Wilshire

IMRF

Wilshire Advisors

Executive Summary of Investment Performance

As of March 31, 2024

IMRF Performance Summary

- IMRF market value as of March 2024 $54.1 billion
- IMRF total fund return for 1Q 2024: 4.33% vs the Total Fund Benchmark return of 5.02%
- U.S. equity markets posted positive returns for the quarter, starting the year on a good note
- IMRF U.S. Equity Portfolio slightly outperformed the benchmark during the quarter, returning 9.51% versus 9.42%
- International equity markets were also up for the quarter, with improving outlook in China although the European economy remain weak
- IMRF International Equity Portfolio outperformed the benchmark during the quarter, returning 5.20% versus 4.69%
- Fixed income markets were down as yields rose and credit spreads tightened
- IMRF Fixed Income Portfolio outperformed the benchmark during the quarter, returning 0.08% versus -0.27%
- All asset class allocations remain within the rebalancing range in the Investment Policy

Performance referenced above is Net of Fees.

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Market Commentary

U.S. Equity

The U.S. stock market was up 9.9% for the first quarter and is up 29.3% for the past year. Nearly every sector was positive with the best performing being communication services (+14.3%) and energy (+13.0%). The worst performing and only negative sector was real estate (-1.2%). Small-cap underperformed large-cap by 230 basis points while growth stocks generally outperformed value. Large-cap growth stocks hold a massive advantage over large-cap value for the past 12 months.

The first cryptocurrency, Bitcoin, came into existence in 2009. It was to be the first truly decentralized global currency, driven by the technological breakthrough called blockchain. Adoption and scalability – including the tension between the speed of transactions and security and decentralization – have always been critical components to the maturation story of digital assets. In 2024, the U.S. SEC approved the first U.S.-listed exchange traded funds (ETFs) to track bitcoin. Since trading started in January, the four largest have grown to a combined $33.5 billion in total assets while the price of bitcoin has grown by 66% during the first quarter.

Non-U.S. Equity

The European economy remains weak with consumers hesitant to spend, fewer exports and lower investment, all reflecting diminished economic demand. Recent data in England confirmed that their economy entered a technical recession during 2023. The outlook in China is improving due to stronger industrial activity and retail spending. Manufacturing saw growth in production and domestic orders during the quarter, but export orders fell.

Fixed Income

The U.S. Treasury yield curve was up across nearly the entire maturity spectrum, and to a greater degree in the long end of the curve. The 10-year Treasury yield ended the quarter at 4.20%, up 32 basis points from December. High yield bond spreads were down -24 basis points, the lowest level in more than a year. The FOMC left the overnight rate unchanged, targeting a range of 5.25% to 5.50%. During a recent speech, Fed Chair Jerome Powell said that the central bank is in no hurry to raise rates, "This is an economy that doesn’t feel like it’s suffering from the current level of rates.”

March 2024 Asset Class Assumptions

	EQUITY						FIXED INCOME							REAL ASSETS					
														Real Estate					
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	4.50	5.50	5.75	5.85	5.10	7.65	4.00	5.05	5.00	4.35	6.25	8.20	3.05	5.80	5.95	6.15	6.30	6.90	2.30
Arithmetic Return (%)	5.85	7.00	8.75	7.50	6.45	11.40	4.00	5.15	5.45	4.50	6.70	8.95	3.15	7.20	7.20	7.05	7.45	7.65	2.30
Risk (%)	17.00	18.00	26.00	19.00	17.05	29.65	0.75	4.70	9.85	6.00	10.00	12.75	4.00	17.50	16.45	13.90	16.00	12.60	1.75
Yield (%)	1.35	2.90	2.45	2.75	1.90	0.00	4.00	5.35	5.40	4.65	9.70	5.10	3.95	4.05	4.05	2.60	4.00	3.60	0.00
Growth Factor Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.90	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00
Inflation Factor Exposure	-3.00	-1.00	3.00	0.10	-1.85	-4.25	0.00	-2.55	-6.85	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	1.00
CORRELATIONS																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.81	1.00																	
Emerging Mkt Stock	0.74	0.74	1.00																
Global ex-US Stock	0.84	0.95	0.89	1.00															
Global Stock	0.95	0.91	0.84	0.94	1.00														
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00											
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00										
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00									
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00								
Private Credit	0.67	0.55	0.57	0.59	0.67	0.44	0.00	0.24	0.30	0.00	0.75	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.67	0.65	0.39	0.26	0.22	1.00						
US RE Securities	0.57	0.47	0.44	0.49	0.56	0.49	-0.05	0.17	0.22	0.10	0.56	0.61	0.05	1.00					
Global RE Securities	0.63	0.56	0.54	0.59	0.64	0.55	-0.05	0.17	0.21	0.11	0.60	0.67	0.04	0.97	1.00				
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.57	0.62	0.05	0.78	0.77	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.61	0.62	0.66	0.68	0.66	0.56	-0.03	0.24	0.26	0.32	0.64	0.69	0.05	0.78	0.83	0.76	0.62	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.21	1.00

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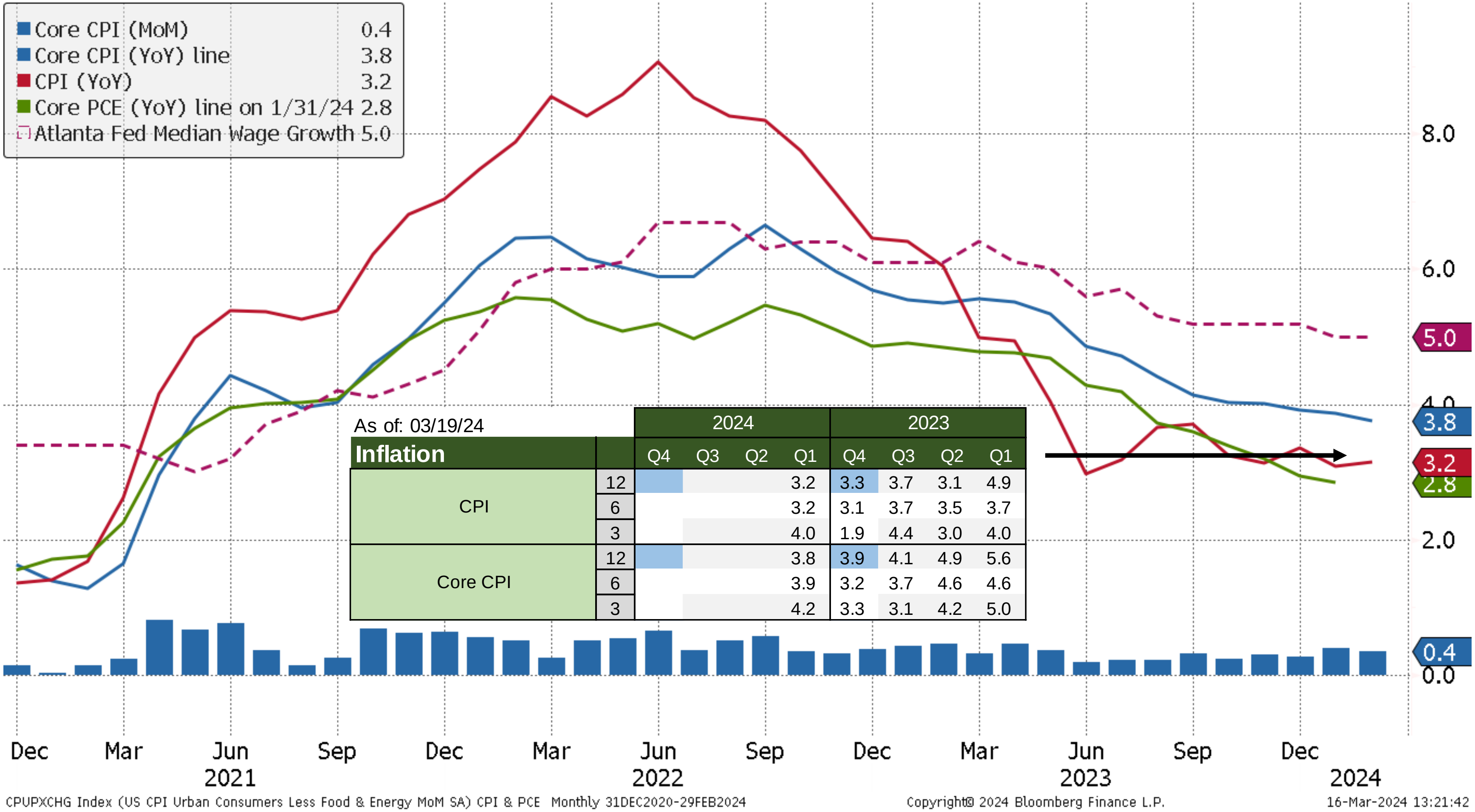
Inflation Stubbornly Settling Near 3%

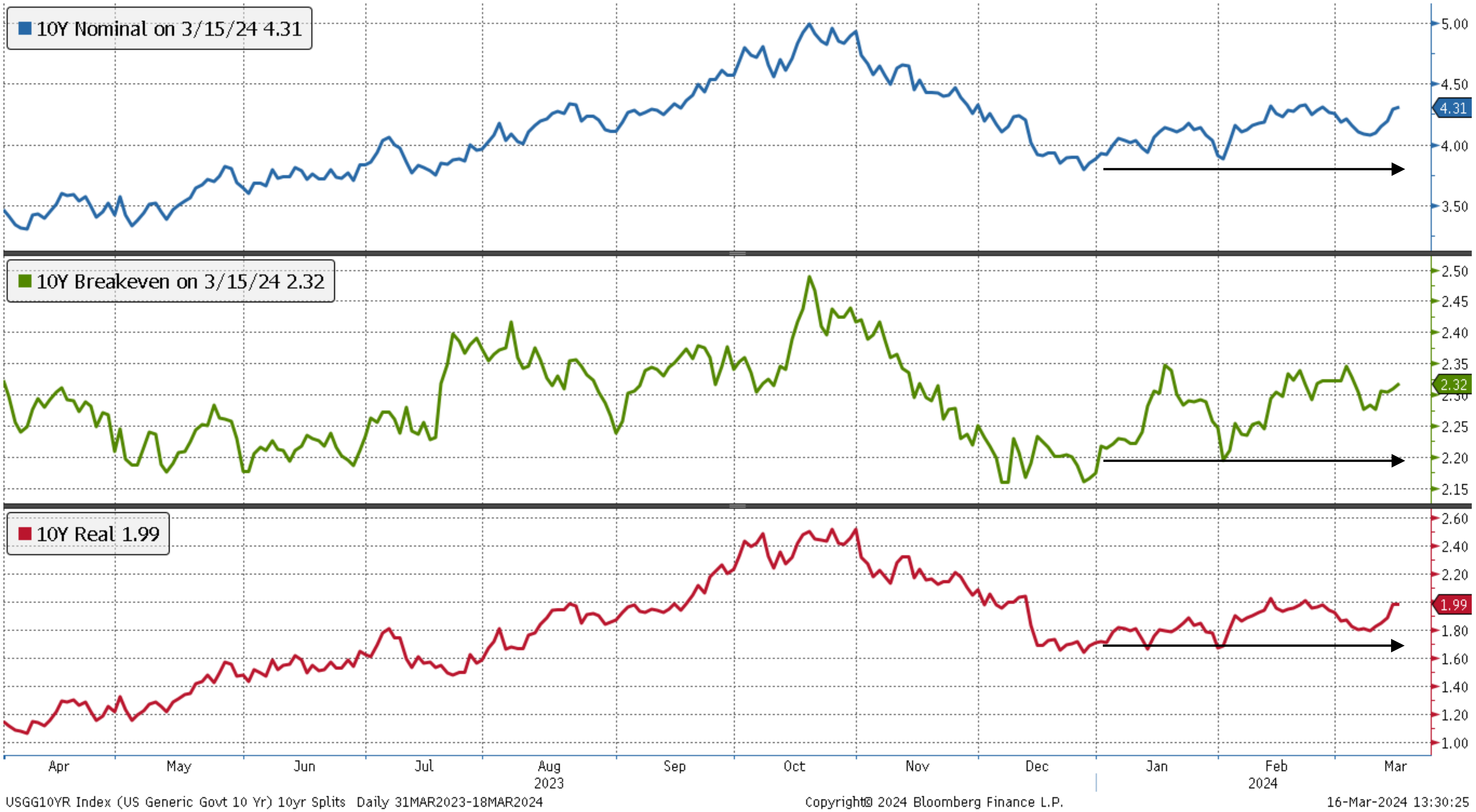


As of: 03/19/24

Inflation		2024 Q4	2024 Q3	2024 Q2	2024 Q1	2023 Q4	2023 Q3	2023 Q2	2023 Q1
CPI	12				3.2	3.3	3.7	3.1	4.9
	6				3.2	3.1	3.7	3.5	3.7
	3				4.0	1.9	4.4	3.0	4.0
Core CPI	12				3.8	3.9	4.1	4.9	5.6
	6				3.9	3.2	3.7	4.6	4.6
	3				4.2	3.3	3.1	4.2	5.0

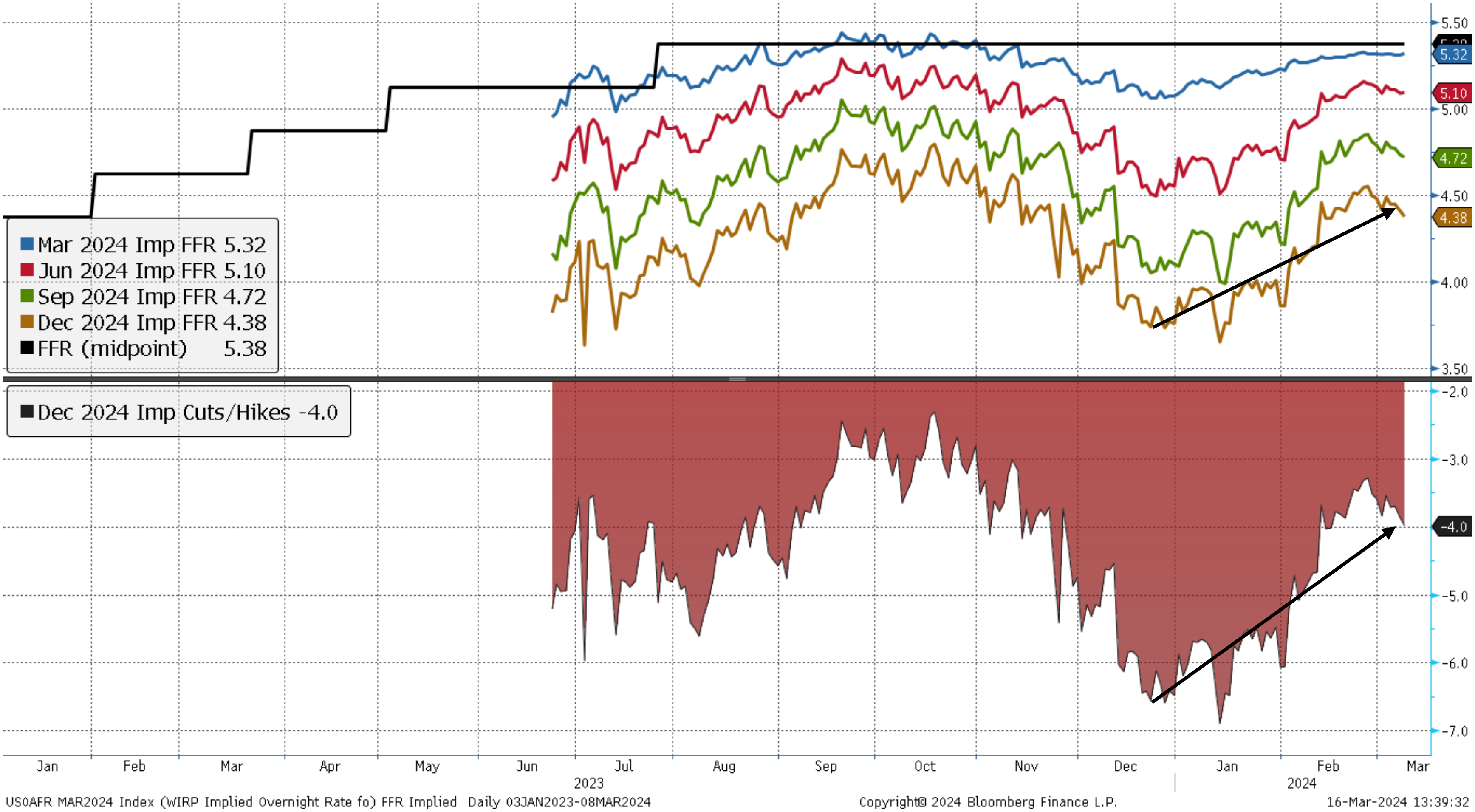
Data Sources: Bloomberg

Inflation Expectations Driving Rates Volatility



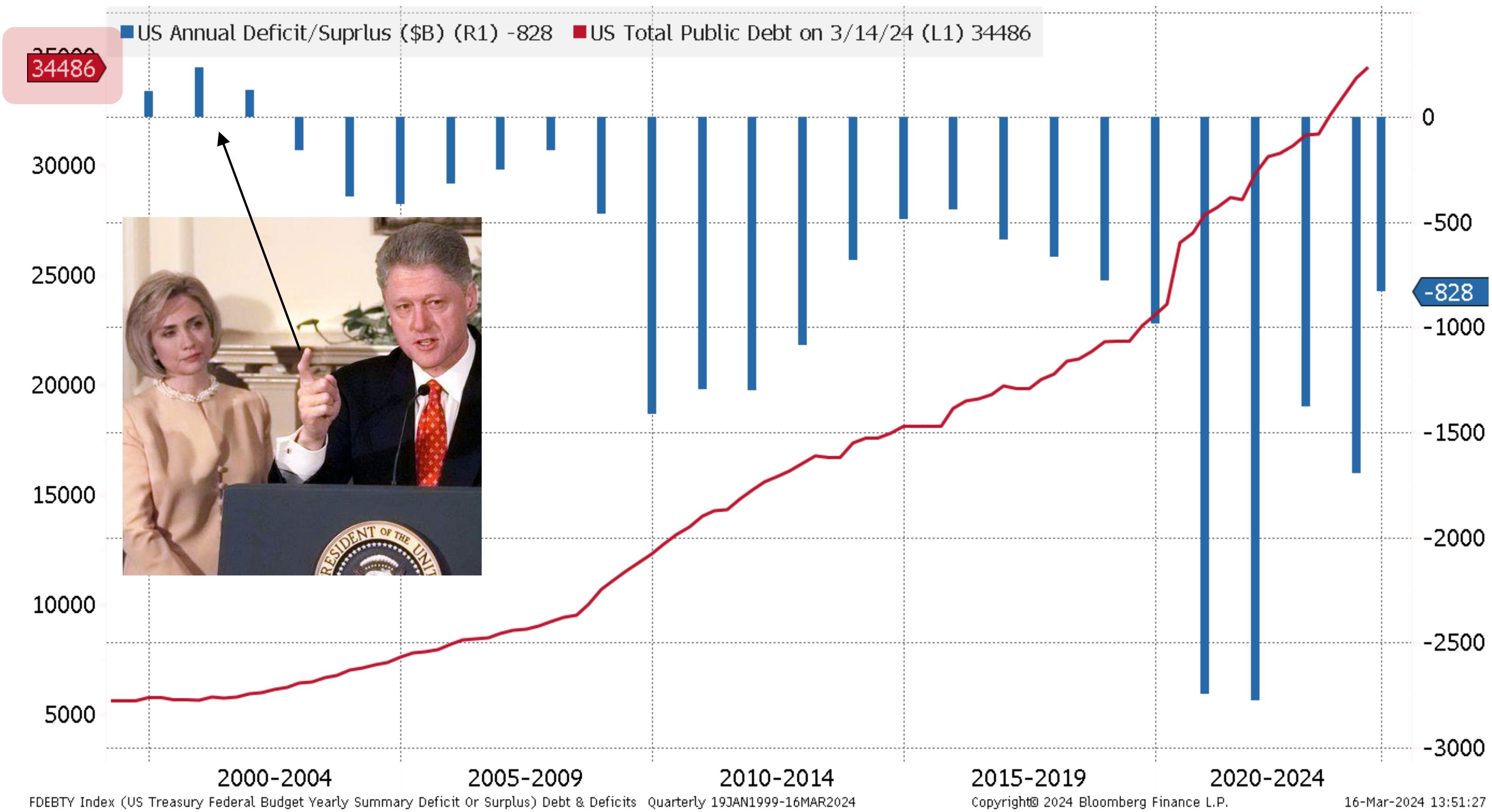
Data Sources: Bloomberg

Markets Begin to Align with Fed's Median Expectations (i.e., Dot-Plot)



Data Sources: Bloomberg

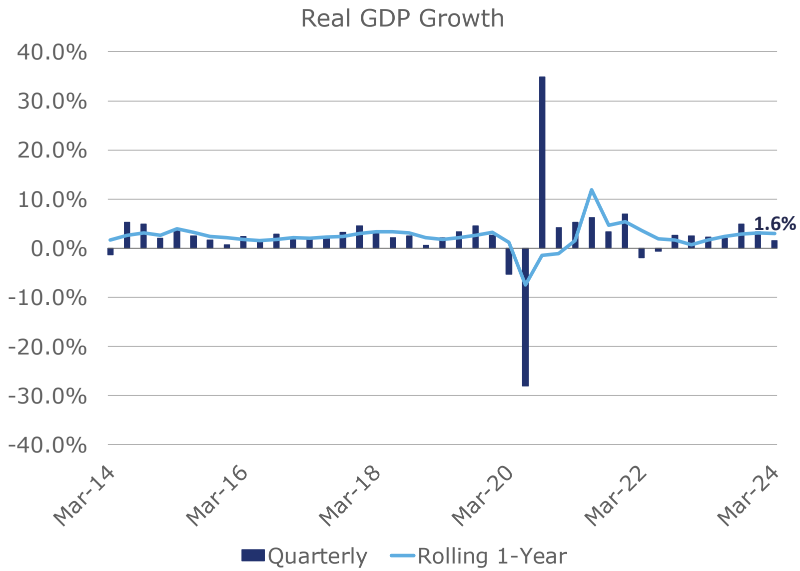
Meanwhile, Nobody Seems to Care About Debt/Deficits

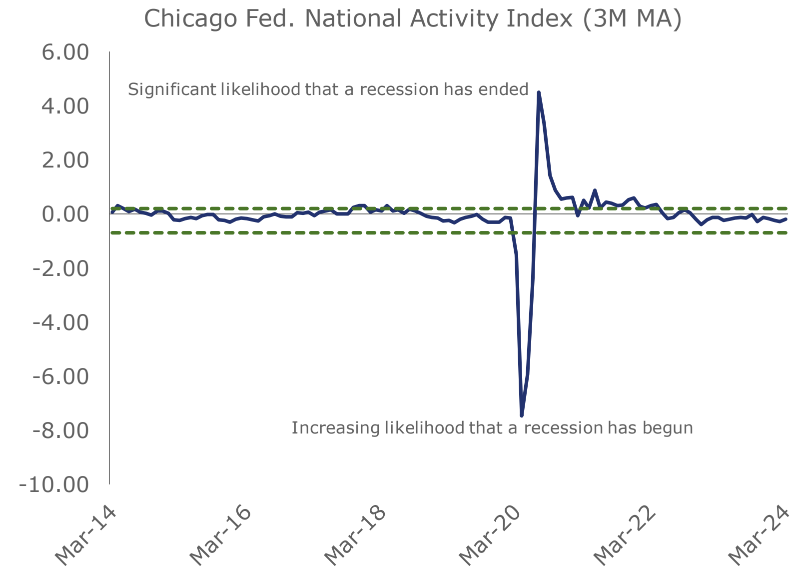


Data Sources: Bloomberg

Economic/Market Activity

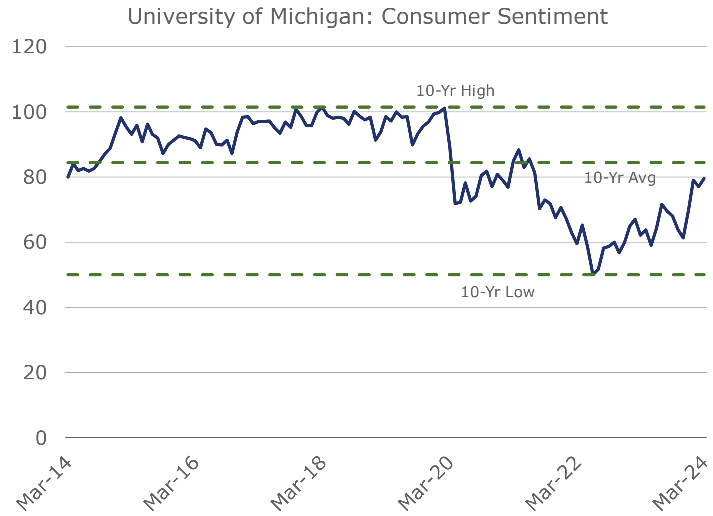
Economic Growth

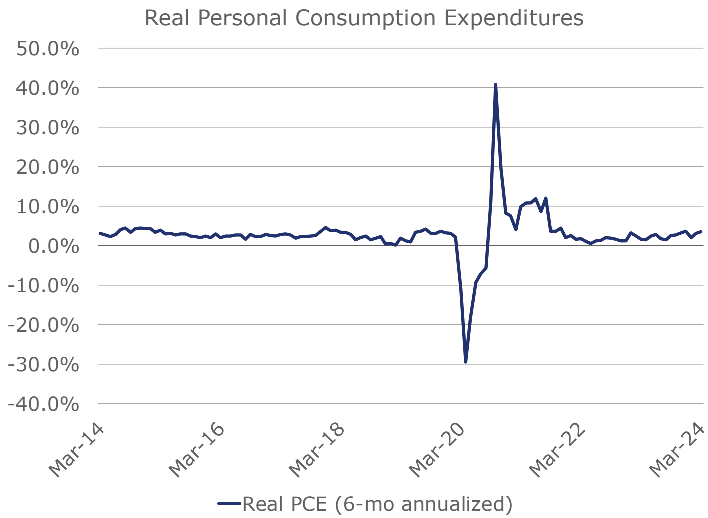




Data Sources: Bloomberg

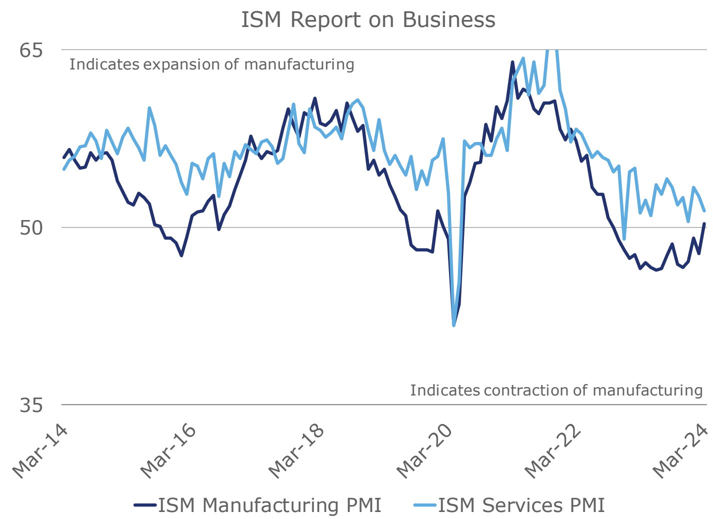
Consumer Activity

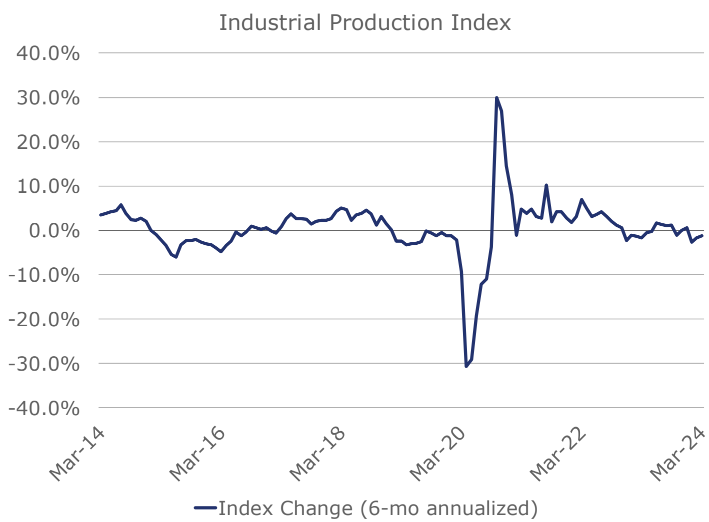


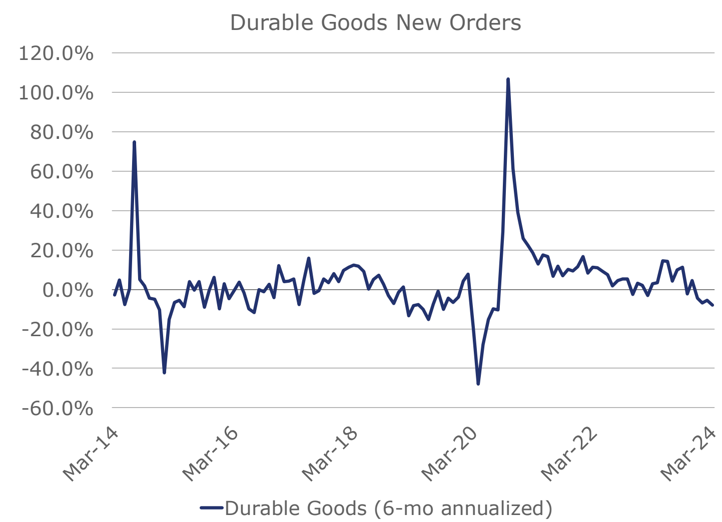


Data Sources: Bloomberg

Business Activity

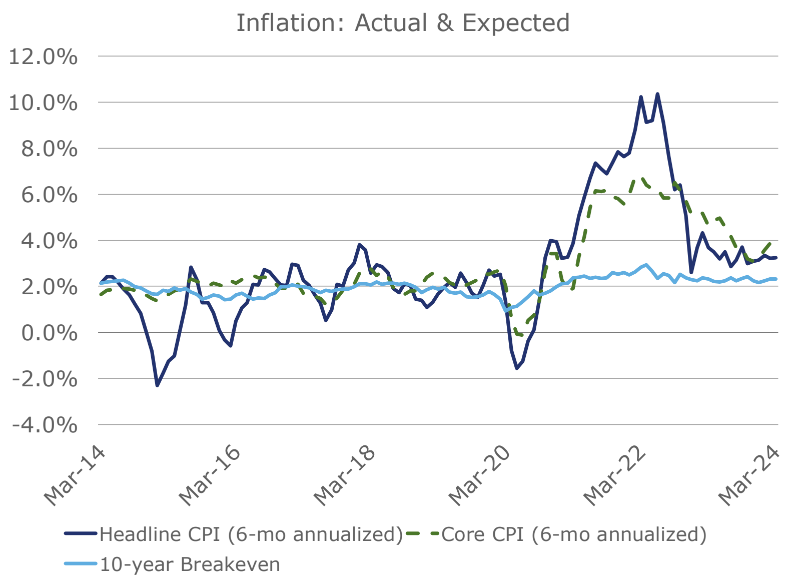


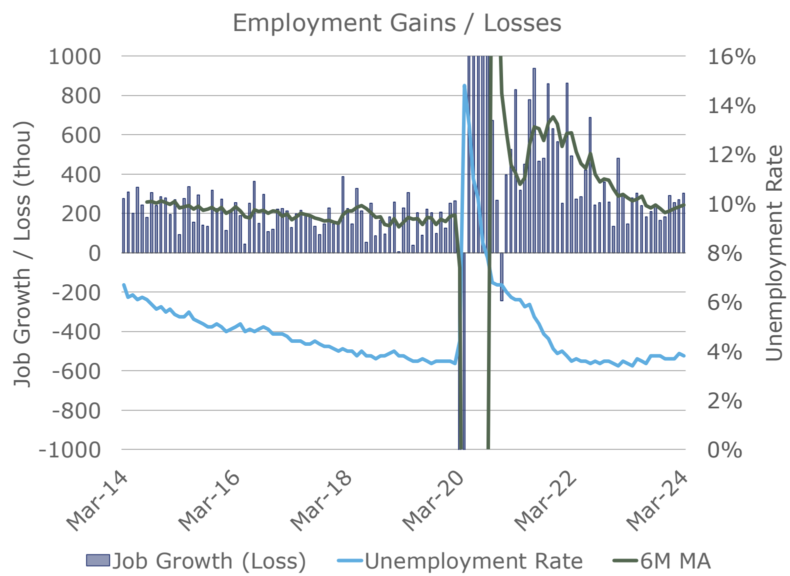




Data Sources: Bloomberg

Inflation and Employment



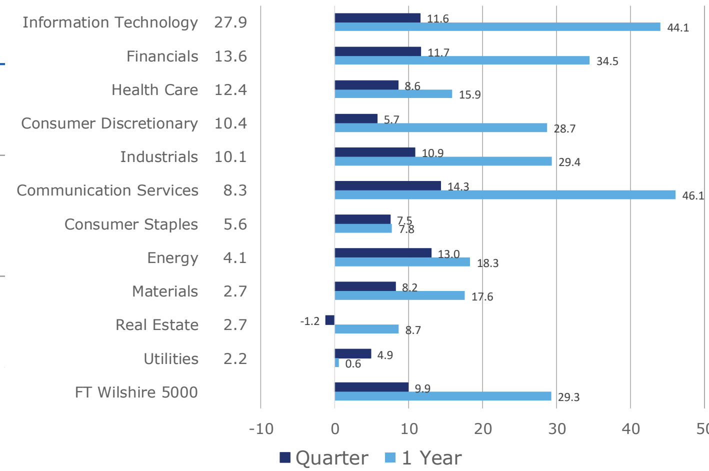


Data Sources: Bloomberg

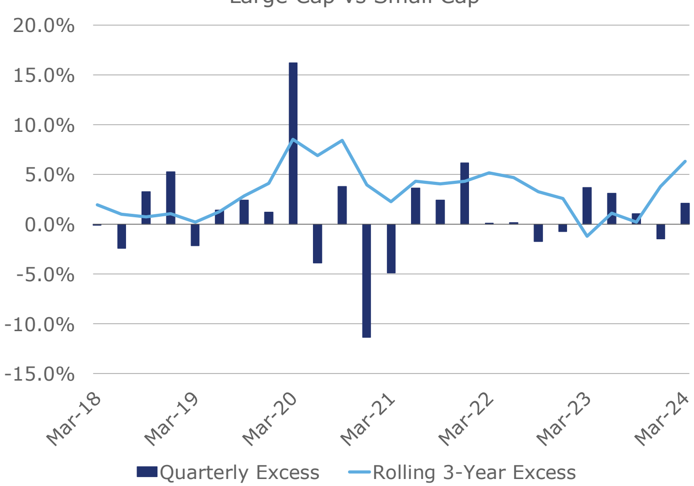
U.S. Equity Market

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	9.9	9.9	29.3	10.1	14.6	12.5
FT Wilshire U.S. Large Cap	10.3	10.3	30.2	11.2	15.2	13.1
FT Wilshire U.S. Small Cap	8.0	8.0	24.1	4.6	10.4	9.4
FT Wilshire U.S. Large Growth	11.9	11.9	41.1	12.2	18.4	n/a
FT Wilshire U.S. Large Value	8.6	8.6	19.7	9.7	11.6	n/a
FT Wilshire U.S. Small Growth	8.2	8.2	23.0	1.8	9.6	n/a
FT Wilshire U.S. Small Value	7.8	7.8	25.1	7.1	10.8	n/a
Wilshire REIT Index	0.0	0.0	12.4	4.5	4.4	6.7
MSCI USA Min. Vol. Index	7.7	7.7	16.7	8.3	9.3	11.0
FTSE RAFI U.S. 1000 Index	10.0	10.0	25.6	10.8	13.9	11.2

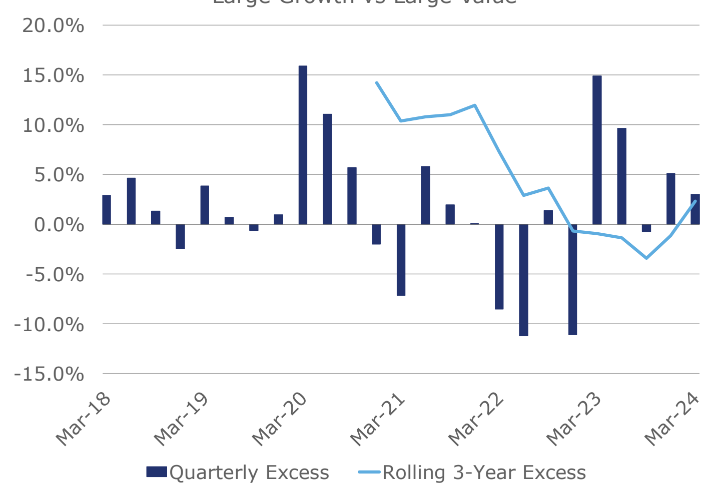
U.S. Sector Weight and Return (%)



Large Cap vs Small Cap



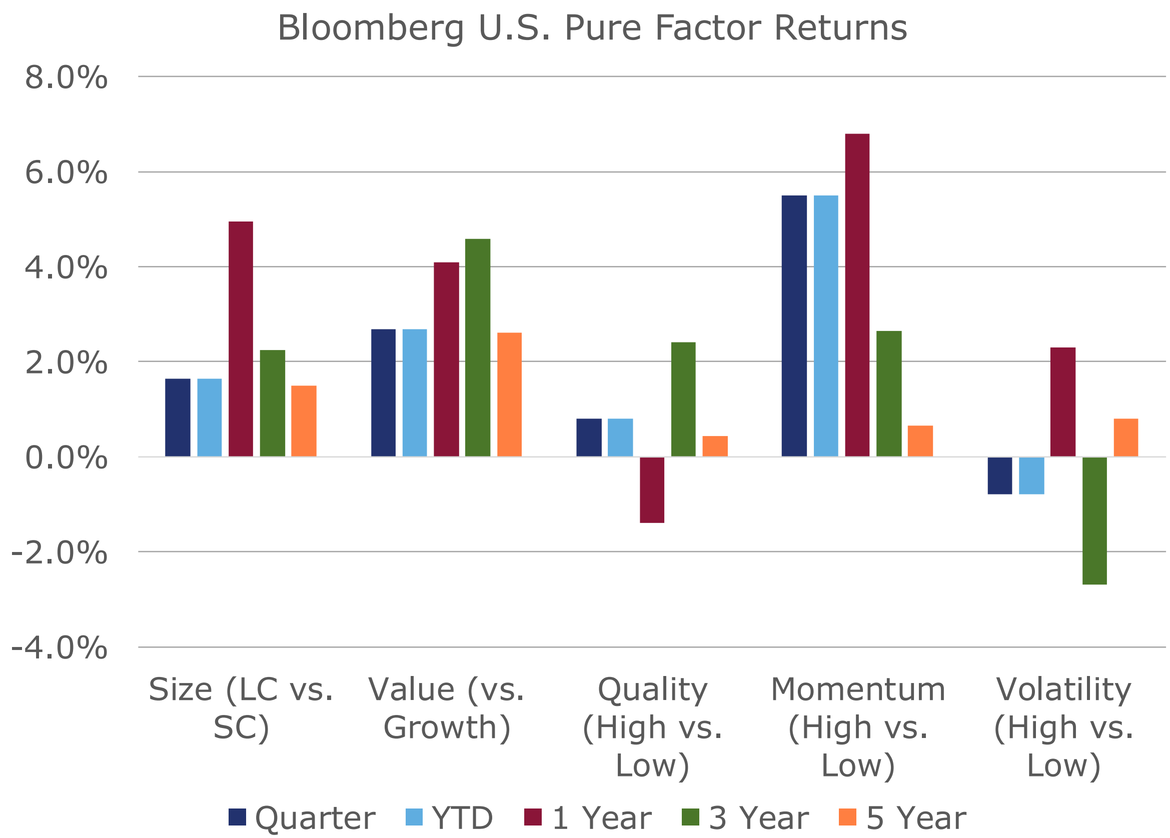
Large Growth vs Large Value



Data Sources: Bloomberg, Wilshire Atlas

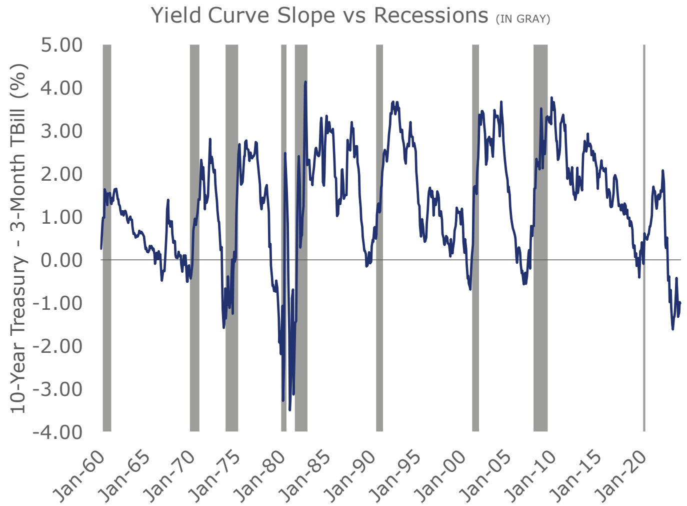
U.S. Factor Returns

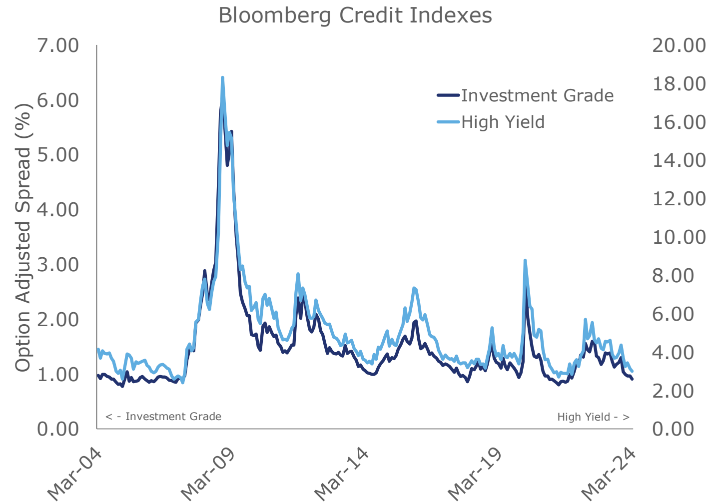
- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg's Portfolio & Risk Analytics module
- Momentum had a strong quarter while high volatility detracted

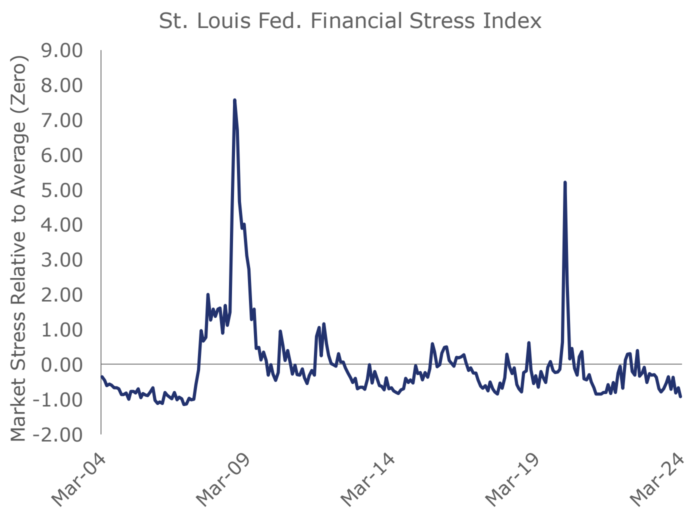


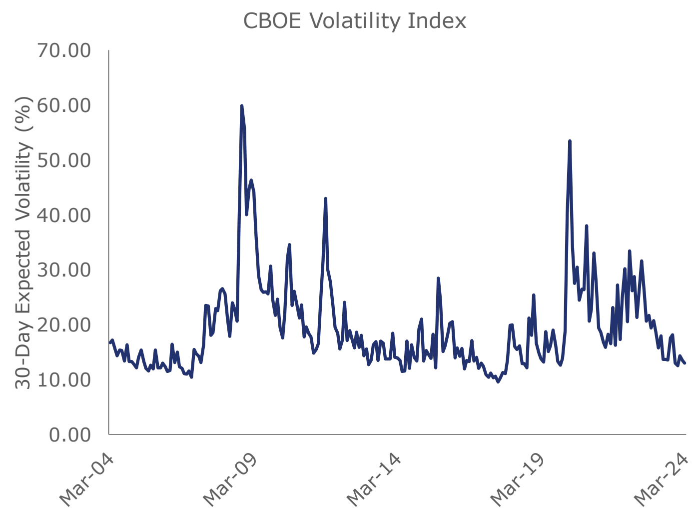
Data Sources: Bloomberg

Risk Monitor



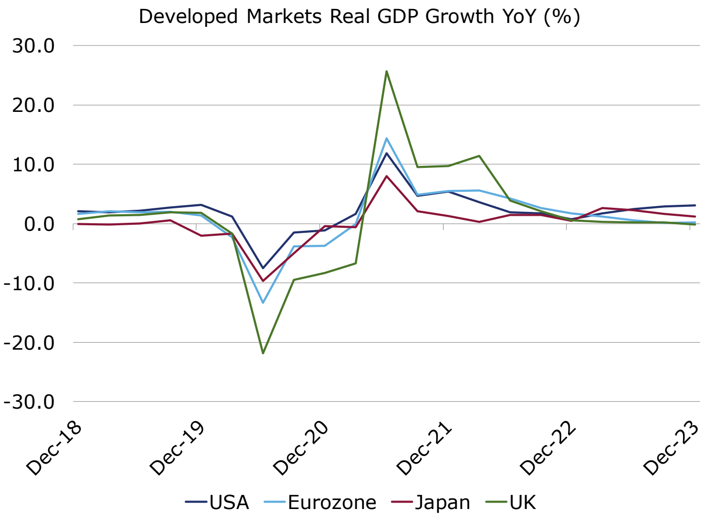


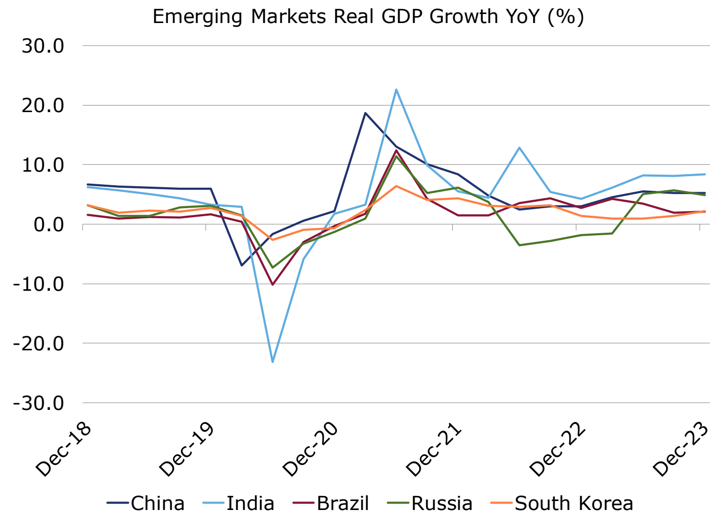


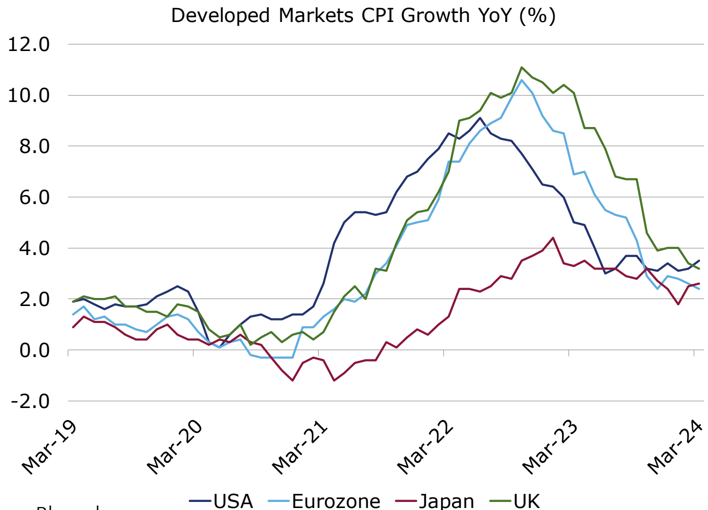


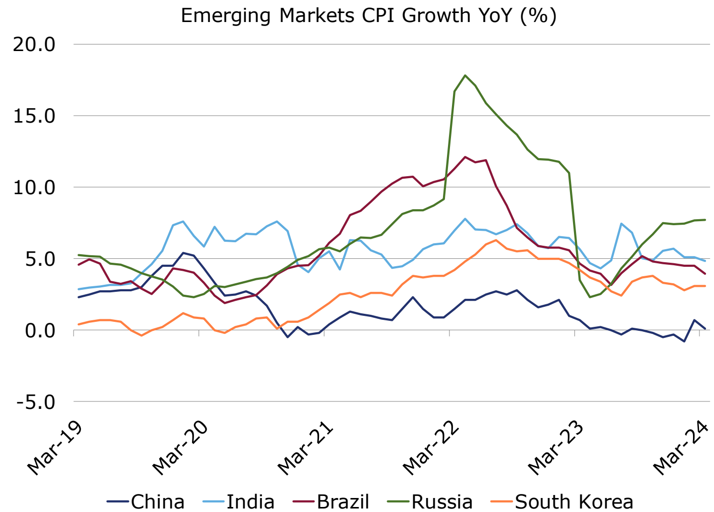
Data Sources: Bloomberg

Non-U.S. Growth and Inflation







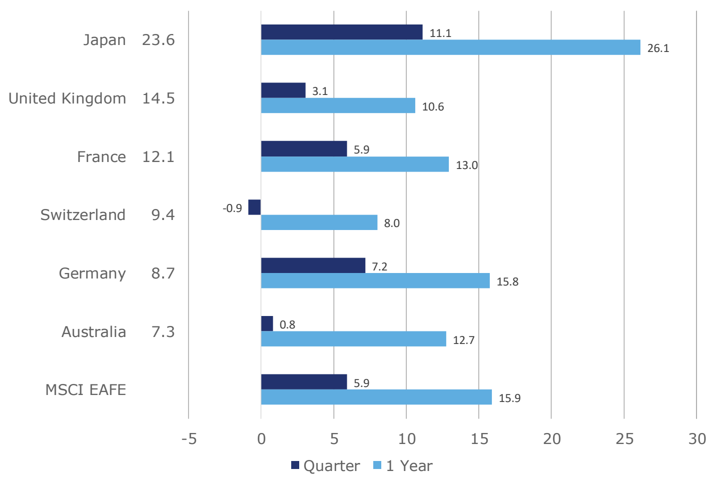


Data Sources: Bloomberg

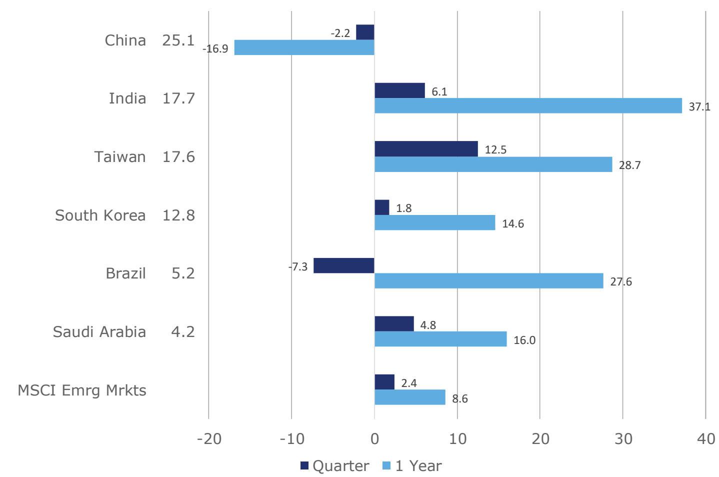
Non-U.S. Equity Market

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US ($G)	4.8	4.8	13.8	2.4	6.5	4.7
MSCI EAFE ($G)	5.9	5.9	15.9	5.3	7.9	5.3
MSCI Emerging Markets ($G)	2.4	2.4	8.6	-4.7	2.6	3.3
MSCI Frontier Markets ($G)	5.7	5.7	16.0	2.8	0.8	0.7
MSCI ACWI ex-US Growth ($G)	6.0	6.0	11.5	-0.5	6.6	5.5
MSCI ACWI ex-US Value ($G)	3.4	3.4	16.2	5.1	6.2	4.0
MSCI ACWI ex-US Small ($G)	2.2	2.2	13.4	0.8	6.7	5.2
MSCI ACWI Minimum Volatility	4.8	4.8	11.7	4.8	6.1	7.9
MSCI EAFE Minimum Volatility	2.4	2.4	8.8	2.1	2.9	4.7
FTSE RAFI Developed ex-US	5.6	5.6	17.8	6.7	8.2	4.9
MSCI EAFE LC (G)	10.1	10.1	19.4	10.0	9.9	8.2
MSCI Emerging Markets LC (G)	4.6	4.6	11.1	-2.0	4.8	6.1

Developed Markets Weight and Return (%)



Emerging Markets Weight and Return (%)



Data Sources: Bloomberg

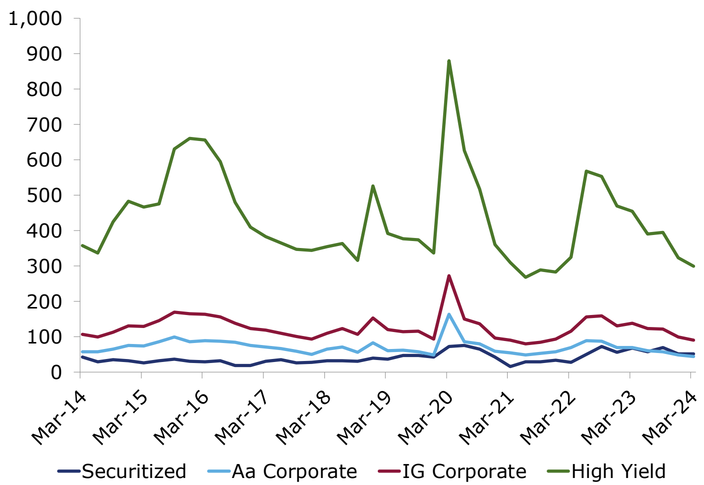
Wilshire

U.S. Fixed Income

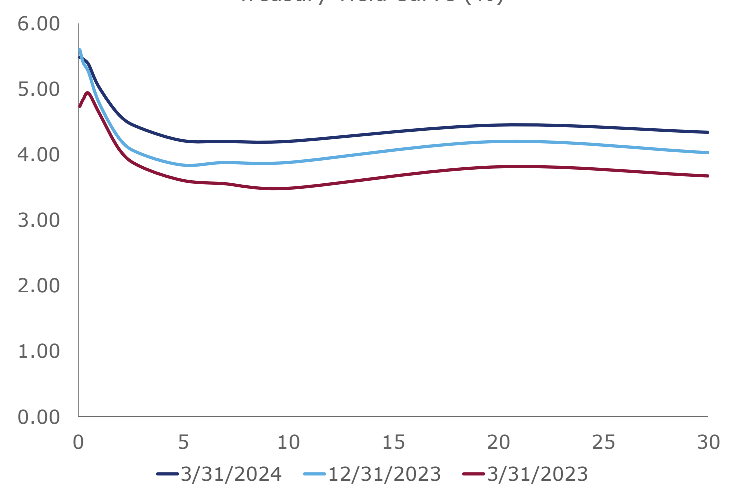
As of 3/31/2024	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.8	6.2	-0.8	-0.8	1.7	-2.5	0.4	1.5
Bloomberg Treasury	4.4	6.0	-1.0	-1.0	0.1	-2.7	-0.1	1.0
Bloomberg Gov't-Rel.	4.9	5.3	-0.4	-0.4	2.5	-1.6	0.7	1.7
Bloomberg Securitized	5.1	5.9	-0.9	-0.9	1.6	-2.7	-0.3	1.2
Bloomberg Corporate	5.3	7.0	-0.4	-0.4	4.4	-1.9	1.5	2.6
Bloomberg LT Gov't/Credit	5.0	14.0	-2.4	-2.4	-1.1	-6.0	-0.6	2.3
Bloomberg LT Treasury	4.4	15.3	-3.3	-3.3	-6.1	-8.0	-2.8	1.2
Bloomberg LT Gov't-Rel.	5.5	11.6	-1.3	-1.3	2.1	-4.1	-0.1	2.7
Bloomberg LT Corporate	5.5	12.9	-1.7	-1.7	3.4	-4.3	1.0	3.1
Bloomberg U.S. TIPS *	4.2	7.3	-0.1	-0.1	0.5	-0.5	2.5	2.2
Bloomberg High Yield	7.7	3.2	1.5	1.5	11.2	2.2	4.2	4.4
S&P/LSTA Leveraged Loan	9.4	0.3	2.5	2.5	12.5	6.0	5.5	4.5
Treasury Bills	5.3	0.3	1.3	1.3	5.3	2.6	2.0	1.4

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

Fixed Income Option Adjusted Spread (bps)



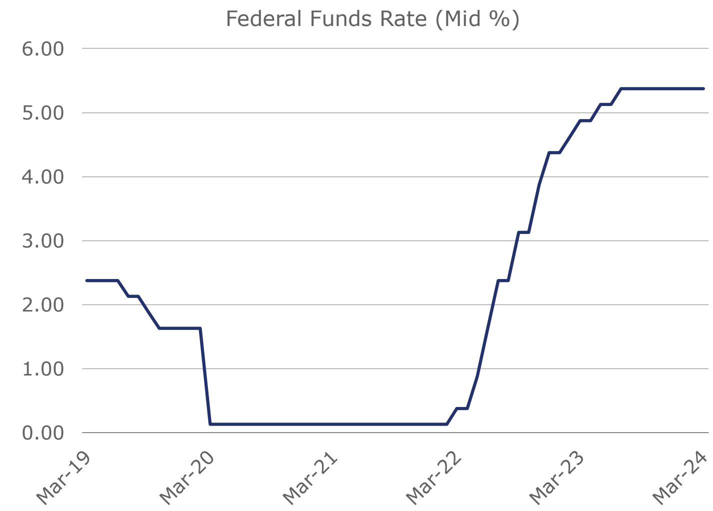
Treasury Yield Curve (%)

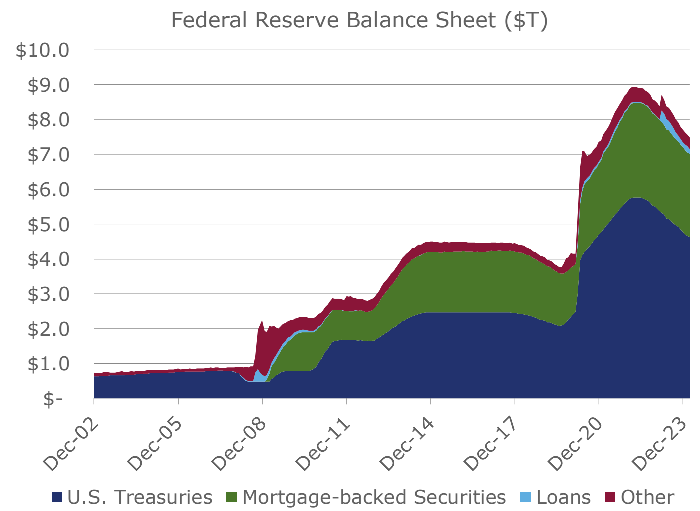


Data Sources: Bloomberg

Federal Reserve

- The Federal Open Market Committee has left their overnight rate unchanged since July of 2023
- QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis
- The Fed's balance sheet has begun to shrink again during the past year





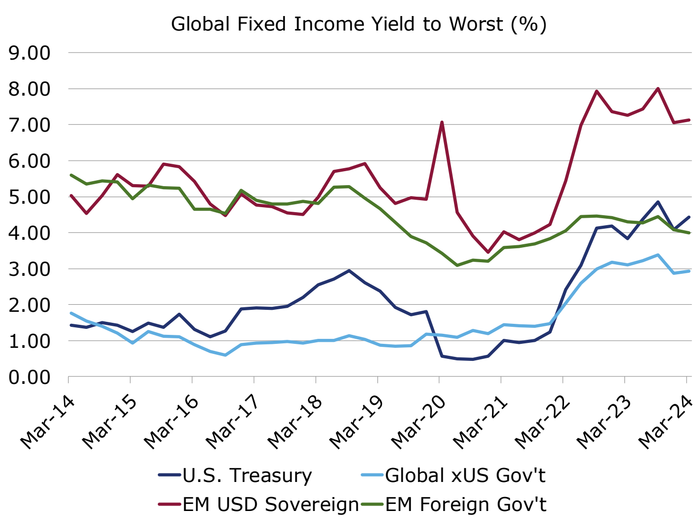
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	$1,403
QE2	11/3/2010	6/29/2012	$568
QE3	9/13/2012	10/29/2014	$1,674
QE4	3/23/2020	3/15/2022	$4,779

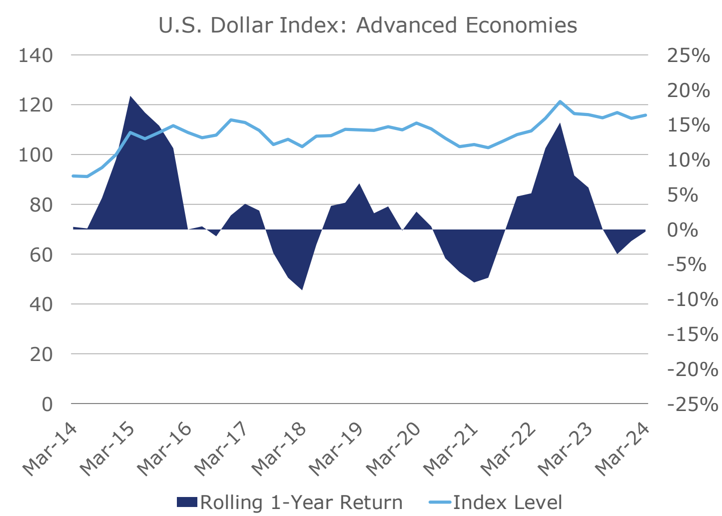
Data Sources: Bloomberg

Non-U.S. Fixed Income

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-3.2	-3.2	-0.7	-6.5	-2.5	-1.4
Bloomberg Global Aggregate xUS *	0.6	0.6	5.9	-0.4	1.0	2.6
Bloomberg Global Inflation Linked xUS	-3.2	-3.2	-1.4	-8.3	-2.9	-0.9
Bloomberg Global Inflation Linked xUS *	-0.9	-0.9	0.3	-3.7	-0.6	2.9
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	1.5	1.5	8.4	-1.5	1.1	2.9
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-1.1	-1.1	2.6	-0.3	1.4	1.1
Bloomberg EM Local Currency Gov't *	1.8	1.8	8.1	2.7	3.1	3.1
Euro vs. Dollar	-2.3	-2.3	-0.5	-2.7	-0.8	-2.4
Yen vs. Dollar	-6.8	-6.8	-12.2	-9.9	-6.0	-3.8
Pound vs. Dollar	-0.8	-0.8	2.3	-2.9	-0.6	-2.7

* Returns are reported in terms of local market investors, which removes currency effects.

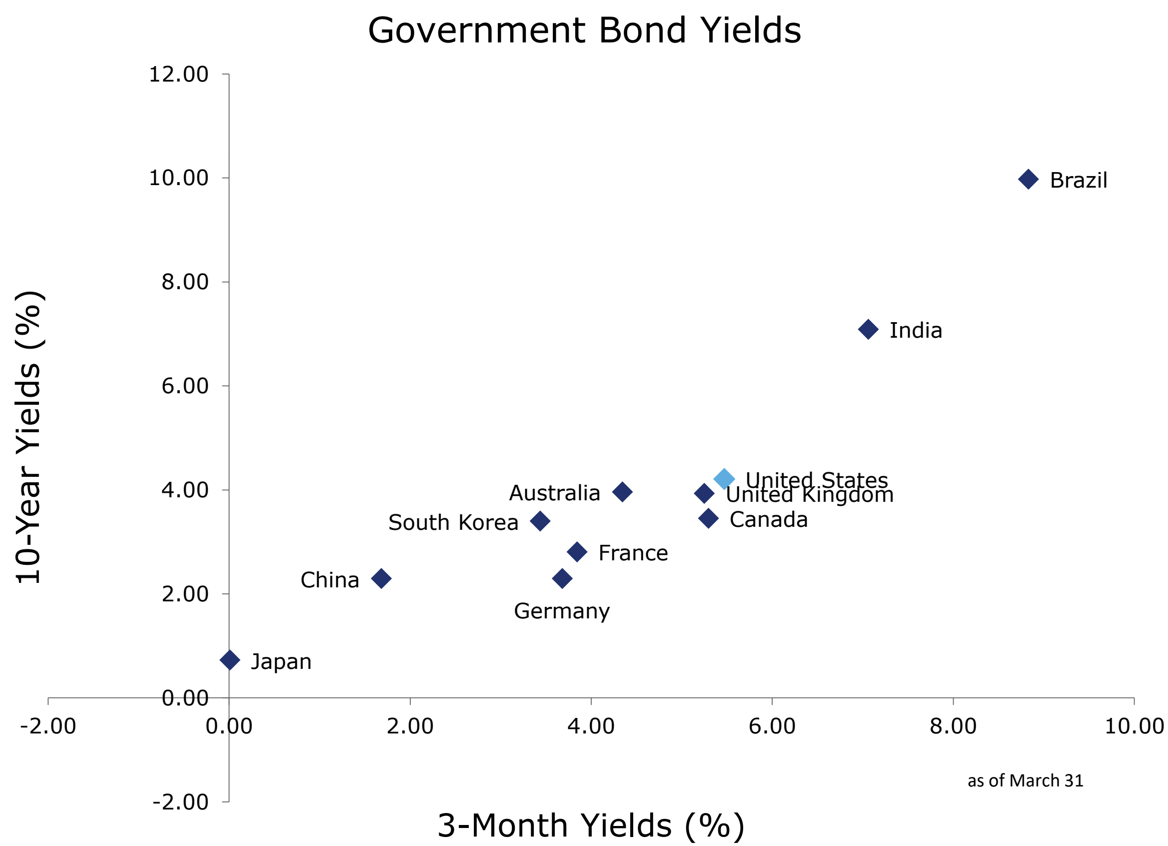




Data Sources: Bloomberg

Global Interest Rates

Short-term rates have turned positive in most larger countries; longer-term rates near 4.0% in the U.K. and Australia

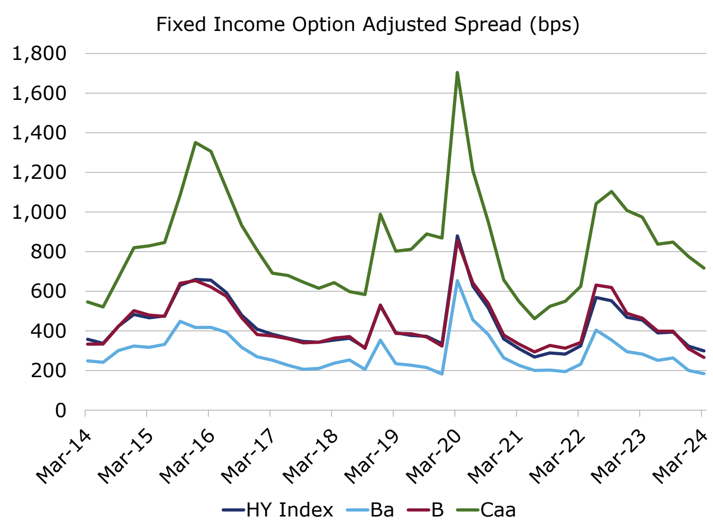


Data Sources: Bloomberg

Wilshire

High Yield Bond Market

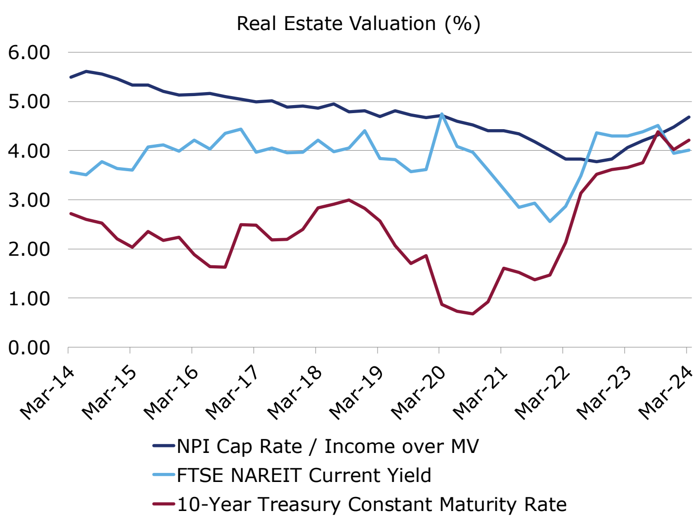
As of 3/31/2024		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		7.7	1.5	1.5	11.2	2.2	4.2	4.4
S&P LSTA Leveraged Loan		9.4	2.0	2.0	12.2	5.5	5.1	4.1
High Yield Quality Distribution	**Weight**							
Ba U.S. High Yield	47.9%	6.5	1.1	1.1	9.1	1.8	4.6	4.8
B U.S. High Yield	38.4%	7.4	1.4	1.4	11.5	2.4	4.0	4.1
Caa U.S. High Yield	12.5%	11.9	2.1	2.1	16.6	2.4	3.1	3.9
Ca to D U.S. High Yield	1.2%	19.9	13.2	13.2	36.7	5.1	3.0	-2.7

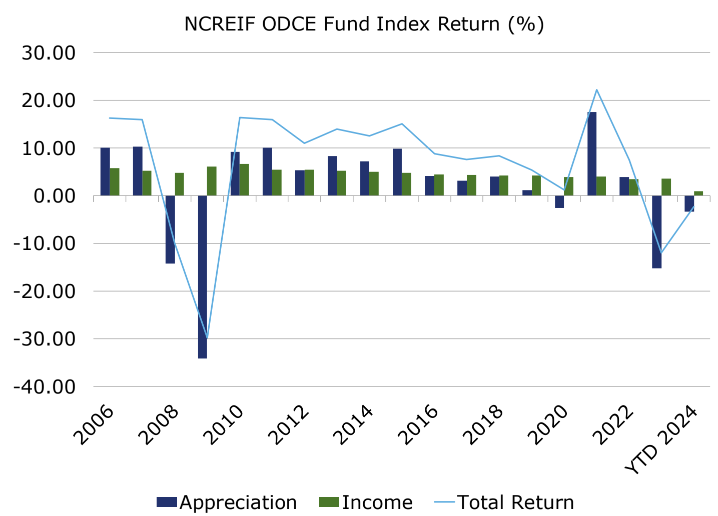


Data Sources: Bloomberg

Real Assets

As of 3/31/2024	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-0.1	-0.1	0.5	-0.5	2.5	2.2
Bloomberg Commodity Index	2.2	2.2	-0.6	9.1	6.4	-1.6
Bloomberg Gold Index	7.4	7.4	12.1	8.5	10.2	4.8
Wilshire Global RESI Index	-0.1	-0.1	12.1	2.7	2.7	5.2
NCREIF ODCE Fund Index	-2.4	-2.4	-11.3	3.4	3.5	6.8
NCREIF Timberland Index	2.1	2.1	9.9	11.0	7.0	5.8
FTSE Global Core Infrastructure 50/50	1.8	1.8	4.1	3.7	4.6	6.4
Alerian Midstream Energy	10.2	10.2	24.6	20.5	10.5	4.8
Bitcoin	66.7	66.7	149.5	6.3	76.9	65.3





Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

Asset Class Performance

Asset Class Returns - Best to Worst

2019	2020	2021	2022	2023	2024 YTD
U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 26.1%	U.S. Equity 9.9%
REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Developed 18.9%	Developed 5.9%
Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 16.1%	Emrg Mrkts 2.4%
Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 13.4%	High Yield 1.5%
High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	Emrg Mrkts 10.3%	T-Bills 1.3%
Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	Core Bond 5.5%	REITs 0.0%
U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	T-Bills 5.1%	U.S. TIPS -0.1%
Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	U.S. TIPS 3.9%	Core Bond -0.8%
T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Commodities -1.3%	Commodities -4.6%

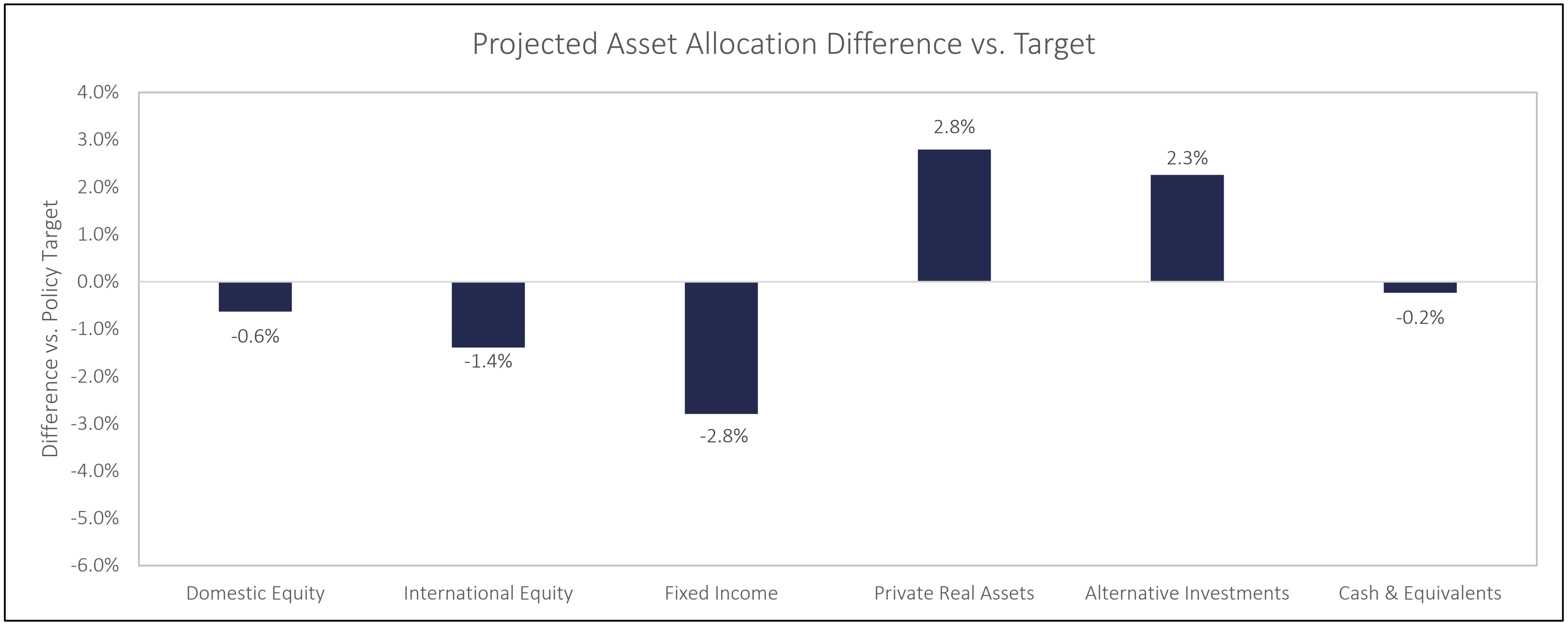
Annualized 5-Year as of 3/24
U.S. Equity 14.6%
Developed 7.9%
Commodities 7.2%
REITs 4.4%
High Yield 4.2%
Emrg Mrkts 2.6%
U.S. TIPS 2.5%
T-Bills 2.0%
Core Bond 0.4%

Data Sources: Bloomberg   Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

Total Fund

Projected Deviations from the Benchmark

As of March 31, 2024



- Includes committed, but unfunded amounts for Real Assets ($2.24billion) and Alternatives ($3.01 billion). Assumes Real Assets and Alternatives allocations are fully funded as of month-end.
- Assumes that outstanding commitments are funded from a basket of public markets asset classes (Domestic Equity, International Equity and/or Fixed Income) that best reflects the expectations of risk, yield and regional allocations of the asset class.

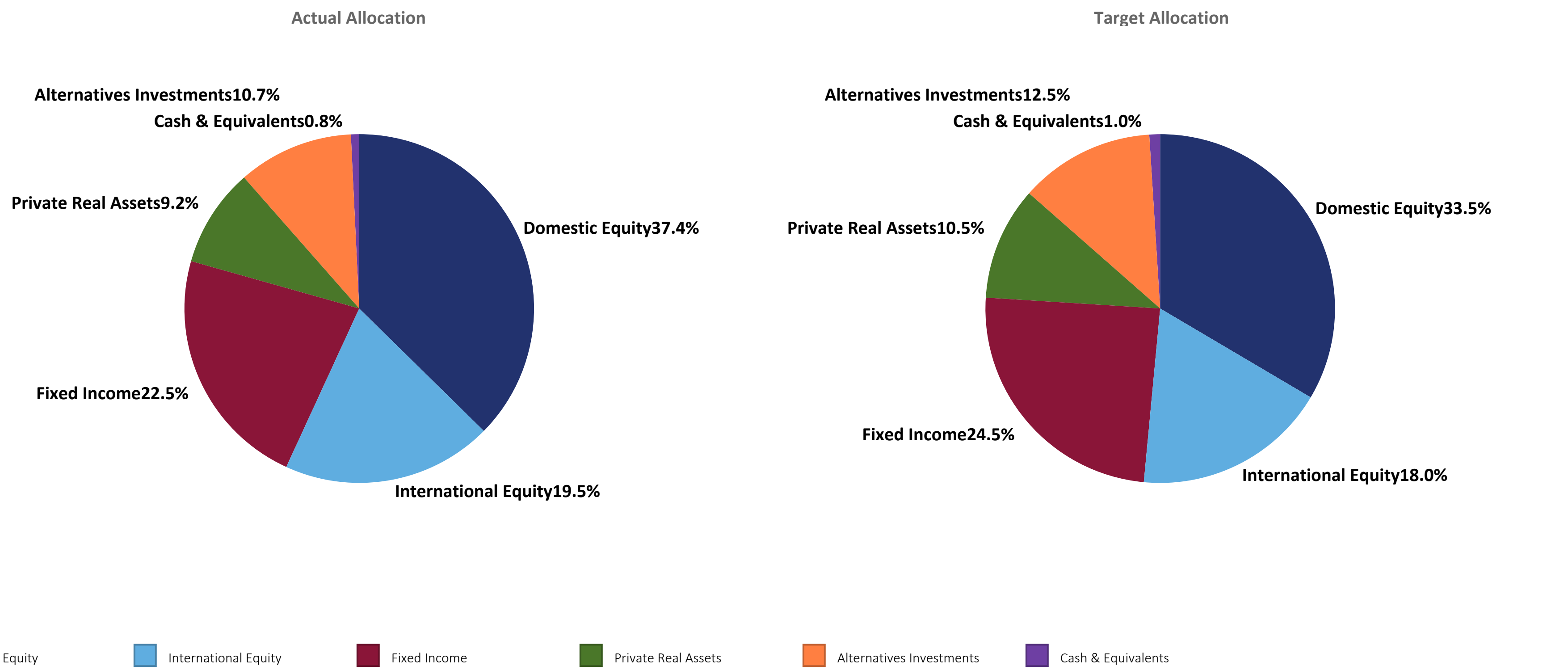
Alternatives Proxy: 60% Domestic Equity, 40% International Equity

Real Assets Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

Asset Allocation

Total Fund

Periods Ended As of March 31, 2024

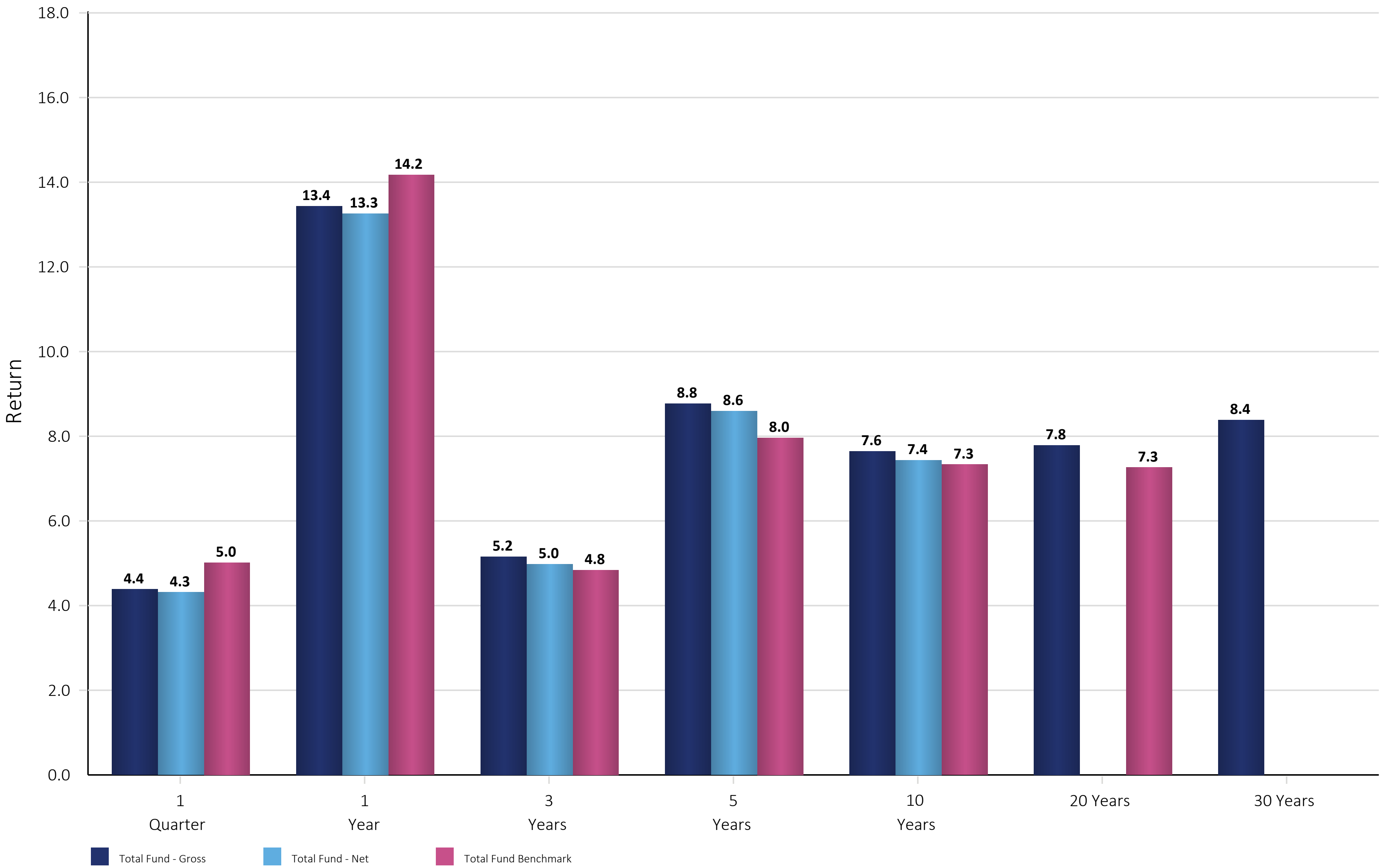


	Actual Allocation $Millions	Actual Allocation %	Target Allocation %	Differences %	Differences $Millions
Total Fund	54,140	100.0	100.0	0.0	
Domestic Equity	20,235	37.4	33.5	3.9	2,098
International Equity	10,545	19.5	18.0	1.5	800
Fixed Income	12,199	22.5	24.5	-2.0	-1,066
Private Real Assets	4,957	9.2	10.5	-1.3	-727
Alternatives Investments	5,788	10.7	12.5	-1.8	-979
Cash & Equivalents	415	0.8	1.0	-0.2	-126

Comparative Performance

Total Fund - Gross

Periods Ended March 31, 2024

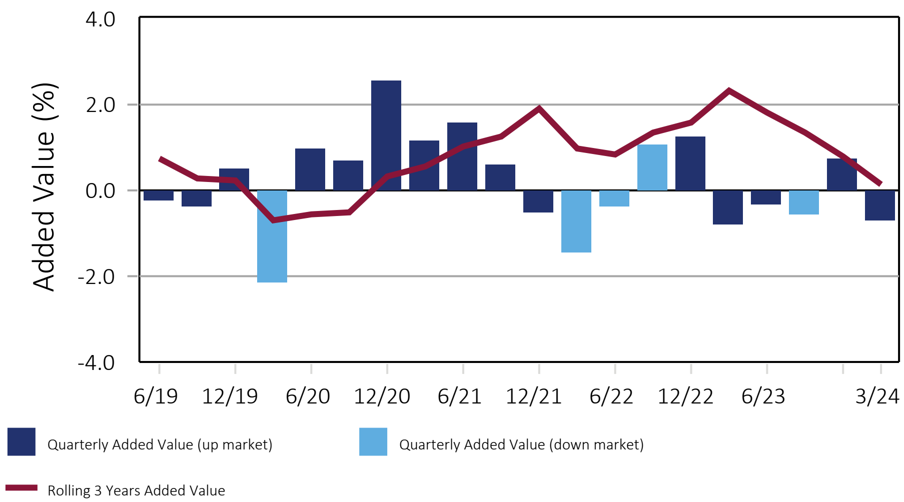


Composite Performance Summary

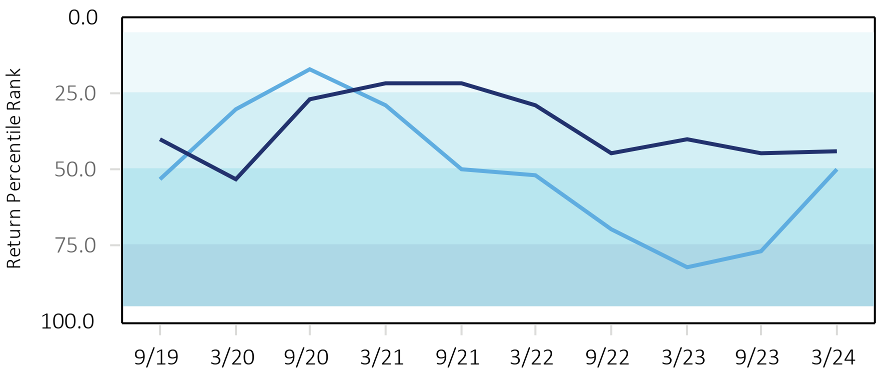
Total Fund

Periods Ended March 31, 2024

Added Value History

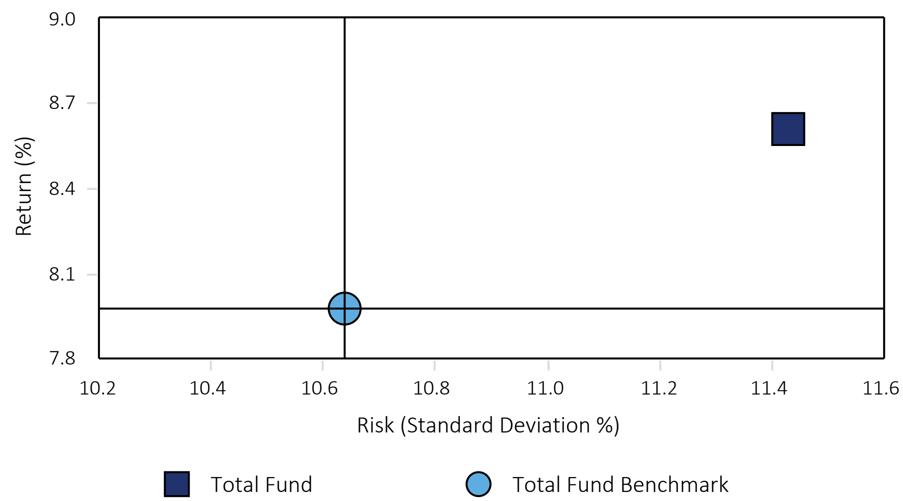


Rolling Percentile Rank : All Public Plans > $1B - Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Fund	10	2 (20%)	7 (70%)	1 (10%)	0 (0%)
Total Fund Benchmark	10	1 (10%)	4 (40%)	3 (30%)	2 (20%)

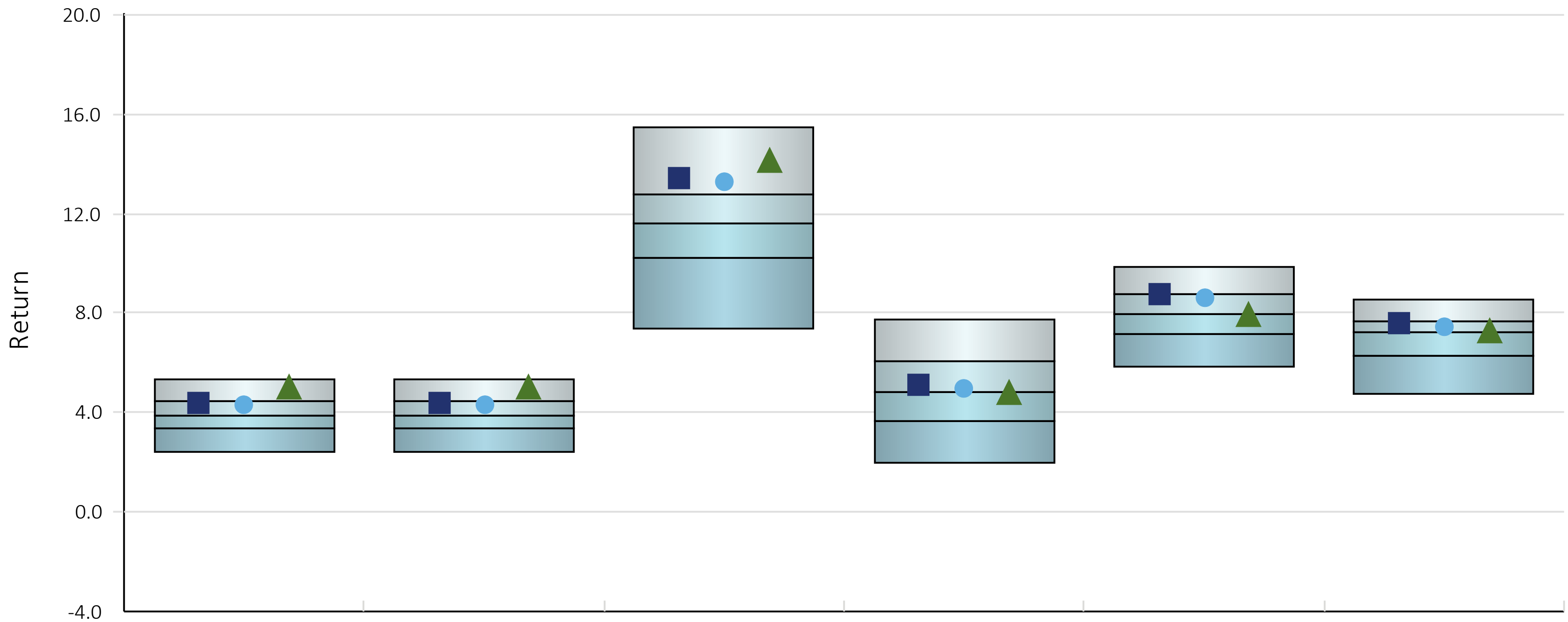
Risk and Return 04/01/19 - 03/31/24



Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans > $1B-Total Fund(Gross)

Periods Ended March 31, 2024



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	4.37 (27)	4.37 (27)	13.44 (16)	5.15 (41)	8.79 (23)	7.63 (27)
● Total Fund - Net	4.33 (29)	4.33 (29)	13.27 (22)	4.99 (44)	8.61 (36)	7.43 (41)
▲ Total Fund Benchmark	5.02 (11)	5.02 (11)	14.19 (11)	4.84 (50)	7.98 (49)	7.33 (43)
5th Percentile	5.37	5.37	15.46	7.78	9.88	8.56
1st Quartile	4.44	4.44	12.77	6.10	8.73	7.65
Median	3.85	3.85	11.60	4.82	7.97	7.24
3rd Quartile	3.35	3.35	10.23	3.64	7.17	6.31
95th Percentile	2.39	2.39	7.37	2.01	5.88	4.76
Population	146	146	102	98	97	93

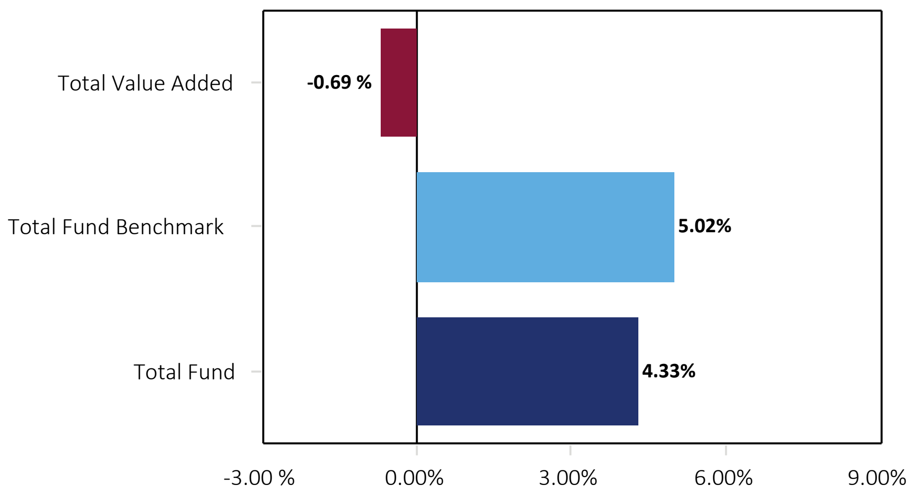
Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI ACWI ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1.0% 90 Day US Treasury Bill.

Total Fund Attribution

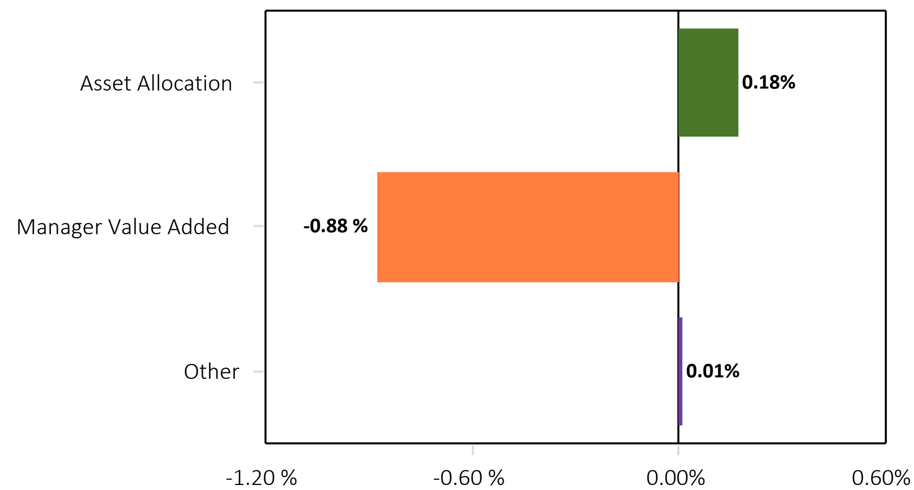
Total Fund

1 Quarter Ending March 31, 2024

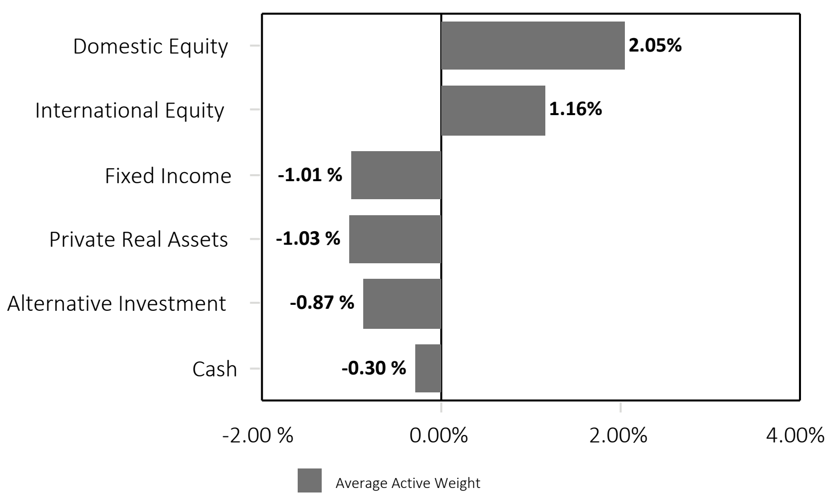
Total Fund Performance



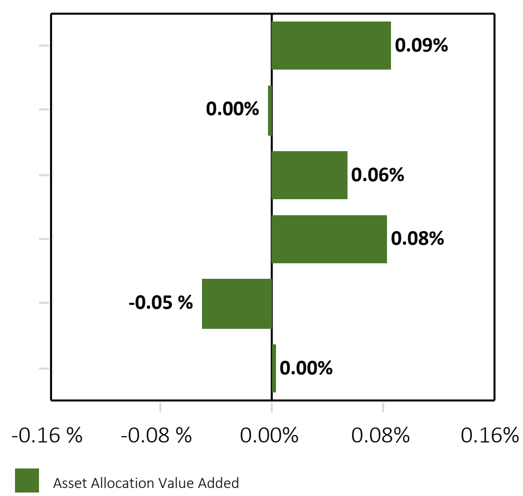
Total Value Added:-0.69 %



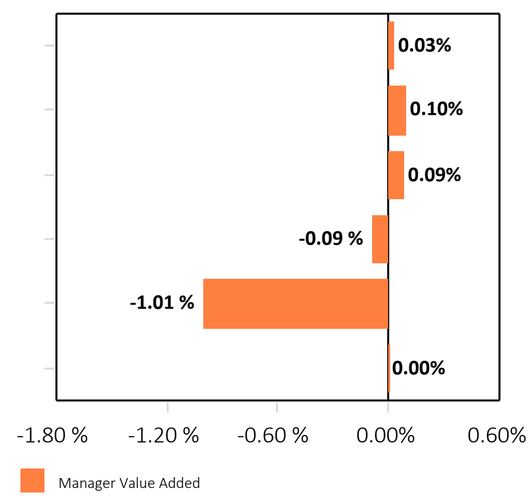
Asset Class Under or Overweighting



Asset Allocation Value Added:0.18%



Total Manager Value Added:-0.88 %



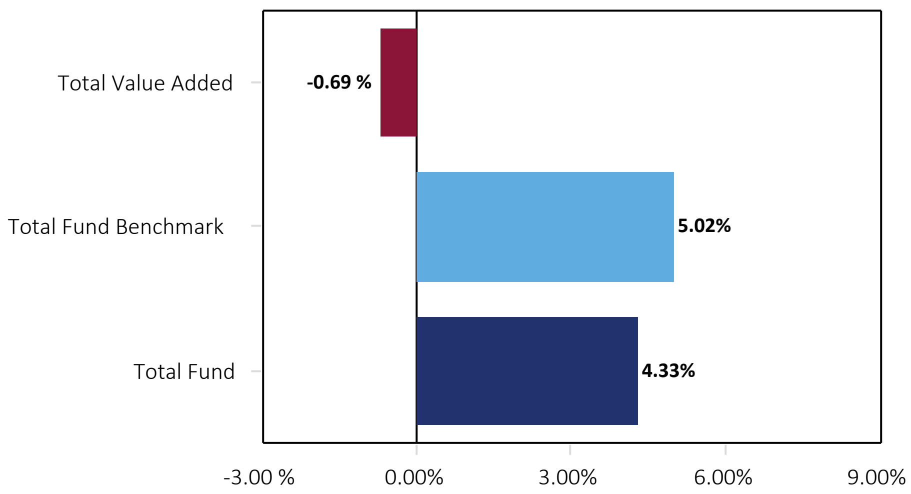
Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI ACWI ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1.0% 90 Day US Treasury Bill.

Total Fund Attribution

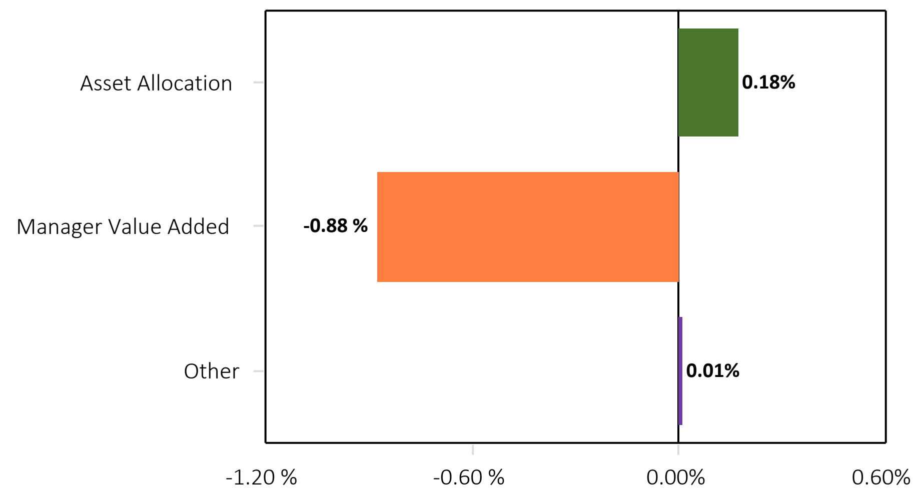
Total Fund

Year To Date Ending March 31, 2024

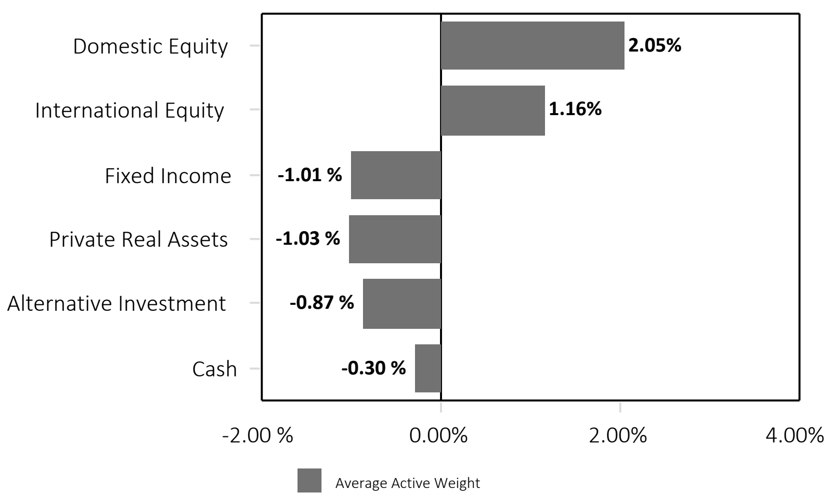
Total Fund Performance



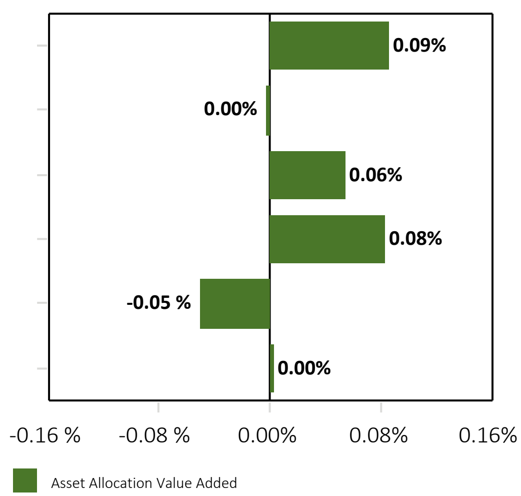
Total Value Added:-0.69 %



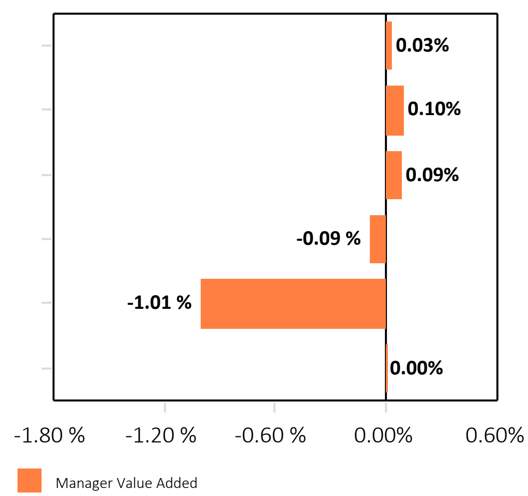
Asset Class Under or Overweighting



Asset Allocation Value Added:0.18%



Total Manager Value Added:-0.88 %



Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI ACWI ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1.0% 90 Day US Treasury Bill.

Asset Class Returns

Periods Ended March 31, 2024

	Performance (%)									
	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Total Fund	**4.37**	**4.37**	**13.44**	**5.15**	**8.79**	**7.63**	**7.81**	**8.39**	**9.71**	**1/1/1982**
Total Fund - Net	4.33	4.33	13.27	4.99	8.61	7.43				
Total Fund Benchmark	5.02	5.02	14.19	4.84	7.98	7.33	7.27			
Domestic Equity	**9.56**	**9.56**	**27.26**	**8.42**	**13.44**	**11.41**	**10.03**	**10.66**	**11.78**	**1/1/1982**
Domestic Equity - Net	9.51	9.51	27.06	8.25	13.25	11.19				
Custom Benchmark (U.S. Equity)	9.42	9.42	27.31	9.36	14.07	12.19	10.09	10.49		
U.S. Equity IMRF Custom Benchmark	8.58	8.58	24.91	8.37	12.74					
International Equity	**5.30**	**5.30**	**16.89**	**3.13**	**7.50**	**5.50**	**6.72**	**6.86**	**7.67**	**9/1/1986**
International Equity - Net	5.20	5.20	16.48	2.76	7.12	5.14				
MSCI AC World ex USA (Net)	4.69	4.69	13.26	1.94	5.97	4.25	5.68	5.36		
International Equity IMRF Custom Benchmark	4.45	4.45	13.03	1.27	5.67					
Fixed Income	**0.10**	**0.10**	**4.32**	**-0.94**	**1.53**	**2.43**	**3.94**	**5.09**	**7.39**	**1/1/1982**
Fixed Income - Net	0.08	0.08	4.24	-1.03	1.44	2.31				
Custom Benchmark (Fixed Income)	-0.27	-0.27	3.77	-1.22	1.12	1.93	3.19	4.62	6.87	
Fixed Income IMRF Custom Benchmark	-0.14	-0.14	3.92	-1.26	1.17					
Private Real Assets	**-3.05**	**-3.05**	**-5.19**						**0.07**	**3/1/2022**
Private Real Assets - Net	-3.07	-3.07	-5.26						0.00	
Custom Benchmark (Private Real Assets)	-2.31	-2.31	-11.10						-3.98	
Real Estate	**-3.10**	**-3.10**	**-5.60**	**7.47**	**7.45**	**8.79**	**7.40**	**7.64**	**5.69**	**5/1/1985**
Real Estate - Net	-3.12	-3.12	-5.67	7.40	7.39	8.75				
Blended Benchmark (Real Estate)	-2.57	-2.57	-12.00	2.47	2.56	5.82	6.32	6.67	7.09	
Agriculture	**-6.00**	**-6.00**	**-15.02**	**-2.69**	**-1.44**	**2.06**	**6.68**		**5.68**	**10/1/1997**
NCREIF Farmland Index	0.74	0.74	3.58	7.42	6.05	7.12	12.23		10.88	
Timberland	**-2.61**	**-2.61**	**24.15**	**13.46**	**7.15**	**4.19**	**4.67**	**6.40**	**7.45**	**10/1/1992**
NCREIF Timberland Index	2.12	2.12	9.85	10.99	7.04	5.83	7.07	7.44	8.54	

Benchmark definitions on next page.

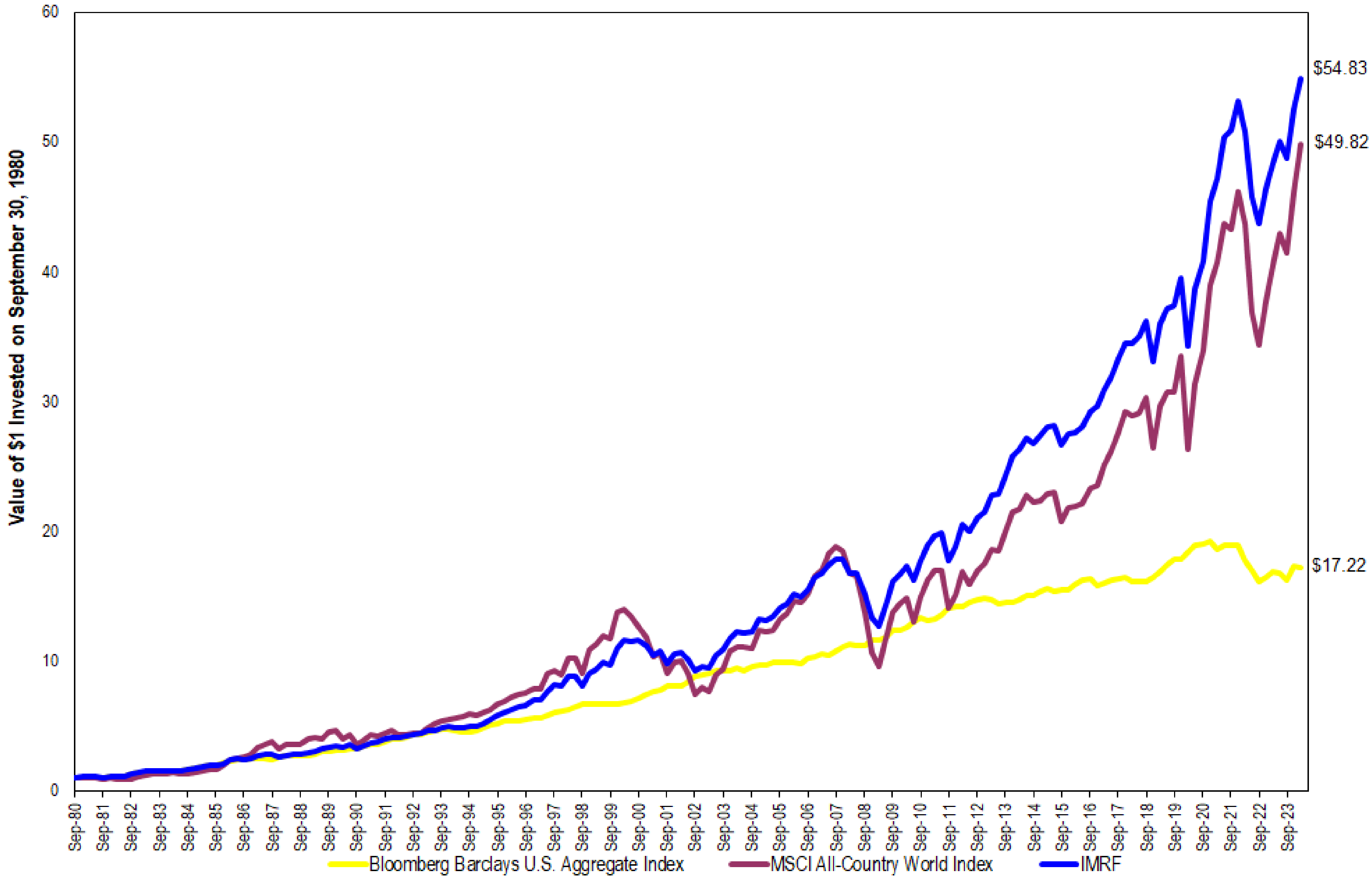
Asset Class Returns

Periods Ended March 31, 2024

	Performance (%)									
	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Unlisted Infrastructure	**0.93**	**0.93**	**10.90**	**11.79**	**13.25**				**12.38**	**4/1/2018**
Blended Benchmark (Unlisted Infrastructure)	2.82	2.82	7.62	8.94	8.96				8.97	
Alternatives Investments	**1.58**	**1.58**	**3.66**	**13.41**	**13.94**	**11.99**	**10.15**	**12.57**	**11.28**	**2/1/1986**
Alternatives Investments - Net	1.58	1.58	3.66	13.40	13.92	11.82				
Custom Benchmark (Alternative Investments)	10.98	10.98	26.00	6.67	7.60	8.30	9.57	11.26	12.05	
Private Equity	**1.25**	**1.25**	**3.36**	**15.06**	**16.02**	**14.50**	**12.89**	**15.25**	**13.49**	**2/1/1986**
Blended Benchmark (Private Equity)	12.24	12.24	27.50	6.74	7.64	8.32	9.58			
Cash	**1.46**	**1.46**	**5.51**	**4.00**	**3.54**	**2.35**	**1.36**	**3.07**	**3.78**	**7/1/1986**
90 Day U.S. Treasury Bill	1.29	1.29	5.24	2.58	2.02	1.37	1.48	2.42	3.14	

Benchmark definitions on next page.

Growth of a Dollar - As of March 31, 2024



Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Domestic Equity	18,963,163,934	36.31	20,235,048,894	37.38
Large Cap Growth	3,905,033,702	7.48	4,240,032,463	7.83
Sands Capital	1,622,066,233	3.11	1,871,958,797	3.46
Xponance Russell 1000 G	2,282,967,469	4.37	2,368,073,666	4.37
Large Cap Value	3,997,619,272	7.66	4,202,295,848	7.76
Dodge & Cox	1,592,736,148	3.05	1,578,219,209	2.92
LSV Asset	958,100,125	1.83	1,070,019,075	1.98
NTGI S&P 500 Value	1,446,783,000	2.77	1,554,057,564	2.87
Large Cap Pass. Core	2,027,158,869	3.88	2,030,523,678	3.75
NTGI MarketCap Idx.	2,027,158,869	3.88	2,030,523,678	3.75
Factor Diversity Strategies	2,914,652,001	5.58	3,227,280,806	5.96
U.S. Large Cap FDP-GSAM	2,914,652,001	5.58	3,227,280,806	5.96
Quantitative Factor Strategies	2,476,788,086	4.74	2,708,479,092	5.00
Quantitative US Equity - SciBeta	2,476,788,086	4.74	2,708,479,092	5.00
Small Cap Multi-Factor Strategies	602,960,519	1.15	622,575,261	1.15
U.S. Small Cap Equity Multi-Factor - S&P	602,960,519	1.15	622,575,261	1.15
Small Cap Growth	706,587,169	1.35	784,733,747	1.45
Frontier Capital	706,587,169	1.35	784,733,747	1.45

Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Small Cap Value	**881,915,398**	**1.69**	**936,164,662**	**1.73**
Channing	345,665,089	0.66	378,457,255	0.70
William Blair Small Cap Value	536,250,310	1.03	557,707,406	1.03
Domestic Equity Transition		0.00		0.00
Transition Account		0.00	148	0.00
Public Real Assets	**1,450,448,918**	**2.78**	**1,482,963,190**	**2.74**
Brookfield	424,096,197	0.81	425,185,296	0.79
Cohen & Steers	1,026,352,721	1.97	1,057,777,893	1.95
International Equity	**10,016,813,612**	**19.18**	**10,544,926,371**	**19.48**
Intl Large Cap Growth	**1,653,772,166**	**3.17**	**1,763,321,091**	**3.26**
EARNEST Part. Intl	688,997,764	1.32	732,588,932	1.35
William Blair	964,774,402	1.85	1,030,732,159	1.90
Intl Large Cap Value	**1,591,964,060**	**3.05**	**1,658,715,359**	**3.06**
Brandes Investment	754,863,387	1.45	794,988,273	1.47
Mondrian	691,175,397	1.32	710,063,846	1.31
Lazard	145,925,276	0.28	153,663,240	0.28
Intl Large Cap Core	**5,539,537,538**	**10.61**	**5,859,433,237**	**10.82**
Arrowstreet Capital	1,236,164,883	2.37	1,346,990,844	2.49
Brown Capital	611,589,781	1.17	636,277,306	1.18
GlobeFlex Capital	912,975,211	1.75	969,491,926	1.79
Xponance Intl EQ	104,689,348	0.20	109,442,144	0.20
Transition Account		0.00	148	0.00
Progress Intl Equity	421,171	0.00	380,983	0.00
NTGI ACWI ex US Index Fund	2,673,697,143	5.12	2,796,850,034	5.17

Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Intl All Cap Developed	**173,689,567**	**0.33**	**181,456,053**	**0.34**
Ativo International	173,689,567	0.33	181,456,053	0.34
Internationall Small Cap	**593,575,147**	**1.14**	**592,218,092**	**1.09**
Franklin Templeton	236,392,705	0.45	237,527,741	0.44
William Blair IntSC	357,182,442	0.68	354,690,351	0.66
Emerging Mkt Equity	**464,275,133**	**0.89**	**489,782,539**	**0.90**
Genesis Investment Management, LLP.	9,929,267	0.02	6,501,292	0.01
Arrowstreet EME	454,345,866	0.87	483,281,247	0.89

Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Fixed Income	12,462,936,175	23.87	12,198,633,936	22.53
Domestic Fixed Core	3,819,686,373	7.31	3,763,590,621	6.95
Attucks Fixed Income	91,931,715	0.18	91,532,288	0.17
Brandes FI Core	339,802,730	0.65	334,816,147	0.62
EARNEST Partners	904,584,091	1.73	893,990,402	1.65
Garcia Hamilton	972,000,396	1.86	947,786,384	1.75
Ramirez Asset Management	526,037,048	1.01	519,061,498	0.96
Xponance Yield Advantage Agg.	985,330,393	1.89	976,403,902	1.80
Domestic Fixed Passive Core	2,851,200,182	5.46	2,829,850,810	5.23
NTGI Blmbg Agg.	1,161,369,064	2.22	1,152,321,716	2.13
BlackRock US Debt I	1,689,831,118	3.24	1,677,529,094	3.10
Domestic Fixed Core Plus	2,981,693,196	5.71	2,940,964,567	5.43
LM Capital Group FI	850,849,565	1.63	839,843,091	1.55
Progress Inv. FI		0.00		0.00
Loop Capital Management	586,811,374	1.12	580,430,489	1.07
Western Asset	965,808,111	1.85	948,592,874	1.75
Longfellow Core Plus	578,224,146	1.11	572,098,113	1.06
Bank Loans	1,686,188,968	3.23	1,537,632,640	2.84
Barings Global Loan Fund	1,686,188,968	3.23	1,537,632,640	2.84
Emerging Markets Debt	333,489	0.00	246,797	0.00
Standish-Mellon EMD	333,489	0.00	246,797	0.00
High Yield	1,123,833,967	2.15	1,126,348,502	2.08
MacKay Shields	1,123,833,967	2.15	1,126,348,502	2.08

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Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Private Real Assets	**5,021,464,490**	**9.62**	**4,957,242,269**	**9.16**
Real Estate	**4,478,141,361**	**8.58**	**4,423,901,823**	**8.17**
Real Estate Core Cmp	**2,190,937,105**	**4.20**	**2,107,300,984**	**3.89**
TA Assoc. Buckhead	913,362,289	1.75	897,170,612	1.66
Barings Euro Core Property	132,355,045	0.25	97,740,635	0.18
Blackstone Property Euro	182,626,570	0.35	166,650,441	0.31
INVESCO Core Real Estate	213,383,622	0.41	211,752,989	0.39
INVESCO European real estate	54,905,426	0.11	53,673,504	0.10
AEW Core Property Tr	248,566,122	0.48	248,566,122	0.46
CBRE Core Partners	274,719,455	0.53	275,155,157	0.51
JPM Strategic Property Fund	171,018,576	0.33	156,591,524	0.29
RE Non-Core Cmp	**2,287,204,256**	**4.38**	**2,316,600,839**	**4.28**
Artemis MWBE Spruce	382,620,064	0.73	382,562,434	0.71
Franklin T. EMREFF	1,066,392	0.00	1,066,392	0.00
Security Capital	99,527,333	0.19	96,515,080	0.18
Dune II	6,961,990	0.01	6,765,804	0.01
Non-Core Real Estate Funds	1,510,403,888	2.89	1,527,563,043	2.82
Non-Core Intl Real Estate	286,554,736	0.55	302,064,540	0.56
Almanac ARS V	69,853	0.00	63,546	0.00
Agriculture	**238,379,349**	**0.46**	**224,080,653**	**0.41**
Premiere Partners IV	238,379,349	0.46	224,080,653	0.41
Timberland	**70,365,782**	**0.13**	**68,325,998**	**0.13**
Forest Investment	70,365,782	0.13	68,325,998	0.13
Unlisted Infrastructure	**234,577,998**	**0.45**	**240,933,795**	**0.45**
Unlisted Infrastructure Funds	234,577,998	0.45	240,933,795	0.45

Investment Manager Asset Allocation

Periods Ended March 31, 2024

	Dec-2023		Mar-2024	
	$	%	$	%
Alternatives Investments	5,533,343,691	10.60	5,788,365,236	10.69
Absolute Return	54,766	0.00	48,943	0.00
Aurora Investment	54,766	0.00	48,943	0.00
Private Equity	5,281,362,992	10.11	5,438,715,801	10.05
Abbott S/A Comp.	**494,830,619**	**0.95**	**491,026,319**	**0.91**
Muller Monroe MPEFF		0.00		0.00
Pantheon S/A Comp.	**418,490,497**	**0.80**	**418,179,220**	**0.77**
Private Equity Fund - Domestic	3,403,253,000	6.52	3,531,699,273	6.52
Private Equity Fund - International	696,520,029	1.33	720,520,812	1.33
Oakbrook Opportunities Fund	268,268,848	0.51	277,290,177	0.51
Private Credit	251,925,933	0.48	349,600,492	0.65
Private Credit Fund - Domestic	249,394,707	0.48	325,268,275	0.60
Private Credit Fund - International	2,531,226	0.00	24,332,217	0.04
Cash & Equivalents	221,036,725	0.42	415,443,664	0.77
Total Fund	52,218,758,627	100.00	54,139,660,370	100.00

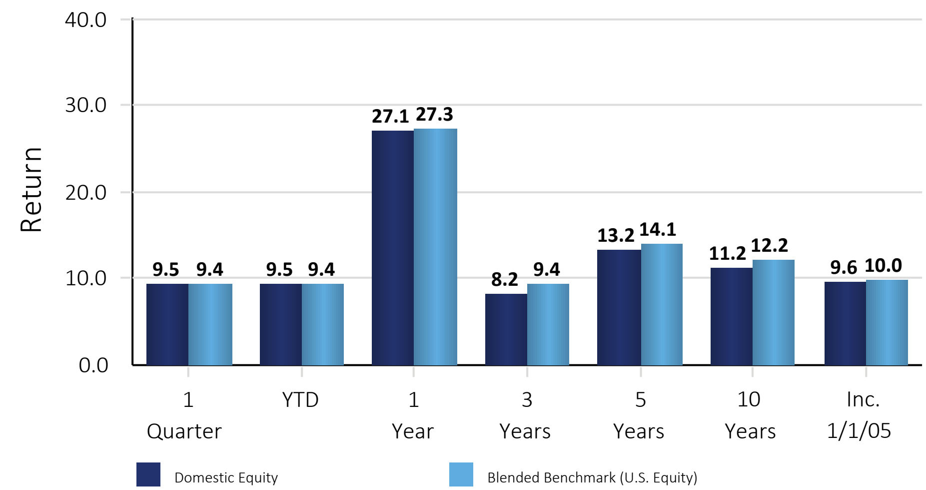
Domestic Equity

Composite Performance Summary

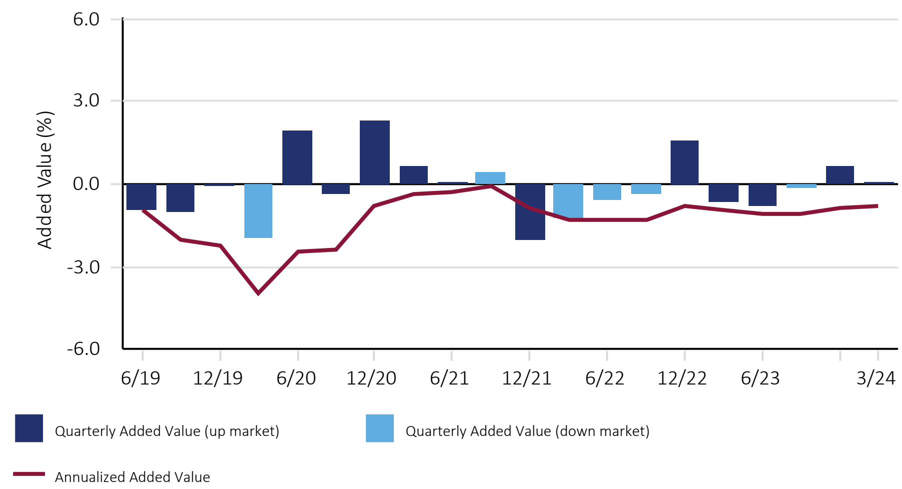
Domestic Equity

Periods Ended March 31, 2024

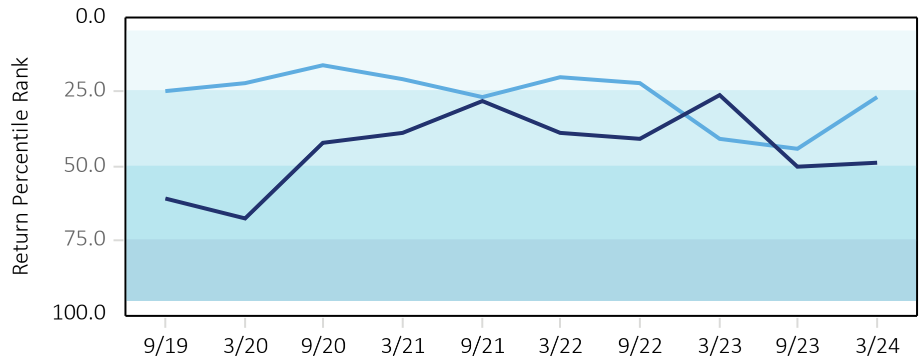
Comparative Performance



Added Value History

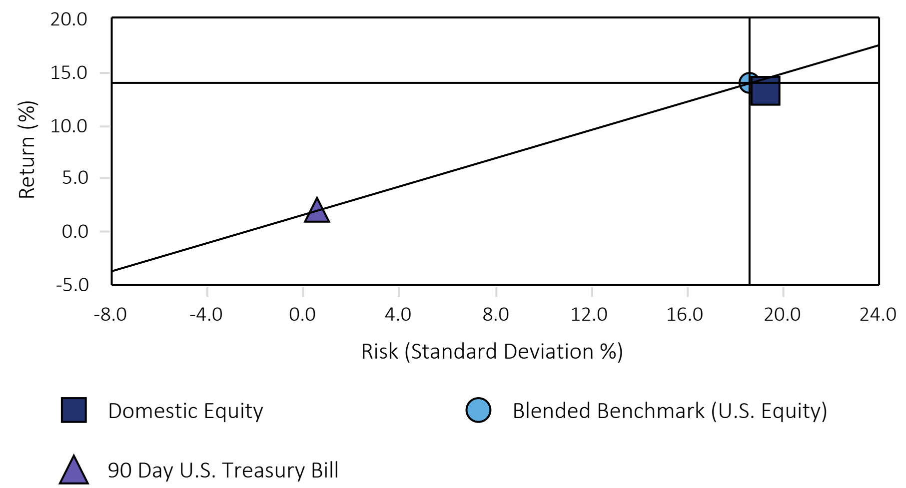


Rolling Percentile Rank: All Public Plans > $1B-US Equity Segment



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Domestic Equity	10	0 (0%)	8 (80%)	2 (20%)	0 (0%)
Benchmark	10	6 (60%)	4 (40%)	0 (0%)	0 (0%)

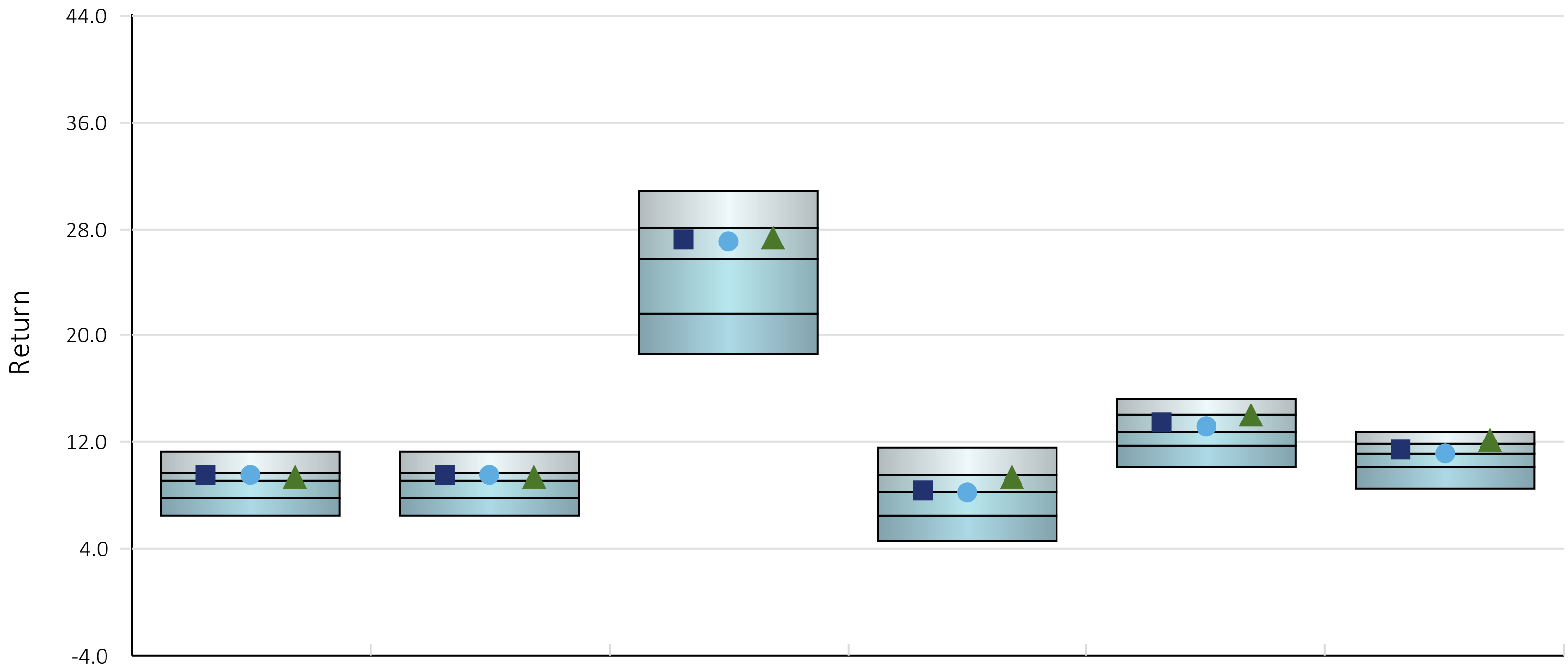
Risk and Return 04/1/19 - 03/31/24



Plan Sponsor Peer Group Analysis

Domestic Equity vs All Public Plans > $1B-US Equity Segment(Gross)

Periods Ended March 31, 2024



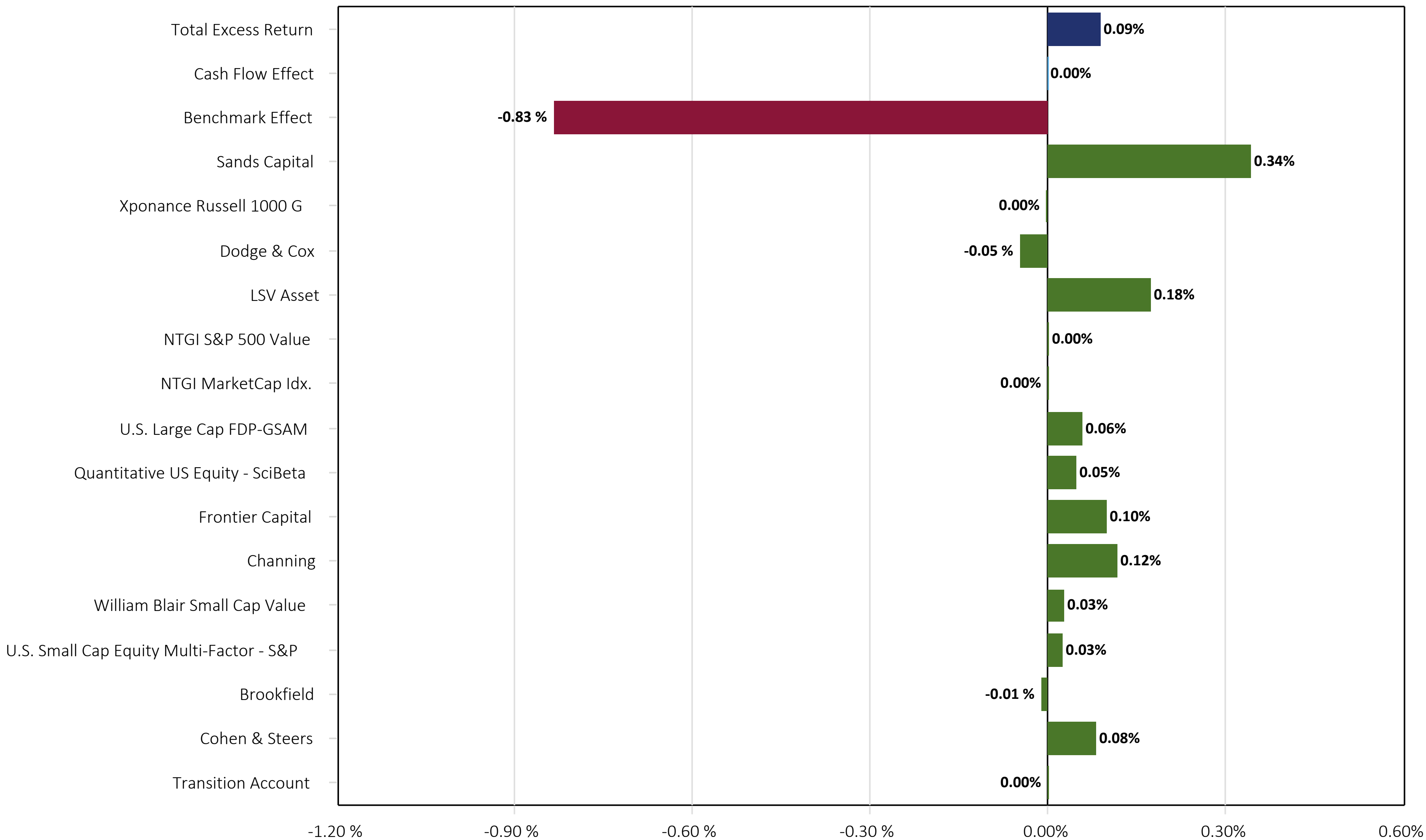
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Domestic Equity	9.56 (30)	9.56 (30)	27.26 (36)	8.42 (47)	13.44 (32)	11.41 (35)
● Domestic Equity - Net	9.51 (32)	9.51 (32)	27.06 (37)	8.25 (49)	13.25 (36)	11.19 (47)
▲ Blended Benchmark (U.S. Equity)	9.42 (34)	9.42 (34)	27.31 (35)	9.36 (27)	14.07 (25)	12.19 (20)
5th Percentile	11.37	11.37	30.84	11.63	15.20	12.83
1st Quartile	9.67	9.67	28.09	9.54	14.02	11.96
Median	9.19	9.19	25.83	8.18	12.77	11.15
3rd Quartile	7.83	7.83	21.63	6.47	11.81	10.20
95th Percentile	6.52	6.52	18.59	4.57	10.14	8.61
Population	49	49	47	46	40	36

Asset Class Attribution

Domestic Equity

Periods Ended 1 Quarter Ending March 31, 2024

1 Quarter



Performance

Domestic Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Domestic Equity	**20,235,048,894**	**9.56**	**9.56**	**27.26**	**8.42**	**13.44**	**11.41**	**11.78**	**1/1/1982**
Domestic Equity - Net		9.51	9.51	27.06	8.25	13.25	11.19		
Blended Benchmark (U.S. Equity)		9.42	9.42	27.31	9.36	14.07	12.19		
Russell 3000 Index		10.02	10.02	29.29	9.78	14.34	12.33	11.76	
U.S. Equity IMRF Custom Benchmark		8.58	8.58	24.91	8.37	12.74			
Large Cap Equity	**13,700,132,795**	**10.87**	**10.87**	**32.29**	**9.73**	**14.56**	**12.44**	**11.60**	**1/1/1982**
Large Cap Equity - Net		10.85	10.85	32.18	9.63	14.47	12.33		
Russell 1000 Index		10.30	10.30	29.87	10.45	14.76	12.68	11.93	
Large Cap Growth	**4,240,032,463**	**13.07**	**13.07**	**43.07**	**9.76**	**17.31**	**15.12**	**12.56**	**1/1/1982**
Large Cap Growth - Net		13.04	13.04	42.93	9.66	17.20	14.99		
LCG Blended Benchmark*		11.41	11.41	39.00	12.50	18.52	15.98		
Russell 1000 Growth Index		11.41	11.41	39.00	12.50	18.52	15.98	11.94	
Xponance Russell 1000 G	**2,368,073,666**	**11.40**	**11.40**	**39.01**	**12.51**	**18.51**		**16.20**	**10/1/2018**
Xponance Russell 1000 G - Net		11.40	11.40	38.99	12.48	18.49		16.17	
Russell 1000 Growth Index		11.41	11.41	39.00	12.50	18.52		16.20	
Sands Capital	**1,871,958,797**	**15.41**	**15.41**	**48.93**	**-1.11**	**12.04**	**12.67**	**12.35**	**11/1/2003**
Sands Capital - Net		15.35	15.35	48.62	-1.34	11.80	12.41		
LCG Blended Benchmark*		11.41	11.41	39.00	12.50	18.52	15.98	11.84	
Russell 1000 Growth Index		11.41	11.41	39.00	12.50	18.52	15.98	11.88	
Large Cap Value	**4,202,295,848**	**9.30**	**9.30**	**25.85**	**10.94**	**12.77**	**10.53**	**10.57**	**10/1/1982**
Large Cap Value - Net		9.27	9.27	25.66	10.77	12.60	10.35		
LCV Blended Benchmark**		8.99	8.99	20.27	8.11	10.31	9.01		
Russell 1000 Value Index		8.99	8.99	20.27	8.11	10.31	9.01	11.63	

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those the S&P 500/Citigroup Growth Index.
** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.
*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Performance

Domestic Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Dodge & Cox	**1,578,219,209**	**8.50**	**8.50**	**26.13**	**10.83**	**13.79**	**11.33**	**10.46**	**9/1/2003**
Dodge & Cox - Net		8.45	8.45	25.84	10.59	13.55	11.10		
LCV Blended Benchmark**		8.99	8.99	20.27	8.11	10.31	9.01	8.73	
Russell 1000 Value Index		8.99	8.99	20.27	8.11	10.31	9.01	8.86	
LSV Asset	**1,070,019,075**	**12.48**	**12.48**	**26.20**	**9.97**	**11.89**	**10.04**	**11.07**	**2/1/2003**
LSV Asset - Net		12.41	12.41	25.89	9.71	11.62	9.78		
LCV Blended Benchmark**		8.99	8.99	20.27	8.11	10.31	9.01	9.44	
Russell 1000 Value Index		8.99	8.99	20.27	8.11	10.31	9.01	9.45	
NTGI S&P 500 Value	**1,554,057,564**	**8.07**	**8.07**	**25.64**	**12.12**	**13.29**	**10.68**	**7.21**	**8/1/1999**
NTGI S&P 500 Value - Net		8.07	8.07	25.64	12.11	13.28	10.67		
S&P 500 Value		8.05	8.05	25.58	12.17	13.26	10.62	7.18	
Large Cap Pass. Core	**2,030,523,678**	**10.04**	**10.04**	**29.40**	**9.67**	**14.26**	**12.31**	**11.50**	**1/1/1985**
Large Cap Pass. Core - Net		10.04	10.04	29.40	9.67	14.25	12.30		
Dow Jones U.S. Total Stock Market Index		10.05	10.05	29.35	9.63	14.23	12.24		
NTGI MarketCap Idx.	**2,030,523,678**	**10.04**	**10.04**	**29.40**	**9.67**	**14.26**	**12.31**	**11.30**	**2/1/1985**
NTGI MarketCap Idx. - Net		10.04	10.04	29.40	9.67	14.25	12.30		
Dow Jones U.S. Total Stock Market Index		10.05	10.05	29.35	9.63	14.23	12.24		
Factor Diversity Strategies	**3,227,280,806**	**10.73**	**10.73**	**29.92**	**10.47**			**14.13**	**8/18/2020**
U.S. Large Cap FDP-GSAM	**3,227,280,806**	**10.73**	**10.73**	**29.92**	**10.47**			**14.13**	**8/18/2020**
U.S. Large Cap FDP-GSAM - Net		10.72	10.72	29.89	10.44			14.08	
Solactive GBS U.S. 1000 Index		10.34	10.34	29.95	10.32			13.89	
GSAM Active Beta US. Large Cap FDC Index		10.76	10.76	29.87	10.49			14.11	
Quantitative Factor Strategies	**2,708,479,092**	**9.35**	**9.35**	**21.78**	**9.37**			**11.11**	**9/17/2019**

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*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Performance

Domestic Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Quantitative US Equity - SciBeta	2,708,479,092	9.35	9.35	21.78	9.37			11.11	9/17/2019
Quantitative US Equity - SciBeta - Net		9.34	9.34	21.73	9.31			10.95	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		8.98	8.98	20.64	8.27			10.10	

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Performance

Domestic Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Small Cap	**2,343,473,669**	**6.94**	**6.94**	**22.24**	**5.80**	**12.05**	**9.29**	**12.10**	**7/1/1988**
Small Cap Composite - Net		6.64	6.64	21.51	5.11	11.34	8.65		
Russell 2000 Index		5.18	5.18	19.71	-0.10	8.10	7.58	9.22	
Small Cap Multi-Factor Strategies	**622,575,261**	**3.25**	**3.25**					**7.46**	**8/1/2023**
U.S. Small Cap Equity Multi-Factor - S&P	**622,575,261**	**3.25**	**3.25**					**7.46**	**8/1/2023**
U.S. Small Cap Equity Multi-Factor - S&P		3.25	3.25					7.46	
S&P SmallCap 600 QVML Top 90% Multi-Factor Index		3.25	3.25					7.53	
S&P SmallCap 600 Index		2.46	2.46					6.29	
Small Cap Growth	**784,733,747**	**11.06**	**11.06**	**27.65**	**4.83**	**13.97**	**11.43**	**13.14**	**7/1/1988**
Small Cap Growth - Net		10.29	10.29	26.24	3.62	12.80	10.57		
Russell 2000 Growth Index		7.58	7.58	20.35	-2.68	7.38	7.89	8.03	
Frontier Capital	**784,733,747**	**11.06**	**11.06**	**27.65**	**4.48**	**14.27**	**12.07**	**13.48**	**8/1/1988**
Frontier Capital - Net		10.29	10.29	26.24	3.30	13.05	11.14		
Russell 2000 Growth Index		7.58	7.58	20.35	-2.68	7.38	7.89	8.11	
Small Cap Value	**936,164,662**	**6.15**	**6.15**	**20.84**	**6.76**	**11.55**	**8.87**	**11.68**	**9/1/1989**
Small Cap Value - Net		6.04	6.04	20.19	6.27	11.01	8.34		
Russell 2000 Value Index		2.90	2.90	18.75	2.22	8.17	6.87	9.71	
Channing	**378,457,255**	**9.48**	**9.48**	**27.43**	**4.94**	**11.28**	**8.42**	**10.58**	**7/1/2011**
Channing - Net		9.36	9.36	26.81	4.43	10.74	7.90	10.01	
Russell 2000 Value Index		2.90	2.90	18.75	2.22	8.17	6.87	8.59	
William Blair Small Cap Value	**557,707,406**	**4.00**	**4.00**	**13.87**	**3.79**	**9.53**	**8.88**	**11.04**	**5/1/1999**
Inv. Couns. Maryland - Net		3.90	3.90	13.25	3.29	8.98	8.34		
Russell 2000 Value Index		2.90	2.90	18.75	2.22	8.17	6.87	8.80	

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Performance

Domestic Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Public Real Assets	**1,482,963,190**	**2.28**	**2.28**	**6.04**	**5.88**	**5.66**		**6.14**	**8/1/2017**
Public Real Assets - Net		2.21	2.21	5.71	5.54	5.28		5.75	
Public Real Assets Benchmark***		1.25	1.25	3.39	3.56	3.83		4.19	
Brookfield	**425,185,296**	**0.26**	**0.26**	**6.60**	**8.45**	**5.83**		**5.53**	**8/1/2017**
Brookfield - Net		0.15	0.15	6.16	7.99	5.33		5.03	
Dow Jones Brookfield Global Infrastructure Composi		0.64	0.64	3.70	4.82	3.85		3.72	
Cohen & Steers	**1,057,777,893**	**3.12**	**3.12**	**5.81**	**5.12**	**5.82**		**6.62**	**8/1/2017**
Cohen & Steers - Net		3.06	3.06	5.53	4.82	5.48		6.26	
FTSE Global Core Infrastructure 50/50 Index (Net)		1.55	1.55	3.22	2.91	3.78		4.39	

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** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.
*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

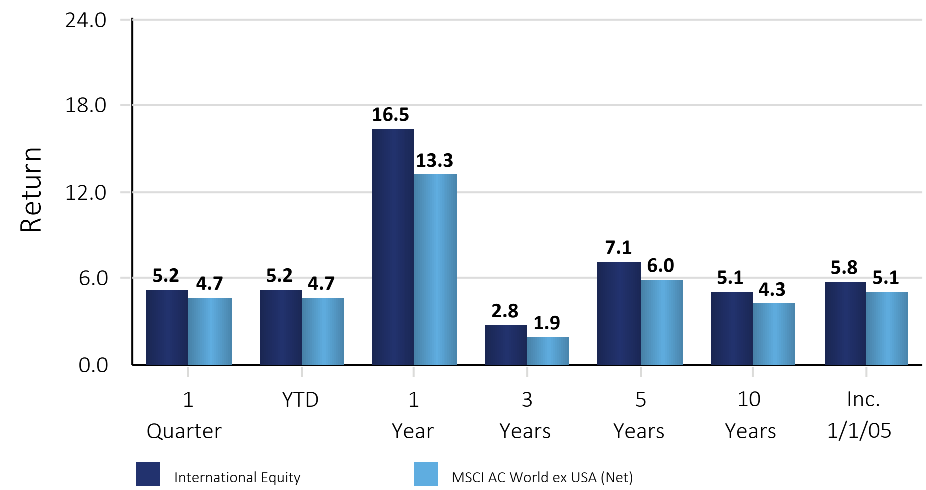
International Equity

Composite Performance Summary

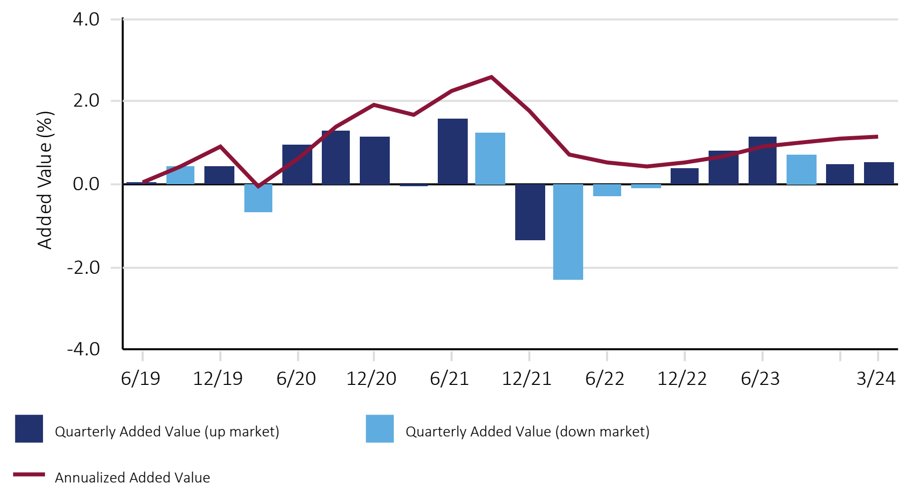
International Equity

Periods Ended March 31, 2024

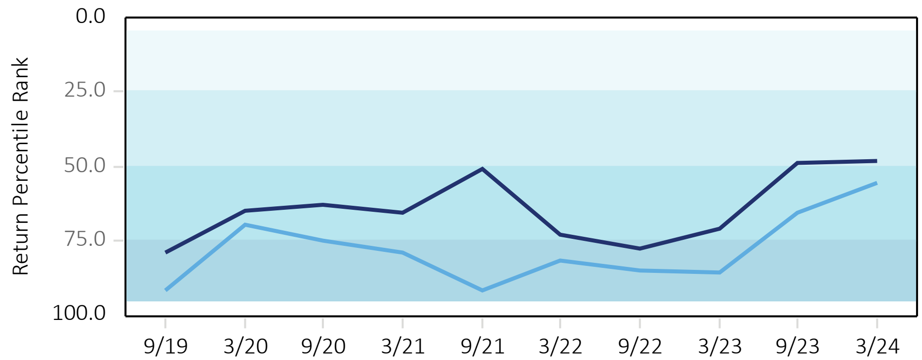
Comparative Performance



Added Value History

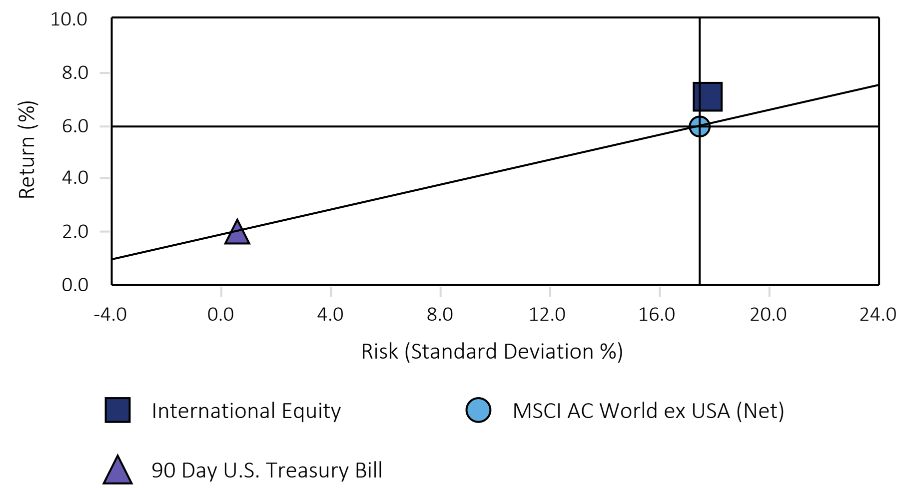


Rolling Percentile Rank: All Public Plans > $1B-Intl. Equity Segment



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
International Equity	10	0 (0%)	2 (20%)	6 (60%)	2 (20%)
Benchmark	10	0 (0%)	0 (0%)	4 (40%)	6 (60%)

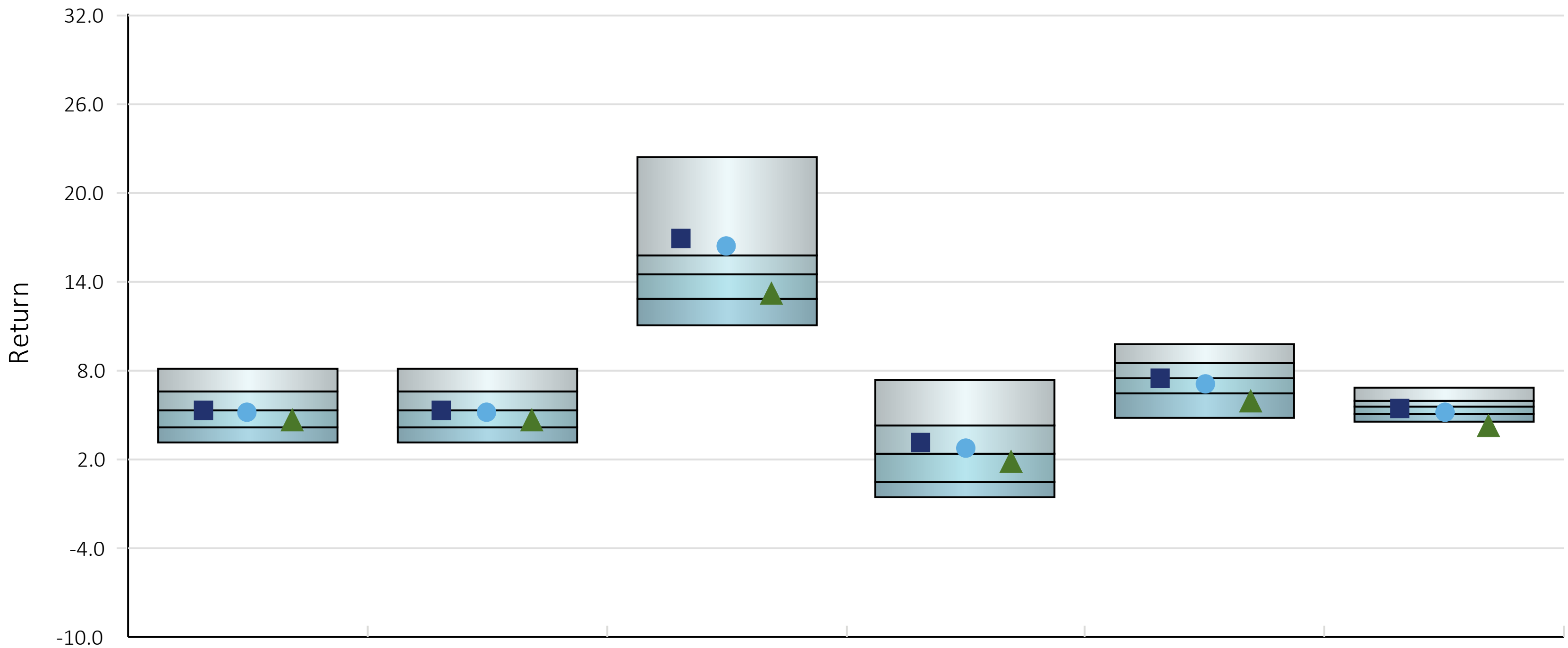
Risk and Return 04/1/19 - 03/31/24



Plan Sponsor Peer Group Analysis

International Equity vs All Public Plans > $1B-Intl. Equity Segment(Gross)

Periods Ended March 31, 2024



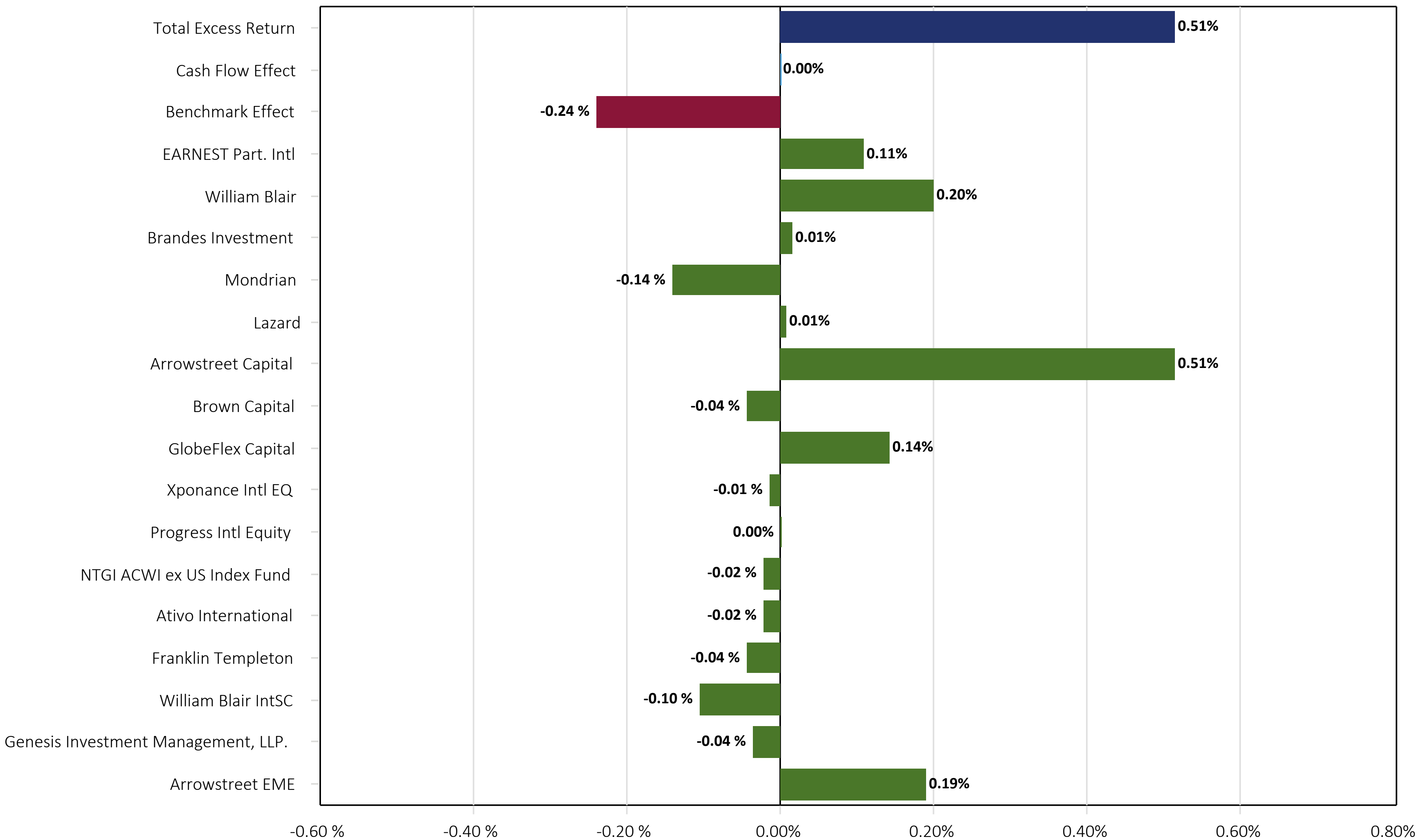
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ International Equity	5.30 (47)	5.30 (47)	16.89 (19)	3.13 (41)	7.50 (49)	5.50 (60)
● International Equity - Net	5.20 (52)	5.20 (52)	16.48 (21)	2.76 (48)	7.12 (64)	5.14 (72)
▲ MSCI AC World ex USA (Net)	4.69 (64)	4.69 (64)	13.26 (67)	1.94 (56)	5.97 (83)	4.25 (99)
5th Percentile	8.14	8.14	22.40	7.37	9.74	6.88
1st Quartile	6.62	6.62	15.75	4.36	8.50	6.01
Median	5.26	5.26	14.50	2.39	7.45	5.64
3rd Quartile	4.22	4.22	12.86	0.51	6.42	5.13
95th Percentile	3.12	3.12	11.02	-0.56	4.87	4.50
Population	50	50	49	49	44	41

Asset Class Attribution

International Equity

Periods Ended 1 Quarter Ending March 31, 2024

1 Quarter



Performance

International Equity

Periods Ended March 31, 2024

		Performance (%)								
	Market Value $	1 Quarter	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	**10,544,926,371**	**5.30**	**5.30**	**5.30**	**16.89**	**3.13**	**7.50**	**5.50**	**7.67**	**9/1/1986**
International Equity - Net		5.20	5.20	5.20	16.48	2.76	7.12	5.14		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25		
International Equity IMRF Custom Benchmark		4.45	4.45	4.45	13.03	1.27	5.67			
Intl Large Cap Equity	**9,281,469,687**	**5.67**	**5.67**	**5.67**	**17.74**	**5.00**	**8.47**	**5.92**	**7.80**	**9/1/1986**
Intl LargeCap Equity - Net		5.58	5.58	5.58	17.39	4.70	8.16	5.63		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25		
Intl Large Cap Grwth	**1,763,321,091**	**6.64**	**6.64**	**6.64**	**16.95**	**3.12**	**9.27**	**6.29**	**8.45**	**9/1/2002**
Intl Large Cap Grwth - Net		6.57	6.57	6.57	16.43	2.74	8.91	5.97		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	6.93	
EARNEST Part. Intl	**732,588,932**	**6.33**	**6.33**	**6.33**	**20.18**	**7.82**	**9.83**	**6.17**	**9.16**	**10/1/2004**
EARNEST Part. Intl - Net		6.28	6.28	6.28	19.47	7.47	9.53	5.92		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.82	
MSCI AC World ex USA Growth (Net)		5.91	5.91	5.91	11.22	-0.76	6.24	5.12	6.33	
William Blair	**1,030,732,159**	**6.85**	**6.85**	**6.85**	**14.76**	**0.19**	**8.95**	**6.49**	**9.31**	**10/1/2002**
William Blair - Net		6.77	6.77	6.77	14.37	-0.19	8.56	6.11		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	7.52	
MSCI AC World ex USA Growth (Net)		5.91	5.91	5.91	11.22	-0.76	6.24	5.12	7.59	
Intl Large Cap Val.	**1,658,715,359**	**4.21**	**4.21**	**4.21**	**18.84**	**7.24**	**7.64**	**5.15**	**8.49**	**10/1/1995**
Intl Large Cap Val. - Net		3.95	3.95	3.95	18.29	6.85	7.28	4.77		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.28	
Brandes Investment	**794,988,273**	**5.32**	**5.32**	**5.32**	**25.00**	**11.15**	**9.67**	**5.98**	**8.98**	**1/1/1996**
Brandes Investment - Net		4.88	4.88	4.88	24.31	10.79	9.36	5.71		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.20	
MSCI AC World ex USA Value		3.60	3.60	3.60	16.19	5.30	6.05	3.83		

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.
** Genesis is NOF NAV commingled fund.

Performance

International Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	**710,063,846**	**2.76**	**2.76**	**2.76**	**13.99**	**4.21**	**5.94**	**4.54**	**5.66**	**4/1/2012**
Mondrian - Net		2.66	2.66	2.66	13.53	3.82	5.53	4.07	5.19	
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.24	
MSCI AC World ex USA Value		3.60	3.60	3.60	16.19	5.30	6.05	3.83	5.03	
Lazard	**153,663,240**	**5.31**	**5.31**	**5.31**	**12.30**	**3.50**	**6.67**	**4.76**	**6.30**	**4/1/2012**
Lazard - Net		5.24	5.24	5.24	12.03	3.26	6.42	4.39	5.87	
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.24	
MSCI AC World ex USA Value		3.60	3.60	3.60	16.19	5.30	6.05	3.83	5.03	
Intl Large Cap Active Core	**3,062,583,203**	**6.91**	**6.91**	**6.91**	**21.35**	**6.33**	**10.07**	**7.48**	**6.33**	**2/1/2008**
Intl Large Cap Active Core - Net		6.82	6.82	6.82	20.91	5.88	9.56	6.95		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	3.26	
Arrowstreet Capital	**1,346,990,844**	**8.97**	**8.97**	**8.97**	**25.59**	**9.39**	**14.45**	**9.91**	**7.79**	**3/1/2008**
Arrowstreet Capital - Net		8.86	8.86	8.86	25.04	8.89	13.94	9.40	7.29	
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	3.10	
Brown Capital	**636,277,306**	**4.04**	**4.04**	**4.04**	**23.85**	**2.08**	**7.53**	**5.81**	**7.71**	**10/1/2004**
Brown Capital - Net		3.98	3.98	3.98	23.56	1.60	6.98	5.06		
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	5.82	
GlobeFlex Capital	**969,491,926**	**6.32**	**6.32**	**6.32**	**15.45**	**5.85**	**7.80**	**6.30**	**5.65**	**3/1/2006**
GlobeFlex Capital - Net		6.24	6.24	6.24	15.08	5.50	7.41	5.90	5.22	
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26	1.94	5.97	4.25	4.20	
Xponance Intl EQ	**109,442,144**	**4.54**	**4.54**	**4.54**	**12.82**	**2.58**			**4.24**	**2/1/2021**
Xponance Intl EQ - Net		4.39	4.39	4.39	12.12	1.94			3.62	
MSCI EAFE (Net)		5.78	5.78	5.78	15.32	4.78			6.02	
Progress Intl Equity*	**380,983**									
Intl Large Cap Passive Core	**2,796,850,034**	**4.61**	**4.61**	**4.61**	**13.00**	**3.22**	**6.49**	**4.58**	**4.23**	**2/1/2000**
Intl Large Cap Passive Core - Net		4.60	4.60	4.60	13.00	3.21	6.49	4.58		
International Large Cap Passive Core Benchmark		4.69	4.69	4.69	13.26	2.72	6.05	4.17	3.83	

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.
** Genesis is NOF NAV commingled fund.

Performance

International Equity

Periods Ended March 31, 2024

	Market Value $	Performance (%)								
		1 Quarter	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
NTGI ACWI ex US Index Fund	**2,796,850,034**	**4.61**	**4.61**	**4.61**	**13.00**				**1.78**	**10/1/2021**
NTGI ACWI ex US Index Fund - Net		4.60	4.60	4.60	13.00				1.77	
MSCI AC World ex USA (Net)		4.69	4.69	4.69	13.26				1.39	
Intl All Cap Developed	**181,456,053**	**4.47**	**4.47**	**4.47**	**16.71**	**4.18**	**6.43**		**6.83**	**2/1/2019**
Intl All Cap Developed - Net		4.35	4.35	4.35	16.14	3.66	5.91		6.32	
MSCI EAFE + Canada (Net)		5.59	5.59	5.59	15.29	4.93	7.48		7.86	
Ativo International	**181,456,053**	**4.47**	**4.47**	**4.47**	**16.71**	**4.18**	**6.43**		**6.82**	**2/1/2019**
Ativo International - Net		4.35	4.35	4.35	16.14	3.66	5.91		6.32	
MSCI EAFE + Canada (Net)		5.59	5.59	5.59	15.29	4.93	7.48		7.86	
Intl Small Cap Eqty	**592,218,092**	**-0.18**	**-0.18**	**-0.18**	**9.21**	**-2.88**	**5.69**	**4.59**	**4.76**	**12/1/2005**
Intl Small Cap Eqty - Net		-0.35	-0.35	-0.35	8.40	-3.60	4.90	3.81		
MSCI AC World ex USA Small Cap (Net)		2.11	2.11	2.11	12.80	0.38	6.24	4.74	5.97	
Custom Benchmark (Intl Small Cap)		2.11	2.11	2.11	12.80	0.38	6.24	4.74	5.41	
Franklin Templeton	**237,527,741**	**0.48**	**0.48**	**0.48**	**10.05**	**-0.73**	**4.78**	**4.61**	**5.60**	**8/1/2011**
Franklin Templeton - Net		0.31	0.31	0.31	9.27	-1.43	4.03	3.85	4.85	
MSCI AC World ex USA Small Cap (Net)		2.11	2.11	2.11	12.80	0.38	6.24	4.74	5.08	
William Blair IntSC	**354,690,351**	**-0.61**	**-0.61**	**-0.61**	**8.65**	**-4.21**	**6.29**	**4.56**	**7.63**	**9/1/2010**
William Blair IntSC - Net		-0.79	-0.79	-0.79	7.83	-4.95	5.49	3.76	6.82	
MSCI AC World ex USA Small Cap (Net)		2.11	2.11	2.11	12.80	0.38	6.24	4.74	6.55	
Custom Benchmark (Intl Small Cap)		2.11	2.11	2.11	12.80	0.38	6.24	4.74	6.77	
Emerging Mkt Equity	**489,782,539**	**5.67**	**5.67**	**5.67**	**13.34**	**-5.35**	**2.53**	**3.61**	**8.01**	**2/1/1992**
Emerging Mkt Equity - Net		5.49	5.49	5.49	12.65	-5.93	1.91	2.99		
MSCI Emerging Markets Index		2.44	2.44	2.44	8.59	-4.68	2.61	3.33	6.38	
Genesis Investment Management, LLP.*	**6,501,292**									
Arrowstreet EME	**483,281,247**	**6.37**	**6.37**	**6.37**	**19.23**				**19.71**	**3/1/2023**
Arrowstreet EME - Net		6.37	6.37	6.37	19.23				19.71	
MSCI Emerging Markets IMI (Net)		2.17	2.17	2.17	9.76				11.74	

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.
** Genesis is NOF NAV commingled fund.

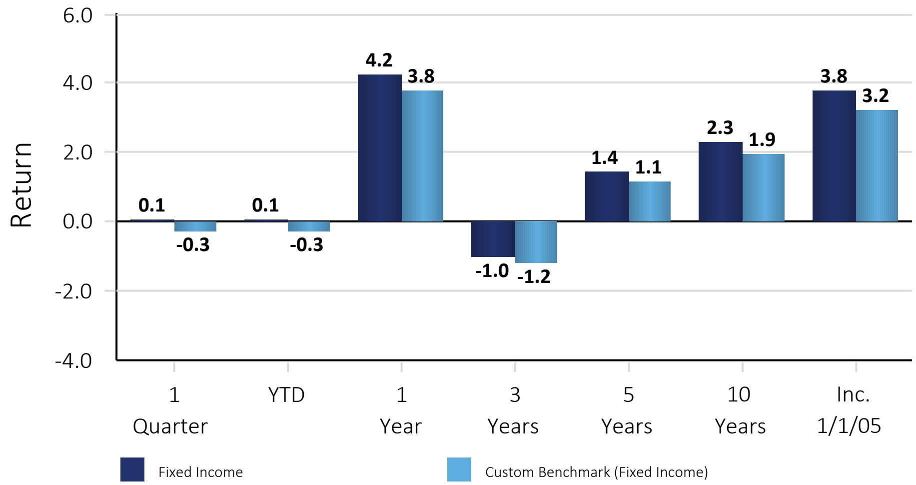
Fixed Income

Composite Performance Summary

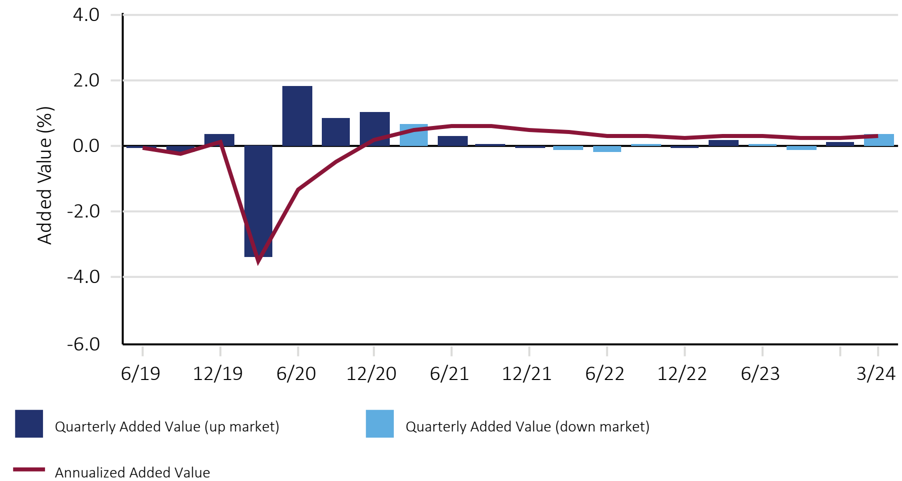
Fixed Income

Periods Ended March 31, 2024

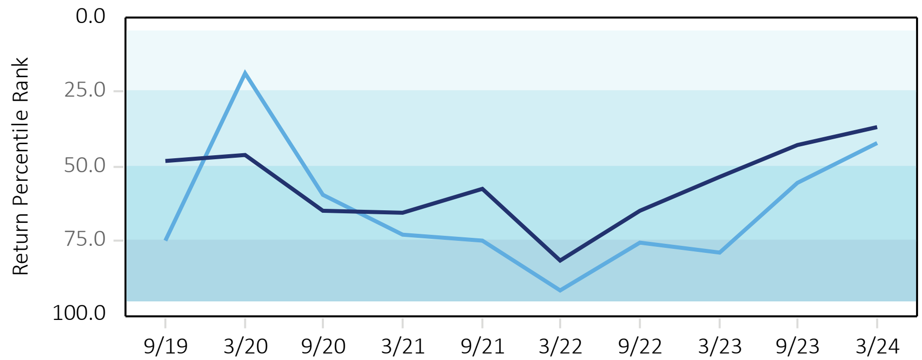
Comparative Performance



Added Value History

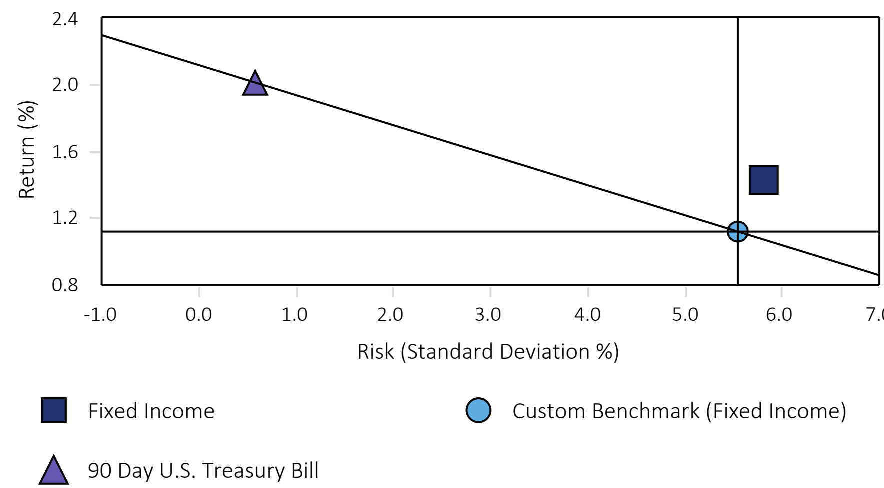


Rolling Percentile Rank: All Public Plans > $1B-US Fixed Income Segment



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Fixed Income	10	0 (0%)	4 (40%)	5 (50%)	1 (10%)
Benchmark	10	1 (10%)	1 (10%)	5 (50%)	3 (30%)

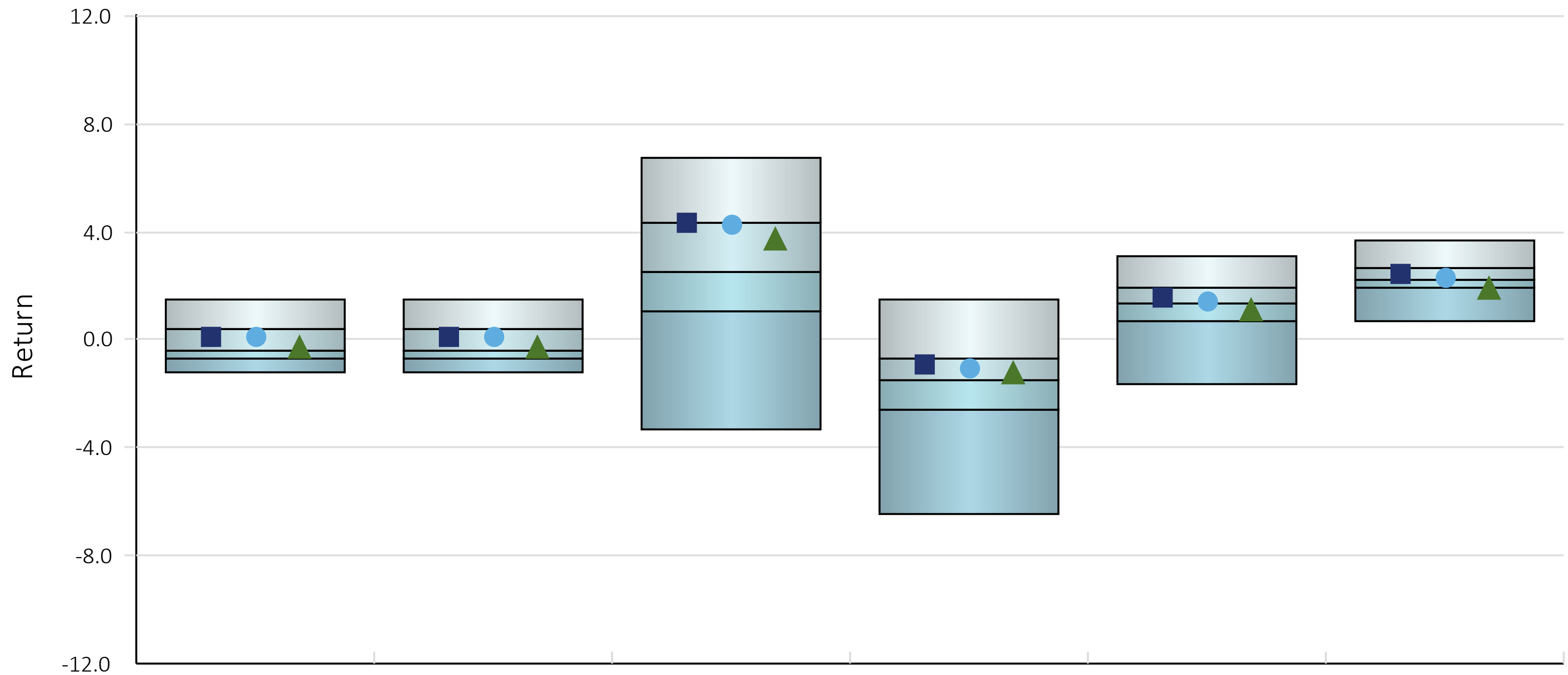
Risk and Return 04/1/19 - 03/31/24



Plan Sponsor Peer Group Analysis

Fixed Income vs All Public Plans > $1B-US Fixed Income Segment(Gross)

Periods Ended March 31, 2024



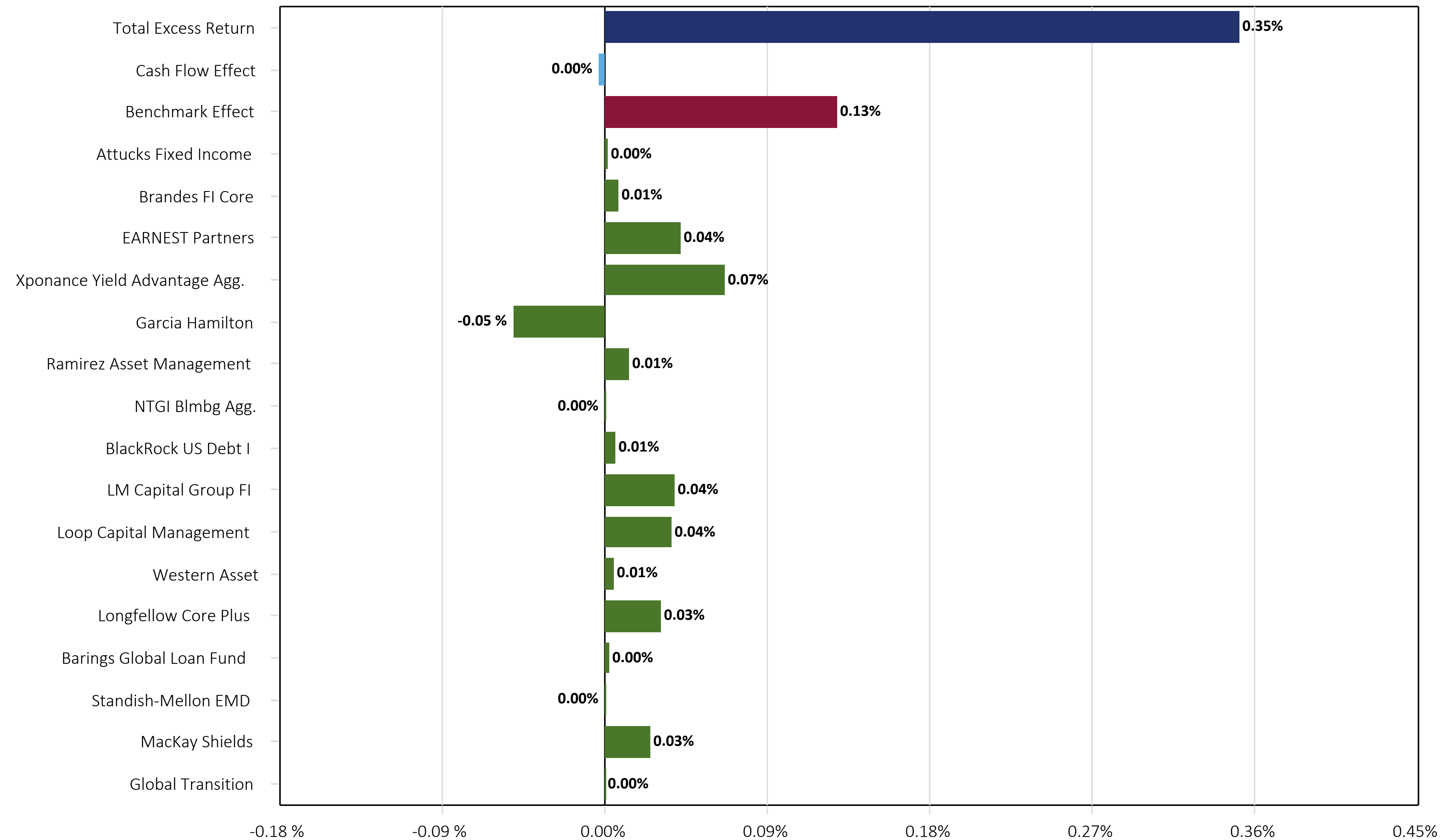
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Fixed Income	0.10 (31)	0.10 (31)	4.32 (27)	-0.94 (34)	1.53 (39)	2.43 (38)
Fixed Income - Net	0.08 (32)	0.08 (32)	4.24 (29)	-1.03 (37)	1.44 (44)	2.31 (44)
Custom Benchmark (Fixed Income)	-0.27 (49)	-0.27 (49)	3.77 (30)	-1.22 (42)	1.12 (59)	1.93 (75)
5th Percentile	1.50	1.50	6.72	1.47	3.12	3.70
1st Quartile	0.36	0.36	4.34	-0.72	1.93	2.66
Median	-0.37	-0.37	2.53	-1.47	1.34	2.21
3rd Quartile	-0.69	-0.69	1.08	-2.60	0.66	1.93
95th Percentile	-1.21	-1.21	-3.30	-6.45	-1.67	0.69
Population	53	53	51	50	44	40

Asset Class Attribution

Fixed Income

Periods Ended 1 Quarter Ending March 31, 2024

1 Quarter



Performance

Fixed Income

Periods Ended March 31, 2024

	Market Value $	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	12,198,633,936	0.10	0.10	4.32	-0.94	1.53	2.43	7.39	1/1/1982
Fixed Income - Net		0.08	0.08	4.24	-1.03	1.44	2.31		
Custom Benchmark (Fixed Income)		-0.27	-0.27	3.77	-1.22	1.12	1.93	6.87	
Fixed Income IMRF Custom Benchmark		-0.14	-0.14	3.92	-1.26	1.17			
Active Fixed Core	3,763,590,621	-0.48	-0.48	2.16	-1.90	0.84	2.00	3.68	4/1/2001
Active Fixed Core - Net		-0.51	-0.51	2.04	-2.01	0.73	1.87		
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	3.56	
Attucks Fixed Income	91,532,288	-0.44	-0.44	2.80	-1.98			-2.74	2/1/2021
Attucks Fixed Income - Net		-0.51	-0.51	2.39	-2.30			-3.04	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46			-3.16	
Brandes FI Core	334,816,147	-0.48	-0.48	2.36	-1.18	0.95		1.37	3/1/2016
Brandes FI Core - Net		-0.49	-0.49	2.33	-1.21	0.94		1.36	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36		1.09	
EARNEST Partners	893,990,402	-0.17	-0.17	2.46	-1.95	0.82	2.05	3.49	5/1/2005
EARNEST Partners - Net		-0.20	-0.20	2.32	-2.08	0.69	1.90	3.31	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	3.03	
Xponance Yield Advantage Agg.	976,403,902	0.09	0.09	3.82	-1.57	1.21	2.08	3.40	6/1/2005
Xponance Yield Advantage Agg. - Net		0.06	0.06	3.68	-1.70	1.08	1.94	3.23	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	2.99	
Garcia Hamilton	947,786,384	-1.40	-1.40	0.01	-2.37	0.41		1.46	6/1/2015
Garcia Hamilton - Net		-1.42	-1.42	-0.07	-2.45	0.33		1.37	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36		1.18	

Loop Capital, Canida, Habacht switched from core to core plus effective 10/01/2010.
* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

Performance

Fixed Income

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Ramirez Asset Management	519,061,498	-0.43	-0.43	2.37	-1.86			-0.58	5/1/2020
Ramirez Asset Management - Net		-0.46	-0.46	2.23	-1.99			-0.71	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46			-2.15	
Pass. Core Fixed Income	2,829,850,810	-0.75	-0.75	1.71	-2.39	0.41	1.61	5.07	1/1/1990
Pass. Core Fixed Income - Net		-0.75	-0.75	1.71	-2.40	0.41	1.61		
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	5.05	
BlackRock US Debt I	1,677,529,094	-0.73	-0.73	1.70	-2.39	0.43	1.64	1.74	10/1/2013
BlackRock US Debt I - Net		-0.73	-0.73	1.70	-2.40	0.43	1.64	1.73	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	1.63	
NTGI Blmbg Agg.	1,152,321,716	-0.78	-0.78	1.71	-2.39	0.39	1.58	5.11	2/1/1990
NTGI Blmbg Agg. - Net		-0.78	-0.78	1.71	-2.39	0.39	1.58		
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	5.10	
Core Plus Fixed Income	2,940,964,567	-0.28	-0.28	3.28	-1.95	1.19	2.30	7.21	1/1/1982
Core Plus Fixed Income - Net		-0.31	-0.31	3.13	-2.10	1.04	2.13		
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	6.78	
LM Capital Group FI	839,843,091	-0.18	-0.18	2.94	-1.76	1.52	2.31	3.87	5/1/2005
LM Capital Group FI - Net		-0.22	-0.22	2.77	-1.92	1.36	2.15	3.71	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	3.03	
Loop Capital Management	580,430,489	0.04	0.04	4.38	-1.41	1.25	2.51	3.93	5/1/2005
Loop Capital Management - Net		0.00	0.00	4.24	-1.54	1.12	2.37	3.80	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	3.03	

Loop Capital, Canida, Habacht switched from core to core plus effective 10/01/2010.
* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

Performance

Fixed Income

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Western Asset	948,592,874	-0.68	-0.68	2.94	-2.60	0.83	2.37	4.34	11/1/2001
Western Asset - Net		-0.71	-0.71	2.79	-2.74	0.69	2.24		
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46	0.36	1.54	3.33	
Longfellow Core Plus	572,098,113	-0.07	-0.07	3.25	-1.59			-0.49	5/1/2020
Longfellow Core Plus - Net		-0.11	-0.11	3.10	-1.74			-0.64	
Blmbg. U.S. Aggregate Index		-0.78	-0.78	1.70	-2.46			-2.15	
Bank Loans	1,537,632,640	2.48	2.48	12.03	5.03	4.84		4.67	8/1/2014
Bank Loans - Net		2.52	2.52	12.22	5.14	4.88		4.41	
Barings Custom Benchmark		2.50	2.50	12.52	5.94	5.47		4.75	
Barings Global Loan Fund	1,537,632,640	2.48	2.48	12.03	5.03	4.84		4.67	8/1/2014
Barings Global Loan Fund - Net		2.52	2.52	12.22	5.14	4.88		4.41	
Barings Custom Benchmark*		2.50	2.50	12.52	5.94	5.47		4.75	
Emerging Markets Debt	246,797								
Standish-Mellon EMD	246,797								
High Yield	1,126,348,502	1.83	1.83	10.36	3.56	5.32	5.46	8.99	4/1/1986
High Yield - Net		1.75	1.75	9.94	3.21	4.99	5.10		
ICE BofA U.S. High Yield, Cash Pay Index		1.47	1.47	10.98	2.23	4.03	4.35	7.74	
MacKay Shields	1,126,348,502	1.83	1.83	10.36	3.56	5.33	5.51	8.09	11/1/2000
MacKay Shields - Net		1.75	1.75	9.94	3.22	5.00	5.17		
ICE BofA U.S. High Yield, Cash Pay Index		1.47	1.47	10.98	2.23	4.03	4.35	6.80	

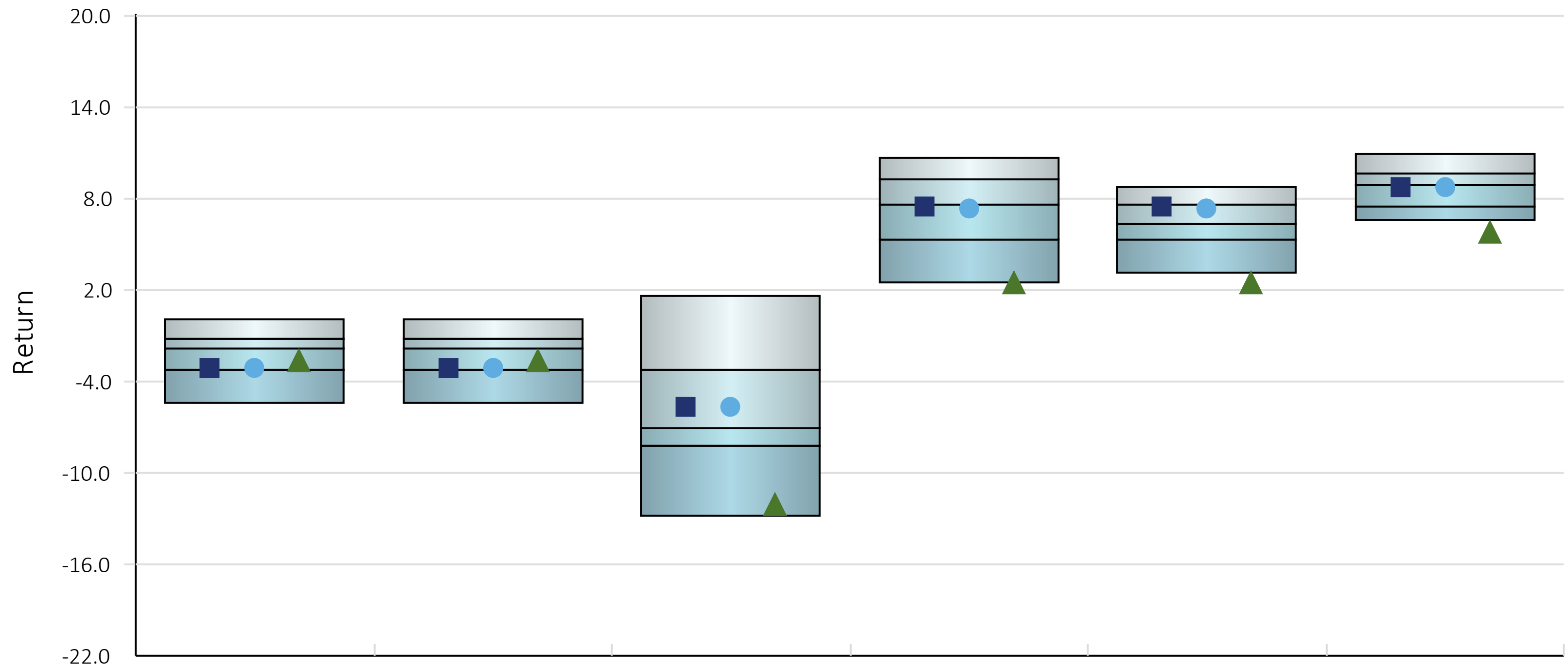
Loop Capital, Canida, Habacht switched from core to core plus effective 10/01/2010.
* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

Private Real Assets

Plan Sponsor Peer Group Analysis

Real Estate vs All Public Plans > $1B-Real Estate Segment(Gross)

Periods Ended March 31, 2024



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Real Estate	-3.10 (70)	-3.10 (70)	-5.60 (42)	7.47 (57)	7.45 (29)	8.79 (53)
● Real Estate - Net	-3.12 (71)	-3.12 (71)	-5.67 (43)	7.40 (58)	7.39 (30)	8.75 (53)
▲ Blended Benchmark (Real Estate)	-2.57 (64)	-2.57 (64)	-12.00 (92)	2.47 (96)	2.56 (100)	5.82 (100)
5th Percentile	0.08	0.08	1.57	10.71	8.83	10.91
1st Quartile	-1.23	-1.23	-3.28	9.26	7.59	9.70
Median	-1.85	-1.85	-7.03	7.62	6.38	8.87
3rd Quartile	-3.21	-3.21	-8.19	5.30	5.26	7.47
95th Percentile	-5.45	-5.45	-12.84	2.49	3.15	6.61
Population	40	40	38	34	27	14

Asset Allocation & Performance

Private Real Assets

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Private Real Assets	4,957,242,269	-3.05	-3.05	-5.19				0.07	3/1/2022
Private Real Assets- Net		-3.07	-3.07	-5.26				0.00	
Custom Benchmark (Private Real Assets)		-2.31	-2.31	-11.10				-3.98	
Real Estate	4,423,901,823	-3.10	-3.10	-5.60	7.47	7.45	8.79	5.69	5/1/1985
Real Estate - Net		-3.12	-3.12	-5.67	7.40	7.39	8.75		
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	7.09	
Real Estate Core Cmp	2,107,300,984	-4.28	-4.28	-7.08	7.24	8.15	9.07	7.43	4/1/1999
TA Assoc. Buckhead	897,170,612	-3.43	-3.43	1.62	14.61	14.18	13.14	11.28	8/1/1995
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	6.62	
Barings Euro Core Property	97,740,635	-26.15	-26.15	-29.13	-10.96	2.80		3.38	3/1/2017
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56		3.79	
Blackstone Property Euro	166,650,441	-8.75	-8.75	-9.34	3.09	6.47		5.49	12/1/2017
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56		3.46	
INVESCO Core Real Estate	211,752,989	-0.20	-0.20	-12.87	3.56	2.78	6.18	7.05	4/1/2011
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	7.38	
INVESCO European real estate	53,673,504	-2.24	-2.24	-7.35	-4.86	-1.14		-1.73	4/1/2018
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56		3.21	
AEW Core Property Tr	248,566,122	0.96	0.96	-9.91	5.66	4.58	6.44	6.74	10/1/2013
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	6.05	
CBRE Core Partners	275,155,157	0.16	0.16	-9.29	9.03	7.74	8.90	8.85	12/1/2013
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	5.95	

Returns are time-weighted and are reported net of fee for all real estate managers.
The Blended Benchmark (Real Estate) is currently the NCREIF ODCE VW Net Index. Prior to January 1, 2013, it was the NCREIF Property Index + 1%. Ret urn s prior to January, 2007, reflect those o
Consumer Price Index + 5%.

Asset Allocation & Performance

Private Real Assets

Periods Ended March 31, 2024

	Market Value $	Performance (%) 1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
JPM Strategic Property Fund	156,591,524	-7.79	-7.79	-13.80	1.87			1.94	1/1/2021
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47			2.87	
RE Non-Core Cmp	2,316,600,839	-1.97	-1.97	-4.13	7.62	6.60	8.45	10.02	1/1/2010
Artemis MWBE Spruce	382,562,434	-2.17	-2.17	-3.86	4.51	6.49		4.31	6/1/2016
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56		4.13	
Franklin T. EMREFF	1,066,392	0.00	0.00	-61.52	-37.56	-30.25	-10.37	-7.34	9/1/2011
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	7.09	
Security Capital	96,515,080	-1.93	-1.93	12.08	4.73	6.36	5.32		7/1/1997
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	6.55	
Dune II	6,765,804	-2.82	-2.82	3.94	7.40	2.71	7.08	5.39	2/1/2009
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	6.42	
Non-Core Real Estate Funds	1,527,563,043	-1.39	-1.39	-3.85	10.61	8.12	9.89	9.98	10/1/2011
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56	5.82	7.04	
Almanac ARS V	63,546								
Non-Core Intl Real Estate	302,064,540	-4.58	-4.58	-10.18	-1.97	0.61		-1.84	8/1/2014
Blended Benchmark (Real Estate)		-2.57	-2.57	-12.00	2.47	2.56		5.62	

Returns are time-weighted and are reported net of fee for all real estate managers.
The Blended Benchmark (Real Estate) is currently the NCREIF ODCE VW Net Index. Prior to January 1, 2013, it was the NCREIF Property Index + 1%. Ret urn s prior to January, 2007, reflect those o Consumer Price Index + 5%.

Asset Allocation & Performance

Private Real Assets

Periods Ended March 31, 2024

		Performance (%)							
	Market Value $	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Agriculture	224,080,653	-6.00	-6.00	-15.02	-2.69	-1.44	2.06	5.68	10/1/1997
NCREIF Farmland Index		0.74	0.74	3.58	7.42	6.05	7.12	10.88	
Premiere Partners IV	224,080,653	-6.00	-6.00	-15.02	-2.69	-1.44		0.46	3/1/2015
Timberland	68,325,998	-2.61	-2.61	24.15	13.46	7.15	4.19	7.45	10/1/1992
NCREIF Timberland Index		2.12	2.12	9.85	10.99	7.04	5.83	8.54	
Forest Investment	68,325,998	-2.61	-2.61	24.15	13.46	7.15	4.22	7.60	10/1/1992
Blended Benchmark (Timberland)		2.82	2.82	7.62	8.98	5.87	5.25	8.35	
Unlisted Infrastructure	240,933,795	0.93	0.93	10.90	11.79	13.25		12.38	4/1/2018
Blended Benchmark (Unlisted Infrastructure)		2.82	2.82	7.62	8.94	8.96		8.97	
Unlisted Infrastructure Funds	240,933,795	0.93	0.93	10.90	11.79	13.25		12.38	4/1/2018
Blended Benchmark (Unlisted Infrastructure)		2.82	2.82	7.62	8.94	8.96		8.97	

Returns are time-weighted and are reported net of fee for all real estate managers.
The Blended Benchmark (Real Estate) is currently the NCREIF ODCE VW Net Index. Prior to January 1, 2013, it was the NCREIF Property Index + 1%. Ret urn s prior to January, 2007, reflect those o
Consumer Price Index + 5%.

Alternative Investments

Asset Allocation & Performance

Alternatives Investments

Periods Ended March 31, 2024

	Allocation	Performance (%)							
	Market Value $	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Alternatives Investments	5,788,365,236	1.58	1.58	3.66	13.41	13.94	11.99	11.28	2/1/1986
Custom Benchmark (Alternative Investments)		10.98	10.98	26.00	6.67	7.60	8.30	12.05	
Absolute Return	48,943								
Aurora Investment	48,943								
Private Equity	5,438,715,801	1.25	1.25	3.36	15.06	16.02	14.50	13.49	2/1/1986
Blended Benchmark (Private Equity)		12.24	12.24	27.50	6.74	7.64	8.32		
Abbott S/A Comp.	491,026,319	0.29	0.29	3.04	15.80	16.83	14.45	14.27	6/1/1987
Muller Monroe MPEFF									
Pantheon S/A Comp.	418,179,220	0.01	0.01	2.07	16.12	15.36	13.88	11.02	10/1/2000
Private Equity Fund - Domestic	3,531,699,273	1.41	1.41	1.33	14.06	17.01	16.54	13.79	6/1/2012
Private Equity Fund - International	720,520,812	1.97	1.97	15.57	18.96	13.42		1.30	7/1/2015
Oakbrook Opportunities Fund	277,290,177	1.05	1.05	3.75	13.07			7.33	6/1/2019
Private Credit	349,600,492	6.97	6.97	7.44	0.16			0.57	10/1/2019
Private Credit Fund - Domestic	325,268,275	8.47	8.47	8.94	0.62			0.88	10/1/2019
Private Credit Fund - International	24,332,217	-30.54	-30.54					-30.54	1/1/2024

Private Equity and Blended Benchmark (Private Equity) returns are 1 quarter lagged.

Manager Watch List

As of March 31, 2023

Investment Manager	Asset Class	Effective Date	Resolution
Ativo	International Equity – All Cap	August 2023	
Brown	International Equity – Large Cap	March 2024	

Appendix

Asset Class Returns

Periods Ended March 31, 2024

	Performance (%)										
	YTD	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Fund	**4.37**	**13.42**	**-12.77**	**16.82**	**14.98**	**19.77**	**-4.23**	**16.02**	**8.01**	**0.53**	**6.15**
Total Fund - Net	4.33	13.24	-12.90	16.63	14.79	19.57	-4.40	15.78	7.77	0.29	5.90
Total Fund Benchmark	5.02	14.28	-13.26	13.48	13.16	18.68	-3.12	14.37	7.89	1.37	7.33
Domestic Equity	**9.56**	**23.30**	**-19.12**	**24.89**	**22.07**	**29.23**	**-6.08**	**19.83**	**12.62**	**0.04**	**9.81**
Domestic Equity - Net	9.51	23.10	-19.25	24.69	21.86	29.00	-6.25	19.59	12.35	-0.22	9.54
Blended Benchmark (U.S. Equity)	9.42	24.16	-18.53	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.47
U.S. Equity IMRF Custom Benchmark	8.58	21.36	-18.21	25.68	18.00	29.67	-6.79	18.08	15.43		
International Equity	**5.30**	**19.64**	**-17.86**	**9.78**	**13.52**	**23.76**	**-14.13**	**27.95**	**3.56**	**-1.90**	**-2.80**
International Equity - Net	5.20	19.22	-18.14	9.37	13.08	23.39	-14.41	27.52	3.21	-2.23	-3.10
MSCI AC World ex USA (Net)	4.69	15.62	-16.00	7.82	10.65	21.51	-14.20	27.19	4.50	-5.66	-3.87
International Equity IMRF Custom Benchmark	4.45	15.11	-16.70	7.30	11.30	21.37	-14.36	27.79	3.92		
Fixed Income	**0.10**	**7.62**	**-11.83**	**-0.44**	**7.87**	**9.50**	**-0.24**	**4.82**	**4.87**	**0.25**	**5.97**
Fixed Income - Net	0.08	7.53	-11.90	-0.53	7.75	9.37	-0.39	4.66	4.71	0.10	5.81
Blmbg. U.S. Aggregate Index	-0.78	5.53	-13.01	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97
Fixed Income IMRF Custom Benchmark	-0.14	7.27	-11.98	-0.85	7.29	9.14	-0.08	3.98	3.89		
Private Real Assets	**-3.07**	**-3.50**									
Custom Benchmark (Private Real Assets)	-2.31	-11.80									
Real Estate	**-3.10**	**-4.15**	**11.77**	**21.95**	**4.20**	**9.81**	**8.36**	**10.03**	**8.97**	**12.54**	**13.02**
Real Estate - Net	-3.12	-4.21	11.71	21.88	4.16	9.76	8.36	10.03	8.97	12.46	13.02
Blended Benchmark (Real Estate)	-2.57	-12.73	6.54	21.02	0.34	4.39	7.36	6.66	7.79	13.95	11.46
Agriculture	**-6.00**	**-8.09**	**3.98**	**2.69**	**4.69**	**-5.82**	**0.28**	**-4.58**	**-0.47**	**20.18**	**24.73**
NCREIF Farmland Index	0.74	4.96	9.64	7.83	3.08	4.81	6.74	6.19	7.09	10.35	12.63
Timberland	**-2.61**	**26.14**	**11.94**	**-2.72**	**4.51**	**1.00**	**-3.62**	**4.68**	**-4.58**	**4.99**	**12.83**
NCREIF Timberland Index	2.12	9.45	12.90	9.17	0.81	1.30	3.21	3.63	2.59	4.97	10.48
Unlisted Infrastruct	**0.93**	**16.38**	**11.76**	**11.68**	**15.90**	**9.65**					
Blended Benchmark (Unlisted Infrastructure)	2.82	7.49	9.65	9.00	9.00	9.00					

Benchmark definitions are in the glossary.
Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Asset Class Returns

Periods Ended March 31, 2024

	Performance (%)										
	YTD	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Alternatives Investments	**1.58**	**2.60**	**4.39**	**46.46**	**12.31**	**9.48**	**17.32**	**12.09**	**5.32**	**6.90**	**11.63**
Alternative Investments - Net	1.58	2.60	4.38	46.44	12.27	9.43	17.14	11.91	5.00	6.47	11.16
Custom Benchmark (Alternative Investments)	10.98	25.15	-18.08	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Private Equity	**1.25**	**2.61**	**5.36**	**54.15**	**14.50**	**11.78**	**21.46**	**15.61**	**8.60**	**8.41**	**13.72**
Blended Benchmark (Private Equity)	12.24	25.61	-19.14	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Cash	**1.46**	**5.23**	**3.18**	**2.44**	**2.56**	**3.59**	**2.36**	**1.67**	**0.63**	**0.29**	**0.17**
90 Day U.S. Treasury Bill	1.29	5.02	1.46	0.05	0.67	2.28	1.87	0.86	0.25	0.03	0.04

Benchmark definitions are in the glossary.
Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Benchmark Definitions

Account Name	From Date	To Date	Benchmark
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
Real Estate Blended Benchmark	1/1/2013	Present	100% NCREIF Fund Index-ODCE (VW) (Net)**
	1/1/2007	12/31/2012	100% NPI + 1%
	1/1/2005	12/31/2016	100% Consumer Price Index + 5%
Alternatives Custom Benchmark	1/1/2024	Present	87% MSCI World World Index (Net) 1 Qtr Lagged +3%, 13% S&P LSTA Leveraged Loan 100 Index +2%
	3/1/2022	12/31/2023	95% MSCI World World Index (Net) 1 Qtr Lagged +3%, 5% S&P LSTA Leveraged 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%
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 the International Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.
Fixed Income IMRF Custom Benchmark			Blend of the the Fixed Income Style benchmarks returns, dollar weighted by the actual allocation at previous month end.

**ODCE returns are updated quarterly.

Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Fixed Income Custom Benchmark	1/1/2024	Present	82% Bloomberg U.S. Aggregate, 10% Custom Barings Global Loan Benchmark, 8% ICE BofAML U.S. High Yield Cash Pay
	3/1/2022	12/31/2023	78% Bloomberg U.S. Aggregate, 14% Custom Barings Global Loan Benchmark, 8% ICE BofAML U.S. High Yield Cash Pay Index
	1/1/1976	2/28/2022	100% Bloomberg U.S. Aggregate
Private Real Assets Custom Benchmark	3/1/2022	Present	95% NCREIF Fund Index-ODCE (VW) (Net)**, 5% Consumer Price Index +4%
Unlisted Infrastructure Blended Benchmark	3/1/2022	Present	100% Consumer Price Index +4%
	4/1/2018	2/28/2022	100% Alternatives Custom Benchmark
Private Equity Blended Benchmark	3/1/2022	Present	100% MSCI World World Index (Net) 1 Qtr Lagged +3%
	2/1/1996	2/28/2022	100% Alternatives Custom Benchmark

**ODCE returns are updated quarterly.

Glosssary: Benchmark Definitions

Account Name	From Date	To Date	Benchmark
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	1/1/2024	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. Barc. 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. Barc. 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.