

# Town of Branford OPEB Trust

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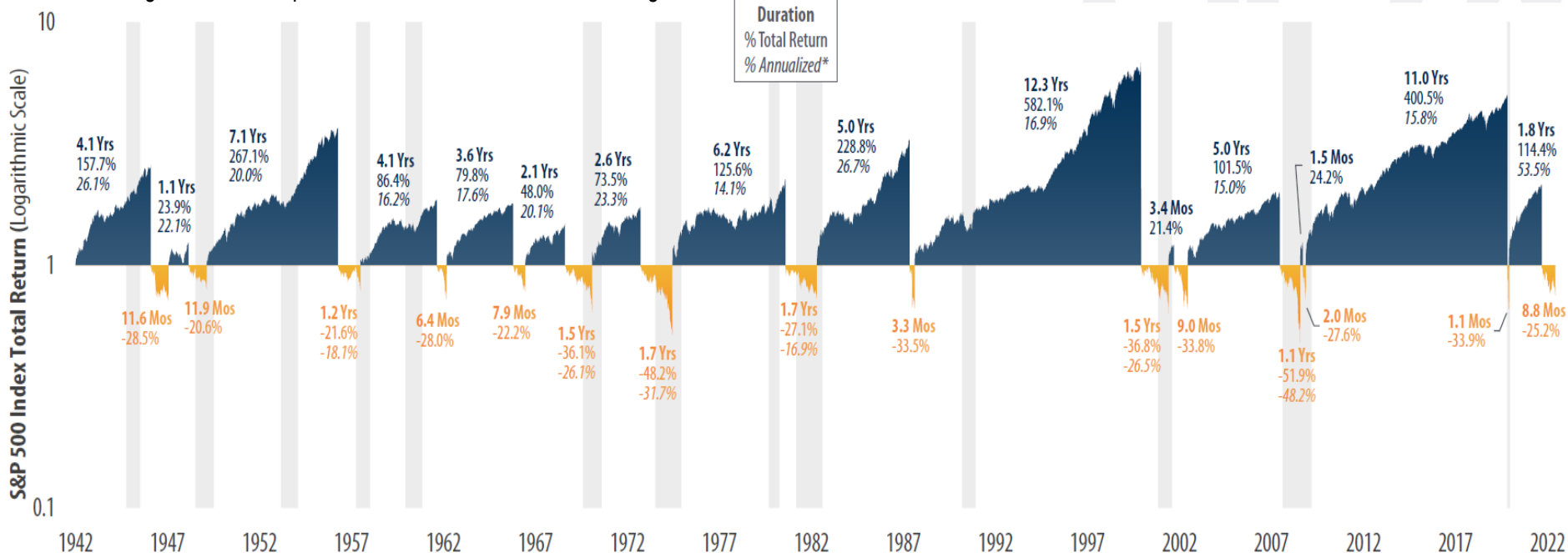
## 3Q22 Performance Review

This presentation has been prepared specifically for the Town of Branford for use at a meeting November 28, 2022.

# History of U.S. Bear & Bull Markets Since 1942

This chart shows daily historical performance of the S&P 500 Index throughout the U.S. Bull and Bear Markets since 1942. We believe looking at the history of the market's expansions and recessions helps to gain a fresh perspective on the benefits of investing for the long-term.

- The average **Bull Market** period lasted 4.4 years with an average cumulative total return of 155.7%.
- The average **Bear Market** period lasted 11.1 months with an average cumulative loss of -31.7%.



Source: First Trust Advisors L.P., Bloomberg. Daily returns from 4/29/1942 - 9/30/2022. \*No annualized return shown if the duration is less than one year. Past performance is no guarantee of future results. These results are based on daily returns—returns using different periods would produce different results. The S&P 500 Index is an unmanaged index of 500 companies used to measure large-cap U.S. stock market performance. Investors cannot invest directly in an index. Index returns do not reflect any fees, expenses, or sales charges. This chart is for illustrative purposes only and not indicative of any actual investment. These returns were the result of certain market factors and events which may not be repeated in the future. The information presented is not intended to constitute an investment recommendation for, or advice to, any specific person. By providing this information, First Trust is not undertaking to give advice in any fiduciary capacity within the meaning of ERISA, the Internal Revenue Code or any other regulatory framework. Financial professionals are responsible for evaluating investment risks independently and for exercising independent judgment in determining whether investments are appropriate for their clients.

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# Performance Summary

Index Performance as of: 9/30/2022

|                             | <u>3 Month</u> | <u>YTD</u> | <u>1 Year</u> | <u>3 Year</u> | <u>5 Year</u> | <u>10 Year</u> |  | <u>3 Month</u> | <u>YTD</u> | <u>1 Year</u> | <u>3 Year</u> | <u>5 Year</u> | <u>10 Year</u> |
|-----------------------------|----------------|------------|---------------|---------------|---------------|----------------|--|----------------|------------|---------------|---------------|---------------|----------------|
| <b>Russell</b>              |                |            |               |               |               |                | <b>Other U.S. Equity</b>                   |                |            |               |               |               |                |
| 3000 Value                  | -5.56          | -17.97     | -11.79        | 4.37          | 5.11          | 9.08           | Dow Jones Industrial Avg.                  | -6.17          | -19.72     | -13.40        | 4.36          | 7.42          | 10.45          |
| 3000                        | -4.46          | -24.62     | -17.63        | 7.70          | 8.62          | 11.39          | Wilshire 5000 (Full Cap)                   | -4.20          | -25.18     | -18.87        | 7.41          | 8.35          | 11.18          |
| 3000 Growth                 | -3.37          | -30.57     | -23.01        | 10.16         | 11.57         | 13.36          | <b>International Equity - Broad Market</b> |                |            |               |               |               |                |
| 1000 Value                  | -5.62          | -17.75     | -11.36        | 4.36          | 5.29          | 9.17           | MSCI EAFE                                  | -9.36          | -27.09     | -25.13        | -1.83         | -0.84         | 3.67           |
| 1000                        | -4.61          | -24.59     | -17.22        | 7.95          | 9.00          | 11.60          | MSCI EM                                    | -11.57         | -27.16     | -28.11        | -2.07         | -1.81         | 1.05           |
| 1000 Growth                 | -3.60          | -30.66     | -22.59        | 10.67         | 12.17         | 13.70          | MSCI Frontier Markets                      | -6.47          | -25.72     | -25.20        | -1.29         | -1.24         | 3.63           |
| Mid Cap Value               | -4.93          | -20.36     | -13.56        | 4.50          | 4.76          | 9.44           | MSCI ACWI                                  | -6.82          | -25.63     | -20.66        | 3.75          | 4.44          | 7.28           |
| Mid Cap                     | -3.44          | -24.27     | -19.39        | 5.19          | 6.48          | 10.30          | MSCI ACWI Ex USA                           | -9.91          | -26.50     | -25.17        | -1.52         | -0.81         | 3.01           |
| Mid Cap Growth              | -0.65          | -31.45     | -29.50        | 4.26          | 7.62          | 10.85          | MSCI AC Asia Ex Japan                      | -13.83         | -27.86     | -28.75        | -1.33         | -1.21         | 3.03           |
| 2000 Value                  | -4.61          | -21.12     | -17.69        | 4.72          | 2.87          | 7.94           | <b>International Equity - Country</b>      |                |            |               |               |               |                |
| 2000                        | -2.19          | -25.10     | -23.50        | 4.29          | 3.55          | 8.55           | MSCI Brazil                                | 8.54           | 11.53      | 4.32          | -5.20         | -1.68         | -1.65          |
| 2000 Growth                 | 0.24           | -29.28     | -29.27        | 2.94          | 3.60          | 8.81           | MSCI BRIC                                  | -12.70         | -27.56     | -31.19        | -5.07         | -3.03         | 1.01           |
| <b>Standard &amp; Poors</b> |                |            |               |               |               |                | MSCI China                                 | -22.50         | -31.23     | -35.40        | -7.18         | -5.56         | 2.37           |
| S&P 500                     | -4.88          | -23.87     | -15.47        | 8.16          | 9.24          | 11.70          | MSCI Europe                                | -10.15         | -28.83     | -24.80        | -1.72         | -1.24         | 3.45           |
| Consumer Disc               | 4.36           | -29.89     | -20.89        | 6.70          | 10.51         | 13.19          | MSCI India                                 | 6.50           | -9.74      | -9.94         | 11.51         | 7.98          | 7.27           |
| Consumer Staples            | -6.62          | -11.83     | -0.09         | 6.24          | 7.60          | 9.51           | MSCI Japan                                 | -7.67          | -26.38     | -29.30        | -2.65         | -0.63         | 4.84           |
| Energy                      | 2.35           | 34.94      | 45.70         | 13.44         | 6.09          | 3.52           | MSCI EM Latin America                      | 3.61           | 3.02       | 0.24          | -3.39         | -2.64         | -2.28          |
| Financials                  | -3.10          | -21.25     | -17.65        | 4.92          | 5.47          | 11.38          | MSCI Russia                                | 0.00           | -100.00    | -100.00       | -98.91        | -92.90        | -73.67         |
| Health Care                 | -5.18          | -13.08     | -3.37         | 12.46         | 10.18         | 13.68          |  |                |            |               |               |               |                |
| Industrials                 | -4.72          | -20.72     | -13.87        | 4.02          | 4.87          | 10.39          |  |                |            |               |               |               |                |
| Information Technology      | -6.21          | -31.44     | -20.00        | 14.93         | 16.74         | 17.09          |  |                |            |               |               |               |                |
| Materials                   | -7.13          | -23.74     | -12.15        | 7.62          | 5.89          | 8.56           |  |                |            |               |               |               |                |
| Real Estate                 | -11.03         | -28.85     | -16.37        | 0.40          | 5.79          | 7.76           |  |                |            |               |               |               |                |
| Telecom Services            | -12.72         | -39.04     | -39.05        | -0.05         | 1.95          | 3.76           |  |                |            |               |               |               |                |
| Utilities                   | -5.99          | -6.51      | 5.58          | 3.66          | 7.82          | 9.85           |  |                |            |               |               |               |                |

Source: Morningstar

# Performance Summary

Index Performance as of: 9/30/2022

|                               | <u>3 Month</u> | <u>YTD</u> | <u>1 Year</u> | <u>3 Year</u> | <u>5 Year</u> | <u>10 Year</u> |                                | <u>3 Month</u> | <u>YTD</u> | <u>1 Year</u> | <u>3 Year</u> | <u>5 Year</u> | <u>10 Year</u> |
|-------------------------------|----------------|------------|---------------|---------------|---------------|----------------|--------------------------------|----------------|------------|---------------|---------------|---------------|----------------|
| <b>Fixed Income</b>           |                |            |               |               |               |                | <b>Fixed Income-Tax Exempt</b> |                |            |               |               |               |                |
| Bloomberg U.S. Aggregate      | -4.75          | -14.61     | -14.60        | -3.26         | -0.27         | 0.89           | Bloomberg Municipal            | -3.46          | -12.13     | -11.50        | -1.85         | 0.59          | 1.79           |
| Bloomberg US Aggregate 1-3 Yr | -1.50          | -4.58      | -5.11         | -0.52         | 0.64          | 0.78           | Bloomberg Municipal 3 Yr       | -1.98          | -5.37      | -5.46         | -0.44         | 0.48          | 0.85           |
| Bloomberg US Aggregate 3-5 Yr | -3.30          | -9.36      | -10.08        | -1.83         | 0.17          | 0.93           | Bloomberg Municipal 5 Yr       | -2.71          | -8.06      | -8.03         | -0.94         | 0.48          | 1.20           |
| Bloomberg US Aggregate 5-7 Yr | -4.68          | -12.59     | -13.08        | -2.52         | -0.06         | 0.91           | Bloomberg Municipal 7 Yr       | -2.66          | -9.30      | -9.11         | -1.15         | 0.71          | 1.63           |
| BofAML 3-Month T-Bill         | 0.46           | 0.61       | 0.62          | 0.59          | 1.15          | 0.68           | Bloomberg HY Muni              | -4.83          | -16.03     | -15.05        | -1.43         | 2.31          | 3.51           |
| Bloomberg U.S. Gov't          | -4.30          | -12.95     | -12.81        | -3.05         | -0.20         | 0.53           | <b>Alternative Investments</b> |                |            |               |               |               |                |
| Bloomberg U.S. Credit         | -4.95          | -18.07     | -17.89        | -3.61         | -0.05         | 1.58           | Alerian MLP                    | 8.05           | 18.90      | 19.56         | 4.46          | 1.90          | 0.66           |
| Bloomberg High Yield Corp.    | -0.65          | -14.74     | -14.14        | -0.45         | 1.57          | 3.94           | Bloomberg Commodity            | -4.11          | 13.57      | 11.80         | 13.45         | 6.96          | -2.14          |
| Bloomberg TIPS                | -5.14          | -13.61     | -11.57        | 0.79          | 1.95          | 0.98           | FTSE NAREIT Equity REIT        | -9.94          | -28.13     | -16.41        | -2.05         | 2.93          | 6.26           |
| Bloomberg Global Aggregate    | -8.85          | -23.88     | -24.77        | -7.78         | -4.03         | -2.39          | S&P Global Natural Res.        | -4.58          | -5.89      | 1.00          | 9.13          | 5.71          | 3.38           |
| Bloomberg Gbl Agg Ex USD      | -6.94          | -19.89     | -20.43        | -5.74         | -2.32         | -0.93          | S&P N. Amer Natural Res.       | -2.15          | 13.37      | 22.59         | 11.36         | 4.80          | 2.00           |
| JPM EMBI Global Div           | -4.20          | -22.24     | -22.23        | -6.10         | -2.31         | 0.95           |                                |                |            |               |               |               |                |

Source: Morningstar

# Market review & outlook

## Another Difficult Quarter for Stocks and Bonds



- Global markets continued their downtrend in the third quarter. Fed Chair Powell's speech at Jackson Hole in August dashed hopes that the Fed would consider pausing its tightening cycle. After recovering in July, both equity and bond markets broke through June lows.
- As a result of hawkish Fed guidance, bond markets ratcheted up expectations for this cycle's terminal interest rate from 3.25% at the end of July to 4.5%, which rippled through the yield curve. The 10-year Treasury yield briefly reached 4% in late-September, ending the month at 3.8%.
- The Bloomberg Aggregate Bond Index fell a further 5% in Q3, leaving it down 15% this year. The MSCI ACWI index fell 7% for the quarter and 25% this year. The simultaneous drawdown in both stocks and bonds has left a traditional 60/40 portfolio down 21% year-to-date.

## Outlook Remains Uncertain

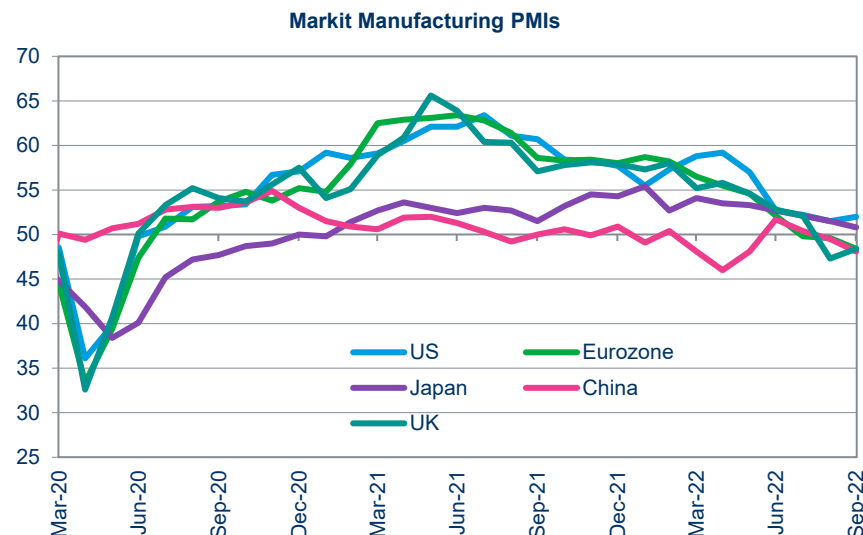


- The drawdown in stocks and bonds this year appears to be a reasonable response to the shift in Fed policy to combat inflation and the resulting uncertainty for economic growth. The decline in equities can be explained by the rise in interest rates putting downward pressure on valuations. The outlook for inflation and its impact on Fed policy likely will remain the key driver of the markets' direction.
- Encouragingly, inflationary pressures appear to be easing. The decline in energy prices in the US from their peaks should lead the headline inflation rate lower in the coming months. The gradual easing of supply side constraints and weaker demand could also slow core inflation. Easing inflation could mean that Fed hawkishness is near the peak.
- US economic activity has been nearly flat in 2022 and the tightening of financial conditions is only just beginning to be felt. The drag likely will intensify into 2023, increasing the risk of at least a mild recession. The good news is that household balance sheets remain strong, which should cushion household spending and prevent a deep downturn.
- A mild recession that reduces inflation could prove supportive of both stock and bond markets. The prospect of the Fed halting rate increases and a fall in longer-term interest rates could more than offset the negative impact of weak earnings for equities in a mild recession. The biggest downside risk we see for balanced portfolios is if inflation remains sticky even as the economy slows. This could require a more forceful Fed response and a deeper recession. This likely would result in continued weakness in stocks and bonds.

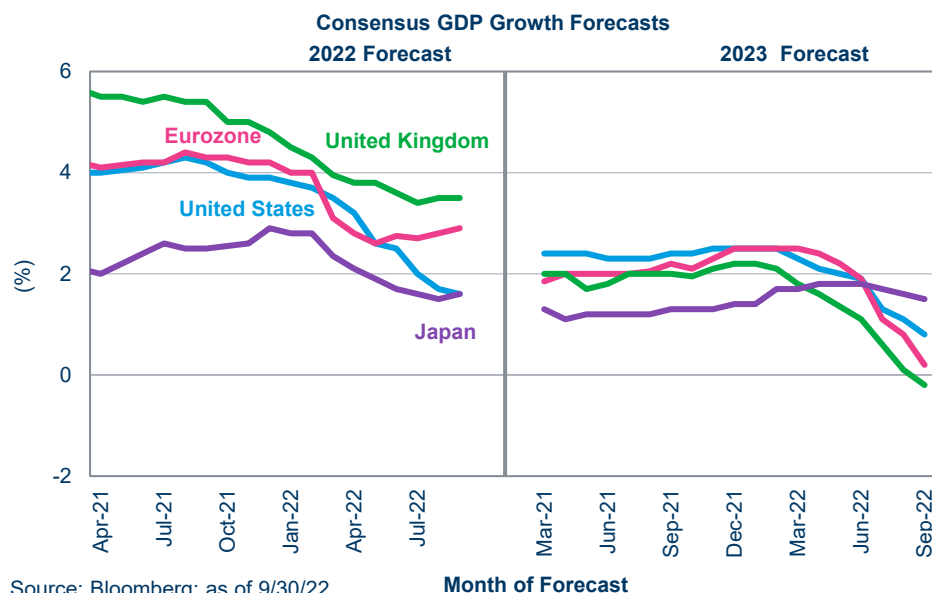
# Economic fundamentals

## Growth outlook deteriorating amid rising rates

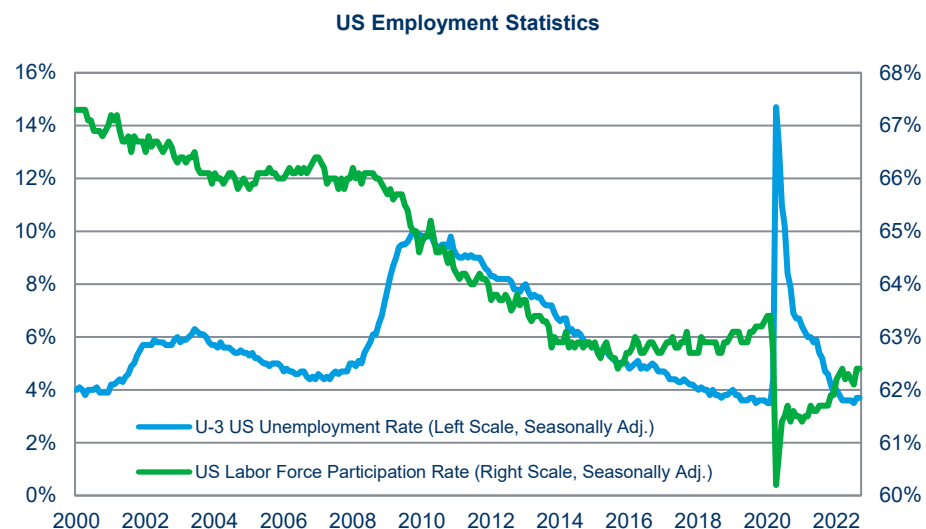
- The growth outlook continues to weaken as persistent inflation drives most central banks to maintain their hawkish stances. Consensus growth forecasts continue to move lower, particularly for 2023.
- Manufacturing PMIs barely remain in expansionary territory for the US and Japan, with most other regions having fallen to contractionary levels during Q3.
- The US labor market continues to show signs of resiliency. The US unemployment rate (U-3)<sup>1</sup> is currently 3.5%, matching its lowest level of the year. The labor force participation rate remains roughly one percentage point below its pre-COVID level.



Source: Bloomberg; as of 9/30/22



Source: Bloomberg; as of 9/30/22



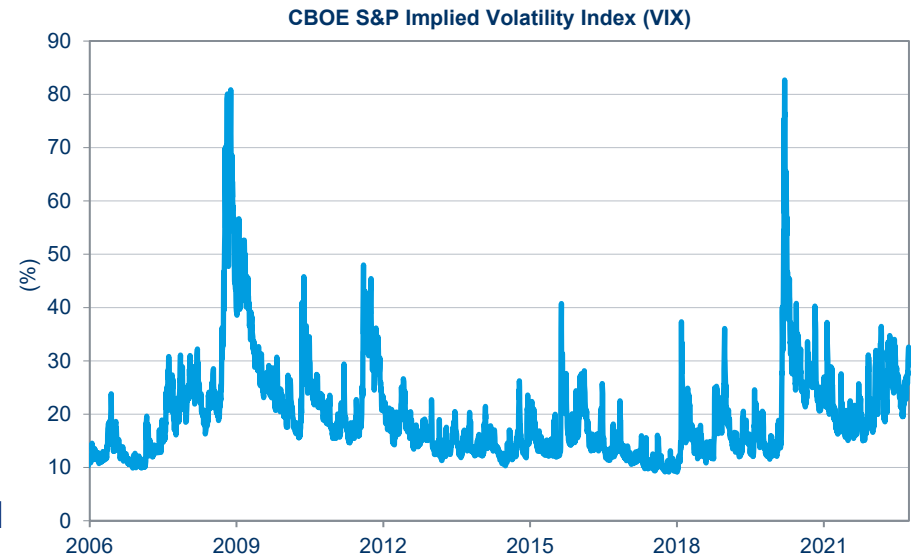
Source: Bureau of Labor Statistics; as of 9/30/22

<sup>1</sup> The U-3 unemployment rate represents the percentage of the civilian labor force that is jobless and actively seeking employment.

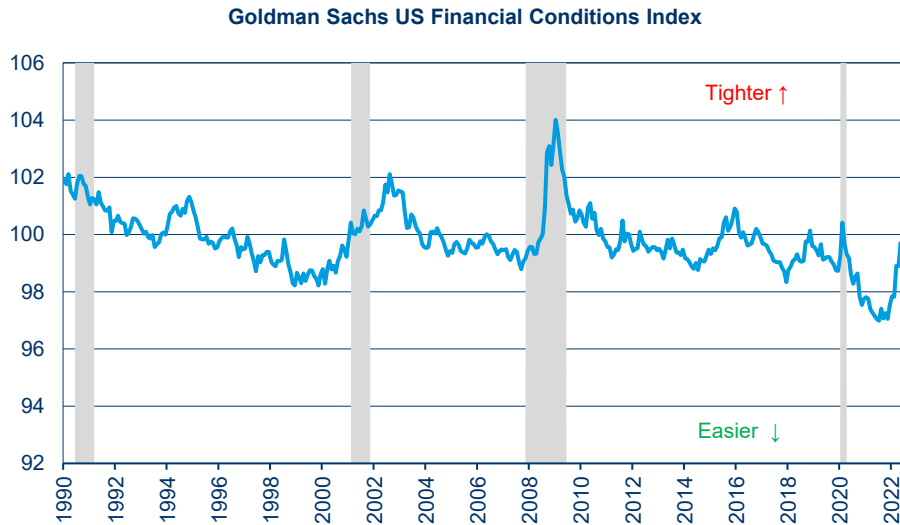
# Risk factors

## US inflation remains high

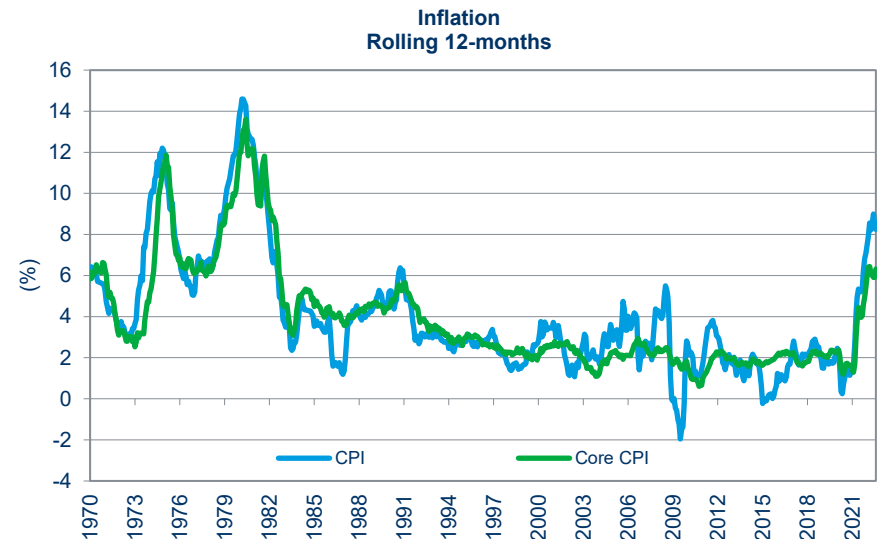
- US inflation remained elevated in Q3, and the Fed has maintained its aggressive pace of tightening. There are some signs that inflationary pressures may be weakening, but more sustained evidence is needed.
- The Russia - Ukraine conflict continues to cause geopolitical uncertainty and fears of potential escalation.
- The VIX volatility index rose from 29 to 31 during the quarter. The index had fallen to around 20 mid-quarter, before returning to elevated levels<sup>1</sup>.
- Financial conditions continued to tighten during the quarter as rates rose. The Goldman Sachs US Financial Conditions Index is at the highest level in over six years.



Source: Bloomberg; as of 9/30/22



Source: Bloomberg; as of 9/30/22



Source: Bloomberg; through 8/31/22

<sup>1</sup> Source: Bloomberg; as of 9/30/22

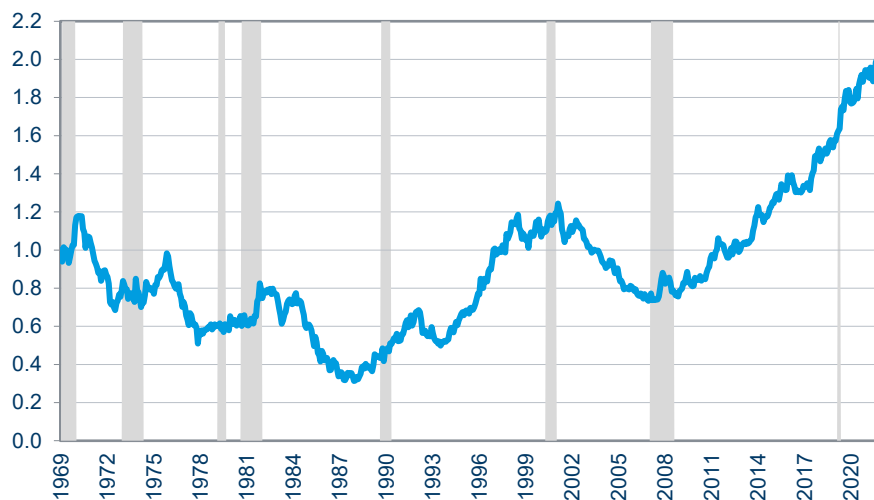


# Regional equity returns

## Global equities in a bear market year-to-date

- Global equities posted another quarter of declines in Q3, with the MSCI ACWI index falling 6.8% during the quarter. Year-to-date, the index has declined 25.6%.
- The S&P 500 fell 4.9% during the quarter, and is now down 23.9% year-to-date.
- International developed stocks declined 9.4% in Q3, leaving their year-to-date decline at 27.1%. A stronger dollar detracted 580 bps from US\$ returns during the quarter.
- Emerging market equities fell 11.6% in Q3 and 27.2% year-to-date. Asian emerging markets were the worst performing region during the quarter, while Latin America posted modest gains.

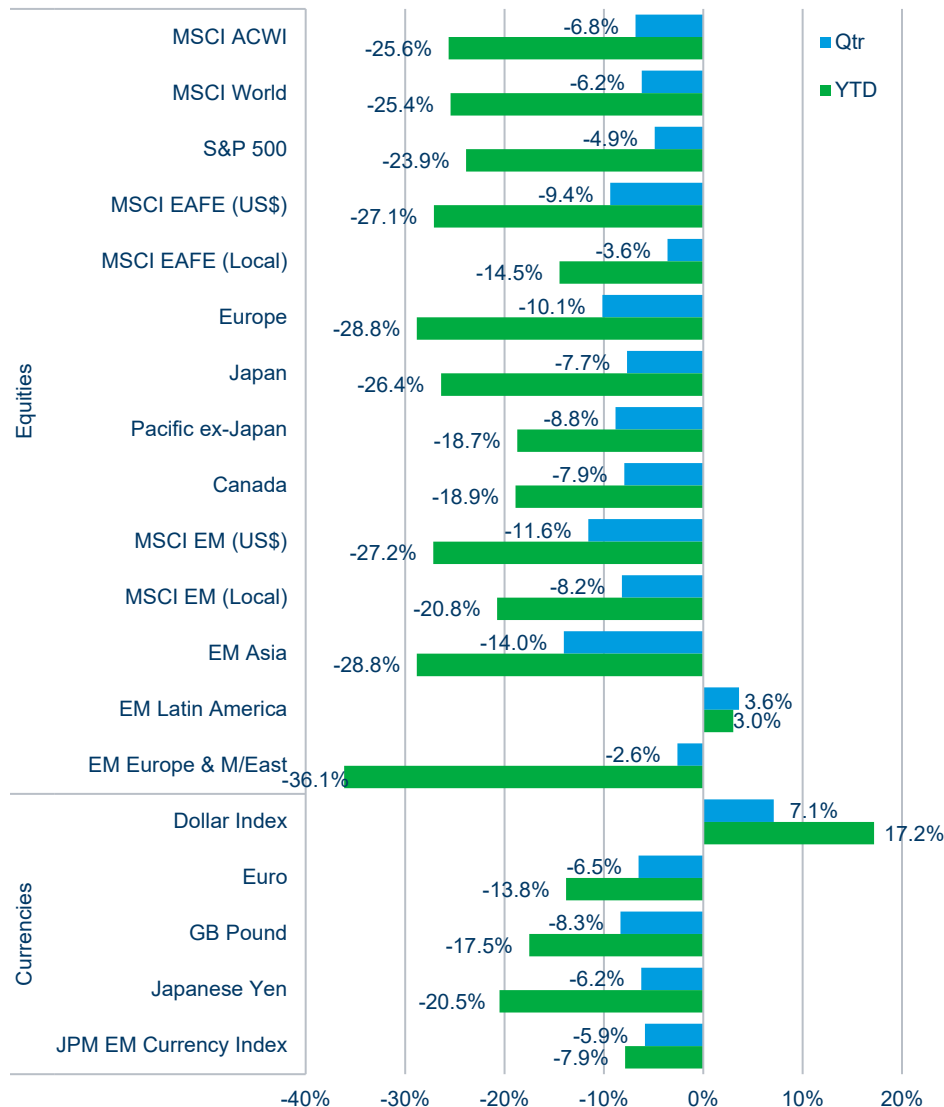
Ratio of MSCI US to MSCI EAFE (Relative Performance)



Source: Datastream; as of 9/30/22

Past performance is no guarantee of future results

Global Performance

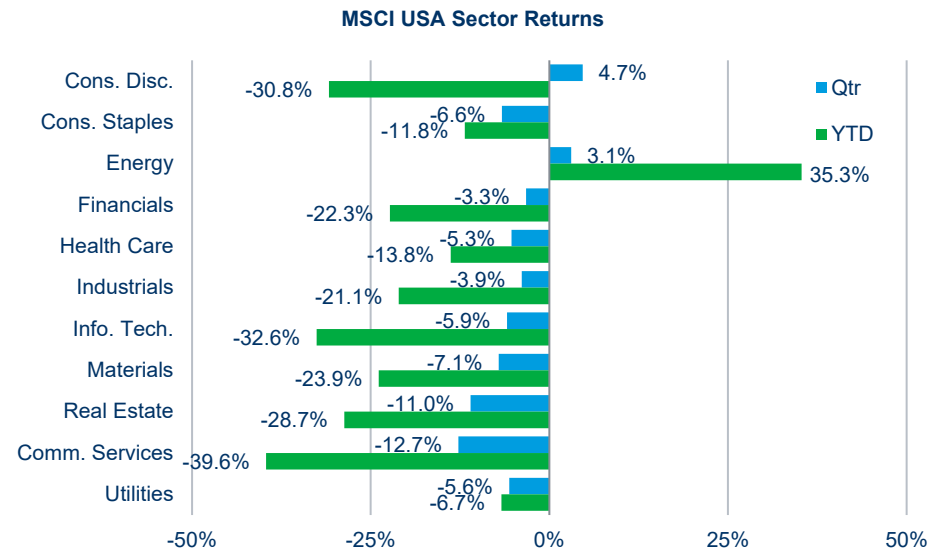


Source: Bloomberg, Datastream; as of 9/30/22

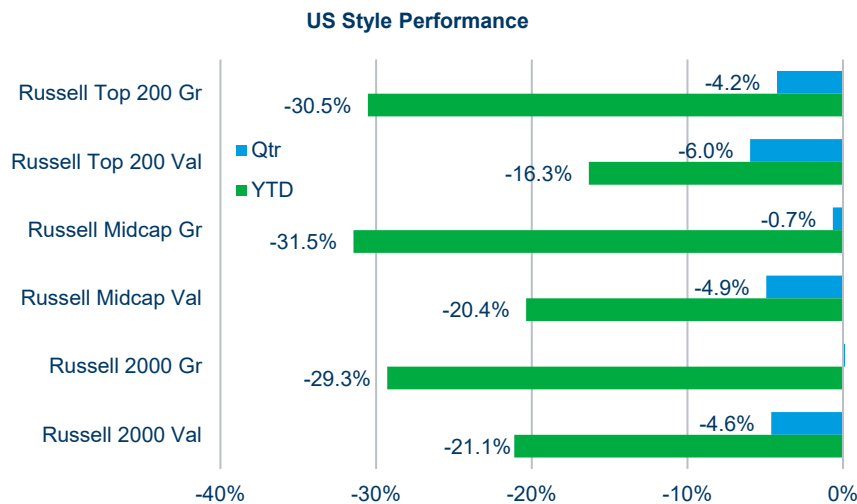
# US equity factor and sector returns

## Small-caps and growth stocks outperform despite rising rates

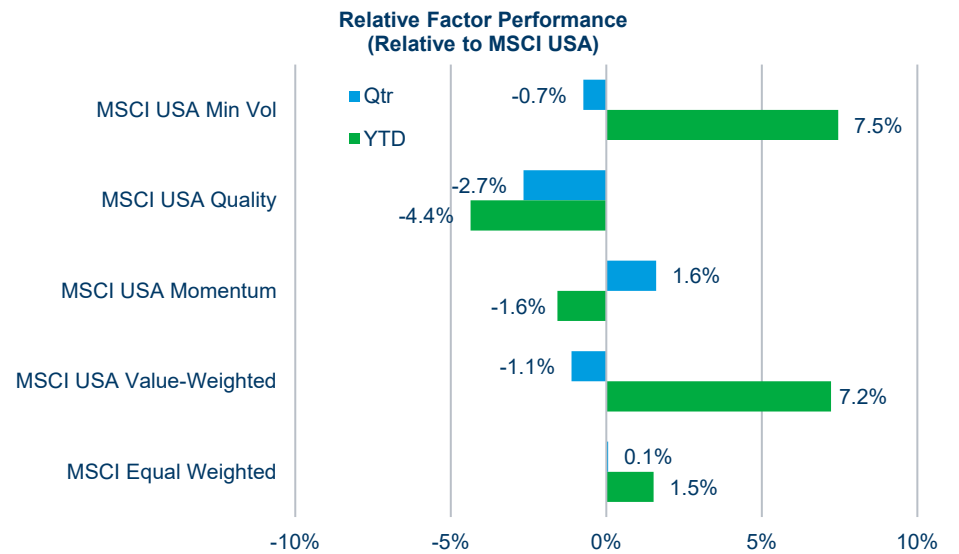
- Small-caps outperformed during Q3, although large-caps remain modestly ahead year-to-date. Value stocks have held up better than growth stocks in 2022, despite modest underperformance in Q3.
- The momentum factor outperformed during Q3, while the quality, minimum volatility and value factors generally lagged. The minimum volatility and value factors continue to show outperformance for the year-to-date period.
- The consumer discretionary and energy sectors were the only sectors with positive performance during Q3 and energy remains the only positive sector year-to-date. Communication services has been the worst performing sector during Q3 and year-to-date.



Source: Bloomberg; as of 9/30/22



Source: Datastream; as of 9/30/22



Source: MSCI; as of 9/30/22

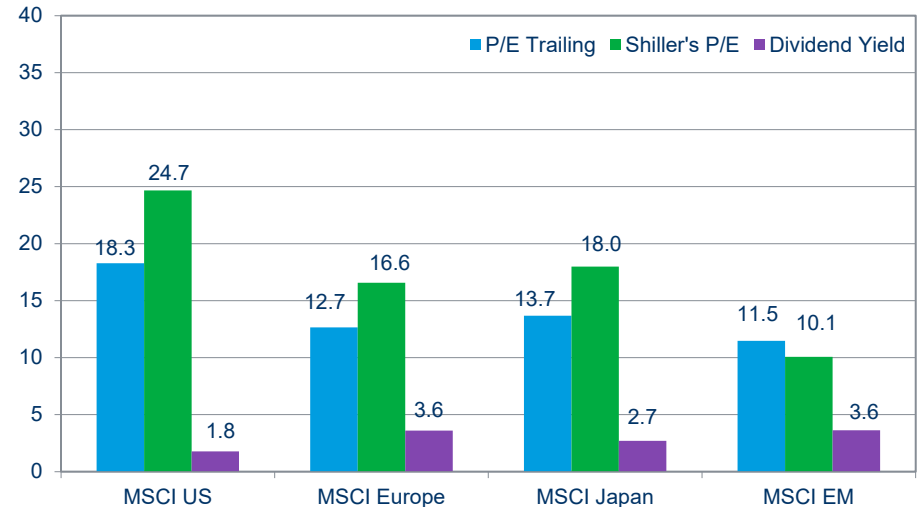
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# Equity fundamentals

## Valuations improve amid weak performance

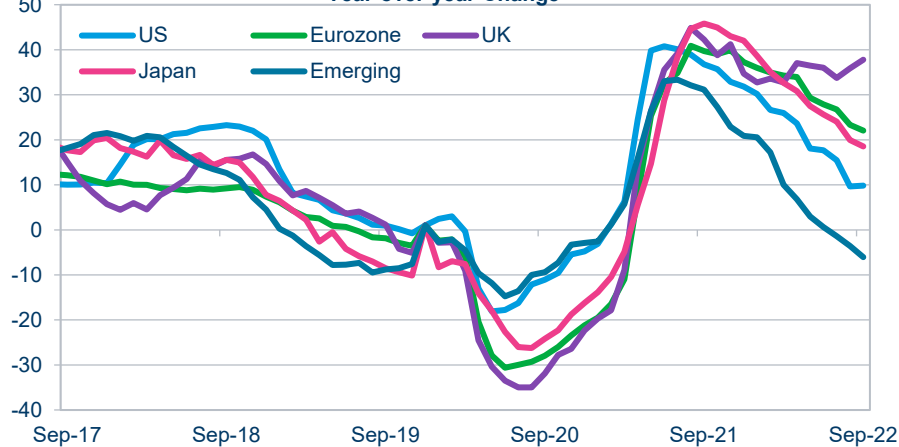
- Valuations modestly improved during the quarter as prices declined more than earnings. The trailing P/E ratio on the MSCI US Index fell from 18.9 to 18.3<sup>1</sup>. However, we estimate that the equity risk premium over long-term Treasuries fell from 2.4% to 1.9%<sup>2</sup> as the increase in yields outweighed improving valuations.
- International developed stocks remain more reasonably valued than US stocks, although Europe faces a challenging winter with elevated energy prices and potential supply shortages.
- Emerging market valuations remain more attractive than developed markets. Monetary policy remains accommodative in China, although challenges in the property sector and COVID restrictions continue to weigh on the outlook.

Global Valuations



Source: Bloomberg, Datastream, Mercer; as of 9/30/22

Forward Earnings Estimates  
Year-over-year Change



Source: Datastream; as of 9/30/22

S&P 500 - Equity Risk Premium Versus Long-Term Treasuries



Source: Bloomberg, Datastream, Mercer; as of 9/30/22

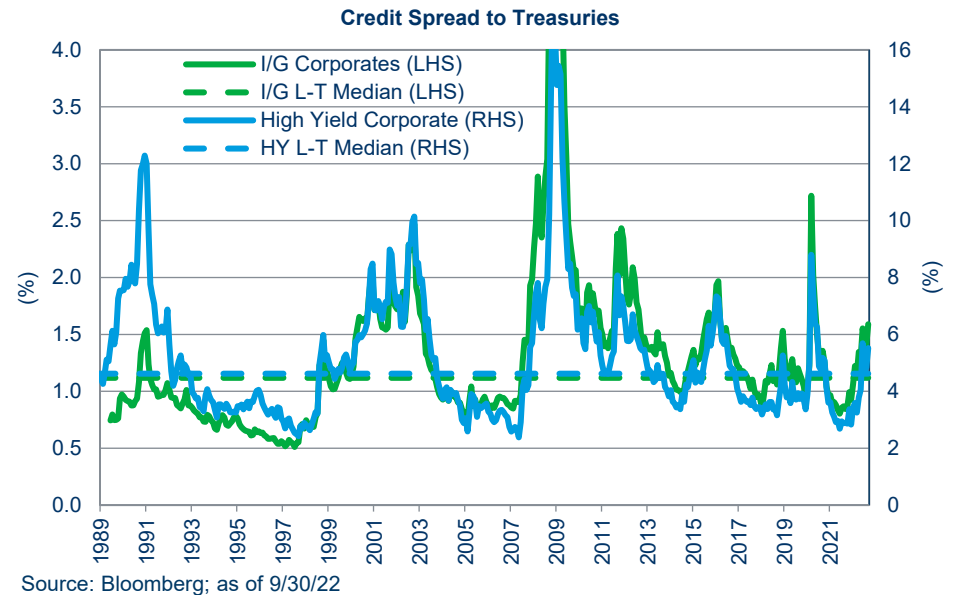
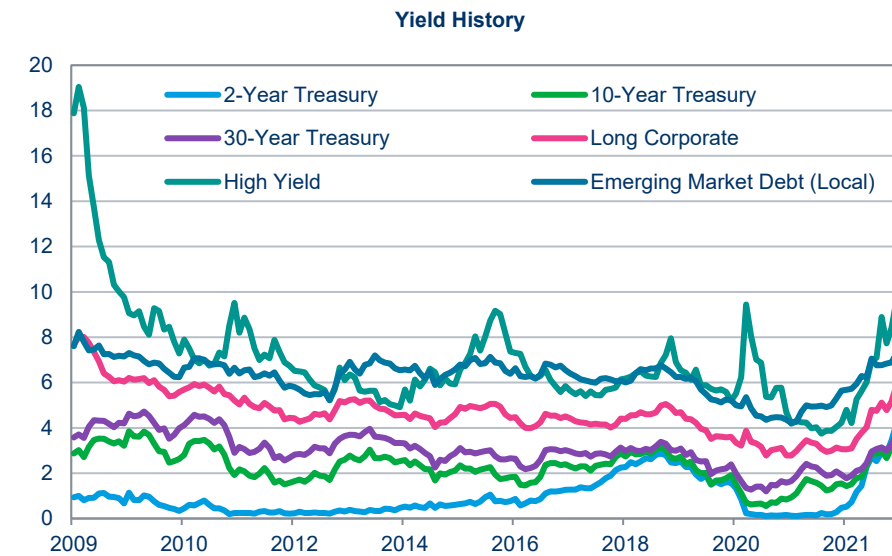
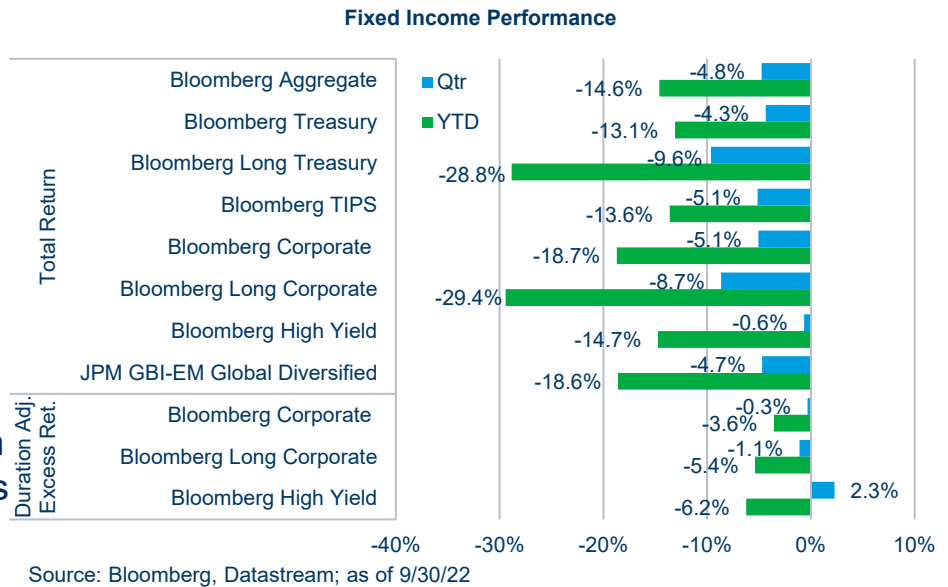
<sup>1</sup> Source: Refinitiv; as of 9/30/22

<sup>2</sup> Source: MSCI, Refinitiv, Mercer; as of 9/30/22

# Interest rates and fixed income

## Rising rates drive losses on bonds, as spreads see little change

- The Bloomberg Aggregate declined 4.8% during the quarter. Treasuries declined 4.3%, but outperformed corporate bonds, which declined 5.1%. The yield curve shifted higher and flattened, with 3-month yields rising 161 bps, while 30-year yields rose by 65 bps<sup>1</sup>.
- Credit spreads on investment-grade corporate bonds saw little change, rising 4 bps during the quarter to 1.6%, which is roughly 45 bps above the long-term median level<sup>2</sup>.
- High yield bonds declined 0.6% during the quarter, even as credit spreads fell 16bps to 5.5%. High yield spreads are 90 bps above the long-term median level of 4.6%<sup>2</sup>. Local currency EMD declined 4.7% during Q3.



<sup>1</sup> Source: Federal Reserve; as of 9/30/22

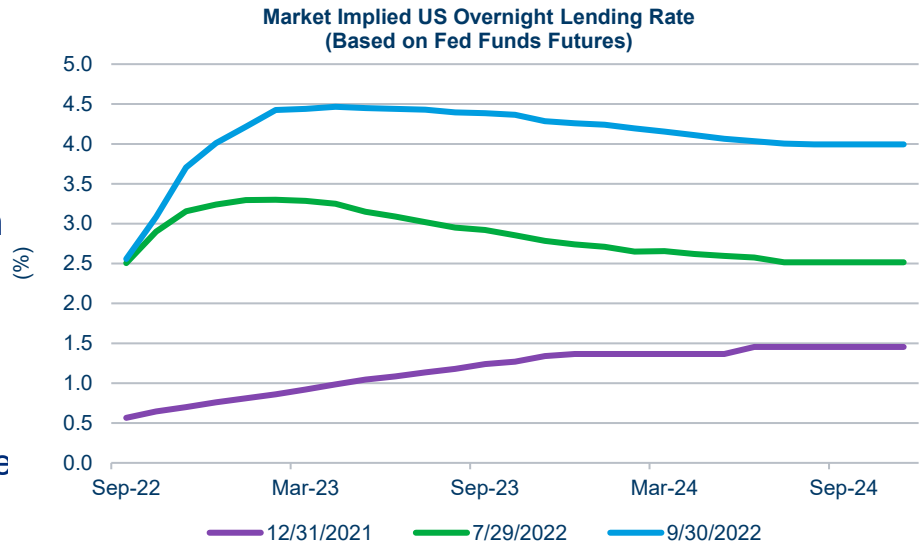
<sup>2</sup> Source: Bloomberg, Mercer; as of 9/30/22

Past performance is no guarantee of future results

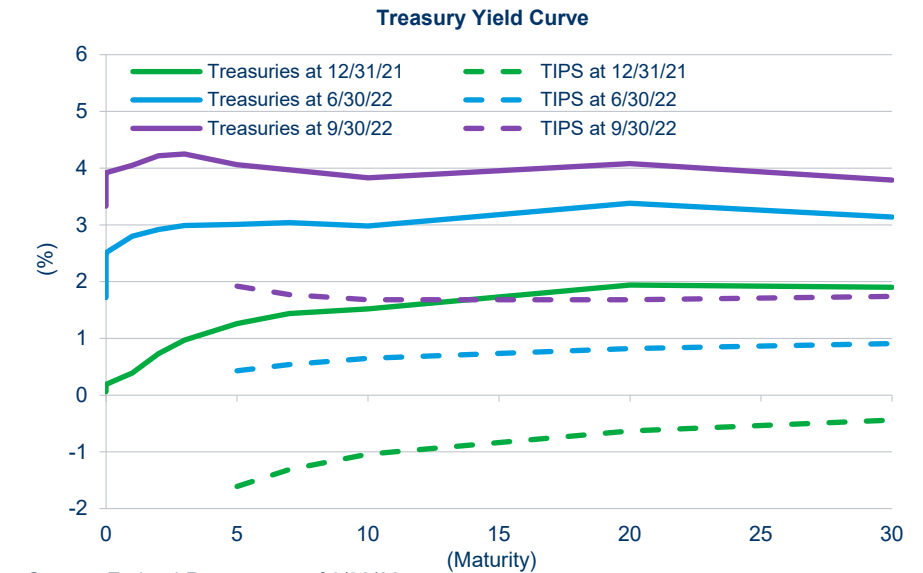
# Monetary policy

## Central banks maintain their hawkish stances

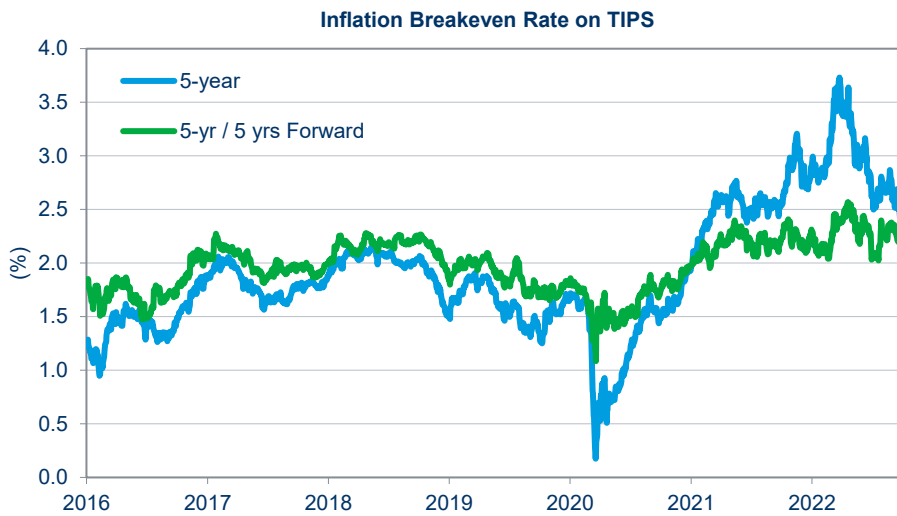
- In September, the Federal Reserve approved its third consecutive 75 basis point rate hike, bringing its policy rate to 3% - 3.25%. The Fed's dot plot and market pricing both suggest that the policy rate will be over 4% by the end of 2022.
- US inflation breakeven rates fell during the quarter, with 10-year inflation breakeven rates falling from 2.3% to 2.15%, slightly below the Fed's target of 2% PCE (roughly 2.5% CPI)<sup>1</sup>.
- Overseas, most other central banks also raised rates, including the ECB and BOE. Japan and China were the only major regions without rate increases in Q3. In the UK, the BOE launched a temporary bond purchase program to ease conditions following the market's negative reaction to a new budget proposal.



Source: Bloomberg



Source: Federal Reserve; as of 9/30/22



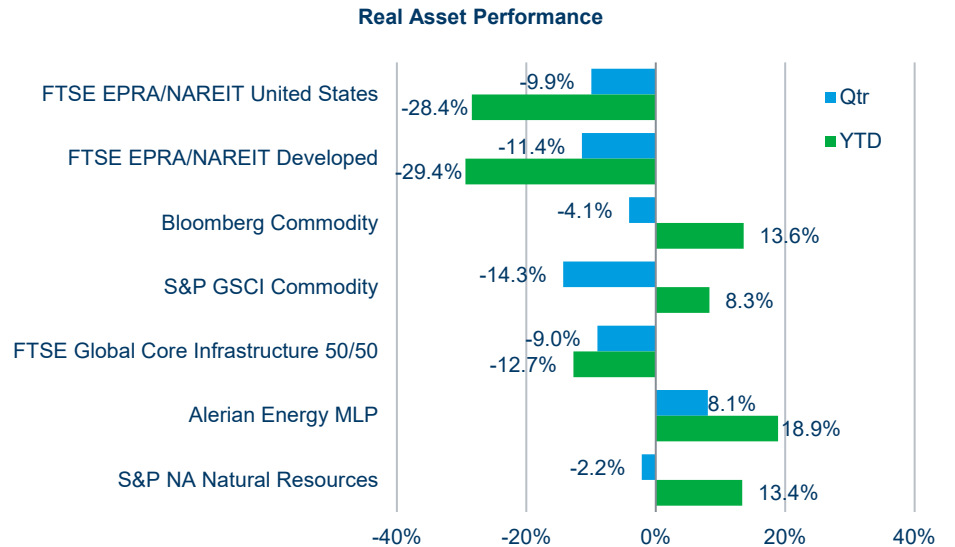
Source: Bloomberg, Mercer through 9/30/22

<sup>1</sup> Source: St. Louis Fed; as of 9/30/22

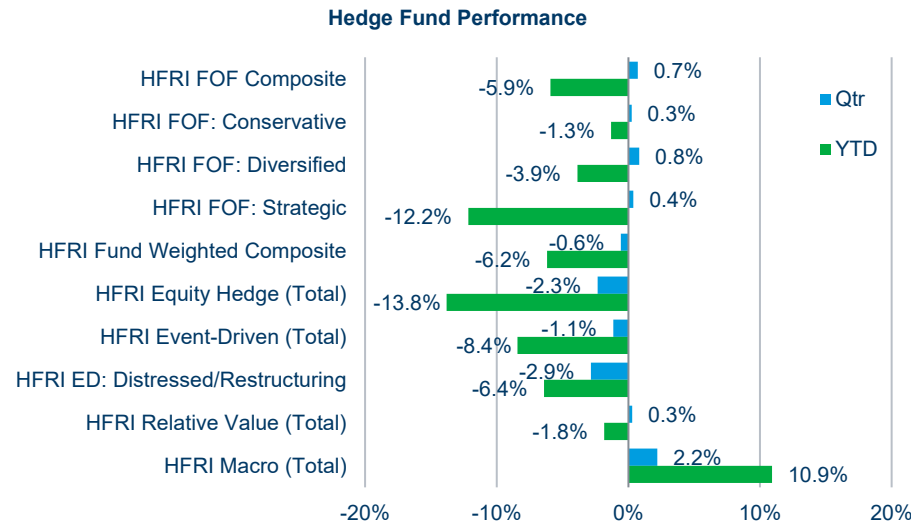
# Alternative investment performance

## REITs, infrastructure and commodities decline, hedge funds deliver gains

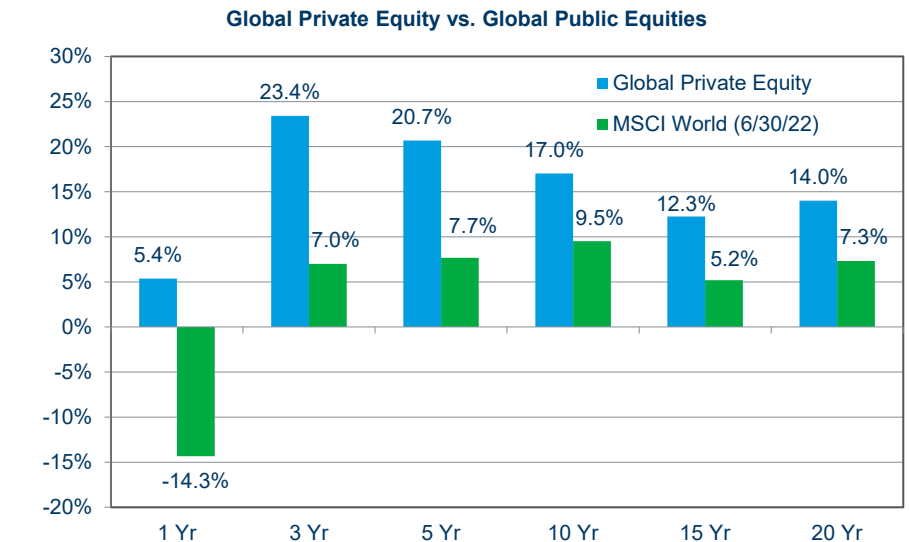
- REITs fell roughly 11% during Q3, faring worse than broader equity markets. Infrastructure stocks declined 9% during the quarter, but they have outperformed broader markets year-to-date.
- Commodities and natural resource stocks posted modest declines during the month on fears of a global slowdown, but returns remain positive year-to-date. MLPs returned over 8% during the quarter.
- The HFRI FOF Composite Index gained 0.7% in Q3, leaving it with a 5.9% decline, year-to-date<sup>1</sup>. Macro strategies have outperformed in 2022, while equity hedge and event-driven strategies have lagged.
- Global private equity outperformed global developed stocks over the most recent trailing periods<sup>2</sup>.



Source: Bloomberg, Datastream; as of 9/30/22



Source: Hedge Fund Research; as of 9/30/22



Source: Burgiss, Bloomberg; as of 6/30/22

<sup>1</sup> Source: Hedge Fund Research; as of 9/30/22

<sup>2</sup> Source: Burgiss, Bloomberg; as of 6/30/22

Past performance is no guarantee of future results

# Valuations and yields

Ending September 30, 2022

## Valuations

| <b>MSCI USA</b>      | <b>9/30/2022</b> | <b>6/30/2022</b> | <b>3/31/2022</b> | <b>12/31/2021</b> |
|----------------------|------------------|------------------|------------------|-------------------|
| Index Level          | 15757.5          | 16534.2          | 19866.9          | 20958.0           |
| P/E Ratio (Trailing) | 18.3             | 18.9             | 23.1             | 32.2              |
| CAPE Ratio           | 24.7             | 26.6             | 33.0             | 36.2              |
| Dividend Yield       | 1.8              | 1.7              | 1.4              | 1.5               |
| P/B                  | 3.6              | 3.8              | 4.7              | 4.4               |
| P/CF                 | 12.6             | 14.1             | 18.5             | 20.3              |
| <b>MSCI EAFE</b>     | <b>9/30/2022</b> | <b>6/30/2022</b> | <b>3/31/2022</b> | <b>12/31/2021</b> |
| Index Level          | 5610.4           | 6189.6           | 7240.4           | 7695.5            |
| P/E Ratio (Trailing) | 13.0             | 13.9             | 15.5             | 23.1              |
| CAPE Ratio           | 14.0             | 15.6             | 17.0             | 17.9              |
| Dividend Yield       | 3.6              | 3.4              | 2.9              | 2.4               |
| P/B                  | 1.5              | 1.6              | 1.8              | 1.8               |
| P/CF                 | 5.5              | 6.4              | 7.9              | 7.7               |
| <b>MSCI EM</b>       | <b>9/30/2022</b> | <b>6/30/2022</b> | <b>3/31/2022</b> | <b>12/31/2021</b> |
| Index Level          | 443.1            | 501.1            | 565.8            | 608.3             |
| P/E Ratio (Trailing) | 11.5             | 12.5             | 14.0             | 21.7              |
| CAPE Ratio           | 10.1             | 11.6             | 13.7             | 14.5              |
| Dividend Yield       | 3.6              | 3.1              | 2.5              | 2.0               |
| P/B                  | 1.5              | 1.7              | 1.8              | 2.0               |
| P/CF                 | 6.7              | 7.6              | 8.5              | 8.3               |

Source: Bloomberg, Thomson Reuters Datastream

## Yields

| <b>Global Bonds</b>     | <b>9/30/2022</b> | <b>6/30/2022</b> | <b>3/31/2022</b> | <b>12/31/2021</b> |
|-------------------------|------------------|------------------|------------------|-------------------|
| Germany – 10Y           | 2.11             | 1.34             | 0.55             | -0.18             |
| France – 10Y            | 2.72             | 1.92             | 0.98             | 0.20              |
| UK – 10Y                | 4.09             | 2.23             | 1.61             | 0.97              |
| Switzerland – 10Y       | 1.23             | 1.07             | 0.60             | -0.14             |
| Italy – 10Y             | 4.52             | 3.26             | 2.04             | 1.17              |
| Spain – 10Y             | 3.29             | 2.42             | 1.44             | 0.57              |
| Japan – 10Y             | 0.24             | 0.23             | 0.22             | 0.07              |
| Euro Corporate          | 4.24             | 3.24             | 1.55             | 0.52              |
| Euro High Yield         | 9.01             | 8.08             | 5.18             | 3.55              |
| EMD (\$)                | 9.57             | 8.56             | 6.42             | 5.27              |
| EMD (LCL)               | 7.31             | 7.06             | 6.23             | 5.72              |
| <b>US Bonds</b>         | <b>9/30/2022</b> | <b>6/30/2022</b> | <b>3/31/2022</b> | <b>12/31/2021</b> |
| 3-Month T-Bill          | 3.33             | 1.72             | 0.52             | 0.06              |
| 10Y Treasury            | 3.83             | 2.98             | 2.32             | 1.52              |
| 30Y Treasury            | 3.79             | 3.14             | 2.44             | 1.90              |
| 10Y TIPS                | 1.68             | 0.65             | -0.52            | -1.04             |
| 30Y TIPS                | 1.74             | 0.91             | -0.03            | -0.44             |
| US Aggregate            | 4.75             | 3.72             | 2.92             | 1.75              |
| US Treasury             | 4.13             | 3.09             | 2.42             | 1.23              |
| US Corporate            | 5.69             | 4.70             | 3.60             | 2.33              |
| US Corporate High Yield | 9.68             | 8.89             | 6.01             | 4.21              |

Source: Bloomberg, Thomson Reuters Datastream

Past performance is no guarantee of future results



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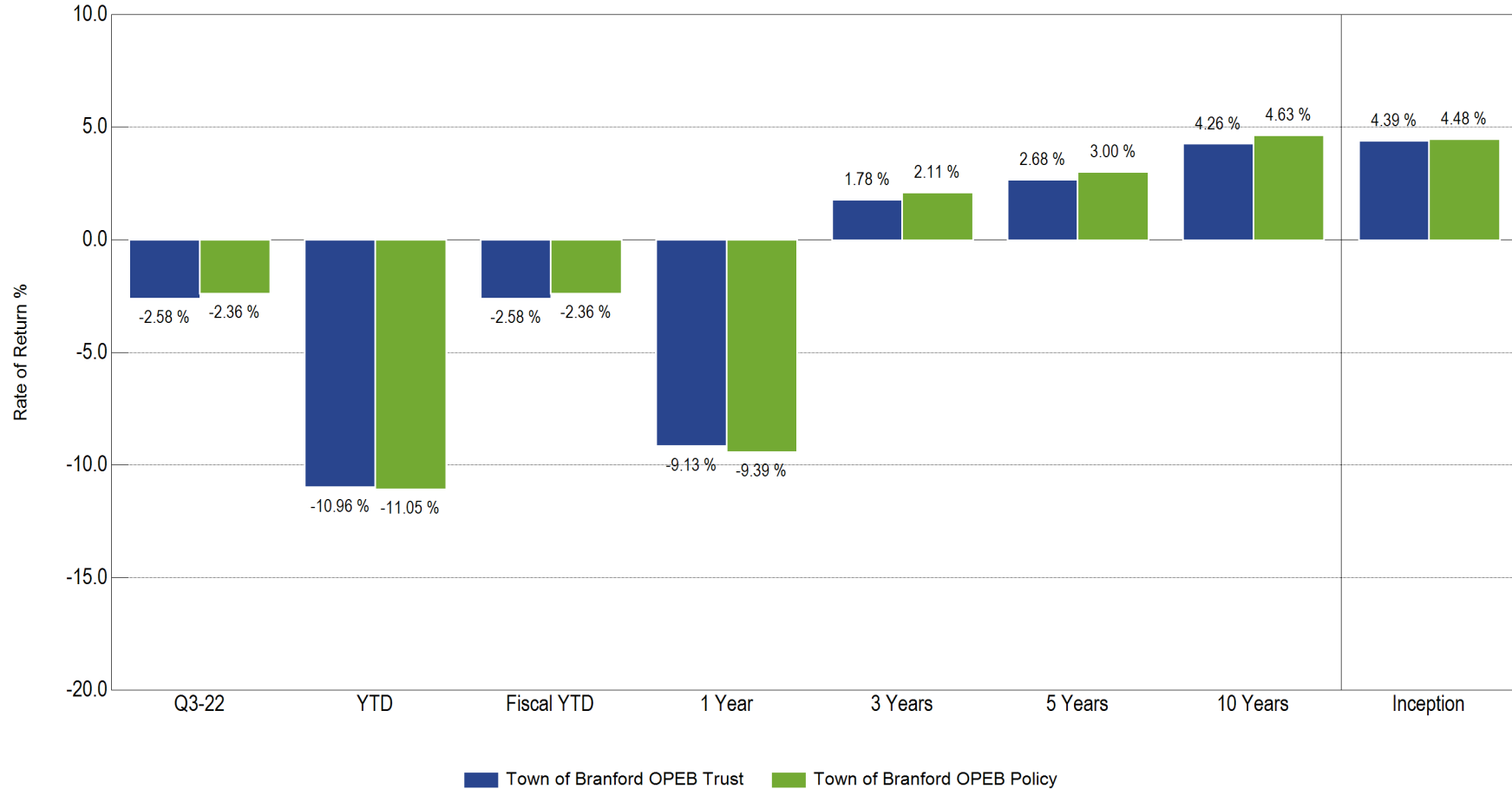
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Return Summary



For the purposes of investment comparison, the Town of Branford OPEB Policy (the "Policy") is utilized. This Policy is a blend of comparative index sub-components based upon the current target asset allocation of the plan and has been adjusted periodically in adherence with the plan's investment policy statement. Details on the composition of the Policy can be found on page 30.

Returns are gross of fees unless otherwise noted. Client returns will be reduced by advisory and other expenses the client may incur. Net performance is shown on page 16.

## Investment Performance Analysis

Gross Composite Performance

As of September 30, 2022

|   | Market Value<br>(\$) | % of<br>Portfolio | Ending September 30, 2022 |               |                      |               |              |              |               | Inception<br>(%) | Inception<br>Date |
|---|----------------------|-------------------|---------------------------|---------------|----------------------|---------------|--------------|--------------|---------------|------------------|-------------------|
|   |                      |                   | 3 Mo<br>(%)               | YTD<br>(%)    | Fiscal<br>YTD<br>(%) | 1 Yr<br>(%)   | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) |                  |                   |
| <b>Town of Branford OPEB Trust</b>        | <b>34,162,936</b>    | <b>100.00</b>     | <b>-2.58</b>              | <b>-10.96</b> | <b>-2.58</b>         | <b>-9.13</b>  | <b>1.78</b>  | <b>2.68</b>  | <b>4.26</b>   | <b>4.39</b>      | <b>Jul-11</b>     |
| <i>Town of Branford OPEB Policy</i>       |                      |                   | -2.36                     | -11.05        | -2.36                | -9.39         | 2.11         | 3.00         | 4.63          | 4.48             | Jul-11            |
| <b>Equity Group</b>                       | <b>12,069,861</b>    | <b>35.33</b>      | <b>-4.99</b>              | <b>-21.39</b> | <b>-4.99</b>         | <b>-16.73</b> | <b>4.19</b>  | <b>4.24</b>  | <b>6.76</b>   | <b>6.59</b>      | <b>Jul-11</b>     |
| <i>Equity Custom Benchmark</i>            |                      |                   | -4.85                     | -21.45        | -4.85                | -16.95        | 4.29         | 4.38         | 6.92          | 6.19             | Jul-11            |
| iShares S&P 500                           | 3,359,398            | 9.83              | -4.81                     | -23.83        | -4.81                | -15.40        | 8.15         | 9.20         | 11.66         | 11.95            | Jul-11            |
| <i>S&amp;P 500</i>                        |                      |                   | -4.88                     | -23.87        | -4.88                | -15.47        | 8.16         | 9.24         | 11.70         | 11.47            | Jul-11            |
| iShares S&P MidCap 400                    | 2,016,882            | 5.90              | -2.32                     | -21.43        | -2.32                | -15.15        | 5.99         | 5.77         | 9.98          | 9.68             | Jul-11            |
| <i>S&amp;P 400 MidCap</i>                 |                      |                   | -2.46                     | -21.52        | -2.46                | -15.25        | 6.01         | 5.82         | 10.04         | 9.16             | Jul-11            |
| iShares Russell 2000                      | 1,486,549            | 4.35              | -1.95                     | -24.99        | -1.95                | -23.48        | 4.25         | 3.45         | 8.52          | 8.51             | Jul-11            |
| <i>Russell 2000</i>                       |                      |                   | -2.19                     | -25.10        | -2.19                | -23.50        | 4.29         | 3.55         | 8.55          | 7.86             | Jul-11            |
| iShares MSCI EAFE                         | 2,110,102            | 6.18              | -10.19                    | -26.82        | -10.19               | -24.89        | -1.95        | -1.01        | 3.59          | 3.01             | Jul-11            |
| <i>MSCI EAFE</i>                          |                      |                   | -9.36                     | -27.09        | -9.36                | -25.13        | -1.83        | -0.84        | 3.67          | 2.51             | Jul-11            |
| iShares MSCI Emerging Mkts                | 1,239,003            | 3.63              | -12.89                    | -27.80        | -12.89               | -28.96        | -3.01        | -2.89        | 0.31          | -0.12            | Jul-11            |
| <i>MSCI Emerging Markets</i>              |                      |                   | -11.57                    | -27.16        | -11.57               | -28.11        | -2.07        | -1.81        | 1.05          | 0.05             | Jul-11            |
| iShares Dow Jones US Real Estate          | 652,086              | 1.91              | -10.42                    | -28.52        | -10.42               | -18.09        | -1.91        | 3.38         | 5.97          | 6.84             | Jul-11            |
| <i>iShares U.S. Real Estate Benchmark</i> |                      |                   | -10.41                    | -28.34        | -10.41               | -17.87        | -1.60        | 3.71         | 6.42          | 6.79             | Jul-11            |
| Alerian MLP                               | 1,205,841            | 3.53              | 8.45                      | 18.26         | 8.45                 | 18.69         | 1.93         | 0.10         | --            | -0.89            | Sep-15            |
| <i>Alerian MLP Index</i>                  |                      |                   | 8.05                      | 18.90         | 8.05                 | 19.56         | 4.46         | 1.90         | --            | 0.15             | Sep-15            |
| <b>Fixed Income Group</b>                 | <b>22,093,075</b>    | <b>64.67</b>      | <b>-1.12</b>              | <b>-4.32</b>  | <b>-1.12</b>         | <b>-4.43</b>  | <b>-0.01</b> | <b>1.40</b>  | <b>1.56</b>   | <b>1.72</b>      | <b>Jul-11</b>     |
| <i>Fixed Income Custom Benchmark</i>      |                      |                   | -1.02                     | -4.68         | -1.02                | -4.79         | -0.05        | 1.41         | 1.81          | 2.22             | Jul-11            |
| High Yield                                | 1,927,489            | 5.64              | -0.48                     | -11.72        | -0.48                | -11.06        | 0.28         | 1.68         | 3.06          | 3.68             | Jul-11            |
| <i>High Yield Bond Blended Benchmark</i>  |                      |                   | -0.67                     | -14.61        | -0.67                | -14.06        | -0.70        | 1.38         | 3.58          | 4.28             | Jul-11            |
| Fixed Income                              | 8,781,834            | 25.71             | -2.84                     | -8.62         | -2.84                | -9.09         | -1.38        | 0.50         | 0.92          | 1.19             | Jul-11            |
| <i>Bloomberg US Govt/Credit Int TR</i>    |                      |                   | -3.06                     | -9.63         | -3.06                | -10.14        | -1.64        | 0.38         | 1.00          | 1.49             | Jul-11            |
| Treasury Bills                            | 10,264,070           | 30.04             | --                        | --            | --                   | --            | --           | --           | --            | 0.02             | Sep-22            |
| <i>FTSE T-Bill 3 Months TR</i>            |                      |                   | --                        | --            | --                   | --            | --           | --           | --            | 0.20             | Sep-22            |
| Cash Alternatives                         | 1,119,681            | 3.28              | 0.44                      | 0.54          | 0.44                 | 0.54          | 0.38         | 0.88         | 0.48          | 0.42             | Jul-11            |
| <i>FTSE T-Bill 3 Months TR</i>            |                      |                   | 0.45                      | 0.62          | 0.45                 | 0.63          | 0.57         | 1.13         | 0.66          | 0.59             | Jul-11            |

Returns for the Town of Branford OPEB Trust (as shown above) are gross of advisory fees. Although our advisory fee is not reflected in the returns reference above, it is important to note that the return streams for registered mutual funds are net of the internal expenses of the Funds. Client returns will be reduced by advisory fees and other expenses the client may incur.

Investment Performance Analysis

Net Composite Performance

As of September 30, 2022

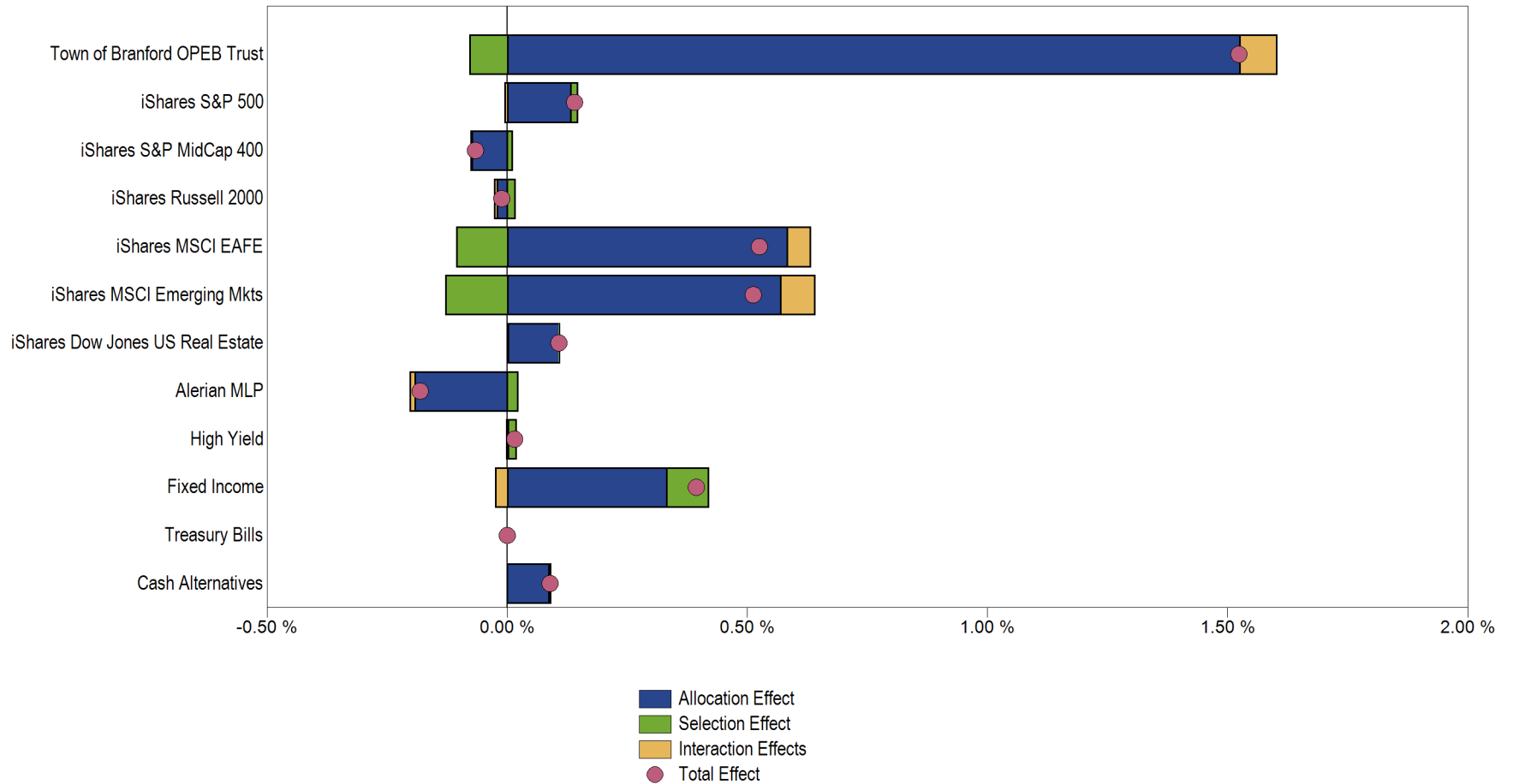
Ending September 30, 2022

|                                     | Market Value<br>(\$) | % of<br>Portfolio | 3 Mo<br>(%)  | YTD<br>(%)    | Fiscal<br>YTD<br>(%) | 1 Yr<br>(%)  | 3 Yrs<br>(%) | 5 Yrs<br>(%) | 10 Yrs<br>(%) | Inception<br>(%) | Inception<br>Date |
|-------------------------------------|----------------------|-------------------|--------------|---------------|----------------------|--------------|--------------|--------------|---------------|------------------|-------------------|
| <b>Town of Branford OPEB Trust</b>  | <b>34,162,936</b>    | <b>100.00</b>     | <b>-2.62</b> | <b>-11.09</b> | <b>-2.62</b>         | <b>-9.31</b> | <b>1.54</b>  | <b>2.44</b>  | <b>4.06</b>   | <b>4.21</b>      | <b>Jul-11</b>     |
| <i>Town of Branford OPEB Policy</i> |                      |                   | -2.36        | -11.05        | -2.36                | -9.39        | 2.11         | 3.00         | 4.63          | 4.48             | Jul-11            |

Fund Level Attribution Analysis

As of September 30, 2022

Attribution Effects  
3 Months Ending September 30, 2022

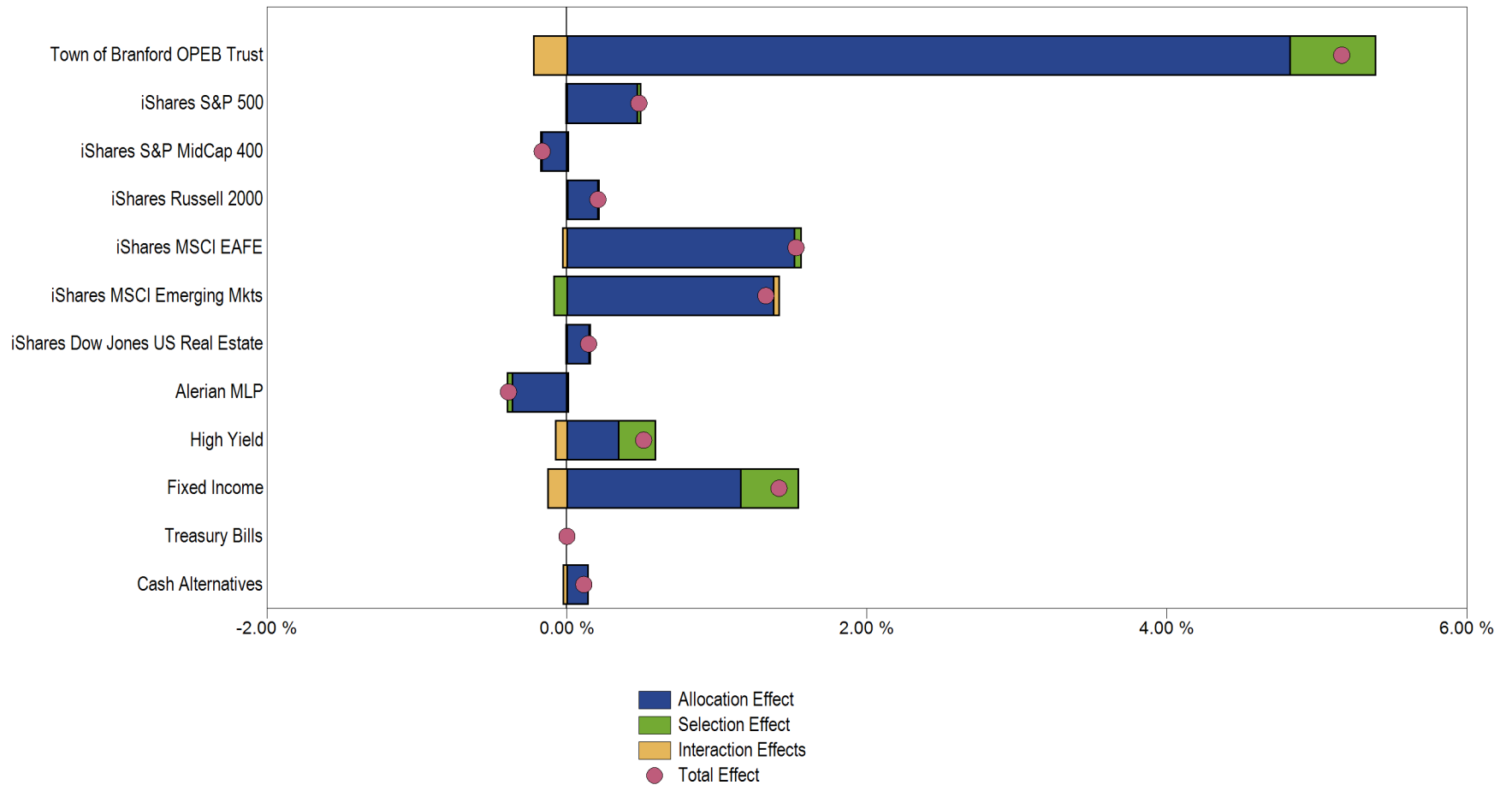


Returns are gross of advisory fees. Client returns will be reduced by advisory fees and other expenses the client may incur.

Fund Level Attribution Analysis

As of September 30, 2022

Attribution Effects  
1 Year Ending September 30, 2022



Returns are gross of advisory fees. Client returns will be reduced by advisory fees and other expenses the client may incur.

## Investment Performance Analysis

As of September 30, 2022

**Performance Attribution**  
**Quarter Ending September 30, 2022**

|                      | Last 3 Mo.   | YTD          | Fiscal YTD   | 1 Yr         | 3 Yrs         | 5 Yrs         | 10 Yrs        |
|----------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|
| Wtd. Actual Return   | -2.60%       | -10.98%      | 1.72%        | -9.15%       | 1.76%         | 2.73%         | 4.37%         |
| Wtd. Index Return *  | -4.13%       | -16.59%      | 1.70%        | -14.32%      | 1.78%         | 2.88%         | 4.57%         |
| <b>Excess Return</b> | <b>1.53%</b> | <b>5.62%</b> | <b>0.02%</b> | <b>5.17%</b> | <b>-0.01%</b> | <b>-0.15%</b> | <b>-0.20%</b> |
| Selection Effect     | -0.08%       | 0.57%        | -0.04%       | 0.57%        | -0.04%        | -0.14%        | -0.19%        |
| Allocation Effect    | 1.53%        | 5.27%        | 0.07%        | 4.82%        | 0.04%         | -0.01%        | -0.01%        |
| Interaction Effect   | 0.08%        | -0.22%       | -0.02%       | -0.22%       | -0.01%        | 0.00%         | -0.01%        |

\*Calculated from benchmark returns and weightings of each component.

**Attribution Summary**  
**3 Months Ending September 30, 2022**

|                                  | Wtd. Actual<br>Return | Wtd. Index<br>Return | Excess<br>Return | Selection<br>Effect | Allocation<br>Effect | Interaction<br>Effects | Total<br>Effects |
|----------------------------------|-----------------------|----------------------|------------------|---------------------|----------------------|------------------------|------------------|
| iShares S&P 500                  | -4.81%                | -4.88%               | 0.07%            | 0.01%               | 0.13%                | 0.00%                  | 0.14%            |
| iShares S&P MidCap 400           | -2.32%                | -2.46%               | 0.14%            | 0.01%               | -0.07%               | 0.00%                  | -0.07%           |
| iShares Russell 2000             | -1.95%                | -2.19%               | 0.24%            | 0.01%               | -0.02%               | 0.00%                  | -0.01%           |
| iShares MSCI EAFE                | -10.19%               | -9.36%               | -0.83%           | -0.11%              | 0.58%                | 0.05%                  | 0.52%            |
| iShares MSCI Emerging Mkts       | -12.89%               | -11.57%              | -1.31%           | -0.13%              | 0.57%                | 0.07%                  | 0.51%            |
| iShares Dow Jones US Real Estate | -10.42%               | -10.41%              | -0.01%           | 0.00%               | 0.11%                | 0.00%                  | 0.11%            |
| Alerian MLP                      | 8.45%                 | 8.05%                | 0.39%            | 0.02%               | -0.19%               | -0.01%                 | -0.18%           |
| High Yield                       | -0.48%                | -0.67%               | 0.19%            | 0.01%               | 0.00%                | 0.00%                  | 0.02%            |
| Fixed Income                     | -2.84%                | -3.06%               | 0.22%            | 0.08%               | 0.33%                | -0.02%                 | 0.39%            |
| Treasury Bills                   | --                    | --                   | --               | --                  | --                   | --                     | --               |
| Cash Alternatives                | 0.44%                 | 0.45%                | -0.01%           | 0.00%               | 0.09%                | 0.00%                  | 0.09%            |
| <b>Total</b>                     | <b>-2.60%</b>         | <b>-4.13%</b>        | <b>1.53%</b>     | <b>-0.08%</b>       | <b>1.53%</b>         | <b>0.08%</b>           | <b>1.52%</b>     |

Returns are gross of advisory fees. Client returns will be reduced by advisory fees and other expenses the client may incur.

# Investment Performance Analysis

Total Plan Information

As of September 30, 2022

## RISK RETURN STATISTICS

Town of Branford OPEB Trust    Town of Branford OPEB Policy

### RETURN SUMMARY STATISTICS

|   |       |       |
|---|-------|-------|
| Number of Periods                       | 135   | 135   |
| Maximum Return                          | 5.87  | 6.92  |
| Minimum Return                          | -8.09 | -8.89 |
| Annualized Return                       | 4.39  | 4.48  |
| Total Return                            | 62.12 | 63.65 |
| Annualized Excess Return Over Risk Free | 3.80  | 3.88  |
| Annualized Excess Return                | -0.09 | 0.00  |

### RISK SUMMARY STATISTICS

|                    |      |      |
|--------------------|------|------|
| Beta               | 0.85 | 1.00 |
| Upside Deviation   | 4.19 | 5.05 |
| Downside Deviation | 5.54 | 6.36 |

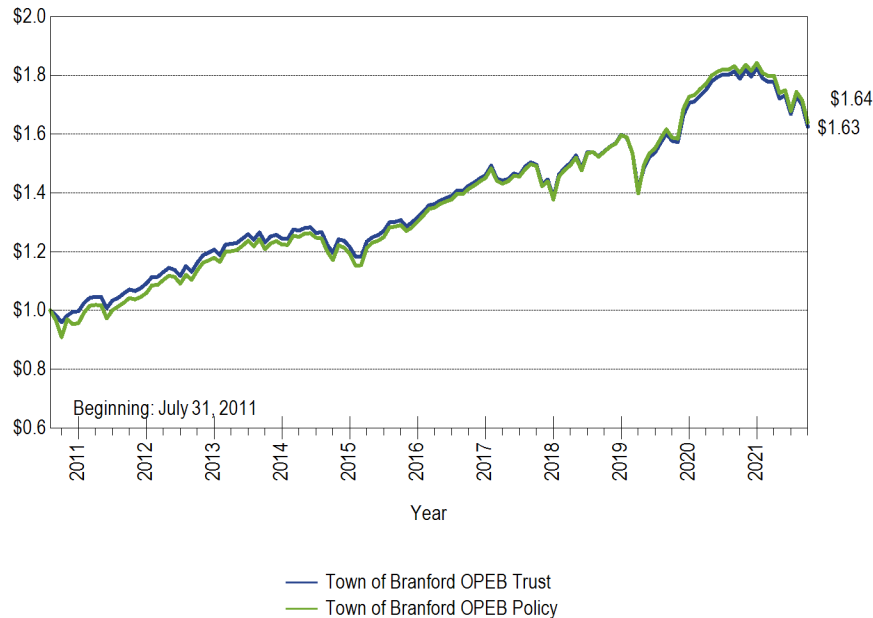
### RISK/RETURN SUMMARY STATISTICS

|                                  |       |      |
|----------------------------------|-------|------|
| Annualized Standard Deviation    | 7.18  | 8.11 |
| Alpha                            | 0.04  | 0.00 |
| Sharpe Ratio                     | 0.53  | 0.48 |
| Excess Return Over Market / Risk | -0.01 | 0.00 |
| Tracking Error                   | 2.20  | 0.00 |
| Information Ratio                | -0.04 | --   |

### CORRELATION STATISTICS

|             |      |      |
|-------------|------|------|
| R-Squared   | 0.93 | 1.00 |
| Correlation | 0.97 | 1.00 |

## Growth of a Dollar



The Growth of Dollar graph and the returns presented above are gross of advisory fees. The returns presented herein will be reduced by advisory and other expenses the client may incur. The Summary of Cash Flows is net of all expenses

## Summary of Cash Flows

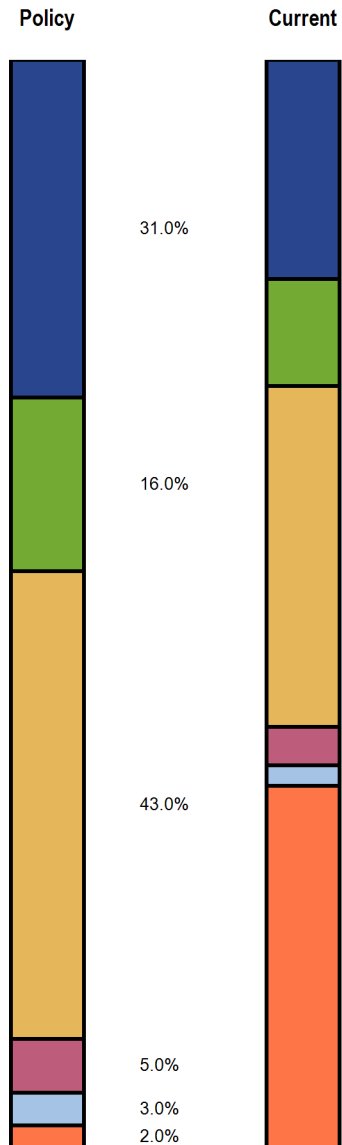
|                        | Last Three Months | Year-To-Date  | Fiscal Year-To-Date | One Year      | Three Years   | Five Years    | Ten Years     | Inception 7/1/11 |
|------------------------|-------------------|---------------|---------------------|---------------|---------------|---------------|---------------|------------------|
| Beginning Market Value | \$34,237,561      | \$37,496,743  | \$34,237,561        | \$36,760,723  | \$18,338,790  | \$13,713,143  | \$6,057,772   | \$4,030,671      |
| Contributions          | \$12,692,553      | \$15,061,326  | \$12,692,553        | \$15,061,981  | \$32,470,909  | \$39,519,463  | \$50,777,049  | \$53,182,237     |
| Withdrawals            | -\$11,840,897     | -\$14,245,492 | -\$11,840,897       | -\$14,265,115 | -\$17,400,703 | -\$21,090,077 | -\$27,531,826 | -\$28,245,550    |
| Net Cash Flow          | \$851,656         | \$815,834     | \$851,656           | \$796,867     | \$15,070,206  | \$18,429,386  | \$23,245,223  | \$24,936,687     |
| Net Investment Change  | -\$926,282        | -\$4,149,641  | -\$926,282          | -\$3,394,654  | \$753,939     | \$2,020,407   | \$4,859,941   | \$5,195,578      |
| Ending Market Value    | \$34,162,936      | \$34,162,936  | \$34,162,936        | \$34,162,936  | \$34,162,936  | \$34,162,936  | \$34,162,936  | \$34,162,936     |

Investment Performance Analysis

Asset Allocation vs. Target Policy

As of September 30, 2022

Asset Allocation vs. Target  
As Of September 30, 2022



|                 | Policy Range  | Policy              | %             | Current             | %             | Difference*  | %      |
|-----------------|---------------|---------------------|---------------|---------------------|---------------|--------------|--------|
| US Equity       | 20.0% - 40.0% | \$10,590,510        | 31.0%         | \$6,862,829         | 20.1%         | -\$3,727,681 | -10.9% |
| Non-US Equity   | 5.0% - 25.0%  | \$5,466,070         | 16.0%         | \$3,349,105         | 9.8%          | -\$2,116,965 | -6.2%  |
| US Fixed Income | 20.0% - 50.0% | \$14,690,062        | 43.0%         | \$10,709,323        | 31.3%         | -\$3,980,740 | -11.7% |
| Alternatives    | 0.0% - 10.0%  | \$1,708,147         | 5.0%          | \$1,205,841         | 3.5%          | -\$502,305   | -1.5%  |
| Real Estate     | 0.0% - 10.0%  | \$1,024,888         | 3.0%          | \$652,086           | 1.9%          | -\$372,802   | -1.1%  |
| Cash            | 0.0% - 5.0%   | \$683,259           | 2.0%          | \$11,383,752        | 33.3%         | \$10,700,493 | 31.3%  |
| <b>Total</b>    |               | <b>\$34,162,936</b> | <b>100.0%</b> | <b>\$34,162,936</b> | <b>100.0%</b> |              |        |

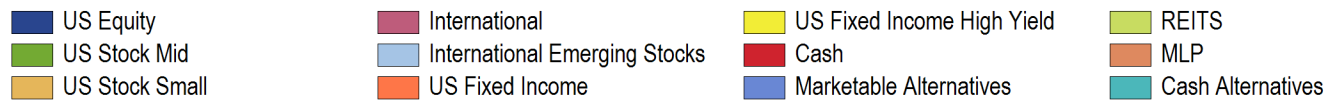
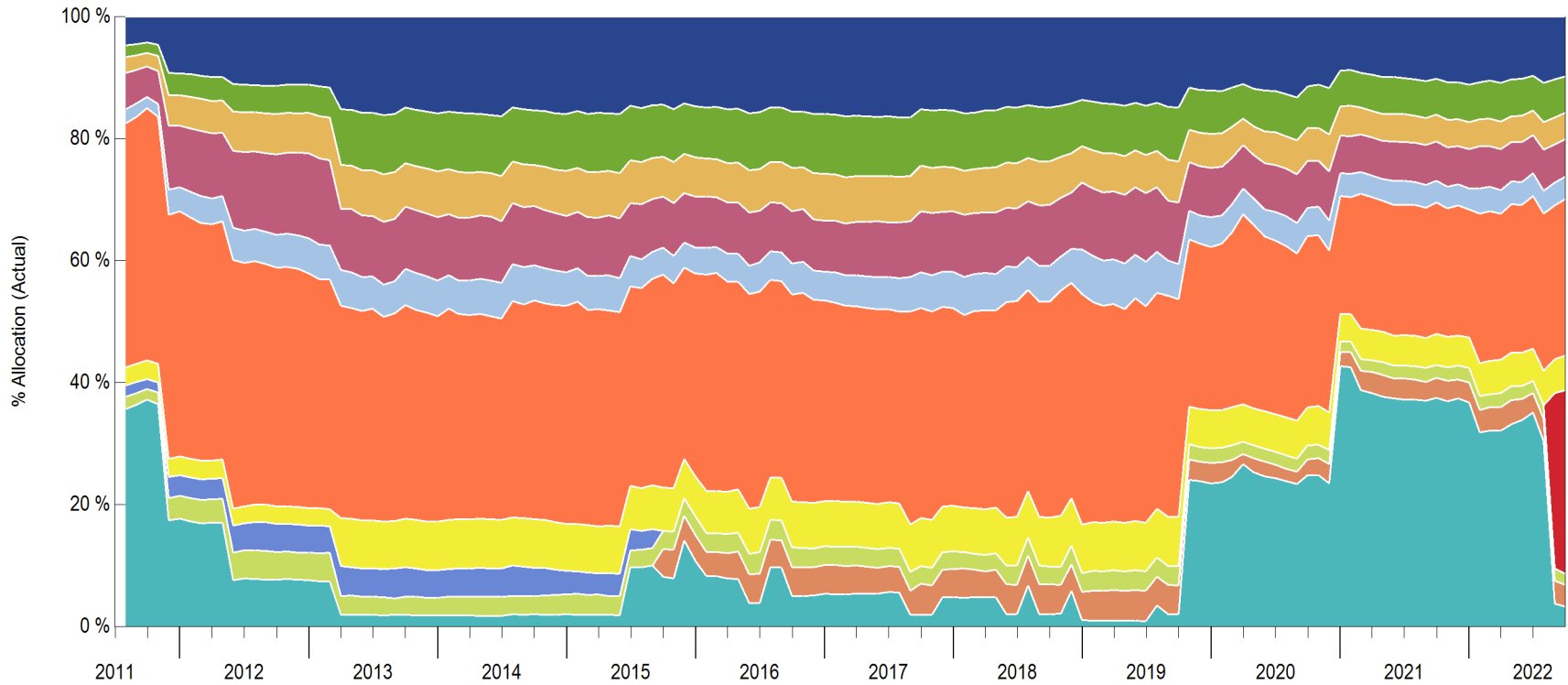
\*Difference between Policy and Current Allocation



Asset Allocation History

As of September 30, 2022

Asset Allocation History  
11 Years 3 Months Ending September 30, 2022



# **Investment Analysis**

*Total Plan*

## Investment Performance Analysis

As of September 30, 2022

**Manager Roster**  
As of September 30, 2022

|                                  | Account Type                  | Benchmark                           | Universe                           | Market Value        | Allocation    | Inception       |
|----------------------------------|-------------------------------|-------------------------------------|------------------------------------|---------------------|---------------|-----------------|
| Alerian MLP                      | MLP                           | Alerian MLP Index                   |                                    | \$1,205,841         | 3.5%          | 9/1/2015        |
| Cash Alternatives                | Cash Alternatives             | FTSE T-Bill 3 Months TR             |                                    | \$1,119,681         | 3.3%          | 7/1/2011        |
| Fixed Income                     | US Fixed Income               | Bloomberg US Govt/Credit Int TR     | US Intermediate Fixed Income       | \$8,781,834         | 25.7%         | 7/1/2011        |
| High Yield                       | US Fixed Income High Yield    | High Yield Bond Blended Benchmark   | High Yield Bond MStar MF           | \$1,927,489         | 5.6%          | 7/1/2011        |
| iShares Dow Jones US Real Estate | REITS                         | iShares U.S. Real Estate Benchmark  | Real Estate MStar MF               | \$652,086           | 1.9%          | 7/1/2011        |
| iShares MSCI EAFE                | International                 | MSCI EAFE                           | Foreign Large Blend MStar MF       | \$2,110,102         | 6.2%          | 7/1/2011        |
| iShares MSCI Emerging Mkts       | International Emerging Stocks | MSCI Emerging Markets               | Diversified Emerging Mkts MStar MF | \$1,239,003         | 3.6%          | 7/1/2011        |
| iShares Russell 2000             | US Stock Small                | Russell 2000                        | Small Blend MStar MF               | \$1,486,549         | 4.4%          | 7/1/2011        |
| iShares S&P 500                  | US Equity                     | S&P 500                             | Large Blend MStar MF               | \$3,359,398         | 9.8%          | 7/1/2011        |
| iShares S&P MidCap 400           | US Stock Mid                  | S&P 400 MidCap                      | Mid-Cap Blend MStar MF             | \$2,016,882         | 5.9%          | 7/1/2011        |
| Treasury Bills                   | Cash                          | FTSE T-Bill 3 Months TR             | US Cash Fixed Income               | \$10,264,070        | 30.0%         | 9/1/2022        |
| <b>Total</b>                     |                               | <b>Town of Branford OPEB Policy</b> |                                    | <b>\$34,162,936</b> | <b>100.0%</b> | <b>7/1/2011</b> |

**Town of Branford OPEB  
Equity Positions  
As of September 30, 2022**

| Holding                          | Market Value           | % of Equity<br>Portfolio |
|----------------------------------|------------------------|--------------------------|
| Cash & Cash Equivalents          | \$11,383,751.77        | 48.54%                   |
| ISHARES S&P 500                  | \$3,359,397.79         | 14.32%                   |
| ISHARES S&P MIDCAP 400           | \$2,016,882.18         | 8.60%                    |
| ISHARES Russell 2000             | \$1,486,548.80         | 6.34%                    |
| ISHARES MSCI EAFE Index ETF      | \$2,110,101.92         | 9.00%                    |
| ISHARES MSCI Emerging Markets    | \$1,239,003.10         | 5.28%                    |
| ISHARES Dow Jones US Real Estate | \$652,086.26           | 2.78%                    |
| Alerian MLP                      | \$1,205,841.33         | 5.14%                    |
|                                  | <b>\$23,453,613.15</b> | <b>100.00%</b>           |

**Town of Branford OPEB Trust  
Fixed Income Positions  
as of September 30, 2022**

| Par (000) | Issuer Name                  | Quality | Coupon | Maturity   | Price   | Mkt Val (000) | % Held (MV) | YTW   | Effective Duration |
|-----------|------------------------------|---------|--------|------------|---------|---------------|-------------|-------|--------------------|
| 144       | CASH & EQUIVALENTS           | AAA     | 1.610  | 07/31/2022 | 100.000 | 144           | 1.68        | 1.610 | 0.084              |
| 65        | NORTHERN TR CORP             | A       | 2.375  | 08/02/2022 | 99.972  | 66            | 0.77        | 2.665 | 0.089              |
| 45        | PHILIP MORRIS INTL INC       | A       | 2.375  | 08/17/2022 | 99.918  | 45            | 0.53        | 2.979 | 0.122              |
| 12        | JPMORGAN CHASE & CO          | A-      | 3.250  | 09/23/2022 | 100.154 | 12            | 0.14        | 2.556 | 0.230              |
| 70        | UNITED STATES TREAS NTS      | AA+     | 0.125  | 10/31/2022 | 99.341  | 70            | 0.81        | 2.110 | 0.333              |
| 30        | CONNECTICUT ST GO BDS 2009B  | A+      | 5.200  | 12/01/2022 | 101.117 | 30            | 0.36        | 2.501 | 0.416              |
| 160       | MORGAN STANLEY               | A-      | 3.125  | 01/23/2023 | 99.972  | 162           | 1.89        | 3.173 | 0.550              |
| 60        | BERKSHIRE HATHAWAY INC DEL   | AA      | 3.000  | 02/11/2023 | 99.832  | 61            | 0.71        | 3.275 | 0.602              |
| 160       | GOLDMAN SACHS GROUP INC      | BBB+    | 3.200  | 02/23/2023 | 100.041 | 162           | 1.89        | 3.124 | 0.606              |
| 75        | UNIVERSITY CALIF REVS GEN R  | AA      | 3.538  | 05/15/2023 | 100.366 | 76            | 0.88        | 3.108 | 0.852              |
| 1         | GNMA POOL - 687736           | AA+     | 5.500  | 07/15/2023 | 100.465 | 1             | 0.01        | 4.063 | 0.447              |
| 65        | GLAXOSMITHKLINE CAP PLC      | A       | 0.534  | 10/01/2023 | 96.642  | 63            | 0.73        | 3.292 | 1.230              |
| 90        | SHELL INTERNATIONAL FIN BV   | A+      | 3.500  | 11/13/2023 | 100.715 | 91            | 1.06        | 2.929 | 1.277              |
| 110       | NATIONAL RURAL UTILS COOP FI | A-      | 3.400  | 11/15/2023 | 99.924  | 110           | 1.29        | 3.455 | 1.227              |
| 100       | CATERPILLAR FINL SVCS MTNS B | A       | 3.750  | 11/24/2023 | 100.907 | 101           | 1.18        | 3.081 | 1.354              |
| 85        | JOHNSON & JOHNSON            | AAA     | 3.375  | 12/05/2023 | 100.502 | 86            | 1.00        | 3.013 | 1.386              |
| 150       | UNITED STATES TREAS NTS      | AA+     | 0.125  | 02/15/2024 | 95.606  | 143           | 1.68        | 2.910 | 1.604              |
| 1         | GNMA POOL - 783221           | AA+     | 6.000  | 02/15/2024 | 100.774 | 1             | 0.01        | 4.125 | 0.508              |
| 61        | BLACKROCK INC                | AA-     | 3.500  | 03/18/2024 | 100.476 | 62            | 0.72        | 3.211 | 1.640              |
| 85        | JPMORGAN CHASE FINL CO LLC   | A-      | 3.100  | 03/24/2024 | 97.712  | 84            | 0.98        | 4.484 | 1.596              |
| 180       | BK OF AMERICA CORP           | A-      | 4.000  | 04/01/2024 | 100.761 | 183           | 2.14        | 3.546 | 1.668              |
| 150       | TRUIST BK CHARLOTTE N C      | A       | 3.200  | 04/01/2024 | 99.604  | 151           | 1.76        | 3.433 | 1.653              |
| 65        | DEERE JOHN CAPITAL CORP      | A       | 3.350  | 06/12/2024 | 99.986  | 65            | 0.76        | 3.357 | 1.872              |
| 100       | ENTERGY GULF STS LA LLC      | A       | 5.590  | 10/01/2024 | 103.359 | 105           | 1.22        | 4.012 | 2.085              |
| 135       | PHILIP MORRIS INTL INC       | A       | 3.250  | 11/10/2024 | 98.778  | 134           | 1.56        | 3.795 | 2.244              |
| 200       | STATE STR CORP               | A       | 3.776  | 12/03/2024 | 99.868  | 200           | 2.34        | 3.870 | 1.374              |
| 40        | UNITED STATES TREAS NTS      | AA+     | 1.000  | 12/15/2024 | 95.316  | 38            | 0.45        | 2.990 | 2.400              |
| 4         | GNMA2 POOL - 004585          | AA+     | 4.500  | 12/20/2024 | 103.773 | 4             | 0.05        | 0.569 | 0.879              |
| 200       | UNITED STATES TREAS NTS      | AA+     | 1.125  | 01/15/2025 | 95.453  | 192           | 2.24        | 2.996 | 2.467              |
| 124       | MERCK & CO INC               | A+      | 2.750  | 02/10/2025 | 98.787  | 124           | 1.45        | 3.237 | 2.396              |
| 140       | EXXON MOBIL CORP             | AA-     | 2.709  | 03/06/2025 | 97.894  | 138           | 1.62        | 3.538 | 2.477              |
| 185       | UNITED STATES TREAS NTS      | AA+     | 1.750  | 03/15/2025 | 96.781  | 180           | 2.10        | 2.995 | 2.604              |
| 120       | CHARLES SCHWAB CORP          | A       | 4.200  | 03/24/2025 | 101.458 | 123           | 1.44        | 3.617 | 2.489              |
| 120       | DEERE & CO                   | A       | 2.750  | 04/15/2025 | 97.899  | 118           | 1.38        | 3.546 | 2.624              |
| 3         | GNMA2 POOL - 004687          | AA+     | 4.500  | 05/20/2025 | 103.811 | 3             | 0.04        | 1.076 | 1.011              |
| 80        | DEERE JOHN CAPITAL CORP      | A       | 3.400  | 06/06/2025 | 99.646  | 80            | 0.93        | 3.527 | 2.763              |
| 50        | BERKSHIRE HATHAWAY INC DEL   | AA      | 7.250  | 06/15/2025 | 108.928 | 55            | 0.64        | 4.018 | 2.668              |
| 130       | UNITED STATES TREAS NTS      | AA+     | 2.000  | 08/15/2025 | 96.988  | 127           | 1.48        | 3.016 | 2.978              |
| 187       | BP CAP MKTS AMER INC         | A-      | 3.796  | 09/21/2025 | 100.428 | 190           | 2.22        | 3.647 | 2.911              |
| 70        | WELLS FARGO & CO             | BBB+    | 3.550  | 09/29/2025 | 98.316  | 69            | 0.81        | 4.108 | 3.009              |
| 65        | PROCTER & GAMBLE CO          | AA-     | 2.700  | 02/02/2026 | 98.315  | 65            | 0.75        | 3.200 | 3.360              |
| 3         | GNMA2 POOL - 004954          | AA+     | 3.000  | 02/20/2026 | 98.431  | 3             | 0.04        | 4.014 | 1.421              |
| 180       | APPLE INC                    | AA+     | 3.250  | 02/23/2026 | 99.388  | 181           | 2.11        | 3.429 | 3.285              |
| 310       | UNITED STATES TREAS NTS      | AA+     | 0.500  | 02/28/2026 | 91.258  | 283           | 3.31        | 3.036 | 3.579              |
| 125       | US BANCORP                   | A       | 3.100  | 04/27/2026 | 96.570  | 121           | 1.42        | 4.077 | 3.527              |

**Town of Branford OPEB Trust  
Fixed Income Positions  
as of September 30, 2022**

| Par (000) | Issuer Name                  | Quality | Coupon | Maturity   | Price   | Mkt Val (000) | % Held (MV) | YTW   | Effective Duration |
|-----------|------------------------------|---------|--------|------------|---------|---------------|-------------|-------|--------------------|
| 100       | UNITED STATES TREAS NTS      | AA+     | 0.750  | 04/30/2026 | 91.789  | 92            | 1.07        | 3.035 | 3.726              |
| 30        | SIERRA PAC PWR CO            | A       | 2.600  | 05/01/2026 | 95.221  | 29            | 0.34        | 3.954 | 3.546              |
| 124       | BANK NEW YORK MELLON CORP    | A       | 2.800  | 05/04/2026 | 96.426  | 120           | 1.40        | 3.807 | 3.531              |
| 115       | UNITED STATES TREAS NTS      | AA+     | 1.625  | 05/15/2026 | 94.887  | 109           | 1.28        | 3.033 | 3.708              |
| 150       | JPMORGAN CHASE & CO          | A-      | 3.200  | 06/15/2026 | 96.598  | 145           | 1.69        | 4.140 | 3.613              |
| 46        | UNITED STATES TREAS NTS      | AA+     | 1.875  | 07/31/2026 | 95.652  | 44            | 0.52        | 3.014 | 3.864              |
| 66        | MICROSOFT CORP               | AAA     | 2.400  | 08/08/2026 | 96.230  | 64            | 0.75        | 3.391 | 3.778              |
| 160       | UNITED STATES TREAS NTS      | AA+     | 0.750  | 08/31/2026 | 91.152  | 146           | 1.71        | 3.025 | 4.044              |
| 100       | TJX COS INC NEW              | A       | 2.250  | 09/15/2026 | 93.879  | 95            | 1.10        | 3.838 | 3.904              |
| 190       | PEPSICO INC                  | A+      | 2.375  | 10/06/2026 | 95.907  | 183           | 2.14        | 3.413 | 3.941              |
| 150       | UNITED STATES TREAS NTS      | AA+     | 1.250  | 11/30/2026 | 92.723  | 139           | 1.63        | 3.022 | 4.247              |
| 30        | UNITED STATES TREAS NTS      | AA+     | 1.625  | 11/30/2026 | 94.227  | 28            | 0.33        | 3.031 | 4.215              |
| 47        | PFIZER INC                   | A       | 3.000  | 12/15/2026 | 97.955  | 46            | 0.54        | 3.499 | 4.135              |
| 200       | UNITED STATES TREAS NTS      | AA+     | 1.500  | 01/31/2027 | 93.504  | 188           | 2.20        | 3.028 | 4.360              |
| 90        | MICROSOFT CORP               | AAA     | 3.300  | 02/06/2027 | 99.498  | 91            | 1.06        | 3.418 | 4.096              |
| 110       | NIKE INC                     | A+      | 2.750  | 03/27/2027 | 96.373  | 107           | 1.25        | 3.588 | 4.326              |
| 200       | CHEVRON CORPORATION          | AA-     | 1.995  | 05/11/2027 | 92.059  | 185           | 2.16        | 3.798 | 4.538              |
| 140       | COCA COLA CO                 | A+      | 2.900  | 05/25/2027 | 97.329  | 137           | 1.60        | 3.497 | 4.518              |
| 75        | JOHNSON & JOHNSON            | AAA     | 2.900  | 01/15/2028 | 96.772  | 74            | 0.86        | 3.547 | 4.923              |
| 195       | UNITED STATES TREAS NTS      | AA+     | 2.750  | 02/15/2028 | 98.418  | 194           | 2.27        | 3.058 | 5.128              |
| 200       | UNITED STATES TREAS NTS      | AA+     | 1.125  | 02/29/2028 | 90.074  | 181           | 2.11        | 3.045 | 5.402              |
| 100       | UNITED STATES TREAS NTS      | AA+     | 1.250  | 04/30/2028 | 90.356  | 91            | 1.06        | 3.068 | 5.546              |
| 90        | UNITED STATES TREAS NTS      | AA+     | 2.875  | 05/15/2028 | 99.000  | 89            | 1.04        | 3.062 | 5.354              |
| 20        | HORMEL FOODS CORP            | A       | 1.700  | 06/03/2028 | 88.348  | 18            | 0.21        | 3.923 | 5.515              |
| 60        | BURLINGTON NORTHN SANTA FE C | A-      | 6.700  | 08/01/2028 | 111.769 | 69            | 0.80        | 4.469 | 4.936              |
| 115       | UNITED STATES TREAS NTS      | AA+     | 3.125  | 11/15/2028 | 100.391 | 116           | 1.35        | 3.057 | 5.733              |
| 60        | WELLS FARGO & CO             | BBB+    | 4.150  | 01/24/2029 | 96.865  | 59            | 0.69        | 4.710 | 5.495              |
| 160       | UNITED STATES TREAS NTS      | AA+     | 2.625  | 02/15/2029 | 97.547  | 158           | 1.84        | 3.036 | 5.978              |
| 10        | TOYOTA MTR CR CORP           | A+      | 4.450  | 06/29/2029 | 101.416 | 10            | 0.12        | 4.214 | 5.975              |
| 79        | UNITED STATES TREAS NTS      | AA+     | 1.625  | 08/15/2029 | 91.234  | 73            | 0.85        | 3.000 | 6.600              |
| 98        | UNITED STATES TREAS NTS      | AA+     | 1.750  | 11/15/2029 | 91.953  | 90            | 1.06        | 2.973 | 6.821              |
| 10        | PROCTER & GAMBLE CO          | AA-     | 3.000  | 03/25/2030 | 94.574  | 10            | 0.11        | 3.816 | 6.754              |
| 120       | CATERPILLAR INC              | A       | 2.600  | 04/09/2030 | 90.725  | 110           | 1.28        | 3.999 | 6.817              |
| 190       | 3M CO                        | A+      | 3.050  | 04/15/2030 | 93.504  | 179           | 2.09        | 4.029 | 6.717              |
| 105       | TJX COS INC NEW              | A       | 3.875  | 04/15/2030 | 97.511  | 103           | 1.21        | 4.253 | 6.513              |
| 10        | YALE UNIV MTN BE             | AAA     | 1.482  | 04/15/2030 | 84.954  | 9             | 0.10        | 3.724 | 7.155              |
| 50        | NORTHERN TR CORP             | A       | 1.950  | 05/01/2030 | 85.150  | 43            | 0.50        | 4.193 | 7.045              |
| 80        | UNITED STATES TREAS NTS      | AA+     | 0.875  | 11/15/2030 | 84.637  | 68            | 0.79        | 2.959 | 7.944              |
| 72        | SALESFORCE INC               | A       | 1.950  | 07/15/2031 | 85.241  | 62            | 0.72        | 3.903 | 7.979              |
| 60        | NEW YORK N Y CITY TRANSITIO  | AA+     | 3.900  | 08/01/2031 | 97.612  | 60            | 0.70        | 4.219 | 6.358              |
| 80        | UNITED STATES TREAS NTS      | AA+     | 2.875  | 05/15/2032 | 99.172  | 80            | 0.93        | 2.972 | 8.512              |
| 70        | TEXAS TRANSN COMMN ST HWY F  | AAA     | 4.000  | 10/01/2033 | 99.245  | 70            | 0.82        | 4.087 | 8.605              |
| 17        | GNMA 2013-105- A             | AA+     | 1.705  | 02/16/2037 | 98.984  | 17            | 0.20        | 4.085 | 0.533              |

**Town of Branford OPEB Trust  
Fixed Income Positions  
as of September 30, 2022**

| <b>Par (000)</b> | <b>Issuer Name</b>       | <b>Quality</b> | <b>Coupon</b> | <b>Maturity</b> | <b>Price</b>  | <b>Mkt Val (000)</b> | <b>% Held (MV)</b> | <b>YTW</b>   | <b>Effective Duration</b> |
|------------------|--------------------------|----------------|---------------|-----------------|---------------|----------------------|--------------------|--------------|---------------------------|
| 3                | GNMA POOL - 782371       | AA+            | 5.000         | 08/15/2038      | 106.051       | 3                    | 0.03               | 3.645        | 3.644                     |
| 12               | PFIZER INC               | A              | 4.100         | 09/15/2038      | 96.933        | 12                   | 0.14               | 4.366        | 11.610                    |
| 29               | FHLMC GOLD POOL - Q09424 | AA+            | 3.500         | 07/01/2042      | 98.513        | 28                   | 0.33               | 3.761        | 4.953                     |
| 45               | NORTHERN STS PWR CO MINN | A              | 3.600         | 09/15/2047      | 84.516        | 39                   | 0.45               | 4.649        | 15.515                    |
| <b>8,797</b>     |                          | <b>AA-</b>     | <b>2.588</b>  | <b>3.925</b>    | <b>96.700</b> | <b>8,560</b>         | <b>100.00</b>      | <b>3.380</b> | <b>3.541</b>              |

**Town of Branford OPEB  
High Yield Positions  
As of September 30, 2022**

| Holding                            | Market Value   | % of High<br>Yield<br>Portfolio |
|------------------------------------|----------------|---------------------------------|
| Cash & Cash Equivalents            | \$0.47         | 0.00%                           |
| MainStay MacKay High Yield Corp Bd | 1,927,488.45   | 100.00%                         |
|                                    | \$1,927,488.92 | 100.00%                         |



## Historical Policy

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|                        |                       |   |
|------------------------|-----------------------|---|
| 7/1/2011 to 2/28/2013  | 40.00                 | Barclays Capital Int Govt/Credit        |
|                        | 12.00                 | S&P 500                                 |
|                        | 15.00                 | MSCI EAFE (Net)                         |
|                        | 7.00                  | Russell 2000                            |
|                        | 6.00                  | MSCI Emerging Market (Net)              |
|                        | 5.00                  | S&P 400 Mid Cap                         |
|                        | 5.00                  | Dow USA Real Estate                     |
|                        | 5.00                  | Bloomberg Commodity Index               |
|                        | 3.00                  | Barclays Capital High Yield Very Liquid |
|                        | 2.00                  | Citigroup Treasury Bill-3 Month         |
|                        | 3/1/2013 to 8/31/2015 | 35.00                                   |
| 15.00                  |                       | S&P 500                                 |
| 10.00                  |                       | MSCI EAFE (Net)                         |
| 9.00                   |                       | S&P 400 Mid Cap                         |
| 8.00                   |                       | Barclays Capital High Yield Very Liquid |
| 7.00                   |                       | Russell 2000                            |
| 6.00                   |                       | MSCI Emerging Market (Net)              |
| 5.00                   |                       | Bloomberg Commodity Index               |
| 3.00                   |                       | Dow USA Real Estate                     |
| 2.00                   |                       | Citigroup Treasury Bill-3 Month         |
| 9/1/2015 to 12/31/2018 |                       | 35.00                                   |
|                        | 15.00                 | S&P 500                                 |
|                        | 10.00                 | MSCI EAFE (Net)                         |
|                        | 9.00                  | S&P 400 Mid Cap                         |
|                        | 8.00                  | Barclays Capital High Yield Very Liquid |
|                        | 7.00                  | Russell 2000                            |
|                        | 6.00                  | MSCI Emerging Market (Net)              |
|                        | 5.00                  | Alerian MLP Index                       |
|                        | 3.00                  | Dow USA Real Estate                     |
|                        | 2.00                  | Citigroup Treasury Bill-3 Month         |
|                        | 1/1/2019 to 2/28/2019 | 36.00                                   |
| 14.50                  |                       | S&P 500                                 |
| 12.50                  |                       | MSCI EAFE (Net)                         |
| 8.50                   |                       | MSCI Emerging Market (Net)              |
| 8.00                   |                       | Barclays Capital High Yield Very Liquid |
| 5.50                   |                       | S&P 400 Mid Cap                         |
| 5.50                   |                       | Russell 2000                            |
| 5.25                   |                       | Alerian MLP Index                       |
| 3.25                   |                       | Dow USA Real Estate                     |
| 1.00                   |                       | Citigroup Treasury Bill-3 Month         |
| 3/1/2019 to 5/31/2019  |                       | 35.00                                   |
|                        | 15.00                 | S&P 500                                 |

|                         |       |   |
|-------------------------|-------|---|
|                         | 10.00 | MSCI EAFE (Net)                         |
|                         | 9.00  | S&P 400 Mid Cap                         |
|                         | 8.00  | Barclays Capital High Yield Very Liquid |
|                         | 7.00  | Russell 2000                            |
|                         | 6.00  | MSCI Emerging Market (Net)              |
|                         | 5.00  | Alerian MLP Index                       |
|                         | 3.00  | Dow USA Real Estate                     |
|                         | 2.00  | Citigroup Treasury Bill-3 Month         |
| 6/1/2019 to 10/31/2019  | 35.00 | Barclays Capital Int Govt/Credit        |
|                         | 15.00 | S&P 500                                 |
|                         | 10.00 | MSCI EAFE (Net)                         |
|                         | 9.00  | S&P 400 Mid Cap                         |
|                         | 8.00  | BofAML US High Yield Constrained        |
|                         | 7.00  | Russell 2000                            |
|                         | 6.00  | MSCI Emerging Market (Net)              |
|                         | 5.00  | Alerian MLP Index                       |
|                         | 3.00  | Dow USA Real Estate                     |
|                         | 2.00  | Citigroup Treasury Bill-3 Month         |
| 11/1/2019 to 12/31/2020 | 27.10 | Barclays Capital Int Govt/Credit        |
|                         | 24.00 | Citigroup Treasury Bill-3 Month         |
|                         | 11.70 | S&P 500                                 |
|                         | 8.10  | MSCI EAFE (Net)                         |
|                         | 6.90  | S&P 400 Mid Cap                         |
|                         | 6.20  | BofAML US High Yield Constrained        |
|                         | 5.40  | Russell 2000                            |
|                         | 4.70  | MSCI Emerging Market (Net)              |
|                         | 3.40  | Alerian MLP Index                       |
|                         | 2.50  | Dow USA Real Estate                     |
| 1/1/2021 to 1/31/2021   | 42.50 | Citigroup Treasury Bill-3 Month         |
|                         | 19.30 | Barclays Capital Int Govt/Credit        |
|                         | 8.80  | S&P 500                                 |
|                         | 6.20  | MSCI EAFE (Net)                         |
|                         | 5.90  | S&P 400 Mid Cap                         |
|                         | 4.80  | Russell 2000                            |
|                         | 4.60  | BofAML US High Yield Constrained        |
|                         | 3.80  | MSCI Emerging Market (Net)              |
|                         | 2.40  | Alerian MLP Index                       |
|                         | 1.70  | Dow USA Real Estate                     |
| 2/1/2021 to 1/31/2022   | 42.50 | Citigroup Treasury Bill-3 Month         |
|                         | 19.30 | Barclays Capital Int Govt/Credit        |
|                         | 8.80  | S&P 500                                 |
|                         | 6.20  | MSCI EAFE (Net)                         |
|                         | 5.90  | S&P 400 Mid Cap                         |
|                         | 4.80  | Russell 2000                            |
|                         | 4.60  | BofAML US High Yield Constrained        |

|                     |       |                                  |
|---------------------|-------|----------------------------------|
|                     | 3.80  | MSCI Emerging Market (Net)       |
|                     | 2.40  | Alerian MLP Index                |
|                     | 1.70  | Dow USA Real Estate Capped       |
| 2/1/2022 to Present | 31.90 | Citigroup Treasury Bill-3 Month  |
|                     | 24.40 | Barclays Capital Int Govt/Credit |
|                     | 10.70 | S&P 500                          |
|                     | 6.90  | MSCI EAFE (Net)                  |
|                     | 6.10  | S&P 400 Mid Cap                  |
|                     | 5.40  | BofAML US High Yield Constrained |
|                     | 4.50  | Russell 2000                     |
|                     | 4.20  | MSCI Emerging Market (Net)       |
|                     | 3.60  | Alerian MLP Index                |
|                     | 2.30  | Dow USA Real Estate Capped       |

# Definitions

- Accrued** – Usually associated with interest or income, as in accrued interest; interest owed by the issuer but not yet paid.
- Allocation Effect** – In attribution analysis, this examines the gain or loss achieved from over or under weighting a manager versus its targeted allocation.
- Alpha** – Value that is added by the manager, or the non-systematic return; the excess portfolio return compared to the risk-adjusted benchmark. A positive alpha implies the manager has added value to the return over that of the market.
- Alpha-Jensen** – A version of alpha that utilizes risk-adjusted manager returns in its calculation.
- Attribution Analysis** – A tool to separate and examine the different sources of gain or loss from an overall investment policy and targeted asset allocation.
- Batting Average** – Measure of a fund or manager's ability to beat the market consistently. It is calculated by dividing the number of quarters in which the fund or manager outperformed its benchmark by the number of quarters in the analysis.
- Best Quarter** – The largest single quarterly return which occurred during the specified time period.
- Beta** – Measures the systematic risk, or the return that is attributable to market movements. A beta equal to one indicates a risk level equivalent to the market. Higher betas are associated with higher risk levels.
- Consumer Discretionary** – Sector classification of companies that produce goods that are not necessities, like automobiles, high-end clothing, hotels, and restaurants.
- Consumer Staples** – Sector classification of companies that produce necessities like food/beverage and household products.
- Correlation Coefficient** – Statistical measure of the degree to which the movements of two variables are related. A correlation of 1.0 indicates a perfect positive correlation; 0.0 indicates a random relationship; -1.0 indicates perfect negative correlation.
- Credit Risk** – A measure of the default risk on amounts due from policyholder or creditors.
- Current Yield** – A bond's coupon rate divided by the bond's current price.
- Dividend Yield** – The current dividend per share of a stock divided by its current price per share.
- Dollar/Money Weighted Rate of Return** – Measure of portfolio returns that includes the impact from cash flows.
- Down Market** – A quarter in which the market return is negative.
- Downside Deviation** – Standard deviation of negative returns only.
- Duration** – A measure of a bond's price volatility relative to a change in the general level of interest rates, measured in years. In general, bonds with longer durations have greater sensitivity to interest rates and vice-versa.
- Earnings Per Share (EPS)** – The portion of a company's profit allocated to each outstanding share of common stock.
- Earnings Per Share Growth Rate** – The rate at which the earnings per share grows over various time periods.
- Energy** – Sector classification of companies that relate to producing or supplying energy.
- Excess Return over Market/Risk** – Annualized excess return achieved by the manager divided by annualized standard deviation.
- Financials** – Sector classification of companies that provide banking, investment, and real estate services to commercial and retail customers.
- Health Care** – Sector classification of companies that provide health related services or products.
- Information Ratio** – Measures the consistency of out-performance. Excess return divided by Standard deviation of excess return.
- Information Technology** – Sector classification of companies that are involved in the development, installation, and implementation of computer systems and applications.
- Industrials** – Sector classification of companies that manufacture or distribute goods.
- Manager Effect** – In attribution analysis, this examines the difference between a manager's returns versus his or her respective benchmark.

# Definitions

- Materials** – Sector classification of companies that are involved in the discovery, development, and processing of raw materials.
- Maturity** – Date when the principal or stated value of a fixed income security becomes due and payable in full to the bondholder.
- Policy Allocation** – Targeted allocation across various asset classes and/or managers.
- Price to Book Ratio (P/B)** – The current price of a stock divided by its book value per share.
- Price to Earnings Ratio (P/E)** – The current price of a stock divided by its earnings per share.
- Quality Rating** – Bond issuer's credit quality, or its ability to meet future contractual obligations. (Moody's and S&P's)
- R-Squared** – Measure of how closely related are the variance of a manager's returns to the variance of the benchmark's returns.
- Range** – The difference between the Best Quarter and the Worst Quarter returns.
- Return on Equity (ROE)** – Equity (net worth) at the beginning of an accounting period divided into net income for the period.
- Return/Risk Comparison** – Analysis that exhibits the rate of return in relation to the volatility of those returns as measured by the annualized standard deviation of quarterly returns.
- Risk Free** – The equivalent of an investment with little to no risk of market loss, typically defined as short term Treasury bills.
- Sharpe Ratio** – This measures excess return per unit of risk. A higher ratio means the manager is achieving higher return for the risk.
- Sortino Ratio** – Similar to Sharpe Ratio, this measures excess return per unit of downside risk.
- Standard Deviation** – A statistical measure of portfolio risk, it measures the volatility of a fund's returns compared to the average return of the fund. It reflects the average deviation of the observations from their sample mean.
- Telecommunication Service** – Sector classification of companies that provide communication technology related services or products.
- Time-Weighted Rate of Return** – Minimizes the impact of cash flows on rate of return calculations.
- Total Return** – For bonds, the sum of interest and principal payments as well as any reinvestment income received over a holding or measurement period, plus any capital gain or loss if the bond is sold at the end of the period.
- Tracking Error** – How closely a fund or manager's returns track the returns of a benchmark.; the annualized standard deviation of the differences between the fund or manager's return and the benchmark's return.
- Transportation** – Sector classification of companies that provide transportation related services or products.
- Treynor Ratio** – Risk is measured using Beta, which is an index dependent measure; relates the difference between the fund return and the risk-free rate to the fund beta for a given time period.
- Universe** – A broadly defined group of investment managers. For example, a group of equity investment managers.
- Up Market** – A quarter in which the market return is positive.
- Upside Deviation** – the standard deviation of positive returns only.
- Upside/Downside** – A graphical representation of up market and down market returns, measured as percentages versus benchmark.
- Utilities** – Sector classification of companies that own or operate facilities used in the generation, transmission, or distribution of electric energy.
- Worst Four Quarters** – Smallest return experienced over any four consecutive quarters, may not correspond with calendar years.
- Worst Quarter** – The worst single quarterly return which occurred during the specified time period.
- Yield** – The return to a bondholder who holds a bond until it matures.
- Yield to Maturity** – Internal rate of return on a bond bought at the current price and held to maturity. This assumes that coupon income is reinvested at the yield to maturity.

# Disclosures

**DATA SOURCES:** The information found in this document was derived from one or more of the following sources: InvestorForce, Morningstar, custodial account statements, money managers.

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