

December 3, 2024



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

Third Quarter 2024

Executive Summary

Thomas H. Shingler
Senior Vice President

Britton M. Murdoch
Senior Vice President

Callan

Market Environment

Equity and Bond Markets Up Sharply in 3Q

Equities have recovered losses of 2022; fixed income and real estate still lag

S&P 500 climbed 5.9% in 3Q24

- U.S. small cap outperformed U.S. large cap, as did developed ex-U.S. markets and emerging markets.

Strong quarter for core fixed income

- The Bloomberg Aggregate rose 5.2% as rates fell over the quarter.
- Long duration fixed income and non-U.S. bonds saw even stronger returns than the Aggregate.
- Interest rates remain volatile as the markets assess how the Fed will continue with easing.
- CPI-U came in at 2.4% (year-over-year) in 3Q, down slightly from last quarter's 2.5%, and supporting the prospects for further rate cuts later this year.

Economy reignites in 3Q

- 3Q24 GDP came in at a surprisingly strong 2.8%, after another surprise in 2Q. Consumer spending continues to drive GDP growth, fueled by rising incomes and lower inflation.

Returns for Periods ended 9/30/24

	Quarter	1 Year	1/1/22 - Current	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	6.23	35.19	7.74	15.26	12.83	8.38
S&P 500	5.89	36.35	8.85	15.98	13.38	8.20
Russell 2000	9.27	26.76	1.23	9.39	8.78	8.27
Global ex-U.S. Equity						
MSCI World ex USA	7.76	24.98	4.99	8.36	5.68	4.77
MSCI Emerging Markets	8.72	26.05	0.92	5.75	4.03	--
MSCI ACWI ex USA Small Cap	8.90	23.25	1.29	8.21	6.08	6.79
Fixed Income						
Bloomberg Aggregate	5.20	11.57	-1.52	0.33	1.84	4.06
90-day T-Bill	1.37	5.46	3.81	2.32	1.65	1.92
Bloomberg Long Gov/Credit	7.96	17.24	-7.43	-1.97	2.32	5.62
Bloomberg Global Agg ex-US	8.52	12.28	-4.40	-1.86	-0.50	2.62
Real Estate						
NCREIF Property	0.78	-3.47	-1.21	3.26	5.88	7.67
FTSE Nareit Equity	16.09	34.74	-0.10	5.46	7.83	10.08
Alternatives						
Cambridge Private Equity*	1.00	4.62	1.94	13.84	13.10	12.73
Cambridge Senior Debt*	1.19	7.51	6.08	6.92	6.76	4.33
HFRI Fund Weighted	2.84	12.64	4.23	7.41	5.12	6.09
Bloomberg Commodity	0.68	0.96	4.60	7.79	0.03	2.21
CPI-U	0.36	2.44	4.58	4.19	2.85	2.55

*Cambridge Private Equity and Cambridge Senior Debt data as of 6/30/24.

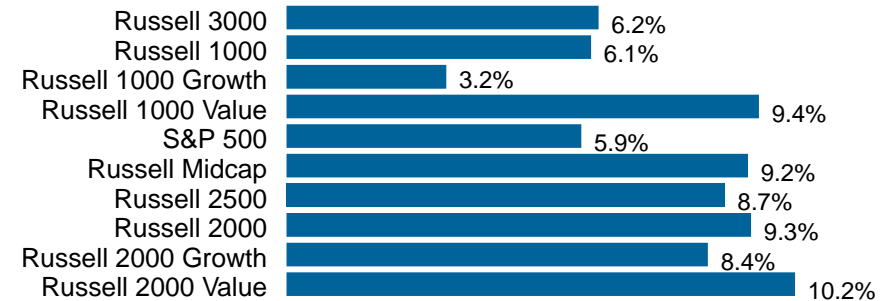
Returns greater than one year are annualized. Sources: Bloomberg, Callan, Cambridge, FTSE Russell, HFRI, MSCI, NCREIF, S&P Dow Jones Indices

U.S. Equity Performance: 3Q24

U.S. market reaches record high after spike in volatility

- The U.S. equity market had a disappointing start to 3Q24 as the S&P 500 Index dropped in July.
- But the market rallied in the last months of 3Q to end the quarter at a record high.
- All sectors within the S&P 500 posted positive returns over the quarter except for the Energy sector. As a result of the Fed's rate cut decision, the bond proxy sectors (Real Estate and Utilities) performed the best.
- During 3Q, value outperformed growth across the market cap spectrum. Small cap stocks outperformed large cap stocks.
- Narrow leadership continues to be an issue for U.S. stocks. YTD, the "Magnificent Seven" stock returns accounted for 45% of the returns of the S&P 500 Index.

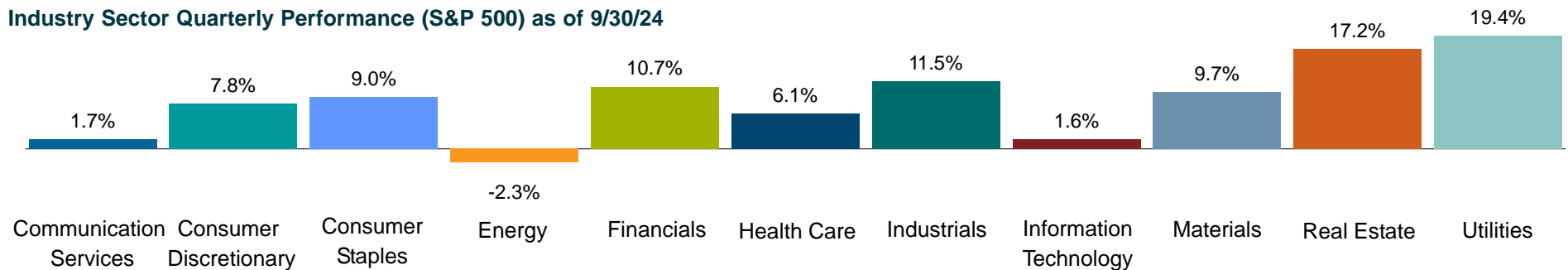
U.S. Equity: Quarter Ended 9/30/24



U.S. Equity: One Year Ended 9/30/24



Industry Sector Quarterly Performance (S&P 500) as of 9/30/24



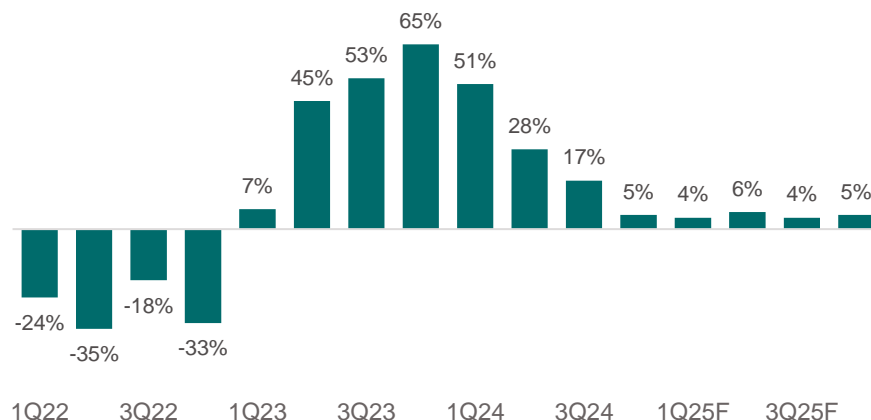
Sources: FTSE Russell, S&P Dow Jones Indices

U.S. Equity Key Theme

Top performers have broadened out from the mega cap growth stocks

- The “Magnificent Seven” stocks experienced increased volatility and mixed results in 3Q. Four of these stocks underperformed the S&P 500 Index.
- Better earnings growth expectations for the market relative to the “Magnificent Seven” could result in broader market leadership.
- Although the long-term trend may have reversed in the last quarter, a large percentage of S&P 500 Index returns since 2021 are attributable to the “Magnificent Seven.”

Earnings Growth Gap Between the Magnificent Seven and the Rest of the S&P 500 (y/y quarterly earnings growth)



Magnificent Seven Return Contribution (S&P 500): 2021-3Q24

Returns	2021	2022	2023	YTD 2024
Magnificent Seven	40%	-40%	76%	35%
—Share of returns	33%	56%	63%	45%
S&P 500 ex-Mag Seven	17%	-8%	8%	11%
—Share of returns	67%	44%	37%	55%

Magnificent Seven Absolute Returns: 3Q24

Stock	3Q Total Return
Tesla	32.22%
Meta Platforms	13.53%
Apple	10.58%
NVIDIA	-1.70%
Amazon.com	-3.58%
Microsoft	-3.77%
Alphabet	-8.96%
S&P 500	5.89%

Sources: FactSet, J.P. Morgan, Westfield Capital

Global/Global ex-U.S. Equity Performance: 3Q24

Non-U.S. markets outpace U.S. as technology sector lags

Broad market

- Global equity markets rose while central banks began easing monetary policy and cutting interest rates.
- Market gains broadened to include more value stocks and underperforming sectors.
- Non-U.S. markets outpaced U.S. markets as the technology sector, a large portion of the U.S. market, faced pressure from AI spending scrutiny.
- Emerging markets outperformed developed markets with Asia being the strongest region within emerging markets.

Emerging markets

- China led a sharp rally higher in emerging markets after the Chinese government announced extensive stimulus measures aimed at tackling weakening economic activity, deflation, and its deteriorating property market.

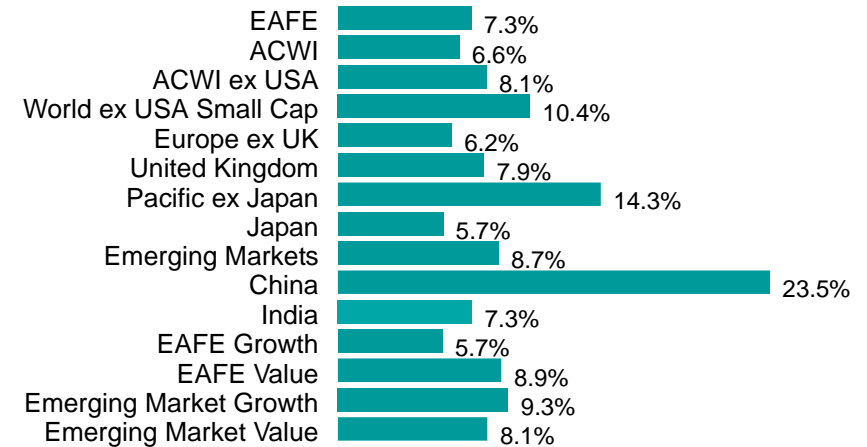
Growth vs. value

- Generally, value-oriented sectors led markets higher as the technology sector lagged on growth concerns. One exception was China as stimulus announcements boosted beaten down Chinese tech companies.

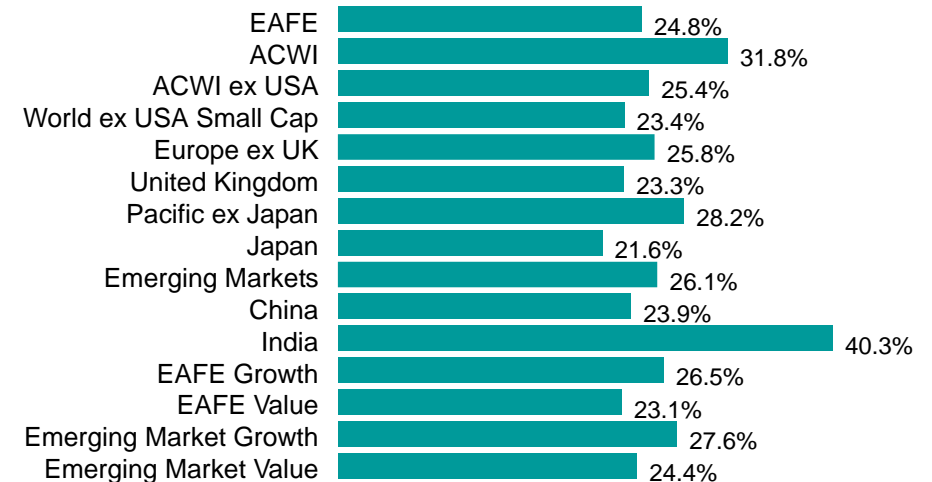
U.S. dollar strength

- The U.S. Dollar Index (DXY), declined over the third quarter amid a much-anticipated rate cut by the U.S. Federal Reserve.

Global Equity Returns: Quarter Ended 9/30/24



Global Equity Returns: One Year Ended 9/30/24



Source: MSCI

U.S. Fixed Income Performance: 3Q24

U.S. taxable bond markets rallied in 3Q

Macro environment

- The Fed lowered rates for the first time since 2020, reducing its overnight target by 50 bps; Fed “dot plot” indicates two more cuts by year-end.
- U.S. Treasuries fell across the curve; 10-year Treasury yield declined to 3.81% from 4.36% at the beginning of the quarter.
- The yield curve took a step toward normalization with the 2s/10s ending positive, though rates at the front-end remain elevated vs. intermediate- and long-term.

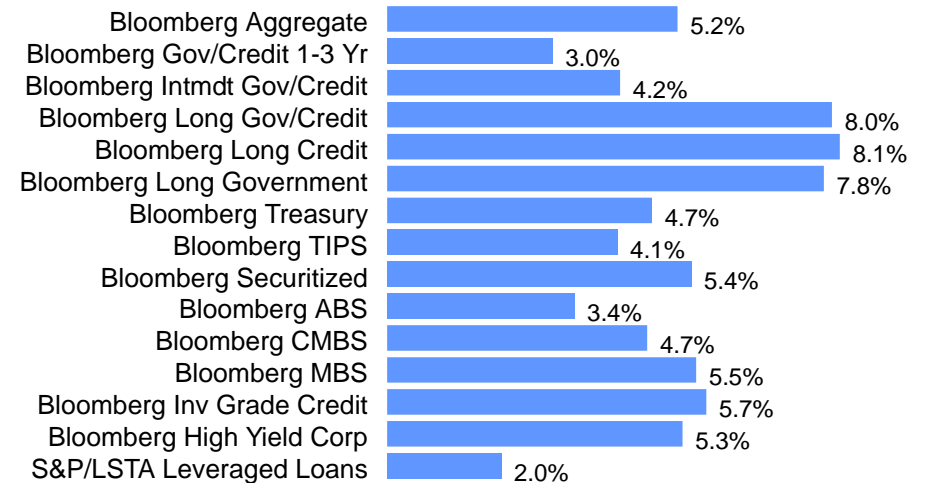
Performance and drivers

- Bloomberg US Aggregate Index gained 5.2%, the second-best quarter in nearly 30 years, led by the rally in rates.
- Investment grade corporates and all securitized sectors outperformed U.S. Treasuries on a duration-adjusted basis.
- High yield corporate excess returns (+1.7%) outpaced investment grade corporates excess returns (+0.8%).

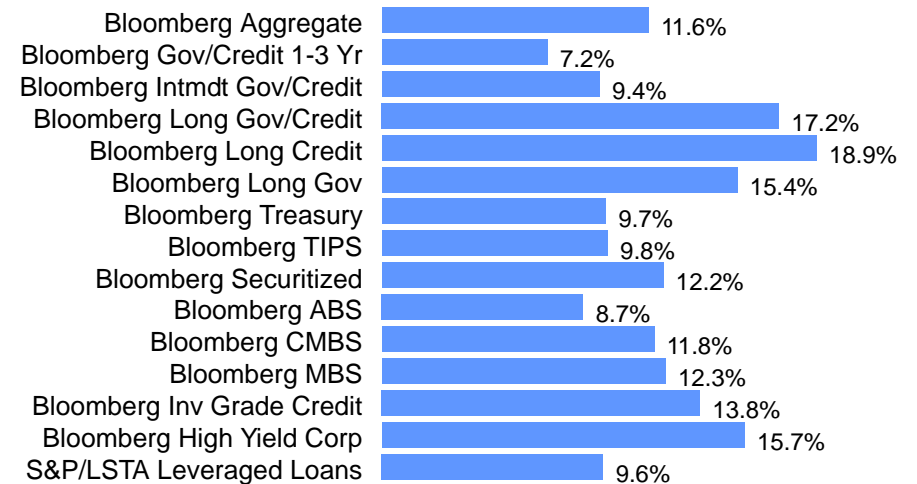
Valuations

- Despite significant widening in late July, both IG and HY spreads ended tighter over the quarter.
- HY defaults declined to 1.8%, while bank loans increased to 3.1%, widening the gap between them to the highest since 2014.
- New issuance continued to be strong, adding \$424 billion in IG and \$78 billion in HY debt.

U.S. Fixed Income Returns: Quarter Ended 9/30/24



U.S. Fixed Income Returns: One Year Ended 9/30/24



Sources: Bloomberg, Callan, J.P. Morgan, S&P Dow Jones Indices, SIFMA

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	3 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%	22.08%
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%	16.86%
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	Non-U.S. Equity
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%	13.10%
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	Small Cap
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%	11.17%
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	Hedge Funds
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%	9.02%
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%	8.00%
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	U.S. Fixed
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%	4.45%
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	Cash Equivalent
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%	4.03%
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	Non-U.S. Fixed
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%	2.81%
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	Real Estate Funds
-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%	-3.20%

- 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

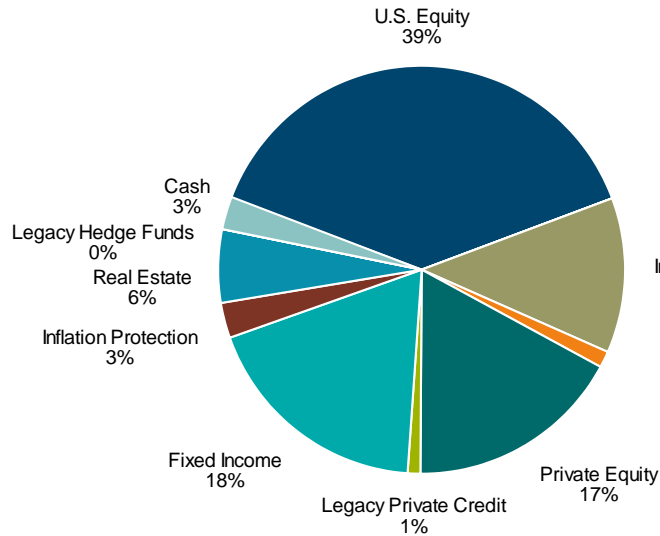
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**PA SERS Defined Benefit Plan
Performance Review**

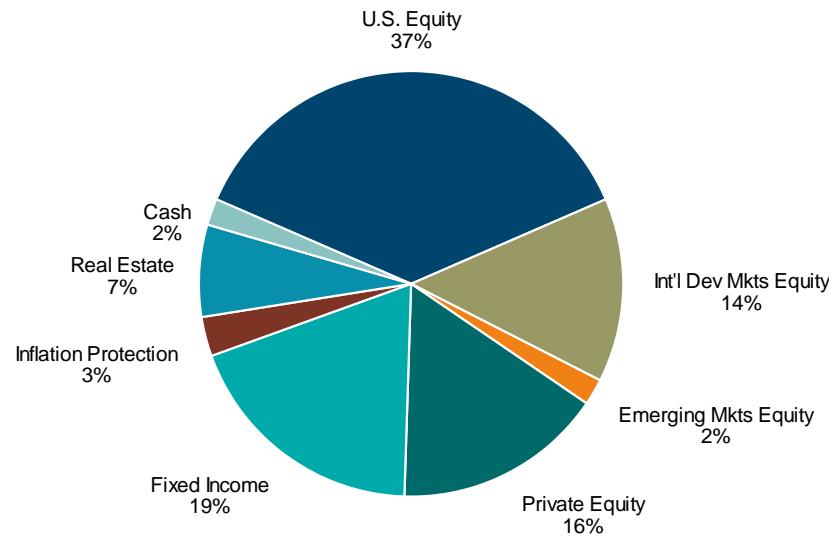
Total Fund

Actual Asset Allocation versus Target as of September 30, 2024

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	15,075,029	38.6%	37.0%	1.6%	621,188
Transition Account*	1,010	0.0%	0.0%	0.0%	1,010
Int'l Dev Mkts Equity	4,789,207	12.3%	14.0%	(1.7%)	(679,814)
Emerging Mkts Equity	506,732	1.3%	2.0%	(0.7%)	(274,557)
Private Equity	6,725,113	17.2%	16.0%	1.2%	474,803
Legacy Private Credit	372,614	1.0%	0.0%	1.0%	372,614
Fixed Income	7,208,513	18.5%	19.0%	(0.5%)	(213,730)
Inflation Protection	1,095,098	2.8%	3.0%	(0.2%)	(76,835)
Real Estate	2,274,433	5.8%	7.0%	(1.2%)	(460,078)
Legacy Hedge Funds	13,652	0.0%	0.0%	0.0%	13,652
Cash	1,003,036	2.6%	2.0%	0.6%	221,747
Total	39,064,435	100.0%	100.0%		

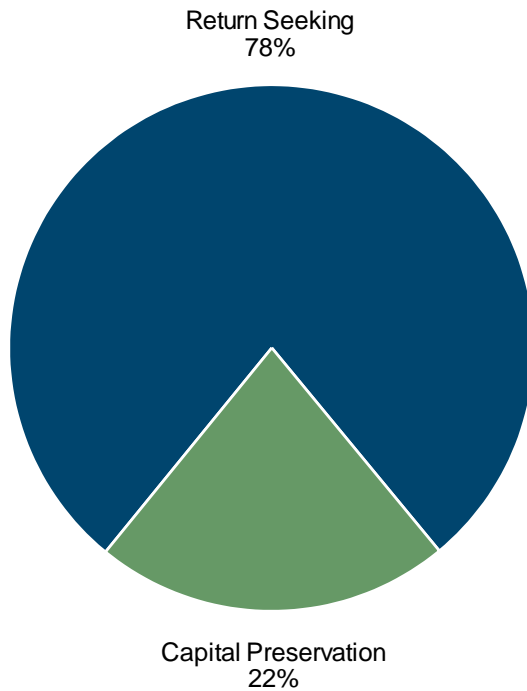
*Market values are shown net of accrued fees.

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

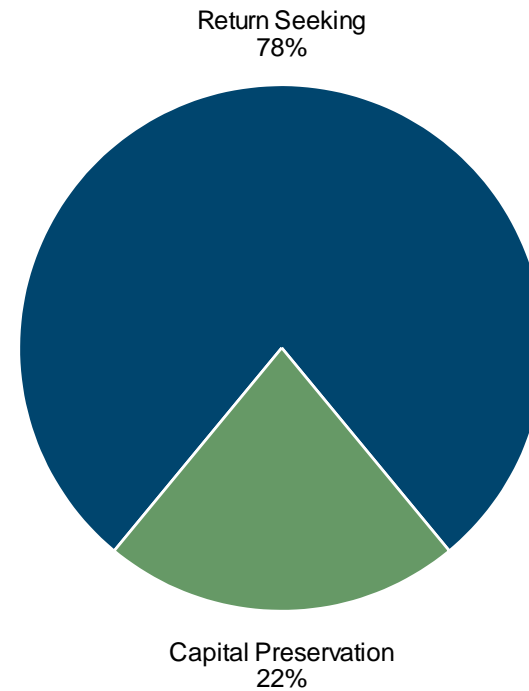
Return Seeking and Capital Preservation Assets

As of September 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%	37%	14%	2%	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**	3.0	3.3	5.0	14.4						
Months of Benefit Payments (Includes EE & ER Contributions)**	9.5	10.3	15.4	44.7						
Cumulative Months of Benefit Payments (Includes EE & ER Contributions)**			80.0							

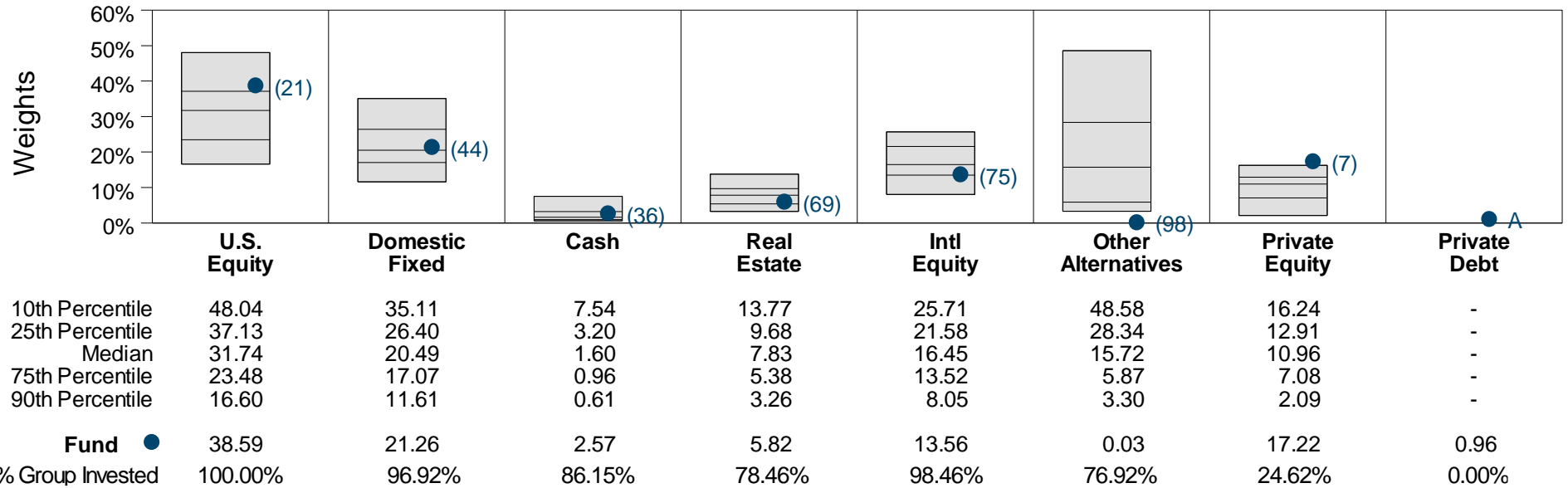
*Callan 2024 Capital Market Projections

**Provided by SERS IO as of 9/30/2024.

Total Fund

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

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

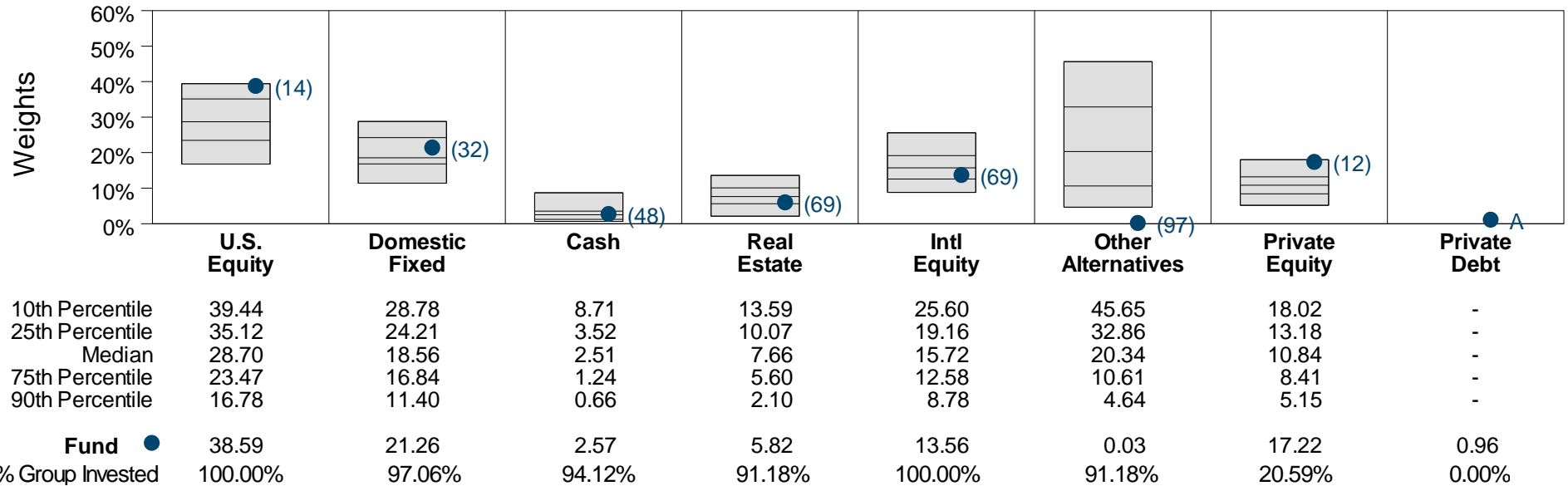


* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Actual Asset Allocation versus Very Large Public DB Plan (>\$10B) Peers as of September 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, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets 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 September 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 September 30, 2024

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	37%	37%	6.28%	6.23%	0.01%	0.01%	0.02%
Int'l Dev. Mkts Equity	12%	14%	7.15%	7.76%	(0.07%)	(0.06%)	(0.14%)
Emerging Markets	2%	2%	8.47%	8.72%	(0.01%)	(0.06%)	(0.07%)
Private Equity**	18%	16%	1.29%	1.29%	0.00%	(0.06%)	(0.06%)
Legacy Private Credit**	1%	0%	2.78%	2.78%	0.00%	(0.02%)	(0.02%)
Fixed Income	18%	19%	4.77%	5.20%	(0.08%)	(0.00%)	(0.08%)
Inflation Protection	3%	3%	4.28%	4.12%	0.00%	0.00%	0.01%
Real Estate	6%	7%	0.22%	(0.82%)	0.06%	0.06%	0.12%
Legacy Hedge Funds	0%	0%	(5.57%)	(5.57%)	0.00%	(0.00%)	(0.00%)
Cash	3%	2%	1.33%	1.37%	(0.00%)	(0.03%)	(0.03%)
Total			4.59%	4.84%	+(0.08%)	+(0.17%)	(0.25%)

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

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets 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 September 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	33%	33%	34.70%	35.19%	(0.14%)	(0.03%)	(0.18%)
Int'l Dev. Mkts Equity	12%	14%	24.60%	24.35%	0.02%	(0.08%)	(0.06%)
Emerging Markets	4%	4%	27.77%	26.15%	0.07%	(0.10%)	(0.03%)
Private Equity**	19%	16%	5.51%	5.51%	0.00%	(0.44%)	(0.44%)
Legacy Private Credit**	1%	0%	11.45%	11.45%	0.00%	(0.08%)	(0.08%)
Fixed Income	19%	20%	11.38%	11.57%	(0.01%)	0.03%	0.01%
Inflation Protection	3%	3%	9.99%	9.79%	0.01%	0.01%	0.02%
Real Estate	7%	7%	(11.18%)	(10.32%)	(0.08%)	0.09%	0.01%
Legacy Hedge Funds	0%	0%	(16.05%)	(16.05%)	0.00%	(0.02%)	(0.02%)
Cash	2%	2%	5.47%	5.46%	0.00%	(0.03%)	(0.03%)
Total			17.48%	18.28%	+	(0.14%) + (0.66%)	(0.80%)

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

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets 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 September 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	32%	32%	9.66%	10.29%	(0.19%)	(0.09%)	(0.28%)
Int'l Dev. Mkts Equity	13%	14%	5.67%	4.69%	0.12%	(0.03%)	0.09%
Emerging Markets	4%	5%	0.30%	1.16%	(0.04%)	0.03%	(0.01%)
Private Equity**	18%	15%	4.23%	4.23%	0.00%	0.03%	0.03%
Legacy Private Credit**	2%	1%	10.38%	10.38%	0.00%	(0.10%)	(0.10%)
Fixed Income	20%	21%	(0.88%)	(1.39%)	0.11%	0.08%	0.19%
Inflation Protection	3%	3%	(1.06%)	(0.57%)	(0.02%)	0.00%	(0.01%)
Real Estate	7%	7%	(3.32%)	0.23%	(0.30%)	0.00%	(0.29%)
Legacy Hedge Funds	0%	0%	(12.46%)	(12.46%)	0.00%	(0.01%)	(0.01%)
Cash	2%	2%	3.60%	3.49%	0.00%	0.01%	0.01%
Total			4.32%	4.69%	+(0.30%)	+(0.07%)	(0.37%)

• 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 and Emerging Markets helped performance (attribution based on target return)
- An overweight as compared to target to Private 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 overweight as compared to target to Legacy Private Credit hurt performance (attribution based on target return)
- A slight underweight as compared to target to U.S. Equity and non-U.S. Developed Markets hurt performance (attribution based on target return)

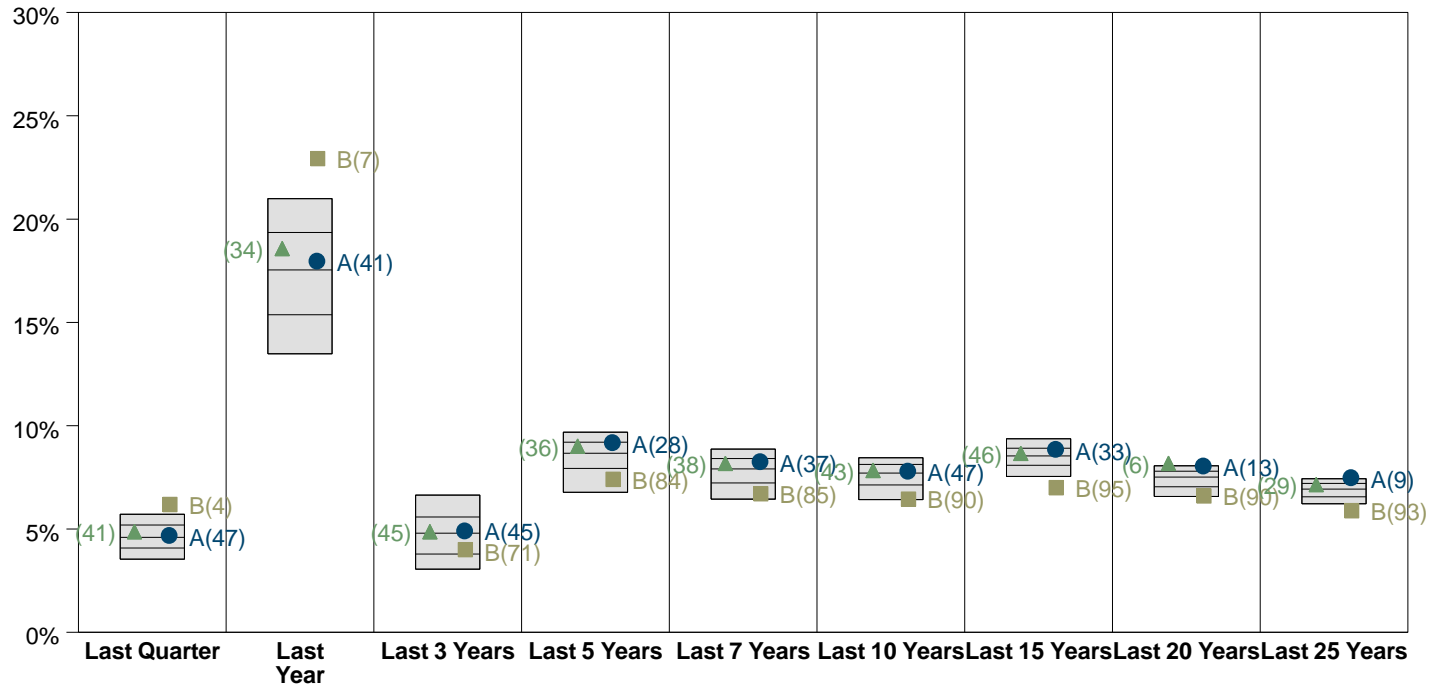
* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

**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 September 30, 2024

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



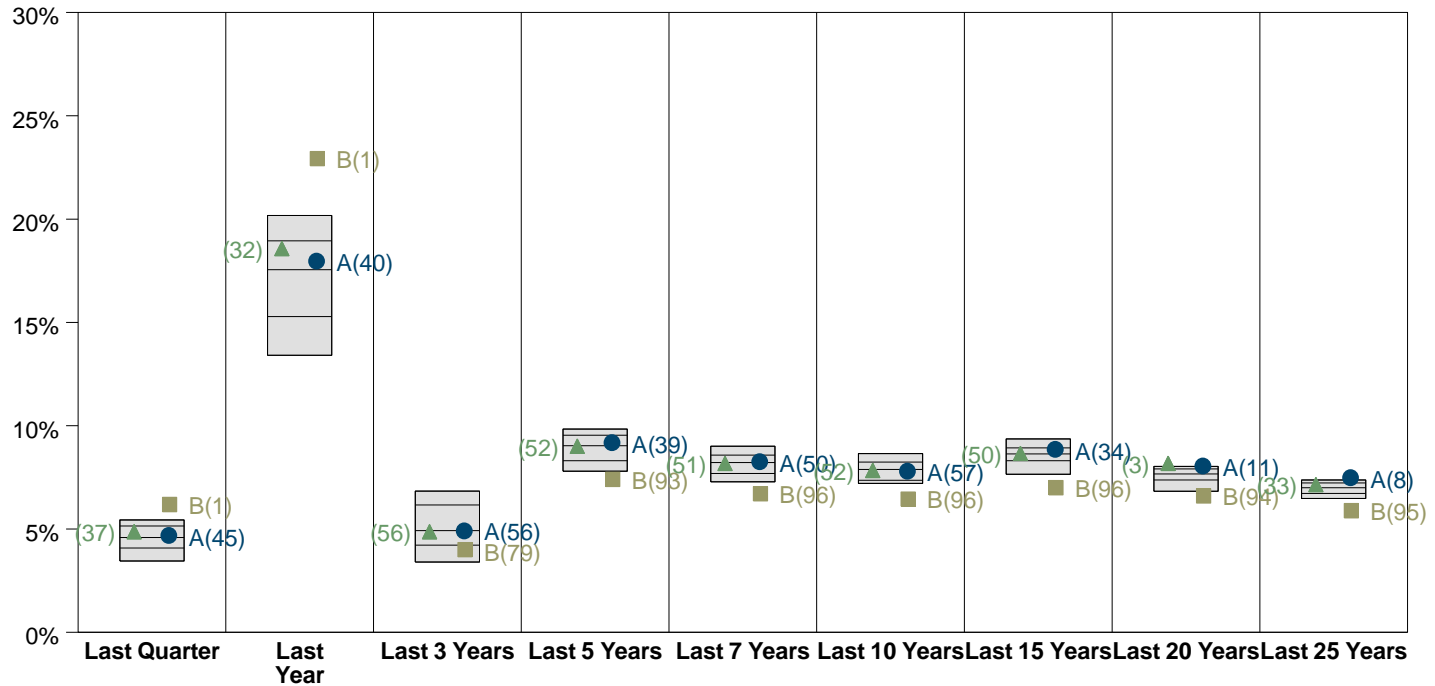
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years
10th Percentile	5.71	20.99	6.64	9.69	8.87	8.45	9.37	8.06	7.43
25th Percentile	5.19	19.35	5.58	9.20	8.41	8.13	8.91	7.80	7.21
Median	4.59	17.54	4.80	8.67	7.91	7.70	8.53	7.51	6.93
75th Percentile	4.08	15.37	3.79	7.93	7.23	7.13	8.08	7.04	6.56
90th Percentile	3.54	13.48	3.06	6.78	6.45	6.42	7.55	6.58	6.22
Total Fund	● A 4.66	17.93	4.87	9.14	8.22	7.76	8.82	8.01	7.45
60% MSCI ACW IM/40% Blmbg U.S. Agg	■ B 6.18	22.93	4.00	7.40	6.71	6.45	7.00	6.60	5.88
Total Fund Custom Benchmark	▲ 4.87	18.58	4.87	9.01	8.18	7.84	8.66	8.18	7.15

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets 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 September 30, 2024

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



10th Percentile		5.44	20.18	6.83	9.84	9.01	8.65	9.36	8.03	7.38
25th Percentile		5.14	18.95	6.16	9.54	8.58	8.24	8.92	7.91	7.23
Median		4.59	17.55	4.92	9.03	8.21	7.88	8.64	7.67	7.00
75th Percentile		4.08	15.28	4.22	8.31	7.69	7.36	8.30	7.38	6.72
90th Percentile		3.45	13.41	3.40	7.80	7.29	7.21	7.65	6.83	6.48
Total Fund	● A	4.66	17.93	4.87	9.14	8.22	7.76	8.82	8.01	7.45
60% MSCI ACW IM/40% Blmbg U.S. Agg	■ B	6.18	22.93	4.00	7.40	6.71	6.45	7.00	6.60	5.88
Total Fund Custom Benchmark	▲	4.87	18.58	4.87	9.01	8.18	7.84	8.66	8.18	7.15

* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets 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 September 30, 2024

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

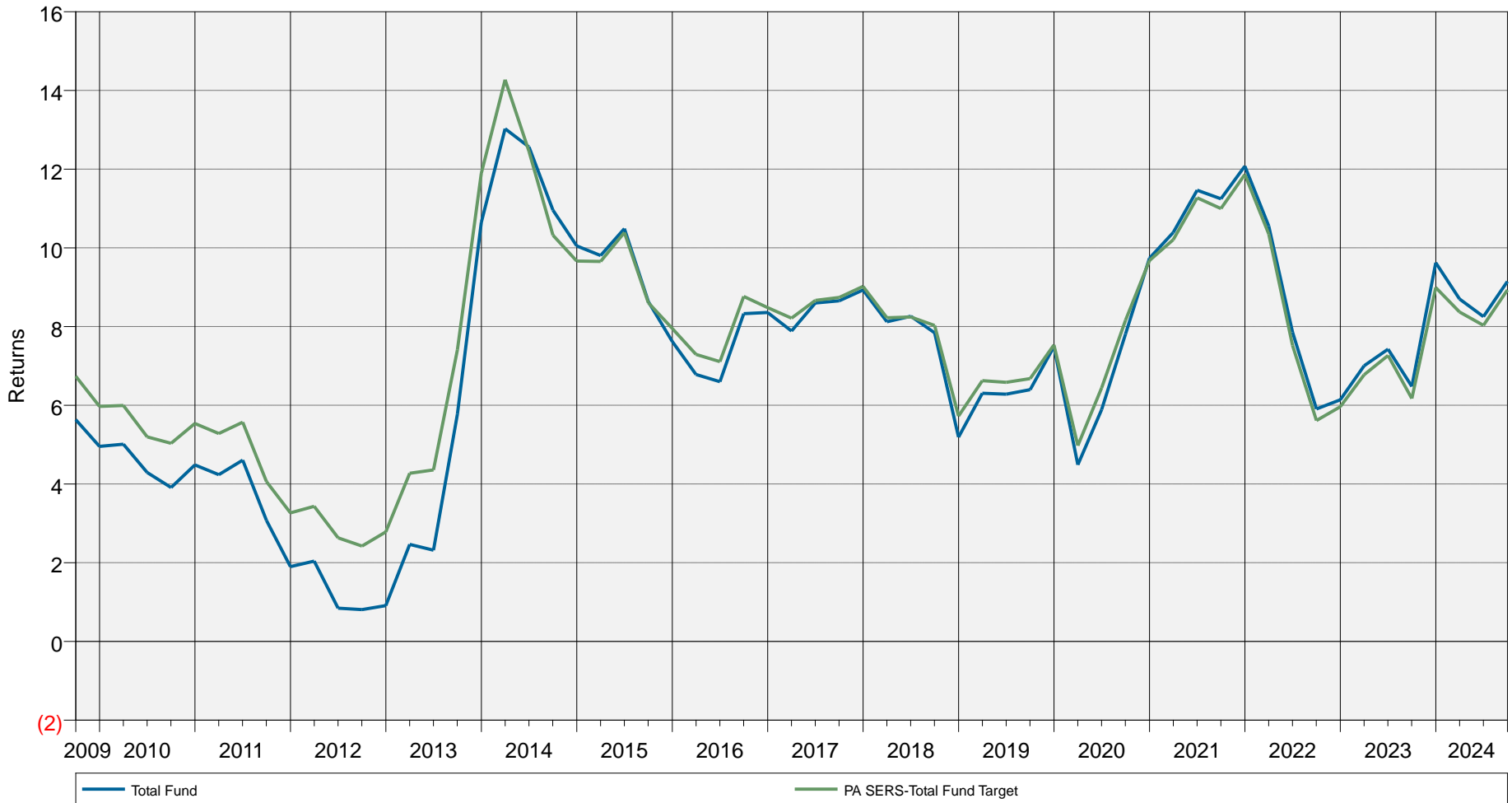


* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

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

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



* Current Quarter Target = 19% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Quarter lag), 2% MSCI Emerging Markets Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Asset Class Returns

As of September 30, 2024

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance							
Total Fund	\$39,064	100.00%	4.59%	10.03%	17.48%	4.32%	8.34%
Total Fund Custom Benchmark(1)	-	-	4.87%	10.53%	18.58%	4.87%	9.01%
Public Market Equiv Benchmark(2)	-	-	5.30%	14.80%	22.88%	6.31%	9.40%
60/40 Index(3)	-	-	6.18%	12.34%	22.93%	4.00%	7.40%
U.S. Equity	\$15,075	38.59%	6.28%	20.02%	34.70%	9.66%	15.02%
Russell 3000 Index (4)	-	-	6.23%	20.63%	35.19%	10.29%	15.26%
S&P 1500 Index	-	-	6.04%	21.26%	35.54%	11.46%	15.59%
Int'l Developed Mkts Equity	\$4,789	12.26%	7.15%	12.64%	24.60%	5.67%	9.13%
MSCI World ex US (5)	-	-	7.76%	12.51%	24.35%	4.69%	8.07%
Emerging Mkts Equity	\$507	1.30%	8.47%	17.78%	27.77%	0.30%	7.15%
MSCI EM (5)	-	-	8.72%	16.78%	26.15%	1.16%	6.61%
Private Equity	\$6,725	17.22%	1.29%	4.87%	5.51%	4.23%	14.44%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.05%	0.05%	0.63%	9.19%
Global Equity + 3% (Qtr lag)(6)	-	-	3.04%	26.73%	23.47%	10.39%	16.09%
Legacy Private Credit Funds (7)	\$373	0.95%	2.45%	7.87%	11.10%	10.26%	10.64%
S&P Levered Loan Index + 1% (Qtr lag)	-	-	2.14%	8.13%	12.11%	7.15%	6.58%
Fixed Income	\$7,209	18.45%	4.77%	4.93%	11.38%	(0.88%)	0.50%
Blmbg U.S. Agg Bond Index	-	-	5.20%	4.45%	11.57%	(1.39%)	0.33%
Inflation Protection (TIPS)	\$1,095	2.80%	4.28%	4.84%	9.99%	(1.06%)	2.16%
Blmbg U.S. TIPS Index	-	-	4.12%	4.85%	9.79%	(0.57%)	2.62%
Real Estate	\$2,274	5.82%	0.22%	(9.04%)	(11.18%)	(3.32%)	0.79%
Real Estate Custom Bench (Qtr lag)(8)	-	-	(0.82%)	(8.38%)	(10.32%)	0.23%	2.14%
CPI + 3% (Qtr lag)	-	-	1.32%	4.30%	5.97%	7.96%	7.17%
Cash	\$1,003	2.57%	1.33%	4.05%	5.47%	3.60%	2.39%
3-month Treasury Bill	-	-	1.37%	4.03%	5.46%	3.49%	2.32%

* 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, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Qtr lag), 2% MSCI Emerging Markets 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, 37% Russell 3000, 14% MSCI World ex US Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 2% MSCI EM 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) Intl Dev Mkts Equity and Emerging Mkts Equity benchmarks switched from IMI version to non-IMI starting 07/01/2024.

(6) 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.

(7) 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.

(8) 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 September 30, 2024

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
Net Performance						
Total Fund	7.06%	8.07%	7.21%	6.67%	9.33%	(1/81)
Total Fund Custom Benchmark(1)	7.84%	8.66%	8.18%	7.15%	-	
Public Market Equiv Benchmark(2)	8.15%	9.02%	8.45%	7.36%	-	
60/40 Index(3)	6.45%	7.00%	6.60%	5.88%	-	
U.S. Equity	12.07%	13.43%	9.80%	8.10%	11.05%	(1/81)
Russell 3000 Index (4)	12.83%	13.80%	10.61%	8.38%	11.36%	(1/81)
S&P 1500 Index	13.12%	13.99%	10.69%	8.44%	-	
Int'l Developed Mkts Equity	6.55%	7.07%	6.35%	-	6.69%	(1/02)
MSCI World ex US (5)	5.67%	6.04%	6.21%	4.83%	6.60%	(1/02)
Emerging Mkts Equity	5.08%	4.29%	5.81%	-	6.98%	(1/02)
MSCI EM (5)	4.30%	4.43%	7.56%	7.04%	8.68%	(1/02)
Private Equity	11.65%	12.76%	12.29%	10.81%	11.37%	(1/86)
Burgiss Private Equity Index (Qtr lag)	10.16%	12.19%	12.11%	11.25%	15.91%	(1/86)
Global Equity + 3% (Qtr lag)(6)	14.78%	17.36%	13.28%	11.03%	14.76%	(1/86)
Legacy Private Credit Funds (7)	-	-	-	-	10.34%	(4/18)
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	6.24%	(4/18)
Fixed Income	1.77%	3.61%	4.01%	4.67%	7.50%	(1/81)
Blmbg U.S. Agg Bond Index	1.84%	2.60%	3.22%	4.06%	6.81%	(1/81)
Inflation Protection (TIPS)	2.33%	2.50%	2.99%	-	3.02%	(2/03)
Blmbg U.S. TIPS Index	2.54%	3.18%	3.58%	4.89%	3.92%	(2/03)
Real Estate	2.73%	4.69%	4.65%	5.67%	7.43%	(3/84)
Real Estate Custom Bench (Qtr lag)(8)	5.15%	6.80%	5.98%	6.57%	-	
CPI + 3% (Qtr lag)	5.80%	5.54%	5.56%	5.58%	5.83%	(3/84)
Cash	1.88%	1.35%	1.86%	2.32%	3.48%	(1/87)
3-month Treasury Bill	1.65%	1.13%	1.62%	1.92%	3.22%	(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, 37% Russell 3000 Index, 14% MSCI World ex US Index, 7% NCREIF NFI-ODCE (Qtr lag), 2% MSCI Emerging Markets Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index. See page 77 for full benchmark history.

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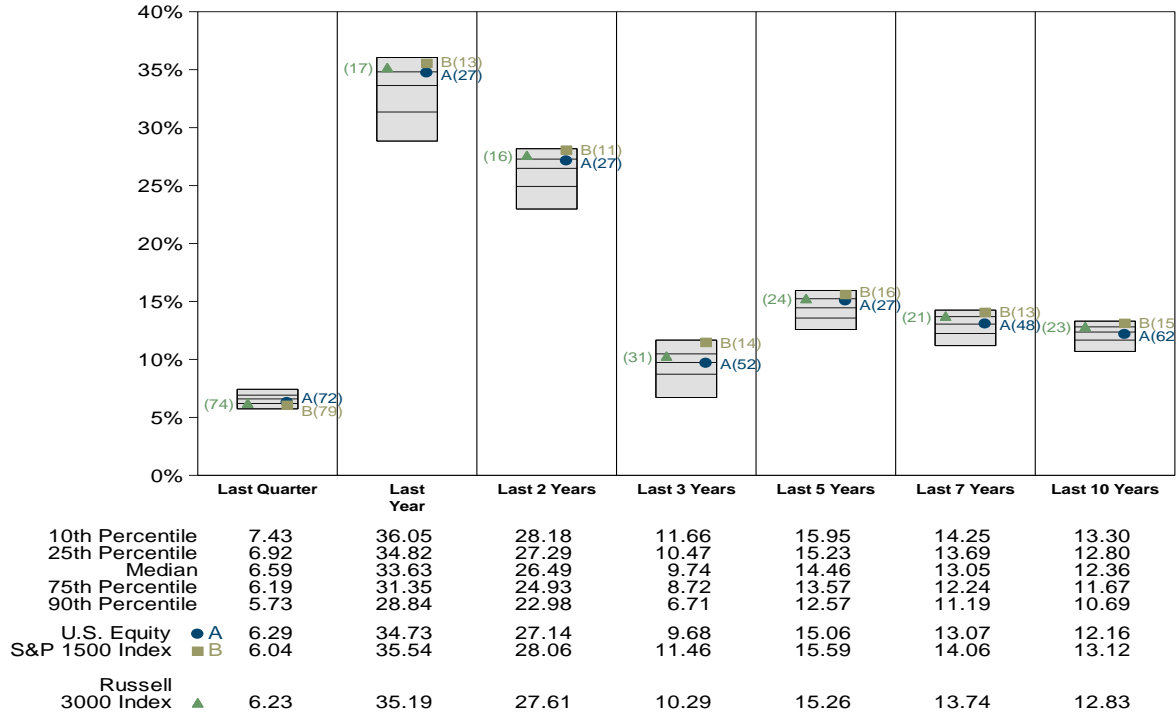
(8) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022 the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged).

Callan

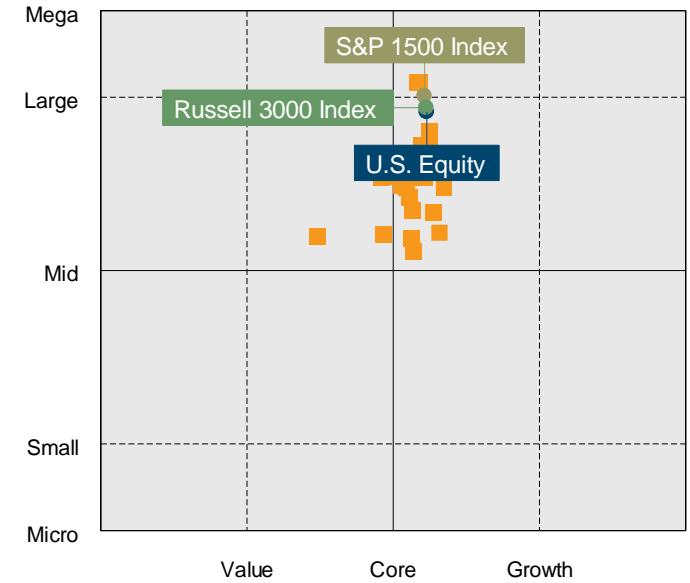
**Appendix I – Asset Class and Manager
Performance**

U.S. Equity as of September 30, 2024

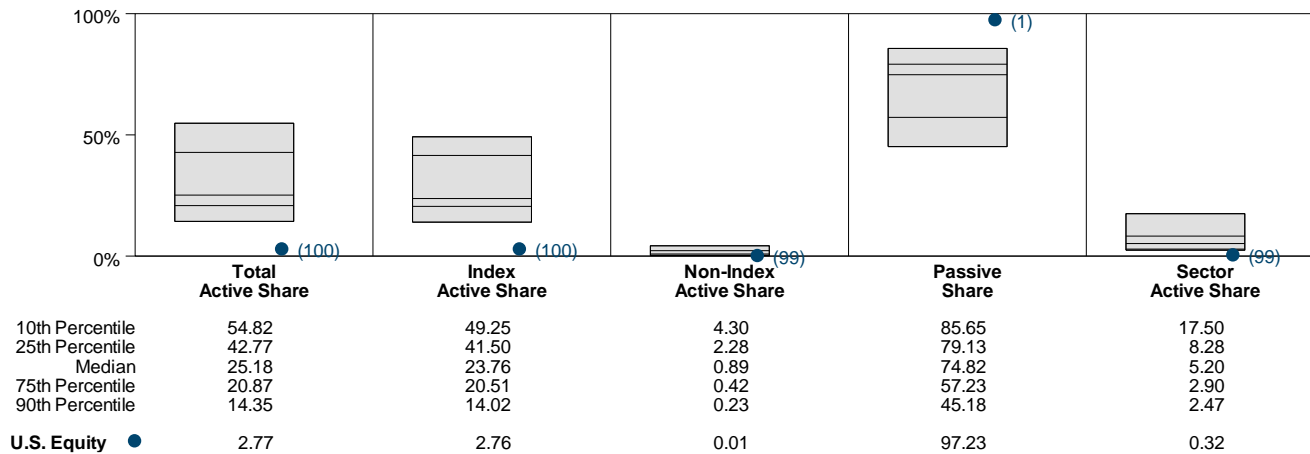
Performance vs Public Fund - Domestic Equity (Gross)



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

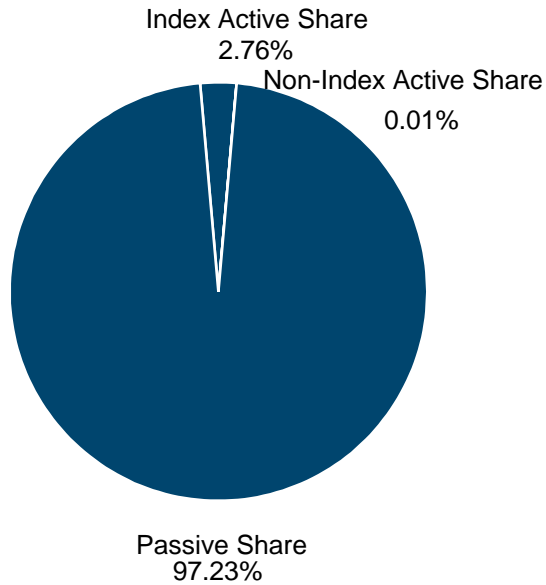


Active Share vs. Pub Pln- Dom Equity

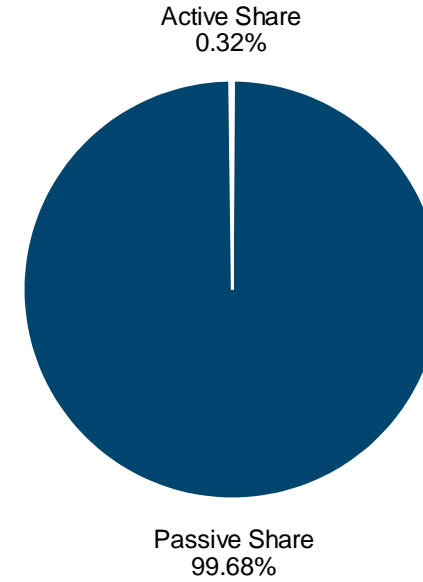


U.S. Equity as of September 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share



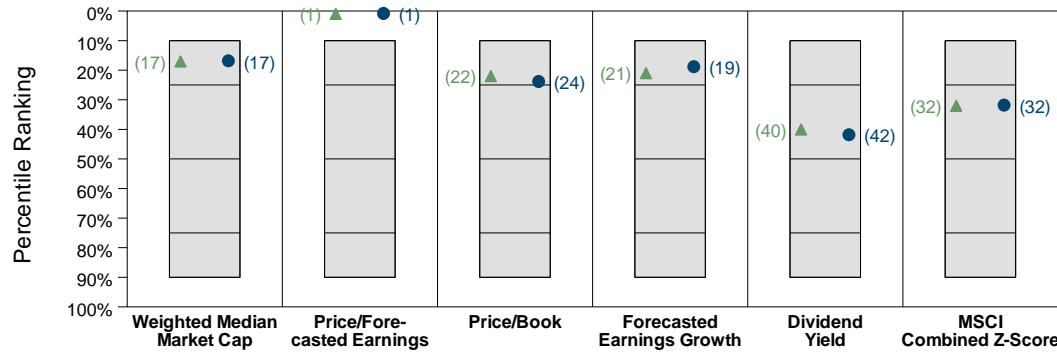
Total Active Share: 2.77%

	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	0.57%	0.03%	0.60%	8.38%	8.34%	0.09%
Consumer Discretionary	2.16%	0.00%	2.16%	10.46%	10.30%	0.26%
Consumer Staples	2.31%	0.00%	2.31%	5.57%	5.56%	0.13%
Energy	2.40%	0.00%	2.40%	3.49%	3.49%	0.09%
Financials	2.99%	0.04%	3.03%	13.62%	13.76%	0.35%
Health Care	5.23%	0.02%	5.24%	11.75%	11.84%	0.59%
Industrials	4.35%	0.00%	4.35%	9.80%	9.72%	0.45%
Information Technology	2.11%	0.00%	2.11%	28.96%	29.02%	0.61%
Materials	5.61%	0.00%	5.61%	2.68%	2.71%	0.13%
Miscellaneous	0.00%	100.00%	100.00%	-	0.00%	0.00%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.00%	0.00%
Real Estate	1.67%	0.00%	1.68%	2.83%	2.83%	0.05%
Utilities	0.78%	0.00%	0.78%	2.44%	2.41%	0.03%
Total	2.76%	0.01%	2.77%	100.00%	100.00%	2.77%

U.S. Equity

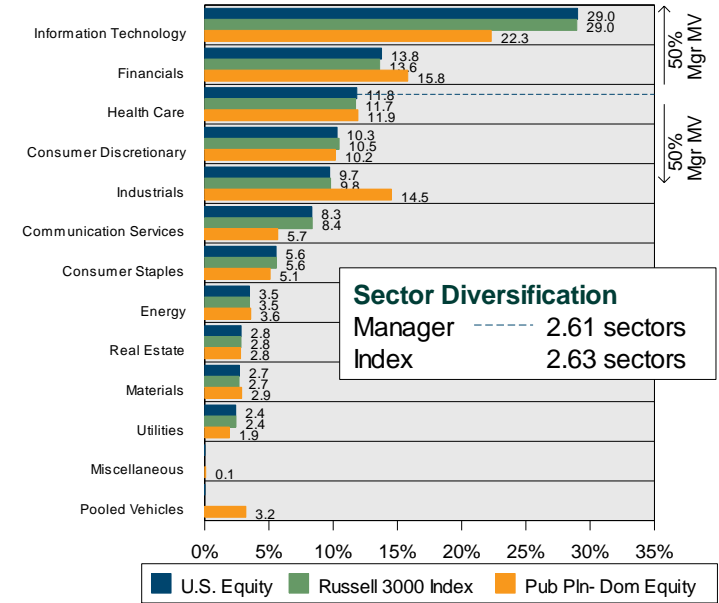
As of September 30, 2024

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

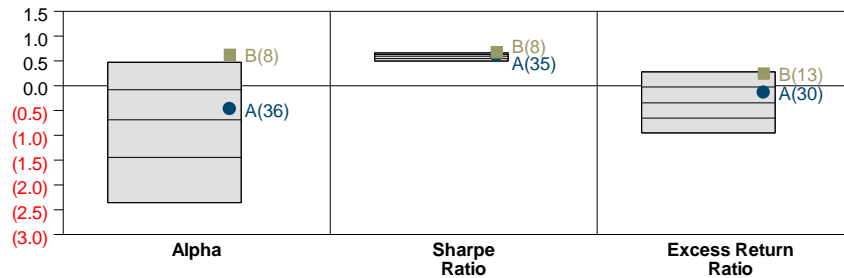


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	238.43	21.62	3.90	17.18	1.41	0.10
25th Percentile	149.05	21.28	3.61	16.73	1.32	0.04
Median	115.33	20.70	3.30	16.38	1.24	0.00
75th Percentile	80.17	19.99	3.07	16.20	1.20	(0.06)
90th Percentile	53.20	18.45	2.66	15.09	1.12	(0.19)
U.S. Equity	184.29	21.86	3.62	16.93	1.27	0.02
Russell 3000 Index	188.67	21.77	3.64	16.85	1.28	0.01

Sector Allocation September 30, 2024



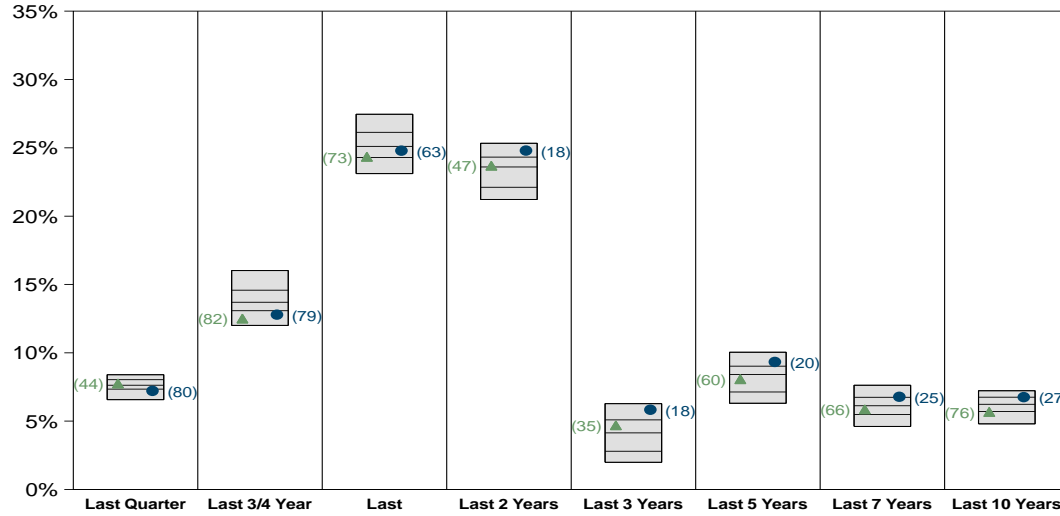
Risk Adjusted Return Measures vs Russell 3000 Index
Rankings Against Public Fund - Domestic Equity (Gross)
Five Years Ended September 30, 2024



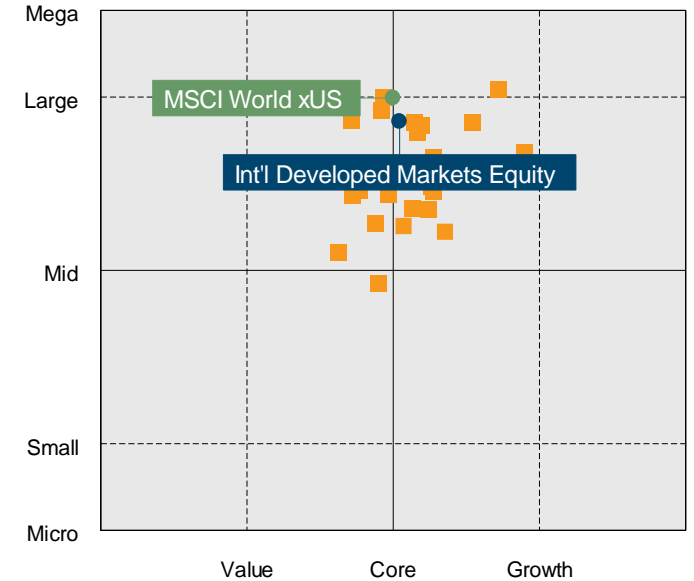
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.47	0.66	0.28
25th Percentile	(0.08)	0.63	(0.02)
Median	(0.69)	0.60	(0.35)
75th Percentile	(1.44)	0.55	(0.65)
90th Percentile	(2.36)	0.50	(0.95)
U.S. Equity	(0.47)	0.61	(0.14)
S&P 1500 Index	0.62	0.67	0.25

International Equity as of September 30, 2024

Performance vs Public Fund - International Equity (Gross)



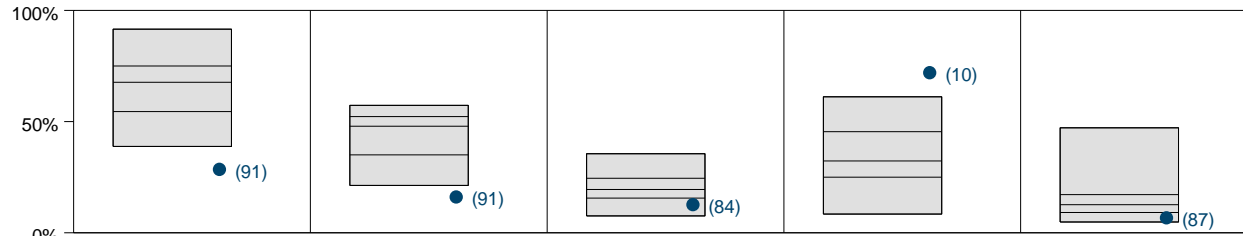
Style Map vs Pub Pln- Intl Equity Holdings as of September 30, 2024



Int'l Developed Markets Equity

●	7.19	12.76	24.76	24.77	5.80	9.30	6.75	6.73
▲	7.76	12.51	24.35	23.69	4.69	8.07	5.86	5.67

Active Share vs. Pub Pln- Intl Equity

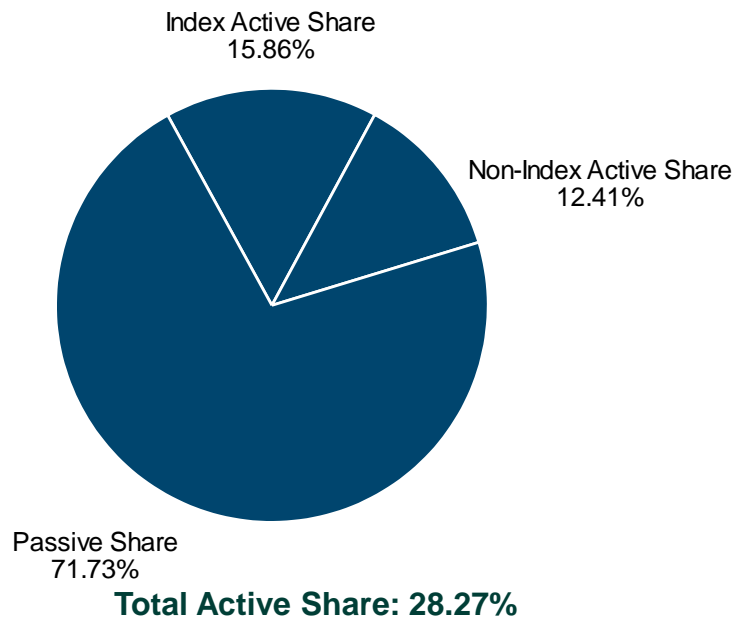


Int'l Developed Markets Equity

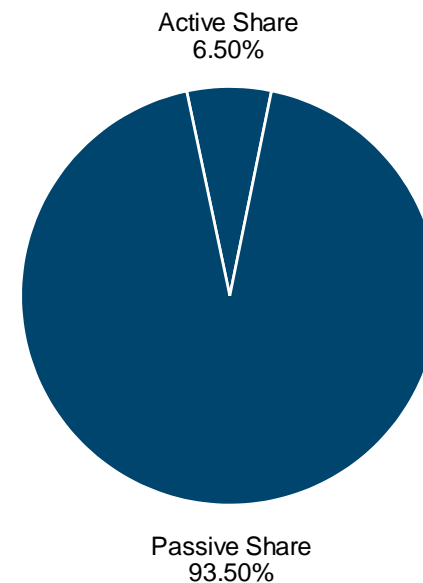
●	28.27	15.86	12.41	71.73	6.50
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International Equity as of September 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share

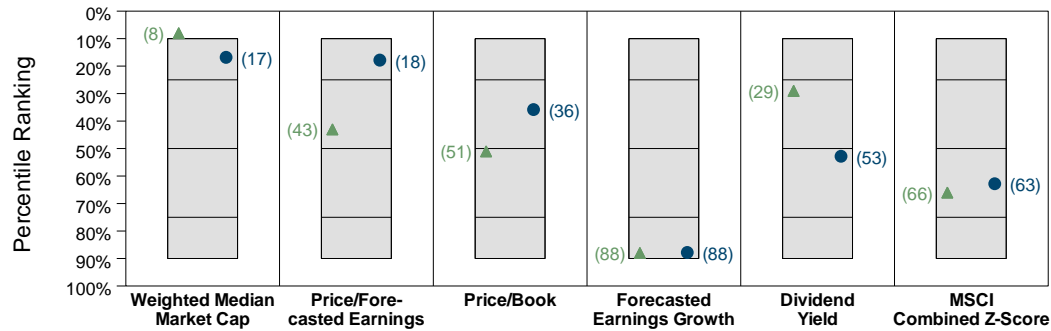


	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	14.47%	12.89%	27.35%	3.96%	4.07%	1.06%
Consumer Discretionary	20.58%	13.66%	34.25%	10.17%	11.63%	3.51%
Consumer Staples	13.07%	9.81%	22.88%	8.28%	8.01%	1.95%
Energy	16.61%	16.61%	33.21%	5.13%	4.00%	1.89%
Financials	9.33%	6.25%	15.58%	22.39%	18.60%	4.67%
Health Care	14.00%	11.53%	25.53%	11.84%	12.33%	3.01%
Industrials	18.28%	14.78%	33.06%	16.77%	17.58%	5.45%
Information Technology	21.01%	19.86%	40.87%	8.82%	11.91%	3.52%
Materials	12.88%	8.93%	21.81%	7.29%	6.70%	1.73%
Miscellaneous	0.00%	100.00%	100.00%	-	0.55%	0.25%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.00%	0.00%
Real Estate	16.05%	16.05%	32.10%	2.00%	1.97%	0.65%
Utilities	3.95%	3.95%	7.90%	3.34%	2.64%	0.55%
Total	15.86%	12.41%	28.27%	100.00%	100.00%	28.24%

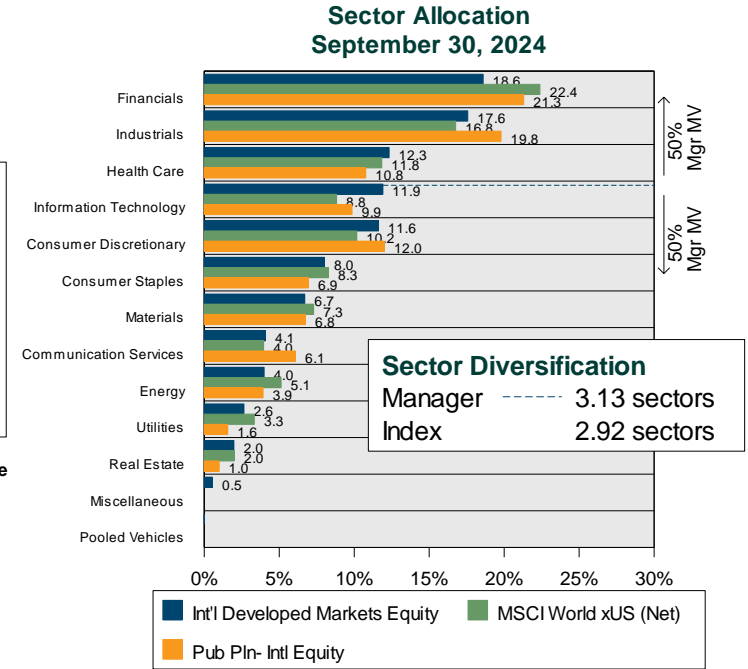
International Equity

As of September 30, 2024

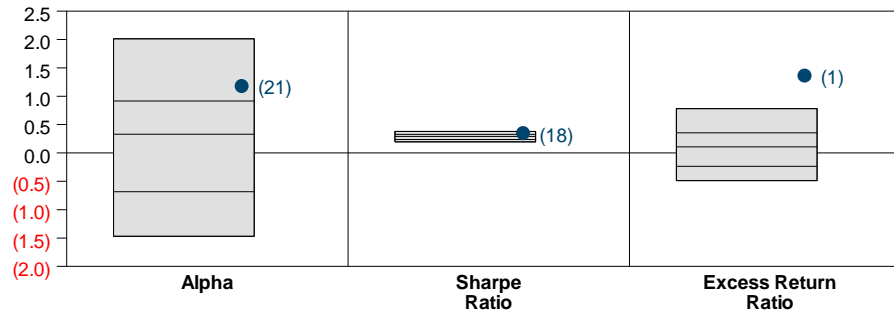
Portfolio Characteristics Percentile Rankings
Rankings Against Public Fund - International Equity
as of September 30, 2024



Int'l Developed Markets Equity	48.49	15.18	2.09	11.41	2.45	0.12
MSCI World xUS (Net)	53.38	14.30	1.93	11.32	2.89	0.08



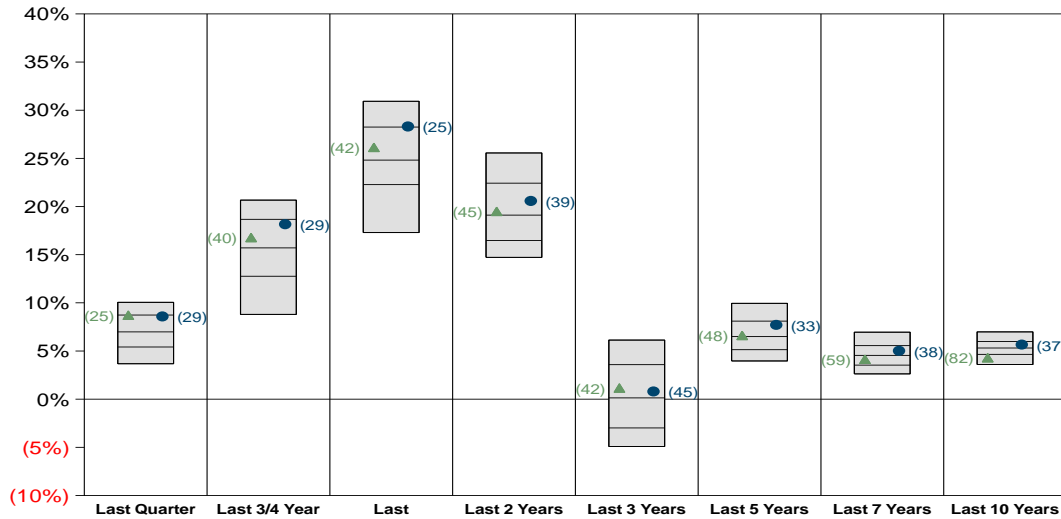
Risk Adjusted Return Measures vs MSCI World ex US
Rankings Against Public Fund - International Equity (Gross)
Five Years Ended September 30, 2024



Int'l Developed Markets Equity	1.17	0.34	1.35
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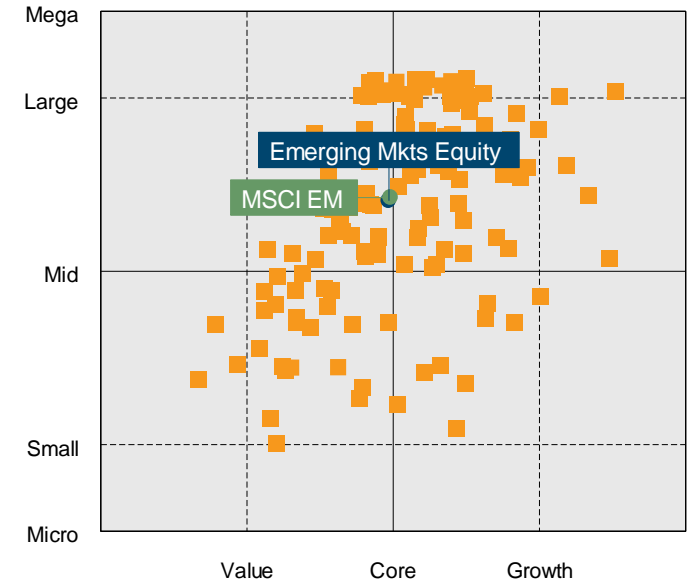
Emerging Markets Equity as of September 30, 2024

Performance vs Callan Emerging Broad (Gross)

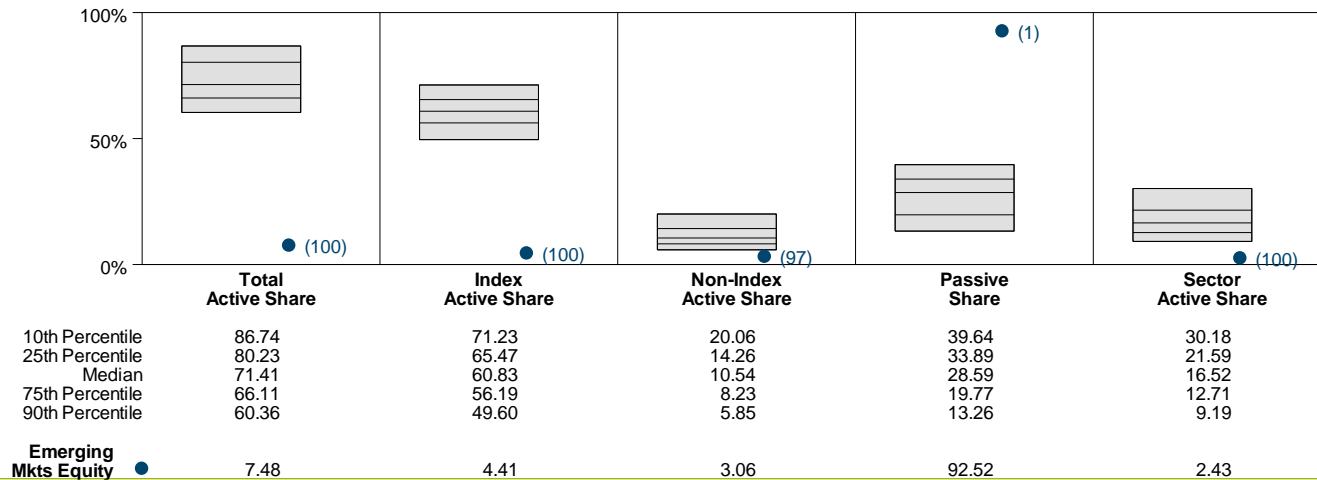


	Last Quarter	Last 3/4 Year	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	10.05	20.67	30.93	25.56	6.14	9.95	6.95	6.99
25th Percentile	8.73	18.67	28.25	22.42	3.58	8.10	5.56	5.98
Median	6.98	15.71	24.82	19.11	0.14	6.50	4.55	5.31
75th Percentile	5.41	12.76	22.28	16.47	(2.99)	5.14	3.54	4.65
90th Percentile	3.68	8.80	17.30	14.72	(4.92)	3.97	2.62	3.59
Emerging Mkts Equity ●	8.54	18.12	28.28	20.55	0.76	7.67	4.98	5.62
MSCI EM ▲	8.72	16.78	26.15	19.50	1.16	6.61	4.14	4.30

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

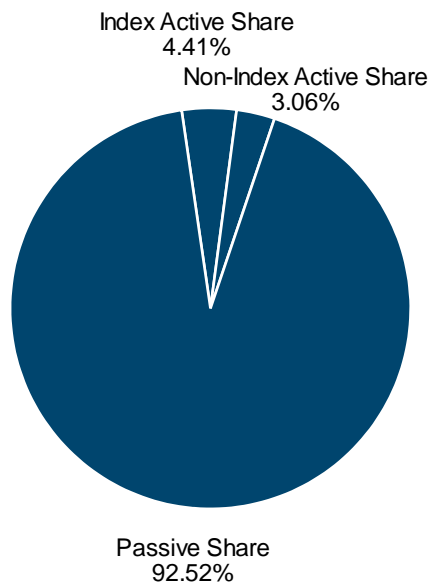


Active Share vs. Callan Emerging Broad

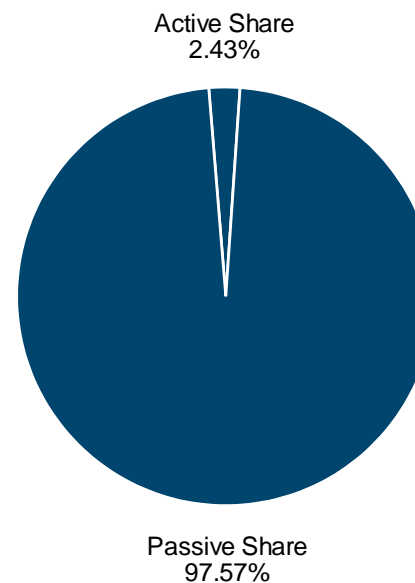


Emerging Markets Equity as of September 30, 2024

Holdings-Level Active Share



Sector Exposure Active Share



Total Active Share: 7.48%

	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	5.86%	4.24%	10.09%	9.43%	9.15%	0.90%
Consumer Discretionary	9.45%	4.52%	13.97%	13.98%	13.36%	1.76%
Consumer Staples	6.79%	3.49%	10.28%	5.24%	4.98%	0.52%
Energy	6.31%	2.35%	8.66%	4.75%	4.81%	0.41%
Financials	2.14%	0.70%	2.84%	22.84%	22.66%	0.68%
Health Care	4.71%	2.24%	6.96%	3.60%	3.58%	0.25%
Industrials	6.30%	1.64%	7.94%	6.77%	6.48%	0.45%
Information Technology	1.75%	0.62%	2.36%	22.23%	22.07%	0.61%
Materials	9.27%	0.85%	10.12%	6.64%	6.10%	0.45%
Miscellaneous	0.00%	100.00%	100.00%	-	2.38%	1.18%
Real Estate	5.20%	2.34%	7.53%	1.59%	1.54%	0.11%
Utilities	4.32%	1.21%	5.53%	2.93%	2.89%	0.16%
Total	4.41%	3.06%	7.48%	100.00%	100.00%	7.48%

Emerging Markets Equity

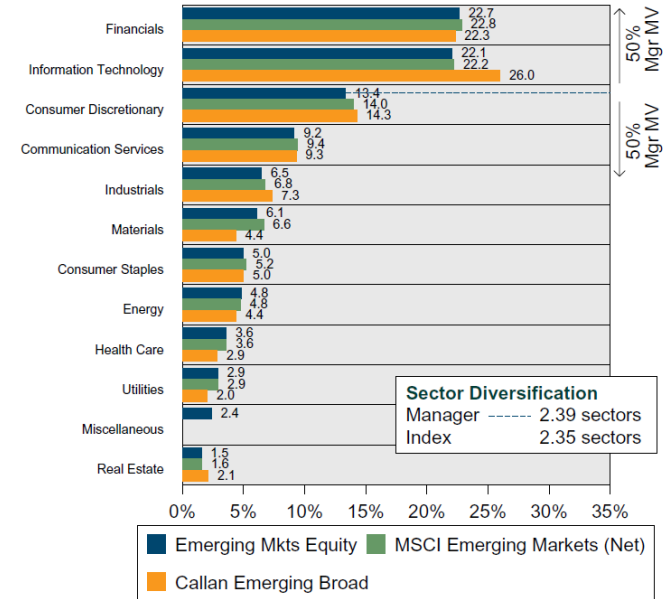
As of September 30, 2024

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

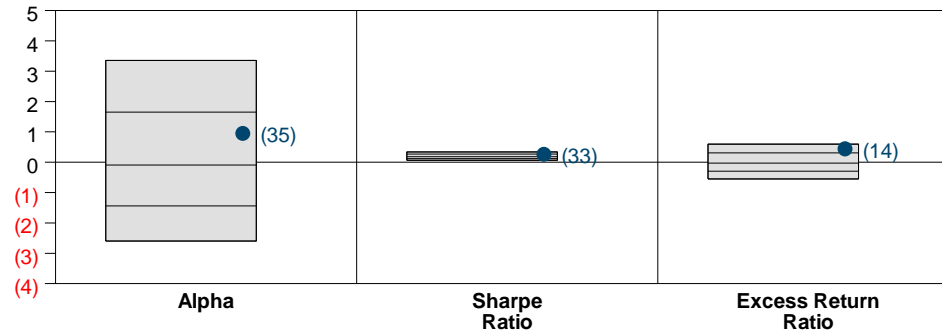


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	61.66	17.42	3.52	24.48	3.63	0.77
25th Percentile	46.77	14.17	2.49	21.61	3.18	0.49
Median	31.44	11.78	1.76	18.96	2.53	0.19
75th Percentile	17.42	10.16	1.41	16.96	1.91	(0.19)
90th Percentile	9.47	8.36	1.09	13.53	1.53	(0.51)
Emerging Mkts Equity	32.13	12.53	1.56	16.92	2.38	0.05
MSCI Emerging Markets (Net)	32.81	12.17	1.56	16.82	2.47	0.07

Sector Allocation September 30, 2024



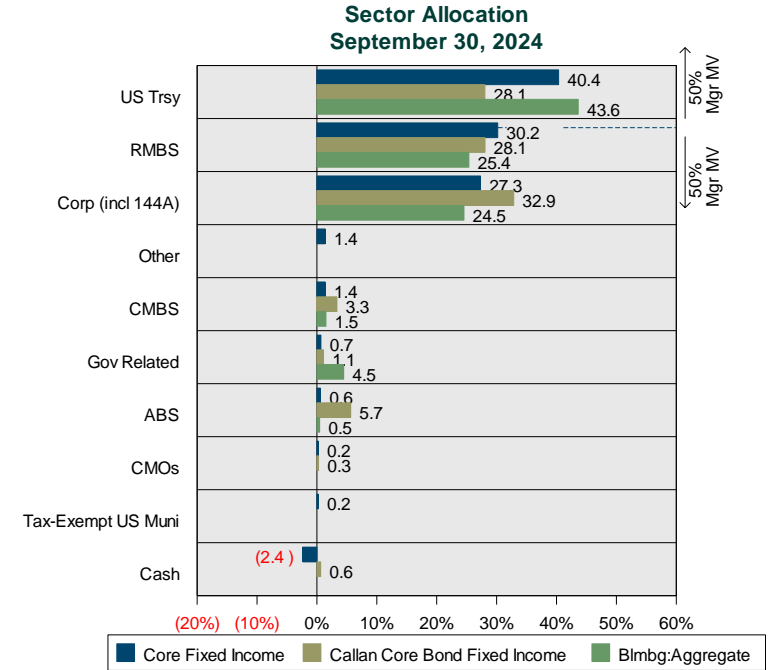
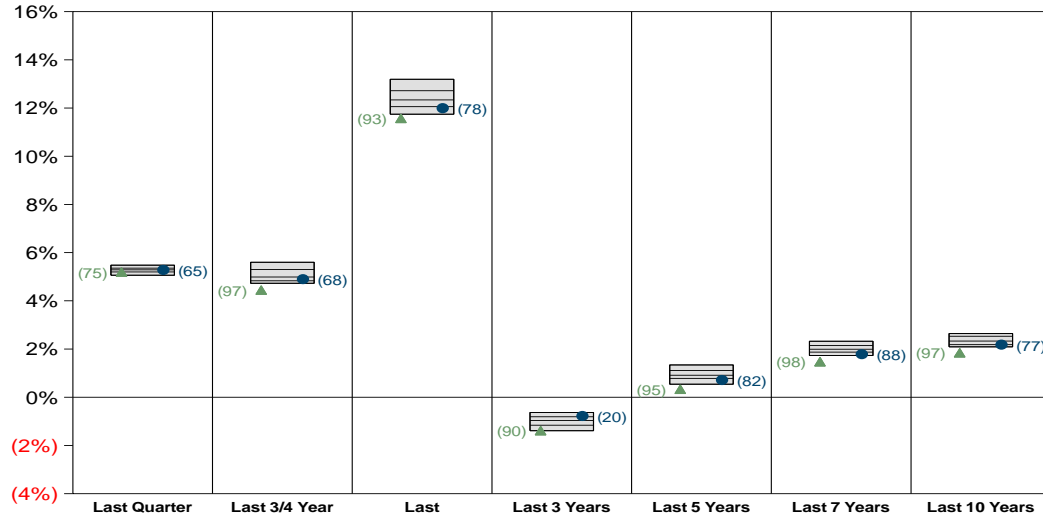
Risk Adjusted Return Measures vs MSCI EM
Rankings Against Callan Emerging Broad (Gross)
Five Years Ended September 30, 2024



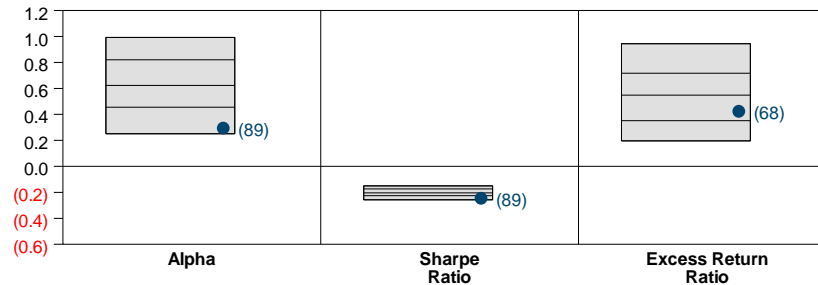
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.35	0.34	0.60
25th Percentile	1.65	0.27	0.31
Median	(0.09)	0.18	(0.03)
75th Percentile	(1.44)	0.12	(0.29)
90th Percentile	(2.59)	0.07	(0.55)
Emerging Mkts Equity	0.93	0.24	0.42

Core Fixed Income As of September 30, 2024

Performance vs Callan Core Bond Fixed Income (Gross)



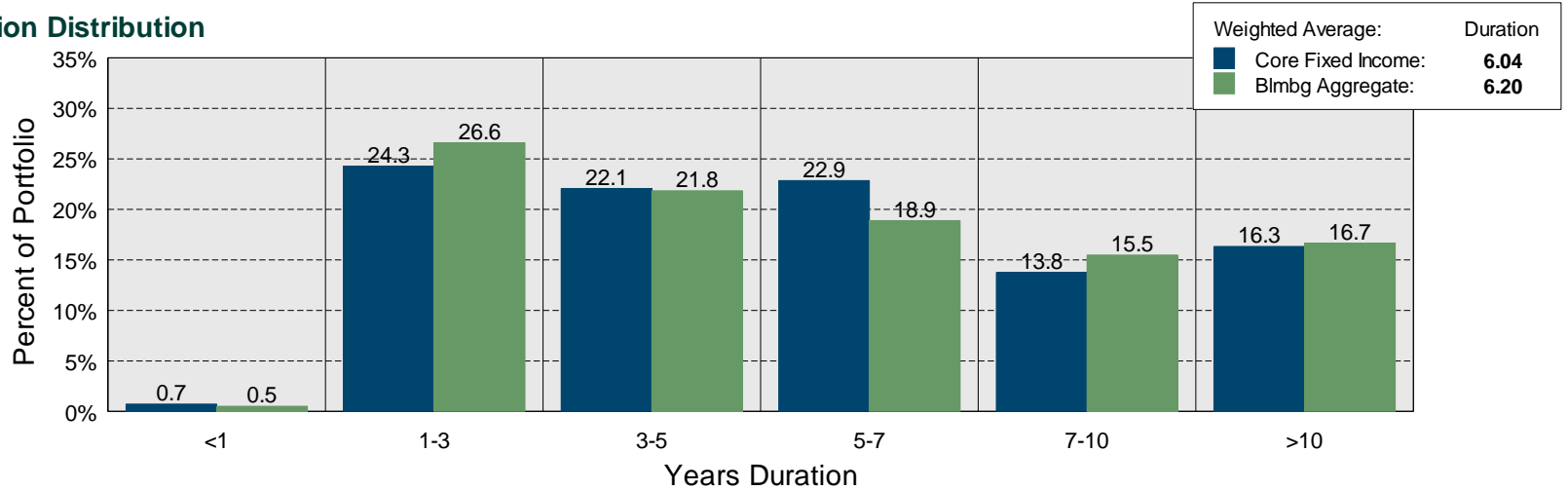
Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended September 30, 2024



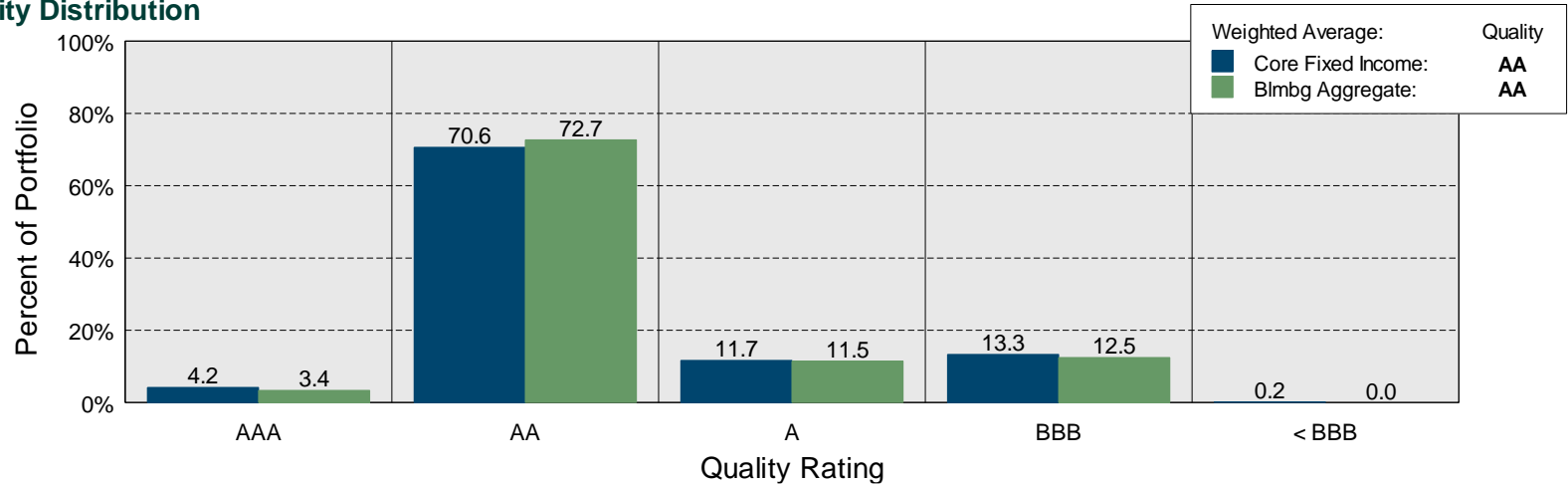
Core Fixed Income

As of September 30, 2024

Duration Distribution

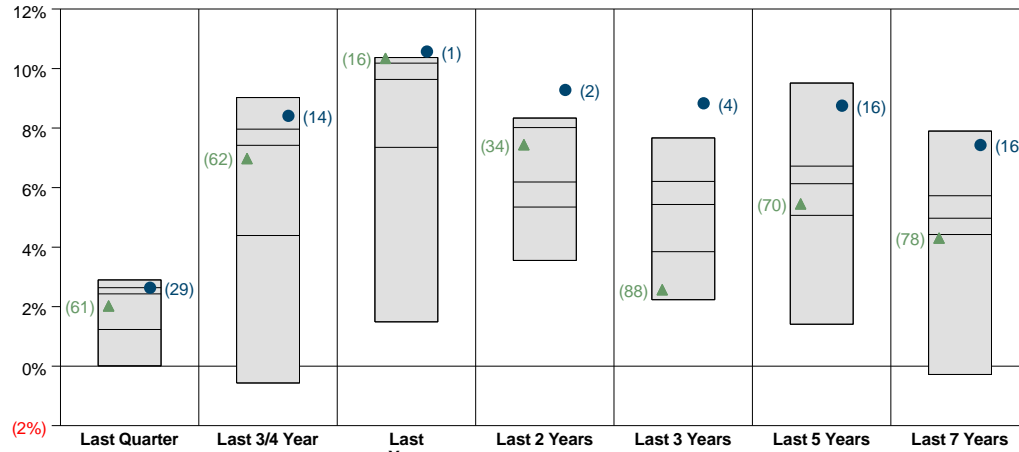


Quality Distribution



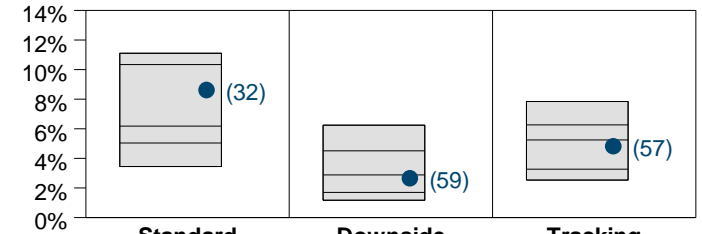
Opportunistic Fixed Income As of September 30, 2024

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



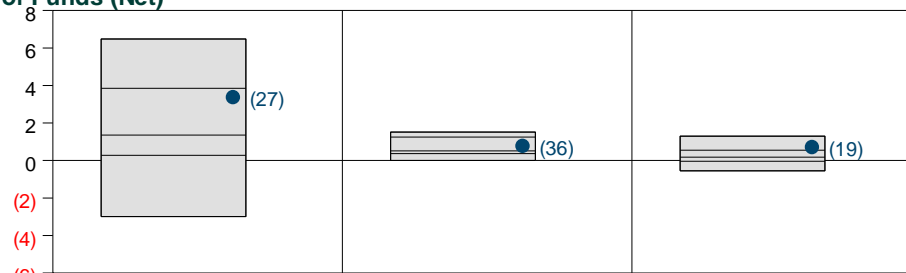
10th Percentile	2.90	9.03	10.37	8.34	7.67	9.51	7.90
25th Percentile	2.64	7.96	10.18	8.02	6.21	6.72	5.73
Median	2.43	7.42	9.63	6.19	5.43	6.13	4.97
75th Percentile	1.23	4.39	7.35	5.35	3.85	5.07	4.42
90th Percentile	0.01	(0.56)	1.49	3.55	2.23	1.41	(0.28)
Blackstone Keystone	● 2.62	8.39	10.56	9.26	8.82	8.73	7.41
HFRI Fund of Funds Composite Index	▲ 2.02	6.98	10.34	7.44	2.57	5.45	4.30

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



10th Percentile	11.11	6.25	7.85
25th Percentile	10.34	4.51	6.26
Median	6.18	2.89	5.26
75th Percentile	5.05	1.70	3.27
90th Percentile	3.46	1.17	2.53
Blackstone Keystone	● 8.58	2.61	4.78

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



10th Percentile	6.47	1.52	1.29
25th Percentile	3.85	1.25	0.55
Median	1.36	0.51	0.18
75th Percentile	0.28	0.37	(0.04)
90th Percentile	(2.99)	0.01	(0.55)
Blackstone Keystone	● 3.35	0.75	0.69

Investment Manager Returns

As of September 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	\$15,075	100.00%	6.28%	20.02%	34.70%	9.66%	15.02%
Russell 3000 Index (1)	-	-	6.23%	20.63%	35.19%	10.29%	15.26%
S&P 1500 Index	-	-	6.04%	21.26%	35.54%	11.46%	15.59%
MCM Russell 1000 Index	14,188	94.12%	6.02%	21.11%	35.60%	10.95%	15.73%
Russell 1000 Index	-	-	6.08%	21.18%	35.68%	10.83%	15.64%
S&P 500 Index	-	-	5.89%	22.08%	36.35%	11.91%	15.98%
MCM Russell 2000 Core Index	101	0.67%	9.10%	11.58%	27.17%	1.94%	9.80%
Russell 2000 Index	-	-	9.27%	11.17%	26.76%	1.84%	9.39%
S&P 600 Index	-	-	10.13%	9.33%	25.86%	3.99%	10.21%
MCM Russell 2000 Val Index	327	2.17%	10.13%	9.21%	25.85%	3.85%	9.36%
Russell 2000 Value Index	-	-	10.15%	9.22%	25.88%	3.77%	9.29%
S&P 600 Value Index	-	-	11.30%	6.05%	22.85%	4.23%	9.42%
Emerald Asset Management	459	3.04%	6.08%	15.46%	32.66%	1.43%	10.29%
Russell 2000 Growth Index	-	-	8.41%	13.22%	27.66%	(0.35%)	8.82%
S&P 600 Growth Index	-	-	8.97%	12.57%	28.65%	3.59%	10.64%
			Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Domestic Equity							
U.S. Equity			12.07%	13.43%	9.80%	8.10%	11.05% (1/81)
Russell 3000 Index (1)			12.83%	13.80%	10.61%	8.38%	11.36% (1/81)
S&P 1500 Index			13.12%	13.99%	10.69%	8.44%	-
MCM Russell 1000 Index			13.16%	-	-	-	14.69% (1/12)
Russell 1000 Index			13.10%	14.03%	10.76%	8.37%	14.68% (1/12)
S&P 500 Index			13.38%	14.15%	10.71%	8.20%	14.84% (1/12)
MCM Russell 2000 Core Index			-	-	-	-	8.61% (12/16)
Russell 2000 Index			8.78%	10.59%	8.49%	8.27%	8.36% (12/16)
S&P 600 Index			10.05%	12.08%	9.69%	10.05%	9.08% (12/16)
MCM Russell 2000 Val Index			-	-	-	-	7.20% (12/16)
Russell 2000 Value Index			8.22%	9.80%	7.74%	9.10%	7.18% (12/16)
S&P 600 Value Index			9.10%	11.24%	8.91%	9.73%	7.96% (12/16)
Emerald Asset Management			-	-	-	-	10.37% (12/16)
Russell 2000 Growth Index			8.95%	11.09%	8.99%	6.98%	9.09% (12/16)
S&P 600 Growth Index			10.81%	12.80%	10.37%	9.96%	9.98% (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 September 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	\$4,789	100.00%	7.15%	12.64%	24.60%	5.67%	9.13%
MSCI World ex US (1)	-	-	7.76%	12.51%	24.35%	4.69%	8.07%
Walter Scott & Partners(2)	854	17.84%	3.92%	12.21%	25.38%	6.52%	11.94%
MSCI World	-	-	6.36%	18.86%	32.43%	9.08%	13.04%
BlackRock MSCI World Ex US Index	3,501	73.10%	7.80%	13.45%	25.33%	6.09%	8.82%
MSCI World ex US	-	-	7.76%	13.10%	24.98%	5.65%	8.36%
Xponance Non-U.S. Small Cap	264	5.51%	6.35%	12.47%	22.60%	0.09%	6.74%
MSCI ACWI ex US Small Cap	-	-	8.90%	11.93%	23.25%	1.39%	8.21%
Harris Assoc Int'l SCV	166	3.47%	12.35%	9.93%	22.34%	4.38%	10.12%
MSCI World ex US Sm Cap	-	-	10.45%	11.53%	23.36%	0.05%	6.85%
MSCI World ex US Sm Value	-	-	10.92%	12.05%	23.31%	3.64%	7.39%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- International Equity					
Int'l Developed Mkts Equity	6.55%	7.07%	6.35%	-	6.69% ^(1/02)
MSCI World ex US (1)	5.67%	6.04%	6.21%	4.83%	6.60% ^(1/02)
Walter Scott & Partners (2)	11.45%	11.39%	-	-	9.84% ^(10/06)
MSCI World	10.07%	10.34%	8.59%	6.47%	7.74% ^(10/06)
BlackRock MSCI World Ex US Index	-	-	-	-	7.14% ^(6/17)
MSCI World ex US	5.68%	5.96%	6.10%	4.77%	6.68% ^(6/17)
Xponance Non-U.S. Small Cap	-	-	-	-	4.69% ^(10/18)
MSCI ACWI ex US Small Cap	6.08%	6.82%	7.53%	6.79%	5.77% ^(10/18)
Harris Assoc Int'l SCV	7.09%	8.08%	8.80%	-	10.34% ^(7/03)
MSCI World ex US Sm Cap	5.99%	6.91%	6.96%	-	8.49% ^(7/03)
MSCI World ex US Sm Value	5.59%	6.43%	7.08%	7.55%	8.68% ^(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) Intl Dev Mkts Equity benchmark reflects MSCI world ex US IMI until 06/30/2024 and MSCI world ex US Index, thereafter.

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

Investment Manager Returns

As of September 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	\$507	100.00%	8.47%	17.78%	27.77%	0.30%	7.15%
MSCI EM (1)	-	-	8.72%	16.78%	26.15%	1.16%	6.61%
BlackRock Emg Mkts Index	506	99.85%	8.23%	16.21%	24.89%	0.00%	5.34%
MSCI EM	-	-	8.72%	16.86%	26.05%	0.40%	5.75%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Emerging Mkts Equity					
Emerging Mkts Equity	5.08%	4.29%	5.81%	-	6.98% ^(1/02)
MSCI EM (1)	4.30%	4.43%	7.56%	7.04%	8.68% ^(1/02)
BlackRock Emg Mkts Index	-	-	-	-	4.27% ^(7/17)
MSCI EM	4.03%	4.16%	7.30%	-	4.61% ^(7/17)

* 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.

*** Globeflex is in liquidation and has \$49k remaining in assets as of 09/30/2024.

**** Leading Edge is in liquidation and has \$708k remaining in assets as of 09/30/2024.

(1) Emerging Mkts Equity benchmark reflects MSCI EM IMI until 06/30/2024 and MSCI EM Index, thereafter.

Investment Manager Returns

As of September 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)	\$7,209	100.00%	4.77%	4.93%	11.38%	(0.88%)	0.50%
Blmbg U.S. Agg Bond Index	-	-	5.20%	4.45%	11.57%	(1.39%)	0.33%
Core Fixed Income	\$4,734	65.68%	5.26%	4.86%	11.94%	(0.84%)	0.64%
Blmbg U.S. Agg Bond Index	-	-	5.20%	4.45%	11.57%	(1.39%)	0.33%
PIMCO Core Bond Fund	576	7.99%	5.73%	5.53%	13.33%	(0.82%)	1.04%
Blmbg Agg ex Treasury	-	-	5.55%	4.91%	12.93%	(1.08%)	0.64%
Mellon Bond Index	4,158	57.69%	5.19%	4.67%	11.65%	(1.30%)	0.33%
Blmbg U.S. Agg Bond Index (2)	-	-	5.20%	4.45%	11.57%	(1.39%)	0.33%
Opportunistic Fixed Income	\$813	11.28%	2.35%	7.54%	9.42%	7.74%	6.91%
BAAM Keystone (3)	813	11.28%	2.35%	7.54%	9.42%	7.77%	7.85%
HFRI FOF Comp Index	-	-	1.97%	6.92%	10.28%	2.55%	5.44%
Nominal U.S. Treasuries	\$1,633	22.65%	4.73%	3.35%	12.17%	(4.06%)	(1.90%)
Blmbg US Treas Bell 10Y	-	-	5.80%	3.65%	10.77%	(3.41%)	(1.28%)
Mellon US Treasury Index	1,633	22.65%	4.73%	-	-	-	-
Blmbg US Treasury	-	-	4.74%	3.84%	9.72%	(1.78%)	(0.20%)
Legacy Fixed Income	\$28	0.40%	1.35%	12.76%	9.71%	-	-
Fidelity HY CMBS (4)	28	0.39%	1.35%	13.38%	10.29%	0.35%	0.63%
Blmbg US CMBS Ex AAA Index (5)	-	-	4.70%	7.63%	13.78%	(1.46%)	0.49%

* 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 September 30, 2024

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
Net Performance - Fixed Income						* All returns on this report are shown with 2-decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.
Fixed Income (1)	1.77%	3.61%	4.01%	4.67%	7.50%	(1/81)
Blmbg U.S. Agg Bond Index	1.84%	2.60%	3.22%	4.06%	6.81%	(1/81)
Core Fixed Income	2.08%	3.22%	3.60%	-	3.95%	(1/02)
Blmbg U.S. Agg Bond Index	1.84%	2.60%	3.22%	4.06%	3.60%	(1/02)
PIMCO Core Bond Fund	2.32%	-	-	-	2.08%	(1/13)
Blmbg Agg ex Treasury	2.13%	2.94%	-	-	2.07%	(1/13)
Mellon Bond Index	1.82%	2.52%	3.14%	4.04%	6.30%	(4/84)
Blmbg U.S. Agg Bond Index (2)	1.84%	2.60%	3.22%	4.13%	-	
Opportunistic Fixed Income	4.65%	-	-	-	5.46%	(10/12)
BAAM Keystone (3)	6.02%	-	-	-	7.53%	(7/12)
HFRI FOF Comp Index	3.67%	3.58%	3.55%	4.21%	4.23%	(7/12)
Nominal U.S. Treasuries	0.85%	-	-	-	1.02%	(9/11)
Blmbg US Treas Bell 10Y	1.03%	2.21%	2.91%	3.74%	1.29%	(9/11)
Mellon US Treasury Index	-	-	-	-	7.33%	(5/24)
Legacy Fixed Income	-	-	-	-	2.82%	(7/22)
Fidelity HY CMBS (4)	2.86%	8.08%	5.27%	6.84%	7.14%	(4/97)
Blmbg US CMBS Ex AAA Index (5)	2.68%	6.22%	1.01%	3.11%	3.49%	(4/97)

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(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 September 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)	\$1,095	100.00%	4.28%	4.84%	9.99%	(1.06%)	2.16%
Blmbg U.S. TIPS Index	-	-	4.12%	4.85%	9.79%	(0.57%)	2.62%
NISA Inv Adv TIPS	478	43.63%	4.11%	5.10%	9.79%	(0.55%)	2.63%
Blmbg U.S. TIPS Index (1)	-	-	4.12%	4.85%	9.79%	(0.57%)	2.62%
Brown Brothers TIPS	500	45.61%	4.04%	4.93%	9.71%	(0.67%)	2.48%
Blmbg U.S. TIPS Index	-	-	4.12%	4.85%	9.79%	(0.57%)	2.62%
New Century Global TIPS	118	10.76%	5.97%	3.39%	12.01%	(4.50%)	(0.33%)
Blmbg Wrld Inflation Linked Unhdg	-	-	5.78%	3.43%	11.76%	(4.31%)	(0.21%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Inflation Protection					
Inflation Protection (TIPS)	2.33%	2.50%	2.99%	-	3.02% (2/03)
Blmbg U.S. TIPS Index	2.54%	3.18%	3.58%	4.89%	3.92% (2/03)
NISA Inv Adv TIPS	2.53%	2.51%	-	-	3.00% (4/07)
Blmbg U.S. TIPS Index (1)	2.54%	2.51%	3.04%	4.45%	3.00% (4/07)
Brown Brothers TIPS	2.53%	-	-	-	1.98% (2/12)
Blmbg U.S. TIPS Index	2.54%	3.18%	3.58%	4.89%	1.92% (2/12)
New Century Global TIPS	1.10%	-	-	-	1.24% (2/12)
Blmbg Wrld Inflation Linked Unhdg	1.03%	2.06%	2.97%	4.30%	1.05% (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.

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(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 September 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	\$6,725	100.00%	1.29%	4.87%	5.51%	4.23%	14.44%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.05%	0.05%	0.63%	9.19%
Global Equity + 3% (Qtr lag)(1)	-	-	3.04%	26.73%	23.47%	10.39%	16.09%
Buyouts	3,590	53.39%	0.85%	2.82%	3.00%	5.11%	14.11%
Burgiss Buyout Index (Qtr lag)	-	-	0.01%	0.05%	0.05%	1.31%	8.57%
Special Situations	1,765	26.24%	2.47%	8.65%	10.85%	12.17%	17.40%
Burgiss Special Situations Idx (Qtr lag)	-	-	0.02%	0.07%	0.08%	1.24%	3.65%
Growth Equity	1,192	17.72%	1.62%	7.60%	7.85%	0.14%	19.22%
Burgiss Venture Capital Index (Qtr lag)	-	-	(0.01%)	0.01%	(0.01%)	(1.10%)	13.77%
Keystone Legacy (2)	178	2.65%	(2.96%)	(5.53%)	(6.40%)	(15.42%)	(4.19%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Private Equity					
Private Equity	11.65%	12.76%	12.29%	10.81%	11.37% ^(1/86)
Burgiss Private Equity Index (Qtr lag)	10.16%	12.19%	12.11%	11.25%	15.91% ^(1/86)
Global Equity + 3% (Qtr lag)(1)	14.78%	17.36%	13.28%	11.03%	14.76% ^(1/86)
Buyouts	12.25%	14.01%	14.11%	12.30%	13.26% ^(4/86)
Burgiss Buyout Index (Qtr lag)	9.78%	12.08%	12.60%	11.26%	18.13% ^(4/86)
Special Situations	12.72%	13.99%	13.31%	13.06%	13.15% ^(1/95)
Burgiss Special Situations Idx (Qtr lag)	4.96%	8.15%	7.65%	8.70%	9.32% ^(1/95)
Growth Equity	14.41%	12.97%	9.89%	6.78%	8.50% ^(1/86)
Burgiss Venture Capital Index (Qtr lag)	14.34%	14.63%	12.28%	10.09%	13.71% ^(1/86)
Keystone Legacy (2)	-	-	-	-	(3.75%) ^(7/18)

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(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 06/30/2024, Keystone Legacy SPV consists of 37 non-core funds, prior performance is reflected in previous sub-asset classes.

Investment Manager Returns

As of September 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	\$2,274	100.00%	0.22%	(9.04%)	(11.18%)	(3.32%)	0.79%
Real Estate Custom Bench (Qtr lag) (1)	-	-	(0.82%)	(8.38%)	(10.32%)	0.23%	2.14%
CPI +3% (Qtr lag)	-	-	1.32%	4.30%	5.97%	7.96%	7.17%
Core/Core Plus Real Estate Funds	1,108	48.72%	1.06%	(4.29%)	(5.21%)	2.56%	3.90%
NCREIF ODCE Index (Qtr lag)	-	-	(0.82%)	(8.38%)	(10.32%)	1.14%	2.58%
Value Add/Oppportunistic SMA	256	11.24%	(9.99%)	(37.70%)	(43.90%)	(22.86%)	(11.54%)
NCREIF ODCE Index (Qtr lag)	-	-	(0.82%)	(8.38%)	(10.32%)	1.14%	2.58%
Value Add/Oppportunistic Funds	757	33.27%	(0.16%)	(5.17%)	(7.50%)	(0.31%)	2.97%
NCREIF ODCE Index (Qtr lag)	-	-	(0.82%)	(8.38%)	(10.32%)	1.14%	2.58%
REITS	154	6.77%	17.27%	17.58%	36.74%	5.41%	6.54%
FTSE NAREIT US Index	-	-	15.97%	15.03%	33.33%	4.41%	4.59%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Real Estate					
Real Estate	2.73%	4.69%	4.65%	5.67%	7.43% ^(3/84)
Real Estate Custom Bench (Qtr lag) (1)	5.15%	6.80%	5.98%	6.57%	-
CPI +3% (Qtr lag)	5.80%	5.54%	5.56%	5.58%	5.83% ^(3/84)
Core/Core Plus Real Estate Funds	6.08%	7.65%	6.68%	7.00%	6.67% ^(9/86)
NCREIF ODCE Index (Qtr lag)	5.80%	6.69%	5.78%	6.23%	5.56% ^(9/86)
Value Add/Oppportunistic SMA	(4.76%)	(1.60%)	(0.07%)	1.57%	2.66% ^(6/88)
NCREIF ODCE Index (Qtr lag)	5.80%	6.69%	5.78%	6.23%	5.57% ^(6/88)
Value Add/Oppportunistic Funds	5.36%	7.38%	5.90%	6.85%	7.26% ^(3/84)
NCREIF ODCE Index (Qtr lag)	5.80%	6.69%	5.78%	6.23%	5.82% ^(3/84)
REITS	6.26%	10.25%	8.35%	9.39%	9.51% ^(4/96)
FTSE NAREIT US Index	6.71%	12.08%	8.06%	9.24%	9.72% ^(4/96)

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(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: 3Q24

STAR Report (clients-only)



Private Equity Fees and Terms Study



2Q24 Market Intelligence Report (clients-only)



Coming Soon: ESG Survey



Recent Blog Posts

Navigating U.S. Equity Concentration: A Look at Global Stocks

Fanglue Zhou

Nonprofits: Same Mission, but New Approach to Allocations

Tony Lissuzzo

The Supermicro Conundrum: When Success Hurts Managers

Nicole Wubbena

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

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-led 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!

Please visit our website at callan.com/events-education as we add dates to our 2025 calendar!



Mark Your Calendar

2025 Regional Workshops

June 3, 2025 – Denver

June 5, 2025 – New York

October 28, 2025 – Chicago

October 30, 2025 – San Francisco

Watch your email for further details and an invitation.

Upcoming Webinars

November 21, 2024

Research Café featuring Callan's 2024 Private Equity Fees and Terms Study

January 2025

Callan's 2025 Capital Markets Assumptions Webinar

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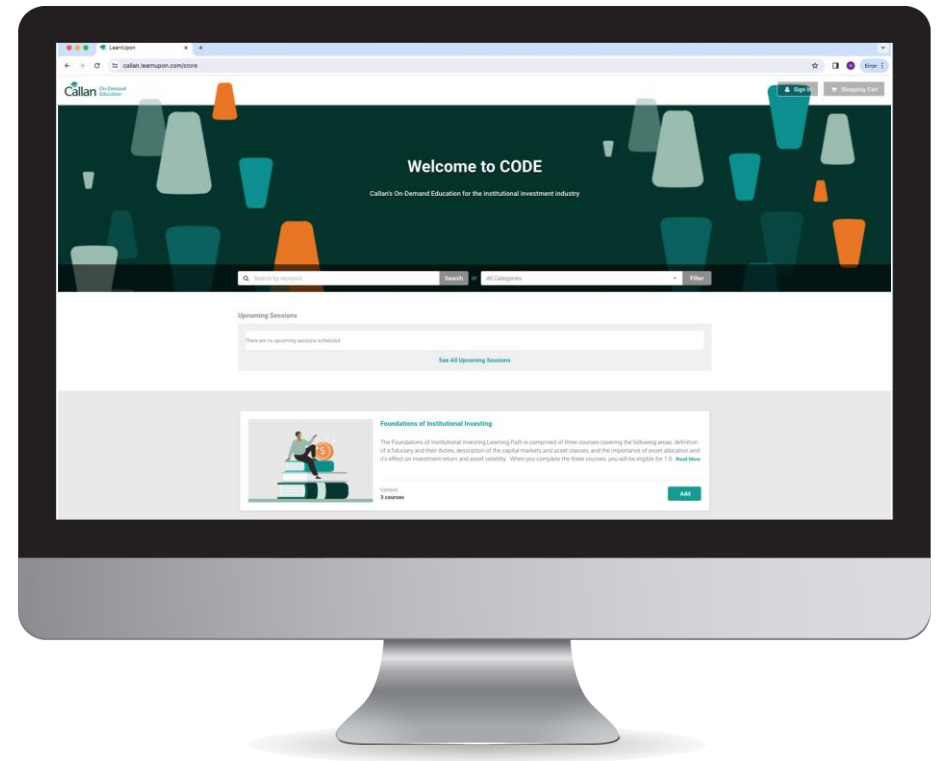


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