

Wilshire



Illinois Municipal Retirement Fund

Monthly Investment Summary

Jul-2024

IMRF Performance Summary

- The Illinois Municipal Retirement Fund (“IMRF”) ended July 2024 with a market value of \$54.89 billion, up for the month by approximately \$847 million. IMRF returned 1.96% during the month, outperforming the Total Fund Benchmark, which returned 1.37%. Growth assets were up and defensive portfolios produced a gain in July as yields fell across most of the maturity spectrum. Volatility was up from June and above its typical level for much of the past six months.
- The broad U.S. Equity market was positive for the month, while Large Cap stocks underperformed Small Cap. The U.S. Equity Portfolio outperformed its benchmark during July, returning 2.29% versus 2.18%. The portfolio's allocation to Factor Diversity Strategies was the largest contributor to relative outperformance.
- Non-US equity markets were up in July, with both Developed and Emerging Markets posting positive returns for the month. The International Equity portfolio underperformed the benchmark during the month, returning 2.16% versus 2.32%. In aggregate, investment manager performance in International Large Cap Growth and International Large Cap Value were the largest contributors to relative underperformance.
- Core bonds posted a gain in July, while the 10-year treasury yield fell 37bps. The Fixed Income Portfolio slightly underperformed the benchmark during the month, returning 2.11% versus 2.15%. High Yield and Bank Loans managers were the largest contributors to relative underperformance.
- As of July 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 though Wednesday July 31, 2024

Portfolio Allocations	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Global 60/40 (ACWI/U.S. Core Bonds)	1.90	1.72	3.11	1.90	1.75	8.41	12.20	2.50	6.86
Wilshire Risk Parity (12%)	1.73	1.47	1.58	1.73	(0.75)	6.17	9.23	(1.50)	3.30

Strategic Allocation Themes *	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Growth ¹	1.61	2.23	4.06	1.61	2.87	13.10	17.02	5.75	11.05
Defensive Growth ²	3.17	1.08	2.08	3.17	0.12	7.18	9.11	1.51	7.18
Diversified Credit ³	1.73	0.70	1.37	1.73	0.88	4.55	10.20	0.98	2.67
Real Assets ⁴	2.27	(0.16)	3.22	2.27	1.20	4.38	4.73	0.18	5.33
Defensive ⁵	2.34	0.95	1.70	2.34	0.07	1.61	5.10	(2.63)	0.19

Major Asset Classes	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	1.84	3.14	4.72	1.84	3.31	15.68	21.08	8.38	14.49
MSCI ACWI-ex-USA (Net)	2.31	(0.09)	2.90	2.31	0.96	8.14	9.75	1.79	6.29
Bloomberg U.S. Aggregate	2.34	0.95	1.70	2.34	0.07	1.61	5.10	(2.63)	0.19
Bloomberg U.S. Corporate High Yield	1.94	0.94	1.10	1.94	1.09	4.58	11.05	2.17	4.20
Wilshire Global Real Estate Securities	5.34	1.83	4.17	5.34	(1.21)	3.94	10.50	(0.71)	3.15
Bloomberg Commodity	(4.04)	(1.54)	1.76	(4.04)	2.89	0.90	(5.17)	3.58	6.51

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 Wednesday July 31, 2024

US Equity	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	1.84	3.14	4.72	1.84	3.31	15.68	21.08	8.38	14.49
Standard & Poor's 500	1.22	3.59	4.96	1.22	4.28	16.70	22.15	9.60	15.00
FT Wilshire US Large Cap	1.14	3.78	4.80	1.14	4.40	16.45	22.10	9.17	15.15
FT Wilshire US Large-Cap Growth	(1.67)	7.47	6.49	(1.67)	9.67	20.62	29.15	9.62	18.71
FT Wilshire US Large-Cap Value	4.22	0.04	3.14	4.22	(0.80)	12.27	15.23	8.36	11.21
FT Wilshire US Small Cap	6.59	(1.45)	4.16	6.59	(4.14)	10.34	14.55	3.95	9.97
FT Wilshire US Small-Cap Growth	5.08	(0.41)	3.76	5.08	(3.89)	9.24	12.33	0.42	8.61
FT Wilshire US Small-Cap Value	8.08	(2.47)	4.54	8.08	(4.37)	11.46	16.78	7.32	10.98
Non-US Equity	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
MSCI ACWI-ex-USA (Net)	2.31	(0.09)	2.90	2.31	0.96	8.14	9.75	1.79	6.29
MSCI EAFE (Net)	2.93	(1.61)	3.87	2.93	(0.42)	8.43	11.21	3.63	7.36
MSCI EM (Net)	0.30	3.94	0.56	0.30	5.00	7.81	6.27	(2.74)	3.41
MSCI ACWI-ex-US Small cap (Net)	3.81	(1.06)	3.24	3.81	0.66	6.70	9.92	(0.48)	7.07
Global Equity	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
MSCI ACWI (Net)	1.61	2.23	4.06	1.61	2.87	13.10	17.02	5.75	11.05
MSCI ACWI Minimum Volatility (Net)	4.00	1.18	1.85	4.00	0.35	9.27	11.64	3.41	5.46
Fixed Income	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Bloomberg U.S. Treasury Bills	0.47	0.41	0.48	0.47	1.32	3.09	5.50	3.17	2.21
Bloomberg U.S. Aggregate	2.34	0.95	1.70	2.34	0.07	1.61	5.10	(2.63)	0.19
Bloomberg U.S. Long Corporate	3.17	0.53	2.82	3.17	(1.74)	(0.33)	5.56	(6.60)	(0.41)
Bloomberg U.S. TIPS	1.78	0.78	1.72	1.78	0.79	2.50	4.41	(1.61)	2.36
Bloomberg U.S. Corporate High Yield	1.94	0.94	1.10	1.94	1.09	4.58	11.05	2.17	4.20
Credit Suisse Leveraged Loan	0.73	0.27	0.91	0.73	1.86	5.21	10.42	6.22	5.35
Bloomberg US Convertibles Index	1.91	0.78	2.28	1.91	(0.21)	3.81	5.04	(1.85)	9.58
JPM EMBI Global Diversified	1.87	0.62	1.80	1.87	0.30	4.26	9.18	(2.13)	0.10
Real Assets	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Wilshire Global Real Estate Securities	5.34	1.83	4.17	5.34	(1.21)	3.94	10.50	(0.71)	3.15
FTSE Global Core Infrastructure 50/50	6.41	(2.56)	5.03	6.41	1.00	9.36	9.71	4.71	5.25
Alerian Midstream Energy	3.78	2.89	3.91	3.78	5.42	20.51	27.27	19.48	12.52
Bloomberg U.S. TIPS	1.78	0.78	1.72	1.78	0.79	2.50	4.41	(1.61)	2.36
Bloomberg U.S. CMBS	2.05	0.94	1.54	2.05	0.67	3.61	7.70	(1.43)	1.05
Bloomberg Commodity	(4.04)	(1.54)	1.76	(4.04)	2.89	0.90	(5.17)	3.58	6.51
Gold	5.19	(0.02)	1.80	5.19	4.34	18.64	24.55	10.50	11.60
Bitcoin	7.39	(11.11)	12.96	7.39	(13.69)	53.95	121.04	16.63	45.13

Source: Bloomberg, All returns are in USD

Factor/Relative Returns

Returns though Wednesday July 31, 2024

Asset Class Differentials	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Stocks (ACWI) > Bonds (BB US Aggregate)	(0.72)	1.28	2.37	(0.72)	2.80	11.49	11.92	8.39	10.86
Stocks (ACWI) > Mkt Alts (Equity Hedged))	0.55	1.36	1.72	0.55	1.38	4.33	4.72	0.63	4.90
Mkt Alts (Relative Value) > Bonds (BB US Aggregate)	(0.99)	(0.71)	(0.73)	(0.99)	(0.08)	(0.21)	(0.64)	1.69	0.53
Equity & Real Assets Differentials	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
US Small > Large	5.44	(5.24)	(0.64)	5.44	(8.53)	(6.11)	(7.55)	(5.22)	(5.18)
US Value > Growth	5.89	(7.43)	(3.35)	5.89	(10.46)	(8.35)	(13.92)	(1.26)	(7.50)
ACWI-ex-US > US	0.47	(3.23)	(1.82)	0.47	(2.34)	(7.54)	(11.33)	(6.59)	(8.20)
EM > EAFE	(2.64)	5.56	(3.31)	(2.64)	5.42	(0.62)	(4.94)	(6.37)	(3.94)
ACWI-ex-US Currency Impact	1.22	(0.80)	0.99	1.22	(1.33)	(3.72)	(3.41)	(4.12)	(1.79)
EAFE Currency Impact	2.17	(1.06)	1.42	2.17	(1.42)	(3.47)	(2.85)	(4.60)	(1.64)
EM Currency Impact	(0.31)	(0.31)	0.09	(0.31)	(1.23)	(3.86)	(4.10)	(3.41)	(2.53)
Global Low Volatility > ACWI	2.39	(1.05)	(2.22)	2.39	(2.52)	(3.82)	(5.38)	(2.35)	(5.59)
Global RE > ACWI	3.72	(0.40)	0.11	3.72	(4.08)	(9.16)	(6.52)	(6.47)	(7.89)
Commodities > Global RE	(9.37)	(3.37)	(2.41)	(9.37)	4.10	(3.04)	(15.67)	4.29	3.36
Commodities > TIPS	(5.82)	(2.32)	0.04	(5.82)	2.10	(1.60)	(9.58)	5.19	4.15
Gold > Commodities	9.23	1.51	0.04	9.23	1.46	17.74	29.73	6.92	5.09
Fixed Income Differentials	MTD	JUN	MAY	QTD	Q2 2024	YTD	1 Year	3 Year	5 Year
Duration (US Core > US Core 1-3 Years)	1.15	0.39	0.97	1.15	(0.88)	(1.00)	(0.61)	(3.53)	(1.26)
IG Credit > Treasury	0.20	(0.37)	0.42	0.20	(0.18)	0.58	2.63	0.29	1.18
High Yield > IG Credit	(0.44)	0.31	(0.77)	(0.44)	1.18	2.69	4.29	4.88	3.22
High Yield > Loans	1.21	0.65	0.16	1.21	(0.81)	(0.59)	0.60	(4.22)	(1.30)
TIPS > Treasury	(1.11)	(0.48)	(0.09)	(1.11)	0.94	1.23	0.54	2.63	3.04
EMD > Dev Hdg	0.22	(0.18)	1.50	0.22	0.57	1.78	1.77	(1.28)	0.05
EMD > High Yield	(0.10)	(0.31)	0.62	(0.10)	(0.41)	(0.47)	(2.39)	(3.84)	(3.57)
Non-US > US Core	0.82	(1.45)	(0.69)	0.82	(2.18)	(3.88)	(3.93)	(4.35)	(3.01)
Non-US Hdg > US Core	(0.71)	(0.13)	(1.47)	(0.71)	0.04	0.72	1.79	2.25	0.40
FI Currency Impact	1.53	(1.32)	0.78	1.53	(2.22)	(4.60)	(5.72)	(6.59)	(3.41)

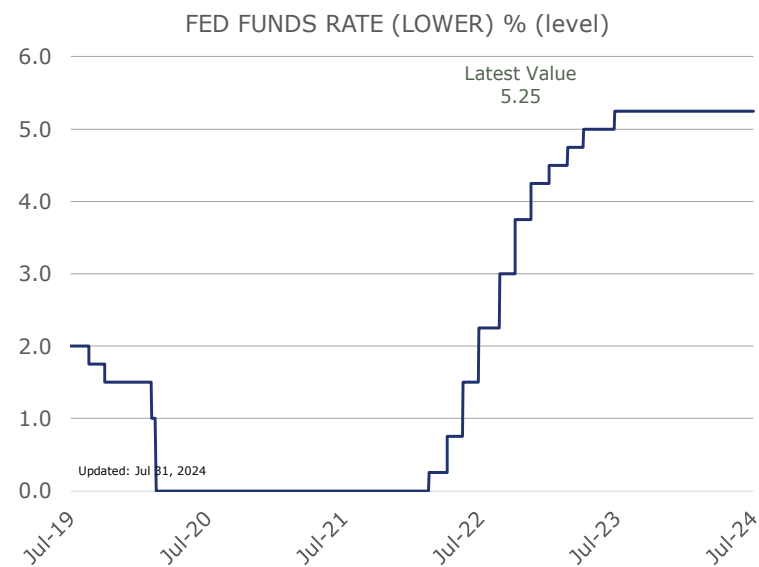
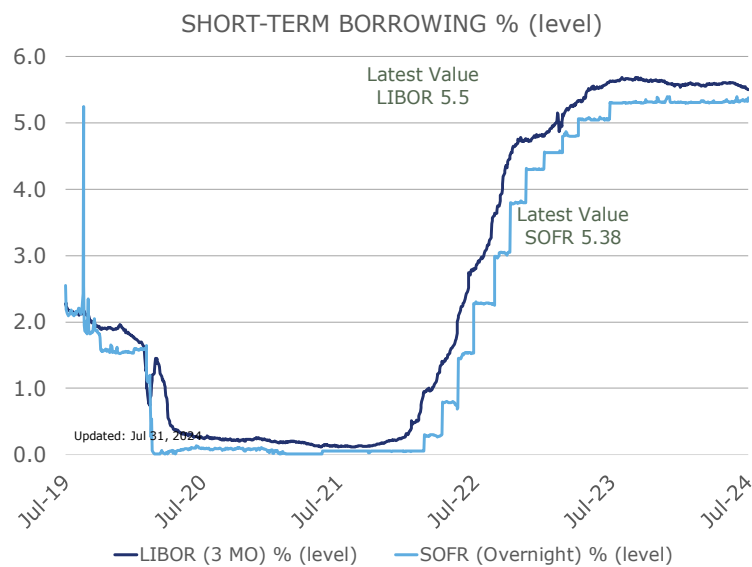
Source: Bloomberg, All returns are in USD

Market Yields & Breakeven Inflation

Market Yields		Previous 3 Month-ends			Previous 2 Quarter-ends		EOY Prior	1 Yr Ago	3 Yrs Ago	5 Yrs Ago
Govt/Treasury Yields	07/31/24	06/28/24	05/31/24	04/30/24	06/28/24	03/29/24	12/29/23	07/31/23	07/30/21	07/31/19
Fed Funds Target Rate (Upper)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	0.25	2.25
2-Year Treasury	4.26	4.76	4.87	5.04	4.76	4.62	4.25	4.88	0.19	1.87
5-Year Treasury	3.91	4.38	4.51	4.72	4.38	4.21	3.85	4.18	0.69	1.83
10-Year Treasury	4.03	4.40	4.50	4.68	4.40	4.20	3.88	3.96	1.22	2.02
30-Year Treasury	4.30	4.56	4.65	4.79	4.56	4.34	4.03	4.01	1.89	2.53
10-Year Real Treasury	1.80	2.11	2.15	2.28	2.11	1.88	1.71	1.59	(1.18)	0.27
Term Spreads	07/31/24	06/28/24	05/31/24	04/30/24	06/28/24	03/29/24	12/29/23	07/31/23	07/30/21	07/31/19
5 - 2 Year Treasury Spread	(0.35)	(0.38)	(0.37)	(0.32)	(0.38)	(0.41)	(0.40)	(0.70)	0.50	(0.05)
10 - 5 Year Treasury Spread	0.11	0.02	(0.01)	(0.04)	0.02	(0.01)	0.03	(0.22)	0.53	0.19
10 - 2 Year Treasury Spread	(0.23)	(0.36)	(0.38)	(0.36)	(0.36)	(0.42)	(0.37)	(0.92)	1.03	0.14
30 - 10 Year Treasury Spread	0.27	0.16	0.15	0.10	0.16	0.14	0.15	0.04	0.67	0.51
30 - 2 Year Treasury Spread	0.04	(0.20)	(0.23)	(0.25)	(0.20)	(0.28)	(0.22)	(0.87)	1.70	0.65
Market Yields	07/31/24	06/28/24	05/31/24	04/30/24	06/28/24	03/29/24	12/29/23	07/31/23	07/30/21	07/31/19
Bloomberg U.S. Treasury YTW	4.19	4.57	4.69	4.88	4.57	4.43	4.08	4.43	0.81	2.01
Bloomberg U.S. Aggregate YTW	4.64	5.00	5.10	5.31	5.00	4.85	4.53	4.85	1.36	2.52
Bloomberg U.S. Long Treasury YTW	4.40	4.61	4.70	4.86	4.61	4.42	4.14	4.13	1.84	2.47
Bloomberg U.S. Long Govt/Credit YTW	4.95	5.17	5.22	5.40	5.17	4.96	4.71	4.85	2.48	3.28
Credit Spreads	07/31/24	06/28/24	05/31/24	04/30/24	06/28/24	03/29/24	12/29/23	07/31/23	07/30/21	07/31/19
Bloomberg Investment Grade OAS	0.93	0.94	0.85	0.87	0.94	0.90	0.99	1.12	0.86	1.08
Bloomberg High Yield OAS	3.14	3.09	3.08	3.01	3.09	2.99	3.23	3.67	2.94	3.71
Breakeven Inflation Rates	07/31/24	06/28/24	05/31/24	04/30/24	06/28/24	03/29/24	12/29/23	07/31/23	07/30/21	07/31/19
1-Year Breakeven Inflation	0.82	1.54	1.94	2.40	1.54	3.96	2.01	1.58	3.29	
2-Year Breakeven Inflation	1.77	2.11	2.27	2.44	2.11	2.72	2.02	2.10	2.83	1.44
5-Year Breakeven Inflation	2.14	2.28	2.36	2.42	2.28	2.44	2.15	2.31	2.62	1.55
10-Year Breakeven Inflation	2.23	2.29	2.36	2.40	2.29	2.32	2.17	2.37	2.40	1.75
5-Year 5-Year Forward Breakeven Inflation	2.36	2.27	2.34	2.37	2.27	2.25	2.15	2.44	2.27	1.99

Source: Bloomberg

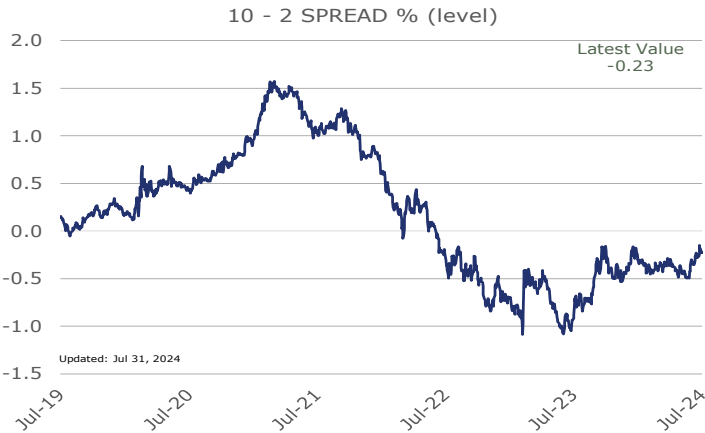
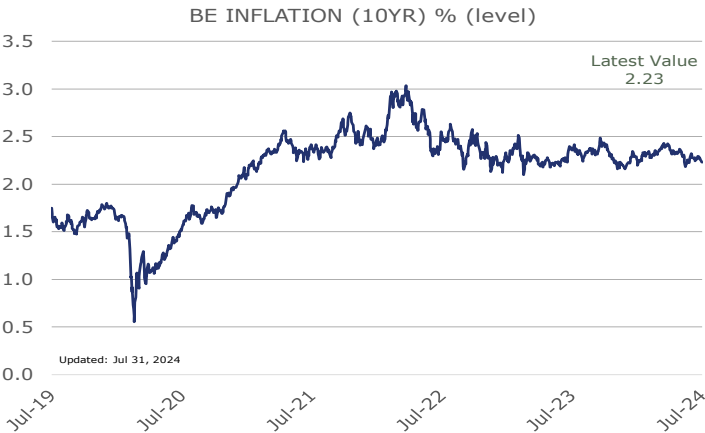
Short Rates



Data Source: Bloomberg

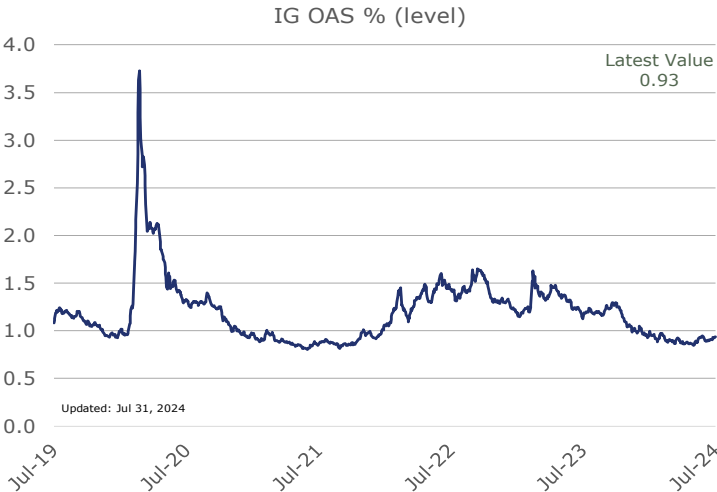
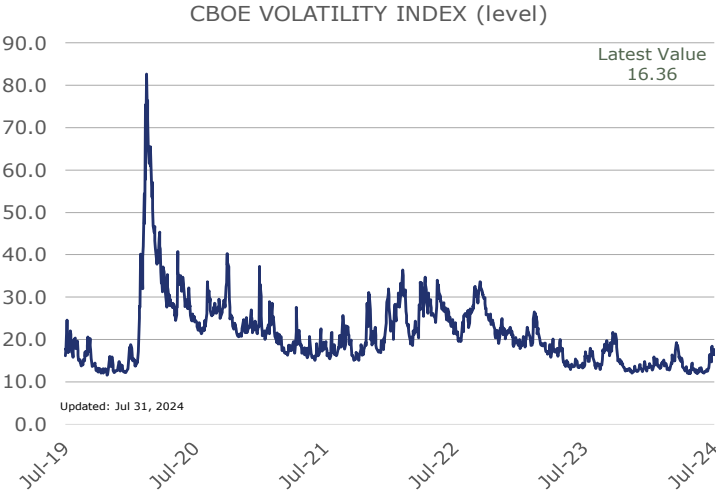
LIBOR: London Inter-bank Offered Rate
SOFR: Federal Reserve Bank NY Secured Overnight Financing Rate

Treasury Rates



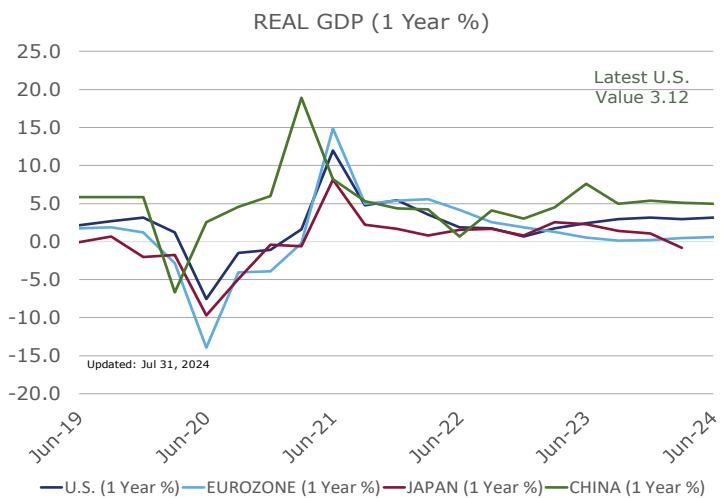
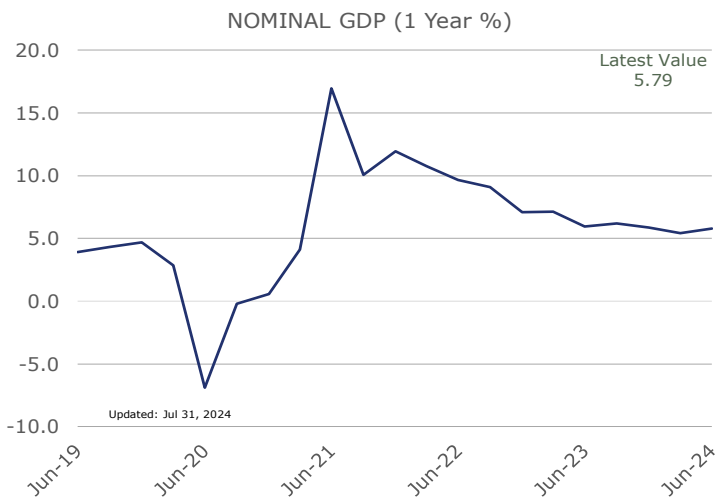
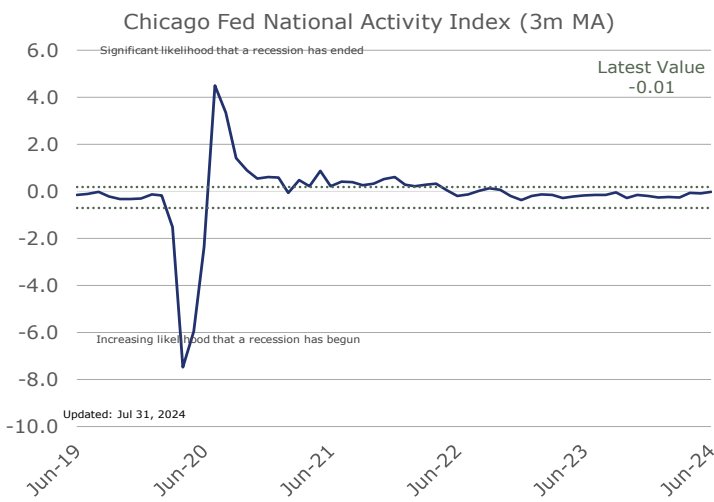
Data Sources: Bloomberg

Volatility & Credit Risk



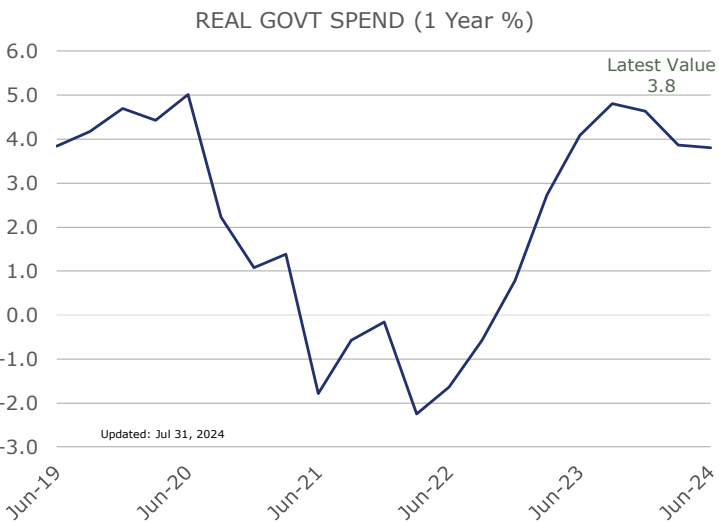
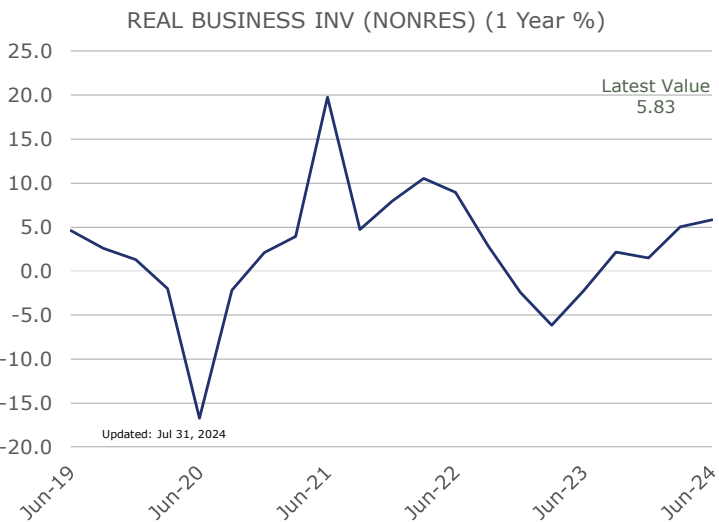
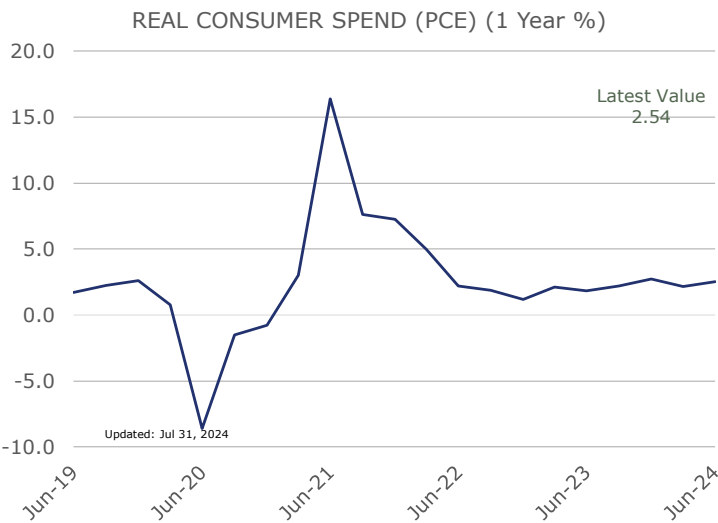
Data Sources: Bloomberg

Economic Growth



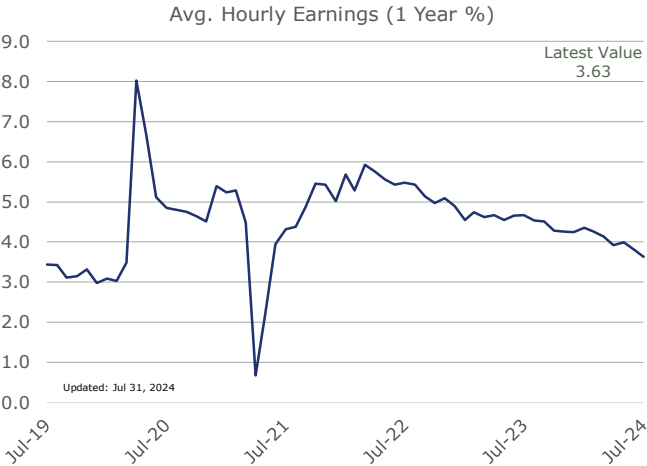
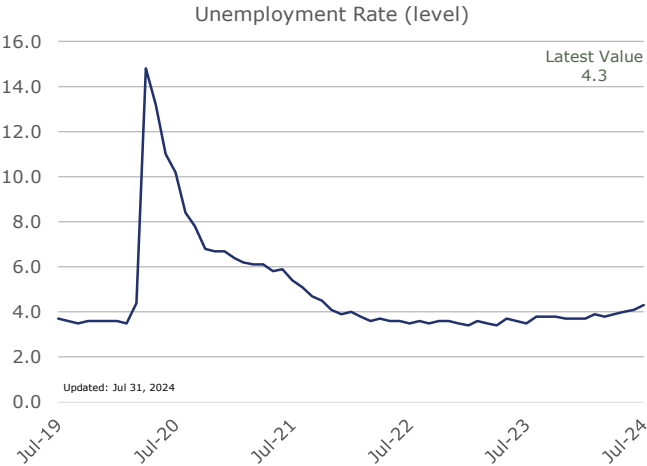
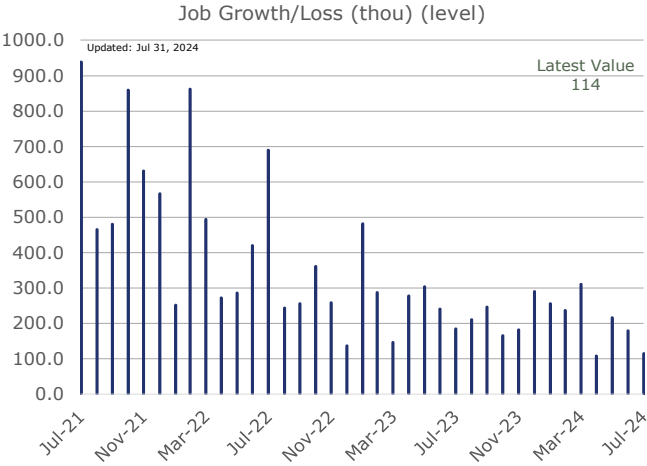
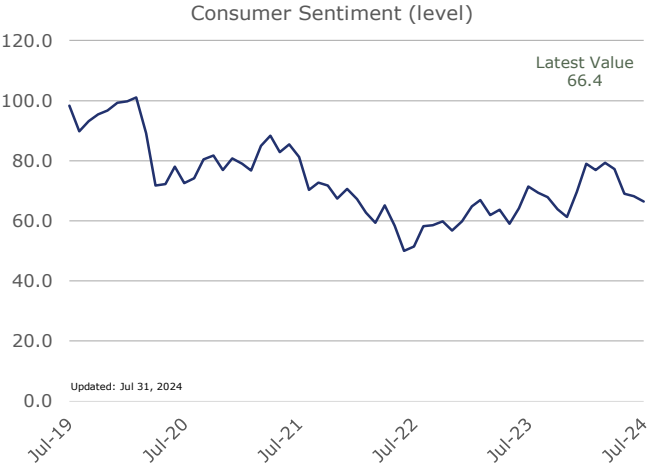
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Economic Growth



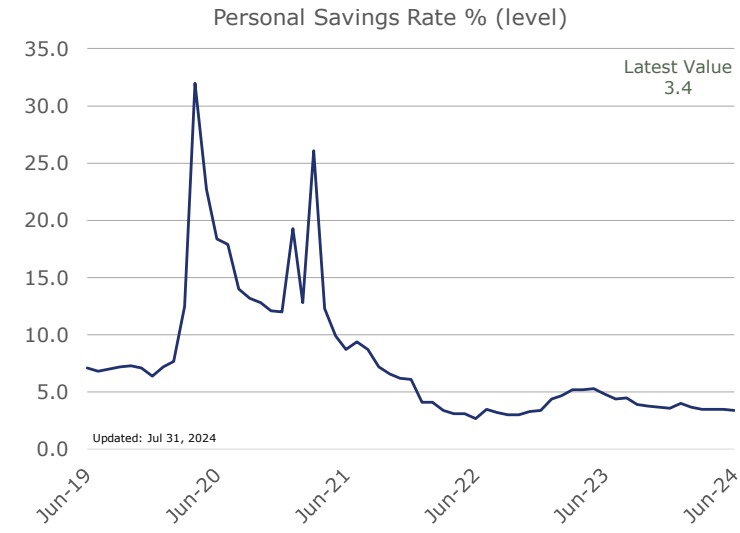
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Consumers & Employment



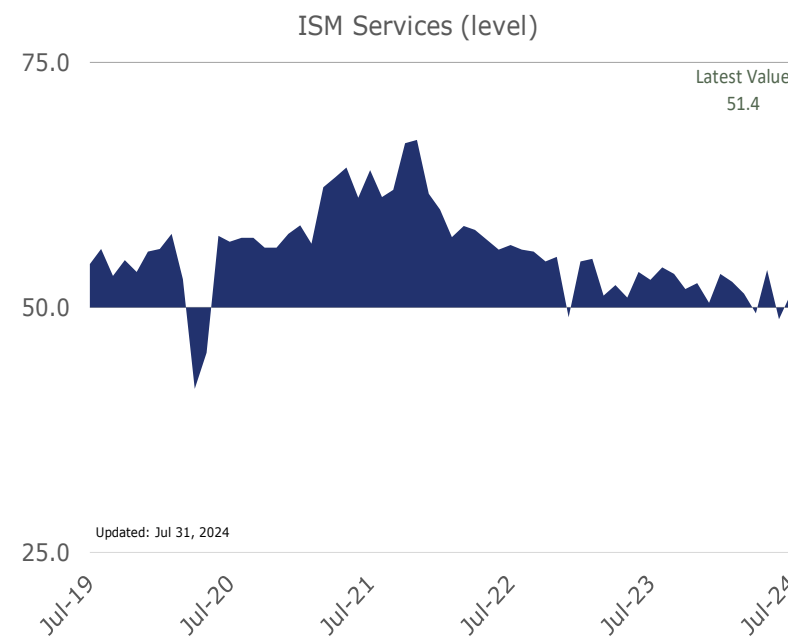
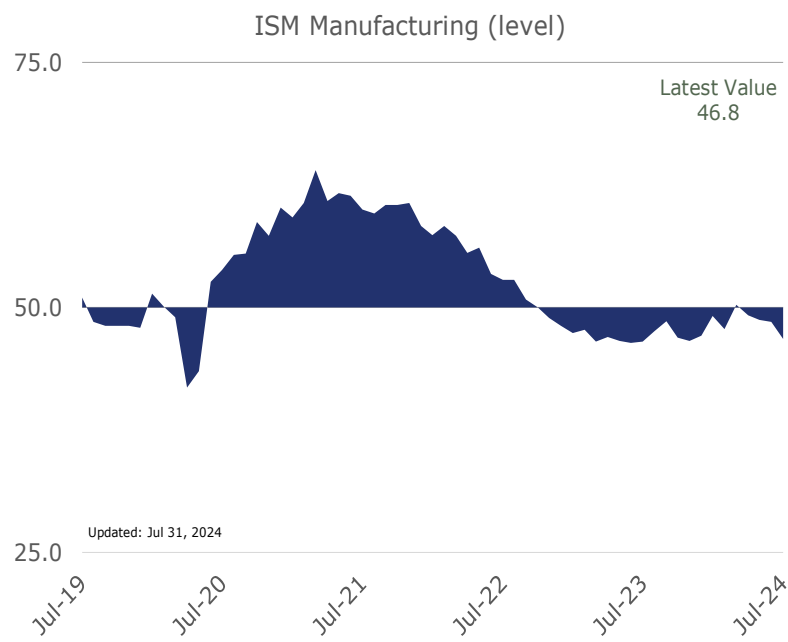
Data Sources: Bloomberg

Income & Spending

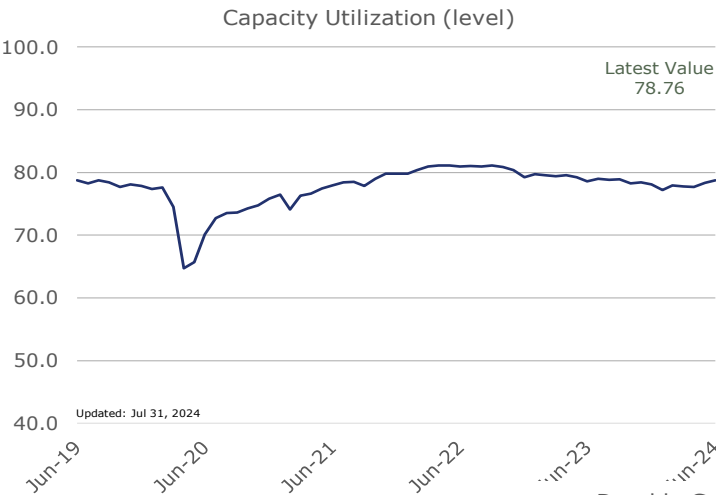


Data Sources: Bloomberg

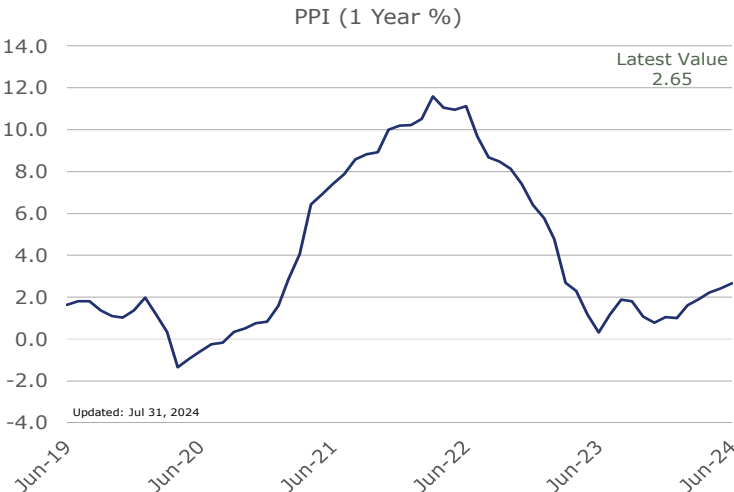
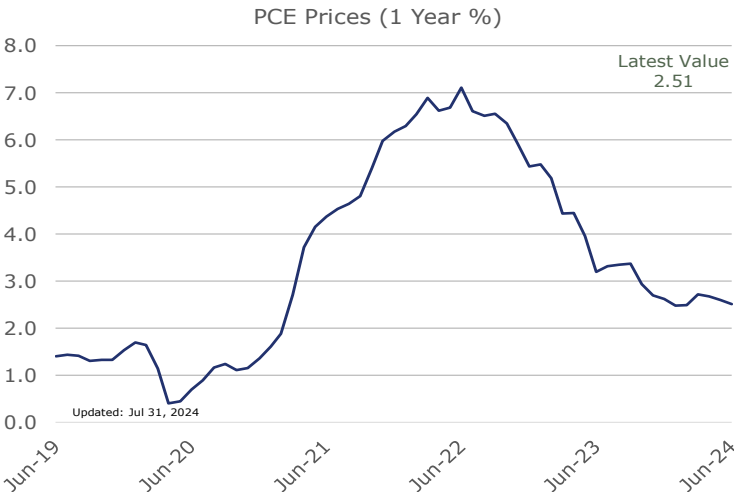
ISM Surveys



Manufacturing Activity

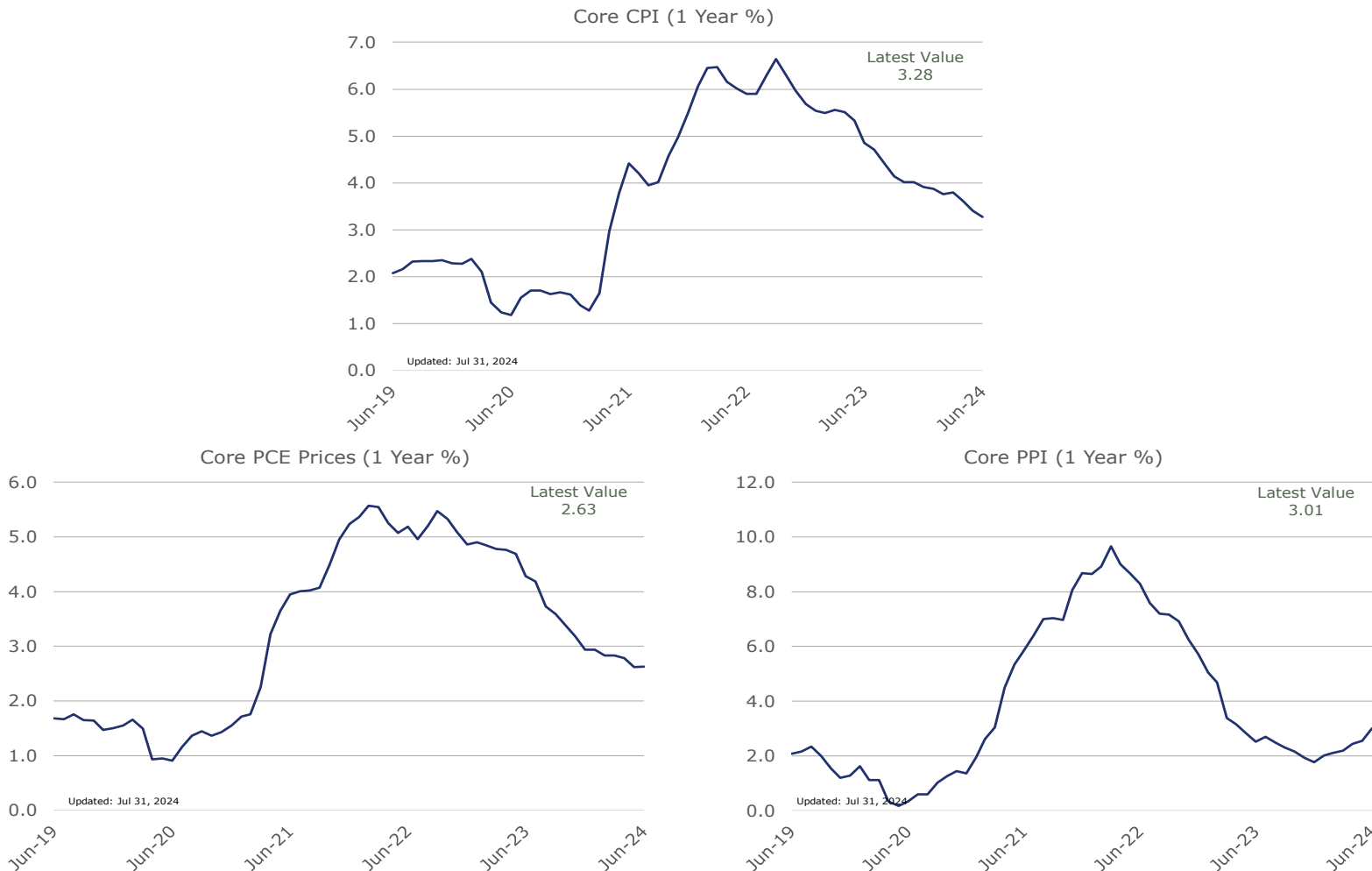


Price Indexes



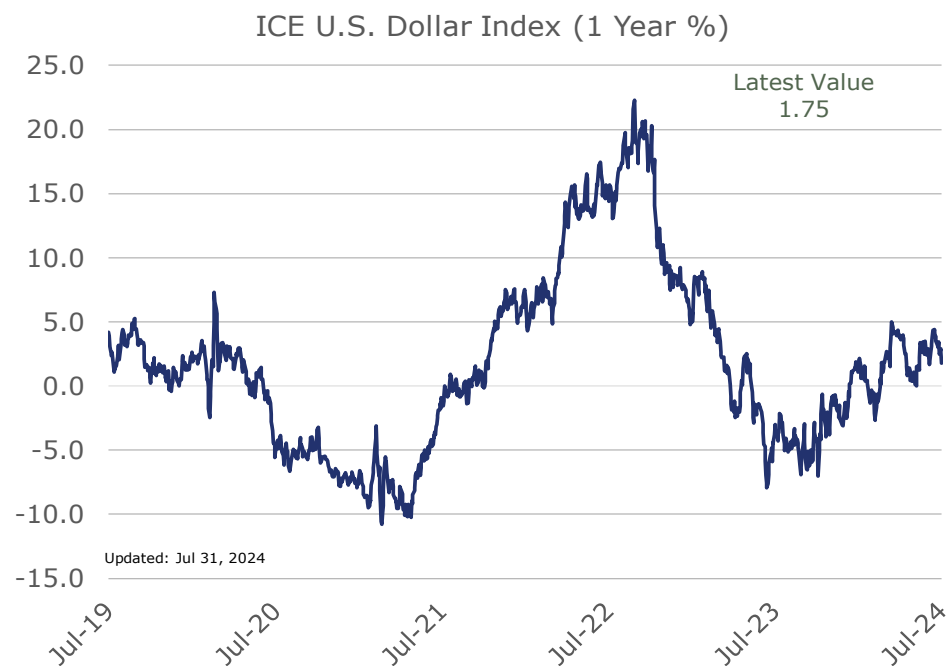
Data Sources: Bloomberg

Core Price Indexes



Data Sources: Bloomberg

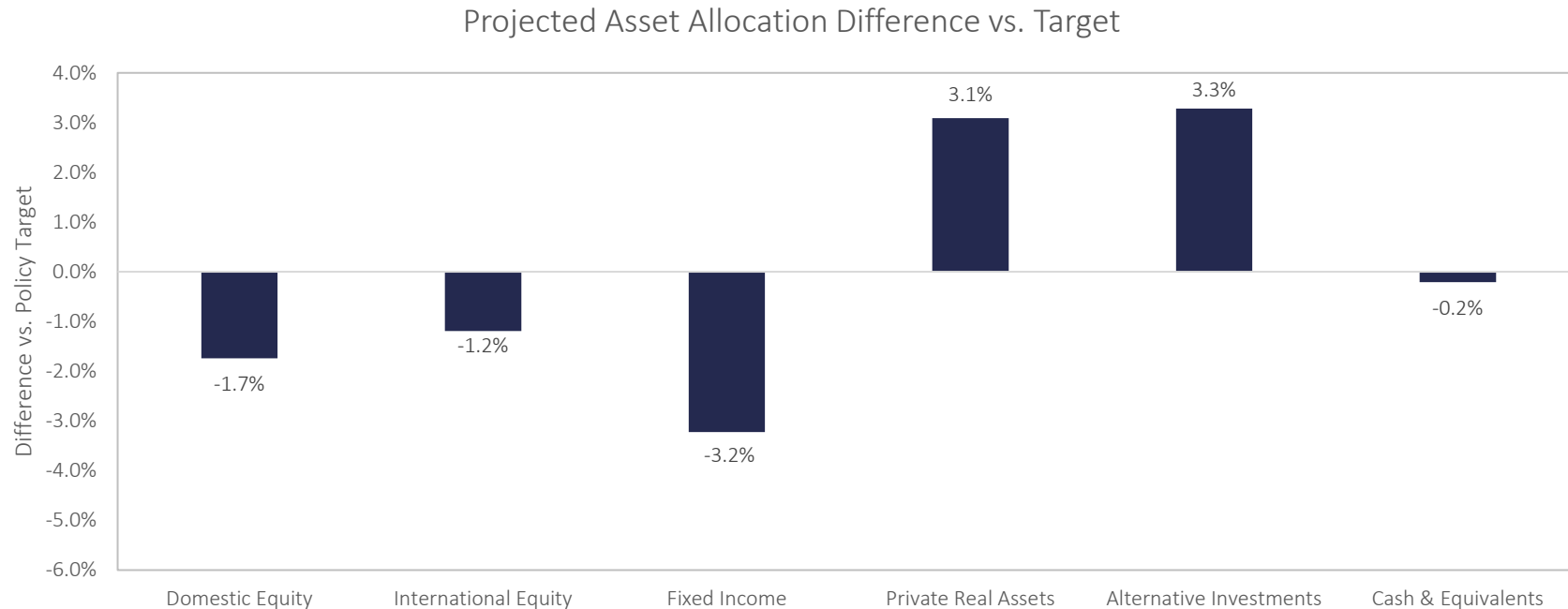
U.S. Dollar



Total Fund

Projected Deviations from the Benchmark

As of July 31, 2024



- Includes committed, but unfunded amounts for Real Assets (\$2.33billion) and Alternatives (\$3.38 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

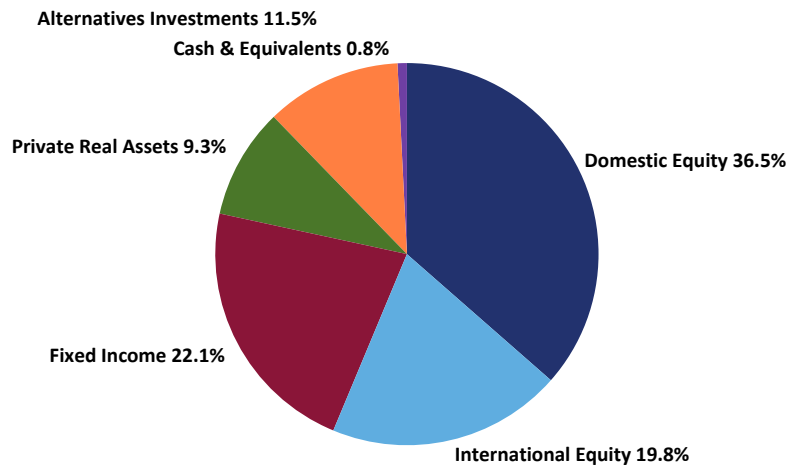
Real Assets Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

Asset Allocation

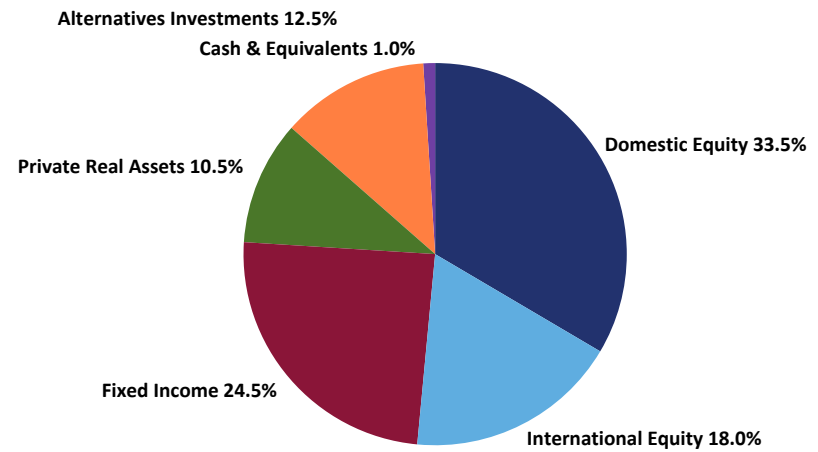
Total Fund

Periods Ended As of July 31, 2024

Actual Allocation



Target Allocation



Domestic Equity International Equity Fixed Income Private Real Assets Alternatives Investments Cash & Equivalents

	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	54,890	100.0	100.0	0.0	
Domestic Equity	20,020	36.5	33.5	3.0	1,631
International Equity	10,873	19.8	18.0	1.8	993
Fixed Income	12,143	22.1	24.5	-2.4	-1,305
Private Real Assets	5,130	9.3	10.5	-1.2	-633
Alternatives Investments	6,289	11.5	12.5	-1.0	-572
Cash & Equivalents	435	0.8	1.0	-0.2	-114

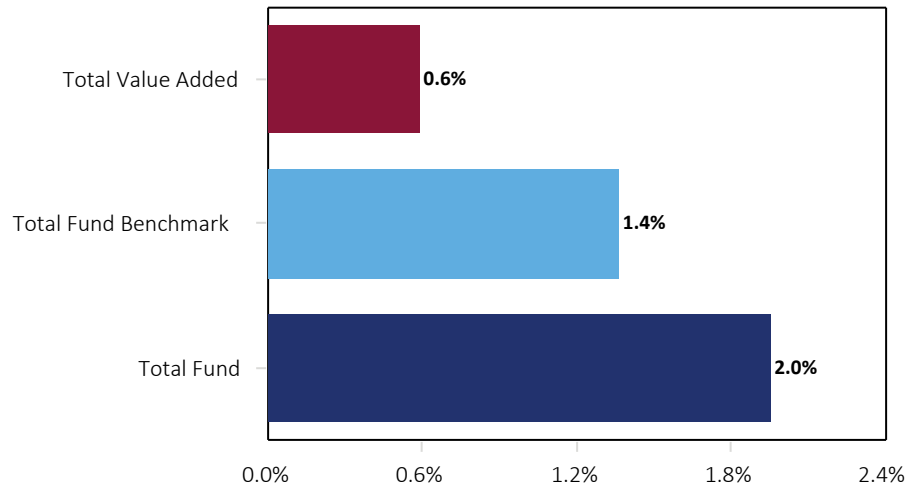
This is relative to the implementation target for the end of 2024

Total Fund Attribution

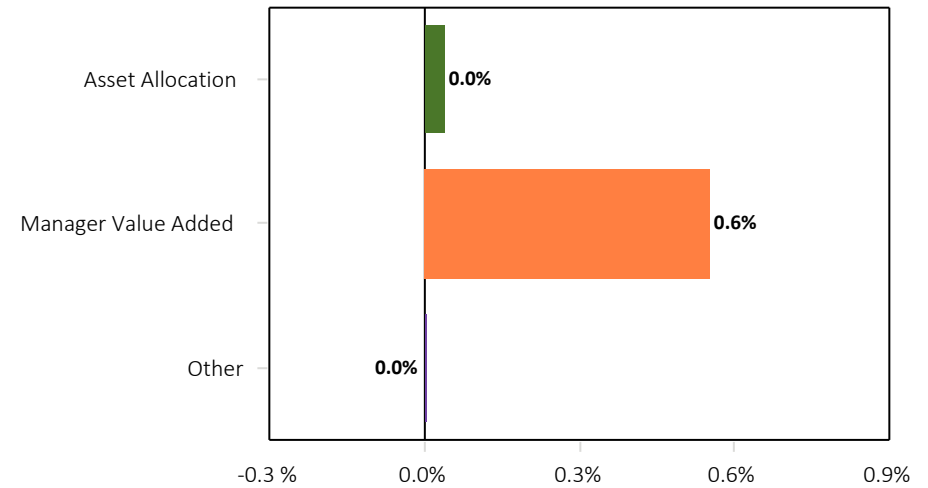
Total Fund

1 Month Ending July 31, 2024

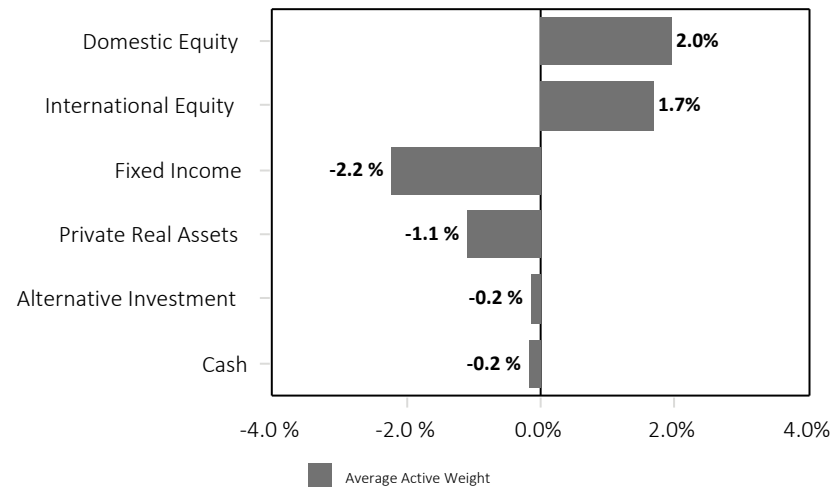
Total Fund Performance



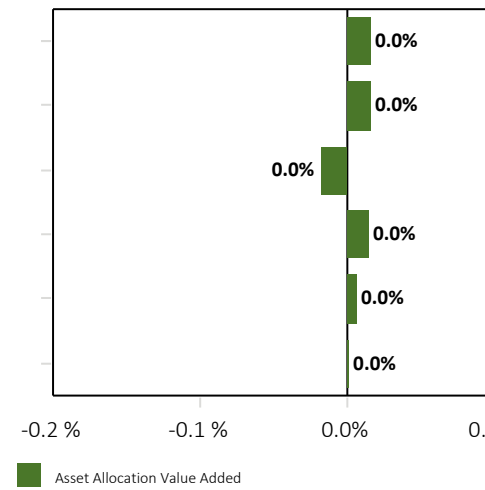
Total Value Added:0.6%



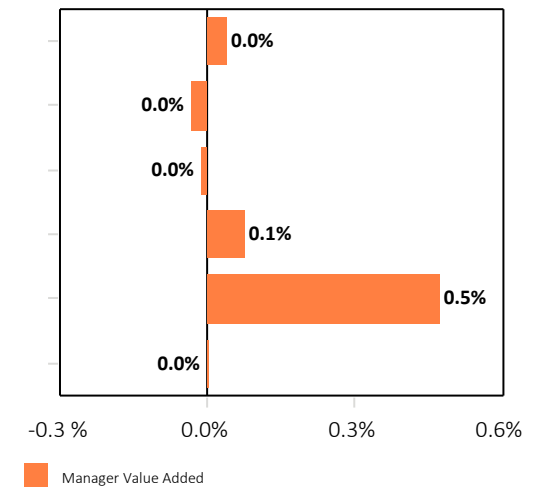
Asset Class Under or Overweighting



Asset Allocation Value Added:0.0%



Total Manager Value Added:0.6%



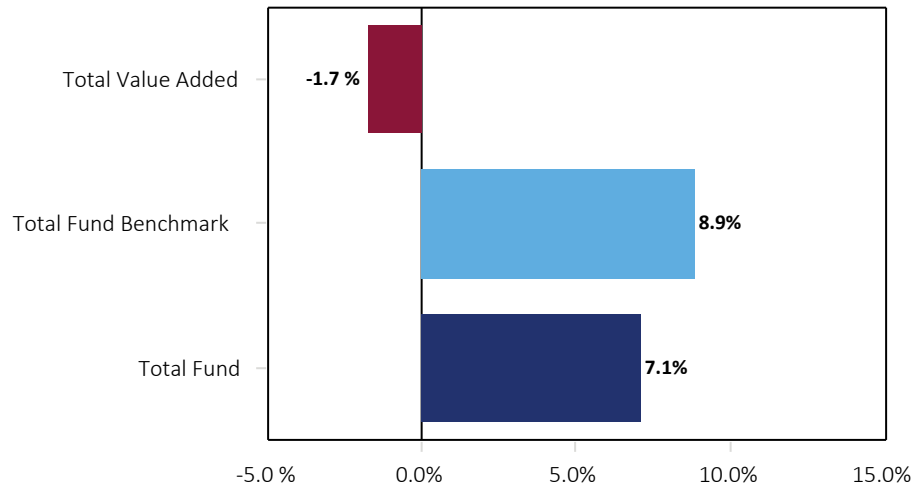
Total Fund Benchmark = 34.5% Domestic Equity Custom Benchmark, 24.5% Fixed Income Custom Benchmark, 18.0% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 11.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

Total Fund Attribution

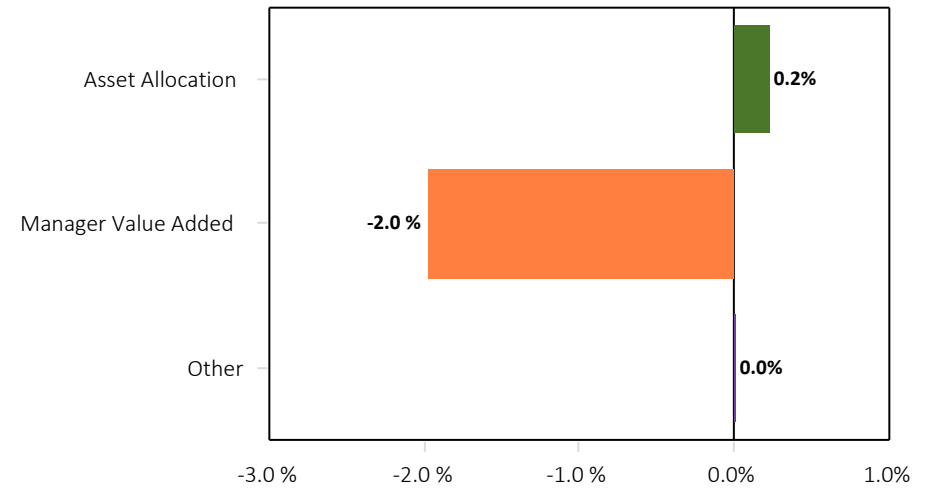
Total Fund

Year To Date Ending July 31, 2024

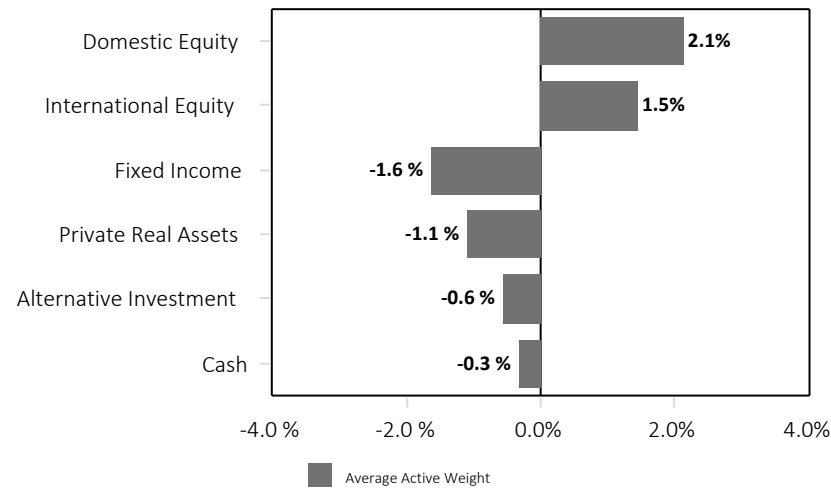
Total Fund Performance



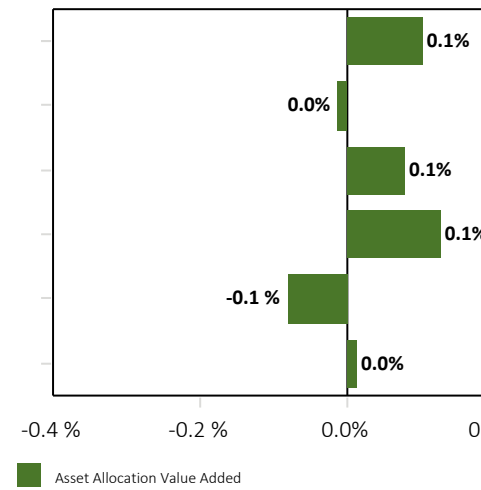
Total Value Added:-1.7 %



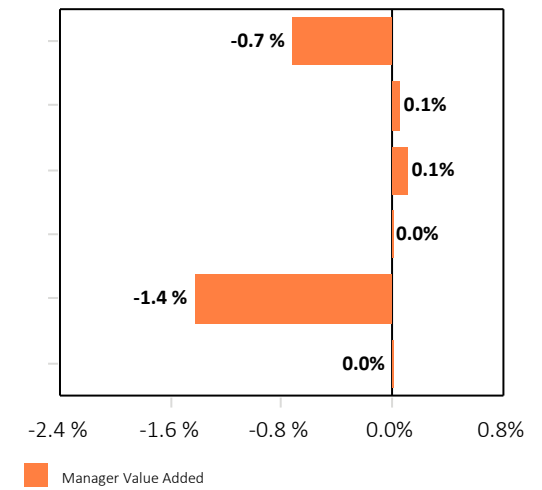
Asset Class Under or Overweighting



Asset Allocation Value Added:0.2%



Total Manager Value Added:-2.0 %



Total Fund Benchmark = 34.5% Domestic Equity Custom Benchmark, 24.5% Fixed Income Custom Benchmark, 18.0% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 11.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

Asset Class Returns

Periods Ended July 31, 2024

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Total Fund	1.97	1.97	7.24	10.35	3.52	8.63	7.75	8.06	8.45	9.70	1/1/1982
Total Fund - Net	1.96	1.96	7.15	10.17	3.36	8.46	7.55				
Total Fund Benchmark	1.37	1.37	8.88	11.68	4.11	7.96	7.42	7.57			
Domestic Equity	2.30	2.30	13.25	18.61	6.26	13.19	11.72	10.35	10.75	11.77	1/1/1982
Domestic Equity - Net	2.29	2.29	13.15	18.42	6.09	13.00	11.50				
Custom Benchmark (U.S. Equity)	2.18	2.18	15.21	20.21	7.75	14.00	12.46	10.51	10.60		
U.S. Equity IMRF Custom Benchmark	3.05	3.05	13.83	18.62	6.73	12.68					
International Equity	2.16	2.16	8.64	12.01	2.03	7.78	5.50	7.10	6.85	7.69	9/1/1986
International Equity - Net	2.16	2.16	8.43	11.59	1.67	7.39	5.14				
MSCI AC World ex USA (Net)	2.32	2.32	8.14	9.75	1.79	6.29	4.18	6.05	5.28		
International Equity IMRF Custom Benchmark	2.32	2.32	8.04	9.53	1.20	6.06					
Fixed Income	2.11	2.11	2.73	6.76	-1.12	1.39	2.50	4.13	5.17	7.40	1/1/1982
Fixed Income - Net	2.11	2.11	2.69	6.67	-1.20	1.30	2.38				
Custom Benchmark (Fixed Income)	2.15	2.15	2.22	6.20	-1.37	0.96	2.00	3.39	4.67	6.88	
Fixed Income IMRF Custom Benchmark	2.12	2.12	2.39	6.39	-1.38	1.02					
Private Real Assets	0.87	0.87	-2.62	-4.06						0.24	3/1/2022
Private Real Assets - Net	0.85	0.85	-2.68	-4.14						0.16	
Custom Benchmark (Private Real Assets)	0.02	0.02	-2.82	-9.20						-3.66	
Real Estate	0.62	0.62	-3.13	-4.71	5.27	6.58	8.36	7.40	7.60	5.64	5/1/1985
Real Estate - Net	0.60	0.60	-3.19	-4.79	5.20	6.51	8.32				
Blended Benchmark (Real Estate)	0.00	0.00	-3.22	-9.99	1.02	2.19	5.36	6.14	6.56	7.01	
Agriculture	0.00	0.00	-7.01	-16.02	-2.38	-1.61	2.00	6.58		5.56	10/1/1997
NCREIF Farmland Index	0.00	0.00	0.53	2.54	6.77	5.82	6.90	12.06		10.73	
Timberland	0.00	0.00	-1.50	20.17	13.51	7.24	4.35	4.24	6.47	7.41	10/1/1992
NCREIF Timberland Index	0.00	0.00	3.86	9.84	10.99	7.18	5.89	7.12	7.40	8.50	
Unlisted Infrastructure	6.21	6.21	11.21	18.53	14.84	14.86				13.42	4/1/2018
Blended Benchmark (Unlisted Infrastructure)	0.44	0.44	4.91	7.01	8.62	8.77				8.82	

Benchmark definitions on following pages.

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

Asset Class Returns

Periods Ended July 31, 2024

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Alternatives Investments	1.29	1.29	3.98	3.18	9.49	14.11	12.02	10.14	12.54	11.25	2/1/1986
Alternatives Investments - Net	1.29	1.29	3.98	3.18	9.48	14.09	11.87				
Custom Benchmark (Alternative Investments)	-2.90	-2.90	17.18	20.48	7.59	8.15	8.57	9.66	11.29	12.10	
Private Equity	1.37	1.37	3.57	2.78	10.24	16.13	14.26	12.74	15.17	13.43	2/1/1986
Blended Benchmark (Private Equity)	-3.48	-3.48	18.84	21.94	7.75	8.25	8.62	9.69			
Cash	0.44	0.44	3.27	5.65	4.29	3.68	2.53	1.34	3.09	3.80	7/1/1986
90 Day U.S. Treasury Bill	0.45	0.45	3.09	5.45	3.18	2.21	1.55	1.56	2.44	3.16	

Benchmark definitions on following pages.

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
Benchmark	1/1/2015	2/28/2022	(Net) 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	1/1/2024	Present	87% MSCI World World Index (Net) 1 Qtr Lagged +3%, 13% S&P LSTA Leveraged Loan 100 Index +2%
Benchmark	3/1/2022	12/31/2023	95% MSCI World World Index (Net) 1 Qtr Lagged +3%, 5% S&P LSTA Leveraged Loan 100 Index +2%
	7/1/2010	2/28/2022	100% Annualized rate of 9.0%
	1/1/2004	6/30/2010	100% Annualized rate of 12.0%
	1/1/2003	12/31/2003	100% Annualized rate of 13.0%
U.S. Equity IMRF Custom Benchmark			Blend of the U.S. Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.
International Equity IMRF Custom Benchmark			Blend of the the International Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.
Fixed Income IMRF Custom Benchmark			Blend of the the Fixed Income Style benchmarks returns, dollar weighted by the actual allocation at previous month end.

**ODCE returns are updated quarterly.

Benchmark Definitions

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

**ODCE returns are updated quarterly.

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Domestic Equity	19,699,374,157	36.45	20,019,569,006	36.47
Large Cap Growth	4,360,355,122	8.07	4,196,572,177	7.65
Sands Capital	1,878,471,607	3.48	1,756,921,284	3.20
Xponance Russell 1000 G	2,481,883,516	4.59	2,439,650,893	4.44
Large Cap Value	3,783,925,336	7.00	3,953,353,683	7.20
Dodge & Cox	1,466,820,660	2.71	1,529,784,716	2.79
LSV Asset	1,032,307,902	1.91	1,080,214,755	1.97
NTGI S&P 500 Value	1,284,796,773	2.38	1,343,354,212	2.45
Large Cap Pass. Core	1,797,162,661	3.33	1,703,434,623	3.10
NTGI MarketCap Idx.	1,797,162,661	3.33	1,703,434,623	3.10
Factor Diversity Strategies	3,313,613,456	6.13	3,373,316,750	6.15
U.S. Large Cap FDP-GSAM	3,313,613,456	6.13	3,373,316,750	6.15
Quantitative Factor Strategies	2,682,957,866	4.96	2,755,059,215	5.02
Quantitative US Equity - SciBeta	2,682,957,866	4.96	2,755,059,215	5.02
Small Cap Multi-Factor Strategies	604,845,020	1.12	670,970,486	1.22
U.S. Small Cap Equity Multi-Factor - S&P	604,845,020	1.12	670,970,486	1.22
Small Cap Growth	771,783,395	1.43	798,037,412	1.45
Frontier Capital	771,783,395	1.43	798,037,412	1.45
Small Cap Value	886,369,259	1.64	975,835,042	1.78
Channing	357,661,972	0.66	390,844,479	0.71
William Blair Small Cap Value	528,707,286	0.98	584,990,563	1.07

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Public Real Assets	1,498,362,042	2.77	1,592,989,618	2.90
Brookfield	425,620,151	0.79	449,474,260	0.82
Cohen & Steers	1,072,741,891	1.98	1,143,515,358	2.08
International Equity	10,642,885,348	19.69	10,873,146,951	19.81
Intl Large Cap Growth	1,752,596,963	3.24	1,781,401,193	3.25
EARNEST Part. Intl	737,697,434	1.37	749,089,092	1.36
William Blair	1,014,899,529	1.88	1,032,312,101	1.88
Intl Large Cap Value	1,669,614,736	3.09	1,741,083,719	3.17
Brandes Investment	796,096,626	1.47	834,289,689	1.52
Mondrian	722,819,628	1.34	750,313,854	1.37
Lazard	150,698,483	0.28	156,480,176	0.29
Intl Large Cap Core	5,934,358,185	10.98	6,054,256,351	11.03
Arrowstreet Capital	1,383,371,274	2.56	1,394,872,438	2.54
Brown Capital	624,020,992	1.15	631,491,761	1.15
GlobeFlex Capital	989,336,188	1.83	1,023,999,373	1.87
Xponance Intl EQ	108,445,480	0.20	111,904,274	0.20
Progress Intl Equity	350,499	0.00	353,810	0.00
NTGI ACWI ex US Index Fund	2,828,833,751	5.23	2,891,634,694	5.27
Intl All Cap Developed	180,156,734	0.33	185,966,682	0.34
Ativo International	180,156,734	0.33	185,966,682	0.34
International Small Cap	590,055,565	1.09	610,507,961	1.11
Franklin Templeton	239,590,659	0.44	247,886,372	0.45
William Blair IntSC	350,464,906	0.65	362,621,589	0.66

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Emerging Mkt Equity	516,103,165	0.95	499,931,046	0.91
Genesis Investment Management, LLP.	1,089,538	0.00	1,092,171	0.00
Arrowstreet EME	515,013,627	0.95	498,838,874	0.91

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Fixed Income	12,041,493,687	22.28	12,143,360,803	22.12
Domestic Fixed Core	3,738,176,427	6.92	3,821,756,009	6.96
Attucks Fixed Income	91,626,897	0.17	93,903,837	0.17
Brandes FI Core	332,449,097	0.62	339,589,292	0.62
EARNEST Partners	887,326,806	1.64	905,859,239	1.65
Garcia Hamilton	943,114,864	1.75	968,901,110	1.77
Ramirez Asset Management	513,175,744	0.95	523,658,845	0.95
Xponance Yield Advantage Agg.	970,483,019	1.80	989,843,686	1.80
Domestic Fixed Passive Core	2,833,088,972	5.24	2,899,413,023	5.28
NTGI Blmbg Agg.	1,153,220,323	2.13	1,180,301,099	2.15
BlackRock US Debt I	1,679,868,648	3.11	1,719,111,924	3.13
Domestic Fixed Core Plus	2,910,249,284	5.38	2,968,733,461	5.41
LM Capital Group FI	832,887,406	1.54	850,145,879	1.55
Loop Capital Management	575,290,219	1.06	586,820,391	1.07
Western Asset	933,030,855	1.73	951,216,134	1.73
Longfellow Core Plus	569,040,804	1.05	580,551,057	1.06
Bank Loans	1,435,690,076	2.66	1,317,930,940	2.40
Barings Global Loan Fund	1,435,690,076	2.66	1,317,930,940	2.40
Emerging Markets Debt	262,996	0.00	263,711	0.00
Standish-Mellon EMD	262,996	0.00	263,711	0.00
High Yield	1,124,025,931	2.08	1,135,263,659	2.07
MacKay Shields	1,124,025,931	2.08	1,135,263,659	2.07

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Private Real Assets	5,083,364,820	9.41	5,130,112,841	9.35
Real Estate	4,533,397,609	8.39	4,558,898,432	8.31
Real Estate Core Cmp	2,090,491,829	3.87	2,067,341,451	3.77
TA Assoc. Buckhead	905,666,983	1.68	884,513,222	1.61
Barings Euro Core Property	96,295,019	0.18	97,224,949	0.18
Blackstone Property Euro	168,570,549	0.31	170,198,450	0.31
INVESCO Core Real Estate	202,966,279	0.38	198,677,073	0.36
INVESCO European real estate	53,257,038	0.10	53,771,346	0.10
AEW Core Property Tr	243,805,184	0.45	241,218,568	0.44
CBRE Core Partners	271,102,756	0.50	274,012,151	0.50
JPM Strategic Property Fund	148,828,022	0.28	147,725,691	0.27
RE Non-Core Cmp	2,442,905,780	4.52	2,491,556,981	4.54
Artemis MWBE Spruce	401,891,714	0.74	408,669,183	0.74
Franklin T. EMREFF	1,066,392	0.00	1,066,392	0.00
Security Capital	101,001,431	0.19	106,639,374	0.19
Dune II	6,955,701	0.01	6,955,701	0.01
Non-Core Real Estate Funds	1,622,485,265	3.00	1,654,555,770	3.01
Non-Core Intl Real Estate	309,449,746	0.57	313,615,029	0.57
Almanac ARS V	55,532	0.00	55,532	0.00
Agriculture	221,660,429	0.41	221,660,429	0.40
Premiere Partners IV	221,660,429	0.41	221,660,429	0.40
Timberland	69,103,553	0.13	69,103,553	0.13
Forest Investment	69,103,553	0.13	69,103,553	0.13
Unlisted Infrastructure	259,203,229	0.48	280,450,427	0.51
Unlisted Infrastructure Funds	259,203,229	0.48	280,450,427	0.51

Investment Manager Asset Allocation

Periods Ended July 31, 2024

	Jun-2024		Jul-2024	
	\$	%	\$	%
Alternatives Investments	6,128,125,580	11.34	6,289,353,556	11.46
Absolute Return	15,652	0.00	12,941	0.00
Aurora Investment	15,652	0.00	12,941	0.00
Private Equity	5,604,811,669	10.37	5,710,026,335	10.40
Abbott S/A Comp.	490,534,261	0.91	487,485,490	0.89
Pantheon S/A Comp.	429,685,655	0.80	429,441,311	0.78
Private Equity Fund - Domestic	3,628,345,975	6.71	3,693,014,641	6.73
Private Equity Fund - International	772,683,132	1.43	806,180,717	1.47
Oakbrook Opportunities Fund	283,562,645	0.52	293,904,176	0.54
Private Credit	523,298,259	0.97	579,314,280	1.06
Private Credit Fund - Domestic	491,085,939	0.91	547,074,354	1.00
Private Credit Fund - International	32,212,320	0.06	32,239,926	0.06
Cash & Equivalents	448,413,524	0.83	434,912,894	0.79
Total Fund	54,043,657,115	100.00	54,890,456,050	100.00

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	54,890,456,050	1.97	1.97	7.24	10.35	3.52	8.63	7.75	9.70	1/1/1982
Total Fund - Net		1.96	1.96	7.15	10.17	3.36	8.46	7.55		
Total Fund Benchmark		1.37	1.37	8.88	11.68	4.11	7.96	7.42		
Domestic Equity	20,019,569,006	2.30	2.30	13.25	18.61	6.26	13.19	11.72	11.77	1/1/1982
Domestic Equity - Net		2.29	2.29	13.15	18.42	6.09	13.00	11.50		
Custom Benchmark (U.S. Equity)		2.18	2.18	15.21	20.21	7.75	14.00	12.46		
Russell 3000 Index		1.86	1.86	15.67	21.07	8.11	14.23	12.58	11.80	
U.S. Equity IMRF Custom Benchmark		3.05	3.05	13.83	18.62	6.73	12.68			
Large Cap Equity	13,226,677,234	0.79	0.79	14.25	20.81	6.89	14.14	12.46	11.58	1/1/1982
Large Cap Equity - Net		0.79	0.79	14.20	20.70	6.80	14.05	12.34		
Russell 1000 Index		1.46	1.46	15.90	21.50	8.52	14.59	12.86	11.96	
Large Cap Growth	4,196,572,177	-3.76	-3.76	14.04	22.25	5.06	16.19	14.90	12.48	1/1/1982
Large Cap Growth - Net		-3.76	-3.76	13.98	22.13	4.96	16.08	14.77		
LCG Blended Benchmark		-1.70	-1.70	18.65	26.94	9.46	18.41	16.31		
Russell 1000 Growth Index		-1.70	-1.70	18.65	26.94	9.46	18.41	16.31	12.01	
Xponance Russell 1000 G	2,439,650,893	-1.70	-1.70	18.69	27.02	9.48	18.41		16.46	10/1/2018
Xponance Russell 1000 G - Net		-1.70	-1.70	18.68	27.00	9.46	18.39		16.44	
Russell 1000 Growth Index		-1.70	-1.70	18.65	26.94	9.46	18.41		16.46	
Sands Capital	1,756,921,284	-6.47	-6.47	8.31	16.41	-7.16	9.50	11.72	11.80	11/1/2003
Sands Capital - Net		-6.47	-6.47	8.20	16.16	-7.37	9.26	11.47		
LCG Blended Benchmark		-1.70	-1.70	18.65	26.94	9.46	18.41	16.31	11.98	
Russell 1000 Growth Index		-1.70	-1.70	18.65	26.94	9.46	18.41	16.31	12.02	
Large Cap Value	3,953,353,683	4.65	4.65	12.72	18.31	9.84	12.60	10.54	10.56	10/1/1982
Large Cap Value - Net		4.63	4.63	12.62	18.10	9.68	12.44	10.36		
LCV Blended Benchmark		5.11	5.11	12.08	14.80	7.01	9.92	8.96		
Russell 1000 Value Index		5.11	5.11	12.08	14.80	7.01	9.92	8.96	11.61	

Benchmark definitions in glossary.

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Dodge & Cox	1,529,784,716	4.44	4.44	13.41	18.93	9.51	13.76	11.43	10.52	9/1/2003
Dodge & Cox - Net		4.44	4.44	13.29	18.66	9.29	13.52	11.20		
LCV Blended Benchmark		5.11	5.11	12.08	14.80	7.01	9.92	8.96	8.73	
Russell 1000 Value Index		5.11	5.11	12.08	14.80	7.01	9.92	8.96	8.85	
LSV Asset	1,080,214,755	4.86	4.86	14.53	19.32	9.09	11.59	9.88	10.99	2/1/2003
LSV Asset - Net		4.79	4.79	14.33	18.91	8.83	11.32	9.61		
LCV Blended Benchmark		5.11	5.11	12.08	14.80	7.01	9.92	8.96	9.43	
Russell 1000 Value Index		5.11	5.11	12.08	14.80	7.01	9.92	8.96	9.44	
NTGI S&P 500 Value	1,343,354,212	4.73	4.73	10.88	16.87	11.00	12.59	10.63	7.22	8/1/1999
NTGI S&P 500 Value - Net		4.73	4.73	10.88	16.87	11.00	12.58	10.63		
S&P 500 Value		4.75	4.75	10.81	16.78	11.00	12.54	10.57	7.19	
Large Cap Pass. Core	1,703,434,623	1.84	1.84	15.70	21.14	7.98	14.15	12.56	11.54	1/1/1985
Large Cap Pass. Core - Net		1.84	1.84	15.70	21.14	7.98	14.14	12.55		
Dow Jones U.S. Total Stock Market Index		1.84	1.84	15.70	21.11	7.94	14.13	12.50		
NTGI MarketCap Idx.	1,703,434,623	1.84	1.84	15.70	21.14	7.98	14.15	12.56	11.34	2/1/1985
NTGI MarketCap Idx. - Net		1.84	1.84	15.70	21.14	7.98	14.14	12.55		
Dow Jones U.S. Total Stock Market Index		1.84	1.84	15.70	21.11	7.94	14.13	12.50		
Factor Diversity Strategies	3,373,316,750	1.80	1.80	15.74	21.80	8.46			14.13	8/18/2020
U.S. Large Cap FDP-GSAM	3,373,316,750	1.80	1.80	15.74	21.80	8.45			14.13	8/18/2020
U.S. Large Cap FDP-GSAM - Net		1.80	1.80	15.72	21.78	8.42			14.09	
Solactive GBS U.S. 1000 Index		1.46	1.46	15.98	21.60	8.34			14.08	
GSAM Active Beta US. Large Cap FDC Index		1.79	1.79	15.79	21.78	8.48			14.12	
Quantitative Factor Strategies	2,755,059,215	2.69	2.69	11.24	16.38	6.76			10.70	9/17/2019
Quantitative US Equity - SciBeta	2,755,059,215	2.69	2.69	11.24	16.38	6.76			10.70	9/17/2019
Quantitative US Equity - SciBeta - Net		2.69	2.69	11.21	16.33	6.71			10.55	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		2.72	2.72	10.97	15.84	5.96			9.79	

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Small Cap	2,444,842,940	8.04	8.04	11.56	13.14	6.52	12.46	10.34	12.11	7/1/1988
Small Cap Composite - Net		7.97	7.97	11.10	12.42	5.82	11.75	9.70		
Russell 2000 Index		10.16	10.16	12.07	14.25	1.85	8.91	8.72	9.32	
Small Cap Multi-Factor Strategies	670,970,486	10.93	10.93	11.28	15.81				15.81	8/1/2023
U.S. Small Cap Equity Multi-Factor - S&P	670,970,486	10.93	10.93	11.28	15.81				15.81	8/1/2023
U.S. Small Cap Equity Multi-Factor - S&P - Net		10.93	10.93	11.28	15.81				15.81	
S&P SmallCap 600 QVML Top 90% Multi-Factor Index		10.94	10.94	11.30	15.91				15.91	
S&P SmallCap 600 Index		10.80	10.80	9.99	14.10				14.10	
Small Cap Growth	798,037,412	3.40	3.40	12.95	10.58	4.22	13.84	12.15	13.06	7/1/1988
Small Cap Growth - Net		3.28	3.28	11.89	9.24	3.01	12.67	11.28		
Russell 2000 Growth Index		8.19	8.19	12.99	12.80	-1.12	7.64	8.92	8.10	
Frontier Capital	798,037,412	3.40	3.40	12.95	10.58	3.95	14.60	13.08	13.40	8/1/1988
Frontier Capital - Net		3.28	3.28	11.89	9.24	2.77	13.38	12.14		
Russell 2000 Growth Index		8.19	8.19	12.99	12.80	-1.12	7.64	8.92	8.18	
Small Cap Value	975,835,042	10.09	10.09	10.65	13.66	7.73	11.86	9.68	11.70	9/1/1989
Small Cap Value - Net		10.04	10.04	10.36	12.98	7.20	11.31	9.14		
Russell 2000 Value Index		12.19	12.19	11.23	15.68	4.62	9.53	8.13	9.86	
Channing	390,844,479	9.28	9.28	13.06	15.36	5.55	11.09	9.21	10.57	7/1/2011
Channing - Net		9.15	9.15	12.67	14.66	4.98	10.52	8.68	9.99	
Russell 2000 Value Index		12.19	12.19	11.23	15.68	4.62	9.53	8.13	9.01	
William Blair Small Cap Value	584,990,563	10.65	10.65	9.09	12.49	5.19	9.61	9.81	11.10	5/1/1999
Inv. Couns. Maryland - Net		10.65	10.65	8.88	11.89	4.68	9.06	9.27		
Russell 2000 Value Index		12.19	12.19	11.23	15.68	4.62	9.53	8.13	9.02	
Public Real Assets	1,592,989,618	6.32	6.32	9.90	11.58	6.02	6.20		6.93	8/1/2017
Public Real Assets - Net		6.32	6.32	9.73	11.24	5.69	5.82		6.54	
Public Real Assets Benchmark		6.35	6.35	8.07	8.77	3.94	4.42		4.96	

Benchmark definitions in glossary.

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Brookfield	449,474,260	5.60	5.60	5.99	9.87	7.52	6.10		6.10	8/1/2017
Brookfield - Net		5.60	5.60	5.77	9.41	7.06	5.61		5.61	
Dow Jones Brookfield Global Infrastructure Composite Index		6.27	6.27	6.56	8.80	4.04	4.33		4.39	
Cohen & Steers	1,143,515,358	6.61	6.61	11.51	12.26	5.63	6.45		7.49	8/1/2017
Cohen & Steers - Net		6.61	6.61	11.37	11.97	5.35	6.12		7.13	
FTSE Global Core Infrastructure 50/50 Index (Net)		6.39	6.39	8.83	8.74	3.86	4.43		5.22	

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	10,873,146,951	2.16	2.16	8.64	12.01	2.03	7.78	5.50	7.69	9/1/1986
International Equity - Net		2.16	2.16	8.43	11.59	1.67	7.39	5.14		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18		
International Equity IMRF Custom Benchmark		2.32	2.32	8.04	9.53	1.20	6.06			
Intl LargeCap Equity	9,576,741,262	2.35	2.35	9.05	12.58	3.55	8.83	5.96	7.82	9/1/1986
Intl LargeCap Equity - Net		2.35	2.35	8.85	12.21	3.24	8.51	5.66		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18		
Intl Large Cap Grwth	1,781,401,193	1.64	1.64	7.73	10.87	0.13	8.80	6.05	8.37	9/1/2002
Intl Large Cap Grwth - Net		1.64	1.64	7.36	10.15	-0.30	8.39	5.71		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	6.98	
MSCI AC World ex USA Growth (Net)		1.06	1.06	7.80	7.69	-1.78	5.75	5.00	7.08	
EARNEST Part. Intl	749,089,092	1.54	1.54	8.73	11.93	6.08	10.03	6.03	9.12	10/1/2004
EARNEST Part. Intl - Net		1.54	1.54	8.08	10.71	5.57	9.61	5.72		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.90	
MSCI AC World ex USA Growth (Net)		1.06	1.06	7.80	7.69	-1.78	5.75	5.00	6.31	
William Blair	1,032,312,101	1.72	1.72	7.03	10.12	-3.44	7.95	6.21	9.17	10/1/2002
William Blair - Net		1.72	1.72	6.85	9.75	-3.81	7.56	5.82		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	7.56	
MSCI AC World ex USA Growth (Net)		1.06	1.06	7.80	7.69	-1.78	5.75	5.00	7.56	
Intl Large Cap Val.	1,741,083,719	4.28	4.28	9.47	14.76	7.85	8.86	5.36	8.57	10/1/1995
Intl Large Cap Val. - Net		4.26	4.26	9.10	14.20	7.48	8.50	4.99		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.34	
MSCI AC World ex USA Value		3.69	3.69	9.09	12.70	6.18	7.24	3.82		
Brandes Investment	834,289,689	4.80	4.80	10.52	18.82	11.27	11.16	6.26	9.06	1/1/1996
Brandes Investment - Net		4.75	4.75	9.96	18.10	10.91	10.85	5.99		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.26	
MSCI AC World ex USA Value		3.69	3.69	9.09	12.70	6.18	7.24	3.82		

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	750,313,854	3.80	3.80	8.78	11.97	5.53	7.24	4.74	5.99	4/1/2012
Mondrian - Net		3.80	3.80	8.57	11.53	5.17	6.83	4.27	5.52	
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.37	
MSCI AC World ex USA Value		3.69	3.69	9.09	12.70	6.18	7.24	3.82	5.33	
Lazard	156,480,176	3.84	3.84	7.24	7.98	2.85	6.17	4.64	6.28	4/1/2012
Lazard - Net		3.84	3.84	7.11	7.71	2.61	5.92	4.31	5.86	
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.37	
MSCI AC World ex USA Value		3.69	3.69	9.09	12.70	6.18	7.24	3.82	5.33	
Intl Large Cap Active Core	3,162,621,656	1.84	1.84	10.42	14.62	4.40	10.50	7.47	6.41	2/1/2008
Intl Large Cap Active Core - Net		1.84	1.84	10.22	14.20	3.95	9.98	6.94		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	3.40	
Arrowstreet Capital	1,394,872,438	0.83	0.83	12.85	17.86	7.68	14.85	9.90	7.86	3/1/2008
Arrowstreet Capital - Net		0.83	0.83	12.61	17.34	7.19	14.34	9.40	7.36	
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	3.24	
Brown Capital	631,491,761	1.20	1.20	3.26	12.01	-2.04	6.58	5.64	7.53	10/1/2004
Brown Capital - Net		1.20	1.20	3.13	11.74	-2.51	6.04	4.89		
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	5.90	
GlobeFlex Capital	1,023,999,373	3.50	3.50	12.33	12.75	5.13	9.30	6.41	5.86	3/1/2006
GlobeFlex Capital - Net		3.50	3.50	12.17	12.40	4.79	8.91	6.01	5.44	
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75	1.79	6.29	4.18	4.30	
Xponance Intl EQ	111,904,274	3.19	3.19	6.90	8.31	1.20			4.49	2/1/2021
Xponance Intl EQ - Net		3.19	3.19	6.58	7.65	0.56			3.89	
MSCI EAFE (Net)		2.93	2.93	8.43	11.21	3.63			6.18	
Progress Intl Equity	353,810									
Intl Large Cap Passive Core	2,891,634,694	2.22	2.22	8.15	9.79	2.26	6.82	4.70	4.31	2/1/2000
Intl Large Cap Passive Core - Net		2.22	2.22	8.15	9.78	2.26	6.81	4.69		
International Large Cap Passive Core Benchmark		2.32	2.32	8.14	9.75	1.85	6.24	4.30	3.91	

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
NTGI ACWI ex US Index	2,891,634,694	2.22	2.22	8.15	9.79				2.77	10/1/2021
NTGI ACWI ex US Index - Net		2.22	2.22	8.15	9.78				2.77	
MSCI AC World ex USA (Net)		2.32	2.32	8.14	9.75				2.39	
Intl All Cap Developed	185,966,682	3.23	3.23	7.07	12.01	2.34	6.01		6.87	2/1/2019
Intl All Cap Developed - Net		3.10	3.10	6.69	11.33	1.83	5.46		6.36	
MSCI EAFE + Canada (Net)		3.14	3.14	8.25	11.12	3.66	7.48		7.86	
Ativo International	185,966,682	3.23	3.23	7.07	12.01	2.33	6.01		6.87	2/1/2019
Ativo International - Net		3.10	3.10	6.69	11.33	1.83	5.46		6.36	
MSCI EAFE + Canada (Net)		3.14	3.14	8.25	11.12	3.66	7.48		7.86	
Intl Small Cap Eqty	610,507,961	3.47	3.47	2.96	7.18	-5.49	5.59	4.95	4.85	12/1/2005
Intl Small Cap Eqty - Net		3.47	3.47	2.59	6.39	-6.18	4.80	4.16		
MSCI AC World ex USA Small Cap (Net)		3.81	3.81	6.69	9.92	-0.48	7.07	5.03	6.11	
Custom Benchmark (Intl Small Cap)		3.81	3.81	6.69	9.92	-0.48	7.07	5.03	5.56	
Franklin Templeton	247,886,372	3.48	3.48	4.90	9.10	-1.73	5.48	4.85	5.81	8/1/2011
Franklin Templeton - Net		3.48	3.48	4.54	8.33	-2.37	4.73	4.09	5.06	
MSCI AC World ex USA Small Cap (Net)		3.81	3.81	6.69	9.92	-0.48	7.07	5.03	5.30	
William Blair IntSC	362,621,589	3.47	3.47	1.66	5.90	-7.76	5.65	5.04	7.62	9/1/2010
William Blair IntSC - Net		3.47	3.47	1.29	5.09	-8.47	4.85	4.24	6.81	
MSCI AC World ex USA Small Cap (Net)		3.81	3.81	6.69	9.92	-0.48	7.07	5.03	6.73	
Custom Benchmark (Intl Small Cap)		3.81	3.81	6.69	9.92	-0.48	7.07	5.03	6.94	
Emerging Mkt Equity	499,931,046	-3.13	-3.13	8.75	8.68	-3.93	2.50	2.94	8.02	2/1/1992
Emerging Mkt Equity - Net		-3.13	-3.13	8.57	8.13	-4.47	1.92	2.34		
MSCI Emerging Markets Index		0.37	0.37	8.08	6.68	-2.34	3.80	3.01	6.49	
Genesis Investment Management, LLP.	1,092,171									
Arrowstreet EME	498,838,874	-3.14	-3.14	9.79	11.29				17.34	3/1/2023
Arrowstreet EME - Net		-3.14	-3.14	9.79	11.29				17.34	
MSCI Emerging Markets IMI (Net)		0.25	0.25	7.68	7.13				12.97	

Benchmark definitions in glossary.

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	12,143,360,803	2.11	2.11	2.73	6.76	-1.12	1.39	2.50	7.40	1/1/1982
Fixed Income - Net		2.11	2.11	2.69	6.67	-1.20	1.30	2.38		
Custom Benchmark (Fixed Income)		2.15	2.15	2.22	6.20	-1.37	0.96	2.00	6.88	
Fixed Income IMRF Custom Benchmark		2.12	2.12	2.39	6.39	-1.38	1.02			
Active Fixed Core	3,821,756,009	2.49	2.49	2.20	5.93	-2.06	0.74	2.06	3.74	4/1/2001
ActiveCore Fixed Inc - Net		2.48	2.48	2.13	5.80	-2.17	0.63	1.94		
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.62	
Attucks Fixed Income	93,903,837	2.49	2.49	2.17	6.14	-2.36			-1.76	2/1/2021
Attucks Fixed Income - Net		2.49	2.49	2.00	5.79	-2.68			-2.06	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63			-2.20	
Brandes FI Core	339,589,292	2.23	2.23	2.01	5.94	-1.37	0.93		1.61	3/1/2016
Brandes FI Core - Net		2.22	2.22	1.98	5.90	-1.40	0.91		1.60	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19		1.33	
EARNEST Partners	905,859,239	2.37	2.37	2.44	6.31	-2.18	0.66	2.10	3.57	5/1/2005
EARNEST Partners - Net		2.37	2.37	2.37	6.17	-2.30	0.53	1.95	3.39	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.11	
Garcia Hamilton	968,901,110	2.93	2.93	1.48	4.63	-2.25	0.43		1.72	6/1/2015
Garcia Hamilton - Net		2.91	2.91	1.42	4.52	-2.33	0.35		1.63	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19		1.40	
Ramirez Asset Management	523,658,845	2.40	2.40	2.10	5.74	-2.27			0.06	5/1/2020
Ramirez Asset Management - Net		2.40	2.40	2.03	5.59	-2.40			-0.07	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63			-1.43	
Xponance Yield Advantage Agg.	989,843,686	2.29	2.29	2.82	6.95	-1.86	1.05	2.16	3.49	6/1/2005
Xponance Yield Advantage Agg. - Net		2.29	2.29	2.75	6.80	-1.98	0.92	2.02	3.32	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.06	
Pass. Core Fixed Inc	2,899,413,023	2.34	2.34	1.69	5.14	-2.57	0.24	1.67	5.09	1/1/1990
Pass. Core Fixed Inc - Net		2.34	2.34	1.69	5.14	-2.58	0.23	1.66		
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	5.07	

Benchmark definitions in glossary.

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
BlackRock US Debt I	1,719,111,924	2.34	2.34	1.73	5.16	-2.56	0.27	1.70	1.91	10/1/2013
BlackRock US Debt I - Net		2.33	2.33	1.73	5.15	-2.57	0.26	1.70	1.91	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	1.81	
NTGI Blmbg Agg.	1,180,301,099	2.35	2.35	1.63	5.12	-2.59	0.21	1.64	5.13	2/1/1990
NTGI Blmbg Agg. - Net		2.35	2.35	1.63	5.12	-2.60	0.20	1.63		
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	5.12	
Core Plus Fixed Income	2,968,733,461	2.31	2.31	2.14	5.96	-2.35	0.96	2.32	7.22	1/1/1982
Core Plus Fixed Inc. - Net		2.30	2.30	2.05	5.79	-2.49	0.81	2.15		
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	6.78	
LM Capital Group FI	850,145,879	2.38	2.38	2.64	6.22	-1.77	1.39	2.40	3.96	5/1/2005
LM Capital Group FI - Net		2.34	2.34	2.52	6.01	-1.93	1.23	2.23	3.79	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.11	
Loop Capital Management	586,820,391	2.25	2.25	2.51	6.85	-1.77	1.09	2.47	4.00	5/1/2005
Loop Capital Management - Net		2.21	2.21	2.41	6.68	-1.92	0.95	2.33	3.86	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.11	
Western Asset	951,216,134	2.27	2.27	1.15	4.67	-3.42	0.39	2.30	4.35	11/1/2001
Western Asset - Net		2.27	2.27	1.07	4.52	-3.56	0.26	2.17		
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63	0.19	1.61	3.39	
Longfellow Core Plus	580,551,057	2.36	2.36	2.70	6.85	-1.82			0.19	5/1/2020
Longfellow Core Plus - Net		2.36	2.36	2.62	6.69	-1.96			0.04	
Blmbg. U.S. Aggregate Index		2.34	2.34	1.61	5.10	-2.63			-1.43	
Bank Loans	1,317,930,940	0.73	0.73	5.35	10.33	5.36	4.96	4.80	4.80	8/1/2014
Bank Loans - Net		0.78	0.78	5.49	10.53	5.50	5.04	4.56	4.56	
Custom Benchmark		0.83	0.83	5.43	10.67	6.43	5.55	4.88	4.88	
Barings Global Loan Fund	1,317,930,940	0.73	0.73	5.35	10.33	5.36	4.96	4.80	4.80	8/1/2014
Barings Global Loan Fund - Net		0.78	0.78	5.49	10.53	5.50	5.04	4.56	4.56	
Custom Benchmark		0.83	0.83	5.43	10.67	6.43	5.55	4.88	4.88	

Benchmark definitions in glossary.

Performance

Periods Ended July 31, 2024

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Emerging Markets Debt	263,711									
Standish-Mellon EMD	263,711									
High Yield	1,135,263,659	1.40	1.40	4.80	10.49	3.54	5.35	5.61	8.99	4/1/1986
High Yield - Net		1.40	1.40	4.65	10.15	3.22	5.02	5.25		
ICE BofA U.S. High Yield, Cash Pay Index		1.95	1.95	4.50	10.91	2.18	4.01	4.55	7.75	
Mackay Shields	1,135,263,659	1.40	1.40	4.80	10.49	3.54	5.35	5.69	8.10	11/1/2000
Mackay Shields - Net		1.40	1.40	4.65	10.15	3.22	5.03	5.35		
ICE BofA U.S. High Yield, Cash Pay Index		1.95	1.95	4.50	10.91	2.18	4.01	4.55	6.83	

Glossary: Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Total Fund Benchmark	1/1/2024	Present	34.5% Blended Benchmark (U.S. Equity), 18.0% MSCI AC World ex USA (Net), 24.5% Custom Benchmark (Fixed Income), 10.5% Custom Benchmark (Private Real Assets), 11.5% Custom Benchmark (Alternative Investments), 1.0% 90 Day U.S. Treasury Bill
	3/1/2022	1/1/2024	35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	1/1/2021	2/28/2022	39% Russell 3000 Index, 25% Blmbg. Barc. U.S. Aggregate, 15% MSCI AC World ex USA (Net), 10% NCREIF Fund Index-ODCE (VW) (Net), 10% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	3/1/2018	12/31/2020	37% Russell 3000 Index, 28% Blmbg. Barc. U.S. Aggregate, 18% MSCI AC World ex USA (Net), 9% NCREIF Fund Index-ODCE (VW) (Net), 7% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

Glossary: 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:
	1/1/2024	Present	34.5% Blended Benchmark (U.S. Equity), 18.0% MSCI AC World ex USA (Net), 24.5% Custom Benchmark (Fixed Income), 10.5% Custom Benchmark (Private Real Assets), 11.5% Custom Benchmark (Alternative Investments), 1.0% 90 Day U.S. Treasury Bill
	3/1/2022	1/1/2024	35.5% Domestic Equity Custom Benchmark, 25.5% Fixed Income Custom Benchmark, 18% MSCI AC World ex USA (Net), 10.5% Private Real Assets Custom Benchmark, 9.5% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	1/1/2021	2/28/2022	39% Russell 3000 Index, 25% Blmgb. 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
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)

Glossary: 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.