Callan

April 30, 2019
Illinois Municipal
Retirement Fund
Monthly Performance Report
Investment Measurement Service
Monthly Review

Market Environment As of April 30, 2019

| | | Year to | | Last 3 | Last 5 | Last 10 |
|---------------------------|------------|---------|-----------|--------|---------|---------|
| Index | Last Month | Date | Last Year | Years | Years | Years |
| Russell:3000 Index | 3.99 | 18.60 | 12.68 | 14.74 | 11.20 | 15.29 |
| S&P:500 | 4.05 | 18.25 | 13.49 | 14.87 | 11.63 | 15.32 |
| Russell:2000 Index | 3.40 | 18.48 | 4.61 | 13.60 | 8.63 | 14.10 |
| MSCI:ACWI ex US | 2.64 | 13.23 | (3.23) | 8.09 | 2.83 | 7.75 |
| MSCI:EM | 2.11 | 12.24 | (5.03) | 11.25 | 4.04 | 7.51 |
| Blmbg:Aggregate | 0.03 | 2.97 | 5.29 | 1.90 | 2.57 | 3.72 |
| NCREIF:Total Index | 0.60 | 2.41 | 6.83 | 7.04 | 9.05 | 8.76 |
| Blmbg:Commodity Price Idx | (0.63) | 5.03 | (10.07) | (1.97) | (10.18) | (3.12) |

Global equities climbed in April with the S&P 500 hitting a record high towards the end of the month. Consumer confidence drove returns in risky assets as some large economies, including China and the U.S., appeared to stabilize during the month. In the Eurozone, government officials were unable to reach a deal regarding Brexit by the deadline of April 12. The departure date has now been set for October 31, 2019. In China, officials decided to pause before implementing additional stimulus measures, allowing time for a potential trade deal to develop between the U.S. and China. Rates generally rose across the U.S. Treasury Yield Curve, with the most substantial increases coming on the long end. Markets continue to price in no rate hikes in 2019, and the expectation (67%) is for one rate cut to come during the year.

The Consumer Price Index (CPI) climbed 0.3% in April and 2.0% over the trailing 12 months. The core CPI rose only 0.1% in April, but 2.1% over the trailing year. Energy prices continued to surge, up 5.7% for the month, and were the main contributor to the overall interest rate increase over the month. The core CPI number continues to be dragged down by apparel which fell 0.8% in April, following up a decrease of 1.9% in March. Fed Chair Jerome Powell cited this bounce back in apparel as a source of optimism.

The initial reading of first quarter GDP growth in the U.S. came in at a very strong 3.2%, significantly above the 2.3% consensus growth rate. The primary contributors to growth were net exports, inventories and consumer spending. While net exports remain negative, their growth contributed more than 1.0 percentage points to the headline rate.

April's employment report announced a better-then-expected 263,000 new nonfarm payrolls, marking a significant growth off an already strong March revised number of 189,000. The unemployment rate fell to 3.6% and the participation dropped another 20 basis points to 62.8%. Wages increased 0.2% from March levels, while April's year-over-year wage growth remained steady at 3.2%.

^{*}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.

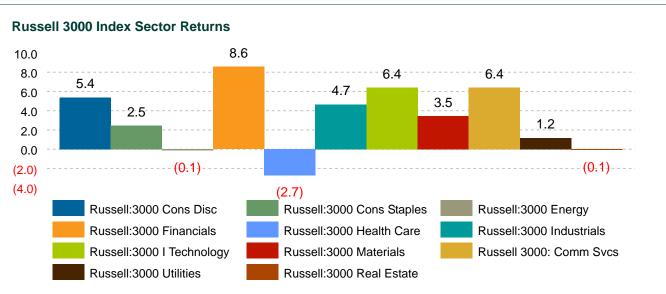


U.S. Equity Overview As of April 30, 2019

| | | Year to | | Last 3 | Last 5 | Last 10 |
|----------------------|------------|---------|-----------|--------|--------|---------|
| Index | Last Month | Date | Last Year | Years | Years | Years |
| Russell:3000 Index | 3.99 | 18.60 | 12.68 | 14.74 | 11.20 | 15.29 |
| S&P:500 | 4.05 | 18.25 | 13.49 | 14.87 | 11.63 | 15.32 |
| Russell:1000 Index | 4.04 | 18.60 | 13.33 | 14.82 | 11.41 | 15.39 |
| Russell:1000 Growth | 4.52 | 21.35 | 17.43 | 18.62 | 14.50 | 16.96 |
| Russell:1000 Value | 3.55 | 15.90 | 9.06 | 10.97 | 8.27 | 13.76 |
| Russell:Midcap Index | 3.81 | 20.97 | 10.69 | 12.82 | 9.75 | 15.65 |
| Russell:2000 Index | 3.40 | 18.48 | 4.61 | 13.60 | 8.63 | 14.10 |
| Russell:2000 Growth | 3.05 | 20.71 | 6.91 | 15.64 | 10.22 | 15.24 |
| Russell:2000 Value | 3.78 | 16.16 | 2.19 | 11.46 | 6.94 | 12.87 |

Backed by a stream of positive economic developments, U.S. equities marched steadily upward throughout the month. The Russell 3000, Russell 1000, and S&P 500 indices each gained 4.0% in April with the S&P 500 hitting a record high late in the month. The Fed's dovish stance continued to provide a tailwind while positive surprises in employment and GDP data boosted gains further. Additionally, corporate earnings came in broadly positive and added more fuel to the rally. Large caps outperformed small caps for the second consecutive month (Russell 1000 Index: +4.0% vs. Russell 2000 Index: +3.4%) and growth continued to outperform value (Russell 1000 Growth Index: +4.5% vs. Russell 1000 Value Index: +3.5%). Mid cap returns were between large and small caps (Russell Midcap Index: +3.8%).

Eight of 11 Russell 3000 sectors posted positive returns in the month and all sectors are positive for the year-to-date period. After dipping almost 5% last month, Financials (+8.6%) rebounded to post the best performance among sectors in April. The Communication Services (+6.4%), Information Technology (+6.4%), and Consumer Discretionary (+5.4%) sectors also saw significant gains. Conversely, a flurry of legislative activity around drug pricing weighed on Health Care stocks, causing the sector to decline 2.7%. Real Estate and Energy posted moderate losses, each falling 0.1%.



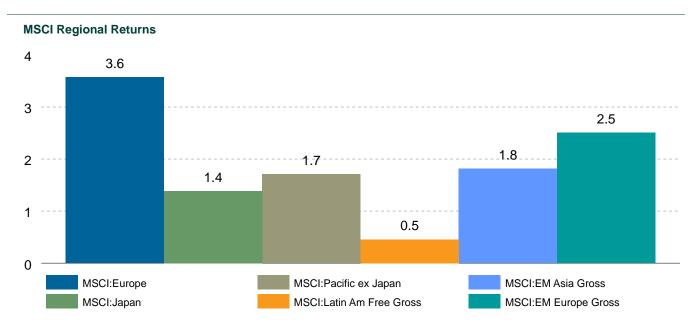


Non-U.S. Equity Overview As of April 30, 2019

| | Last | Year to | | Last 3 | Last 5 | Last 10 |
|---------------------------|-------|---------|-----------|--------|--------|---------|
| Index | Month | Date | Last Year | Years | Years | Years |
| MSCI:ACWI ex US | 2.64 | 13.23 | (3.23) | 8.09 | 2.83 | 7.75 |
| MSCI:EAFE | 2.81 | 13.07 | (3.22) | 7.24 | 2.60 | 7.95 |
| MSCI:EAFE Hedged Net | 3.57 | 15.23 | 4.24 | 11.07 | 7.51 | 9.54 |
| MSCI:EM | 2.11 | 12.24 | (5.03) | 11.25 | 4.04 | 7.51 |
| MSCI:ACWI ex US Small Cap | 2.21 | 12.70 | (8.54) | 6.81 | 3.75 | 10.37 |

Non-U.S. equities climbed in April as fears of a slowdown in global growth subsided and economic data was better than expected (or in some cases not as weak). Eurozone GDP was up only 1.2% annualized but this was slightly above estimates. China generated a robust 6.4% annualized growth in GDP. Manufacturing data, particularly in Europe, continues to be a concern as purchasing manager's indices in many countries remain in contraction territory. These competing forces resulted in performance that was positive but lagged U.S. equities (MSCI ACWI ex-U.S.: +2.6% vs. Russell 1000 Index: +4.0%). Emerging markets trailed developed markets in April (MSCI Emerging Markets Index: +2.1% vs. MSCI EAFE Index: +2.8%). The dollar gained against developed market currencies for a third consecutive month (MSCI EAFE Index: +2.8% vs MSCI EAFE Hedged Net Index: +3.6%). Non-U.S. small cap stocks lagged non-U.S. large caps (MSCI ACWI ex U.S. Small Cap: +2.2% vs. MSCI ACWI ex-U.S.: +2.6%).

Europe was the best performing region (MSCI Europe Index: +3.6%), lifted by strong results in Germany (+6.8%) and France (+4.6%), which both recovered from recent weakness. Emerging Europe (MSCI EM Europe Gross Index: +2.5%) was the second-best performer as rising oil prices boosted Russian stocks, which account for more than 60% of the index. Latin America was the worst performing region for the third straight month despite managing a small gain (MSCI Latin America Free Gross Index: +0.5%).



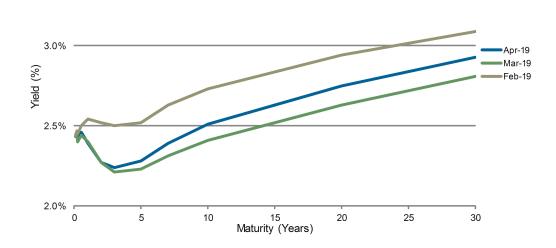


Fixed Income Overview As of April 30, 2019

| | | Year to | | Last 3 | Last 5 | Last 10 |
|---------------------------|------------|---------|-----------|--------|--------|---------|
| Index | Last Month | Date | Last Year | Years | Years | Years |
| Blmbg:Aggregate | 0.03 | 2.97 | 5.29 | 1.90 | 2.57 | 3.72 |
| Blmbg:Long Gov/Credit | (0.40) | 6.02 | 6.89 | 3.19 | 4.81 | 7.29 |
| Blmbg:US Government | (0.27) | 1.83 | 4.76 | 1.02 | 1.98 | 2.55 |
| Blmbg:Credit | 0.49 | 5.39 | 6.38 | 3.23 | 3.46 | 5.98 |
| Blmbg:Mortgage Backed Sec | (0.06) | 2.11 | 4.89 | 1.70 | 2.45 | 3.07 |
| Blmbg:US TIPS | 0.33 | 3.54 | 3.10 | 1.69 | 1.74 | 3.64 |
| ML:US High Yield Cash Pay | 1.40 | 8.90 | 6.74 | 7.74 | 4.83 | 10.09 |
| CS:Leveraged Loan | 1.59 | 5.42 | 4.46 | 5.76 | 4.11 | 7.22 |
| 3 Month T-Bill | 0.19 | 0.79 | 2.18 | 1.25 | 0.78 | 0.45 |
| Blmbg:Treasury | (0.28) | 1.83 | 4.77 | 0.98 | 1.99 | 2.59 |

Treasury Yield Curve





Rates moved higher across the curve in April, more significantly on the long end, as investors favored risk assets. On the long end, the 30-year rose 12 bps to 2.93%. The 10-year increased 10 bps to 2.51% and the 2-year stayed steady at 2.27%. As the curve steepened, the closely watched spread between the 2- and 10-year Treasuries rose 10 basis points to 24 bps to close out the month (its largest month end in 2019). Solid economic data led to spread tightening in both investment grade and below investment grade fixed income. Corporate spreads moved eight bps tighter to finish the month at 111 bps, while high yield corporate spreads fell 33 bps to close at 358 bps. The market implied probability of a Fed rate cut coming in 2019 increased marginally to 67% in April from the 65% March estimate.

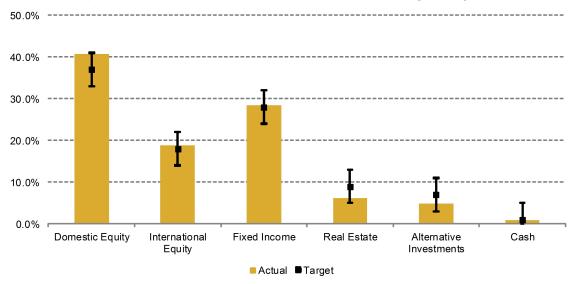
The Bloomberg Aggregate Index increased 0.03% in April amid the rising rate environment. Longer dated issues (Bloomberg Long Gov/Credit Index: -0.40%) performed poorly during the month as rates moved most significantly on the long end of the curve. Despite rising rates, the Bloomberg Credit Index returned 0.49%, benefitting from spread tightening. Spread tightening was more significant in high yield (ML U.S. High Yield Index) where the index returned 1.40% for the month. TIPS (Bloomberg TIPS Index: +0.33%) outperformed nominal bonds (Bloomberg Treasury Index: -0.28%) in April. Though impacted by rising rates in April, returns across fixed income sectors remain positive year-to-date.

IMRF Commentary Executive Summary

Total Fund

The market value of the Total Fund was \$42.73 billion at the end of April, an increase of \$964.98 million from the prior month. The Fund returned 2.16% during the month, leading the 2.05% return of its benchmark. Domestic Equity (+3.82%) underperformed its benchmark (+3.99%). International Equity (+2.69%) led its benchmark by five basis points. The Fixed Income composite returned 0.24% leading its benchmark return of 0.03%. Real Estate returned 0.62% in April, outperforming its benchmark by 22 basis points. Over the last three months, Alternatives (+2.29%) led the benchmark return of 2.18%.

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 April month end, all asset classes are within their target ranges.



U.S. Equity

The U.S. Equity composite returned 3.82% during April, trailing the Russell 3000 Index by 17 basis points. For the month, large caps outperformed small caps.

Large Cap: IMRF's Large Cap managers returned 4.05% in April, modestly leading the 4.04% return of the Russell 1000 Index. In aggregate, growth managers returned 4.31%, while the Russell 1000 Growth Index returned 4.52%. Value managers returned 3.83% collectively, outperforming the 3.55% return of the Russell 1000 Value Index.

Small Cap: The Small Cap composite (+3.39%) trailed the Russell 2000 Index by one basis point in April. The growth managers collectively returned 1.97%, relative to the 3.05% return of the Russell 2000 Growth Index. The value managers returned 4.41% during the month, leading the Russell 2000 Value Index by 63 basis points. The Micro Cap composite returned 3.36% in April.

Public Real Assets: The Public Real Assets portfolio managed by Brookfield and Cohen & Steers returned 0.29% in April, trailing the custom benchmark by 37 basis points.



IMRF Commentary Executive Summary

International Equity

The International Equity composite returned 2.69% in April, five basis points ahead of its MSCI ACWI ex-U.S. benchmark (+2.64%).

International Large Cap: International Large Cap managers collectively returned 2.62% in April, modestly trailing the MSCI ACWI ex-U.S. Index by two basis points. International Large Cap Growth managers (+3.21%) trailed the MSCI ACWI ex-U.S. Growth Index by two basis points. International Large Cap Value managers returned 2.54% for the month, leading the MSCI ACWI ex-U.S. Value Index (+2.19%).

International Small Cap and Emerging Markets: The International Small Cap managers returned 3.90% in April, 169 basis points ahead of the MSCI ACWI Small Cap ex-U.S. Index return of 2.21%. The Emerging Markets portfolio, managed by Genesis, returned 2.63% during the month, leading the MSCI Emerging Markets Index by 51 basis points.

Fixed Income

The Fixed Income composite returned 0.24% in April relative to the 0.03% return of the Bloomberg Aggregate Index.

Active Core: In aggregate, the Domestic Active Core managers returned 0.01% in April, two basis points behind the Bloomberg Aggregate Index.

Core Plus: Domestic Fixed Core Plus managers ended the month with a return of 0.21%, leading the Bloomberg Aggregate Index by 18 basis points.

Bank Loans: The Bank Loans portfolio, managed by Barings, returned 1.61% for the month, leading the custom benchmark by 10 basis points.

Emerging Markets: The Emerging Markets Debt component, managed by Standish, returned 0.16% in April, three basis points ahead of the custom benchmark.

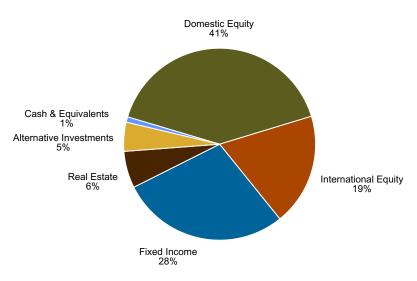
High Yield: The High Yield allocation, managed by MacKay Shields, returned 1.38% in April, trailing the benchmark return of 1.40%.



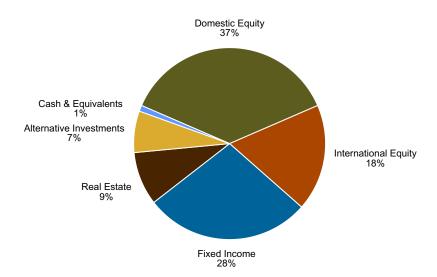
Actual vs Target Asset Allocation

The first chart below shows the Fund's asset allocation as of April 30, 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 | 17,406 | 40.7% | 37.0% | 3.7% | 1,595 |
| International Equity | 8,062 | 18.9% | 18.0% | 0.9% | 370 |
| Fixed Income ' ' | 12,151 | 28.4% | 28.0% | 0.4% | 186 |
| Real Estate | 2,640 | 6.2% | 9.0% | (2.8%) | (1,206) |
| Alternative Investments | 2,108 | 4.9% | 7.0% | (2.1%) | (884) |
| Cash & Equivalents | 366 | 0.9% | 1.0% | (0.1%) | `(61) |
| Total | 42 733 | 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 April 30, 2019, with the distribution as of March 31, 2019.

Asset Distribution Across Investment Managers

| | April 30, 2019 | | March 31, 20 | 19 |
|--------------------------------------|--------------------------------|----------------|--------------------------------|----------------|
| | Market Value | Percent | Market Value | Percent |
| Domestic Equity* Large Cap Growth | \$17,405,861,076 | 40.73% | \$16,922,204,142 | 40.52% |
| NTGI S&P 500 Growth Idx | 2,317,943,381 | 5.42% | 2,229,191,651 | 5.34% |
| Sands | 2,012,528,760 | 4.71% | 1,924,165,514 | 4.61% |
| Piedmont Russell 1000 G | 1,026,916,519 | 2.40% | 982,561,181 | 2.35% |
| Large Cap Value | | | | |
| Dodge & Cox | 1,358,077,969 | 3.18% | 1,303,912,863 | 3.12% |
| BMO | 1,372,927,399 | 3.21% | 1,336,615,458 | 3.20% |
| LSV NTGI S&P 500 Value Idx | 1,544,072,028 1,662,310,174 | 3.61% 3.89% | 1,489,574,324 1,596,494,975 | 3.57% 3.82% |
| Large Cap Core | | | | |
| NTGI MarketCap Index | 2,619,671,201 | 6.13% | 2,667,466,464 | 6.39% |
| Small Cap Growth | | | | |
| Frontier | 564,862,550 | 1.32% | 562,414,557 | 1.35% |
| FIAM | 480,461,666 | 1.12% | 462,671,921 | 1.11% |
| Small Cap Value | | | | |
| Channing | 232.888.073 | 0.54% | 221,810,048 | 0.53% |
| Dimensional Small Cap Value | 584,429,232 | 1.37% | 561,889,112 | 1.35% |
| Inv. Counselors of Maryland | 684,263,883 | 1.60% | 654,592,639 | 1.57% |
| Micro Cap | | | | |
| Dimensional Micro Cap | 435,705,704 | 1.02% | 421,534,608 | 1.01% |
| Public Real Assets | | | | |
| Brookfield Cohen & Steers | 162,080,292 346,722,245 | 0.38% 0.81% | 161,268,829 346,039,999 | 0.39% 0.83% |
| International Equity | \$8,061,867,378 | 18.87% | \$7,850,107,646 | 18.79% |
| International Large Cap Growth | | | | |
| EARNEST Partners | 644,950,323 | 1.51% | 623,647,261 | 1.49% |
| William Blair | 746,096,910 | 1.75% | 724,085,603 | 1.73% |
| International Large Cap Value | | | | |
| Brandes | 612,418,342 | 1.43% | 597,669,193 | 1.43% |
| Lombardia | 1 | 0.00% | 1 | 0.00% |
| Mondrian Lazard | 546,233,749 115,079,210 | 1.28% 0.27% | 532,482,095 111,333,048 | 1.27% 0.27% |
| International Large Cap Core | | | | |
| Arrowstreet | 692,893,272 | 1.62% | 682,511,323 | 1.63% |
| Brown | 351,921,131 | 0.82% | 340,864,762 | 0.82% |
| GlobeFlex | 595,454,518 | 1.39% | 594,247,058 | 1.42% |
| NTGI MSCI EAFE Index | 1,865,560,257 | 4.37% | 1,809,073,759 | 4.33% |
| Progress Intl Equity | 316,528,326 | 0.74% | 305,202,105 | 0.73% |
| International All Cap Developed | | | | |
| Ativo International | 136,175,761 | 0.32% | 132,904,215 | 0.32% |
| International Small Cap | | | | |
| Franklin Templeton | 193,157,901 | 0.45% | 188,089,124 | 0.45% |
| William Blair | 274,642,491 | 0.64% | 262,163,554 | 0.63% |
| Emerging Markets Genesis | 970,755,187 | 2.27% | 945,834,547 | 2.26% |
| deliesis | 310,133,101 | 2.21 70 | 340,034,047 | 2.2070 |

^{*} 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 April 30, 2019, with the distribution as of March 31, 2019.

Asset Distribution Across Investment Managers

| | April 30, 2019 | | March 31, 2019 | | |
|-----------------------------|------------------|---------|------------------|---------|--|
| | Market Value | Percent | Market Value | Percent | |
| Total Fixed Income | \$12,151,308,465 | 28.44% | \$12,141,408,312 | 29.07% | |
| Domestic Fixed Core | | | | | |
| Brandes Core | 355,532,840 | 0.83% | 355,758,618 | 0.85% | |
| EARNEST Partners | 1,040,270,703 | 2.43% | 1,040,874,149 | 2.49% | |
| Piedmont Investment | 1,029,133,762 | 2.41% | 1,026,900,495 | 2.46% | |
| Garcia Hamilton | 1,015,838,257 | 2.38% | 1,016,955,069 | 2.43% | |
| Domestic Fixed Passive Core | | | | | |
| NTGI Blmbg Agg. Index | 1,713,097,203 | 4.01% | 1,712,818,585 | 4.10% | |
| BlackRock US Debt | 1,642,207,042 | 3.84% | 1,641,758,049 | 3.93% | |
| Domestic Fixed Core Plus | | | | | |
| LM Capital | 883,314,857 | 2.07% | 880,661,394 | 2.11% | |
| Progress Fixed Income | 923,796,580 | 2.16% | 921,564,229 | 2.21% | |
| Taplin, Canida, & Habacht | 911,788,293 | 2.13% | 909,583,056 | 2.18% | |
| Western | 1,075,332,220 | 2.52% | 1,074,541,087 | 2.57% | |
| Bank Loans | | | | | |
| Barings Global Loan Fund | 576,088,018 | 1.35% | 574,916,173 | 1.38% | |
| Emerging Markets Debt | | | | | |
| Standish | 206,375,916 | 0.48% | 206,054,666 | 0.49% | |
| Opportunistic Fixed Income | | | | | |
| Crescent | 4 | 0.00% | 11,117,986 | 0.03% | |
| High Yield | | | | | |
| MacKay Shields | 778,198,620 | 1.82% | 767,570,501 | 1.84% | |
| FIAM High Yield | 334,151 | 0.00% | 334.256 | 0.00% | |
| | 22.,.0. | | , | /0 | |

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



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

Investment Manager Asset Allocation

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

Asset Distribution Across Investment Managers

| | April 30, 2019 | | March 31, 2019 | | |
|-------------------------------------|------------------|---------|-----------------|---------|--|
| | Market Value | Percent | Market Value | Percent | |
| Real Estate | \$2,640,026,203 | 6.18% | \$2,607,214,338 | 6.24% | |
| Real Estate Core | | | | | |
| TA Buckhead Ind. Prop. | 505,903,023 | 1.18% | 505,903,023 | 1.21% | |
| Barings Core Property Fund | 1,070 | 0.00% | 1,070 | 0.00% | |
| Barings European Core Property | 85,309,825 | 0.20% | 85,473,482 | 0.20% | |
| Blackstone Property Partners Europe | 121,637,200 | 0.28% | 121,870,547 | 0.29% | |
| INVESCO Core RE | 208,860,635 | 0.49% | 208,383,270 | 0.50% | |
| INVESCO Euro real estate | 56,262,334 | 0.13% | 56,804,509 | 0.14% | |
| AEW Core Property Trust | 238,686,638 | 0.56% | 235,144,734 | 0.56% | |
| CBRE US Core Property Trust | 193,547,093 | 0.45% | 189,500,154 | 0.45% | |
| Real Estate Non-Core | | | | | |
| Artemis MWBE Spruce | 173,870,113 | 0.41% | 173,528,871 | 0.42% | |
| Franklin Templeton EMREFF | 18,234,052 | 0.04% | 18,234,052 | 0.04% | |
| Security Capital | 56,312,011 | 0.13% | 55,536,045 | 0.13% | |
| Dune II | 28,018,636 | 0.07% | 28,018,636 | 0.07% | |
| Non-Core Real Estate Funds* | 834,215,510 | 1.95% | 807,462,960 | 1.93% | |
| Non-Core Intl Real Estate Funds** | 117,311,134 | 0.27% | 119,496,055 | 0.29% | |
| Rockwood Fund VIII | 248,553 | 0.00% | 248,553 | 0.00% | |
| Almanac ARS V | 1,603,723 | 0.00% | 1,603,723 | 0.00% | |
| TA Fund IX | 4,653 | 0.00% | 4,653 | 0.00% | |
| Alternative Investments | \$2,107,623,496 | 4.93% | \$1,927,183,981 | 4.61% | |
| Absolute Return | | | | | |
| Aurora | 635,016 | 0.00% | 657,791 | 0.00% | |
| Private Equity | | | | | |
| Abbott | 339,144,152 | 0.79% | 339,143,602 | 0.81% | |
| Muller & Monroe MPEFF | 5,800,581 | 0.01% | 5,800,581 | 0.01% | |
| Pantheon | 252,567,271 | 0.59% | 257,568,319 | 0.62% | |
| Private Equity Fund - Domestic | 904,854,607 | 2.12% | 914,504,783 | 2.19% | |
| Private Equity Fund - International | 299,439,275 | 0.70% | 104,757,611 | 0.25% | |
| Agriculture | 407.544.000 | 0.400/ | 407.544.000 | 0.470/ | |
| Premiere Partners IV | 197,511,092 | 0.46% | 197,511,092 | 0.47% | |
| Timberland | 70 000 505 | 0.470/ | 70 000 505 | 0.4001 | |
| Forest Investment Assoc. | 73,093,535 | 0.17% | 73,093,535 | 0.18% | |
| Unlisted Infrastructure | 04 577 000 | 0.000/ | 04.440.007 | 0.0007 | |
| Unlisted Infrastructure Funds | 34,577,966 | 0.08% | 34,146,667 | 0.08% | |
| Cash & Equivalents | \$365,879,623 | 0.86% | \$319,469,749 | 0.76% | |
| Total Fund | \$42,732,566,241 | | | | |

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

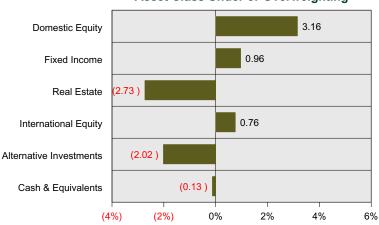


^{*} Non-Core Real Estate Funds funded since September 2011.

Monthly Total Fund Relative Attribution - April 30, 2019

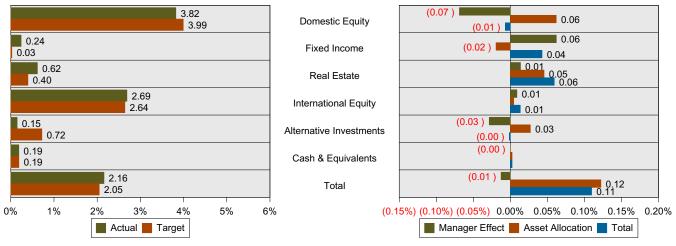
The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation 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.





Actual vs Target Returns

Relative Attribution by Asset Class



Relative Attribution Effects for Month ended April 30, 2019

| Asset Class | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|-------------------------|-------------------------------|-------------------------------|------------------|------------------|-------------------|---------------------|-----------------------------|
| Domestic Equity | 40% | 37% | 3.82% | 3.99% | (0.07%) | 0.06% | (0.01%) |
| Fixed Income | 29% | 28% | 0.24% | 0.03% | 0.06% | (0.02%) | 0.04% |
| Real Estate | 6% | 9% | 0.62% | 0.40% | 0.01% | `0.05%´ | 0.06% |
| International Equity | 19% | 18% | 2.69% | 2.64% | 0.01% | 0.00% | 0.01% |
| Alternative Investments | | 7% | 0.15% | 0.72% | (0.03%) | 0.03% | (0.00%) |
| Cash & Equivalents | 1% | 1% | 0.19% | 0.19% | (0.00%) | 0.00% | <u>0.00%′</u> |
| | | | | | · · | | |
| Total | | | 2.16% = | 2.05% | + (0.01%) + | 0.12% | 0.11% |

^{*} 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.

| | | Last | Year | Last |
|-----------------------------------|---------------|-------------|------------|--------------|
| | Last Month | 3 Months | to Date | 12 Months |
| Domestic Equity | 3.82% | 8.23% | 18.96% | 10.55% |
| Blended Benchmark** | 3.99% | 9.22% | 18.60% | 12.68% |
| Domestic Equity - Net | 3.82% | 8.20% | 18.90% | 10.35% |
| International Equity | 2.69% | 5.90% | 14.15% | (3.39%) |
| MSCI ACWI x US (Net) | 2.64% | 5.27% | 13.23% | (3.23%) |
| International Equity - Net | 2.67% | 5.86% | 14.06% | (3.65%) |
| Fixed Income | 0.24% | 2.18% | 3.75% | 5.16% |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% |
| Fixed Income - Net | 0.23% | 2.17% | 3.71% | 5.04% |
| Real Estate | 0.62% | 1.46% | 1.76% | 8.05% |
| Blended Benchmark*** | 0.40% | 1.20% | 1.60% | 6.33% |
| Real Estate - Net | 0.62% | 1.46% | 1.76% | 8.05% |
| Alternative Investments | 0.15% | 2.29% | 2.25% | 17.02% |
| Alternatives Custom Benchmark**** | 0.72% | 2.18% | 2.91% | 9.00% |
| Alternative Investments - Net | 0.15% | 2.25% | 2.20% | 16.89% |
| Private Equity | 0.16% | 2.94% | 2.89% | 20.82% |
| Alternatives Custom Benchmark**** | 0.72% | 2.18% | 2.91% | 9.00% |
| Agriculture | 0.00% | (2.17%) | (2.17%) | 0.21% |
| Blended Benchmark*** | 0.40% | 1.20% | 1.60% | 6.33% |
| Timberland | (0.25%) | 1.08% | 1.08% | (1.78%) |
| Blended Benchmark*** | 0.40% | 1.20% | 1.60% | 6.33% |
| Unlisted Infrastructure | 1.26% | 1.26% | 1.26% | 9.51% |
| Alternatives Custom Benchmark**** | 0.72% | 2.18% | 2.91% | 9.00% |
| Total Fund | 2.16% | 5.25% | 11.39% | 6.09% |
| Total Fund - Net | 2.15% | 5.23% | 11.33% | 5.93% |
| Total Fund Benchmark | 2.05% | 5.13% | 10.30% | 7.03% |

^{*} 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.

| | Last 36 | Last 60 | Last 84 | Last 120 | Since |
|-----------------------------------|------------|------------|------------|-------------|---------------|
| | Months | Months | Months | Months | Inception |
| Domestic Equity | 14.76% | 10.59% | 13.08% | 15.29% | 11.64% (1/82) |
| Blended Benchmark** | 14.74% | 11.18% | 13.33% | 15.33% | 11.44% (1/82) |
| Domestic Equity - Net | 14.54% | 10.35% | 12.82% | 15.02% | 8.63% (1/05) |
| International Equity | 8.49% | 3.89% | 7.00% | 9.30% | 7.77% (9/86) |
| MSCI ACWI x US (Net) | 8.09% | 2.83% | 5.36% | 7.75% | - |
| International Equity - Net | 8.14% | 3.56% | 6.66% | 8.97% | 5.57% (1/05) |
| Fixed Income | 3.06% | 3.20% | 3.33% | 5.38% | 8.19% (1/82) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 2.32% | 3.72% | 7.65% (1/82) |
| Fixed Income - Net | 2.92% | 3.06% | 3.17% | 5.23% | 4.65% (1/05) |
| Real Estate - Net | 8.92% | 10.06% | 10.39% | 8.28% | 7.32% (1/05) |
| Blended Benchmark*** | 6.92% | 9.07% | 9.87% | 9.28% | 7.61% (1/05) |
| Alternative Investments | 12.34% | 10.32% | 9.95% | 9.45% | 10.86% (2/86) |
| Alternatives Custom Benchmark**** | 9.00% | 9.00% | 9.00% | 9.35% | 12.73% (2/86) |
| Alternative Investments - Net | 12.13% | 10.03% | 9.66% | 9.15% | 8.66% (1/05) |
| Private Equity | 15.62% | 13.18% | 12.32% | 12.01% | 13.08% (2/86) |
| Alternatives Custom Benchmark**** | 9.00% | 9.00% | 9.00% | 9.35% | 12.73% (2/86) |
| Agriculture | (2.36%) | 5.68% | 10.04% | 8.42% | 7.37% (10/97 |
| Blended Benchmark*** | 6.92% | 9.07% | 9.87% | 9.28% | 7.48% (10/97 |
| Timberland | 0.82% | 1.48% | 2.69% | 2.34% | 7.53% (10/92 |
| Blended Benchmark*** | 6.92% | 9.07% | 9.87% | 9.28% | 7.51% (10/92 |
| Unlisted Infrastructure | - | - | - | - | 8.75% (4/18) |
| Alternatives Custom Benchmark**** | 9.00% | 9.00% | 9.00% | 9.35% | 9.00% (4/18) |
| Total Fund | 9.63% | 7.01% | 8.73% | 10.52% | 9.87% (1/82) |
| Total Fund - Net | 9.41% | 6.79% | 8.50% | 10.29% | 7.17% (1/05) |
| Total Fund Benchmark | 8.75% | 7.00% | 8.22% | 9.83% | 6.98% (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 April 30, 2019

| | | Last | | Last |
|----------------------------------|--------|--------|---------|--------|
| | Last | 3 | to | 12 |
| | Month | Months | Date | Months |
| _arge Cap Equity | 4.05% | 8.84% | 18.91% | 11.78% |
| Russell 1000 Index | 4.04% | 9.43% | 18.60% | 13.33% |
| arge Cap Growth | 4.31% | 11.30% | 22.95% | 18.69% |
| NTGI S&P 500 Growth Idx | 3.98% | 11.18% | 19.53% | 16.92% |
| S&P/Citi 500 Growth Index | 3.98% | 11.18% | 19.53% | 16.94% |
| NTGI S&P 500 Growth Idx - Net | 3.98% | 11.18% | 19.53% | 16.91% |
| Piedmont Russell 1000 G | 4.51% | 11.33% | 21.33% | - |
| Russell 1000 Growth Index | 4.52% | 11.34% | 21.35% | 17.43% |
| Piedmont Russell 1000 G - Net | 4.51% | 11.32% | 21.32% | - |
| Sands | 4.59% | 11.42% | 28.03% | 22.07% |
| LCG Blended Benchmark* | 4.52% | 11.34% | 21.35% | 17.43% |
| Russell 1000 Growth Index | 4.52% | 11.34% | 21.35% | 17.43% |
| Sands - Net | 4.59% | 11.36% | 27.96% | 21.79% |
| 2 | 0.000/ | 0.740/ | 45.040/ | 0.440/ |
| _arge Cap Value | 3.83% | 6.54% | 15.64% | 6.44% |
| Dodge & Cox | 4.35% | 6.10% | 14.75% | 7.79% |
| LCV Blended Benchmark** | 3.55% | 7.53% | 15.90% | 9.06% |
| Russell 1000 Value Index | 3.55% | 7.53% | 15.90% | 9.06% |
| Dodge & Cox - Net | 4.35% | 6.04% | 14.69% | 7.56% |
| ВМО | 2.93% | 6.38% | 15.15% | 4.75% |
| LCV Blended Benchmark** | 3.55% | 7.53% | 15.90% | 9.06% |
| Russell 1000 Value Index | 3.55% | 7.53% | 15.90% | 9.06% |
| BMO - Net | 2.93% | 6.33% | 15.09% | 4.52% |
| LSV | 3.87% | 5.91% | 15.62% | 3.34% |
| LCV Blended Benchmark** | 3.55% | 7.53% | 15.90% | 9.06% |
| Russell 1000 Value Index | 3.55% | 7.53% | 15.90% | 9.06% |
| LSV - Net | 3.87% | 5.91% | 15.55% | 3.15% |
| NTGI S&P 500 Value Idx | 4.12% | 7.62% | 16.84% | 9.80% |
| S&P/Citi 500 Value Index | 4.12% | 7.60% | 16.82% | 9.75% |
| NTGI S&P 500 Value Idx - Net | 4.12% | 7.62% | 16.83% | 9.79% |
| _arge Cap Passive Core | 4.04% | 9.26% | 18.68% | 12.71% |
| • | | | | |
| NTGI MarketCap Idx | 4.04% | 9.26% | 18.68% | 12.71% |
| DJ U.S. Total Stock Market Index | 3.98% | 9.18% | 18.58% | 12.58% |
| NTGI MarketCap Idx - Net | 4.04% | 9.26% | 18.67% | 12.70% |

^{*} The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those 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 April 30, 2019

| | Last 36 | Last 60 | Last 120 | Since |
|----------------------------------|------------------|------------|-------------|-------------------|
| | Months | Months | Months | Inception |
| Large Cap Equity | 15.28% | 11.40% | 15.49% | 11.30% (1/82) |
| Russell 1000 Index | 14.82% | 11.41% | 15.39% | 11.64% (1/82) |
| Large Cap Growth | 19.77% | 14.47% | 16.91% | 12.04% (1/82) |
| NTGI S&P 500 Growth Idx | 17.90% | 14.18% | 16.70% | 8.01% (8/01) |
| S&P/Citi 500 Growth Index | 17.93% | 14.18% | 16.69% | 7.99% (8/01) |
| NTGI S&P 500 Growth Idx - Net | 17.89% | 14.17% | 16.70% | 9.97% (1/05) |
| Piedmont Russell 1000 G | _ | - | _ | 2.07% (10/18) |
| Russell 1000 Growth Index | 18.62% | 14.50% | 16.96% | 2.07% (10/18) |
| Piedmont Russell 1000 G - Net | - | - | - | 2.06% (10/18) |
| Sands | 23.75% | 15.63% | 20.59% | 12.71% (11/03) |
| LCG Blended Benchmark* | 18.62% | 14.50% | 16.96% | 10.01% (11/03) |
| Russell 1000 Growth Index | | 14.50% | 16.96% | 10.01% (11/03) |
| | 18.62% 23.48% | | | |
| Sands - Net | 23.46% | 15.38% | 20.32% | 11.70% (1/05) |
| arge Cap Value | 12.42% | 9.10% | 14.48% | 10.36% (10/82) |
| Dadas 9 Cov | 44.070/ | 0.05% | 45 240/ | 0.660/ |
| Dodge & Cox | 14.87% | 9.95% | 15.31% | 9.66% (9/03) |
| LCV Blended Benchmark** | 10.97% | 8.27% | 13.76% | 8.42% (9/03) |
| Russell 1000 Value Index | 10.97% | 8.27% | 13.76% | 8.59% (9/03) |
| Dodge & Cox - Net | 14.65% | 9.73% | 15.07% | 8.01% (1/05) |
| ВМО | 11.44% | 8.87% | 14.02% | 8.16% (2/01) |
| LCV Blended Benchmark** | 10.97% | 8.27% | 13.76% | 5.78% (2/01) |
| Russell 1000 Value Index | 10.97% | 8.27% | 13.76% | 6.80% (2/01) |
| BMO - Net | 11.21% | 8.63% | 13.77% | 8.27% (1/05) |
| LSV | 12.29% | 8.96% | 14.95% | 11.02% (2/03) |
| LCV Blended Benchmark** | 10.97% | 8.27% | 13.76% | 9.35% (2/03) |
| Russell 1000 Value Index | 10.97% | 8.27% | 13.76% | 9.36% (2/03) |
| LSV - Net | 12.05% | 8.71% | 14.66% | 8.38% (1/05) |
| NTGI S&P 500 Value Idx | 11.45% | 8.74% | 13.83% | 5.91% (8/99) |
| S&P/Citi 500 Value Index | 11.34% | 8.66% | 13.75% | 5.88% (8/99) |
| NTGI S&P 500 Value lidex | 11.45% | 8.73% | 13.82% | 7.17% (1/05) |
| INTO SOF SOO VAIUE IUX - INEL | 11.40% | 0.73% | 13.02 % | 7 . 1 7 70 (1/05) |
| Large Cap Passive Core | 14.81% | 11.25% | 15.42% | 11.20% (1/85) |
| NTGI MarketCap Idx | 14.81% | 11.25% | 15.44% | 10.97% (2/85) |
| DJ U.S. Total Stock Market Index | 14.71% | 11.14% | 15.30% | 10.92% (2/85) |
| = = 0.0 otal otalika mankat maak | / 0 | / 0 | | (2/00) |

^{**} 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.



^{*} The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those the S&P 500/Citigroup Growth 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 April 30, 2019

| | | Last | Year | Last | |
|------------------------------------|-------|--------|--------|---------|--|
| | Last | 3 | to | 12 | |
| | Month | Months | Date | Months | |
| Small Cap Equity | 3.39% | 5.86% | 19.71% | 5.19% | |
| Russell 2000 Index | 3.40% | 6.50% | 18.48% | 4.61% | |
| Small Cap Growth | 1.97% | 6.24% | 23.34% | 10.82% | |
| Frontier | 0.44% | 4.70% | 22.71% | 16.33% | |
| Russell 2000 Growth Index | 3.05% | 8.22% | 20.71% | 6.91% | |
| Frontier - Net | 0.31% | 4.57% | 22.05% | 15.41% | |
| FIAM | 3.85% | 8.17% | 24.52% | 9.06% | |
| Russell 2000 Growth Index | 3.05% | 8.22% | 20.71% | 6.91% | |
| FIAM - Net | 3.85% | 8.17% | 24.52% | 8.79% | |
| Small Cap Value | 4.41% | 5.83% | 18.28% | 1.72% | |
| Channing | 4.99% | 8.42% | 21.03% | 0.89% | |
| Russell 2000 Value Index | 3.78% | 4.71% | 16.16% | 2.19% | |
| Channing - Net | 4.87% | 8.29% | 20.74% | 0.37% | |
| DFA Small Cap Value | 4.01% | 3.42% | 15.58% | (0.94%) | |
| Russell 2000 Value Index | 3.78% | 4.71% | 16.16% | 2.19% | |
| DFA Small Cap Value - Net | 4.01% | 3.31% | 15.45% | (1.43%) | |
| Inv. Counselors of Maryland | 4.54% | 7.08% | 19.75% | 4.42% | |
| Russell 2000 Value Index | 3.78% | 4.71% | 16.16% | 2.19% | |
| Inv. Couns. of Maryland - Net | 4.54% | 7.08% | 19.64% | 3.90% | |
| Micro Cap | 3.36% | 4.79% | 15.56% | 1.66% | |
| DFA Micro Cap | 3.36% | 4.79% | 15.57% | 2.41% | |
| Russell 2000 Value Index | 3.78% | 4.71% | 16.16% | 2.19% | |
| Russell 2000 Index | 3.40% | 6.50% | 18.48% | 4.61% | |
| DFA Micro Cap - Net | 3.36% | 4.67% | 15.44% | 1.91% | |
| | | | | | |
| Public Real Assets | 0.29% | 5.24% | 15.08% | 13.15% | |
| Public Real Assets Benchmark (1) | 0.66% | 5.71% | 14.53% | 11.98% | |
| Brookfield Public Global Inf | 0.50% | 5.94% | 17.05% | 11.45% | |
| Dow Jones Global Infra Comp Idx | 0.50% | 5.97% | 16.47% | 10.78% | |
| Brookfield Public Global Inf - Net | 0.50% | 5.80% | 16.90% | 10.86% | |
| Cohen & Steers Public Global Inf | 0.20% | 4.92% | 14.19% | 13.96% | |
| FTSE GI Core Infr 50/50 N | 0.71% | 5.62% | 13.89% | 12.33% | |
| Cohen & St Public Global Inf - Net | 0.20% | 4.92% | 14.07% | 13.47% | |

^{(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 April 30, 2019

| | Last | Last | Last | |
|------------------------------------|------------|--------|--------|----------------------|
| | 36 | 60 | 120 | Since |
| | Months | Months | Months | Inception |
| Small Cap Equity | 12.79% | 8.12% | 14.95% | 12.19% (7/88) |
| Russell 2000 Index | 13.60% | 8.63% | 14.10% | 9.50% (7/88) |
| . 1.0.00011000 111.0011 | . 5.55 / 5 | 0.0070 | , , | 0.00 /0 (//00) |
| Small Cap Growth | 14.86% | 10.16% | 15.58% | 13.04% (7/88) |
| Frontier | 20.90% | 11.03% | 15.82% | 13.33% (8/88) |
| Russell 2000 Growth Index | 15.64% | 10.22% | 15.24% | 8.31% (8/88) |
| Frontier - Net | 20.16% | 10.36% | 15.08% | 10.07% (1/05) |
| FIAM | 12.38% | 10.80% | 16.37% | 13.58% (8/88) |
| Russell 2000 Growth Index | 15.64% | 10.22% | 15.24% | 8.31% (8/88) |
| FIAM - Net | 11.96% | 10.30% | 15.79% | 10.92% (1/05) |
| Small Cap Value | 11.48% | 7.66% | 14.68% | 11.83% (9/89) |
| Channing | 10.93% | 7.33% | - | 10.71% (7/11) |
| Russell 2000 Value Index | 11.46% | 6.94% | 12.87% | 9.29% (7/11) |
| Channing - Net | 10.34% | 6.82% | - | 10.10% (7/11) |
| DFA Small Cap Value | 9.66% | 6.42% | 15.09% | 12.02% (2/96) |
| Russell 2000 Value Index | 11.46% | 6.94% | 12.87% | 9.58% (2/96) |
| DFA Small Cap Value - Net | 9.09% | 5.91% | 14.54% | 7.72% (1/05) |
| Inv. Counselors of Maryland | 13.87% | 9.73% | 15.13% | 11.63% (5/99) |
| Russell 2000 Value Index | 11.46% | 6.94% | 12.87% | 9.12% (5/99) |
| Inv. Couns. of Maryland - Net | 13.26% | 9.20% | 14.59% | 8.78% (1/05) |
| Micro Cap | 10.99% | 4.95% | 14.23% | 11.53% (7/84) |
| DFA Micro Cap | 12.85% | 8.72% | 15.51% | 11.19% (8/87) |
| Russell 2000 Value Index | 11.46% | 6.94% | 12.87% | 9.87% (8/87) |
| Russell 2000 Index | 13.60% | 8.63% | 14.10% | 8.89% (8/87) |
| DFA Micro Cap - Net | 12.30% | 8.18% | 14.96% | 8.02% (1/05) |
| | | | | |
| Public Real Assets | - | - | - | 7.40% (8/17) |
| Public Real Assets Benchmark (1) | - | - | - | 5.66% (8/17) |
| Brookfield Public Global Inf | - | - | - | 4.70% (8/17) |
| Dow Jones Global Infra Comp Idx | 7.11% | 4.17% | 12.67% | 3.48% (8/17) |
| Brookfield Public Global Inf - Net | - | - | - | 4.24% (8/17) |
| Cohen & Steers Public Global Inf | - | - | - | 8.72% (8/17) |
| FTSE GI Core Infr 50/50 N | 9.27% | 7.14% | - | 6.36% (8/17) |
| Cohen & St Public Global Inf - Net | - | - | - | 8.34% (8/17) |

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



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.

| | | Last | Year | Last | |
|------------------------|-------|--------|--------|---------|--|
| | Last | 3 | to | 12 | |
| | Month | Months | Date | Months | |
| Intl Large Cap Equity | 2.62% | 5.53% | 13.42% | (3.40%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| Intl Large Cap Growth | 3.21% | 7.94% | 16.26% | (3.62%) | |
| EARNEST Partners | 3.42% | 6.38% | 14.85% | (3.78%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Growth | 3.23% | 7.83% | 16.05% | (0.34%) | |
| EARNEST Partners - Net | 3.42% | 6.38% | 14.79% | (3.93%) | |
| William Blair | 3.04% | 9.32% | 17.50% | (3.34%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Growth | 3.23% | 7.83% | 16.05% | (0.34%) | |
| William Blair - Net | 2.95% | 9.23% | 17.30% | (3.69%) | |
| Intl Large Cap Value | 2.54% | 3.35% | 11.12% | (4.09%) | |
| Brandes | 2.47% | 0.99% | 9.40% | (6.00%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Value | 2.19% | 3.08% | 10.84% | (5.15%) | |
| Brandes - Net | 2.41% | 0.94% | 9.29% | (6.15%) | |
| Mondrian | 2.46% | 5.43% | 12.55% | (2.36%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Value | 2.19% | 3.08% | 10.84% | (5.15%) | |
| Mondrian - Net | 2.46% | 5.43% | 12.55% | (2.48%) | |
| Lazard | 3.36% | 6.60% | 13.84% | (1.50%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Value | 2.19% | 3.08% | 10.84% | (5.15%) | |
| Lazard - Net | 3.36% | 6.60% | 13.78% | (1.75%) | |



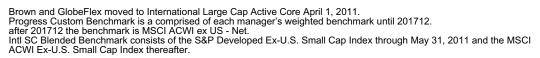
The table below details the rates of return for the fund's international large cap growth and international large cap value managers over various time periods. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized.

| | Last | Last | Last | |
|------------------------|--------|--------|--------|----------------------|
| | 36 | 60 | 120 | Since |
| | Months | Months | Months | Inception |
| Intl Large Cap Equity | 8.23% | 3.76% | 9.12% | 7.76% (9/86) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | - |
| Intl Large Cap Growth | 9.26% | 4.01% | 9.61% | 8.37% (9/02) |
| EARNEST Partners | 10.07% | 3.21% | 9.75% | 9.13% (10/04) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 5.93% (10/04) |
| MSCI ACWI ex-US Growth | 9.40% | 4.89% | 9.13% | 6.91% (10/04) |
| EARNEST Partners - Net | 9.87% | 3.01% | 9.39% | 7.84% (1/05) |
| William Blair | 8.64% | 4.77% | 10.86% | 9.57% (10/02) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 8.13% (10/02) |
| MSCI ACWI ex-US Growth | 9.40% | 4.89% | 9.13% | 8.53% (10/02) |
| William Blair - Net | 8.22% | 4.37% | 10.44% | 6.23% (1/05) |
| Intl Large Cap Value | 6.87% | 2.87% | 7.36% | 8.74% (10/95) |
| Brandes | 6.62% | 2.60% | 7.60% | 8.91% (1/96) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 5.16% (1/96) |
| MSCI ACWI ex-US Value | 7.78% | 1.69% | 7.30% | - |
| Brandes - Net | 6.38% | 2.36% | 7.35% | 4.34% (1/05) |
| Mondrian | 7.32% | 3.18% | - | 5.69% (4/12) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 5.05% (4/12) |
| MSCI ACWI ex-US Value | 7.78% | 1.69% | 7.30% | 4.58% (4/12) |
| Mondrian - Net | 6.93% | 2.77% | - | 5.24% (4/12) |
| Lazard | 6.86% | 3.52% | - | 6.46% (4/12) |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 5.05% (4/12) |
| MSCI ACWI ex-US Value | 7.78% | 1.69% | 7.30% | 4.58% (4/12) |
| Lazard - Net | 6.45% | 3.05% | - | 5.91% (4/12) |



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.

| | | Last | Year | Last | |
|--|----------------|----------------|------------------|--------------------|--|
| | Last | 3 | to | 12 | |
| | Month | Months | Date | Months | |
| Intl Large Cap Active Core | 1.77% | 4.37% | 13.18% | (3.84%) | |
| Arrowstreet | 1.52% | 4.00% | 12.56% | (3.47%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| Arrowstreet - Net | 1.52% | 4.00% | 12.44% | (3.93%) | |
| Brown | 3.24% | 7.07% | 14.91% | 1.27% | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| Brown - Net | 3.24% | 7.07% | 14.84% | 1.08% | |
| GlobeFlex | 0.20% | 2.58% | 11.76% | (8.78%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| GlobeFlex - Net | 0.20% | 2.47% | 11.65% | (9.14%) | |
| Progress Intl Equity | 3.71% | 5.68% | 15.39% | (0.02%) | |
| Custom Benchmark | 2.64% | 5.27% | 13.23% | (3.23%) | |
| MSCI ACWI ex-US Index | 2.64% | 5.27% | 13.23% | (3.23%) | |
| Progress Intl Equity - Net | 3.71% | 5.68% | 15.25% | (0.52%) | |
| Intl Large Cap Pass. Core | 3.12% | 6.51% | 13.41% | (2.35%) | |
| | | | | | |
| NTGI MSCI EAFE Idx | 3.12% | 6.51% | 13.41% | (2.35%) | |
| MSCI EAFE Index | 2.81% | 6.10% | 13.07% | (3.22%) | |
| NTGI EAFE ldx - Net | 3.12% | 6.51% | 13.41% | (2.36%) | |
| Intl All Cap Developed | 2.46% | 5.54% | 5.40% | - | |
| Ativo International | 2.46% | 5.54% | _ | - | |
| MSCI EAFE + Canada | 2.83% | 6.01% | 13.58% | (2.63%) | |
| Ativo International - Net | 2.46% | 5.54% | - | - ' | |
| International Small Cap | 3.90% | 8.36% | 17.47% | (0.040/) | |
| international Small Cap | 3.90 /6 | 8.30 /6 | 17.47/0 | (8.01%) | |
| Franklin Templeton | 2.69% | 7.39% | 15.95% | (6.72%) | |
| ACWI Small Cap ex US | 2.21% | 4.51% | 12.70% | (8.54%) | |
| Franklin Templeton - Net | 2.69% | 7.39% | 15.75% | (7.26%) | |
| William Blair | 4.76% | 9.06% | 18.71% | (8.69%) | |
| ACWI Small Cap ex US | 2.21% | 4.51% | 12.70% | (8.54%) | |
| Intl SC Blended Benchmark | 2.21% | 4.51% | 12.70% | (8.54%) | |
| William Blair - Net | 4.57% | 8.86% | 18.28% | (9.40%) | |
| Emerging Markets | 2.63% | 7.65% | 18.79% | (0.35%) | |
| Genesis | 2.63% | 7.65% | 18.79% | (0.35%) | |
| | 2.12% | 3.24% | | | |
| | | | | | |
| MSCI Emerging Markets Index Genesis - Net | 2.12% 2.63% | 3.24% 7.55% | 12.30% 18.62% | (4.67%) (0.90%) | |





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 April 30, 2019

| | Last | Last | Last | | |
|-----------------------------|--------|---------|-----------|----------------------|--|
| | 36 | 60 | 120 | Since | |
| | Months | Months | Months | Inception | |
| Intl Large Cap Active Core | 9.12% | 5.30% | 10.81% | 4.83% (2/08) | |
| Arrowstreet | 10.02% | 5.88% | 11.00% | 5.02% (3/08) | |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 2.05% (3/08) | |
| Arrowstreet - Net | 9.51% | 5.41% | 10.48% | 4.53% (3/08) | |
| Brown | 7.14% | 5.17% | 11.13% | 7.96% (10/04) | |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 5.93% (10/04) | |
| Brown - Net | 6.31% | 4.23% | 10.35% | 6.43% (1/05) | |
| GlobeFlex | 8.27% | 4.59% | 10.00% | 4.83% (3/06) | |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 3.71% (3/06) | |
| GlobeFlex - Net | 7.87% | 4.20% | 9.56% | 4.39% (3/06) | |
| Progress Intl Equity | 11.02% | - | <u>-</u> | 4.88% (7/14) | |
| Custom Benchmark | 9.14% | - | - | 3.29% (7/14) | |
| MSCI ACWI ex-US Index | 8.09% | 2.83% | 7.75% | 2.17% (7/14) | |
| Progress Intl Equity - Net | 10.52% | - | - | 4.42% (7/14) | |
| | | | | | |
| Intl Large Cap Pass. Core | 7.72% | 3.03% | 8.40% | 3.43% (1/00) | |
| NTGI MSCI EAFE Idx | 7.72% | 3.03% | 8.39% | 3.79% (2/00) | |
| MSCI EAFE Index | 7.24% | 2.60% | 7.95% | 3.39% (2/00) | |
| NTGI EAFE ldx - Net | 7.72% | 3.02% | 8.39% | 4.91% (1/05) | |
| Intl All Cap Developed | - | - | - | 5.54% (2/19) | |
| Ativo International | | | | 5.54% (2/19) | |
| MSCI EAFE + Canada | 7.16% | 2.45% | 7.81% | 6.01% (2/19) | |
| Ativo International - Net | 7.1076 | 2.45 /0 | - | 5.54% (2/19) | |
| | | | | | |
| International Small Cap | 7.25% | 4.58% | 10.39% | 4.68% (12/05) | |
| Franklin Templeton | 8.82% | 4.86% | - | 6.41% (8/11) | |
| ACWI Small Cap ex US | 6.81% | 3.75% | 10.37% | 4.58% (8/11) | |
| Franklin Templeton - Net | 8.11% | 4.17% | - | 5.69% (8/11) | |
| William Blair | 6.10% | 4.44% | - | 8.92% (9/10) | |
| ACWI Small Cap ex US | 6.81% | 3.75% | 10.37% | 6.94% (9/10) | |
| Intl SC Blended Benchmark | 6.81% | 3.75% | 9.75% | 7.32% (9/10) | |
| William Blair - Net | 5.23% | 3.60% | - | 8.08% (9/10) | |
| Emerging Markets | 11.66% | 4.73% | 11.02% | 9.13% (2/92) | |
| Genesis | 11.66% | 4.73% | 11.02% | 11.35% (5/04) | |
| MSCI Emerging Markets Index | 11.66% | 4.42% | 7.87% | 9.05% (5/04) | |
| Genesis - Net | 11.01% | 4.11% | 10.37% | 9.34% (1/05) | |
| | , . | | . 3.0. 70 | 2.0.70 (00) | |

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.



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 April 30, 2019

| | | Last | Year | Last | |
|-----------------------------|---------|--------|-------|--------|--|
| | Last | 3 | to | 12 | |
| | Month | Months | Date | Months | |
| Dom. Fixed Active Core | 0.01% | 1.90% | 2.84% | 4.91% | |
| Brandes Core* | (0.06%) | 1.66% | 2.94% | 4.89% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| Brandes Core - Net | (0.06%) | 1.66% | 2.94% | 4.89% | |
| EARNEST Partners | (0.06%) | 2.08% | 2.78% | 5.36% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| EARNEST Partners - Net | (0.09%) | 2.04% | 2.71% | 5.22% | |
| Piedmont | 0.22% | 2.17% | 3.13% | 4.61% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| Piedmont - Net | 0.18% | 2.13% | 3.06% | 4.47% | |
| Garcia Hamilton | (0.11%) | 1.53% | 2.56% | 4.63% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| Garcia Hamilton | (0.13%) | 1.51% | 2.52% | 4.54% | |
| Dom. Fixed Passive Core | 0.02% | 1.91% | 3.01% | 5.35% | |
| | | | | | |
| BlackRock US Debt | 0.03% | 1.91% | 3.02% | 5.40% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| BlackRock US Debt - Net | 0.03% | 1.91% | 3.02% | 5.40% | |
| NTGI Blmbg Agg. Index | 0.02% | 1.92% | 3.00% | 5.31% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| NTGI Blmbg Agg. Index - Net | 0.01% | 1.91% | 2.99% | 5.30% | |

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



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 April 30, 2019

| | Last 36 | Last 60 | Last 120 | Since |
|-----------------------------|------------|------------|-------------|---------------------|
| | Months | Months | Months | Inception |
| Dom. Fixed Active Core | 2.33% | 2.98% | 4.77% | 4.46% (4/01) |
| Brandes Core * | 1.87% | - | - | 1.97% (3/16) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 2.22% (3/16) |
| Brandes Core - Net | 1.87% | - | - | 1.97% (3/16) |
| EARNEST Partners | 2.26% | 3.08% | 4.59% | 4.44% (5/05) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 3.99% (5/05) |
| EARNEST Partners - Net | 2.11% | 2.90% | 4.40% | 4.24% (5/05) |
| Piedmont | 2.34% | 2.83% | 4.60% | 4.20% (6/05) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 3.93% (6/05) |
| Piedmont - Net | 2.19% | 2.68% | 4.44% | 4.01% (6/05) |
| Garcia Hamilton | 2.42% | - | - | 2.75% (6/15) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 2.22% (6/15) |
| Garcia Hamilton | 2.31% | - | - | 2.65% (6/15) |
| Dom. Fixed Passive Core | 1.96% | 2.65% | 3.82% | 5.87% (1/90) |
| DI 10 110 D 11 | | 0.700/ | | 0.000/ |
| BlackRock US Debt | 2.01% | 2.70% | - | 2.90% (10/13) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 2.77% (10/13) |
| BlackRock US Debt - Net | 2.00% | 2.69% | - | 2.89% (10/13) |
| NTGI Blmbg Agg. Index | 1.91% | 2.61% | 3.81% | 5.92% (2/90) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 5.91% (2/90) |
| NTGI Blmbg Agg. Index - Net | 1.90% | 2.60% | 3.80% | 3.93% (1/05) |

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



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 April 30, 2019

| | Last Month | Last 3 Months | Year to Date | Last 12 Months | |
|--------------------------------|---------------|---------------------|--------------------|----------------------|--|
| Domestic Fixed Core Plus | 0.21% | 2.19% | 3.93% | 5.27% | |
| LM Capital | 0.30% | 2.31% | 4.10% | 4.89% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| LM Capital - Net | 0.26% | 2.27% | 4.02% | 4.72% | |
| Progress Fixed Income | 0.24% | 2.27% | 3.66% | 5.46% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| Progress Fixed Inc Net | 0.24% | 2.27% | 3.57% | 5.12% | |
| BMO-TCH | 0.24% | 2.27% | 3.90% | 5.28% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| BMO-TCH Net | 0.24% | 2.27% | 3.87% | 5.15% | |
| Western | 0.07% | 1.94% | 4.05% | 5.40% | |
| Blmbg Aggregate Index | 0.03% | 1.89% | 2.97% | 5.29% | |
| Western - Net | 0.07% | 1.94% | 4.05% | 5.29% | |
| Bank Loans | 1.61% | 3.10% | 5.21% | 4.02% | |
| Barings Global Loan Fund | 1.61% | 3.10% | 5.21% | 4.02% | |
| Custom Benchmark | 1.51% | 2.96% | 5.13% | 4.62% | |
| Barings Global Loan Fund - Net | 1.63% | 3.13% | 5.23% | 3.90% | |
| Emerging Markets | 0.16% | 0.02% | 5.07% | (1.52%) | |
| Standish | 0.16% | 0.02% | 5.07% | (1.52%) | |
| Custom Benchmark | 0.13% | 0.06% | 4.53% | 0.47% | |
| Standish - Net | 0.16% | (0.06%) | 4.99% | (1.86%) | |
| High Yield | 1.38% | 4.59% | 8.90% | 7.67% | |
| MacKay Shields | 1.38% | 4.59% | 8.91% | 7.66% | |
| ML High Yield Cash Pay Index | 1.40% | 4.12% | 8.90% | 6.74% | |
| MacKay Shields - Net | 1.38% | 4.51% | 8.83% | 7.31% | |

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.



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 April 30, 2019

| | Last 36 Months | Last 60 Months | Last 120 Months | Since Inception |
|--------------------------------|----------------------|----------------------|-----------------------|---------------------|
| Domestic Fixed Core Plus | 2.93% | 3.27% | 5.48% | 8.04% (1/82) |
| LM Capital | 2.29% | 3.01% | 4.90% | 4.73% (5/05) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 3.99% (5/05) |
| LM Capital - Net | 2.13% | 2.85% | 4.73% | 4.56% (5/05) |
| Progress Fixed Income | 2.91% | 3.10% | 4.73% | 4.79% (1/06) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 4.07% (1/06) |
| Progress Fixed Inc Net | 2.60% | 2.78% | 4.38% | 4.45% (1/06) |
| BMO-TCH | 3.76% | 3.58% | 5.64% | 4.90% (5/05) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 3.99% (5/05) |
| BMO-TCH - Net | 3.62% | 3.45% | 5.50% | 4.77% (5/05) |
| Western | 3.50% | 3.75% | 6.41% | 5.34% (11/01) |
| Blmbg Aggregate Index | 1.90% | 2.57% | 3.72% | 4.18% (11/01) |
| Western - Net | 3.37% | 3.61% | 6.26% | 4.76% (1/05) |
| Bank Loans | 6.20% | - | - | 4.70% (8/14) |
| Barings Global Loan Fund | 6.20% | - | - | 4.70% (8/14) |
| Custom Benchmark | 5.82% | - | - | 4.25% (8/14) |
| Barings Global Loan Fund - Net | 5.75% | - | - | 4.20% (8/14) |
| Emerging Markets | 4.61% | - | - | 2.10% (8/14) |
| Standish | 4.61% | - | - | 2.10% (8/14) |
| Custom Benchmark | 3.79% | 1.93% | 5.66% | 1.47% (8/14) |
| Standish - Net | 4.24% | - | - | 1.77% (8/14) |
| High Yield | 8.33% | 5.76% | 10.70% | 9.58% (4/86) |
| MacKay Shields | 8.50% | 5.86% | 10.12% | 8.89% (11/00) |
| ML High Yield Cash Pay Index | 7.74% | 4.83% | 10.09% | 7.61% (11/00) |
| MacKay Shields - Net | 8.13% | 5.49% | 9.73% | 6.96% (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) | |
| Sands | 6.68 | 2.69 | 10/31/2003 |
| Genesis | 6.48 | 2.29 | 04/30/2004 |
| William Blair Int'l SC | 6.01 | 1.98 | 08/31/2010 |
| Channing | 4.87 | 1.42 | 06/30/2011 |
| William Blair | 4.27 | 1.44 | 09/30/2002 |

Five Worst Performing Portfolio's vs. Benchmarks

| Manager | Year-to-Date Underperformance | Since Inception Underperformance | |
|-------------|-------------------------------|----------------------------------|------------|
| | (in % points) | (in % points) | |
| Brandes | -3.83 | 3.75 | 12/31/1995 |
| Dodge & Cox | -1.16 | 1.24 | 08/31/2003 |
| ВМО | -0.76 | 2.38 | 01/31/2001 |
| Mondrian | -0.68 | 0.64 | 03/31/2012 |
| Arrowstreet | -0.66 | 2.69 | 02/29/2008 |

Five Highest Returning Portfolios

| Manager | Year-to-Date Return | Since Inception Return | |
|---------------------|---------------------|------------------------|------------|
| | (in % points) | (in % points) | |
| Sands | 28.03 | 12.71 | 10/31/2003 |
| Pyramis SCG | 24.52 | 13.58 | 07/31/1988 |
| Frontier | 22.71 | 13.33 | 07/31/1988 |
| Channing | 21.03 | 10.71 | 06/30/2011 |
| Inv Couselors of MD | 19.75 | 11.63 | 04/30/1999 |

Five Lowest Returning Portfolios

| Manager | Year-to-Date Return | Since Inception Return | |
|-------------------|---------------------|------------------------|------------|
| | (in % points) | (in % points) | |
| Earnest FI | 2.78 | 4.44 | 04/30/2005 |
| NTGI BC Agg | 3.00 | 5.92 | 01/31/1990 |
| Blackrock US Debt | 3.02 | 2.88 | 09/01/2013 |
| Piedmont | 3.13 | 4.17 | 05/31/2005 |
| Progress | 3.66 | 4.79 | 12/31/2005 |

Returns are shown gross of investment management fees.

Excludes Real Estate and Alternative Investments portfolios.