

December 31, 2018



**Illinois Municipal
Retirement Fund
Monthly Performance Report**

**Investment Measurement Service
Monthly Review**

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Market Environment

As of December 31, 2018

Index	Last Month	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell:3000 Index	(9.31)	(14.30)	(5.24)	(5.24)	8.97	7.91	13.18
S&P:500	(9.03)	(13.52)	(4.38)	(4.38)	9.26	8.49	13.12
Russell:2000 Index	(11.88)	(20.20)	(11.01)	(11.01)	7.36	4.41	11.97
MSCI:ACWI ex US	(4.53)	(11.46)	(14.20)	(14.20)	4.48	0.68	6.57
MSCI:EM	(2.66)	(7.47)	(14.58)	(14.58)	9.25	1.65	8.02
Blmbg:Aggregate	1.84	1.64	0.01	0.01	2.06	2.52	3.48
NCREIF:Total Index	0.55	1.67	7.03	7.03	7.32	9.39	7.52
Blmbg:Commodity Price Idx	(7.08)	(9.96)	(12.99)	(12.99)	(0.79)	(9.41)	(4.15)

A possible global economic slowdown captured investors' attention in December, sending equity markets tumbling and bond markets higher as capital fled to safe haven assets. At the December meeting, the Federal Reserve (Fed) raised rates but then struck a more dovish tone, signaling two increases in 2019 instead of three. Concerns about the stability of the U.S. economic expansion and a shutdown of the U.S. government exacerbated stock market declines. Meanwhile, the economy in Europe is beginning to decelerate concurrent with the European Central Bank ending its stimulatory bond-buying program. Faltering Brexit negotiations, disagreement over the Italian budget proposal, and protests of French President Macron's economic policies added uncertainty to the region. A slowdown in China's economy, which posted its lowest quarterly growth since the global financial crisis, also had far-reaching implications. Lower demand from China negatively impacted Europe's export-heavy economy and drove U.S. companies to lower earnings guidance.

December's employment report far exceeded expectations, adding 312,000 nonfarm payrolls vs. a consensus of only 180,000. This was the highest reading since February and among the strongest of the expansion. The year-over-year change in wages matched the expansion high reached in October, up 3.2%. The unemployment rate ticked up from 3.7% to 3.9% but this was due to the participation rate, which rose two tenths to 63.1%.

Inflation came in at consensus. The headline Consumer Price Index (CPI) declined 0.1% month-over-month, pulled down by lower oil prices. The headline index ended the year 1.9% higher. Core CPI rose 0.2% month-over-month and finished the year up 2.2%. While energy prices fell during the month, food, housing, and medical costs ticked higher.

The final estimate of third quarter GDP growth slipped one tenth to 3.4% after holding steady for the first two estimates. Slight declines in consumer spending, residential spending, and net exports accounted for the lower GDP estimate. With regard to the latter, a steep rise in imports combined with a minor drop in exports detracted from the overall growth in GDP.

*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

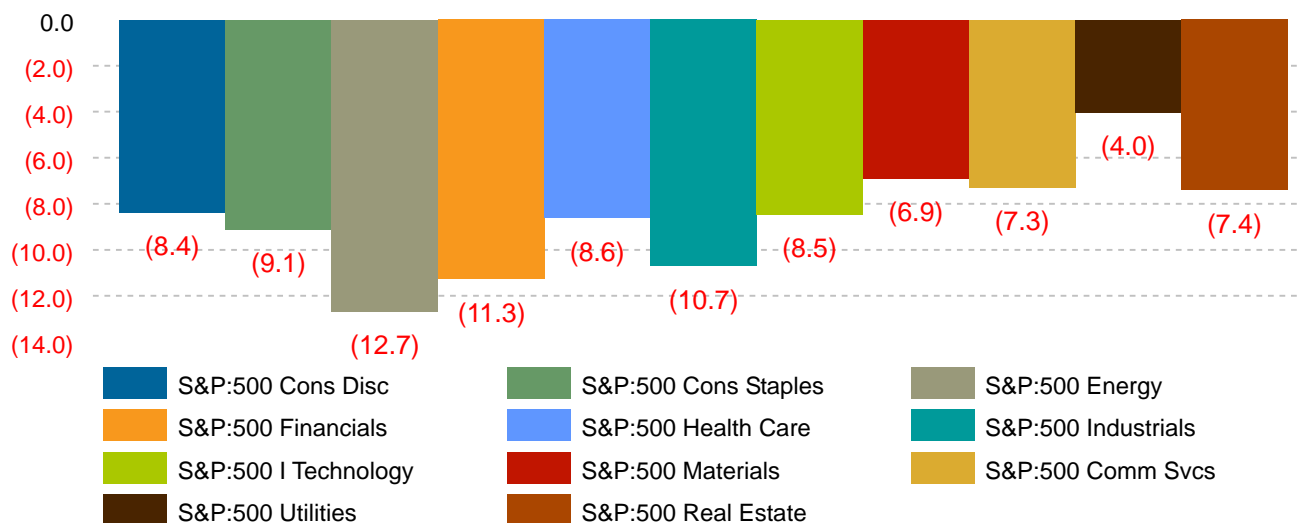
As of December 31, 2018

Index	Last Month	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell:3000 Index	(9.31)	(14.30)	(5.24)	(5.24)	8.97	7.91	13.18
Russell:1000 Index	(9.11)	(13.82)	(4.78)	(4.78)	9.09	8.21	13.28
Russell:1000 Growth	(8.60)	(15.89)	(1.51)	(1.51)	11.15	10.40	15.29
Russell:1000 Value	(9.60)	(11.72)	(8.27)	(8.27)	6.95	5.95	11.18
Russell:Midcap Index	(9.92)	(15.37)	(9.06)	(9.06)	7.04	6.26	14.03
Russell:2000 Index	(11.88)	(20.20)	(11.01)	(11.01)	7.36	4.41	11.97
Russell:2000 Growth	(11.68)	(21.65)	(9.31)	(9.31)	7.24	5.13	13.52
Russell:2000 Value	(12.09)	(18.67)	(12.86)	(12.86)	7.37	3.61	10.40

In December, U.S. equities posted their worst month since February 2009 capping off the worst quarter since Q3 of 2011 (S&P 500 Index: -9.0% for December; -13.5% for the quarter). Growing concerns about the duration of the economic expansion were intensified by a partial inversion of the yield curve. Rates on 1-year notes exceeded the rates on issues with maturities of 2-, 3-, 5-, and 7-years. Additionally, the strength of corporate earnings came into question when a number of companies lowered guidance, citing concerns over the trade war and rising interest rates. The government shutdown, which began on December 22, furthered the market decline. Large caps outperformed small caps in the period (Russell 1000 Index: -9.1% vs. Russell 2000 Index: -11.9%) and growth outperformed value (Russell 1000 Growth: -8.6% vs. Russell 1000 Value: -9.6%). Returns on mid caps fell between large and small (Russell Midcap Index: -9.9%).

All 11 S&P 500 sectors were down in December. Energy was the worst performing, declining 12.7% as the prospect of slowing global growth impacted oil prices. Financials (-11.3%) and Industrials (-10.7%) also fell by double-digits. More defensive sectors held up slightly better. The Utilities sector was the best performing despite falling 4.0%, still a considerable loss on an absolute basis. Materials (-6.9%) and Communication Services (-7.3%) were the next best performing sectors on a relative basis.

S&P 500 Index Sector Returns



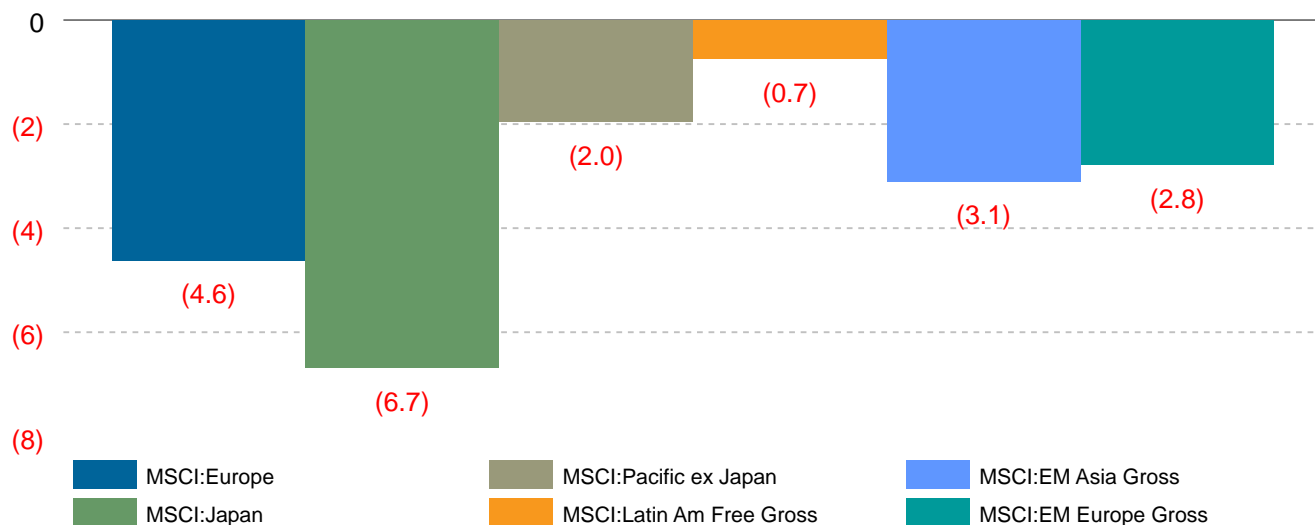
Non-U.S. Equity Overview As of December 31, 2018

Index	Last Month	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
MSCI:ACWI ex US	(4.53)	(11.46)	(14.20)	(14.20)	4.48	0.68	6.57
MSCI:EAFE	(4.85)	(12.54)	(13.79)	(13.79)	2.87	0.53	6.32
MSCI:EAFE Hedged Net	(5.67)	(11.56)	(8.96)	(8.96)	4.13	4.61	8.09
MSCI:EM	(2.66)	(7.47)	(14.58)	(14.58)	9.25	1.65	8.02
MSCI:ACWI ex US Small Cap	(5.44)	(14.43)	(18.20)	(18.20)	3.82	1.96	10.02

Non-U.S. equity returns, while negative on an absolute basis, meaningfully outperformed U.S. equity (MSCI ACWI ex U.S.: -4.5% vs. Russell 1000 Index: -9.1%). Political uncertainty in Europe - including Brexit negotiations, the Italian budget dispute, and French protests - weighed on markets. Emerging market economies were pulled down by the continuing trade dispute between the U.S. and China. However, emerging markets topped developed markets over the month (MSCI Emerging Markets Index: -2.7% vs. MSCI EAFE Index: -4.9%). The dollar depreciated against developed market currencies, widening the performance gap over U.S. stocks (MSCI EAFE Index: -4.9% vs MSCI EAFE Hedged Net Index: -5.7%). Non-U.S. small cap stocks trailed developed large cap and emerging markets (MSCI ACWI ex U.S. Small Cap: -5.4%).

Latin America was the best performing region on a relative basis (MSCI Latin America Free Gross Index: -0.7%). A rebound in Mexico, which had declined precipitously in October and November, lifted the region for the month (MSCI Mexico Index: +3.3%). Pacific ex Japan was also relatively strong as Hong Kong and Singapore held up better (MSCI Pacific ex Japan Index: -2.0%). Japan performed poorly (MSCI Japan Index: -6.7%). There may be early signs that economic reforms are reaching the end of their effectiveness, but no starkly negative news came out in December. Europe declined the most after Japan, with the previously noted political issues at the forefront (MSCI Europe Index: -4.6%).

MSCI Regional Returns

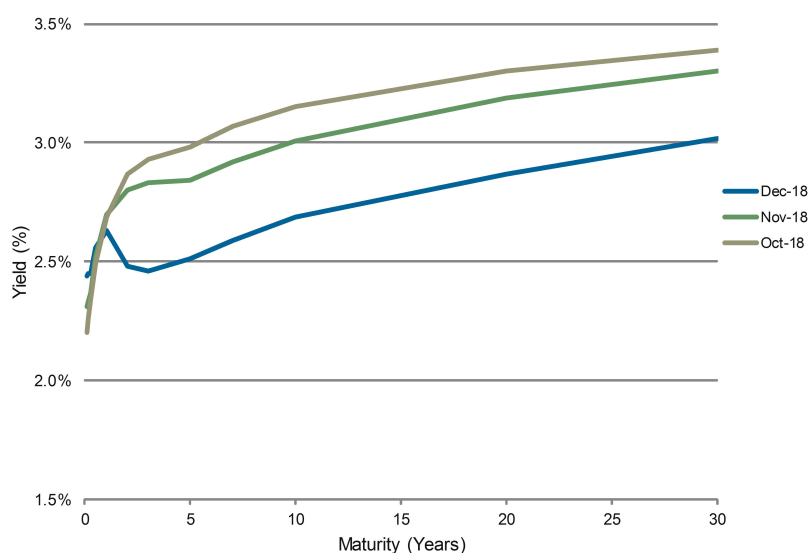


Fixed Income Overview

As of December 31, 2018

Index	Last Month	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Blmbg:Aggregate	1.84	1.64	0.01	0.01	2.06	2.52	3.48
Blmbg:Long Gov/Credit	3.70	0.78	(4.68)	(4.68)	4.03	5.37	5.88
Blmbg:US Government	2.13	2.54	0.88	0.88	1.41	1.99	2.12
Blmbg:Credit	1.50	0.01	(2.11)	(2.11)	3.16	3.22	5.52
Blmbg:Mortgage Backed Sec	1.81	2.08	0.99	0.99	1.71	2.53	3.11
Blmbg:US TIPS	0.55	(0.42)	(1.26)	(1.26)	2.11	1.69	3.64
ML:US High Yield Cash Pay	(2.19)	(4.64)	(2.26)	(2.26)	7.22	3.81	10.89
CS:Leveraged Loan	(2.29)	(3.08)	1.14	1.14	5.03	3.33	8.23
3 Month T-Bill	0.18	0.56	1.87	1.87	1.02	0.63	0.37

Treasury Yield Curve



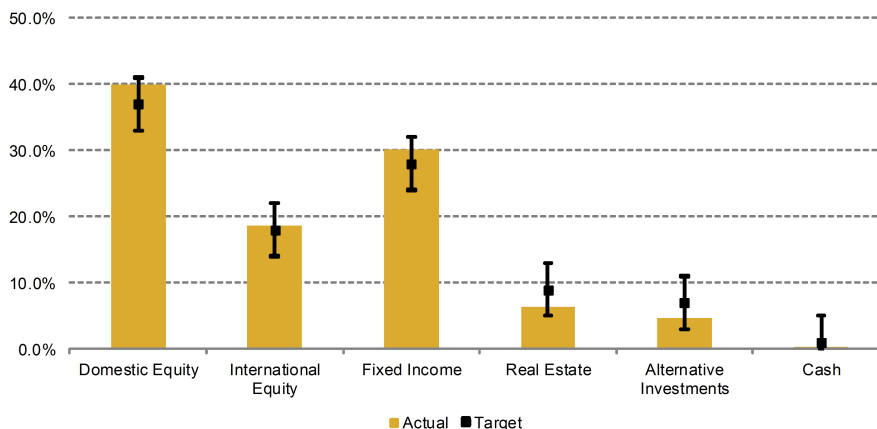
Fears of a slowdown in global economic growth pushed investors into the relative safety of fixed income investments and the Bloomberg Aggregate Index gained 1.8% in the month. Treasuries rallied significantly in this environment; 2- to 20-year Treasury yields each fell more than 30 basis points and yields on the 30-year bond fell 28 basis points. However, the short end of the curve (maturities less than one year) rose while the 1-year rate only fell by seven basis points. As a result, the month ended with the yield curve inverted for maturities from 1-year to 7-years. The spread between the 2- and 10-year Treasuries held steady at 21 basis points. The Fed raised rates by 25 basis points in December, marking the fourth such increase for the year and bringing the target rate to a range of 2.25% - 2.50%. At the same time, they struck a more dovish tone and signaled two increases in 2019, down from the previously expected three.

The Bloomberg Long Gov/Credit Index (+3.7%) was the best performing sector in December given the longer duration and dramatic decline in rates. High quality segments also performed well, including the Bloomberg U.S. Government Index (+2.1%) and Bloomberg Mortgage Backed Securities Index (+1.8%). Investment grade spreads widened by 16 basis points to finish the month at 153 basis points, the widest level since 2016. However, the fall in rates overall helped produce positive results (Bloomberg Credit Index: +1.5%). High yield credit was hit much harder, with spreads widening 110 basis points. Amid this risk-off environment, high yield (Merrill Lynch U.S. High Yield Cash Pay Index: -2.2%) and leveraged loans (Credit Suisse Leveraged Loan Index: -2.3%) were the worst performing.

Total Fund

The market value of the Total Fund was \$38.42 billion at the end of December, a decrease of \$1.74 billion from the prior month. The Fund returned -4.54% during the month, trailing the -3.64% return of its benchmark. Domestic Equity (-9.54%) trailed its benchmark (-9.31%). International Equity (-4.75%) underperformed its benchmark by 22 basis points. The Fixed Income composite returned 1.23% trailing its benchmark return of 1.84%. Real Estate returned -0.08% in December, trailing its benchmark by 70 basis points. Over the last three months, Alternatives (+5.84%) outperformed the benchmark return of 2.18%. For the trailing year, the Fund is 121 basis points behind its benchmark, returning -4.30%.

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. As of December month end, all asset classes are within their target ranges. The Board approved rebalancing actions totaling \$1.7 billion across Domestic Equity and Fixed income at the October meeting. This rebalancing reduces the overweight allocation to Domestic Equity by 2% and underweight allocation to Fixed Income by 2%. Staff is currently implementing these changes.



U.S. Equity

The U.S. Equity composite returned -9.54% during December, trailing the Russell 3000 Index by 23 basis points. For the month, large caps outperformed small caps.

Large Cap: IMRF's Large Cap managers returned -9.25% in December, trailing the -9.11% return of the Russell 1000 Index. In aggregate, growth managers returned -8.23%, while the Russell 1000 Growth Index returned -8.60%. Value managers returned -10.05% collectively, underperforming the -9.60% return of the Russell 1000 Value Index.

Small Cap: The Small Cap composite (-11.52%) led the Russell 2000 Index by 36 basis points in December. The growth managers collectively returned -10.09%, relative to the -11.68% return of the Russell 2000 Growth Index. The value managers returned -12.78% during the month, underperforming the Russell 2000 Value Index by 69 basis points. The Micro Cap composite returned -11.45% in December.

Public Real Assets: The Public Real Assets portfolio managed by Brookfield and Cohen & Steers returned -4.44% in December, 45 basis points behind the custom benchmark.

International Equity

The International Equity composite returned -4.75% in December, 22 basis points behind its MSCI ACWI ex-U.S. benchmark (-4.53%).

International Large Cap: International Large Cap managers collectively returned -4.89% in December, trailing the MSCI ACWI ex-U.S. Index by 36 basis points. International Large Cap Growth managers (-5.68%) trailed the MSCI ACWI ex-U.S. Growth Index by 113 basis points. International Large Cap Value managers returned -4.25% for the month, 18 basis points ahead of the MSCI ACWI ex-U.S. Value Index.

International Small Cap and Emerging Markets: The International Small Cap managers returned -5.73% in December, 29 basis points behind the MSCI ACWI Small Cap ex-U.S. Index return of -5.44%. The Emerging Markets portfolio, managed by Genesis, returned -2.97% during the month, trailing the MSCI Emerging Markets Index by 37 basis points.

Fixed Income

The Fixed Income composite returned 1.23% in December relative to the 1.84% return of the Bloomberg Aggregate Index.

Active Core: In aggregate, the Domestic Active Core managers were up 1.57% in December, 27 basis points behind the Bloomberg Aggregate Index.

Core Plus: Domestic Fixed Core Plus managers ended the month with a return of 1.51%, trailing the Bloomberg Aggregate Index by 33 basis points.

Bank Loans: The Bank Loans portfolio, managed by Barings, returned -1.99% for the month, leading the custom benchmark by two basis points.

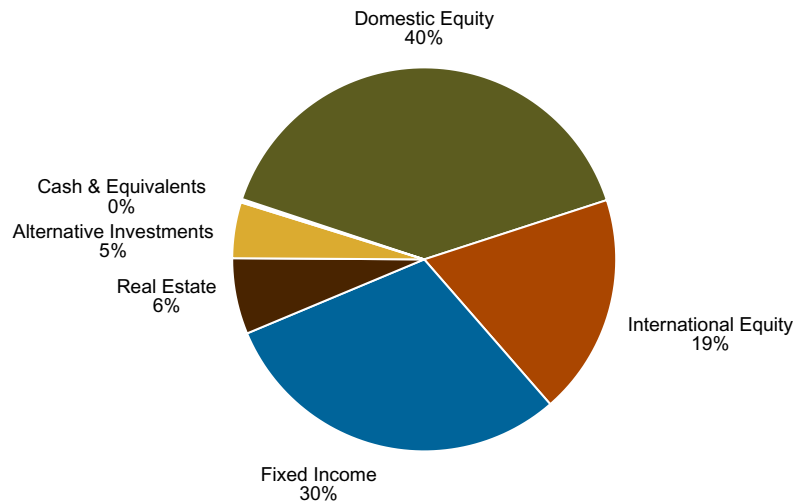
Emerging Markets: The Emerging Markets Debt component, managed by Standish, returned 1.04% in December, 22 basis points behind the custom benchmark.

High Yield: The High Yield allocation, managed by MacKay Shields, returned -1.78% in December, leading the benchmark return of -2.19%.

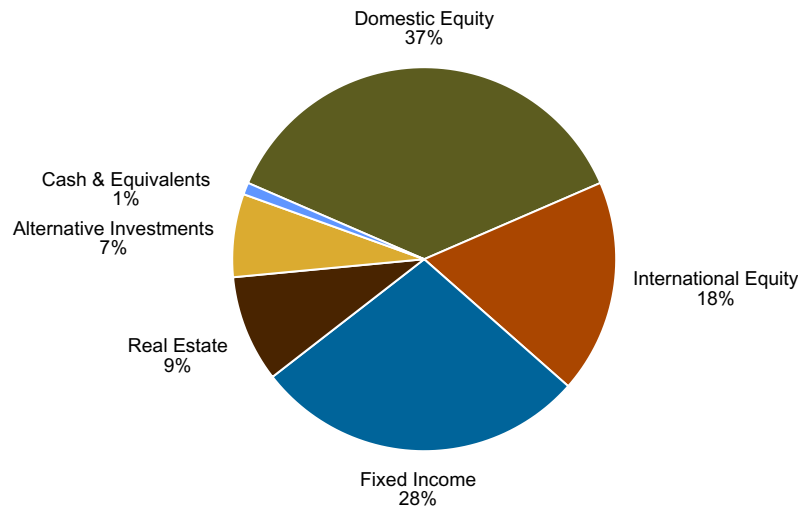
Actual vs Target Asset Allocation

The first chart below shows the Fund's asset allocation as of December 31, 2018. 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	15,352	40.0%	37.0%	3.0%	1,137
International Equity	7,129	18.6%	18.0%	0.6%	214
Fixed Income	11,570	30.1%	28.0%	2.1%	813
Real Estate	2,440	6.4%	9.0%	(2.6%)	(1,018)
Alternative Investments	1,796	4.7%	7.0%	(2.3%)	(893)
Cash & Equivalents	131	0.3%	1.0%	(0.7%)	(254)
Total	38,417	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 December 31, 2018, with the distribution as of November 30, 2018.

Asset Distribution Across Investment Managers

	December 31, 2018		November 30, 2018	
	Market Value	Percent	Market Value	Percent
Domestic Equity*	\$15,351,663,236	39.96%	\$17,004,989,479	42.34%
Large Cap Growth				
NTGI S&P 500 Growth Idx	1,939,178,208	5.05%	2,122,156,571	5.28%
Sands	1,571,958,078	4.09%	1,700,112,388	4.23%
Piedmont Russell 1000 G	846,386,617	2.20%	925,895,958	2.31%
Large Cap Value				
Dodge & Cox	1,193,139,294	3.11%	1,334,767,702	3.32%
BMO	1,202,113,731	3.13%	1,331,033,200	3.31%
LSV	1,348,605,351	3.51%	1,519,522,555	3.78%
NTGI S&P 500 Value Idx	1,519,141,144	3.95%	1,677,865,102	4.18%
Large Cap Core				
NTGI MarketCap Index	2,515,871,313	6.55%	2,774,133,315	6.91%
Small Cap Growth				
Frontier	460,326,283	1.20%	510,738,999	1.27%
FIAM	664,094,875	1.73%	739,860,487	1.84%
Small Cap Value				
Channing	192,418,255	0.50%	222,127,601	0.55%
Dimensional Small Cap Value	505,660,219	1.32%	579,581,264	1.44%
Inv. Counselors of Maryland	571,455,677	1.49%	653,767,046	1.63%
Micro Cap				
Ativo	2,190,666	0.01%	24,429,460	0.06%
Dimensional Micro Cap	377,012,845	0.98%	426,343,157	1.06%
Public Real Assets				
Brookfield	138,475,315	0.36%	146,048,509	0.36%
Cohen & Steers	303,635,365	0.79%	316,606,164	0.79%
International Equity	\$7,129,300,166	18.56%	\$7,485,212,802	18.64%
International Large Cap Growth				
EARNEST Partners	561,556,621	1.46%	597,563,966	1.49%
William Blair	634,976,094	1.65%	671,013,897	1.67%
International Large Cap Value				
Brandes	559,795,851	1.46%	587,797,779	1.46%
Lombardia	1	0.00%	1	0.00%
Mondrian	484,146,031	1.26%	502,722,386	1.25%
Lazard	101,084,244	0.26%	105,342,487	0.26%
International Large Cap Core				
Arrowstreet	615,555,533	1.60%	647,706,048	1.61%
Brown	306,266,447	0.80%	322,964,620	0.80%
GlobeFlex	532,785,032	1.39%	555,817,300	1.38%
NTGI MSCI EAFE Index	1,972,067,710	5.13%	2,074,423,782	5.17%
Progress Intl Equity	274,734,888	0.72%	288,319,057	0.72%
International Small Cap				
Franklin Templeton	166,583,965	0.43%	176,613,022	0.44%
William Blair	231,344,937	0.60%	245,486,035	0.61%
Emerging Markets				
Genesis	688,402,812	1.79%	709,442,423	1.77%

* 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 December 31, 2018, with the distribution as of November 30, 2018.

Asset Distribution Across Investment Managers

	December 31, 2018		November 30, 2018	
	Market Value	Percent	Market Value	Percent
Total Fixed Income	\$11,569,882,477	30.12%	\$11,255,589,744	28.03%
Domestic Fixed Core				
Brandes Core	345,395,292	0.90%	340,725,184	0.85%
EARNEST Partners	1,012,164,652	2.63%	993,319,695	2.47%
Piedmont Investment	823,121,826	2.14%	737,312,494	1.84%
Garcia Hamilton	990,483,905	2.58%	976,203,652	2.43%
Domestic Fixed Passive Core				
NTGI Blmbg Agg. Index	1,663,255,569	4.33%	1,633,195,801	4.07%
BlackRock US Debt	1,594,104,143	4.15%	1,565,423,863	3.90%
Domestic Fixed Core Plus				
LM Capital	848,518,013	2.21%	839,347,780	2.09%
Progress Fixed Income	891,672,708	2.32%	879,448,496	2.19%
Taplin, Canida, & Habacht	877,539,132	2.28%	867,300,911	2.16%
Western	1,033,587,375	2.69%	1,010,906,546	2.52%
Bank Loans				
Barings Global Loan Fund	562,562,404	1.46%	573,983,808	1.43%
Emerging Markets Debt				
Standish	196,410,149	0.51%	194,386,819	0.48%
Opportunistic Fixed Income				
Crescent	11,115,633	0.03%	11,115,633	0.03%
High Yield				
MacKay Shields	719,618,332	1.87%	632,583,621	1.58%
FIAM High Yield	333,345	0.00%	335,441	0.00%

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

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

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2018, with the distribution as of November 30, 2018.

Asset Distribution Across Investment Managers

	December 31, 2018		November 30, 2018	
	Market Value	Percent	Market Value	Percent
Real Estate	\$2,440,045,890	6.35%	\$2,447,621,055	6.09%
Real Estate Core				
TA Buckhead Ind. Prop.	479,284,513	1.25%	482,577,089	1.20%
Barings Core Property Fund	1,070	0.00%	1,070	0.00%
Barings European Core Property	29,875,116	0.08%	29,590,257	0.07%
Blackstone Property Partners Europe	121,584,673	0.32%	120,425,361	0.30%
INVESCO Core RE	205,705,973	0.54%	205,705,973	0.51%
INVESCO Euro real estate	57,077,810	0.15%	56,533,533	0.14%
AEW Core Property Trust	233,396,523	0.61%	233,396,523	0.58%
CBRE US Core Property Trust	186,118,622	0.48%	186,118,622	0.46%
Real Estate Non-Core				
Artemis MWBE Spruce	171,196,382	0.45%	170,858,129	0.43%
Franklin Templeton EMREFF	20,071,732	0.05%	21,515,955	0.05%
Security Capital	52,451,755	0.14%	52,451,755	0.13%
Dune II	28,405,977	0.07%	28,405,977	0.07%
Non-Core Real Estate Funds*	753,800,724	1.96%	760,683,778	1.89%
Non-Core Intl Real Estate Funds**	98,601,669	0.26%	96,809,014	0.24%
Rockwood Fund VIII	262,601	0.00%	262,601	0.00%
Almanac ARS V	2,182,612	0.01%	2,182,612	0.01%
TA Fund IX	28,138	0.00%	102,806	0.00%
Alternative Investments	\$1,795,822,961	4.67%	\$1,770,851,848	4.41%
Absolute Return				
Aurora	736,994	0.00%	739,873	0.00%
Private Equity				
Abbott	344,122,607	0.90%	336,221,605	0.84%
Muller & Monroe ILPEFF	1	0.00%	1	0.00%
Muller & Monroe MPEFF	5,800,581	0.02%	5,800,581	0.01%
Pantheon	246,370,611	0.64%	244,839,939	0.61%
Private Equity Fund - Domestic	799,855,596	2.08%	793,060,406	1.97%
Private Equity Fund - International	98,132,857	0.26%	91,480,192	0.23%
Agriculture				
Premiere Partners IV	193,985,906	0.50%	190,991,443	0.48%
Timberland				
Forest Investment Assoc.	72,671,141	0.19%	73,571,141	0.18%
Unlisted Infrastructure				
Unlisted Infrastructure Funds	34,146,667	0.09%	34,146,667	0.09%
Cash & Equivalents	\$130,517,820	0.34%	\$197,325,015	0.49%
Total Fund	\$38,417,232,551	100.0%	\$40,161,589,943	100.0%

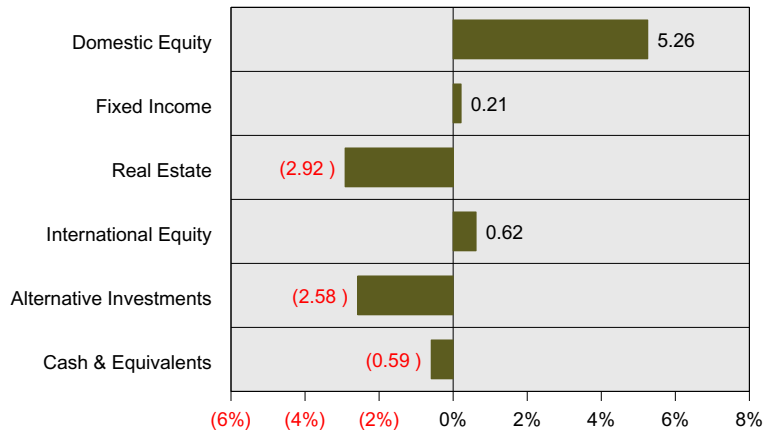
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** Non-Core International Real Estate Funds funded since August 2014.

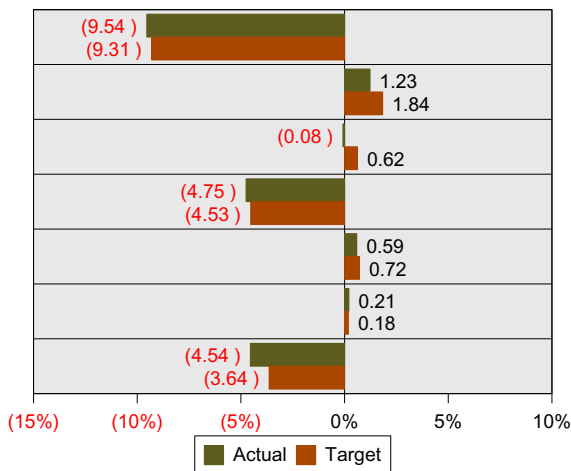
Monthly Total Fund Relative Attribution - December 31, 2018

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.

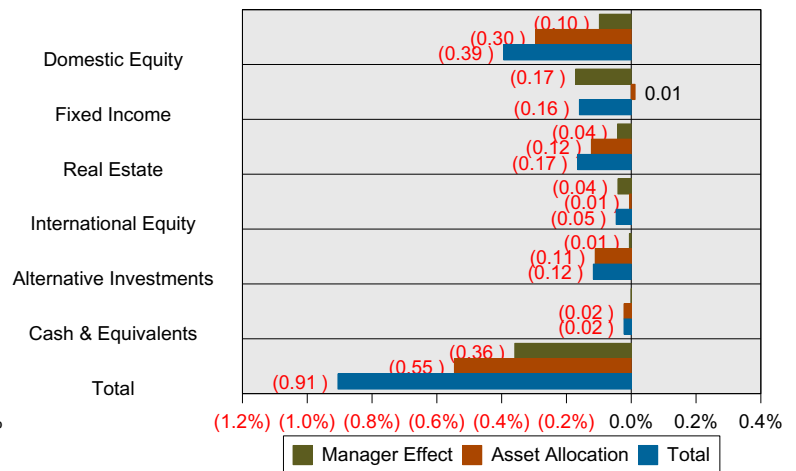
Asset Class Under or Overweighting



Actual vs Target Returns



Relative Attribution by Asset Class



Relative Attribution Effects for Month ended December 31, 2018

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	42%	37%	(9.54%)	(9.31%)	(0.10%)	(0.30%)	(0.39%)
Fixed Income	28%	28%	1.23%	1.84%	(0.17%)	0.01%	(0.16%)
Real Estate	6%	9%	(0.08%)	0.62%	(0.04%)	(0.12%)	(0.17%)
International Equity	19%	18%	(4.75%)	(4.53%)	(0.04%)	(0.01%)	(0.05%)
Alternative Investments	4%	7%	0.59%	0.72%	(0.01%)	(0.11%)	(0.12%)
Cash & Equivalents	0%	1%	0.21%	0.18%	0.00%	(0.02%)	(0.02%)
Total			(4.54%)	(3.64%)	(0.36%)	(0.55%)	(0.91%)

* 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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Domestic Equity	(9.54%)	(15.43%)	(6.08%)
Blended Benchmark**	(9.31%)	(14.30%)	(5.24%)
Domestic Equity - Net	(9.54%)	(15.47%)	(6.26%)
International Equity	(4.75%)	(12.40%)	(14.15%)
MSCI ACWI x US (Net)	(4.53%)	(11.46%)	(14.20%)
International Equity - Net	(4.76%)	(12.46%)	(14.41%)
Fixed Income	1.23%	0.79%	(0.23%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Fixed Income - Net	1.23%	0.76%	(0.36%)
Real Estate	(0.08%)	1.82%	7.75%
Blended Benchmark***	0.62%	1.87%	7.73%
Real Estate - Net	(0.08%)	1.82%	7.75%
Alternative Investments	0.59%	5.84%	16.40%
Alternatives Custom Benchmark****	0.72%	2.18%	9.00%
Alternative Investments - Net	0.59%	5.83%	16.26%
Private Equity	0.49%	6.60%	20.43%
Alternatives Custom Benchmark****	0.72%	2.18%	9.00%
Agriculture	1.96%	3.86%	(0.11%)
Blended Benchmark***	0.62%	1.87%	7.73%
Timberland	(0.61%)	(0.86%)	(4.33%)
Blended Benchmark***	0.62%	1.87%	7.73%
Unlisted Infrastructure	0.00%	1.11%	-
Alternatives Custom Benchmark****	0.72%	2.18%	9.00%
Total Fund	(4.54%)	(8.62%)	(4.30%)
Total Fund - Net	(4.54%)	(8.65%)	(4.46%)
Total Fund Benchmark	(3.64%)	(6.69%)	(3.09%)

* 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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Domestic Equity	8.22%	6.84%	13.31%	11.23% ^(1/82)
Blended Benchmark**	8.97%	7.90%	13.24%	11.04% ^(1/82)
Domestic Equity - Net	8.00%	6.60%	13.05%	7.51% ^(1/05)
International Equity	4.39%	1.64%	7.95%	7.41% ^(9/86)
MSCI ACWI x US (Net)	4.48%	0.68%	6.57%	-
International Equity - Net	4.05%	1.31%	7.61%	4.71% ^(1/05)
Fixed Income	3.12%	3.10%	5.30%	8.16% ^(1/82)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	7.64% ^(1/82)
Fixed Income - Net	2.98%	2.95%	5.15%	4.49% ^(1/05)
Real Estate - Net	8.91%	10.43%	6.37%	7.33% ^(1/05)
Blended Benchmark***	7.39%	9.48%	8.17%	7.70% ^(1/05)
Alternative Investments	11.18%	10.40%	8.37%	10.88% ^(2/86)
Alternatives Custom Benchmark****	9.00%	9.00%	9.44%	12.77% ^(2/86)
Alternative Investments - Net	10.96%	10.09%	8.07%	8.65% ^(1/05)
Private Equity	14.78%	13.26%	9.84%	13.09% ^(2/86)
Alternatives Custom Benchmark****	9.00%	9.00%	9.44%	12.77% ^(2/86)
Agriculture	(1.74%)	7.30%	8.93%	7.58% ^(10/97)
Blended Benchmark***	7.39%	9.48%	8.17%	7.55% ^(10/97)
Timberland	(1.50%)	2.51%	2.11%	7.56% ^(10/92)
Blended Benchmark***	7.39%	9.48%	8.17%	7.56% ^(10/92)
Unlisted Infrastructure	-	-	-	8.14% ^(4/18)
Alternatives Custom Benchmark****	9.00%	9.00%	9.44%	6.68% ^(4/18)
Total Fund	6.24%	5.06%	9.46%	9.64% ^(1/82)
Total Fund - Net	6.03%	4.83%	9.23%	6.52% ^(1/05)
Total Fund Benchmark	6.14%	5.42%	8.79%	6.41% ^(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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Large Cap Equity	(9.25%)	(14.57%)	(5.09%)
Russell 1000 Index	(9.11%)	(13.82%)	(4.78%)
Large Cap Growth	(8.23%)	(16.21%)	3.25%
NTGI S&P 500 Growth Idx	(8.62%)	(14.68%)	(0.07%)
S&P/Citi 500 Growth Index	(8.62%)	(14.71%)	(0.01%)
NTGI S&P 500 Growth Idx - Net	(8.62%)	(14.68%)	(0.08%)
Piedmont Russell 1000 G	(8.59%)	(15.88%)	-
Russell 1000 Growth Index	(8.60%)	(15.89%)	(1.51%)
Piedmont Russell 1000 G - Net	(8.59%)	(15.88%)	-
Sands	(7.54%)	(17.72%)	6.97%
LCG Blended Benchmark*	(8.60%)	(15.89%)	(1.51%)
Russell 1000 Growth Index	(8.60%)	(15.89%)	(1.51%)
Sands - Net	(7.54%)	(17.78%)	6.73%
Large Cap Value	(10.05%)	(13.18%)	(9.66%)
Dodge & Cox	(10.48%)	(13.34%)	(6.87%)
LCV Blended Benchmark**	(9.60%)	(11.72%)	(8.27%)
Russell 1000 Value Index	(9.60%)	(11.72%)	(8.27%)
Dodge & Cox - Net	(10.48%)	(13.39%)	(7.07%)
BMO	(9.38%)	(13.73%)	(11.05%)
LCV Blended Benchmark**	(9.60%)	(11.72%)	(8.27%)
Russell 1000 Value Index	(9.60%)	(11.72%)	(8.27%)
BMO - Net	(9.38%)	(13.78%)	(11.25%)
LSV	(10.92%)	(13.77%)	(11.49%)
LCV Blended Benchmark**	(9.60%)	(11.72%)	(8.27%)
Russell 1000 Value Index	(9.60%)	(11.72%)	(8.27%)
LSV - Net	(10.92%)	(13.82%)	(11.69%)
NTGI S&P 500 Value Idx	(9.46%)	(12.07%)	(8.90%)
S&P/Citi 500 Value Index	(9.48%)	(12.04%)	(8.95%)
NTGI S&P 500 Value Idx - Net	(9.46%)	(12.07%)	(8.90%)
Large Cap Passive Core	(9.31%)	(14.33%)	(5.26%)
NTGI MarketCap Idx	(9.31%)	(14.33%)	(5.26%)
DJ U.S. Total Stock Market Index	(9.32%)	(14.36%)	(5.30%)
NTGI MarketCap Idx - Net	(9.31%)	(14.33%)	(5.26%)

* 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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Large Cap Equity	8.80%	7.83%	13.42%	10.89% ^(1/82)
Russell 1000 Index	9.09%	8.21%	13.28%	11.24% ^(1/82)
Large Cap Growth	10.48%	9.33%	15.17%	11.53% ^(1/82)
NTGI S&P 500 Growth Idx	10.83%	10.53%	14.83%	7.07% ^(8/01)
S&P/Citi 500 Growth Index	10.85%	10.55%	14.81%	7.04% ^(8/01)
NTGI S&P 500 Growth Idx - Net	10.83%	10.53%	14.82%	8.82% ^(1/05)
Piedmont Russell 1000 G	-	-	-	(15.88%) ^(10/18)
Russell 1000 Growth Index	11.15%	10.40%	15.29%	(15.89%) ^(10/18)
Piedmont Russell 1000 G - Net	-	-	-	(15.88%) ^(10/18)
Sands	10.64%	8.95%	19.92%	11.18% ^(11/03)
LCG Blended Benchmark*	11.15%	10.40%	15.29%	8.85% ^(11/03)
Russell 1000 Growth Index	11.15%	10.40%	15.29%	8.90% ^(11/03)
Sands - Net	10.39%	8.70%	19.64%	10.04% ^(1/05)
Large Cap Value	7.78%	6.71%	12.17%	10.02% ^(10/82)
Dodge & Cox	10.23%	7.41%	13.46%	8.90% ^(9/03)
LCV Blended Benchmark**	6.95%	5.95%	11.18%	7.57% ^(9/03)
Russell 1000 Value Index	6.95%	5.95%	11.18%	7.74% ^(9/03)
Dodge & Cox - Net	10.00%	7.19%	13.22%	7.15% ^(1/05)
BMO	6.67%	6.68%	11.74%	7.47% ^(2/01)
LCV Blended Benchmark**	6.95%	5.95%	11.18%	5.02% ^(2/01)
Russell 1000 Value Index	6.95%	5.95%	11.18%	6.05% ^(2/01)
BMO - Net	6.43%	6.45%	11.49%	7.39% ^(1/05)
LSV	7.52%	6.72%	12.77%	10.26% ^(2/03)
LCV Blended Benchmark**	6.95%	5.95%	11.18%	8.55% ^(2/03)
Russell 1000 Value Index	6.95%	5.95%	11.18%	8.56% ^(2/03)
LSV - Net	7.26%	6.46%	12.48%	7.47% ^(1/05)
NTGI S&P 500 Value Idx	7.32%	6.13%	11.29%	5.17% ^(8/99)
S&P/Citi 500 Value Index	7.23%	6.06%	11.21%	5.14% ^(8/99)
NTGI S&P 500 Value Idx - Net	7.31%	6.13%	11.28%	6.16% ^(1/05)
Large Cap Passive Core	9.01%	7.95%	13.34%	10.76% ^(1/85)
NTGI MarketCap Idx	9.01%	7.95%	13.35%	10.53% ^(2/85)
DJ U.S. Total Stock Market Index	8.92%	7.86%	13.22%	10.47% ^(2/85)
NTGI MarketCap Idx - Net	9.00%	7.94%	13.34%	7.66% ^(1/05)

* 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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Small Cap Equity	(11.52%)	(20.09%)	(10.57%)
Russell 2000 Index	(11.88%)	(20.20%)	(11.01%)
Small Cap Growth	(10.09%)	(19.44%)	(6.14%)
Frontier	(9.87%)	(20.03%)	2.54%
Russell 2000 Growth Index	(11.68%)	(21.65%)	(9.31%)
Frontier - Net	(9.87%)	(20.14%)	2.04%
FIAM	(10.24%)	(19.23%)	(9.80%)
Russell 2000 Growth Index	(11.68%)	(21.65%)	(9.31%)
FIAM - Net	(10.24%)	(19.23%)	(10.10%)
Small Cap Value	(12.78%)	(20.45%)	(14.28%)
Channing	(13.37%)	(21.81%)	(16.53%)
Russell 2000 Value Index	(12.09%)	(18.67%)	(12.86%)
Channing - Net	(13.37%)	(21.93%)	(16.95%)
DFA Small Cap Value	(12.75%)	(20.03%)	(14.84%)
Russell 2000 Value Index	(12.09%)	(18.67%)	(12.86%)
DFA Small Cap Value - Net	(12.75%)	(20.14%)	(15.27%)
Inv. Counselors of Maryland	(12.59%)	(20.34%)	(12.99%)
Russell 2000 Value Index	(12.09%)	(18.67%)	(12.86%)
Inv. Couns. of Maryland - Net	(12.59%)	(20.43%)	(13.43%)
Micro Cap	(11.46%)	(20.33%)	(12.22%)
DFA Micro Cap	(11.57%)	(20.09%)	(10.82%)
Russell 2000 Value Index	(12.09%)	(18.67%)	(12.86%)
Russell 2000 Index	(11.88%)	(20.20%)	(11.01%)
DFA Micro Cap - Net	(11.57%)	(20.20%)	(11.28%)
Public Real Assets	(4.44%)	(4.91%)	(3.73%)
Public Real Assets Benchmark (1)	(3.99%)	(3.80%)	(5.12%)
Brookfield Public Global Inf	(5.19%)	(7.60%)	(7.01%)
Dow Jones Global Infra Comp Idx	(5.15%)	(7.42%)	(8.54%)
Brookfield Public Global Inf - Net	(5.19%)	(7.73%)	(7.51%)
Cohen & Steers Public Global Inf	(4.10%)	(3.62%)	(2.16%)
FTSE GI Core Infr 50/50 N	(3.62%)	(2.60%)	(3.99%)
Cohen & St Public Global Inf - Net	(4.10%)	(3.73%)	(2.59%)

(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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Small Cap Equity	5.93%	3.82%	13.34%	11.67% ^(7/88)
Russell 2000 Index	7.36%	4.41%	11.97%	9.00% ^(7/88)
Small Cap Growth	5.20%	5.14%	13.91%	12.41% ^(7/88)
Frontier	10.30%	6.28%	14.67%	12.72% ^(8/88)
Russell 2000 Growth Index	7.24%	5.13%	13.52%	7.74% ^(8/88)
Frontier - Net	9.71%	5.70%	13.97%	8.77% ^(1/05)
FIAM	2.99%	5.41%	14.48%	12.92% ^(8/88)
Russell 2000 Growth Index	7.24%	5.13%	13.52%	7.74% ^(8/88)
FIAM - Net	2.55%	4.89%	13.90%	9.47% ^(1/05)
Small Cap Value	6.93%	3.93%	12.77%	11.34% ^(9/89)
Channing	5.21%	3.26%	-	8.42% ^(7/11)
Russell 2000 Value Index	7.37%	3.61%	10.40%	7.55% ^(7/11)
Channing - Net	4.68%	2.77%	-	7.83% ^(7/11)
DFA Small Cap Value	5.79%	3.16%	13.34%	11.50% ^(2/96)
Russell 2000 Value Index	7.37%	3.61%	10.40%	9.02% ^(2/96)
DFA Small Cap Value - Net	5.23%	2.65%	12.79%	6.81% ^(1/05)
Inv. Counselors of Maryland	9.17%	5.70%	13.12%	10.81% ^(5/99)
Russell 2000 Value Index	7.37%	3.61%	10.40%	8.46% ^(5/99)
Inv. Couns. of Maryland - Net	8.57%	5.18%	12.59%	7.61% ^(1/05)
Micro Cap	4.93%	0.91%	12.94%	11.19% ^(7/84)
DFA Micro Cap	8.40%	5.13%	13.86%	10.80% ^(8/87)
Russell 2000 Value Index	7.37%	3.61%	10.40%	9.46% ^(8/87)
Russell 2000 Index	7.36%	4.41%	11.97%	8.40% ^(8/87)
DFA Micro Cap - Net	7.86%	4.60%	13.30%	7.11% ^(1/05)
Public Real Assets	-	-	-	(1.10%) ^(8/17)
Public Real Assets Benchmark (1)	-	-	-	(2.74%) ^(8/17)
Brookfield Public Global Inf	-	-	-	(5.29%) ^(8/17)
Dow Jones Global Infra Comp Idx	4.81%	2.62%	11.01%	(6.33%) ^(8/17)
Brookfield Public Global Inf - Net	-	-	-	(5.72%) ^(8/17)
Cohen & Steers Public Global Inf	-	-	-	0.97% ^(8/17)
FTSE GI Core Infr 50/50 N	8.01%	5.81%	-	(1.55%) ^(8/17)
Cohen & St Public Global Inf - Net	-	-	-	0.60% ^(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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Intl Large Cap Equity	(4.89%)	(12.60%)	(13.52%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
Intl Large Cap Growth	(5.68%)	(14.84%)	(16.59%)
EARNEST Partners	(6.03%)	(13.32%)	(16.11%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Growth	(4.55%)	(12.16%)	(14.10%)
EARNEST Partners - Net	(6.08%)	(13.37%)	(16.29%)
William Blair	(5.37%)	(16.02%)	(16.88%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Growth	(4.55%)	(12.16%)	(14.10%)
William Blair - Net	(5.37%)	(16.11%)	(17.18%)
Intl Large Cap Value	(4.25%)	(9.85%)	(10.82%)
Brandes	(4.76%)	(11.11%)	(8.85%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Value	(4.43%)	(10.63%)	(13.45%)
Brandes - Net	(4.76%)	(11.11%)	(9.00%)
Mondrian	(3.70%)	(8.18%)	(12.14%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Value	(4.43%)	(10.63%)	(13.45%)
Mondrian - Net	(3.70%)	(8.18%)	(12.35%)
Lazard	(4.04%)	(10.61%)	(13.91%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Value	(4.43%)	(10.63%)	(13.45%)
Lazard - Net	(4.04%)	(10.67%)	(14.13%)

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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Intl Large Cap Equity	4.15%	1.66%	7.77%	7.43% ^(9/86)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	-
Intl Large Cap Growth	3.79%	0.93%	8.11%	7.55% ^(9/02)
EARNEST Partners	5.42%	0.56%	8.79%	8.30% ^(10/04)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	5.15% ^(10/04)
MSCI ACWI ex-US Growth	4.57%	2.06%	7.52%	5.97% ^(10/04)
EARNEST Partners - Net	5.21%	0.36%	8.43%	6.97% ^(1/05)
William Blair	2.47%	1.29%	9.47%	8.69% ^(10/02)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	7.48% ^(10/02)
MSCI ACWI ex-US Growth	4.57%	2.06%	7.52%	7.72% ^(10/02)
William Blair - Net	2.10%	0.92%	9.06%	5.18% ^(1/05)
Intl Large Cap Value	4.54%	1.65%	5.80%	8.38% ^(10/95)
Brandes	4.94%	1.68%	6.21%	8.62% ^(1/96)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	4.67% ^(1/96)
MSCI ACWI ex-US Value	5.37%	0.18%	6.55%	-
Brandes - Net	4.72%	1.44%	5.95%	3.79% ^(1/05)
Mondrian	4.30%	1.87%	-	4.14% ^(4/12)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	3.39% ^(4/12)
MSCI ACWI ex-US Value	5.37%	0.18%	6.55%	3.23% ^(4/12)
Mondrian - Net	3.87%	1.42%	-	3.68% ^(4/12)
Lazard	3.40%	1.02%	-	4.75% ^(4/12)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	3.39% ^(4/12)
MSCI ACWI ex-US Value	5.37%	0.18%	6.55%	3.23% ^(4/12)
Lazard - Net	3.00%	0.55%	-	4.20% ^(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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Intl Large Cap Active Core	(4.71%)	(13.09%)	(13.50%)
Arrowstreet	(4.96%)	(12.33%)	(11.88%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
Arrowstreet - Net	(4.96%)	(12.44%)	(12.29%)
Brown	(5.17%)	(13.73%)	(11.39%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
Brown - Net	(5.17%)	(13.79%)	(11.61%)
GlobeFlex	(4.14%)	(14.12%)	(17.44%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
GlobeFlex - Net	(4.14%)	(14.21%)	(17.74%)
Progress Intl Equity	(4.71%)	(12.04%)	(11.15%)
Custom Benchmark	(4.53%)	(11.46%)	(14.20%)
MSCI ACWI ex-US Index	(4.53%)	(11.46%)	(14.20%)
Progress Intl Equity - Net	(4.71%)	(12.16%)	(11.60%)
Intl Large Cap Pass. Core	(4.93%)	(12.40%)	(13.18%)
NTGI MSCI EAFE Idx	(4.93%)	(12.40%)	(13.18%)
MSCI EAFE Index	(4.85%)	(12.54%)	(13.79%)
NTGI EAFE Idx - Net	(4.93%)	(12.40%)	(13.19%)
International Small Cap	(5.73%)	(17.11%)	(21.12%)
Franklin Templeton	(5.68%)	(14.73%)	(17.87%)
ACWI Small Cap ex US	(5.44%)	(14.43%)	(18.20%)
Franklin Templeton - Net	(5.68%)	(14.73%)	(18.34%)
William Blair	(5.76%)	(18.74%)	(23.40%)
ACWI Small Cap ex US	(5.44%)	(14.43%)	(18.20%)
Intl SC Blended Benchmark	(5.44%)	(14.43%)	(18.20%)
William Blair - Net	(5.76%)	(18.92%)	(24.01%)
Emerging Markets	(2.92%)	(7.42%)	(15.28%)
Genesis	(2.92%)	(7.42%)	(15.28%)
MSCI Emerging Markets Index	(2.60%)	(7.40%)	(14.25%)
Genesis - Net	(2.97%)	(7.57%)	(15.79%)

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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Intl Large Cap Active Core	5.23%	3.25%	10.04%	3.80% ^(2/08)
Arrowstreet	6.54%	3.62%	10.28%	4.04% ^(3/08)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	0.95% ^(3/08)
Arrowstreet - Net	6.05%	3.14%	9.76%	3.55% ^(3/08)
Brown	2.13%	3.09%	9.92%	7.11% ^(10/04)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	5.15% ^(10/04)
Brown - Net	1.35%	2.16%	9.14%	5.54% ^(1/05)
GlobeFlex	4.92%	2.97%	8.84%	4.05% ^(3/06)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	2.81% ^(3/06)
GlobeFlex - Net	4.53%	2.57%	8.40%	3.61% ^(3/06)
Progress Intl Equity	6.55%	-	-	2.00% ^(7/14)
Custom Benchmark	5.62%	-	-	0.72% ^(7/14)
MSCI ACWI ex-US Index	4.48%	0.68%	6.57%	(0.45%) ^(7/14)
Progress Intl Equity - Net	6.02%	-	-	1.54% ^(7/14)
Intl Large Cap Pass. Core	3.29%	0.93%	6.75%	2.80% ^(1/00)
NTGI MSCI EAFE Idx	3.29%	0.93%	6.74%	3.17% ^(2/00)
MSCI EAFE Index	2.87%	0.53%	6.32%	2.78% ^(2/00)
NTGI EAFE Idx - Net	3.28%	0.92%	6.74%	4.09% ^(1/05)
International Small Cap	1.51%	1.35%	8.40%	3.52% ^(12/05)
Franklin Templeton	3.70%	2.30%	-	4.60% ^(8/11)
ACWI Small Cap ex US	3.82%	1.96%	10.02%	3.11% ^(8/11)
Franklin Templeton - Net	3.01%	1.59%	-	3.88% ^(8/11)
William Blair	(0.12%)	0.64%	-	7.07% ^(9/10)
ACWI Small Cap ex US	3.82%	1.96%	10.02%	5.70% ^(9/10)
Intl SC Blended Benchmark	3.82%	1.96%	8.75%	6.09% ^(9/10)
William Blair - Net	(0.89%)	(0.14%)	-	6.25% ^(9/10)
Emerging Markets	8.78%	1.78%	10.71%	8.55% ^(2/92)
Genesis	8.78%	1.78%	10.71%	10.31% ^(5/04)
MSCI Emerging Markets Index	9.65%	2.03%	8.39%	8.40% ^(5/04)
Genesis - Net	8.12%	1.16%	10.06%	8.25% ^(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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Dom. Fixed Active Core	1.57%	1.57%	0.37%
Brandes Core*	1.37%	1.11%	0.12%
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Brandes Core - Net	1.37%	1.11%	0.12%
EARNEST Partners	1.90%	2.05%	0.70%
Blmbg Aggregate Index	1.84%	1.64%	0.01%
EARNEST Partners - Net	1.90%	2.02%	0.56%
Piedmont	1.37%	1.37%	(0.39%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Piedmont - Net	1.37%	1.34%	(0.54%)
Garcia Hamilton	1.46%	1.39%	0.85%
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Garcia Hamilton	1.46%	1.37%	0.75%
Dom. Fixed Passive Core	1.84%	1.63%	0.06%
BlackRock US Debt	1.83%	1.63%	0.08%
Blmbg Aggregate Index	1.84%	1.64%	0.01%
BlackRock US Debt - Net	1.83%	1.63%	0.07%
NTGI Blmbg Agg. Index	1.84%	1.63%	0.05%
Blmbg Aggregate Index	1.84%	1.64%	0.01%
NTGI Blmbg Agg. Index - Net	1.84%	1.63%	0.04%

* 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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Dom. Fixed Active Core	2.57%	3.02%	4.61%	4.38% ^(4/01)
Brandes Core *	-	-	-	1.17% ^(3/16)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	1.43% ^(3/16)
Brandes Core - Net	-	-	-	1.17% ^(3/16)
EARNEST Partners	2.33%	3.16%	4.55%	4.34% ^(5/05)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	3.86% ^(5/05)
EARNEST Partners - Net	2.17%	2.98%	4.35%	4.14% ^(5/05)
Piedmont	2.70%	2.78%	4.42%	4.07% ^(6/05)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	3.80% ^(6/05)
Piedmont - Net	2.55%	2.63%	4.25%	3.88% ^(6/05)
Garcia Hamilton	2.69%	-	-	2.28% ^(6/15)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	1.59% ^(6/15)
Garcia Hamilton	2.58%	-	-	2.19% ^(6/15)
Dom. Fixed Passive Core	2.11%	2.61%	3.58%	5.83% ^(1/90)
BlackRock US Debt	2.16%	2.65%	-	2.50% ^(10/13)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	2.37% ^(10/13)
BlackRock US Debt - Net	2.16%	2.65%	-	2.50% ^(10/13)
NTGI Blmbg Agg. Index	2.07%	2.57%	3.57%	5.88% ^(2/90)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	5.88% ^(2/90)
NTGI Blmbg Agg. Index - Net	2.06%	2.56%	3.56%	3.80% ^(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 December 31, 2018

	Last Month	Last 3 Months	Last 12 Months
Domestic Fixed Core Plus	1.51%	0.81%	(0.75%)
LM Capital	1.09%	0.28%	(1.39%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
LM Capital - Net	1.09%	0.24%	(1.55%)
Progress Fixed Income	1.39%	0.95%	(0.05%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Progress Fixed Inc. - Net	1.39%	0.86%	(0.37%)
BMO-TCH	1.18%	0.41%	(0.54%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
BMO-TCH. - Net	1.18%	0.37%	(0.70%)
Western	2.24%	1.47%	(1.01%)
Blmbg Aggregate Index	1.84%	1.64%	0.01%
Western - Net	2.24%	1.47%	(1.08%)
Bank Loans	(1.99%)	(3.12%)	0.91%
Barings Global Loan Fund	(1.99%)	(3.12%)	0.91%
Custom Benchmark	(2.01%)	(2.65%)	1.60%
Barings Global Loan Fund - Net	(1.99%)	(3.12%)	0.58%
Emerging Markets	1.04%	0.46%	(6.73%)
Standish	1.04%	0.46%	(6.73%)
Custom Benchmark	1.26%	0.87%	(4.43%)
Standish - Net	1.04%	0.37%	(7.06%)
High Yield	(1.78%)	(3.08%)	(0.87%)
MacKay Shields	(1.78%)	(3.08%)	(0.88%)
ML High Yield Cash Pay Index	(2.19%)	(4.64%)	(2.26%)
MacKay Shields - Net	(1.78%)	(3.17%)	(1.23%)

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 December 31, 2018

	Last 36 Months	Last 60 Months	Last 120 Months	Since Inception
Domestic Fixed Core Plus	2.93%	3.17%	5.32%	8.00% ^(1/82)
LM Capital	2.21%	2.73%	4.69%	4.54% ^(5/05)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	3.86% ^(5/05)
LM Capital - Net	2.05%	2.57%	4.52%	4.37% ^(5/05)
Progress Fixed Income	2.91%	3.05%	4.52%	4.63% ^(1/06)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	3.94% ^(1/06)
Progress Fixed Inc. - Net	2.58%	2.71%	4.17%	4.29% ^(1/06)
BMO-TCH	4.08%	3.66%	5.31%	4.73% ^(5/05)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	3.86% ^(5/05)
BMO-TCH - Net	3.94%	3.53%	5.18%	4.60% ^(5/05)
Western	3.44%	3.66%	6.28%	5.21% ^(11/01)
Blmbg Aggregate Index	2.06%	2.52%	3.48%	4.08% ^(11/01)
Western - Net	3.32%	3.53%	6.14%	4.59% ^(1/05)
Bank Loans	5.58%	-	-	3.86% ^(8/14)
Barings Global Loan Fund	5.58%	-	-	3.86% ^(8/14)
Custom Benchmark	5.15%	-	-	3.40% ^(8/14)
Barings Global Loan Fund - Net	5.06%	-	-	3.32% ^(8/14)
Emerging Markets	5.95%	-	-	1.12% ^(8/14)
Standish	5.95%	-	-	1.12% ^(8/14)
Custom Benchmark	5.66%	1.72%	5.83%	0.57% ^(8/14)
Standish - Net	5.58%	-	-	0.78% ^(8/14)
High Yield	7.37%	4.79%	11.42%	9.41% ^(4/86)
MacKay Shields	7.65%	4.88%	10.69%	8.57% ^(11/00)
ML High Yield Cash Pay Index	7.22%	3.81%	10.89%	7.25% ^(11/00)
MacKay Shields - Net	7.28%	4.51%	10.30%	6.50% ^(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)	
Frontier	11.85	4.99	07/31/1988
Sands	8.49	2.33	10/31/2003
Brandes	5.34	3.95	12/31/1995
Brown	2.81	1.95	09/30/2004
Arrowstreet	2.32	2.80	02/29/2008

Five Worst Performing Portfolio's vs. Benchmarks

Manager	Year-to-Date Underperformance	Since Inception Underperformance	
	(in % points)	(in % points)	
William Blair Int'l SC	-5.20	1.37	08/31/2010
Channing	-3.66	0.87	06/30/2011
LSV	-3.23	1.71	01/31/2003
BMO	-2.79	2.45	01/31/2001
Standish	-2.26	0.56	07/31/2014

Five Highest Returning Portfolios

Manager	Year-to-Date Return	Since Inception Return	
	(in % points)	(in % points)	
Sands	6.97	11.18	10/31/2003
Frontier	2.54	12.73	07/31/1988
Babson	0.91	3.77	07/31/2014
Earnest FI	0.70	4.34	04/30/2005
Blackrock US Debt	0.08	2.49	09/01/2013

Five Lowest Returning Portfolios

Manager	Year-to-Date Return	Since Inception Return	
	(in % points)	(in % points)	
William Blair Int'l SC	-23.40	7.07	08/31/2010
Franklin	-17.87	4.60	07/31/2011
GlobeFlex	-17.44	4.03	02/28/2006
William Blair	-16.88	9.11	09/30/2002
Channing	-16.53	8.42	06/30/2011

Returns are shown gross of investment management fees.

Excludes Real Estate and Alternative Investments portfolios.