

FLASH REPORT (GROSS)

Boston Retirement System

November 30, 2019

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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	Nov	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	3.6%	27.6%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	3.8%	27.7%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	4.1%	22.0%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	4.3%	25.1%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	1.1%	18.2%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	-0.1%	10.2%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	2.4%	22.3%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	9.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	0.2%	8.0%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	0.3%	7.2%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	0.4%	10.3%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.3%	12.1%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	-0.1%	8.8%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	-0.8%	6.2%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	-0.5%	18.1%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	0.5%	23.2%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	-0.3%	26.2%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	-1.8%	9.0%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	-0.5%	12.8%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	7.1%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	-2.6%	2.5%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-5.8%	-1.8%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	-1.5%	26.8%

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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	5,247,282,677	100.0	100.0	1.5	4.2	13.7	9.9	8.8	6.1	7.9	7.8	Aug-94
<i>Allocation Index</i>				1.1	4.1	13.9	10.1	8.8	6.1	7.3	--	Aug-94
<i>Policy Index</i>				1.1	4.3	13.9	10.9	9.5	6.7	7.9	--	Aug-94
PRIT Core Fund/Teachers*	1,662,933,185	31.7		1.1	4.0	14.4	11.4	10.4	7.7	--	9.6	Jul-10
Total Equity	2,608,058,683	49.7	48.0	2.9	8.0	21.1	12.7	11.6	7.2	--	--	Dec-04
Large Cap Comp	986,384,143	18.8	17.0	4.3	7.7	28.1	16.7	15.6	11.6	14.4	9.8	Dec-04
Rhumblin Advisors	260,114,640	5.0		3.6	7.8	27.5	16.1	14.8	10.9	13.4	10.0	Aug-94
DE Shaw Core Enhanced	96,758,279	1.8		3.9	8.1	28.2	17.5	15.7	11.7	14.0	14.4	Oct-09
DE Shaw 130/30	247,932,335	4.7		3.9	8.5	26.8	16.8	15.1	12.5	14.7	15.3	Oct-09
<i>Russell 1000</i>				3.8	7.8	27.7	16.1	14.7	10.8	13.5	13.6	Oct-09
Aristotle Value	136,954,260	2.6		4.1	--	--	--	--	--	--	4.1	Nov-19
Columbia Threadneedle	134,533,077	2.6		4.0	9.7	23.2	11.3	11.1	9.2	13.5	9.8	Jan-97
<i>Russell 1000 Value</i>				3.1	8.3	23.2	11.3	9.6	7.8	11.7	8.4	Jan-97
Zevenbergen Capital	109,740,935	2.1		7.9	3.6	39.1	22.0	24.1	14.4	15.9	12.2	Aug-94
<i>Russell 1000 Growth</i>				4.4	7.4	32.4	21.0	19.8	13.7	15.2	10.1	Aug-94
Small Cap Comp	343,759,214	6.6	6.0	6.0	10.4	25.7	11.6	14.2	9.8	14.0	10.0	Dec-04
Westfield Capital Management	112,503,581	2.1		9.3	11.0	32.7	19.9	17.8	10.6	15.2	11.5	Sep-03
<i>Russell 2000 Growth</i>				5.9	8.0	25.6	10.9	12.2	9.5	13.7	9.5	Sep-03
Bernzott	122,697,534	2.3		5.5	12.4	23.6	10.5	15.0	--	--	13.2	Nov-15
<i>Russell 2000 Value</i>				2.3	10.2	18.3	4.0	5.0	6.8	11.0	9.1	Nov-15
Aristotle Small Cap	108,557,399	2.1		3.2	7.6	21.3	5.3	9.9	--	--	10.6	Nov-15
<i>Russell 2000</i>				4.1	9.1	22.0	7.5	8.6	8.2	12.4	10.1	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.



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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	1,277,915,326	24.4	25.0	1.1	7.6	15.5	10.0	8.3	3.5	4.8	6.1	Aug-94
International Equity	876,268,678	16.7	17.0	1.6	8.6	18.3	11.3	8.6	3.8	--	5.7	Dec-10
Todd	247,123,191	4.7		2.7	8.7	22.5	13.2	9.2	--	--	7.4	Apr-16
<i>MSCI ACWI ex USA</i>				0.9	7.1	16.5	11.2	9.2	3.8	4.7	8.2	Apr-16
Panagora Asset Management	244,303,100	4.7		0.6	7.9	13.8	8.6	7.6	4.6	6.8	5.9	Aug-94
State Street Transition Account	261,332,691	5.0		1.2	--	--	--	--	--	--	1.2	Nov-19
<i>MSCI EAFE</i>				1.1	7.8	18.2	12.4	9.6	4.3	5.3	1.1	Nov-19
Segall Bryant Hamill	122,797,619	2.3		2.0	10.8	13.1	5.3	--	--	--	-5.0	Nov-17
<i>MSCI EAFE Small Cap</i>				2.2	9.9	19.7	12.0	10.4	7.8	8.4	1.2	Nov-17
Emerging Markets	401,646,649	7.7	8.0	0.2	5.4	9.9	7.2	7.6	3.0	--	2.6	Dec-10
Vontobel	103,639,641	2.0		0.2	1.6	13.2	11.6	10.1	3.4	7.7	9.9	Oct-05
Polunin	110,927,249	2.1		1.6	8.2	11.0	8.3	9.0	6.0	--	6.6	Oct-13
SSgA Emerging Markets	91,868,143	1.8		-0.6	5.0	5.0	2.1	7.6	1.3	--	1.4	Oct-13
<i>MSCI Emerging Markets</i>				-0.1	6.1	10.2	7.3	9.0	3.1	3.3	3.2	Oct-13
Lazard	95,211,616	1.8		-0.8	6.9	11.0	7.6	3.6	1.5	--	1.7	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				-0.6	5.2	5.1	3.4	4.6	1.2	3.0	1.8	Oct-13
Total Fixed Income	1,487,318,935	28.3	26.0	0.0	0.0	7.8	8.8	4.1	3.3	4.2	4.8	Dec-04
Core Fixed Income	954,790,637	18.2	16.0	0.0	0.0	7.8	8.8	4.1	3.3	4.2	4.8	Dec-04
Wells Asset Management	318,376,294	6.1		0.0	-0.2	8.9	10.9	4.3	3.4	4.5	5.2	May-05
BlackRock SIO	319,989,457	6.1		0.0	0.7	7.2	7.3	4.5	--	--	3.7	Aug-15
<i>BBgBarc US Aggregate TR</i>				-0.1	-0.3	8.8	10.8	4.1	3.1	3.6	3.4	Aug-15
IR&M	316,424,886	6.0		0.0	-0.4	7.4	8.3	3.5	--	--	3.5	Jul-15
<i>IR&M Custom Benchmark</i>				0.0	-0.4	7.2	8.2	3.2	2.6	3.3	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.



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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	532,528,299	10.1	10.0	0.1	0.3	9.3	8.4	5.7	3.7	--	--	
High Yield Income	320,655,555	6.1	6.0	0.6	0.6	7.4	5.4	5.8	5.1	7.3	6.9	Jan-06
Crescent Capital	108,331,887	2.1		0.7	1.4	10.0	8.0	5.5	--	--	5.5	May-15
<i>50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield</i>				0.5	0.8	9.5	6.9	5.3	4.6	6.4	4.6	May-15
DDJ	101,243,098	1.9		0.6	-0.3	4.1	2.0	6.4	--	--	5.6	May-15
<i>75% BC HY 25% S&P Leverage Loan</i>				0.4	0.9	10.8	8.3	5.8	--	--	5.0	May-15
GoldenTree Multi Sector Opp Credit	109,946,967	2.1		0.5	0.7	8.2	6.0	5.4	--	--	5.4	Dec-16
<i>Blended Index</i>				0.3	0.5	8.1	6.4	4.8	--	--	4.8	Dec-16
<i>S&P/LSTA Leveraged Loan TR</i>				0.6	0.6	6.9	4.2	4.2	3.9	5.1	4.2	Dec-16
Emerging Market Debt	187,648,459	3.6	4.0	-0.5	-0.2	12.9	14.0	6.0	0.7	--	0.6	Nov-11
Aberdeen EMD Plus	187,648,145	3.6		-0.5	-0.2	12.9	14.0	--	--	--	14.0	Dec-18
<i>JP Morgan EMBI Global Diversified</i>				-0.5	-0.7	12.8	14.3	6.4	5.3	6.7	14.3	Dec-18
Global Fixed Income	24,224,285	0.5	0.0	-0.8	-1.0	6.5	8.1	4.2	2.5	2.7	5.1	Jul-95
Loomis Sayles	24,224,285	0.5		-0.8	-1.0	6.5	8.1	4.2	2.5	2.7	5.6	Nov-99
<i>FTSE WGBI TR</i>				-1.2	-1.9	5.6	8.1	3.8	1.8	1.3	4.1	Nov-99
Total Alternative Assets	1,102,675,699	21.0	26.0									
Hedge Fund Composite	239,737,990	4.6	5.0	0.7	1.2	5.1	3.1	2.4	0.5	2.9	3.1	Nov-04
EnTrust Peruvian Bonds	4,874,012	0.1		-0.1	-0.4	-3.2	-5.3	--	--	--	-4.1	Jan-18
Blackstone	115,976,240	2.2		0.5	1.1	7.1	6.7	--	--	--	4.9	Feb-18
Grosvenor	116,719,980	2.2		0.9	1.4	4.7	2.6	3.6	2.4	--	3.5	Jul-13
<i>HFRI Fund of Funds Composite Index</i>				0.8	0.9	6.6	4.8	3.6	2.1	2.7	2.9	Jul-13
Hedge Fund Transition Account	2,167,759	0.0										
Real Estate Composite	500,073,176	9.5	10.0	0.0	1.6	5.1	7.6	8.6	9.9	10.0	--	
Private Equity & Debt	362,864,533	6.9	11.0	0.0	1.9	2.7	5.1	9.8	7.5	8.4	--	
Cash	49,229,359	0.9	0.0	0.1	0.6	2.2	2.2	0.7	0.4	0.2	1.2	Oct-04

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 6/30/2019.
- 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 June 30, 2019						
	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	\$971,380,397	\$577,771,427	\$698,841,830	1.9%	5.1%	\$362,864,533
Private Equity	\$604,401,896	\$450,777,850	\$487,381,867			\$200,483,462
Private Debt	\$366,978,501	\$126,993,577	\$211,459,963			\$162,381,071
Real Estate IRR	\$928,863,774	\$747,665,633	\$825,201,741	1.6%	7.6%	\$500,073,176



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- 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.
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