

Wilshire



Wilshire Advisors

Monthly Performance Summary

As of November 30, 2021

IMRF Performance Summary

- The Illinois Municipal Retirement Fund (“IMRF”) ended November 2021 with a market value of \$55.7 billion, down for the month by approximately \$874 million. IMRF returned -1.39% during the month, slightly trailing the Total Fund Benchmark which returned -1.12%.
 - Year-to-date, IMRF has returned +13.87% while outperforming its benchmark of +10.25%.
- The U.S. Equity Portfolio underperformed the Russell 3000 Index during the month, returning -2.20% versus -1.52%. In aggregate, investment manager relative performance in Large Cap Growth and Small Cap Growth underperformed their respective benchmarks.
 - Year-to-date, the U.S. Equity Portfolio is behind the benchmark, returning +20.51% versus +20.90%.
- The Internally Managed Scientific Beta Portfolio outperformed the benchmark during November, returning -1.49% versus -1.77%. Since inception, the strategy has outperformed the benchmark, returning +14.96% versus +14.16%.
- The Internally Managed GSAM-Factor Diversity Portfolio outperformed the benchmark during the month, returning -1.04% versus -1.35%.
- The Public Real Assets Portfolio outperformed its benchmark during the month, returning -3.10% versus -3.68%.
- The International Equity Portfolio underperformed the benchmark during November, returning -4.93% versus -4.50%. In aggregate, investment managers in both Large Cap and Small Cap underperformed their respective benchmarks during the month.
 - Year-to-date; however, IMRF’s International Equity Portfolio continues to deliver strong relative performance, returning +5.28% versus +3.54% for the benchmark.
- The Fixed Income Portfolio underperformed the benchmark during the month, returning +0.02% versus +0.30%. The Portfolio’s dedicated allocation to Emerging Markets, High Yield and Bank Loans were among the largest detractors from relative performance as those markets underperformed the Bloomberg U.S. Aggregate Index during the month. Year-to-date; however, these dedicated allocations continue to benefit overall relative performance of the Portfolio.
 - IMRF’s Fixed Income Portfolio has returned -0.59% versus -1.29% for the benchmark, year-to-date.
- As of November month-end, all underlying asset class allocations in the Portfolio are within the stated four percentage point rebalancing range as outlined by the current Statement of Investment Policy.

Market Dashboard

Returns through Tuesday November 30, 2021

Portfolio Allocations	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Global 60/40	(1.33)	3.05	(2.82)	1.68	(0.59)	7.73	10.79	12.11	10.04
Wilshire Risk Parity (12%)	0.49	1.97	(3.46)	2.47	1.12	12.07	16.89	13.72	10.87
Strategic Allocation Themes *	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Growth ¹	(2.41)	5.10	(4.13)	2.57	(1.05)	13.98	19.27	15.96	13.99
Defensive Growth ²	(2.58)	2.95	(2.80)	0.29	(0.14)	7.35	11.91	13.87	12.71
Diversified Credit ³	(1.22)	(0.03)	(0.79)	(1.25)	0.25	0.76	2.58	6.35	5.33
Real Assets ⁴	(2.80)	4.09	(1.26)	1.18	2.96	18.12	23.13	11.64	8.20
Defensive ⁵	0.30	(0.03)	(0.87)	0.27	0.05	(1.29)	(1.15)	5.52	3.65
Major Asset Classes	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	(1.17)	6.73	(4.43)	5.48	0.14	21.95	27.42	20.53	17.69
MSCI ACWI-ex-USA (Net)	(4.50)	2.39	(3.20)	(2.22)	(2.99)	3.54	9.14	9.95	9.28
Bloomberg U.S. Aggregate	0.30	(0.03)	(0.87)	0.27	0.05	(1.29)	(1.15)	5.52	3.65
Bloomberg U.S. Corporate High Yield	(0.97)	(0.17)	(0.01)	(1.14)	0.89	3.34	5.29	7.39	6.29
Wilshire Global Real Estate Securities	(1.04)	6.45	(5.02)	5.35	0.37	24.84	29.26	10.04	8.94
Bloomberg Commodity	(7.31)	2.58	4.98	(4.92)	6.59	22.78	28.89	6.05	3.31

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 : 43% Global REITS/GLI, 33% Commodities, 48% TIPS, 9% Gold, -31% Cash

⁵ Defensive : 100% US Core Bonds

Market Returns

Returns through Tuesday November 30, 2021

US Equity	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
FT Wilshire 5000	(1.17)	6.73	(4.43)	5.48	0.14	21.95	27.42	20.53	17.69
Standard & Poor's 500	(0.69)	7.01	(4.65)	6.26	0.58	23.18	27.92	20.38	17.90
Wilshire 4500 Completion	(4.31)	5.02	(3.49)	0.49	(1.77)	14.61	23.32	20.06	16.02
Wilshire US Large Cap	(0.91)	6.54	(4.71)	5.58	0.10	20.78	25.59	19.05	16.16
Wilshire US Large-Cap Growth	0.26	8.74	(5.30)	9.02	1.15	25.43	31.37	27.23	22.58
Wilshire US Large-Cap Value	(2.82)	4.60	(3.91)	1.65	(1.23)	14.51	18.22	10.27	9.32
Wilshire US Small Cap	(3.55)	3.50	(3.24)	(0.18)	(3.41)	13.93	23.24	12.86	10.29
Wilshire US Small-Cap Growth	(4.18)	4.35	(3.36)	(0.00)	(3.91)	7.76	17.19	16.05	13.93
Wilshire US Small-Cap Value	(3.66)	3.40	(1.97)	(0.38)	(2.36)	21.02	29.90	9.54	6.53
Non-US Equity	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
MSCI ACWI-ex-USA (Net)	(4.50)	2.39	(3.20)	(2.22)	(2.99)	3.54	9.14	9.95	9.28
MSCI EAFE (Net)	(4.65)	2.46	(2.90)	(2.31)	(0.45)	5.84	10.77	9.83	9.19
MSCI EM (Net)	(4.08)	0.99	(3.97)	(3.13)	(8.09)	(4.34)	2.70	9.27	9.52
MSCI ACWI-ex-US Small cap (Net)	(4.95)	1.56	(3.04)	(3.46)	(0.00)	8.34	15.92	12.74	10.75
Global Equity	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
MSCI ACWI (Net)	(2.41)	5.10	(4.13)	2.57	(1.05)	13.98	19.27	15.96	13.99
MSCI ACWI Minimum Volatility (Net)	(1.93)	2.53	(3.56)	0.55	0.08	7.79	10.37	8.38	9.63
Fixed Income	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Bloomberg U.S. Aggregate	0.30	(0.03)	(0.87)	0.27	0.05	(1.29)	(1.15)	5.52	3.65
Bloomberg Long Term Treasury	2.65	1.86	(2.86)	4.56	0.47	(3.27)	(4.41)	11.30	6.74
Bloomberg U.S. TIPS	0.89	1.13	(0.71)	2.04	1.75	5.62	6.83	8.52	5.25
Bloomberg U.S. Corporate High Yield	(0.97)	(0.17)	(0.01)	(1.14)	0.89	3.34	5.29	7.39	6.29
Credit Suisse Leveraged Loan	(0.15)	0.24	0.65	0.08	1.13	4.74	6.10	4.40	4.43
ICE BofA US Convertible Index	(3.55)	3.58	(1.67)	(0.09)	(0.49)	6.27	13.76	22.18	17.21
JPM EMBI Global Diversified	(1.84)	0.02	(2.07)	(1.82)	(0.70)	(3.15)	(1.31)	5.93	4.64
Real Assets	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Wilshire Global Real Estate Securities	(1.04)	6.45	(5.02)	5.35	0.37	24.84	29.26	10.04	8.94
FTSE Global Core Infrastructure 50/50	(3.26)	3.72	(3.59)	0.34	(0.07)	7.77	9.30	8.23	9.30
Alerian Midstream Energy	(7.14)	6.11	4.14	(1.47)	(1.26)	36.87	37.59	5.70	2.49
Bloomberg Commodity	(7.31)	2.58	4.98	(4.92)	6.59	22.78	28.89	6.05	3.31
Gold	(0.50)	1.50	(3.12)	1.00	(0.74)	(6.52)	(0.14)	13.29	8.63
Bitcoin	(8.43)	43.65	(7.60)	31.55	25.59	97.06	194.85	144.06	138.32

Source: Bloomberg, All returns are in USD

Factor/Relative Returns

Returns through Tuesday November 30, 2021

Asset Class Differentials	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Stocks (ACWI) > Bonds (BB US Aggregate)	(2.70)	5.13	(3.26)	2.30	(1.10)	15.27	20.42	10.44	10.34
Stocks (ACWI) > Mkt Alts (Equity Hedged))	(1.19)	2.52	(2.04)	1.23	(0.89)	3.32	6.39	9.91	9.60
Mkt Alts (Relative Value) > Bonds (BB US Aggregate)	(0.81)	(0.27)	0.59	(1.07)	(0.22)	1.57	2.64	(2.43)	(1.33)
Equity & Real Assets Differentials	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
US Small > Large	(2.85)	(3.06)	1.88	(5.99)	(3.42)	(7.15)	(2.59)	(6.43)	(6.21)
US Value > Growth	(2.92)	(3.97)	1.54	(7.05)	(1.89)	(8.95)	(11.01)	(14.72)	(11.09)
ACWI-ex-US > US	(3.33)	(4.34)	1.23	(7.70)	(3.13)	(18.41)	(18.28)	(10.58)	(8.42)
EM > EAFE	0.58	(1.47)	(1.07)	(0.82)	(7.65)	(10.18)	(8.07)	(0.56)	0.32
ACWI-ex-US Currency Impact	(1.86)	0.37	(1.37)	(1.55)	(1.69)	(5.80)	(4.05)	(0.01)	0.44
EAFE Currency Impact	(2.14)	0.28	(1.60)	(1.93)	(1.76)	(7.95)	(5.84)	0.28	0.79
EM Currency Impact	(0.85)	0.09	(1.15)	(0.77)	(1.40)	(2.69)	(1.62)	(1.20)	(0.69)
Global Low Volatility > ACWI	0.48	(2.58)	0.57	(2.03)	1.14	(6.19)	(8.90)	(7.58)	(4.36)
Global RE > ACWI	1.37	1.35	(0.89)	2.78	1.42	10.86	9.99	(5.92)	(5.05)
Commodities > Global RE	(6.27)	(3.87)	9.99	(10.26)	6.22	(2.06)	(0.37)	(3.99)	(5.62)
Commodities > TIPS	(8.20)	1.45	5.69	(6.95)	4.84	17.16	22.05	(2.47)	(1.94)
Gold > Commodities	6.81	(1.08)	(8.10)	5.92	(7.33)	(29.30)	(29.02)	7.24	5.31
Fixed Income Differentials	MTD	OCT	SEP	QTD	Q3 2021	YTD	1 Year	3 Year	5 Year
Duration (US Core > US Core 1-3 Years)	0.38	0.30	(0.78)	0.68	(0.04)	(0.95)	(0.94)	3.02	1.80
IG Credit > Treasury	(0.71)	0.32	0.03	(0.39)	(0.09)	0.86	1.51	3.15	2.26
High Yield > IG Credit	(1.03)	(0.42)	1.04	(1.45)	0.89	4.30	5.82	(0.76)	0.87
High Yield > Loans	(0.83)	(0.42)	(0.65)	(1.25)	(0.22)	(1.19)	(0.66)	2.88	1.91
TIPS > Treasury	(0.20)	1.58	0.87	1.40	1.77	8.40	9.88	2.50	1.56
EMD > Dev Hdg	(2.12)	0.01	(0.65)	(2.10)	(0.63)	(1.74)	(0.67)	2.06	1.30
EMD > High Yield	(0.10)	(0.25)	(1.65)	(0.34)	(1.43)	(5.94)	(6.41)	(1.43)	(1.69)
Non-US > US Core	(1.01)	(0.36)	(1.59)	(1.37)	(1.64)	(5.69)	(3.80)	(2.29)	(0.77)
Non-US Hdg > US Core	0.75	(0.40)	(0.14)	0.35	0.04	0.43	0.69	(1.63)	(0.35)
FI Currency Impact	(1.76)	0.03	(1.44)	(1.72)	(1.68)	(6.12)	(4.50)	(0.66)	(0.42)

Source: Bloomberg, All returns are in USD

Market Yields & Breakeven Inflation

Market Yields

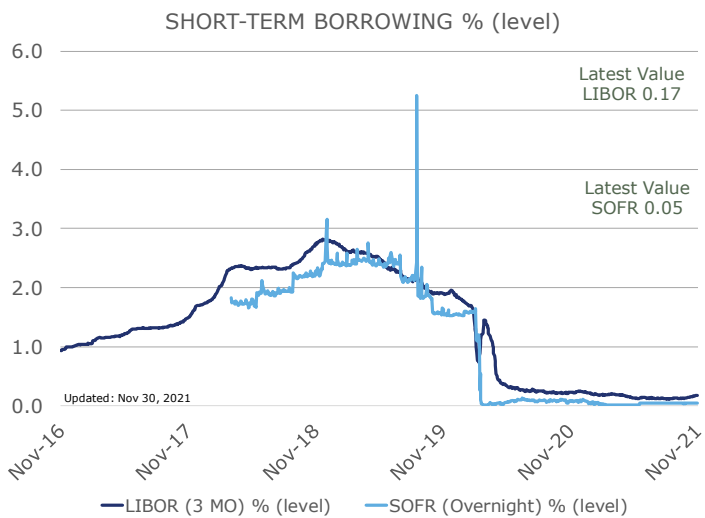
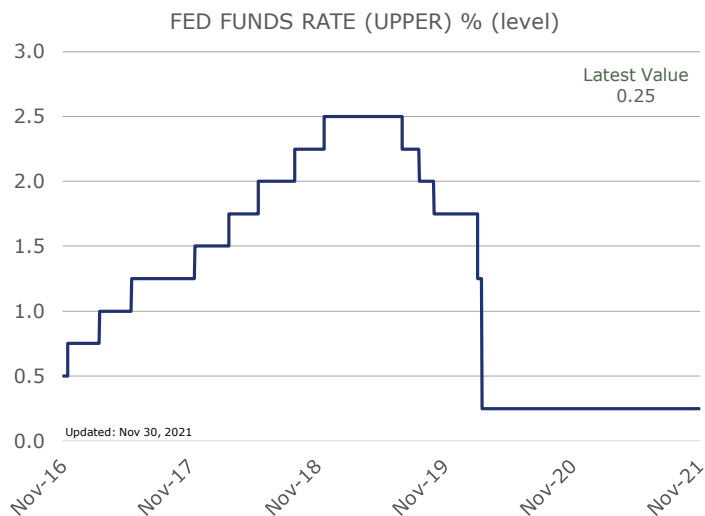
Govt/Treasury Yields	Previous 3 Month-ends				Previous 2 Quarter-ends		EOY Prior	1 Yr Ago	3 Yrs Ago	5 Yrs Ago
	11/30/21	10/29/21	09/30/21	08/31/21	09/30/21	06/30/21	12/31/20	11/30/20	11/30/18	11/30/16
Fed Funds Target Rate (Upper)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.25	0.50
2-Year Treasury	0.57	0.50	0.28	0.21	0.28	0.25	0.12	0.15	2.79	1.12
5-Year Treasury	1.16	1.19	0.97	0.78	0.97	0.89	0.36	0.36	2.81	1.84
10-Year Treasury	1.45	1.56	1.49	1.31	1.49	1.47	0.92	0.84	2.99	2.38
30-Year Treasury	1.79	1.93	2.05	1.93	2.05	2.09	1.65	1.57	3.29	3.04
10-Year Real Treasury	(1.08)	(1.03)	(0.89)	(1.03)	(0.89)	(0.88)	(1.09)	(0.96)	1.02	0.43
Term Spreads	11/30/21	10/29/21	09/30/21	08/31/21	09/30/21	06/30/21	12/31/20	11/30/20	11/30/18	11/30/16
5 - 2 Year Treasury Spread	0.59	0.68	0.69	0.57	0.69	0.64	0.24	0.21	0.02	0.72
10 - 5 Year Treasury Spread	0.28	0.37	0.52	0.53	0.52	0.58	0.55	0.48	0.17	0.54
10 - 2 Year Treasury Spread	0.87	1.05	1.21	1.10	1.21	1.22	0.79	0.69	0.20	1.26
30 - 10Year Treasury Spread	0.34	0.38	0.56	0.62	0.56	0.62	0.73	0.73	0.30	0.65
30 - 2Year Treasury Spread	1.22	1.43	1.77	1.72	1.77	1.84	1.52	1.42	0.50	1.92

Market Yields	11/30/21	10/29/21	09/30/21	08/31/21	09/30/21	06/30/21	12/31/20	11/30/20	11/30/18	11/30/16
Bloomberg U.S. Treasury YTW	1.12	1.14	1.01	0.86	1.01	0.95	0.57	0.56	2.93	1.83
Bloomberg U.S. Aggregate YTW	1.69	1.66	1.56	1.42	1.56	1.50	1.12	1.15	3.54	2.57
Bloomberg U.S. Long Treasury YTW	1.81	1.94	2.03	1.86	2.03	2.03	1.51	1.44	3.29	2.94
Bloomberg U.S. Long Govt/Credit YTW	2.53	2.60	2.68	2.52	2.68	2.66	2.28	2.26	4.30	3.97
Credit Spreads	11/30/21	10/29/21	09/30/21	08/31/21	09/30/21	06/30/21	12/31/20	11/30/20	11/30/18	11/30/16
Bloomberg Investment Grade OAS	0.99	0.87	0.84	0.87	0.84	0.80	0.96	1.04	1.37	1.29
Bloomberg High Yield OAS	3.37	2.87	2.89	2.88	2.89	2.68	3.60	4.12	4.18	4.55

Breakeven Inflation Rates	11/30/21	10/29/21	09/30/21	08/31/21	09/30/21	06/30/21	12/31/20	11/30/20	11/30/18	11/30/16
1-Year Breakeven Inflation	3.75	3.23	2.54	2.62	2.54	3.17	2.02	1.28	(1.11)	0.56
2-Year Breakeven Inflation	3.24	3.07	2.53	2.54	2.53	2.72	2.01	1.55	1.22	1.39
5-Year Breakeven Inflation	2.81	2.93	2.53	2.51	2.53	2.50	1.97	1.70	1.77	1.80
10-Year Breakeven Inflation	2.51	2.59	2.38	2.34	2.38	2.34	1.99	1.79	1.97	1.98
5-Year 5-Year Forward Breakeven Inflation	2.22	2.19	2.24	2.19	2.24	2.18	1.97	1.85	2.11	2.11

Source: Bloomberg

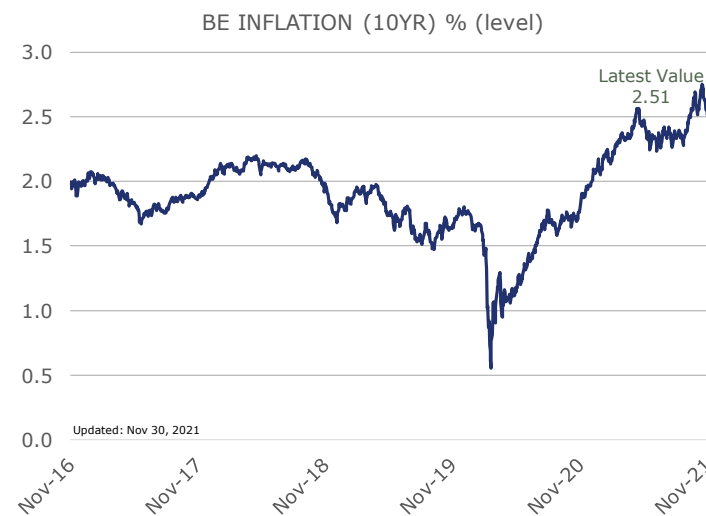
Short Rates



Data Source: Bloomberg

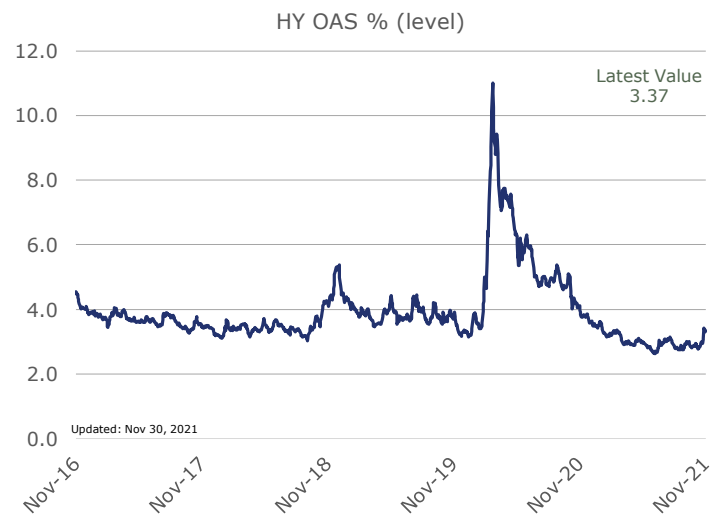
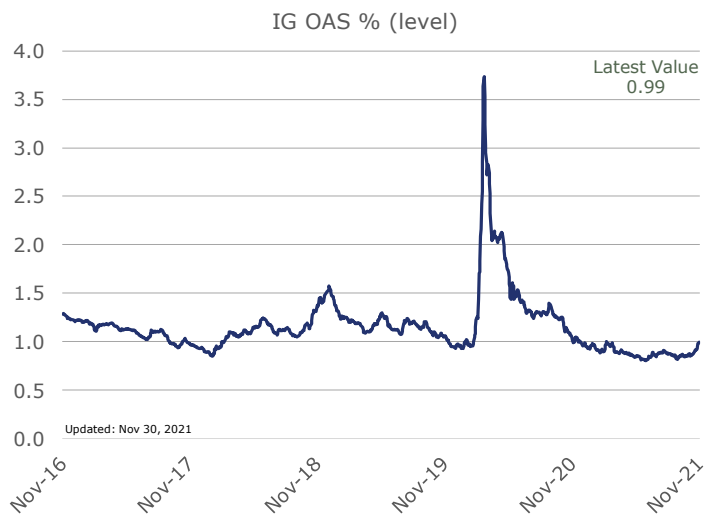
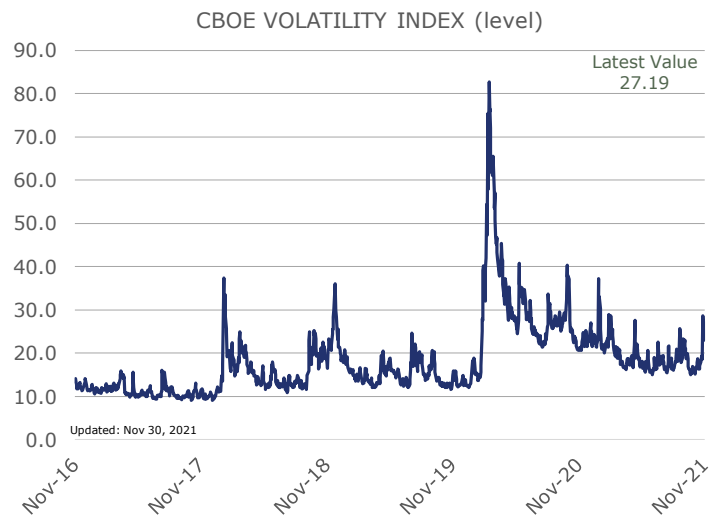
LIBOR: London Inter-bank Offered Rate
SOFR: Federal Reserve Bank NY Secured Overnight Financing Rate

Treasury Rates



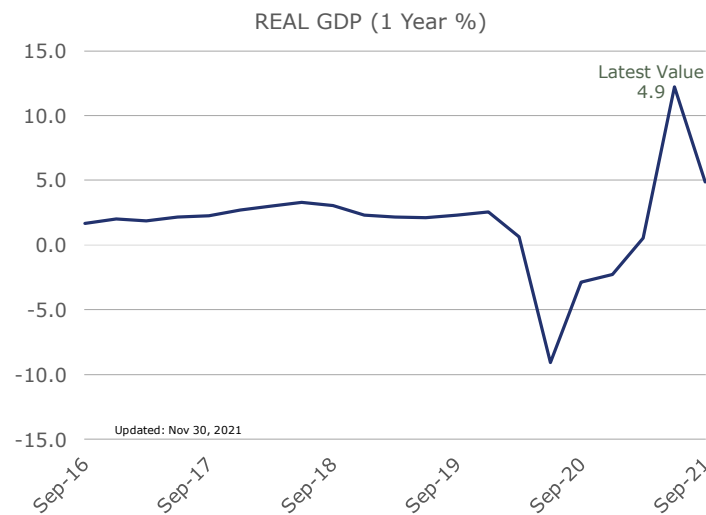
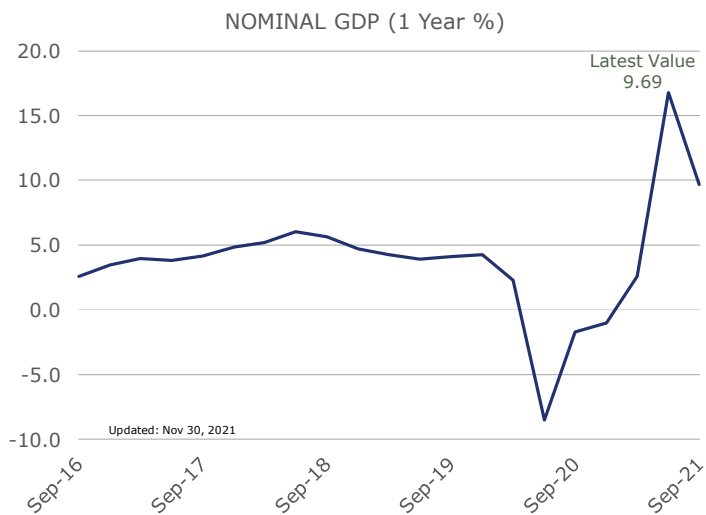
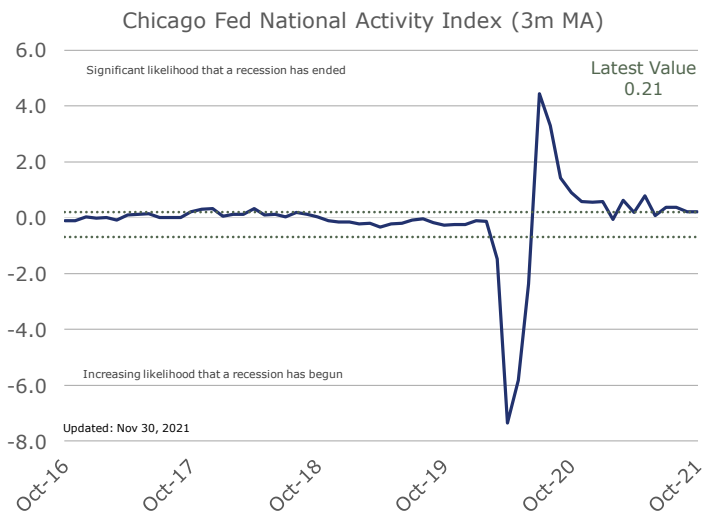
Data Sources: Bloomberg

Volatility & Credit Risk



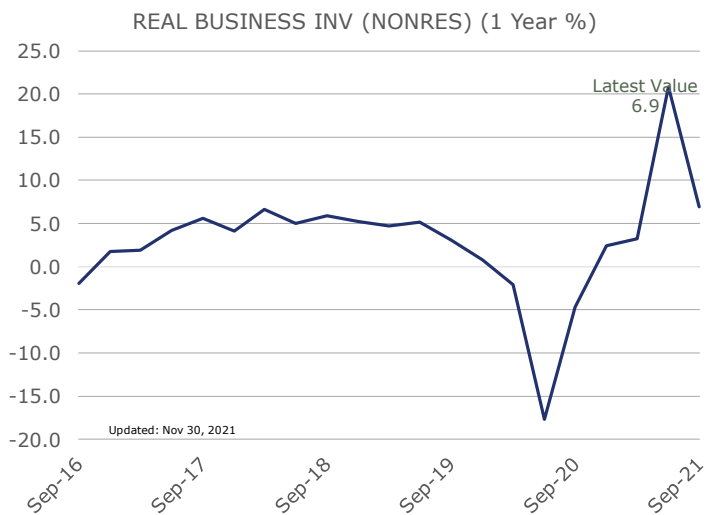
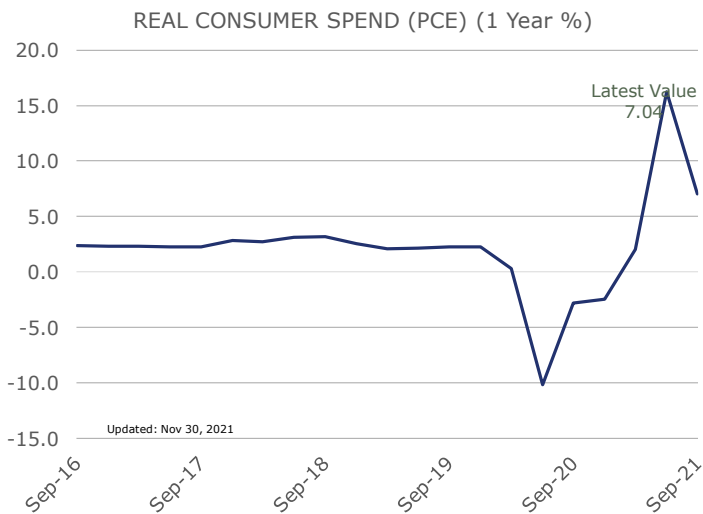
Data Sources: Bloomberg

Economic Growth



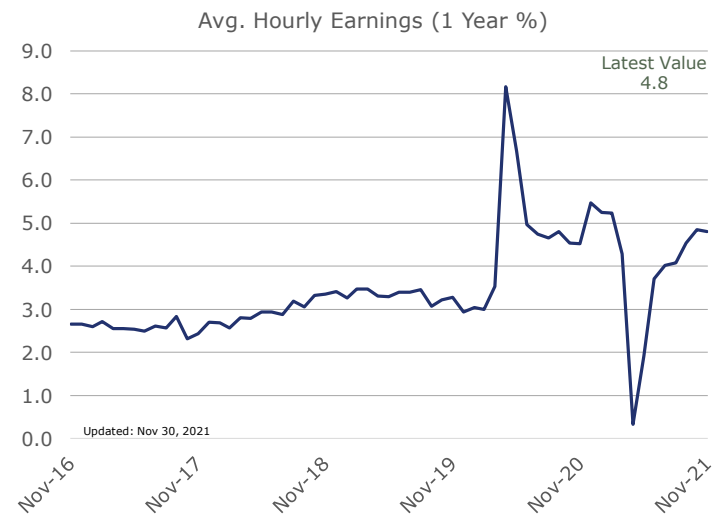
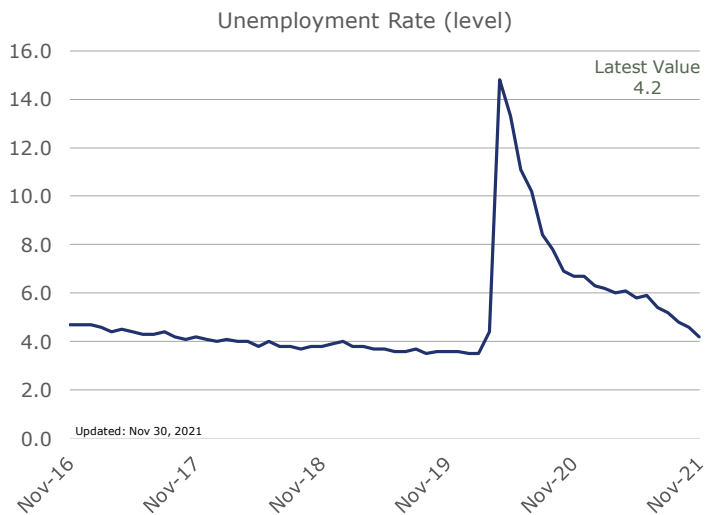
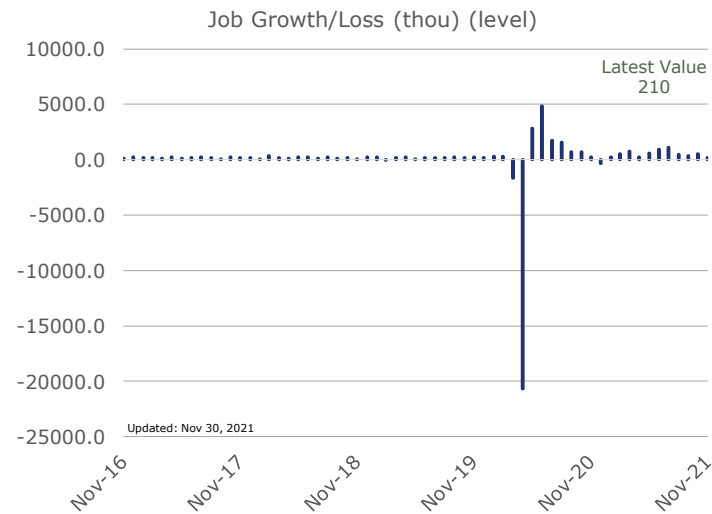
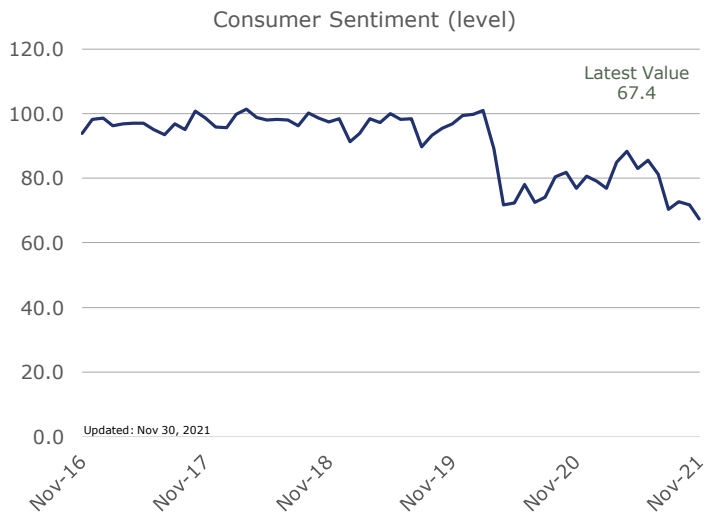
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Economic Growth



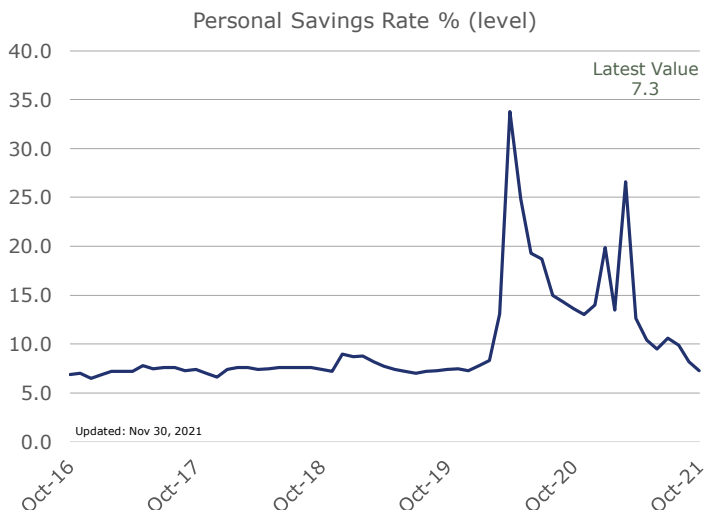
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Consumers & Employment



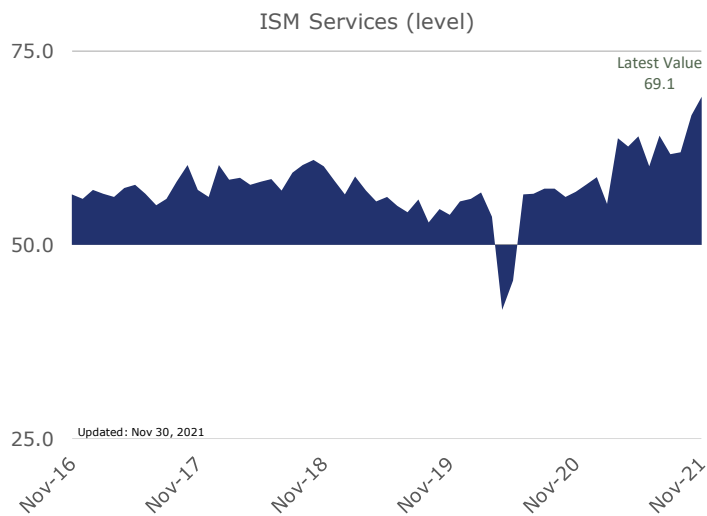
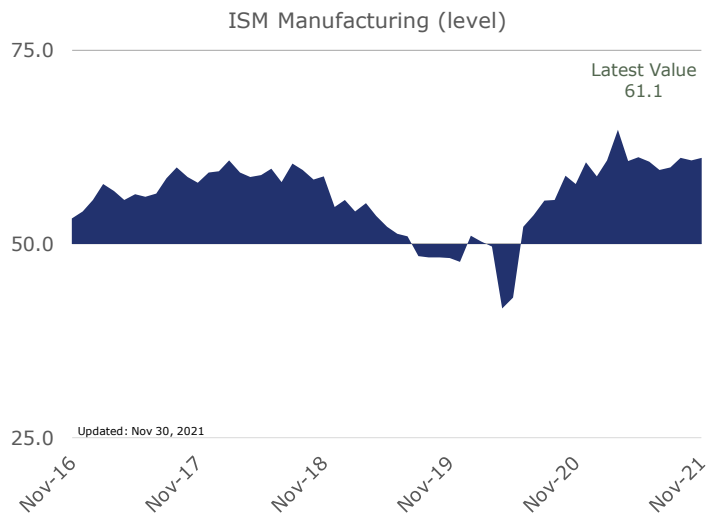
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Income & Spending

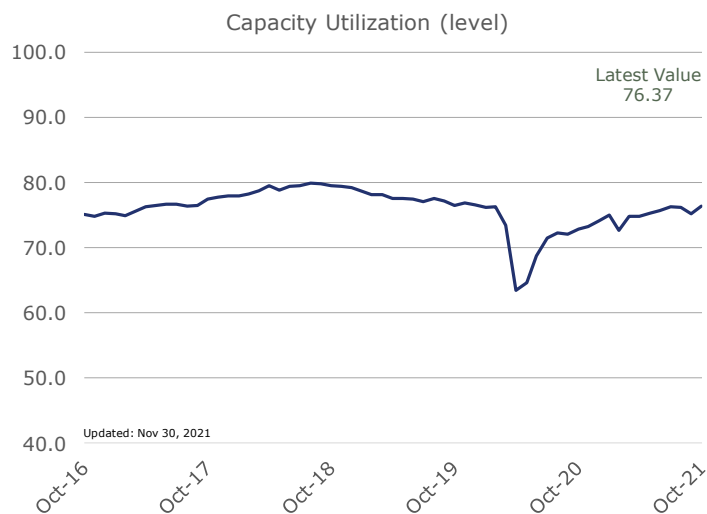


Data Sources: Bloomberg

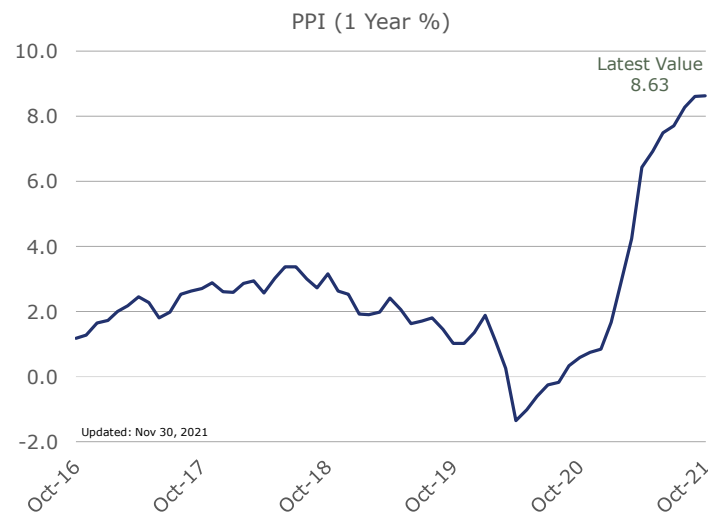
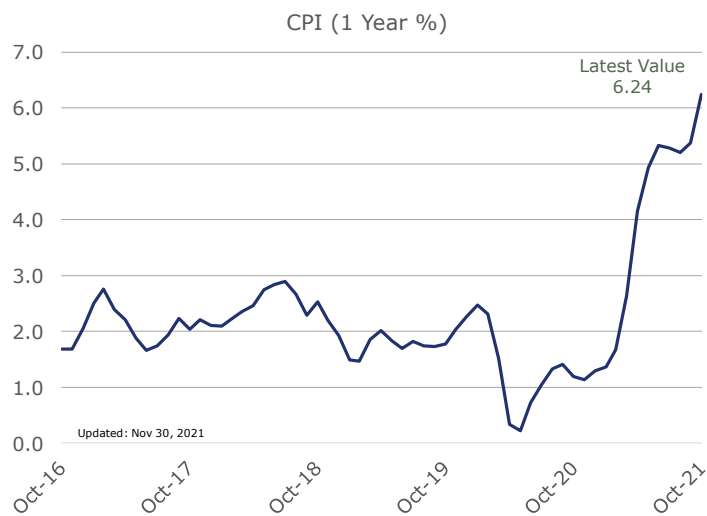
ISM Surveys



Manufacturing Activity

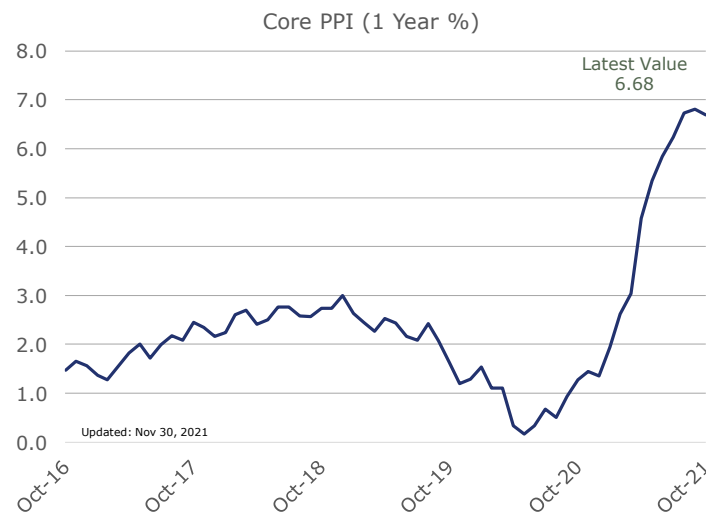
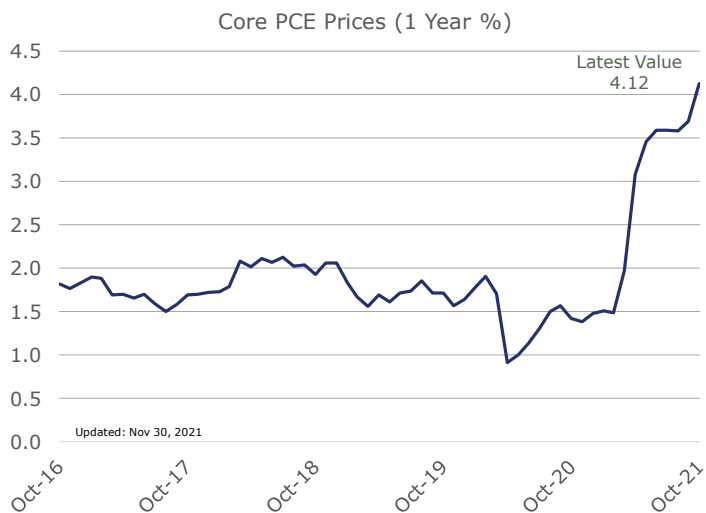
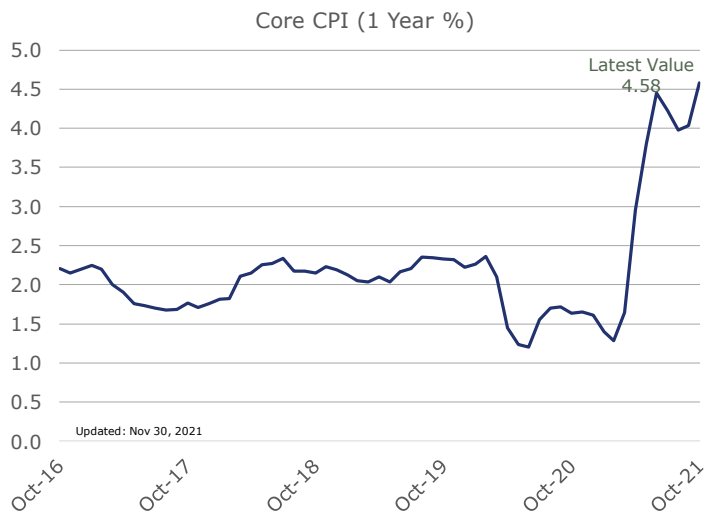


Price Indexes



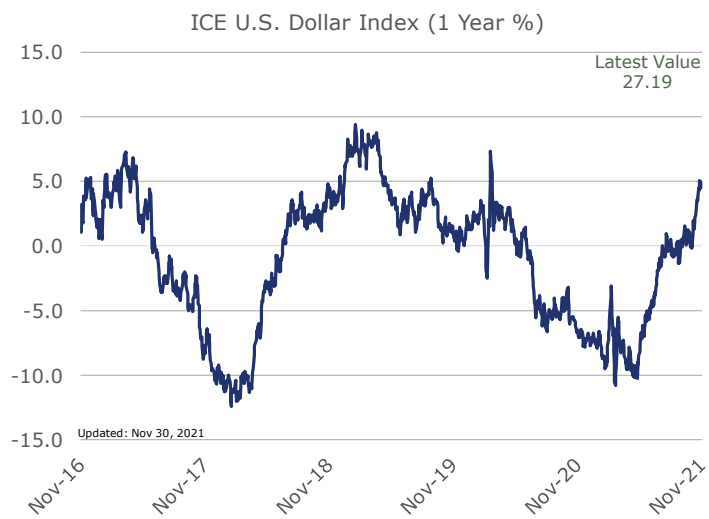
Data Sources: Bloomberg

Core Price Indexes



Data Sources: Bloomberg

U.S. Dollar

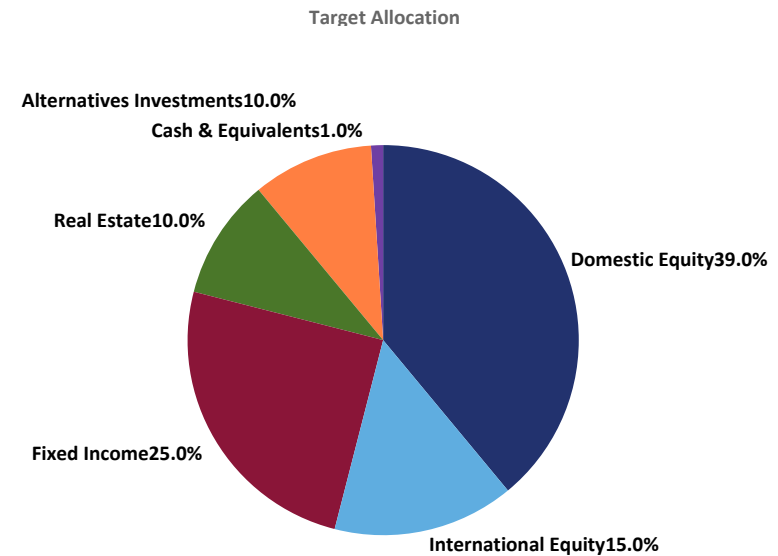
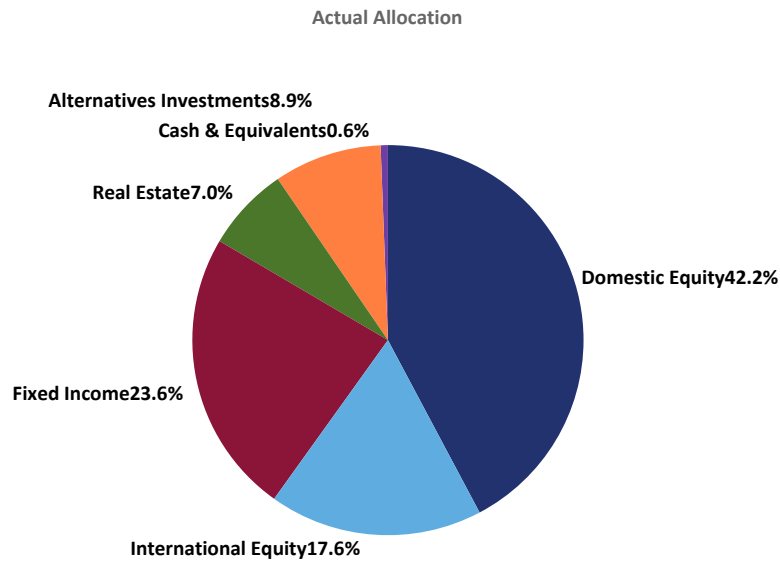


IMRF Performance

Asset Allocation

Total Fund

Periods Ended As of November 30, 2021

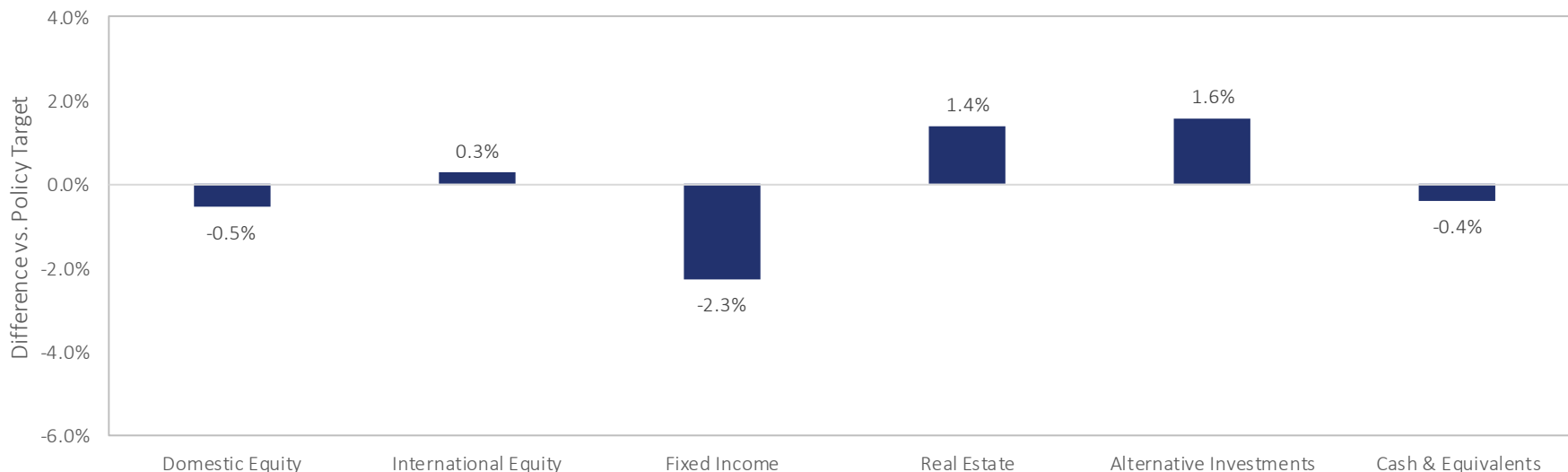


	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	55,721	100.0	100.0	0.0	
Domestic Equity	23,535	42.2	39.0	3.2	1,804
International Equity	9,831	17.6	15.0	2.6	1,473
Fixed Income	13,152	23.6	25.0	-1.4	-779
Real Estate	3,897	7.0	10.0	-3.0	-1,675
Alternatives Investments	4,968	8.9	10.0	-1.1	-604
Cash & Equivalents	338	0.6	1.0	-0.4	-219

Projected Deviations from the Benchmark

As of November 30, 2021

Projected Asset Allocation Difference vs. Target



- Includes committed, but unfunded amounts for real estate (\$1.48 billion) and alternatives (\$2.44 billion). Assumes real estate 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

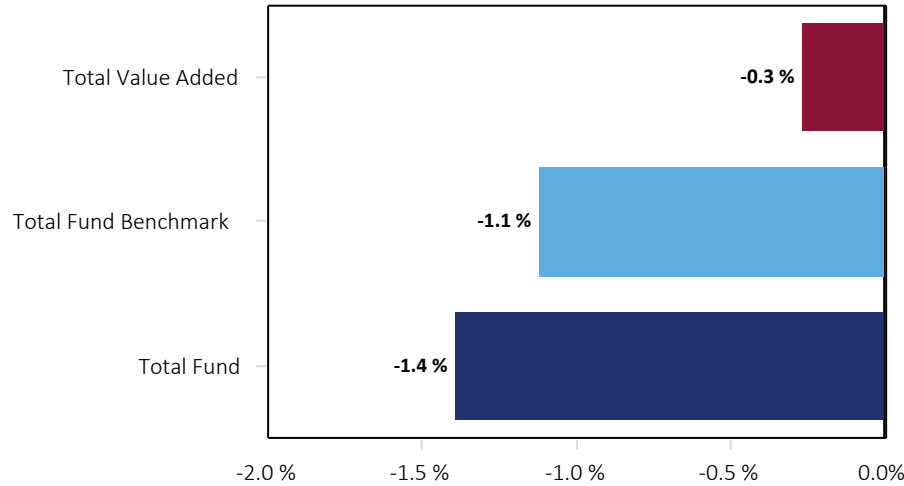
Private Equity Proxy: 60% Domestic Equity, 40% International Equity
 Real Estate Proxy: 50% Domestic Equity, 30% International Equity, 20% Fixed Income

Total Fund Attribution

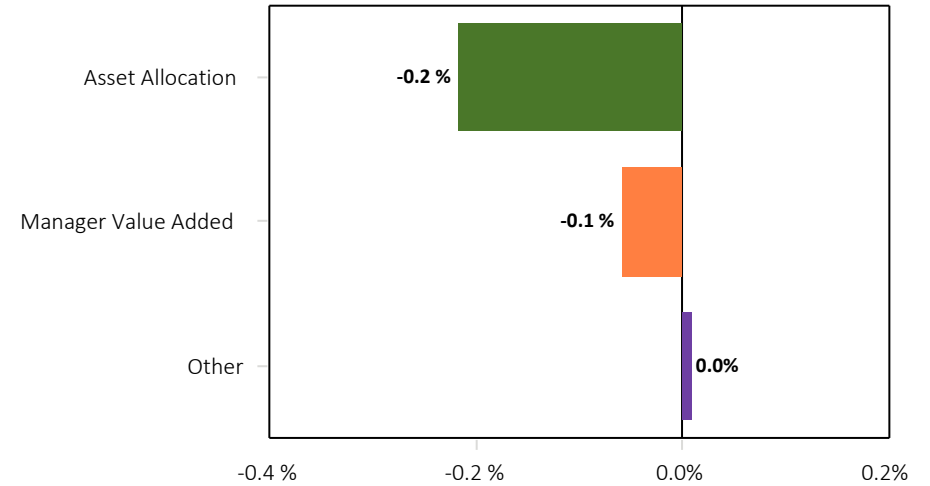
Total Fund

1 Month Ending November 30, 2021

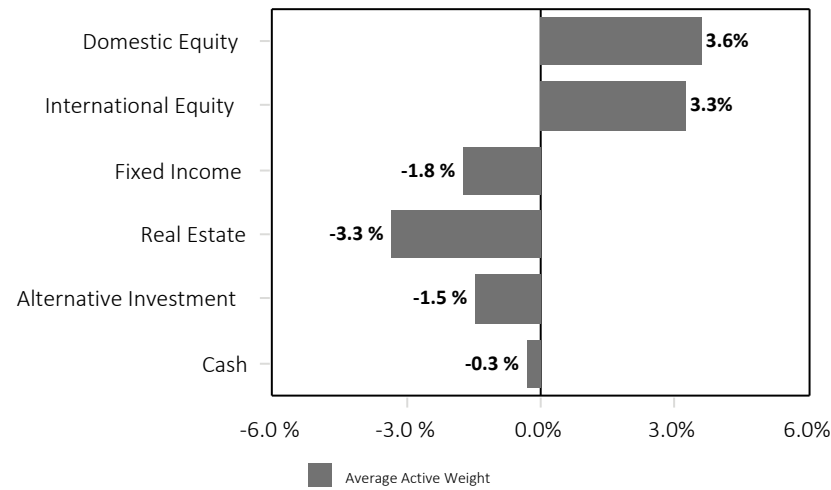
Total Fund Performance



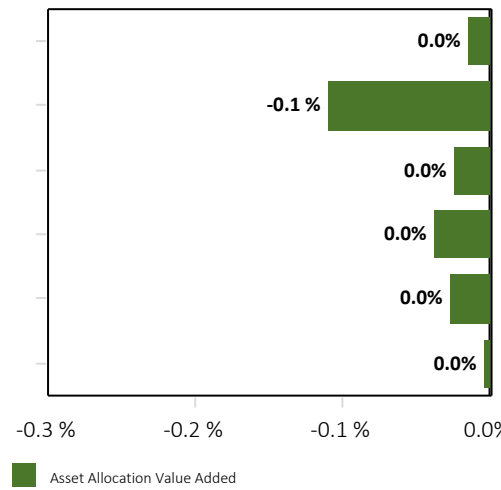
Total Value Added:-0.3 %



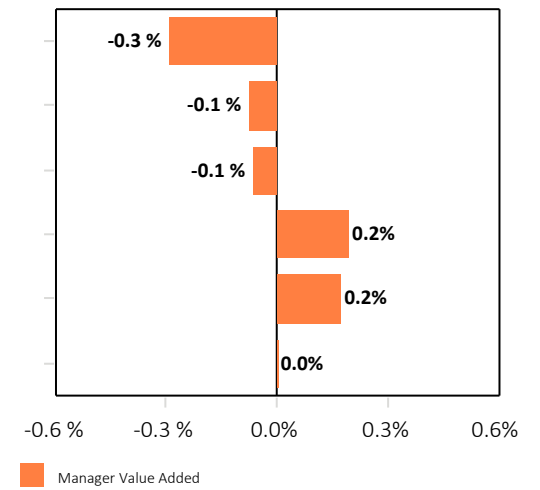
Asset Class Under or Overweighting



Asset Allocation Value Added:-0.2 %



Total Manager Value Added:-0.1 %



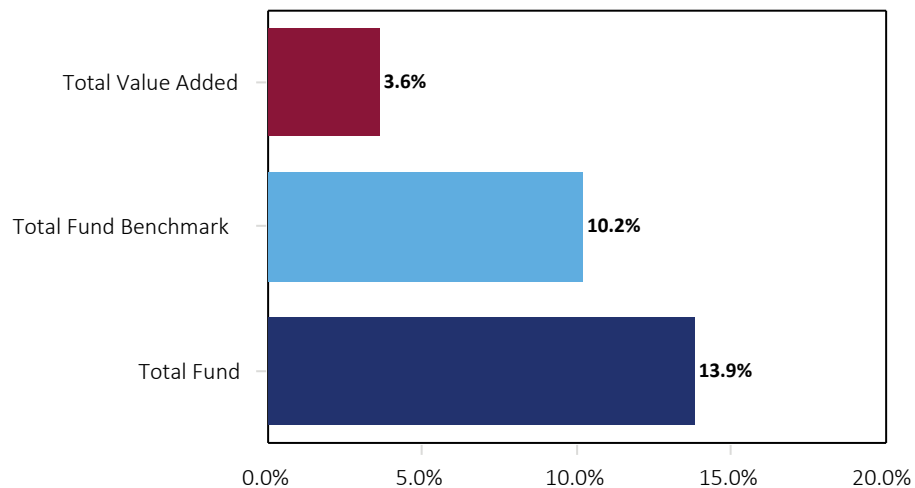
Total Fund Benchmark = 39.0% Russell 3000 Index, 25.0% Blmbg Aggregate, 15.0% MSCI ACWI ex US, 10.0% NCREIF NFI-ODCE Val Wt Nt, 10.0% 9% Annually and 1.0% 3-month Treasury Bill.

Total Fund Attribution

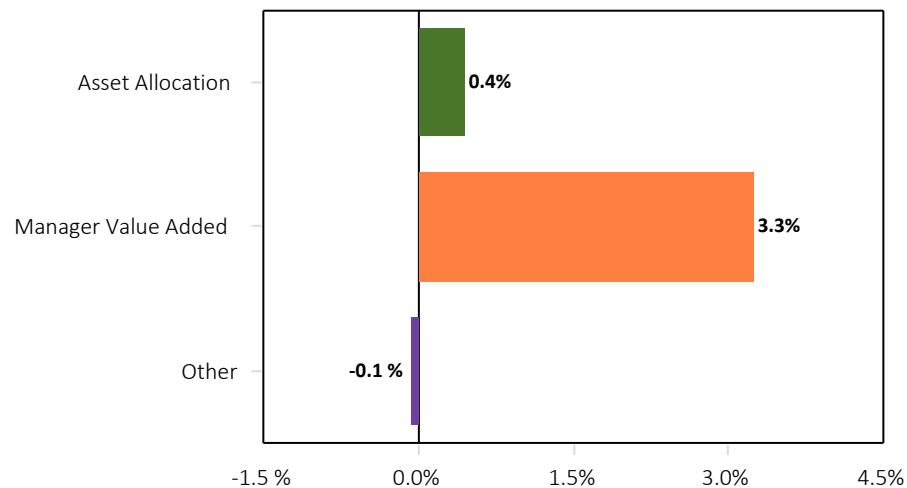
Total Fund

Year To Date Ending November 30, 2021

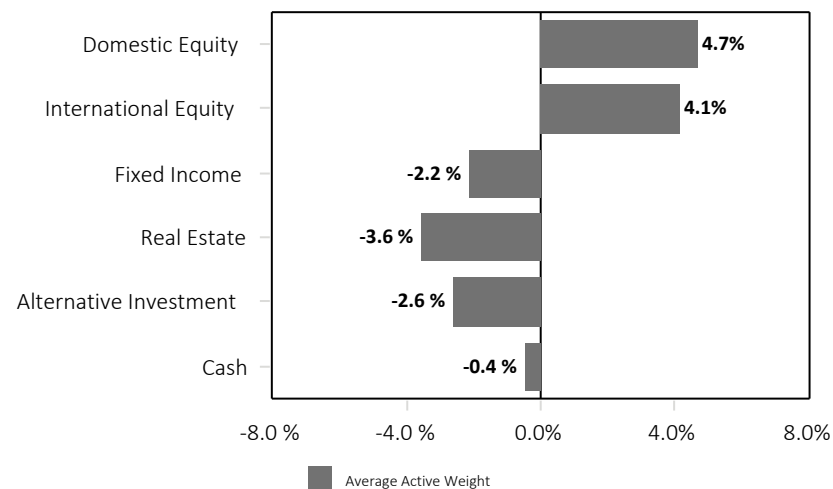
Total Fund Performance



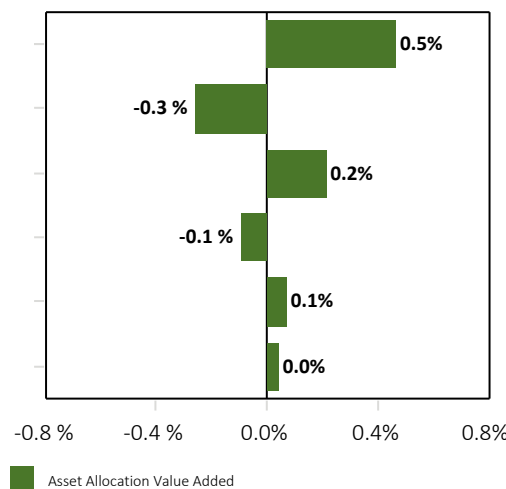
Total Value Added: 3.6%



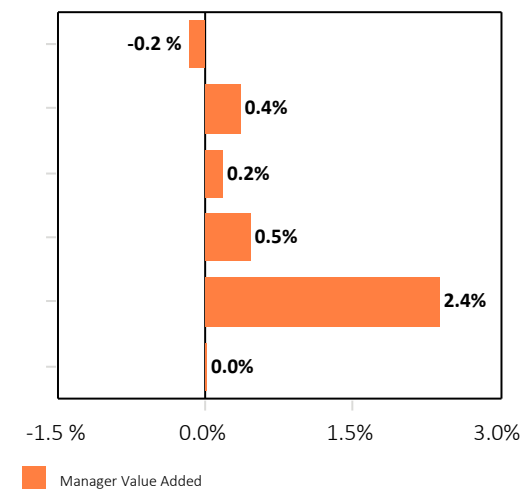
Asset Class Under or Overweighting



Asset Allocation Value Added: 0.4%



Total Manager Value Added: 3.3%



Total Fund Benchmark = 39.0% Russell 3000 Index, 25.0% Blmbg Aggregate, 15.0% MSCI ACWI ex US, 10.0% NCREIF NFI-ODCE Val Wt Nt, 10.0% 9% Annually and 1.0% 3-month Treasury Bill.

Asset Class Returns

Periods Ended November 30, 2021

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Total Fund	-1.36	1.94	14.06	18.32	14.48	12.11	10.71	8.37	8.98	10.15	1/1/1982
Total Fund - Net	-1.39	1.90	13.87	18.12	14.29	11.91	10.49				
Total Fund Benchmark	-1.12	1.90	10.25	13.36	12.58	10.70	9.66				
Domestic Equity	-2.18	3.68	20.69	26.88	19.87	16.91	15.74	9.94	11.28	12.16	1/1/1982
Domestic Equity - Net	-2.20	3.65	20.51	26.68	19.67	16.70	15.50				
Blended Benchmark (U.S. Equity)	-1.52	5.14	20.90	26.34	20.20	17.51	15.93	9.78	10.93		
U.S. Equity IMRF Custom Benchmark	-1.31	5.25	20.89	26.57	18.71	15.81					
International Equity	-4.82	-3.18	5.67	12.44	12.24	10.83	8.59	7.72	7.76	7.98	9/1/1986
International Equity - Net	-4.93	-3.31	5.28	12.02	11.84	10.45	8.22				
MSCI AC World ex USA (Net)	-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	6.65			
International Equity IMRF Custom Benchmark	-4.48	-2.43	3.31	9.13	10.05	9.39					
Fixed Income	0.03	-0.07	-0.50	0.05	5.95	4.31	4.02	5.15	6.05	7.98	1/1/1982
Fixed Income - Net	0.02	-0.08	-0.59	-0.04	5.84	4.18	3.87				
Blmbg. U.S. Aggregate	0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.31	5.40	7.45	
Fixed Income IMRF Custom Benchmark											
Real Estate	2.96	5.46	20.31	21.62	11.42	10.56	11.07	7.98	6.16	5.91	5/1/1985
Real Estate - Net	2.96	5.45	20.24	21.55	11.37	10.52	11.05				
Blended Benchmark (Real Estate)	0.00	0.00	12.41	13.64	5.77	6.29	8.92	7.32	7.38	7.63	
Alternatives Investments	2.77	6.88	44.01	48.32	21.52	18.48	13.32	9.84	13.05	11.74	2/1/1986
Alternatives Investments - Net	2.77	6.87	43.99	48.30	21.48	18.38	13.09				
Alternatives Custom Benchmark	0.72	1.45	8.22	9.00	9.00	9.00	9.00	10.48	11.97	12.46	
Private Equity	2.74	7.40	51.40	56.65	25.23	22.16	15.83	11.85	15.84	14.08	2/1/1986
Alternatives Custom Benchmark	0.72	1.45	8.22	9.00	9.00	9.00	9.00	10.48	11.97	12.46	
Agriculture	3.06	3.06	1.10	1.75	0.67	-0.85	8.35	7.12		6.64	10/1/1997
NCREIF Farmland Index	0.00	0.00	3.89	5.54	4.90	5.53	10.19	12.17		11.14	
Timberland	0.00	1.86	-4.09	-4.85	0.21	0.92	1.88	3.26		6.85	10/1/1992
NCREIF Timberland Index	0.00	0.00	4.41	5.01	2.42	2.90	4.89	5.84		8.22	

Benchmark definitions on next page.

Asset Class Returns

Periods Ended November 30, 2021

	Performance (%)										
	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Unlisted Infrastructure	1.72	1.77	11.64	11.64	12.37					12.38	4/1/2018
Alternatives Custom Benchmark	0.72	1.45	8.22	9.00	9.00					9.00	
Cash	0.10	0.40	2.19	2.31	2.85	2.50	1.38	1.44	3.04	3.75	7/1/1986
90 Day US Treasury Bill	0.01	0.00	0.04	0.05	1.05	1.15	0.61	1.26	2.43	3.13	

Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Domestic Equity Blended	1/1/2015	Present	100% Russell 3000 Index
Benchmark	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)** 100%
Benchmark	1/1/2007	12/31/2012	100% NPI + 1%
	1/1/2005	12/31/2016	100% Consumer Price Index + 5%
Alternatives Custom	7/1/2010	Present	100% Annualized rate of 9.0%
Benchmark	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
Total Fund Benchmark	1/1/2021	Present	The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset class: 39% Russell 3000 Index, 25% Blmbg. Barc. U.S. Aggregate, 15% MSCI AC World ex USA (Net), 10% NCREIF Fund Index-ODCE (VW) (Net), 10% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.
	3/1/2018	12/31/2020	37% Russell 3000 Index, 28% Blmbg. Barc. U.S. Aggregate, 18% MSCI AC World ex USA (Net), 9% NCREIF Fund Index-ODCE (VW) (Net), 7% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
Domestic Equity	24,129,161,578	42.63	23,535,476,553	42.24
Domestic Equity Transition	261,276,031	0.46	6,813	0.00
Large Cap Growth	9,049,443,986	15.99	8,912,281,731	15.99
NTGI S&P 500 Growth	3,997,994,792	7.06	4,054,331,624	7.28
Sands Capital	2,657,365,424	4.70	2,449,179,070	4.40
Xponance Russell 1000 G	2,394,083,769	4.23	2,408,771,037	4.32
Large Cap Value	4,936,409,141	8.72	4,756,702,854	8.54
Dodge & Cox	1,875,963,833	3.31	1,797,675,530	3.23
LSV Asset	1,505,544,587	2.66	1,455,157,453	2.61
NTGI S&P 500 Value	1,554,900,721	2.75	1,503,869,871	2.70
Large Cap Pass. Core	3,334,977,319	5.89	3,212,672,453	5.77
NTGI MarketCap Idx.	3,334,977,319	5.89	3,212,672,453	5.77
Factor Diversity Strategies	1,337,585,385	2.36	1,615,866,369	2.90
U.S. Large Cap FDP-GSAM	1,337,585,385	2.36	1,615,866,369	2.90
Quantitative Factor Strategies	1,825,701,877	3.23	1,798,517,172	3.23
Quantitative US Equity - SciBeta	1,825,701,877	3.23	1,798,517,172	3.23
Small Cap Growth	884,919,146	1.56	833,782,652	1.50
Frontier Capital	884,919,146	1.56	833,782,652	1.50
FIAM Small Cap		0.00		0.00
Small Cap Value	1,487,569,437	2.63	1,446,571,496	2.60
Channing	339,898,239	0.60	323,624,432	0.58

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
DFA Small Cap Val.	526,762,705	0.93	511,762,308	0.92
William Blair Small Cap Value	620,908,493	1.10	611,184,757	1.10
Micro Cap	22,321,219	0.04	281	0.00
DFA Micro Cap (9-10)	22,321,219	0.04	281	0.00
Public Real Assets	988,958,039	1.75	959,074,733	1.72
Brookfield	189,482,741	0.33	182,026,543	0.33
Cohen & Steers	799,475,298	1.41	777,048,189	1.39
International Equity	10,330,552,495	18.25	9,831,193,705	17.64
Intl Large Cap Growth	1,802,770,885	3.19	1,723,317,297	3.09
EARNEST Part. Intl	633,459,846	1.12	604,657,516	1.09
William Blair	1,169,311,039	2.07	1,118,659,781	2.01
Intl Large Cap Value	1,398,453,322	2.47	1,322,737,789	2.37
Brandes Investment	608,463,177	1.08	573,231,023	1.03
Mondrian	645,707,638	1.14	612,976,612	1.10
Lazard	144,282,507	0.25	136,530,153	0.25
Intl Large Cap Core	4,788,091,941	8.46	4,569,095,883	8.20
Arrowstreet Capital	1,086,978,065	1.92	1,042,203,687	1.87
Brown Capital	685,308,100	1.21	644,615,047	1.16
GlobeFlex Capital	878,578,844	1.55	840,742,782	1.51
Xponance Intl EQ	109,233,411	0.19	103,654,051	0.19
Progress Intl Equity	735,949	0.00	702,988	0.00
Transition Account	119,870	0.00	119,870	0.00

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
NTGI ACWI ex US Index Fund	2,027,137,702	3.58	1,937,057,459	3.48
Intl All Cap Developed	174,726,325	0.31	168,466,158	0.30
Ativo International	174,726,325	0.31	168,466,158	0.30
International Small Cap	737,435,113	1.30	701,010,896	1.26
Franklin Templeton	258,569,406	0.46	245,819,002	0.44
William Blair IntSC	478,865,707	0.85	455,191,894	0.82
Emerging Mkt Equity	1,429,074,908	2.53	1,346,565,683	2.42
Genesis Asset Mngrs.	1,429,074,908	2.53	1,346,565,683	2.42

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
Fixed Income	13,156,768,509	23.25	13,151,550,678	23.60
Global Bonds Transition	481,131,546	0.85	214,369	0.00
Domestic Fixed Core	4,296,195,754	7.59	4,310,081,112	7.74
Attucks Fixed Income	99,821,347	0.18	100,150,487	0.18
Brandes FI Core	373,409,192	0.66	374,608,546	0.67
EARNEST Partners	1,023,970,328	1.81	1,027,301,193	1.84
Garcia Hamilton	1,086,691,683	1.92	1,091,324,917	1.96
Ramirez Asset Management	600,943,453	1.06	602,832,801	1.08
Xponance Yield Advantage Agg.	1,111,359,751	1.96	1,113,863,169	2.00
Domestic Fixed Passive Core	3,654,857,271	6.46	3,666,006,181	6.58
NTGI Blmbg Agg.	1,816,508,515	3.21	1,822,088,284	3.27
BlackRock US Debt I	1,838,348,757	3.25	1,843,917,897	3.31
Domestic Fixed Core Plus	2,936,885,957	5.19	3,401,787,711	6.11
LM Capital Group FI	958,929,005	1.69	957,469,209	1.72
Progress Inv. FI	1,664	0.00	1,620	0.00
BMO - TCH	661,954,144	1.17	661,844,973	1.19
Western Asset	1,129,370,691	2.00	1,126,944,218	2.02
Longfellow Core Plus	186,630,453	0.33	655,527,691	1.18
Bank Loans	728,946,952	1.29	728,574,470	1.31
Barings Global Loan Fund	728,946,952	1.29	728,574,470	1.31
Emerging Markets Debt	225,281,548	0.40	219,934,409	0.39
Standish-Mellon EMD	225,281,548	0.40	219,934,409	0.39

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
High Yield	833,469,481	1.47	824,952,426	1.48
MacKay Shields	833,453,578	1.47	824,936,466	1.48
FIAM High Yield	15,903	0.00	15,960	0.00

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
Real Estate	3,765,796,776	6.65	3,896,993,357	6.99
Real Estate Core Cmp	2,016,868,385	3.56	2,087,565,188	3.75
TA Assoc. Buckhead	745,125,050	1.32	819,665,905	1.47
Barings Euro Core Property	145,576,004	0.26	143,968,764	0.26
Blackstone Property Euro	161,045,256	0.28	162,606,677	0.29
INVESCO Core Real Estate	226,419,016	0.40	226,419,016	0.41
INVESCO European real estate	59,152,064	0.10	57,527,366	0.10
AEW Core Property Tr	254,920,150	0.45	252,746,615	0.45
CBRE Core Partners	256,116,454	0.45	256,116,454	0.46
JPM Strategic Property Fund	168,514,391	0.30	168,514,391	0.30
RE Non-Core Cmp	1,748,928,390	3.09	1,809,428,169	3.25
Artemis MWBE Spruce	295,967,370	0.52	301,721,111	0.54
Franklin T. EMREFF	4,776,924	0.01	4,776,924	0.01
Security Capital	71,132,555	0.13	71,132,555	0.13
Dune II	10,567,951	0.02	10,805,178	0.02
Non-Core Real Estate Funds	1,137,309,648	2.01	1,188,665,020	2.13
Non-Core Intl Real Estate	229,086,895	0.40	232,240,838	0.42
Almanac ARS V	87,048	0.00	86,544	0.00
Alternatives Investments	4,829,366,633	8.53	4,967,830,000	8.92
Absolute Return	113,571	0.00	116,811	0.00
Aurora Investment	113,571	0.00	116,811	0.00
Private Equity	4,240,765,492	7.49	4,370,662,970	7.84

Investment Manager Asset Allocation

Periods Ended November 30, 2021

	Oct-2021		Nov-2021	
	\$	%	\$	%
Abbott S/A Comp.	518,161,303	0.92	516,426,765	0.93
Muller Monroe MPEFF	520,309	0.00	520,309	0.00
Pantheon S/A Comp.	401,082,257	0.71	400,414,265	0.72
Private Equity Fund - Domestic	2,666,344,270	4.71	2,773,318,547	4.98
Private Equity Fund - International	557,259,968	0.98	564,545,522	1.01
Oakbrook Opportunities Fund	97,397,385	0.17	115,437,563	0.21
Private Credit	200,541,062	0.35	197,238,655	0.35
Private Credit Fund - Domestic	200,541,062	0.35	197,238,655	0.35
Agriculture	218,013,625	0.39	224,683,859	0.40
Premiere Partners IV	218,013,625	0.39	224,683,859	0.40
Timberland	68,831,610	0.12	67,771,284	0.12
Forest Investment	68,831,610	0.12	67,771,284	0.12
Unlisted Infrastructure	101,101,273	0.18	107,356,421	0.19
Unlisted Infrastructure Funds	101,101,273	0.18	107,356,421	0.19
Cash & Equivalents	383,413,103	0.68	337,934,031	0.61
Total Fund	56,595,059,094	100.00	55,720,978,324	100.00

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	55,720,978,324	-1.36	1.94	14.06	18.32	14.48	12.11	10.71	10.15	1/1/1982
Total Fund - Net		-1.39	1.90	13.87	18.12	14.29	11.91	10.49		
Total Fund Benchmark		-1.12	1.90	10.25	13.36	12.58	10.70	9.66		
Domestic Equity	23,535,476,553	-2.18	3.68	20.69	26.88	19.87	16.91	15.74	12.16	1/1/1982
Domestic Equity - Net		-2.20	3.65	20.51	26.68	19.67	16.70	15.50		
Blended Benchmark		-1.52	5.14	20.90	26.34	20.20	17.51	15.93		
Russell 3000 Index		-1.52	5.14	20.90	26.34	20.20	17.51	15.95	12.06	
U.S. Equity IMRF Custom Benchmark		-1.31	5.25	20.89	26.57	18.71	15.81			
Large Cap Equity	18,497,523,407	-2.00	4.38	21.06	26.91	21.28	18.38	16.47	11.93	1/1/1982
Large Cap Equity - Net		-2.01	4.37	20.97	26.81	21.18	18.27	16.33		
Russell 1000 Index		-1.34	5.50	21.53	26.67	20.65	17.93	16.18	12.22	
Large Cap Growth	8,912,281,731	-1.52	6.01	21.36	27.81	30.12	26.29	19.44	13.10	1/1/1982
Large Cap Growth - Net		-1.52	6.00	21.28	27.73	30.02	26.17	19.28		
LCG Blended Benchmark		0.61	9.33	24.95	30.70	29.21	25.10	19.50		
Russell 1000 Growth Index		0.61	9.33	24.95	30.70	29.21	25.10	19.50	12.29	
NTGI S&P 500 Growth	4,054,331,624	1.41	10.61	28.78	34.03	27.20	23.79	18.97	10.35	8/1/2001
NTGI S&P 500 Growth - Net		1.41	10.61	28.78	34.02	27.19	23.78	18.96		
S&P 500 Growth		1.42	10.63	28.82	34.08	27.25	23.85	18.98	10.33	
Xponance Russell 1000 G	2,408,771,037	0.61	9.33	24.94	30.69	29.19			24.16	10/1/2018
Xponance Russell 1000 G - Net		0.61	9.32	24.92	30.66	29.17			24.14	
Russell 1000 Growth Index		0.61	9.33	24.95	30.70	29.21			24.18	
Sands Capital	2,449,179,070	-7.83	-3.19	9.53	16.94	32.34	29.09	21.12	14.99	11/1/2003
Sands Capital - Net		-7.83	-3.19	9.36	16.76	32.10	28.84	20.87		
LCG Blended Benchmark		0.61	9.33	24.95	30.70	29.21	25.10	19.50	12.59	
Russell 1000 Growth Index		0.61	9.33	24.95	30.70	29.21	25.10	19.50	12.64	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Large Cap Value	4,756,702,854	-3.47	0.65	21.32	26.40	12.25	11.51	13.74	10.51	10/1/1982
Large Cap Value - Net		-3.49	0.61	21.14	26.21	12.08	11.34	13.56		
LCV Blended Benchmark		-3.52	1.37	17.73	22.25	11.45	10.36	12.50		
Russell 1000 Value Index		-3.52	1.37	17.73	22.25	11.45	10.36	12.50	11.86	
Dodge & Cox	1,797,675,530	-3.94	0.44	25.17	30.26	14.25	13.30	15.27	10.47	9/1/2003
Dodge & Cox - Net		-3.99	0.39	24.92	30.00	14.02	13.06	15.03		
LCV Blended Benchmark		-3.52	1.37	17.73	22.25	11.45	10.36	12.50	8.83	
Russell 1000 Value Index		-3.52	1.37	17.73	22.25	11.45	10.36	12.50	8.98	
LSV Asset	1,455,157,453	-3.16	0.28	21.27	26.58	10.50	10.44	13.63	11.02	2/1/2003
LSV Asset - Net		-3.16	0.22	21.00	26.29	10.23	10.18	13.35		
LCV Blended Benchmark		-3.52	1.37	17.73	22.25	11.45	10.36	12.50	9.63	
Russell 1000 Value Index		-3.52	1.37	17.73	22.25	11.45	10.36	12.50	9.64	
NTGI S&P 500 Value	1,503,869,871	-3.22	1.25	16.73	20.82	12.31	11.04	12.81	6.59	8/1/1999
NTGI S&P 500 Value - Net		-3.22	1.25	16.72	20.81	12.31	11.03	12.81		
S&P 500 Value		-3.26	1.19	16.68	20.76	12.20	10.94	12.72	6.55	
Large Cap Pass. Core	3,212,672,453	-1.45	5.17	21.09	26.51	20.21	17.54	15.98	11.82	1/1/1985
Large Cap Pass. Core - Net		-1.45	5.16	21.08	26.51	20.20	17.53	15.97		
Dow Jones US Total Stock Market Index		-1.47	5.14	21.06	26.49	20.18	17.49	15.91		
NTGI MarketCap Idx.	3,212,672,453	-1.45	5.17	21.09	26.51	20.21	17.54	15.98	11.61	2/1/1985
NTGI MarketCap Idx. - Net		-1.45	5.16	21.08	26.51	20.20	17.53	15.97		
Dow Jones US Total Stock Market Index		-1.47	5.14	21.06	26.49	20.18	17.49	15.91		
Factor Diversity Strategies	1,615,866,369	-1.04	5.46	20.54	26.08				26.73	8/18/2020
U.S. Large Cap FDP-GSAM	1,615,866,369	-1.04	5.46	20.54	26.08				26.73	8/18/2020
U.S. Large Cap FDP-GSAM - Net		-1.04	5.45	20.48	26.02				26.66	
Solactive GBS U.S. 1000 Index		-1.35	5.43	21.48	26.68				27.26	
GSAM Active Beta US. Large Cap FDC Index		-1.05	5.46	20.61	26.16				26.66	
Quantitative Factor Strategies	1,798,517,172	-1.49	3.88	19.62	23.21				15.22	9/17/2019

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Quantitative US Equity - SciBeta	1,798,517,172	-1.49	3.88	19.62	23.21				15.22	9/17/2019
Quantitative US Equity - SciBeta - Net		-1.49	3.87	19.55	23.14				14.96	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		-1.77	3.81	18.13	21.62				14.16	
Small Cap	2,280,354,429	-3.81	0.04	20.80	30.48	16.03	12.67	13.74	12.50	7/1/1988
Small Cap Composite - Net		-3.93	-0.12	20.06	29.69	15.36	12.05	13.13		
Russell 2000 Index		-4.17	-0.09	12.31	22.02	14.22	12.14	13.06	9.89	
Small Cap Growth	833,782,652	-5.77	-0.48	13.55	23.00	22.99	17.69	15.97	13.72	7/1/1988
Small Cap Growth - Net		-5.85	-0.68	12.51	21.87	22.04	16.92	15.31		
Russell 2000 Growth Index		-4.88	-0.43	2.38	11.95	16.08	14.74	14.06	8.80	
Frontier Capital	833,782,652	-5.78	-0.57	12.58	22.07	24.04	21.60	16.80	14.09	8/1/1988
Frontier Capital - Net		-5.78	-0.70	11.59	20.99	22.92	20.70	16.05		
Russell 2000 Growth Index		-4.88	-0.43	2.38	11.95	16.08	14.74	14.06	8.89	
Small Cap Value	1,446,571,496	-2.76	0.40	24.87	34.49	12.71	9.90	12.85	11.97	9/1/1989
Small Cap Value - Net		-2.89	0.26	24.34	33.92	12.16	9.35	12.30		
Russell 2000 Value Index		-3.42	0.27	23.24	33.01	11.54	9.08	11.76	10.28	
Channing	323,624,432	-4.79	-0.75	13.76	23.27	13.37	9.33	13.25	11.42	7/1/2011
Channing - Net		-4.91	-0.88	13.24	22.71	12.82	8.79	12.66	10.83	
Russell 2000 Value Index		-3.42	0.27	23.24	33.01	11.54	9.08	11.76	10.10	
DFA Small Cap Val.	511,762,308	-2.85	0.88	32.97	44.02	12.69	9.30	12.95	12.26	2/1/1996
DFA Small Cap Val. - Net		-2.99	0.74	32.37	43.38	12.16	8.76	12.41		
Russell 2000 Value Index		-3.42	0.27	23.24	33.01	11.54	9.08	11.76	9.88	
William Blair Small Cap Value	611,184,757	-1.57	0.69	22.77	31.33	12.61	10.82	13.32	11.76	5/1/1999
Inv. Couns. Maryland - Net		-1.71	0.54	22.28	30.80	12.05	10.26	12.79		
Russell 2000 Value Index		-3.42	0.27	23.24	33.01	11.54	9.08	11.76	9.52	
Micro Cap	281									7/1/1984
Micro Cap - Net										
Russell Microcap Index										

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
DFA Micro Cap (9-10) DFA Micro Cap (9-10) - Net Russell 2000 Index	281									8/1/1987
Public Real Assets	959,074,733	-3.02	1.04	10.74	12.10	9.07			6.93	8/1/2017
Public Real Assets - Net		-3.10	0.97	10.34	11.69	8.62			6.49	
Public Real Assets Benchmark		-3.68	0.03	8.79	9.72	7.23			4.88	
Brookfield	182,026,543	-3.93	0.37	13.68	14.40	7.62			4.64	8/1/2017
Brookfield - Net		-4.06	0.24	13.11	13.83	7.06			4.11	
Dow Jones Brookfield Global Infrastructure Composite Index		-4.35	-0.42	12.21	12.11	6.81			3.71	
Cohen & Steers	777,048,189	-2.81	1.20	9.78	11.33	9.79			8.06	8/1/2017
Cohen & Steers - Net		-2.87	1.14	9.42	10.96	9.38			7.65	
FTSE Global Core Infrastructure 50/50 Index (Net)		-3.34	0.25	7.09	8.52	7.41			5.43	

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	9,831,193,705	-4.82	-3.18	5.67	12.44	12.24	10.83	8.59	7.98	9/1/1986
International Equity - Net		-4.93	-3.31	5.28	12.02	11.84	10.45	8.22		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73		
International Equity IMRF Custom Benchmark		-4.48	-2.43	3.31	9.13	10.05	9.39			
Intl LargeCap Equity	7,615,150,968	-4.67	-2.88	7.78	14.40	12.10	10.79	8.66	7.99	9/1/1986
Intl LargeCap Equity - Net		-4.79	-3.02	7.45	14.05	11.78	10.48	8.36		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73		
Intl Large Cap Grwth	1,723,317,297	-4.35	-1.84	8.40	16.14	17.40	13.65	9.75	9.39	9/1/2002
Intl Large Cap Grwth - Net		-4.46	-1.97	8.03	15.75	17.04	13.33	9.40		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	7.49	
MSCI AC World ex USA Growth (Net)		-3.61	-0.63	2.02	7.38	14.85	12.72	8.63	8.24	
EARNEST Part. Intl	604,657,516	-4.55	-3.48	9.37	19.43	11.23	10.24	7.38	9.24	10/1/2004
EARNEST Part. Intl - Net		-4.55	-3.53	9.16	19.21	11.00	10.03	7.09		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	6.29	
MSCI AC World ex USA Growth (Net)		-3.61	-0.63	2.02	7.38	14.85	12.72	8.63	7.49	
William Blair	1,118,659,781	-4.24	-0.93	7.95	14.60	21.63	15.92	11.61	10.98	10/1/2002
William Blair - Net		-4.42	-1.11	7.50	14.12	21.18	15.50	11.19		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	8.15	
MSCI AC World ex USA Growth (Net)		-3.61	-0.63	2.02	7.38	14.85	12.72	8.63	8.80	
Intl Large Cap Val.	1,322,737,789	-5.41	-4.38	5.18	10.86	6.15	6.91	6.31	8.34	10/1/1995
Intl Large Cap Val. - Net		-5.47	-4.46	4.87	10.53	5.82	6.56	5.93		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	5.54	
MSCI AC World ex USA Value		-5.42	-3.82	5.47	11.37	5.41	6.28	5.28		
Brandes Investment	573,231,023	-5.79	-5.48	8.00	14.10	5.17	6.25	6.46	8.45	1/1/1996
Brandes Investment - Net		-5.79	-5.53	7.77	13.86	4.94	6.00	6.22		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	5.45	
MSCI AC World ex USA Value		-5.42	-3.82	5.47	11.37	5.41	6.28	5.28		

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	612,976,612	-5.07	-3.41	3.72	8.99	6.84	7.41		5.45	4/1/2012
Mondrian - Net		-5.17	-3.51	3.32	8.57	6.39	6.92		4.95	
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28		5.92	
MSCI AC World ex USA Value		-5.42	-3.82	5.47	11.37	5.41	6.28		4.42	
Lazard	136,530,153	-5.37	-4.03	0.50	6.38	9.04	8.74		6.56	4/1/2012
Lazard - Net		-5.43	-4.10	0.26	6.13	8.77	8.46		6.08	
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28		5.92	
MSCI AC World ex USA Value		-5.42	-3.82	5.47	11.37	5.41	6.28		4.42	
Intl Large Cap Active Core	2,632,038,424	-4.67	-3.68	9.54	17.14	13.78	12.20	10.33	6.28	2/1/2008
Intl Large Cap Active Core - Net		-4.92	-3.94	8.96	16.53	13.18	11.64	9.77		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	3.40	
Arrowstreet Capital	1,042,203,687	-4.12	-4.64	11.15	21.89	17.19	14.46	11.49	7.20	3/1/2008
Arrowstreet Capital - Net		-4.23	-4.76	10.66	21.35	16.66	13.94	10.98	6.70	
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	3.20	
Brown Capital	644,615,047	-5.94	-2.31	5.14	8.72	15.40	12.83	11.48	8.88	10/1/2004
Brown Capital - Net		-6.64	-3.04	4.17	7.71	14.61	12.13	10.60		
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	6.29	
GlobeFlex Capital	840,742,782	-4.31	-3.63	11.91	19.34	10.40	9.76	8.82	5.54	3/1/2006
GlobeFlex Capital - Net		-4.39	-3.72	11.54	18.94	9.97	9.32	8.39	5.09	
MSCI AC World ex USA (Net)		-4.50	-2.22	3.54	9.14	9.95	9.28	6.73	4.45	
Xponance Intl EQ	103,654,051	-5.11	-2.76						8.06	2/1/2021
Xponance Intl EQ - Net		-5.26	-2.92						7.59	
MSCI EAFE Index (Net)		-4.65	-2.31						6.98	
Progress Intl Equity	702,988									
Intl Large Cap Passive Core	1,937,057,459	-4.44	-1.65	6.94	12.20	10.45	9.76	7.88	4.40	2/1/2000
Intl Large Cap Passive Core - Net		-4.44	-1.65	6.93	12.19	10.44	9.75	7.87		
International Large Cap Passive Core Benchmark		-4.50	-2.22	5.94	10.86	9.86	9.21	7.40	3.97	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
NTGI ACWI ex US Index	1,937,057,459	-4.44	-1.65						-1.65	10/1/2021
NTGI ACWI ex US Index - Net		-4.44	-1.65						-1.65	
MSCI AC World ex USA (Net)		-4.50	-2.22						-2.22	
Intl All Cap Developed	168,466,158	-3.58	-0.62	9.62	14.10				9.87	2/1/2019
Intl All Cap Developed - Net		-3.58	-0.75	9.10	13.55				9.37	
MSCI EAFE + Canada (Net)		-4.68	-1.84	7.18	12.05				10.25	
Ativo International	168,466,158	-3.58	-0.62	9.62	14.10				9.87	2/1/2019
Ativo International - Net		-3.58	-0.75	9.10	13.55				9.37	
MSCI EAFE + Canada (Net)		-4.68	-1.84	7.18	12.05				10.25	
Intl Small Cap Eqty	701,010,896	-4.94	-2.88	9.75	17.25	18.41	13.84	11.22	6.58	12/1/2005
Intl Small Cap Eqty - Net		-5.06	-3.06	8.98	16.43	17.55	13.00	10.39		
MSCI AC World ex USA Small Cap (Net)		-4.95	-3.46	8.34	15.92	12.74	10.75	8.81	6.97	
Custom Benchmark (Intl Small Cap)		-4.95	-3.46	8.34	15.92	12.74	10.75	8.81	6.33	
Franklin Templeton	245,819,002	-4.93	-3.80	7.79	12.61	11.66	11.13	9.87	7.27	8/1/2011
Franklin Templeton - Net		-4.93	-3.97	7.06	11.85	10.86	10.33	9.07	6.49	
MSCI AC World ex USA Small Cap (Net)		-4.95	-3.46	8.34	15.92	12.74	10.75	8.81	6.42	
William Blair IntSC	455,191,894	-4.94	-2.38	10.83	19.92	22.86	15.42	12.00	11.71	9/1/2010
William Blair IntSC - Net		-5.13	-2.56	10.04	19.06	21.95	14.55	11.14	10.86	
MSCI AC World ex USA Small Cap (Net)		-4.95	-3.46	8.34	15.92	12.74	10.75	8.81	8.11	
Custom Benchmark (Intl Small Cap)		-4.95	-3.46	8.34	15.92	12.74	10.75	8.81	8.38	
Emerging Mkt Equity	1,346,565,683	-5.73	-5.25	-7.15	0.16	11.45	10.31	6.65	8.97	2/1/1992
Emerging Mkt Equity - Net		-5.77	-5.34	-7.62	-0.39	10.83	9.67	6.03		
MSCI Emerging Markets Index		-4.07	-3.11	-4.07	3.03	9.66	9.91	5.54	7.18	
Genesis Asset Mngrs.	1,346,565,683	-5.73	-5.25	-7.15	0.16	11.45	10.31	6.65	10.75	5/1/2004
Genesis Asset Mngrs. - Net		-5.77	-5.34	-7.62	-0.39	10.83	9.67	6.03		
MSCI Emerging Markets Index		-4.07	-3.11	-4.07	3.03	9.66	9.91	5.54	8.82	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Fixed Income	13,151,550,678	0.03	-0.07	-0.50	0.05	5.95	4.31	4.02	7.98	1/1/1982
Fixed Income - Net		0.02	-0.08	-0.59	-0.04	5.84	4.18	3.87		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	7.45	
Fixed Income IMRF Custom Benchmark		0.15	0.11	-0.81	-0.46	5.59	3.90			
Active Fixed Core	4,310,081,112	0.32	0.29	-0.68	-0.33	5.69	3.98	3.61	4.51	4/1/2001
ActiveCore Fixed Inc - Net		0.31	0.26	-0.78	-0.44	5.58	3.87	3.46		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.46	
Attucks Fixed Income	100,150,487	0.33	0.40						0.21	2/1/2021
Attucks Fixed Income - Net		0.25	0.32						-0.03	
Blmbg. U.S. Aggregate		0.30	0.27						-0.58	
Brandes FI Core	374,608,546	0.32	-0.02	-1.22	-1.16	5.06	3.47		2.95	3/1/2016
Brandes FI Core - Net		0.32	-0.04	-1.23	-1.17	5.05	3.47		2.95	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65		3.24	
EARNEST Partners	1,027,301,193	0.33	0.32	-0.19	0.22	5.80	4.01	3.62	4.50	5/1/2005
EARNEST Partners - Net		0.33	0.28	-0.31	0.09	5.66	3.87	3.44	4.31	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.07	
Garcia Hamilton	1,091,324,917	0.43	0.42	-1.73	-1.57	5.17	3.79		3.41	6/1/2015
Garcia Hamilton - Net		0.43	0.40	-1.80	-1.65	5.09	3.70		3.32	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65		3.12	
Ramirez Asset Management	602,832,801	0.31	0.13	0.23	0.79				4.04	5/1/2020
Ramirez Asset Management - Net		0.31	0.13	0.09	0.64				3.90	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16				0.68	
Xponance Yield Advantage Agg.	1,113,863,169	0.23	0.25	-0.08	0.48	6.13	4.16	3.70	4.38	6/1/2005
Xponance Yield Advantage Agg. - Net		0.19	0.22	-0.21	0.35	6.00	4.02	3.54	4.20	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.02	
Pass. Core Fixed Inc	3,666,006,181	0.31	0.26	-1.28	-1.14	5.58	3.71	3.09	5.76	1/1/1990
Pass. Core Fixed Inc - Net		0.30	0.26	-1.29	-1.15	5.58	3.71	3.08		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	5.74	

Benchmark definitions in glossary.

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
BlackRock US Debt I	1,843,917,897	0.30	0.27	-1.25	-1.11	5.61	3.75		3.43	10/1/2013
BlackRock US Debt I - Net		0.30	0.27	-1.26	-1.12	5.60	3.74		3.42	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65		3.31	
NTGI Blmbg Agg.	1,822,088,284	0.31	0.25	-1.31	-1.17	5.56	3.68	3.07	5.81	2/1/1990
NTGI Blmbg Agg. - Net		0.31	0.25	-1.32	-1.17	5.55	3.67	3.06		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	5.80	
Core Plus Fixed Income	3,401,787,711	-0.07	-0.20	-1.18	-0.57	6.66	4.59	4.19	7.88	1/1/1982
Core Plus Fixed Inc. - Net		-0.08	-0.22	-1.31	-0.70	6.49	4.41	4.01		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	7.45	
LM Capital Group FI	957,469,209	-0.15	-0.29	-1.66	-1.10	6.50	4.29	3.91	4.84	5/1/2005
LM Capital Group FI - Net		-0.15	-0.33	-1.82	-1.26	6.33	4.13	3.75	4.68	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.07	
Progress Inv. FI	1,620									
BMO - TCH	661,844,973	-0.02	-0.09	-0.43	-0.03	6.16	4.58	4.49	4.94	5/1/2005
BMO - TCH - Net		-0.05	-0.12	-0.56	-0.17	6.02	4.44	4.35	4.80	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.07	
Western Asset	1,126,944,218	-0.21	-0.39	-1.59	-0.79	7.26	5.07	4.63	5.42	11/1/2001
Western Asset - Net		-0.21	-0.39	-1.69	-0.89	7.15	4.95	4.50		
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16	5.52	3.65	3.04	4.22	
Longfellow Core Plus	655,527,691	0.26	0.36	0.50	0.94				3.84	5/1/2020
Longfellow Core Plus - Net		0.25	0.34	0.34	0.73				3.68	
Blmbg. U.S. Aggregate		0.30	0.27	-1.29	-1.16				0.68	
Bank Loans	728,574,470	-0.05	0.04	5.83	7.37	4.62	4.70		4.52	8/1/2014
Bank Loans - Net		-0.05	0.02	5.81	7.35	4.53	4.42		4.14	
Custom Benchmark		-0.07	0.16	4.78	6.01	4.60	4.61		4.21	

Performance

Periods Ended November 30, 2021

	Market Value \$	Performance (%)								
		1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Barings Global Loan Fund	728,574,470	-0.05	0.04	5.83	7.37	4.62	4.70		4.52	8/1/2014
Barings Global Loan Fund - Net		-0.05	0.02	5.81	7.35	4.53	4.42		4.14	
Custom Benchmark		-0.07	0.16	4.78	6.01	4.60	4.61		4.21	
Emerging Markets Debt	219,934,409	-2.37	-3.74	-7.43	-4.29	4.24	4.09		2.25	8/1/2014
Emerging Markets Debt - Net		-2.37	-3.74	-7.67	-4.54	3.91	3.75		1.92	
Custom Benchmark		-2.14	-3.04	-6.85	-4.37	4.04	3.83		1.80	
Standish-Mellon EMD	219,934,409	-2.37	-3.74	-7.43	-4.29	4.24	4.09		2.25	8/1/2014
Standish EM MRK - Net		-2.37	-3.74	-7.67	-4.54	3.91	3.75		1.92	
Custom Benchmark		-2.14	-3.04	-6.85	-4.37	4.04	3.83		1.80	
High Yield	824,952,426	-1.02	-1.32	4.63	6.50	8.00	6.90	7.34	9.37	4/1/1986
High Yield - Net		-1.02	-1.32	4.38	6.16	7.69	6.56	6.97		
ICE BofAML US High Yield, Cash Pay Index		-1.03	-1.21	3.29	5.27	7.07	6.09	6.75	8.14	
Mackay Shields	824,936,466	-1.02	-1.32	4.63	6.50	8.01	6.89	7.35	8.61	11/1/2000
Mackay Shields - Net		-1.02	-1.32	4.38	6.16	7.70	6.56	6.98		
ICE BofAML US High Yield, Cash Pay Index		-1.03	-1.21	3.29	5.27	7.07	6.09	6.75	7.36	

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:
	1/1/2021	Present	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	1/1/2015	Present	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 Composi, 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.
Standish-Mellon EMD	4/1/2020	Present	50% JPM GBI-EM Global Diversified ex-CNY, 25% JPM EMBI Global (USD), 25% JPM CEMBI Broad Index
	8/1/2014	3/31/2020	50% JPM GBI-EM Global Diversified, 25% JPM EMBI Global (USD), 25% JPM CEMBI Broad Index