospective investors should consult their own advisors regarding such matters. All figures are estimated and unaudited unless otherwise noted and are shown net of all expenses, management fees and estimated incentive allocations. All figures reflect the reinvestment of dividends and other earnings, where applicable. Certain investment returns may be subject to clawbacks. Actual returns may differ from the reported results due to differences in contribution dates, fee structures and new issue eligibility.

No offer to purchase or sell securities. Neither this document nor anything contained herein shall form the basis for any contract or commitment whatsoever. If at any time there should commence an offering of securities, any decision to invest in any such offer to subscribe for or acquire such securities must be based wholly on the information contained in a final offering document issued or to be issued in connection with any such offer and not on the contents hereof. This document does not constitute and should not be considered as any form of financial opinion or recommendation by us or any of our affiliates.

No registration. Any securities offered in connection with any transaction described herein will not be registered under the United States Securities Act of 1933, as amended (the "Securities Act"), and the issuer of the securities will not be registered under the United States Investment Company Act of 1940, as amended (the "Investment Company Act"). Any offered securities will not be recommended or approved by any United States federal or state securities commission or any other regulatory authority. Furthermore, the foregoing authorities have not confirmed the accuracy or determined the adequacy of this material. Any securities offered will be subject to certain restrictions on transfers as described in the final offering documents.

Forward looking statements. Certain statements provided in this presentation are not historical facts and may contain forward-looking statements. These forward-looking statements are based on the current beliefs and expectations of the investment manager and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate, or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements. Please see the offering documents for various risks inherent with these investments which could cause actual results to differ materially from those in any forward-looking statements. Any target or estimated returns in this presentation are included for illustrative purposes only and are inherently forward-looking statements. While we believe that our assumptions are reasonable as of the date of this presentation, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results. PA Capital, LLC undertakes no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

Risk Factors. Notwithstanding the foregoing, please note the following with respect to investment funds managed by PA Capital, LLC: Investments in the funds are meant for sophisticated investors and involve a high degree of risk. Investors can lose all or a substantial portion of their investment. Investment returns may be volatile. Investments in underlying funds may not be diversified. Funds of funds have substantial fees and expenses that will offset profits, if any. Investments in the funds are subject to significant restrictions on transfers. There is no secondary market for interests in the funds and none is expected to develop. The underlying funds' use of leverage in the course of their trading could exacerbate losses.

Target Returns. The targeted returns included are for illustrative purposes only. Accordingly, no assumptions or comparisons should be made based upon these returns. Projected returns are subject to inherent limitations. One limitation is that the returns do not take into account the impact that market and economic risks, such as defaults, prepayments, and reinvestment rates. In addition, target returns are subject to risks and uncertainties that may change at any time, and, therefore, actual results may differ materially from those expected. In no circumstances should the targeted returns be regarded as a representation, warranty or prediction that the Fund will reflect any particular performance or that it will achieve or is likely to achieve any particular result or that investors will be able to avoid losses, including total loss of their investment. Inherent in any investment is the potential for loss. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results.

Past Performance. Past performance is not indicative of future returns. Rate of return information is provided solely as an indicator as to how the fund will be managed and is not intended to be viewed as an indicator of likely performance returns to investors in the fund. Where past performance has been aggregated across a strategy, these results should not be interpreted as a single fund in which an investment could have been made.

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I. Client Profile

PA Small Company Coinvestment Fund, LP		
As of Date	September 30, 2020	As of 2/16/2022
Commitment	$4,000,000	*Called / Distributed*
Total Capital Called[1]	$3,747,604	$3,828,919
As a % of Committed Capital	*93.7%*	95.7%
Total Capital Distributed[1]	$1,844,337	$2,281,177
As a % of Called Capital	*49.2%*	59.6%
Capital Account Balance	$5,495,932	
Net MOIC[2]	2.0x	
Net IRR[2]	26.4%	

Portfolio Statistics[3]

- PASCCIF size: $97 million
- Vintage Year: 2016
- Number of co-investment partners: 25
- Number of underlying companies: 30
  - Fully/Partially Realized: 8
  - Unrealized: 22

(1) Estimated and unaudited as of September 30, 2021. Capital Called and Distributed figures are presented net of distributions subject to recall. (2) Net Multiple of Invested Capital and Net IRR provided at the Fund level. Please see Co-investment Disclosures at the end of this presentation for information related to performance. (3) As of January 31, 2022. Figures include both Private Advisors Small Company Coinvestment Fund, LP, and Private Advisors Small Company Coinvestment Fund-ERISA, LP.

II. Firm Overview

$7.7B
in AUM(1)
Founded in 1997

>$1B
Affiliated Capital Invested(2)

NEW YORK LIFE
AAA-rated(3)
Affiliate since 2010(4)

92%
Institutional Clients(5)

35+
Investment Professionals

Private Equity

1997 Inception | **$5.7B** AUM(1)

Historical Investments(6)

190+	Funds
120+	Direct Co-investments
80+	Secondaries
Launched 2020	GP Stakes

Private Real Assets

2014 Inception | **$837M** AUM(1)

Historical Investments(6)

20+	Funds / Secondaries
40+	Direct Co-investments

Long / Short Equity

2001 Inception | **$1.1B** AUM(1)

Historical Investments(6)

95+	Funds
40+	Direct Co-investments

(1) Assets under management figure is an estimate as of December 31, 2021 and includes non-discretionary separate account and co-advised assets. (2) Internal and affiliated capital is composed of PA Capital employee and New York Life capital. (3) New York Life has the highest financial strength ratings currently awarded to any US life insurer from all four of the major credit ratings agencies: A.M Best (A++), Fitch (AAA), Moody's Investors Service (Aaa), and Standard & Poor's (AA+). Individual independent rating agency commentary as of October 15, 2020. The financial strength ratings do not apply to any investment products as they are subject to market risk and will fluctuate in value. (4) On December 30, 2010, PA Capital entered into a strategic partnership with New York Life Investment Management Holdings LLC, a wholly owned subsidiary of New York Life Insurance Company ("New York Life"). In May 2020, New York Life Investment Management Holdings LLC transferred its PA ownership to its wholly owned direct subsidiary, New York Life Investments Alternatives LLC. (5) PA Capital's assets by client type figures are estimates as of December 31, 2021 and are subject to change. (6) As of July 15, 2021. Includes investments made through commingled funds and separate accounts investing in the Low Mid Market.

The PA Team

Senior Leadership

- Chip Moelchert — *CEO*
- Chris Stringer — *President*
- Greg Ciaverelli — *COO*
- Lou Moelchert — *Chairman*

Private Equity

- Curt Futch — *Mng. Director*
- Mike Griech — *Mng. Director*
- Todd Milligan — *Mng. Director*
- Bart Shirley — *Mng. Director*
- Richard Wiltshire — *Mng. Director*
- Louise Woltz Smith — *Mng. Director*
- Mike Zeleniuch — *Mng. Director*
- Kee Rabb — *Mng. Director*
- Bryan Pendleton — *Director*
- Seung Hyun Ko (“Ko”) — *Vice President*
- Mary LaRocco — *Vice President*
- Sujan Dhoju — *Snr. Associate*
- Ryan Bowles — *Associate*
- Sarah Bowron — *Associate*
- Yusuf Hamza — *Associate*
- John Lawrance — *Associate*
- Jack Carmody — *Analyst*
- David Micevski — *Analyst*
- Olivia Schilsky — *Analyst*
- Catherine Zysk — *Analyst*

Real Assets

- Zac McCarroll — *Mng. Director*
- Todd Leedy — *Director*
- Barrett Miles — *Director*
- Marina Schwartzman — *Vice President*

Long / Short Equity

- Charles Honey — *Mng. Director*
- Laura Baird — *Mng. Director*
- T.J. Theodorsen — *Mng. Director*
- Ben Fass — *Director*
- Sam Wilson — *Analyst*

Shared Resources

ODD

- Ryan Plante — *Mng. Director*
- Ben Donahue — *Vice President*
- Brendan Duball — *Associate*

Data & Analytics

- Eddie Fuller — *Vice President*
- John Smalley — *Vice President*
- Chancy Guo — *Analyst*
- Robert Hicks — *Analyst*

Business Development & Investor Relations

- Devan Marshall — *Mng. Director*
- Chris Mitrovich — *Director*
- Sarah St. Jean — *Director*
- Ian Flatt — *Vice President*
- Julia Seelye — *Vice President*
- Brendan Bostock — *Snr. Associate*
- Zach Cochran — *Associate*
- Charlie Connellan — *Associate*

Operations & Compliance

20+

Professionals(1)

As of January 2022. (1) Figure excludes ODD professionals.

NewCo: Established Middle Market Boutiques, Capabilities Spanning Private Equity & Private Debt

$35 Billion

in Assets Under Management[(1)]

320+

Unique GP Relationships[(2)]

$75B | 2,500

Since Inception Investments ($ | #)[(3)]

Overview of Legacy Boutiques

	PA Capital	Madison Capital Funding (A New York Life Investments Company)	GoldPoint Partners
Founded	**1997**	**2001**	**1999**
Strategies	Private Equity | Private Real Assets | Long / Short Equity	Direct Lending	Private Equity Mezzanine
Core Investment Capabilities	Fund Investing | Co-investing Secondaries | GP Stakes	Senior & Junior Debt	Fund Investing | Co-Investing Mezzanine Financing
Focus	Low Mid Market	Low Mid Market | Middle Market	Middle Market
AUM[(1)]	$7B	$13B	$16B
Representative Performance	16.2% agg. net IRR[(4)]	7.8% gross median IRR (unlevered senior debt)[(5)] | 1.7% default rate[(6)]	15.6% agg. net IRR[(7)]
Active GP Relationships[(2)]	135+	185+	50+
Employees[(8)]	70+	95+	45+

(1) PA and Madison AUM estimated as of September 30, 2021. GPP estimated as of June 30, 2021. Includes non-discretionary separate account and co-advised assets. See footnotes in Disclosures section for more information. (2) "Active GP Relationships" for Madison represents the number of Private Equity Sponsors with which Madison has made an investment from 2016 through September 30, 2021. PA and GPP relationships include private equity GPs where PA or GPP have an active investment relationship as of September 30, 2021. (3) Includes investments across PA Capital, GoldPoint, and Madison as of June 30, 2021. See Aggregate Commitment Figures Disclosure for more information. Footnotes 4 – 7: Estimated and unaudited. PA and GPP performance as of June 30, 2021. Madison performance as of September 30, 2021. More information about the investments included in the "representative performance" can be found in footnotes 4-7 in the "Established Middle Market Boutiques, Capabilities Spanning Private Equity & Private Debt" Footnotes in the Disclosures section for more information. (8) As of December 13, 2021.

Full Suite of Private Capital Solutions Across GoldPoint, PA, & Madison Capital

	Private Debt			Private Equity			
	Senior Debt	Unitranche	Mezz	Secondaries *(GP & LP Solutions)*	Funds	Direct / Co-invest	GP Stakes
	MADISON CAPITAL FUNDING A NEW YORK LIFE INVESTMENTS COMPANY	MADISON CAPITAL FUNDING A NEW YORK LIFE INVESTMENTS COMPANY	GoldPoint PARTNERS / MADISON CAPITAL FUNDING A NEW YORK LIFE INVESTMENTS COMPANY	PA Capital	GoldPoint PARTNERS / PA Capital	GoldPoint PARTNERS / PA Capital	PA Capital
Fund Investments & GP Solutions				●	●		●
Direct Company Level Investments	●	●	●	●		●	

III. PA Small Company Small Company Coinvestment Fund, LP (“PASCCIF”)

Diversified Portfolio of North American Low Mid Market Companies

Target Net Returns[1]

2.0x+
Net MOIC

20%+
Net IRR

Investment Strategy

- Target founder-owned companies with enterprise value <$250M
- Partner with Low Mid Market fund managers and independent sponsors

Program Size

$164M
Total Program Size

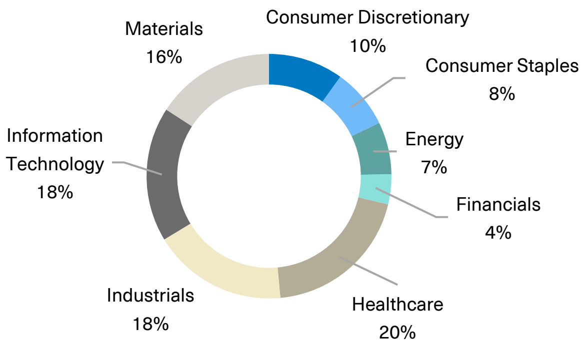
$97M
PASCCIF Size[2]

Investment Diversification

- **Strategies:** Buyout, growth equity, turnaround / distressed
- **Vintage Years:** 2016 - 2020
- **Industries:** Diversified

High-Quality Portfolio of Diversified Investments[3]

PASCCIF Exposure by Industry



Diversified: 30 portfolio companies; average position size of 3.3%

Highly Selective: 3% investment rate

Attractive Fees: no management fee charged by sponsors historically

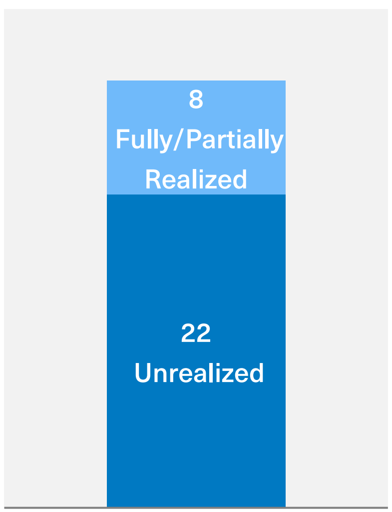
(1) See Target Returns disclosure in the Disclosures section of the Appendix for more information. (2) Includes both Private Advisors Small Company Coinvestment Fund, LP, and Private Advisors Small Company Coinvestment Fund-ERISA, LP. (3) All data as of September 30, 2021. Includes investments made in PASCCIF and PASCCIF-E. Exposure by industry and investment year based on invested capital. Note: The Fund is closed and no longer accepting new investments.

Key Statistics

MWRA Commitment	$4.0M
Total Fund / Program Size	$97.2M / $163.6M
Current Net Performance(1)	26% IRR | 2.0x MOIC
Expected Net Performance(2)	20% – 25% IRR | 2.3x – 2.6x MOIC

Realized vs. Unrealized Portfolio Companies(3)

30
Total Companies



Companies

Fully/Partially Realized Investments

60%
Of agg. called capital returned

3.3x
Gross MOIC

Performance Momentum

39%
1-year net IRR(1)

$21.5 million
Distributed since Dec-20(4)

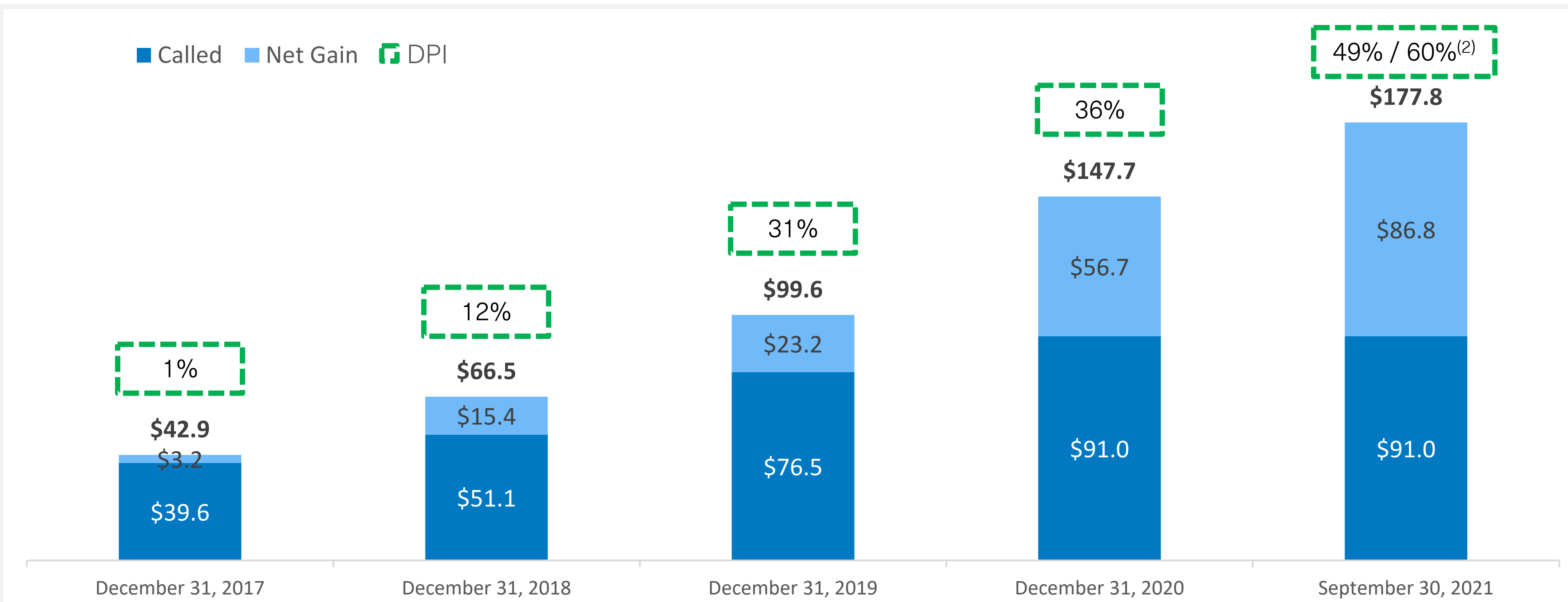
Update(3)

- Fund life = 6 years (since first cash flow)
- Maturing portfolio; transitioning into harvest stage
- Accelerating financial performance with LTM revenue and EBITDA up 31% and 35%, respectively
- 3.4 year average hold period of remaining companies
- Unrealized portfolio conservatively capitalized at 4.0x net debt/EBITDA and valued at 1.7x capital weighted MOIC
- Continued strong liquidity expected in 2022 as portfolio continues to mature

(1) Data is estimated and unaudited as of September 30, 2021. Please see Disclosures at the end of the presentation for disclosures related to performance and valuation methodology.
(2) Based on portfolio projection analysis as of February 2022. Projected performance is estimated and unaudited and based on discussions with underlying sponsors. There can be no assurance these Target Returns will be achieved. Please see Disclosures at the end of the presentation for important information regarding Target Returns.
(3) Realized and partially realized portfolio company statistics as of January 31, 2022. Partially realized investments include those that have returned at least 100% of invested capital. Unless otherwise noted, unrealized portfolio company financial performance data is NAV weighted and as of September 30, 202i.
(4) Includes period from December 1, 2020 to January 31, 2022.

Performance Development

December 31, 2017[1]	December 31, 2018[1]	December 31, 2019[1]	December 31, 2020[1]	September 30, 2021[1]
1.1x Net MOIC / **11%** Net IRR	**1.3x** Net MOIC / **20%** Net IRR	**1.3x** Net MOIC / **17%** Net IRR	**1.6x** Net MOIC / **24%** Net IRR	**2.0x** Net MOIC / **26%** Net IRR
	27% One-Year Net IRR	**13%** One-Year Net IRR	**41%** One-Year Net IRR	**27%** YTD Net IRR



(1) Estimated and unaudited as of the date shown. Please see Co-investment Disclosures at the end of this presentation for information related to performance. Figures include both Private Advisors Small Company Coinvestment Fund, LP, and Private Advisors Small Company Coinvestment Fund-ERISA, LP. (2) Includes actual liquidity through January 31, 2022.

Investment Schedule

Portfolio Valuation Summary(1)(2)
As of September 30, 2021

Company	Sponsor	Entry Date	Invested Capital	Realized Proceeds	Estimated Residual Value	Multiple of Cost	Estimated Gross IRR	Exit Date
PACIF IV Program Co-investments								
Fully / Partially Realized								
Company 1	Sponsor 1	12/17	$3.5	$15.2	$0.0	4.3x	163.6%	6/19
Company 2	Sponsor 2	12/15	$2.2	$0.6	$0.0	0.3x	(64.5%)	9/21
Company 3	Sponsor 3	12/15	4.3	6.9	12.0	4.4x	33.6%	
Company 12	Sponsor 12	7/18	2.2	2.8	0.0	1.3x	32.3%	
Company 19	Sponsor 17	7/19	3.4	7.1	20.6	8.2x	167.1%	
Total Fully / Partially Realized PACIF IV Program Co-investments			**$15.5**	**$32.5**	**$32.6**	**4.2x**	**50.9%**	
Unrealized								
Company 4	Sponsor 4	8/16	2.2	0.5	7.5	3.7x	31.4%	
Company 5	Sponsor 5	11/16	2.2	0.0	2.2	1.0x	0.2%	
Company 6	Sponsor 6	1/17	2.7	0.2	6.5	2.5x	25.0%	
Company 7	Sponsor 7	2/17	3.0	0.0	1.1	0.4x	(19.9%)	
Company 8	Sponsor 8	4/17	3.2	0.0	10.9	3.3x	33.2%	
Company 9	Sponsor 9	9/17	2.7	0.1	1.9	0.7x	(7.3%)	
Company 10	Sponsor 10	12/17	6.9	0.4	22.4	3.3x	47.0%	
Company 11	Sppnsor 11	6/18	2.4	0.1	4.4	1.8x	20.1%	
Company 13	Sponsor 13	8/18	3.1	0.0	4.7	1.5x	14.4%	
Company 14	Sponsor 10	8/18	3.5	0.0	6.4	1.8x	20.9%	
Company 15	Sponsor 4	1/19	1.6	0.0	2.5	1.5x	17.3%	
Company 16	Sponsor 14	2/19	2.7	0.0	8.1	3.0x	51.7%	
Company 17	Sponsor 15	5/19	2.3	0.0	2.5	1.1x	3.0%	
Company 18	Sponsor 16	6/19	3.5	0.0	0.0	0.0x	(100.0%)	
Company 20	Sponsor 18	7/19	3.2	0.0	2.5	0.8x	(10.3%)	
Company 21	Sponsor 19	10/19	4.0	1.6	6.0	1.9x	41.7%	
Company 22	Sponsor 3	12/19	2.2	0.0	3.0	1.4x	20.2%	
Company 23	Sponsor 20	9/20	3.0	0.3	4.9	1.7x	77.5%	
Total Unrealized PACIF IV Program Co-investments			**$54.5**	**$3.3**	**$97.3**	**1.8x**	**21.7%**	
Total PACIF IV Program Co-investments			**$70.0**	**$35.9**	**$129.9**	**2.4x**	**32.3%**	
Middle Market Co-investments								
Fully / Partially Realized								
Company 30	Sponsor 25	10/19	3.0	7.3	0.1	2.5x	117.6%	12/20
Total Fully / Partially Realized Middle Market Co-investments			**$3.0**	**$7.3**	**$0.1**	**2.5x**	**117.6%**	
Unrealized								
Company 24	Sponsor 21	6/16	$2.6	$0.0	$2.2	0.9x	(3.1%)	
Company 25	Sponsor 14	11/16	2.9	1.9	0.7	0.9x	(4.5%)	
Company 26	Sponsor 22	11/17	3.0	0.0	3.4	1.1x	3.8%	
Company 27	Sponsor 22	1/18	2.0	0.0	0.2	0.1x	(47.2%)	
Company 28	Sponsor 23	10/18	3.3	0.0	4.1	1.2x	8.0%	
Company 29	Sponsor 24	10/19	2.6	0.0	3.4	1.3x	25.2%	
Total Unrealized Middle Market Co-investments			**$16.4**	**$1.9**	**$14.1**	**1.0x**	**0.0%**	
Total Middle Market Co-investments			**$19.4**	**$9.3**	**$14.2**	**1.2x**	**7.3%**	
Total PASCCIF / PASCCIF-E			**$89.4**	**$45.1**	**$144.2**	**2.1x**	**28.1%**	

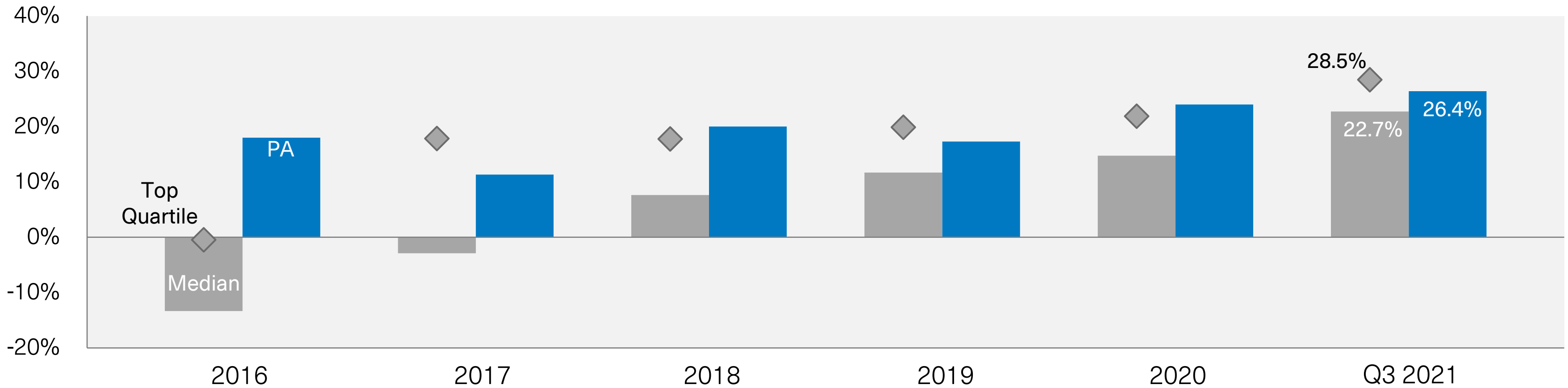
Total Estimated PASCCIF / PASCCIF-E Net IRR(3)	26.4%
Total Estimated PASCCIF / PASCCIF-E Net ROIC(3)	2.0x

(1) All data is estimated and unaudited. **Neither past performance, estimated values, nor estimated IRRs are necessarily indicative of the future results.** Please see Appendix for important disclosures regarding valuation methodology. Co-investments are generally valued at cost for the first year after investment unless a material event occurs. After the first year, values may be estimated higher or lower which could significantly impact performance. (2) All underlying co-investment company data contained herein is based upon information provided by the underlying co-investment company and is provided solely for illustrative purposes. The multiple on invested capital and IRR for each underlying company are estimated and derived from information provided by the lead equity sponsor. While we believe the data to be reliable, we cannot guarantee the accuracy of such information.. (3) Net of management fees, expenses, and estimated carried interest.

IV. Appendix

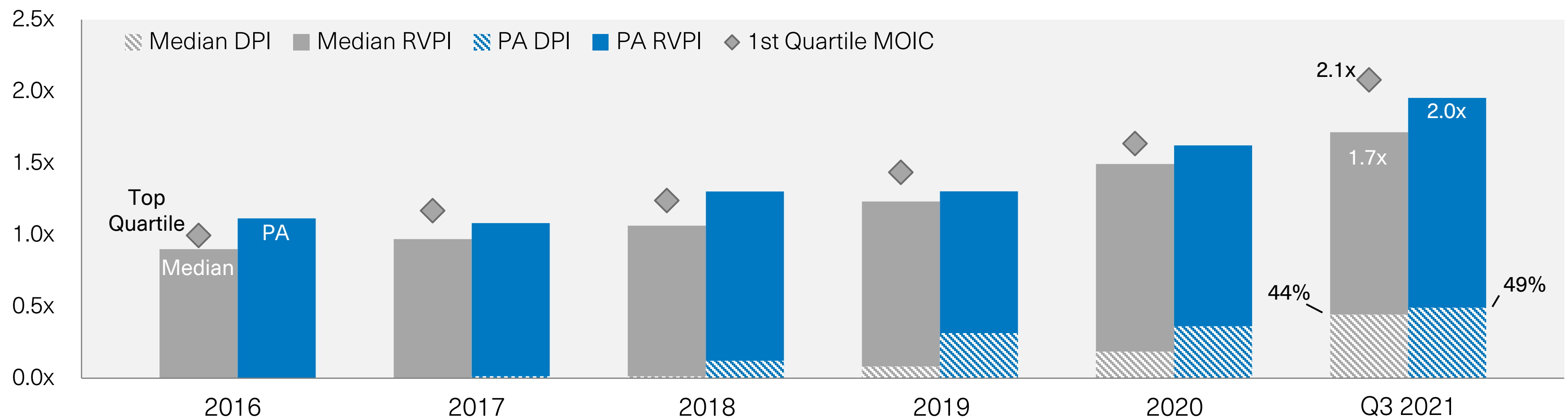
PASCCIF Net IRR Development vs. 2015 Vintage Year Benchmark

As of September 30, 2021(1)(2)



PASCCIF Net MOIC / DPI Development vs. 2015 Vintage Year Benchmark

As of September 30, 2021(1)(2)

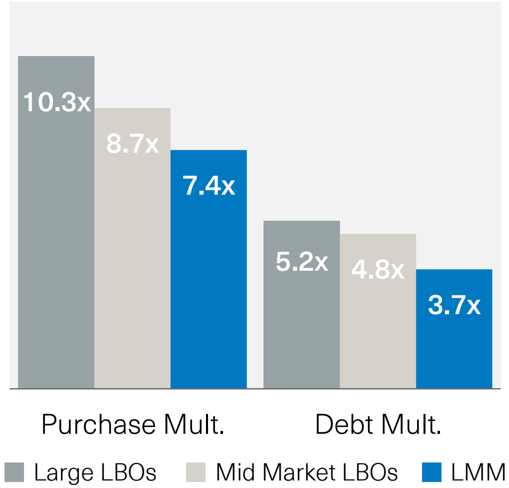


(1) Estimated and unaudited as of the date shown. Please see Co-investment Disclosures at the end of this presentation for information related to performance. Figures include both Private Advisors Small Company Coinvestment Fund, LP, and Private Advisors Small Company Coinvestment Fund-ERISA, LP. (2) Source for PE benchmark: Cambridge Associates, 48 US buyout funds, vintage year 2015 as of September 30, 2021. Note: Disclosures can be found in the Disclosures section of the Appendix.

Below Market Entry Points

- Less competition in LMM
- Opportunity to grow and professionalize businesses

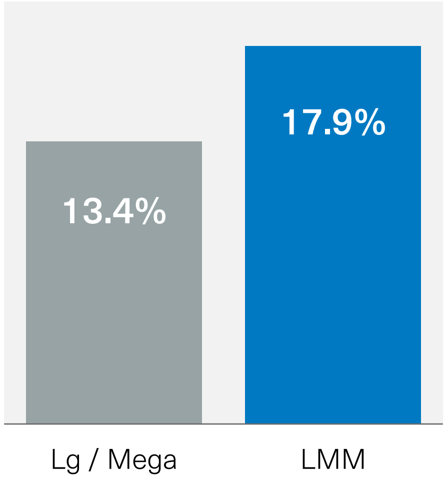
Entry Multiples by Size[1]



Significant Outperformance

- Focus on business building, not financial engineering
- Potential for multiple expansion

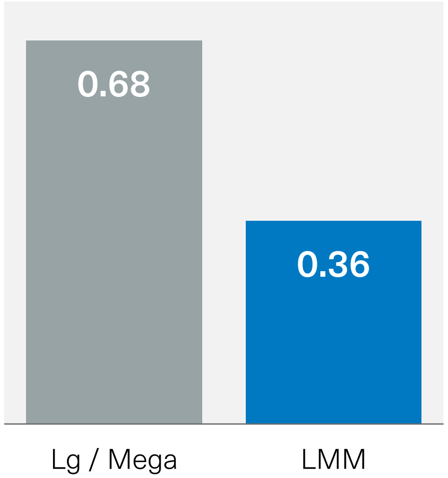
Returns by Fund Size[2][4]



Low Correlation to Public Markets

- Performance less tied to credit cycles relative to larger PE

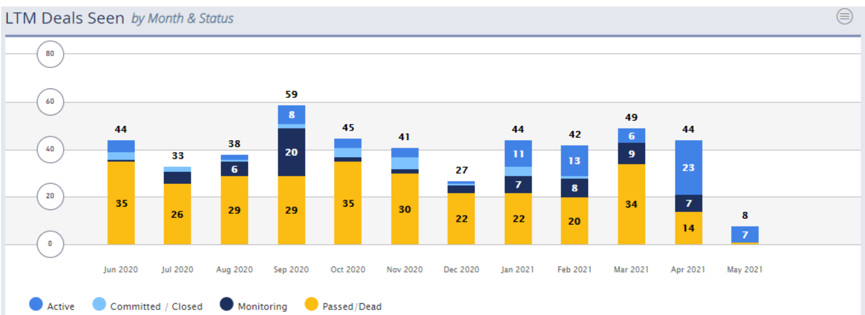
Correlation to S&P 500 by Size[3][4]

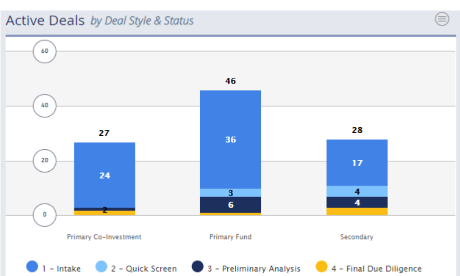


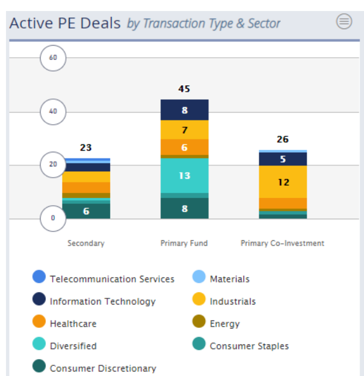
(1) As of March 31, 2021. Includes transactions from January 2010 to March 2021. Source for Large / Mid Market LBO Purchase Multiples: LCD Leveraged Buyout Review - 1Q'21, S&P Global Market Intelligence. "Large LBOs" defined as transactions > $500M, "Mid Market LBOs" defined as transactions between $250 – and $499M. Source for Large / Mid Market Debt Multiples: LCD Middle Market Lending Review - 1Q'21, S&P Global Market Intelligence. "Large LBOs" and "Mid Market LBOs" defined as issuers with EBITDA > $50M and < $50M, respectively. Source for LMM Purchase Multiples: GF Data's "GF Data M&A Report May 2021." Source for LMM Debt Multiples: GF Data's "GF Data Leverage Report May 2021." Includes deals between $50M and $100M. (2) Source: Cambridge Associates pooled average returns since 1986 for North America based buyout and growth funds as of March 31, 2021. (3) As of March 31, 2021. Source for S&P 500 Total Returns Index: AltSoft. Source for Buyout fund returns is Cambridge Associates. Refers to US buyout funds in vintage years 1997 to 2019. Correlation is calculated using quarterly returns for public indexes and quarterly IRRs for Cambridge Associates. (4) "Lg / Mega" defined as funds > $750M. "LMM" defined as funds < $750M."

One of the most comprehensive Small Company private equity databases

DealCloud
An Intapp Company







Robust, Dynamic Database

Current Data

- 1,700+ GP Managers
- 3,200+ Individual Funds
- 11,000+ Portfolio Companies

Sourcing and Due Diligence Edge

- Over 20 years of proprietary data
- Integrated sourcing across firm-wide PE capabilities
- More thorough evaluation of prospective managers through:
  - Centralized tracking and real-time analysis
  - Performance and comparable company analysis
- Ability to provide more detailed transparency and reporting

Note: All data as of August 16, 2021.

Sourcing	Due Diligence	Execution
200+ Deals Sourced Annually	**36%** Undergo Formal Due Diligence	**5%** Historical Investment Rate
Proactive, Platform-Wide Sourcing	Focus on Low Mid Market Transactions	Leverage General Partner Relationships
20 PE IPs Engaged in Sourcing[(1)] **750+** Sponsors Providing Deal Flow[(2)]	**$125M** Med. EV of Closed Investments[(3)] **$15M** Med. EBITDA of Closed Investments[(3)]	**>70%+** of Closed Investments are with PA-Backed GPs
Differentiated Deal Sources	Fundamental Underwriting of Company & Sponsor	Post-Close Monitoring Drives New Opportunities

Investing alongside GPs that we know well and can complete multiple investments with

	% of Deals Sourced[(3)]	% of Deals Closed[(3)]
PA-Backed GPs – Sponsors with which PA has made at least one fund investment	19%	72%
Prospective GPs – Sponsors with at least one fund but PA has not made a fund investment	45%	12%
Independent Sponsors – Sponsors that have not raised a formal private equity fund	36%	16%

Note: Please refer to "Platform-Wide Sourcing, Due Diligence & Investment Process" footnotes in the Appendix for additional footnotes.

(3) All allocations represent targets. There can be no assurances the target allocation will be achieved. Represents target characteristics of PA's co-investment platform. Data based off investments made in the following PA Capital funds since 2015: PACIF III, the PACIF IV Program (excluding the 20% Mandate – see "PACIF IV Program Disclosure" in the Appendix for an explanation of the Mandate), and PASCCIF II.

Initial Due Diligence: Key Evaluation Criteria

Target Sponsor Characteristics

Fund Manager Fit and Value-Add

- Successful industry investing experience
- Brings unique resources and insights to the deals (pre- and post-closing)
- Values relationship with PA

Target Company Characteristics

Quality of Business

- Attractive returns on tangible capital employed
- Consistent revenue growth and strong free cash flow characteristics
- Achievable growth opportunities independent of the macro-economic environment
- Sustainable competitive position in a stable and growing market

Management Team

- Proven, experienced and has prior success in the company and / or industry
- Strong alignment of interests and is committed to the transaction

Return Profile; Value Orientation

- Return profile: 20%+ net IRR and 2-3x multiple of invested capital[(1)]
- Conservative capital structure, can withstand various interest rate environments and / or a macro-economic downturn

Note: The above criteria represent target attributes that the Firm seeks when evaluating transactions, but there can be no assurances that any individual investment will meet all or any of these criteria. (1) See Target Returns disclosure in the Disclosures section of the Appendix for more information.

PA Capital Private Markets Track Record

As of September 30, 2021

PA Fund	Strategy	Vintage Year	Fund Size (in M)	Drawn in % of Commitment	Distributed to Paid In (%)	Net Multiple[6]	Est. Net IRR Since Inception[7]
PA Private Equity Fund[1][2] *(Buyout & Opportunistic Portfolio Only)*[3]	Multi-Manager	1999	$65 [3]	112.3% [5]	238.0%	2.4x	19.8%
PA Small Company Buyout Fund[1][2]	Multi-Manager	2001	175	96.8%	224.0%	2.2x	23.2%
PA Small Company Buyout Fund II[1][2]	Multi-Manager	2003	296	101.2%	167.9%	1.7x	10.4%
PA Co-investment Fund[1][4]	Co-Invest	2006	50	108.5%	162.9%	1.8x	11.1%
PA Small Company Buyout Fund III[2]	Multi-Manager	2007	203	94.1%	159.6%	1.8x	11.4%
CC Emerging Buyout Partners[1][8]	Multi-Manager	2009	70	94.0%	182.7%	2.2x	18.0%
PA Co-investment Fund II[1]	Co-Invest	2010	70	111.9%	106.9%	1.2x	4.3%
PA Small Company Buyout Fund IV[1]	Multi-Manager	2010	212	90.6%	146.6%	2.0x	14.0%
CC Partners IV[1][8]	Secondaries	2011	135	109.3%	133.0%	1.7x	16.2%
PA Small Company Buyout Fund V Program[1][9]	Multi-Manager	2012	340	82.4%	115.9%	2.3x	17.2%
PA Co-investment Fund III[1]	Co-Invest	2013	121	105.8%	121.4%	1.8x	13.3%
PA Small Company Private Equity Fund VI[1]	Multi-Manager	2014	350	79.0%	80.6%	2.1x	20.8%
PA Co-investment Fund IV[1]	Co-Invest	2015	56	96.0%	47.9%	2.1x	26.3%
Emerging Managers SMA[9]	Multi-Manager	2015	189	91.7%	73.8%	2.1x	28.9%
PA Small Company Co-investment Fund Program[1][11]	Co-Invest	2016	97	93.7%	49.2%	2.0x	26.4%
PA Small Company Private Equity Fund VII[1]	Multi-Manager	2016	350	76.2%	14.3%	1.7x	20.3%
PA Real Assets Fund[1]	Real Assets	2016	205	97.9%	47.8%	1.4x	10.3%
PA Secondary Fund V[1][8]	Secondaries	2016	275	91.4%	44.1%	1.8x	27.2%
PA Small Company Private Equity Fund VIII[1]	Multi-Manager	2018	420	56.6%	4.3%	1.7x	30.2%
PA Real Assets Fund II[1]	Real Assets	2018	242	78.8%	17.8%	1.6x	24.1%
PA Small Company Private Equity Fund IX[1]	Multi-Manager	2020	473	26.1%	3.8%	1.4x	n/m
PA Small Company Co-investment Fund II[1]	Co-Invest	2020	200	32.3%	3.2%	1.3x	n/m
PA Secondary Fund VI*[1][8][12]	Secondaries	2021	500	23.3%	0.7%	1.6x	n/m

Note: Funds marked with a * are actively investing and raising capital. (1) Figures are preliminary, estimated, and unaudited as of September 30, 2021 unless otherwise noted. These funds are managed by PA Capital, LLC ("PA"). (2) These funds are fully realized. (3) PA Private Equity Fund, LP is a $101.3 MM diversified fund of funds. Two-thirds of the committed capital was committed to 10 small company buyout and growth equity managers and 1 co-investment. The remainder was committed to 8 venture capital managers. The data displayed above is representative of the buyout and growth equity portfolio only. Including the venture capital positions, PAPEF had a net IRR of 10.1% and a net multiple of 1.8x. (4) PACIF's fund life has concluded, and the remaining assets were transferred to a liquidating trust on December 31, 2019. As such, performance is as of December 31, 2019 and represents the most recent available data. (5) Includes capital recycled by underlying managers. (6) Computed as follows: (Distributed Capital + Capital Account Value)/Contributed Capital. Please see each respective capabilities' disclosures section for information related to the computation of estimated Capital Account Value. (7) Please see respective capabilities' disclosures section for information related to computation of estimated IRR. (8) PA Capital acquired the investment advisory business of Cuyahoga Capital Partners in October of 2012. Secondaries funds I-III were invested under a different strategy than the Firm now employs prior to the Secondaries Team joining PA and are fully realized. As such they are not included in this track record. Please see the Secondary Disclosures in the Appendix for the full secondaries track record. (9) PA Small Company Fund V Program includes a Fund V onshore vehicle ($279.0 million fund size) and an offshore Fund V ERISA vehicle ($61.0 million fund size). The ERISA vehicle was established to accept benefit plan asset investors and is a parallel fund to the onshore vehicle. (10) Performance of the PA Emerging Manager Program is net of custom separate account fees, not the fees typically associated with a PA commingled funds. The EM SMA's returns would be reduced by the effect of typical commingled fund fees. (11) The PA Small Company Co-investment Program ("PASCCIF") includes PASCCIF and PASCCIF-ERISA. (12) These funds are in the process of fundraising. The fund sizes presented represent a target or expected fund size. PASF VI drawn in based on current raised as of September 30, 2021 ($338.8M)

V. Disclosures

Established Middle Market Boutiques, Capabilities Spanning Private Equity & Private Debt Footnotes

(1) Additional detail on Madison AUM: Estimated as of September 30, 2021; Assets Under Management ("AUM") includes approximately $254 million of equity, mezzanine, fund and other subordinated investments and approximately $4.3 billion of third-party senior loan assets managed by Madison Capital Funding LLC ("MCF"). These assets qualify as Regulatory Assets Under Management ("RAUM") as defined in SEC Form ADV. AUM does not include approximately $302 million of RAUM consisting primarily of unfunded capital commitments to certain private funds managed by MCF. The balance of the AUM, approximately $8.7 billion of senior loan commitments and $75 million of fund investments, are managed by MCF for its own account. These senior loan commitment assets and fund investments do not qualify as RAUM and, therefore, are not included in MCF's Form ADV RAUM calculation for regulatory purposes.

(4) Estimated and unaudited as of June 30, 2021. Represents aggregate net returns of PA's commingled multi-manager funds and an Emerging Manager SMA and co-investment funds since inception. Does not include venture capital investments in PA's first commingled fund, PAPEF, as PA did not invest in venture after PAPEF. Should not be considered as a fund managed by PA or available for investment.

(5) Estimated and unaudited as of September 30, 2021. The information is based on individual IRRs for each loan (TERM LOAN only) within Madison's portfolio since inception. The individual IRRs are calculated as of September 30, 2021 using Madison's Wall Street Office system ("WSO") to calculate an internal rate of return based on all actual cash flow activity throughout the life of each loan (TERM LOAN only). The calculations presented above were performed by Madison and were not verified by independent third parties. Returns are gross of fees that would typically be paid by an investor. The IRR calculations relate only to funded term loans held on Madison's balance sheet and do not reflect returns for investments held in individually managed third-party client accounts. This information should not be considered as a fund managed by Madison or available for investment.

(6) Estimated and unaudited as of September 30, 2021. Madison's Default Rate represents an average of the default rate for each calendar year. Default Rate for each calendar year is calculated by dividing Madison's Global Outstanding at Default for each calendar year by the average of the prior year and current year FYE Outstanding Asset Balance (defined as: the total outstanding senior loan debt held by Madison, certain New York Life subsidiaries, and third-party vehicles managed by Madison for all issuers in the portfolio as of the end of each year-end. This balance does not include unfunded commitments).

(7) Estimated and unaudited as of June 30, 2021. Represents aggregate net returns of GoldPoint's commingled Select Manager Funds and commingled co-investment funds since 1999. Co-investment track record includes Core Strategy Investments only, which excludes 8 Fund I investments that were EBITDA negative at entry or lacked a relationship sponsor, as the strategy no longer pursued these types of investments after Fund I. Should not be considered as a fund managed by GPP or available for investment.

<u>Aggregate Pooled Net Performance</u>

Aggregate pooled net IRR represents investments made in several funds and is not representative of a single fund available for purchase. This information is estimated and unaudited and is being provided for informational and comparison purposes only. Capital account balances are as reported to us by the underlying managers. The Internal Rates of Return ("IRRs") are calculated by aggregating the net cash flows for relevant funds and then aggregating their net terminal values to create a series of cash flows that can be used to calculate an aggregate IRR.

For the PA since inception and one-year performance information, more detail is provided below:

Multi-Manager Performance: represents net performance of PAPEF (Buyout & Growth Portfolio only), PASCBF, PASCBF II, PASCBF III, CCP EBP, PASCBF IV, PASCBF V, PASCPEF VI,, PASCPEF VII, PASCPEF VIII, and PASCPEF IX and an Emerging Manager-focused separately managed account. Note: PAPEF, PASCBF, and PASCBF II were fully realized prior to the one-year period represented in this presentation. Note: PASCBF III was sold on the secondary market in June 2021. Note: the separate account includes the deduction of fees specific to the separate account but does not include typical fees associated with a PA commingled multi-manager fund, which would have the effect of reducing returns.

Co-investment Performance: represents the net performance of a hypothetical portfolio comprising investments since 2015 in PACIF III, PACIF IV (and related SMA), PASCCIF, and PASCCIF-ERISA. The performance does not include the "middle market co-investments" made in PASCCIF and PASCCIF-ERISA as these investments were part of a specific mandate for a custom account and will not be part of PA's co-investment strategy going forward.

Secondaries Performance: represents net performance of CCP IV and PASF V. PASF VI not included as it made its first capital call from LPs in May 2021 and performance is not yet meaningful.

Private Real Assets: represents net performance of PARAF I and PARAF II. PARAF III had not called capital from LPs as of the date of performance.

Platform-Wide Sourcing, Due Diligence & Investment Process

(1) Refers to members of the Private Equity Team, including some members of senior leadership team who are on the PASCCIF II investment committee.

(2) Based on deals sourced since the launch of the dedicated PA co-investment strategy in 2006.

(3) Source: PA's proprietary database. As of August 16, 2020.

(4) Refers to funds in PA commingled funds or LMM separate accounts which have not been liquidated (including Multi-Manager program and Real Assets program).

(5) Refers to advisory board seats held in PA's commingled multi-manager funds historically since PA's inception.

(6) Refers to investments made since 2015 in PACIF III, and the PACIF IV Program (excluding the 20% Mandate – see "PACIF IV Program Disclosure" for more information). Underlying data provided by sponsors and has not been independently verified.

(7) Refers to investments made since the inception the Firm's co-investment program. There can be no assurances the actual volume of deals will match the figures presented herein.

Disclosures

Valuation Methodology for PA Capital Co-investment Funds

Important disclosures regarding valuation methodology for PA Capital Co-investment Fund, LP (“PACIF”), PA Capital Co-investment Fund II, LP (“PACIF II”), PA Capital Co-investment Fund III, LP (“PACIF III”), PA Capital Co-investment Fund IV, LP (“PACIF IV”), PA Capital Small Company Co-investment Fund, LP (“PASCCIF”), PA Capital Small Company Co-investment Fund-ERISA (“PASCCIF-E”), and PA Small Company Co-investment Fund II, LP (PASCCIF II”):

There can be no assurances that the actual IRR will not be materially different from the estimates presented here. The estimated IRR is calculated by PA Capital based on information provided in part by the underlying co-investment companies and upon PA Capital’s own valuations of the underlying co-investment companies. To the extent the actual Residual Value is materially lower than the estimate provided herein, the actual IRR will also be materially lower. The estimated residual value may never be realized. There can be no assurances that unrealized value included in the estimated Residual Value calculations will be realized at the time the underlying funds liquidate their investments. Investments which are currently reflecting unrealized gain may realize a loss when actually liquidated. Neither past performance, estimated values, nor estimated IRRs are necessarily indicative of future results.

Co-investments are generally valued at cost for the first year after investment unless a material event occurs. After the first year, values may be estimated higher or lower which could significantly impact performance.

All figures are estimated, unaudited and subject to change unless otherwise noted and are shown net of all expenses, management fees, and estimated carried interest.

The PACIF IV Program and PASCCIF II have credit lines available for short-term financing to decrease the overall frequency of capital calls, which may have an impact on the IRR of the funds. Please see Effects of Leverage on Gross and Net IRR disclosure for additional information.

All underlying co-investment company data contained herein is based upon information provided by the underlying co-investment company and is provided solely for illustrative purposes.

Effects of Leverage on Gross and Net IRRs

Calculations of net and gross IRRs in respect of investment and performance data included and/or referred to herein are based on the payment date of capital contributions received from limited partners, even in instances where a fund or account utilizes borrowings under a subscription-based credit facility. The use of a subscription-based credit facility (or other fund-level leverage) with respect to investments may result in a higher or lower reported gross IRR and net IRR at the fund-level than if such subscription facility (or other fund-level leverage) had not been used and instead the investors’ capital had been contributed at the inception of each such investment. This is due to the fact that calculations of gross IRR and net IRR are based on the period of time between (a) the date of limited partner contributions for a relevant investment (and not the date the investment was made) and (b) the date of distribution from the applicable fund or account to investors.

Therefore, if a subscription facility is used to fund an investment, capital may be called more slowly from the limited partners to repay such borrowings, which would shorten the time between such contribution and distribution and consequently increase or decrease gross IRR and net IRR. Additionally, early in a fund or account’s life, the use of a subscription-based credit facility could cause the amount of invested capital to exceed drawn capital.

Prior Performance

In considering the prior performance information contained herein, prospective investors should bear in mind that past performance is not indicative of future results and there can be no assurance that the Partnership will achieve its objective or will not incur substantial losses. The Partnership is not required by law to follow any standard methodology when calculating and presenting performance data. The performance of the Partnership may not be directly comparable to the performance of other private investment funds. In addition, there can be no assurance that unrealized investments will be realized at the valuations shown as actual realized returns. Most of such unrealized investments are in privately-held companies for which there is no trading market. Prospective investors are cautioned not to rely on the prior returns set forth herein in making a decision whether or not to purchase the interests offered hereby. The return information contained herein has not been audited or verified by any independent party and should not be considered representative of the returns that may be received by an investor in the Partnership. Actual returns will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs, and the timing and manner of sale, all of which may differ from the assumptions on which the valuations contained herein are based. Nothing contained herein should be deemed to be a prediction or projection of future performance of the Partnership.

Public Market Equivalent Calculation Disclosure

In order to avoid comparing dollar-weighted private equity IRRs to time-weighted returns of public markets, the public market equivalent IRR’s have been calculated using the Direct Alpha method, a methodology that attempts to create a comparable performance metric by assuming that the capital invested in a private equity portfolio was invested into a public stock market index instead. This is accomplished by calculating an IRR for the contributions, distributions, and capital accounts of the PA Capital underlying fund managers. The cash flows are discounted at the respective public stock market index’s rate of return and the sum of the underlying fund manager capital accounts is the terminal value. Please see: Gredil, Griffiths, and Stucke, “Benchmarking Private Equity: The Direct Alpha Method” (February 28, 2014).

Disclosures

Target Returns

The targeted returns included are for illustrative purposes only. Accordingly, no assumptions or comparisons should be made based upon these returns. Projected returns are subject to inherent limitations. One limitation is that the returns do not take into account the impact that market and economic risks, such as defaults, prepayments, and reinvestment rates. In addition, target returns are subject to risks and uncertainties that may change at any time, and, therefore, actual results may differ materially from those expected. In no circumstances should the targeted returns be regarded as a representation, warranty or prediction that the Fund will reflect any particular performance or that it will achieve or is likely to achieve any particular result or that investors will be able to avoid losses, including total loss of their investment. Inherent in any investment is the potential for loss. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results.

Case Study Disclosure

The case studies presented herein are for discussion purposes only. Case studies are not reliable indicators of the likely performance of the fund. There can be no assurances the fund will be able to make similar investments in the future or that any of the investments in the fund will be profitable. A complete loss of capital is possible. Certain statements made in the case studies are not historical facts and may contain forward-looking statements which are based on the current beliefs and expectations of PA Capital LLC, the company, or the sponsor. These forward-looking statements are subject to significant risks and uncertainties, are subject to change, are relevant as of the date of this communication, and will not be updated by PA Capital LLC. Past performance is not indicative of future returns. Please see the fund offering materials for further information.

PACIF IV Program Disclosure

The PA Co-investment Fund IV Program (the "PACIF IV Program") consisted of four components: the PA Co-investment Fund IV, LP ("PACIF IV"), PA Small Company Co-investment Fund, LP ("PASCCIF"), PA Small Company Co-investment Fund - ERISA, LP ("PASCCIF-E"), and a separately managed account which was managed pari-passu with PACIF IV. PASCCIF and PASCCIF-E were managed 80% pari passu to PACIF IV and 20% to a client specific mandate (the "20% Mandate"). For the purposes of discussing the track record of the PACIF IV Program, we have excluded the results of the 20% Mandate as this specific mandate will not carry over to the next fund.

Benchmarking Disclosure

Data included in the Cambridge Associates benchmark statistics does not represent the returns of all U.S. buyout and growth funds but only those to which Cambridge Associates has access. The number of funds included in the Cambridge Associates benchmark data for a specific vintage year will likely vary. Moreover, performance information for all U.S. buyout and growth funds may differ from those reported by Cambridge Associates. Comparisons to alternative investment indices are subject to material inherent limitations. In particular, the universe from which the components of an alternative investment index are selected includes a significant element of "survivor bias" into the reported levels of an index, as generally only successful funds will continue to report for the required period. Accordingly, indexation of alternative investment strategies tends to overstate the beneficial aspects of these strategies while obscuring certain risks, including the "risk of ruin."

Performance of the S&P 500 is for information purposes only and does not provide a basis of comparison for private equity fund investments as the market volatility, liquidity and other characteristics of private equity fund investments are materially different from those of the S&P 500.

Enterprise Value Disclosure

The enterprise value is the sum of total equity value plus a company's net funded debt at a given point in time.

Aggregate Commitment Figures Disclosure

Aggregate investment / commitment figures include investments made through PA's commingled and customized primaries, secondaries, co-investment, and real assets funds investing in the Low Mid Market. For primary funds (including private equity and real assets investments), commitment / investment figures represent commitment to an underlying fund. For secondary investments, commitment / investment figures represent exposure at purchase, which is defined as capital funded at close as well as any unfunded commitment. For co-investment funds (including private equity and real assets investments), commitment / investment figures include invested capital and capital reserved for follow-on investments.

The full amount of a commitment to an underlying investment may not be called in all cases.

Disclosures

Valuation Methodology for PA Capital Secondaries Funds
Important disclosures regarding valuation methodology for Cuyahoga Capital Partners IV, LP ("CCP IV" or "Fund IV"), Private Advisors Secondary Fund V, LP ("PASF V" or "Fund V"), and Private Advisors Secondary Fund VI, LP ("PASF VI" or "Fund VI"):

All figures are estimated, unaudited and subject to change unless otherwise noted and are shown net of all expenses, management fees, and estimated carried interest except where noted as gross. Gross results are net of underlying manager fees, but gross of PA Capital's fees (which include fund level fees, including PA Capital's management fee and carry and CCP fund expenses). All figures reflect the reinvestment of dividends and other earnings, where applicable. Performance estimates are shown on a capital account basis and are based on the individual capital account values as reported to us by the underlying managers, which are subject to change and have not been independently verified or audited. Net IRR is calculated using Fund-level cash flows and the capital account value of the Fund. The Net IRR and the gross IRR are computed using the actual day of each cash flow. Individual performance may differ based upon new issue eligibility.

There can be no assurances that the capital account value is a true representation of actual market value, nor can there be any assurances that the estimated net IRR will not be materially different from the estimate presented here. The capital account value may never be realized. There can be no assurances that unrealized value included in the capital account value will be realized at the time the underlying funds liquidate their investments. Investments which are currently reflecting unrealized gain may realize a loss when actually liquidated.

Underlying portfolio exposures are subject to change by underlying managers and are not directly controlled by PA. Future portfolio investments are subject to the discretion of PA and may change without notice. Neither past performance, estimated values, nor pro forma IRRs are necessarily indicative of future results. Certain impacts to public health conditions particular to the COVID-19 outbreak may also have a significant negative impact on the operations and profitability of investments. The extent of the impact to the financial performance of investments will depend on future developments, including (i) the duration and spread of the outbreak, (ii) the effects of governmental and medical organizations' restrictions and advisories, (iii) the effects on the financial markets, and (iv) the effects on various industries and on the economy overall, all of which are highly uncertain and cannot be predicted. If the financial performance of investments is impacted by these developments for an extended period, investment results may be materially adversely affected.

Multiple on Invested Capital ("MOIC") is computed as follows: (Distributed Capital + Capital Account Value) / Contributed Capital. Calls and distributions are net of distributions subject to recall.

Fund V and Fund VI have credit lines available for short-term financing to decrease the overall frequency of capital calls, which may have an impact on the IRR of the Fund. Please see Effects of Leverage on Gross and Net IRR disclosure for additional information.

Valuation Methodology for PA Capital Real Assets Funds
Important disclosures regarding valuation methodology for Private Advisors Real Assets Fund, LP ("PARAF") and Private Advisors Real Assets Fund II, LP ("PARAF II"):

All figures are estimated, unaudited and subject to change unless otherwise noted and are shown net of all expenses, management fees, and estimated carried interest. All figures reflect the reinvestment of dividends and other earnings, where applicable. Performance estimates are shown on a capital account basis and are based on the individual capital account values as reported to us by the underlying managers, which are subject to change and have not been independently verified or audited. Net IRR is calculated using Fund-level cash flows and the capital account value of the Fund. Individual performance may differ based upon new issue eligibility.

The Fund has a credit line available for short-term financing to decrease the overall frequency of capital calls, which may have an impact on the IRR of the Fund.

There can be no assurances that the capital account value is a true representation of actual market value, nor can there be any assurances that the estimated net IRR will not be materially different from the estimate presented here. The capital account value may never be realized. There can be no assurances that unrealized value included in the capital account value will be realized at the time the underlying funds liquidate their investments. Investments which are currently reflecting unrealized gain may realize a loss when actually liquidated. Co-investments are generally valued at cost for the first year after investment unless a material event occurs. After the first year, values may be estimated higher or lower which could significantly impact performance.

Underlying portfolio exposures are subject to change by underlying managers and are not directly controlled by PA Capital. Future portfolio investments are subject to the discretion of PA Capital and may change without notice. Neither past performance, estimated values, nor pro forma IRRs are necessarily indicative of future results.

Disclosures

Valuation Methodology for PA Capital's ("PA") Multi-Manager Funds Disclosure

Important disclosures regarding valuation methodology for Private Advisors Private Equity Fund, LP ("PAPEF"), Private Advisors Small Company Buyout Fund, LP ("PASCBF"), Private Advisors Small Company Buyout Fund II, LP ("PASCBF II"), Private Advisors Small Company Buyout Fund III, LP ("PASCBF III"), Cuyahoga Capital Emerging Buyout Partners, LP ("CC EBP"), Private Advisors Small Company Buyout Fund IV, LP, ("PASCBF IV'), Private Advisors Small Company Buyout Fund V, LP ("PASCBF V"), Private Advisors Small Company Buyout-V ERISA Fund, LP ("PASCBF V-ERISA"), Private Advisors Small Company Private Equity Fund VI, LP ("PASCPEF VI"), Private Advisors Small Company Private Equity Fund VII ,LP ("PASCPEF VII"), Private Advisors Small Company Private Equity Fund VIII, LP ("PASCPEF VIII"), and PA Small Company Private Equity Fund IX, LP ("PASCPEF IX"):

All figures are estimated, unaudited and subject to change unless otherwise noted and are shown net of all expenses, management fees, and estimated carried interest. All figures reflect the reinvestment of dividends and other earnings, where applicable. Performance estimates are shown on a capital account basis and are based on the individual capital account values as reported to us by the underlying managers, which are subject to change and have not been independently verified or audited. Net IRR is calculated using Fund-level cash flows and the capital account value of the Fund. Individual performance may differ based upon new issue eligibility.

PASCPEF VI, PASCPEF VII, PASCPEF VIII, and PASCPEF IX have credit lines available for short-term financing to decrease the overall frequency of capital calls, which may have an impact on the IRR of the fund. Please see Effects of Leverage on Gross and Net IRR disclosure for additional information.

For PAPEF: The estimated PAPEF buyout and growth equity portfolio IRR is calculated using the cash flows of the underlying buyout and growth equity managers and the portion of the fees charged by PA Capital attributable to buyout and growth equity investments. This portion equals the sum of buyout and growth equity commitments divided by the total commitments made by PAPEF.

There can be no assurances that the capital account value is a true representation of actual market value, nor can there be any assurances that the estimated net IRR will not be materially different from the estimate presented here. The capital account value may never be realized. There can be no assurances that unrealized value included in the capital account value will be realized at the time the underlying funds liquidate their investments. Investments which are currently reflecting unrealized gain may realize a loss when actually liquidated.

Underlying portfolio exposures are subject to change by underlying managers and are not directly controlled by PA Capital. Future portfolio investments are subject to the discretion of PA Capital and may change without notice. Neither past performance, estimated values, nor pro forma IRRs are necessarily indicative of future results.

Index Definitions

Cambridge Associates Private Equity Benchmarks – Cambridge Associates US Private Equity Benchmark Statistics represent a robust collection of institutional quality private fund performance and are based on data compiled from institutional-quality global buyout and growth equity funds formed since 1986. The benchmark aggregates portfolio-level performance information. Fund and investment-level performance information is drawn from the quarterly and audited annual financial statements of the fund managers and each manager's reported performance numbers are independently recreated from the financial statements and verified by Cambridge Associates. Benchmarks can be aggregated across relevant strategies, vintage years, fund sizes, etc.

Russell 2000 Index – The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership. The Russell 2000 Index 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.

S&P 500 Total Return Index (or "S&P 500 TR") – The index is an unmanaged index of 500 common stocks that is generally considered representative of the U.S. stock market. The index is heavily weighted towards stocks with large market capitalizations. The index assumes reinvestment of dividends and capital gains at net asset values. You cannot invest directly in the Index.

Note: Performance of broad public market indices, such as the S&P 500, are for informational purposes only and do not provide a basis of comparison for private equity fund investments as the market volatility, liquidity and other characteristics of private equity fund investments are materially different from those of broad public market indices. Comparisons to alternative investment indices/benchmarks are subject to material inherent limitations. Data included in alternative investment indices or benchmarks generally do not represent the returns of all funds but rather only those to which the index/benchmark provider has access. The number of funds included in the index/benchmark data for a specific vintage year will likely vary. Moreover, performance information for all funds within a specific category may differ from those reported by the index/benchmark provider. Additionally, the universe from which the components of an alternative investment index/benchmark are selected include a significant element of "survivor bias" into the reported levels of an index/benchmark, as generally only successful funds will continue to report for the required period. Accordingly, indexation of alternative investment strategies tends to overstate the beneficial aspects of these strategies while obscuring certain risks, including the "risk of ruin."

Disclosures

<u>Secondaries Track Record Prior to PA</u>

Please find below the track record of secondary funds raised by Cuyahoga Capital Partners prior to the team joining PA (Prior Strategy Funds). Please note: Funds I-III were raised and invested prior to the team joining PA in 2012. Each of the funds had non-traditional investment periods (12-19 months) and a different investment focus than the current strategy, including significant allocations to venture capital and fund-of-funds. Funds I-III are fully realized.

Vintage Year	Fund	Fund Size (in M)	Drawn in % of Commitment[2]	Distributed to Paid In[2] (%)	Net Multiple[3]	Net IRR Since Inception[4]
Prior Strategy						
2005	Fund I[5]	$18	93%	159%	1.6x	10%
2007	Fund II[5]	$26	104%	113%	1.1x	2%
2008	Fund III[5]	$59	93%	148%	1.5x	12%

Note: PA Capital acquired the investment advisory business of Cuyahoga Capital Partners in October of 2012.

(1) Data is estimated and unaudited as of December 31, 2020. These funds are managed by PA Capital ("PA"). (2) Capital called and distributed are presented net of distributions subject to recall. (3) Computed as follows: (Distributed Capital + Capital Account Value)/Contributed Capital. Please see Disclosure 1 for disclosures related to the computation of estimated Capital Account Value. (4) See Disclosure 1 for information related to computation of IRR. (5) These funds were invested prior to the Secondaries Team joining PA and are fully realized. Please see the "Prior Performance" Disclosure for more information about the Secondaries Team.

Disclosures

Madison Capital AUM Disclosure

Additional detail on Madison AUM: Estimated as of September 30, 2021; Assets Under Management ("AUM") includes approximately $254 million of equity, mezzanine, fund and other subordinated investments and approximately $4.3 billion of third-party senior loan assets managed by Madison. These assets qualify as Regulatory Assets Under Management ("RAUM") as defined in SEC Form ADV. AUM does not include approximately $302 million of RAUM consisting primarily of unfunded capital commitments to certain private funds managed by Madison. The balance of the AUM, approximately $8.7 billion of senior loan commitments and $75 million of fund investments, are managed by Madison for its own account. These senior loan commitment assets and fund investments do not qualify as RAUM and, therefore, are not included in Madison's Form ADV RAUM calculation for regulatory purposes.

Disclosure Regarding GoldPoint Partners Performance

The GoldPoint Partners LLC ("GoldPoint") performance information is based on investments made by the Goldpoint team utilizing a process developed over the past 20 years. Investment decisions were formally made by an Investment Committee which prior to August 2021 was comprised of seven voting members. In August 2021, the resignations of six current voting members of the investment committee were accepted by GoldPoint. Upon the resignation of these individuals, any open fundraising and/or investment periods were ended. Subsequently, a former member of the Investment Committee, who left the firm in early 2021, rejoined the firm, and the investment committee, in January 2022.

While there has been significant turnover of the members of the Investment Committee, performance information is being provided as evidence of the investment process that was developed, the underlying manager relationships that may still exist, and the efforts of the remaining investment professionals at GoldPoint. Members of the remaining investment professionals at Goldpoint have participated in origination/sourcing, underwriting, execution, participation in investment committee meetings, and monitoring of the investments. There can be no assurance that similar investment opportunities that resulted in the past Select Manager Fund performance will be identified, available for investment, bear the same characteristics, pass due diligence, and/or perform in a similar manner.

Firm:	**Ascent Venture Partners**
Strategy/Product:	**Venture Capital**
Client:	**MWRA Employees' Retirement Board**

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?

   In 2020, the firm was unable to raise the next fund, (in part from the onset of COVID-19). Since the new fund was not raised, the firm will not be making any new investments, and as a result Geoff Oblak joined another Boston-based VC firm in 2020. He continues to work closely on a contractual basis with the Ascent team, including his lead investment role in managing three portfolio companies in AVP V and AVP VI. This arrangement has proven to work well.

   Matt Fates is expected to join another Boston-based VC firm in the near future. We anticipate a similar contractual arrangement to that of Geoff Oblak where Matt will continue to work closely on a contractual basis with the Ascent team, including his lead investment role in managing two portfolio companies in AVP VI. The other team members (Burns, Dick, Girvan, and Scanlon) continue to manage the portfolio companies to outcomes for all of the remaining funds.

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

   Ascent Venture Partners ("Ascent"/the "Firm") has $314M of committed capital for the remaining 3 of 6 funds. The most recent fund, Ascent Venture Partners VI, L.P. is a 2015 vintage fund with $71.05M of committed capital.

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

   AVP III has been terminated and dissolved in the normal course of the life of a fund in September of 2021 with a final liquidating distribution in June of 2021.

4. Are any products capacity constrained? **No**

5. Describe any current or pending regulatory, compliance or litigation issues and the expected business impact. **There are no current or pending regulatory, compliance or litigation issues.**

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

   Not applicable. The firm was unable to raise the next fund, (in part from the onset of COVID-19). Since the new fund was not raised the firm will not be adding new employees to the team with no opportunity to advance further diversity, equity and inclusion.

Portfolio Management Team

1. Have there been any changes in the portfolio management team in the past year? **No**

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

   See prior discussion of Matt Fates' anticipated transition.

Process

1. Have there been significant changes in any of the areas below in the past year?
   - Identification of investment ideas **No**
   - Process for exploring and vetting ideas **No**
   - Portfolio trading practices including buy/sell rules **No**
   - Approach to portfolio monitoring and risk management **No**

Philosophy

1. Describe recent changes in investment philosophy, if any. **None**

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.). **The meeting presentation includes the current portfolio holdings and appropriate performance information for venture capital.**

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

   The Firm has $314M of committed capital across the remaining 3 of its 6 funds all of which invest/have invested in a similar venture capital strategy. The funds have made capital calls and distributions in the normal course of operation over the last year.

3. Describe investor concentration for the strategy and note the percent of AUM attributable to the top five investors. **As is typical of venture capital funds, Ascent has 39% of its committed capital concentrated in the top five investors (aggregated by common control). The risk commonly associated with investor concentration is mitigated by the long-term nature of the asset class and withdrawal restrictions common amongst venture capital funds.**

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.

   The presentation contains venture capital appropriate performance returns.

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

   Public markets remain strong. Venture capital exits are traditionally made through a strategic acquisition or PE backed acquisition.
   The strategic acquisition market is helped by strong public markets and PE

firms still maintain record levels of “dry powder” that they need to put to work.

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

   The long-term nature of a venture capital strategy mitigates some of the risk from short-term volatility of the public markets.

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.

   This data information is included on an account page in the presentation.

ASCENT VENTURE PARTNERS

TRUSTED PARTNERS TO EXCEPTIONAL ENTREPRENEURS

Ascent Venture Partners

Update Presentation – MWRA Employees' Retirement System

February 2022

All performance data as of September 30, 2021

Investor Status – MWRA Employees' Retirement Board

As of September 30, 2021	AVP II	AVP IV	AVP IV-B	AVP V	AVP VI	Total
Commitment	$800,000	$2,000,000	$1,000,000	$2,000,000	$3,000,000	$8,800,000
Invested Capital	$774,806	$2,000,000	$967,836	$1,940,000	$2,820,000	$8,502,642
Distributions	$2,582,627	$334,111	$800,101*	$1,646,891*	$-0-	$5,363,730*
Distributions as % of invested capital	333%	17%	83%	85%	0%	63%
Remaining Value	$-0-	$6,399	$110,088*	$1,758,672*	$3,082,018	$4,957,177*
Remaining Value as % of invested capital	0%	0%	12%	91%	109%	58%
Value of Invested Capital	$2,582,627	$340,510	$910,189	$3,405,563	$3,082,018	$10,320,907
Value as % of invested capital	333%	17%	94%	176%	109%	121%

* Adjusted to reflect $5K (AVP IV-B) and $349K (AVP V) distributions made in December 2021

ASCENT VENTURE PARTNERS

THE ASCENT TEAM:
TRUSTED PARTNERS TO ENTREPRENEURS

Luke Burns	Walter Dick	Matt Fates	Brian Girvan	Geoff Oblak	Tom Scanlon
GP	GP	GP	GP	GP	CFO

Continuity
Over 100 years of venture experience, most of it together at Ascent

Teamwork
Collaborative, team-oriented model

Consistent Focus
Early stage Enterprise IT

Leadership
Lead 100% of investments with active engagement with company mgmt.

ASCENT VENTURE PARTNERS

Opening Remarks

- All companies took rapid action at the start of the COVID-19 pandemic including:
  - Reductions in team size, salary reductions, furloughs and other expenses
  - Use of Government PPP Loans - $14M across 10 companies in first round; all forgiveness applications have received approval some loans repaid
- Public equity markets rebounded; private markets followed
- Economy Recovering: GDP has increased each quarter since the pandemic started in Q2 ‘20
- Overall, the portfolio responded well to challenging conditions in 2020
- Many companies took advantage of the acceleration of tech/digital trends brought on by COVID-19
- Our Focus is managing the portfolio for optimal AVP V and VI outcomes and liquidity

AVP IV (2004): **PORTFOLIO SUMMARY**

AVP IV	Number of Investments	Cost ($M)	Value ($M)	Gross Multiple	Gross IRR	Net IRR	Net Multiple
Realized	16	143	145	1.0x	0.2%		
Unrealized	1	15	3	0.2x	-28.1%		
Total	**17**	**158**	**147**	**0.9x**	**-1.3%**	**-26.9%**	**0.2x**

- Net returns presented above are for original AVP IV LPs, AVP IV-B net IRR is -4.9%
- AVP IV (original investors) is 100% drawn; AVP IV-B (secondary investors) is 97% drawn
- Distributed $360K in 2021 and $27.8M in 2020 to AVP IV-B investors
- Contingent consideration relating to the sale of TimeTrade final remaining asset
- All outcomes have no increase in capital account value for AVP IV original investors. Distributed $688K in February 2021 from reduction in cash reserves. Expecting final distribution of approximately $150K later this quarter

AVP V (2008): **PORTFOLIO SUMMARY**

AVP V	Number of Investments	Cost ($M)	Value ($M)	Gross Multiple	Gross IRR	Net IRR	Net Multiple
Realized	4	21	59	2.8x	30.3%		
Unrealized	6	43	100	2.3x	10.1%		
Total	10	64	160	2.5x	14.8%	8.3%	1.7x

Active Portfolio:

- Portfolio construction completed in 2015 - 97% of capital called to date
- Four of ten investments have exited thus far
  - Distributed $64M to LPs on contributed capital of $76M including the distribution made on December 3rd of $14M to the LPs
- 3 of remaining 6 active companies have demonstrated fund driver potential

AVP V: **FUND PERFORMANCE**

			COST	VALUE	CURRENT MULTIPLE	
REALIZED	CloudLock	Realized	$5.8M	$38.6M	6.7	DRIVER
	cargometrics	Realized	$6.1M	$12.6M	2.1	CONTRIBUTOR
	PerspecSys Making the Public Cloud Private	Realized	$4.9M	$8.1M	1.6	CONTRIBUTOR
	ScaleBase	Realized	$4.3M	$0.0M	0.0	ASSET SALE
		SUBTOTAL:	**$21.0M**	**$59.3M**	**2.8**	
ACTIVE	start.io	Unrealized	$5.8M	$30.6M	5.3	DRIVER
	invaluable	Unrealized	$5.6M	$16.2M	2.9	DRIVER
	NOVA SCIENTIFIC	Unrealized	$9.9M	$27.6M	2.8	DRIVER
	vee|24	Unrealized	$6.1M	$10.3M	1.7	CONTRIBUTOR
	rapidminer	Unrealized	$7.2M	$12.1M	1.7	CONTRIBUTOR
	Knoa SOFTWARE	Unrealized	$8.0M	$3.5M	0.4	DEFENSIVE
		SUBTOTAL:	**$42.7M**	**$100.2M**	**2.3**	

AVP VI (2015): **PORTFOLIO SUMMARY**

AVP V	Number of Investments	Cost ($M)	Value ($M)	Gross Multiple	Gross IRR	Net IRR	Net Multiple
Realized	1	6	0	0.0x	-100%		
Unrealized	8	48	74	1.5x	11.6%		
Total	9	54	74	1.4x	7.9%	2.4%	1.1x

Active Portfolio:

Quartile · cloudbees · splash · promoboxx · NOVA SCIENCES · Connectbase · GR8 PEOPLE · empow (You have it in you.)

- 94% of capital has been called to date
- Portfolio construction complete
- 3 of 9 investments have already demonstrated fund driver potential
- Working with companies to best position for growth post COVID-19

ASCENT VENTURE PARTNERS

AVP VI: **FUND PERFORMANCE**

		COST	VALUE	CURRENT MULTIPLE	
Quartile	Unrealized	$7.8M	$19.1M	2.4	DRIVER
splash	Unrealized	$8.9M	$16.8M	1.9	DRIVER
Connectbase	Unrealized	$7.0M	$13.5M	1.9	DRIVER
promoboxx	Unrealized	$4.9M	$10.4M	2.1	CONTRIBUTOR
NOVA SCIENCES	Unrealized	$5.0M	$6.4M	1.3	CONTRIBUTOR
cloudbees	Unrealized	$4.6M	$4.9M	1.1	CONTRIBUTOR
GR8 PEOPLE	Unrealized	$4.8M	$2.6M	0.5	DEFENSIVE
empow You have it in you.	Unrealized	$5.0M	$0.0M	0.0	DEFENSIVE
CPX SECURITY	Realized	$6.4M	$0.0M	0.0	DEFENSIVE
	TOTAL:	**$54.5M**	**$73.7M**	**1.4**	

AVP VI: **SUMMARY**

AVP VI in growth mode

- Portfolio construction complete, nine investments diversified across target sectors
- Called 94% of capital thus far
  - Expect to call 1% to 3% over next year for follow-on investments and expenses
- Intensive engagement with portfolio throughout the year to respond to COVID-19 impact, position companies for longer term success
- Portfolio still relatively immature with average age of 3.9 years, but beginning to segregate portfolio into Driver, Contributor and Defensive categories
- Working to maximize value of 3 Drivers, improve performance of 3 Contributors, limit additional capital into 3 Defensive companies unless prospects improve

GARCIA HAMILTON & ASSOCIATES, L.P.

1401 MCKINNEY STREET, SUITE 1600, HOUSTON, TX 77010
PHONE: 713-853-2322
FAX: 713-853-2300

NEPC MANAGER DUE DILIGENCE QUESTIONNAIRE

MWRA EMPLOYEES' RETIREMENT SYSTEM

FEBRUARY 23, 2022

PRIMARY CONTACT: RUBY MUÑOZ DANG
PHONE: 713-853-2322 EXT. 2359
EMAIL: RUBY@GARCIAHAMILTONASSOCIATES.COM

Awards/rankings may not represent client experiences and are not indicative of future performance.
Go to www.garciahamiltonassociates.com/awards/ for additional information on each award.

NEPC, LLC

Firm: Garcia Hamilton & Associates

Strategy/Product: Fixed Income - Aggregate

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?

Yes, Yvette Duenas was named partner in January 2021. Yvette has been with us for over five years and has been the catalyst for our new municipal bond strategy. In addition, she continues to be a vital part of our investment team and another firm leader.

Our newest partners, Mark Delaney, and Marcus Smith, both were named partners in December 2021. Mark and Marcus were welcomed to the firm this summer, both are industry veterans and have had the opportunity to work with several of our team members, including Gilbert, in past careers. Mark Delaney joins our investment team with over 40 years of money management experience. Marcus Smith joins our marketing and client service team with over 20 years of industry experience.

We also had a few minor ownership adjustments among a few existing partners, and with these changes our minority ownership is 64% and our women and minority ownership is 88%.

GH&A FIRM OWNERSHIP AS OF DECEMBER 31, 2021		
Name	**Title**	**Percentage**
Gilbert A. Garcia, CFA	Managing Partner	33.30%
Janna Hamilton	Partner, Marketing and Client Services	16.90%
Ruby Muñoz Dang	Partner, Director of Marketing & Client Services	11.20%
Stephanie Roberts	Partner, Marketing and Client Services	6.60%
Kevin Lunday	Partner, Chief Operating Officer	4.80%
Nancy Rodriguez	Partner, Portfolio Manager	4.80%
Karen Tass, CFA	Partner, Portfolio Manager	3.70%
Jeffrey Detwiler, CFA	Partner, Portfolio Manager	3.60%
Benjamin Monkiewicz	Partner, Portfolio Manager	2.40%

Gary Montgomery	Partner, Systems Manager	2.20%
Don Elsenbrock	Partner, Portfolio Manager / Strategist	2.10%
Yvette Duenas	Partner, Portfolio Manager	1.90%
Morgan Doyle	Partner, Client Relations Manager	1.90%
Beth McWilliams	Partner, Chief Compliance Officer	1.80%
Mark Delaney	Partner, Senior Portfolio Manager / Strategist	1.50%
Marcus Smith	Partner, Vice President of Marketing & Client Services	1.30%

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

GH&A FIRM AUM, NEW FLOWS, GAINED & LOST ACCOUNTS						
Year	Year-End AUM (millions)	Accounts Gained	Assets Gained (millions)	Accounts Lost	Assets Lost (millions)	Net Flows (millions)
2017	$10,071	31	$981	9	$403	$578
2018	$12,590	39	$2,027	7	$482	$1,545
2019	$14,740	50	$775	6	$64	$711
2020	$16,726	19	$937	12	$151	$786
2021	$18,740	38	$2,273	18	$445	$1,828

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

The Firm launched the Collective Investment Trust (CIT) vehicle in January 2022.

4. Are any products capacity constrained?

The Firm does not have a policy limiting accounts or assets under management. We presently have ample capacity from an investment management standpoint, and we continually review this from an organizational, management, and client service standpoint. We feel we are positioned to continue to grow at a steady pace over the next several years and are committed to adding the resources required to provide the quality of investment and client services to exceed our clients' expectations.

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

We do not have any current or pending regulatory compliance litigation issues.

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

Diversity is more than a word at GH&A, it's a mindset and permeates everything we do from the management of the firm to the way we manage investments. Our firm goal is to provide our clients with best-in-class service while setting an example as an industry leader not just in fixed income solutions for institutional clients, but as a leader in corporate diversity and inclusion. Thus, diversity is reflected in our ownership, staff, vendors, and the community organizations we are involved in. We believe diverse backgrounds and opinions lead to better solutions and there is no greater testament to this than our continued growth and recognition as a leader in the industry.

Please refer to the Diversity and Inclusion attachment where we go into further detail regarding our efforts.

Attached: **GH&A Diversity and Inclusion**

Portfolio Management Team

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

   Yes. Mark Delaney, Senior Portfolio Manager/Strategist, CFA, joined the investment team in May 2021. Mr. Delaney brings four decades of experience in high-quality fixed income investment management, including experience with municipal and TIPS products. He is working with the Managing Partner and Strategist to implement the investment process across our full suite of high-quality fixed income products.

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

   We do not anticipate any changes in the portfolio management team in the near future.

Process

1. Have there been significant changes in any of the areas below in the past year?
   - Identification of investment ideas
   - Process for exploring and vetting ideas
   - Portfolio trading practices including buy/sell rules
   - Approach to portfolio monitoring and risk management

   There have not been any significant changes in our processes in the past year.

Philosophy

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

   There have been no recent changes to the investment philosophy. Since GH&A's inception, the firm has followed a consistent fixed income investment philosophy that focuses on the preservation of principal while maintaining high current income. GH&A's goal is to outperform our benchmark indices net of fees with higher credit quality and lower risk.

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.).

   We invest 100% in U.S. domiciled companies. Portfolio characteristics (sector exposure, YTM, coupon and duration) are included in the meeting presentation.

Attached: **GH&A 4Q21 MWRA Holdings**

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

GH&A FIXED INCOME – AGGREGATE STRATEGY AUM, NET FLOWS, GAINED & LOST ACCOUNTS						
Year	**Year-End AUM (millions)**	**Accounts Gained**	**Assets Gained (millions)**	**Accounts Lost**	**Assets Lost (millions)**	**Net Flows (millions)**
2017	$7,407	19	$705	4	$183	$522
2018	$9,522	29	$1,831	4	$350	$1,481
2019	$11,216	28	$572	4	$26	$546
2020	$11,385	11	$308	8	$129	$179
2021	$11,634	27	$1,002	12	$308	$694

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

The top five largest investors attribute for 19% of the total Fixed Income - Aggregate strategy AUM. The table below illustrates our investor concentration for the strategy.

GH&A FIXED INCOME - AGGREGATE AS OF DECEMBER 31, 2021	
Client Type	**% Strategy AUM**
Corporation	16.31
Public	55.48
Endowments/Foundations	9.39
Insurance	3.43
High Net Worth Individuals	0.07
Other*	15.32
Total	**100.00**

*Other includes unions, commingled Funds and Mutual Funds

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.

Trailing returns are included in the meeting presentation. Calendar year returns for the past 10 years are shown in the chart below.

GH&A FIXED INCOME – AGGREGATE COMPOSITE CALENDAR YEAR RETURNS			
Time Period	**Gross of Fees**	**Net of Fees**	**Bloomberg US**

					Aggregate Index
12/31/2011	to	12/31/2012	10.48	10.25	4.22
12/31/2012	to	12/31/2013	0.09	-0.12	-2.03
12/31/2013	to	12/31/2014	8.02	7.81	5.97
12/31/2014	to	12/31/2015	0.85	0.65	0.55
12/31/2015	to	12/31/2016	3.18	2.98	2.65
12/31/2016	to	12/31/2017	3.82	3.64	3.54
12/31/2017	to	12/31/2018	0.98	0.81	0.01
12/31/2018	to	12/31/2019	7.27	7.09	8.72
12/31/2019	to	12/31/2020	8.10	7.92	7.51
12/31/2020	to	12/31/2021	-2.12	-2.28	-1.54

YTD 2022 UPDATE
The Fixed Income – Aggregate Composite is outperforming the Index by 117 basis points (as of February 15, 2022). The markets are coming our way as rates continue to move up, and the portfolio is benefiting from our short duration, underweight credit, and our barbelled yield curve positioning.

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

   Recent performance trends have been very positive due to our defensive duration positioning, barbell portfolio structure and underweight to the corporate sector. Through mid-February 2022 has seen interest rates rise, the yield curve flatten and corporate spreads widen. Our portfolio strategy will continue to generate positive alpha as we are in the early phase of a Federal Reserve tightening cycle combined with quantitative tightening in the form of balance sheet tapering/reduction.

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

   Our strategic 6-to-12-month outlook calls for tightening Federal Reserve monetary policy, above trend economic growth and high inflation. In such an environment, we expect interest rates to continue rising, the yield curve to flatten further and corporate bond spreads to widen, particularly low-quality corporate spreads. We continue to maintain a maximum underweight duration position with a barbell yield curve structure and an underweight allocation to the historically tight credit sector. We continue to look for opportunities to add to high-coupon 15-year and 20-year MBS securities due to their attractive return and convexity properties.

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.

   Yes, please refer to slide 22 in the meeting presentation.

   Attached: **GH&A 4Q21 MWRA Review**

Attachment

GH&A Diversity and Inclusion

Garcia Hamilton & Associates, L.P.

DIVERSITY AND INCLUSION

CONTENTS

Introduction

Firm Diversity Overview

Mentorship

Recruiting and Hiring

Training the Next Generation of Leaders

Vendors

Investment Management

Investment Industry and Non-Profit

Introduction

Diversity is more than a word at Garcia Hamilton & Associates, L.P. (GH&A). Diversity is a mindset and philosophy that permeates everything we do from the management of the firm to the management of investments. Our goal is three-fold. Our first goal is to outperform our benchmarks net-of-fees with a higher credit profile than the index. Our second goal is to provide our clients with best-in-class service. Our third goal is to set an example as an industry leader in fixed income solutions for institutional clients, as well as a leader in corporate diversity and inclusion (D&I). Thus, diversity is reflected in our ownership, staff, vendors, and our community service. We believe diverse backgrounds and opinions lead to better solutions.

We believe the commitment to diverse, inclusive, and transparent corporate governance starts with the asset manager and its own internal practices, not just the securities the manager evaluates for the portfolio. At GH&A we practice what we preach, to ensure corporate governance and D&I is reflected in our professionals, investments, stewardship, community engagement, and vendor relationships.

Firm Diversity Overview

Located in Houston, Texas, the firm employs 34 dedicated professionals including twelve (12) investment, fifteen (13) client services, and nine (9) operations/administration professionals. Over 85% of all firm employees are women and/or minority. Diversity is reflected at all levels of the firm including ownership, senior management, investment team, and overall staff.

As an MWBE/MBE/HUB certified and 100% employee-owned and operated firm, the contribution of our women and minority team members has been profound, both to our overall Firm's success and to the industry as a whole. We train and prepare women and minorities for promotion through mentorship and pairing employees with senior team members to educate them on the industry. We challenge junior team members by assigning a diverse set of both client and investment-facing projects and continually providing opportunities and tools to succeed. Furthermore, we encourage all our team members to participate in client and consultant outreach and meetings to build confidence in their role as a representative of GH&A.

GH&A FIRM-WIDE DIVERSITY	
%	**MINORITY BREAKDOWN**
29.42%	Hispanic
32.35%	African American
2.94%	Asian
64.71%	**Total Minority**
%	**GENDER**
64.71%	Women
35.29%	Men
64.71%	**Total Women**
85.29%	**Total Minority & Women**

GH&A INVESTMENT TEAM DIVERSITY	
%	**MINORITY BREAKDOWN**
41.67%	Hispanic
16.67%	African American
58.34%	**Total Minority**
%	**GENDER**
41.67%	Women
58.33%	Men
41.67%	**Total Women**
66.67%	**Total Minority & Women**

As a leader in the investment management industry and MBE certified firm, GH&A is committed to a more transparent and diverse corporate citizenship within the industry. The Firm has collaborated with a variety of organizations to promote corporate governance and diversity and inclusion (D&I) initiatives in the industry, including the recruitment and retention of women and minorities. Our outreach efforts are robust and include the involvement of our firm partners and professionals in senior level positions and advisory roles with *NASP (National Association of Securities Professionals)*, *Diverse Asset Managers Initiative (DAMI)*, *SEO (Sponsors for Educational Opportunity)*, the *CFA Institute*, and the *SEC (FACA Committees: Fixed Income Market Structure Advisory Committee (FIMSA)*, and *Asset Management Advisory Committee (AMAC)*).

The Firm has received numerous industry recognitions including *2019 Fixed Income Manager of the Year*, *2018 Fixed Income Manager of the Year* and *2010 Core Fixed Income Manager of the Year by Emerging Manager Monthly*. Other awards include *2014 Fixed Income Investment Grade Manager of the Year*, *2015 Intermediate-Term Fixed Income Manager of the Year*, and *2016 Intermediate-Term Fixed Income Manager of the Year by Institutional Investor*. Additionally, the Firm is proud to announce that it is a multi-year winner (2020, 2019, 2018, 2017 & 2016) by Pensions & Investments for *Best Places to Work in Money Management.*[1]

Twelve (12) of our sixteen (16) Partners are women and/or minority and have an average firm tenure of 16 years. We promote from within, with many of our partners starting at GH&A as junior team members and being mentored and developed for senior level positions.

GH&A OWNERSHIP DIVERSITY	
%	**MINORITY BREAKDOWN**
53.60%	Hispanic
10.10%	African American
63.70%	**Total Minority**
%	**GENDER**
48.80%	Women
51.20%	Men
48.80%	**Total Women**
88.00%	**Total Minority & Women**

GH&A is proud to be 100% employee owned and operated, and MWBE/MBE/HUB certified in several states and cities. Approximately 88% of the firm ownership is held by minority and women Partners and 64% is held by minority Partners.

GH&A MWBE/MBE/HUB CERTIFICATIONS	
CITY/STATE/AGENCY	**TYPE OF CERTIFICATION**
California Public Utilities Commission	MBE
City of Houston	MBE
City of Philadelphia	MBE
Delaware	MBE
Illinois	MBE
New York City	MWBE
New York State	MBE
North Carolina	HUB
Port Authority of New York & New Jersey	MBE
Texas	HUB

[1] *Awards/rankings may not represent client experiences and are not indicative of future performance.*
Go to www.garciahamiltonassociates.com/awards/ for additional information on each award.

Mentorship

We are committed to mentoring future generations of women and minority youth in the industry and host our own firm paid internship program for 20 undergraduate and high school students each year, primarily minority and women students. We also mentor students throughout the year through speaking engagements at college campuses, high schools, and conferences. We understand the powerful impact we make when we visit with minority youth and they see that people who look like them can be successful in this industry. Though we do not use our mentorship program to source team members, we are proud that three employees have come through our internship program, including two Partners who are senior members of our investment team.

Recruitment and Hiring

When the Firm has an employment opportunity, we actively seek quality diverse candidates to include in the interview process. We always look for "reasons to make diversity work" rather than "reasons to eliminate diversity." Our efforts have led to 12 of 16 Firm Partners being minority or women – we are approximately 64% minority-owned and 88% minority and women-owned. In addition, over 85% of all firm employees are women and/or minority. We believe in promoting from within, which has led to a high concentration of minority and women in senior leadership and management roles across all departments including Investment Professionals (67%) and Senior Executives/Management (91%).

It is the policy of GH&A to provide equal opportunity in employment to all employees and applicants for employment. We recruit, hire, train, and promote individuals in all job titles without regard to race, color, creed, religion, ancestry, sexual orientation, national origin, age, gender, disability, military status, or any other characteristic.

Training the Next Generation of Leaders

We train and prepare all employees for promotion by pairing employees with senior team members to educate them on the industry, and to serve as a sounding board and extra layer of support. This has resulted in the promotion of several team members to senior roles. Furthermore, we challenge new team members by assigning them various investment and client related projects. That way, they get exposure to different key areas of the firm and get the opportunity and tools to succeed. Furthermore, we encourage all our team members to participate in client and consultant outreach. This often includes both direct contact and in-person meetings to sharpen their skills and to build confidence in themselves.

The Firm has also promoted women, most being minority women, into leadership and management roles across all departments including Named Partner, Portfolio Manager, Director of Marketing and Client Services, Chief Compliance Officer, Operations Manager, and Client Relations Manager.

GARCIA HAMILTON & ASSOCIATES, L.P. WOMEN AND MINORITY KEY MANAGERS AND SENIOR OFFICERS				
NAME	**MANAGEMENT/ SR. OFFICER ROLE**	**TITLE**	**GENDER/ ETHNICITY**	**FIRM TENURE**
Gilbert A. Garcia, CFA	Management Committee Partner Portfolio Manager	Managing Partner	Male/Hispanic	20
Janna Hamilton	Management Committee Partner	Partner/Marketing and Client Services	Female/White (Non-Hispanic)	27
Ruby Muñoz Dang	Management Committee Partner Director	Partner/Director of Marketing and Client Services	Female/ Hispanic	27
Karen Tass, CFA	Partner Portfolio Manager	Partner/Portfolio Manager	Female/White (Non-Hispanic)	11
Nancy Rodriguez	Partner Portfolio Manager	Partner/Portfolio Manager	Female/Hispanic	24
Benjamin Monkiewicz	Partner Portfolio Manager	Partner/Portfolio Manager	Male/Hispanic	11
Yvette Dueñas	Partner Portfolio Manager	Partner/Portfolio Manager	Female/Hispanic	5
Beth L. McWilliams	Partner Chief Compliance Officer	Partner/Chief Compliance Officer	Female/White (Non-Hispanic)	27
Gary Montgomery	Partner Systems Manager	Partner/Systems Manager	Male/African American	14
Stephanie Roberts	Partner	Partner/Marketing and Client Services	Female/African American	21
Marcus Smith	Partner Vice President	Partner/Vice President of Marketing and Client Services	Male/African American	<1
Morgan Doyle	Partner Client Relations Manager	Partner/Client Relations Manager	Female/White (Non-Hispanic)	7
Regina Perkins	Operations Manager	Operations Manager	Female/African American	18

It is the policy of GH&A to promote a workplace that is free from discrimination against any individual or group of individuals. This commitment applies to all terms, conditions, benefits, and privileges of employment and all policies. All complaints of discrimination will be investigated promptly and in an impartial and confidential manner. GH&A prohibits any form of retaliation against employees for bringing forward good faith complaints or providing information about discrimination.

We are committed to equal pay for equal performance in equivalent roles regardless of gender and ethnic status. This includes providing equal opportunities and consideration for pay raises, bonuses, and promotions. When determining salaries, bonuses, and career advancement, we consider the employee's individual experience, education, training, and ability. We also look at the employee's overall contribution to the success of the firm and their overall contribution to a positive attitude and work environment. Lastly, we make sure salaries and bonuses are equitable when compared to other employees in similar roles.

Vendors

We seek MWBE firms when selecting all vendors. We believe in paying-it-forward and also support minorities and women at large organizations. Currently, we have contracts with five MWBE vendors (not including brokerage) and work with several other firms where our primary contact is a woman or minority.

Investment Management

As for ESG, we are a *Principles for Responsible Investment (PRI) signatory* and *Task Force on Climate-related Financial Disclosures (TCFD) supporter*. Our investing incorporates ESG and responsible investing (RI) metrics across our high-quality universe within our top-down macro framework. We continually evaluate corporate securities on their current ESG/RI initiatives and policies and evaluate their measurable improvement and implementation of these initiatives.

We utilize traditional financial and quantitative analysis as well as qualitative assessments to identify ESG risks and opportunities. The Firm uses both internal and external resources to acquire data, information and analyses on ESG factors affecting our investable universe. We have chosen to not "reinvent the wheel" and utilize the third-party research of industry experts in our ESG evaluation. We use three sources to evaluate individual issuers within our universe and peer groups which include the *S&P Global Ratings ESG Profile Score* emanating from the *S&P Global Corporate Sustainability Assessment* (a score based on the formerly *RobecoSAM Corporate Sustainability Assessment (CSA)*), the *ISS QualityScore*, and the *CDP Climate Score*. Corporate securities are evaluated based on improving or declining adherence to ESG metrics. If a security within our investment universe fails to maintain a positive ESG trajectory, it will receive diminished consideration for future investments.

As it relates to brokerage, we execute trades with over 50 brokers and solicit at least one MWDVBE broker in every transaction. Our brokerage goal is a firm-wide initiative and is implemented for all accounts. We are proud to have executed in competition approximately 60% of all trades over the last 5-year period to MWDVBE brokers without sacrificing performance nor best execution.

Investment Industry and Non-Profit

Many of our employees play senior leadership roles in D&I initiatives throughout the industry and throughout the country. While listing their roles and contributions is far longer than the scope of this document, we have provided the examples below to show the firm's active involvement in diversity and inclusion advocacy.

- Gilbert A. Garcia, CFA, *Managing Partner*, previously served as Chairman of the Metropolitan Transit Authority of Harris County and currently serves as a member of two Securities and Exchange Commission (SEC) FACA Committees: the Fixed Income Market Structure Advisory Committee (FIMSA) and the Asset Management Advisory Committee (AMAC). In his role in the AMAC Committee, he has focused on D&I, and has taken a leadership role in the AMAC D&I Subcommittee which presented formal recommendations to the SEC Commissioners to create more transparency and improve D&I in the asset management industry.
- Stephanie Roberts, *Partner*, serves on the Board of *NASP (National Association of Securities Professionals)*, a non-profit that brings together minority and women professionals in asset management and banking to advocate for more diversity in the industry. The organization recently awarded Mr. Garcia,

Managing Partner, the Maynard Holbrook Jackson, Jr. Award for his D&I advocacy and community service.

- Mr. Garcia serves on the Board of Directors (since 1987) and is an alum (1983) of *SEO (Sponsors for Educational Opportunity)*, a non-profit with programs serving underserved and underrepresented students including the nation's premier professional development program providing Black, Hispanic, and Native American undergrads with internships in banking, asset management, and private equity.
- GH&A is active with the *Diverse Asset Managers Initiative (DAMI)* which is committed to raising awareness among institutional investors on the opportunities of investing with diverse-owned managers. Our work with DAMI and other advocacy organizations to push the U.S. Congress for legislation on more D&I transparency, culminated in the recent introduction of the *Diversity Data Accountability Act* which would amend Dodd-Frank to mandate regulated entities disclose their diversity data and enhance transparency/accountability.
- GH&A has been a significant sponsor of *Robert Toigo Foundation* which is a nonprofit working to foster the career advancement and increased leadership of underrepresented talent and their Toigo Fellows Program supports diverse MBA candidates committed to careers in finance. We have been speakers at many of their conferences.

Attachment

GH&A 4Q21 MWRA Holdings

GARCIA HAMILTON & ASSOCIATES
FIXED INCOME PORTFOLIO
MWRA EMPLOYEES' RETIREMENT SYSTEM (365034) massw
31-Dec-21

Cusip	Original Face	Quantity	Security	Description	Unit Cost	Total Cost	Price	Market Value	Accrued Interest	Market Value +Accr.Int.	Pct. Assets
458140BC3		780,000	Intel Corp Floater	0.504% Due 05-11	100.10	780,803.40	100.08	780,595.14	535.48	781,130.62	2.01
89788JAC3		730,000	Truist Bank Floate	0.780% Due 03-09	100.74	735,416.60	100.53	733,881.41	347.97	734,229.38	1.89
025816CJ6		585,000	American Express	0.280% Due 11-03	100.00	585,000.00	99.91	584,457.70	259.35	584,717.06	1.50
38141GXK5		770,000	Goldman Sachs F	0.590% Due 11-17	100.20	771,570.80	100.01	770,069.30	555.26	770,624.56	1.98
61744YAP3		1,520,000	Morgan Stanley	3.772% Due 01-24	104.87	1,594,028.72	108.82	1,654,027.52	25,004.17	1,679,031.69	4.32
95000U2D4		1,225,000	Wells Fargo	4.150% Due 01-24	113.16	1,386,202.37	111.94	1,371,273.57	22,170.80	1,393,444.37	3.59
38141GWV2		645,000	Goldman Sachs	3.814% Due 04-23	93.80	605,035.80	108.78	701,600.68	4,646.72	706,247.41	1.82
06051GHQ5		1,640,000	Bank of America	3.974% Due 02-07	111.42	1,827,221.25	110.15	1,806,517.40	26,069.44	1,832,586.84	4.72
172967ME8		395,000	Citigroup Inc.	3.980% Due 03-20	112.54	444,535.21	110.39	436,036.55	4,410.61	440,447.16	1.13
46647PBE5		890,000	JP Morgan	2.739% Due 10-15	101.81	906,078.32	102.75	914,459.87	5,146.28	919,606.15	2.37
172967MP3		1,100,000	Citigroup Inc.	4.412% Due 03-31	118.21	1,300,299.32	114.21	1,256,266.00	12,133.00	1,268,399.00	3.26
912796K81		970,000	U S Treasury Bill	0.000% Due 01-20	99.99	969,898.69	100.00	969,994.18	-	969,994.18	2.50
9128286C9		1,145,000	U S Treasury	2.500% Due 02-15	100.76	1,153,676.95	100.29	1,148,276.99	10,734.37	1,159,011.36	2.98
912796L98		1,925,000	U S Treasury Bill	0.000% Due 03-03	99.98	1,924,683.34	99.99	1,924,849.85	-	1,924,849.85	4.95
9128286H8		1,530,000	U S Treasury	2.375% Due 03-15	100.93	1,544,283.98	100.45	1,536,901.83	10,740.64	1,547,642.47	3.98
912796N47		1,550,000	U S Treasury Bill	0.000% Due 04-07	99.98	1,549,674.50	99.98	1,549,703.95	-	1,549,703.95	3.99
9128286M7		1,085,000	U S Treasury	2.250% Due 04-15	101.02	1,096,019.53	100.60	1,091,475.28	5,164.18	1,096,639.46	2.82
9128286Y1		765,000	U S Treasury	1.750% Due 06-15	101.05	773,068.36	100.72	770,528.65	588.46	771,117.12	1.98
912810RS9		3,660,000	U S Treasury	2.500% Due 05-15	109.65	4,013,336.74	110.52	4,045,013.70	11,627.07	4,056,640.77	10.44
912810RT7		2,220,000	U S Treasury	2.250% Due 08-15	103.97	2,308,239.88	105.73	2,347,303.68	18,731.25	2,366,034.93	6.09
3140Q9ZX4	1815000	633,540	FNMA Pool #CA2	4.000% Due 11-01	107.94	683,827.47	106.93	677,452.31	2,111.80	679,564.11	1.75
3140X6BK6	3015000	929,435	FNMA Pool #FM2	4.000% Due 02-01	107.27	996,963.73	105.22	977,962.26	3,098.11	981,060.38	2.52
3140X4ZL3	2560000	629,479	FNMA Pool #FM1	3.500% Due 06-01	106.78	672,165.01	105.60	664,733.61	1,835.98	666,569.59	1.72
31418DNC2	1700000	598,127	FNMA Pool #MA3	3.500% Due 04-01	106.73	638,407.36	105.41	630,491.81	1,744.54	632,236.35	1.63
3140X6WA5	3880000	1,463,151	FNMA Pool #FM3	3.500% Due 05-01	106.83	1,563,056.73	105.18	1,538,913.01	4,267.52	1,543,180.53	3.97
3140XBJD3	895000	654,798	FNMA Pool #FM7	3.500% Due 12-01	106.97	700,428.75	105.38	689,997.80	1,909.83	691,907.63	1.78
31418CQD9	3295000	827,680	FNMA Pool #MA3	3.000% Due 10-01	105.22	870,874.73	104.97	868,797.44	2,069.20	870,866.64	2.24
31418CSD7	3990000	1,072,986	FNMA Pool #MA3	3.500% Due 12-01	106.48	1,142,562.14	106.48	1,142,518.02	3,129.54	1,145,647.56	2.95
31418CWX8	3720000	838,365	FNMA Pool #MA3	4.000% Due 05-01	108.15	906,682.90	106.99	897,004.41	2,794.55	899,798.96	2.32
3140X6MZ1	4775000	1,336,093	FNMA Pool #FM3	3.500% Due 11-01	106.59	1,424,080.63	105.55	1,410,297.98	3,896.94	1,414,194.92	3.64
3140XAXT4	1510000	980,696	FNMA Pool #FM6	3.000% Due 09-01	105.22	1,031,876.45	103.93	1,019,216.29	2,451.74	1,021,668.03	2.63
3132D55F5	1455000	667,477	FHLMC Pool# SB	3.000% Due 05-01	105.58	704,710.12	105.10	701,529.82	1,668.69	703,198.51	1.81
3132D9AS3	2365000	658,598	FHLMC Pool #SC	3.500% Due 08-01	106.88	703,876.33	105.96	697,857.83	1,920.91	699,778.74	1.80
			CASH Total			355,856.33		355,856.33		355,856.33	0.92
			TOTAL PORTFOLIO			**38,664,442.42**		**38,665,862.19**	**191,764.43**	**38,857,626.61**	**100.00**

GARCIA HAMILTON & ASSOCIATES, L.P.

Attachment

GH&A 4Q21 MWRA Review

MWRA Employees' Retirement System

February 23, 2022

Presented by:

Gilbert A. Garcia, CFA
Managing Partner

Ruby Muñoz Dang
Partner

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Pensions&Investments 2020 BEST PLACES TO WORK IN MONEY MANAGEMENT MULTIYEAR WINNER 2016 2017 2018 2019

FIXED-INCOME MANAGER OF THE YEAR — Emerging Manager Awards 2019

Institutional Investor 2016 2015 U.S. INVESTMENT MANAGEMENT AWARDS Intermediate-Term Fixed Income

Fundmap Institutional Asset Management Awards 2018 Winner US Fixed Income Manager Garcia Hamilton & Associates

HOUSTON BUSINESS JOURNAL BPtW 2018 BEST PLACES TO WORK

Institutional Investor Awards 2014 FIXED INCOME INVESTMENT GRADE MANAGER OF THE YEAR

Emerging Manager Monthly 2010 Core Fixed Income Manager of the Year

Signatory of: PRI Principles for Responsible Investment

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Awards/rankings may not represent client experiences and are not indicative of future performance. Go to www.garciahamiltonassociates.com/awards/ for additional information on each award.

Agenda

Performance

Market Update

Portfolio

Firm Updates

Marshall Gerometta/CTBUH

Pensions&Investments 2020
BEST PLACES TO WORK IN MONEY MANAGEMENT
MULTIYEAR WINNER
2016 2017 2018 2019

FIXED-INCOME MANAGER OF THE YEAR
Emerging Manager AWARDS 2019

HOUSTON BUSINESS JOURNAL
BPtW
2018 BEST PLACES TO WORK

Signatory of:
PRI Principles for Responsible Investment

Institutional Investor 2016 2015
U.S. INVESTMENT MANAGEMENT AWARDS
Intermediate-Term Fixed Income

Institutional Investor Awards 2014
FIXED INCOME INVESTMENT GRADE MANAGER OF THE YEAR

Fundmap
Institutional Asset Management Awards 2018
Winner
US Fixed Income Manager
Garcia Hamilton & Associates

Emerging Manager Monthly
2010
Core Fixed Income Manager of the Year

TCFD
TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

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Performance

- 4Q 2021 Performance
- January 2022 Performance
- Current 2022 Performance

4Q 2021 Performance

MWRA Employees' Retirement System

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	38,501,770.28	99.1	1.1
CASH	355,856.33	0.9	0.0
Total	**38,857,626.61**	**100.0**	**1.1**

CHANGE IN PORTFOLIO

Portfolio Value on 09-30-21	38,750,154.69
Accrued Interest	144,301.65
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-158,752.53
Unrealized Gains/Losses	-115,108.36
Income Received	189,568.38
Change in Accrued Interest	47,462.78
Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
Total	**38,857,626.61**

TIME WEIGHTED RETURN

	Quarter	One Year	Annualized Last 2 Years	Annualized Last 3 Years	Annualized Inception 04-30-18 To Date
Gross of Fees	**-0.09**	**-2.22**	**2.77**	**4.28**	**4.04**
Net of Fees	**-0.15**	**-2.45**	**2.54**	**4.05**	**3.82**
Bloomberg US Aggregate	0.01	-1.54	2.88	4.79	4.53

Our Form ADV disclosure document is available upon request. We urge you to compare account statements that you receive from us with the account statements that you receive from your custodian. Past performance is no guarantee of future results. See disclosures for other relevant information. Client Use Only.

January 2022 Performance

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	36,765,972.68	96.0	1.2
CASH	1,530,331.38	4.0	0.0
Total	**38,296,304.06**	**100.0**	**1.2**

CHANGE IN PORTFOLIO

Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-27,842.87
Unrealized Gains/Losses	-610,961.37
Income Received	87,240.91
Change in Accrued Interest	-9,759.22
Portfolio Value on 01-31-22	38,114,298.85
Accrued Interest	182,005.20
Total	**38,296,304.06**

TIME WEIGHTED RETURN

	Month To Date	One Year	Annualized Last 2 Years	Annualized Last 3 Years	Annualized Inception 04-30-18 To Date
Gross of Fees	**-1.44**	**-2.83**	**1.16**	**3.45**	**3.55**
Net of Fees	**-1.44**	**-3.05**	**0.93**	**3.22**	**3.33**
Bloomberg US Aggregate	-2.15	-2.97	0.80	3.67	3.82

Current 2022 Performance

MWRA Employees' Retirement System

Preliminary

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	34,881,091.59	92.5	1.4
CASH	2,814,320.65	7.5	0.0
Total	**37,695,412.24**	**100.0**	**1.3**

CHANGE IN PORTFOLIO

Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-79,013.88
Unrealized Gains/Losses	-1,196,869.48
Income Received	192,144.52
Change in Accrued Interest	-78,475.53
Portfolio Value on 02-15-22	37,582,123.35
Accrued Interest	113,288.89
	37,695,412.24

TIME WEIGHTED RETURN

	Month To Date	Year To Date
Gross of Fees	**-1.57**	**-2.99**
Net of Fees	**-1.57**	**-2.99**
Bloomberg US Aggregate	-2.06	-4.17

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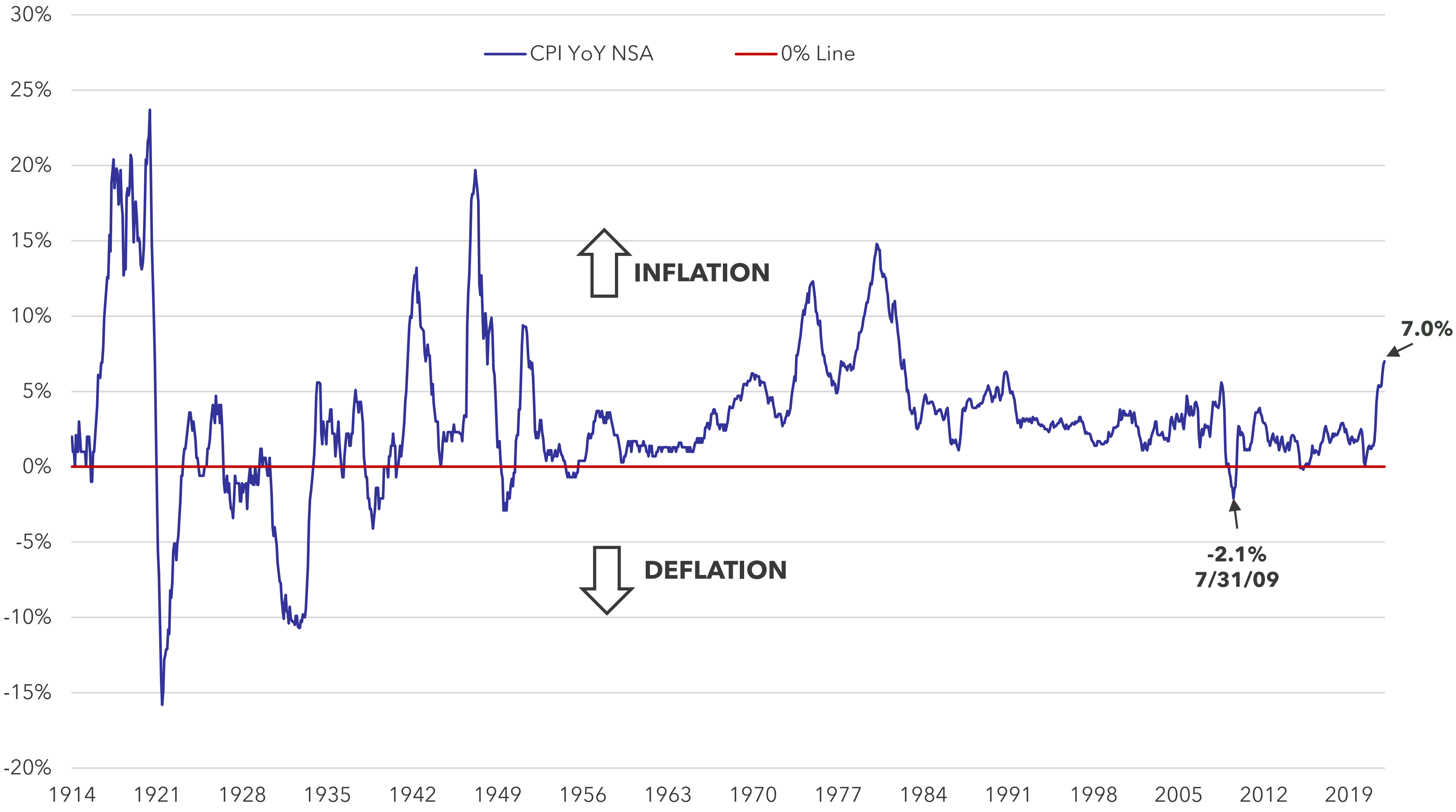
Market Update

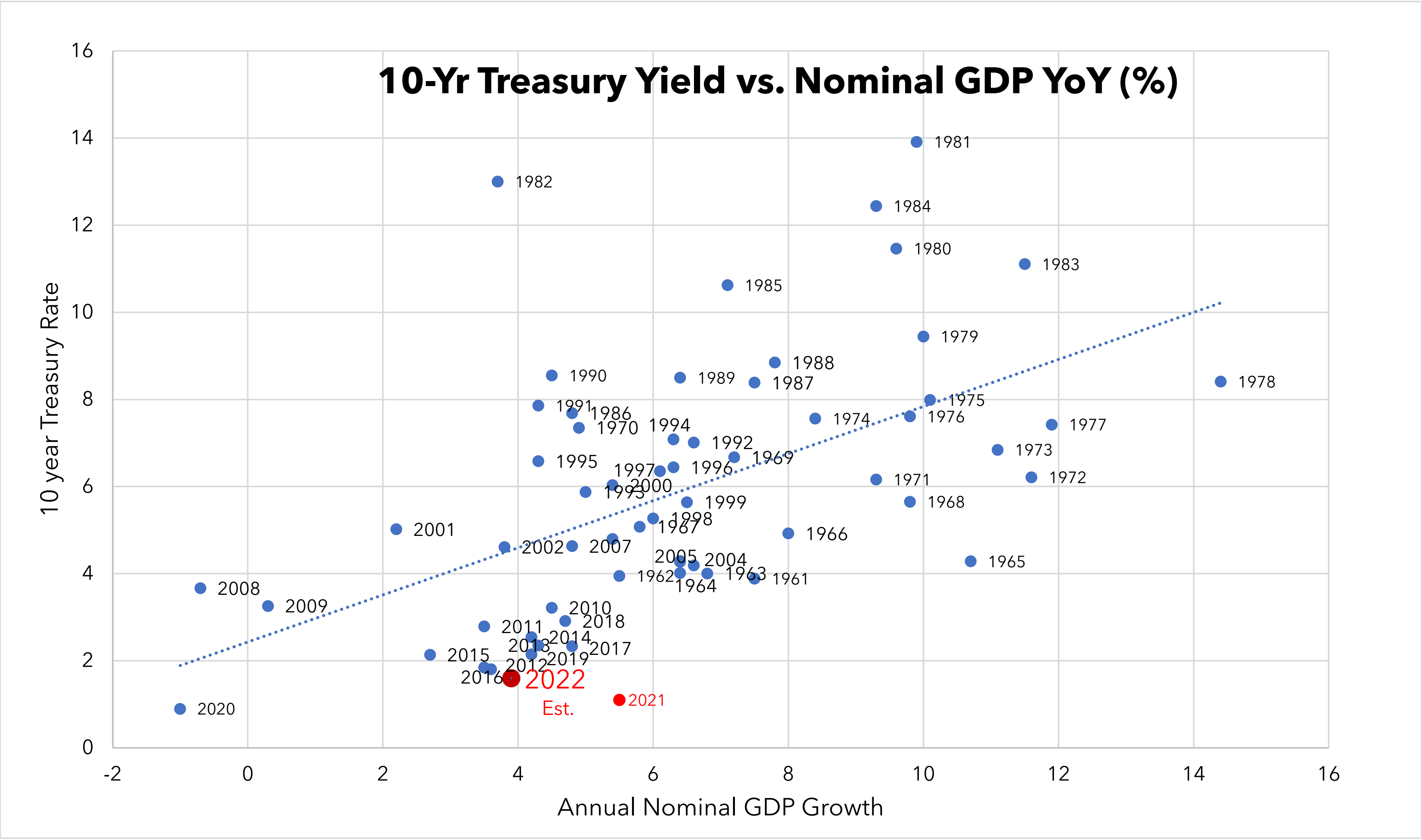
- CPI
- Stimulus
- Money Supply
- Inflationary Pressures
- Number of Unemployed per Job Opening
- Broad Based Wage Growth
- Federal Reserve
- Average Option Adjusted Spreads (OAS)
- Quality
- MBS Sector

Monthly YoY Percentage Change in CPI



Index: Consumer Price Index (CPI) for All Urban Consumers Non-Seasonally Adjusted
As of December 31, 2021 | Bloomberg

Measuring the Market Impact from the Federal Reserve and Government Stimulus



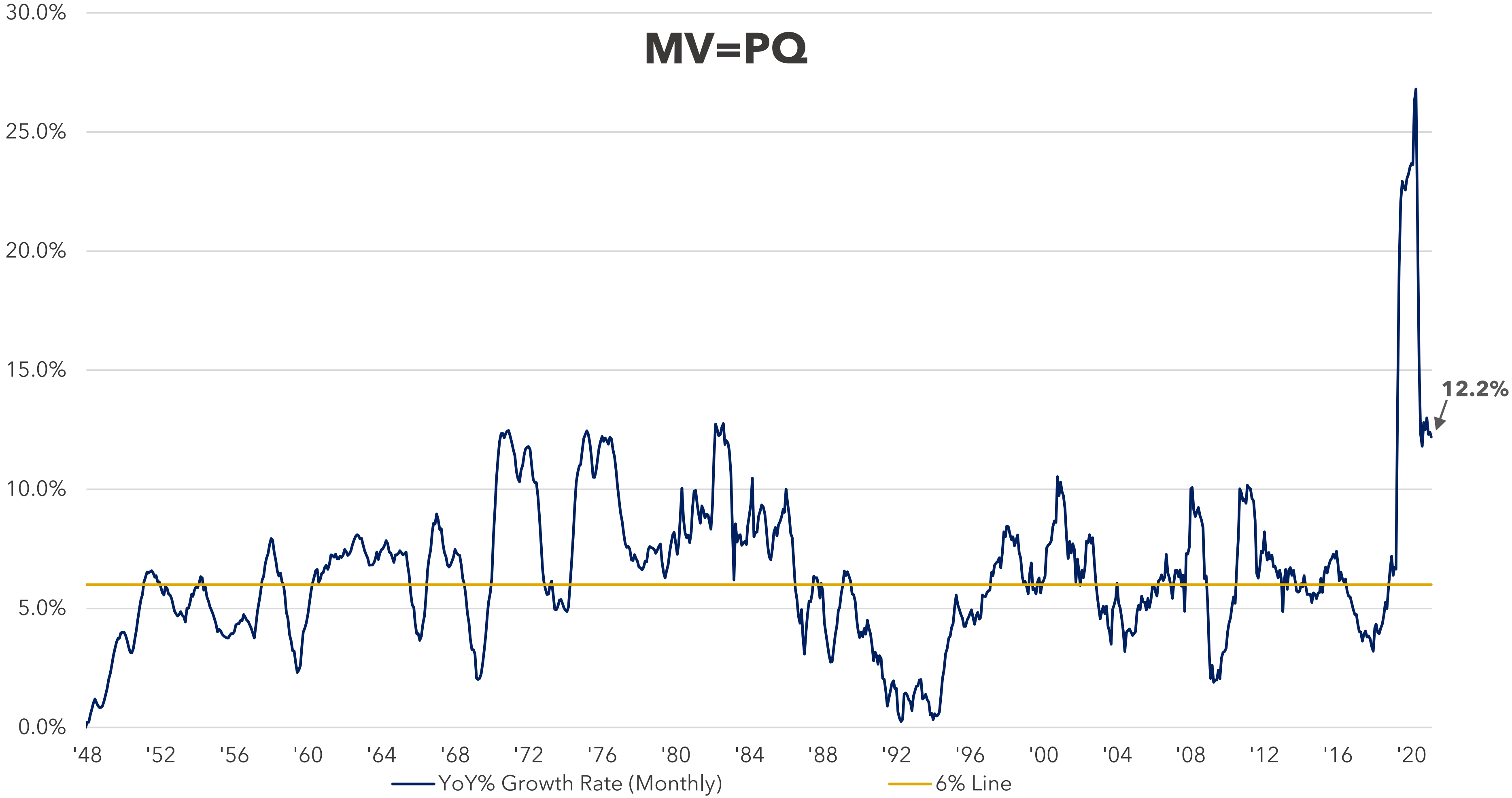
Historical Fiscal Stimulus

Events	Amount	% of GDP	Today's Dollars	Date
COVID-19	$6.7 T*	29.5%	$6.7 T	2020-2021
Great Financial Crisis	$939 B	3.2%	$1.2 T	2008-2009
World War II	$350 B	30.5%	$6.8 T	1939-1945
Great Depression	$42 B	7.5%	$825 B	1933-1939

*More Pending

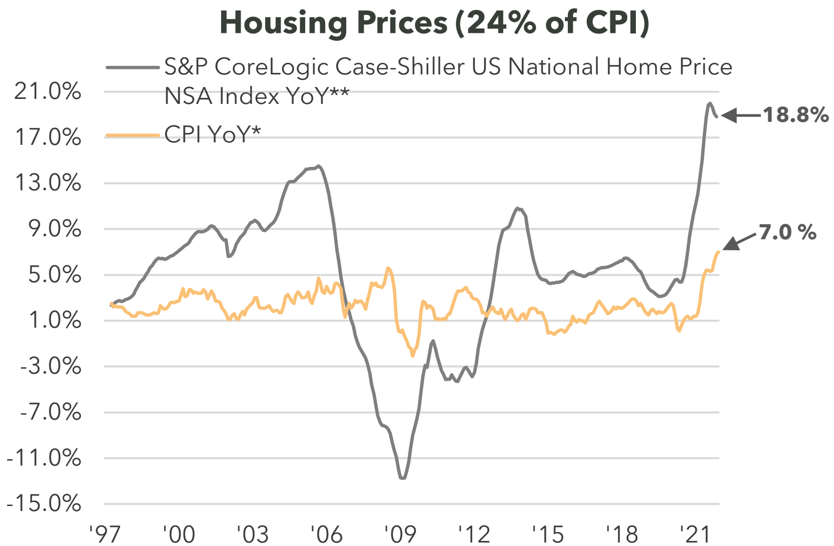
Mizuho Group, International Monetary Fund, CNBC

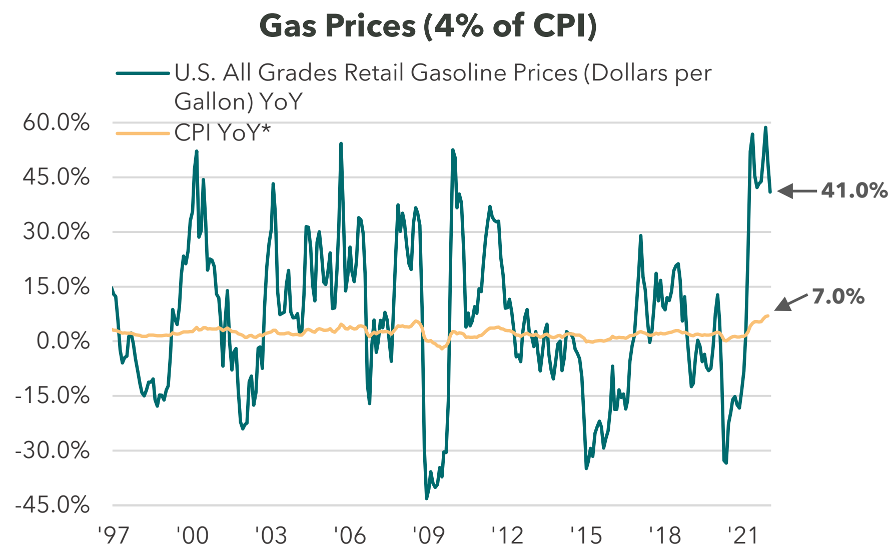
Money Supply Long Term Growth

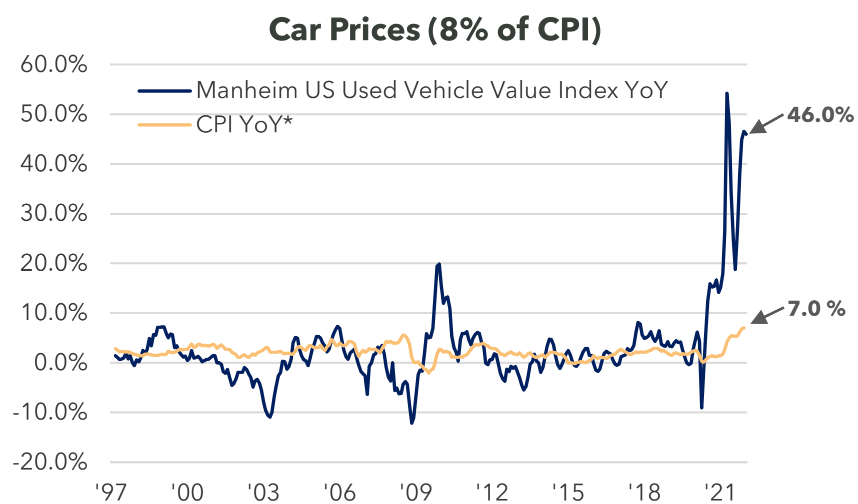


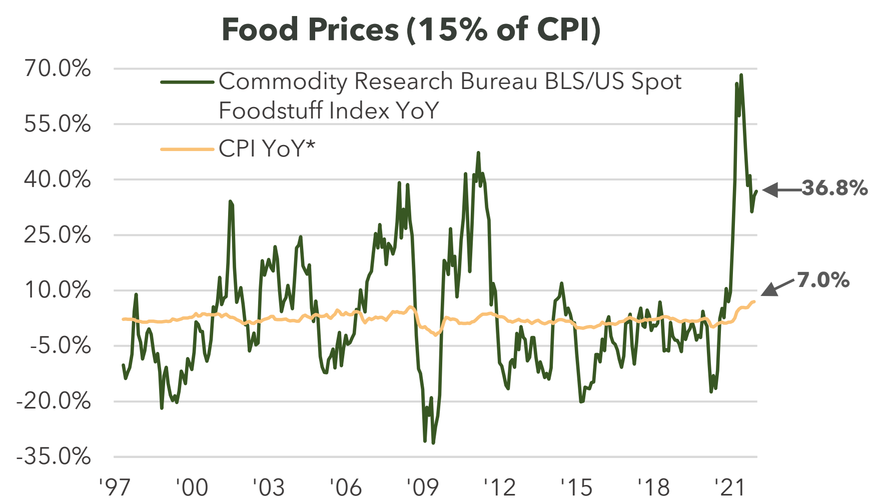
The data used to create the long-term year over year growth rate was compiled from data published by the Federal Reserve Historical Monetary Aggregate Data. The monthly series from Jan 1948 until November 1980 was compiled from the M2SA and M2SL series and is used to calculate the year over year annualized growth rate. After November 1980, the weekly data series for M2 is used to calculate the year over year annual growth rate.

Inflationary Pressures Everywhere



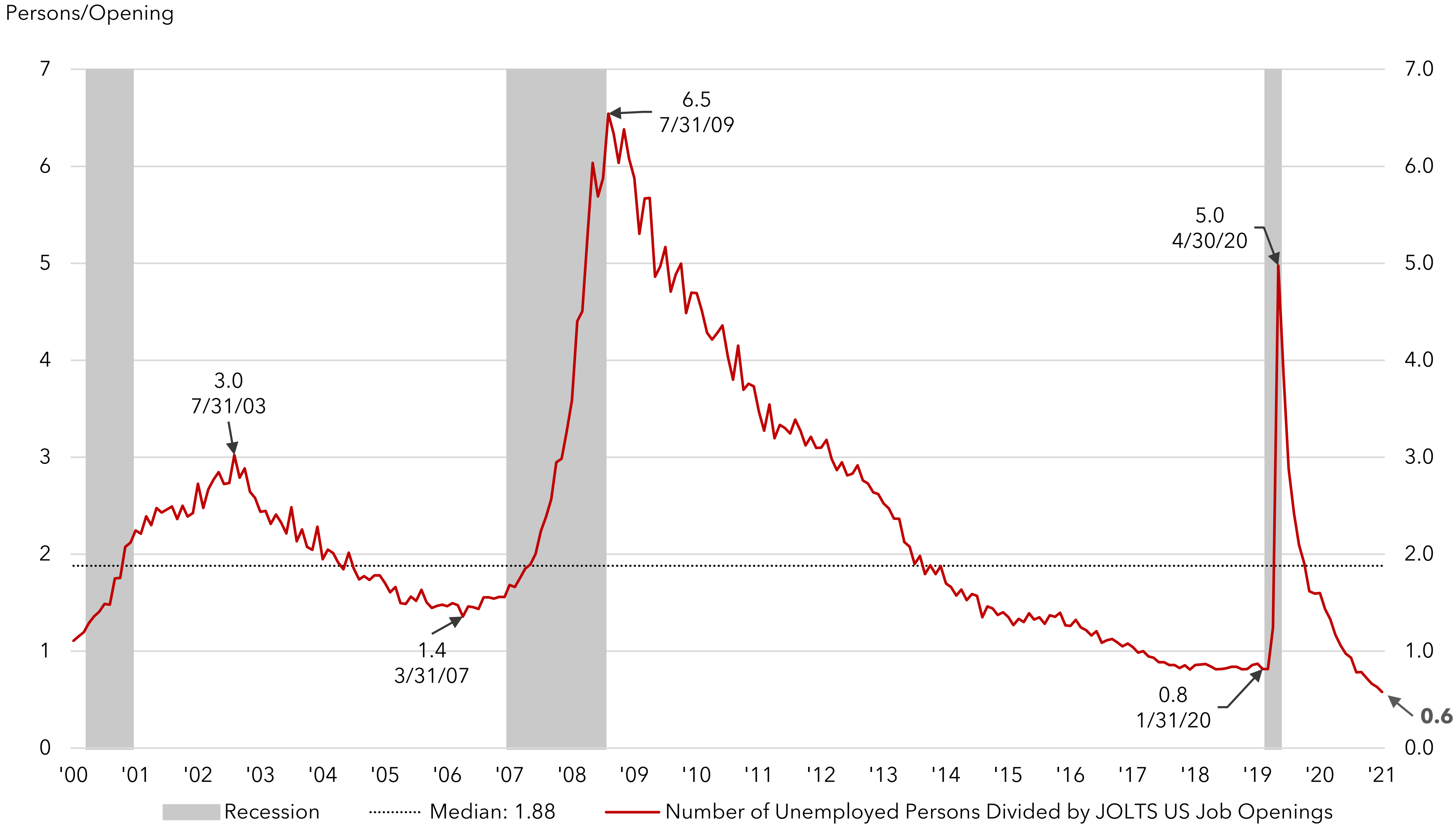




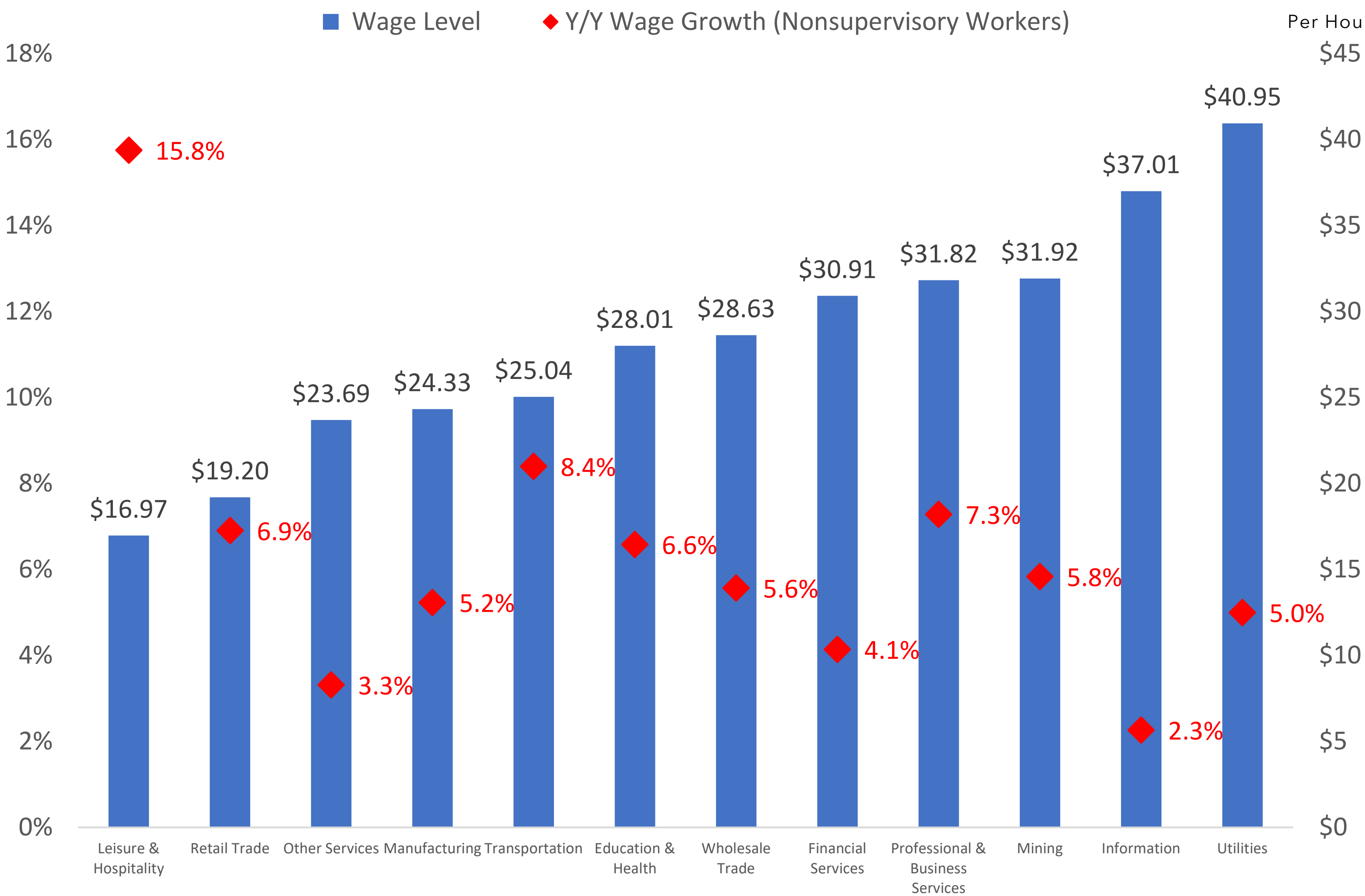


As of January 31, 2022 | *As of December 31, 2021 | **As of November 2021 | Bloomberg

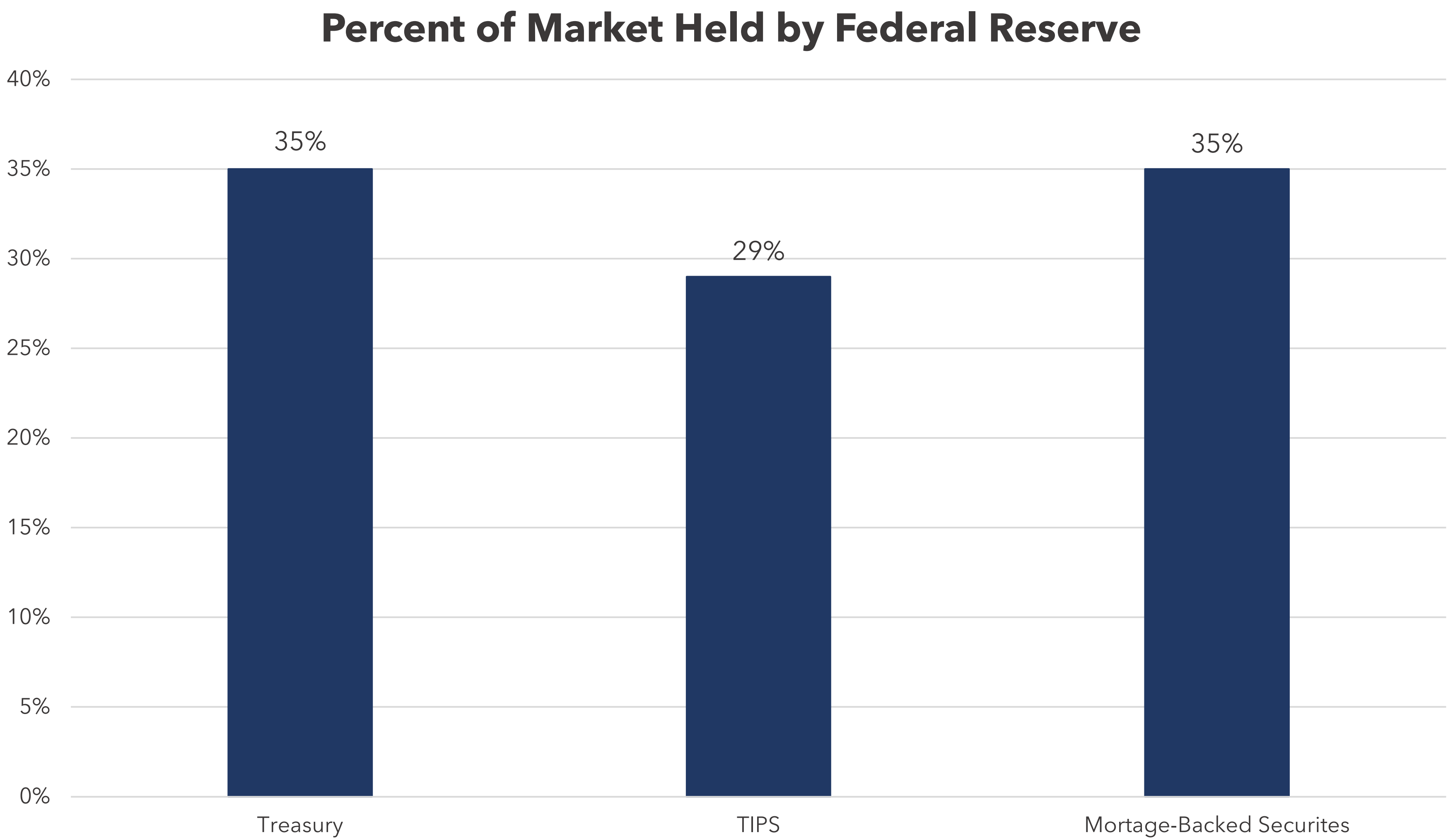
Number of Unemployed Per Job Opening



Broad-Based Wage Growth

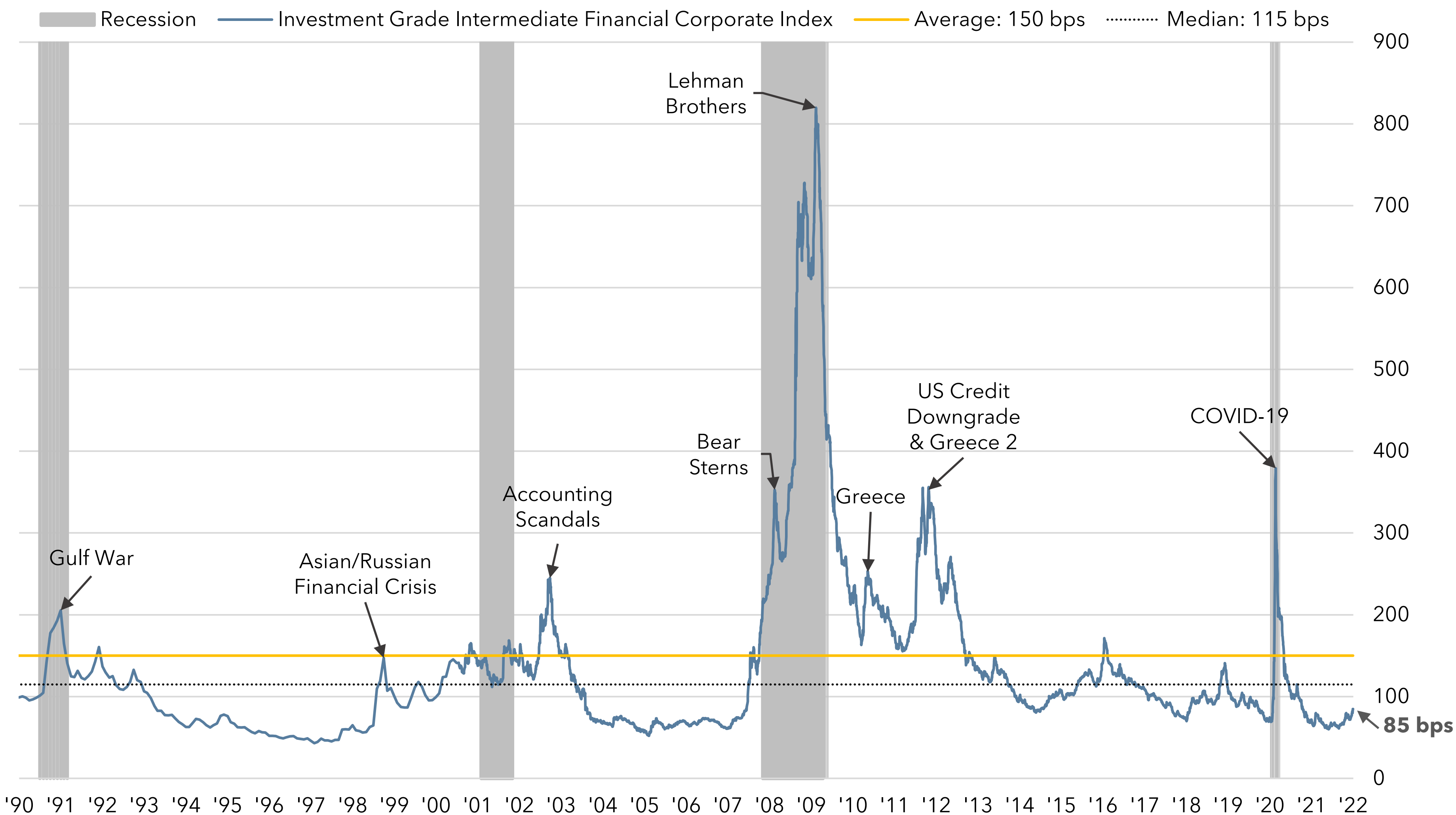


Measuring the Financial Repression of the Federal Reserve in the Bond Market

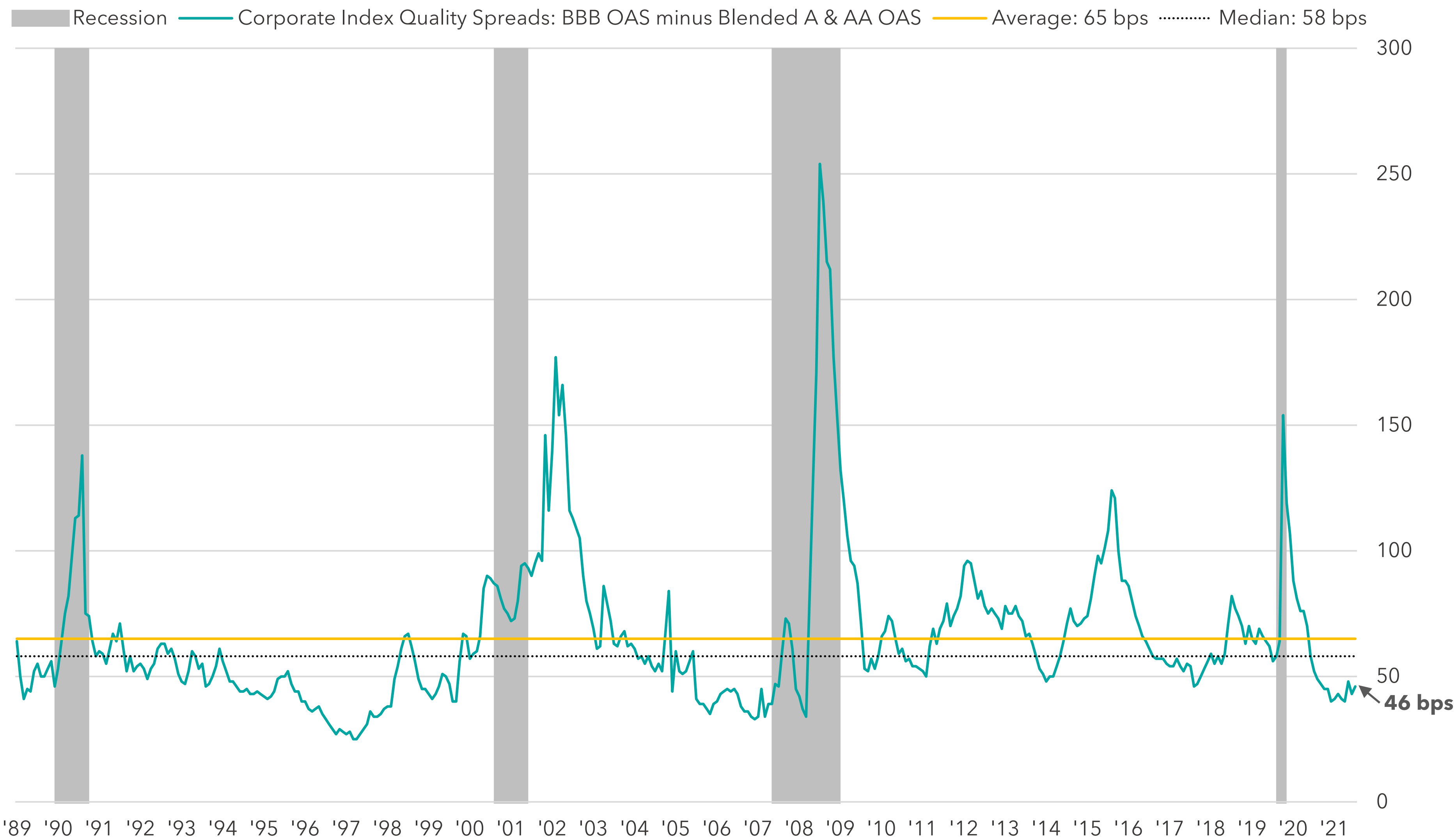


As of December 31, 2021 | Bloomberg

Average Option Adjusted Spreads (OAS)



Quality Spreads



Outperformance by Low Quality Last Year

Excess returns by quality for the Aggregate Index:

	12-Month Excess Return	25-Year Annualized Excess Return
Aggregate	0.32%	0.38%
A	0.85%	0.58%
BBB	2.29%	1.13%

BBB-rated securities outperformed A securities last year by almost 3 times the average.

Excess Returns in Rising Rate Environments

Time Frame	10-Year Treasury Yield Change	MBS Index	30-Year Low Coupon	20-Year High Coupon	15-Year High Coupon
7-29-16 To 10-31-18	169 bps	0.18%	0.62%	0.45%	2.93%
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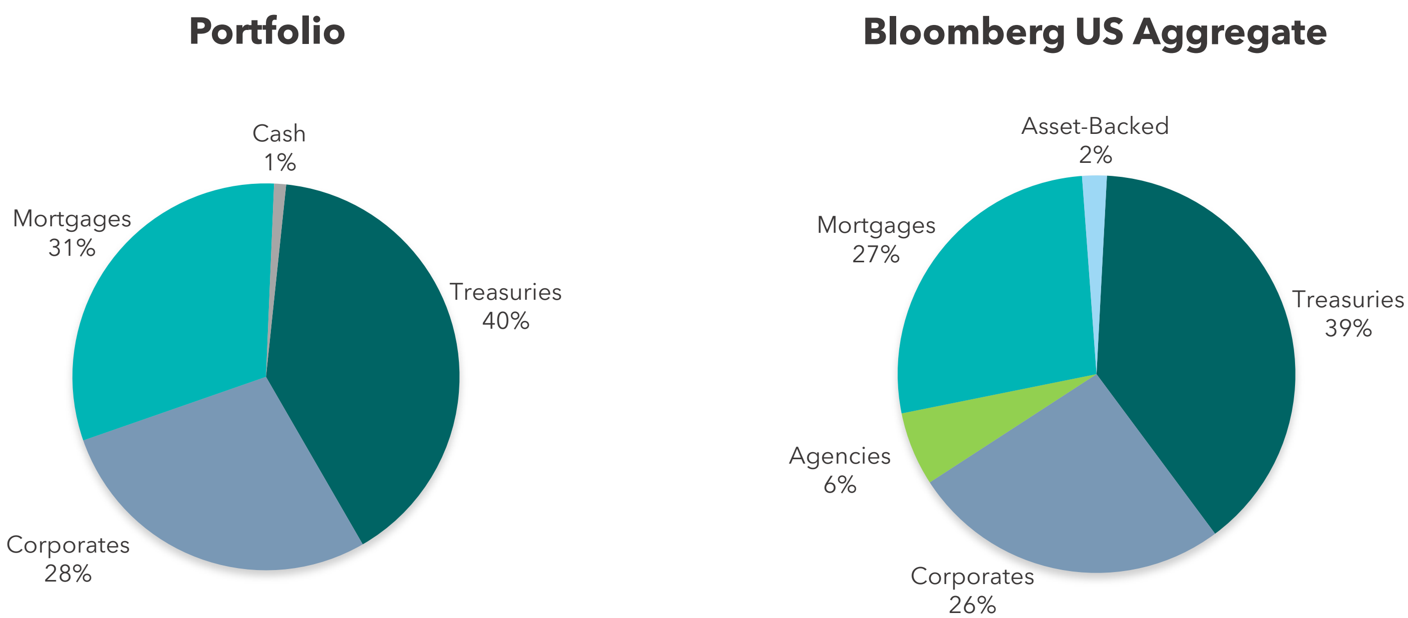
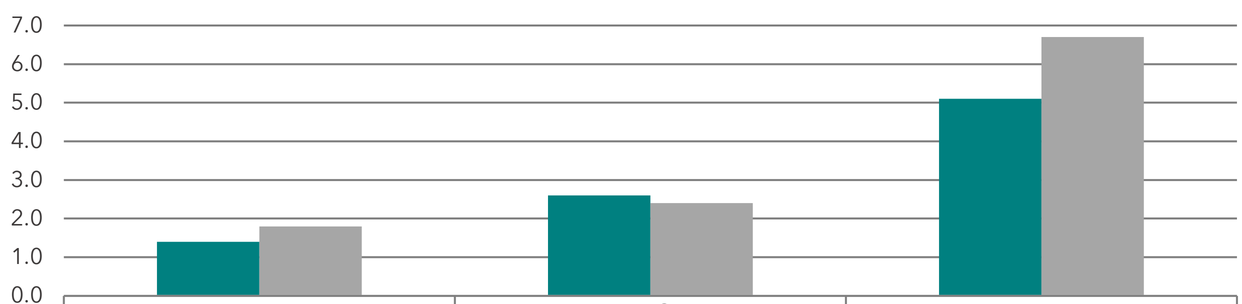
Portfolio

- Portfolio Characteristics
- Account History

Fixed Income Portfolio Characteristics





	Average YTM	Average Coupon	Average Duration
Portfolio	1.4	2.6	5.1
Bloomberg US Aggregate	1.8	2.4	6.7

MWRA Employees' Retirement System Account History

- Initial contribution: $28 million on 4/2/2018
- Cumulative subsequent contributions: $20.5 million
- Cumulative subsequent distributions: $15 million
- Realized gains/losses: $1.7 million
- Unrealized gains/losses: $1.4 thousand
- Current value: $38.9 million

Firm Updates

- GH&A Community Engagement
- Organization
- Asset Breakdown
- GH&A Giving Back
- ESG Stewardship

GH&A Community Engagement

We are proud to have donated over 35,000 masks, boxes of hand sanitizers and cleaning supplies, and over $100,000 to underserved and underrepresented communities during the COVID-19 pandemic and Texas winter storms.

We partnered twice with the Houston Food Bank and Texas State Representatives Christina Morales and Mary Ann Perez to provide free food, water, CO2 detectors, pet food, diapers, fresh local produce, hand sanitizers and $25,000 in food gift cards to those most in need in our local community.

We are Garcia Hamilton, and we are Houston strong!

GH&A Community Engagement

We also partnered with HEB and The Baptist Ministers Association to donate $30,000 in HEB gift cards for food to 120 families from 24 churches.

We are Garcia Hamilton, and we are Houston strong!

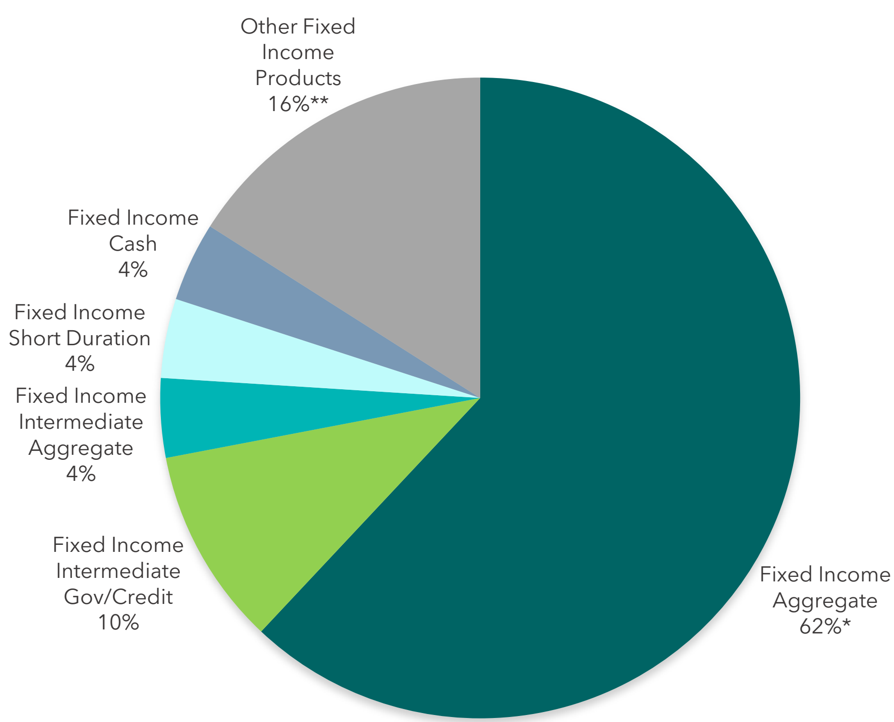
Organization

- Founded in 1988
- 100% employee-owned and MBE firm
- ESG/RI Manager, Principles for Responsible Investment (PRI) signatory, and Task Force on Climate-related Financial Disclosures (TCFD) supporter
- 34 employees in Houston, Texas
- 12-member investment team has over 260 years of industry experience and over 120 years combined firm experience
- Over $18.7 billion in assets under management
- High-quality fixed income strategies designed to prevent "negative surprises"
- No debt

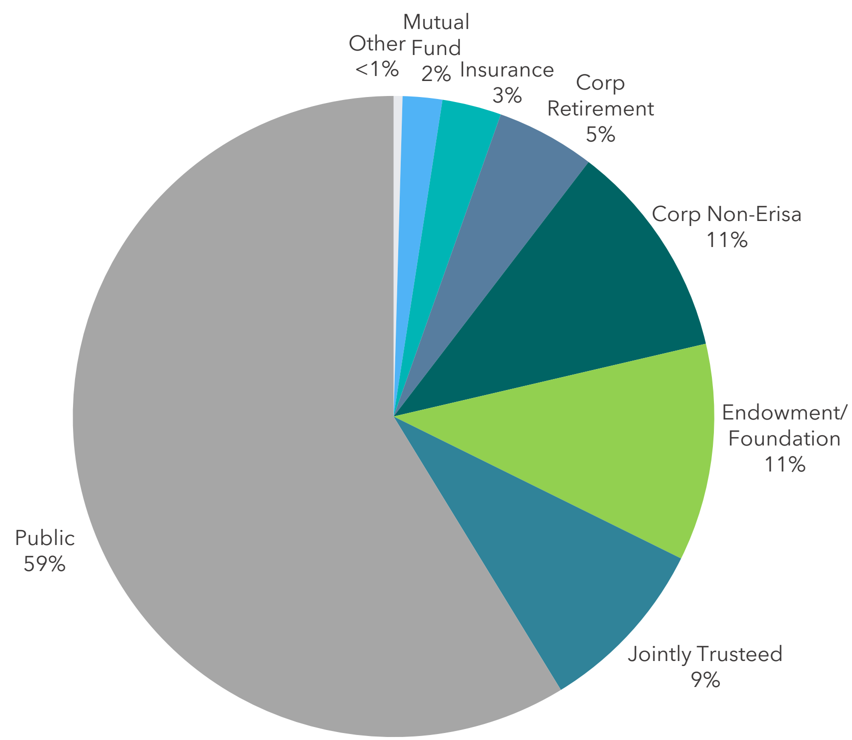
As of December 31, 2021

Asset Breakdown

By Type



By Client



GH&A Giving Back

Over
$2.5 Million
Donated
Since 2014

Coast Guard Foundation
Tejano Center for Community Concerns TCCC
Latino Caucus Foundation Chicago
National Association for the Advancement of Colored People 1909
NAACP Houston Branch
Fire Davie Florida Dept Safety Rescue
Illinois Legislative Latino Caucus Foundation ILLCF
League of United Latin American Citizens LULAC 1929
100 Black Men of America, Inc.
Sponsors for Educational Opportunity SEO
UOG Endowment Foundation
UHD University of Houston Downtown
Bowery Arts + Science
Gulf Coast Building & Construction Trades Council
Corpus Christi Colts
Fraternal Order of Police Lodge 89
Crime Stoppers
Kingwood Fallen Heroes Memorial Golf Tournament
Fulton Education Foundation
Democracy Alliance

COVID-19
35,000 masks

Wounded Warrior Project
Children's Museum Houston
Citrus Center Boys & Girls Clubs
Serving East Polk County
AJC American Jewish Committee
Stetson University
Hispanic Bar Association of Houston (HisBA)
Advancing Hispanics in the Legal Profession Since 1988
Project Row Houses
Louisiana Baptist Children's Home & Family Ministries
Rainbow Push Coalition
CBTU Coalition of Black Trade Unionists
Diverse Asset Managers Initiative
air Alliance Houston
NECA
Houston Area Urban League
Rivalz Blondes vs Brunettes
alzheimer's association
American Heart Association
OneSight
TOIGO.
Robert Toigo Foundation
Hispanic Heritage Foundation
Houston Hispanic Chamber of Commerce
NALEO Educational Fund
Susan G. Komen Houston
Victory Fund
Chicago Teachers Union
Plumbers Local 68 UA

ESG Stewardship

GH&A became a **Principles for Responsible Investment (PRI)** signatory in 2019.

We completed our first **PRI Transparency Report** in March 2020. PRI signatories are required to report publicly on their responsible investment activities each year.

We received our first **PRI Assessment Report** in July 2020 and received an **'A' grade in Strategy & Governance** – which is considered the main module/section of the report.

Signatory of:

PRI Principles for Responsible Investment

GH&A became a **Task Force on Climate-related Financial Disclosures (TCFD)** supporter in 2021.

As an investment management firm with a long-standing commitment to responsible investment, GH&A supports the TCFD framework. We utilize the third-party research of industry experts in our ESG evaluation including Bloomberg ESG disclosure metrics which incorporate **TCFD disclosures**. The reports from these third-party providers assist the investment team in its overall evaluation process and provides a base to further study/research these securities for continued inclusion in our portfolio. **TCFD disclosures** increase transparency around climate-related risks which are incorporated considerations in our investment process.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Client Report Disclosure

PERFORMANCE DATA

Performance data represents historically achieved results for a client's portfolio(s) and is no guarantee of future performance. The market or economic conditions during this period may or may not be repeated. There may be differences between the performance shown and the performance results achieved by any other client retaining Garcia Hamilton for the same investment strategy. Benchmark results are shown for comparison purposes only. The benchmark represents an unmanaged portfolio with characteristics which are similar to the portfolio(s). The returns of the benchmark do not include any transaction costs, management fees or other costs. The holdings in the client's portfolio(s) may differ significantly from the securities that comprise the benchmark shown. The benchmark has been selected by the client as an appropriate benchmark with which to compare the performance of the portfolio(s).

MWRA Employees' Retirement System

February 23, 2022

Presented by:

Gilbert A. Garcia, CFA
Managing Partner

Ruby Muñoz Dang
Partner

Five Houston Center
1401 McKinney Street, Suite 1600
Houston, TX 77010
Tel: (713) 853-2359
Ruby@GarciaHamiltonAssociates.com
www.GarciaHamiltonAssociates.com

Pensions&Investments 2020
BEST PLACES TO WORK IN MONEY MANAGEMENT
MULTIYEAR WINNER
2016 2017 2018 2019

FIXED-INCOME MANAGER OF THE YEAR
Emerging Manager Awards 2019

Institutional Investor 2016 2015 U.S. INVESTMENT MANAGEMENT AWARDS
Intermediate-Term Fixed Income

Fundmap Institutional Asset Management Awards 2018 Winner US Fixed Income Manager

HOUSTON BUSINESS JOURNAL BPtW 2018 BEST PLACES TO WORK

Institutional Investor Awards 2014 FIXED INCOME INVESTMENT GRADE MANAGER OF THE YEAR

Emerging Manager Monthly 2010 Core Fixed Income Manager of the Year

Signatory of: PRI Principles for Responsible Investment

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Awards/rankings may not represent client experiences and are not indicative of future performance.
Go to www.garciahamiltonassociates.com/awards/ for additional information on each award.

Agenda

Performance

Market Update

Portfolio

Firm Updates

Marshall Gerometta/CTBUH

Pensions&Investments 2020
BEST PLACES TO WORK IN MONEY MANAGEMENT
MULTIYEAR WINNER
2016 ★ 2017 ★ 2018 ★ 2019

FIXED-INCOME MANAGER OF THE YEAR
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BPtW
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Intermediate-Term Fixed Income

Institutional Investor Awards 2014
FIXED INCOME INVESTMENT GRADE MANAGER OF THE YEAR

Fundmap
Institutional Asset Management Awards 2018
Winner
US Fixed Income Manager
Garcia Hamilton & Associates

Emerging Manager Monthly
2010
Core Fixed Income Manager of the Year

TCFD
TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

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Performance

- 4Q 2021 Performance
- January 2022 Performance
- Current 2022 Performance

4Q 2021 Performance

MWRA Employees' Retirement System

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	38,501,770.28	99.1	1.1
CASH	355,856.33	0.9	0.0
Total	**38,857,626.61**	**100.0**	**1.1**

CHANGE IN PORTFOLIO

Portfolio Value on 09-30-21	38,750,154.69
Accrued Interest	144,301.65
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-158,752.53
Unrealized Gains/Losses	-115,108.36
Income Received	189,568.38
Change in Accrued Interest	47,462.78
Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
	38,857,626.61

TIME WEIGHTED RETURN

	Quarter	One Year	Annualized Last 2 Years	Annualized Last 3 Years	Annualized Inception 04-30-18 To Date
Gross of Fees	**-0.09**	**-2.22**	**2.77**	**4.28**	**4.04**
Net of Fees	**-0.15**	**-2.45**	**2.54**	**4.05**	**3.82**
Bloomberg US Aggregate	0.01	-1.54	2.88	4.79	4.53

Our Form ADV disclosure document is available upon request. We urge you to compare account statements that you receive from us with the account statements that you receive from your custodian. Past performance is no guarantee of future results. See disclosures for other relevant information. Client Use Only.

January 2022 Performance

MWRA Employees' Retirement System

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	36,765,972.68	96.0	1.2
CASH	1,530,331.38	4.0	0.0
Total	**38,296,304.06**	**100.0**	**1.2**

CHANGE IN PORTFOLIO

Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-27,842.87
Unrealized Gains/Losses	-610,961.37
Income Received	87,240.91
Change in Accrued Interest	-9,759.22
Portfolio Value on 01-31-22	38,114,298.85
Accrued Interest	182,005.20
Total	**38,296,304.06**

TIME WEIGHTED RETURN

	Month To Date	One Year	Annualized Last 2 Years	Annualized Last 3 Years	Annualized Inception 04-30-18 To Date
Gross of Fees	**-1.44**	**-2.83**	**1.16**	**3.45**	**3.55**
Net of Fees	**-1.44**	**-3.05**	**0.93**	**3.22**	**3.33**
Bloomberg US Aggregate	-2.15	-2.97	0.80	3.67	3.82

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Current 2022 Performance

Preliminary

PORTFOLIO COMPOSITION

	Market Value	Pct. Assets	Yield
FIXED INCOME	34,881,091.59	92.5	1.4
CASH	2,814,320.65	7.5	0.0
Total	**37,695,412.24**	**100.0**	**1.3**

CHANGE IN PORTFOLIO

Portfolio Value on 12-31-21	38,665,862.19
Accrued Interest	191,764.43
Net Additions/Withdrawals	0.00
Realized Gains/Losses	-79,013.88
Unrealized Gains/Losses	-1,196,869.48
Income Received	192,144.52
Change in Accrued Interest	-78,475.53
Portfolio Value on 02-15-22	37,582,123.35
Accrued Interest	113,288.89
	37,695,412.24

TIME WEIGHTED RETURN

	Month To Date	Year To Date
Gross of Fees	**-1.57**	**-2.99**
Net of Fees	**-1.57**	**-2.99**
Bloomberg US Aggregate	-2.06	-4.17

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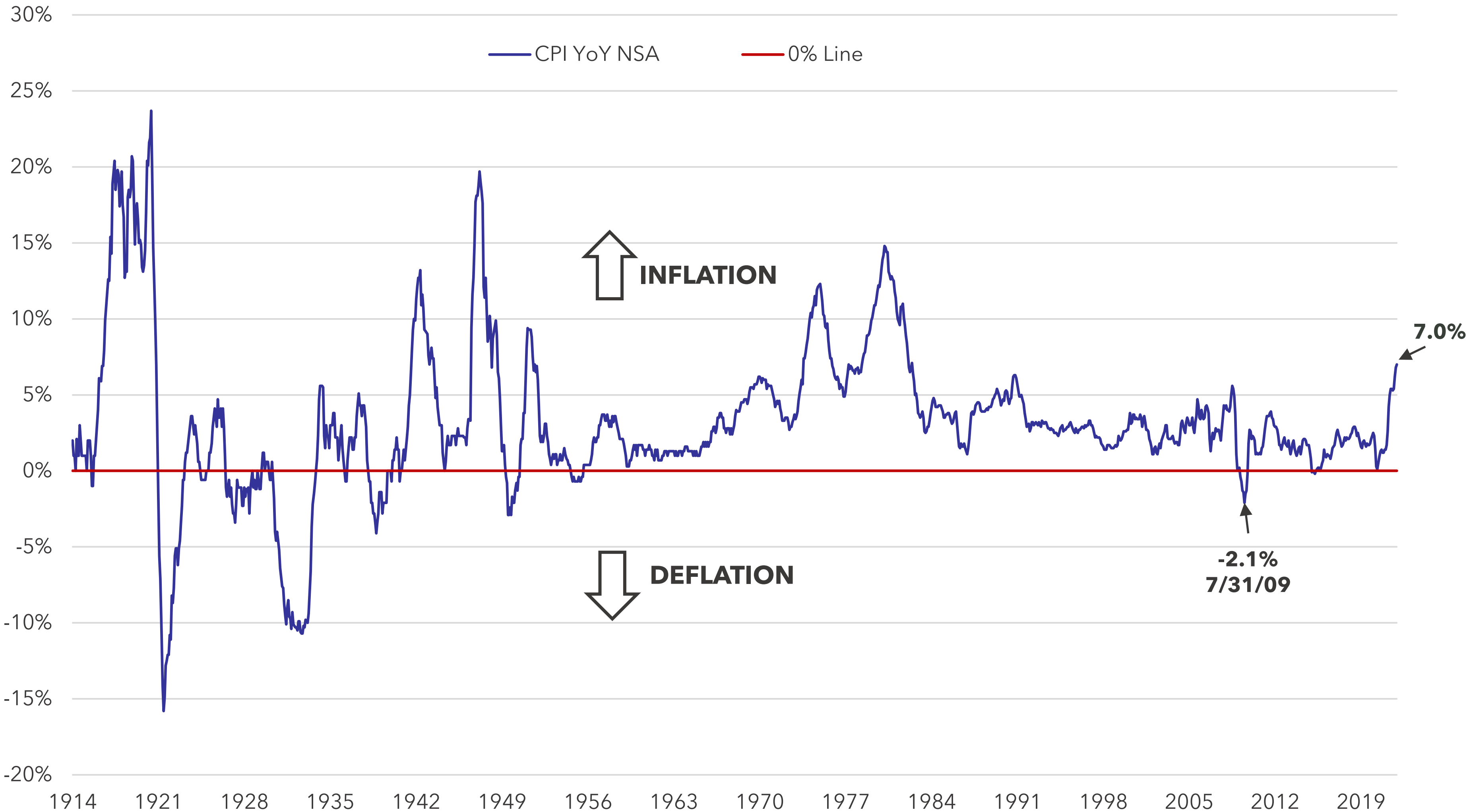
Market Update

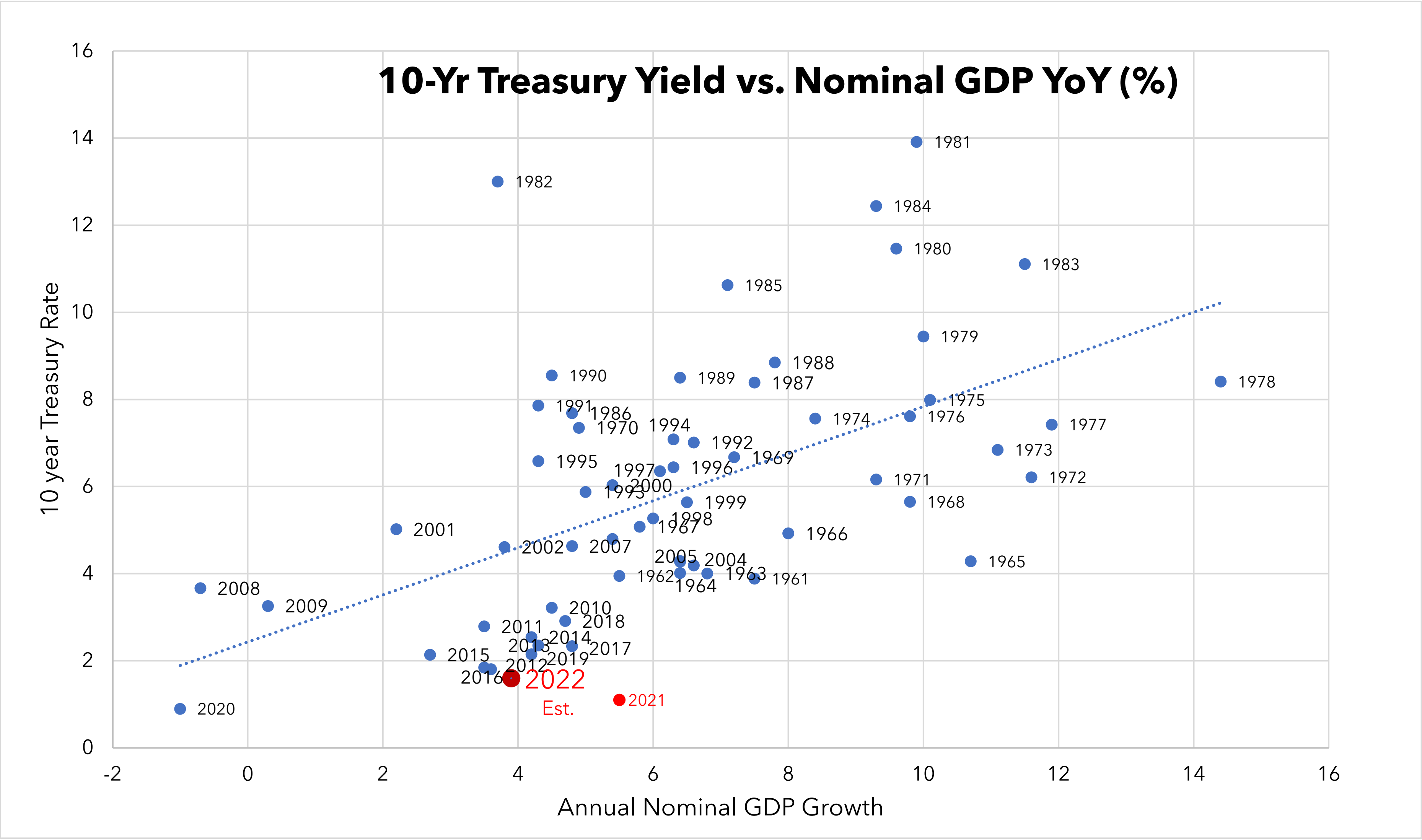
- CPI
- Stimulus
- Money Supply
- Inflationary Pressures
- Number of Unemployed per Job Opening
- Broad Based Wage Growth
- Federal Reserve
- Average Option Adjusted Spreads (OAS)
- Quality
- MBS Sector

Monthly YoY Percentage Change in CPI



Index: Consumer Price Index (CPI) for All Urban Consumers Non-Seasonally Adjusted
As of December 31, 2021 | Bloomberg

Measuring the Market Impact from the Federal Reserve and Government Stimulus



Garcia Hamilton & Associates

As of December 31, 2021 | Bloomberg

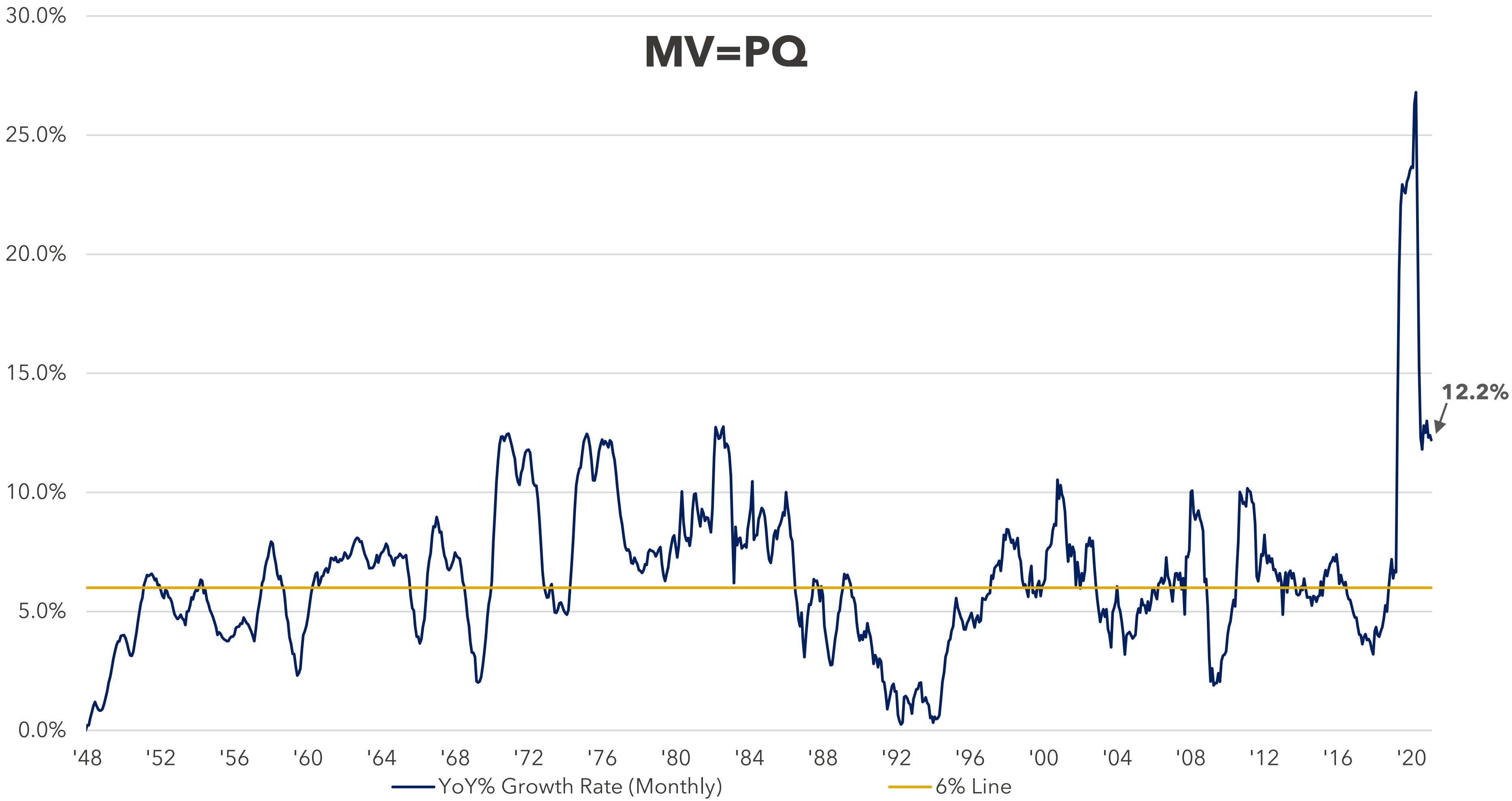
Historical Fiscal Stimulus

Events	Amount	% of GDP	Today's Dollars	Date
COVID-19	$6.7 T*	29.5%	$6.7 T	2020-2021
Great Financial Crisis	$939 B	3.2%	$1.2 T	2008-2009
World War II	$350 B	30.5%	$6.8 T	1939-1945
Great Depression	$42 B	7.5%	$825 B	1933-1939

*More Pending

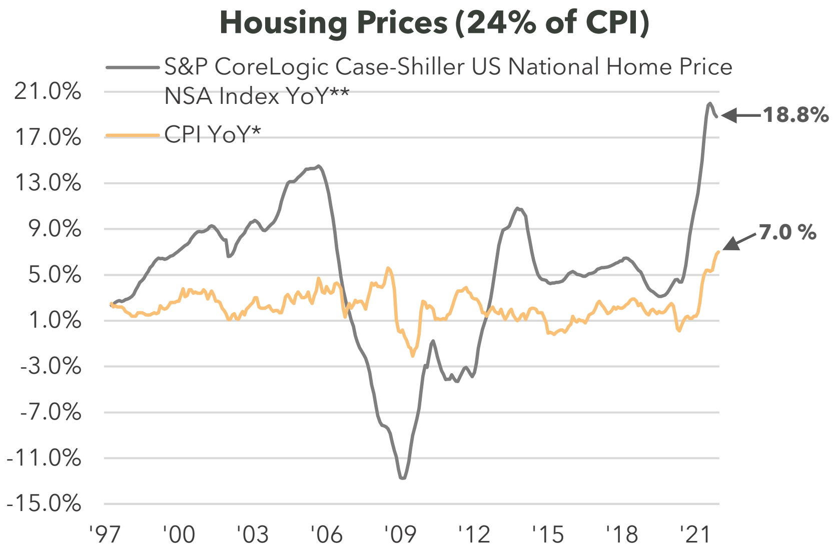
Mizuho Group, International Monetary Fund, CNBC

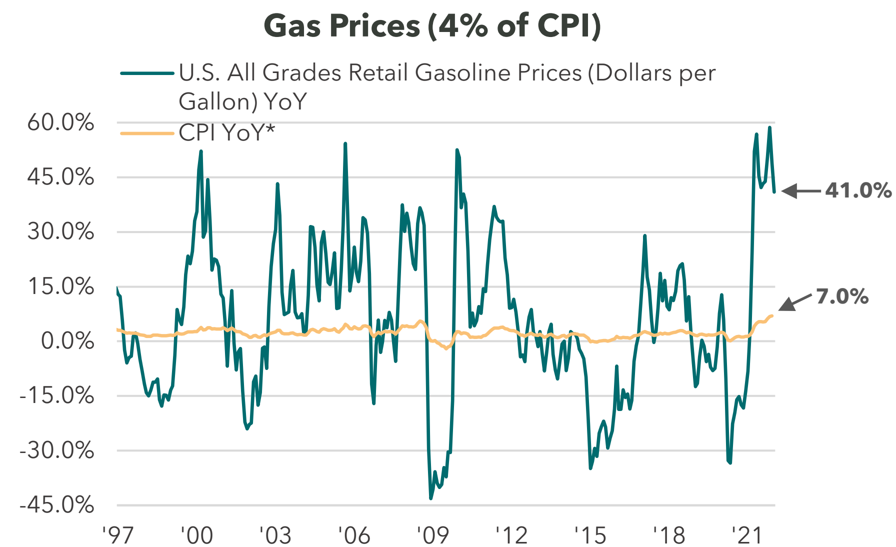
Money Supply Long Term Growth

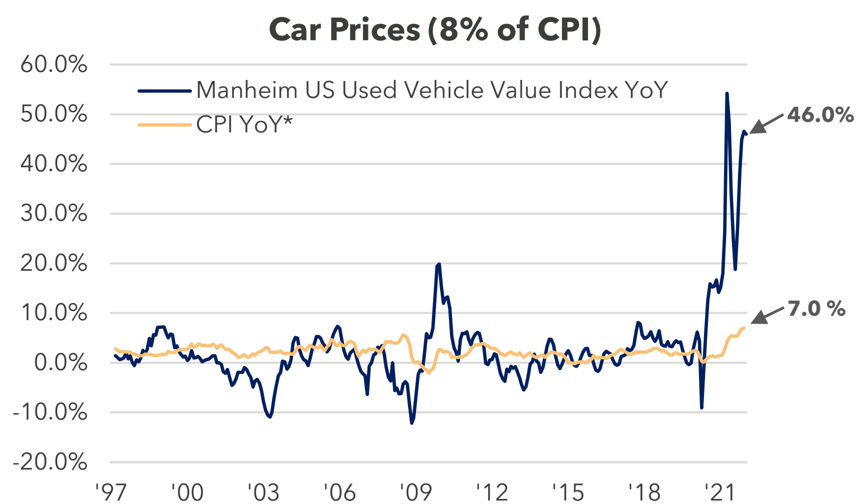


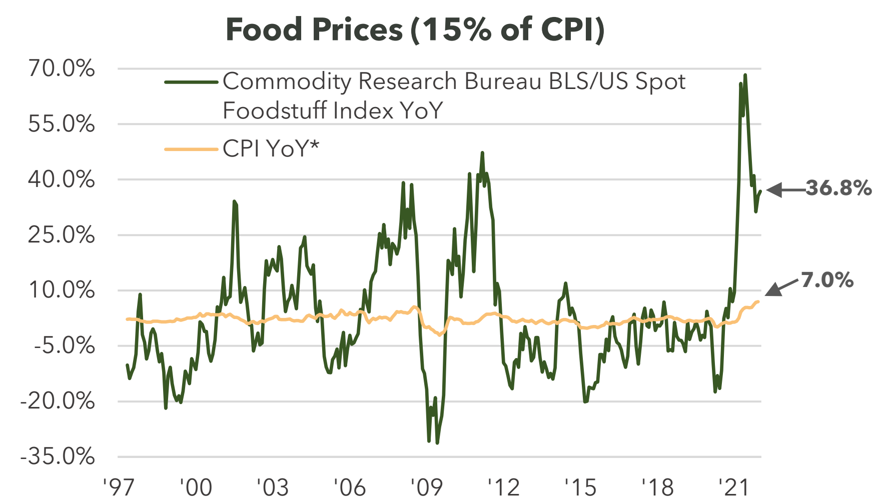
The data used to create the long-term year over year growth rate was compiled from data published by the Federal Reserve Historical Monetary Aggregate Data. The monthly series from Jan 1948 until November 1980 was compiled from the M2SA and M2SL series and is used to calculate the year over year annualized growth rate. After November 1980, the weekly data series for M2 is used to calculate the year over year annual growth rate.

Inflationary Pressures Everywhere









As of January 31, 2022 | *As of December 31, 2021 | **As of November 2021 | Bloomberg

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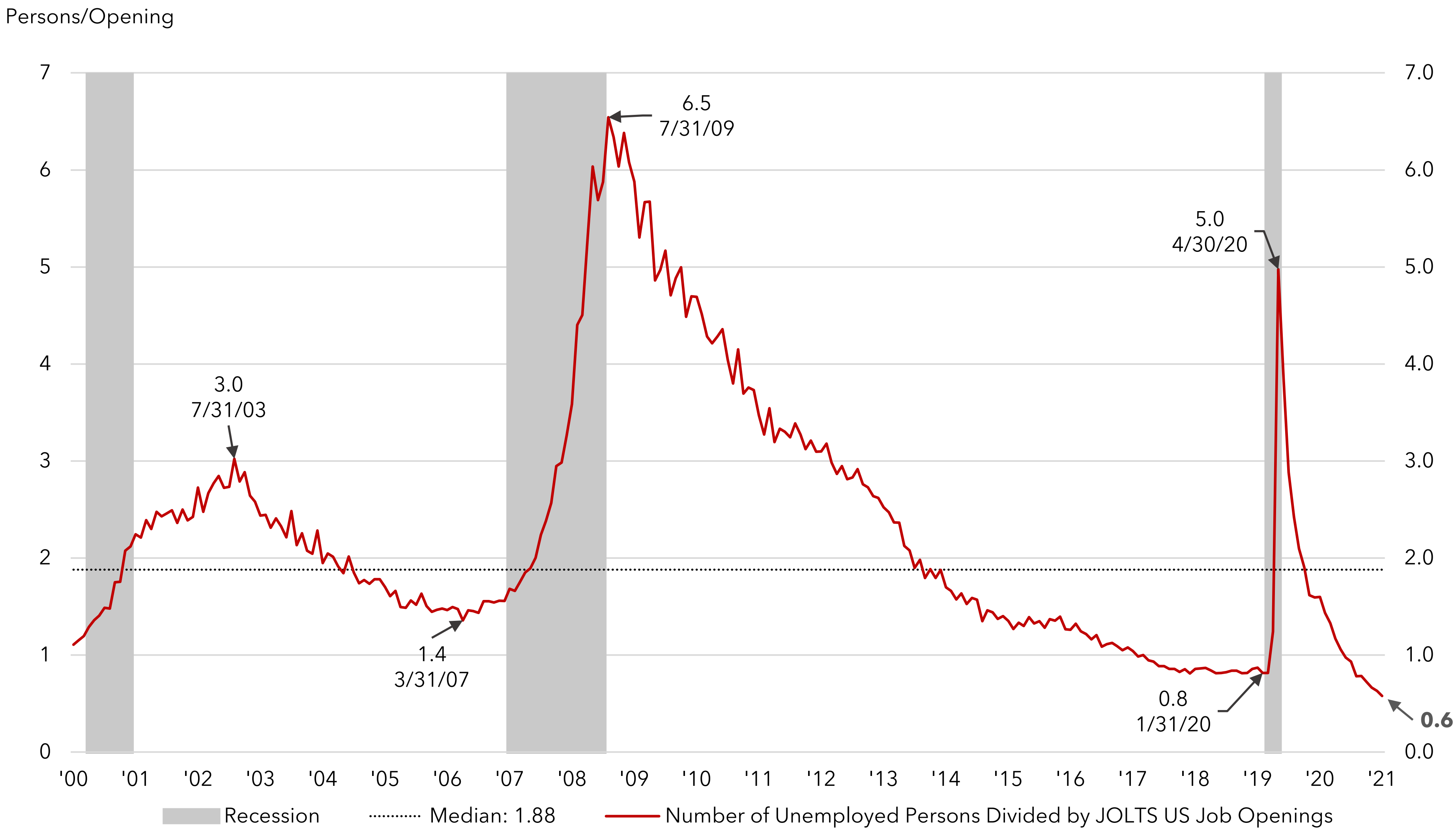

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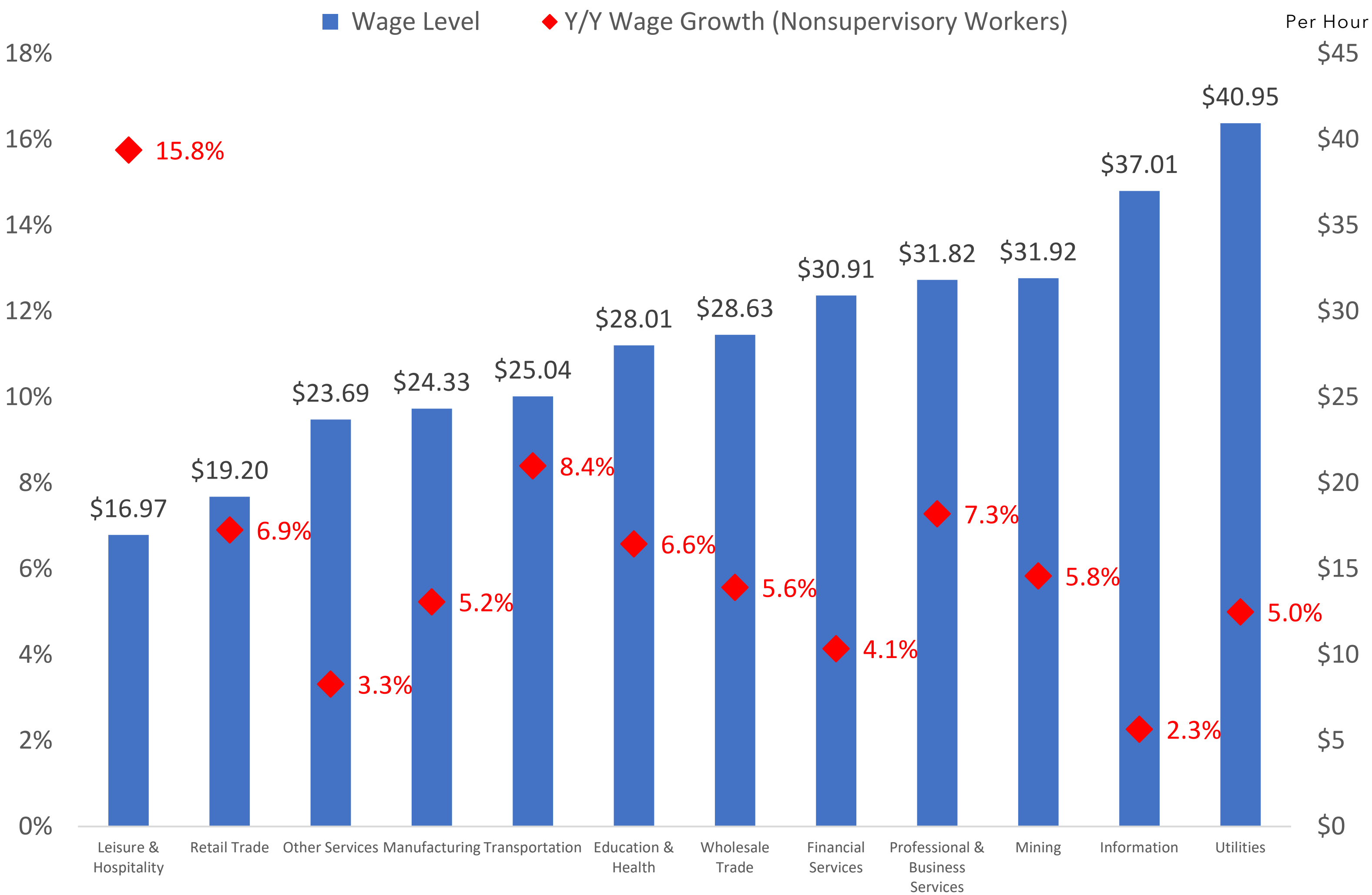

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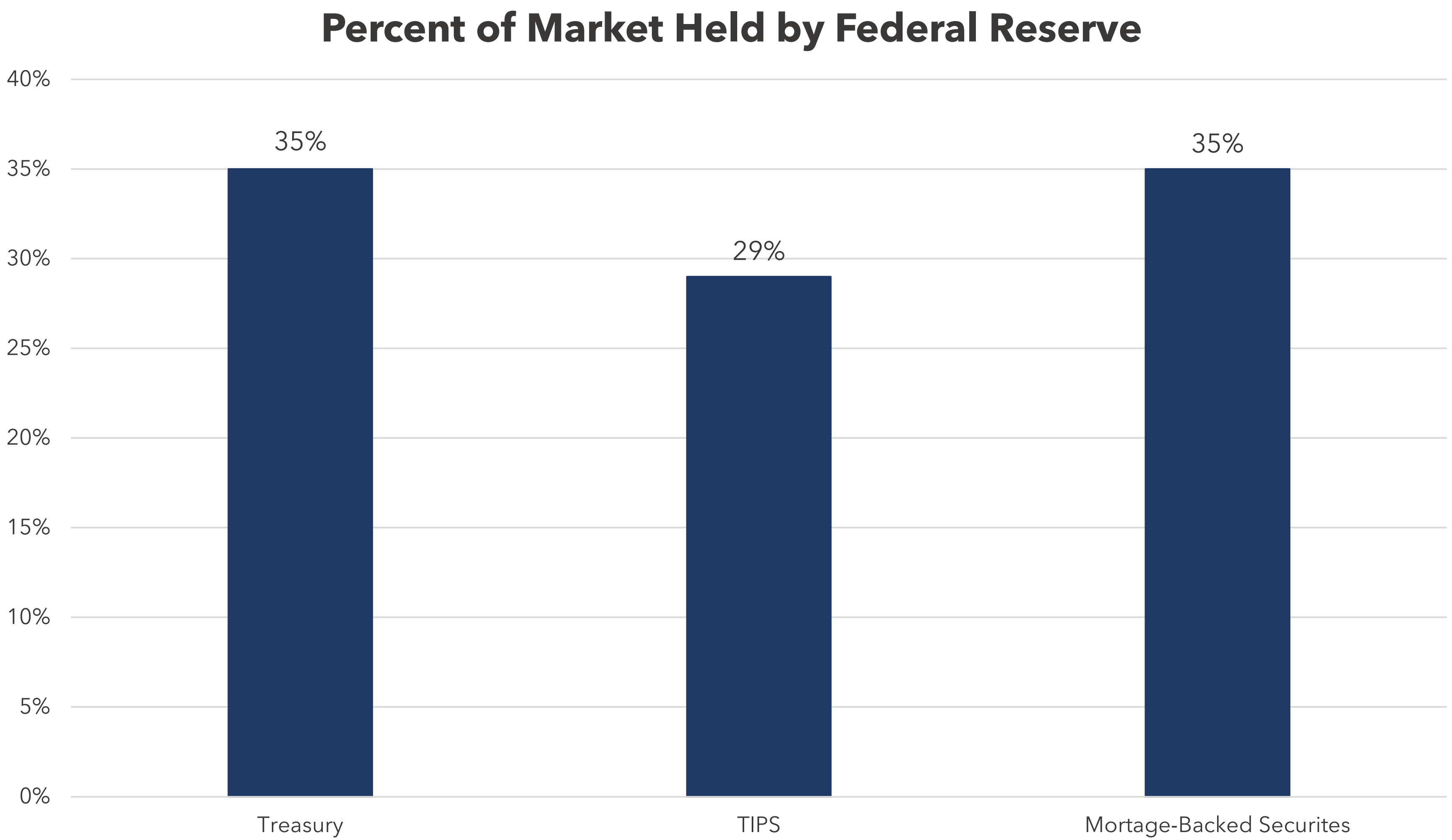

As of December 31, 2021 | Bloomberg

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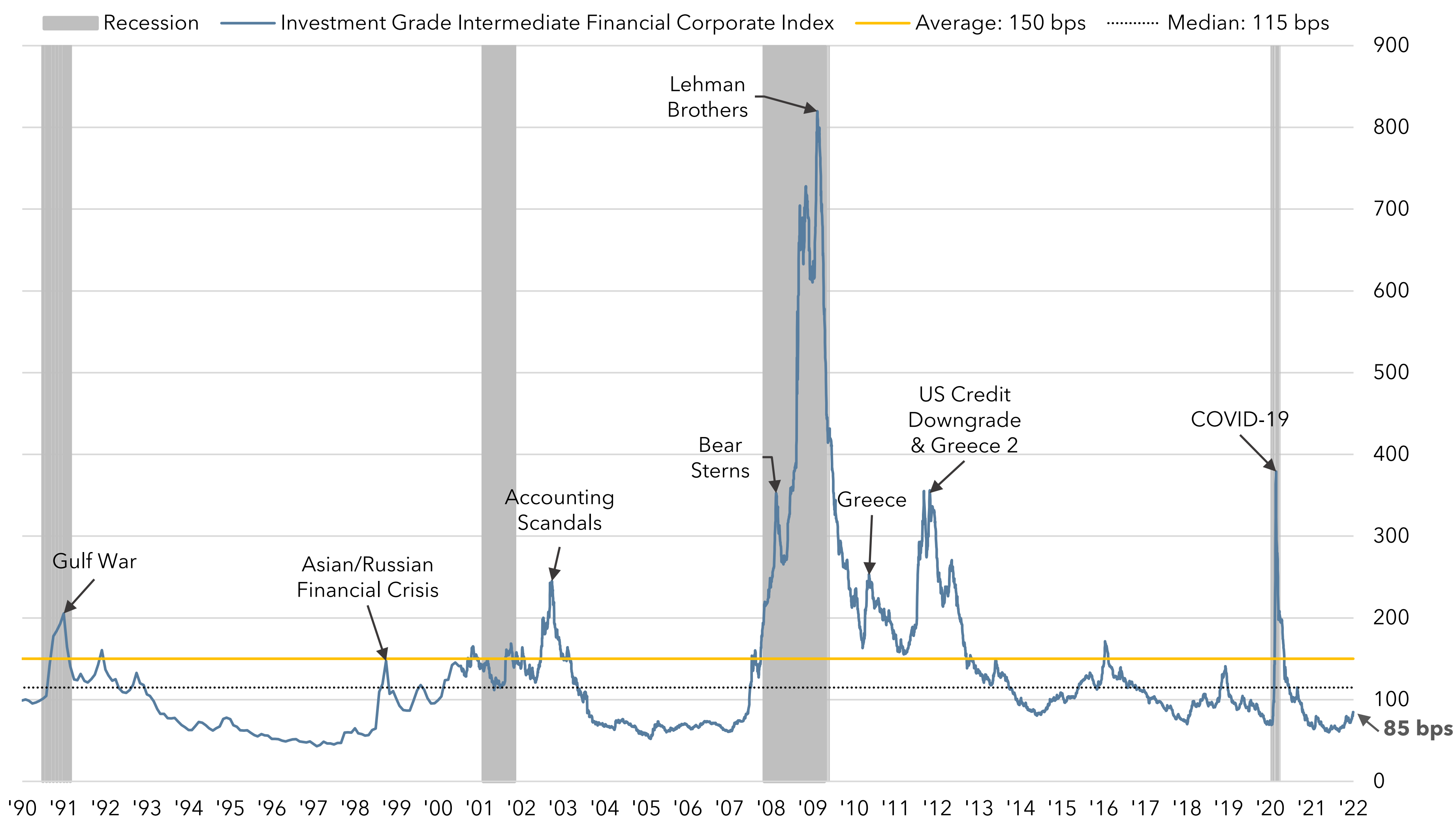
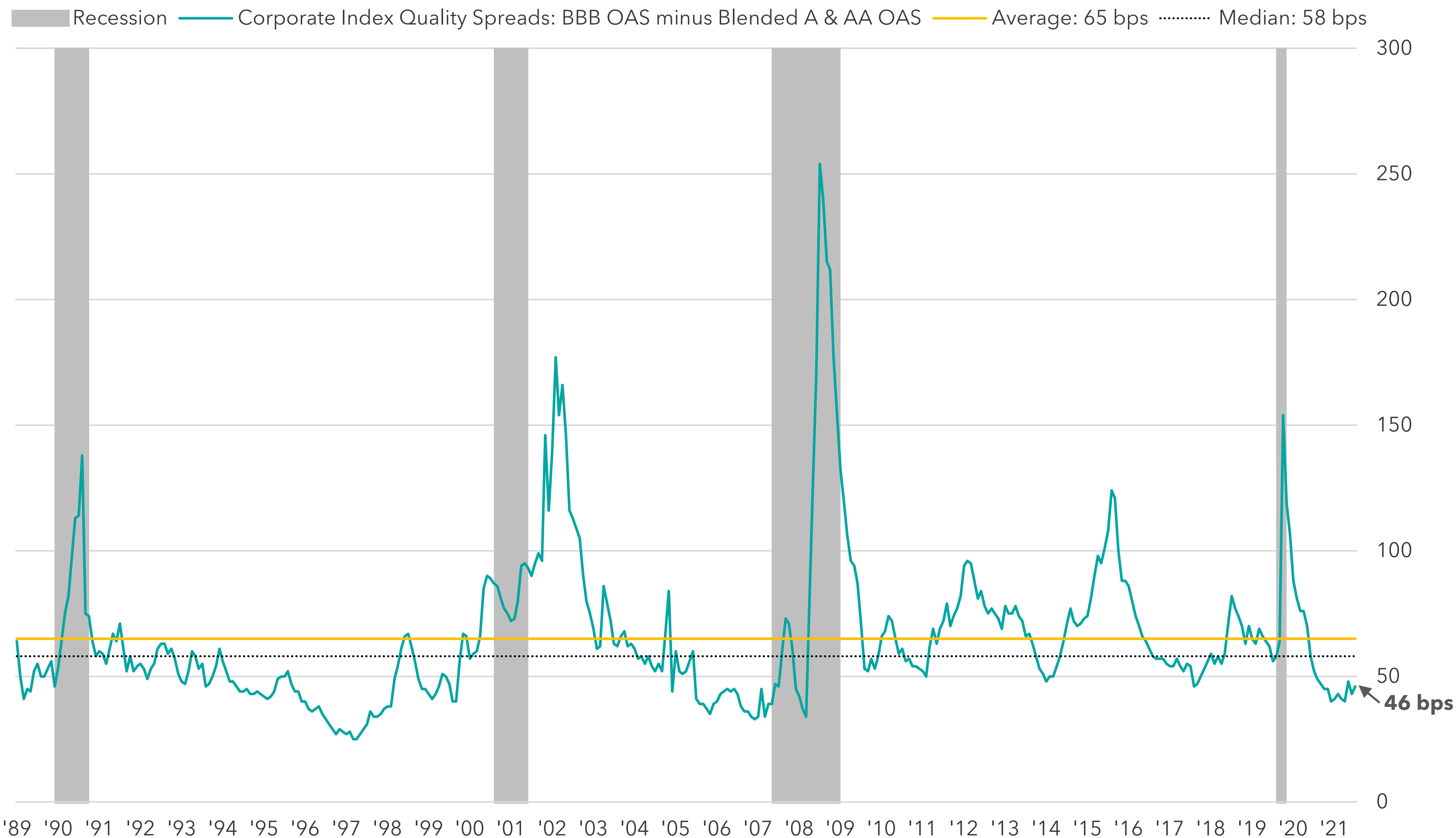


Quality Spreads



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Portfolio

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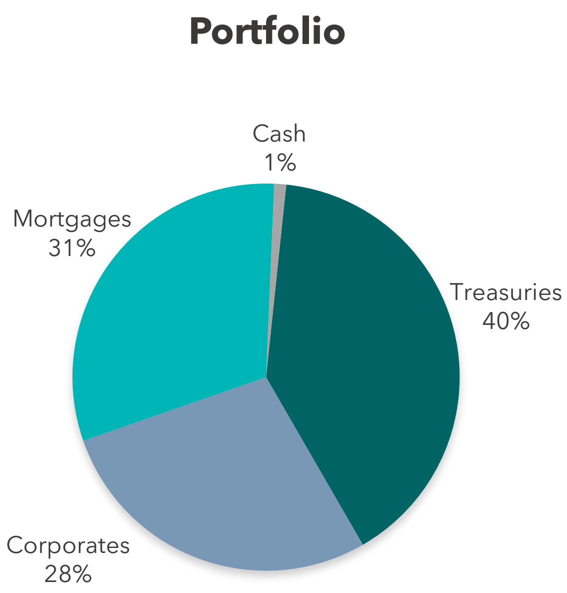
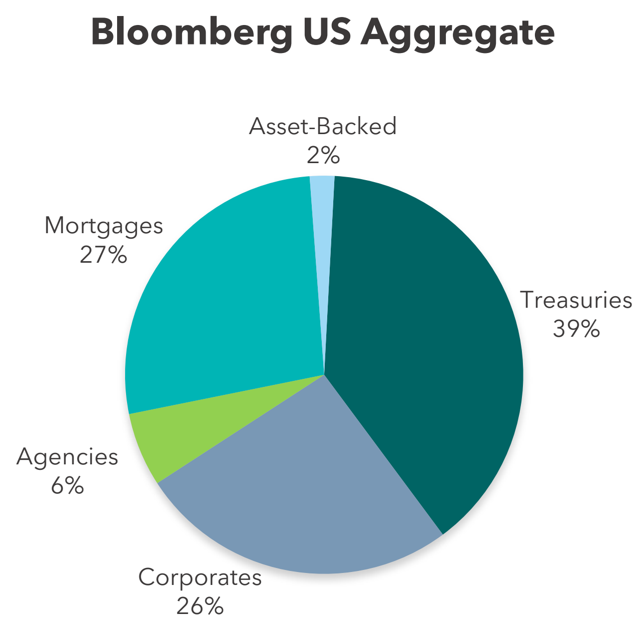
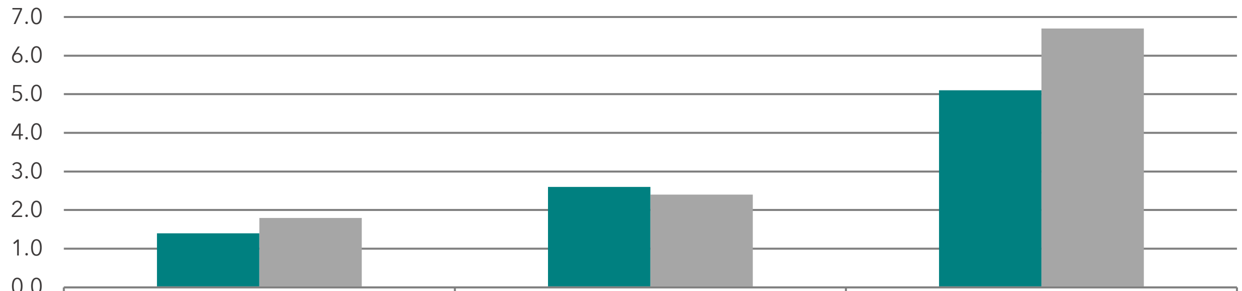
Fixed Income Portfolio Characteristics







	Average YTM	Average Coupon	Average Duration
Portfolio	1.4	2.6	5.1
Bloomberg US Aggregate	1.8	2.4	6.7

MWRA Employees' Retirement System Account History

- Initial contribution: $28 million on 4/2/2018
- Cumulative subsequent contributions: $20.5 million
- Cumulative subsequent distributions: $15 million
- Realized gains/losses: $1.7 million
- Unrealized gains/losses: $1.4 thousand
- Current value: $38.9 million

Firm Updates

- GH&A Community Engagement
- Organization
- Asset Breakdown
- GH&A Giving Back
- ESG Stewardship

GH&A Community Engagement

We are proud to have donated over 35,000 masks, boxes of hand sanitizers and cleaning supplies, and over $100,000 to underserved and underrepresented communities during the COVID-19 pandemic and Texas winter storms.

We partnered twice with the Houston Food Bank and Texas State Representatives Christina Morales and Mary Ann Perez to provide free food, water, CO2 detectors, pet food, diapers, fresh local produce, hand sanitizers and $25,000 in food gift cards to those most in need in our local community.

We are Garcia Hamilton, and we are Houston strong!

GH&A Community Engagement

We also partnered with HEB and The Baptist Ministers Association to donate $30,000 in HEB gift cards for food to 120 families from 24 churches.

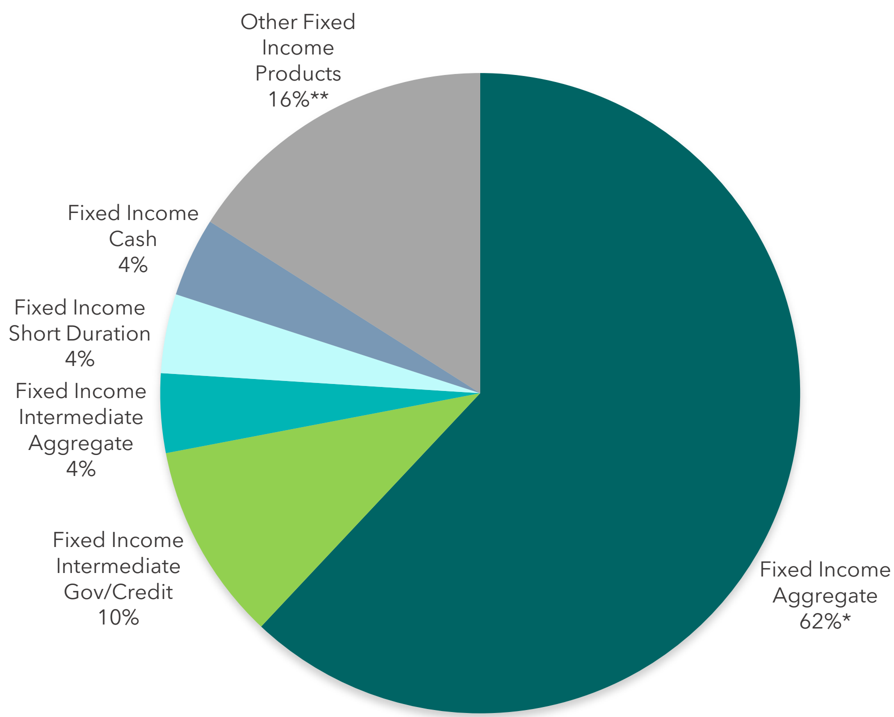
We are Garcia Hamilton, and we are Houston strong!

Organization

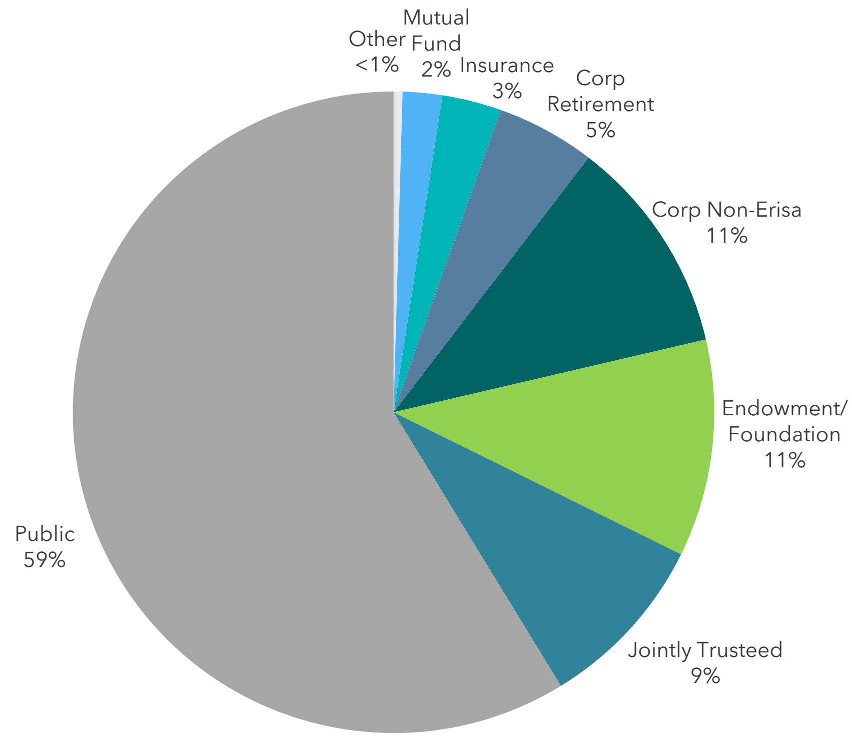
- Founded in 1988
- 100% employee-owned and MBE firm
- ESG/RI Manager, Principles for Responsible Investment (PRI) signatory, and Task Force on Climate-related Financial Disclosures (TCFD) supporter
- 34 employees in Houston, Texas
- 12-member investment team has over 260 years of industry experience and over 120 years combined firm experience
- Over $18.7 billion in assets under management
- High-quality fixed income strategies designed to prevent "negative surprises"
- No debt

Asset Breakdown

By Type



By Client



GH&A Giving Back

Over
$2.5 Million
Donated
Since 2014

COVID-19
35,000 masks

ESG Stewardship

GH&A became a **Principles for Responsible Investment (PRI)** signatory in 2019.

We completed our first **PRI Transparency Report** in March 2020. PRI signatories are required to report publicly on their responsible investment activities each year.

We received our first **PRI Assessment Report** in July 2020 and received an **'A' grade in Strategy & Governance** – which is considered the main module/section of the report.

Signatory of:

PRI Principles for Responsible Investment

GH&A became a **Task Force on Climate-related Financial Disclosures (TCFD)** supporter in 2021.

As an investment management firm with a long-standing commitment to responsible investment, GH&A supports the TCFD framework. We utilize the third-party research of industry experts in our ESG evaluation including Bloomberg ESG disclosure metrics which incorporate **TCFD disclosures**. The reports from these third-party providers assist the investment team in its overall evaluation process and provides a base to further study/research these securities for continued inclusion in our portfolio. **TCFD disclosures** increase transparency around climate-related risks which are incorporated considerations in our investment process.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Client Report Disclosure

PERFORMANCE DATA

Performance data represents historically achieved results for a client's portfolio(s) and is no guarantee of future performance. The market or economic conditions during this period may or may not be repeated. There may be differences between the performance shown and the performance results achieved by any other client retaining Garcia Hamilton for the same investment strategy. Benchmark results are shown for comparison purposes only. The benchmark represents an unmanaged portfolio with characteristics which are similar to the portfolio(s). The returns of the benchmark do not include any transaction costs, management fees or other costs. The holdings in the client's portfolio(s) may differ significantly from the securities that comprise the benchmark shown. The benchmark has been selected by the client as an appropriate benchmark with which to compare the performance of the portfolio(s).

ASSET ALLOCATION REVIEW & OUTLOOK

MWRA RETIREMENT SYSTEM

FEBRUARY 23, 2022

Sebastian Grzejka
Kiley Fischer

INTRODUCTION

- **NEPC and MWRAERS conduct an annual asset allocation to reaffirm policy targets**
  - The goal is to ensure the strategy meets the System's needs, and is positioned to take advantage of market opportunities in a risk controlled manner

- **The current approach is structured to support the long term goals of the System:**
  - The primary goal is to provide benefits to participants and beneficiaries of the System, with the goal of becoming fully funded. In order to achieve this goal, consistency of returns and risk of loss are primary considerations
  - The assumed rate of return for the Plan is currently 6.9%

- **Today, we want to focus on ongoing implementation of the portfolio, specifically:**
  - ***Strategic Allocation:*** Reaffirm if the current strategy is appropriate or if changes are needed based on Portfolio goals and market opportunities
  - ***Fixed Income:*** Finalize discussion around fixed income allocation sizing, and implementation
  - ***Private Markets:*** Determine appropriate sizing and continue annual pacing to bring both private equity and private real estate to long term target allocation

- **We have provided an updated asset allocation analysis to review these topics**

ASSET CLASS ASSUMPTIONS

OVERVIEW

- **Equity return assumptions are broadly lower and reflect the tremendous market rally over the last 12 months**
- **Fixed Income return assumptions are marginally higher and reflect a transition to tighter monetary policy in the near-term to offset inflationary pressures**
- **Key Takeaways**
  1. **NEPC's expectation for inflation has increased over the near-term but the long-term inflation view is unchanged**
  2. **We encourage investors to hold a dedicated safe-haven fixed income allocation to be a source of portfolio liquidity and downside protection**
  3. **Look to maintain strategic equity targets as a cyclical upswing in growth and inflation continue to support elevated valuations**

CORE ASSET CLASS RETURN ASSUMPTIONS

	Asset Class	12/31/21 10-Year Return	12/31/20 10-Year Return	Delta
	Cash	1.5%	0.8%	+0.7%
	U.S. Inflation	2.4%	2.0%	+0.4%
Equity	U.S. Large-Cap Equity	4.3%	5.4%	-1.1%
	Non-U.S. Developed Equity	5.2%	5.9%	-0.7%
	Emerging Market Equity	8.3%	7.5%	+0.8%
	Global Equity*	5.4%	6.2%	-0.8%
	Private Equity*	9.0%	9.3%	-0.3%
Fixed Income	U.S. Treasury Bond	1.5%	0.9%	+0.6%
	U.S. Aggregate Bond*	2.0%	1.4%	+0.6%
	U.S. TIPS	1.4%	1.0%	+0.4%
	U.S. High Yield Corporate Bond	3.2%	2.9%	+0.3%
	Private Debt*	6.6%	6.1%	+0.5%
Real Assets	Commodity Futures	0.4%	0.9%	-0.5%
	U.S. REIT	4.5%	5.5%	-1.0%
	Gold	3.3%	2.9%	+0.4%
	Real Estate - Core	4.7%	4.4%	+0.3%
	Private Real Assets - Infrastructure	5.3%	5.4%	-0.1%
Multi-Asset	60% S&P 500 & 40% U.S. Aggregate	3.7%	4.1%	-0.4%
	60% MSCI ACWI & 40% U.S. Agg.	4.4%	4.6%	-0.2%
	Hedge Fund*	4.2%	4.0%	+0.2%

*Calculated as a blend of other asset classes

ASSESSING THE KEY MARKET THEMES

AS OF 12/31/21

New Key Market Theme

Theme	DORMANT	FADED	NEUTRAL	PREVALENT	DOMINANT
Economic Crossroads **Change in Status:** -			**NEUTRAL**		
Permanent Interventions **Change in Status:** *Prevalent to Faded*		**FADED**			
Globalization Backlash **Change in Status:** *Prevalent to Neutral*			**NEUTRAL**		
China Transitions **Change in Status:** -				**PREVALENT**	

Economic Crossroads

- Diminishing policy support and higher levels of inflation/growth are driving a transition from Fed policy as the dominant input for capital markets to economic fundamentals
- This transition will dramatically influence the pricing of risk premia across capital markets and the economic outcome may track a wide regime spectrum

Permanent Interventions

- Permanent Interventions enhances investor sentiment but is cyclically fading as monetary policy shifts to a less accommodative stance
- The Federal Reserve has begun tapering asset purchases and recent commentary suggests rate liftoff may happen sooner than anticipated given the economic and inflation backdrop

Globalization Backlash

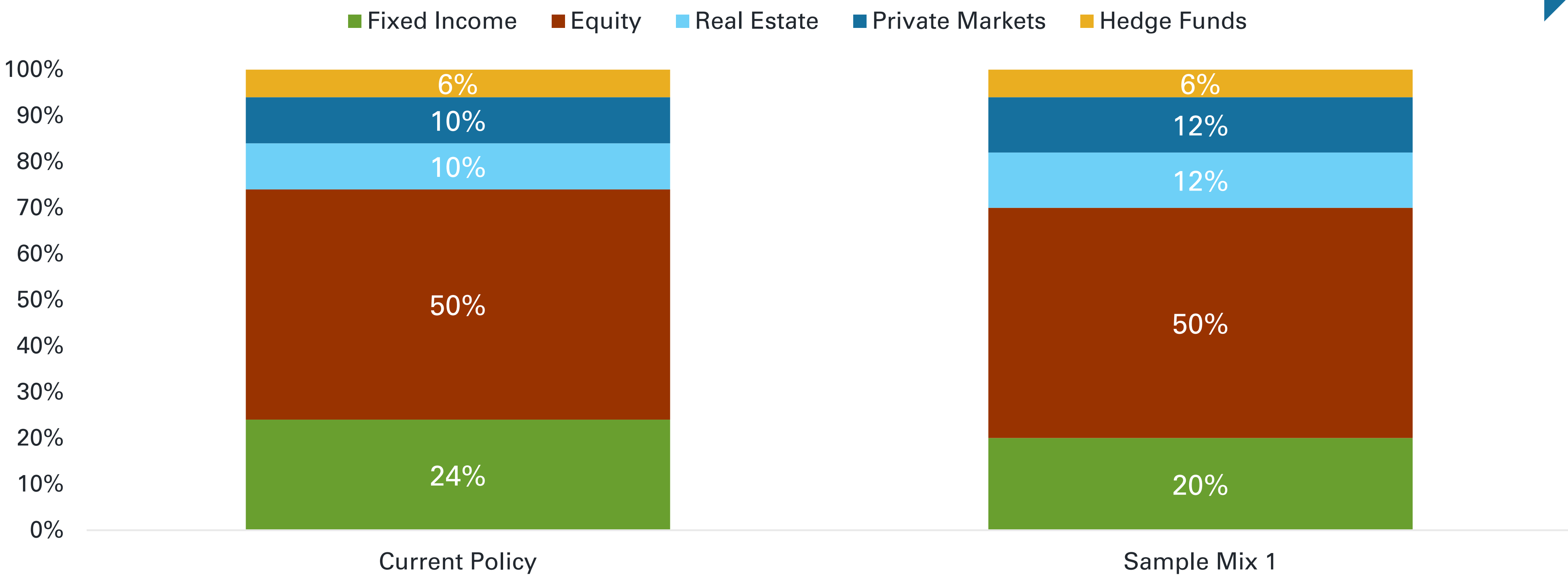
- The importance of this theme may increase as supply-chain disruptions and inflationary pressures strain the electorate and geopolitical relationships
- The world will likely be faced with an amplified wealth divide given economic and labor market conditions, which has historically driven more volatile political outcomes

China Transitions

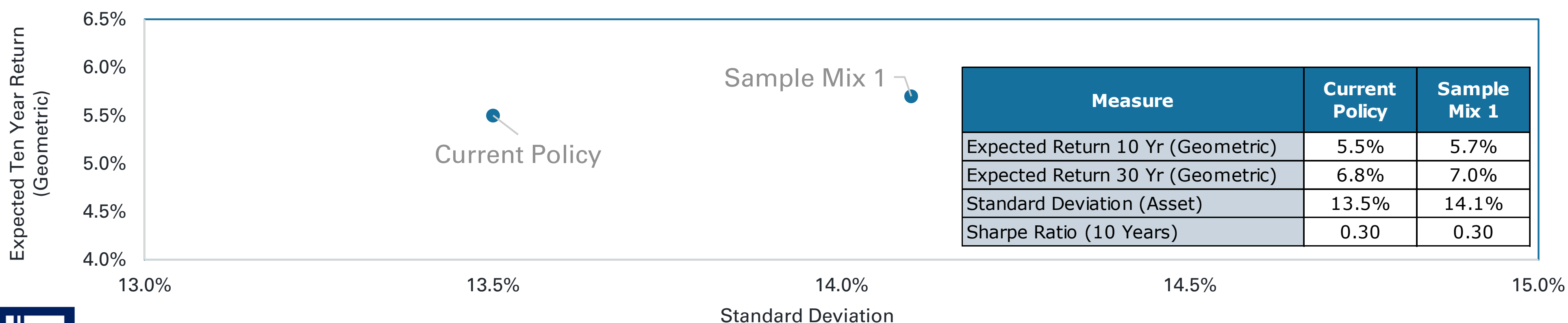
- The "regulatory reset" highlights the potential for economic and capital market volatility on the country's long transition path
- While in-line with the longer-term economic goals, these regulations have negatively impacted market sentiment; creating a tail-risk for market and economic contagion

MIXES FOR DISCUSSION

Sample mix maintains efficiency, along with long term return prospects



Asset Allocation Mixes – Expected Risk and Return



Measure	Current Policy	Sample Mix 1
Expected Return 10 Yr (Geometric)	5.5%	5.7%
Expected Return 30 Yr (Geometric)	6.8%	7.0%
Standard Deviation (Asset)	13.5%	14.1%
Sharpe Ratio (10 Years)	0.30	0.30

ASSET ALLOCATION DETAILS

The current target has been structured to meet long term goals. The sample mix maintains similar characteristics, however, increases volatility due to added growth exposure.

	Long Term Policy	Sample Mix 1
US Large Cap	24%	24%
US Small Cap	7%	7%
Non US Equity	12%	12%
Emerging Equity	7%	7%
Private Equity	10%	12%
Total Equity	**60%**	**62%**
Core Bonds	10%	12%
TIPS	4%	0%
Multi Sector Credit	10%	8%
Total Fixed Income	**24%**	**20%**
Real Estate	10%	12%
Total Real Assets	**10%**	**12%**
Hedge Funds	6%	6%
Total Multi Asset	**6%**	**6%**
Exp Return 10 Yr	**5.5%**	**5.7%**
Exp Return 30 Yr	**6.8%**	**7.0%**
Std Dev (Asset)	**13.5%**	**14.1%**
Sharpe Ratio	**0.30**	**0.30**

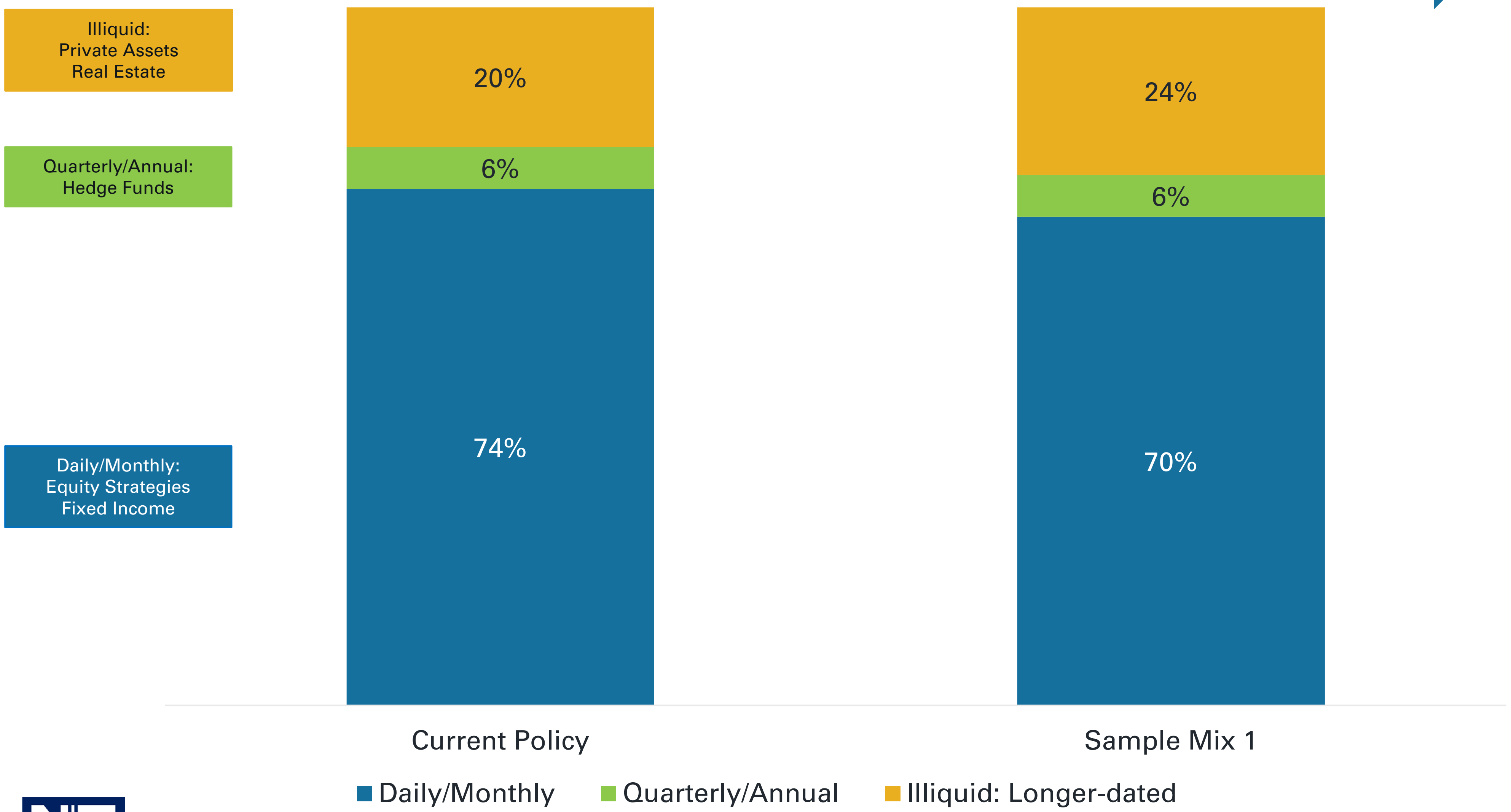
Fixed income is reduced overall in Mix 2, however, rebalanced to maintain higher quality and defensive characteristics.

Both mixes achieve long term return goals for the Plan. Mix 2 looks to add to real estate and private equity to help improve potential return expectations.

*Expected return is net of fee and beta only

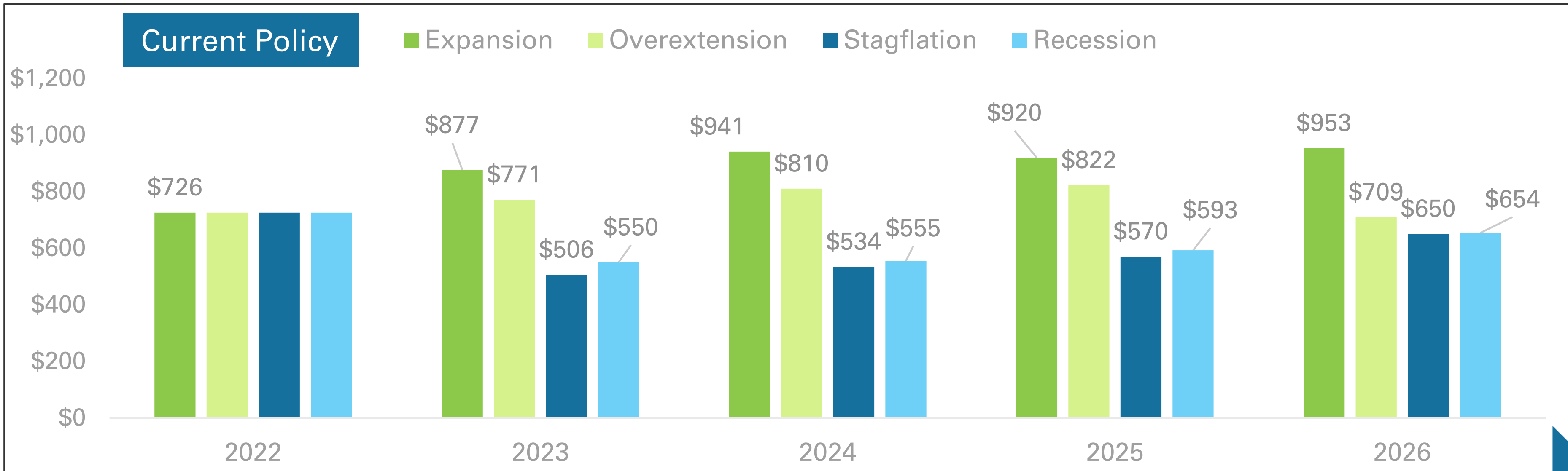
ASSET ALLOCATION LIQUIDITY OVERVIEW*

Each mix maintains a similar liquidity profile for the Plan. We will provide pacing analysis annually to help determine commitment to private assets and review liquidity profile.

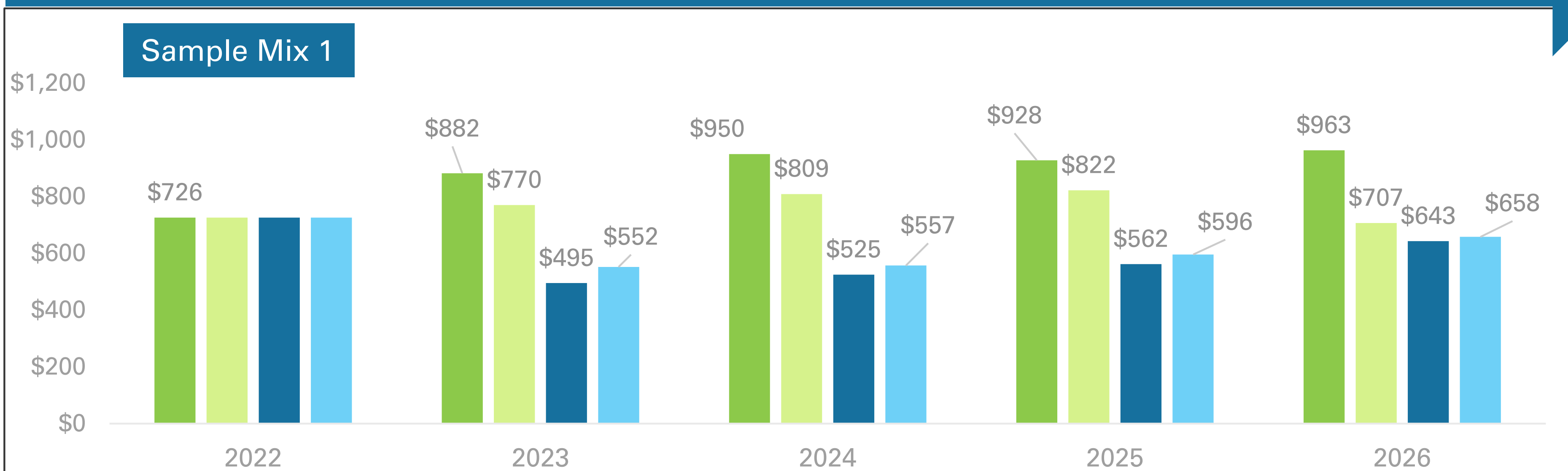


*Based on asset class liquidity, not individual fund liquidity terms.

SCENARIO ANALYSIS



Both mixes are well positioned in growth regimes, and have similar downside characteristics overall. Given the annual review of the asset allocation, its likely adjustments would be made along the way.



*Based on December 31 market value of the portfolio of $726 million.

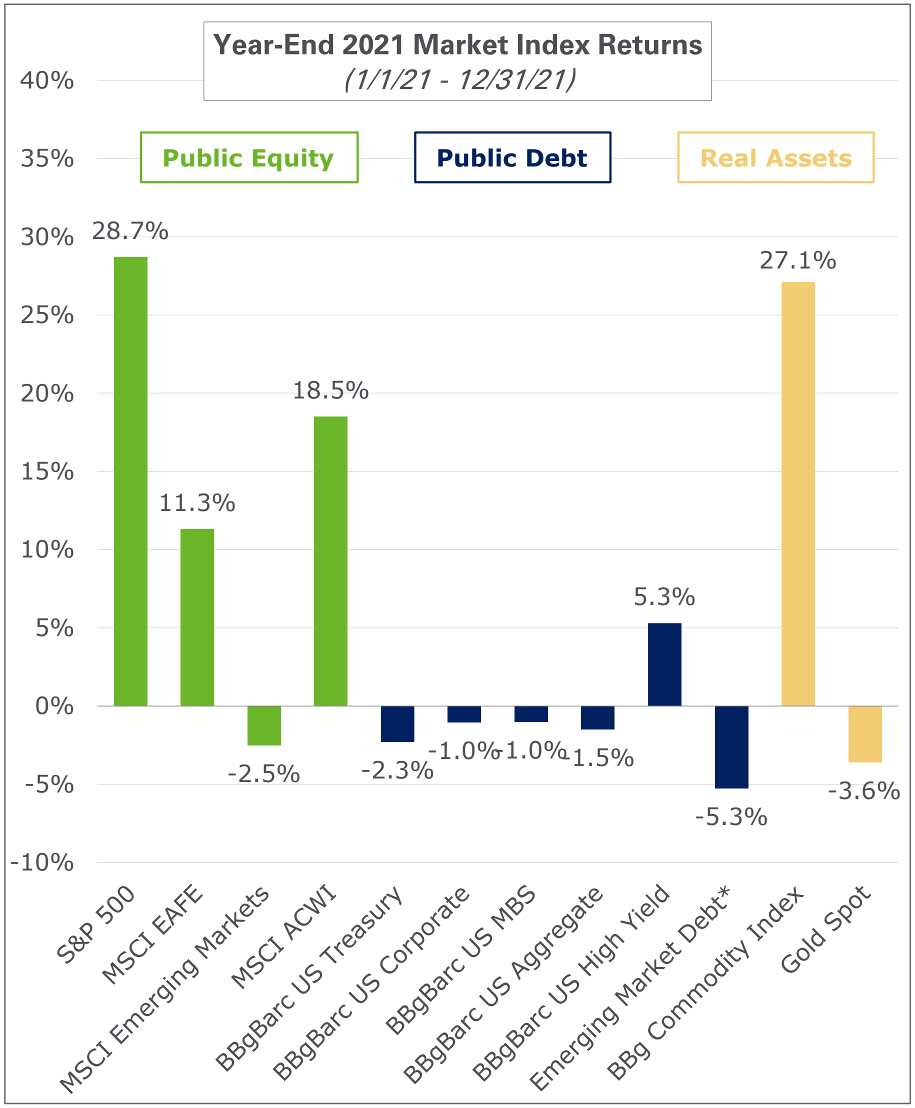
NEPC CURRENT OPPORTUNITIES

	RATIONALE	IMPLEMENTATION VIEW
Reduce Lower Quality Credit Exposure *Shift exposure equally to large-cap U.S. equity and safe-haven fixed income*	▪ Credit spreads, particularly in the lower-quality space, are near cyclical lows	**Return-Seeking Credit Portfolio Tilt:** Shift exposure to large-cap U.S. equity and Safe-Haven FI **Opportunity Cost:** Bloomberg U.S. High Yield
Reduce U.S. TIPS Exposure *Disperse TIPS proceeds to safe-haven fixed income and/or the portfolio*	▪ We are concerned TIPS will be negatively impacted relative to nominal Treasuries should real rates increase due to a surprise in the speed the Fed tightens monetary policy	**Safe-Haven Fixed Income Portfolio Tilt:** 75% U.S. Treasuries, 25% TIPS **Opportunity Cost:** 50% U.S. Treasuries, 50% TIPS
Add U.S. Large-Cap Value Exposure *Add large-cap value exposure to U.S. equity, while maintaining overall equity exposure*	▪ U.S. large-cap value exposure can help mitigate the portfolio impact relative to the S&P 500 of heightened inflation levels normalizing above market expectations and interest rates rising	**U.S. Large Cap Equity Portfolio Tilt:** 70% S&P 500, 30% Russell 1000 Value **Opportunity Cost:** S&P 500

CAPITAL MARKET OVERVIEW

2021 CAPITAL MARKETS UPDATE

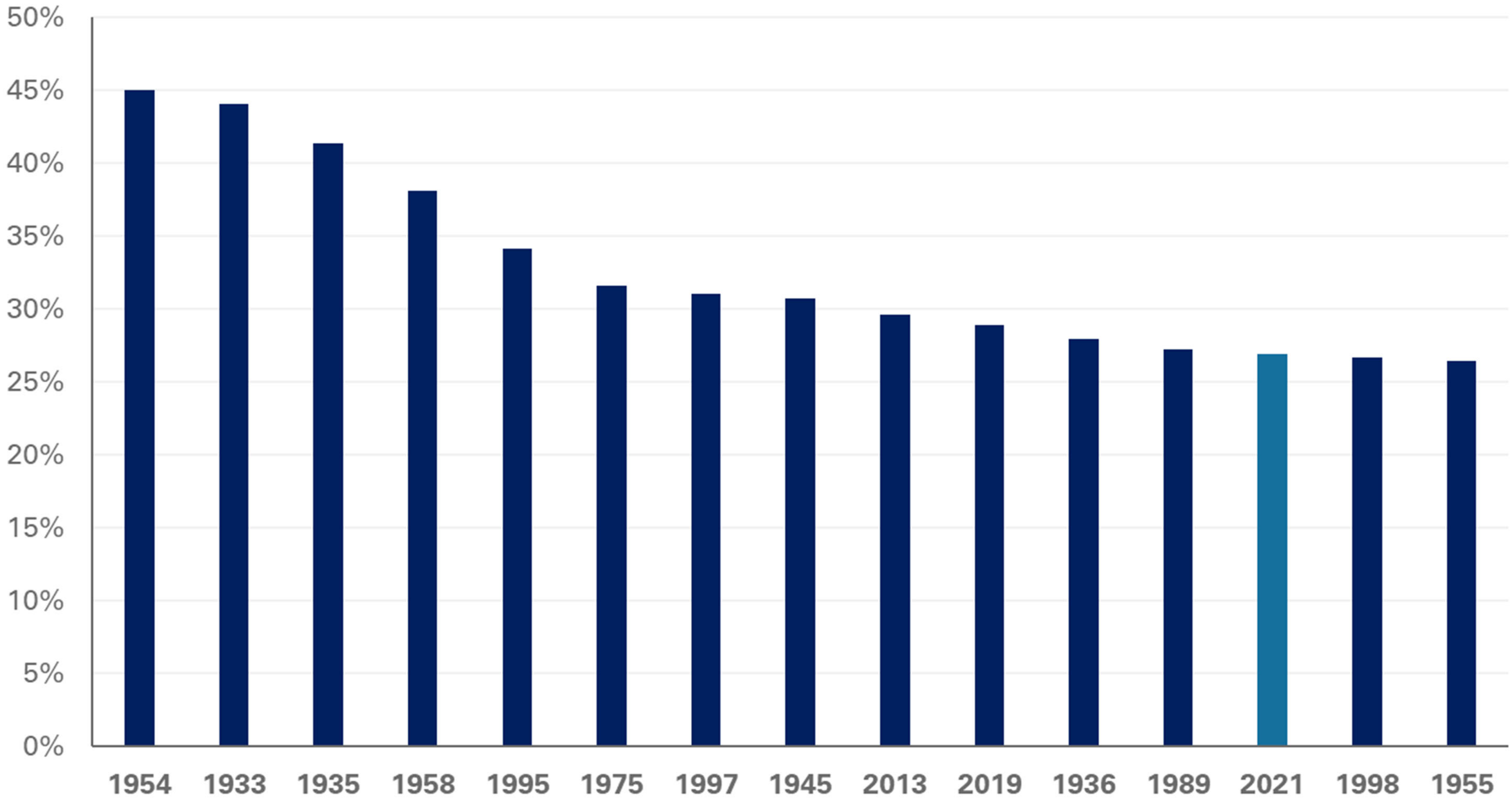
- **Global equities delivered a strong performance in 2021 despite headwinds from COVID-19**
  - Domestic stocks led the way for the year-end period, with the S&P 500 delivering a robust 28.7%
  - International developed-market equities returned 11.3%, while emerging markets returned -2.5%
- **U.S. Treasuries turned in a rare negative yield primarily due to Federal Reserve intervention over the course of the year**
  - The Federal Reserve announced plans to scale-down and eventually cease it's monthly bond-buying program by March 2022
  - Treasury spreads widened in the three months ended December 31, signifying a less-favorable appetite for risk-taking
- **With the exception of Gold, real assets finished the year with a strong performance**
  - Bloomberg Commodity Index returned 27.1%



*EMD benchmark is 50% JPM EMBI Global Diversified/50% JPM GBI-EM Global Diversified

2021 EQUITY RETURNS WERE HISTORICALLY HIGH

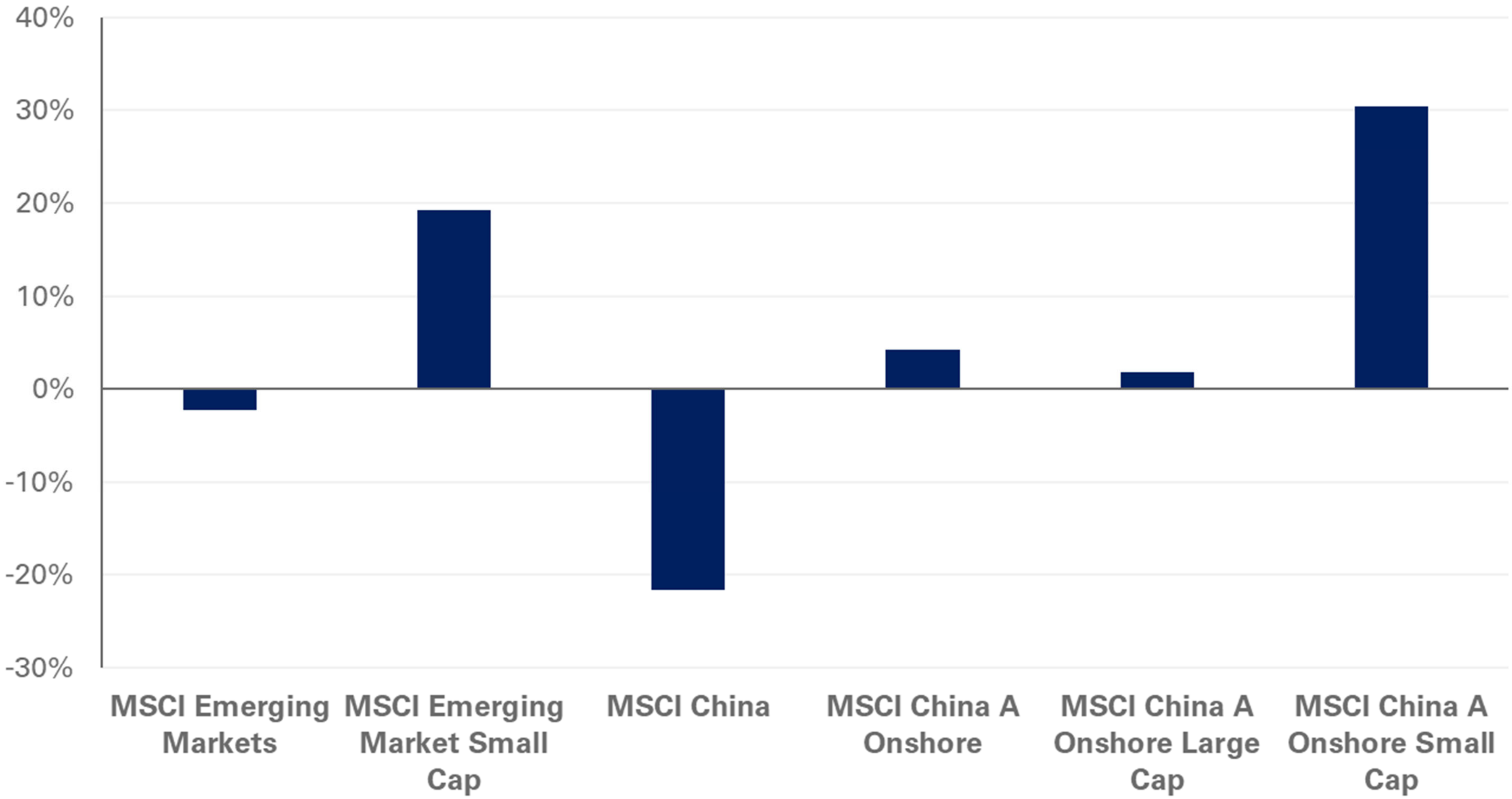
TOP 15 S&P 500 ANNUAL RETURNS



Source: S&P, FactSet

CHINA ONSHORE SMALL CAP OUTPERFORMED

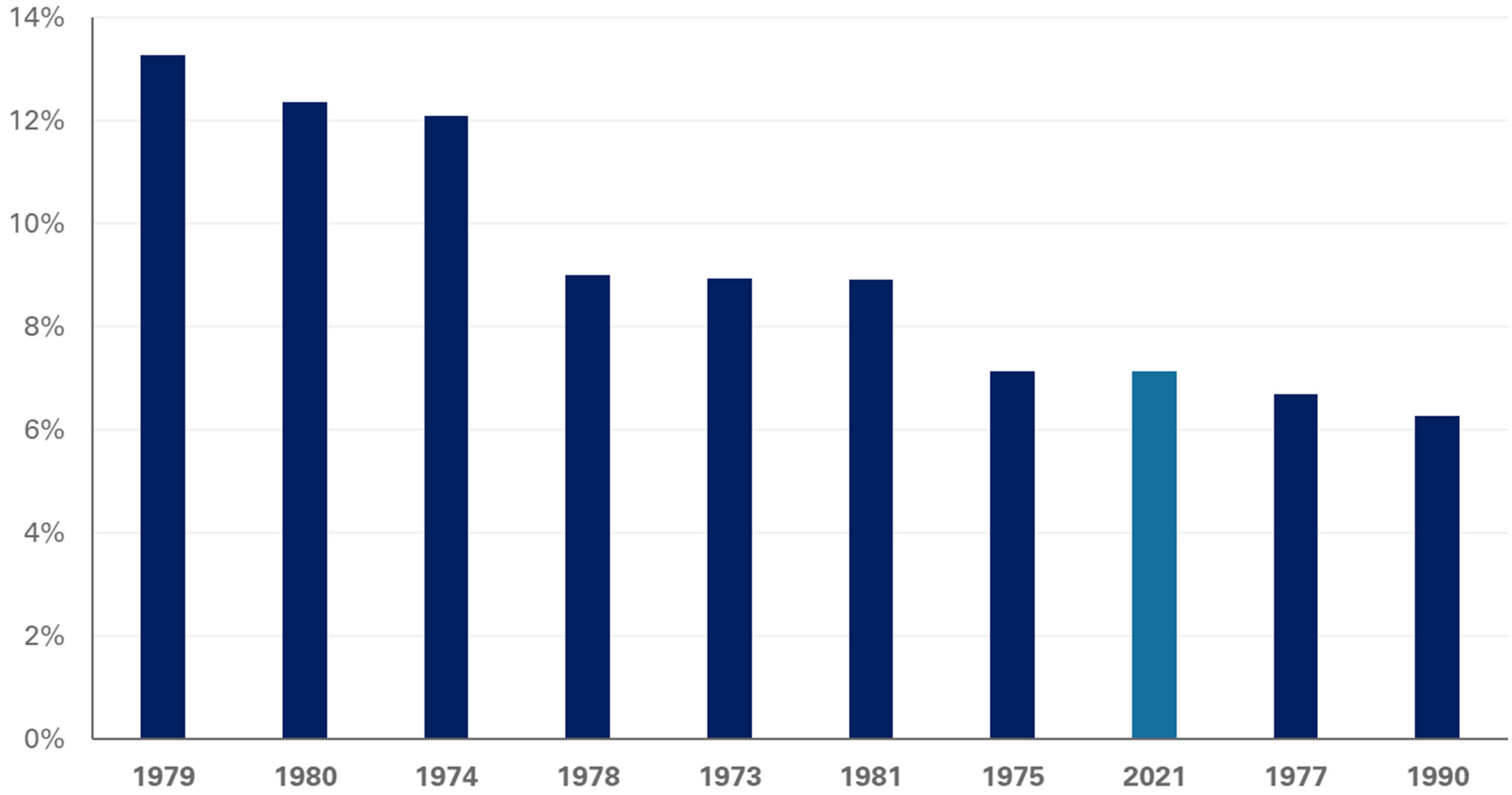
ANNUAL TOTAL RETURNS



Source: MSCI, FactSet

INFLATION ROSE AT HIGHEST LEVEL SINCE 1981

TOP 10 ANNUAL U.S. CPI-U CHANGES



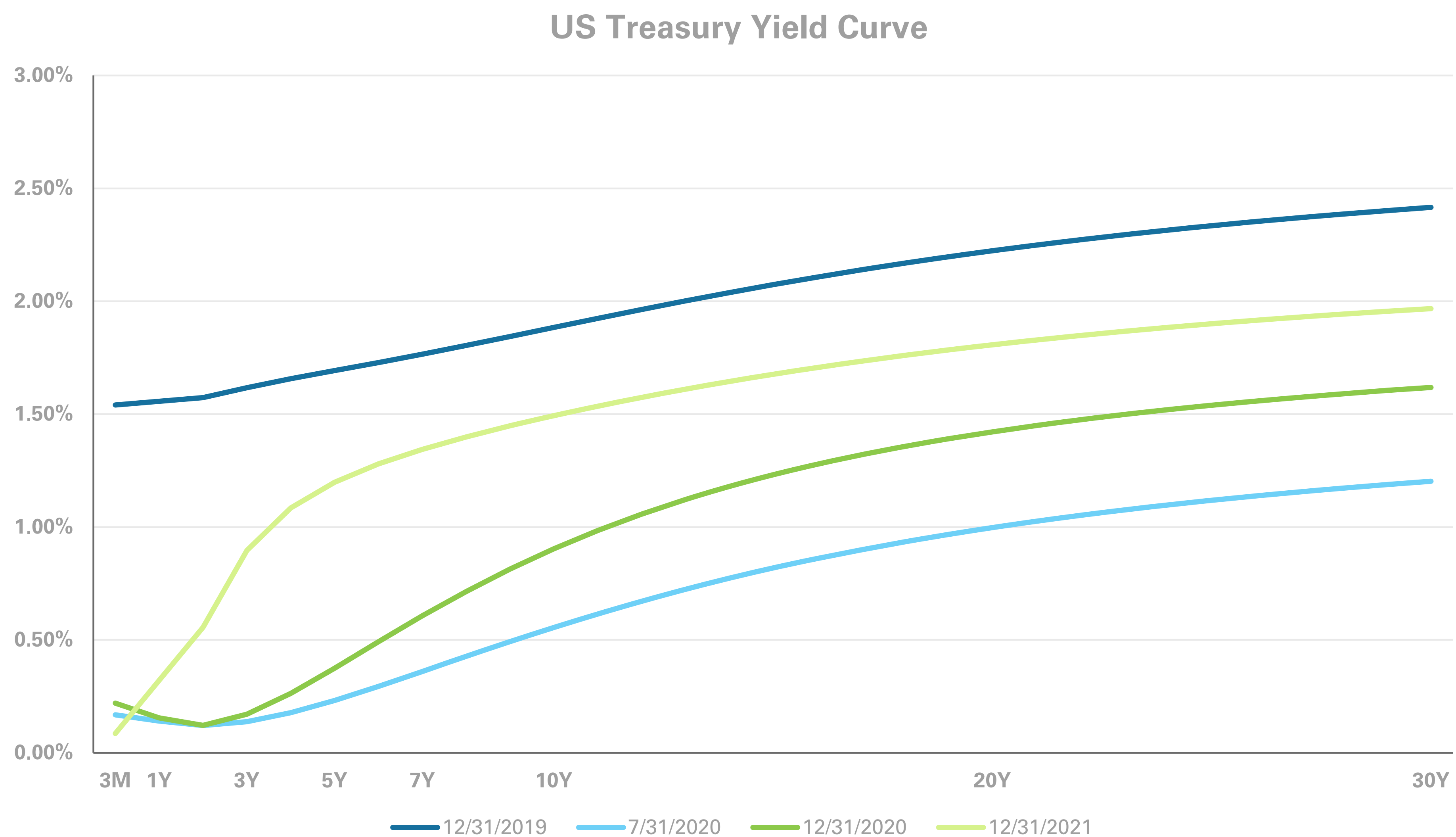
Source: Bureau of Labor Statistics, FactSet

RATE HIKE PROBABILITIES REMAIN ELEVATED

EURODOLLAR IMPLIED RATE HIKE PROBABILITY IN 2022

Source: FactSet

TREASURY CURVE



Source: FactSet, NEPC

TAPERING WILL SLOW BALANCE SHEET GROWTH

FEDERAL RESERVE TOTAL ASSETS

Source: Federal Reserve System, FactSet

THOUGHTS ON INFLATION

INVESTING IN A HIGHER INFLATION WORLD

OR EVEN A POTENTIALLY HIGHER INFLATION WORLD

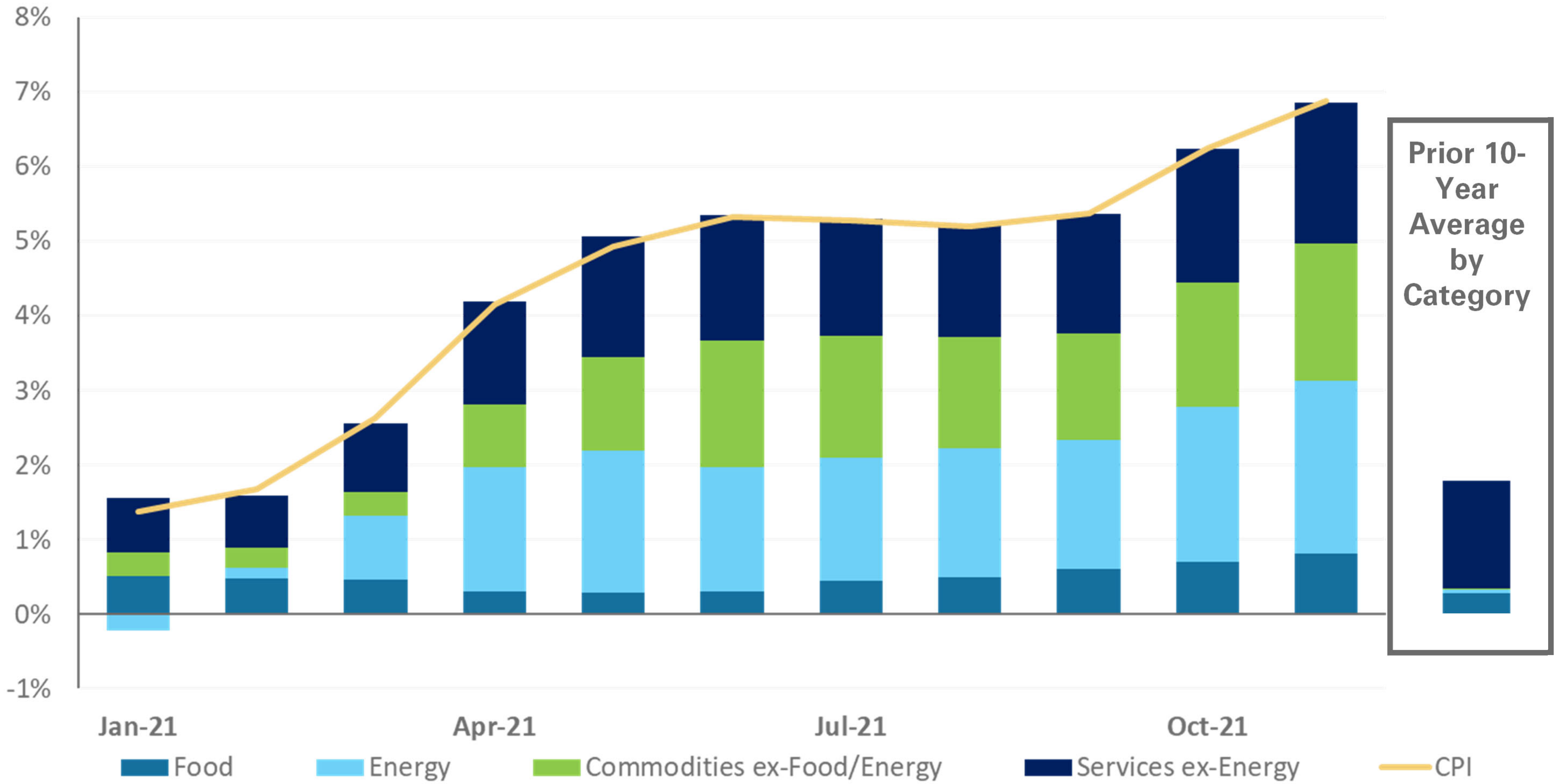
- **All assets have some sensitivity to inflation**
  - Elevated inflation is generally harmful to financial assets (stocks and bonds)
  - Real assets and assets with inflation-sensitive cashflows can have positive sensitivity to inflation

- **Assets with a positive inflation beta may provide protection, but often alter the risk-return profile of a portfolio**
  - Effectiveness of an asset's inflation sensitivity will vary depending on different economic and fundamental factors

- **The decision to incorporate inflation protection should be determined by an investor's risk tolerance and vulnerability to inflation surprises**
  - There is no "perfect" inflation exposure that is suitable for all investors

MOST CATEGORIES HAVE SEEN PRICE PRESSURES

2021 ANNUAL CPI-U BY CATEGORY



Notes: Prior 10-Year Average by Category does not include 2021

Sources: Bureau of Labor Statistics, FactSet

WHAT HAS CAUSED THE UPTICK IN INFLATION?

THE INFLATION NARRATIVE HAS EVOLVED THROUGHOUT 2021

Economic Reopening Theme

Supply Chain Disruptions

Energy

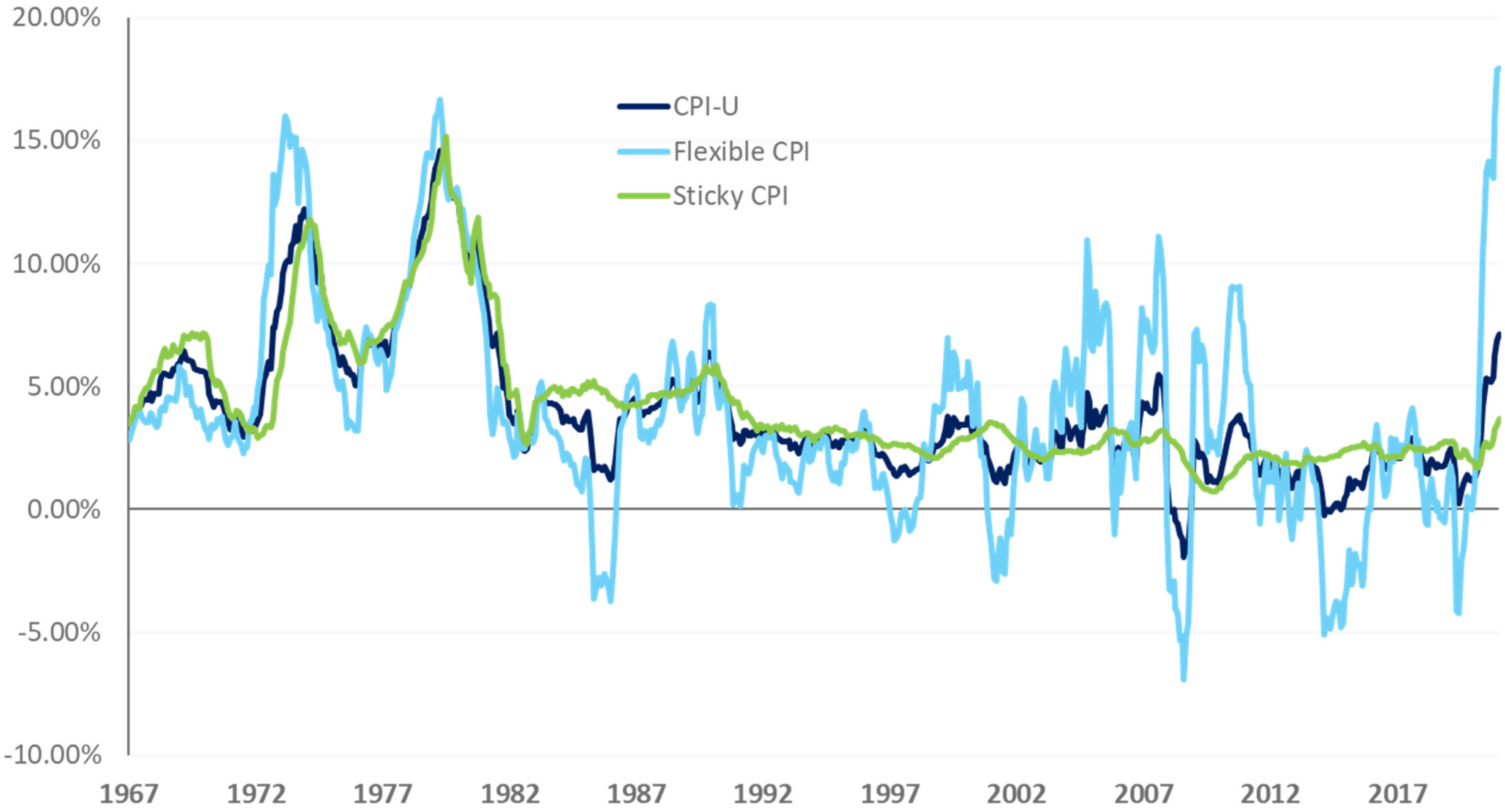
Shelter

Q1 2021	Q2 2021	Q3 2021	Q4 2021
"Supply and demand imbalances related to the pandemic and the reopening of the economy have continued to contribute to elevated levels of inflation." – February FOMC statement	"Inflation has risen, largely reflecting transitory factors." – April, June, and July FOMC statements	"Inflation is elevated, largely reflecting transitory factors." – September FOMC statement	"Inflation is elevated, largely reflecting factors that are expected to be transitory." – November FOMC statement "It's probably a good time to retire that word (transitory)…" – Jerome Powell, December

Source: Federal Reserve

STICKY AND FLEXIBLE CPI METRICS ARE ELEVATED

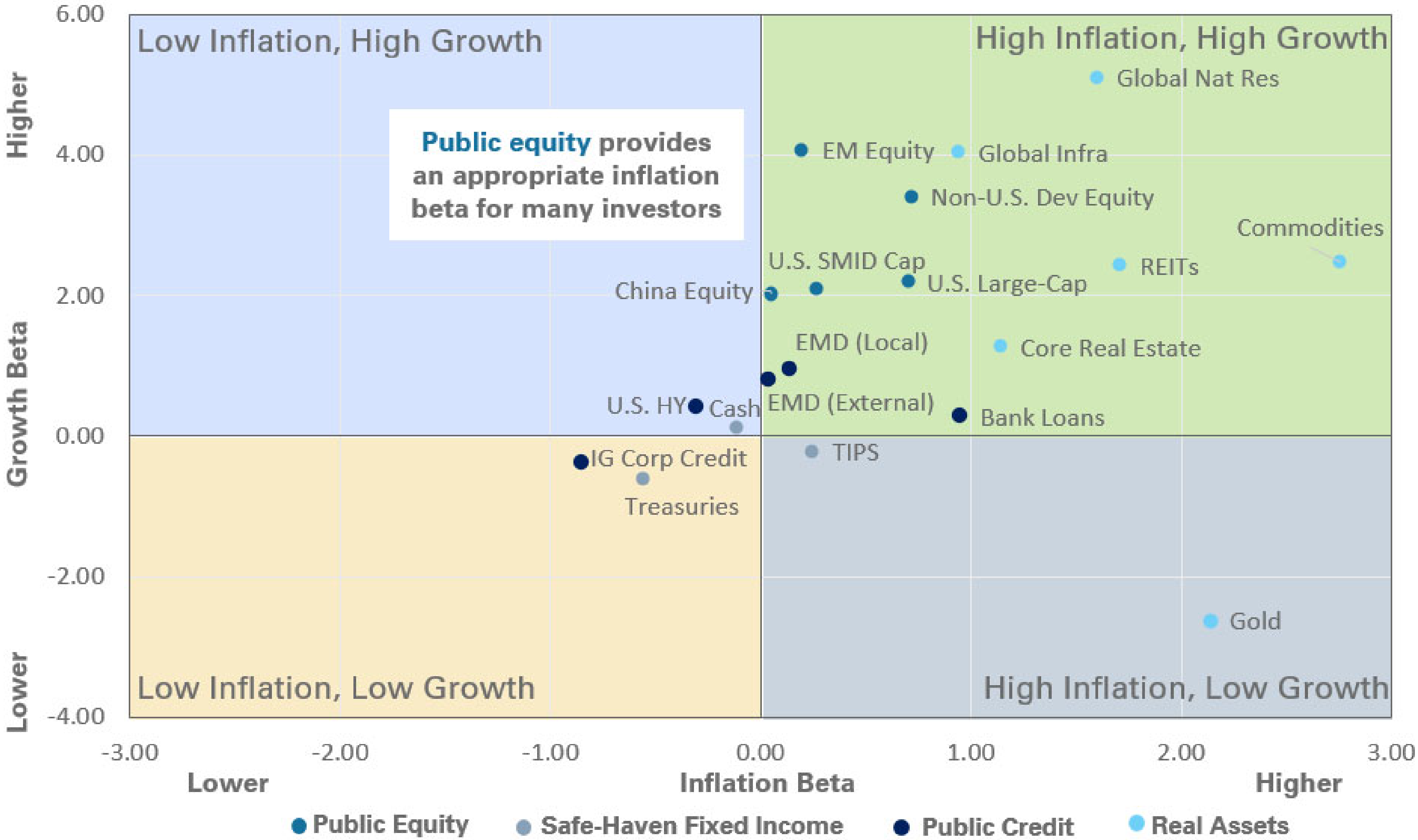
TRAILING 12-MONTH CPI METRICS



Notes: Flexible CPI represents a weighted basket of items that change price relatively frequently. Sticky CPI represents a weighted basket of items that change price relatively slowly. Data as of 11/30/2021.

Sources: Atlanta Fed, Bureau of Labor Statistics, FactSet

ASSET CLASS INFLATION & GROWTH SENSITIVITY



Notes: Growth and Inflation Beta calculations reflect sensitivity to trends in U.S. CPI-U and U.S. Real GDP growth since asset class inception date. EM and China Equity betas reflect sensitivity to a blend of 50% U.S. and 50% global metrics.

Sources: S&P, Russell, MSCI, Bloomberg, JPM, NAREIT, NCREIF, FactSet

INFLATION LIKELY TO STAY IN NEAR-TERM

- **Unprecedented stimulation and a reopening of the economy delivered the highest inflation levels in 30 years in 2021**
  - While some elements of increasing prices will likely normalize, economic strength will likely keep inflation higher in the near-term
  - An aggressive central bank response to inflation could limit the timeframe for inflation but also accelerate an economic slowdown
- **NEPC's expectation for inflation has increased over the near-term (1-5 years), but the long-term inflation view (year 10 inflation) is unchanged**
- **We expect the 5%+ inflation prints are transitory, but have an increased conviction that ~3% inflation could persist over the next 3 years**
  - Current market pricing and break-even inflation expectations do not reflect the potential for ~3% inflation and this can be a source of disruption for equities and real interest rates
- **Deflationary pressures will overwhelm inflationary pressures in the long-run; they have been overpowered by stimulation in the near-term**

APPENDIX

SCENARIO ANALYSIS: REGIME CHANGES

NEPC scenario analysis highlights the impact of shifting economic and market regimes on the portfolio and potential asset allocation mixes

- Risk asset returns are informed by credit returns which are based on changes in real rate, inflation, and credit spreads experienced across market regimes

Expansion

Informed by rising interest rates, moderately rising inflation, elevated positive real rates, spread tightening, and increasing growth

Stagflation

Informed by rising interest rates, rising inflation, depressed negative real rates, spread widening, and slowing growth

Overextension

Informed by rising interest rates, high inflation, negative real rates, spread tightening, and increasing growth

Recession

Informed by depressed interest rate levels, falling inflation, depressed positive real rates, spread widening and slowing growth

Depression

Informed by negative interest rates, deflation, severe credit defaults and downgrades, and negative growth

SCENARIO ANALYSIS: REGIME RETURNS

Expansion Scenario Return*

Cash: 1.0%
Treasuries: 0.0%
Long Treasuries: -2.5%
US TIPS: 1.0%
US IG Credit: 1.6%
High Yield Bonds: 2.5%
US Large-Cap Equity: 7.7%
Emerging Market Equity: 13.7%
Commodities: -0.8%

Depression Scenario Return*

Cash: -0.3%
Treasuries: 1.9%
Long Treasuries: 5.0%
US TIPS: -0.9%
US IG Credit: 2.6%
High Yield Bonds: -6.3%
US Large-Cap Equity: -10.2%
Emerging Market Equity: -22.5%
Commodities: -21.9%

Overextension Scenario Return*

Cash: 1.6%
Treasuries: 1.4%
Long Treasuries: 0.0%
US TIPS: 2.5%
US IG Credit: 0.7%
High Yield Bonds: 0.3%
US Large-Cap Equity: -1.2%
Emerging Market Equity: -1.7%
Commodities: 3.3%

Recession Scenario Return*

Cash: 0.0%
Treasuries: 0.9%
Long Treasuries: 1.9%
US TIPS: -1.1%
US IG Credit: 2.4%
High Yield Bonds: 0.5%
US Large-Cap Equity: -2.7%
Emerging Market Equity: -6.2%
Commodities: -10.3%

Stagflation Scenario Return*

Cash: 2.2%
Treasuries: -1.1%
Long Treasuries: -5.8%
US TIPS: 2.0%
US IG Credit: -1.4%
High Yield Bonds: 0.1%
US Large-Cap Equity: -4.9%
Emerging Market Equity: -12.3%
Commodities: 0.4%

Scenario returns are a 5 year annualized returns

INFLATION ASSUMPTIONS

OVERVIEW

- **Inflation is a key building block to develop asset class assumptions**
- **Inflation assumptions are model-driven and informed by multiple inputs for both the U.S. and global assets**
  - Includes forecasts from international organizations (e.g. IMF), local consumer and producer price indices, global interest rate curves, and break-even inflation expectations
- **NEPC's U.S. expectations reflect stickier inflation over the near-term, but more muted inflation pressures over the long-term**
  - We anticipate continued volatility among inflation measures as market-based inflation expectations diverge from current consumer inflation metrics

Region	10-Year Inflation Assumption	30-Year Inflation Assumption
United States	2.4%	2.6%

NEPC

10-YEAR RETURN FORECASTS

EQUITY

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
U.S. Large-Cap Equity	4.3%	5.4%	-1.1%
U.S. Small/Mid-Cap Equity	5.6%	5.7%	-0.1%
Non-U.S. Developed Equity	5.2%	5.9%	-0.7%
Non-U.S. Developed Equity (USD Hedge)	5.4%	6.1%	-0.7%
Non-U.S. Developed Small-Cap Equity	5.9%	6.1%	-0.2%
Emerging Market Equity	8.3%	7.5%	+0.8%
Emerging Market Small-Cap Equity	7.6%	8.1%	-0.5%
Hedge Fund - Equity	4.1%	4.0%	+0.1%
Private Equity - Buyout	7.3%	7.6%	-0.3%
Private Equity - Growth	8.6%	8.9%	-0.3%
Private Equity - Early Stage Venture	10.0%	10.4%	-0.4%
Private Equity - Secondary	6.8%	7.1%	-0.3%
Non-U.S. Private Equity	10.3%	10.7%	-0.4%
China Equity	8.8%	7.0%	+1.8%
U.S. Microcap Equity	6.5%	6.6%	-0.1%
Global Equity*	5.4%	6.2%	-0.8%
Private Equity*	9.0%	9.3%	-0.3%

*Calculated as a blend of other asset classes

10-YEAR RETURN FORECASTS

SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
Cash	1.5%	0.8%	+0.7%
U.S. TIPS	1.4%	1.0%	+0.4%
U.S. Treasury Bond	1.5%	0.9%	+0.6%
U.S. Corporate Bond	2.8%	2.2%	+0.6%
U.S. Corporate Bond - AAA	2.2%	1.5%	+0.7%
U.S. Corporate Bond - AA	2.2%	1.6%	+0.6%
U.S. Corporate Bond - A	2.6%	1.9%	+0.7%
U.S. Corporate Bond - BBB	3.1%	2.5%	+0.6%
U.S. Mortgage-Backed Securities	1.8%	1.2%	+0.6%
U.S. Securitized Bond	2.3%	1.8%	+0.5%
U.S. Collateralized Loan Obligation	3.1%	2.3%	+0.8%
U.S. Municipal Bond	1.6%	2.0%	-0.4%
U.S. Municipal Bond (1-10 Year)	1.2%	1.1%	+0.1%
U.S. Taxable Municipal Bond	2.7%	2.5%	+0.2%

10-YEAR RETURN FORECASTS

SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
Non-US Government Bond	1.1%	0.6%	+0.5%
Non-US Government Bond (USD Hedge)	1.3%	0.8%	+0.5%
Non-US Inflation-Linked Bond (USD Hedge)	0.7%	0.1%	+0.6%
U.S. Short-Term TIPS (1-3 Year)	1.2%	1.1%	+0.1%
U.S. Short-Term Treasury Bond (1-3 Year)	1.4%	1.0%	+0.4%
U.S. Short-Term Corporate Bond (1-3 Year)	2.3%	1.8%	+0.5%
U.S. Intermediate-Term TIPS (3-10 Year)	1.5%	1.0%	+0.5%
U.S. Intermediate-Term Treasury Bond (3-10 Year)	1.6%	0.9%	+0.7%
U.S. Intermediate-Term Corporate Bond (3-10 Year)	3.0%	2.3%	+0.7%
U.S. Long-Term Treasury Bond (10-30 Year)	1.4%	0.7%	+0.7%
U.S. Long-Term TIPS (10-30 Year)	1.3%	1.0%	+0.3%
U.S. Long-Term Corporate Bond (10-30 Year)	2.8%	2.3%	+0.5%
20+ Year U.S. Treasury STRIPS	1.0%	0.4%	+0.6%
10 Year U.S. Treasury Bond	1.8%	0.9%	+0.9%
10 Year Non-U.S. Government Bond (USD Hedge)	0.3%	-0.1%	+0.4%
U.S. Aggregate Bond*	2.0%	1.4%	+0.6%

*Calculated as a blend of other asset classes

10-YEAR RETURN FORECASTS

RETURN-SEEKING CREDIT

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
U.S. High Yield Corporate Bond	3.2%	2.9%	+0.3%
U.S. Corporate Bond - BB	4.0%	3.9%	+0.1%
U.S. Corporate Bond - B	3.6%	3.0%	+0.6%
U.S. Corporate Bond - CCC/Below	-3.8%	-3.4%	-0.4%
U.S. Short-Term High Yield Corp Bond (1-3 Year)	2.3%	2.5%	-0.2%
U.S. Leveraged Loan	4.7%	3.9%	+0.8%
Emerging Market External Debt	4.1%	3.0%	+1.1%
Emerging Market Local Currency Debt	5.7%	5.0%	+0.7%
U.S. High Yield Securitized Bond	3.4%	2.3%	+1.1%
U.S. High Yield Collateralized Loan Obligation	5.5%	4.6%	+0.9%
U.S. High Yield Municipal Bond	2.1%	2.8%	-0.7%
Hedge Fund - Credit	4.2%	3.9%	+0.3%
Private Debt - Credit Opportunities	6.5%	6.2%	+0.3%
Private Debt - Distressed	7.2%	7.2%	-
Private Debt - Direct Lending	6.2%	5.4%	+0.8%
Private Debt*	6.6%	6.1%	+0.5%

*Calculated as a blend of other asset classes

10-YEAR RETURN FORECASTS
REAL ASSETS

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
Commodity Futures	0.4%	0.9%	-0.5%
Midstream Energy	6.7%	7.4%	-0.7%
U.S. REIT	4.5%	5.5%	-1.0%
Global Infrastructure Equity	5.6%	5.9%	-0.3%
Global Natural Resources Equity	5.5%	6.7%	-1.2%
Gold	3.3%	2.9%	+0.4%
Real Estate - Core	4.7%	4.4%	+0.3%
Real Estate - Non-Core	5.9%	5.5%	+0.4%
Private Debt - Real Estate	4.6%	4.1%	+0.5%
Private Real Assets - Natural Resources	7.1%	8.0%	-0.9%
Private Real Assets - Infrastructure	5.3%	5.4%	-0.1%

30-YEAR RETURN FORECASTS
EQUITY

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
U.S. Large-Cap Equity	6.1%	6.3%	-0.2%
U.S. Small/Mid-Cap Equity	6.6%	6.6%	-
Non-U.S. Developed Equity	6.2%	6.5%	-0.3%
Non-U.S. Developed Equity (USD Hedge)	6.4%	6.7%	-0.3%
Non-U.S. Developed Small-Cap Equity	6.8%	6.8%	-
Emerging Market Equity	8.7%	8.4%	+0.3%
Emerging Market Small-Cap Equity	8.7%	8.6%	+0.1%
Hedge Fund - Equity	5.2%	5.0%	+0.2%
Private Equity - Buyout	8.5%	8.5%	-
Private Equity - Growth	9.7%	9.8%	-0.1%
Private Equity - Early Stage Venture	10.7%	10.7%	-
Private Equity - Secondary	7.9%	8.0%	-0.1%
Non-U.S. Private Equity	10.7%	10.7%	-
China Equity	8.8%	7.8%	+1.0%
U.S. Microcap Equity	7.5%	7.4%	+0.1%
Global Equity*	6.8%	7.0%	-0.2%
Private Equity*	10.0%	10.1%	-0.1%

*Calculated as a blend of other asset classes

30-YEAR RETURN FORECASTS

SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
Cash	2.3%	1.9%	+0.4%
U.S. TIPS	2.6%	2.1%	+0.5%
U.S. Treasury Bond	2.5%	2.0%	+0.5%
U.S. Corporate Bond	4.2%	3.7%	+0.5%
U.S. Corporate Bond - AAA	3.3%	2.8%	+0.5%
U.S. Corporate Bond - AA	3.4%	2.9%	+0.5%
U.S. Corporate Bond - A	3.8%	3.3%	+0.5%
U.S. Corporate Bond - BBB	4.4%	3.9%	+0.5%
U.S. Mortgage-Backed Securities	2.8%	2.3%	+0.5%
U.S. Securitized Bond	3.6%	3.1%	+0.5%
U.S. Collateralized Loan Obligation	4.0%	3.3%	+0.7%
U.S. Municipal Bond	2.5%	2.3%	+0.2%
U.S. Municipal Bond (1-10 Year)	2.3%	1.9%	+0.4%
U.S. Taxable Municipal Bond	4.3%	3.9%	+0.4%

30-YEAR RETURN FORECASTS

SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	12/31/2021	12/31/2020	Delta
Non-US Government Bond	1.9%	1.7%	+0.2%
Non-US Government Bond (USD Hedge)	2.2%	1.9%	+0.3%
Non-US Inflation-Linked Bond (USD Hedge)	1.4%	1.1%	+0.3%
U.S. Short-Term TIPS (1-3 Year)	2.4%	2.0%	+0.4%
U.S. Short-Term Treasury Bond (1-3 Year)	2.4%	2.0%	+0.4%
U.S. Short-Term Corporate Bond (1-3 Year)	3.4%	3.7%	-0.3%
U.S. Intermediate-Term TIPS (3-10 Year)	2.8%	2.1%	+0.7%
U.S. Intermediate-Term Treasury Bond (3-10 Year)	2.7%	2.1%	+0.6%
U.S. Intermediate-Term Corporate Bond (3-10 Year)	4.4%	3.8%	+0.6%
U.S. Long-Term Treasury Bond (10-30 Year)	2.4%	1.9%	+0.5%
U.S. Long-Term TIPS (10-30 Year)	2.3%	2.0%	+0.3%
U.S. Long-Term Corporate Bond (10-30 Year)	4.2%	3.8%	+0.4%
20+ Year U.S. Treasury STRIPS	2.1%	1.7%	+0.4%
10 Year U.S. Treasury Bond	3.0%	2.3%	+0.7%
10 Year Non-U.S. Government Bond (USD Hedge)	1.4%	1.1%	+0.3%
U.S. Aggregate Bond*	3.1%	2.7%	+0.4%

*Calculated as a blend of other asset classes

30-YEAR RETURN FORECASTS

RETURN-SEEKING CREDIT

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
U.S. High Yield Corporate Bond	5.4%	5.0%	+0.4%
U.S. Corporate Bond - BB	6.0%	5.6%	+0.4%
U.S. Corporate Bond - B	5.4%	4.9%	+0.5%
U.S. Corporate Bond - CCC/Below	-0.6%	-0.8%	+0.2%
U.S. Short-Term High Yield Corp Bond (1-3 Year)	3.7%	3.5%	+0.2%
U.S. Leveraged Loan	5.6%	4.8%	+0.8%
Emerging Market External Debt	5.1%	4.5%	+0.6%
Emerging Market Local Currency Debt	5.3%	5.1%	+0.2%
U.S. High Yield Securitized Bond	5.4%	4.5%	+0.9%
U.S. High Yield Collateralized Loan Obligation	6.4%	5.7%	+0.7%
U.S. High Yield Municipal Bond	3.9%	3.9%	-
Hedge Fund - Credit	5.7%	5.3%	+0.4%
Private Debt - Credit Opportunities	7.4%	7.0%	+0.4%
Private Debt - Distressed	8.2%	7.8%	+0.4%
Private Debt - Direct Lending	7.8%	7.4%	+0.4%
Private Debt*	7.9%	7.5%	+0.4%

*Calculated as a blend of other asset classes

30-YEAR RETURN FORECASTS

REAL ASSETS

Geometric Expected Return			
Asset Class	**12/31/2021**	**12/31/2020**	**Delta**
Commodity Futures	3.3%	3.3%	-
Midstream Energy	6.7%	7.3%	-0.6%
U.S. REIT	6.3%	6.7%	-0.4%
Global Infrastructure Equity	6.3%	6.6%	-0.3%
Global Natural Resources Equity	6.7%	7.0%	-0.3%
Gold	4.0%	3.7%	+0.3%
Real Estate - Core	5.6%	5.6%	-
Real Estate - Non-Core	6.9%	7.0%	-0.1%
Private Debt - Real Estate	5.4%	5.2%	+0.2%
Private Real Assets - Natural Resources	8.2%	8.5%	-0.3%
Private Real Assets - Infrastructure	6.6%	6.6%	-

INFORMATION DISCLAIMER

Past performance is no guarantee of future results.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

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MONTHLY PERFORMANCE REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM

JANUARY 31, 2022

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

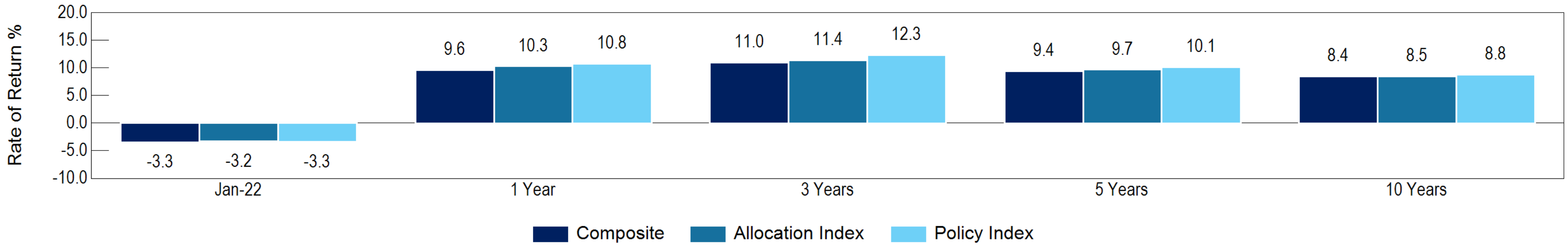
The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **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).

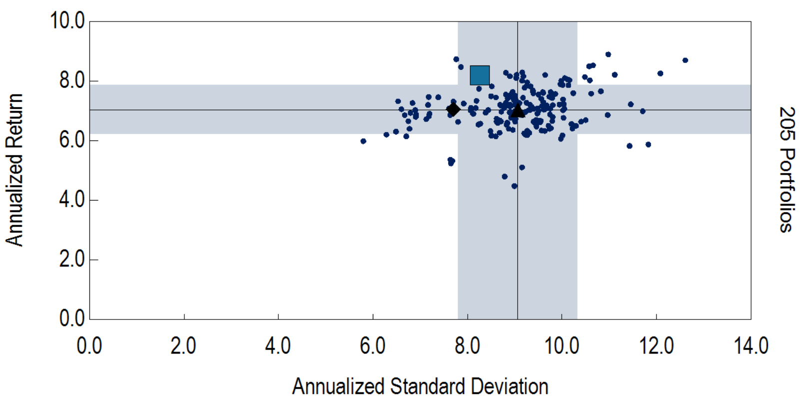
MWRA Employees' Retirement System

EXECUTIVE SUMMARY

Net Return Summary
Ending January 31, 2022



20 Years Ending December 31, 2021



Statistics Summary	Anlzd Ret	Anlzd Std Dev	Rank
Composite	8.2%	8.3%	12
Allocation Index	7.1%	7.7%	81
Policy Index	7.4%	8.3%	53
InvMetrics Public DB Gross Median	7.5%	9.1%	--

Performance

- The Composite had a preliminary return of -3.3% (net) for the month, underperforming the Allocation Index (-3.2%) and matching the Policy Index (-3.3%).
- Global equities sold-off in January as the Federal Reserve assumed a more hawkish stance as persistent inflation pressures pushed yields higher. In the U.S., the S&P 500 Index recorded its worst January since 2009, losing 5.2%. Non-U.S. equities were also down with the MSCI EAFE and MSCI Emerging Markets indexes shedding 4.8% and 1.9%, respectively. The portfolio's Domestic Equity composite returned -6.3% (net) while the Non-US Equity composite was fell -4.4% (net) for the month.
- In fixed income, the U.S. Treasury curve flattened with 10-year yields rising 27 basis points, while two-year Treasury yields increased 44 basis points to 1.16%. The Fixed Income composite fell -1.8% (net) for the month while both the Bloomberg Agg and Bloomberg US HY fell -2.2% and -2.7% respectively.
- This brings the total plan return for the trailing one-year period to 9.6% (net), while the Allocation and Policy Index returned 10.3% (net) and 10.8% (net) respectively.

20 years Risk/Return is as of 12/31/2021. Chart reflects universe data on quarter end months only.
Returns for 20 years Risk/Return and Statistics Summary are gross of fees.
Since inception return is 8.8% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.

MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	**700,176,721**	**100.0**	**100.0**	**-3.3**	**9.6**	**11.0**	**9.4**	**8.4**	**7.1**	**Jan-86**
Allocation Index				*-3.2*	*10.3*	*11.4*	*9.7*	*8.5*	*--*	*Jan-86*
Policy Index				*-3.3*	*10.8*	*12.3*	*10.1*	*8.8*	*--*	*Jan-86*
Total Balanced	**5,489,034**	**0.8**	**0.0**	**0.0**	**20.0**	**12.3**	**9.0**	**6.5**	**6.0**	**Dec-10**
PRIT Core Fund	5,489,034	0.8		0.0	20.0	14.5	12.0	10.1	7.6	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				*-4.0*	*12.3*	*14.0*	*11.4*	*10.4*	*6.7*	*Apr-99*
Total Domestic Equity	**224,557,447**	**32.1**	**31.0**	**-6.2**	**16.9**	**18.6**	**15.9**	**14.3**	**8.2**	**May-99**
Russell 3000				*-5.9*	*18.8*	*19.9*	*16.1*	*15.0*	*7.8*	*May-99*
Large Cap	**176,656,588**	**25.2**	**24.0**	**-5.7**	**19.7**	**20.1**	**17.3**	**15.0**	**14.5**	**Dec-10**
Rhumbline Advisors S&P 500 Index Fund	72,234,162	10.3	10.0	-5.2	23.2	20.6	16.7	15.3	9.5	Apr-97
S&P 500				*-5.2*	*23.3*	*20.7*	*16.8*	*15.4*	*9.5*	*Apr-97*
Coho Relative Value Equity	54,119,068	7.7	7.0	-3.1	18.9	14.4	12.5	--	12.6	Mar-16
Russell 1000 Value				*-2.3*	*23.4*	*13.8*	*10.5*	*12.3*	*12.9*	*Mar-16*
Polen Focused Growth	50,303,359	7.2	7.0	-9.1	15.3	24.5	22.8	--	20.0	Feb-16
Russell 1000 Growth				*-8.6*	*17.5*	*26.4*	*22.3*	*18.0*	*21.4*	*Feb-16*
Small Cap	**47,900,859**	**6.8**	**7.0**	**-8.1**	**7.3**	**14.2**	**12.3**	**12.5**	**12.6**	**Dec-10**
Boston Partners Small Cap Value	25,184,488	3.6	3.5	-3.0	20.5	13.2	8.4	10.8	10.7	Feb-97
Russell 2000 Value				*-5.8*	*14.8*	*11.7*	*7.9*	*10.6*	*9.3*	*Feb-97*
Loomis Sayles Small Cap Growth	22,716,370	3.2	3.5	-13.1	-5.5	14.4	15.6	13.9	7.2	Jan-97
Russell 2000 Growth				*-13.4*	*-15.0*	*11.4*	*10.9*	*11.7*	*7.3*	*Jan-97*
Total Non-US Equity	**131,017,289**	**18.7**	**19.0**	**-4.4**	**-2.2**	**8.4**	**8.1**	**5.9**	**4.7**	**Mar-99**
International Equity	**89,230,247**	**12.7**	**12.0**	**-4.0**	**-0.4**	**10.5**	**9.3**	**7.0**	**4.5**	**Sep-05**
SEG Baxter Street	36,180,242	5.2	5.0	0.0	5.5	12.4	11.6	--	11.0	May-16
MSCI ACWI ex USA				*-3.7*	*3.6*	*9.1*	*8.0*	*6.2*	*8.0*	*May-16*
Schroder International Alpha Trust Class 1	36,061,892	5.2	4.0	-4.3	6.3	15.0	11.9	--	8.2	Mar-12
MSCI ACWI ex USA				*-3.7*	*3.6*	*9.1*	*8.0*	*6.2*	*5.6*	*Mar-12*
Baillie Gifford International Growth Fund Class K	16,988,113	2.4	3.0	-11.2	-21.8	--	--	--	-2.1	Oct-20
MSCI ACWI ex USA				*-3.7*	*3.6*	*9.1*	*8.0*	*6.2*	*15.7*	*Oct-20*

Since inception return is 8.7% 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 investment vehicle is linked to mutual fun performance history.
SEG Baxter Street is preliminary as of 01/31/2022, and is subject to change once finalized.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Equity	**41,787,042**	**6.0**	**7.0**	**-5.1**	**--**	**--**	**--**	**--**	**-11.1**	**Mar-21**
Axiom Emerging Markets Trust Class 2	20,402,029	2.9	7.0	-5.8	--	--	--	--	-12.2	Mar-21
MSCI Emerging Markets				*-1.9*	*-7.2*	*7.2*	*8.3*	*4.2*	*-7.9*	*Mar-21*
ABS Emerging Markets MA Fund	21,385,013	3.1		-4.4	--	--	--	--	-2.4	Dec-21
MSCI Emerging Markets				*-1.9*	*-7.2*	*7.2*	*8.3*	*4.2*	*-0.1*	*Dec-21*
Total Fixed Income	**160,707,723**	**23.0**	**24.0**	**-1.8**	**-1.0**	**5.2**	**4.1**	**4.3**	**6.3**	**Mar-99**
Garcia Hamilton Fixed Income Aggregate	38,305,218	5.5	6.0	-1.4	-2.9	3.2	--	--	3.2	Apr-18
Bloomberg US Aggregate TR				*-2.2*	*-3.0*	*3.7*	*3.1*	*2.6*	*3.5*	*Apr-18*
Lord Abbett Core Fixed Income	37,698,146	5.4	4.0	-1.8	-2.2	4.2	--	--	3.9	Apr-18
Bloomberg US Aggregate TR				*-2.2*	*-3.0*	*3.7*	*3.1*	*2.6*	*3.5*	*Apr-18*
Rhumbline TIPS	15,024,110	2.1	4.0	-2.0	3.4	7.2	4.7	--	4.3	Jun-16
Bloomberg US TIPS TR				*-2.0*	*3.5*	*7.2*	*4.7*	*2.6*	*4.4*	*Jun-16*
Loomis Sayles Multisector Full Discretion Trust	55,399,803	7.9	8.0	-2.5	-1.6	6.4	5.1	5.3	7.5	Mar-99
Bloomberg US Aggregate TR				*-2.2*	*-3.0*	*3.7*	*3.1*	*2.6*	*4.5*	*Mar-99*
Bloomberg US High Yield TR				*-2.7*	*2.1*	*6.3*	*5.4*	*6.2*	*6.7*	*Mar-99*
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	14,225,320	2.0	2.0	0.0	3.1	--	--	--	4.0	Aug-19
Credit Suisse Leveraged Loan				*0.4*	*4.5*	*4.8*	*4.3*	*4.7*	*4.1*	*Aug-19*
Invesco Mortgage Recovery Loans Feeder Fund	55,127	0.0		0.0	0.5	-1.4	1.9	6.4	10.8	Apr-10
Bloomberg US Aggregate TR				*-2.2*	*-3.0*	*3.7*	*3.1*	*2.6*	*3.3*	*Apr-10*
Total Hedge Fund	**42,900,944**	**6.1**	**6.0**	**-1.1**	**7.0**	**6.6**	**4.9**	**4.5**	**3.7**	**Oct-06**
PRIM Portfolio Completion Strategies	15,343,146	2.2		0.0	7.7	5.3	4.7	5.1	4.0	Oct-06
Corbin Pinehurst Partners	13,610,316	1.9		-3.3	6.4	8.5	--	--	8.0	Nov-18
HFRI Fund of Funds Composite Index				*-2.0*	*4.6*	*6.8*	*5.0*	*4.1*	*6.4*	*Nov-18*
UBS Neutral Alpha Strategies	13,203,017	1.9		0.0	7.2	7.4	--	--	6.6	Nov-18
HFRI Fund of Funds Composite Index				*-2.0*	*4.6*	*6.8*	*5.0*	*4.1*	*6.4*	*Nov-18*
Entrust Peru Wind Down	744,465	0.1		-0.1	-1.1	-2.7	--	--	-3.3	Dec-17
HFRI Fund of Funds Composite Index				*-2.0*	*4.6*	*6.8*	*5.0*	*4.1*	*4.7*	*Dec-17*
Other	**12,404,221**	**1.8**	**0.0**	**0.0**	**0.0**	**1.0**	**1.2**	**0.7**	**0.6**	**Dec-10**
Cash Account	12,404,221	1.8		0.0	0.0	1.0	1.2	0.7	1.7	Feb-00
91 Day T-Bills				*0.0*	*0.0*	*0.8*	*1.1*	*0.6*	*1.5*	*Feb-00*

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.
ABS Emerging Markets MA Fund, Corbin Pinehurst Partners and Entrust Peru Wind Down are preliminary as of 01/31/2022, and are subject to change once finalized.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	**58,878,460**	**8.4**	**10.0**	**0.0**	**23.4**	**10.4**	**9.8**	**11.4**	**8.3**	**Apr-99**
NCREIF Property Index				*0.0*	*17.7*	*8.4*	*7.8*	*9.3*	*8.8*	*Apr-99*
Morgan Stanley Prime Property ($2.8m commitment in '95)	24,477,755	3.5		0.0	21.5	9.3	8.9	11.1	8.8	Sep-95
TA Realty Core Property Fund, LP ($15m commitment in '19)	25,640,650	3.7		0.0	29.7	--	--	--	14.3	Jun-19
Invesco Mortgage Recovery II ($3M commitment in '15)	980,562	0.1		0.0	10.5	-16.4	-4.7	--	-1.2	Oct-15
Landmark VI ($2m commitment in '11)	93,801	0.0		0.0	14.5	-8.0	-4.9	3.6	4.2	Jul-11
Landmark VIII ($4m commitment in '17)	1,859,968	0.3		0.0	32.6	15.4	--	--	19.3	Nov-17
StepStone Real Estate Fund II ($2m commitment in '11)	184,188	0.0		0.0	4.4	-3.0	0.5	--	2.5	May-12
Cerberus Institutional Real Estate Partners III ($1.5m commitment in '12)	649,585	0.1		0.0	67.3	26.7	17.7	--	17.7	May-13
TA Realty Fund X LP ($3.5m commitment in '12)	31,062	0.0		0.0	3.1	4.3	7.6	--	8.1	May-13
TerraCap Partners III, LP ($2.6m commitment in '15)	1,600,833	0.2		0.0	2.5	2.8	5.3	--	9.4	Jul-15
TerraCap Partners IV, LP ($4m commitment in '17)	3,360,055	0.5		0.0	6.1	7.6	--	--	8.9	Nov-17
Total Private Equity	**64,221,603**	**9.2**	**10.0**	**0.0**	**38.0**	**18.6**	**16.6**	**15.2**	**10.6**	**Apr-99**
C|A US All PE				*0.0*	*31.6*	*22.0*	*18.7*	*15.8*	*13.5*	*Apr-99*
NASDAQ W/O Income				*-9.0*	*8.9*	*25.1*	*20.5*	*17.6*	*8.0*	*Apr-99*
PRIM Vintage Year 2008 ($3m commitment in '08)	828,654	0.1		0.0	37.4	17.1	20.6	20.2	10.5	Jun-08
PRIM Vintage Year 2009 ($1m commitment in '09)	141,500	0.0		0.0	80.2	51.9	38.7	28.5	16.6	Nov-09
PRIM Vintage Year 2010 ($1m commitment in '10)	884,847	0.1		0.0	130.2	43.0	36.3	26.0	17.2	Jun-10
PRIM Vintage Year 2011 ($1.5m commitment in '11)	1,085,533	0.2		0.0	108.4	35.8	31.6	22.0	11.3	May-11
PRIM Vintage Year 2012 ($1m commitment in '12)	818,674	0.1		0.0	44.5	28.9	25.9	--	-7.3	Jun-12
PRIM Vintage Year 2014 ($2m commitment in '14)	2,396,355	0.3		0.0	57.5	30.8	29.6	--	9.7	Jun-14
PRIM Vintage Year 2017 ($2m commitment in '17)	2,508,105	0.4		0.0	56.9	29.1	--	--	18.6	May-17
PRIM Vintage Year 2020 ($5m commitment in '20)	2,685,981	0.4		0.0	36.2	--	--	--	22.5	Mar-20
PRIM Vintage Year 2021 ($5m commitment in '21)	1,502,619	0.2		0.0	3.6	--	--	--	3.1	Dec-20
Alcentra European DLF ($5m commitment in '14)	177,096	0.0		0.0	56.9	13.6	11.2	--	10.4	Jan-15
Ascent Fund IV ($2m commitment in '04)	6,399	0.0		0.0	-13.7	-19.5	-37.0	-32.3	-20.9	Jul-04
Ascent Fund IV-B ($1m commitment in '16)	110,089	0.0		0.0	-14.3	-24.8	-16.5	--	-14.7	Jul-16
Ascent Fund V ($2m commitment in '08)	1,758,672	0.3		0.0	25.7	4.7	2.3	7.3	5.8	Oct-08
Ascent VI ($3m commitment in '15)	3,082,018	0.4		0.0	3.5	-1.9	3.6	--	0.8	Dec-15
CVI Credit Value Fund IV A LP ($6m commitment in '17)	5,807,826	0.8		0.0	14.7	8.1	--	--	6.4	Dec-17
Invesco Fund VI ($5m commitment in '13)	1,489,373	0.2		0.0	57.3	36.8	27.8	--	21.7	Jul-13

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.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII ($5m commitment in '15)	1,685,406	0.2		0.0	44.9	-34.6	-18.8	--	-11.7	Jan-16
Foundry 2007 ($3m commitment in '07)	493,302	0.1		0.0	53.7	8.9	3.4	10.7	20.9	Dec-07
Foundry 2010 ($3m commitment in '10)	5,670,649	0.8		0.0	78.3	31.4	25.1	17.3	15.0	Jan-11
Foundry 2010 Annex ($0.4m commitment in '15)	1,116,397	0.2		0.0	200.5	106.7	72.1	--	49.5	Sep-15
Pinebridge PEP V ($6m commitment in '07)	894,391	0.1		0.0	4.7	10.8	6.7	9.9	--	Mar-08
Landmark XV ($3m commitment in '13)	1,195,095	0.2		0.0	12.7	12.4	13.6	--	14.3	Nov-13
JFL Equity Investors IV, L.P. ($6m commitment in '16)	2,004,605	0.3		0.0	44.2	41.0	40.2	--	39.4	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP ($4m commitment in '17)	5,140,408	0.7		0.0	26.9	25.9	22.0	--	22.0	Feb-17
Park Square Credit Opportunities III ($3m commitment in '17)	2,613,621	0.4		0.0	5.6	7.9	--	--	6.5	Feb-18
Ironsides Constitution Opportunities ($3m commitment in '18)	2,185,007	0.3		0.0	11.0	13.6	--	--	12.4	Oct-18
HarbourVest Dover Street X ($9m commitment in '20)	4,874,507	0.7		0.0	51.6	--	--	--	95.1	Jun-20
Hamilton Lane Secondary Fund V LP ($9m commitment in '20)	6,449,365	0.9		0.0	43.3	--	--	--	47.4	Jul-20
JFL Equity Investors V, L.P. ($9m commitment in '20)	4,615,112	0.7		0.0	-4.7	--	--	--	-10.5	Sep-20
Private Equity Benchmark (1 Qtr. Lag)				*0.0*	*46.8*	*21.3*	*19.8*	*16.4*	*49.8*	*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.

MWRA Employees' Retirement System
ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2022	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	$5,489,034	0.8%	$26,896	0.49%
Rhumbline Advisors S&P 500 Index Fund	0.05% of Assets	$72,234,162	10.3%	$36,117	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	$54,119,068	7.7%	$270,595	0.50%
Polen Focused Growth	0.65% of Assets	$50,303,359	7.2%	$326,972	0.65%
Boston Partners Small Cap Value	1.00% of Assets	$25,184,488	3.6%	$251,845	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	$22,716,370	3.2%	$102,224	0.45%
SEG Baxter Street	1.00% of Assets	$36,180,242	5.2%	$361,802	1.00%
Schroder International Alpha Trust Class 1	0.55% of Assets	$36,061,892	5.2%	$198,340	0.55%
Baillie Gifford International Growth Fund Class K	0.60% of Assets	$16,988,113	2.4%	$101,929	0.60%
Axiom Emerging Markets Trust Class 2	0.73% of Assets	$20,402,029	2.9%	$148,935	0.73%
ABS Emerging Markets MA Fund	0.75% of Assets	$21,385,013	3.1%	$160,388	0.75%
Garcia Hamilton Fixed Income Aggregate	Performance-based 0.13 and 15.00	$38,305,218	5.5%	$47,882	0.13%
Lord Abbett Core Fixed Income	0.19% of Assets	$37,698,146	5.4%	$71,626	0.19%
Rhumbline TIPS Pooled Index Fund	0.04% of Assets	$15,024,110	2.1%	$6,010	0.04%
Loomis Sayles Multisector Full Discretion Trust	0.50% of First 20.0 Mil, 0.40% of Next 20.0 Mil, 0.30% Thereafter	$55,399,803	7.9%	$226,199	0.41%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	$14,225,320	2.0%	$56,901	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	$55,127	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	$15,343,146	2.2%	--	--
Corbin Pinehurst Partners	0.85% of Assets	$13,610,316	1.9%	$115,688	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	$13,203,017	1.9%	$118,827	0.90%
Entrust Peru Wind Down	0.50% of Assets	$744,465	0.1%	$3,722	0.50%
Cash Account	No Fee	$12,404,221	1.8%	--	--
Morgan Stanley Prime Property ($2.8m commitment in '95)	No Fee	$24,477,755	3.5%	--	--
TA Realty Core Property Fund, LP ($15m commitment in '19)	No Fee	$25,640,650	3.7%	--	--
Invesco Mortgage Recovery II ($3M commitment in '15)	No Fee	$980,562	0.1%	--	--
Landmark VI ($2m commitment in '11)	No Fee	$93,801	0.0%	--	--

MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2022	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Landmark VIII ($4m commitment in '17)	No Fee	$1,859,968	0.3%	--	--
StepStone Real Estate Fund II ($2m commitment in '11)	No Fee	$184,188	0.0%	--	--
Cerberus Institutional Real Estate Partners III ($1.5m commitment in '12)	No Fee	$649,585	0.1%	--	--
TA Realty Fund X LP ($3.5m commitment in '12)	No Fee	$31,062	0.0%	--	--
TerraCap Partners III, LP ($2.6m commitment in '15)	No Fee	$1,600,833	0.2%	--	--
TerraCap Partners IV, LP ($4m commitment in '17)	No Fee	$3,360,055	0.5%	--	--
PRIM Vintage Year 2008 ($3m commitment in '08)	No Fee	$828,654	0.1%	--	--
PRIM Vintage Year 2009 ($1m commitment in '09)	No Fee	$141,500	0.0%	--	--
PRIM Vintage Year 2010 ($1m commitment in '10)	No Fee	$884,847	0.1%	--	--
PRIM Vintage Year 2011 ($1.5m commitment in '11)	No Fee	$1,085,533	0.2%	--	--
PRIM Vintage Year 2012 ($1m commitment in '12)	No Fee	$818,674	0.1%	--	--
PRIM Vintage Year 2014 ($2m commitment in '14)	No Fee	$2,396,355	0.3%	--	--
PRIM Vintage Year 2017 ($2m commitment in '17)	No Fee	$2,508,105	0.4%	--	--
PRIM Vintage Year 2020 ($5m commitment in '20)	No Fee	$2,685,981	0.4%	--	--
PRIM Vintage Year 2021 ($5m commitment in '21)	No Fee	$1,502,619	0.2%	--	--
Alcentra European DLF ($5m commitment in '14)	No Fee	$177,096	0.0%	--	--
Ascent Fund IV ($2m commitment in '04)	No Fee	$6,399	0.0%	--	--
Ascent Fund IV-B ($1m commitment in '16)	No Fee	$110,089	0.0%	--	--
Ascent Fund V ($2m commitment in '08)	No Fee	$1,758,672	0.3%	--	--
Ascent VI ($3m commitment in '15)	No Fee	$3,082,018	0.4%	--	--
CVI Credit Value Fund IV A LP ($6m commitment in '17)	No Fee	$5,807,826	0.8%	--	--
Invesco Fund VI ($5m commitment in '13)	No Fee	$1,489,373	0.2%	--	--
Kayne Energy Fund VII ($5m commitment in '15)	No Fee	$1,685,406	0.2%	--	--
Foundry 2007 ($3m commitment in '07)	No Fee	$493,302	0.1%	--	--
Foundry 2010 ($3m commitment in '10)	No Fee	$5,670,649	0.8%	--	--
Foundry 2010 Annex ($0.4m commitment in '15)	No Fee	$1,116,397	0.2%	--	--
Pinebridge (AIG) PEP V Asia ($6m commitment in '07)	No Fee	$54,637	0.0%	--	--
Pinebridge (AIG) PEP V Co-Investment ($6m commitment in '07)	No Fee	$84,527	0.0%	--	--
Pinebridge (AIG) PEP V Europe ($6m commitment in '07)	No Fee	$22,533	0.0%	--	--

MWRA Employees’ Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2022	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Pinebridge (AIG) PEP V Large Market US Buyout ($6m commitment in '07)	No Fee	$158,700	0.0%	--	--
Pinebridge (AIG) PEP V Preferred Participation Fund ($6m commitment in '07)	No Fee	$318,169	0.0%	--	--
Pinebridge (AIG) PEP V Secondary ($6m commitment in '07)	No Fee	$37,015	0.0%	--	--
Pinebridge (AIG) PEP V Small-Mid Market US Buyout ($6m commitment in '07)	No Fee	$115,448	0.0%	--	--
Pinebridge (AIG) PEP V US Venture ($6m commitment in '07)	No Fee	$103,362	0.0%	--	--
Landmark XV ($3m commitment in '13)	No Fee	$1,195,095	0.2%	--	--
JFL Equity Investors IV, L.P. ($6m commitment in '16)	No Fee	$2,004,605	0.3%	--	--
Private Advisors Small Co. Coinvestment Fund, LP ($4m commitment in '17)	No Fee	$5,140,408	0.7%	--	--
Park Square Credit Opportunities III ($3m commitment in ’17)	No Fee	$2,613,621	0.4%	--	--
Ironsides Constitution Opportunities ($3m commitment in '18)	No Fee	$2,185,007	0.3%	--	--
HarbourVest Dover Street X ($9m commitment in '20)	No Fee	$4,874,507	0.7%	--	--
Hamilton Lane Secondary Fund V LP ($9m commitment in '20)	No Fee	$6,449,365	0.9%	--	--
JFL Equity Investors V, L.P. ($9m commitment in '20)	No Fee	$4,615,112	0.7%	--	--
Investment Management Fee		**$700,176,721**	**100.0%**	**$2,632,898**	**0.38%**

Note:
Estimate fee for privates are ~$1,556,212 annually, which brings the total expense ratio for privates to ~22 bps. This brings the total estimated expense ratio for MWRA to ~ 60 bps.

MWRA Employees' Retirement System
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 7.2% for the current month.

4 - Preliminary Total Composite gross of fee since inception return is 8.7% for the current month.

5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 06/01/2020.

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, 10% Bloomberg US Aggregate TR, 4% Bloomberg US TIPS TR, 10% Bloomberg US Universal TR, 10% NCREIF Property Index, 10% C|A US All PE , 6% HFRI Fund of Funds Composite Index.

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.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv

Q4 PERFORMANCE REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM

DECEMBER 31, 2021

MWRA Employees’ Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Composite	**726,341,394**	**100.0**	**100.0**	**3.4**	**84**	**12.9**	**64**	**13.9**	**80**	**10.5**	**70**	**9.2**	**66**	**7.7**	**17**	**7.2**	**Jan-86**
Allocation Index				*4.0*	*64*	*14.0*	*44*	*14.2*	*75*	*10.7*	*63*	*9.2*	*67*	*7.0*	*50*	*--*	*Jan-86*
Policy Index				*4.1*	*59*	*14.6*	*34*	*15.2*	*57*	*11.2*	*52*	*9.5*	*56*	*7.4*	*30*	*--*	*Jan-86*
InvMetrics Public DB Net Median				*4.4*		*13.8*		*15.5*		*11.2*		*9.6*		*7.0*		*8.6*	*Jan-86*
Composite	**726,341,394**	**100.0**	**100.0**	**3.4**	**83**	**12.9**	**61**	**13.9**	**80**	**10.5**	**71**	**9.2**	**72**	**7.7**	**34**	**7.2**	**Jan-86**
Allocation Index				*4.0*	*61*	*14.0*	*44*	*14.2*	*72*	*10.7*	*64*	*9.2*	*73*	*7.0*	*78*	*--*	*Jan-86*
Policy Index				*4.1*	*55*	*14.6*	*32*	*15.2*	*53*	*11.2*	*49*	*9.5*	*60*	*7.4*	*52*	*--*	*Jan-86*
InvMetrics Public DB Gross Median				*4.3*		*13.6*		*15.3*		*11.1*		*9.9*		*7.4*		*8.7*	*Jan-86*
Total Balanced	**5,489,034**	**0.8**	**0.0**	**5.4**	**--**	**19.9**	**--**	**13.6**	**--**	**9.3**	**--**	**6.9**	**--**	**--**	**--**	**6.0**	**Dec-10**
PRIT Core Fund	5,489,034	0.8		5.4	14	19.9	3	16.1	28	12.4	10	10.5	1	8.1	41	7.6	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				*6.6*	*7*	*15.9*	*44*	*17.5*	*12*	*12.6*	*9*	*11.1*	*1*	*7.7*	*54*	*6.9*	*Apr-99*
Total Domestic Equity	**239,352,783**	**33.0**	**31.0**	**7.9**	**44**	**23.2**	**61**	**24.4**	**40**	**17.9**	**33**	**15.6**	**36**	**9.9**	**58**	**8.5**	**May-99**
Russell 3000				*9.3*	*29*	*25.7*	*47*	*25.8*	*34*	*18.0*	*33*	*16.3*	*26*	*9.7*	*64*	*8.1*	*May-99*
eV All US Equity Net Median				*7.4*		*25.2*		*22.6*		*14.9*		*14.4*		*10.2*		*10.0*	*May-99*
Large Cap	**187,288,277**	**25.8**	**24.0**	**8.9**	**33**	**24.5**	**54**	**25.3**	**36**	**19.1**	**27**	**16.2**	**28**	**--**	**--**	**15.2**	**Dec-10**
eV All US Equity Net Median				*7.4*		*25.2*		*22.6*		*14.9*		*14.4*		*10.2*		*13.6*	*Dec-10*
Rhumbline Advisors S&P 500 Index Fund	76,171,547	10.5	10.0	11.0	31	28.6	30	26.0	23	18.4	20	16.4	13	9.5	55	9.8	Apr-97
S&P 500				*11.0*	*31*	*28.7*	*29*	*26.1*	*22*	*18.5*	*18*	*16.6*	*10*	*9.5*	*55*	*9.7*	*Apr-97*
eV US Large Cap Core Equity Net Median				*10.1*		*26.9*		*23.7*		*16.7*		*15.1*		*9.7*		*10.3*	*Apr-97*
Coho Relative Value Equity	55,826,554	7.7	7.0	10.1	14	18.7	95	17.6	59	13.7	28	--	--	--	--	13.4	Mar-16
Russell 1000 Value				*7.8*	*56*	*25.2*	*65*	*17.6*	*59*	*11.2*	*68*	*13.0*	*53*	*8.3*	*67*	*13.6*	*Mar-16*
eV US Large Cap Value Equity Net Median				*8.1*		*26.8*		*18.3*		*12.1*		*13.1*		*8.8*		*13.9*	*Mar-16*
Polen Focused Growth	55,290,176	7.6	7.0	4.9	80	23.6	52	31.7	40	25.7	22	--	--	--	--	22.3	Feb-16
Russell 1000 Growth				*11.6*	*20*	*27.6*	*25*	*34.1*	*14*	*25.3*	*27*	*19.8*	*14*	*10.9*	*36*	*23.6*	*Feb-16*
eV US Large Cap Growth Equity Net Median				*8.7*		*23.8*		*30.7*		*23.4*		*18.2*		*10.5*		*21.4*	*Feb-16*

Notes:
1. Since inception return is 8.8% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns
2. In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to the transition to the CIT investment vehicle is linked to mutual fun performance history.
3. 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.

MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap	**52,064,506**	**7.2**	**7.0**	**4.5**	**77**	**18.6**	**78**	**21.6**	**58**	**14.5**	**53**	**14.2**	**53**	**--**	**--**	**13.5**	**Dec-10**
eV All US Equity Net Median				*7.4*		*25.2*		*22.6*		*14.9*		*14.4*		*10.2*		*13.6*	*Dec-10*
Boston Partners Small Cap Value	25,930,224	3.6	3.5	3.7	86	26.2	67	18.7	55	9.1	57	11.9	63	9.9	66	10.9	Feb-97
Russell 2000 Value				*4.4*	*81*	*28.3*	*53*	*18.0*	*65*	*9.1*	*58*	*12.0*	*58*	*9.2*	*81*	*9.5*	*Feb-97*
eV US Small Cap Value Equity Net Median				*6.3*		*28.8*		*19.1*		*9.6*		*12.3*		*10.3*		*10.7*	*Feb-97*
Loomis Sayles Small Cap Growth	26,134,282	3.6	3.5	5.4	15	10.5	46	23.7	70	19.5	52	16.0	59	9.9	82	7.9	Jan-97
Russell 2000 Growth				*0.0*	*63*	*2.8*	*82*	*21.2*	*86*	*14.5*	*89*	*14.1*	*85*	*9.2*	*92*	*7.9*	*Jan-97*
eV US Small Cap Growth Equity Net Median				*1.5*		*9.6*		*27.7*		*19.8*		*16.4*		*11.4*		*11.1*	*Jan-97*
Total Non-US Equity	**142,964,724**	**19.7**	**19.0**	**-0.1**	**77**	**2.4**	**90**	**12.8**	**79**	**9.9**	**73**	**6.9**	**88**	**5.5**	**97**	**4.9**	**Mar-99**
eV All ACWI ex-US Equity Net Median				*1.8*		*11.0*		*17.4*		*12.4*		*9.6*		*7.8*		*7.4*	*Mar-99*
International Equity	**98,961,662**	**13.6**	**12.0**	**0.1**	**80**	**3.9**	**94**	**14.9**	**45**	**11.0**	**39**	**7.9**	**75**	**--**	**--**	**4.8**	**Sep-05**
eV All EAFE Equity Net Median				*2.2*		*11.4*		*14.3*		*10.0*		*9.0*		*7.4*		*6.1*	*Sep-05*
SEG Baxter Street	42,180,242	5.8	5.0	-1.1	89	3.0	89	15.6	63	12.0	53	--	--	--	--	11.2	May-16
MSCI ACWI ex USA				*1.8*	*50*	*7.8*	*69*	*13.2*	*76*	*9.6*	*75*	*7.3*	*84*	*6.8*	*85*	*8.9*	*May-16*
eV All ACWI ex-US Equity Net Median				*1.8*		*11.0*		*17.4*		*12.4*		*9.6*		*7.8*		*11.0*	*May-16*
Schroder International Alpha Trust Class 1	37,661,235	5.2	4.0	3.3	30	11.4	44	19.3	34	14.1	32	--	--	--	--	8.7	Mar-12
MSCI ACWI ex USA				*1.8*	*50*	*7.8*	*69*	*13.2*	*76*	*9.6*	*75*	*7.3*	*84*	*6.8*	*85*	*6.1*	*Mar-12*
eV All ACWI ex-US Equity Net Median				*1.8*		*11.0*		*17.4*		*12.4*		*9.6*		*7.8*		*8.4*	*Mar-12*
Baillie Gifford International Growth Fund Class K	19,120,185	2.6	3.0	-4.6	98	-9.4	99	--	--	--	--	--	--	--	--	7.5	Oct-20
MSCI ACWI ex USA				*1.8*	*50*	*7.8*	*69*	*13.2*	*76*	*9.6*	*75*	*7.3*	*84*	*6.8*	*85*	*20.4*	*Oct-20*
eV All ACWI ex-US Equity Net Median				*1.8*		*11.0*		*17.4*		*12.4*		*9.6*		*7.8*		*22.7*	*Oct-20*

Notes:
1. 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.

MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Emerging Markets Equity	**44,003,061**	**6.1**	**7.0**	**-0.9**	**53**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**-6.4**	**Mar-21**
eV Emg Mkts Equity Net Median				*-0.9*		*0.4*		*12.8*		*10.2*		*6.1*		*9.9*		*-3.9*	*Mar-21*
Axiom Emerging Markets Trust Class 2	21,647,831	3.0	7.0	-1.4	60	--	--	--	--	--	--	--	--	--	--	-6.8	Mar-21
MSCI Emerging Markets				*-1.3*	*58*	*-2.5*	*65*	*10.9*	*66*	*9.9*	*55*	*5.5*	*70*	*9.6*	*65*	*-6.2*	*Mar-21*
eV Emg Mkts Equity Net Median				*-0.9*		*0.4*		*12.8*		*10.2*		*6.1*		*9.9*		*-3.9*	*Mar-21*
ABS Emerging Markets MA Fund	22,355,230	3.1		--	--	--	--	--	--	--	--	--	--	--	--	2.1	Dec-21
MSCI Emerging Markets				*-1.3*	*58*	*-2.5*	*65*	*10.9*	*66*	*9.9*	*55*	*5.5*	*70*	*9.6*	*65*	*1.9*	*Dec-21*
eV Emg Mkts Equity Net Median				*-0.9*		*0.4*		*12.8*		*10.2*		*6.1*		*9.9*		*2.5*	*Dec-21*
Total Fixed Income	**163,672,355**	**22.5**	**24.0**	**0.2**	**37**	**0.4**	**36**	**6.5**	**30**	**4.7**	**31**	**4.9**	**28**	**6.5**	**18**	**6.4**	**Mar-99**
eV All US Fixed Inc Net Median				*0.0*		*-0.2*		*4.8*		*3.7*		*3.3*		*4.4*		*4.6*	*Mar-99*
Garcia Hamilton Fixed Income Aggregate	38,857,627	5.3	6.0	-0.1	41	-2.4	95	4.1	95	--	--	--	--	--	--	3.6	Apr-18
Bloomberg US Aggregate TR				*0.0*	*22*	*-1.5*	*52*	*4.8*	*76*	*3.6*	*73*	*2.9*	*80*	*4.3*	*71*	*4.2*	*Apr-18*
eV US Core Fixed Inc Net Median				*-0.1*		*-1.5*		*5.2*		*3.8*		*3.2*		*4.6*		*4.4*	*Apr-18*
Lord Abbett Core Fixed Income	38,387,747	5.3	4.0	0.1	16	-0.7	19	5.2	48	--	--	--	--	--	--	4.5	Apr-18
Bloomberg US Aggregate TR				*0.0*	*22*	*-1.5*	*52*	*4.8*	*76*	*3.6*	*73*	*2.9*	*80*	*4.3*	*71*	*4.2*	*Apr-18*
eV US Core Fixed Inc Net Median				*-0.1*		*-1.5*		*5.2*		*3.8*		*3.2*		*4.6*		*4.4*	*Apr-18*
Rhumbline TIPS	15,331,940	2.1	4.0	2.3	25	5.9	34	8.4	41	5.3	57	--	--	--	--	4.8	Jun-16
Bloomberg US TIPS TR				*2.4*	*13*	*6.0*	*33*	*8.4*	*40*	*5.3*	*56*	*3.1*	*53*	*5.3*	*81*	*4.9*	*Jun-16*
eV US TIPS / Inflation Fixed Inc Net Median				*2.2*		*5.7*		*8.3*		*5.4*		*3.1*		*5.4*		*5.0*	*Jun-16*
Loomis Sayles Multisector Full Discretion Trust	56,814,596	7.8	8.0	-0.2	70	0.1	5	8.5	1	6.0	1	6.0	1	8.2	1	7.7	Mar-99
Bloomberg US Aggregate TR				*0.0*	*22*	*-1.5*	*52*	*4.8*	*76*	*3.6*	*73*	*2.9*	*80*	*4.3*	*71*	*4.7*	*Mar-99*
Bloomberg US High Yield TR				*0.7*	*1*	*5.3*	*1*	*8.8*	*1*	*6.3*	*1*	*6.8*	*1*	*7.8*	*1*	*6.9*	*Mar-99*
eV US Core Fixed Inc Net Median				*-0.1*		*-1.5*		*5.2*		*3.8*		*3.2*		*4.6*		*4.9*	*Mar-99*
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	14,225,320	2.0	2.0	0.6	2	4.1	2	--	--	--	--	--	--	--	--	4.2	Aug-19
Credit Suisse Leveraged Loan				*0.7*	*1*	*5.4*	*1*	*5.4*	*31*	*4.3*	*10*	*4.8*	*2*	*4.8*	*27*	*4.1*	*Aug-19*
eV US Core Fixed Inc Net Median				*-0.1*		*-1.5*		*5.2*		*3.8*		*3.2*		*4.6*		*3.6*	*Aug-19*
Invesco Mortgage Recovery Loans Feeder Fund	55,127	0.0		0.0	45	0.5	15	-1.4	99	1.9	99	6.4	1	--	--	10.9	Apr-10
Bloomberg US Aggregate TR				*0.0*	*44*	*-1.5*	*94*	*4.8*	*94*	*3.6*	*95*	*2.9*	*99*	*4.3*	*98*	*3.5*	*Apr-10*
eV US Core Plus Fixed Inc Net Median				*0.0*		*-0.4*		*5.9*		*4.3*		*3.9*		*5.1*		*4.5*	*Apr-10*

Notes:
1. 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.

MWRA Employees’ Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Total Hedge Fund	**43,294,677**	**6.0**	**6.0**	**0.6**	**--**	**7.8**	**--**	**7.7**	**--**	**5.2**	**--**	**4.8**	**--**	**--**	**--**	**3.8**	**Oct-06**
PRIM Portfolio Completion Strategies	15,343,146	2.1		1.3	--	9.5	--	6.1	--	4.9	--	5.3	--	--	--	4.1	Oct-06
Corbin Pinehurst Partners	14,003,193	1.9		-1.1	--	8.5	--	10.6	--	--	--	--	--	--	--	9.2	Nov-18
HFRI Fund of Funds Composite Index				*0.3*	--	*6.1*	--	*8.4*	--	*5.7*	--	*4.5*	--	*3.9*	--	*7.2*	*Nov-18*
UBS Neutral Alpha Strategies	13,203,017	1.8		1.8	--	5.7	--	7.9	--	--	--	--	--	--	--	6.7	Nov-18
HFRI Fund of Funds Composite Index				*0.3*	--	*6.1*	--	*8.4*	--	*5.7*	--	*4.5*	--	*3.9*	--	*7.2*	*Nov-18*
Entrust Peru Wind Down	745,321	0.1		0.8	--	-1.2	--	-2.7	--	--	--	--	--	--	--	-3.4	Dec-17
HFRI Fund of Funds Composite Index				*0.3*	--	*6.1*	--	*8.4*	--	*5.7*	--	*4.5*	--	*3.9*	--	*5.3*	*Dec-17*
Other	**8,836,573**	**1.2**	**0.0**	**0.0**	**--**	**0.0**	**--**	**1.1**	**--**	**1.3**	**--**	**0.7**	**--**	**--**	**--**	**0.6**	**Dec-10**
Cash Account	8,836,573	1.2		0.0	20	0.0	41	1.1	32	1.3	41	0.7	52	1.4	14	1.8	Feb-00
91 Day T-Bills				*0.0*	*9*	*0.0*	*32*	*0.8*	*75*	*1.1*	*71*	*0.6*	*66*	*1.2*	*71*	*1.5*	*Feb-00*
eV US Cash Management Net Median				*0.0*		*0.0*		*1.0*		*1.2*		*0.7*		*1.3*		*1.6*	*Feb-00*
Total Real Estate	**58,878,460**	**8.1**	**10.0**	**8.0**	**--**	**23.4**	**--**	**10.9**	**--**	**9.8**	**--**	**11.4**	**--**	**8.3**	**--**	**8.3**	**Apr-99**
NCREIF Property Index				*6.2*	--	*17.7*	--	*8.4*	--	*7.8*	--	*9.3*	--	*8.7*	--	*8.9*	*Apr-99*
Morgan Stanley Prime Property ($2.8m commitment in '95)	24,477,755	3.4		9.6	--	21.5	--	9.3	--	8.9	--	11.1	--	8.7	--	8.9	Sep-95
TA Realty Core Property Fund, LP ($15m commitment in '19)	25,640,650	3.5		8.5	--	29.7	--	--	--	--	--	--	--	--	--	14.8	Jun-19
Invesco Mortgage Recovery II ($3M commitment in '15)	980,562	0.1		0.0	--	10.5	--	-16.4	--	-4.7	--	--	--	--	--	-1.2	Oct-15
Landmark VI ($2m commitment in '11)	93,801	0.0		18.6	--	14.5	--	-8.0	--	-4.9	--	3.6	--	--	--	4.2	Jul-11
Landmark VIII ($4m commitment in '17)	1,859,968	0.3		8.6	--	32.6	--	15.4	--	--	--	--	--	--	--	19.7	Nov-17
StepStone Real Estate Fund II ($2m commitment in '11)	184,188	0.0		0.0	--	4.4	--	-3.0	--	0.5	--	--	--	--	--	2.5	May-12
Cerberus Institutional Real Estate Partners III ($1.5m commitment in '12)	649,585	0.1		13.7	--	67.3	--	26.7	--	17.7	--	--	--	--	--	17.8	May-13
TA Realty Fund X LP ($3.5m commitment in '12)	31,062	0.0		0.0	--	3.1	--	4.3	--	7.6	--	--	--	--	--	8.2	May-13
TerraCap Partners III, LP ($2.6m commitment in '15)	1,600,833	0.2		0.0	--	2.5	--	2.8	--	5.3	--	--	--	--	--	9.5	Jul-15
TerraCap Partners IV, LP ($4m commitment in '17)	3,360,055	0.5		0.0	--	6.1	--	7.6	--	--	--	--	--	--	--	9.1	Nov-17

Note:
1. 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.
2. Corbin Pinehurst Partners and Entrust Peru Wind Down are preliminary as of 12/31/2021, and are subject to change once finalzied.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Total Private Equity	**63,852,789**	**8.8**	**10.0**	**1.6**	**--**	**38.0**	**--**	**18.6**	**--**	**16.6**	**--**	**15.2**	**--**	**10.3**	**--**	**10.7**	**Apr-99**
C|A US All PE				*0.0*	--	*31.6*	--	*22.0*	--	*18.7*	--	*15.8*	--	*14.2*	--	*13.6*	*Apr-99*
NASDAQ W/O Income				*8.3*	--	*21.4*	--	*33.1*	--	*23.8*	--	*19.6*	--	*11.0*	--	*8.5*	*Apr-99*
PRIM Vintage Year 2008 ($3m commitment in '08)	1,040,193	0.1		7.0	--	37.3	--	17.1	--	20.9	--	20.2	--	--	--	10.5	Jun-08
PRIM Vintage Year 2009 ($1m commitment in '09)	161,001	0.0		14.4	--	80.1	--	51.9	--	38.8	--	28.5	--	--	--	16.8	Nov-09
PRIM Vintage Year 2010 ($1m commitment in '10)	887,561	0.1		23.1	--	130.3	--	43.0	--	36.3	--	26.0	--	--	--	17.3	Jun-10
PRIM Vintage Year 2011 ($1.5m commitment in '11)	1,108,210	0.2		8.3	--	108.1	--	35.8	--	31.5	--	21.1	--	--	--	11.4	May-11
PRIM Vintage Year 2012 ($1m commitment in '12)	845,930	0.1		-0.1	--	44.2	--	28.9	--	26.2	--	--	--	--	--	-7.4	Jun-12
PRIM Vintage Year 2014 ($2m commitment in '14)	2,507,907	0.3		13.0	--	57.4	--	30.7	--	29.5	--	--	--	--	--	9.8	Jun-14
PRIM Vintage Year 2017 ($2m commitment in '17)	2,461,665	0.3		6.6	--	57.8	--	28.8	--	--	--	--	--	--	--	19.0	May-17
PRIM Vintage Year 2020 ($5m commitment in '20)	2,450,214	0.3		6.8	--	35.1	--	--	--	--	--	--	--	--	--	23.6	Mar-20
PRIM Vintage Year 2021 ($5m commitment in '21)	1,131,525	0.2		3.8	--	3.6	--	--	--	--	--	--	--	--	--	3.3	Dec-20
Alcentra European DLF ($5m commitment in '14)	177,096	0.0		-8.4	--	56.9	--	13.6	--	11.2	--	--	--	--	--	10.5	Jan-15
Ascent Fund IV ($2m commitment in '04)	6,399	0.0		0.0	--	-13.7	--	-19.5	--	-37.0	--	-32.3	--	--	--	-21.0	Jul-04
Ascent Fund IV-B ($1m commitment in '16)	110,089	0.0		0.0	--	-14.3	--	-24.8	--	-16.5	--	--	--	--	--	-14.9	Jul-16
Ascent Fund V ($2m commitment in '08)	1,758,672	0.2		0.0	--	25.7	--	4.7	--	2.3	--	7.3	--	--	--	5.8	Oct-08
Ascent VI ($3m commitment in '15)	3,082,018	0.4		0.0	--	3.5	--	-1.9	--	3.6	--	--	--	--	--	0.9	Dec-15
CVI Credit Value Fund IV A LP ($6m commitment in '17)	5,807,826	0.8		2.2	--	14.7	--	8.1	--	--	--	--	--	--	--	6.6	Dec-17
Invesco Fund VI ($5m commitment in '13)	1,489,373	0.2		0.0	--	57.3	--	36.8	--	27.8	--	--	--	--	--	22.0	Jul-13
Kayne Energy Fund VII ($5m commitment in '15)	1,798,420	0.2		0.0	--	44.9	--	-34.6	--	-18.8	--	--	--	--	--	-11.8	Jan-16
Foundry 2007 ($3m commitment in '07)	493,302	0.1		0.0	--	53.7	--	8.9	--	3.4	--	10.7	--	--	--	21.0	Dec-07
Foundry 2010 ($3m commitment in '10)	5,670,649	0.8		0.0	--	78.3	--	31.4	--	25.1	--	17.3	--	--	--	15.1	Jan-11
Foundry 2010 Annex ($0.4m commitment in '15)	1,116,397	0.2		0.0	--	200.5	--	106.7	--	72.1	--	--	--	--	--	50.3	Sep-15
Pinebridge PEP V ($6m commitment in '07)	894,391	0.1		0.0	--	4.7	--	10.8	--	6.7	--	9.9	--	--	--	--	Mar-08
Landmark XV ($3m commitment in '13)	1,241,057	0.2		0.0	--	12.7	--	12.4	--	13.6	--	--	--	--	--	14.4	Nov-13
JFL Equity Investors IV, L.P. ($6m commitment in '16)	2,004,605	0.3		0.0	--	44.2	--	41.0	--	40.2	--	--	--	--	--	40.2	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP ($4m commitment in '17)	5,140,408	0.7		0.0	--	26.9	--	25.9	--	--	--	--	--	--	--	22.5	Feb-17
Park Square Credit Opportunities III ($3m commitment in '17)	2,613,621	0.4		0.0	--	5.6	--	7.9	--	--	--	--	--	--	--	6.6	Feb-18
Ironsides Constitution Opportunities ($3m commitment in '18)	2,396,526	0.3		0.0	--	11.0	--	13.6	--	--	--	--	--	--	--	12.7	Oct-18
HarbourVest Dover Street X ($9m commitment in '20)	4,874,507	0.7		0.0	--	51.6	--	--	--	--	--	--	--	--	--	102.1	Jun-20

Notes:
1. 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.

MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	20 Yrs (%)	Rank	Inception (%)	Inception Date
Hamilton Lane Secondary Fund V LP ($9m commitment in '20)	5,968,116	0.8		0.0	--	43.3	--	--	--	--	--	--	--	--	--	50.6	Jul-20
JFL Equity Investors V, L.P. ($9m commitment in '20)	4,615,112	0.6		0.0	--	-4.7	--	--	--	--	--	--	--	--	--	-11.1	Sep-20
Private Equity Benchmark (1 Qtr. Lag)				*5.7*	--	*46.8*	--	*21.3*	--	*19.8*	--	*16.4*	--	*14.3*	--	*53.6*	*Sep-20*

Notes:
1. 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.

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 7.2% for the current month.

4 - Preliminary Total Composite gross of fee since inception return is 8.8% for the current month.

5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 06/01/2020.

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, 10% Bloomberg US Aggregate TR, 4% Bloomberg US TIPS TR, 10% Bloomberg US Universal TR, 10% NCREIF Property Index, 10% C|A US All PE , 6% HFRI Fund of Funds Composite Index.

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

REAL ESTATE SEARCH REVIEW

MWRA EMPLOYEES' RETIREMENT SYSTEM

JANUARY 2022

Sebastian Grzejka, CAIA, Principal
Kiley Fischer, Consulting Analyst

NEPC

SUMMARY OF REAL ESTATE SEARCH

- **Target Fund Strategy**
  - Value-Add (private, closed-end)

- **Advertised Search Requirements:**

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 be registered with the SEC or with the Secretary of State where the firm is domiciled.

3. Candidates must read and agree to the attached side letter pertaining to mandatory contractual language, based on the guidelines above.

4. Preference will be given to candidates that have raised at least one prior fund for the proposed strategy, however, this is subject to the Board's discretion.

5. The funds final close date of the proposed fund must be no earlier than May 31, 2022.

6. It is preferred that the proposed fund is raising at least $200 million, however, lower amounts may be considered at the Board's discretion.

- **Responses were due on January 17, 2022 at 5:00 PM EST**

- **The search had a total of 23 respondents**

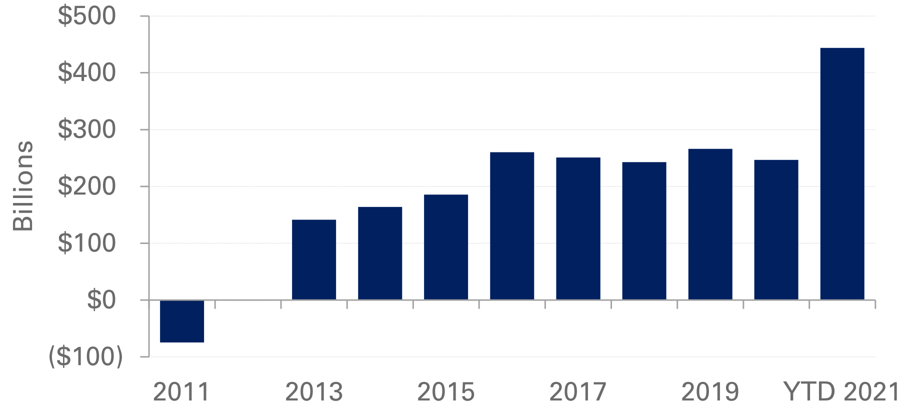
MARKET ENVIRONMENT

REAL ESTATE CAPITAL MARKETS

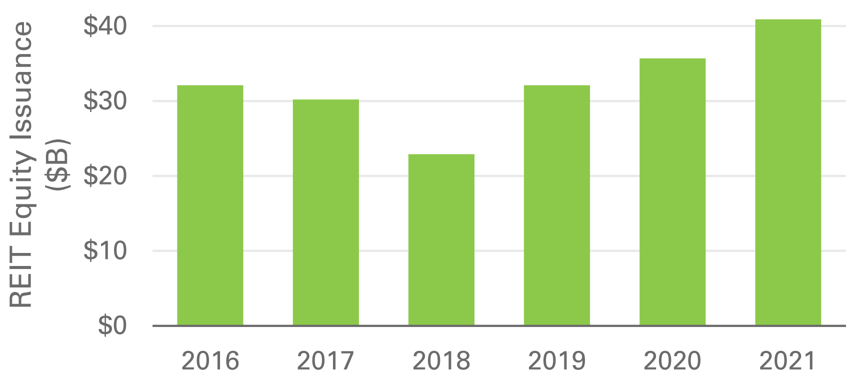
Capital Markets Are Healthy & Functioning

- **Real estate transaction volumes accelerated through 2021 after a slowdown in 2020**
- **This helped fuel an increase in demand for new real estate loans**
- **Generally, both equity (REIT) and debt markets are healthy and issuance levels are up**
- **There remain disparities by property type and asset quality, however, as some real estate continues to face capital structure distress**

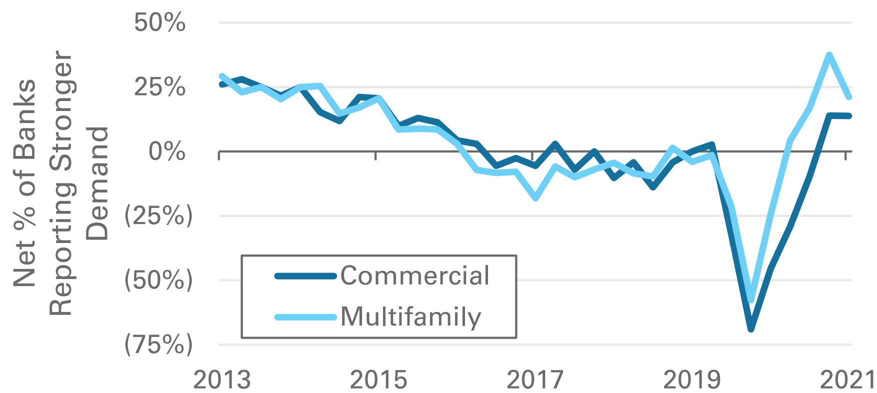
Net CRE Loan Originations



Real Estate Equity Markets Healthy



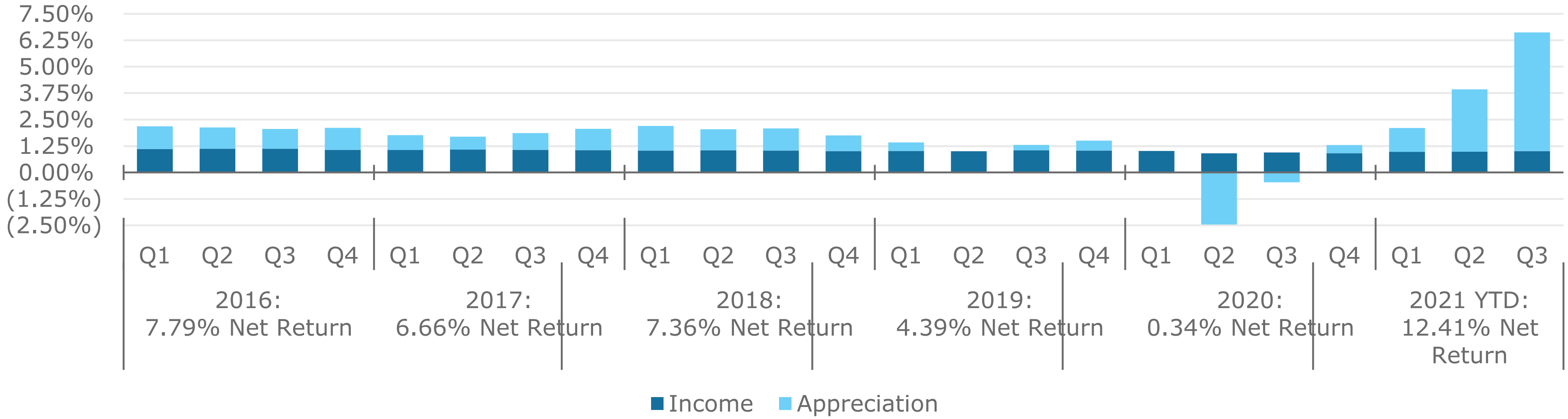
Demand for Real Estate Loans by Type



Sources: Federal Reserve, as of September 30, 2021; Goldman Sachs, as of December 31, 2021.

REAL ESTATE MARKET PERFORMANCE

CORE REAL ESTATE: REBOUND CONTINUES; ALL TIME HIGH QUARTERLY RETURN IN Q3

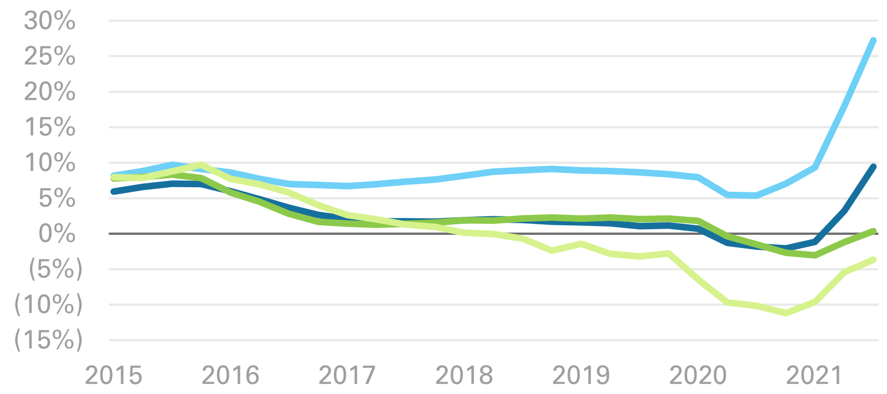


REITs: STRONG RECOVERY AFTER 2020 VOLATILITY

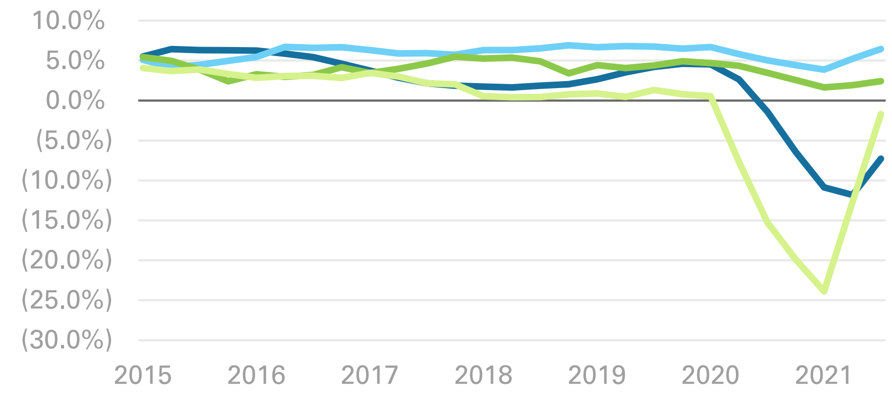
Sources: Core Real Estate returns represented by the NCREIF Open-End Diversified Core Equity Index (ODCE) as of September 30, 2021. REIT returns represented by the FTSE NAREIT Equity REITs benchmark as of December 31, 2021, with data provided by Factset.

REAL ESTATE FUNDAMENTALS

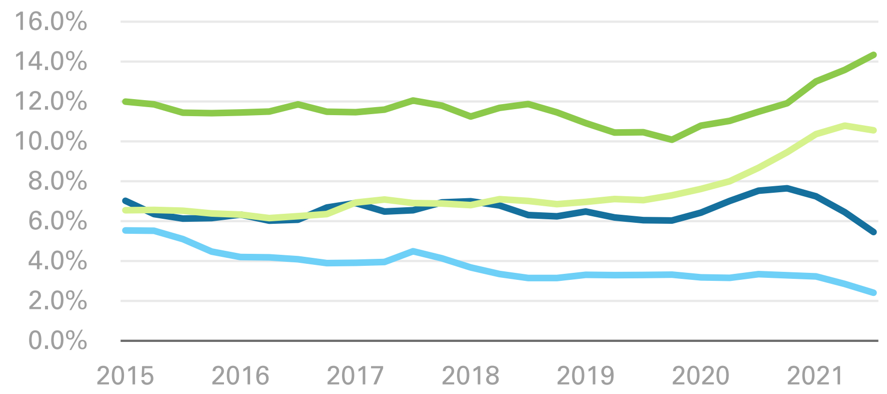
Appreciation Returns (Rolling 1-Year)



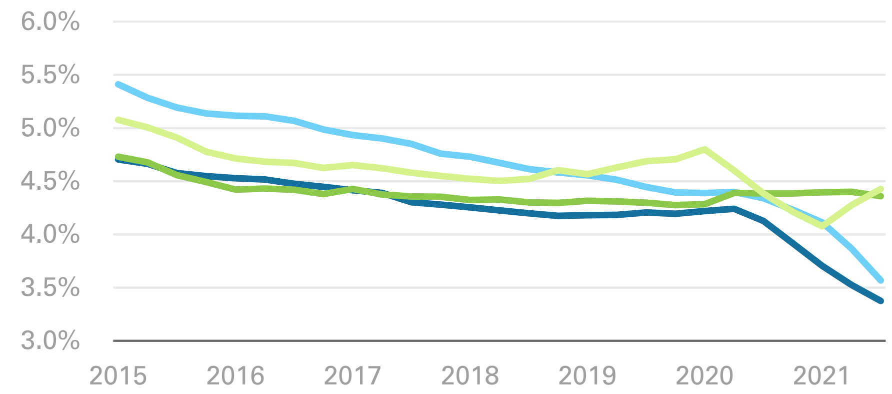
NOI Growth (Rolling 1-Year SAAR*)



Vacancy Rates



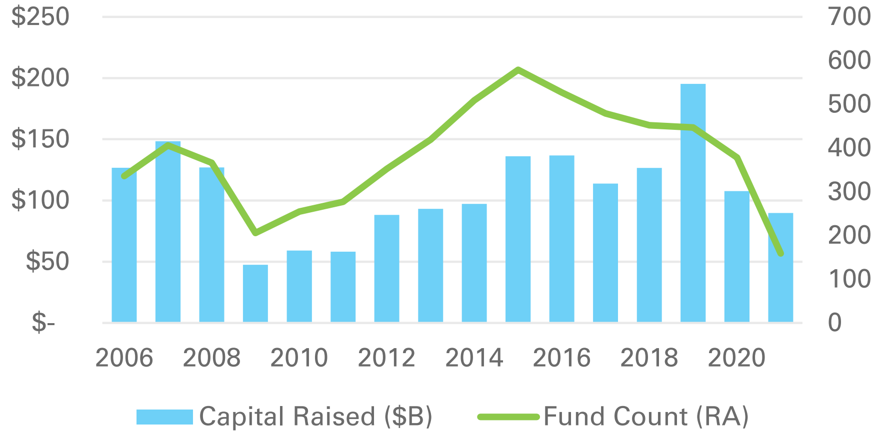
Cap Rates

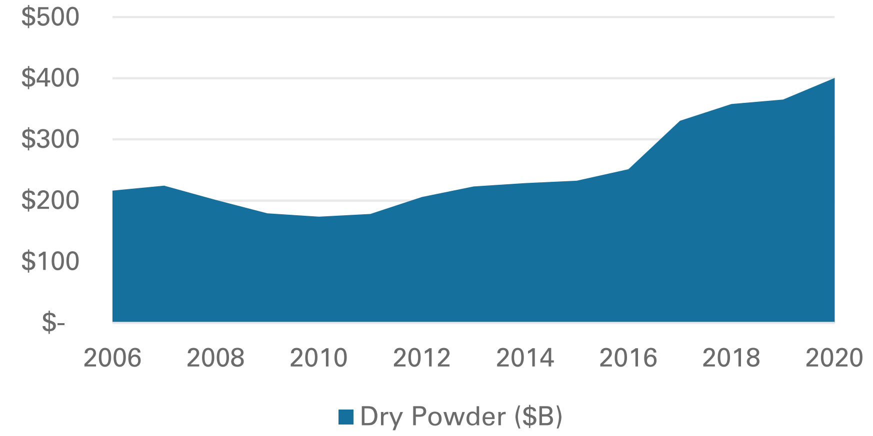


Sources: Data from NCREIF, as of September 30, 2021.
* NOI Growth shown is the seasonally-adjusted annual rate (SAAR).

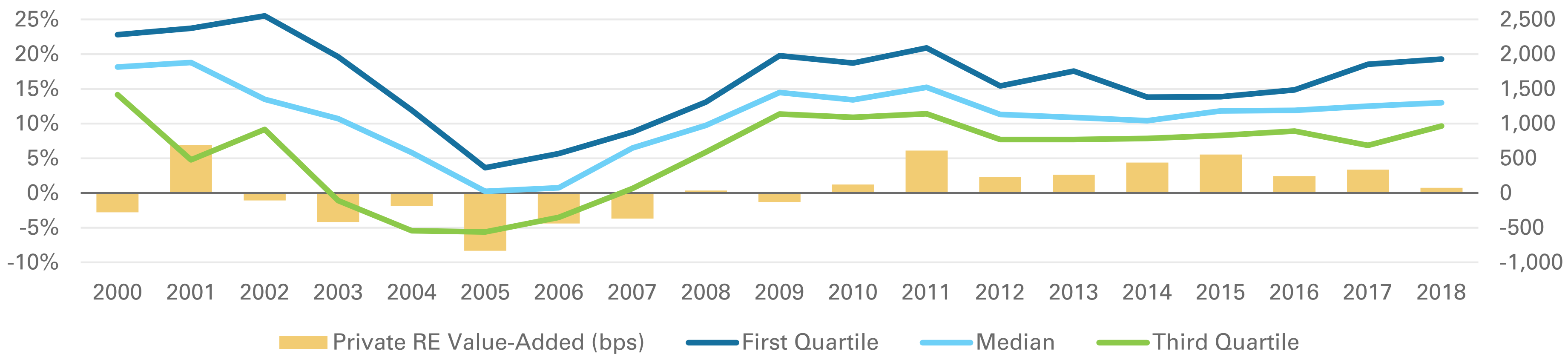
NON-CORE REAL ESTATE SNAPSHOT

VALUE-ADD & OPPORTUNISTIC: FUNDRAISING HAS SLOWED; DRY POWDER REMAINS HIGH





VALUE-ADD & OPPORTUNISTIC: VINTAGE YEAR RETURNS & PMEs



Fund performance data represents the since-inception vintage year returns for the C|A US Value-Add and Opportunistic Real Estate benchmark. "Private RE Value-Added (Lost)" refers to the benchmark's pooled return relative to the Public Market Equivalent (PME), using the FTSE NAREIT Equity REITs Index. Positive values indicate outperformance vs. the PME, while negative values indicate underperformance vs. the PME.

Sources: C|A, Thomson One, PitchBook. Performance data as of June 30, 2021; capital raising data as of September 30, 2021; dry powder data as of March 31, 2021.

VALUE ADD REAL ESTATE SEARCH SUMMARY

REAL ESTATE RESPONDENTS

Fund	Target Fund Size (M)	Target Final Close	Target Net IRR	Strategy & Sector Focus	Comments	Fees	Rating
Aegon US Multifamily Value Add	$500	Dec-23	11-13%	Value-Add Apt./ Multifamily	Strategy will focus 100% on multifamily rental properties to middle income families. Aegon expects to make 25-30 deals. Manager will acquire, reposition, manage and operate the assets.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
AIG U.S. Real Estate Fund IV	$1,000	Jan-23	12-14%	Value-Add Diversified	Strategy will focus primarily on multifamily and industrial properties, however, can also invest in office, retail and hospitality. AIG expects to invest across 40-50 assets.	Early Close: 0.90% on committed, 1.25% on invested Standard: 1% on committed, 1.5% on invested	3
Alidade Capital Fund V	$250	Jun-22	13-15%	Value-Add Diversified	Strategy will focus on R&D flex, industrial, life science and office properties, which they view as innovation ecosystems. Alidade expects to invest across 30-35 assets.	During IP: 1.5% on committed Post IP: 1.5% on invested * Fee Discount Available	1
Ares US Real Estate Fund X	$1,500	Q2 2022	12-14%	Value-Add Diversified	Strategy will invest primarily across industrial, residential and office, as well as other diversifying sectors. Ares expects to invest across 20-25 assets. Ares recently acquired Landmark Real Estate.	During IP: 0.75% on committed and 1.5% on invested Post IP: 1.5% on invested	2
Artemis Real Estate Partners Fund IV	$1,500	Q1 2023	14-15%	Value-Add Diversified	Artemis will look to build a highly diversified portfolio and invest across 40-50 middle-market investments.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
Blue Vista Real Estate Partners VI	$750	Q4 2023	13-15%	Value-Add Diversified	Blue Vista will focus on making 60-70 investments, with a specific focus on residential, industrial, self storage and select office and hotel subsectors.	During IP: 1.5% on committed Post IP: 1.5% on invested	2
CenterSquare Value-Added Fund V	$300	2H 2022	13-15%	Value-Add Diversified	CenterSquare will focus on core property types in industrial and residential, as well as sub-property types such as cold storage, life sciences and residential. They expect to invest in 15-25 assets.	During IP: 1.5% on committed Post IP: 1.5% on invested * Fee Discount Available	2
Crow Holdings Capital Fund X	$3,000	Jan-23	12-14%	Value-Add Diversified	Crow will invest primarily in industrial and multifamily opportunities, as well as diversifying sectors such as manufactured housing, student housing and car wash. The manager expects to make 125-150 transactions.	During IP: 1.5% on committed Post IP: 1.5% on invested	2

NEPC

* Alidade offers a fee discount for NEPC clients once aggregated client commitments reach $30M ($30M = 1.4% fee; $50M = 1.3%; $75M = 1.25%)
* CenterSquare is offering a reduced fee of 135 bps for NEPC clients

REAL ESTATE RESPONDENTS

Fund	Target Fund Size (M)	Target Final Close	Target Net IRR	Strategy & Sector Focus	Comments	Fees	Rating
Elion Industrial Fund II	$750	Jun-23	13-15%	Value-Add Industrial	Elion will acquire, redevelop and reposition industrial properties across the US. The manager seeks to make 30-40 investments.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
Farallon Real Estate Partners IV	$500	Q2 2023	N/A	Value-Add Diversified	Farallon will invest primarily in office, multi-family, retail, and industrial properties. The number of investments will be dependent upon the opportunity set, while the prior fund made 14 investments.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
Greystar Equity Partners XI	$2,500	Q1 2023	11-12%	Value-Add Apt./ Multifamily	Greystar invest primarily in value-add multifamily, student, active adult and purpose-built single-family rental housing product and will invest in select development opportunities. The manager seeks to make 70 investments.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
Griffith Properties Fund V	$100	Dec-22	16%	Value-Add Diversified/ Regional	Griffith will target investments in the life science, industrial/flex and office sectors within the New England and Mid-Atlantic regions. Firm is 100% woman owned. Manager seeks to make 15-18 deals.	During IP: 1.5% on committed Post IP: 1.5% on invested	3
Invesco Real Estate US Fund VI	$1,500	Q2 2022	11-13%	Value-Add Diversified	Invesco will invest in properties that can be transformed into core investments via re-tenanting, re-positioning, renovation and/or development. The manager seeks to make 20-40 deals. Existing MWRA manager.	Charged on Invested: $0 ≤ $25: 1.5%, $25 ≤ $50: 1.4%, $50 ≤ $75: 1.3%, $75 ≤ $100: 1.2%, $100 ≤ $150: 1.1%, $150+: 1.0% *Fee Discount Available	2
LaSalle Value Partners US IX	$1,250	TBD	12-14%	Value-Add Diversified	LaSalle will invest in a diversified portfolio of transitional or emerging properties across the US and seeks to make 25-40 deals.	Not provided	2
Nuveen Real Estate US Strategic Alternatives Fund I	$350	Jun-22	12-14%	Value-Add Diversified	The strategy will focus primarily on medical office buildings, single-family rentals, and self-storage facilities. Total transactions will vary dependent upon deal size and property type. This is Nuveen's first diversified US fund targeting value-add returns in the alternative healthcare and housing space.	During IP: 1.5% on committed Post IP: 1.5% on invested	3

* Invesco will determine the fee tier based on aggregated NEPC client commitments.

REAL ESTATE RESPONDENTS

Fund	Target Fund Size (M)	Target Final Close	Target Net IRR	Strategy & Sector Focus	Comments	Fees	
Sculptor Real Estate Credit Fund II	$1,000	Q4 2022	10-12%	Value-Add Credit/RE Debt	The Fund will invest in real estate credit and related opportunities in North America and Europe. Sculptor seeks to make 20-40 transactions.	1.5% on invested capital	2
TA Realty Fund XIII	$1,250	TBD	10-12.5%	Value-Add Diversified	TA Realty will focus on diversified portfolio focusing on industrial and apartment/multi-family, as well as office and retail real estate. The manager seeks to make 60-70 investments. Existing MWRA manager.	Yr. 1: 0.50%, Yr. 2: 0.85%, Yr. 3: 1.15% (on committed) Yr. 4: 1.20%, Yr. 5: 1.25%, Yr. 6: 1.20%, Yr. 7: 1.0%, thereafter: 0.60% (on invested)	1
TerraCap Partners V	$400	Oct-22	14-16%	Value-Add Diversified	TerraCap will invest in income properties including apartment/multifamily, industrial and office across the southeast, south central and western mountain US. The manager seeks to make 30-35 transactions. Existing MWRA manager.	During IP: 1.5% on committed Post IP: 1.5% on invested	2

IRR COMPARISON

Vintage / Firm	Aegon	AIG	Alidade	Ares	Artemis	Blue Vista	Center Square	Crow	Elion	Farallon	Greystar	Griffith	Invesco	LaSalle	Nuveen	Sculptor	TA	Terra Cap	Thomson One Median IRR
2005													1.5%	(5.5%)					0.2%
2006						9.4%	6.1%	1.6%									(0.1%)		0.7%
2007				13.5%									6.8%		10.4%				6.5%
2008								14.8%						13.0%			10.4%		9.8%
2009																			14.5%
2010			17.4%						15.3%										13.4%
2011																		12.9%	15.2%
2012		10.0%	18.9%		24.0%	14.9%		10.2%	17.8%			26.0%	13.6%		16.7%		12.6%		11.3%
2013		15.8%		16.5%					11.0%	9.4%	12.0%			12.9%	10.1%				10.9%
2014		11.8%	13.9%				14.9%	11.5%										10.4%	10.4%
2015		6.5%			10.0%	12.2%							12.0%		11.3%	12.3%	14.1%		11.8%
2016		7.9%								18.5%	14.1%			12.1%	9.2%				11.9%
2017	17.8%	12.6%	11.3%	19.5%				23.0%	8.2%									15.5%	12.5%
2018		17.0%			31.0%	17.7%	13.0%								24.5%		43.3%		13.0%
2019	2.0%	33.1%							50.2%			47.6%	19.8%		92.9%				7.9%
2020		*44.5%*								*12.9%*				*19.3%*					*10.6%*
2021	*32.5%*																		---
2022																			---
Above Median Quartile																			

Results are not meaningful

TVPI COMPARISON

Vintage / Firm	Aegon	AIG	Alidade	Ares	Artemis	Blue Vista	Center Square	Crow	Elion	Farallon	Greystar	Griffith	Invesco	LaSalle	Nuveen	Sculptor	TA	Terra Cap	Thomson One Median TVPI
2005													1.1x	0.7x					1.0x
2006						1.4x	1.3x	1.1x									1.0x		1.0x
2007				1.6x									1.3x		1.8x				1.3x
2008								1.5x						1.7x			1.6x		1.5x
2009																			1.7x
2010			2.0x						1.3x										1.6x
2011																		1.6x	1.6x
2012		1.5x	1.8x		1.6x	1.4x		1.4x	1.4x			2.8x	1.5x		2.5x		1.6x		1.5x
2013		1.8x		1.6x					1.5x	1.3x	1.7x			1.5x	1.6x				1.4x
2014		1.6x	1.8x				1.5x	1.4x										1.4x	1.4x
2015		1.3x			1.3x	1.4x							1.4x		1.5x	1.1x	1.7x		1.4x
2016		1.4x								1.5x	1.7x			1.4x	1.3x				1.4x
2017	1.4x	1.5x	1.4x	1.4x				1.5x	1.3x									1.2x	1.3x
2018		1.5x			1.3x	1.0x	1.3x								1.4x		1.3x		1.2x
2019	1.0x	1.7x							1.3x			3.0x	1.3x		1.9x				1.1x
2020		*1.4x*								*1.4x*				*1.2x*					*1.1x*
2021	*1.0x*																		---
2022																			---
Above Median Quartile																			

Results are not meaningful

DPI COMPARISON

Vintage / Firm	Aegon	AIG	Alidade	Ares	Artemis	Blue Vista	Center Square	Crow	Elion	Farallon	Greystar	Griffith	Invesco	LaSalle	Nuveen	Sculptor	TA	Terra Cap	Thomson One Median DPI
2005													1.1x	0.7x					1.0x
2006						1.4x	1.3x	1.1x									1.0x		1.0x
2007				1.6x									1.3x		1.8x				1.3x
2008								1.5x						1.7x			1.6x		1.4x
2009																			1.6x
2010			2.0x						1.3x										1.6x
2011																		1.4x	1.5x
2012		1.3x	1.8x		1.6x	1.5x		1.2x	1.4x			2.8x	1.5x		2.5x		1.6x		1.2x
2013		1.7x		1.3x					1.3x	1.0x	1.5x			1.2x	0.7x				1.2x
2014		1.1x	1.0x				1.1x	1.2x										0.7x	0.9x
2015		0.9x			1.0x	0.7x							1.0x		0.3x	0.6x	0.5x		0.7x
2016		0.6x								0.9x	1.7x			0.4x	0.1x				0.4x
2017	0.8x	0.6x	0.2x	0.2x				0.8x	0.6x									0.0x	0.2x
2018		0.7x			0.3x	0.1x	0.2x								0.0x		0.0x		0.1x
2019	0.0x	0.7x							0.0x			0.3x	0.1x						0.1x
2020		*0.1x*								*0.0x*				*0.1x*					*0.0x*
2021	*0.0x*																		---
2022																			---
Above Median Quartile																			

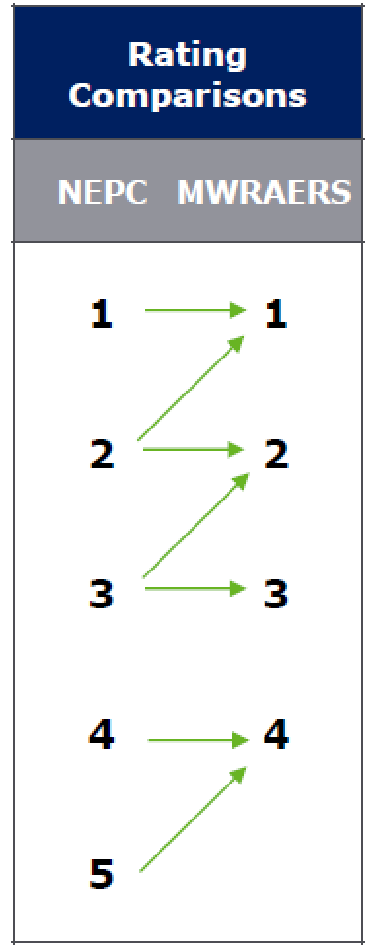
Results are not meaningful

APPENDIX

RATINGS FRAMEWORK 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.

MWRAERS 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 MWRAERS. 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.



*This is for indicative purposes only. Individual situations may vary.

REAL ESTATE RESPONDENTS

Fund	Target Fund Size (M)	Target Final Close	Target Net IRR	Strategy & Sector Focus	Comments	Fees	Rating
Cohen & Steers Real Estate Opportunities Fund	$650	2023	14-17%	Opportunistic Diversified	Cohen will invest in private real estate through direct joint ventures with operating partners, co-investments, club deals, private fund interests and pre-IPO/special situations. They will make 20-25 investments. This is the Manager's first private opportunistic real estate fund.	**Cornerstone Investors:** 1.25% on invested for direct investments & 0.75% for fund investments **Subsequent Investors:** 1.5% for direct investments & 0.75% for fund investments	4 given the opportunistic focus
Continental Realty Retail Fund I	$250	Aug-22	16-20%	Opportunistic Retail	Continental will target income producing retail real estate investments in the US. The manager will make 16-20 investments.	During IP: 1.5% on committed Post IP: 1.5% on invested	4 given the opportunistic focus
CrossHarbor Institutional Partners 2021	$850	Dec-22	14-16%	Opportunistic Diversified	CrossHarbor will prioritize business plan-driven strategies and high margin arbitrage scenarios. Examples of business plan-driven strategies are development, renovation, redevelopment, turnaround, and workout scenarios among others. Examples of high margin arbitrage are off-market transactions, corporate dispositions, and complex tax, ownership, or capital structures among others. The manager seeks to make 12-15 deals per year.	During IP: 1.5% on committed Post IP: 1.5% on invested	4 given the opportunistic focus
Rockpoint Fund VII	$4,500	Apr-23	13-15%	Opportunistic Diversified	Rockpoint will invest primarily in residential, office, hospitality and industrial properties. The manager seeks to make 50-70 deals.	During IP: 1.5% on committed Post IP: 1.5 on invested	4 given the opportunistic focus

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