

FLASH REPORT (GROSS)

Boston Retirement System

December 31, 2020

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BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

CALENDAR YEAR INDEX PERFORMANCE

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | Dec | YTD |
|---------------------------------|-------|--------|-------|--------|--------|--------|-------|-------|--------|-------|-------|--------|
| S&P 500 | 15.1% | 2.1% | 16.0% | 32.4% | 13.7% | 1.4% | 12.0% | 21.8% | -4.4% | 31.5% | 3.8% | 18.4% |
| Russell 1000 | 16.1% | 1.5% | 16.4% | 33.1% | 13.2% | 0.9% | 12.1% | 21.7% | -4.8% | 31.4% | 4.2% | 21.0% |
| Russell 2000 | 26.9% | -4.2% | 16.3% | 38.8% | 4.9% | -4.4% | 21.3% | 14.6% | -11.0% | 25.5% | 8.7% | 20.0% |
| Russell 2500 | 26.7% | -2.5% | 17.9% | 36.8% | 7.1% | -2.9% | 17.6% | 16.8% | -10.0% | 27.8% | 7.6% | 20.0% |
| MSCI EAFE | 7.8% | -12.1% | 17.3% | 22.8% | -4.9% | -0.8% | 1.0% | 25.0% | -13.8% | 22.0% | 4.6% | 7.8% |
| MSCI EM | 18.9% | -18.4% | 18.2% | -2.6% | -2.2% | -14.9% | 11.2% | 37.3% | -14.6% | 18.4% | 7.4% | 18.3% |
| MSCI ACWI | 12.7% | -7.3% | 16.1% | 22.8% | 4.2% | -2.4% | 7.9% | 24.0% | -9.4% | 26.6% | 4.6% | 16.3% |
| Private Equity | 19.8% | 9.5% | 12.6% | 22.3% | 14.6% | 10.4% | 10.3% | 21.0% | 13.1% | 17.2% | - | 1.8% |
| BC TIPS | 6.3% | 13.6% | 7.0% | -8.6% | 3.6% | -1.4% | 4.7% | 3.0% | -1.3% | 8.4% | 1.1% | 11.0% |
| BC Municipal | 2.4% | 10.7% | 6.8% | -2.6% | 9.1% | 3.3% | 0.2% | 5.4% | 1.3% | 7.5% | 0.6% | 5.2% |
| BC Muni High Yield | 7.8% | 9.2% | 18.1% | -5.5% | 13.8% | 1.8% | 3.0% | 9.7% | 4.8% | 10.7% | 1.9% | 4.9% |
| BC US Corporate HY | 15.1% | 5.0% | 15.8% | 7.4% | 2.5% | -4.5% | 17.1% | 7.5% | -2.1% | 14.3% | 1.9% | 7.1% |
| BC US Agg Bond | 6.5% | 7.8% | 4.2% | -2.0% | 6.0% | 0.5% | 2.6% | 3.5% | 0.0% | 8.7% | 0.1% | 7.5% |
| BC Global Agg | 5.5% | 5.6% | 4.3% | -2.6% | 0.6% | -3.2% | 2.1% | 7.4% | -1.2% | 6.8% | 1.3% | 9.2% |
| BC Long Treasuries | 9.4% | 29.9% | 3.6% | -12.7% | 25.1% | -1.2% | 1.3% | 8.5% | -1.8% | 14.8% | -1.2% | 17.7% |
| BC US Long Credit | 10.7% | 17.1% | 12.7% | -6.6% | 16.4% | -4.6% | 10.2% | 12.2% | -6.8% | 23.4% | 0.4% | 13.3% |
| BC US STRIPS 20+ Yr | 10.9% | 58.5% | 3.0% | -21.0% | 46.4% | -3.7% | 1.4% | 13.7% | -4.1% | 20.9% | -1.5% | 24.0% |
| JPM GBI-EM Global Div | 15.7% | -1.8% | 16.8% | -9.0% | -5.7% | -14.9% | 9.9% | 15.2% | -6.2% | 13.5% | 3.5% | 2.7% |
| JPM EMBI Glob Div | 12.2% | 7.3% | 17.4% | -5.3% | 7.4% | 1.2% | 10.2% | 10.3% | -4.3% | 15.0% | 1.9% | 5.3% |
| CS Hedge Fund | 10.9% | -2.5% | 7.7% | 9.7% | 4.1% | -0.7% | 1.2% | 7.1% | -3.2% | 9.3% | - | 2.5% |
| BBG Commodity | 16.8% | -13.3% | -1.1% | -9.5% | -17.0% | -24.7% | 11.8% | 1.7% | -11.2% | 7.7% | 5.0% | -3.1% |
| Alerian MLP | 35.9% | 13.9% | 4.8% | 27.6% | 4.8% | -32.6% | 18.3% | -6.5% | -12.4% | 6.6% | 2.5% | -28.7% |
| FTSE NAREIT Equity REITs | 28.0% | 8.3% | 18.1% | 2.5% | 30.1% | 3.2% | 8.5% | 5.2% | -4.6% | 26.0% | 3.3% | -8.0% |

Source: FactSet, Barclays, Thomson One

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

| | Market Value (\$) | % of Portfolio | Policy % | 1 Mo (%) | 3 Mo (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | 10 Yrs (%) | Inception (%) | Inception Date |
|------------------------------|----------------------|-------------------|--------------|-------------|-------------|-------------|--------------|--------------|---------------|------------------|-------------------|
| Total Fund | 6,011,574,976 | 100.0 | 100.0 | 3.9 | 10.6 | 12.3 | 7.4 | 9.4 | 7.9 | 8.0 | Aug-94 |
| Allocation Index | | | | 4.2 | 10.9 | 12.1 | 7.6 | 9.4 | 7.6 | -- | Aug-94 |
| Policy Index | | | | 4.4 | 11.0 | 12.7 | 8.5 | 10.1 | 8.1 | -- | Aug-94 |
| PRIT Core Fund/Teachers* | 1,841,023,841 | 30.6 | | 4.4 | 9.8 | 12.6 | 8.8 | 10.4 | 8.9 | 10.0 | Jul-10 |
| Total Equity | 3,142,258,079 | 52.3 | 48.0 | 5.5 | 17.5 | 16.9 | 9.1 | 12.3 | -- | -- | Dec-04 |
| MSCI ACWI | | | | 4.6 | 14.7 | 16.3 | 10.1 | 12.3 | 9.1 | 7.6 | Dec-04 |
| Large Cap Comp | 1,233,741,683 | 20.5 | 17.0 | 4.5 | 15.1 | 27.8 | 17.0 | 17.5 | 15.4 | 11.0 | Dec-04 |
| Rhumblin Advisors | 326,028,120 | 5.4 | | 3.8 | 12.1 | 18.4 | 14.1 | 15.2 | 13.8 | 10.4 | Aug-94 |
| DE Shaw Core Enhanced | 421,490,010 | 7.0 | | 4.3 | 13.1 | 19.9 | 15.1 | 16.2 | 14.7 | 15.1 | Oct-09 |
| Russell 1000 | | | | 4.2 | 13.7 | 21.0 | 14.8 | 15.6 | 14.0 | 14.5 | Oct-09 |
| Aristotle Value | 161,522,053 | 2.7 | | 4.8 | 15.8 | 14.7 | -- | -- | -- | 19.5 | Nov-19 |
| Columbia Threadneedle | 150,372,169 | 2.5 | | 3.8 | 17.8 | 8.3 | 7.3 | 12.4 | 12.6 | 9.8 | Jan-97 |
| Russell 1000 Value | | | | 3.8 | 16.3 | 2.8 | 6.1 | 9.7 | 10.5 | 8.3 | Jan-97 |
| Zevenbergen Capital | 173,919,812 | 2.9 | | 6.9 | 23.1 | 124.3 | 48.9 | 34.3 | 23.0 | 15.3 | Aug-94 |
| Russell 1000 Growth | | | | 4.6 | 11.4 | 38.5 | 23.0 | 21.0 | 17.2 | 11.1 | Aug-94 |
| Small Cap Comp | 449,890,639 | 7.5 | 6.0 | 7.8 | 25.7 | 20.3 | 12.8 | 15.4 | 13.0 | 10.7 | Dec-04 |
| Westfield Capital Management | 129,972,078 | 2.2 | | 8.2 | 22.1 | 34.7 | 19.5 | 18.5 | 15.0 | 12.8 | Sep-03 |
| Russell 2000 Growth | | | | 9.3 | 29.6 | 34.6 | 16.2 | 16.4 | 13.5 | 10.9 | Sep-03 |
| Bernzott | 146,259,309 | 2.4 | | 7.2 | 24.8 | 16.2 | 12.2 | 16.3 | -- | 14.3 | Nov-15 |
| Russell 2000 Value | | | | 7.9 | 33.4 | 4.6 | 3.7 | 9.7 | 8.7 | 8.8 | Nov-15 |
| Aristotle Small Cap | 173,485,956 | 2.9 | | 7.9 | 29.7 | 11.7 | 7.3 | 12.1 | -- | 11.2 | Nov-15 |
| Russell 2000 | | | | 8.7 | 31.4 | 20.0 | 10.2 | 13.3 | 11.2 | 12.4 | Nov-15 |

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

| | Market Value (\$) | % of Portfolio | Policy % | 1 Mo (%) | 3 Mo (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | 10 Yrs (%) | Inception (%) | Inception Date |
|--|----------------------|-------------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|------------------|-------------------|
| Total Non-US Equity | 1,458,625,757 | 24.3 | 25.0 | 5.7 | 17.2 | 7.2 | 2.5 | 7.7 | 4.6 | 6.3 | Aug-94 |
| International Equity | 979,782,170 | 16.3 | 17.0 | 5.2 | 15.9 | 5.0 | 2.2 | 6.3 | 5.1 | 6.0 | Dec-10 |
| Todd | 282,932,930 | 4.7 | | 5.3 | 20.3 | 10.5 | 5.4 | -- | -- | 8.8 | Apr-16 |
| <i>MSCI ACWI ex USA</i> | | | | 5.4 | 17.0 | 10.7 | 4.9 | 8.9 | 4.9 | 9.5 | Apr-16 |
| Panagora Asset Management | 297,922,406 | 5.0 | | 5.2 | 16.8 | 6.6 | 2.1 | 6.4 | 6.5 | 6.0 | Aug-94 |
| Walter Scott International Equity | 275,297,753 | 4.6 | | 4.0 | 11.1 | -- | -- | -- | -- | 11.1 | Oct-20 |
| <i>MSCI EAFE</i> | | | | 4.6 | 16.0 | 7.8 | 4.3 | 7.4 | 5.5 | 16.0 | Oct-20 |
| Segall Bryant Hamill | 123,389,884 | 2.1 | | 7.4 | 15.6 | -3.5 | -4.6 | -- | -- | -2.9 | Nov-17 |
| <i>MSCI EAFE Small Cap</i> | | | | 6.8 | 17.3 | 12.3 | 4.9 | 9.4 | 7.8 | 6.0 | Nov-17 |
| Emerging Markets | 478,843,587 | 8.0 | 8.0 | 6.8 | 19.8 | 11.9 | 3.1 | 10.5 | 3.5 | 4.1 | Dec-10 |
| Vontobel | 126,985,456 | 2.1 | | 6.2 | 17.7 | 16.9 | 6.7 | 10.9 | 6.7 | 10.7 | Oct-05 |
| Polunin | 140,244,378 | 2.3 | | 8.8 | 29.4 | 19.7 | 5.9 | 15.0 | -- | 9.2 | Oct-13 |
| SSgA Emerging Markets | 105,920,771 | 1.8 | | 6.2 | 15.4 | 7.3 | 1.4 | 9.4 | -- | 3.2 | Oct-13 |
| <i>MSCI Emerging Markets</i> | | | | 7.4 | 19.7 | 18.3 | 6.2 | 12.8 | 3.6 | 6.2 | Oct-13 |
| Lazard | 105,692,981 | 1.8 | | 5.5 | 15.5 | 2.2 | -2.5 | 6.0 | -- | 2.9 | Oct-13 |
| <i>MSCI Emerging Markets Small Cap</i> | | | | 7.7 | 22.2 | 19.3 | 2.7 | 8.2 | 2.3 | 4.9 | Oct-13 |
| Total Fixed Income | 1,551,506,981 | 25.8 | 26.0 | | | | | | | | |
| Core Fixed Income | 964,960,104 | 16.1 | 16.0 | 0.8 | 2.2 | 8.6 | 5.6 | 5.0 | 4.5 | 5.0 | Dec-04 |
| Wells Asset Management | 326,061,099 | 5.4 | | 0.2 | 1.1 | 9.3 | 6.0 | 5.0 | 4.7 | 5.5 | May-05 |
| BlackRock SIO | 314,872,740 | 5.2 | | 1.3 | 4.3 | 7.9 | 5.4 | 5.2 | -- | 4.6 | Aug-15 |
| <i>BBgBarc US Aggregate TR</i> | | | | 0.1 | 0.7 | 7.5 | 5.3 | 4.4 | 3.8 | 4.1 | Aug-15 |
| IR&M | 324,026,264 | 5.4 | | 0.9 | 1.4 | 8.9 | 5.5 | 4.7 | -- | 4.5 | Jul-15 |
| <i>IR&M Custom Benchmark</i> | | | | 0.8 | 1.2 | 8.0 | 5.1 | 4.1 | 3.7 | 3.8 | Jul-15 |

- IR&M Custom Benchmark reflects BC Agg since inception through 04/30/2017, as of 05/01/2017 forward it reflects 40% BC Agg/60% BC US TIPS.

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

| | Market Value (\$) | % of Portfolio | Policy % | 1 Mo (%) | 3 Mo (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | 10 Yrs (%) | Inception (%) | Inception Date |
|---|----------------------|-------------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|------------------|-------------------|
| Value Added Fixed Income | 586,546,878 | 9.8 | 10.0 | 2.4 | 7.5 | 7.3 | 5.3 | 7.3 | 4.7 | -- | |
| High Yield Income | 351,119,851 | 5.8 | 6.0 | 2.1 | 6.9 | 7.5 | 5.8 | 7.5 | 6.6 | 7.0 | Jan-06 |
| Crescent Capital | 115,740,444 | 1.9 | | 1.6 | 6.1 | 5.8 | 5.4 | 6.6 | -- | 5.8 | May-15 |
| <i>50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield</i> | | | | 1.6 | 5.1 | 5.1 | 5.1 | 6.9 | 5.6 | 5.0 | May-15 |
| DDJ | 113,543,499 | 1.9 | | 2.4 | 7.4 | 9.2 | 5.9 | 9.4 | -- | 6.8 | May-15 |
| <i>75% BC HY 25% S&P Leverage Loan</i> | | | | 1.7 | 5.8 | 6.1 | 5.7 | 7.7 | -- | 5.5 | May-15 |
| GoldenTree Multi Sector Opp Credit | 120,855,229 | 2.0 | | 2.4 | 7.4 | 7.8 | 6.0 | -- | -- | 6.4 | Dec-16 |
| <i>Blended Index</i> | | | | 1.7 | 4.9 | 5.4 | 4.8 | -- | -- | 5.2 | Dec-16 |
| <i>S&P/LSTA Leveraged Loan TR</i> | | | | 1.3 | 3.8 | 3.1 | 4.0 | 5.2 | 4.3 | 4.2 | Dec-16 |
| Emerging Market Debt | 235,427,027 | 3.9 | 4.0 | 2.9 | 8.3 | 5.5 | 4.0 | 6.9 | -- | 1.4 | Nov-11 |
| Aberdeen EMD Plus | 235,426,714 | 3.9 | | 2.9 | 8.3 | 5.5 | -- | -- | -- | 10.5 | Dec-18 |
| <i>JP Morgan EMBI Global Diversified</i> | | | | 1.9 | 5.8 | 5.3 | 5.0 | 7.1 | 6.2 | 10.3 | Dec-18 |
| Total Alternative Assets | 1,284,678,420 | 21.4 | 26.0 | | | | | | | | |
| Hedge Fund Composite | 289,609,508 | 4.8 | 5.0 | 3.1 | 6.5 | 11.7 | 4.9 | 3.8 | 3.5 | 3.7 | Nov-04 |
| EnTrust Peruvian Bonds | 4,705,648 | 0.1 | | 3.9 | 2.2 | -0.1 | -3.6 | -- | -- | -3.6 | Jan-18 |
| Blackstone | 133,709,513 | 2.2 | | 2.7 | 4.7 | 6.6 | -- | -- | -- | 5.7 | Feb-18 |
| Grosvenor | 149,789,055 | 2.5 | | 3.5 | 8.4 | 17.4 | 7.1 | 6.0 | -- | 5.5 | Jul-13 |
| <i>HFRI Fund of Funds Composite Index</i> | | | | 3.7 | 8.1 | 10.9 | 4.9 | 4.6 | 3.3 | 4.2 | Jul-13 |
| Hedge Fund Transition Account | 1,405,291 | 0.0 | | | | | | | | | |
| Real Estate Composite | 515,299,143 | 8.6 | 10.0 | 1.0 | 1.0 | 2.5 | 6.3 | 7.5 | 10.5 | -- | |
| Private Equity & Debt | 479,769,769 | 8.0 | 11.0 | 5.1 | 5.1 | 3.3 | 7.1 | 6.8 | 8.1 | -- | |
| Cash | 33,131,495 | 0.6 | 0.0 | 0.0 | 0.0 | 0.4 | 0.9 | 0.5 | 0.3 | 1.2 | Oct-04 |

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 9/30/2020.
- The Hedge Fund Transition Account is an estimation of the total values redeemed from the hedge fund portfolio and is subject to change.
- The Blended Index Benchmark consists of 30% ML HY II/ 30% S&P LSTA / 25% HFRI RV FI/ 15% BAML ABS.
- EnTrust Peruvian and Grosvenor are estimated based off their benchmarks.

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL

| Private Markets Summary | | | | | | |
|--------------------------------------|------------------------|-------------------------|----------------------|-------------|-------------|----------------------|
| Quarter Ending September 30, 2020 | | | | | | |
| | Committed Capital | Cumulative Distribution | Contributed Capital | QTR | Last Year | Valuation |
| Private Equity & Debt IRR | \$1,181,018,410 | \$619,748,160 | \$835,245,737 | 5.1% | 3.3% | \$479,769,769 |
| Private Equity | \$724,039,909 | \$472,854,874 | \$521,976,607 | | | \$232,545,995 |
| Private Debt | \$456,978,501 | \$146,893,286 | \$313,269,130 | | | \$247,223,774 |
| Real Estate IRR | \$1,037,176,734 | \$782,609,965 | \$851,209,177 | 1.0% | 2.5% | \$515,299,143 |



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