

October 31, 2019



**Illinois Municipal
Retirement Fund
Monthly Performance Report**

**Investment Measurement Service
Monthly Review**

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Market Environment As of October 31, 2019

Index	Last Month	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell:3000 Index	2.15	22.68	13.49	14.47	10.31	13.62
S&P:500	2.17	23.16	14.33	14.91	10.78	13.70
Russell:2000 Index	2.63	17.18	4.90	10.96	7.37	12.27
MSCI:ACWI ex US	3.49	15.45	11.27	8.08	3.82	4.94
MSCI:EM	4.22	10.36	11.87	7.36	2.94	3.79
Blmbg:Aggregate	0.30	8.85	11.51	3.29	3.24	3.73
NCREIF:Total Index	0.47	5.29	6.25	6.73	8.45	9.90
Blmbg:Commodity Price Idx	1.87	3.29	(4.75)	(2.28)	(7.61)	(4.97)

October was a positive month for risk assets as trade concerns generally abated and central banks continued to pursue accommodative policies. The month began with news of a tentative U.S.-China trade deal that outlined increased Chinese purchases of U.S. agricultural goods and an agreement to expedite the opening of the Chinese financial sector to foreign entities. In the U.K., Boris Johnson negotiated a new exit agreement with the EU, only to have Parliament balk at passing the deal. Instead, the October 31st departure deadline has been extended to January 2020. Overall, global equity markets responded positively to the political climate in October with most indices appreciating. Longer dated bond yields also rose on the back of positive sentiment, with corporates outperforming Treasuries. U.S. economic data sent mixed signals in October. The labor market remained strong as September unemployment dropped lower, but consumer confidence showed signs of weakness. In response to the slowing momentum, the Federal Reserve announced its third 25 basis point rate cut of 2019. In the Eurozone, third quarter GDP expanded 0.2% quarter-over-quarter. Emerging market equities outperformed most other regions in October following positive sentiment on trade talks, a weaker U.S. dollar, and a stronger appetite for risk.

October's employment report showed signs of strength despite the highly publicized UAW strike during the month. While the manufacturing sector shaved 36,000 jobs, the overall economy added 128,000, which exceeded analysts' expectations. The unemployment rate ticked one tenth of a percent higher to 3.6%, but the participation rate climbed in tandem, up ten basis points to 63.3%. Wage pressure remains modest with 0.2% growth from last month and a 3.0% increase from the prior year.

In October the headline Consumer Price Index (CPI) grew 0.4% from September's levels and was up 1.8% year-over-year. The Core CPI grew 0.2% month-over-month and 2.3% over the trailing year. Energy was the primary cause of the discrepancy between the core and headline CPI, with the energy basket climbing 2.7% in October. Housing prices also continued to rise, as did medical expenses.

The initial estimate of annualized third quarter GDP was 1.9%, which came in slightly above consensus expectations and 10 basis points below the second quarter's growth. Consumer spending continued to contribute to the expansion, climbing 2.9% during the quarter. Residential investment and government spending were also contributors, while business investment detracted from the growth figure.

*Due to a lag in the reporting of NCREIF Property Index returns, the monthly return shown is deduced from the most recent quarterly return. This monthly return, when compounded over three months, equates to the quarterly return.

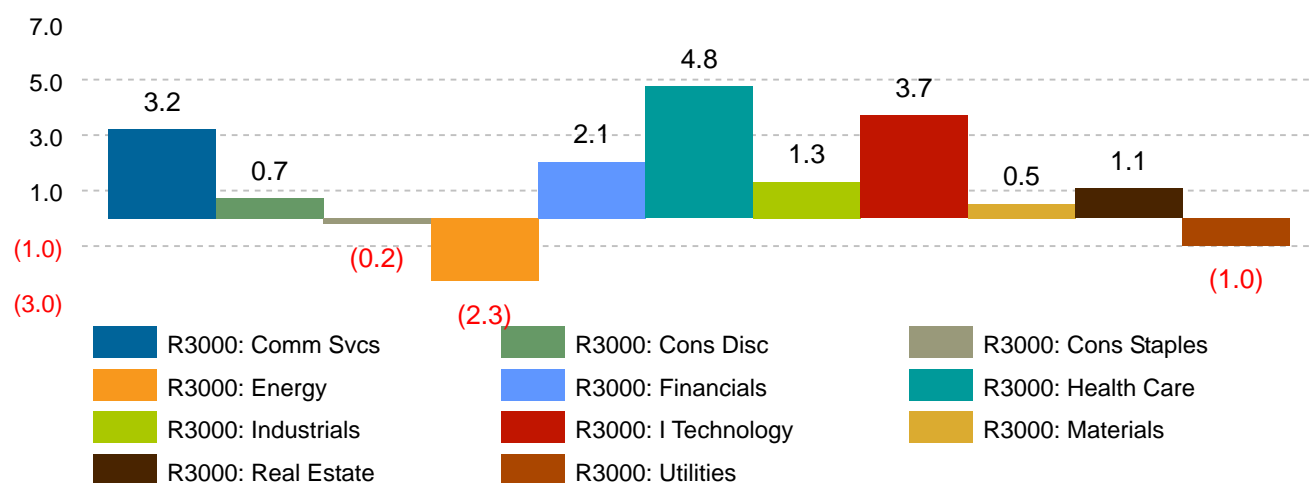
U.S. Equity Overview As of October 31, 2019

Index	Last Month	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell:3000 Index	2.15	22.68	13.49	14.47	10.31	13.62
S&P:500	2.17	23.16	14.33	14.91	10.78	13.70
Russell:1000 Index	2.12	23.09	14.15	14.73	10.55	13.72
Russell:1000 Growth	2.82	26.77	17.10	18.92	13.43	15.41
Russell:1000 Value	1.40	19.46	11.21	10.51	7.61	11.96
Russell:Midcap Index	1.05	23.21	13.72	12.28	8.67	13.70
Russell:2000 Index	2.63	17.18	4.90	10.96	7.37	12.27
Russell:2000 Growth	2.85	18.62	6.40	13.22	8.38	13.38
Russell:2000 Value	2.42	15.55	3.22	8.60	6.24	11.08

U.S. equities continued their march upward and added 2.2% in the month, bringing the year-to-date return to 23.2% (S&P 500). Improvement in trade sentiment and accommodative monetary policy were the primary drivers in the month. Regarding trade, the U.S. and China outlined potential terms of a "phase one" deal that would represent an initial step toward full resolution. U.S. equities were also bolstered by anticipation of the third 25 basis point rate cut of 2019, which the Federal Reserve ultimately enacted on October 31. Small caps outperformed large caps (Russell 2000 Index: +2.6% vs. Russell 1000 Index: +2.1%) while mid cap returns lagged large and small caps (Russell Midcap Index: +1.1%).

The more cyclical sectors outperformed in October, led by Health Care (+4.8%), Information Technology (+3.7%), and Communication Services (+3.2%). On the other hand the more defensive sectors trailed. Energy (-2.3%), Utilities (-1.0%), and Consumer Staples (-0.2%) were the worst performing sectors. Overall it was a fairly positive month with eight of 11 sectors producing gains.

Russell 3000 Index Sector Returns



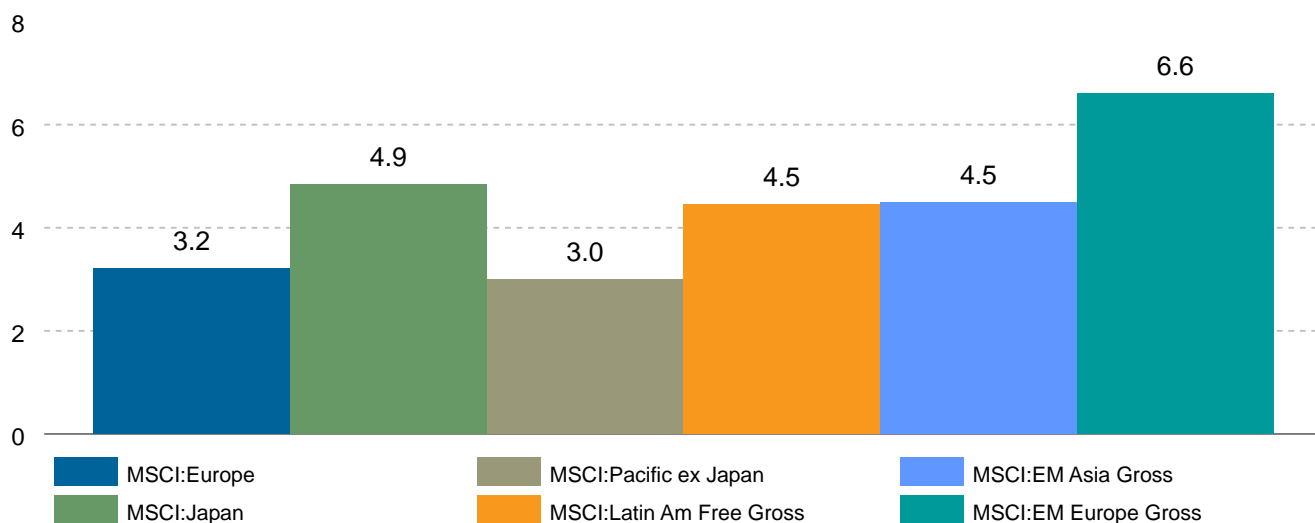
Non-U.S. Equity Overview As of October 31, 2019

Index	Last Month	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
MSCI:ACWI ex US	3.49	15.45	11.27	8.08	3.82	4.94
MSCI:EAFE	3.59	16.86	11.04	8.48	4.31	5.41
MSCI:EAFE Hedged Net	1.89	20.04	13.22	10.59	7.72	8.15
MSCI:EM	4.22	10.36	11.87	7.36	2.94	3.79
MSCI:ACWI ex US Small Cap	4.05	14.75	8.77	6.98	5.31	6.67

Non-U.S. equities outperformed their U.S. counterparts in October (MSCI ACWI ex-U.S.: +3.5% vs. S&P 500 Index: +2.2%) but remain behind for the year-to-date period (MSCI ACWI ex-U.S.: +15.5% vs. S&P 500 Index: +23.2%). In October, the EU extended the Brexit deadline from October 31, 2019 to January 31, 2020 amid progress in negotiations, reducing the likelihood of a no-deal Brexit. Positive developments in the U.S.-China trade spat also provided a strong environment for equities globally, and aided emerging markets in particular (MSCI Emerging Markets Index: +4.2%). Non-U.S. equities were also supported by declines in the dollar, which fell as the Fed cut rates in the U.S. As a result, unhedged returns were much stronger than hedged returns (MSCI EAFE Index: +3.6% vs. MSCI EAFE Hedged Net Index: +1.9%). Non-U.S. small cap stocks topped non-U.S. large cap stocks (MSCI ACWI ex-U.S. Small Cap: +4.1% vs. MSCI ACWI ex-U.S.: +3.5%).

All of the regions shown in the chart produced a positive return for the second consecutive month. Emerging Europe (MSCI EM Europe Gross: +6.6%) was the best performer, lifted by Russia's 8.7% return. The country posted strong returns as the central bank cut rates more than anticipated. Pacific ex-Japan (MSCI Pacific ex-Japan Index) was the worst performer despite a healthy 3.0% return, underscoring the strength of equities around the globe in October.

MSCI Regional Returns

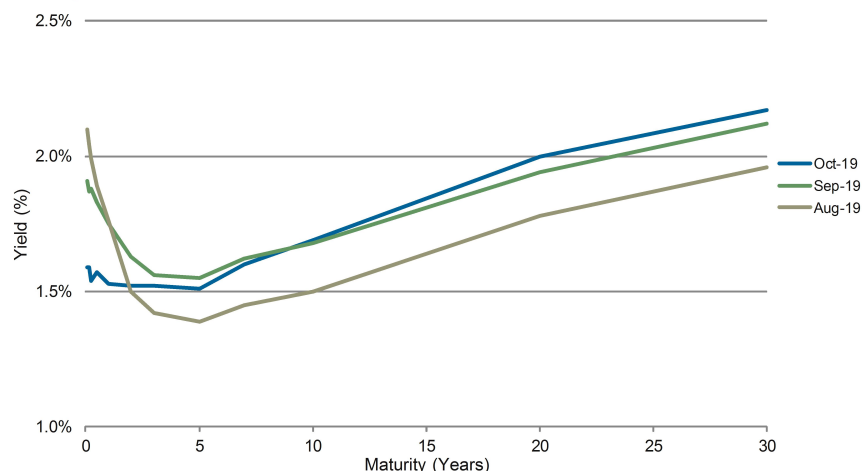


Fixed Income Overview

As of October 31, 2019

Index	Last Month	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Blmbg:Aggregate	0.30	8.85	11.51	3.29	3.24	3.73
Blmbg:Long Gov/Credit	(0.06)	20.86	26.03	6.55	6.34	7.50
Blmbg:Government	0.07	7.74	10.99	2.66	2.72	3.01
Blmbg:Treasury	0.07	7.78	11.08	2.64	2.73	3.09
Blmbg:Credit	0.57	13.26	14.88	4.83	4.43	5.32
Blmbg:MBS	0.35	5.97	8.87	2.53	2.67	3.10
Blmbg:TIPS	0.26	7.85	8.96	2.44	2.33	3.36
ML:HY Corp Cash Pay	0.24	11.78	8.36	6.04	5.17	7.66
CS:Leveraged Loan	(0.49)	5.87	2.61	4.24	3.95	5.20
3 Month T-Bill	0.19	2.01	2.40	1.60	1.02	0.56

Treasury Yield Curve



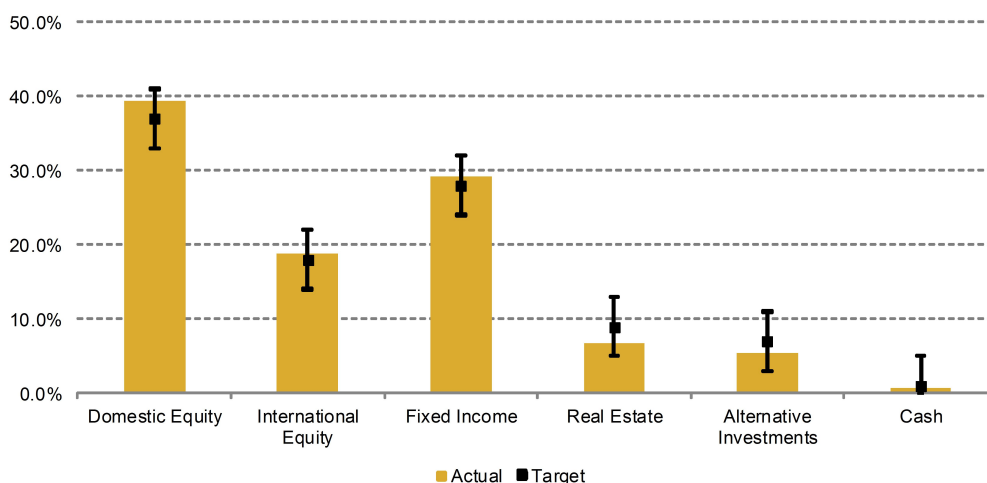
Fixed income markets were relatively flat in October amid meaningful Fed actions and calming trade tensions. The Fed cut rates by 25 bps for the third time this year to a target range of 1.50% to 1.75%, and provided guidance that they will pause future rate cuts barring a "material reassessment." The Fed also announced balance sheet expansion in the form of purchasing \$60 billion of Treasury bills each month through June 2020, with the goal of providing liquidity to the overnight repo market that saw significant volatility in September. The Fed's actions led to steepening of the Treasury curve as 3-month T-Bill yields fell 32 basis points to 1.59%, 10-year yields increased one basis point to 1.69% and 30-year yields increased 5 bps to 2.17%.

The Bloomberg Aggregate Index returned 0.3% in October, a month that saw rates fall on the shorter end of the curve, with more stability on the longer end. Corporate spreads tightened by five basis points, to close at 110 bps, in response to better than expected corporate earnings and softening tension with China. The Bloomberg Credit Index increased 0.6% to lead fixed income sectors. Conversely, high yield spreads widened by 19 bps, to close at 392 bps, as high yield flows slowed in October. The ML High Yield CP Index returned 0.2% for the month. Mortgages (Bloomberg Mortgage Backed Securities Index) performed relatively well in the month, returning 0.4%. Long bonds (Bloomberg Long Gov/Credit Index: -0.1%) struggled as rates rose modestly across that portion of the curve. TIPS (Bloomberg U.S. TIPS Index: +0.3%) outperformed nominal bonds (Bloomberg U.S. Treasury Index: +0.1%).

Total Fund

The market value of the Total Fund was \$43.29 billion at the end of October, an increase of \$623.3 million from the prior month. The Fund returned 1.71% during the month, leading the 1.59% return of its benchmark. Domestic Equity (+2.12%) modestly underperformed its benchmark (+2.15%). International Equity (+3.54%) led its benchmark for the month. The Fixed Income composite returned 0.30%, falling in line with its benchmark return. Real Estate returned 1.18% in October, outperforming its benchmark return of 0.36%. Over the last three months, Alternatives (+4.07%) led the benchmark return of 2.18%.

As of October month end, all asset 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.



U.S. Equity

The U.S. Equity composite returned 2.12% during October, modestly trailing the Russell 3000 Index by three basis points. For the month, small caps outperformed large caps.

Large Cap: IMRF's Large Cap managers returned 2.20% in October, leading the 2.12% return of the Russell 1000 Index. In aggregate, growth managers returned 2.08%, while the Russell 1000 Growth Index returned 2.82%. Value managers returned 2.36% collectively, outperforming the 1.40% return of the Russell 1000 Value Index.

Small Cap: The Small Cap composite (+2.32%) trailed the Russell 2000 Index by 31 basis points in October. The growth managers collectively returned 3.43%, relative to the 2.85% return of the Russell 2000 Growth Index. The value managers returned 1.79% during the month, trailing the Russell 2000 Value Index by 63 basis points. The Micro Cap composite returned 2.23% in October.

Public Real Assets: The Public Real Assets portfolio managed by Brookfield and Cohen & Steers returned 0.10% in October, underperforming the custom benchmark by 46 basis points.

International Equity

The International Equity composite returned 3.54% in October, outperforming its MSCI ACWI ex-U.S. benchmark (+3.49%).

International Large Cap: International Large Cap managers collectively returned 3.46% in October, trailing the MSCI ACWI ex-U.S. Index by three basis points. International Large Cap Growth managers (+3.51%) trailed the MSCI ACWI ex-U.S. Growth Index by 14 basis points. International Large Cap Value managers returned 3.06% for the month, trailing the MSCI ACWI ex-U.S. Value Index (+3.35%).

International Small Cap and Emerging Markets: The International Small Cap managers returned 4.05% in October, returning in line with the MSCI ACWI Small Cap ex-U.S. Index. The Emerging Markets portfolio, managed by Genesis, returned 3.90% during the month, trailing the MSCI Emerging Markets Index by 33 basis points.

Fixed Income

The Fixed Income composite returned 0.30% in October, falling in line with the Bloomberg Aggregate Index.

Active Core: In aggregate, the Domestic Active Core managers returned 0.19% in October, 11 basis points behind the Bloomberg Aggregate Index.

Core Plus: Domestic Fixed Core Plus managers ended the month with a return of 0.45%, leading the Bloomberg Aggregate Index by 15 basis points.

Bank Loans: The Bank Loans portfolio, managed by Barings, returned -0.72% for the month, trailing the custom benchmark by 31 basis points.

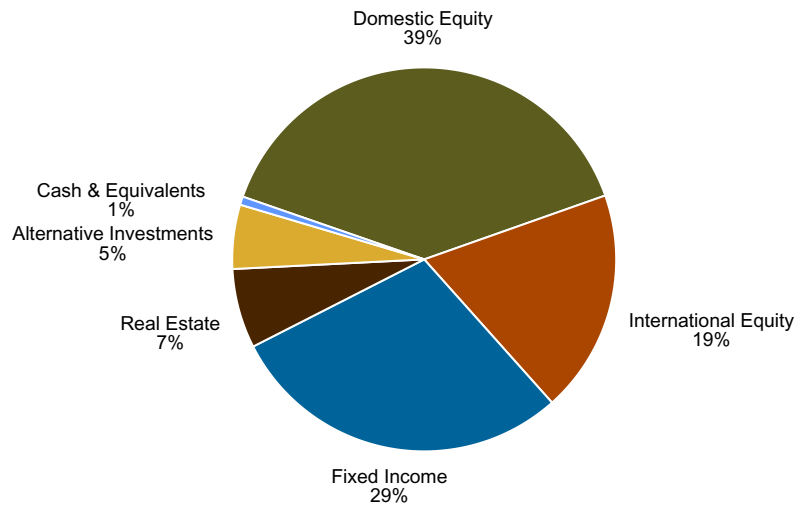
Emerging Markets: The Emerging Markets Debt component, managed by Standish, returned 1.94% in October, 19 basis points ahead of the custom benchmark.

High Yield: The High Yield allocation, managed by MacKay Shields, returned 0.34% in October, leading the benchmark return of 0.24%.

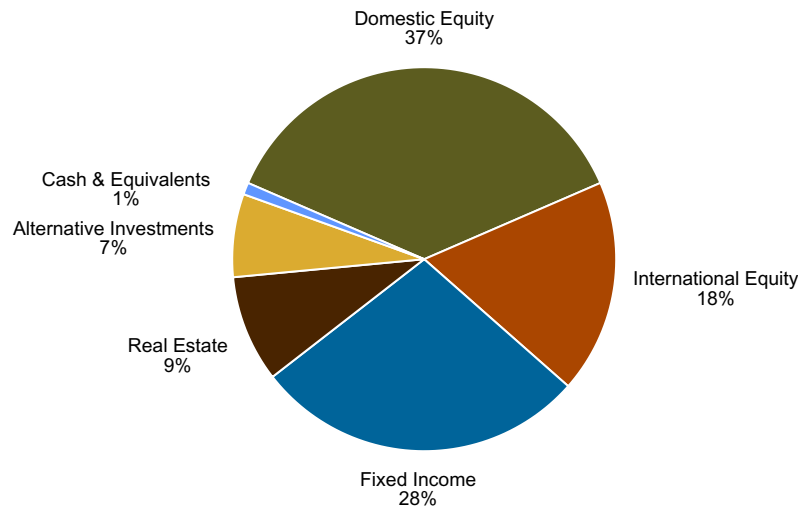
Actual vs Target Asset Allocation

The first chart below shows the Fund's asset allocation as of October 31, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$Millions Actual	Percent Actual	Percent Target	Percent Difference	\$Millions Difference
Domestic Equity	16,999	39.3%	37.0%	2.3%	981
International Equity	8,140	18.8%	18.0%	0.8%	347
Fixed Income	12,594	29.1%	28.0%	1.1%	472
Real Estate	2,898	6.7%	9.0%	(2.3%)	(998)
Alternative Investments	2,357	5.4%	7.0%	(1.6%)	(673)
Cash & Equivalents	304	0.7%	1.0%	(0.3%)	(129)
Total	43,292	100.0%	100.0%		

* Current Month Target = 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.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of October 31, 2019, with the distribution as of September 30, 2019.

Asset Distribution Across Investment Managers

	October 31, 2019		September 30, 2019	
	Market Value	Percent	Market Value	Percent
Domestic Equity*	\$16,999,293,786	39.27%	\$16,654,424,996	39.03%
Large Cap Growth				
NTGI S&P 500 Growth Idx	2,388,952,315	5.52%	2,347,912,126	5.50%
Sands	1,939,397,380	4.48%	1,899,806,232	4.45%
Piedmont Russell 1000 G	1,072,687,632	2.48%	1,043,300,770	2.45%
Large Cap Value				
Dodge & Cox	1,352,542,641	3.12%	1,325,525,813	3.11%
BMO	1,168,161,554	2.70%	1,158,391,244	2.71%
LSV	1,570,261,367	3.63%	1,525,607,691	3.58%
NTGI S&P 500 Value Idx	1,598,805,989	3.69%	1,557,660,103	3.65%
Large Cap Core				
NTGI MarketCap Index	2,455,893,435	5.67%	2,455,205,435	5.75%
Quantitative Factor Strategies				
Quantitative U.S. Equity - SB	251,182,370	0.58%	200,205,771	0.47%
Small Cap Growth				
Frontier	570,101,496	1.32%	549,779,686	1.29%
FIAM	171,447,823	0.40%	167,190,415	0.39%
Small Cap Value				
Channing	226,835,454	0.52%	224,415,464	0.53%
Dimensional Small Cap Value	562,908,525	1.30%	552,839,990	1.30%
Inv. Counselors of Maryland	694,413,449	1.60%	680,774,567	1.60%
Micro Cap				
Dimensional Micro Cap	428,923,231	0.99%	419,553,571	0.98%
Public Real Assets				
Brookfield	170,192,699	0.39%	171,137,397	0.40%
Cohen & Steers	376,586,429	0.87%	375,118,722	0.88%
International Equity	\$8,139,562,321	18.80%	\$7,933,894,320	18.59%
International Large Cap Growth				
EARNEST Partners	571,052,783	1.32%	627,517,107	1.47%
William Blair	783,863,262	1.81%	754,094,122	1.77%
International Large Cap Value				
Brandes	608,973,733	1.41%	597,158,672	1.40%
Mondrian	554,553,584	1.28%	530,808,199	1.24%
Lazard	117,832,969	0.27%	115,339,075	0.27%
International Large Cap Core				
Arrowstreet	714,511,103	1.65%	690,820,493	1.62%
Brown	358,232,068	0.83%	351,962,518	0.82%
GlobeFlex	555,703,332	1.28%	533,378,387	1.25%
NTGI MSCI EAFE Index	1,929,594,279	4.46%	1,860,725,488	4.36%
Progress Intl Equity	328,082,145	0.76%	315,295,304	0.74%
International All Cap Developed				
Ativo International	142,312,978	0.33%	137,997,260	0.32%
International Small Cap				
Franklin Templeton	193,920,561	0.45%	188,344,495	0.44%
William Blair	287,127,021	0.66%	273,978,093	0.64%
Emerging Markets				
Genesis	993,802,504	2.30%	956,475,108	2.24%

* includes asset in equity transition account.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of October 31, 2019, with the distribution as of September 30, 2019.

Asset Distribution Across Investment Managers

	October 31, 2019		September 30, 2019	
	Market Value	Percent	Market Value	Percent
Total Fixed Income	\$12,593,901,001	29.09%	\$12,579,942,292	29.48%
Domestic Fixed Core				
Brandes Core	367,569,325	0.85%	366,947,213	0.86%
EARNEST Partners	1,008,772,183	2.33%	1,008,533,131	2.36%
Piedmont Investment	1,070,740,097	2.47%	1,070,579,524	2.51%
Garcia Hamilton	1,061,725,001	2.45%	1,062,415,563	2.49%
Domestic Fixed Passive Core				
NTGI Blmbg Agg. Index	1,811,418,339	4.18%	1,806,186,515	4.23%
BlackRock US Debt	1,736,228,252	4.01%	1,731,155,694	4.06%
Domestic Fixed Core Plus				
LM Capital	917,197,751	2.12%	915,417,555	2.15%
Progress Fixed Income	975,231,001	2.25%	972,497,037	2.28%
Taplin, Canida, & Habacht	943,876,837	2.18%	942,703,197	2.21%
Western	1,136,149,939	2.62%	1,129,828,773	2.65%
Bank Loans				
Barings Global Loan Fund	560,893,519	1.30%	572,585,272	1.34%
Emerging Markets Debt				
Standish	220,575,462	0.51%	216,368,843	0.51%
High Yield				
Mackay Shields	783,196,538	1.81%	784,396,985	1.84%
FIAM High Yield	326,752	0.00%	326,988	0.00%

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of October 31, 2019, with the distribution as of September 30, 2019.

Asset Distribution Across Investment Managers

	October 31, 2019		September 30, 2019	
	Market Value	Percent	Market Value	Percent
Real Estate	\$2,897,789,679	6.69%	\$2,878,846,374	6.75%
Real Estate Core				
TA Buckhead Ind. Prop.	582,181,439	1.34%	582,181,439	1.36%
Barings Core Property Fund	1,070	0.00%	1,070	0.00%
Barings European Core Property	122,876,654	0.28%	120,073,619	0.28%
Blackstone Property Partners Europe	126,568,389	0.29%	123,681,138	0.29%
INVESCO Core RE	211,508,105	0.49%	209,185,978	0.49%
INVESCO Euro real estate	56,582,922	0.13%	54,726,527	0.13%
AEW Core Property Trust	241,173,186	0.56%	237,519,445	0.56%
CBRE US Core Property Trust	200,730,602	0.46%	197,435,087	0.46%
Real Estate Non-Core				
Artemis MWBE Spruce	242,714,086	0.56%	246,078,082	0.58%
Franklin Templeton EMREFF	14,756,093	0.03%	13,998,139	0.03%
Security Capital	58,840,456	0.14%	58,006,135	0.14%
Dune II	21,778,218	0.05%	24,452,942	0.06%
Non-Core Real Estate Funds*	869,714,927	2.01%	869,329,739	2.04%
Non-Core Intl Real Estate Funds**	147,644,730	0.34%	141,458,231	0.33%
Rockwood Fund VIII	188,953	0.00%	188,953	0.00%
Almanac ARS V	529,848	0.00%	529,848	0.00%
TA Fund IX	1	0.00%	1	0.00%
Alternative Investments	\$2,356,912,718	5.44%	\$2,334,098,504	5.47%
Absolute Return				
Aurora	564,932	0.00%	615,766	0.00%
Private Equity				
Abbott	340,171,696	0.79%	335,260,049	0.79%
Muller & Monroe MPEFF	5,139,236	0.01%	5,139,236	0.01%
Pantheon	263,951,026	0.61%	258,175,653	0.61%
Private Equity Fund - Domestic	973,956,193	2.25%	1,097,286,582	2.57%
Private Equity Fund - International	320,526,336	0.74%	299,190,016	0.70%
Oakbrook Opportunities Fund	4,302,045	0.01%	3,099,607	0.01%
Private Credit				
Private Credit Fund-Domestic	119,773,782	0.28%	-	-
Agriculture				
Premiere Partners IV	209,446,580	0.48%	216,995,812	0.51%
Timberland				
Forest Investment Assoc.	74,100,301	0.17%	73,516,408	0.17%
Unlisted Infrastructure				
Unlisted Infrastructure Funds	44,980,591	0.10%	44,819,374	0.11%
Cash & Equivalents	\$304,065,615	0.70%	\$287,013,845	0.67%
Total Fund	\$43,291,525,121	100.0%	\$42,668,220,330	100.0%

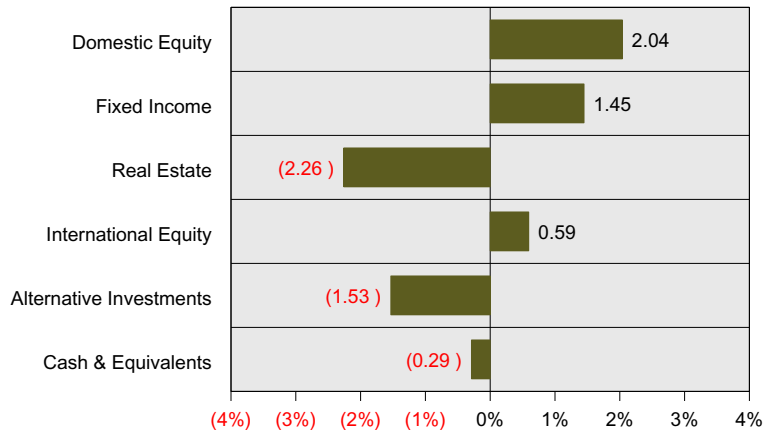
* Non-Core Real Estate Funds funded since September 2011.

** Non-Core International Real Estate Funds funded since August 2014.

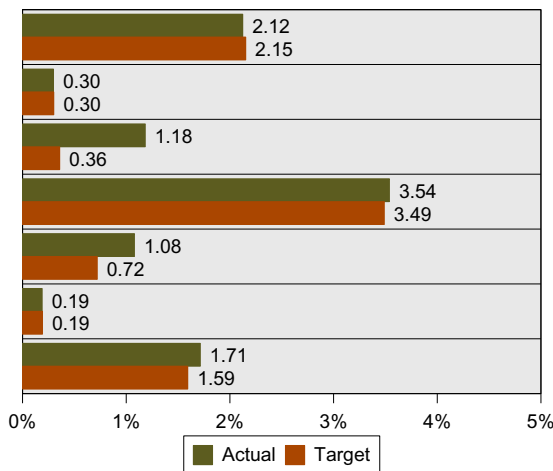
Monthly Total Fund Relative Attribution - October 31, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

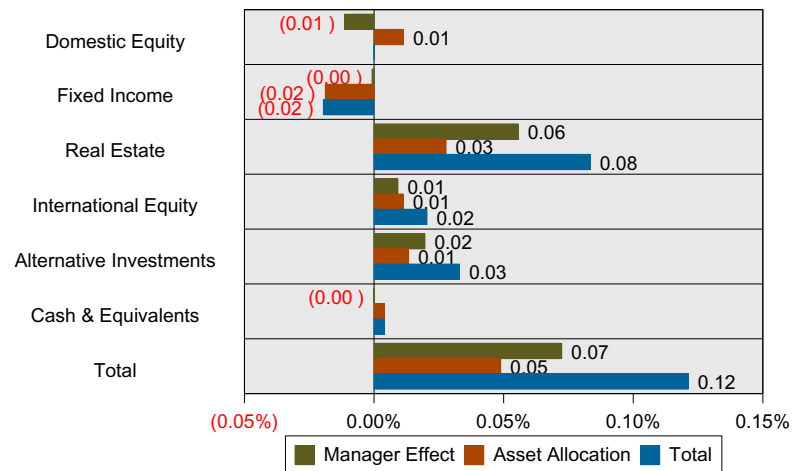
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Month ended October 31, 2019

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39%	37%	2.12%	2.15%	(0.01%)	0.01%	0.00%
Fixed Income	29%	28%	0.30%	0.30%	(0.00%)	(0.02%)	(0.02%)
Real Estate	7%	9%	1.18%	0.36%	0.06%	0.03%	0.08%
International Equity	19%	18%	3.54%	3.49%	0.01%	0.01%	0.02%
Alternative Investments	5%	7%	1.08%	0.72%	0.02%	0.01%	0.03%
Cash & Equivalents	1%	1%	0.19%	0.19%	(0.00%)	0.00%	0.00%
Total			1.71%	1.59%	+ 0.07%	+ 0.05%	0.12%

* Current Month Target = 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

The table below details the rates of return for the fund's asset class composites over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Domestic Equity	2.12%	1.01%	20.99%	11.74%
Blended Benchmark**	2.15%	1.83%	22.68%	13.49%
Domestic Equity - Net	2.11%	0.95%	20.80%	11.53%
International Equity	3.54%	3.43%	17.10%	11.88%
MSCI ACWI x US (Net)	3.49%	2.87%	15.45%	11.27%
International Equity - Net	3.52%	3.34%	16.82%	11.54%
Fixed Income	0.30%	2.10%	9.22%	10.96%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Fixed Income - Net	0.28%	2.07%	9.11%	10.82%
Real Estate	1.18%	2.57%	8.02%	9.93%
Blended Benchmark***	0.36%	1.08%	3.45%	4.49%
Real Estate - Net	1.18%	2.57%	7.99%	9.89%
Alternative Investments	1.08%	4.07%	7.89%	13.92%
Alternatives Custom Benchmark****	0.72%	2.18%	7.45%	9.00%
Alternative Investments - Net	1.08%	4.07%	7.84%	13.85%
Private Equity	1.75%	5.18%	10.00%	16.92%
Alternatives Custom Benchmark****	0.72%	2.18%	7.45%	9.00%
Agriculture	(3.48%)	(3.46%)	(5.76%)	(2.33%)
Blended Benchmark***	0.36%	1.08%	3.45%	4.49%
Timberland	0.79%	0.55%	1.25%	0.63%
Blended Benchmark***	0.36%	1.08%	3.45%	4.49%
Unlisted Infrastructure	(0.21%)	3.78%	6.59%	7.77%
Alternatives Custom Benchmark****	0.72%	2.18%	7.45%	9.00%
Total Fund	1.71%	2.04%	15.13%	11.42%
Total Fund - Net	1.70%	1.99%	14.97%	11.22%
Total Fund Benchmark	1.59%	2.14%	14.56%	11.68%

* Current Month Target = 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.

** The Blended Benchmark is currently Russell 3000 Index. Returns prior to January 1, 2015, reflect those of the Dow Jones U.S. Total Stock Market Index.

*** The Blended Benchmark is currently ODCE Value Weighted Index. Returns between January 1, 2007 and December 31, 2012 reflect NPI+1%. Returns prior to January 1, 2007, reflect those of the Consumer Price Index +5%.

Given that ODCE returns are updated quarterly, an approximation of the Index is used in the monthly reports.

**** The Alternatives Custom Benchmark is based on an annualized rate of return of 9.0%. Prior to July 1, 2010 the Benchmark was based on an annual return of 12.0%. Prior to 2004, the Benchmark was based on an annual return of 13.0%. Prior to 2003, it was based on an annual return of 15.0%.

Asset Class Returns

The table below details the rates of return for the fund's asset class composites over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 84 Months	Last 120 Months	Since Inception
Domestic Equity	13.74%	9.48%	13.28%	13.33%	11.53% ^(1/82)
Blended Benchmark**	14.47%	10.31%	13.60%	13.65%	11.38% ^(1/82)
Domestic Equity - Net	13.52%	9.24%	13.03%	13.06%	8.44% ^(1/05)
International Equity	8.72%	5.05%	7.05%	6.56%	7.73% ^(9/86)
MSCI ACWI x US (Net)	8.08%	3.82%	5.47%	4.94%	-
International Equity - Net	8.37%	4.70%	6.71%	6.23%	5.54% ^(1/05)
Fixed Income	3.95%	3.78%	3.48%	4.80%	8.23% ^(1/82)
Blmbg Aggregate Index	3.29%	3.24%	2.74%	3.73%	7.71% ^(1/82)
Fixed Income - Net	3.80%	3.63%	3.33%	4.65%	4.85% ^(1/05)
Real Estate - Net	9.49%	10.18%	10.50%	9.77%	7.50% ^(1/05)
Blended Benchmark***	6.25%	8.22%	9.31%	10.25%	7.47% ^(1/05)
Alternative Investments	13.36%	10.55%	10.66%	9.69%	10.87% ^(2/86)
Alternatives Custom Benchmark****	9.00%	9.00%	9.00%	9.20%	12.67% ^(2/86)
Alternative Investments - Net	13.20%	10.29%	10.39%	9.41%	8.75% ^(1/05)
Private Equity	16.69%	13.21%	13.19%	12.90%	13.10% ^(2/86)
Alternatives Custom Benchmark****	9.00%	9.00%	9.00%	9.20%	12.67% ^(2/86)
Agriculture	(3.21%)	4.82%	9.31%	8.02%	7.02% ^(10/97)
Blended Benchmark***	6.25%	8.22%	9.31%	10.25%	7.40% ^(10/97)
Timberland	1.55%	0.99%	3.12%	2.79%	7.39% ^(10/92)
Blended Benchmark***	6.25%	8.22%	9.31%	10.25%	7.44% ^(10/92)
Unlisted Infrastructure	-	-	-	-	9.39% ^(4/18)
Alternatives Custom Benchmark****	9.00%	9.00%	9.00%	9.20%	9.00% ^(4/18)
Total Fund	9.64%	6.99%	8.93%	9.11%	9.83% ^(1/82)
Total Fund - Net	9.43%	6.77%	8.70%	8.88%	7.15% ^(1/05)
Total Fund Benchmark	9.03%	6.99%	8.43%	8.73%	7.01% ^(1/05)

* Current Month Target = 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.

** The Blended Benchmark is currently Russell 3000 Index. Returns prior to January 1, 2015, reflect those of the Dow Jones U.S. Total Stock Market Index.

*** The Blended Benchmark is currently ODCE Value Weighted Index. Returns between January 1, 2007 and December 31, 2012 reflect NPI+1%. Returns prior to January 1, 2007, reflect those of the Consumer Price Index +5%.

Given that ODCE returns are updated quarterly, an approximation of the Index is used in the monthly reports.

**** The Alternatives Custom Benchmark is based on an annualized rate of return of 9.0%. Prior to July 1, 2010 the Benchmark was based on an annual return of 12.0%. Prior to 2004, the Benchmark was based on an annual return of 13.0%. Prior to 2003, it was based on an annual return of 15.0%.

Large Cap Equity Returns

The table below details the rates of return for the fund's large cap growth and large cap value managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Large Cap Equity	2.20%	1.08%	21.25%	12.53%
Russell 1000 Index	2.12%	1.99%	23.09%	14.15%
Large Cap Growth	2.08%	(0.61%)	23.95%	16.08%
NTGI S&P 500 Growth Idx	1.75%	1.32%	23.19%	14.32%
S&P/Citi 500 Growth Index	1.74%	1.31%	23.17%	14.28%
NTGI S&P 500 Growth Idx - Net	1.75%	1.32%	23.19%	14.31%
Piedmont Russell 1000 G	2.82%	2.04%	26.74%	17.08%
Russell 1000 Growth Index	2.82%	2.04%	26.77%	17.10%
Piedmont Russell 1000 G - Net	2.82%	2.04%	26.72%	17.07%
Sands	2.08%	(4.24%)	23.37%	17.59%
LCG Blended Benchmark*	2.82%	2.04%	26.77%	17.10%
Russell 1000 Growth Index	2.82%	2.04%	26.77%	17.10%
Sands - Net	2.08%	(4.30%)	23.18%	17.31%
Large Cap Value	2.36%	2.38%	18.46%	9.28%
Dodge & Cox	2.30%	0.62%	15.77%	6.35%
LCV Blended Benchmark**	1.40%	1.93%	19.46%	11.21%
Russell 1000 Value Index	1.40%	1.93%	19.46%	11.21%
Dodge & Cox - Net	2.24%	0.51%	15.54%	6.07%
BMO	1.04%	0.54%	14.09%	5.48%
LCV Blended Benchmark**	1.40%	1.93%	19.46%	11.21%
Russell 1000 Value Index	1.40%	1.93%	19.46%	11.21%
BMO - Net	1.04%	0.47%	13.90%	5.24%
LSV	3.12%	3.89%	19.38%	9.43%
LCV Blended Benchmark**	1.40%	1.93%	19.46%	11.21%
Russell 1000 Value Index	1.40%	1.93%	19.46%	11.21%
LSV - Net	3.06%	3.84%	19.11%	9.18%
NTGI S&P 500 Value Idx	2.64%	3.72%	23.19%	14.46%
S&P/Citi 500 Value Index	2.65%	3.73%	23.19%	14.45%
NTGI S&P 500 Value Idx - Net	2.64%	3.71%	23.18%	14.46%
Large Cap Passive Core	2.10%	1.78%	22.64%	13.47%
NTGI MarketCap Idx	2.10%	1.78%	22.64%	13.47%
DJ U.S. Total Stock Market Index	2.12%	1.79%	22.60%	13.40%
NTGI MarketCap Idx - Net	2.10%	1.78%	22.63%	13.46%
Quantitative Factor Strategies	0.23%	-	-	-
Quantitative US Equity - SciBeta	0.23%	-	-	-
SciBeta US HFI M-Beta/Strat 6F EW	0.25%	-	-	-
Quantitative US Equity - SciBeta - Net	0.23%	-	-	-

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Growth Index.

** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

Large Cap Equity Returns

The table below details the rates of return for the fund's large cap growth and large cap value managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception	
Large Cap Equity	14.38%	10.03%	13.56%	11.20%	(1/82)
Russell 1000 Index	14.73%	10.55%	13.72%	11.59%	(1/82)
Large Cap Growth	18.32%	12.20%	14.74%	11.89%	(1/82)
NTGI S&P 500 Growth Idx	17.21%	12.55%	14.96%	7.96%	(8/01)
S&P/Citi 500 Growth Index	17.23%	12.56%	14.94%	7.94%	(8/01)
NTGI S&P 500 Growth Idx - Net	17.20%	12.54%	14.95%	9.84%	(1/05)
Piedmont Russell 1000 G	-	-	-	6.09%	(10/18)
Russell 1000 Growth Index	18.92%	13.43%	15.41%	6.11%	(10/18)
Piedmont Russell 1000 G - Net	-	-	-	6.08%	(10/18)
Sands	19.65%	11.70%	17.32%	12.03%	(11/03)
LCG Blended Benchmark*	18.92%	13.43%	15.41%	9.98%	(11/03)
Russell 1000 Growth Index	18.92%	13.43%	15.41%	10.04%	(11/03)
Sands - Net	19.39%	11.45%	17.06%	11.00%	(1/05)
Large Cap Value	11.77%	8.28%	12.67%	10.29%	(10/82)
Dodge & Cox	12.33%	8.90%	12.89%	9.40%	(9/03)
LCV Blended Benchmark**	10.51%	7.61%	11.96%	8.35%	(9/03)
Russell 1000 Value Index	10.51%	7.61%	11.96%	8.51%	(9/03)
Dodge & Cox - Net	12.08%	8.67%	12.65%	7.78%	(1/05)
BMO	10.54%	7.12%	12.23%	7.88%	(2/01)
LCV Blended Benchmark**	10.51%	7.61%	11.96%	5.79%	(2/01)
Russell 1000 Value Index	10.51%	7.61%	11.96%	6.78%	(2/01)
BMO - Net	10.30%	6.89%	11.98%	7.90%	(1/05)
LSV	11.81%	8.29%	12.96%	10.89%	(2/03)
LCV Blended Benchmark**	10.51%	7.61%	11.96%	9.26%	(2/03)
Russell 1000 Value Index	10.51%	7.61%	11.96%	9.27%	(2/03)
LSV - Net	11.55%	8.04%	12.67%	8.30%	(1/05)
NTGI S&P 500 Value Idx	12.19%	8.71%	12.34%	6.04%	(8/99)
S&P/Citi 500 Value Index	12.14%	8.64%	12.27%	6.01%	(8/99)
NTGI S&P 500 Value Idx - Net	12.18%	8.70%	12.33%	7.31%	(1/05)
Large Cap Passive Core	14.48%	10.35%	13.68%	11.14%	(1/85)
NTGI MarketCap Idx	14.48%	10.35%	13.69%	10.91%	(2/85)
DJ U.S. Total Stock Market Index	14.42%	10.26%	13.62%	10.86%	(2/85)
NTGI MarketCap Idx - Net	14.48%	10.34%	13.68%	8.70%	(1/05)
Quantitative Factor Strategies	-	-	-	0.63%	(9/19)
Quantitative US Equity - SciBeta	-	-	-	0.63%	(9/19)
SciBeta US HFI M-Beta/Strat 6F EW	-	-	-	0.28%	(9/19)
Quantitative US Equity - SciBeta - Net	-	-	-	0.63%	(9/19)

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Growth Index.

** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

Small Cap Equity Returns

The table below details the rates of return for the fund's small cap growth, small cap value, and micro cap managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Small Cap Equity	2.32%	0.29%	18.95%	6.80%
Russell 2000 Index	2.63%	(0.40%)	17.18%	4.90%
Small Cap Growth	3.43%	0.37%	24.14%	13.08%
Frontier	3.70%	1.15%	23.85%	12.76%
Russell 2000 Growth Index	2.85%	(2.40%)	18.62%	6.40%
Frontier - Net	3.57%	1.02%	22.89%	11.88%
FIAM	2.55%	(2.13%)	23.71%	12.57%
Russell 2000 Growth Index	2.85%	(2.40%)	18.62%	6.40%
FIAM - Net	2.55%	(2.35%)	23.24%	12.13%
Small Cap Value	1.79%	0.37%	16.91%	4.39%
Channing	1.08%	(1.82%)	17.89%	5.45%
Russell 2000 Value Index	2.42%	1.67%	15.55%	3.22%
Channing - Net	0.95%	(2.07%)	17.31%	4.93%
DFA Small Cap Value	1.82%	(0.14%)	11.32%	(2.01%)
Russell 2000 Value Index	2.42%	1.67%	15.55%	3.22%
DFA Small Cap Value - Net	1.82%	(0.27%)	10.92%	(2.50%)
Inv. Counselors of Maryland	2.00%	1.53%	21.52%	9.85%
Russell 2000 Value Index	2.42%	1.67%	15.55%	3.22%
Inv. Couns. of Maryland - Net	2.00%	1.29%	21.00%	9.27%
Micro Cap	2.23%	(0.10%)	13.76%	0.32%
DFA Micro Cap	2.23%	(0.10%)	13.77%	1.16%
Russell 2000 Value Index	2.42%	1.67%	15.55%	3.22%
Russell 2000 Index	2.63%	(0.40%)	17.18%	4.90%
DFA Micro Cap - Net	2.23%	(0.22%)	13.36%	0.66%
Public Real Assets	0.10%	2.87%	23.67%	20.00%
Public Real Assets Benchmark (1)	0.56%	3.11%	21.75%	19.84%
Brookfield Public Global Inf	(0.55%)	1.14%	22.90%	17.34%
Dow Jones Global Infra Comp Idx	(0.16%)	1.78%	22.03%	17.09%
Brookfield Public Global Inf - Net	(0.55%)	1.01%	22.44%	16.73%
Cohen & Steers Public Global Inf	0.39%	3.68%	24.03%	21.25%
FTSE GI Core Infr 50/50 N	0.80%	3.55%	21.65%	20.72%
Cohen & St Public Global Inf - Net	0.39%	3.57%	23.64%	20.74%

(1) 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index

Small Cap Equity Returns

The table below details the rates of return for the fund's small cap growth, small cap value, and micro cap managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Small Cap Equity	10.89%	7.30%	12.71%	11.96% ^(7/88)
Russell 2000 Index	10.96%	7.37%	12.27%	9.30% ^(7/88)
Small Cap Growth	13.82%	9.33%	13.57%	12.84% ^(7/88)
Frontier	19.00%	10.36%	13.84%	13.14% ^(8/88)
Russell 2000 Growth Index	13.22%	8.38%	13.38%	8.11% ^(8/88)
Frontier - Net	18.31%	9.69%	13.12%	9.77% ^(1/05)
FIAM	11.52%	9.56%	13.88%	13.33% ^(8/88)
Russell 2000 Growth Index	13.22%	8.38%	13.38%	8.11% ^(8/88)
FIAM - Net	11.04%	9.02%	13.28%	10.46% ^(1/05)
Small Cap Value	9.35%	6.79%	12.24%	11.58% ^(9/89)
Channing	7.73%	5.83%	-	9.69% ^(7/11)
Russell 2000 Value Index	8.60%	6.24%	11.08%	8.64% ^(7/11)
Channing - Net	7.19%	5.30%	-	9.09% ^(7/11)
DFA Small Cap Value	6.70%	4.94%	12.25%	11.57% ^(2/96)
Russell 2000 Value Index	8.60%	6.24%	11.08%	9.35% ^(2/96)
DFA Small Cap Value - Net	6.14%	4.43%	11.71%	7.16% ^(1/05)
Inv. Counselors of Maryland	12.44%	9.51%	13.03%	11.41% ^(5/99)
Russell 2000 Value Index	8.60%	6.24%	11.08%	8.86% ^(5/99)
Inv. Couns. of Maryland - Net	11.85%	8.95%	12.50%	8.55% ^(1/05)
Micro Cap	8.15%	4.32%	12.07%	11.31% ^(7/84)
DFA Micro Cap	10.36%	7.62%	13.35%	10.95% ^(8/87)
Russell 2000 Value Index	8.60%	6.24%	11.08%	9.70% ^(8/87)
Russell 2000 Index	10.96%	7.37%	12.27%	8.71% ^(8/87)
DFA Micro Cap - Net	9.81%	7.09%	12.80%	7.61% ^(1/05)
Public Real Assets	-	-	-	9.14% ^(8/17)
Public Real Assets Benchmark (1)	-	-	-	7.25% ^(8/17)
Brookfield Public Global Inf	-	-	-	5.91% ^(8/17)
Dow Jones Global Infra Comp Idx	7.65%	3.61%	10.74%	4.84% ^(8/17)
Brookfield Public Global Inf - Net	-	-	-	5.43% ^(8/17)
Cohen & Steers Public Global Inf	-	-	-	10.71% ^(8/17)
FTSE GI Core Infr 50/50 N	10.73%	6.90%	-	8.03% ^(8/17)
Cohen & St Public Global Inf - Net	-	-	-	10.31% ^(8/17)

(1) 1/3 Dow Jones Brookfield Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index

International Equity Returns

The table below details the rates of return for the fund's international large cap growth and international large cap value managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Intl Large Cap Equity	3.46%	3.65%	16.27%	10.49%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
Intl Large Cap Growth	3.51%	2.73%	19.46%	12.62%
EARNEST Partners	2.96%	2.13%	14.94%	8.12%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
MSCI ACWI ex-US Growth	3.65%	3.03%	20.86%	17.12%
EARNEST Partners - Net	2.91%	2.09%	14.83%	7.96%
William Blair	3.95%	3.21%	23.45%	16.60%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
MSCI ACWI ex-US Growth	3.65%	3.03%	20.86%	17.12%
William Blair - Net	3.95%	3.12%	23.13%	16.18%
Intl Large Cap Value	3.06%	3.92%	11.91%	6.96%
Brandes	1.98%	3.84%	8.78%	2.37%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
MSCI ACWI ex-US Value	3.35%	2.88%	11.14%	6.64%
Brandes - Net	1.93%	3.79%	8.56%	2.16%
Mondrian	4.47%	4.54%	14.54%	11.32%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
MSCI ACWI ex-US Value	3.35%	2.88%	11.14%	6.64%
Mondrian - Net	4.37%	4.33%	14.03%	10.82%
Lazard	2.16%	1.52%	16.57%	12.27%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
MSCI ACWI ex-US Value	3.35%	2.88%	11.14%	6.64%
Lazard - Net	2.10%	1.39%	16.29%	11.92%

International Equity Returns

The table below details the rates of return for the fund's international large cap growth and international large cap value managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Intl Large Cap Equity	8.58%	4.96%	6.54%	7.72% ^(9/86)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	-
Intl Large Cap Growth	8.94%	4.76%	6.91%	8.29% ^(9/02)
EARNEST Partners	8.02%	3.70%	6.19%	8.82% ^(10/04)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	5.87% ^(10/04)
MSCI ACWI ex-US Growth	10.32%	6.08%	6.61%	6.96% ^(10/04)
EARNEST Partners - Net	7.84%	3.51%	5.84%	7.56% ^(1/05)
William Blair	9.78%	5.72%	8.24%	9.59% ^(10/02)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	8.00% ^(10/02)
MSCI ACWI ex-US Growth	10.32%	6.08%	6.61%	8.53% ^(10/02)
William Blair - Net	9.42%	5.34%	7.85%	6.36% ^(1/05)
Intl Large Cap Value	6.76%	4.01%	5.05%	8.59% ^(10/95)
Brandes	5.66%	3.81%	5.14%	8.69% ^(1/96)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	5.13% ^(1/96)
MSCI ACWI ex-US Value	6.84%	2.49%	4.19%	-
Brandes - Net	5.40%	3.56%	4.90%	4.15% ^(1/05)
Mondrian	7.71%	4.28%	-	5.59% ^(4/12)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	4.98% ^(4/12)
MSCI ACWI ex-US Value	6.84%	2.49%	4.19%	4.31% ^(4/12)
Mondrian - Net	7.15%	3.74%	-	5.07% ^(4/12)
Lazard	8.39%	4.13%	-	6.35% ^(4/12)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	4.98% ^(4/12)
MSCI ACWI ex-US Value	6.84%	2.49%	4.19%	4.31% ^(4/12)
Lazard - Net	8.10%	3.70%	-	5.81% ^(4/12)

International Equity Returns

The table below details the rates of return for the fund's international large cap core, international small cap, and emerging markets managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Intl Large Cap Active Core	3.44%	3.08%	16.15%	10.44%
Arrowstreet	3.43%	2.87%	16.08%	10.44%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
Arrowstreet - Net	3.43%	2.75%	15.68%	9.92%
Brown	1.78%	1.32%	16.97%	10.26%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
Brown - Net	1.78%	1.26%	16.75%	9.98%
GlobeFlex	4.19%	3.84%	14.19%	8.28%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
GlobeFlex - Net	4.19%	3.73%	13.84%	7.83%
Progress Intl Equity Custom Benchmark	4.06%	4.42%	19.60%	15.33%
MSCI ACWI ex-US Index	3.49%	2.87%	15.45%	11.27%
Progress Intl Equity - Net	4.06%	4.29%	19.17%	14.75%
Intl Large Cap Pass. Core	3.70%	4.76%	17.31%	11.59%
NTGI MSCI EAFE Idx	3.70%	4.76%	17.31%	11.59%
MSCI EAFE Index	3.59%	3.80%	16.86%	11.04%
NTGI EAFE Idx - Net	3.70%	4.76%	17.30%	11.58%
Intl All Cap Developed	3.13%	2.44%	10.15%	-
Ativo International	3.13%	2.44%	-	-
MSCI EAFE + Canada	3.23%	3.52%	17.24%	11.08%
Ativo International - Net	3.00%	2.19%	-	-
International Small Cap	4.05%	3.16%	20.76%	13.21%
Franklin Templeton	2.96%	2.10%	16.41%	10.50%
ACWI Small Cap ex US	4.05%	3.51%	14.75%	8.77%
Franklin Templeton - Net	2.96%	1.92%	15.78%	9.67%
William Blair	4.80%	3.88%	24.11%	15.20%
ACWI Small Cap ex US	4.05%	3.51%	14.75%	8.77%
Intl SC Blended Benchmark	4.05%	3.51%	14.75%	8.77%
William Blair - Net	4.80%	3.69%	23.42%	14.30%
Emerging Markets	3.90%	2.25%	21.95%	23.73%
Genesis	3.90%	2.25%	21.95%	23.73%
MSCI Emerging Markets Index	4.23%	1.10%	10.72%	12.31%
Genesis - Net	3.90%	2.15%	21.47%	23.11%

Brown and GlobeFlex moved to International Large Cap Active Core April 1, 2011.

Progress Custom Benchmark is a comprised of each manager's weighted benchmark until 201712. after 201712 the benchmark is MSCI ACWI ex US - Net.

Intl SC Blended Benchmark consists of the S&P Developed Ex-U.S. Small Cap Index through May 31, 2011 and the MSCI ACWI Ex-U.S. Small Cap Index thereafter.

International Equity Returns

The table below details the rates of return for the fund's international large cap core, international small cap, and emerging markets managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Intl Large Cap Active Core	9.22%	6.15%	7.91%	4.85% (2/08)
Arrowstreet	9.80%	6.54%	8.13%	5.08% (3/08)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	2.14% (3/08)
Arrowstreet - Net	9.30%	6.04%	7.63%	4.59% (3/08)
Brown	9.06%	6.16%	7.80%	7.81% (10/04)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	5.87% (10/04)
Brown - Net	8.23%	5.20%	7.04%	6.33% (1/05)
GlobeFlex	7.83%	5.49%	7.58%	4.81% (3/06)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	3.72% (3/06)
GlobeFlex - Net	7.43%	5.08%	7.15%	4.37% (3/06)
Progress Intl Equity	10.85%	6.54%	-	5.12% (7/14)
Custom Benchmark	8.72%	4.84%	-	3.35% (7/14)
MSCI ACWI ex-US Index	8.08%	3.82%	4.94%	2.34% (7/14)
Progress Intl Equity - Net	10.31%	6.04%	-	4.65% (7/14)
Intl Large Cap Pass. Core	8.92%	4.72%	5.83%	3.51% (1/00)
NTGI MSCI EAFE Idx	8.92%	4.72%	5.83%	3.87% (2/00)
MSCI EAFE Index	8.48%	4.31%	5.41%	3.48% (2/00)
NTGI EAFE Idx - Net	8.92%	4.71%	5.82%	4.98% (1/05)
Intl All Cap Developed	-	-	-	10.30% (2/19)
Ativo International	-	-	-	10.30% (2/19)
MSCI EAFE + Canada	8.33%	4.05%	5.28%	9.43% (2/19)
Ativo International - Net	-	-	-	9.93% (2/19)
International Small Cap	7.87%	6.11%	7.72%	4.73% (12/05)
Franklin Templeton	8.64%	5.95%	-	6.09% (8/11)
ACWI Small Cap ex US	6.98%	5.31%	6.67%	4.52% (8/11)
Franklin Templeton - Net	7.91%	5.17%	-	5.34% (8/11)
William Blair	7.23%	6.26%	-	8.94% (9/10)
ACWI Small Cap ex US	6.98%	5.31%	6.67%	6.76% (9/10)
Intl SC Blended Benchmark	6.98%	5.31%	6.61%	7.12% (9/10)
William Blair - Net	6.49%	5.44%	-	8.12% (9/10)
Emerging Markets	10.34%	4.99%	6.76%	9.06% (2/92)
Genesis	10.34%	4.99%	6.76%	11.15% (5/04)
MSCI Emerging Markets Index	7.77%	3.32%	4.14%	8.65% (5/04)
Genesis - Net	9.72%	4.38%	6.14%	9.19% (1/05)

Brown and GlobeFlex moved to International Large Cap Active Core April 1, 2011.

Progress Custom Benchmark is a comprised of each manager's weighted benchmark until 201712. after 201712 the benchmark is MSCI ACWI ex US - Net.

Intl SC Blended Benchmark consists of the S&P Developed Ex-U.S. Small Cap Index through May 31, 2011 and the MSCI ACWI Ex-U.S. Small Cap Index thereafter.

Fixed Income Returns

The table below details the rates of return for the fund's domestic fixed core managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Dom. Fixed Active Core	0.19%	2.25%	8.49%	10.83%
Brandes Core*	0.21%	2.07%	7.90%	9.78%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Brandes Core - Net	0.21%	2.07%	7.90%	9.78%
EARNEST Partners	0.28%	2.23%	8.74%	11.62%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
EARNEST Partners - Net	0.25%	2.17%	8.60%	11.45%
Piedmont	0.20%	2.26%	8.92%	11.03%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Piedmont - Net	0.20%	2.22%	8.82%	10.93%
Garcia Hamilton	0.10%	2.37%	8.07%	10.16%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Garcia Hamilton	0.08%	2.36%	7.98%	10.08%
Dom. Fixed Passive Core	0.29%	2.33%	8.91%	11.57%
BlackRock US Debt	0.29%	2.35%	8.92%	11.58%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
BlackRock US Debt - Net	0.29%	2.35%	8.91%	11.58%
NTGI Blmbg Agg. Index	0.29%	2.30%	8.91%	11.55%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
NTGI Blmbg Agg. Index - Net	0.29%	2.30%	8.90%	11.54%

* Brandes changed to a Core mandate from Core Plus on 01/01/2018. Performance shown is Brandes full SI history.

Fixed Income Returns

The table below details the rates of return for the fund's domestic fixed core managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Dom. Fixed Active Core	3.58%	3.54%	4.37%	4.64% ^(4/01)
Brandes Core *	2.95%	-	-	3.01% ^(3/16)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	3.47% ^(3/16)
Brandes Core - Net	2.95%	-	-	3.01% ^(3/16)
EARNEST Partners	3.67%	3.67%	4.37%	4.69% ^(5/05)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.24% ^(5/05)
EARNEST Partners - Net	3.52%	3.50%	4.18%	4.49% ^(5/05)
Piedmont	3.51%	3.45%	4.35%	4.45% ^(6/05)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.19% ^(6/05)
Piedmont - Net	3.38%	3.31%	4.19%	4.26% ^(6/05)
Garcia Hamilton	3.66%	-	-	3.65% ^(6/15)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	3.25% ^(6/15)
Garcia Hamilton	3.56%	-	-	3.56% ^(6/15)
Dom. Fixed Passive Core	3.34%	3.31%	3.80%	5.97% ^(1/90)
BlackRock US Debt	3.38%	3.35%	-	3.60% ^(10/13)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	3.48% ^(10/13)
BlackRock US Debt - Net	3.38%	3.34%	-	3.60% ^(10/13)
NTGI Blmbg Agg. Index	3.31%	3.27%	3.78%	6.02% ^(2/90)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	6.01% ^(2/90)
NTGI Blmbg Agg. Index - Net	3.30%	3.26%	3.77%	4.18% ^(1/05)

* Brandes changed to a Core mandate from Core Plus on 01/01/2018. Performance shown is Brandes full SI history.

Fixed Income Returns

The table below details the rates of return for the fund's domestic fixed core plus and high yield managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last Month	Last 3 Months	Year to Date	Last 12 Months
Domestic Fixed Core Plus	0.45%	2.30%	9.92%	11.99%
LM Capital	0.39%	2.08%	9.63%	11.15%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
LM Capital - Net	0.35%	2.04%	9.46%	10.98%
Progress Fixed Income	0.28%	2.25%	9.43%	11.35%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Progress Fixed Inc. - Net	0.28%	2.17%	9.17%	10.99%
BMO-TCH	0.35%	1.80%	9.01%	10.64%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
BMO-TCH. - Net	0.32%	1.73%	8.87%	10.46%
Western	0.72%	2.93%	11.34%	14.42%
Blmbg Aggregate Index	0.30%	2.35%	8.85%	11.51%
Western - Net	0.72%	2.93%	11.30%	14.34%
Bank Loans	(0.72%)	(0.42%)	5.53%	2.41%
Barings Global Loan Fund	(0.72%)	(0.42%)	5.53%	2.41%
Custom Benchmark	(0.41%)	(0.07%)	6.04%	3.14%
Barings Global Loan Fund - Net	(0.72%)	(0.42%)	5.29%	2.12%
Emerging Markets	1.94%	0.58%	12.30%	14.79%
Standish	1.94%	0.58%	12.30%	14.79%
Custom Benchmark	1.75%	1.20%	11.63%	14.52%
Standish - Net	1.94%	0.50%	12.02%	14.40%
High Yield	0.34%	1.77%	12.37%	9.59%
MacKay Shields	0.34%	1.77%	12.38%	9.59%
ML High Yield Cash Pay Index	0.24%	0.96%	11.78%	8.36%
MacKay Shields - Net	0.26%	1.69%	12.11%	9.24%

Taplin, Canida, & Habacht moved to Core Plus October 1, 2010.

Barings Custom Benchmark is 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 Custom Benchmark is 50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

Fixed Income Returns

The table below details the rates of return for the fund's domestic fixed core plus and high yield managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

Returns for Periods Ended October 31, 2019

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Domestic Fixed Core Plus	3.99%	3.86%	4.91%	8.09% ^(1/82)
LM Capital	3.46%	3.57%	4.48%	4.93% ^(5/05)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.24% ^(5/05)
LM Capital - Net	3.29%	3.39%	4.32%	4.76% ^(5/05)
Progress Fixed Income	4.01%	3.76%	4.54%	5.02% ^(1/06)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.34% ^(1/06)
Progress Fixed Inc. - Net	3.67%	3.42%	4.19%	4.68% ^(1/06)
BMO-TCH	4.12%	3.92%	5.05%	5.07% ^(5/05)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.24% ^(5/05)
BMO-TCH - Net	3.98%	3.78%	4.92%	4.94% ^(5/05)
Western	4.74%	4.54%	5.60%	5.59% ^(11/01)
Blmbg Aggregate Index	3.29%	3.24%	3.73%	4.38% ^(11/01)
Western - Net	4.62%	4.41%	5.46%	5.08% ^(1/05)
Bank Loans	4.52%	4.52%	-	4.33% ^(8/14)
Barings Global Loan Fund	4.52%	4.52%	-	4.33% ^(8/14)
Custom Benchmark	4.50%	4.21%	-	4.01% ^(8/14)
Barings Global Loan Fund - Net	4.05%	4.00%	-	3.80% ^(8/14)
Emerging Markets	5.13%	2.61%	-	3.19% ^(8/14)
Standish	5.13%	2.61%	-	3.19% ^(8/14)
Custom Benchmark	4.78%	3.02%	4.60%	2.60% ^(8/14)
Standish - Net	4.77%	2.26%	-	2.86% ^(8/14)
High Yield	6.63%	6.16%	8.11%	9.53% ^(4/86)
MacKay Shields	6.66%	6.34%	8.10%	8.83% ^(11/00)
ML High Yield Cash Pay Index	6.04%	5.17%	7.66%	7.55% ^(11/00)
MacKay Shields - Net	6.30%	5.97%	7.72%	6.93% ^(1/05)

Taplin, Canida, & Habacht moved to Core Plus October 1, 2010.

Barings Custom Benchmark is 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 Custom Benchmark is 50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

Five Best Performing Portfolio's vs. Benchmarks

Manager	Year-to-Date Outperformance	Since Inception Outperformance	
	(in % points)	(in % points)	
Genesis	11.23	2.50	04/30/2004
William Blair Int'l SC	9.37	2.18	08/31/2010
William Blair	7.99	1.59	09/30/2002
Inv Counselors of MD	5.97	2.54	04/30/1999
Pyramis SCG	5.09	5.22	07/31/1988

Five Worst Performing Portfolio's vs. Benchmarks

Manager	Year-to-Date Underperformance	Since Inception Underperformance	
	(in % points)	(in % points)	
Brandes	-6.72	3.56	12/31/1995
BMO	-5.37	2.09	01/31/2001
DFA SCV	-4.23	2.22	01/31/1996
Dodge & Cox	-3.75	1.05	08/31/2003
Sands	-3.40	2.04	10/31/2003

Five Highest Returning Portfolios

Manager	Year-to-Date Return	Since Inception Return	
	(in % points)	(in % points)	
William Blair Int'l SC	24.11	8.94	08/31/2010
Pyramis SCG	23.71	13.33	07/31/1988
Frontier	23.70	13.13	07/31/1988
William Blair	23.45	9.59	09/30/2002
Sands	23.37	12.03	10/31/2003

Five Lowest Returning Portfolios

Manager	Year-to-Date Return	Since Inception Return	
	(in % points)	(in % points)	
Earnest FI	8.71	4.68	04/30/2005
Brandes	8.73	8.69	12/31/1995
NTGI BC Agg	8.91	6.02	01/31/1990
Blackrock US Debt	8.91	3.56	09/01/2013
Piedmont	8.92	4.42	05/31/2005

Returns are shown gross of investment management fees.

Excludes Real Estate and Alternative Investments portfolios.