

FLASH REPORT (GROSS)

Boston Retirement System

June 30, 2019

Mike Manning, CFA, CAIA, Managing Partner
Will Forde, CFA, CAIA, Senior Consultant
Kiley Fischer, Analyst



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

CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	18.5%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	18.8%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	17.0%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	19.2%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	14.0%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	10.6%
MSCI ACWI	11.2%	-13.7%	16.8%	15.3%	-3.9%	-5.7%	4.5%	27.2%	-14.2%	13.6%
Private Equity*	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	5.7%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	6.2%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	5.1%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	6.7%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	9.9%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	6.1%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	5.6%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	11.0%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	15.4%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	14.7%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	8.7%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	11.3%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	4.3%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	5.1%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	17.0%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	17.8%

Source: FactSet, 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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	5,076,473,130	100.0	100.0	4.1	2.7	10.3	3.9	9.0	5.4	8.8	7.8	Aug-94
<i>Allocation Index</i>				4.1	2.9	10.4	4.7	8.8	5.5	8.4	--	Aug-94
<i>Policy Index</i>				4.3	3.1	10.3	6.0	9.6	6.0	8.9	--	Aug-94
PRIT Core Fund/Teachers*	1,676,602,674	33.0		4.0	3.4	10.1	6.2	9.8	7.1	--	9.6	Jul-10
Total Equity	2,495,914,399	49.2	48.0	6.7	3.1	15.6	2.4	12.0	6.2	--	--	Dec-04
Large Cap Comp	920,246,125	18.1	17.0	7.1	4.5	19.2	8.7	15.8	11.2	15.6	9.5	Dec-04
Rhumblin Advisors	157,500,926	3.1		7.0	4.3	18.5	10.3	14.1	10.7	14.7	9.9	Aug-94
DE Shaw Core Enhanced	89,101,485	1.8		7.0	4.2	17.9	10.4	14.8	11.1	--	14.1	Oct-09
JP Morgan 130/30	212,645,842	4.2		6.7	4.3	18.2	8.2	15.3	10.4	--	13.8	Oct-09
<i>S&P 500</i>				7.0	4.3	18.5	10.4	14.2	10.7	14.7	13.4	Oct-09
DE Shaw 130/30	229,031,738	4.5		6.6	3.2	16.7	7.0	14.9	11.6	--	15.0	Oct-09
<i>Russell 1000</i>				7.0	4.2	18.8	10.0	14.1	10.5	14.8	13.4	Oct-09
Columbia Threadneedle	110,904,287	2.2		8.2	3.9	15.0	3.6	13.3	8.6	14.8	9.6	Jan-97
<i>Russell 1000 Value</i>				7.2	3.8	16.2	8.5	10.2	7.5	13.2	8.3	Jan-97
Zevenbergen Capital	61,144,213	1.2		8.8	10.1	39.6	13.9	28.1	14.6	18.6	12.5	Aug-94
Intech	59,917,634	1.2		6.5	7.0	26.4	16.1	18.8	14.5	17.1	10.4	Oct-06
<i>Russell 1000 Growth</i>				6.9	4.6	21.5	11.6	18.1	13.4	16.3	10.7	Oct-06
Small Cap Comp	325,482,567	6.4	6.0	6.9	3.4	18.6	1.2	15.5	8.4	15.2	9.8	Dec-04
Westfield Capital Management	103,486,722	2.0		6.9	4.4	21.7	3.2	17.4	9.0	16.2	11.2	Sep-03
<i>Russell 2000 Growth</i>				7.7	2.7	20.4	-0.5	14.7	8.6	14.4	9.4	Sep-03
Bernzott	115,254,730	2.3		6.2	1.6	15.9	3.2	15.8	--	--	12.9	Nov-15
<i>Russell 2000 Value</i>				6.4	1.4	13.5	-6.2	9.8	5.4	12.4	8.9	Nov-15
Aristotle	106,741,025	2.1		7.7	4.4	18.8	-1.4	13.5	--	--	11.2	Nov-15
<i>Russell 2000</i>				7.1	2.1	17.0	-3.3	12.3	7.1	13.4	10.0	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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	1,250,185,707	24.6	25.0	6.3	2.2	12.8	-1.7	8.8	2.1	6.7	6.1	Aug-94
International Equity	845,182,107	16.6	17.0	6.7	2.6	13.8	-2.4	8.7	1.8	--	5.5	Dec-10
Todd	236,298,688	4.7		8.3	3.8	16.8	-1.6	8.7	--	--	6.7	Apr-16
<i>MSCI ACWI ex USA</i>				6.0	3.0	13.6	1.3	9.4	2.2	6.5	8.4	Apr-16
Panagora Asset Management	238,594,466	4.7		5.5	1.2	11.0	-2.4	8.4	2.9	8.3	5.9	Aug-94
Fisher	253,413,102	5.0		7.7	4.8	17.4	2.2	11.2	3.8	8.8	4.8	Feb-06
<i>MSCI EAFE</i>				5.9	3.7	14.0	1.1	9.1	2.2	6.9	3.5	Feb-06
Segall Bryant Hamill	116,480,125	2.3		3.8	-1.6	6.4	-14.0	--	--	--	-9.3	Nov-17
<i>MSCI EAFE Small Cap</i>				4.2	1.7	12.5	-6.3	9.1	4.4	9.7	-2.2	Nov-17
Emerging Markets	405,003,600	8.0	8.0	5.5	1.4	10.7	-0.1	8.9	2.8	--	2.8	Dec-10
Vontobel	105,804,053	2.1		5.4	3.2	15.1	6.8	8.6	4.3	10.0	10.3	Oct-05
Polunin	110,439,589	2.2		6.3	2.1	10.1	1.8	12.6	5.3	--	6.9	Oct-13
SSgA Emerging Markets	93,916,297	1.9		5.5	0.4	7.4	-2.3	9.3	1.1	--	1.9	Oct-13
<i>MSCI Emerging Markets</i>				6.2	0.6	10.6	1.2	10.7	2.5	5.8	3.5	Oct-13
Lazard	94,843,661	1.9		4.6	-0.4	11.1	-6.4	4.8	0.9	--	2.0	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				3.9	-1.0	6.7	-5.1	5.5	0.5	5.9	2.2	Oct-13
Total Fixed Income	1,467,131,613	28.9	26.0									
Core Fixed Income	938,107,023	18.5	16.0	1.4	2.9	5.8	6.5	3.3	3.4	4.7	4.8	Dec-04
Wells Asset Management	310,671,528	6.1		1.4	3.1	6.2	7.9	2.6	3.3	4.9	5.2	May-05
BlackRock SIO	315,711,474	6.2		1.7	2.8	5.5	5.7	4.8	--	--	3.7	Aug-15
<i>BBgBarc US Aggregate TR</i>				1.3	3.1	6.1	7.9	2.3	2.9	3.9	3.1	Aug-15
IR&M	311,724,021	6.1		1.1	2.8	5.7	6.1	2.3	--	--	3.5	Jul-15
<i>IR&M Custom Benchmark</i>				1.0	3.0	6.1	6.0	1.9	2.7	3.8	2.9	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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	529,024,591	10.4	10.0	2.0	2.6	8.4	6.9	6.6	3.1	--	--	
High Yield Income	319,337,894	6.3	6.0	1.0	1.8	6.7	5.1	7.3	5.0	8.7	7.0	Jan-06
Crescent Capital	105,868,097	2.1		1.7	2.3	7.2	6.0	6.1	--	--	5.4	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				1.3	2.1	7.8	5.7	6.4	4.2	7.7	4.7	May-15
DDJ	103,252,355	2.0		0.4	0.9	5.7	4.8	9.7	--	--	6.5	May-15
75% BC HY 25% S&P Leverage Loan				1.8	2.3	8.9	6.6	7.0	--	--	5.1	May-15
GoldenTree Multi Sector Opp Credit	109,055,580	2.1		1.0	2.2	7.4	4.5	--	--	--	5.9	Dec-16
Blended Index				1.2	2.1	7.0	5.4	5.8	--	--	5.1	Dec-16
S&P/LSTA Leveraged Loan TR				0.2	1.7	5.7	4.0	5.2	3.7	6.2	4.4	Dec-16
Emerging Market Debt	185,503,843	3.7	4.0	3.7	4.0	11.6	10.3	5.7	-0.5	--	0.5	Nov-11
Aberdeen EMD Plus	185,503,530	3.7		3.7	4.0	11.6	--	--	--	--	12.7	Dec-18
JP Morgan EMBI Global Diversified				3.4	4.1	11.3	12.4	5.5	5.3	7.8	12.8	Dec-18
Global Fixed Income	24,182,854	0.5	0.0	2.4	3.3	6.2	6.0	2.5	1.7	4.1	5.2	Jul-95
Loomis Sayles	24,182,854	0.5		2.4	3.3	6.2	6.0	2.5	1.7	4.1	5.7	Nov-99
FTSE WGBI TR				2.3	3.6	5.4	5.5	1.0	0.8	2.2	4.2	Nov-99
Total Alternative Assets	1,063,482,995	20.9	26.0									
Hedge Fund Composite	237,621,553	4.7	5.0	1.2	1.3	3.8	0.5	2.4	-0.2	3.2	3.0	Nov-04
EnTrust Peruvian Bonds	5,003,456	0.1		-0.1	-0.3	-0.8	-4.2	--	--	--	-3.6	Jan-18
Blackstone	114,576,113	2.3		1.5	2.2	5.3	6.0	--	--	--	5.1	Feb-18
Grosvenor	115,538,575	2.3		1.1	0.9	3.6	-1.0	4.5	2.2	--	3.6	Jul-13
HFRI Fund of Funds Composite Index				1.6	1.5	6.2	1.2	4.2	2.2	3.2	3.1	Jul-13
Hedge Fund Transition Account	2,503,409	0.0										
Real Estate Composite	483,800,001	9.5	10.0	1.9	1.9	3.5	7.8	8.6	10.4	9.2	--	
Private Equity & Debt	342,061,441	6.7	11.0	2.2	2.2	0.8	7.9	9.7	8.5	8.6	--	
Cash	49,944,122	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	Oct-04

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 3/31/2019.
- 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.

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 March 31, 2019						
	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	\$971,371,856	\$567,080,348	\$674,193,868	2.2%	7.9%	\$342,061,441
Private Equity	\$604,393,355	\$443,863,187	\$477,289,111			\$193,210,897
Private Debt	\$366,978,504	\$123,271,161	\$196,904,757			\$148,850,544
Real Estate IRR	\$886,763,453	\$736,469,772	\$805,413,879	1.9%	7.8%	\$483,800,001



Information Disclaimer

- 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.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Reporting Methodology

- 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.

