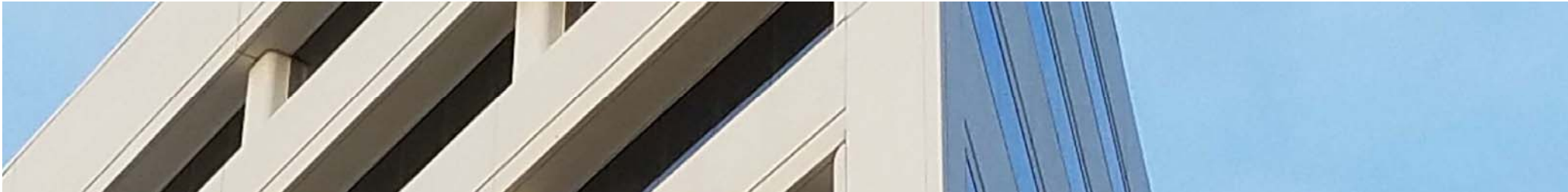




# WILSHIRE ASSOCIATES

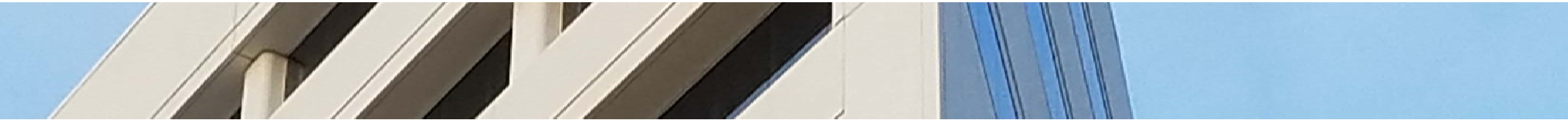
Wilshire Consulting



## Illinois Municipal Retirement Fund

Monthly Investment Summary

*January 31, 2020*



# CAPITAL MARKET REVIEW

# ECONOMIC REVIEW

## Market Commentary

U.S. employers added an additional 225,000 jobs in January, an outcome that exceeded market expectations. Despite this, and partially due to the fact that more people have entered the labor force, the unemployment rate ticked-up slightly to 3.6% during the month.

The manufacturing sector saw a decline in jobs for the third time in four months, while the retail sector and financial sector also experienced net layoffs in January.

The ISM Manufacturing Index came in at 50.9 in January. This move to above 50.0 suggests an expansionary environment for the manufacturing sector, after previously posting five straight months of contractionary results. The Non-Manufacturing ISM Index also ticked up during January.

Consumers, which make up approximately two-thirds of the U.S. economy, saw an increase in sentiment during January. The University of Michigan Consumer Sentiment Index reached 99.8, a level not previously seen since May 2019.

The U.S. saw a modest improvement in trade uncertainty during January, with the signing of the Phase I trade deal with China occurring on January 15.

The global outbreak of the Wuhan coronavirus has continued to be a growing concern. Global markets sold-off dramatically during the latter half of January as restrictions limited the movement of major manufacturing and exports across China.

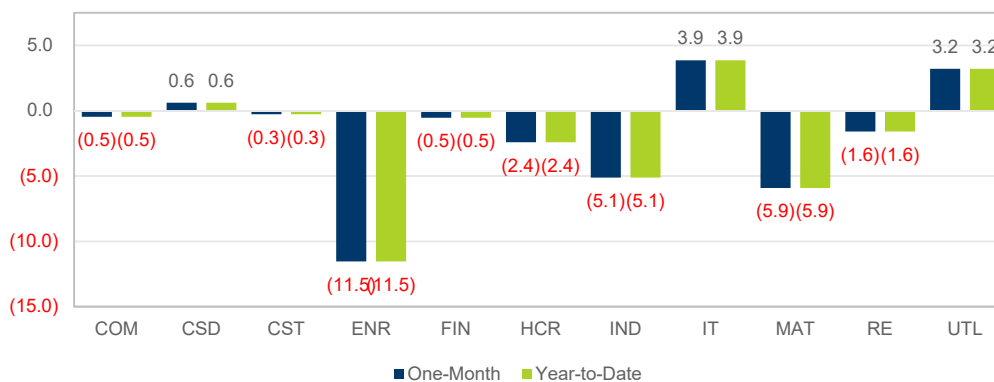
One-Year Cumulative Return (%)



# U.S. EQUITY MARKET

U.S. Equity Indices (%)	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Russell 3000 Index	(0.11)	(0.11)	(0.11)	20.53	13.82	11.84	13.81
Standard & Poor's 500 Index	(0.04)	(0.04)	(0.04)	21.68	14.54	12.36	13.96
Russell 1000 Index	0.11	0.11	0.11	21.39	14.33	12.12	13.96
Russell 2500 Index	(2.03)	(2.03)	(2.03)	12.25	9.08	8.93	12.73
Russell 2000 Index	(3.21)	(3.21)	(3.21)	9.21	7.28	8.23	11.87
Russell Micro Cap Index	(4.66)	(4.66)	(4.66)	5.64	5.24	6.45	11.06
Russell 1000 Index	0.11	0.11	0.11	21.39	14.33	12.12	13.96
Russell 1000 Growth Index	2.24	2.24	2.24	27.94	20.04	15.48	15.98
Russell 1000 Value Index	(2.15)	(2.15)	(2.15)	14.88	8.63	8.70	11.87
Russell 2000 Index	(3.21)	(3.21)	(3.21)	9.21	7.28	8.23	11.87
Russell 2000 Growth Index	(1.10)	(1.10)	(1.10)	13.91	11.48	9.60	13.39
Russell 2000 Value Index	(5.39)	(5.39)	(5.39)	4.38	3.10	6.71	10.27
Russell 3000 Index	(0.11)	(0.11)	(0.11)	20.53	13.82	11.84	13.81
GICS - Communication Services	(0.46)	(0.46)	(0.46)	21.55	17.91	13.50	10.02
GICS - Consumer Discretionary	0.61	0.61	0.61	18.12	15.33	12.91	16.70
GICS - Consumer Staples	(0.26)	(0.26)	(0.26)	17.43	6.34	7.12	11.85
GICS - Energy	(11.53)	(11.53)	(11.53)	(13.14)	(7.50)	(4.82)	1.34
GICS - Financials	(0.53)	(0.53)	(0.53)	20.86	13.06	12.70	12.92
GICS - Health Care	(2.41)	(2.41)	(2.41)	12.45	14.72	9.57	14.91
GICS - Industrials	(5.12)	(5.12)	(5.12)	14.06	6.58	6.07	13.89
GICS - Information Technology	3.87	3.87	3.87	39.62	25.44	20.66	18.04
GICS - Materials	(5.91)	(5.91)	(5.91)	10.68	4.91	6.94	10.31
GICS - Real Estate	(1.59)	(1.59)	(1.59)	18.77	10.84	3.27	8.60
GICS - Utilities	3.21	3.21	3.21	24.74	11.36	10.11	12.23

Sector Returns (%)



## Market Commentary

The U.S. stock market, represented by the Russell 3000 Index, was down -0.1% for the month of January 2020; however, the one-year return remains strong, up +20.5%.

Although the U.S. reported strong economic indicators that should have contributed to a positive stock market – positive jobs growth, increase in consumer sentiment, expansionary manufacturing environment – growing concern over the global impact of the coronavirus led the market to sell-off during the second-half of the month.

Large capitalization stocks outperformed small caps for the month as the Russell 1000 Index was up modestly +0.1% versus a negative -3.2% for the Russell 2000 Index. The Russell Micro Cap Index was down -4.7% for the month, but up +5.6% for the one-year.

Growth stocks again led value stocks during January and have outperformed during trailing one-year.

Of the eleven major sectors in the index, eight were in negative territory during the month. Information Technology and Utilities led the way for the month with returns of +3.9% and +3.2%, respectively. Energy, Materials and Industrials were the largest laggards for the month down between -5.1% and -11.5%.

# NON-U.S. EQUITY MARKET

## Market Commentary

Equity markets outside of the U.S. trailed the U.S. equity market as the growing concern regarding the global impact of the coronavirus and general signs of a global growth slowdown impeded returns across Non-U.S. markets.

Although the U.S. and China announced positive GDP growth during the fourth quarter, there are signs that the global growth slowdown and global easing cycle might be nearing an end.

Australia's central bank held rates steady, but was hawkish in their tone. Brazil cut rates by 0.25%, while Mexico is expected to cut rates by 0.25% in February.

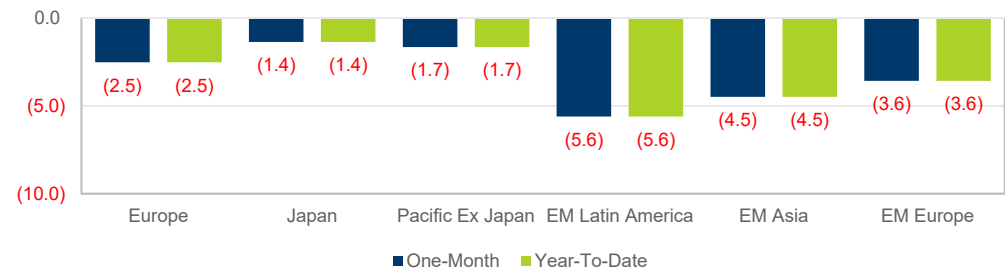
Broad Non-U.S. Equity markets, including both Developed and Emerging Markets were down 2.7% during January.

Developed Markets outpaced Emerging Markets -2.1 vs. -4.7%. EM Asia and EM Latin America were down -4.5% and -5.6%, respectively during the month.

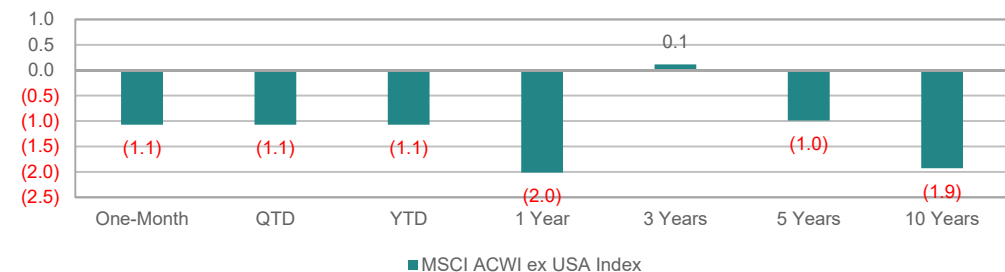
The U.S. Dollar strengthened during the month, providing a headwind for U.S. based investors.

Non-U.S. Equity (USD %)	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
MSCI AC World ex U.S. Index	(2.69)	(2.69)	(2.69)	9.94	7.62	4.96	5.20
MSCI EAFE Index	(2.09)	(2.09)	(2.09)	12.10	7.76	5.12	5.75
MSCI Emerging Markets Index	(4.66)	(4.66)	(4.66)	3.81	7.88	4.48	3.78
MSCI AC World ex U.S. Small Index	(3.12)	(3.12)	(3.12)	9.98	7.14	6.44	6.78
MSCI Europe Index	(2.51)	(2.51)	(2.51)	13.20	8.10	4.52	5.54
MSCI Japan Index	(1.36)	(1.36)	(1.36)	11.20	7.11	6.91	6.24
MSCI Pacific ex Japan Index	(1.65)	(1.65)	(1.65)	8.59	7.54	5.34	6.38
MSCI EM Latin America Index	(5.60)	(5.60)	(5.60)	(3.54)	6.01	4.31	(0.30)
MSCI EM Asia Index	(4.49)	(4.49)	(4.49)	6.12	9.12	5.16	5.92
MSCI EM Europe Index	(3.58)	(3.58)	(3.58)	14.45	10.01	8.49	0.53
Local Currency (%)	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
MSCI AC World ex U.S. Index	(16.1)	(16.1)	(16.1)	11.95	7.50	5.95	7.13
MSCI EAFE Index	(1.23)	(1.23)	(1.23)	13.96	7.19	5.83	7.48
MSCI Emerging Markets Index	(3.29)	(3.29)	(3.29)	6.53	8.83	6.44	6.26

Regional Returns (%)



Currency Effect (%)



# FIXED INCOME MARKET

## Market Commentary

The U.S. Treasury yield curve generally fell during the month across the maturity spectrum. The largest decrease occurred within the 20-year Treasury yield, down 42 basis points from year-end. The 10-year Treasury yield ended the month at 1.51%, down 41 basis points from December 31, 2019.

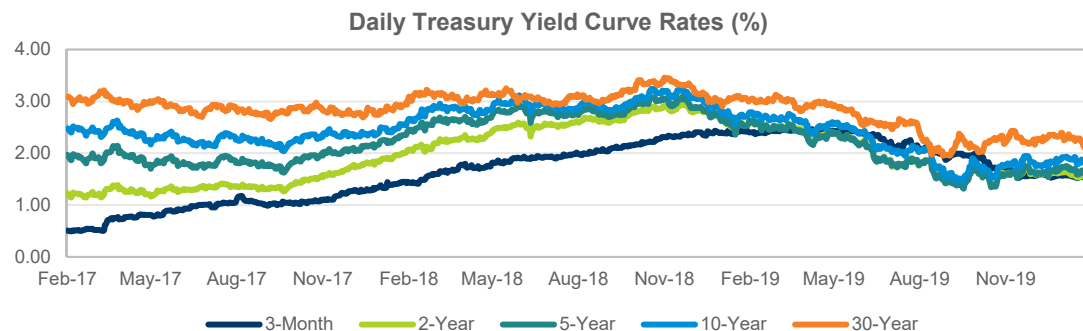
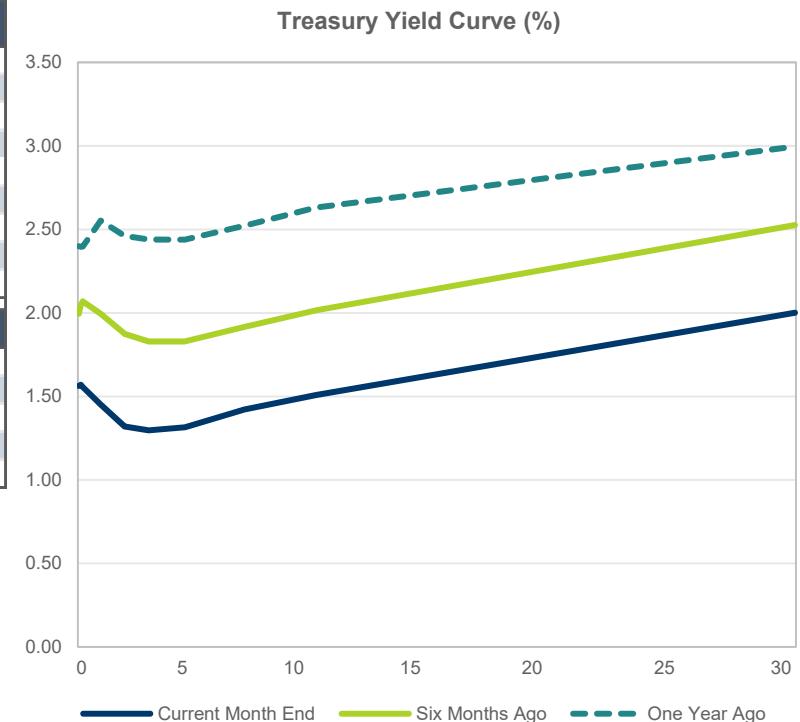
The Federal Open Market Committee initially suggested that interest rates would be held steady throughout the duration of 2020. Federal Reserve Chairman, Jerome Powell, suggested during his February 2020 biannual report to Congress that they are closely monitoring the prolonged economic impact of the coronavirus, which could force policy makers to cut rates sometime in 2020.

Credit spreads ticked up during January within both the investment grade and high yield markets.

U.S. Fixed Income	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Bloomberg Barclays U.S. Aggregate	192	192	192	9.64	4.62	3.01	3.78
Bloomberg Barclays Long Gov't/Credit	5.22	5.22	5.22	23.08	9.80	5.18	7.92
Bloomberg Barclays LT Treasury	6.85	6.85	6.85	21.87	9.19	3.80	7.44
Bloomberg Barclays U.S. TIPS	2.10	2.10	2.10	9.23	3.74	2.41	3.41
Bloomberg Barclays U.S. Credit	2.34	2.34	2.34	13.99	6.45	4.29	5.40
Bloomberg Barclays U.S. High Yield	0.03	0.03	0.03	9.40	5.87	5.99	7.43
ICE BofA U.S. High Yield Cash Pay	0.01	0.01	0.01	9.38	5.85	5.98	7.32
S&P LSTA Levered Loan Index	0.56	0.56	0.56	6.54	4.35	4.49	4.85
ICE BofA US 3-Month Treasury Bill	0.13	0.13	0.13	2.22	1.70	1.10	0.59

Global Fixed Income	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Bloomberg Barclays Global Aggregate	128	128	128	6.58	4.32	2.60	2.56
Bloomberg Barclays Global Aggregate (Hdg.)	180	180	180	9.01	5.05	3.55	4.16
JPM GBI-EM Index	(0.90)	(0.90)	(0.90)	5.17	4.87	2.73	2.61
JPM EMBI Global Index	174	174	174	11.48	6.18	6.18	6.72
JPM Corporate EMBI Index	145	145	145	12.04	6.46	6.26	6.73



# REAL ASSETS MARKET

Real Assets	MTD	QTD	YTD	1 Year	3 Years	5 Years	10 Years
Wilshire US RESI	0.73	0.73	0.73	13.71	8.28	6.01	12.82
Wilshire Global RESI	0.27	0.27	0.27	12.32	8.85	5.77	11.11
Bloomberg Commodity Index	(7.36)	(7.36)	(7.36)	(5.38)	(3.47)	(4.73)	(4.74)
S&P GSCI Index	(10.83)	(10.83)	(10.83)	(3.76)	(1.02)	(5.02)	(5.74)
Alerian MLP Index	(5.61)	(5.61)	(5.61)	(10.70)	(7.75)	(7.49)	3.53
DJ Brookfield Global Infrastructure	150	150	150	20.41	12.17	7.07	10.39
FTSE Global 50/50 Infrastructure	2.22	2.22	2.22	19.54	13.51	8.68	11.20

## Market Commentary

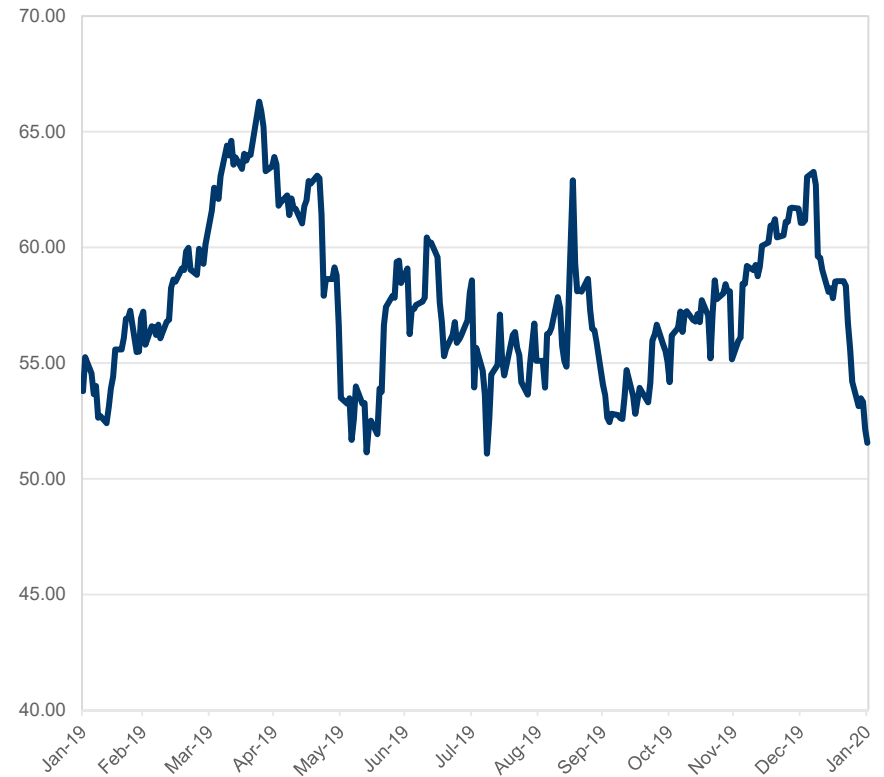
U.S. real estate securities were up during January (+0.7%), and up double-digits for the trailing one-year (+13.7%). Similarly, global real estate securities were up for both periods (0.3% month, 12.3% one-year).

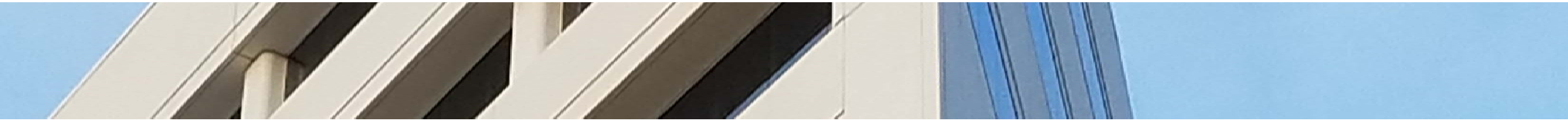
Commodity results were largely negative for the month as crude oil fell -15.5% to \$51.56 per barrel. Natural gas prices were down -16.0%, ending the month at \$1.84 per million BTUs.

Midstream Energy (MLPs) were down for the month (-5.6%) as well as the trailing one-year (-10.7%)

Finally, gold prices were up for the month and finished at approximately \$1,572 per troy ounce, up +3.6% from year-end.

Price of Oil (USD \$)





# IMRF PERFORMANCE



# IMRF COMMENTARY

## IMRF Commentary

The Illinois Municipal Retirement Fund (“IMRF”) ended January 2020 with a market value of \$44.43 billion, down for the month by \$242.8 million. The Fund returned -0.30% for the month of January, net of fees. Relative to its benchmark, The Fund underperformed by -0.37% for the month, -0.30% vs. 0.07%. The Fund’s underperformance was driven primarily by lagging performance in Domestic Equity, and an overweight to International Equity.

The U.S. Equity Portfolio performed behind the benchmark for the month, returning -0.87%. In aggregate, Large Cap underperformed its benchmark for the month, as did Small Cap. Large Cap Growth led the benchmark with a return of 2.99% versus 2.24%, while the counterpart Large Value trailed its benchmark with -3.49% versus -2.15%. In the Small Cap space, both Small cap Growth and Small Cap Value lagged their respective benchmarks.

The Public Real Assets Portfolio was ahead of its benchmark for the month, 1.83% vs. 1.73%.

The International Equity Portfolio trailed the MSCI ACWI ex US Index in January, -2.83% vs. -2.69%. In January, Large Cap modestly underperformed its benchmark, while Small Cap slightly outperformed its benchmark.

The Fixed Income Portfolio posted a positive but lagging return for the month of January, returning 1.79% vs. 1.92% for the benchmark. The Active Fixed Core segment posted the strongest returns in January, returning 2.19% in aggregate, while Passive Core Fixed Income and Core Plus areas of the portfolio followed closely behind with 1.95% and 1.94% returns, respectively. Bank Loans led their benchmark, while Emerging Markets Debt and High Yield lagged their respective benchmarks.

As of January month end, all assets classes are within their target ranges. Current policy states that when actual allocations of the asset classes differ by more than four percentage points from their policy target, a recommendation for rebalancing will be made to the Board of Trustees.



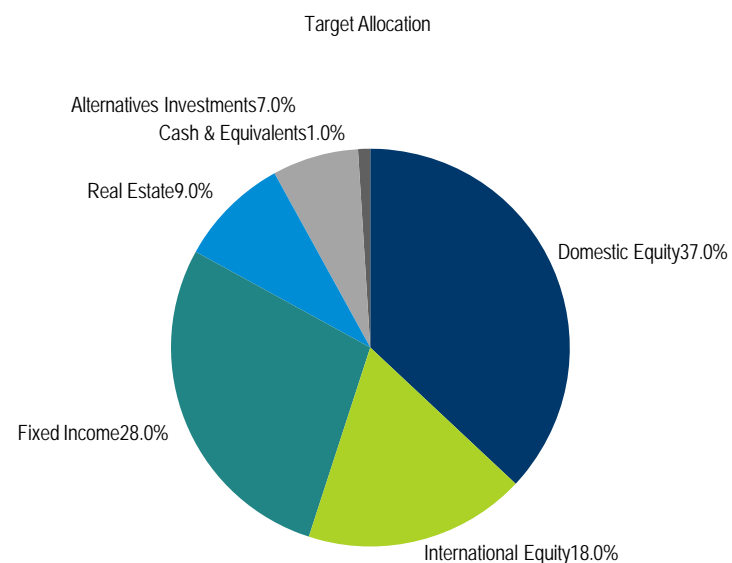
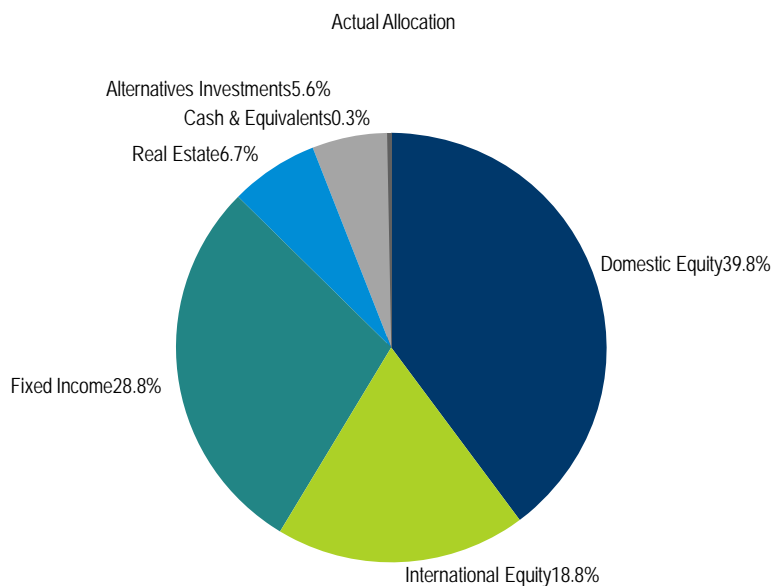
Total Fund

# Wilshire Consulting

## Asset Allocation

Total Fund

Periods Ended As of January 31, 2020



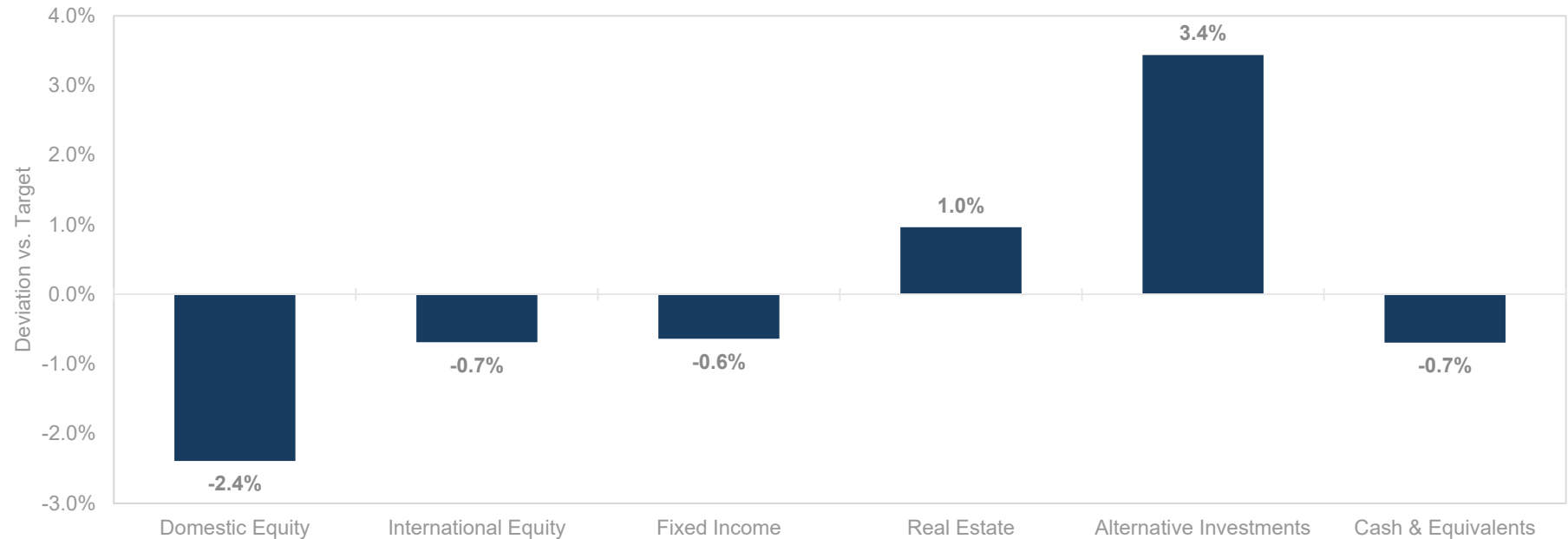
■ Domestic Equity    
 ■ International Equity    
 ■ Fixed Income    
 ■ Real Estate    
 ■ Alternatives Investments    
 ■ Cash & Equivalents

	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	44,429	100.0	100.0	0.0	
■ Domestic Equity	17,697	39.8	37.0	2.8	1,258
■ International Equity	8,358	18.8	18.0	0.8	360
■ Fixed Income	12,775	28.8	28.0	0.8	335
■ Real Estate	2,960	6.7	9.0	-2.3	-1,039
■ Alternatives Investments	2,503	5.6	7.0	-1.4	-607
■ Cash & Equivalents	137	0.3	1.0	-0.7	-307

# Projected Deviation From Benchmark

Period Ending January 31, 2020

Projected Asset Allocation Differences vs. Target



- Includes committed, but unfunded amounts for real estate (\$1,461.7 million) and alternatives (\$2,134.8 million). Assumes real estate and alternatives allocations are fully funded as of quarter end.
- Assumes that outstanding commitments are funded from the overweight asset classes (U.S. equity, non-U.S. equity, and fixed income) in proportion to their respective overweighting relative to the target.

# Investment Manager Asset Allocation

Periods Ended January 31, 2020

	Dec-2019		Jan-2020	
	\$	%	\$	%
Domestic Equity	17,935,493,093	40.15	17,696,602,623	39.83
Large Cap Growth	5,800,672,059	12.99	5,974,166,699	13.45
NTGI S&P 500 Growth	2,543,433,185	5.69	2,601,358,068	5.86
Sands Capital	2,103,278,133	4.71	2,193,065,536	4.94
Piedmont Russell 1000 G	1,153,960,741	2.58	1,179,743,095	2.66
Large Cap Value	5,850,014,935	13.10	5,563,343,289	12.52
Dodge & Cox	1,447,795,289	3.24	1,399,337,278	3.15
BMO	1,028,690,135	2.30	922,744,470	2.08
LSV Asset	1,661,390,635	3.72	1,573,609,416	3.54
NTGI S&P 500 Value	1,712,138,876	3.83	1,667,652,125	3.75
Large Cap Pass. Core	2,622,330,010	5.87	2,619,169,056	5.90
NTGI MarketCap Idx.	2,622,330,010	5.87	2,619,169,056	5.90
Quantitative Factor Strategies	263,662,873	0.59	262,229,322	0.59
Quantitative US Equity - SciBeta	263,662,873	0.59	262,229,322	0.59
Small Cap Growth	804,509,812	1.80	784,626,483	1.77
Frontier Capital	617,718,712	1.38	600,195,871	1.35
FIAM Small Cap	186,791,100	0.42	184,430,612	0.42
Small Cap Value	1,572,731,557	3.52	1,486,444,345	3.35
Channing	242,270,534	0.54	232,157,584	0.52
DFA Small Cap Val.	602,828,903	1.35	560,660,374	1.26
Inv. Couns. Maryland	727,632,120	1.63	693,626,387	1.56
Micro Cap	458,553,936	1.03	433,328,866	0.98
DFA Micro Cap (9-10)	458,553,936	1.03	433,328,866	0.98

# Investment Manager Asset Allocation

Periods Ended January 31, 2020

	Dec-2019		Jan-2020	
	\$	%	\$	%
Public Real Assets	563,017,911	1.26	573,294,563	1.29
Brookfield Public Global Infrastru	176,273,741	0.39	178,024,850	0.40
Cohen & St Public Global Infrastru	386,744,170	0.87	395,269,712	0.89
International Equity	8,600,379,064	19.25	8,357,590,405	18.81
Intl Large Cap Growth	1,443,495,588	3.23	1,412,617,162	3.18
EARNEST Part. Intl	605,966,756	1.36	581,450,141	1.31
William Blair	837,528,831	1.87	831,167,022	1.87
Intl Large Cap Value	1,353,041,434	3.03	1,297,254,140	2.92
Brandes Investment	646,970,266	1.45	615,485,188	1.39
Mondrian	582,363,658	1.30	560,110,539	1.26
Lazard	123,707,510	0.28	121,658,413	0.27
Intl Large Cap Core	4,075,816,999	9.12	3,976,013,079	8.95
Arrowstreet Capital	758,679,892	1.70	738,030,618	1.66
Brown Capital	378,026,609	0.85	376,945,606	0.85
GlobeFlex Capital	579,991,613	1.30	561,933,668	1.26
NTGI MSCI EAFE	2,010,705,163	4.50	1,959,719,010	4.41
Progress Intl Equity	348,413,722	0.78	339,384,177	0.76
Intl All Cap Developed	148,654,168	0.33	146,761,799	0.33
Ativo International	148,654,168	0.33	146,761,799	0.33
Internationall Small Cap	521,086,414	1.17	505,058,712	1.14
Franklin Templeton	206,833,333	0.46	196,531,943	0.44
William Blair IntSC	314,253,082	0.70	308,526,768	0.69

# Investment Manager Asset Allocation

*Periods Ended January 31, 2020*

	Dec-2019		Jan-2020	
	\$	%	\$	%
Emerging Mkt Equity	1,058,284,461	2.37	1,019,885,513	2.30
Genesis Asset Mngrs.	1,058,284,461	2.37	1,019,885,513	2.30

# Investment Manager Asset Allocation

Periods Ended January 31, 2020

	Dec-2019		Jan-2020	
	\$	%	\$	%
Fixed Income	12,576,451,532	28.15	12,775,077,996	28.75
Domestic Fixed Core	3,474,931,690	7.78	3,544,681,252	7.98
Brandes FI Core	365,347,188	0.82	371,527,290	0.84
EARNEST Partners	998,040,790	2.23	1,019,754,208	2.30
Piedmont Investment	1,060,171,256	2.37	1,083,728,959	2.44
Garcia Hamilton	1,051,372,456	2.35	1,069,670,794	2.41
Domestic Fixed Passive Core	3,543,519,109	7.93	3,612,526,441	8.13
NTGI Blmbg Agg.	1,809,158,439	4.05	1,844,759,608	4.15
BlackRock US Debt I	1,734,360,670	3.88	1,767,766,833	3.98
Domestic Fixed Core Plus	3,963,965,751	8.87	4,031,486,426	9.07
LM Capital Group FI	912,793,939	2.04	929,426,457	2.09
Progress Inv. FI	975,964,038	2.18	995,099,582	2.24
BMO - TCH	941,707,150	2.11	957,107,743	2.15
Western Asset	1,133,500,624	2.54	1,149,852,644	2.59
Bank Loans	575,673,744	1.29	572,196,186	1.29
Barings Global Loan Fund	575,673,744	1.29	572,196,186	1.29
Emerging Markets Debt	225,668,765	0.51	226,091,714	0.51
Standish Emerging Markets	225,668,765	0.51	226,091,714	0.51
High Yield	792,692,472	1.77	788,095,978	1.77
MacKay Shields	792,364,020	1.77	787,766,886	1.77
FIAM High Yield	328,452	0.00	329,092	0.00



# Investment Manager Asset Allocation

Periods Ended January 31, 2020

	Dec-2019		Jan-2020	
	\$	%	\$	%
Real Estate	2,964,215,006	6.64	2,959,754,898	6.66
Real Estate Core Cmp	1,571,332,424	3.52	1,577,075,921	3.55
TA Assoc. Buckhead	605,428,300	1.36	605,428,300	1.36
Barings Core Property	1,070	0.00		0.00
Barings Euro Core Property	126,969,573	0.28	125,352,054	0.28
Blackstone Property Euro	130,685,873	0.29	129,021,010	0.29
INVESCO Core Real Estate	211,508,105	0.47	214,400,464	0.48
INVESCO European real estate	56,923,207	0.13	56,886,865	0.13
AEW Core Property Tr	239,085,694	0.54	241,362,936	0.54
CBRE Core Partners	200,730,602	0.45	204,624,292	0.46
RE Non-Core Cmp	1,392,882,581	3.12	1,382,678,977	3.11
Artemis MWBE Spruce	240,731,549	0.54	242,982,015	0.55
Franklin T. EMREFF	14,756,093	0.03	11,805,035	0.03
Security Capital	59,648,554	0.13	56,591,964	0.13
Dune II	21,982,160	0.05	21,982,160	0.05
Non-Core Real Estate Funds	893,638,295	2.00	891,507,627	2.01
Non-Core Intl Real Estate	161,583,067	0.36	157,267,314	0.35
Rockwood Fund VIII	168,181	0.00	168,181	0.00
Almanac ARS V	374,681	0.00	374,681	0.00
TA Assoc. - Fund IX	1	0.00		0.00
Alternatives Investments	2,426,795,465	5.43	2,503,355,707	5.63
Absolute Return	550,758	0.00	490,720	0.00
Aurora Investment	550,758	0.00	490,720	0.00

# Investment Manager Asset Allocation

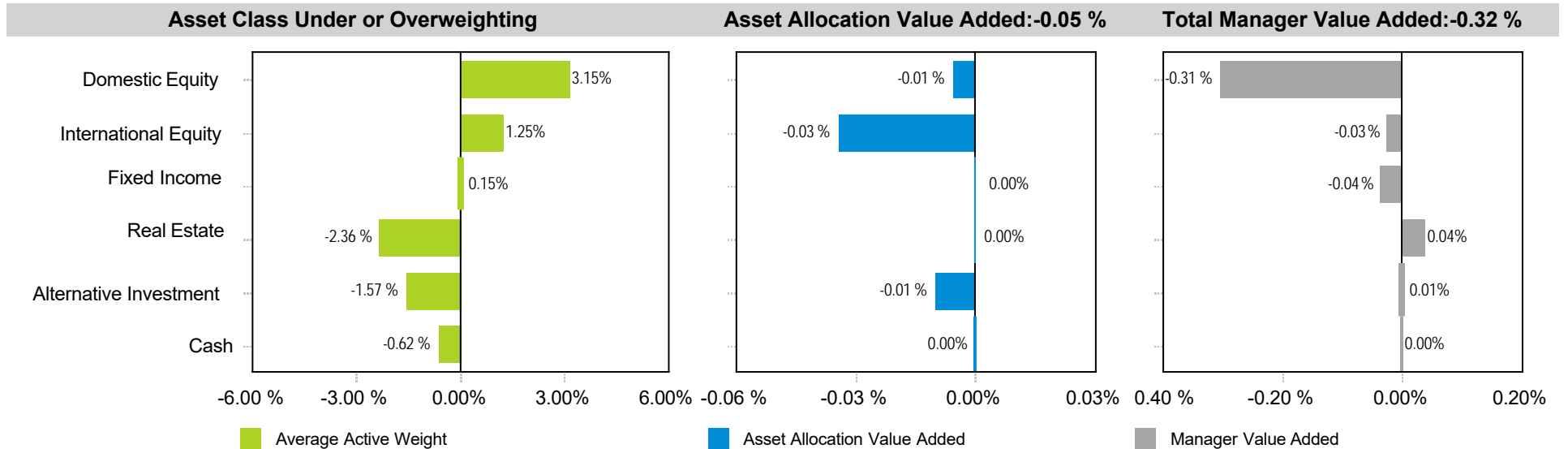
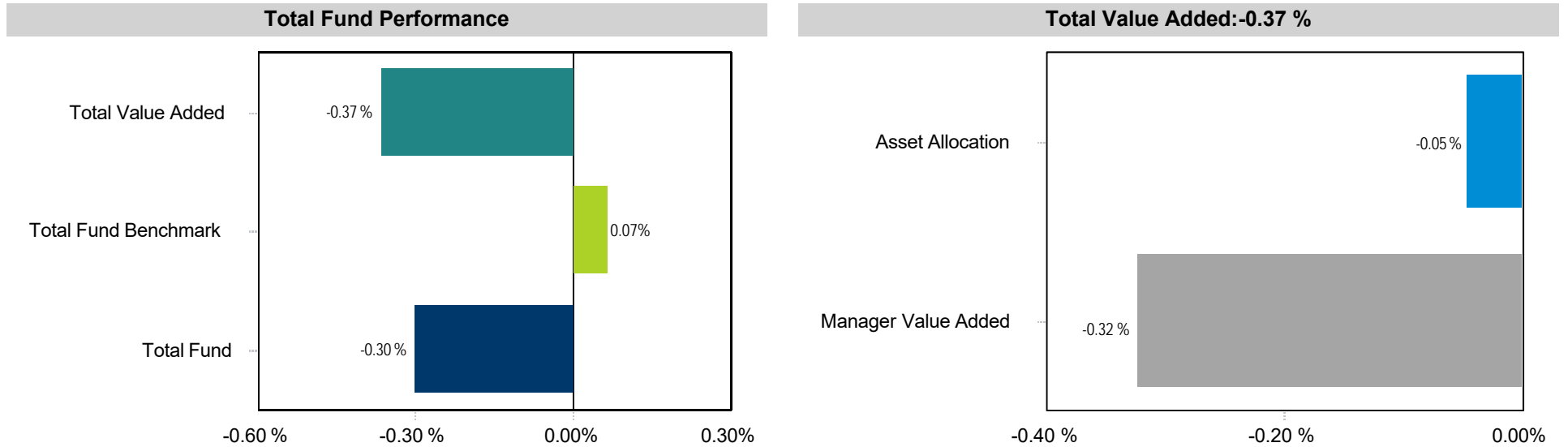
Periods Ended January 31, 2020

	Dec-2019		Jan-2020	
	\$	%	\$	%
Private Equity	1,968,686,105	4.41	2,038,449,559	4.59
Abbott S/A Comp.	359,027,403	0.80	358,459,883	0.81
Muller Monroe MPEFF	5,104,385	0.01	5,104,385	0.01
Pantheon S/A Comp.	256,760,283	0.57	259,213,060	0.58
Private Equity Fund - Domestic	1,010,187,362	2.26	1,049,373,460	2.36
Private Equity Fund - International	332,244,607	0.74	359,596,454	0.81
Oakbrook Opportunities Fund	5,362,066	0.01	6,702,317	0.02
Private Credit	128,930,696	0.29	123,284,625	0.28
Private Credit Fund - Domestic	128,930,696	0.29	123,284,625	0.28
Agriculture	208,323,624	0.47	218,543,619	0.49
Premiere Partners IV	208,323,624	0.47	218,543,619	0.49
Timberland	73,900,301	0.17	76,057,702	0.17
Forest Investment	73,900,301	0.17	76,057,702	0.17
Unlisted Infrastructure	46,403,981	0.10	46,529,482	0.10
Unlisted Infrastructure Funds	46,403,981	0.10	46,529,482	0.10
Cash & Equivalents	168,699,071	0.38	136,895,415	0.31
<b>Total Fund</b>	<b>44,672,033,231</b>	<b>100.00</b>	<b>44,429,277,043</b>	<b>100.00</b>

# Total Fund Attribution

Total Fund

1 Month Ending January 31, 2020



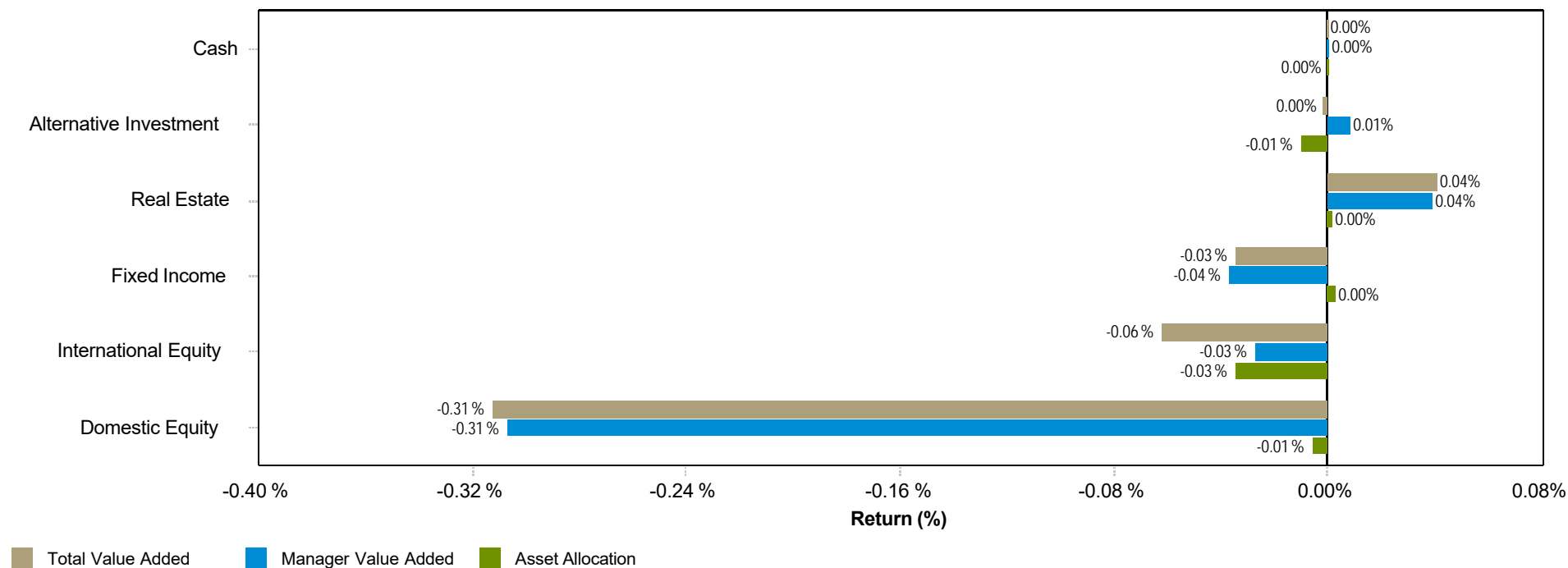
Total Fund Benchmark = 37.0% Russell 3000 Index, 28.0% Blmbg Aggregate, 18.0% MSCI ACWI ex US, 9.0% NCREIF NFI-ODCE Val Wt Nt, 7.0% 9% Annually and 1.0% 3-month Treasury Bill.

# Total Fund Attribution

Total Fund

1 Month Ending January 31, 2020

Relative Attribution by Asset Class



Relative Attribution Effects							
	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	40.1	37.0	-0.87	-0.11	-0.31	-0.01	-0.31
International Equity	19.3	18.0	-2.83	-2.69	-0.03	-0.03	-0.06
Fixed Income	28.2	28.0	1.79	1.92	-0.04	0.00	-0.03
Real Estate	6.6	9.0	0.59	0.00	0.04	0.00	0.04
Alternative Investment	5.4	7.0	0.87	0.72	0.01	-0.01	0.00
Cash	0.4	1.0	0.26	0.13	0.00	0.00	0.00
<b>Total Fund</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.30</b>	<b>0.07</b>	<b>-0.32</b>	<b>-0.05</b>	<b>-0.37</b>

Total Fund Benchmark = 37.0% Russell 3000 Index, 28.0% Blmbg Aggregate, 18.0% MSCI ACWI ex US, 9.0% NCREIF NFI-ODCE Val Wt Nt, 7.0% 9% Annually and 1.0% 3-month Treasury Bill.

# Asset Class Returns

Periods Ended January 31, 2020

	Performance (%)							
	1 Month	1 Year	3 Years	5 Years	10 Years	30 Years	Since Inception	Inception Date
<b>Domestic Equity</b>	<b>-0.87</b>	<b>16.54</b>	<b>12.27</b>	<b>10.92</b>	<b>13.44</b>	<b>10.62</b>	<b>11.61</b>	<b>1/1/1982</b>
Domestic Equity - Net	-0.87	16.36	12.06	10.70	13.19			
Blended Benchmark (U.S. Equity)	-0.11	20.53	13.82	11.85	13.83	10.27		
U.S. Equity IMRF Custom Benchmark	-0.62							
<b>International Equity</b>	<b>-2.81</b>	<b>11.57</b>	<b>8.50</b>	<b>6.03</b>	<b>6.78</b>	<b>6.75</b>	<b>7.75</b>	<b>9/1/1986</b>
International Equity - Net	-2.83	11.28	8.17	5.69	6.44			
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21			
International Equity IMRF Custom Benchmark	-2.79							
<b>Fixed Income</b>	<b>1.80</b>	<b>9.79</b>	<b>5.09</b>	<b>3.76</b>	<b>4.77</b>	<b>6.72</b>	<b>8.23</b>	<b>1/1/1982</b>
Fixed Income - Net	1.79	9.68	4.95	3.62	4.61			
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	6.02	7.71	
Fixed Income IMRF Custom Benchmark	1.71							
<b>Real Estate</b>	<b>0.59</b>	<b>10.13</b>	<b>9.52</b>	<b>9.98</b>	<b>11.12</b>	<b>5.05</b>	<b>5.57</b>	<b>5/1/1985</b>
Real Estate - Net	0.59	10.08	9.50	9.95	11.10			
Blended Benchmark (Real Estate)	0.00	3.97	5.95	7.76	10.45	7.53	7.68	
<b>Alternatives Investments</b>	<b>0.87</b>	<b>10.48</b>	<b>13.72</b>	<b>10.32</b>	<b>9.63</b>	<b>11.62</b>	<b>10.86</b>	<b>2/1/1986</b>
Alternatives Investments - Net	0.87	10.44	13.59	10.09	9.37			
Alternatives Custom Benchmark	0.72	9.00	9.00	9.00	9.12	12.34	12.65	
<b>Private Equity</b>	<b>0.50</b>	<b>12.40</b>	<b>16.61</b>	<b>13.17</b>	<b>12.65</b>	<b>14.16</b>	<b>13.06</b>	<b>2/1/1986</b>
Alternatives Custom Benchmark	0.72	9.00	9.00	9.00	9.12	12.34	12.65	
<b>Agriculture</b>	<b>4.91</b>	<b>-1.19</b>	<b>-1.85</b>	<b>2.49</b>	<b>9.03</b>		<b>7.16</b>	<b>10/1/1997</b>
NCREIF Farmland Index	0.00	4.81	5.91	7.02	11.00		11.77	
<b>Timberland</b>	<b>2.92</b>	<b>3.95</b>	<b>1.60</b>	<b>0.94</b>	<b>2.87</b>		<b>7.43</b>	<b>10/1/1992</b>
NCREIF Timberland Index	0.00	1.30	2.71	3.13	4.45		8.59	

Benchmark definitions on next page.

# Asset Class Returns

Periods Ended January 31, 2020

	Performance (%)							
	1 Month	1 Year	3 Years	5 Years	10 Years	30 Years	Since Inception	Inception Date
<b>Unlisted Infrastructure</b>	<b>-0.10</b>	<b>9.54</b>					<b>9.68</b>	<b>4/1/2018</b>
Alternatives Custom Benchmark	0.72	9.00					9.00	
<b>Total Fund</b>	<b>-0.29</b>	<b>12.84</b>	<b>9.32</b>	<b>7.77</b>	<b>9.22</b>	<b>8.57</b>	<b>9.87</b>	<b>1/1/1982</b>
Total Fund - Net	-0.30	12.68	9.13	7.55	8.99			
Total Fund Benchmark	0.07	13.16	9.05	7.62	8.85			

Benchmark definitions on next page.

# 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.  
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# Benchmark Definitions

Account Name	From Date	To Date	Benchmark
Total Fund Benchmark			<p>The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset class, currently:</p> <p>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.</p>



Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>-0.29</b>	<b>12.84</b>	<b>9.32</b>	<b>7.77</b>	<b>9.22</b>	<b>9.87</b>	<b>1/1/1982</b>
Total Fund - Net	-0.30	12.68	9.13	7.55	8.99		
Total Fund Benchmark	0.07	13.16	9.05	7.62	8.85		
<b>Domestic Equity</b>	<b>-0.87</b>	<b>16.54</b>	<b>12.27</b>	<b>10.92</b>	<b>13.44</b>	<b>11.61</b>	<b>1/1/1982</b>
Domestic Equity - Net	-0.87	16.36	12.06	10.70	13.19		
Blended Benchmark	-0.11	20.53	13.82	11.85	13.83		
Russell 3000 Index	-0.11	20.53	13.82	11.85	13.82	11.56	
<b>Large Cap Equity</b>	<b>-0.23</b>	<b>18.48</b>	<b>13.70</b>	<b>11.68</b>	<b>13.83</b>	<b>11.31</b>	<b>1/1/1982</b>
Large Cap Equity - Net	-0.24	18.39	13.58	11.56	13.68		
Russell 1000 Index	0.11	21.39	14.33	12.13	13.97	11.71	
<b>Large Cap Growth</b>	<b>2.99</b>	<b>24.11</b>	<b>20.36</b>	<b>14.83</b>	<b>15.56</b>	<b>12.11</b>	<b>1/1/1982</b>
Large Cap Growth - Net	2.99	24.01	20.23	14.69	15.39		
LCG Blended Benchmark	2.24	27.94	20.04	15.49	15.99		
Russell 1000 Growth Index	2.24	27.94	20.04	15.49	15.99	11.36	
<b>NTGI S&amp;P 500 Growth</b>	<b>2.28</b>	<b>24.78</b>	<b>18.36</b>	<b>14.41</b>	<b>15.66</b>	<b>8.35</b>	<b>8/1/2001</b>
NTGI S&P 500 Growth - Net	2.28	24.77	18.35	14.40	15.65		
S&P 500 Growth	2.27	24.74	18.39	14.41	15.64	8.32	
<b>Piedmont Russell 1000 G</b>	<b>2.23</b>	<b>27.90</b>				<b>12.68</b>	<b>10/1/2018</b>
Piedmont Russell 1000 G - Net	2.23	27.88				12.66	
Russell 1000 Growth Index	2.24	27.94				12.70	
<b>Sands Capital</b>	<b>4.27</b>	<b>21.41</b>	<b>23.04</b>	<b>15.15</b>	<b>18.09</b>	<b>12.68</b>	<b>11/1/2003</b>
Sands Capital - Net	4.27	21.15	22.78	14.90	17.83		
LCG Blended Benchmark	2.24	27.94	20.04	15.49	15.99	10.47	
Russell 1000 Growth Index	2.24	27.94	20.04	15.49	15.99	10.52	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Large Cap Value</b>	<b>-3.48</b>	<b>12.41</b>	<b>8.92</b>	<b>9.21</b>	<b>12.46</b>	<b>10.30</b>	<b>10/1/1982</b>
Large Cap Value - Net	-3.49	12.24	8.75	9.03	12.28		
LCV Blended Benchmark	-2.15	14.88	8.63	8.70	11.87		
Russell 1000 Value Index	-2.15	14.88	8.63	8.70	11.87	11.84	
<b>Dodge &amp; Cox</b>	<b>-3.13</b>	<b>11.31</b>	<b>9.20</b>	<b>10.40</b>	<b>12.73</b>	<b>9.52</b>	<b>9/1/2003</b>
Dodge & Cox - Net	-3.13	11.08	8.97	10.18	12.50		
LCV Blended Benchmark	-2.15	14.88	8.63	8.70	11.87	8.45	
Russell 1000 Value Index	-2.15	14.88	8.63	8.70	11.87	8.61	
<b>BMO</b>	<b>-2.80</b>	<b>8.49</b>	<b>7.80</b>	<b>7.53</b>	<b>12.24</b>	<b>7.94</b>	<b>2/1/2001</b>
BMO - Net	-2.80	8.24	7.56	7.29	11.99		
LCV Blended Benchmark	-2.15	14.88	8.63	8.70	11.87	5.91	
Russell 1000 Value Index	-2.15	14.88	8.63	8.70	11.87	6.89	
<b>LSV Asset</b>	<b>-5.11</b>	<b>10.39</b>	<b>8.11</b>	<b>8.90</b>	<b>12.59</b>	<b>10.78</b>	<b>2/1/2003</b>
LSV Asset - Net	-5.17	10.14	7.86	8.64	12.30		
LCV Blended Benchmark	-2.15	14.88	8.63	8.70	11.87	9.35	
Russell 1000 Value Index	-2.15	14.88	8.63	8.70	11.87	9.36	
<b>NTGI S&amp;P 500 Value</b>	<b>-2.60</b>	<b>18.37</b>	<b>10.33</b>	<b>10.01</b>	<b>12.16</b>	<b>6.18</b>	<b>8/1/1999</b>
NTGI S&P 500 Value - Net	-2.60	18.36	10.32	10.00	12.15		
S&P 500 Value	-2.64	18.30	10.25	9.93	12.09	6.15	
<b>Large Cap Pass. Core</b>	<b>-0.12</b>	<b>20.44</b>	<b>13.81</b>	<b>11.88</b>	<b>13.86</b>	<b>11.26</b>	<b>1/1/1985</b>
Large Cap Pass. Core - Net	-0.12	20.44	13.80	11.87	13.85		
Dow Jones US Total Stock Market Index	-0.12	20.37	13.74	11.79	13.80		
<b>NTGI MarketCap Idx.</b>	<b>-0.12</b>	<b>20.44</b>	<b>13.81</b>	<b>11.88</b>	<b>13.87</b>	<b>11.03</b>	<b>2/1/1985</b>
NTGI MarketCap Idx. - Net	-0.12	20.44	13.80	11.87	13.86		
Dow Jones US Total Stock Market Index	-0.12	20.37	13.74	11.79	13.80		

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Quantitative Factor Strategies</b>	<b>-0.54</b>					<b>5.06</b>	<b>9/1/2019</b>
<b>Quantitative US Equity - SciBeta</b>	<b>-0.54</b>					<b>5.06</b>	<b>9/1/2019</b>
Quantitative US Equity - SciBeta - Net	-0.54					5.06	
SciBeta United States High-Factor-Intensity Divers	-0.47					4.78	
<b>Small Cap Composite</b>	<b>-4.63</b>	<b>7.16</b>	<b>6.57</b>	<b>7.81</b>	<b>12.15</b>	<b>11.93</b>	<b>7/1/1988</b>
Small Cap Composite - Net	-4.63	6.72	6.07	7.25	11.56		
Russell 2000 Index	-3.21	9.21	7.28	8.23	11.88	9.35	
<b>Small Cap Growth</b>	<b>-2.47</b>	<b>13.15</b>	<b>11.75</b>	<b>9.97</b>	<b>13.50</b>	<b>12.93</b>	<b>7/1/1988</b>
Small Cap Growth - Net	-2.47	12.75	11.27	9.42	12.91		
Russell 2000 Growth Index	-1.10	13.91	11.48	9.60	13.40	8.19	
<b>Frontier Capital</b>	<b>-2.84</b>	<b>11.25</b>	<b>16.94</b>	<b>10.98</b>	<b>13.88</b>	<b>13.21</b>	<b>8/1/1988</b>
Frontier Capital - Net	-2.84	10.84	16.31	10.36	13.24		
Russell 2000 Growth Index	-1.10	13.91	11.48	9.60	13.40	8.28	
<b>FIAM Small Cap</b>	<b>-1.26</b>	<b>15.61</b>	<b>9.99</b>	<b>10.47</b>	<b>13.90</b>	<b>13.48</b>	<b>8/1/1988</b>
FIAM Small Cap - Net	-1.26	15.16	9.60	9.95	13.34		
Russell 2000 Index	-3.21	9.21	7.28	8.23	11.88	9.41	
Russell 2000 Growth Index	-1.10	13.91	11.48	9.60	13.40	8.28	
<b>Small Cap Value</b>	<b>-5.49</b>	<b>4.76</b>	<b>3.48</b>	<b>7.33</b>	<b>11.36</b>	<b>11.49</b>	<b>9/1/1989</b>
Small Cap Value - Net	-5.49	4.30	2.95	6.78	10.81		
Russell 2000 Value Index	-5.39	4.38	3.10	6.71	10.28	9.81	
<b>Channing</b>	<b>-4.17</b>	<b>8.08</b>	<b>2.76</b>	<b>6.83</b>		<b>9.69</b>	<b>7/1/2011</b>
Channing - Net	-4.17	7.68	2.29	6.32		9.11	
Russell 2000 Value Index	-5.39	4.38	3.10	6.71		8.40	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>DFA Small Cap Val.</b>	<b>-7.00</b>	<b>-0.78</b>	<b>0.84</b>	<b>5.31</b>	<b>11.30</b>	<b>11.43</b>	<b>2/1/1996</b>
DFA Small Cap Val. - Net	-7.00	-1.26	0.32	4.77	10.76		
Russell 2000 Value Index	-5.39	4.38	3.10	6.71	10.28	9.26	
<b>Inv. Couns. Maryland</b>	<b>-4.67</b>	<b>8.53</b>	<b>6.19</b>	<b>9.97</b>	<b>12.11</b>	<b>11.26</b>	<b>5/1/1999</b>
Inv. Couns. Maryland - Net	-4.67	8.08	5.64	9.41	11.59		
Russell 2000 Value Index	-5.39	4.38	3.10	6.71	10.28	8.76	
<b>Micro Cap</b>	<b>-5.50</b>	<b>4.22</b>	<b>4.41</b>	<b>5.15</b>	<b>11.42</b>	<b>11.26</b>	<b>7/1/1984</b>
Micro Cap - Net	-5.50	3.72	3.87	4.54	10.73		
Russell Microcap Index	-4.66	5.64	5.24	6.45	11.07		
<b>DFA Micro Cap (9-10)</b>	<b>-5.50</b>	<b>4.22</b>	<b>5.27</b>	<b>8.35</b>	<b>12.73</b>	<b>10.90</b>	<b>8/1/1987</b>
DFA Micro Cap (9-10) - Net	-5.50	3.72	4.75	7.82	12.18		
Russell 2000 Index	-3.21	9.21	7.28	8.23	11.88	8.76	
<b>Public Real Assets</b>	<b>1.83</b>	<b>18.58</b>				<b>10.26</b>	<b>8/1/2017</b>
Public Real Assets - Net	1.83	18.13				9.82	
Public Real Assets Benchmark	1.73	17.74				8.32	
<b>Brookfield</b>	<b>0.99</b>	<b>16.36</b>				<b>7.22</b>	<b>8/1/2017</b>
Brookfield - Net	0.99	15.76				6.72	
Dow Jones Brookfield Global Infrastructure Composite Index	0.79	16.04				6.21	
<b>Cohen &amp; Steers</b>	<b>2.20</b>	<b>19.61</b>				<b>11.74</b>	<b>8/1/2017</b>
Cohen & Steers - Net	2.20	19.23				11.32	
FTSE Global Core Infrastructure 50/50 Index (Net)	2.19	18.58				9.36	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>International Equity</b>	<b>-2.81</b>	<b>11.57</b>	<b>8.50</b>	<b>6.03</b>	<b>6.78</b>	<b>7.75</b>	<b>9/1/1986</b>
International Equity - Net	-2.83	11.28	8.17	5.69	6.44		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21		
<b>Intl LargeCap Equity</b>	<b>-2.71</b>	<b>10.89</b>	<b>8.09</b>	<b>5.83</b>	<b>6.71</b>	<b>7.74</b>	<b>9/1/1986</b>
Intl LargeCap Equity - Net	-2.72	10.67	7.83	5.55	6.43		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21		
<b>Intl Large Cap Grwth</b>	<b>-2.14</b>	<b>15.64</b>	<b>9.17</b>	<b>6.02</b>	<b>7.20</b>	<b>8.42</b>	<b>9/1/2002</b>
Intl Large Cap Grwth - Net	-2.16	15.42	8.92	5.75	6.85		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	7.30	
MSCI AC World ex USA Growth (Net)	-0.96	17.20	11.05	6.93	6.68	7.72	
<b>EARNEST Part. Intl</b>	<b>-4.04</b>	<b>8.40</b>	<b>6.94</b>	<b>4.85</b>	<b>6.02</b>	<b>8.80</b>	<b>10/1/2004</b>
EARNEST Part. Intl - Net	-4.09	8.29	6.76	4.66	5.73		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	5.93	
MSCI AC World ex USA Growth (Net)	-0.96	17.20	11.05	6.93	6.68	6.81	
<b>William Blair</b>	<b>-0.76</b>	<b>21.78</b>	<b>11.04</b>	<b>7.00</b>	<b>8.74</b>	<b>9.82</b>	<b>10/1/2002</b>
William Blair - Net	-0.76	21.47	10.68	6.61	8.34		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	8.03	
MSCI AC World ex USA Growth (Net)	-0.96	17.20	11.05	6.93	6.68	8.33	
<b>Intl Large Cap Val.</b>	<b>-4.12</b>	<b>5.31</b>	<b>6.03</b>	<b>4.59</b>	<b>5.13</b>	<b>8.56</b>	<b>10/1/1995</b>
Intl Large Cap Val. - Net	-4.12	5.07	5.69	4.22	4.77		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21		
MSCI AC World ex USA Value	-4.42	3.52	4.85	3.54	4.27		

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Brandes Investment</b>	<b>-4.87</b>	<b>1.50</b>	<b>4.56</b>	<b>4.55</b>	<b>5.20</b>	<b>8.65</b>	<b>1/1/1996</b>
Brandes Investment - Net	-4.87	1.34	4.36	4.32	4.96		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21		
MSCI AC World ex USA Value	-4.42	3.52	4.85	3.54	4.27		
<b>Mondrian</b>	<b>-3.82</b>	<b>8.24</b>	<b>7.12</b>	<b>4.47</b>		<b>5.54</b>	<b>4/1/2012</b>
Mondrian - Net	-3.82	7.89	6.61	3.99		5.04	
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96		5.14	
MSCI AC World ex USA Value	-4.42	3.52	4.85	3.54		4.19	
<b>Lazard</b>	<b>-1.66</b>	<b>12.69</b>	<b>8.99</b>	<b>5.48</b>		<b>6.57</b>	<b>4/1/2012</b>
Lazard - Net	-1.66	12.49	8.72	5.06		6.05	
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96		5.14	
MSCI AC World ex USA Value	-4.42	3.52	4.85	3.54		4.19	
<b>Intl Large Cap Active Core</b>	<b>-2.36</b>	<b>10.42</b>	<b>8.91</b>	<b>7.12</b>	<b>8.10</b>	<b>5.01</b>	<b>2/1/2008</b>
Intl Large Cap Active Core - Net	-2.36	10.02	8.44	6.60	7.57		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	2.52	
<b>Arrowstreet Capital</b>	<b>-2.72</b>	<b>10.78</b>	<b>8.76</b>	<b>7.44</b>	<b>8.35</b>	<b>5.25</b>	<b>3/1/2008</b>
Arrowstreet Capital - Net	-2.72	10.40	8.26	6.95	7.84	4.77	
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	2.30	
<b>Brown Capital</b>	<b>-0.29</b>	<b>14.69</b>	<b>10.20</b>	<b>7.44</b>	<b>8.10</b>	<b>8.04</b>	<b>10/1/2004</b>
Brown Capital - Net	-0.29	14.44	9.73	6.66	7.34		
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	5.93	
<b>GlobeFlex Capital</b>	<b>-3.11</b>	<b>5.98</b>	<b>6.93</b>	<b>6.09</b>	<b>7.61</b>	<b>4.81</b>	<b>3/1/2006</b>
GlobeFlex Capital - Net	-3.11	5.53	6.52	5.70	7.17	4.37	
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96	5.21	3.83	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Progress Intl Equity</b>	<b>-2.59</b>	<b>13.59</b>	<b>11.60</b>	<b>7.94</b>		<b>5.57</b>	<b>7/1/2014</b>
Progress Intl Equity - Net	-2.59	13.04	11.06	7.41		5.07	
Custom Benchmark (Progress Intl Equity)	-2.69	9.94	8.40	5.87		3.59	
MSCI AC World ex USA (Net)	-2.69	9.94	7.62	4.96		2.67	
<b>Intl Large Cap Passive Core</b>	<b>-2.54</b>	<b>11.89</b>	<b>7.95</b>	<b>5.40</b>	<b>6.10</b>	<b>3.55</b>	<b>1/1/2000</b>
Intl Large Cap Passive Core - Net	-2.54	11.88	7.95	5.39	6.09		
MSCI EAFE Index (Net)	-2.09	12.10	7.76	5.12	5.76	3.19	
<b>NTGI MSCI EAFE</b>	<b>-2.54</b>	<b>11.89</b>	<b>7.95</b>	<b>5.40</b>	<b>6.10</b>	<b>3.90</b>	<b>2/1/2000</b>
NTGI MSCI EAFE - Net	-2.54	11.88	7.95	5.39	6.09		
MSCI EAFE Index (Net)	-2.09	12.10	7.76	5.12	5.76	3.55	
<b>Intl All Cap Developed</b>	<b>-1.27</b>	<b>13.75</b>				<b>13.75</b>	<b>2/1/2019</b>
Intl All Cap Developed - Net	-1.39	13.23				13.23	
MSCI EAFE + Canada (Net)	-1.94	12.12				12.12	
<b>Ativo International</b>	<b>-1.27</b>	<b>13.75</b>				<b>13.75</b>	<b>2/1/2019</b>
Ativo International - Net	-1.39	13.23				13.23	
MSCI EAFE + Canada (Net)	-1.94	12.12				12.12	
<b>Intl Small Cap Eqty</b>	<b>-3.08</b>	<b>16.98</b>	<b>9.30</b>	<b>7.29</b>	<b>8.24</b>	<b>5.00</b>	<b>12/1/2005</b>
Intl Small Cap Eqty - Net	-3.08	16.35	8.53	6.49	7.44		
MSCI AC World ex USA Small Cap (Net)	-3.12	9.98	7.14	6.45	6.79	6.05	
Custom Benchmark (Intl Small Cap)	-3.12	9.98	7.14	6.45	6.81	5.34	
<b>Franklin Templeton</b>	<b>-4.98</b>	<b>9.27</b>	<b>8.28</b>	<b>6.23</b>		<b>6.07</b>	<b>8/1/2011</b>
Franklin Templeton - Net	-4.98	8.68	7.49	5.46		5.32	
MSCI AC World ex USA Small Cap (Net)	-3.12	9.98	7.14	6.45		4.79	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>William Blair IntSC</b>	<b>-1.82</b>	<b>22.51</b>	<b>9.93</b>	<b>8.07</b>		<b>9.53</b>	<b>9/1/2010</b>
William Blair IntSC - Net	-1.82	21.83	9.16	7.24		8.70	
MSCI AC World ex USA Small Cap (Net)	-3.12	9.98	7.14	6.45		6.95	
Custom Benchmark (Intl Small Cap)	-3.12	9.98	7.14	6.45		7.26	
<b>Emerging Mkt Equity</b>	<b>-3.56</b>	<b>13.62</b>	<b>11.43</b>	<b>6.86</b>	<b>6.47</b>	<b>9.08</b>	<b>2/1/1992</b>
Emerging Mkt Equity - Net	-3.63	13.03	10.79	6.23	5.85		
MSCI Emerging Markets Index	-4.66	4.21	8.28	4.87	4.14	6.99	
<b>Genesis Asset Mngrs.</b>	<b>-3.56</b>	<b>13.62</b>	<b>11.43</b>	<b>6.86</b>	<b>6.47</b>	<b>11.16</b>	<b>5/1/2004</b>
Genesis Asset Mngrs. - Net	-3.63	13.03	10.79	6.23	5.85		
MSCI Emerging Markets Index	-4.66	4.21	8.28	4.87	4.14	8.67	



Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Fixed Income</b>	<b>1.80</b>	<b>9.79</b>	<b>5.09</b>	<b>3.76</b>	<b>4.77</b>	<b>8.23</b>	<b>1/1/1982</b>
Fixed Income - Net	1.79	9.68	4.95	3.62	4.61		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	7.71	
<b>Active Fixed Core</b>	<b>2.20</b>	<b>9.47</b>	<b>4.78</b>	<b>3.36</b>	<b>4.37</b>	<b>4.68</b>	<b>4/1/2001</b>
ActiveCore Fixed Inc - Net	2.19	9.38	4.68	3.24	4.21		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.68	
<b>Brandes FI Core</b>	<b>1.89</b>	<b>8.25</b>	<b>4.16</b>			<b>3.23</b>	<b>3/1/2016</b>
Brandes FI Core - Net	1.89	8.25	4.16			3.23	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62			3.72	
<b>EARNEST Partners</b>	<b>2.41</b>	<b>10.11</b>	<b>5.04</b>	<b>3.37</b>	<b>4.44</b>	<b>4.74</b>	<b>5/1/2005</b>
EARNEST Partners - Net	2.38	9.97	4.89	3.20	4.25	4.55	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.30	
<b>Piedmont Investment</b>	<b>2.38</b>	<b>10.03</b>	<b>4.66</b>	<b>3.44</b>	<b>4.37</b>	<b>4.51</b>	<b>6/1/2005</b>
Piedmont Investment - Net	2.38	9.93	4.53	3.31	4.21	4.32	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.25	
<b>Garcia Hamilton</b>	<b>1.94</b>	<b>8.75</b>	<b>4.77</b>			<b>3.82</b>	<b>6/1/2015</b>
Garcia Hamilton - Net	1.94	8.68	4.68			3.73	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62			3.47	
<b>Pass. Core Fixed Inc</b>	<b>1.95</b>	<b>9.73</b>	<b>4.69</b>	<b>3.07</b>	<b>3.83</b>	<b>5.98</b>	<b>1/1/1990</b>
Pass. Core Fixed Inc - Net	1.95	9.72	4.68	3.06	3.82		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	5.96	
<b>BlackRock US Debt I</b>	<b>1.93</b>	<b>9.70</b>	<b>4.72</b>	<b>3.11</b>		<b>3.75</b>	<b>10/1/2013</b>
BlackRock US Debt I - Net	1.93	9.70	4.72	3.10		3.75	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01		3.63	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>NTGI Blmbg Agg.</b>	<b>1.97</b>	<b>9.75</b>	<b>4.66</b>	<b>3.04</b>	<b>3.81</b>	<b>6.03</b>	<b>2/1/1990</b>
NTGI Blmbg Agg. - Net	1.97	9.74	4.66	3.03	3.81		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	6.02	
<b>Core Plus Fixed Income</b>	<b>1.95</b>	<b>10.46</b>	<b>5.26</b>	<b>3.80</b>	<b>4.90</b>	<b>8.09</b>	<b>1/1/1982</b>
Core Plus Fixed Inc. - Net	1.94	10.31	5.08	3.62	4.72		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	7.71	
<b>LM Capital Group FI</b>	<b>2.06</b>	<b>10.13</b>	<b>4.77</b>	<b>3.51</b>	<b>4.51</b>	<b>5.00</b>	<b>5/1/2005</b>
LM Capital Group FI - Net	2.02	9.95	4.60	3.34	4.34	4.83	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.30	
<b>Progress Inv. FI</b>	<b>1.96</b>	<b>10.16</b>	<b>5.17</b>	<b>3.65</b>	<b>4.57</b>	<b>5.08</b>	<b>1/1/2006</b>
Progress Inv. FI - Net	1.96	9.90	4.86	3.33	4.22	4.74	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.39	
<b>BMO - TCH</b>	<b>1.89</b>	<b>9.68</b>	<b>5.18</b>	<b>3.95</b>	<b>5.07</b>	<b>5.14</b>	<b>5/1/2005</b>
BMO - TCH - Net	1.89	9.58	5.05	3.82	4.94	5.01	
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.30	
<b>Western Asset</b>	<b>1.91</b>	<b>11.65</b>	<b>6.07</b>	<b>4.44</b>	<b>5.52</b>	<b>5.64</b>	<b>11/1/2001</b>
Western Asset - Net	1.91	11.57	5.95	4.31	5.38		
Blmbg. Barc. U.S. Aggregate	1.92	9.64	4.62	3.01	3.79	4.42	
<b>Bank Loans</b>	<b>0.60</b>	<b>6.77</b>	<b>4.71</b>	<b>5.22</b>		<b>4.74</b>	<b>8/1/2014</b>
Bank Loans - Net	0.60	6.57	4.28	4.72		4.24	
Custom Benchmark	0.57	6.58	4.69	4.80		4.31	
<b>Barings Global Loan Fund</b>	<b>0.60</b>	<b>6.77</b>	<b>4.71</b>	<b>5.22</b>		<b>4.74</b>	<b>8/1/2014</b>
Barings Global Loan Fund - Net	0.60	6.57	4.28	4.72		4.24	
Custom Benchmark	0.57	6.58	4.69	4.80		4.31	

Benchmark definitions in glossary.

Periods Ended January 31, 2020

	Performance (%)						
	1 Month	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
<b>Emerging Markets Debt</b>	<b>0.19</b>	<b>9.58</b>	<b>6.37</b>	<b>4.63</b>		<b>3.51</b>	<b>8/1/2014</b>
Emerging Markets Debt - Net	0.19	9.20	6.01	4.26		3.17	
Custom Benchmark	0.20	9.08	6.17	4.48		2.86	
<b>Standish Emerging Markets</b>	<b>0.19</b>	<b>9.58</b>	<b>6.37</b>	<b>4.63</b>		<b>3.51</b>	<b>8/1/2014</b>
Standish EM MRK - Net	0.19	9.20	6.01	4.26		3.17	
Custom Benchmark	0.20	9.08	6.17	4.48		2.86	
<b>High Yield</b>	<b>-0.09</b>	<b>10.47</b>	<b>6.60</b>	<b>6.95</b>	<b>7.72</b>	<b>9.54</b>	<b>4/1/1986</b>
High Yield - Net	-0.09	10.12	6.24	6.58	7.33		
ICE BofAML US High Yield, Cash Pay Index	0.01	9.38	5.85	5.98	7.32	8.30	
<b>MacKay Shields</b>	<b>-0.09</b>	<b>10.47</b>	<b>6.58</b>	<b>7.14</b>	<b>7.86</b>	<b>8.84</b>	<b>11/1/2000</b>
MacKay Shields - Net	-0.09	10.12	6.22	6.77	7.48		
ICE BofAML US High Yield, Cash Pay Index	0.01	9.38	5.85	5.98	7.32	7.57	

# Benchmark History

Account Name	From Date	To Date	Benchmark
Total Fund			<p>The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset class, currently:</p> <p>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.</p>
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	12/31/2005	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)
Progress Intl Equity	12/1/2017	Present	100% MSCI AC World ex USA (Net)
	7/1/2014	11/30/2017	Custom blended weighted average of the underlying managers' individual MSCI benchmarks

# 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 Emerging Markets	8/1/2014	Present	50% JPM GBI-EM Global Diversified, 25% JPM EMBI Global (USD), 25% JPM CEMBI Broad Index

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