

**Wilshire**



# Illinois Municipal Retirement Fund

Monthly Investment Summary

Oct-2023

## IMRF Performance Summary

- The Illinois Municipal Retirement Fund (“IMRF”) ended October 2023 with a market value of \$47.9 billion, down for the month by approximately \$1.0 billion. IMRF returned -2.26% during the month, underperforming the Total Fund Benchmark, which returned -1.67%. Growth and defensive assets posted negative returns to begin the 4th quarter as bond yields moved up and geopolitical uncertainty weighed on investor sentiment.
- The broad U.S. Equity market was negative for the month, with Small Cap stocks underperforming Large Cap. The U.S. Equity Portfolio underperformed its benchmark during October, returning -3.00% versus -2.59%. Investment manager performance in Large Cap Growth was the largest contributor to relative underperformance.
- International Equity markets were negative in October, while Emerging Markets outperformed Developed. The International Equity portfolio outperformed the benchmark during the month, returning -3.92% versus -4.13%. In aggregate, investment manager performance in Large Cap Growth and Emerging Markets were the largest contributors to relative outperformance.
- Fixed Income markets were generally negative in October as yields rose and spreads widened. The Fixed Income Portfolio underperformed the benchmark during the month, returning -1.37% versus -1.33%. Investment manager performance in Core and Core Plus were the largest contributors to relative underperformance.
- As of October month-end, all underlying asset class allocations in the Portfolio are within the stated four percentage point re-balancing range as outlined by the current Statement of Investment Policy.

Performance referenced above is Net of Fees.

## Market Dashboard

Returns through Tuesday October 31, 2023

Portfolio Allocations	MTD	SEP	AUG	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Global 60/40	(2.44)	(3.50)	(1.93)	(2.44)	(3.31)	2.92	6.45	1.83	4.73
Wilshire Risk Parity (12%)	(2.11)	(4.19)	(2.59)	(2.11)	(5.82)	(0.03)	0.46	0.92	3.84
Strategic Allocation Themes *	MTD	SEP	AUG	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Growth <sup>1</sup>	(3.01)	(4.14)	(2.79)	(3.01)	(3.40)	6.75	10.50	6.68	7.47
Defensive Growth <sup>2</sup>	(2.79)	(2.34)	(2.20)	(2.79)	(2.51)	0.23	2.07	3.00	6.23
Diversified Credit <sup>3</sup>	(1.07)	(1.48)	(0.35)	(1.07)	(0.26)	3.60	7.99	(0.74)	1.91
Real Assets <sup>4</sup>	(1.44)	(4.15)	(2.48)	(1.44)	(3.22)	(5.60)	(3.02)	5.13	4.72
Defensive <sup>5</sup>	(1.58)	(2.54)	(0.64)	(1.58)	(3.23)	(2.77)	0.36	(5.57)	(0.06)
Major Asset Classes	MTD	SEP	AUG	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	(2.66)	(4.78)	(1.94)	(2.66)	(3.28)	9.50	8.38	9.55	10.44
MSCI ACWI-ex-USA (Net)	(4.13)	(3.16)	(4.52)	(4.13)	(3.77)	0.99	12.07	3.03	3.46
Bloomberg U.S. Aggregate	(1.58)	(2.54)	(0.64)	(1.58)	(3.23)	(2.77)	0.36	(5.57)	(0.06)
Bloomberg U.S. Corporate High Yield	(1.16)	(1.18)	0.28	(1.16)	0.46	4.63	6.23	1.19	3.05
Wilshire Global Real Estate Securities	(4.64)	(5.88)	(2.85)	(4.64)	(5.21)	(5.76)	(3.17)	3.34	0.98
Bloomberg Commodity	0.27	(0.69)	(0.77)	0.27	4.71	(3.19)	(2.97)	15.79	6.65

Source: Bloomberg, All returns are in USD

\* Strategic Allocations are comprised of the following asset mixes (rebalanced monthly)

<sup>1</sup> Growth : 100% Global Equity

<sup>2</sup> Defensive Growth : 60% Low Vol Global Equity, 40% US Convertibles

<sup>3</sup> Diversified Credit : 42.5% U.S. High Yield, 42.5% EMD, 15% Banks Loans

<sup>4</sup> Real Assets : 43% Global REITS/GLI, 33% Commodities, 48% TIPS, 9% Gold, -33% Cash

<sup>5</sup> Defensive : 100% US Core Bonds

## Market Returns

Returns though Tuesday October 31, 2023

<b>US Equity</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
FT Wilshire 5000	(2.66)	(4.78)	(1.94)	(2.66)	(3.28)	9.50	8.38	9.55	10.44
Standard & Poor's 500	(2.10)	(4.77)	(1.59)	(2.10)	(3.27)	10.69	10.14	10.36	11.01
FT Wilshire US Large Cap	(2.20)	(4.71)	(1.66)	(2.20)	(3.12)	11.30	10.39	9.27	11.29
FT Wilshire US Large-Cap Growth	(1.85)	(5.63)	(1.08)	(1.85)	(3.47)	24.99	20.85	n/a	n/a
FT Wilshire US Large-Cap Value	(2.53)	(3.70)	(2.32)	(2.53)	(2.75)	(0.79)	0.71	n/a	n/a
FT Wilshire US Small Cap	(5.63)	(5.18)	(3.57)	(5.63)	(4.16)	(0.67)	(2.63)	6.54	6.19
FT Wilshire US Small-Cap Growth	(6.40)	(5.61)	(3.52)	(6.40)	(5.14)	0.97	(1.51)	n/a	n/a
FT Wilshire US Small-Cap Value	(4.85)	(4.75)	(3.64)	(4.85)	(3.17)	(2.29)	(3.74)	n/a	n/a
<b>Non-US Equity</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
MSCI ACWI-ex-USA (Net)	(4.13)	(3.16)	(4.52)	(4.13)	(3.77)	0.99	12.07	3.03	3.46
MSCI EAFE (Net)	(4.05)	(3.42)	(3.83)	(4.05)	(4.11)	2.74	14.40	5.73	4.10
MSCI EM (Net)	(3.89)	(2.62)	(6.16)	(3.89)	(2.93)	(2.14)	10.80	(3.67)	1.59
MSCI ACWI-ex-US Small cap (Net)	(5.59)	(3.76)	(2.79)	(5.59)	(1.70)	(0.84)	8.82	2.96	3.51
<b>Global Equity</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
MSCI ACWI (Net)	(3.01)	(4.14)	(2.79)	(3.01)	(3.40)	6.75	10.50	6.68	7.47
MSCI ACWI Minimum Volatility (Net)	(1.71)	(2.16)	(1.94)	(1.71)	(2.51)	(0.55)	3.57	3.56	4.35
<b>Fixed Income</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Bloomberg U.S. Aggregate	(1.58)	(2.54)	(0.64)	(1.58)	(3.23)	(2.77)	0.36	(5.57)	(0.06)
Bloomberg Long Term Treasury	(4.93)	(7.29)	(2.79)	(4.93)	(11.83)	(13.07)	(8.50)	(16.29)	(3.16)
Bloomberg U.S. TIPS	(0.72)	(1.85)	(0.89)	(0.72)	(2.60)	(1.50)	(0.72)	(2.00)	2.27
Bloomberg US Treasury Bills	0.46	0.44	0.45	0.46	1.34	4.13	4.86	1.82	1.78
Bloomberg U.S. Corporate High Yield	(1.16)	(1.18)	0.28	(1.16)	0.46	4.63	6.23	1.19	3.05
Credit Suisse Leveraged Loan	0.03	0.88	1.15	0.03	3.37	9.94	11.56	5.86	4.32
Bloomberg US Convertibles Index	(4.22)	(2.52)	(2.62)	(4.22)	(2.36)	1.97	1.01	1.63	8.97
JPM EMBI Global Diversified	(1.35)	(2.60)	(1.50)	(1.35)	(2.23)	0.39	8.36	(4.99)	(0.19)
<b>Real Assets</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Wilshire Global Real Estate Securities	(4.64)	(5.88)	(2.85)	(4.64)	(5.21)	(5.76)	(3.17)	3.34	0.98
FTSE Global Core Infrastructure 50/50	(1.70)	(4.60)	(5.36)	(1.70)	(7.80)	(8.79)	(3.63)	3.44	4.17
Alerian Midstream Energy	(0.32)	(0.67)	(0.12)	(0.32)	2.49	6.77	4.20	29.02	9.26
Bloomberg Commodity	0.27	(0.69)	(0.77)	0.27	4.71	(3.19)	(2.97)	15.79	6.65
Gold	7.32	(4.72)	(1.27)	7.32	(3.68)	8.76	21.45	1.83	10.31
Bitcoin	28.80	3.42	(10.93)	28.80	(11.48)	109.00	69.81	36.45	40.62

Source: Bloomberg, All returns are in USD

## Factor/Relative Returns

Returns through Tuesday October 31, 2023

<b>Asset Class Differentials</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Stocks (ACWI) > Bonds (BB US Aggregate)	(1.43)	(1.59)	(2.16)	(1.43)	(0.17)	9.51	10.15	12.25	7.53
Stocks (ACWI) > Mkt Alts (Equity Hedged)	(2.24)	(2.49)	(2.46)	(2.24)	(2.91)	1.88	4.50	0.70	3.79
Mkt Alts (Relative Value) > Bonds (BB US Aggregate)	0.71	1.36	0.30	0.71	2.29	2.28	0.82	3.93	0.11
<b>Equity &amp; Real Assets Differentials</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
US Small > Large	(3.43)	(0.48)	(1.90)	(3.43)	(1.05)	(11.97)	(13.01)	(2.73)	(5.10)
US Value > Growth	(0.68)	1.93	(1.24)	(0.68)	0.72	(25.78)	(20.14)	n/a	n/a
ACWI-ex-US > US	(1.47)	1.62	(2.58)	(1.47)	(0.49)	(8.50)	3.69	(6.51)	(6.98)
EM > EAFE	0.17	0.80	(2.33)	0.17	1.19	(4.87)	(3.60)	(9.40)	(2.50)
ACWI-ex-US Currency Impact	(0.73)	(1.72)	(1.90)	(0.73)	(2.41)	(3.57)	2.64	(4.13)	(2.06)
EAFE Currency Impact	(0.70)	(2.34)	(1.99)	(0.70)	(2.84)	(4.22)	3.99	(5.29)	(2.26)
EM Currency Impact	(0.29)	(0.82)	(1.48)	(0.29)	(1.50)	(2.44)	1.01	(2.55)	(2.01)
Global Low Volatility > ACWI	1.29	1.98	0.86	1.29	0.90	(7.30)	(6.93)	(3.13)	(3.12)
Global RE > ACWI	(1.64)	(1.74)	(0.05)	(1.64)	(1.81)	(12.51)	(13.68)	(3.34)	(6.49)
Commodities > Global RE	4.91	5.18	2.08	4.91	9.92	2.58	0.20	12.45	5.67
Commodities > TIPS	0.99	1.15	0.13	0.99	7.31	(1.69)	(2.25)	17.79	4.39
Gold > Commodities	7.05	(4.02)	(0.50)	7.05	(8.39)	11.95	24.42	(13.96)	3.65
<b>Fixed Income Differentials</b>	<b>MTD</b>	<b>SEP</b>	<b>AUG</b>	<b>QTD</b>	<b>Q3 2023</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Duration (US Core > US Core 1-3 Years)	(1.90)	(2.48)	(1.01)	(1.90)	(3.97)	(4.98)	(2.91)	(4.95)	(1.26)
IG Credit > Treasury	(0.66)	(0.46)	(0.26)	(0.66)	(0.03)	0.86	3.40	0.44	1.06
High Yield > IG Credit	0.71	1.49	1.05	0.71	3.55	6.49	3.46	6.66	2.20
High Yield > Loans	(1.17)	(2.12)	(0.89)	(1.17)	(2.97)	(5.54)	(5.69)	(4.82)	(1.41)
TIPS > Treasury	1.20	1.26	(0.15)	1.20	1.82	3.24	1.70	5.72	2.74
EMD > Dev Hdg	(1.45)	(1.15)	(1.48)	(1.45)	(1.53)	(3.36)	4.47	(1.92)	(0.56)
EMD > High Yield	(0.31)	(1.09)	(1.48)	(0.31)	(2.77)	(5.21)	0.68	(5.84)	(2.85)
Non-US > US Core	0.66	(0.76)	(1.33)	0.66	(0.77)	(1.32)	2.23	(3.25)	(2.95)
Non-US Hdg > US Core	1.55	1.41	0.92	1.55	2.45	5.54	2.09	2.83	0.82
FI Currency Impact	(0.89)	(2.17)	(2.25)	(0.89)	(3.22)	(6.86)	0.14	(6.08)	(3.77)

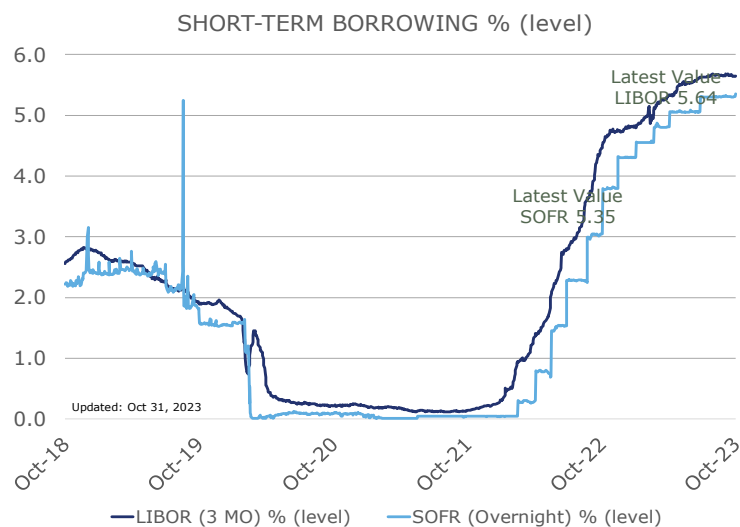
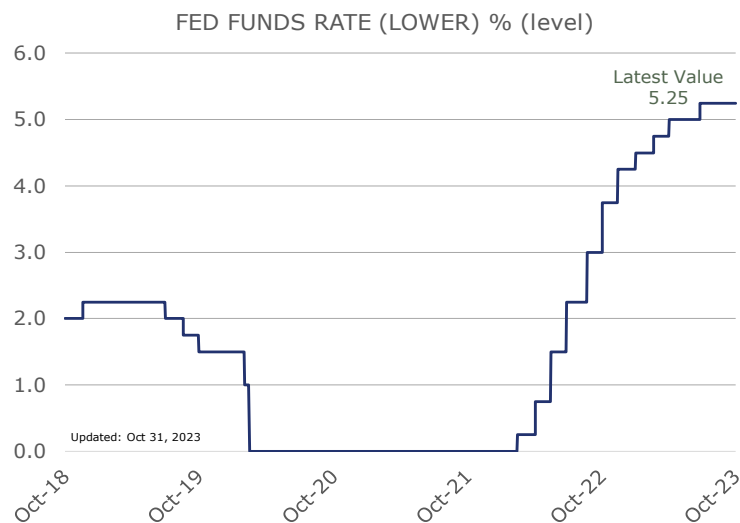
Source: Bloomberg, All returns are in USD

## Market Yields & Breakeven Inflation

Market Yields		Previous 3 Month-ends			Previous 2 Quarter-ends		EOY Prior	1 Yr Ago	3 Yrs Ago	5 Yrs Ago
Govt/Treasury Yields	10/31/23	09/29/23	08/31/23	07/31/23	09/29/23	06/30/23	12/30/22	10/31/22	10/30/20	10/31/18
Fed Funds Target Rate (Upper)	5.50	5.50	5.50	5.50	5.50	5.25	4.50	3.25	0.25	2.25
2-Year Treasury	5.09	5.05	4.87	4.88	5.05	4.90	4.43	4.49	0.16	2.87
5-Year Treasury	4.86	4.61	4.26	4.18	4.61	4.16	4.01	4.23	0.39	2.98
10-Year Treasury	4.93	4.57	4.11	3.96	4.57	3.84	3.88	4.05	0.88	3.14
30-Year Treasury	5.10	4.70	4.21	4.01	4.70	3.86	3.97	4.17	1.66	3.39
10-Year Real Treasury	2.52	2.23	1.87	1.59	2.23	1.62	1.58	1.54	(0.83)	1.08
Term Spreads	10/31/23	09/29/23	08/31/23	07/31/23	09/29/23	06/30/23	12/30/22	10/31/22	10/30/20	10/31/18
5 - 2 Year Treasury Spread	(0.24)	(0.44)	(0.61)	(0.70)	(0.44)	(0.75)	(0.43)	(0.26)	0.23	0.10
10 - 5 Year Treasury Spread	0.08	(0.04)	(0.15)	(0.22)	(0.04)	(0.32)	(0.13)	(0.18)	0.49	0.17
10 - 2 Year Treasury Spread	(0.16)	(0.48)	(0.76)	(0.92)	(0.48)	(1.06)	(0.56)	(0.44)	0.72	0.27
30 - 10 Year Treasury Spread	0.16	0.13	0.10	0.04	0.13	0.02	0.08	0.11	0.78	0.24
30 - 2 Year Treasury Spread	0.00	(0.35)	(0.66)	(0.87)	(0.35)	(1.04)	(0.47)	(0.32)	1.50	0.52
Market Yields	10/31/23	09/29/23	08/31/23	07/31/23	09/29/23	06/30/23	12/30/22	10/31/22	10/30/20	10/31/18
Bloomberg U.S. Treasury YTW	5.03	4.85	4.51	4.43	4.85	4.37	4.18	4.39	0.58	3.03
Bloomberg U.S. Aggregate YTW	5.65	5.39	4.97	4.85	5.39	4.81	4.68	5.01	1.24	3.59
Bloomberg U.S. Long Treasury YTW	5.22	4.85	4.34	4.13	4.85	3.97	4.08	4.37	1.50	3.38
Bloomberg U.S. Long Govt/Credit YTW	5.91	5.54	5.04	4.85	5.54	4.75	4.91	5.33	2.46	4.31
Credit Spreads	10/31/23	09/29/23	08/31/23	07/31/23	09/29/23	06/30/23	12/30/22	10/31/22	10/30/20	10/31/18
Bloomberg Investment Grade OAS	1.29	1.21	1.18	1.12	1.21	1.23	1.30	1.58	1.25	1.18
Bloomberg High Yield OAS	4.37	3.94	3.72	3.67	3.94	3.90	4.69	4.64	5.09	3.71
Breakeven Inflation Rates	10/31/23	09/29/23	08/31/23	07/31/23	09/29/23	06/30/23	12/30/22	10/31/22	10/30/20	10/31/18
1-Year Breakeven Inflation	2.23	1.73	1.50	1.58	1.73	1.83	2.14	2.73	0.85	0.37
2-Year Breakeven Inflation	2.26	2.05	1.98	2.10	2.05	2.11	2.31	2.86	1.24	1.51
5-Year Breakeven Inflation	2.38	2.25	2.17	2.31	2.25	2.19	2.38	2.66	1.59	1.91
10-Year Breakeven Inflation	2.42	2.34	2.24	2.37	2.34	2.23	2.30	2.51	1.71	2.06
5-Year 5-Year Forward Breakeven Inflation	2.48	2.43	2.28	2.44	2.43	2.22	2.20	2.32	1.82	2.18

Source: Bloomberg

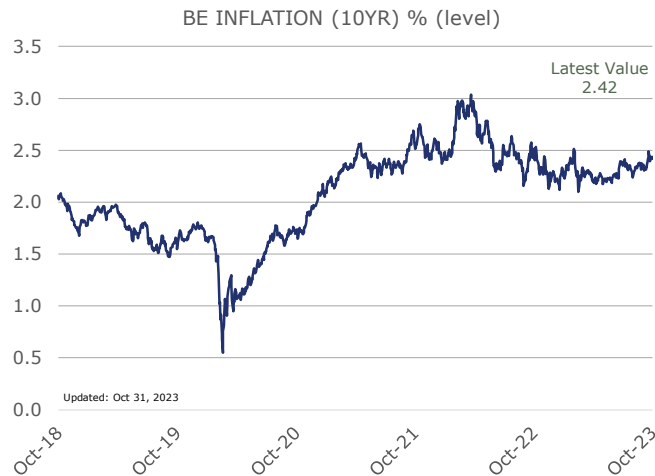
# Short Rates



Data Source: Bloomberg

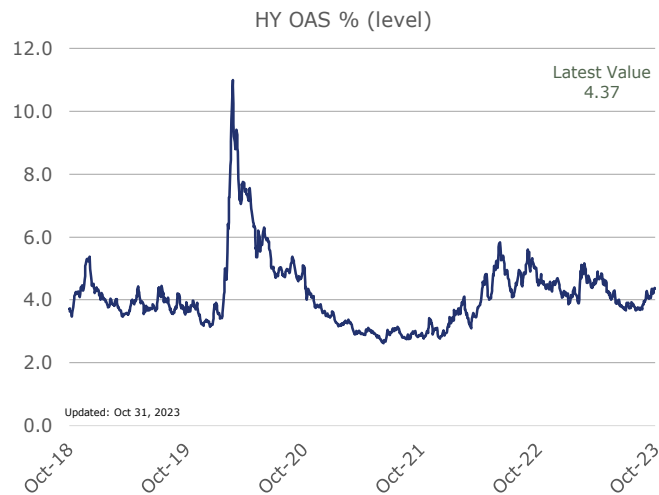
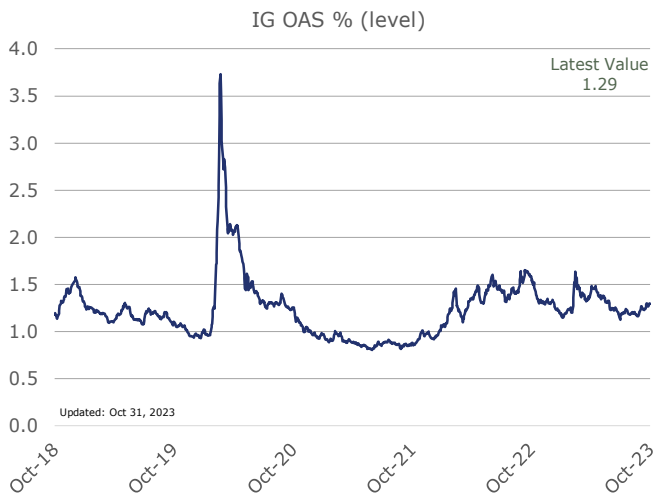
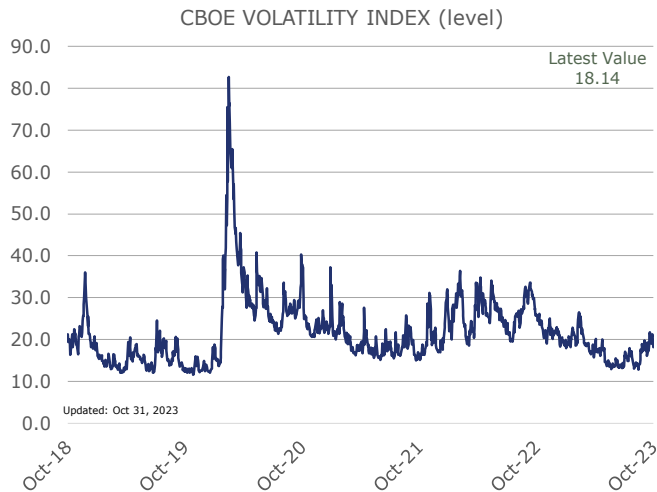
LIBOR: London Inter-bank Offered Rate  
 SOFR: Federal Reserve Bank NY Secured Overnight Financing Rate

# Treasury Rates

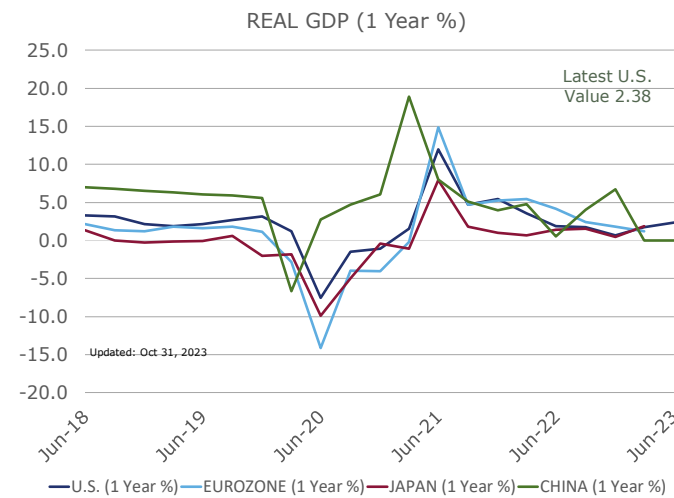
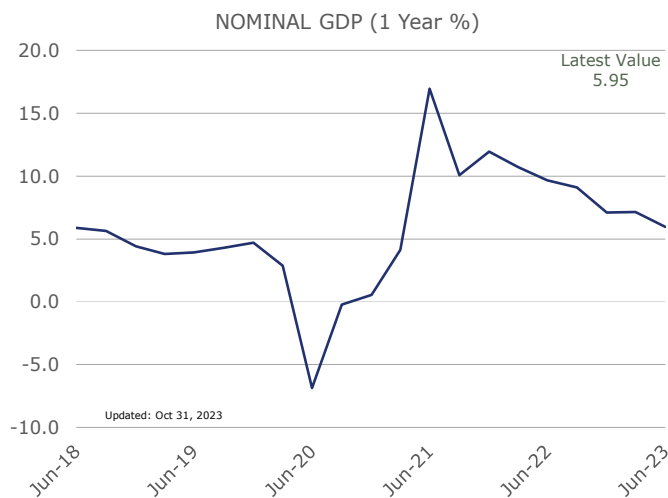
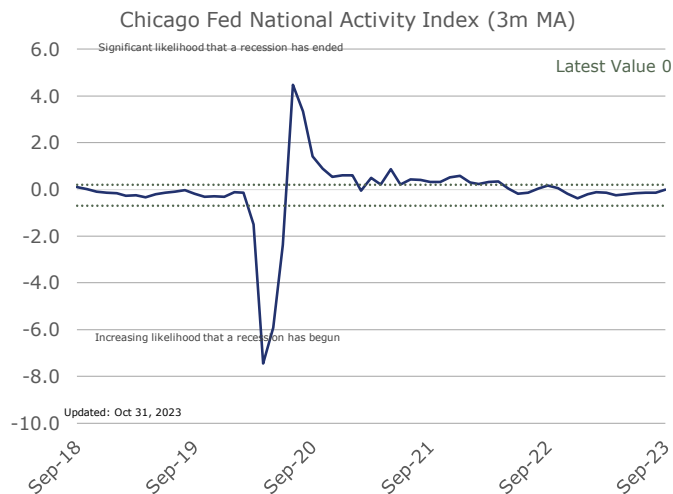




# Volatility & Credit Risk

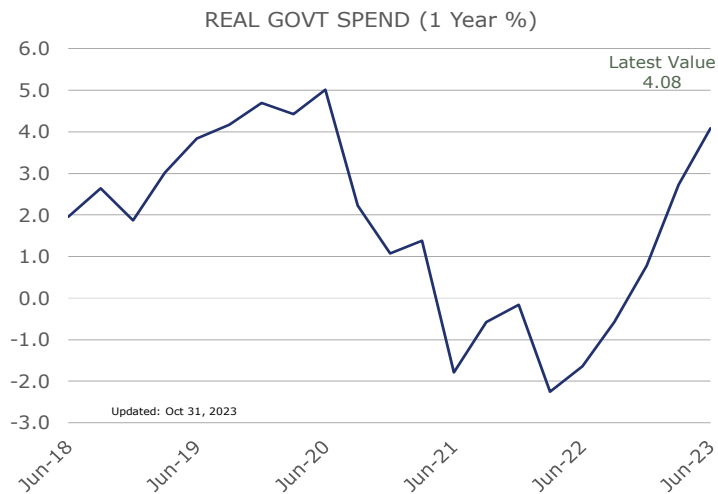
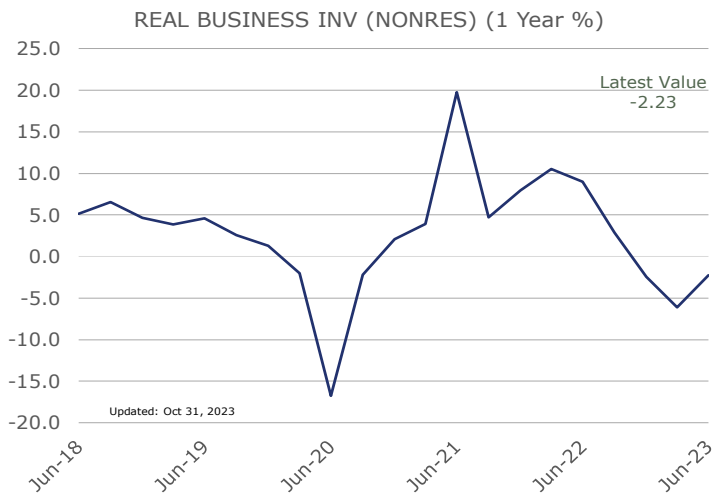
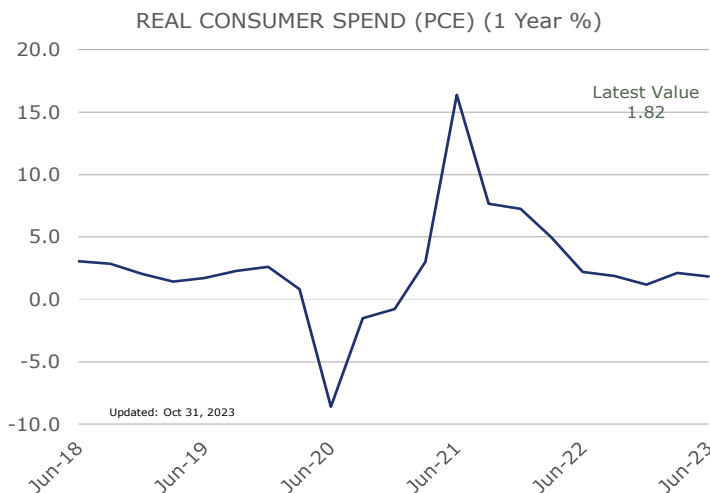


# Economic Growth



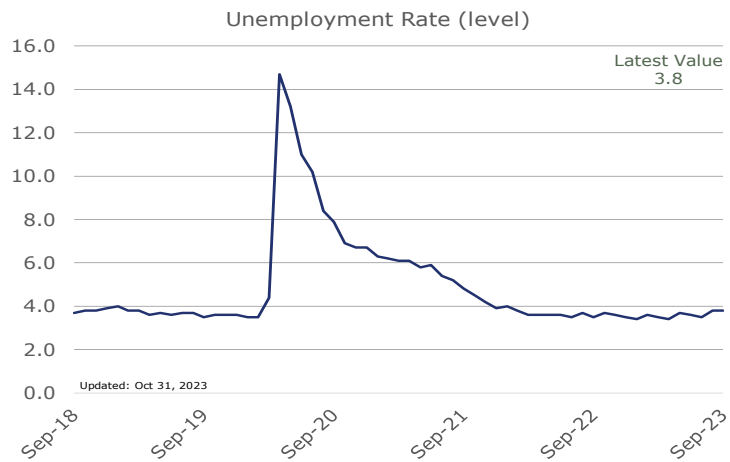
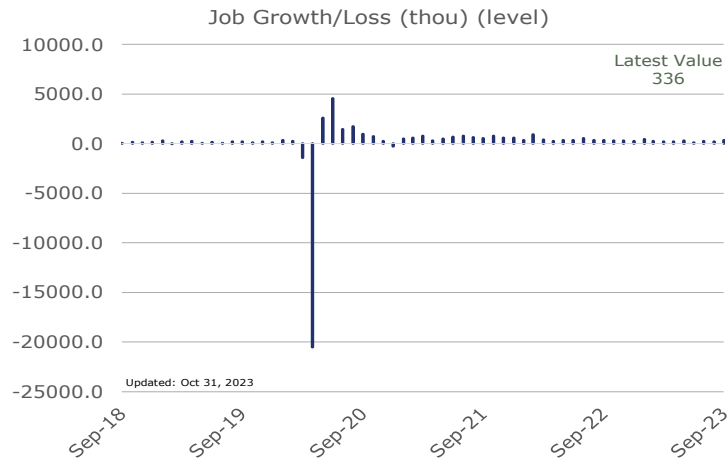
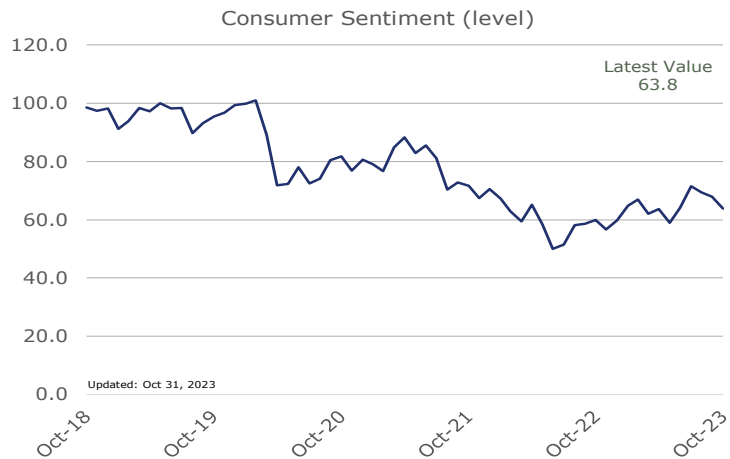
Data Sources: Bloomberg

Economic Growth

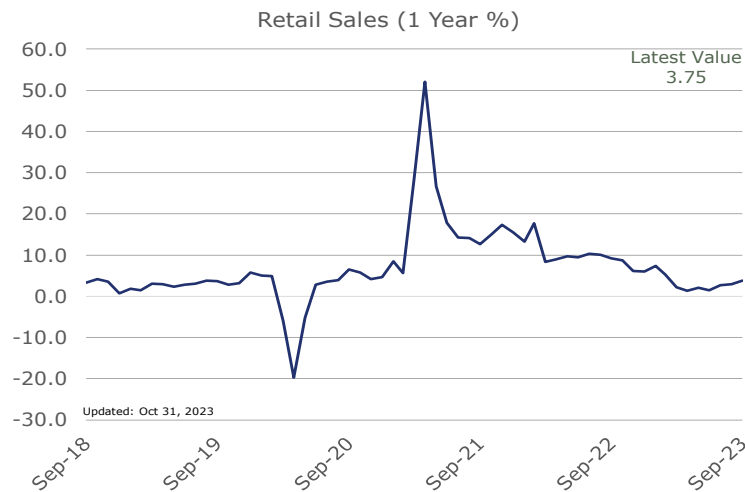
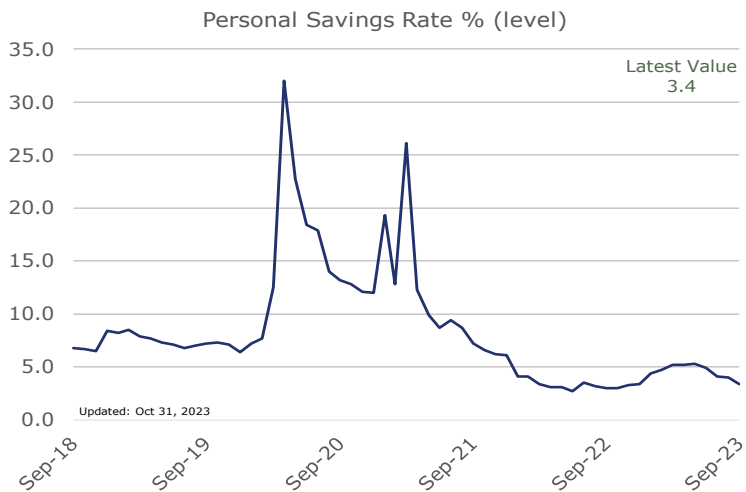
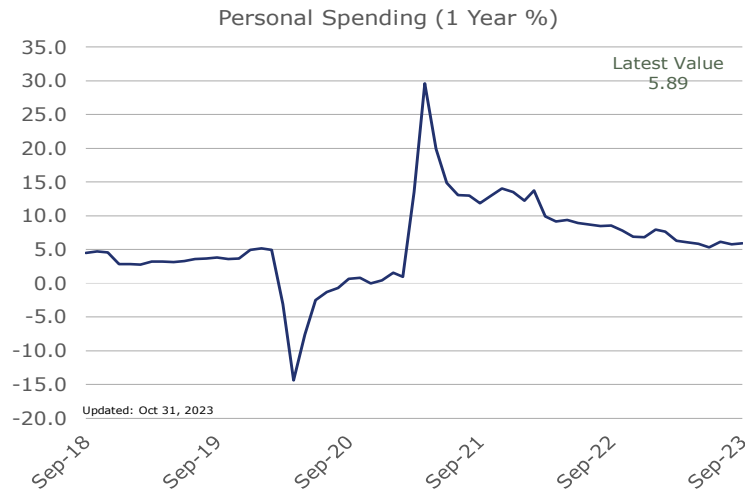
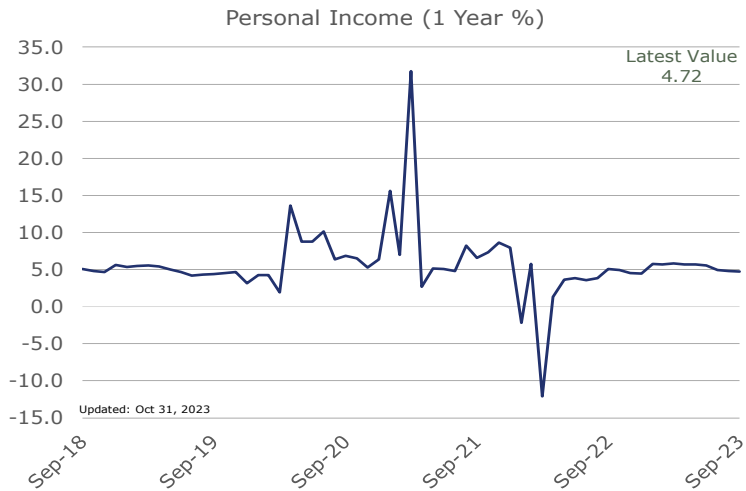


Data Sources: Bloomberg

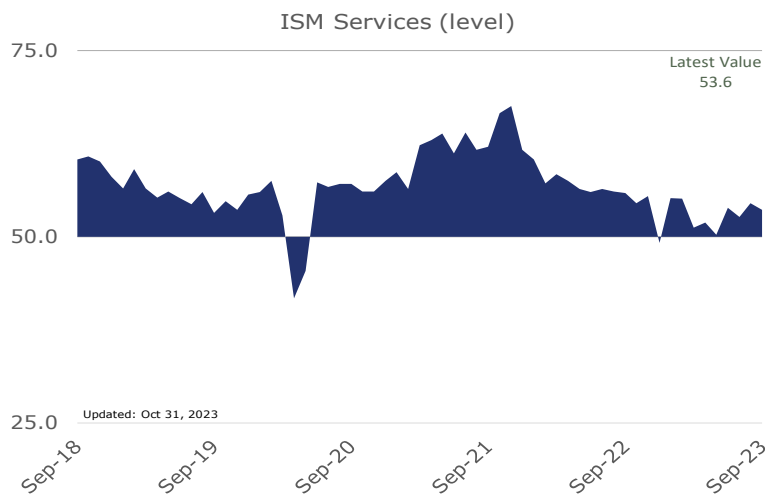
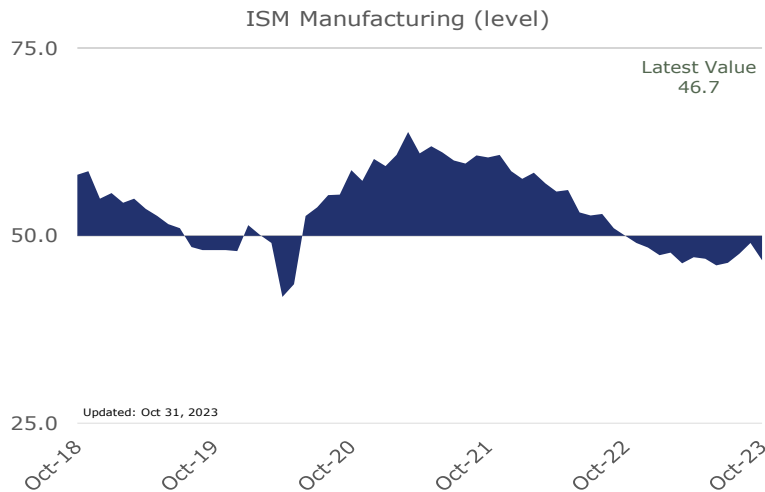
## Consumers & Employment



# Income & Spending

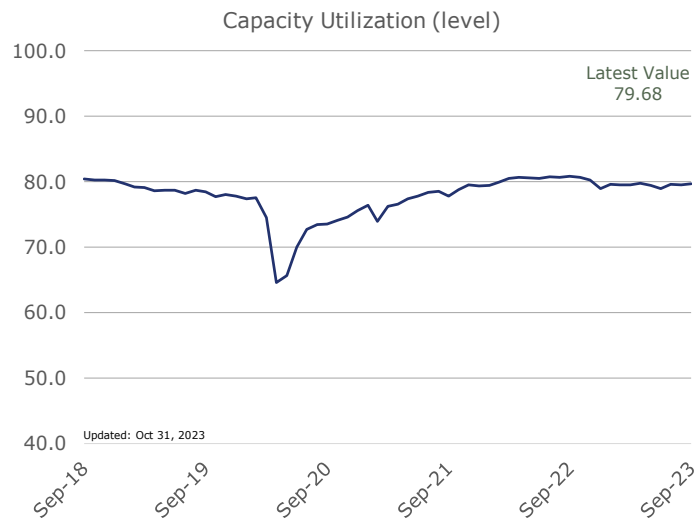


# ISM Surveys

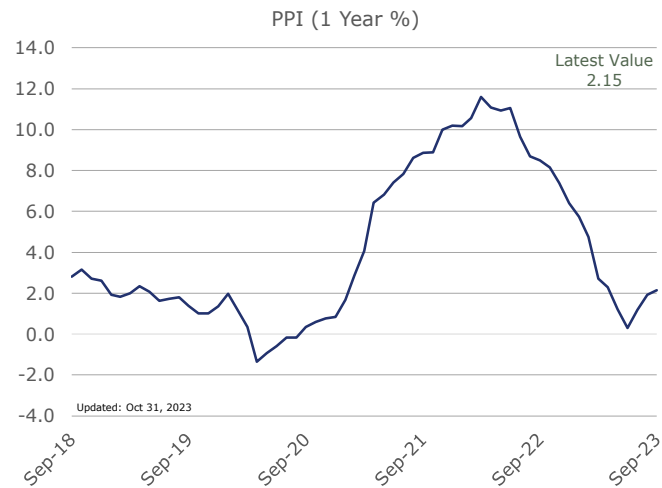
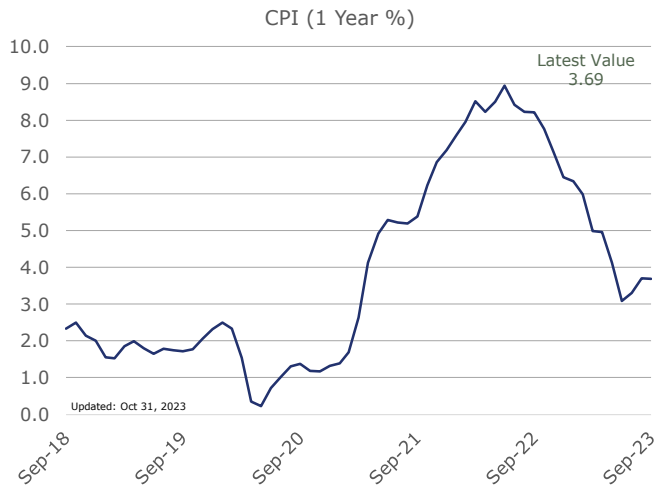


Data Source: Bloomberg

# Manufacturing Activity

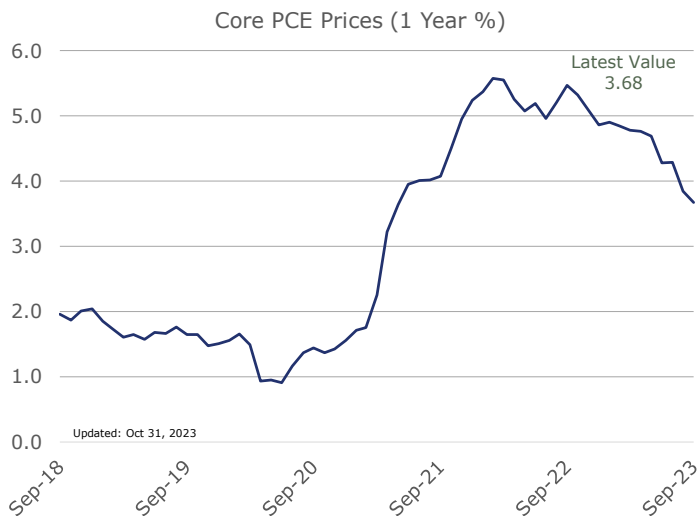
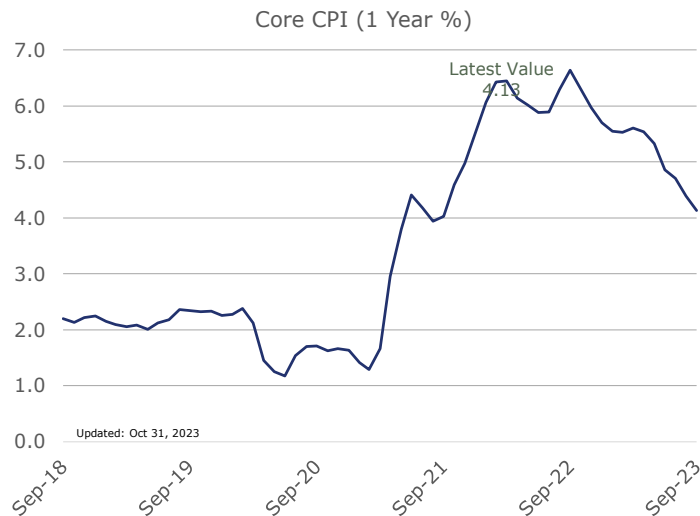


# Price Indexes



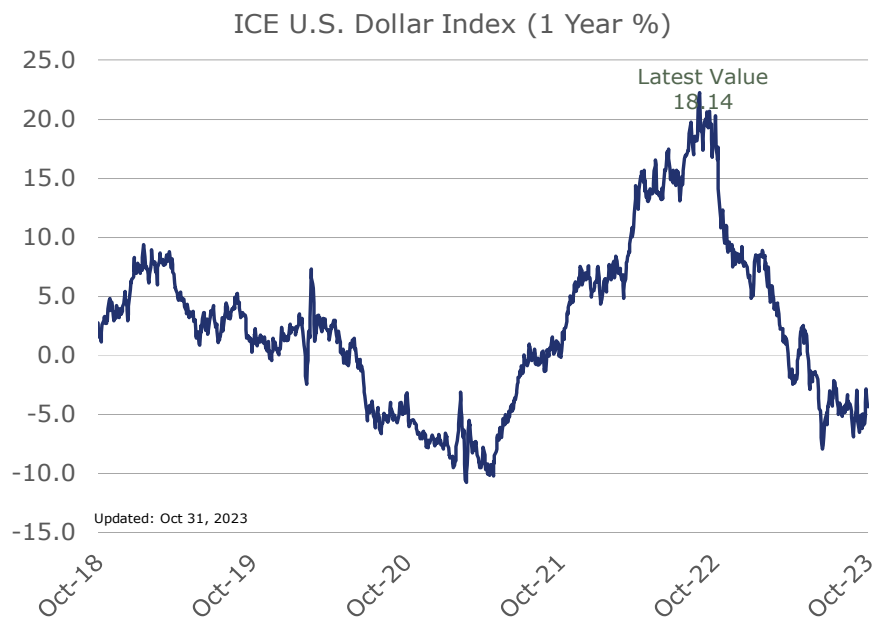


# Core Price Indexes



Data Sources: Bloomberg

U.S. Dollar

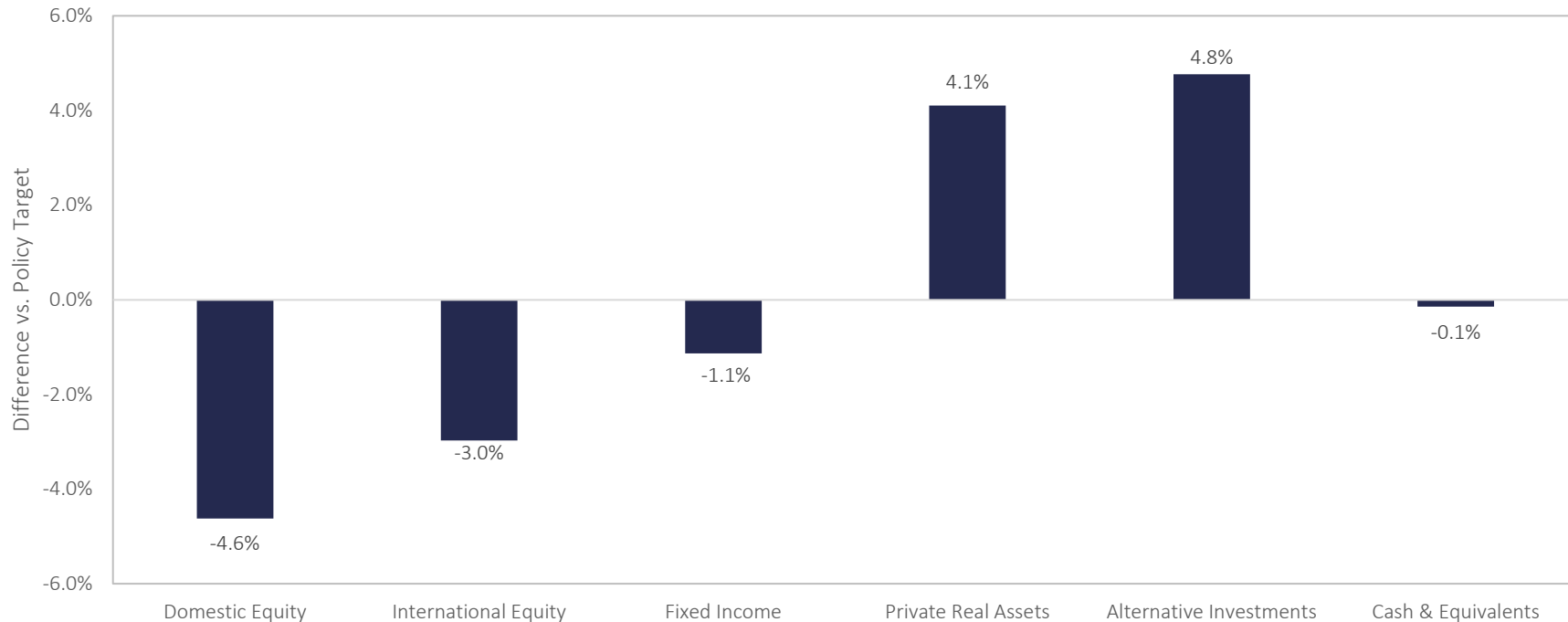


# Total Fund

# Projected Deviations from the Benchmark

As of October 31, 2023

Projected Asset Allocation Difference vs. Target



- Includes committed, but unfunded amounts for Real Assets (\$2.07 billion) and Alternatives (\$2.63 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

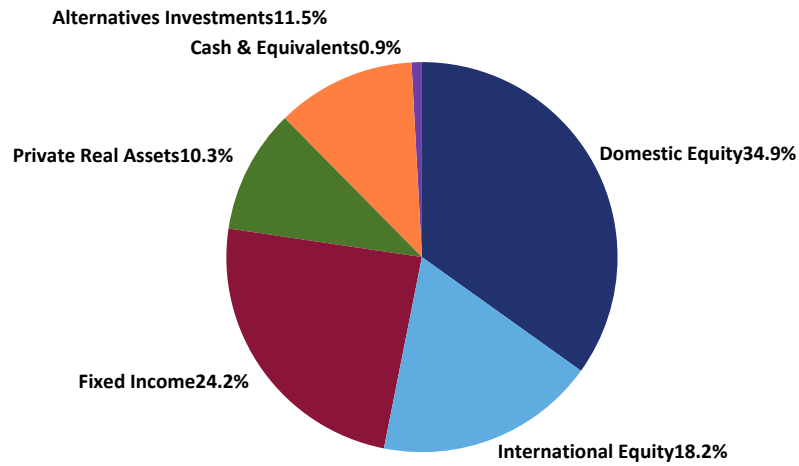
Real Assets Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

# Asset Allocation

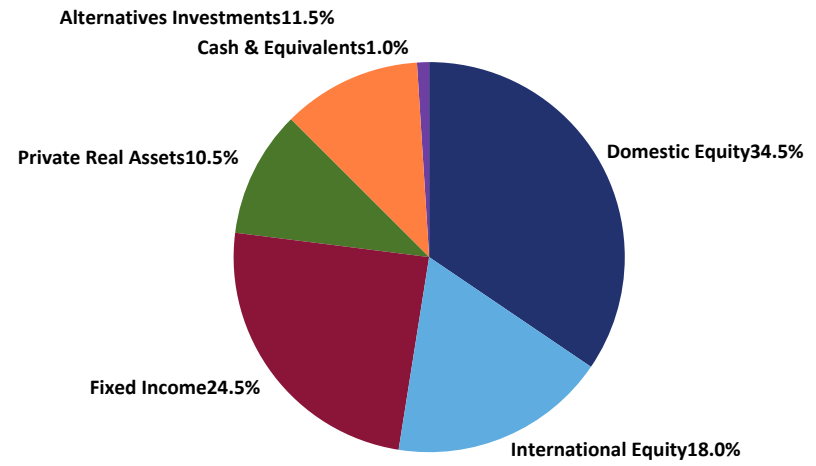
Total Fund

Periods Ended As of October 31, 2023

Actual Allocation



Target Allocation



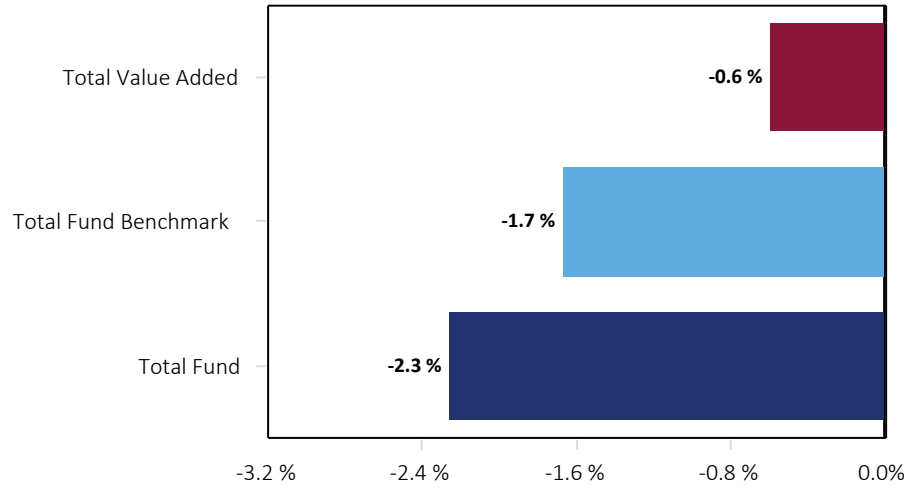
	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	47,885	100.0	100.0	0.0	
Domestic Equity	16,709	34.9	34.5	0.4	189
International Equity	8,728	18.2	18.0	0.2	109
Fixed Income	11,603	24.2	24.5	-0.3	-129
Private Real Assets	4,920	10.3	10.5	-0.2	-108
Alternatives Investments	5,515	11.5	11.5	0.0	8
Cash & Equivalents	409	0.9	1.0	-0.1	-69

# Total Fund Attribution

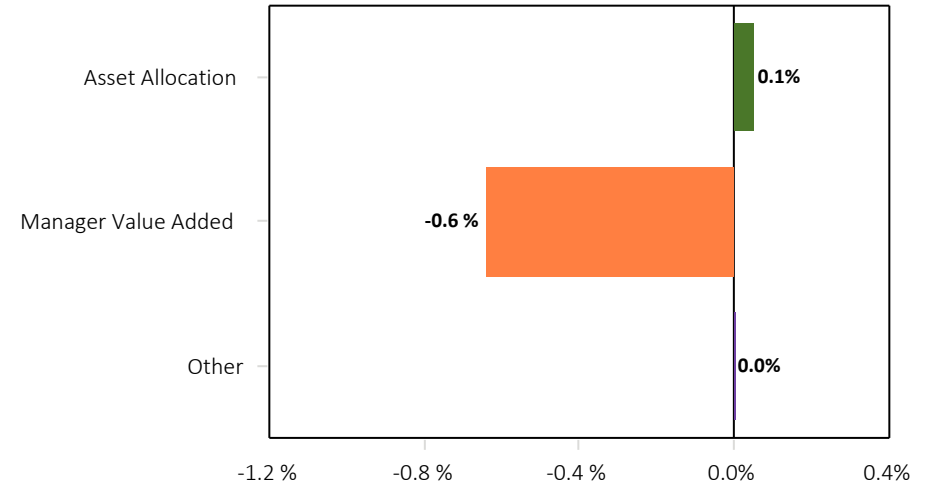
Total Fund

1 Month Ending October 31, 2023

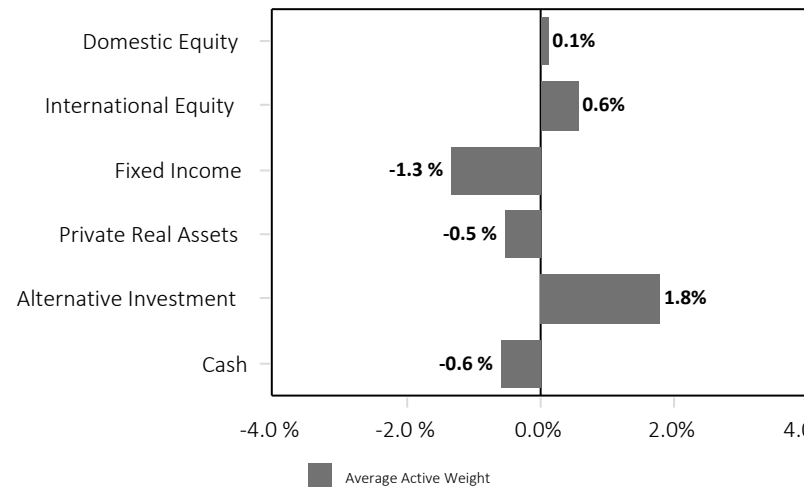
## Total Fund Performance



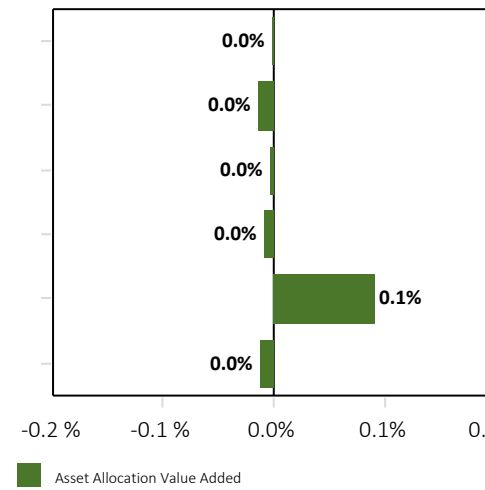
## Total Value Added:-0.6 %



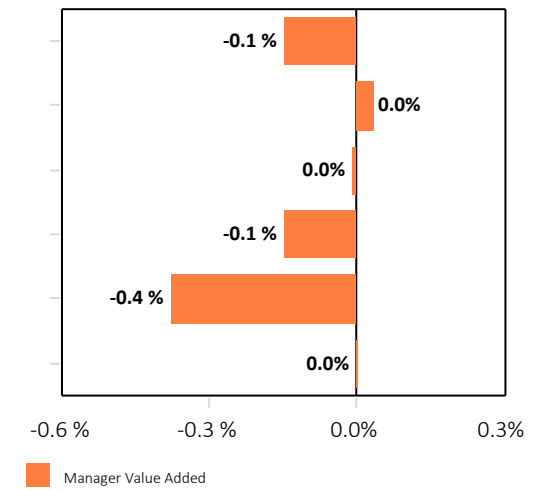
## Asset Class Under or Overweighting



## Asset Allocation Value Added:0.1%



## Total Manager Value Added:-0.6 %



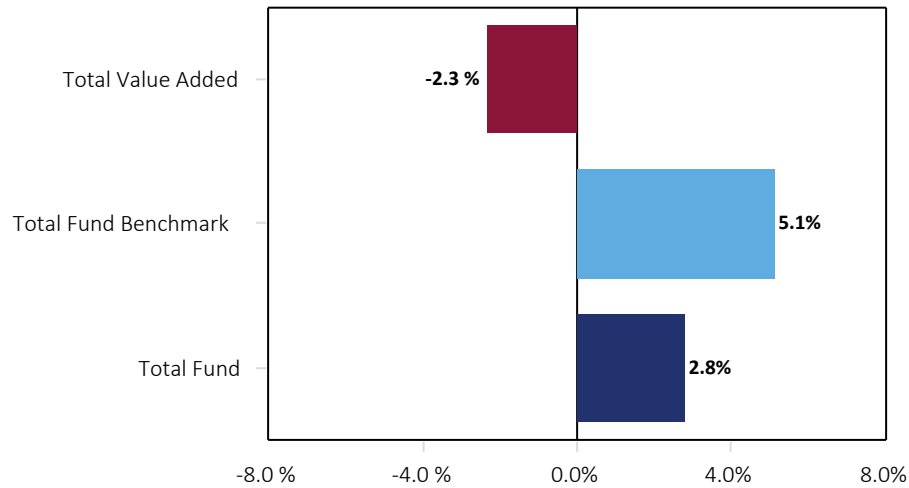
Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

# Total Fund Attribution

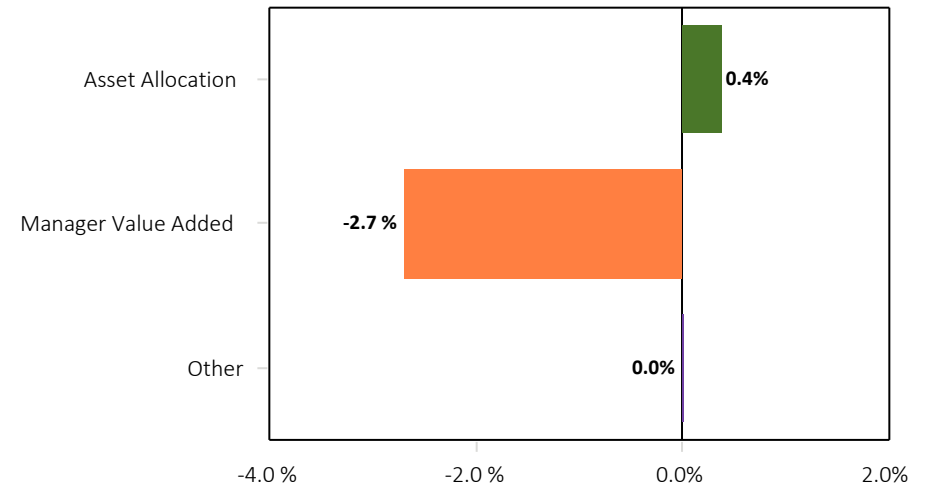
Total Fund

Year To Date Ending October 31, 2023

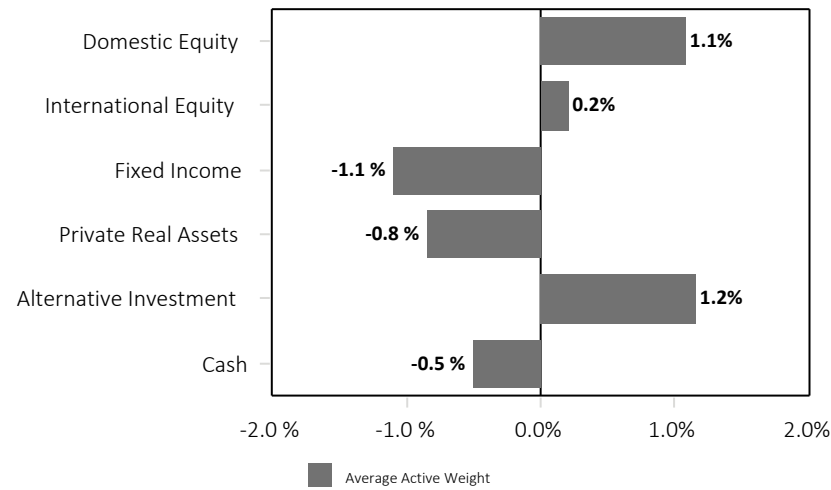
## Total Fund Performance



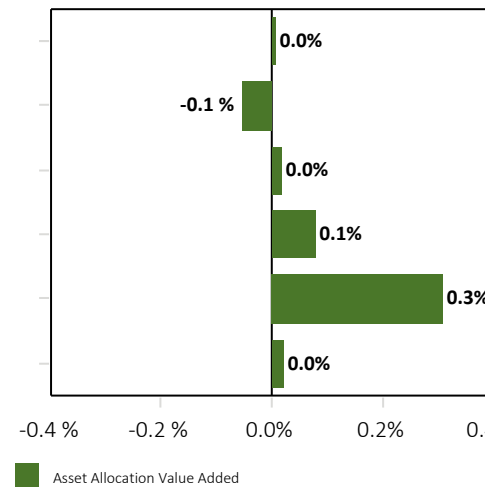
## Total Value Added:-2.3 %



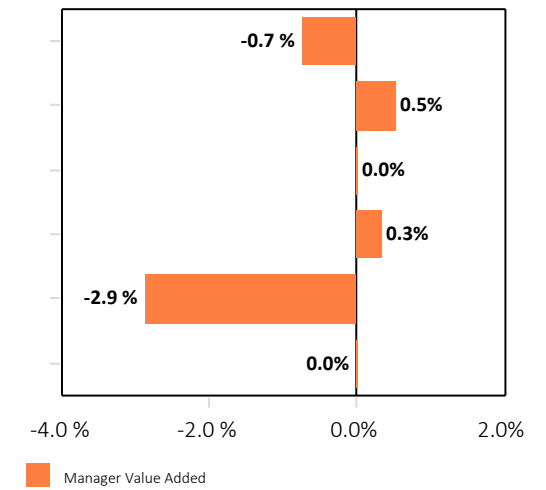
## Asset Class Under or Overweighting



## Asset Allocation Value Added:0.4%



## Total Manager Value Added:-2.7 %



Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

# Asset Class Returns

Periods Ended October 31, 2023

	Performance (%)									
	1 Month	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>-2.25</b>	<b>2.92</b>	<b>5.23</b>	<b>5.68</b>	<b>6.93</b>	<b>6.69</b>	<b>7.49</b>	<b>7.82</b>	<b>9.44</b>	<b>1/1/1982</b>
Total Fund - Net	-2.26	2.80	5.09	5.52	6.76	6.49				
Total Fund Benchmark	-1.67	5.12	5.98	4.50	6.26	6.33	6.95			
<b>Domestic Equity</b>	<b>-3.00</b>	<b>6.12</b>	<b>6.03</b>	<b>8.33</b>	<b>9.33</b>	<b>9.64</b>	<b>9.21</b>	<b>9.70</b>	<b>11.26</b>	<b>1/1/1982</b>
Domestic Equity - Net	-3.00	5.99	5.87	8.16	9.14	9.42				
Custom Benchmark (U.S. Equity)	-2.59	8.01	7.47	9.03	10.13	10.46	9.29	9.51		
U.S. Equity IMRF Custom Benchmark	-2.79	5.16	4.93	8.30	8.82					
<b>International Equity</b>	<b>-3.91</b>	<b>4.14</b>	<b>15.15</b>	<b>4.39</b>	<b>4.74</b>	<b>3.83</b>	<b>6.48</b>	<b>6.43</b>	<b>7.21</b>	<b>9/1/1986</b>
International Equity - Net	-3.92	3.89	14.79	4.03	4.38	3.48				
MSCI AC World ex USA (Net)	-4.13	0.99	12.07	3.03	3.46	2.54	5.47			
International Equity IMRF Custom Benchmark	-4.19	0.58	11.79	2.47	3.20					
<b>Fixed Income</b>	<b>-1.37</b>	<b>-0.27</b>	<b>2.64</b>	<b>-3.67</b>	<b>0.99</b>	<b>1.82</b>	<b>3.76</b>	<b>4.74</b>	<b>7.27</b>	<b>1/1/1982</b>
Fixed Income - Net	-1.37	-0.33	2.57	-3.75	0.89	1.69				
Custom Benchmark (Fixed Income)	-1.33	-0.41	2.42	-4.29	0.75	1.29	3.02	4.26	6.76	
Fixed Income IMRF Custom Benchmark	-1.33	-0.41	2.41	-4.05	0.71					
<b>Private Real Assets</b>	<b>-1.44</b>	<b>-3.92</b>	<b>-5.29</b>						<b>1.65</b>	<b>3/1/2022</b>
Private Real Assets - Net	-1.45	-3.99	-5.36						1.58	
Custom Benchmark (Private Real Assets)	0.01	-7.42	-11.96						-0.77	
<b>Real Estate</b>	<b>-1.02</b>	<b>-4.22</b>	<b>-6.03</b>	<b>10.11</b>	<b>8.74</b>	<b>9.72</b>	<b>7.83</b>	<b>6.99</b>	<b>5.84</b>	<b>5/1/1985</b>
Real Estate - Net	-1.04	-4.29	-6.09	10.05	8.68	9.68				
Blended Benchmark (Real Estate)	0.00	-8.14	-12.89	6.19	4.62	7.09	6.90	7.05	7.38	
<b>Agriculture</b>	<b>-10.08</b>	<b>-8.07</b>	<b>-5.57</b>	<b>-0.41</b>	<b>0.06</b>	<b>4.30</b>	<b>7.17</b>		<b>6.02</b>	<b>10/1/1997</b>
NCREIF Farmland Index	0.00	2.63	5.98	7.22	6.16	8.01	12.45		10.94	
<b>Timberland</b>	<b>3.14</b>	<b>8.45</b>	<b>12.77</b>	<b>5.45</b>	<b>4.38</b>	<b>3.55</b>	<b>3.97</b>	<b>6.65</b>	<b>7.13</b>	<b>10/1/1992</b>
NCREIF Timberland Index	0.00	4.90	10.03	9.15	5.87	5.93	7.04	7.34	8.44	

Benchmark definitions on next page.

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



# Asset Class Returns

*Periods Ended October 31, 2023*

	Performance (%)									
	1 Month	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
<b>Unlisted Infrastructure</b>	<b>-0.14</b>	<b>10.71</b>	<b>16.01</b>	<b>14.43</b>	<b>12.17</b>				<b>12.17</b>	<b>4/1/2018</b>
Blended Benchmark (Unlisted Infrastructure)	0.29	7.11	7.37	9.10	9.06				9.05	
<b>Alternatives Investments</b>	<b>0.10</b>	<b>3.44</b>	<b>3.50</b>	<b>19.05</b>	<b>15.48</b>	<b>12.76</b>	<b>10.51</b>	<b>12.78</b>	<b>11.39</b>	<b>2/1/1986</b>
Alternatives Investments - Net	0.10	3.44	3.50	19.04	15.45	12.57				
Custom Benchmark (Alternative Investments)	3.44	32.66	16.83	6.31	7.38	8.19	9.59	11.31	12.06	
<b>Private Equity</b>	<b>0.31</b>	<b>3.52</b>	<b>3.59</b>	<b>21.77</b>	<b>18.00</b>	<b>15.41</b>	<b>13.38</b>	<b>15.44</b>	<b>13.63</b>	<b>2/1/1986</b>
Blended Benchmark (Private Equity)	3.61	33.83	16.89	6.16	7.29	8.14	9.56			
<b>Cash</b>	<b>0.45</b>	<b>4.26</b>	<b>4.91</b>	<b>3.37</b>	<b>3.29</b>	<b>2.11</b>	<b>1.28</b>	<b>3.04</b>	<b>3.76</b>	<b>7/1/1986</b>
90 Day U.S. Treasury Bill	0.45	4.06	4.77	1.85	1.77	1.15	1.39	2.39	3.12	

Benchmark definitions on next page.

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

## Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Domestic Equity Custom	3/1/2022	Present	93% Russell 3000 Index, 7% FTSE Global Core Infrastructure 50/50 Index (Net)
Benchmark	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	1/1/2013	Present	100% NCREIF Fund Index-ODCE (VW) (Net)**
Benchmark	1/1/2007	12/31/2012	100% NPI + 1%
	1/1/2005	12/31/2016	100% Consumer Price Index + 5%
Alternatives Custom	3/1/2022	Present	95% MSCI World World Index (Net) 1 Qtr Lagged +3%, 5% S&P LSTA Leveraged Loan 100 Index +2%
Benchmark	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%
	2/1/1986	12/31/2002	100% Annualized rate of 15.0%
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	3/1/2022	Present	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.

# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
<b>Domestic Equity</b>	<b>17,421,960,223</b>	<b>35.61</b>	<b>16,709,271,672</b>	<b>34.89</b>
<b>Large Cap Growth</b>	<b>3,671,652,397</b>	<b>7.51</b>	<b>3,592,197,842</b>	<b>7.50</b>
Sands Capital	1,493,207,838	3.05	1,444,768,939	3.02
Xponance Russell 1000 G	2,178,444,558	4.45	2,147,428,903	4.48
<b>Large Cap Value</b>	<b>3,718,608,823</b>	<b>7.60</b>	<b>3,496,570,688</b>	<b>7.30</b>
Dodge & Cox	1,453,210,778	2.97	1,398,945,226	2.92
LSV Asset	881,270,598	1.80	841,925,534	1.76
NTGI S&P 500 Value	1,384,127,447	2.83	1,255,699,928	2.62
<b>Large Cap Pass. Core</b>	<b>1,807,388,988</b>	<b>3.69</b>	<b>1,758,759,239</b>	<b>3.67</b>
NTGI MarketCap Idx.	1,807,388,988	3.69	1,758,759,239	3.67
<b>Factor Diversity Strategies</b>	<b>2,600,919,247</b>	<b>5.32</b>	<b>2,532,910,808</b>	<b>5.29</b>
U.S. Large Cap FDP-GSAM	2,600,919,247	5.32	2,532,910,808	5.29
<b>Quantitative Factor Strategies</b>	<b>2,253,058,652</b>	<b>4.61</b>	<b>2,193,358,470</b>	<b>4.58</b>
Quantitative US Equity - SciBeta	2,253,058,652	4.61	2,193,358,470	4.58
<b>Small Cap Multi-Factor Strategies</b>	<b>525,082,421</b>	<b>1.07</b>	<b>497,450,840</b>	<b>1.04</b>
U.S. Small Cap Equity Multi-Factor - S&P	525,082,421	1.07	497,450,840	1.04
<b>Small Cap Growth</b>	<b>705,095,382</b>	<b>1.44</b>	<b>604,298,310</b>	<b>1.26</b>
Frontier Capital	705,095,382	1.44	604,298,310	1.26
<b>Small Cap Value</b>	<b>847,578,353</b>	<b>1.73</b>	<b>746,883,056</b>	<b>1.56</b>
Channing	311,325,915	0.64	292,392,825	0.61
William Blair Small Cap Value	536,252,438	1.10	454,490,231	0.95
<b>Public Real Assets</b>	<b>1,292,575,962</b>	<b>2.64</b>	<b>1,286,842,420</b>	<b>2.69</b>

# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
Brookfield	377,521,053	0.77	374,958,464	0.78
Cohen & Steers	915,054,909	1.87	911,883,955	1.90
<b>International Equity</b>	<b>9,086,988,649</b>	<b>18.57</b>	<b>8,727,947,286</b>	<b>18.23</b>
<b>Intl Large Cap Growth</b>	<b>1,467,600,896</b>	<b>3.00</b>	<b>1,417,920,035</b>	<b>2.96</b>
EARNEST Part. Intl	621,968,278	1.27	604,698,661	1.26
William Blair	845,632,618	1.73	813,221,374	1.70
<b>Intl Large Cap Value</b>	<b>1,451,222,023</b>	<b>2.97</b>	<b>1,399,496,651</b>	<b>2.92</b>
Brandes Investment	681,964,158	1.39	658,129,281	1.37
Mondrian	635,457,463	1.30	612,391,661	1.28
Lazard	133,800,402	0.27	128,975,708	0.27
<b>Intl Large Cap Core</b>	<b>4,402,136,441</b>	<b>9.00</b>	<b>4,419,057,416</b>	<b>9.23</b>
Arrowstreet Capital	1,151,647,418	2.35	1,110,550,162	2.32
Brown Capital	514,570,302	1.05	493,962,979	1.03
GlobeFlex Capital	847,542,158	1.73	804,975,077	1.68
Xponance Intl EQ	95,100,133	0.19	91,099,740	0.19
Progress Intl Equity	404,313	0.00	403,139	0.00
NTGI ACWI ex US Index Fund	1,792,872,117	3.66	1,918,066,318	4.01
<b>Intl All Cap Developed</b>	<b>156,484,142</b>	<b>0.32</b>	<b>150,140,269</b>	<b>0.31</b>
Ativo International	156,484,142	0.32	150,140,269	0.31
<b>International Small Cap</b>	<b>523,931,467</b>	<b>1.07</b>	<b>491,434,272</b>	<b>1.03</b>
Franklin Templeton	212,710,550	0.43	201,242,309	0.42
William Blair IntSC	311,220,917	0.64	290,191,963	0.61

# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
<b>Emerging Mkt Equity</b>	<b>1,085,613,681</b>	<b>2.22</b>	<b>849,898,644</b>	<b>1.77</b>
Genesis Investment Management, LLP.	656,943,512	1.34	438,962,539	0.92
Arrowstreet EME	428,670,168	0.88	410,936,105	0.86

# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
<b>Fixed Income</b>	<b>11,827,497,798</b>	<b>24.18</b>	<b>11,603,088,565</b>	<b>24.23</b>
<b>Domestic Fixed Core</b>	<b>3,598,085,618</b>	<b>7.35</b>	<b>3,526,469,354</b>	<b>7.36</b>
Attucks Fixed Income	85,715,652	0.18	84,516,929	0.18
Brandes FI Core	321,989,643	0.66	317,243,197	0.66
EARNEST Partners	856,081,884	1.75	840,449,045	1.76
Garcia Hamilton	904,020,901	1.85	881,644,027	1.84
Ramirez Asset Management	499,762,611	1.02	489,528,541	1.02
Xponance Yield Advantage Agg.	930,514,928	1.90	913,087,615	1.91
<b>Domestic Fixed Passive Core</b>	<b>2,671,109,907</b>	<b>5.46</b>	<b>2,629,174,371</b>	<b>5.49</b>
NTGI Blmbg Agg.	1,087,683,213	2.22	1,070,711,777	2.24
BlackRock US Debt I	1,583,426,694	3.24	1,558,462,594	3.25
<b>Domestic Fixed Core Plus</b>	<b>2,804,053,279</b>	<b>5.73</b>	<b>2,744,147,217</b>	<b>5.73</b>
LM Capital Group FI	808,516,661	1.65	792,747,054	1.66
Progress Inv. FI	1,107	0.00	1,146	0.00
Loop Capital Management	550,549,779	1.13	540,340,817	1.13
Western Asset	901,000,896	1.84	878,251,498	1.83
Longfellow Core Plus	543,984,836	1.11	532,806,702	1.11
<b>Bank Loans</b>	<b>1,675,840,950</b>	<b>3.43</b>	<b>1,637,303,566</b>	<b>3.42</b>
Barings Global Loan Fund	1,675,840,950	3.43	1,637,303,566	3.42
<b>Emerging Markets Debt</b>	<b>306,142</b>	<b>0.00</b>	<b>317,499</b>	<b>0.00</b>
Standish-Mellon EMD	306,142	0.00	317,499	0.00
<b>High Yield</b>	<b>1,078,101,901</b>	<b>2.20</b>	<b>1,065,696,136</b>	<b>2.23</b>
MacKay Shields	1,078,101,901	2.20	1,065,696,136	2.23

# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
<b>Private Real Assets</b>	<b>4,868,443,851</b>	<b>9.95</b>	<b>4,920,305,336</b>	<b>10.28</b>
<b>Real Estate</b>	<b>4,415,589,874</b>	<b>9.03</b>	<b>4,397,860,049</b>	<b>9.18</b>
<b>Real Estate Core Cmp</b>	<b>2,223,995,974</b>	<b>4.55</b>	<b>2,201,834,764</b>	<b>4.60</b>
TA Assoc. Buckhead	893,469,458	1.83	893,469,458	1.87
Barings Euro Core Property	130,429,781	0.27	130,214,202	0.27
Blackstone Property Euro	179,161,923	0.37	178,865,799	0.37
INVESCO Core Real Estate	229,091,981	0.47	223,787,672	0.47
INVESCO European real estate	55,234,684	0.11	54,065,926	0.11
AEW Core Property Tr	260,736,803	0.53	255,835,363	0.53
CBRE Core Partners	299,094,514	0.61	294,577,768	0.62
JPM Strategic Property Fund	176,776,830	0.36	171,018,576	0.36
<b>RE Non-Core Cmp</b>	<b>2,191,593,901</b>	<b>4.48</b>	<b>2,196,025,285</b>	<b>4.59</b>
Artemis MWBE Spruce	350,929,713	0.72	340,923,694	0.71
Franklin T. EMREFF	2,399,442	0.00	2,399,442	0.01
Security Capital	86,284,757	0.18	79,139,582	0.17
Dune II	8,015,136	0.02	6,803,633	0.01
Non-Core Real Estate Funds	1,465,007,405	2.99	1,487,045,047	3.11
Non-Core Intl Real Estate	278,885,547	0.57	279,641,986	0.58
Almanac ARS V	71,901	0.00	71,901	0.00
<b>Agriculture</b>	<b>265,175,062</b>	<b>0.54</b>	<b>238,433,179</b>	<b>0.50</b>
Premiere Partners IV	265,175,062	0.54	238,433,179	0.50
<b>Timberland</b>	<b>63,824,685</b>	<b>0.13</b>	<b>65,827,904</b>	<b>0.14</b>
Forest Investment	63,824,685	0.13	65,827,904	0.14
<b>Unlisted Infrastructure</b>	<b>123,854,230</b>	<b>0.25</b>	<b>218,184,204</b>	<b>0.46</b>
Unlisted Infrastructure Funds	123,854,230	0.25	218,184,204	0.46



# Investment Manager Asset Allocation

*Periods Ended October 31, 2023*

	Sep-2023		Oct-2023	
	\$	%	\$	%
<b>Alternatives Investments</b>	<b>5,525,047,421</b>	<b>11.29</b>	<b>5,514,983,087</b>	<b>11.52</b>
<b>Absolute Return</b>	<b>70,938</b>	<b>0.00</b>	<b>70,511</b>	<b>0.00</b>
Aurora Investment	70,938	0.00	70,511	0.00
<b>Private Equity</b>	<b>5,347,119,662</b>	<b>10.93</b>	<b>5,278,857,007</b>	<b>11.02</b>
<b>Abbott S/A Comp.</b>	<b>502,074,896</b>	<b>1.03</b>	<b>503,336,716</b>	<b>1.05</b>
Muller Monroe MPEFF		0.00		0.00
<b>Pantheon S/A Comp.</b>	<b>418,026,500</b>	<b>0.85</b>	<b>423,974,398</b>	<b>0.89</b>
Private Equity Fund - Domestic	3,516,042,669	7.19	3,429,894,724	7.16
Private Equity Fund - International	666,378,302	1.36	664,315,916	1.39
Oakbrook Opportunities Fund	244,597,294	0.50	257,335,253	0.54
<b>Private Credit</b>	<b>177,856,821</b>	<b>0.36</b>	<b>236,055,569</b>	<b>0.49</b>
Private Credit Fund - Domestic	177,856,821	0.36	236,055,569	0.49
<b>Cash &amp; Equivalents</b>	<b>192,527,968</b>	<b>0.39</b>	<b>409,379,022</b>	<b>0.85</b>
<b>Total Fund</b>	<b>48,922,465,910</b>	<b>100.00</b>	<b>47,884,974,969</b>	<b>100.00</b>

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>47,884,974,969</b>	<b>-2.25</b>	<b>2.92</b>	<b>5.23</b>	<b>5.68</b>	<b>6.93</b>	<b>6.69</b>	<b>9.44</b>	<b>1/1/1982</b>
Total Fund - Net		-2.26	2.80	5.09	5.52	6.76	6.49		
Total Fund Benchmark		-1.67	5.12	5.98	4.50	6.26	6.33		
<b>Domestic Equity</b>	<b>16,709,271,672</b>	<b>-3.00</b>	<b>6.12</b>	<b>6.03</b>	<b>8.33</b>	<b>9.33</b>	<b>9.64</b>	<b>11.26</b>	<b>1/1/1982</b>
Domestic Equity - Net		-3.00	5.99	5.87	8.16	9.14	9.42		
Custom Benchmark (U.S. Equity)		-2.59	8.01	7.47	9.03	10.13	10.46		
Russell 3000 Index		-2.65	9.41	8.38	9.19	10.23	10.52	11.26	
U.S. Equity IMRF Custom Benchmark		-2.79	5.16	4.93	8.30	8.82			
<b>Large Cap Equity</b>	<b>11,380,438,576</b>	<b>-2.62</b>	<b>10.08</b>	<b>9.38</b>	<b>8.11</b>	<b>10.11</b>	<b>10.47</b>	<b>11.04</b>	<b>1/1/1982</b>
Large Cap Equity - Net		-2.62	10.01	9.30	8.02	10.02	10.35		
Russell 1000 Index		-2.42	10.28	9.48	9.53	10.71	10.88	11.43	
<b>Large Cap Growth</b>	<b>3,592,197,842</b>	<b>-2.16</b>	<b>22.01</b>	<b>17.07</b>	<b>4.37</b>	<b>12.53</b>	<b>12.36</b>	<b>11.87</b>	<b>1/1/1982</b>
Large Cap Growth - Net		-2.16	21.92	16.95	4.27	12.43	12.23		
LCG Blended Benchmark		-1.42	23.20	18.95	8.70	14.22	13.82		
Russell 1000 Growth Index		-1.42	23.20	18.95	8.70	14.22	13.82	11.38	
<b>Xponance Russell 1000 G</b>	<b>2,147,428,903</b>	<b>-1.42</b>	<b>23.18</b>	<b>18.93</b>	<b>8.70</b>	<b>14.21</b>		<b>11.88</b>	<b>10/1/2018</b>
Xponance Russell 1000 G - Net		-1.42	23.17	18.91	8.68	14.18		11.86	
Russell 1000 Growth Index		-1.42	23.20	18.95	8.70	14.22		11.89	
<b>Sands Capital</b>	<b>1,444,768,939</b>	<b>-3.24</b>	<b>20.30</b>	<b>14.40</b>	<b>-8.22</b>	<b>7.11</b>	<b>9.10</b>	<b>10.51</b>	<b>11/1/2003</b>
Sands Capital - Net		-3.24	20.11	14.16	-8.43	6.87	8.86		
LCG Blended Benchmark		-1.42	23.20	18.95	8.70	14.22	13.82	10.68	
Russell 1000 Growth Index		-1.42	23.20	18.95	8.70	14.22	13.82	10.72	

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							Inception Date
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
<b>Large Cap Value</b>	<b>3,496,570,688</b>	<b>-3.04</b>	<b>3.04</b>	<b>4.76</b>	<b>14.26</b>	<b>8.35</b>	<b>9.12</b>	<b>10.07</b>	<b>10/1/1982</b>
Large Cap Value - Net		-3.04	2.92	4.62	14.11	8.20	8.94		
LCV Blended Benchmark		-3.53	-1.80	0.13	10.21	6.60	7.60		
Russell 1000 Value Index		-3.53	-1.80	0.13	10.21	6.60	7.60	11.18	
<b>Dodge &amp; Cox</b>	<b>1,398,945,226</b>	<b>-3.59</b>	<b>3.34</b>	<b>4.89</b>	<b>15.84</b>	<b>9.23</b>	<b>10.00</b>	<b>9.51</b>	<b>9/1/2003</b>
Dodge & Cox - Net		-3.59	3.17	4.66	15.62	9.00	9.78		
LCV Blended Benchmark		-3.53	-1.80	0.13	10.21	6.60	7.60	7.77	
Russell 1000 Value Index		-3.53	-1.80	0.13	10.21	6.60	7.60	7.90	
<b>LSV Asset</b>	<b>841,925,534</b>	<b>-4.22</b>	<b>-0.45</b>	<b>1.24</b>	<b>13.45</b>	<b>6.82</b>	<b>8.46</b>	<b>9.97</b>	<b>2/1/2003</b>
LSV Asset - Net		-4.22	-0.61	1.08	13.21	6.58	8.20		
LCV Blended Benchmark		-3.53	-1.80	0.13	10.21	6.60	7.60	8.52	
Russell 1000 Value Index		-3.53	-1.80	0.13	10.21	6.60	7.60	8.53	
<b>NTGI S&amp;P 500 Value</b>	<b>1,255,699,928</b>	<b>-1.73</b>	<b>5.78</b>	<b>7.72</b>	<b>13.45</b>	<b>9.26</b>	<b>9.04</b>	<b>6.36</b>	<b>8/1/1999</b>
NTGI S&P 500 Value - Net		-1.73	5.78	7.72	13.44	9.25	9.03		
S&P 500 Value		-1.73	5.71	7.69	13.49	9.23	8.98	6.33	
<b>Large Cap Pass. Core</b>	<b>1,758,759,239</b>	<b>-2.69</b>	<b>9.40</b>	<b>8.40</b>	<b>9.08</b>	<b>10.13</b>	<b>10.49</b>	<b>10.95</b>	<b>1/1/1985</b>
Large Cap Pass. Core - Net		-2.69	9.40	8.40	9.08	10.13	10.48		
Dow Jones U.S. Total Stock Market Index		-2.69	9.39	8.39	9.06	10.10	10.43		
<b>NTGI MarketCap Idx.</b>	<b>1,758,759,239</b>	<b>-2.69</b>	<b>9.40</b>	<b>8.40</b>	<b>9.08</b>	<b>10.13</b>	<b>10.49</b>	<b>10.74</b>	<b>2/1/1985</b>
NTGI MarketCap Idx. - Net		-2.69	9.40	8.40	9.08	10.13	10.48		
Dow Jones U.S. Total Stock Market Index		-2.69	9.39	8.39	9.06	10.10	10.43		
<b>Factor Diversity Strategies</b>	<b>2,532,910,808</b>	<b>-2.61</b>	<b>9.27</b>	<b>8.88</b>	<b>9.36</b>			<b>7.74</b>	<b>8/18/2020</b>

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							Inception Date
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
<b>U.S. Large Cap FDP-GSAM</b>	2,532,910,808	-2.61	9.27	8.88	9.36			7.74	8/18/2020
U.S. Large Cap FDP-GSAM - Net		-2.62	9.25	8.85	9.32			7.69	
Solactive GBS U.S. 1000 Index		-2.45	10.42	9.46	9.32			7.69	
GSAM Active Beta US. Large Cap FDC Index		-2.62	9.27	8.84	9.33			7.72	
<b>Quantitative Factor Strategies</b>	2,193,358,470	-2.65	1.77	3.63	9.04			6.74	9/17/2019
<b>Quantitative US Equity - SciBeta</b>	2,193,358,470	-2.65	1.77	3.63	9.04			6.74	9/17/2019
Quantitative US Equity - SciBeta - Net		-2.65	1.73	3.57	8.96			6.58	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		-2.68	0.57	2.43	7.94			5.70	
<b>Small Cap</b>	1,848,632,206	-7.13	-0.85	-2.87	11.75	7.46	7.50	11.46	7/1/1988
Small Cap Composite - Net		-7.13	-1.36	-3.42	11.05	6.81	6.89		
Russell 2000 Index		-6.82	-4.45	-8.56	3.95	3.31	5.63	8.56	
<b>Small Cap Multi-Factor Strategies</b>	497,450,840	-5.26						-14.14	8/1/2023
<b>U.S. Small Cap Equity Multi-Factor - S&amp;P</b>	497,450,840	-5.26						-14.14	8/1/2023
U.S. Small Cap Equity Multi-Factor - S&P - Net		-5.26						-14.14	
S&P SmallCap 600 QVML Top 90% Multi-Factor Index		-5.25						-14.14	
S&P SmallCap 600 Index		-5.74						-15.06	
<b>Small Cap Growth</b>	604,298,310	-10.04	2.75	0.36	6.94	9.54	9.10	12.36	7/1/1988
Small Cap Growth - Net		-10.04	1.79	-0.58	5.84	8.56	8.33		
Russell 2000 Growth Index		-7.71	-2.87	-7.63	-1.83	2.68	5.67	7.30	
<b>Frontier Capital</b>	604,298,310	-10.04	2.75	0.36	6.80	10.05	9.85	12.70	8/1/1988
Frontier Capital - Net		-10.04	1.79	-0.58	5.72	8.97	9.02		
Russell 2000 Growth Index		-7.71	-2.87	-7.63	-1.83	2.68	5.67	7.37	
<b>Small Cap Value</b>	746,883,056	-5.87	-1.72	-3.58	14.78	6.87	7.24	11.10	9/1/1989
Small Cap Value - Net		-5.87	-2.12	-4.05	14.26	6.36	6.72		
Russell 2000 Value Index		-5.97	-6.46	-9.93	9.73	3.26	5.20	9.09	

Benchmark definitions in glossary.

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Channing</b>	<b>292,392,825</b>	<b>-6.08</b>	<b>2.27</b>	<b>-1.90</b>	<b>10.15</b>	<b>6.33</b>	<b>6.49</b>	<b>8.66</b>	<b>7/1/2011</b>
Channing - Net		-6.08	1.90	-2.37	9.62	5.84	5.98	8.10	
Russell 2000 Value Index		-5.97	-6.46	-9.93	9.73	3.26	5.20	6.87	
<b>William Blair Small Cap Value</b>	<b>454,490,231</b>	<b>-5.75</b>	<b>-5.36</b>	<b>-7.41</b>	<b>11.52</b>	<b>5.87</b>	<b>7.42</b>	<b>10.32</b>	<b>5/1/1999</b>
Inv. Couns. Maryland - Net		-5.75	-5.75	-7.88	11.00	5.34	6.89		
Russell 2000 Value Index		-5.97	-6.46	-9.93	9.73	3.26	5.20	7.93	
<b>Public Real Assets</b>	<b>1,286,842,420</b>	<b>-0.44</b>	<b>-6.41</b>	<b>-1.69</b>	<b>5.17</b>	<b>4.93</b>		<b>4.17</b>	<b>8/1/2017</b>
Public Real Assets - Net		-0.44	-6.63	-2.00	4.81	4.53		3.78	
Public Real Assets Benchmark		-1.53	-8.11	-3.52	3.73	3.42		2.29	
<b>Brookfield</b>	<b>374,958,464</b>	<b>-0.68</b>	<b>-2.50</b>	<b>1.26</b>	<b>9.56</b>	<b>5.41</b>		<b>3.80</b>	<b>8/1/2017</b>
Brookfield - Net		-0.68	-2.80	0.84	9.07	4.90		3.31	
Dow Jones Brookfield Global Infrastructure Composite Index		-1.12	-5.53	-1.69	5.87	3.48		1.93	
<b>Cohen &amp; Steers</b>	<b>911,883,955</b>	<b>-0.35</b>	<b>-7.93</b>	<b>-2.86</b>	<b>3.82</b>	<b>4.96</b>		<b>4.55</b>	<b>8/1/2017</b>
Cohen & Steers - Net		-0.35	-8.11	-3.12	3.51	4.60		4.20	
FTSE Global Core Infrastructure 50/50 Index (Net)		-1.73	-9.39	-4.44	2.65	3.36		2.44	

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>International Equity</b>	<b>8,727,947,286</b>	<b>-3.91</b>	<b>4.14</b>	<b>15.15</b>	<b>4.39</b>	<b>4.74</b>	<b>3.83</b>	<b>7.21</b>	<b>9/1/1986</b>
International Equity - Net		-3.92	3.89	14.79	4.03	4.38	3.48		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54		
International Equity IMRF Custom Benchmark		-4.19	0.58	11.79	2.47	3.20			
<b>Intl LargeCap Equity</b>	<b>7,236,474,102</b>	<b>-3.86</b>	<b>4.92</b>	<b>14.90</b>	<b>6.63</b>	<b>5.39</b>	<b>4.25</b>	<b>7.33</b>	<b>9/1/1986</b>
Intl LargeCap Equity - Net		-3.87	4.73	14.63	6.32	5.11	3.97		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54		
<b>Intl Large Cap Grwth</b>	<b>1,417,920,035</b>	<b>-3.38</b>	<b>1.87</b>	<b>8.27</b>	<b>2.86</b>	<b>5.87</b>	<b>4.25</b>	<b>7.51</b>	<b>9/1/2002</b>
Intl Large Cap Grwth - Net		-3.38	1.66	7.98	2.54	5.56	3.95		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	6.16	
MSCI AC World ex USA Growth (Net)		-3.89	-1.38	9.19	-2.57	3.75	3.18	6.23	
<b>EARNEST Part. Intl</b>	<b>604,698,661</b>	<b>-2.78</b>	<b>6.46</b>	<b>14.04</b>	<b>12.72</b>	<b>6.62</b>	<b>4.33</b>	<b>8.28</b>	<b>10/1/2004</b>
EARNEST Part. Intl - Net		-2.78	6.31	13.88	12.50	6.42	4.12		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	4.96	
MSCI AC World ex USA Growth (Net)		-3.89	-1.38	9.19	-2.57	3.75	3.18	5.35	
<b>William Blair</b>	<b>813,221,374</b>	<b>-3.83</b>	<b>-1.29</b>	<b>4.34</b>	<b>-2.52</b>	<b>5.46</b>	<b>4.32</b>	<b>8.28</b>	<b>10/1/2002</b>
William Blair - Net		-3.83	-1.54	3.98	-2.89	5.08	3.94		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	6.76	
MSCI AC World ex USA Growth (Net)		-3.89	-1.38	9.19	-2.57	3.75	3.18	6.72	
<b>Intl Large Cap Val.</b>	<b>1,399,496,651</b>	<b>-3.56</b>	<b>10.43</b>	<b>23.75</b>	<b>11.24</b>	<b>4.79</b>	<b>3.77</b>	<b>7.96</b>	<b>10/1/1995</b>
Intl Large Cap Val. - Net		-3.56	10.20	23.40	10.92	4.48	3.41		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	4.69	
MSCI AC World ex USA Value		-4.34	4.15	15.91	9.63	3.50	2.33		

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							Inception Date
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
<b>Brandes Investment</b>	<b>658,129,281</b>	<b>-3.49</b>	<b>15.22</b>	<b>29.26</b>	<b>16.17</b>	<b>5.70</b>	<b>4.43</b>	<b>8.38</b>	<b>1/1/1996</b>
Brandes Investment - Net		-3.49	15.05	29.01	15.95	5.49	4.19		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	4.60	
MSCI AC World ex USA Value		-4.34	4.15	15.91	9.63	3.50	2.33		
<b>Mondrian</b>	<b>612,391,661</b>	<b>-3.63</b>	<b>7.03</b>	<b>20.16</b>	<b>7.99</b>	<b>4.23</b>	<b>3.37</b>	<b>4.52</b>	<b>4/1/2012</b>
Mondrian - Net		-3.63	6.72	19.70	7.59	3.84	2.91	4.06	
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	3.80	
MSCI AC World ex USA Value		-4.34	4.15	15.91	9.63	3.50	2.33	3.76	
<b>Lazard</b>	<b>128,975,708</b>	<b>-3.61</b>	<b>4.09</b>	<b>15.02</b>	<b>4.78</b>	<b>4.22</b>	<b>3.22</b>	<b>4.93</b>	<b>4/1/2012</b>
Lazard - Net		-3.61	3.90	14.75	4.54	3.98	2.85	4.51	
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	3.80	
MSCI AC World ex USA Value		-4.34	4.15	15.91	9.63	3.50	2.33	3.76	
<b>Intl Large Cap Active Core</b>	<b>2,500,991,097</b>	<b>-4.15</b>	<b>6.60</b>	<b>16.05</b>	<b>7.97</b>	<b>6.88</b>	<b>5.83</b>	<b>5.14</b>	<b>2/1/2008</b>
Intl Large Cap Active Core - Net		-4.15	6.30	15.63	7.44	6.38	5.29		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	2.17	
<b>Arrowstreet Capital</b>	<b>1,110,550,162</b>	<b>-3.57</b>	<b>10.78</b>	<b>22.54</b>	<b>14.44</b>	<b>11.30</b>	<b>8.23</b>	<b>6.68</b>	<b>3/1/2008</b>
Arrowstreet Capital - Net		-3.57	10.42	22.00	13.92	10.79	7.73	6.19	
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	2.00	
<b>Brown Capital</b>	<b>493,962,979</b>	<b>-4.00</b>	<b>6.44</b>	<b>11.84</b>	<b>-2.57</b>	<b>3.21</b>	<b>4.15</b>	<b>6.46</b>	<b>10/1/2004</b>
Brown Capital - Net		-4.00	6.25	11.58	-3.24	2.67	3.34		
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	4.96	
<b>GlobeFlex Capital</b>	<b>804,975,077</b>	<b>-5.02</b>	<b>1.84</b>	<b>10.74</b>	<b>8.62</b>	<b>5.01</b>	<b>4.67</b>	<b>4.68</b>	<b>3/1/2006</b>
GlobeFlex Capital - Net		-5.02	1.60	10.38	8.26	4.61	4.27	4.25	
MSCI AC World ex USA (Net)		-4.13	0.99	12.07	3.03	3.46	2.54	3.23	

# Performance

Periods Ended October 31, 2023

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Xponance Intl EQ</b>	<b>91,099,740</b>	<b>-4.20</b>	<b>2.76</b>	<b>14.37</b>				<b>-1.87</b>	<b>2/1/2021</b>
Xponance Intl EQ - Net		-4.37	2.13	13.67				-2.49	
MSCI EAFE (Net)		-4.05	2.74	14.40				-0.42	
<b>Progress Intl Equity</b>	<b>403,139</b>								
<b>Intl Large Cap Passive Core</b>	<b>1,918,066,318</b>	<b>-4.08</b>	<b>1.00</b>	<b>12.42</b>	<b>4.63</b>	<b>3.66</b>	<b>3.03</b>	<b>3.52</b>	<b>2/1/2000</b>
Intl Large Cap Passive Core - Net		-4.08	1.00	12.42	4.63	3.66	3.02		
International Large Cap Passive Core Benchmark		-4.13	0.99	12.07	4.19	3.19	2.60	3.11	
<b>NTGI ACWI ex US Index</b>	<b>1,918,066,318</b>	<b>-4.08</b>	<b>1.00</b>	<b>12.42</b>				<b>-6.31</b>	<b>10/1/2021</b>
NTGI ACWI ex US Index - Net		-4.08	1.00	12.42				-6.31	
MSCI AC World ex USA (Net)		-4.13	0.99	12.07				-6.79	
<b>Intl All Cap Developed</b>	<b>150,140,269</b>	<b>-4.05</b>	<b>3.93</b>	<b>12.21</b>	<b>4.15</b>			<b>3.24</b>	<b>2/1/2019</b>
Intl All Cap Developed - Net		-4.18	3.42	11.66	3.63			2.74	
MSCI EAFE + Canada (Net)		-4.22	2.22	12.56	5.97			4.16	
<b>Ativo International</b>	<b>150,140,269</b>	<b>-4.05</b>	<b>3.93</b>	<b>12.21</b>	<b>4.15</b>			<b>3.24</b>	<b>2/1/2019</b>
Ativo International - Net		-4.18	3.42	11.66	3.63			2.74	
MSCI EAFE + Canada (Net)		-4.22	2.22	12.56	5.97			4.16	
<b>Intl Small Cap Eqty</b>	<b>491,434,272</b>	<b>-6.20</b>	<b>-2.19</b>	<b>6.60</b>	<b>-2.71</b>	<b>2.98</b>	<b>3.01</b>	<b>3.78</b>	<b>12/1/2005</b>
Intl Small Cap Eqty - Net		-6.28	-2.80	5.75	-3.43	2.19	2.24		
MSCI AC World ex USA Small Cap (Net)		-5.59	-0.84	8.82	2.96	3.51	3.43	5.08	
Custom Benchmark (Intl Small Cap)		-5.59	-0.84	8.82	2.96	3.51	3.43	4.52	
<b>Franklin Templeton</b>	<b>201,242,309</b>	<b>-5.39</b>	<b>0.84</b>	<b>11.57</b>	<b>1.16</b>	<b>2.78</b>	<b>3.20</b>	<b>4.38</b>	<b>8/1/2011</b>
Franklin Templeton - Net		-5.57	0.13	10.59	0.45	2.00	2.45	3.62	
MSCI AC World ex USA Small Cap (Net)		-5.59	-0.84	8.82	2.96	3.51	3.43	3.77	

Benchmark definitions in glossary.



# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>William Blair IntSC</b>	<b>290,191,963</b>	<b>-6.76</b>	<b>-4.19</b>	<b>3.41</b>	<b>-5.08</b>	<b>3.12</b>	<b>2.88</b>	<b>6.24</b>	<b>9/1/2010</b>
William Blair IntSC - Net		-6.76	-4.72	2.64	-5.80	2.34	2.09	5.44	
MSCI AC World ex USA Small Cap (Net)		-5.59	-0.84	8.82	2.96	3.51	3.43	5.36	
Custom Benchmark (Intl Small Cap)		-5.59	-0.84	8.82	2.96	3.51	3.43	5.58	
<b>Emerging Mkt Equity</b>	<b>849,898,644</b>	<b>-3.09</b>	<b>1.82</b>	<b>21.43</b>	<b>-4.55</b>	<b>2.57</b>	<b>1.74</b>	<b>7.58</b>	<b>2/1/1992</b>
Emerging Mkt Equity - Net		-3.12	1.33	20.76	-5.08	1.99	1.16		
MSCI Emerging Markets Index		-3.87	-1.80	11.26	-3.30	1.98	1.56	6.00	
<b>Genesis Investment Management, LLP.</b>	<b>438,962,539</b>	<b>-2.41</b>	<b>-1.28</b>	<b>17.74</b>	<b>-5.53</b>	<b>1.93</b>	<b>1.43</b>	<b>8.11</b>	<b>5/1/2004</b>
Genesis Investment Management, LLP. - Net		-2.46	-1.88	16.93	-6.09	1.34	0.84		
MSCI Emerging Markets Index		-3.87	-1.80	11.26	-3.30	1.98	1.56	6.72	
<b>Arrowstreet EME</b>	<b>410,936,105</b>	<b>-4.14</b>						<b>3.33</b>	<b>3/1/2023</b>
Arrowstreet EME - Net		-4.14						3.33	
MSCI Emerging Markets IMI (Net)		-4.02						-1.91	

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Fixed Income</b>	<b>11,603,088,565</b>	<b>-1.37</b>	<b>-0.27</b>	<b>2.64</b>	<b>-3.67</b>	<b>0.99</b>	<b>1.82</b>	<b>7.27</b>	<b>1/1/1982</b>
Fixed Income - Net		-1.37	-0.33	2.57	-3.75	0.89	1.69		
Custom Benchmark (Fixed Income)		-1.33	-0.41	2.42	-4.29	0.75	1.29	6.76	
Fixed Income IMRF Custom Benchmark		-1.33	-0.41	2.41	-4.05	0.71			
<b>Active Fixed Core</b>	<b>3,526,469,354</b>	<b>-1.70</b>	<b>-2.80</b>	<b>0.37</b>	<b>-5.02</b>	<b>0.20</b>	<b>1.30</b>	<b>3.38</b>	<b>4/1/2001</b>
ActiveCore Fixed Inc - Net		-1.71	-2.89	0.26	-5.12	0.09	1.18		
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	3.29	
<b>Attucks Fixed Income</b>	<b>84,516,929</b>	<b>-1.46</b>	<b>-1.97</b>	<b>1.02</b>				<b>-5.93</b>	<b>2/1/2021</b>
Attucks Fixed Income - Net		-1.46	-2.21	0.69				-6.21	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36				-6.19	
<b>Brandes FI Core</b>	<b>317,243,197</b>	<b>-1.32</b>	<b>-1.63</b>	<b>0.89</b>	<b>-4.37</b>	<b>0.45</b>		<b>0.50</b>	<b>3/1/2016</b>
Brandes FI Core - Net		-1.32	-1.65	0.87	-4.40	0.44		0.49	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06		0.17	
<b>EARNEST Partners</b>	<b>840,449,045</b>	<b>-1.45</b>	<b>-2.33</b>	<b>0.56</b>	<b>-4.82</b>	<b>0.35</b>	<b>1.39</b>	<b>3.14</b>	<b>5/1/2005</b>
EARNEST Partners - Net		-1.45	-2.43	0.46	-4.94	0.22	1.23	2.96	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	2.69	
<b>Garcia Hamilton</b>	<b>881,644,027</b>	<b>-2.29</b>	<b>-4.95</b>	<b>-1.10</b>	<b>-5.95</b>	<b>-0.42</b>		<b>0.48</b>	<b>6/1/2015</b>
Garcia Hamilton - Net		-2.31	-5.03	-1.18	-6.03	-0.50		0.40	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06		0.35	
<b>Ramirez Asset Management</b>	<b>489,528,541</b>	<b>-1.65</b>	<b>-2.06</b>	<b>1.22</b>	<b>-4.56</b>			<b>-2.80</b>	<b>5/1/2020</b>
Ramirez Asset Management - Net		-1.65	-2.16	1.08	-4.68			-2.92	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57			-4.45	
<b>Xponance Yield Advantage Agg.</b>	<b>913,087,615</b>	<b>-1.56</b>	<b>-1.97</b>	<b>0.95</b>	<b>-4.56</b>	<b>0.48</b>	<b>1.36</b>	<b>3.01</b>	<b>6/1/2005</b>
Xponance Yield Advantage Agg. - Net		-1.56	-2.07	0.81	-4.67	0.36	1.22	2.84	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	2.64	

Benchmark definitions in glossary.

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Pass. Core Fixed Inc</b>	<b>2,629,174,371</b>	<b>-1.57</b>	<b>-2.60</b>	<b>0.41</b>	<b>-5.50</b>	<b>0.01</b>	<b>0.96</b>	<b>4.90</b>	<b>1/1/1990</b>
Pass. Core Fixed Inc - Net		-1.57	-2.61	0.40	-5.51	0.01	0.95		
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	4.88	
<b>BlackRock US Debt I</b>	<b>1,558,462,594</b>	<b>-1.58</b>	<b>-2.52</b>	<b>0.43</b>	<b>-5.49</b>	<b>0.03</b>	<b>0.99</b>	<b>1.07</b>	<b>10/1/2013</b>
BlackRock US Debt I - Net		-1.58	-2.53	0.42	-5.50	0.03	0.99	1.06	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	0.96	
<b>NTGI Blmbg Agg.</b>	<b>1,070,711,777</b>	<b>-1.56</b>	<b>-2.72</b>	<b>0.38</b>	<b>-5.51</b>	<b>-0.01</b>	<b>0.93</b>	<b>4.94</b>	<b>2/1/1990</b>
NTGI Blmbg Agg. - Net		-1.56	-2.72	0.38	-5.52	-0.02	0.92		
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	4.93	
<b>Core Plus Fixed Income</b>	<b>2,744,147,217</b>	<b>-1.80</b>	<b>-2.37</b>	<b>1.02</b>	<b>-5.08</b>	<b>0.54</b>	<b>1.59</b>	<b>7.06</b>	<b>1/1/1982</b>
Core Plus Fixed Inc. - Net		-1.81	-2.49	0.87	-5.21	0.38	1.41		
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	6.66	
<b>LM Capital Group FI</b>	<b>792,747,054</b>	<b>-1.51</b>	<b>-1.76</b>	<b>1.48</b>	<b>-4.44</b>	<b>1.00</b>	<b>1.66</b>	<b>3.53</b>	<b>5/1/2005</b>
LM Capital Group FI - Net		-1.55	-1.91	1.32	-4.60	0.84	1.50	3.37	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	2.69	
<b>Progress Inv. FI</b>	<b>1,146</b>								
<b>Loop Capital Management</b>	<b>540,340,817</b>	<b>-1.65</b>	<b>-1.57</b>	<b>2.04</b>	<b>-4.68</b>	<b>0.45</b>	<b>1.84</b>	<b>3.52</b>	<b>5/1/2005</b>
Loop Capital Management - Net		-1.65	-1.67	1.90	-4.81	0.32	1.71	3.38	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	2.69	
<b>Western Asset</b>	<b>878,251,498</b>	<b>-2.18</b>	<b>-3.38</b>	<b>0.16</b>	<b>-6.04</b>	<b>0.23</b>	<b>1.58</b>	<b>3.97</b>	<b>11/1/2001</b>
Western Asset - Net		-2.18	-3.48	0.02	-6.17	0.11	1.45		
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57	-0.06	0.88	3.04	
<b>Longfellow Core Plus</b>	<b>532,806,702</b>	<b>-1.75</b>	<b>-2.40</b>	<b>0.73</b>	<b>-4.59</b>			<b>-3.01</b>	<b>5/1/2020</b>
Longfellow Core Plus - Net		-1.75	-2.51	0.58	-4.74			-3.15	
Blmbg. U.S. Aggregate Index		-1.58	-2.77	0.36	-5.57			-4.45	

Benchmark definitions in glossary.

# Performance

*Periods Ended October 31, 2023*

	Market Value \$	Performance (%)							
		1 Month	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Bank Loans</b>	<b>1,637,303,566</b>	<b>-0.11</b>	<b>9.89</b>	<b>11.80</b>	<b>5.52</b>	<b>3.84</b>		<b>4.27</b>	<b>8/1/2014</b>
Bank Loans - Net		-0.07	10.03	11.99	5.61	3.83		4.00	
Custom Benchmark		-0.02	10.41	12.38	6.01	4.53		4.38	
<b>Barings Global Loan Fund</b>	<b>1,637,303,566</b>	<b>-0.11</b>	<b>9.89</b>	<b>11.80</b>	<b>5.52</b>	<b>3.84</b>		<b>4.27</b>	<b>8/1/2014</b>
Barings Global Loan Fund - Net		-0.07	10.03	11.99	5.61	3.83		4.00	
Custom Benchmark		-0.02	10.41	12.38	6.01	4.53		4.38	
<b>Emerging Markets Debt</b>	<b>317,499</b>								
Standish-Mellon EMD	317,499								
<b>High Yield</b>	<b>1,065,696,136</b>	<b>-0.55</b>	<b>5.54</b>	<b>7.27</b>	<b>2.99</b>	<b>4.56</b>	<b>5.00</b>	<b>8.86</b>	<b>4/1/1986</b>
High Yield - Net		-0.55	5.30	6.95	2.67	4.23	4.65		
ICE BofA U.S. High Yield, Cash Pay Index		-1.24	4.59	5.80	1.23	2.89	3.77	7.55	
<b>MacKay Shields</b>	<b>1,065,696,136</b>	<b>-0.55</b>	<b>5.54</b>	<b>7.27</b>	<b>2.98</b>	<b>4.57</b>	<b>5.04</b>	<b>7.85</b>	<b>11/1/2000</b>
MacKay Shields - Net		-0.55	5.30	6.95	2.67	4.24	4.70		
ICE BofA U.S. High Yield, Cash Pay Index		-1.24	4.59	5.80	1.23	2.89	3.77	6.48	

# Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Total Fund Benchmark			The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset class:
	3/1/2022	Present	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.

## Benchmark History

Account Name	From Date	To Date	Benchmark
Total Fund			The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset classes:
	3/1/2022	Present	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
Domestic Equity	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
Large Cap Growth	1/1/2006	Present	100% Russell 1000 Growth Index
	11/1/2003	12/13/2005	100% S&P 500 Growth
Large Cap Value	1/1/2006	Present	100% Russell 1000 Value Index
	2/1/2001	12/31/2005	100% S&P 500 Value
Public Real Assets	8/1/2017	Present	33.3% Dow Jones Brookfield Global Infrastructure Composite, 66.7% FTSE GLOBAL CORE INFRASTRUCTURE 50/50 INDEX (Net)

## Benchmark History

Account Name	From Date	To Date	Benchmark
Intl Small Cap Eqty	6/1/2011	Present	100% MSCI AC World ex USA Small Cap (Net)
	12/1/2005	5/31/2011	100% S&P Developed Ex-U.S. SmallCap (Net)
Barings Global Loan Fund	8/1/2014	Present	Comprised of the 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.