

Bristol County Retirement System

# Analysis of Investment Performance

As of March 31, 2019

# Table of Contents

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## ANALYSIS OF INVESTMENT PERFORMANCE

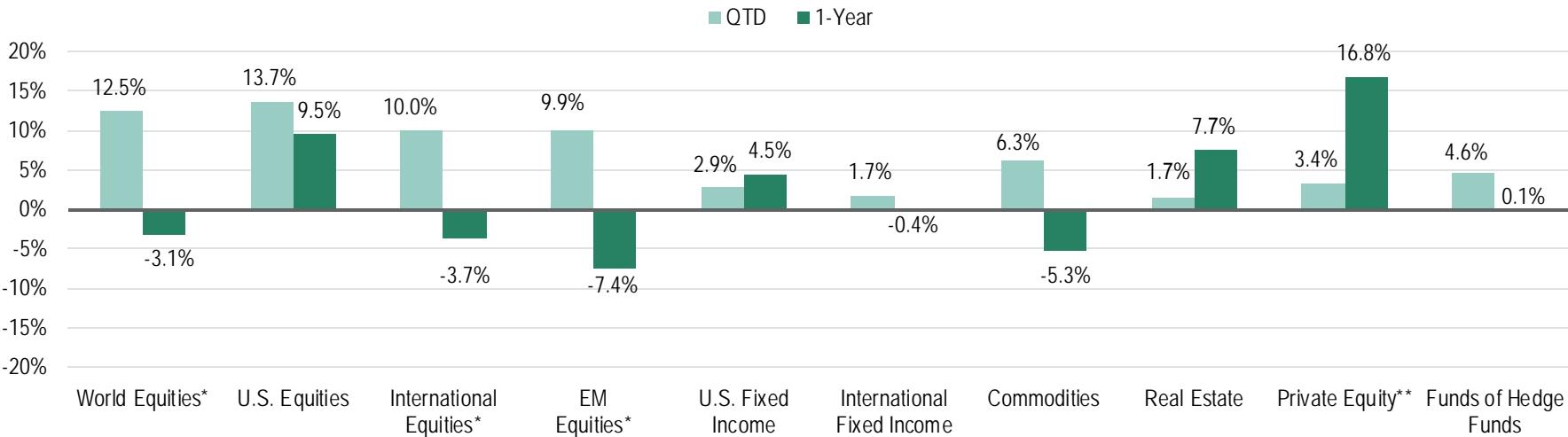
|                                   | SECTION |
|-----------------------------------|---------|
| Financial Market Conditions ..... | 1       |
| Total Fund .....                  | 2       |
| Domestic Equity .....             | 3       |
| International Equity .....        | 4       |
| Domestic Fixed Income.....        | 5       |
| Global Fixed Income .....         | 6       |
| Alternatives .....                | 7       |

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## **Financial Market Conditions**

# Q1 2019 In Review

## Summary of Investment Returns



## Quarterly Synopsis

- World equity markets rose in Q1. Fears over U.S./China trade relations lessened and central banks became more accommodative.
- U.S. equity gained in the quarter. Economic data was broadly positive and the Federal Reserve kept interest rates on hold.
- International equities were higher with optimism over global trade and with the European Central Bank not raising rates.
- Emerging market equity rose in Q1 with more optimism surrounding U.S./China trade talks.
- U.S. fixed income rose in the quarter. Investors favored riskier assets like corporate and high-yield bonds over Treasuries.
- Non-U.S. fixed income also gained in Q1, with rates on hold and growth concerns in Europe leading investors to safer assets.
- Hedge funds rose during the quarter. Equity hedge strategies were the top performers.

\* Net of Dividends

\*\* Performance as of Q3 2018 because Q4 2018 and Q1 2019 performance data is not yet available.

Sources: Investment Metrics, Thomson One, FactSet

# Q1 2019 Index Returns

| Asset Class                   | Indices                                     | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|-------------------------------|---|-------|-------|--------|--------|--------|---------|
| <b>World Equity</b>           | MSCI World <sup>1</sup>                     | 12.48 | 12.48 | 4.01   | 10.68  | 6.78   | 12.38   |
| <b>U.S. Equity</b>            | Russell 3000                                | 14.04 | 14.04 | 8.77   | 13.48  | 10.36  | 16.00   |
| <b>Non-U.S. Equity</b>        | MSCI EAFE <sup>1</sup>                      | 9.98  | 9.98  | -3.71  | 7.27   | 2.33   | 8.96    |
| <b>Emerging Market Equity</b> | MSCI EM <sup>1</sup>                        | 9.92  | 9.92  | -7.41  | 10.68  | 3.68   | 8.94    |
| <b>U.S. Fixed Income</b>      | Bloomberg Barclays U.S. Aggregate           | 2.94  | 2.94  | 4.48   | 2.03   | 2.74   | 3.77    |
| <b>Non-U.S. Fixed Income</b>  | FTSE <sup>2</sup> Non-U.S. WGBI (Unhedged)  | 1.52  | 1.52  | -4.55  | 0.87   | -0.06  | 2.02    |
| <b>Commodities</b>            | Bloomberg Commodity Index                   | 6.32  | 6.32  | -5.25  | 2.22   | -8.92  | -2.56   |
| <b>Private Real Estate</b>    | NFI-ODCE <sup>3</sup>                       | 1.69  | 1.69  | 7.74   | 8.17   | 10.36  | 8.47    |
| <b>Private Equity</b>         | Thomson Reuters Private Equity <sup>4</sup> | 3.37  | 11.19 | 16.80  | 13.87  | 13.79  | 11.54   |
| <b>Hedge Funds</b>            | HFRI Fund of Funds Composite                | 4.59  | 4.59  | 0.11   | 3.92   | 2.20   | 3.54    |

<sup>1</sup> Net of Dividends

<sup>2</sup> Formerly Citigroup Non-U.S. WGBI. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were all rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

<sup>3</sup> NCREIF Fund Index (NFI) – Open End Diversified Core Equity (ODCE)

<sup>4</sup> Performance as of Q3 2018 because Q4 2018 and Q1 2019 performance data is not yet available.

Sources: Investment Metrics, Thomson One, FactSet

# Q1 2019 Index Returns

| Equity Indices      | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|---------------------|-------|-------|--------|--------|--------|---------|
| S&P 500®            | 13.65 | 13.65 | 9.50   | 13.51  | 10.91  | 15.92   |
| Russell 1000        | 14.00 | 14.00 | 9.30   | 13.52  | 10.63  | 16.05   |
| Russell 1000 Growth | 16.10 | 16.10 | 12.75  | 16.53  | 13.50  | 17.52   |
| Russell 1000 Value  | 11.93 | 11.93 | 5.67   | 10.45  | 7.72   | 14.52   |
| Russell 2000        | 14.58 | 14.58 | 2.05   | 12.92  | 7.05   | 15.36   |
| Russell 2000 Growth | 17.14 | 17.14 | 3.85   | 14.87  | 8.41   | 16.52   |
| Russell 2000 Value  | 11.93 | 11.93 | 0.17   | 10.86  | 5.59   | 14.12   |
| Russell 3000        | 14.04 | 14.04 | 8.77   | 13.48  | 10.36  | 16.00   |
| MSCI EAFE*          | 9.98  | 9.98  | -3.71  | 7.27   | 2.33   | 8.96    |
| MSCI World*         | 10.45 | 10.45 | -3.14  | 7.29   | 2.20   | 8.82    |
| MSCI EM*            | 9.92  | 9.92  | -7.41  | 10.68  | 3.68   | 8.94    |

| Fixed-Income Indices                     | QTD  | YTD  | 1-Year | 3-Year | 5-Year | 10-Year |
|--|------|------|--------|--------|--------|---------|
| Blbg Bar U.S. Aggregate                  | 2.94 | 2.94 | 4.48   | 2.03   | 2.74   | 3.77    |
| Blbg Bar U.S. Govt/Credit                | 3.26 | 3.26 | 4.48   | 2.12   | 2.78   | 3.92    |
| Blbg Bar U.S. Intermediate Govt/Credit   | 2.32 | 2.32 | 4.24   | 1.66   | 2.12   | 3.14    |
| Blbg Bar U.S. L/T Govt/Credit            | 6.45 | 6.45 | 5.24   | 3.75   | 5.35   | 7.23    |
| Blbg Bar U.S. Government                 | 2.10 | 2.10 | 4.20   | 1.07   | 2.15   | 2.44    |
| Blbg Bar U.S. Credit                     | 4.87 | 4.87 | 4.89   | 3.48   | 3.61   | 6.22    |
| Blbg Bar U.S. Mortgage-Backed Securities | 2.17 | 2.17 | 4.42   | 1.77   | 2.66   | 3.12    |
| BofA ML U.S. High Yield Master II        | 7.26 | 7.26 | 5.93   | 8.56   | 4.68   | 11.26   |
| Citigroup Non-U.S. WGBI (Unhedged)       | 1.52 | 1.52 | -4.55  | 0.87   | -0.06  | 2.02    |
| Citigroup 3-Month T-Bill                 | 0.60 | 0.60 | 2.11   | 1.17   | 0.72   | 0.41    |

| Other Indices                    | QTD  | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|----------------------------------|------|-------|--------|--------|--------|---------|
| Hueler Stable Value              | 0.59 | 0.59  | 2.31   | 2.05   | 1.92   | 2.22    |
| Bloomberg Commodity              | 6.32 | 6.32  | -5.25  | 2.22   | -8.92  | -2.56   |
| HFRI Fund of Funds Composite     | 4.59 | 4.59  | 0.11   | 3.92   | 2.20   | 3.54    |
| NCREIF ODCE                      | 1.69 | 1.69  | 7.74   | 8.17   | 10.36  | 8.47    |
| Thomson Reuters Private Equity** | 3.37 | 11.19 | 16.80  | 13.87  | 13.79  | 11.54   |

\* Net of Dividends

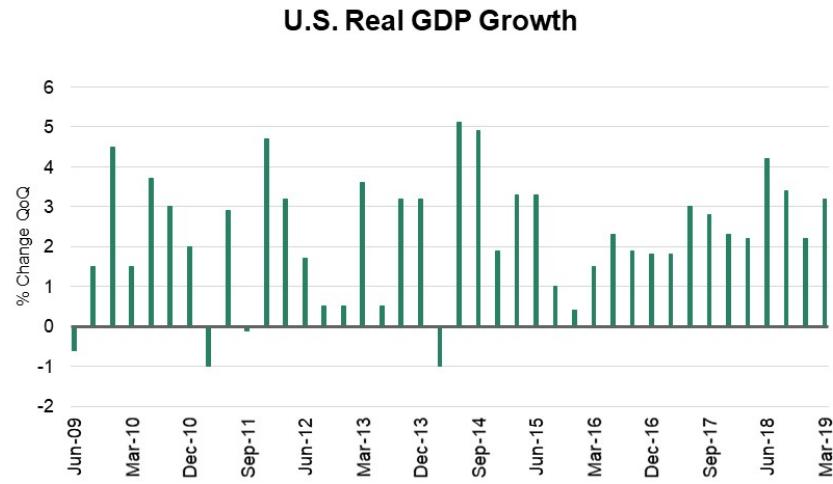
\*\* Performance reported as of Q3 2018 because Q4 2018 and Q1 2019 performance data is not yet available.

Sources: eVestment Alliance, Hueler Analytics, Investment Metrics, Thomson One, FactSet

# Q1 2019 In Review: U.S. Economy

## GDP Growth

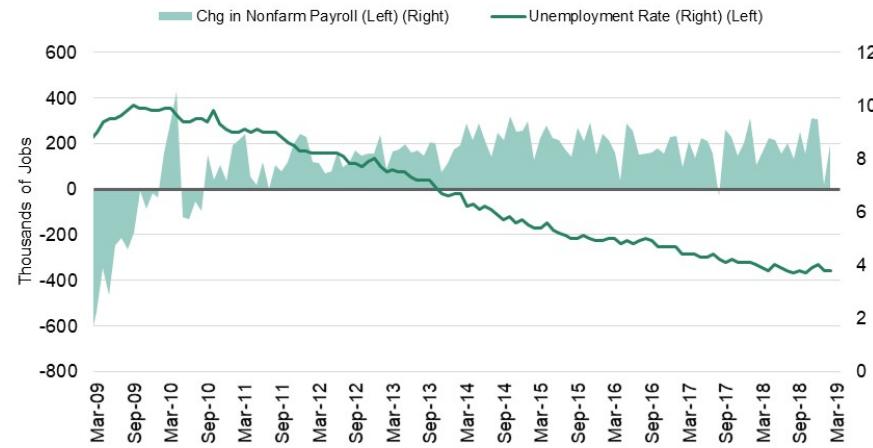
- U.S. GDP growth rose by 3.2% in Q1 2019.
- A rise in exports, a drop in imports and higher inventory investment helped drive GDP growth in the quarter.
- However, consumer spending, which drives 2/3 of economic activity, was weaker in Q1. Americans bought fewer vehicles and services in the quarter.



## Employment Picture

- The unemployment rate fell to 3.8% in March. Nonfarm payrolls rose by 520,000 over the quarter.
- Employment gains were led by health care, professional and technical services, and food services and drinking places.
- Employment in industries such as construction, manufacturing, mining, wholesale trade, transportation and warehousing, information, financial activities, and government, showed little change.

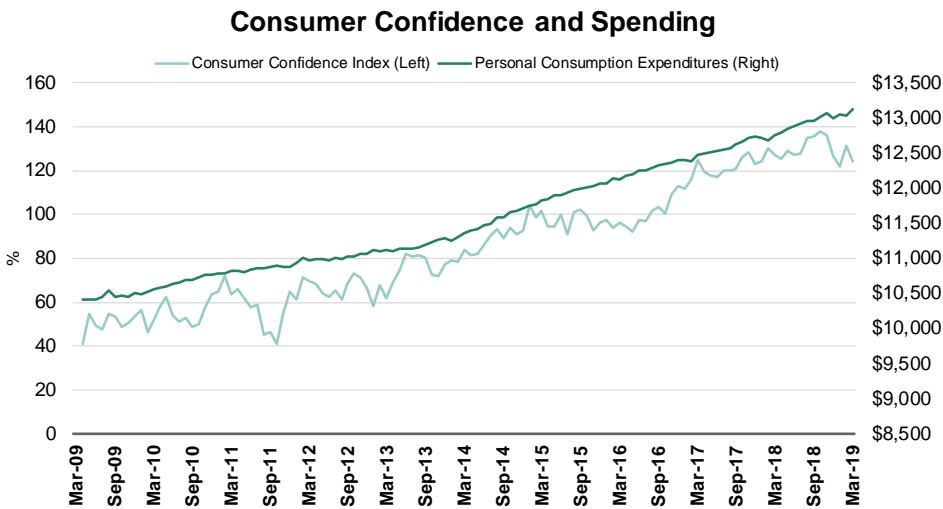
## U.S. Nonfarm Payrolls and Unemployment Rate



# Q1 2019 In Review: U.S. Economy

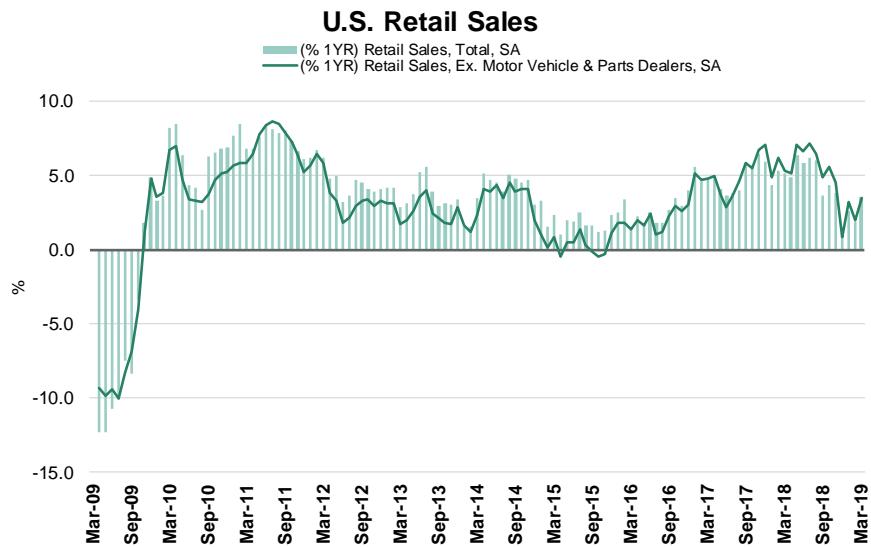
## Consumer Confidence and Spending

- Sentiment declined again in Q1, as the Conference Board's Consumer Confidence Index decreased from 128.1 at the end of December 2018 to 124.1 at the end of March.
- Personal consumption expenditures rose in January\*.
- Consumer confidence fell as global trade tensions persisted and worries grew about the state of the global economy.



## Retail Sales

- Retail sales ended March\* up 3.5% from one year ago.
- Auto, gasoline, furniture and clothing sales gained the most in March.
- The gains show a significant rebound from late 2018's sales slowdown. Continued positive economic news has helped boost consumers' willingness to spend so far in 2019.



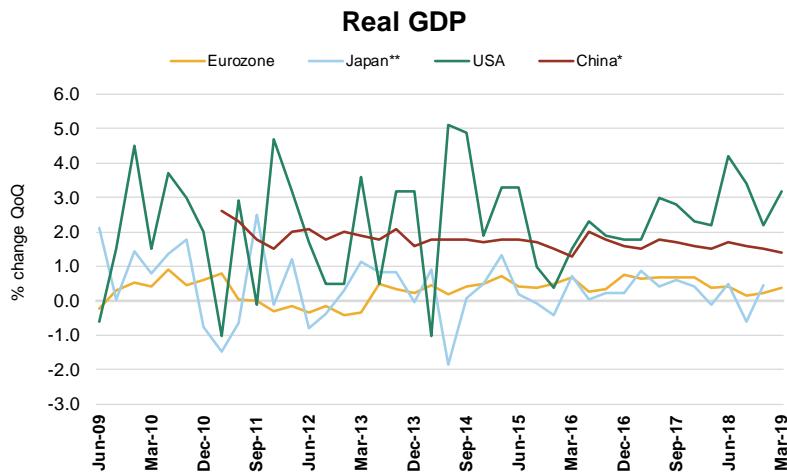
\*The most recent data available.

Source this page: FactSet

# Q1 2019 In Review: Global Economy

## World GDP Growth

- Eurozone GDP grew 0.4% quarter over quarter (QoQ), its best growth rate since early 2018. The Eurozone's annual growth rate stayed steady at 1.2%.
- China's GDP growth declined by 0.1% QoQ to 1.4% in Q1. The country's annual growth rate remains at 6.4%.
- Japan's GDP was back in positive territory QoQ in Q4\*\*, coming in at 0.5%. The Japanese economy's annual growth rate grew to 0.3%.
- U.S. GDP grew 3.2% in Q1.

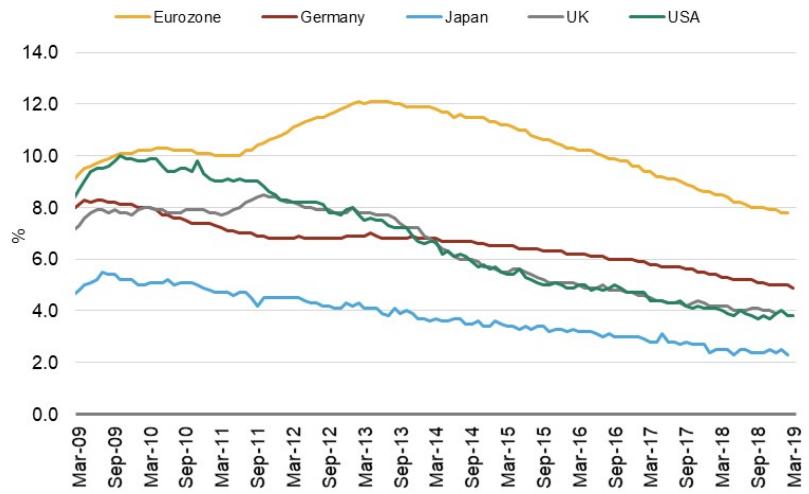


Note that the figures in the graph above represent the percent change in real GDP from the previous quarter, not the annual growth rate of these economies.

## Global Employment Picture

- Eurozone unemployment fell to 7.7% in March 2019\*\*, the region's lowest-recorded rate since October 2008. The Eurozone shook off recession fears in Q1 with strong GDP growth, and jobs grew accordingly in the quarter.
- Japan's unemployment rate ticked up to 2.5% in March. While higher than its earlier historic low of 2.2%, unemployment remained quite modest in Japan.

## International Unemployment Rates



\*Quarter over quarter data calculations began in 2011.

\*\*Most recent data available.

Source this page: FactSet

# Q1 2019 In Review: Global Equity Overview

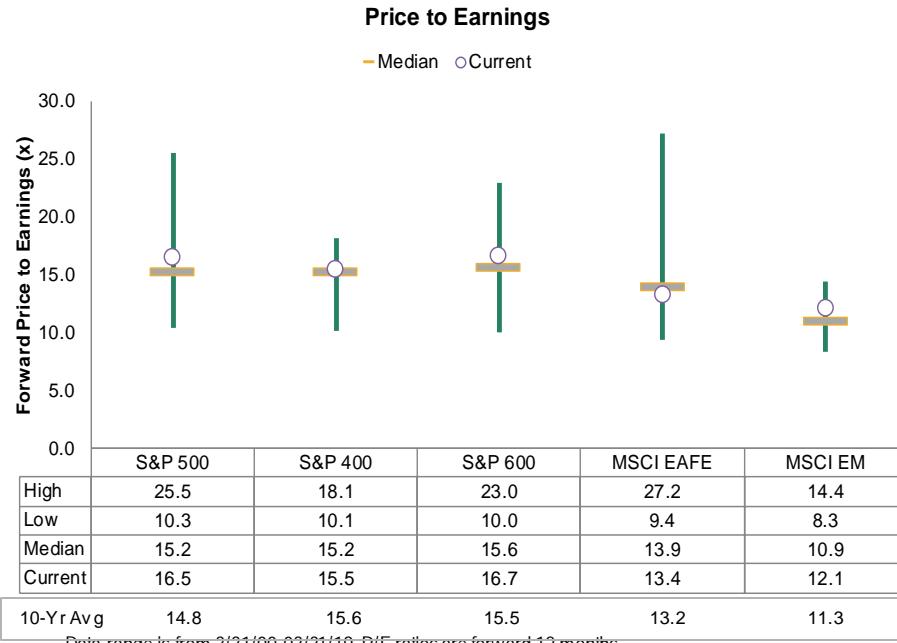
| Equity Indices                                | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|---|-------|-------|--------|--------|--------|---------|
| S&P 500                                       | 13.65 | 13.65 | 9.50   | 13.51  | 10.91  | 15.92   |
| MSCI Europe, Australasia and Far East (EAFE)* | 9.98  | 9.98  | -3.71  | 7.27   | 2.33   | 8.96    |
| MSCI Emerging Markets (EM)*                   | 9.92  | 9.92  | -7.41  | 10.68  | 3.68   | 8.94    |

All data in the table are percentages.

\* Net of dividends

## Global Equity Performance and Valuations

- Equity markets posted positive returns around the globe in Q1, with U.S. equities outperforming non-U.S. developed and emerging markets. The financial markets responded favorably to the U.S. Federal Reserve's shift away from its monetary tightening bias.
- While only the U.S. is in positive territory for the trailing one-year period, the U.S., non-U.S. developed, and EM equities are all in positive territory over the 3-, 5-, and 10-year periods.
- The P/E multiple for U.S. large, small and mid-caps all rose above median in Q1.
- The MSCI EAFE P/E multiple increased from 11.9x to 13.4x but still remains lower than its median. As such, developed international equities appear to be undervalued by this measure.
- The MSCI EM P/E multiple ended Q1 above its median. EM equities thus appear to be fully valued.



# Q1 2019 In Review: U.S. Equity

| U.S. Equity Indices | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|---------------------|-------|-------|--------|--------|--------|---------|
| S&P 500             | 13.65 | 13.65 | 9.50   | 13.51  | 10.91  | 15.92   |
| Russell 1000        | 14.00 | 14.00 | 9.30   | 13.52  | 10.63  | 16.05   |
| Russell 1000 Growth | 16.10 | 16.10 | 12.75  | 16.53  | 13.50  | 17.52   |
| Russell 1000 Value  | 11.93 | 11.93 | 5.67   | 10.45  | 7.72   | 14.52   |
| Russell 2000        | 14.58 | 14.58 | 2.05   | 12.92  | 7.05   | 15.36   |
| Russell 2000 Growth | 17.14 | 17.14 | 3.85   | 14.87  | 8.41   | 16.52   |
| Russell 2000 Value  | 11.93 | 11.93 | 0.17   | 10.86  | 5.59   | 14.12   |
| Russell 3000        | 14.04 | 14.04 | 8.77   | 13.48  | 10.36  | 16.00   |

All data in the tables are percentages.

## Performance

- U.S. equity markets posted significant gains in the first quarter after a volatile end to 2018. A reversal of market sentiment was led by positive global economic news and muted inflation expectations.
- The S&P 500 notched positive performance across all sectors, led by economically sensitive areas like Information Technology, Industrials, and Real Estate. Financials, with news that the Federal Reserve would keep interest rate hikes on hold, and Health Care, with uncertainty surrounding regulatory changes, were the worst performing sectors.
- Amid a late cycle rally, the faster growing companies helped growth stocks outpace value stocks. Among capitalizations, small and mid-caps led the way for 1Q19.

| S&P 500 Sector Returns | QTD   | 1-Year |
|------------------------|-------|--------|
| Cons. Disc.            | 15.73 | 13.19  |
| Cons. Staples          | 12.01 | 10.49  |
| Energy                 | 16.43 | 1.32   |
| Financials             | 8.56  | -4.67  |
| Healthcare             | 6.59  | 14.89  |
| Industrials            | 17.20 | 3.23   |
| IT                     | 19.86 | 15.44  |
| Materials              | 10.30 | -0.43  |
| Telecom                | 13.98 | 7.75   |
| Utilities              | 10.84 | 19.33  |
| Real Estate            | 17.53 | 21.00  |

# Q1 2019 In Review: International Equity

| MSCI International Equity Indices | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|-----------------------------------|-------|-------|--------|--------|--------|---------|
| World ex. U.S.                    | 10.45 | 10.45 | -3.14  | 7.29   | 2.20   | 8.82    |
| EAFE                              | 9.98  | 9.98  | -3.71  | 7.27   | 2.33   | 8.96    |
| EAFE Local Currency               | 10.59 | 10.59 | 2.83   | 8.53   | 5.98   | 9.75    |
| Europe                            | 10.84 | 10.84 | -3.72  | 6.56   | 1.04   | 8.95    |
| Europe ex U.K.                    | 10.45 | 10.45 | -5.09  | 6.66   | 1.18   | 8.75    |
| U.K.                              | 11.89 | 11.89 | -0.07  | 6.31   | 0.69   | 9.27    |
| Pacific ex Japan                  | 12.24 | 12.24 | 4.59   | 10.32  | 3.88   | 11.42   |
| Japan                             | 6.66  | 6.66  | -7.84  | 8.06   | 5.61   | 7.96    |

All data in the tables are percentages and net of dividends.

## Performance

- After a tough end to 2018, developed markets outside of the U.S. rebounded to positive returns during the quarter (though they underperformed the U.S. equity market). Developed markets, as measured by the MSCI EAFE Index, rose 10%. Italy, Netherlands and Switzerland led the way, each gaining between 13-15% for the quarter. Japan, Germany and Spain trailed the benchmark, up just 7% apiece.
- Markets in Europe (including the U.K., which rose 12% in the quarter) were resilient despite the overhang of Brexit, slowing economic data, and other political and monetary uncertainty.
- Sector returns were all positive in Q1, with Information Technology and Real Estate stocks performing the best in a relative sense. Communication Services, Utilities and Financials were relative laggards as the market returned to a risk-on environment during the quarter.

| MSCI EAFE Sector Returns | QTD   | 1-Year |
|--------------------------|-------|--------|
| Consumer Disc.           | 7.52  | -10.39 |
| Cons. Staples            | 12.38 | 3.28   |
| Energy                   | 10.44 | 4.59   |
| Financials               | 6.93  | -12.65 |
| Healthcare               | 11.23 | 7.37   |
| Industrials              | 10.56 | -5.41  |
| IT                       | 15.31 | -3.80  |
| Materials                | 13.18 | -2.96  |
| Telecom                  | 4.33  | -4.52  |
| Utilities                | 8.97  | 8.73   |
| Real Estate              | 14.01 | 4.19   |

# Q1 2019 In Review: Emerging Market Equity

| MSCI EM Equity Indices | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|------------------------|-------|-------|--------|--------|--------|---------|
| Emerging Markets       | 9.92  | 9.92  | -7.41  | 10.68  | 3.68   | 8.94    |
| EM Local Currency      | 9.83  | 9.83  | -1.94  | 11.25  | 7.10   | 10.16   |
| Asia                   | 11.11 | 11.11 | -6.84  | 11.79  | 6.21   | 10.80   |
| EMEA                   | 5.52  | 5.52  | -10.57 | 5.43   | -1.81  | 5.96    |
| Latin America          | 7.85  | 7.85  | -6.72  | 11.10  | -0.30  | 5.27    |

All data in the tables are percentages and net of dividends.

## Performance

- Emerging markets, which suffered for much of 2018, returned almost 10% for the quarter. While positive, EM returns still came in behind the U.S. in Q1.
- Emerging markets stocks were lifted by progress in the U.S.-China trade dispute and news the U.S. Federal Reserve expects to slow its pace of interest rate hikes.
- The standout performer in EM in Q1 was China, which climbed nearly 18%. China's gain came amid optimism over a trade agreement with the U.S., better economic data and ongoing government support for the Chinese domestic economy. China A-shares were particularly strong as MSCI announced plans to quadruple their weight in its global benchmark indices between May and November 2019.
- Every sector had positive returns in Q1. Consumer Discretionary, Real Estate, Information Technology and Energy all had double digit positive returns in the quarter to lead the way.

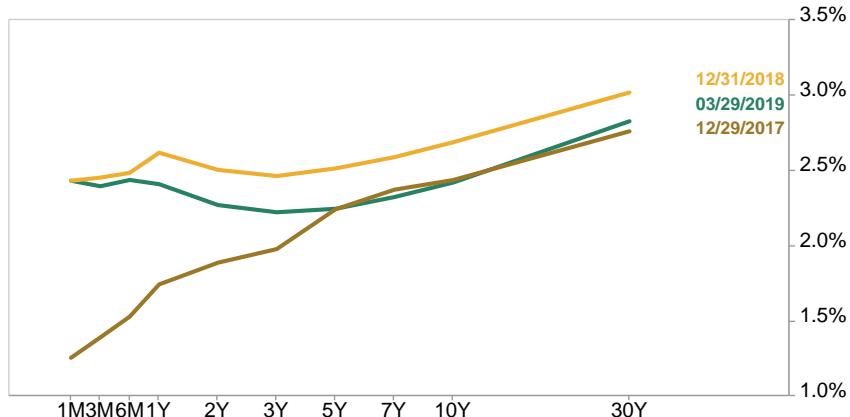
| MSCI EM Sector Returns | QTD   | 1-Year |
|------------------------|-------|--------|
| Cons. Disc.            | 20.78 | -13.15 |
| Cons. Staples          | 5.33  | -8.37  |
| Energy                 | 12.20 | 9.41   |
| Financials             | 7.20  | -6.01  |
| Healthcare             | 3.63  | -23.41 |
| Industrials            | 4.82  | -7.63  |
| IT                     | 12.79 | -10.83 |
| Materials              | 6.87  | -6.16  |
| Telecom                | 9.51  | -3.26  |
| Utilities              | 4.21  | -2.66  |
| Real Estate            | 15.62 | -2.12  |

# Q1 2019 In Review: Fixed Income Overview

## Yield Curve

- Treasury yields fell across the curve in Q1, with the Fed saying it would take more of a ‘wait and see’ approach to interest rate hikes in 2019.
- Global demand for Treasuries helped make the yield curve flatter. Changes were particularly noteworthy among shorter maturities, as the 5-yr yield (2.24%) fell below the 3 month yield (2.39%).
- The 30-year Treasury ended the quarter yielding 2.82%, which was 19 basis points (bps) lower than its yield at the end of Q4. The 2-year Treasury ended the quarter at 2.27%, which was 23 bps lower than the prior quarter.

United States Treasury Yield Curve

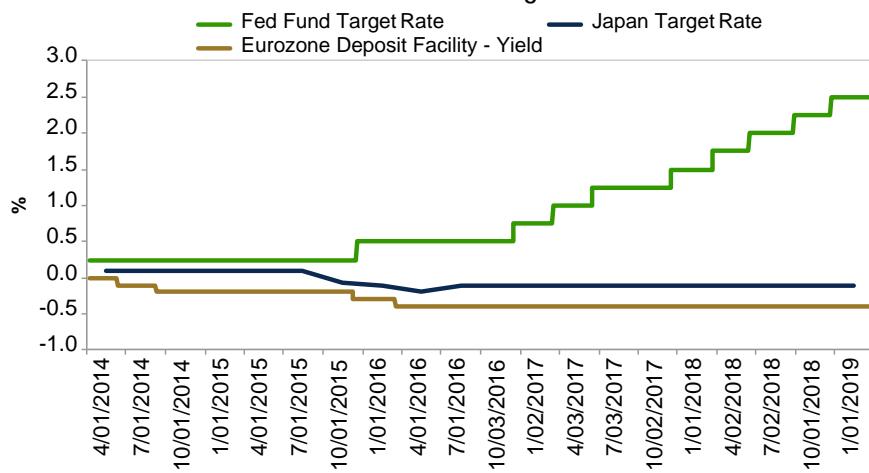


## Monetary Policies/Global Interest Rates

- Central bank deposit rates remained negative in Japan and Europe.
- The U.S. continues to be an outlier with the policy rate at 2.5%, but the outlook and expectations for future hikes has come under scrutiny.
- The Fed did not hike in 1Q as its plans for future rate increases are less clear now than previously stated due to concerns about market volatility and economic growth.

| Interest Rates | Fed Funds Rate    | EZ Deposit Facility Rate |
|----------------|-------------------|--------------------------|
| Average        | 5.16% (1971-2019) | 1.02% (1999-2019)        |
| Max            | 20.0% (Mar. 1980) | 3.75% (Oct. 2000)        |
| Min            | 0.25% (Dec. 2008) | -0.40% (Mar. 2016)       |

Central Bank Target Rates



# Q1 2019 In Review: U.S. Fixed Income

| U.S. Fixed Income Indices* | QTD  | YTD  | 1-Year | 3-Year | 5-Year | 10-Year |
|----------------------------|------|------|--------|--------|--------|---------|
| U.S. Aggregate             | 2.94 | 2.94 | 4.48   | 2.03   | 2.74   | 3.77    |
| Government/Credit          | 3.26 | 3.26 | 4.48   | 2.12   | 2.78   | 3.92    |
| Government                 | 2.10 | 2.10 | 4.20   | 1.07   | 2.15   | 2.44    |
| Investment Grade Corporate | 5.14 | 5.14 | 4.94   | 3.64   | 3.72   | 6.66    |
| Investment Grade CMBS      | 3.23 | 3.23 | 5.54   | 2.56   | 2.99   | 8.04    |
| U.S. Corporate High Yield  | 7.26 | 7.26 | 5.93   | 8.56   | 4.68   | 11.26   |
| FTSE** 3-Month T-Bill      | 0.60 | 0.60 | 2.11   | 1.17   | 0.72   | 0.41    |
| Hueler Stable Value        | 0.59 | 0.59 | 2.31   | 2.05   | 1.92   | 2.22    |

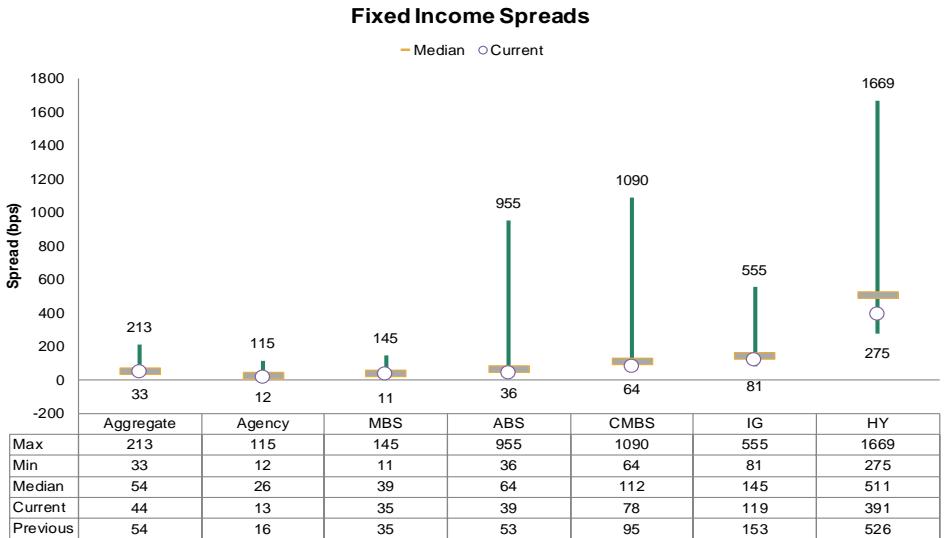
\* Bloomberg Barclays Indices, unless otherwise noted.

\*\* Formerly Citigroup. Citigroup's fixed income indices were purchased by London Stock Exchange Group (LSEG) and were rebranded to FTSE by July 31, 2018. FTSE Russell is a unit of LSEG's Information Services Division and a wholly owned subsidiary of LSEG.

All data in the table are percentages.

## Performance and Spreads

- The U.S. Aggregate Index was positive in Q1. Performance was driven most notably by Corporates (+5.14%). Treasuries and Agency MBS also performed well, each returning over 2.0%.
- High yield generated a 7.26% return in Q1. Higher yielding credits performed well in a reversal from Q4's numbers.
- Most domestic fixed income spreads are tighter than the levels seen at the end of Q4, but still higher than the levels seen at the end of the third quarter of 2018.



# Q1 2019 In Review: International Fixed Income

| Global Fixed Income Indices               | QTD  | YTD  | 1-Year | 3-Year | 5-Year | 10-Year |
|---|------|------|--------|--------|--------|---------|
| Bloomberg Barclays Global Aggregate       | 2.20 | 2.20 | -0.38  | 1.49   | 1.04   | 3.05    |
| Bloomberg Barclays Global Aggregate (Hgd) | 2.99 | 2.99 | 4.93   | 2.82   | 3.64   | 4.09    |
| FTSE Non-U.S. WGBI*                       | 1.52 | 1.52 | -4.55  | 0.87   | -0.06  | 2.02    |
| FTSE Non-U.S. WGBI (Hgd)                  | 3.10 | 3.10 | 5.12   | 3.20   | 4.50   | 4.07    |
| JPM EMBI Global Diversified**             | 6.59 | 6.59 | 3.52   | 5.20   | 4.80   | 8.12    |
| JPM GBI-EM Global Diversified***          | 2.92 | 2.92 | -7.58  | 3.27   | -0.76  | 4.38    |

All data in the table are percentages.

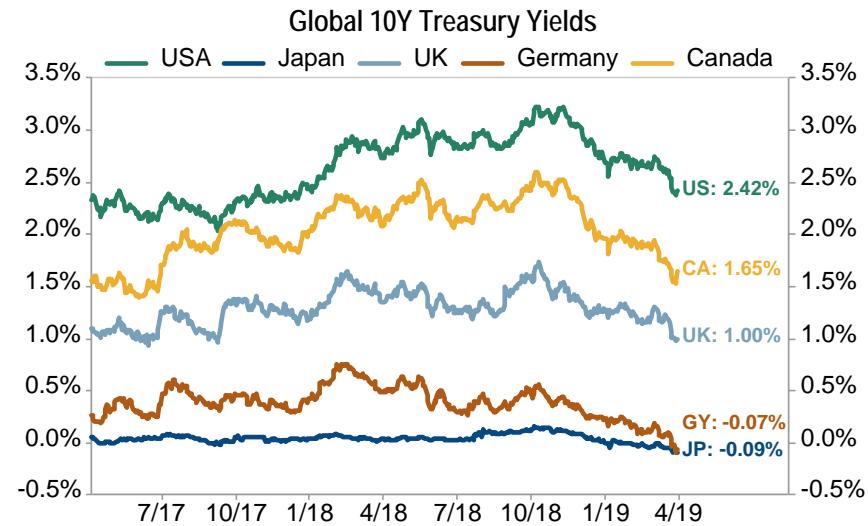
\* Formerly Citigroup. The FTSE Non-U.S. World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment grade sovereign bonds excluding the U.S.

\*\* The JP Morgan Emerging Market Bond Index (EMBI) Global Diversified index measures government bonds in hard currencies.

\*\*\* The JP Morgan Government Bond Index – Emerging Markets (GBI-EM) Global Diversified index measures government bonds in local currencies.

## Global Performance and Yields

- Government yields fell in Q1 across developed markets.
- The euro and Japanese yen depreciated relative to the U.S. dollar, while the British pound appreciated. In emerging markets, modest currency appreciation was seen in Asia ex-Japan and Latin America.
- In Q1, central banks continued to adjust policy away from accommodation, but the pace and rhetoric have decelerated given lackluster global growth.



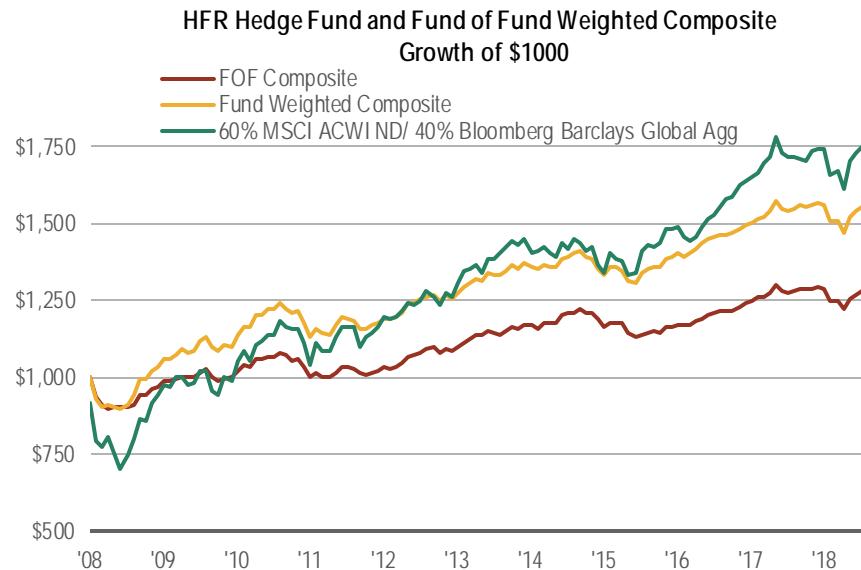
# Q1 2019 In Review: Absolute Return Strategies

| HFRI Indices            | QTD  | YTD  | 1-Year | 3-Year | 5-Year | 10-Year |
|-------------------------|------|------|--------|--------|--------|---------|
| Fund of Funds Composite | 4.59 | 4.59 | 0.11   | 3.92   | 2.20   | 3.54    |
| Fund Weighted Composite | 5.71 | 5.71 | 0.72   | 5.06   | 3.03   | 5.46    |
| Event Driven            | 4.20 | 4.20 | 1.87   | 6.91   | 3.01   | 6.94    |
| Equity Hedge            | 7.82 | 7.82 | -0.19  | 6.79   | 3.59   | 6.46    |
| Macro                   | 2.59 | 2.59 | -0.01  | 0.01%  | 1.22   | 1.39    |
| Emerging Markets        | 7.51 | 7.51 | -5.22  | 7.08   | 3.04   | 5.96    |
| Relative Value          | 3.95 | 3.95 | 3.05   | 5.53   | 3.49   | 6.90    |

## Hedge Fund Performance

- The HFRI Fund Weighted Composite increased 5.7% during Q1, and all of the major hedge fund strategies were positive during the quarter. Despite Macro being the weakest performer, contributions from quantitative managers helped the Composite have its best quarter since Q3 of 2017.
- Equity Hedge was the strongest performing strategy in Q1, as the previous quarter's largest detractors rebounded. Healthcare sector-focused managers led sub-strategy performance, followed by Fundamental Growth strategies, largely as a result of the reversal in investor sentiment after improving trade negotiations between the U.S. and China.
- The Fund Weighted Composite and Fund of Funds Composite indices were both positive but underperformed the 60/40 Balanced MSCI ACWI/Bloomberg Barclays Global Aggregate index, which gained 8.22% during the quarter. The Fund Weighted Composite also had its highest first-quarter return since the first quarter of 2006.

Sources this page: FactSet, eVestment



# Q1 2019 In Review: Private Equity

## Performance

- The total return for private equity funds, comprising performance across all regions and strategies, was (0.6%) in Q4 2018\* amidst the public market sell down. The 1-year period return ending Q4 still reached 11.5% .
- The 5-, 10-, and 20-year returns for private equity funds were 12.0%, 14.2% and 13.2%, respectively, at the end of Q4. Venture funds performed especially well, generating meaningful returns across multiple time periods.
- All funds from recent vintage years performed well with 2017 vintages having come out of the J-curve.

## Fundraising

- Globally, private equity funds raised approximately \$100.2 billion across 219 funds through in Q1 2019, which is about the same amount that was raised in Q1 2018.
- North America and Asia continue to be active fundraising markets, while Europe has fewer funds.
- Dry powder\*\* continues to reach new records, with \$1.26 trillion as of March 2019. Buyout funds account for the majority (59%) of this dry powder, while venture capital and growth funds hold 17% and 5% of the total respectively.

## Exit Activity

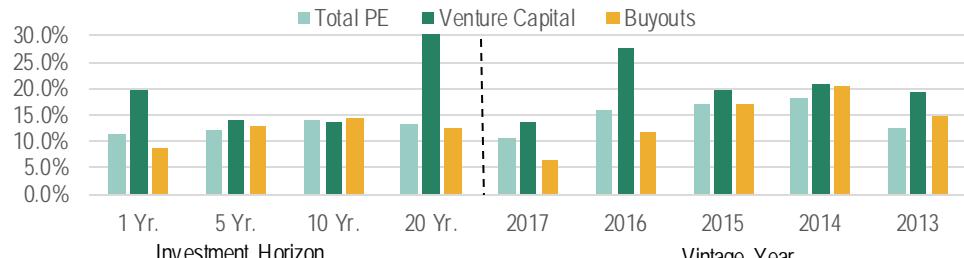
- Exit activity continued to decline, falling from 464 exits in Q4 2018 to 348 exits in Q1 2019. Aggregate deal value was also considerably lower compared with the prior quarter.
- The total value of venture capital exits has spiked in recent quarters, driven by the exit activity of a small number of large companies. However, developing exit strategies for venture capital-backed companies is becoming increasingly challenging.

\*Most recent data available.

\*\*Dry powder is capital raised that hasn't yet been invested.

Sources this page: Thomson Reuters, Preqin

## Global Private Equity Performance by Investment Horizon and Vintage Year

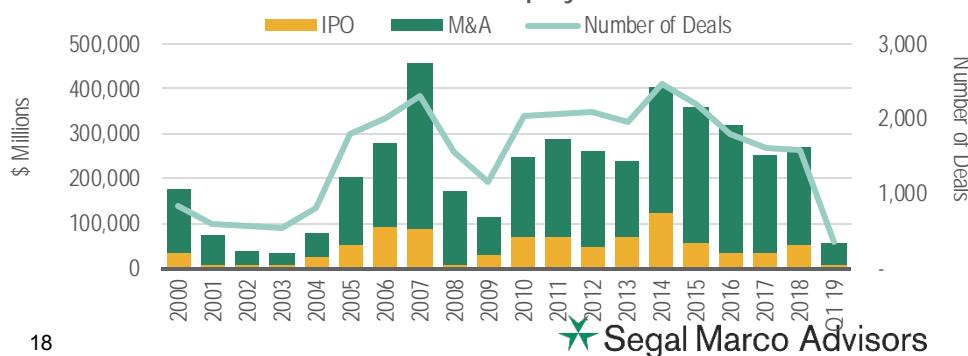


"Vintage year" refers to the first year that capital was committed in a particular fund. Vintage-year performance is calculated as the median percentile returns of all funds reporting as pooled IRRs.

## Global Private Equity Fundraising



## Global Private Equity Exit



# Q1 2019 In Review: Real Estate

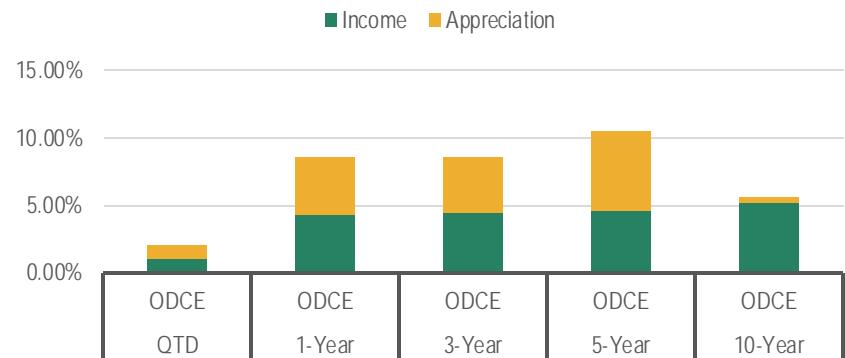
## Real Estate Performance

- NFI ODCE was up 169 bps for the quarter while the NCREIF NPI gained 180 bps. The EPRA/NAREIT Developed Index gained 14.9% after a rough 4Q 2018, when that index slid -5.46%
- Income for the NFI-ODCE remained flat for the quarter, and has remained between 4.2% - 4.5% over a trailing 1-3-5 year basis with only the 10-year number breaching 5%
- NFI-CEVA trailing vintage year cohorts for the trailing 10-years are reporting the following Top/Median/Bottom Quartile performance:
  - 2016/17: 11.5%/9.1%/7.2%
  - 2014/15: 15.1%/14.1%/11.9%
  - 2013/: 17.6%/12.7%/12.2%
  - 2011/12: 17.9%/15.2%/9.8%
  - 2008-2010: 20.7%/15.2%/9.8%

## Real Estate Capitalization Rates\* vs. Treasuries

- Asset values remain steady for the most part; however, lower quality properties possess the most risk potential
- Prevailing cap rates have been buoyed by historically wide spreads versus financing costs and persistent demand for real estate.
- Further compounding the cap rate spread issue, there is a record level of capital available to invest in real estate.

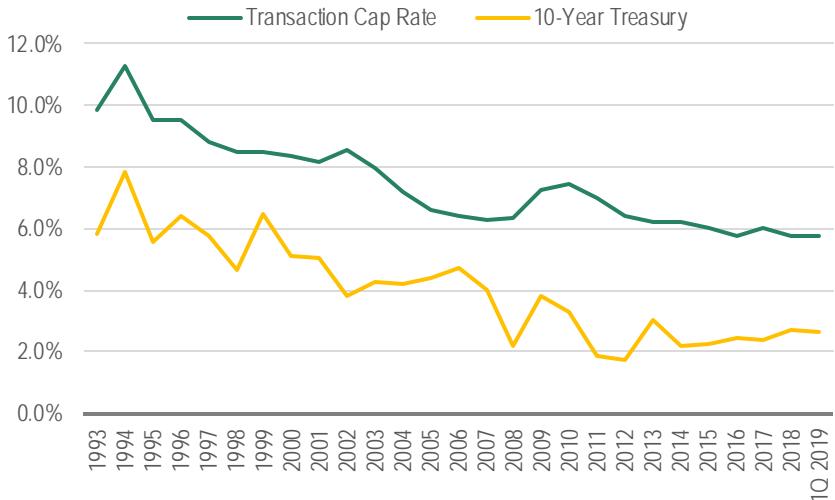
## NCREIF Fund Index (NFI) Open-End Diversified Core (ODCE)



The NFI-ODCE (Open-end Diversified Core Equity) is defined by NCREIF as a fund-level cap-weighted, gross of fee, time-weighted return index with an inception date of December 31, 1977.

The NFI-CEVA Index, which is a quarter lagged in performance reporting, is defined by NCREIF as a capitalization-weighted, gross of fees, time-weighted return index. Funds included in the index must be closed-end with a value-add strategy operated for U.S. institutional investors and must comply with NCREIF's data collection and reporting standards.

## Capitalization Rates & 10-Year U.S. Treasury



\*A cap rate is the potential rate of return on a real estate investment. Assuming no change in net operating income, real estate valuations rise when cap rates fall. Comparing cap rates to the 10-year U.S. Treasury provides investors with an estimated spread for expected returns from real estate (higher risk) vs. fixed rate bond (lower risk) investments.

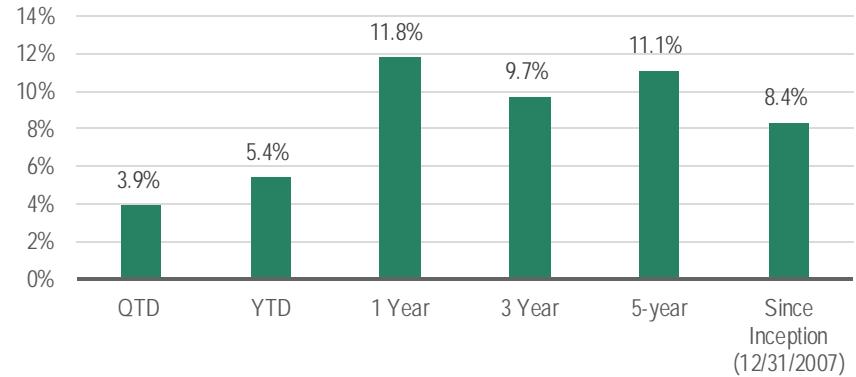
Sources this page: NCREIF, Bloomberg

# Q1 2019 In Review: Infrastructure

## Infrastructure Performance

- Private infrastructure gained 3.9% in Q2 2018\* and 11.8% over the 1-year period ending June 30, 2018.
- The 1-, 3-, and 5-year results exceeded the since-inception return, indicating the asset class has recovered well from the global financial crisis. The strong Q2 2018 return is a good sign for investors after a weak Q1 2018(1.4%).
- The number of deals completed in Q1 2019 fell to 534 relative to 750 deals completed in Q1 of 2018. At \$448.5M, the average deal size year to date is on pace to be a record high.
- Public infrastructure registered a 13.3% return in Q1 2019, as per the FTSE Global Infrastructure 50/50 Index. Public infrastructure securities recovered with the rest of public equity markets from a rough December 2018.

Preqin Infrastructure Annualized Return as of 6/30/2018\*

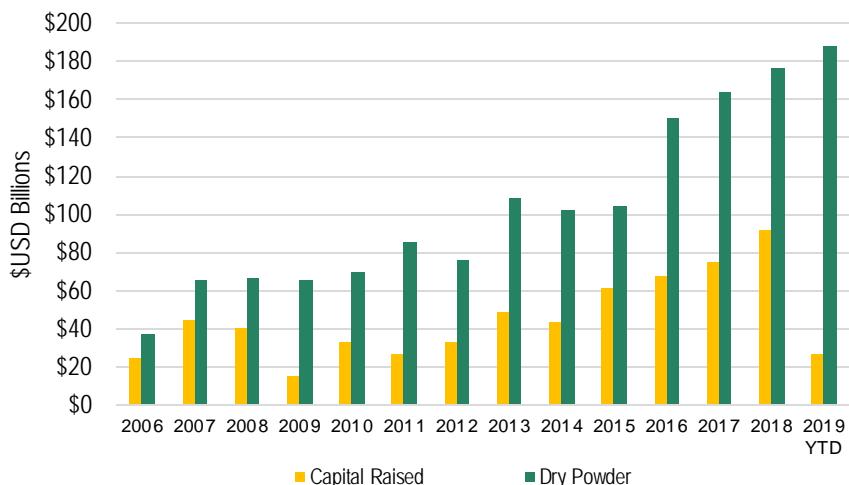


According to Preqin, the Preqin Infrastructure Index captures the average returns earned by investors in their infrastructure portfolios, based on the actual amount of money invested. The Preqin Infrastructure index is calculated on a quarterly basis using data from Preqin's Infrastructure Online services.

## Dry Powder and Fundraising

- Infrastructure fundraising remains strong with large funds successfully driving capital inflows into the asset. \$23.7 billion in funds were raised in Q1 2019 with an average fund size of \$2.2 billion. Compare that to the historical average quarterly fund size of \$919.0 million.
- Dry powder\*\* increased by \$11 billion, a small increase following a strong fundraising quarter in Q1 2019. Dry powder continues to reach record highs with strong investor demand for infrastructure investments.
- European funds drove the growth in dry powder during the quarter with a \$14 billion increase. North American focused funds saw dry powder decrease by \$4 billion.

## Dry Powder and Fundraising



\*The most recent data available. Preqin did not report Q3 2018 numbers by the time of this publication.

\*\*Dry powder is capital raised that hasn't yet been invested.

Sources this page: Preqin

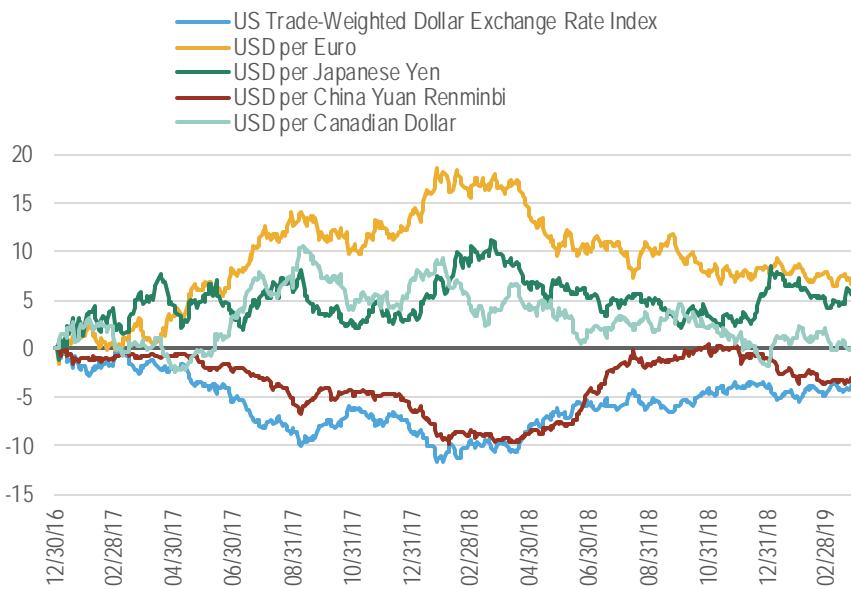
# Q1 2019 In Review: Commodities and Currencies

| BCOM Indices                     | QTD   | YTD   | 1-Year | 3-Year | 5-Year | 10-Year |
|----------------------------------|-------|-------|--------|--------|--------|---------|
| Bloomberg Commodity Index (BCOM) | 6.32  | 6.32  | -5.25  | 2.22   | -8.92  | -2.56   |
| Energy                           | 15.93 | 15.93 | -0.55  | 7.48   | -16.72 | -10.02  |
| Agriculture                      | -3.18 | -3.18 | -16.26 | -7.99  | -12.40 | -2.81   |
| Industrial Metals                | 12.85 | 12.85 | -3.10  | 11.28  | 0.11   | 2.37    |
| Precious Metals                  | 0.02  | 0.02  | -4.04  | 0.19   | -1.90  | 2.42    |
| Livestock                        | 4.69  | 4.69  | 14.37  | 0.70   | -4.28  | -1.56   |

## Commodity and Currency Highlights

- The Bloomberg Commodity Index increased during Q1, with 15 out of 23 constituents posting positive performance.
- Top three performers during the quarter were in the Energy sector, as WTI Crude Oil (30.2%), Gasoline (26.7%) and Brent Crude oil (25.2%) all saw strong gains. These subsectors saw tighter inventories as a result of U.S. sanctions on Iran, domestic problems in Venezuela and supply cuts from OPEC.
- The only sector that posted negative performance during the quarter was Agriculture. That sector was impacted by mild weather in the Black Sea region, which increased supply internationally, and an expectation for higher yields in the U.S. in 2019.
- The USD rose against most major currencies in Q1, though its gains were modest.
- Both the euro and the yen declined against the USD.
- The Canadian dollar appreciated against the USD. The CAD rose amid solid Canada economic data and higher oil prices.

## Major World Currencies Indexed to Zero



## **Total Fund**

# Bristol County Retirement System

# Comparative Performance

As of March 31, 2019

|                               | Allocation           |               | Performance (%) |                           |                           |              |             |              |             |              |              |                 |                   |
|-------------------------------|----------------------|---------------|-----------------|---------------------------|---------------------------|--------------|-------------|--------------|-------------|--------------|--------------|-----------------|-------------------|
|                               | Market Value (\$000) | %             | 1 Quarter       | 1 Quarter Ending Dec-2018 | 1 Quarter Ending Sep-2018 | Year To Date | 1 Year      | 3 Years      | 5 Years     | 7 Years      | 10 Years     | Since Inception | Inception Date    |
| <b>Total Fund</b>             | <b>679,267</b>       | <b>100.00</b> | <b>7.48</b>     | <b>-5.98</b>              | <b>2.58</b>               | <b>7.48</b>  | <b>2.49</b> | <b>8.98</b>  | <b>6.16</b> | <b>8.11</b>  | <b>10.65</b> | <b>7.41</b>     | <b>01/01/2000</b> |
| Total Plan Index              |                      |               | 8.31            | -7.01                     | 2.59                      | 8.31         | 3.74        | 8.05         | 6.05        | 7.63         | 10.25        | 4.86            |                   |
| Total Plan Allocation Index   |                      |               | 8.27            | -6.71                     | 2.41                      | 8.27         | 3.31        | N/A          | N/A         | N/A          | N/A          | N/A             |                   |
| <b>Total Domestic Equity</b>  | <b>147,733</b>       | <b>21.75</b>  | <b>15.01</b>    | <b>-17.32</b>             | <b>5.39</b>               | <b>15.01</b> | <b>1.75</b> | <b>12.02</b> | <b>8.60</b> | <b>11.97</b> | <b>15.58</b> | <b>5.34</b>     | <b>01/01/2000</b> |
| S&P 500 Index                 |                      |               | 13.65           | -13.52                    | 7.71                      | 13.65        | 9.50        | 13.51        | 10.91       | 12.85        | 15.92        | 5.50            |                   |
| Russell 3000 Index            |                      |               | 14.04           | -14.30                    | 7.12                      | 14.04        | 8.77        | 13.49        | 10.36       | 12.63        | 16.00        | 5.88            |                   |
| ClearBridge Large Cap Growth  | 27,771               | 4.09          | 16.12           | -13.29                    | N/A                       | 16.12        | N/A         | N/A          | N/A         | N/A          | N/A          | 3.36            | 09/01/2018        |
| Russell 1000 Growth Index     |                      |               | 16.10           | -15.89                    | 9.17                      | 16.10        | 12.75       | 16.53        | 13.50       | 14.34        | 17.52        | -1.80           |                   |
| Columbia                      | 28,634               | 4.22          | 22.16           | -19.67                    | 7.45                      | 22.16        | 10.56       | 18.04        | 11.78       | N/A          | N/A          | 13.67           | 09/01/2013        |
| Russell 1000 Growth Index     |                      |               | 16.10           | -15.89                    | 9.17                      | 16.10        | 12.75       | 16.53        | 13.50       | 14.34        | 17.52        | 15.14           |                   |
| LSV                           | 32,599               | 4.80          | 10.93           | -13.86                    | 5.12                      | 10.93        | -0.19       | 10.66        | 7.74        | 12.47        | 15.66        | 8.79            | 09/01/2004        |
| Russell 1000 Value Index      |                      |               | 11.93           | -11.72                    | 5.70                      | 11.93        | 5.67        | 10.45        | 7.72        | 11.14        | 14.52        | 7.79            |                   |
| Lyrical                       | 30,553               | 4.50          | 13.46           | -17.41                    | 3.28                      | 13.46        | -7.35       | 7.81         | 5.49        | N/A          | N/A          | 9.62            | 09/01/2013        |
| Russell 1000 Value Index      |                      |               | 11.93           | -11.72                    | 5.70                      | 11.93        | 5.67        | 10.45        | 7.72        | 11.14        | 14.52        | 9.80            |                   |
| Frontier Capital Appreciation | 14,578               | 2.15          | 15.12           | N/A                       | N/A                       | 15.12        | N/A         | N/A          | N/A         | N/A          | N/A          | 2.30            | 12/01/2018        |
| Russell 2000 Growth Index     |                      |               | 17.14           | -21.65                    | 5.52                      | 17.14        | 3.85        | 14.87        | 8.41        | 11.79        | 16.52        | 3.46            |                   |
| Earnest Partners              | 13,574               | 2.00          | 12.21           | -18.35                    | 1.98                      | 12.21        | -1.59       | 11.80        | 8.10        | 11.59        | 15.76        | 11.43           | 04/01/2003        |
| Russell 2000 Value Index      |                      |               | 11.93           | -18.67                    | 1.60                      | 11.93        | 0.17        | 10.86        | 5.59        | 9.61         | 14.12        | 10.15           |                   |

# Bristol County Retirement System

# Comparative Performance

As of March 31, 2019

|                                   | Allocation           |              | Performance (%) |                           |                           |              |              |             |             |             |              |                 |                   |
|-----------------------------------|----------------------|--------------|-----------------|---------------------------|---------------------------|--------------|--------------|-------------|-------------|-------------|--------------|-----------------|-------------------|
|                                   | Market Value (\$000) | %            | 1 Quarter       | 1 Quarter Ending Dec-2018 | 1 Quarter Ending Sep-2018 | Year To Date | 1 Year       | 3 Years     | 5 Years     | 7 Years     | 10 Years     | Since Inception | Inception Date    |
| <b>Total International Equity</b> | <b>168,404</b>       | <b>24.79</b> | <b>10.01</b>    | <b>-8.78</b>              | <b>1.00</b>               | <b>10.01</b> | <b>-3.94</b> | <b>9.70</b> | <b>4.01</b> | <b>7.18</b> | <b>12.25</b> | <b>9.76</b>     | <b>01/01/2000</b> |
| MSCI EAFE (net)                   |                      |              | 9.98            | -12.54                    | 1.35                      | 9.98         | -3.71        | 7.27        | 2.33        | 5.63        | 8.96         | 2.89            |                   |
| MSCI AC World ex USA              |                      |              | 10.44           | -11.41                    | 0.80                      | 10.44        | -3.74        | 8.61        | 3.05        | 5.21        | 9.35         | 3.90            |                   |
| Arrowstreet Capital               | 29,550               | 4.35         | 10.75           | -12.77                    | 2.93                      | 10.75        | -3.76        | 10.23       | 4.83        | 7.62        | 11.78        | 7.38            | 07/01/2001        |
| MSCI AC World ex USA              |                      |              | 10.44           | -11.41                    | 0.80                      | 10.44        | -3.74        | 8.61        | 3.05        | 5.21        | 9.35         | 6.05            |                   |
| Freedom Capital Intl              | 33,498               | 4.93         | 10.21           | -14.11                    | 1.52                      | 10.21        | -2.62        | 9.71        | 4.39        | 9.79        | 14.59        | 9.14            | 06/01/1998        |
| MSCI EAFE (net)                   |                      |              | 9.98            | -12.54                    | 1.35                      | 9.98         | -3.71        | 7.27        | 2.33        | 5.63        | 8.96         | 4.06            |                   |
| Fiera International Equity        | 30,485               | 4.49         | 12.00           | N/A                       | N/A                       | 12.00        | N/A          | N/A         | N/A         | N/A         | N/A          | 9.24            | 12/01/2018        |
| MSCI EAFE (Net)                   |                      |              | 9.98            | -12.54                    | 1.35                      | 9.98         | -3.71        | 7.27        | 2.33        | 5.63        | 8.96         | 4.64            |                   |
| Lazard Emerging Markets           | 40,224               | 5.92         | 7.07            | -5.30                     | -1.60                     | 7.07         | -13.52       | 7.73        | 0.79        | 0.90        | 8.27         | 2.36            | 05/01/2007        |
| MSCI Emerging Markets Index       |                      |              | 9.97            | -7.40                     | -0.95                     | 9.97         | -7.06        | 11.09       | 4.06        | 3.06        | 9.31         | 3.48            |                   |
| Aberdeen Emerging Markets         | 34,646               | 5.10         | 10.86           | -3.21                     | -0.28                     | 10.86        | -3.83        | N/A         | N/A         | N/A         | N/A          | 7.61            | 03/01/2017        |
| MSCI Emerging Markets Index       |                      |              | 9.97            | -7.40                     | -0.95                     | 9.97         | -7.06        | 11.09       | 4.06        | 3.06        | 9.31         | 8.92            |                   |
| <b>Global REITs</b>               |                      |              |                 |                           |                           |              |              |             |             |             |              |                 |                   |
| Brookfield Global Real Estate     | 14,672               | 2.16         | 15.22           | N/A                       | N/A                       | 15.22        | N/A          | N/A         | N/A         | N/A         | N/A          | 8.48            | 12/01/2018        |
| FTSE EPRA/NAREIT Developed Index  |                      |              | 14.86           | -5.46                     | -0.15                     | 14.86        | 14.33        | 6.67        | 7.37        | 8.46        | 14.90        | 8.63            |                   |

# Bristol County Retirement System

# Comparative Performance

As of March 31, 2019

|                                       | Allocation           |              | Performance (%) |                           |                           |              |             |             |             |             |             |                 |                   |
|---------------------------------------|----------------------|--------------|-----------------|---------------------------|---------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------------|
|                                       | Market Value (\$000) | %            | 1 Quarter       | 1 Quarter Ending Dec-2018 | 1 Quarter Ending Sep-2018 | Year To Date | 1 Year      | 3 Years     | 5 Years     | 7 Years     | 10 Years    | Since Inception | Inception Date    |
| <b>Total Domestic Fixed</b>           | <b>52,504</b>        | <b>7.73</b>  | <b>3.20</b>     | <b>1.14</b>               | <b>0.04</b>               | <b>3.20</b>  | <b>4.43</b> | <b>2.45</b> | <b>3.08</b> | <b>3.07</b> | <b>5.09</b> | <b>5.59</b>     | <b>01/01/2000</b> |
| Barclays Cap Aggregate                |                      |              | 2.94            | 1.64                      | 0.02                      | 2.94         | 4.48        | 2.03        | 2.74        | 2.48        | 3.77        | 4.93            |                   |
| Income Research & Management          | 40,460               | 5.96         | 3.40            | 1.43                      | 0.13                      | 3.40         | 4.82        | 2.72        | 3.29        | 3.41        | 5.63        | 5.65            | 12/01/1996        |
| BImbg. Barc. U.S. Gov't/Credit        |                      |              | 3.26            | 1.46                      | 0.06                      | 3.26         | 4.48        | 2.12        | 2.78        | 2.59        | 3.92        | 5.02            |                   |
| IR+M TIPS                             | 11,796               | 1.74         | 2.61            | -0.03                     | -0.42                     | 2.61         | 2.72        | 1.57        | 1.53        | 0.92        | 2.86        | 3.54            | 02/01/2007        |
| Barclays Cap US Treas: US TIPS        |                      |              | 3.19            | -0.42                     | -0.82                     | 3.19         | 2.70        | 1.70        | 1.94        | 1.21        | 3.41        | 3.97            |                   |
| <b>Total Global Fixed</b>             | <b>117,847</b>       | <b>17.35</b> | <b>5.06</b>     | <b>-0.58</b>              | <b>0.87</b>               | <b>5.06</b>  | <b>1.54</b> | <b>5.52</b> | <b>3.84</b> | <b>3.94</b> | <b>6.98</b> | <b>6.52</b>     | <b>01/01/2000</b> |
| Barclays Cap Global Aggregate         |                      |              | 2.20            | 1.20                      | -0.92                     | 2.20         | -0.38       | 1.49        | 1.04        | 1.19        | 3.05        | 4.40            |                   |
| Colchester Global Bond                | 23,497               | 3.46         | 1.97            | 1.32                      | -0.95                     | 1.97         | -1.91       | 1.83        | 1.26        | N/A         | N/A         | 0.89            | 12/01/2012        |
| Citigroup World Govt Bond             |                      |              | 1.74            | 1.75                      | -1.62                     | 1.74         | -1.57       | 0.95        | 0.59        | 0.52        | 2.20        | 0.09            |                   |
| PIMCO Diversified Income              | 62,769               | 9.24         | 5.81            | -1.26                     | 1.69                      | 5.81         | 5.47        | 7.20        | 5.11        | 5.28        | 8.86        | 6.59            | 08/01/2006        |
| PIMCO Diversified Income Index**      |                      |              | 5.10            | -1.27                     | 0.99                      | 5.10         | 2.11        | 4.84        | 3.28        | 3.97        | 7.50        | 5.98            |                   |
| Stone Harbor EMD                      | 17,338               | 2.55         | 5.97            | -0.99                     | -0.47                     | 5.97         | -5.52       | N/A         | N/A         | N/A         | N/A         | 2.60            | 11/01/2016        |
| 50%/50% Blend **                      |                      |              | 4.93            | 0.43                      | 0.25                      | 4.93         | -1.78       | 4.59        | 2.37        | 2.44        | 6.50        | 3.10            |                   |
| Ashmore Emerging Markets Total Return | 14,244               | 2.10         | 5.54            | -0.16                     | 1.31                      | 5.54         | -1.29       | N/A         | N/A         | N/A         | N/A         | 5.82            | 01/01/2017        |
| 50%/50% Blend **                      |                      |              | 4.93            | 0.43                      | 0.25                      | 4.93         | -1.78       | 4.59        | 2.37        | 2.44        | 6.50        | 5.25            |                   |

# Bristol County Retirement System

# Comparative Performance

As of March 31, 2019

|                                    | Allocation           |             | Performance (%) |                           |                           |              |              |              |              |             |             |                 |                   |
|------------------------------------|----------------------|-------------|-----------------|---------------------------|---------------------------|--------------|--------------|--------------|--------------|-------------|-------------|-----------------|-------------------|
|                                    | Market Value (\$000) | %           | 1 Quarter       | 1 Quarter Ending Dec-2018 | 1 Quarter Ending Sep-2018 | Year To Date | 1 Year       | 3 Years      | 5 Years      | 7 Years     | 10 Years    | Since Inception | Inception Date    |
| PRIT Absolute Return               | 34,142               | 5.03        | 3.10            | -3.53                     | 0.86                      | 3.10         | 1.39         | 5.28         | 2.90         | 4.76        | 5.12        | 3.99            | 10/01/2008        |
| HFRI Fund of Funds Composite Index |                      |             | 4.62            | -4.94                     | 0.24                      | 4.62         | 0.15         | 3.94         | 2.20         | 3.10        | 3.55        | 2.37            |                   |
| HFRI FOF: Diversified Index        |                      |             | 4.27            | -4.60                     | 0.59                      | 4.27         | 0.76         | 3.67         | 2.15         | 3.11        | 3.52        | 2.43            |                   |
| <b>Total Real Estate</b>           | <b>63,696</b>        | <b>9.38</b> | <b>1.31</b>     | <b>3.33</b>               | <b>2.58</b>               | <b>1.31</b>  | <b>12.00</b> | <b>9.72</b>  | <b>10.40</b> | <b>9.54</b> | <b>5.55</b> | <b>7.16</b>     | <b>01/01/1995</b> |
| NCREIF Property Index              |                      |             | 1.80            | 1.37                      | 1.67                      | 1.80         | 6.83         | 7.07         | 9.13         | 9.62        | 8.51        | 9.45            |                   |
| RREEF America REIT II              | 13,407               | 1.97        | 1.85            | 1.16                      | 2.49                      | 1.85         | 7.87         | 8.29         | 10.65        | 11.50       | 9.92        | 7.57            | 04/01/2005        |
| NCREIF Property Index              |                      |             | 1.80            | 1.37                      | 1.67                      | 1.80         | 6.83         | 7.07         | 9.13         | 9.62        | 8.51        | 8.35            |                   |
| Intercontinental                   | 29,815               | 4.39        | 1.97            | 2.14                      | 2.52                      | 1.97         | 9.87         | N/A          | N/A          | N/A         | N/A         | 9.47            | 01/01/2017        |
| NCREIF Property Index              |                      |             | 1.80            | 1.37                      | 1.67                      | 1.80         | 6.83         | 7.07         | 9.13         | 9.62        | 8.51        | 6.90            |                   |
| <b>Total Infrastructure</b>        | <b>34,027</b>        | <b>5.01</b> | <b>2.80</b>     | <b>2.59</b>               | <b>6.02</b>               | <b>2.80</b>  | <b>10.62</b> | <b>11.19</b> | <b>N/A</b>   | <b>N/A</b>  | <b>N/A</b>  | <b>13.14</b>    | <b>03/01/2016</b> |
| IFM                                | 26,618               | 3.92        | 3.39            | 1.48                      | 6.79                      | 3.39         | 10.89        | N/A          | N/A          | N/A         | N/A         | 16.46           | 04/01/2017        |
| Bristol County Cash                | 2,043                | 0.30        | 0.62            | 1.01                      | 0.46                      | 0.62         | 4.29         | 1.77         | 1.50         | 1.12        | 0.94        | 2.77            | 01/01/1997        |
| 90 Day U.S. Treasury Bill          |                      |             | 0.60            | 0.56                      | 0.49                      | 0.60         | 2.12         | 1.17         | 0.73         | 0.54        | 0.41        | 2.17            |                   |

\*\*Stone Harbor 50/50 Blend: 50% JPM EMBI Global Diversified Index/50% JPM GBI-EM Global Diversified US Index

\*\*PIMCO Index: 33% BC Global Agg/33% ML Global HY/33% JPM EMBI Global.

# Bristol County Retirement System

**As of March 31, 2019**

Internal Rates of Return

|  | Market Value<br>(\$) | %    | 1<br>Quarter | 1<br>Quarter<br>Ending<br>Dec-2018 | 1<br>Quarter<br>Ending<br>Sep-2018 | 1<br>Quarter<br>Ending<br>Jun-2018 | 1<br>Year | 3<br>Years | 5<br>Years | 7<br>Years | Since<br>Inception | Inception<br>Date |
|--|----------------------|------|--------------|------------------------------------|------------------------------------|------------------------------------|-----------|------------|------------|------------|--------------------|-------------------|
| <b>Other Fixed Income</b>                        |                      |      |              |                                    |                                    |                                    |           |            |            |            |                    |                   |
| Invesco Mortgage Recovery Fund                   | 247,203              | 0.04 | 0.00         | 5.23                               | 3.83                               | 5.73                               | 16.03     | 0.61       | 19.25      | 16.23      | 13.98              | 03/31/2010        |
| <b>Real Assets</b>                               |                      |      |              |                                    |                                    |                                    |           |            |            |            |                    |                   |
| <b>Active Funds:</b>                             |                      |      |              |                                    |                                    |                                    |           |            |            |            |                    |                   |
| Brookfield Timberlands Fund V                    | 1,106,315            | 0.16 | 0.00         | -8.23                              | 7.65                               | 1.67                               | 0.71      | 8.99       | 8.70       | N/A        | 8.69               | 12/23/2013        |
| Eastern Timberland Opportunities II              | 2,990,142            | 0.44 | 4.40         | -0.94                              | 2.00                               | 0.80                               | 6.27      | 8.02       | N/A        | N/A        | 9.30               | 07/03/2014        |
| GCM Customized Infrastructures Strategies II, LP | 7,408,347            | 1.09 | 0.00         | 5.23                               | 3.33                               | -1.15                              | 7.73      | 8.71       | N/A        | N/A        | 8.91               | 03/10/2016        |
| Invesco Mortgage Recovery II                     | 9,273,115            | 1.37 | 0.00         | 10.59                              | 1.75                               | 14.46                              | 28.23     | N/A        | N/A        | N/A        | 13.47              | 05/20/2016        |
| TerraCap Partners IV                             | 11,137,190           | 1.64 | 0.00         | 4.19                               | 3.45                               | N/A                                | N/A       | N/A        | N/A        | N/A        | 7.84               | 07/31/2018        |
| <b>Funds in Liquidation</b>                      |                      |      |              |                                    |                                    |                                    |           |            |            |            |                    |                   |
| Hunt RIVA (FKA SSgA Tuckerman)                   | 63,885               | 0.01 | 0.00         | -1.51                              | 0.12                               | -0.82                              | -1.99     | -6.89      | -0.24      | 8.31       | 0.00               | 10/01/2004        |

# Bristol County Retirement System

**As of March 31, 2019**

Internal Rates of Return

|                                 | Market Value (\$) | %    | 1 Quarter | 1 Quarter Ending Dec-2018 | 1 Quarter Ending Sep-2018 | 1 Quarter Ending Jun-2018 | 1 Year | 3 Years | 5 Years | 7 Years | Since Inception | Inception Date |
|---------------------------------|-------------------|------|-----------|---------------------------|---------------------------|---------------------------|--------|---------|---------|---------|-----------------|----------------|
| Total Private Equity            | 40,067,412        | 5.90 | 1.62      | 1.50                      | 5.72                      | 3.64                      | 12.78  | 13.41   | 8.71    | 8.80    | 177.68          | 01/05/1995     |
| <b>Active Funds:</b>            |                   |      |           |                           |                           |                           |        |         |         |         |                 |                |
| BlackRock Vesey Street Fund III | 345,678           | 0.05 | 0.00      | -5.36                     | 0.30                      | -4.98                     | -10.33 | -5.23   | 5.28    | 7.17    | 4.17            | 07/17/2006     |
| DuPont Capital Management II    | 657,729           | 0.10 | 0.00      | -1.21                     | -0.70                     | 0.40                      | -1.37  | -0.19   | -2.59   | 1.65    | 0.69            | 08/14/2006     |
| DN Partners II                  | 1,072,419         | 0.16 | 0.00      | 0.00                      | 0.00                      | -0.57                     | -0.57  | 6.72    | -15.48  | -12.91  | -11.53          | 01/11/2007     |
| BlackRock Vesey Street Fund IV  | 4,685,644         | 0.69 | 0.00      | 0.11                      | 5.46                      | -1.29                     | 4.20   | 8.32    | 6.88    | 9.87    | 8.14            | 02/24/2009     |
| Mesirow PE Fund V               | 3,909,345         | 0.58 | 0.00      | 2.81                      | 2.69                      | 5.36                      | 11.70  | 15.36   | 14.38   | 15.38   | 14.04           | 04/09/2009     |
| PRIT Vintage 2014               | 7,897,241         | 1.16 | -1.10     | 5.63                      | 7.92                      | 7.67                      | 21.95  | 23.27   | N/A     | N/A     | 18.16           | 05/01/2014     |
| PRIT Vintage 2015               | 11,263,857        | 1.66 | -0.36     | 8.99                      | 5.60                      | 6.09                      | 21.13  | 22.82   | N/A     | N/A     | 19.60           | 03/01/2015     |
| PRIT Vintage 2016               | 4,817,729         | 0.71 | -4.25     | 0.99                      | 7.79                      | 7.58                      | 8.37   | 0.51    | N/A     | N/A     | 0.51            | 03/01/2016     |
| PRIT Vintage 2017               | 3,584,976         | 0.53 | 28.02     | -28.95                    | 13.26                     | -16.25                    | 4.30   | N/A     | N/A     | N/A     | 7.00            | 04/30/2017     |
| PRIT Vintage 2018               | 1,672,252         | 0.25 | 17.40     | -27.77                    | -5.34                     | N/A                       | N/A    | N/A     | N/A     | N/A     | -5.67           | 05/30/2018     |
| PRIT Vintage 2019               | 15,485            | 0.00 | N/A       | N/A                       | N/A                       | N/A                       | N/A    | N/A     | N/A     | N/A     | 0.00            | 03/31/2019     |
| <b>Funds in Liquidation:</b>    |                   |      |           |                           |                           |                           |        |         |         |         |                 |                |
| Charles River XI                | 145,057           | 0.02 | 0.02      | 3.14                      | -0.02                     | -0.02                     | 3.12   | 7.89    | 13.15   | 14.21   | 8.86            | 11/22/2000     |

| <b>Policy Index</b>              | <b>Weight (%)</b> |
|----------------------------------|-------------------|
| Jan-1976                         |                   |
| Bloomberg Barc. U.S. Aggregate   | 35.00             |
| MSCI EAFE (Net)                  | 15.00             |
| S&P 500                          | 50.00             |
| Jul-2007                         |                   |
| Bloomberg Barc. U.S. Aggregate   | 33.00             |
| MSCI EAFE (Net)                  | 22.00             |
| S&P 500                          | 45.00             |
| Jul-2010                         |                   |
| Bloomberg Barc. U.S. Aggregate   | 33.00             |
| MSCI EAFE (Net)                  | 25.50             |
| S&P 500                          | 41.50             |
| Jan-2017                         |                   |
| Bloomberg Barc. U.S. Aggregate   | 18.00             |
| Russell 3000 Index               | 34.00             |
| Bloomberg Barc. Global Aggregate | 16.50             |
| MSCI AC World ex USA             | 24.00             |
| NCREIF Property Index            | 7.50              |

As of March 31, 2019

| <b>Policy Index</b>                                  | <b>Weight (%)</b> |
|--|-------------------|
| Jan-2017   |                   |
| Russell 3000 Index                                   | 30.00             |
| NCREIF Timberland Index                              | 3.00              |
| FTSE EPRA/NAREIT Developed Index                     | 2.00              |
| MSCI EAFE Index                                      | 12.50             |
| MSCI Emerging Markets Index                          | 10.50             |
| Blmbg. Barc. U.S. Aggregate                          | 11.00             |
| Blmbg. Barc. U.S. TIPS                               | 2.00              |
| Blmbg. Barc. Global Aggregate                        | 6.50              |
| 50% JPM EMBI Global Div./ 50% JPM GBI-EM Global Div. | 7.00              |
| FTSE High Yield Market Capped Index                  | 3.00              |
| HFRI FOF: Diversified Index                          | 5.00              |
| NCREIF Property Index                                | 7.50              |

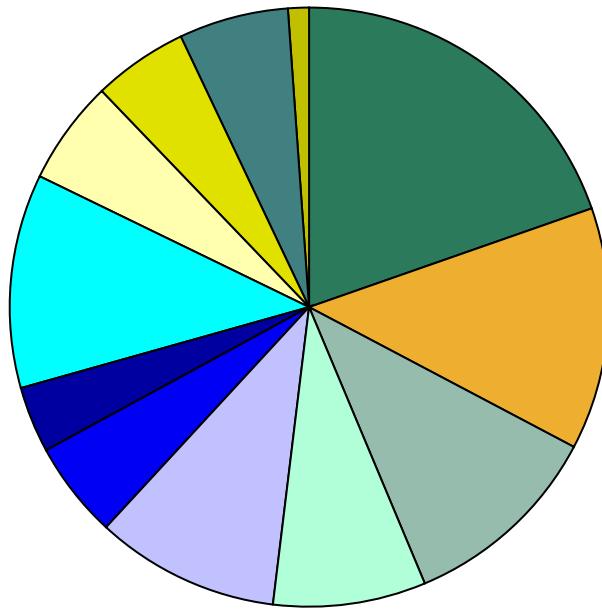
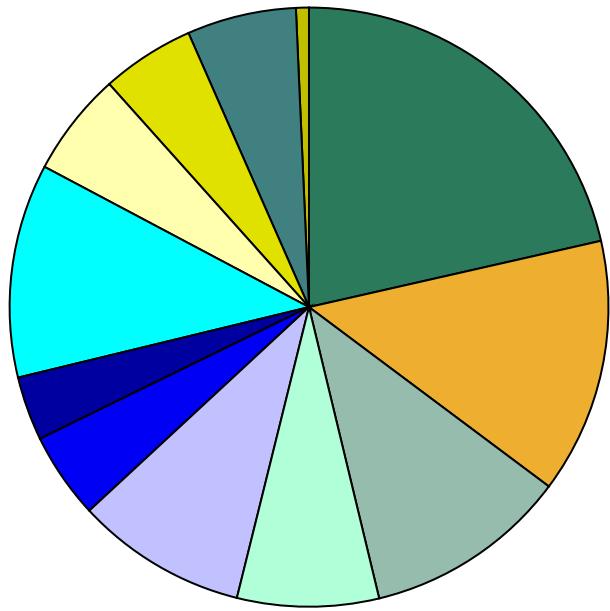
## Bristol County Retirement System

**Total Fund**

As of March 31, 2019

Mar-2019 : \$679,266,636

Dec-2018 : \$645,803,115



| Segments                   | Market Value (\$) | Allocation (%) |
|----------------------------|-------------------|----------------|
| Domestic Equity            | 145,671,156       | 21.45          |
| International Equity       | 93,533,771        | 13.77          |
| Emerging Equity            | 74,870,304        | 11.02          |
| Domestic Fixed Income      | 51,864,751        | 7.64           |
| International Fixed Income | 62,768,706        | 9.24           |
| Emerging Fixed Income      | 31,581,830        | 4.65           |
| Global Fixed Income        | 23,496,663        | 3.46           |
| Real Estate                | 78,403,055        | 11.54          |
| Alternative Investment     | 38,123,253        | 5.61           |
| Hedge Fund                 | 34,142,340        | 5.03           |
| Private Equity             | 40,067,412        | 5.90           |
| Cash Equivalent            | 4,743,395         | 0.70           |

| Segments                   | Market Value (\$) | Allocation (%) |
|----------------------------|-------------------|----------------|
| Domestic Equity            | 126,910,714       | 19.65          |
| International Equity       | 84,441,322        | 13.08          |
| Emerging Equity            | 70,759,571        | 10.96          |
| Domestic Fixed Income      | 53,250,947        | 8.25           |
| International Fixed Income | 64,127,470        | 9.93           |
| Emerging Fixed Income      | 33,663,164        | 5.21           |
| Global Fixed Income        | 23,077,160        | 3.57           |
| Real Estate                | 74,577,056        | 11.55          |
| Alternative Investment     | 36,371,840        | 5.63           |
| Hedge Fund                 | 33,114,696        | 5.13           |
| Private Equity             | 38,216,221        | 5.92           |
| Cash Equivalent            | 7,292,955         | 1.13           |

## Bristol County Retirement System

## Financial Reconciliation

1 Quarter Ending March 31, 2019

|                                       | Market Value<br>As of<br>01/01/2019 | Contributions | Distributions | Fees    | Expenses | Return On<br>Investment | Market Value<br>As of<br>03/31/2019 |
|---------------------------------------|-------------------------------------|---------------|---------------|---------|----------|-------------------------|-------------------------------------|
| <b>Domestic Equity</b>                |                                     |               |               |         |          |                         |                                     |
| ClearBridge Large Cap Growth          | 23,974,597                          | -             | -             | -64,504 | -        | 3,861,335               | 27,771,427                          |
| Columbia                              | 23,439,708                          | -             | -             | -       | -        | 5,194,648               | 28,634,356                          |
| LSV                                   | 29,425,133                          | -             | -             | -43,387 | -        | 3,216,774               | 32,598,520                          |
| Lyrical                               | 26,974,366                          | -             | -             | -50,672 | -        | 3,629,138               | 30,552,833                          |
| Earnest Partners                      | 12,113,624                          | -             | -             | -18,205 | -        | 1,479,060               | 13,574,479                          |
| Frontier Capital Appreciation         | 12,663,181                          | -             | -             | -       | -        | 1,914,473               | 14,577,654                          |
| <b>International Equity</b>           |                                     |               |               |         |          |                         |                                     |
| Arrowstreet Capital                   | 26,714,516                          | -             | -             | -36,223 | -        | 2,871,952               | 29,550,246                          |
| Freedom Capital Intl                  | 30,457,769                          | -             | -             | -69,435 | -        | 3,110,056               | 33,498,390                          |
| Fiera International Equity            | 27,269,037                          | -             | -             | -53,833 | -        | 3,269,932               | 30,485,136                          |
| Lazard Emerging Markets               | 39,436,498                          | -             | -2,000,000    | -       | -        | 2,787,436               | 40,223,935                          |
| Aberdeen Emerging Markets             | 31,323,072                          | -             | -             | -78,331 | -        | 3,401,629               | 34,646,370                          |
| <b>Global REITs</b>                   |                                     |               |               |         |          |                         |                                     |
| Brookfield Global Real Estate         | 12,733,520                          | -             | -             | -       | -        | 1,938,325               | 14,671,846                          |
| <b>Domestic Fixed Income</b>          |                                     |               |               |         |          |                         |                                     |
| Income Research & Management          | 42,106,379                          | -             | -3,000,000    | -32,226 | -        | 1,386,201               | 40,460,354                          |
| IRM-TIPS                              | 11,499,265                          | -             | -             | -2,865  | -        | 299,901                 | 11,796,301                          |
| Invesco Mortgage Recovery Fund        | 374,182                             | -             | -126,979      | -       | -        | -                       | 247,203                             |
| <b>International Fixed Income</b>     |                                     |               |               |         |          |                         |                                     |
| Colchester Global Bond                | 23,077,160                          | -             | -             | -34,558 | -        | 454,061                 | 23,496,663                          |
| PIMCO Diversified Income              | 64,127,470                          | -             | -5,000,000    | -       | -        | 3,641,236               | 62,768,706                          |
| Stone Harbor EMD                      | 18,270,096                          | -             | -2,000,000    | -25,453 | -        | 1,093,543               | 17,338,186                          |
| Ashmore Emerging Markets Total Return | 15,393,068                          | -             | -2,000,000    | -       | -        | 850,575                 | 14,243,644                          |

## Bristol County Retirement System

## Financial Reconciliation

1 Quarter Ending March 31, 2019

|  | Market Value<br>As of<br>01/01/2019 | Contributions     | Distributions      | Fees            | Expenses       | Return On<br>Investment | Market Value<br>As of<br>03/31/2019 |
|--|-------------------------------------|-------------------|--------------------|-----------------|----------------|-------------------------|-------------------------------------|
| <b>Short Term Investments</b>                    |                                     |                   |                    |                 |                |                         |                                     |
| Bristol County Cash                              | 4,860,774                           | 15,622,447        | -18,454,728        | -               | -              | 14,124                  | 2,042,617                           |
| <b>Total Private Equity</b>                      |                                     |                   |                    |                 |                |                         |                                     |
| DN Partners II                                   | 1,072,419                           | -                 | -                  | -               | -              | -                       | 1,072,419                           |
| Charles River XI                                 | 145,027                             | -                 | -                  | -               | -              | 30                      | 145,057                             |
| DuPont Capital Management II                     | 710,070                             | 2,407             | -54,749            | -2,407          | -              | 2,407                   | 657,729                             |
| BlackRock Vesey Street Fund III                  | 395,678                             | -                 | -50,000            | -               | -              | -                       | 345,678                             |
| BlackRock Vesey Street Fund IV                   | 4,935,644                           | 57,161            | -307,161           | -               | -36,726        | 36,726                  | 4,685,644                           |
| Mesirow PE Fund V                                | 4,084,345                           | -                 | -175,000           | -               | -              | -                       | 3,909,345                           |
| PRIT Vintage 2014                                | 7,945,491                           | 233,068           | -193,433           | -746            | -57            | -87,082                 | 7,897,241                           |
| PRIT Vintage 2015                                | 10,707,865                          | 650,770           | -55,006            | -15,923         | -1,383         | -22,466                 | 11,263,857                          |
| PRIT Vintage 2016                                | 4,727,624                           | 295,200           | -1,580             | -455            | -481           | -202,580                | 4,817,729                           |
| PRIT Vintage 2017                                | 2,449,684                           | 396,279           | -7,539             | -352            | -833           | 747,737                 | 3,584,976                           |
| PRIT Vintage 2018                                | 1,042,374                           | 418,020           | -                  | -510            | -612           | 212,981                 | 1,672,252                           |
| PRIT Vintage 2019                                | -                                   | 15,485            | -                  | -31             | -              | 31                      | 15,485                              |
| <b>Real Assets</b>                               |                                     |                   |                    |                 |                |                         |                                     |
| Hunt RIVA (FKA SSgA Tuckerman)                   | 63,885                              | -                 | -                  | -               | -              | -                       | 63,885                              |
| RREEF America REIT II                            | 13,194,920                          | -                 | -                  | -31,532         | -              | 243,566                 | 13,406,954                          |
| Intercontinental                                 | 29,301,930                          | -                 | -                  | -65,554         | -              | 578,615                 | 29,814,991                          |
| Brookfield Timberlands Fund V                    | 1,117,812                           | 2,869             | -14,366            | -2,709          | -160           | 2,869                   | 1,106,315                           |
| Eastern Timberland Opportunities II              | 2,898,480                           | -                 | -34,599            | -               | -              | 126,261                 | 2,990,142                           |
| GCM Customized Infrastructures Strategies II, LP | 6,548,674                           | 1,079,648         | -219,974           | -13,848         | -17,934        | 31,782                  | 7,408,347                           |
| IFM  | 25,806,874                          | -                 | -                  | -63,115         | -              | 874,690                 | 26,618,449                          |
| TerraCap Partners IV                             | 11,287,121                          | -                 | -149,931           | -               | -              | -                       | 11,137,190                          |
| <b>Hedge Fund of Funds</b>                       |                                     |                   |                    |                 |                |                         |                                     |
| PRIT Absolute Return                             | 33,114,696                          | -                 | -                  | -35,162         | -              | 1,062,807               | 34,142,340                          |
| <b>Total Fund</b>                                | <b>645,803,115</b>                  | <b>20,120,584</b> | <b>-33,845,044</b> | <b>-778,604</b> | <b>-58,186</b> | <b>48,024,772</b>       | <b>679,266,636</b>                  |

## Bristol County Retirement System

## Financial Reconciliation

1 Year Ending March 31, 2019

|                                       | Market Value<br>As of<br>04/01/2018 | Contributions | Distributions | Fees     | Expenses | Return On<br>Investment | Market Value<br>As of<br>03/31/2019 |
|---------------------------------------|-------------------------------------|---------------|---------------|----------|----------|-------------------------|-------------------------------------|
| <b>Domestic Equity</b>                |                                     |               |               |          |          |                         |                                     |
| ClearBridge Large Cap Growth          | -                                   | 27,000,000    | -             | -64,504  | -        | 835,932                 | 27,771,427                          |
| Intech Large Cap Growth               | 25,969,321                          | -             | -27,619,588   | -70,234  | -        | 1,720,501               | -                                   |
| Columbia                              | 32,268,622                          | -             | -6,000,000    | -        | -        | 2,365,733               | 28,634,356                          |
| LSV                                   | 32,850,949                          | -             | -             | -189,072 | -        | -63,357                 | 32,598,520                          |
| Lyrical                               | 33,228,262                          | -             | -             | -238,392 | -        | -2,437,038              | 30,552,833                          |
| Earnest Partners                      | 16,367,847                          | -             | -2,500,000    | -123,971 | -        | -169,398                | 13,574,479                          |
| Frontier Capital Appreciation         | -                                   | 14,250,000    | -             | -        | -        | 327,654                 | 14,577,654                          |
| Rice Hall James                       | 16,811,610                          | -             | -16,640,000   | -100,918 | -        | -47,134                 | 23,559                              |
| <b>International Equity</b>           |                                     |               |               |          |          |                         |                                     |
| Arrowstreet Capital                   | 33,450,839                          | -             | -2,500,000    | -169,450 | -        | -1,231,143              | 29,550,246                          |
| Freedom Capital Intl                  | 43,289,663                          | -             | -8,500,000    | -353,790 | -        | -937,483                | 33,498,390                          |
| Fiera International Equity            | -                                   | 27,500,000    | -             | -76,852  | -        | 3,061,988               | 30,485,136                          |
| MFS International Equity              | 31,390,231                          | -             | -29,377,556   | -        | -        | -2,012,675              | -                                   |
| Lazard Emerging Markets               | 45,438,153                          | 5,000,000     | -4,500,000    | -        | -        | -5,714,218              | 40,223,935                          |
| Aberdeen Emerging Markets             | 33,254,638                          | 5,000,000     | -2,500,000    | -294,585 | -        | -813,682                | 34,646,370                          |
| <b>Global REITs</b>                   |                                     |               |               |          |          |                         |                                     |
| Brookfield Global Real Estate         | -                                   | 13,450,000    | -             | -        | -        | 1,221,846               | 14,671,846                          |
| CBRE Clarion Global REITs             | 13,555,172                          | -             | -13,418,117   | -81,366  | -        | -20,614                 | 35,075                              |
| <b>Domestic Fixed Income</b>          |                                     |               |               |          |          |                         |                                     |
| Income Research & Management          | 41,635,650                          | -             | -3,000,000    | -128,923 | -        | 1,953,627               | 40,460,354                          |
| IRM-TIPS                              | 11,495,779                          | -             | -             | -11,493  | -        | 312,014                 | 11,796,301                          |
| Invesco Mortgage Recovery Fund        | 396,450                             | -             | -203,617      | -        | -        | 54,370                  | 247,203                             |
| <b>International Fixed Income</b>     |                                     |               |               |          |          |                         |                                     |
| Colchester Global Bond                | 27,287,787                          | -             | -3,000,000    | -150,803 | -        | -640,321                | 23,496,663                          |
| PIMCO Diversified Income              | 59,351,052                          | 5,000,000     | -5,000,000    | -        | -        | 3,417,654               | 62,768,706                          |
| Stone Harbor EMD                      | 17,678,660                          | 2,500,000     | -2,000,000    | -96,300  | -        | -744,174                | 17,338,186                          |
| Ashmore Emerging Markets Total Return | 13,704,493                          | 2,500,000     | -2,000,000    | -        | -        | 39,150                  | 14,243,644                          |

# Bristol County Retirement System

# Financial Reconciliation

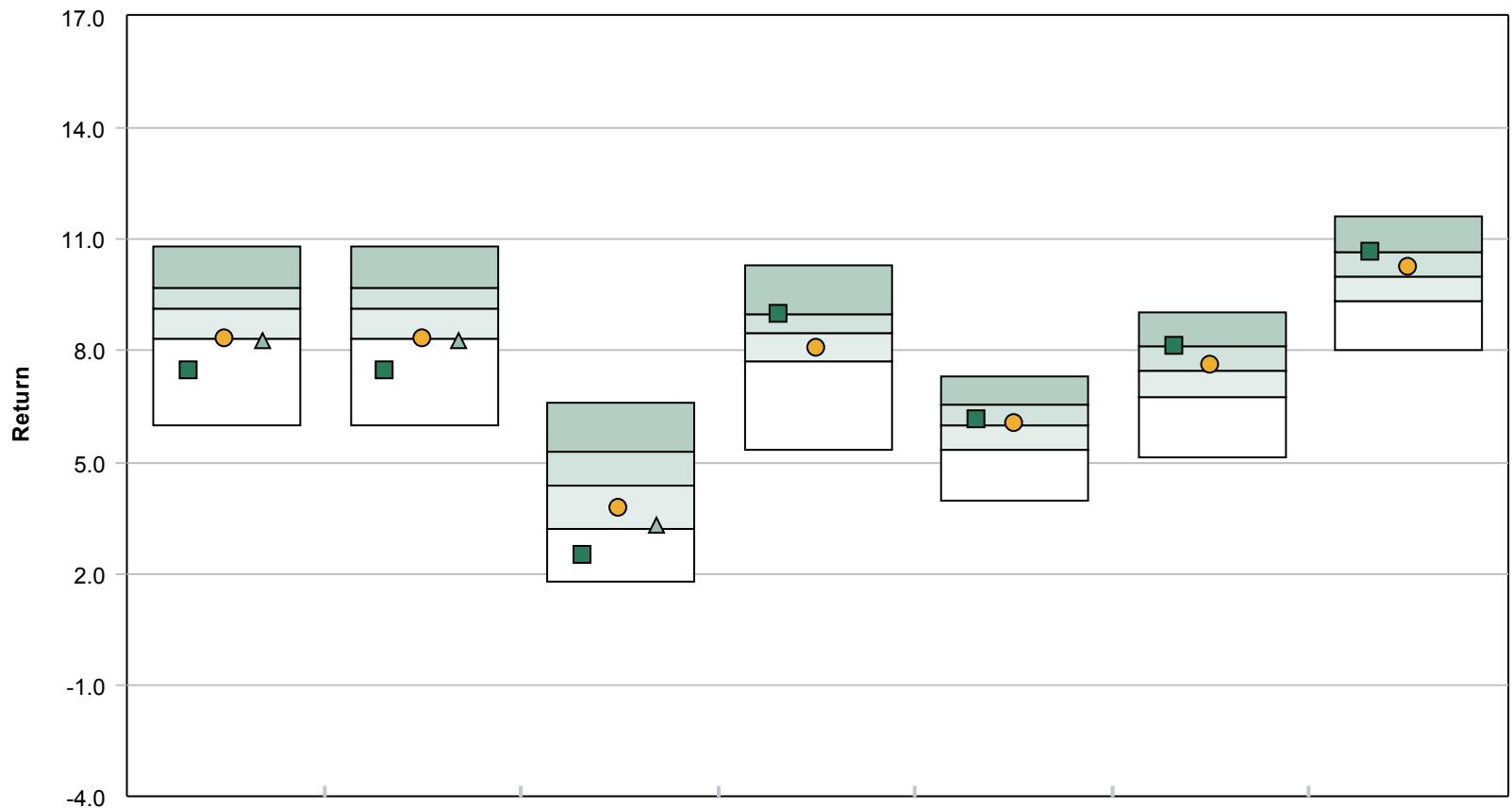
1 Year Ending March 31, 2019

|  | Market Value<br>As of<br>04/01/2018 | Contributions      | Distributions       | Fees              | Expenses        | Return On<br>Investment | Market Value<br>As of<br>03/31/2019 |
|--|-------------------------------------|--------------------|---------------------|-------------------|-----------------|-------------------------|-------------------------------------|
| <b>Short Term Investments</b>                    |                                     |                    |                     |                   |                 |                         |                                     |
| Bristol County Cash                              | 1,153,638                           | 170,506,157        | -169,742,207        | -                 | -               | 125,028                 | 2,042,617                           |
| <b>Total Private Equity</b>                      |                                     |                    |                     |                   |                 |                         |                                     |
| DN Partners II                                   | 1,078,521                           | -                  | -                   | -                 | -               | -6,102                  | 1,072,419                           |
| Charles River XI                                 | 140,667                             | -                  | -                   | -                 | -               | 4,390                   | 145,057                             |
| DuPont Capital Management II                     | 1,026,412                           | 7,489              | -365,149            | -5,473            | -               | -5,550                  | 657,729                             |
| BlackRock Vesey Street Fund III                  | 565,609                             | 4,601              | -172,500            | -                 | -4,601          | -47,431                 | 345,678                             |
| BlackRock Vesey Street Fund IV                   | 5,678,917                           | 257,165            | -1,457,161          | -                 | -36,726         | 243,449                 | 4,685,644                           |
| Mesirow PE Fund V                                | 4,297,836                           | 100,350            | -950,000            | -9,112            | -350            | 470,621                 | 3,909,345                           |
| PRIT Vintage 2014                                | 6,982,478                           | 1,202,288          | -1,776,234          | -3,553            | -97,474         | 1,589,736               | 7,897,241                           |
| PRIT Vintage 2015                                | 7,382,099                           | 2,547,296          | -424,006            | -36,171           | -146,134        | 1,940,772               | 11,263,857                          |
| PRIT Vintage 2016                                | 2,394,361                           | 2,219,669          | -81,004             | -4,418            | -109,377        | 398,498                 | 4,817,729                           |
| PRIT Vintage 2017                                | 1,133,508                           | 2,455,170          | -95,055             | -4,138            | -144,171        | 239,662                 | 3,584,976                           |
| PRIT Vintage 2018                                | -                                   | 1,720,128          | -50                 | -3,820            | -18,089         | -25,917                 | 1,672,252                           |
| PRIT Vintage 2019                                | -                                   | 15,485             | -                   | -31               | -               | 31                      | 15,485                              |
| <b>Real Assets</b>                               |                                     |                    |                     |                   |                 |                         |                                     |
| New Boston                                       | -                                   | -                  | -                   | -                 | -               | -                       | -                                   |
| Hunt RIVA (FKA SSgA Tuckerman)                   | 121,520                             | -                  | -55,805             | -58               | -               | -1,772                  | 63,885                              |
| RREEF America REIT II                            | 12,546,727                          | -                  | -                   | -123,701          | -               | 983,929                 | 13,406,954                          |
| Intercontinental                                 | 27,522,075                          | -                  | -                   | -411,538          | -               | 2,704,454               | 29,814,991                          |
| Brookfield Timberlands Fund V                    | 1,232,958                           | 9,292              | -144,341            | -8,217            | -1,075          | 17,698                  | 1,106,315                           |
| Eastern Timberland Opportunities II              | 2,987,141                           | -                  | -178,316            | -                 | -               | 181,317                 | 2,990,142                           |
| GCM Customized Infrastructures Strategies II, LP | 6,992,895                           | 1,171,067          | -1,278,158          | -71,827           | -51,375         | 645,745                 | 7,408,347                           |
| IFM  | 24,238,292                          | -                  | -                   | -243,851          | -               | 2,624,008               | 26,618,449                          |
| TerraCap Partners IV                             | -                                   | 10,566,939         | -249,893            | -                 | -               | 820,144                 | 11,137,190                          |
| <b>Hedge Fund of Funds</b>                       |                                     |                    |                     |                   |                 |                         |                                     |
| PRIT Absolute Return                             | 33,675,291                          | -                  | -                   | -316,892          | -               | 783,942                 | 34,142,340                          |
| <b>Total Fund</b>                                | <b>676,517,179</b>                  | <b>296,943,401</b> | <b>-306,209,270</b> | <b>-3,393,451</b> | <b>-609,371</b> | <b>16,018,149</b>       | <b>679,266,636</b>                  |

## Bristol County Retirement System

## All Public Plans < \$1B-Total Fund

As of March 31, 2019



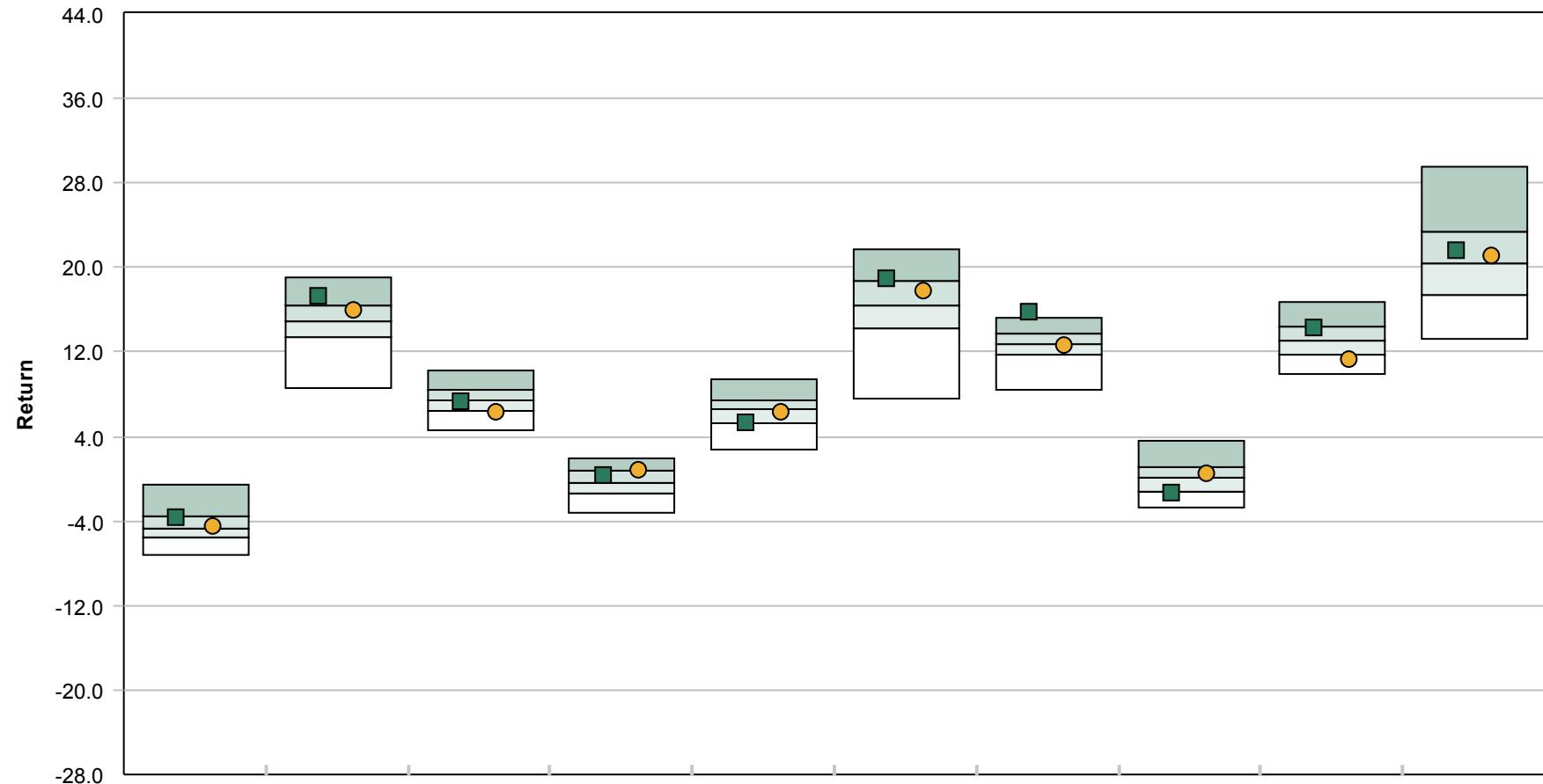
|                             | 1 Qtr     | YTD       | 1 Yr      | 3 Yrs     | 5 Yrs     | 7 Yrs     | 10 Yrs     |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Total Fund                  | 7.48 (85) | 7.48 (85) | 2.49 (86) | 8.98 (26) | 6.16 (43) | 8.11 (24) | 10.65 (27) |
| Total Plan Index            | 8.31 (77) | 8.31 (77) | 3.74 (62) | 8.05 (66) | 6.05 (49) | 7.63 (45) | 10.25 (43) |
| Total Plan Allocation Index | 8.27 (78) | 8.27 (78) | 3.31 (72) | N/A       | N/A       | N/A       | N/A        |
| 5th Percentile              | 10.79     | 10.79     | 6.59      | 10.33     | 7.30      | 9.06      | 11.62      |
| 1st Quartile                | 9.70      | 9.70      | 5.29      | 8.99      | 6.55      | 8.10      | 10.65      |
| Median                      | 9.13      | 9.13      | 4.35      | 8.47      | 5.97      | 7.46      | 10.01      |
| 3rd Quartile                | 8.34      | 8.34      | 3.22      | 7.71      | 5.32      | 6.76      | 9.35       |
| 95th Percentile             | 6.01      | 6.01      | 1.79      | 5.31      | 3.97      | 5.13      | 8.03       |
| Population                  | 158       | 158       | 156       | 151       | 144       | 139       | 124        |

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

## Bristol County Retirement System

## All Public Plans < \$1B-Total Fund

As of March 31, 2019



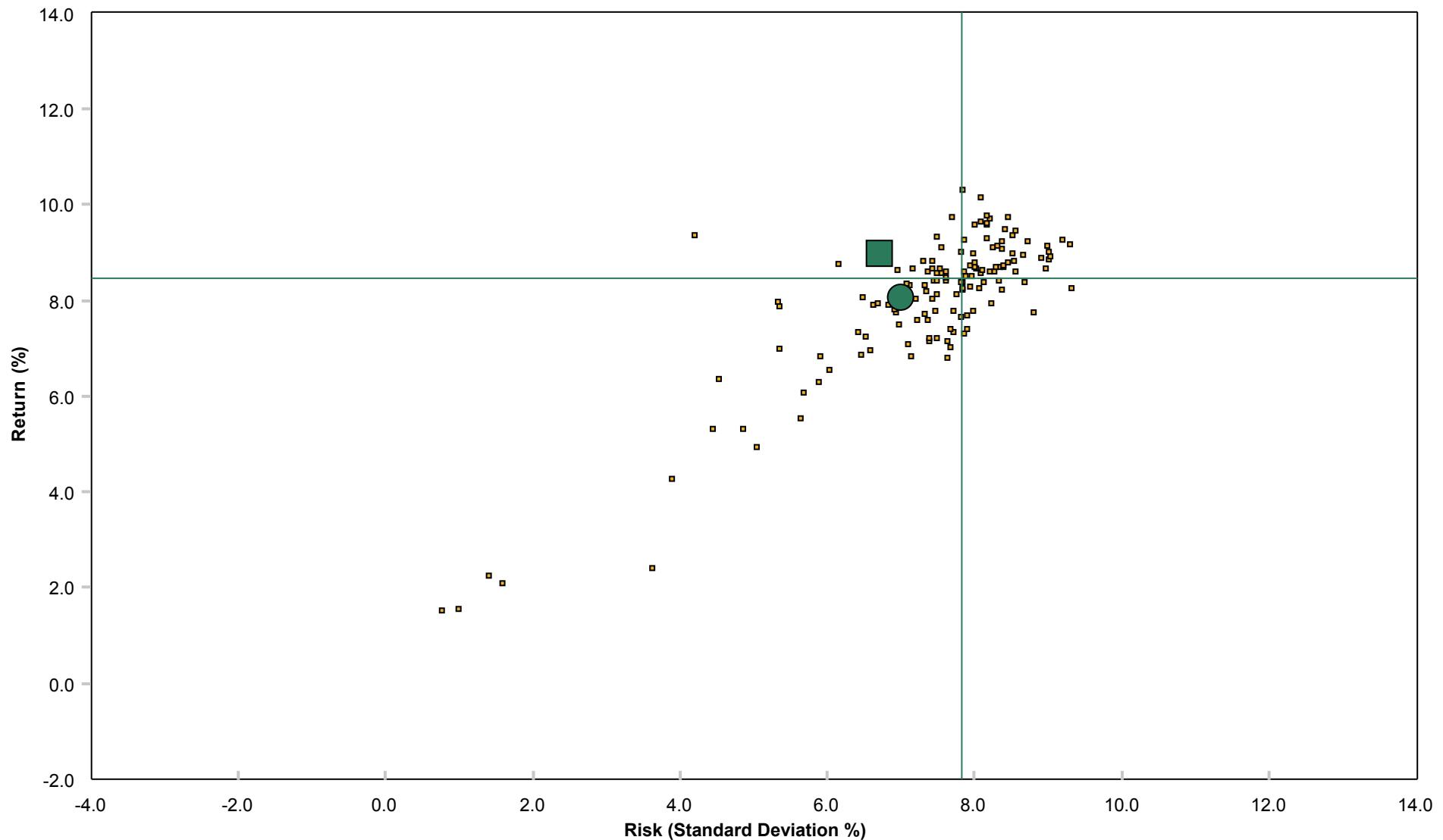
|                  | 2018       | 2017       | 2016      | 2015      | 2014      | 2013       | 2012       | 2011       | 2010       | 2009       |
|------------------|------------|------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|
| Total Fund       | -3.80 (31) | 17.25 (14) | 7.32 (55) | 0.21 (37) | 5.30 (74) | 18.86 (21) | 15.68 (4)  | -1.44 (79) | 14.26 (28) | 21.58 (43) |
| Total Plan Index | -4.59 (46) | 15.96 (30) | 6.19 (83) | 0.79 (24) | 6.25 (58) | 17.81 (33) | 12.59 (55) | 0.45 (40)  | 11.21 (84) | 21.02 (47) |
| 5th Percentile   | -0.56      | 19.06      | 10.28     | 1.98      | 9.34      | 21.75      | 15.25      | 3.60       | 16.73      | 29.49      |
| 1st Quartile     | -3.62      | 16.44      | 8.34      | 0.73      | 7.39      | 18.69      | 13.80      | 1.05       | 14.38      | 23.30      |
| Median           | -4.73      | 14.89      | 7.43      | -0.33     | 6.54      | 16.37      | 12.82      | 0.15       | 12.99      | 20.38      |
| 3rd Quartile     | -5.48      | 13.39      | 6.47      | -1.38     | 5.23      | 14.23      | 11.76      | -1.27      | 11.72      | 17.42      |
| 95th Percentile  | -7.20      | 8.57       | 4.60      | -3.25     | 2.70      | 7.58       | 8.36       | -2.73      | 9.88       | 13.30      |
| Population       | 184        | 202        | 197       | 185       | 174       | 175        | 182        | 174        | 169        | 158        |

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

## Bristol County Retirement System

## All Public Plans < \$1B-Total Fund

3 Years Ending March 31, 2019



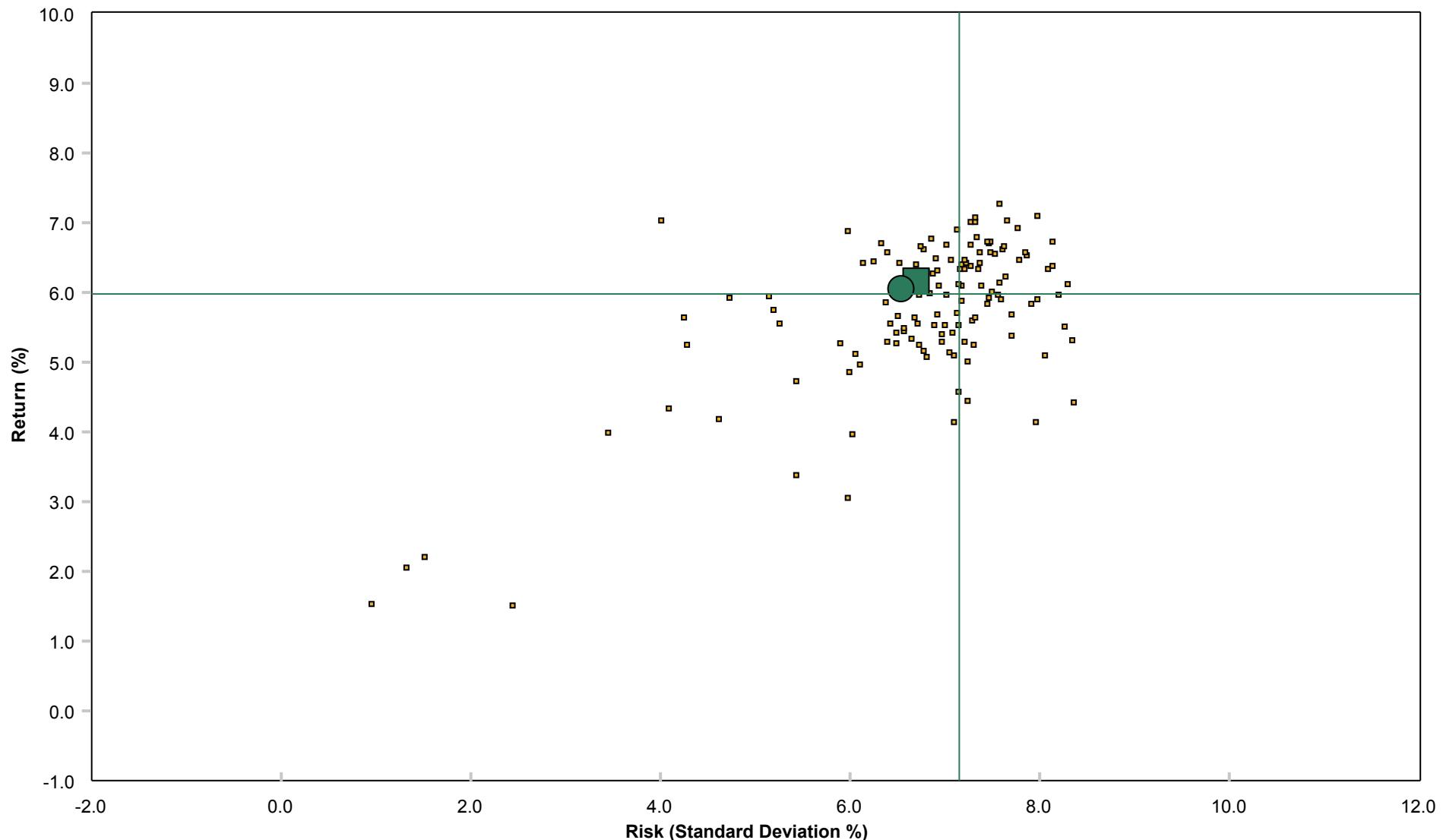
|                  | Return | Standard Deviation |
|------------------|--------|--------------------|
| Total Fund       | 8.98   | 6.71               |
| Total Plan Index | 8.05   | 7.01               |
| Median           | 8.47   | 7.84               |

Calculation based on quarterly periodicity.

## Bristol County Retirement System

## All Public Plans < \$1B-Total Fund

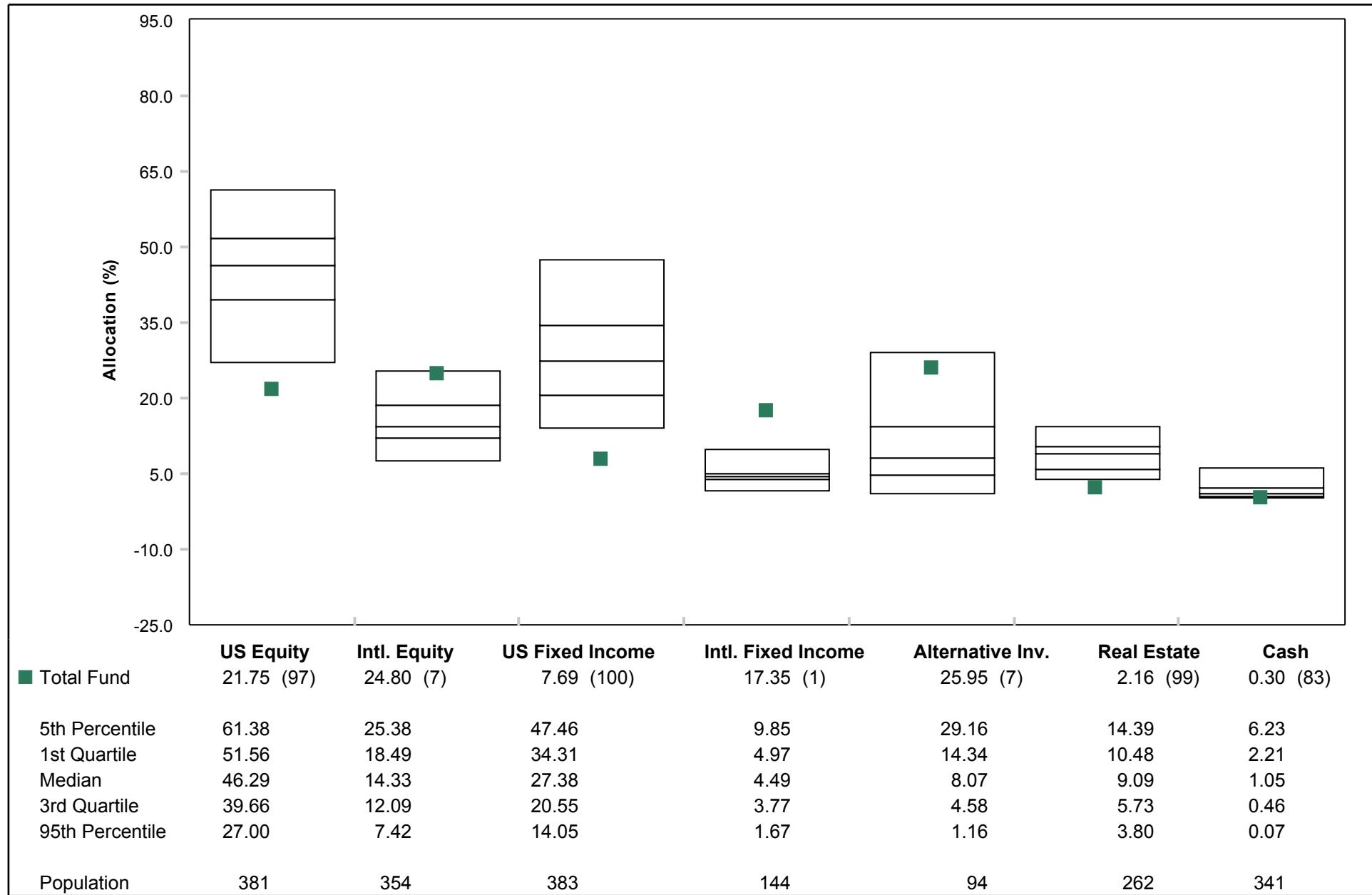
5 Years Ending March 31, 2019



Calculation based on quarterly periodicity.

As of March 31, 2019

All Public Plans &lt; \$1B-Total Fund



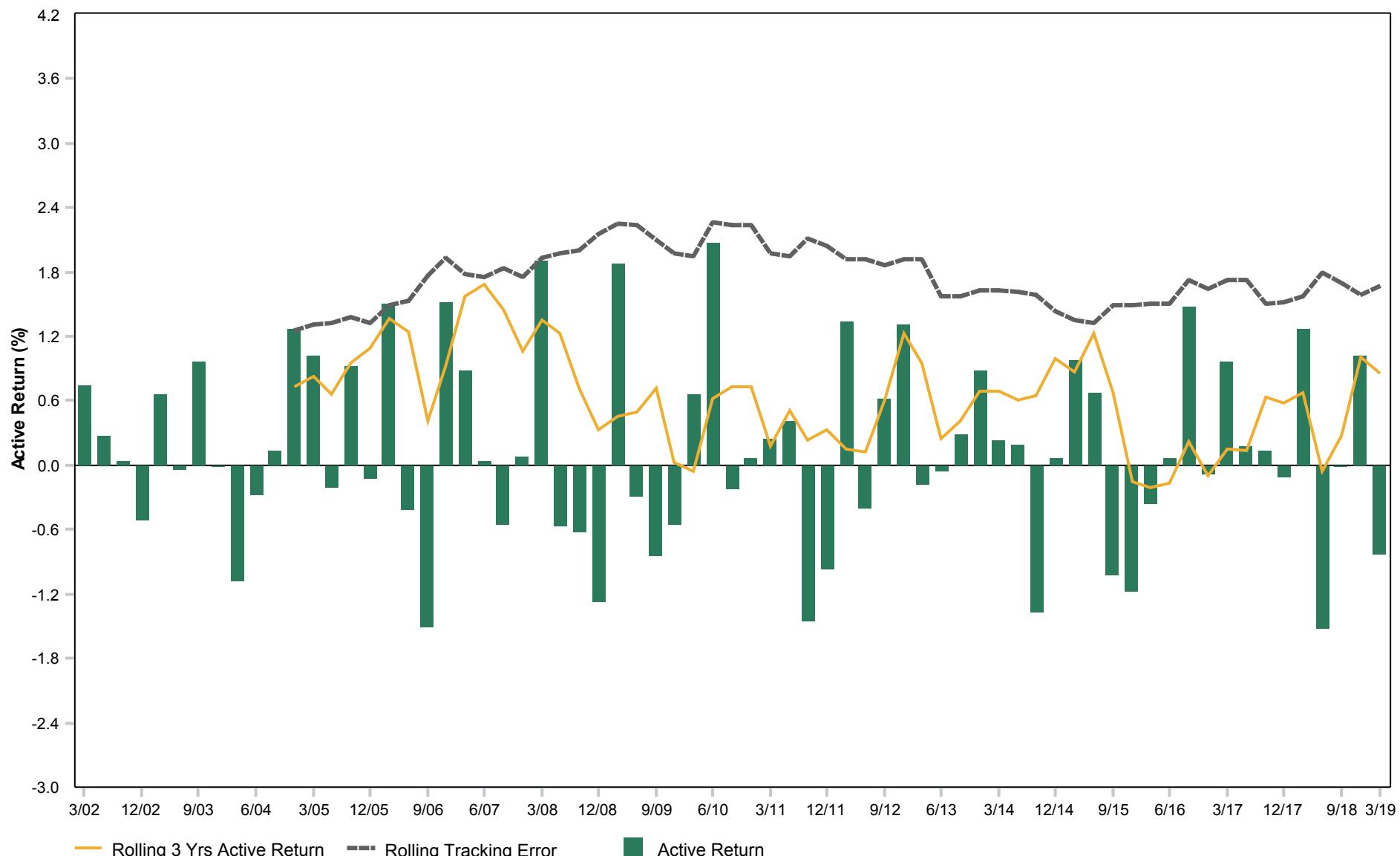
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                  | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016 | 2015  |
|------------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|------|-------|
| Total Fund       | 7.48  | 7.48  | 2.49  | 8.98  | 6.16  | 8.11  | 10.65  | -3.80 | 17.25 | 7.32 | 0.21  |
| Total Plan Index | 8.31  | 8.31  | 3.74  | 8.05  | 6.05  | 7.63  | 10.25  | -4.59 | 15.96 | 6.19 | 0.79  |
| Difference       | -0.83 | -0.83 | -1.25 | 0.93  | 0.11  | 0.48  | 0.40   | 0.79  | 1.29  | 1.13 | -0.58 |



Gross of Fees

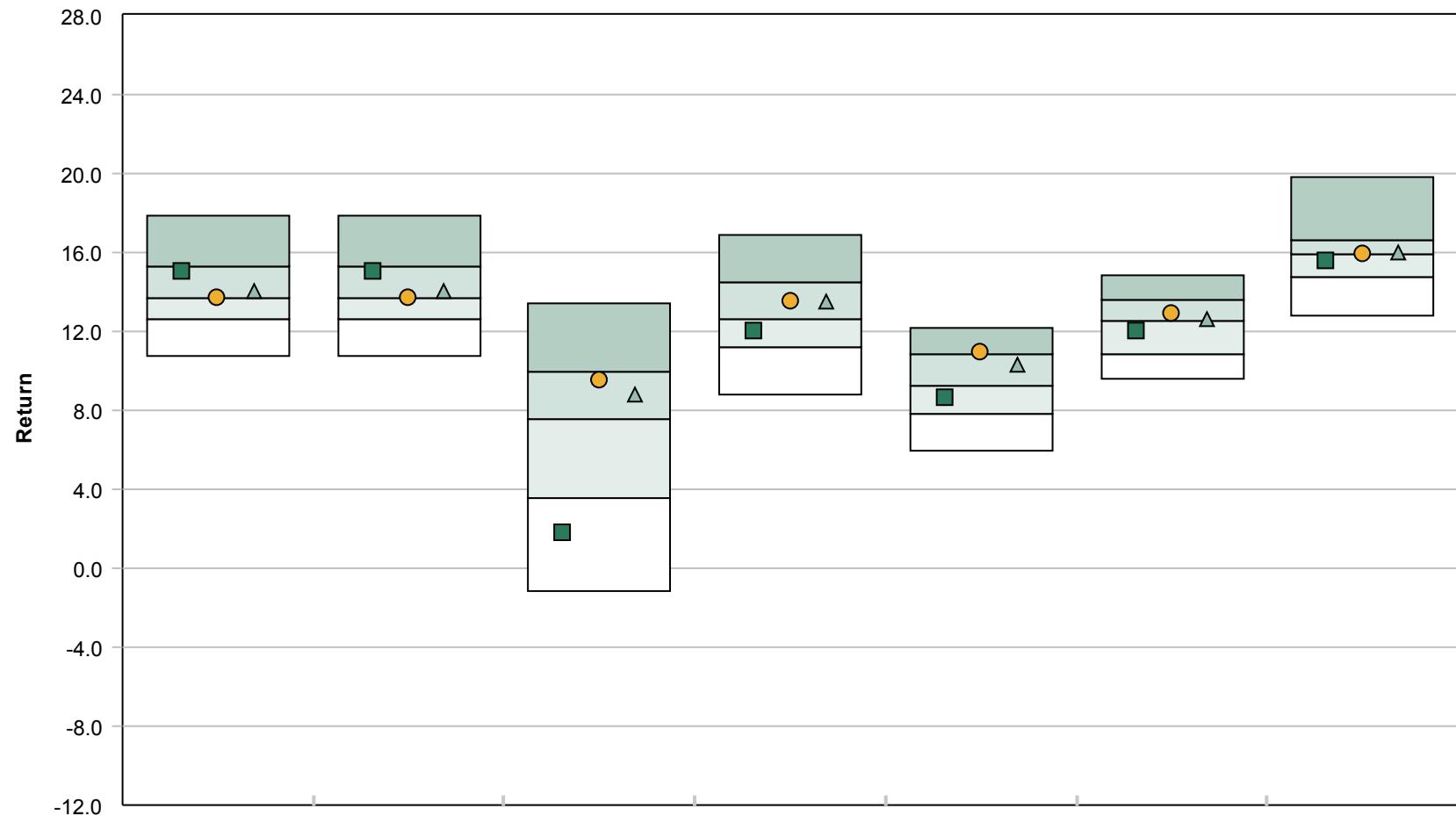
 Segal Marco Advisors

## **Domestic Equity**

## Bristol County Retirement System

## IM U.S. All Cap Core Equity (SA+CF)

As of March 31, 2019



|                       | 1 Qtr      | YTD        | 1 Yr      | 3 Yrs      | 5 Yrs      | 7 Yrs      | 10 Yrs     |
|-----------------------|------------|------------|-----------|------------|------------|------------|------------|
| Total Domestic Equity | 15.01 (30) | 15.01 (30) | 1.75 (84) | 12.02 (60) | 8.60 (58)  | 11.97 (63) | 15.58 (60) |
| S&P 500 Index         | 13.65 (51) | 13.65 (51) | 9.50 (28) | 13.51 (42) | 10.91 (24) | 12.85 (40) | 15.92 (52) |
| Russell 3000 Index    | 14.04 (39) | 14.04 (39) | 8.77 (32) | 13.49 (43) | 10.36 (40) | 12.63 (46) | 16.00 (45) |
| 5th Percentile        | 17.87      | 17.87      | 13.41     | 16.91      | 12.18      | 14.85      | 19.82      |
| 1st Quartile          | 15.28      | 15.28      | 9.97      | 14.49      | 10.86      | 13.62      | 16.66      |
| Median                | 13.66      | 13.66      | 7.55      | 12.60      | 9.28       | 12.50      | 15.94      |
| 3rd Quartile          | 12.61      | 12.61      | 3.55      | 11.24      | 7.85       | 10.83      | 14.79      |
| 95th Percentile       | 10.78      | 10.78      | -1.13     | 8.82       | 5.97       | 9.61       | 12.76      |

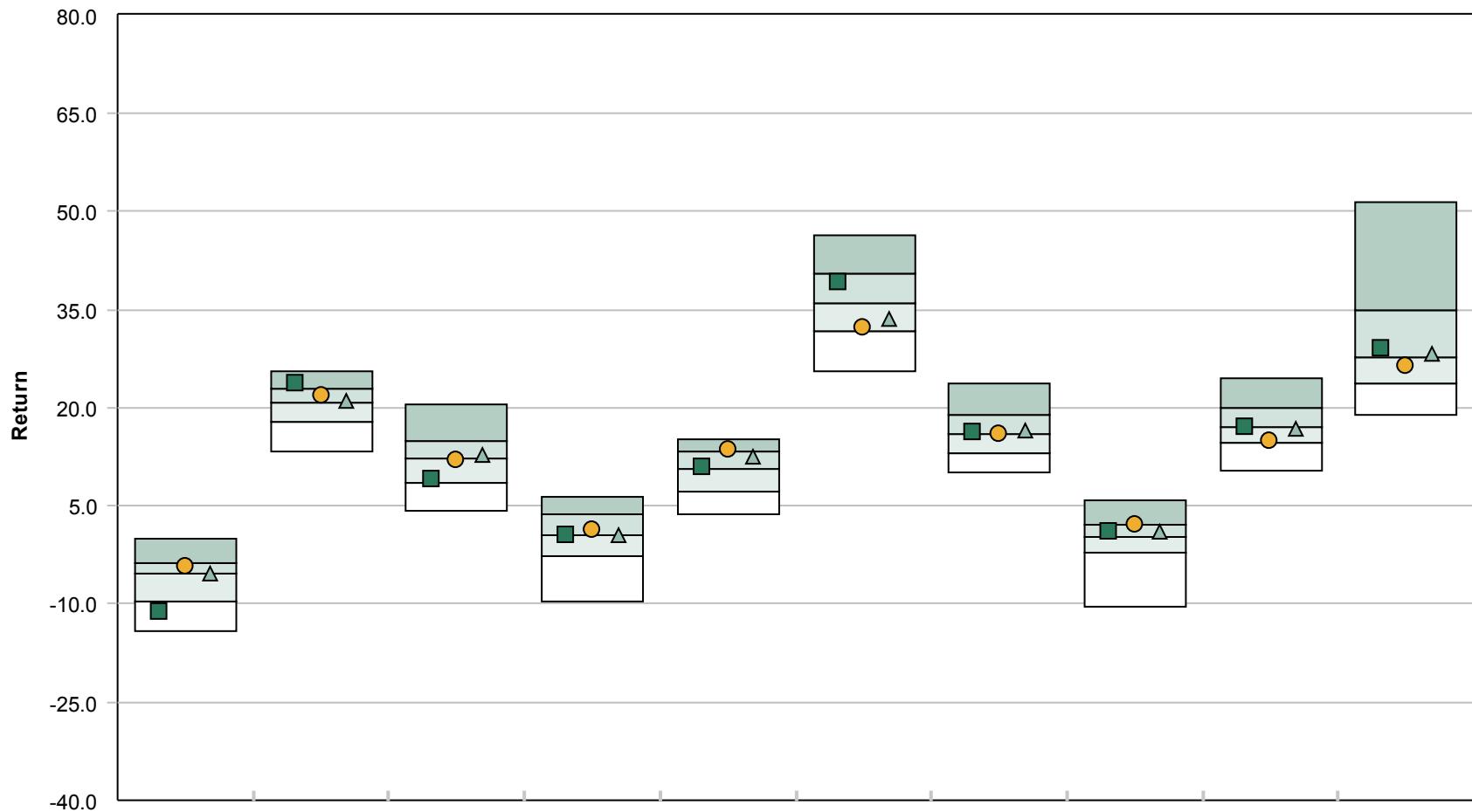
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. All Cap Core Equity (SA+CF)

As of March 31, 2019



|                       | 2018        | 2017       | 2016       | 2015      | 2014       | 2013       | 2012       | 2011      | 2010       | 2009       |
|-----------------------|-------------|------------|------------|-----------|------------|------------|------------|-----------|------------|------------|
| Total Domestic Equity | -11.11 (84) | 23.61 (19) | 9.01 (69)  | 0.66 (47) | 10.97 (49) | 39.12 (28) | 16.25 (48) | 1.11 (43) | 17.08 (47) | 29.17 (44) |
| S&P 500 Index         | -4.38 (36)  | 21.83 (34) | 11.96 (52) | 1.38 (40) | 13.69 (18) | 32.39 (73) | 16.00 (50) | 2.11 (25) | 15.06 (71) | 26.46 (56) |
| Russell 3000 Index    | -5.24 (49)  | 21.13 (48) | 12.74 (48) | 0.48 (50) | 12.56 (32) | 33.55 (66) | 16.42 (44) | 1.03 (43) | 16.93 (53) | 28.34 (46) |
| 5th Percentile        | 0.01        | 25.61      | 20.45      | 6.38      | 15.10      | 46.48      | 23.62      | 5.78      | 24.54      | 51.35      |
| 1st Quartile          | -3.78       | 23.00      | 14.94      | 3.65      | 13.30      | 40.43      | 18.95      | 2.01      | 20.06      | 34.84      |
| Median                | -5.36       | 20.91      | 12.17      | 0.45      | 10.80      | 35.95      | 15.97      | 0.32      | 16.99      | 27.82      |
| 3rd Quartile          | -9.65       | 17.90      | 8.41       | -2.75     | 7.21       | 31.68      | 13.08      | -2.23     | 14.77      | 23.68      |
| 95th Percentile       | -14.22      | 13.36      | 4.18       | -9.67     | 3.86       | 25.65      | 10.00      | -10.48    | 10.29      | 18.88      |

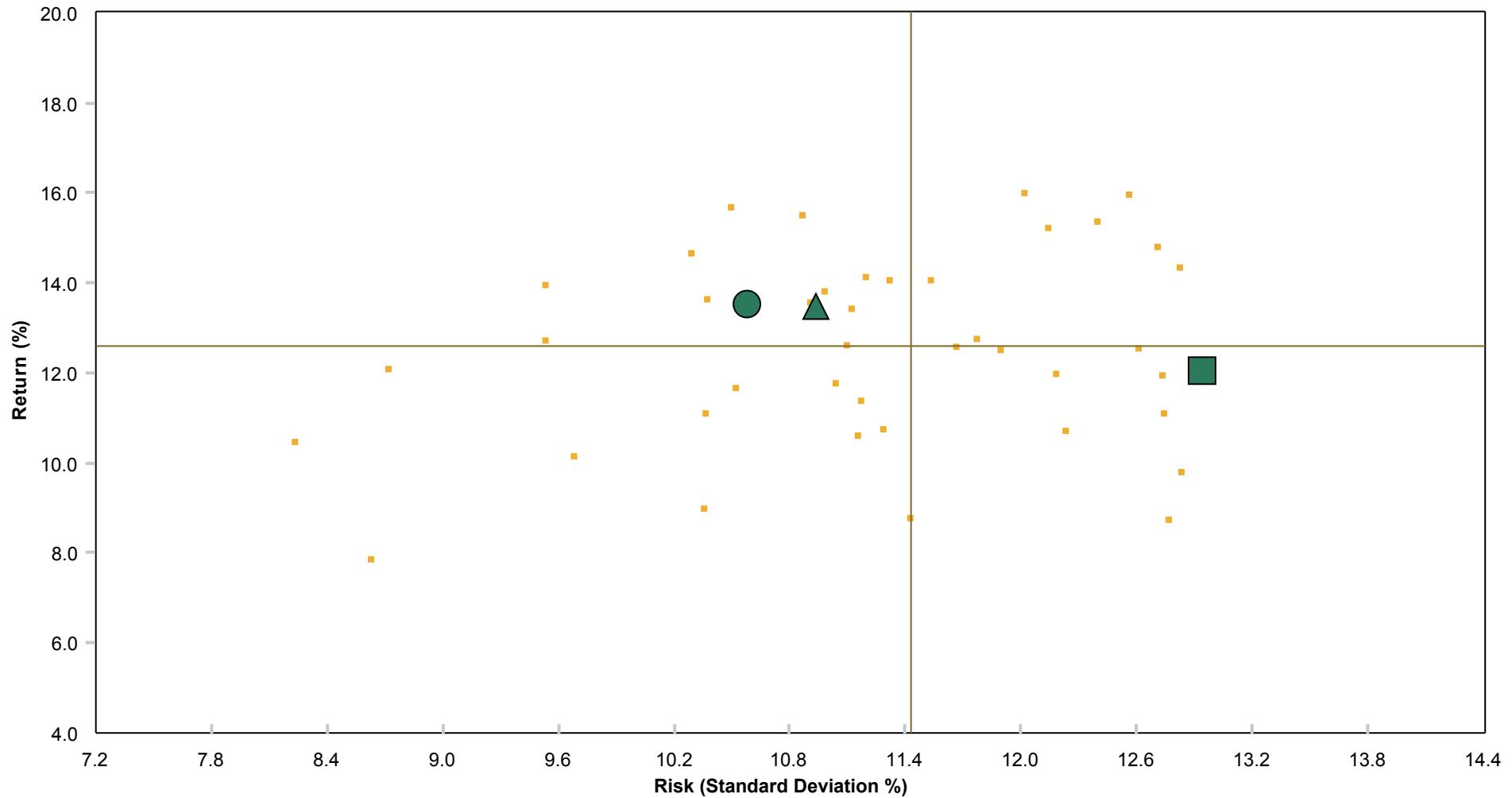
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

3 Years Ending March 31, 2019

IM U.S. All Cap Core Equity (SA+CF)



|                       | Return | Standard Deviation |
|-----------------------|--------|--------------------|
| Total Domestic Equity | 12.02  | 12.94              |
| S&P 500 Index         | 13.51  | 10.58              |
| Russell 3000 Index    | 13.49  | 10.94              |
| Median                | 12.60  | 11.43              |

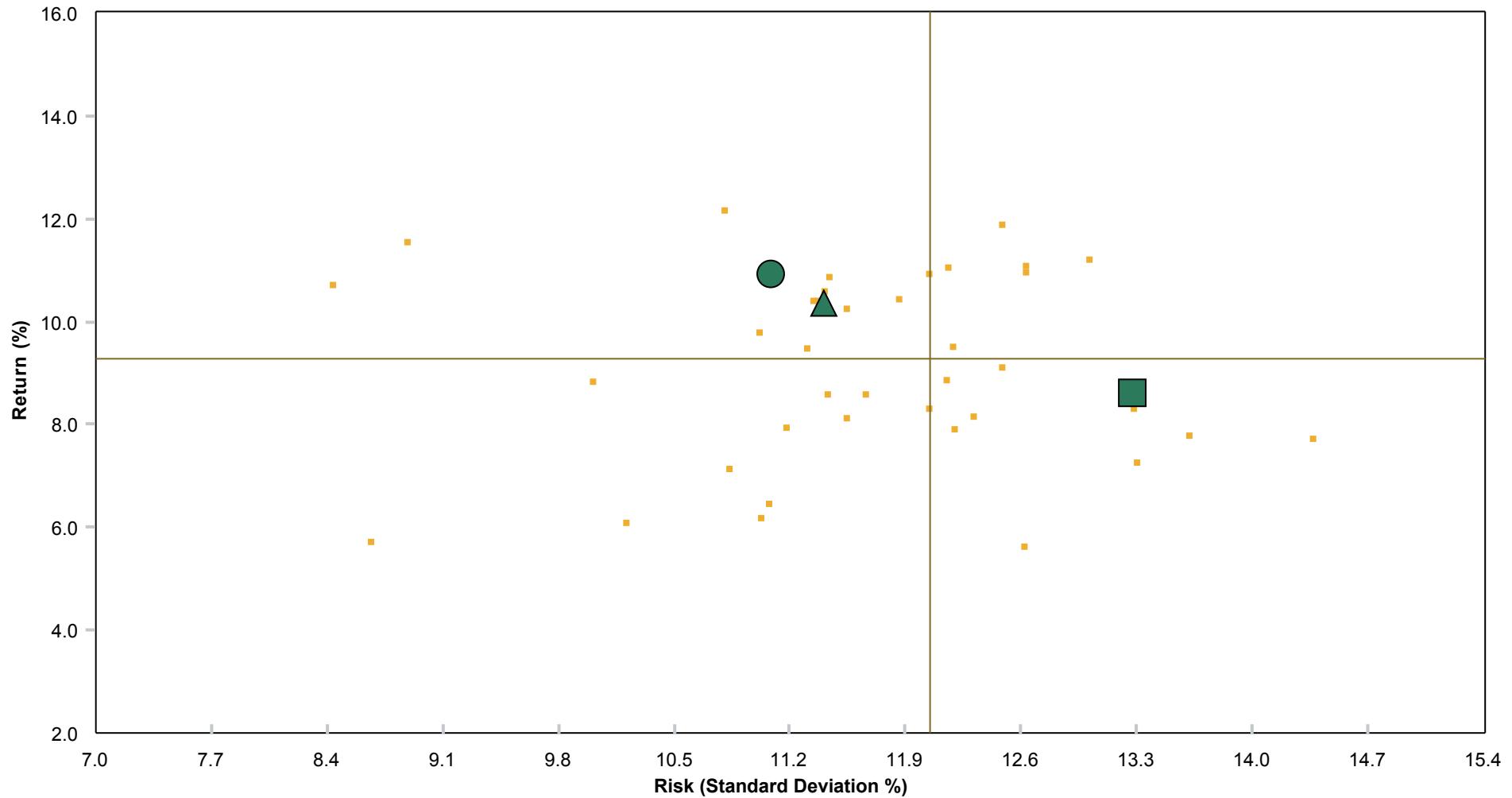
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

5 Years Ending March 31, 2019

IM U.S. All Cap Core Equity (SA+CF)



|                       | Return | Standard Deviation |
|-----------------------|--------|--------------------|
| Total Domestic Equity | 8.60   | 13.28              |
| S&P 500 Index         | 10.91  | 11.09              |
| Russell 3000 Index    | 10.36  | 11.41              |
| Median                | 9.28   | 12.05              |

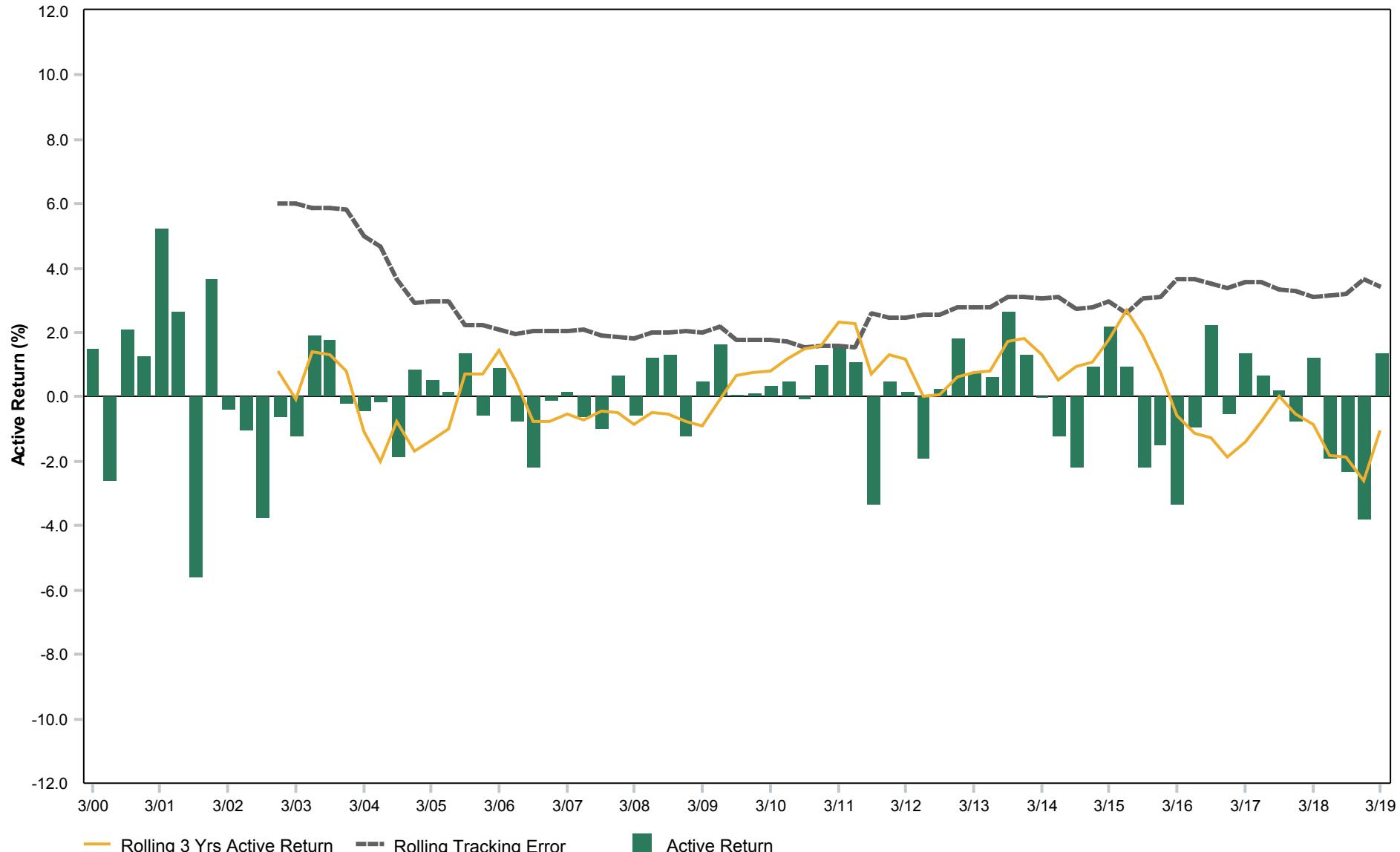
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                       | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016  | 2015  |
|-----------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| Total Domestic Equity | 15.01 | 15.01 | 1.75  | 12.02 | 8.60  | 11.97 | 15.58  | -11.11 | 23.61 | 9.01  | 0.66  |
| S&P 500 Index         | 13.65 | 13.65 | 9.50  | 13.51 | 10.91 | 12.85 | 15.92  | -4.38  | 21.83 | 11.96 | 1.38  |
| Difference            | 1.36  | 1.36  | -7.75 | -1.49 | -2.31 | -0.88 | -0.34  | -6.73  | 1.78  | -2.95 | -0.72 |



## Bristol County Retirement System

**Total Domestic Equity**

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 14.90 |
| Portfolio Trading        | 0.11  |
| Actual Return            | 15.01 |
| Benchmark Return         | 13.65 |
| Actual Active Return     | 1.36  |
|                          |       |
| Stock Selection          | 1.20  |
| Sector Selection         | -0.23 |
| Interaction              | 0.26  |
| Total Selection          | 1.22  |
|                          |       |
| Portfolio Trading        | 0.11  |
| Benchmark Trading        | -0.03 |
| Active Trading Impact    | 0.14  |
|                          |       |
| Buy & Hold Active Return | 1.36  |

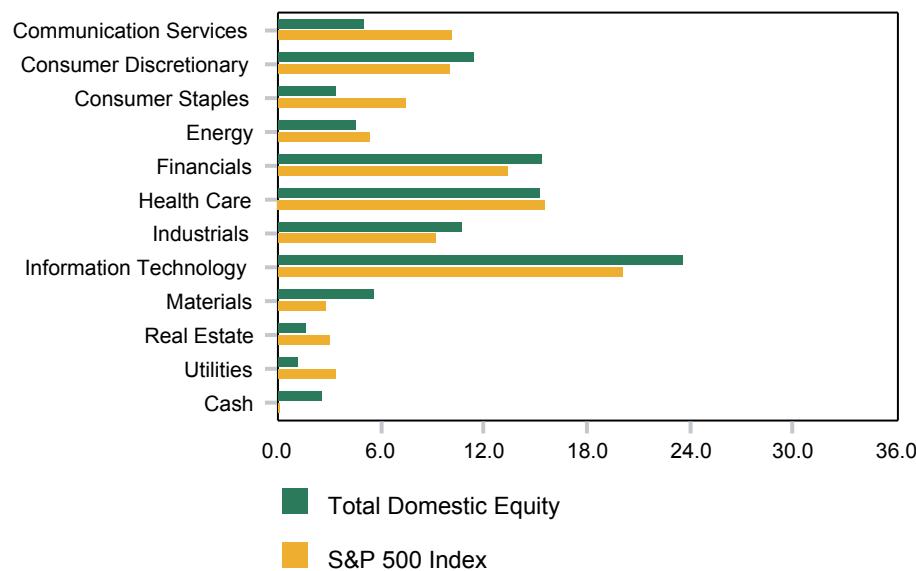
|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 4.95                    | 10.12     | 13.92  | 14.35     | -0.04       | -0.03  | 0.02        | -0.06 |
| Consumer Discretionary | 11.41                   | 9.94      | 19.68  | 15.68     | 0.40        | 0.03   | 0.06        | 0.49  |
| Consumer Staples       | 3.36                    | 7.41      | 11.44  | 12.01     | -0.04       | 0.07   | 0.02        | 0.05  |
| Energy                 | 4.52                    | 5.32      | 13.42  | 16.38     | -0.16       | -0.02  | 0.02        | -0.15 |
| Financials             | 15.37                   | 13.31     | 10.91  | 8.50      | 0.32        | -0.11  | 0.05        | 0.26  |
| Health Care            | 15.25                   | 15.54     | 10.38  | 6.54      | 0.60        | 0.02   | -0.01       | 0.61  |
| Industrials            | 10.64                   | 9.20      | 15.44  | 17.19     | -0.16       | 0.05   | -0.03       | -0.14 |
| Information Technology | 23.58                   | 20.12     | 20.10  | 19.86     | 0.05        | 0.21   | 0.01        | 0.27  |
| Materials              | 5.55                    | 2.73      | 15.83  | 10.27     | 0.15        | -0.10  | 0.16        | 0.21  |
| Real Estate            | 1.63                    | 2.96      | 18.84  | 17.52     | 0.04        | -0.05  | -0.02       | -0.03 |
| Utilities              | 1.16                    | 3.34      | 12.93  | 11.52     | 0.05        | 0.05   | -0.03       | 0.06  |
| Cash                   | 2.59                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.35  | 0.00        | -0.35 |
| Total                  | 100.00                  | 100.00    | 14.90  | 13.68     | 1.20        | -0.23  | 0.26        | 1.22  |

## Bristol County Retirement System

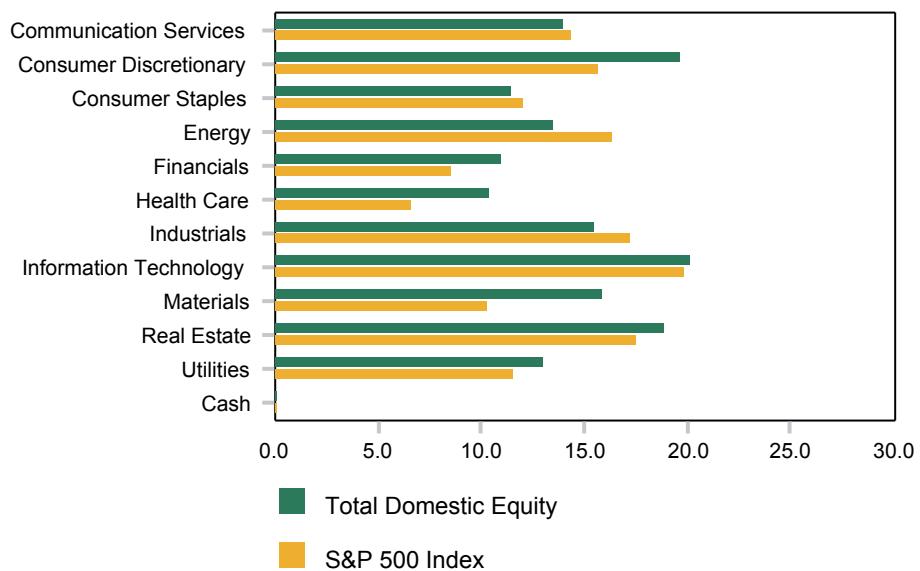
## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

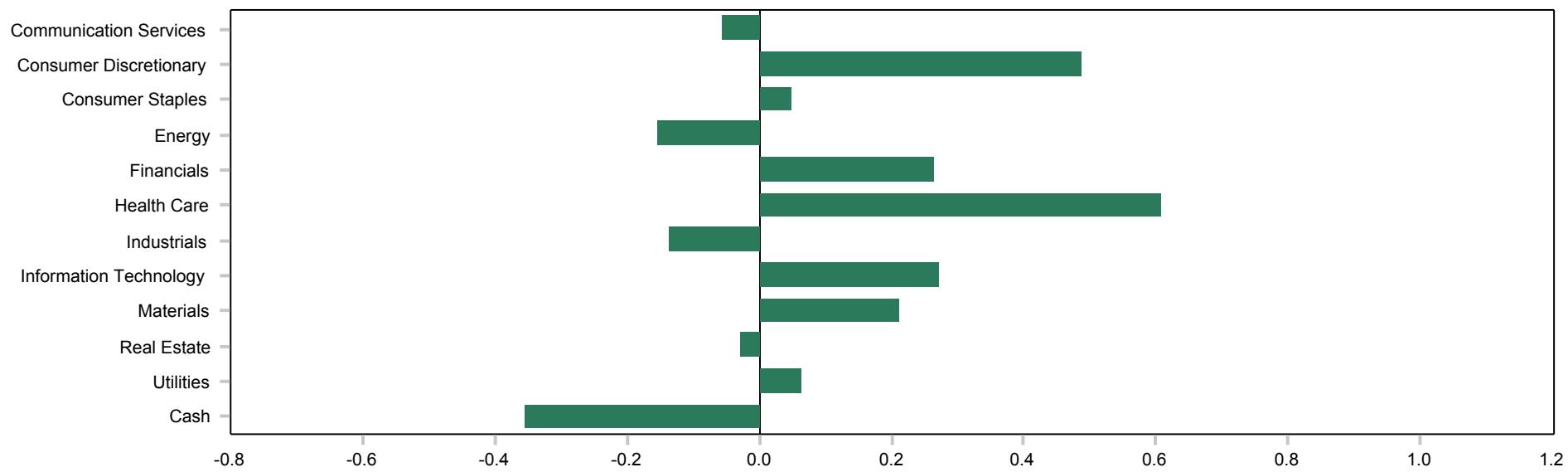
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 14.90 |
| Portfolio Trading        | 0.11  |
| Actual Return            | 15.01 |
| Benchmark Return         | 13.65 |
| Actual Active Return     | 1.36  |
|                          |       |
| Stock Selection          | 0.82  |
| Style Selection          | -0.60 |
| Interaction              | 1.00  |
| Total Selection          | 1.22  |
|                          |       |
| Portfolio Trading        | 0.11  |
| Benchmark Trading        | -0.03 |
| Active Trading Impact    | 0.14  |
|                          |       |
| Buy & Hold Active Return | 1.36  |

### Performance-1 Quarter Ending March 31, 2019

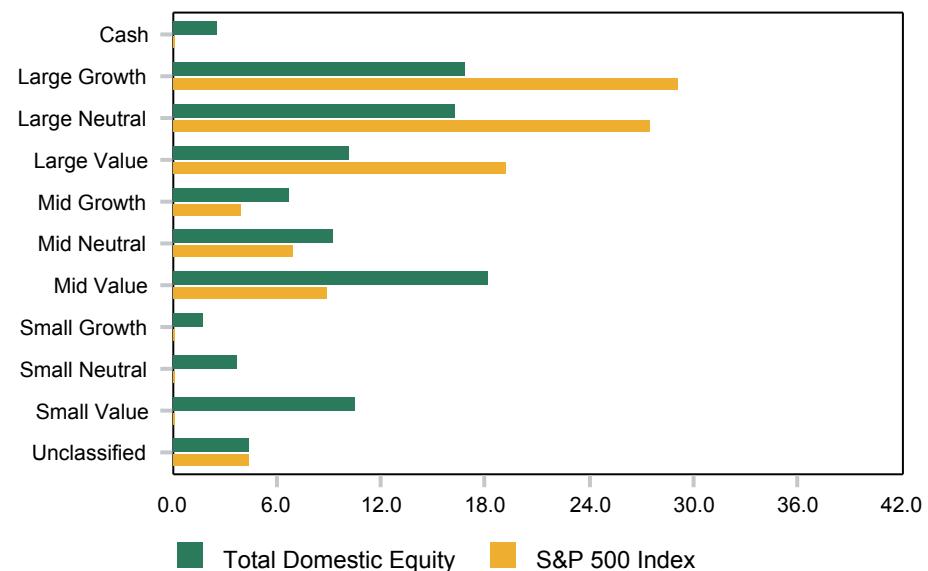
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             | Total |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction |       |
| Cash          | 2.59                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.35 | 0.00        | -0.35 |
| Large Growth  | 16.83                 | 29.10     | 16.26     | 16.34     | -0.02       | -0.33 | 0.01        | -0.34 |
| Large Neutral | 16.24                 | 27.55     | 12.35     | 11.64     | 0.20        | 0.23  | -0.08       | 0.35  |
| Large Value   | 10.15                 | 19.22     | 12.32     | 10.43     | 0.36        | 0.29  | -0.17       | 0.49  |
| Mid Growth    | 6.65                  | 3.88      | 28.67     | 19.06     | 0.37        | 0.15  | 0.27        | 0.79  |
| Mid Neutral   | 9.22                  | 6.90      | 19.93     | 17.59     | 0.16        | 0.09  | 0.05        | 0.31  |
| Mid Value     | 18.15                 | 8.90      | 13.39     | 13.72     | -0.03       | 0.00  | -0.03       | -0.06 |
| Small Growth  | 1.68                  | 0.00      | 21.56     | 0.00      | 0.00        | 0.13  | 0.00        | 0.13  |
| Small Neutral | 3.71                  | 0.02      | 19.18     | 30.13     | 0.00        | 0.61  | -0.40       | 0.20  |
| Small Value   | 10.45                 | 0.01      | 12.97     | 0.00      | 0.00        | -1.43 | 1.35        | -0.07 |
| Unclassified  | 4.35                  | 4.42      | 7.07      | 12.07     | -0.22       | 0.00  | 0.00        | -0.22 |
| Total         | 100.00                | 100.00    | 14.90     | 13.68     | 0.82        | -0.60 | 1.00        | 1.22  |

## Bristol County Retirement System

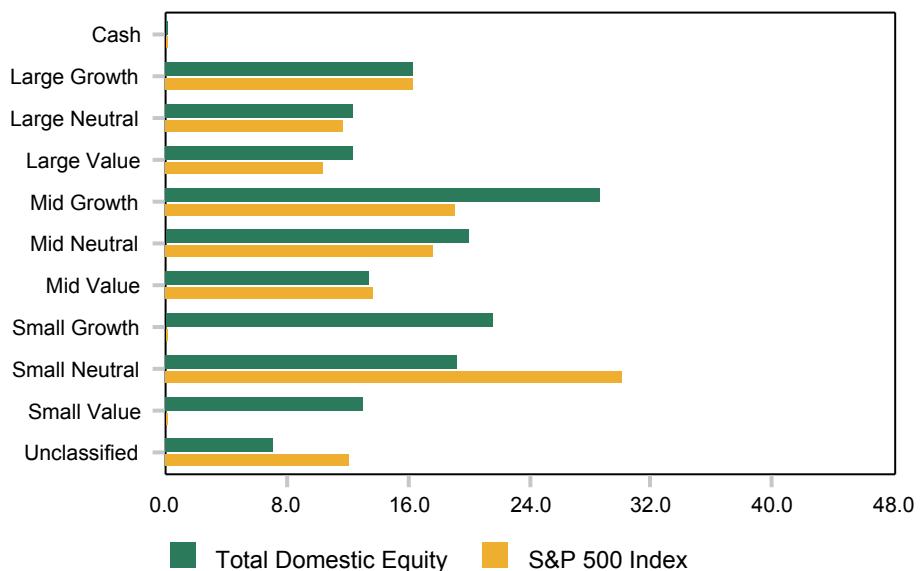
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

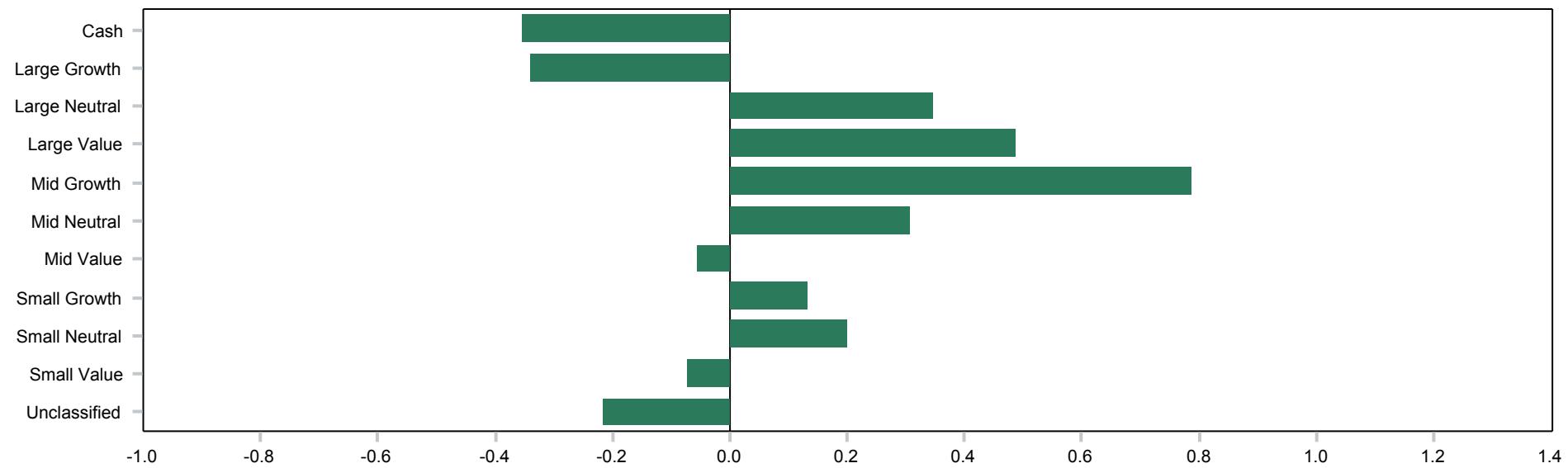
### Allocation



### Performance



### Total Attribution



# Bristol County Retirement System

**Total Domestic Equity**

As of March 31, 2019

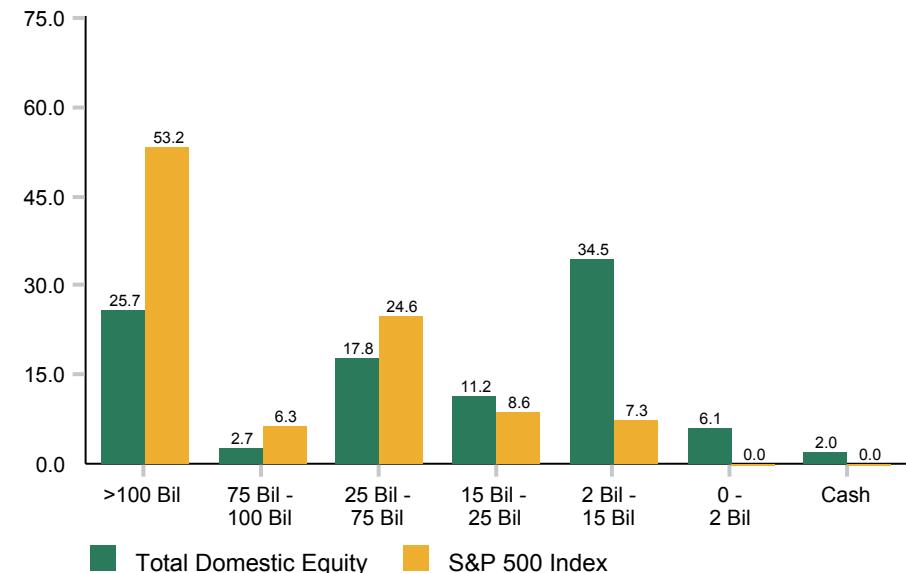
## Top Ten Equity Holdings

|                           | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---------------------------|----------------------|----------------------|-------------------|----------------------|
| Amazon.com Inc            | 1.97                 | 3.11                 | -1.14             | 18.56                |
| Facebook Inc              | 1.72                 | 1.68                 | 0.04              | 27.16                |
| HCA Healthcare Inc        | 1.50                 | 0.15                 | 1.35              | 5.07                 |
| Broadcom Inc              | 1.43                 | 0.50                 | 0.93              | 19.34                |
| Visa Inc                  | 1.32                 | 1.16                 | 0.16              | 18.59                |
| Alibaba Group Holding Ltd | 1.21                 | 0.00                 | 1.21              | 33.11                |
| Adobe Inc                 | 1.15                 | 0.55                 | 0.60              | 17.79                |
| Celanese Corp             | 1.09                 | 0.05                 | 1.04              | 10.19                |
| PayPal Holdings Inc       | 1.06                 | 0.52                 | 0.54              | 23.49                |
| Unitedhealth Group Inc    | 0.98                 | 1.00                 | -0.02             | -0.37                |
| % of Portfolio            | 13.43                | 8.72                 | 4.71              |                      |

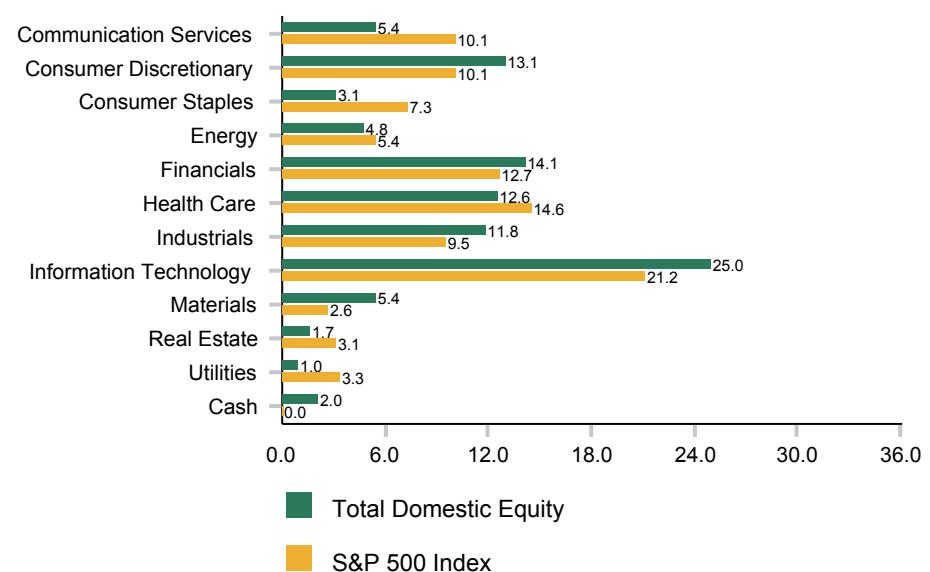
## Portfolio Characteristics

|                           | Portfolio      | Benchmark       |
|---------------------------|----------------|-----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 98,156,766,495 | 227,094,956,197 |
| Median Mkt. Cap (\$)      | 6,327,637,350  | 21,549,682,000  |
| Price/Earnings ratio      | 17.29          | 19.95           |
| Price/Book ratio          | 2.96           | 3.43            |
| 5 Yr. EPS Growth Rate (%) | 16.49          | 15.01           |
| Current Yield (%)         | 1.53           | 2.01            |
| Beta (5 Years, Monthly)   | 1.15           | 1.00            |
| Number of Stocks          | 411            | 505             |

## Distribution of Market Capitalization (%)



## Sector Weights (%)



## Bristol County Retirement System

## Total Domestic Equity

As of March 31, 2019

### Ten Best Performers

|   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---|----------------------|----------------------|-------------------|----------------------|
| MercadoLibre Inc                              | 0.62                 | 0.00                 | 0.62              | 73.38                |
| Tronox Ltd                                    | 0.06                 | 0.00                 | 0.06              | 69.65                |
| Aqua Metals Inc                               | 0.01                 | 0.00                 | 0.01              | 68.68                |
| Tandem Diabetes Care Inc                      | 0.19                 | 0.00                 | 0.19              | 67.24                |
| Triumph Group Inc.                            | 0.01                 | 0.00                 | 0.01              | 66.02                |
| Chipotle Mexican Grill Inc                    | 0.28                 | 0.07                 | 0.21              | 64.51                |
| New Oriental Education & Technology Group Inc | 0.72                 | 0.00                 | 0.72              | 64.37                |
| Universal Display Corp                        | 0.13                 | 0.00                 | 0.13              | 63.46                |
| Xerox Corp                                    | 0.09                 | 0.03                 | 0.06              | 63.11                |
| Ctrip.com International Ltd                   | 0.58                 | 0.00                 | 0.58              | 61.46                |
| % of Portfolio                                | 2.69                 | 0.10                 | 2.59              |                      |

### Ten Worst Performers

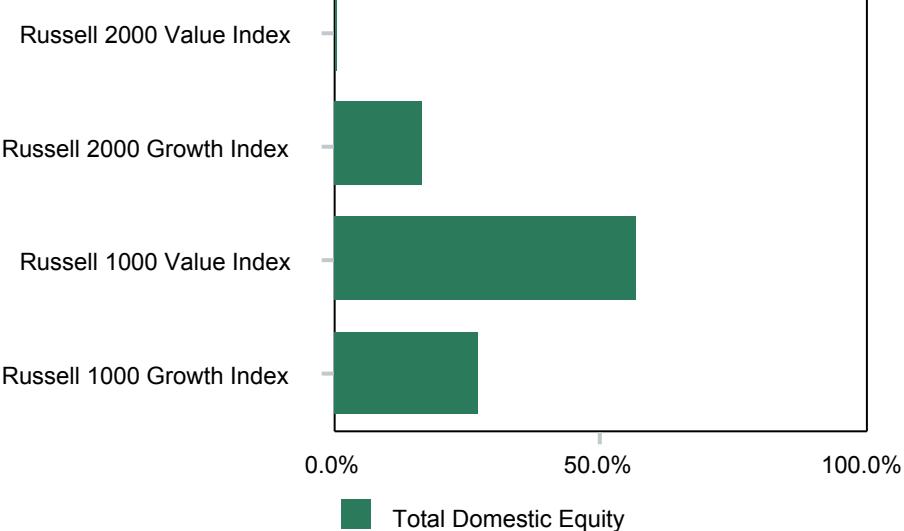
|                                     | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|-------------------------------------|----------------------|----------------------|-------------------|----------------------|
| Global Eagle Entertainment Inc      | 0.01                 | 0.00                 | 0.01              | -68.19               |
| Diplomat Pharmacy Inc               | 0.02                 | 0.00                 | 0.02              | -56.83               |
| Tailored Brands Inc                 | 0.03                 | 0.00                 | 0.03              | -41.25               |
| Vista Outdoor Inc                   | 0.07                 | 0.00                 | 0.07              | -29.43               |
| Green Dot Corp                      | 0.05                 | 0.00                 | 0.05              | -23.73               |
| Biogen Inc                          | 0.27                 | 0.20                 | 0.07              | -21.45               |
| Neuronetics Inc                     | 0.00                 | 0.00                 | 0.00              | -21.19               |
| United Fire Group Inc               | 0.18                 | 0.00                 | 0.18              | -20.67               |
| Centennial Resource Development Inc | 0.06                 | 0.00                 | 0.06              | -20.24               |
| Tenneco Inc                         | 0.26                 | 0.00                 | 0.26              | -18.51               |
| % of Portfolio                      | 0.95                 | 0.20                 | 0.75              |                      |

# Bristol County Retirement System

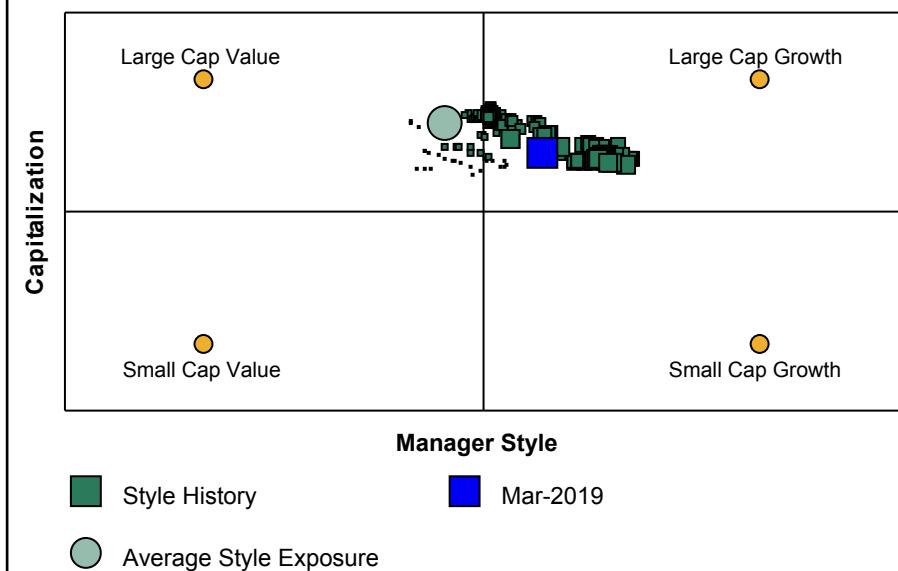
# Style Analysis

Ending March 31, 2019

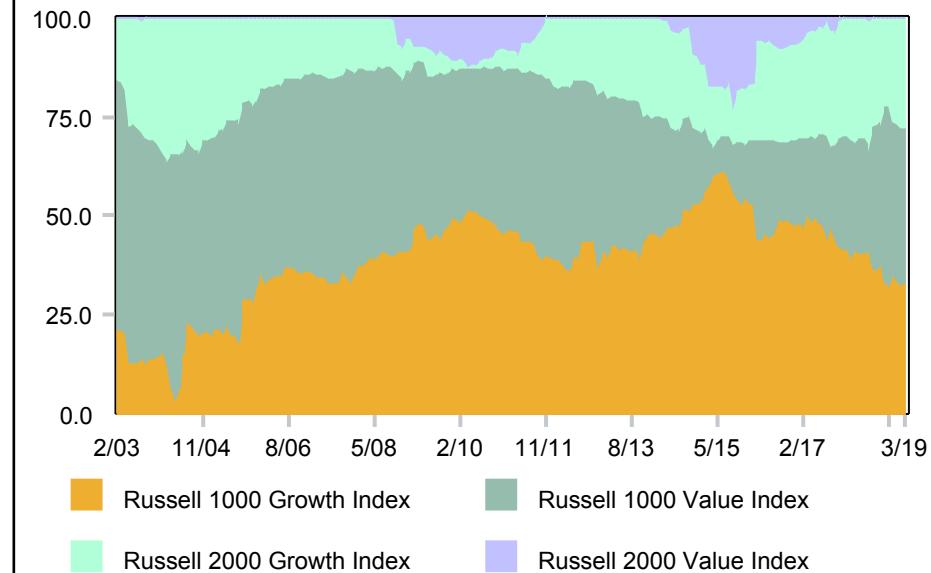
## Investment Style Exposure



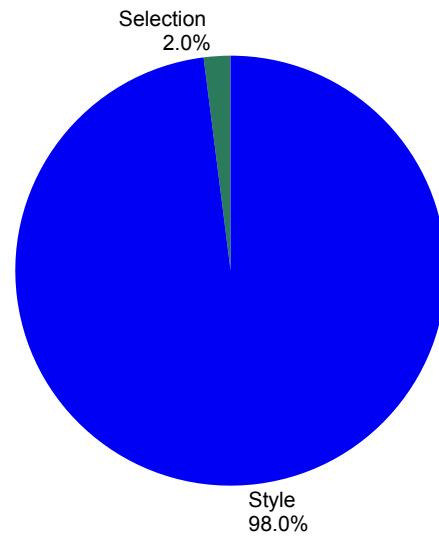
## Style Map(ppp)



## Style History(ppp)



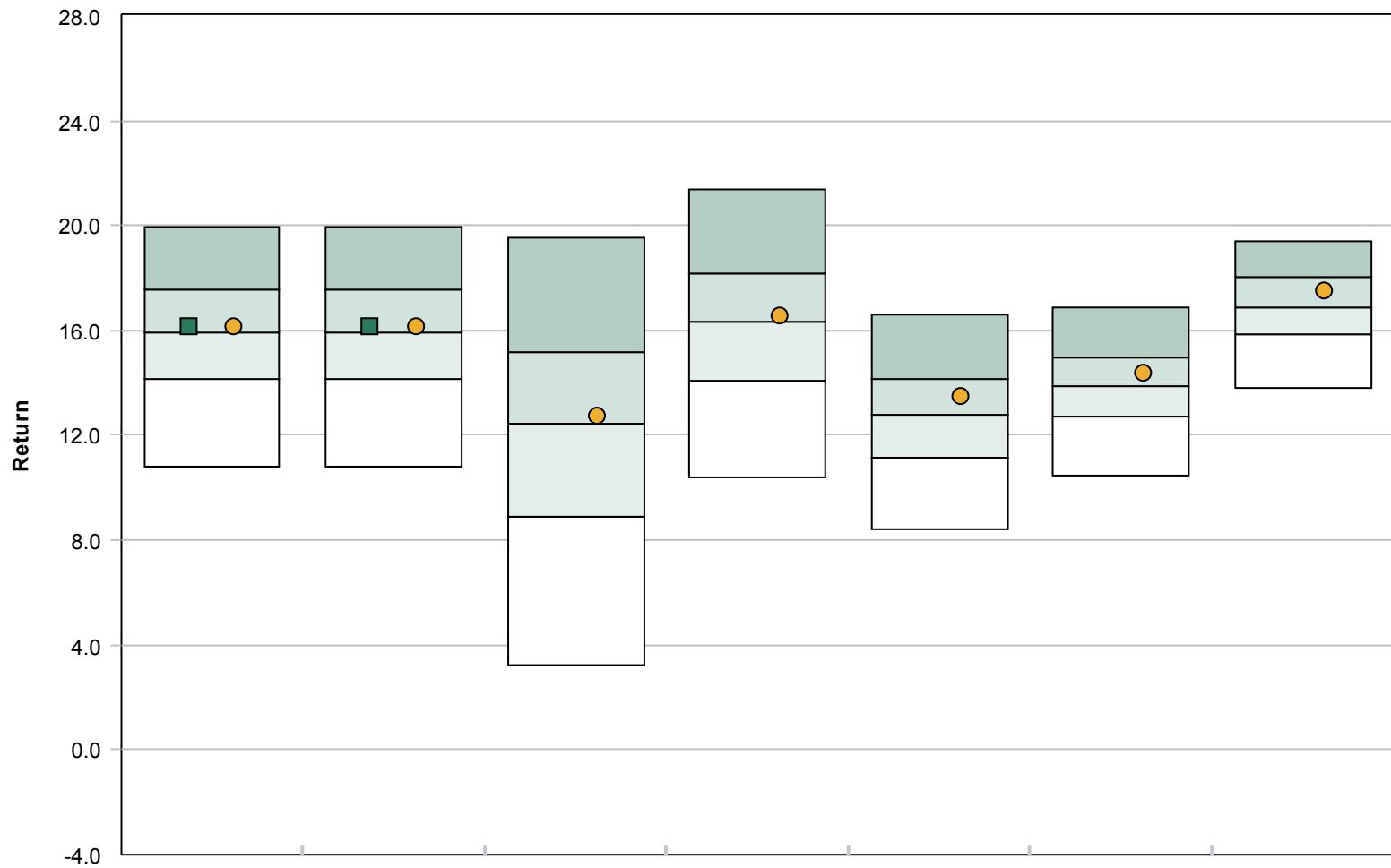
## Return Variance



## Bristol County Retirement System

## IM U.S. Large Cap Growth Equity (SA+CF)

As of March 31, 2019



■ ClearBridge Large Cap Growth

**1 Qtr** 16.12 (46) **YTD** 16.12 (46) **1 Yr** N/A **3 Yrs** N/A **5 Yrs** N/A **7 Yrs** N/A **10 Yrs** N/A

● Russell 1000 Growth Index

16.10 (46) 16.10 (46) 12.75 (48) 16.53 (46) 13.50 (38) 14.34 (39) 17.52 (35)

5th Percentile

19.94 19.94 19.56 21.38 16.61 16.86 19.41

1st Quartile

17.54 17.54 15.16 18.19 14.12 14.97 18.01

Median

15.92 15.92 12.46 16.34 12.80 13.86 16.87

3rd Quartile

14.18 14.18 8.88 14.07 11.16 12.73 15.87

95th Percentile

10.80 10.80 3.21 10.43 8.42 10.46 13.83

Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

**Bristol County Retirement System**
**ClearBridge Large Cap Growth**

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 16.14 |
| Portfolio Trading        | -0.02 |
| Actual Return            | 16.12 |
| Benchmark Return         | 16.10 |
| Actual Active Return     | 0.02  |
|                          |       |
| Stock Selection          | 0.80  |
| Sector Selection         | -0.67 |
| Interaction              | -0.08 |
| Total Selection          | 0.05  |
|                          |       |
| Portfolio Trading        | -0.02 |
| Benchmark Trading        | 0.01  |
| Active Trading Impact    | -0.03 |
|                          |       |
| Buy & Hold Active Return | 0.02  |

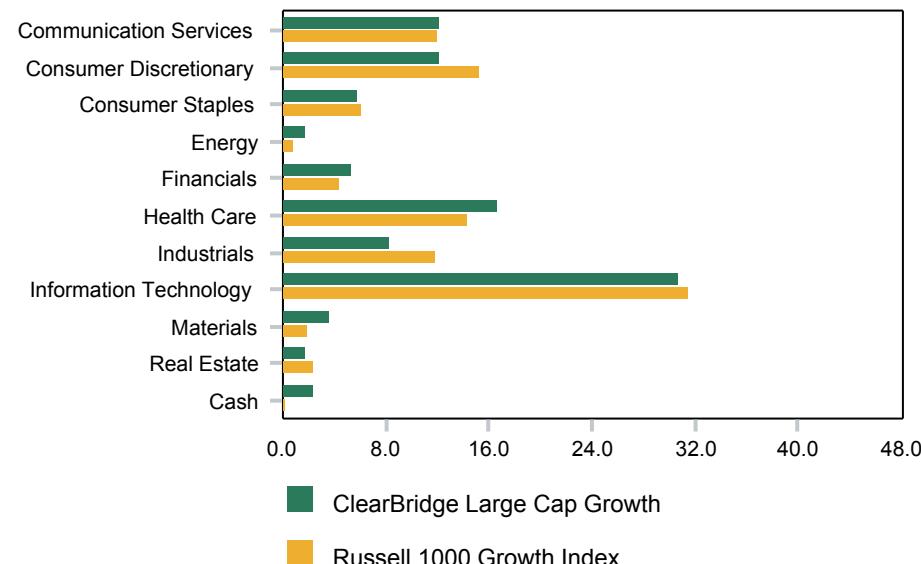
|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           |       | Attribution |             |       |
|------------------------|-------------------------|-----------|--|-----------|-------|-------------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock | Sector      | Interaction | Total |
| Communication Services | 12.15                   | 11.93     | 15.66  | 16.69     | -0.12 | 0.00        | 0.00        | -0.12 |
| Consumer Discretionary | 12.03                   | 15.14     | 25.98  | 15.39     | 1.60  | 0.02        | -0.33       | 1.30  |
| Consumer Staples       | 5.74                    | 6.03      | 14.83  | 10.92     | 0.24  | 0.02        | -0.01       | 0.24  |
| Energy                 | 1.77                    | 0.76      | 19.26  | 14.23     | 0.04  | -0.02       | 0.05        | 0.07  |
| Financials             | 5.19                    | 4.40      | 9.22   | 13.29     | -0.18 | -0.02       | -0.03       | -0.23 |
| Health Care            | 16.61                   | 14.29     | 12.53  | 7.39      | 0.73  | -0.20       | 0.12        | 0.65  |
| Industrials            | 8.28                    | 11.83     | 12.88  | 16.29     | -0.40 | -0.01       | 0.12        | -0.29 |
| Information Technology | 30.67                   | 31.46     | 16.96  | 21.36     | -1.39 | -0.04       | 0.03        | -1.39 |
| Materials              | 3.59                    | 1.84      | 17.08  | 14.91     | 0.04  | -0.02       | 0.04        | 0.06  |
| Real Estate            | 1.63                    | 2.32      | 29.28  | 18.84     | 0.24  | -0.02       | -0.07       | 0.15  |
| Cash                   | 2.34                    | 0.00      | 0.00   | 0.00      | 0.00  | -0.38       | 0.00        | -0.38 |
| Total                  | 100.00                  | 100.00    | 16.14  | 16.09     | 0.80  | -0.67       | -0.08       | 0.05  |

## Bristol County Retirement System

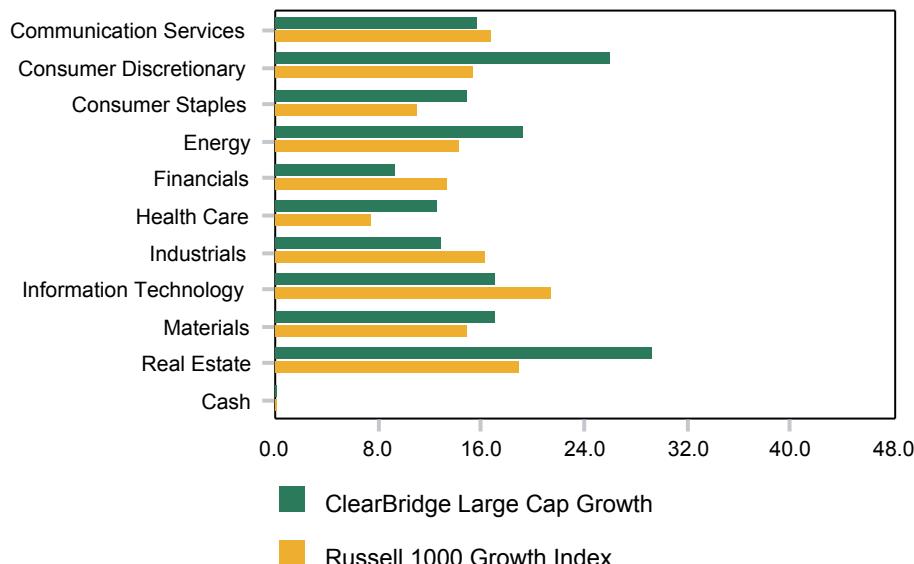
## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

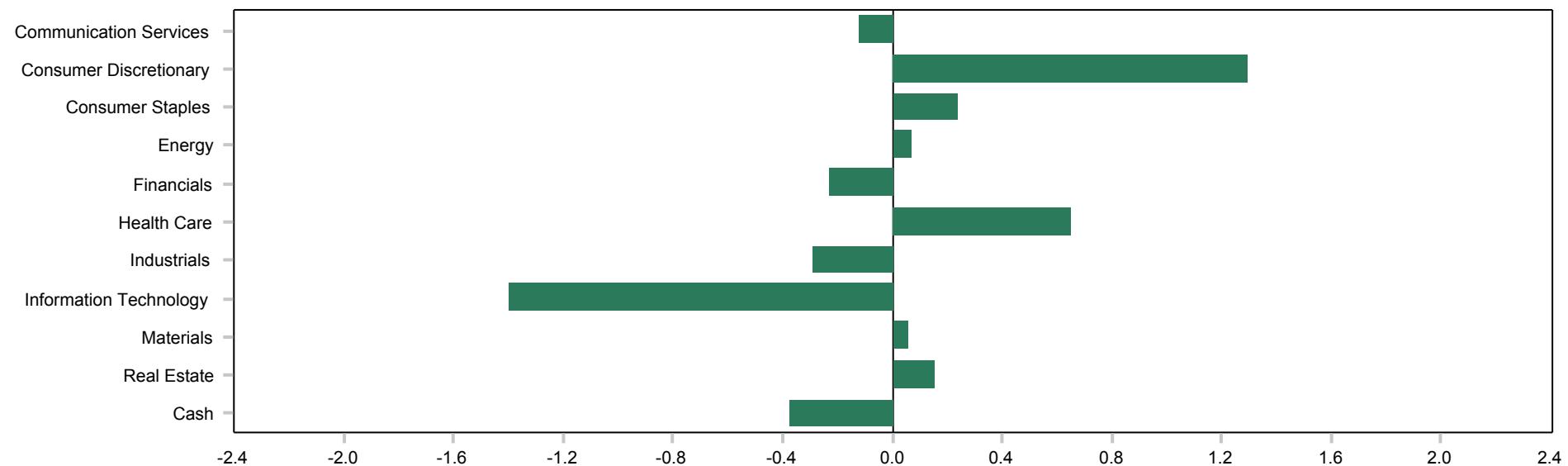
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 16.14 |
| Portfolio Trading        | -0.02 |
| Actual Return            | 16.12 |
| Benchmark Return         | 16.10 |
| Actual Active Return     | 0.02  |
|                          |       |
| Stock Selection          | 0.59  |
| Style Selection          | -0.93 |
| Interaction              | 0.39  |
| Total Selection          | 0.05  |
|                          |       |
| Portfolio Trading        | -0.02 |
| Benchmark Trading        | 0.01  |
| Active Trading Impact    | -0.03 |
|                          |       |
| Buy & Hold Active Return | 0.02  |

### Performance-1 Quarter Ending March 31, 2019

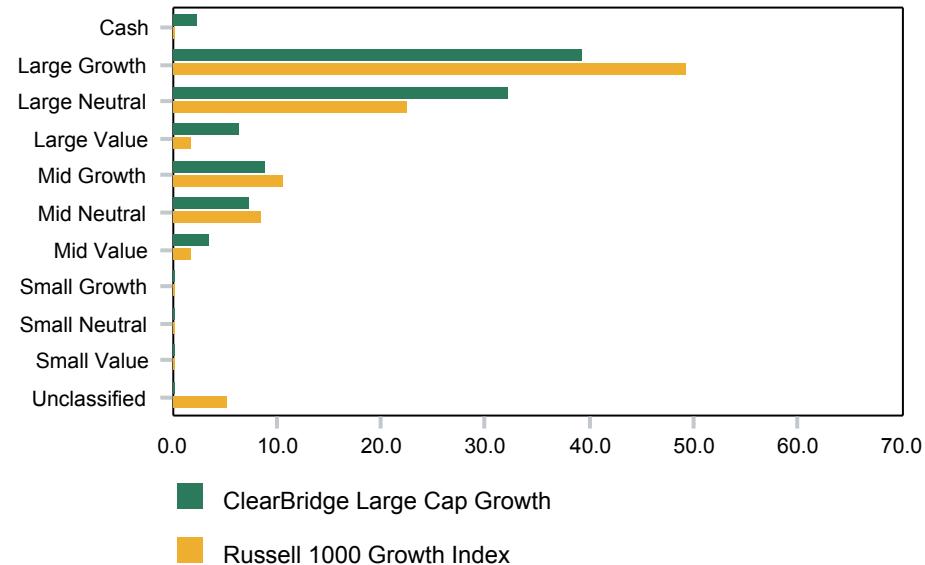
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             | Total |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction |       |
| Cash          | 2.34                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.38 | 0.00        | -0.38 |
| Large Growth  | 39.24                 | 49.30     | 17.13     | 17.02     | 0.06        | -0.09 | -0.01       | -0.05 |
| Large Neutral | 32.31                 | 22.42     | 11.87     | 12.26     | -0.09       | -0.38 | -0.04       | -0.50 |
| Large Value   | 6.32                  | 1.64      | 18.60     | 11.86     | 0.11        | -0.20 | 0.32        | 0.23  |
| Mid Growth    | 8.91                  | 10.48     | 19.84     | 21.05     | -0.13       | -0.08 | 0.02        | -0.19 |
| Mid Neutral   | 7.35                  | 8.51      | 24.25     | 18.62     | 0.48        | -0.03 | -0.07       | 0.38  |
| Mid Value     | 3.54                  | 1.72      | 24.15     | 14.90     | 0.16        | -0.02 | 0.17        | 0.31  |
| Small Growth  | 0.00                  | 0.22      | 0.00      | 32.70     | 0.00        | -0.04 | 0.00        | -0.04 |
| Small Neutral | 0.00                  | 0.26      | 0.00      | 17.63     | 0.00        | 0.00  | 0.00        | 0.00  |
| Small Value   | 0.00                  | 0.20      | 0.00      | 22.43     | 0.00        | -0.01 | 0.00        | -0.01 |
| Unclassified  | 0.00                  | 5.25      | 0.00      | 10.42     | 0.00        | 0.30  | 0.00        | 0.30  |
| Total         | 100.00                | 100.00    | 16.14     | 16.09     | 0.59        | -0.93 | 0.39        | 0.05  |

## Bristol County Retirement System

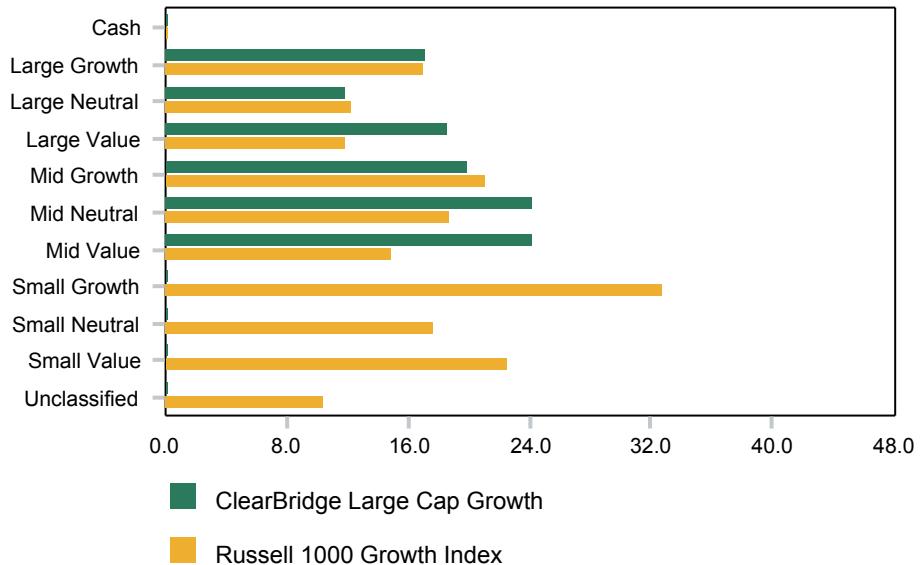
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

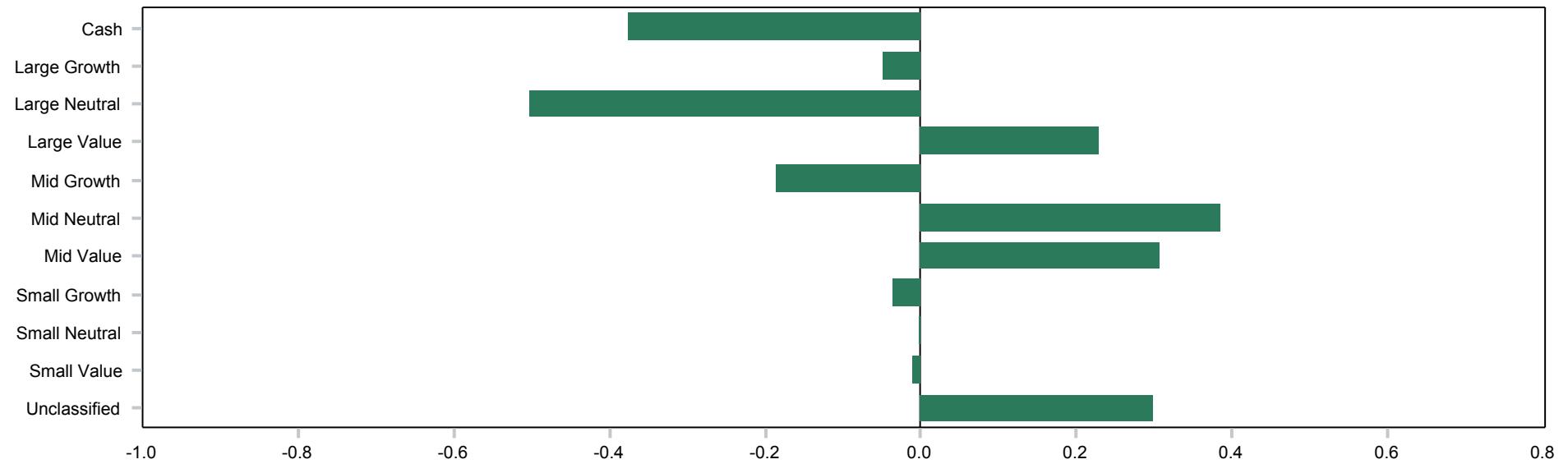
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## ClearBridge Large Cap Growth

As of March 31, 2019

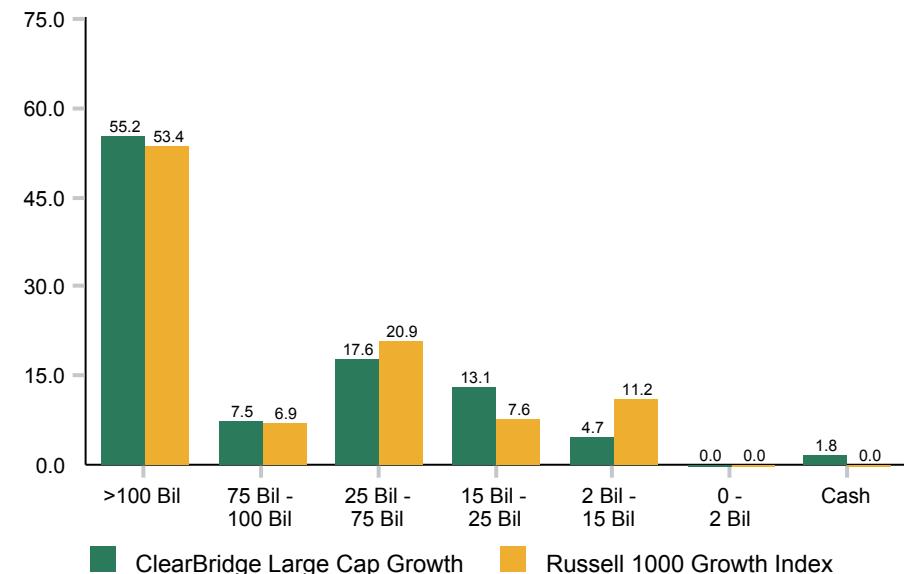
### Top Ten Equity Holdings

|                              | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|------------------------------|----------------------|----------------------|-------------------|----------------------|
| Amazon.com Inc               | 6.18                 | 5.49                 | 0.69              | 18.56                |
| Microsoft Corp               | 4.46                 | 6.35                 | -1.89             | 16.62                |
| Facebook Inc                 | 4.41                 | 2.97                 | 1.44              | 27.16                |
| Visa Inc                     | 3.94                 | 2.06                 | 1.88              | 18.59                |
| Alphabet Inc                 | 3.12                 | 2.68                 | 0.44              | 13.30                |
| Adobe Inc                    | 2.76                 | 0.98                 | 1.78              | 17.79                |
| Unitedhealth Group Inc       | 2.73                 | 1.77                 | 0.96              | -0.37                |
| Apple Inc                    | 2.37                 | 6.76                 | -4.39             | 20.94                |
| Thermo Fisher Scientific Inc | 2.32                 | 0.05                 | 2.27              | 22.40                |
| Zoetis Inc                   | 2.31                 | 0.37                 | 1.94              | 17.92                |
| % of Portfolio               | 34.60                | 29.48                | 5.12              |                      |

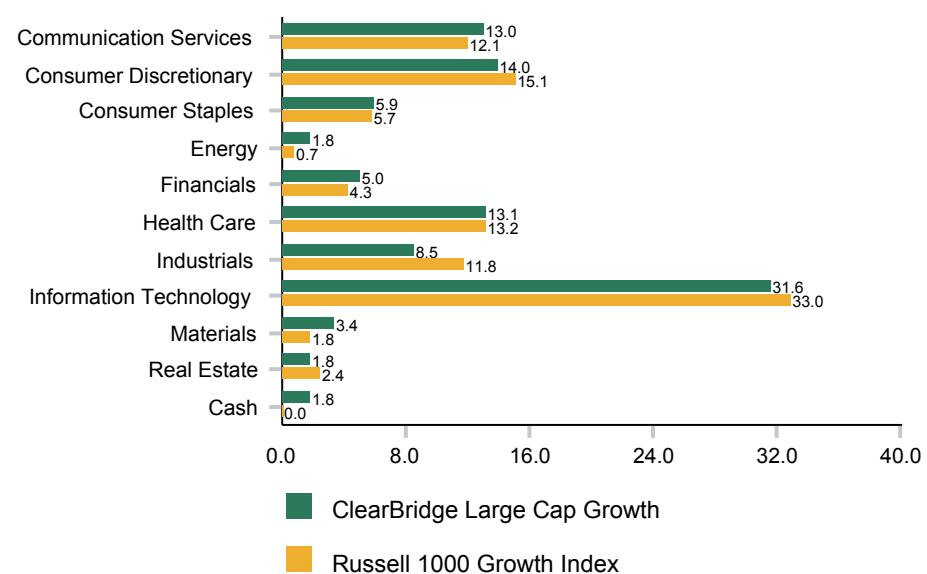
### Portfolio Characteristics

|                           | Portfolio       | Benchmark       |
|---------------------------|-----------------|-----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 252,871,648,522 | 283,378,088,398 |
| Median Mkt. Cap (\$)      | 77,910,711,025  | 11,754,144,110  |
| Price/Earnings ratio      | 26.61           | 23.65           |
| Price/Book ratio          | 5.65            | 6.74            |
| 5 Yr. EPS Growth Rate (%) | 21.72           | 23.79           |
| Current Yield (%)         | 1.10            | 1.28            |
| Beta                      | N/A             | 1.00            |
| Number of Stocks          | 53              | 545             |

### Distribution of Market Capitalization (%)



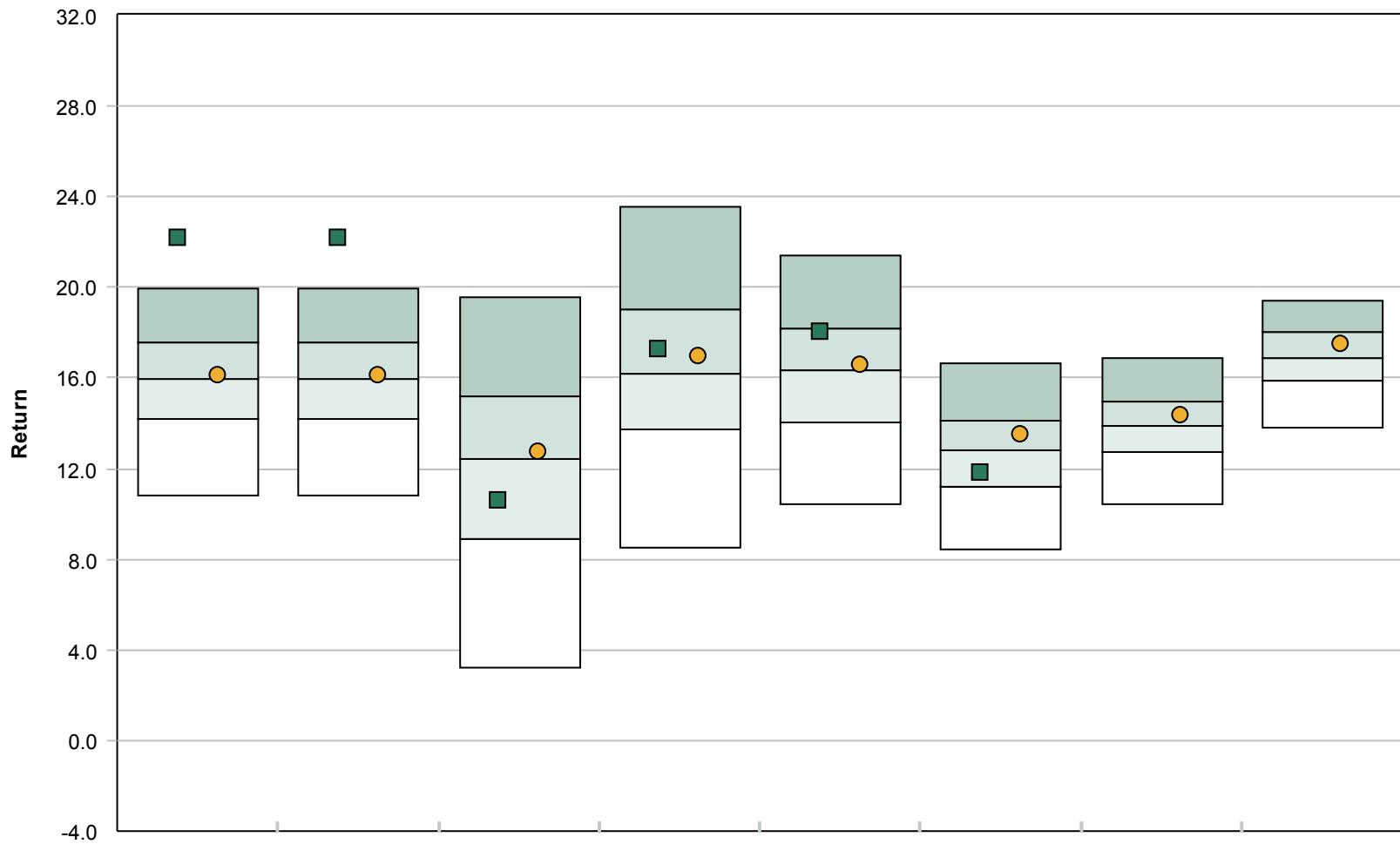
### Sector Weights (%)



## Bristol County Retirement System

## IM U.S. Large Cap Growth Equity (SA+CF)

As of March 31, 2019



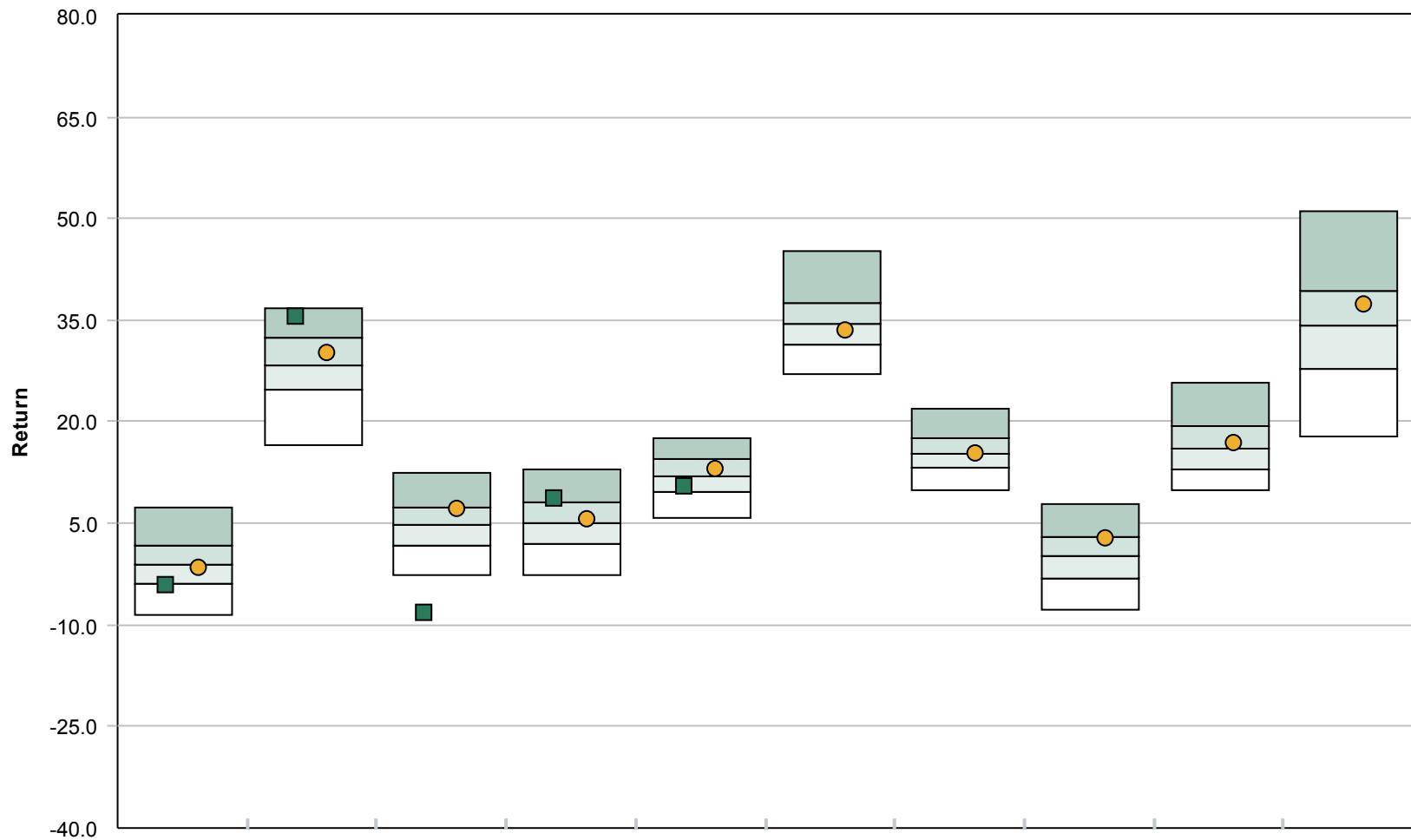
|                           | 1 Qtr      | YTD        | 1 Yr       | 2 Yrs      | 3 Yrs      | 5 Yrs      | 7 Yrs      | 10 Yrs     |
|---------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Columbia                  | 22.16 (3)  | 22.16 (3)  | 10.56 (63) | 17.23 (44) | 18.04 (26) | 11.78 (67) | N/A        | N/A        |
| Russell 1000 Growth Index | 16.10 (46) | 16.10 (46) | 12.75 (48) | 16.92 (45) | 16.53 (46) | 13.50 (38) | 14.34 (39) | 17.52 (35) |
| 5th Percentile            | 19.94      | 19.94      | 19.56      | 23.53      | 21.38      | 16.61      | 16.86      | 19.41      |
| 1st Quartile              | 17.54      | 17.54      | 15.16      | 19.06      | 18.19      | 14.12      | 14.97      | 18.01      |
| Median                    | 15.92      | 15.92      | 12.46      | 16.19      | 16.34      | 12.80      | 13.86      | 16.87      |
| 3rd Quartile              | 14.18      | 14.18      | 8.88       | 13.75      | 14.07      | 11.16      | 12.73      | 15.87      |
| 95th Percentile           | 10.80      | 10.80      | 3.21       | 8.55       | 10.43      | 8.42       | 10.46      | 13.83      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. Large Cap Growth Equity (SA+CF)

As of March 31, 2019



■ Columbia

● Russell 1000 Growth Index

2018      2017      2016      2015      2014      2013      2012      2011      2010      2009

|                 |            |             |           |            |            |            |           |            |            |
|-----------------|------------|-------------|-----------|------------|------------|------------|-----------|------------|------------|
| -4.30 (80)      | 35.56 (9)  | -8.17 (100) | 8.65 (20) | 10.45 (67) | N/A        | N/A        | N/A       | N/A        | N/A        |
| -1.51 (54)      | 30.21 (38) | 7.08 (26)   | 5.67 (46) | 13.05 (39) | 33.48 (59) | 15.26 (50) | 2.64 (27) | 16.71 (46) | 37.21 (34) |
| 5th Percentile  | 7.34       | 36.76       | 12.44     | 13.06      | 17.66      | 45.22      | 21.81     | 7.95       | 25.77      |
| 1st Quartile    | 1.75       | 32.36       | 7.23      | 8.02       | 14.38      | 37.46      | 17.67     | 2.93       | 19.29      |
| Median          | -1.17      | 28.21       | 4.65      | 5.07       | 12.02      | 34.52      | 15.18     | 0.18       | 16.00      |
| 3rd Quartile    | -3.81      | 24.74       | 1.78      | 2.01       | 9.64       | 31.28      | 13.13     | -3.21      | 13.06      |
| 95th Percentile | -8.58      | 16.48       | -2.63     | -2.62      | 5.89       | 26.93      | 9.82      | -7.84      | 9.80       |

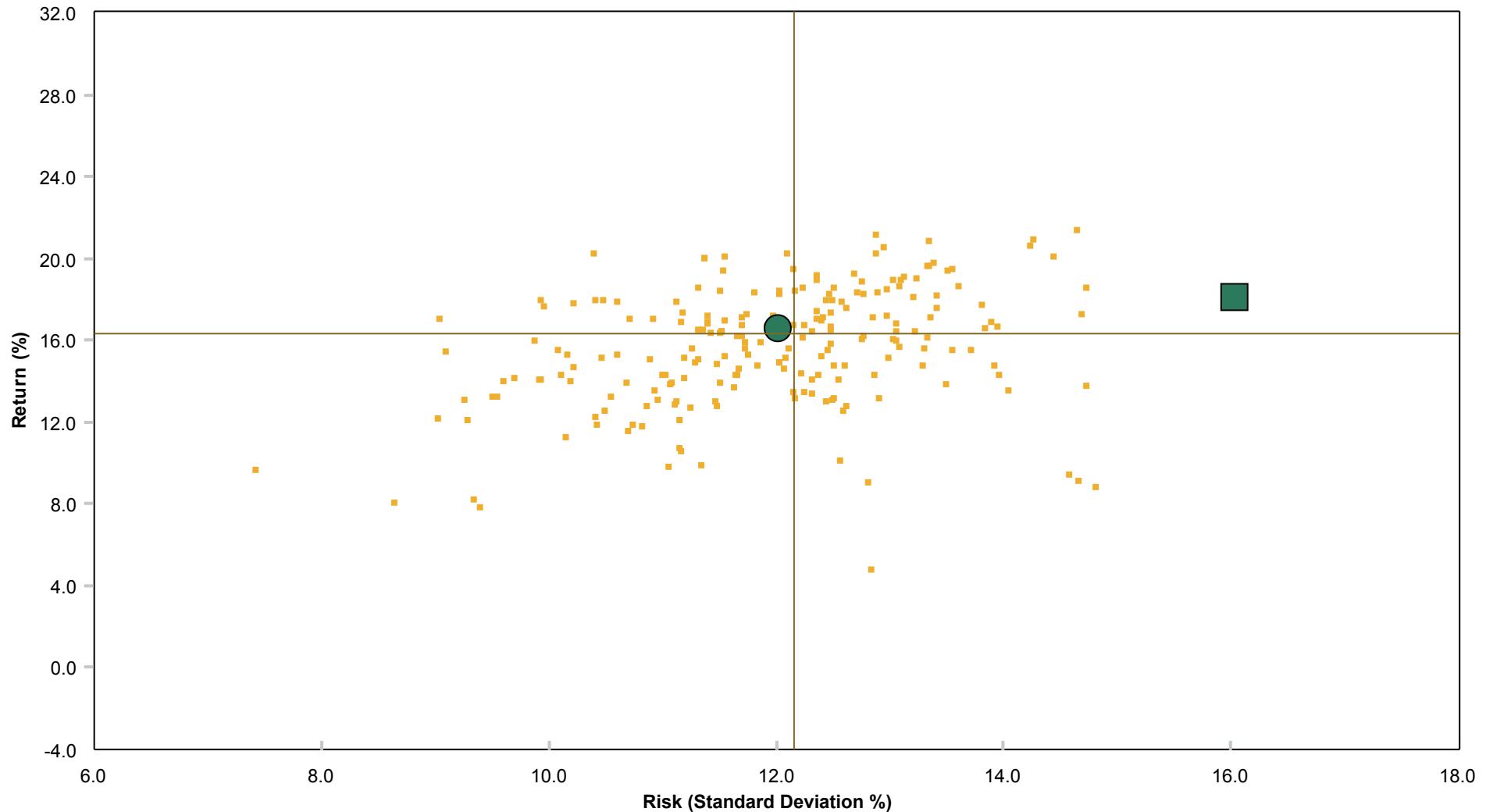
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

**Bristol County Retirement System****Peer Group Scattergram**

IM U.S. Large Cap Growth Equity (SA+CF)

3 Years Ending March 31, 2019

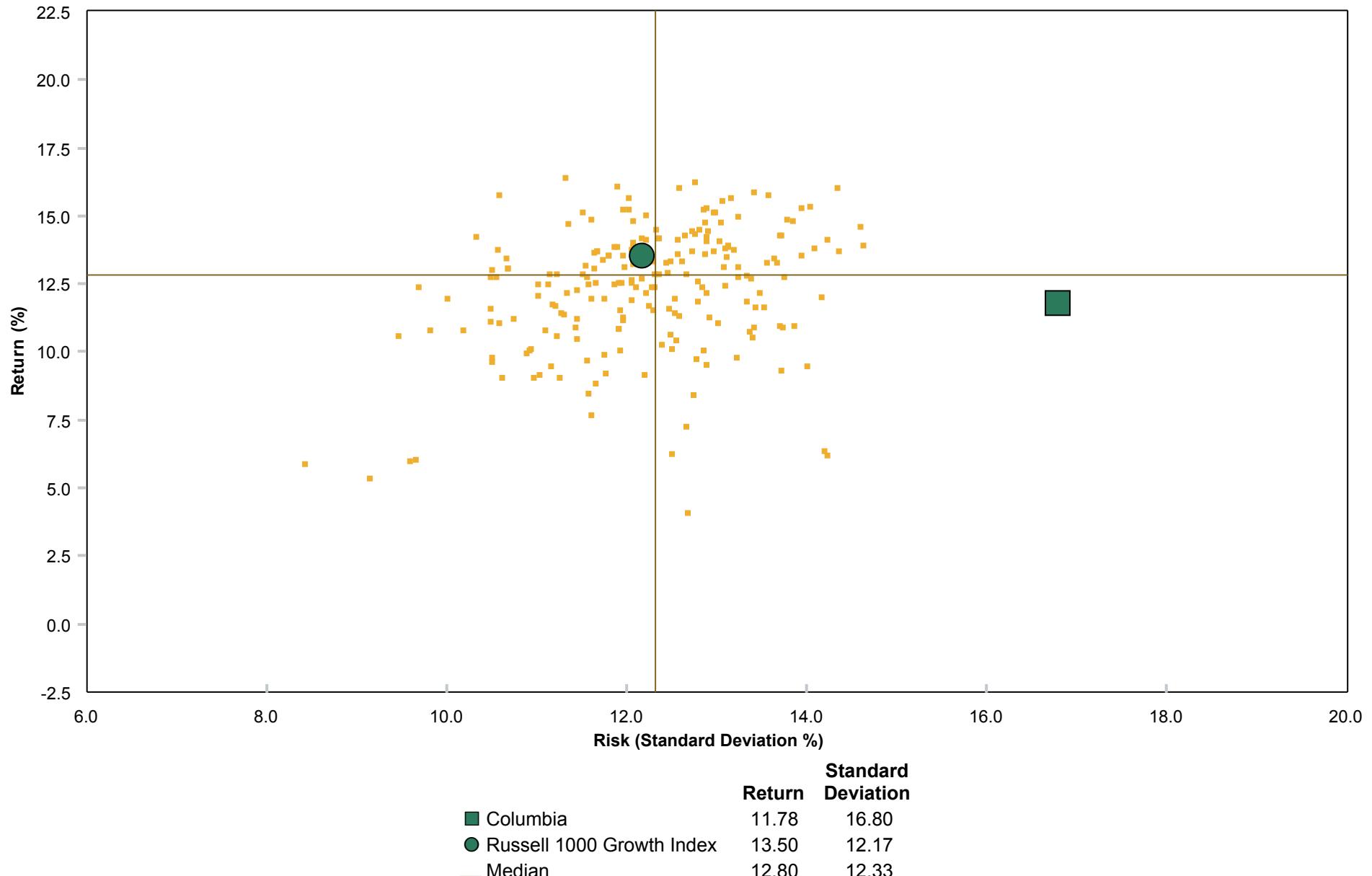


Calculation based on monthly periodicity.

**Bristol County Retirement System****Peer Group Scattergram**

IM U.S. Large Cap Growth Equity (SA+CF)

5 Years Ending March 31, 2019



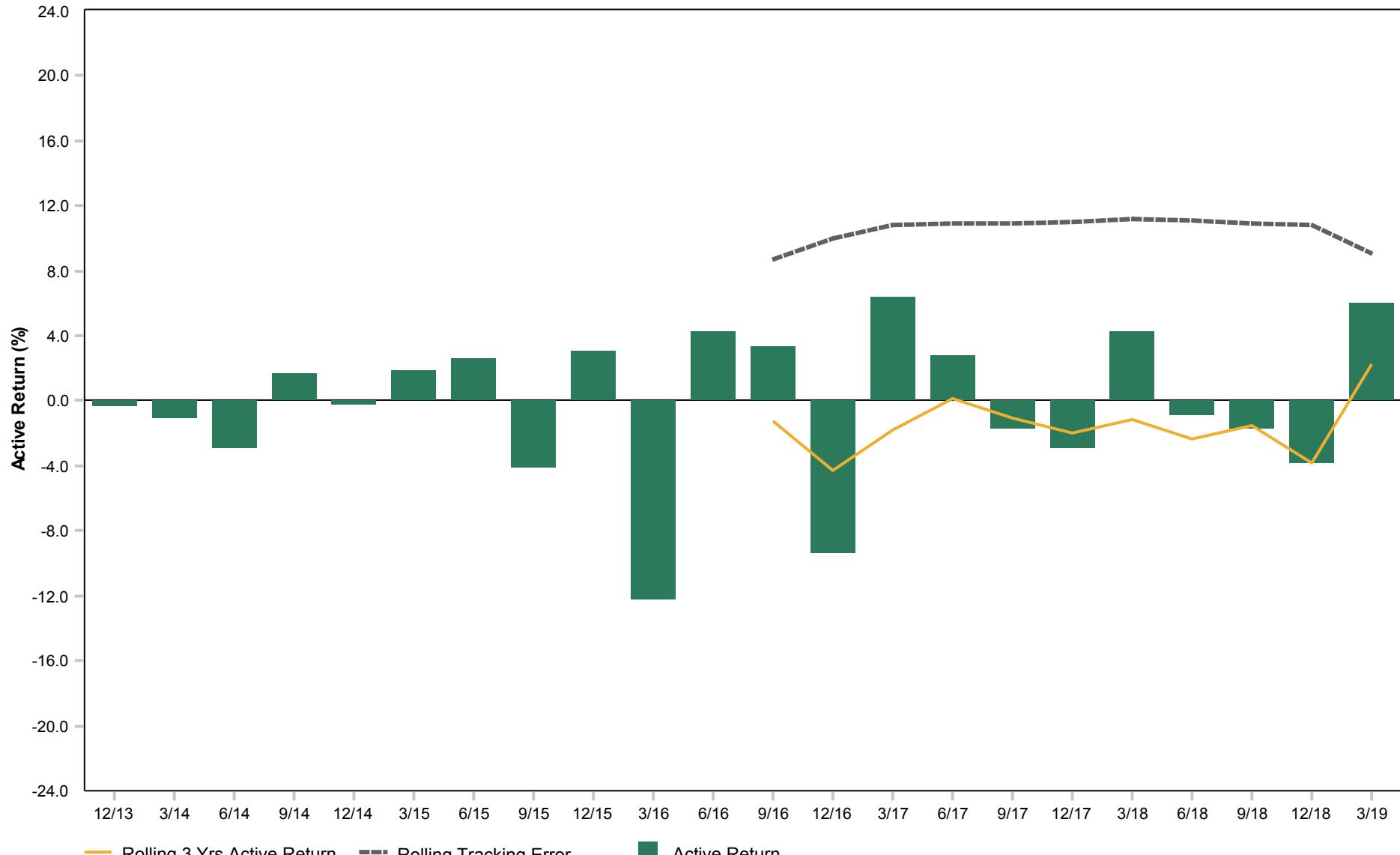
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                           | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016   | 2015 |
|---------------------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------|------|
| Columbia                  | 22.16 | 22.16 | 10.56 | 18.04 | 11.78 | N/A   | N/A    | -4.30 | 35.56 | -8.17  | 8.65 |
| Russell 1000 Growth Index | 16.10 | 16.10 | 12.75 | 16.53 | 13.50 | 14.34 | 17.52  | -1.51 | 30.21 | 7.08   | 5.67 |
| Difference                | 6.06  | 6.06  | -2.19 | 1.51  | -1.72 | N/A   | N/A    | -2.79 | 5.35  | -15.25 | 2.98 |



— Rolling 3 Yrs Active Return    - - - Rolling Tracking Error

■ Active Return

**Bristol County Retirement System**

**Columbia**

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 21.23 |
| Portfolio Trading        | 0.94  |
| Actual Return            | 22.16 |
| Benchmark Return         | 16.10 |
| Actual Active Return     | 6.06  |
|                          |       |
| Stock Selection          | 4.53  |
| Sector Selection         | -1.68 |
| Interaction              | 2.29  |
| Total Selection          | 5.14  |
|                          |       |
| Portfolio Trading        | 0.94  |
| Benchmark Trading        | 0.01  |
| Active Trading Impact    | 0.92  |
|                          |       |
| Buy & Hold Active Return | 6.06  |

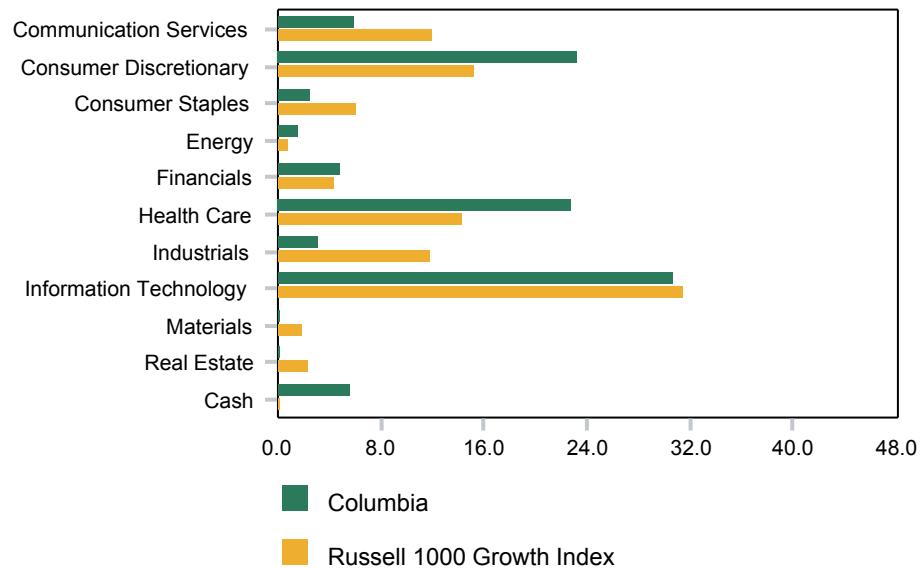
|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 5.94                    | 11.93     | 15.94  | 16.69     | -0.09       | -0.04  | 0.05        | -0.08 |
| Consumer Discretionary | 23.25                   | 15.14     | 33.33  | 15.39     | 2.72        | -0.06  | 1.46        | 4.11  |
| Consumer Staples       | 2.46                    | 6.03      | 19.19  | 10.92     | 0.50        | 0.18   | -0.30       | 0.39  |
| Energy                 | 1.49                    | 0.76      | 16.03  | 14.23     | 0.01        | -0.01  | 0.01        | 0.01  |
| Financials             | 4.75                    | 4.40      | 17.69  | 13.29     | 0.19        | -0.01  | 0.02        | 0.20  |
| Health Care            | 22.82                   | 14.29     | 14.15  | 7.39      | 0.97        | -0.74  | 0.58        | 0.80  |
| Industrials            | 3.04                    | 11.83     | 10.54  | 16.29     | -0.68       | -0.02  | 0.50        | -0.19 |
| Information Technology | 30.63                   | 31.46     | 24.25  | 21.36     | 0.91        | -0.04  | -0.02       | 0.84  |
| Materials              | 0.00                    | 1.84      | 0.00   | 14.91     | 0.00        | 0.02   | 0.00        | 0.02  |
| Real Estate            | 0.00                    | 2.32      | 0.00   | 18.84     | 0.00        | -0.06  | 0.00        | -0.06 |
| Cash                   | 5.61                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.90  | 0.00        | -0.90 |
| Total                  | 100.00                  | 100.00    | 21.23  | 16.09     | 4.53        | -1.68  | 2.29        | 5.14  |

## Bristol County Retirement System

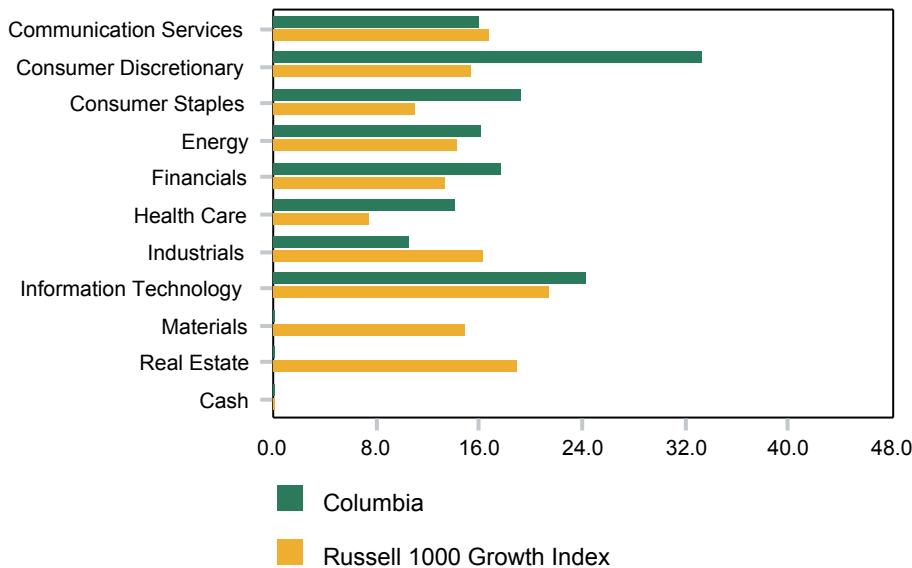
## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

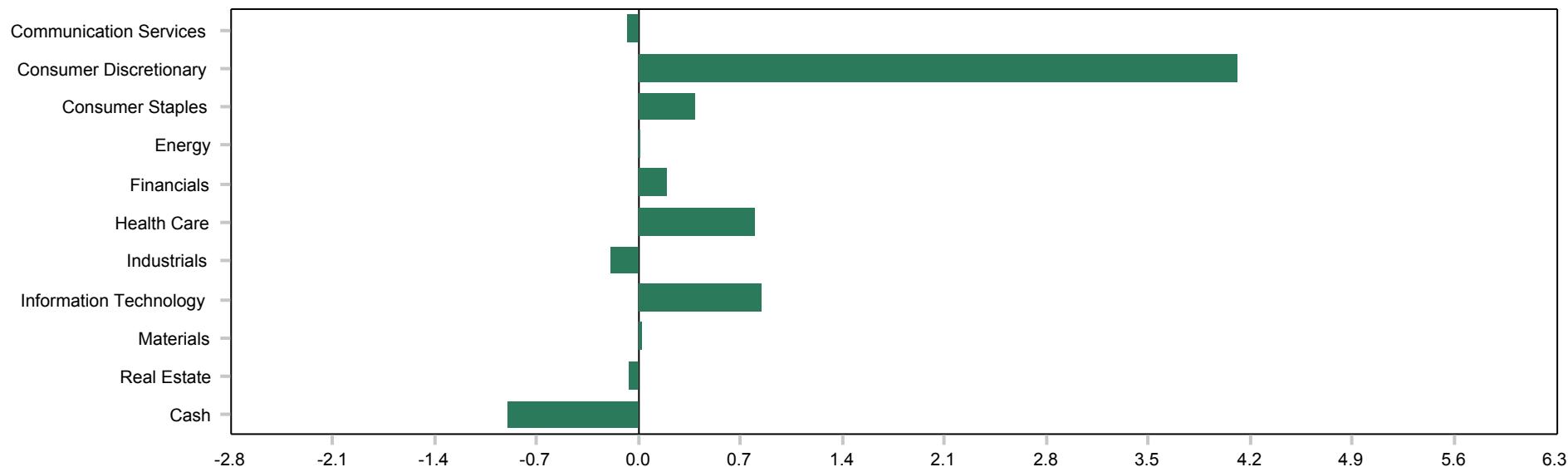
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 21.23 |
| Portfolio Trading        | 0.94  |
| Actual Return            | 22.16 |
| Benchmark Return         | 16.10 |
| Actual Active Return     | 6.06  |
|                          |       |
| Stock Selection          | 7.04  |
| Style Selection          | -0.63 |
| Interaction              | -1.26 |
| Total Selection          | 5.14  |
|                          |       |
| Portfolio Trading        | 0.94  |
| Benchmark Trading        | 0.01  |
| Active Trading Impact    | 0.92  |
|                          |       |
| Buy & Hold Active Return | 6.06  |

### Performance-1 Quarter Ending March 31, 2019

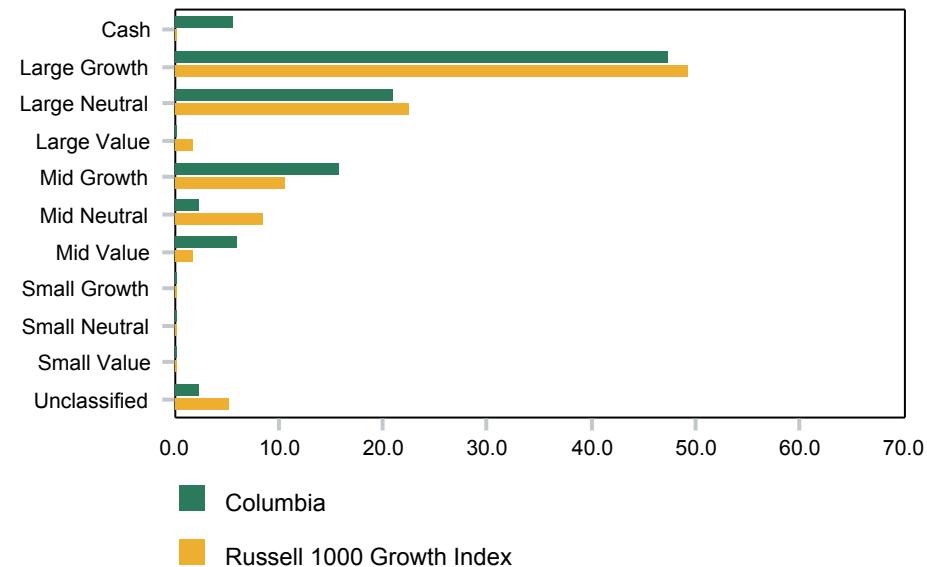
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             |       |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction | Total |
| Cash          | 5.61                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.90 | 0.00        | -0.90 |
| Large Growth  | 47.37                 | 49.30     | 16.56     | 17.02     | -0.22       | -0.02 | 0.01        | -0.23 |
| Large Neutral | 20.87                 | 22.42     | 15.23     | 12.26     | 0.67        | 0.06  | -0.05       | 0.68  |
| Large Value   | 0.00                  | 1.64      | 0.00      | 11.86     | 0.00        | 0.07  | 0.00        | 0.07  |
| Mid Growth    | 15.65                 | 10.48     | 37.68     | 21.05     | 1.74        | 0.26  | 0.86        | 2.86  |
| Mid Neutral   | 2.22                  | 8.51      | 64.37     | 18.62     | 3.89        | -0.16 | -2.88       | 0.85  |
| Mid Value     | 5.92                  | 1.72      | 40.51     | 14.90     | 0.44        | -0.05 | 1.08        | 1.47  |
| Small Growth  | 0.00                  | 0.22      | 0.00      | 32.70     | 0.00        | -0.04 | 0.00        | -0.04 |
| Small Neutral | 0.00                  | 0.26      | 0.00      | 17.63     | 0.00        | 0.00  | 0.00        | 0.00  |
| Small Value   | 0.00                  | 0.20      | 0.00      | 22.43     | 0.00        | -0.01 | 0.00        | -0.01 |
| Unclassified  | 2.35                  | 5.25      | 20.20     | 10.42     | 0.51        | 0.16  | -0.28       | 0.39  |
| Total         | 100.00                | 100.00    | 21.23     | 16.09     | 7.04        | -0.63 | -1.26       | 5.14  |

## Bristol County Retirement System

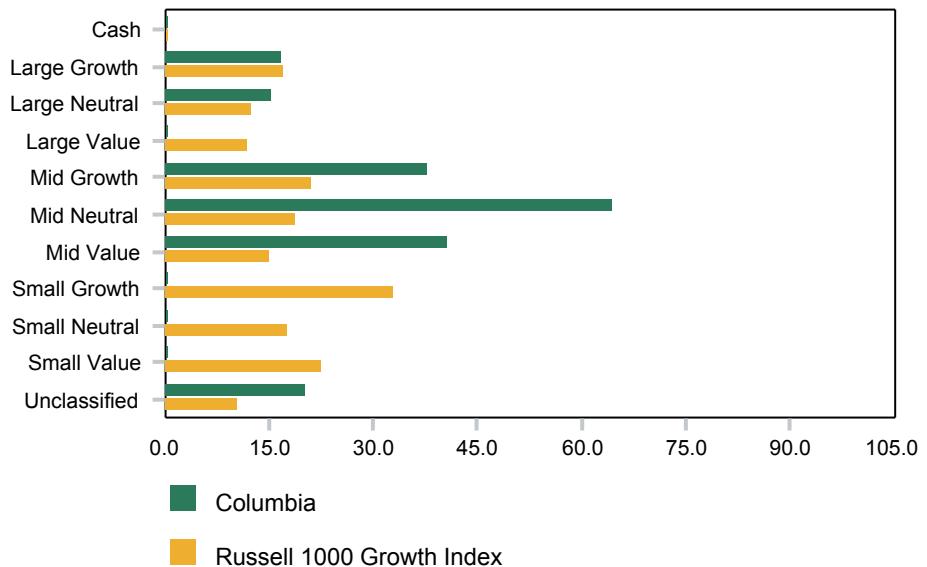
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

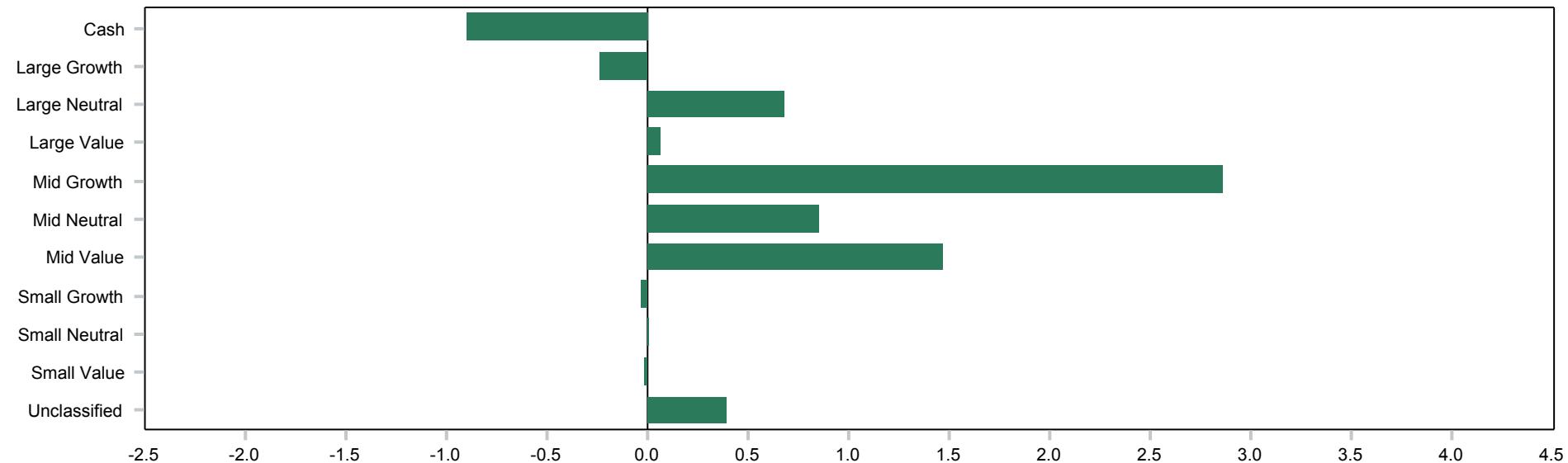
### Allocation



### Performance



### Total Attribution



As of March 31, 2019

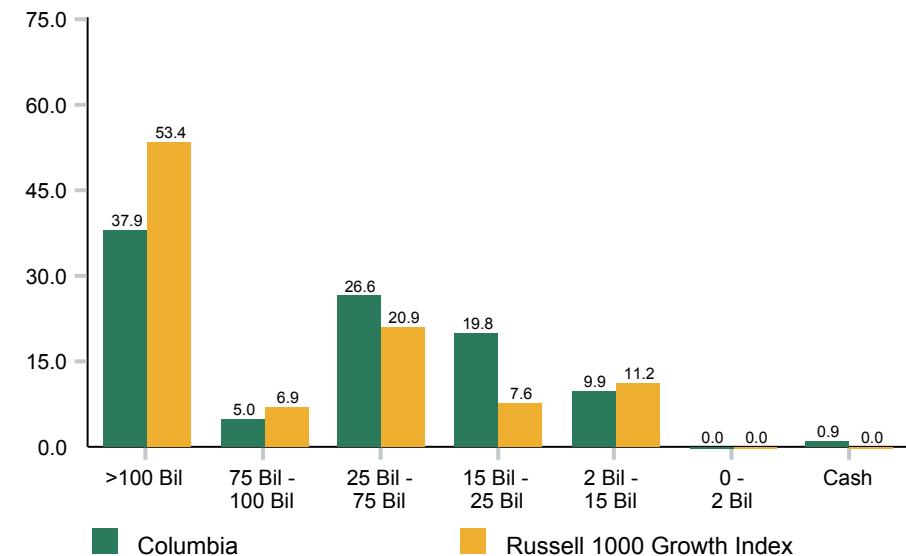
### Top Ten Equity Holdings

|   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---|----------------------|----------------------|-------------------|----------------------|
| Alibaba Group Holding Ltd                     | 4.76                 | 0.00                 | 4.76              | 33.11                |
| Facebook Inc                                  | 4.62                 | 2.97                 | 1.65              | 27.16                |
| ServiceNow Inc                                | 4.50                 | 0.33                 | 4.17              | 38.44                |
| Amazon.com Inc                                | 4.18                 | 5.49                 | -1.31             | 18.56                |
| salesforce.com Inc                            | 3.94                 | 0.86                 | 3.08              | 15.62                |
| New Oriental Education & Technology Group Inc | 3.72                 | 0.00                 | 3.72              | 64.37                |
| NVIDIA Corp                                   | 3.51                 | 0.78                 | 2.73              | 34.64                |
| Alexion Pharmaceuticals Inc                   | 3.38                 | 0.18                 | 3.20              | 38.84                |
| Nike Inc                                      | 3.38                 | 0.78                 | 2.60              | 13.87                |
| PayPal Holdings Inc                           | 3.38                 | 0.91                 | 2.47              | 23.49                |
| % of Portfolio                                | 39.37                | 12.30                | 27.07             |                      |

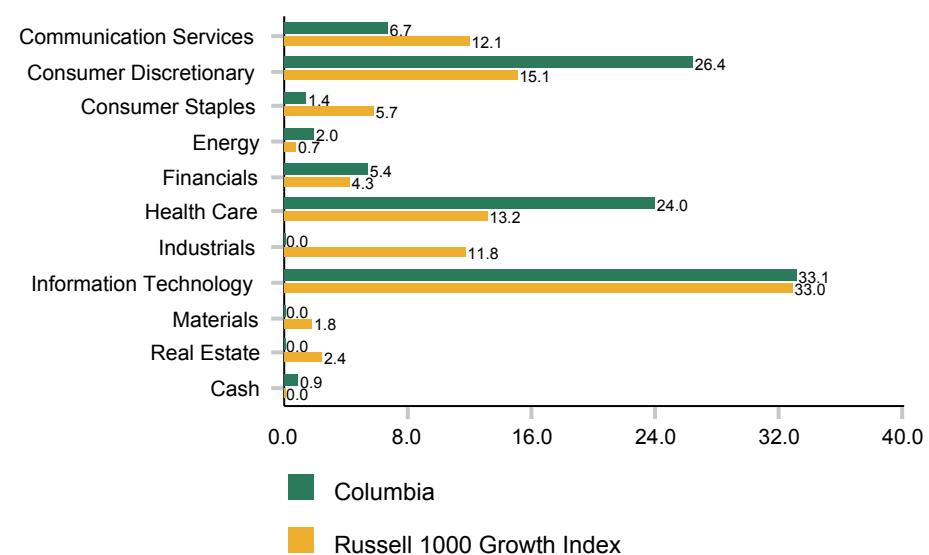
### Portfolio Characteristics

|                           | Portfolio       | Benchmark       |
|---------------------------|-----------------|-----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 133,547,382,169 | 283,378,088,398 |
| Median Mkt. Cap (\$)      | 44,491,445,000  | 11,754,144,110  |
| Price/Earnings ratio      | 33.23           | 23.65           |
| Price/Book ratio          | 7.02            | 6.74            |
| 5 Yr. EPS Growth Rate (%) | 30.61           | 23.79           |
| Current Yield (%)         | 0.37            | 1.28            |
| Beta (5 Years, Monthly)   | 1.25            | 1.00            |
| Number of Stocks          | 34              | 545             |

### Distribution of Market Capitalization (%)



### Sector Weights (%)

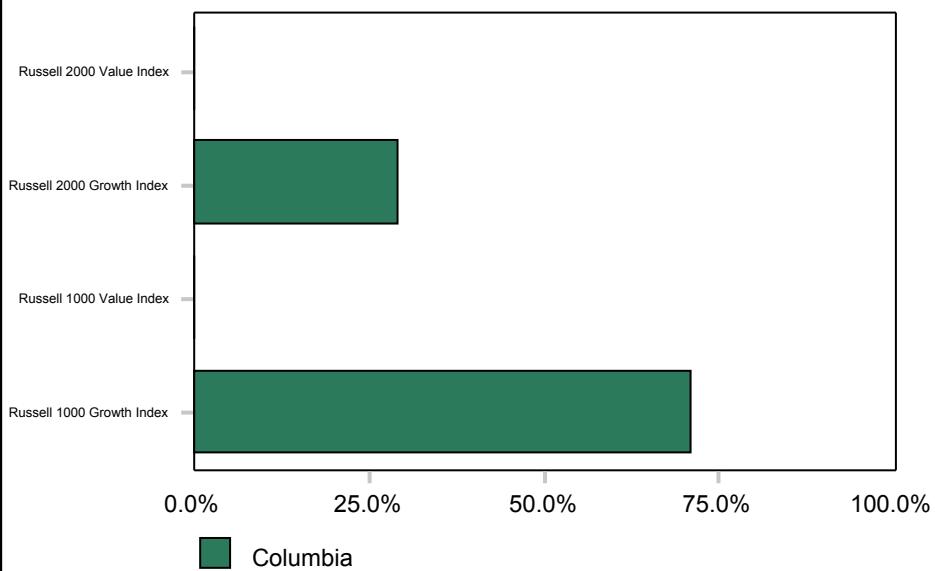


## Bristol County Retirement System

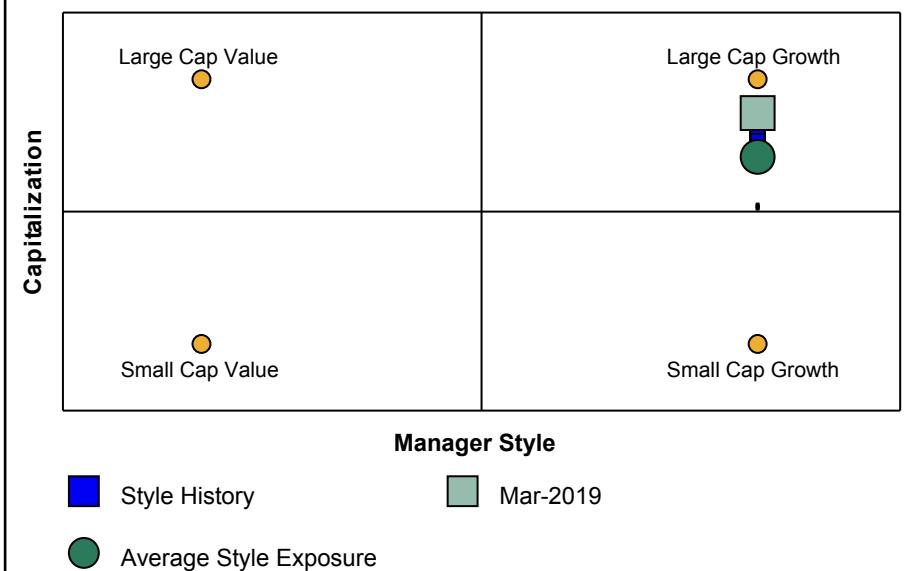
## Style Analysis

Ending March 31, 2019

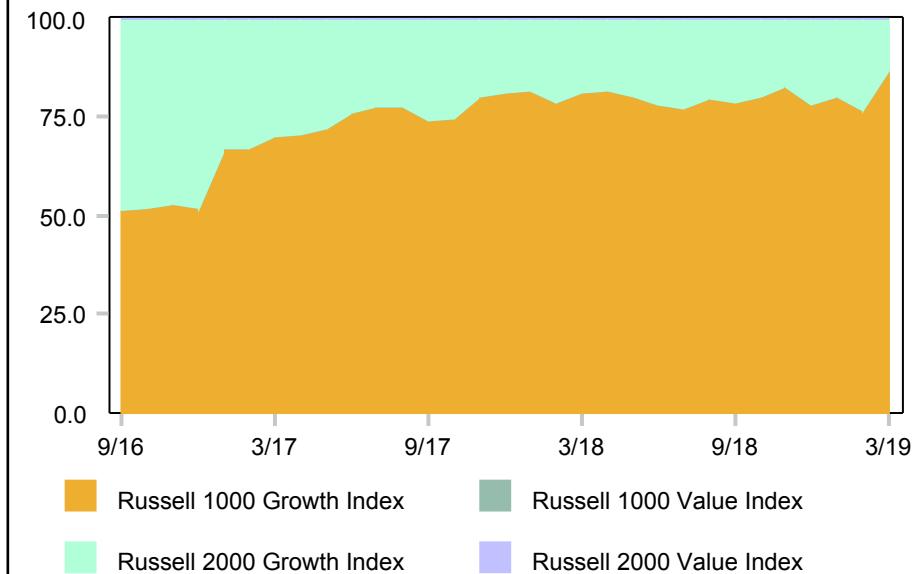
### Investment Style Exposure



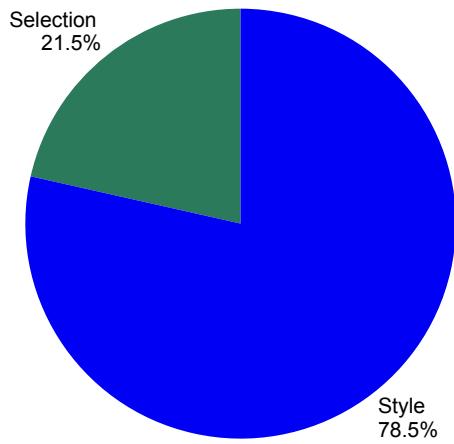
### Style Map(ppp)



### Style History(ppp)



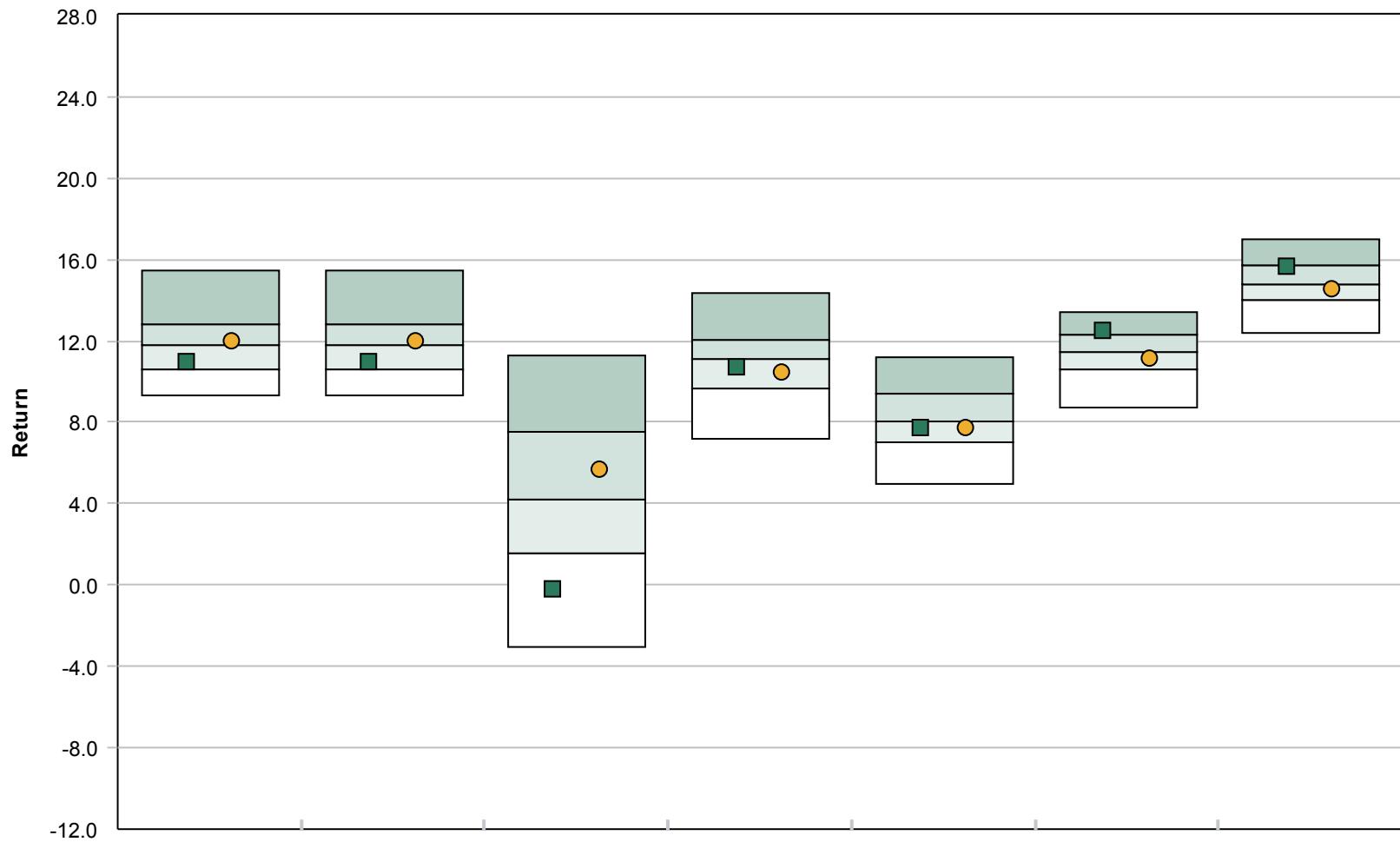
### Return Variance



## Bristol County Retirement System

## IM U.S. Large Cap Value Equity (SA+CF)

As of March 31, 2019



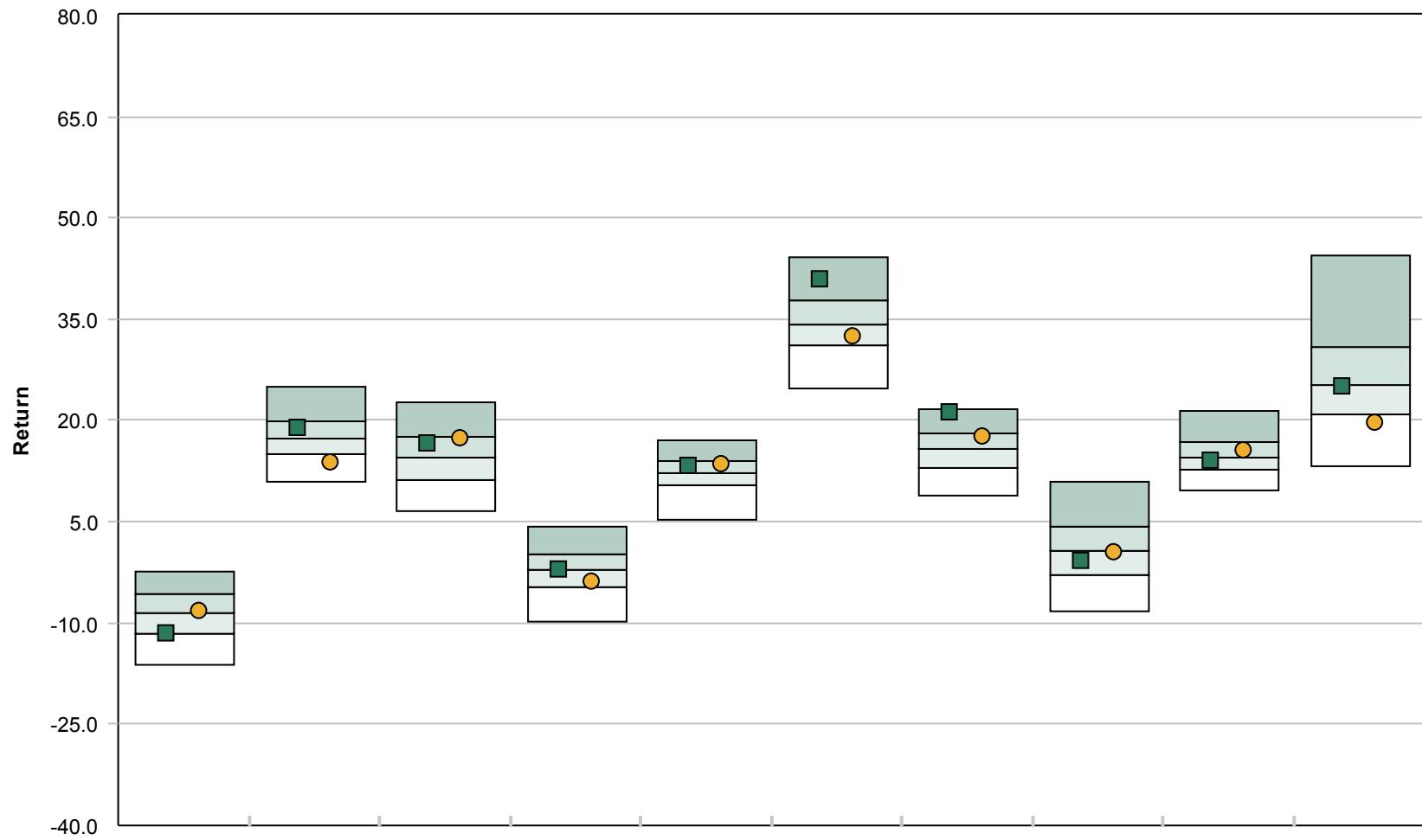
|                          | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs      | 5 Yrs     | 7 Yrs      | 10 Yrs     |
|--------------------------|------------|------------|------------|------------|-----------|------------|------------|
| LSV                      | 10.93 (69) | 10.93 (69) | -0.19 (86) | 10.66 (61) | 7.74 (58) | 12.47 (19) | 15.66 (26) |
| Russell 1000 Value Index | 11.93 (46) | 11.93 (46) | 5.67 (36)  | 10.45 (65) | 7.72 (59) | 11.14 (60) | 14.52 (58) |
| 5th Percentile           | 15.47      | 15.47      | 11.24      | 14.37      | 11.18     | 13.46      | 17.02      |
| 1st Quartile             | 12.85      | 12.85      | 7.55       | 12.06      | 9.36      | 12.29      | 15.68      |
| Median                   | 11.76      | 11.76      | 4.23       | 11.10      | 8.03      | 11.45      | 14.80      |
| 3rd Quartile             | 10.60      | 10.60      | 1.58       | 9.70       | 7.06      | 10.57      | 13.97      |
| 95th Percentile          | 9.28       | 9.28       | -3.03      | 7.17       | 4.98      | 8.74       | 12.40      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. Large Cap Value Equity (SA+CF)

As of March 31, 2019



|                          | 2018        | 2017       | 2016       | 2015       | 2014       | 2013       | 2012       | 2011       | 2010       | 2009       |
|--------------------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| LSV                      | -11.72 (78) | 18.89 (34) | 16.66 (30) | -2.14 (49) | 13.25 (38) | 40.94 (12) | 21.22 (7)  | -0.94 (63) | 13.94 (59) | 24.91 (53) |
| Russell 1000 Value Index | -8.27 (48)  | 13.66 (88) | 17.34 (26) | -3.83 (69) | 13.45 (35) | 32.53 (62) | 17.51 (29) | 0.39 (52)  | 15.51 (41) | 19.69 (80) |
| 5th Percentile           | -2.29       | 24.95      | 22.66      | 4.28       | 17.12      | 44.06      | 21.67      | 10.90      | 21.45      | 44.56      |
| 1st Quartile             | -5.70       | 19.97      | 17.56      | 0.09       | 14.07      | 37.74      | 18.00      | 4.19       | 16.88      | 30.80      |
| Median                   | -8.44       | 17.22      | 14.52      | -2.25      | 12.19      | 34.26      | 15.67      | 0.61       | 14.59      | 25.24      |
| 3rd Quartile             | -11.47      | 15.12      | 11.29      | -4.75      | 10.31      | 31.11      | 12.95      | -2.99      | 12.83      | 20.97      |
| 95th Percentile          | -16.09      | 10.82      | 6.59       | -9.72      | 5.18       | 24.83      | 8.91       | -8.26      | 9.56       | 13.32      |

Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

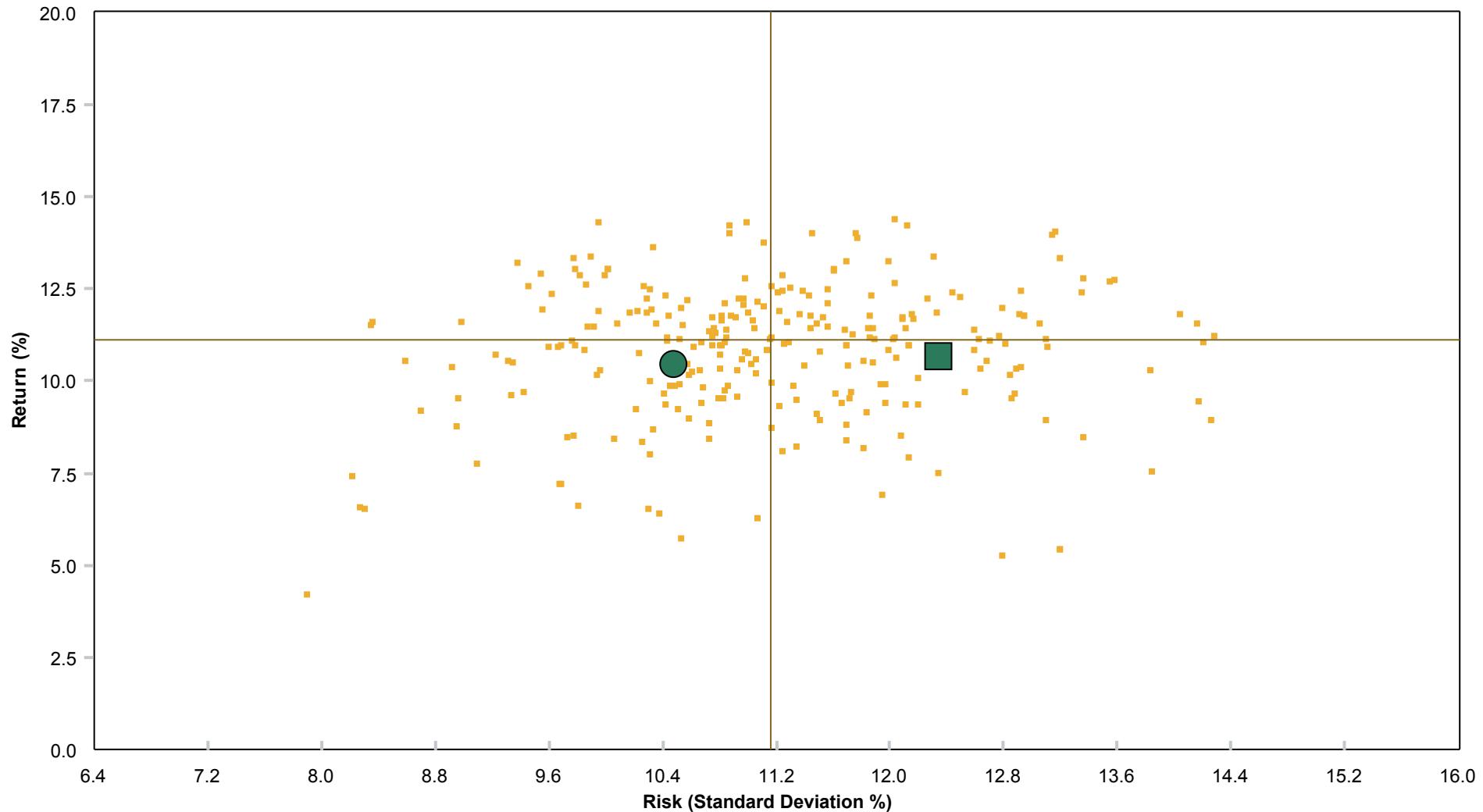
 Segal Marco Advisors

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Large Cap Value Equity (SA+CF)

3 Years Ending March 31, 2019



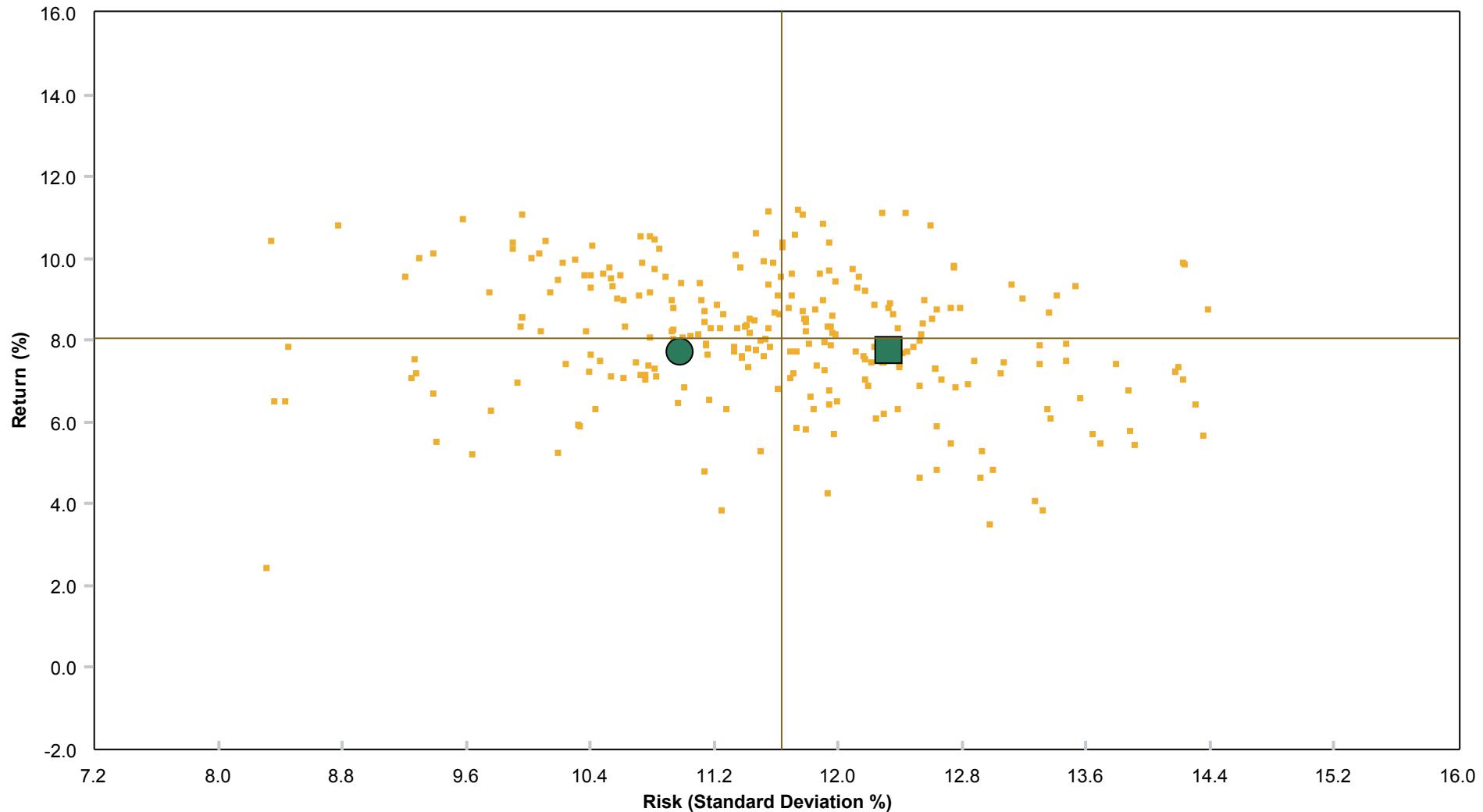
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Large Cap Value Equity (SA+CF)

5 Years Ending March 31, 2019



|                          | Return | Risk  |
|--------------------------|--------|-------|
| LSV                      | 7.74   | 12.33 |
| Russell 1000 Value Index | 7.72   | 10.98 |
| Median                   | 8.05   | 11.63 |

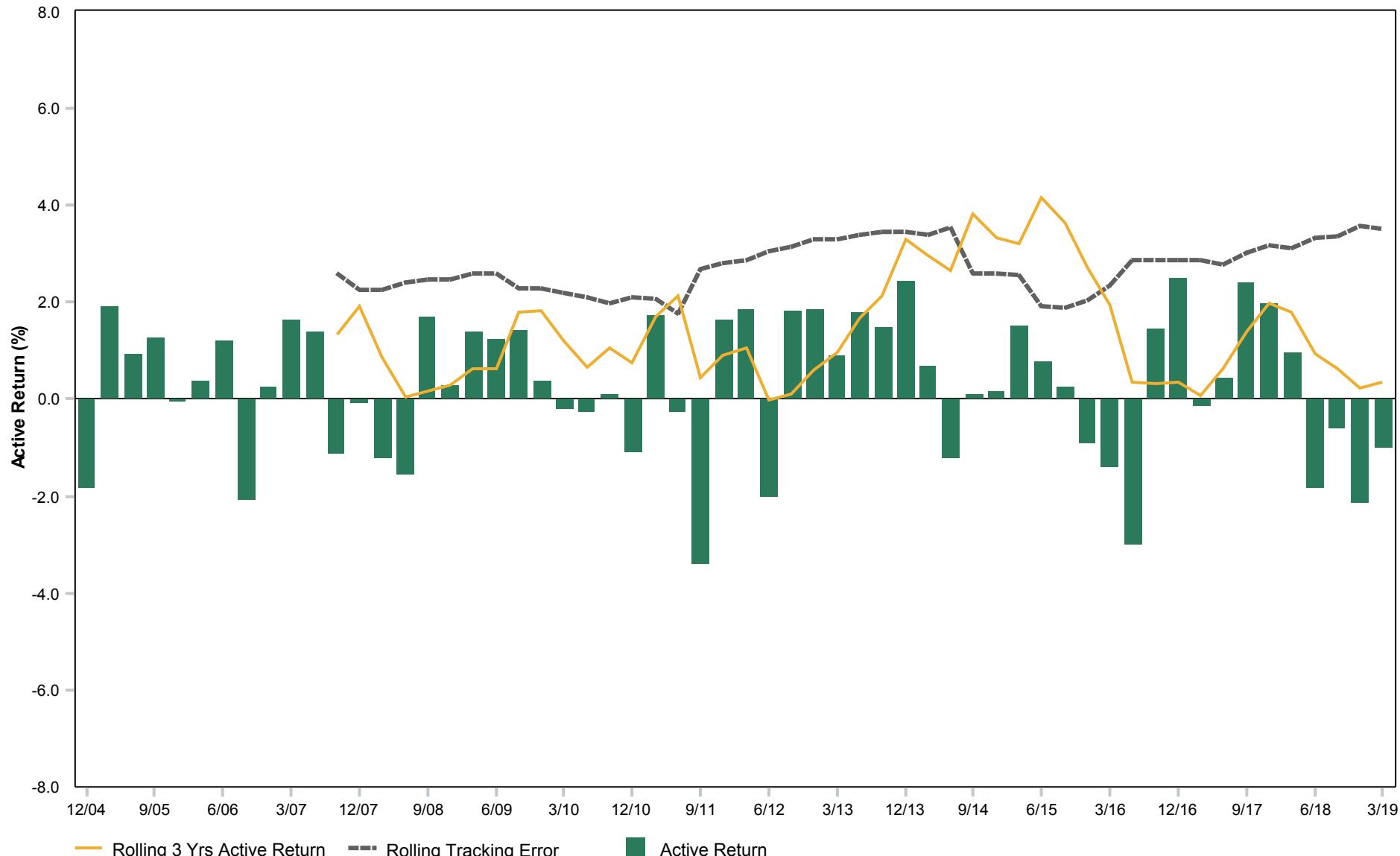
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                          | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016  | 2015  |
|--------------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| LSV                      | 10.93 | 10.93 | -0.19 | 10.66 | 7.74  | 12.47 | 15.66  | -11.72 | 18.89 | 16.66 | -2.14 |
| Russell 1000 Value Index | 11.93 | 11.93 | 5.67  | 10.45 | 7.72  | 11.14 | 14.52  | -8.27  | 13.66 | 17.34 | -3.83 |
| Difference               | -1.00 | -1.00 | -5.86 | 0.21  | 0.02  | 1.33  | 1.14   | -3.45  | 5.23  | -0.68 | 1.69  |



# Bristol County Retirement System

LSV

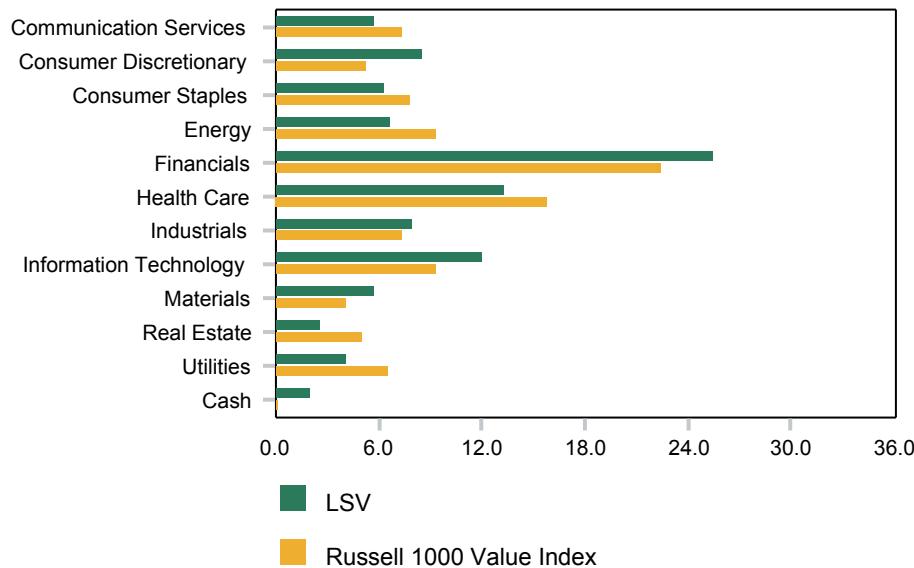
1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 10.64 |
| Portfolio Trading        | 0.29  |
| Actual Return            | 10.93 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | -1.00 |
|                          |       |
| Stock Selection          | -1.62 |
| Sector Selection         | -0.24 |
| Interaction              | 0.53  |
| Total Selection          | -1.34 |
|                          |       |
| Portfolio Trading        | 0.29  |
| Benchmark Trading        | -0.05 |
| Active Trading Impact    | 0.34  |
|                          |       |
| Buy & Hold Active Return | -1.00 |

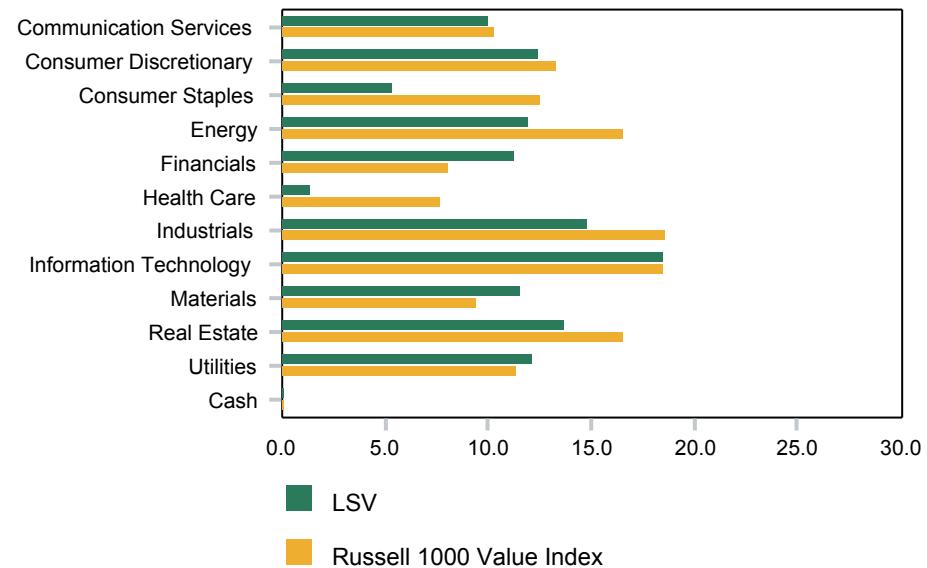
|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 5.70                    | 7.29      | 9.93   | 10.23     | -0.02       | 0.03   | 0.00        | 0.01  |
| Consumer Discretionary | 8.45                    | 5.23      | 12.35  | 13.22     | -0.04       | 0.04   | -0.03       | -0.03 |
| Consumer Staples       | 6.30                    | 7.83      | 5.35   | 12.47     | -0.56       | -0.01  | 0.11        | -0.46 |
| Energy                 | 6.60                    | 9.29      | 11.91  | 16.59     | -0.43       | -0.12  | 0.13        | -0.43 |
| Financials             | 25.42                   | 22.47     | 11.19  | 8.01      | 0.71        | -0.12  | 0.09        | 0.69  |
| Health Care            | 13.28                   | 15.74     | 1.38   | 7.64      | -0.99       | 0.11   | 0.15        | -0.72 |
| Industrials            | 7.86                    | 7.35      | 14.80  | 18.63     | -0.28       | 0.03   | -0.02       | -0.27 |
| Information Technology | 11.99                   | 9.31      | 18.47  | 18.46     | 0.00        | 0.17   | 0.00        | 0.18  |
| Materials              | 5.74                    | 4.07      | 11.48  | 9.43      | 0.08        | -0.04  | 0.03        | 0.08  |
| Real Estate            | 2.56                    | 4.95      | 13.68  | 16.51     | -0.14       | -0.11  | 0.07        | -0.18 |
| Utilities              | 4.09                    | 6.47      | 12.06  | 11.34     | 0.05        | 0.02   | -0.02       | 0.04  |
| Cash                   | 2.01                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.24  | 0.00        | -0.24 |
| Total                  | 100.00                  | 100.00    | 10.64  | 11.98     | -1.62       | -0.24  | 0.53        | -1.34 |

## Bristol County Retirement System

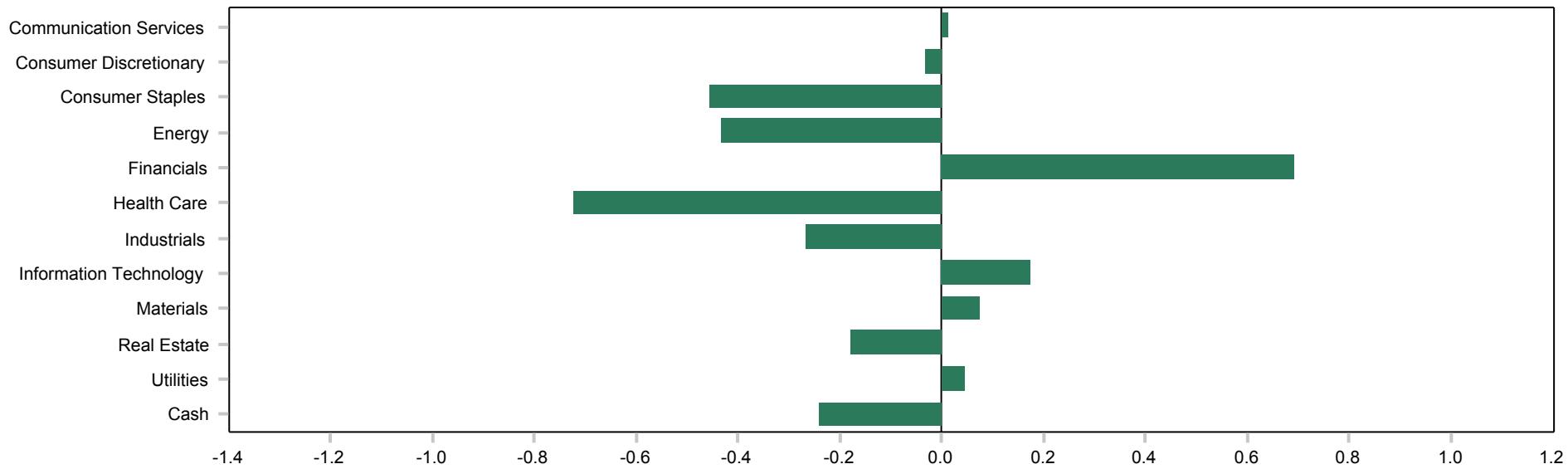
### Allocation



### Performance



### Total Attribution



## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 10.64 |
| Portfolio Trading        | 0.29  |
| Actual Return            | 10.93 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | -1.00 |
|                          |       |
| Stock Selection          | -1.48 |
| Style Selection          | 0.28  |
| Interaction              | -0.13 |
| Total Selection          | -1.34 |
|                          |       |
| Portfolio Trading        | 0.29  |
| Benchmark Trading        | -0.05 |
| Active Trading Impact    | 0.34  |
|                          |       |
| Buy & Hold Active Return | -1.00 |

### Performance-1 Quarter Ending March 31, 2019

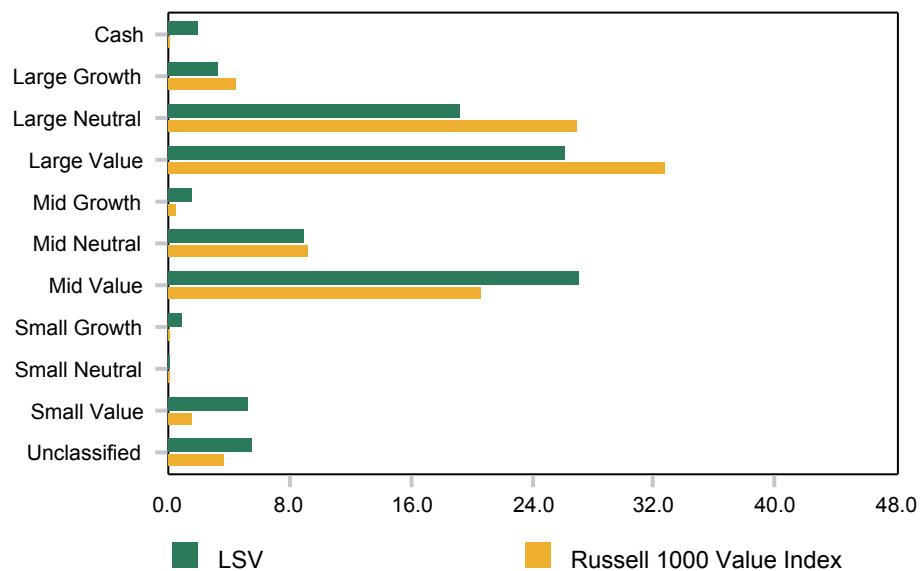
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             | Total |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction |       |
| Cash          | 2.01                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.24 | 0.00        | -0.24 |
| Large Growth  | 3.33                  | 4.49      | 3.09      | 7.71      | -0.21       | 0.05  | 0.05        | -0.10 |
| Large Neutral | 19.16                 | 26.99     | 8.76      | 11.17     | -0.65       | 0.06  | 0.19        | -0.40 |
| Large Value   | 26.19                 | 32.75     | 11.72     | 10.38     | 0.44        | 0.11  | -0.09       | 0.46  |
| Mid Growth    | 1.59                  | 0.54      | 27.48     | 9.70      | 0.10        | -0.02 | 0.19        | 0.26  |
| Mid Neutral   | 8.98                  | 9.17      | 13.92     | 16.57     | -0.24       | -0.01 | 0.01        | -0.25 |
| Mid Value     | 27.13                 | 20.65     | 11.64     | 13.87     | -0.46       | 0.12  | -0.14       | -0.48 |
| Small Growth  | 0.89                  | 0.03      | 7.41      | 16.39     | 0.00        | 0.04  | -0.08       | -0.04 |
| Small Neutral | 0.00                  | 0.12      | 0.00      | 9.93      | 0.00        | 0.00  | 0.00        | 0.00  |
| Small Value   | 5.25                  | 1.64      | 14.80     | 15.53     | -0.01       | 0.13  | -0.03       | 0.09  |
| Unclassified  | 5.48                  | 3.62      | 1.93      | 14.18     | -0.44       | 0.04  | -0.23       | -0.63 |
| Total         | 100.00                | 100.00    | 10.64     | 11.98     | -1.48       | 0.28  | -0.13       | -1.34 |

## Bristol County Retirement System

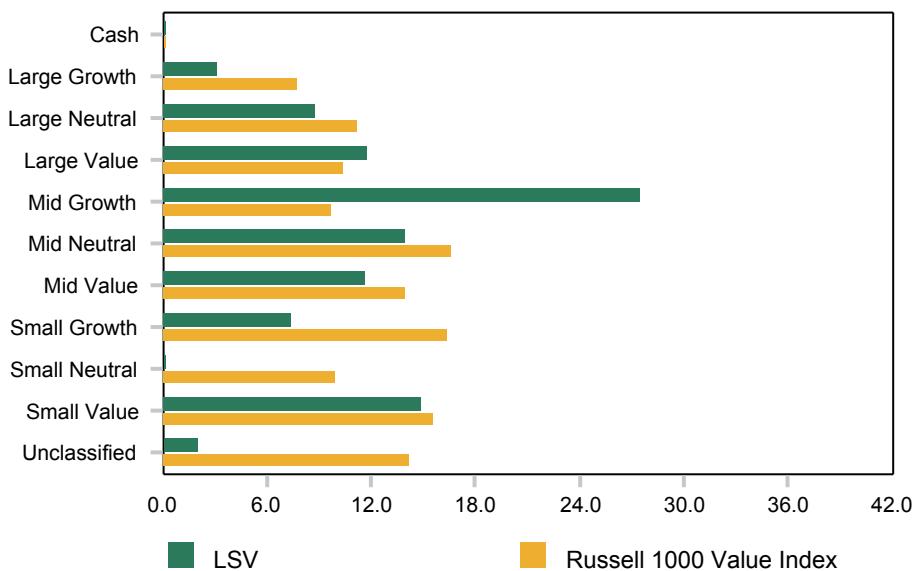
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

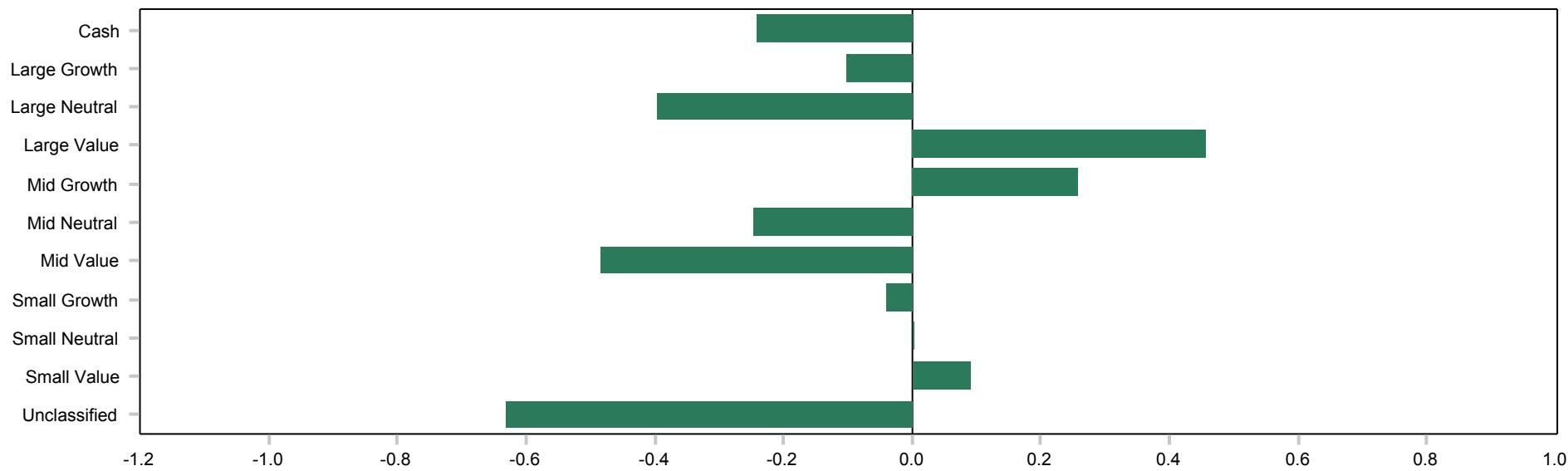
### Allocation



### Performance



### Total Attribution



As of March 31, 2019

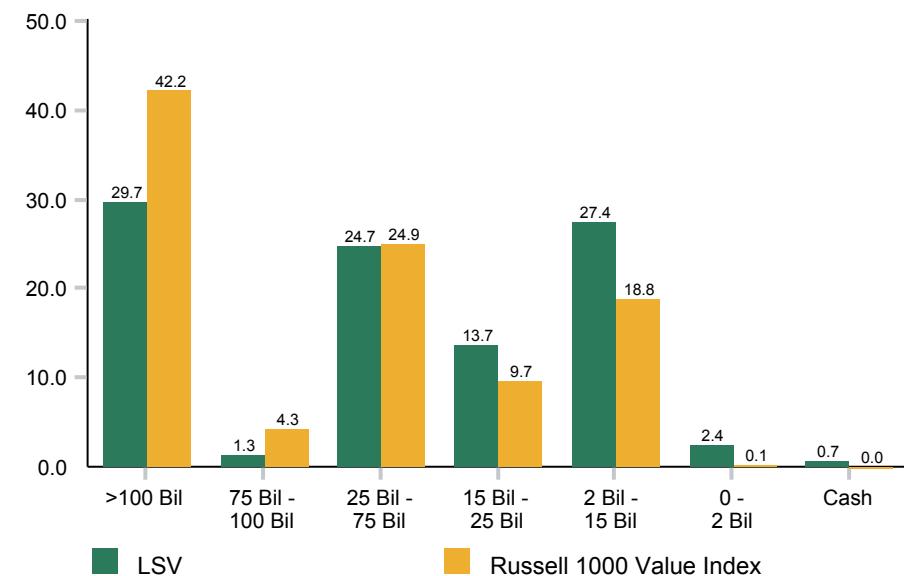
## Top Ten Equity Holdings

|                            | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|----------------------------|----------------------|----------------------|-------------------|----------------------|
| Cisco Systems Inc          | 2.85                 | 1.88                 | 0.97              | 25.60                |
| JPMorgan Chase & Co        | 2.83                 | 2.57                 | 0.26              | 4.55                 |
| Intel Corp                 | 2.66                 | 1.86                 | 0.80              | 15.15                |
| Pfizer Inc                 | 2.61                 | 1.87                 | 0.74              | -1.86                |
| Verizon Communications Inc | 2.31                 | 1.88                 | 0.43              | 6.29                 |
| Citigroup Inc              | 2.05                 | 1.13                 | 0.92              | 20.36                |
| Bank of America Corp       | 2.02                 | 1.91                 | 0.11              | 12.55                |
| Amgen Inc                  | 1.69                 | 0.05                 | 1.64              | -1.65                |
| Johnson & Johnson          | 1.63                 | 2.36                 | -0.73             | 9.04                 |
| Exxon Mobil Corp           | 1.56                 | 2.63                 | -1.07             | 19.81                |
| % of Portfolio             | 22.21                | 18.14                | 4.07              |                      |

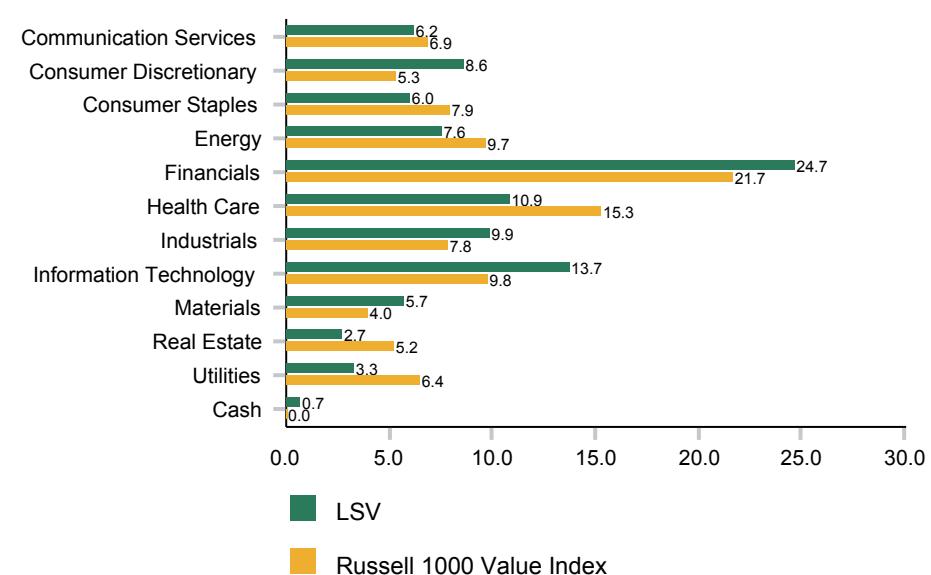
## Portfolio Characteristics

|                           | Portfolio      | Benchmark       |
|---------------------------|----------------|-----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 87,696,423,258 | 126,580,444,413 |
| Median Mkt. Cap (\$)      | 14,349,518,550 | 9,111,400,470   |
| Price/Earnings ratio      | 12.17          | 17.18           |
| Price/Book ratio          | 2.09           | 2.21            |
| 5 Yr. EPS Growth Rate (%) | 11.34          | 6.12            |
| Current Yield (%)         | 3.08           | 2.65            |
| Beta (5 Years, Monthly)   | 1.10           | 1.00            |
| Number of Stocks          | 142            | 722             |

## Distribution of Market Capitalization (%)



## Sector Weights (%)

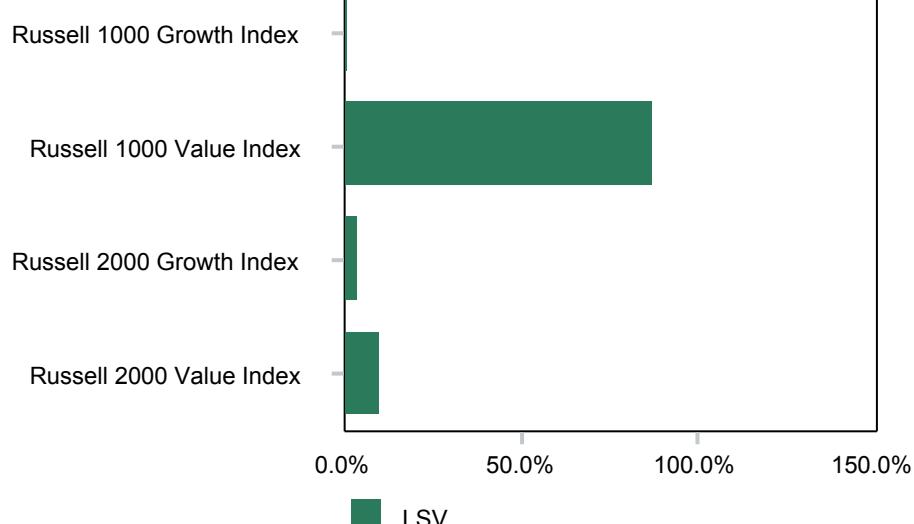


## Bristol County Retirement System

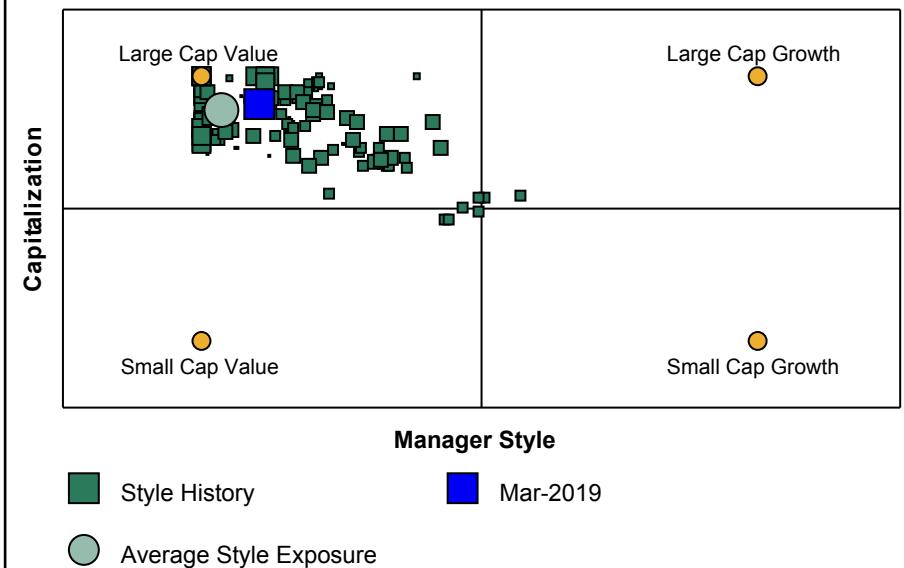
## Style Analysis

Ending March 31, 2019

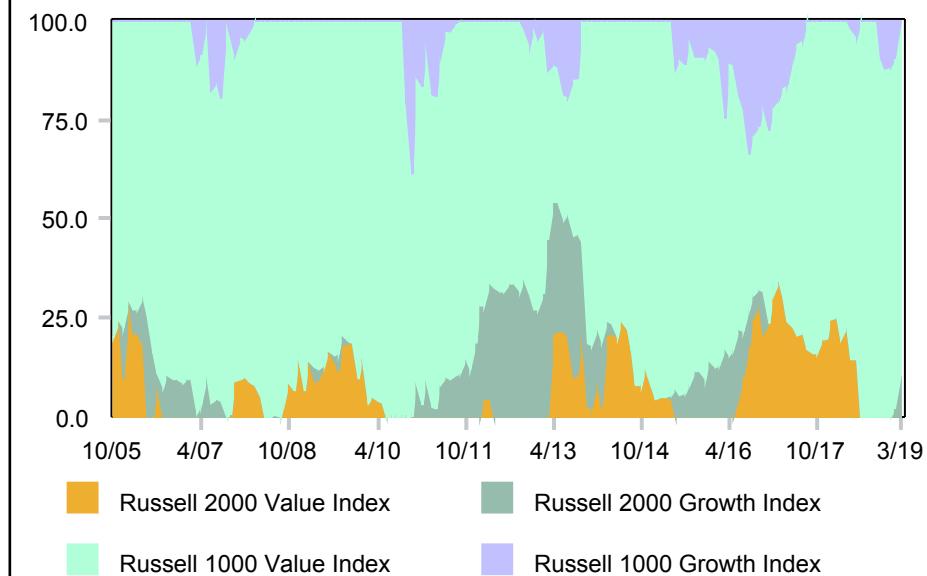
### Investment Style Exposure



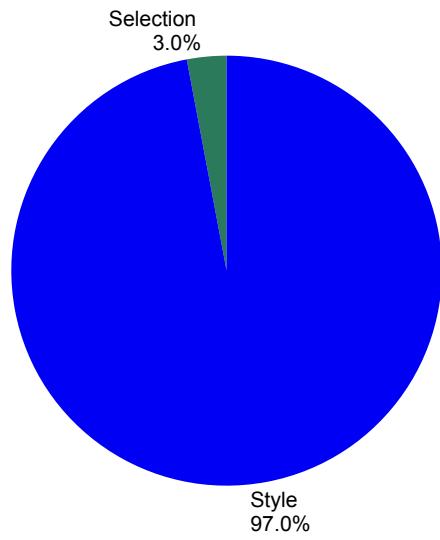
### Style Map(ppp)



### Style History(ppp)



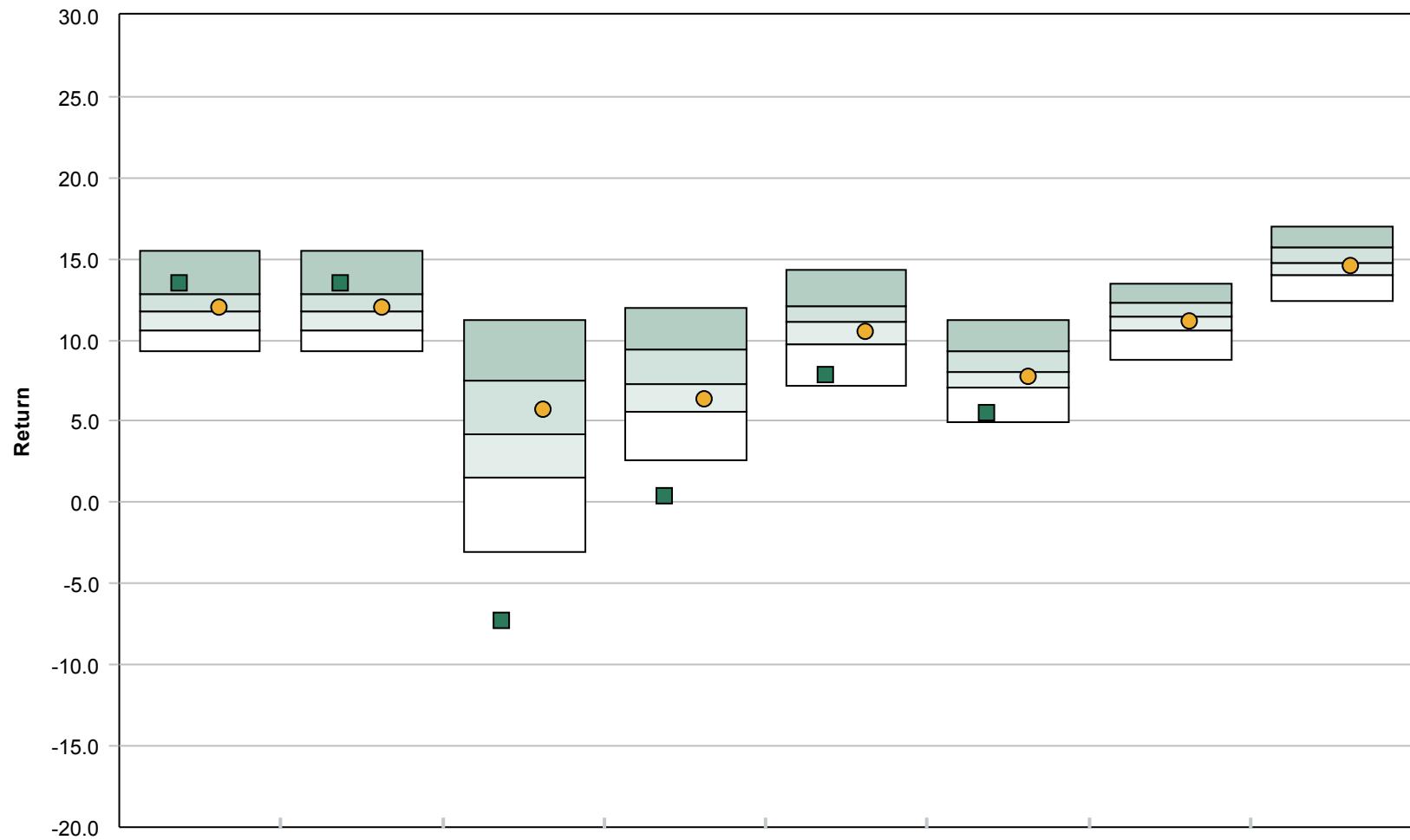
### Return Variance



## Bristol County Retirement System

## IM U.S. Large Cap Value Equity (SA+CF)

As of March 31, 2019



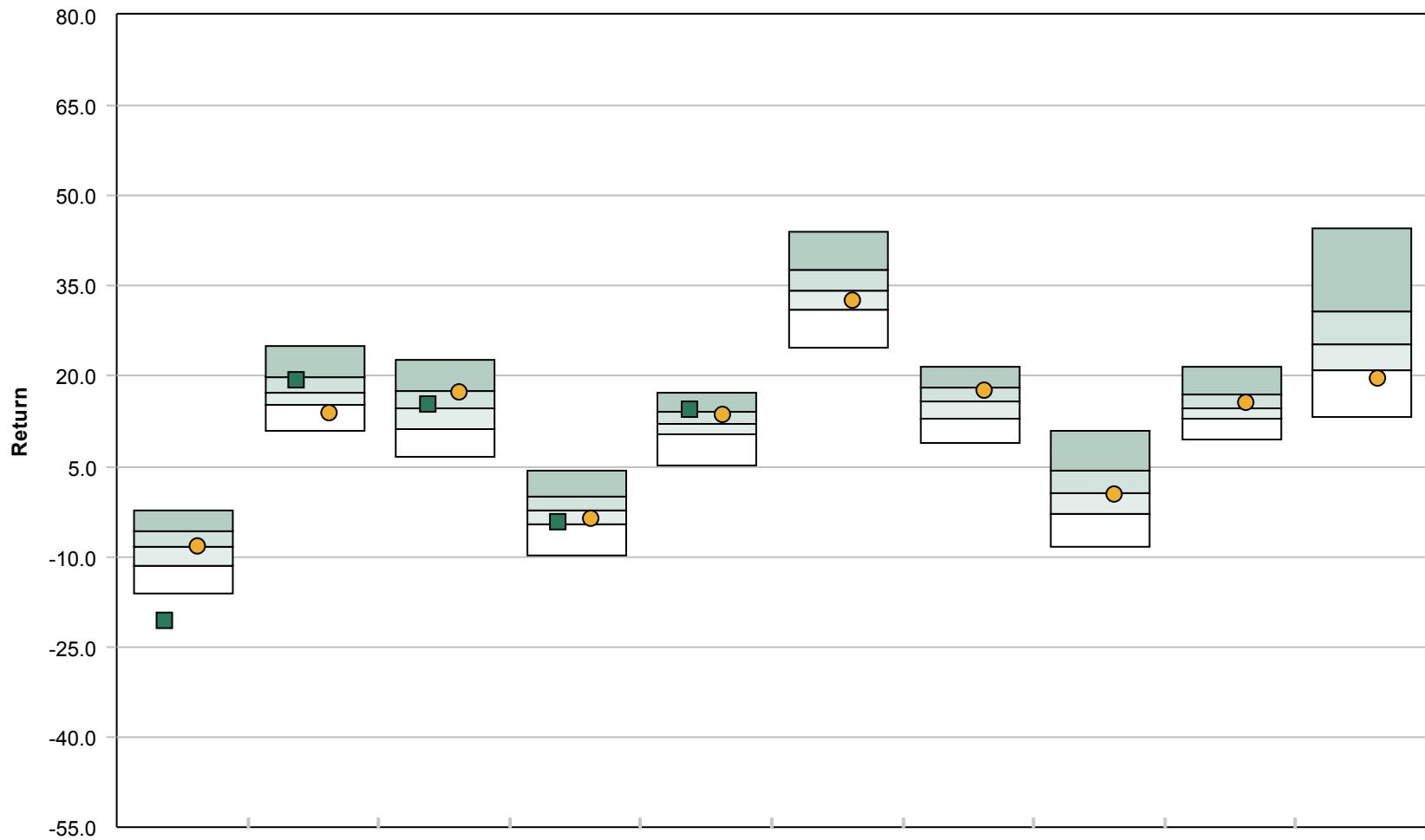
|                          | 1 Qtr      | YTD        | 1 Yr       | 2 Yrs     | 3 Yrs      | 5 Yrs     | 7 Yrs      | 10 Yrs     |
|--------------------------|------------|------------|------------|-----------|------------|-----------|------------|------------|
| Lyrical                  | 13.46 (18) | 13.46 (18) | -7.35 (99) | 0.41 (99) | 7.81 (93)  | 5.49 (91) | N/A        | N/A        |
| Russell 1000 Value Index | 11.93 (46) | 11.93 (46) | 5.67 (36)  | 6.31 (65) | 10.45 (65) | 7.72 (59) | 11.14 (60) | 14.52 (58) |
| 5th Percentile           | 15.47      | 15.47      | 11.24      | 11.99     | 14.37      | 11.18     | 13.46      | 17.02      |
| 1st Quartile             | 12.85      | 12.85      | 7.55       | 9.38      | 12.06      | 9.36      | 12.29      | 15.68      |
| Median                   | 11.76      | 11.76      | 4.23       | 7.28      | 11.10      | 8.03      | 11.45      | 14.80      |
| 3rd Quartile             | 10.60      | 10.60      | 1.58       | 5.57      | 9.70       | 7.06      | 10.57      | 13.97      |
| 95th Percentile          | 9.28       | 9.28       | -3.03      | 2.58      | 7.17       | 4.98      | 8.74       | 12.40      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. Large Cap Value Equity (SA+CF)

As of March 31, 2019



|                          | 2018         | 2017       | 2016       | 2015       | 2014       | 2013       | 2012       | 2011      | 2010       | 2009       |
|--------------------------|--------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|
| Lyrical                  | -20.80 (100) | 19.32 (31) | 15.33 (43) | -4.25 (72) | 14.28 (23) | N/A        | N/A        | N/A       | N/A        | N/A        |
| Russell 1000 Value Index | -8.27 (48)   | 13.66 (88) | 17.34 (26) | -3.83 (69) | 13.45 (35) | 32.53 (62) | 17.51 (29) | 0.39 (52) | 15.51 (41) | 19.69 (80) |
| 5th Percentile           | -2.29        | 24.95      | 22.66      | 4.28       | 17.12      | 44.06      | 21.67      | 10.90     | 21.45      | 44.56      |
| 1st Quartile             | -5.70        | 19.97      | 17.56      | 0.09       | 14.07      | 37.74      | 18.00      | 4.19      | 16.88      | 30.80      |
| Median                   | -8.44        | 17.22      | 14.52      | -2.25      | 12.19      | 34.26      | 15.67      | 0.61      | 14.59      | 25.24      |
| 3rd Quartile             | -11.47       | 15.12      | 11.29      | -4.75      | 10.31      | 31.11      | 12.95      | -2.99     | 12.83      | 20.97      |
| 95th Percentile          | -16.09       | 10.82      | 6.59       | -9.72      | 5.18       | 24.83      | 8.91       | -8.26     | 9.56       | 13.32      |

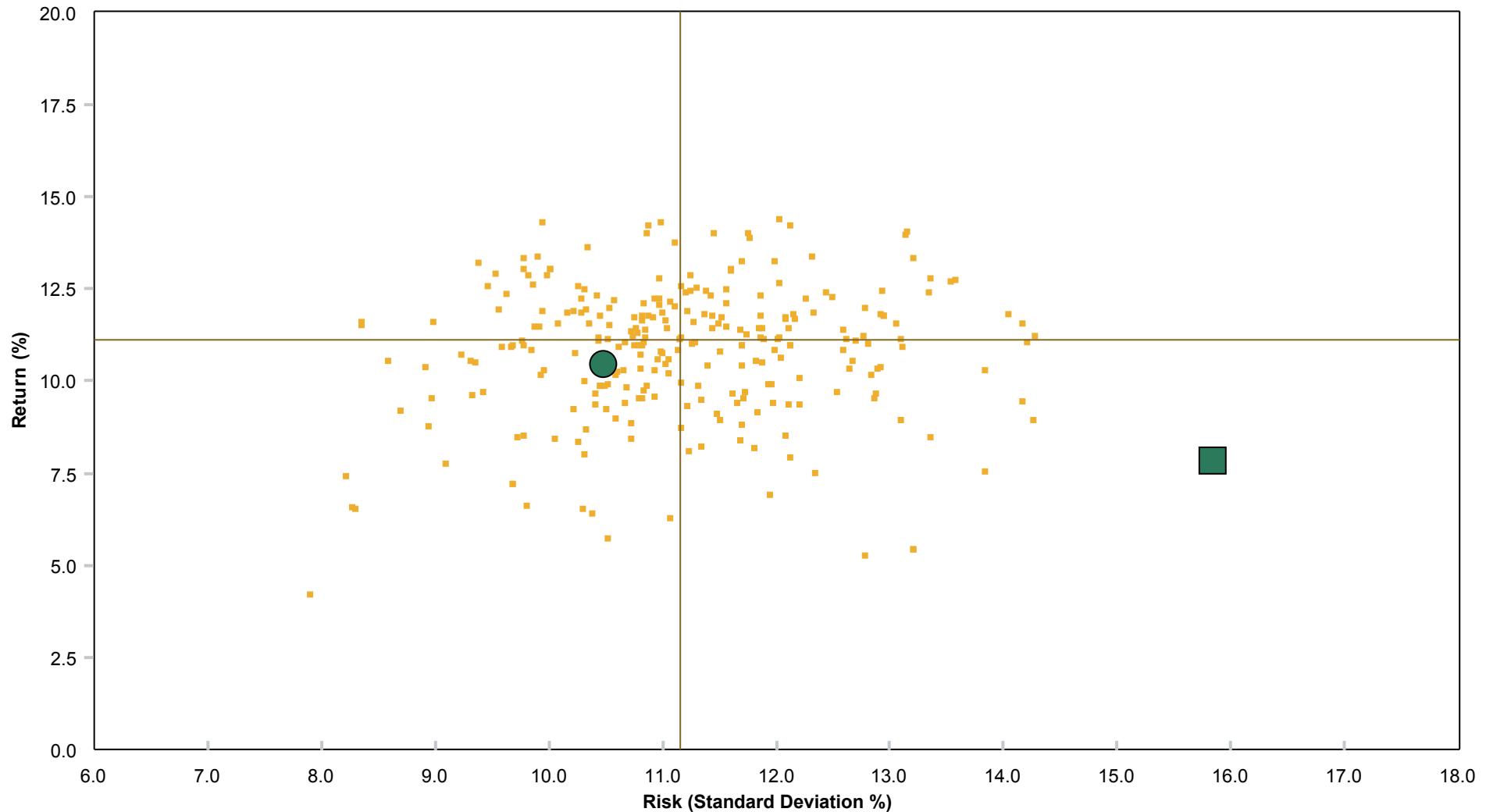
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Large Cap Value Equity (SA+CF)

3 Years Ending March 31, 2019



Calculation based on monthly periodicity.

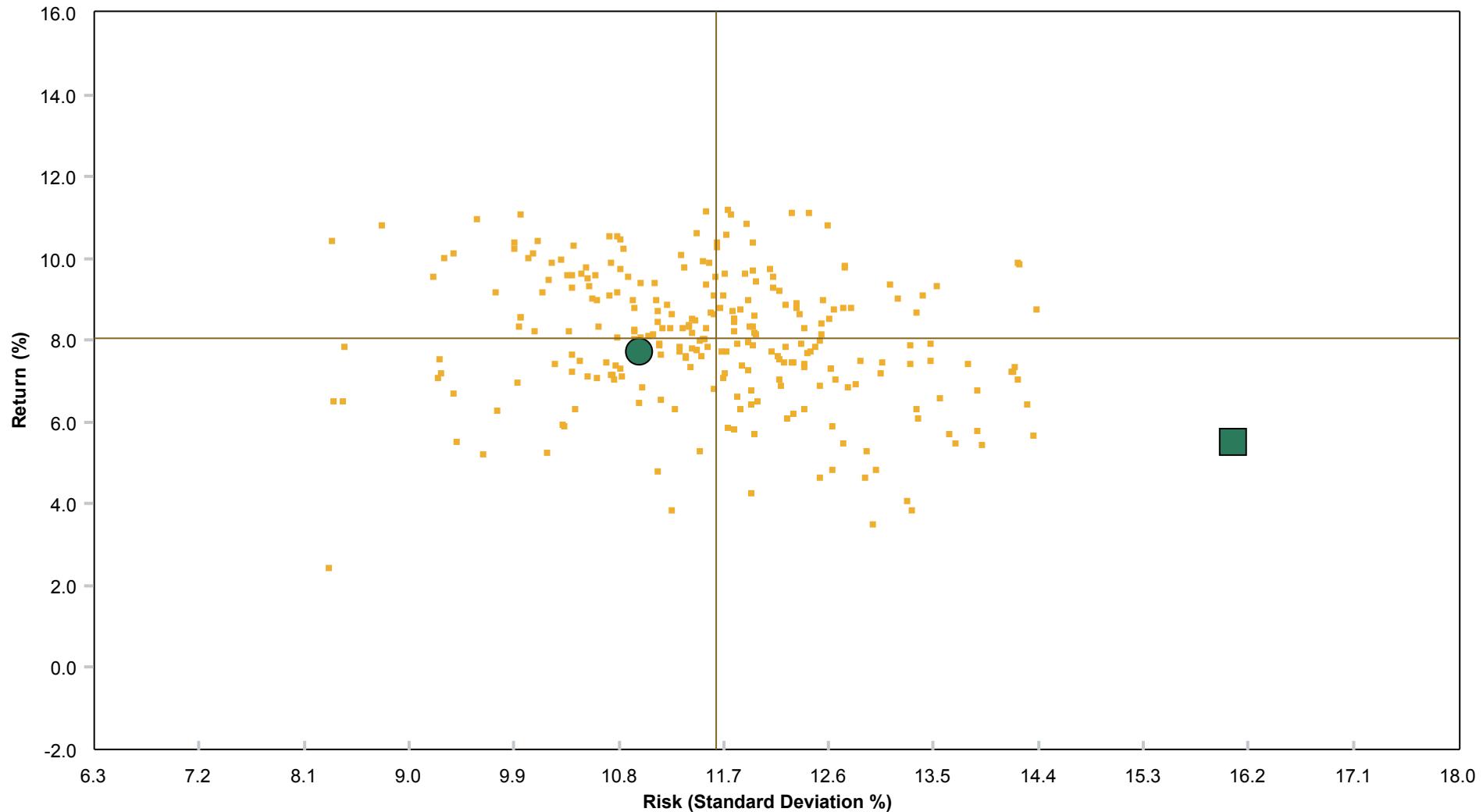
 Segal Marco Advisors

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Large Cap Value Equity (SA+CF)

5 Years Ending March 31, 2019



|                          | Return | Standard Deviation |
|--------------------------|--------|--------------------|
| Lyrical                  | 5.49   | 16.08              |
| Russell 1000 Value Index | 7.72   | 10.98              |
| Median                   | 8.05   | 11.63              |

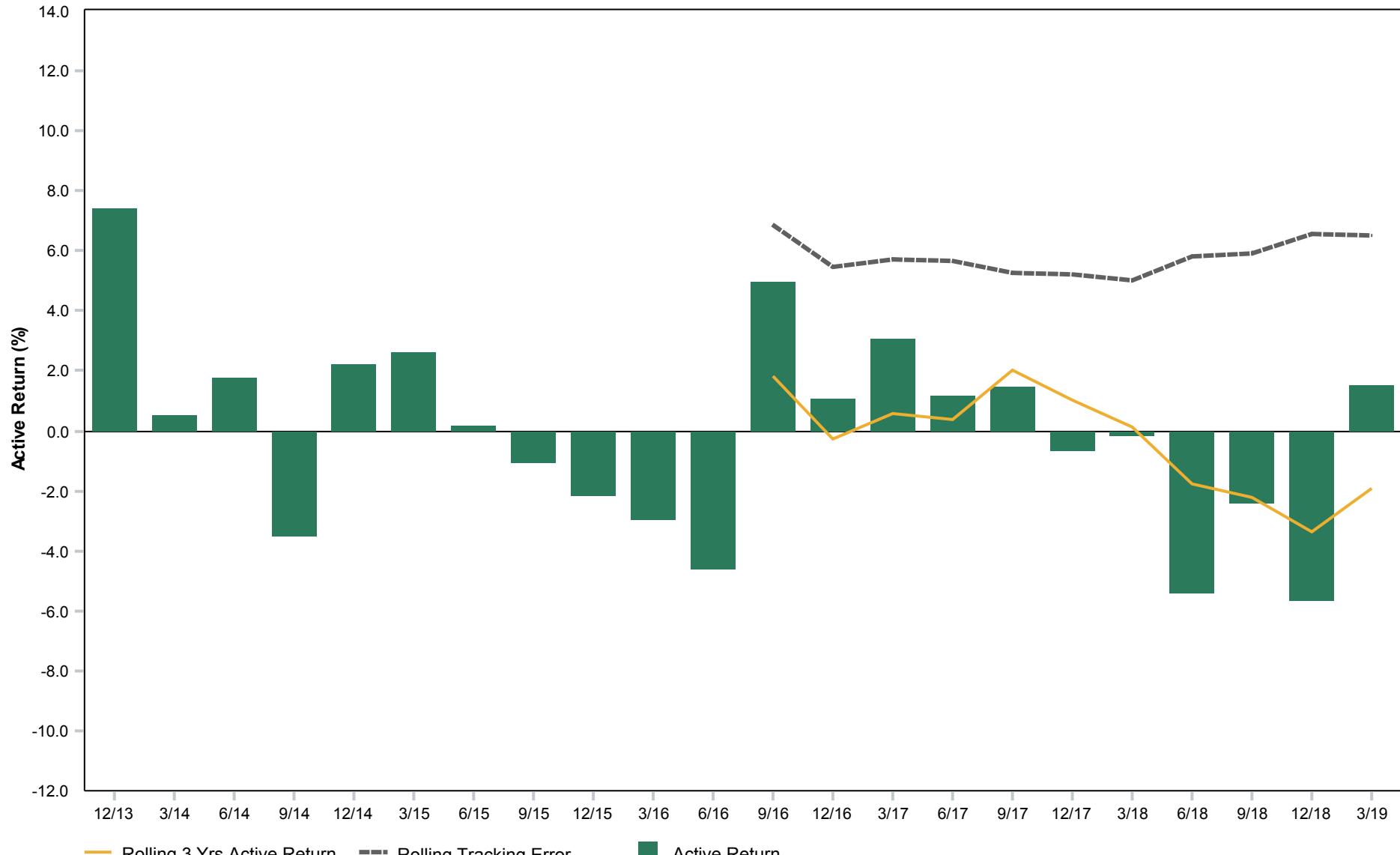
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                          | 1 Qtr | YTD   | 1 Yr   | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016  | 2015  |
|--------------------------|-------|-------|--------|-------|-------|-------|--------|--------|-------|-------|-------|
| Lyrical                  | 13.46 | 13.46 | -7.35  | 7.81  | 5.49  | N/A   | N/A    | -20.80 | 19.32 | 15.33 | -4.25 |
| Russell 1000 Value Index | 11.93 | 11.93 | 5.67   | 10.45 | 7.72  | 11.14 | 14.52  | -8.27  | 13.66 | 17.34 | -3.83 |
| Difference               | 1.53  | 1.53  | -13.02 | -2.64 | -2.23 | N/A   | N/A    | -12.53 | 5.66  | -2.01 | -0.42 |



■ Active Return

— Rolling 3 Yrs Active Return    - - - Rolling Tracking Error

## Bristol County Retirement System

Lyrical

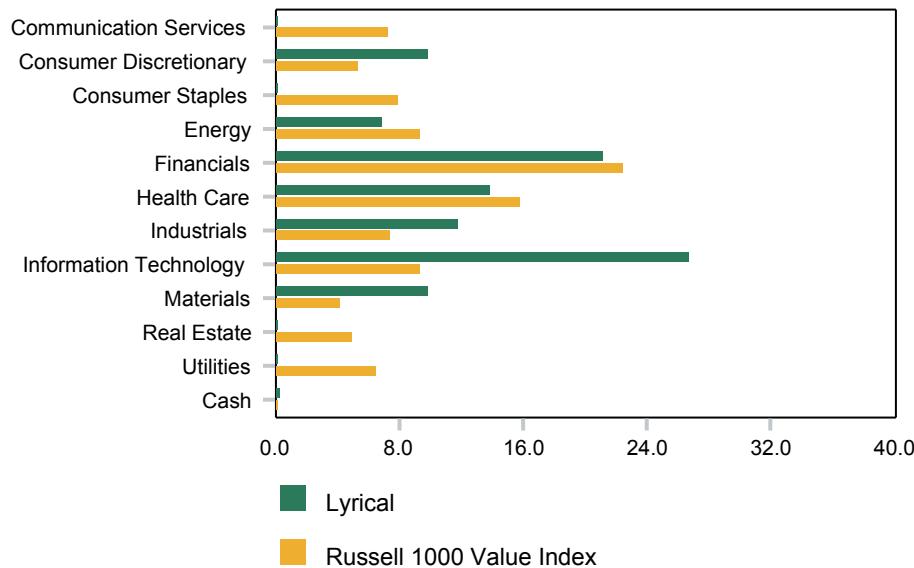
1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 13.93 |
| Portfolio Trading        | -0.47 |
| Actual Return            | 13.46 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | 1.52  |
|                          |       |
| Stock Selection          | 0.57  |
| Sector Selection         | 1.24  |
| Interaction              | 0.14  |
| Total Selection          | 1.95  |
|                          |       |
| Portfolio Trading        | -0.47 |
| Benchmark Trading        | -0.05 |
| Active Trading Impact    | -0.43 |
|                          |       |
| Buy & Hold Active Return | 1.52  |

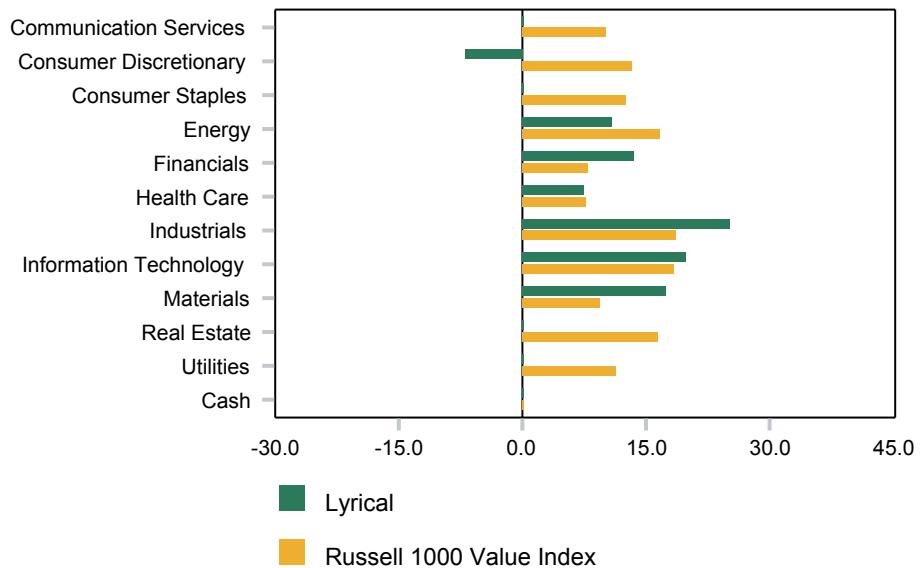
|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 0.00                    | 7.29      | 0.00   | 10.23     | 0.00        | 0.13   | 0.00        | 0.13  |
| Consumer Discretionary | 9.79                    | 5.23      | -6.96  | 13.22     | -1.05       | 0.06   | -0.92       | -1.92 |
| Consumer Staples       | 0.00                    | 7.83      | 0.00   | 12.47     | 0.00        | -0.04  | 0.00        | -0.04 |
| Energy                 | 6.85                    | 9.29      | 10.98  | 16.59     | -0.52       | -0.11  | 0.14        | -0.50 |
| Financials             | 21.11                   | 22.47     | 13.43  | 8.01      | 1.22        | 0.05   | -0.07       | 1.20  |
| Health Care            | 13.77                   | 15.74     | 7.56   | 7.64      | -0.01       | 0.09   | 0.00        | 0.07  |
| Industrials            | 11.80                   | 7.35      | 25.07  | 18.63     | 0.47        | 0.30   | 0.29        | 1.06  |
| Information Technology | 26.67                   | 9.31      | 19.94  | 18.46     | 0.14        | 1.12   | 0.26        | 1.52  |
| Materials              | 9.75                    | 4.07      | 17.49  | 9.43      | 0.33        | -0.14  | 0.46        | 0.64  |
| Real Estate            | 0.00                    | 4.95      | 0.00   | 16.51     | 0.00        | -0.22  | 0.00        | -0.22 |
| Utilities              | 0.00                    | 6.47      | 0.00   | 11.34     | 0.00        | 0.04   | 0.00        | 0.04  |
| Cash                   | 0.25                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.03  | 0.00        | -0.03 |
| Total                  | 100.00                  | 100.00    | 13.93  | 11.98     | 0.57        | 1.24   | 0.14        | 1.95  |

## Bristol County Retirement System

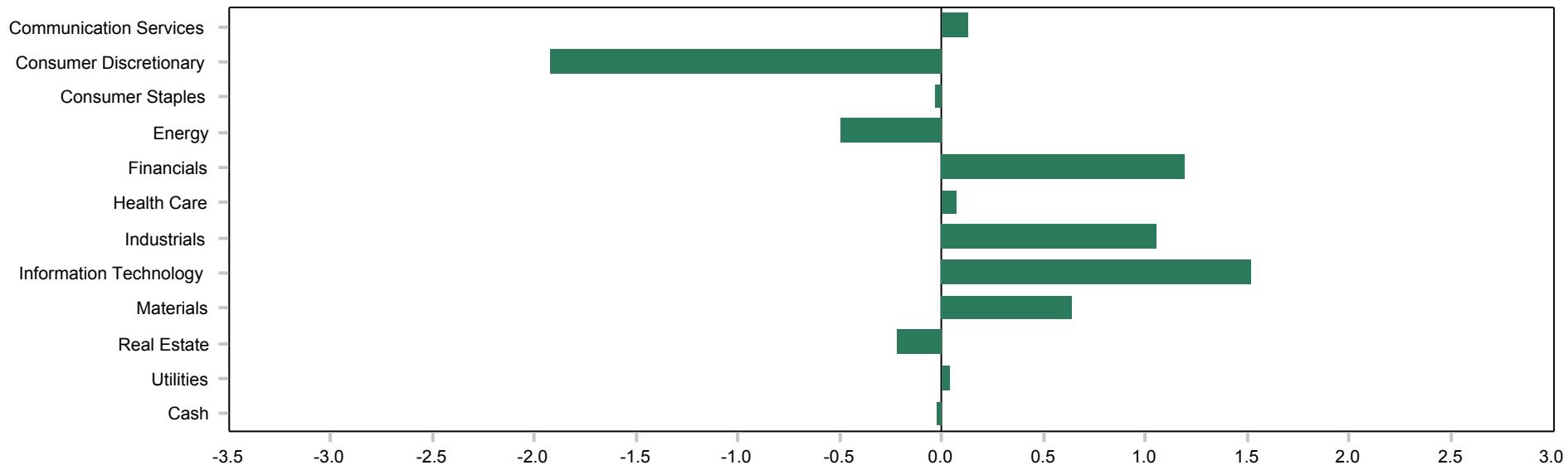
### Allocation



### Performance



### Total Attribution



## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 13.93 |
| Portfolio Trading        | -0.47 |
| Actual Return            | 13.46 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | 1.52  |
|                          |       |
| Stock Selection          | 0.87  |
| Style Selection          | 1.39  |
| Interaction              | -0.31 |
| Total Selection          | 1.95  |
|                          |       |
| Portfolio Trading        | -0.47 |
| Benchmark Trading        | -0.05 |
| Active Trading Impact    | -0.43 |
|                          |       |
| Buy & Hold Active Return | 1.52  |

### Performance-1 Quarter Ending March 31, 2019

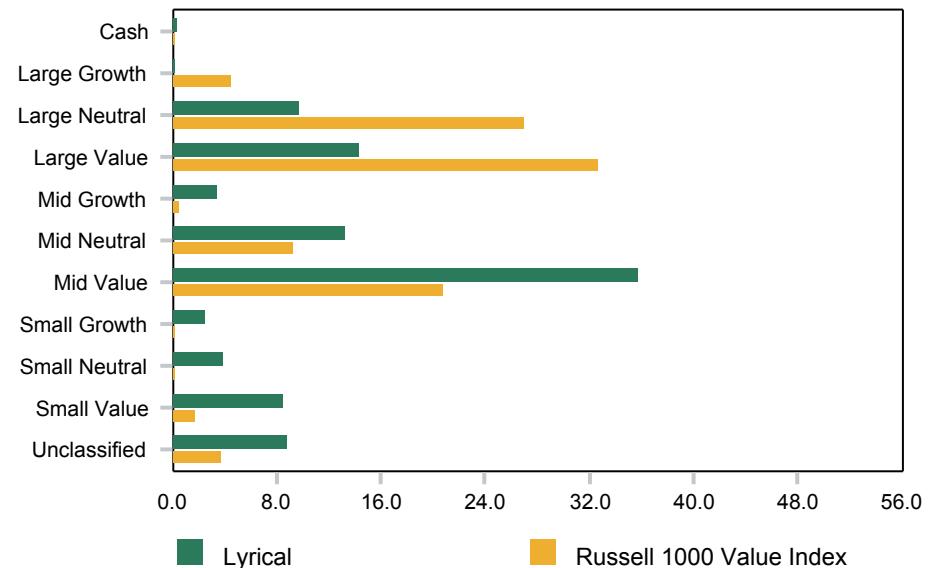
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             |       |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction | Total |
| Cash          | 0.25                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.03 | 0.00        | -0.03 |
| Large Growth  | 0.00                  | 4.49      | 0.00      | 7.71      | 0.00        | 0.19  | 0.00        | 0.19  |
| Large Neutral | 9.69                  | 26.99     | 16.13     | 11.17     | 1.34        | 0.14  | -0.86       | 0.62  |
| Large Value   | 14.21                 | 32.75     | 11.05     | 10.38     | 0.22        | 0.30  | -0.12       | 0.39  |
| Mid Growth    | 3.36                  | 0.54      | 31.27     | 9.70      | 0.12        | -0.06 | 0.61        | 0.66  |
| Mid Neutral   | 13.21                 | 9.17      | 17.10     | 16.57     | 0.05        | 0.19  | 0.02        | 0.26  |
| Mid Value     | 35.80                 | 20.65     | 11.08     | 13.87     | -0.57       | 0.29  | -0.42       | -0.71 |
| Small Growth  | 2.45                  | 0.03      | 18.24     | 16.39     | 0.00        | 0.11  | 0.04        | 0.15  |
| Small Neutral | 3.87                  | 0.12      | 34.63     | 9.93      | 0.03        | -0.08 | 0.93        | 0.88  |
| Small Value   | 8.36                  | 1.64      | 13.98     | 15.53     | -0.03       | 0.24  | -0.10       | 0.11  |
| Unclassified  | 8.80                  | 3.62      | 6.40      | 14.18     | -0.28       | 0.11  | -0.40       | -0.57 |
| Total         | 100.00                | 100.00    | 13.93     | 11.98     | 0.87        | 1.39  | -0.31       | 1.95  |

## Bristol County Retirement System

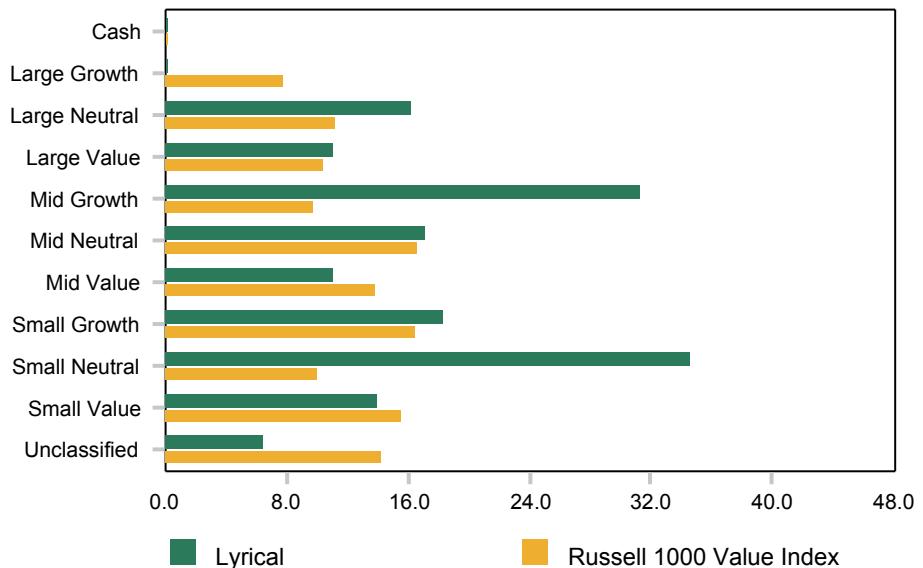
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

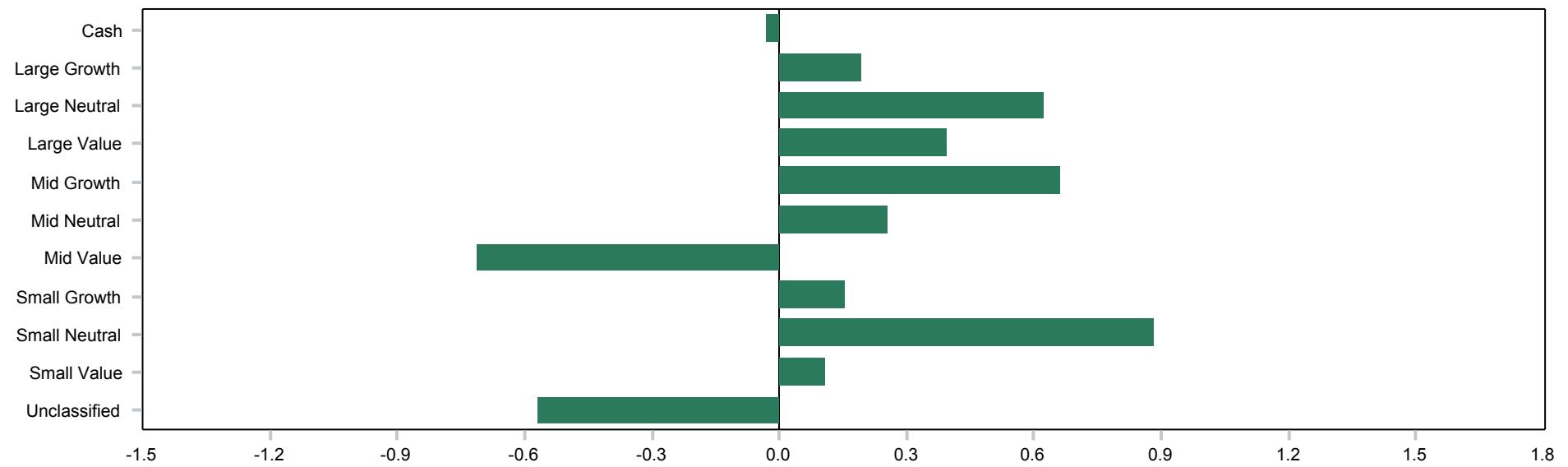
### Allocation



### Performance



### Total Attribution



As of March 31, 2019

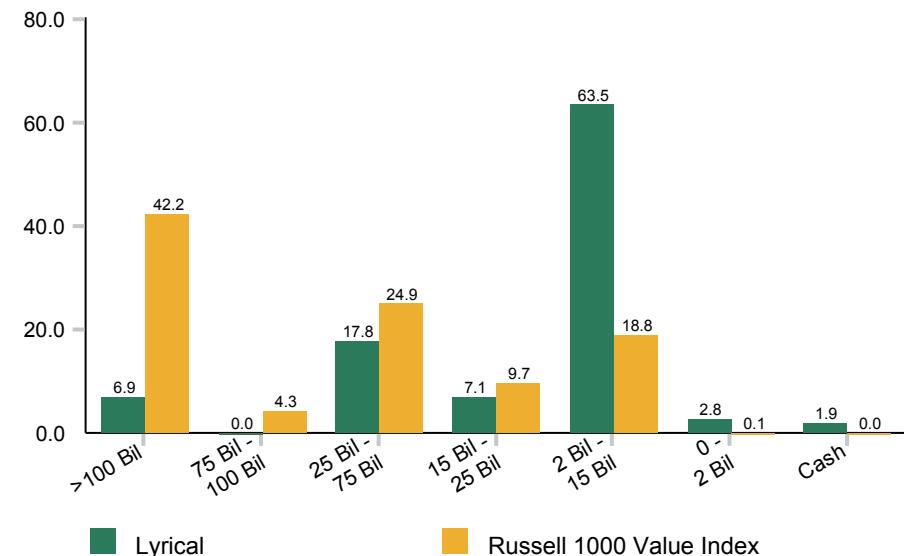
## Top Ten Equity Holdings

|                       | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|-----------------------|----------------------|----------------------|-------------------|----------------------|
| Broadcom Inc          | 6.93                 | 0.38                 | 6.55              | 19.34                |
| HCA Healthcare Inc    | 5.71                 | 0.08                 | 5.63              | 5.07                 |
| AerCap Holdings NV    | 4.62                 | 0.00                 | 4.62              | 17.52                |
| Celanese Corp         | 4.53                 | 0.04                 | 4.49              | 10.19                |
| AFLAC Inc             | 4.08                 | 0.29                 | 3.79              | 10.35                |
| Assurant Inc.         | 4.05                 | 0.04                 | 4.01              | 6.76                 |
| Crown Holdings Inc    | 3.96                 | 0.00                 | 3.96              | 31.27                |
| Tech Data Corp        | 3.79                 | 0.00                 | 3.79              | 25.18                |
| Lincoln National Corp | 3.77                 | 0.10                 | 3.67              | 15.18                |
| Hanesbrands Inc       | 3.70                 | 0.00                 | 3.70              | 43.84                |
| % of Portfolio        | 45.14                | 0.93                 | 44.21             |                      |

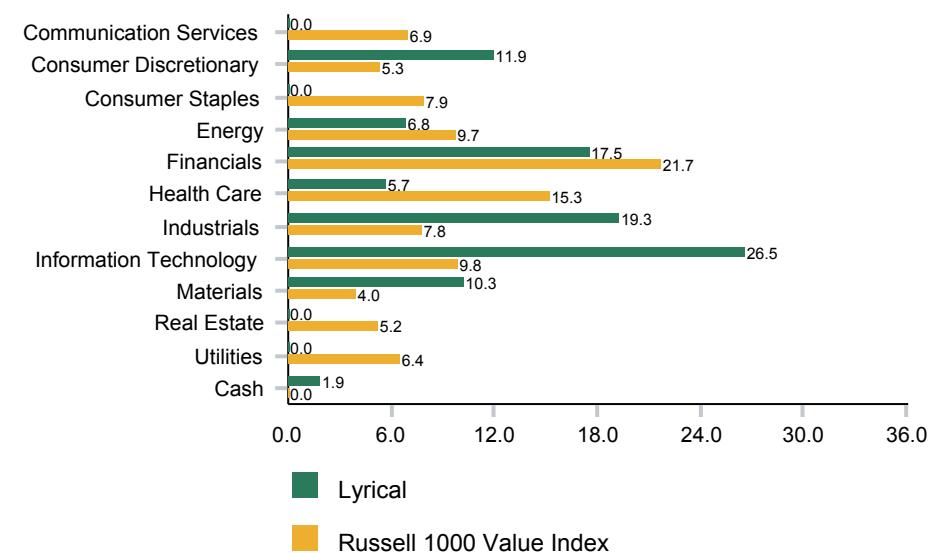
## Portfolio Characteristics

|                           | Portfolio      | Benchmark       |
|---------------------------|----------------|-----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 22,003,182,494 | 126,580,444,413 |
| Median Mkt. Cap (\$)      | 6,961,685,920  | 9,111,400,470   |
| Price/Earnings ratio      | 13.44          | 17.18           |
| Price/Book ratio          | 2.18           | 2.21            |
| 5 Yr. EPS Growth Rate (%) | 12.52          | 6.12            |
| Current Yield (%)         | 1.61           | 2.65            |
| Beta (5 Years, Monthly)   | 1.34           | 1.00            |
| Number of Stocks          | 34             | 722             |

## Distribution of Market Capitalization (%)



## Sector Weights (%)

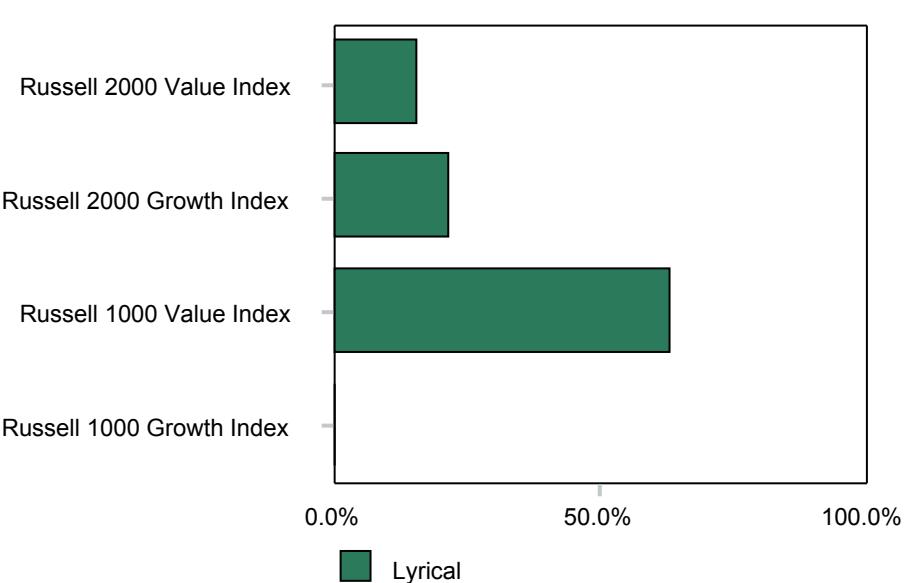


## Bristol County Retirement System

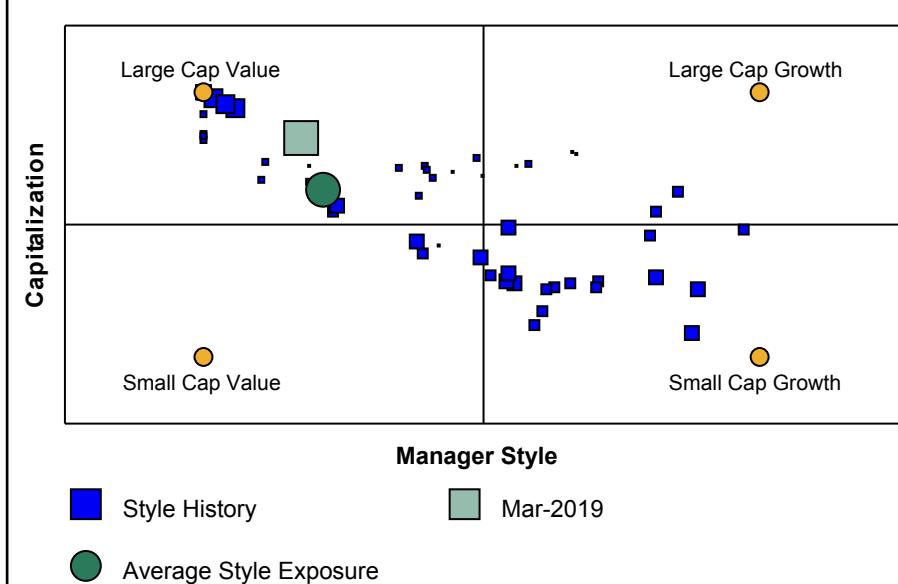
## Style Analysis

Ending March 31, 2019

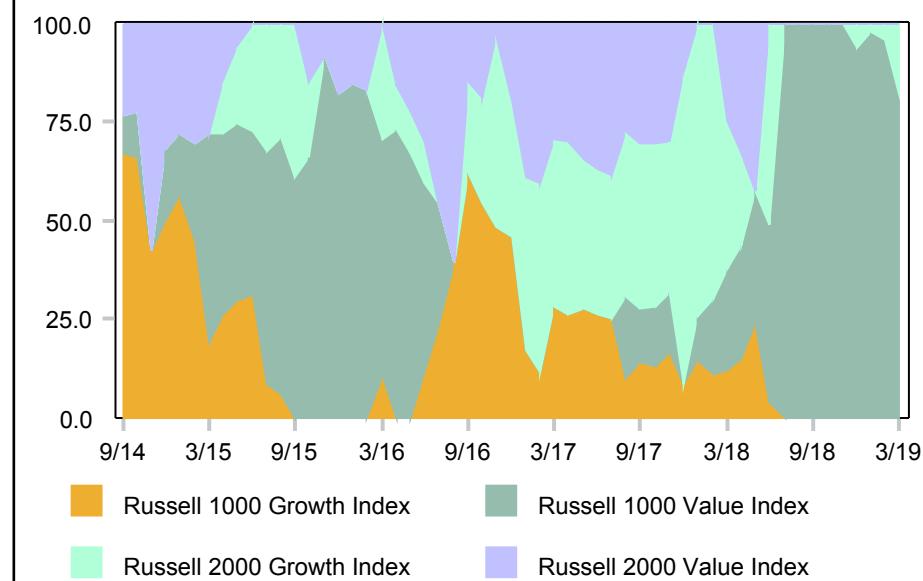
### Investment Style Exposure



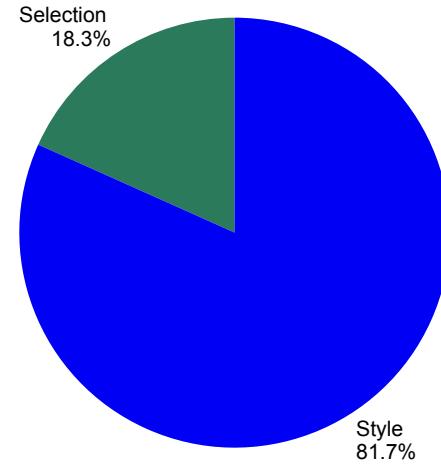
### Style Map(ppp)



### Style History(ppp)



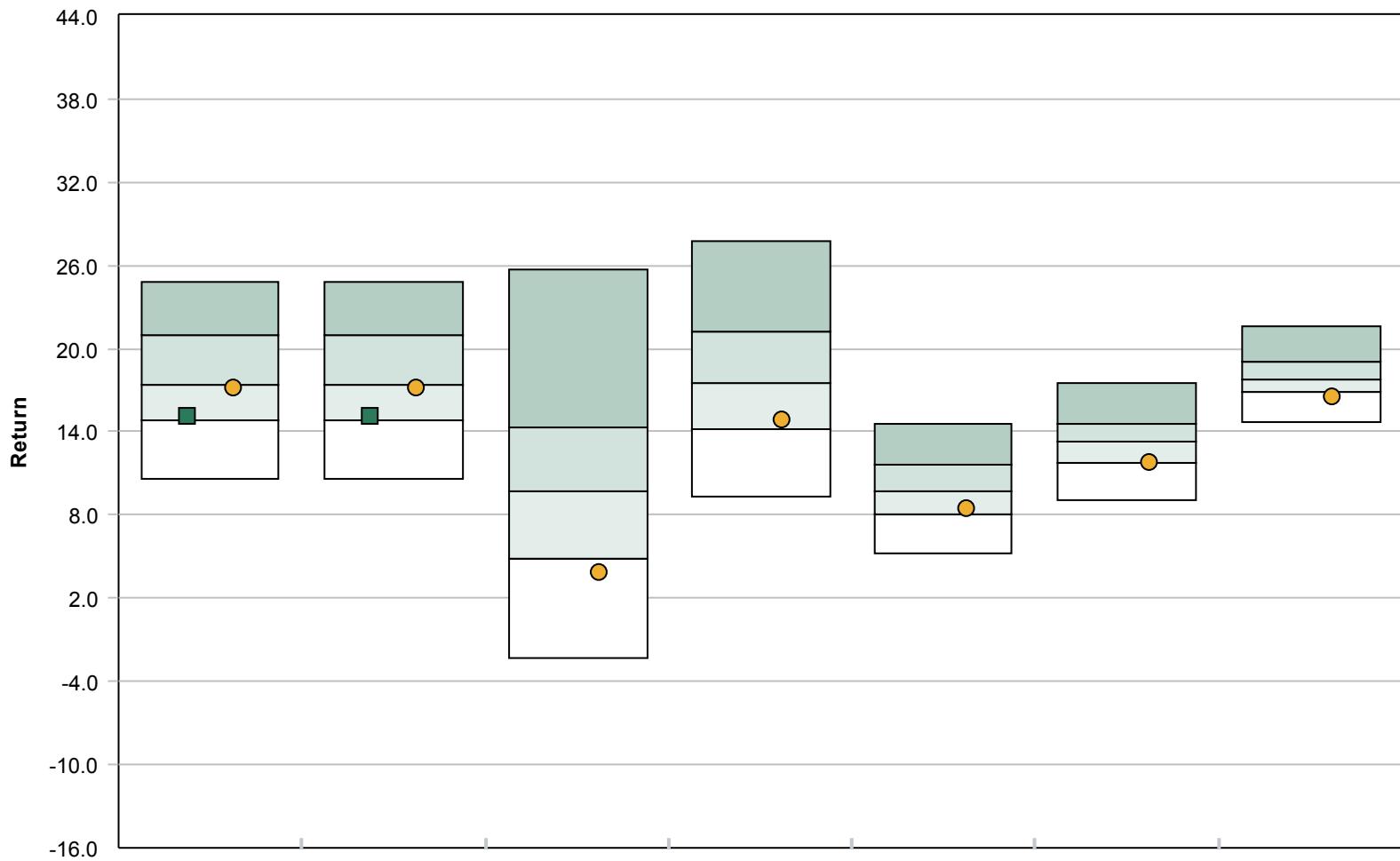
### Return Variance



## Bristol County Retirement System

## IM U.S. Small Cap Growth Equity (SA+CF)

As of March 31, 2019



■ Frontier Capital Appreciation

● Russell 2000 Growth Index

**1 Qtr**      **YTD**      **1 Yr**      **3 Yrs**      **5 Yrs**      **7 Yrs**      **10 Yrs**

|                 |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| 5th Percentile  | 24.86 | 24.86 | 25.66 | 27.71 | 14.62 | 17.57 | 21.61 |
| 1st Quartile    | 20.97 | 20.97 | 14.28 | 21.24 | 11.63 | 14.61 | 19.03 |
| Median          | 17.44 | 17.44 | 9.72  | 17.54 | 9.65  | 13.32 | 17.72 |
| 3rd Quartile    | 14.88 | 14.88 | 4.87  | 14.25 | 8.11  | 11.80 | 16.87 |
| 95th Percentile | 10.57 | 10.57 | -2.32 | 9.30  | 5.20  | 9.07  | 14.68 |

Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

**Bristol County Retirement System**
**Frontier Capital Appreciation**

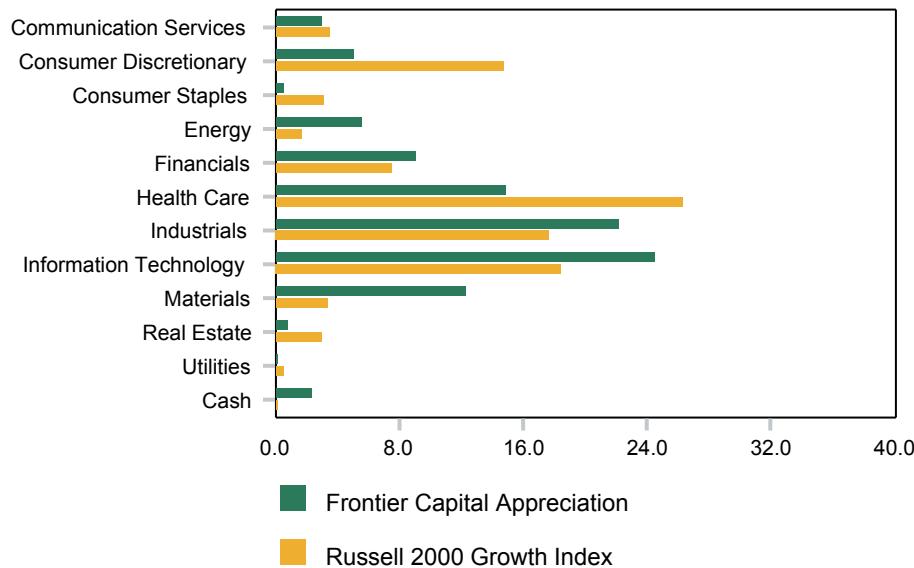
1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 15.87 |
| Portfolio Trading        | -0.75 |
| Actual Return            | 15.12 |
| Benchmark Return         | 17.14 |
| Actual Active Return     | -2.03 |
|                          |       |
| Stock Selection          | -0.05 |
| Sector Selection         | 0.40  |
| Interaction              | -1.16 |
| Total Selection          | -0.81 |
|                          |       |
| Portfolio Trading        | -0.75 |
| Benchmark Trading        | 0.46  |
| Active Trading Impact    | -1.22 |
|                          |       |
| Buy & Hold Active Return | -2.03 |

|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 3.03                    | 3.53      | 10.83  | 15.23     | -0.16       | 0.01   | 0.02        | -0.13 |
| Consumer Discretionary | 5.07                    | 14.77     | 16.59  | 15.92     | 0.10        | 0.07   | -0.07       | 0.11  |
| Consumer Staples       | 0.46                    | 3.11      | 12.53  | 6.93      | 0.17        | 0.26   | -0.15       | 0.28  |
| Energy                 | 5.55                    | 1.72      | 12.40  | 22.78     | -0.18       | 0.23   | -0.40       | -0.34 |
| Financials             | 9.00                    | 7.47      | 8.37   | 10.48     | -0.16       | -0.10  | -0.03       | -0.28 |
| Health Care            | 14.89                   | 26.32     | 18.02  | 16.72     | 0.34        | 0.00   | -0.15       | 0.19  |
| Industrials            | 22.19                   | 17.73     | 11.47  | 13.54     | -0.37       | -0.14  | -0.09       | -0.60 |
| Information Technology | 24.52                   | 18.49     | 22.94  | 23.75     | -0.15       | 0.43   | -0.05       | 0.23  |
| Materials              | 12.20                   | 3.38      | 17.25  | 17.18     | 0.00        | 0.04   | 0.01        | 0.05  |
| Real Estate            | 0.78                    | 2.96      | 31.10  | 19.69     | 0.34        | -0.07  | -0.25       | 0.02  |
| Utilities              | 0.00                    | 0.52      | 0.00   | 9.07      | 0.00        | 0.04   | 0.00        | 0.04  |
| Cash                   | 2.29                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.38  | 0.00        | -0.38 |
| Total                  | 100.00                  | 100.00    | 15.87  | 16.68     | -0.05       | 0.40   | -1.16       | -0.81 |

## Bristol County Retirement System

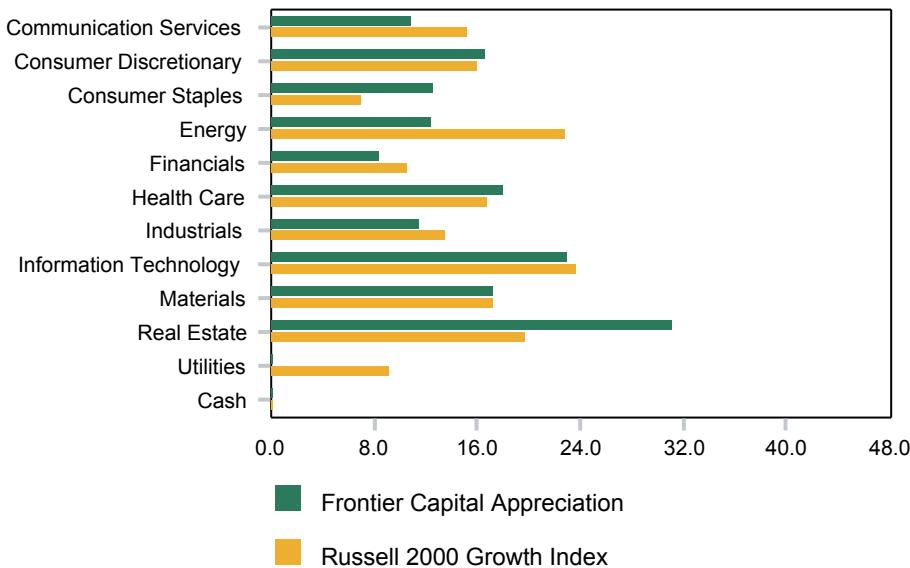
### Allocation



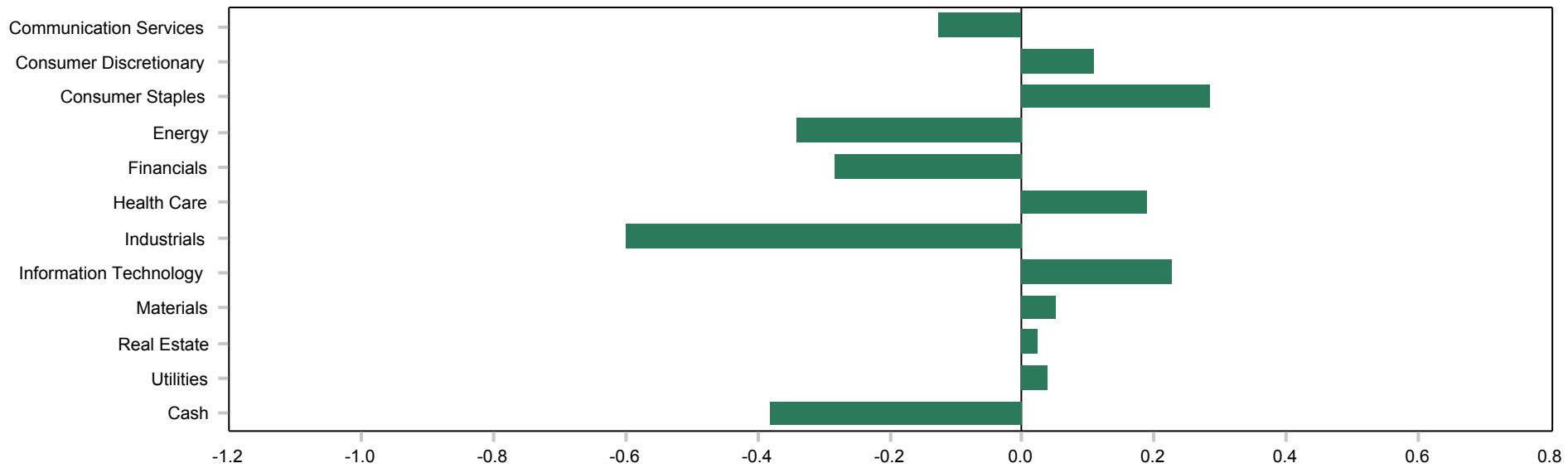
## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

### Performance



### Total Attribution



## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 15.87 |
| Portfolio Trading        | -0.75 |
| Actual Return            | 15.12 |
| Benchmark Return         | 17.14 |
| Actual Active Return     | -2.03 |
|                          |       |
| Stock Selection          | 3.13  |
| Style Selection          | 1.84  |
| Interaction              | -5.78 |
| Total Selection          | -0.81 |
|                          |       |
| Portfolio Trading        | -0.75 |
| Benchmark Trading        | 0.46  |
| Active Trading Impact    | -1.22 |
|                          |       |
| Buy & Hold Active Return | -2.03 |

### Performance-1 Quarter Ending March 31, 2019

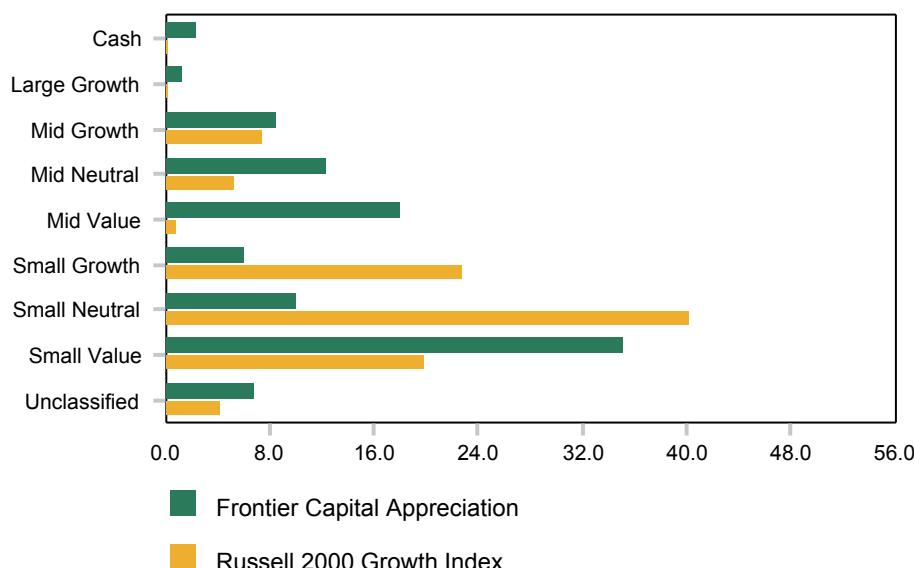
|               | Allocation-01/01/2019 |           | Performance-1 Quarter Ending<br>March 31, 2019 |           | Attribution |       |             | Total |
|---------------|-----------------------|-----------|--|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio                                      | Benchmark | Stock       | Style | Interaction |       |
| Cash          | 2.29                  | 0.00      | 0.00   | 0.00      | 0.00        | -0.38 | 0.00        | -0.38 |
| Large Growth  | 1.19                  | 0.00      | 24.91  | 0.00      | 0.00        | 0.10  | 0.00        | 0.10  |
| Mid Growth    | 8.43                  | 7.35      | 17.00  | 21.24     | -0.31       | 0.05  | -0.05       | -0.31 |
| Mid Neutral   | 12.24                 | 5.28      | 17.97  | 14.47     | 0.18        | -0.15 | 0.24        | 0.27  |
| Mid Value     | 17.91                 | 0.71      | 10.75  | 29.22     | -0.13       | 2.16  | -3.18       | -1.15 |
| Small Growth  | 5.93                  | 22.69     | 23.97  | 18.29     | 1.29        | -0.27 | -0.95       | 0.07  |
| Small Neutral | 10.05                 | 40.17     | 21.03  | 15.24     | 2.32        | 0.43  | -1.74       | 1.01  |
| Small Value   | 35.20                 | 19.72     | 17.27  | 15.57     | 0.33        | -0.17 | 0.26        | 0.43  |
| Unclassified  | 6.77                  | 4.08      | 5.99   | 19.70     | -0.56       | 0.08  | -0.37       | -0.85 |
| Total         | 100.00                | 100.00    | 15.87  | 16.68     | 3.13        | 1.84  | -5.78       | -0.81 |

## Bristol County Retirement System

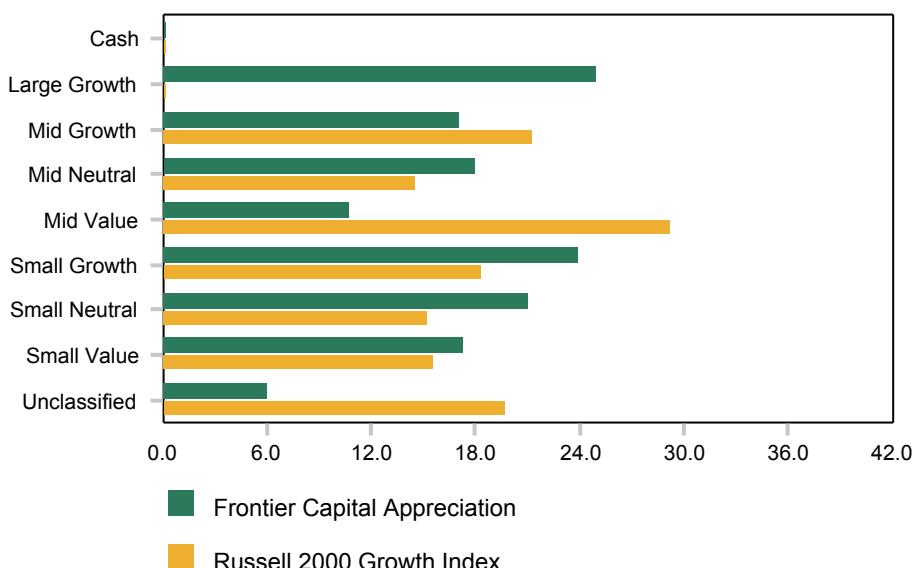
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

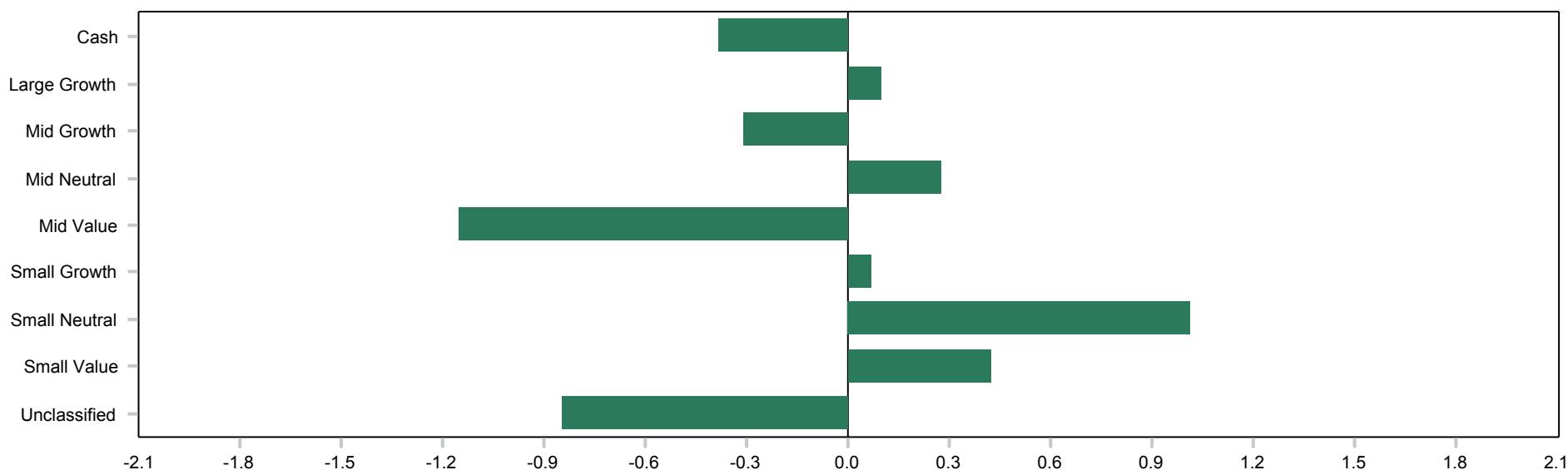
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## Frontier Capital Appreciation

As of March 31, 2019

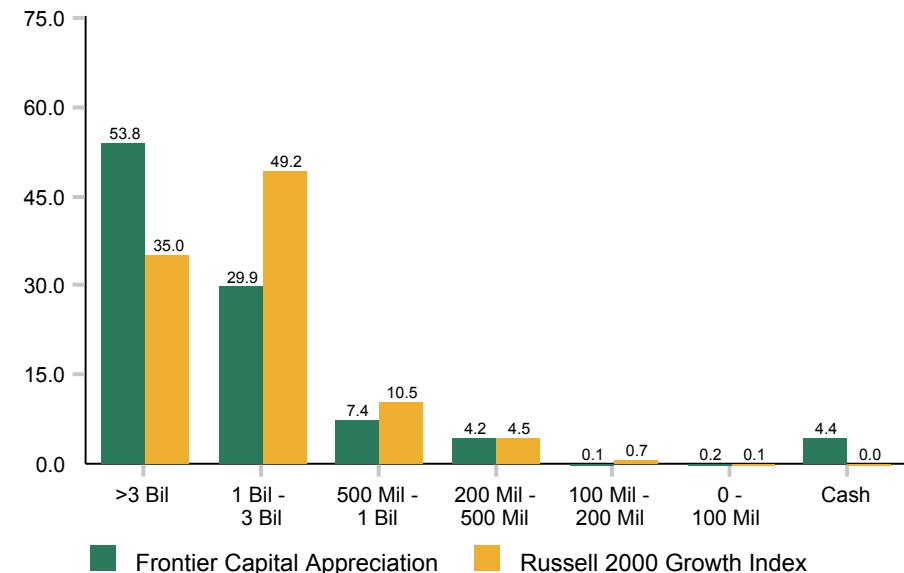
### Top Ten Equity Holdings

|                                    | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|------------------------------------|----------------------|----------------------|-------------------|----------------------|
| United Continental Holdings Inc    | 2.93                 | 0.00                 | 2.93              | -4.72                |
| Insulet Corp                       | 2.33                 | 0.00                 | 2.33              | 19.88                |
| Tutor Perini Corp                  | 2.29                 | 0.00                 | 2.29              | 7.20                 |
| Allegheny Technologies Inc         | 2.12                 | 0.00                 | 2.12              | 17.45                |
| Cooper Companies Inc. (The)        | 2.03                 | 0.00                 | 2.03              | 16.39                |
| Tandem Diabetes Care Inc           | 1.89                 | 0.30                 | 1.59              | 67.24                |
| Monolithic Power Systems Inc       | 1.64                 | 0.00                 | 1.64              | 16.90                |
| Cogent Communications Holdings Inc | 1.55                 | 0.21                 | 1.34              | 21.43                |
| Rogers Corp.                       | 1.52                 | 0.14                 | 1.38              | 60.39                |
| Qorvo Inc                          | 1.48                 | 0.00                 | 1.48              | 18.11                |
| % of Portfolio                     | 19.78                | 0.65                 | 19.13             |                      |

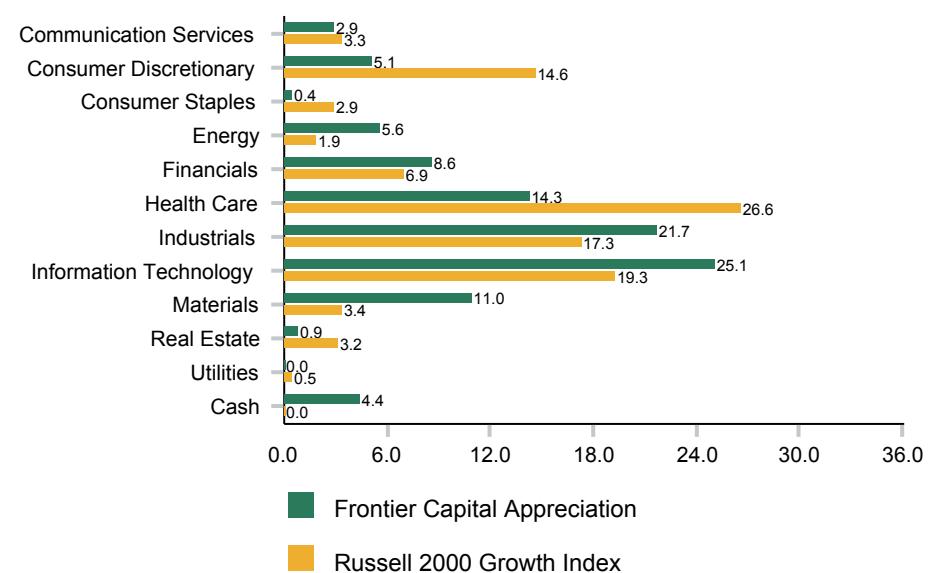
### Portfolio Characteristics

|                           | Portfolio     | Benchmark     |
|---------------------------|---------------|---------------|
| Wtd. Avg. Mkt. Cap (\$)   | 5,356,900,441 | 2,647,686,206 |
| Median Mkt. Cap (\$)      | 2,690,900,640 | 874,532,400   |
| Price/Earnings ratio      | 18.98         | 22.12         |
| Price/Book ratio          | 2.53          | 3.91          |
| 5 Yr. EPS Growth Rate (%) | 11.74         | 16.55         |
| Current Yield (%)         | 0.90          | 0.72          |
| Beta                      | N/A           | 1.00          |
| Number of Stocks          | 144           | 1,239         |

### Distribution of Market Capitalization (%)



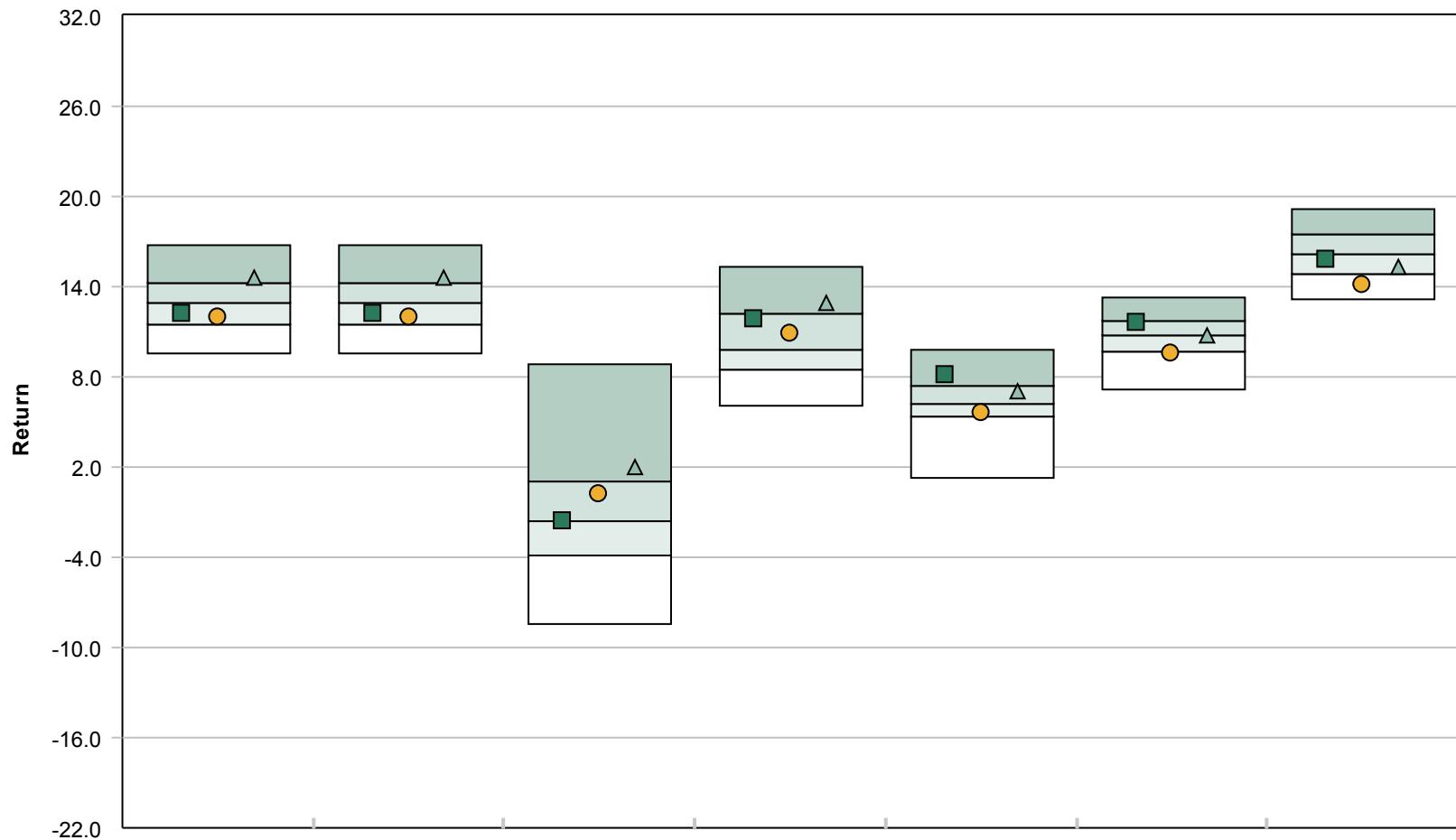
### Sector Weights (%)



## Bristol County Retirement System

## IM U.S. Small Cap Value Equity (SA+CF)

As of March 31, 2019



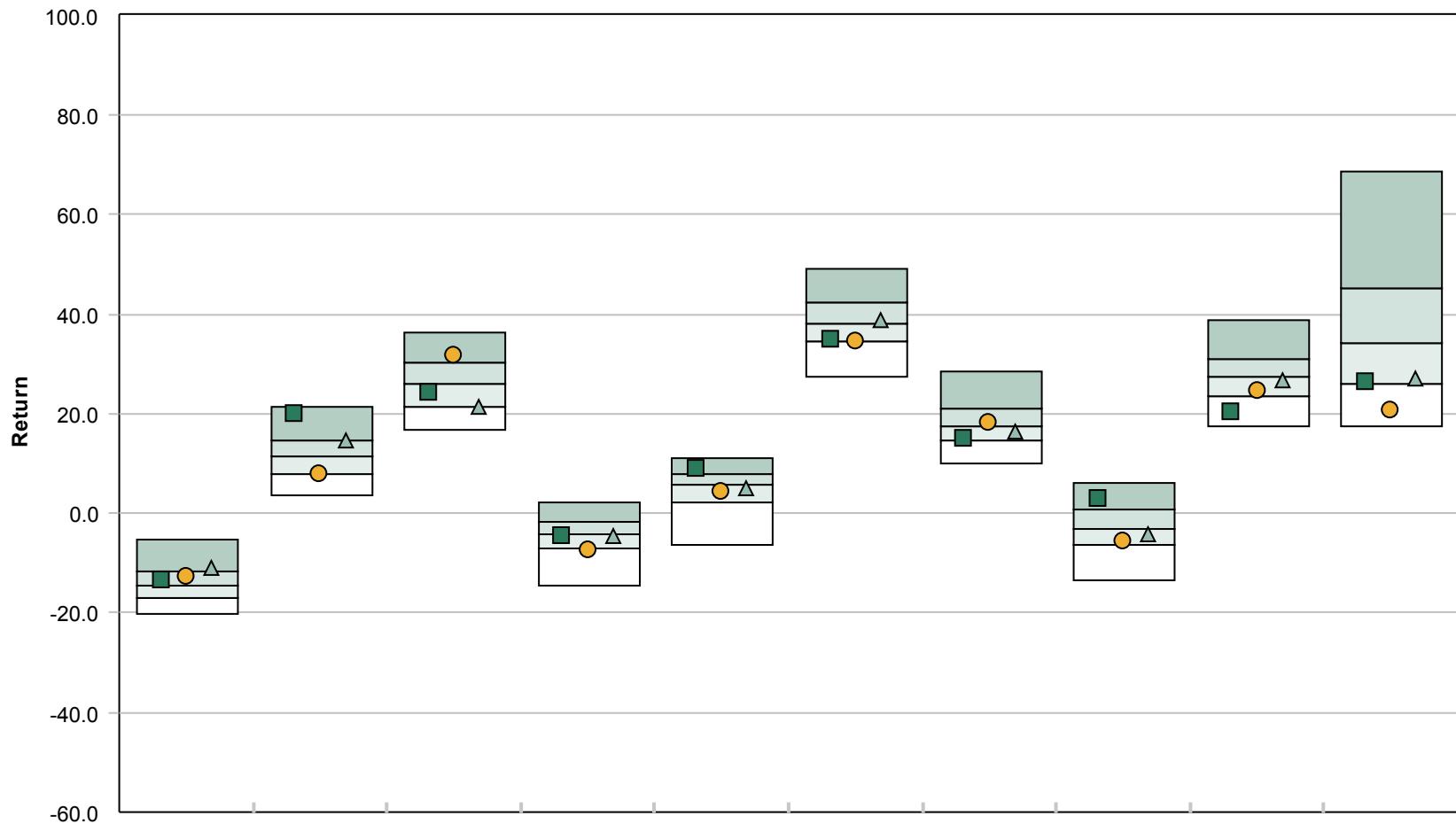
|                          | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs      | 5 Yrs     | 7 Yrs      | 10 Yrs     |
|--------------------------|------------|------------|------------|------------|-----------|------------|------------|
| Earnest Partners         | 12.21 (65) | 12.21 (65) | -1.59 (50) | 11.80 (29) | 8.10 (19) | 11.59 (27) | 15.76 (62) |
| Russell 2000 Value Index | 11.93 (72) | 11.93 (72) | 0.17 (33)  | 10.86 (36) | 5.59 (67) | 9.61 (79)  | 14.12 (86) |
| Russell 2000 Index       | 14.58 (21) | 14.58 (21) | 2.05 (22)  | 12.92 (19) | 7.05 (33) | 10.74 (49) | 15.36 (69) |
| 5th Percentile           | 16.80      | 16.80      | 8.87       | 15.27      | 9.83      | 13.22      | 19.13      |
| 1st Quartile             | 14.22      | 14.22      | 1.02       | 12.19      | 7.45      | 11.70      | 17.49      |
| Median                   | 12.95      | 12.95      | -1.63      | 9.78       | 6.24      | 10.70      | 16.21      |
| 3rd Quartile             | 11.48      | 11.48      | -3.93      | 8.43       | 5.33      | 9.72       | 14.83      |
| 95th Percentile          | 9.59       | 9.59       | -8.42      | 6.12       | 1.25      | 7.18       | 13.15      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. Small Cap Value Equity (SA+CF)

As of March 31, 2019



|                          | 2018        | 2017       | 2016       | 2015       | 2014      | 2013       | 2012       | 2011       | 2010       | 2009       |
|--------------------------|-------------|------------|------------|------------|-----------|------------|------------|------------|------------|------------|
| Earnest Partners         | -13.38 (40) | 20.01 (7)  | 24.39 (62) | -4.51 (54) | 8.89 (14) | 34.88 (74) | 14.90 (74) | 2.76 (12)  | 20.45 (90) | 26.39 (74) |
| Russell 2000 Value Index | -12.86 (36) | 7.84 (75)  | 31.74 (16) | -7.47 (78) | 4.22 (65) | 34.52 (75) | 18.05 (47) | -5.50 (68) | 24.50 (71) | 20.58 (87) |
| Russell 2000 Index       | -11.01 (23) | 14.65 (25) | 21.31 (78) | -4.41 (52) | 4.89 (58) | 38.82 (46) | 16.35 (60) | -4.18 (60) | 26.85 (55) | 27.17 (71) |
| 5th Percentile           | -5.36       | 21.37      | 36.53      | 2.26       | 11.24     | 49.29      | 28.61      | 6.05       | 38.99      | 68.71      |
| 1st Quartile             | -11.66      | 14.60      | 30.29      | -1.76      | 7.92      | 42.26      | 21.19      | 0.73       | 31.00      | 45.10      |
| Median                   | -14.39      | 11.60      | 26.17      | -4.28      | 5.66      | 38.07      | 17.52      | -3.17      | 27.52      | 34.11      |
| 3rd Quartile             | -16.98      | 7.80       | 21.59      | -6.95      | 2.30      | 34.41      | 14.72      | -6.48      | 23.72      | 25.92      |
| 95th Percentile          | -20.30      | 3.62       | 16.72      | -14.55     | -6.18     | 27.39      | 10.01      | -13.25     | 17.69      | 17.54      |

Parentheses contain percentile rankings.

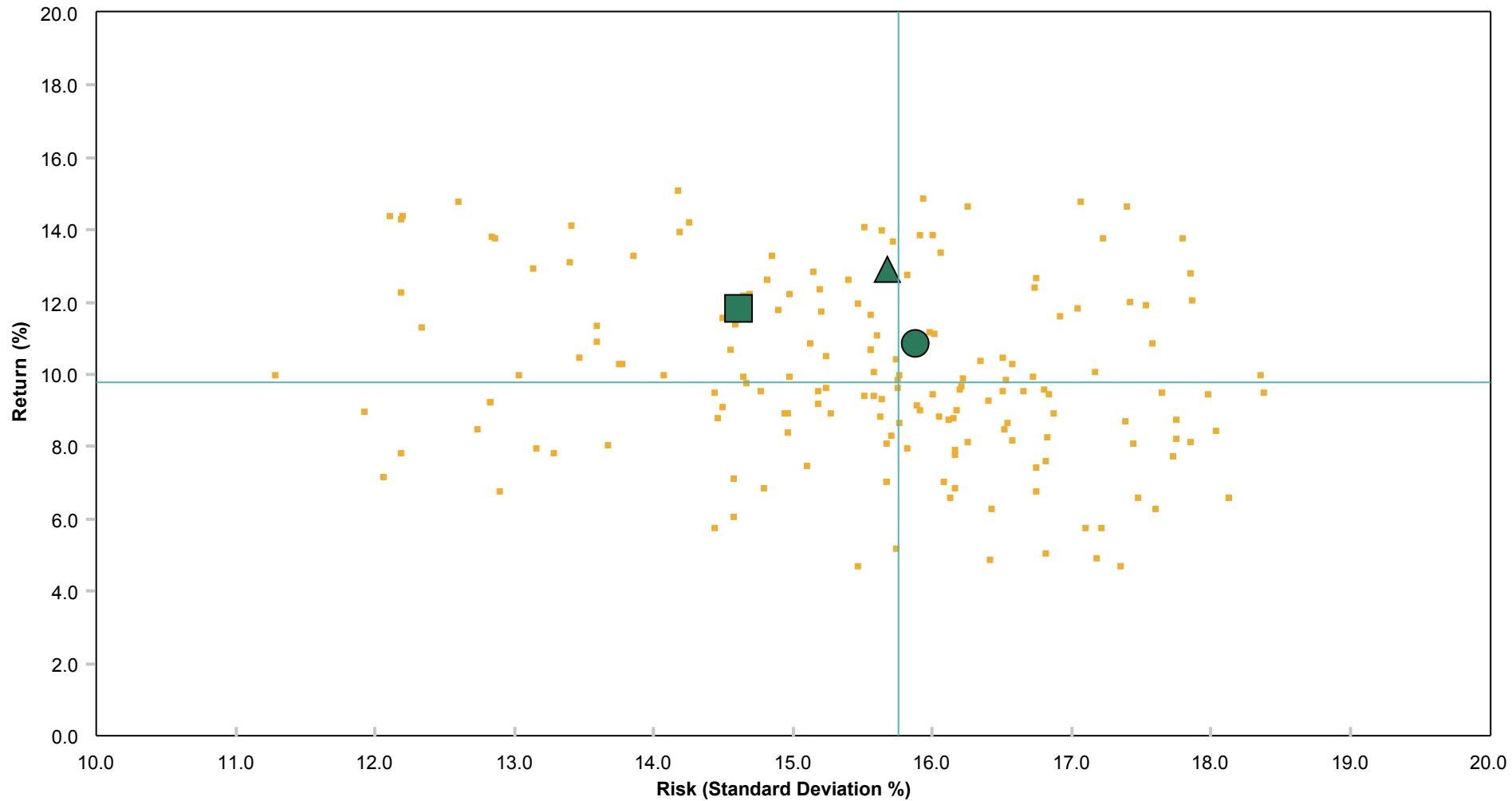
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Small Cap Value Equity (SA+CF)

3 Years Ending March 31, 2019



|                          | Return | Standard Deviation |
|--------------------------|--------|--------------------|
| Earnest Partners         | 11.80  | 14.62              |
| Russell 2000 Value Index | 10.86  | 15.89              |
| Russell 2000 Index       | 12.92  | 15.68              |
| Median                   | 9.78   | 15.77              |

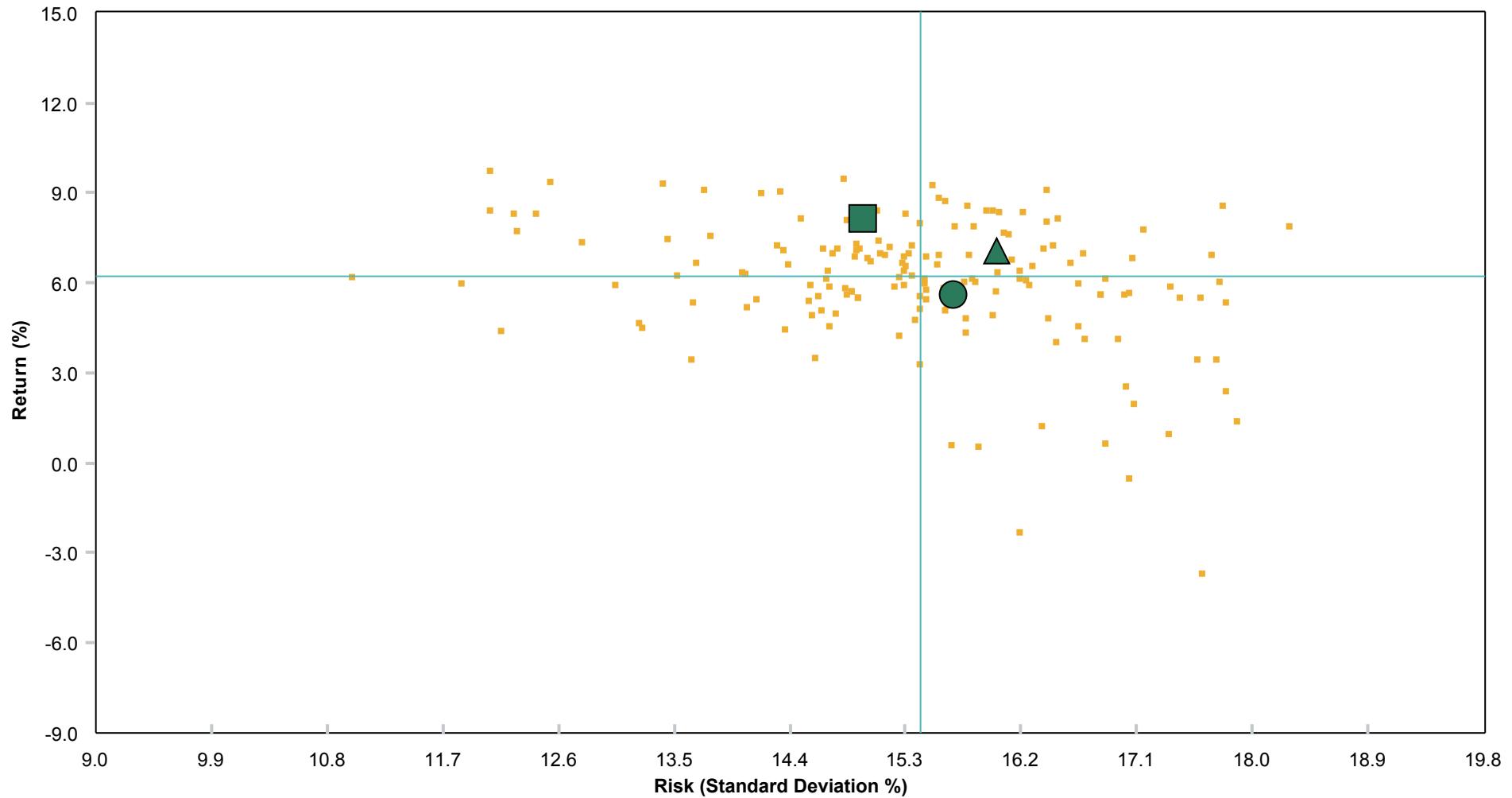
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM U.S. Small Cap Value Equity (SA+CF)

5 Years Ending March 31, 2019



Calculation based on monthly periodicity.

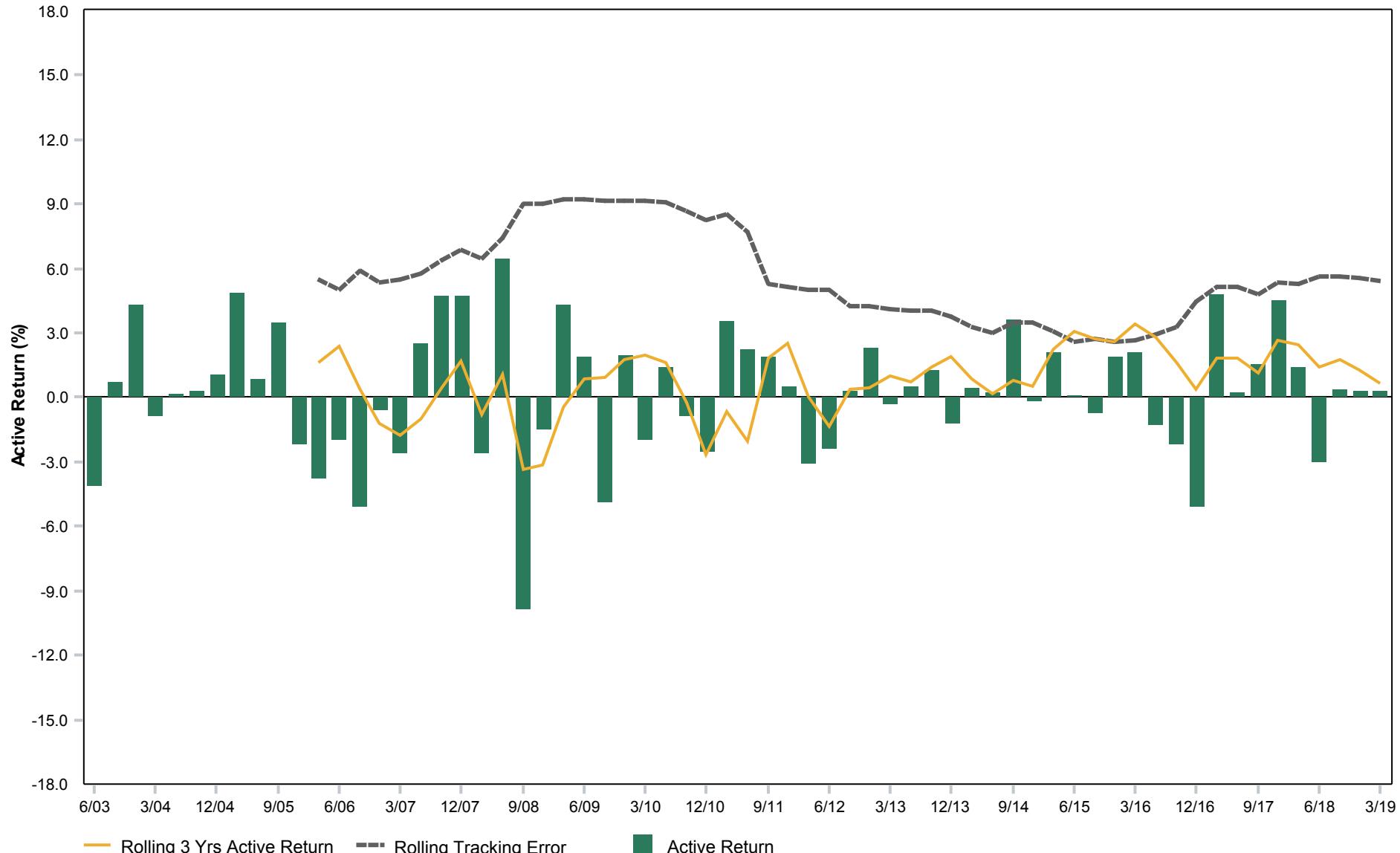
 Segal Marco Advisors

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                          | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016  | 2015  |
|--------------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| Earnest Partners         | 12.21 | 12.21 | -1.59 | 11.80 | 8.10  | 11.59 | 15.76  | -13.38 | 20.01 | 24.39 | -4.51 |
| Russell 2000 Value Index | 11.93 | 11.93 | 0.17  | 10.86 | 5.59  | 9.61  | 14.12  | -12.86 | 7.84  | 31.74 | -7.47 |
| Difference               | 0.28  | 0.28  | -1.76 | 0.94  | 2.51  | 1.98  | 1.64   | -0.52  | 12.17 | -7.35 | 2.96  |



— Rolling 3 Yrs Active Return    - - - Rolling Tracking Error

■ Active Return

**Bristol County Retirement System**
**Earnest Partners**

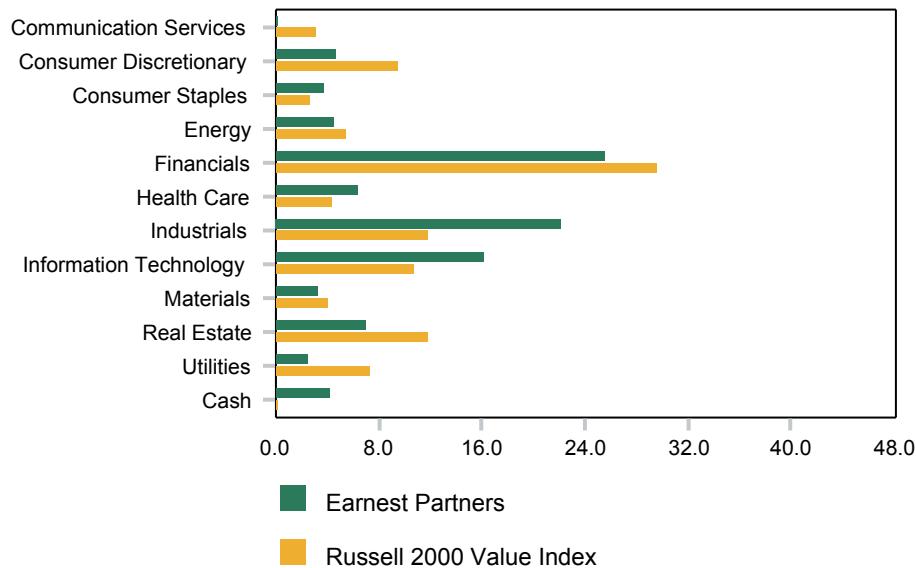
1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 11.71 |
| Portfolio Trading        | 0.51  |
| Actual Return            | 12.21 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | 0.29  |
|                          |       |
| Stock Selection          | 0.59  |
| Sector Selection         | -0.43 |
| Interaction              | -0.37 |
| Total Selection          | -0.22 |
|                          |       |
| Portfolio Trading        | 0.51  |
| Benchmark Trading        | 0.00  |
| Active Trading Impact    | 0.50  |
|                          |       |
| Buy & Hold Active Return | 0.29  |

|                        | Allocation — 01/01/2019 |           | Performance — 1 Quarter<br>Ending March 31, 2019 |           | Attribution |        |             | Total |
|------------------------|-------------------------|-----------|--|-----------|-------------|--------|-------------|-------|
|                        | Portfolio               | Benchmark | Portfolio  | Benchmark | Stock       | Sector | Interaction |       |
| Communication Services | 0.00                    | 3.09      | 0.00   | 14.41     | 0.00        | -0.08  | 0.00        | -0.08 |
| Consumer Discretionary | 4.68                    | 9.44      | 16.43  | 8.90      | 0.71        | 0.14   | -0.36       | 0.50  |
| Consumer Staples       | 3.77                    | 2.63      | 16.00  | 7.66      | 0.22        | -0.05  | 0.09        | 0.27  |
| Energy                 | 4.53                    | 5.41      | 22.16  | 18.49     | 0.20        | -0.06  | -0.03       | 0.11  |
| Financials             | 25.53                   | 29.52     | 4.74   | 7.89      | -0.93       | 0.16   | 0.13        | -0.64 |
| Health Care            | 6.32                    | 4.29      | 13.61  | 9.01      | 0.20        | -0.06  | 0.09        | 0.23  |
| Industrials            | 22.11                   | 11.79     | 11.89  | 10.09     | 0.21        | -0.19  | 0.19        | 0.21  |
| Information Technology | 16.11                   | 10.75     | 15.66  | 19.36     | -0.40       | 0.40   | -0.20       | -0.20 |
| Materials              | 3.33                    | 4.06      | 15.03  | 16.84     | -0.07       | -0.04  | 0.01        | -0.10 |
| Real Estate            | 7.02                    | 11.72     | 17.19  | 17.01     | 0.02        | -0.24  | -0.01       | -0.23 |
| Utilities              | 2.45                    | 7.29      | 16.44  | 10.58     | 0.43        | 0.07   | -0.28       | 0.21  |
| Cash                   | 4.16                    | 0.00      | 0.00   | 0.00      | 0.00        | -0.50  | 0.00        | -0.50 |
| Total                  | 100.00                  | 100.00    | 11.71  | 11.92     | 0.59        | -0.43  | -0.37       | -0.22 |

## Bristol County Retirement System

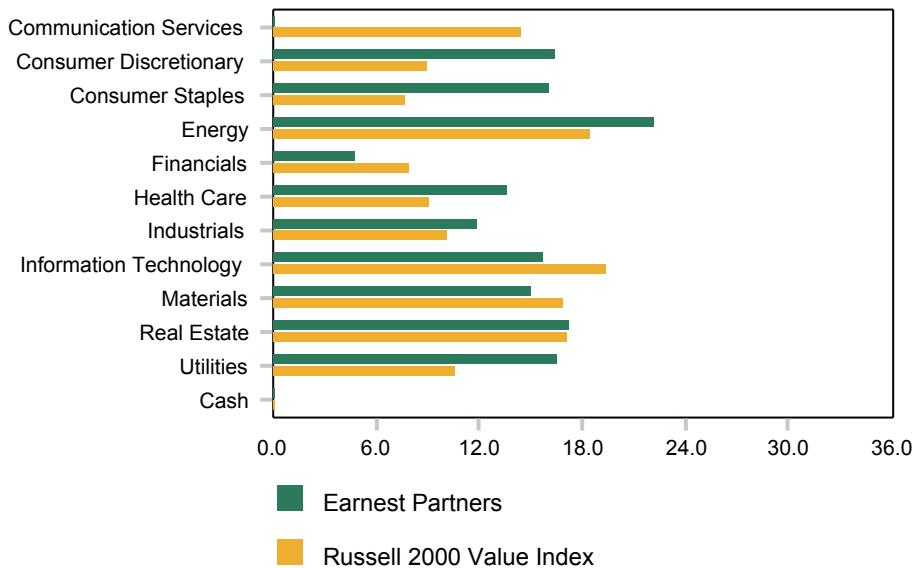
### Allocation



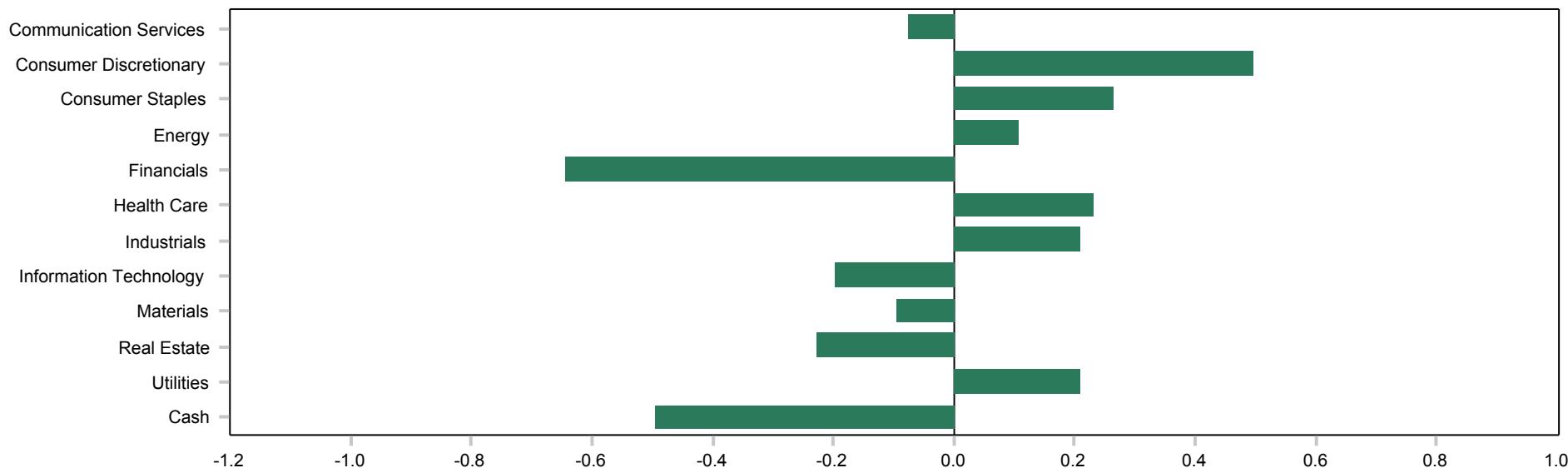
## Buy and Hold Sector Attribution Graph

1 Quarter Ending March 31, 2019

### Performance



### Total Attribution



## Bristol County Retirement System

## Buy and Hold Style Attribution

1 Quarter Ending March 31, 2019

|                          |       |
|--------------------------|-------|
| Buy-and-Hold Portfolio   | 11.71 |
| Portfolio Trading        | 0.51  |
| Actual Return            | 12.21 |
| Benchmark Return         | 11.93 |
| Actual Active Return     | 0.29  |
|                          |       |
| Stock Selection          | -2.50 |
| Style Selection          | -0.56 |
| Interaction              | 2.84  |
| Total Selection          | -0.22 |
|                          |       |
| Portfolio Trading        | 0.51  |
| Benchmark Trading        | 0.00  |
| Active Trading Impact    | 0.50  |
|                          |       |
| Buy & Hold Active Return | 0.29  |

### Performance-1 Quarter Ending March 31, 2019

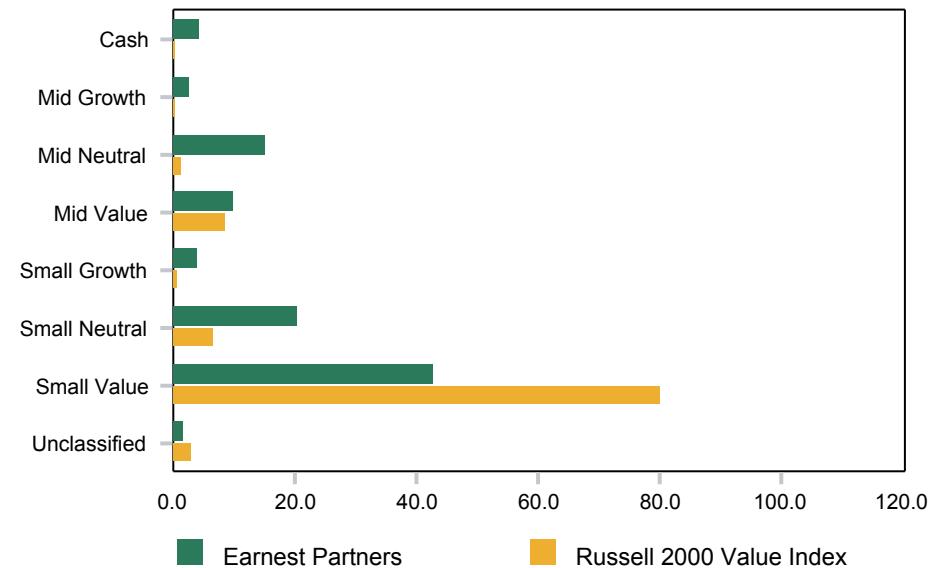
|               | Allocation-01/01/2019 |           |           |           | Attribution |       |             |       |
|---------------|-----------------------|-----------|-----------|-----------|-------------|-------|-------------|-------|
|               | Portfolio             | Benchmark | Portfolio | Benchmark | Stock       | Style | Interaction | Total |
| Cash          | 4.16                  | 0.00      | 0.00      | 0.00      | 0.00        | -0.50 | 0.00        | -0.50 |
| Mid Growth    | 2.51                  | 0.10      | 16.90     | -11.03    | 0.03        | -0.55 | 0.67        | 0.15  |
| Mid Neutral   | 14.97                 | 1.24      | 19.01     | 12.31     | 0.08        | 0.05  | 0.92        | 1.06  |
| Mid Value     | 9.78                  | 8.50      | 9.64      | 13.85     | -0.36       | 0.02  | -0.05       | -0.39 |
| Small Growth  | 3.98                  | 0.75      | 30.01     | 17.19     | 0.10        | 0.17  | 0.41        | 0.68  |
| Small Neutral | 20.22                 | 6.52      | 11.62     | 12.85     | -0.08       | 0.13  | -0.17       | -0.12 |
| Small Value   | 42.74                 | 79.86     | 8.28      | 11.64     | -2.68       | 0.11  | 1.24        | -1.32 |
| Unclassified  | 1.65                  | 3.02      | 24.82     | 11.46     | 0.40        | 0.01  | -0.18       | 0.23  |
| Total         | 100.00                | 100.00    | 11.71     | 11.92     | -2.50       | -0.56 | 2.84        | -0.22 |

## Bristol County Retirement System

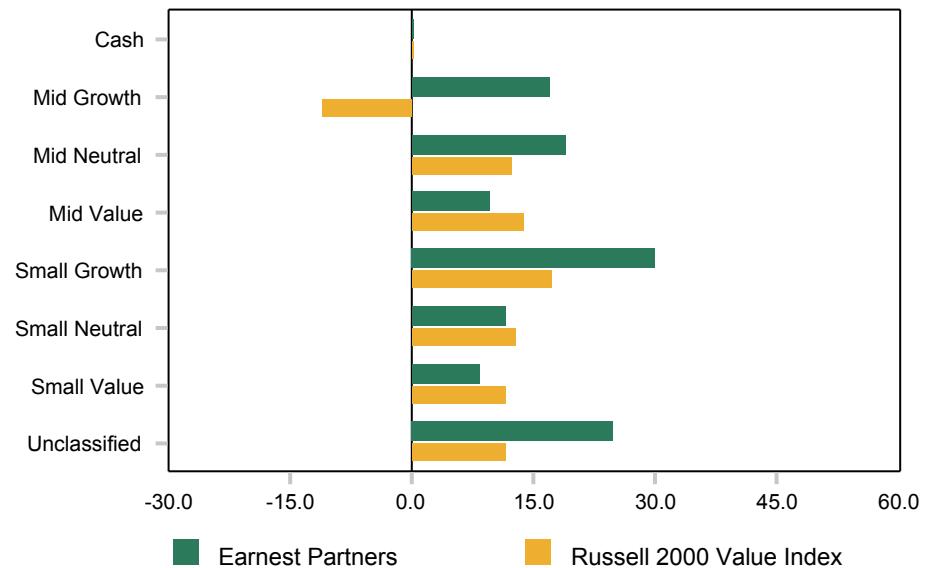
## Buy and Hold Style Attribution Graph

1 Quarter Ending March 31, 2019

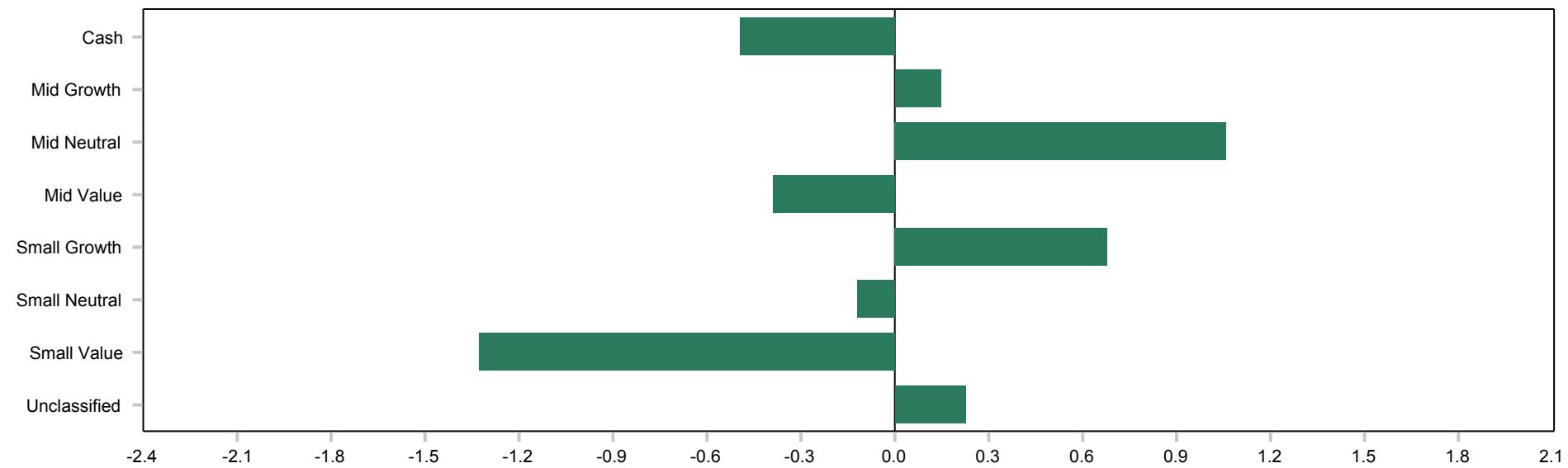
### Allocation



### Performance



### Total Attribution



## Bristol County Retirement System

## Earnest Partners

As of March 31, 2019

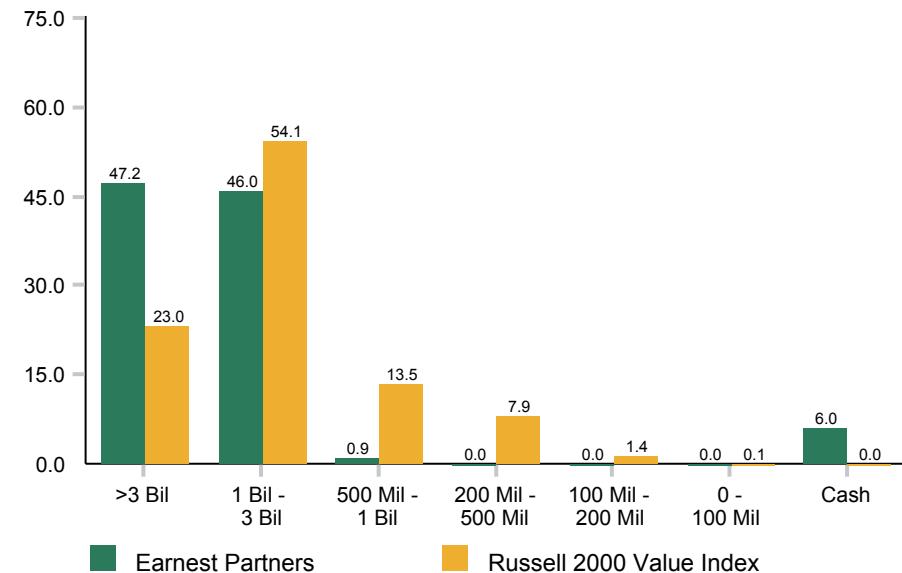
### Top Ten Equity Holdings

|                              | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|------------------------------|----------------------|----------------------|-------------------|----------------------|
| Hexcel Corp                  | 3.57                 | 0.00                 | 3.57              | 20.88                |
| Franklin Electric Co Inc     | 3.34                 | 0.01                 | 3.33              | 19.51                |
| EastGroup Properties Inc.    | 2.95                 | 0.00                 | 2.95              | 22.49                |
| Molina Healthcare Inc.       | 2.80                 | 0.00                 | 2.80              | 22.15                |
| Darling Ingredients Inc      | 2.72                 | 0.37                 | 2.35              | 12.53                |
| Wolverine World Wide Inc.    | 2.65                 | 0.00                 | 2.65              | 12.36                |
| Cabot Microelectronics Corp  | 2.62                 | 0.00                 | 2.62              | 17.86                |
| Monolithic Power Systems Inc | 2.61                 | 0.00                 | 2.61              | 16.90                |
| South Jersey Industries Inc. | 2.52                 | 0.26                 | 2.26              | 16.44                |
| EnerSys                      | 2.33                 | 0.10                 | 2.23              | -15.82               |
| % of Portfolio               | 28.11                | 0.74                 | 27.37             |                      |

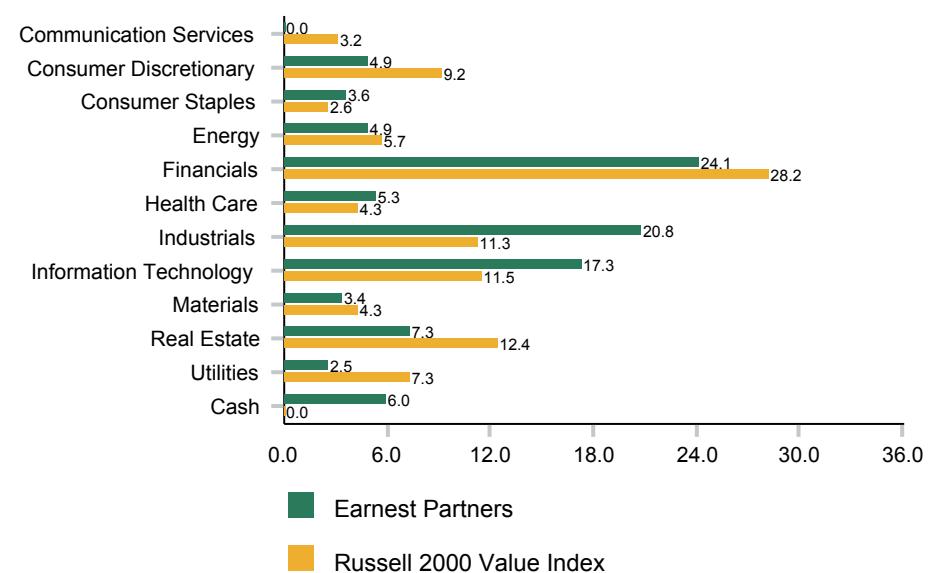
### Portfolio Characteristics

|                           | Portfolio     | Benchmark     |
|---------------------------|---------------|---------------|
| Wtd. Avg. Mkt. Cap (\$)   | 3,480,256,682 | 2,096,541,205 |
| Median Mkt. Cap (\$)      | 2,586,624,000 | 694,865,550   |
| Price/Earnings ratio      | 17.55         | 15.06         |
| Price/Book ratio          | 1.96          | 1.61          |
| 5 Yr. EPS Growth Rate (%) | 6.96          | 7.47          |
| Current Yield (%)         | 1.63          | 2.23          |
| Beta (5 Years, Monthly)   | 0.91          | 1.00          |
| Number of Stocks          | 50            | 1,366         |

### Distribution of Market Capitalization (%)



### Sector Weights (%)

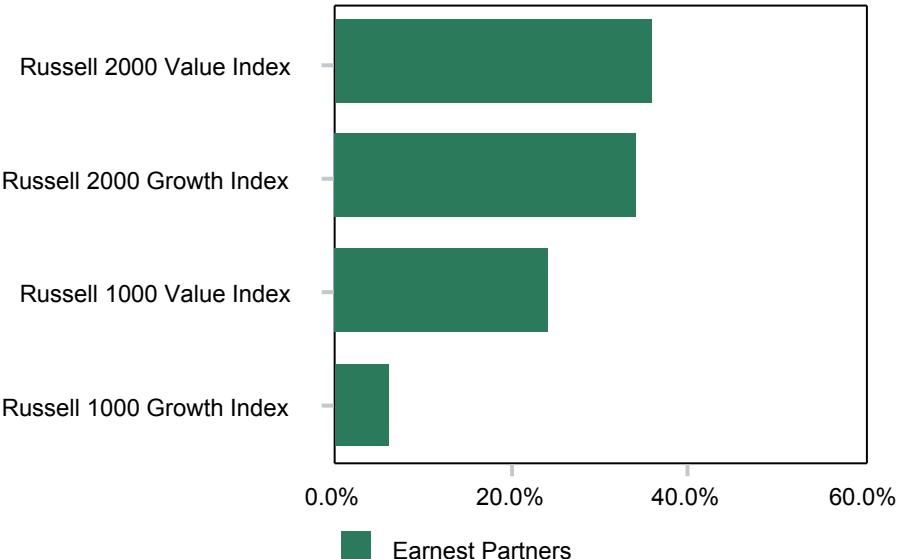


## Bristol County Retirement System

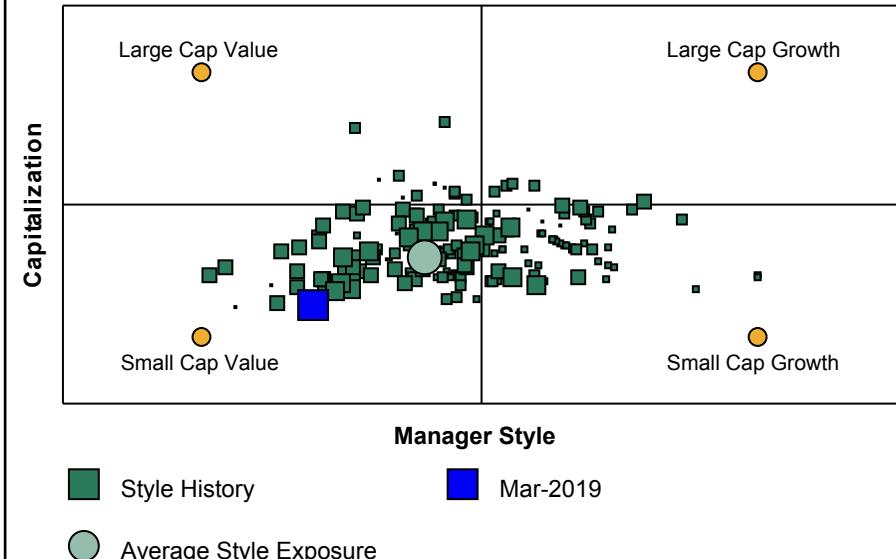
## Earnest Partners

Ending March 31, 2019

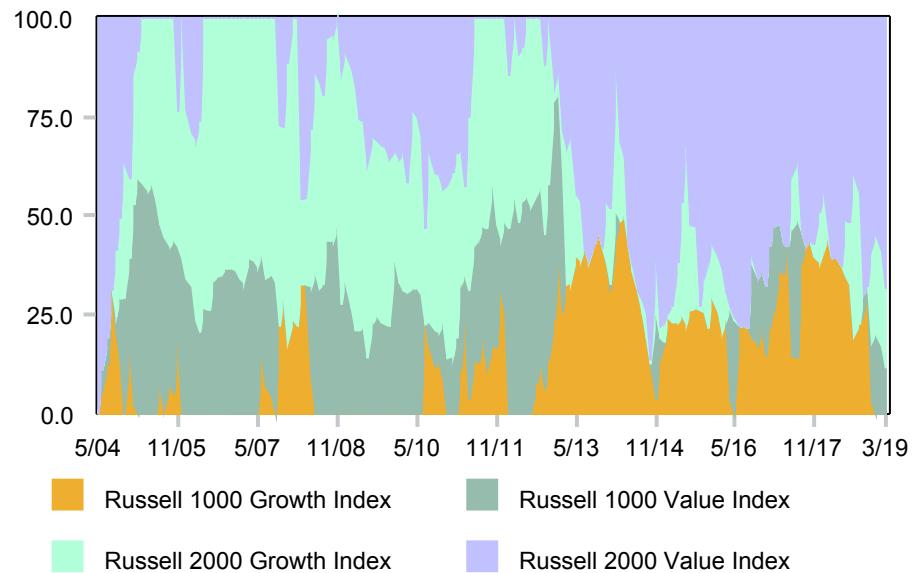
### Investment Style Exposure



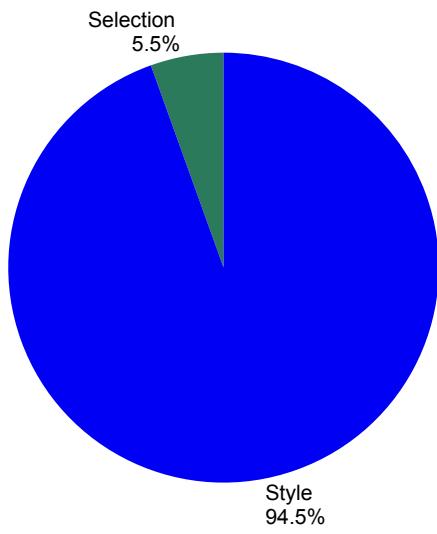
### Style Map(ppp)



### Style History(ppp)

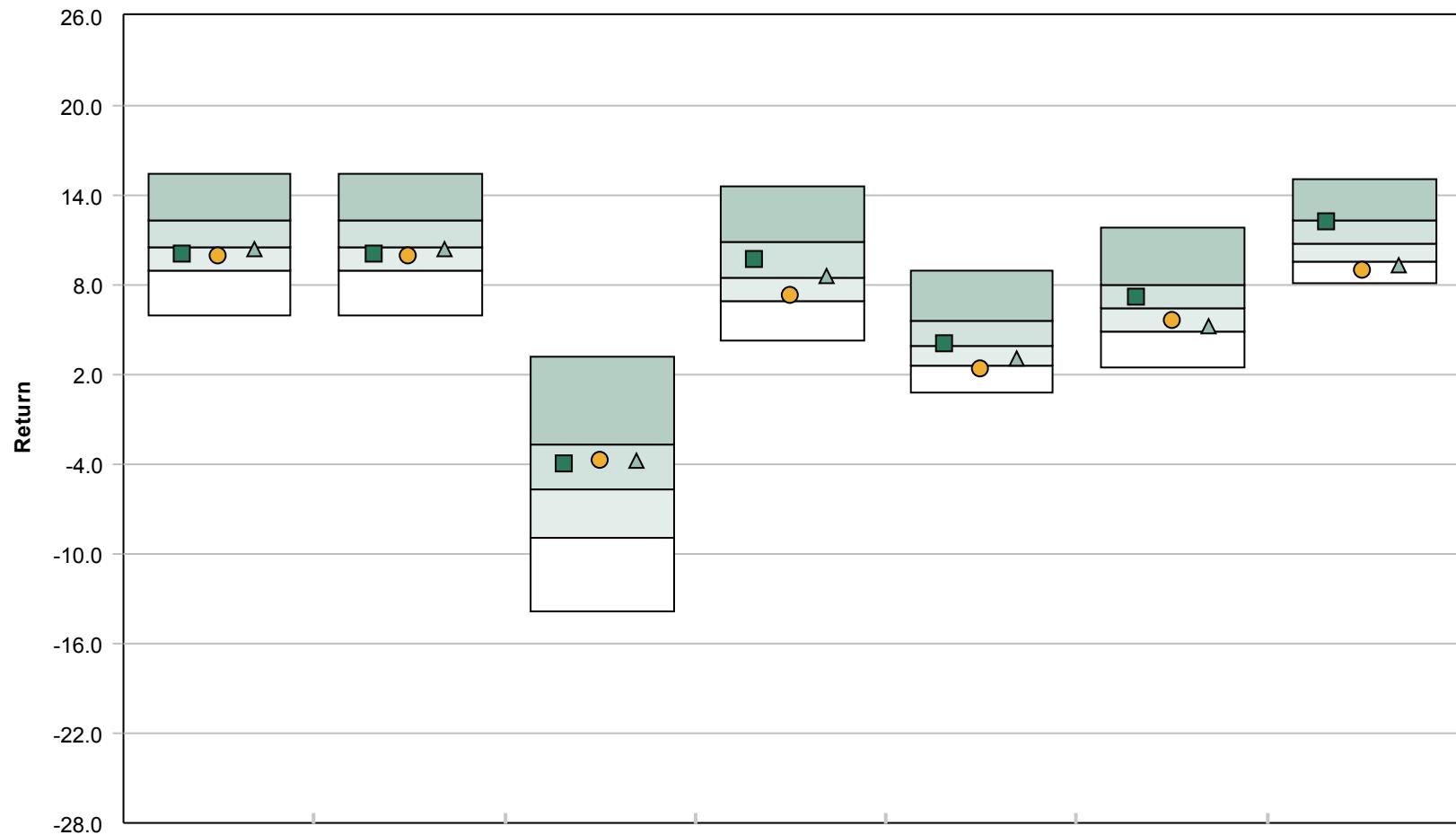


### Return Variance



# **International Equity**

As of March 31, 2019



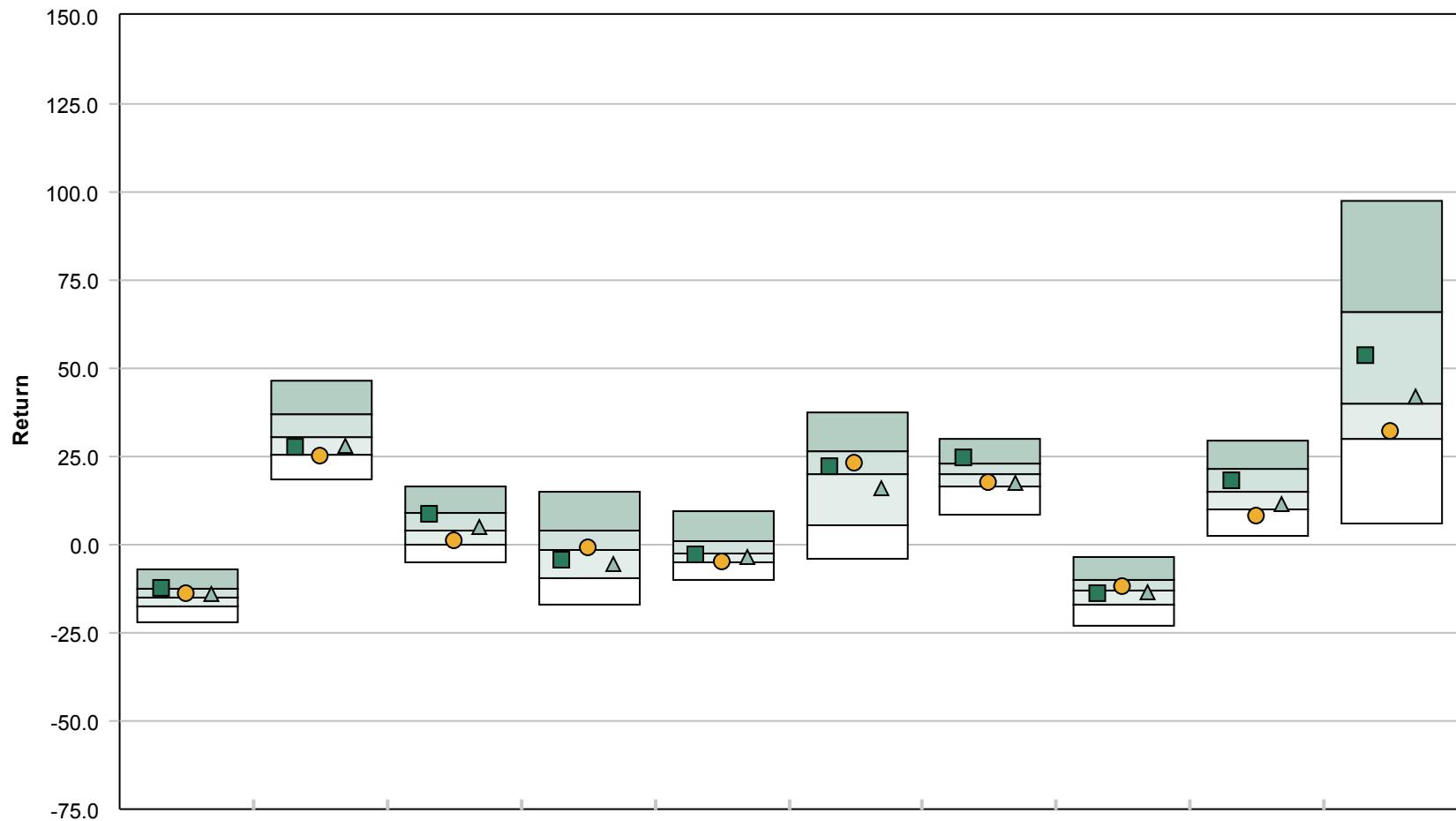
|                            | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs     | 5 Yrs     | 7 Yrs     | 10 Yrs     |
|----------------------------|------------|------------|------------|-----------|-----------|-----------|------------|
| Total International Equity | 10.01 (61) | 10.01 (61) | -3.94 (35) | 9.70 (36) | 4.01 (49) | 7.18 (38) | 12.25 (28) |
| MSCI EAFE (net)            | 9.98 (62)  | 9.98 (62)  | -3.71 (33) | 7.27 (71) | 2.33 (82) | 5.63 (66) | 8.96 (86)  |
| MSCI AC World ex USA       | 10.44 (51) | 10.44 (51) | -3.74 (34) | 8.61 (50) | 3.05 (68) | 5.21 (71) | 9.35 (80)  |
| 5th Percentile             | 15.50      | 15.50      | 3.22       | 14.54     | 8.92      | 11.87     | 15.05      |
| 1st Quartile               | 12.34      | 12.34      | -2.68      | 10.86     | 5.55      | 7.96      | 12.36      |
| Median                     | 10.49      | 10.49      | -5.69      | 8.48      | 3.94      | 6.46      | 10.73      |
| 3rd Quartile               | 8.99       | 8.99       | -8.92      | 6.90      | 2.66      | 4.83      | 9.54       |
| 95th Percentile            | 5.96       | 5.96       | -13.89     | 4.22      | 0.75      | 2.44      | 8.11       |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM International Equity (SA+CF)

As of March 31, 2019



|                            | 2018        | 2017       | 2016      | 2015       | 2014       | 2013       | 2012       | 2011        | 2010       | 2009       |
|----------------------------|-------------|------------|-----------|------------|------------|------------|------------|-------------|------------|------------|
| Total International Equity | -12.74 (28) | 27.74 (65) | 8.40 (28) | -4.29 (62) | -3.24 (57) | 21.81 (44) | 24.35 (18) | -14.17 (59) | 17.77 (39) | 53.39 (32) |
| MSCI EAFE (net)            | -13.79 (38) | 25.03 (80) | 1.00 (69) | -0.81 (48) | -4.90 (74) | 22.78 (41) | 17.32 (70) | -12.14 (43) | 7.75 (84)  | 31.78 (71) |
| MSCI AC World ex USA       | -13.78 (38) | 27.77 (65) | 5.01 (44) | -5.25 (65) | -3.44 (60) | 15.78 (62) | 17.39 (70) | -13.33 (52) | 11.60 (67) | 42.14 (46) |
| 5th Percentile             | -6.76       | 46.74      | 16.67     | 15.17      | 9.43       | 37.34      | 30.01      | -3.67       | 29.67      | 97.67      |
| 1st Quartile               | -12.39      | 36.91      | 8.85      | 3.78       | 1.06       | 26.65      | 22.94      | -10.04      | 21.27      | 65.86      |
| Median                     | -14.86      | 30.50      | 3.76      | -1.64      | -2.52      | 19.95      | 19.84      | -13.11      | 15.16      | 39.79      |
| 3rd Quartile               | -17.50      | 25.59      | 0.21      | -9.26      | -5.05      | 5.63       | 16.72      | -16.75      | 9.78       | 29.96      |
| 95th Percentile            | -21.88      | 18.52      | -5.20     | -16.90     | -9.79      | -3.91      | 8.37       | -23.13      | 2.44       | 6.10       |

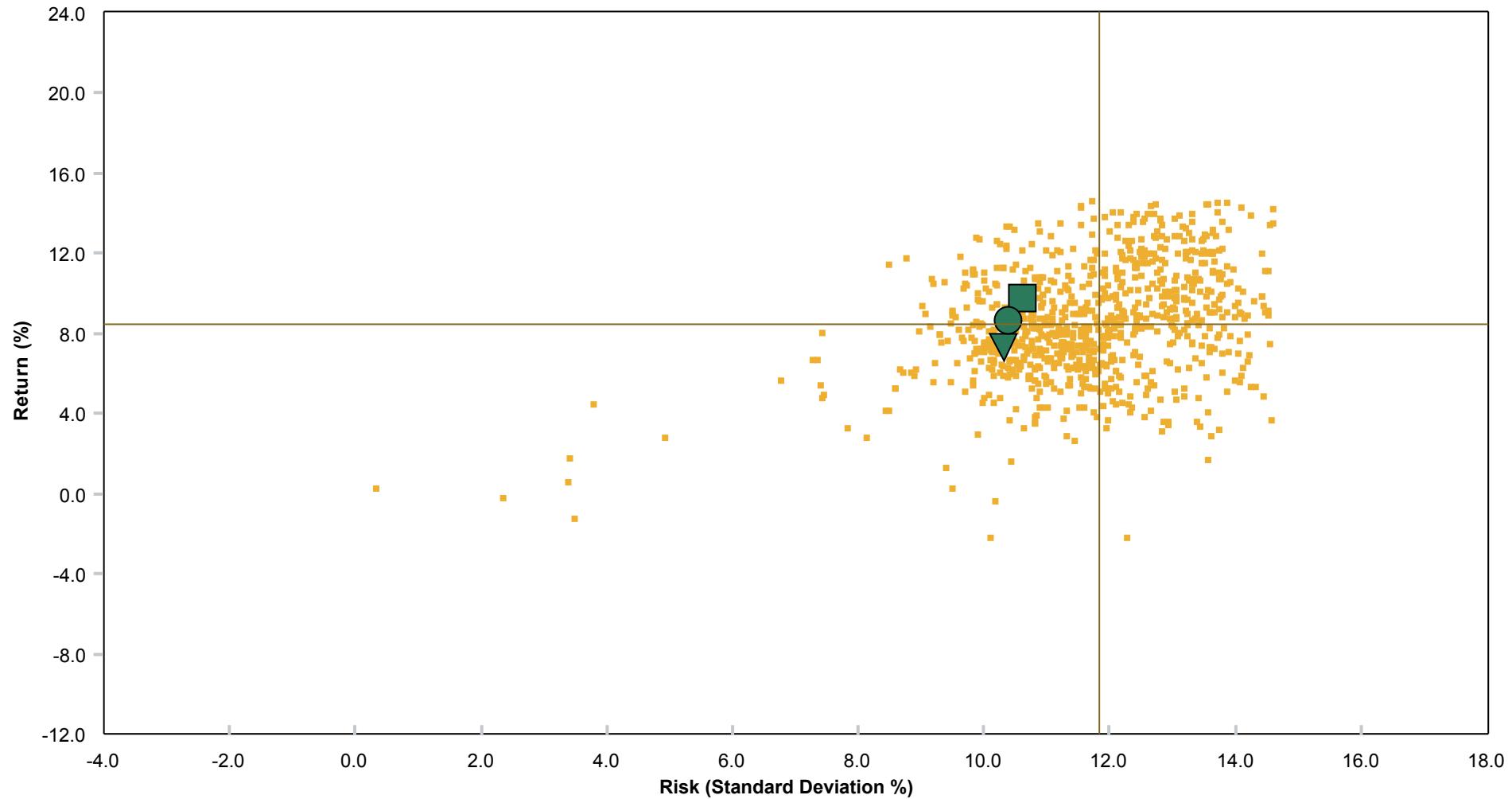
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM International Equity (SA+CF)

3 Years Ending March 31, 2019



|                            | Return | Standard Deviation |
|----------------------------|--------|--------------------|
| Total International Equity | 9.70   | 10.62              |
| MSCI EAFE (net)            | 7.27   | 10.32              |
| MSCI AC World ex USA       | 8.61   | 10.41              |
| Median                     | 8.48   | 11.84              |

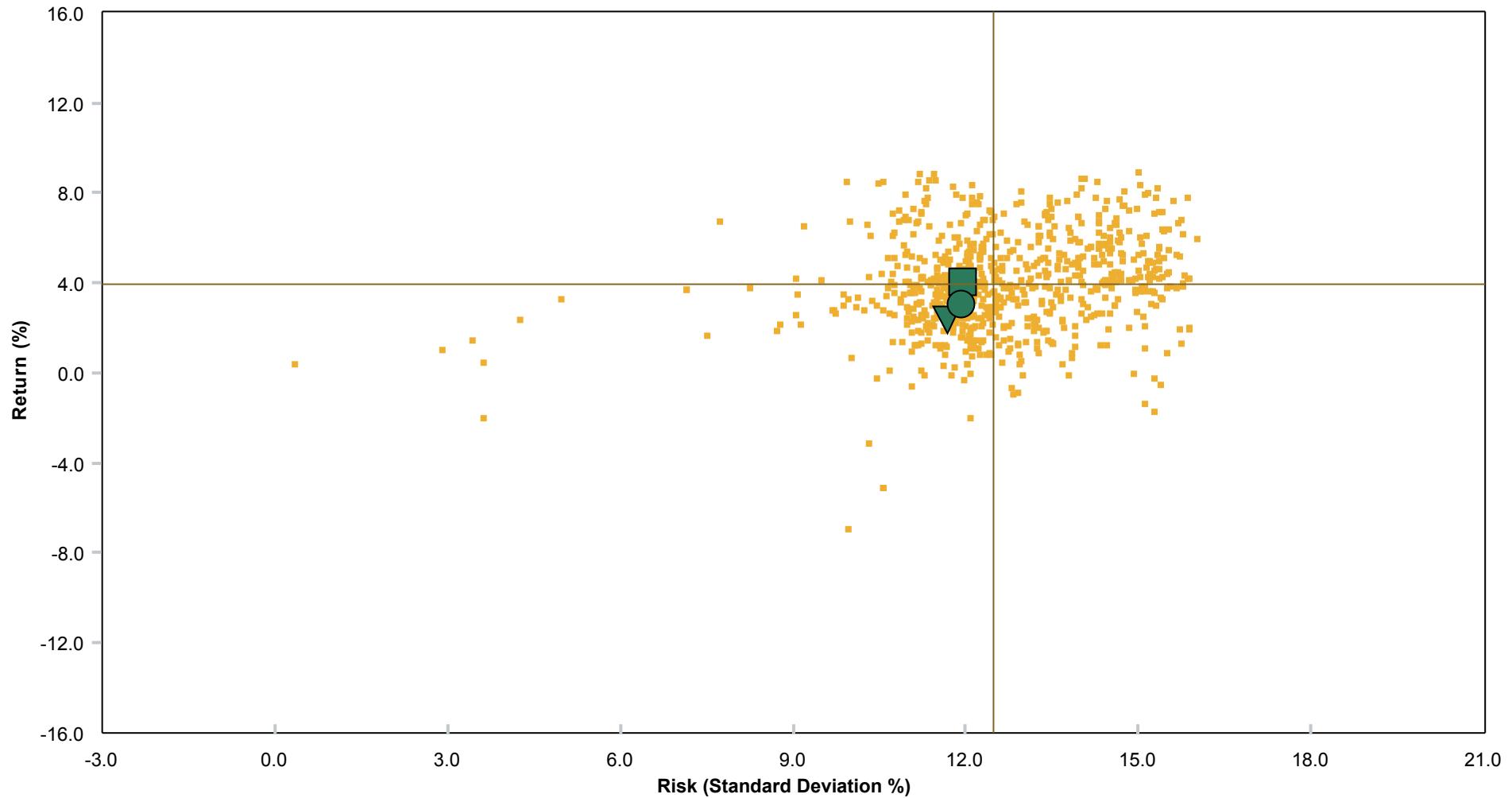
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM International Equity (SA+CF)

5 Years Ending March 31, 2019



|                            | Return | Standard Deviation |
|----------------------------|--------|--------------------|
| Total International Equity | 4.01   | 11.95              |
| MSCI EAFE (net)            | 2.33   | 11.67              |
| MSCI AC World ex USA       | 3.05   | 11.92              |
| Median                     | 3.94   | 12.49              |

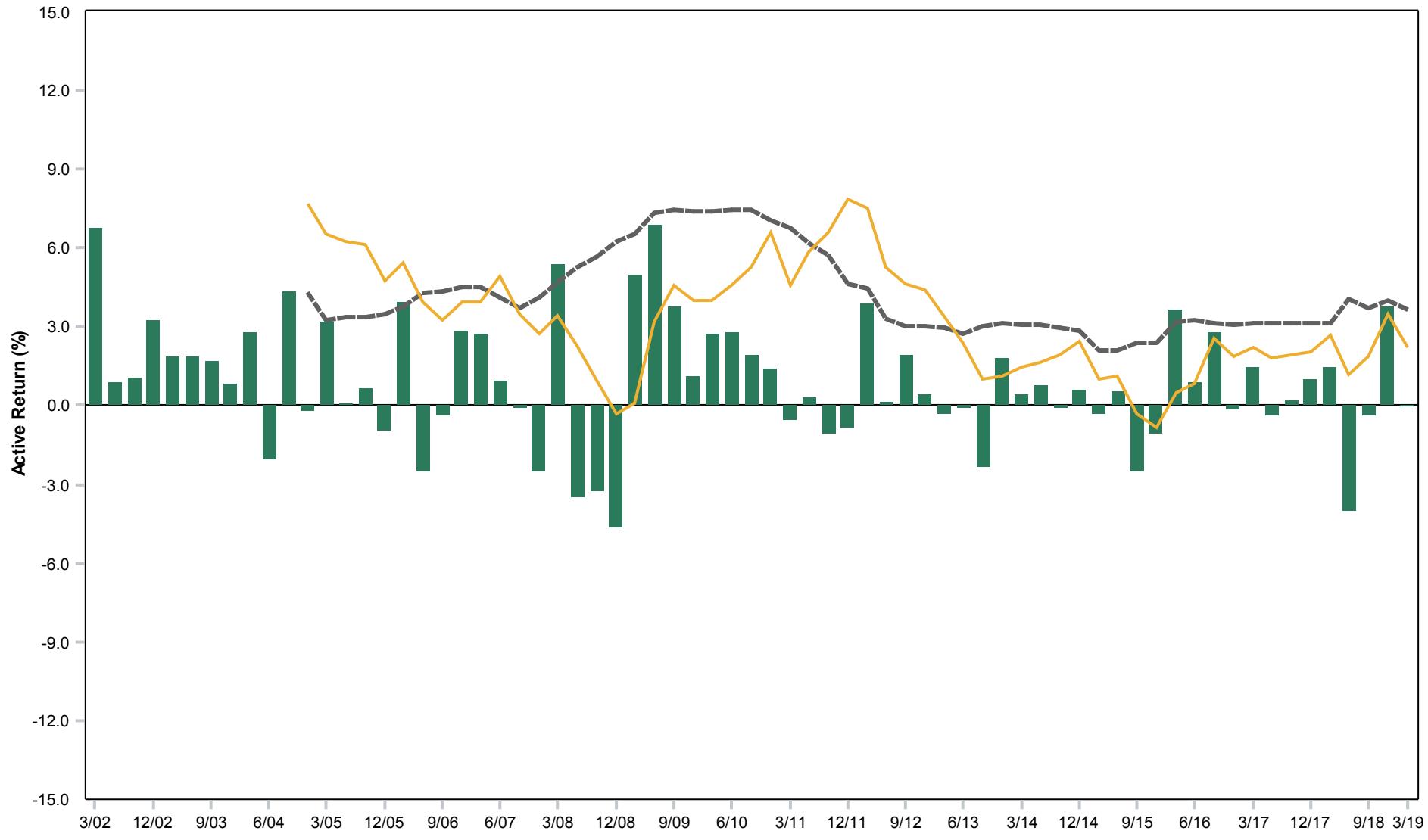
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                            | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016 | 2015  |
|----------------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|------|-------|
| Total International Equity | 10.01 | 10.01 | -3.94 | 9.70  | 4.01  | 7.18  | 12.25  | -12.74 | 27.74 | 8.40 | -4.29 |
| MSCI EAFE (net)            | 9.98  | 9.98  | -3.71 | 7.27  | 2.33  | 5.63  | 8.96   | -13.79 | 25.03 | 1.00 | -0.81 |
| Difference                 | 0.03  | 0.03  | -0.23 | 2.43  | 1.68  | 1.55  | 3.29   | 1.05   | 2.71  | 7.40 | -3.48 |



— Rolling 3 Yrs Active Return

- - - Rolling Tracking Error

█ Active Return

## Bristol County Retirement System

## Total International Equity

As of March 31, 2019

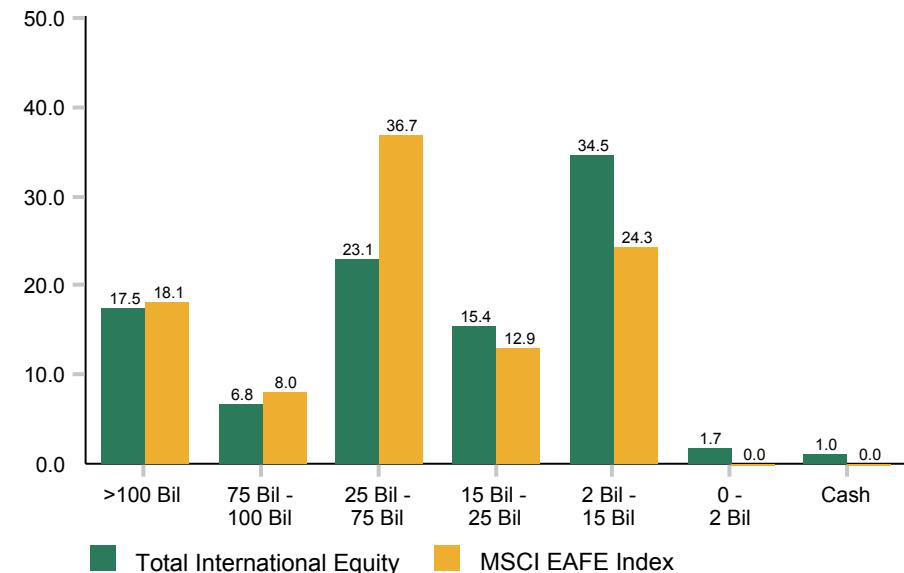
### Top Ten Equity Holdings

|                              | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|------------------------------|----------------------|----------------------|-------------------|----------------------|
| Taiwan Semiconductor Manuf   | 1.94                 | 0.00                 | 1.94              | 7.96                 |
| Roche Holding AG             | 1.29                 | 1.42                 | -0.13             | 14.98                |
| Tencent Holdings LTD         | 1.28                 | 0.00                 | 1.28              | 14.70                |
| Keyence Corp                 | 1.26                 | 0.44                 | 0.82              | 22.83                |
| China Construction Bank Corp | 1.18                 | 0.00                 | 1.18              | 3.94                 |
| Samsung Electronics Co Ltd   | 1.07                 | 0.00                 | 1.07              | 12.85                |
| SK Hynix Inc                 | 1.07                 | 0.00                 | 1.07              | 20.06                |
| Sberbank of Russia OJSC      | 0.95                 | 0.00                 | 0.95              | 21.99                |
| Banco Do Brasil SA Bb Brasil | 0.89                 | 0.00                 | 0.89              | 3.10                 |
| NESTLE SA/AG                 | 0.89                 | 0.00                 | 0.89              | N/A                  |
| % of Portfolio               | 11.82                | 1.86                 | 9.96              |                      |

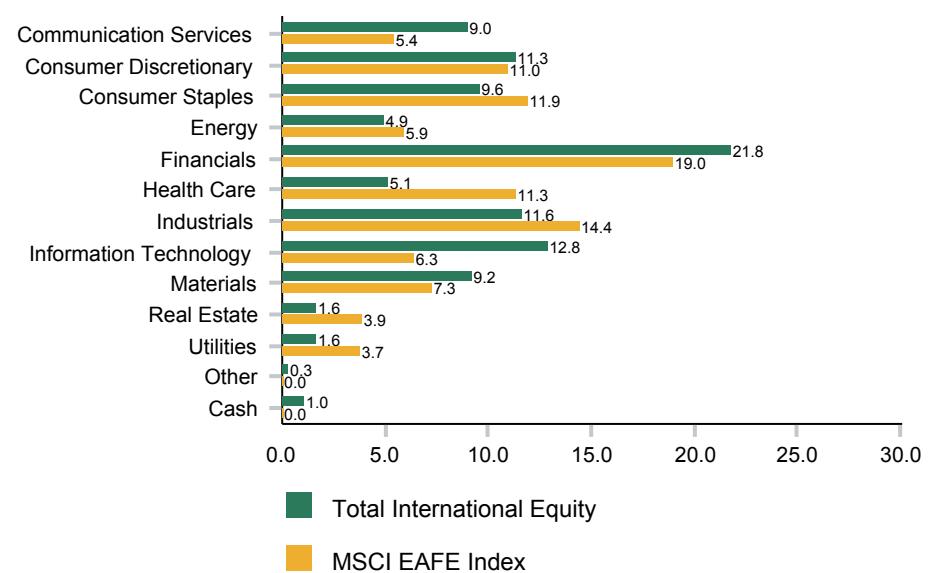
### Portfolio Characteristics

|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 52,934,209,141 | 61,529,682,722 |
| Median Mkt. Cap (\$)      | 7,708,550,293  | 10,328,381,298 |
| Price/Earnings ratio      | 12.91          | 13.96          |
| Price/Book ratio          | 2.29           | 2.24           |
| 5 Yr. EPS Growth Rate (%) | 9.10           | 8.68           |
| Current Yield (%)         | 3.06           | 3.59           |
| Beta (5 Years, Monthly)   | 0.97           | 1.00           |
| Number of Stocks          | 888            | 920            |

### Distribution of Market Capitalization (%)



### Sector Weights (%)



## Bristol County Retirement System

## Total International Equity

As of March 31, 2019

### Ten Best Performers

|   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---|----------------------|----------------------|-------------------|----------------------|
| China National Software & Service Co Ltd          | 0.01                 | 0.00                 | 0.01              | 171.74               |
| Hisense Home Appliances Group Co Ltd              | 0.01                 | 0.00                 | 0.01              | 95.10                |
| Cronos Group Inc                                  | 0.01                 | 0.00                 | 0.01              | 77.38                |
| Universal Scientific Industrial (Shanghai) Co Ltd | 0.01                 | 0.00                 | 0.01              | 75.35                |
| GW Pharmaceuticals PLC                            | 0.01                 | 0.00                 | 0.01              | 73.09                |
| Lasertec Corp                                     | 0.01                 | 0.00                 | 0.01              | 63.44                |
| Momo Inc  | 0.02                 | 0.00                 | 0.02              | 61.01                |
| CyberArk Software Ltd                             | 0.02                 | 0.00                 | 0.02              | 60.58                |
| Nemetschek SE                                     | 0.02                 | 0.00                 | 0.02              | 55.62                |
| Banco BTG Pactual SA                              | 0.01                 | 0.00                 | 0.01              | 55.30                |
| % of Portfolio                                    | 0.13                 | 0.00                 | 0.13              |                      |

### Ten Worst Performers

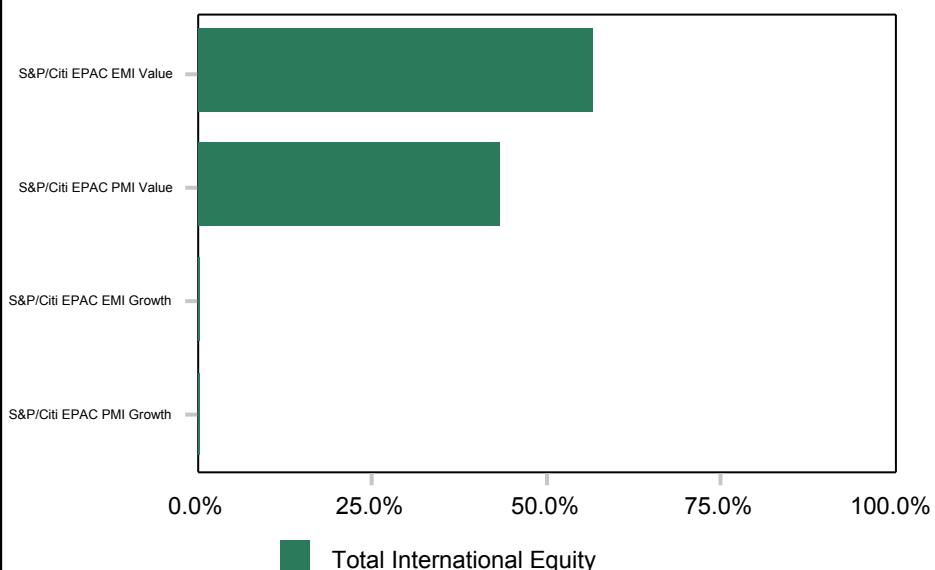
|                                       | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---------------------------------------|----------------------|----------------------|-------------------|----------------------|
| Swedbank AB                           | 0.01                 | 0.09                 | -0.08             | -29.48               |
| Eisai Co Ltd                          | 0.03                 | 0.10                 | -0.07             | -26.71               |
| Koza Altin Islemeleri AS              | 0.01                 | 0.00                 | 0.01              | -23.33               |
| Massmart Holdings Ltd                 | 0.13                 | 0.00                 | 0.13              | -21.99               |
| China Resources Power Holdings Co Ltd | 0.01                 | 0.00                 | 0.01              | -21.83               |
| PPC Ltd                               | 0.05                 | 0.00                 | 0.05              | -20.50               |
| ProSiebenSat.1 Media SE               | 0.01                 | 0.02                 | -0.01             | -19.81               |
| Telefonica Deutschland Holding AG     | 0.01                 | 0.02                 | -0.01             | -19.72               |
| Truworths International Ltd           | 0.10                 | 0.00                 | 0.10              | -18.65               |
| Cocokara Fine Healthcare Inc          | 0.00                 | 0.00                 | 0.00              | -18.13               |
| % of Portfolio                        | 0.36                 | 0.23                 | 0.13              |                      |

# Bristol County Retirement System

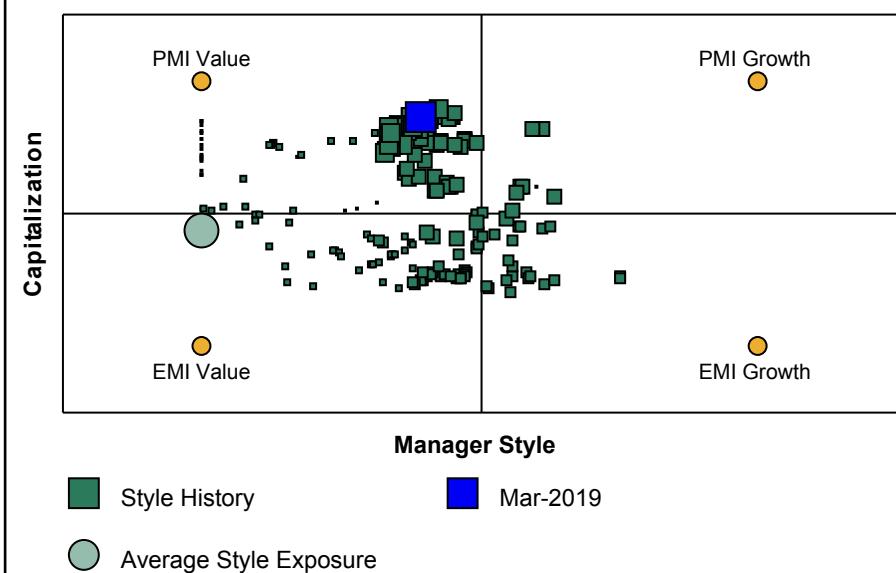
# Style Analysis

Ending March 31, 2019

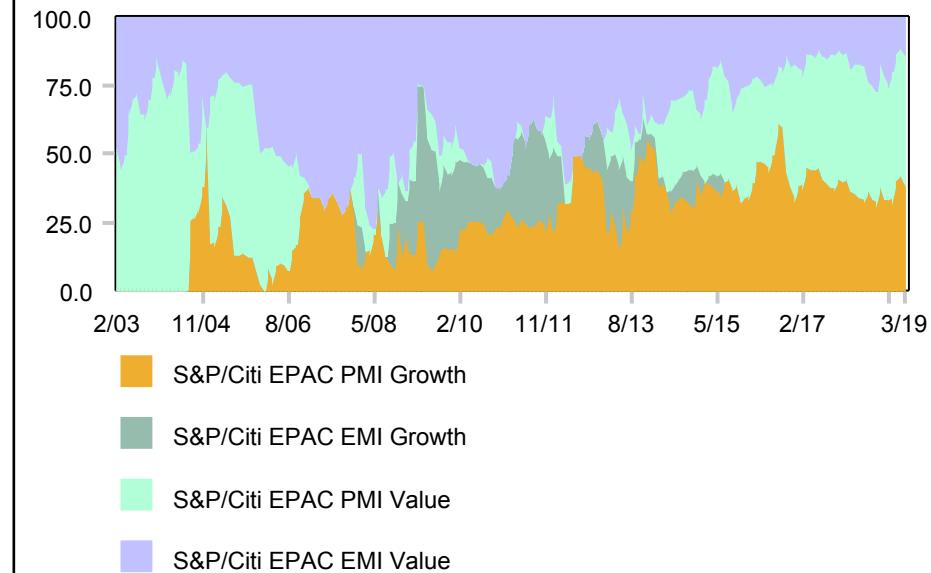
## Investment Style Exposure



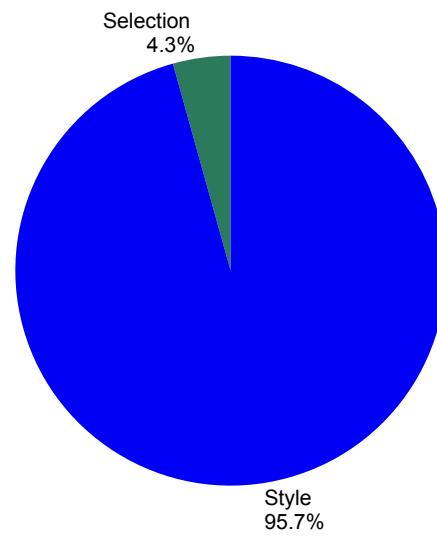
## Style Map(ppp)



## Style History(ppp)



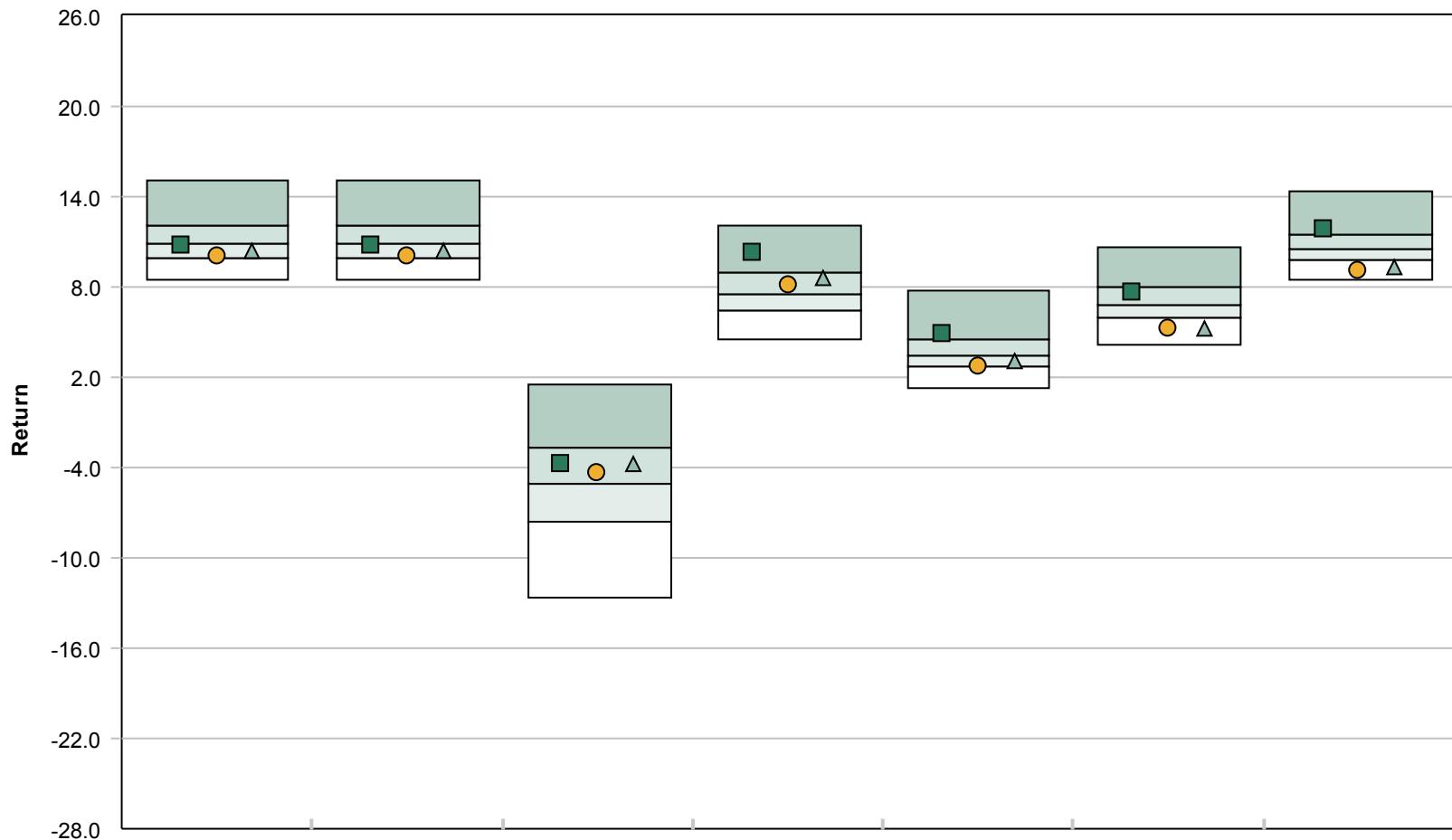
## Return Variance



## Bristol County Retirement System

## IM International Core Equity (SA+CF)

As of March 31, 2019



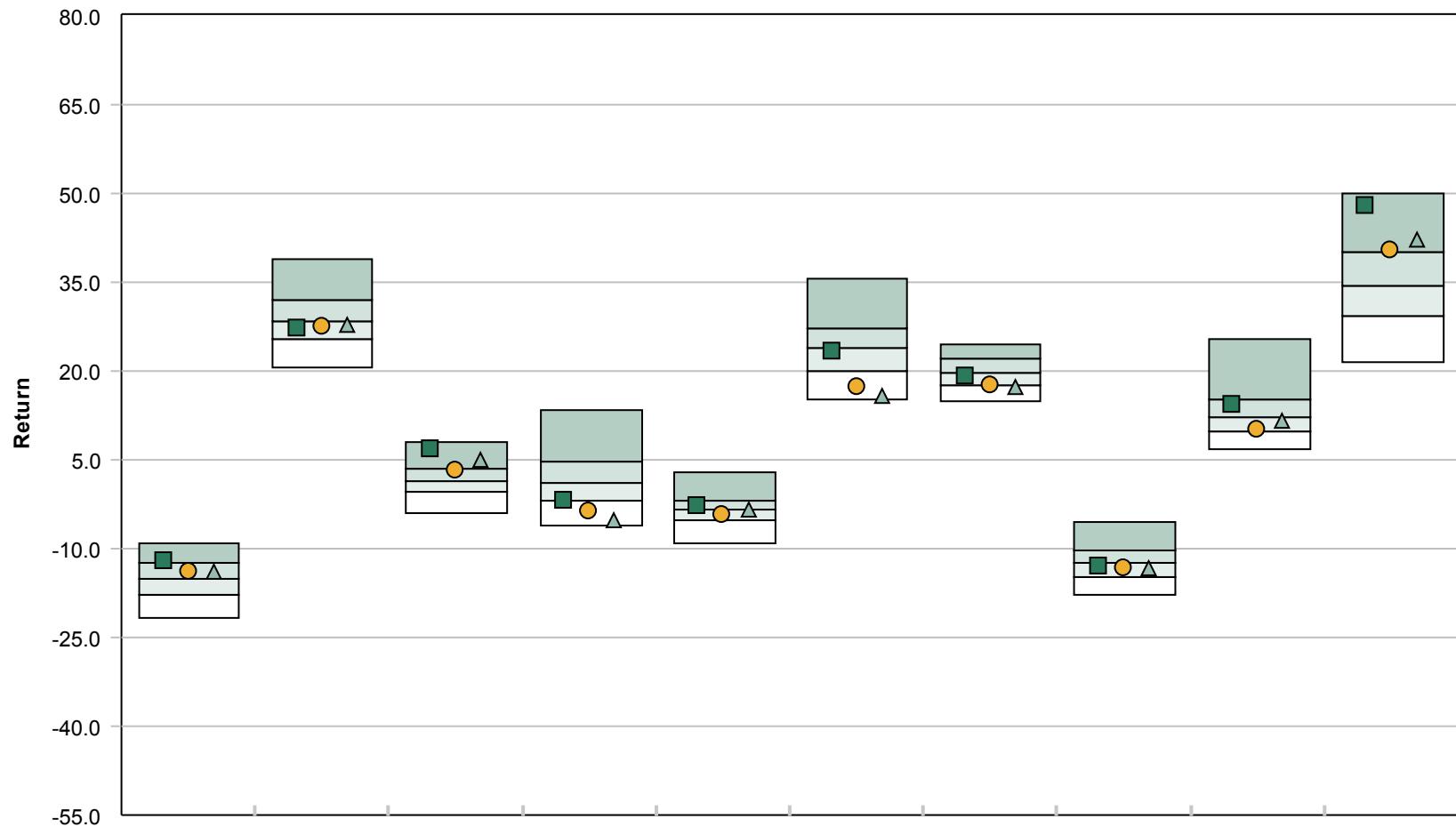
|                            | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs      | 5 Yrs     | 7 Yrs     | 10 Yrs     |
|----------------------------|------------|------------|------------|------------|-----------|-----------|------------|
| Arrowstreet Capital        | 10.75 (52) | 10.75 (52) | -3.76 (36) | 10.23 (16) | 4.83 (23) | 7.62 (35) | 11.78 (21) |
| Arrowstreet Capital Index* | 9.98 (74)  | 9.98 (74)  | -4.35 (41) | 8.08 (42)  | 2.74 (75) | 5.18 (90) | 9.11 (86)  |
| MSCI AC World ex USA       | 10.44 (59) | 10.44 (59) | -3.74 (36) | 8.61 (29)  | 3.05 (68) | 5.21 (90) | 9.35 (84)  |
| 5th Percentile             | 15.10      | 15.10      | 1.50       | 12.09      | 7.75      | 10.60     | 14.36      |
| 1st Quartile               | 12.11      | 12.11      | -2.66      | 8.97       | 4.57      | 7.98      | 11.53      |
| Median                     | 10.85      | 10.85      | -5.02      | 7.47       | 3.44      | 6.80      | 10.51      |
| 3rd Quartile               | 9.92       | 9.92       | -7.63      | 6.39       | 2.74      | 5.94      | 9.86       |
| 95th Percentile            | 8.42       | 8.42       | -12.66     | 4.51       | 1.23      | 4.20      | 8.46       |

\*80% MSCI EAFE/20% MSCI EME

## Bristol County Retirement System

## IM International Core Equity (SA+CF)

As of March 31, 2019



|                            | 2018        | 2017       | 2016      | 2015       | 2014       | 2013       | 2012       | 2011        | 2010       | 2009       |
|----------------------------|-------------|------------|-----------|------------|------------|------------|------------|-------------|------------|------------|
| Arrowstreet Capital        | -11.98 (20) | 27.26 (56) | 6.87 (10) | -1.88 (76) | -2.74 (38) | 23.44 (56) | 19.10 (62) | -12.96 (57) | 14.39 (31) | 47.80 (9)  |
| Arrowstreet Capital Index* | -13.84 (35) | 27.52 (56) | 3.15 (32) | -3.64 (88) | -4.23 (59) | 17.38 (85) | 17.65 (76) | -13.27 (60) | 9.98 (70)  | 40.33 (25) |
| MSCI AC World ex USA       | -13.78 (34) | 27.77 (54) | 5.01 (19) | -5.25 (94) | -3.44 (50) | 15.78 (94) | 17.39 (78) | -13.33 (61) | 11.60 (55) | 42.14 (19) |
| 5th Percentile             | -8.99       | 38.76      | 8.11      | 13.29      | 2.95       | 35.70      | 24.58      | -5.62       | 25.49      | 50.08      |
| 1st Quartile               | -12.42      | 32.14      | 3.59      | 4.68       | -1.94      | 27.21      | 22.01      | -10.40      | 15.30      | 40.08      |
| Median                     | -15.16      | 28.38      | 1.54      | 1.09       | -3.45      | 24.02      | 19.76      | -12.41      | 12.06      | 34.43      |
| 3rd Quartile               | -17.65      | 25.34      | -0.30     | -1.86      | -5.24      | 19.95      | 17.67      | -14.82      | 9.71       | 29.23      |
| 95th Percentile            | -21.65      | 20.65      | -3.91     | -6.15      | -8.99      | 15.23      | 14.94      | -17.91      | 6.70       | 21.59      |

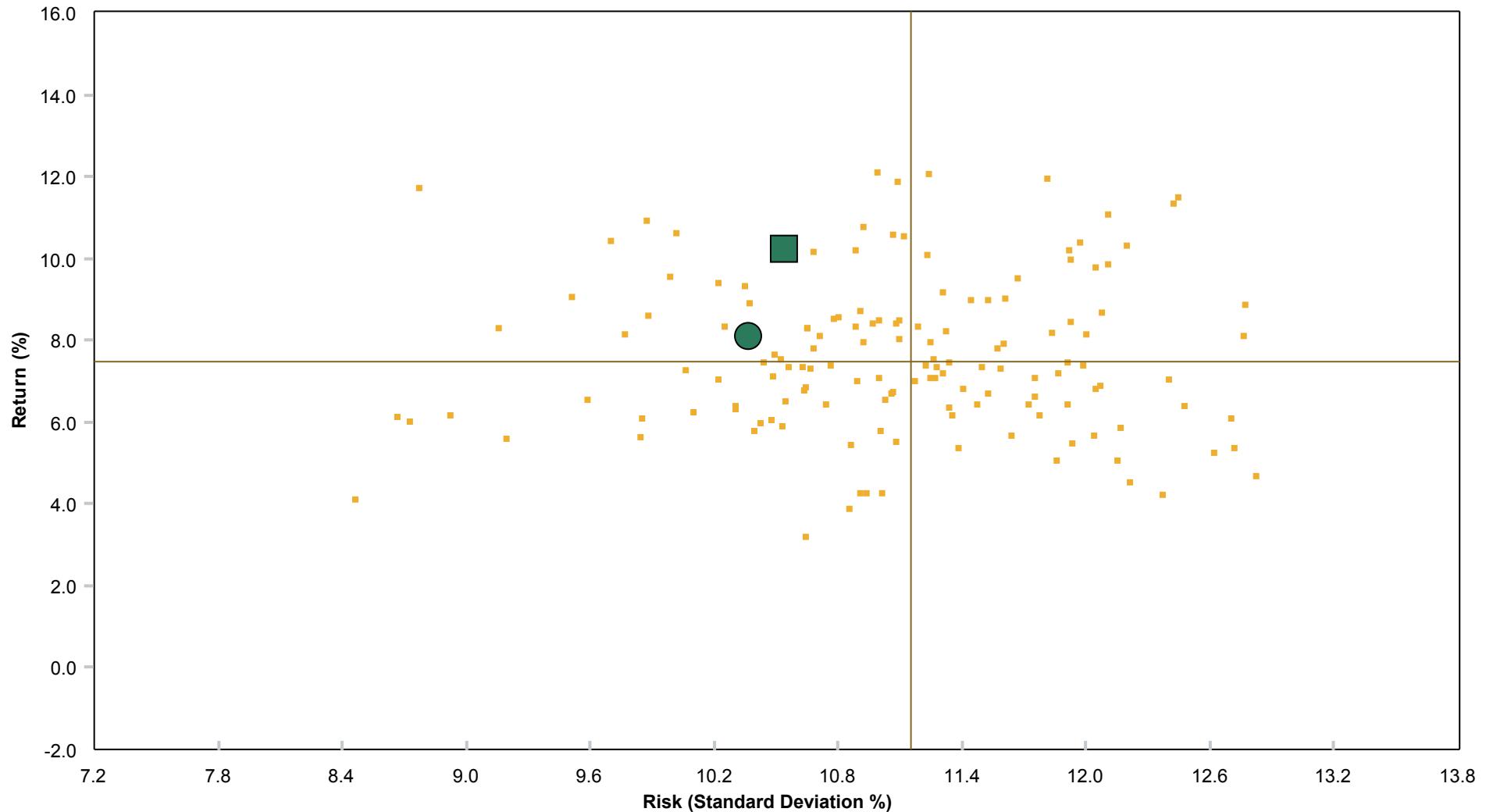
\*80% MSCI EAFE/20% MSCI EME

## Bristol County Retirement System

## Peer Group Scattergram

IM International Core Equity (SA+CF)

3 Years Ending March 31, 2019



|                            | Return | Standard Deviation |
|----------------------------|--------|--------------------|
| Arrowstreet Capital        | 10.23  | 10.54              |
| Arrowstreet Capital Index* | 8.08   | 10.37              |
| Median                     | 7.47   | 11.15              |

\*80% MSCI EAFE/20% MSCI EME.

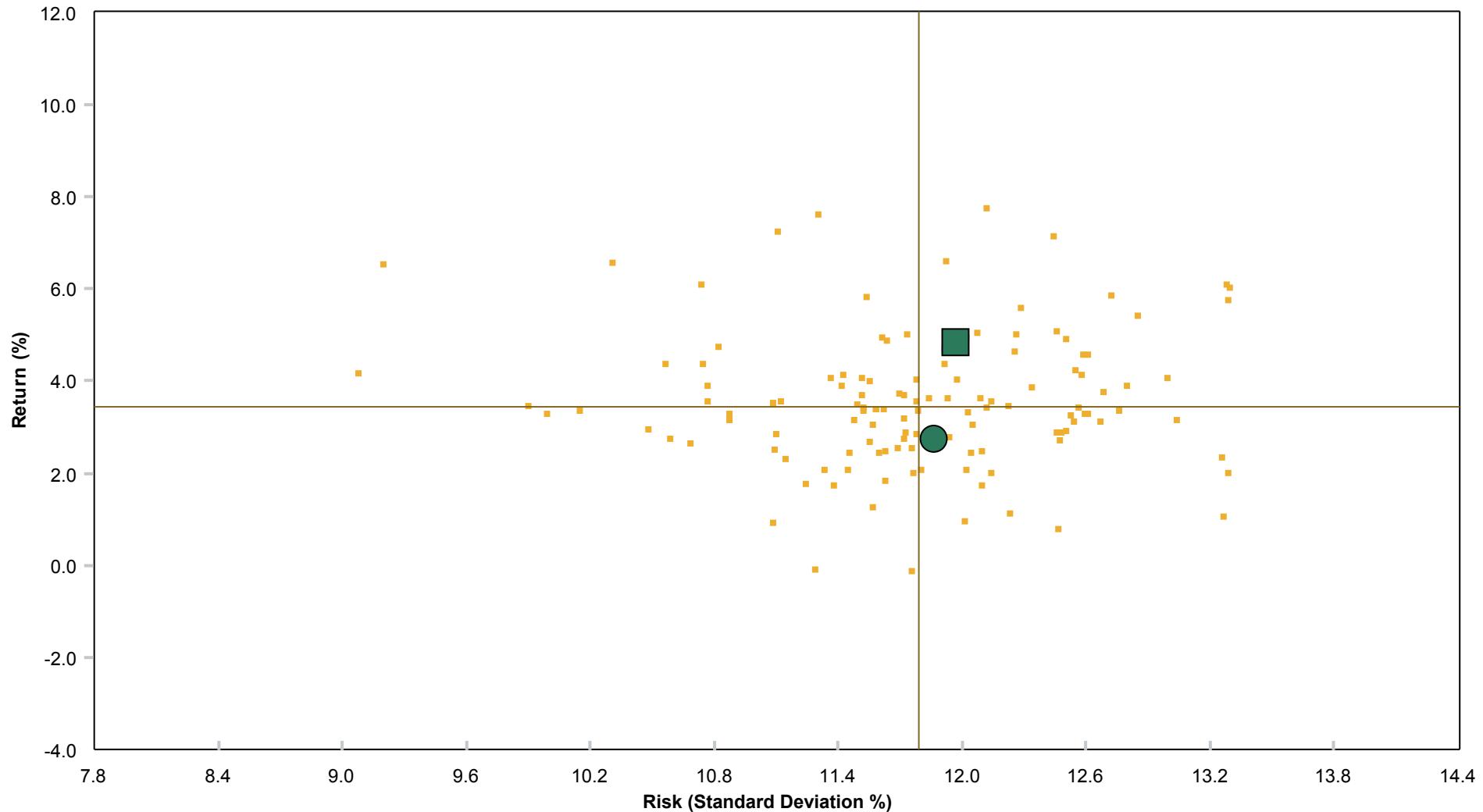
 Segal Marco Advisors

## Bristol County Retirement System

## Peer Group Scattergram

IM International Core Equity (SA+CF)

5 Years Ending March 31, 2019



\*80% MSCI EAFE/20% MSCI EME.

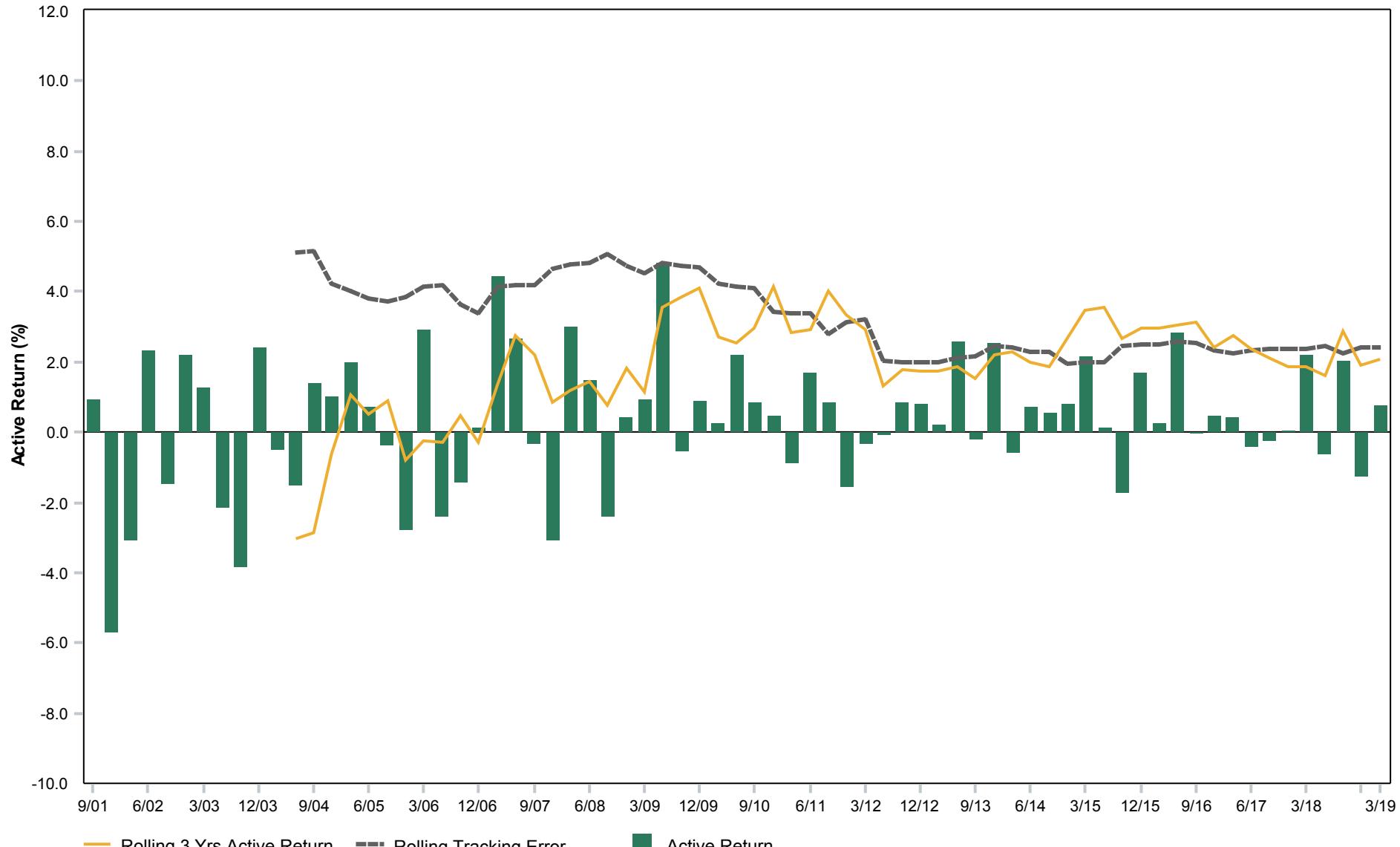
 Segal Marco Advisors

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                            | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016 | 2015  |
|----------------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|------|-------|
| Arrowstreet Capital        | 10.75 | 10.75 | -3.76 | 10.23 | 4.83  | 7.62  | 11.78  | -11.98 | 27.26 | 6.87 | -1.88 |
| Arrowstreet Capital Index* | 9.98  | 9.98  | -4.35 | 8.08  | 2.74  | 5.18  | 9.11   | -13.84 | 27.52 | 3.15 | -3.64 |
| Difference                 | 0.77  | 0.77  | 0.59  | 2.15  | 2.09  | 2.44  | 2.67   | 1.86   | -0.26 | 3.72 | 1.76  |



\*80% MSCI EAFE (Net)/20% MSCI EMF.

Gross of Fees

 Segal Marco Advisors

## Bristol County Retirement System

## Arrowstreet Capital

As of March 31, 2019

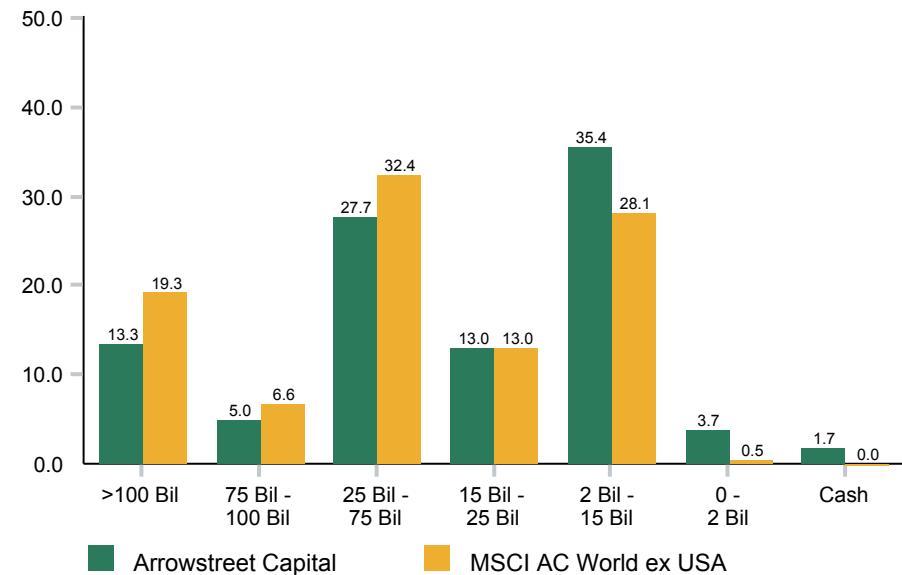
### Top Ten Equity Holdings

|   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|---|----------------------|----------------------|-------------------|----------------------|
| Roche Holding AG                                      | 3.22                 | 0.95                 | 2.27              | 14.98                |
| Novartis AG   | 1.72                 | 1.03                 | 0.69              | 16.25                |
| Samsung Electronics Co Ltd                            | 1.55                 | 0.92                 | 0.63              | 13.84                |
| Nestle SA, Cham Und Vevey                             | 1.35                 | 1.44                 | -0.09             | 17.54                |
| Enel Ente Nazionale Per L'Energia Elettrica SPA, Roma | 1.24                 | 0.26                 | 0.98              | 13.85                |
| iShares MSCI South Korea Capped ETF                   | 1.10                 | 0.00                 | 1.10              | 3.55                 |
| Eni SpA   | 0.99                 | 0.22                 | 0.77              | 12.34                |
| Bank of China Ltd                                     | 0.98                 | 0.18                 | 0.80              | 5.08                 |
| Rio Tinto Group                                       | 0.98                 | 0.33                 | 0.65              | 30.77                |
| Glaxosmithkline PLC                                   | 0.95                 | 0.51                 | 0.44              | 10.98                |
| % of Portfolio  | 14.08                | 5.84                 | 8.24              |                      |

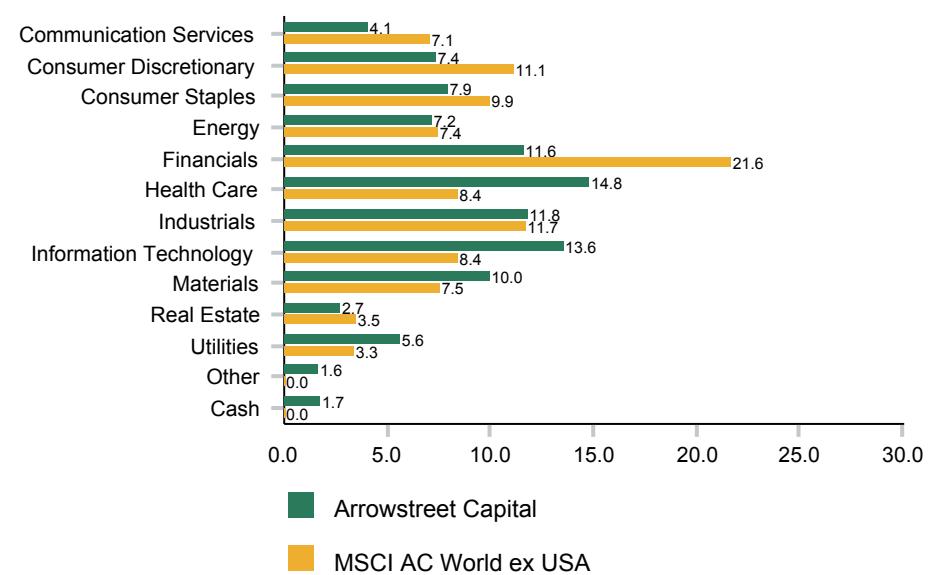
### Portfolio Characteristics

|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 47,630,619,792 | 66,549,977,499 |
| Median Mkt. Cap (\$)      | 6,987,245,349  | 7,841,429,210  |
| Price/Earnings ratio      | 12.67          | 13.72          |
| Price/Book ratio          | 2.25           | 2.20           |
| 5 Yr. EPS Growth Rate (%) | 11.32          | 10.02          |
| Current Yield (%)         | 3.46           | 3.37           |
| Beta (5 Years, Monthly)   | 0.97           | 1.00           |
| Number of Stocks          | 714            | 2,148          |

### Distribution of Market Capitalization (%)



### Sector Weights (%)

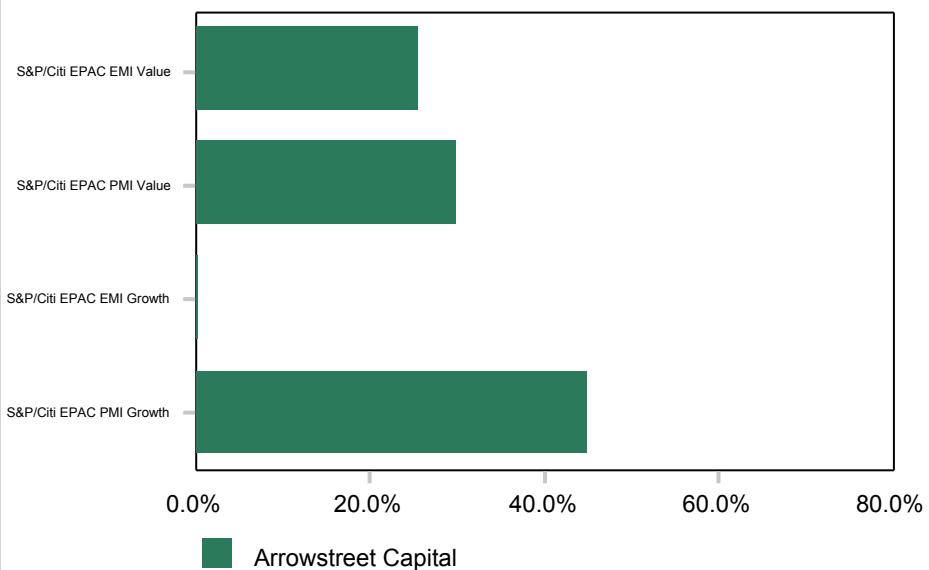


## Bristol County Retirement System

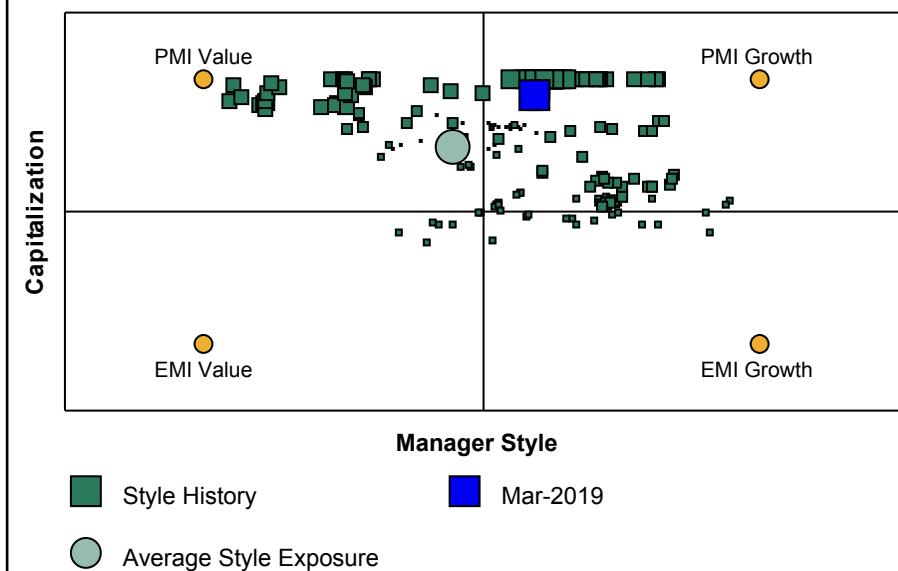
## Style Analysis

Ending March 31, 2019

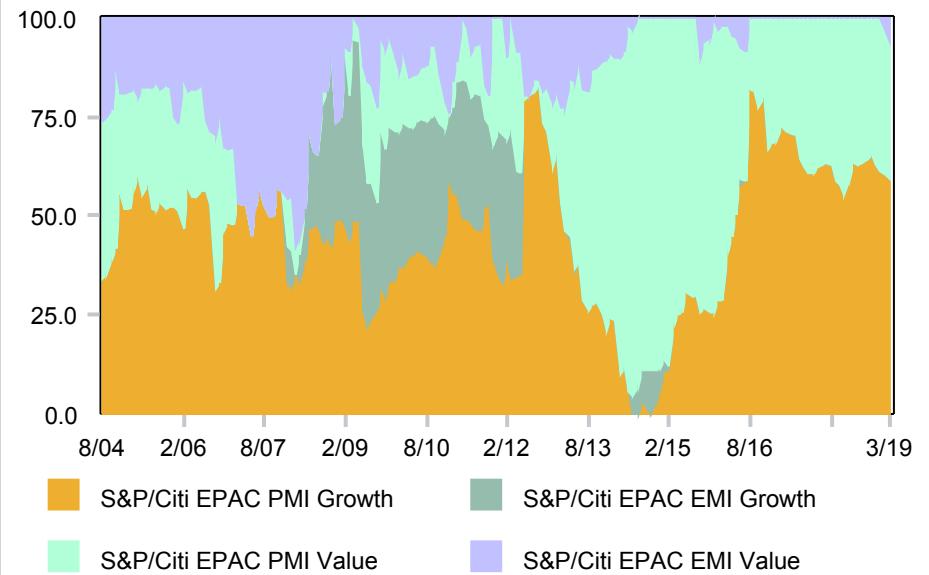
### Investment Style Exposure



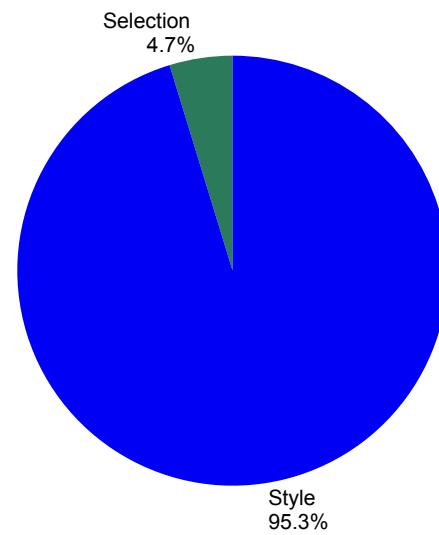
### Style Map(ppp)



### Style History(ppp)



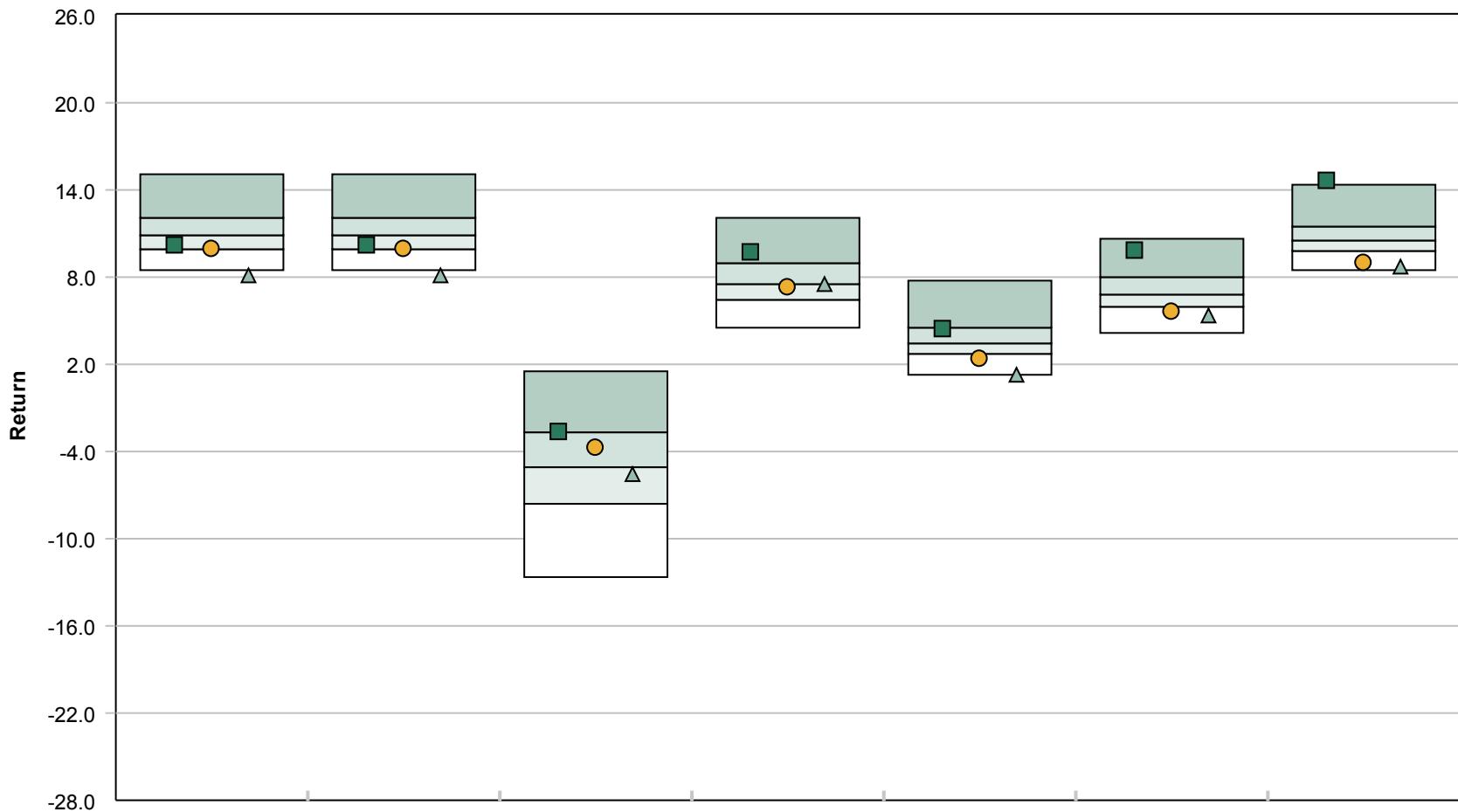
### Return Variance



## Bristol County Retirement System

## IM International Core Equity (SA+CF)

As of March 31, 2019



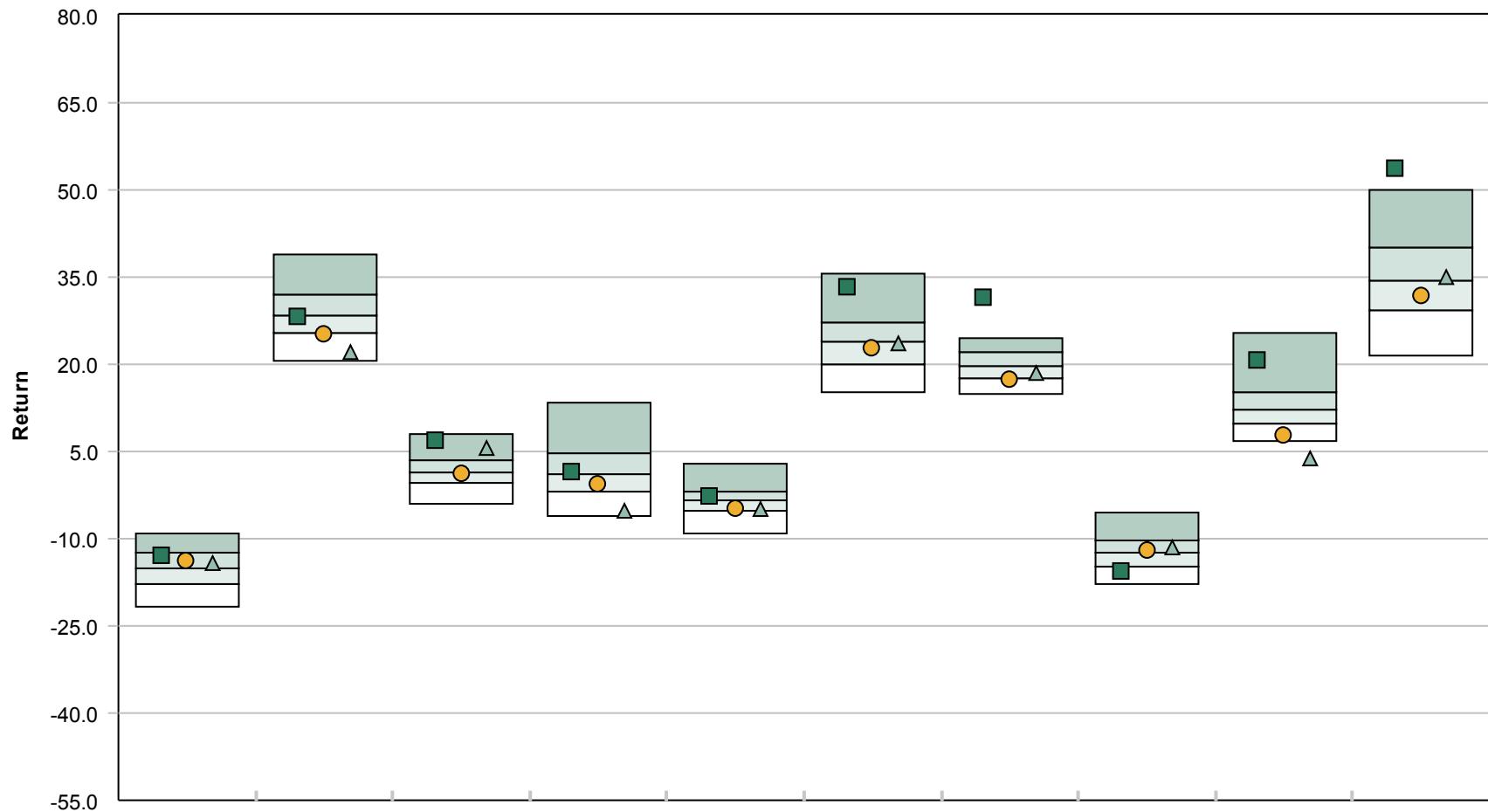
|                      | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs     | 5 Yrs     | 7 Yrs     | 10 Yrs    |
|----------------------|------------|------------|------------|-----------|-----------|-----------|-----------|
| Freedom Capital Intl | 10.21 (67) | 10.21 (67) | -2.62 (25) | 9.71 (20) | 4.39 (28) | 9.79 (9)  | 14.59 (5) |
| MSCI EAFE (net)      | 9.98 (74)  | 9.98 (74)  | -3.71 (36) | 7.27 (58) | 2.33 (86) | 5.63 (84) | 8.96 (89) |
| MSCI EAFE Value      | 8.08 (97)  | 8.08 (97)  | -5.56 (56) | 7.54 (49) | 1.24 (95) | 5.30 (89) | 8.74 (92) |
| 5th Percentile       | 15.10      | 15.10      | 1.50       | 12.09     | 7.75      | 10.60     | 14.36     |
| 1st Quartile         | 12.11      | 12.11      | -2.66      | 8.97      | 4.57      | 7.98      | 11.53     |
| Median               | 10.85      | 10.85      | -5.02      | 7.47      | 3.44      | 6.80      | 10.51     |
| 3rd Quartile         | 9.92       | 9.92       | -7.63      | 6.39      | 2.74      | 5.94      | 9.86      |
| 95th Percentile      | 8.42       | 8.42       | -12.66     | 4.51      | 1.23      | 4.20      | 8.46      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM International Core Equity (SA+CF)

As of March 31, 2019



|                      | 2018        | 2017       | 2016      | 2015       | 2014       | 2013       | 2012       | 2011        | 2010       | 2009       |
|----------------------|-------------|------------|-----------|------------|------------|------------|------------|-------------|------------|------------|
| Freedom Capital Intl | -12.90 (29) | 27.96 (53) | 6.75 (10) | 1.37 (48)  | -2.88 (40) | 33.24 (8)  | 31.46 (1)  | -15.84 (87) | 20.72 (13) | 53.54 (3)  |
| MSCI EAFE (net)      | -13.79 (35) | 25.03 (78) | 1.00 (58) | -0.81 (67) | -4.90 (69) | 22.78 (60) | 17.32 (78) | -12.14 (46) | 7.75 (92)  | 31.78 (61) |
| MSCI EAFE Value      | -14.26 (41) | 22.12 (94) | 5.68 (15) | -5.22 (94) | -4.92 (69) | 23.59 (54) | 18.43 (70) | -11.65 (41) | 3.81 (98)  | 35.06 (48) |
| 5th Percentile       | -8.99       | 38.76      | 8.11      | 13.29      | 2.95       | 35.70      | 24.58      | -5.62       | 25.49      | 50.08      |
| 1st Quartile         | -12.42      | 32.14      | 3.59      | 4.68       | -1.94      | 27.21      | 22.01      | -10.40      | 15.30      | 40.08      |
| Median               | -15.16      | 28.38      | 1.54      | 1.09       | -3.45      | 24.02      | 19.76      | -12.41      | 12.06      | 34.43      |
| 3rd Quartile         | -17.65      | 25.34      | -0.30     | -1.86      | -5.24      | 19.95      | 17.67      | -14.82      | 9.71       | 29.23      |
| 95th Percentile      | -21.65      | 20.65      | -3.91     | -6.15      | -8.99      | 15.23      | 14.94      | -17.91      | 6.70       | 21.59      |

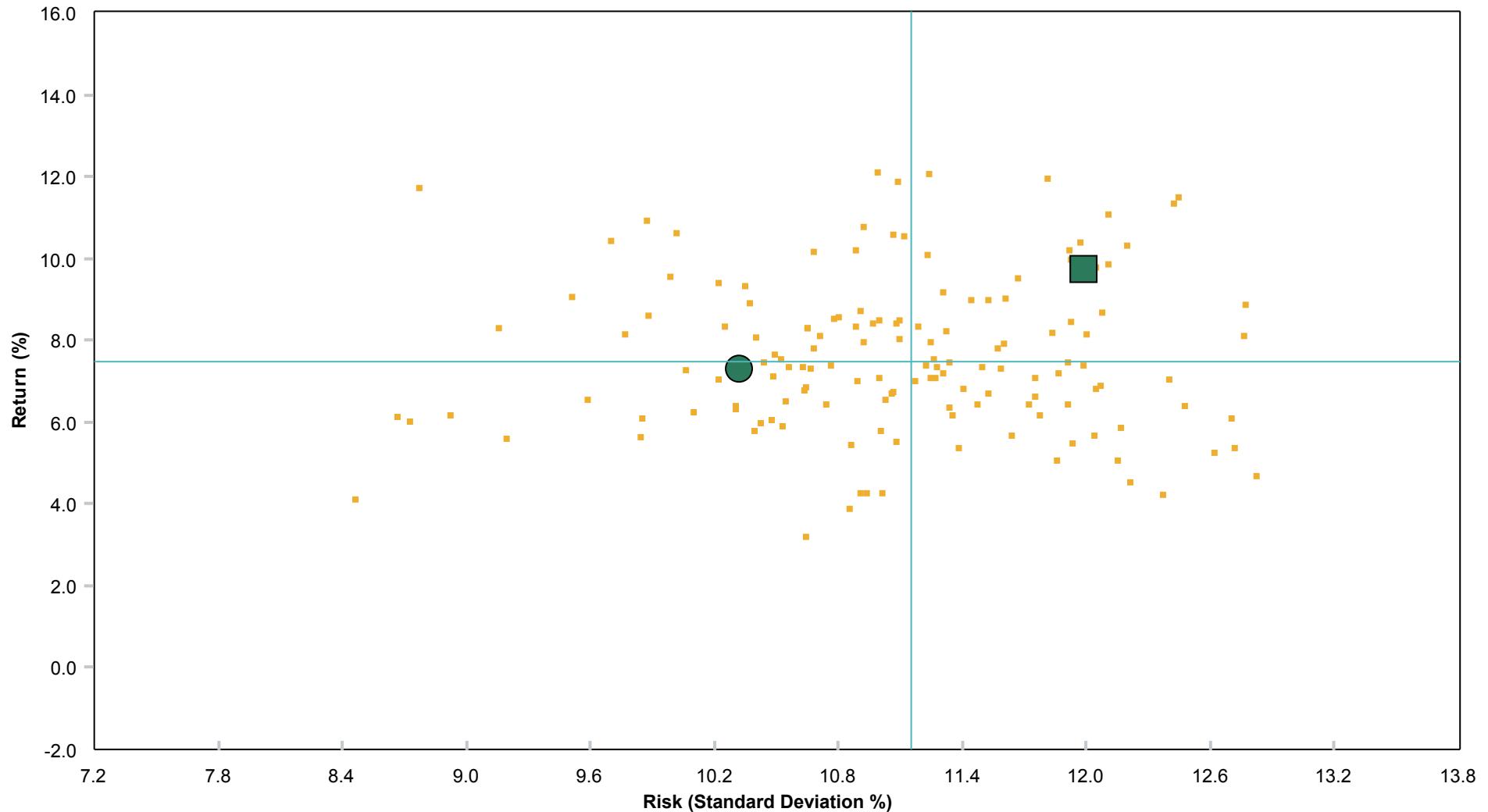
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

IM International Core Equity (SA+CF)

3 Years Ending March 31, 2019



Calculation based on monthly periodicity.

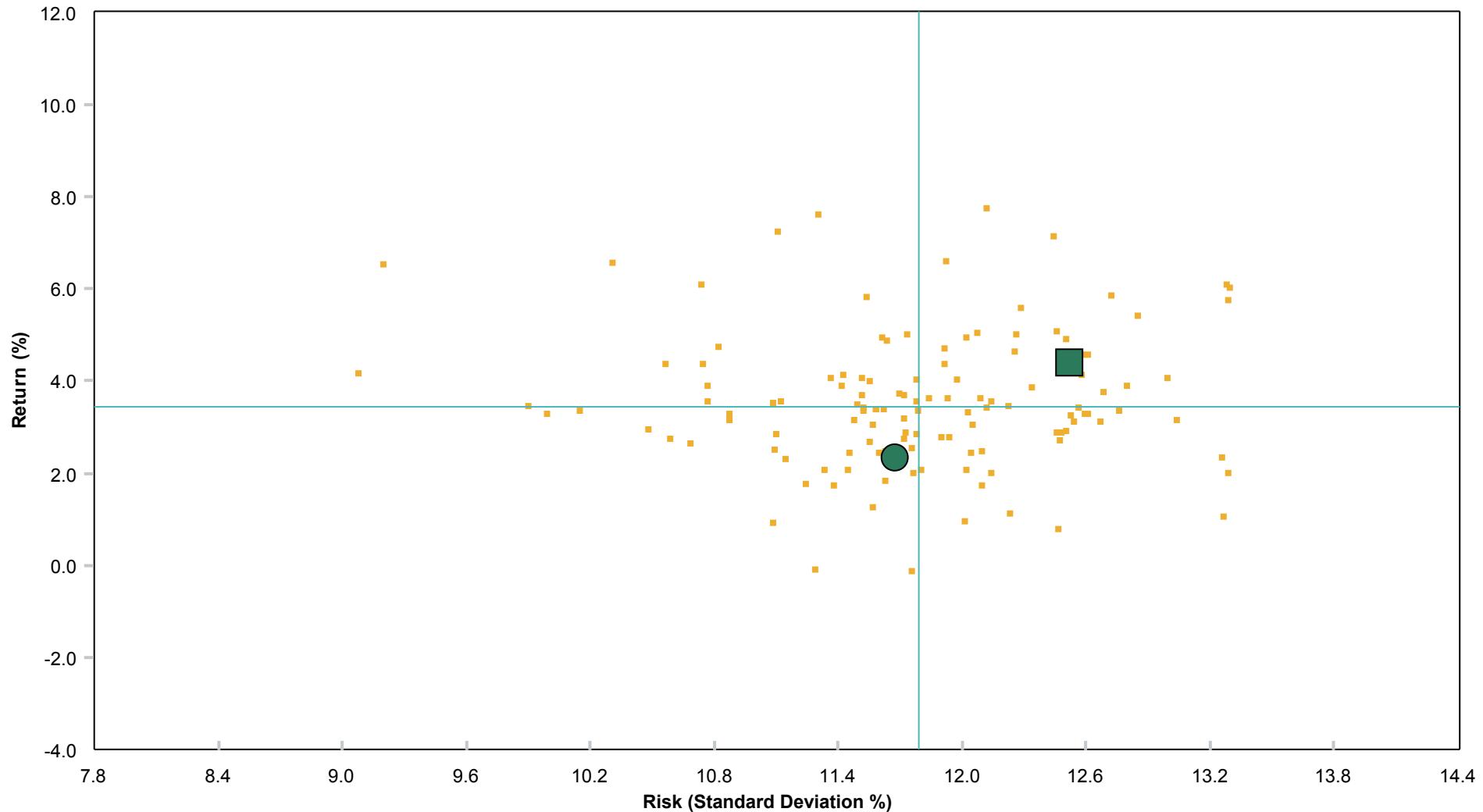
 Segal Marco Advisors

## Bristol County Retirement System

## Peer Group Scattergram

IM International Core Equity (SA+CF)

5 Years Ending March 31, 2019



Calculation based on monthly periodicity.

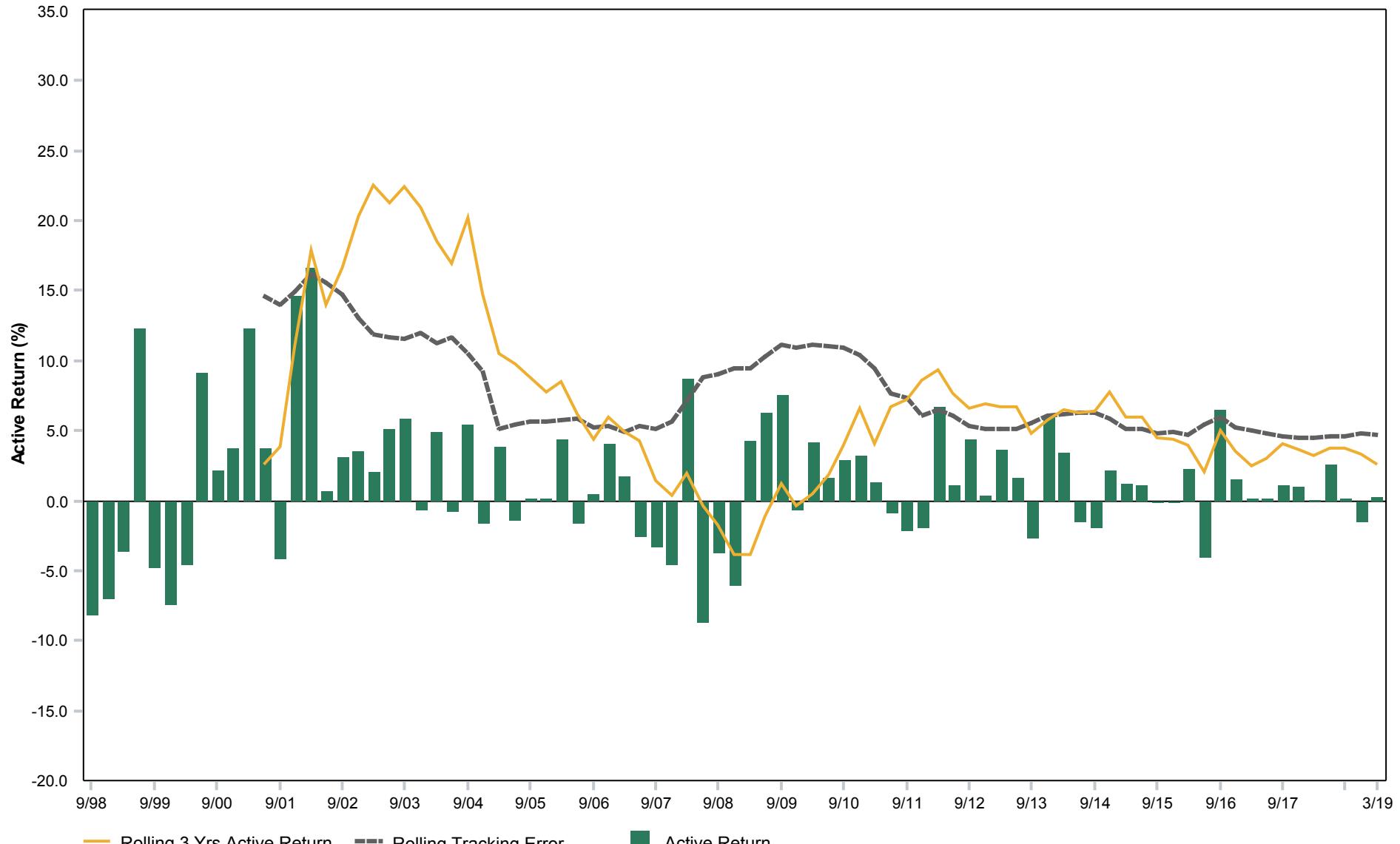
 Segal Marco Advisors

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                      | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016 | 2015  |
|----------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|------|-------|
| Freedom Capital Intl | 10.21 | 10.21 | -2.62 | 9.71  | 4.39  | 9.79  | 14.59  | -12.90 | 27.96 | 6.75 | 1.37  |
| MSCI EAFE (net)      | 9.98  | 9.98  | -3.71 | 7.27  | 2.33  | 5.63  | 8.96   | -13.79 | 25.03 | 1.00 | -0.81 |
| Difference           | 0.23  | 0.23  | 1.09  | 2.44  | 2.06  | 4.16  | 5.63   | 0.89   | 2.93  | 5.75 | 2.18  |



— Rolling 3 Yrs Active Return    - - - Rolling Tracking Error

■ Active Return

## Bristol County Retirement System

## Freedom Capital Intl

As of March 31, 2019

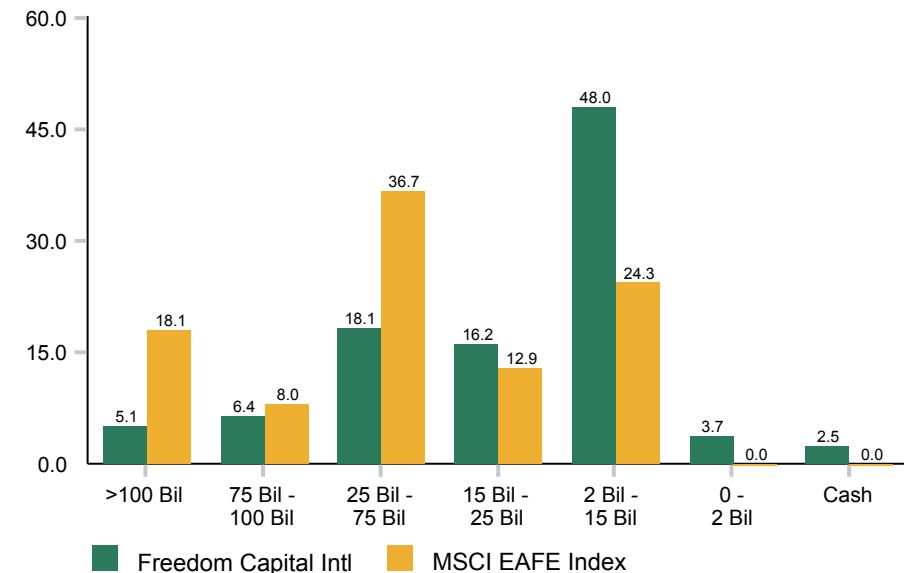
### Top Ten Equity Holdings

|                   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|-------------------|----------------------|----------------------|-------------------|----------------------|
| Linde Plc         | 3.07                 | 0.00                 | 3.07              | 13.34                |
| Infosys Ltd       | 2.82                 | 0.00                 | 2.82              | 15.43                |
| Novartis AG       | 2.78                 | 1.53                 | 1.25              | 16.25                |
| Nexon Co Ltd      | 2.77                 | 0.05                 | 2.72              | 21.51                |
| Cineworld Group   | 2.73                 | 0.00                 | 2.73              | 13.60                |
| Bellway PLC       | 2.67                 | 0.00                 | 2.67              | 23.71                |
| Next PLC          | 2.64                 | 0.07                 | 2.57              | 42.86                |
| DnB ASA           | 2.52                 | 0.13                 | 2.39              | 15.65                |
| Vinci SA          | 2.51                 | 0.36                 | 2.15              | 18.04                |
| Taylor Wimpey PLC | 2.44                 | 0.05                 | 2.39              | 31.58                |
| % of Portfolio    | 26.95                | 2.19                 | 24.76             |                      |

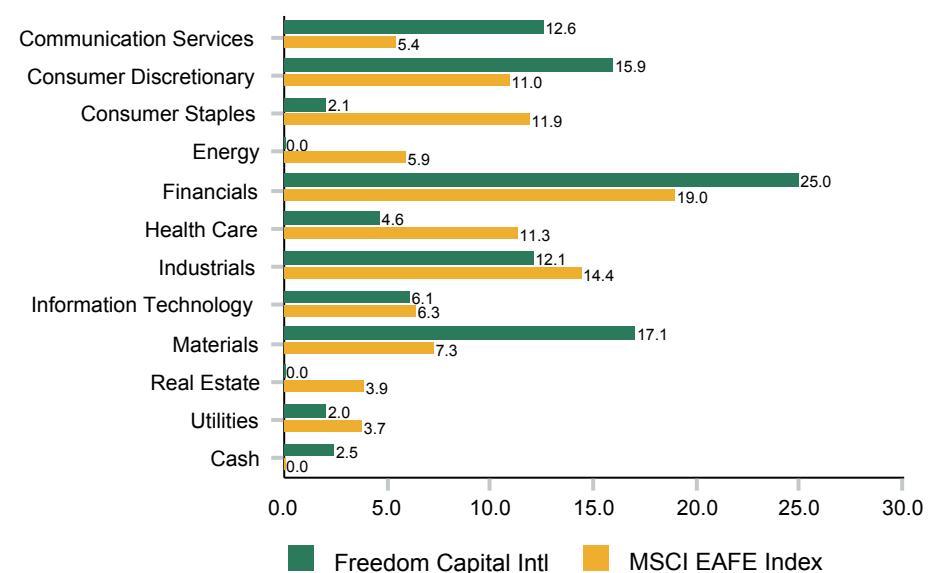
### Portfolio Characteristics

|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 31,647,296,805 | 61,529,682,722 |
| Median Mkt. Cap (\$)      | 13,584,924,856 | 10,328,381,298 |
| Price/Earnings ratio      | 12.32          | 13.96          |
| Price/Book ratio          | 1.71           | 2.24           |
| 5 Yr. EPS Growth Rate (%) | 6.56           | 8.68           |
| Current Yield (%)         | 3.59           | 3.59           |
| Beta (5 Years, Monthly)   | 1.00           | 1.00           |
| Number of Stocks          | 53             | 920            |

### Distribution of Market Capitalization (%)



### Sector Weights (%)

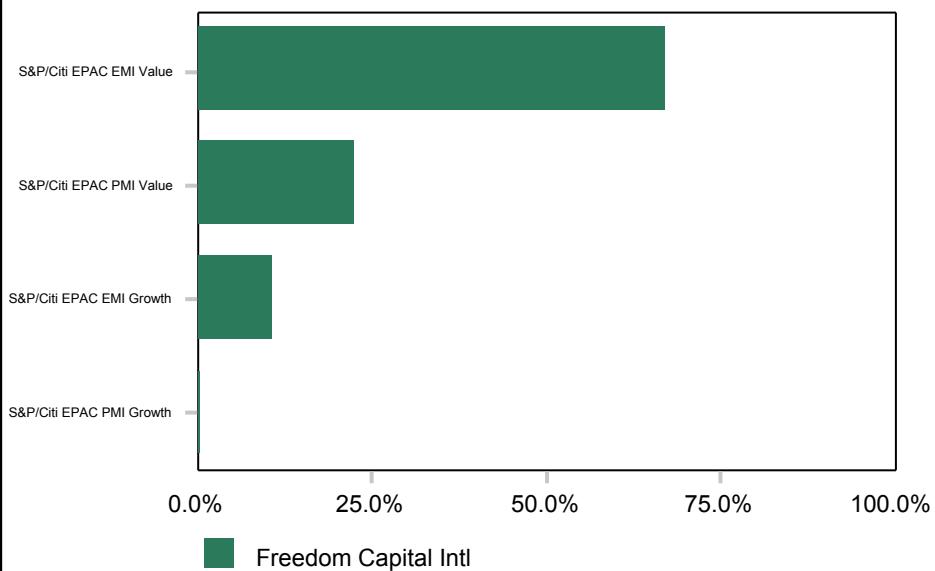


## Bristol County Retirement System

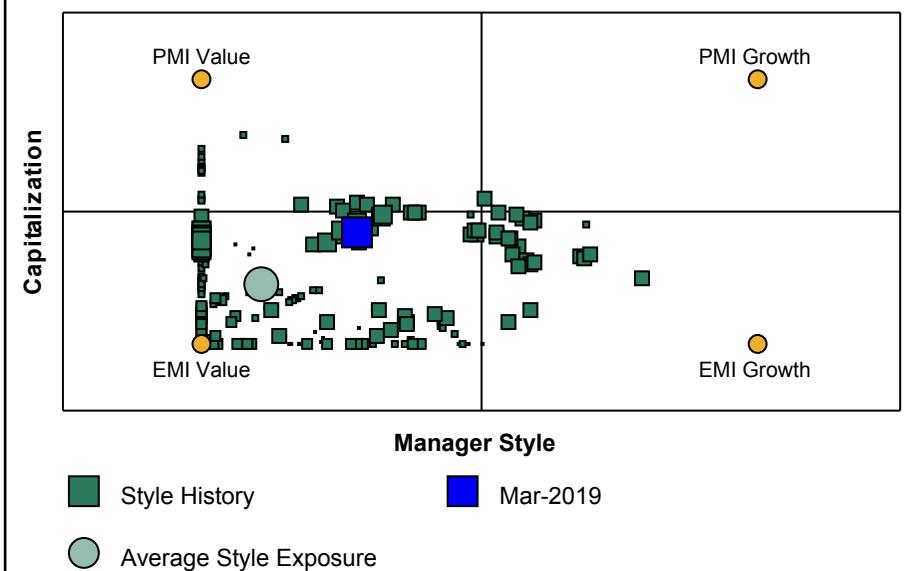
## Freedom Capital International

Ending March 31, 2019

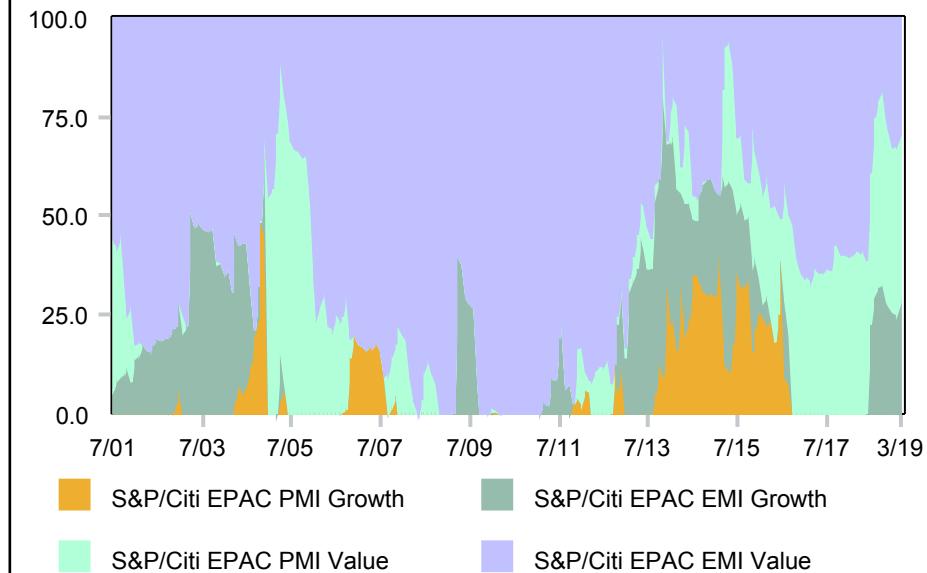
### Investment Style Exposure



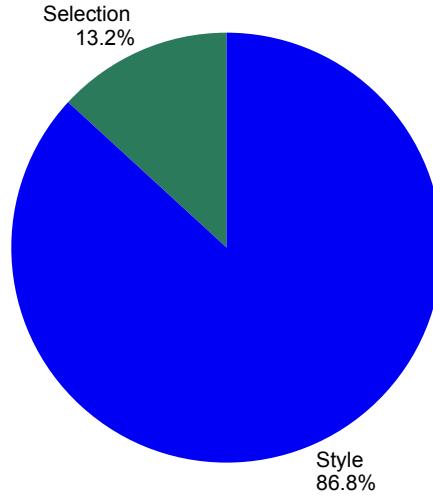
### Style Map(ppp)



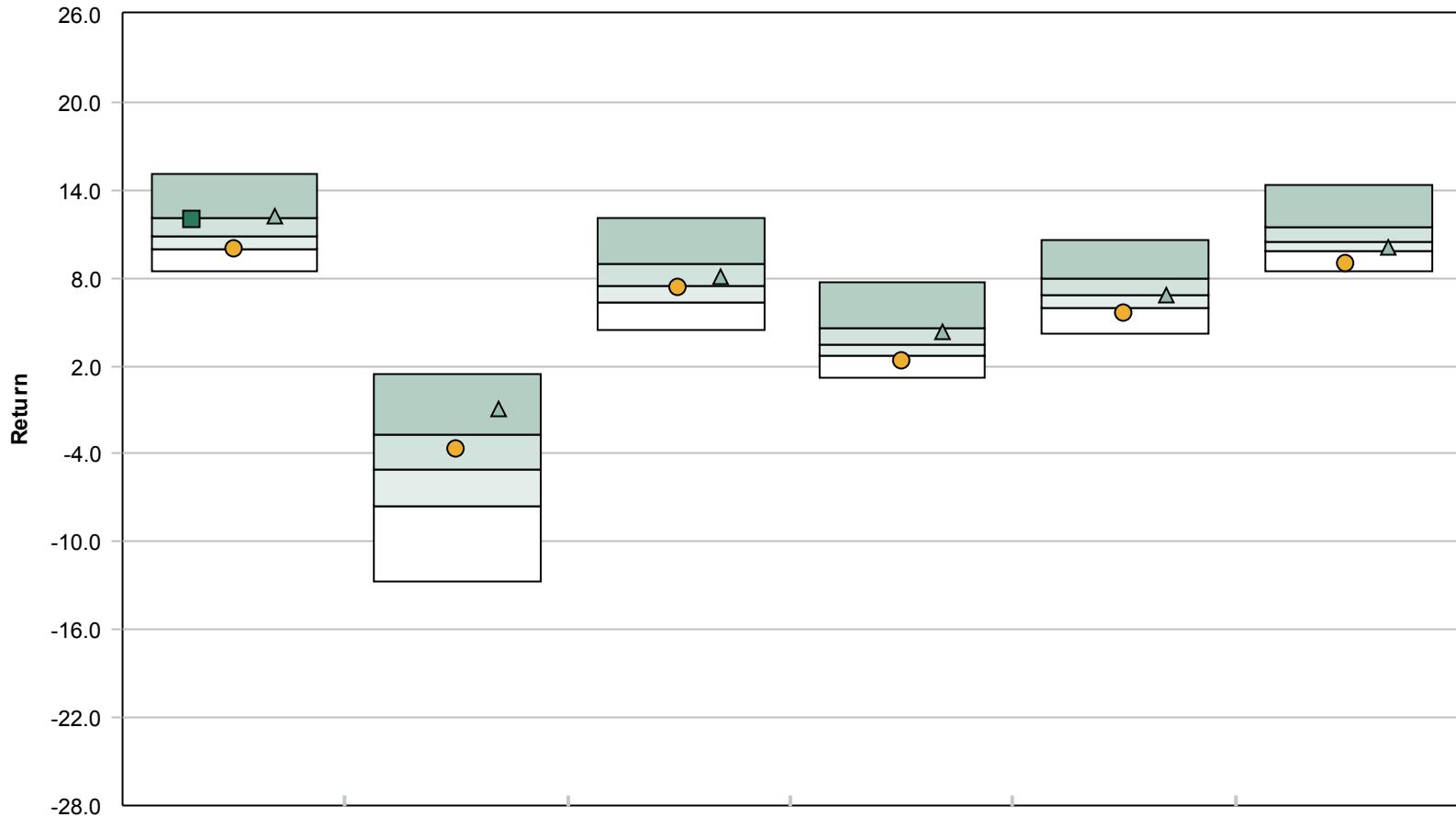
### Style History(ppp)



### Return Variance



As of March 31, 2019



■ Fiera International Equity

**1 Qtr**

○ MSCI EAFE (Net)

**1 Yr**

△ MSCI EAFE Growth Index

**3 Yrs**

**5 Yrs**

**7 Yrs**

**10 Yrs**

5th Percentile

15.10

1.50

12.09

7.75

10.60

14.36

1st Quartile

12.11

-2.66

8.97

4.57

7.98

11.53

Median

10.85

-5.02

7.47

3.44

6.80

10.51

3rd Quartile

9.92

-7.63

6.39

2.74

5.94

9.86

95th Percentile

8.42

-12.66

4.51

1.23

4.20

8.46

Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

## Bristol County Retirement System

## Fiera International Equity

As of March 31, 2019

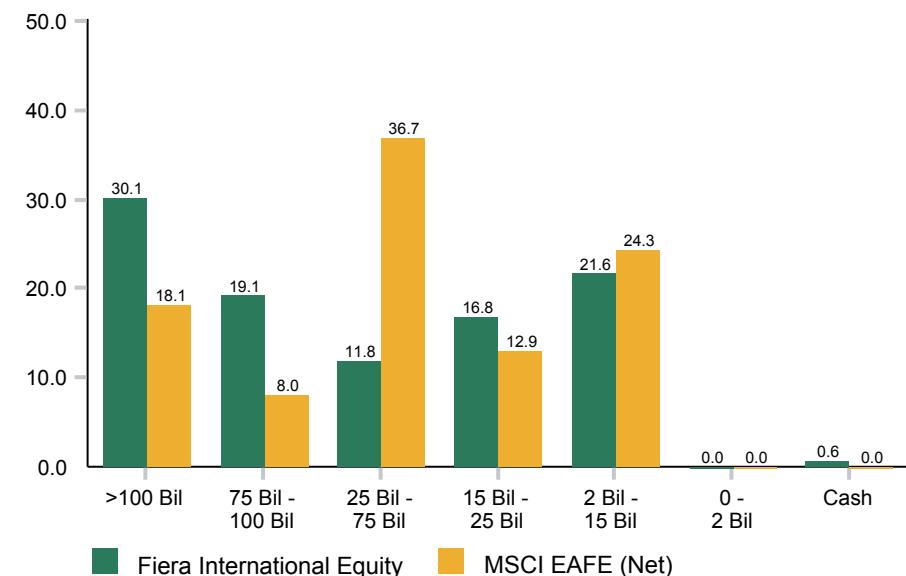
### Top Ten Equity Holdings

|                                   | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|-----------------------------------|----------------------|----------------------|-------------------|----------------------|
| Keyence Corp                      | 6.95                 | 0.44                 | 6.51              | 22.83                |
| NESTLE SA/AG                      | 4.92                 | 0.00                 | 4.92              | N/A                  |
| Unilever NV                       | 4.84                 | 0.66                 | 4.18              | 9.14                 |
| DIAGEO PLC                        | 4.37                 | 0.00                 | 4.37              | N/A                  |
| Roche Holding AG                  | 4.01                 | 1.42                 | 2.59              | 14.98                |
| Intercontinental Hotels Group PLC | 3.88                 | 0.08                 | 3.80              | 22.26                |
| Taiwan Semiconductor              | 3.77                 | 0.00                 | 3.77              | 10.97                |
| Schindler Holding AG, Hergiswil   | 3.60                 | 0.06                 | 3.54              | 6.86                 |
| Intertek Group PLC, London        | 3.48                 | 0.07                 | 3.41              | 3.22                 |
| IHS Markit Ltd                    | 3.45                 | 0.00                 | 3.45              | 13.36                |
| % of Portfolio                    | 43.27                | 2.73                 | 40.54             |                      |

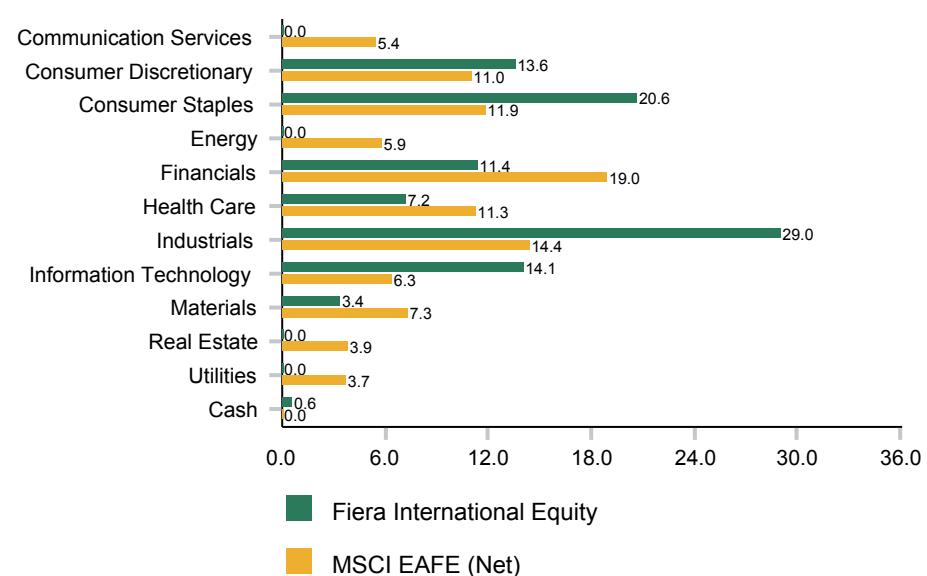
### Portfolio Characteristics

|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 75,113,105,880 | 61,529,682,722 |
| Median Mkt. Cap (\$)      | 42,846,510,871 | 10,328,381,298 |
| Price/Earnings ratio      | 23.83          | 13.96          |
| Price/Book ratio          | 4.20           | 2.24           |
| 5 Yr. EPS Growth Rate (%) | 9.67           | 8.68           |
| Current Yield (%)         | 1.66           | 3.59           |
| Beta                      | N/A            | 1.00           |
| Number of Stocks          | 35             | 920            |

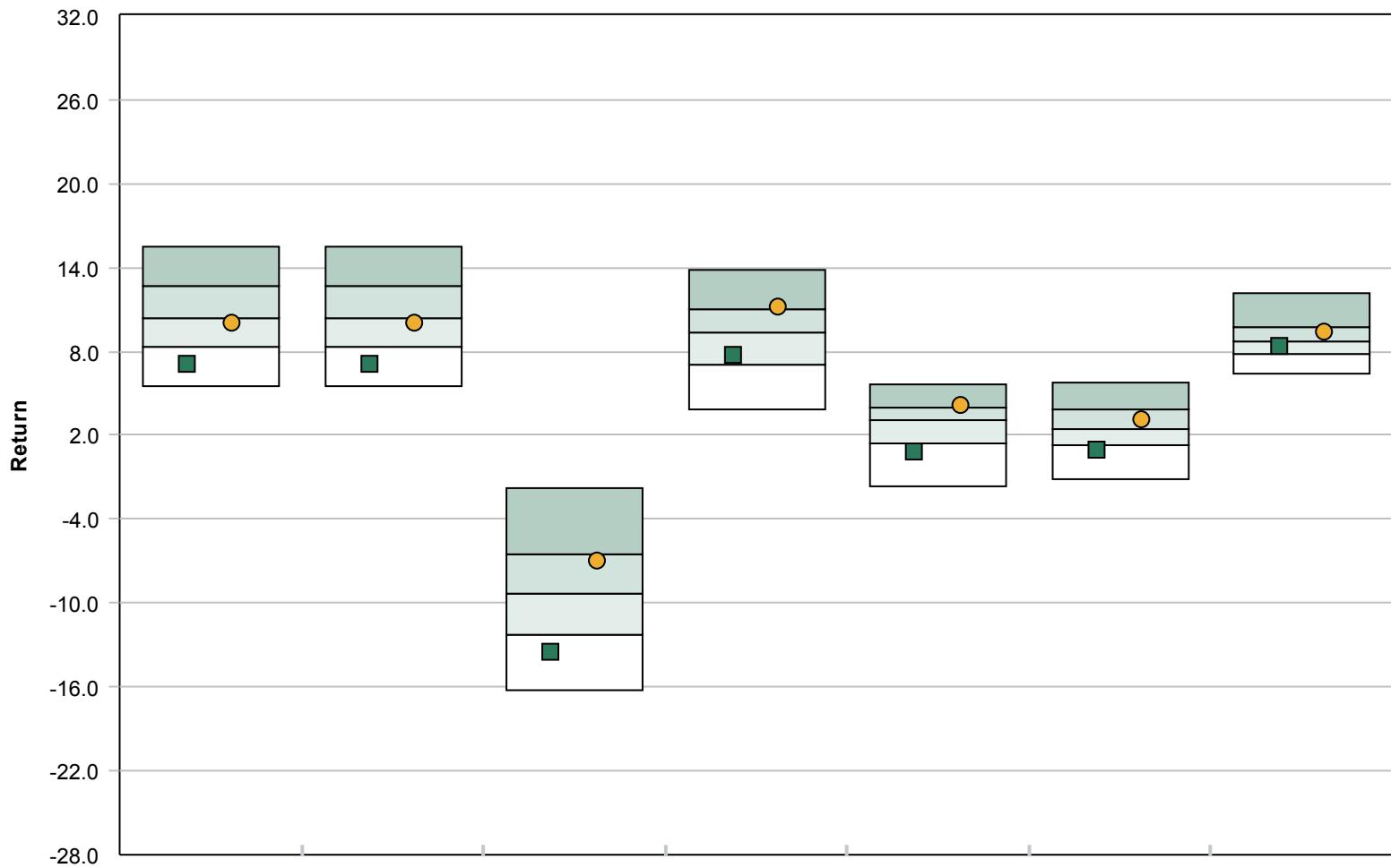
### Distribution of Market Capitalization (%)



### Sector Weights (%)



As of March 31, 2019

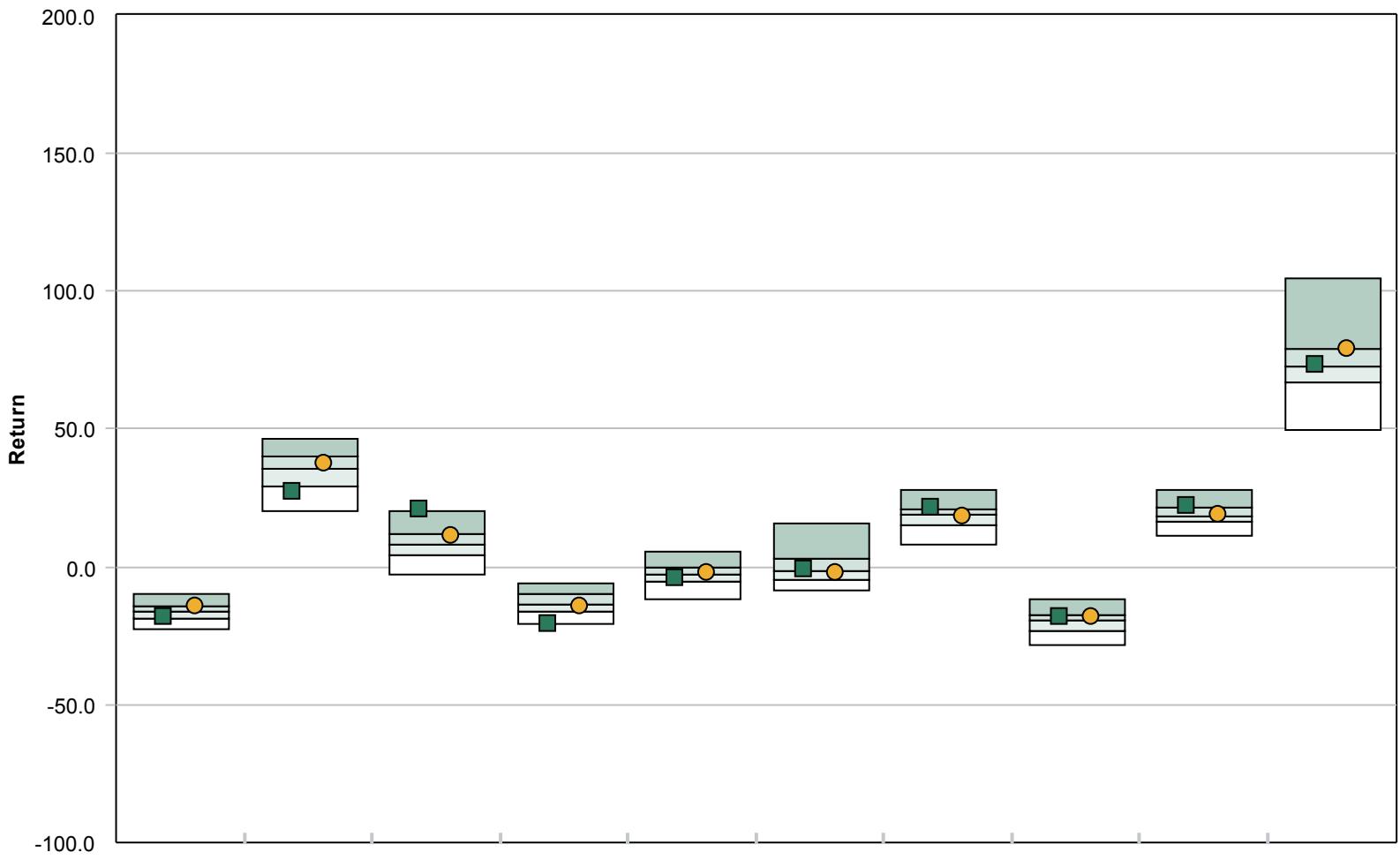


■ Lazard Emerging Markets  
 ● MSCI Emerging Markets Index

|                 | 1 Qtr | YTD   | 1 Yr   | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs |
|-----------------|-------|-------|--------|-------|-------|-------|--------|
| 5th Percentile  | 15.45 | 15.45 | -1.75  | 13.81 | 5.65  | 5.73  | 12.21  |
| 1st Quartile    | 12.63 | 12.63 | -6.49  | 11.03 | 4.02  | 3.88  | 9.78   |
| Median          | 10.38 | 10.38 | -9.38  | 9.40  | 3.08  | 2.41  | 8.77   |
| 3rd Quartile    | 8.35  | 8.35  | -12.23 | 7.10  | 1.39  | 1.36  | 7.80   |
| 95th Percentile | 5.54  | 5.54  | -16.28 | 3.90  | -1.62 | -1.14 | 6.45   |

Parentheses contain percentile rankings.  
 Calculation based on monthly periodicity.

As of March 31, 2019



■ Lazard Emerging Markets  
 ● MSCI Emerging Markets Index

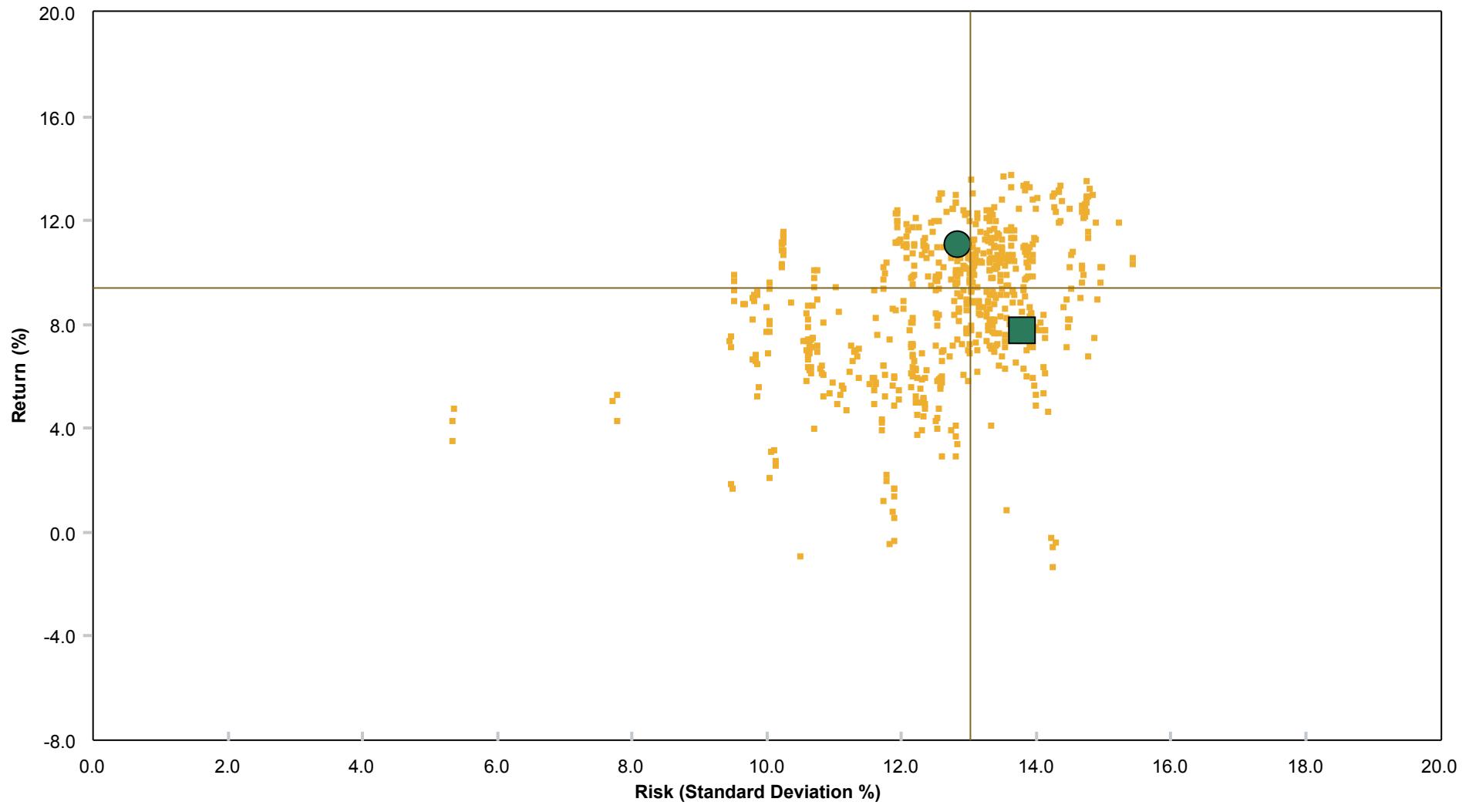
|                 | 2018   | 2017  | 2016  | 2015   | 2014   | 2013  | 2012  | 2011   | 2010  | 2009   |
|-----------------|--------|-------|-------|--------|--------|-------|-------|--------|-------|--------|
| 5th Percentile  | -9.64  | 46.64 | 20.18 | -5.77  | 5.49   | 15.49 | 28.18 | -11.88 | 28.16 | 104.42 |
| 1st Quartile    | -14.02 | 40.40 | 11.80 | -9.95  | -0.22  | 2.73  | 20.70 | -17.42 | 21.85 | 78.94  |
| Median          | -16.41 | 35.37 | 8.35  | -13.66 | -2.92  | -1.42 | 18.78 | -19.51 | 18.32 | 72.67  |
| 3rd Quartile    | -19.04 | 29.42 | 4.00  | -16.19 | -5.04  | -4.73 | 15.35 | -23.06 | 16.42 | 66.89  |
| 95th Percentile | -22.62 | 20.51 | -2.69 | -20.93 | -11.68 | -8.28 | 8.26  | -28.12 | 11.42 | 49.83  |

Parentheses contain percentile rankings.  
 Calculation based on monthly periodicity.

**Bristol County Retirement System****Peer Group Scattergram**

3 Years Ending March 31, 2019

IM Emerging Markets Equity (MF)

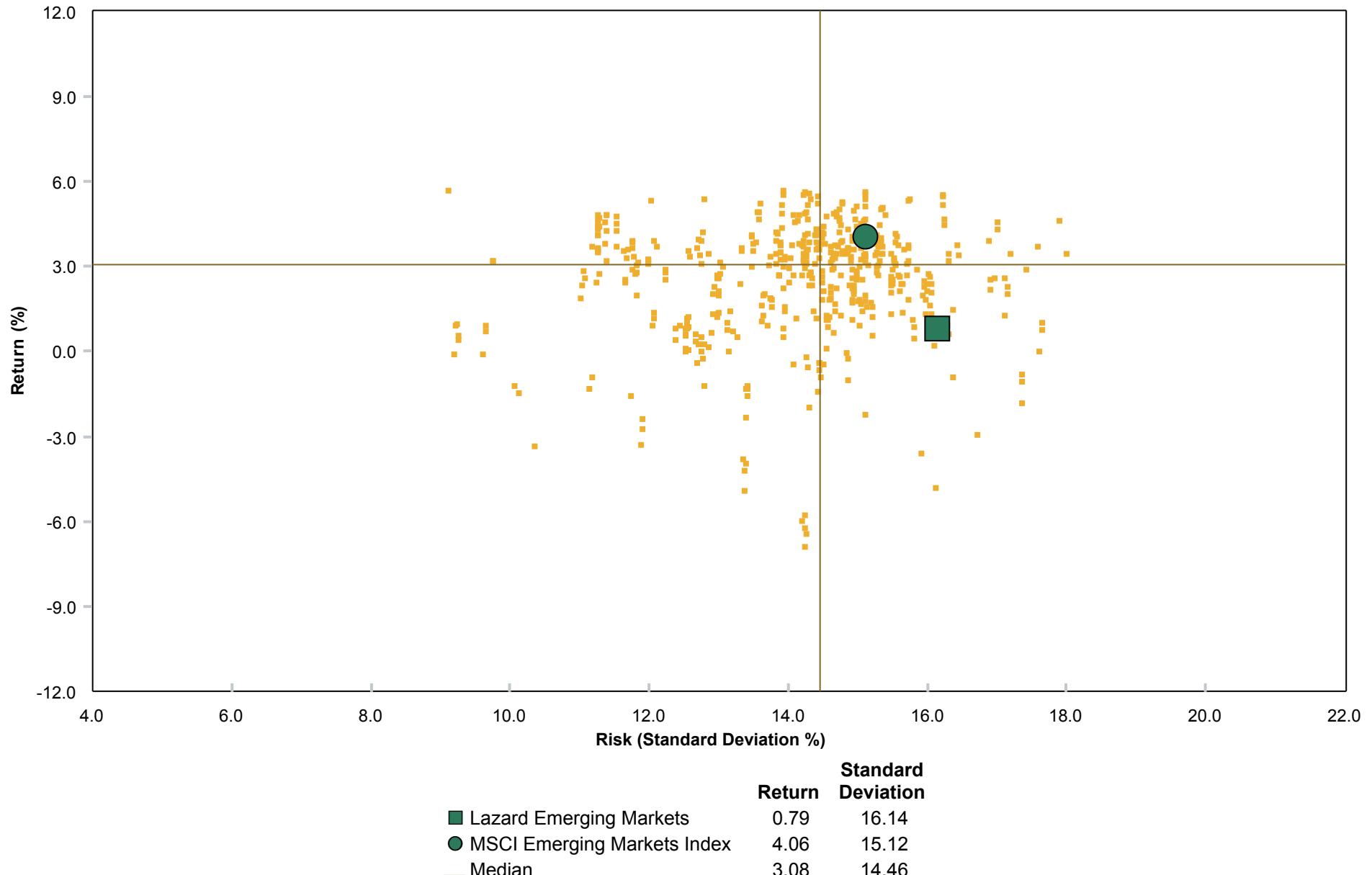


Calculation based on monthly periodicity.

**Bristol County Retirement System****Peer Group Scattergram**

5 Years Ending March 31, 2019

IM Emerging Markets Equity (MF)



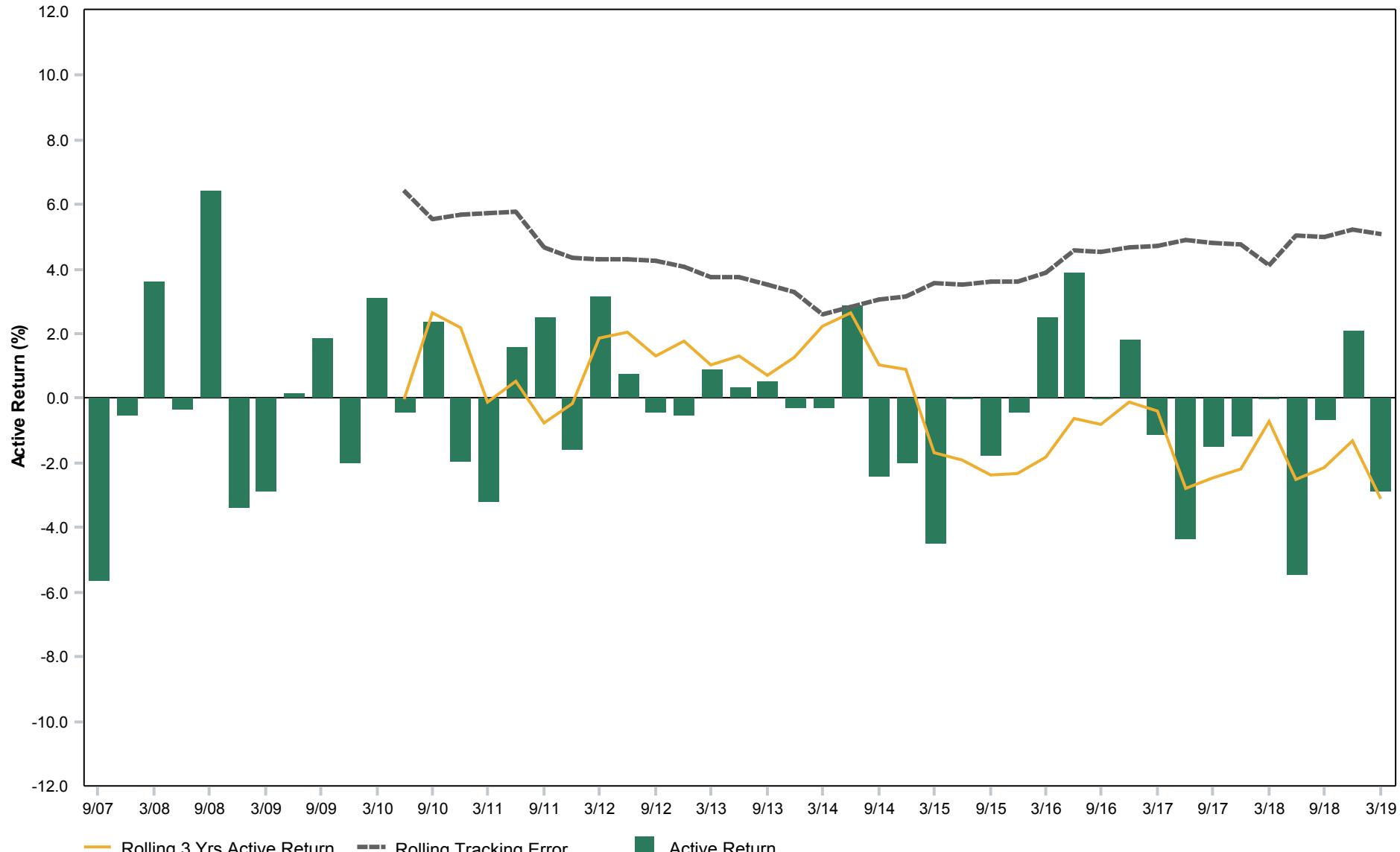
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                             | 1 Qtr | YTD   | 1 Yr   | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017   | 2016  | 2015   |
|-----------------------------|-------|-------|--------|-------|-------|-------|--------|--------|--------|-------|--------|
| Lazard Emerging Markets     | 7.07  | 7.07  | -13.52 | 7.73  | 0.79  | 0.90  | 8.27   | -18.05 | 27.55  | 20.92 | -20.42 |
| MSCI Emerging Markets Index | 9.97  | 9.97  | -7.06  | 11.09 | 4.06  | 3.06  | 9.31   | -14.25 | 37.75  | 11.60 | -14.60 |
| Difference                  | -2.90 | -2.90 | -6.46  | -3.36 | -3.27 | -2.16 | -1.04  | -3.80  | -10.20 | 9.32  | -5.82  |



— Rolling 3 Yrs Active Return    - - - Rolling Tracking Error

■ Active Return

## Bristol County Retirement System

## Lazard Emerging Markets

As of March 31, 2019

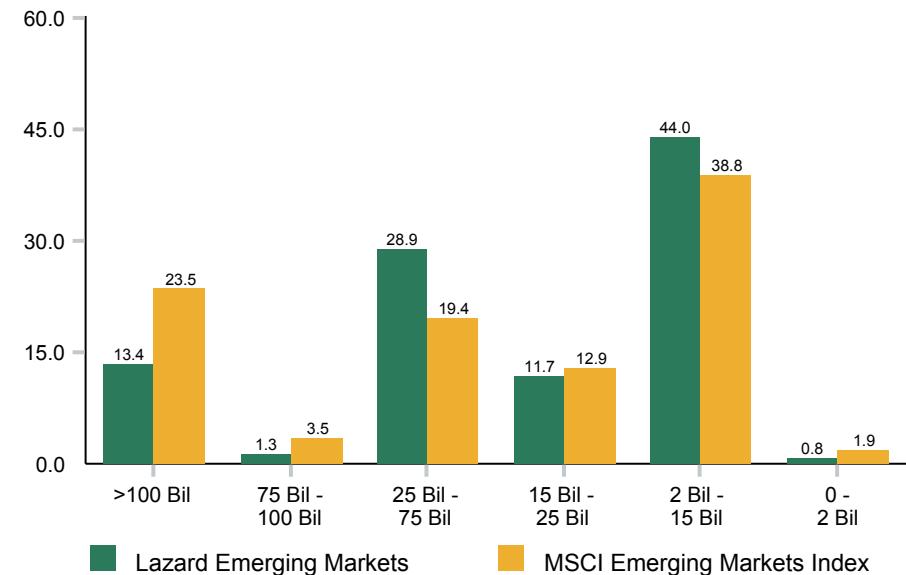
### Top Ten Equity Holdings

|                              | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|------------------------------|----------------------|----------------------|-------------------|----------------------|
| China Construction Bank Corp | 4.85                 | 1.56                 | 3.29              | 3.94                 |
| Sberbank of Russia OJSC      | 3.98                 | 0.67                 | 3.31              | 21.99                |
| Taiwan Semiconductor Manuf   | 3.75                 | 3.70                 | 0.05              | 7.96                 |
| Banco Do Brasil SA Bb Brasil | 3.74                 | 0.20                 | 3.54              | 3.10                 |
| SK Hynix Inc                 | 3.25                 | 0.72                 | 2.53              | 20.06                |
| Netease Inc                  | 2.97                 | 0.35                 | 2.62              | 2.80                 |
| China Mobile Ltd             | 2.90                 | 1.18                 | 1.72              | 6.23                 |
| Uti Bank Ltd                 | 2.63                 | 0.40                 | 2.23              | 25.96                |
| Oil Co LUKOIL PJSC           | 2.22                 | 0.83                 | 1.39              | 24.55                |
| Weichai Power Co Ltd         | 2.16                 | 0.06                 | 2.10              | 39.78                |
| % of Portfolio               | 32.45                | 9.67                 | 22.78             |                      |

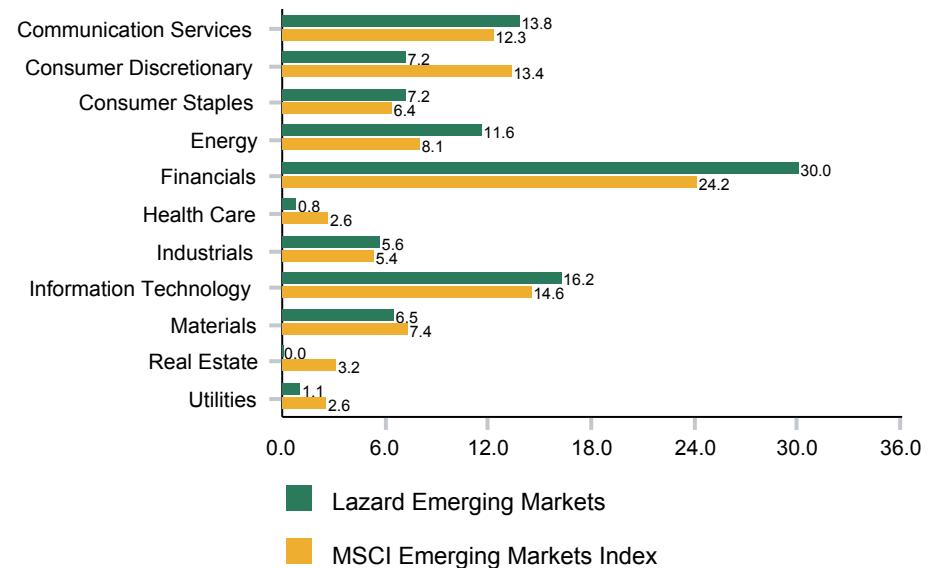
### Portfolio Characteristics

|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 45,674,311,191 | 85,403,055,362 |
| Median Mkt. Cap (\$)      | 12,074,239,674 | 5,466,905,568  |
| Price/Earnings ratio      | 9.39           | 12.82          |
| Price/Book ratio          | 2.17           | 2.23           |
| 5 Yr. EPS Growth Rate (%) | 7.25           | 14.20          |
| Current Yield (%)         | 4.18           | 2.86           |
| Beta (5 Years, Monthly)   | 1.01           | 1.00           |
| Number of Stocks          | 75             | 1,136          |

### Distribution of Market Capitalization (%)



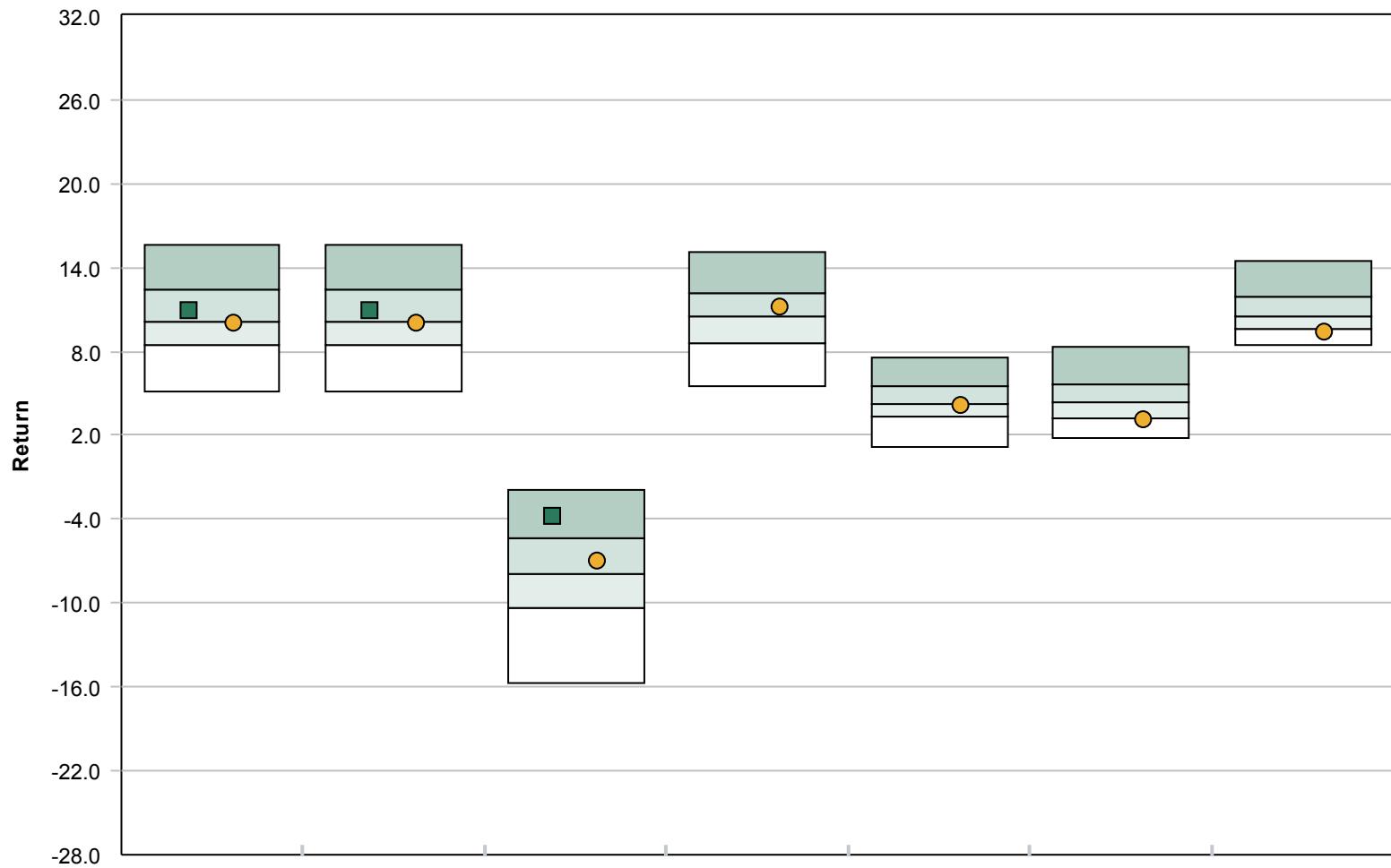
### Sector Weights (%)



## Bristol County Retirement System

## IM Emerging Markets Equity (SA+CF)

As of March 31, 2019



■ Aberdeen Emerging Markets

● MSCI Emerging Markets Index

**1 Qtr**      **YTD**      **1 Yr**      **3 Yrs**      **5 Yrs**      **7 Yrs**      **10 Yrs**

|                 |       |       |        |       |      |      |       |
|-----------------|-------|-------|--------|-------|------|------|-------|
| 5th Percentile  | 15.60 | 15.60 | -1.88  | 15.09 | 7.58 | 8.31 | 14.53 |
| 1st Quartile    | 12.43 | 12.43 | -5.38  | 12.15 | 5.50 | 5.62 | 11.93 |
| Median          | 10.09 | 10.09 | -7.94  | 10.45 | 4.28 | 4.31 | 10.56 |
| 3rd Quartile    | 8.48  | 8.48  | -10.34 | 8.59  | 3.31 | 3.25 | 9.61  |
| 95th Percentile | 5.15  | 5.15  | -15.67 | 5.49  | 1.16 | 1.84 | 8.50  |

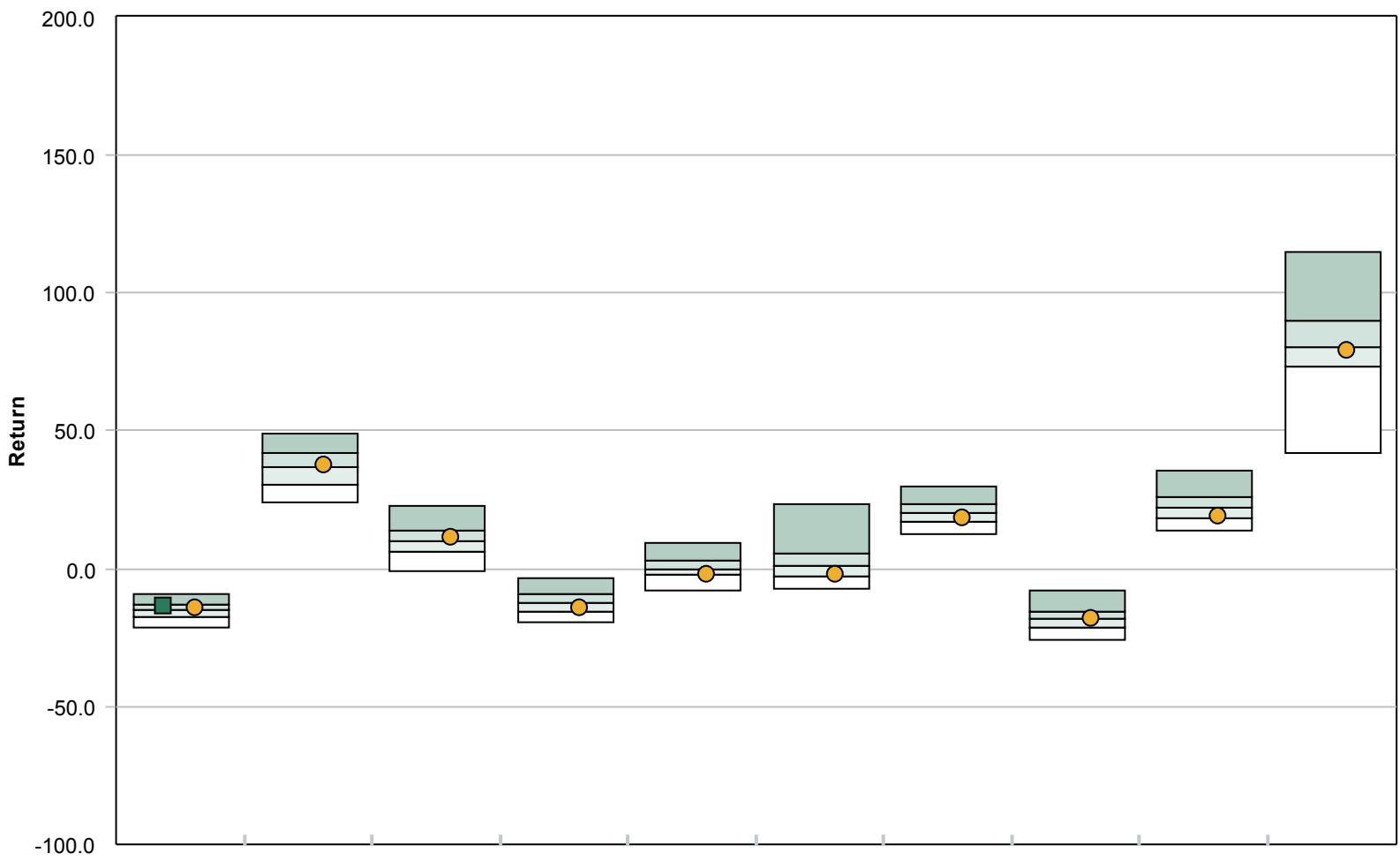
Parentheses contain percentile rankings.

Calculation based on quarterly periodicity.

## Bristol County Retirement System

## IM Emerging Markets Equity (SA+CF)

As of March 31, 2019



■ Aberdeen Emerging Markets

● MSCI Emerging Markets Index

2018      2017      2016      2015      2014      2013      2012      2011      2010      2009

|                 |        |       |       |        |       |       |       |        |       |        |
|-----------------|--------|-------|-------|--------|-------|-------|-------|--------|-------|--------|
| 5th Percentile  | -9.00  | 49.29 | 22.70 | -3.13  | 9.22  | 23.70 | 30.08 | -8.18  | 35.87 | 114.71 |
| 1st Quartile    | -13.28 | 41.89 | 13.56 | -9.28  | 3.12  | 5.70  | 23.14 | -15.64 | 25.79 | 90.14  |
| Median          | -15.23 | 36.84 | 10.12 | -12.62 | -0.09 | 0.98  | 20.50 | -18.06 | 21.86 | 80.18  |
| 3rd Quartile    | -17.65 | 30.38 | 6.27  | -15.32 | -2.44 | -2.59 | 17.27 | -21.47 | 18.32 | 73.12  |
| 95th Percentile | -21.50 | 24.39 | -0.97 | -19.09 | -7.97 | -7.37 | 12.83 | -26.02 | 13.74 | 42.21  |

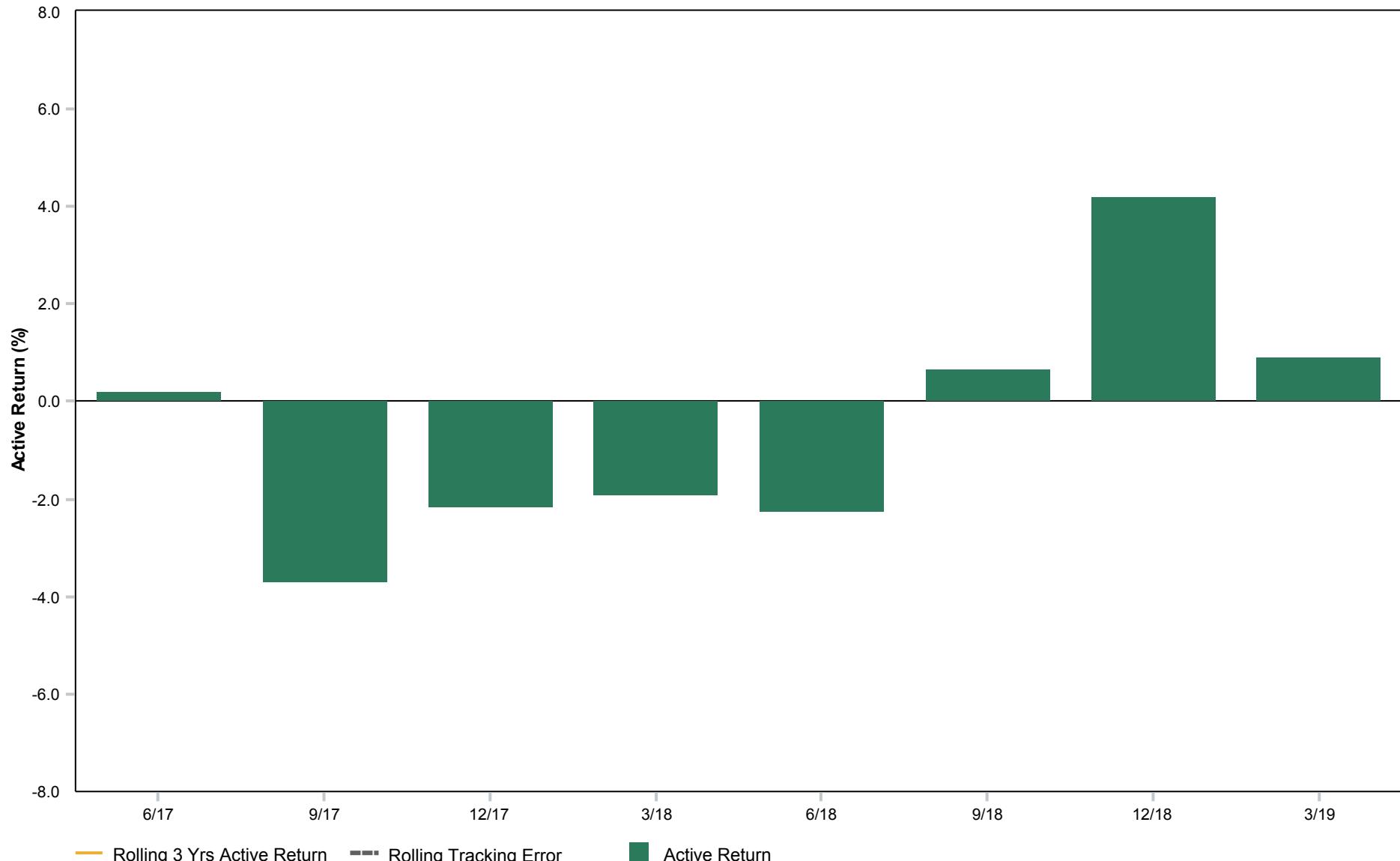
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

|                             | 1 Qtr | YTD   | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018   | 2017  | 2016  | 2015   |
|-----------------------------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|--------|
| Aberdeen Emerging Markets   | 10.86 | 10.86 | -3.83 | N/A   | N/A   | N/A   | N/A    | -13.65 | N/A   | N/A   | N/A    |
| MSCI Emerging Markets Index | 9.97  | 9.97  | -7.06 | 11.09 | 4.06  | 3.06  | 9.31   | -14.25 | 37.75 | 11.60 | -14.60 |
| Difference                  | 0.89  | 0.89  | 3.23  | N/A   | N/A   | N/A   | N/A    | 0.60   | N/A   | N/A   | N/A    |



## Bristol County Retirement System

## Aberdeen Emerging Markets

As of March 31, 2019

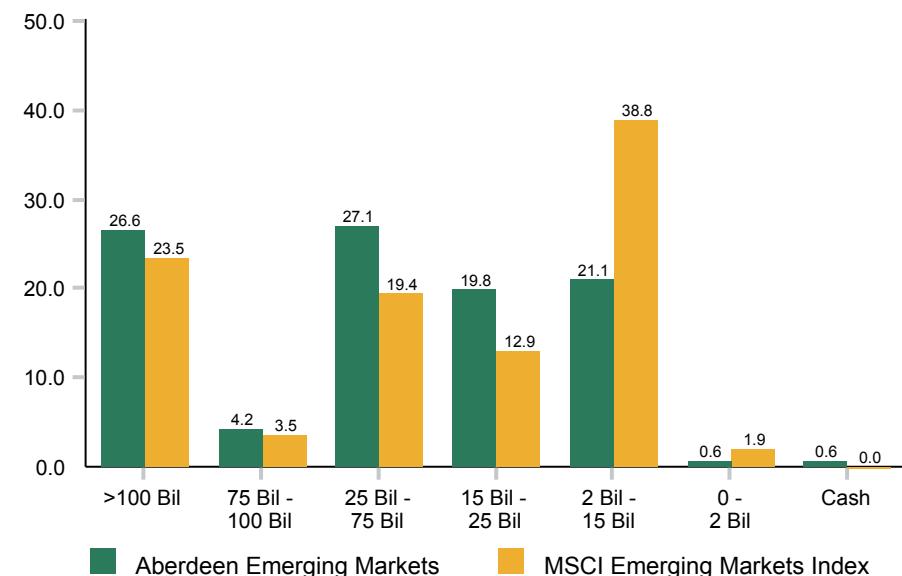
### Top Ten Equity Holdings

|                                      | Portfolio Weight (%) | Benchmark Weight (%) | Active Weight (%) | Quarterly Return (%) |
|--------------------------------------|----------------------|----------------------|-------------------|----------------------|
| Tencent Holdings LTD                 | 6.24                 | 4.96                 | 1.28              | 14.70                |
| Taiwan Semiconductor Manuf           | 5.07                 | 3.70                 | 1.37              | 7.96                 |
| Samsung Electronics Co Ltd           | 5.05                 | 0.49                 | 4.56              | 12.85                |
| Housing Development Finance Corp Ltd | 3.67                 | 0.88                 | 2.79              | 0.63                 |
| Ping An Insurance Group              | 3.63                 | 1.10                 | 2.53              | 26.82                |
| Banco Bradesco Sa Brad               | 3.56                 | 0.18                 | 3.38              | 10.46                |
| AIA Group Ltd                        | 2.71                 | 0.00                 | 2.71              | 19.95                |
| Kweichow Moutai Co Ltd               | 2.61                 | 0.05                 | 2.56              | 48.33                |
| Vale SA                              | 2.47                 | 0.78                 | 1.69              | -0.99                |
| China Resources Land Ltd             | 2.13                 | 0.23                 | 1.90              | 16.67                |
| % of Portfolio                       | 37.14                | 12.37                | 24.77             |                      |

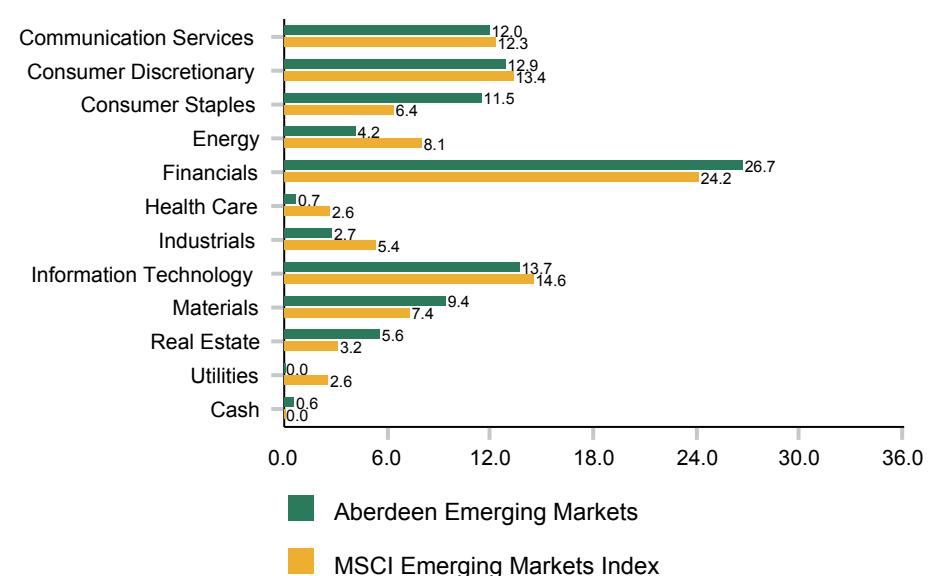
### Portfolio Characteristics

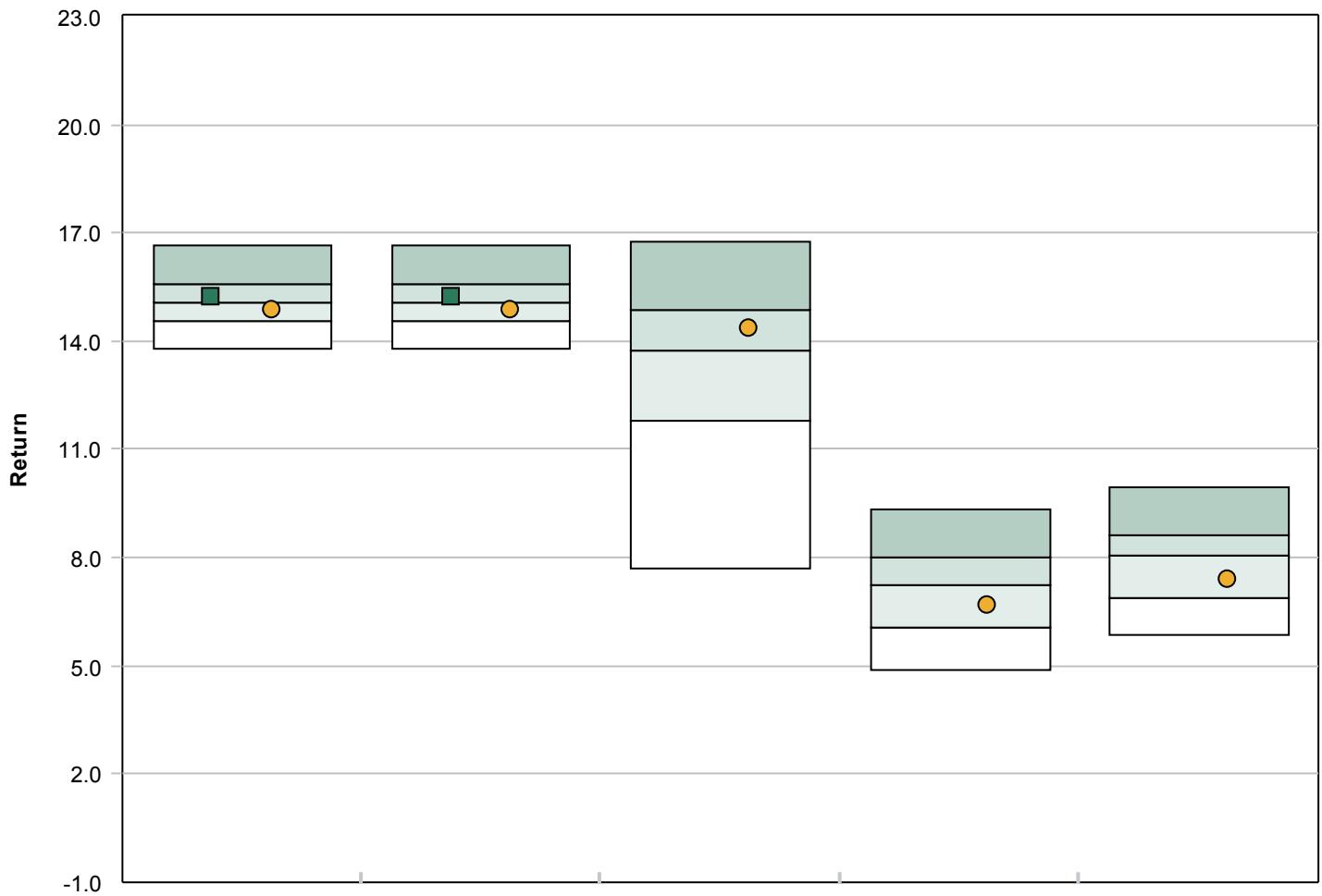
|                           | Portfolio      | Benchmark      |
|---------------------------|----------------|----------------|
| Wtd. Avg. Mkt. Cap (\$)   | 66,952,829,214 | 85,403,055,362 |
| Median Mkt. Cap (\$)      | 17,023,449,870 | 5,466,905,568  |
| Price/Earnings ratio      | 18.36          | 12.82          |
| Price/Book ratio          | 2.58           | 2.23           |
| 5 Yr. EPS Growth Rate (%) | 12.54          | 14.20          |
| Current Yield (%)         | 2.16           | 2.86           |
| Beta                      | N/A            | 1.00           |
| Number of Stocks          | 64             | 1,136          |

### Distribution of Market Capitalization (%)



### Sector Weights (%)





|                                  | 1 Qtr      | YTD        | 1 Yr       | 3 Yrs     | 5 Yrs     |
|----------------------------------|------------|------------|------------|-----------|-----------|
| Brookfield Global Real Estate    | 15.22 (41) | 15.22 (41) | N/A        | N/A       | N/A       |
| FTSE EPRA/NAREIT Developed Index | 14.86 (59) | 14.86 (59) | 14.33 (43) | 6.67 (57) | 7.37 (71) |
| 5th Percentile                   | 16.65      | 16.65      | 16.76      | 9.33      | 9.95      |
| 1st Quartile                     | 15.56      | 15.56      | 14.84      | 8.00      | 8.61      |
| Median                           | 15.06      | 15.06      | 13.72      | 7.22      | 8.06      |
| 3rd Quartile                     | 14.54      | 14.54      | 11.81      | 6.08      | 6.87      |
| 95th Percentile                  | 13.81      | 13.81      | 7.69       | 4.88      | 5.88      |

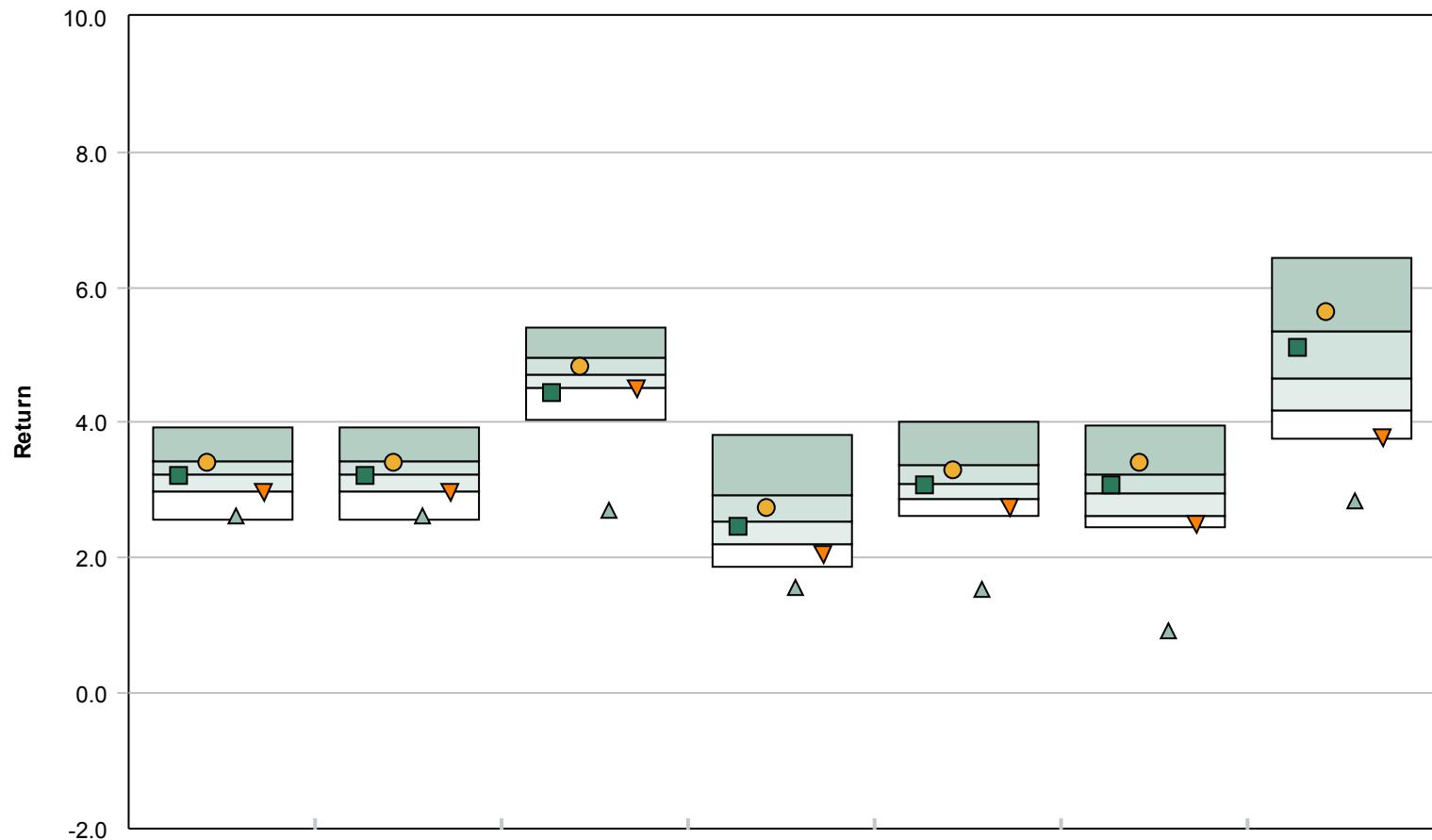
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## **Domestic Fixed Income**

## Bristol County Retirement System

## IM U.S. Broad Market Core Fixed Income (SA+CF)

As of March 31, 2019



|                              | 1 Qtr     | YTD       | 1 Yr      | 3 Yrs      | 5 Yrs      | 7 Yrs      | 10 Yrs     |
|------------------------------|-----------|-----------|-----------|------------|------------|------------|------------|
| Total Domestic Fixed         | 3.20 (52) | 3.20 (52) | 4.43 (86) | 2.45 (58)  | 3.08 (53)  | 3.07 (41)  | 5.09 (30)  |
| Income Research & Management | 3.40 (28) | 3.40 (28) | 4.82 (36) | 2.72 (39)  | 3.29 (35)  | 3.41 (18)  | 5.63 (16)  |
| IRM-TIPS                     | 2.61 (94) | 2.61 (94) | 2.72 (99) | 1.57 (100) | 1.53 (100) | 0.92 (100) | 2.86 (100) |
| Barclays Aggregate           | 2.94 (83) | 2.94 (83) | 4.48 (80) | 2.03 (89)  | 2.74 (90)  | 2.48 (95)  | 3.77 (94)  |
| 5th Percentile               | 3.93      | 3.93      | 5.40      | 3.82       | 4.01       | 3.97       | 6.43       |
| 1st Quartile                 | 3.44      | 3.44      | 4.95      | 2.92       | 3.37       | 3.25       | 5.36       |
| Median                       | 3.23      | 3.23      | 4.70      | 2.54       | 3.10       | 2.94       | 4.65       |
| 3rd Quartile                 | 2.98      | 2.98      | 4.51      | 2.19       | 2.88       | 2.63       | 4.18       |
| 95th Percentile              | 2.56      | 2.56      | 4.03      | 1.87       | 2.62       | 2.47       | 3.76       |

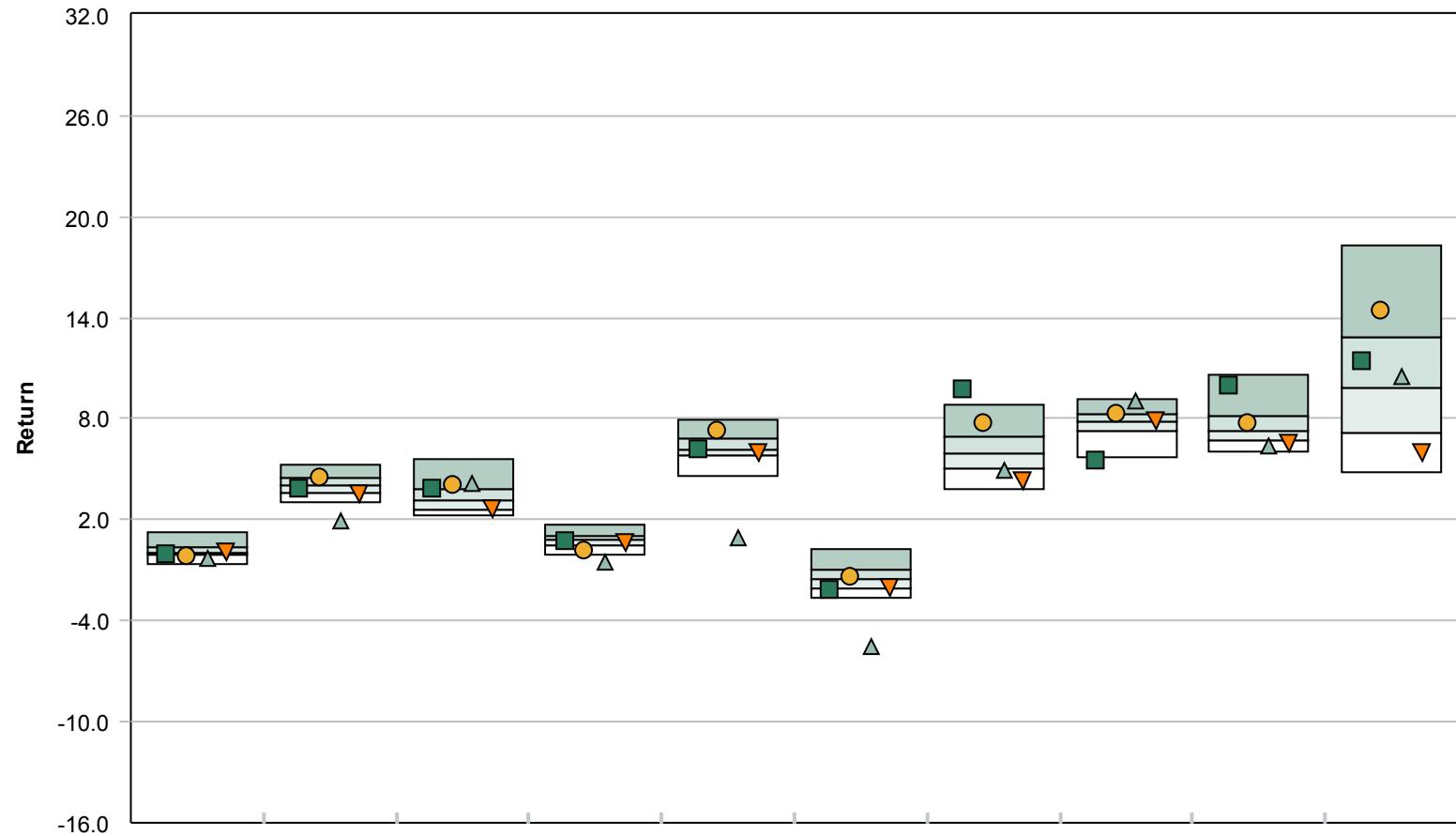
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



## Bristol County Retirement System

## IM U.S. Broad Market Core Fixed Income (SA+CF)

As of March 31, 2019



|                              | 2018       | 2017       | 2016      | 2015       | 2014       | 2013        | 2012      | 2011      | 2010      | 2009       |
|------------------------------|------------|------------|-----------|------------|------------|-------------|-----------|-----------|-----------|------------|
| Total Domestic Fixed         | -0.08 (71) | 3.82 (63)  | 3.86 (25) | 0.66 (64)  | 6.15 (51)  | -2.14 (82)  | 9.73 (5)  | 5.49 (97) | 9.95 (8)  | 11.40 (36) |
| Income Research & Management | -0.19 (81) | 4.49 (27)  | 4.00 (22) | 0.20 (86)  | 7.23 (10)  | -1.39 (41)  | 7.70 (12) | 8.31 (24) | 7.71 (39) | 14.40 (18) |
| IRM-TIPS                     | -0.26 (83) | 1.97 (100) | 4.11 (17) | -0.53 (98) | 0.88 (100) | -5.54 (100) | 4.96 (77) | 9.08 (6)  | 6.41 (85) | 10.49 (42) |
| Barclays Aggregate           | 0.01 (61)  | 3.54 (85)  | 2.65 (77) | 0.55 (74)  | 5.97 (67)  | -2.02 (74)  | 4.21 (91) | 7.84 (51) | 6.54 (83) | 5.93 (89)  |
| 5th Percentile               | 1.23       | 5.29       | 5.62      | 1.68       | 7.91       | 0.21        | 8.85      | 9.13      | 10.61     | 18.28      |
| 1st Quartile                 | 0.39       | 4.52       | 3.83      | 1.09       | 6.79       | -1.01       | 6.96      | 8.26      | 8.18      | 12.85      |
| Median                       | 0.07       | 4.06       | 3.11      | 0.82       | 6.16       | -1.56       | 5.92      | 7.84      | 7.24      | 9.88       |
| 3rd Quartile                 | -0.12      | 3.64       | 2.65      | 0.54       | 5.79       | -2.04       | 5.09      | 7.25      | 6.75      | 7.19       |
| 95th Percentile              | -0.68      | 3.06       | 2.23      | -0.07      | 4.65       | -2.62       | 3.85      | 5.74      | 6.03      | 4.86       |

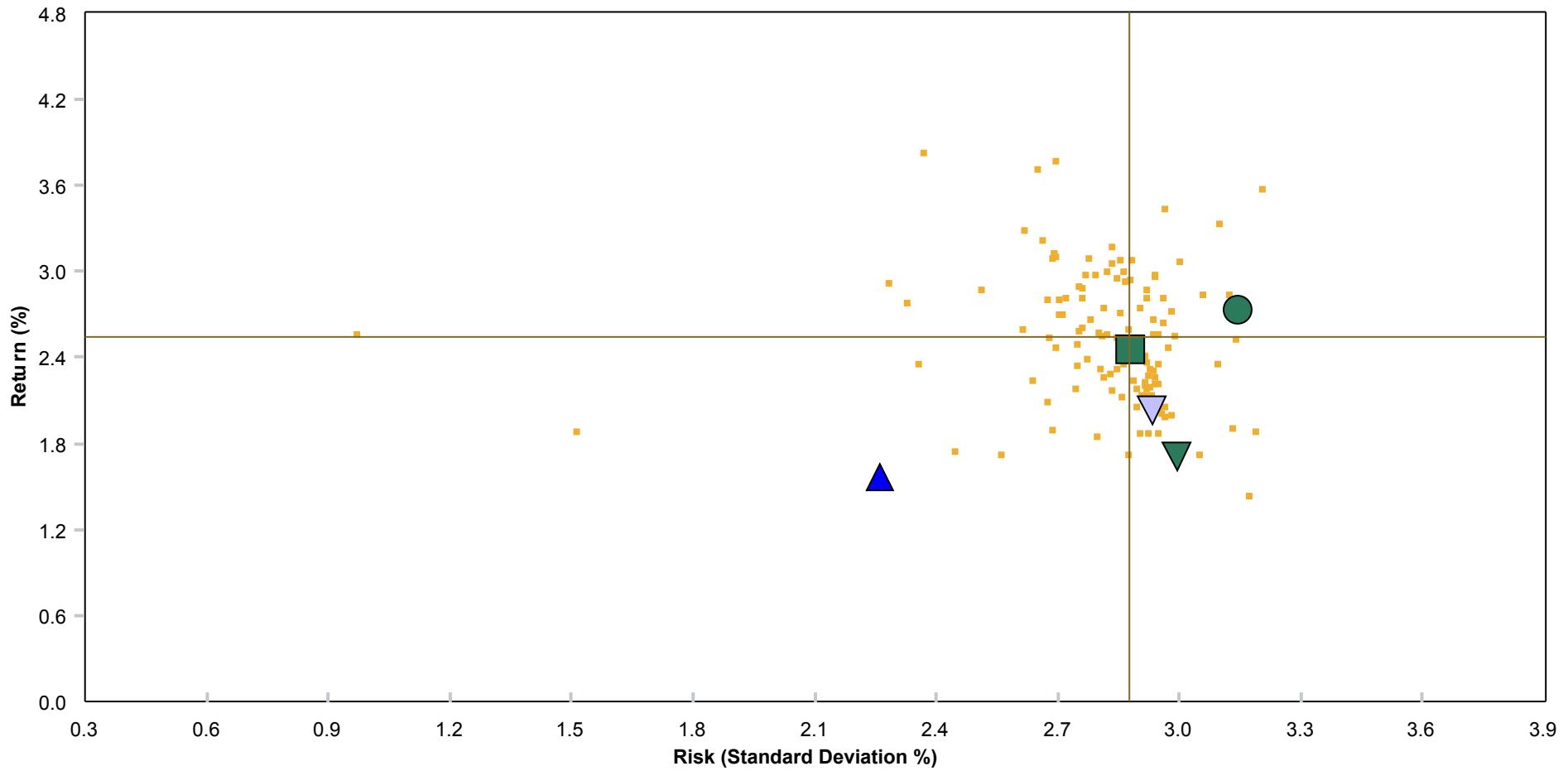
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

3 Years Ending March 31, 2019

IM U.S. Broad Market Core Fixed Income (SA+CF)



|                              | Return | Standard Deviation |
|------------------------------|--------|--------------------|
| Total Domestic Fixed         | 2.45   | 2.88               |
| Income Research & Management | 2.72   | 3.15               |
| Barclays Aggregate           | 2.03   | 2.93               |
| IRM-TIPS                     | 1.57   | 2.26               |
| Blmbg. Barc. U.S. TIPS       | 1.70   | 2.99               |
| Median                       | 2.54   | 2.88               |

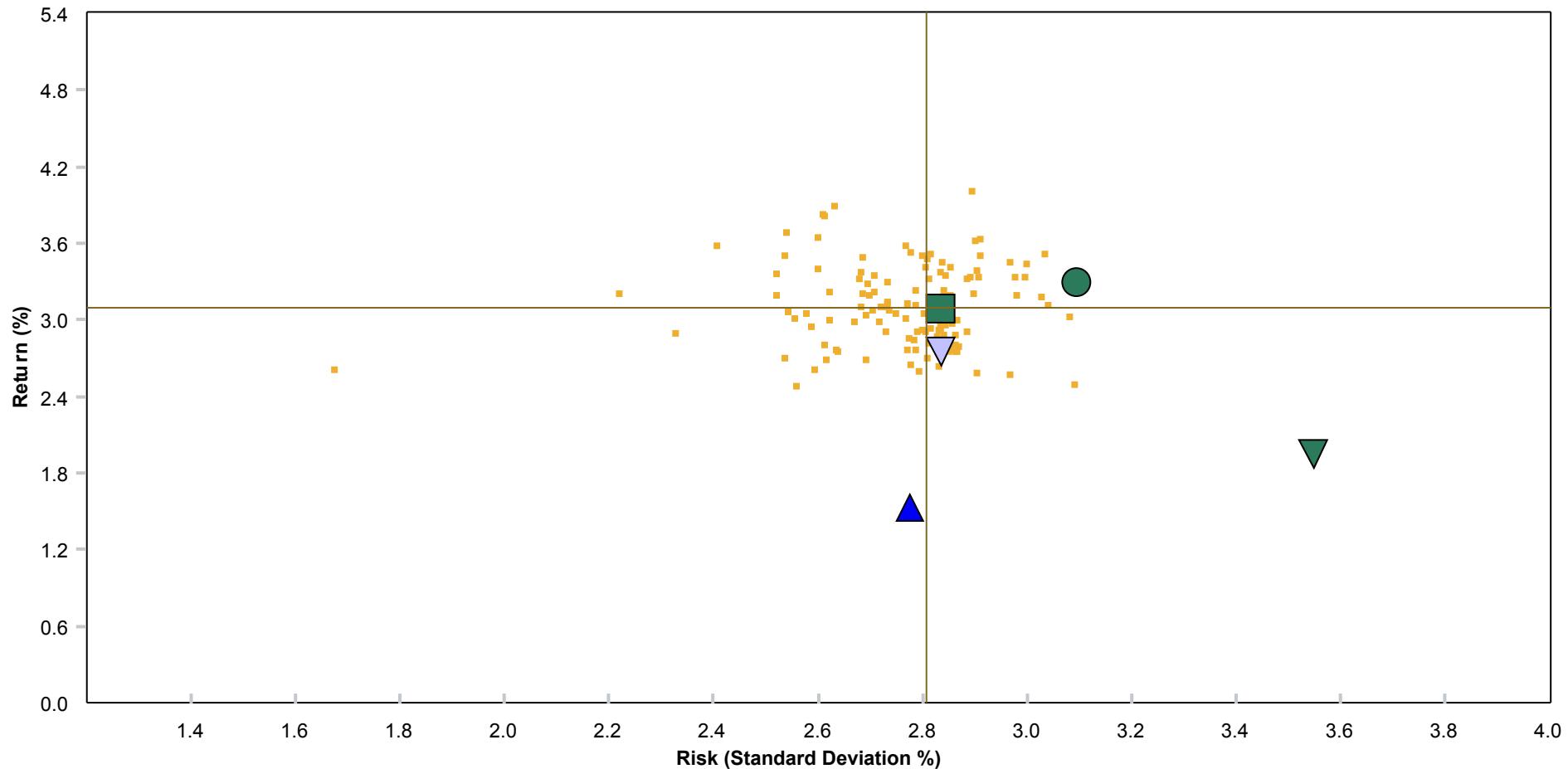
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

5 Years Ending March 31, 2019

IM U.S. Broad Market Core Fixed Income (SA+CF)



|                              | Return | Standard Deviation |
|------------------------------|--------|--------------------|
| Total Domestic Fixed         | 3.08   | 2.84               |
| Income Research & Management | 3.29   | 3.10               |
| Barclays Aggregate           | 2.74   | 2.83               |
| IRM-TIPS                     | 1.53   | 2.78               |
| Blmbg. Barc. U.S. TIPS       | 1.94   | 3.55               |
| Median                       | 3.10   | 2.81               |

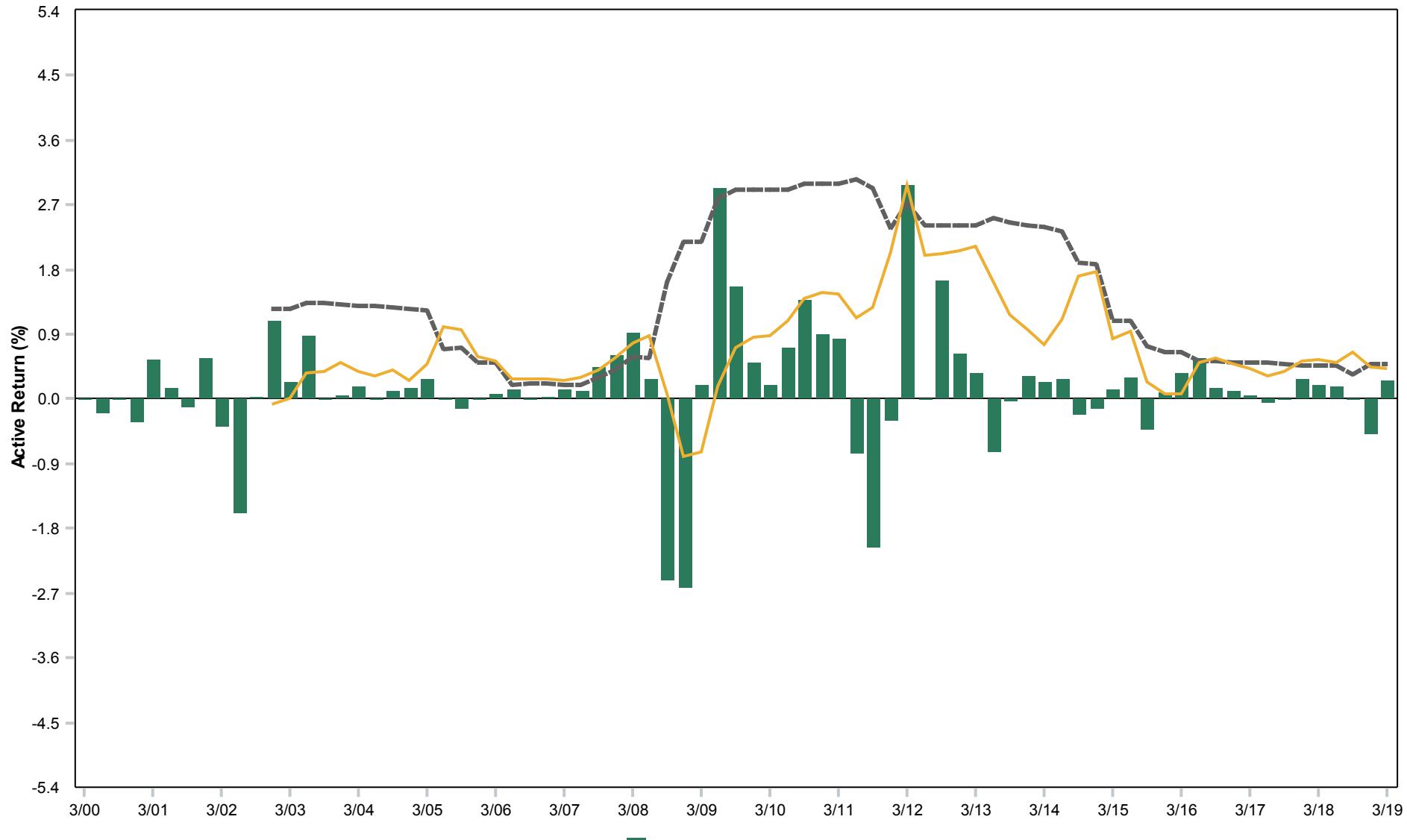
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                      | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017 | 2016 | 2015 |
|----------------------|-------|------|-------|-------|-------|-------|--------|-------|------|------|------|
| Total Domestic Fixed | 3.20  | 3.20 | 4.43  | 2.45  | 3.08  | 3.07  | 5.09   | -0.08 | 3.82 | 3.86 | 0.66 |
| Barclays Aggregate   | 2.94  | 2.94 | 4.48  | 2.03  | 2.74  | 2.48  | 3.77   | 0.01  | 3.54 | 2.65 | 0.55 |
| Difference           | 0.26  | 0.26 | -0.05 | 0.42  | 0.34  | 0.59  | 1.32   | -0.09 | 0.28 | 1.21 | 0.11 |



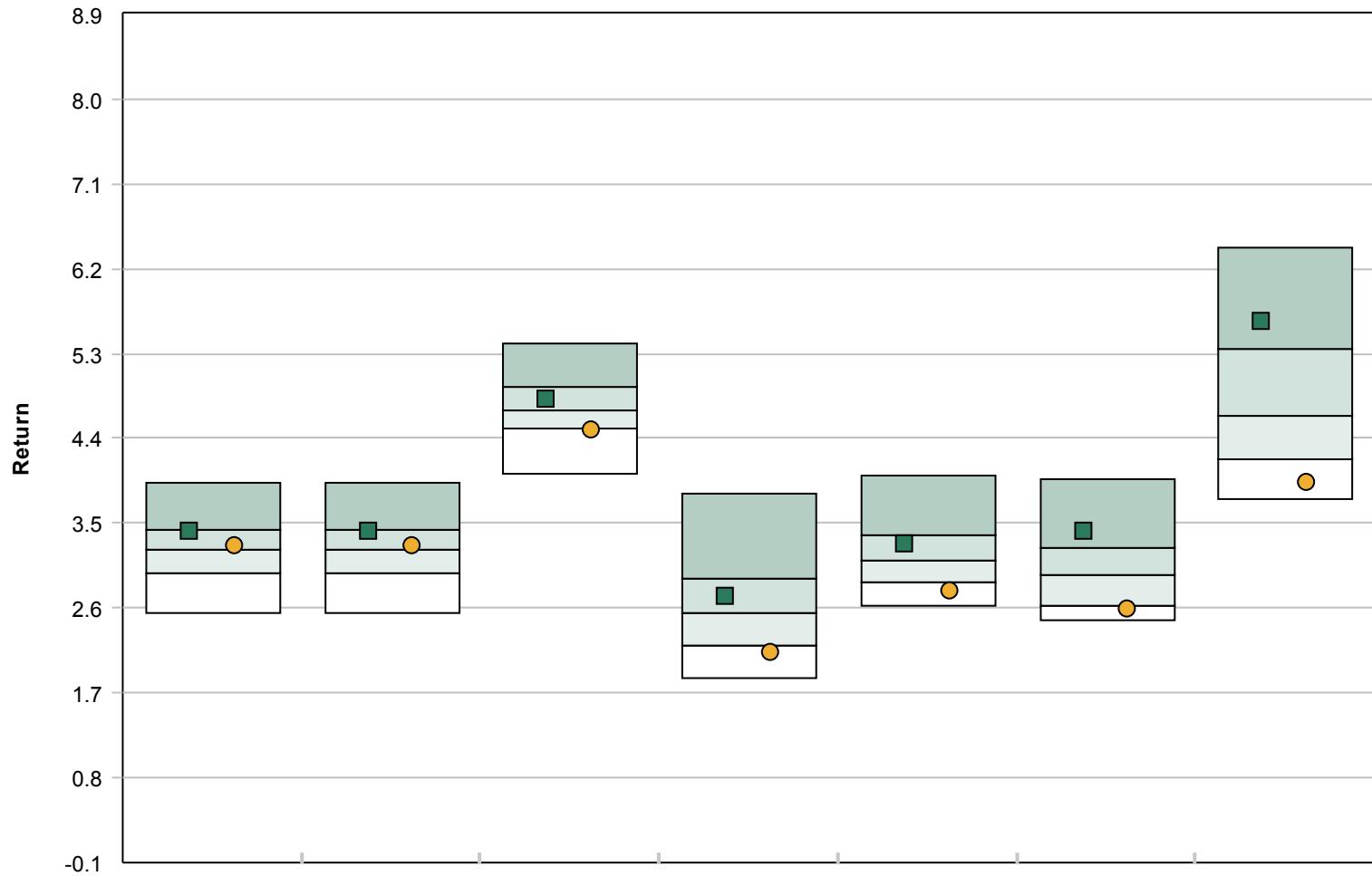
Gross of Fees

 Segal Marco Advisors

## Bristol County Retirement System

## IM U.S. Broad Market Core Fixed Income (SA+CF)

As of March 31, 2019



■ Income Research & Management

● Blmbg. Barc. U.S. Gov't/Credit

**1 Qtr**      **YTD**      **1 Yr**      **3 Yrs**      **5 Yrs**      **7 Yrs**      **10 Yrs**

3.40 (28)      3.40 (28)      4.82 (36)      2.72 (39)      3.29 (35)      3.41 (18)      5.63 (16)

3.26 (46)      3.26 (46)      4.48 (80)      2.12 (82)      2.78 (82)      2.59 (83)      3.92 (87)

5th Percentile

3.93

3.93

5.40

3.82

4.01

3.97

6.43

1st Quartile

3.44

3.44

4.95

2.92

3.37

3.25

5.36

Median

3.23

3.23

4.70

2.54

3.10

2.94

4.65

3rd Quartile

2.98

2.98

4.51

2.19

2.88

2.63

4.18

95th Percentile

2.56

2.56

4.03

1.87

2.62

2.47

3.76

Parentheses contain percentile rankings.

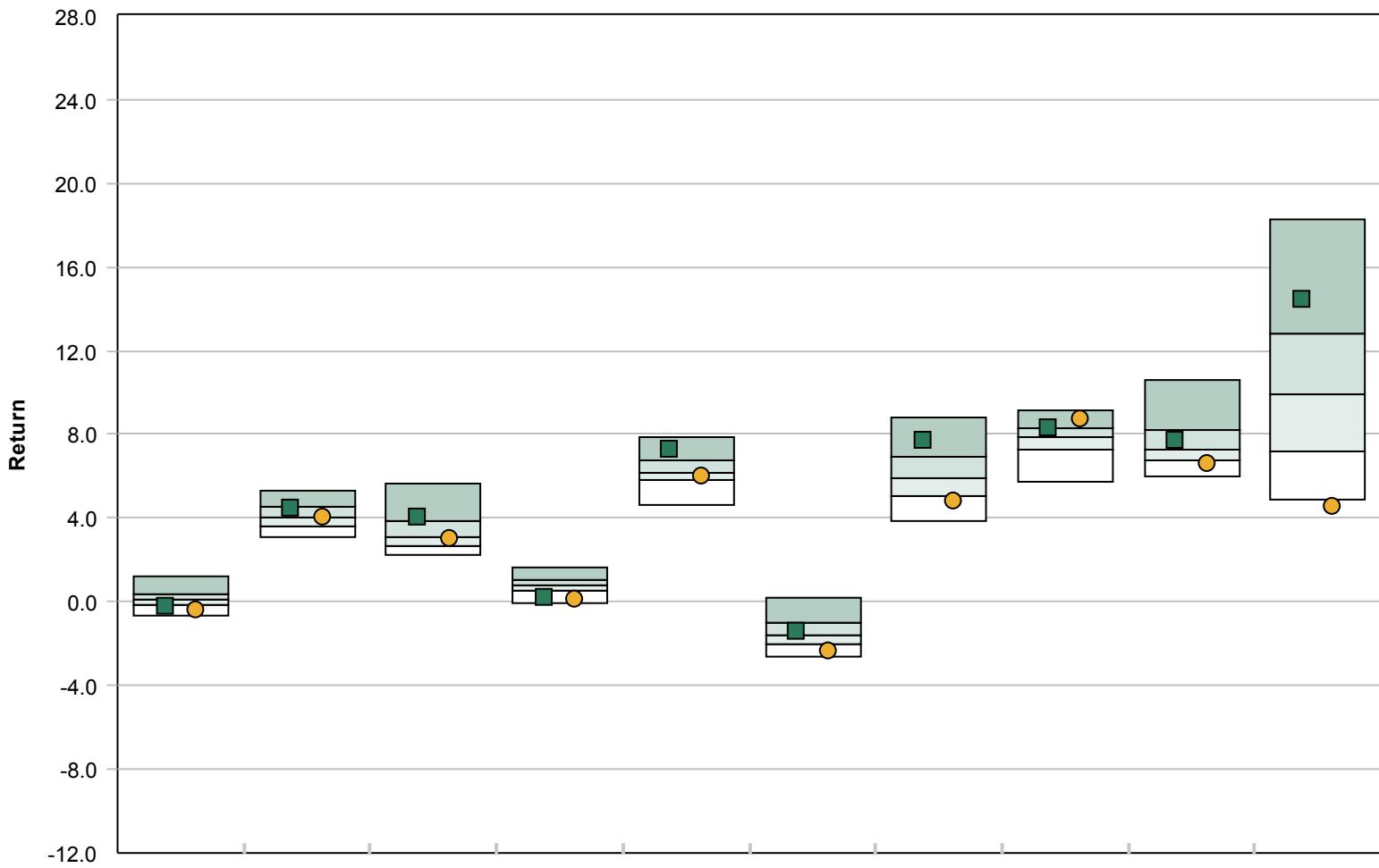
Calculation based on monthly periodicity.

Segal Marco Advisors

## Bristol County Retirement System

## IM U.S. Broad Market Core Fixed Income (SA+CF)

As of March 31, 2019



|                                | 2018       | 2017      | 2016      | 2015      | 2014      | 2013       | 2012      | 2011      | 2010      | 2009       |
|--------------------------------|------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|
| Income Research & Management   | -0.19 (81) | 4.49 (27) | 4.00 (22) | 0.20 (86) | 7.23 (10) | -1.39 (41) | 7.70 (12) | 8.31 (24) | 7.71 (39) | 14.40 (18) |
| Blmbg. Barc. U.S. Gov't/Credit | -0.42 (92) | 4.00 (54) | 3.05 (54) | 0.15 (89) | 6.01 (64) | -2.35 (92) | 4.82 (80) | 8.74 (12) | 6.59 (81) | 4.52 (97)  |
| 5th Percentile                 | 1.23       | 5.29      | 5.62      | 1.68      | 7.91      | 0.21       | 8.85      | 9.13      | 10.61     | 18.28      |
| 1st Quartile                   | 0.39       | 4.52      | 3.83      | 1.09      | 6.79      | -1.01      | 6.96      | 8.26      | 8.18      | 12.85      |
| Median                         | 0.07       | 4.06      | 3.11      | 0.82      | 6.16      | -1.56      | 5.92      | 7.84      | 7.24      | 9.88       |
| 3rd Quartile                   | -0.12      | 3.64      | 2.65      | 0.54      | 5.79      | -2.04      | 5.09      | 7.25      | 6.75      | 7.19       |
| 95th Percentile                | -0.68      | 3.06      | 2.23      | -0.07     | 4.65      | -2.62      | 3.85      | 5.74      | 6.03      | 4.86       |

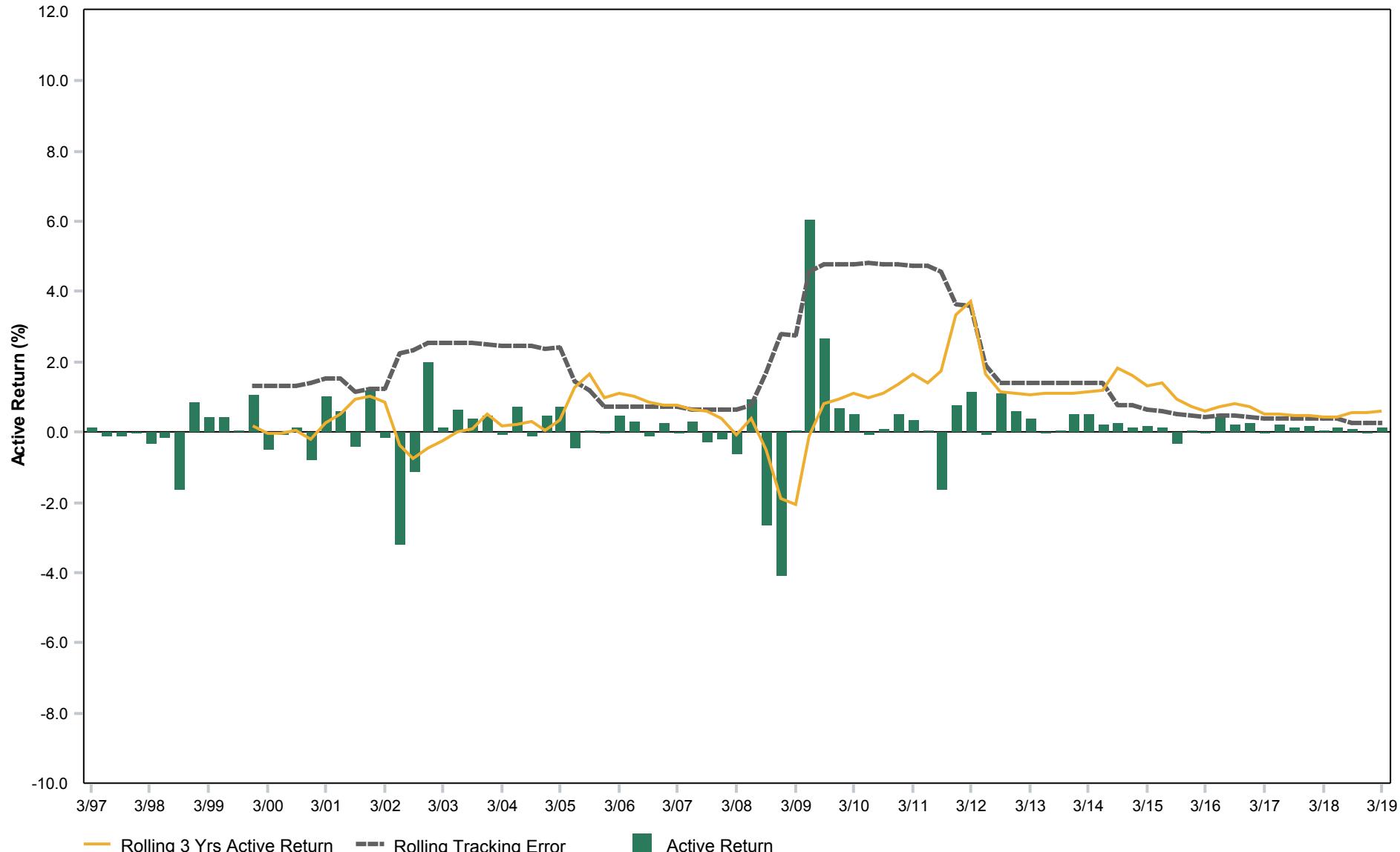
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

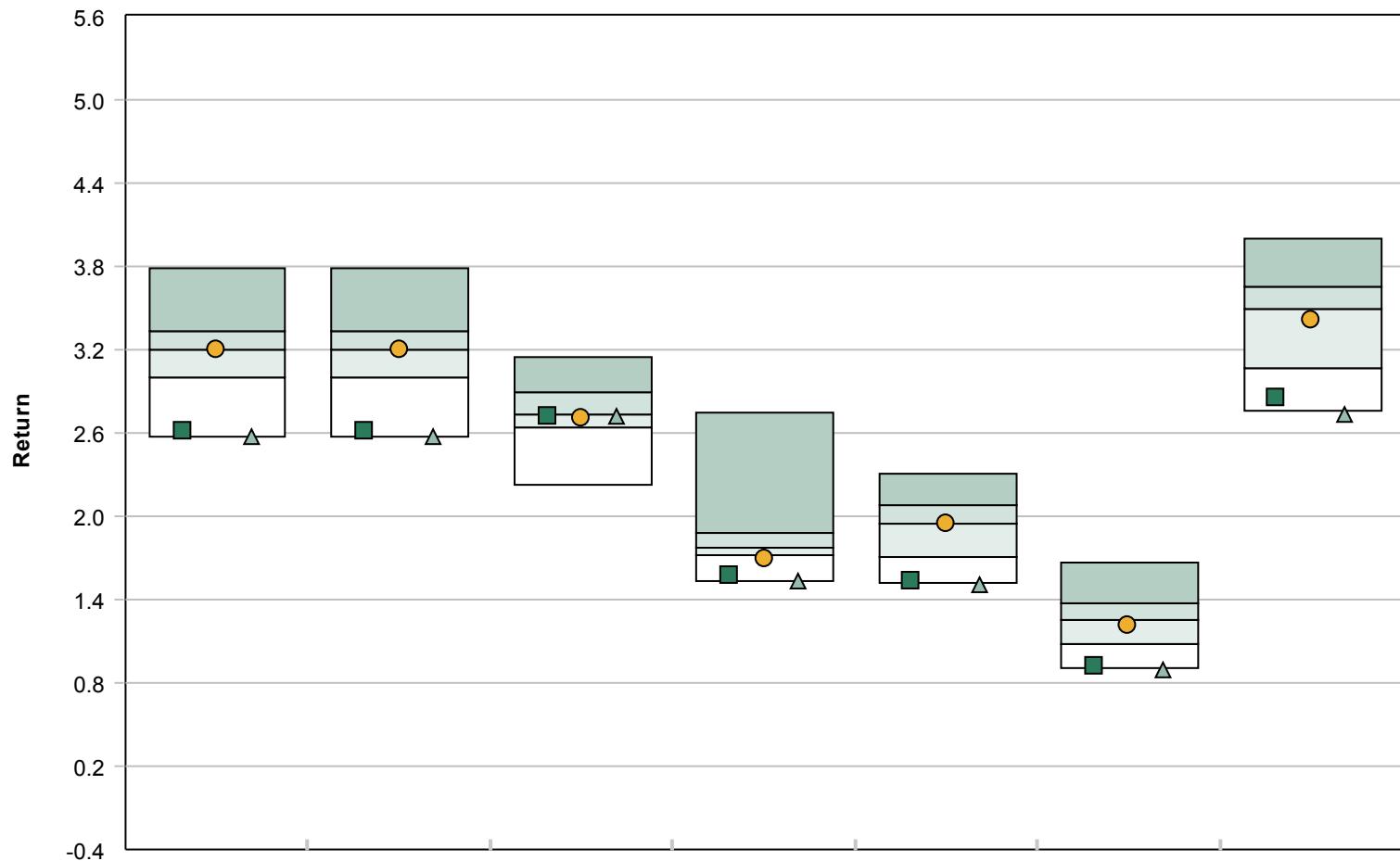
|                                | 1 Qtr | YTD  | 1 Yr | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017 | 2016 | 2015 |
|--------------------------------|-------|------|------|-------|-------|-------|--------|-------|------|------|------|
| Income Research & Management   | 3.40  | 3.40 | 4.82 | 2.72  | 3.29  | 3.41  | 5.63   | -0.19 | 4.49 | 4.00 | 0.20 |
| Blmbg. Barc. U.S. Gov't/Credit | 3.26  | 3.26 | 4.48 | 2.12  | 2.78  | 2.59  | 3.92   | -0.42 | 4.00 | 3.05 | 0.15 |
| Difference                     | 0.14  | 0.14 | 0.34 | 0.60  | 0.51  | 0.82  | 1.71   | 0.23  | 0.49 | 0.95 | 0.05 |



# Bristol County Retirement System

# IM U.S. TIPS (SA+CF)

As of March 31, 2019



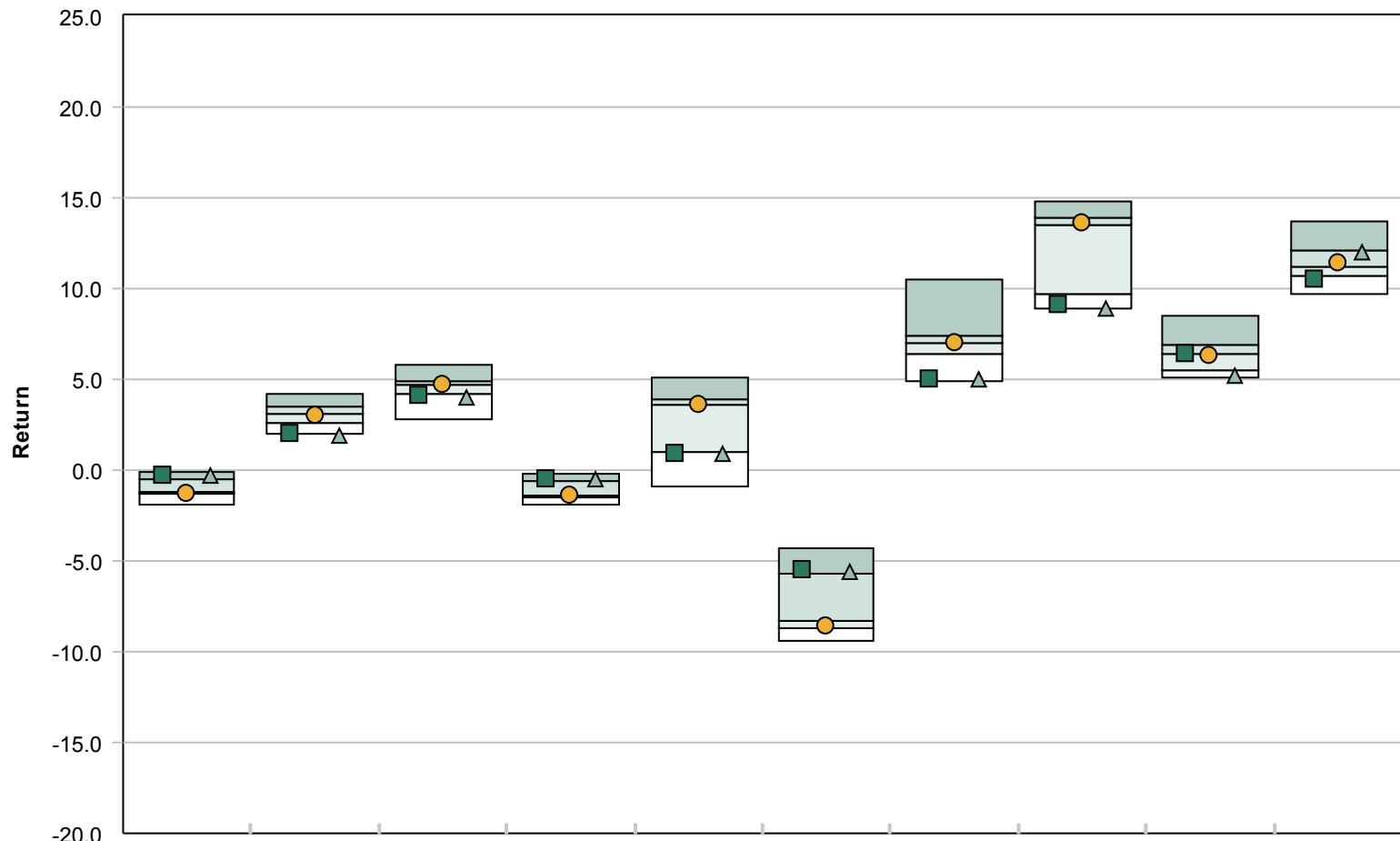
|                                  | 1 Qtr     | YTD       | 1 Yr      | 3 Yrs     | 5 Yrs     | 7 Yrs     | 10 Yrs     |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| IRM-TIPS                         | 2.61 (84) | 2.61 (84) | 2.72 (54) | 1.57 (90) | 1.53 (90) | 0.92 (92) | 2.86 (86)  |
| Blmbg. Barc. U.S. TIPS           | 3.19 (65) | 3.19 (65) | 2.70 (61) | 1.70 (78) | 1.94 (51) | 1.21 (64) | 3.41 (64)  |
| Blmbg. Barc. U.S. TIPS 1-10 Year | 2.57 (98) | 2.57 (98) | 2.72 (54) | 1.53 (97) | 1.50 (97) | 0.89 (97) | 2.73 (100) |
| 5th Percentile                   | 3.79      | 3.79      | 3.15      | 2.74      | 2.30      | 1.67      | 4.00       |
| 1st Quartile                     | 3.33      | 3.33      | 2.90      | 1.88      | 2.08      | 1.38      | 3.65       |
| Median                           | 3.20      | 3.20      | 2.73      | 1.77      | 1.95      | 1.25      | 3.49       |
| 3rd Quartile                     | 3.01      | 3.01      | 2.64      | 1.72      | 1.71      | 1.08      | 3.07       |
| 95th Percentile                  | 2.57      | 2.57      | 2.22      | 1.54      | 1.52      | 0.91      | 2.76       |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM U.S. TIPS (SA+CF)

As of March 31, 2019



|                                  | 2018       | 2017      | 2016      | 2015       | 2014      | 2013       | 2012      | 2011       | 2010      | 2009       |
|----------------------------------|------------|-----------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| IRM-TIPS                         | -0.26 (22) | 1.97 (96) | 4.11 (81) | -0.53 (20) | 0.88 (87) | -5.54 (18) | 4.96 (89) | 9.08 (82)  | 6.41 (50) | 10.49 (81) |
| Blmbg. Barc. U.S. TIPS           | -1.26 (57) | 3.01 (67) | 4.68 (46) | -1.44 (59) | 3.64 (46) | -8.61 (70) | 6.98 (51) | 13.56 (46) | 6.31 (56) | 11.41 (41) |
| Blmbg. Barc. U.S. TIPS 1-10 Year | -0.25 (19) | 1.90 (98) | 4.01 (89) | -0.52 (20) | 0.91 (83) | -5.58 (22) | 5.04 (83) | 8.93 (89)  | 5.22 (93) | 12.02 (28) |
| 5th Percentile                   | -0.09      | 4.18      | 5.77      | -0.16      | 5.05      | -4.34      | 10.53     | 14.80      | 8.50      | 13.67      |
| 1st Quartile                     | -0.46      | 3.51      | 4.94      | -0.65      | 3.91      | -5.68      | 7.44      | 13.87      | 6.89      | 12.08      |
| Median                           | -1.22      | 3.10      | 4.66      | -1.40      | 3.60      | -8.33      | 6.99      | 13.52      | 6.40      | 11.24      |
| 3rd Quartile                     | -1.30      | 2.65      | 4.23      | -1.52      | 1.04      | -8.67      | 6.37      | 9.66       | 5.46      | 10.71      |
| 95th Percentile                  | -1.89      | 1.97      | 2.85      | -1.91      | -0.93     | -9.43      | 4.92      | 8.87       | 5.08      | 9.75       |

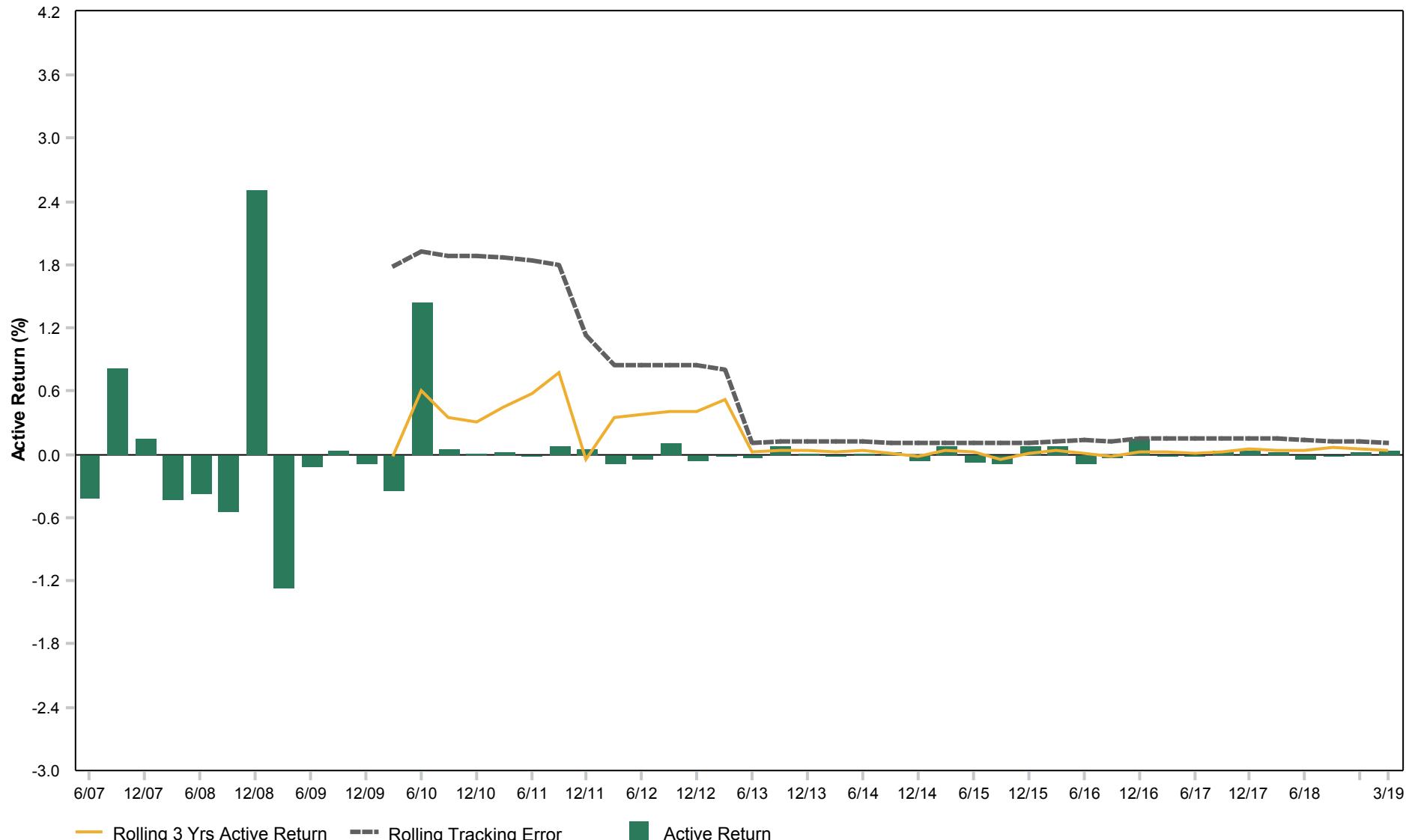
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

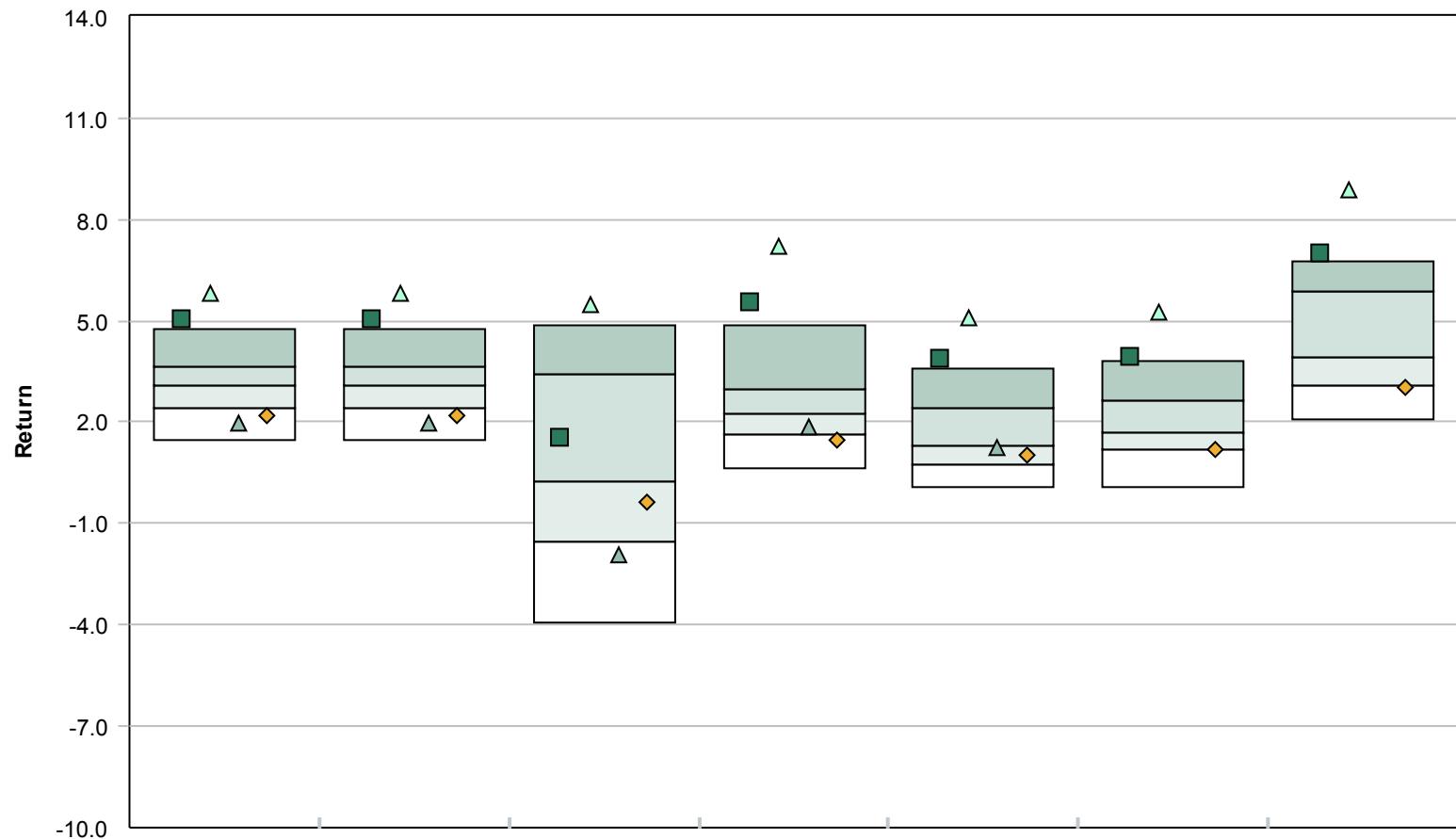
## Comparative Performance & Rolling Return

As of March 31, 2019

|                                  | YTD  | 1 Yr | 3 Yrs | 5 Yrs | 2018  | 2017 | 2016 | Since Inception | Inception Date |
|----------------------------------|------|------|-------|-------|-------|------|------|-----------------|----------------|
| IRM-TIPS                         | 2.61 | 2.72 | 1.57  | 1.53  | -0.26 | 1.97 | 4.11 | 3.54            | 02/01/2007     |
| Blmbg. Barc. U.S. TIPS 1-10 Year | 2.57 | 2.72 | 1.53  | 1.50  | -0.25 | 1.90 | 4.01 | 3.41            |                |
| Difference                       | 0.04 | 0.00 | 0.04  | 0.03  | -0.01 | 0.07 | 0.10 | 0.13            |                |

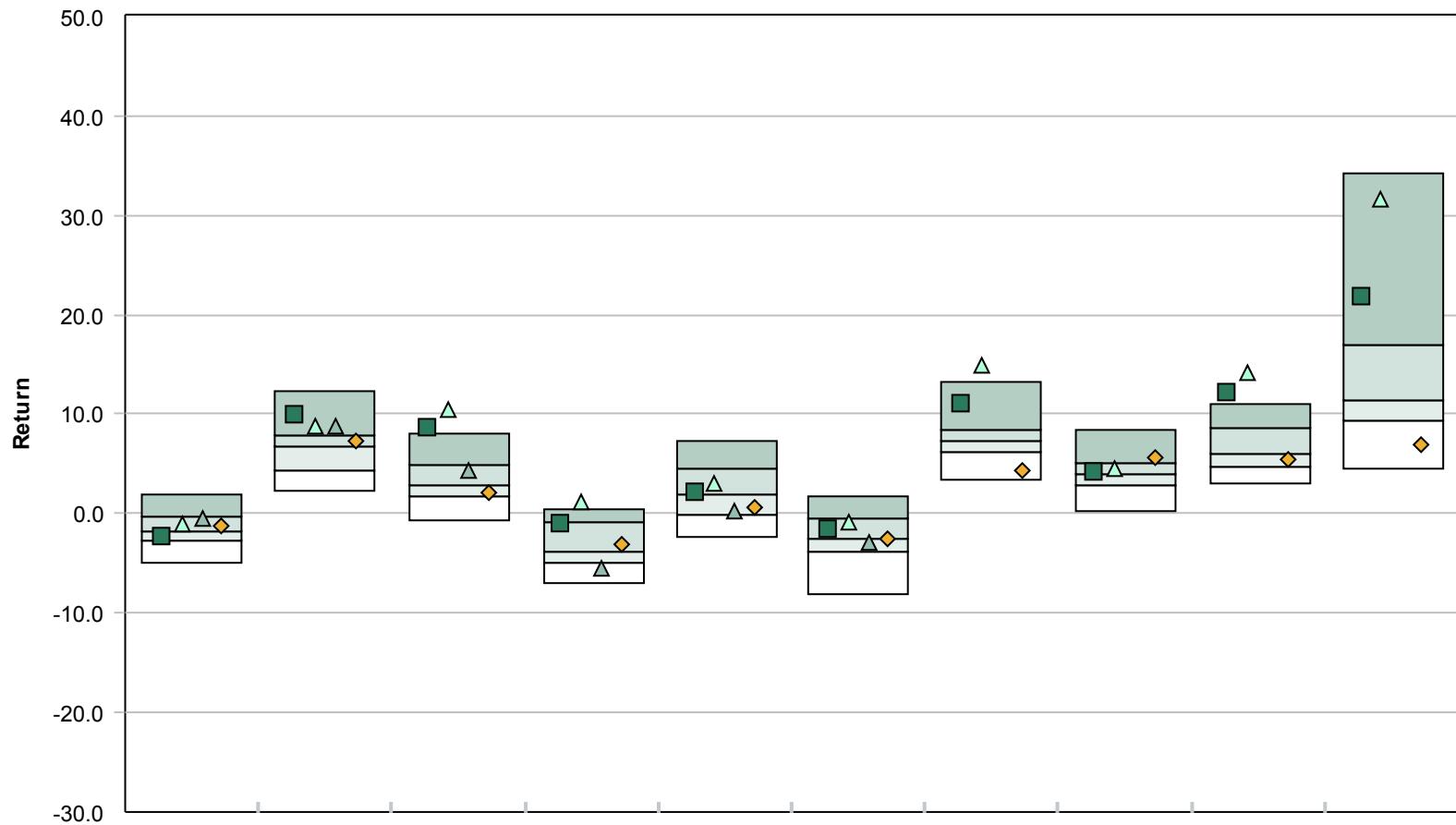


## **Global Fixed Income**



|                               | 1 Qtr     | YTD       | 1 Yr       | 3 Yrs     | 5 Yrs     | 7 Yrs     | 10 Yrs    |
|-------------------------------|-----------|-----------|------------|-----------|-----------|-----------|-----------|
| Total Global Fixed            | 5.06 (4)  | 5.06 (4)  | 1.54 (45)  | 5.52 (1)  | 3.84 (1)  | 3.94 (5)  | 6.98 (4)  |
| PIMCO Diversified Income      | 5.81 (1)  | 5.81 (1)  | 5.47 (1)   | 7.20 (1)  | 5.11 (1)  | 5.28 (1)  | 8.86 (1)  |
| Colchester Global Bond        | 1.97 (87) | 1.97 (87) | -1.91 (84) | 1.83 (68) | 1.26 (54) | N/A       | N/A       |
| Blmbg. Barc. Global Aggregate | 2.20 (84) | 2.20 (84) | -0.38 (57) | 1.49 (78) | 1.04 (64) | 1.19 (76) | 3.05 (76) |
| 5th Percentile                | 4.75      | 4.75      | 4.89       | 4.86      | 3.56      | 3.83      | 6.76      |
| 1st Quartile                  | 3.67      | 3.67      | 3.43       | 2.97      | 2.41      | 2.66      | 5.86      |
| Median                        | 3.10      | 3.10      | 0.24       | 2.25      | 1.31      | 1.70      | 3.95      |
| 3rd Quartile                  | 2.41      | 2.41      | -1.56      | 1.61      | 0.75      | 1.21      | 3.06      |
| 95th Percentile               | 1.45      | 1.45      | -3.93      | 0.62      | 0.06      | 0.10      | 2.10      |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



|                               | 2018       | 2017      | 2016      | 2015       | 2014      | 2013       | 2012       | 2011      | 2010      | 2009       |
|-------------------------------|------------|-----------|-----------|------------|-----------|------------|------------|-----------|-----------|------------|
| Total Global Fixed            | -2.43 (70) | 10.00 (9) | 8.55 (3)  | -1.05 (27) | 2.13 (47) | -1.54 (38) | 11.04 (14) | 4.23 (46) | 12.13 (4) | 21.87 (17) |
| PIMCO Diversified Income      | -0.96 (36) | 8.85 (16) | 10.56 (2) | 1.24 (1)   | 2.98 (38) | -0.91 (29) | 14.97 (4)  | 4.44 (38) | 14.27 (1) | 31.57 (6)  |
| Colchester Global Bond        | -0.47 (27) | 8.74 (17) | 4.28 (36) | -5.53 (85) | 0.27 (70) | -2.88 (56) | N/A        | N/A       | N/A       | N/A        |
| Blmbg. Barc. Global Aggregate | -1.19 (40) | 7.39 (38) | 2.09 (69) | -3.15 (41) | 0.59 (62) | -2.60 (52) | 4.32 (94)  | 5.64 (21) | 5.54 (59) | 6.93 (80)  |
| 5th Percentile                | 1.84       | 12.27     | 7.96      | 0.40       | 7.36      | 1.66       | 13.22      | 8.48      | 11.05     | 34.25      |
| 1st Quartile                  | -0.37      | 7.86      | 4.95      | -0.86      | 4.52      | -0.49      | 8.43       | 5.14      | 8.64      | 16.98      |
| Median                        | -1.75      | 6.81      | 2.92      | -3.83      | 1.91      | -2.52      | 7.33       | 4.01      | 5.97      | 11.42      |
| 3rd Quartile                  | -2.78      | 4.42      | 1.70      | -4.94      | -0.14     | -3.90      | 6.27       | 2.81      | 4.72      | 9.32       |
| 95th Percentile               | -4.98      | 2.21      | -0.62     | -7.00      | -2.35     | -8.15      | 3.48       | 0.26      | 3.08      | 4.45       |

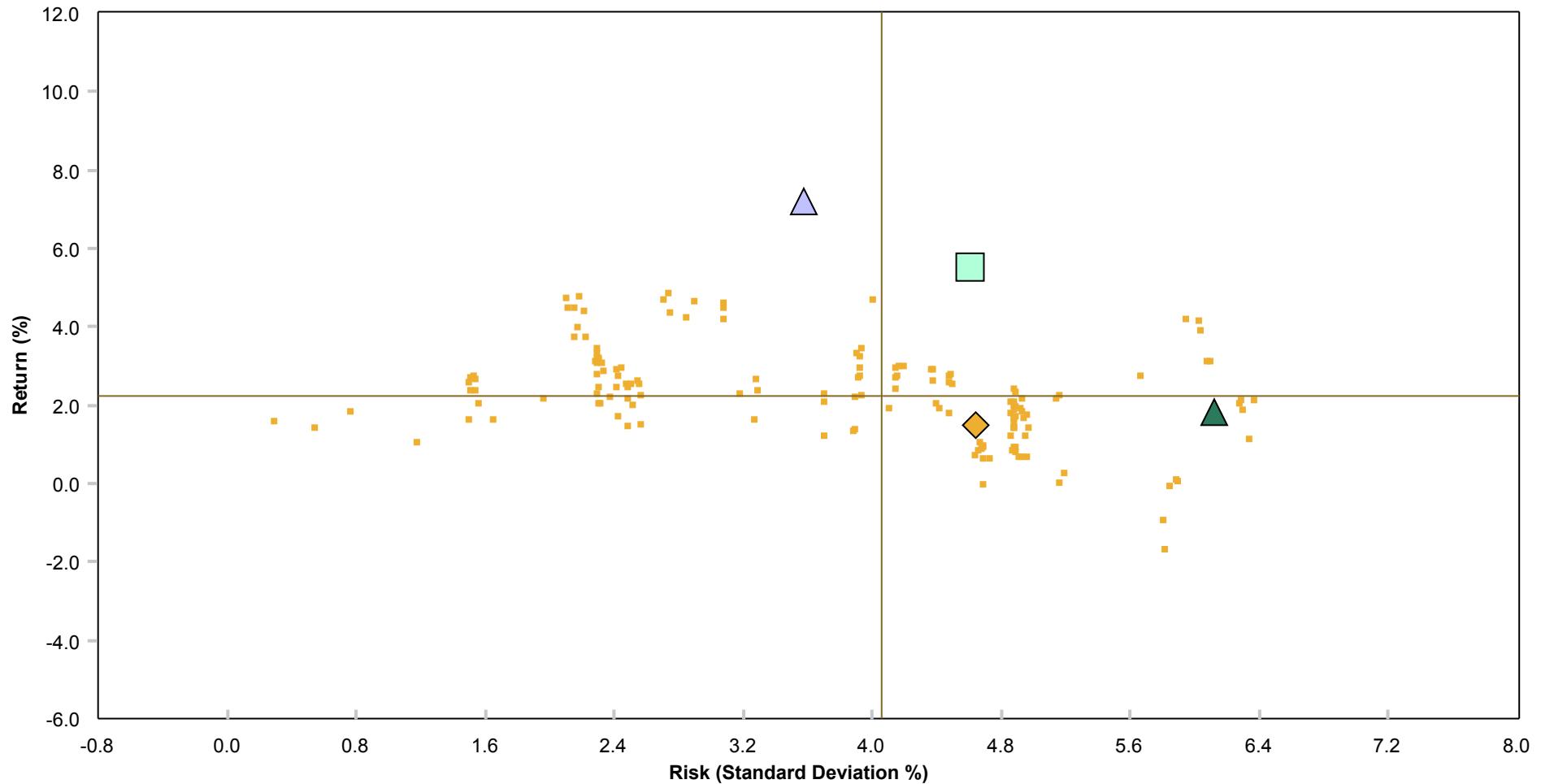
(Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.)

## Bristol County Retirement System

## Peer Group Scattergram

3 Years Ending March 31, 2019

IM Global Fixed Income (MF)



|                                 | Return | Standard Deviation |
|---------------------------------|--------|--------------------|
| ■ Total Global Fixed            | 5.52   | 4.61               |
| △ PIMCO Diversified Income      | 7.20   | 3.58               |
| ▲ Colchester Global Bond        | 1.83   | 6.12               |
| ◆ Blmbg. Barc. Global Aggregate | 1.49   | 4.64               |
| — Median                        | 2.25   | 4.06               |

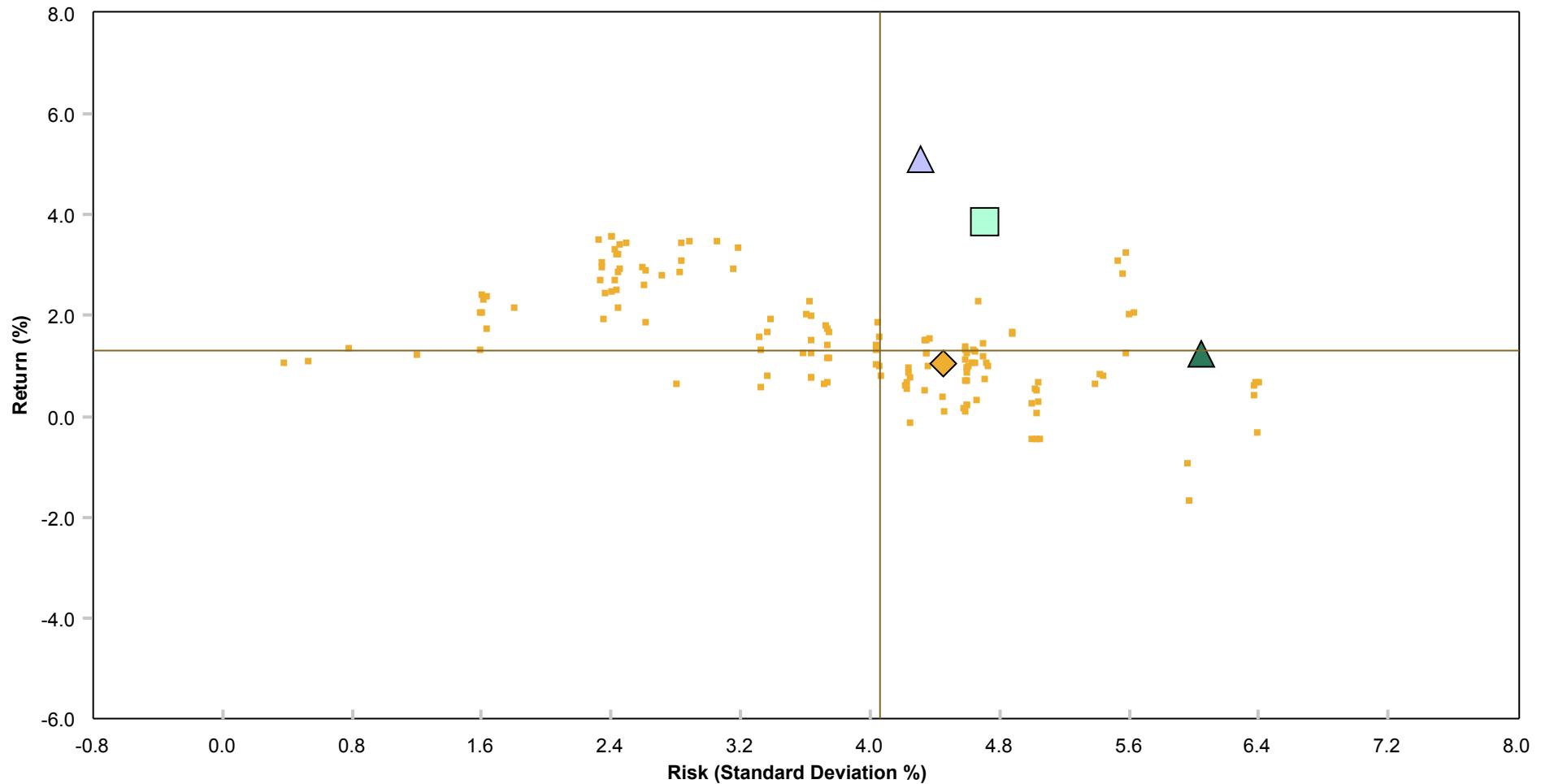
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Peer Group Scattergram

5 Years Ending March 31, 2019

IM Global Fixed Income (MF)



|                               | Return | Standard Deviation |
|-------------------------------|--------|--------------------|
| Total Global Fixed            | 3.84   | 4.71               |
| PIMCO Diversified Income      | 5.11   | 4.31               |
| Colchester Global Bond        | 1.26   | 6.05               |
| Blmbg. Barc. Global Aggregate | 1.04   | 4.45               |
| Median                        | 1.31   | 4.06               |

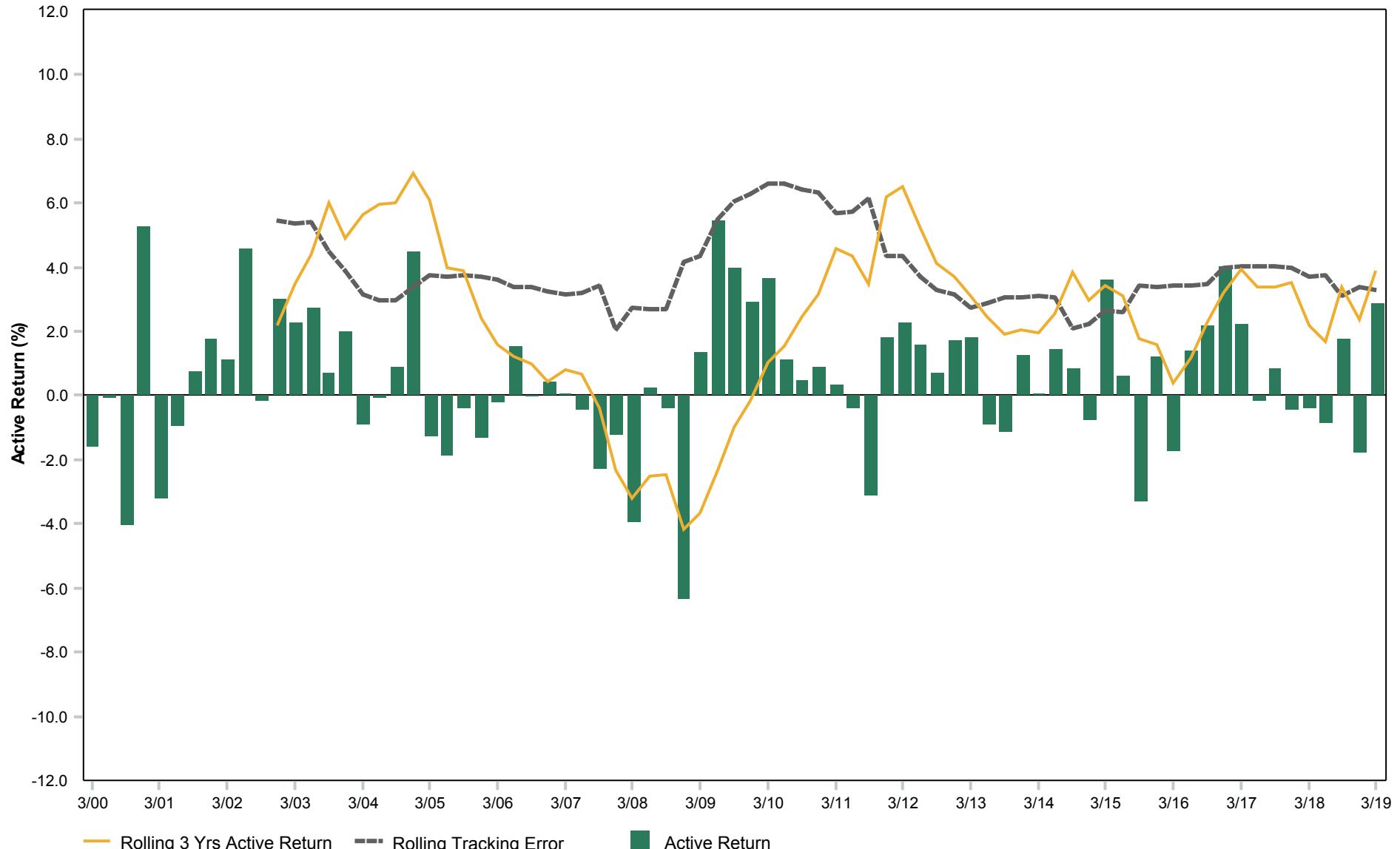
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

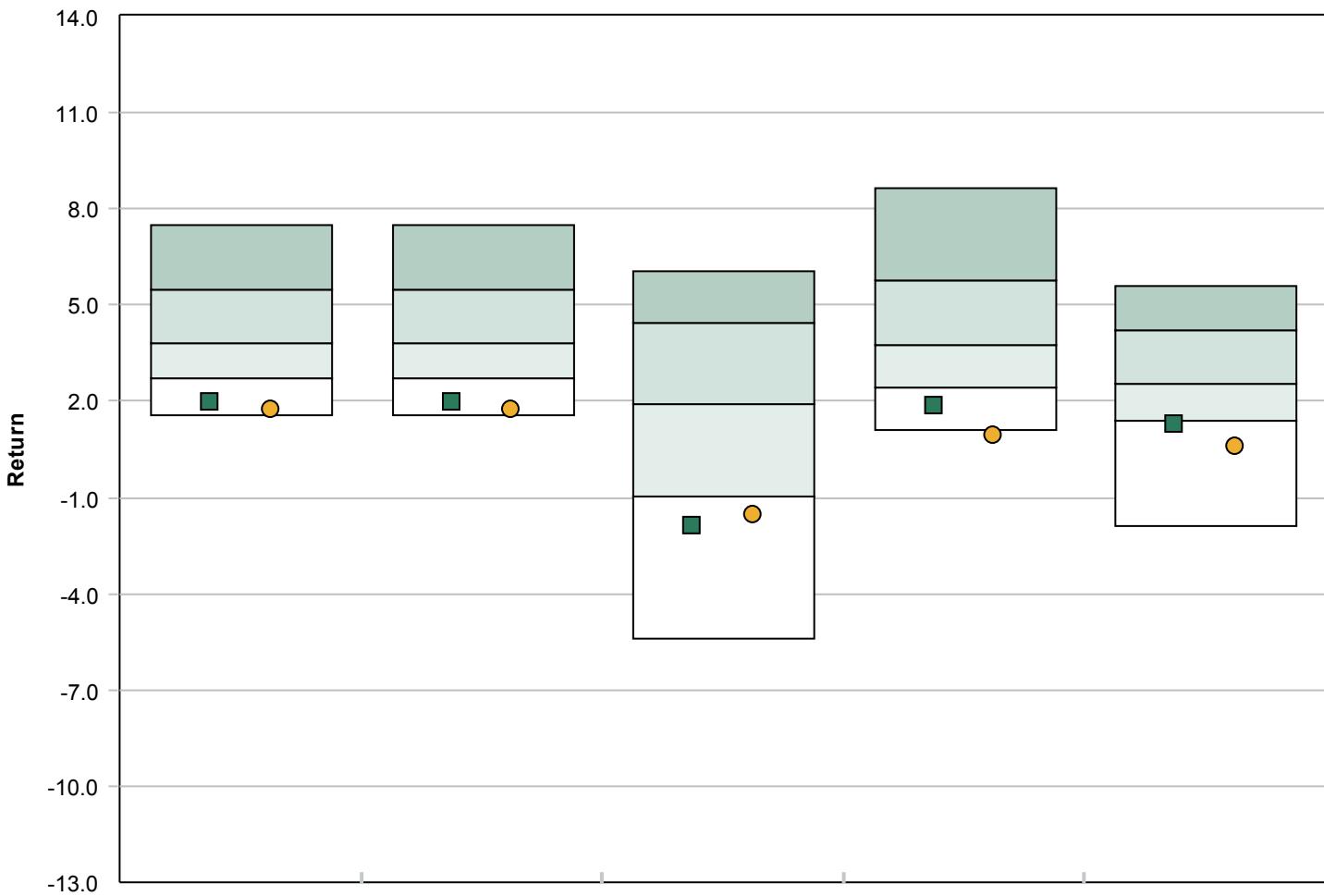
|                               | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016 | 2015  |
|-------------------------------|-------|------|-------|-------|-------|-------|--------|-------|-------|------|-------|
| Total Global Fixed            | 5.06  | 5.06 | 1.54  | 5.52  | 3.84  | 3.94  | 6.98   | -2.43 | 10.00 | 8.55 | -1.05 |
| Blmbg. Barc. Global Aggregate | 2.20  | 2.20 | -0.38 | 1.49  | 1.04  | 1.19  | 3.05   | -1.19 | 7.39  | 2.09 | -3.15 |
| Difference                    | 2.86  | 2.86 | 1.92  | 4.03  | 2.80  | 2.75  | 3.93   | -1.24 | 2.61  | 6.46 | 2.10  |



Net of fees.

 Segal Marco Advisors

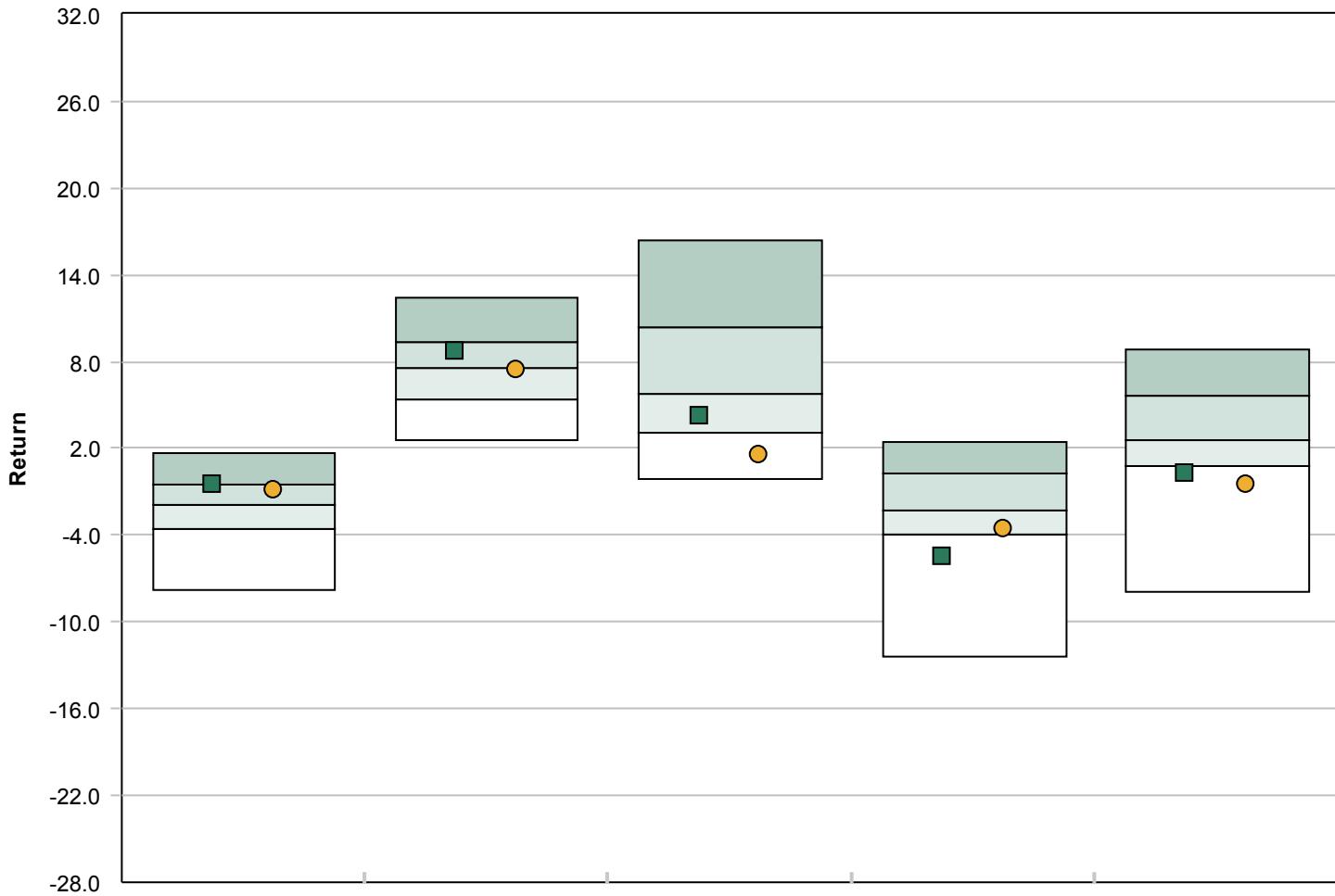
As of March 31, 2019



|                                  | 1 Qtr     | YTD       | 1 Yr       | 3 Yrs     | 5 Yrs     |
|----------------------------------|-----------|-----------|------------|-----------|-----------|
| Colchester Global Bond           | 1.97 (91) | 1.97 (91) | -1.91 (83) | 1.83 (86) | 1.26 (81) |
| FTSE World Government Bond Index | 1.74 (93) | 1.74 (93) | -1.57 (79) | 0.95 (96) | 0.59 (91) |
| 5th Percentile                   | 7.52      | 7.52      | 6.04       | 8.64      | 5.62      |
| 1st Quartile                     | 5.48      | 5.48      | 4.43       | 5.78      | 4.20      |
| Median                           | 3.84      | 3.84      | 1.89       | 3.78      | 2.53      |
| 3rd Quartile                     | 2.72      | 2.72      | -0.98      | 2.44      | 1.41      |
| 95th Percentile                  | 1.54      | 1.54      | -5.41      | 1.12      | -1.90     |

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

As of March 31, 2019



|                                  | 2018       | 2017      | 2016      | 2015       | 2014       |
|----------------------------------|------------|-----------|-----------|------------|------------|
| Colchester Global Bond           | -0.47 (25) | 8.74 (29) | 4.28 (64) | -5.53 (85) | 0.27 (79)  |
| FTSE World Government Bond Index | -0.84 (33) | 7.49 (52) | 1.60 (89) | -3.57 (68) | -0.48 (85) |
| 5th Percentile                   | 1.66       | 12.36     | 16.40     | 2.51       | 8.84       |
| 1st Quartile                     | -0.51      | 9.29      | 10.41     | 0.28       | 5.71       |
| Median                           | -1.86      | 7.62      | 5.77      | -2.30      | 2.61       |
| 3rd Quartile                     | -3.62      | 5.33      | 3.12      | -3.98      | 0.75       |
| 95th Percentile                  | -7.84      | 2.53      | -0.09     | -12.45     | -7.91      |

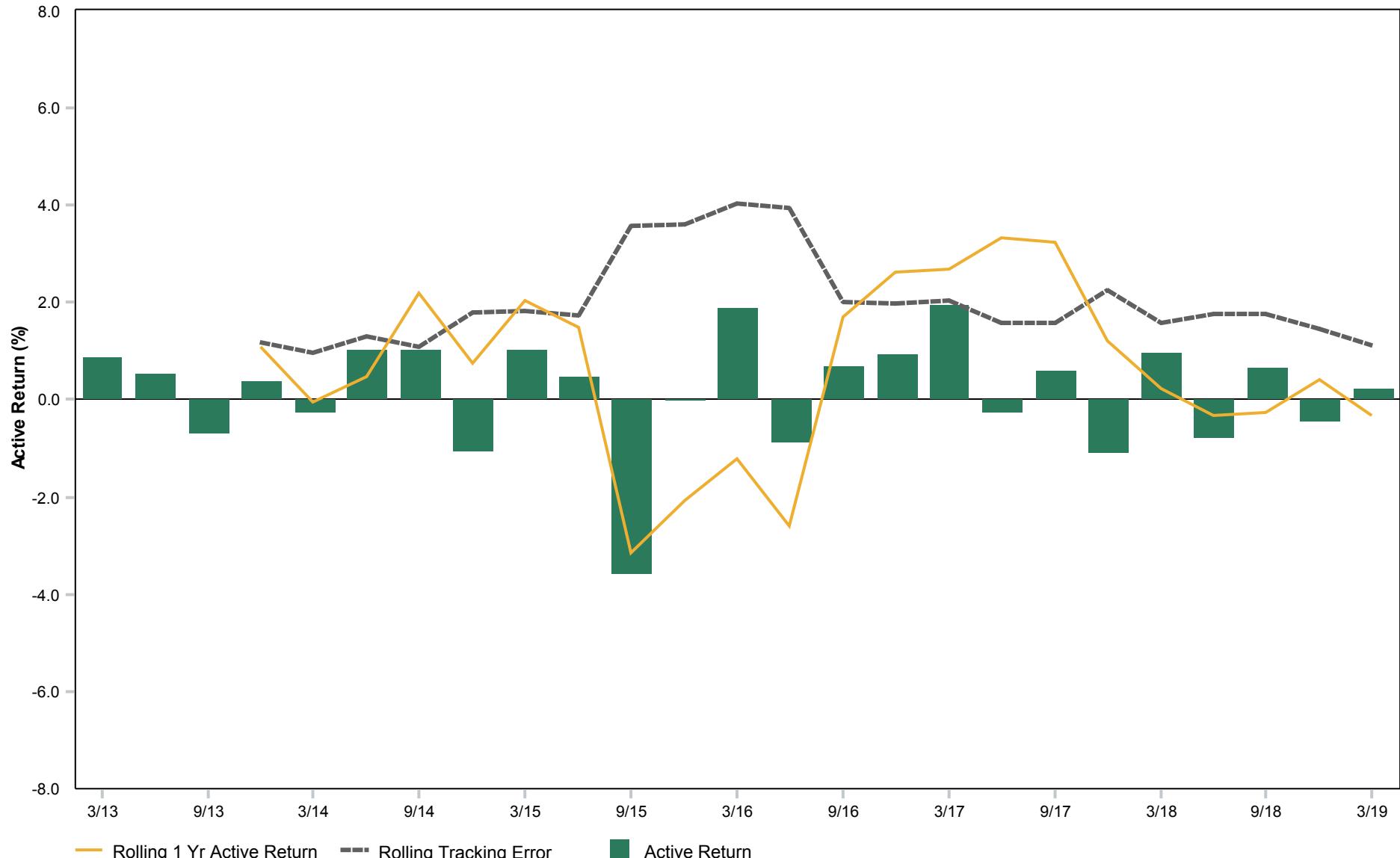
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

## Bristol County Retirement System

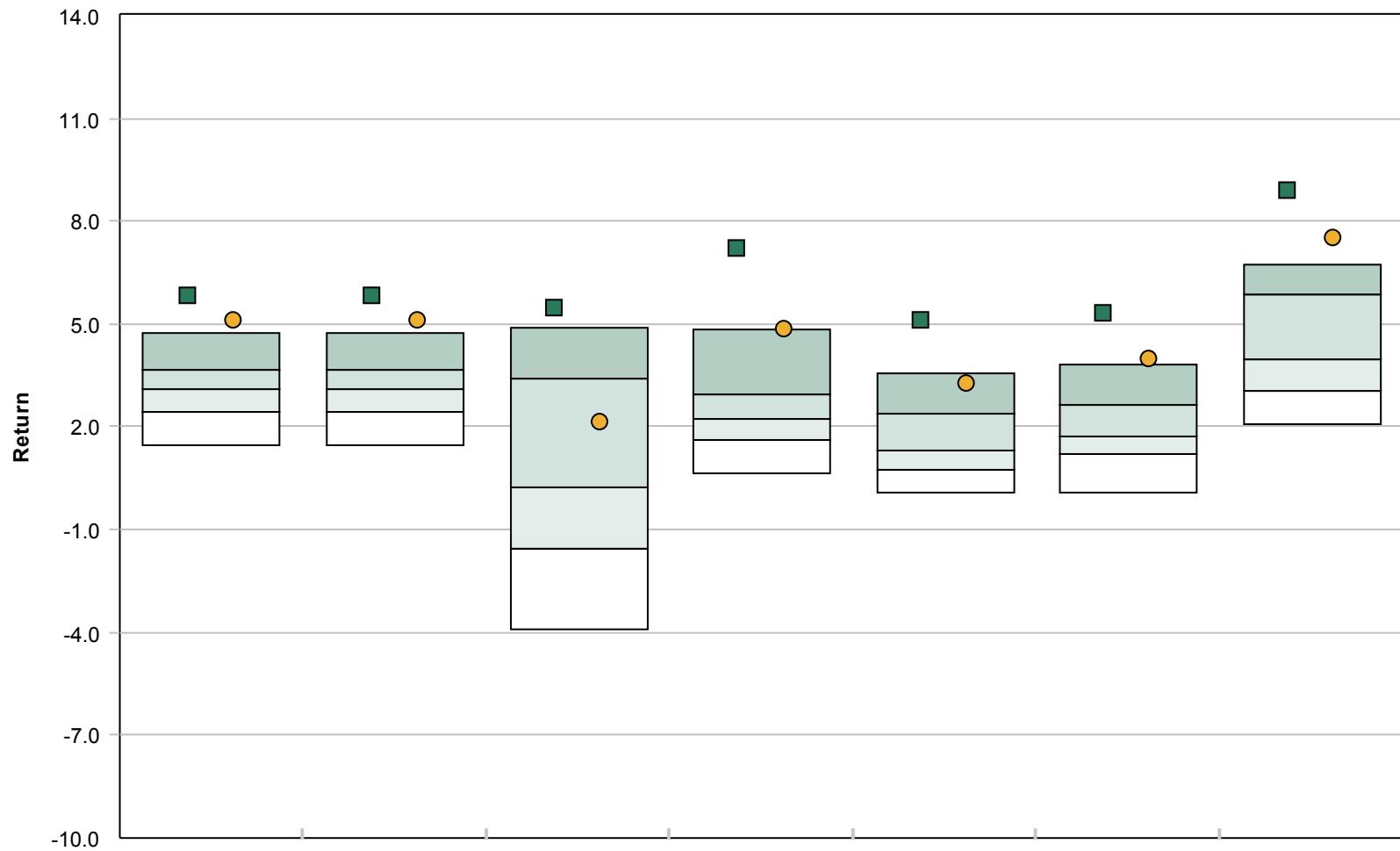
## Comparative Performance & Rolling Return

As of March 31, 2019

|                                  | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017 | 2016 | 2015  |
|----------------------------------|-------|------|-------|-------|-------|-------|--------|-------|------|------|-------|
| Colchester Global Bond           | 1.97  | 1.97 | -1.91 | 1.83  | 1.26  | N/A   | N/A    | -0.47 | 8.74 | 4.28 | -5.53 |
| FTSE World Government Bond Index | 1.74  | 1.74 | -1.57 | 0.95  | 0.59  | 0.52  | 2.20   | -0.84 | 7.49 | 1.60 | -3.57 |
| Difference                       | 0.23  | 0.23 | -0.34 | 0.88  | 0.67  | N/A   | N/A    | 0.37  | 1.25 | 2.68 | -1.96 |



As of March 31, 2019



■ PIMCO Diversified Income  
● PIMCO Diversified Index\*

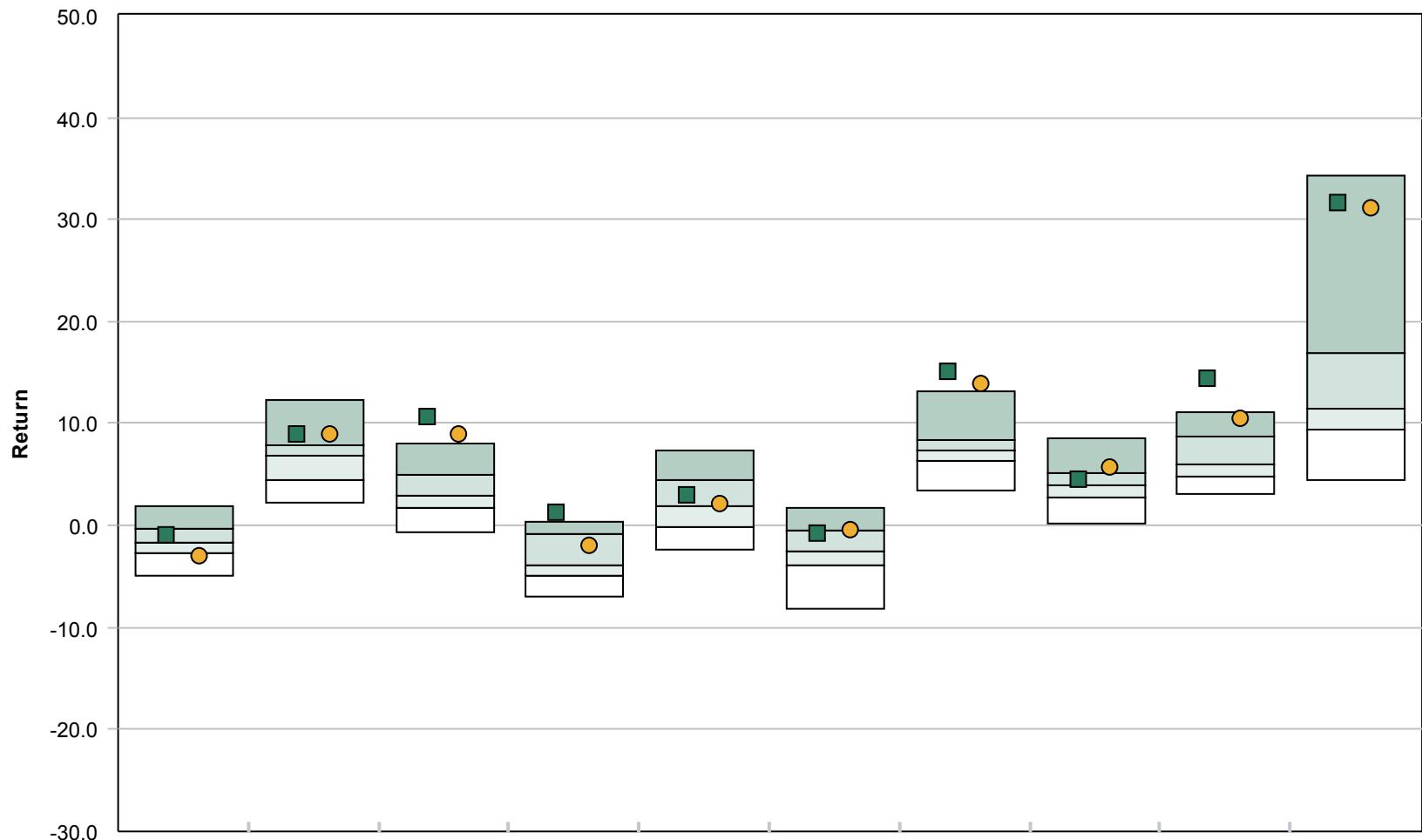
|                 | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs |
|-----------------|-------|------|-------|-------|-------|-------|--------|
| 5th Percentile  | 4.75  | 4.75 | 4.89  | 4.86  | 3.56  | 3.83  | 6.76   |
| 1st Quartile    | 3.67  | 3.67 | 3.43  | 2.97  | 2.41  | 2.66  | 5.86   |
| Median          | 3.10  | 3.10 | 0.24  | 2.25  | 1.31  | 1.70  | 3.95   |
| 3rd Quartile    | 2.41  | 2.41 | -1.56 | 1.61  | 0.75  | 1.21  | 3.06   |
| 95th Percentile | 1.45  | 1.45 | -3.93 | 0.62  | 0.06  | 0.10  | 2.10   |

\*33.3% ML Global HY/33.3% JPM EMBI Global/33.3% LB Global Agg

## Bristol County Retirement System

## IM Global Fixed Income (MF)

As of March 31, 2019



■ PIMCO Diversified Income

● PIMCO Diversified Index\*

2018      2017      2016      2015      2014      2013      2012      2011      2010      2009

|                 |       |       |       |       |       |       |       |      |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| 5th Percentile  | 1.84  | 12.27 | 7.96  | 0.40  | 7.36  | 1.66  | 13.22 | 8.48 | 11.05 | 34.25 |
| 1st Quartile    | -0.37 | 7.86  | 4.95  | -0.86 | 4.52  | -0.49 | 8.43  | 5.14 | 8.64  | 16.98 |
| Median          | -1.75 | 6.81  | 2.92  | -3.83 | 1.91  | -2.52 | 7.33  | 4.01 | 5.97  | 11.42 |
| 3rd Quartile    | -2.78 | 4.42  | 1.70  | -4.94 | -0.14 | -3.90 | 6.27  | 2.81 | 4.72  | 9.32  |
| 95th Percentile | -4.98 | 2.21  | -0.62 | -7.00 | -2.35 | -8.15 | 3.48  | 0.26 | 3.08  | 4.45  |

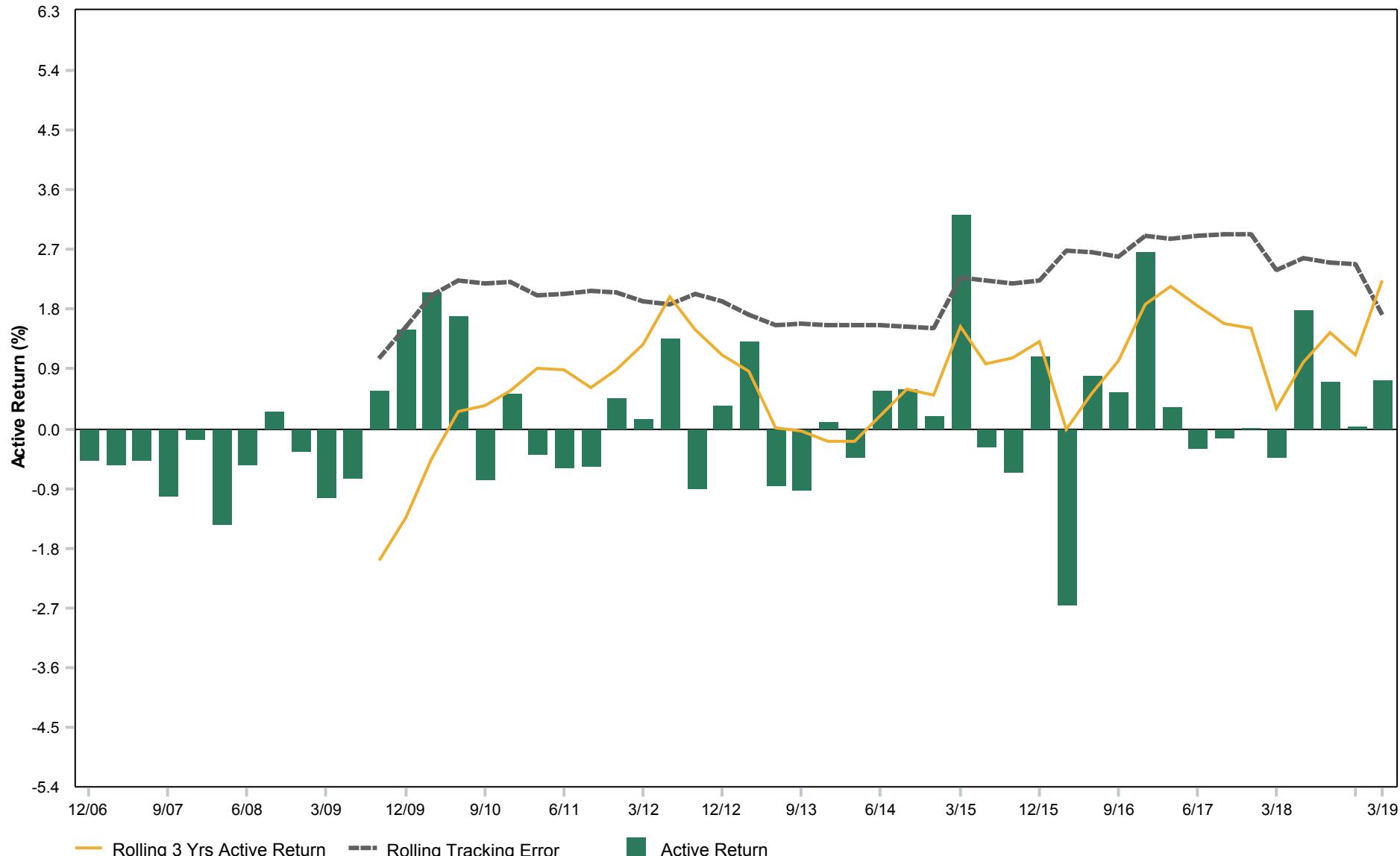
\*33.3% ML Global HY/33.3% JPM EMBI Global/33.3% LB Global Agg

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|                          | 1 Qtr | YTD  | 1 Yr | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016  | 2015  |
|--------------------------|-------|------|------|-------|-------|-------|--------|-------|-------|-------|-------|
| PIMCO Diversified Income | 5.81  | 5.81 | 5.47 | 7.20  | 5.11  | 5.28  | 8.86   | -0.96 | 8.85  | 10.56 | 1.24  |
| PIMCO Diversified Index* | 5.10  | 5.10 | 2.11 | 4.84  | 3.28  | 3.97  | 7.50   | -3.03 | 8.97  | 8.97  | -2.02 |
| Difference               | 0.71  | 0.71 | 3.36 | 2.36  | 1.83  | 1.31  | 1.36   | 2.07  | -0.12 | 1.59  | 3.26  |

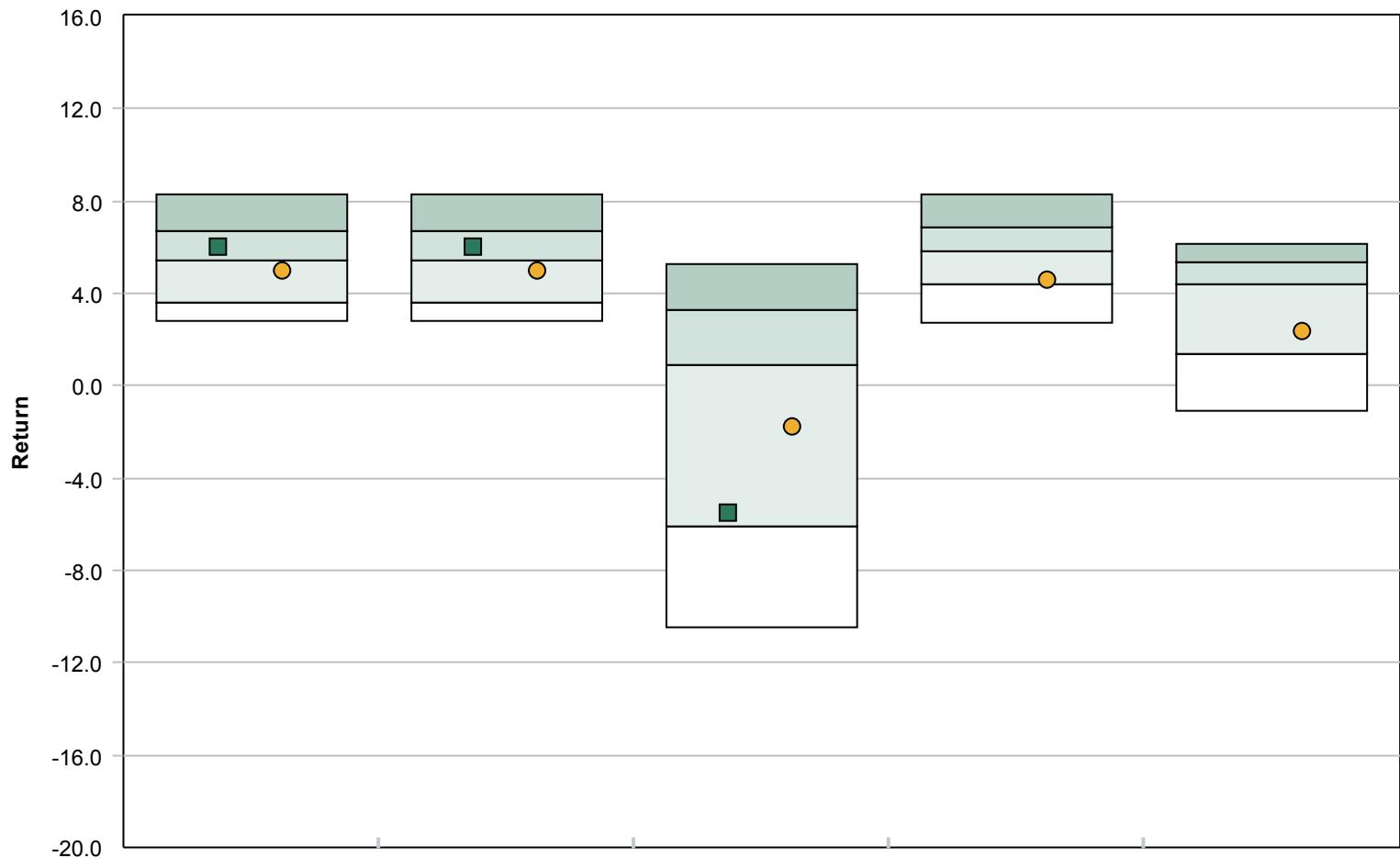


\*PIMCO Index: 33% BC Global Agg/33% ML Global HY/33% JPM EMBI Global.

## Bristol County Retirement System

## IM Emerging Market Debt Blend (SA+CF)

As of March 31, 2019



Stone Harbor EMD

50% JPM EMBI Global Div./  
50% JPM GBI-EM Global Div.

**1 Qtr**  
5.97 (39)

4.93 (61)

**YTD**  
5.97 (39)

4.93 (61)

**1 Yr**  
-5.52 (71)

-1.78 (59)

**3 Yrs**  
N/A

4.59 (74)

**5 Yrs**  
N/A

2.37 (64)

5th Percentile

8.26

8.26

5.28

8.28

6.11

1st Quartile

6.73

6.73

3.32

6.83

5.34

Median

5.40

5.40

0.87

5.86

4.42

3rd Quartile

3.64

3.64

-6.07

4.44

1.38

95th Percentile

2.84

2.84

-10.45

2.73

-1.05

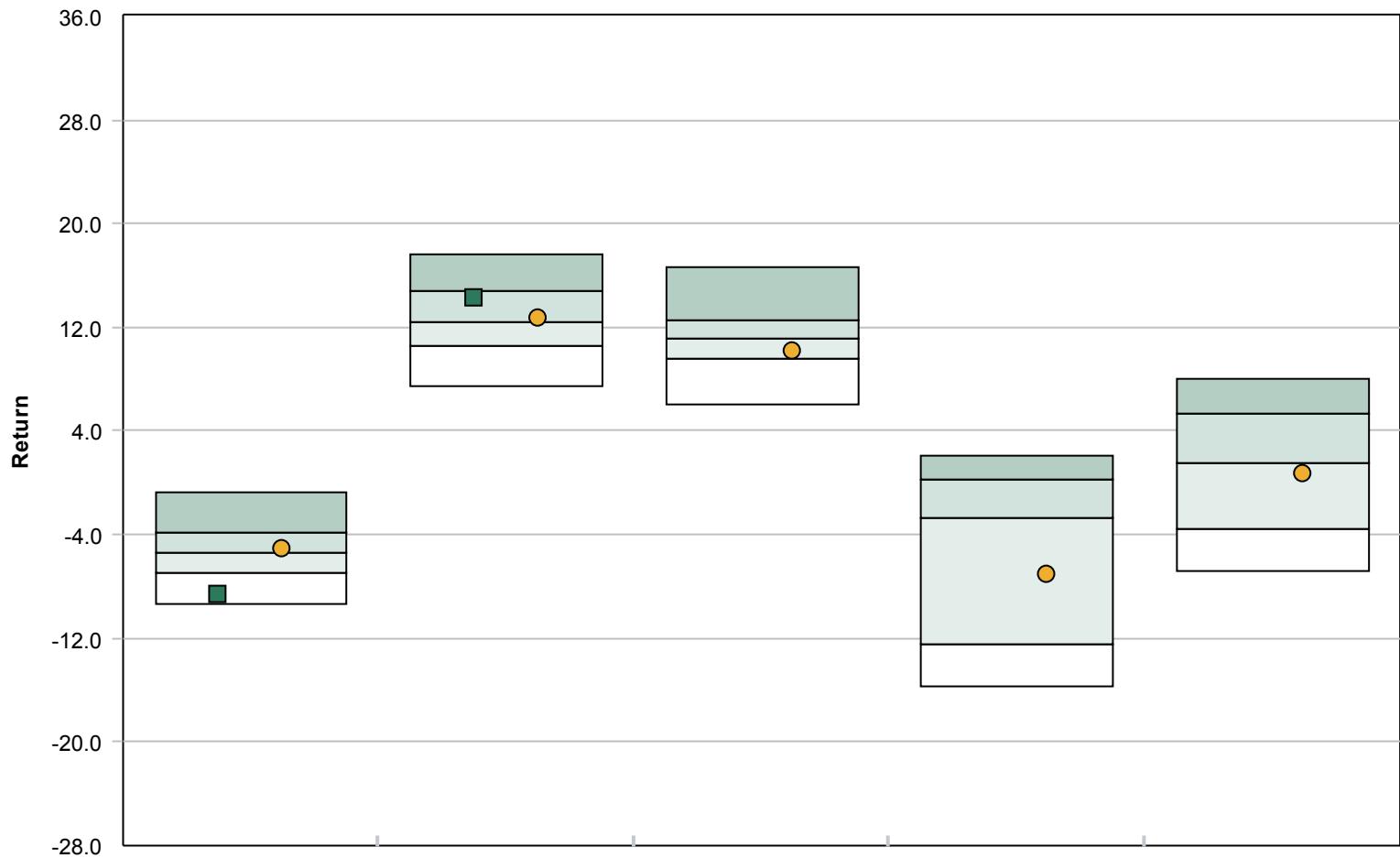
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

## Bristol County Retirement System

## IM Emerging Market Debt Blend (SA+CF)

As of March 31, 2019



■ Stone Harbor EMD

● 50% JPM EMBI Global Div./  
50% JPM GBI-EM Global Div.

**2018**

-8.65 (92)  
-5.15 (46)

**2017**

14.30 (32)  
12.74 (46)

**2016**

N/A  
10.16 (67)

**2015**

N/A  
-7.14 (66)

**2014**

N/A  
0.71 (59)

5th Percentile

-0.69

17.70

16.62

2.04

8.07

1st Quartile

-3.82

14.78

12.59

0.26

5.41

Median

-5.35

12.43

11.09

-2.67

1.52

3rd Quartile

-6.99

10.52

9.53

-12.49

-3.61

95th Percentile

-9.36

7.45

6.04

-15.77

-6.82

Parentheses contain percentile rankings.

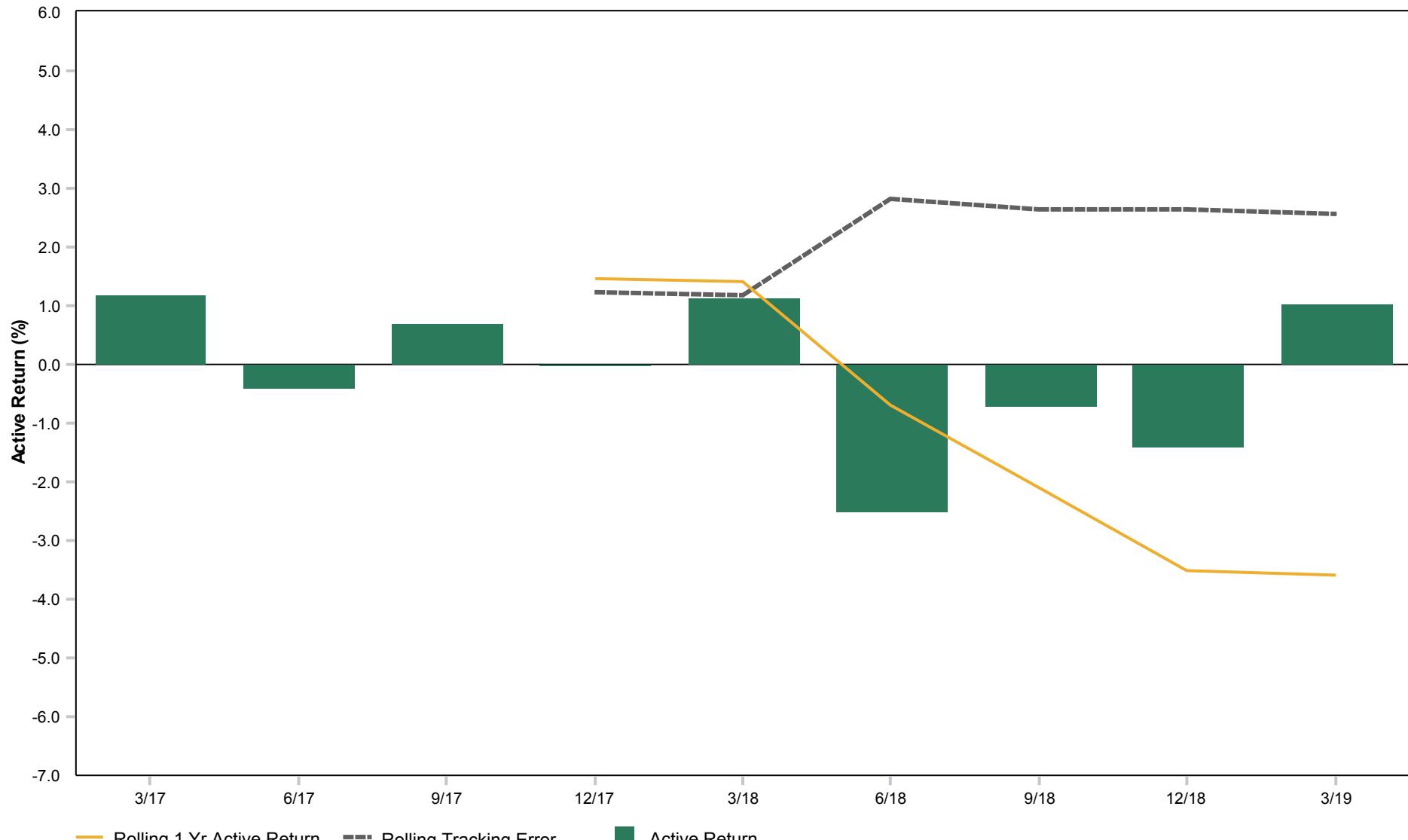
Calculation based on monthly periodicity.

## Bristol County Retirement System

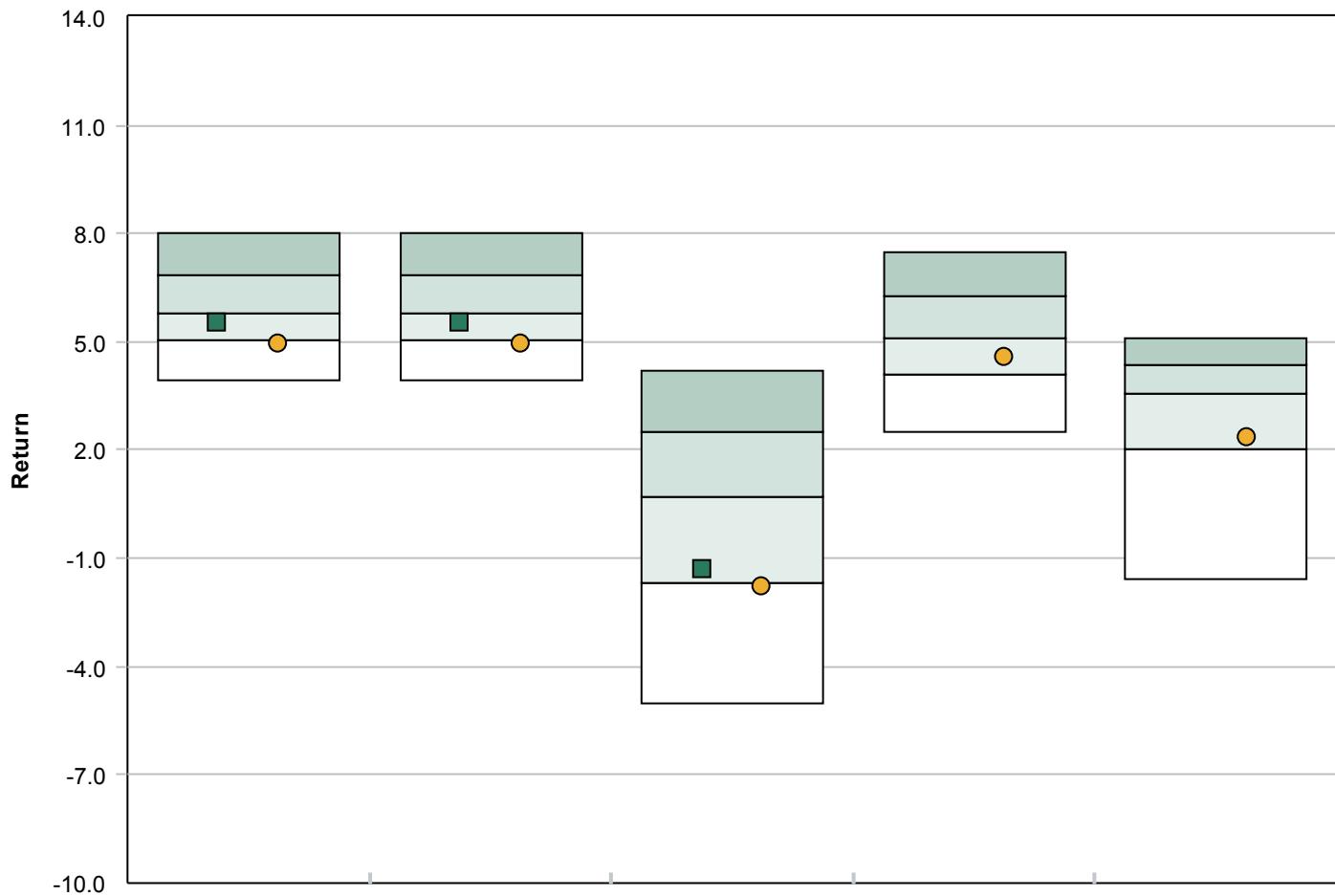
## Comparative Performance & Rolling Return

As of March 31, 2019

|  | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016  | 2015  |
|--|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Stone Harbor EMD   | 5.97  | 5.97 | -5.52 | N/A   | N/A   | N/A   | N/A    | -8.65 | 14.30 | N/A   | N/A   |
| 50% JPM EMBI Global Diversified/<br>50% JPM GBI-EM Global Diversified US | 4.93  | 4.93 | -1.78 | 4.59  | 2.37  | 2.44  | 6.50   | -5.15 | 12.74 | 10.16 | -7.14 |
| Difference   | 1.04  | 1.04 | -3.74 | N/A   | N/A   | N/A   | N/A    | -3.50 | 1.56  | N/A   | N/A   |



■ Active Return



■ Ashmore Emerging Markets Total Return

● 50% JPM EMBI Global Div./  
50% JPM GBI-EM Global Div.

5th Percentile

5.54 (57)  
4.93 (78)

1st Quartile

8.00  
6.83

Median

6.83  
5.77

3rd Quartile

5.77  
5.02

95th Percentile

5.02  
3.93

-1.29 (71)  
-1.78 (78)

4.17  
-1.67

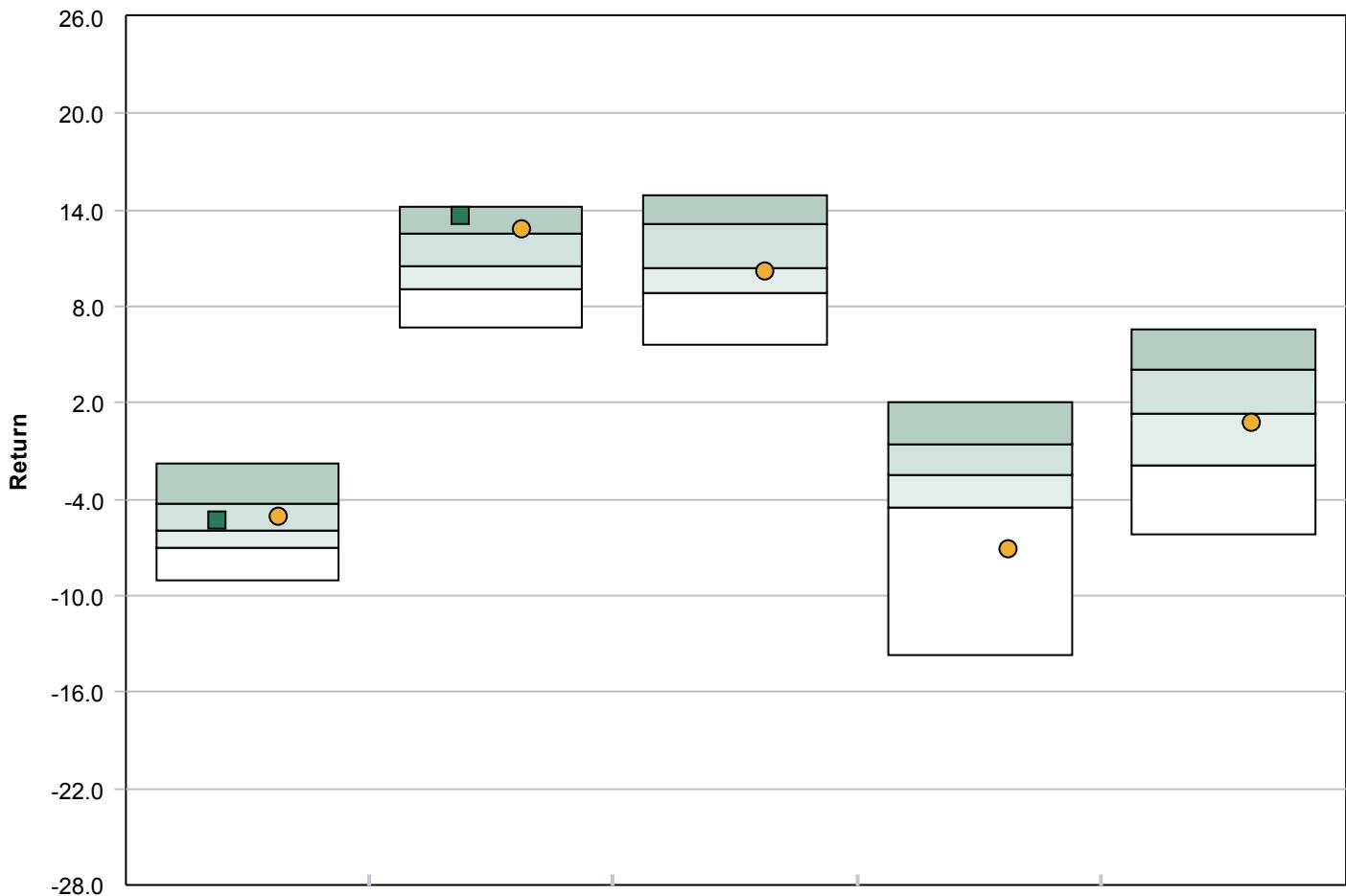
7.48  
4.10

5.12  
2.48

3.56  
-1.59

Parentheses contain percentile rankings.

Calculation based on monthly periodicity.



■ Ashmore Emerging Markets Total Return

● 50% JPM EMBI Global Div./  
50% JPM GBI-EM Global Div.

|   | 2018       | 2017       | 2016       | 2015       | 2014      |
|---|------------|------------|------------|------------|-----------|
| Ashmore Emerging Markets Total Return                   | -5.33 (42) | 13.66 (10) | N/A        | N/A        | N/A       |
| 50% JPM EMBI Global Div./<br>50% JPM GBI-EM Global Div. | -5.15 (39) | 12.74 (22) | 10.16 (55) | -7.14 (84) | 0.71 (57) |

5th Percentile

-1.82 14.25 14.96 1.98 6.51

1st Quartile

-4.27 12.52 13.09 -0.59 4.05

Median

-5.91 10.49 10.42 -2.53 1.31

3rd Quartile

-7.08 9.02 8.88 -4.49 -1.88

95th Percentile

-8.99 6.67 5.57 -13.69 -6.22

Parentheses contain percentile rankings.

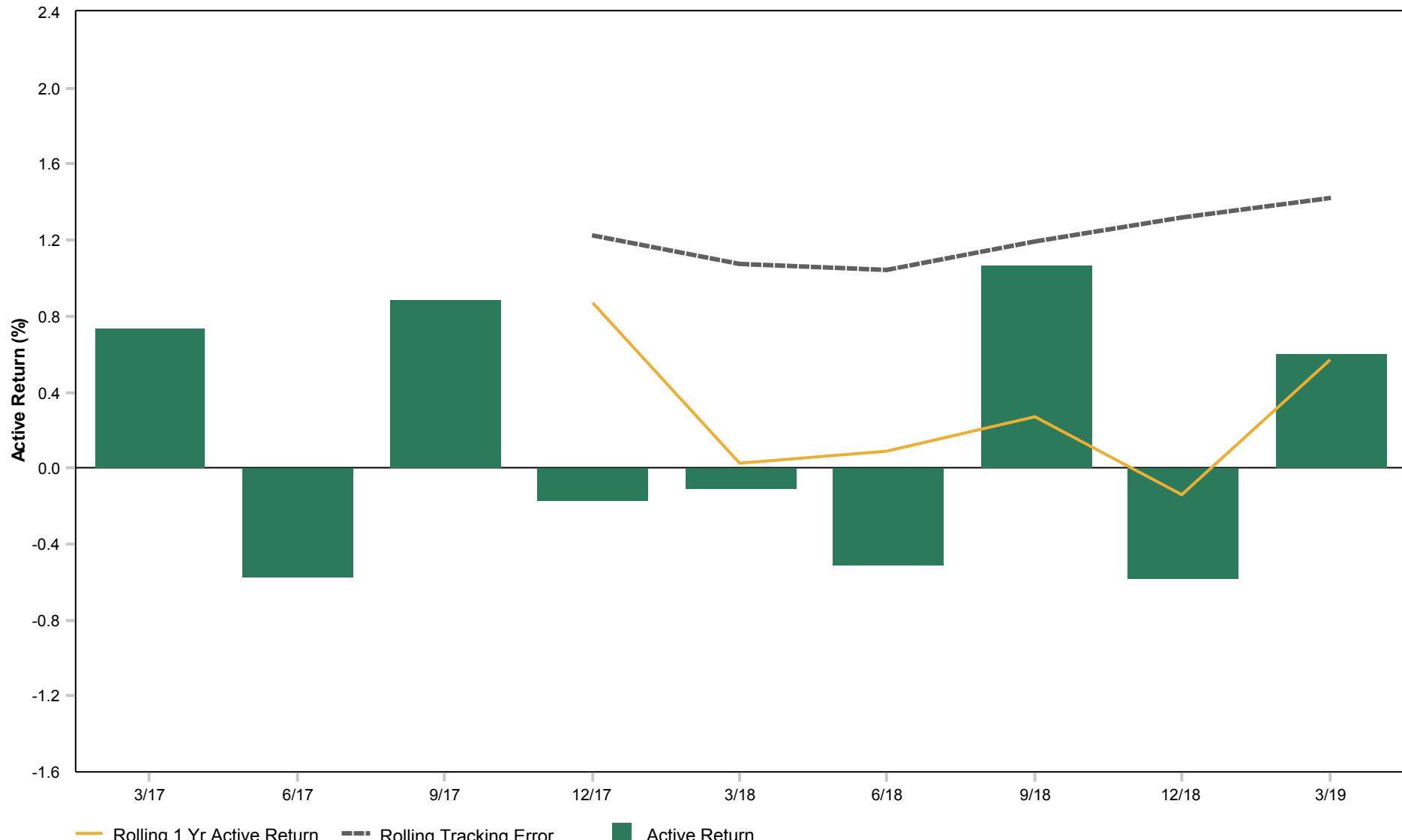
Calculation based on monthly periodicity.

## Bristol County Retirement System

## Comparative Performance & Rolling Return

As of March 31, 2019

|  | 1 Qtr | YTD  | 1 Yr  | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2018  | 2017  | 2016  | 2015  |
|--|-------|------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Ashmore Emerging Markets Total Return                                    | 5.54  | 5.54 | -1.29 | N/A   | N/A   | N/A   | N/A    | -5.33 | 13.66 | N/A   | N/A   |
| 50% JPM EMBI Global Diversified/<br>50% JPM GBI-EM Global Diversified US | 4.93  | 4.93 | -1.78 | 4.59  | 2.37  | 2.44  | 6.50   | -5.15 | 12.74 | 10.16 | -7.14 |
| Difference   | 0.61  | 0.61 | 0.49  | N/A   | N/A   | N/A   | N/A    | -0.18 | 0.92  | N/A   | N/A   |



— Rolling 1 Yr Active Return    - - - Rolling Tracking Error

■ Active Return

## **Other Fixed Income**

**Bristol County Retirement System****Comparative Performance - IRR**

As of March 31, 2019

|                                | Market Value<br>(\$) | %    | 1       | Year<br>To<br>Date | 1     | 3     | Since<br>Inception | Inception<br>Date |
|--------------------------------|----------------------|------|---------|--------------------|-------|-------|--------------------|-------------------|
|                                |                      |      | Quarter |                    | Year  | Years |                    |                   |
| Invesco Mortgage Recovery Fund | 247,203              | 0.04 | 0.00    | 0.00               | 16.03 | 0.61  | 13.98              | 03/31/2010        |

# Bristol County Retirement System

# Schedule of Investable Assets

Invesco Mortgage Recovery Fund

Since Inception Ending March 31, 2019

| Periods Ending | Beginning Market Value (\$) | Net Cash Flow (\$) | Contributions (\$) | Withdrawals (\$) | Gain/Loss (\$) | Ending Market Value (\$) | %Return | Unit Value | Income (\$) | Income % of Beginning Market Value |
|----------------|-----------------------------|--------------------|--------------------|------------------|----------------|--------------------------|---------|------------|-------------|------------------------------------|
| Jun-2010       | -                           | 2,047,799          | 2,089,844          | 42,045           | -              | 2,151,396                | 5.74    | 105.74     | 27,307      | 0.00                               |
| Sep-2010       | 2,151,396                   | 739,731            | 921,104            | 181,373          | 142,577        | 3,033,704                | 5.94    | 112.02     | 75,028      | 3.49                               |
| Dec-2010       | 3,033,704                   | -448,204           | 33,362             | 481,566          | 96,495         | 2,681,995                | 3.67    | 116.13     | 209,106     | 6.89                               |
| Mar-2011       | 2,681,995                   | -265,432           | 215,509            | 480,941          | 114,718        | 2,531,281                | 4.31    | 121.13     | 206,684     | 7.71                               |
| Jun-2011       | 2,531,281                   | -248,483           | 200,172            | 448,655          | -37,226        | 2,245,572                | -1.67   | 119.11     | 33,871      | 1.34                               |
| Sep-2011       | 2,245,572                   | 1,186,159          | 1,302,619          | 116,460          | -15,163        | 3,416,568                | -0.67   | 118.31     | 8,310       | 0.37                               |
| Dec-2011       | 3,416,568                   | -974,627           | -                  | 974,627          | 7,383          | 2,449,324                | 0.24    | 118.60     | 38,619      | 1.13                               |
| Mar-2012       | 2,449,324                   | -880,764           | -                  | 880,764          | 106,038        | 1,674,598                | 4.64    | 124.10     | 18,649      | 0.76                               |
| Jun-2012       | 1,674,598                   | -3,746             | 159,003            | 162,749          | 44,872         | 1,715,724                | 2.45    | 127.14     | 75,013      | 4.48                               |
| Sep-2012       | 1,715,724                   | -10,305            | -                  | 10,305           | 37,498         | 1,742,917                | 2.19    | 129.92     | -           | 0.00                               |
| Dec-2012       | 1,742,917                   | -510,562           | -                  | 510,562          | 85,492         | 1,317,847                | 5.91    | 137.60     | -           | 0.00                               |
| Mar-2013       | 1,317,847                   | -65,326            | -                  | 65,326           | 22,847         | 1,275,368                | 1.74    | 140.00     | -           | 0.00                               |
| Jun-2013       | 1,275,368                   | -59,917            | 20,152             | 80,069           | 26,281         | 1,241,732                | 2.19    | 143.07     | -           | 0.00                               |
| Sep-2013       | 1,241,732                   | 221,939            | 221,939            | -                | 2,024          | 1,465,695                | 0.14    | 143.27     | -           | 0.00                               |
| Dec-2013       | 1,465,695                   | 132,967            | 329,829            | 196,862          | 124,547        | 1,723,209                | 8.11    | 154.89     | -           | 0.00                               |
| Mar-2014       | 1,723,209                   | -97,979            | -                  | 97,979           | 39,216         | 1,664,446                | 2.35    | 158.54     | -           | 0.00                               |
| Jun-2014       | 1,664,446                   | -64,464            | 70,551             | 135,015          | 53,465         | 1,653,447                | 3.34    | 163.84     | -           | 0.00                               |
| Sep-2014       | 1,653,447                   | -38,489            | 40,092             | 78,581           | 82,363         | 1,697,321                | 5.10    | 172.19     | -           | 0.00                               |
| Dec-2014       | 1,697,321                   | 53,602             | 88,065             | 34,463           | 315,116        | 2,066,039                | 18.00   | 203.18     | -           | 0.00                               |
| Mar-2015       | 2,066,039                   | -338,868           | 42,571             | 381,439          | 49,102         | 1,776,273                | 2.88    | 209.03     | -           | 0.00                               |
| Jun-2015       | 1,776,273                   | 28,704             | 28,704             | -                | 67,010         | 1,871,987                | 3.91    | 217.20     | -           | 0.00                               |
| Sep-2015       | 1,871,987                   | -239,366           | 44,631             | 283,997          | 184,643        | 1,817,264                | 11.31   | 241.76     | -           | 0.00                               |
| Dec-2015       | 1,817,264                   | -255,351           | -                  | 255,351          | 107,519        | 1,669,432                | 6.88    | 258.40     | -           | 0.00                               |
| Mar-2016       | 1,669,432                   | 9,080              | 57,199             | 48,119           | -204           | 1,678,308                | -0.01   | 258.37     | -           | 0.00                               |
| Jun-2016       | 1,678,308                   | -423,449           | -                  | 423,449          | 62,718         | 1,317,577                | 5.00    | 271.28     | -           | 0.00                               |
| Sep-2016       | 1,317,577                   | -175,341           | -                  | 175,341          | 1,890          | 1,144,126                | 0.17    | 271.73     | -           | 0.00                               |
| Dec-2016       | 1,144,126                   | -1,965             | -                  | 1,965            | -85,161        | 1,057,000                | -7.44   | 251.51     | -           | 0.00                               |
| Mar-2017       | 1,057,000                   | -                  | -                  | -                | -25,343        | 1,031,657                | -2.40   | 245.48     | -           | 0.00                               |
| Jun-2017       | 1,031,657                   | -559,332           | -                  | 559,332          | -399           | 471,926                  | -0.08   | 245.27     | -           | 0.00                               |
| Sep-2017       | 471,926                     | -80,808            | -                  | 80,808           | -25,848        | 365,270                  | -6.61   | 229.06     | -           | 0.00                               |
| Dec-2017       | 365,270                     | -                  | -                  | -                | 18,088         | 383,358                  | 4.95    | 240.40     | -           | 0.00                               |
| Mar-2018       | 383,358                     | 840                | 840                | -                | 12,252         | 396,450                  | 3.36    | 248.49     | -           | 0.00                               |
| Jun-2018       | 396,450                     | -76,638            | -                  | 76,638           | 22,664         | 342,476                  | 5.75    | 262.78     | -           | 0.00                               |
| Sep-2018       | 342,476                     | -                  | -                  | -                | 13,122         | 355,598                  | 3.83    | 272.85     | -           | 0.00                               |

\*% return represents a time weighted return.

 Segal Marco Advisors

**Bristol County Retirement System**
**Schedule of Investable Assets**

Invesco Mortgage Recovery Fund

Since Inception Ending March 31, 2019

| Periods Ending | Beginning Market Value (\$) | Net Cash Flow (\$) | Contributions (\$) | Withdrawals (\$) | Gain/Loss (\$) | Ending Market Value (\$) | %Return | Unit Value | Income (\$) | Income % of Beginning Market Value |
|----------------|-----------------------------|--------------------|--------------------|------------------|----------------|--------------------------|---------|------------|-------------|------------------------------------|
| Dec-2018       | 355,598                     | -                  | -                  | -                | 18,584         | 374,182                  | 5.23    | 287.11     | -           | 0.00                               |
| Mar-2019       | 374,182                     | -126,979           | -                  | 126,979          | -              | 247,203                  | 0.00    | 287.11     | -           | 0.00                               |
|                | -                           | -1,525,574         | 5,866,186          | 7,391,760        | 1,669,180      | 247,203                  | 12.43   | 287.11     | 692,587     | 0.00                               |

\*% return represents a time weighted return.

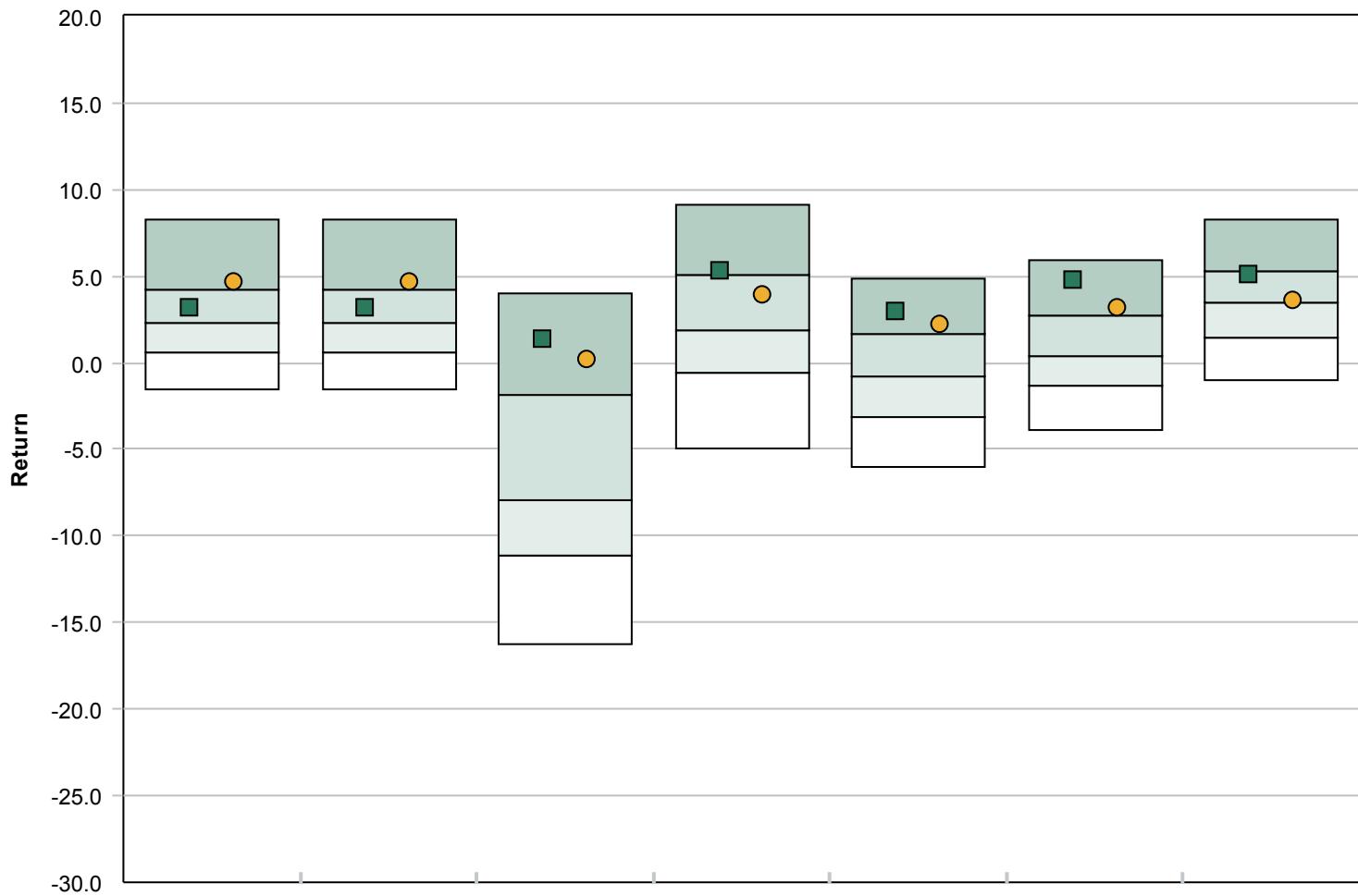
 Segal Marco Advisors

## **Alternatives**

## Bristol County Retirement System

## Fund of Funds Hedge Funds

As of March 31, 2019



■ PRIT Absolute Return

● HFRI Fund of Funds Composite Index

**1 Qtr**      **YTD**      **1 Yr**      **3 Yrs**      **5 Yrs**      **7 Yrs**      **10 Yrs**

|                 |       |       |        |       |       |       |       |
|-----------------|-------|-------|--------|-------|-------|-------|-------|
| 5th Percentile  | 8.32  | 8.32  | 3.97   | 9.09  | 4.81  | 5.94  | 8.23  |
| 1st Quartile    | 4.25  | 4.25  | -1.87  | 5.08  | 1.71  | 2.70  | 5.26  |
| Median          | 2.30  | 2.30  | -7.98  | 1.87  | -0.76 | 0.39  | 3.50  |
| 3rd Quartile    | 0.64  | 0.64  | -11.15 | -0.60 | -3.14 | -1.28 | 1.49  |
| 95th Percentile | -1.52 | -1.52 | -16.28 | -4.92 | -6.05 | -3.89 | -1.04 |

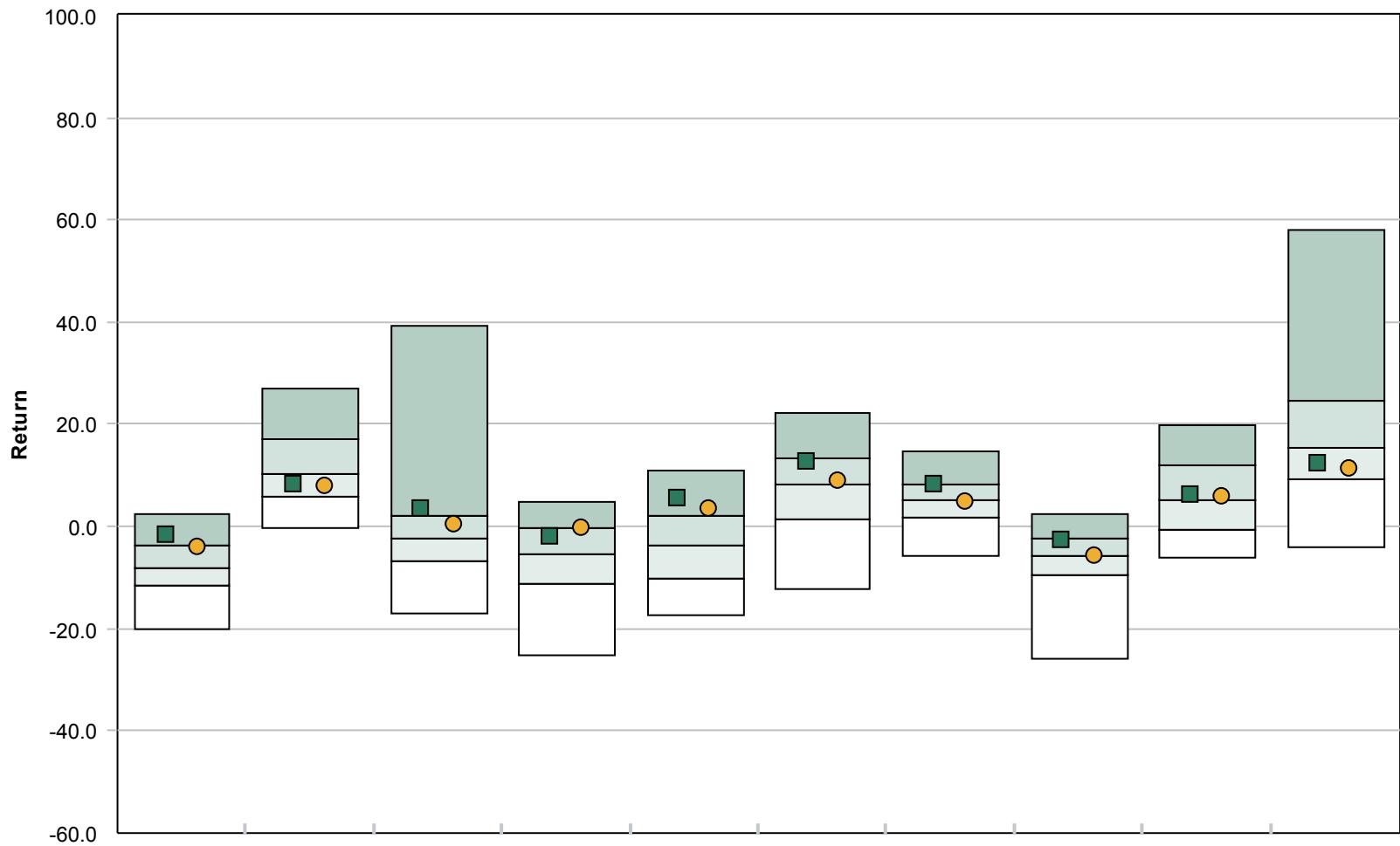
Parentheses contain percentile rankings.

Calculation based on monthly periodicity.

## Bristol County Retirement System

## Fund of Funds Hedge Funds

As of March 31, 2019



|                             | 2018       | 2017      | 2016      | 2015       | 2014      | 2013       | 2012      | 2011       | 2010      | 2009       |
|-----------------------------|------------|-----------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| PRIT Absolute Return        | -1.56 (16) | 8.16 (63) | 3.57 (20) | -1.86 (34) | 5.53 (10) | 12.61 (29) | 8.36 (24) | -2.77 (28) | 6.29 (44) | 12.33 (64) |
| HFRI F of F Composite Index | -4.02 (27) | 7.77 (65) | 0.51 (33) | -0.27 (26) | 3.37 (19) | 8.96 (48)  | 4.79 (54) | -5.72 (50) | 5.70 (47) | 11.47 (68) |
| 5th Percentile              | 2.33       | 27.02     | 39.30     | 4.96       | 10.83     | 22.15      | 14.88     | 2.27       | 19.71     | 57.92      |
| 1st Quartile                | -3.77      | 17.17     | 2.12      | -0.26      | 1.93      | 13.40      | 8.24      | -2.39      | 11.90     | 24.67      |
| Median                      | -8.04      | 10.19     | -2.31     | -5.43      | -3.83     | 8.39       | 5.21      | -5.77      | 5.06      | 15.26      |
| 3rd Quartile                | -11.46     | 5.93      | -6.63     | -11.11     | -10.15    | 1.33       | 1.66      | -9.51      | -0.53     | 9.23       |
| 95th Percentile             | -20.12     | -0.38     | -17.00    | -25.21     | -17.44    | -12.19     | -5.86     | -25.98     | -6.07     | -4.19      |

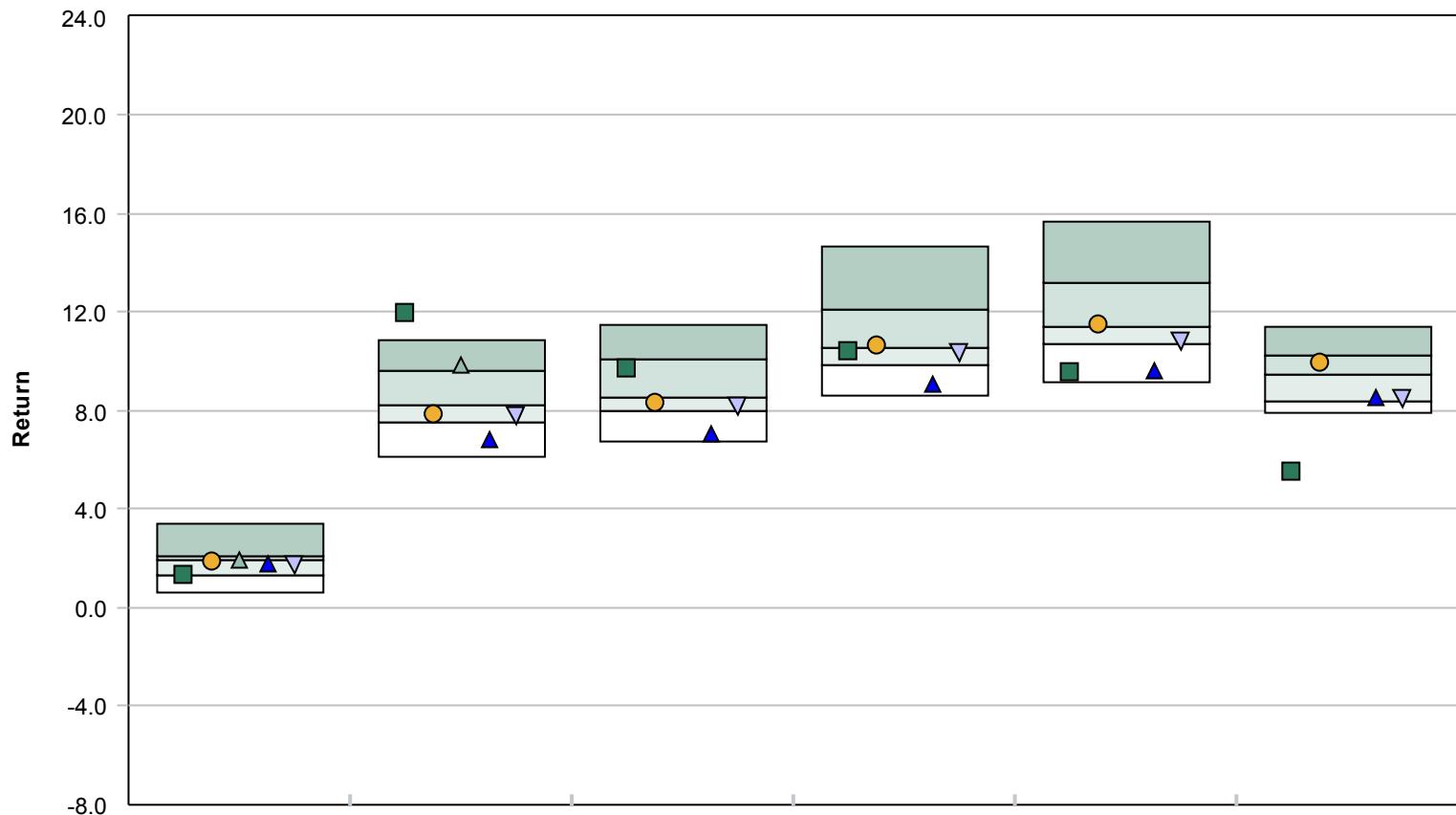
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.

 Segal Marco Advisors

## Bristol County Retirement System

## IM U.S. Open End Private Real Estate (SA+CF)

As of March 31, 2019



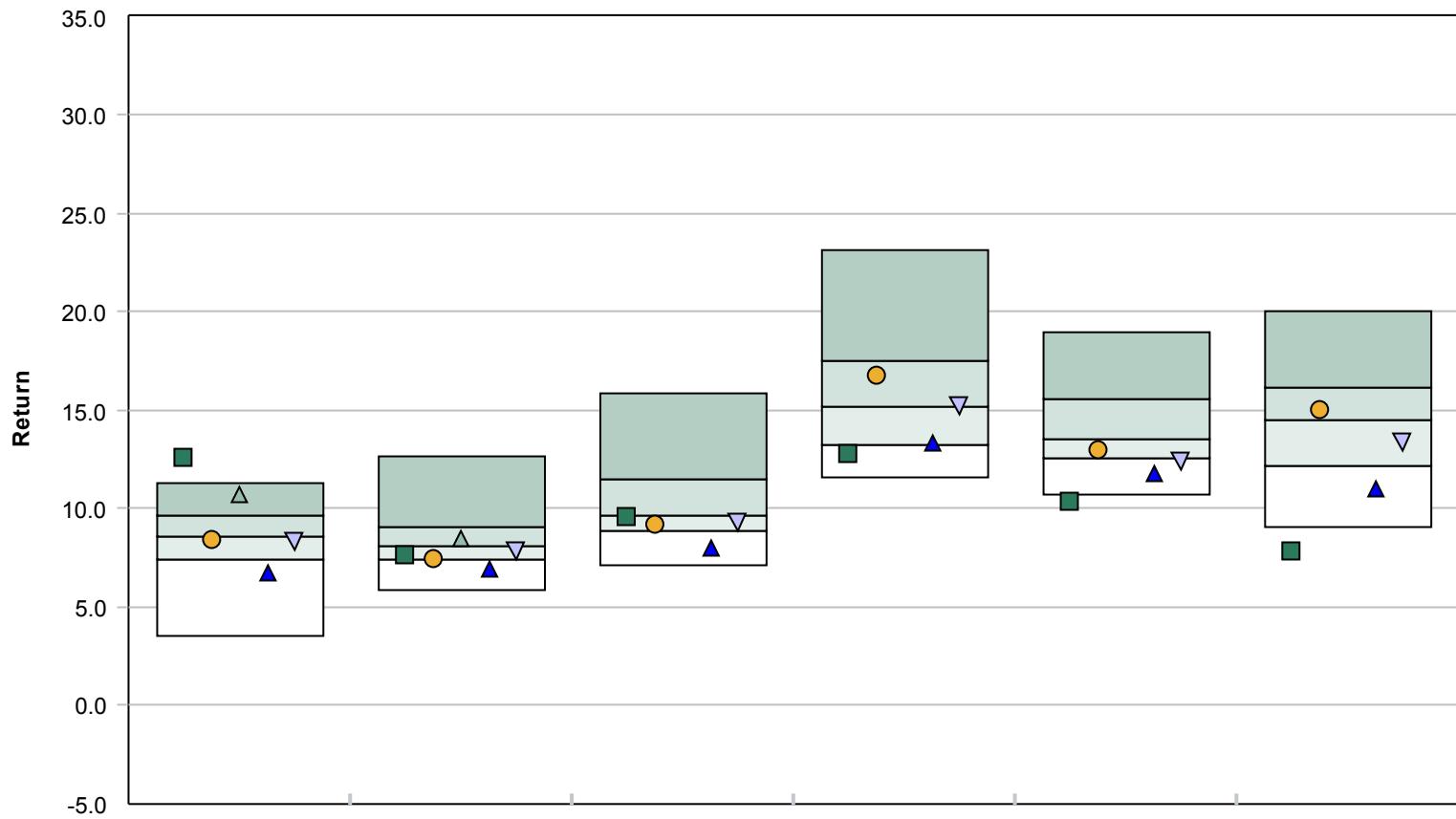
|                            | 1 Qtr     | 1 Yr      | 3 Yrs     | 5 Yrs      | 7 Yrs      | 10 Yrs     |
|----------------------------|-----------|-----------|-----------|------------|------------|------------|
| Total Real Estate          | 1.31 (74) | 12.00 (1) | 9.72 (29) | 10.40 (60) | 9.54 (92)  | 5.55 (100) |
| RREEF America REIT II      | 1.85 (57) | 7.87 (66) | 8.29 (61) | 10.65 (44) | 11.50 (49) | 9.92 (38)  |
| Intercontinental           | 1.97 (46) | 9.87 (24) | N/A       | N/A        | N/A        | N/A        |
| NCREIF Property Index      | 1.80 (60) | 6.83 (90) | 7.07 (92) | 9.13 (91)  | 9.62 (92)  | 8.51 (74)  |
| NCREIF ODCE Equal Weighted | 1.69 (66) | 7.74 (69) | 8.17 (63) | 10.36 (61) | 10.83 (63) | 8.47 (75)  |
| 5th Percentile             | 3.40      | 10.87     | 11.47     | 14.65      | 15.71      | 11.42      |
| 1st Quartile               | 2.08      | 9.65      | 10.09     | 12.08      | 13.23      | 10.28      |
| Median                     | 1.93      | 8.23      | 8.56      | 10.54      | 11.38      | 9.45       |
| 3rd Quartile               | 1.29      | 7.54      | 7.99      | 9.86       | 10.74      | 8.40       |
| 95th Percentile            | 0.65      | 6.11      | 6.75      | 8.61       | 9.19       | 7.89       |

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

## Bristol County Retirement System

## IM U.S. Open End Private Real Estate (SA+CF)

As of March 31, 2019



|                            | 2018       | 2017      | 2016      | 2015       | 2014       | 2013       |
|----------------------------|------------|-----------|-----------|------------|------------|------------|
| Total Real Estate          | 12.55 (4)  | 7.60 (63) | 9.60 (51) | 12.77 (86) | 10.35 (97) | 7.79 (99)  |
| RREEF America REIT II      | 8.43 (52)  | 7.44 (70) | 9.14 (62) | 16.70 (35) | 12.99 (68) | 15.01 (37) |
| Intercontinental           | 10.74 (16) | 8.53 (43) | N/A       | N/A        | N/A        | N/A        |
| NCREIF Property Index      | 6.72 (84)  | 6.96 (82) | 7.97 (88) | 13.33 (75) | 11.82 (82) | 10.98 (86) |
| NCREIF ODCE Equal Weighted | 8.25 (57)  | 7.80 (57) | 9.27 (55) | 15.17 (51) | 12.38 (78) | 13.36 (60) |
| 5th Percentile             | 11.33      | 12.62     | 15.83     | 23.17      | 18.98      | 20.08      |
| 1st Quartile               | 9.62       | 9.12      | 11.50     | 17.53      | 15.54      | 16.14      |
| Median                     | 8.55       | 8.08      | 9.63      | 15.23      | 13.59      | 14.47      |
| 3rd Quartile               | 7.46       | 7.42      | 8.90      | 13.23      | 12.57      | 12.23      |
| 95th Percentile            | 3.53       | 5.85      | 7.15      | 11.60      | 10.68      | 9.07       |

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

## Bristol County Retirement System

## Total Active Hard Assets and Real Estate Composite Overview

As of March 31, 2019

### Cash Flow Summary

Capital Committed: \$138,427,501

Total Contributions: \$130,889,221

Remaining Capital Commitment: \$16,213,382

Total Distributions: \$64,865,800

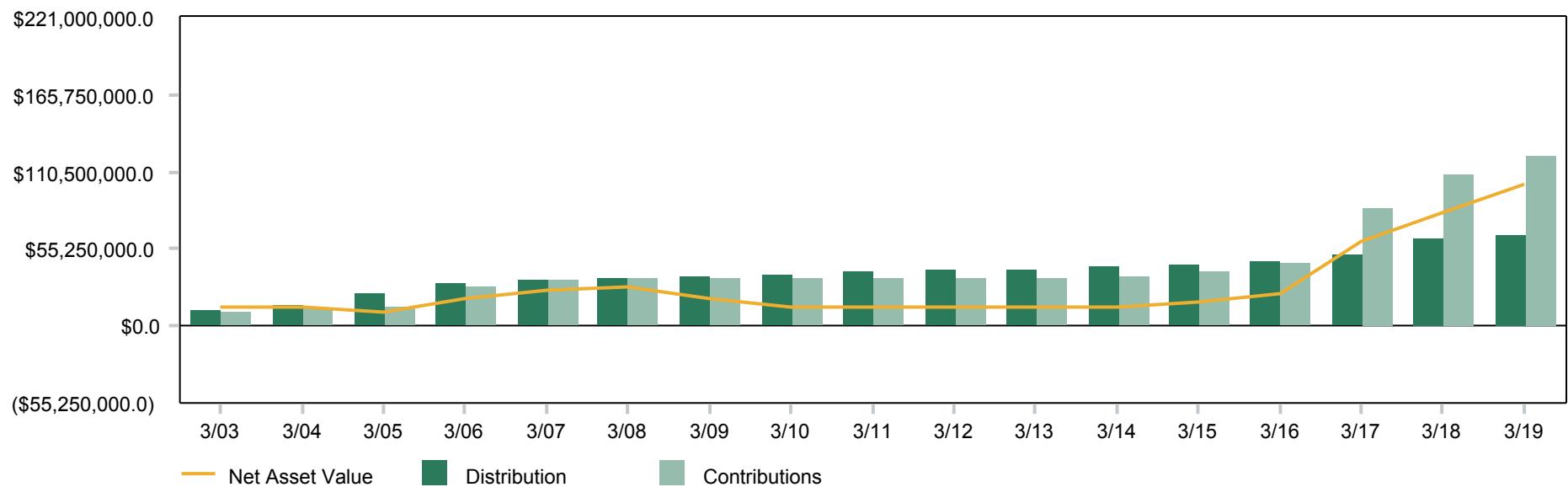
Market Value: \$101,819,388

Inception Date: 01/01/1995

Inception IRR: 16.17

TVPI: 1.28

### Cash Flow Analysis



**Bristol County Retirement System**

**Total Active Hard Assets and Real Estate**

As of March 31, 2019

| <b>Partnerships</b>                              | <b>Vintage Year</b> | <b>Investment Strategy</b> | <b>Capital Commitment (\$)</b> | <b>Drawn Down (\$)</b> | <b>Distributed (\$)</b> | <b>Market Value (\$)</b> | <b>IRR (%)</b> | <b>TVPI Multiple</b> |
|--|---------------------|----------------------------|--------------------------------|------------------------|-------------------------|--------------------------|----------------|----------------------|
| Brookfield Timberlands Fund V                    | 2013                | Timber                     | 5,000,000                      | 1,135,041              | 503,978                 | 1,106,315                | 8.69           | 1.42                 |
| Eastern Timberland Opportunities II              | 2014                | Timber                     | 2,500,000                      | 2,258,324              | 322,034                 | 2,990,142                | 9.30           | 1.47                 |
| GCM Customized Infrastructures Strategies II, LP | 2015                | Infrastructure             | 13,000,000                     | 10,156,330             | 3,941,262               | 7,408,347                | 8.91           | 1.12                 |
| Invesco Mortgage Recovery II                     | 2016                | Real Estate                | 15,000,000                     | 13,845,087             | 7,692,680               | 9,273,115                | 13.47          | 1.28                 |
| TerraCap Partners IV                             |                     |                            | 10,000,000                     | 10,566,939             | 249,893                 | 11,137,190               | 7.84           | 1.13                 |
| <b>Total Hard Assets</b>                         |                     |                            | <b>138,427,501</b>             | <b>130,889,221</b>     | <b>64,865,800</b>       | <b>101,819,388</b>       | <b>16.17</b>   | <b>1.28</b>          |

**Bristol County Retirement System**
**Active Closed End Real Estate and Hard Asset Funds**

As of March 31, 2019

Internal Rates of Return

|  | Market Value<br>(\$) | %<br>Change | 1<br>Quarter | Year<br>To<br>Date | Year      |            |            |            |             |       | Since<br>Inception | Inception<br>Date |
|--|----------------------|-------------|--------------|--------------------|-----------|------------|------------|------------|-------------|-------|--------------------|-------------------|
|  |                      |             |              |                    | 1<br>Year | 3<br>Years | 5<br>Years | 7<br>Years | 10<br>Years |       |                    |                   |
| Brookfield Timberlands Fund V                    | 1,106,315            | 0.16        | 0.00         | 0.00               | 0.71      | 8.99       | 8.70       | N/A        | N/A         | 8.69  |                    | 12/23/2013        |
| Eastern Timberland Opportunities II              | 2,990,142            | 0.44        | 4.40         | 4.40               | 6.27      | 8.02       | N/A        | N/A        | N/A         | 9.30  |                    | 07/03/2014        |
| GCM Customized Infrastructures Strategies II, LP | 7,408,347            | 1.09        | 0.00         | 0.00               | 7.73      | 8.71       | N/A        | N/A        | N/A         | 8.91  |                    | 03/10/2016        |
| Invesco Mortgage Recovery II                     | 9,273,115            | 1.37        | 0.00         | 0.00               | 28.23     | N/A        | N/A        | N/A        | N/A         | 13.47 |                    | 05/20/2016        |
| TerraCap Partners IV                             | 11,137,190           | 1.64        | 0.00         | 0.00               | N/A       | N/A        | N/A        | N/A        | N/A         | 7.84  |                    | 07/31/2018        |

As of March 31, 2019

### Cash Flow Summary

Capital Committed: \$120,180,465

Total Contributions: \$71,151,887

Remaining Capital Commitment: \$51,248,268

Total Distributions: \$71,176,940

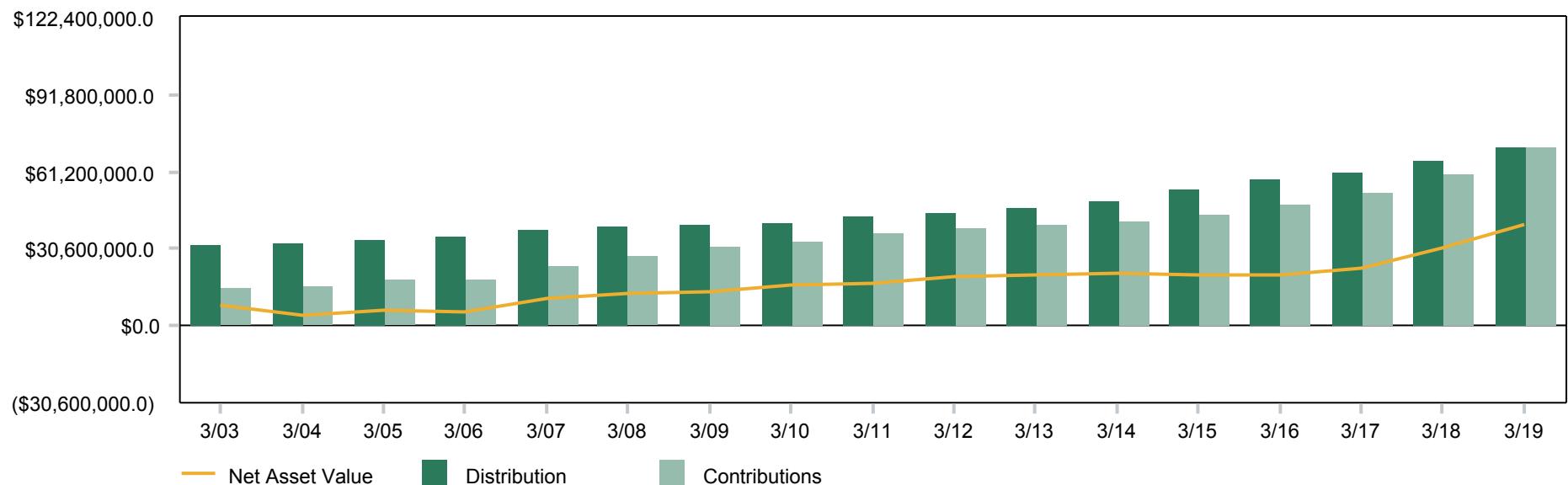
Market Value: \$40,067,412

Inception Date: 01/05/1995

Inception IRR: 177.68

TVPI: 1.56

### Cash Flow Analysis



**Bristol County Retirement System**

**Private Equity Summary of Partnership**

As of March 31, 2019

| <b>Partnerships</b>             | <b>Vintage Year</b> | <b>Capital Commitment (\$)</b> | <b>Contributions (\$)</b> | <b>Distributions (\$)</b> | <b>Market Value (\$)</b> | <b>IRR (%)</b> | <b>DPI Multiple</b> | <b>TVPI Multiple</b> | <b>Remaining Commitment (\$)</b> |
|---------------------------------|---------------------|--------------------------------|---------------------------|---------------------------|--------------------------|----------------|---------------------|----------------------|----------------------------------|
| DuPont Capital Management II    | 2005                | 5,000,000                      | 3,657,046                 | 3,194,499                 | 657,729                  | 0.69           | 0.88                | 1.06                 | 1,586,923                        |
| BlackRock Vesey Street Fund III | 2005                | 5,000,000                      | 4,433,304                 | 5,651,598                 | 345,678                  | 4.17           | 1.28                | 1.35                 | 650,000                          |
| DN Partners II                  | 2005                | 6,000,000                      | 2,803,066                 | -                         | 1,072,419                | -11.53         | -                   | 0.38                 | 3,196,934                        |
| BlackRock Vesey Street Fund IV  | 2007                | 10,000,000                     | 9,243,986                 | 10,048,008                | 4,685,644                | 8.14           | 1.09                | 1.60                 | 2,329,560                        |
| Mesirow PE Fund V               | 2008                | 5,000,000                      | 4,047,431                 | 3,625,658                 | 3,909,345                | 14.04          | 0.90                | 1.86                 | 956,700                          |
| PRIT Vintage 2014               | 2014                | 9,090,291                      | 6,929,479                 | 2,414,211                 | 7,897,241                | 18.16          | 0.35                | 1.49                 | 2,170,171                        |
| PRIT Vintage 2015               | 2015                | 12,290,670                     | 8,792,817                 | 909,239                   | 11,263,857               | 19.60          | 0.10                | 1.38                 | 3,576,110                        |
| PRIT Vintage 2016               | 2016                | 8,302,928                      | 4,871,514                 | 81,872                    | 4,817,729                | 0.51           | 0.02                | 1.01                 | 3,439,483                        |
| PRIT Vintage 2017               | 2017                | 15,696,576                     | 3,504,035                 | 94,501                    | 3,584,976                | 7.00           | 0.03                | 1.05                 | 12,198,567                       |
| PRIT Vintage 2018               | 2018                | 15,000,000                     | 1,720,128                 | 50                        | 1,672,252                | -5.67          | 0.00                | 0.97                 | 13,284,121                       |
| PRIT Vintage 2019               |                     | 10,000,000                     | 15,485                    | -                         | 15,485                   | 0.00           | -                   | 1.00                 | 9,984,546                        |
| <b>Total Private Equity</b>     |                     | <b>120,180,465</b>             | <b>71,151,887</b>         | <b>71,176,940</b>         | <b>40,067,412</b>        | <b>177.68</b>  | <b>1.00</b>         | <b>1.56</b>          | <b>51,248,268</b>                |

\*Active Private Equity managers shown

**Bristol County Retirement System**
**Active Private Equity Funds**

As of March 31, 2019

Internal Rates of Return

|                                 | <b>Market Value<br/>(\$)</b> | <b>%</b> | <b>1<br/>Quarter</b> | <b>Year<br/>To<br/>Date</b> | <b>1<br/>Year</b> | <b>3<br/>Years</b> | <b>5<br/>Years</b> | <b>7<br/>Years</b> | <b>10<br/>Years</b> | <b>Since<br/>Inception</b> | <b>Inception<br/>Date</b> |
|---------------------------------|------------------------------|----------|----------------------|-----------------------------|-------------------|--------------------|--------------------|--------------------|---------------------|----------------------------|---------------------------|
| Total Private Equity            | 40,067,412                   | 5.90     | 1.62                 | 1.62                        | 12.78             | 13.41              | 8.71               | 8.80               | 8.27                | 177.68                     | 01/05/1995                |
| BlackRock Vesey Street Fund III | 345,678                      | 0.05     | 0.00                 | 0.00                        | -10.33            | -5.23              | 5.28               | 7.17               | 12.44               | 4.17                       | 07/17/2006                |
| DuPont Capital Management II    | 657,729                      | 0.10     | 0.00                 | 0.00                        | -1.37             | -0.19              | -2.59              | 1.65               | 4.66                | 0.69                       | 08/14/2006                |
| DN Partners II                  | 1,072,419                    | 0.16     | 0.00                 | 0.00                        | -0.57             | 6.72               | -15.48             | -12.91             | -10.92              | -11.53                     | 01/11/2007                |
| BlackRock Vesey Street Fund IV  | 4,685,644                    | 0.69     | 0.00                 | 0.00                        | 4.20              | 8.32               | 6.88               | 9.87               | 10.28               | 8.14                       | 02/24/2009                |
| Mesirow PE Fund V               | 3,909,345                    | 0.58     | 0.00                 | 0.00                        | 11.70             | 15.36              | 14.38              | 15.38              | 14.04               | 14.04                      | 04/09/2009                |
| PRIT Vintage 2014               | 7,897,241                    | 1.16     | -1.10                | -1.10                       | 21.95             | 23.27              | N/A                | N/A                | N/A                 | 18.16                      | 05/01/2014                |
| PRIT Vintage 2015               | 11,263,857                   | 1.66     | -0.36                | -0.36                       | 21.13             | 22.82              | N/A                | N/A                | N/A                 | 19.60                      | 03/01/2015                |
| PRIT Vintage 2016               | 4,817,729                    | 0.71     | -4.25                | -4.25                       | 8.37              | 0.51               | N/A                | N/A                | N/A                 | 0.51                       | 03/01/2016                |
| PRIT Vintage 2017               | 3,584,976                    | 0.53     | 28.02                | 28.02                       | 4.30              | N/A                | N/A                | N/A                | N/A                 | 7.00                       | 04/30/2017                |
| PRIT Vintage 2018               | 1,672,252                    | 0.25     | 17.40                | 17.40                       | N/A               | N/A                | N/A                | N/A                | N/A                 | -5.67                      | 05/30/2018                |
| PRIT Vintage 2019               | 15,485                       | 0.00     | N/A                  | N/A                         | N/A               | N/A                | N/A                | N/A                | N/A                 | 0.00                       | 03/31/2019                |