

Wilshire



Illinois Municipal Retirement Fund

Monthly Investment Summary

Nov-2023

IMRF Performance Summary

- The Illinois Municipal Retirement Fund (“IMRF”) ended November 2023 with a market value of \$50.6 billion, up for the month by approximately \$2.7 billion. IMRF returned 5.96% during the month, outperforming the Total Fund Benchmark, which returned 5.75%. Growth and defensive assets rebounded in November on the back of economic moderation in the U.S. and falling inflation across developed markets.
- The broad U.S. Equity market was positive for the month, with Small Cap stocks underperforming Large Cap. The U.S. Equity Portfolio outperformed its benchmark during November, returning 9.47% versus 9.23%. Investment manager performance in Large Cap Growth was the largest contributor to relative outperformance.
- International Equity markets were positive in November, while Emerging Markets underperformed Developed. The International Equity portfolio outperformed the benchmark during the month, returning 9.18% versus 9.00%. In aggregate, investment manager performance in Large Cap Growth and Small Cap were the largest contributors to relative outperformance.
- Fixed Income markets were generally positive in November as yields fell and increased expectations of future rate cuts. The Fixed Income Portfolio outperformed the benchmark during the month, returning 4.11% versus 4.06%. Investment manager performance in Core and Core Plus were the largest contributors to relative outperformance.
- As of November 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 Thursday November 30, 2023

Portfolio Allocations	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Global 60/40 (ACWI/U.S. Core Bonds)	7.35	(2.44)	(3.50)	4.74	(3.31)	10.49	7.68	1.69	5.99
Wilshire Risk Parity (12%)	7.60	(2.11)	(4.19)	5.32	(5.82)	7.56	3.71	0.55	5.04
Strategic Allocation Themes *	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Growth ¹	9.23	(3.01)	(4.14)	5.95	(3.40)	16.60	12.01	5.69	9.07
Defensive Growth ²	5.06	(2.79)	(2.34)	2.13	(2.51)	5.31	2.73	1.71	6.78
Diversified Credit ³	4.51	(1.07)	(1.48)	3.40	(0.26)	8.27	8.19	(0.46)	2.95
Real Assets ⁴	4.81	(1.52)	(4.19)	3.22	(3.10)	(1.46)	(3.87)	4.44	5.37
Defensive ⁵	4.53	(1.58)	(2.54)	2.88	(3.23)	1.64	1.18	(4.47)	0.71
Major Asset Classes	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	9.34	(2.66)	(4.78)	6.43	(3.28)	19.72	12.71	8.66	12.00
MSCI ACWI-ex-USA (Net)	9.00	(4.13)	(3.16)	4.50	(3.77)	10.08	9.26	1.67	5.06
Bloomberg U.S. Aggregate	4.53	(1.58)	(2.54)	2.88	(3.23)	1.64	1.18	(4.47)	0.71
Bloomberg U.S. Corporate High Yield	4.53	(1.16)	(1.18)	3.31	0.46	9.37	8.69	1.37	4.15
Wilshire Global Real Estate Securities	10.84	(4.64)	(5.88)	5.70	(5.21)	4.46	0.37	2.87	2.33
Bloomberg Commodity	(2.25)	0.27	(0.69)	(1.99)	4.71	(5.37)	(7.68)	13.60	6.29

Source: Bloomberg, All returns are in USD

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

¹ Growth : 100% Global Equity

² Defensive Growth : 60% Low Vol Global Equity, 40% US Convertibles

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

⁴ Real Assets : 40% Global REITS/GLI, 36% Commodities, 45% TIPS, 15% CMBS, 9% Gold, -45% Cash

⁵ Defensive : 100% US Core Bonds

Market Returns

Returns though Thursday November 30, 2023

US Equity	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	9.34	(2.66)	(4.78)	6.43	(3.28)	19.72	12.71	8.66	12.00
Standard & Poor's 500	9.13	(2.10)	(4.77)	6.84	(3.27)	20.80	13.84	9.76	12.51
FT Wilshire US Large Cap	9.38	(2.20)	(4.71)	6.98	(3.12)	21.75	14.60	9.35	12.74
FT Wilshire US Large-Cap Growth	11.73	(1.85)	(5.63)	9.67	(3.47)	39.66	28.91	8.58	16.13
FT Wilshire US Large-Cap Value	7.02	(2.53)	(3.70)	4.31	(2.75)	6.18	1.74	9.73	8.98
FT Wilshire US Small Cap	9.13	(5.63)	(5.18)	2.99	(4.16)	8.40	1.99	4.49	7.33
FT Wilshire US Small-Cap Growth	9.21	(6.40)	(5.61)	2.22	(5.14)	10.27	4.15	(0.35)	7.00
FT Wilshire US Small-Cap Value	9.04	(4.85)	(4.75)	3.75	(3.17)	6.54	(0.12)	9.20	7.28
Non-US Equity	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
MSCI ACWI-ex-USA (Net)	9.00	(4.13)	(3.16)	4.50	(3.77)	10.08	9.26	1.67	5.06
MSCI EAFE (Net)	9.28	(4.05)	(3.42)	4.85	(4.11)	12.27	12.36	3.80	5.99
MSCI EM (Net)	8.00	(3.89)	(2.62)	3.81	(2.93)	5.70	4.21	(4.04)	2.34
MSCI ACWI-ex-US Small cap (Net)	9.68	(5.59)	(3.76)	3.54	(1.70)	8.75	8.93	1.69	5.38
Global Equity	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
MSCI ACWI (Net)	9.23	(3.01)	(4.14)	5.95	(3.40)	16.60	12.01	5.69	9.07
MSCI ACWI Minimum Volatility (Net)	4.96	(1.71)	(2.16)	3.16	(2.51)	4.38	2.31	2.98	4.73
Fixed Income	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Bloomberg U.S. Treasury Bills	0.47	0.46	0.44	0.94	1.34	4.62	5.01	1.97	1.83
Bloomberg U.S. Aggregate	4.53	(1.58)	(2.54)	2.88	(3.23)	1.64	1.18	(4.47)	0.71
Bloomberg Long Term Treasury	9.16	(4.93)	(7.29)	3.77	(11.83)	(5.11)	(6.72)	(14.16)	(1.81)
Bloomberg U.S. TIPS	2.71	(0.72)	(1.85)	1.97	(2.60)	1.17	0.14	(1.49)	2.72
Bloomberg U.S. Corporate High Yield	4.53	(1.16)	(1.18)	3.31	0.46	9.37	8.69	1.37	4.15
Credit Suisse Leveraged Loan	1.19	0.03	0.88	1.22	3.37	11.26	11.65	5.53	4.74
Bloomberg US Convertibles Index	5.12	(4.22)	(2.52)	0.68	(2.36)	7.19	4.19	(0.94)	9.69
JPM EMBI Global Diversified	5.66	(1.35)	(2.60)	4.23	(2.23)	6.07	6.42	(4.44)	1.00
Real Assets	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Wilshire Global Real Estate Securities	10.84	(4.64)	(5.88)	5.70	(5.21)	4.46	0.37	2.87	2.33
FTSE Global Core Infrastructure 50/50	8.15	(1.70)	(4.60)	6.31	(7.80)	(1.36)	(3.44)	3.52	5.18
Alerian Midstream Energy	7.34	(0.32)	(0.67)	6.99	2.49	14.60	7.70	24.67	10.71
Bloomberg Commodity	(2.25)	0.27	(0.69)	(1.99)	4.71	(5.37)	(7.68)	13.60	6.29
Gold	2.65	7.32	(4.72)	10.16	(3.68)	11.64	15.15	4.65	10.78
Bitcoin	8.95	28.80	3.42	40.32	(11.48)	127.70	120.71	24.89	57.22

Source: Bloomberg, All returns are in USD

Factor/Relative Returns

Returns though Thursday November 30, 2023

Asset Class Differentials	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Stocks (ACWI) > Bonds (BB US Aggregate)	4.70	(1.43)	(1.59)	3.07	(0.17)	14.96	10.83	10.17	8.36
Stocks (ACWI) > Mkt Alts (Equity Hedged)	5.40	(2.24)	(2.49)	2.91	(2.91)	7.71	5.54	0.19	4.66
Mkt Alts (Relative Value) > Bonds (BB US Aggregate)	(1.89)	0.71	1.36	(1.14)	2.29	0.50	0.50	2.94	(0.10)

Equity & Real Assets Differentials	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
US Small > Large	(0.26)	(3.43)	(0.48)	(3.99)	(1.05)	(13.35)	(12.61)	(4.86)	(5.41)
US Value > Growth	(4.72)	(0.68)	1.93	(5.36)	0.72	(33.48)	(27.17)	1.15	(7.16)
ACWI-ex-US > US	(0.34)	(1.47)	1.62	(1.93)	(0.49)	(9.64)	(3.45)	(6.99)	(6.94)
EM > EAFE	(1.28)	0.17	0.80	(1.04)	1.19	(6.58)	(8.15)	(7.84)	(3.65)
ACWI-ex-US Currency Impact	3.08	(0.73)	(1.72)	2.18	(2.41)	(0.67)	1.71	(3.74)	(1.53)
EAFE Currency Impact	3.69	(0.70)	(2.34)	2.80	(2.84)	(0.67)	2.82	(4.71)	(1.58)
EM Currency Impact	1.82	(0.29)	(0.82)	1.44	(1.50)	(0.81)	(0.17)	(2.42)	(1.90)
Global Low Volatility > ACWI	(4.27)	1.29	1.98	(2.78)	0.90	(12.22)	(9.70)	(2.71)	(4.34)
Global RE > ACWI	1.61	(1.64)	(1.74)	(0.25)	(1.81)	(12.15)	(11.65)	(2.82)	(6.74)
Commodities > Global RE	(13.10)	4.91	5.18	(7.69)	9.92	(9.82)	(8.05)	10.73	3.96
Commodities > TIPS	(4.96)	0.99	1.15	(3.96)	7.31	(6.54)	(7.82)	15.09	3.57
Gold > Commodities	4.90	7.05	(4.02)	12.15	(8.39)	17.01	22.83	(8.95)	4.49

Fixed Income Differentials	MTD	OCT	SEP	QTD	Q3 2023	YTD	1 Year	3 Year	5 Year
Duration (US Core > US Core 1-3 Years)	3.37	(1.90)	(2.48)	1.39	(3.97)	(1.77)	(2.43)	(4.20)	(0.66)
IG Credit > Treasury	2.51	(0.66)	(0.46)	1.77	(0.03)	3.34	3.41	0.44	1.77
High Yield > IG Credit	(1.45)	0.71	1.49	(0.68)	3.55	5.36	5.13	5.88	2.09
High Yield > Loans	3.31	(1.17)	(2.12)	2.09	(2.97)	(2.14)	(3.26)	(4.28)	(0.76)
TIPS > Treasury	(1.83)	1.20	1.26	(0.57)	1.82	1.58	1.66	4.94	2.58
EMD > Dev Hdg	2.70	(1.45)	(1.15)	1.18	(1.53)	(0.76)	2.09	(1.99)	0.08
EMD > High Yield	0.77	(0.31)	(1.09)	0.43	(2.77)	(4.68)	(3.11)	(5.34)	(2.87)
Non-US > US Core	0.99	0.66	(0.76)	1.67	(0.77)	(0.43)	1.35	(3.42)	(2.70)
Non-US Hdg > US Core	(1.93)	1.55	1.41	(0.31)	2.45	3.81	2.31	2.50	0.48
FI Currency Impact	2.92	(0.89)	(2.17)	1.98	(3.22)	(4.24)	(0.96)	(5.92)	(3.18)

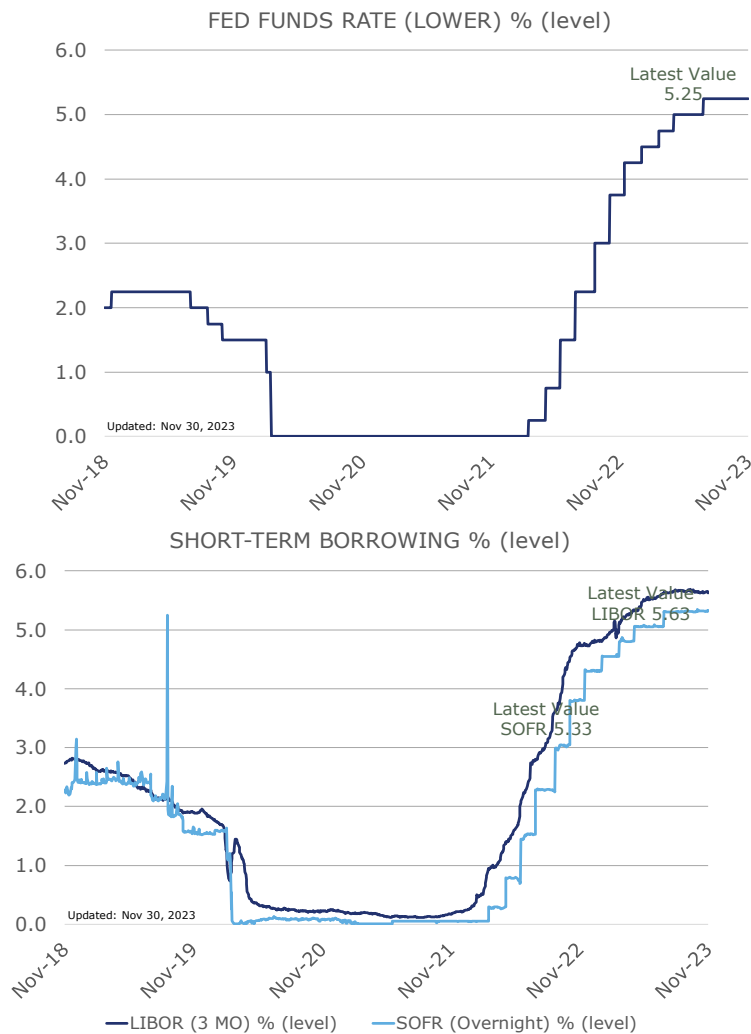
Source: Bloomberg, All returns are in USD

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
	11/30/23	10/31/23	09/29/23	08/31/23	09/29/23	06/30/23	12/30/22	11/30/22	11/30/20	11/30/18
Govt/Treasury Yields										
Fed Funds Target Rate (Upper)	5.50	5.50	5.50	5.50	5.50	5.25	4.50	4.00	0.25	2.25
2-Year Treasury	4.68	5.09	5.05	4.87	5.05	4.90	4.43	4.31	0.15	2.79
5-Year Treasury	4.27	4.86	4.61	4.26	4.61	4.16	4.01	3.74	0.36	2.81
10-Year Treasury	4.33	4.93	4.57	4.11	4.57	3.84	3.88	3.61	0.84	2.99
30-Year Treasury	4.50	5.10	4.70	4.21	4.70	3.86	3.97	3.74	1.57	3.29
10-Year Real Treasury	2.09	2.52	2.23	1.87	2.23	1.62	1.58	1.24	(0.96)	1.02
Term Spreads										
5 - 2 Year Treasury Spread	(0.42)	(0.24)	(0.44)	(0.61)	(0.44)	(0.75)	(0.43)	(0.58)	0.21	0.02
10 - 5 Year Treasury Spread	0.06	0.08	(0.04)	(0.15)	(0.04)	(0.32)	(0.13)	(0.13)	0.48	0.17
10 - 2 Year Treasury Spread	(0.36)	(0.16)	(0.48)	(0.76)	(0.48)	(1.06)	(0.56)	(0.71)	0.69	0.20
30 - 10 Year Treasury Spread	0.16	0.16	0.13	0.10	0.13	0.02	0.08	0.13	0.73	0.30
30 - 2 Year Treasury Spread	(0.19)	0.00	(0.35)	(0.66)	(0.35)	(1.04)	(0.47)	(0.58)	1.42	0.50
Market Yields										
Bloomberg U.S. Treasury YTW	4.55	5.03	4.85	4.51	4.85	4.37	4.18	4.05	0.56	2.93
Bloomberg U.S. Aggregate YTW	5.05	5.65	5.39	4.97	5.39	4.81	4.68	4.56	1.15	3.54
Bloomberg U.S. Long Treasury YTW	4.66	5.22	4.85	4.34	4.85	3.97	4.08	3.96	1.44	3.29
Bloomberg U.S. Long Govt/Credit YTW	5.24	5.91	5.54	5.04	5.54	4.75	4.91	4.79	2.26	4.30
Credit Spreads										
Bloomberg Investment Grade OAS	1.04	1.29	1.21	1.18	1.21	1.23	1.30	1.33	1.04	1.37
Bloomberg High Yield OAS	3.70	4.37	3.94	3.72	3.94	3.90	4.69	4.48	4.12	4.18
Breakeven Inflation Rates										
1-Year Breakeven Inflation	2.02	2.23	1.73	1.50	1.73	1.83	2.14	2.38	1.28	(1.11)
2-Year Breakeven Inflation	2.10	2.26	2.05	1.98	2.05	2.11	2.31	2.53	1.55	1.22
5-Year Breakeven Inflation	2.17	2.38	2.25	2.17	2.25	2.19	2.38	2.48	1.70	1.77
10-Year Breakeven Inflation	2.25	2.42	2.34	2.24	2.34	2.23	2.30	2.37	1.79	1.97
5-Year 5-Year Forward Breakeven Inflation	2.31	2.48	2.43	2.28	2.43	2.22	2.20	2.23	1.85	2.11

Source: Bloomberg

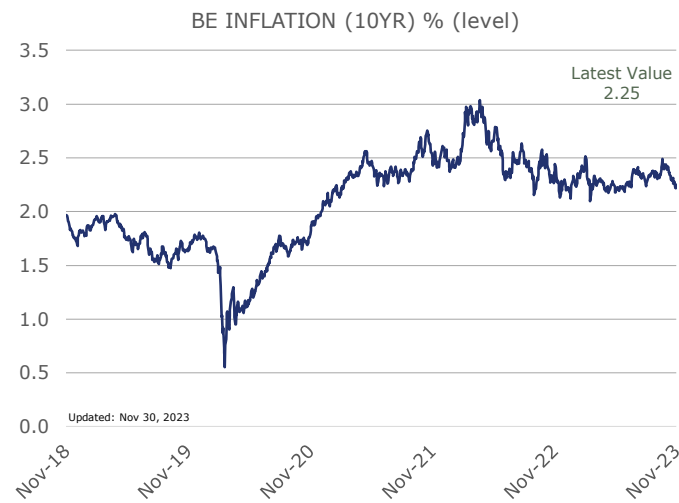
Short Rates



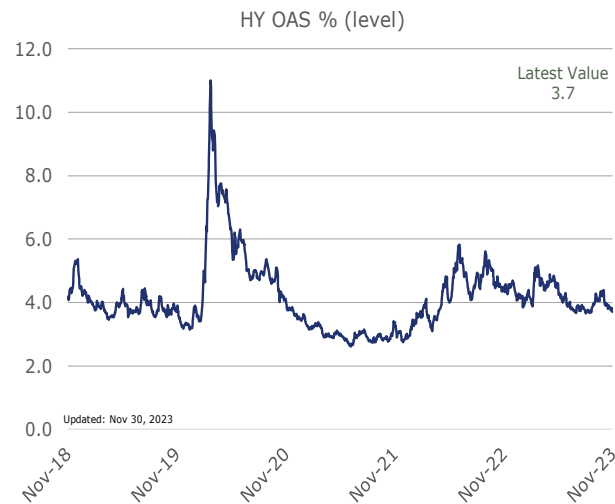
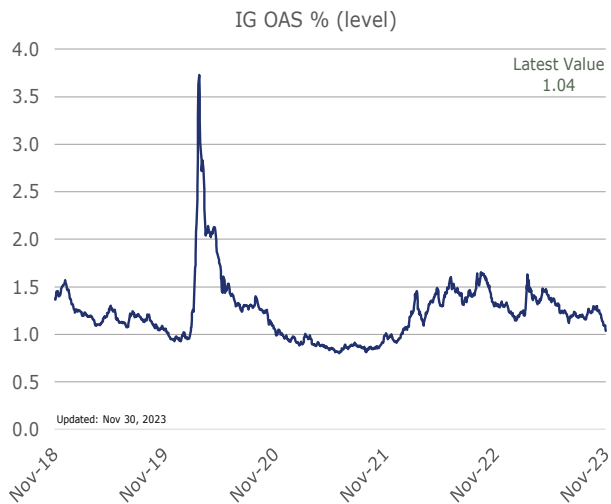
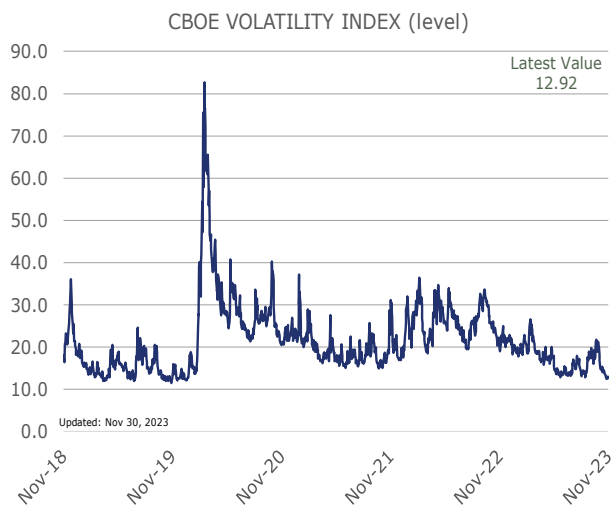
Data Source: Bloomberg

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

Treasury Rates

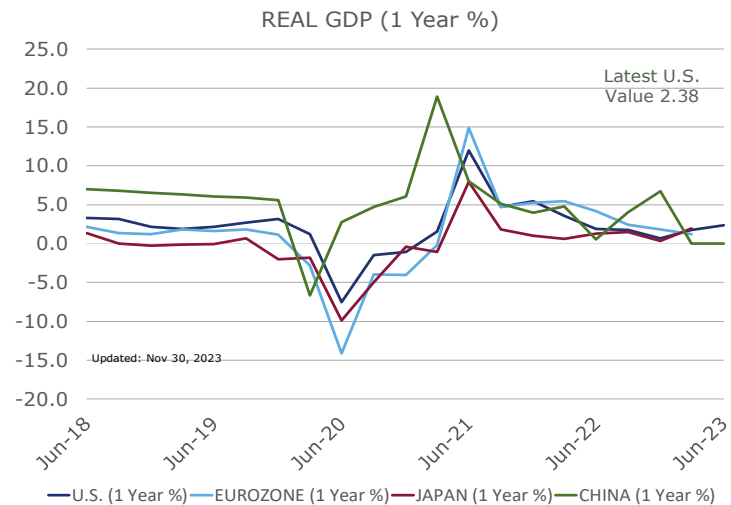
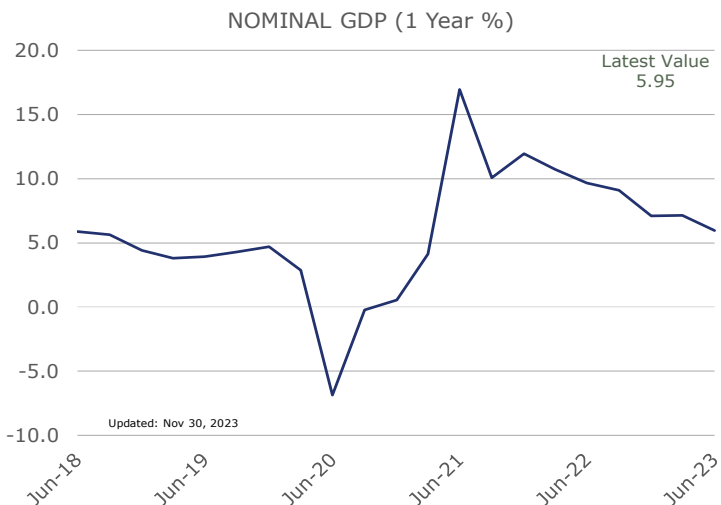
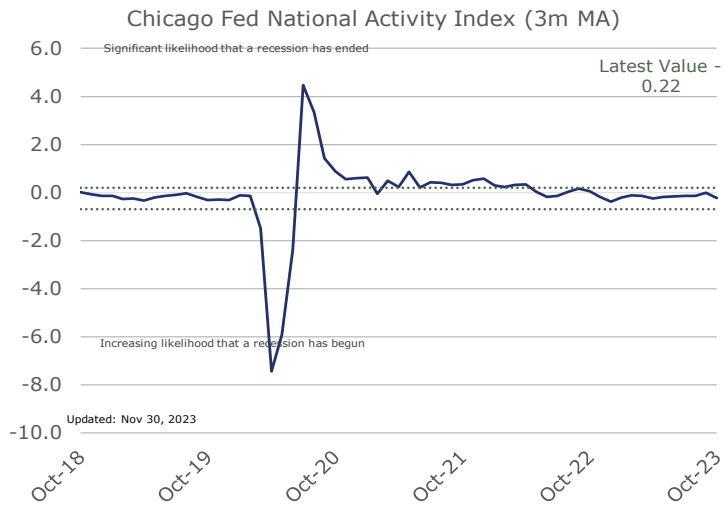


Volatility & Credit Risk



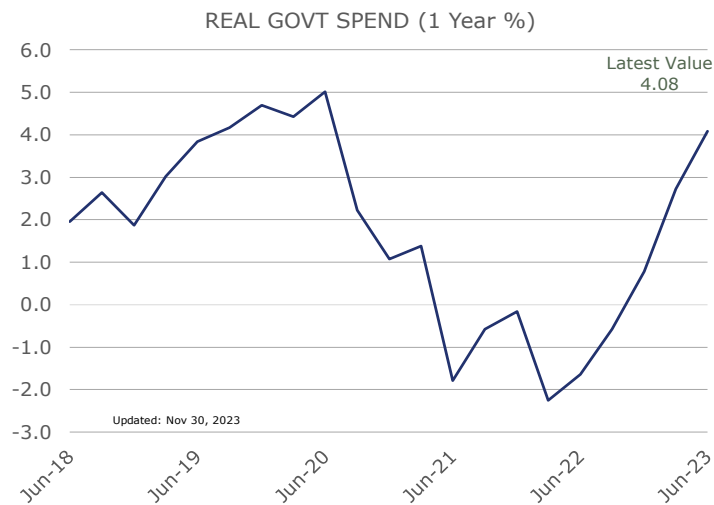
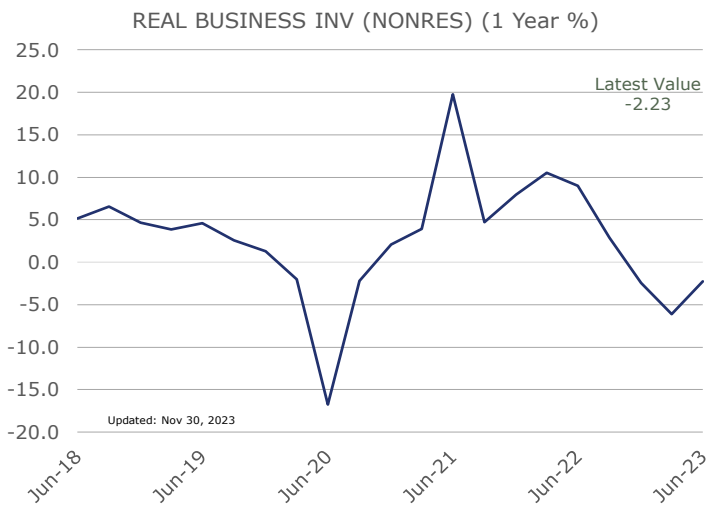
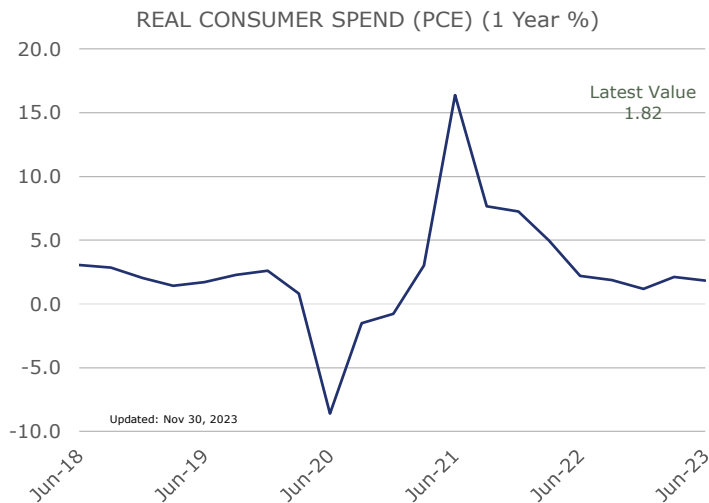
Data Sources: Bloomberg

Economic Growth

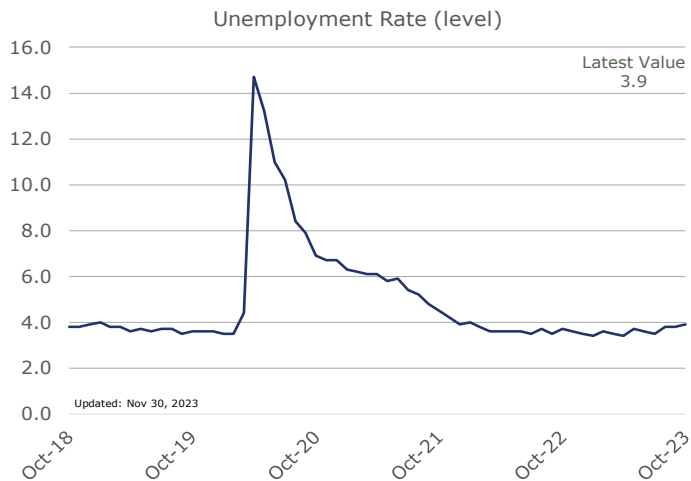
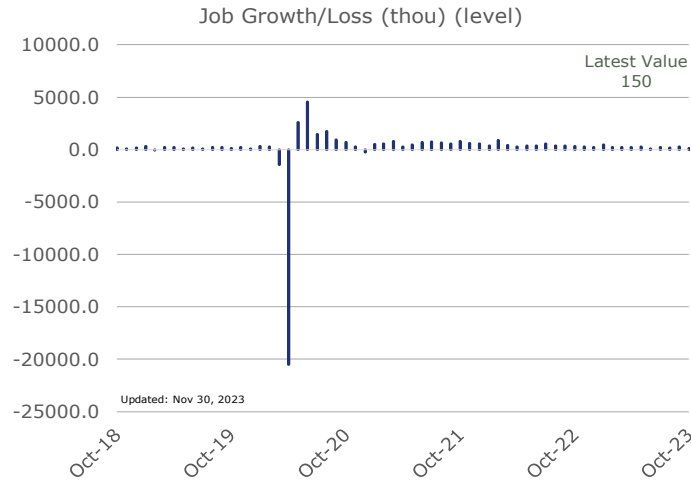
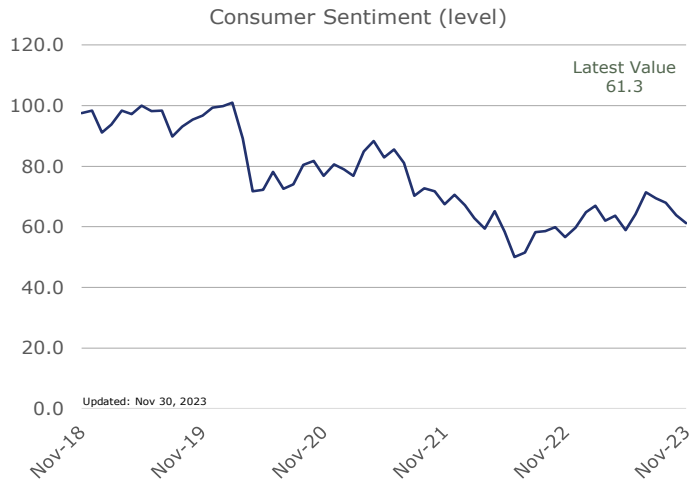


Data Sources: Bloomberg

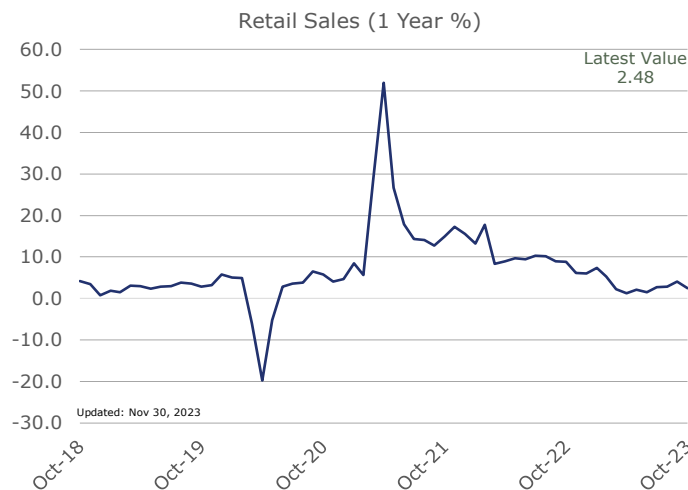
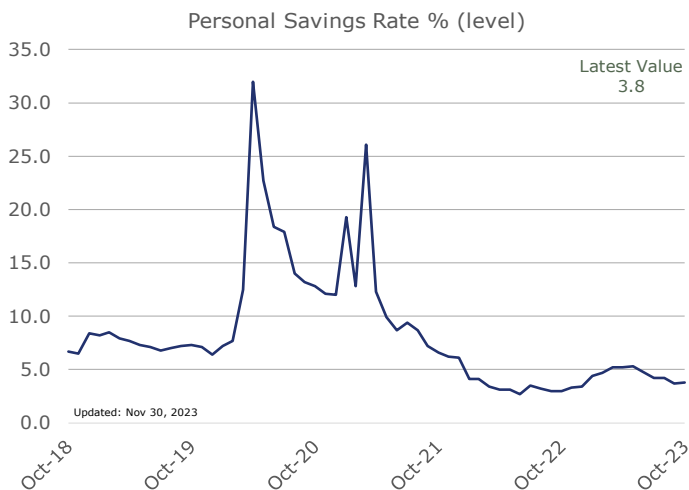
Economic Growth



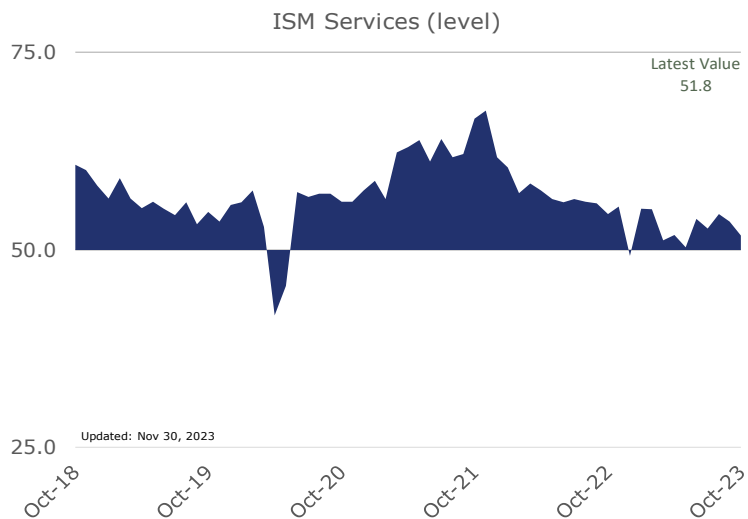
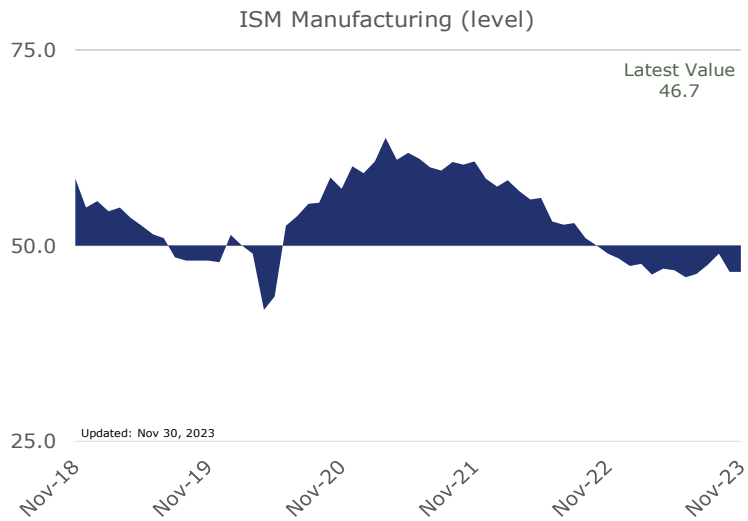
Consumers & Employment



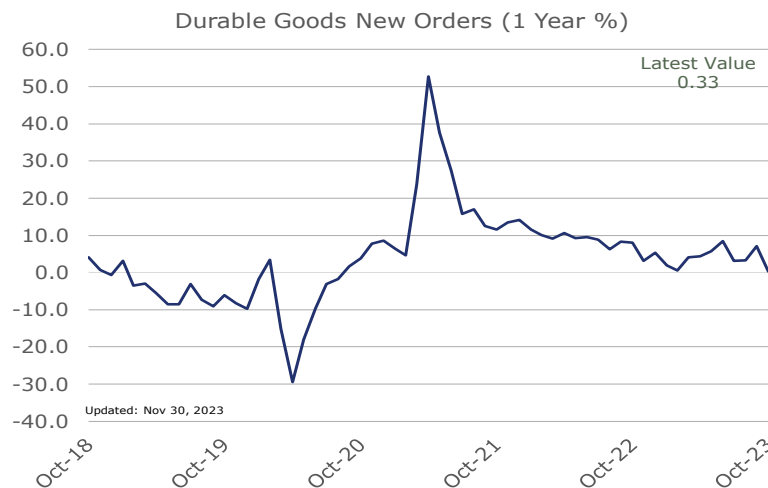
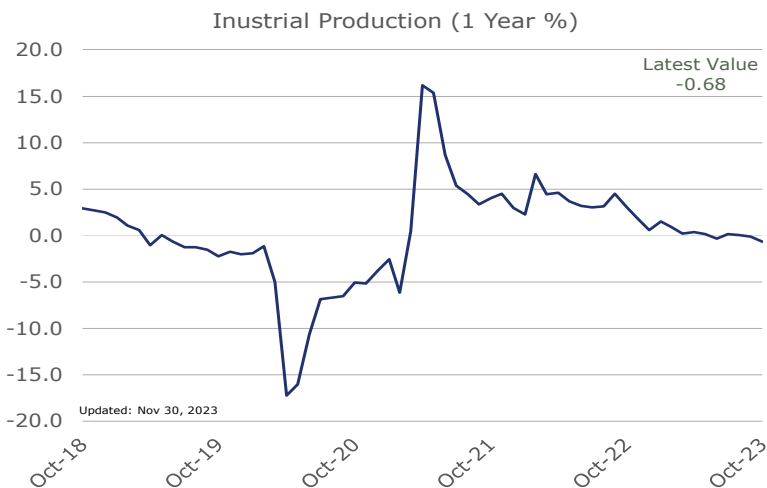
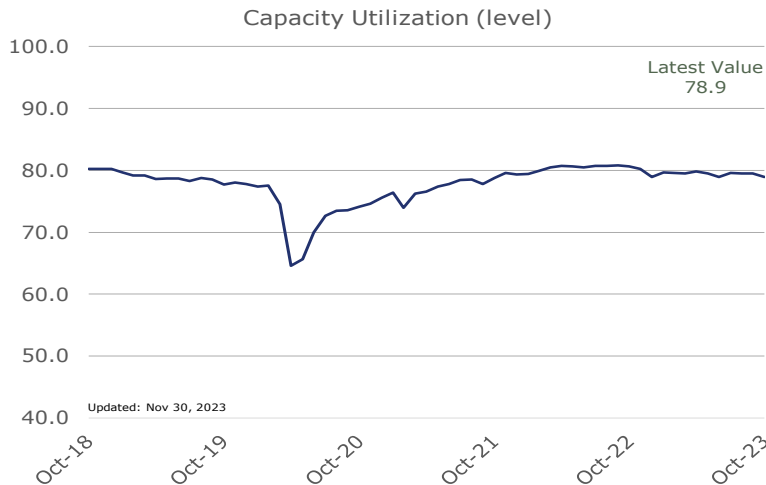
Income & Spending



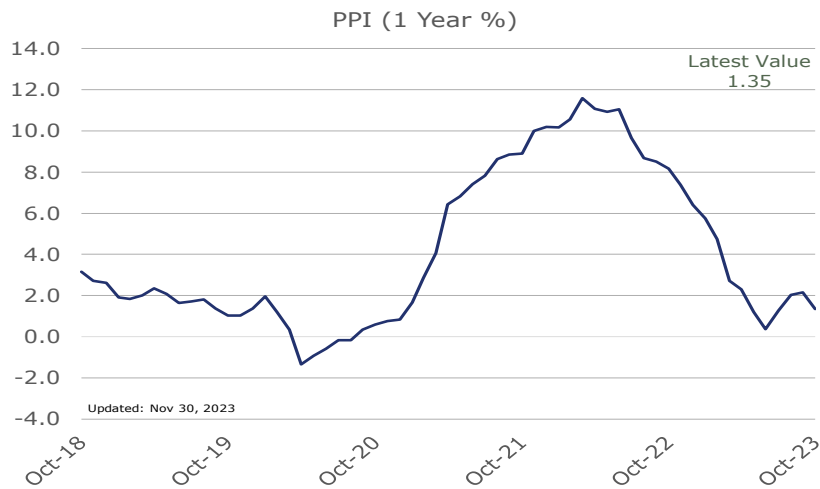
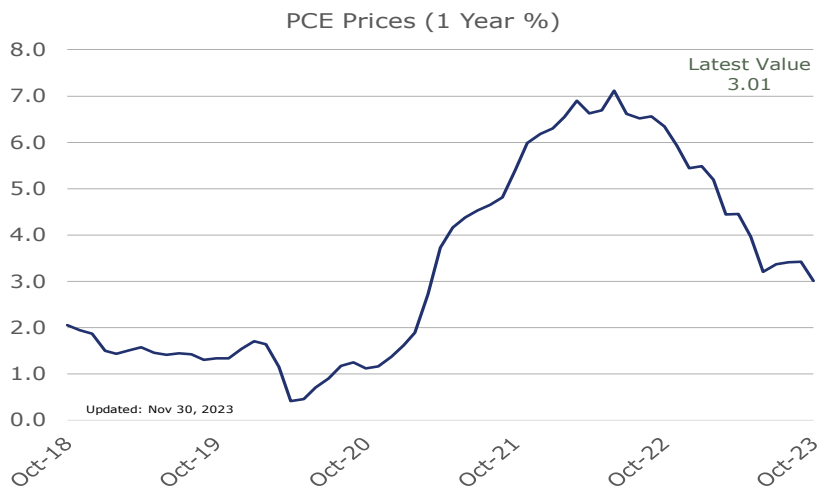
ISM Surveys



Manufacturing Activity

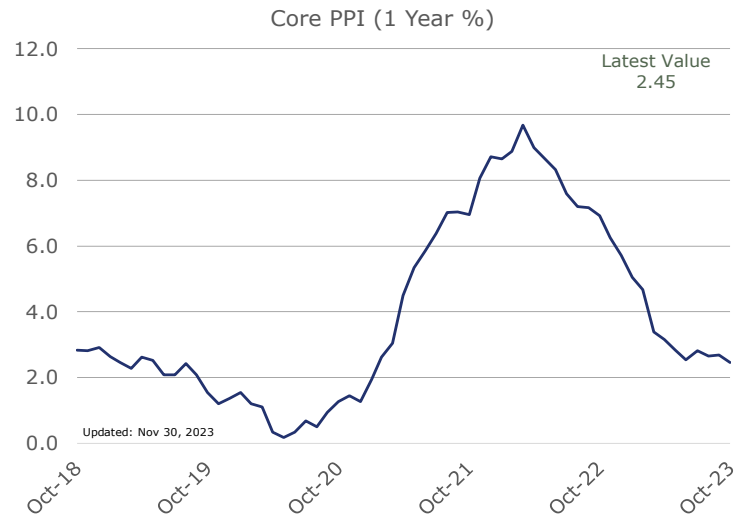
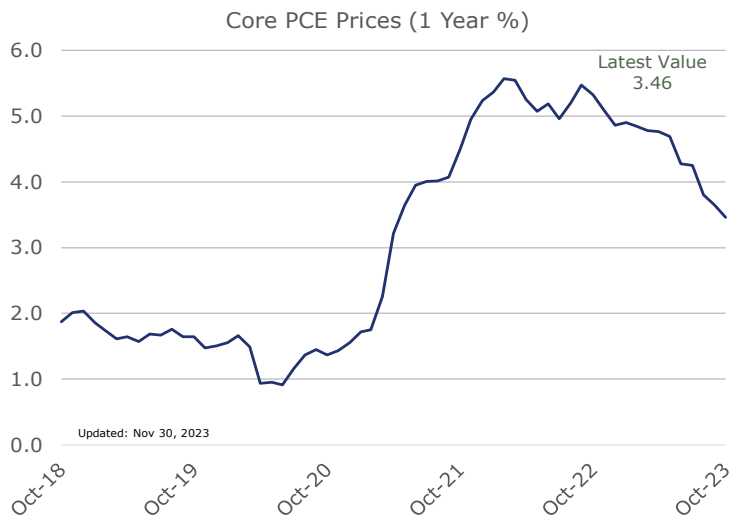
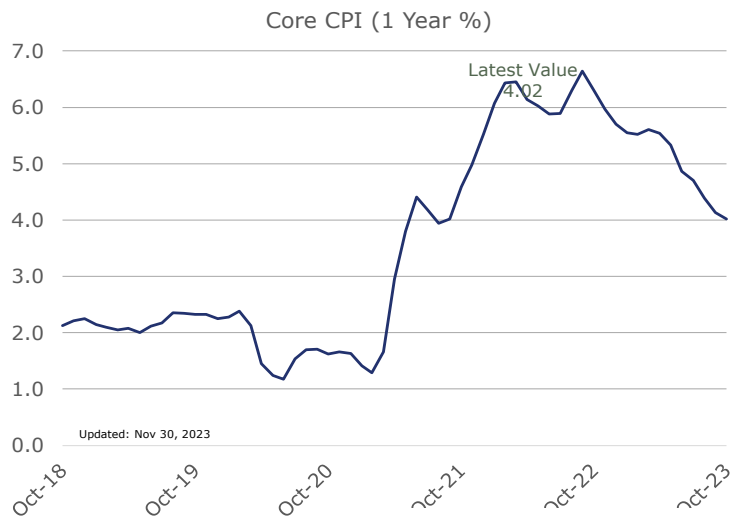


Price Indexes

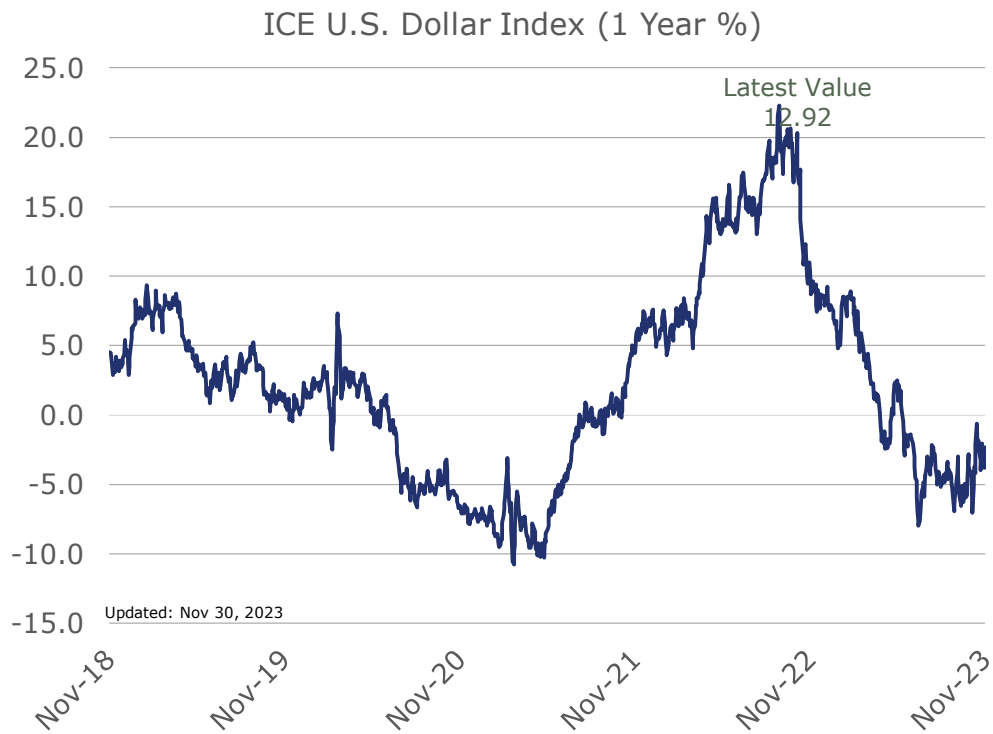


Data Sources: Bloomberg

Core Price Indexes



U.S. Dollar

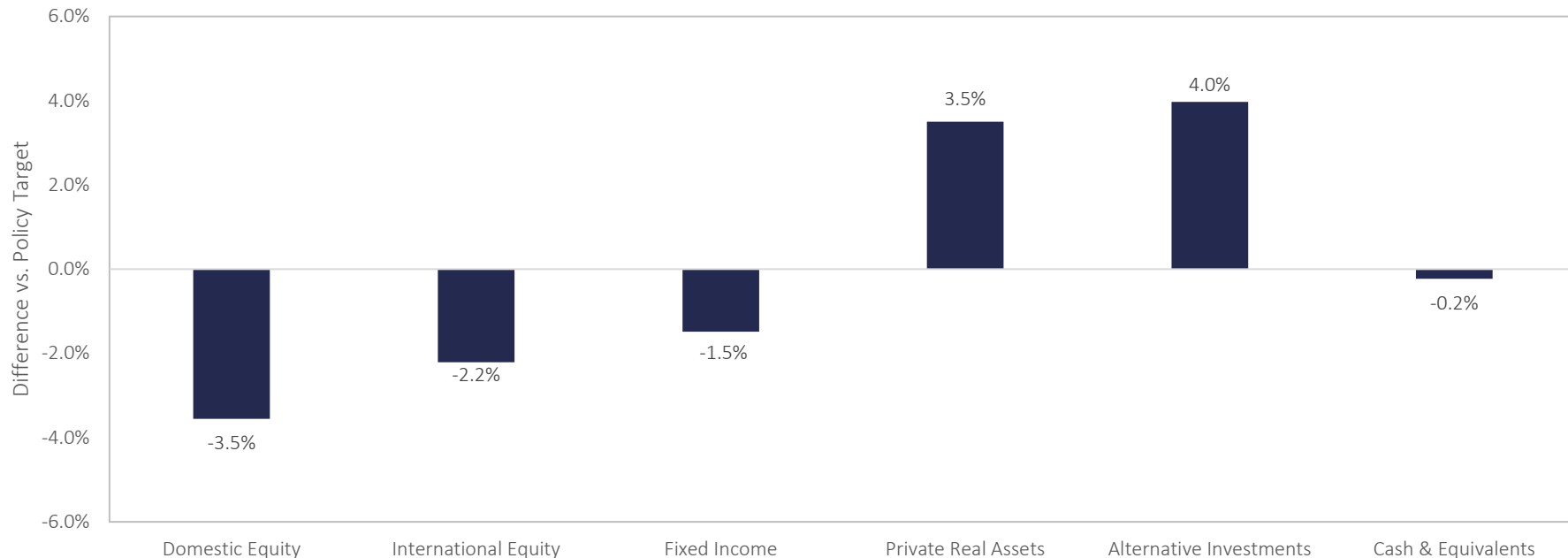


Total Fund

Projected Deviations from the Benchmark

As of November 30, 2023

Projected Asset Allocation Difference vs. Target



- Includes committed, but unfunded amounts for Real Assets (\$2.07 billion) and Alternatives (\$2.83 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

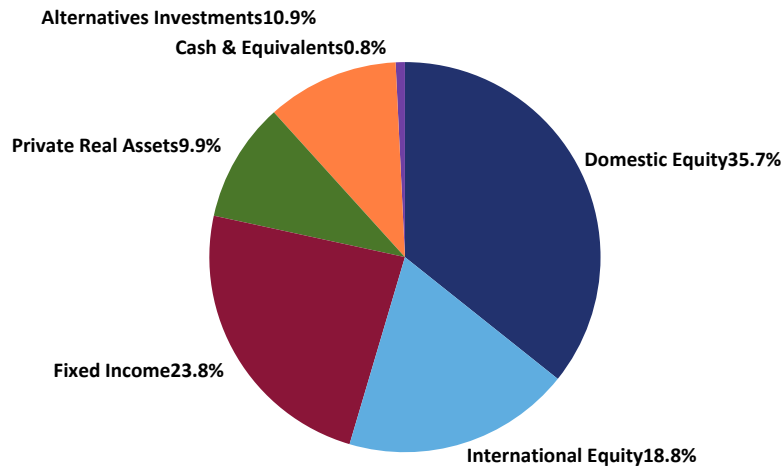
Real Assets Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

Asset Allocation

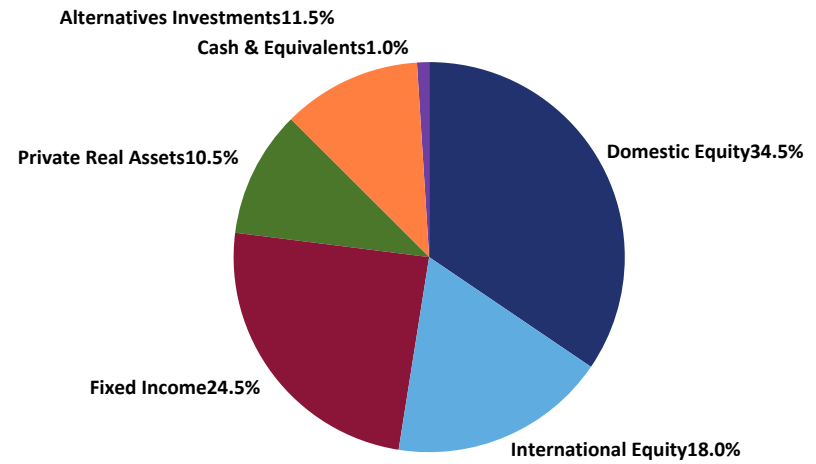
Total Fund

Periods Ended As of November 30, 2023

Actual Allocation



Target Allocation



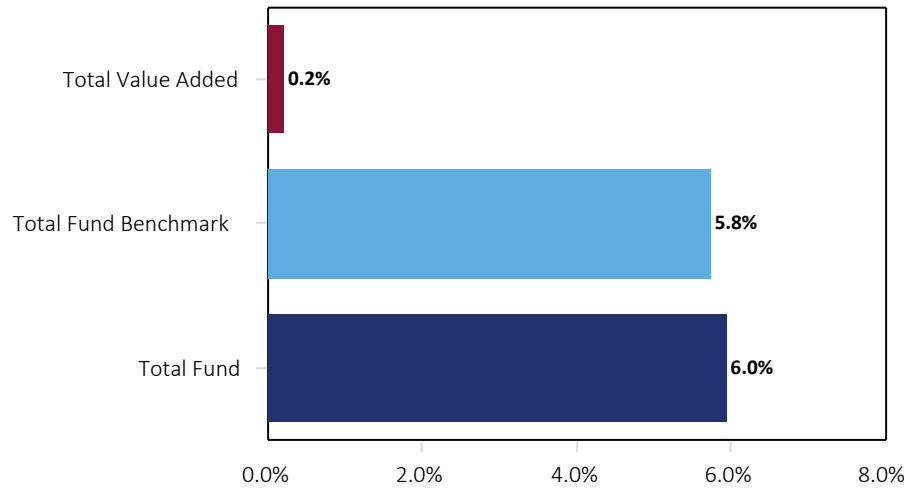
	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	50,577	100.0	100.0	0.0	
Domestic Equity	18,071	35.7	34.5	1.2	622
International Equity	9,530	18.8	18.0	0.8	426
Fixed Income	12,056	23.8	24.5	-0.7	-336
Private Real Assets	5,010	9.9	10.5	-0.6	-301
Alternatives Investments	5,521	10.9	11.5	-0.6	-296
Cash & Equivalents	389	0.8	1.0	-0.2	-116

Total Fund Attribution

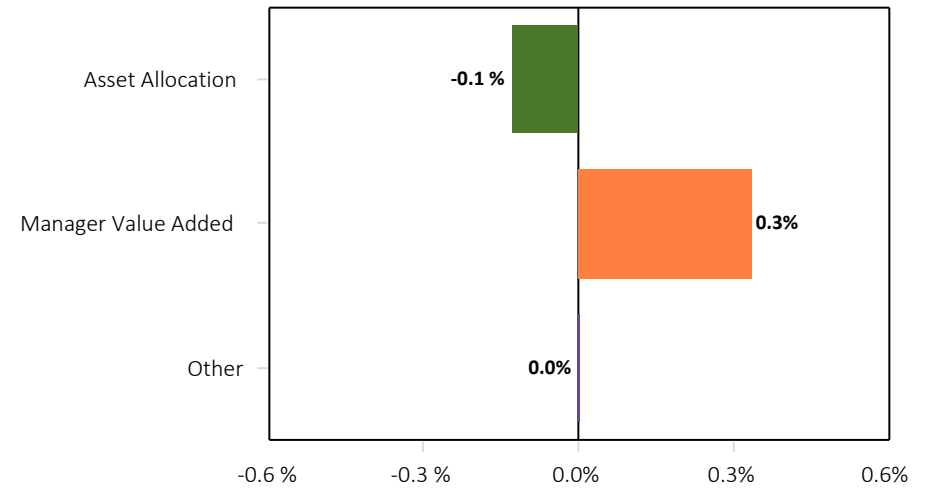
Total Fund

1 Month Ending November 30, 2023

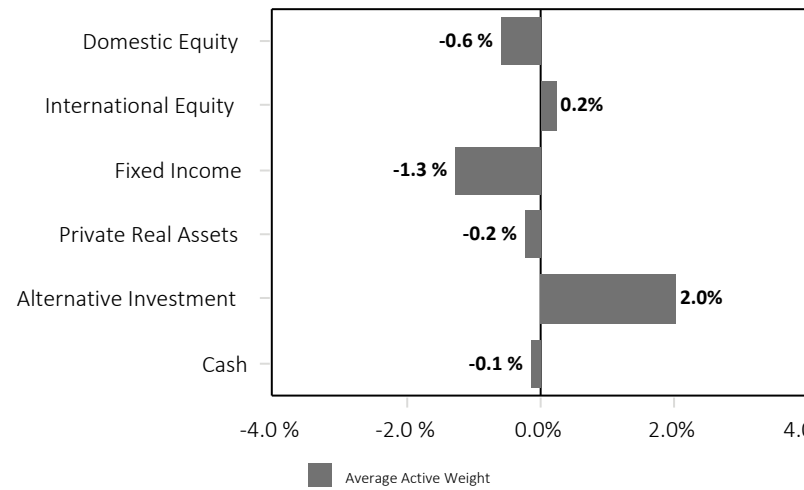
Total Fund Performance



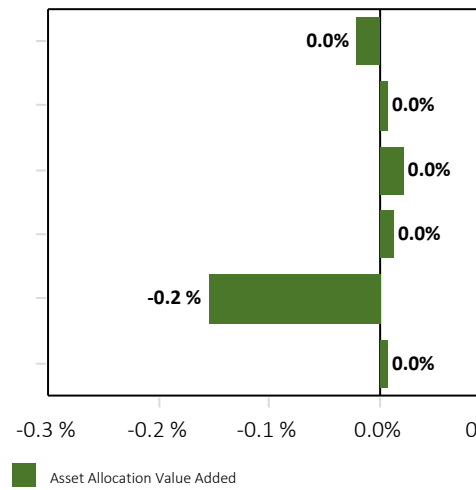
Total Value Added: 0.2%



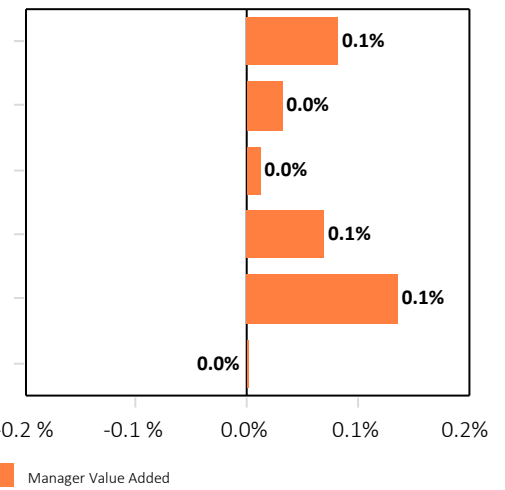
Asset Class Under or Overweighting



Asset Allocation Value Added: -0.1%



Total Manager Value Added: 0.3%



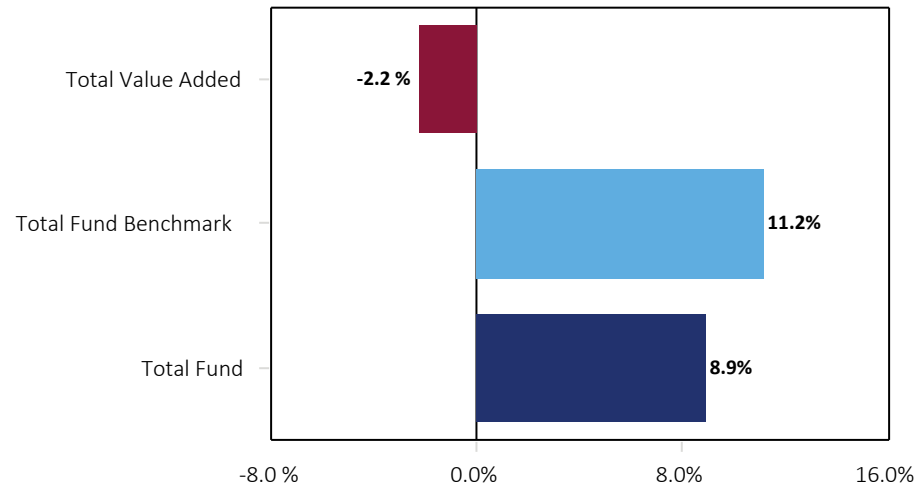
Total Fund Benchmark = 35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18.0% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

Total Fund Attribution

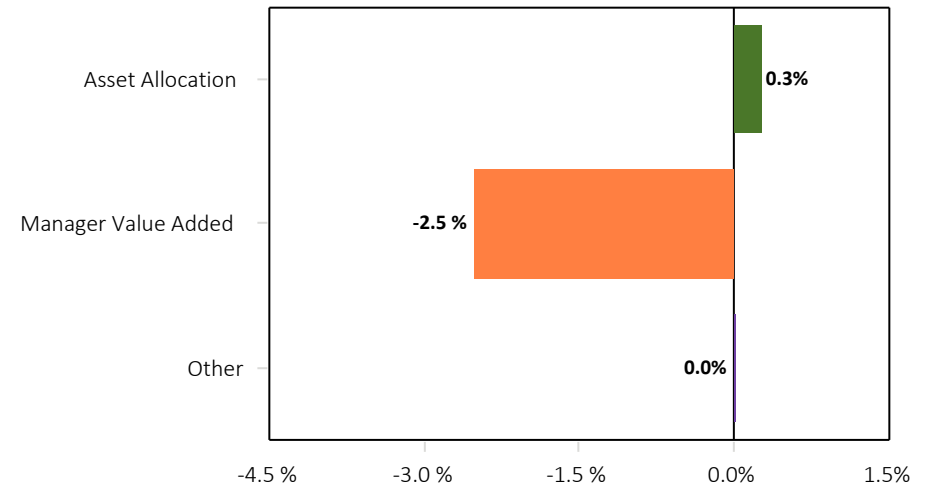
Total Fund

Year To Date Ending November 30, 2023

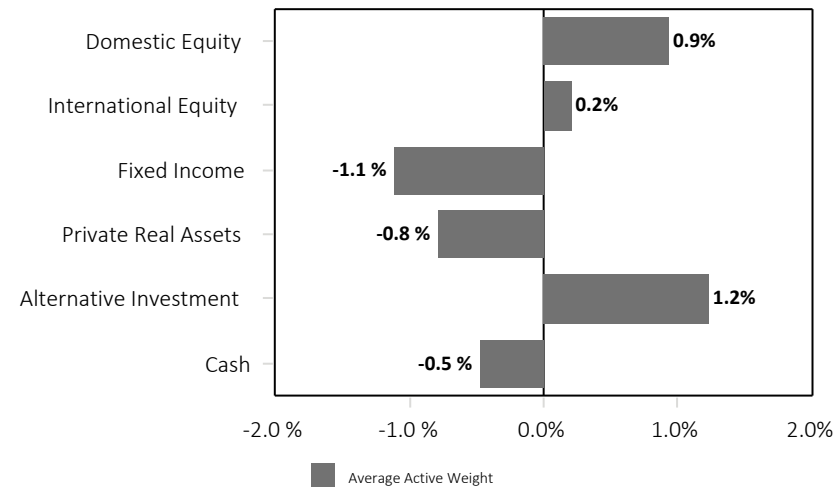
Total Fund Performance



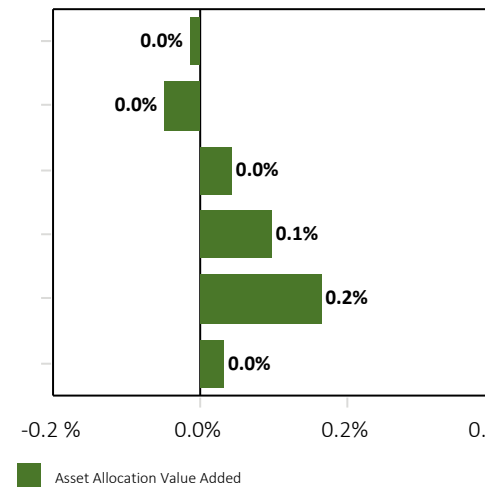
Total Value Added:-2.2 %



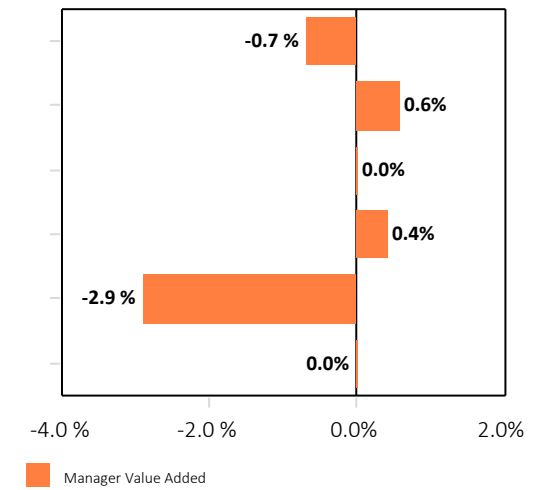
Asset Class Under or Overweighting



Asset Allocation Value Added:0.3%



Total Manager Value Added:-2.5 %



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 November 30, 2023

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Total Fund	5.99	3.60	9.08	6.46	4.86	7.90	7.11	7.74	8.07	9.57	1/1/1982
Total Fund - Net	5.96	3.57	8.92	6.31	4.70	7.72	6.91				
Total Fund Benchmark	5.75	3.99	11.16	7.23	4.01	7.20	6.81	7.20			
Domestic Equity	9.51	6.22	16.21	10.02	7.26	10.87	10.25	9.63	10.09	11.47	1/1/1982
Domestic Equity - Net	9.47	6.19	16.02	9.85	7.09	10.69	10.03				
Custom Benchmark (U.S. Equity)	9.23	6.41	17.98	11.37	8.07	11.65	11.12	9.70	9.90		
U.S. Equity IMRF Custom Benchmark	9.12	6.08	14.76	8.69	7.29	10.30					
International Equity	9.26	4.99	13.79	12.58	2.97	6.55	4.70	6.85	6.83	7.45	9/1/1986
International Equity - Net	9.18	4.90	13.42	12.21	2.62	6.18	4.35				
MSCI AC World ex USA (Net)	9.00	4.50	10.08	9.26	1.67	5.06	3.41	5.81			
International Equity IMRF Custom Benchmark	8.96	4.40	9.60	8.77	1.14	4.79					
Fixed Income	4.13	2.71	3.85	3.50	-2.86	1.73	2.25	3.94	4.91	7.36	1/1/1982
Fixed Income - Net	4.11	2.69	3.77	3.42	-2.94	1.64	2.13				
Custom Benchmark (Fixed Income)	4.06	2.68	3.64	3.27	-3.33	1.44	1.73	3.21	4.43	6.85	
Fixed Income IMRF Custom Benchmark	4.06	2.68	3.64	3.26	-3.18	1.43					
Private Real Assets	0.70	-0.75	-3.25	-4.22						1.97	3/1/2022
Private Real Assets - Net	0.70	-0.77	-3.32	-4.28						1.90	
Custom Benchmark (Private Real Assets)	0.01	0.02	-7.42	-11.96						-0.73	
Real Estate	0.51	-0.51	-3.73	-4.91	9.88	8.57	9.55	7.79	7.03	5.84	5/1/1985
Real Estate - Net	0.51	-0.53	-3.80	-4.97	9.81	8.51	9.51				
Blended Benchmark (Real Estate)	0.00	0.00	-8.14	-12.89	6.19	4.51	6.98	6.89	7.03	7.37	
Agriculture	0.00	-10.08	-8.07	-8.84	-0.40	-0.18	2.18	7.17		6.00	10/1/1997
NCREIF Farmland Index	0.00	0.00	2.63	5.98	7.22	6.16	8.01	12.45		10.90	
Timberland	-0.25	2.88	8.18	12.49	5.33	4.33	3.55	3.96	6.64	7.10	10/1/1992
NCREIF Timberland Index	0.00	0.00	4.90	10.03	9.15	5.87	5.93	7.04	7.34	8.41	
Unlisted Infrastructure	5.50	5.35	16.80	22.39	13.39	13.12				13.05	4/1/2018
Blended Benchmark (Unlisted Infrastructure)	0.13	0.41	7.24	7.26	8.89	8.93				8.94	

Benchmark definitions on next page.

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

Asset Class Returns

Periods Ended November 30, 2023

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Alternatives Investments	-0.78	-0.68	2.64	2.39	17.35	14.35	12.13	10.41	12.69	11.34	2/1/1986
Alternatives Investments - Net	-0.78	-0.68	2.64	2.38	17.34	14.33	11.95				
Custom Benchmark (Alternative Investments)	-1.97	1.41	30.05	18.88	5.36	6.80	7.89	9.42	11.19	11.97	
Private Equity	-0.86	-0.56	2.63	2.38	19.92	16.68	14.84	13.26	15.32	13.58	2/1/1986
Blended Benchmark (Private Equity)	-2.15	1.39	30.95	19.07	5.14	6.67	7.83	9.39			
Cash	0.45	0.90	4.73	5.05	3.48	3.34	2.15	1.34	3.04	3.77	7/1/1986
90 Day U.S. Treasury Bill	0.45	0.90	4.53	4.91	2.00	1.82	1.19	1.41	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 November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Domestic Equity	16,709,271,672	34.89	18,071,298,342	35.73
Large Cap Growth	3,592,197,842	7.50	3,881,314,685	7.67
Sands Capital	1,444,768,939	3.02	1,599,730,723	3.16
Xponance Russell 1000 G	2,147,428,903	4.48	2,281,583,962	4.51
Large Cap Value	3,496,570,688	7.30	3,778,745,076	7.47
Dodge & Cox	1,398,945,226	2.92	1,506,973,315	2.98
LSV Asset	841,925,534	1.76	897,840,110	1.78
NTGI S&P 500 Value	1,255,699,928	2.62	1,373,931,650	2.72
Large Cap Pass. Core	1,758,759,239	3.67	1,924,168,978	3.80
NTGI MarketCap Idx.	1,758,759,239	3.67	1,924,168,978	3.80
Factor Diversity Strategies	2,532,910,808	5.29	2,762,898,563	5.46
U.S. Large Cap FDP-GSAM	2,532,910,808	5.29	2,762,898,563	5.46
Quantitative Factor Strategies	2,193,358,470	4.58	2,360,784,837	4.67
Quantitative US Equity - SciBeta	2,193,358,470	4.58	2,360,784,837	4.67
Small Cap Multi-Factor Strategies	497,450,840	1.04	538,428,093	1.06
U.S. Small Cap Equity Multi-Factor - S&P	497,450,840	1.04	538,428,093	1.06
Small Cap Growth	604,298,310	1.26	637,657,455	1.26
Frontier Capital	604,298,310	1.26	637,657,455	1.26
Small Cap Value	746,883,056	1.56	792,110,321	1.57
Channing	292,392,825	0.61	309,435,468	0.61
William Blair Small Cap Value	454,490,231	0.95	482,674,853	0.95
Public Real Assets	1,286,842,420	2.69	1,395,190,334	2.76

Investment Manager Asset Allocation

Periods Ended November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Brookfield	374,958,464	0.78	413,627,331	0.82
Cohen & Steers	911,883,955	1.90	981,563,002	1.94
International Equity	8,727,947,286	18.23	9,530,141,835	18.84
Intl Large Cap Growth	1,417,920,035	2.96	1,557,649,277	3.08
EARNEST Part. Intl	604,698,661	1.26	650,717,696	1.29
William Blair	813,221,374	1.70	906,931,581	1.79
Intl Large Cap Value	1,399,496,651	2.92	1,525,348,073	3.02
Brandes Investment	658,129,281	1.37	722,873,802	1.43
Mondrian	612,391,661	1.28	661,122,192	1.31
Lazard	128,975,708	0.27	141,352,079	0.28
Intl Large Cap Core	4,419,057,416	9.23	5,022,363,685	9.93
Arrowstreet Capital	1,110,550,162	2.32	1,189,883,237	2.35
Brown Capital	493,962,979	1.03	564,092,143	1.12
GlobeFlex Capital	804,975,077	1.68	875,005,154	1.73
Xponance Intl EQ	91,099,740	0.19	99,502,700	0.20
Progress Intl Equity	403,139	0.00	416,055	0.00
NTGI ACWI ex US Index Fund	1,918,066,318	4.01	2,293,464,395	4.53
Intl All Cap Developed	150,140,269	0.31	163,675,607	0.32
Ativo International	150,140,269	0.31	163,675,607	0.32
International Small Cap	491,434,272	1.03	550,786,273	1.09
Franklin Templeton	201,242,309	0.42	219,814,381	0.43
William Blair IntSC	290,191,963	0.61	330,971,892	0.65

Investment Manager Asset Allocation

Periods Ended November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Emerging Mkt Equity	849,898,644	1.77	710,318,921	1.40
Genesis Investment Management, LLP.	438,962,539	0.92	271,785,706	0.54
Arrowstreet EME	410,936,105	0.86	438,533,215	0.87

Investment Manager Asset Allocation

Periods Ended November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Fixed Income	11,603,088,565	24.23	12,055,733,451	23.84
Domestic Fixed Core	3,526,469,354	7.36	3,681,271,142	7.28
Attucks Fixed Income	84,516,929	0.18	88,479,672	0.17
Brandes FI Core	317,243,197	0.66	328,303,343	0.65
EARNEST Partners	840,449,045	1.76	874,085,207	1.73
Garcia Hamilton	881,644,027	1.84	930,019,559	1.84
Ramirez Asset Management	489,528,541	1.02	508,662,557	1.01
Xponance Yield Advantage Agg.	913,087,615	1.91	951,720,803	1.88
Domestic Fixed Passive Core	2,629,174,371	5.49	2,747,721,267	5.43
NTGI Blmbg Agg.	1,070,711,777	2.24	1,118,726,033	2.21
BlackRock US Debt I	1,558,462,594	3.25	1,628,995,235	3.22
Domestic Fixed Core Plus	2,744,147,217	5.73	2,871,866,706	5.68
LM Capital Group FI	792,747,054	1.66	823,144,490	1.63
Progress Inv. FI	1,146	0.00	1,210	0.00
Loop Capital Management	540,340,817	1.13	565,473,474	1.12
Western Asset	878,251,498	1.83	926,420,630	1.83
Longfellow Core Plus	532,806,702	1.11	556,826,903	1.10
Bank Loans	1,637,303,566	3.42	1,658,534,810	3.28
Barings Global Loan Fund	1,637,303,566	3.42	1,658,534,810	3.28
Emerging Markets Debt	317,499	0.00	331,806	0.00
Standish-Mellon EMD	317,499	0.00	331,806	0.00
High Yield	1,065,696,136	2.23	1,096,007,720	2.17
MacKay Shields	1,065,696,136	2.23	1,096,007,720	2.17

Investment Manager Asset Allocation

Periods Ended November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Private Real Assets	4,920,305,336	10.28	5,010,082,421	9.91
Real Estate	4,397,860,049	9.18	4,476,736,661	8.85
Real Estate Core Cmp	2,201,834,764	4.60	2,205,657,255	4.36
TA Assoc. Buckhead	893,469,458	1.87	893,469,458	1.77
Barings Euro Core Property	130,214,202	0.27	130,731,544	0.26
Blackstone Property Euro	178,865,799	0.37	180,433,625	0.36
INVESCO Core Real Estate	223,787,672	0.47	223,787,672	0.44
INVESCO European real estate	54,065,926	0.11	55,803,249	0.11
AEW Core Property Tr	255,835,363	0.53	255,835,363	0.51
CBRE Core Partners	294,577,768	0.62	294,577,768	0.58
JPM Strategic Property Fund	171,018,576	0.36	171,018,576	0.34
RE Non-Core Cmp	2,196,025,285	4.59	2,271,079,406	4.49
Artemis MWBE Spruce	340,923,694	0.71	379,572,991	0.75
Franklin T. EMREFF	2,399,442	0.01	2,399,442	0.00
Security Capital	79,139,582	0.17	87,914,216	0.17
Dune II	6,803,633	0.01	6,961,990	0.01
Non-Core Real Estate Funds	1,487,045,047	3.11	1,504,282,066	2.97
Non-Core Intl Real Estate	279,641,986	0.58	289,878,848	0.57
Almanac ARS V	71,901	0.00	69,853	0.00
Agriculture	238,433,179	0.50	238,433,179	0.47
Premiere Partners IV	238,433,179	0.50	238,433,179	0.47
Timberland	65,827,904	0.14	65,665,690	0.13
Forest Investment	65,827,904	0.14	65,665,690	0.13
Unlisted Infrastructure	218,184,204	0.46	229,246,891	0.45
Unlisted Infrastructure Funds	218,184,204	0.46	229,246,891	0.45

Investment Manager Asset Allocation

Periods Ended November 30, 2023

	Oct-2023		Nov-2023	
	\$	%	\$	%
Alternatives Investments	5,514,983,087	11.52	5,520,559,052	10.92
Absolute Return	70,511	0.00	72,595	0.00
Aurora Investment	70,511	0.00	72,595	0.00
Private Equity	5,278,857,007	11.02	5,272,487,608	10.42
Abbott S/A Comp.	503,336,716	1.05	495,783,767	0.98
Muller Monroe MPEFF		0.00		0.00
Pantheon S/A Comp.	423,974,398	0.89	423,983,645	0.84
Private Equity Fund - Domestic	3,429,894,724	7.16	3,387,530,025	6.70
Private Equity Fund - International	664,315,916	1.39	707,854,918	1.40
Oakbrook Opportunities Fund	257,335,253	0.54	257,335,253	0.51
Private Credit	236,055,569	0.49	247,998,849	0.49
Private Credit Fund - Domestic	236,055,569	0.49	247,998,849	0.49
Cash & Equivalents	409,379,022	0.85	389,417,453	0.77
Total Fund	47,884,974,969	100.00	50,577,232,553	100.00

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	50,577,232,553	5.99	3.60	9.08	6.46	4.86	7.90	7.11	9.57	1/1/1982
Total Fund - Net		5.96	3.57	8.92	6.31	4.70	7.72	6.91		
Total Fund Benchmark		5.75	3.99	11.16	7.23	4.01	7.20	6.81		
Domestic Equity	18,071,298,342	9.51	6.22	16.21	10.02	7.26	10.87	10.25	11.47	1/1/1982
Domestic Equity - Net		9.47	6.19	16.02	9.85	7.09	10.69	10.03		
Custom Benchmark (U.S. Equity)		9.23	6.41	17.98	11.37	8.07	11.65	11.12		
Russell 3000 Index		9.32	6.43	19.61	12.61	8.26	11.77	11.19	11.47	
U.S. Equity IMRF Custom Benchmark		9.12	6.08	14.76	8.69	7.29	10.30			
Large Cap Equity	12,347,127,302	10.30	7.41	21.42	14.55	7.50	11.79	11.18	11.28	1/1/1982
Large Cap Equity - Net		10.28	7.38	21.32	14.45	7.40	11.70	11.07		
Russell 1000 Index		9.34	6.70	20.58	13.57	8.72	12.25	11.56	11.64	
Large Cap Growth	3,881,314,685	13.63	11.17	38.64	28.66	5.25	14.98	13.44	12.19	1/1/1982
Large Cap Growth - Net		13.61	11.15	38.51	28.53	5.15	14.88	13.31		
LCG Blended Benchmark		10.90	9.32	36.63	26.17	8.92	16.36	14.69		
Russell 1000 Growth Index		10.90	9.32	36.63	26.17	8.92	16.36	14.69	11.64	
Xponance Russell 1000 G	2,281,583,962	10.90	9.32	36.62	26.17	8.92	16.35		13.93	10/1/2018
Xponance Russell 1000 G - Net		10.90	9.32	36.60	26.15	8.90	16.33		13.91	
Russell 1000 Growth Index		10.90	9.32	36.63	26.17	8.92	16.36		13.94	
Sands Capital	1,599,730,723	17.69	13.87	41.58	32.31	-6.71	9.98	10.58	11.36	11/1/2003
Sands Capital - Net		17.63	13.81	41.28	32.03	-6.93	9.74	10.33		
LCG Blended Benchmark		10.90	9.32	36.63	26.17	8.92	16.36	14.69	11.21	
Russell 1000 Growth Index		10.90	9.32	36.63	26.17	8.92	16.36	14.69	11.25	
Large Cap Value	3,778,745,076	8.20	4.91	11.49	6.49	12.09	9.52	9.56	10.26	10/1/1982
Large Cap Value - Net		8.16	4.86	11.32	6.33	11.92	9.36	9.38		
LCV Blended Benchmark		7.55	3.75	5.61	1.36	8.27	7.52	8.09		
Russell 1000 Value Index		7.55	3.75	5.61	1.36	8.27	7.52	8.09	11.35	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Dodge & Cox	1,506,973,315	7.79	3.92	11.39	6.33	12.56	10.31	10.37	9.88	9/1/2003
Dodge & Cox - Net		7.72	3.86	11.13	6.08	12.33	10.07	10.14		
LCV Blended Benchmark		7.55	3.75	5.61	1.36	8.27	7.52	8.09	8.13	
Russell 1000 Value Index		7.55	3.75	5.61	1.36	8.27	7.52	8.09	8.26	
LSV Asset	897,840,110	6.86	2.35	6.38	1.11	10.66	7.63	8.72	10.27	2/1/2003
LSV Asset - Net		6.78	2.27	6.12	0.86	10.40	7.37	8.46		
LCV Blended Benchmark		7.55	3.75	5.61	1.36	8.27	7.52	8.09	8.86	
Russell 1000 Value Index		7.55	3.75	5.61	1.36	8.27	7.52	8.09	8.87	
NTGI S&P 500 Value	1,373,931,650	9.57	7.67	15.90	11.33	12.34	10.70	9.73	6.73	8/1/1999
NTGI S&P 500 Value - Net		9.57	7.67	15.89	11.33	12.33	10.69	9.73		
S&P 500 Value		9.57	7.68	15.82	11.29	12.37	10.66	9.67	6.70	
Large Cap Pass. Core	1,924,168,978	9.40	6.46	19.69	12.65	8.17	11.68	11.17	11.18	1/1/1985
Large Cap Pass. Core - Net		9.40	6.46	19.69	12.65	8.16	11.68	11.16		
Dow Jones U.S. Total Stock Market Index		9.39	6.44	19.66	12.62	8.13	11.65	11.10		
NTGI MarketCap Idx.	1,924,168,978	9.40	6.46	19.69	12.65	8.17	11.68	11.17	10.98	2/1/1985
NTGI MarketCap Idx. - Net		9.40	6.46	19.69	12.65	8.16	11.68	11.16		
Dow Jones U.S. Total Stock Market Index		9.39	6.44	19.66	12.62	8.13	11.65	11.10		
Factor Diversity Strategies	2,762,898,563	9.08	6.23	19.19	12.34	8.51			10.38	8/18/2020
U.S. Large Cap FDP-GSAM	2,762,898,563	9.08	6.23	19.19	12.34	8.51			10.38	8/18/2020
U.S. Large Cap FDP-GSAM - Net		9.08	6.23	19.17	12.31	8.47			10.33	
Solactive GBS U.S. 1000 Index		9.36	6.68	20.76	13.65	8.52			10.42	
GSAM Active Beta US. Large Cap FDC Index		9.04	6.18	19.15	12.25	8.52			10.35	
Quantitative Factor Strategies	2,360,784,837	7.63	4.78	9.54	5.08	8.16			8.46	9/17/2019
Quantitative US Equity - SciBeta	2,360,784,837	7.63	4.78	9.54	5.08	8.16			8.46	9/17/2019
Quantitative US Equity - SciBeta - Net		7.63	4.78	9.49	5.03	8.10			8.31	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		7.68	4.79	8.29	3.93	6.99			7.44	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Small Cap	1,968,195,870	7.63	-0.05	6.71	-0.08	8.28	8.73	7.86	11.66	7/1/1988
Small Cap Composite - Net		7.51	-0.16	6.05	-0.70	7.59	8.07	7.24		
Russell 2000 Index		9.05	1.61	4.20	-2.56	1.13	4.78	6.13	8.80	
Small Cap Multi-Factor Strategies	538,428,093	8.24	2.54						-7.07	8/1/2023
U.S. Small Cap Equity Multi-Factor - S&P	538,428,093	8.24	2.54						-7.07	8/1/2023
U.S. Small Cap Equity Multi-Factor - S&P - Net		8.24	2.54						-7.07	
S&P SmallCap 600 QVML Top 90% Multi-Factor Index		8.25	2.57						-7.06	
S&P SmallCap 600 Index		8.27	2.06						-8.03	
Small Cap Growth	637,657,455	9.11	-1.84	12.11	4.67	3.95	11.18	9.61	12.61	7/1/1988
Small Cap Growth - Net		8.93	-2.01	10.87	3.51	2.83	10.15	8.82		
Russell 2000 Growth Index		9.10	0.69	5.97	-0.83	-4.26	4.16	6.17	7.54	
Frontier Capital	637,657,455	9.11	-1.84	12.11	4.67	3.69	11.75	10.40	12.95	8/1/1988
Frontier Capital - Net		8.93	-2.01	10.87	3.51	2.58	10.63	9.54		
Russell 2000 Growth Index		9.10	0.69	5.97	-0.83	-4.26	4.16	6.17	7.62	
Small Cap Value	792,110,321	6.06	-0.17	4.23	-2.27	10.70	7.63	7.46	11.26	9/1/1989
Small Cap Value - Net		5.92	-0.30	3.68	-2.78	10.19	7.11	6.93		
Russell 2000 Value Index		9.00	2.50	1.96	-4.73	6.47	4.72	5.71	9.34	
Channing	309,435,468	5.83	-0.61	8.23	0.23	5.64	6.86	6.77	9.10	7/1/2011
Channing - Net		5.68	-0.75	7.69	-0.27	5.12	6.33	6.26	8.53	
Russell 2000 Value Index		9.00	2.50	1.96	-4.73	6.47	4.72	5.71	7.56	
William Blair Small Cap Value	482,674,853	6.20	0.10	0.51	-6.04	7.90	6.43	7.75	10.55	5/1/1999
Inv. Couns. Maryland - Net		6.07	-0.03	-0.03	-6.55	7.39	5.90	7.22		
Russell 2000 Value Index		9.00	2.50	1.96	-4.73	6.47	4.72	5.71	8.28	
Public Real Assets	1,395,190,334	8.42	7.94	1.47	-1.28	5.48	6.31		5.45	8/1/2017
Public Real Assets - Net		8.33	7.85	1.16	-1.59	5.13	5.92		5.05	
Public Real Assets Benchmark		8.60	6.94	-0.21	-2.78	3.76	4.65		3.60	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Brookfield	413,627,331	10.31	9.56	7.55	4.30	9.38	7.35		5.37	8/1/2017
Brookfield - Net		10.19	9.45	7.10	3.86	8.90	6.84		4.86	
Dow Jones Brookfield Global Infrastructure Composite Index		9.72	8.48	3.65	0.20	5.79	5.17		3.41	
Cohen & Steers	981,563,002	7.64	7.27	-0.89	-3.46	4.20	6.10		5.71	8/1/2017
Cohen & Steers - Net		7.57	7.20	-1.16	-3.72	3.90	5.75		5.35	
FTSE Global Core Infrastructure 50/50 Index (Net)		8.04	6.17	-2.11	-4.27	2.73	4.36		3.67	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	9,530,141,835	9.26	4.99	13.79	12.58	2.97	6.55	4.70	7.45	9/1/1986
International Equity - Net		9.18	4.90	13.42	12.21	2.62	6.18	4.35		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41		
International Equity IMRF Custom Benchmark		8.96	4.40	9.60	8.77	1.14	4.79			
Intl LargeCap Equity	8,105,361,035	9.20	4.98	14.57	13.09	4.89	7.28	5.09	7.57	9/1/1986
Intl LargeCap Equity - Net		9.14	4.92	14.30	12.81	4.60	6.99	4.81		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41		
Intl Large Cap Grwth	1,557,649,277	9.86	6.14	11.91	9.21	1.62	7.89	5.16	7.96	9/1/2002
Intl Large Cap Grwth - Net		9.77	6.06	11.60	8.90	1.30	7.57	4.86		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	6.57	
MSCI AC World ex USA Growth (Net)		10.35	6.05	8.83	7.17	-2.52	5.50	4.17	6.69	
EARNEST Part. Intl	650,717,696	7.61	4.62	14.56	11.98	8.74	8.18	5.09	8.66	10/1/2004
EARNEST Part. Intl - Net		7.55	4.57	14.34	11.76	8.52	7.96	4.88		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	5.41	
MSCI AC World ex USA Growth (Net)		10.35	6.05	8.83	7.17	-2.52	5.50	4.17	5.87	
William Blair	906,931,581	11.52	7.25	10.09	7.31	-2.45	7.83	5.34	8.81	10/1/2002
William Blair - Net		11.42	7.16	9.71	6.94	-2.81	7.44	4.96		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	7.16	
MSCI AC World ex USA Growth (Net)		10.35	6.05	8.83	7.17	-2.52	5.50	4.17	7.19	
Intl Large Cap Val.	1,525,348,073	8.99	5.11	20.37	20.96	8.55	6.65	4.61	8.27	10/1/1995
Intl Large Cap Val. - Net		8.91	5.03	20.02	20.61	8.22	6.32	4.25		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	4.99	
MSCI AC World ex USA Value		7.71	3.04	12.18	12.27	6.61	4.97	3.09		
Brandes Investment	722,873,802	9.84	6.00	26.55	28.27	12.90	7.96	5.33	8.72	1/1/1996
Brandes Investment - Net		9.78	5.95	26.31	28.02	12.67	7.74	5.09		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	4.91	
MSCI AC World ex USA Value		7.71	3.04	12.18	12.27	6.61	4.97	3.09		

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	661,122,192	7.96	4.04	15.55	15.27	5.56	5.64	4.14	5.18	4/1/2012
Mondrian - Net		7.84	3.93	15.09	14.81	5.17	5.23	3.67	4.70	
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	4.54	
MSCI AC World ex USA Value		7.71	3.04	12.18	12.27	6.61	4.97	3.09	4.40	
Lazard	141,352,079	9.60	5.64	14.07	14.08	3.29	6.07	4.11	5.72	4/1/2012
Lazard - Net		9.53	5.58	13.80	13.81	3.05	5.82	3.74	5.29	
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	4.54	
MSCI AC World ex USA Value		7.71	3.04	12.18	12.27	6.61	4.97	3.09	4.40	
Intl Large Cap Active Core	2,728,899,289	9.11	4.59	16.31	15.18	6.64	8.81	6.64	5.70	2/1/2008
Intl Large Cap Active Core - Net		9.02	4.49	15.89	14.76	6.18	8.29	6.11		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	2.72	
Arrowstreet Capital	1,189,883,237	7.14	3.32	18.70	17.54	11.45	12.82	8.81	7.12	3/1/2008
Arrowstreet Capital - Net		7.02	3.20	18.18	17.03	10.95	12.31	8.31	6.62	
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	2.55	
Brown Capital	564,092,143	14.20	9.62	21.56	19.37	-1.65	6.11	5.42	7.17	10/1/2004
Brown Capital - Net		14.13	9.56	21.27	19.09	-2.12	5.56	4.68		
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	5.41	
GlobeFlex Capital	875,005,154	8.70	3.24	10.70	10.08	7.55	7.00	5.47	5.15	3/1/2006
GlobeFlex Capital - Net		8.61	3.15	10.34	9.73	7.20	6.61	5.07	4.71	
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26	1.67	5.06	3.41	3.72	
Xponance Intl EQ	99,502,700	9.22	4.63	12.24	11.95				1.29	2/1/2021
Xponance Intl EQ - Net		9.22	4.46	11.55	11.26				0.67	
MSCI EAFE (Net)		9.28	4.85	12.27	12.36				2.76	
Progress Intl Equity	416,055									
Intl Large Cap Passive Core	2,293,464,395	8.97	4.52	10.06	7.71	2.77	5.45	3.84	3.88	2/1/2000
Intl Large Cap Passive Core - Net		8.97	4.52	10.06	7.71	2.77	5.44	3.83		
International Large Cap Passive Core Benchmark		9.00	4.50	10.08	9.26	2.20	5.01	3.41	3.47	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
NTGI ACWI ex US Index	2,293,464,395	8.97	4.52	10.06	7.71				-2.27	10/1/2021
NTGI ACWI ex US Index - Net		8.97	4.52	10.06	7.71				-2.28	
MSCI AC World ex USA (Net)		9.00	4.50	10.08	9.26				-2.74	
Intl All Cap Developed	163,675,607	9.02	4.60	13.30	12.47	3.50			5.05	2/1/2019
Intl All Cap Developed - Net		9.02	4.46	12.74	11.92	2.98			4.54	
MSCI EAFE + Canada (Net)		9.40	4.78	11.83	11.28	4.11			6.04	
Ativo International	163,675,607	9.02	4.60	13.30	12.47	3.49			5.05	2/1/2019
Ativo International - Net		9.02	4.46	12.74	11.92	2.98			4.54	
MSCI EAFE + Canada (Net)		9.40	4.78	11.83	11.28	4.11			6.04	
Intl Small Cap Eqty	550,786,273	12.08	5.13	9.62	8.21	-2.66	5.49	4.22	4.42	12/1/2005
Intl Small Cap Eqty - Net		11.94	4.91	8.81	7.34	-3.39	4.70	3.43		
MSCI AC World ex USA Small Cap (Net)		9.68	3.54	8.75	8.93	1.69	5.38	4.42	5.60	
Custom Benchmark (Intl Small Cap)		9.68	3.54	8.75	8.93	1.69	5.38	4.42	5.03	
Franklin Templeton	219,814,381	9.23	3.34	10.15	9.82	0.24	4.48	4.20	5.10	8/1/2011
Franklin Templeton - Net		9.23	3.14	9.37	8.86	-0.47	3.73	3.45	4.34	
MSCI AC World ex USA Small Cap (Net)		9.68	3.54	8.75	8.93	1.69	5.38	4.42	4.52	
William Blair IntSC	330,971,892	14.05	6.35	9.27	7.16	-4.41	6.19	4.21	7.26	9/1/2010
William Blair IntSC - Net		13.82	6.13	8.44	6.35	-5.15	5.39	3.41	6.44	
MSCI AC World ex USA Small Cap (Net)		9.68	3.54	8.75	8.93	1.69	5.38	4.42	6.06	
Custom Benchmark (Intl Small Cap)		9.68	3.54	8.75	8.93	1.69	5.38	4.42	6.28	
Emerging Mkt Equity	710,318,921	8.06	4.72	10.02	10.63	-5.30	3.26	2.79	7.82	2/1/1992
Emerging Mkt Equity - Net		7.83	4.46	9.27	9.84	-5.88	2.65	2.18		
MSCI Emerging Markets Index		8.02	3.83	6.08	4.65	-3.66	2.73	2.50	6.24	
Genesis Investment Management, LLP.	271,785,706	9.59	6.95	8.20	8.80	-5.83	2.91	2.61	8.58	5/1/2004
Genesis Investment Management, LLP. - Net		9.10	6.42	7.05	7.61	-6.52	2.23	1.97		
MSCI Emerging Markets Index		8.02	3.83	6.08	4.65	-3.66	2.73	2.50	7.11	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Arrowstreet EME	438,533,215	6.72	2.30						10.27	3/1/2023
Arrowstreet EME - Net		6.72	2.30						10.27	
MSCI Emerging Markets IMI (Net)		8.23	3.88						6.16	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	12,055,733,451	4.13	2.71	3.85	3.50	-2.86	1.73	2.25	7.36	1/1/1982
Fixed Income - Net		4.11	2.69	3.77	3.42	-2.94	1.64	2.13		
Custom Benchmark (Fixed Income)		4.06	2.68	3.64	3.27	-3.33	1.44	1.73	6.85	
Fixed Income IMRF Custom Benchmark		4.06	2.68	3.64	3.26	-3.18	1.43			
Active Fixed Core	3,681,271,142	4.67	2.88	1.74	1.25	-3.91	1.00	1.79	3.57	4/1/2001
ActiveCore Fixed Inc - Net		4.65	2.86	1.63	1.14	-4.01	0.89	1.66		
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	3.48	
Attucks Fixed Income	88,479,672	4.69	3.16	2.62	2.12				-4.23	2/1/2021
Attucks Fixed Income - Net		4.69	3.16	2.37	1.87				-4.51	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18				-4.53	
Brandes FI Core	328,303,343	4.16	2.78	2.47	1.88	-3.28	1.20		1.02	3/1/2016
Brandes FI Core - Net		4.15	2.78	2.44	1.85	-3.30	1.18		1.01	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71		0.75	
EARNEST Partners	874,085,207	4.19	2.68	1.76	1.40	-3.78	1.03	1.82	3.35	5/1/2005
EARNEST Partners - Net		4.15	2.64	1.62	1.26	-3.91	0.89	1.66	3.17	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	2.92	
Garcia Hamilton	930,019,559	5.59	3.18	0.37	-0.38	-4.51	0.58		1.12	6/1/2015
Garcia Hamilton - Net		5.59	3.15	0.28	-0.46	-4.59	0.50		1.04	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71		0.87	
Ramirez Asset Management	508,662,557	4.45	2.73	2.30	2.01	-3.62			-1.54	5/1/2020
Ramirez Asset Management - Net		4.42	2.69	2.16	1.87	-3.75			-1.68	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47			-3.16	
Xponance Yield Advantage Agg.	951,720,803	4.51	2.88	2.45	2.04	-3.63	1.26	1.83	3.24	6/1/2005
Xponance Yield Advantage Agg. - Net		4.51	2.88	2.35	1.94	-3.75	1.14	1.69	3.07	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	2.88	
Pass. Core Fixed Inc	2,747,721,267	4.51	2.87	1.79	1.20	-4.42	0.78	1.44	5.03	1/1/1990
Pass. Core Fixed Inc - Net		4.51	2.87	1.79	1.20	-4.43	0.77	1.44		
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	5.01	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
BlackRock US Debt I	1,628,995,235	4.53	2.88	1.89	1.24	-4.40	0.80	1.48	1.50	10/1/2013
BlackRock US Debt I - Net		4.53	2.88	1.89	1.24	-4.41	0.79	1.48	1.50	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	1.39	
NTGI Blmbg Agg.	1,118,726,033	4.48	2.85	1.64	1.15	-4.44	0.76	1.41	5.07	2/1/1990
NTGI Blmbg Agg. - Net		4.48	2.85	1.64	1.15	-4.45	0.75	1.40		
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	5.05	
Core Plus Fixed Income	2,871,866,706	5.00	3.11	2.51	2.11	-4.16	1.44	2.11	7.17	1/1/1982
Core Plus Fixed Inc. - Net		4.98	3.08	2.37	1.96	-4.30	1.29	1.94		
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	6.76	
LM Capital Group FI	823,144,490	4.30	2.72	2.46	2.03	-3.63	1.80	2.10	3.75	5/1/2005
LM Capital Group FI - Net		4.30	2.68	2.30	1.87	-3.79	1.64	1.94	3.59	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	2.92	
Progress Inv. FI	1,210									
Loop Capital Management	565,473,474	5.03	3.30	3.38	3.10	-3.64	1.38	2.38	3.77	5/1/2005
Loop Capital Management - Net		5.03	3.30	3.28	2.99	-3.75	1.25	2.25	3.64	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	2.92	
Western Asset	926,420,630	5.71	3.41	2.14	1.53	-5.09	1.24	2.18	4.21	11/1/2001
Western Asset - Net		5.68	3.37	2.00	1.39	-5.22	1.11	2.04		
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47	0.71	1.37	3.24	
Longfellow Core Plus	556,826,903	4.83	2.99	2.32	2.19	-3.60			-1.65	5/1/2020
Longfellow Core Plus - Net		4.79	2.95	2.16	2.03	-3.77			-1.80	
Blmbg. U.S. Aggregate Index		4.53	2.88	1.64	1.18	-4.47			-3.16	
Bank Loans	1,658,534,810	1.30	1.19	11.32	11.77	5.02	4.32		4.38	8/1/2014
Bank Loans - Net		1.30	1.23	11.46	11.96	5.12	4.32		4.11	
Custom Benchmark		1.18	1.16	11.72	12.19	5.63	4.94		4.48	

Performance

Periods Ended November 30, 2023

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Barings Global Loan Fund	1,658,534,810	1.30	1.19	11.32	11.77	5.02	4.32		4.38	8/1/2014
Barings Global Loan Fund - Net		1.30	1.23	11.46	11.96	5.12	4.32		4.11	
Custom Benchmark		1.18	1.16	11.72	12.19	5.63	4.94		4.48	
Emerging Markets Debt	331,806									
Standish-Mellon EMD	331,806									
High Yield	1,096,007,720	3.54	2.97	9.28	9.00	3.19	5.39	5.32	8.94	4/1/1986
High Yield - Net		3.46	2.90	8.95	8.59	2.85	5.06	4.97		
ICE BofA U.S. High Yield, Cash Pay Index		4.56	3.27	9.36	8.53	1.42	4.00	4.19	7.66	
MackKay Shields	1,096,007,720	3.54	2.97	9.28	9.00	3.19	5.39	5.37	7.99	11/1/2000
MackKay Shields - Net		3.46	2.90	8.95	8.59	2.85	5.06	5.03		
ICE BofA U.S. High Yield, Cash Pay Index		4.56	3.27	9.36	8.53	1.42	4.00	4.19	6.66	

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.