

Callan



February 2025

Illinois Municipal Retirement Fund

Fourth Quarter 2024
Performance Review

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IMRF Performance Highlights

As of December 31, 2024

- IMRF's market value as of December 31, 2024 was \$54.9 billion, down from \$56.4 billion at the end of 3Q24.
- The Total Fund returned -1.37% for the quarter versus the benchmark return of -0.37%. The Fund's 4Q return ranked in the 65th percentile of peers. For the year, the Fund returned 9.15% and ranked just ahead of the median.
- The U.S. Equity portfolio returned 1.23% for the quarter and underperformed the benchmark return of 2.03%. For the year, the U.S. Equity portfolio gained 18.84% relative to the benchmark return of 22.80%.
- International Equity declined 6.74% during the quarter but fared better than the benchmark return of -7.61%. For the year, the International Equity Portfolio returned 6.00% and outpaced the benchmark return of 5.53%.
- The Fixed Income portfolio performed in line with the benchmark during the quarter, returning -2.29% versus -2.27%. For the year, the Fixed Income portfolio returned 2.99% and outperformed the benchmark return of 2.58%.
- Private Real Assets declined 0.54% in the fourth quarter versus the benchmark return of 0.96%. For the year, the Private Real Assets portfolio modestly outperformed the benchmark, returning -1.79% versus -1.82%.
- All asset classes are within the rebalancing range as stated in the Investment Policy.

*Numbers are for fourth quarter unless otherwise noted. Returns presented are net of fees, peer group rankings are on a gross of fee basis.

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Economic & Market Overview

Equity Markets Up Sharply in 2024

Stocks have recovered losses of 2022; fixed income still lags

S&P 500 climbed 25% in 2024

- U.S. large cap substantially outperformed U.S. small cap, developed ex-U.S. markets, and emerging markets. Technology and AI drove the S&P 500.

Weak 4Q for core fixed income

- The Bloomberg Aggregate fell 3.1%. Long duration and non-U.S. bonds saw even greater declines.
- Interest rates remain volatile as the markets assess how the Fed will continue with easing.
- CPI-U came in at 2.9% (year-over-year) through December, up from 3Q, but with a welcome decline in the core figure, which rose 3.2%.

Solid growth through 2024

- 3Q GDP came in at a surprisingly strong 3.1%, after another surprise in 2Q, and saw 2.3% growth in 4Q. Consumer spending continues to drive GDP growth.

Returns for Periods ended 12/31/24

	Quarter	1 Year	3 Years	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	2.63	23.81	8.01	13.86	12.55	7.84
S&P 500	2.41	25.02	8.94	14.53	13.10	7.70
Russell 2000	0.33	11.54	1.24	7.40	7.82	7.55
Global ex-U.S. Equity						
MSCI World ex USA	-7.43	4.70	1.91	5.10	5.26	3.78
MSCI Emerging Markets	-8.01	7.50	-1.92	1.70	3.64	--
MSCI ACWI ex USA Small Cap	-7.66	3.36	-1.47	4.30	5.66	6.23
Fixed Income						
Bloomberg Aggregate	-3.06	1.25	-2.41	-0.33	1.35	3.94
90-day T-Bill	1.17	5.25	3.89	2.46	1.77	1.91
Bloomberg Long Gov/Credit	-7.42	-4.15	-9.20	-3.26	0.99	5.36
Bloomberg Global Agg ex-US	-6.84	-4.22	-6.28	-3.37	-0.90	2.45
Real Estate						
NCREIF Property Index	0.90	0.43	-0.82	3.13	5.66	7.58
FTSE Nareit Equity	-6.21	8.73	-2.20	4.27	5.73	9.84
Alternatives						
Cambridge Private Equity*	2.68	7.93	2.75	14.27	13.40	12.39
Cambridge Senior Debt*	3.35	10.18	7.08	7.89	7.31	4.59
HFRI Fund Weighted	1.49	9.83	4.41	7.00	5.26	5.57
Bloomberg Commodity	-0.45	5.38	4.05	6.77	1.28	2.15
Gold Spot Price	-0.69	27.47	13.04	11.64	8.35	9.24
Inflation: CPI-U*	0.10	2.89	4.22	4.20	3.00	2.54

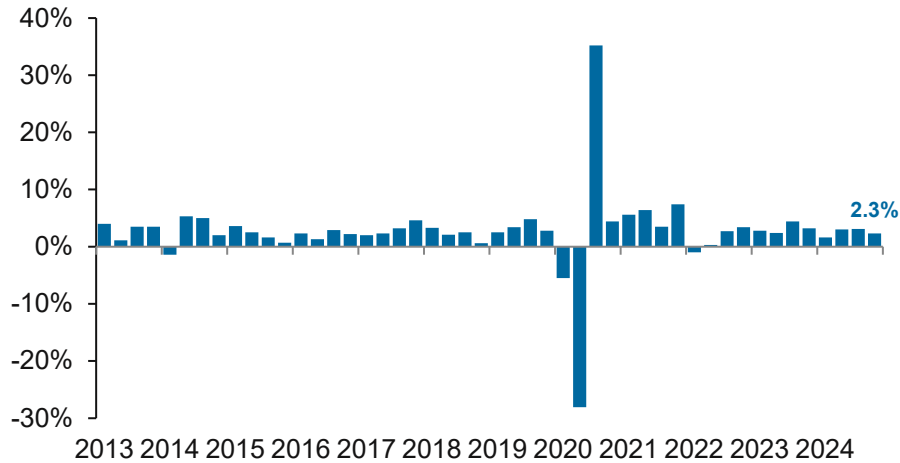
*Cambridge Private Equity and Cambridge Senior Debt data as of 9/30/24. Returns greater than one year are annualized.

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

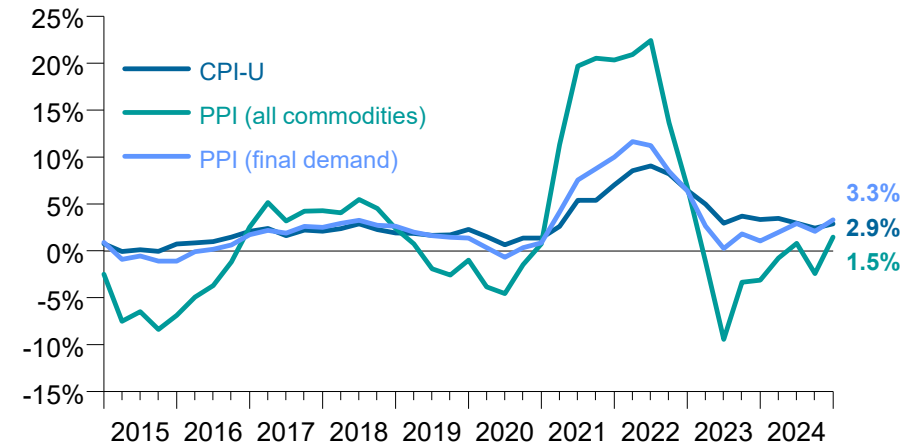
U.S. Economy—Summary

For periods ended 12/31/24

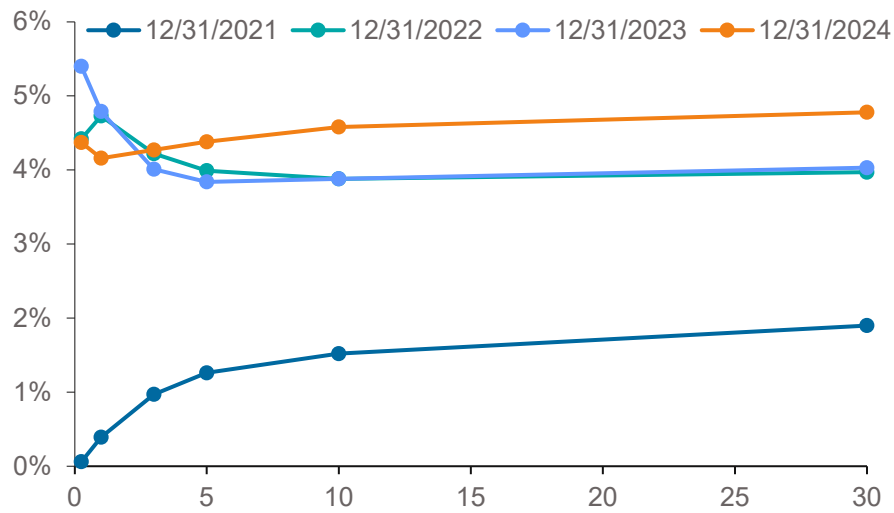
Quarterly Real GDP Growth



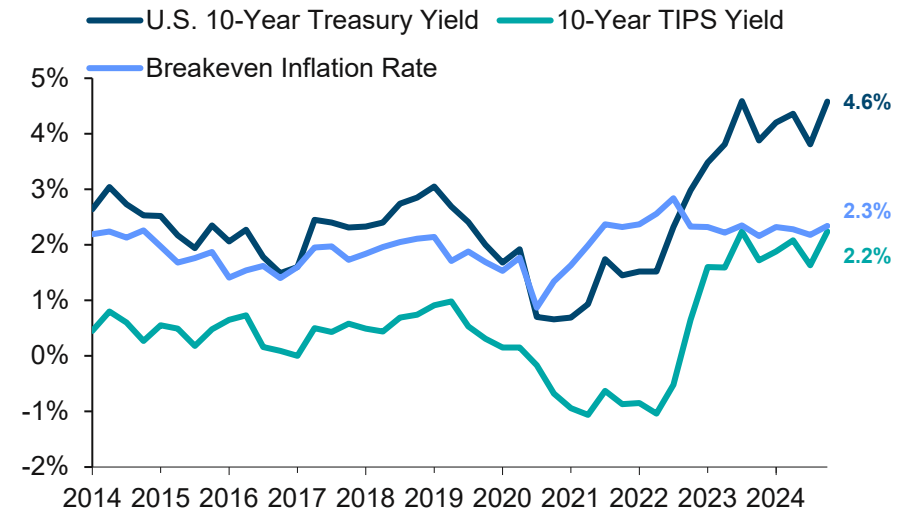
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Historical 10-Year Yields



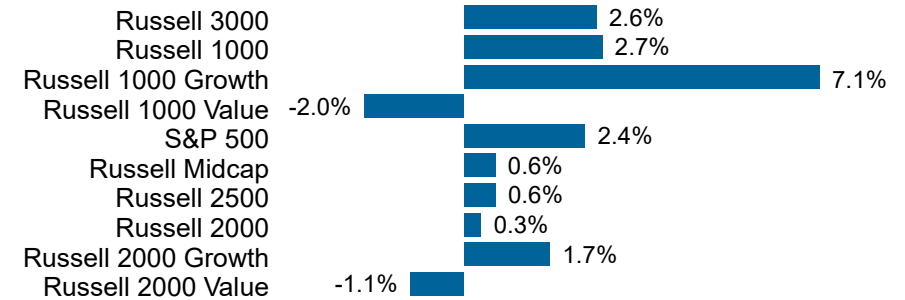
Sources: Bureau of Labor Statistics, Callan, Federal Reserve

U.S. Equity Performance: 4Q24

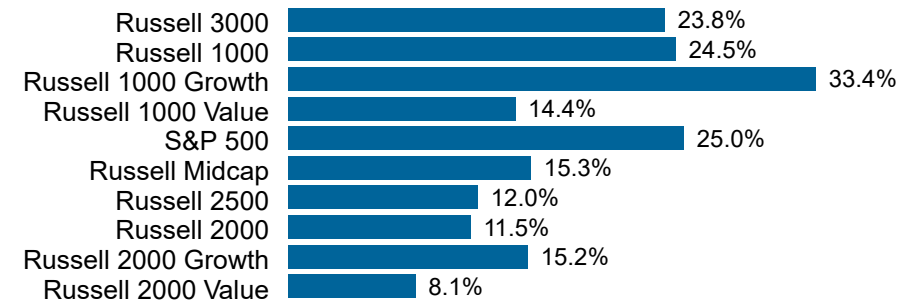
U.S. market ends on a high note, though with some volatility

- The U.S. equity market ended on a positive note as the S&P 500 Index was up over 2%. However, the quarter was marked by volatility, particularly during October and December. Negative returns in October were driven by investor anxiety around the U.S. presidential election, uncertainty with the Fed's approach to interest rate cuts on a go-forward basis, and some misses to earnings expectations for companies. December returns, while initially buoyed by the Fed's third consecutive rate cut, cooled after the Fed announced no additional rate cuts until the second half of 2025.
- Sector performance was mixed; only 4 (Communication Services, Consumer Discretionary, Financials, and Information Technology) posted positive returns.
- During 4Q24, large cap stocks outperformed small cap stocks. Growth stocks outperformed value stocks across the market cap spectrum.
- Market concentration remains elevated; the percentage of companies outperforming the S&P 500 is at historic lows and there remains a large divergence between S&P 500 and S&P 500 ex-Magnificent Seven returns.

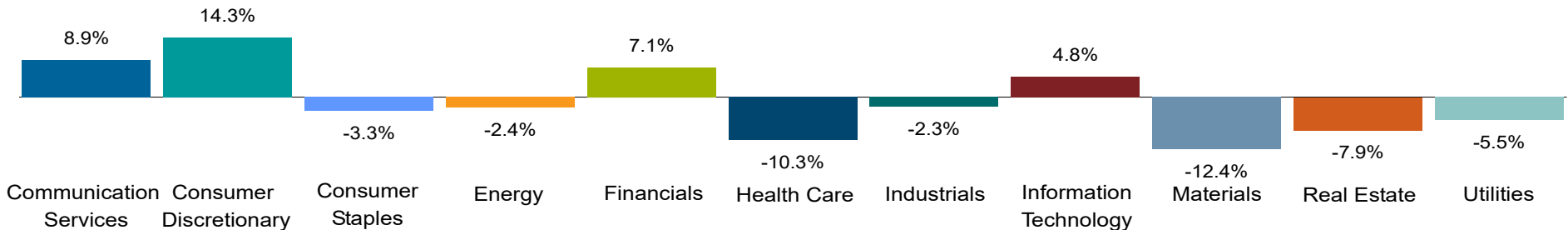
U.S. Equity: Quarter Ended 12/31/24



U.S. Equity: One Year Ended 12/31/24



Industry Sector Quarterly Performance (S&P 500) as of 12/31/24



Sources: FTSE Russell, S&P Dow Jones Indices

Global/Global ex-U.S. Equity Performance: 4Q24

Non-U.S. markets pull back at year-end

Broad market

- Global equity markets had a rough end to the year as concerns around Trump tariffs weighed on Europe and China.
- Europe was one of the worst-performing regions, plagued by political uncertainty and continued economic woes.
- While still negative, Japan's decline over the quarter was stemmed by the approval of a new economic stimulus plan focused on issues such as wage stability and deflation.

Emerging markets

- Emerging markets declined on the heels of poor results out of China and India. Although Chinese stocks initially gained from the announced stimulus, they later declined due to expected tariffs. Economic growth in India fell short of expectations.

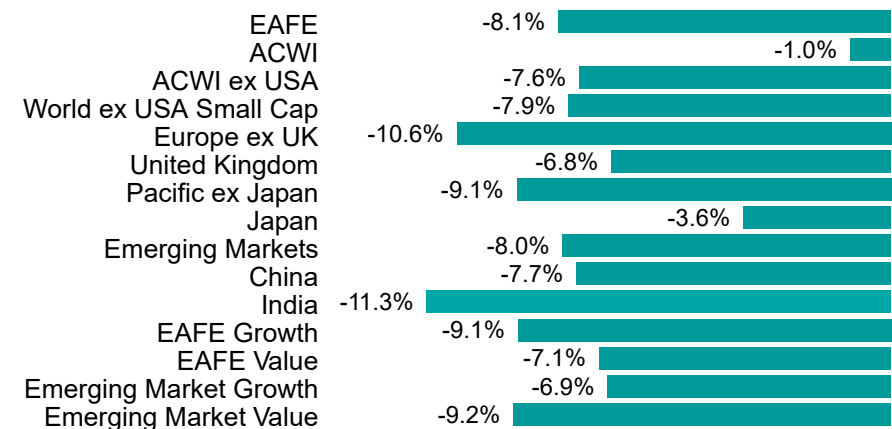
Growth vs. value

- In developed markets outside the U.S., the influence of technology and AI is comparatively more muted, which makes the trend of growth stocks, especially those from the "Magnificent Seven," outperforming value stocks less pronounced.

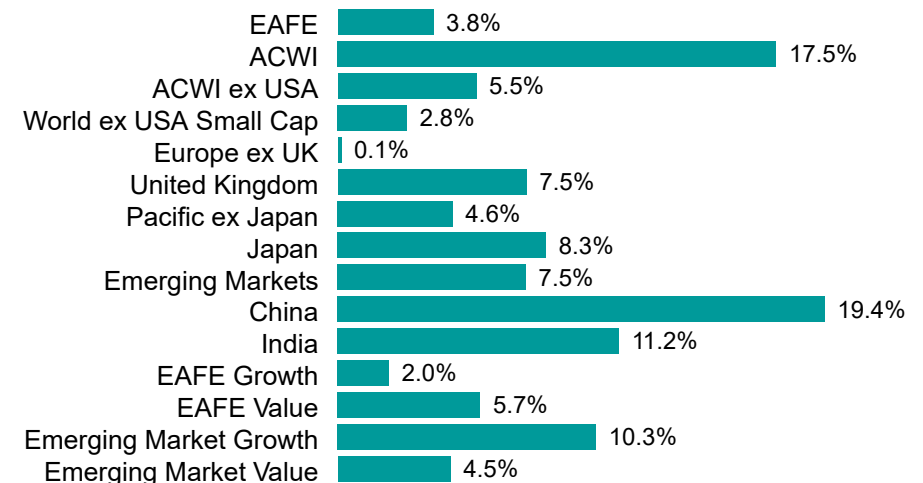
U.S. dollar strength

- The U.S. dollar shifted direction from the last quarter as expectations for interest rate cuts faded, along with the anticipated beneficial effects of the Trump administration on the U.S. economy; in total the U.S. Dollar Index rose over 7% during the quarter.

Global Equity Returns: Quarter Ended 12/31/24



Global Equity Returns: One Year Ended 12/31/24



Source: MSCI

U.S. Fixed Income Performance: 4Q24

Uncertainty resumes, hurting 4Q fixed income performance

Macro environment

- The Fed continued the rate cutting cycle, most recently in December, bringing the target range to 4.25%-4.50%.
- The yield curve steepened, with rates rising for Treasuries one year and longer. The 10-year rose 77 bps from 3.81% to 4.58%.
- Inflation concerns resurfaced, with the breakeven inflation rate rising by 19 bps to 2.30% over the course of the quarter.

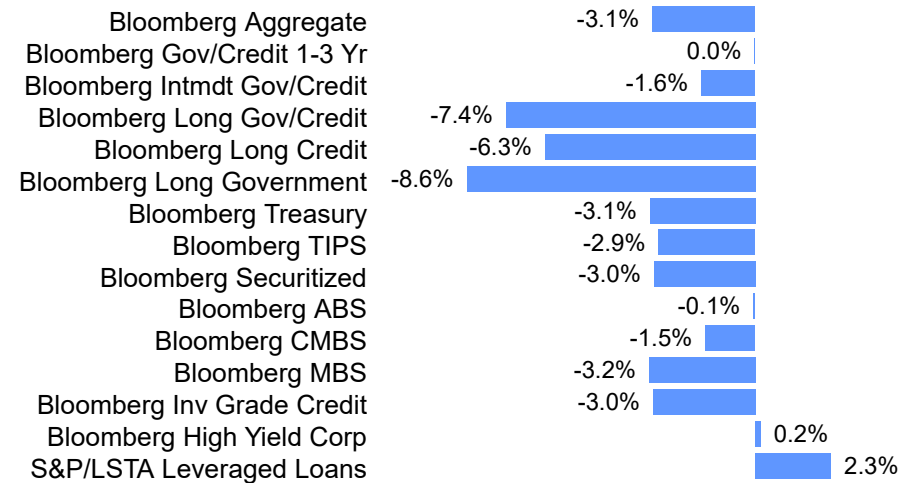
Performance and drivers

- The Bloomberg US Aggregate Bond Index fell 3.1% due to the rise in rates.
- With the steepening yield curve, long government bonds fared the worst among sectors.
- Leveraged finance sectors (High yield: +0.2%, leveraged loans: +2.3%) were the only positive fixed income sectors as spreads tightened.

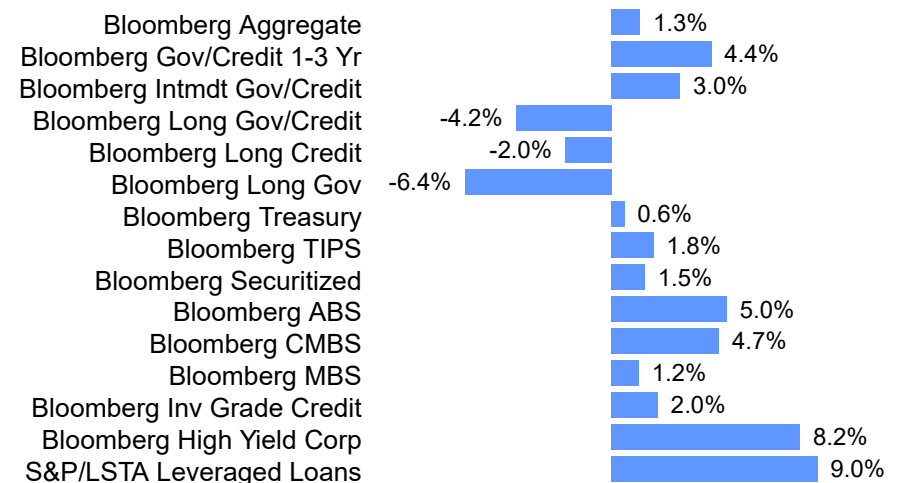
Valuations

- Corporate credit spreads across both investment grade and leveraged finance tightened, with both being “priced to perfection.”
- New issuance continued to be strong, with 2024 totals for both IG and HY outpacing 2023.

U.S. Fixed Income Returns: Quarter Ended 12/31/24



U.S. Fixed Income Returns: One Year Ended 12/31/24



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

U.S. Private Real Estate Performance: 4Q24

Sector appreciation turns positive, outside of office

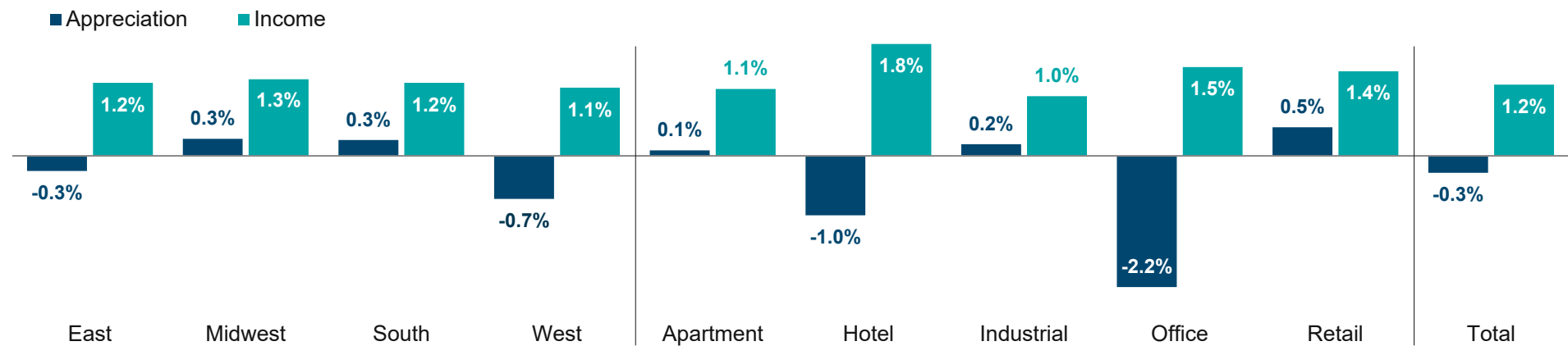
Valuations reflect higher interest rates

- Valuations appear to have bottomed and now reflect higher borrowing costs.
- Income returns were positive across sectors and regions.
- Property sectors were mixed; Office and Hotel experienced negative appreciation, and the remaining sectors had flat or positive appreciation.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	1.0%	-2.3%	-3.1%	2.0%	4.9%
Income	0.8%	3.3%	2.8%	2.9%	3.2%
Appreciation	0.1%	-5.4%	-5.9%	-0.9%	1.7%
NCREIF Property Index	0.9%	0.4%	-0.8%	3.1%	5.7%
Income	1.2%	4.8%	4.3%	4.3%	4.5%
Appreciation	-0.3%	-4.2%	-5.0%	-1.1%	1.1%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



Source: NCREIF; ODCE return is net

Callan Periodic Table of Investment Returns

Annual returns for key indices ranked in order of performance (2015-2024)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Real Estate Funds	Small Cap	Emerging Markets	Real Estate Funds	Large Cap	Small Cap	Large Cap	Real Estate Funds	Large Cap	Large Cap
13.95%	21.31%	37.28%	7.36%	31.49%	19.96%	28.71%	6.55%	26.29%	25.02%
Large Cap	High Yield	Dev ex-U.S. Equity	Cash Equivalent	Small Cap	Large Cap	Real Estate Funds	Cash Equivalent	Dev ex-U.S. Equity	Small Cap
1.38%	17.13%	24.21%	1.87%	25.52%	18.40%	21.02%	1.46%	17.94%	11.54%
U.S. Fixed	Large Cap	Large Cap	U.S. Fixed	Dev ex-U.S. Equity	Emerging Markets	Small Cap	Hedge Funds	Small Cap	Hedge Funds
0.55%	11.96%	21.83%	0.01%	22.49%	18.31%	14.82%	-4.14%	16.93%	9.75%
Cash Equivalent	Emerging Markets	Small Cap	High Yield	Emerging Markets	Hedge Funds	Dev ex-U.S. Equity	High Yield	High Yield	High Yield
0.05%	11.19%	14.65%	-2.08%	18.44%	11.83%	12.62%	-11.19%	13.44%	8.19%
Hedge Funds	Real Estate Funds	Global ex-U.S. Fixed	Global ex-U.S. Fixed	High Yield	Global ex-U.S. Fixed	Hedge Funds	U.S. Fixed	Emerging Markets	Emerging Markets
-1.12%	7.79%	10.51%	-2.15%	14.32%	10.11%	10.16%	-13.01%	9.83%	7.50%
Dev ex-U.S. Equity	Hedge Funds	Hedge Funds	Large Cap	Hedge Funds	Dev ex-U.S. Equity	High Yield	Dev ex-U.S. Equity	Hedge Funds	Cash Equivalent
-3.04%	5.44%	8.59%	-4.38%	10.45%	7.59%	5.28%	-14.29%	8.12%	5.25%
Small Cap	Dev ex-U.S. Equity	High Yield	Hedge Funds	U.S. Fixed	U.S. Fixed	Cash Equivalent	Large Cap	Global ex-U.S. Fixed	Dev ex-U.S. Equity
-4.41%	2.75%	7.50%	-4.75%	8.72%	7.51%	0.05%	-18.11%	5.72%	4.70%
High Yield	U.S. Fixed	Real Estate Funds	Small Cap	Global ex-U.S. Fixed	High Yield	U.S. Fixed	Global ex-U.S. Fixed	U.S. Fixed	U.S. Fixed
-4.47%	2.65%	6.66%	-11.01%	5.09%	7.11%	-1.54%	-18.70%	5.53%	1.25%
Global ex-U.S. Fixed	Global ex-U.S. Fixed	U.S. Fixed	Dev ex-U.S. Equity	Real Estate Funds	Cash Equivalent	Emerging Markets	Emerging Markets	Cash Equivalent	Real Estate Funds
-6.02%	1.49%	3.54%	-14.09%	4.39%	0.67%	-2.54%	-20.09%	5.01%	-2.27%
Emerging Markets	Cash Equivalent	Cash Equivalent	Emerging Markets	Cash Equivalent	Real Estate Funds	Global ex-U.S. Fixed	Small Cap	Real Estate Funds	Global ex-U.S. Fixed
-14.92%	0.33%	0.86%	-14.57%	2.28%	0.34%	-7.05%	-20.44%	-12.73%	-4.22%

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

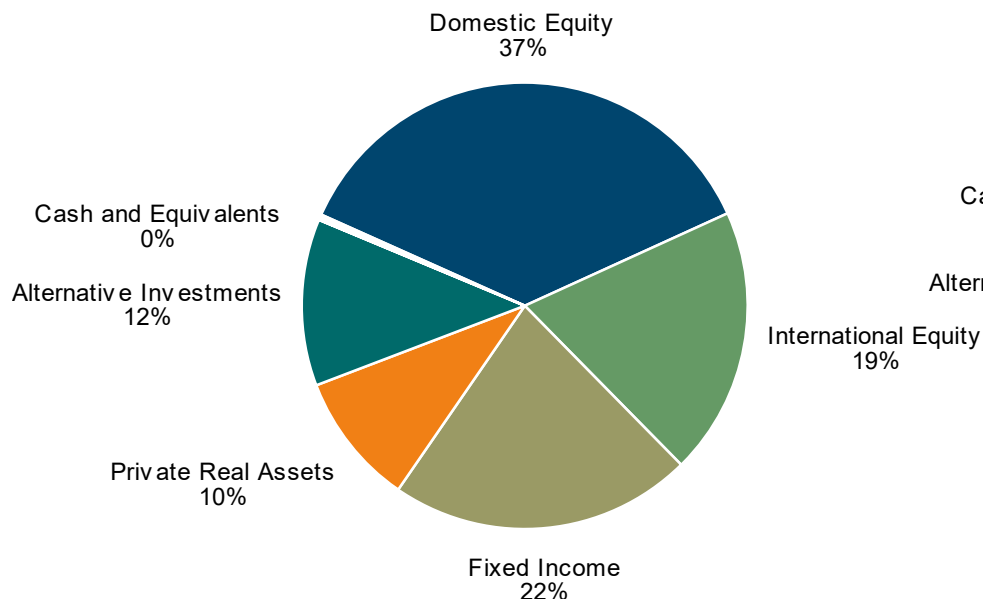
Callan

Total Fund

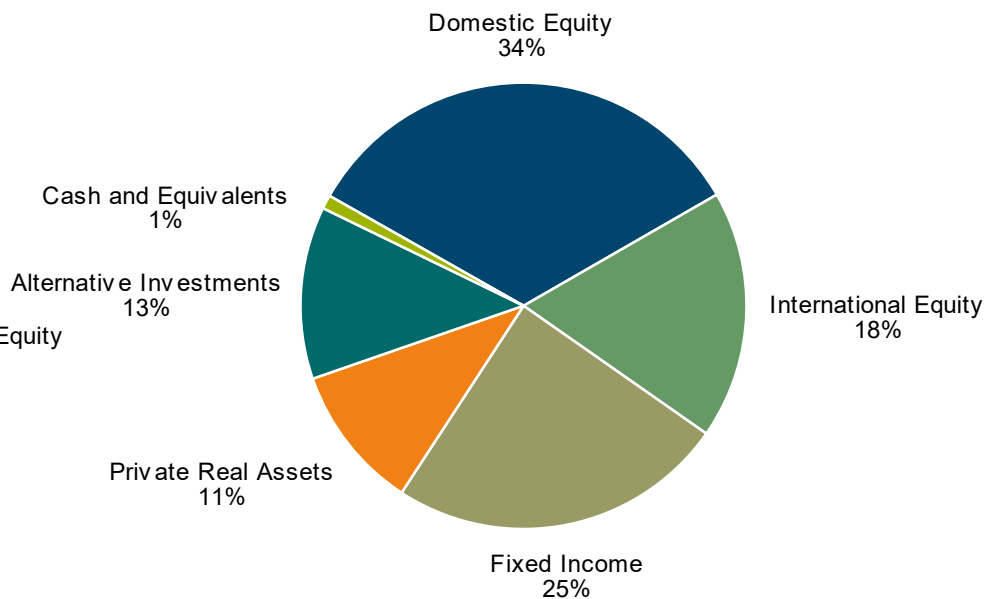
Target Asset Allocation

December 31, 2024

Actual Asset Allocation



Target Asset Allocation

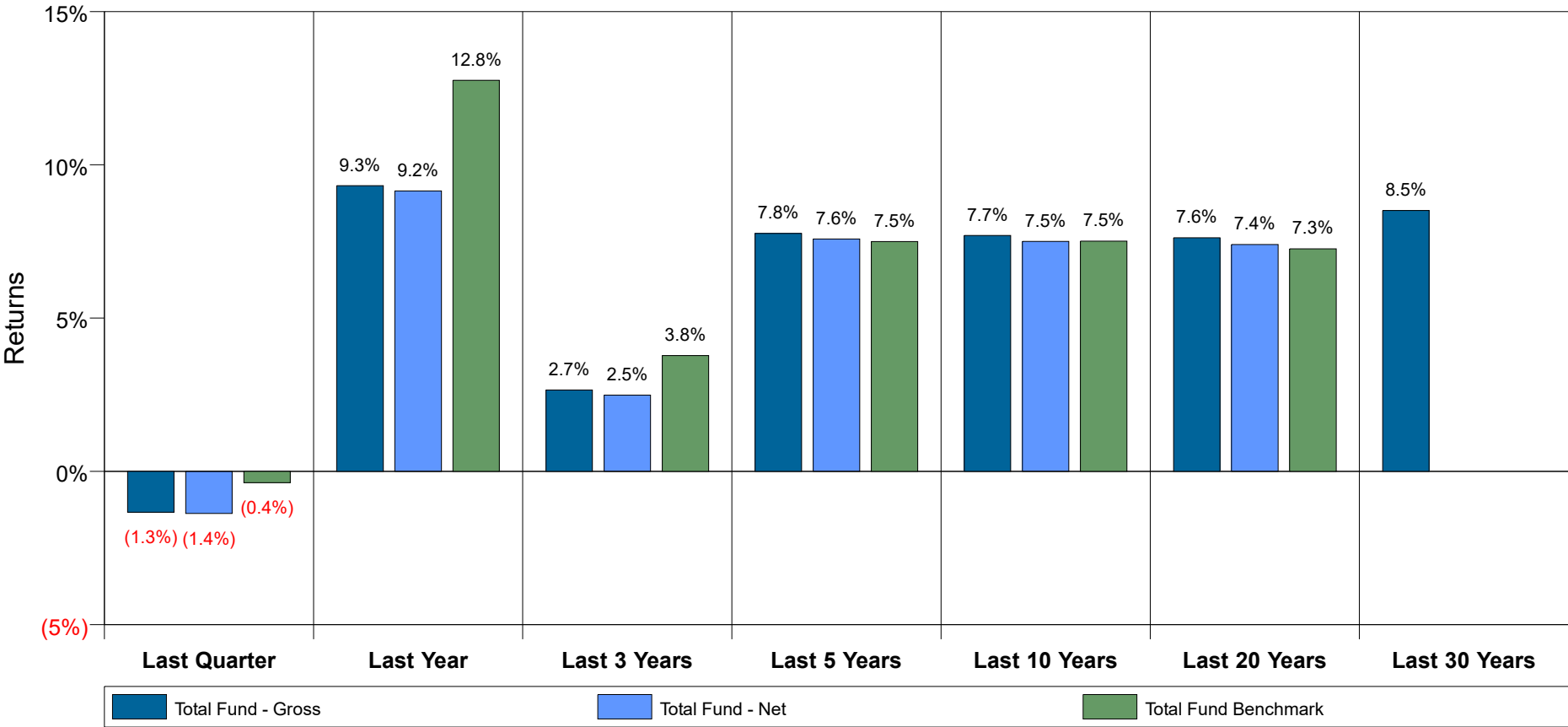


Asset Class	\$Millions Actual	Weight Actual	Target	Percent Difference	\$Millions Difference
Domestic Equity	20,058	36.5%	33.5%	3.0%	1,660
International Equity	10,639	19.4%	18.0%	1.4%	753
Fixed Income	12,061	22.0%	24.5%	(2.5%)	(1,394)
Private Real Assets	5,298	9.6%	10.5%	(0.9%)	(469)
Alternative Investments	6,639	12.1%	12.5%	(0.4%)	(226)
Cash and Equivalents	225	0.4%	1.0%	(0.6%)	(324)
Total	54,921	100.0%	100.0%		

Total Fund Return

Periods Ended December 31, 2024

Returns for Periods Ended December 31, 2024

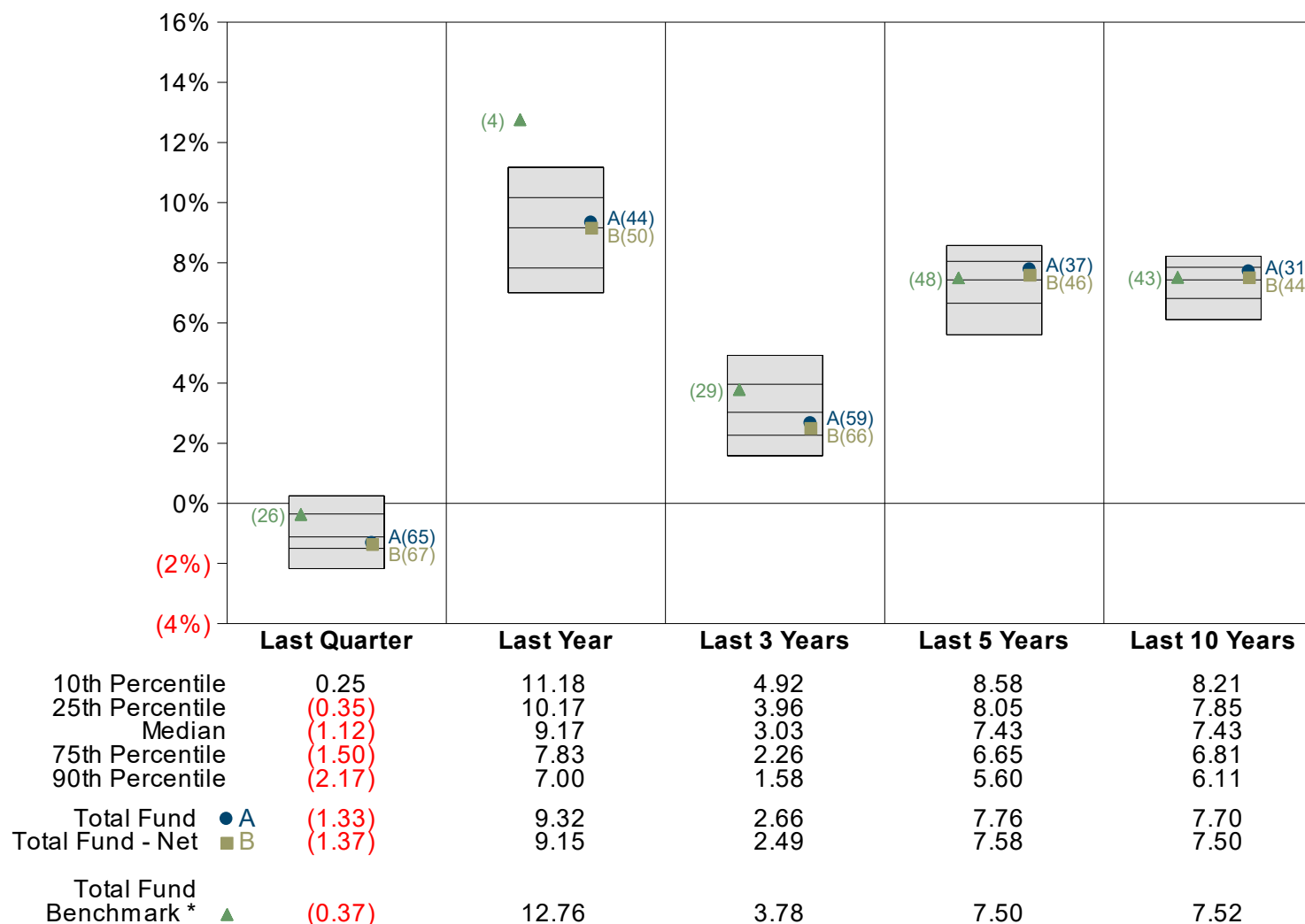


Benchmark detail is included in the Appendix.

Total Fund Return and Rank

Periods Ended December 31, 2024

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

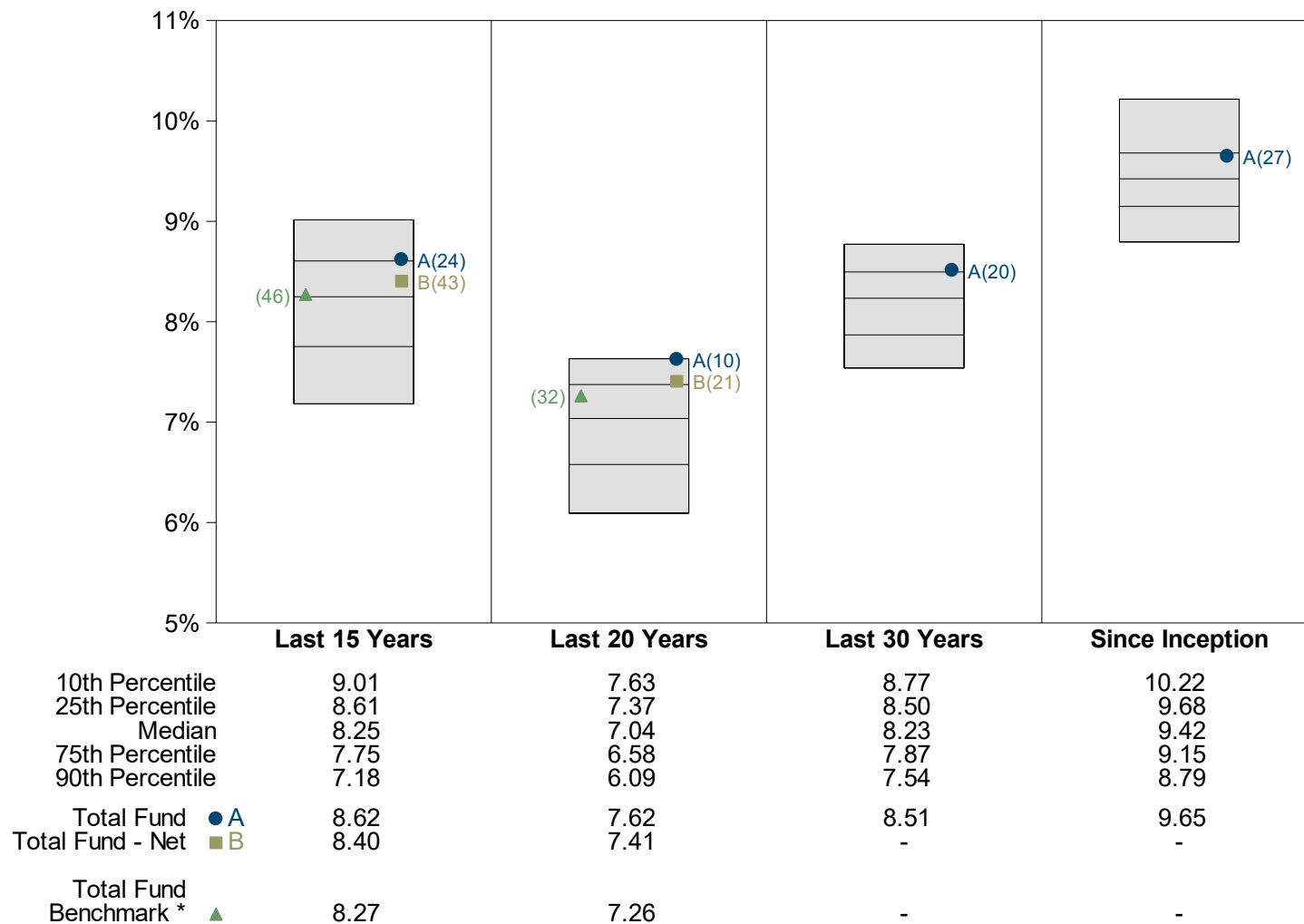


* Benchmark detail is included in the Appendix.

Total Fund Return and Rank

Periods Ended December 31, 2024

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



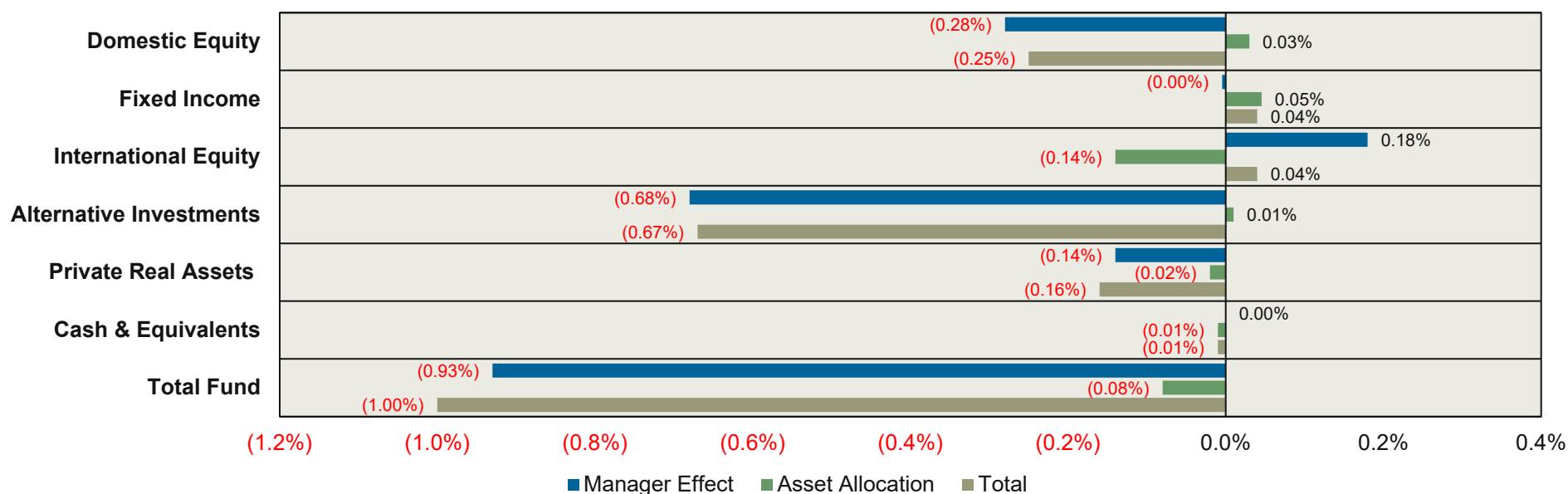
* Benchmark detail is included in the Appendix.

Total Fund Absolute Return Attribution – Last Quarter

December 31, 2024

	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Total	(1.37%)	(0.37%)	(0.93%)	(0.08%)	(1.00%)

Relative Attribution by Asset Class



- Total Fund underperformed the Policy Target by 100 basis points during the past 3 months.
- Manager Performance: - 93 bps
 - + International Equity outperformed
 - Domestic Equity, Alternative Investments, and Private Real Assets underperformed.
- Allocation Impacts: - 8 bps
 - + Overweight Domestic Equity, Alternative Investments
 - Overweight International Equity
 - Underweight Private Real Assets

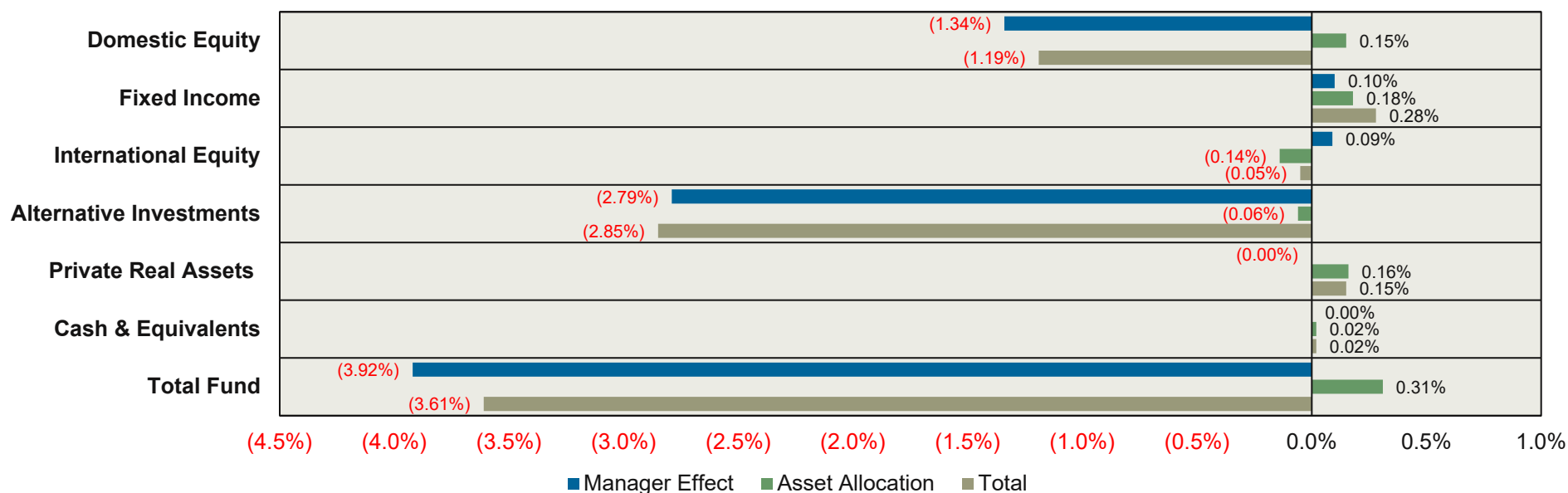
Returns are net of fees.

Total Fund Absolute Return Attribution – Last Year

December 31, 2024

	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Total	9.15%	12.76%	+ (3.92%)	+ 0.31%	(3.61%)

Relative Attribution by Asset Class



- Total Fund underperformed the Policy Target by 361 basis points during the past 12 months.
- Manager Performance: - 392 bps
 - + Fixed Income and International Equity outperformed.
 - Domestic Equity and Alternative Investments underperformed.
- + Allocation Impacts: + 31 bps
 - + Overweight Domestic Equity
 - + Underweight Fixed Income & Private Real Assets
 - Overweight International Equity
 - Underweight Alternative Investments

Returns are net of fees.

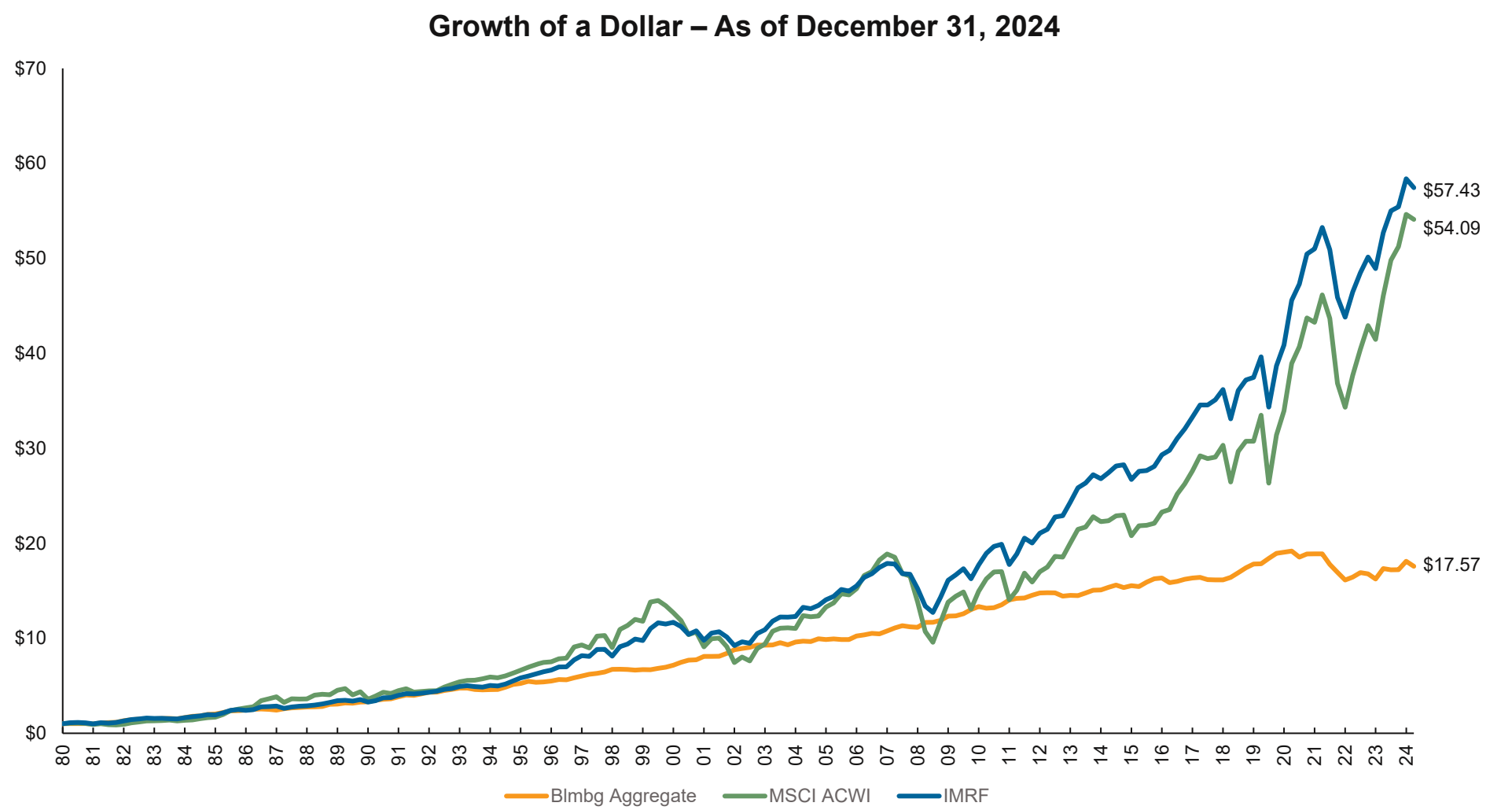
Asset Class Returns

Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	30 Years	Since Inception	Inception Date
Total Fund	(1.33%)	9.32%	2.66%	7.76%	7.70%	8.62%	8.51%	9.65%	1/1/1982
Total Fund - Net	(1.37%)	9.15%	2.49%	7.58%	7.50%	8.40%	--		
Total Fund Benchmark	(0.37%)	12.76%	3.78%	7.50%	7.52%	8.27%	--	--	
Domestic Equity	1.27%	19.02%	5.88%	12.59%	11.48%	12.95%	10.90%	11.77%	1/1/1982
Domestic Equity - Net	1.23%	18.84%	5.71%	12.41%	11.27%	12.71%	--		
U.S. Equity Custom Benchmark	2.03%	22.80%	7.50%	13.54%	12.39%	13.48%	10.78%	--	
Domestic Equity IMRF Custom Benchmark	1.10%	19.67%	5.90%	11.99%	--	--	--	--	
International Equity	(6.66%)	6.36%	1.48%	5.43%	6.05%	6.25%	6.90%	7.55%	9/1/1986
International Equity - Net	(6.74%)	6.00%	1.14%	5.05%	5.69%	5.90%	--		
MSCI ACWI ex U.S.A.	(7.60%)	5.53%	0.82%	4.10%	4.80%	4.68%	--	--	
International Equity IMRF Custom Benchmark	(7.61%)	5.46%	0.37%	3.85%	--	--	--	--	
Fixed Income	(2.26%)	3.14%	(0.68%)	1.03%	2.39%	3.50%	5.19%	7.34%	1/1/1982
Fixed Income - Net	(2.29%)	2.99%	(0.82%)	0.90%	2.25%	3.35%	--		
Fixed Income Custom Benchmark	(2.27%)	2.58%	(0.91%)	0.59%	1.81%	2.68%	4.72%	6.82%	
Fixed Income IMRF Custom Benchmark	(2.20%)	2.83%	(0.98%)	0.64%	--	--	--	--	
Private Real Assets	(0.52%)	(1.71%)	--	--	--	--	--	0.53%	3/1/2022
Private Real Assets - Net	(0.54%)	(1.79%)	--	--	--	--	--		
Private RA Custom Benchmark	0.96%	(1.82%)	--	--	--	--	--	(2.77%)	
Real Estate	(0.45%)	(2.25%)	1.55%	5.88%	7.89%	8.94%	7.60%	5.60%	5/1/1985
Real Estate - Net	(0.47%)	(2.33%)	1.48%	5.82%	7.84%	8.91%	--		
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	7.58%	6.49%	6.96%	
Agriculture	(6.94%)	(9.34%)	(4.66%)	(1.41%)	0.04%	4.78%	--	5.37%	10/1/1997
NCREIF Farmland Index	(1.32%)	(1.03%)	4.38%	4.80%	5.90%	8.90%	10.36%	10.49%	
Timberland	0.23%	1.82%	12.87%	7.89%	4.08%	4.32%	6.21%	7.42%	10/1/1992
NCREIF Timberland Index	1.44%	6.97%	9.75%	7.78%	5.43%	5.55%	7.18%	8.49%	
Unlisted Infrastructure	3.36%	15.02%	14.37%	14.13%	--	--	--	13.10%	4/1/2018
Unlisted Infrastructure Custom Benchmark	1.08%	7.00%	8.04%	8.42%	--	--	--	8.57%	
Alternative Investments	0.62%	6.72%	4.56%	13.46%	11.79%	10.82%	12.46%	11.19%	2/1/1986
Alternative Investments - Net	0.62%	6.72%	4.55%	13.45%	11.66%	10.64%	--		
Alternative Investments Custom Benchmark	6.61%	32.89%	10.86%	10.11%	9.55%	9.47%	11.54%	12.32%	
Private Equity	0.81%	5.83%	4.59%	15.09%	14.08%	13.43%	15.09%	13.34%	2/1/1986
Private Equity Custom Benchmark	7.15%	36.40%	11.48%	10.48%	9.74%	9.59%	--	--	
Cash and Equivalents	1.25%	5.57%	4.65%	3.79%	2.74%	1.89%	3.09%	3.82%	7/1/1986
3 Month T-Bill	1.17%	5.25%	3.89%	2.46%	1.77%	1.20%	2.48%	3.26%	

Benchmark detail is included in the Appendix. Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Total Fund Growth of a Dollar



Asset Distribution Across Investment Managers

	December 31, 2024		September 30, 2024	
	Market Value	Weight	Market Value	Weight
Domestic Equity	\$20,058,228,064	36.52%	\$20,430,738,079	36.25%
Large Cap Growth				
Sands Capital	2,022,123,975	3.68%	1,857,839,519	3.30%
Xponance Russell 1000 G	2,423,888,246	4.41%	2,405,390,956	4.27%
Large Cap Value				
Dodge & Cox	1,540,152,796	2.80%	1,565,113,468	2.78%
LSV Asset	997,409,231	1.82%	1,107,742,124	1.97%
NTGI S&P 500 Value Index Fund	1,227,321,048	2.23%	1,267,544,913	2.25%
Large Cap Passive Core				
NTGI Market Cap Index Fund	1,449,381,287	2.64%	1,775,598,576	3.15%
Factor Diversity Strategies				
US Large Cap FDP-GSAM	3,595,011,796	6.55%	3,509,100,730	6.23%
Quantitative Factor Strategies				
Quantitative US Equity -SCI Beta	2,822,991,049	5.14%	2,869,366,425	5.09%
Small Cap Multi Factor Strategies				
US Small Cap Equity Multi-Factor - S&P	660,953,232	1.20%	663,184,399	1.18%
Small Cap Growth				
Frontier Capital	791,063,079	1.44%	794,482,145	1.41%
Small Cap Value				
Channing	385,970,171	0.70%	386,295,920	0.69%
William Blair Small Cap Value	510,956,246	0.93%	517,679,509	0.92%
Public Real Assets				
Brookfield	476,356,740	0.87%	479,406,100	0.85%
Cohen & Steers	1,154,649,169	2.10%	1,231,992,830	2.19%

Asset Distribution Across Investment Managers

	December 31, 2024		September 30, 2024	
	Market Value	Weight	Market Value	Weight
International Equity	\$10,639,260,529	19.39%	\$11,401,111,145	20.23%
International Large Cap Growth				
Earnest Partner	738,429,503	1.35%	774,605,561	1.37%
William Blair	999,078,363	1.82%	1,066,834,707	1.89%
International Large Cap Value				
Brandes Investment	807,531,760	1.47%	886,080,395	1.57%
Mondrian	737,566,590	1.34%	804,932,896	1.43%
Lazard	150,821,170	0.27%	165,729,646	0.29%
International Large Cap Core				
Arrowstreet Capital	1,364,884,477	2.49%	1,432,280,568	2.54%
Brown Capital	618,835,547	1.13%	662,545,869	1.18%
GlobeFlex Capital	1,021,646,457	1.86%	1,079,612,136	1.92%
Xponance International Equity	106,848,875	0.19%	116,311,747	0.21%
Progress International Equity	326,226	0.00%	364,791	0.00%
NTGI ACWI ex US Index Fund	2,825,745,789	5.15%	3,055,148,462	5.42%
International All Cap Developed				
Ativo International	177,423,507	0.32%	191,170,628	0.34%
International Small Cap				
Franklin Templeton	235,219,597	0.43%	258,922,901	0.46%
William Blair International Small Cap	362,740,156	0.66%	380,224,125	0.67%
Emerging Markets				
Arrowstreet Emerging Market Equity	492,162,510	0.90%	526,346,715	0.93%
Fixed Income	\$12,061,443,492	21.98%	\$12,368,877,490	21.94%
Domestic Fixed Core				
Attucks Fixed Income	93,481,877	0.17%	96,516,833	0.17%
Brandes Core	336,483,265	0.61%	345,720,713	0.61%
Earnest Partners	899,737,145	1.64%	927,009,174	1.64%
Garcia Hamilton	946,535,912	1.72%	991,673,092	1.76%
Ramirez Asset Management	519,342,780	0.95%	535,959,734	0.95%
Xponance Yield Advantage Agg	985,560,156	1.80%	1,013,094,534	1.80%

Asset Distribution Across Investment Managers

	December 31, 2024		September 30, 2024	
	Market Value	Weight	Market Value	Weight
Domestic Fixed Passive Core				
NTGI Bloomberg Aggregate	1,176,318,632	2.14%	1,213,284,095	2.15%
Blackrock US Debt Income	1,713,621,374	3.12%	1,767,287,018	3.14%
Domestic Fixed Core Plus				
LM Capital Group FI	844,328,470	1.54%	868,116,406	1.54%
Loop Capital Management	585,468,887	1.07%	601,047,099	1.07%
Longfellow Core Plus	577,592,702	1.05%	594,864,588	1.06%
Western Asset	937,803,682	1.71%	973,752,204	1.73%
Bank Loans				
Barings Global Loan Fund	1,287,975,668	2.35%	1,286,225,139	2.28%
Emerging Markets Debt				
Standish-Mellon EMD	209,821	0.00%	246,051	0.00%
High Yield				
MacKay Shields	1,156,983,122	2.11%	1,154,080,811	2.05%
Private Real Assets	\$5,290,971,662	9.64%	\$5,228,045,513	9.28%
Real Estate	\$4,745,389,889	8.65%	\$4,655,544,264	8.26%
Real Estate Core				
TA Assoc. Buckhead	935,555,547	1.70%	884,850,944	1.57%
Barings Euro Core Property	94,346,868	0.17%	100,907,337	0.18%
Blackstone Property Euro	161,632,183	0.29%	176,123,482	0.31%
INVESCO Core Real Estate	195,185,098	0.36%	198,677,073	0.35%
INVESCO European Real Estate	51,355,229	0.09%	55,451,485	0.10%
AEW Core Property Trust	237,752,089	0.43%	241,218,568	0.43%
CBRE Core Partners	278,491,263	0.51%	272,901,725	0.48%
JPM Strategic Property Fund	147,458,370	0.27%	148,339,694	0.26%
Real Estate Non-Core				
Artemis MWBE Spruce	431,355,443	0.79%	426,216,911	0.76%
Franklin T. EMREFF	76,752	0.00%	213,361	0.00%
Barings Real Estate Debt	3,091,345	0.01%	-	-
Security Capital	104,562,237	0.19%	112,669,772	0.20%
Dune II	5,406,471	0.01%	7,019,901	0.01%
Non-Core Real Estate Funds	1,788,915,300	3.26%	1,706,480,453	3.03%
Non-Core Intl Real Estate	310,161,649	0.57%	324,422,618	0.58%
Almanac ARS V	44,046	0.00%	50,940	0.00%

Asset Distribution Across Investment Managers

	December 31, 2024		September 30, 2024	
	Market Value	Weight	Market Value	Weight
Agriculture				
Premiere Partners IV	209,251,481	0.38%	222,590,110	0.39%
Timberland				
Forest Investment	70,933,595	0.13%	70,770,974	0.13%
Unlisted Infrastructure				
Unlisted Infrastructure Funds	265,396,697	0.48%	279,140,165	0.50%
Alternative Investments	\$6,602,833,961	12.03%	\$6,480,483,306	11.50%
Absolute Return				
Aurora Investment	13,609	0.00%	13,243	0.00%
Private Equity				
Abbott S/A Comp	458,812,009	0.84%	475,159,344	0.84%
Pantheon S/A Comp	413,458,343	0.75%	417,034,912	0.74%
Private Equity Fund - Domestic	3,867,215,296	7.05%	3,755,330,986	6.66%
Private Equity Fund - International	812,240,382	1.48%	859,733,013	1.53%
Oakbrook Opportunities Fund	307,134,393	0.56%	299,686,950	0.53%
Private Credit				
Private Credit Fund - Domestic	697,384,279	1.27%	628,924,979	1.12%
Private Credit Fund - International	46,575,650	0.08%	44,599,878	0.08%
Cash and Equivalents	\$225,357,029	0.41%	\$454,262,743	0.81%
Total Fund	\$54,878,094,737	100.00%	\$56,363,519,214	100.00%

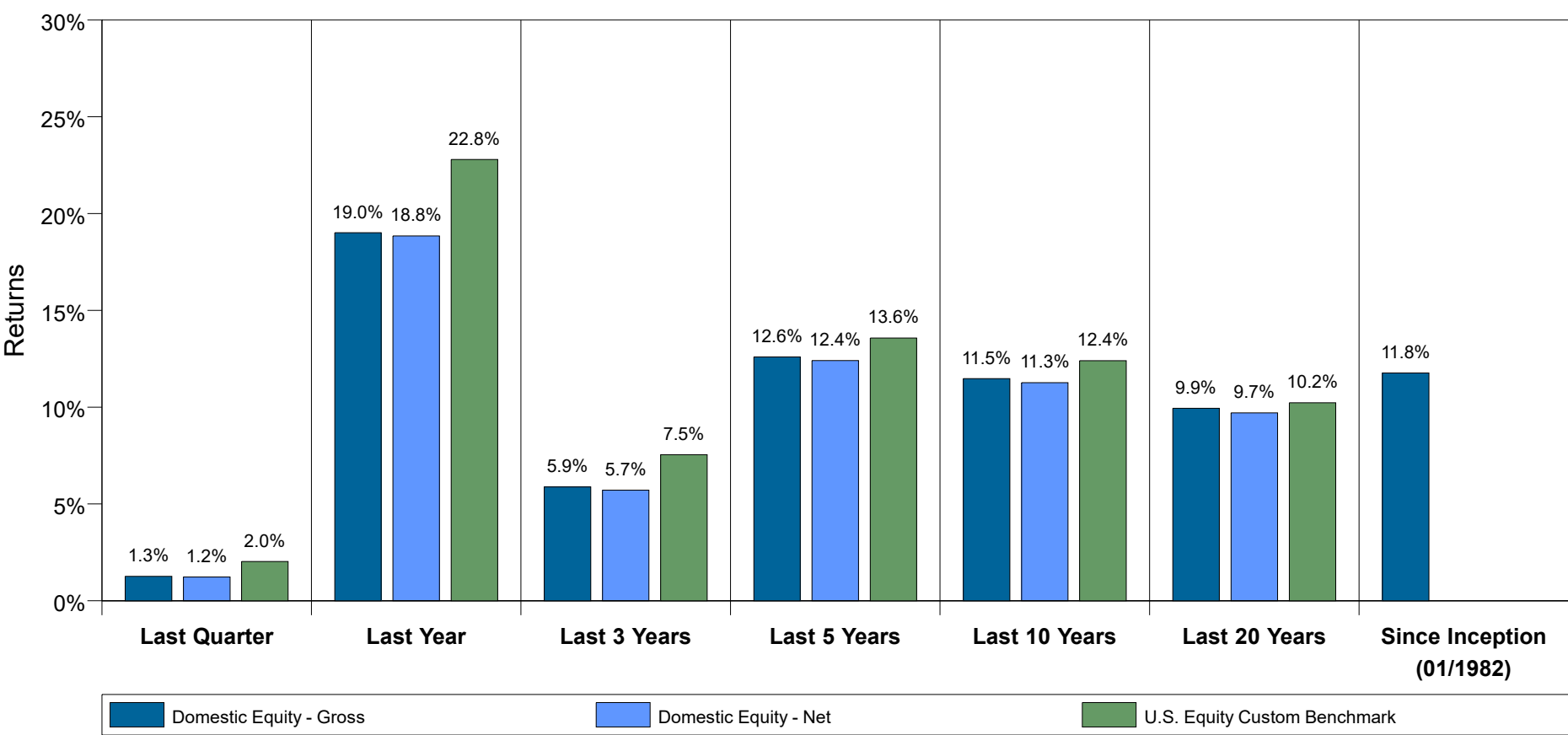
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Domestic Equity

Domestic Equity Returns

Periods Ended December 31, 2024

Returns for Periods Ended December 31, 2024

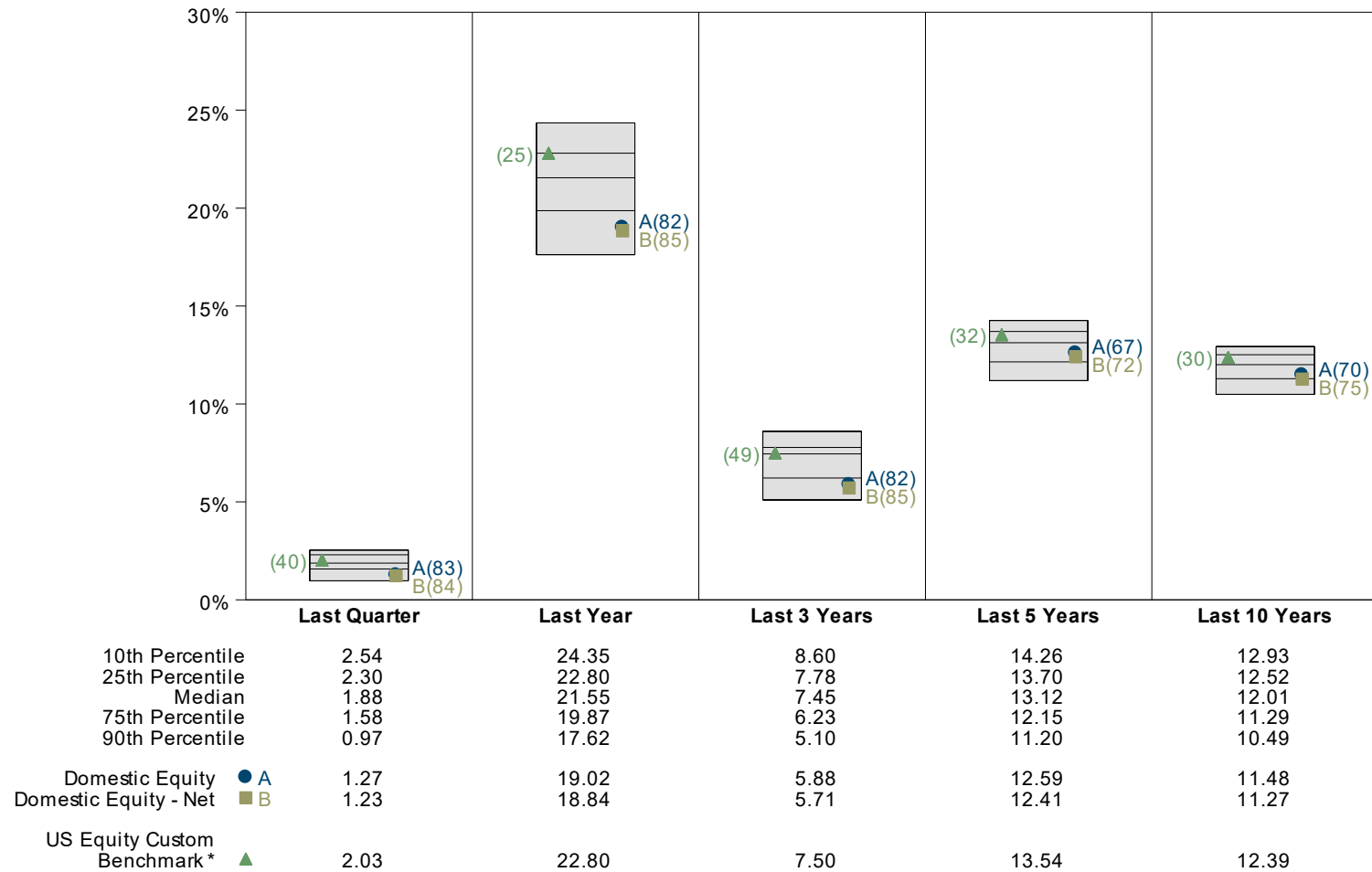


Benchmark detail is included in the Appendix.

Domestic Equity – Returns and Rankings

December 31, 2024

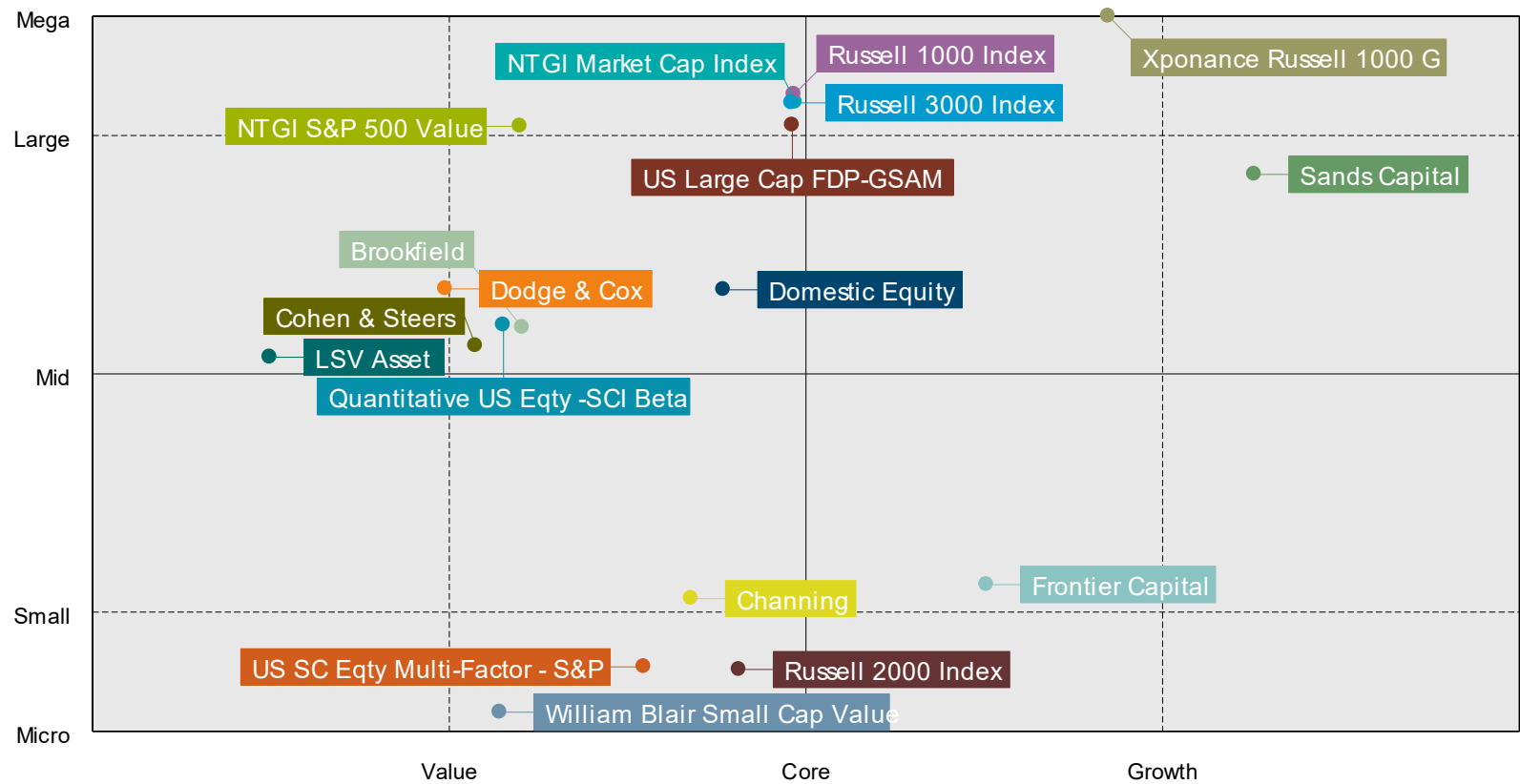
Performance vs Public Fund - Domestic Equity (Gross)



*The Blended Benchmark is currently Russell 3000 Index. Returns prior to January 1, 2015 reflect those of the Dow Jones U.S. Total Stock Market Index.

Domestic Equity Style Map

Style Map
Holdings for One Quarter Ended December 31, 2024



Domestic Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Domestic Equity	1.27%	19.02%	5.88%	12.59%	11.48%	11.77%	1/1/1982
Domestic Equity - Net	1.23%	18.84%	5.71%	12.41%	11.27%		
U.S. Equity Custom Benchmark	2.03%	22.80%	7.50%	13.54%	12.39%	--	
Russell:3000 Index	2.63%	23.81%	8.01%	13.86%	12.55%	11.85%	
U.S. Equity IMRF Custom Benchmark	1.10%	19.67%	5.90%	11.99%	--	--	
Large Cap Equity	3.00%	22.63%	7.22%	13.97%	12.49%	11.65%	1/1/1982
Large Cap Equity - Net	2.98%	22.53%	7.13%	13.87%	12.38%		
Russell:1000 Index	2.75%	24.51%	8.41%	14.28%	12.87%	12.02%	
Large Cap Growth	7.80%	29.45%	7.47%	17.63%	15.59%	12.68%	1/1/1982
Large Cap Growth - Net	7.78%	29.32%	7.36%	17.52%	15.46%		
LCG Blended Benchmark	7.07%	33.36%	10.47%	18.96%	16.78%	--	
Russell:1000 Growth	7.07%	33.36%	10.47%	18.96%	16.78%	12.19%	
Xponance Russell 1000 G	7.10%	33.44%	10.51%	18.98%	--	17.46%	10/1/2018
Xponance Russell 1000 G - Net	7.10%	33.41%	10.49%	18.96%	--	17.44%	10/1/2018
Russell:1000 Growth	7.07%	33.36%	10.47%	18.96%	16.78%	17.46%	
Sands Capital	8.84%	24.67%	(1.02%)	11.78%	12.57%	12.30%	11/1/2003
Sands Capital - Net	8.79%	24.40%	(1.24%)	11.53%	12.32%		
LCG Blended Benchmark	7.07%	33.36%	10.47%	18.96%	16.78%	12.35%	
Russell:1000 Growth	7.07%	33.36%	10.47%	18.96%	16.78%	12.38%	

Domestic Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Large Cap Value	(1.57%)	14.53%	8.40%	10.98%	10.04%	10.49%	10/1/1982
Large Cap Value - Net	(1.60%)	14.36%	8.23%	10.82%	9.87%		
LCV Blended Benchmark	(1.98%)	14.37%	5.63%	8.68%	8.49%	--	
Russell 1000 Value Index	(1.98%)	14.37%	5.63%	8.68%	8.49%	11.53%	
Dodge & Cox	(1.18%)	15.01%	8.11%	12.34%	11.11%	10.37%	9/1/2003
Dodge & Cox - Net	(1.22%)	14.77%	7.88%	12.10%	10.87%		
LCV Blended Benchmark	(1.98%)	14.37%	5.63%	8.68%	8.49%	8.65%	
Russell 1000 Value Index	(1.98%)	14.37%	5.63%	8.68%	8.49%	8.78%	
LSV Asset	(0.93%)	16.85%	7.99%	9.81%	9.47%	10.87%	2/1/2003
LSV Asset - Net	(1.00%)	16.56%	7.73%	9.55%	9.21%		
LCV Blended Benchmark	(1.98%)	14.37%	5.63%	8.68%	8.49%	9.34%	
Russell 1000 Value Index	(1.98%)	14.37%	5.63%	8.68%	8.49%	9.35%	
NTGI S&P 500 Value	(2.63%)	12.38%	9.15%	10.54%	10.07%	7.15%	8/1/1999
NTGI S&P 500 Value - Net	(2.63%)	12.38%	9.15%	10.54%	10.06%		
S&P 500 Value	(2.67%)	12.29%	9.16%	10.49%	10.01%	7.12%	
Large Cap Passive Core	2.70%	23.86%	7.93%	13.80%	12.53%	11.60%	1/1/1985
Large Cap Passive Core - Net	2.70%	23.86%	7.93%	13.80%	12.52%		
DJ:US Total Mkt Ix	2.71%	23.88%	7.91%	13.78%	12.48%	--	
NTGI Market Cap Index	2.70%	23.86%	7.93%	13.80%	12.53%	11.40%	2/1/1985
NTGI Market Cap Index - Net	2.70%	23.86%	7.93%	13.80%	12.52%		
Dow Jones US Total Stock Market Index	2.71%	23.88%	7.91%	13.78%	12.48%	--	

Domestic Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Factor Diversity Strategies	2.45%	23.34%	8.14%	--	--	14.36%	8/18/2020
U.S. Large Cap FDP-GSAM	2.45%	23.34%	8.14%	--	--	14.36%	8/18/2020
U.S. Large Cap FDP-GSAM - Net	2.44%	23.32%	8.11%	--	--	14.31%	
Solactive GBS U.S. 1000 Index	2.70%	24.57%	8.28%			14.50%	
GSAM Active Beta U.S. Large Cap FDC Index	2.46%	23.42%	8.15%			14.35%	
Quantitative Factor Strategies	(1.62%)	13.98%	5.23%	9.84%	--	10.33%	9/17/2019
Quantitative US Equity - SciBeta	(1.62%)	13.98%	5.23%	9.84%	--	10.33%	9/17/2019
Quantitative US Equity - SciBeta - Net	(1.63%)	13.94%	5.18%	9.70%	--	10.19%	
SciBeta US Hi-Fctr-Inst Div Multi-Beta Multi-Strat Index	(1.80%)	13.48%	4.38%	8.99%		9.45%	

Domestic Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Small Cap	(0.54%)	9.46%	4.17%	10.50%	9.26%	11.90%	7/1/1988
Small Cap - Net	(0.62%)	8.86%	3.52%	9.82%	8.64%		
Russell:2000 Index	0.33%	11.54%	1.24%	7.40%	7.82%	9.20%	
Small Cap Multi Factor Strategies	(0.34%)	9.62%	--	--	--	9.75%	8/1/2023
US Small Cap Equity Multi-Factor - S&P	(0.34%)	9.62%	--	--	--	9.75%	8/1/2023
US Small Cap Equity Multi-Factor - S&P - Net	(0.34%)	9.62%	--	--	--	9.75%	
S&P600 QVML Top 90%	(0.31%)	9.66%				9.83%	
S&P:600 Small Cap	(0.58%)	8.70%				8.84%	
Small Cap Growth	(0.43%)	11.96%	3.17%	11.72%	10.92%	12.88%	7/1/1988
Small Cap Growth - Net	(0.55%)	10.78%	2.01%	10.57%	10.06%		
Russell:2000 Growth	1.70%	15.15%	0.21%	6.86%	8.09%	8.06%	
Frontier Capital	(0.43%)	11.96%	3.17%	12.32%	11.74%	13.21%	8/1/1988
Frontier Capital - Net	(0.55%)	10.78%	2.01%	11.13%	10.81%		
Russell:2000 Growth	1.70%	15.15%	0.21%	6.86%	8.09%	8.14%	
Small Cap Value	(0.78%)	7.35%	4.41%	9.82%	8.68%	11.46%	9/1/1989
Small Cap Value - Net	(0.89%)	6.82%	3.91%	9.29%	8.14%		
Russell:2000 Value	(1.06%)	8.05%	1.94%	7.29%	7.14%	9.65%	
Channing	(0.08%)	11.65%	4.03%	9.76%	8.37%	10.13%	7/1/2011
Channing - Net	(0.21%)	11.13%	3.51%	9.23%	7.85%	9.56%	
Russell:2000 Value	(1.06%)	8.05%	1.94%	7.29%	7.14%	8.49%	
William Blair Small Cap Value	(1.30%)	4.52%	1.56%	7.34%	8.71%	10.73%	5/1/1999
William Blair Small Cap Value - Net	(1.40%)	3.99%	1.04%	6.80%	8.15%		
Russell:2000 Value	(1.06%)	8.05%	1.94%	7.29%	7.14%	8.74%	

Domestic Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Public Real Assets	(4.70%)	12.53%	4.67%	5.48%	--	6.87%	8/1/2017
Public Real Assets - Net	(4.77%)	12.20%	4.35%	5.12%	--	6.48%	
Public Real Assets Benchmark	(4.55%)	10.12%	2.75%	3.56%		4.94%	
Brookfield	(0.64%)	12.32%	7.35%	6.35%	--	6.57%	8/1/2017
Brookfield - Net	(0.73%)	11.88%	6.92%	5.87%	--	6.08%	
Dow Jones Global Infra Composite Index	(2.15%)	11.26%	3.97%	4.11%		4.75%	
Cohen & Steers	(6.28%)	12.61%	3.84%	5.33%	--	7.19%	8/1/2017
Cohen & Steers - Net	(6.34%)	12.33%	3.57%	5.02%	--	6.84%	
FTSE Global Core Infra 50/50 Index (Net)	(5.74%)	9.53%	2.12%	3.26%		5.01%	

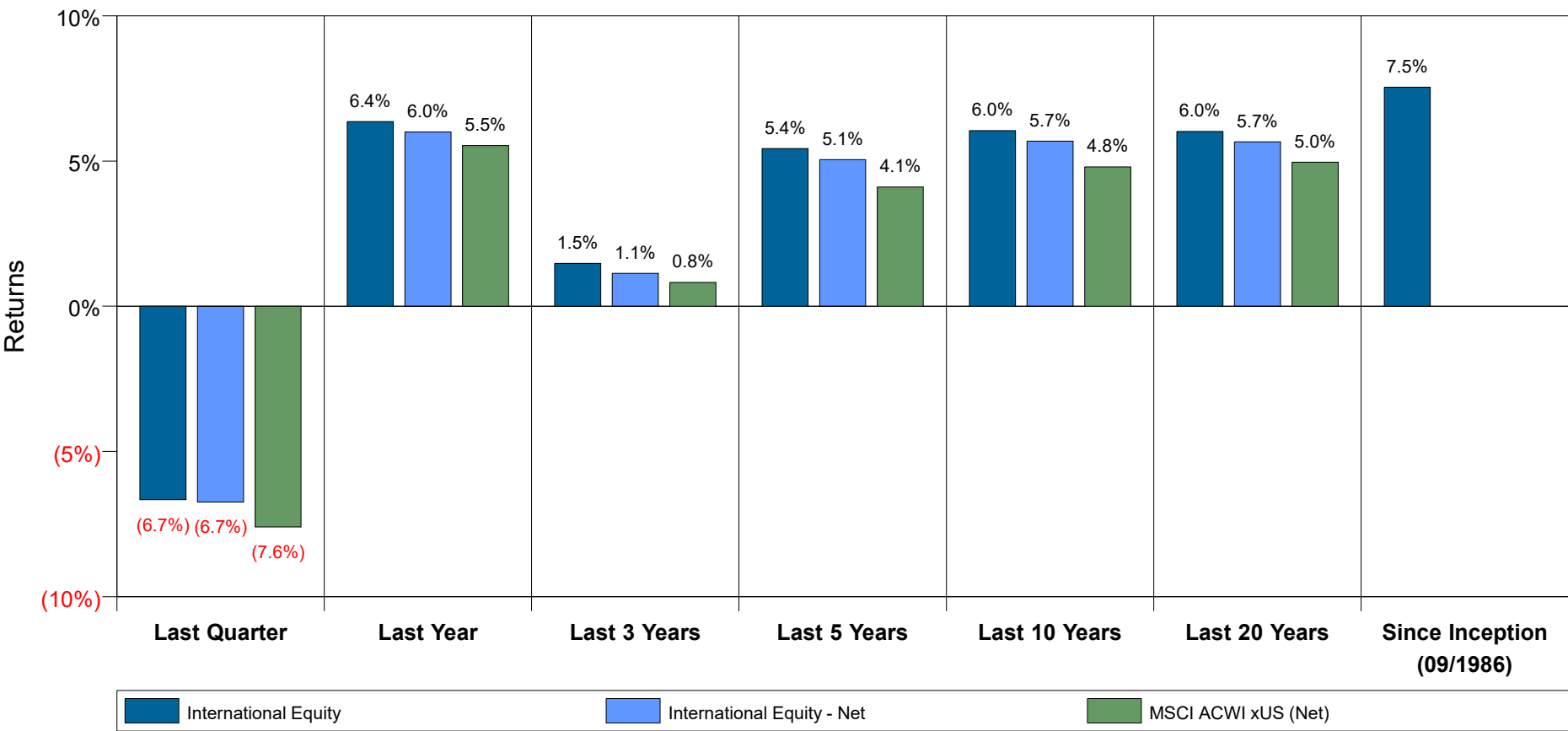
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International Equity

International Equity Returns

Periods Ended December 31, 2024

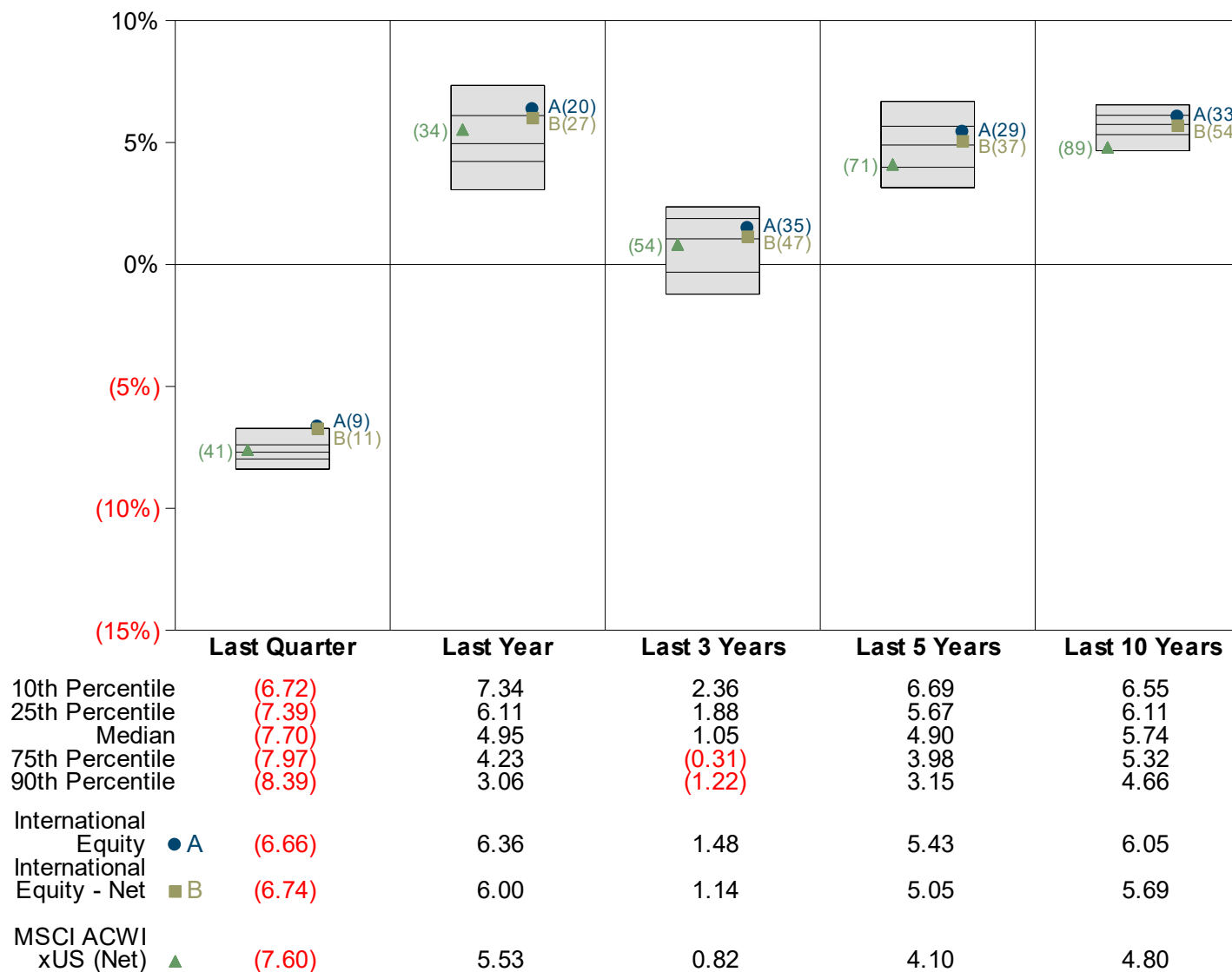
Returns for Periods Ended December 31, 2024



International Equity – Returns and Rankings

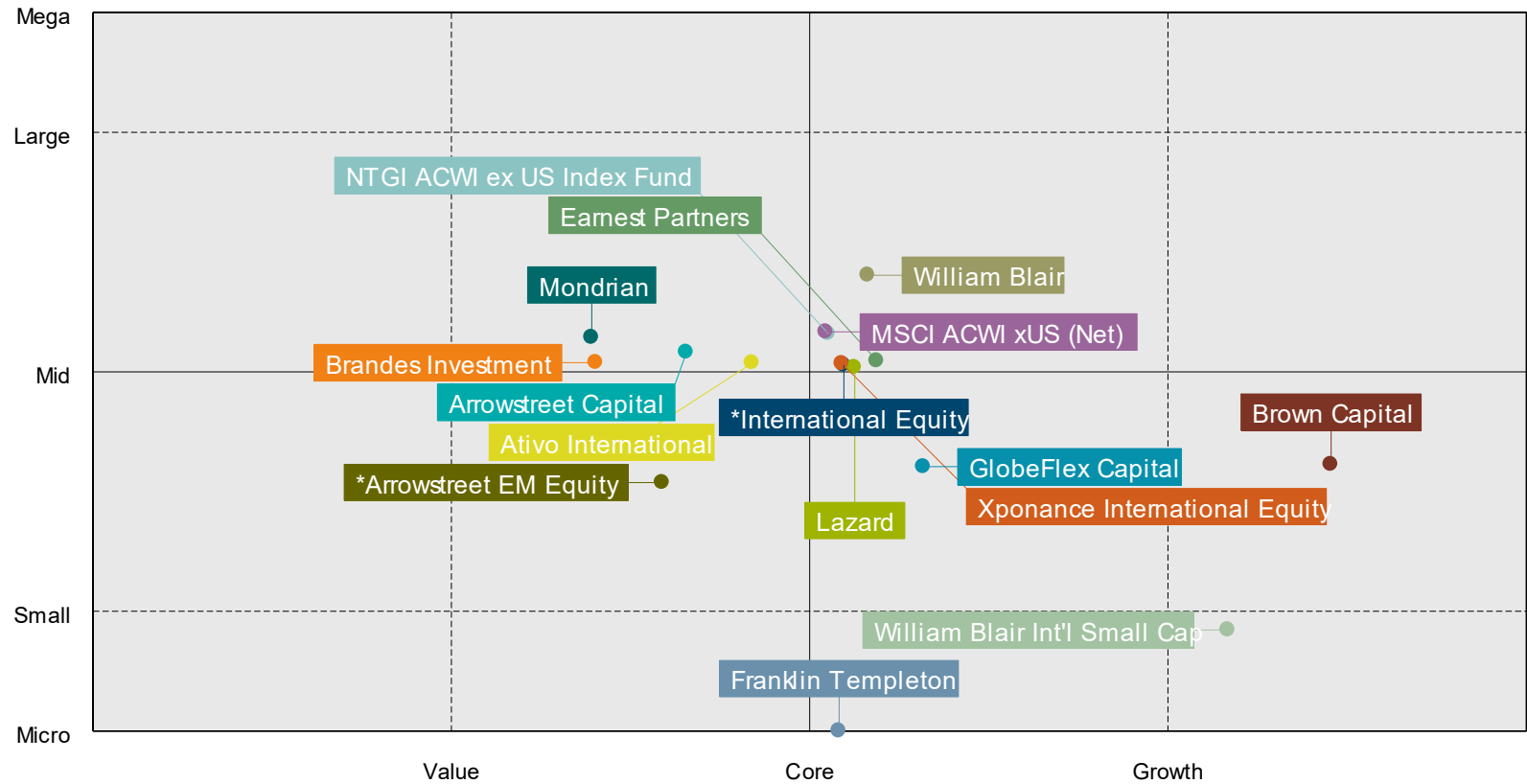
Periods Ended December 31, 2024

Performance vs Public Fund - International Equity (Gross)



International Equity Portfolio Weights

Style Map
Holdings for One Quarter Ended December 31, 2024



International Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	(6.66%)	6.36%	1.48%	5.43%	6.05%	7.55%	9/1/1986
International Equity - Net	(6.74%)	6.00%	1.14%	5.05%	5.69%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	--	
International Equity IMRF Custom Benchmark	(7.61%)	5.46%	0.37%	3.85%	--	--	
International Large Cap Equity	(6.67%)	6.75%	2.71%	6.48%	6.48%	7.67%	9/1/1986
International Large Cap Equity - Net	(6.75%)	6.42%	2.42%	6.16%	6.18%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	--	
International Large Cap Growth	(5.63%)	5.10%	(0.71%)	6.32%	6.40%	8.09%	9/1/2002
International Large Cap Growth - Net	(5.82%)	4.46%	(1.16%)	5.89%	6.04%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	6.73%	
EARNEST Partners Intl	(4.67%)	7.19%	5.27%	7.96%	6.71%	8.85%	10/1/2004
EARNEST Partners Intl - Net	(5.00%)	6.13%	4.64%	7.48%	6.37%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	5.65%	
MSCI ACWI xUS Growth (Net)	(7.88%)	5.07%	(2.67%)	3.44%	5.35%	6.05%	
William Blair	(6.33%)	3.60%	(4.36%)	5.18%	6.26%	8.83%	10/1/2002
William Blair - Net	(6.41%)	3.26%	(4.69%)	4.80%	5.88%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	7.30%	
MSCI ACWI xUS Growth (Net)	(7.88%)	5.07%	(2.67%)	3.44%	5.35%	7.29%	

International Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Large Cap Value	(8.62%)	6.67%	6.88%	6.30%	5.95%	8.35%	10/1/1995
International Large Cap Value - Net	(8.69%)	6.18%	6.51%	5.95%	5.59%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	--	
Brandes Investment	(8.80%)	7.06%	10.03%	8.30%	6.95%	8.80%	1/1/1996
Brandes Investment - Net	(8.85%)	6.46%	9.67%	8.00%	6.68%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	--	
MSCI ACWI xUS Value (Net)	(7.31%)	6.04%	4.37%	4.50%	4.07%	--	
Lazard	(8.99%)	3.36%	1.95%	4.06%	4.84%	5.76%	4/1/2012
Lazard - Net	(9.05%)	3.11%	1.71%	3.81%	4.50%	5.35%	
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	4.99%	
MSCI ACWI xUS Value (Net)	(7.31%)	6.04%	4.37%	4.50%	4.07%	4.34%	
Mondrian	(8.36%)	6.95%	4.82%	4.90%	5.28%	5.65%	4/1/2012
Mondrian - Net	(8.45%)	6.53%	4.44%	4.50%	4.82%	5.18%	
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	4.99%	
MSCI ACWI xUS Value (Net)	(7.31%)	6.04%	4.37%	4.50%	4.07%	4.34%	
International Large Cap Active Core	(5.38%)	8.76%	3.89%	8.31%	7.98%	6.15%	2/1/2008
International Large Cap Active Core - Net	(5.47%)	8.37%	3.50%	7.82%	7.47%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	3.16%	
Arrowstreet Capital	(4.70%)	10.43%	7.00%	12.35%	10.18%	7.52%	3/1/2008
Arrowstreet Capital - Net	(4.81%)	9.94%	6.52%	11.85%	9.68%	7.02%	
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	3.01%	
Brown Capital	(6.60%)	1.19%	(2.50%)	4.74%	6.11%	7.27%	10/1/2004
Brown Capital - Net	(6.66%)	0.94%	(2.74%)	4.21%	5.45%		
MSCI ACWI xUS (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	5.65%	

International Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
GlobeFlex Capital	(5.23%)	12.33%	4.92%	7.55%	7.20%	5.73%	3/1/2006
Globeflex Capital - Net	(5.30%)	12.00%	4.59%	7.19%	6.81%	5.30%	
MSCI ACWI ex USA (Net)	(7.60%)	5.53%	0.82%	4.10%	4.80%	4.07%	
Xponance International Equity	(8.13%)	2.07%	(0.64%)	--	--	2.78%	2/1/2021
Xponance International Equity - Net	(8.28%)	1.45%	(1.26%)	--	--	2.17%	
MSCI EAFE (Net)	(8.11%)	3.82%	1.65%			4.34%	
Intl Large Cap Passive Core	(7.51%)	5.69%	1.08%	4.48%	5.26%	4.14%	2/1/2000
Intl Large Cap Passive Core - Net	(7.51%)	5.69%	1.07%	4.48%	5.25%	--	
Intl Large Cap Passive Core Benchmark	(7.60%)	5.53%	0.82%	4.04%	4.85%	3.74%	
NTGI ACWI ex US Index Fund	(7.51%)	5.69%	1.08%	--	--	1.69%	10/1/2021
NTGI ACWI ex US Index Fund - Net	(7.51%)	5.69%	1.07%	--	--	1.68%	
MSCI ACWI ex USA (Net)	(7.60%)	5.53%	0.82%			1.32%	
Intl All Cap Developed	(7.19%)	2.15%	(0.25%)	3.60%	--	5.53%	2/1/2019
Intl All Cap Developed - Net	(7.31%)	1.66%	(0.75%)	3.09%	--	5.03%	
MSCI EAFE + Canada (Net)	(7.43%)	4.70%	1.91%	5.10%		6.68%	
Ativo International	(7.19%)	2.15%	(0.25%)	3.60%	--	5.53%	2/1/2019
Ativo International - Net	(7.31%)	1.66%	(0.75%)	3.09%	--	5.03%	
MSCI EAFE + Canada (Net)	(7.43%)	4.70%	1.91%	5.10%		6.68%	

International Equity Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Small Cap	(6.39%)	0.93%	(5.98%)	2.86%	5.36%	4.63%	12/1/2005
International Small Cap - Net	(6.57%)	0.21%	(6.68%)	2.10%	4.58%	--	
Intl Small Cap Custom Benchmark	(7.66%)	3.36%	(1.47%)	4.30%	5.66%	5.25%	
Franklin Templeton	(9.15%)	(0.45%)	(2.90%)	2.62%	4.93%	5.21%	8/1/2011
Franklin Templeton - Net	(9.32%)	(1.14%)	(3.59%)	1.89%	4.18%	4.46%	
MSCI ACWI xUS Small (Net)	(7.66%)	3.36%	(1.47%)	4.30%	5.66%	4.89%	
William Blair Intl SC	(4.51%)	1.85%	(7.77%)	3.01%	5.67%	7.40%	9/1/2010
William Blair Intl SC - Net	(4.70%)	1.10%	(8.49%)	2.23%	4.87%	6.59%	
MSCI ACWI xUS Small (Net)	(7.66%)	3.36%	(1.47%)	4.30%	5.66%	6.29%	
Intl Small Cap Custom Benchmark	(7.66%)	3.36%	(1.47%)	4.30%	5.66%	6.48%	
Emerging Market Equity	(6.49%)	7.29%	(2.54%)	0.48%	3.89%	7.87%	2/1/1992
Emerging Market Equity - Net	(6.49%)	7.11%	(3.01%)	(0.05%)	3.31%	--	
MSCI Emerging Markets (Net)	(8.01%)	7.50%	(1.92%)	1.70%	3.64%	--	
Arrowstreet EME	(6.49%)	8.33%	--	--	--	12.33%	3/1/2023
Arrowstreet EME - Net	(6.49%)	8.33%	--	--	--	12.33%	
MSCI: Emerging Markets IMI (Net)	(7.89%)	7.09%				9.56%	

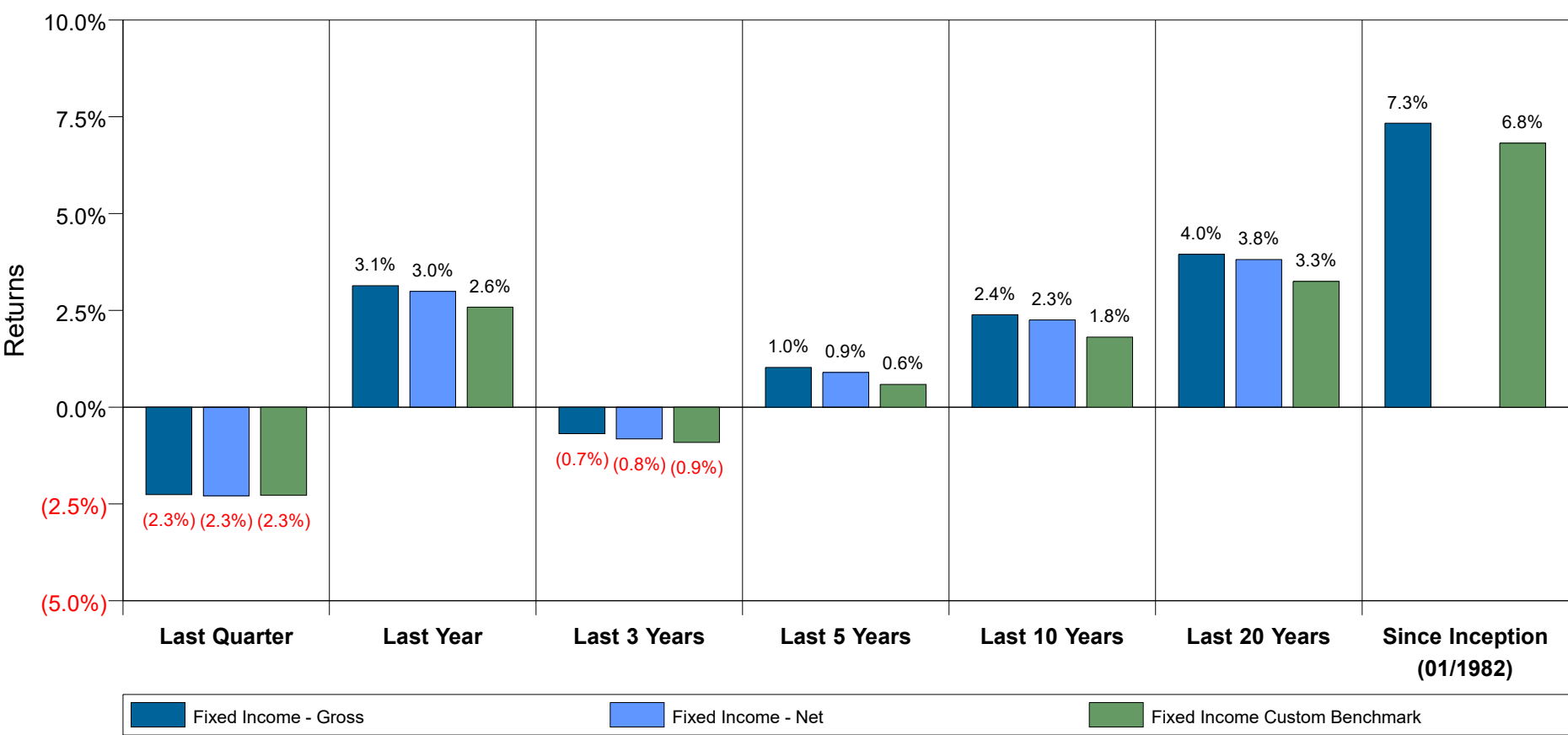
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Fixed Income

Fixed Income Returns

Periods Ended December 31, 2024

Returns for Periods Ended December 31, 2024

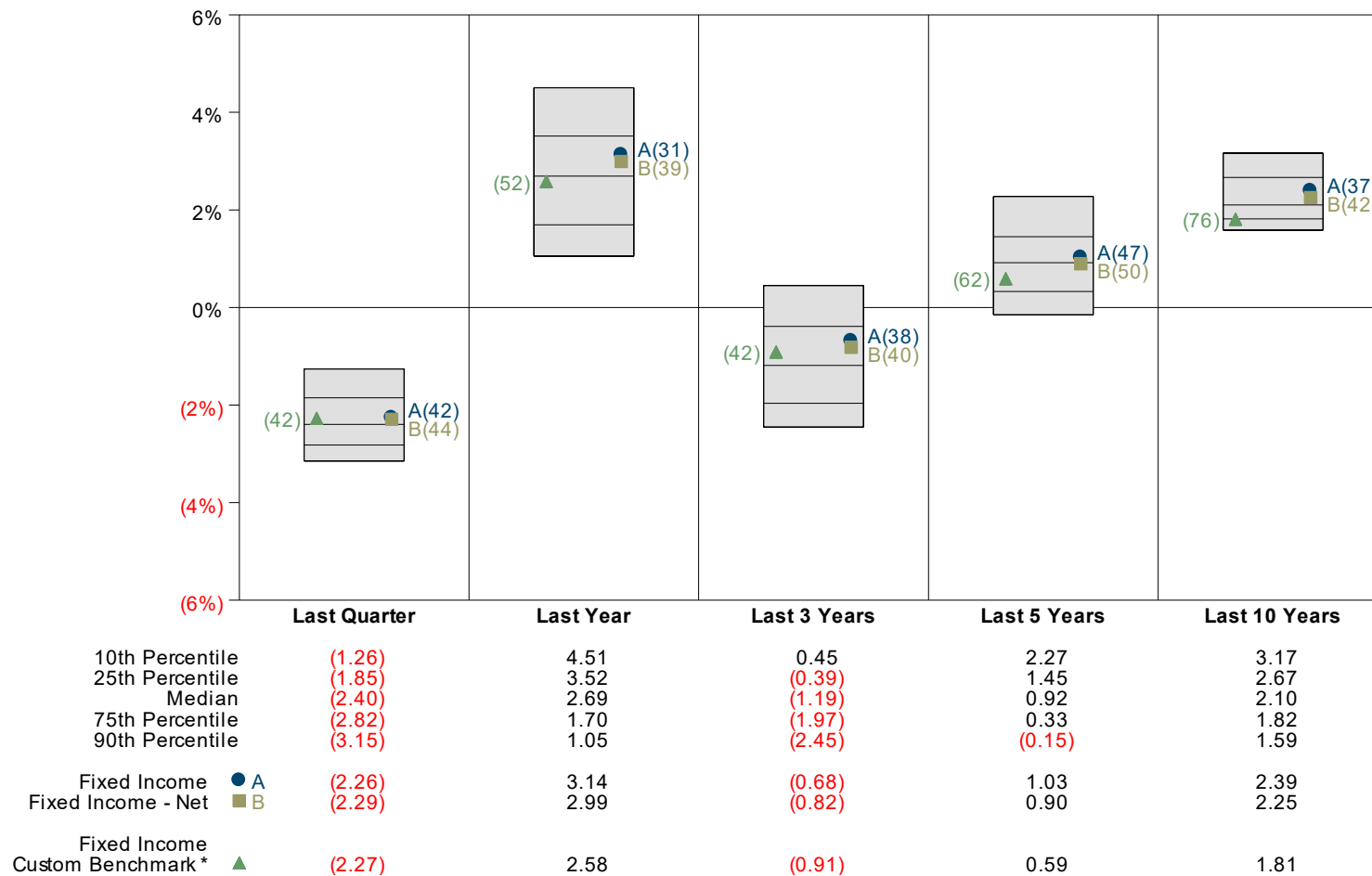


Benchmark detail is included in the Appendix.

Fixed Income – Returns and Rankings

Periods Ended December 31, 2024

Performance vs Public Fund - Domestic Fixed (Gross)



Benchmark detail is included in the Appendix.

Fixed Income Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	(2.26%)	3.14%	(0.68%)	1.03%	2.39%	7.34%	1/1/1982
Fixed Income - Net	(2.29%)	2.99%	(0.82%)	0.90%	2.25%	--	
Fixed Income Custom Benchmark	(2.27%)	2.58%	(0.91%)	0.59%	1.81%	6.82%	
Fixed Income IMRF Custom Benchmark	(2.20%)	2.83%	(0.98%)	0.64%	--	--	
Active Fixed Core	(3.29%)	1.68%	(1.88%)	0.26%	1.79%	3.65%	4/1/2001
Active Fixed Core - Net	(3.32%)	1.56%	(2.00%)	0.15%	1.67%	--	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	3.54%	
Attucks Fixed Income	(3.14%)	1.71%	(2.14%)	--	--	(1.69%)	2/1/2021
Attucks Fixed Income - Net	(3.22%)	1.38%	(2.46%)	--	--	(1.99%)	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)			(2.06%)	
Brandes FI Core	(2.67%)	1.82%	(1.12%)	0.54%	--	1.52%	3/1/2016
Brandes FI Core - Net	(2.68%)	1.79%	(1.15%)	0.52%	--	1.50%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)		1.23%	
EARNEST Partners	(2.94%)	2.25%	(1.79%)	0.27%	1.79%	3.48%	5/1/2005
EARNEST Partners - Net	(2.97%)	2.11%	(1.92%)	0.14%	1.64%	3.30%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	3.02%	
Xponance Yield Advantage Agg	(2.72%)	2.89%	(1.59%)	0.70%	2.01%	3.42%	6/1/2005
Xponance Yield Advantage Agg - Net	(2.75%)	2.75%	(1.73%)	0.56%	1.87%	3.25%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	2.98%	
Garcia Hamilton	(4.55%)	(0.13%)	(2.45%)	(0.30%)	--	1.48%	6/1/2015
Garcia Hamilton - Net	(4.57%)	(0.22%)	(2.53%)	(0.38%)	--	1.39%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)		1.30%	
Ramirez Asset Management	(3.10%)	1.68%	(2.00%)	--	--	(0.04%)	5/1/2020
Ramirez Asset Management - Net	(3.13%)	1.55%	(2.13%)	--	--	(0.17%)	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)			(1.38%)	

Fixed Income Performance

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Passive Fixed Core	(3.04%)	1.36%	(2.33%)	(0.26%)	1.41%	5.02%	1/1/1990
Passive Fixed Core - Net	(3.04%)	1.36%	(2.33%)	(0.27%)	1.40%	--	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	5.00%	
BlackRock US Debt I	(3.04%)	1.41%	(2.31%)	(0.24%)	1.44%	1.81%	10/1/2013
BlackRock US Debt I - Net	(3.04%)	1.40%	(2.31%)	(0.25%)	1.43%	1.81%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	1.71%	
NTGI Blmbg Agg.	(3.05%)	1.29%	(2.36%)	(0.29%)	1.38%	5.06%	2/1/1990
NTGI Blmbg Agg. - Net	(3.05%)	1.29%	(2.36%)	(0.29%)	1.37%	--	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	5.04%	
Core Plus Fixed Income	(3.04%)	1.87%	(2.08%)	0.40%	2.09%	7.14%	1/1/1982
Core Plus Fixed Income - Net	(3.07%)	1.72%	(2.22%)	0.25%	1.93%	--	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	6.71%	
LM Capital Group FI	(2.74%)	2.58%	(1.32%)	0.94%	2.20%	3.87%	5/1/2005
LM Capital Group FI - Net	(2.78%)	2.42%	(1.47%)	0.78%	2.04%	3.70%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	3.02%	
Loop Capital Management	(2.59%)	2.89%	(1.37%)	0.74%	2.32%	3.93%	5/1/2005
Loop Capital Management - Net	(2.62%)	2.75%	(1.50%)	0.60%	2.19%	3.80%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	3.02%	
Western Asset	(3.66%)	0.18%	(3.39%)	(0.46%)	2.00%	4.23%	11/1/2001
Western Asset - Net	(3.69%)	0.04%	(3.52%)	(0.60%)	1.86%	--	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)	(0.33%)	1.35%	3.31%	
Longfellow Core Plus	(2.90%)	2.63%	(1.72%)	--	--	0.16%	5/1/2020
Longfellow Core Plus - Net	(2.94%)	2.48%	(1.86%)	--	--	0.01%	
Blmbg U.S. Aggregate Index	(3.06%)	1.25%	(2.41%)			(1.38%)	

Fixed Income Performance

Returns for Periods Ended December 31, 2024

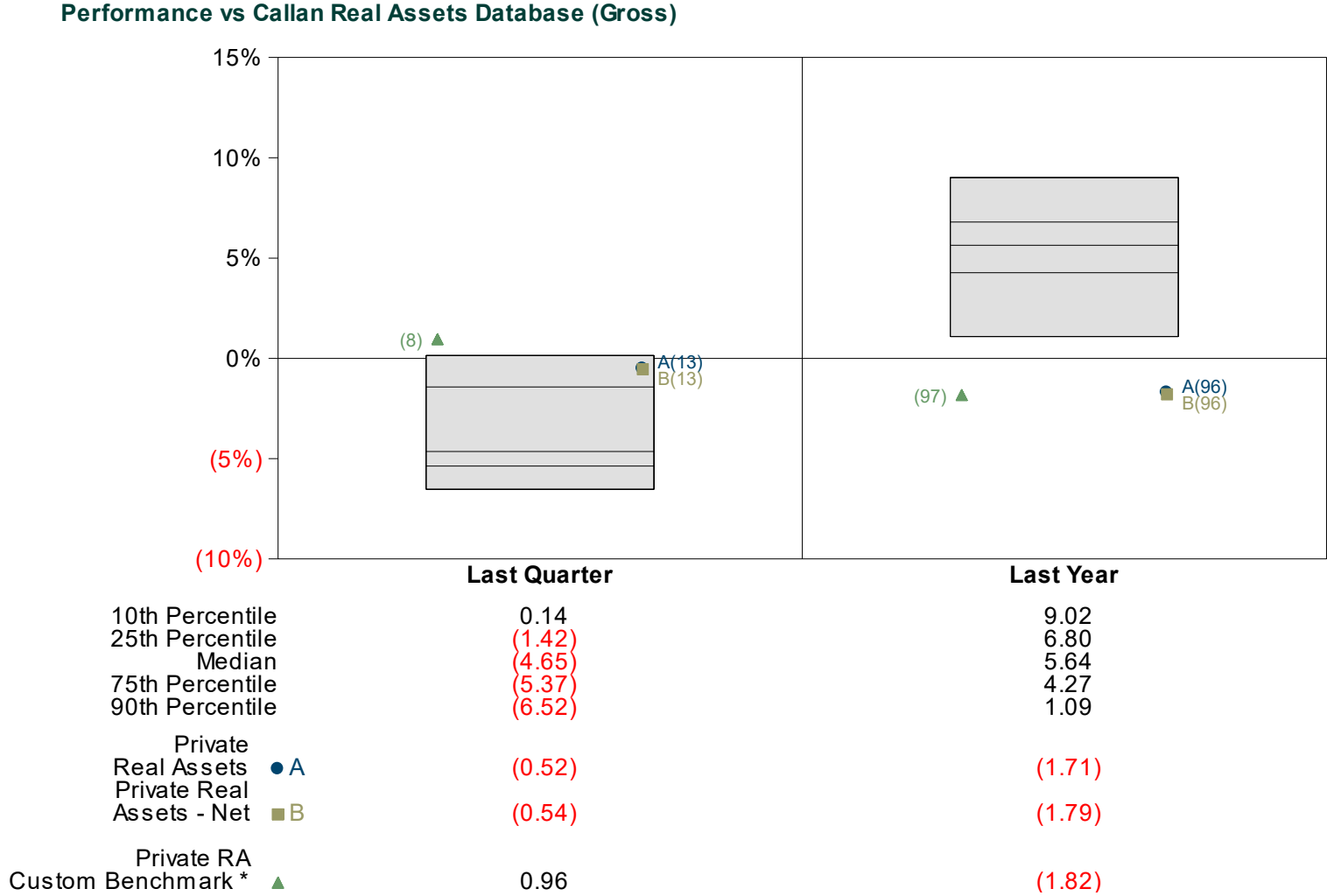
	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Bank Loans	2.38%	9.37%	6.00%	5.28%	5.21%	4.98%	8/1/2014
Bank Loans - Net	2.29%	9.44%	6.11%	5.35%	4.99%	4.74%	
Barings Custom Benchmark	2.36%	9.34%	7.05%	5.91%	5.32%	5.05%	
Barings Global Loan Fund	2.38%	9.79%	6.41%	5.68%	5.41%	5.17%	8/1/2014
Barings Global Loan Fund - Net	2.29%	9.44%	6.11%	5.35%	4.99%	4.74%	
Barings Custom Benchmark	2.36%	9.34%	7.05%	5.91%	5.32%	5.05%	
High Yield	0.27%	7.80%	4.02%	5.06%	6.09%	8.97%	4/1/1986
High Yield - Net	0.19%	7.48%	3.71%	4.74%	5.75%	--	
ICE BofA High Yield Cash Pay Index	0.13%	8.04%	2.89%	4.02%	5.07%	7.75%	
MacKay Shields	0.27%	7.80%	4.03%	5.07%	6.17%	8.08%	11/1/2000
MacKay Shields - Net	0.19%	7.48%	3.72%	4.74%	5.83%	--	
ICE BofA High Yield Cash Pay Index	0.13%	8.04%	2.89%	4.02%	5.07%	6.86%	

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Private Real Assets

Private Real Assets – Returns and Rankings

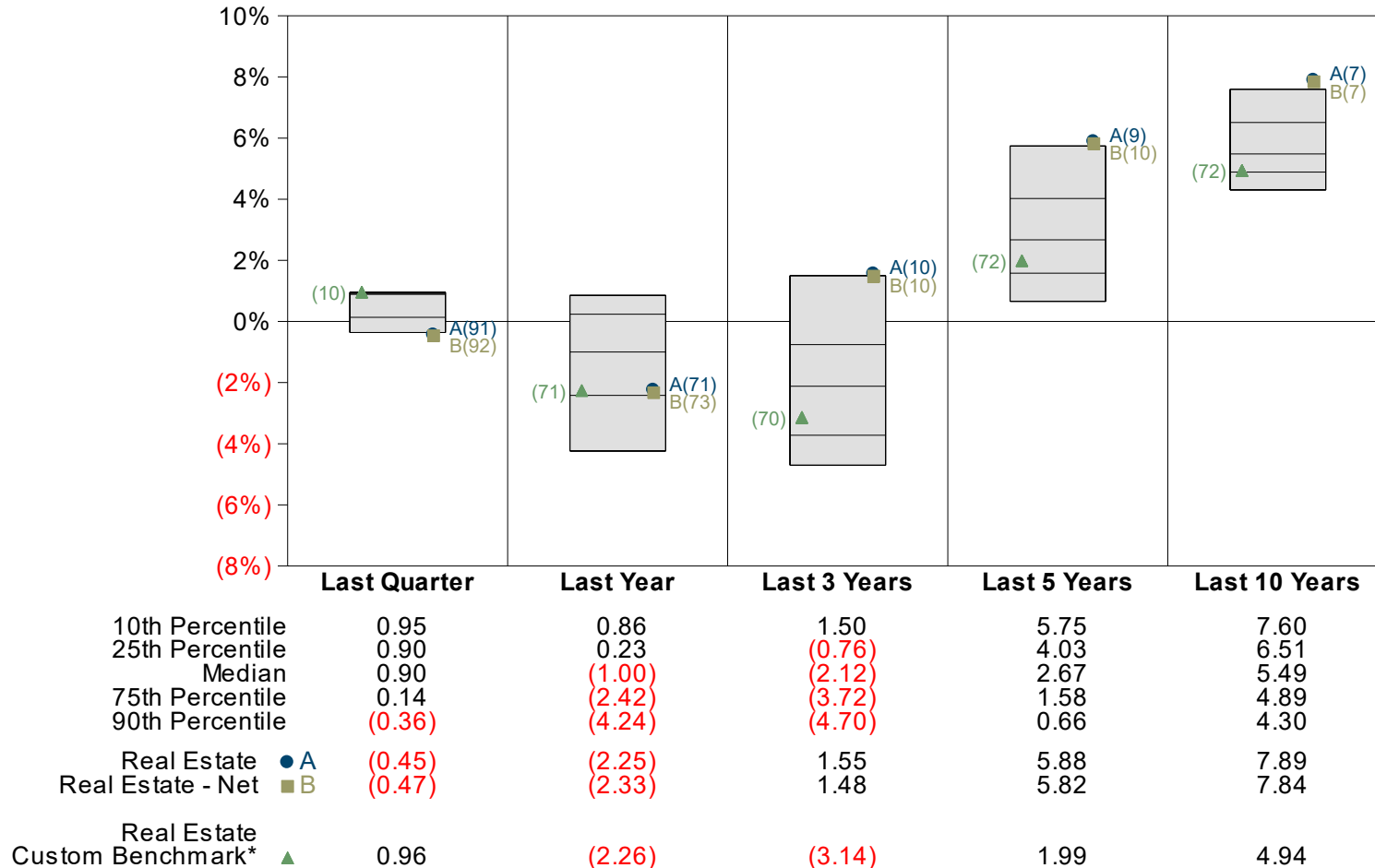
Periods Ended December 31, 2024



Private Real Estate – Returns and Rankings

Periods Ended December 31, 2024

Performance vs Public Fund - Real Estate (Gross)



Private Real Assets

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Private Real Assets	(0.52%)	(1.71%)	--	--	--	0.53%	3/1/2022
Private Real Assets - Net	(0.54%)	(1.79%)	--	--	--	0.46%	
Private RA Custom Benchmark	0.96%	(1.82%)	--	--	--	(2.77%)	
Real Estate	(0.45%)	(2.25%)	1.55%	5.88%	7.89%	5.60%	5/1/1985
Real Estate - Net	(0.47%)	(2.33%)	1.48%	5.82%	7.84%		
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.96%	
Real Estate Core Cmp	0.81%	(2.69%)	1.43%	6.52%	8.18%	7.27%	4/1/1999
TA Assoc. Buckhead	4.02%	3.24%	7.20%	13.35%	12.93%	11.23%	8/1/1995
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.46%	
Barings Euro Core Property	(6.50%)	(28.72%)	(13.32%)	(5.69%)	--	2.59%	3/1/2017
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	3.47%	
Blackstone Property Euro	(8.23%)	(11.48%)	(0.08%)	4.35%	--	4.44%	12/1/2017
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	3.14%	
INVESCO Core Real Estate	(1.03%)	(6.23%)	(4.41%)	0.79%	4.36%	6.17%	4/1/2011
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.99%	
INVESCO European real estate	(6.35%)	(5.42%)	(3.70%)	(1.83%)	--	(2.02%)	4/1/2018
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	2.90%	
AEW Core Property Trust	(0.77%)	(0.87%)	1.33%	3.31%	5.32%	6.11%	10/1/2013
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	5.67%	
CBRE Core Partners	2.55%	1.87%	(0.31%)	6.87%	7.64%	8.39%	12/1/2013
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	5.57%	
JPM Strategic Property Fund	1.71%	(9.83%)	(2.51%)	--	--	0.99%	12/1/2020
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	2.63%	

Benchmark detail is included in the Appendix. Returns are time-weighted and are reported net of fee for all real estate managers.

Private Real Assets

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
RE Non-Core Cmp	(1.43%)	(1.70%)	1.69%	5.17%	7.57%	9.51%	1/1/2010
Artemis MWBE Spruce	0.00%	1.08%	2.28%	4.93%	--	3.90%	6/1/2016
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	3.80%	
Franklin T. EMREFF	(64.03%)	(92.80%)	(74.13%)	(59.34%)	(31.59%)	(23.61%)	9/1/2011
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.70%	
Security Capital	(6.27%)	9.74%	0.74%	6.60%	6.00%	10.42%	11/1/1997
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.37%	
Dune II	(9.54%)	(8.79%)	(0.09%)	0.94%	5.32%	4.71%	2/1/2009
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.13%	
Non-Core Real Estate Funds	(0.53%)	(1.72%)	2.60%	6.50%	9.01%	9.36%	10/1/2011
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	6.65%	
Non-Core Intl Real Estate	(6.47%)	(9.35%)	(4.72%)	(1.57%)	(2.12%)	(2.19%)	8/1/2014
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	5.24%	
Agriculture	(6.94%)	(9.34%)	(4.66%)	(1.41%)	0.04%	5.37%	10/1/1997
NCREIF Farmland Index	(1.32%)	(1.03%)	4.38%	4.80%	5.90%	10.49%	
Premiere Partners IV	(6.94%)	(9.34%)	(4.66%)	(1.41%)	--	0.06%	3/1/2015
Real Estate Custom Benchmark	0.96%	(2.26%)	(3.14%)	1.99%	4.94%	4.81%	
Timberland	0.03%	1.21%	12.02%	7.07%	3.33%	3.78%	1/1/2010
NCREIF Timberland Index	1.44%	6.97%	9.75%	7.78%	5.43%	5.55%	
Forest Investment	0.03%	1.01%	11.95%	7.02%	3.31%	3.77%	1/1/2010
NCREIF Timberland Index	1.44%	6.97%	9.75%	7.78%	5.43%	5.55%	
Unlisted Infrastructure	3.36%	15.02%	14.37%	14.13%	--	13.10%	4/1/2018
Unlisted Infrastructure Funds	3.36%	15.02%	14.37%	14.13%	--	13.10%	4/1/2018
Unlisted Infrastructure Custom Benchmark	1.08%	7.00%	8.04%	8.42%	--	8.57%	

Benchmark detail is included in the Appendix. Returns are time-weighted and are reported net of fee for all real estate managers.

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Alternative Investments

Alternative Investments

Returns for Periods Ended December 31, 2024

	1 Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Alternative Investments	0.62%	6.72%	4.56%	13.46%	11.79%	11.19%	2/1/1986
Alternative Investments Custom Benchmark	6.61%	32.89%	10.86%	10.11%	9.55%	12.32%	
Private Equity	0.81%	5.83%	4.59%	15.09%	14.08%	13.34%	2/1/1986
Private Equity Custom Benchmark	7.15%	36.40%	11.48%	10.48%	9.74%	--	
Abbott S/A Comp	1.78%	3.18%	2.09%	15.40%	14.25%	14.05%	6/1/1987
Pantheon S/A Comp	2.65%	5.42%	1.74%	14.19%	13.63%	10.90%	10/1/2000
Private Equity Fund - Domestic	1.58%	5.14%	4.17%	15.60%	14.72%	13.25%	6/1/2012
Private Equity Fund - International	(5.27%)	9.15%	11.45%	14.46%	--	1.92%	7/1/2015
Oakbrook Opportunities Fund	4.49%	11.46%	4.77%	11.78%	--	8.20%	6/1/2019
Private Credit	(1.25%)	18.09%	0.34%	2.09%	--	2.40%	10/1/2019
Private Credit Fund - Domestic	(1.43%)	19.16%	0.64%	2.27%	--	2.57%	10/1/2019
Private Credit Fund - International	1.47%	(16.85%)	--	--	--	(16.85%)	1/1/2024

Benchmark detail is included in the Appendix. Private Equity and Blended Benchmark (Private Equity) returns are 1 quarter lagged.

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Manager Watch List

Investment Manager Watch List

As of December 31, 2024

Investment Manager	Asset Class	Effective Date
None	None	N/A

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Appendix

IMRF Benchmark Definitions for Composites

Benchmark Name	From Date	To Date	Benchmark Definition
IMRF Total Fund Benchmark	1/1/2024	Present	34.5% Blended Benchmark (U.S. Equity), 18.0% MSCI AC World ex USA (Net), 24.5% Custom Benchmark (Fixed Income), 10.5% Custom Benchmark (Private Real Assets), 11.5% Custom Benchmark (Alternative Investments), 1.0% 90 Day U.S. Treasury Bill
	3/1/2022	12/31/2023	35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	1/1/2021	2/28/2022	39% Russell 3000 Index, 25% Blmbg U.S. Aggregate, 15% MSCI AC World ex USA (Net), 10% NCREIF Fund Index-ODCE (VW) (Net), 10% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	3/1/2018	12/31/2020	37% Russell 3000 Index, 28% Blmbg. U.S. Aggregate, 18% MSCI AC World ex USA (Net), 9% NCREIF Fund Index-ODCE (VW) (Net), 7% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
Domestic Equity Custom Benchmark	3/1/2022	Present	93% Russell 3000 Index, 7% FTSE Global Core Infrastructure 50/50 Index (Net)
	1/1/2015	2/28/2022	100% Russell 3000 Index
	1/1/1982	12/31/2014	100% Dow Jones US Total Stock Market Index
U.S. Equity IMRF Custom Benchmark	Blend of the U.S. Equity Style benchmarks returns, dollar weighted by the actual allocation at pervious month end.		
International Equity IMRF Custom Benchmark	Blend of the International Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.		
Fixed Income IMRF Custom Benchmark	Blend of the Fixed Income Style benchmarks returns, dollar weighted by the actual allocation at previous month end.		

IMRF Benchmark Definitions for Composites

Benchmark Name	From Date	To Date	Benchmark Definition
Fixed Income Custom Benchmark	1/1/2024	Present	82% Bloomberg U.S. Aggregate, 10% Custom Barings Global Loan Benchmark, 8% ICE BofA ML U.S. High Yield Cash Pay Index
	3/1/2022	12/31/2023	78% Bloomberg U.S. Aggregate, 14% Custom Barings Global Loan Benchmark, 8% ICE BofA ML U.S. High Yield Cash Pay Index
	1/1/1976	2/28/2022	100% Bloomberg U.S. Aggregate Index
Private Real Assets Custom Benchmark	3/1/2022	Present	95% NCREIF Fund Index-ODCE Value-Weighted (Net), 5% Consumer Price Index +4%
Real Estate Blended Benchmark	1/1/2013	Present	100% NCREIF Fund Index-ODCE Value-Weighted (Net)
	1/1/2007	12/31/2012	100% NPI + 1%
	1/1/2005	12/31/2016	100% Consumer Price Index + 5%
Unlisted Infrastructure Blended Benchmark	3/1/2022	Present	100% Consumer Price Index +4%
	4/1/2018	2/28/2022	100% Alternatives Custom Index
Alternative Investments Custom Index	1/1/2024	Present	87% MSCI World Index (Net) 1 Qtr Lag +3%, 13% S&P LSTA Lev. Loan 100 Index +2%
	3/1/2022	3/31/2023	95% MSCI World Index (Net) 1 Qtr Lag +3%, 5% S&P LSTA Lev. Loan 100 Index +2%
	7/1/2010	2/28/2022	100% Annualized rate of 9.0%
	1/1/2004	6/30/2010	100% Annualized rate of 12.0%
	1/1/2003	12/31/2003	100% Annualized rate of 13.0%
Private Equity Blended Benchmark	3/1/2022	Present	100% MSCI World Index (Net) 1 Qtr Lagged +3%
	2/1/1996	2/28/2022	100% Alternatives Custom Index

IMRF Benchmark Definitions for Managers

Benchmark Name	From Date	To Date	Benchmark Definition
Barings Custom Benchmark			Credit Suisse U.S. Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.
Standish Custom Benchmark			50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

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