

November 13, 2023



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

Third Quarter 2023

Executive Summary

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Market Environment

Equity Markets Down in 3Q, Following Rebound in First Half of 2023

Stocks and bonds still have ground to make up after declines in 2022

- ▶ S&P 500 down 3.3% in 3Q23.
 - Loss through first three quarters of 2022 was 23.9%; rebound in the following three quarters reduced the loss to 2.9% by June, but decline in 3Q shows S&P is still over 7% below 1/2022 high-water mark
- ▶ Fixed income recovered in first half of 2023 as high inflation began to ease; speculation about interest rate cuts evaporated in 2Q
 - Bloomberg Aggregate: up 3% in 1Q, but declined 0.8% in 2Q and another 3.2% in 3Q as Fed continued to raise rates
 - CPI-U: +3.7% year-over year for 3Q, and still up 5.8% since the start of 2022
- ▶ Economic data defied expectations of recession in 2023; GDP growth came in at 2.1% in 1Q and 2.2% in 2Q, and surged to a stunning 4.9% in 3Q
 - Job market remains solid, providing support to Fed efforts to fight inflation

Returns for Periods ended 9/30/23

	Quarter	YTD	Since 1/2022	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	-3.25	12.39	-5.36	9.14	11.28	8.09
S&P 500	-3.27	13.07	-4.30	9.92	11.91	7.92
Russell 2000	-5.13	2.54	-10.98	2.40	6.65	8.00
Global ex-U.S. Equity						
MSCI World ex USA	-4.10	6.73	-4.97	3.44	3.84	4.98
MSCI Emerging Markets	-2.93	1.82	-11.12	0.56	2.07	--
MSCI ACWI ex USA Small Cap	-1.70	5.03	-9.45	2.58	4.35	7.41
Fixed Income						
Bloomberg Aggregate	-3.23	-1.21	-8.29	0.10	1.13	3.59
90-day T-Bill	1.31	3.60	2.89	1.72	1.11	1.89
Bloomberg Long Gov/Credit	-9.37	-5.40	-19.12	-1.21	1.94	4.67
Bloomberg Global Agg ex-US	-4.00	-3.20	-12.79	-3.10	-1.73	2.04
Real Estate						
NCREIF Property	-1.98	-5.66	-0.26	5.13	7.33	8.29
FTSE Nareit Equity	-7.13	-2.14	-15.80	2.77	5.96	8.49
Alternatives						
CS Hedge Fund Index	1.81	3.71	2.72	4.77	4.08	5.96
Cambridge Private Equity*	1.59	3.71	0.39	15.37	14.91	13.67
Bloomberg Commodity	4.71	-3.44	6.74	6.13	-0.75	2.45
Gold Spot Price	-3.28	2.18	1.17	9.30	3.47	7.60
Inflation - CPI-U	0.88	3.70	5.81	4.04	2.77	2.56

*Cambridge PE data as of 2Q23

Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

Diversification Remains Key Risk Control

Periodic Table of Investment Returns

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	3 Qtrs. 2023
Emerging Markets	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
25.55%	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%	13.07%
Non-U.S. Equity	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
20.38%	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%	6.73%
Small Cap	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	High Yield
18.33%	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%	5.86%
Non-U.S. Fixed	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	Hedge Funds
12.54%	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%	3.71%
Real Estate Funds	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	Cash Equivalent
12.00%	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%	3.60%
High Yield	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	Small Cap
11.13%	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%	2.54%
Large Cap	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	Emerging Markets
10.88%	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%	1.82%
Hedge Funds	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
9.64%	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%	-1.21%
U.S. Fixed	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	Non-U.S. Fixed
4.34%	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%	-3.20%
Cash Equivalent	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
1.33%	-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%	-8.14%

- 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

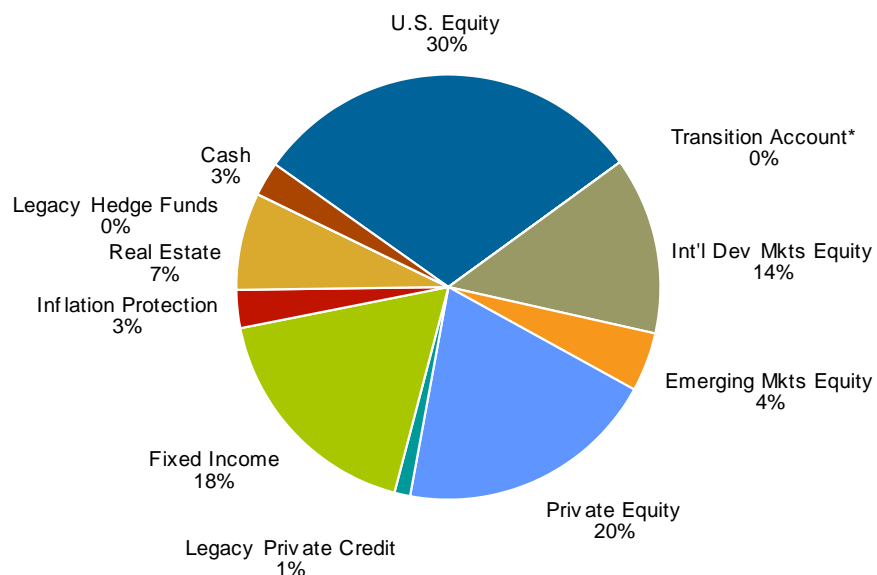
Callan

**PA SERS Defined Benefit Plan
Performance Review**

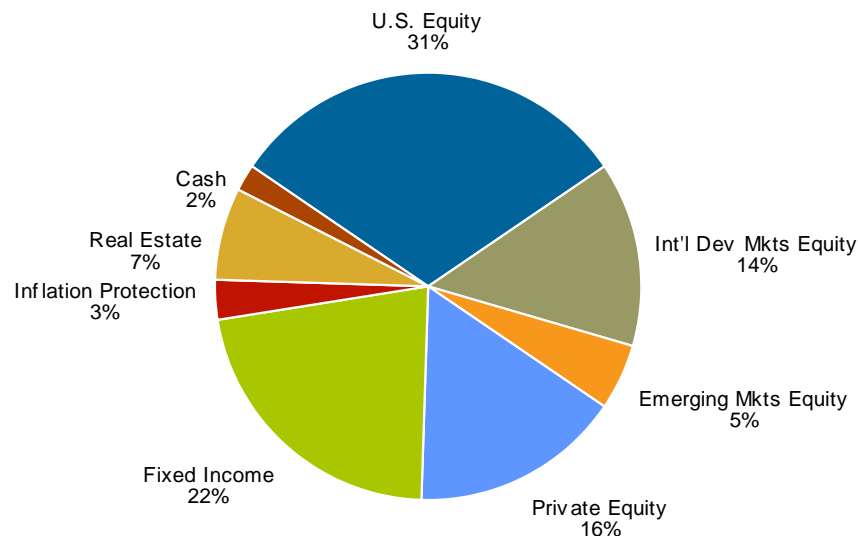
Total Fund

Actual Asset Allocation versus Target as of September 30, 2023

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	10,396,188	30.2%	31.0%	(0.8%)	(270,341)
Transition Account*	988	0.0%	0.0%	0.0%	988
Int'l Dev Mkts Equity	4,656,489	13.5%	14.0%	(0.5%)	(160,654)
Emerging Mkts Equity	1,531,820	4.5%	5.0%	(0.5%)	(188,588)
Private Equity	6,856,175	19.9%	16.0%	3.9%	1,350,870
Legacy Private Credit	397,212	1.2%	0.0%	1.2%	397,212
Fixed Income	6,134,570	17.8%	22.0%	(4.2%)	(1,435,225)
Inflation Protection	995,629	2.9%	3.0%	(0.1%)	(36,616)
Real Estate	2,543,394	7.4%	7.0%	0.4%	134,823
Legacy Hedge Funds	16,557	0.0%	0.0%	0.0%	16,557
Cash	879,137	2.6%	2.0%	0.6%	190,973
Total	34,408,158	100.0%	100.0%		

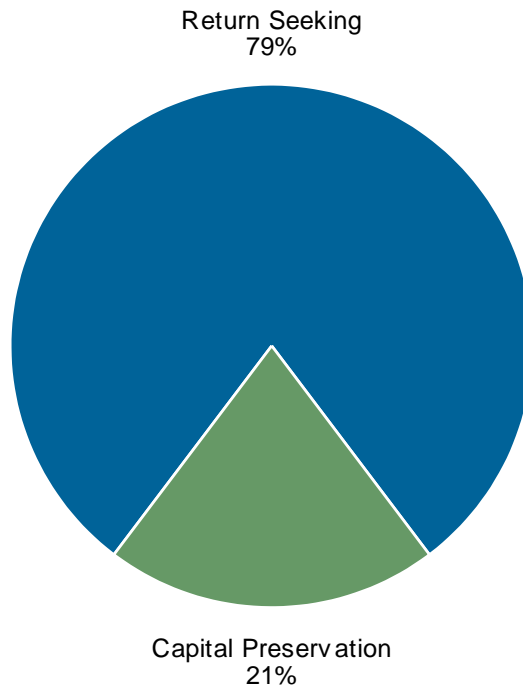
*Market values are shown net of accrued fees.

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

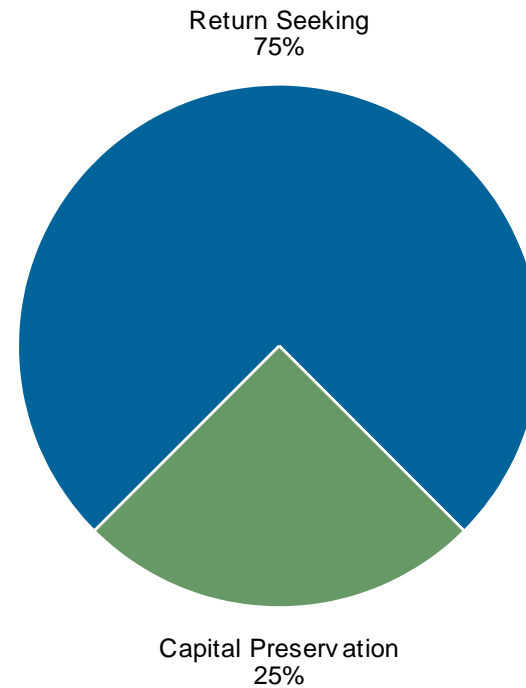
Return Seeking and Capital Preservation Assets

As of September 30, 2023

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)	Fixed Income [^]	U.S. Equity	Developed International Equity	Emerging Markets Equity	Real Estate	Private Equity
Policy Target Asset Allocation	2%	3%	22%	31%	14%	5%	7%	16%
Projected Return* (Geometric)	2.75%	4.00%	4.25%	7.35%	7.25%	7.45%	7.30%	8.50%
Projected Risk* (Standard Deviation)	0.90%	5.30%	4.10%	18.05%	20.15%	25.70%	16.35%	27.60%
Liquidity	High	High	High	High	High	Medium	Low	Low
Correlation to U.S. Equity*	-0.06	-0.07	0.02	1.00	0.73	0.79	0.44	0.79
Months of Benefit Payments**	2.8	3.1	16.2					
Months of Benefit Payments (Includes EE & ER Contributions)**	9.6	10.8	55.9					
Cumulative Months of Benefit Payments (Includes EE & ER Contributions)**		76.3						

*Callan 2023 Capital Market Projections

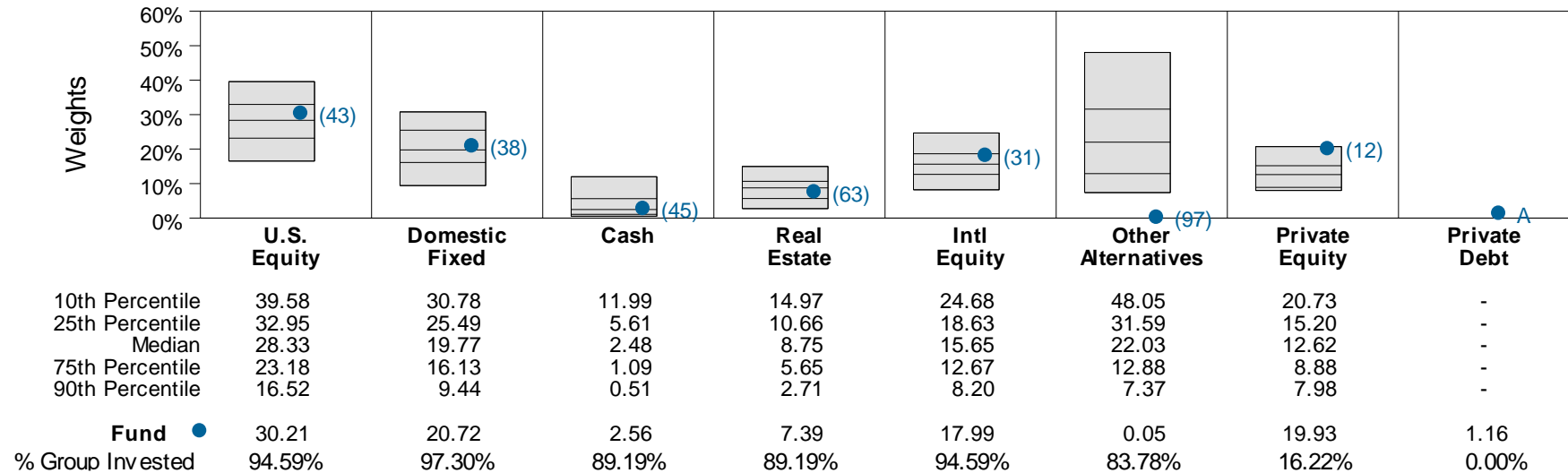
**Provided by SERS IO as of 9/30/2023. Benefit payment calculations for fixed income represent core fixed income , TIPS, treasury and cash allocations.

[^]Core and Opportunistic fixed Income combined; modeled as core fixed income

Total Fund

Actual Asset Allocation versus Very Large Public DB Plan (>\$10B) Peers as of June 30, 2023

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



* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 September 30, 2023

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, 2023

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	31%	31%	(3.45%)	(3.25%)	(0.06%)	0.01%	(0.05%)
Int'l Dev. Mkts Equity	14%	14%	(4.27%)	(4.02%)	(0.04%)	0.00%	(0.03%)
Emerging Markets	5%	5%	(4.11%)	(2.12%)	(0.09%)	(0.01%)	(0.10%)
Private Equity	19%	16%	2.22%	2.22%	0.00%	0.15%	0.15%
Legacy Private Credit	1%	0%	2.96%	2.96%	0.00%	0.06%	0.06%
Fixed Income	18%	22%	(2.93%)	(3.23%)	0.05%	0.04%	0.09%
Inflation Protection	3%	3%	(2.92%)	(2.60%)	(0.01%)	0.00%	(0.01%)
Real Estate	7%	7%	(4.25%)	(3.05%)	(0.09%)	(0.01%)	(0.10%)
Legacy Hedge Funds	0%	0%	(7.79%)	(7.79%)	0.00%	(0.00%)	(0.00%)
Cash	2%	2%	1.33%	1.31%	(0.00%)	0.03%	0.03%
Total			(2.22%)	(2.27%)	(0.23%)	0.28%	0.05%

• What helped relative attribution?

- An overweight to Private Equity and Legacy Private Credit helped performance (attribution based on target return)
- An underweight to Fixed Income helped performance (attribution based on target return)
- Outperformance relative to target from Fixed Income managers

• What hurt relative attribution?

- Underperformance relative to target from Real Estate and Emerging Markets Equity managers
- Underperformance relative to target from non-U.S. Developed Markets and U.S. Equity managers hurt performance (small cap underperformed large cap)

* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 September 30, 2023

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	31%	31%	19.95%	20.46%	(0.14%)	(0.11%)	(0.25%)
Int'l Dev. Mkts Equity	13%	14%	24.63%	23.03%	0.19%	(0.27%)	(0.07%)
Emerging Markets	4%	5%	12.78%	13.21%	(0.03%)	(0.10%)	(0.13%)
Private Equity	19%	16%	5.59%	5.59%	0.00%	(0.22%)	(0.22%)
Legacy Private Credit	1%	0%	9.07%	9.07%	0.00%	(0.02%)	(0.02%)
Fixed Income	18%	22%	0.91%	0.64%	0.04%	0.28%	0.32%
Inflation Protection	3%	3%	1.14%	1.25%	(0.00%)	(0.00%)	(0.00%)
Real Estate	8%	7%	(8.52%)	(10.51%)	0.21%	(0.35%)	(0.14%)
Legacy Hedge Funds	0%	0%	(7.63%)	(7.63%)	0.00%	(0.01%)	(0.01%)
Cash	2%	2%	4.70%	4.47%	0.00%	0.07%	0.08%

Total	10.09% = 10.54% + 0.27% + (0.72%)	(0.45%)
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- **What helped relative attribution?**
 - Outperformance relative to target from Real Estate and non-U.S. Developed Markets Equity managers
 - An underweight as compared to target to Fixed Income helped performance (attribution based on target return)
 - Outperformance relative to target from Fixed Income managers
- **What hurt relative attribution?**
 - An overweight as compared to target to Real Estate and Private Equity hurt performance (attribution based on target return)
 - An underweight as compared to target to non-U.S. Developed Markets Equity, Emerging Markets Equity and U.S. Equity hurt performance (attribution based on target return)
 - Underperformance relative to target from U.S. Equity managers

* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 September 30, 2023

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	29%	29%	9.66%	9.38%	0.06%	(0.10%)	(0.04%)
Int'l Dev. Mkts Equity	13%	14%	6.70%	5.45%	0.16%	(0.01%)	0.15%
Emerging Markets	4%	5%	(1.76%)	(0.29%)	(0.06%)	0.08%	0.02%
Private Equity**	17%	14%	20.37%	20.37%	0.00%	0.23%	0.23%
Legacy Private Credit**	3%	2%	13.60%	13.60%	0.00%	(0.04%)	(0.04%)
Fixed Income	22%	23%	(4.00%)	(5.21%)	0.32%	(0.00%)	0.32%
Inflation Protection	3%	3%	(2.68%)	(1.98%)	(0.02%)	(0.00%)	(0.02%)
Real Estate	8%	7%	5.33%	7.57%	(0.19%)	(0.01%)	(0.19%)
Legacy Hedge Funds	0%	0%	0.52%	(0.38%)	0.00%	(0.00%)	(0.00%)
Cash	2%	2%	1.81%	1.70%	0.00%	0.04%	0.04%
Total			6.02%	5.56%	+ 0.27%	+ 0.19%	0.46%

• What helped relative attribution?

- Outperformance relative to target from Fixed Income, non-U.S. Developed Markets Equity, and U.S. 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 Emerging Markets Equity helped performance (attribution based on target return)

• What hurt relative attribution?

- An 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 hurt performance (attribution based on target return)
- Underperformance relative to target from Real Estate and Emerging Markets Equity managers

* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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.

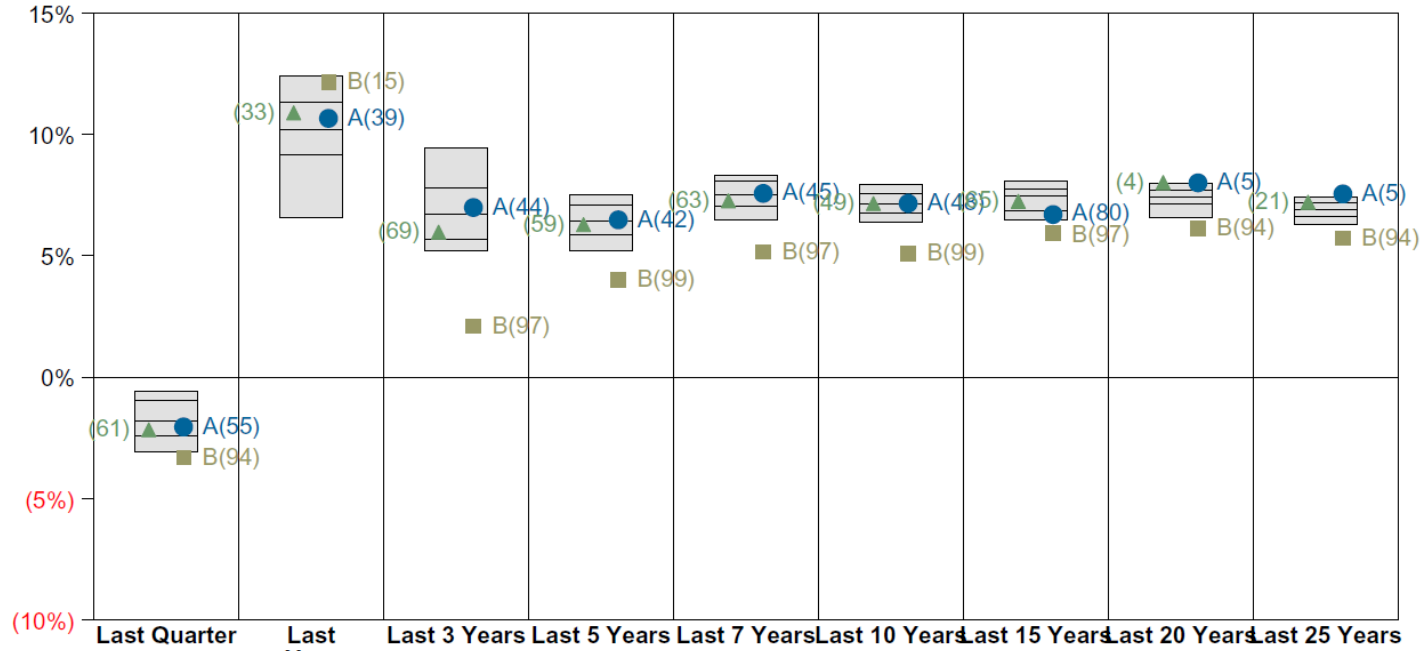
**For this analysis, PE and PC are benchmarked to the SERS' PE and PC program returns, respectively.

Returns are shown net of fees.

Total Fund

Gross of Fee Performance versus Very Large Public DB Plan (>\$10B) Peers and Benchmark as of September 30, 2023

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



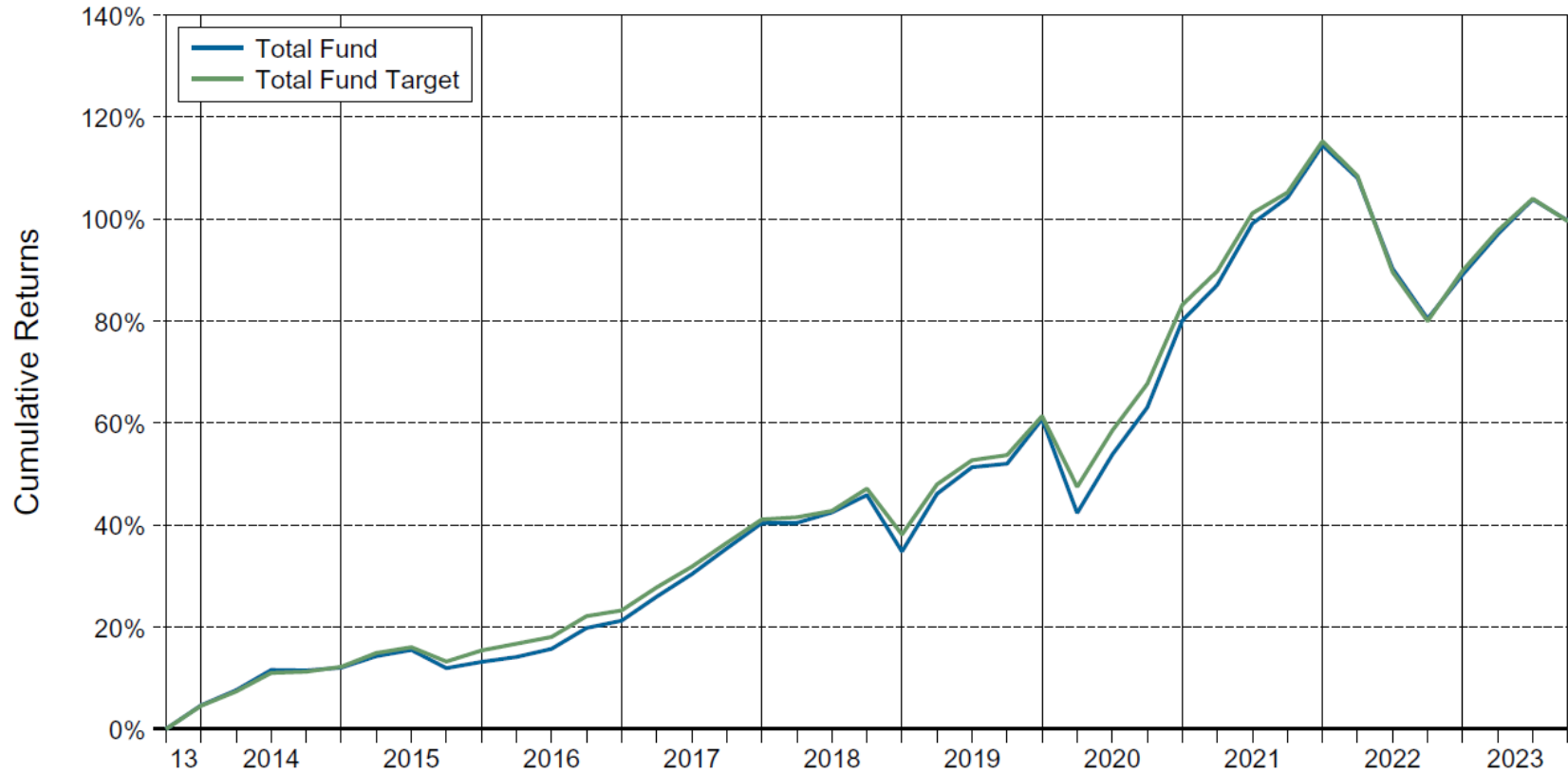
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years
10th Percentile	(0.56)	12.41	9.43	7.50	8.32	7.92	8.07	7.96	7.39
25th Percentile	(0.97)	11.33	7.78	7.10	8.09	7.58	7.76	7.70	7.17
Median	(1.79)	10.18	6.73	6.41	7.49	7.15	7.47	7.44	6.88
75th Percentile	(2.44)	9.15	5.70	5.85	7.03	6.76	6.87	7.15	6.61
90th Percentile	(3.06)	6.56	5.22	5.20	6.47	6.36	6.47	6.59	6.29
Total Fund	● A (2.05)	10.66	6.99	6.48	7.57	7.16	6.70	8.00	7.55
60% MSCI ACW IMI/40% Blmbg U.S. Agg	■ B (3.31)	12.14	2.11	4.01	5.15	5.08	5.94	6.12	5.73
Total Fund Custom Benchmark	▲ (2.17)	10.89	5.97	6.29	7.27	7.15	7.24	8.02	7.21

* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 September 30, 2023

Cumulative Returns Actual vs Target

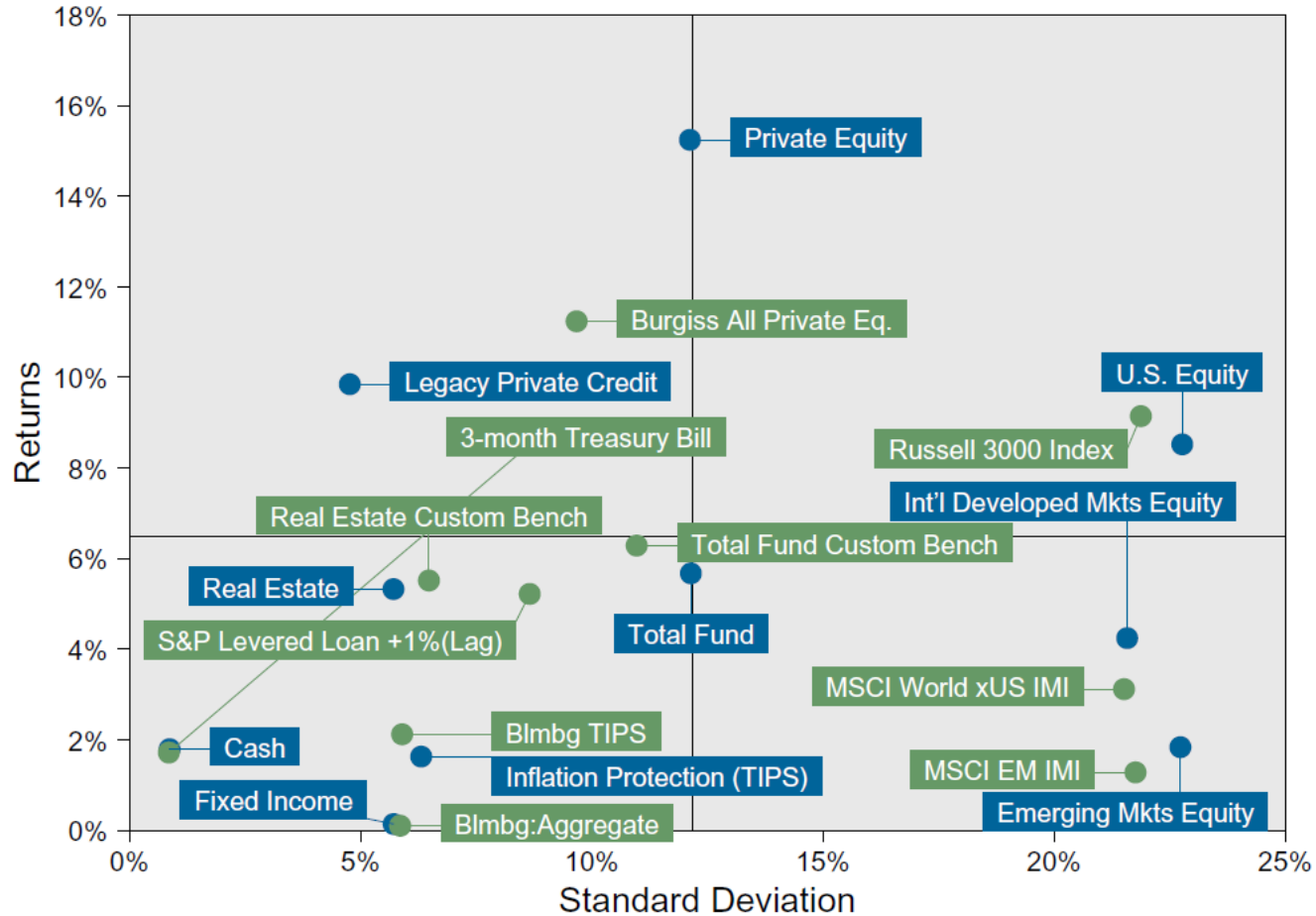


* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Asset Class Risk and Return as of September 30, 2023

Five Year Annualized Risk vs Return
Asset Classes vs Benchmark Indices

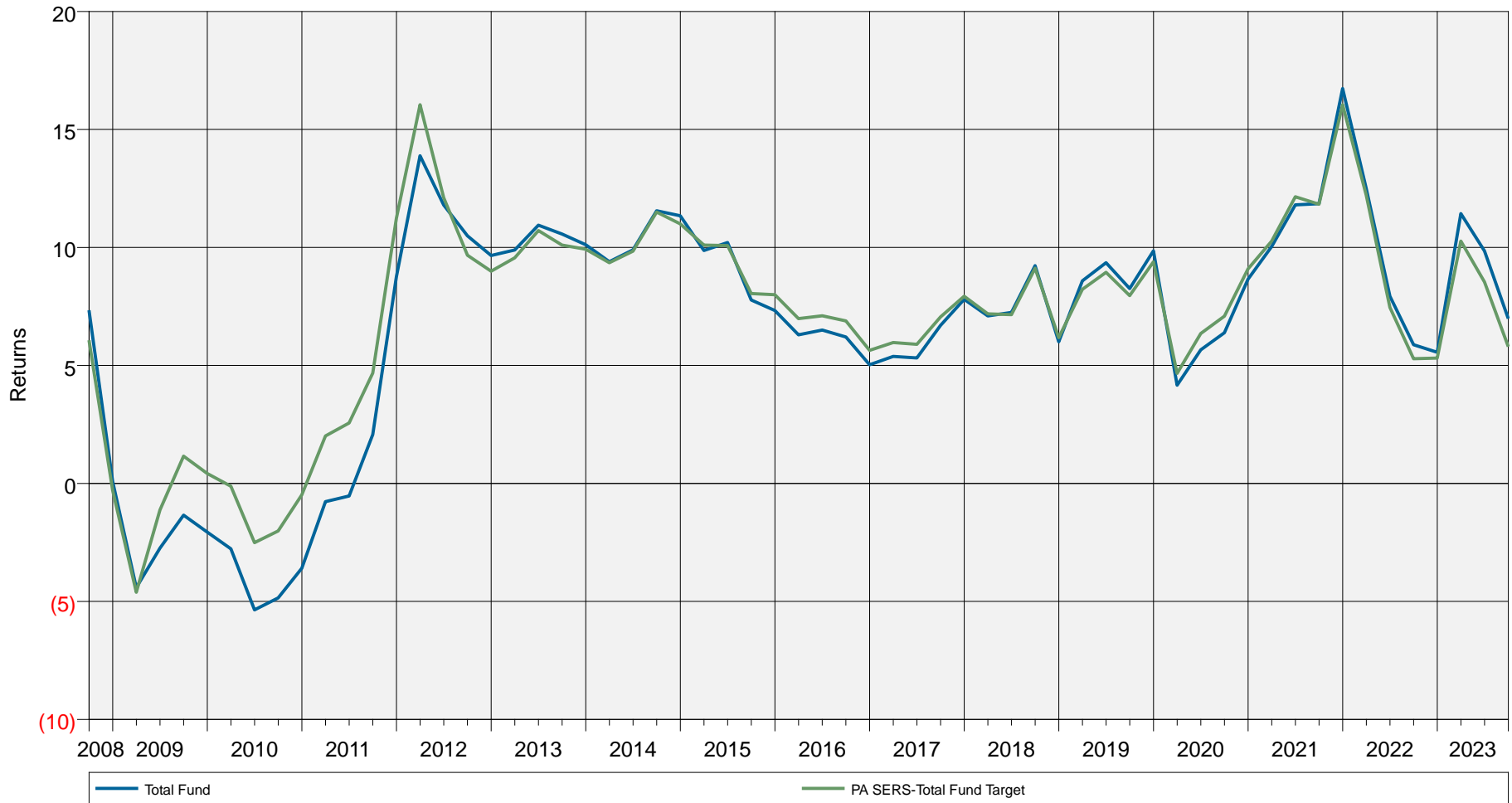


* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Rolling 3-year Gross of Fee Performance versus Benchmark as of September 30, 2023

Rolling 12 Quarter Gross of Fee Returns
for 15 Years Ended September 30, 2023

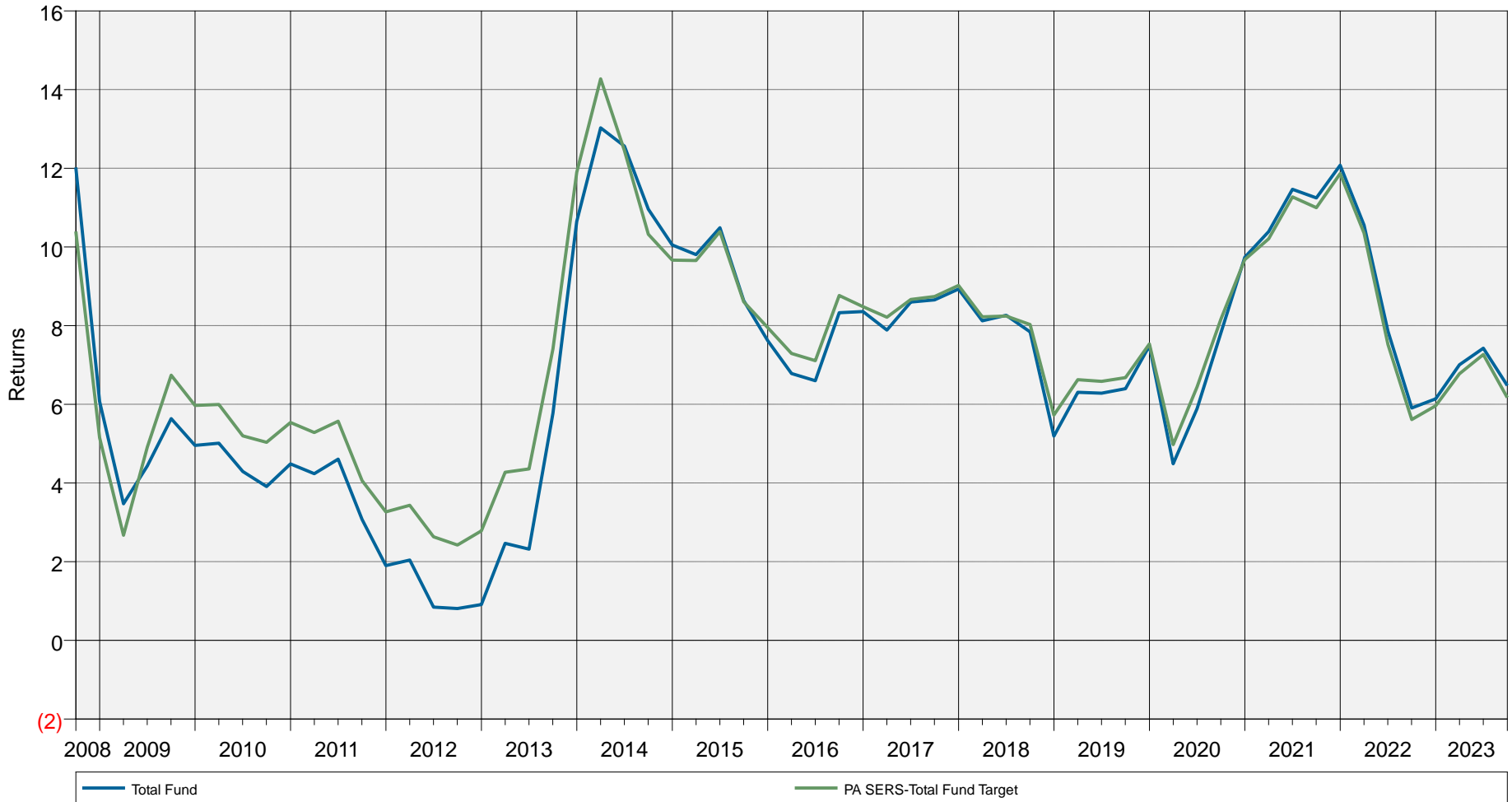


* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

Total Fund

Rolling 5-year Gross of Fee Performance versus Benchmark as of September 30, 2023

Rolling 20 Quarter Gross of Fee Returns
for 15 Years Ended September 30, 2023



* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 September 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance							
Total Fund	\$34,408	100.00%	(2.22%)	5.10%	10.09%	6.02%	5.67%
Total Fund Custom Benchmark(1)	-	-	(2.17%)	5.09%	10.89%	5.97%	6.29%
Public Market Equiv Benchmark(2)	-	-	(1.06%)	9.42%	14.75%	5.16%	5.99%
60/40 Index(3)	-	-	(3.31%)	5.12%	12.14%	2.11%	4.01%
U.S. Equity	\$10,396	30.21%	(3.45%)	11.88%	19.95%	9.66%	8.52%
Russell 3000 Index (4)	-	-	(3.25%)	12.39%	20.46%	9.38%	9.14%
S&P 1500 Index	-	-	(3.36%)	12.24%	20.98%	10.31%	9.50%
Int'l Developed Mkts Equity	\$4,656	13.53%	(4.27%)	7.58%	24.63%	6.70%	4.24%
MSCI World ex US IMI	-	-	(4.02%)	6.02%	23.03%	5.45%	3.12%
Emerging Mkts Equity	\$1,532	4.45%	(4.11%)	2.69%	12.78%	(1.76%)	1.84%
MSCI EM IMI	-	-	(2.12%)	3.38%	13.21%	(0.29%)	1.28%
Private Equity	\$6,856	19.93%	2.22%	5.94%	5.59%	20.37%	15.24%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.03%	(1.64%)	13.70%	11.24%
Global Equity + 3% (Qtr lag)(5)	-	-	7.70%	28.20%	22.48%	16.43%	14.00%
Legacy Private Credit Funds (6)	\$397	1.15%	2.96%	7.63%	9.07%	13.60%	9.85%
S&P Levered Loan Index + 1% (Qtr lag)	-	-	3.38%	10.13%	11.90%	7.38%	5.22%
Fixed Income	\$6,135	17.83%	(2.93%)	(0.54%)	0.91%	(4.00%)	0.14%
Blmbg U.S. Agg Bond Index	-	-	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
Inflation Protection (TIPS)	\$996	2.89%	(2.92%)	(1.02%)	1.14%	(2.68%)	1.63%
Blmbg U.S. TIPS Index	-	-	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
Real Estate	\$2,543	7.39%	(4.25%)	(9.79%)	(8.52%)	5.33%	5.33%
Real Estate Custom Bench (Qtr lag)(7)	-	-	(3.05%)	(11.20%)	(10.51%)	7.57%	5.52%
CPI + 3% (Qtr lag)	-	-	1.80%	5.02%	5.97%	8.78%	6.90%
Cash	\$879	2.56%	1.33%	3.72%	4.70%	1.81%	1.79%
3-month Treasury Bill	-	-	1.31%	3.60%	4.47%	1.70%	1.72%

* 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 = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 75 for full benchmark history.

(2) The current public equivalent benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 31% 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 75 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 September 30, 2023

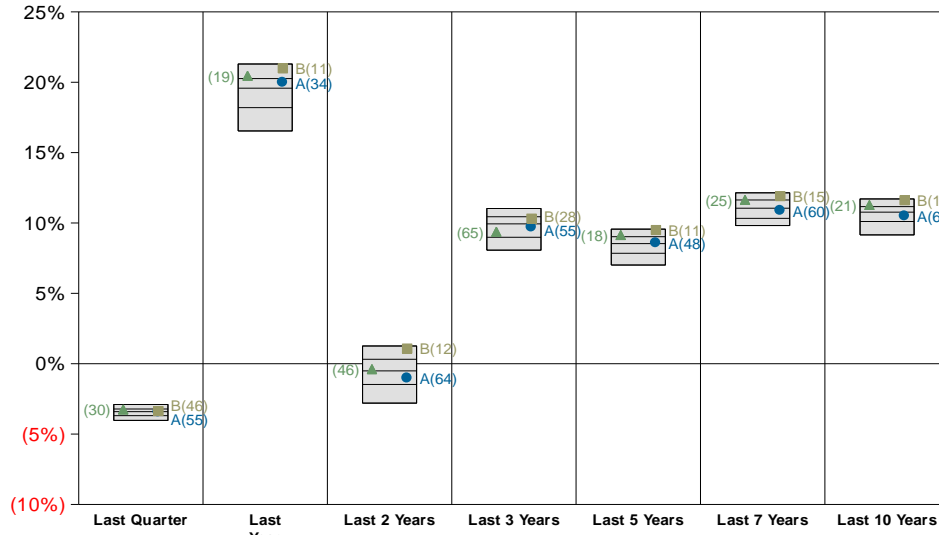
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
Net Performance						
Total Fund	6.43%	5.93%	7.18%	6.77%	9.15%	(1/81) * All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.
Total Fund Custom Benchmark(1)	7.15%	7.24%	8.02%	7.21%	-	
Public Market Equiv Benchmark(2)	7.15%	7.34%	8.09%	7.27%	-	
60/40 Index(3)	5.08%	5.94%	6.12%	5.73%	-	(1)The current total fund benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% 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 75 for full benchmark history.
U.S. Equity	10.38%	9.83%	9.01%	7.78%	10.55%	(1/81)
Russell 3000 Index (4)	11.28%	11.05%	9.68%	8.09%	10.86%	(1/81)
S&P 1500 Index	11.61%	11.18%	9.77%	8.17%	-	
Int'l Developed Mkts Equity	4.63%	5.23%	6.29%	-	5.93%	(1/02)
MSCI World ex US IMI	3.87%	4.79%	6.14%	5.23%	5.84%	(1/02)
Emerging Mkts Equity	2.85%	2.87%	5.47%	-	6.11%	(1/02)
MSCI EM IMI	2.39%	4.17%	7.55%	7.57%	7.94%	(1/02)
Private Equity	12.98%	10.56%	12.83%	11.96%	11.53%	(1/86)
Burgiss Private Equity Index (Qtr lag)	12.45%	10.24%	13.10%	12.31%	16.37%	(1/86)
Global Equity + 3% (Qtr lag)(5)	15.23%	13.86%	13.28%	11.07%	14.53%	(1/86)
Legacy Private Credit Funds (6)	-	-	-	-	10.21%	(4/18)
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	5.23%	(4/18)
Fixed Income	1.29%	3.57%	3.82%	4.26%	7.41%	(1/81)
Blimbg U.S. Agg Bond Index	1.13%	2.53%	2.85%	3.59%	6.70%	(1/81)
Inflation Protection (TIPS)	1.54%	2.13%	2.62%	-	2.69%	(2/03)
Blimbg U.S. TIPS Index	1.74%	2.92%	3.47%	4.58%	3.64%	(2/03)
Real Estate	5.29%	2.70%	5.96%	6.65%	7.95%	(3/84)
Real Estate Custom Bench (Qtr lag)(7)	7.56%	4.94%	7.17%	7.39%	-	
CPI + 3% (Qtr lag)	5.71%	5.24%	5.57%	5.54%	5.83%	(3/84)
Cash	1.37%	1.06%	1.67%	2.21%	3.42%	(1/87)
3-month Treasury Bill	1.11%	0.80%	1.41%	1.89%	3.16%	(1/87)

Callan

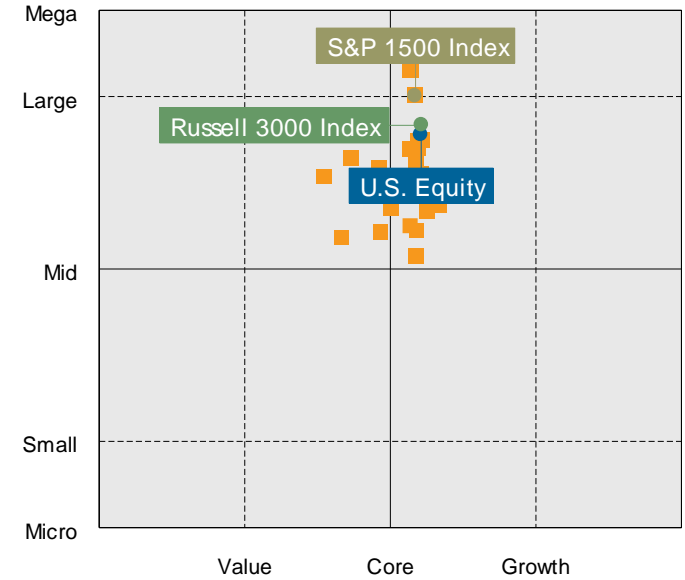
**Appendix I – Asset Class and Manager
Performance**

U.S. Equity as of September 30, 2023

Performance vs Public Fund - Domestic Equity (Gross)

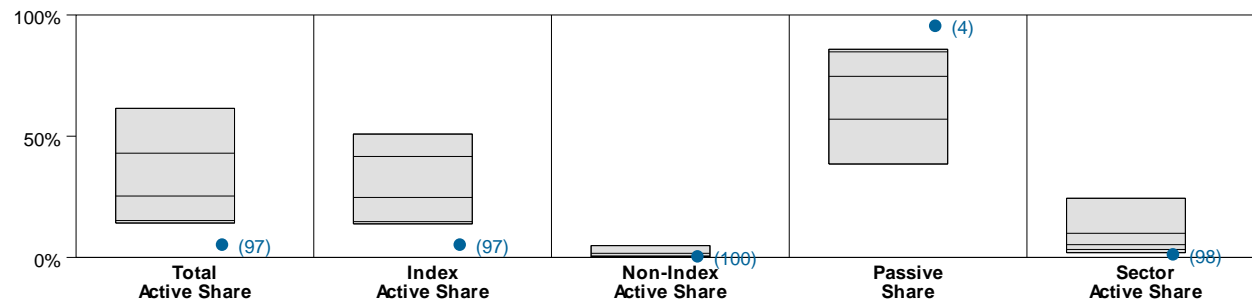


Style Map vs Pub Pln- Dom Equity Holdings as of September 30, 2023



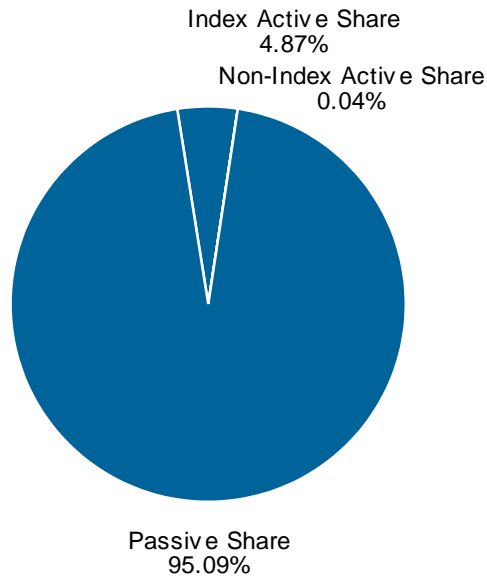
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(2.90)	21.29	1.26	11.03	9.57	12.14	11.71
25th Percentile	(3.22)	20.26	0.31	10.44	9.02	11.63	11.16
Median	(3.41)	19.58	(0.51)	9.94	8.53	11.05	10.77
75th Percentile	(3.69)	18.20	(1.47)	8.98	7.84	10.32	10.11
90th Percentile	(4.03)	16.54	(2.80)	8.07	7.02	9.82	9.15
U.S. Equity ● A	(3.44)	19.98	(1.04)	9.69	8.58	10.87	10.48
S&P 1500 Index ■ B	(3.36)	20.98	1.08	10.31	9.50	11.90	11.61
Russell 3000 Index ▲	(3.25)	20.46	(0.39)	9.38	9.14	11.64	11.28

Active Share vs. Pub Pln- Dom Equity

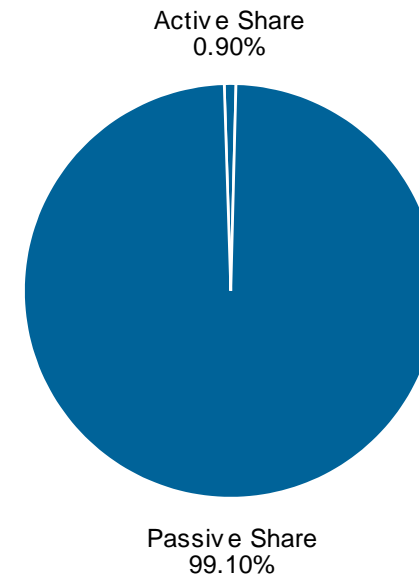


U.S. Equity as of September 30, 2023

Holdings-Level Active Share



Sector Exposure Active Share



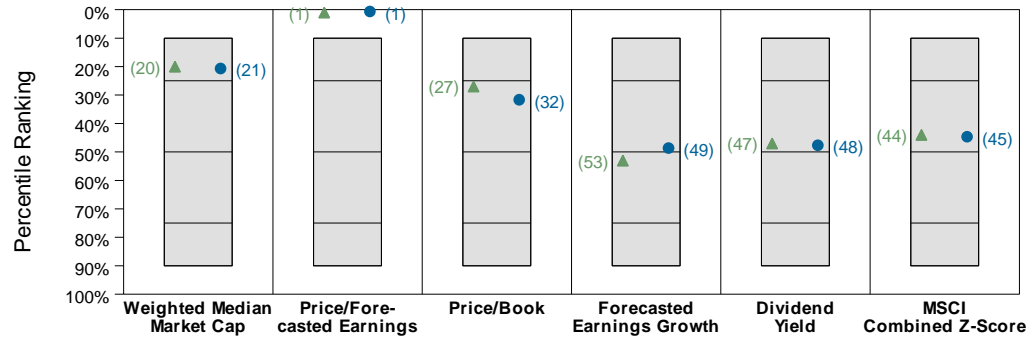
Total Active Share: 4.91%

	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	1.00%	0.00%	1.00%	8.22%	7.89%	0.22%
Consumer Discretionary	4.34%	0.09%	4.44%	10.68%	10.71%	0.50%
Consumer Staples	3.68%	0.00%	3.68%	6.06%	5.98%	0.26%
Energy	7.94%	0.00%	7.94%	4.91%	5.02%	0.31%
Financials	5.58%	0.06%	5.64%	13.40%	13.51%	0.68%
Health Care	7.29%	0.05%	7.34%	13.37%	13.59%	0.86%
Industrials	7.99%	0.08%	8.07%	9.80%	10.04%	0.69%
Information Technology	2.49%	0.00%	2.49%	25.67%	25.21%	0.94%
Materials	7.12%	0.00%	7.12%	2.72%	2.78%	0.18%
Miscellaneous	0.00%	100.00%	100.00%	-	0.01%	0.00%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.01%	0.00%
Real Estate	7.26%	0.00%	7.26%	2.83%	2.96%	0.17%
Utilities	2.95%	0.00%	2.95%	2.33%	2.31%	0.08%
Total	4.87%	0.04%	4.91%	100.00%	100.00%	4.91%

U.S. Equity

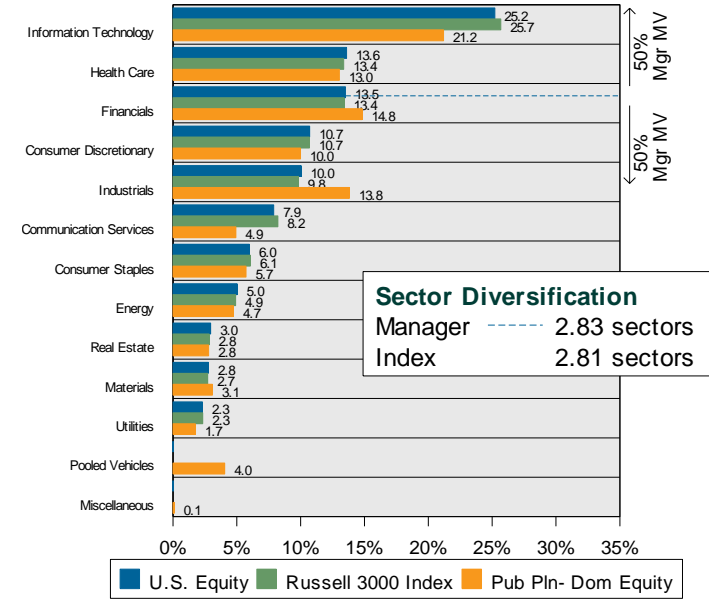
As of September 30, 2023

Portfolio Characteristics Percentile Rankings
Rankings Against Public Fund - Domestic Equity
as of September 30, 2023

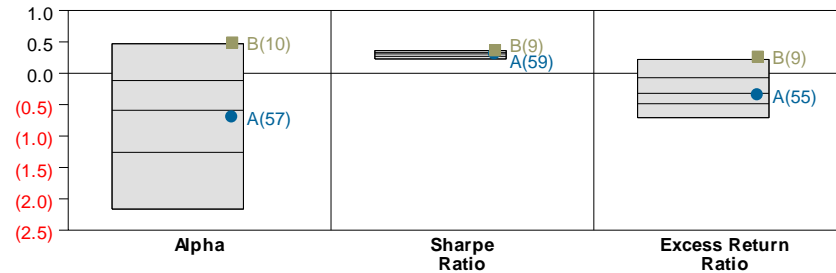


Percentile Ranking	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th	187.83	18.02	3.69	13.85	1.76	0.09
25th	109.92	17.96	3.38	13.46	1.60	0.02
Median	85.16	17.14	3.02	12.87	1.53	(0.01)
75th	59.26	16.17	2.74	12.25	1.42	(0.07)
90th	40.79	15.02	2.42	11.59	1.33	(0.35)
U.S. Equity	114.88	18.26	3.22	12.90	1.55	0.00
Russell 3000 Index	122.22	18.18	3.36	12.71	1.56	0.01

Sector Allocation September 30, 2023



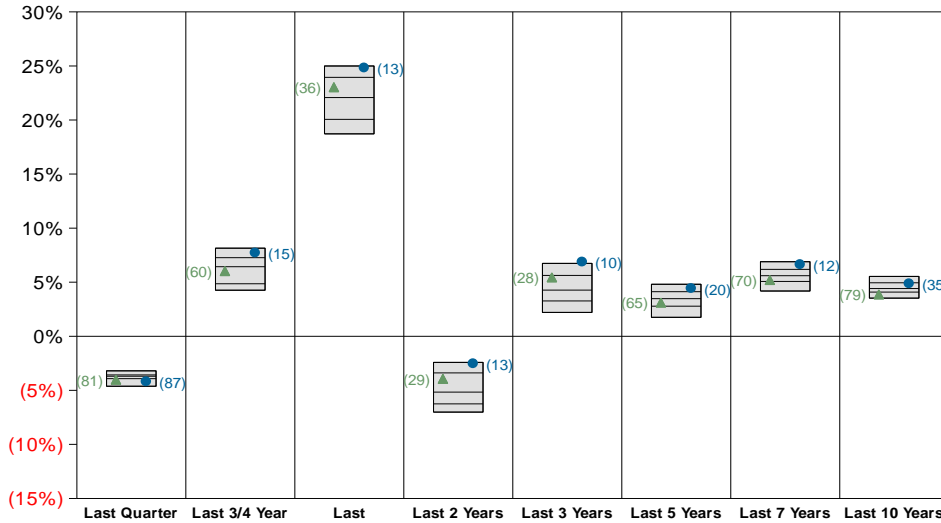
Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended September 30, 2023



Percentile	Alpha	Sharpe Ratio	Excess Return Ratio
10th	0.47	0.36	0.22
25th	(0.12)	0.33	(0.07)
Median	(0.59)	0.31	(0.32)
75th	(1.26)	0.27	(0.49)
90th	(2.16)	0.23	(0.71)
U.S. Equity	(0.70)	0.30	(0.35)
S&P 1500 Index	0.49	0.37	0.27

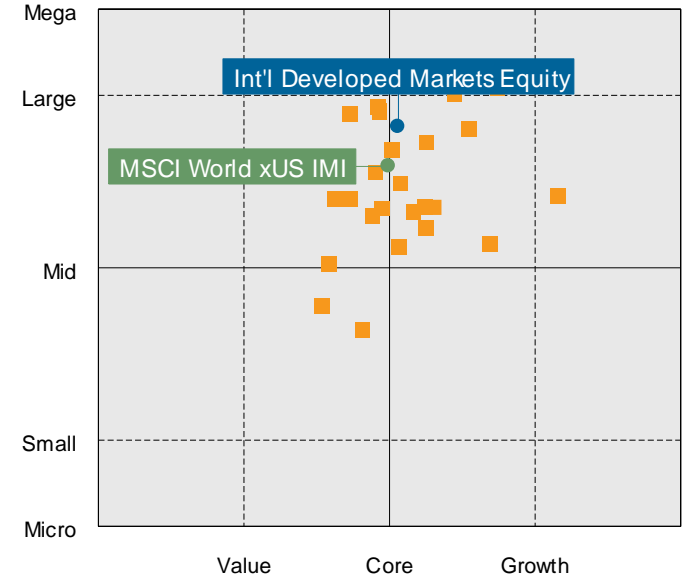
International Equity as of September 30, 2023

Performance vs Public Fund - International Equity (Gross)

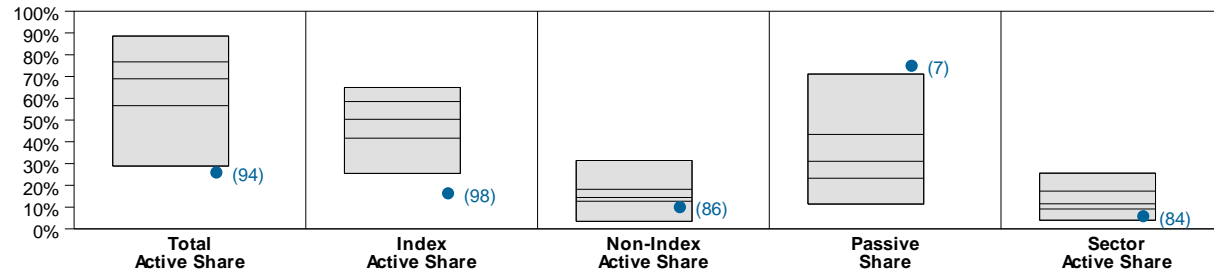


	Last Quarter	Last 3/4 Year	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(3.20)	8.15	24.99	(2.42)	6.74	4.81	6.90	5.54
25th Percentile	(3.57)	7.26	23.95	(3.39)	5.63	4.13	6.18	4.94
Median	(3.70)	6.43	22.07	(5.17)	4.27	3.48	5.60	4.42
75th Percentile	(3.92)	4.86	20.06	(6.25)	3.27	2.79	5.07	4.09
90th Percentile	(4.62)	4.26	18.72	(7.02)	2.20	1.75	4.18	3.52
Int'l Developed Markets Equity ●	(4.24)	7.67	24.78	(2.57)	6.83	4.38	6.60	4.82
MSCI World xUS IMI ▲	(4.02)	6.02	23.03	(3.93)	5.45	3.12	5.20	3.87

Style Map vs Pub Pln- Intl Equity Holdings as of September 30, 2023



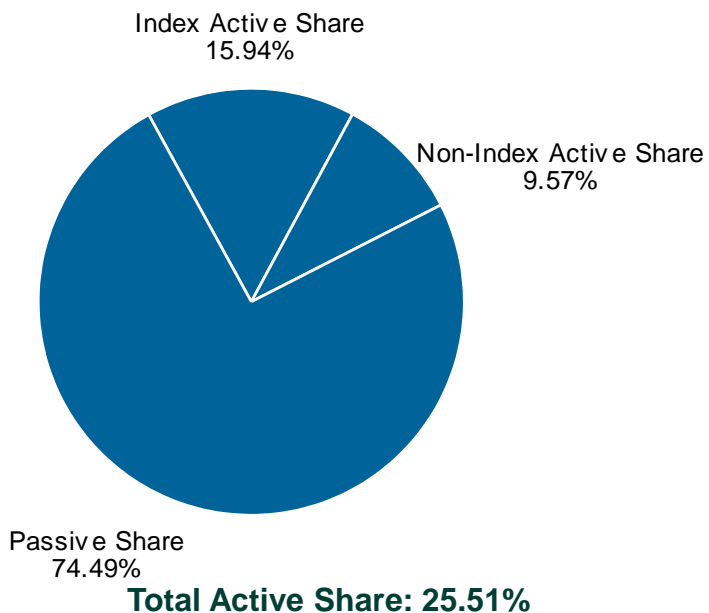
Active Share vs. Pub Pln- Intl Equity



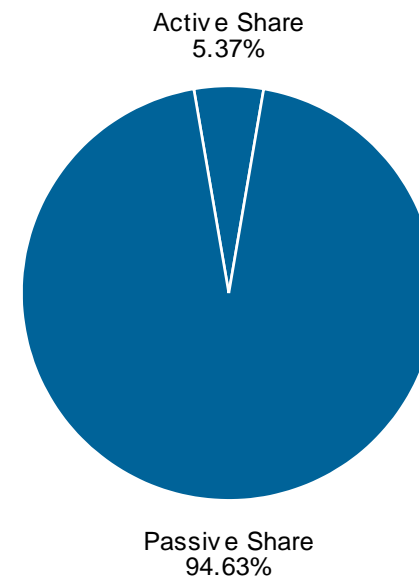
	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	88.60	64.94	31.43	71.13	25.63
25th Percentile	76.69	58.50	18.19	43.42	17.37
Median	68.95	50.33	14.44	31.05	11.53
75th Percentile	56.58	41.66	12.75	23.31	9.15
90th Percentile	28.87	25.50	3.44	11.40	4.03
Int'l Developed Markets Equity ●	25.51	15.94	9.57	74.49	5.37

International Equity as of September 30, 2023

Holdings-Level Active Share



Sector Exposure Active Share

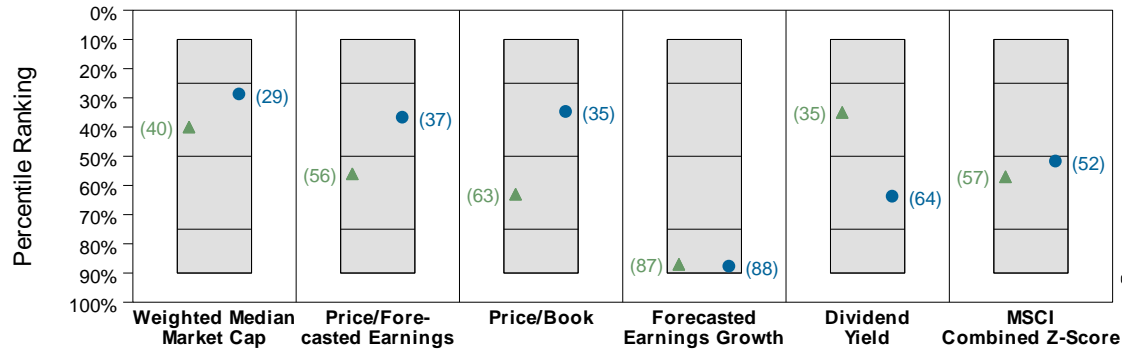


	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	14.21%	8.65%	22.86%	3.87%	4.06%	0.84%
Consumer Discretionary	19.37%	9.07%	28.45%	11.31%	12.09%	3.17%
Consumer Staples	11.38%	6.62%	18.00%	8.84%	8.99%	1.58%
Energy	21.47%	14.36%	35.83%	6.19%	5.19%	2.04%
Financials	9.17%	3.80%	12.97%	19.48%	17.94%	3.01%
Health Care	20.10%	16.84%	36.94%	11.17%	12.42%	4.10%
Industrials	18.39%	8.13%	26.52%	16.44%	16.40%	4.36%
Information Technology	21.84%	17.22%	39.06%	7.97%	10.35%	3.01%
Materials	13.78%	3.93%	17.71%	8.22%	7.22%	1.52%
Miscellaneous	0.00%	100.00%	100.00%	-	0.61%	0.30%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.00%	0.00%
Real Estate	35.78%	8.68%	44.46%	3.22%	2.00%	0.99%
Utilities	14.29%	4.57%	18.86%	3.27%	2.71%	0.57%
Total	15.94%	9.57%	25.51%	100.00%	100.00%	25.49%

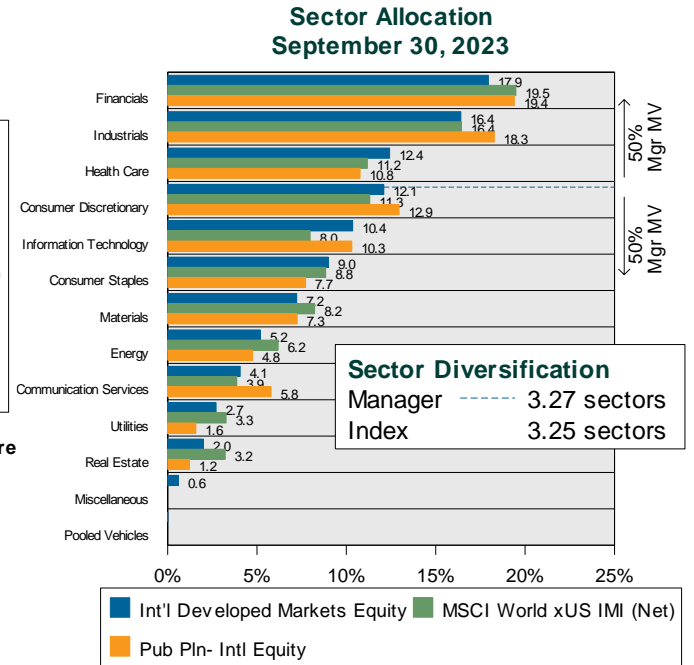
International Equity

As of September 30, 2023

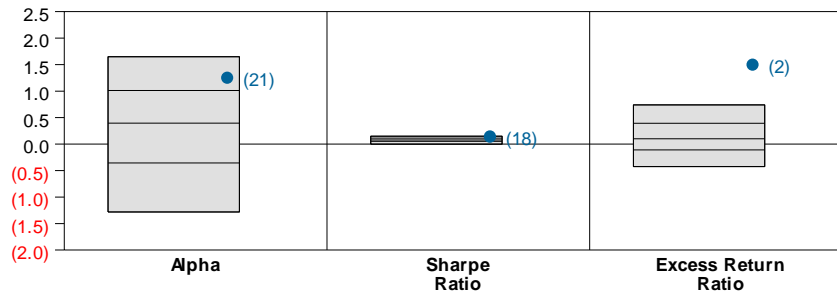
Portfolio Characteristics Percentile Rankings
Rankings Against Public Fund - International Equity
as of September 30, 2023



	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
Int'l Developed Markets Equity ●	38.73	13.33	1.83	10.74	2.79	0.09
MSCI World xUS IMI (Net) ▲	31.70	12.65	1.63	10.78	3.24	0.04



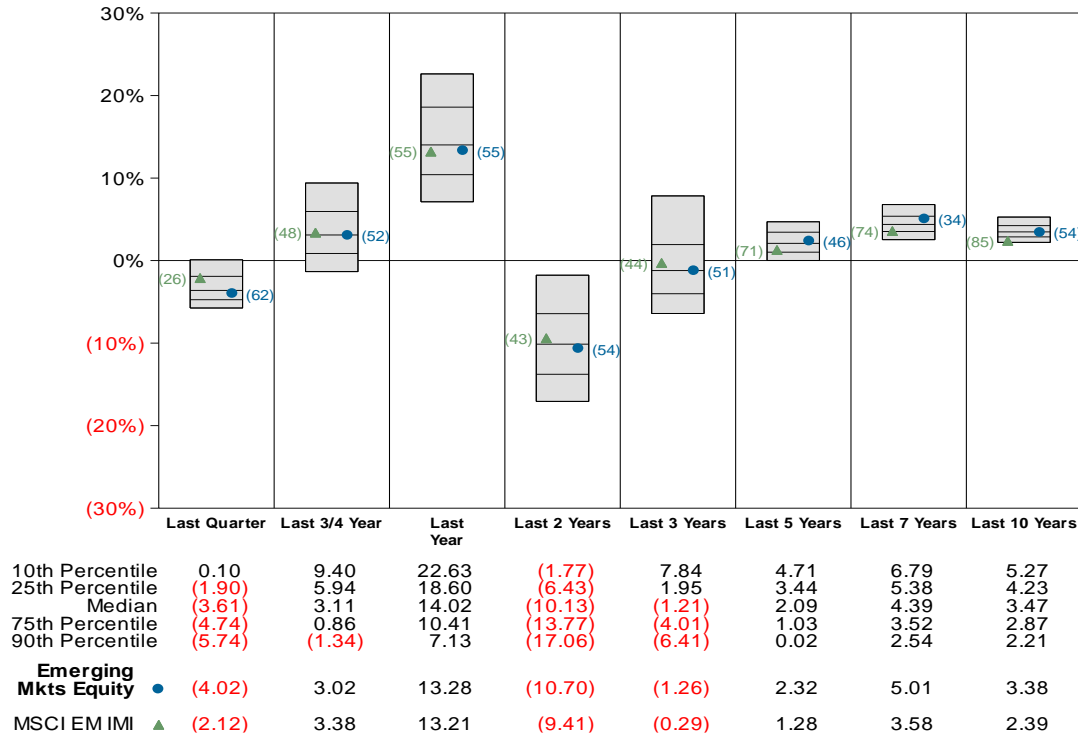
Risk Adjusted Return Measures vs MSCI World xUS IMI
Rankings Against Public Fund - International Equity (Gross)
Five Years Ended September 30, 2023



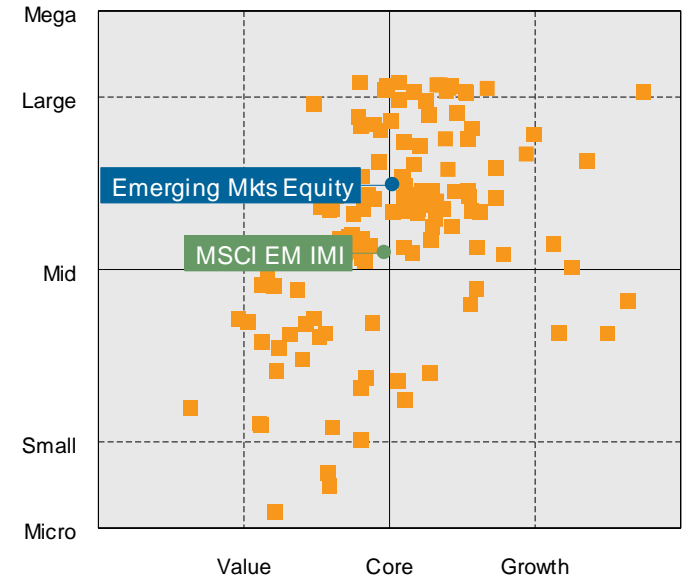
	Alpha	Sharpe Ratio	Excess Return Ratio
Int'l Developed Markets Equity ●	1.23	0.12	1.48

Emerging Markets Equity as of September 30, 2023

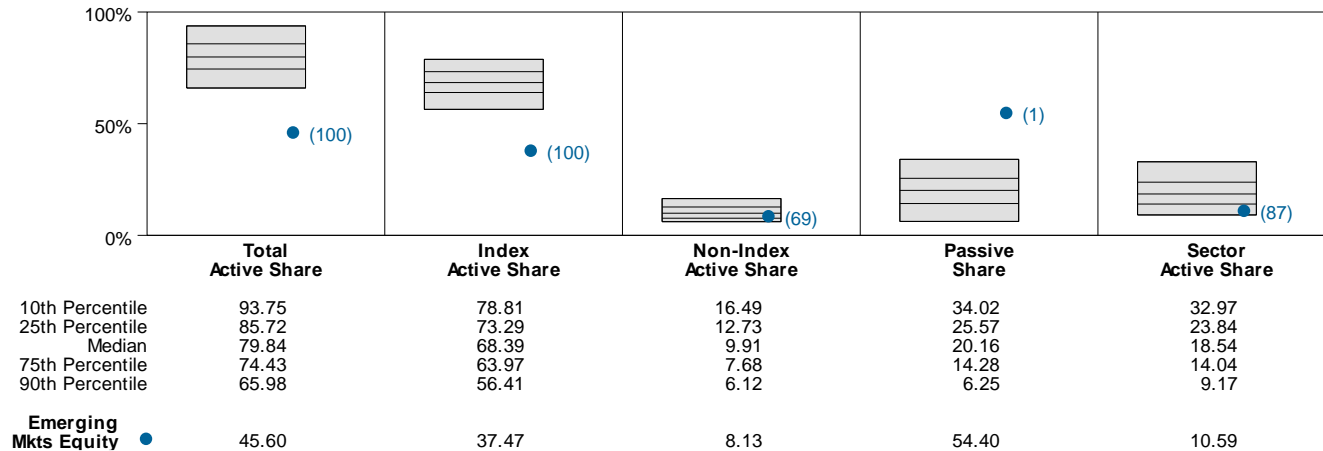
Performance vs Callan Emerging Broad (Gross)



Style Map vs Callan Emerging Broad Holdings as of September 30, 2023

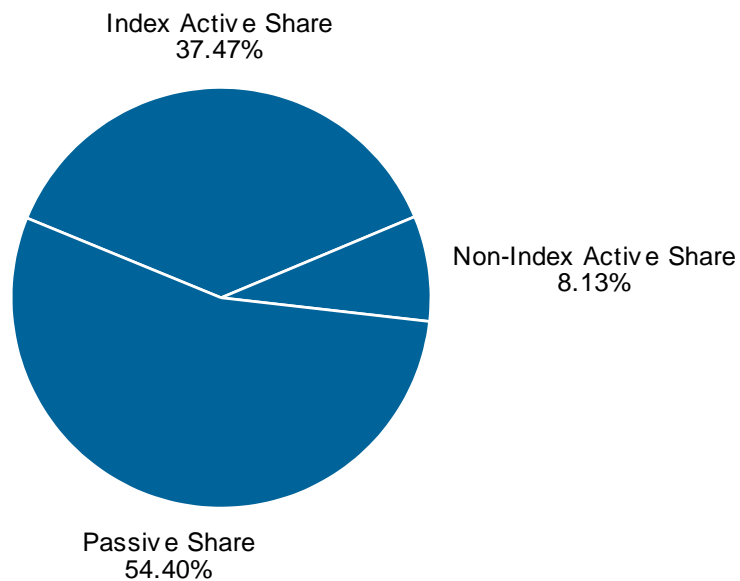


Active Share vs. Callan Emerging Broad

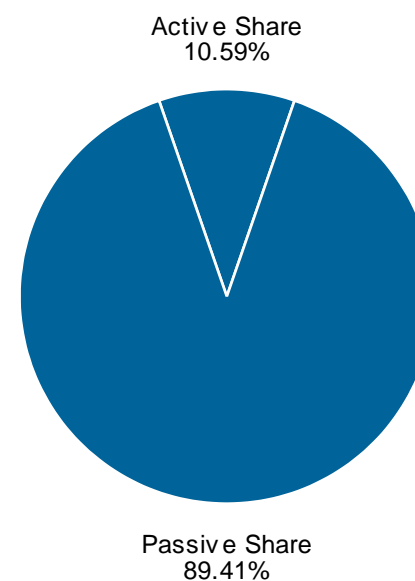


Emerging Markets Equity as of September 30, 2023

Holdings-Level Active Share



Sector Exposure Active Share



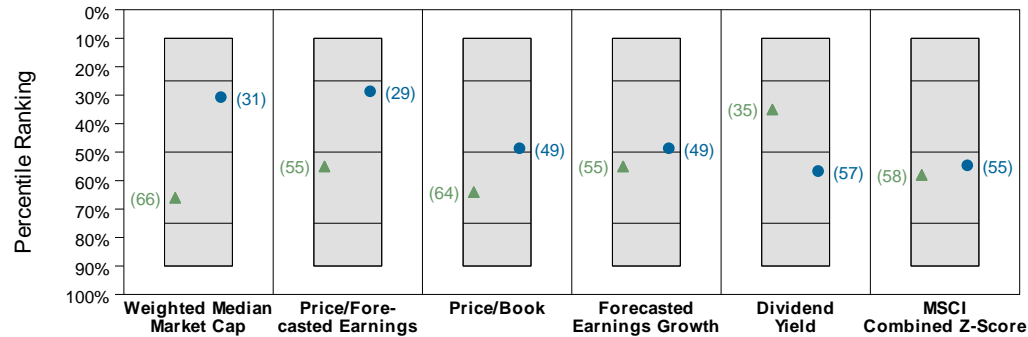
Total Active Share: 45.60%

	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	41.49%	7.25%	48.74%	8.72%	8.96%	4.27%
Consumer Discretionary	31.34%	13.31%	44.65%	13.38%	12.76%	5.91%
Consumer Staples	47.75%	4.38%	52.13%	6.19%	7.19%	3.43%
Energy	32.86%	6.02%	38.88%	4.80%	5.83%	1.83%
Financials	35.53%	4.72%	40.25%	20.53%	18.71%	8.18%
Health Care	48.19%	10.81%	59.00%	4.54%	3.56%	2.48%
Industrials	52.72%	3.78%	56.50%	8.22%	6.03%	4.23%
Information Technology	29.98%	3.05%	33.04%	19.87%	23.66%	7.05%
Materials	38.61%	8.50%	47.11%	8.70%	6.65%	3.92%
Miscellaneous	0.00%	100.56%	100.56%	-	1.84%	0.83%
Pooled Vehicles	50.00%	50.00%	100.00%	-	2.70%	1.35%
Real Estate	34.46%	5.65%	40.11%	2.36%	0.83%	0.91%
Utilities	33.73%	2.72%	36.45%	2.68%	1.30%	1.07%
Total	37.47%	8.13%	45.60%	100.00%	100.00%	45.47%

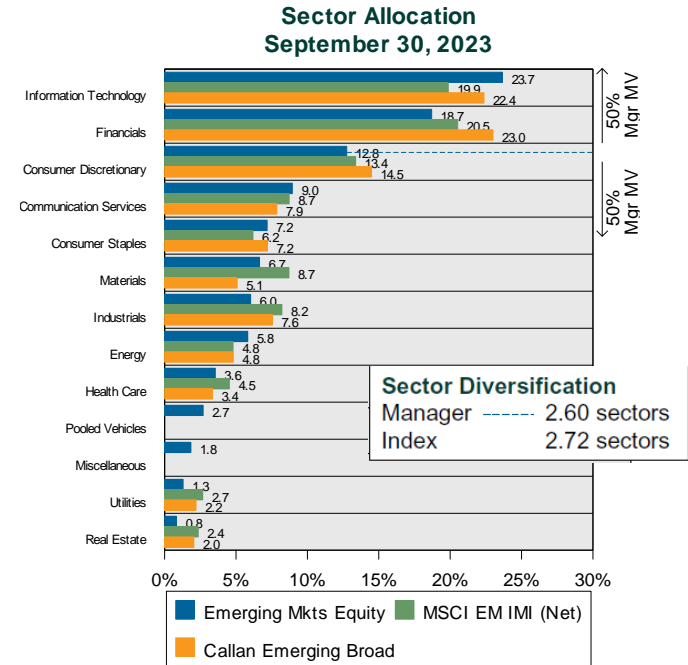
Emerging Markets Equity

As of September 30, 2023

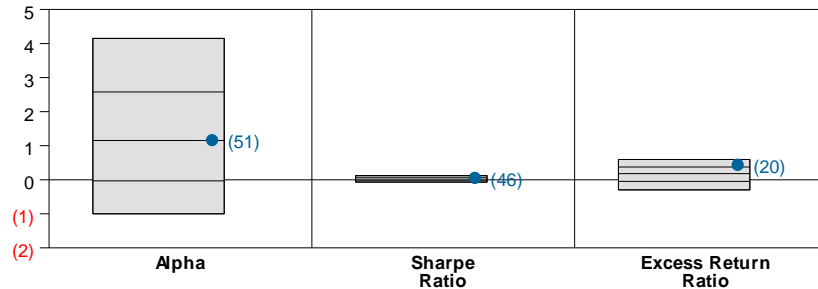
Portfolio Characteristics Percentile Rankings
Rankings Against Callan Emerging Broad
as of September 30, 2023



	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	50.32	18.00	3.17	21.72	4.89	0.66
25th Percentile	32.64	14.77	2.37	18.73	3.80	0.41
Median	24.13	12.12	1.62	15.57	2.98	0.16
75th Percentile	12.34	9.76	1.34	13.38	2.04	(0.21)
90th Percentile	6.75	8.11	1.01	10.93	1.64	(0.56)
Emerging Mkts Equity	28.66	14.29	1.63	15.73	2.66	0.06
MSCI EM IMI (Net)	16.58	11.68	1.43	15.33	3.47	0.01



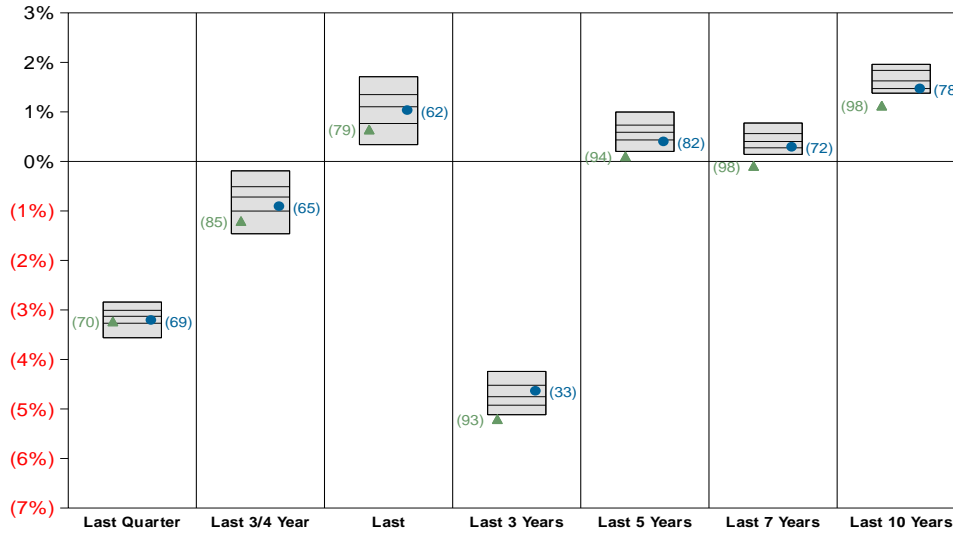
Risk Adjusted Return Measures vs MSCI EM IMI
Rankings Against Callan Emerging Broad (Gross)
Five Years Ended September 30, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	4.15	0.12	0.59
25th Percentile	2.58	0.07	0.37
Median	1.16	0.02	0.18
75th Percentile	(0.03)	(0.03)	(0.05)
90th Percentile	(1.00)	(0.07)	(0.30)
Emerging Mkts Equity	1.13	0.03	0.41

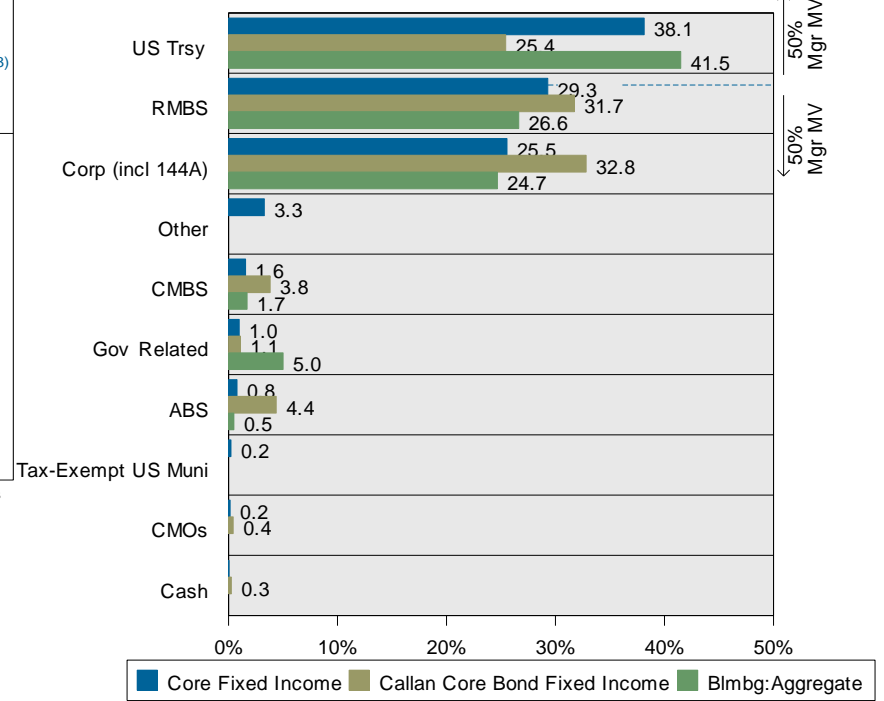
Core Fixed Income As of September 30, 2023

Performance vs Callan Core Bond Fixed Income (Gross)

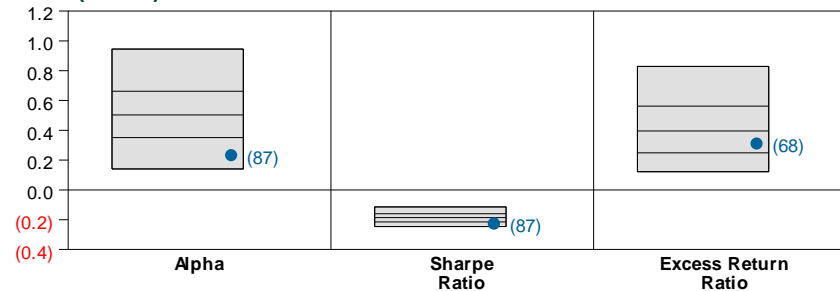


	Last Quarter	Last 3/4 Year	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	(2.84)	(0.19)	1.71	(4.24)	1.00	0.78	1.96
25th Percentile	(3.01)	(0.51)	1.35	(4.52)	0.73	0.56	1.84
Median	(3.13)	(0.72)	1.10	(4.75)	0.59	0.40	1.63
75th Percentile	(3.27)	(1.00)	0.77	(4.92)	0.43	0.28	1.47
90th Percentile	(3.56)	(1.46)	0.34	(5.12)	0.20	0.14	1.38
Core Fixed Income	● (3.22)	● (0.92)	1.02	(4.65)	0.39	0.28	1.46
Blmbg:Aggregate	▲ (3.23)	▲ (1.21)	0.64	(5.21)	0.10	(0.09)	1.13

Sector Allocation September 30, 2023



Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended September 30, 2023

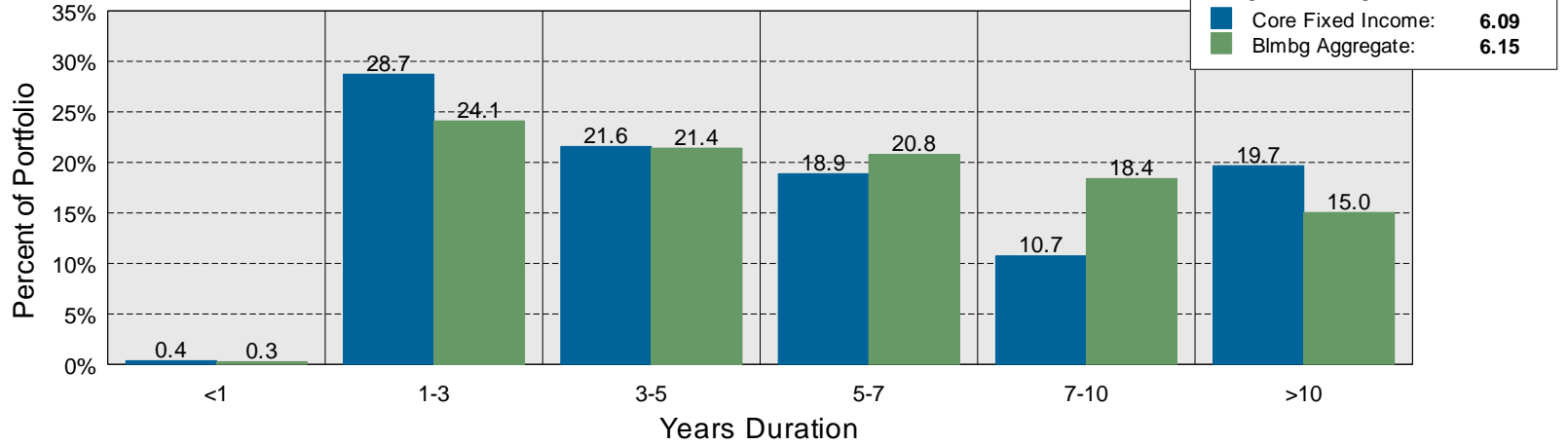


	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	0.94	(0.11)	0.83
25th Percentile	0.66	(0.16)	0.56
Median	0.50	(0.19)	0.40
75th Percentile	0.35	(0.21)	0.25
90th Percentile	0.14	(0.25)	0.12
Core Fixed Income	● 0.23	● (0.23)	● 0.30

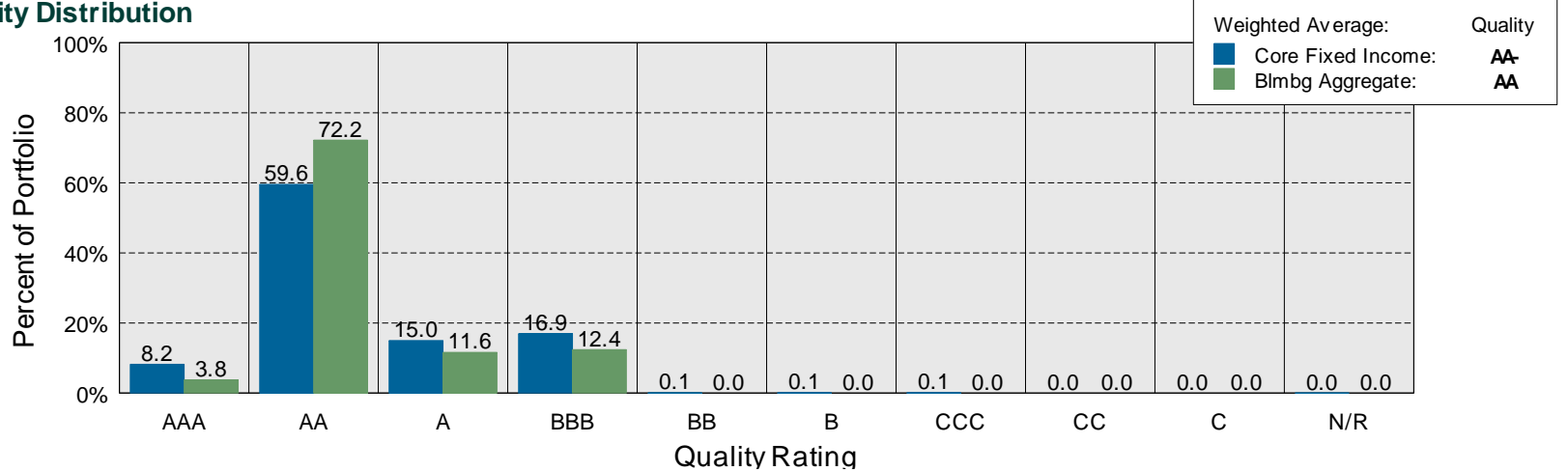
Core Fixed Income

As of September 30, 2023

Duration Distribution

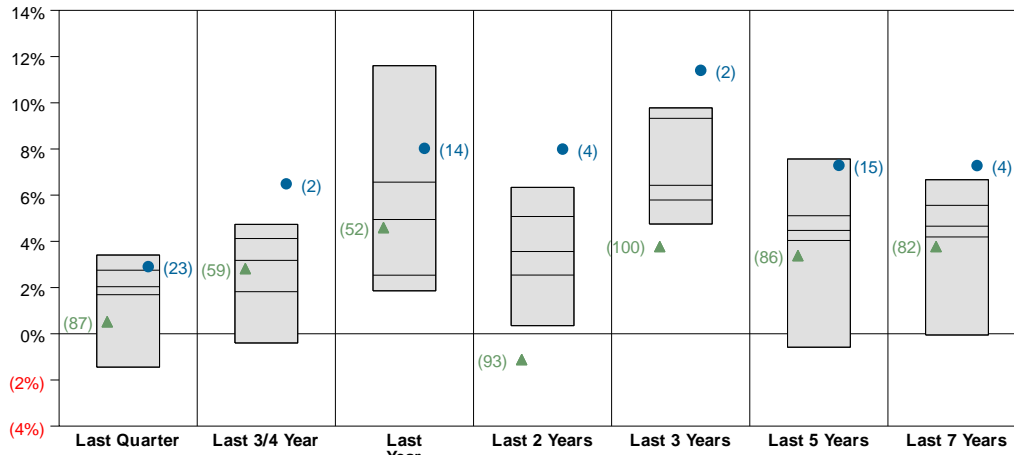


Quality Distribution



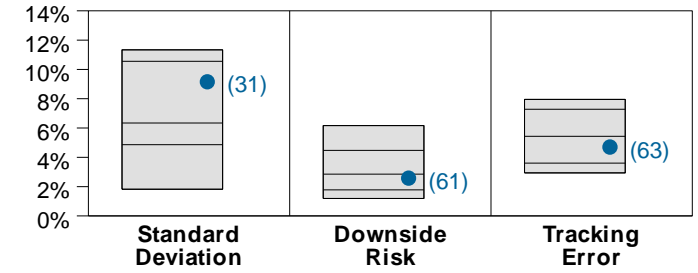
Opportunistic Fixed Income As of September 30, 2023

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



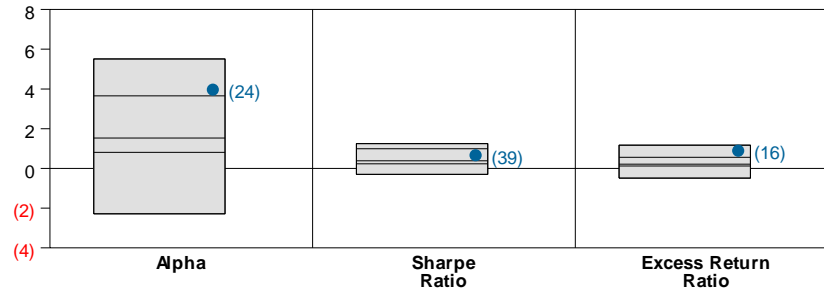
	Last Quarter	Last 3/4 Year	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	3.41	4.74	11.60	6.34	9.78	7.57	6.67
25th Percentile	2.75	4.12	6.57	5.08	9.32	5.11	5.56
Median	2.04	3.18	4.95	3.56	6.43	4.47	4.66
75th Percentile	1.69	1.82	2.53	2.54	5.79	4.04	4.19
90th Percentile	(1.45)	(0.40)	1.86	0.35	4.75	(0.59)	(0.05)
Blackstone Keystone	2.87	6.45	7.99	7.96	11.37	7.25	7.24
HFRI Fund of Funds Composite Index	0.52	2.82	4.60	(1.12)	3.77	3.38	3.78

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, 2023



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	11.34	6.17	7.96
25th Percentile	10.55	4.47	7.29
Median	6.35	2.86	5.44
75th Percentile	4.87	1.79	3.61
90th Percentile	1.83	1.20	2.94
Blackstone Keystone	9.06	2.49	4.61

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, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	5.51	1.25	1.17
25th Percentile	3.65	0.99	0.56
Median	1.53	0.39	0.21
75th Percentile	0.81	0.23	0.12
90th Percentile	(2.29)	(0.30)	(0.49)
Blackstone Keystone	3.91	0.61	0.84

Investment Manager Returns

As of September 30, 2023

	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	\$10,396	100.00%	(3.45%)	11.88%	19.95%	9.66%	8.52%
Russell 3000 Index (1)	-	-	(3.25%)	12.39%	20.46%	9.38%	9.14%
S&P 1500 Index	-	-	(3.36%)	12.24%	20.98%	10.31%	9.50%
MCM Russell 1000 Index	9,407	90.49%	(3.12%)	13.07%	21.25%	9.73%	9.72%
Russell 1000 Index	-	-	(3.15%)	13.01%	21.19%	9.53%	9.63%
S&P 500 Index	-	-	(3.27%)	13.07%	21.62%	10.15%	9.92%
MCM Russell 2000 Core Index	323	3.11%	(5.14%)	2.68%	9.11%	7.76%	2.72%
Russell 2000 Index	-	-	(5.13%)	2.54%	8.93%	7.16%	2.40%
S&P 600 Index	-	-	(4.93%)	0.81%	10.08%	12.10%	3.21%
MCM Russell 2000 Val Index	320	3.08%	(2.98%)	(0.48%)	7.94%	13.43%	2.66%
Russell 2000 Value Index	-	-	(2.96%)	(0.53%)	7.84%	13.32%	2.59%
S&P 600 Value Index	-	-	(5.60%)	(0.83%)	10.26%	15.38%	3.23%
Emerald Asset Management	346	3.33%	(8.47%)	3.22%	10.14%	0.59%	2.24%
Russell 2000 Growth Index	-	-	(7.32%)	5.24%	9.59%	1.09%	1.55%
S&P 600 Growth Index	-	-	(4.25%)	2.47%	9.62%	8.79%	2.91%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Domestic Equity					
U.S. Equity	10.38%	9.83%	9.01%	7.78%	10.55% (1/81)
Russell 3000 Index (1)	11.28%	11.05%	9.68%	8.09%	10.86% (1/81)
S&P 1500 Index	11.61%	11.18%	9.77%	8.17%	-
MCM Russell 1000 Index	11.68%	-	-	-	13.07% (1/12)
Russell 1000 Index	11.63%	11.26%	9.79%	8.08%	13.05% (1/12)
S&P 500 Index	11.91%	11.28%	9.72%	7.92%	13.18% (1/12)
MCM Russell 2000 Core Index	-	-	-	-	6.13% (12/16)
Russell 2000 Index	6.65%	8.13%	8.13%	8.00%	5.90% (12/16)
S&P 600 Index	8.15%	9.55%	9.63%	9.75%	6.82% (12/16)
MCM Russell 2000 Val Index	-	-	-	-	4.71% (12/16)
Russell 2000 Value Index	6.19%	7.16%	7.73%	8.34%	4.68% (12/16)
S&P 600 Value Index	7.58%	8.86%	9.14%	9.38%	5.94% (12/16)
Emerald Asset Management	-	-	-	-	7.44% (12/16)
Russell 2000 Growth Index	6.72%	8.82%	8.27%	7.15%	6.61% (12/16)
S&P 600 Growth Index	8.55%	10.13%	10.03%	9.69%	7.49% (12/16)

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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, 2023

	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	\$4,656	100.00%		7.58%	24.63%	6.70%	4.24%
MSCI World ex US IMI	-	-	(4.27%) (4.02%)	6.02%	23.03%	5.45%	3.12%
Walter Scott & Partners(1) MSCI World	681 -	14.63% -	(5.95%) (3.46%)	10.00% 11.10%	24.26% 21.95%	6.96% 8.08%	8.32% 7.26%
BlackRock MSCI World Ex US Index MSCI World ex US	3,620 -	77.75% -	(4.05%) (4.10%)	7.17% 6.73%	24.57% 24.00%	6.59% 6.07%	3.88% 3.44%
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	215 -	4.62% -	(2.78%) (1.70%)	6.30% 5.03%	20.58% 19.01%	2.25% 4.02%	1.44% 2.58%
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	136 - -	2.92% - -	(2.82%) (3.48%) (1.01%)	7.92% 1.83% 4.23%	36.46% 17.32% 21.75%	11.07% 1.85% 6.90%	5.32% 1.28% 1.74%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- International Equity					
Int'l Developed Mkts Equity	4.63%	5.23%	6.29%	-	5.93% (1/02)
MSCI World ex US IMI	3.87%	4.79%	6.14%	5.23%	5.84% (1/02)
Walter Scott & Partners(1) MSCI World	9.87% 8.26%	10.34% 8.12%	- 7.92%	- 6.37%	8.98% (10/06) 6.44% (10/06)
BlackRock MSCI World Ex US Index MSCI World ex US	- 3.84%	- 4.59%	- 5.99%	- 4.98%	4.51% (6/17) 4.04% (6/17)
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	- 4.35%	- 6.64%	- 7.68%	- 7.41%	1.44% (10/18) 2.58% (10/18)
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	4.80% 4.13% 3.78%	8.27% 6.39% 6.30%	9.26% 7.10% 7.38%	- - 7.92%	9.78% (7/03) 7.80% (7/03) 8.01% (7/03)

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

Investment Manager Returns

As of September 30, 2023

	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	\$1,532	100.00%	(4.11%)	2.69%	12.78%	(1.76%)	1.84%
MSCI EM IMI	-	-	(2.12%)	3.38%	13.21%	(0.29%)	1.28%
Macquarie Emg Mkts Equity	319	20.84%	(4.22%)	3.53%	12.01%	(3.62%)	0.67%
MSCI EM	-	-	(2.93%)	1.82%	11.70%	(1.73%)	0.56%
Martin Currie Emg Mkts Equity	332	21.69%	(7.82%)	(1.21%)	9.89%	(4.81%)	0.84%
MSCI EM	-	-	(2.93%)	1.82%	11.70%	(1.73%)	0.56%
BlackRock Emg Mkts Index	524	34.18%	(2.99%)	1.66%	11.49%	(1.94%)	0.32%
MSCI EM	-	-	(2.93%)	1.82%	11.70%	(1.73%)	0.56%
Leading Edge Emg Mkts Fund	214	13.99%	(4.37%)	(0.20%)	9.74%	(2.68%)	-
MSCI EM	-	-	(2.93%)	1.82%	11.70%	(1.73%)	0.56%
GlobeFlex Emerging Small Cap	142	9.30%	1.78%	17.31%	29.22%	15.99%	8.78%
MSCI EM Small Cap	-	-	2.93%	13.74%	23.06%	10.61%	6.45%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- Emerging Mkts Equity					
Emerging Mkts Equity	2.85%	2.87%	5.47%	-	6.11% ^(1/02)
MSCI EM IMI	2.39%	4.17%	7.55%	7.57%	7.94% ^(1/02)
Macquarie Emg Mkts Equity	2.34%	-	-	-	2.49% ^(5/13)
MSCI EM	2.07%	3.76%	7.30%	-	1.64% ^(5/13)
Martin Currie Emg Mkts Equity	-	-	-	-	2.57% ^(1/14)
MSCI EM	2.07%	3.76%	7.30%	-	1.94% ^(1/14)
BlackRock Emg Mkts Index	-	-	-	-	1.31% ^(7/17)
MSCI EM	2.07%	3.76%	7.30%	-	1.54% ^(7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	1.77% ^(11/18)
MSCI EM	2.07%	3.76%	7.30%	-	2.45% ^(11/18)
GlobeFlex Emerging Small Cap	6.64%	-	-	-	6.88% ^(8/13)
MSCI EM Small Cap	4.57%	7.10%	9.18%	8.95%	4.79% ^(8/13)

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Investment Manager Returns

As of September 30, 2023

	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)	\$6,135	100.00%	(2.93%)	(0.54%)	0.91%	(4.00%)	0.14%
Bimbg U.S. Agg Bond Index	-	-	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
Core Fixed Income	\$4,331	70.60%	(3.23%)	(0.94%)	0.99%	(4.70%)	0.32%
Bimbg U.S. Agg Bond Index	-	-	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
PIMCO Core Bond Fund	508	8.29%	(3.40%)	(0.55%)	1.73%	(4.72%)	0.37%
Bimbg Agg ex Treasury	-	-	(3.35%)	(0.99%)	1.66%	(4.83%)	0.15%
Mellon Bond Index	3,822	62.31%	(3.20%)	(0.99%)	0.89%	(5.20%)	0.07%
Bimbg U.S. Agg Bond Index (2)	-	-	(3.23%)	(1.21%)	0.64%	(5.21%)	0.10%
Opportunistic Fixed Income	\$892	14.54%	2.52%	5.77%	7.14%	9.35%	6.38%
BAAM Keystone (3)	892	14.54%	2.52%	5.77%	7.14%	10.47%	6.54%
HFRI FOF Comp Index	-	-	0.51%	2.81%	4.59%	3.77%	3.38%
Nominal U.S. Treasuries	\$810	13.21%	(7.42%)	(4.59%)	(5.05%)	(10.04%)	(1.49%)
Bimbg US Treas Bell 10Y	-	-	(5.12%)	(3.43%)	(2.82%)	(8.58%)	(0.51%)
Mellon Intermediate Treasury Index	363	5.92%	(0.83%)	0.39%	1.27%	-	-
Bimbg Intmdt Treasury	-	-	(0.81%)	0.28%	1.30%	(3.21%)	0.68%
Mellon Long Duration Index	447	7.29%	(11.83%)	(7.86%)	(9.15%)	-	-
Bimbg Long Treasury	-	-	(11.83%)	(8.55%)	(9.09%)	(15.73%)	(2.78%)
Legacy Fixed Income	\$102	1.66%	0.55%	(1.27%)	(1.75%)	-	-
Fidelity HY CMBS (4)	102	1.66%	0.57%	(1.46%)	(1.83%)	0.81%	0.27%
Bimbg US CMBS Ex AAA Index (5)	-	-	(1.08%)	(1.97%)	(2.84%)	(3.12%)	0.13%
SEI Str.Credit: HY Bank Loans (6)	0	0.00%	7.35%	11.04%	9.01%	16.92%	7.27%
FTSE HY Corp (1 month lag)	-	-	3.40%	6.65%	6.99%	1.97%	3.19%

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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 Bimbg US CMBS Ex AAA Index, thereafter.

(6) SEI HY Bank Loans has a 1 month lag in valuation. On this chart, SEI's market value of \$36K has been rounded to \$0MM.

Investment Manager Returns

As of September 30, 2023

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
Net Performance - Fixed Income						
Fixed Income (1)	1.29%	3.57%	3.82%	4.26%	7.41%	(1/81)
Blmbg U.S. Agg Bond Index	1.13%	2.53%	2.85%	3.59%	6.70%	(1/81)
Core Fixed Income	1.37%	3.44%	3.22%	-	3.60%	(1/02)
Blmbg U.S. Agg Bond Index	1.13%	2.53%	2.85%	3.59%	3.25%	(1/02)
PIMCO Core Bond Fund	1.44%	-	-	-	1.09%	(1/13)
Blmbg Agg ex Treasury	1.38%	2.89%	-	-	1.11%	(1/13)
Mellon Bond Index	1.09%	2.40%	2.75%	3.50%	6.17%	(4/84)
Blmbg U.S. Agg Bond Index (2)	1.13%	2.53%	2.85%	3.60%	-	
Opportunistic Fixed Income	4.92%	-	-	-	5.11%	(10/12)
BAAM Keystone (3)	6.27%	-	-	-	7.36%	(7/12)
HFRI FOF Comp Index	3.28%	2.83%	3.33%	4.30%	3.70%	(7/12)
Nominal U.S. Treasuries	0.13%	-	-	-	0.15%	(9/11)
Blmbg US Treas Bell 10Y	0.42%	2.01%	2.55%	3.01%	0.55%	(9/11)
Mellon Intermediate Treasury Index	-	-	-	-	(3.23%)	(3/21)
Blmbg Intmdt Treasury	0.80%	1.69%	2.27%	3.02%	(3.22%)	(3/21)
Mellon Long Duration Index	-	-	-	-	(16.16%)	(1/21)
Blmbg Long Treasury	0.75%	2.63%	3.42%	4.03%	(16.11%)	(1/21)
Legacy Fixed Income	-	-	-	-	(2.38%)	(7/22)
Fidelity HY CMBS (4)	2.93%	6.19%	5.58%	6.62%	7.03%	(4/97)
Blmbg US CMBS Ex AAA Index (5)	1.75%	2.01%	0.73%	2.85%	3.12%	(4/97)
SEI Str.Credit: HY Bank Loans (6)	7.38%	11.60%	-	-	11.29%	(5/08)
FTSE HY Corp (1 month lag)	4.23%	6.44%	6.47%	6.07%	6.28%	(5/08)

* 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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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.

(6) SEI HY Bank Loans has a 1 month lag in valuation. On this chart, SEI's market value of \$36K has been rounded to \$0MM.

Investment Manager Returns

As of September 30, 2023

	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)	\$996	100.00%	(2.92%)	(1.02%)	1.14%	(2.68%)	1.63%
Blmbg U.S. TIPS Index	-	-	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
NISA Inv Adv TIPS	435	43.71%	(2.55%)	(0.62%)	1.30%	(1.98%)	2.10%
Blmbg U.S. TIPS Index (1)	-	-	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
Brown Brothers TIPS	455	45.73%	(2.72%)	(1.00%)	0.93%	(2.14%)	2.02%
Blmbg U.S. TIPS Index	-	-	(2.60%)	(0.78%)	1.25%	(1.98%)	2.12%
New Century Global TIPS	105	10.56%	(5.20%)	(2.69%)	1.41%	(6.94%)	(1.13%)
Blmbg Wrld Inflation Linked Unhdg	-	-	(4.85%)	(2.39%)	1.35%	(6.32%)	(1.02%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Inflation Protection					
Inflation Protection (TIPS)	1.54%	2.13%	2.62%	-	2.69% ^(2/03)
Blmbg U.S. TIPS Index	1.74%	2.92%	3.47%	4.58%	3.64% ^(2/03)
NISA Inv Adv TIPS	1.73%	2.14%	-	-	2.60% ^(4/07)
Blmbg U.S. TIPS Index (1)	1.74%	2.14%	2.93%	4.14%	2.60% ^(4/07)
Brown Brothers TIPS	1.72%	-	-	-	1.34% ^(2/12)
Blmbg U.S. TIPS Index	1.74%	2.92%	3.47%	4.58%	1.28% ^(2/12)
New Century Global TIPS	0.37%	-	-	-	0.37% ^(2/12)
Blmbg Wrld Inflation Linked Unhdg	0.21%	1.67%	3.00%	3.95%	0.18% ^(2/12)

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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, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Private Equity							
Private Equity	\$6,856	100.00%	2.22%	5.94%	5.59%	20.37%	15.24%
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.03%	(1.64%)	13.70%	11.24%
Global Equity + 3% (Qtr lag)(1)	-	-	7.70%	28.20%	22.48%	16.43%	14.00%
Buyouts	3,755	54.77%	2.41%	7.42%	7.02%	19.46%	15.41%
Burgiss Buyout Index (Qtr lag)	-	-	0.02%	0.07%	(1.77%)	13.67%	10.17%
Special Situations	1,665	24.29%	2.36%	6.61%	8.21%	23.87%	18.37%
Burgiss Special Situations Idx (Qtr lag)	-	-	0.02%	0.03%	0.03%	6.45%	4.42%
Growth Equity	1,233	17.98%	0.98%	1.12%	0.27%	23.45%	23.18%
Burgiss Venture Capital Index (Qtr lag)	-	-	(0.01%)	(0.06%)	(2.53%)	18.30%	17.94%
Keystone Legacy (2)	203	2.96%	4.91%	2.78%	(6.12%)	0.76%	(3.40%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Private Equity					
Private Equity	12.98%	10.56%	12.83%	11.96%	11.53% ^(1/86)
Burgiss Private Equity Index (Qtr lag)	12.45%	10.24%	13.10%	12.31%	16.37% ^(1/86)
Global Equity + 3% (Qtr lag)(1)	15.23%	13.86%	13.28%	11.07%	14.53% ^(1/86)
Buyouts	14.07%	11.83%	15.04%	13.80%	13.55% ^(4/86)
Burgiss Buyout Index (Qtr lag)	12.01%	9.82%	13.85%	11.83%	18.66% ^(4/86)
Special Situations	12.64%	11.46%	14.02%	12.63%	13.23% ^(1/95)
Burgiss Special Situations Idx (Qtr lag)	6.32%	6.61%	8.62%	8.92%	9.66% ^(1/95)
Growth Equity	15.48%	10.92%	9.21%	7.91%	8.52% ^(1/86)
Burgiss Venture Capital Index (Qtr lag)	17.51%	13.27%	12.25%	12.89%	14.10% ^(1/86)
Keystone Legacy (2)	-	-	-	-	(3.24%) ^(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 6/30/2023, Keystone Legacy SPV consists of 43 non-core funds, prior performance is reflected in previous sub-asset classes.

Investment Manager Returns

As of September 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Real Estate							
Real Estate	\$2,543	100.00%	(4.25%)	(9.79%)	(8.52%)	5.33%	5.33%
Real Estate Custom Bench (Qtr lag) (1)	-	-	(3.05%)	(11.20%)	(10.51%)	7.57%	5.52%
CPI +3% (Qtr lag)	-	-	1.80%	5.02%	5.97%	8.78%	6.90%
Core/Core Plus Real Estate Funds	1,199	47.15%	(1.86%)	(5.26%)	(2.82%)	7.87%	6.05%
NCREIF ODCE Index (Qtr lag)	-	-	(3.05%)	(11.20%)	(10.51%)	7.59%	6.07%
Value Add/Oppportunistic SMA	477	18.75%	(11.20%)	(23.63%)	(25.00%)	(3.40%)	2.15%
NCREIF ODCE Index (Qtr lag)	-	-	(3.05%)	(11.20%)	(10.51%)	7.59%	6.07%
Value Add/Oppportunistic Funds	755	29.68%	(2.77%)	(8.55%)	(8.02%)	8.36%	5.85%
NCREIF ODCE Index (Qtr lag)	-	-	(3.05%)	(11.20%)	(10.51%)	7.59%	6.07%
REITS	113	4.43%	(7.29%)	(2.65%)	1.94%	5.80%	3.76%
FTSE NAREIT US Index	-	-	(7.18%)	(2.28%)	2.67%	5.82%	2.07%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Real Estate					
Real Estate	5.29%	2.70%	5.96%	6.65%	7.95% (3/84)
Real Estate Custom Bench (Qtr lag) (1)	7.56%	4.94%	7.17%	7.39%	-
CPI +3% (Qtr lag)	5.71%	5.24%	5.57%	5.54%	5.83% (3/84)
Core/Core Plus Real Estate Funds	7.82%	6.09%	7.38%	7.66%	7.01% (9/86)
NCREIF ODCE Index (Qtr lag)	8.12%	4.80%	6.84%	7.17%	6.02% (9/86)
Value Add/Oppportunistic SMA	2.09%	(0.66%)	3.13%	4.32%	4.43% (6/88)
NCREIF ODCE Index (Qtr lag)	8.12%	4.80%	6.84%	7.17%	6.06% (6/88)
Value Add/Oppportunistic Funds	7.97%	3.56%	7.19%	7.99%	7.66% (3/84)
NCREIF ODCE Index (Qtr lag)	8.12%	4.80%	6.84%	7.17%	6.26% (3/84)
REITS	4.51%	5.31%	7.89%	7.71%	8.63% (4/96)
FTSE NAREIT US Index	5.00%	5.68%	7.86%	7.58%	8.94% (4/96)

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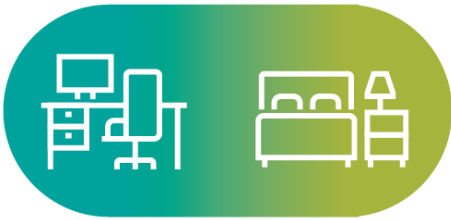
(1) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged). Prior to 03/31/2019, benchmark history was provided by RVK.

Callan

Appendix II – Callan Update

Published Research Highlights from 3Q23

**Office-to-Residential
Conversions: Vast Opportunity
or Unfeasible Challenge?**



**Four-Part Series: The ESG Rule
Explained**



**Callan Discount Rate Reporter:
Regular Update on Corporate
DB Plans**



**How Your Public DB Plan's
Returns Compare: Quarterly
Update**



Recent Blog Posts

**An Investor's
Guide to the
Nasdaq-100's
Special
Rebalance**

Mark Wood

**A Deeper Dive
Into the Tradeoff
Between Return
and Risk**

Kevin Machiz

**S&P Global
Moves Away
from Numeric
ESG Credit
Indicators**

Kristin Bradbury

Additional Reading

Alternatives Focus quarterly newsletter

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

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.

- November 1–2, 2023 – Atlanta, Georgia
- March 5–7, 2024 – Virtual Session via Zoom

Intro to Alternatives

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 alternative investments like private equity, hedge funds, and real estate and how they can play a key role in any portfolio. You will learn about the importance of allocations to alternatives and how to consider integrating, evaluating, and monitoring them.

- February 21–22, 2024 – Virtual Session via Zoom

Please visit our website at callan.com/events-education as we add dates to our 2023 and 2024 calendar!

Mark Your Calendar

2023 Regional Workshops

October 24, 2023 – New York
October 26, 2023 – Chicago

2024 National Conference

April 8–10, 2024 – San Francisco

2024 Regional Workshops

June 25, 2024 – Atlanta
June 27, 2024 – San Francisco

Watch your email for further details and an invitation.

Webinars & Research Café Sessions

Webinar: ESG Study

November 7, 2023 – Virtual Session via Zoom

Webinar: The Retirement Conundrum

November 15, 2023 – Virtual Session via Zoom

Research Café: Conversion of Commercial Real Estate

December 6, 2023 – Virtual Session via Zoom

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