

August 2023



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

Second Quarter 2023

Executive Summary

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**Thomas H. Shingler**  
Senior Vice President

**Britton M. Murdoch**  
Vice President

Callan

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**Market Environment**

# Equity Markets Rebound Sharply in 1Q and 2Q; Fixed Income Markets Down in 2Q

Stocks and bonds still have ground to make up after first three quarters of 2022

S&P 500 up 16.9% in first half of 2023.

- Loss through first three quarters of 2022 was 23.9%; rebound in the following three quarters reduced the loss to 2.9% since the start of 2022. Greater loss reduction in large cap (U.S. and global ex-U.S.) compared to emerging and small cap

Fixed income recovered 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 as Fed continued to raise rates
- CPI-U: +3% year-over year for 2Q, down from +6.5% for the year ended Dec. 2022

Inflation hit the highest rate (9%) in decades in June of 2022.

Economic data defied expectations of recession; GDP growth was revised up to 2.0% in 1Q, and hit 2.4% in 2Q

- Job market remains solid, providing support to Fed efforts to fight inflation

## Returns for Periods ended 6/30/23

	Quarter	Last 3 Qtrs	1Q-3Q 2022	5 Years	10 Years	25 Years
<b>U.S. Equity</b>						
Russell 3000	8.39	24.51	-24.62	11.39	12.34	7.72
S&P 500	8.74	25.73	-23.87	12.31	12.86	7.61
Russell 2000	5.21	14.82	-25.10	4.21	8.26	7.26
<b>Global ex-U.S. Equity</b>						
MSCI World ex USA	3.03	29.30	-26.23	4.58	5.40	4.49
MSCI Emerging Markets	0.90	15.07	-27.16	0.93	2.95	--
MSCI ACWI ex USA Small Cap	2.05	21.06	-29.37	2.62	5.75	6.73
<b>Fixed Income</b>						
Bloomberg Aggregate	-0.84	4.00	-14.61	0.77	1.52	3.90
90-day T-Bill	1.17	3.12	0.61	1.55	0.98	1.89
Bloomberg Long Gov/Credit	-1.29	7.11	-28.94	0.66	2.86	5.33
Bloomberg Global Agg ex-US	-2.16	7.70	-23.88	-2.65	-0.90	2.62
<b>Real Estate</b>						
NCREIF Property	-1.81	-6.97	9.35	5.94	7.84	8.53
FTSE Nareit Equity	2.62	10.89	-28.13	4.55	6.42	8.32
<b>Alternatives</b>						
CS Hedge Fund Index	1.71	2.80	0.14	4.52	4.06	5.49
Cambridge Private Equity*	2.12	1.12	-1.84	15.98	15.04	13.83
Bloomberg Commodity	-2.56	-5.74	13.57	4.73	-0.99	2.04
Gold Spot Price	-2.86	15.39	-8.56	8.99	4.66	7.76
<b>Inflation - CPI-U</b>	1.08	2.80	6.46	3.90	2.71	2.54

\*Cambridge PE data as of 1Q23

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	2 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%	16.89%
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%	11.29%
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	Small Cap
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%	8.09%
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	High Yield
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%	5.38%
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	Emerging Markets
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%	4.89%
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	Cash Equivalent
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%	2.25%
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	U.S. Fixed
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%	2.09%
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	Hedge Funds
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%	1.87%
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%	0.83%
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%	-6.16%

- 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

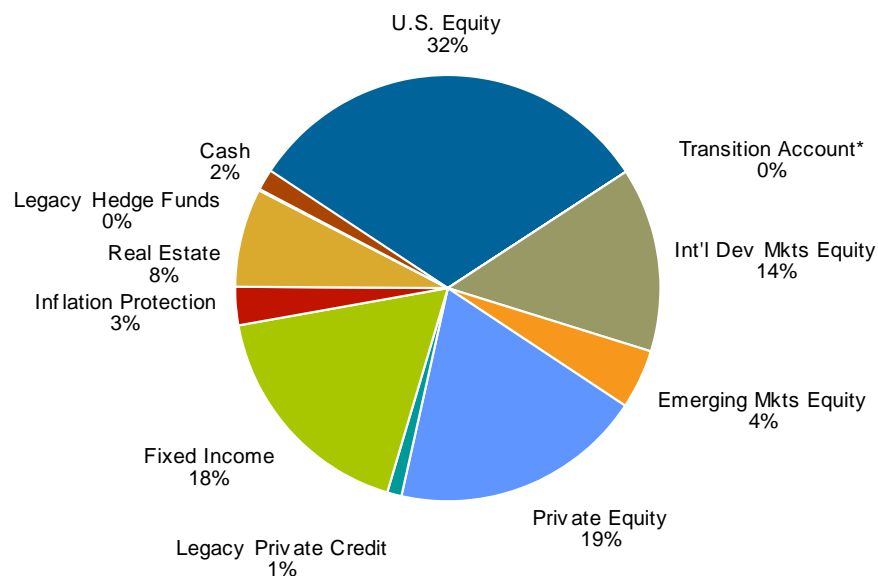
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**PA SERS Defined Benefit Plan  
Performance Review**

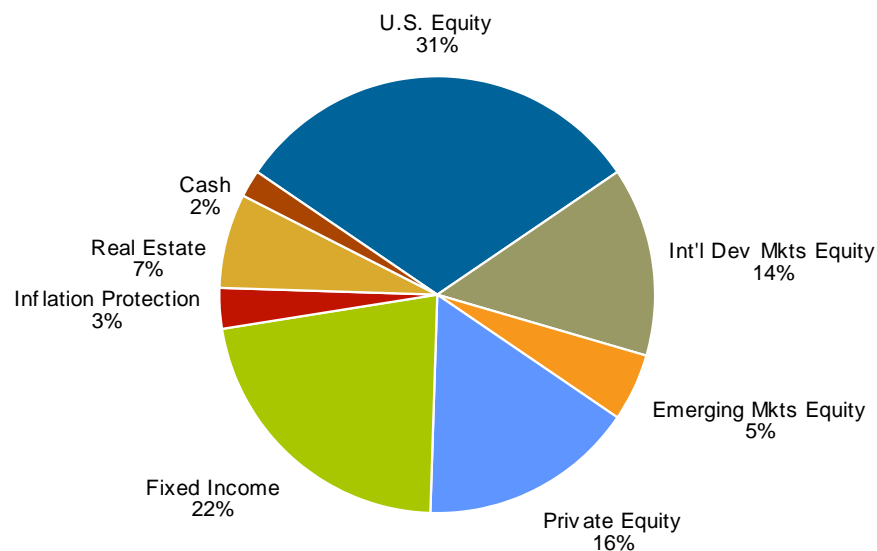
# Total Fund

## Actual Asset Allocation versus Target as of June 30, 2023

**Actual Asset Allocation**



**Target Asset Allocation**



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	11,204,054	31.6%	31.0%	0.6%	197,994
Transition Account*	1,008	0.0%	0.0%	0.0%	1,008
Int'l Dev Mkts Equity	4,961,854	14.0%	14.0%	(0.0%)	(8,624)
Emerging Mkts Equity	1,597,436	4.5%	5.0%	(0.5%)	(177,735)
Private Equity	6,800,172	19.2%	16.0%	3.2%	1,119,626
Legacy Private Credit	401,117	1.1%	0.0%	1.1%	401,117
Fixed Income	6,252,257	17.6%	22.0%	(4.4%)	(1,558,494)
Inflation Protection	1,025,546	2.9%	3.0%	(0.1%)	(39,556)
Real Estate	2,665,793	7.5%	7.0%	0.5%	180,554
Legacy Hedge Funds	17,956	0.1%	0.0%	0.1%	17,956
Cash	576,224	1.6%	2.0%	(0.4%)	(133,844)
<b>Total</b>	<b>35,503,417</b>	<b>100.0%</b>	<b>100.0%</b>		

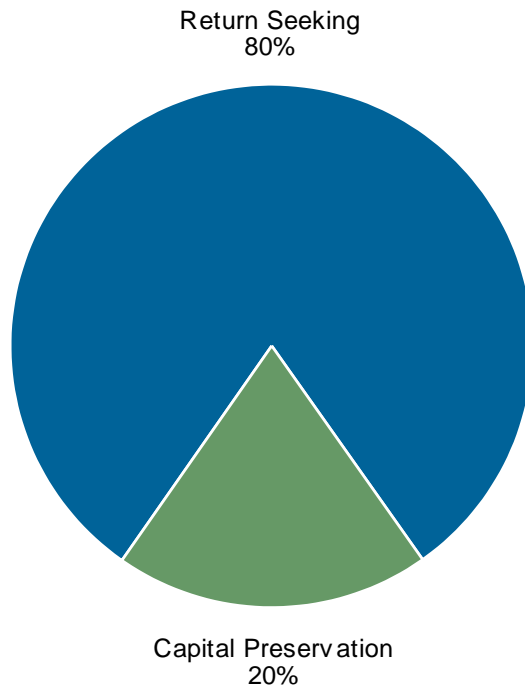
\*Market values are shown net of accrued fees.

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

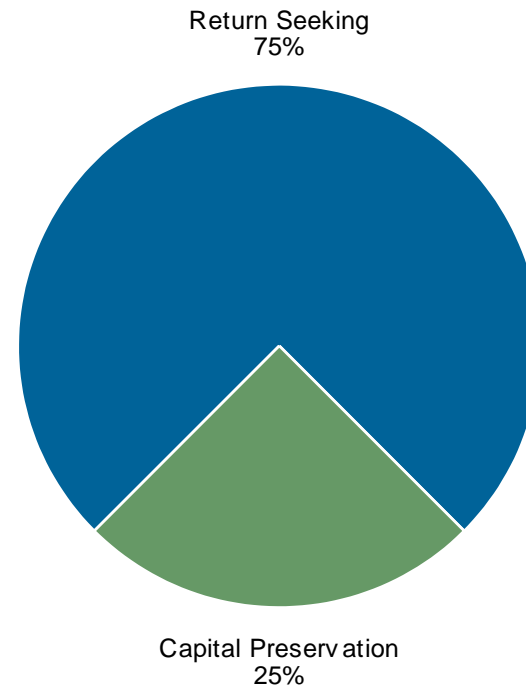
# Return Seeking and Capital Preservation Assets

As of June 30, 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 <sup>^</sup>	U.S. Equity	Developed International Equity	Emerging Markets Equity	Real Estate	Private Equity
<b>Policy Target Asset Allocation</b>	2%	3%	22%	31%	14%	5%	7%	16%
<b>Projected Return* (Geometric)</b>	2.75%	4.00%	4.25%	7.35%	7.25%	7.45%	7.30%	8.50%
<b>Projected Risk* (Standard Deviation)</b>	0.90%	5.30%	4.10%	18.05%	20.15%	25.70%	16.35%	27.60%
<b>Liquidity</b>	High	High	High	High	High	Medium	Low	Low
<b>Correlation to U.S. Equity*</b>	-0.06	-0.07	0.02	1.00	0.73	0.79	0.44	0.79
<b>Months of Benefit Payments**</b>	1.8	3.2	16.6					
<b>Months of Benefit Payments (Includes EE &amp; ER Contributions)**</b>	6.3	11.1	57.0					
<b>Cumulative Months of Benefit Payments (Includes EE &amp; ER Contributions)**</b>		74.5						

\*Callan 2023 Capital Market Projections

\*\*Provided by SERS IO as of 6/30/2023. Benefit payment calculations for fixed income represent core fixed income , TIPS, treasury and cash allocations.

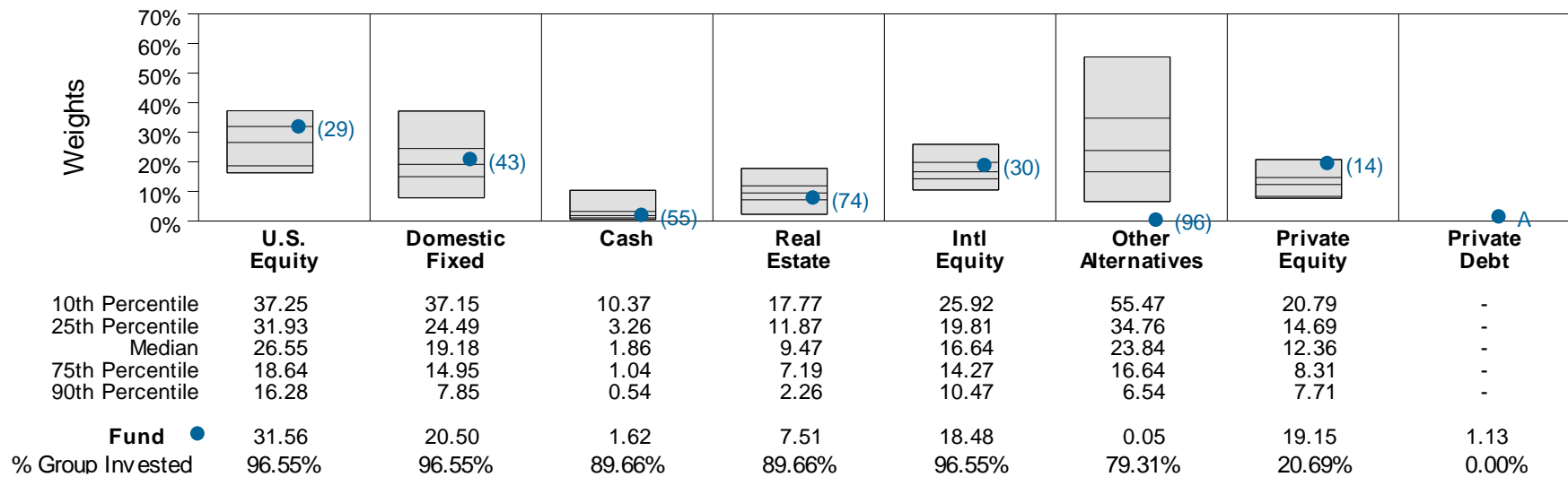
<sup>^</sup>Core and Opportunistic fixed Income combined; modeled as core fixed income



# 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 – Gross of Fees as of June 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 June 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%	8.33%	8.39%	(0.02%)	(0.01%)	(0.03%)
Int'l Dev. Mkts Equity	14%	14%	3.71%	2.67%	0.14%	(0.01%)	0.13%
Emerging Markets	4%	5%	1.73%	1.62%	0.01%	0.01%	0.01%
Private Equity	19%	16%	3.72%	3.72%	0.00%	0.01%	0.01%
Legacy Private Credit	1%	0%	3.14%	3.14%	0.00%	(0.00%)	(0.00%)
Fixed Income	18%	22%	(0.46%)	(0.84%)	0.07%	0.16%	0.23%
Inflation Protection	3%	3%	(1.54%)	(1.42%)	(0.00%)	0.00%	(0.00%)
Real Estate	8%	7%	(3.32%)	(3.50%)	0.00%	(0.07%)	(0.06%)
Legacy Hedge Funds	0%	0%	5.35%	5.35%	0.00%	0.00%	0.00%
Cash	1%	2%	1.24%	1.17%	0.00%	0.01%	0.01%
<b>Total</b>			<b>3.49%</b>	<b>3.19%</b>	<b>+ 0.20%</b>	<b>+ 0.09%</b>	<b>0.29%</b>

- **What helped relative attribution?**

- An underweight to Fixed Income (attribution based on target return)
- Outperformance relative to target from non-U.S. Developed Markets Equity and Emerging Markets Equity managers
- Outperformance relative to target from Fixed Income managers

- **What hurt relative attribution?**

- An overweight to Real Estate (attribution based on target return)
- Slight underperformance relative to target from U.S. Equity managers (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.  
Returns are shown gross of fees

# Total Fund

## One Year Attribution Analysis versus Target – Gross of Fees as of June 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%	18.86%	18.95%	(0.03%)	(0.20%)	(0.22%)
Int'l Dev. Mkts Equity	13%	14%	18.89%	16.35%	0.31%	(0.17%)	0.14%
Emerging Markets	4%	5%	6.11%	3.19%	0.11%	0.01%	0.12%
Private Equity	19%	16%	(2.34%)	(2.34%)	0.00%	(0.37%)	(0.37%)
Legacy Private Credit	1%	0%	7.70%	7.70%	0.00%	(0.05%)	(0.05%)
Fixed Income	19%	22%	(0.38%)	(0.94%)	0.11%	0.22%	0.33%
Inflation Protection	3%	3%	(1.56%)	(1.40%)	(0.01%)	(0.00%)	(0.01%)
Real Estate	8%	7%	(5.41%)	(3.69%)	(0.19%)	(0.20%)	(0.39%)
Legacy Hedge Funds	0%	0%	(6.91%)	(6.91%)	0.00%	(0.01%)	(0.01%)
Cash	1%	2%	3.85%	3.59%	0.00%	(0.00%)	0.00%
<b>Total</b>			<b>7.13%</b>	<b>7.59%</b>	<b>+ 0.31%</b>	<b>+ (0.77%)</b>	<b>(0.46%)</b>

#### • What helped relative attribution?

- Outperformance relative to target from non-U.S. Developed Markets Equity and Emerging 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?

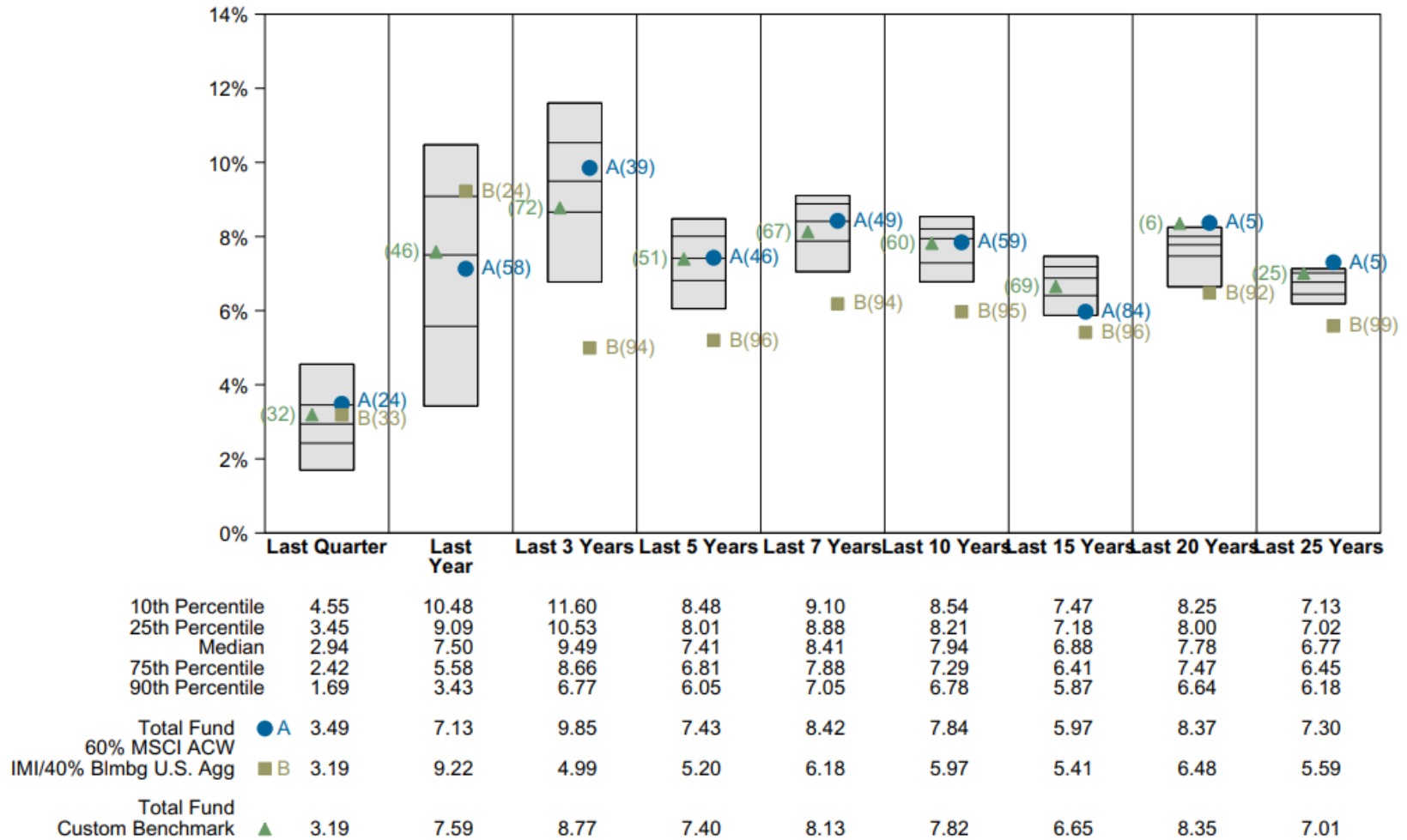
- Relative weights as compared to target to U.S. Equity, Private Equity, Real Estate, non-U.S. Developed Markets Equity and Legacy Private Credit hurt performance (attribution based on target return)
- Underperformance relative to target from Real Estate managers

\* 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.  
Returns are shown gross of fees.

# Total Fund

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

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

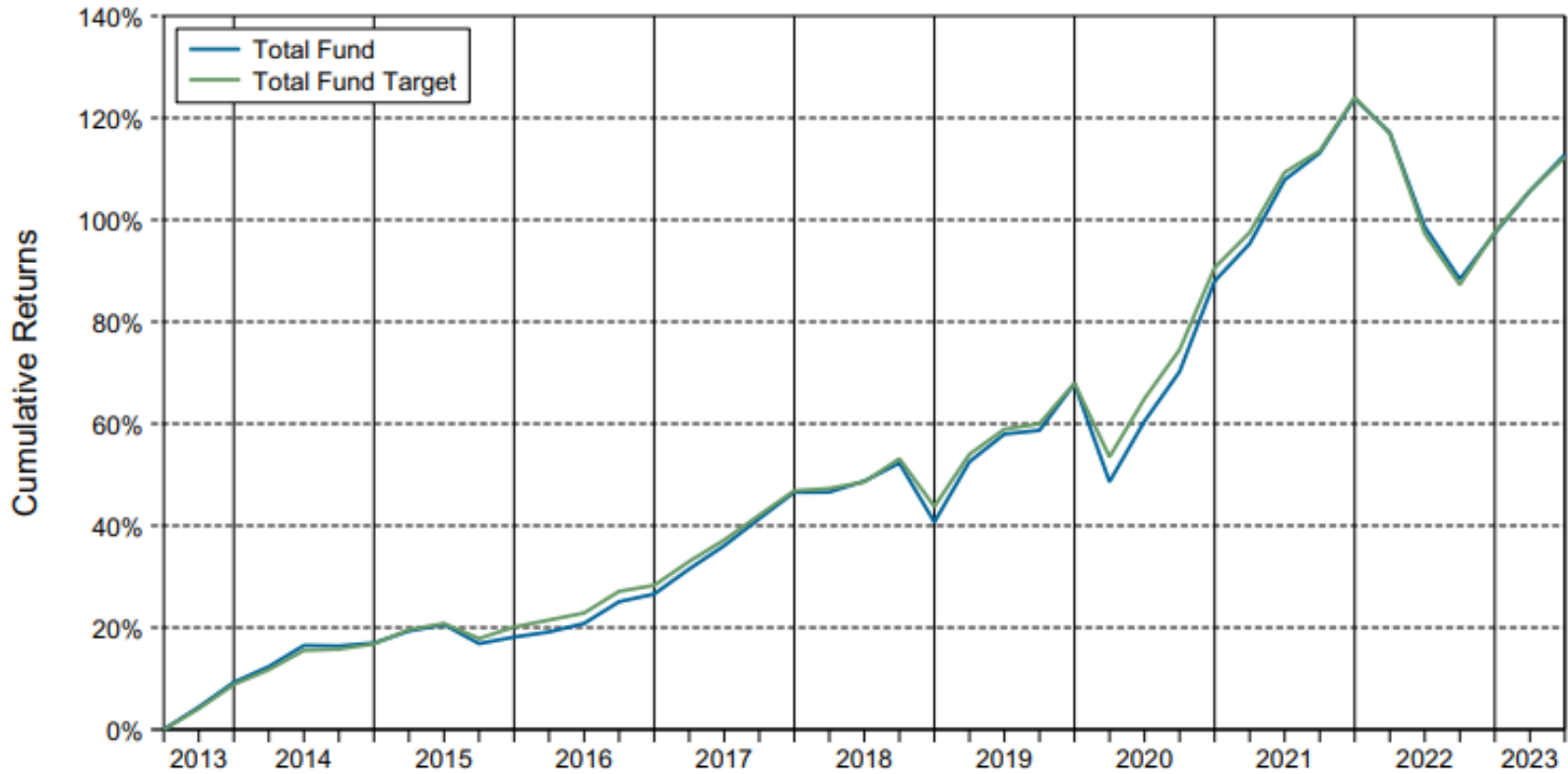


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# Total Fund

Cumulative 10-year Returns vs Target as of June 30, 2023

Cumulative Returns Actual vs Target

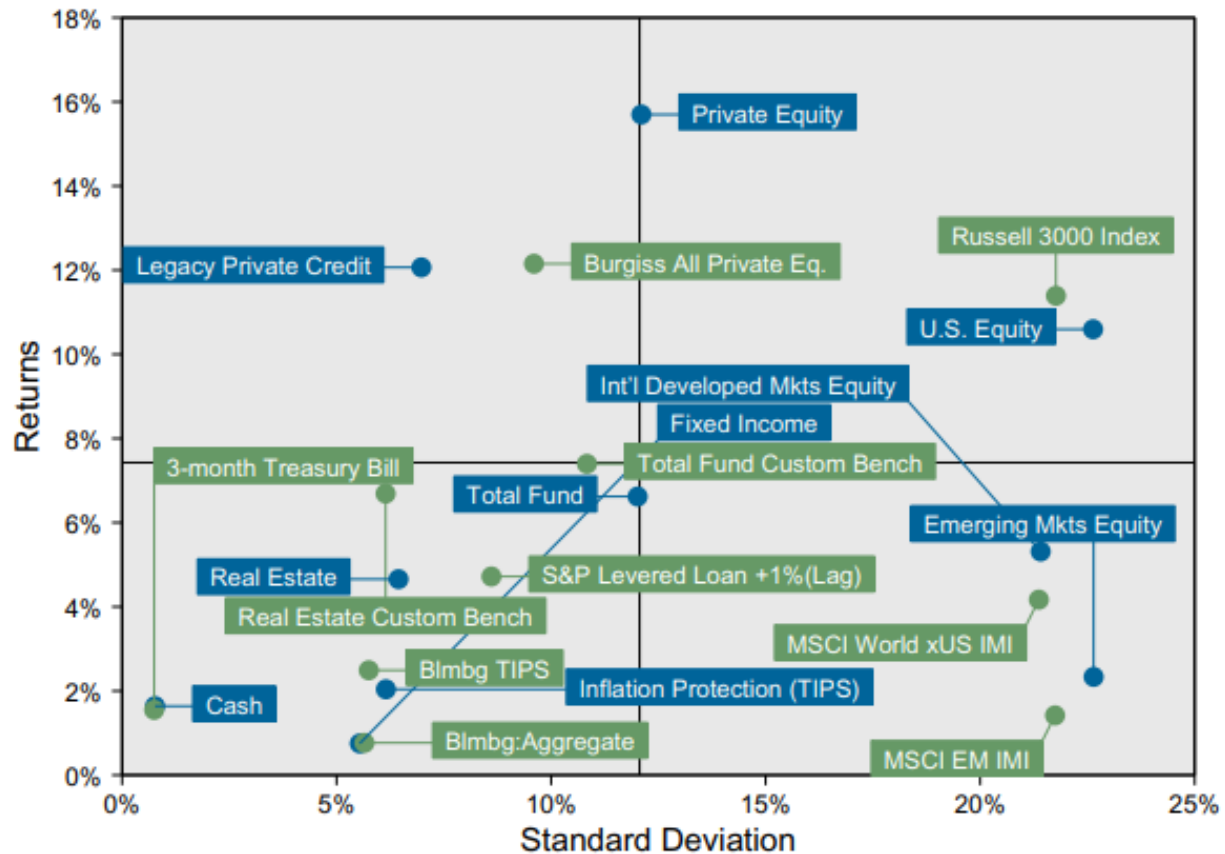


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# Total Fund

Asset Class Risk and Return as of June 30, 2023

**Five Year Annualized Risk vs Return  
Asset Classes vs Benchmark Indices**

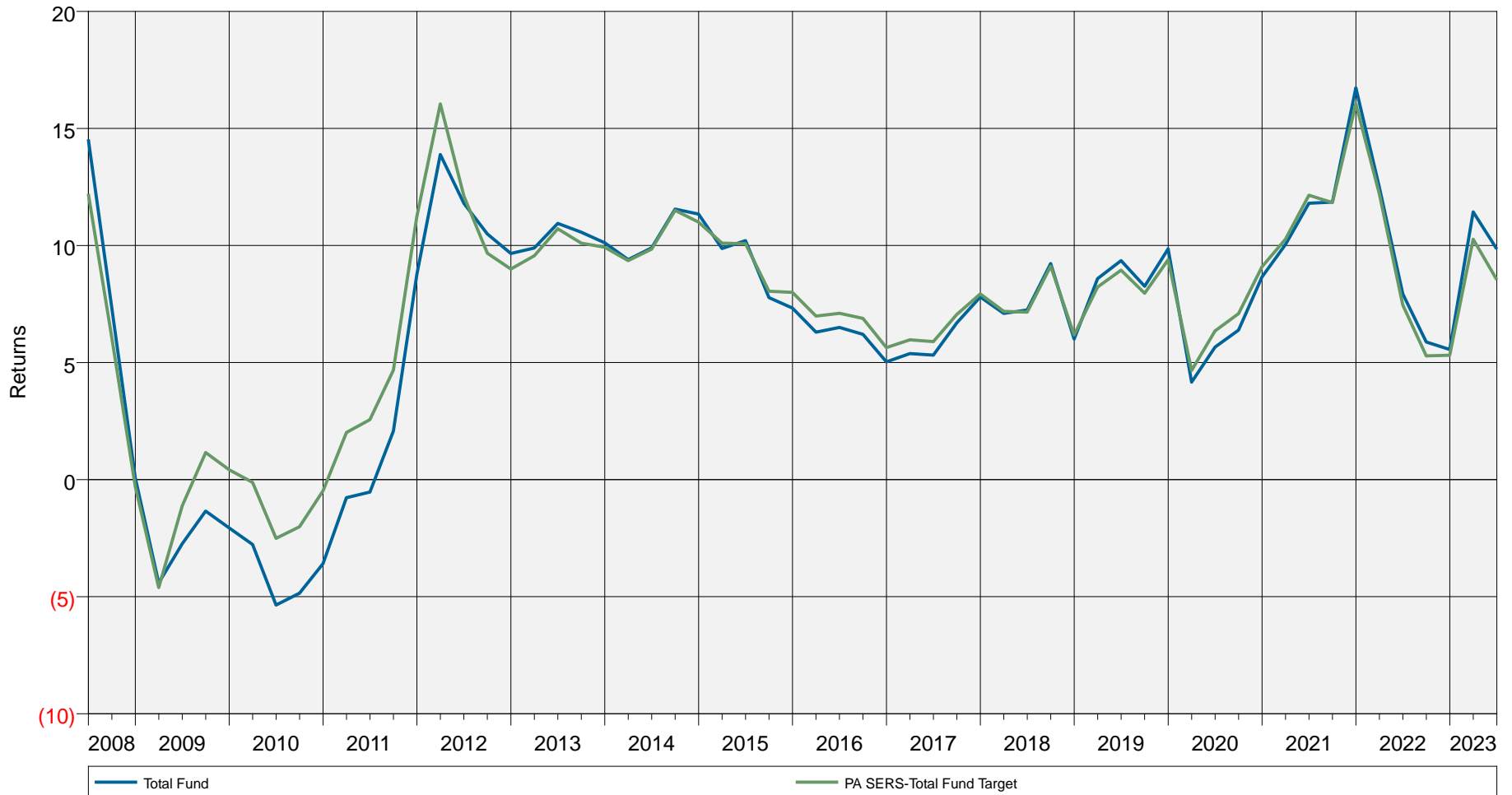


\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

# Total Fund

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

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

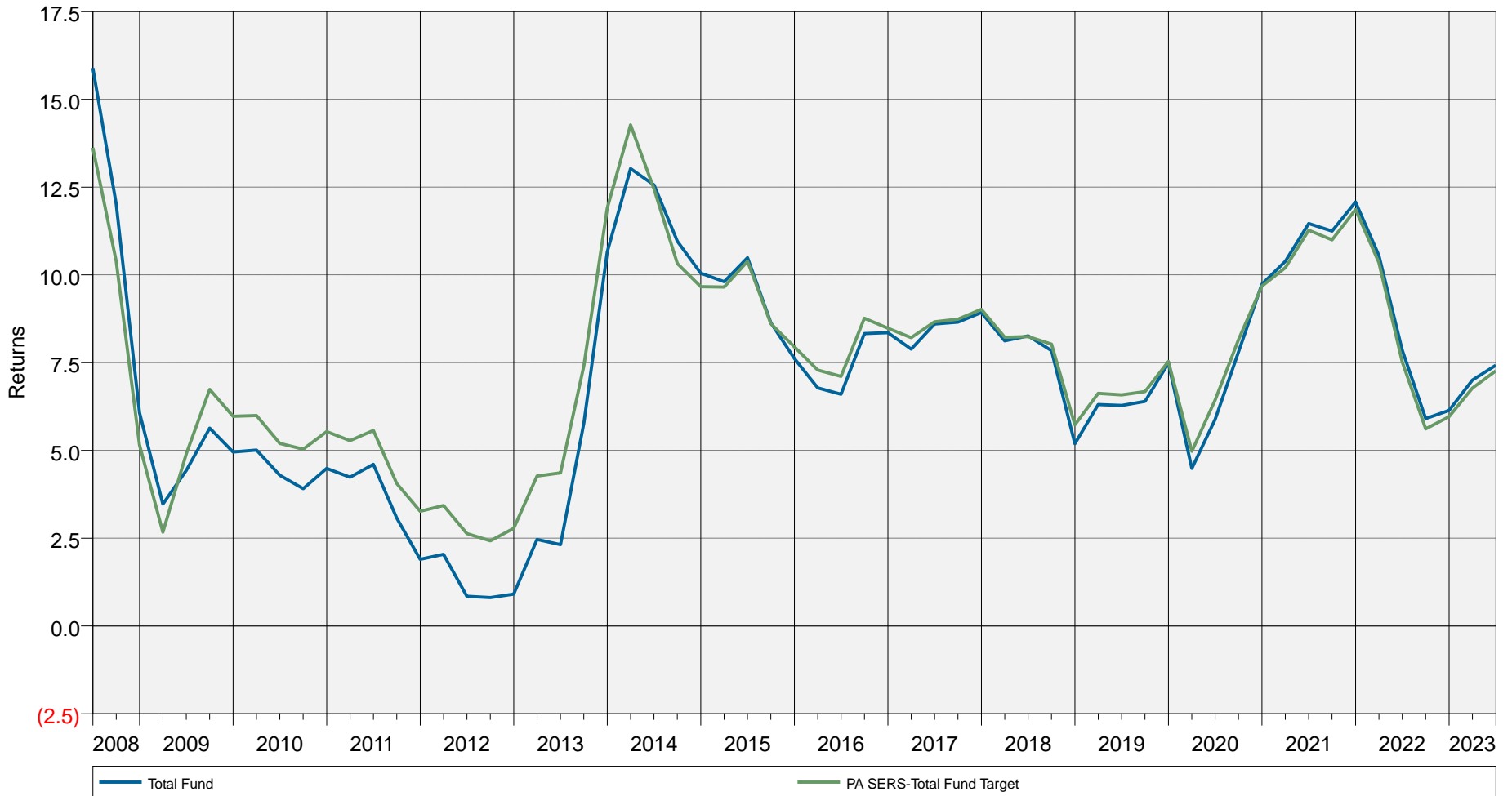


\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Quarter lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

# Total Fund

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

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

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance</b>							
<b>Total Fund</b>	<b>\$35,503</b>	<b>100.00%</b>	<b>3.28%</b>	<b>7.48%</b>	<b>6.91%</b>	<b>8.83%</b>	<b>6.62%</b>
Total Fund Custom Benchmark(1)	-	-	3.19%	7.42%	7.59%	8.77%	7.40%
Public Market Equiv Benchmark(2)	-	-	4.32%	10.60%	8.55%	7.95%	6.85%
60/40 Index(3)	-	-	3.19%	8.71%	9.22%	4.99%	5.20%
<b>U.S. Equity</b>	<b>\$11,204</b>	<b>31.56%</b>	<b>8.32%</b>	<b>15.88%</b>	<b>18.83%</b>	<b>14.10%</b>	<b>10.59%</b>
Russell 3000 Index (4)	-	-	8.39%	16.17%	18.95%	13.89%	11.39%
S&P 1500 Index	-	-	8.39%	16.15%	19.24%	14.67%	11.83%
<b>Int'l Developed Mkts Equity</b>	<b>\$4,962</b>	<b>13.98%</b>	<b>3.68%</b>	<b>12.37%</b>	<b>18.75%</b>	<b>10.42%</b>	<b>5.31%</b>
MSCI World ex US IMI	-	-	2.67%	10.46%	16.35%	8.87%	4.17%
<b>Emerging Mkts Equity</b>	<b>\$1,597</b>	<b>4.50%</b>	<b>1.63%</b>	<b>7.10%</b>	<b>5.60%</b>	<b>3.27%</b>	<b>2.33%</b>
MSCI EM IMI	-	-	1.62%	5.62%	3.19%	3.60%	1.42%
<b>Private Equity</b>	<b>\$6,800</b>	<b>19.15%</b>	<b>2.79%</b>	<b>3.64%</b>	<b>(2.75%)</b>	<b>23.54%</b>	<b>15.70%</b>
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.02%	(5.21%)	16.49%	12.15%
Global Equity + 3% (Qtr lag)(5)	-	-	8.05%	19.03%	(3.11%)	20.98%	13.33%
<b>Legacy Private Credit Funds (6)</b>	<b>\$401</b>	<b>1.13%</b>	<b>2.50%</b>	<b>4.53%</b>	<b>6.60%</b>	<b>13.46%</b>	<b>12.07%</b>
S&P Levered Loan Index + 1% (Qtr lag)	-	-	3.46%	6.53%	3.73%	9.59%	4.72%
<b>Fixed Income</b>	<b>\$6,252</b>	<b>17.61%</b>	<b>(0.49%)</b>	<b>2.46%</b>	<b>(0.48%)</b>	<b>(2.48%)</b>	<b>0.75%</b>
Blmbg U.S. Agg Bond Index	-	-	(0.84%)	2.09%	(0.94%)	(3.96%)	0.77%
<b>Inflation Protection (TIPS)</b>	<b>\$1,026</b>	<b>2.89%</b>	<b>(1.57%)</b>	<b>1.96%</b>	<b>(1.66%)</b>	<b>(0.71%)</b>	<b>2.04%</b>
Blmbg U.S. TIPS Index	-	-	(1.42%)	1.87%	(1.40%)	(0.12%)	2.49%
<b>Real Estate</b>	<b>\$2,666</b>	<b>7.51%</b>	<b>(3.35%)</b>	<b>(5.78%)</b>	<b>(5.98%)</b>	<b>7.22%</b>	<b>4.66%</b>
Real Estate Custom Bench (Qtr lag)(7)	-	-	(3.50%)	(8.40%)	(3.69%)	8.24%	6.69%
CPI + 3% (Qtr lag)	-	-	2.40%	3.16%	7.99%	8.36%	6.88%
<b>Cash</b>	<b>\$576</b>	<b>1.62%</b>	<b>1.24%</b>	<b>2.36%</b>	<b>3.85%</b>	<b>1.38%</b>	<b>1.64%</b>
3-month Treasury Bill	-	-	1.17%	2.25%	3.59%	1.27%	1.55%

\* 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 June 30, 2023

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance</b>						
<b>Total Fund</b>	<b>7.11%</b>	<b>5.20%</b>	<b>7.54%</b>	<b>6.53%</b>	<b>9.26%</b>	(1/81)
Total Fund Custom Benchmark(1)	7.82%	6.65%	8.35%	7.01%	-	
Public Market Equiv Benchmark(2)	7.70%	6.67%	8.37%	7.02%	-	
60/40 Index(3)	5.97%	5.41%	6.48%	5.59%	-	
<b>U.S. Equity</b>	<b>11.51%</b>	<b>8.84%</b>	<b>9.41%</b>	<b>7.35%</b>	<b>10.71%</b>	(1/81)
Russell 3000 Index (4)	12.34%	10.61%	10.05%	7.68%	11.01%	(1/81)
S&P 1500 Index	12.61%	10.79%	10.12%	7.82%	-	
<b>Int'l Developed Mkts Equity</b>	<b>6.25%</b>	<b>3.66%</b>	<b>7.04%</b>	<b>-</b>	<b>6.21%</b>	(1/02)
MSCI World ex US IMI	5.46%	3.43%	6.80%	4.76%	6.12%	(1/02)
<b>Emerging Mkts Equity</b>	<b>3.99%</b>	<b>0.90%</b>	<b>6.37%</b>	<b>-</b>	<b>6.39%</b>	(1/02)
MSCI EM IMI	3.16%	2.15%	8.34%	6.48%	8.14%	(1/02)
<b>Private Equity</b>	<b>12.95%</b>	<b>10.29%</b>	<b>12.96%</b>	<b>12.26%</b>	<b>11.54%</b>	(1/86)
Burgiss Private Equity Index (Qtr lag)	12.75%	10.22%	13.40%	12.52%	16.48%	(1/86)
Global Equity + 3% (Qtr lag)(5)	14.76%	13.24%	13.74%	10.85%	14.41%	(1/86)
<b>Legacy Private Credit Funds (6)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>10.11%</b>	(4/18)
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	4.82%	(4/18)
<b>Fixed Income</b>	<b>1.67%</b>	<b>3.38%</b>	<b>4.05%</b>	<b>4.51%</b>	<b>7.53%</b>	(1/81)
Blmbg U.S. Agg Bond Index	1.52%	2.73%	3.01%	3.90%	6.83%	(1/81)
<b>Inflation Protection (TIPS)</b>	<b>1.95%</b>	<b>2.15%</b>	<b>2.77%</b>	<b>-</b>	<b>2.87%</b>	(2/03)
Blmbg U.S. TIPS Index	2.08%	2.85%	3.63%	4.80%	3.82%	(2/03)
<b>Real Estate</b>	<b>6.05%</b>	<b>2.88%</b>	<b>6.40%</b>	<b>6.91%</b>	<b>8.12%</b>	(3/84)
Real Estate Custom Bench (Qtr lag)(7)	8.18%	5.09%	7.52%	7.65%	-	
CPI+ 3% (Qtr lag)	5.63%	5.34%	5.50%	5.51%	5.82%	(3/84)
<b>Cash</b>	<b>1.24%</b>	<b>1.04%</b>	<b>1.62%</b>	<b>2.21%</b>	<b>3.41%</b>	(1/87)
3-month Treasury Bill	0.98%	0.75%	1.35%	1.89%	3.14%	(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: 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.

(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.

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

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

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

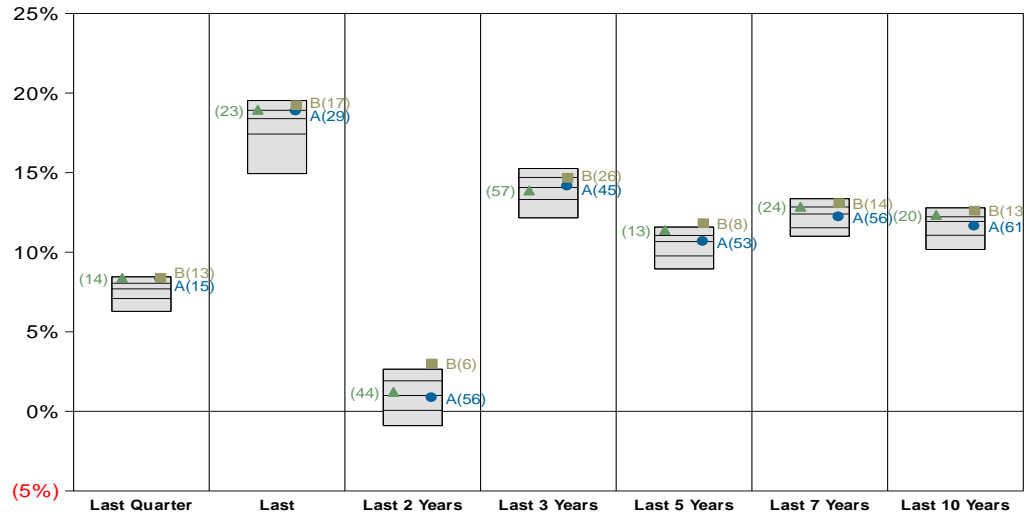
Callan

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

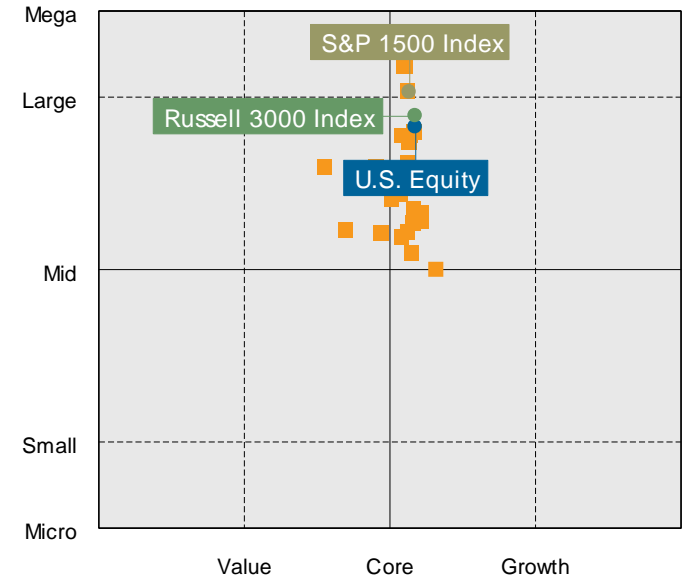
# U.S. Equity as of June 30, 2023

## Performance vs Public Fund - Domestic Equity (Gross)

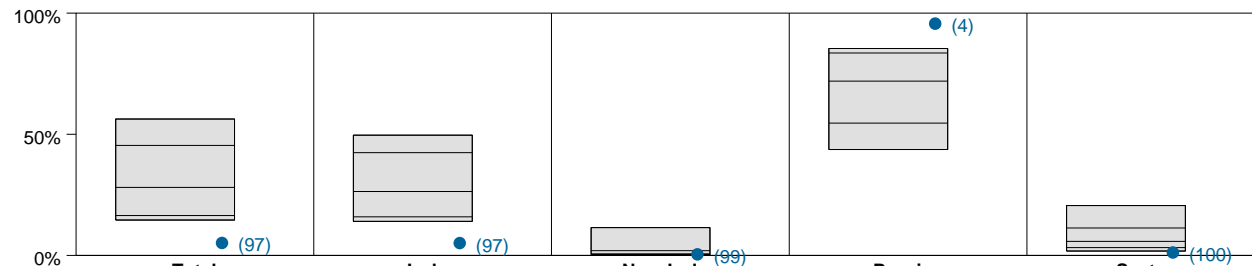


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	8.46	19.53	2.65	15.26	11.58	13.36	12.79
25th Percentile	8.05	18.92	1.92	14.70	11.06	12.84	12.22
Median	7.69	18.39	1.00	14.07	10.67	12.41	11.94
75th Percentile	7.09	17.43	0.07	13.31	9.77	11.54	11.06
90th Percentile	6.28	14.94	(0.90)	12.16	8.95	11.00	10.17
U.S. Equity (A)	8.33	18.86	0.84	14.14	10.65	12.21	11.62
S&P 1500 Index (B)	8.39	19.24	3.01	14.67	11.83	13.08	12.61
Russell 3000 Index (A)	8.39	18.95	1.22	13.89	11.39	12.86	12.34

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



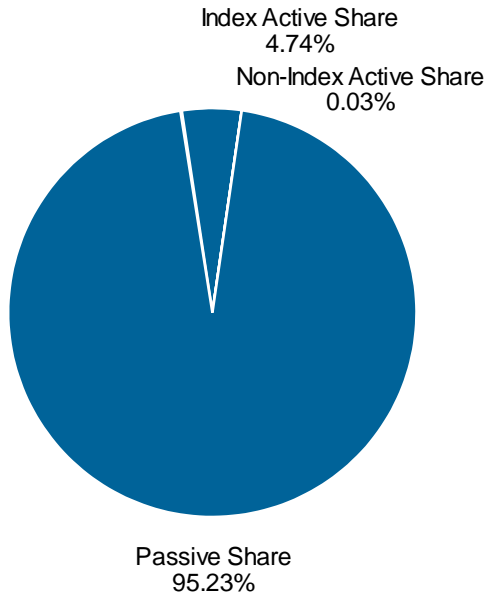
## Active Share vs. Pub Pln- Dom Equity



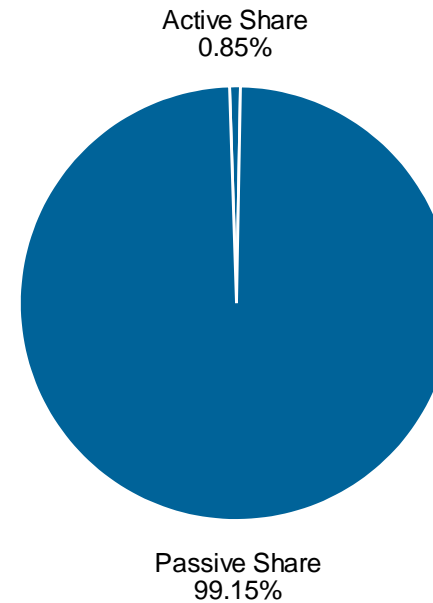
	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	56.28	49.59	11.51	85.39	20.58
25th Percentile	45.42	42.39	1.98	83.54	11.32
Median	28.08	26.36	0.66	71.92	5.83
75th Percentile	16.46	15.92	0.42	54.58	3.27
90th Percentile	14.61	14.05	0.30	43.72	1.84
U.S. Equity (●)	4.77	4.74	0.03	95.23	0.85

# U.S. Equity as of June 30, 2023

## Holdings-Level Active Share



## Sector Exposure Active Share



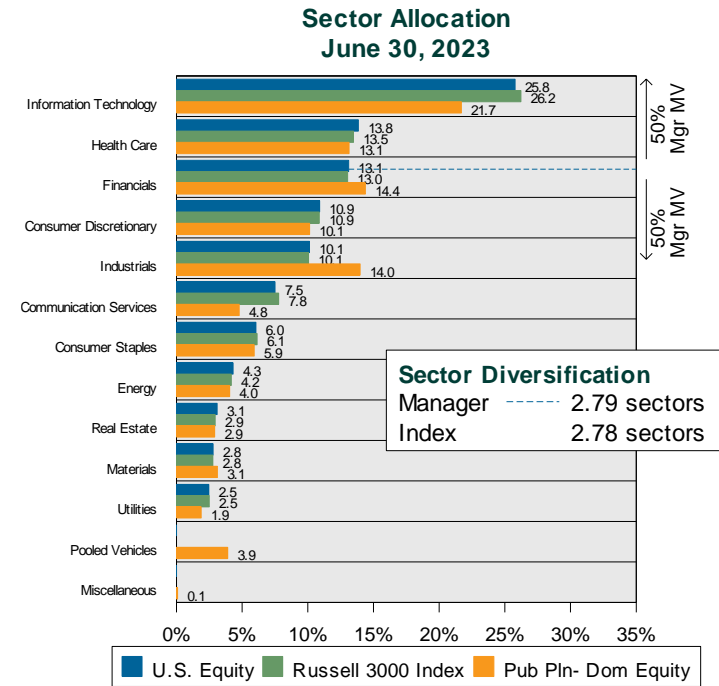
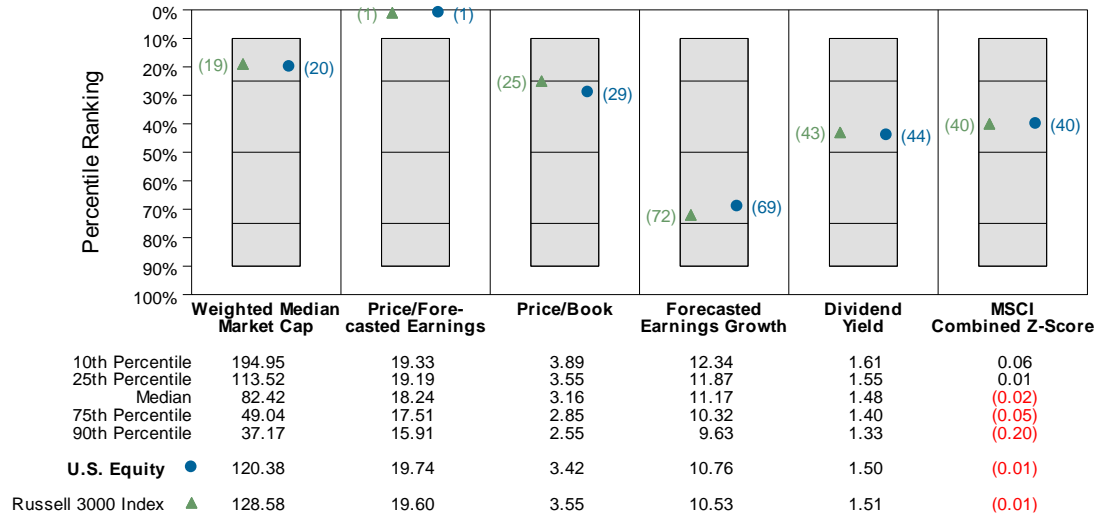
### Total Active Share: 4.77%

	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	1.10%	0.00%	1.10%	7.78%	7.51%	<b>0.20%</b>
Consumer Discretionary	4.73%	0.11%	4.84%	10.87%	10.90%	<b>0.53%</b>
Consumer Staples	3.49%	0.00%	3.49%	6.14%	6.05%	<b>0.25%</b>
Energy	7.42%	0.00%	7.42%	4.18%	4.32%	<b>0.26%</b>
Financials	5.13%	0.05%	5.18%	13.04%	13.11%	<b>0.63%</b>
Health Care	7.86%	0.01%	7.87%	13.48%	13.84%	<b>0.91%</b>
Industrials	7.02%	0.00%	7.03%	10.05%	10.13%	<b>0.63%</b>
Information Technology	2.55%	0.00%	2.55%	26.22%	25.78%	<b>0.94%</b>
Materials	6.20%	0.00%	6.20%	2.77%	2.79%	<b>0.16%</b>
Miscellaneous	0.00%	100.00%	100.00%	-	0.01%	<b>0.00%</b>
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.01%	<b>0.00%</b>
Real Estate	6.40%	0.00%	6.40%	2.95%	3.10%	<b>0.16%</b>
Utilities	2.88%	0.00%	2.88%	2.50%	2.46%	<b>0.09%</b>
<b>Total</b>	<b>4.74%</b>	<b>0.03%</b>	<b>4.77%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>4.76%</b>

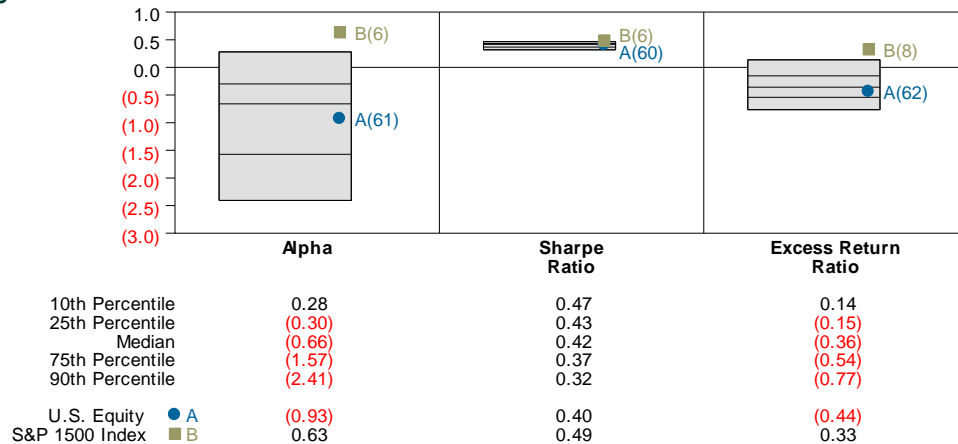
# U.S. Equity

As of June 30, 2023

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

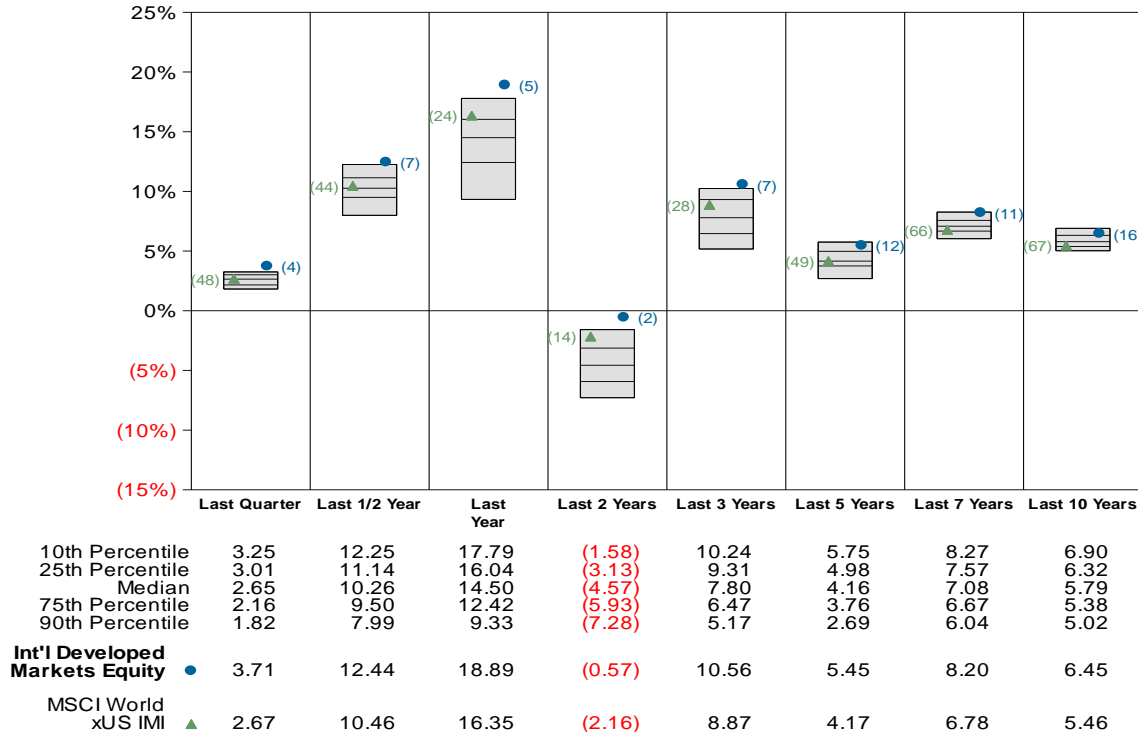


Risk Adjusted Return Measures vs Russell 3000 Index  
Rankings Against Public Fund - Domestic Equity (Gross)  
Five Years Ended June 30, 2023

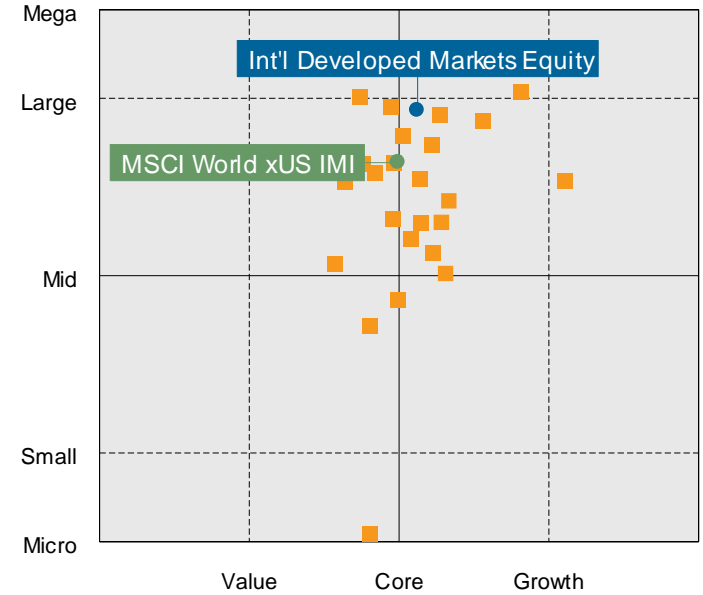


# International Equity as of June 30, 2023

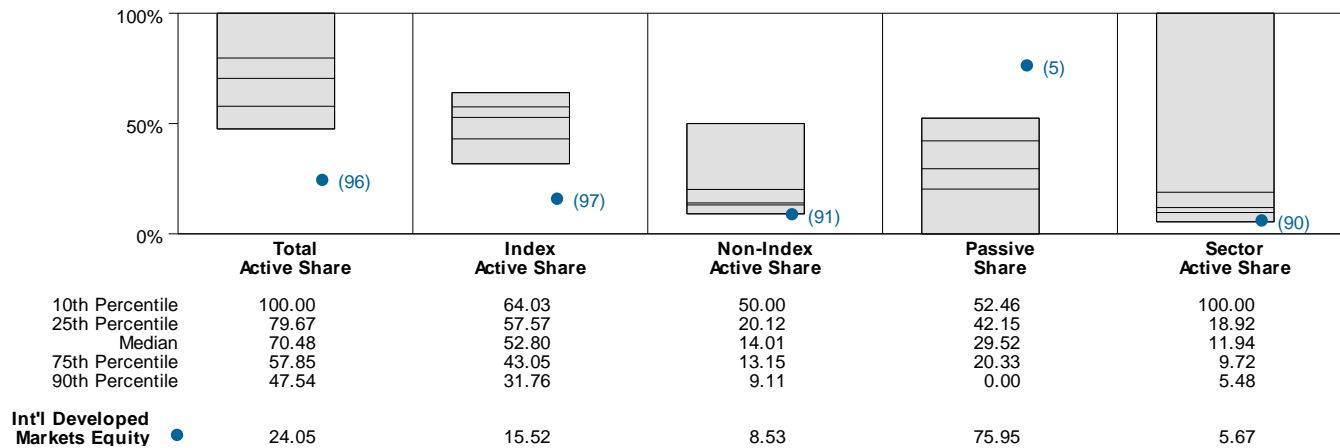
Performance vs Public Fund - International Equity (Gross)



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

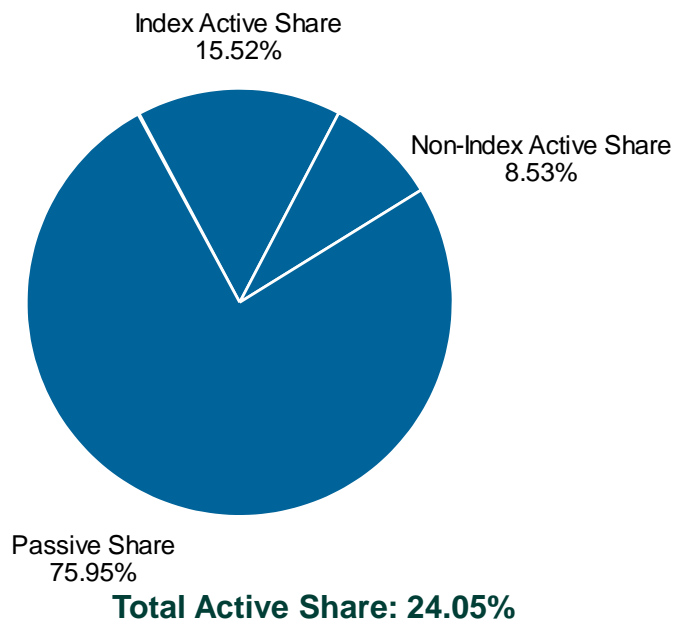


Active Share vs. Pub Pln- Intl Equity

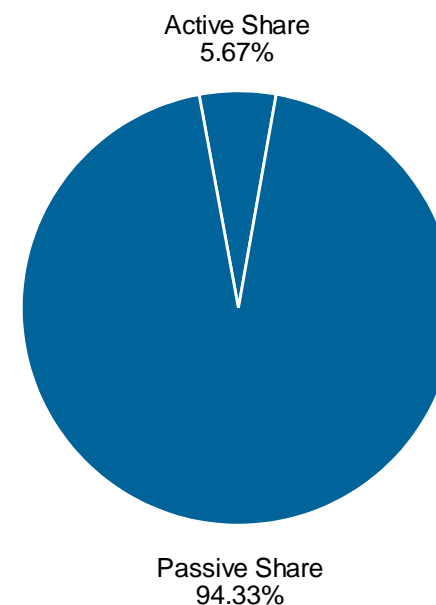


# International Equity as of June 30, 2023

## Holdings-Level Active Share



## Sector Exposure Active Share



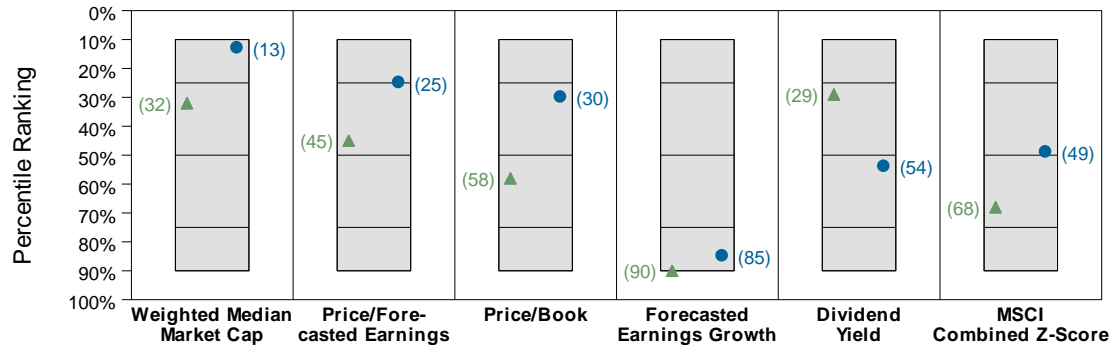
	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	13.50%	8.19%	21.69%	3.87%	3.97%	<b>0.81%</b>
Consumer Discretionary	19.26%	8.51%	27.77%	11.76%	12.49%	<b>3.23%</b>
Consumer Staples	10.50%	6.35%	16.85%	9.03%	9.15%	<b>1.51%</b>
Energy	21.95%	15.39%	37.34%	5.45%	4.58%	<b>1.87%</b>
Financials	9.92%	3.70%	13.62%	18.82%	17.34%	<b>2.98%</b>
Health Care	14.61%	9.18%	23.79%	11.02%	12.39%	<b>2.58%</b>
Industrials	18.13%	8.04%	26.18%	16.74%	16.56%	<b>4.42%</b>
Information Technology	21.88%	16.65%	38.53%	8.48%	10.91%	<b>3.18%</b>
Materials	14.32%	3.66%	17.98%	8.21%	7.17%	<b>1.49%</b>
Miscellaneous	0.00%	100.00%	100.00%	-	0.85%	<b>0.46%</b>
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.00%	<b>0.01%</b>
Real Estate	41.20%	3.98%	45.18%	3.17%	1.75%	<b>0.88%</b>
Utilities	15.57%	4.66%	20.22%	3.45%	2.82%	<b>0.62%</b>
<b>Total</b>	<b>15.52%</b>	<b>8.53%</b>	<b>24.05%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>24.04%</b>



# International Equity

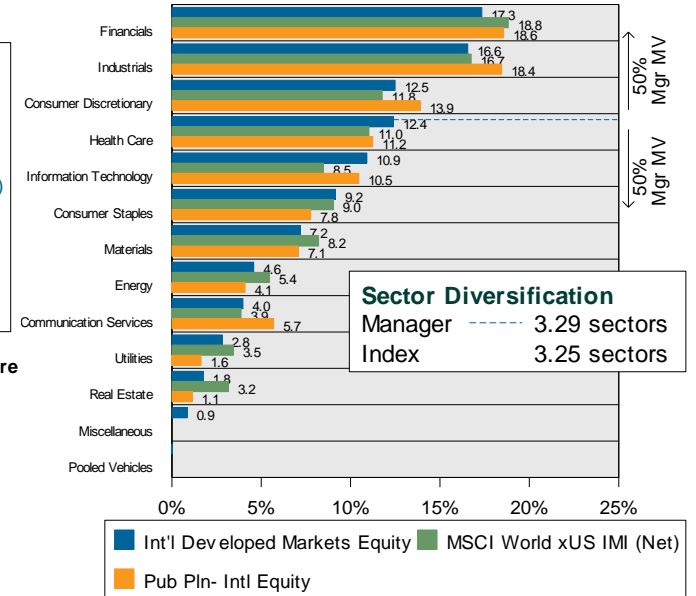
As of June 30, 2023

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

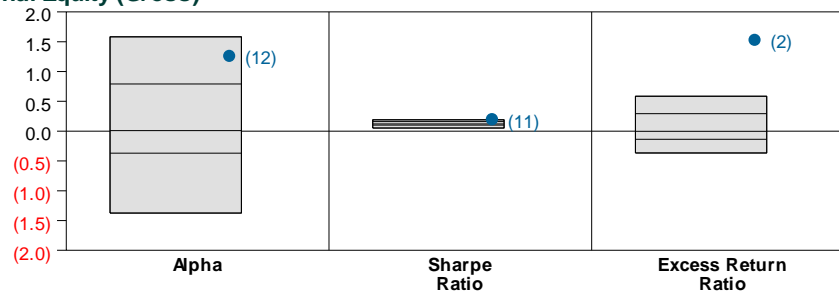


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
Int'l Developed Markets Equity ●	45.10	14.04	1.93	10.85	2.66	0.12
MSCI World xUS IMI (Net) ▲	35.30	13.13	1.68	10.20	3.07	0.01

## Sector Allocation June 30, 2023



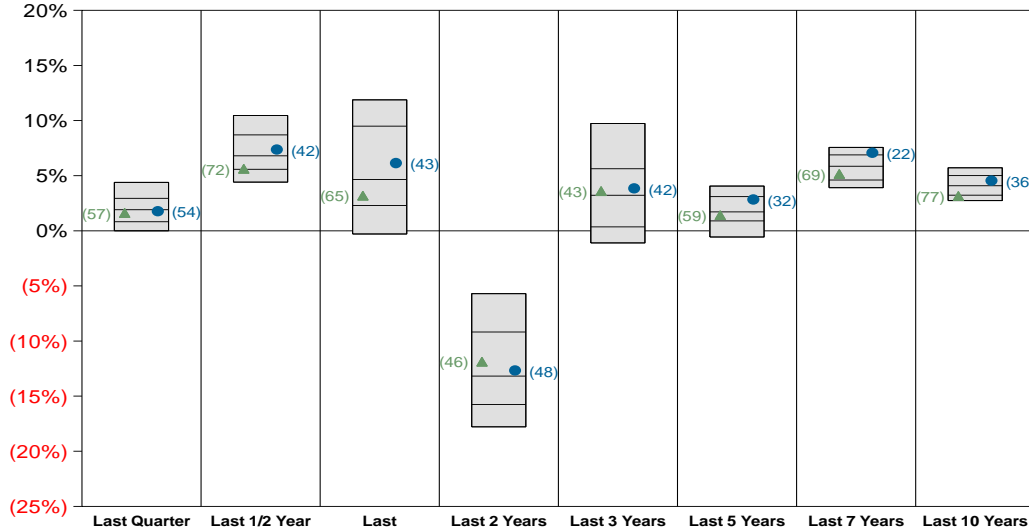
## Risk Adjusted Return Measures vs MSCI World xUS IMI Rankings Against Public Fund - International Equity (Gross) Five Years Ended June 30, 2023



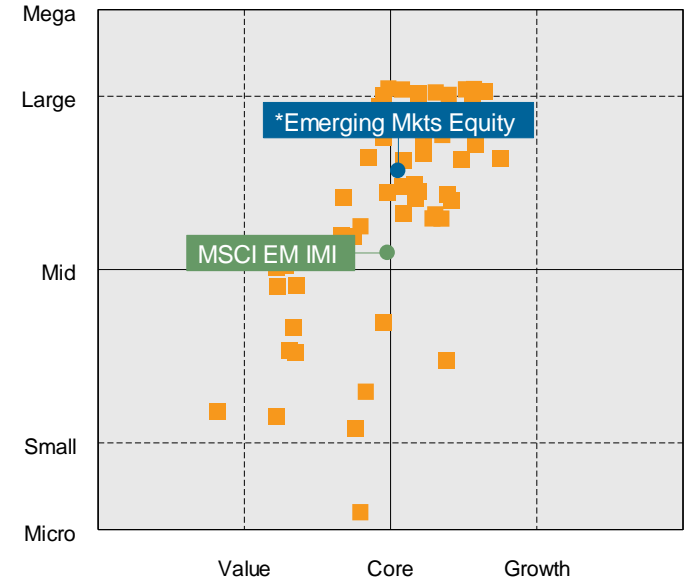
	Alpha	Sharpe Ratio	Excess Return Ratio
Int'l Developed Markets Equity ●	1.25	0.18	1.51

# Emerging Markets Equity as of June 30, 2023

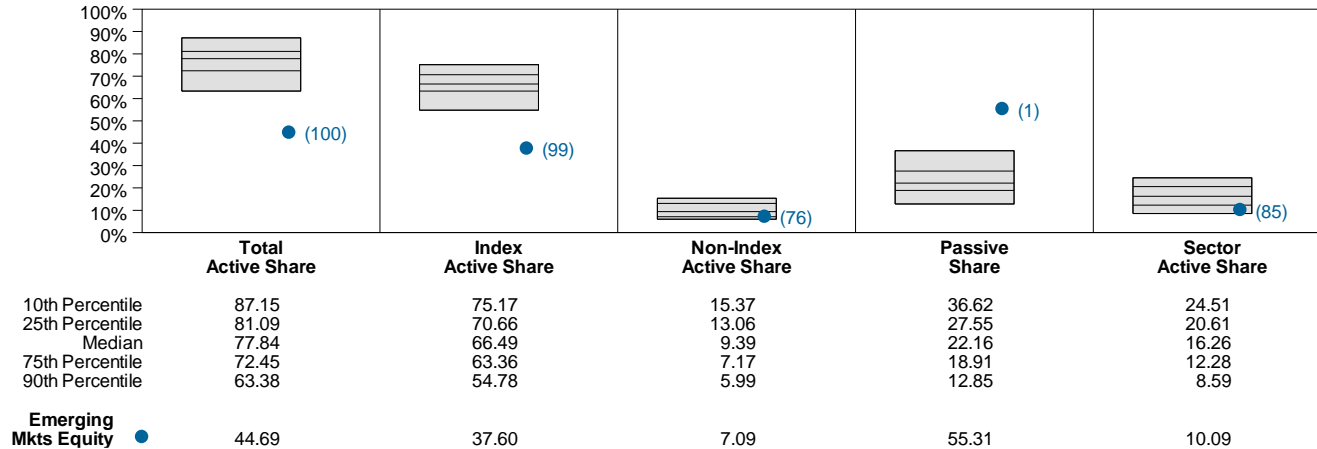
Performance vs Callan Emerging Broad (Gross)



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

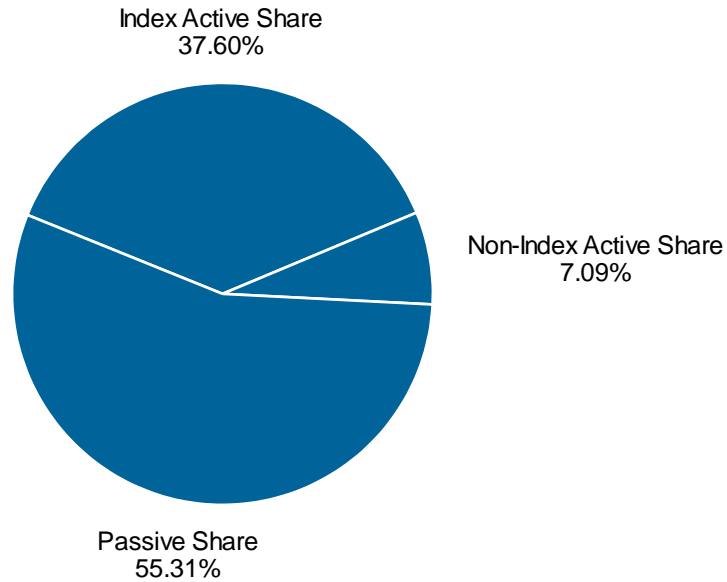


Active Share vs. Callan Emerging Broad



# Emerging Markets Equity as of June 30, 2023

## Holdings-Level Active Share



## Sector Exposure Active Share



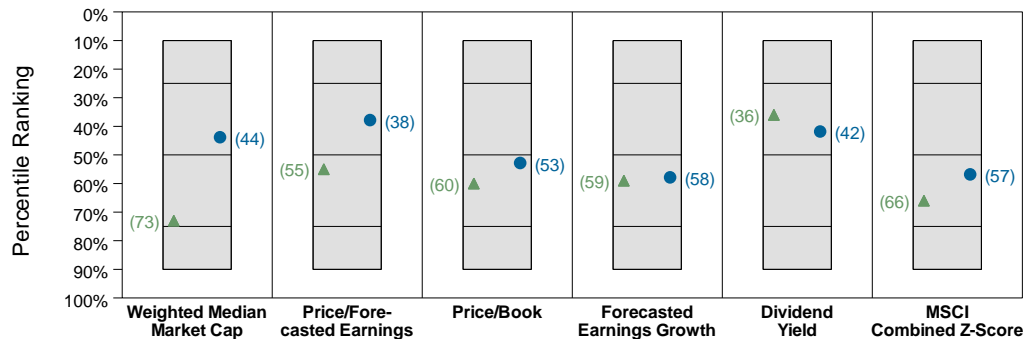
**Total Active Share: 44.69%**

	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	40.75%	7.72%	48.47%	8.99%	8.84%	4.35%
Consumer Discretionary	33.31%	12.30%	45.61%	12.91%	12.46%	5.86%
Consumer Staples	48.01%	3.50%	51.51%	6.33%	7.43%	3.48%
Energy	33.74%	4.29%	38.03%	4.58%	6.03%	1.69%
Financials	35.26%	4.76%	40.02%	20.43%	18.35%	8.08%
Health Care	46.80%	9.79%	56.58%	4.46%	3.35%	2.32%
Industrials	52.37%	3.45%	55.82%	7.77%	5.98%	3.96%
Information Technology	29.94%	2.45%	32.38%	20.60%	24.76%	7.19%
Materials	38.61%	8.00%	46.61%	8.89%	6.92%	3.98%
Miscellaneous	50.00%	50.43%	100.43%	-	1.32%	0.53%
Pooled Vehicles	50.00%	50.00%	100.00%	-	2.07%	1.03%
Real Estate	36.42%	5.37%	41.80%	2.35%	0.97%	0.94%
Utilities	41.32%	2.41%	43.73%	2.70%	1.54%	1.11%
<b>Total</b>	<b>37.60%</b>	<b>7.09%</b>	<b>44.69%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>44.52%</b>

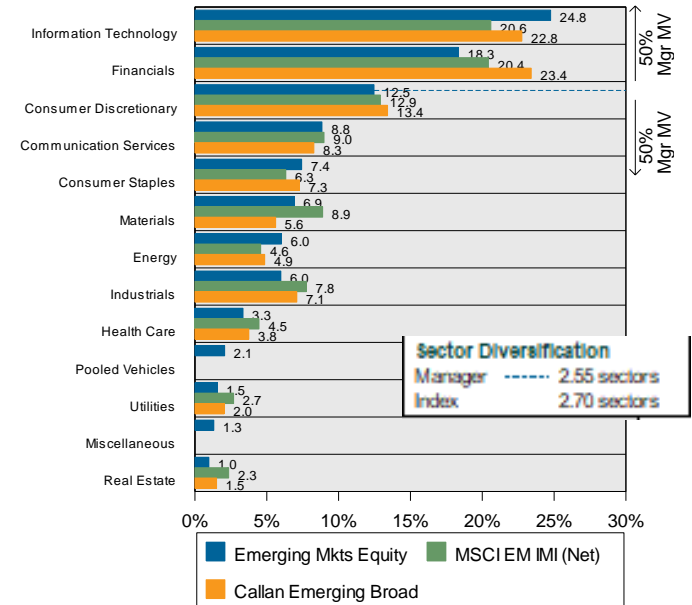
# Emerging Markets Equity

As of June 30, 2023

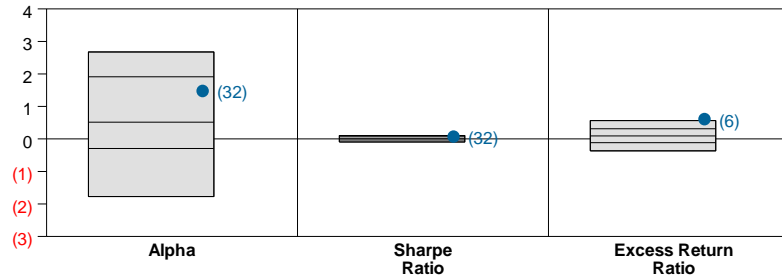
Portfolio Characteristics Percentile Rankings  
Rankings Against Callan Emerging Broad  
as of June 30, 2023



Sector Allocation  
June 30, 2023

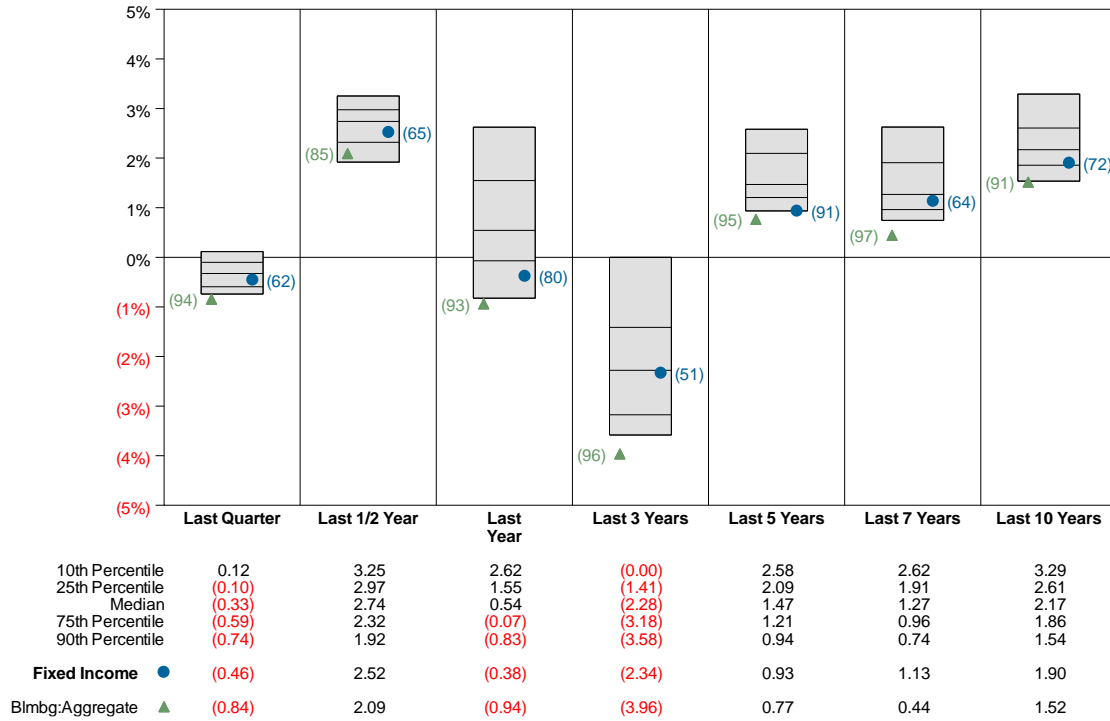


Risk Adjusted Return Measures vs MSCI EM IMI  
Rankings Against Callan Emerging Broad (Gross)  
Five Years Ended June 30, 2023

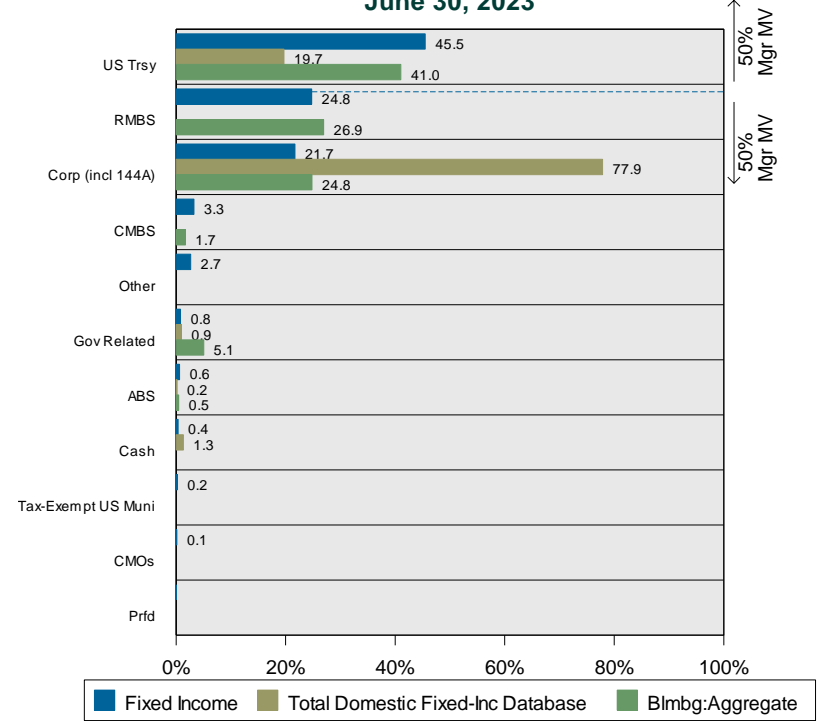


# Core Fixed Income As of June 30, 2023

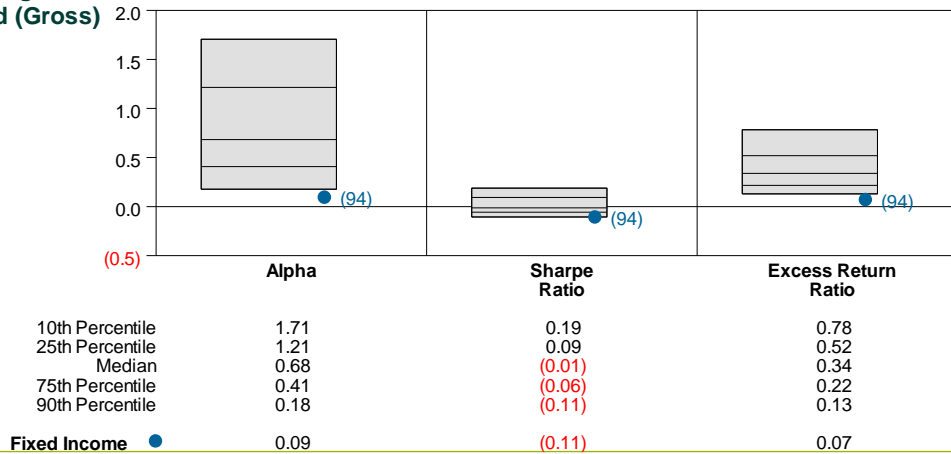
## Performance vs Public Fund - Domestic Fixed (Gross)



## Sector Allocation June 30, 2023



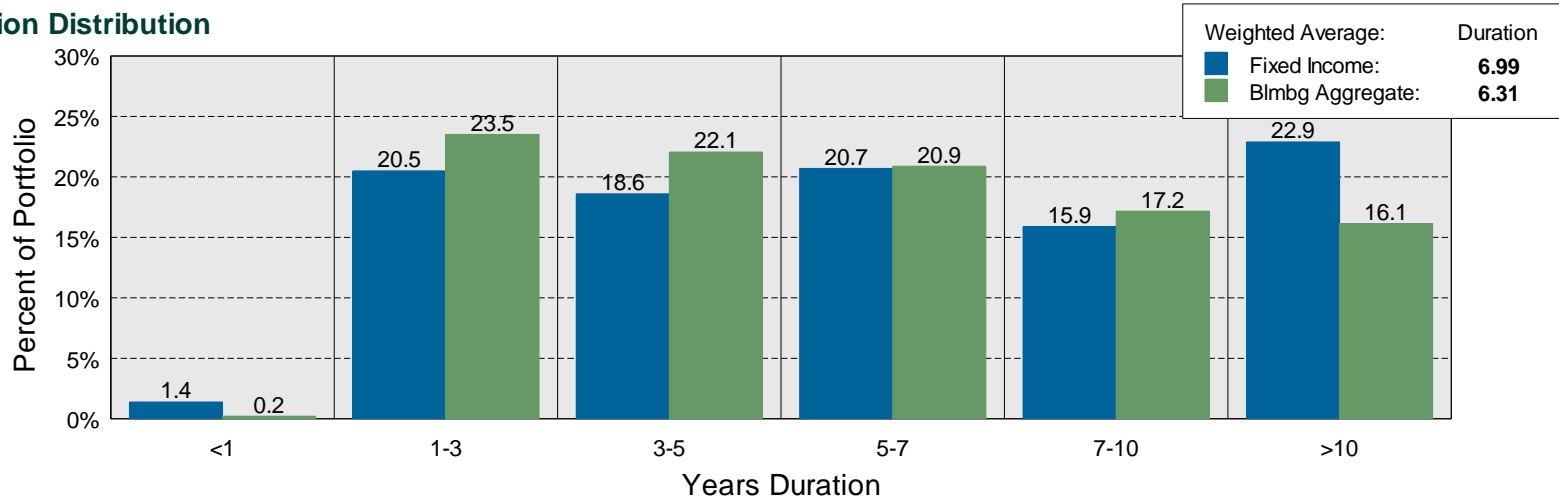
## Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Public Fund - Domestic Fixed (Gross) Five Years Ended June 30, 2023



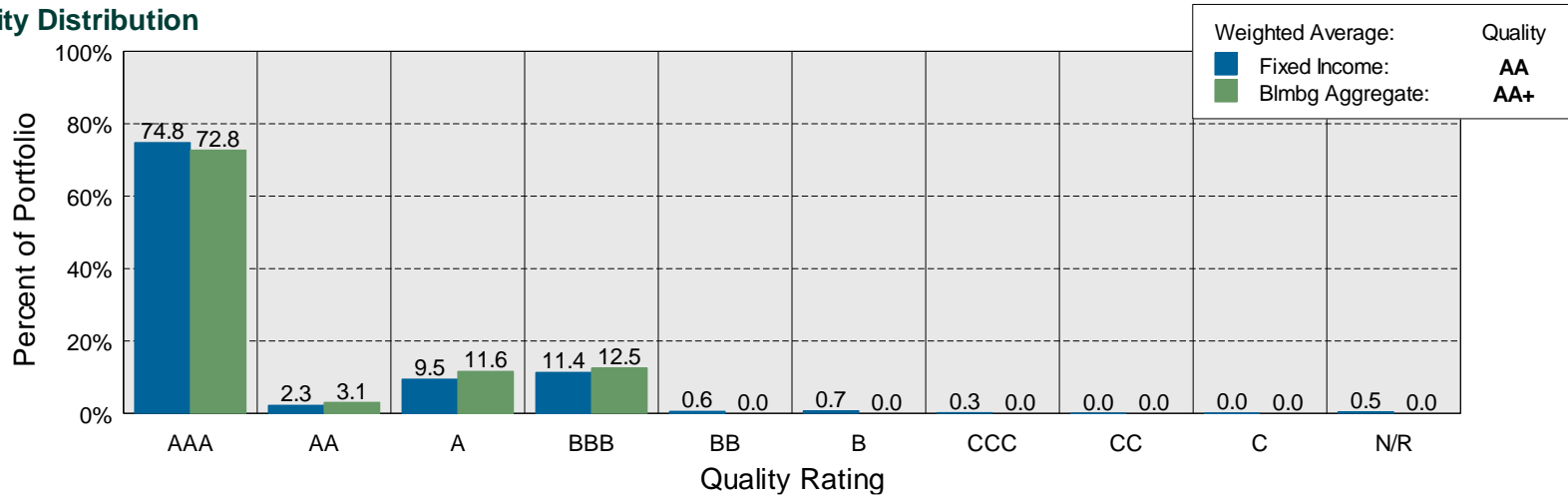
# Core Fixed Income

As of June 30, 2023

**Duration Distribution**

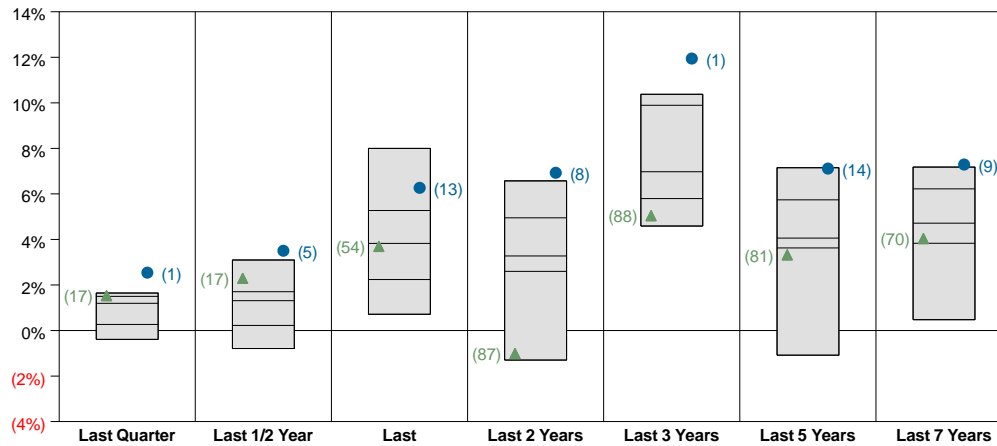


**Quality Distribution**



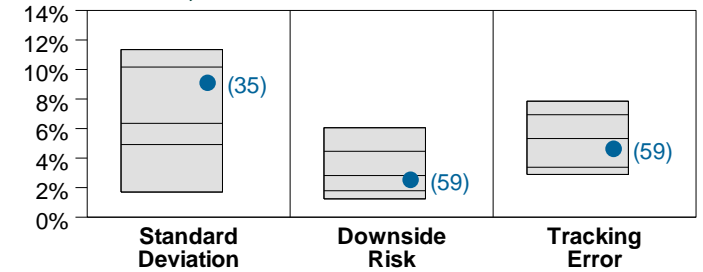
# Opportunistic Fixed Income As of June 30, 2023

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



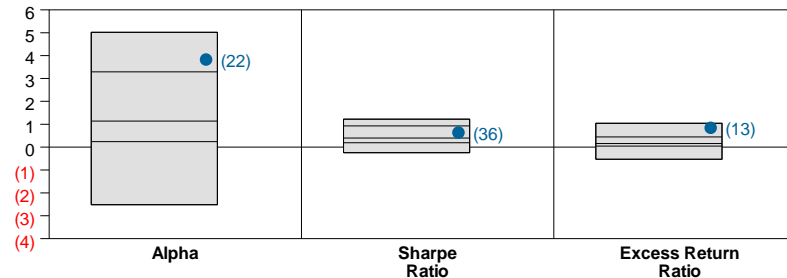
	Last Quarter	Last 1/2 Year	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	1.65	3.10	8.00	6.57	10.38	7.15	7.18
25th Percentile	1.50	1.71	5.27	4.95	9.90	5.74	6.22
Median	1.20	1.31	3.83	3.28	6.97	4.06	4.71
75th Percentile	0.27	0.23	2.24	2.60	5.80	3.63	3.83
90th Percentile	(0.39)	(0.79)	0.71	(1.30)	4.59	(1.08)	0.47
<b>Blackstone Keystone</b>	● 2.52	3.48	6.24	6.90	11.92	7.09	7.27
HFRI Fund of Funds Composite Index	▲ 1.53	2.30	3.70	(1.01)	5.05	3.33	4.04

## Risk Statistics Rankings vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2023



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	11.35	6.06	7.86
25th Percentile	10.17	4.47	6.94
Median	6.36	2.82	5.33
75th Percentile	4.92	1.79	3.38
90th Percentile	1.70	1.25	2.90
<b>Blackstone Keystone</b>	● 9.05	2.49	4.59

## Risk Adjusted Return Measures vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2023



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	5.02	1.22	1.04
25th Percentile	3.29	0.93	0.45
Median	1.14	0.40	0.16
75th Percentile	0.24	0.19	0.04
90th Percentile	(2.52)	(0.24)	(0.53)
<b>Blackstone Keystone</b>	● 3.81	0.61	0.82

# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance- Domestic Equity</b>							
<b>U.S. Equity</b>	<b>\$11,204</b>	<b>100.00%</b>	<b>8.32%</b>	<b>15.88%</b>	<b>18.83%</b>	<b>14.10%</b>	<b>10.59%</b>
Russell 3000 Index (1)	-	-	8.39%	16.17%	18.95%	13.89%	11.39%
S&P 1500 Index	-	-	8.39%	16.15%	19.24%	14.67%	11.83%
MCM Russell 1000 Index	10,156	90.64%	8.58%	16.70%	19.39%	14.27%	12.01%
Russell 1000 Index	-	-	8.58%	16.68%	19.36%	14.09%	11.92%
S&P 500 Index	-	-	8.74%	16.89%	19.59%	14.60%	12.31%
MCM Russell 2000 Core Index	341	3.04%	5.22%	8.25%	12.50%	11.48%	4.53%
Russell 2000 Index	-	-	5.21%	8.09%	12.31%	10.82%	4.21%
S&P 600 Index	-	-	3.38%	6.03%	9.75%	15.19%	5.22%
MCM Russell 2000 Val Index	330	2.94%	3.20%	2.58%	6.11%	15.54%	3.61%
Russell 2000 Value Index	-	-	3.18%	2.50%	6.01%	15.43%	3.54%
S&P 600 Value Index	-	-	1.95%	5.06%	8.88%	18.43%	4.96%
Emerald Asset Management	378	3.37%	8.69%	12.76%	20.75%	6.65%	5.45%
Russell 2000 Growth Index	-	-	7.05%	13.55%	18.53%	6.10%	4.22%
S&P 600 Growth Index	-	-	4.78%	7.02%	10.62%	11.88%	5.22%
		<b>Last 10 Years</b>	<b>Last 15 Years</b>	<b>Last 20 Years</b>	<b>Last 25 Years</b>	<b>Since Inception</b>	
<b>Net Performance- Domestic Equity</b>							
<b>U.S. Equity</b>		<b>11.51%</b>	<b>8.84%</b>	<b>9.41%</b>	<b>7.35%</b>	<b>10.71%</b> <sup>(1/81)</sup>	
Russell 3000 Index (1)		12.34%	10.61%	10.05%	7.68%	11.01% <sup>(1/81)</sup>	
S&P 1500 Index		12.61%	10.79%	10.12%	7.82%	-	
MCM Russell 1000 Index		12.70%	-	-	-	13.68% <sup>(1/12)</sup>	
Russell 1000 Index		12.64%	10.77%	10.13%	7.75%	13.66% <sup>(1/12)</sup>	
S&P 500 Index		12.86%	10.88%	10.04%	7.61%	13.81% <sup>(1/12)</sup>	
MCM Russell 2000 Core Index		-	-	-	-	7.22% <sup>(12/16)</sup>	
Russell 2000 Index		8.26%	8.43%	8.89%	7.26%	6.98% <sup>(12/16)</sup>	
S&P 600 Index		9.81%	9.85%	10.29%	8.94%	7.92% <sup>(12/16)</sup>	
MCM Russell 2000 Val Index		-	-	-	-	5.38% <sup>(12/16)</sup>	
Russell 2000 Value Index		7.29%	7.72%	8.29%	7.62%	5.35% <sup>(12/16)</sup>	
S&P 600 Value Index		9.19%	9.45%	9.79%	8.57%	7.10% <sup>(12/16)</sup>	
Emerald Asset Management		-	-	-	-	9.19% <sup>(12/16)</sup>	
Russell 2000 Growth Index		8.83%	8.85%	9.23%	6.39%	8.11% <sup>(12/16)</sup>	
S&P 600 Growth Index		10.26%	10.12%	10.69%	8.89%	8.49% <sup>(12/16)</sup>	

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

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

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



# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance- International Equity</b>							
<b>Int'l Developed Mkts Equity</b>	<b>\$4,962</b>	<b>100.00%</b>	<b>3.68%</b>	<b>12.37%</b>	<b>18.75%</b>	<b>10.42%</b>	<b>5.31%</b>
MSCI World ex US IMI	-	-	2.67%	10.46%	16.35%	8.87%	4.17%
Walter Scott & Partners(1) MSCI World	724 -	14.60% -	5.72% 6.83%	16.95% 15.09%	23.15% 18.51%	12.23% 12.18%	11.29% 9.07%
BlackRock MSCI World Ex US Index MSCI World ex US	3,872 -	78.04% -	3.28% 3.03%	11.69% 11.29%	18.01% 17.41%	9.83% 9.30%	5.03% 4.58%
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	221 -	4.46% -	3.50% 2.05%	9.34% 6.84%	12.42% 10.93%	7.23% 8.15%	- 2.62%
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	140 - -	2.82% - -	3.81% 0.49% 0.71%	11.05% 5.50% 5.30%	25.96% 10.05% 10.58%	15.75% 6.42% 9.79%	5.05% 1.83% 1.88%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance- International Equity</b>					
<b>Int'l Developed Mkts Equity</b>	<b>6.25%</b>	<b>3.66%</b>	<b>7.04%</b>	<b>-</b>	<b>6.21%</b> <sup>(1/02)</sup>
MSCI World ex US IMI	5.46%	3.43%	6.80%	4.76%	6.12% <sup>(1/02)</sup>
Walter Scott & Partners(1) MSCI World	11.48% 9.50%	9.70% 7.19%	- 8.37%	- 5.98%	9.52% <sup>(10/06)</sup> 6.76% <sup>(10/06)</sup>
BlackRock MSCI World Ex US Index MSCI World ex US	- 5.40%	- 3.28%	- 6.62%	- 4.49%	5.42% <sup>(6/17)</sup> 4.93% <sup>(6/17)</sup>
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	- 5.75%	- 4.71%	- 8.50%	- 6.73%	2.12% <sup>(10/18)</sup> 3.09% <sup>(10/18)</sup>
Harris Assoc Int'l SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	6.70% 5.97% 5.36%	7.45% 4.65% 4.67%	10.06% 8.09% 8.17%	- - 7.27%	10.06% <sup>(7/03)</sup> 8.09% <sup>(7/03)</sup> 8.17% <sup>(7/03)</sup>

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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 June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance- Emerging Mkts Equity</b>							
<b>Emerging Mkts Equity</b>	<b>\$1,597</b>	<b>100.00%</b>	<b>1.63%</b>	<b>7.10%</b>	<b>5.60%</b>	<b>3.27%</b>	<b>2.33%</b>
MSCI EM IMI	-	-	1.62%	5.62%	3.19%	3.60%	1.42%
Macquarie Emg Mkts Equity	333	20.86%	0.77%	8.09%	3.58%	1.35%	1.59%
MSCI EM	-	-	0.90%	4.89%	1.75%	2.32%	0.93%
Martin Currie Emg Mkts Equity	360	22.56%	1.97%	7.17%	6.16%	1.98%	1.57%
MSCI EM	-	-	0.90%	4.89%	1.75%	2.32%	0.93%
BlackRock Emg Mkts Index	540	33.78%	0.79%	4.80%	1.51%	2.08%	0.70%
MSCI EM	-	-	0.90%	4.89%	1.75%	2.32%	0.93%
Leading Edge Emg Mkts Fund	224	14.03%	0.26%	4.36%	4.46%	1.92%	-
MSCI EM	-	-	0.90%	4.89%	1.75%	2.32%	0.93%
GlobeFlex Emerging Small Cap	140	8.76%	8.76%	15.26%	20.80%	18.27%	7.59%
MSCI EM Small Cap	-	-	6.39%	10.50%	13.28%	13.72%	4.94%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance- Emerging Mkts Equity</b>					
<b>Emerging Mkts Equity</b>	<b>3.99%</b>	<b>0.90%</b>	<b>6.37%</b>	<b>-</b>	<b>6.39%</b> (1/02)
MSCI EM IMI	3.16%	2.15%	8.34%	6.48%	8.14% (1/02)
Macquarie Emg Mkts Equity	3.82%	-	-	-	2.99% (5/13)
MSCI EM	2.95%	1.81%	8.18%	-	1.98% (5/13)
Martin Currie Emg Mkts Equity	-	-	-	-	3.52% (1/14)
MSCI EM	2.95%	1.81%	8.18%	-	2.31% (1/14)
BlackRock Emg Mkts Index	-	-	-	-	1.88% (7/17)
MSCI EM	2.95%	1.81%	8.18%	-	2.11% (7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	2.84% (11/18)
MSCI EM	2.95%	1.81%	8.18%	-	3.23% (11/18)
GlobeFlex Emerging Small Cap	-	-	-	-	6.87% (8/13)
MSCI EM Small Cap	4.63%	4.60%	9.68%	7.84%	4.61% (8/13)

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# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance - Fixed Income</b>							
<b>Fixed Income (1)</b>	<b>\$6,252</b>	<b>50.00%</b>	<b>(0.49%)</b>	<b>2.46%</b>	<b>(0.48%)</b>	<b>(2.48%)</b>	<b>0.75%</b>
Blmbg U.S. Agg Bond Index	-	-	(0.84%)	2.09%	(0.94%)	(3.96%)	0.77%
<b>Core Fixed Income</b>	<b>\$4,475</b>	<b>35.79%</b>	<b>(0.79%)</b>	<b>2.36%</b>	<b>(0.64%)</b>	<b>(3.41%)</b>	<b>1.03%</b>
Blmbg U.S. Agg Bond Index	-	-	(0.84%)	2.09%	(0.94%)	(3.96%)	0.77%
PIMCO Core Bond Fund	526	4.21%	(0.42%)	2.95%	(0.03%)	(3.13%)	1.14%
Blmbg Agg ex Treasury	-	-	(0.47%)	2.45%	(0.10%)	(3.46%)	0.91%
Mellon Bond Index	3,949	31.58%	(0.84%)	2.29%	(0.73%)	(3.98%)	0.73%
Blmbg U.S. Agg Bond Index (2)	-	-	(0.84%)	2.09%	(0.94%)	(3.96%)	0.77%
<b>Opportunistic Fixed Income</b>	<b>\$882</b>	<b>7.05%</b>	<b>2.36%</b>	<b>3.17%</b>	<b>5.81%</b>	<b>10.13%</b>	<b>6.13%</b>
BAAM Keystone (3)	882	7.05%	2.36%	3.17%	5.81%	11.09%	6.45%
HFRI FOF Comp Index	-	-	1.53%	2.30%	3.70%	5.05%	3.33%
<b>Nominal U.S. Treasuries</b>	<b>\$773</b>	<b>6.18%</b>	<b>(1.93%)</b>	<b>3.06%</b>	<b>(4.90%)</b>	<b>(7.63%)</b>	<b>(0.13%)</b>
Blmbg US Treas Bell 10Y	-	-	(1.91%)	1.78%	(3.55%)	(6.95%)	0.32%
Mellon Intermediate Treasury Index	266	2.13%	(1.15%)	1.22%	(1.02%)	-	-
Blmbg Intrndt Treasury	-	-	(1.15%)	1.10%	(1.02%)	(2.88%)	0.82%
Mellon Long Duration Index	507	4.05%	(2.34%)	4.50%	(6.86%)	-	-
Blmbg Long Treasury	-	-	(2.30%)	3.72%	(6.82%)	(12.09%)	(0.88%)
<b>Legacy Fixed Income</b>	<b>\$122</b>	<b>0.98%</b>	<b>(0.36%)</b>	<b>(1.80%)</b>	<b>(3.49%)</b>	<b>-</b>	<b>-</b>
Fidelity HY CMBS (4)	122	0.98%	(0.36%)	(2.01%)	(3.49%)	2.71%	0.54%
Blmbg US CMBS Ex AAA Index (5)	-	-	(1.05%)	(0.90%)	(4.94%)	(1.01%)	0.62%
SEI Str.Credit: HY Bank Loans (6)	0	0.00%	(1.54%)	3.44%	2.91%	17.69%	5.98%
FTSE HY Corp (1 month lag)	-	-	1.23%	3.14%	(0.01%)	3.12%	2.94%

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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 \$124K has been rounded to \$0MM.

# Investment Manager Returns

As of June 30, 2023

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance - Fixed Income</b>						
<b>Fixed Income (1)</b>	<b>1.67%</b>	<b>3.38%</b>	<b>4.05%</b>	<b>4.51%</b>	<b>7.53%</b>	(1/81)
Blmbg U.S. Agg Bond Index	1.52%	2.73%	3.01%	3.90%	6.83%	(1/81)
<b>Core Fixed Income</b>	<b>1.76%</b>	<b>3.45%</b>	<b>3.39%</b>	-	<b>3.80%</b>	(1/02)
Blmbg U.S. Agg Bond Index	1.52%	2.73%	3.01%	3.90%	3.45%	(1/02)
PIMCO Core Bond Fund	1.84%	-	-	-	1.45%	(1/13)
Blmbg Agg ex Treasury	1.81%	3.04%	-	-	1.47%	(1/13)
Mellon Bond Index	1.48%	2.60%	2.91%	3.83%	6.30%	(4/84)
Blmbg U.S. Agg Bond Index (2)	1.52%	2.73%	3.01%	3.93%	-	
<b>Opportunistic Fixed Income</b>	<b>4.79%</b>	-	-	-	<b>4.99%</b>	(10/12)
BAAM Keystone (3)	6.34%	-	-	-	7.29%	(7/12)
HFRI FOF Comp Index	3.40%	2.04%	3.42%	3.84%	3.74%	(7/12)
<b>Nominal U.S. Treasuries</b>	<b>0.86%</b>	-	-	-	<b>0.81%</b>	(9/11)
Blmbg US Treas Bell 10Y	0.89%	2.53%	2.73%	3.60%	1.01%	(9/11)
Mellon Intermediate Treasury Index	-	-	-	-	(3.22%)	(3/21)
Blmbg Intrmtd Treasury	0.93%	1.89%	2.31%	3.25%	(3.23%)	(3/21)
Mellon Long Duration Index	-	-	-	-	(13.37%)	(1/21)
Blmbg Long Treasury	1.80%	3.69%	3.93%	4.87%	(13.31%)	(1/21)
<b>Legacy Fixed Income</b>	-	-	-	-	<b>(3.49%)</b>	(7/22)
Fidelity HY CMBS (4)	3.17%	5.74%	5.58%	6.56%	7.07%	(4/97)
Blmbg US CMBS Ex AAA Index (5)	1.99%	1.10%	0.73%	2.70%	3.19%	(4/97)
SEI Str.Credit: HY Bank Loans (6)	6.73%	10.90%	-	-	10.97%	(5/08)
FTSE HY Corp (1 month lag)	3.73%	5.88%	6.43%	5.67%	6.15%	(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.

\*\* 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.

(6) SEI HY Bank Loans has a 1 month lag in valuation. On this chart, SEI's market value of \$124K has been rounded to \$0MM.

# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance - Inflation Protection</b>							
<b>Inflation Protection (TIPS)</b>	<b>\$1,026</b>	<b>100.00%</b>	<b>(1.57%)</b>	<b>1.96%</b>	<b>(1.66%)</b>	<b>(0.71%)</b>	<b>2.04%</b>
Blmbg U.S. TIPS Index	-	-	(1.42%)	1.87%	(1.40%)	(0.12%)	2.49%
NISA Inv Adv TIPS	447	43.55%	(1.48%)	1.99%	(1.39%)	(0.12%)	2.45%
Blmbg U.S. TIPS Index (1)	-	-	(1.42%)	1.87%	(1.40%)	(0.12%)	2.49%
Brown Brothers TIPS	468	45.64%	(1.62%)	1.77%	(1.42%)	(0.28%)	2.41%
Blmbg U.S. TIPS Index	-	-	(1.42%)	1.87%	(1.40%)	(0.12%)	2.49%
New Century Global TIPS	111	10.82%	(1.66%)	2.65%	(3.67%)	(4.00%)	(0.39%)
Blmbg Wrld Inflation Linked Unhdg	-	-	(1.73%)	2.59%	(3.44%)	(3.63%)	(0.36%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Inflation Protection</b>					
<b>Inflation Protection (TIPS)</b>	<b>1.95%</b>	<b>2.15%</b>	<b>2.77%</b>	<b>-</b>	<b>2.87%</b> (2/03)
Blmbg U.S. TIPS Index	2.08%	2.85%	3.63%	4.80%	3.82% (2/03)
NISA Inv Adv TIPS	2.07%	2.14%	-	-	2.81% (4/07)
Blmbg U.S. TIPS Index (1)	2.08%	2.14%	3.09%	4.36%	2.81% (4/07)
Brown Brothers TIPS	2.08%	-	-	-	1.62% (2/12)
Blmbg U.S. TIPS Index	2.08%	2.85%	3.63%	4.80%	1.54% (2/12)
New Century Global TIPS	1.22%	-	-	-	0.85% (2/12)
Blmbg Wrld Inflation Linked Unhdg	1.05%	1.47%	3.30%	4.29%	0.62% (2/12)

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

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

# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance - Private Equity</b>							
<b>Private Equity</b>	<b>\$6,800</b>	<b>100.00%</b>	<b>2.79%</b>	<b>3.64%</b>	<b>(2.75%)</b>	<b>23.54%</b>	<b>15.70%</b>
Burgiss Private Equity Index (Qtr lag)	-	-	0.01%	0.02%	(5.21%)	16.49%	12.15%
Global Equity + 3% (Qtr lag)(1)	-	-	8.05%	19.03%	(3.11%)	20.98%	13.33%
Buyouts	3,786	55.68%	3.15%	4.89%	0.43%	23.43%	15.63%
Burgiss Buyout Index (Qtr lag)	-	-	0.02%	0.05%	(4.26%)	16.25%	10.98%
Special Situations	1,632	24.00%	2.47%	4.16%	2.75%	24.31%	18.52%
Burgiss Special Situations Idx (Qtr lag)	-	-	0.01%	0.01%	(1.41%)	7.87%	4.71%
Growth Equity	1,185	17.42%	2.79%	0.14%	(14.50%)	28.29%	24.70%
Burgiss Venture Capital Index (Qtr lag)	-	-	(0.01%)	(0.05%)	(8.86%)	22.18%	19.51%
Keystone Legacy (2)	197	2.90%	(1.43%)	(2.03%)	(17.07%)	0.10%	(4.32%)

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Private Equity</b>					
<b>Private Equity</b>	<b>12.95%</b>	<b>10.29%</b>	<b>12.96%</b>	<b>12.26%</b>	<b>11.54%</b> (1/86)
Burgiss Private Equity Index (Qtr lag)	12.75%	10.22%	13.40%	12.52%	16.48% (1/86)
Global Equity + 3% (Qtr lag)(1)	14.76%	13.24%	13.74%	10.85%	14.41% (1/86)
Buyouts	13.99%	11.48%	15.19%	14.27%	13.57% (4/86)
Burgiss Buyout Index (Qtr lag)	12.29%	9.77%	14.22%	12.12%	18.79% (4/86)
Special Situations	12.80%	11.33%	14.34%	12.94%	13.26% (1/95)
Burgiss Special Situations Idx (Qtr lag)	6.61%	6.64%	9.04%	9.10%	9.75% (1/95)
Growth Equity	15.53%	10.79%	9.12%	8.00%	8.55% (1/86)
Burgiss Venture Capital Index (Qtr lag)	17.94%	13.30%	12.24%	13.15%	14.20% (1/86)
Keystone Legacy (2)	-	-	-	-	(4.32%) (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 3/31/2023, Keystone Legacy SPV consists of 44 non-core funds, prior performance is reflected in previous sub-asset classes.

# Investment Manager Returns

As of June 30, 2023

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
<b>Net Performance - Real Estate</b>							
<b>Real Estate</b>	<b>\$2,666</b>	<b>100.00%</b>	<b>(3.35%)</b>	<b>(5.78%)</b>	<b>(5.98%)</b>	<b>7.22%</b>	<b>4.66%</b>
Real Estate Custom Bench (Qtr lag) (1)	-	-	(3.50%)	(8.40%)	(3.69%)	8.24%	6.69%
CPI +3% (Qtr lag)	-	-	2.40%	3.16%	7.99%	8.36%	6.88%
Core/Core Plus Real Estate Funds	1,232	46.21%	(1.74%)	(3.46%)	(0.88%)	8.83%	6.80%
NCREIF ODCE Index (Qtr lag)	-	-	(3.50%)	(8.40%)	(3.69%)	8.17%	7.13%
Value Add/Oppportunistic SMA	555	20.83%	(8.99%)	(14.00%)	(16.32%)	1.10%	0.19%
NCREIF ODCE Index (Qtr lag)	-	-	(3.50%)	(8.40%)	(3.69%)	8.17%	7.13%
Value Add/Oppportunistic Funds	757	28.38%	(2.51%)	(5.95%)	(6.69%)	9.39%	6.96%
NCREIF ODCE Index (Qtr lag)	-	-	(3.50%)	(8.40%)	(3.69%)	8.17%	7.13%
REITS	121	4.56%	2.14%	5.00%	(1.47%)	8.96%	7.06%
FTSE NAREIT US Index	-	-	2.56%	5.28%	(0.45%)	8.80%	5.65%

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Real Estate</b>					
<b>Real Estate</b>	<b>6.05%</b>	<b>2.88%</b>	<b>6.40%</b>	<b>6.91%</b>	<b>8.12%</b> (3/84)
Real Estate Custom Bench (Qtr lag) (1)	8.18%	5.09%	7.52%	7.65%	-
CPI +3% (Qtr lag)	5.63%	5.34%	5.50%	5.51%	5.82% (3/84)
Core/Core Plus Real Estate Funds	8.38%	6.18%	7.57%	7.94%	7.11% (9/86)
NCREIF ODCE Index (Qtr lag)	8.82%	5.05%	7.12%	7.48%	6.15% (9/86)
Value Add/Oppportunistic SMA	3.64%	0.10%	3.90%	4.89%	4.81% (6/88)
NCREIF ODCE Index (Qtr lag)	8.82%	5.05%	7.12%	7.48%	6.20% (6/88)
Value Add/Oppportunistic Funds	8.71%	3.59%	7.44%	8.28%	7.79% (3/84)
NCREIF ODCE Index (Qtr lag)	8.82%	5.05%	7.12%	7.48%	6.39% (3/84)
REITS	5.22%	5.36%	8.90%	7.80%	9.01% (4/96)
FTSE NAREIT US Index	5.64%	5.81%	8.94%	7.70%	9.33% (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

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**Appendix II – Callan Update**



# Published Research Highlights from 2Q23

2023 Private Credit Fees and Terms Study



The Critical Underlying Technology Behind Digital Assets: A Primer for Institutional Investors



Understanding the DNA of the U.S. Life Sciences Sector



Research Café: ESG Interview Series Session



## Recent Blog Posts

**Biodiversity: A Relatively New Theme for ESG-focused Investors**

Kristin Bradbury

**How Your Public DB Plan's Returns Compare**

Public DB Plan Focus Group

**How to Improve DC Plans with DEI**

Jana Steele

## 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 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.

– August 23-24, 2023 – Virtual Session via Zoom

### Intro to Investments—Learn the Fundamentals

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

– September 26–28, 2023 – Virtual Session via Zoom

– November 1–2, 2023 – Atlanta, Georgia

Please visit our website at [callan.com/events-education](https://callan.com/events-education) as we add dates to our 2023 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

*Watch your email for further details and an invitation.*

## Webinars & Research Café Sessions

### Webinar:

### The End of the Low-Yield Environment

August 9, 2023 – 9:30am (PT)

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