

**Wilshire**



# Illinois Municipal Retirement Fund

Monthly Investment Summary

Jan-2023

## IMRF Performance Summary

- The Illinois Municipal Retirement Fund (“IMRF”) ended January 2023 with a market value of \$50.4 billion, up for the month by approximately \$2.51 billion. IMRF returned 5.05% during the month, underperforming the Total Fund Benchmark, which returned 5.28%. Growth and defensive assets rebounded to start 2023 on encouraging inflation data and the expectation of slower rate hikes.
- The broad U.S. Equity market was up for the month. The U.S. Equity Portfolio outperformed the benchmark during January, returning 7.62% versus 6.59%. Investment manager performance in Large Cap Growth was the largest contributor to relative outperformance.
- International Equity markets were up for the month, with developed stocks outpacing emerging. The International Equity Portfolio outperformed the benchmark during January, returning 8.26% versus 8.11%. In aggregate, investment manager performance in Large Cap Value and Emerging Markets were the largest contributors to relative outperformance.
- The broad fixed income market was positive for January as yields fell. The Fixed Income Portfolio outperformed the benchmark during the month, returning 3.30% versus 3.08%. Investment manager performance in Core and Core Plus were the largest contributors to relative outperformance.
- As of January month-end, all underlying asset class allocations in the Portfolio are within the stated four percentage point rebalancing range as outlined by the current Statement of Investment Policy.

Performance referenced above is Net of Fees.

## Market Dashboard

Returns through Tuesday January 31, 2023

Portfolio Allocations	MTD	DEC	NOV	QTD	Q4 2022	YTD	1 Year	3 Year	5 Year
Global 60/40	5.53	(2.54)	6.13	5.53	6.64	5.53	(7.87)	3.45	3.97
Wilshire Risk Parity (12%)	5.54	(3.58)	4.23	5.54	3.94	5.54	(13.31)	(0.99)	3.93
Strategic Allocation Themes *	MTD	DEC	NOV	QTD	Q4 2022	YTD	1 Year	3 Year	5 Year
Growth <sup>1</sup>	7.17	(3.94)	7.76	7.17	9.76	7.17	(7.99)	6.83	5.53
Defensive Growth <sup>2</sup>	2.99	(2.45)	4.39	2.99	5.70	2.99	(5.88)	4.70	6.51
Diversified Credit <sup>3</sup>	3.35	(0.07)	4.32	3.35	5.59	3.35	(7.43)	(1.00)	1.54
Real Assets <sup>4</sup>	4.30	(2.44)	5.30	4.30	5.50	4.30	(5.24)	6.61	5.86
Defensive <sup>5</sup>	3.08	(0.45)	3.68	3.08	1.87	3.08	(8.36)	(2.35)	0.86
Major Asset Classes	MTD	DEC	NOV	QTD	Q4 2022	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	6.90	(5.87)	5.15	6.90	7.10	6.90	(8.20)	9.82	9.33
MSCI ACWI-ex-USA (Net)	8.11	(0.75)	11.80	8.11	14.29	8.11	(5.72)	3.64	1.36
Bloomberg U.S. Aggregate	3.08	(0.45)	3.68	3.08	1.87	3.08	(8.36)	(2.35)	0.86
Bloomberg U.S. Corporate High Yield	3.81	(0.62)	2.17	3.81	4.17	3.81	(5.22)	1.29	2.96
Wilshire Global Real Estate Securities	10.29	(3.91)	6.93	10.29	6.35	10.29	(11.93)	0.45	3.86
Bloomberg Commodity	(0.49)	(2.45)	2.74	(0.49)	2.22	(0.49)	6.20	15.37	5.92

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, -31% Cash

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

## Market Returns

Returns through Tuesday January 31, 2023

<b>US Equity</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
FT Wilshire 5000	6.90	(5.87)	5.15	6.90	7.10	6.90	(8.20)	9.82	9.33
Standard & Poor's 500	6.28	(5.76)	5.59	6.28	7.56	6.28	(8.22)	9.88	9.54
Wilshire 4500 Completion	10.35	(6.27)	3.44	10.35	5.34	10.35	(7.48)	8.89	7.67
Wilshire US Large Cap	6.57	(5.86)	5.34	6.57	7.05	6.57	(8.71)	9.94	9.63
Wilshire US Large-Cap Growth	9.58	(7.98)	4.18	9.58	0.75	9.58	(15.86)	9.81	10.46
Wilshire US Large-Cap Value	3.74	(3.77)	6.51	3.74	13.75	3.74	(0.13)	9.82	8.67
Wilshire US Small Cap	10.32	(6.11)	3.54	10.32	7.91	10.32	(2.04)	8.94	6.65
Wilshire US Small-Cap Growth	11.05	(6.18)	3.66	11.05	7.07	11.05	(3.65)	7.46	6.53
Wilshire US Small-Cap Value	9.66	(6.04)	3.44	9.66	8.68	9.66	(0.56)	10.35	6.73
<b>Non-US Equity</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
MSCI ACWI-ex-USA (Net)	8.11	(0.75)	11.80	8.11	14.29	8.11	(5.72)	3.64	1.36
MSCI EAFE (Net)	8.10	0.08	11.26	8.10	17.34	8.10	(2.83)	4.25	2.13
MSCI EM (Net)	7.90	(1.41)	14.83	7.90	9.70	7.90	(12.12)	1.40	(1.48)
MSCI ACWI-ex-US Small cap (Net)	7.20	0.17	9.56	7.20	13.31	7.20	(8.50)	4.54	1.10
<b>Global Equity</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
MSCI ACWI (Net)	7.17	(3.94)	7.76	7.17	9.76	7.17	(7.99)	6.83	5.53
MSCI ACWI Minimum Volatility (Net)	1.73	(1.98)	6.26	1.73	8.48	1.73	(4.04)	1.73	4.25
<b>Fixed Income</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Bloomberg U.S. Aggregate	3.08	(0.45)	3.68	3.08	1.87	3.08	(8.36)	(2.35)	0.86
Bloomberg Long Term Treasury	6.41	(1.70)	7.07	6.41	(0.59)	6.41	(21.47)	(7.53)	(0.32)
Bloomberg U.S. TIPS	1.83	(1.02)	1.83	1.83	2.04	1.83	(8.38)	1.12	2.66
Bloomberg U.S. Corporate High Yield	3.81	(0.62)	2.17	3.81	4.17	3.81	(5.22)	1.29	2.96
Credit Suisse Leveraged Loan	2.57	0.36	1.11	2.57	2.33	2.57	1.12	3.02	3.54
Bloomberg US Convertibles Index	6.22	(2.80)	1.91	6.22	1.62	6.22	(7.42)	9.54	9.38
JPM EMBI Global Diversified	3.17	0.33	7.59	3.17	8.11	3.17	(12.70)	(4.77)	(0.69)
<b>Real Assets</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Wilshire Global Real Estate Securities	10.29	(3.91)	6.93	10.29	6.35	10.29	(11.93)	0.45	3.86
FTSE Global Core Infrastructure 50/50	2.62	(2.11)	7.94	2.62	9.24	2.62	1.42	2.48	6.05
Alerian Midstream Energy	4.85	(6.02)	3.85	4.85	8.38	4.85	16.10	11.70	7.34
Bloomberg Commodity	(0.49)	(2.45)	2.74	(0.49)	2.22	(0.49)	6.20	15.37	5.92
Gold	5.72	3.14	8.26	5.72	9.84	5.72	7.30	6.66	7.47
Bitcoin	38.43	(3.07)	(16.18)	38.43	(14.65)	38.43	(40.29)	34.87	18.16

Source: Bloomberg, All returns are in USD

## Factor/Relative Returns

Returns through Tuesday January 31, 2023

<b>Asset Class Differentials</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Stocks (ACWI) > Bonds (BB US Aggregate)	4.09	(3.48)	4.08	4.09	7.89	4.09	0.37	9.17	4.66
Stocks (ACWI) > Mkt Alts (Equity Hedged)	4.25	(1.72)	4.39	4.25	4.74	4.25	(6.03)	2.63	3.57
Mkt Alts (Relative Value) > Bonds (BB US Aggregate)	(1.04)	(0.01)	(1.54)	(1.04)	(0.68)	(1.04)	3.07	1.64	(0.65)
<b>Equity &amp; Real Assets Differentials</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
US Small > Large	3.74	(0.25)	(1.80)	3.74	0.86	3.74	6.66	(1.01)	(2.98)
US Value > Growth	(5.83)	4.20	2.33	(5.83)	13.00	(5.83)	15.74	0.01	(1.79)
ACWI-ex-US > US	1.21	5.12	6.66	1.21	7.19	1.21	2.48	(6.18)	(7.97)
EM > EAFE	(0.20)	(1.49)	3.57	(0.20)	(7.64)	(0.20)	(9.29)	(2.85)	(3.61)
ACWI-ex-US Currency Impact	1.66	2.14	4.03	1.66	6.46	1.66	(4.74)	(1.78)	(2.60)
EAFE Currency Impact	1.80	3.09	4.84	1.80	8.62	1.80	(5.43)	(1.96)	(2.71)
EM Currency Impact	1.35	0.59	3.15	1.35	3.13	1.35	(3.75)	(2.02)	(2.72)
Global Low Volatility > ACWI	(5.44)	1.95	(1.50)	(5.44)	(1.29)	(5.44)	3.95	(5.10)	(1.28)
Global RE > ACWI	3.12	0.02	(0.82)	3.12	(3.41)	3.12	(3.94)	(6.38)	(1.67)
Commodities > Global RE	(10.78)	1.47	(4.20)	(10.78)	(4.14)	(10.78)	18.13	14.92	2.06
Commodities > TIPS	(2.32)	(1.43)	0.91	(2.32)	0.18	(2.32)	14.58	14.25	3.26
Gold > Commodities	6.21	5.59	5.52	6.21	7.62	6.21	1.10	(8.71)	1.55
<b>Fixed Income Differentials</b>	<b>MTD</b>	<b>DEC</b>	<b>NOV</b>	<b>QTD</b>	<b>Q4 2022</b>	<b>YTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
Duration (US Core > US Core 1-3 Years)	2.26	(0.65)	2.85	2.26	0.98	2.26	(6.12)	(2.01)	(0.22)
IG Credit > Treasury	1.50	0.08	2.50	1.50	2.91	1.50	(0.80)	0.24	0.77
High Yield > IG Credit	(0.20)	(0.19)	(3.01)	(0.20)	0.54	(0.20)	4.12	3.65	1.52
High Yield > Loans	1.05	(1.04)	0.93	1.05	1.46	1.05	(6.96)	(1.99)	(0.71)
TIPS > Treasury	(1.35)	0.10	(1.76)	(1.35)	1.07	(1.35)	1.69	4.32	1.72
EMD > Dev Hdg	1.51	2.71	5.07	1.51	6.41	1.51	(2.98)	(0.79)	(0.69)
EMD > High Yield	(0.61)	1.47	4.46	(0.61)	2.42	(0.61)	(4.97)	(4.67)	(2.71)
Non-US > US Core	0.41	1.76	1.90	0.41	4.93	0.41	(5.82)	(2.75)	(3.85)
Non-US Hdg > US Core	(1.38)	(1.40)	(2.11)	(1.38)	(1.69)	(1.38)	1.16	(0.23)	0.08
FI Currency Impact	1.79	3.16	4.01	1.79	6.62	1.79	(6.98)	(2.52)	(3.93)

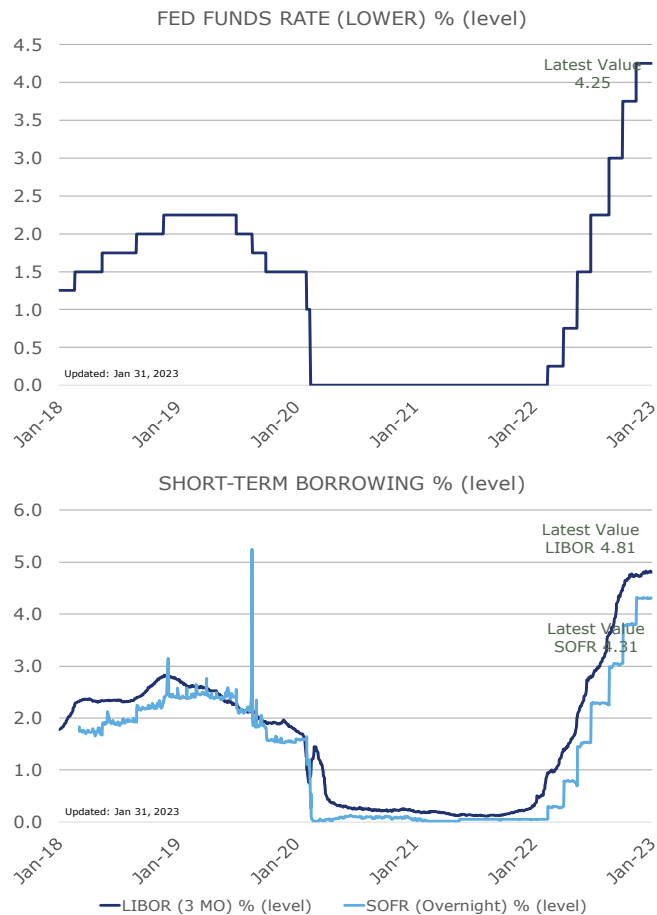
Source: Bloomberg, All returns are in USD

## Market Yields & Breakeven Inflation

<b>Market Yields</b>	<b>Previous 3 Month-ends</b>				<b>Previous 2 Quarter-ends</b>		<b>EOY Prior</b>	<b>1 Yr Ago</b>	<b>3 Yrs Ago</b>	<b>5 Yrs Ago</b>
<b>Govt/Treasury Yields</b>	<b>01/31/23</b>	<b>12/30/22</b>	<b>11/30/22</b>	<b>10/31/22</b>	<b>12/30/22</b>	<b>09/30/22</b>	<b>12/30/22</b>	<b>01/31/22</b>	<b>01/31/20</b>	<b>01/31/18</b>
Fed Funds Target Rate (Upper)	4.50	4.50	4.00	3.25	4.50	3.25	4.50	0.25	1.75	1.50
2-Year Treasury	4.20	4.43	4.31	4.49	4.43	4.28	4.43	1.18	1.32	2.14
5-Year Treasury	3.62	4.01	3.74	4.23	4.01	4.09	4.01	1.61	1.31	2.52
10-Year Treasury	3.51	3.88	3.61	4.05	3.88	3.83	3.88	1.78	1.51	2.71
30-Year Treasury	3.63	3.97	3.74	4.17	3.97	3.78	3.97	2.11	2.00	2.94
10-Year Real Treasury	1.26	1.58	1.24	1.54	1.58	1.68	1.58	(0.71)	(0.13)	0.59
<b>Term Spreads</b>	<b>01/31/23</b>	<b>12/30/22</b>	<b>11/30/22</b>	<b>10/31/22</b>	<b>12/30/22</b>	<b>09/30/22</b>	<b>12/30/22</b>	<b>01/31/22</b>	<b>01/31/20</b>	<b>01/31/18</b>
5 - 2 Year Treasury Spread	(0.59)	(0.43)	(0.58)	(0.26)	(0.43)	(0.19)	(0.43)	0.43	(0.01)	0.37
10 - 5 Year Treasury Spread	(0.11)	(0.13)	(0.13)	(0.18)	(0.13)	(0.26)	(0.13)	0.17	0.19	0.19
10 - 2 Year Treasury Spread	(0.70)	(0.56)	(0.71)	(0.44)	(0.56)	(0.45)	(0.56)	0.60	0.19	0.56
30 - 10Year Treasury Spread	0.12	0.08	0.13	0.11	0.08	(0.06)	0.08	0.33	0.49	0.23
30 - 2Year Treasury Spread	(0.57)	(0.47)	(0.58)	(0.32)	(0.47)	(0.51)	(0.47)	0.93	0.68	0.79
<b>Market Yields</b>	<b>01/31/23</b>	<b>12/30/22</b>	<b>11/30/22</b>	<b>10/31/22</b>	<b>12/30/22</b>	<b>09/30/22</b>	<b>12/30/22</b>	<b>01/31/22</b>	<b>01/31/20</b>	<b>01/31/18</b>
Bloomberg U.S. Treasury YTW	3.86	4.18	4.05	4.39	4.18	4.13	4.18	1.58	1.49	2.47
Bloomberg U.S. Aggregate YTW	4.30	4.68	4.56	5.01	4.68	4.75	4.68	2.11	2.02	2.97
Bloomberg U.S. Long Treasury YTW	3.72	4.08	3.96	4.37	4.08	4.00	4.08	2.14	1.98	2.90
Bloomberg U.S. Long Govt/Credit YTW	4.48	4.91	4.79	5.33	4.91	5.03	4.91	2.92	2.76	3.65
<b>Credit Spreads</b>	<b>01/31/23</b>	<b>12/30/22</b>	<b>11/30/22</b>	<b>10/31/22</b>	<b>12/30/22</b>	<b>09/30/22</b>	<b>12/30/22</b>	<b>01/31/22</b>	<b>01/31/20</b>	<b>01/31/18</b>
Bloomberg Investment Grade OAS	1.17	1.30	1.33	1.58	1.30	1.59	1.30	1.06	1.02	0.86
Bloomberg High Yield OAS	4.20	4.69	4.48	4.64	4.69	5.52	4.69	3.42	3.90	3.19
<b>Breakeven Inflation Rates</b>	<b>01/31/23</b>	<b>12/30/22</b>	<b>11/30/22</b>	<b>10/31/22</b>	<b>12/30/22</b>	<b>09/30/22</b>	<b>12/30/22</b>	<b>01/31/22</b>	<b>01/31/20</b>	<b>01/31/18</b>
1-Year Breakeven Inflation	2.13	2.14	2.38	2.73	2.14	1.72	2.14	3.51	1.19	2.13
2-Year Breakeven Inflation	2.33	2.31	2.53	2.86	2.31	1.98	2.31	3.26	1.35	1.84
5-Year Breakeven Inflation	2.33	2.38	2.48	2.66	2.38	2.16	2.38	2.89	1.60	2.01
10-Year Breakeven Inflation	2.25	2.30	2.37	2.51	2.30	2.15	2.30	2.49	1.64	2.11
5-Year 5-Year Forward Breakeven Inflation	2.20	2.20	2.23	2.32	2.20	2.12	2.20	2.18	1.75	2.21

Source: Bloomberg

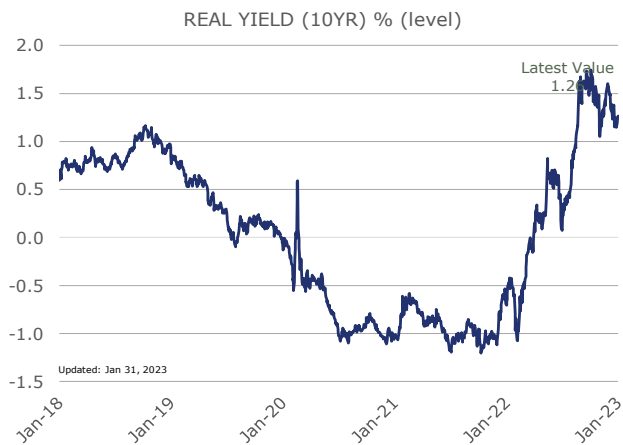
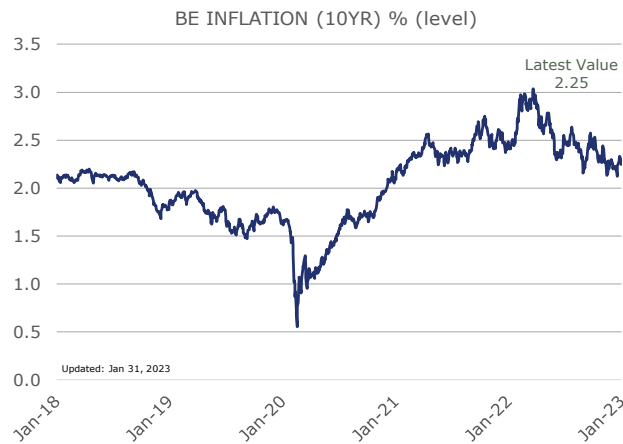
# Short Rates



Data Source: Bloomberg

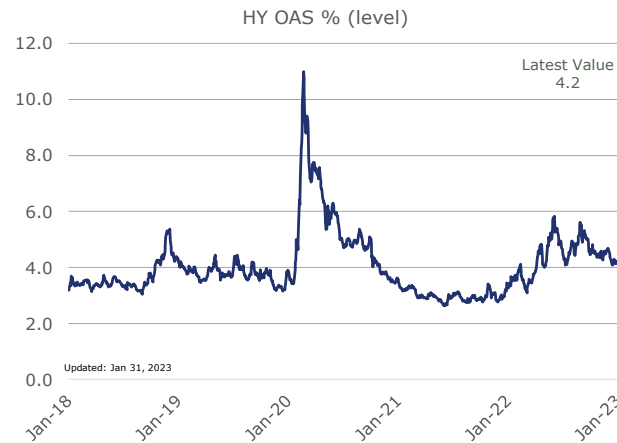
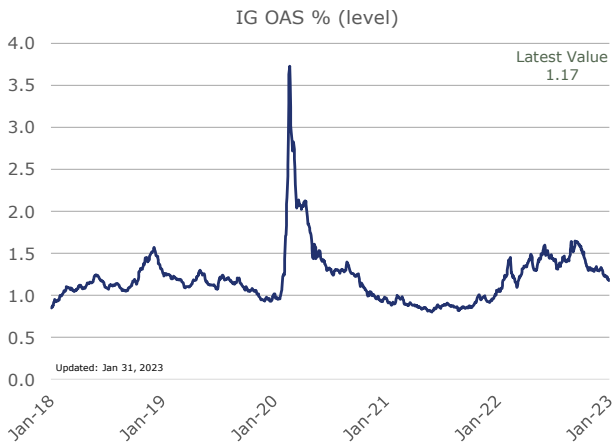
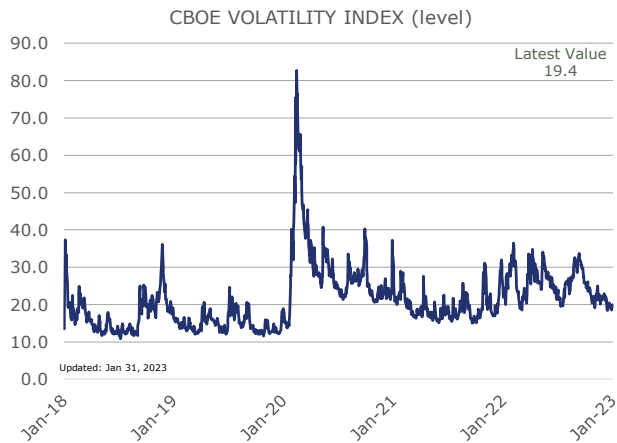
LIBOR: London Inter-bank Offered Rate  
 SOFR: Federal Reserve Bank NY Secured Overnight Financing Rate

# Treasury Rates

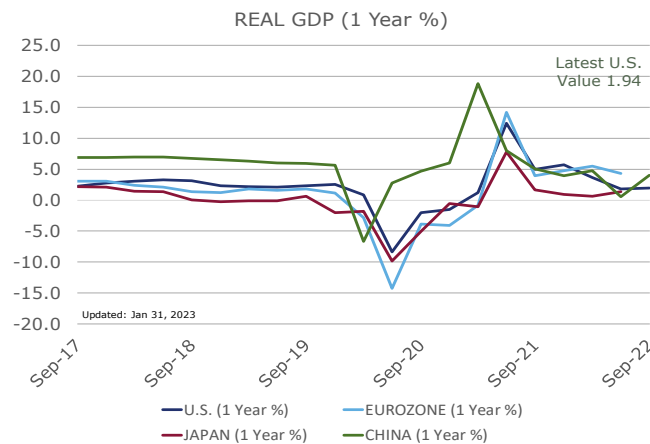
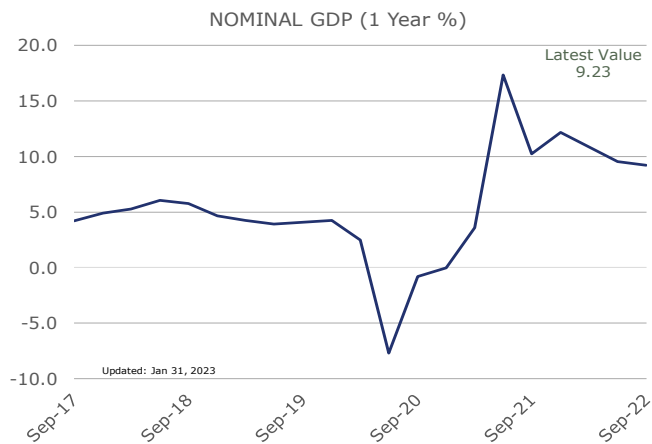
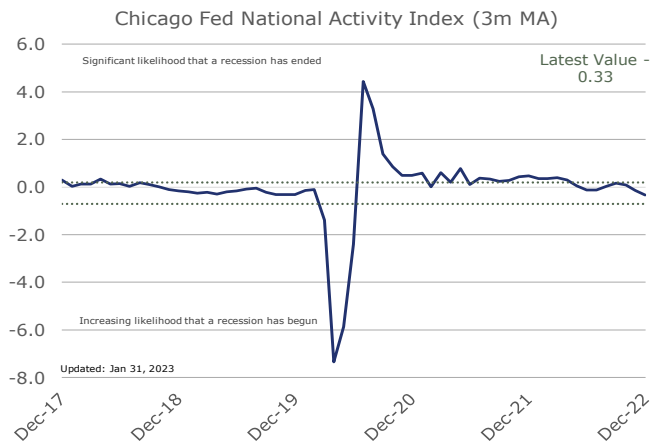




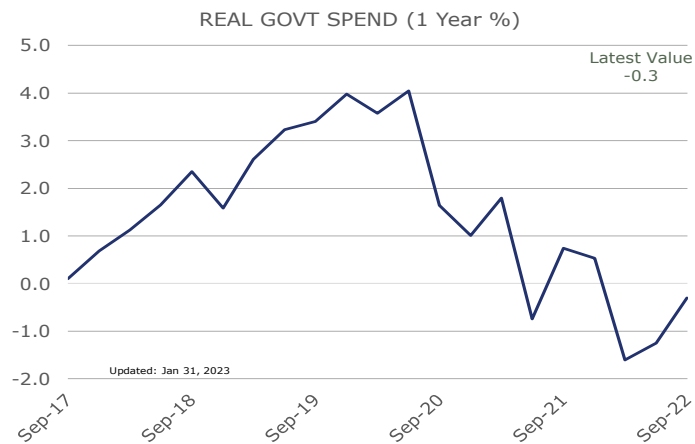
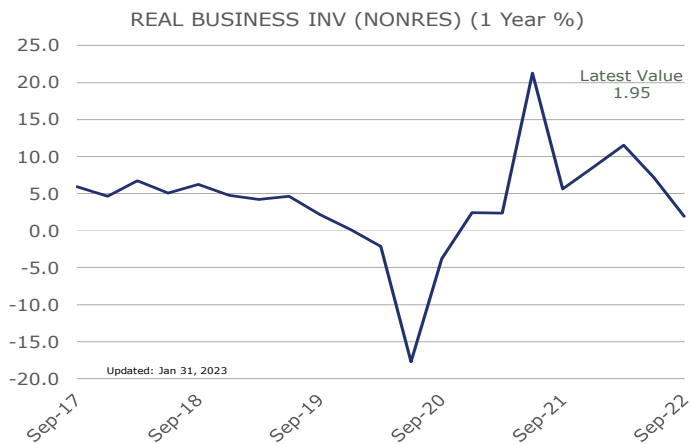
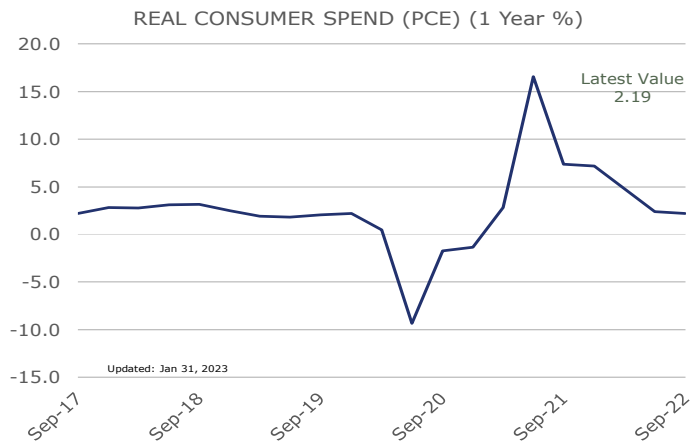
# Volatility & Credit Risk



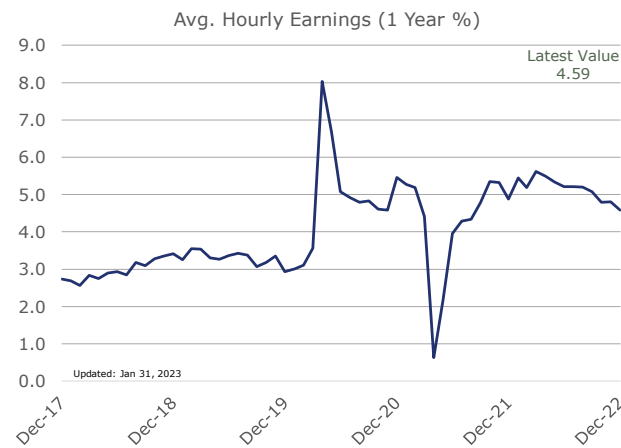
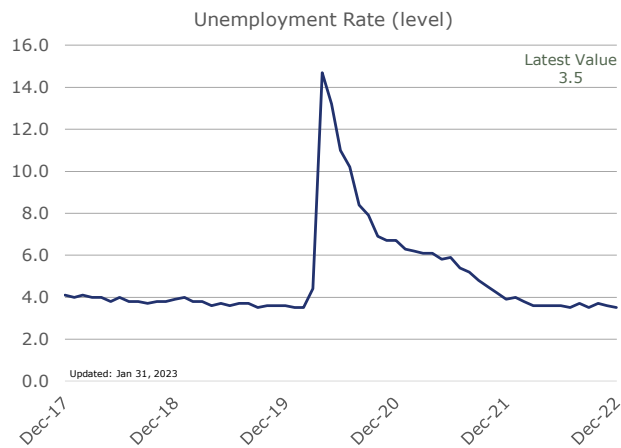
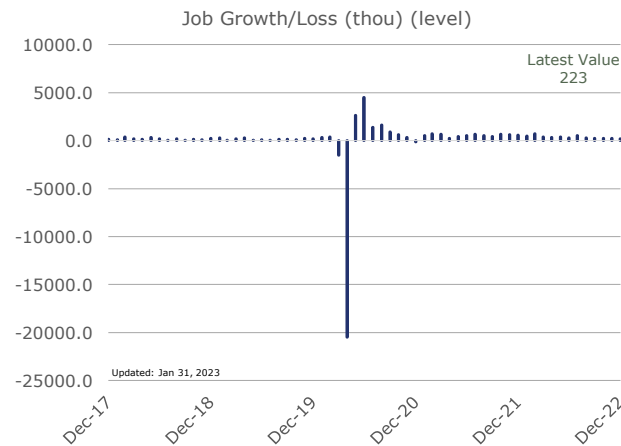
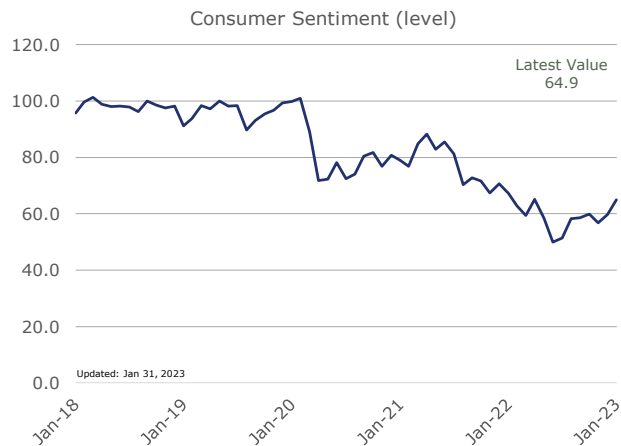
Economic Growth



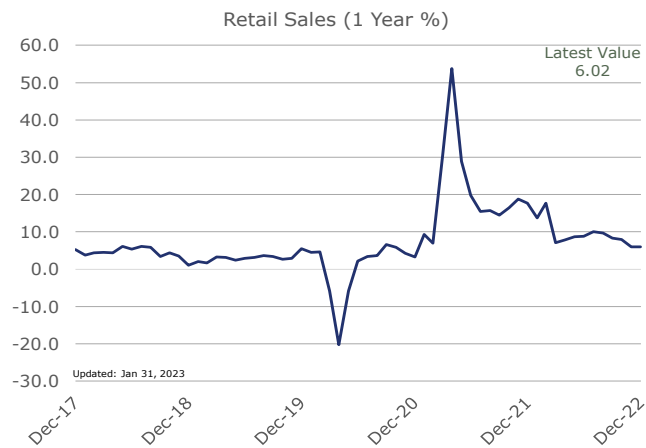
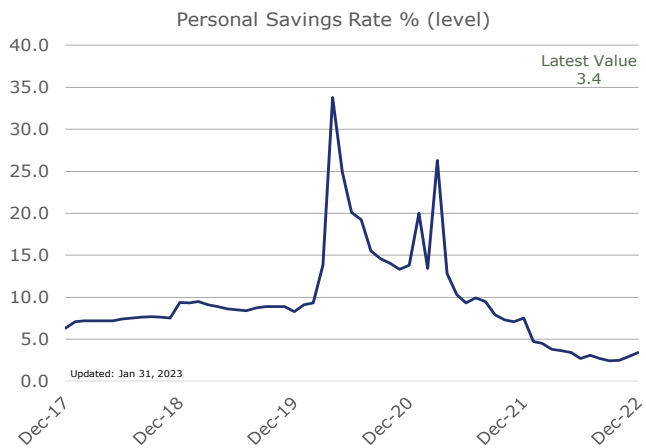
# Economic Growth



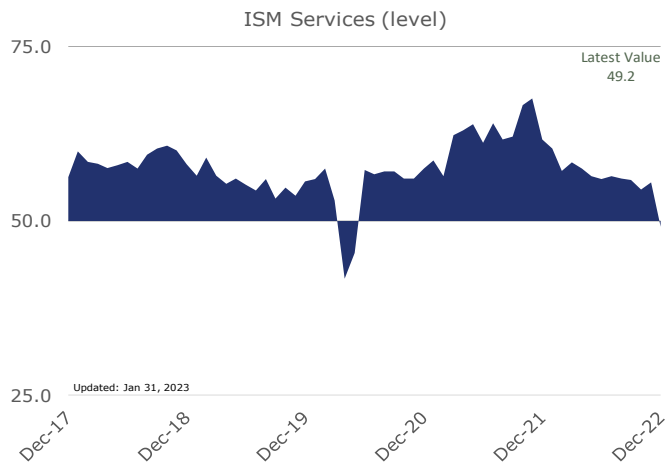
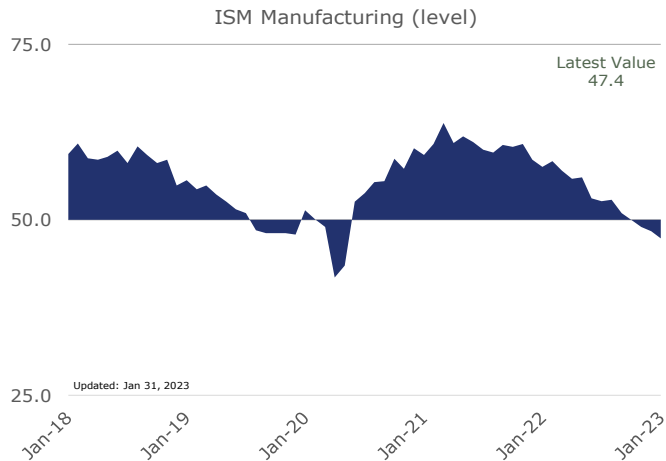
# Consumers & Employment



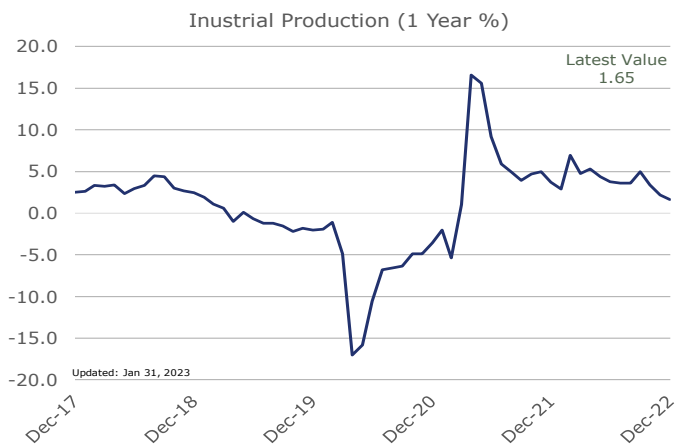
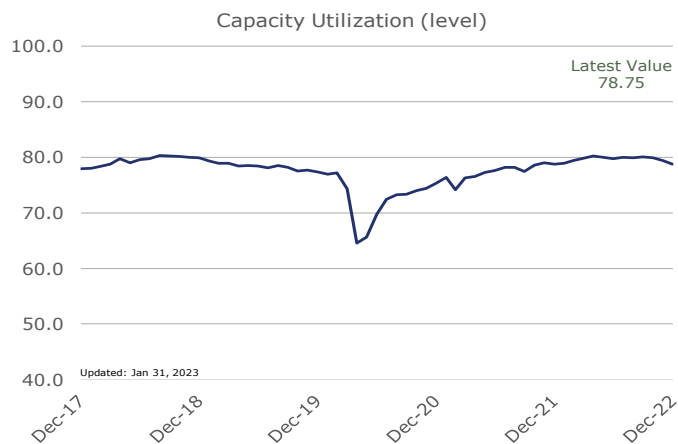
# Income & Spending



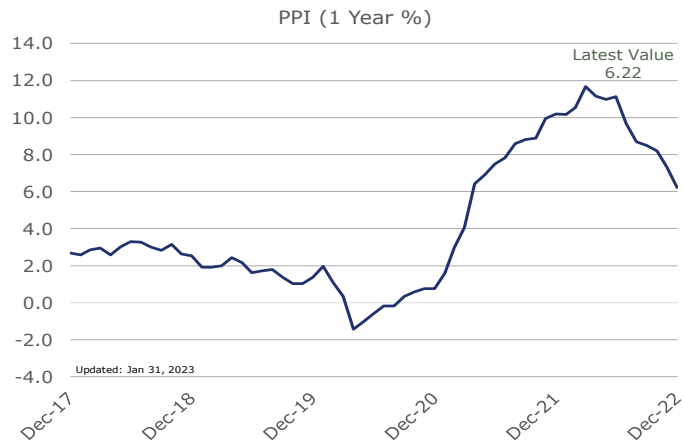
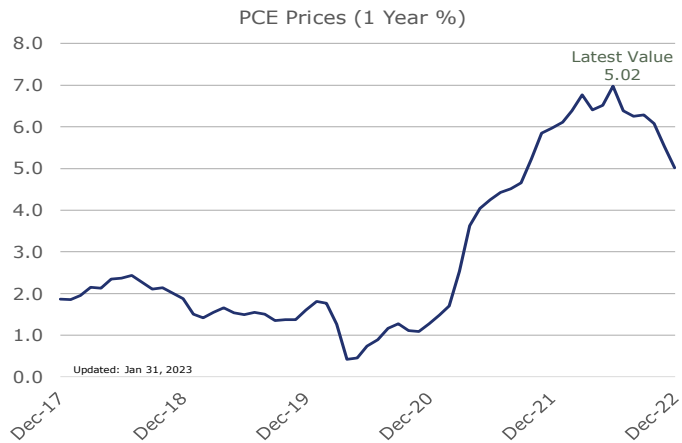
# ISM Surveys



# Manufacturing Activity

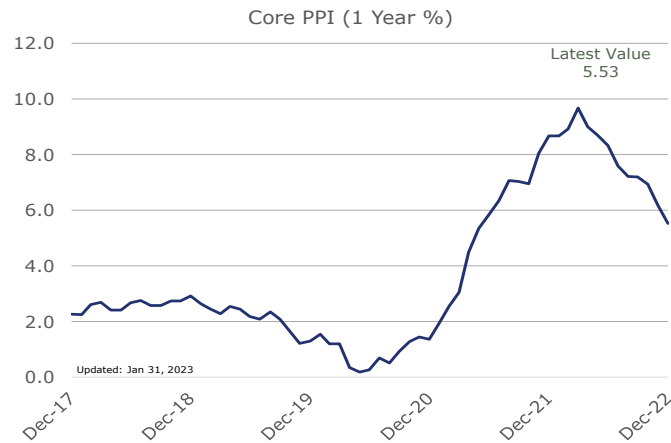
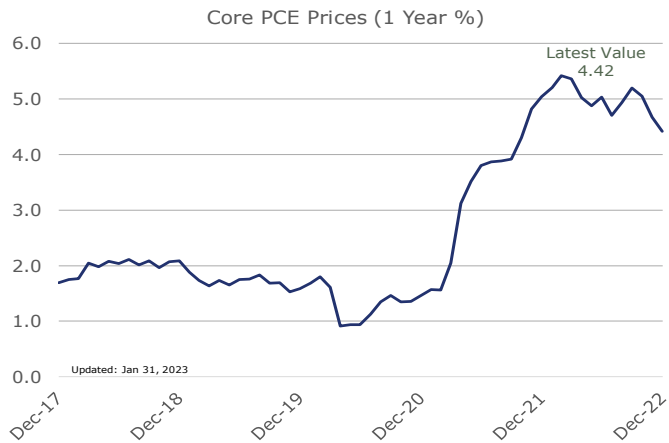
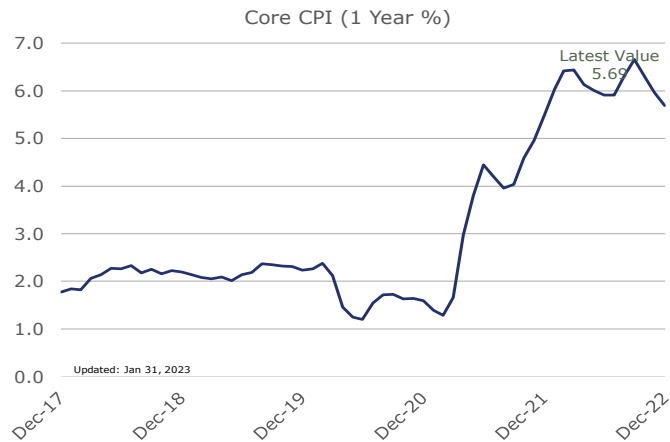


Price Indexes

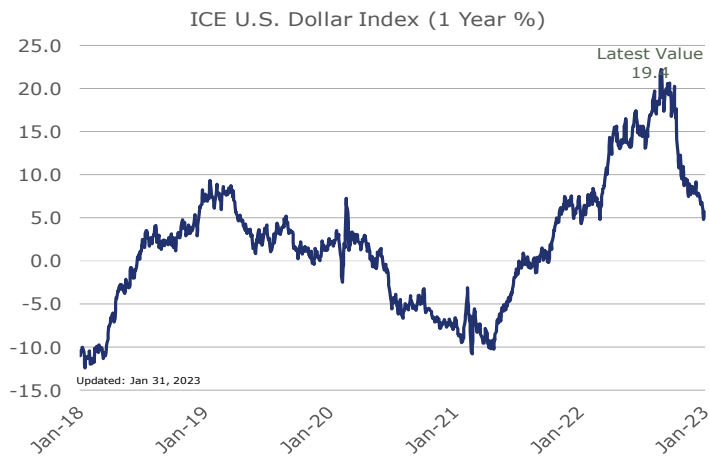




# Core Price Indexes



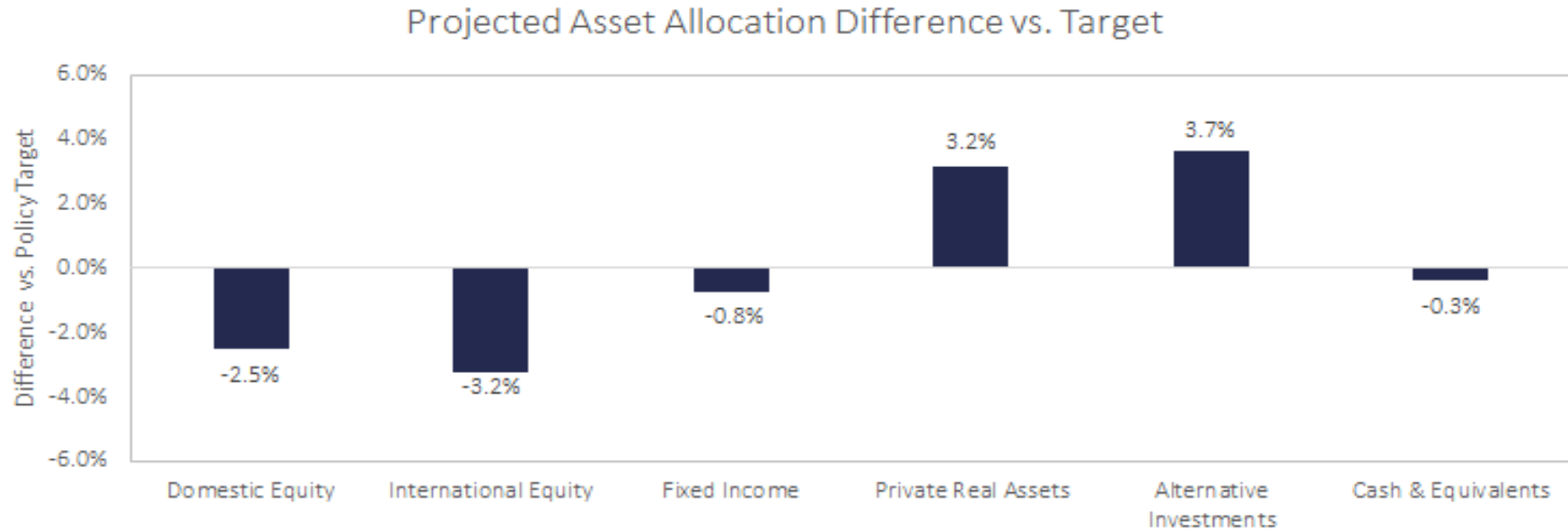
# U.S. Dollar



# IMRF Performance

# Projected Deviations from the Benchmark

As of January 31, 2023



- Includes committed, but unfunded amounts for Real Assets (\$2.06 billion) and Alternatives (\$2.53 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

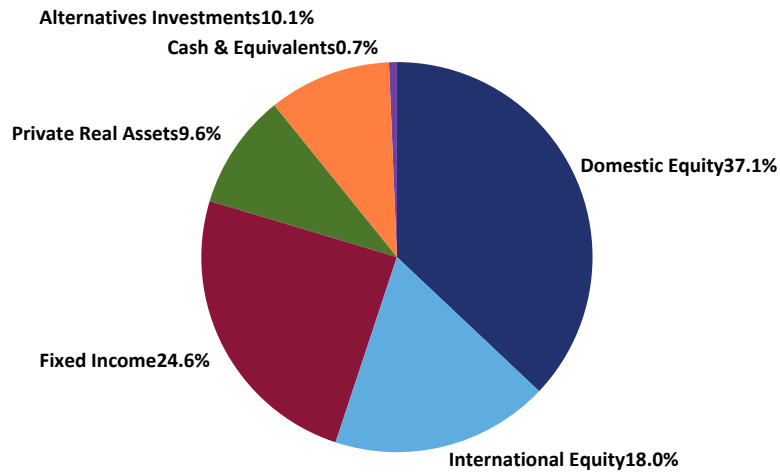
Real Assets Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

# Asset Allocation

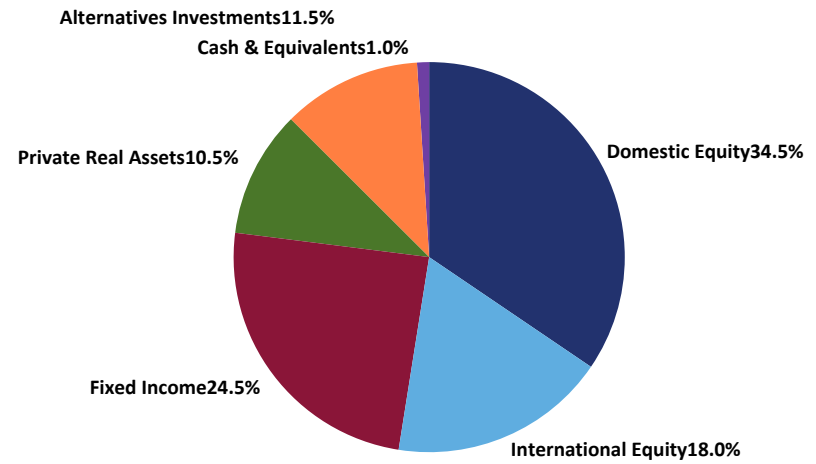
Total Fund

Periods Ended As of January 31, 2023

Actual Allocation



Target Allocation



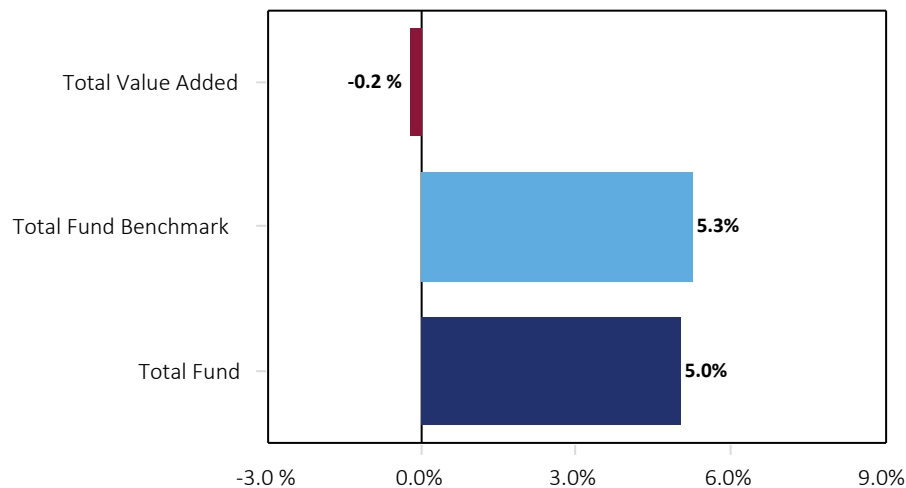
	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	50,381	100.0	100.0	0.0	
Domestic Equity	18,671	37.1	34.5	2.6	1,289
International Equity	9,081	18.0	18.0	0.0	12
Fixed Income	12,376	24.6	24.5	0.1	32
Private Real Assets	4,816	9.6	10.5	-0.9	-474
Alternatives Investments	5,109	10.1	11.5	-1.4	-685
Cash & Equivalents	329	0.7	1.0	-0.3	-175

# Total Fund Attribution

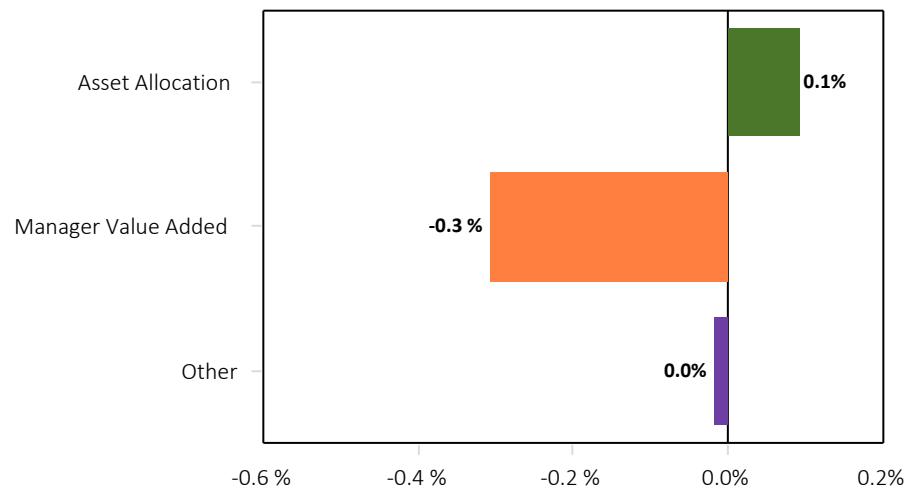
Total Fund

1 Month Ending January 31, 2023

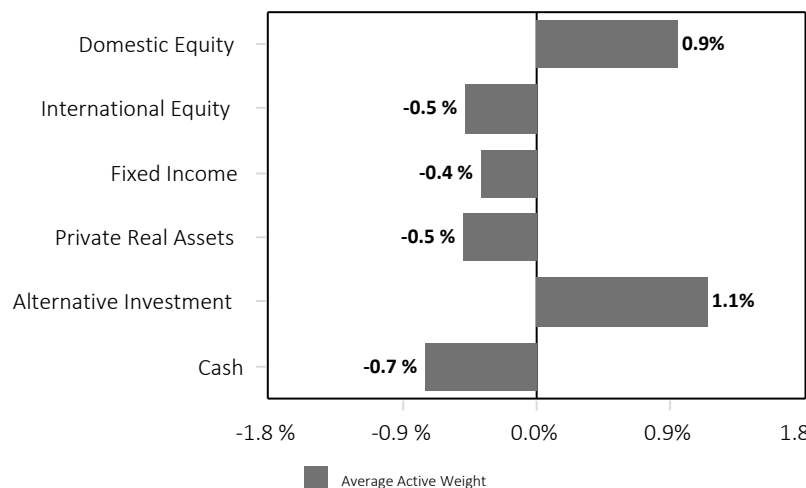
## Total Fund Performance



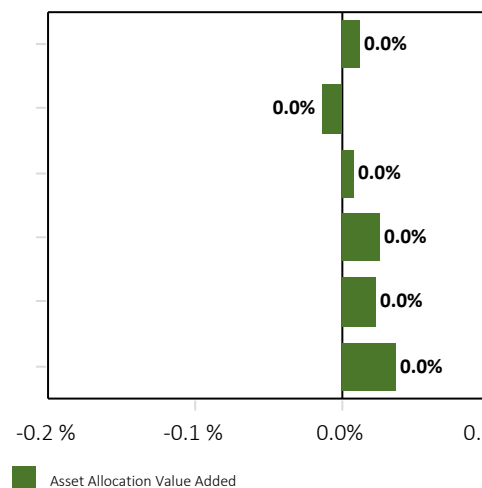
## Total Value Added:-0.2 %



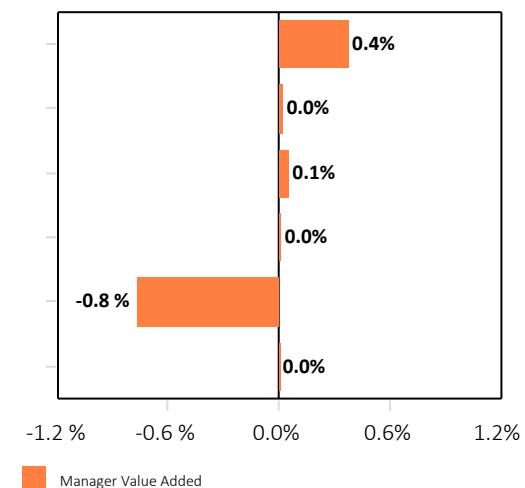
## Asset Class Under or Overweighting



## Asset Allocation Value Added:0.1%



## Total Manager Value Added:-0.3 %



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 January 31, 2023*

	Performance (%)								
	1 Month	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>5.05</b>	<b>-4.75</b>	<b>7.28</b>	<b>6.45</b>	<b>8.19</b>	<b>8.52</b>	<b>8.29</b>	<b>9.67</b>	<b>1/1/1982</b>
Total Fund - Net	5.05	-4.89	7.10	6.28	7.98				
Total Fund Benchmark	5.28	-5.54	5.43	5.60	7.39	7.82			
<b>Domestic Equity</b>	<b>7.62</b>	<b>-7.14</b>	<b>10.21</b>	<b>8.88</b>	<b>12.01</b>	<b>10.68</b>	<b>10.11</b>	<b>11.51</b>	<b>1/1/1982</b>
Domestic Equity - Net	7.62	-7.29	10.03	8.70	11.79				
Custom Benchmark (U.S. Equity)	6.59	-7.74	9.71	9.24	12.32	10.55	9.81		
U.S. Equity IMRF Custom Benchmark	6.66	-7.08	9.19	8.41					
<b>International Equity</b>	<b>8.27</b>	<b>-6.63</b>	<b>4.48</b>	<b>2.18</b>	<b>5.51</b>	<b>8.34</b>	<b>7.52</b>	<b>7.48</b>	<b>9/1/1986</b>
International Equity - Net	8.26	-6.93	4.10	1.83	5.16				
MSCI AC World ex USA (Net)	8.11	-5.72	3.64	1.36	4.20	7.34			
International Equity IMRF Custom Benchmark	8.03	-6.60	3.40	1.12					
<b>Fixed Income</b>	<b>3.30</b>	<b>-7.12</b>	<b>-1.32</b>	<b>1.47</b>	<b>2.20</b>	<b>4.22</b>	<b>5.21</b>	<b>7.50</b>	<b>1/1/1982</b>
Fixed Income - Net	3.30	-7.19	-1.42	1.36	2.07				
Custom Benchmark (Fixed Income)	3.08	-6.85	-1.82	1.19	1.60	3.34	4.65	6.98	
Fixed Income IMRF Custom Benchmark	3.09	-7.38	-1.73	1.20					
<b>Private Real Assets</b>	<b>0.13</b>							<b>7.10</b>	<b>3/1/2022</b>
Private Real Assets - Net	0.12							7.03	
Custom Benchmark (Private Real Assets)	0.06							6.70	
<b>Real Estate</b>	<b>0.15</b>	<b>9.93</b>	<b>12.24</b>	<b>11.01</b>	<b>10.96</b>	<b>8.33</b>	<b>7.17</b>	<b>6.08</b>	<b>5/1/1985</b>
Real Estate - Net	0.13	9.84	12.18	10.97	10.93				
Blended Benchmark (Real Estate)	0.00	6.54	8.97	7.58	9.02	7.64	7.55	7.78	
<b>Agriculture</b>	<b>0.00</b>	<b>3.98</b>	<b>2.14</b>	<b>1.19</b>	<b>5.40</b>	<b>7.32</b>		<b>6.56</b>	<b>10/1/1997</b>
NCREIF Farmland Index	0.00	9.64	6.82	6.40	8.83	12.53		11.17	

Benchmark definitions on next page.

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

# Asset Class Returns

*Periods Ended January 31, 2023*

	Performance (%)								
	1 Month	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
<b>Timberland</b>	<b>0.00</b>	<b>13.60</b>	<b>3.41</b>	<b>2.12</b>	<b>3.67</b>	<b>3.54</b>	<b>6.87</b>	<b>7.02</b>	<b>10/1/1992</b>
NCREIF Timberland Index	0.00	12.90	7.51	5.37	5.80	6.98	7.85	8.48	
<b>Unlisted Infrastructure</b>	<b>0.00</b>	<b>11.76</b>	<b>13.13</b>					<b>11.81</b>	<b>4/1/2018</b>
Blended Benchmark (Unlisted Infrastructure)	1.13	10.09	9.36					9.23	
<b>Alternatives Investments</b>	<b>0.02</b>	<b>3.77</b>	<b>19.41</b>	<b>17.17</b>	<b>13.17</b>	<b>10.61</b>	<b>12.97</b>	<b>11.53</b>	<b>2/1/1986</b>
Alternatives Investments - Net	0.02	3.77	19.38	17.10	12.97				
Custom Benchmark (Alternative Investments)	7.23	-12.78	1.19	4.25	6.60	8.93	10.91	11.67	
<b>Private Equity</b>	<b>0.02</b>	<b>4.64</b>	<b>22.78</b>	<b>20.37</b>	<b>16.13</b>	<b>13.27</b>	<b>15.68</b>	<b>13.82</b>	<b>2/1/1986</b>
Blended Benchmark (Private Equity)	7.45	-13.75	0.82	4.01	6.48	8.87			
<b>Cash</b>	<b>0.39</b>	<b>3.38</b>	<b>2.77</b>	<b>2.88</b>	<b>1.73</b>	<b>1.36</b>	<b>3.01</b>	<b>3.73</b>	<b>7/1/1986</b>
90 Day U.S. Treasury Bill	0.31	1.78	0.78	1.30	0.78	1.25	2.34	3.08	

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.

# 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.

# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	Dec-2022		Jan-2023	
	\$	%	\$	%
<b>Domestic Equity</b>	<b>17,448,903,100</b>	<b>36.43</b>	<b>18,670,703,270</b>	<b>37.06</b>
<b>Large Cap Growth</b>	<b>2,944,288,673</b>	<b>6.15</b>	<b>3,274,345,912</b>	<b>6.50</b>
Sands Capital	1,201,012,297	2.51	1,385,790,937	2.75
Xponance Russell 1000 G	1,743,276,376	3.64	1,888,554,975	3.75
<b>Large Cap Value</b>	<b>4,631,558,697</b>	<b>9.67</b>	<b>4,938,292,151</b>	<b>9.80</b>
Dodge & Cox	1,728,993,204	3.61	1,841,161,627	3.65
LSV Asset	1,418,302,933	2.96	1,511,768,449	3.00
NTGI S&P 500 Value	1,484,262,560	3.10	1,585,362,074	3.15
<b>Large Cap Pass. Core</b>	<b>1,945,750,947</b>	<b>4.06</b>	<b>1,981,143,690</b>	<b>3.93</b>
NTGI MarketCap Idx.	1,945,750,947	4.06	1,981,143,690	3.93
<b>Factor Diversity Strategies</b>	<b>2,318,030,533</b>	<b>4.84</b>	<b>2,479,002,155</b>	<b>4.92</b>
U.S. Large Cap FDP-GSAM	2,318,030,533	4.84	2,479,002,155	4.92
<b>Quantitative Factor Strategies</b>	<b>2,155,151,638</b>	<b>4.50</b>	<b>2,267,834,377</b>	<b>4.50</b>
Quantitative US Equity - SciBeta	2,155,151,638	4.50	2,267,834,377	4.50
<b>Small Cap Growth</b>	<b>679,167,546</b>	<b>1.42</b>	<b>760,319,379</b>	<b>1.51</b>
Frontier Capital	679,167,546	1.42	760,319,379	1.51
<b>Small Cap Value</b>	<b>1,399,941,970</b>	<b>2.92</b>	<b>1,539,236,155</b>	<b>3.06</b>
Channing	285,902,968	0.60	318,850,057	0.63
DFA Small Cap Val.	532,395,280	1.11	583,380,358	1.16
William Blair Small Cap Value	581,643,721	1.21	637,005,740	1.26
<b>Public Real Assets</b>	<b>1,375,013,095</b>	<b>2.87</b>	<b>1,430,529,451</b>	<b>2.84</b>
Brookfield	384,584,077	0.80	405,770,160	0.81
Cohen & Steers	990,429,018	2.07	1,024,759,291	2.03

# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	Dec-2022		Jan-2023	
	\$	%	\$	%
<b>International Equity</b>	<b>8,387,346,009</b>	<b>17.51</b>	<b>9,080,863,913</b>	<b>18.02</b>
<b>Intl Large Cap Growth</b>	<b>1,392,016,238</b>	<b>2.91</b>	<b>1,506,646,098</b>	<b>2.99</b>
EARNEST Part. Intl	568,088,257	1.19	618,351,528	1.23
William Blair	823,927,981	1.72	888,294,570	1.76
<b>Intl Large Cap Value</b>	<b>1,267,341,613</b>	<b>2.65</b>	<b>1,388,364,313</b>	<b>2.76</b>
Brandes Investment	571,218,749	1.19	630,834,604	1.25
Mondrian	572,193,568	1.19	621,892,873	1.23
Lazard	123,929,296	0.26	135,636,836	0.27
<b>Intl Large Cap Core</b>	<b>4,049,262,218</b>	<b>8.45</b>	<b>4,349,253,113</b>	<b>8.63</b>
Arrowstreet Capital	1,002,514,846	2.09	1,067,400,533	2.12
Brown Capital	464,085,668	0.97	503,789,200	1.00
GlobeFlex Capital	790,620,542	1.65	835,545,854	1.66
Xponance Intl EQ	88,657,644	0.19	96,457,299	0.19
Progress Intl Equity	592,962	0.00	602,807	0.00
Transition Account	188,525	0.00	188,787	0.00
NTGI ACWI ex US Index Fund	1,702,602,031	3.55	1,845,268,633	3.66
<b>Intl All Cap Developed</b>	<b>144,466,592</b>	<b>0.30</b>	<b>154,141,339</b>	<b>0.31</b>
Ativo International	144,466,592	0.30	154,141,339	0.31
<b>International Small Cap</b>	<b>502,629,501</b>	<b>1.05</b>	<b>539,846,698</b>	<b>1.07</b>
Franklin Templeton	199,582,016	0.42	215,855,513	0.43
William Blair IntSC	303,047,485	0.63	323,991,185	0.64

# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	<b>Dec-2022</b>		<b>Jan-2023</b>	
	<b>\$</b>	<b>%</b>	<b>\$</b>	<b>%</b>
<b>Emerging Mkt Equity</b>	<b>1,031,629,847</b>	<b>2.15</b>	<b>1,142,612,352</b>	<b>2.27</b>
Genesis Investment Management, LLP.	1,031,629,847	2.15	1,142,612,352	2.27

# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	Dec-2022		Jan-2023	
	\$	%	\$	%
<b>Fixed Income</b>	<b>12,027,573,713</b>	<b>25.11</b>	<b>12,375,551,671</b>	<b>24.56</b>
<b>Domestic Fixed Core</b>	<b>3,738,475,455</b>	<b>7.81</b>	<b>3,858,960,017</b>	<b>7.66</b>
Attucks Fixed Income	86,159,511	0.18	89,040,682	0.18
Brandes FI Core	332,122,012	0.69	341,189,381	0.68
EARNEST Partners	888,905,464	1.86	914,043,081	1.81
Garcia Hamilton	954,134,051	1.99	993,128,751	1.97
Ramirez Asset Management	517,063,703	1.08	532,433,635	1.06
Xponance Yield Advantage Agg.	960,090,715	2.00	989,124,488	1.96
<b>Domestic Fixed Passive Core</b>	<b>2,699,434,195</b>	<b>5.64</b>	<b>2,784,979,821</b>	<b>5.53</b>
NTGI Blmbg Agg.	1,100,651,759	2.30	1,134,104,482	2.25
BlackRock US Debt I	1,598,782,435	3.34	1,650,875,339	3.28
<b>Domestic Fixed Core Plus</b>	<b>2,908,690,745</b>	<b>6.07</b>	<b>3,004,348,061</b>	<b>5.96</b>
LM Capital Group FI	836,206,981	1.75	859,575,019	1.71
Progress Inv. FI	1,101	0.00	1,113	0.00
Loop Capital Management	567,833,210	1.19	587,060,176	1.17
Western Asset	941,743,453	1.97	977,502,601	1.94
Longfellow Core Plus	562,906,000	1.18	580,209,152	1.15
<b>Bank Loans</b>	<b>1,616,072,322</b>	<b>3.37</b>	<b>1,633,378,462</b>	<b>3.24</b>
Barings Global Loan Fund	1,616,072,322	3.37	1,633,378,462	3.24
<b>Emerging Markets Debt</b>	<b>413,942</b>	<b>0.00</b>	<b>391,260</b>	<b>0.00</b>
Standish-Mellon EMD	413,942	0.00	391,260	0.00
<b>High Yield</b>	<b>1,064,487,054</b>	<b>2.22</b>	<b>1,093,494,050</b>	<b>2.17</b>
MacKay Shields	1,064,487,054	2.22	1,093,494,050	2.17

# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	Dec-2022		Jan-2023	
	\$	%	\$	%
<b>Private Real Assets</b>	<b>4,791,842,770</b>	<b>10.01</b>	<b>4,815,868,388</b>	<b>9.56</b>
<b>Real Estate</b>	<b>4,362,776,353</b>	<b>9.11</b>	<b>4,386,876,971</b>	<b>8.71</b>
<b>Real Estate Core Cmp</b>	<b>2,350,380,042</b>	<b>4.91</b>	<b>2,349,632,778</b>	<b>4.66</b>
TA Assoc. Buckhead	900,720,750	1.88	900,720,750	1.79
Barings Euro Core Property	141,907,419	0.30	144,407,160	0.29
Blackstone Property Euro	184,852,309	0.39	188,108,538	0.37
INVESCO Core Real Estate	250,478,467	0.52	248,625,899	0.49
INVESCO European real estate	56,881,071	0.12	57,883,048	0.11
AEW Core Property Tr	288,235,321	0.60	288,235,321	0.57
CBRE Core Partners	333,822,479	0.70	333,822,479	0.66
JPM Strategic Property Fund	193,482,226	0.40	187,829,584	0.37
<b>RE Non-Core Cmp</b>	<b>2,012,396,311</b>	<b>4.20</b>	<b>2,037,244,193</b>	<b>4.04</b>
Artemis MWBE Spruce	327,294,956	0.68	324,812,058	0.64
Franklin T. EMREFF	2,870,680	0.01	2,870,680	0.01
Security Capital	93,311,385	0.19	100,917,491	0.20
Dune II	7,607,645	0.02	7,607,645	0.02
Non-Core Real Estate Funds	1,340,145,446	2.80	1,357,190,666	2.69
Non-Core Intl Real Estate	241,086,483	0.50	243,765,936	0.48
Almanac ARS V	79,717	0.00	79,717	0.00
<b>Agriculture</b>	<b>247,585,848</b>	<b>0.52</b>	<b>247,585,848</b>	<b>0.49</b>
Premiere Partners IV	247,585,848	0.52	247,585,848	0.49
<b>Timberland</b>	<b>63,349,367</b>	<b>0.13</b>	<b>63,349,367</b>	<b>0.13</b>
Forest Investment	63,349,367	0.13	63,349,367	0.13
<b>Unlisted Infrastructure</b>	<b>118,131,202</b>	<b>0.25</b>	<b>118,056,202</b>	<b>0.23</b>
Unlisted Infrastructure Funds	118,131,202	0.25	118,056,202	0.23



# Investment Manager Asset Allocation

*Periods Ended January 31, 2023*

	Dec-2022		Jan-2023	
	\$	%	\$	%
<b>Alternatives Investments</b>	<b>5,097,683,692</b>	<b>10.65</b>	<b>5,109,062,591</b>	<b>10.14</b>
<b>Absolute Return</b>	<b>75,952</b>	<b>0.00</b>	<b>74,904</b>	<b>0.00</b>
Aurora Investment	75,952	0.00	74,904	0.00
<b>Private Equity</b>	<b>4,924,786,019</b>	<b>10.29</b>	<b>4,933,572,832</b>	<b>9.79</b>
<b>Abbott S/A Comp.</b>	<b>507,256,863</b>	<b>1.06</b>	<b>507,264,577</b>	<b>1.01</b>
Muller Monroe MPEFF	1	0.00	1	0.00
<b>Pantheon S/A Comp.</b>	<b>416,250,559</b>	<b>0.87</b>	<b>409,427,855</b>	<b>0.81</b>
Private Equity Fund - Domestic	3,255,891,125	6.80	3,275,737,581	6.50
Private Equity Fund - International	536,451,555	1.12	532,206,901	1.06
Oakbrook Opportunities Fund	208,935,917	0.44	208,935,917	0.41
<b>Private Credit</b>	<b>172,821,721</b>	<b>0.36</b>	<b>175,414,855</b>	<b>0.35</b>
Private Credit Fund - Domestic	172,821,721	0.36	175,414,855	0.35
<b>Cash &amp; Equivalents</b>	<b>121,363,972</b>	<b>0.25</b>	<b>328,952,125</b>	<b>0.65</b>
<b>Total Fund</b>	<b>47,874,713,254</b>	<b>100.00</b>	<b>50,381,001,958</b>	<b>100.00</b>

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>50,381,001,958</b>	<b>5.05</b>	<b>-4.75</b>	<b>7.28</b>	<b>6.45</b>	<b>8.19</b>	<b>9.67</b>	<b>1/1/1982</b>
Total Fund - Net		5.05	-4.89	7.10	6.28	7.98		
Total Fund Benchmark		5.28	-5.54	5.43	5.60	7.39		
<b>Domestic Equity</b>	<b>18,670,703,270</b>	<b>7.62</b>	<b>-7.14</b>	<b>10.21</b>	<b>8.88</b>	<b>12.01</b>	<b>11.51</b>	<b>1/1/1982</b>
Domestic Equity - Net		7.62	-7.29	10.03	8.70	11.79		
Custom Benchmark (U.S. Equity)		6.59	-7.74	9.71	9.24	12.32		
Russell 3000 Index		6.89	-8.24	9.51	9.12	12.28	11.41	
U.S. Equity IMRF Custom Benchmark		6.66	-7.08	9.19	8.41			
<b>Large Cap Equity</b>	<b>12,672,783,908</b>	<b>7.95</b>	<b>-9.45</b>	<b>9.74</b>	<b>8.89</b>	<b>12.36</b>	<b>11.20</b>	<b>1/1/1982</b>
Large Cap Equity - Net		7.94	-9.53	9.64	8.79	12.23		
Russell 1000 Index		6.70	-8.55	9.66	9.38	12.51	11.56	
<b>Large Cap Growth</b>	<b>3,274,345,912</b>	<b>11.21</b>	<b>-18.66</b>	<b>8.61</b>	<b>10.66</b>	<b>13.52</b>	<b>11.85</b>	<b>1/1/1982</b>
Large Cap Growth - Net		11.21	-18.74	8.51	10.56	13.39		
LCG Blended Benchmark		8.33	-16.02	9.89	11.22	14.53		
Russell 1000 Growth Index		8.33	-16.02	9.89	11.22	14.53	11.26	
<b>Xponance Russell 1000 G</b>	<b>1,888,554,975</b>	<b>8.33</b>	<b>-16.01</b>	<b>9.89</b>			<b>10.74</b>	<b>10/1/2018</b>
Xponance Russell 1000 G - Net		8.33	-16.03	9.87			10.72	
Russell 1000 Growth Index		8.33	-16.02	9.89			10.75	
<b>Sands Capital</b>	<b>1,385,790,937</b>	<b>15.39</b>	<b>-29.32</b>	<b>0.56</b>	<b>6.33</b>	<b>11.43</b>	<b>10.70</b>	<b>11/1/2003</b>
Sands Capital - Net		15.39	-29.51	0.33	6.09	11.19		
LCG Blended Benchmark		8.33	-16.02	9.89	11.22	14.53	10.38	
Russell 1000 Growth Index		8.33	-16.02	9.89	11.22	14.53	10.42	

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Large Cap Value</b>	<b>4,938,292,151</b>	<b>6.79</b>	<b>0.68</b>	<b>11.21</b>	<b>7.69</b>	<b>11.61</b>	<b>10.37</b>	<b>10/1/1982</b>
Large Cap Value - Net		6.77	0.53	11.05	7.53	11.43		
LCV Blended Benchmark		5.18	-0.43	8.54	6.94	10.15		
Russell 1000 Value Index		5.18	-0.43	8.54	6.94	10.15	11.59	
<b>Dodge &amp; Cox</b>	<b>1,841,161,627</b>	<b>6.62</b>	<b>-2.16</b>	<b>13.20</b>	<b>9.00</b>	<b>12.64</b>	<b>10.08</b>	<b>9/1/2003</b>
Dodge & Cox - Net		6.62	-2.36	12.97	8.77	12.42		
LCV Blended Benchmark		5.18	-0.43	8.54	6.94	10.15	8.47	
Russell 1000 Value Index		5.18	-0.43	8.54	6.94	10.15	8.60	
<b>LSV Asset</b>	<b>1,511,768,449</b>	<b>6.80</b>	<b>1.92</b>	<b>10.54</b>	<b>6.56</b>	<b>11.53</b>	<b>10.75</b>	<b>2/1/2003</b>
LSV Asset - Net		6.73	1.68	10.27	6.31	11.25		
LCV Blended Benchmark		5.18	-0.43	8.54	6.94	10.15	9.23	
Russell 1000 Value Index		5.18	-0.43	8.54	6.94	10.15	9.23	
<b>NTGI S&amp;P 500 Value</b>	<b>1,585,362,074</b>	<b>6.99</b>	<b>2.95</b>	<b>9.67</b>	<b>8.19</b>	<b>10.98</b>	<b>6.62</b>	<b>8/1/1999</b>
NTGI S&P 500 Value - Net		6.99	2.94	9.66	8.18	10.97		
S&P 500 Value		7.00	3.08	9.66	8.17	10.91	6.59	
<b>Large Cap Pass. Core</b>	<b>1,981,143,690</b>	<b>6.97</b>	<b>-8.39</b>	<b>9.38</b>	<b>9.03</b>	<b>12.26</b>	<b>11.11</b>	<b>1/1/1985</b>
Large Cap Pass. Core - Net		6.97	-8.39	9.38	9.02	12.25		
Dow Jones U.S. Total Stock Market Index		6.97	-8.42	9.37	8.99	12.19		
<b>NTGI MarketCap Idx.</b>	<b>1,981,143,690</b>	<b>6.97</b>	<b>-8.39</b>	<b>9.38</b>	<b>9.03</b>	<b>12.26</b>	<b>10.90</b>	<b>2/1/1985</b>
NTGI MarketCap Idx. - Net		6.97	-8.39	9.38	9.02	12.25		
Dow Jones U.S. Total Stock Market Index		6.97	-8.42	9.37	8.99	12.19		
<b>Factor Diversity Strategies</b>	<b>2,479,002,155</b>	<b>6.94</b>	<b>-7.14</b>				<b>9.23</b>	<b>8/18/2020</b>

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>U.S. Large Cap FDP-GSAM</b>	<b>2,479,002,155</b>	<b>6.94</b>	<b>-7.14</b>				<b>9.23</b>	<b>8/18/2020</b>
U.S. Large Cap FDP-GSAM - Net		6.94	-7.17				9.18	
Solactive GBS U.S. 1000 Index		6.76	-8.79				8.64	
GSAM Active Beta US. Large Cap FDC Index		6.97	-7.09				9.21	
<b>Quantitative Factor Strategies</b>	<b>2,267,834,377</b>	<b>5.23</b>	<b>-1.96</b>	<b>8.90</b>			<b>9.34</b>	<b>9/17/2019</b>
<b>Quantitative US Equity - SciBeta</b>	<b>2,267,834,377</b>	<b>5.23</b>	<b>-1.96</b>	<b>8.90</b>			<b>9.34</b>	<b>9/17/2019</b>
Quantitative US Equity - SciBeta - Net		5.23	-2.01	8.72			9.16	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		5.03	-2.93	7.89			8.36	
<b>Small Cap</b>	<b>2,299,555,534</b>	<b>10.60</b>	<b>2.10</b>	<b>13.68</b>	<b>9.18</b>	<b>11.24</b>	<b>12.08</b>	<b>7/1/1988</b>
Small Cap Composite - Net		10.60	1.38	12.96	8.55	10.63		
Russell 2000 Index		9.75	-3.38	7.51	5.54	9.36	9.19	
<b>Small Cap Growth</b>	<b>760,319,379</b>	<b>11.95</b>	<b>-2.42</b>	<b>12.83</b>	<b>11.22</b>	<b>12.52</b>	<b>12.92</b>	<b>7/1/1988</b>
Small Cap Growth - Net		11.95	-3.61	11.71	10.35	11.79		
Russell 2000 Growth Index		9.95	-6.50	4.26	4.68	9.54	7.85	
<b>Frontier Capital</b>	<b>760,319,379</b>	<b>11.95</b>	<b>-2.43</b>	<b>13.99</b>	<b>13.57</b>	<b>13.48</b>	<b>13.28</b>	<b>8/1/1988</b>
Frontier Capital - Net		11.95	-3.61	12.79	12.59	12.69		
Russell 2000 Growth Index		9.95	-6.50	4.26	4.68	9.54	7.93	
<b>Small Cap Value</b>	<b>1,539,236,155</b>	<b>9.95</b>	<b>4.49</b>	<b>14.26</b>	<b>8.10</b>	<b>10.78</b>	<b>11.73</b>	<b>9/1/1989</b>
Small Cap Value - Net		9.95	4.04	13.74	7.59	10.26		
Russell 2000 Value Index		9.54	-0.52	9.94	5.78	8.84	9.82	
<b>Channing</b>	<b>318,850,057</b>	<b>11.52</b>	<b>-3.79</b>	<b>11.16</b>	<b>6.39</b>	<b>9.88</b>	<b>10.07</b>	<b>7/1/2011</b>
Channing - Net		11.52	-4.27	10.62	5.89	9.35	9.50	
Russell 2000 Value Index		9.54	-0.52	9.94	5.78	8.84	8.80	

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>DFA Small Cap Val.</b>	<b>583,380,358</b>	<b>9.58</b>	<b>10.66</b>	<b>19.03</b>	<b>9.45</b>	<b>11.35</b>	<b>12.25</b>	<b>2/1/1996</b>
DFA Small Cap Val. - Net		9.58	10.33	18.54	8.97	10.83		
Russell 2000 Value Index		9.54	-0.52	9.94	5.78	8.84	9.33	
<b>William Blair Small Cap Value</b>	<b>637,005,740</b>	<b>9.52</b>	<b>3.64</b>	<b>11.94</b>	<b>7.88</b>	<b>11.21</b>	<b>11.34</b>	<b>5/1/1999</b>
Inv. Couns. Maryland - Net		9.52	3.13	11.40	7.34	10.69		
Russell 2000 Value Index		9.54	-0.52	9.94	5.78	8.84	8.91	
<b>Public Real Assets</b>	<b>1,430,529,451</b>	<b>4.04</b>	<b>3.63</b>	<b>3.97</b>	<b>6.78</b>		<b>6.78</b>	<b>8/1/2017</b>
Public Real Assets - Net		4.04	3.31	3.59	6.35		6.38	
Public Real Assets Benchmark		3.65	1.32	2.10	5.06		4.88	
<b>Brookfield</b>	<b>405,770,160</b>	<b>5.51</b>	<b>5.46</b>	<b>4.69</b>	<b>6.24</b>		<b>5.83</b>	<b>8/1/2017</b>
Brookfield - Net		5.51	5.04	4.19	5.71		5.33	
Dow Jones Brookfield Global Infrastructure Composite Index		5.76	2.57	2.77	4.67		4.32	
<b>Cohen &amp; Steers</b>	<b>1,024,759,291</b>	<b>3.47</b>	<b>3.10</b>	<b>3.99</b>	<b>7.26</b>		<b>7.44</b>	<b>8/1/2017</b>
Cohen & Steers - Net		3.47	2.81	3.65	6.87		7.07	
FTSE Global Core Infrastructure 50/50 Index (Net)		2.60	0.66	1.73	5.23		5.13	

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>International Equity</b>	<b>9,080,863,913</b>	<b>8.27</b>	<b>-6.63</b>	<b>4.48</b>	<b>2.18</b>	<b>5.51</b>	<b>7.48</b>	<b>9/1/1986</b>
International Equity - Net		8.26	-6.93	4.10	1.83	5.16		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20		
International Equity IMRF Custom Benchmark		8.03	-6.60	3.40	1.12			
<b>Intl LargeCap Equity</b>	<b>7,244,263,524</b>	<b>7.98</b>	<b>-4.74</b>	<b>5.72</b>	<b>2.89</b>	<b>5.90</b>	<b>7.57</b>	<b>9/1/1986</b>
Intl LargeCap Equity - Net		7.98	-4.98	5.41	2.61	5.62		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20		
<b>Intl Large Cap Grwth</b>	<b>1,506,646,098</b>	<b>8.24</b>	<b>-7.16</b>	<b>6.37</b>	<b>3.45</b>	<b>5.88</b>	<b>8.12</b>	<b>9/1/2002</b>
Intl Large Cap Grwth - Net		8.24	-7.43	6.04	3.17	5.59		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	6.75	
MSCI AC World ex USA Growth (Net)		8.46	-9.23	2.67	2.11	5.17	6.96	
<b>EARNEST Part. Intl</b>	<b>618,351,528</b>	<b>8.85</b>	<b>-0.73</b>	<b>8.57</b>	<b>3.65</b>	<b>5.30</b>	<b>8.76</b>	<b>10/1/2004</b>
EARNEST Part. Intl - Net		8.85	-0.89	8.35	3.46	5.09		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	5.55	
MSCI AC World ex USA Growth (Net)		8.46	-9.23	2.67	2.11	5.17	6.12	
<b>William Blair</b>	<b>888,294,570</b>	<b>7.81</b>	<b>-11.17</b>	<b>4.84</b>	<b>3.42</b>	<b>6.50</b>	<b>9.07</b>	<b>10/1/2002</b>
William Blair - Net		7.81	-11.50	4.45	3.06	6.12		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	7.37	
MSCI AC World ex USA Growth (Net)		8.46	-9.23	2.67	2.11	5.17	7.47	
<b>Intl Large Cap Val.</b>	<b>1,388,364,313</b>	<b>9.55</b>	<b>-1.49</b>	<b>4.99</b>	<b>2.01</b>	<b>5.16</b>	<b>8.16</b>	<b>10/1/1995</b>
Intl Large Cap Val. - Net		9.55	-1.77	4.67	1.70	4.80		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	5.08	
MSCI AC World ex USA Value		7.79	-1.67	4.80	0.92	3.64		

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						Inception Date
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	
<b>Brandes Investment</b>	<b>630,834,604</b>	<b>10.44</b>	<b>1.55</b>	<b>6.93</b>	<b>2.86</b>	<b>5.88</b>	<b>8.46</b>	<b>1/1/1996</b>
Brandes Investment - Net		10.44	1.39	6.70	2.66	5.64		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	4.99	
MSCI AC World ex USA Value		7.79	-1.67	4.80	0.92	3.64		
<b>Mondrian</b>	<b>621,892,873</b>	<b>8.69</b>	<b>-4.30</b>	<b>3.57</b>	<b>1.39</b>	<b>4.58</b>	<b>4.99</b>	<b>4/1/2012</b>
Mondrian - Net		8.69	-4.60	3.18	0.97	4.12	4.52	
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	4.72	
MSCI AC World ex USA Value		7.79	-1.67	4.80	0.92	3.64	4.36	
<b>Lazard</b>	<b>135,636,836</b>	<b>9.45</b>	<b>-1.97</b>	<b>3.71</b>	<b>1.86</b>	<b>4.94</b>	<b>5.77</b>	<b>4/1/2012</b>
Lazard - Net		9.45	-2.16	3.47	1.62	4.48	5.33	
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	4.72	
MSCI AC World ex USA Value		7.79	-1.67	4.80	0.92	3.64	4.36	
<b>Intl Large Cap Active Core</b>	<b>2,503,984,480</b>	<b>6.70</b>	<b>-4.25</b>	<b>7.04</b>	<b>3.68</b>	<b>7.27</b>	<b>5.41</b>	<b>2/1/2008</b>
Intl Large Cap Active Core - Net		6.70	-4.63	6.48	3.18	6.73		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	2.74	
<b>Arrowstreet Capital</b>	<b>1,067,400,533</b>	<b>6.47</b>	<b>-1.17</b>	<b>12.90</b>	<b>7.38</b>	<b>9.23</b>	<b>6.75</b>	<b>3/1/2008</b>
Arrowstreet Capital - Net		6.47	-1.64	12.38	6.89	8.74	6.26	
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	2.57	
<b>Brown Capital</b>	<b>503,789,200</b>	<b>8.56</b>	<b>-10.93</b>	<b>0.96</b>	<b>1.62</b>	<b>6.08</b>	<b>6.85</b>	<b>10/1/2004</b>
Brown Capital - Net		8.56	-11.17	0.27	1.10	5.26		
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	5.55	
<b>GlobeFlex Capital</b>	<b>835,545,854</b>	<b>5.68</b>	<b>-3.62</b>	<b>6.56</b>	<b>1.61</b>	<b>6.34</b>	<b>5.12</b>	<b>3/1/2006</b>
GlobeFlex Capital - Net		5.68	-3.95	6.17	1.22	5.94	4.68	
MSCI AC World ex USA (Net)		8.11	-5.72	3.64	1.36	4.20	3.80	

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Xponance Intl EQ</b>	96,457,299	8.80	-5.12				0.25	2/1/2021
Xponance Intl EQ - Net		8.80	-5.74				-0.30	
MSCI EAFE (Net)		8.10	-2.83				1.98	
<b>Progress Intl Equity</b>	602,807							
<b>Intl Large Cap Passive Core</b>	1,845,268,633	8.38	-5.73	4.26	2.21	5.17	3.95	2/1/2000
Intl Large Cap Passive Core - Net		8.38	-5.74	4.26	2.21	5.16		
International Large Cap Passive Core Benchmark		8.11	-5.72	3.33	1.59	4.67	3.52	
<b>NTGI ACWI ex US Index</b>	1,845,268,633	8.38	-5.73				-4.77	10/1/2021
NTGI ACWI ex US Index - Net		8.38	-5.74				-4.78	
MSCI AC World ex USA (Net)		8.11	-5.72				-5.71	
<b>Intl All Cap Developed</b>	154,141,339	6.70	-8.60	1.65			4.55	2/1/2019
Intl All Cap Developed - Net		6.57	-9.07	1.15			4.04	
MSCI EAFE + Canada (Net)		8.20	-2.98	4.64			6.46	
<b>Ativo International</b>	154,141,339	6.70	-8.60	1.65			4.55	2/1/2019
Ativo International - Net		6.57	-9.07	1.15			4.04	
MSCI EAFE + Canada (Net)		8.20	-2.98	4.64			6.46	
<b>Intl Small Cap Eqty</b>	539,846,698	7.40	-14.45	2.27	0.35	5.85	4.52	12/1/2005
Intl Small Cap Eqty - Net		7.33	-15.13	1.48	-0.40	5.07		
MSCI AC World ex USA Small Cap (Net)		7.20	-8.50	4.54	1.10	5.53	5.79	
Custom Benchmark (Intl Small Cap)		7.20	-8.50	4.54	1.10	5.53	5.20	
<b>Franklin Templeton</b>	215,855,513	8.15	-10.14	3.18	0.21	5.52	5.31	8/1/2011
Franklin Templeton - Net		7.97	-10.79	2.38	-0.55	4.76	4.55	
MSCI AC World ex USA Small Cap (Net)		7.20	-8.50	4.54	1.10	5.53	4.73	



# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>William Blair IntSC</b>	<b>323,991,185</b>	<b>6.91</b>	<b>-17.10</b>	<b>1.68</b>	<b>0.43</b>	<b>6.11</b>	<b>7.58</b>	<b>9/1/2010</b>
William Blair IntSC - Net		6.91	-17.79	0.90	-0.31	5.32	6.77	
MSCI AC World ex USA Small Cap (Net)		7.20	-8.50	4.54	1.10	5.53	6.36	
Custom Benchmark (Intl Small Cap)		7.20	-8.50	4.54	1.10	5.53	6.60	
<b>Emerging Mkt Equity</b>	<b>1,142,612,352</b>	<b>10.80</b>	<b>-13.46</b>	<b>-0.97</b>	<b>-0.79</b>	<b>2.71</b>	<b>8.07</b>	<b>2/1/1992</b>
Emerging Mkt Equity - Net		10.76	-13.92	-1.53	-1.34	2.13		
MSCI Emerging Markets Index		7.91	-11.73	1.77	-1.11	2.45	6.47	
<b>Genesis Investment Management, LLP.</b>	<b>1,142,612,352</b>	<b>10.80</b>	<b>-13.47</b>	<b>-0.97</b>	<b>-0.79</b>	<b>2.71</b>	<b>9.12</b>	<b>5/1/2004</b>
Genesis Investment Management, LLP. - Net		10.76	-13.92	-1.53	-1.34	2.13		
MSCI Emerging Markets Index		7.91	-11.73	1.77	-1.11	2.45	7.53	

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Fixed Income</b>	<b>12,375,551,671</b>	<b>3.30</b>	<b>-7.12</b>	<b>-1.32</b>	<b>1.47</b>	<b>2.20</b>	<b>7.50</b>	<b>1/1/1982</b>
Fixed Income - Net		3.30	-7.19	-1.42	1.36	2.07		
Custom Benchmark (Fixed Income)		3.08	-6.85	-1.82	1.19	1.60	6.98	
Fixed Income IMRF Custom Benchmark		3.09	-7.38	-1.73	1.20			
<b>Active Fixed Core</b>	<b>3,858,960,017</b>	<b>3.41</b>	<b>-7.58</b>	<b>-1.62</b>	<b>1.28</b>	<b>1.88</b>	<b>3.79</b>	<b>4/1/2001</b>
ActiveCore Fixed Inc - Net		3.41	-7.68	-1.73	1.18	1.74		
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.68	
<b>Attucks Fixed Income</b>	<b>89,040,682</b>	<b>3.34</b>	<b>-8.84</b>				<b>-5.61</b>	<b>2/1/2021</b>
Attucks Fixed Income - Net		3.34	-9.15				-5.88	
Blmbg. U.S. Aggregate Index		3.08	-8.36				-5.70	
<b>Brandes FI Core</b>	<b>341,189,381</b>	<b>2.82</b>	<b>-6.30</b>	<b>-1.40</b>	<b>1.24</b>		<b>1.20</b>	<b>3/1/2016</b>
Brandes FI Core - Net		2.82	-6.33	-1.42	1.23		1.19	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86		1.04	
<b>EARNEST Partners</b>	<b>914,043,081</b>	<b>3.11</b>	<b>-7.93</b>	<b>-1.90</b>	<b>1.27</b>	<b>1.85</b>	<b>3.59</b>	<b>5/1/2005</b>
EARNEST Partners - Net		3.11	-8.02	-2.02	1.14	1.69	3.41	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.14	
<b>Garcia Hamilton</b>	<b>993,128,751</b>	<b>4.11</b>	<b>-6.44</b>	<b>-1.43</b>	<b>1.34</b>		<b>1.73</b>	<b>6/1/2015</b>
Garcia Hamilton - Net		4.09	-6.52	-1.51	1.26		1.64	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86		1.15	
<b>Ramirez Asset Management</b>	<b>532,433,635</b>	<b>3.33</b>	<b>-8.16</b>				<b>-1.65</b>	<b>5/1/2020</b>
Ramirez Asset Management - Net		3.33	-8.28				-1.77	
Blmbg. U.S. Aggregate Index		3.08	-8.36				-3.60	
<b>Xponance Yield Advantage Agg.</b>	<b>989,124,488</b>	<b>3.25</b>	<b>-8.37</b>	<b>-1.59</b>	<b>1.26</b>	<b>1.86</b>	<b>3.45</b>	<b>6/1/2005</b>
Xponance Yield Advantage Agg. - Net		3.25	-8.49	-1.72	1.13	1.72	3.27	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.10	

Benchmark definitions in glossary.

# Performance

Periods Ended January 31, 2023

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Pass. Core Fixed Inc</b>	<b>2,784,979,821</b>	<b>3.17</b>	<b>-8.27</b>	<b>-2.29</b>	<b>0.93</b>	<b>1.48</b>	<b>5.20</b>	<b>1/1/1990</b>
Pass. Core Fixed Inc - Net		3.17	-8.28	-2.29	0.92	1.48		
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	5.18	
<b>BlackRock US Debt I</b>	<b>1,650,875,339</b>	<b>3.26</b>	<b>-8.28</b>	<b>-2.25</b>	<b>0.95</b>		<b>1.78</b>	<b>10/1/2013</b>
BlackRock US Debt I - Net		3.26	-8.28	-2.26	0.95		1.78	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86		1.67	
<b>NTGI Blmbg Agg.</b>	<b>1,134,104,482</b>	<b>3.04</b>	<b>-8.28</b>	<b>-2.32</b>	<b>0.91</b>	<b>1.46</b>	<b>5.24</b>	<b>2/1/1990</b>
NTGI Blmbg Agg. - Net		3.04	-8.28	-2.33	0.90	1.45		
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	5.23	
<b>Core Plus Fixed Income</b>	<b>3,004,348,061</b>	<b>3.56</b>	<b>-8.55</b>	<b>-1.63</b>	<b>1.35</b>	<b>2.17</b>	<b>7.35</b>	<b>1/1/1982</b>
Core Plus Fixed Inc. - Net		3.55	-8.68	-1.79	1.19	2.00		
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	6.94	
<b>LM Capital Group FI</b>	<b>859,575,019</b>	<b>3.07</b>	<b>-7.17</b>	<b>-0.98</b>	<b>1.58</b>	<b>2.13</b>	<b>3.97</b>	<b>5/1/2005</b>
LM Capital Group FI - Net		3.03	-7.32	-1.14	1.41	1.97	3.80	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.14	
<b>Progress Inv. FI</b>	<b>1,113</b>							
<b>Loop Capital Management</b>	<b>587,060,176</b>	<b>3.62</b>	<b>-8.09</b>	<b>-1.63</b>	<b>1.22</b>	<b>2.28</b>	<b>3.97</b>	<b>5/1/2005</b>
Loop Capital Management - Net		3.62	-8.18	-1.76	1.09	2.14	3.84	
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.14	
<b>Western Asset</b>	<b>977,502,601</b>	<b>4.07</b>	<b>-10.13</b>	<b>-2.38</b>	<b>1.12</b>	<b>2.35</b>	<b>4.47</b>	<b>11/1/2001</b>
Western Asset - Net		4.07	-10.26	-2.51	0.99	2.21		
Blmbg. U.S. Aggregate Index		3.08	-8.36	-2.35	0.86	1.43	3.44	
<b>Longfellow Core Plus</b>	<b>580,209,152</b>	<b>3.36</b>	<b>-8.32</b>				<b>-1.79</b>	<b>5/1/2020</b>
Longfellow Core Plus - Net		3.36	-8.45				-1.93	
Blmbg. U.S. Aggregate Index		3.08	-8.36				-3.60	

Benchmark definitions in glossary.

# Performance

*Periods Ended January 31, 2023*

	Market Value \$	Performance (%)						
		1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Bank Loans</b>	<b>1,633,378,462</b>	<b>2.91</b>	<b>-1.32</b>	<b>2.25</b>	<b>3.13</b>		<b>3.85</b>	<b>8/1/2014</b>
Bank Loans - Net		2.91	-1.23	2.29	3.03		3.55	
Custom Benchmark		2.66	1.16	3.12	3.71		3.89	
<b>Barings Global Loan Fund</b>	<b>1,633,378,462</b>	<b>2.91</b>	<b>-1.32</b>	<b>2.25</b>	<b>3.13</b>		<b>3.85</b>	<b>8/1/2014</b>
Barings Global Loan Fund - Net		2.91	-1.23	2.29	3.03		3.55	
Custom Benchmark		2.66	1.16	3.12	3.71		3.89	
<b>Emerging Markets Debt</b>	<b>391,260</b>							
Standish-Mellon EMD	391,260							
<b>High Yield</b>	<b>1,093,494,050</b>	<b>3.15</b>	<b>-2.27</b>	<b>2.89</b>	<b>4.24</b>	<b>5.19</b>	<b>8.98</b>	<b>4/1/1986</b>
High Yield - Net		3.15	-2.56	2.56	3.91	4.84		
ICE BofA US High Yield, Cash Pay Index		3.88	-5.07	1.06	2.78	4.19	7.69	
<b>MacKay Shields</b>	<b>1,093,494,050</b>	<b>3.15</b>	<b>-2.28</b>	<b>2.89</b>	<b>4.25</b>	<b>5.30</b>	<b>8.02</b>	<b>11/1/2000</b>
MacKay Shields - Net		3.15	-2.56	2.57	3.91	4.95		
ICE BofA US High Yield, Cash Pay Index		3.88	-5.07	1.06	2.78	4.19	6.67	

## 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.