

FLASH REPORT (GROSS)

Boston Retirement System

April 30, 2019

Mike Manning, CFA, CAIA, Managing Partner

Will Forde, CFA, CAIA, Sr. 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	Q1	Apr	YTD
US Large Cap	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	13.6%	4.0%	18.2%
US Small/Mid Cap	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	15.8%	3.5%	19.9%
Int'l Developed Equity	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	10.0%	2.8%	13.1%
Emerging Market Equity	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	9.9%	2.1%	12.2%
US Aggregate	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	2.9%	0.0%	3.0%
US High Yield	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	7.3%	1.4%	8.8%
US Long Treasury	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	4.7%	-1.8%	2.8%
EM Local Credit	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	2.9%	-0.2%	2.7%
Global Credit	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	7.4%	-1.2%	2.2%	-0.3%	1.9%
Commodities	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	6.3%	-0.4%	5.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	3.2%	0.3%	3.5%

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

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 Treasury
 GBI-EM Global Diversified = EM Local Credit
 Barclays Global Aggregate = Global Credit
 Bloomberg Commodity = Commodities
 Barclays US TIPS = BC TIPS



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	Fiscal YTD (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	5,014,044,946	100.0	100.0	1.9	9.4	4.2	2.9	8.9	6.0	9.2	7.8	Aug-94
Allocation Index				1.7	9.1	4.1	3.3	8.6	5.9	8.7	--	Aug-94
Policy Index				1.7	8.7	3.8	4.6	9.2	6.4	9.3	--	Aug-94
PRIT Core Fund/Teachers*	1,681,755,172	33.5		1.7	8.3	3.9	5.5	9.6	7.5	--	9.6	Jul-10
Total Equity	2,505,085,927	50.0	48.0	3.4	15.9	6.7	1.7	11.9	7.2	--	--	Dec-04
Large Cap Comp	921,500,369	18.4	17.0	4.6	19.3	9.7	12.8	16.3	12.4	16.3	9.6	Dec-04
Rhumblin Advisors	157,133,854	3.1		4.0	18.2	9.4	13.4	14.8	11.6	15.3	9.9	Aug-94
DE Shaw Core Enhanced	89,096,035	1.8		4.2	17.9	9.8	14.1	15.5	12.2	--	14.4	Oct-09
JP Morgan 130/30	213,664,466	4.3		4.6	18.6	9.6	11.8	15.3	11.7	--	14.0	Oct-09
S&P 500				4.0	18.2	9.5	13.5	14.9	11.6	15.3	13.6	Oct-09
DE Shaw 130/30	231,091,649	4.6		4.0	17.6	9.3	11.7	16.0	12.8	--	15.4	Oct-09
Russell 1000				4.0	18.6	9.4	13.3	14.8	11.4	15.4	13.7	Oct-09
Columbia Threadneedle	113,416,446	2.3		6.1	17.5	7.6	6.6	14.7	10.1	15.8	9.8	Jan-97
Russell 1000 Value				3.5	15.9	7.5	9.1	11.0	8.3	13.8	8.3	Jan-97
Zevenbergen Capital	58,750,396	1.2		5.6	33.9	13.7	21.6	25.8	16.2	18.8	12.4	Aug-94
Intech	58,347,523	1.2		4.1	22.9	12.5	17.1	19.0	14.9	17.5	10.3	Oct-06
Russell 1000 Growth				4.5	21.3	11.3	17.4	18.6	14.5	17.0	10.9	Oct-06
Small Cap Comp	328,423,063	6.6	6.0	4.2	19.5	7.6	7.3	16.2	9.7	15.7	10.0	Dec-04
Westfield Capital Management	104,091,664	2.1		4.8	22.1	10.0	8.3	17.4	10.2	16.9	11.3	Sep-03
Russell 2000 Growth				3.0	20.7	8.2	6.9	15.6	10.2	15.2	9.6	Sep-03
Bernzott	116,966,022	2.3		2.9	17.5	6.2	10.3	17.2	--	--	13.9	Nov-15
Russell 2000 Value				3.8	16.2	4.7	2.2	11.5	6.9	12.9	10.1	Nov-15
Aristotle	107,365,288	2.1		4.9	19.2	6.9	5.1	14.1	--	--	11.9	Nov-15
Russell 2000				3.4	18.5	6.5	4.6	13.6	8.6	14.1	10.9	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 (%)	Fiscal YTD (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	1,255,162,495	25.0	25.0	2.5	13.1	4.7	-6.5	8.0	3.0	8.0	6.2	Aug-94
International Equity	850,514,081	17.0	17.0	3.1	14.4	5.7	-5.8	7.3	2.4	--	5.7	Dec-10
Todd	236,518,944	4.7		3.9	16.7	5.7	-3.7	7.2	--	--	7.1	Apr-16
<i>MSCI ACWI ex USA</i>				2.6	13.2	5.3	-3.2	8.1	2.8	7.7	8.8	Apr-16
Panagora Asset Management	239,605,654	4.8		1.5	11.3	3.2	-6.3	6.7	3.4	9.6	5.9	Aug-94
Fisher	253,469,965	5.1		4.6	17.1	9.8	-2.0	9.9	4.2	9.9	4.9	Feb-06
<i>MSCI EAFE</i>				2.8	13.1	6.1	-3.2	7.2	2.6	8.0	3.4	Feb-06
Segall Bryant Hamill	120,527,258	2.4		1.8	10.1	2.0	-17.2	--	--	--	-8.2	Nov-17
<i>MSCI EAFE Small Cap</i>				3.0	14.0	5.5	-7.9	7.8	5.3	11.5	-1.6	Nov-17
Emerging Markets	404,648,414	8.1	8.0	1.2	10.6	2.8	-7.7	9.1	4.2	--	2.8	Dec-10
Vontobel	106,202,351	2.1		3.4	15.4	7.8	0.4	10.1	5.8	11.8	10.5	Oct-05
Polunin	108,062,044	2.2		-0.2	7.9	0.8	-8.8	11.3	6.8	--	6.8	Oct-13
SSgA Emerging Markets	94,962,164	1.9		1.5	8.6	0.4	-8.3	9.9	2.4	--	2.1	Oct-13
<i>MSCI Emerging Markets</i>				2.1	12.2	3.2	-5.0	11.3	4.0	7.5	3.9	Oct-13
Lazard	95,421,855	1.9		0.2	11.8	3.4	-13.6	4.9	2.2	--	2.2	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				0.2	8.0	2.5	-12.1	5.5	1.7	8.2	2.5	Oct-13
Total Fixed Income	1,436,564,295	28.7	26.0									
Core Fixed Income	915,751,304	18.3	16.0	0.4	3.2	2.0	4.3	2.9	3.1	4.7	4.7	Dec-04
Wells Asset Management	301,492,432	6.0		0.0	3.1	2.0	5.4	2.2	3.0	4.9	5.0	May-05
BlackRock SIO	309,900,069	6.2		0.8	3.4	2.1	3.2	4.3	--	--	3.3	Aug-15
<i>BBgBarc US Aggregate TR</i>				0.0	3.0	1.9	5.3	1.9	2.6	3.7	2.4	Aug-15
IR&M	304,358,803	6.1		0.3	3.2	2.0	4.3	2.1	--	--	3.0	Jul-15
<i>IR&M Custom Benchmark</i>				0.2	3.3	2.1	4.0	1.6	2.4	3.6	2.3	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 (%)	Fiscal YTD (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	520,812,991	10.4	10.0	1.0	6.7	3.3	3.4	6.4	3.2	--	--	
High Yield Income	318,567,797	6.4	6.0	1.6	6.5	3.8	5.3	7.6	5.2	9.2	7.1	Jan-06
Crescent Capital	104,776,523	2.1		1.1	6.1	3.2	5.4	6.1	--	--	5.4	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				1.5	7.2	3.6	5.5	6.6	4.4	8.7	4.8	May-15
DDJ	104,376,584	2.1		2.0	6.8	4.1	5.9	10.7	--	--	7.1	May-15
75% BC HY 25% S&P Leverage Loan				1.5	8.0	3.8	6.1	7.2	--	--	5.1	May-15
GoldenTree Multi Spec Opp Credit	108,478,736	2.2		1.6	6.8	4.1	4.7	--	--	--	6.1	Dec-16
Blended Index				1.3	6.1	3.2	4.8	--	--	--	5.1	Dec-16
S&P/LSTA Leveraged Loan TR				1.7	5.7	3.1	4.2	5.6	3.9	7.3	4.7	Dec-16
Emerging Market Debt	178,841,231	3.6	4.0	0.2	7.6	2.7	0.2	4.7	-0.7	--	0.0	Nov-11
Aberdeen EMD Plus	178,841,185	3.6		0.2	7.6	2.7	--	--	--	--	8.6	Nov-18
JP Morgan EMBI Global Diversified				0.2	7.2	2.7	6.0	5.3	5.2	8.0	8.7	Nov-18
Global Fixed Income	23,403,964	0.5	0.0	-0.2	2.9	0.7	0.9	1.9	1.4	4.7	5.1	Jul-95
Loomis Sayles	23,403,964	0.5		-0.2	2.9	0.7	0.9	1.9	1.4	4.7	5.6	Nov-99
FTSE WGBI TR				-0.5	1.2	-0.2	-0.2	0.4	0.3	2.1	4.0	Nov-99
Total Alternative Assets	1,020,791,791	20.4	26.0									
Hedge Fund Composite	236,343,419	4.7	5.0	0.5	3.0	1.3	0.6	2.6	0.6	3.8	3.1	Nov-04
EnTrust Peruvian Bonds	5,015,834	0.1		-0.1	-0.7	-0.6	-4.6	--	--	--	-4.0	Jan-18
Blackstone	113,207,251	2.3		0.7	3.8	1.8	5.2	--	--	--	4.7	Feb-18
Grosvenor	115,407,561	2.3		0.7	3.5	1.5	0.1	4.6	2.6	--	3.7	Jul-13
HFRI Fund of Funds Composite Index				1.0	5.7	3.0	0.9	4.1	2.5	3.5	3.1	Jul-13
Hedge Fund Transition Account	2,712,773	0.1										
Real Estate Composite	469,478,597	9.4	10.0	0.0	1.6	1.6	8.9	8.7	10.5	6.6	--	
Private Equity & Debt	314,969,775	6.3	11.0	0.0	-1.4	-1.4	9.3	8.4	8.7	8.5	--	
Cash	51,602,933	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 12/31/2018.
- 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.

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 December 31, 2018						
	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	\$948,876,703	\$563,358,645	\$650,857,524	-1.4%	9.3%	\$314,969,775
Private Equity	\$610,376,703	\$440,951,360	\$460,027,029			\$175,189,071
Private Debt	\$338,500,000	\$122,407,285	\$190,830,495			\$139,780,704
Real Estate IRR	\$899,735,502	\$729,353,035	\$792,965,732	1.6%	8.9%	\$469,478,597



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.

