

MWRA EMPLOYEES' RETIREMENT BOARD MEETING

AGENDA

Thursday, November 16, 2023 10:00 a.m.
MWRA, 2 Griffin Way
Chelsea, MA 02150

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

OLD BUSINESS

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

NEW BUSINESS

- Item 3 Approval of October 26, 2023 Minutes – VOTE
- Item 4 Approval of Warrants – VOTE
- a) Warrant 11-2023
 - b) Warrant 11A-2023 – Payroll & Annuity Savings Refund (Death)
- Item 5 Approval of Monthly Transfers 11-2023 – VOTE
- Item 6 Approval of October 2023 Bank Reconciliation – VOTE
- Item 7 Approval of 2024 Budget – VOTE
- Item 8 10:15 a.m. Legal Update
- Item 9 NEPC
- a) Flash Report as of 10/31/23
 - b) Rebalance Recommendation – VOTE
 - c) Large Cap Value RFP – VOTE
 - d) Custody Search Ratings – VOTE
 - e) Q3 2023 Investment Report

FOR YOUR INFORMATION and REVIEW

- Item 99-1 2022 PERAC Annual Report
- Item 99-2 PERAC MEMO # 23/2023 – Paid Family and Medical Leave (“PFML”) & Supplemental Payments
- Item 99-3 PERAC MEMO #24a/2023 – Outsourced Chief Investment Officer (OCIO) Policy
- Item 99-4 PERAC MEMO #25/2023 – Cybersecurity Training

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, December 14, 2023, 10:00 a.m., Chelsea

**MWRA EMPLOYEES' RETIREMENT BOARD MEETING
OCTOBER 26, 2023**

A meeting of the MWRA Employees' Retirement Board was conducted in-person on Thursday, October 26, 2023. Remote access was provided to the public via Zoom, with call-in information provided on the official Meeting Notice posted to www.mwraretirement.com and the MA Secretary of State's website. Participating in the in-person meeting were Board members James Fleming, Matthew Horan, Kevin McKenna, Brian Peña and Frank Zecha, staff members Carolyn Russo, Julie McManus and Danielle DiRuzza, and Sebastian Grzejka representing NEPC. Members of the public including Kevin Balaod also attended via remote access. Mr. Fleming called the meeting to order at 10:00 a.m.

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

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

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

- 3) Approval of Minutes – VOTE

- a) September 28, 2023 Minutes

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

VOTED

to approve the Minutes of the September 28, 2023 meeting. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

- b) September 28, 2023 Executive Session Minutes

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

VOTED

to approve the Executive Session Minutes of the September 28, 2023 meeting. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

c) October 5, 2023 Minutes

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

VOTED

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

4) Approval of Warrants – VOTE

a) Warrant 10-2023 – Accounts Payable

b) Warrant 10-2023A – Retiree Payroll

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

VOTED

to approve Warrant 10-2023. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

The Executive Director requested that the Board approve her adding to Warrant 10-2023A the MACRS expenses for a Board member who submitted the documentation after Warrant 10-2023 was done.

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

VOTED

to approve Warrant 10-2023A. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

Mr. McKenna requested that a copy of Warrant 10-2023A be sent to all Board members upon completion.

5) Approval of Monthly Transfers 10-2023 – VOTE

Mr. McKenna stated that the first line item is blank, and that he had inquired of the Executive Director as to why. It is blank because the Octagon funds have not yet been received, but are anticipated to be remitted on October 30, 2023.

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

VOTED

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

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

- a) Mary Shaw DOR 9/30/2023
- b) Rose Marie Convery DOR 10/14/2023

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

VOTED

to acknowledge the section 5 retirements as listed. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

7) Approval of September 2023 Bank Reconciliation – VOTE

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

VOTED

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

8) Approval of Kristine Dassau's buyback of 1 year and 1 month of MDC service – VOTE

Mr. Horan asked on behalf of the member whether a buyback could be done through payroll deduction over time, and the Retirement Coordinator responded that it can. Mr. McKenna asked when the MDC service was, and the Retirement Coordinator responded 1985-1988.

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

VOTED

to approve the request made by Kristine Dassau for purchase of 1 year and 1 month of prior MDC service. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

The Chair reported that Staff had received an additional buyback request from an employee who would be leaving MWRA and who needs to make the purchase prior to terminating her service next month. Ms. Karen Graham is requesting that she be permitted to purchase 2 years 7 months for time as an intern and contract employee with MWRA.

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

VOTED

to approve the request made by Karen Graham for purchase of 2 years 7 months of prior MWRA non-membership service. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

Mr. Zecha noted at 10:10 a.m. that a member of Financial Investment News had joined the call, and the Chair repeated his two-party consent caution as it applies to recording.

9) Consulting Services RFP – VOTE

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

VOTED

to approve the RFP and RFP Notice as submitted by the Executive Director and to post the Consultant Services RFP notice as required under s. 23B. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

10) NEPC

- a) Flash Report as of 9/30/23
- b) Rebalance Recommendation – VOTE
- c) Custody Search Review
- d) Equity Structure Review

Mr. Grzejka reported that the volatility continued throughout the month of September, fueled by fears of a government shutdown and higher rates. Overall, the portfolio was down 2.8% for the month, but is still up 3.4% year-to-date. Growth has been impacted more by higher rates, but returns remain positive YTD. October to date has seen a bounce-back. US continues to outperform non-US, but there's been a pullback across equity exposure. Fixed Income has been adversely affected by rates as well. Yields are attractive but price fluctuations can cause negative returns. Mr. McKenna asked about Baillie Gifford, whether geopolitical events and conflicts are hurting performance. Mr. Grzejka likened them to Polen except they're international, in that they similarly focus on large growth companies, and performance will be driven by concentrations. Mr. Grzejka stated the Board needs to make the same evaluation on Non-US that was just done on US equity. Mr. McKenna asked what the equivalent of Rhumblin would be for International, and Mr. Grzejka responded MSCI EAFE and MSCI ACWI ex-US. Mr. McKenna asked if that would be coming next month, and Mr. Grzejka said it would be in the near term. He continued that LMCG had positive returns in its first month. Mr. McKenna asked the Executive Director to explain her concern relative to the fees. The Executive Director stated that the gains on the account were roughly \$197,000, and LMCG charged a management fee of \$15,000 and an "incentive fee" of \$37,000. Mr. Grzejka stated that LMCG has a 20% incentive fee, but they are adding value. Mr. McKenna stated all the responses had similar fee structures, but Mr. Grzejka countered that Wellington's was a flat fee. Mr. Grzejka hopes to have the October flash for the next meeting, which will hopefully show positive performance for the month.

Regarding the rebalance request, NEPC's recommendation is to add to Fixed Income and to cash. The System is cash flow negative, and the interest rate

environment is favorable. Hedge Fund redemptions will take time. An increase in the target allocation for cash is appropriate as part of the Asset Allocation discussion coming up in February. Mr. Zecha stated that he would favor increasing the cash position in the near term, since it's earning more than Fixed Income. Mr. Grzejka responded that Garcia Hamilton and Lord Abbett have exceeded cash yields. Values move due to price movements, but that's just noise, and we'll still eventually see the yields rise. Holding more cash for the rest of the year does make sense because more volatility is expected. NEPC will make additional rebalance recommendations at the November meeting. Mr. Horan asked whether it makes sense to purchase short-term Treasuries, but Mr. Grzejka responded that would require an RFP, so implementation would not be timely. Mr. Horan asked whether a short-term CD would be an option, and Mr. Fleming responded that it would, within the existing banking relationship. Mr. Zecha stated M&T confirmed the cash account is earning 5.28% or 5.38%, so it's competitive. Mr. McKenna asked if there is a maximum cash parameter allowed. Mr. Grzejka stated there is not, but holding 4-5% over the short term is different from holding 10% over the long term.

As directed by the Board, NEPC requested that the Custody respondents review their pricing to be sure they fully understand the extent of services to be required. As a result, State Street adjusted their pricing from \$50,000 to \$75,000, Comerica lowered their fee to \$40,395 due to an error in a prior quote, and M&T adjusted slightly to \$75,569 to update AUM to August as requested. M&T and State Street are equivalent in pricing, safety, and like-clients. Comerica has a smaller team. State Street has greater resources but dumped the MA public fund custody business 7-8 years ago with little notice, and is now trying to pivot back into the market. M&T is an existing relationship and has proved to be a good fit for the system. Mr. McKenna made a motion seconded by Mr. Peña to select M&T as the Custody Services vendor. Mr. Horan commented that it seems as if Comerica did not fully grasp what managing the MWRAERS account entails, and the pricing was cause for concern. Mr. McKenna noted that the account team at M&T works closely with staff, has frequent person-to-person contact, and collaborated with staff on a set of controls intended to prevent any cybersecurity issues. Mr. Fleming noted that the respondents were told in detail what the responsibilities are. Mr. Zecha concurred with Mr. Horan that it seems as if Comerica was basing the pricing on a different standard of services.

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

VOTED

to select M&T Bank as the Custody Services vendor. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

In regard to the Equity Structure review, historically the account has been roughly 50-50 active/passive, or has favored active management, but the Board needs to decide whether that is appropriate moving forward. Page 6 shows a snapshot. Active managers have struggled at times to add value. Return dispersions will

show a more clear picture of whether the managers are in the median or outperforming. Over the last decade, really since 2008, Growth, especially tech Growth, has been in favor. Page 7 shows that the Value side has had headwinds until recently, when Coho started outperforming the median of their peer universe. The first question the Board needs to answer is whether the current allocation is still appropriate. Page 11 shows that we can make the portfolio more efficient and still add value through active management. Mr. Grzejka explained the significance of the information ratio (return/tracking error), stating that .5 is great, and anything above that would be outstanding. 70-30 would still provide alpha with a comparable information ratio. A 50-50 passive/active Growth split would have much more overlap with the S&P, while a passive/Value mix would provide better diversification. Mr. Zecha stated that he had just attended the PRIT client conference, being involved on both the retirement and OPEB sides. PRIT has had a similar discussion, ultimately determining passive is where you want to be, but stated he would prefer an allocation which allows *up to 70%*, to allow flexibility for movement as needed. Mr. Grzejka stated he does not disagree. Differences lie in sectors and industries. Around ten names have driven returns, and unless the manager has been invested in those ten names, they faced headwinds. Right now the account stands at roughly 60-40 active/passive, but we need to be mindful of who's in the 60. Concentrations will determine performance. Mr. McKenna stated page 11 shows the ten-year results, and asked if there have been other mixes over the three- and five-year periods that might have been better. Mr. Grzejka acknowledged there likely were. Mr. Grzejka stated active management has added alpha. Mr. McKenna noted Coho has underperformed, and Mr. Grzejka stated they have bounced back for the same reason they previously underperformed-they are not holding the ten names that drove prior performance, and are now benefitting from that. Mr. McKenna asked if PERAC has a standard for the split. Mr. Grzejka stated that PERAC does not, and it is strictly a Board decision. Mr. Horan asked if the Board is going to go higher than its historical allocation up to 70%, could the Board put 10% active and the remainder with PRIT, or move funds to the existing passive account without an RFP, and Mr. Grzejka stated that the Board can do so at will, but if we keep the active manager(s), an RFP is needed because of the seven-year limit. Over time, active management has added value, but "point in time" may struggle. Value has universally had headwinds, and very concentrated managers have a different risk profile. The next question becomes whether a concentrated active manager is still an appropriate choice. Mr. McKenna noted that PERAC's fee report puts MWRAERS in a bad light, with \$4m plus in fees. Mr. Grzejka stated that the Value accounts carries a fee of 50bps, and the Growth 60bps. Mr. Grzejka stated that in the current environment, passive plus Value makes more sense. Mr. Zecha asked if the Board should authorize an RFP. Mr. Grzejka responded that the Board has to decide if it will seek a Growth or Value manager. If the Board decides on Value, the matter of Deep Value vs. Relative Value can be decided when the Board reviews responses. Deep value would include cyclicals, and energy, which Coho does not normally hold because theirs is a Relative

Value product. Mr. McKenna asked if it will require multiple votes. Mr. Grzejka responded that this is more a discussion to take place during manager selection. Mr. McKenna asked about concentration and if there might be a less concentrated product, such as one with 70 names. Mr. Grzejka responded affirmatively, stating he would expect a broad range of managers to respond. Mr. Zecha commented that a speaker at the PRIT conference yesterday remarked that PRIT had a similar conversation at the Investment Committee meeting last year relative to Fixed Income, looking to identify quality Energy, Industrials and IT, and asked whether the RFP would be for Value or Deep Value. Mr. Grzejka said it would be left broad as “Value” and the Board can select from the responses. It is NEPC’s recommendation is that one Value manager be selected over a combination to manage roughly \$50m. Mr. Zecha asked if that will eliminate Coho, and Mr. Grzejka responded that it may.

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

VOTED

to authorize NEPC to draft a Large Cap Value RFP. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes.

Mr. McKenna noted that Polen’s seven-year term is also up, and asked if the Board should move forward with a Growth RFP. Mr. Grzejka stated that the Board needs to establish their strategy to move forward first, and that it may not be necessary, depending on decisions made as part of that discussion. In regard to Private Equity pacing, PRIT is asking that the Board notify them before December if it plans to invest in VY 2024. NEPC sees opportunities in Private Credit and Secondaries for 2024. Mr. McKenna asked when Landmark funds will be fully closed and where the Secondary exposure will be. Mr. Grzejka responded Harbourvest and Hamilton Lane. Mr. Zecha noted that PRIT raised its PE target to 19%, and that MWRAERS currently stands at 12%, and stated he would not be opposed to going up to 15%. Mr. Grzejka stated that he would look into it, but reminded the Board that the money is not deployed right away or all at once in most cases. Mr. Fleming asked if making a PRIT PE allocation for 2024 locks the Board in, and Mr. Grzejka stated it does not. An RFP may still be done to seek other opportunities, and Mr. Grzejka would suggest \$5m-\$6m to PRIT PE, with the rest going to other opportunities.

The Chair asked if there were any other matters to come before the Board. The Executive Director asked that the Board formally acknowledge the MWRA Advisory Board’s loss of their Finance Director, James Guidod, who passed away on October 12, 2023. Mr. Guidod frequently attended Retirement Board meetings in his official capacity. Mr. Zecha asked that the Board observe a moment of silence out of respect for Mr. Guidod, his family and his colleagues, and the Chair so directed the Board and Staff.

Mr. Zecha stated that Retirement Staff may want to put another posting up about the importance of Option D beneficiaries, since it has been a few years, and MWRA has a lot of new staff. Mr. McKenna suggested an Intranet posting regarding the Option D reminder. Mr. Zecha continued that the Board should start thinking about another retirement seminar too, because the last one was pre-pandemic.

Mr. Fleming asked if Staff would track the training credits for the Board members to make sure all remain in compliance, and the Retirement Coordinator responded affirmatively.

Mr. Zecha wished Mr. Fleming and all of MWRA's Veterans a happy and healthy Veterans Day.

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

VOTED

to adjourn the October 26, 2023 meeting of the MWRA Employees' Retirement Board. 5-0, with Mr. Horan voting yes, Mr. McKenna voting yes, Mr. Peña voting yes, Mr. Zecha voting yes, and Mr. Fleming voting yes. The meeting was adjourned at 11:10 a.m.

The following communications were distributed to the Board for review:

Notice of Option to Invest in the PRIT Private Equity 2024 Vintage Year
 2024 Meeting Dates
 2022 PERAC Comparative Analysis September 2023
 PERAC Memo #20/2023 – Mandatory Retirement Board Member Training – 4th Quarter 2023
 PERAC Memo #21/2023 – Upcoming Public Hearings on PERAC Regulations
 PERAC Memo #22/2023 – Appropriation Data Due October 31, 2023
 TA Realty Core Property Fund Q3 2023 Flash Report

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 regular Retirement Board meeting is Thursday, November 16, 2023, 10:00 a.m., Chelsea, MA.

James Fleming, Chair

Matthew Horan, Appointed Member

Kevin McKenna, Elected Member

Brian Peña, Ex Officio Member

Frank Zecha, Fifth Member

MONTHLY PERFORMANCE REPORT

**MWRA EMPLOYEES' RETIREMENT
SYSTEM**

OCTOBER 31, 2023



PROPRIETARY & CONFIDENTIAL

GOALS & OBJECTIVES

Investment Return Objective

“Its primary goal is to provide promised benefits to participants and beneficiaries of the MWRA Employees’ Retirement system. Plan assets should be equal to or greater than the present value of the projected benefit obligations (“fully funded”). When Plan assets are less than the present value of projected benefit obligations, a schedule will be established and a plan will be in place to meet a fully funded status. When achieving return objectives required to fully fund the system, the Board is intent on controlling risk. Consistency of returns and risk of loss are primary considerations. The Board has also determined that the annual performance of plan assets should not vary substantially from returns achieved by other public pension funds with similar goals and objectives.”

Return Expectations

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

- **Time Horizon:** Return assumptions will be based on a ten-year time horizon with a detailed review and analysis to be made at least annually to monitor allocations and assumptions. Should a manager deviate from proscribed mandate or expected risk and return profile by a consequential degree, that manager may be reevaluated at any time.
- **Liquidity Needs:** Presently contributions exceed plan withdrawals to provide benefits, payouts, and/or plan expenses. Portfolio liquidity will be managed based on the cash flow needs of the System.
- **Regulatory Considerations:** Assets of this Fund shall be invested in a manner consistent with the fiduciary standards established under Code of Massachusetts Regulations 840 (“840 CMR”). The Board shall also use as precedent the Employee Retirement Income Security Act (ERISA).

EXECUTIVE SUMMARY

	Market Value (\$)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Composite	631,957,850	-1.9	1.5	3.0	3.6	5.2	5.3
<i>Allocation Index</i>		-2.0	2.3	4.1	4.8	5.9	5.8
<i>Policy Index</i>		-2.0	2.5	4.0	5.0	6.3	6.1

20 Years As of October 31, 2023				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
Composite	7.1	8.4	0.7	1.0
<i>Allocation Index</i>	6.5	7.9	0.7	1.0
<i>Policy Index</i>	7.0	8.5	0.7	1.0

Performance

- The Composite had a preliminary return of -1.9% (net) for the month, outperforming the Allocation Index and Policy Index of -2.0%.
- In equities, the S&P 500 Index fell 2.1%, bringing losses to 8.3% since July. Notably, the five largest companies in the index outperformed, contributing a 0.2% return to the broader index. Small-cap equities underperformed with the Russell 2000 falling 6.8%, bringing year-to-date losses to 4.5%. Outside of the U.S., a stronger U.S. dollar weighed on equity returns with the MSCI EAFE and MSCI Emerging Market indexes down 4.1% and 3.9%, respectively. The portfolio's Domestic Equity composite returned -3.0% (net) and the Non-US Equity composite was down -4.5% (net).
- In fixed income, the Treasury yield curve steepened with the two- and 10-year Treasury yields rising two and 33 basis points, respectively, narrowing the inversion to 16 basis points. Notably, the 10-year Treasury yield briefly rose above 5% for the first time since 2007, before ending the month at 4.9%. Further, the yields on the Bloomberg U.S. Corporate High Yield Index hit 9.5% after option-adjusted spreads rose 43 basis points to 4.4%. The Fixed Income composite returned -1.5% (net) for the month while the Bloomberg Agg and the Bloomberg US HY returned -1.6% and -1.2%, respectively.
- This brings the total plan return for the trailing one-year period to 3.0% (net), while the Allocation Index and Policy Index both returned 4.1% and 4.0%, respectively.

Returns for 20 years Risk/Return and Statistics Summary are gross of fees.

Since inception return is 8.1% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	631,957,850	100.0	100.0	-1.9	1.5	3.0	3.6	5.2	5.3	6.5	Jan-86
Allocation Index				-2.0	2.3	4.1	4.8	5.9	5.8		
Policy Index				-2.0	2.5	4.0	5.0	6.3	6.1		
Total Balanced	3,613,781	0.6	0.0	0.0	4.6	6.7	7.1	6.2	4.2	4.5	Dec-10
PRIT Core Fund	3,613,781	0.6	0.0	0.0	4.6	6.7	7.1	7.2	7.1	6.7	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				-1.9	5.2	6.3	4.0	6.8	7.2	5.9	
Total Domestic Equity	187,640,338	29.7	31.0	-3.0	4.2	3.2	6.4	8.4	9.0	7.1	May-99
Russell 3000 Index				-2.7	9.4	8.4	9.2	10.2	10.5	6.9	
Large Cap	145,622,251	23.0	24.0	-1.8	6.5	5.6	6.5	9.5	10.0	11.5	Dec-10
Rhumblin Advisors S&P 500 Index Fund	57,789,978	9.1	10.0	-2.1	10.6	10.1	10.3	11.0	11.1	8.7	Apr-97
S&P 500 Index				-2.1	10.7	10.1	10.4	11.0	11.2	8.6	
Coho Relative Value Equity	47,321,240	7.5	7.0	-2.4	-9.1	-7.8	5.8	6.1		8.1	Mar-16
Russell 1000 Value Index				-3.5	-1.8	0.1	10.2	6.6		8.8	
Polen Focused Growth	40,511,034	6.4	7.0	-0.7	21.0	15.6	1.3	10.2		12.3	Feb-16
Russell 1000 Growth Index				-1.4	23.2	19.0	8.7	14.2		15.5	
Small Cap	42,018,087	6.6	7.0	-6.8	-3.5	-4.8	6.0	5.2	6.7	9.6	Dec-10
Loomis Sayles Small Cap Growth	20,656,266	3.3	3.5	-6.9	-3.2	-3.8	0.6	5.1	7.6	6.2	Jan-97
Russell 2000 Growth Index				-7.7	-2.9	-7.6	-1.8	2.7	5.7	6.0	
Mesirow Small Cap Value Equity CIT - Founders Class	21,361,820	3.4	3.5	-6.8						-7.3	Apr-23
Russell 2000 Value Index				-6.0						-5.8	
Total Non-US Equity	99,305,138	15.7	19.0	-4.5	-3.0	6.0	-3.8	0.1	0.7	3.2	Mar-99
International Equity	64,265,169	10.2	12.0	-4.6	-3.1	6.0	-2.8	1.2	1.6	2.5	Sep-05
SEG Baxter Street	26,147,365	4.1	5.0	-6.1	-6.9	-0.3	-4.7	1.3		3.7	May-16
MSCI AC World ex USA (Net)				-4.1	1.0	12.1	3.0	3.5		4.3	
Schroder International Alpha Trust Class 1	26,005,532	4.1	4.0	-3.0	1.3	12.0	3.5	6.0	4.4	5.5	Mar-12
MSCI AC World ex USA (Net)				-4.1	1.0	12.1	3.0	3.5	2.5	3.6	
Baillie Gifford International Growth Fund Class K	12,112,272	1.9	3.0	-4.7	-3.4	8.4	-11.7			-11.2	Oct-20
MSCI AC World ex USA (Net)				-4.1	1.0	12.1	3.0			2.2	

Since inception return is 6.5% Net of fees. Prior to 1999, performance history does not capture separate net and gross returns.

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to the transition to the CIT investment vehicle is linked to mutual fund performance history.

Preliminary performance is subject to change once finalized.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)								
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date	
Emerging Markets Equity	35,039,969	5.5	7.0	-4.3	-2.9	5.9					-14.3	Mar-21
Axiom Emerging Markets Trust Class 2	16,587,759	2.6	7.0	-3.9	-5.9	1.5					-17.2	Mar-21
<i>MSCI Emerging Markets (Net)</i>				-3.9	-2.1	10.8					-11.0	
ABS Emerging Markets MA Fund	18,452,210	2.9		-4.7	-0.2	9.9					-12.0	Dec-21
<i>MSCI Emerging Markets (Net)</i>				-3.9	-2.1	10.8					-11.2	
Total Fixed Income	129,024,563	20.4	20.0	-1.5	-1.4	1.5	-3.5	1.2	1.9	5.4	Mar-99	
Garcia Hamilton Fixed Income Aggregate	30,108,444	4.8	6.0	-2.3	-5.1	-2.1	-6.1	-0.8		-0.7	Apr-18	
<i>Blmbg. U.S. Aggregate Index</i>				-1.6	-2.8	0.4	-5.6	-0.1		-0.2		
Lord Abbett Core Fixed Income	38,479,747	6.1	4.0	-1.5	-2.1	0.8	-5.1	0.2		0.0	Apr-18	
<i>Blmbg. U.S. Aggregate Index</i>				-1.6	-2.8	0.4	-5.6	-0.1		-0.2		
Loomis Sayles Multisector Full Discretion Trust	48,184,347	7.6	8.0	-1.8	-1.3	1.7	-3.4	1.6	2.3	6.5	Mar-99	
<i>Blmbg. U.S. Aggregate Index</i>				-1.6	-2.8	0.4	-5.6	-0.1	0.9	3.6		
<i>Blmbg. U.S. Corp: High Yield Index</i>				-1.2	4.6	6.2	1.2	3.1	3.9	6.0		
LMCG Serenitas Credit Gamma Offshore	12,236,640	1.9		0.6						1.8	Sep-23	
<i>HFRI Relative Value (Total) Index</i>				-0.1						0.3		
<i>Blmbg. U.S. Aggregate Index</i>				-1.6						-4.1		
Invesco Mortgage Recovery Loans Feeder Fund	15,385	0.0		0.0	0.4	1.1	-0.1	0.3	5.8	9.4	Apr-10	
<i>Blmbg. U.S. Aggregate Index</i>				-1.6	-2.8	0.4	-5.6	-0.1	0.9	1.8		
Total Hedge Fund	39,302,085	6.2	6.0	0.3	5.3	5.1	5.1	4.4	3.2	3.4	Oct-06	
PRIM Portfolio Completion Strategies	12,679,439	2.0		0.0	5.0	6.4	5.9	3.7	3.8	3.8	Oct-06	
Corbin Pinehurst Partners	13,566,885	2.1		0.7	7.7	8.7	4.8	5.1		5.1	Nov-18	
<i>HFRI Fund of Funds Composite Index</i>				-1.0	1.8	3.1	3.3	3.8		3.8		
UBS Neutral Alpha Strategies	13,003,745	2.1		0.1	3.5	5.5	6.5	6.2		6.2	Nov-18	
<i>HFRI Fund of Funds Composite Index</i>				-1.0	1.8	3.1	3.3	3.8		3.8		
Entrust Peru Wind Down	52,016	0.0		0.0	-21.4	-92.9	-58.5	-42.5		-37.7	Dec-17	
<i>HFRI Fund of Funds Composite Index</i>				-1.0	1.8	3.1	3.3	3.8		3.0		
Other	12,261,374	1.9	0.0	0.6	4.3	5.0	1.9	1.9	1.2	1.0	Dec-10	
Cash Account	12,261,374	1.9		0.6	4.3	5.0	1.9	1.9	1.2	1.9	Feb-00	
<i>90 Day U.S. Treasury Bill</i>				0.4	4.1	4.8	1.8	1.8	1.1	1.7		

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

Preliminary performance is subject to change once finalized.

Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1 liquidated on October 30, 2023.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	67,222,562	10.6	12.0	0.0	-2.5	-5.2	10.2	8.1	9.4	8.0	Apr-99
<i>NCREIF Property Index</i>				0.0	-5.1	-8.4	6.0	5.3	7.4	8.2	
Morgan Stanley Prime Property (\$2.8m commitment in '95)	24,644,518	3.9		0.0	-3.5	-7.0	8.1	6.4	8.9	8.4	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	25,494,984	4.0		0.0	-1.9	-7.3	12.7			10.0	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	644,706	0.1		0.0	-27.6	-40.7	-31.2	-18.4		-7.9	Oct-15
Landmark VI (\$2m commitment in '11)	5,866	0.0		0.0	-9.3	-9.4	-6.5	-10.4	-2.3	1.3	Jul-11
Landmark VIII (\$4m commitment in '17)	1,984,460	0.3		0.0	-3.4	-5.7	17.5	12.2		15.7	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	361,718	0.1		0.0	1.4	-1.1	0.0	-2.5	3.5	1.8	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	473,317	0.1		0.0	1.7	19.8	22.7	15.3	13.8	14.1	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,589,564	0.3		0.0	-1.3	15.0	8.6	7.7		10.0	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,518,882	0.6		0.0	-4.1	-1.3	7.5	8.0		8.4	Nov-17
TerraCap Partners V, LP (\$8m commitment in '22)	8,504,546	1.3		0.0	0.0	4.3				6.8	Jun-22
Total Private Equity and Debt	93,588,008	14.8	12.0	0.0	5.2	6.2	20.2	13.9	14.7	10.4	Apr-99
<i>CJA US All PE</i>				0.0	5.5	6.8	17.4	14.5	14.0	13.0	
<i>NASDAQ W/O Income</i>				-2.8	22.8	17.0	5.6	12.0	12.6	7.0	
PRIM Vintage Year 2008 (\$3m commitment in '08)	877,781	0.1		0.0	22.4	21.8	24.6	15.7	18.9	10.7	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	54,148	0.0		0.0	-4.8	-9.5	19.2	25.0	23.7	13.0	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	384,253	0.1		0.0	-13.0	-19.2	8.2	8.7	15.5	9.0	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	758,234	0.1		0.0	3.2	2.7	31.3	21.2	22.4	9.5	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	433,618	0.1		0.0	4.3	10.1	6.4	11.2	13.2	-8.4	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,052,897	0.3		0.0	2.0	-0.3	19.3	19.5		7.9	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,643,769	0.4		0.0	7.0	9.1	25.3	19.1		15.2	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	4,335,163	0.7		0.0	3.1	2.5	16.7			13.7	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	3,917,830	0.6		0.0	5.9	2.1				1.2	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	1,870,561	0.3		0.0	4.2	3.4				-1.1	Apr-22
PRIM Vintage Year 2023 (\$10m commitment in '23)	457,227	0.1		0.0						-1.0	May-23
Alcentra European DLF (\$5m commitment in '14)	208,355	0.0		0.0	4.8	5.6	27.4	13.5		11.4	Jan-15
Ascent Fund IV-B (\$1m commitment in '16)	20,242	0.0		0.0	-1.4	-49.8	-30.3	-29.8		-21.1	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,274,437	0.2		0.0	1.0	1.9	2.4	-1.3	1.9	3.8	Oct-08
Ascent VI (\$3m commitment in '15)	3,174,297	0.5		0.0	-2.6	-10.6	1.4	-1.1		0.7	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	4,624,990	0.7		0.0	6.2	8.6	11.0	6.8		6.7	Dec-17
Invesco Fund VI (\$5m commitment in '13)	548,079	0.1		0.0	-28.8	-34.5	0.5	6.3	10.8	10.5	Jul-13

Importantly, all returns in this report, including those of the private real estate managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

Preliminary performance is subject to change once finalized.



TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,565,334	0.4		0.0	-5.1	-2.0	21.3	-17.9		-4.5	Jan-16
Foundry 2007 (\$3m commitment in '07)	205,925	0.0		0.0	-0.6	-57.5	1.9	-20.0	2.3	12.5	Dec-07
Foundry 2010 (\$3m commitment in '10)	5,901,587	0.9		0.0	-0.3	-1.2	23.6	18.8	13.1	13.2	Feb-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,100,130	0.2		0.0	0.0	-0.5	51.3	54.1		36.9	Sep-15
Pinebridge PEP V (\$6.23m commitment in '07)	290,916	0.0		0.0	1.1	-1.7	1.3	1.6	6.5	6.7	Dec-10
Pinebridge (AIG) PEP V Asia (\$.55m commitment)	29,864	0.0		0.0	-5.9	-8.6	-10.7	-13.7		-13.5	Oct-18
Pinebridge (AIG) PEP V Europe (\$1.6m commitment)	3,271	0.0		0.0	2.1	3.1	-15.5	97.7		95.5	Oct-18
Pinebridge (AIG) PEP V Large Market US Buyout (\$.7m commitment)	89,305	0.0		0.0	16.1	27.3	8.9	10.3		10.1	Oct-18
Pinebridge (AIG) PEP V Preferred Participation Fund (\$.5m commitment)	59,460	0.0		0.0	-13.1	-21.5	-8.2	-7.9		-7.8	Oct-18
Pinebridge (AIG) PEP V Secondary (\$.6m commitment)	15,403	0.0		0.0	-8.1	-16.0	-14.4	-15.1		-11.3	Jan-17
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$.9m commitment)	52,801	0.0		0.0	3.4	2.8	6.2	13.9		13.6	Oct-18
Pinebridge (AIG) PEP V US Venture (\$.48m commitment)	40,812	0.0		0.0	2.3	-13.8	-2.5	-5.2		-5.1	Oct-18
Landmark XV (\$3m commitment in '13)	592,329	0.1		0.0	-2.1	-3.9	7.0	3.1	9.4	9.4	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	2,302,229	0.4		0.0	27.9	27.9	41.1	40.1		37.0	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,885,206	0.8		0.0	14.0	15.9	19.2	21.4		19.4	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,809,653	0.4		0.0	5.2	7.7	7.4	8.2		7.0	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,481,666	0.2		0.0	8.0	11.0	11.3	11.6		11.4	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	7,331,986	1.2		0.0	4.4	7.2	27.6			47.9	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	7,785,098	1.2		0.0	3.2	5.1	25.2			26.3	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	12,688,150	2.0		0.0	4.2	3.0				3.3	Nov-21
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)	4,594,346	0.7		0.0	7.4	15.4					Jan-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	11,417,570	1.8		0.0	14.6	29.1	13.1			9.5	Sep-20

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49 % of Assets	3,613,781	0.57	17,708	0.49
Rhumblin Advisors S&P 500 Index Fund	0.04 % of Assets	57,789,978	9.14	23,116	0.04
Coho Relative Value Equity	0.50 % of First \$75 M 0.40 % of Next \$75 M 0.35 % Thereafter	47,321,240	7.49	236,606	0.50
Polen Focused Growth	0.65 % of Assets	40,511,034	6.41	263,322	0.65
Loomis Sayles Small Cap Growth	0.45 % of Assets Minimum Fee: \$45,000	20,656,266	3.27	92,953	0.45
SEG Baxter Street	1.00 % of Assets	26,147,365	4.14	261,474	1.00
Schroder International Alpha Trust Class 1	0.55 % of Assets	26,005,532	4.12	143,030	0.55
Baillie Gifford International Growth Fund Class K	0.60 % of Assets	12,112,272	1.92	72,674	0.60
Axiom Emerging Markets Trust Class 2	0.77 % of Assets	16,587,759	2.62	127,726	0.77
ABS Emerging Markets MA Fund	0.75 % of Assets	18,452,210	2.92	138,392	0.75
Garcia Hamilton Fixed Income Aggregate		30,108,444	4.76	37,636	0.13
Lord Abbett Core Fixed Income	0.19 % of Assets	38,479,747	6.09	73,112	0.19
Loomis Sayles Multisector Full Discretion Trust	0.39 % of First \$50 M 0.30 % Thereafter	48,184,347	7.62	187,919	0.39
Mesirow Small Cap Value Equity CIT - Founders Class	0.45 % of Assets	21,361,820	3.38	96,128	0.45
Invesco Mortgage Recovery Loans Feeder Fund		15,385	0.00		
PRIM Portfolio Completion Strategies		12,679,439	2.01		
Corbin Pinehurst Partners	0.85 % of Assets	13,566,885	2.15	115,319	0.85
UBS Neutral Alpha Strategies	0.90 % of Assets	13,003,745	2.06	117,034	0.90
Entrust Peru Wind Down	0.50 % of Assets	52,016	0.01	260	0.50
LMCG Serenitas Credit Gamma Offshore	Performance Based 1.50 and 20.00	12,236,640	1.94	183,550	1.50
Cash Account		12,261,374	1.94		
Morgan Stanley Prime Property (\$2.8m commitment in '95)		24,644,518	3.90		
TA Realty Core Property Fund, LP (\$15m commitment in '19)		25,494,984	4.03		
Invesco Mortgage Recovery II (\$3M commitment in '15)		644,706	0.10		
Landmark VI (\$2m commitment in '11)		5,866	0.00		
Landmark VIII (\$4m commitment in '17)		1,984,460	0.31		
StepStone Real Estate Fund II (\$2m commitment in '11)		361,718	0.06		
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)		473,317	0.07		
TerraCap Partners III, LP (\$2.6m commitment in '15)		1,589,564	0.25		
TerraCap Partners IV, LP (\$4m commitment in '17)		3,518,882	0.56		

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TerraCap Partners V, LP (\$8m commitment in '22)		8,504,546	1.35		
PRIM Vintage Year 2008 (\$3m commitment in '08)		877,781	0.14		
PRIM Vintage Year 2009 (\$1m commitment in '09)		54,148	0.01		
PRIM Vintage Year 2010 (\$1m commitment in '10)		384,253	0.06		
PRIM Vintage Year 2011 (\$1.5m commitment in '11)		758,234	0.12		
PRIM Vintage Year 2012 (\$1m commitment in '12)		433,618	0.07		
PRIM Vintage Year 2014 (\$2m commitment in '14)		2,052,897	0.32		
PRIM Vintage Year 2017 (\$2m commitment in '17)		2,643,769	0.42		
PRIM Vintage Year 2020 (\$5m commitment in '20)		4,335,163	0.69		
PRIM Vintage Year 2021 (\$5m commitment in '21)		3,917,830	0.62		
PRIM Vintage Year 2022 (\$7.5m commitment in '22)		1,870,561	0.30		
PRIM Vintage Year 2023 (\$10m commitment in '23)		457,227	0.07		
Alcentra European DLF (\$5m commitment in '14)		208,355	0.03		
Ascent Fund IV-B (\$1m commitment in '16)		20,242	0.00		
Ascent Fund V (\$2m commitment in '08)		1,274,437	0.20		
Ascent VI (\$3m commitment in '15)		3,174,297	0.50		
CVI Credit Value Fund IV A LP (\$6m commitment in '17)		4,624,990	0.73		
Invesco Fund VI (\$5m commitment in '13)		548,079	0.09		
Kayne Energy Fund VII (\$5m commitment in '15)		2,565,334	0.41		
Foundry 2007 (\$3m commitment in '07)		205,925	0.03		
Foundry 2010 (\$3m commitment in '10)		5,901,587	0.93		
Foundry 2010 Annex (\$0.4m commitment in '15)		1,100,130	0.17		
Pinebridge (AIG) PEP V Asia (\$.55m commitment)		29,864	0.00		
Pinebridge (AIG) PEP V Europe (\$1.6m commitment)		3,271	0.00		
Pinebridge (AIG) PEP V Large Market US Buyout (\$.7m commitment)		89,305	0.01		
Pinebridge (AIG) PEP V Preferred Participation Fund (\$.5m commitment)		59,460	0.01		
Pinebridge (AIG) PEP V Secondary (\$.6m commitment)		15,403	0.00		
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$.9m commitment)		52,801	0.01		
Pinebridge (AIG) PEP V US Venture (\$.48m commitment)		40,812	0.01		
Landmark XV (\$3m commitment in '13)		592,329	0.09		
JFL Equity Investors IV, L.P. (\$6m commitment in '16)		2,302,229	0.36		
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)		4,885,206	0.77		
Park Square Credit Opportunities III (\$3m commitment in '17)		2,809,653	0.44		
Ironsides Constitution Opportunities (\$3m commitment in '18)		1,481,666	0.23		

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
HarbourVest Dover Street X (\$9m commitment in '20)		7,331,986	1.16		
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)		7,785,098	1.23		
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)		12,688,150	2.01		
JFL Equity Investors V, L.P. (\$9m commitment in '20)		11,417,570	1.81		
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)		4,594,346	0.73		
Investment Management Fee		631,957,850	100.00	2,187,956	0.35

NOTES

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balances, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Preliminary Total Composite net of fee since inception return is 6.5% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.1% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 02/01/2022.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index Consists of: 24% S&P 500, 7% Russell 2000, 12% MSCI ACWI IMI, 7% MSCI Emerging Markets, 12% Bloomberg US Aggregate TR, 8% Bloomberg US Universal TR, 6% HFRI Fund of Funds Composite Index, 12% NCREIF Property Index, 12% CJA US All PE.
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.
- 9 - All Private Market managers are final as of 6/30/23, and cash adjust through 9/30/2023.
- 10 - Total estimated annual fee is \$2,187,956.

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

Estimated Asset Allocation Rebalance Summary

November 10, 2023

	Market Value	Weight in Fund	Target Weight	Recommendation	New Market Value	New Weight
Composite	\$644,861,124	100.0%	100.0%	\$0	\$644,861,124	100.0%
Total Balanced	\$4,180,105	0.6%	0.0%	\$0	\$4,180,105	0.6%
PRIT Core Fund	\$4,180,105	0.6%	0.0%	\$0	\$4,180,105	0.6%
Total Domestic Equity	\$195,630,593	30.3%	31.0%	-\$6,000,000	\$189,630,593	29.4%
Rhumblin Advisors S&P 500 Index Fund	\$60,870,184	9.4%	10.0%	\$0	\$60,870,184	9.4%
Coho Relative Value	\$48,736,186	7.6%	7.0%	-\$3,000,000	\$45,736,186	7.1%
Polen Focused Growth	\$43,173,228	6.7%	7.0%	-\$3,000,000	\$40,173,228	6.2%
Mesirow Smcall Cap Value	\$21,782,648	3.4%	3.5%	\$0	\$21,782,648	3.4%
Loomis Sayles Small Cap Growth	\$21,068,347	3.3%	3.5%	\$0	\$21,068,347	3.3%
Total International Equity	\$101,123,520	15.7%	19.0%	-\$1,000,000	\$100,123,520	15.5%
SEG - Baxter Street Fund	\$26,147,365	4.1%	5.0%	\$0	\$26,147,365	4.1%
Schroders International Alpha	\$26,005,532	4.0%	4.0%	\$0	\$26,005,532	4.0%
Baillie Gifford	\$13,032,805	2.0%	3.0%	-\$1,000,000	\$12,032,805	1.9%
Axiom Emerging Markets	\$16,587,759	2.6%	3.5%	\$0	\$16,587,759	2.6%
ABS Emerging Markets Strategic Portfolio	\$19,350,059	3.0%	3.5%	\$0	\$19,350,059	3.0%
Total Equity	\$296,754,113	46.0%	50.0%	-\$7,000,000	\$289,754,113	44.9%
Total Fixed Income	\$131,368,316	20.4%	20.0%	\$0	\$131,368,316	20.4%
Garcia Hamilton	\$30,827,697	4.8%	10.0%	\$0	\$30,827,697	4.8%
Lord Abbett	\$39,183,926	6.1%		\$0	\$39,183,926	6.1%
Loomis Sayles Multi Sector Bonds	\$49,104,668	7.6%	8.0%	\$0	\$49,104,668	7.6%
LMCG Serenitas	\$12,236,640	1.9%	2.0%	\$0	\$12,236,640	1.9%
Invesco Mortgage Recovery	\$15,385	0.0%	0.0%	\$0	\$15,385	0.0%
Total Hedge Fund	\$39,302,085	6.1%	6.0%	\$0	\$39,302,085	6.1%
PRIM Absolute Return Fund	\$12,679,439	2.0%		\$0	\$12,679,439	2.0%
Corbin Pinehurst Partners	\$13,566,885	2.1%		\$0	\$13,566,885	2.1%
UBS Neutral Alpha Strategies	\$13,003,745	2.0%		\$0	\$13,003,745	2.0%
Entrust Peru Winddown	\$52,016	0.0%		\$0	\$52,016	0.0%
Total Real Estate	\$67,222,562	10.4%	12.0%	\$0	\$67,222,562	10.4%
TA Realty Core	\$25,494,984	4.0%		\$0	\$25,494,984	4.0%
Morgan Stanley PPF	\$24,644,518	3.8%		\$0	\$24,644,518	3.8%
Total Private Equity	\$93,588,008	14.5%	12.0%	\$0	\$93,588,008	14.5%
Cash	\$12,445,935	1.9%	0.0%	\$7,000,000	\$19,445,935	3.0%
M&T Cash	\$12,445,935	1.9%	0.0%	\$7,000,000	\$19,445,935	3.0%



The MWRA Retirement System Large Cap Value Equity Search

The Massachusetts Water Resource Authority Retirement System (the "System") is accepting proposals from investment firms to manage a U.S. Large Cap Value Equity mandate for the System's ~\$650 million, defined benefit, pension fund. To be considered, candidates must be offering an active U.S. large cap value strategy. Core, Growth, Hedged and All Cap strategies will not be considered for this search. The System anticipates investing approximately \$50 million with the manager(s). In order to be considered, the candidates must meet the following criteria.

1. Candidates **must have familiarity with and agree to comply (in writing)** with Massachusetts G.L. Chapter 32 and Chapter 176 of the Acts of 2011. Additionally, candidates must have familiarity and agree to comply with the reporting and investment guidelines administered by PERAC. Guidelines can be found in the attached links.
<https://malegislature.gov/Laws/SessionLaws/Acts/2011/Chapter176>
<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleIV/Chapter32>
2. Candidates must read and agree to the attached side letter pertaining to mandatory contractual language, based on the guidelines above.
3. Candidates must be registered with the SEC or Massachusetts Secretary of State.
4. Preference will be given to candidates who have at least \$500 million in assets in the fund that is being suggested, however, this is subject to the Board's discretion.
5. Preference will be given to Funds that have a live track record of at least three years, however, this is subject to the Board's discretion.

By submitting a formal response to this RFP, the Manager acknowledges that the Investor, MWRA Employees' Retirement System, is bound by both Massachusetts Open Meeting Law as governed by Massachusetts General Laws Chapter 30A § 18-25 and 940 CMR 29.00, and the Massachusetts Public Records Law as governed by Massachusetts General Laws Chapter 66 and 950 CMR 32.00. Any document submitted by the Manager to the Investor or discussed in open session at a public meeting will be presumed to be a public record unless it otherwise qualifies under an exemption as specified in the statute.

If you are interested in participating in the search, please update eVestment through 3Q 2023 at www.evestment.com.

In addition, please provide NEPC with the following information:

1. A cover letter indicating your firm's interest in the search. Please include the vehicle you are proposing for this search and the fee schedule you are proposing for this mandate, as well as confirmation regarding the attached side letter.
2. An email copy of all eVestment information at the firm and product level for the proposed strategy. Please clearly indicate the product type category in which you classify your product. All historical information surrounding investment market capitalization must be included.
3. The completed Fund Summary template provided by NEPC for the strategy you are proposing.
4. Completion of the PERAC disclosure and verification forms (4), which are available on both the PERAC and NEPC website.

All questions should be directed via email to the following contact (no phone calls please). **Proposals must be submitted to MWRAsearch@nepc.com by 5:00 pm EDT, on Friday, December 1, 2023.** Proposals received after the deadline will not be considered.

MWRA Search
NEPC, LLC
MWRAsearch@nepc.com



CUSTODY SEARCH RATINGS

MWRA RETIREMENT SYSTEM

NOVEMBER 16, 2023

Sebastian Grzejka
Francesca LoVarde



EXECUTIVE SUMMARY

- **NEPC initiated a Custody Search on behalf of The Massachusetts Water Resource Authority Employee Retirement System**
 - BNY Mellon, State Street, Northern Trust, US Bank, Comerica Bank, Broadridge Financial Solutions, Inc. and Wilmington Trust/M&T Bank (incumbent) requested access to the search
 - The RFP included plan assets and metrics as of **5/31/2023**. For reference purposes, assets were **\$639 million** and responses were due by **August 11, 2023**

- **BNY Mellon and Northern Trust declined to participate noting limited asset size, scope of services and that relationship would fall under their annual custody minimum. US Bank declined to participate due to PERAC requirements, which they do not support today**
 - Broadridge Financial Solutions, Inc. requested copies of the search materials, but did not provide a proposal

- **NEPC received responses from State Street, Comerica Bank and Wilmington Trust/M&T Bank (incumbent custodian). Included in each response was an overview and pricing estimate for the following services:**
 - Core Custody Services

- **The following presentation summarizes the qualifications, products/services and search rating**

SUMMARY ANALYSIS

COMPETITIVE ADVANTAGES & AREAS FOR CONCERN¹

State Street	Comerica Bank	Wilmington Trust/ M&T Bank
<ul style="list-style-type: none"> • Largest trust/custody revenue contribution (to entire firm) in comparison to other providers • Provide domestic and global custody (direct access to US and non-US markets) • Single proprietary systems for custody and accounting services • Notable technology budget and spend • Dedicated conversion staff including conversion specialist for each client transition • Lowest pricing proposal • Local service team (Quincy, MA) 	<ul style="list-style-type: none"> • Public Fund/Taft-Hartley focus • Continuous custody client gains • Superior client service model compared to larger global custodians 	<ul style="list-style-type: none"> • Existing provider –relationship team is knowledgeable of existing plans(s)/structure • No transition required – although Wilmington Trust/M&T Bank do have a dedicated conversion staff including conversion specialist for each client transition • Local service team (Andover, MA)
<ul style="list-style-type: none"> • Client losses over last five years high relative to client assets gained and other providers 	<ul style="list-style-type: none"> • Third-party custody and accounting systems • Utilize BNY Mellon for global custody services (do not have direct access to non-US markets) • Highest pricing proposal • Service team located in Detroit, MI 	<ul style="list-style-type: none"> • Utilize third-party systems for custody operations • Lowest trust/custody revenue contribution (to entire firm) in comparison to other providers



The scoresheet is intended for documentation purposes and to facilitate discussion, particularly around areas of comparative strength, weakness or "fit". It is not intended to bind a decision or recommendation to a selection Committee.

¹Competitive Advantages and Areas for Concern (Cited & Observed)

SUMMARY ANALYSIS

CRITERIA & SCORING

Score	Methodology	MWRA Search Rating
	Does not currently support product/service	Unacceptable
	Unclear response and/or does not align with client requirements	Not Advantageous
	Clear response which appears to align with client requirements	Advantageous
	Vigorous response which is highly aligned with client requirements	Highly Advantageous

Standard Criteria	State Street	Comerica Bank	Wilmington Trust/M&T Bank
Firm History, Experience & Financial Stability			
Relationship Team Experience & Structure			
Core Custody Services			
Technology, Systems & Applications			
Transition/Conversion			



SUMMARY ANALYSIS

CRITERIA & SCORING (PERAC)

Score	Methodology
	Does not currently support product/service
	Unclear response and/or does not align with client requirements
	Clear response which appears to align with client requirements
	Vigorous response which is highly aligned with client requirements

Standard Criteria	State Street	Comerica Bank	Wilmington Trust/M&T Bank
Candidates must have familiarity with and agree to comply 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.			
Candidates must have experience working with public pension plans.			
Candidates must have a global platform.			
MWRA Overall Search Rating	Advantageous	Advantageous	Advantageous



INFORMATION DISCLOSURE

These materials contain summary information regarding the custodian banks described herein and are not a complete description of the products, services, and/or legal agreements for each provider. This analysis does not constitute a formal recommendation, approval or affirmation by NEPC. This report is for informational purposes and should be used as legal and/or tax advise. This report was prepared by NEPC for use by an individual client and should not be used by anyone other than the intended recipient. This report may consist of statements of opinion which are as of the date published and specific to the individual client review.

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Q3 2023 INVESTMENT REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM

NOVEMBER 16, 2023

Sebastian Grzejka, CAIA, Principal
Francesca LoVerde, Sr. Consulting Analyst



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).



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Third Quarter Plan Performance	19





MARKET REVIEW



PROPRIETARY & CONFIDENTIAL

TRAILING ANNUAL INDEX PERFORMANCE

Equity						
	Oct-23	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI	-3.0%	6.7%	10.5%	6.7%	7.5%	6.8%
S&P 500	-2.1%	10.7%	10.1%	10.4%	11.0%	11.2%
Russell 1000	-2.4%	10.3%	9.5%	9.5%	10.7%	10.9%
Russell 2000	-6.8%	-4.5%	-8.6%	3.9%	3.3%	5.6%
Russell 2500	-6.1%	-2.7%	-4.6%	5.5%	5.5%	6.9%
MSCI EAFE	-4.1%	2.7%	14.4%	5.7%	4.1%	3.1%
MSCI EM	-3.9%	-2.1%	10.8%	-3.7%	1.6%	1.2%

Credit						
	Oct-23	YTD	1 YR	3 YR	5 YR	10 YR
BBG Global Agg	-1.2%	-3.4%	1.7%	-7.3%	-1.6%	-0.7%
BBG US Agg	-1.6%	-2.8%	0.4%	-5.6%	-0.1%	0.9%
BBG Credit	-1.8%	-1.7%	2.7%	-5.3%	0.8%	1.8%
BBG US HY	-1.2%	4.6%	6.2%	1.2%	3.1%	3.9%
BBG Muni	-0.9%	-2.2%	2.6%	-2.5%	1.0%	2.1%
BBG Muni HY	-1.6%	-1.6%	4.0%	-1.3%	1.7%	3.8%
BBG TIPS	-0.7%	-1.5%	-0.7%	-2.0%	2.3%	1.6%
BBG 20+ STRIPS	-8.6%	-22.3%	-16.6%	-23.6%	-5.9%	-0.3%
BBG Long Treasuries	-4.9%	-13.1%	-8.5%	-16.3%	-3.2%	0.1%
BBG Long Credit	-4.1%	-6.6%	0.6%	-10.1%	-0.3%	2.0%
BBG Govt/Credit 1-3 Yr	0.3%	2.2%	3.2%	-0.6%	1.3%	1.0%
JPM EMBI Glob Div	-1.4%	0.4%	8.4%	-5.0%	-0.2%	2.1%
JPM GBI-EM Glob Div	-0.5%	3.7%	13.5%	-3.0%	0.3%	-1.2%

Real Assets						
	Oct-23	YTD	1 YR	3 YR	5 YR	10 YR
BBG Commodity	0.3%	-3.2%	-3.0%	15.8%	6.7%	-0.6%
Alerian Midstream Index	-0.3%	6.8%	4.2%	29.0%	9.3%	3.9%
NAREIT Composite Index	-3.5%	-8.5%	-7.8%	2.7%	2.2%	5.2%



Source: S&P, MSCI, Russell, Bloomberg, JPM, Alerian, FTSE, FactSet

CURRENT MARKET OUTLOOK



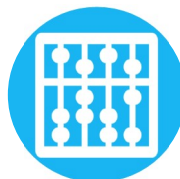
The "higher-for-longer" interest rate environment will test the economy's ability to avoid a recession in 2024



The outlook for U.S. TIPS is favorable with higher real interest rates and attractive breakeven inflation rates



We are concerned about U.S. mega-caps and suggest reducing exposure, while maintaining U.S. large-cap value exposure



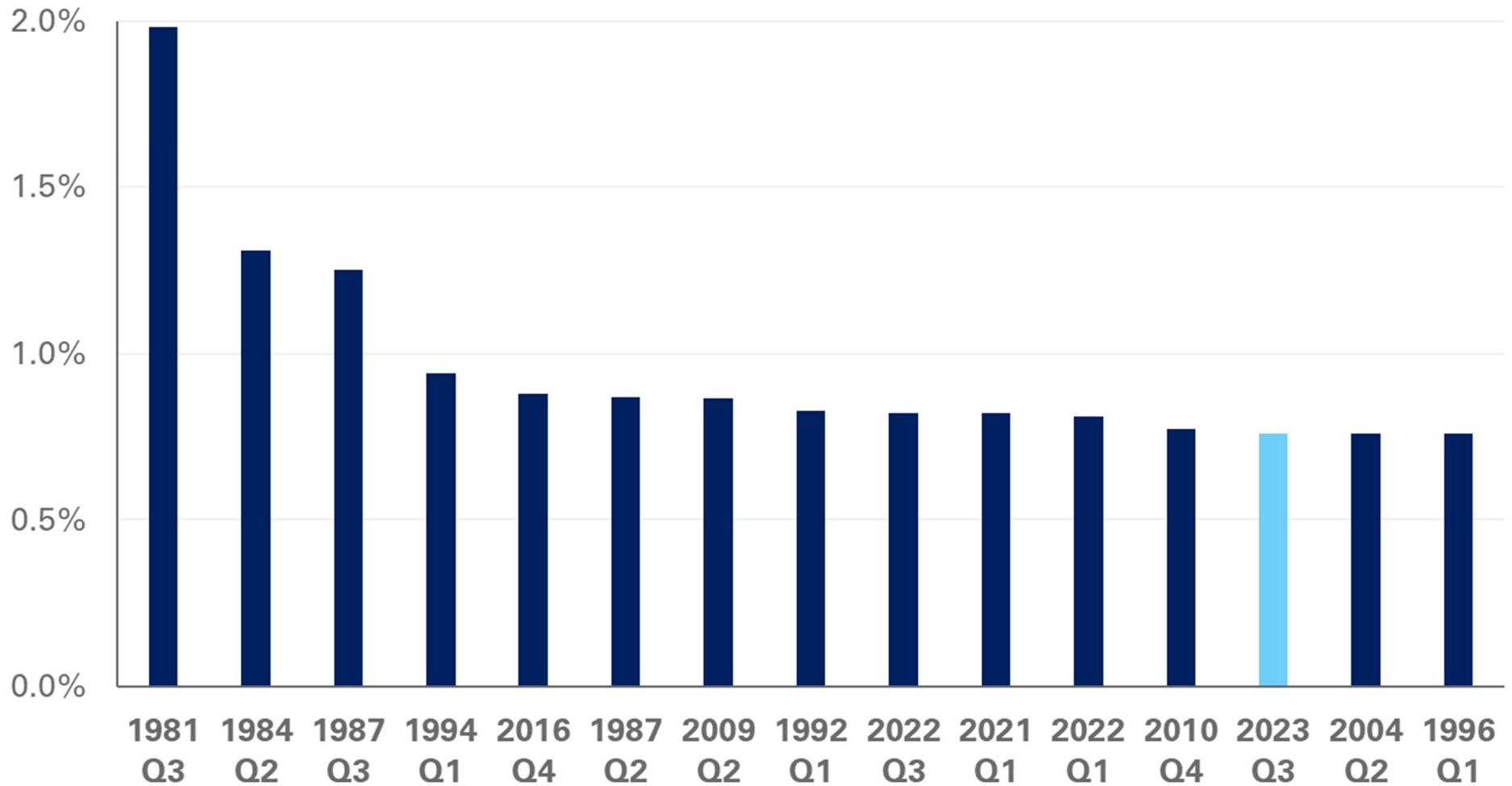
We believe U.S. high yield offers a greater return versus U.S. large-cap equity and we recommend increasing exposure



We recommend a duration-neutral posture relative to policy targets and remain comfortable with elevated levels of cash

10-YEAR YIELDS ROSE SIGNIFICANTLY

TOP 15 QUARTERLY CHANGE: 10-YEAR U.S. TREASURY YIELD

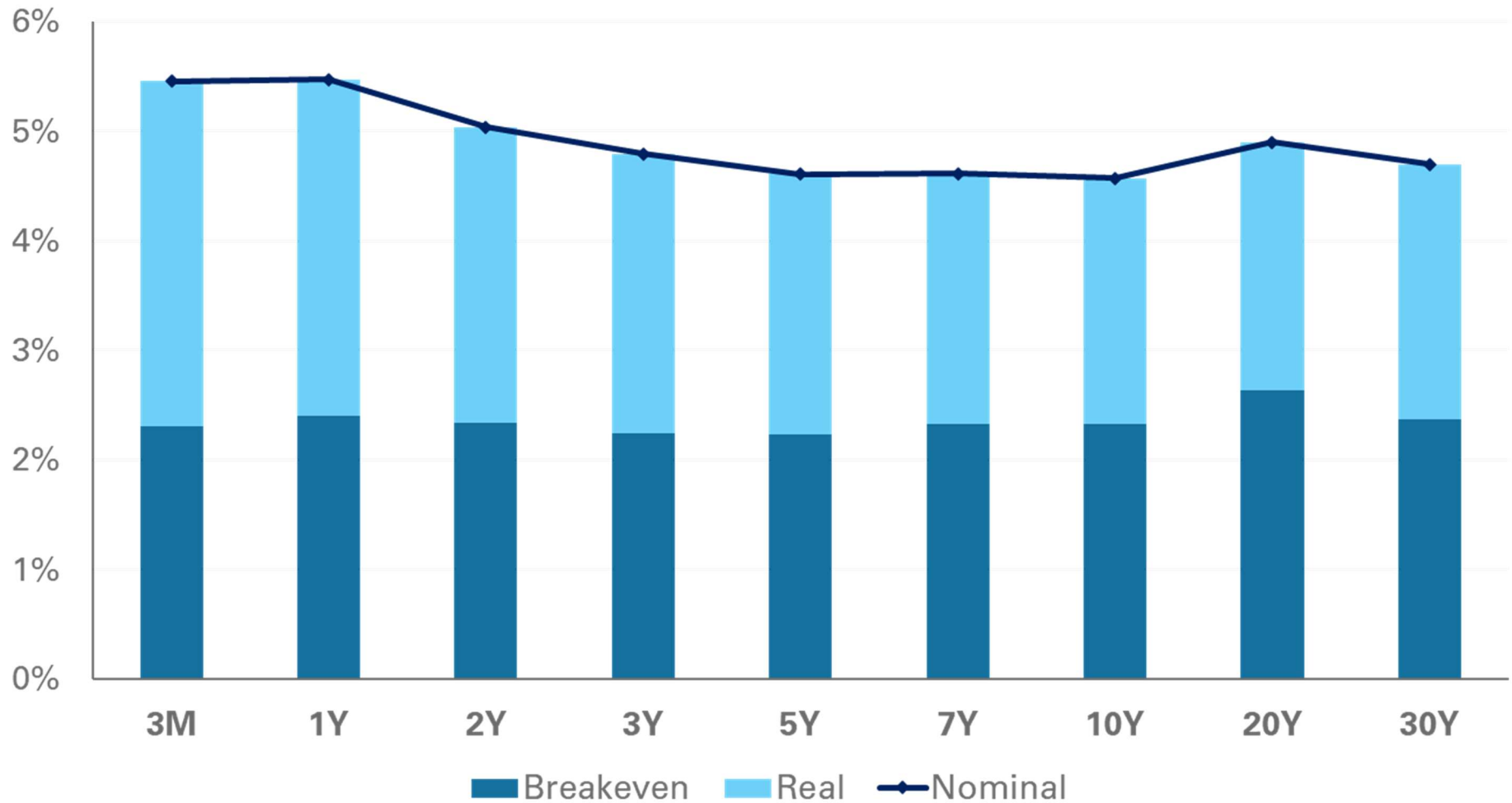


Calculated based on data as of 12/31/1980
Source: FactSet



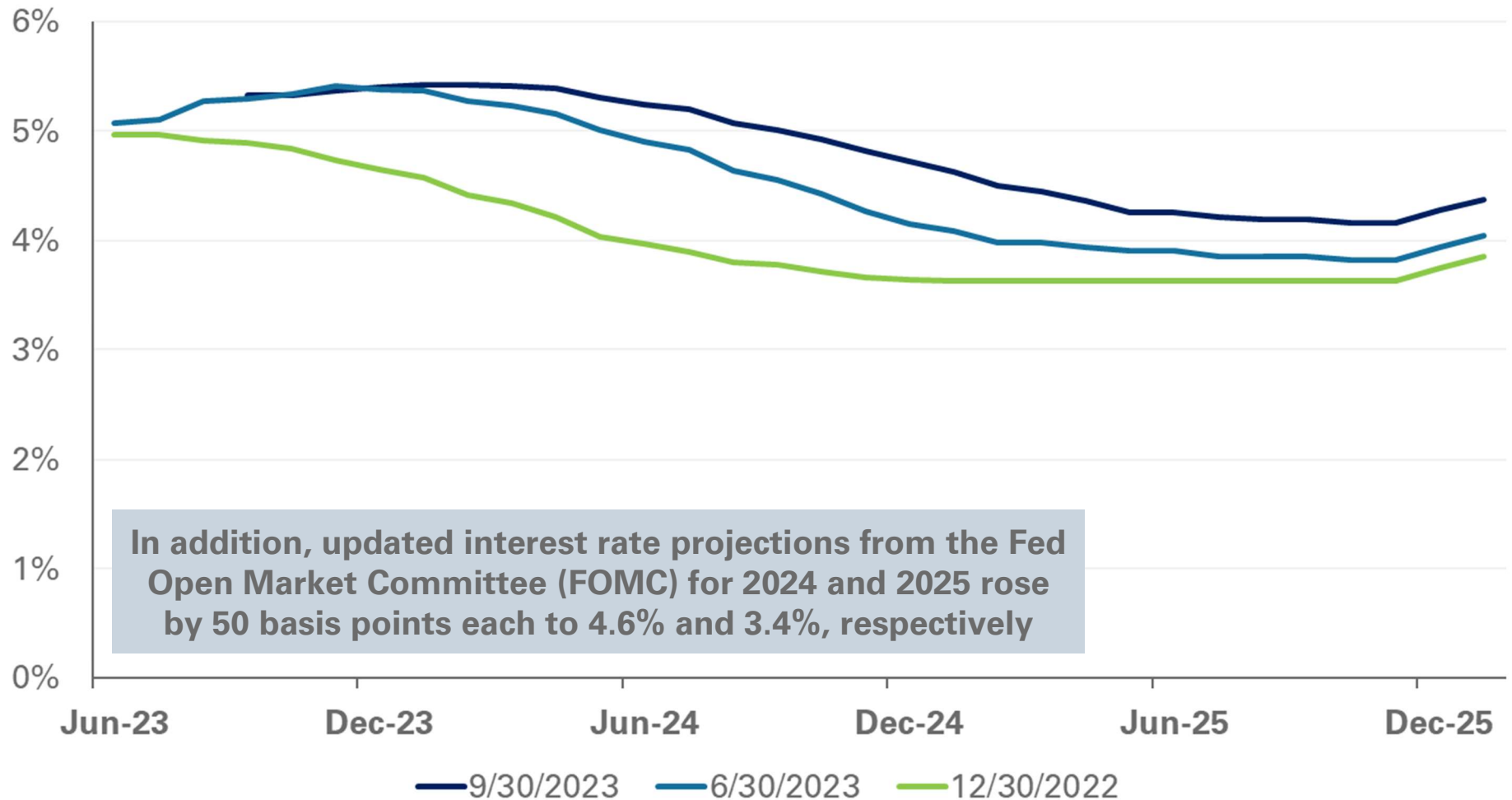
HIGHER REAL RATES LIFTED THE YIELD CURVE

U.S. YIELD CURVE



THE MARKET IS PRICING IN "HIGHER FOR LONGER"

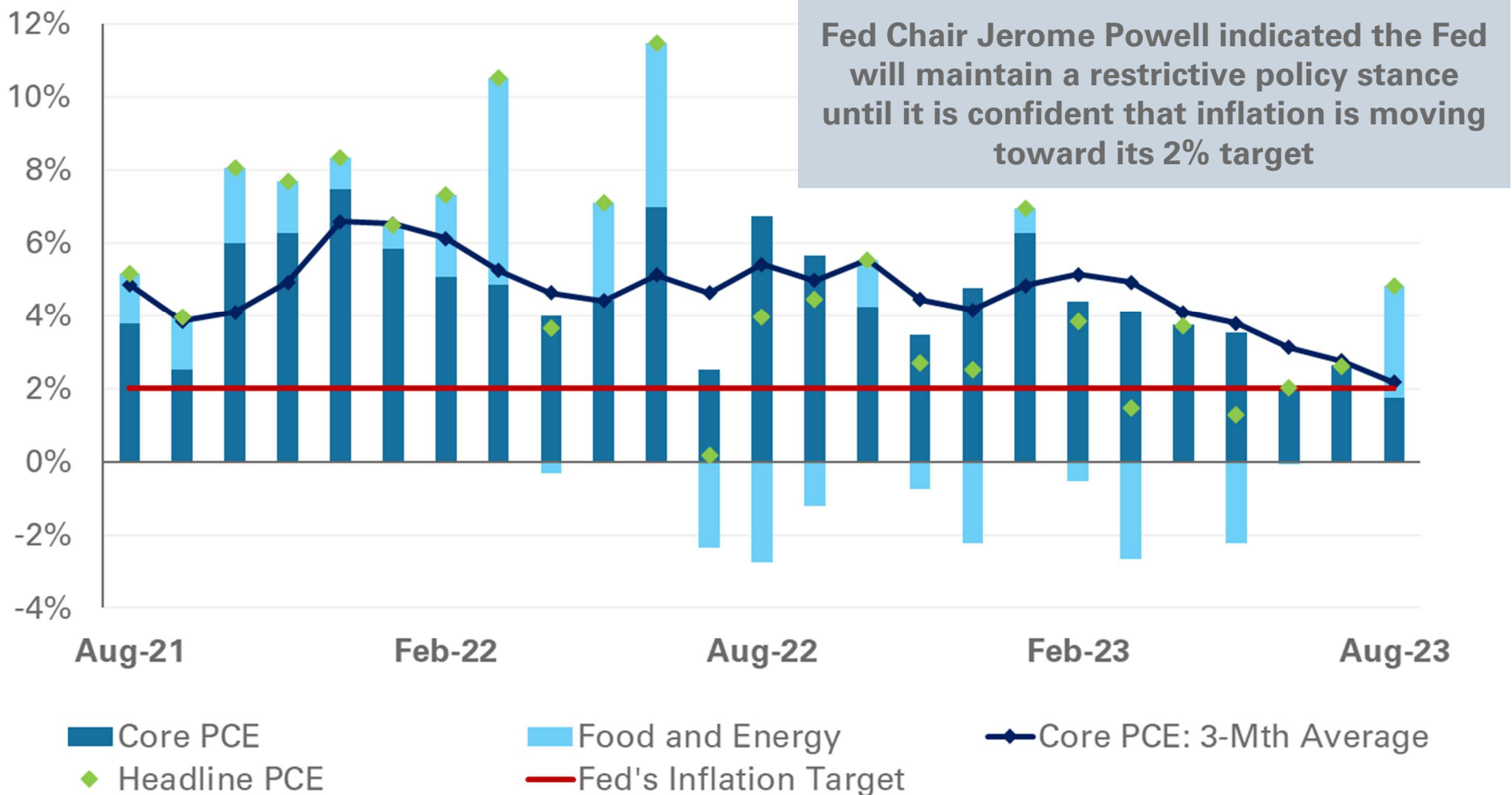
FEDERAL FUND FUTURES



Source: FactSet

CORE INFLATION NEAR FED'S INFLATION TARGET

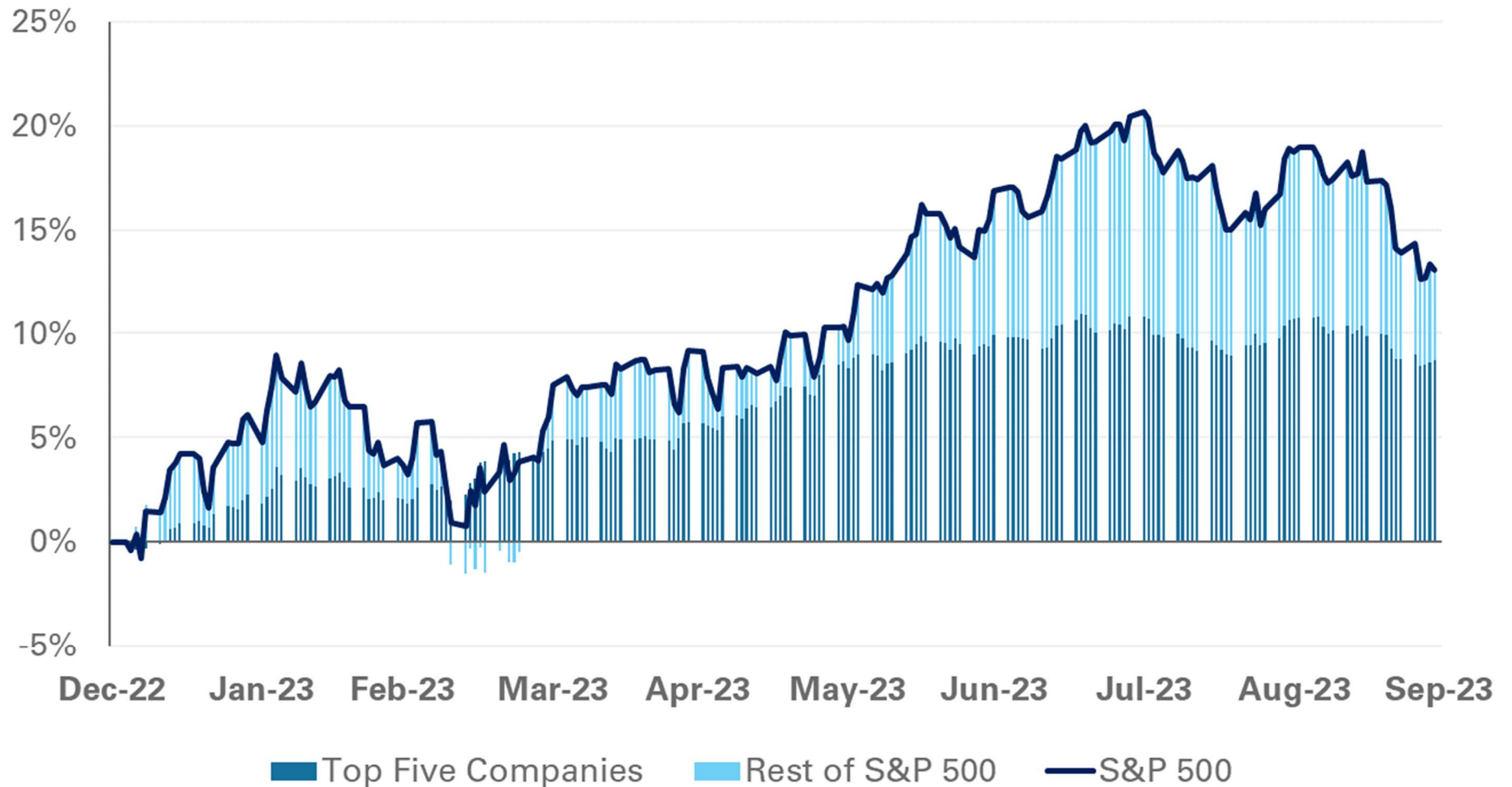
ANNUALIZED MONTHLY U.S. PCE PRICE INDEX CHANGES



Sources: Department of Labor, FactSet

TOP FIVE COMPANIES SUPPORTED THE S&P 500

CONTRIBUTIONS TO TOTAL RETURN



BREADTH OF STOCK RETURNS HAS BEEN POOR

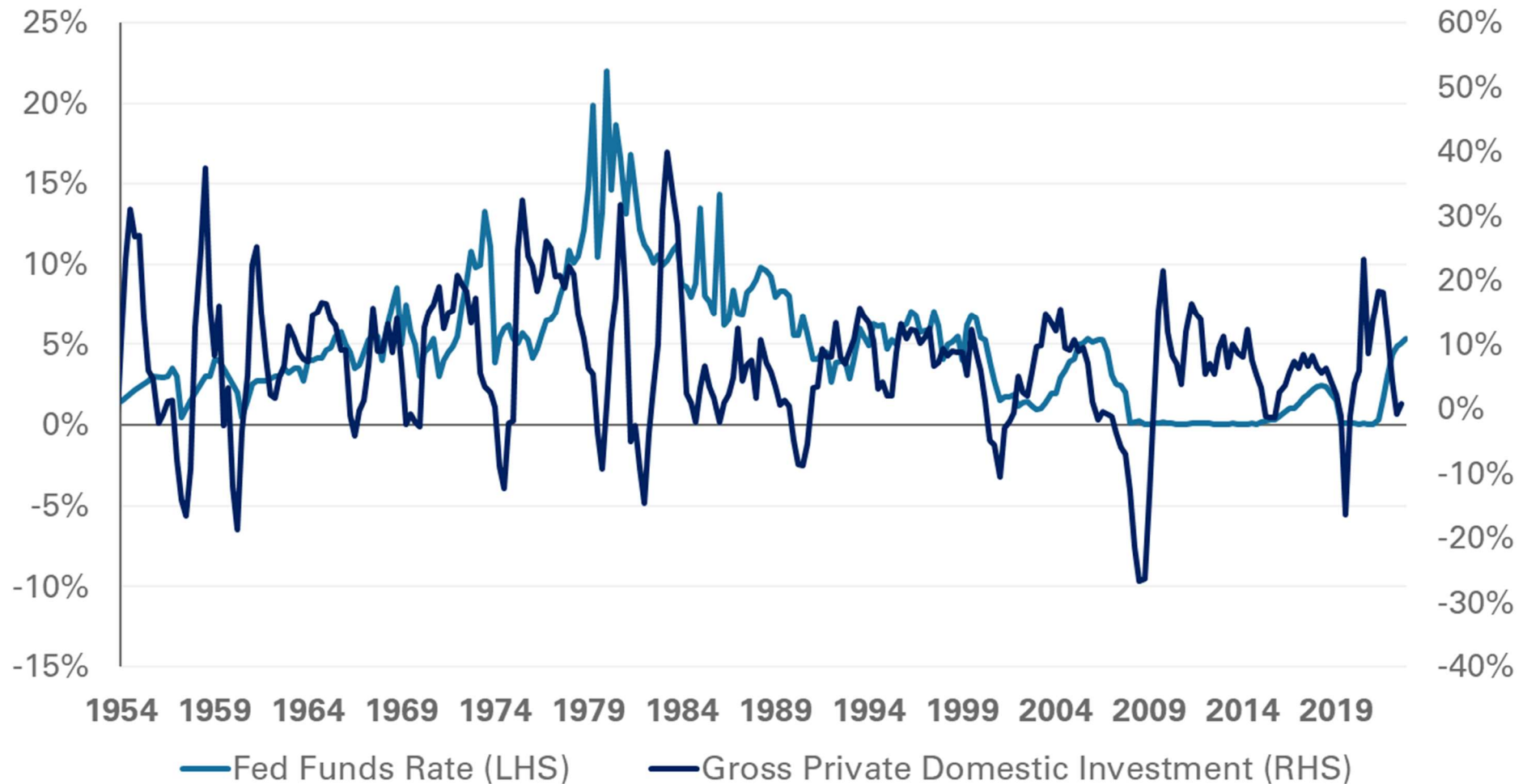
TRAILING 250 DAY RETURN OF S&P 500 VS S&P EQUAL WEIGHT



Sources: S&P, FactSet, NEPC

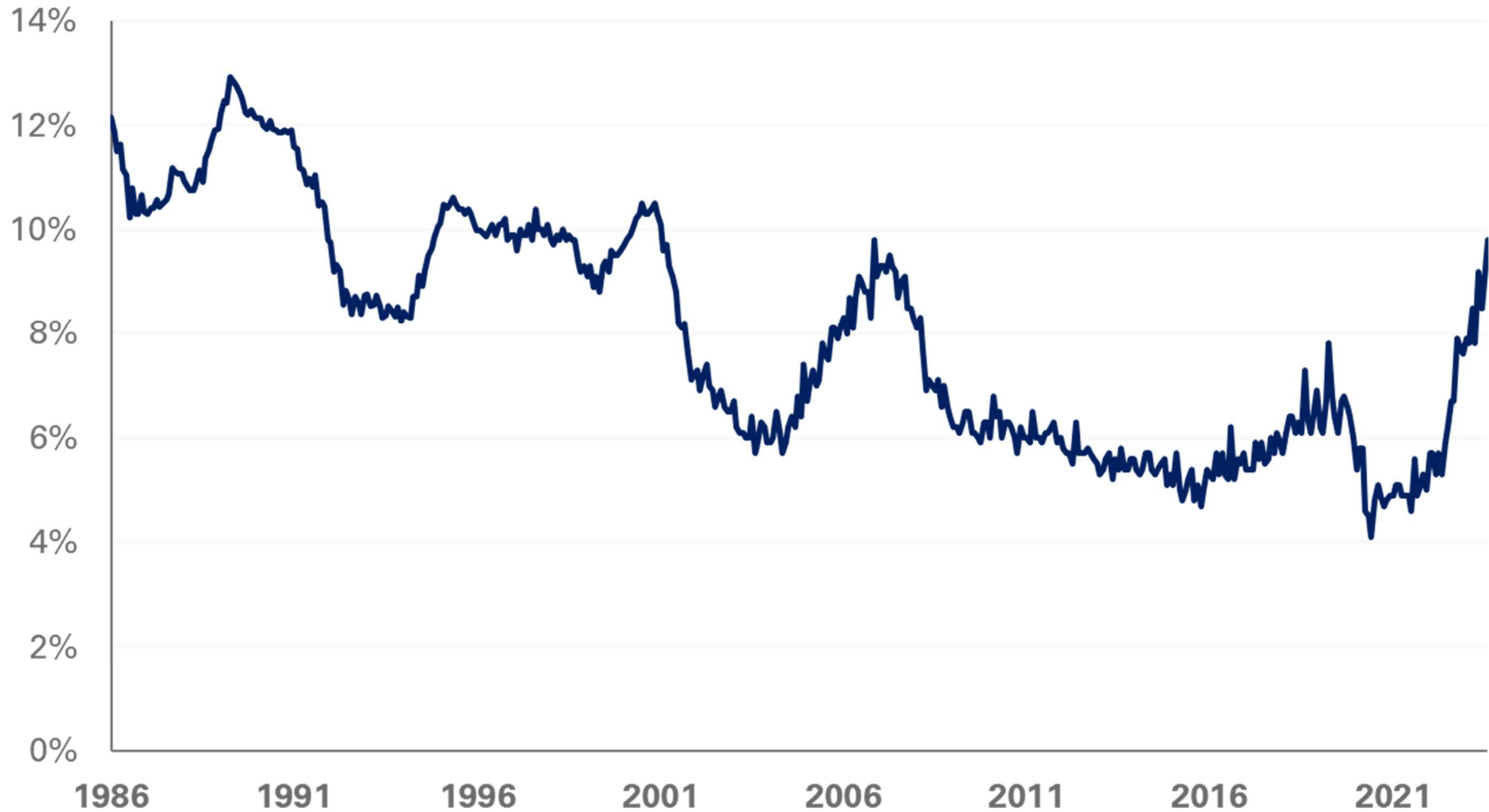
RATES INFLUENCE INVESTMENT DECISIONS

FED FUNDS VS. ANNUAL CHANGE IN PRIV. DOMESTIC INVESTMENT



RISING INTEREST COSTS TO PRESSURE BUSINESSES

RATE PAID ON SHORT-TERM LOANS BY SMALL BUSINESSES



Sources: National Federation of Independent Businesses, FactSet

JOB OPENINGS REMAIN ELEVATED

NONFARM JOB OPENINGS AND LABOR TURNOVER SURVEY



Source: Department of Labor, FactSet

CONSUMER BALANCE SHEETS ARE HEALTHY

U.S. HOUSEHOLD DEBT SERVICE TO DISPOSABLE INCOME



THE LABOR MARKET REMAINS TIGHT VS. HISTORY

UNEMPLOYMENT INSURANCE CLAIMS AS % OF LABOR FORCE



Notes: Chart truncated at 0.8%. Reading for 04/03/2020 was 3.93%. Shaded regions reflect recessions as defined by the NBER.

Sources: Department of Labor, NBER, FactSet

CONCLUDING THOUGHTS



We do not foresee a recession in 2024 and expect “higher-for-longer” interest rates to persist



The economy has been resilient with higher rates; robust labor market data reinforces a “no recession” outcome



The monetary policy lag is likely longer and more variable today given the services-orientation of the economy

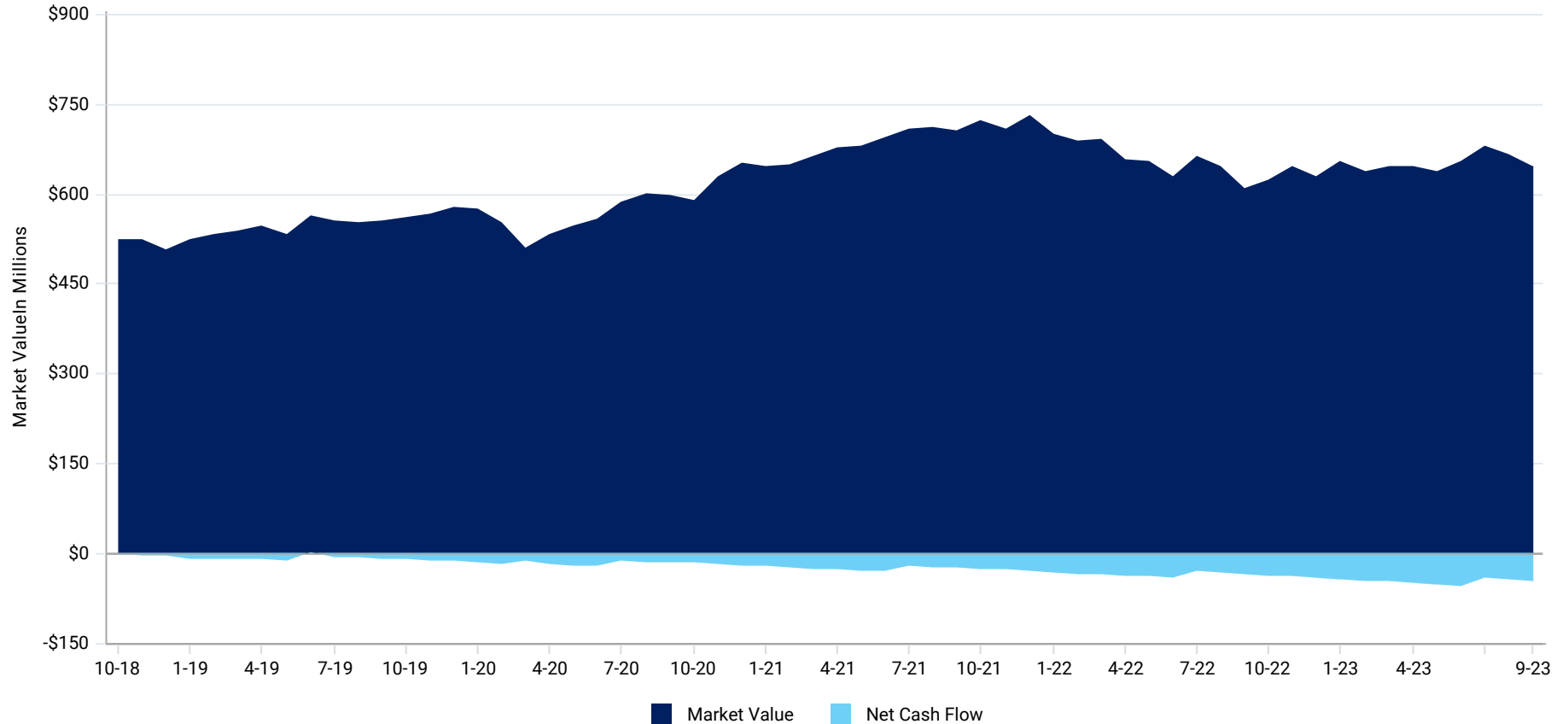
THIRD QUARTER PLAN PERFORMANCE



PROPRIETARY & CONFIDENTIAL

TOTAL FUND ASSET GROWTH SUMMARY CALENDAR

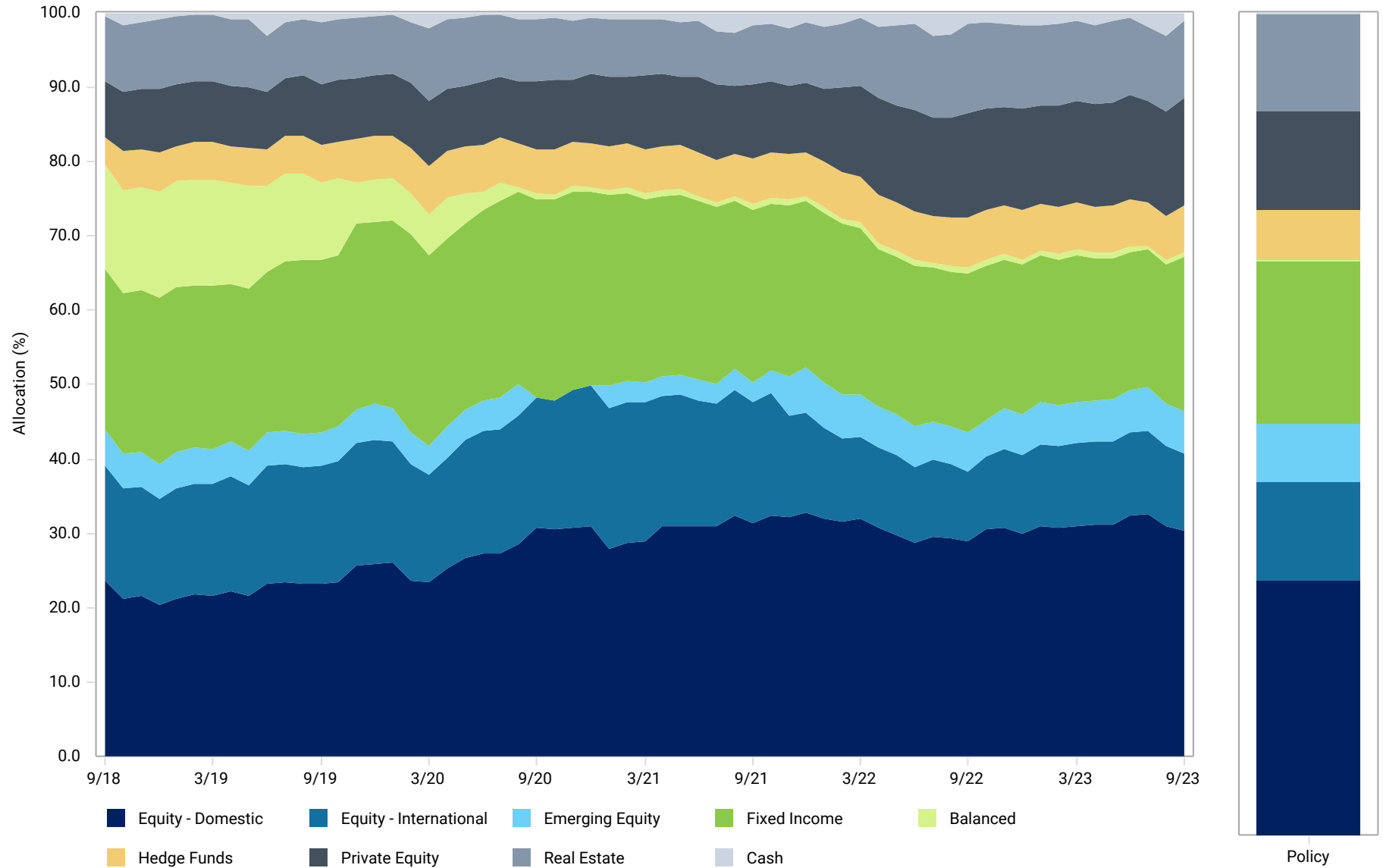
5 Years Ending September 30, 2023



	2018	2019	2020	2021	2022
Beginning Market Value	525,597,128	507,653,878	579,228,207	651,404,918	731,202,570
Net Cash Flow	-1,438,297	-8,456,662	-6,431,675	-9,727,520	-11,112,301
Net Investment Change	-16,504,953	80,030,992	78,608,385	89,525,172	-90,106,944
Ending Market Value	507,653,878	579,228,207	651,404,918	731,202,570	629,983,324
Net Change	-17,943,250	71,574,329	72,176,711	79,797,652	-101,219,245

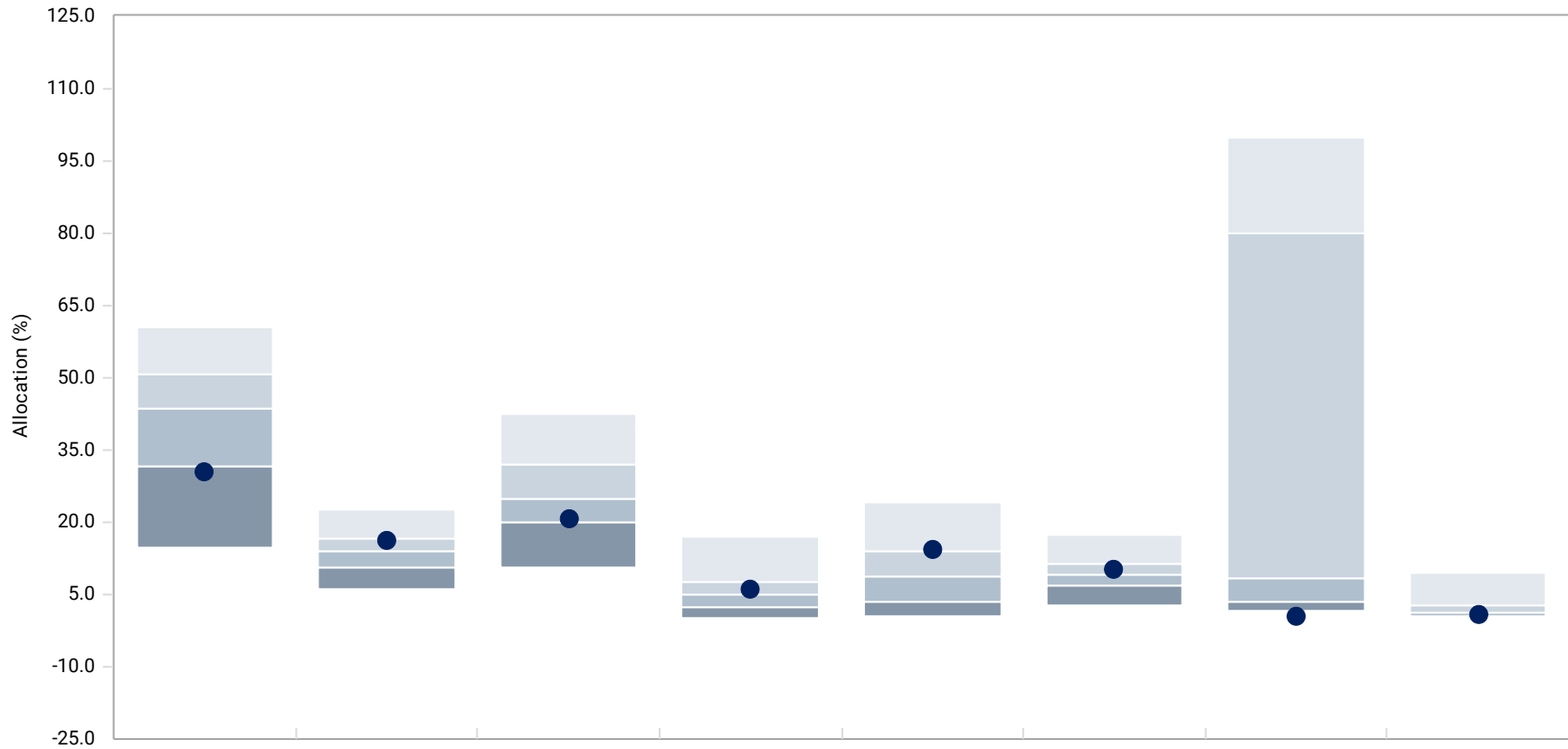
TOTAL FUND ASSET ALLOCATION HISTORY

Historical Asset Allocation



TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

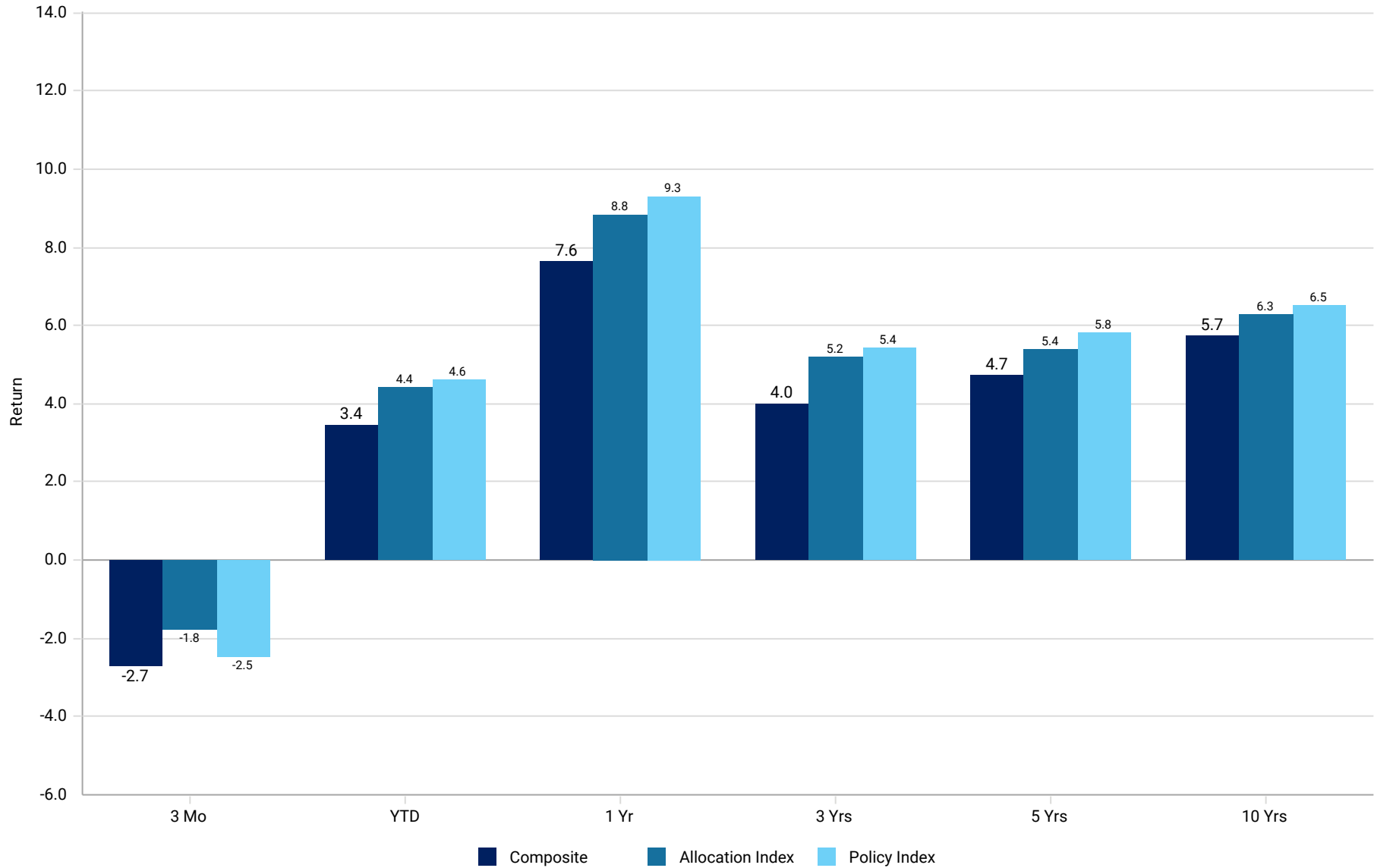
Total Fund Allocation vs. All Public DB Plans



	US Equity	Global ex-US Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Estate - Private	Balanced	Cash & Equivalents
● Composite	30.4 (77)	16.1 (31)	20.8 (71)	6.3 (36)	14.5 (23)	10.4 (36)	0.6 (100)	1.0 (63)
5th Percentile	60.6	22.7	42.4	17.0	24.1	17.3	100.0	9.4
1st Quartile	50.8	16.7	32.0	7.6	14.1	11.5	80.1	2.8
Median	43.5	14.0	24.9	5.0	8.7	9.1	8.3	1.4
3rd Quartile	31.7	10.5	20.0	2.2	3.7	6.7	3.5	0.6
95th Percentile	14.7	6.2	10.6	0.1	0.7	2.9	1.8	0.1
Population	541	500	577	94	177	319	36	485

TOTAL FUND RETURN SUMMARY

Return Summary (net of fees)



TOTAL FUND ATTRIBUTION

Attribution Effects
1 Year Ending September 30, 2023



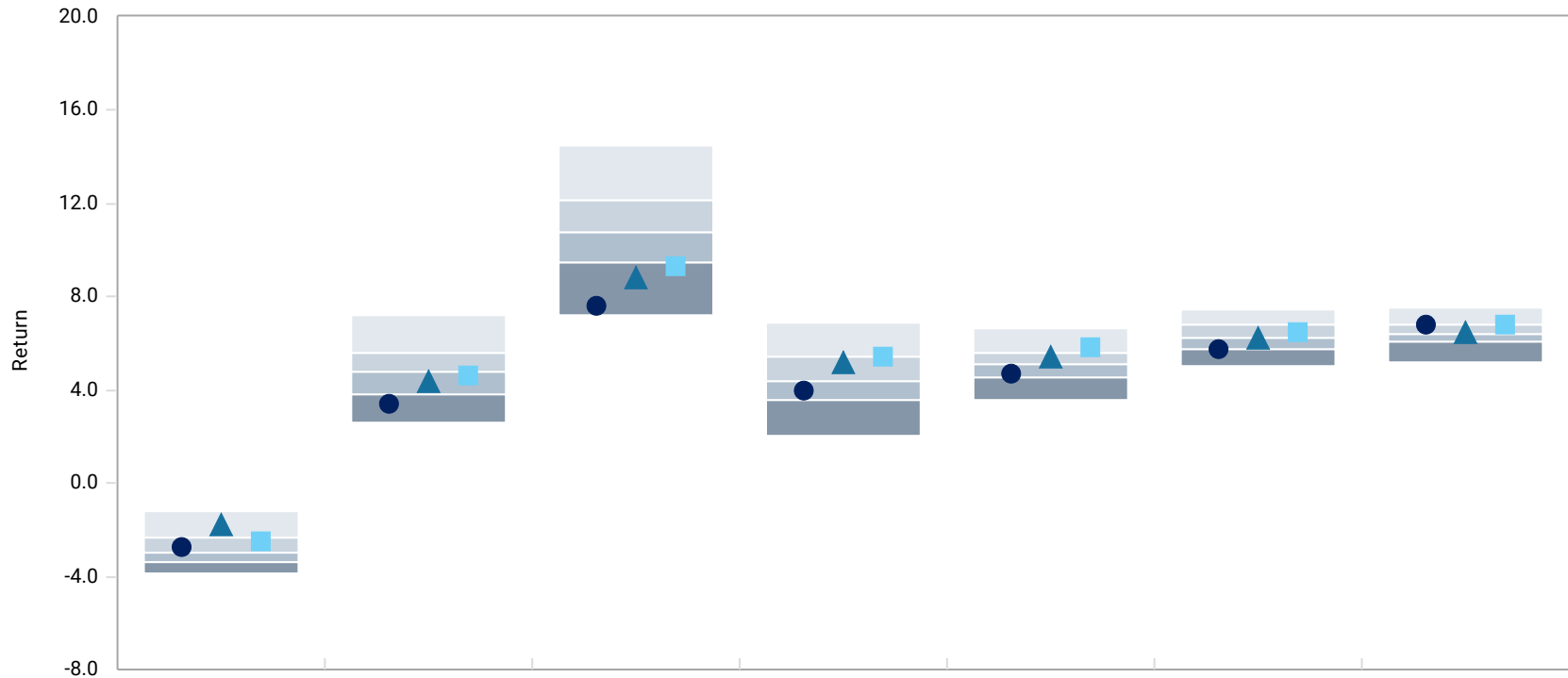
Attribution Summary
1 Year Ending September 30, 2023

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Total Domestic Equity	15.0	18.8	-3.8	-1.1	-0.1	0.0	-1.2
Total Non-US Equity	13.5	17.2	-3.7	-0.6	-0.3	0.0	-0.9
Total Fixed Income	2.2	1.0	1.1	0.2	0.0	0.0	0.2
Total Hedge Fund	5.2	4.6	0.6	0.0	-0.1	0.0	0.0
Other	4.7	4.5	0.2	0.0	0.1	0.0	0.1
Total Real Estate	-5.2	-8.4	3.2	0.4	0.1	0.0	0.5
Total Private Equity	6.2	6.8	-0.6	-0.1	-0.1	0.0	-0.2
Composite	7.6	9.3	-1.7	-1.2	-0.5	0.0	-1.7

*Total Actual and Index returns are weighted average calculations.

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Composite vs. All Public DB Plans

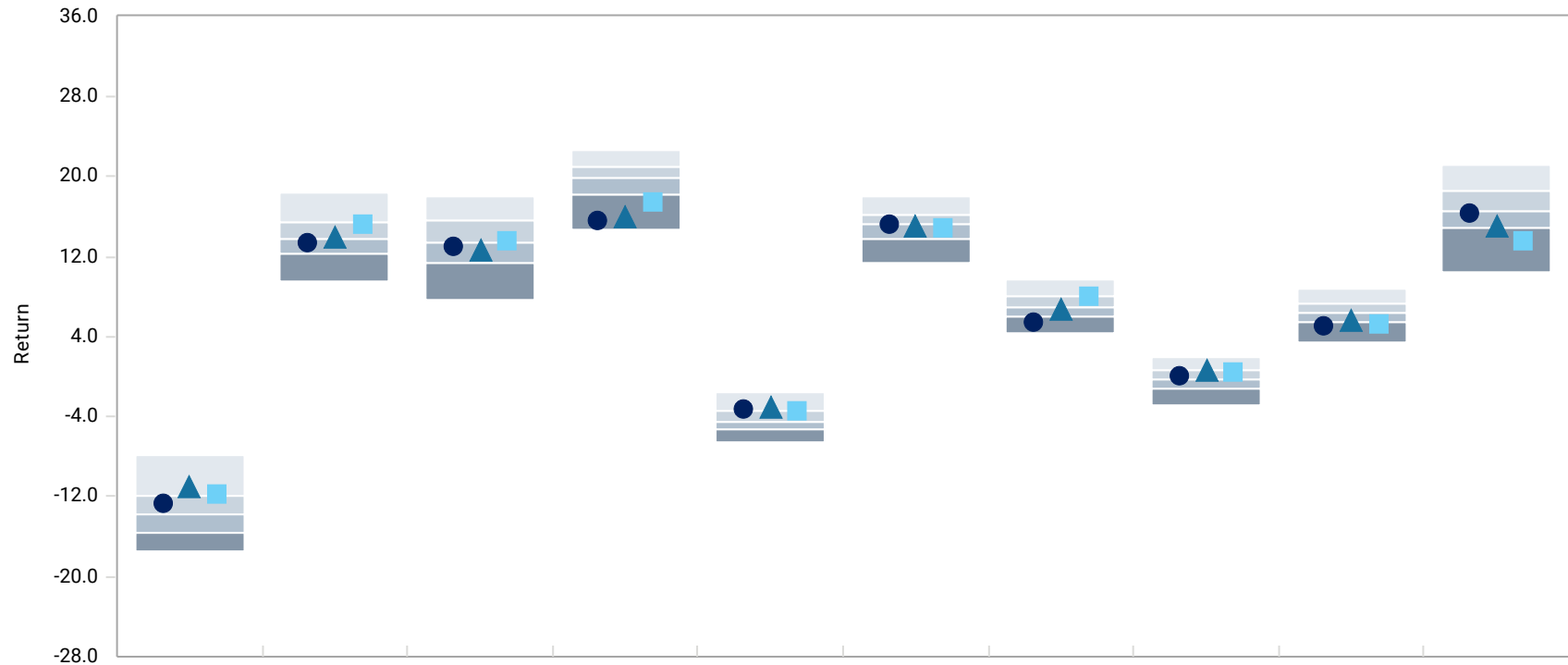


	3 Mo	YTD	1 Year	3 Years	5 Years	10 Years	20 Years
● Composite	-2.7 (41)	3.4 (85)	7.6 (94)	4.0 (63)	4.7 (67)	5.7 (78)	6.8 (24)
▲ Allocation Index	-1.8 (12)	4.4 (61)	8.8 (84)	5.2 (31)	5.4 (35)	6.3 (50)	6.4 (47)
■ Policy Index	-2.5 (33)	4.6 (53)	9.3 (78)	5.4 (26)	5.8 (18)	6.5 (37)	6.8 (24)
5th Percentile	-1.2	7.2	14.5	6.9	6.7	7.5	7.6
1st Quartile	-2.3	5.6	12.1	5.4	5.6	6.8	6.8
Median	-2.9	4.8	10.8	4.4	5.1	6.3	6.4
3rd Quartile	-3.4	3.8	9.4	3.5	4.5	5.8	6.1
95th Percentile	-3.9	2.6	7.2	2.1	3.6	5.0	5.2

Population	603	580	573	549	530	437	208
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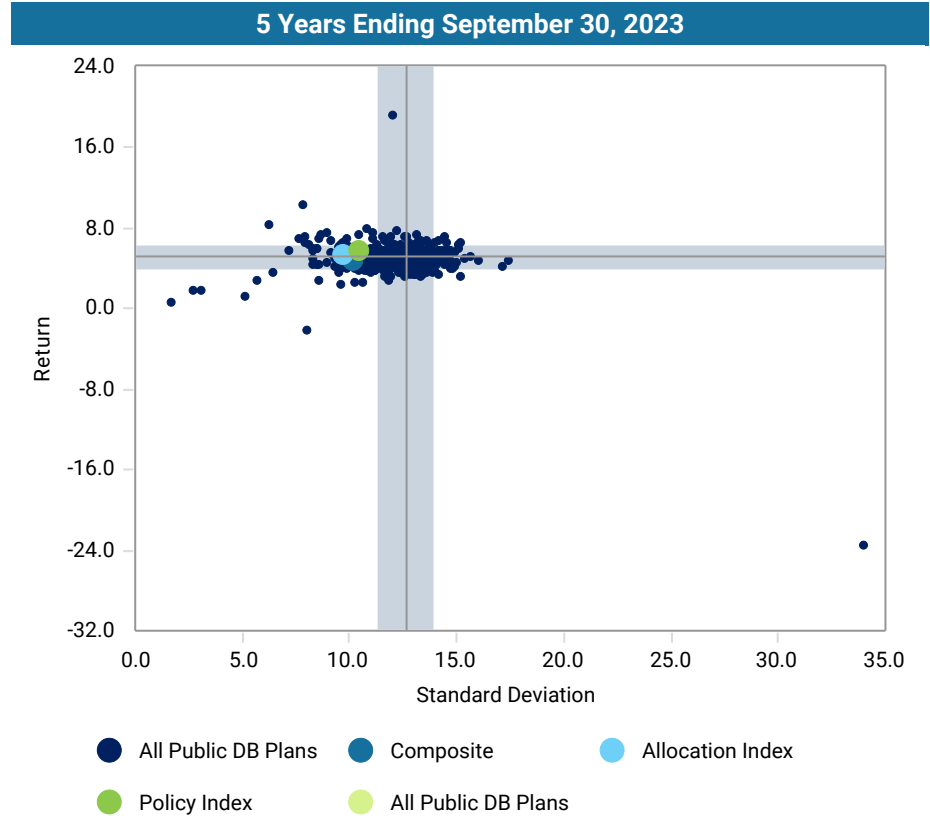
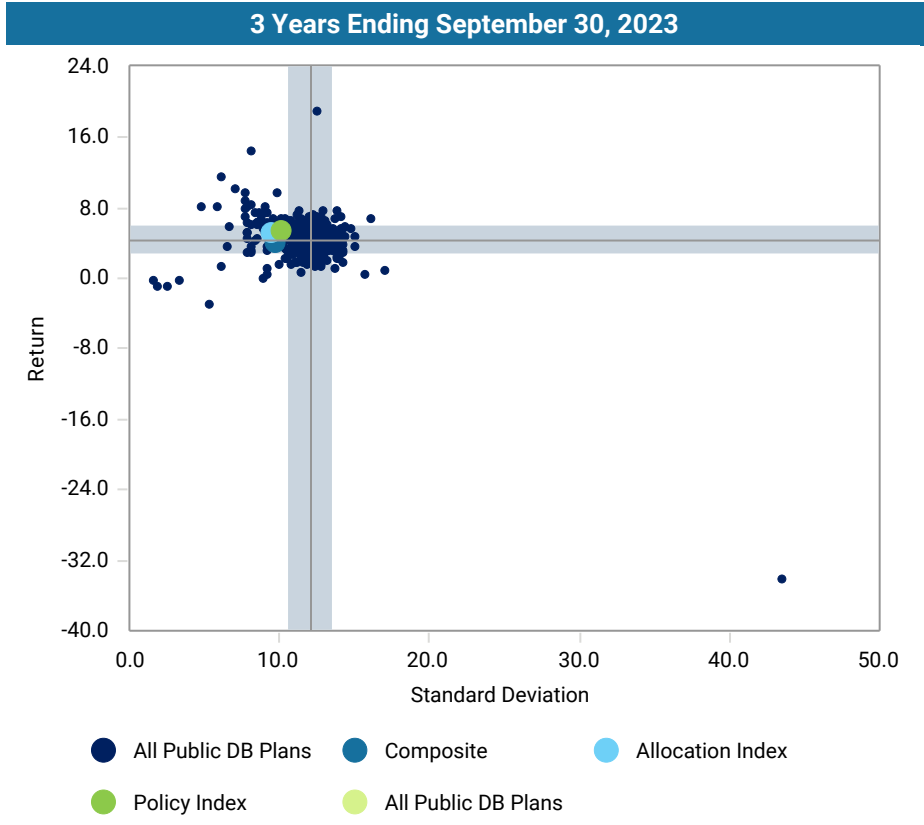
TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Composite vs. All Public DB Plans



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
● Composite	-12.6 (35)	13.5 (55)	13.1 (54)	15.6 (92)	-3.2 (22)	15.3 (49)	5.5 (86)	0.1 (43)	5.0 (83)	16.3 (53)
▲ Allocation Index	-11.0 (16)	14.0 (46)	12.6 (59)	16.1 (90)	-3.0 (18)	15.1 (52)	6.8 (55)	0.6 (26)	5.6 (70)	15.2 (73)
■ Policy Index	-11.7 (23)	15.3 (28)	13.7 (47)	17.4 (83)	-3.3 (25)	14.8 (57)	8.0 (27)	0.6 (29)	5.2 (81)	13.6 (85)
5th Percentile	-7.9	18.4	18.0	22.6	-1.6	18.1	9.8	2.0	8.8	21.1
1st Quartile	-11.8	15.5	15.6	21.0	-3.4	16.2	8.1	0.7	7.3	18.6
Median	-13.8	13.8	13.3	19.9	-4.5	15.2	7.0	-0.2	6.3	16.5
3rd Quartile	-15.6	12.4	11.3	18.2	-5.3	13.8	6.1	-1.2	5.5	14.8
95th Percentile	-17.4	9.6	7.6	14.8	-6.5	11.4	4.4	-2.9	3.5	10.5
Population	768	936	983	726	711	692	682	632	601	587

TOTAL FUND RISK/RETURN - 3 YEARS & 5 YEARS



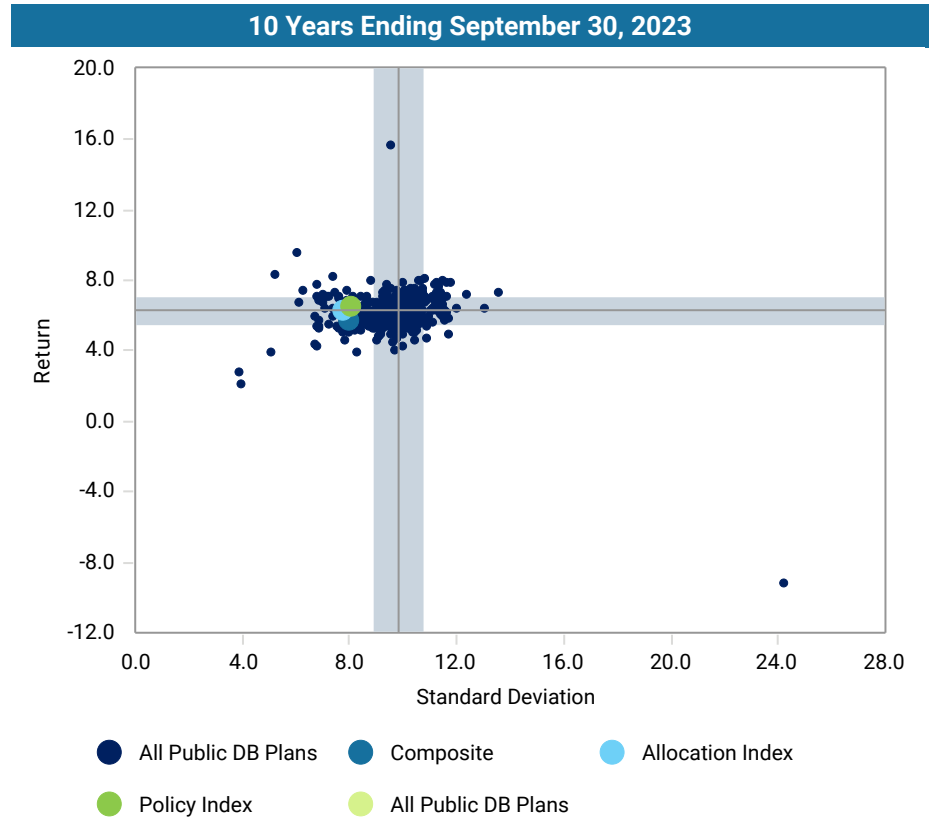
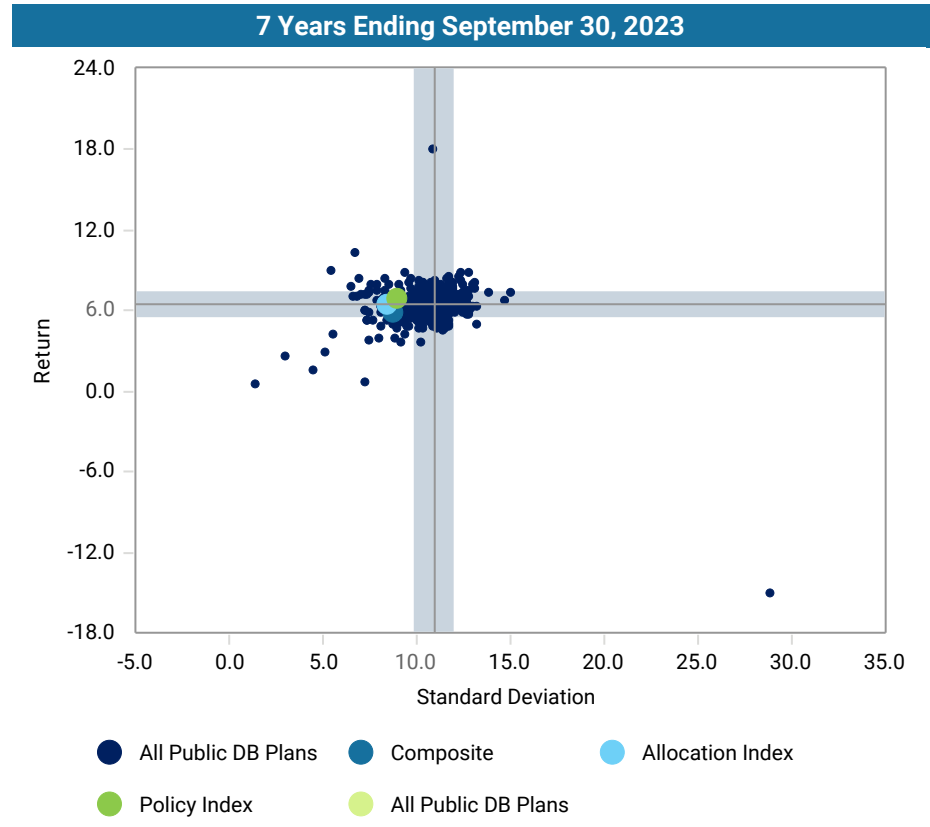
3 Years Ending September 30, 2023

	Return	Standard Deviation	Sharpe Ratio
Composite	4.0 (63)	9.7 (11)	0.3 (49)
Allocation Index	5.2 (31)	9.5 (10)	0.4 (19)
Policy Index	5.4 (26)	10.1 (13)	0.4 (19)
Population	549	549	549

5 Years Ending September 30, 2023

	Return	Standard Deviation	Sharpe Ratio
Composite	4.7 (67)	10.1 (9)	0.3 (42)
Allocation Index	5.4 (35)	9.7 (8)	0.4 (11)
Policy Index	5.8 (18)	10.4 (10)	0.4 (9)
Population	530	530	530

TOTAL FUND RISK/RETURN - 7 YEARS & 10 YEARS



7 Years Ending September 30, 2023

	Return	Standard Deviation	Sharpe Ratio
Composite	6.0 (73)	8.7 (9)	0.5 (31)
Allocation Index	6.5 (50)	8.4 (7)	0.6 (11)
Policy Index	6.9 (33)	9.0 (10)	0.6 (10)
Population	506	506	506

10 Years Ending September 30, 2023

	Return	Standard Deviation	Sharpe Ratio
Composite	5.7 (78)	8.0 (9)	0.6 (30)
Allocation Index	6.3 (50)	7.8 (7)	0.7 (8)
Policy Index	6.5 (37)	8.0 (9)	0.7 (8)
Population	437	437	437

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)								
	Market Value (\$)	% of Portfolio	Policy(%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date	
Composite	646,775,513	100.0	100.0	-2.7 (41)	3.4 (85)	7.6 (94)	4.0 (63)	4.7 (67)	5.7 (78)	6.6	Jan-86	
Allocation Index				-1.8 (12)	4.4 (61)	8.8 (84)	5.2 (31)	5.4 (35)	6.3 (50)			
Policy Index				-2.5 (33)	4.6 (53)	9.3 (78)	5.4 (26)	5.8 (18)	6.5 (37)			
All Public DB Plans Median				-2.9	4.8	10.8	4.4	5.1	6.3			
Total Balanced	3,613,781	0.6	0.0	-1.8	4.6	8.9	6.8	5.7	4.4	4.5	Dec-10	
PRIT Core Fund	3,613,781	0.6	0.0	-1.8	4.6	8.9	6.8	6.3	7.3	6.7	Apr-99	
60% S&P 500 / 40% Bloomberg Aggregate				-3.2	7.2	13.0	4.0	6.3	7.7	6.0		
Total Domestic Equity	196,502,207	30.4	31.0	-4.1 (61)	7.4 (42)	15.0 (56)	6.9 (70)	7.4 (43)	9.8 (40)	7.2 (75)	May-99	
Russell 3000 Index				-3.3 (44)	12.4 (24)	20.5 (28)	9.4 (52)	9.1 (24)	11.3 (22)	7.1 (78)		
eV All US Equity Median				-3.5	5.9	15.9	9.5	6.8	9.1	8.2		
Large Cap	151,418,098	23.4	24.0	-4.2 (82)	8.5 (54)	15.6 (71)	6.2 (87)	8.4 (60)	10.7 (54)	11.7 (52)	Dec-10	
eV US Large Cap Core Equity Median				-3.1	9.3	18.9	9.2	8.7	10.9	11.8		
Rhumblin Advisors S&P 500 Index Fund	62,150,620	9.6	10.0	-3.3 (56)	13.0 (25)	21.5 (29)	10.1 (36)	9.9 (22)	11.8 (18)	8.8 (54)	Apr-97	
S&P 500 Index				-3.3 (56)	13.1 (24)	21.6 (29)	10.2 (35)	9.9 (21)	11.9 (16)	8.8 (55)		
eV US Large Cap Core Equity Median				-3.1	9.3	18.9	9.2	8.7	10.9	8.9		
Coho Relative Value Equity	48,489,282	7.5	7.0	-6.1 (100)	-6.8 (100)	3.5 (100)	5.4 (99)	5.7 (76)		8.5 (84)	Mar-16	
Russell 1000 Value Index				-3.2 (72)	1.8 (55)	14.4 (58)	11.1 (61)	6.2 (66)		9.4 (65)		
eV US Large Cap Value Equity Median				-2.4	2.3	15.4	11.8	6.8		10.0		
Polen Focused Growth	40,778,196	6.3	7.0	-3.4 (47)	21.8 (47)	21.4 (74)	0.9 (88)	8.5 (78)		12.6 (73)	Feb-16	
Russell 1000 Growth Index				-3.1 (41)	25.0 (25)	27.7 (26)	8.0 (26)	12.4 (10)		15.9 (10)		
eV US Large Cap Growth Equity Median				-3.5	20.8	25.1	5.4	9.8		13.5		
Small Cap	45,084,110	7.0	7.0	-3.8 (69)	3.6 (46)	12.6 (60)	9.2 (92)	4.6 (44)	7.7 (33)	10.3 (17)	Dec-10	
eV US Small Cap Value Equity Median				-2.9	2.9	14.0	15.1	4.3	6.9	9.1		
Loomis Sayles Small Cap Growth	22,175,932	3.4	3.5	-5.1 (22)	3.9 (56)	12.2 (34)	3.7 (35)	4.4 (48)	8.6 (44)	6.5 (99)	Jan-97	
Russell 2000 Growth Index				-7.3 (64)	5.2 (49)	9.6 (54)	1.1 (58)	1.6 (86)	6.7 (89)	6.4 (99)		
eV US Small Cap Growth Equity Median				-6.6	5.0	9.8	2.1	4.2	8.3	9.0		
Mesirow Small Cap Value Equity CIT - Founders Class	22,908,178	3.5	3.5	-2.6 (48)						-0.5 (68)	Apr-23	
Russell 2000 Value Index				-3.0 (54)						0.1 (58)		
eV US Small Cap Value Equity Median				-2.9						0.5		

Since inception return is 8.2% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to the transition to the CIT investment vehicle is linked to mutual fund performance history.

Importantly, all returns in this report, including those of the private market 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)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	103,961,511	16.1	19.0	-7.1 (75)	1.6 (86)	13.5 (89)	-2.8 (83)	-0.7 (96)	1.5 (98)	3.4 (99)	Mar-99
<i>eV All ACWI ex-US Equity Median</i>				-4.8	5.3	20.7	3.0	3.0	4.2	5.9	
International Equity	67,365,449	10.4	12.0	-9.1 (96)	1.6 (86)	16.5 (87)	-1.8 (90)	0.6 (86)	2.4 (95)	2.8 (96)	Sep-05
<i>eV All EAFE Equity Median</i>				-4.1	6.2	23.4	5.0	2.9	4.1	4.6	
SEG Baxter Street	27,845,969	4.3	5.0	-10.4 (97)	-0.9 (93)	12.7 (89)	-3.4 (86)	1.4 (82)		4.7 (76)	May-16
<i>MSCI AC World ex USA (Net)</i>				-3.8 (38)	5.3 (50)	20.4 (54)	3.7 (44)	2.6 (64)		4.9 (68)	
<i>eV All ACWI ex-US Equity Median</i>				-4.8	5.3	20.7	3.0	3.0		5.5	
Schroder International Alpha Trust Class 1	26,810,770	4.1	4.0	-7.0 (75)	4.4 (63)	21.8 (41)	3.8 (44)	4.8 (17)	5.0 (26)	5.8 (33)	Mar-12
<i>MSCI AC World ex USA (Net)</i>				-3.8 (38)	5.3 (50)	20.4 (54)	3.7 (44)	2.6 (64)	3.3 (81)	4.1 (87)	
<i>eV All ACWI ex-US Equity Median</i>				-4.8	5.3	20.7	3.0	3.0	4.2	5.3	
Baillie Gifford International Growth Fund Class K	12,708,710	2.0	3.0	-10.6 (97)	1.4 (87)	14.6 (87)	-10.1 (98)			-10.1 (98)	Oct-20
<i>MSCI AC World ex USA (Net)</i>				-3.8 (38)	5.3 (50)	20.4 (54)	3.7 (44)			3.7 (44)	
<i>eV All ACWI ex-US Equity Median</i>				-4.8	5.3	20.7	3.0			3.1	
Emerging Markets Equity	36,596,062	5.7	7.0	-3.0 (48)	1.4 (70)	7.9 (88)				-13.2 (79)	Mar-21
<i>eV Emg Mkts Equity Median</i>				-3.2	3.8	14.3				-8.4	
Axiom Emerging Markets Trust Class 2	17,246,003	2.7	7.0	-4.4 (70)	-2.1 (92)	3.6 (95)				-16.4 (96)	Mar-21
<i>MSCI Emerging Markets (Net)</i>				-2.9 (47)	1.8 (65)	11.7 (65)				-9.9 (59)	
<i>eV Emg Mkts Equity Median</i>				-3.2	3.8	14.3				-8.4	
ABS Emerging Markets MA Fund	19,350,059	3.0		-1.8 (34)	4.7 (43)	11.8 (64)				-10.2 (64)	Dec-21
<i>MSCI Emerging Markets (Net)</i>				-2.9 (47)	1.8 (65)	11.7 (65)				-9.7 (61)	
<i>eV Emg Mkts Equity Median</i>				-3.2	3.8	14.3				-8.4	

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)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fixed Income	134,813,350	20.8	20.0	-2.5 (13)	0.1 (13)	2.2 (12)	-3.1 (4)	1.2 (3)	2.2 (2)	5.4 (1)	Mar-99
<i>eV US Core Fixed Inc Median</i>				-3.1	-0.9	0.9	-5.0	0.4	1.4	3.9	
Garcia Hamilton Fixed Income Aggregate	30,813,272	4.8	6.0	-4.9 (99)	-2.8 (100)	-1.4 (100)	-5.5 (90)	-0.4 (98)		-0.3 (96)	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				-3.2 (67)	-1.2 (78)	0.6 (70)	-5.2 (76)	0.1 (79)		0.1 (77)	
<i>eV US Core Fixed Inc Median</i>				-3.1	-0.9	0.9	-5.0	0.4		0.3	
Lord Abbett Core Fixed Income	36,015,695	5.6	4.0	-2.9 (32)	-0.7 (36)	1.0 (41)	-4.7 (39)	0.3 (55)		0.3 (54)	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				-3.2 (67)	-1.2 (78)	0.6 (70)	-5.2 (76)	0.1 (79)		0.1 (77)	
<i>eV US Core Fixed Inc Median</i>				-3.1	-0.9	0.9	-5.0	0.4		0.3	
Loomis Sayles Multisector Full Discretion Trust	46,023,882	7.1	8.0	-2.2 (11)	0.5 (8)	3.1 (4)	-2.9 (3)	1.6 (1)	2.8 (1)	6.6 (1)	Mar-99
<i>Blmbg. U.S. Aggregate Index</i>				-3.2 (67)	-1.2 (78)	0.6 (70)	-5.2 (76)	0.1 (79)	1.1 (80)	3.7 (77)	
<i>Blmbg. U.S. Corp: High Yield Index</i>				0.5 (2)	5.9 (1)	10.3 (1)	1.8 (1)	3.0 (1)	4.2 (1)	6.1 (1)	
<i>eV US Core Fixed Inc Median</i>				-3.1	-0.9	0.9	-5.0	0.4	1.4	3.9	
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	9,799,079	1.5	2.0	2.6 (1)	8.1 (1)	10.8 (1)	4.4 (1)			3.7 (1)	Aug-19
<i>Credit Suisse Leveraged Loan</i>				3.4 (1)	9.9 (1)	12.5 (1)	5.9 (1)			4.5 (1)	
<i>eV US Core Fixed Inc Median</i>				-3.1	-0.9	0.9	-5.0			-1.4	
LMCG Serenitas Credit Gamma Offshore	12,146,036	1.9								1.2	Sep-23
<i>HFRI Relative Value (Total) Index</i>										0.4	
Invesco Mortgage Recovery Loans Feeder Fund	15,385	0.0		0.0	0.4	1.1	-0.1	0.3	5.8	9.4	Apr-10
<i>Blmbg. U.S. Aggregate Index</i>				-3.2	-1.2	0.6	-5.2	0.1	1.1	1.9	
Total Hedge Fund	40,700,580	6.3	6.0	2.0	5.1	5.2	5.2	4.0	3.3	3.4	Oct-06
PRIM Portfolio Completion Strategies	12,679,439	2.0		1.5	5.0	6.6	6.1	3.5	3.9	3.8	Oct-06
Corbin Pinehurst Partners	13,472,577	2.1		2.5	7.0	8.8	4.5			5.0	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.5	2.8	4.6	3.8			4.1	
UBS Neutral Alpha Strategies	14,496,548	2.2		1.9	3.4	5.6	6.7			6.3	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.5	2.8	4.6	3.8			4.1	
Entrust Peru Wind Down	52,016	0.0		-2.3	-21.4	-92.9	-58.7	-42.6		-38.2	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				0.5	2.8	4.6	3.8	3.4		3.2	
Other	6,296,259	1.0	0.0	1.3	3.8	4.7	1.7	1.8	1.2	0.9	Dec-10
Cash Account	6,296,259	1.0		1.3	3.8	4.7	1.7	1.8	1.2	1.8	Feb-00
<i>90 Day U.S. Treasury Bill</i>				1.3	3.6	4.5	1.7	1.7	1.1	1.7	

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TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	67,222,562	10.4	12.0	0.0	-2.5	-5.2	10.2	8.0	9.5	8.0	Apr-99
<i>NCREIF Property Index</i>											
Morgan Stanley Prime Property (\$2.8m commitment in '95)	24,644,518	3.8		-1.4	-5.1	-8.4	6.0	5.3	7.4	8.2	
TA Realty Core Property Fund, LP (\$15m commitment in '19)	25,494,984	3.9		0.0	-1.9	-7.3	12.7	6.4	8.9	10.2	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	644,706	0.1		0.0	-27.6	-40.7	-31.2	-18.4		-8.0	Oct-15
Landmark VI (\$2m commitment in '11)	5,866	0.0		0.0	-9.3	-9.4	-6.5	-10.4	-2.3	1.3	Jul-11
Landmark VIII (\$4m commitment in '17)	1,984,460	0.3		-4.7	-3.4	-5.7	17.5	12.2		15.9	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	361,718	0.1		0.0	1.4	-1.1	0.0	-2.5	3.5	1.8	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	473,317	0.1		0.0	1.7	19.8	22.7	15.3	13.8	14.2	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,589,564	0.2		0.0	-1.3	15.0	8.6	7.7		10.1	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,518,882	0.5		0.0	-4.1	-1.3	7.5	8.0		8.6	Nov-17
TerraCap Partners V, LP (\$8m commitment in '22)	8,504,546	1.3		0.0	0.0	4.3				7.2	Jun-22
Total Private Equity and Debt	93,665,262	14.5	12.0	0.4	5.2	6.2	20.2	13.9	14.7	10.4	Apr-99
<i>CJA US All PE</i>											
<i>NASDAQ W/O Income</i>											
PRIM Vintage Year 2008 (\$3m commitment in '08)	924,691	0.1		6.4	22.4	21.5	24.6	15.6	18.9	10.8	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	54,147	0.0		4.0	-4.8	-4.3	19.2	24.9	23.7	13.1	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	384,373	0.1		-4.6	-13.0	-19.2	8.2	8.6	15.5	9.1	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	758,219	0.1		2.3	3.2	0.1	31.3	21.2	22.3	9.6	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	433,616	0.1		2.1	4.3	10.4	6.3	11.0	13.1	-8.4	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,087,122	0.3		1.2	2.0	-0.3	19.3	19.4		8.0	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,648,705	0.4		2.9	7.0	9.4	24.8	18.5		15.4	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	4,280,022	0.7		2.0	3.1	2.9	16.7			14.0	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	3,848,158	0.6		1.8	5.9	1.5				1.2	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	1,796,672	0.3		1.0	4.2	3.6				-1.2	Apr-22
PRIM Vintage Year 2023 (\$10m commitment in '23)	390,006	0.1		-0.7						-1.0	May-23
Alcentra European DLF (\$5m commitment in '14)	208,355	0.0		0.0	4.8	5.6	27.4	13.5		11.6	Jan-15
Ascent Fund IV-B (\$1m commitment in '16)	20,242	0.0		0.0	-1.4	-49.8	-30.3	-29.8		-21.3	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,274,437	0.2		0.0	1.0	1.9	2.4	-1.3	1.9	3.8	Oct-08
Ascent VI (\$3m commitment in '15)	3,174,297	0.5		0.0	-2.6	-10.6	1.4	-1.1		0.7	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	4,624,990	0.7		2.1	6.2	8.6	11.0	6.8		6.8	Dec-17
Invesco Fund VI (\$5m commitment in '13)	548,079	0.1		0.0	-28.8	-34.5	0.5	6.3	10.8	10.5	Jul-13

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TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)							
	Market Value (\$)	% of Portfolio	Policy(%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,686,582	0.4		0.0	-5.1	-2.0	21.3	-17.9		-4.6	Jan-16
Foundry 2007 (\$3m commitment in '07)	205,925	0.0		0.0	-0.6	-57.5	1.9	-20.0	2.3	12.6	Dec-07
Foundry 2010 (\$3m commitment in '10)	5,901,587	0.9		0.0	-0.3	-1.2	23.6	18.8	13.1	13.3	Feb-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,100,130	0.2		0.0	0.0	-0.5	51.3	54.1		37.4	Sep-15
Pinebridge PEP V (\$6.23m commitment in '07)	393,213	0.1		0.0	1.1	-1.7	1.3	1.6	6.5	6.7	Dec-10
Pinebridge (AIG) PEP V Asia (\$.55m commitment)	29,864	0.0		0.0	-5.9	-8.6	-10.7	-13.7		-13.7	Oct-18
Pinebridge (AIG) PEP V Co-Investment (\$.9m commitment)	88,883	0.0		0.0	0.1	-1.9	12.8	4.9		4.9	Oct-18
Pinebridge (AIG) PEP V Europe (\$1.6m commitment)	16,685	0.0		0.0	2.1	3.1	-15.5	97.7		97.7	Oct-18
Pinebridge (AIG) PEP V Large Market US Buyout (\$.7m commitment)	89,305	0.0		0.0	16.1	27.3	8.9	10.3		10.3	Oct-18
Pinebridge (AIG) PEP V Preferred Participation Fund (\$.5m commitment)	59,460	0.0		0.0	-13.1	-21.5	-8.2	-7.9		-7.9	Oct-18
Pinebridge (AIG) PEP V Secondary (\$.6m commitment)	15,403	0.0		0.0	-8.1	-16.0	-14.4	-15.1		-11.4	Jan-17
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$.9m commitment)	52,801	0.0		0.0	3.4	2.8	6.2	13.9		13.9	Oct-18
Pinebridge (AIG) PEP V US Venture (\$.48m commitment)	40,812	0.0		0.0	2.3	-13.8	-2.5	-5.2		-5.2	Oct-18
Landmark XV (\$3m commitment in '13)	592,329	0.1		0.0	-2.1	-3.9	7.0	3.1		9.5	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	2,302,229	0.4		0.0	27.9	27.9	41.1	40.1		37.5	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,885,206	0.8		0.0	14.0	15.9	19.2	21.4		19.6	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,809,653	0.4		0.0	5.2	7.7	7.4	8.2		7.1	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,515,127	0.2		0.0	8.0	11.0	11.3	11.6		11.6	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	7,331,986	1.1		0.0	4.4	7.2	27.6			49.3	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	7,785,098	1.2		0.0	3.2	5.1	25.2			27.0	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	12,688,150	2.0		0.0	4.2	3.0				3.5	Nov-21
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)	4,594,346	0.7		0.0	7.4	15.4					Jan-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	11,417,570	1.8		0.0	14.6	29.1	13.1			9.7	Sep-20

NOTES

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balances, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Preliminary Total Composite net of fee since inception return is 6.6% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.1% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 02/01/2022.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index Consists of: 24% S&P 500, 7% Russell 2000, 12% MSCI ACWI IMI, 7% MSCI Emerging Markets, 12% Bloomberg US Aggregate TR, 8% Bloomberg US Universal TR, 6% HFRI Fund of Funds Composite Index, 12% NCREIF Property Index, 12% CJA US All PE.
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.
- 9 - All Private Market managers are final as of 6/30/23, and cash adjusted through 9/30/2023.

DISCLAIMER

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other 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.
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Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

