

# **FLASH REPORT (GROSS)**

## **Boston Retirement System**

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# CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	Q1	Q2	Q3	Oct	Nov	Dec	Q4	YTD
<b>US Large Cap</b>	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-0.8%	3.4%	7.7%	-6.8%	2.0%	-9.0%	-13.5%	-4.4%
<b>US Small/Mid Cap</b>	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-0.2%	5.7%	4.7%	-10.2%	1.9%	-11.0%	-18.5%	-10.0%
<b>Int'l Developed Equity</b>	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-1.5%	-1.2%	1.4%	-8.0%	-0.1%	-4.9%	-12.5%	-13.8%
<b>Emerging Market Equity</b>	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	1.4%	-8.0%	-1.1%	-8.7%	4.1%	-2.7%	-7.5%	-14.6%
<b>US Aggregate</b>	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	-1.5%	-0.2%	0.0%	-0.8%	0.6%	1.8%	1.6%	0.0%
<b>US High Yield</b>	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-0.9%	1.0%	2.4%	-1.6%	-0.9%	-2.1%	-4.5%	-2.1%
<b>US Long Treasuries</b>	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-3.3%	0.3%	-2.9%	-3.0%	1.9%	5.5%	4.2%	-1.8%
<b>EM Local Credit</b>	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	4.4%	-10.4%	-1.8%	-2.0%	2.8%	1.3%	2.1%	-6.2%
<b>Global Credit</b>	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	7.4%	1.4%	-2.8%	-0.9%	-1.1%	0.3%	2.0%	1.2%	-1.2%
<b>Commodities</b>	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-0.4%	0.4%	-2.0%	-2.2%	-0.6%	-6.9%	-9.4%	-11.2%
<b>BC TIPS</b>	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-0.8%	0.8%	-0.8%	-1.4%	0.5%	0.5%	-0.4%	-1.3%

S&P 500 = US Large Cap  
 Russell 2500 = US Small/Mid Cap  
 MSCI EAFE = International Developed Equity  
 MSCI EM = Emerging Market Equity  
 Bloomberg Barclays Aggregate = US Aggregate  
 Bloomberg Barclays High Yield = US HY  
 Bloomberg Barclays Long Treasury = US Long Treasuries  
 GBI-EM Global Diversified = EM Local Credit  
 Barclays Global Aggregate = Global Credit  
 Bloomberg Commodity = Commodities  
 Barclays US TIPS = BC TIPS

Source: Bloomberg, Barclays, S&P, Russell, MSCI, JP Morgan, Credit Suisse



## 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
<b>Total Composite</b>	<b>4,605,686,611</b>	<b>100.0</b>	<b>100.0</b>	<b>-3.3</b>	<b>-8.0</b>	<b>-5.3</b>	<b>6.2</b>	<b>4.6</b>	<b>8.3</b>	<b>7.5</b>	<b>Aug-94</b>
Allocation Index				-3.3	-7.4	-4.8	6.3	4.5	7.7	--	Aug-94
Policy Index				-2.9	-6.8	-3.5	6.9	5.0	8.3	--	Aug-94
PRIT Core Fund/Teachers*	1,481,521,492	32.2		-2.6	-6.1	-1.8	7.7	6.4	--	9.0	Jul-10
<b>Total Equity</b>	<b>2,342,379,937</b>	<b>50.9</b>	<b>52.0</b>	<b>-7.0</b>	<b>-14.3</b>	<b>-11.7</b>	<b>6.7</b>	<b>4.4</b>	<b>--</b>	<b>--</b>	<b>Dec-04</b>
<b>Large Cap Comp</b>	<b>740,199,539</b>	<b>16.1</b>	<b>17.0</b>	<b>-8.9</b>	<b>-15.3</b>	<b>-5.1</b>	<b>9.9</b>	<b>8.8</b>	<b>14.2</b>	<b>8.5</b>	<b>Dec-04</b>
Rhumblin Advisors	99,135,379	2.2		-9.0	-13.5	-4.4	9.2	8.4	13.1	9.3	Aug-94
DE Shaw Core Enhanced	75,577,679	1.6		-8.4	-13.6	-3.7	10.1	9.1	--	12.9	Oct-09
JP Morgan 130/30	180,463,805	3.9		-9.1	-15.8	-6.6	8.4	8.3	--	12.5	Oct-09
S&P 500				-9.0	-13.5	-4.4	9.3	8.5	13.1	12.1	Oct-09
DE Shaw 130/30	196,971,169	4.3		-7.8	-14.2	-6.2	10.7	9.6	--	13.9	Oct-09
Russell 1000				-9.1	-13.8	-4.8	9.1	8.2	13.3	12.1	Oct-09
Columbia Threadneedle	96,564,089	2.1		-9.6	-14.6	-10.5	9.1	7.1	13.6	9.1	Jan-97
Russell 1000 Value				-9.6	-11.7	-8.3	7.0	5.9	11.2	7.7	Jan-97
Zevenbergen Capital	43,958,314	1.0		-12.3	-24.4	1.8	10.5	8.7	17.0	11.2	Aug-94
Intech	47,529,104	1.0		-8.5	-15.9	-2.4	11.6	10.4	15.5	8.7	Oct-06
Russell 1000 Growth				-8.6	-15.9	-1.5	11.1	10.4	15.3	9.5	Oct-06
<b>Small Cap Comp</b>	<b>275,243,930</b>	<b>6.0</b>	<b>6.0</b>	<b>-11.2</b>	<b>-19.6</b>	<b>-7.4</b>	<b>9.8</b>	<b>5.8</b>	<b>14.3</b>	<b>8.9</b>	<b>Dec-04</b>
Westfield Capital Management	85,359,588	1.9		-9.7	-19.0	-6.7	8.6	6.0	15.4	10.1	Sep-03
Russell 2000 Growth				-11.7	-21.7	-9.3	7.2	5.1	13.5	8.4	Sep-03
Bernzott	99,692,704	2.2		-10.6	-18.7	-3.4	13.3	--	--	10.3	Nov-15
Russell 2000 Value				-12.1	-18.7	-12.9	7.4	3.6	10.4	6.1	Nov-15
Aristotle	90,191,550	2.0		-13.2	-20.6	-11.6	8.2	--	--	7.1	Nov-15
Russell 2000				-11.9	-20.2	-11.0	7.4	4.4	12.0	6.3	Nov-15

- J&W Seligman is now named Columbia Threadneedle.

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
<b>Total Non-US Equity</b>	<b>1,326,936,468</b>	<b>28.8</b>	<b>29.0</b>	<b>-4.8</b>	<b>-12.5</b>	<b>-17.1</b>	<b>3.7</b>	<b>0.8</b>	<b>6.8</b>	<b>5.7</b>	<b>Aug-94</b>
<b>International Equity</b>	<b>923,923,442</b>	<b>20.1</b>	<b>21.0</b>	<b>-5.9</b>	<b>-14.6</b>	<b>-17.2</b>	<b>1.7</b>	<b>0.0</b>	<b>--</b>	<b>4.2</b>	<b>Dec-10</b>
Todd	255,172,910	5.5		-7.6	-16.0	-17.0	--	--	--	2.1	Apr-16
<i>MSCI ACWI ex USA</i>				-4.5	-11.5	-14.2	4.5	0.7	6.6	5.0	Apr-16
Panagora Asset Management	288,933,737	6.3		-4.6	-12.7	-15.1	2.9	1.7	8.3	5.5	Aug-94
Fisher	269,946,986	5.9		-5.2	-14.2	-16.1	3.4	1.0	8.3	3.7	Feb-06
<i>MSCI EAFE</i>				-4.9	-12.5	-13.8	2.9	0.5	6.3	2.5	Feb-06
Segall Bryant Hamill	109,471,642	2.4		-7.0	-17.6	-24.9	--	--	--	-17.5	Nov-17
<i>MSCI EAFE Small Cap</i>				-6.4	-16.0	-17.9	3.7	3.1	10.5	-12.4	Nov-17
<b>Emerging Markets</b>	<b>403,013,026</b>	<b>8.8</b>	<b>8.0</b>	<b>-2.4</b>	<b>-7.6</b>	<b>-16.8</b>	<b>7.7</b>	<b>2.3</b>	<b>--</b>	<b>1.7</b>	<b>Dec-10</b>
Vontobel	92,287,869	2.0		-1.4	-4.2	-13.2	6.2	3.3	11.0	9.6	Oct-05
Polunin	100,753,654	2.2		-2.4	-7.9	-16.1	12.3	5.3	--	5.7	Oct-13
SSgA Emerging Markets	124,171,554	2.7		-2.8	-9.3	-14.0	9.0	1.1	--	0.7	Oct-13
<i>MSCI Emerging Markets</i>				-2.7	-7.5	-14.6	9.2	1.6	8.0	1.9	Oct-13
Lazard	85,799,949	1.9		-3.1	-7.9	-24.3	3.0	-0.3	--	0.1	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				-1.6	-7.2	-18.6	3.7	1.0	9.9	1.1	Oct-13
<b>Total Fixed Income</b>	<b>1,186,330,444</b>	<b>25.8</b>	<b>22.0</b>	<b>0.9</b>	<b>0.6</b>	<b>0.1</b>	<b>2.7</b>	<b>3.1</b>	<b>4.6</b>	<b>4.5</b>	<b>Dec-04</b>
<b>Core Fixed Income</b>	<b>698,087,610</b>	<b>15.2</b>	<b>12.0</b>	<b>0.9</b>	<b>0.6</b>	<b>0.1</b>	<b>2.7</b>	<b>3.1</b>	<b>4.6</b>	<b>4.5</b>	<b>Dec-04</b>
Wells Asset Management	210,146,627	4.6		1.8	1.7	0.1	2.4	2.9	5.0	4.9	May-05
BlackRock SIO	222,111,521	4.8		0.1	-0.4	0.1	3.3	--	--	2.6	Aug-15
<i>BBgBarc US Aggregate TR</i>				1.8	1.6	0.0	2.1	2.5	3.5	1.8	Aug-15
IR&M	265,829,462	5.8		0.9	0.5	-0.1	2.4	--	--	2.3	Jul-15
<i>IR&amp;M Custom Benchmark</i>				1.1	0.4	-0.8	1.6	2.3	3.3	1.6	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
<b>Value Added Fixed Income</b>	<b>488,242,835</b>	<b>10.6</b>	<b>10.0</b>	<b>-0.8</b>	<b>-2.7</b>	<b>-2.7</b>	<b>5.9</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	
<b>High Yield Income</b>	<b>299,197,951</b>	<b>6.5</b>	<b>6.0</b>	<b>-2.0</b>	<b>-3.5</b>	<b>0.1</b>	<b>6.7</b>	<b>4.4</b>	<b>10.1</b>	<b>6.8</b>	<b>Jan-06</b>
Crescent Capital	98,882,706	2.1		-1.9	-3.3	-0.8	5.3	--	--	4.2	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				-2.3	-4.0	-0.8	6.0	3.5	9.9	3.2	May-15
DDJ	97,687,437	2.1		-2.0	-3.2	0.7	10.0	--	--	5.8	May-15
75% BC HY 25% S&P Leverage Loan				-2.2	-4.3	-1.5	6.6	--	--	3.4	May-15
GoldenTree Multi Spec Opp Credit	101,587,143	2.2		-2.1	-3.9	0.1	--	--	--	3.8	Dec-16
Blended Index				-1.6	-3.1	-0.5	--	--	--	3.0	Dec-16
S&P/LSTA Leveraged Loan TR				-2.5	-3.5	0.4	4.8	3.1	8.6	2.7	Dec-16
<b>Emerging Market Debt</b>	<b>166,214,654</b>	<b>3.6</b>	<b>4.0</b>	<b>0.9</b>	<b>-1.7</b>	<b>-7.9</b>	<b>4.7</b>	<b>-1.6</b>	<b>--</b>	<b>-1.0</b>	<b>Nov-11</b>
Aberdeen EMD Plus	166,214,608	3.6		0.9	--	--	--	--	--	0.9	Nov-18
JP Morgan EMBI Global Diversified				1.3	-1.3	-4.3	5.2	4.8	8.2	1.3	Nov-18
<b>Global Fixed Income</b>	<b>22,830,230</b>	<b>0.5</b>	<b>0.0</b>	<b>1.5</b>	<b>0.5</b>	<b>-1.7</b>	<b>3.7</b>	<b>1.6</b>	<b>4.2</b>	<b>5.0</b>	<b>Jul-95</b>
Loomis Sayles	22,830,230	0.5		1.5	0.5	-1.7	3.7	1.6	4.2	5.6	Nov-99
FTSE WGBI TR				2.4	1.8	-0.8	2.7	0.8	1.5	4.0	Nov-99
<b>Total Alternative Assets</b>	<b>1,001,909,610</b>	<b>21.8</b>	<b>26.0</b>								
<b>Hedge Fund Composite</b>	<b>231,282,417</b>	<b>5.0</b>	<b>5.0</b>	<b>-1.8</b>	<b>-3.7</b>	<b>-2.6</b>	<b>0.6</b>	<b>0.2</b>	<b>3.8</b>	<b>3.0</b>	<b>Nov-04</b>
Permal	69,751,518	1.5		-3.3	-5.5	-8.2	-0.1	-0.5	5.4	3.0	Nov-07
EnTrust Peruvian Bonds	5,163,941	0.1		-0.1	-0.7	-2.6	--	--	--	-2.6	Jan-18
Blackstone	75,618,936	1.6		-0.4	-1.1	--	--	--	--	1.9	Feb-18
Grosvenor	77,714,690	1.7		-2.0	-5.0	-1.4	2.4	2.1	--	3.3	Jul-13
HFRI Fund of Funds Composite Index				-1.7	-5.0	-4.1	1.3	1.4	3.1	2.2	Jul-13
Hedge Fund Transition Account	3,033,332	0.1									
<b>Real Estate Composite</b>	<b>463,464,505</b>	<b>10.1</b>	<b>10.0</b>	<b>2.4</b>	<b>2.4</b>	<b>9.5</b>	<b>9.3</b>	<b>10.9</b>	<b>5.3</b>	<b>--</b>	
<b>Private Equity &amp; Debt</b>	<b>307,162,688</b>	<b>6.7</b>	<b>11.0</b>	<b>3.9</b>	<b>3.9</b>	<b>16.2</b>	<b>9.4</b>	<b>9.9</b>	<b>8.7</b>	<b>--</b>	
<b>Cash</b>	<b>75,066,620</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>1.1</b>	<b>Oct-04</b>

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 9/30/2018.

- 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 Bonds is preliminary.

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**

PE/RE Summary								
Quarter Ending September 30, 2018								
Target Weight	Weight in Fund		Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
11%	6.7%	<b>Private Equity &amp; Debt IRR</b>	\$888,885,650	\$564,456,348	\$635,550,853	3.9%	16.2%	\$307,162,688
7%	3.8%	Private Equity	\$570,385,650	\$431,557,650	\$448,204,108			\$174,398,504
4%	2.9%	Private Debt	\$318,500,000	\$132,898,698	\$187,346,745			\$132,764,184
10%	10.1%	<b>Real Estate IRR</b>	\$900,081,937	\$713,322,048	\$778,245,832	2.4%	9.5%	\$463,464,505



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- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
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- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

