

August 12, 2024



**Pennsylvania State Employees'
Retirement System – Defined
Benefit Plan**

Second Quarter 2024

Executive Summary

Thomas H. Shingler
Senior Vice President

Britton M. Murdoch
Senior Vice President

Callan

Market Environment

Equity and Bond Markets Mixed in 2Q

Many sectors still have ground to make up to recover losses of 2022

S&P 500 climbed 4.3% in 2Q24

- Emerging markets and non-U.S. small cap equities also posted gains
- U.S. small cap and developed non-U.S. stocks fell.

Core fixed income eked out a gain

- The Bloomberg Aggregate rose 0.1% despite rates rising over the quarter due to coupon income offsetting price losses.
- Long duration fixed income and non-U.S. bonds fell.
- Interest rates have been volatile as the markets assess when and how swiftly the Fed will begin easing.
- CPI-U came in at 3.0% (year-over-year) in 2Q, falling sharply from last quarter's 3.5%, and improving the prospects for a rate cut later this year.

Economy reignites in second quarter

- After a weak 1.4% rise in 1Q24, the initial estimate for 2Q24 GDP came in at a brisk 2.8%, with consumer spending and business investment fueling the climb.

Returns for Periods ended 6/30/24

	Quarter	1 Year	1/1/22 - Current	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	3.22	23.13	5.96	14.14	12.15	7.82
S&P 500	4.28	24.56	7.29	15.05	12.86	7.67
Russell 2000	-3.28	10.06	-2.18	6.94	7.00	7.60
Global ex-U.S. Equity						
MSCI World ex USA	-0.60	11.22	2.39	6.55	4.27	4.63
MSCI Emerging Markets	5.00	12.55	-2.31	3.10	2.79	--
MSCI ACWI ex USA Small Cap	0.66	11.26	-1.98	6.13	4.44	6.74
Fixed Income						
Bloomberg Aggregate	0.07	2.63	-3.64	-0.23	1.35	3.88
90-day T-Bill	1.32	5.40	3.64	2.16	1.51	1.91
Bloomberg Long Gov/Credit	-1.73	-1.58	-10.91	-2.22	1.65	5.29
Bloomberg Global Agg ex-US	-2.11	-0.66	-7.88	-3.56	-1.86	2.46
Real Estate						
NCREIF Property	-0.26	-5.53	-1.64	3.39	6.07	7.75
FTSE Nareit Equity	0.06	7.79	-5.90	3.90	5.90	9.06
Alternatives						
Cambridge Private Equity*	1.17	5.16	1.70	14.58	13.47	13.37
Cambridge Senior Debt*	0.73	7.73	5.58	6.87	6.73	4.25
HFRI Fund Weighted	0.54	9.80	3.44	6.67	4.77	6.00
Bloomberg Commodity	2.89	5.00	4.79	7.25	-1.29	2.69
CPI-U	0.59	2.97	4.89	4.17	2.80	2.58

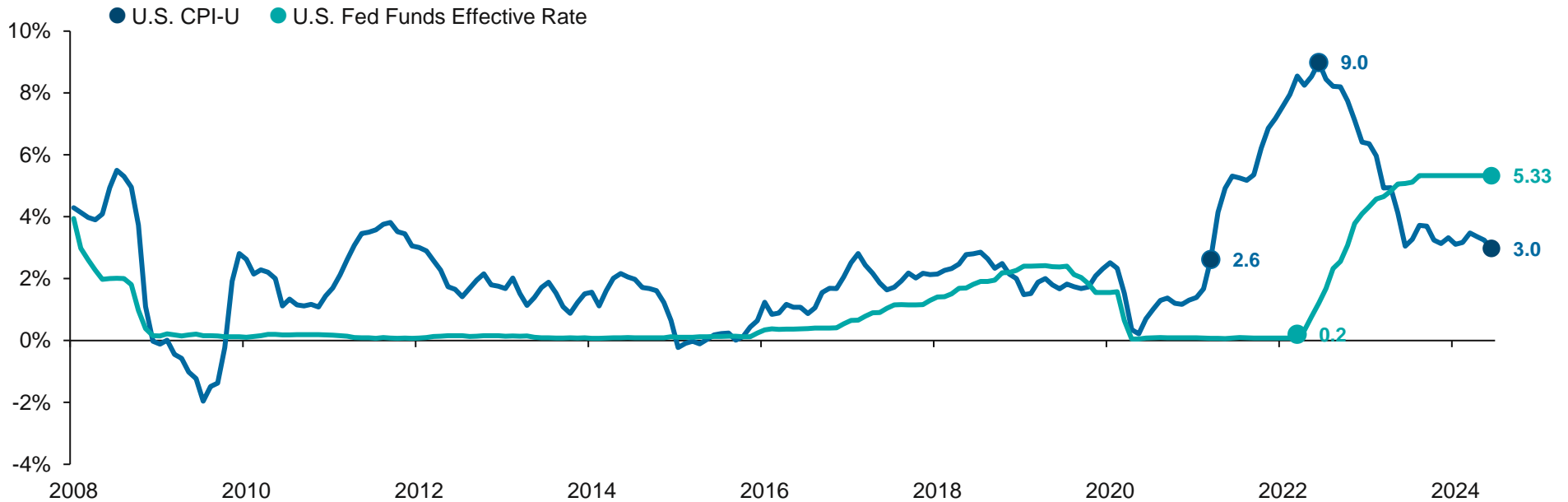
*Cambridge Private Equity and Cambridge Senior Debt data as of 3/31/24.

Returns greater than one year are annualized. Sources: Bloomberg, Callan, Cambridge, FTSE Russell, HFRI, MSCI, NCREIF, S&P Dow Jones Indices

A Tale of Two Fed Rate Cuts

After the GFC, the Fed cut rates to 0%; it worked then, but now ...

How ZIRP Worked Out in Two Different Environments



- After the Global Financial Crisis, the Fed engineered something never seen before: ZIRP, or zero interest rate policy, which lasted from 2008 to 2015. Surprisingly, inflation did not take off.
- In the wake of COVID-19, the Fed dusted off the ZIRP playbook and lowered interest rates from ~1.5% to zero.
- This time was different. Inflation rose from 2.6% in March 2021 to 9.0% in June 2022.
- The Fed quickly raised interest rates starting in March 2022 from 0% to 5.3% in 18 months after 40 years of secular decline from 19.0%.
- Inflation has fallen to the current rate of 3.0%. Yet wringing out the last bits of inflation to reach the Fed's target of 2.0% may be more difficult than anticipated by the soft-landing camp.

Source: Federal Reserve Bank of St. Louis

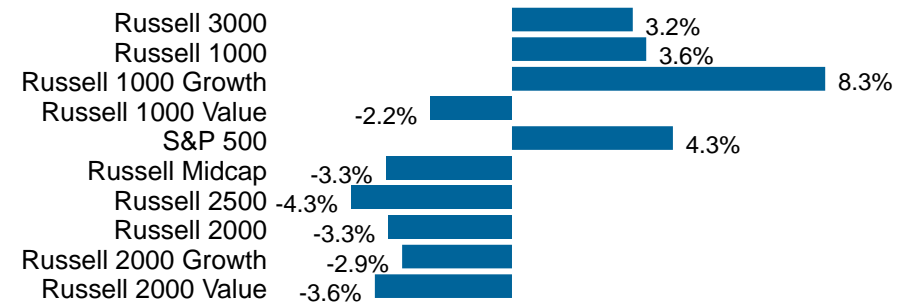
This material comes from a blog post by Callan consultant Alex Browning: [Are We Headed for an Economic 'Rapid Unplanned Disassembly'?](#)

U.S. Equity Performance: 2Q24

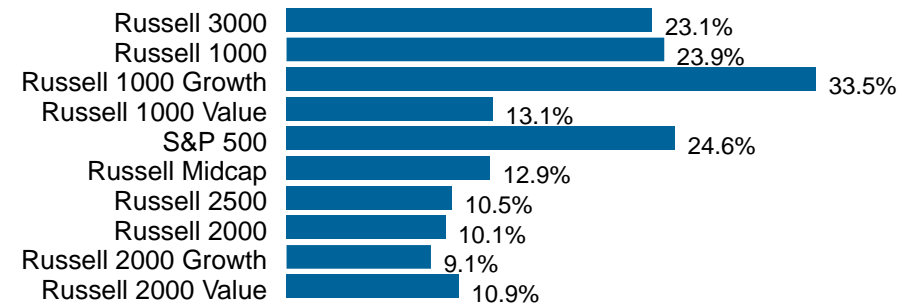
Broad indices exhibited a strong start to 2024, but performance was uneven

- The U.S. equity market had an exceptional start with the S&P 500 hitting 31 record highs over the first six months of 2024 and gaining 15.3%.
- Index returns continued to be driven by a handful of stocks, especially the “Magnificent Seven,” which comprised 33% of the S&P 500 as of quarter-end. As a group, the cohort gained 33% in the first six months of the year, far exceeding the S&P 493 gain of only 5%.
- 2Q returns for the broad S&P 500 Index were modest at 4.3%, but sector performance was quite mixed, ranging from -4.5% (Materials) to +13.8% (Technology), with 6 of the 11 S&P 500 sectors posting negative returns during the period.
- During 2Q, value (R1000V: -2.2%) continued to underperform growth (R1000G: +8.3%) and small cap (R2000: -3.3%) continued to underperform large cap (R1000: +3.6%).
- In the first half of 2024, the 12.5% performance difference in small cap (Russell 2000) versus large cap (Russell 1000) was the widest since 1973.

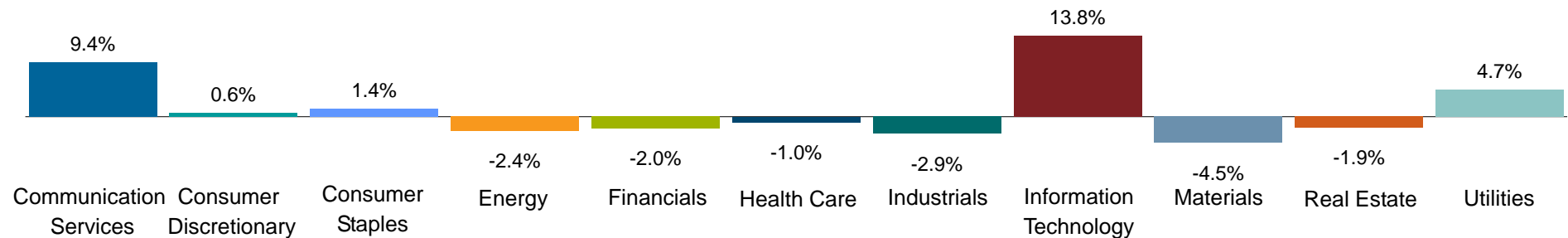
U.S. Equity: Quarter Ended 6/30/24



U.S. Equity: One Year Ended 6/30/24



Industry Sector Quarterly Performance (S&P 500) as of 6/30/24



Sources: FTSE Russell, S&P Dow Jones Indices

U.S. Equity Key Theme

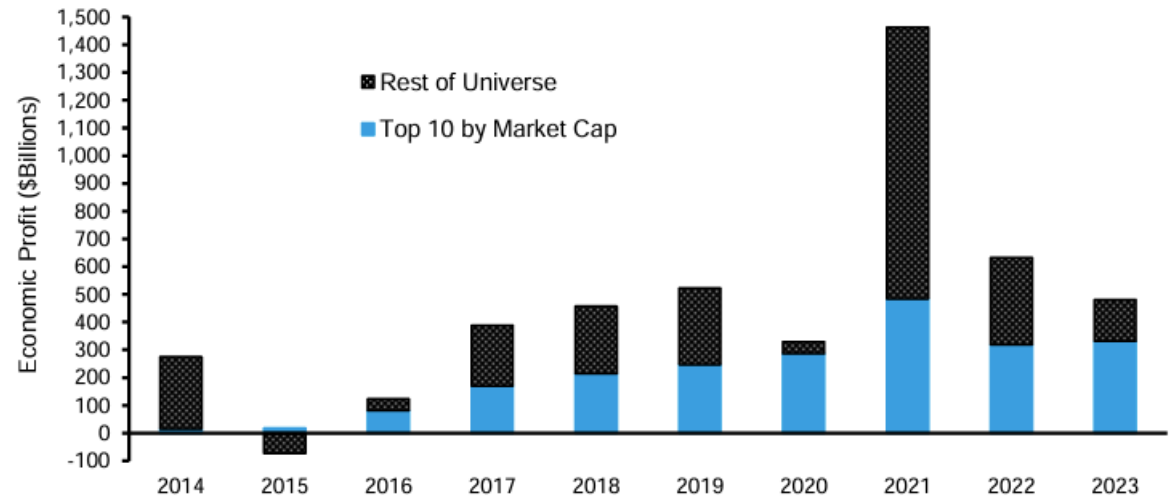
Historical context for market concentration in U.S. equity indices

- Magnificent Seven stock returns drove increased concentration of the top 10 stocks in the S&P 500 to 37% as of 2Q24, an increase from the low point of ~17% in 2016.
- Market concentration has reached its highest level since 1972. The top 10 stocks have broken away from stocks #11 - #500 to an even greater degree than during the tech bubble in 2000-01.
- The largest and most successful stocks were generating more earnings, earnings growth, and cash relative to the smaller stocks in the index. Price appreciation for the largest stocks is supported by strong earnings growth and large economic profits.*
 - In the 10 years through 2023, the top 10 stocks averaged 19% of the market capitalization while the companies averaged 47% of the economic profit.
 - In 2023: top 10 stocks at YE 2023 were 27% of the market capitalization and the companies earned 69% of the economic profit.

Weight of Top 10 Stocks in the S&P 500 as of 2Q24



Economic Profit of Top 10 by Market Cap for U.S. – 2014 thru 2023



Sources: J.P. Morgan, Morgan Stanley

*Economic Profit = money earned after taking explicit and implicit costs into account

U.S. Equity Key Theme

Small cap vs. large cap performance history

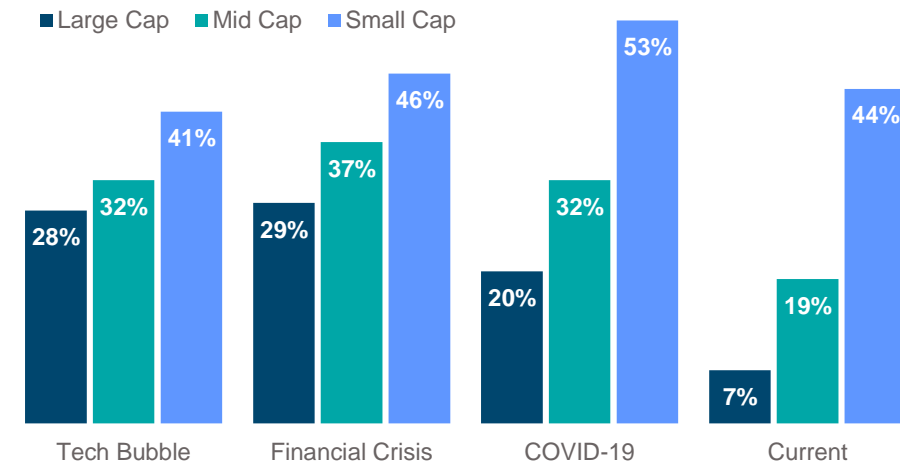
U.S. small cap continued to underperform large cap

Since 2010, small cap has been one of the big three underperforming portfolio strategies alongside value vs. growth and non-U.S. stocks vs. U.S.

Why has small cap underperformed broadly?

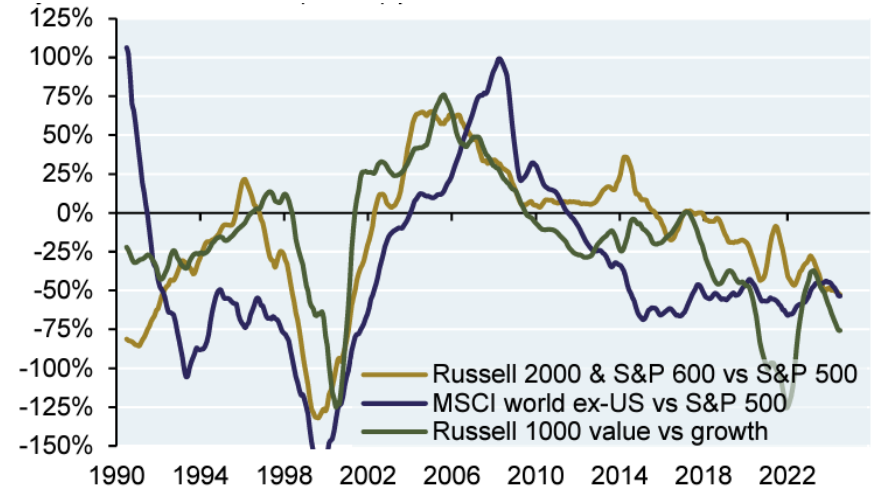
- ▶ **Lower quality:** Small cap (R2000) continues to have a higher proportion of unprofitable companies and lower earnings growth.
- ▶ **Tech underperformance:** Large cap tech stocks have tripled the performance of small cap tech since YE 2010, with most of that excess performance occurring post-2019.
- ▶ **Non-Tech underperformance:** No small cap sector meaningfully outperformed large cap since 2010.

Percent of Unprofitable Companies (as of July 2024)

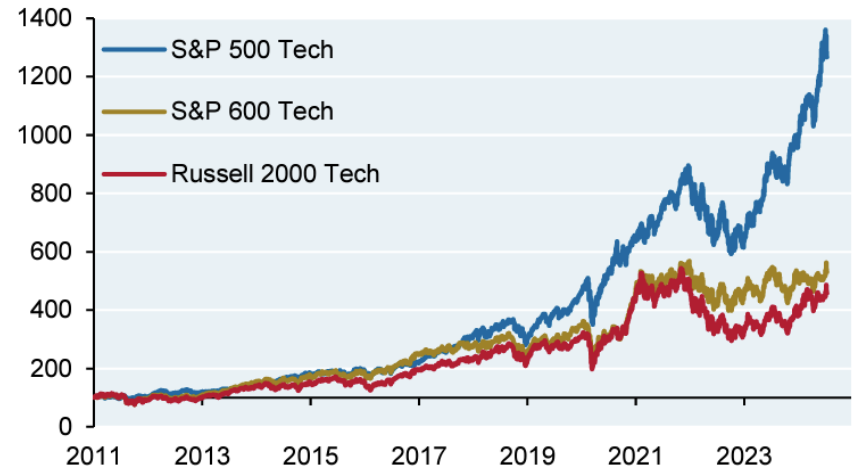


Sources: Bloomberg, J.P. Morgan

Five Year Cumulative Out-/Under-Performance (as of July 2024)



Large Cap vs Small Cap Tech Sector Performance (as of July 2024)



Global/Global ex-U.S. Equity Performance: 2Q24

Reversal as China snaps back and Japan lags; India continues to outperform

Broad market

- The U.S. continued its lead over developed non-U.S. markets resulting in a positive ACWI return.
- Developed non-U.S. markets struggled with growing uncertainty on future economic growth, political instability, and divergent central bank policies.
- Small caps once again trailed large caps in a higher interest rate environment and amid exchange rate volatility.

Emerging markets

- Emerging markets rebounded, snapping a two-quarter losing streak relative to developed markets as both China and India produced strong returns.
- China’s GDP growth exceeded expectations with a rebound in industrial production, manufacturing, and exports. Further, the Chinese government implemented several measures to support capital markets.

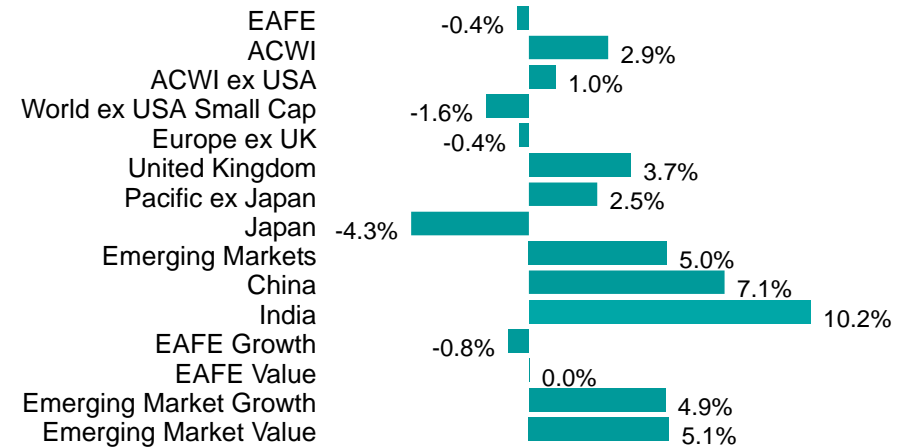
Growth vs. value

- Growth and value saw little difference, as much of the caution was driven around macro concerns about future growth and a growing risk of a recession.

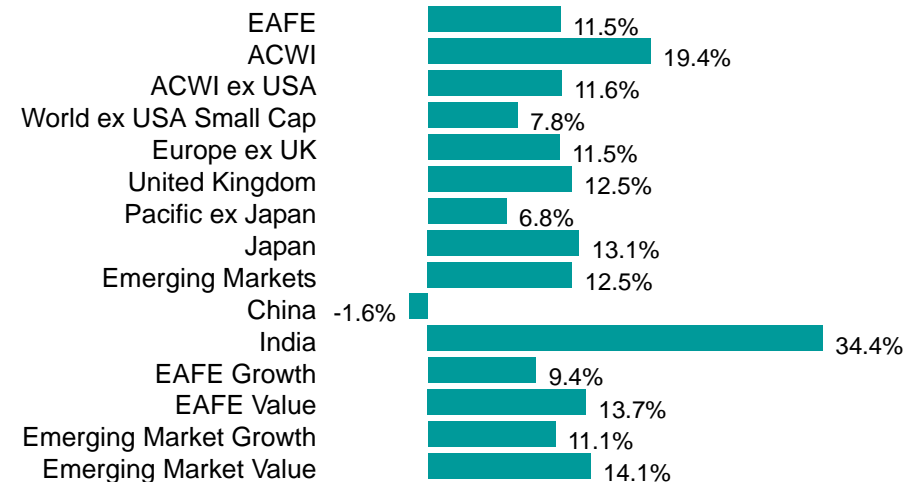
U.S. dollar strength

- The U.S. Dollar Index (DXY), was relatively flat in 2Q due to a balancing act of increased global uncertainty but a more likely 2024 U.S. central bank rate cut.

Global Equity Returns: Quarter Ended 6/30/24



Global Equity Returns: One Year Ended 6/30/24



Source: MSCI

Global/Global ex-U.S. Equity Key Themes

Growth and value manager emerging market exposure diverges

Total EM allocations

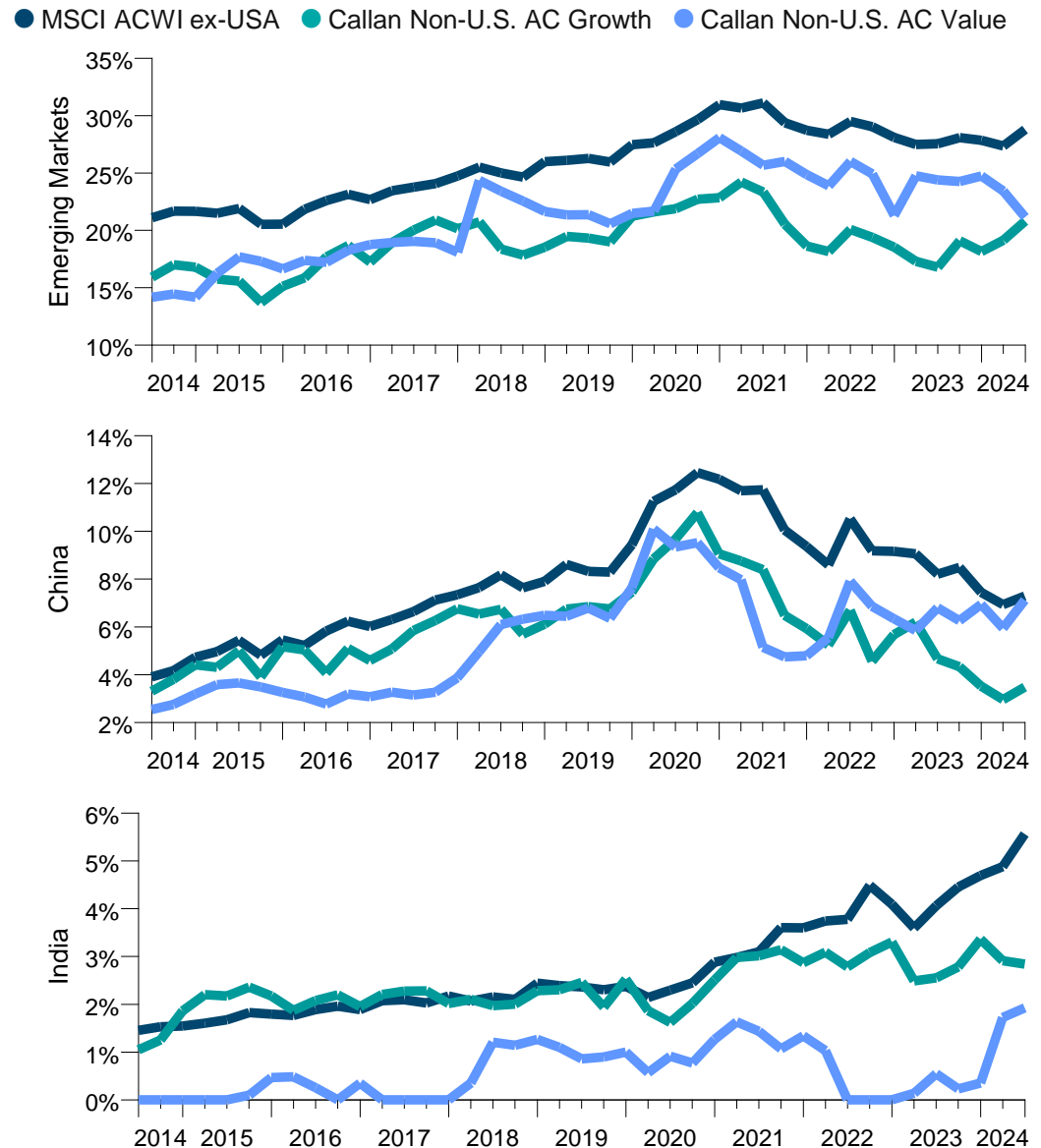
- EM allocations between value and growth managers saw increasing divergences from early 2020 until mid-2023 but have been narrowing the gap since, largely due to TSMC.
- Generally, EM allocations for both value and growth global ex-U.S. managers have been below the MSCI ACWI ex-USA Index weight for EM.

China

- China's weight within the benchmark has decreased since 2020. During this time, growth managers have been decreasing their overall and relative exposure, while value managers have been increasing their relative exposure since 2021 as they find more attractive valuation opportunities in the market drawdown.

India

- High valuations have historically kept value manager exposures in India low while growth managers found the higher growth environment more attractive.
- However, since 2020, growth manager exposure has failed to keep up with India's steady increase within the benchmark. And value managers are reentering the market more recently.



Source: Callan

U.S. Fixed Income Performance: 2Q24

Muted performance across the board

Macro environment

- Fed on hold awaiting more evidence that inflation is under control as economy remained resilient
- 10-year U.S. Treasury yield up modestly from 4.21% to 4.36%
- Curve remained inverted

Performance and drivers

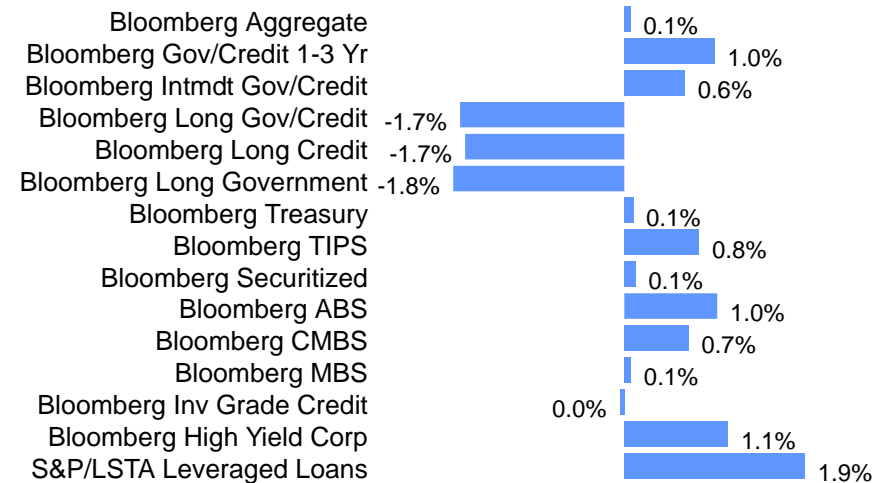
- The Bloomberg US Aggregate Index rose 0.1% amid higher rates.
- Corporates and most securitized sectors were roughly flat vs. U.S. Treasuries on a duration-adjusted basis.
- Lower quality outperformed, with high yield corporates and leveraged loans posting the best returns.
- Longer maturity underperformed short and intermediate strategies as curve steepened from 5 years out to 30.

Valuations

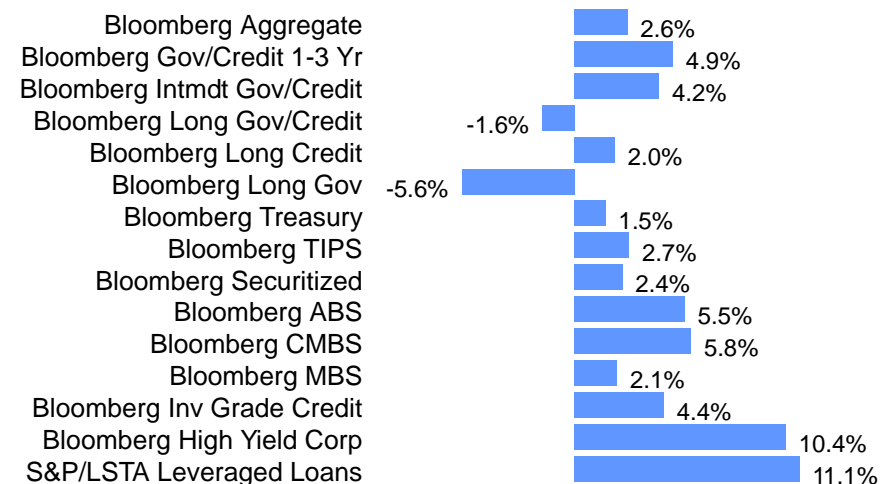
- Corporate credit remains rich with spreads near historical tights.
- Default rates, including distressed exchanges, fell to just 1.8% for HY and 3.1% for bank loans.
- IG corporate new issuance slowed from record highs in 1Q but remained robust with \$349 billion in new debt, bringing YTD total to \$886 billion.
- HY new issuance in 2Q nearly matched 1Q with \$83 billion, bringing YTD total to \$172 billion.
- Both were met with strong investor demand.

Sources: Bloomberg, Callan, S&P Dow Jones Indices

U.S. Fixed Income Returns: Quarter Ended 6/30/24



U.S. Fixed Income Returns: One Year Ended 6/30/24



Diversification Remains Key Risk Control

Periodic Table of Investment Returns

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2 Qtrs. 2024
Emerging Markets	Emerging Markets	Emerging Markets	U.S. Fixed	Emerging Markets	Small Cap	Real Estate Funds	Emerging Markets	Small Cap	Large Cap	Real Estate Funds	Small Cap	Emerging Markets	Real Estate Funds	Large Cap	Small Cap	Large Cap	Real Estate Funds	Large Cap	Large Cap
34.00%	32.17%	39.38%	5.24%	78.51%	26.85%	14.96%	18.23%	38.82%	13.69%	13.95%	21.31%	37.28%	7.36%	31.49%	19.96%	28.71%	6.55%	26.29%	15.29%
Real Estate Funds	Non-U.S. Equity	Real Estate Funds	Non-U.S. Fixed	High Yield	Emerging Markets	U.S. Fixed	Non-U.S. Equity	Large Cap	Real Estate Funds	Large Cap	High Yield	Non-U.S. Equity	Cash Equivalent	Small Cap	Large Cap	Real Estate Funds	Cash Equivalent	Non-U.S. Equity	Emerging Markets
20.15%	25.71%	14.84%	4.39%	58.21%	18.88%	7.84%	16.41%	32.39%	11.46%	1.38%	17.13%	24.21%	1.87%	25.52%	18.40%	21.02%	1.46%	17.94%	7.49%
Non-U.S. Equity	Small Cap	Hedge Funds	Cash Equivalent	Non-U.S. Equity	Real Estate Funds	High Yield	Small Cap	Non-U.S. Equity	U.S. Fixed	U.S. Fixed	Large Cap	Large Cap	U.S. Fixed	Non-U.S. Equity	Emerging Markets	Small Cap	Hedge Funds	Small Cap	Hedge Funds
14.47%	18.37%	12.56%	2.06%	33.67%	15.26%	4.98%	16.35%	21.02%	5.97%	0.55%	11.96%	21.83%	0.01%	22.49%	18.31%	14.82%	1.06%	16.93%	6.86%
Hedge Funds	Large Cap	Non-U.S. Equity	Real Estate Funds	Small Cap	High Yield	Non-U.S. Fixed	Large Cap	Real Estate Funds	Small Cap	Cash Equivalent	Emerging Markets	Small Cap	High Yield	Emerging Markets	Non-U.S. Fixed	Non-U.S. Equity	High Yield	High Yield	Non-U.S. Equity
7.61%	15.79%	12.44%	-10.70%	27.17%	15.12%	4.36%	16.00%	12.90%	4.89%	0.05%	11.19%	14.65%	-2.08%	18.44%	10.11%	12.62%	-11.19%	13.44%	4.96%
Large Cap	Real Estate Funds	Non-U.S. Fixed	Hedge Funds	Large Cap	Large Cap	Large Cap	High Yield	Hedge Funds	Hedge Funds	Hedge Funds	Real Estate Funds	Non-U.S. Fixed	Non-U.S. Fixed	High Yield	Non-U.S. Equity	Hedge Funds	U.S. Fixed	Emerging Markets	Cash Equivalent
4.91%	15.27%	11.03%	-19.07%	26.47%	15.06%	2.11%	15.81%	9.73%	4.13%	-0.71%	7.79%	10.51%	-2.15%	14.32%	7.59%	8.23%	-13.01%	9.83%	2.63%
Small Cap	Hedge Funds	U.S. Fixed	High Yield	Hedge Funds	Hedge Funds	Cash Equivalent	Real Estate Funds	High Yield	High Yield	Non-U.S. Equity	Non-U.S. Equity	High Yield	Hedge Funds	Hedge Funds	U.S. Fixed	High Yield	Non-U.S. Equity	Hedge Funds	High Yield
4.55%	13.86%	6.97%	-26.16%	18.57%	10.95%	0.10%	9.79%	7.44%	2.45%	-3.04%	2.75%	7.50%	-3.19%	9.31%	7.51%	5.28%	-14.29%	5.83%	2.58%
Cash Equivalent	High Yield	Large Cap	Small Cap	Non-U.S. Fixed	Non-U.S. Equity	Hedge Funds	Hedge Funds	Cash Equivalent	Cash Equivalent	Small Cap	U.S. Fixed	Hedge Funds	Large Cap	U.S. Fixed	High Yield	Cash Equivalent	Large Cap	Non-U.S. Fixed	Small Cap
3.06%	11.85%	5.49%	-33.79%	7.53%	8.95%	-2.52%	7.67%	0.07%	0.04%	-4.41%	2.65%	7.12%	-4.38%	8.72%	7.11%	0.05%	-18.11%	5.72%	1.73%
High Yield	Non-U.S. Fixed	Cash Equivalent	Large Cap	U.S. Fixed	U.S. Fixed	Small Cap	U.S. Fixed	U.S. Fixed	Emerging Markets	High Yield	Non-U.S. Fixed	Real Estate Funds	Small Cap	Non-U.S. Fixed	Hedge Funds	U.S. Fixed	Non-U.S. Fixed	U.S. Fixed	U.S. Fixed
2.74%	8.16%	5.00%	-37.00%	5.93%	6.54%	-4.18%	4.21%	-2.02%	-2.19%	-4.47%	1.49%	6.66%	-11.01%	5.09%	6.36%	-1.54%	-18.70%	5.53%	-0.71%
U.S. Fixed	Cash Equivalent	High Yield	Non-U.S. Equity	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Non-U.S. Fixed	Emerging Markets	Non-U.S. Fixed	Non-U.S. Fixed	Hedge Funds	U.S. Fixed	Non-U.S. Equity	Real Estate Funds	Cash Equivalent	Emerging Markets	Emerging Markets	Cash Equivalent	Real Estate Funds
2.43%	4.86%	1.87%	-43.56%	0.21%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.25%	3.54%	-14.09%	4.39%	0.67%	-2.54%	-20.09%	5.01%	-3.22%
Non-U.S. Fixed	U.S. Fixed	Small Cap	Emerging Markets	Real Estate Funds	Cash Equivalent	Emerging Markets	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Emerging Markets	Cash Equivalent	Cash Equivalent	Emerging Markets	Cash Equivalent	Real Estate Funds	Non-U.S. Fixed	Small Cap	Real Estate Funds	Non-U.S. Fixed
-8.65%	4.33%	-1.57%	-53.33%	-30.40%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.57%	2.28%	0.34%	-7.05%	-20.44%	-12.73%	-5.26%

- Bloomberg Barclays Corp High Yield ● Bloomberg Barclays Global Aggregate ex US ● Bloomberg Barclays US Aggregate
- Credit Suisse Hedge Fund ● ICE BofAML US 3-Month Treasury Bill ● MSCI Emerging Markets ● MSCI World ex USA
- NFI-ODCE (value-weighted net) ● Russell 2000 ● S&P 500

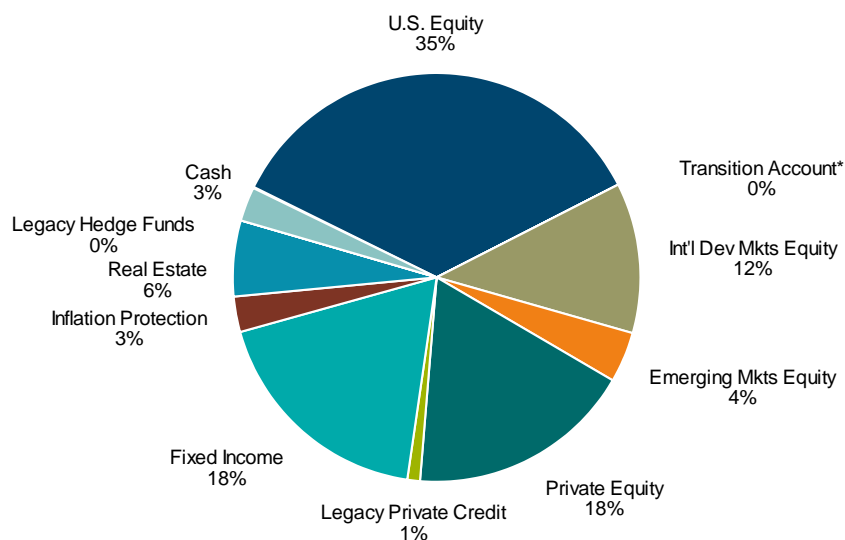
Callan

**PA SERS Defined Benefit Plan
Performance Review**

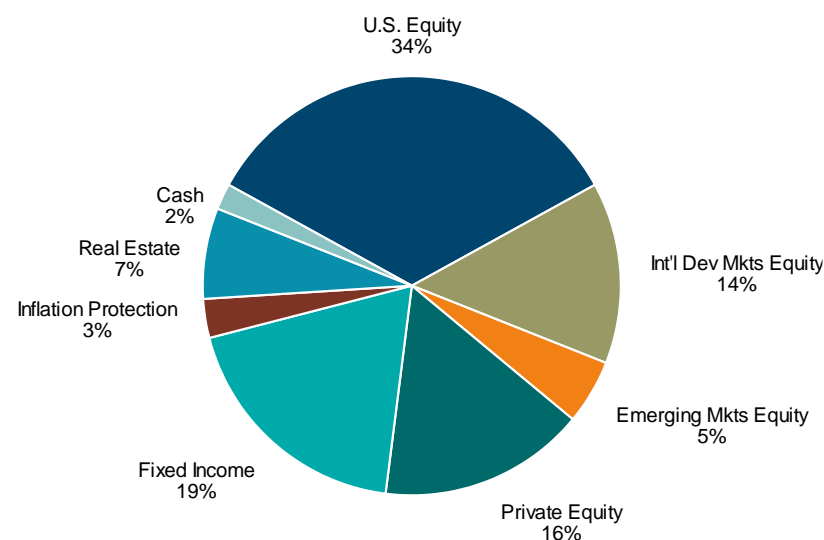
Total Fund

Actual Asset Allocation versus Target as of June 30, 2024

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	13,268,114	35.2%	34.0%	1.2%	463,632
Transition Account*	970	0.0%	0.0%	0.0%	970
Int'l Dev Mkts Equity	4,469,476	11.9%	14.0%	(2.1%)	(802,958)
Emerging Mkts Equity	1,522,942	4.0%	5.0%	(1.0%)	(360,070)
Private Equity	6,737,587	17.9%	16.0%	1.9%	711,948
Legacy Private Credit	379,224	1.0%	0.0%	1.0%	379,224
Fixed Income	6,927,720	18.4%	19.0%	(0.6%)	(227,725)
Inflation Protection	1,050,199	2.8%	3.0%	(0.2%)	(79,608)
Real Estate	2,268,382	6.0%	7.0%	(1.0%)	(367,834)
Legacy Hedge Funds	14,668	0.0%	0.0%	0.0%	14,668
Cash	1,020,958	2.7%	2.0%	0.7%	267,753
Total	37,660,240	100.0%	100.0%		

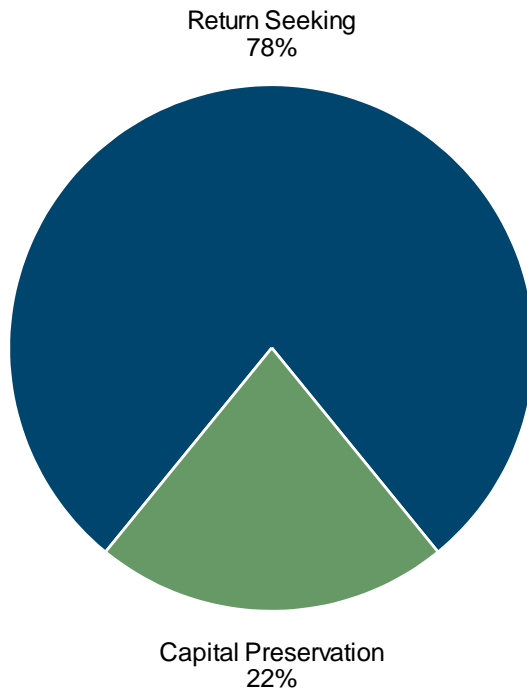
*Market values are shown net of accrued fees.

*Transition account market values are not included in any asset class and are excluded from these charts.

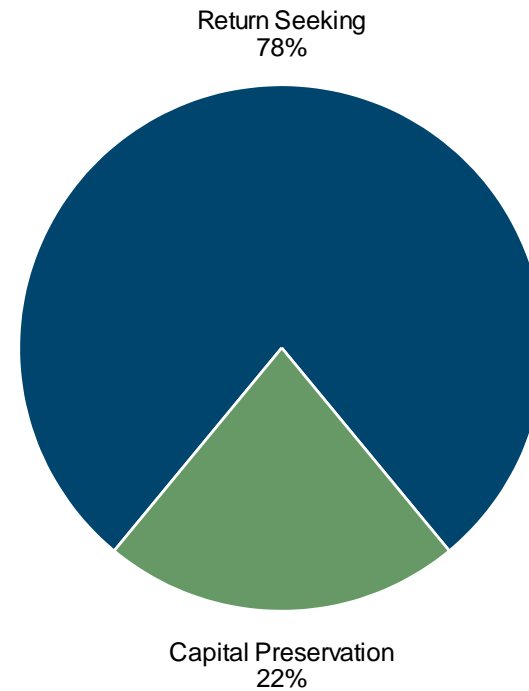
Return Seeking and Capital Preservation Assets

As of June 30, 2024

Actual Asset Allocation



Target Asset Allocation



*Return Seeking Assets: U.S. Equity, Int'l Developed Markets Equity, Emerging Markets Equity, Transition Account, Private Equity, Real Estate, Opportunistic Fixed Income, Legacy Hedge Funds and Legacy Private Credit.

*Capital Preservation Assets: Core Fixed Income, Nominal U.S. Treasuries, Inflation Protection (TIPS) and Cash.

*Market values are shown net of accrued fees.

Projected Risk, Liquidity and Correlation

	Capital Preservation Assets				Return Seeking Assets					
	Cash	Inflation Protection (TIPS)	Treasuries	Core Fixed Income	U.S. Equity	Developed International Equity	Emerging Markets Equity	Opportunistic Fixed Income	Real Estate	Private Equity
Policy Target Asset Allocation	2%	3%	5%	12%	34%	14%	5%	2%	7%	16%
Projected Return* (Geometric)	3.00%	5.05%	4.70%	5.25%	7.65%	7.50%	7.70%	7.40%	7.65%	8.75%
Projected Risk* (Standard Deviation)	0.90%	5.40%	5.55%	4.25%	17.40%	20.15%	25.60%	15.70%	15.75%	27.60%
Liquidity	High	High	High	High	High	High	Medium	Low	Low	Low
Correlation to U.S. Equity*	-0.03	-0.03	-0.05	0.08	1.00	0.73	0.84	0.68	0.68	0.80
Months of Benefit Payments**	3.1	3.2	4.7	13.7						
Months of Benefit Payments (Includes EE & ER Contributions)**	9.6	9.9	14.7	42.5						
Cumulative Months of Benefit Payments (Includes EE & ER Contributions)**			76.8							

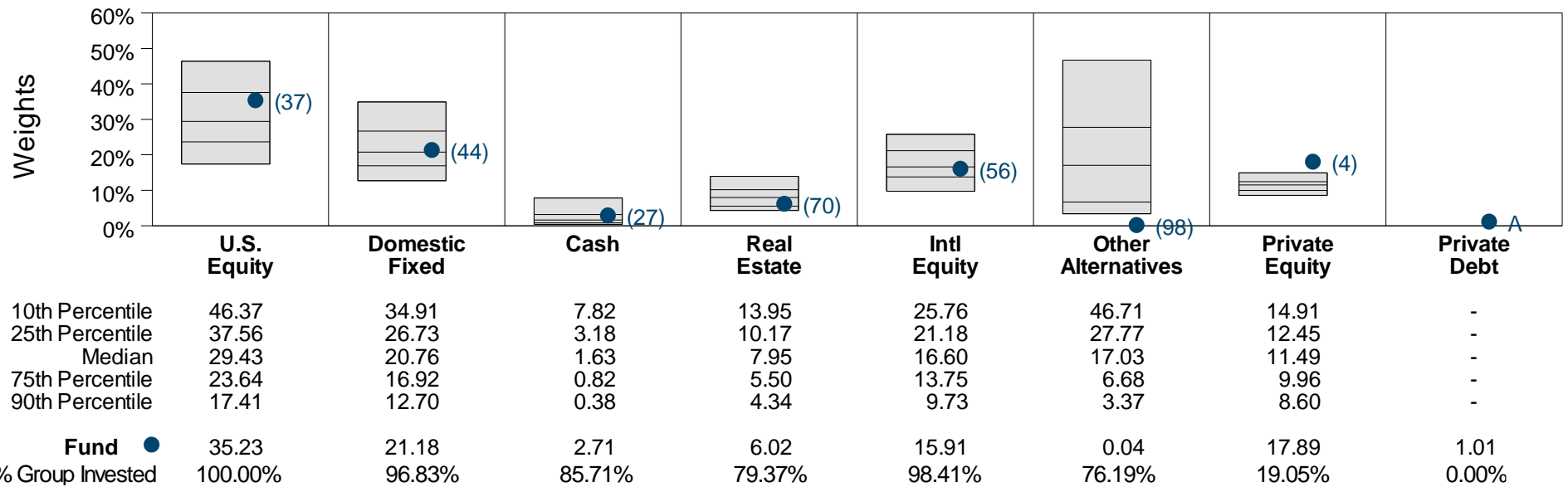
*Callan 2024 Capital Market Projections

**Provided by SERS IO as of 6/30/2024.

Total Fund

Actual Asset Allocation versus Large Public Plan (>\$1B) Peers as of June 30, 2024

Asset Class Weights vs Callan Public Fund Spons - Large (>1B)

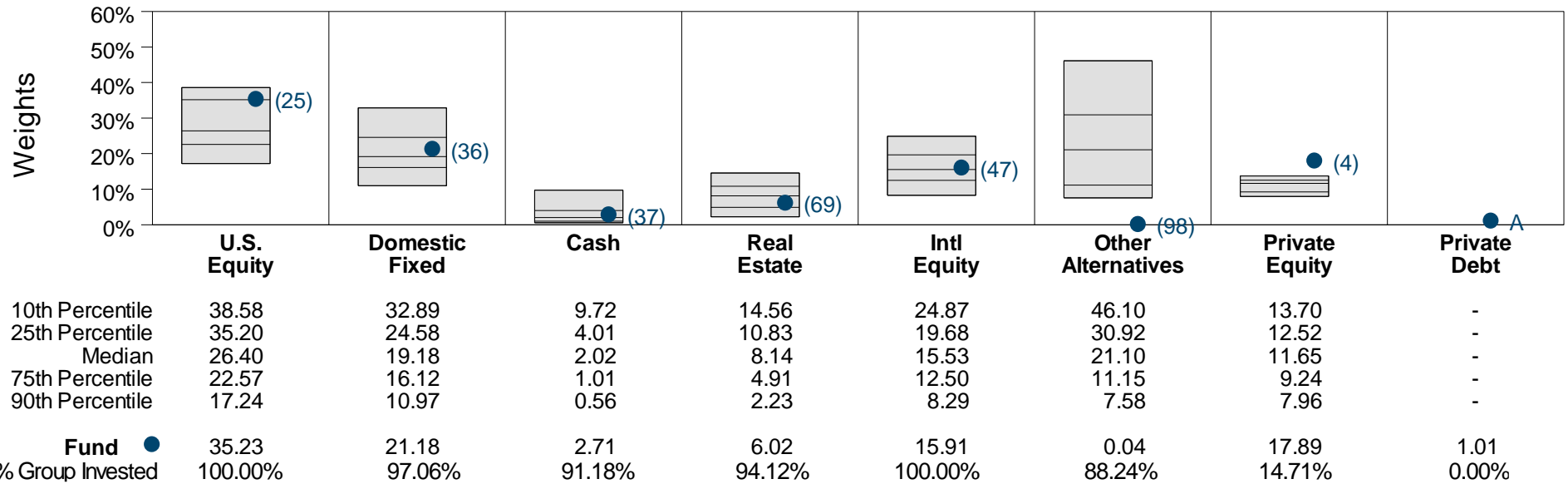


* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Actual Asset Allocation versus Very Large Public DB Plan (>\$10B) Peers as of June 30, 2024

Asset Class Weights vs Callan Public Fund Spons- V Lg DB (>10B)



* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

One Quarter Attribution Analysis versus Target – Net of Fees as of June 30, 2024

Note: Attribution is a snapshot in time. Asset allocation effect utilizes monthly asset class weights to calculate the overall effect on attribution. Asset class weights fluctuate month to month and are combined to calculate a quarterly attribution effect.

Relative Attribution Effects for Quarter ended June 30, 2024

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	34%	34%	2.96%	3.22%	(0.09%)	(0.00%)	(0.09%)
Int'l Dev. Mkts Equity	12%	14%	(0.29%)	(0.73%)	0.05%	0.04%	0.09%
Emerging Markets	4%	5%	4.98%	5.13%	(0.01%)	(0.03%)	(0.04%)
Private Equity**	18%	16%	1.29%	1.29%	0.00%	(0.01%)	(0.01%)
Legacy Private Credit**	1%	0%	2.63%	2.63%	0.00%	0.01%	0.01%
Fixed Income	19%	19%	0.33%	0.07%	0.05%	0.01%	0.06%
Inflation Protection	3%	3%	0.71%	0.79%	(0.00%)	0.00%	(0.00%)
Real Estate	6%	7%	(3.84%)	(2.38%)	(0.09%)	0.03%	(0.07%)
Legacy Hedge Funds	0%	0%	(4.51%)	(4.51%)	0.00%	(0.00%)	(0.00%)
Cash	3%	2%	1.33%	1.32%	0.00%	0.00%	0.00%
Total			1.34%	1.38%	+ (0.09%)	+ 0.04%	(0.05%)

- **What helped relative attribution?**
 - Outperformance relative to target from Fixed Income and non-U.S. Developed Markets Equity managers helped performance (attribution based on target return)
 - An underweight to non-U.S. Developed Markets Equity and Real Estate helped performance (attribution based on target return)
- **What hurt relative attribution?**
 - Underperformance relative to target from U.S. Equity and Real Estate managers
 - An underweight to Emerging Markets hurt performance (attribution based on target return)

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

**For this analysis, PE and PC are benchmarked to the SERS' PE and PC program returns, respectively.

Returns are shown net of fees

Total Fund

One Year Attribution Analysis versus Target – Net of Fees as of June 30, 2024

Note: Attribution is a snapshot in time. Asset allocation effect utilizes monthly asset class weights to calculate the overall effect on attribution. Asset class weights fluctuate month to month and are combined to calculate an annual attribution effect.

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	32%	32%	22.36%	23.13%	(0.22%)	(0.03%)	(0.25%)
Int'l Dev. Mkts Equity	13%	14%	11.32%	10.76%	0.06%	(0.01%)	0.05%
Emerging Markets	4%	5%	12.95%	13.56%	(0.03%)	(0.04%)	(0.07%)
Private Equity**	19%	16%	6.47%	6.47%	0.00%	(0.16%)	(0.16%)
Legacy Private Credit**	1%	0%	11.65%	11.65%	0.00%	0.02%	0.02%
Fixed Income	19%	21%	3.20%	2.63%	0.13%	0.07%	0.21%
Inflation Protection	3%	3%	2.40%	2.71%	(0.01%)	0.01%	(0.00%)
Real Estate	7%	7%	(15.13%)	(12.33%)	(0.24%)	0.01%	(0.23%)
Legacy Hedge Funds	0%	0%	(18.03%)	(18.03%)	0.00%	(0.01%)	(0.01%)
Cash	2%	2%	5.47%	5.40%	0.00%	0.03%	0.03%
Total			9.84%	= 10.27%	+ (0.31%)	+ (0.12%)	(0.43%)

- **What helped relative attribution?**
 - Outperformance relative to target from Fixed Income and non-U.S. Developed Markets Equity managers
 - An underweight as compared to target to Fixed Income helped performance (attribution based on target return)
- **What hurt relative attribution?**
 - Underperformance relative to target from Real Estate and U.S. Equity managers
 - An overweight as compared to target to Private Equity hurt performance (attribution based on target return)
 - A slight underweight as compared to target to non-U.S. Developed Markets Equity and U.S. Equity hurt performance (attribution based on target return)

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

**For this analysis, PE and PC are benchmarked to the SERS' PE and PC program returns, respectively.

Returns are shown net of fees.

Total Fund

Three Year Attribution Analysis versus Target – Net of Fees as of June 30, 2024

Note: Attribution is a snapshot in time. Asset allocation effect utilizes monthly asset class weights to calculate the overall effect on attribution. Asset class weights fluctuate month to month and are combined to calculate an annual attribution effect.

Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	31%	31%	7.54%	8.05%	(0.16%)	(0.13%)	(0.28%)
Int'l Dev. Mkts Equity	13%	14%	3.16%	1.97%	0.15%	(0.01%)	0.14%
Emerging Markets	4%	5%	(5.20%)	(4.11%)	(0.05%)	0.05%	0.00%
Private Equity**	18%	15%	8.33%	8.33%	0.00%	0.15%	0.15%
Legacy Private Credit**	2%	1%	10.68%	10.68%	0.00%	(0.09%)	(0.09%)
Fixed Income	20%	22%	(2.37%)	(3.02%)	0.15%	0.08%	0.23%
Inflation Protection	3%	3%	(1.98%)	(1.33%)	(0.02%)	0.00%	(0.02%)
Real Estate	8%	7%	(2.20%)	1.78%	(0.32%)	(0.02%)	(0.34%)
Legacy Hedge Funds	0%	0%	(8.17%)	(8.17%)	0.00%	(0.00%)	(0.00%)
Cash	2%	2%	3.15%	3.03%	0.00%	0.02%	0.02%
Total			3.48%	= 3.66%	+ (0.24%)	+ 0.06%	(0.18%)

- **What helped relative attribution?**
 - Outperformance relative to target from Fixed Income and non-U.S. Developed Markets Equity managers
 - An overweight as compared to target to Private Equity helped performance (attribution based on target return)
 - An underweight as compared to target to Fixed Income and Emerging Markets Equity helped performance (attribution based on target return)
- **What hurt relative attribution?**
 - Underperformance relative to target from Real Estate, U.S. Equity and Emerging Markets Equity managers
 - A slight underweight as compared to target to U.S. Equity hurt performance (attribution based on target return)
 - A slight overweight as compared to target to Legacy Private Credit hurt performance (attribution based on target return)

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

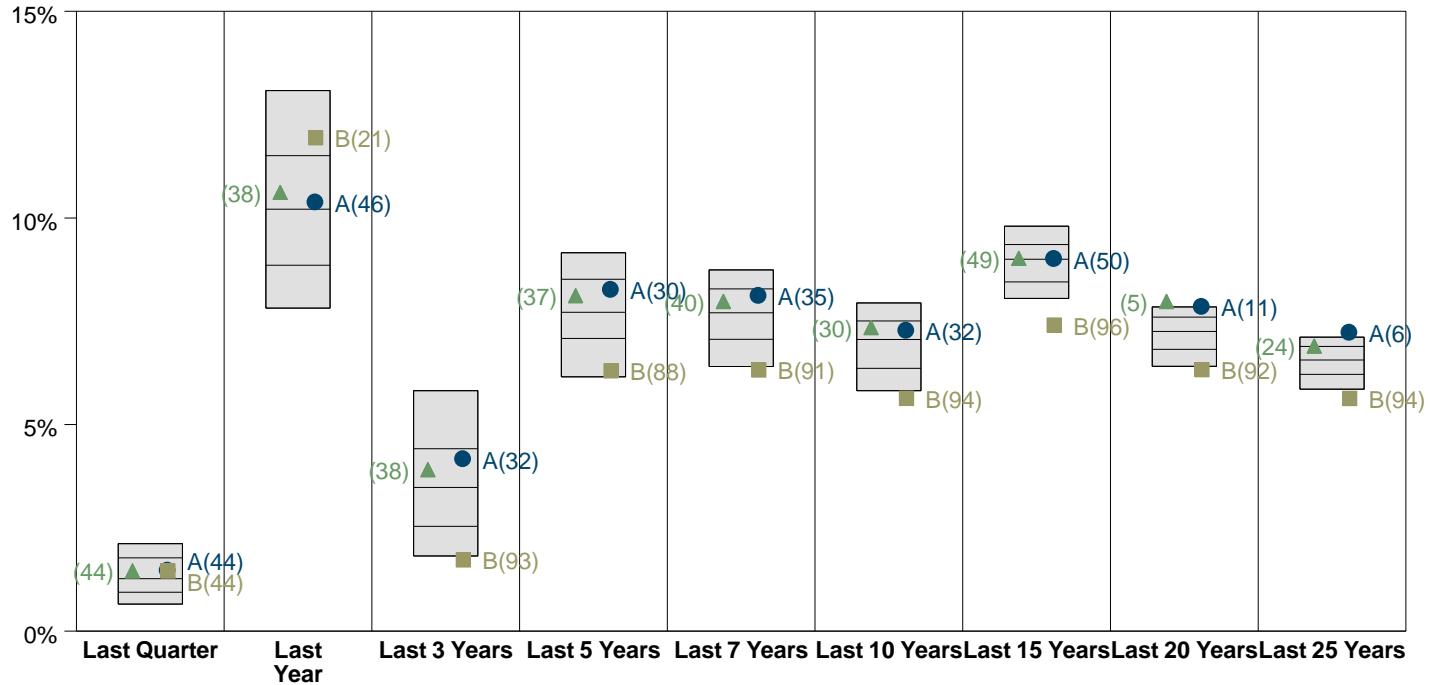
**For this analysis, PE and PC are benchmarked to the SERS' PE and PC program returns, respectively.

Returns are shown net of fees.

Total Fund

Gross of Fee Performance versus Large Public Plan (>\$1B) Peers and Benchmark as of June 30, 2024

Performance vs Callan Public Fund Spons - Large (>1B) (Gross)



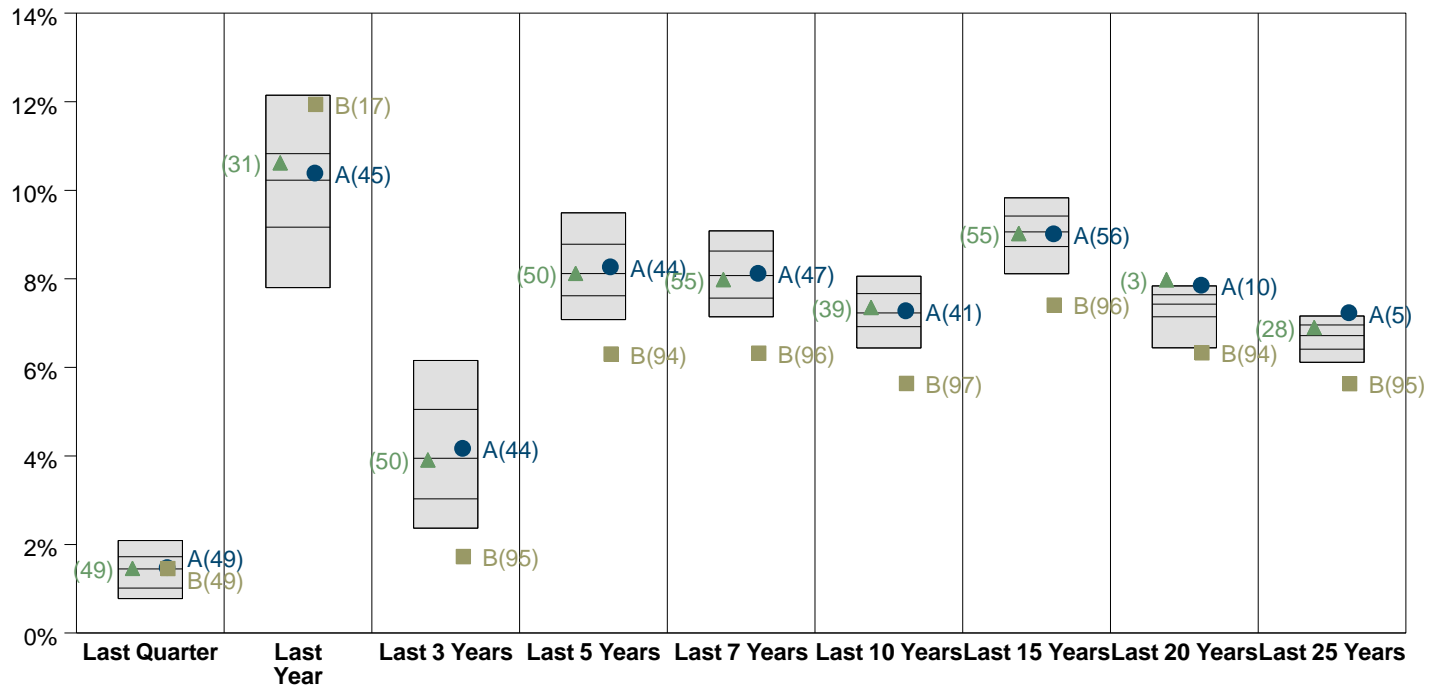
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years
10th Percentile	2.12	13.08	5.82	9.16	8.74	7.94	9.80	7.85	7.12
25th Percentile	1.77	11.51	4.41	8.52	8.28	7.51	9.36	7.60	6.89
Median	1.27	10.21	3.48	7.72	7.70	7.06	9.00	7.25	6.56
75th Percentile	0.94	8.85	2.54	7.08	7.06	6.36	8.45	6.82	6.22
90th Percentile	0.66	7.82	1.82	6.16	6.41	5.82	8.05	6.41	5.86
Total Fund	● A	10.37	4.16	8.25	8.11	7.26	9.00	7.84	7.22
60% MSCI ACW IMI/40% Bimbg U.S. Agg	■ B	11.94	1.73	6.30	6.32	5.64	7.41	6.33	5.63
Total Fund Custom Benchmark	▲	10.62	3.91	8.12	7.98	7.35	9.02	7.98	6.90

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Gross of Fee Performance versus Very Large Public DB Plan (>\$10B) Peers and Benchmark as of June 30, 2024

Performance vs Callan Public Fund Spons- V Lg DB (>10B) (Gross)



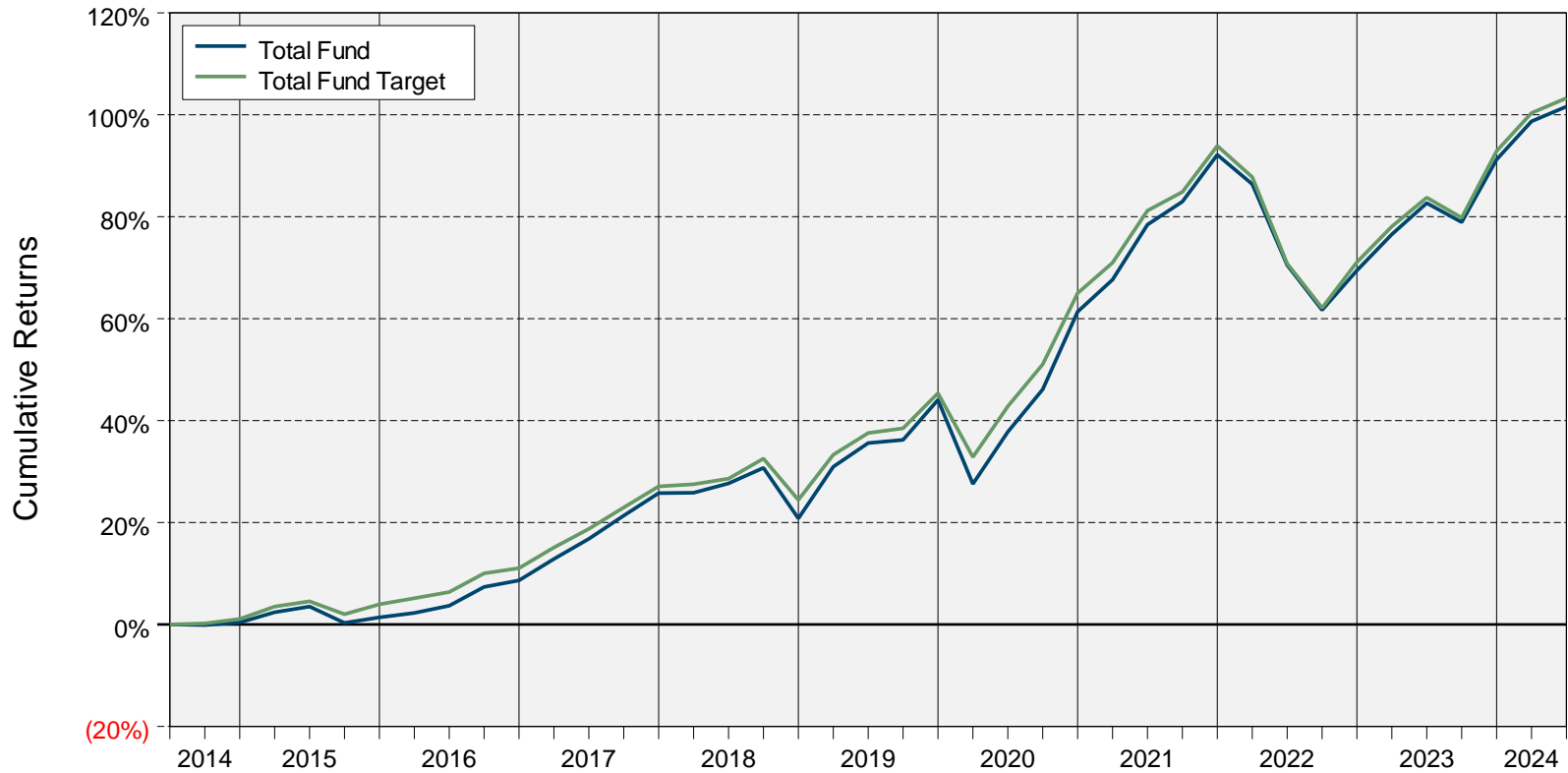
10th Percentile		2.09	12.15	6.15	9.49	9.08	8.06	9.83	7.84	7.16
25th Percentile		1.72	10.83	5.05	8.78	8.63	7.67	9.42	7.64	6.96
Median		1.45	10.23	3.95	8.12	8.07	7.23	9.06	7.43	6.71
75th Percentile		1.01	9.17	3.03	7.62	7.56	6.92	8.73	7.14	6.41
90th Percentile		0.78	7.80	2.37	7.08	7.14	6.44	8.12	6.44	6.11
Total Fund	● A	1.46	10.37	4.16	8.25	8.11	7.26	9.00	7.84	7.22
60% MSCI ACW IM/40% Blmbg U.S. Agg	■ B	1.46	11.94	1.73	6.30	6.32	5.64	7.41	6.33	5.63
Total Fund Custom Benchmark	▲	1.46	10.62	3.91	8.12	7.98	7.35	9.02	7.98	6.90

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Cumulative 10-year Returns vs Target as of June 30, 2024

Cumulative Returns Actual vs Target

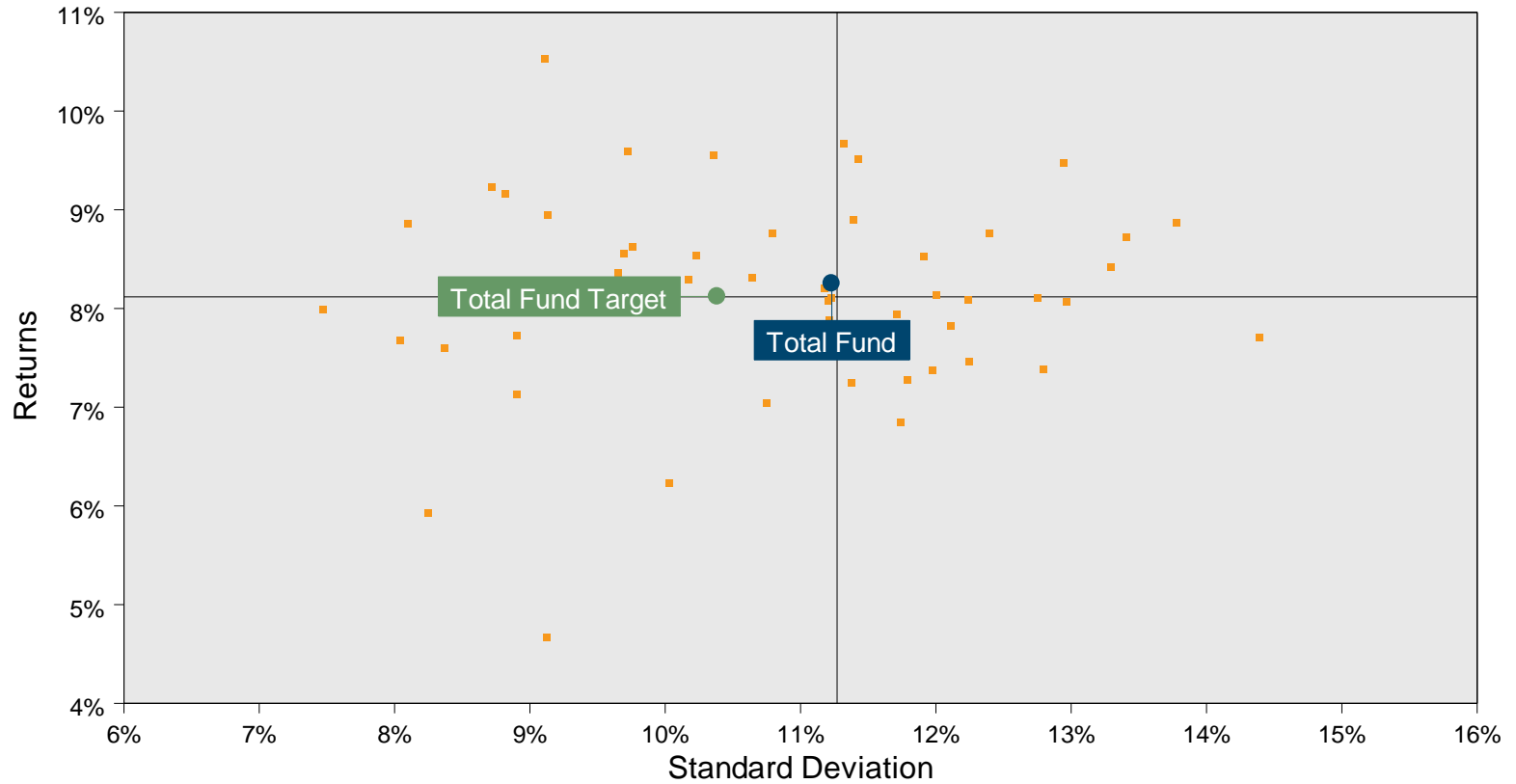


* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

5-year Risk vs Return as of June 30, 2024

Five Year Annualized Risk vs Return



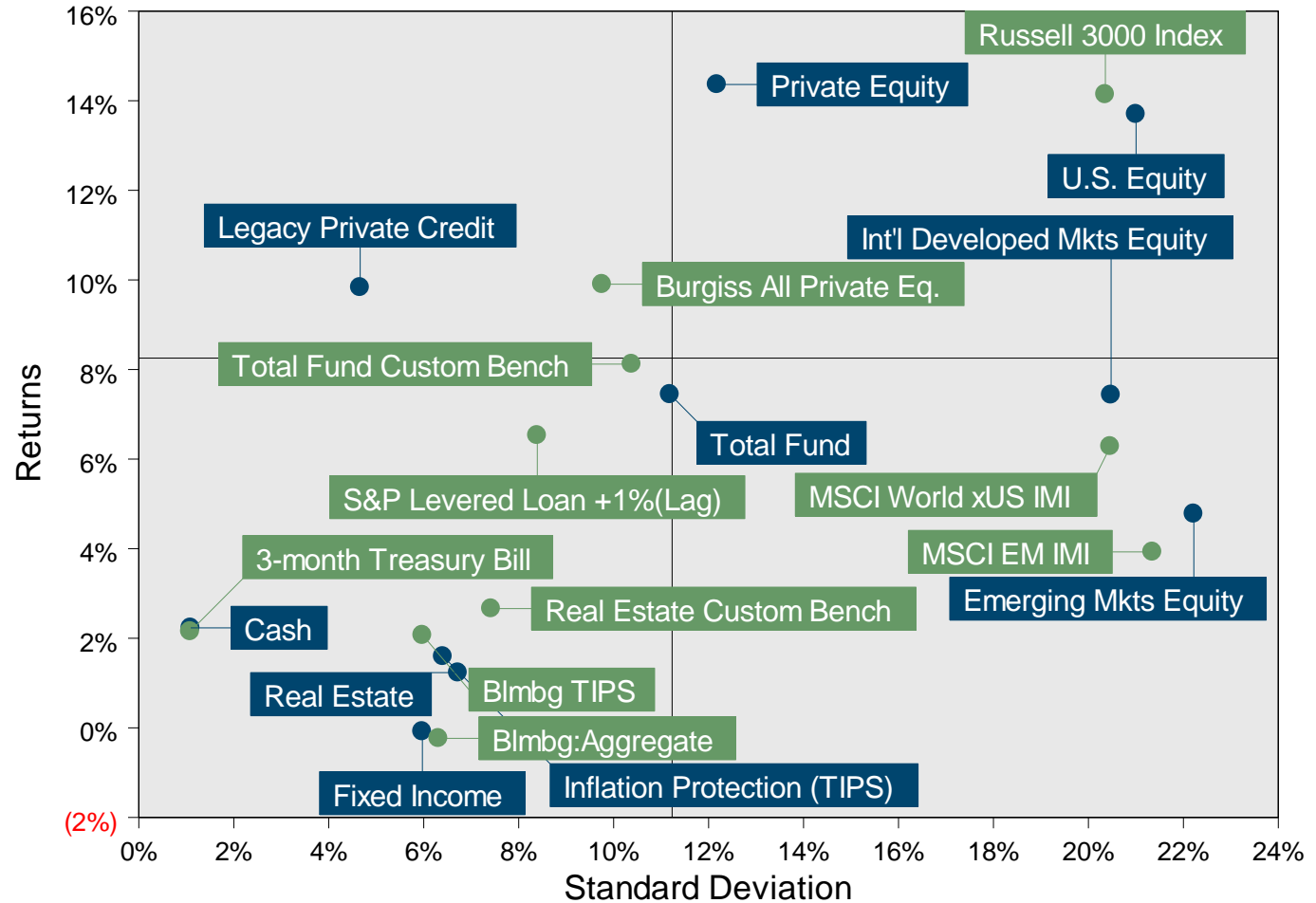
Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Asset Class Risk and Return as of June 30, 2024

Five Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices



* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Rolling 3-year Gross of Fee Performance versus Benchmark as of June 30, 2024

Rolling 12 Quarter Gross of Fee Returns
for 15 Years Ended June 30, 2024

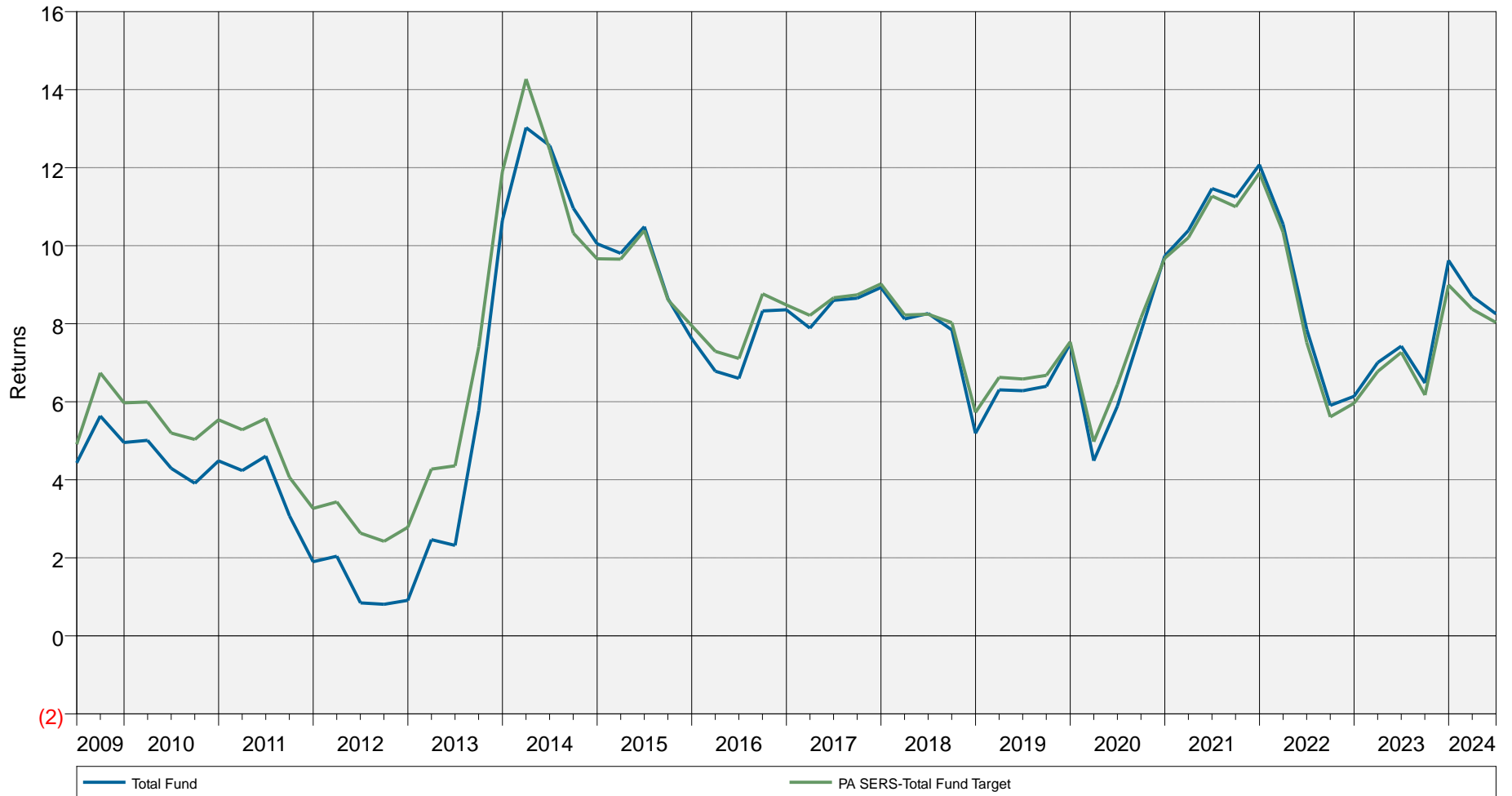


* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Rolling 5-year Gross of Fee Performance versus Benchmark as of June 30, 2024

Rolling 20 Quarter Gross of Fee Returns
for 15 Years Ended June 30, 2024



* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Asset Class Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance							
Total Fund	\$37,660	100.00%	1.34%	5.20%	9.84%	3.48%	7.45%
Total Fund Custom Benchmark(1)	-	-	1.46%	5.40%	10.62%	3.91%	8.12%
Public Market Equiv Benchmark(2)	-	-	3.01%	9.02%	15.46%	4.85%	8.55%
60/40 Index(3)	-	-	1.46%	5.80%	11.94%	1.73%	6.30%
U.S. Equity	\$13,268	35.23%	2.96%	12.92%	22.36%	7.54%	13.70%
Russell 3000 Index (4)	-	-	3.22%	13.56%	23.13%	8.05%	14.14%
S&P 1500 Index	-	-	3.66%	14.35%	23.52%	9.43%	14.59%
Int'l Developed Mkts Equity	\$4,469	11.87%	(0.29%)	5.12%	11.32%	3.16%	7.44%
MSCI World ex US IMI	-	-	(0.73%)	4.41%	10.76%	1.97%	6.29%
Emerging Mkts Equity	\$1,523	4.04%	4.98%	8.59%	12.95%	(5.20%)	4.78%
MSCI EM IMI	-	-	5.13%	7.41%	13.56%	(4.11%)	3.93%
Private Equity	\$6,738	17.89%	1.29%	3.53%	6.47%	8.33%	14.36%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.04%	0.05%	3.57%	9.91%
Global Equity + 3% (Qtr lag)(5)	-	-	9.50%	22.99%	29.05%	12.21%	16.52%
Legacy Private Credit Funds (6)	\$379	1.01%	2.63%	5.29%	11.65%	10.68%	9.83%
S&P Levered Loan Index + 1% (Qtr lag)	-	-	2.69%	5.87%	13.48%	7.00%	6.53%
Fixed Income	\$6,928	18.40%	0.33%	0.15%	3.20%	(2.37%)	(0.08%)
Blmbg U.S. Agg Bond Index	-	-	0.07%	(0.71%)	2.63%	(3.02%)	(0.23%)
Inflation Protection (TIPS)	\$1,050	2.79%	0.71%	0.54%	2.40%	(1.98%)	1.60%
Blmbg U.S. TIPS Index	-	-	0.79%	0.70%	2.71%	(1.33%)	2.07%
Real Estate	\$2,268	6.02%	(3.84%)	(9.24%)	(15.13%)	(2.20%)	1.23%
Real Estate Custom Bench (Qtr lag)(7)	-	-	(2.38%)	(7.62%)	(12.33%)	1.78%	2.66%
CPI + 3% (Qtr lag)	-	-	2.52%	2.95%	6.48%	8.65%	7.21%
Cash	\$1,021	2.71%	1.33%	2.69%	5.47%	3.15%	2.23%
3-month Treasury Bill	-	-	1.32%	2.63%	5.40%	3.03%	2.16%

* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

(1) Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index. See page 77 for full benchmark history.

(2) The current public equivalent benchmark consists of: 19% Bloomberg U.S. Agg Bond Index, 34% Russell 3000, 14% MSCI World ex US IMI Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 4% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index. See page 77 for full benchmark history.

(3) Benchmark consists of 60% MSCI ACW IMI Index and 40% Bloomberg U.S. Agg Bond Index.

(4) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

(5) As of 01/01/2020 benchmark consists of 25% MSCI World ex US +3% (Qtr lag) and 75% Russell 3000 + 3% (Qtr lag). Benchmark performance represents the historical benchmark (Russell 3000 +3% Qtr lag) linked to the current benchmark.

(6) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

(7) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged).

Asset Class Returns

As of June 30, 2024

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance					
Total Fund	6.55%	8.24%	7.04%	6.44%	9.28% (1/81)
Total Fund Custom Benchmark(1)	7.35%	9.02%	7.98%	6.90%	-
Public Market Equiv Benchmark(2)	7.62%	9.35%	8.23%	7.09%	-
60/40 Index(3)	5.64%	7.41%	6.33%	5.63%	-
U.S. Equity	11.33%	14.05%	9.36%	7.55%	10.97% (1/81)
Russell 3000 Index (4)	12.15%	14.49%	10.17%	7.82%	11.28% (1/81)
S&P 1500 Index	12.50%	14.67%	10.26%	7.90%	-
Int'l Developed Mkts Equity	5.15%	7.90%	5.98%	-	6.44% (1/02)
MSCI World ex US IMI	4.23%	6.79%	5.82%	4.81%	6.32% (1/02)
Emerging Mkts Equity	3.79%	4.99%	5.74%	-	6.67% (1/02)
MSCI EM IMI	3.09%	5.19%	7.51%	6.38%	8.38% (1/02)
Private Equity	11.88%	13.08%	12.33%	11.66%	11.41% (1/86)
Burgiss Private Equity Index (Qtr lag)	10.71%	12.60%	12.30%	11.89%	16.02% (1/86)
Global Equity + 3% (Qtr lag)(5)	15.06%	18.38%	13.22%	11.25%	14.77% (1/86)
Legacy Private Credit Funds (6)	-	-	-	-	10.35% (4/18)
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	6.13% (4/18)
Fixed Income	1.28%	4.00%	3.94%	4.51%	7.43% (1/81)
Blmbg U.S. Agg Bond Index	1.35%	2.50%	3.12%	3.88%	6.73% (1/81)
Inflation Protection (TIPS)	1.69%	2.40%	2.90%	-	2.85% (2/03)
Blmbg U.S. TIPS Index	1.91%	3.11%	3.57%	4.74%	3.77% (2/03)
Real Estate	3.07%	4.03%	4.68%	5.81%	7.47% (3/84)
Real Estate Custom Bench (Qtr lag)(7)	5.59%	6.60%	6.12%	6.76%	-
CPI + 3% (Qtr lag)	5.83%	5.60%	5.59%	5.59%	5.83% (3/84)
Cash	1.75%	1.26%	1.81%	2.27%	3.46% (1/87)
3-month Treasury Bill	1.51%	1.04%	1.57%	1.91%	3.20% (1/87)

* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

(1)The current total fund benchmark consists of: 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 34% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index. See page 77 for full benchmark history.

(2) The current public equivalent benchmark consists of: 19% Bloomberg U.S. Agg Bond Index, 34% Russell 3000, 14% MSCI World ex US IMI Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 4% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index. See page 77 for full benchmark history.

(3) Benchmark consists of 60% MSCI ACW IMI Index and 40% Bloomberg U.S. Agg Bond Index

(4) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

(5) As of 01/01/2020 benchmark consists of 25% MSCI World ex US +3% (Qtr lag) and 75% Russell 3000 + 3% (Qtr lag). Benchmark performance represents the historical benchmark (Russell 3000 +3% Qtr lag) linked to the current benchmark.

(6) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

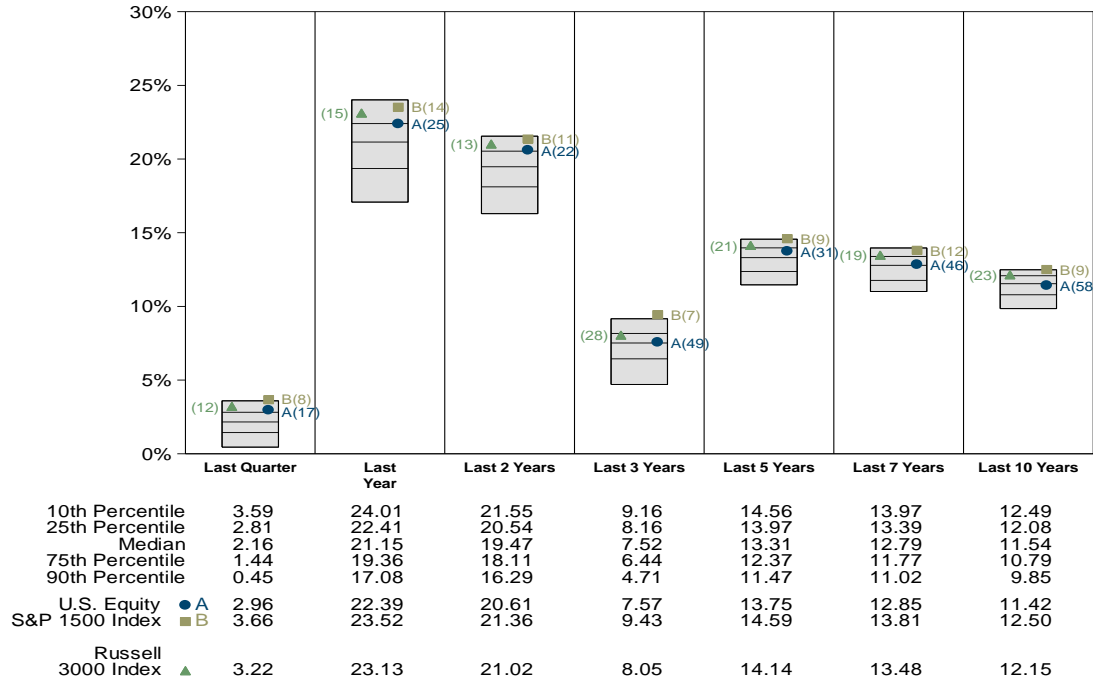
(7) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022 the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged).

Callan

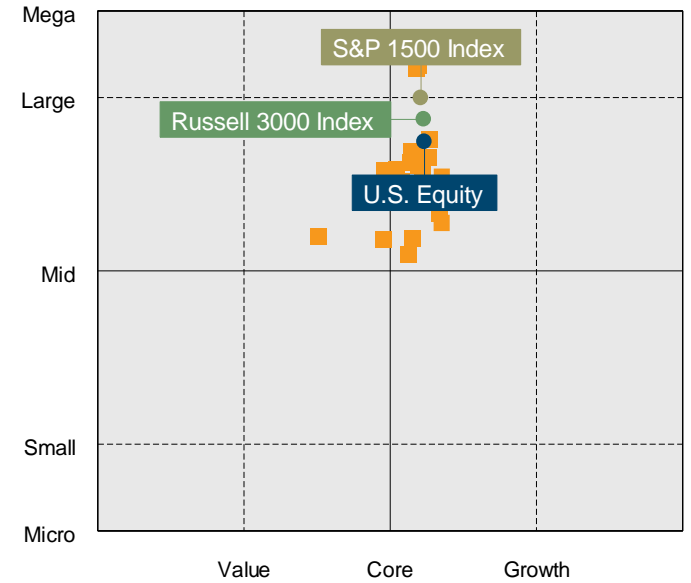
**Appendix I – Asset Class and Manager
Performance**

U.S. Equity as of June 30, 2024

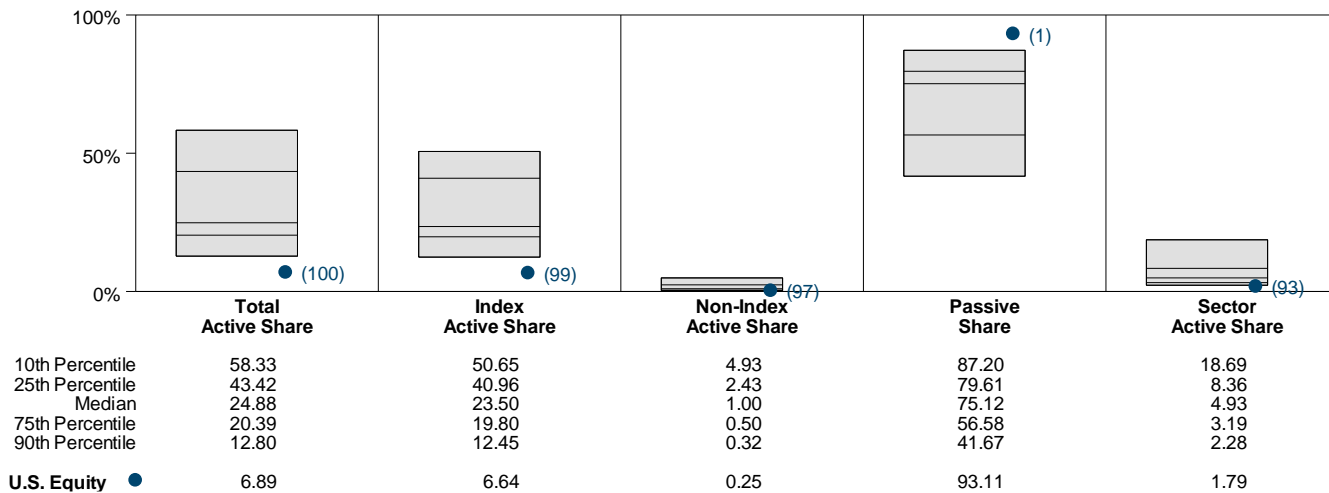
Performance vs Public Fund - Domestic Equity (Gross)



Style Map vs Pub Pln- Dom Equity Holdings as of June 30, 2024

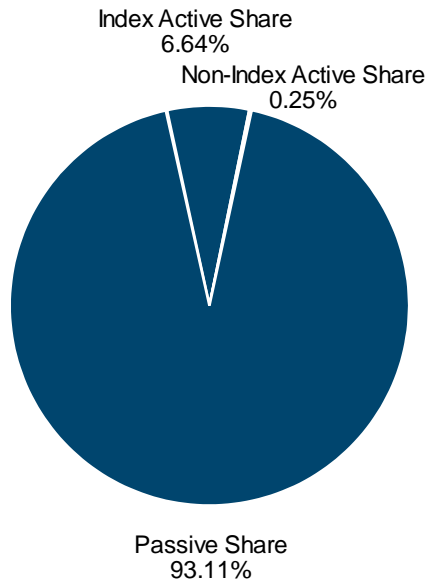


Active Share vs. Pub Pln- Dom Equity

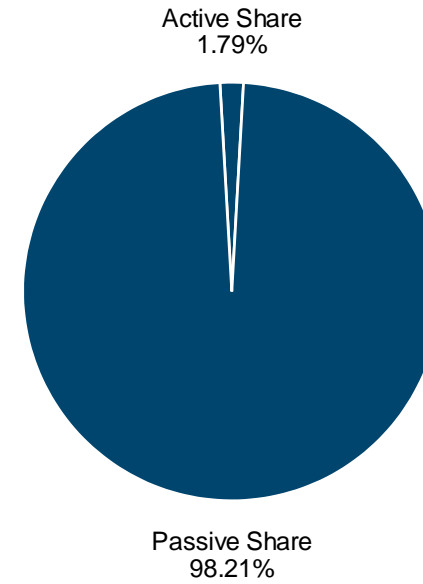


U.S. Equity as of June 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share



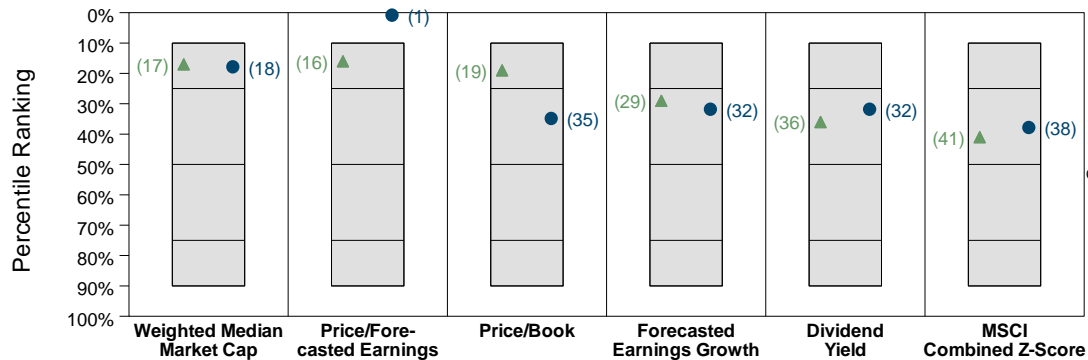
Total Active Share: 6.89%

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	1.91%	0.10%	2.01%	8.93%	8.27%	0.43%
Consumer Discretionary	5.81%	0.30%	6.10%	10.18%	10.13%	0.60%
Consumer Staples	4.37%	0.02%	4.40%	5.47%	5.30%	0.30%
Energy	10.90%	0.37%	11.26%	3.85%	4.03%	0.39%
Financials	8.67%	0.17%	8.84%	13.02%	13.40%	1.07%
Health Care	8.82%	0.30%	9.11%	11.85%	12.13%	1.00%
Industrials	9.68%	0.13%	9.81%	9.37%	9.79%	0.81%
Information Technology	3.82%	0.20%	4.02%	30.16%	29.25%	1.58%
Materials	12.88%	1.81%	14.68%	2.44%	2.70%	0.30%
Miscellaneous	0.00%	100.00%	100.00%	-	0.01%	0.00%
Real Estate	12.25%	0.30%	12.56%	2.53%	2.79%	0.26%
Utilities	7.01%	0.00%	7.01%	2.20%	2.19%	0.15%
Total	6.64%	0.25%	6.89%	100.00%	100.00%	6.89%

U.S. Equity

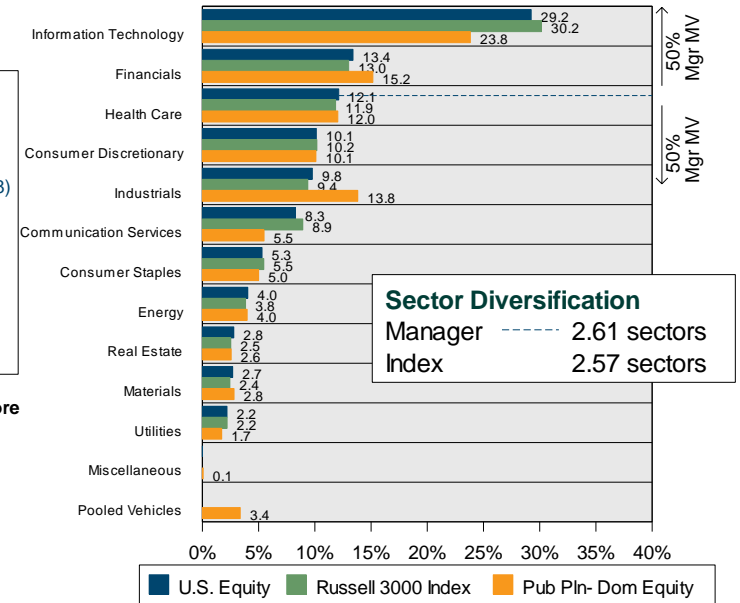
As of June 30, 2024

Portfolio Characteristics Percentile Rankings
Rankings Against Public Fund - Domestic Equity
as of June 30, 2024

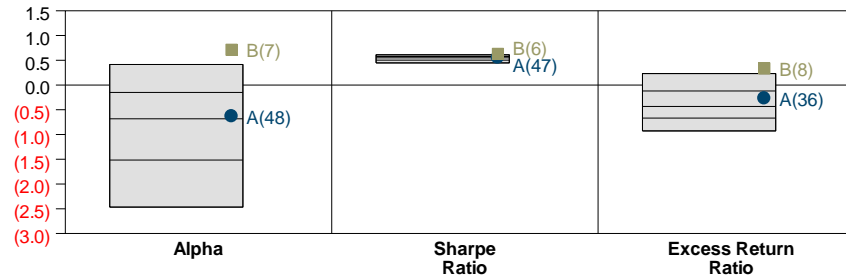


Percentile Ranking	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	277.70	21.08	4.15	17.28	1.46	0.15
25th Percentile	145.59	20.58	3.64	16.82	1.36	0.05
Median	125.43	20.01	3.37	16.50	1.30	0.01
75th Percentile	91.20	19.22	3.08	16.01	1.20	(0.03)
90th Percentile	51.57	18.04	2.74	14.93	1.13	(0.17)
U.S. Equity	● 156.56	21.25	3.49	16.62	1.33	0.01
Russell 3000 Index	▲ 180.85	20.97	3.76	16.68	1.33	0.01

Sector Allocation June 30, 2024



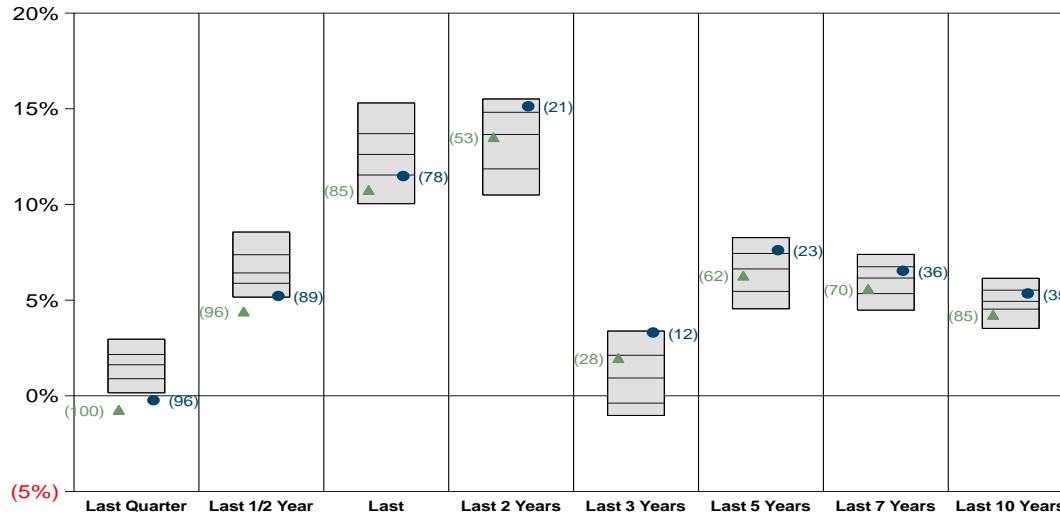
Risk Adjusted Return Measures vs Russell 3000 Index
Rankings Against Public Fund - Domestic Equity (Gross)
Five Years Ended June 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.41	0.61	0.23
25th Percentile	(0.15)	0.58	(0.12)
Median	(0.68)	0.55	(0.43)
75th Percentile	(1.52)	0.50	(0.67)
90th Percentile	(2.47)	0.45	(0.93)
U.S. Equity	● A (0.63)	0.55	(0.27)
S&P 1500 Index	■ B (0.71)	0.63	0.33

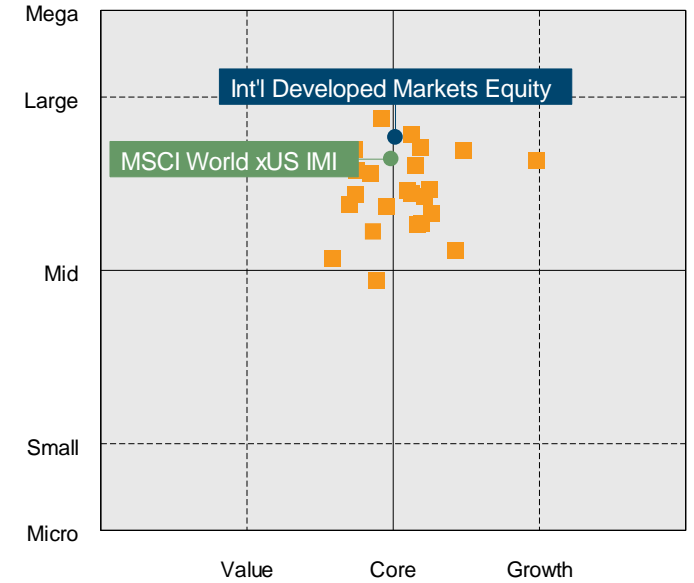
International Equity as of June 30, 2024

Performance vs Public Fund - International Equity (Gross)

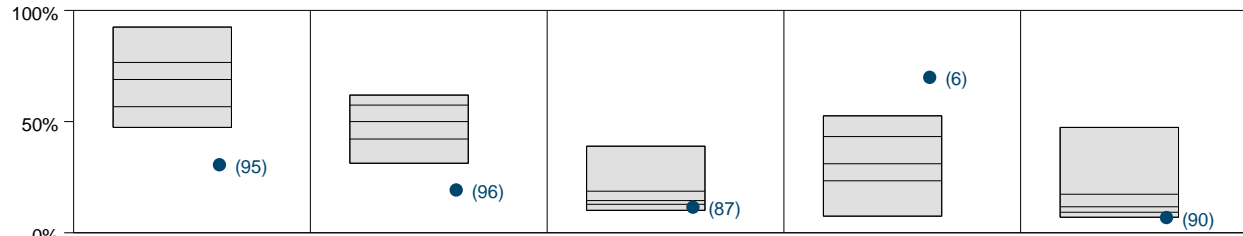


Int'l Developed Markets Equity ●	(0.25)	5.20	11.46	15.12	3.29	7.59	6.51	5.33
MSCI World xUS IMI ▲	(0.73)	4.41	10.76	13.52	1.97	6.29	5.59	4.23

Style Map vs Pub Pln- Intl Equity Holdings as of June 30, 2024



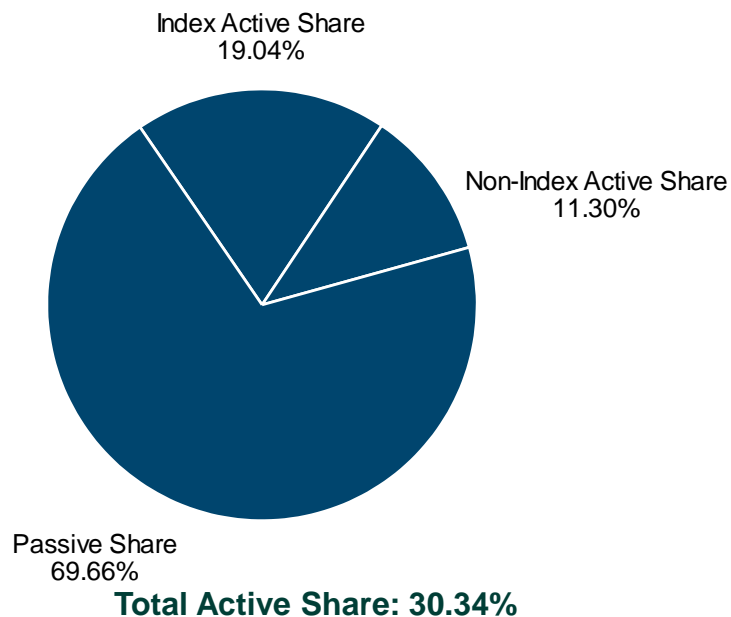
Active Share vs. Pub Pln- Intl Equity



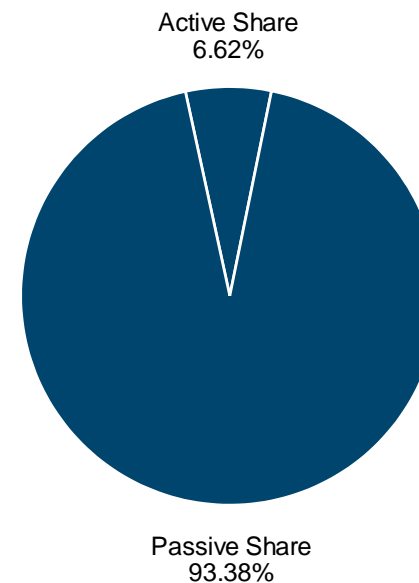
Int'l Developed Markets Equity ●	30.34	19.04	11.30	69.66	6.62
---	-------	-------	-------	-------	------

International Equity as of June 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share

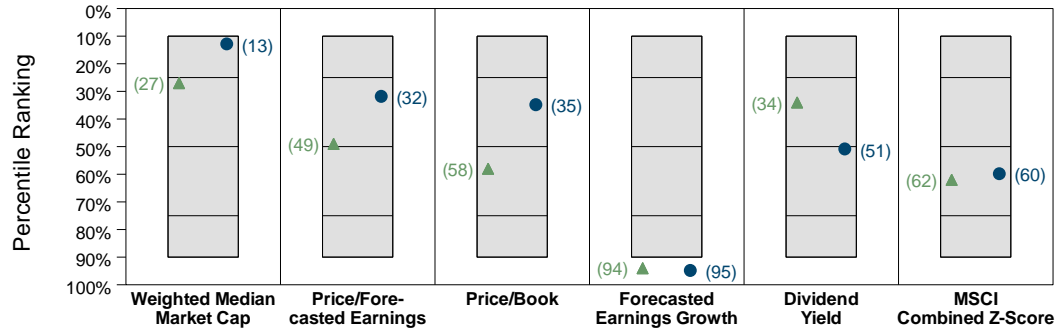


	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	16.42%	10.37%	26.79%	3.74%	3.95%	0.96%
Consumer Discretionary	23.18%	10.91%	34.08%	10.78%	11.59%	3.67%
Consumer Staples	14.97%	8.42%	23.38%	7.81%	8.03%	1.79%
Energy	22.24%	14.93%	37.16%	5.58%	4.41%	2.00%
Financials	10.12%	4.43%	14.56%	20.26%	17.80%	3.72%
Health Care	24.58%	21.12%	45.70%	11.18%	12.71%	5.16%
Industrials	21.20%	9.33%	30.53%	17.29%	17.12%	5.30%
Information Technology	21.98%	17.57%	39.55%	9.50%	12.76%	3.84%
Materials	15.78%	5.41%	21.18%	7.71%	6.71%	1.83%
Miscellaneous	0.00%	100.00%	100.00%	-	0.60%	0.28%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.00%	0.00%
Real Estate	36.57%	10.12%	46.69%	3.03%	1.86%	1.07%
Utilities	15.38%	5.27%	20.66%	3.11%	2.47%	0.68%
Total	19.04%	11.30%	30.34%	100.00%	100.00%	30.31%

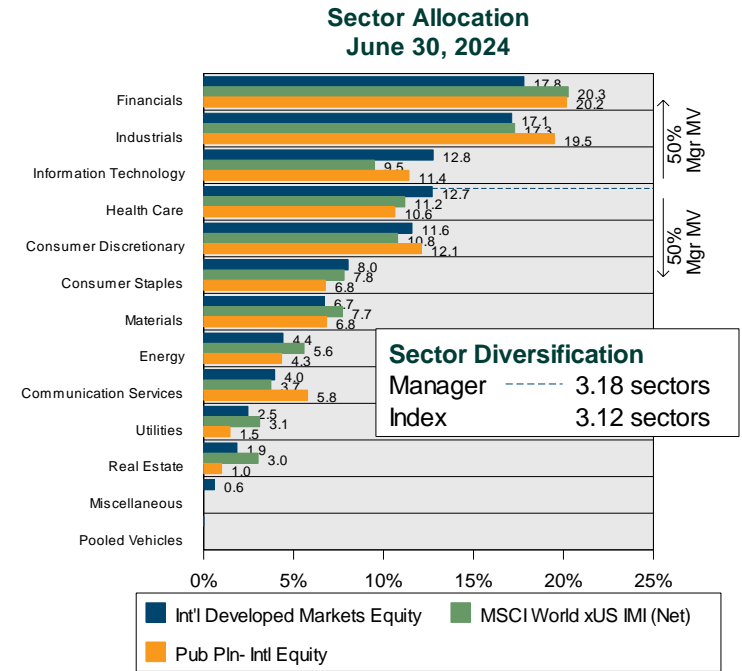
International Equity

As of June 30, 2024

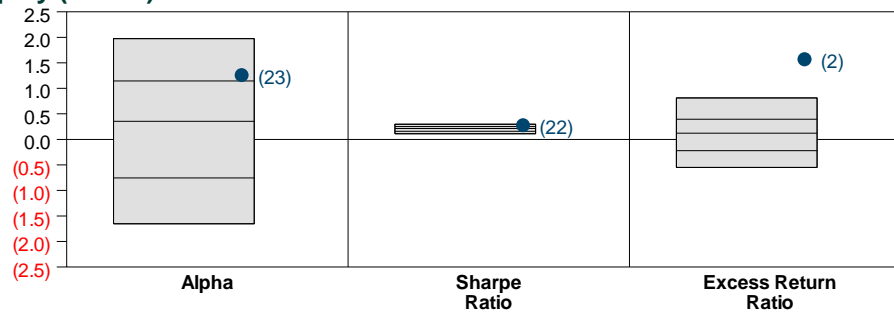
Portfolio Characteristics Percentile Rankings
Rankings Against Public Fund - International Equity
as of June 30, 2024



	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	46.32	17.39	2.96	17.51	3.48	0.67
25th Percentile	40.64	15.37	2.23	15.90	3.36	0.34
Median	32.33	13.90	1.93	14.97	2.84	0.24
75th Percentile	25.99	12.28	1.57	14.13	2.53	0.00
90th Percentile	18.78	11.55	1.35	12.67	2.11	(0.12)
Int'l Developed Markets Equity	44.05	14.91	2.05	11.90	2.77	0.11
MSCI World xUS IMI (Net)	39.41	13.94	1.79	12.21	3.24	0.09



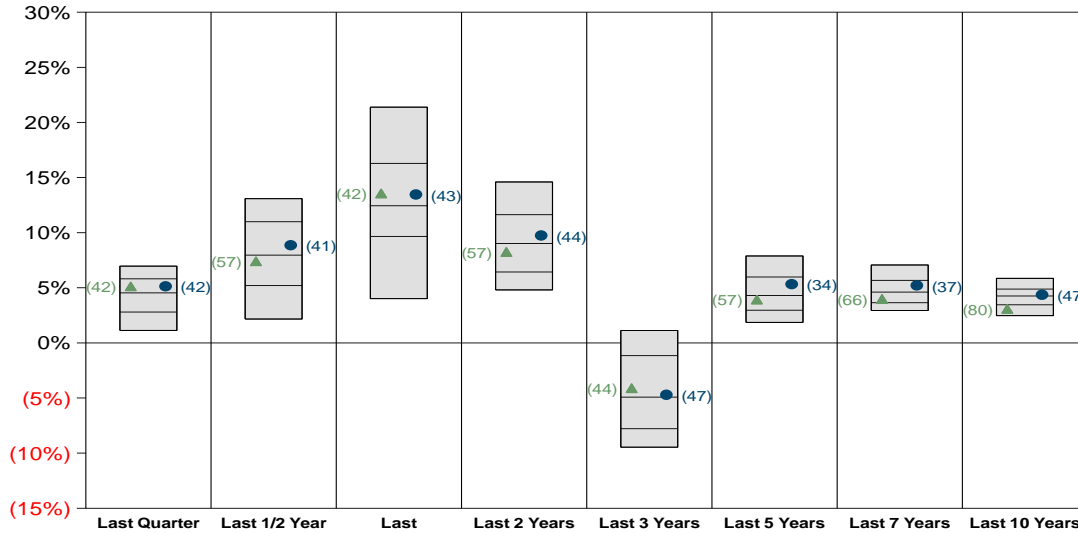
Risk Adjusted Return Measures vs MSCI World xUS IMI
Rankings Against Public Fund - International Equity (Gross)
Five Years Ended June 30, 2024



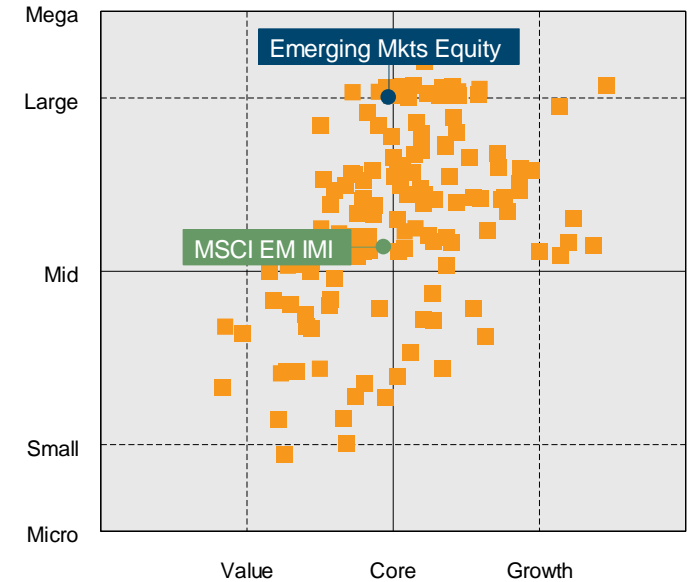
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.98	0.30	0.81
25th Percentile	1.15	0.25	0.39
Median	0.36	0.21	0.12
75th Percentile	(0.76)	0.16	(0.22)
90th Percentile	(1.65)	0.11	(0.55)
Int'l Developed Markets Equity	1.25	0.27	1.56

Emerging Markets Equity as of June 30, 2024

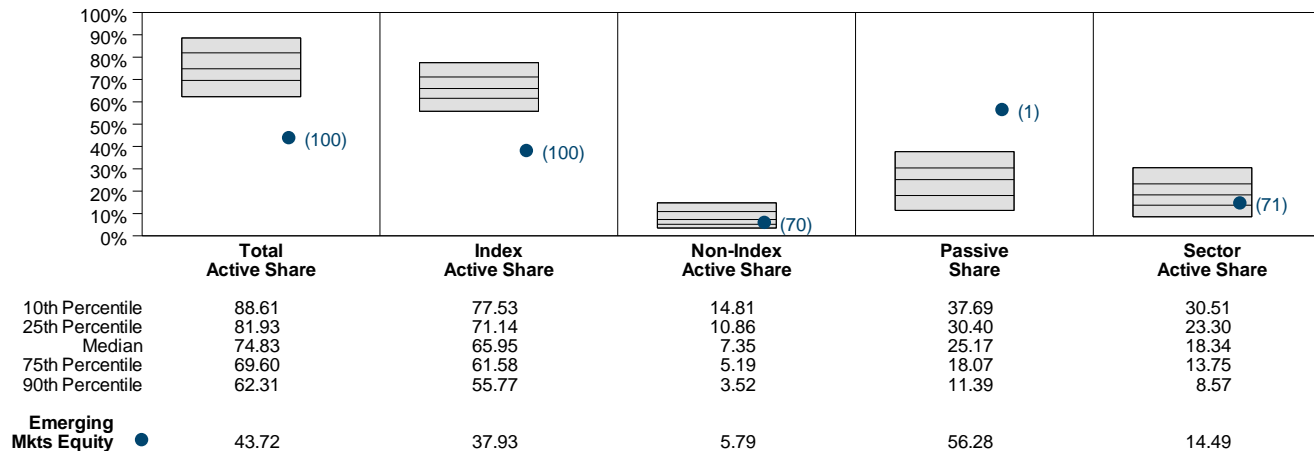
Performance vs Callan Emerging Broad (Gross)



Style Map vs Callan Emerging Broad Holdings as of June 30, 2024

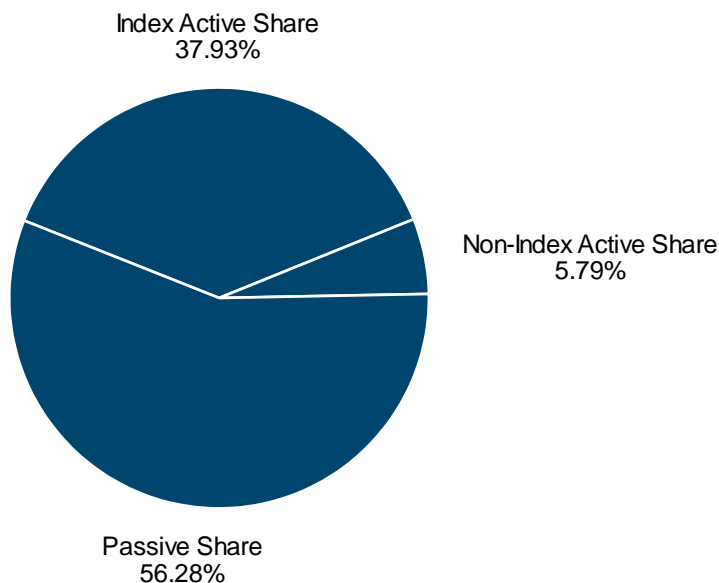


Active Share vs. Callan Emerging Broad

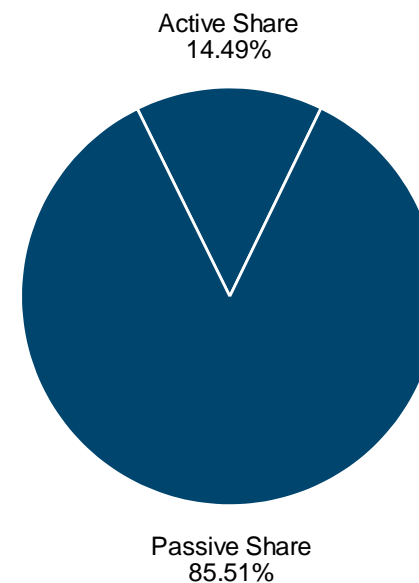


Emerging Markets Equity as of June 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share



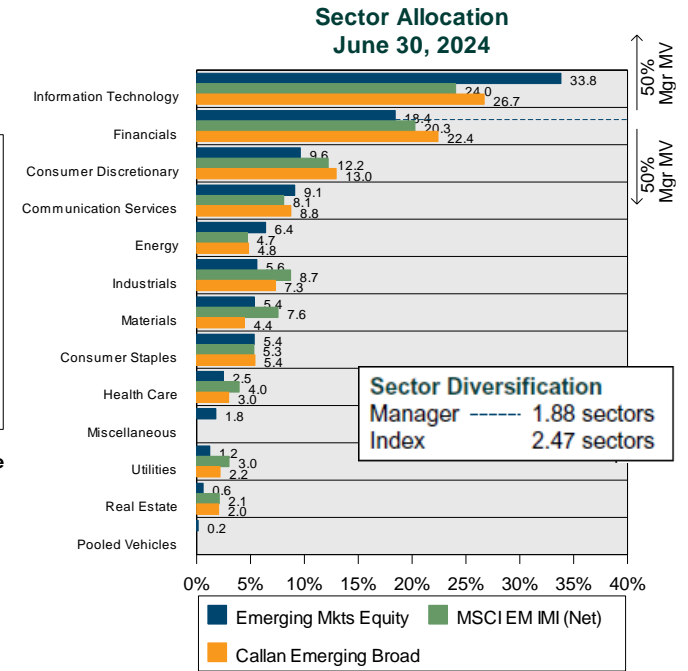
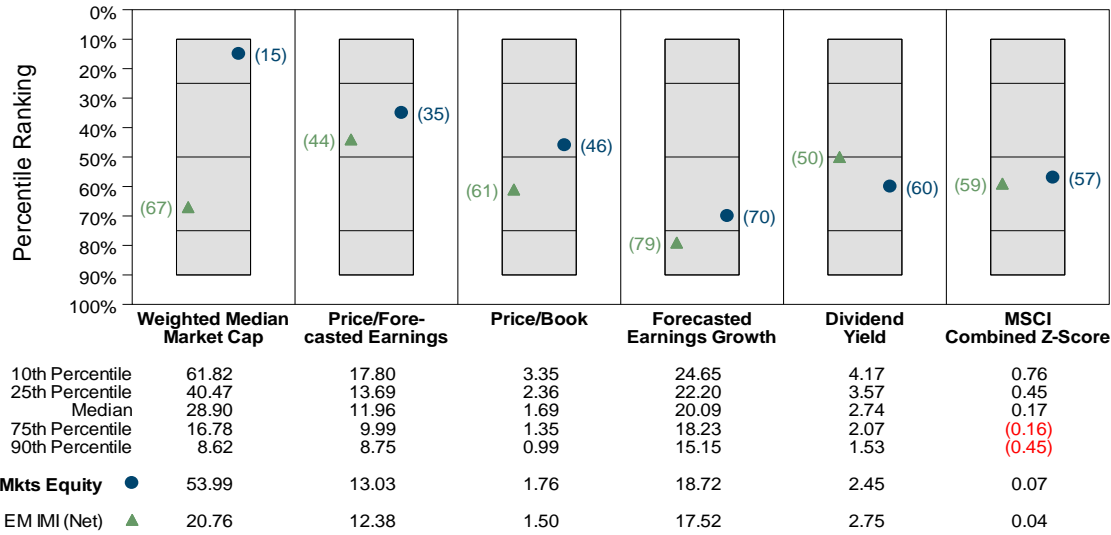
Total Active Share: 43.72%

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	31.47%	3.64%	35.11%	8.08%	9.11%	3.21%
Consumer Discretionary	35.75%	5.62%	41.38%	12.21%	9.63%	4.55%
Consumer Staples	48.74%	4.04%	52.78%	5.31%	5.35%	2.81%
Energy	32.09%	4.07%	36.16%	4.72%	6.41%	1.54%
Financials	39.51%	4.44%	43.95%	20.27%	18.43%	8.69%
Health Care	37.00%	16.97%	53.97%	3.96%	2.50%	2.02%
Industrials	54.08%	2.17%	56.26%	8.72%	5.60%	4.50%
Information Technology	30.42%	4.80%	35.22%	24.04%	33.82%	10.05%
Materials	40.27%	6.87%	47.13%	7.56%	5.37%	3.35%
Miscellaneous	0.00%	102.44%	102.44%	-	1.80%	0.92%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.16%	0.08%
Real Estate	33.80%	10.80%	44.60%	2.11%	0.60%	0.88%
Utilities	19.24%	2.06%	21.30%	3.01%	1.23%	1.07%
Total	37.93%	5.79%	43.72%	100.00%	100.00%	43.67%

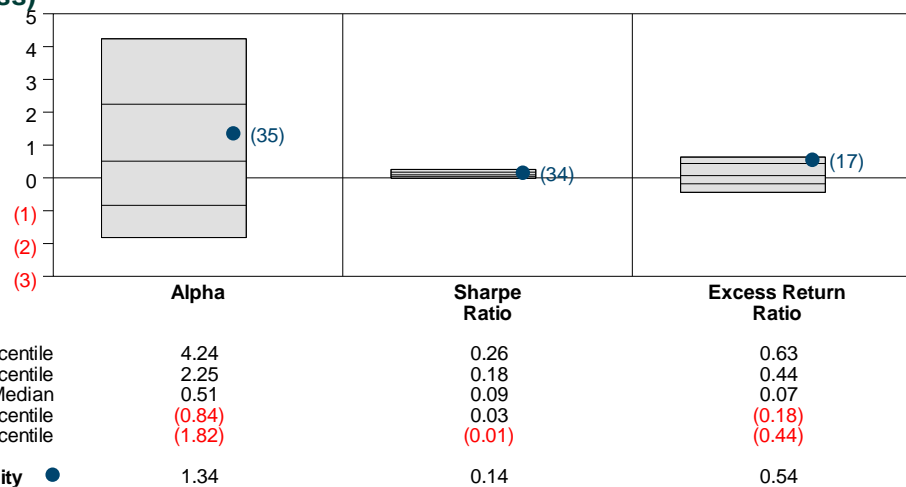
Emerging Markets Equity

As of June 30, 2024

Portfolio Characteristics Percentile Rankings
Rankings Against Callan Emerging Broad
as of June 30, 2024

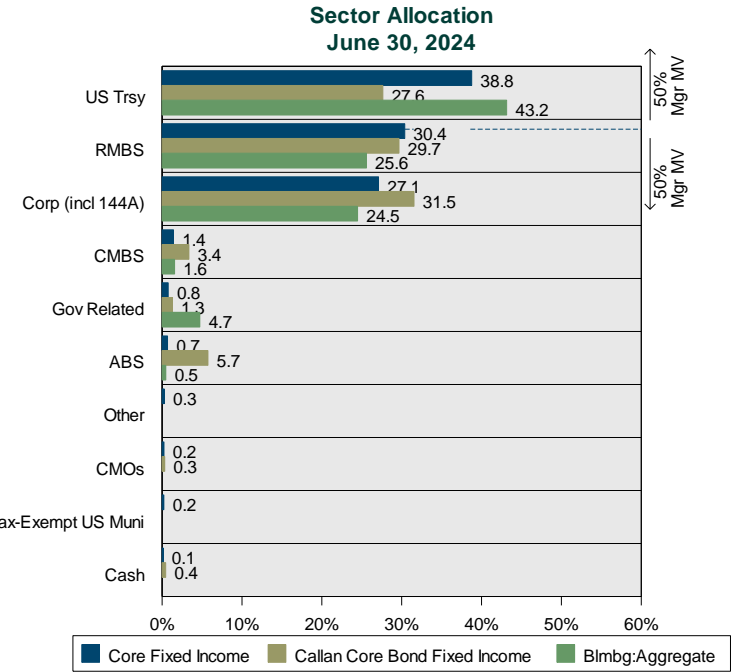
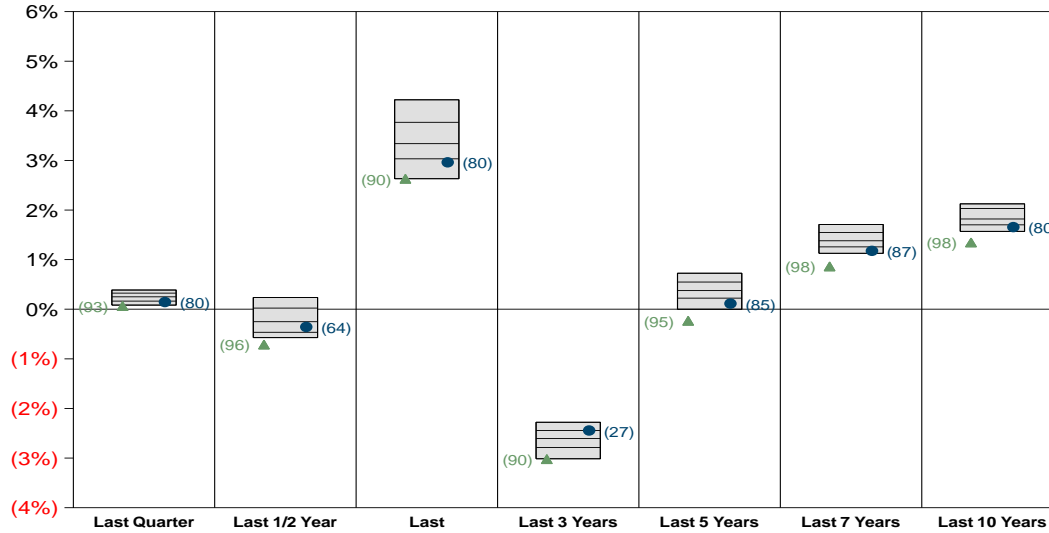


Risk Adjusted Return Measures vs MSCI EM IMI
Rankings Against Callan Emerging Broad (Gross)
Five Years Ended June 30, 2024

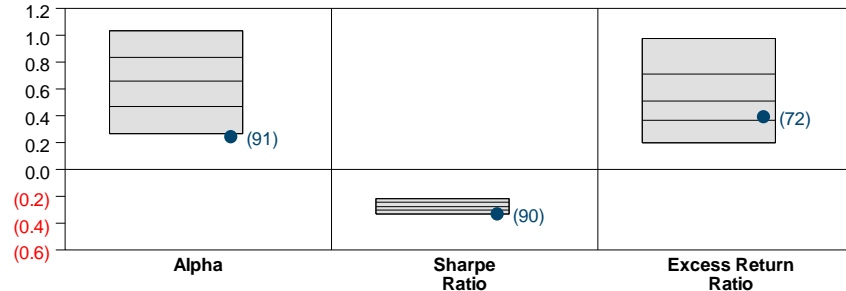


Core Fixed Income As of June 30, 2024

Performance vs Callan Core Bond Fixed Income (Gross)



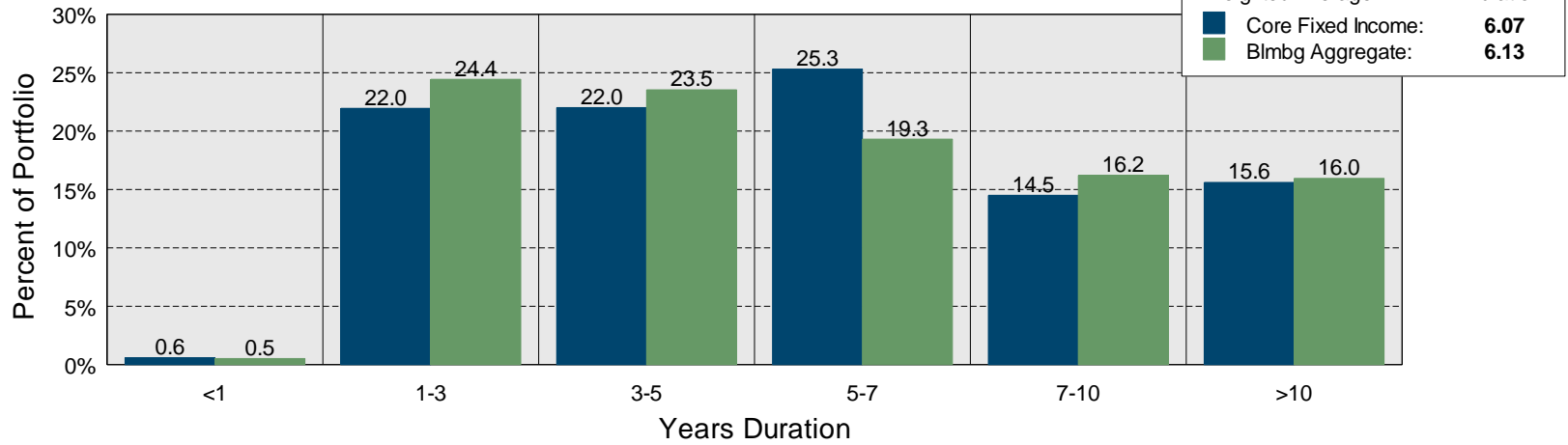
Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2024



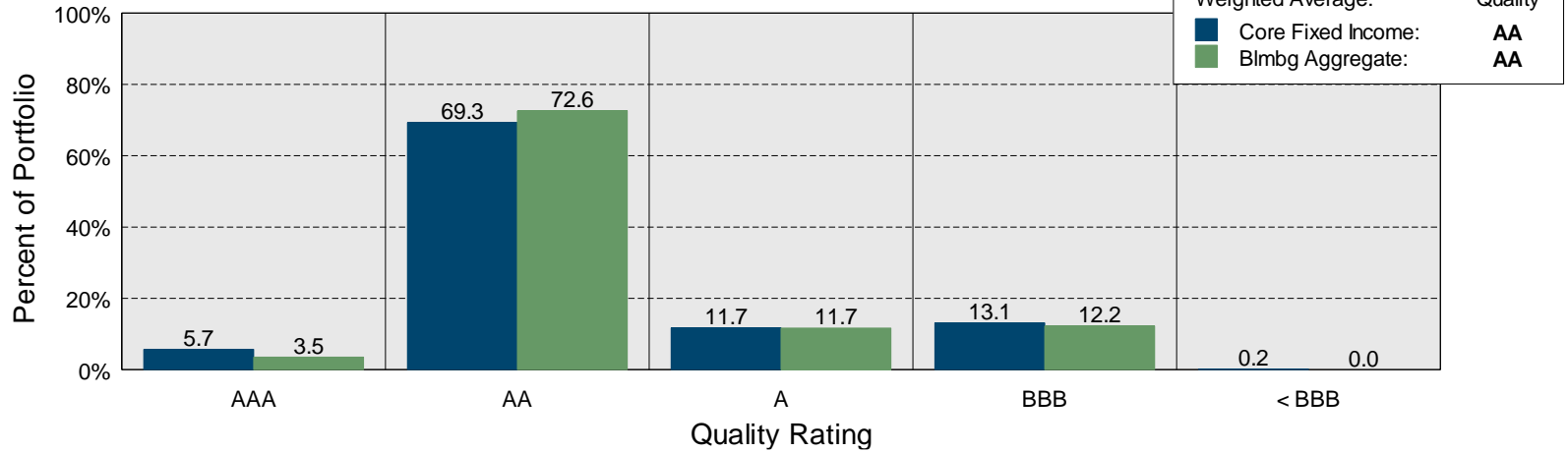
Core Fixed Income

As of June 30, 2024

Duration Distribution

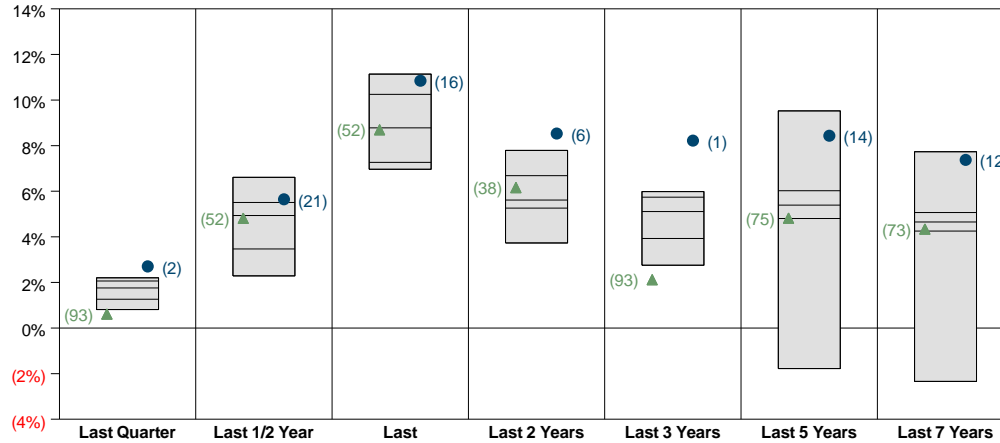


Quality Distribution



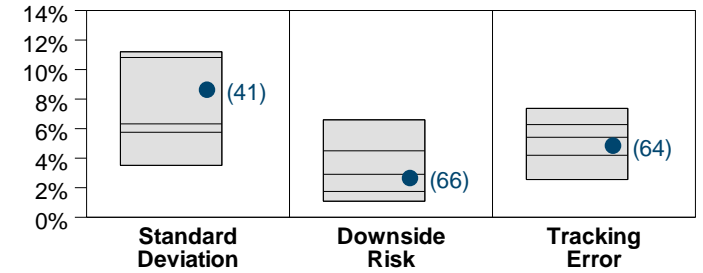
Opportunistic Fixed Income As of June 30, 2024

Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)



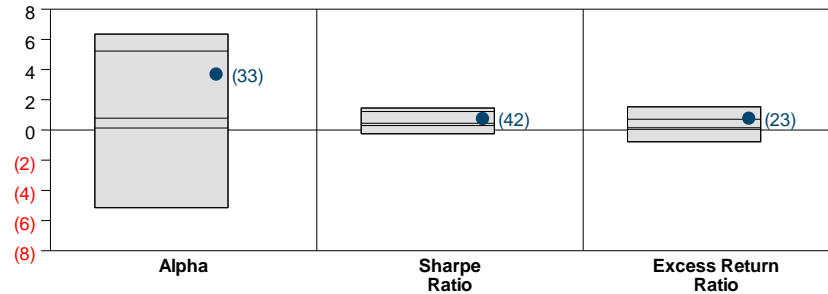
	Last Quarter	Last 1/2 Year	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	2.20	6.61	11.14	7.79	5.98	9.53	7.73
25th Percentile	2.06	5.51	10.25	6.69	5.74	6.02	5.06
Median	1.76	4.93	8.78	5.61	5.11	5.40	4.65
75th Percentile	1.26	3.47	7.27	5.26	3.93	4.81	4.25
90th Percentile	0.81	2.29	6.97	3.74	2.76	(1.78)	(2.34)
Blackstone Keystone ●	2.68	5.63	10.82	8.51	8.20	8.41	7.35
HFRI Fund of Funds Composite Index ▲	0.61	4.81	8.70	6.16	2.12	4.82	4.34

Risk Statistics Rankings vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2024



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	11.21	6.60	7.38
25th Percentile	10.82	4.50	6.28
Median	6.32	2.91	5.41
75th Percentile	5.76	1.75	4.20
90th Percentile	3.51	1.08	2.56
Blackstone Keystone ●	8.59	2.61	4.81

Risk Adjusted Return Measures vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2024



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	6.35	1.46	1.54
25th Percentile	5.23	1.23	0.71
Median	0.78	0.44	0.15
75th Percentile	0.13	0.30	0.04
90th Percentile	(5.15)	(0.25)	(0.79)
Blackstone Keystone ●	3.67	0.73	0.75

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance- Domestic Equity							
U.S. Equity	\$13,268	100.00%	2.96%	12.92%	22.36%	7.54%	13.70%
Russell 3000 Index (1)	-	-	3.22%	13.56%	23.13%	8.05%	14.14%
S&P 1500 Index	-	-	3.66%	14.35%	23.52%	9.43%	14.59%
MCM Russell 1000 Index	11,777	88.76%	3.56%	14.22%	23.91%	8.93%	14.70%
Russell 1000 Index	-	-	3.57%	14.24%	23.88%	8.74%	14.61%
S&P 500 Index	-	-	4.28%	15.29%	24.56%	10.01%	15.05%
MCM Russell 2000 Core Index	693	5.22%	(3.26%)	2.27%	10.57%	(1.55%)	7.38%
Russell 2000 Index	-	-	(3.28%)	1.73%	10.06%	(2.58%)	6.94%
S&P 600 Index	-	-	(3.11%)	(0.72%)	8.66%	(0.26%)	8.06%
MCM Russell 2000 Val Index	366	2.76%	(3.63%)	(0.84%)	10.88%	(0.45%)	7.15%
Russell 2000 Value Index	-	-	(3.64%)	(0.85%)	10.90%	(0.53%)	7.07%
S&P 600 Value Index	-	-	(4.85%)	(4.72%)	4.20%	(0.79%)	7.42%
Emerald Asset Management	433	3.26%	3.16%	8.84%	14.47%	(1.08%)	7.44%
Russell 2000 Growth Index	-	-	(2.92%)	4.44%	9.14%	(4.86%)	6.17%
S&P 600 Growth Index	-	-	(1.40%)	3.30%	13.03%	0.17%	8.34%
			Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Domestic Equity							
U.S. Equity			11.33%	14.05%	9.36%	7.55%	10.97% (1/81)
Russell 3000 Index (1)			12.15%	14.49%	10.17%	7.82%	11.28% (1/81)
S&P 1500 Index			12.50%	14.67%	10.26%	7.90%	-
MCM Russell 1000 Index			12.58%	-	-	-	14.47% (1/12)
Russell 1000 Index			12.51%	14.71%	10.33%	7.82%	14.45% (1/12)
S&P 500 Index			12.86%	14.82%	10.29%	7.67%	14.64% (1/12)
MCM Russell 2000 Core Index			-	-	-	-	7.66% (12/16)
Russell 2000 Index			7.00%	11.24%	7.85%	7.60%	7.38% (12/16)
S&P 600 Index			8.24%	12.63%	9.09%	9.41%	8.01% (12/16)
MCM Russell 2000 Val Index			-	-	-	-	6.09% (12/16)
Russell 2000 Value Index			6.23%	10.59%	7.23%	8.32%	6.06% (12/16)
S&P 600 Value Index			7.18%	11.81%	8.34%	8.92%	6.71% (12/16)
Emerald Asset Management			-	-	-	-	9.87% (12/16)
Russell 2000 Growth Index			7.39%	11.59%	8.21%	6.42%	8.24% (12/16)
S&P 600 Growth Index			9.11%	13.35%	9.73%	9.47%	9.08% (12/16)

* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

(1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance- International Equity							
Int'l Developed Mkts Equity	\$4,469	100.00%	(0.29%)	5.12%	11.32%	3.16%	7.44%
MSCI World ex US IMI	-	-	(0.73%)	4.41%	10.76%	1.97%	6.29%
Walter Scott & Partners(1) MSCI World	822 -	18.39% -	(0.08%) 2.63%	7.98% 11.75%	13.48% 20.19%	5.52% 6.86%	11.20% 11.78%
BlackRock MSCI World Ex US Index MSCI World ex US	3,248 -	72.66% -	(0.37%) (0.60%)	5.24% 4.96%	11.56% 11.22%	3.27% 2.82%	7.00% 6.55%
Xpance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	248 -	5.55% -	1.66% 0.66%	5.75% 2.78%	12.08% 11.26%	(1.87%) (1.45%)	4.96% 6.13%
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	148 - -	3.31% - -	(2.78%) (1.56%) (1.82%)	(2.16%) 0.98% 1.02%	5.82% 7.80% 10.04%	(0.07%) (2.98%) 0.16%	7.41% 4.69% 5.24%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- International Equity					
Int'l Developed Mkts Equity	5.15%	7.90%	5.98%	-	6.44% (1/02)
MSCI World ex US IMI	4.23%	6.79%	5.82%	4.81%	6.32% (1/02)
Walter Scott & Partners(1) MSCI World	10.95% 9.16%	12.07% 11.07%	- 8.20%	- 6.14%	9.74% (10/06) 7.48% (10/06)
BlackRock MSCI World Ex US Index MSCI World ex US	- 4.27%	- 6.68%	- 5.72%	- 4.63%	6.26% (6/17) 5.80% (6/17)
Xpance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	- 4.44%	- 7.69%	- 7.08%	- 6.74%	3.79% (10/18) 4.47% (10/18)
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	4.79% 4.04% 3.55%	9.01% 7.67% 7.34%	8.39% 6.36% 6.59%	- - 7.38%	9.86% (7/03) 8.08% (7/03) 8.26% (7/03)

* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation.

The market values and performance of such accounts are included within their relevant composites.

(1) Walter Scott since inception returns were contained in the Global Mandates composite prior to 12/31/2019.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance- Emerging Mkts Equity							
Emerging Mkts Equity	\$1,523	100.00%	4.98%	8.59%	12.95%	(5.20%)	4.78%
MSCI EM IMI	-	-	5.13%	7.41%	13.56%	(4.11%)	3.93%
Macquarie Emg Mkts Equity	416	27.34%	7.78%	16.35%	24.95%	(2.43%)	6.23%
MSCI EM	-	-	5.00%	7.49%	12.55%	(5.07%)	3.10%
Martin Currie Emg Mkts Equity	376	24.71%	3.67%	5.10%	4.42%	(9.55%)	2.64%
MSCI EM	-	-	5.00%	7.49%	12.55%	(5.07%)	3.10%
BlackRock Emg Mkts Index	467	30.69%	5.09%	7.38%	11.94%	(5.35%)	2.79%
MSCI EM	-	-	5.00%	7.49%	12.55%	(5.07%)	3.10%
Leading Edge Emg Mkts Fund	247	16.21%	3.49%	6.31%	10.12%	(6.17%)	2.35%
MSCI EM	-	-	5.00%	7.49%	12.55%	(5.07%)	3.10%
GlobeFlex Emerging Small Cap	16	1.04%	2.74%	6.03%	14.29%	3.79%	11.44%
MSCI EM Small Cap	-	-	5.93%	7.04%	20.04%	2.54%	9.99%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Emerging Mkts Equity					
Emerging Mkts Equity	3.79%	4.99%	5.74%	-	6.67% (1/02)
MSCI EM IMI	3.09%	5.19%	7.51%	6.38%	8.38% (1/02)
Macquarie Emg Mkts Equity	4.29%	-	-	-	4.79% (5/13)
MSCI EM	2.79%	4.90%	7.27%	-	2.88% (5/13)
Martin Currie Emg Mkts Equity	3.46%	-	-	-	3.61% (1/14)
MSCI EM	2.79%	4.90%	7.27%	-	3.24% (1/14)
BlackRock Emg Mkts Index	-	-	-	-	3.26% (7/17)
MSCI EM	2.79%	4.90%	7.27%	-	3.54% (7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	4.09% (11/18)
MSCI EM	2.79%	4.90%	7.27%	-	4.82% (11/18)
GlobeFlex Emerging Small Cap	6.55%	-	-	-	7.53% (8/13)
MSCI EM Small Cap	5.15%	7.22%	9.29%	7.69%	5.94% (8/13)

* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.
 ** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Fixed Income							
Fixed Income (1)	\$6,928	100.00%	0.33%	0.15%	3.20%	(2.37%)	(0.08%)
Blmbg U.S. Agg Bond Index	-	-	0.07%	(0.71%)	2.63%	(3.02%)	(0.23%)
Core Fixed Income	\$4,498	64.93%	0.13%	(0.38%)	2.92%	(2.49%)	0.05%
Blmbg U.S. Agg Bond Index	-	-	0.07%	(0.71%)	2.63%	(3.02%)	(0.23%)
PIMCO Core Bond Fund	545	7.87%	0.21%	(0.19%)	3.54%	(2.55%)	0.30%
Blmbg Agg ex Treasury	-	-	0.04%	(0.60%)	3.41%	(2.83%)	(0.01%)
Mellon Bond Index	3,953	57.06%	0.12%	(0.50%)	2.74%	(2.97%)	(0.24%)
Blmbg U.S. Agg Bond Index (2)	-	-	0.07%	(0.71%)	2.63%	(3.02%)	(0.23%)
Opportunistic Fixed Income	\$824	11.90%	2.41%	5.07%	9.61%	7.68%	6.48%
BAAM Keystone (3)	824	11.90%	2.41%	5.07%	9.61%	7.20%	7.53%
HFRI FOF Comp Index	-	-	0.61%	4.81%	8.70%	2.12%	4.82%
Nominal U.S. Treasuries	\$1,559	22.50%	(0.31%)	(1.32%)	(0.84%)	(5.51%)	(2.17%)
Blmbg US Treas Bell 10Y	-	-	(0.36%)	(2.03%)	(0.66%)	(5.23%)	(1.77%)
Mellon US Treasury Index	1,559	22.50%	-	-	-	-	-
Legacy Fixed Income	\$47	0.68%	2.34%	11.26%	8.84%	-	-
Fidelity HY CMBS (4)	47	0.67%	2.36%	11.87%	9.44%	0.38%	0.72%
Blmbg US CMBS Ex AAA Index (5)	-	-	1.07%	2.80%	7.49%	(2.95%)	0.09%

* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.
 ** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation.
 The market values and performance of such accounts are included within their relevant composites.

(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022. On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income,

Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

(2) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

Investment Manager Returns

As of June 30, 2024

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Fixed Income					
Fixed Income (1)	1.28%	4.00%	3.94%	4.51%	7.43% (1/81)
Blmbg U.S. Agg Bond Index	1.35%	2.50%	3.12%	3.88%	6.73% (1/81)
Core Fixed Income	1.56%	3.30%	3.48%	-	3.76% (1/02)
Blmbg U.S. Agg Bond Index	1.35%	2.50%	3.12%	3.88%	3.41% (1/02)
PIMCO Core Bond Fund	1.73%	-	-	-	1.63% (1/13)
Blmbg Agg ex Treasury	1.59%	2.86%	-	-	1.64% (1/13)
Mellon Bond Index	1.32%	2.42%	3.04%	3.85%	6.21% (4/84)
Blmbg U.S. Agg Bond Index (2)	1.35%	2.50%	3.12%	3.94%	-
Opportunistic Fixed Income	4.42%	-	-	-	5.37% (10/12)
BAAM Keystone (3)	5.95%	-	-	-	7.48% (7/12)
HFRI FOF Comp Index	3.50%	3.75%	3.46%	4.16%	4.15% (7/12)
Nominal U.S. Treasuries	0.45%	-	-	-	0.68% (9/11)
Blmbg US Treas Bell 10Y	0.54%	2.00%	2.87%	3.52%	0.88% (9/11)
Mellon US Treasury Index	-	-	-	-	2.48% (5/24)
Legacy Fixed Income	-	-	-	-	2.49% (7/22)
Fidelity HY CMBS (4)	2.80%	8.76%	5.58%	6.80%	7.16% (4/97)
Blmbg US CMBS Ex AAA Index (5)	2.19%	6.69%	1.04%	2.98%	3.35% (4/97)

* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation.

The market values and performance of such accounts are included within their relevant composites.

(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022.

On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income,

Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

(2) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the

Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the

Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Inflation Protection							
Inflation Protection (TIPS)	\$1,050	100.00%	0.71%	0.54%	2.40%	(1.98%)	1.60%
Blmbg U.S. TIPS Index	-	-	0.79%	0.70%	2.71%	(1.33%)	2.07%
NISA Inv Adv TIPS	459	43.70%	0.93%	0.95%	2.76%	(1.31%)	2.06%
Blmbg U.S. TIPS Index (1)	-	-	0.79%	0.70%	2.71%	(1.33%)	2.07%
Brown Brothers TIPS	480	45.72%	0.88%	0.85%	2.58%	(1.44%)	1.97%
Blmbg U.S. TIPS Index	-	-	0.79%	0.70%	2.71%	(1.33%)	2.07%
New Century Global TIPS	111	10.59%	(0.86%)	(2.43%)	0.21%	(6.26%)	(1.09%)
Blmbg Wrld Inflation Linked Unhdg	-	-	(0.67%)	(2.22%)	0.53%	(5.85%)	(0.98%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Inflation Protection					
Inflation Protection (TIPS)	1.69%	2.40%	2.90%	-	2.85% ^(2/03)
Blmbg U.S. TIPS Index	1.91%	3.11%	3.57%	4.74%	3.77% ^(2/03)
NISA Inv Adv TIPS	1.91%	2.42%	-	-	2.80% ^(4/07)
Blmbg U.S. TIPS Index (1)	1.91%	2.42%	3.03%	4.31%	2.80% ^(4/07)
Brown Brothers TIPS	1.93%	-	-	-	1.70% ^(2/12)
Blmbg U.S. TIPS Index	1.91%	3.11%	3.57%	4.74%	1.63% ^(2/12)
New Century Global TIPS	0.25%	-	-	-	0.80% ^(2/12)
Blmbg Wrld Inflation Linked Unhdg	0.21%	2.01%	2.88%	4.13%	0.61% ^(2/12)

* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

(1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Private Equity							
Private Equity	\$6,738	100.00%	1.29%	3.53%	6.47%	8.33%	14.36%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.04%	0.05%	3.57%	9.91%
Global Equity + 3% (Qtr lag)(1)	-	-	9.50%	22.99%	29.05%	12.21%	16.52%
Buyouts	3,651	54.19%	0.67%	1.95%	4.60%	8.78%	14.41%
Burgiss Buyout Index (Qtr lag)	-	-	0.01%	0.04%	0.06%	4.55%	9.16%
Special Situations	1,724	25.59%	2.42%	6.03%	10.73%	15.21%	17.72%
Burgiss Special Situations Idx (Qtr lag)	-	-	0.02%	0.05%	0.08%	2.40%	3.90%
Growth Equity	1,174	17.43%	1.73%	5.88%	7.17%	4.88%	18.00%
Burgiss Venture Capital Index (Qtr lag)	-	-	0.01%	0.02%	(0.01%)	2.08%	14.94%
Keystone Legacy (2)	188	2.79%	0.54%	(2.65%)	1.19%	(9.28%)	(3.48%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Private Equity					
Private Equity	11.88%	13.08%	12.33%	11.66%	11.41% ^(1/86)
Burgiss Private Equity Index (Qtr lag)	10.71%	12.60%	12.30%	11.89%	16.02% ^(1/86)
Global Equity + 3% (Qtr lag)(1)	15.06%	18.38%	13.22%	11.25%	14.77% ^(1/86)
Buyouts	12.68%	14.38%	14.21%	13.32%	13.33% ^(4/86)
Burgiss Buyout Index (Qtr lag)	10.34%	12.46%	12.84%	11.69%	18.26% ^(4/86)
Special Situations	12.36%	14.76%	13.45%	13.40%	13.17% ^(1/95)
Burgiss Special Situations Idx (Qtr lag)	5.30%	8.98%	7.81%	8.93%	9.41% ^(1/95)
Growth Equity	14.49%	12.85%	9.69%	7.55%	8.51% ^(1/86)
Burgiss Venture Capital Index (Qtr lag)	14.95%	14.70%	12.24%	11.58%	13.80% ^(1/86)
Keystone Legacy (2)	-	-	-	-	(3.42%) ^(7/18)

* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

(1) As of 01/01/2020 benchmark consists of 25% MSCI World ex US and 75% Russell 3000 + 3% with a 1 quarter lag.

(2) As of 03/31/2024, Keystone Legacy SPV consists of 37 non-core funds, prior performance is reflected in previous sub-asset classes.

Investment Manager Returns

As of June 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Real Estate							
Real Estate	\$2,268	100.00%	(3.84%)	(9.24%)	(15.13%)	(2.20%)	1.23%
Real Estate Custom Bench (Qtr lag) (1)	-	-	(2.38%)	(7.62%)	(12.33%)	1.78%	2.66%
CPI +3% (Qtr lag)	-	-	2.52%	2.95%	6.48%	8.65%	7.21%
Core/Core Plus Real Estate Funds	1,098	48.42%	1.12%	(5.29%)	(7.95%)	3.10%	3.60%
NCREIF ODCE Index (Qtr lag)	-	-	(2.38%)	(7.62%)	(12.33%)	2.81%	2.98%
Value Add/Oppportunistic SMA	283	12.47%	(24.82%)	(30.79%)	(44.65%)	(18.51%)	(9.08%)
NCREIF ODCE Index (Qtr lag)	-	-	(2.38%)	(7.62%)	(12.33%)	2.81%	2.98%
Value Add/Oppportunistic Funds	756	33.32%	(1.01%)	(5.03%)	(9.92%)	1.13%	3.45%
NCREIF ODCE Index (Qtr lag)	-	-	(2.38%)	(7.62%)	(12.33%)	2.81%	2.98%
REITS	131	5.79%	0.66%	0.26%	8.10%	0.38%	4.81%
FTSE NAREIT US Index	-	-	(0.20%)	(0.81%)	6.71%	(0.39%)	3.04%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Real Estate					
Real Estate	3.07%	4.03%	4.68%	5.81%	7.47% (3/84)
Real Estate Custom Bench (Qtr lag) (1)	5.59%	6.60%	6.12%	6.76%	-
CPI +3% (Qtr lag)	5.83%	5.60%	5.59%	5.59%	5.83% (3/84)
Core/Core Plus Real Estate Funds	6.27%	7.02%	6.73%	7.06%	6.68% (9/86)
NCREIF ODCE Index (Qtr lag)	6.15%	5.99%	5.98%	6.38%	5.62% (9/86)
Value Add/Oppportunistic SMA	(3.56%)	(2.10%)	0.63%	2.12%	2.98% (6/88)
NCREIF ODCE Index (Qtr lag)	6.15%	5.99%	5.98%	6.38%	5.64% (6/88)
Value Add/Oppportunistic Funds	5.87%	6.11%	6.12%	6.95%	7.31% (3/84)
NCREIF ODCE Index (Qtr lag)	6.15%	5.99%	5.98%	6.38%	5.88% (3/84)
REITS	5.43%	11.13%	7.12%	9.17%	8.98% (4/96)
FTSE NAREIT US Index	5.85%	12.98%	6.98%	9.03%	9.23% (4/96)

* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

** Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

(1) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged). Prior to 03/31/2019, benchmark history was provided by RVK.

Callan

Appendix II – Callan Update

Published Research Highlights: 2Q24

Quantifying Sequence-of-Returns Risk



Sector-Specialist Strategies and Large LPs' Portfolios



2024 Asset Manager DEI Study



2024 Defined Contribution Trends Survey



Recent Blog Posts

Commercial Real Estate Capital Markets and Institutional Investors

Christine Mays

A Look at How We Did With Our Capital Markets Assumptions

Greg Allen and Julia Moriarty

Is This a Time for Active Managers to Shine?

Tony Lissuzzo

Additional Reading

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Market Intelligence (clients-only)

Real Estate Indicators market outlook

Callan Institute Events

Upcoming conferences, workshops, and webinars

Callan College

Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

– September 24-26, 2024 – Virtual Session via Zoom

Please visit our website at callan.com/events-education as we add dates to our 2024 calendar!

Mark Your Calendar

2024 Regional Workshops

October 22, 2024 – Denver

October 23, 2024 – Chicago

Watch your email for further details and an invitation.

2025 National Conference

Mark your calendars for this event in Scottsdale on April 27-29, 2025

Our annual conference will feature mainstage speakers and Callan lead workshops on a variety of topics.

This year we welcome Zanny Minton Beddoes to the stage.

Registration for this event will open in January 2025!

Introducing CODE: Callan On-Demand Education

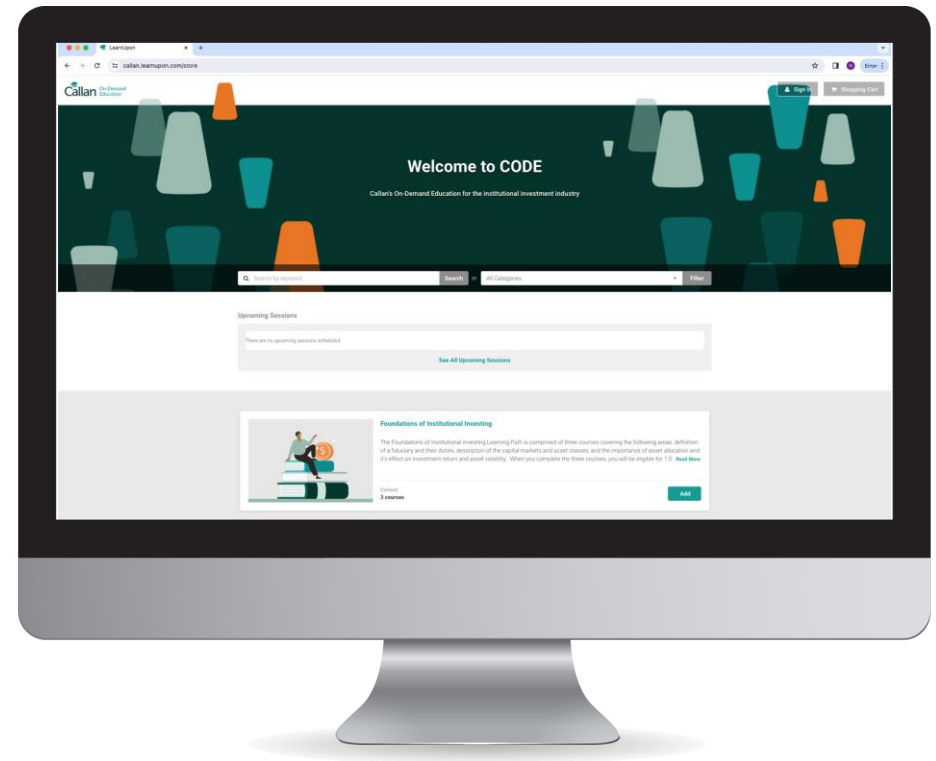


- ▶ Variety of educational courses
- ▶ Interactive and engaging
- ▶ Self-guided modules
- ▶ Eligible for continuing education credits
- ▶ Learning at your own pace

CODE courses are designed for investment professionals of all levels—and they're self-guided. Access them anytime, from anywhere, and get continuing education credits for each completed course.

CODE is for you, your colleagues, your new hires, and your interns. It's for anyone interested in learning about institutional investing.

callan.com/code



3 Reasons to Take CODE Courses

- 1 Become a better fiduciary
- 2 Showcase your skills and knowledge
- 3 Learn from Callan's investment experts

Important Disclosures

The content of this document is particular to the client and should not be relied upon by any other individual or entity. There can be no assurance that the performance of any account or investment will be comparable to the performance information presented in this document.

Certain information herein has been compiled by Callan from a variety of sources believed to be reliable but for which Callan has not necessarily verified for accuracy or completeness. Information contained herein may not be current. Callan has no obligation to bring current the information contained herein.

Callan's performance, market value, and, if applicable, liability calculations are inherently estimates based on data available at the time each calculation is performed and may later be determined to be incorrect or require subsequent material adjustment due to many variables including, but not limited to, reliance on third party data, differences in calculation methodology, presence of illiquid assets, the timing and magnitude of unrecognized cash flows, and other data/assumptions needed to prepare such estimated calculations. In no event should the performance measurement and reporting services provided by Callan be used in the calculation, deliberation, policy determination, or any other action of the client as it pertains to determining amounts, timing or activity of contribution levels or funding amounts, rebalancing activity, benefit payments, distribution amounts, and/or performance-based fee amounts, unless the client understands and accepts the inherent limitations of Callan's estimated performance, market value, and liability calculations.

Callan's performance measurement service reports estimated returns for a portfolio and compares them against relevant benchmarks and peer groups, as appropriate; such service may also report on historical portfolio holdings, comparing them to holdings of relevant benchmarks and peer groups, as appropriate ("portfolio holdings analysis"). To the extent that Callan's reports include a portfolio holdings analysis, Callan relies entirely on holdings, pricing, characteristics, and risk data provided by third parties including custodian banks, record keepers, pricing services, index providers, and investment managers. Callan reports the performance and holdings data as received and does not attempt to audit or verify the holdings data. Callan is not responsible for the accuracy or completeness of the performance or holdings data received from third parties and such data may not have been verified for accuracy or completeness.

Callan's performance measurement service may report on illiquid asset classes, including, but not limited to, private real estate, private equity, private credit, hedge funds and infrastructure. The final valuation reports, which Callan receives from third parties, for of these types of asset classes may not be available at the time a Callan performance report is issued. As a result, the estimated returns and market values reported for these illiquid asset classes, as well as for any composites including these illiquid asset classes, including any total fund composite prepared, may not reflect final data, and therefore may be subject to revision in future quarters.

The content of this document may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact. The opinions expressed herein may change based upon changes in economic, market, financial and political conditions and other factors. Callan has no obligation to bring current the opinions expressed herein.

The information contained herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties. Actual results may vary, perhaps materially, from the future results projected in this document. Undue reliance should not be placed on forward-looking statements.

Callan is not responsible for reviewing the risks of individual securities or the compliance/non-compliance of individual security holdings with a client's investment policy guidelines.

This document should not be construed as legal or tax advice on any matter. You should consult with legal and tax advisers before applying any of this information to your particular situation.

Reference to, or inclusion in this document of, any product, service or entity should not necessarily be construed as recommendation, approval, or endorsement or such product, service or entity by Callan. This document is provided in connection with Callan's consulting services and should not be viewed as an advertisement of Callan, or of the strategies or products discussed or referenced herein.

Important Disclosures (continued)

The issues considered and risks highlighted herein are not comprehensive and other risks may exist that the user of this document may deem material regarding the enclosed information. Please see any applicable full performance report or annual communication for other important disclosures.

Unless Callan has been specifically engaged to do so, Callan does not conduct background checks or in-depth due diligence of the operations of any investment manager search candidate or investment vehicle, as may be typically performed in an operational due diligence evaluation assignment and in no event does Callan conduct due diligence beyond what is described in its report to the client.

Any decision made on the basis of this document is sole responsibility of the client, as the intended recipient, and it is incumbent upon the client to make an independent determination of the suitability and consequences of such a decision.

Callan undertakes no obligation to update the information contained herein except as specifically requested by the client.

Past performance is no guarantee of future results.