

FLASH REPORT (Gross)

Boston Retirement System

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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	May	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	31.5%	4.8%	-5.0%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	31.4%	5.3%	-4.9%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	25.5%	6.5%	-15.9%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	27.8%	7.4%	-13.5%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	22.0%	4.4%	-14.3%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	0.8%	-16.0%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	26.6%	4.3%	-9.2%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	11.0%	-	10.4%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	8.4%	0.3%	4.8%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	7.5%	3.2%	1.2%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	10.7%	4.1%	-6.4%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	14.3%	4.4%	-4.7%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	8.7%	0.5%	5.5%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	6.8%	0.4%	2.1%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	14.8%	-1.9%	21.0%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	23.4%	1.5%	3.3%
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%	-3.2%	28.5%
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%	5.2%	-7.3%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	15.0%	6.1%	-6.1%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	9.3%	-	-6.8%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	7.7%	4.3%	-21.2%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	6.6%	9.0%	-30.2%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	26.0%	0.2%	-21.1%

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	5,038,548,812	100.0	100.0	3.3	-0.8	-5.2	4.4	4.5	4.8	7.5	7.5	Aug-94
Allocation Index				2.8	-0.7	-5.1	4.3	4.6	4.9	7.1	--	Aug-94
Policy Index				2.8	-0.1	-4.5	5.4	5.5	5.6	7.7	--	Aug-94
PRIT Core Fund/Teachers*	1,677,667,303	33.3		2.2	-0.4	-3.7	6.2	6.5	6.5	--	8.9	Jul-10
Total Equity	2,498,921,531	49.6	48.0	5.1	-1.5	-11.0	3.4	3.7	4.6	--	--	Dec-04
MSCI ACWI				4.3	-0.1	-9.2	5.4	5.2	5.3	8.5	6.2	Dec-04
Large Cap Comp	1,023,657,959	20.3	17.0	5.9	4.8	-2.5	15.8	11.5	10.8	14.2	9.5	Dec-04
Rhumblin Advisors	297,842,949	5.9		4.8	3.6	-4.9	12.8	10.2	9.8	13.1	9.7	Aug-94
DE Shaw Core Enhanced	336,731,092	6.7		5.2	4.0	-4.6	14.3	11.0	10.5	13.7	13.5	Oct-09
Russell 1000				5.3	3.4	-4.9	12.5	10.1	9.6	13.1	12.7	Oct-09
Aristotle Value	126,717,352	2.5		5.1	-0.2	-10.1	--	--	--	--	-3.6	Nov-19
Columbia Threadneedle	116,886,123	2.3		3.0	-2.7	-15.9	0.8	4.0	5.5	11.4	8.9	Jan-97
Russell 1000 Value				3.4	-4.6	-15.7	-1.6	2.6	4.4	9.8	7.6	Jan-97
Zevenbergen Capital	145,137,434	2.9		13.2	21.8	36.7	54.1	30.6	21.3	19.8	13.5	Aug-94
Russell 1000 Growth				6.7	10.5	5.2	26.3	17.2	14.5	16.1	10.2	Aug-94
Small Cap Comp	349,395,838	6.9	6.0	8.4	-1.1	-11.7	2.9	6.8	6.4	11.5	9.0	Dec-04
Westfield Capital Management	113,358,985	2.2		12.6	6.3	-1.1	17.9	13.4	9.0	14.3	11.2	Sep-03
Russell 2000 Growth				9.4	1.7	-6.6	7.3	7.7	6.3	11.7	8.9	Sep-03
Bernzott	104,920,712	2.1		7.3	-6.7	-17.0	-2.9	6.0	--	--	8.0	Nov-15
Russell 2000 Value				2.9	-13.0	-25.6	-14.7	-4.2	0.7	6.5	2.0	Nov-15
Aristotle Small Cap	130,962,917	2.6		6.0	-2.3	-16.1	-4.9	1.3	--	--	5.9	Nov-15
Russell 2000				6.5	-5.2	-15.9	-3.4	2.0	3.7	9.2	5.5	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	1,125,867,734	22.3	25.0	3.3	-6.9	-17.5	-5.9	-2.5	-0.3	4.1	5.4	Aug-94
International Equity	775,231,112	15.4	17.0	4.2	-6.0	-17.1	-4.7	-2.3	-0.4	--	3.7	Dec-10
Todd	213,512,406	4.2		3.7	-7.2	-16.9	-1.6	-0.5	--	--	2.8	Apr-16
<i>MSCI ACWI ex USA</i>				3.3	-5.0	-14.8	-3.4	-0.2	0.8	4.4	4.1	Apr-16
Panagora Asset Management	234,799,980	4.7		4.3	-5.2	-16.1	-6.3	-3.0	0.3	6.2	5.2	Aug-94
State Street Transition Account	227,981,941	4.5		4.2	-3.8	-15.4	--	--	--	--	-11.7	Nov-19
<i>MSCI EAFE</i>				4.4	-3.7	-14.3	-2.8	-0.4	0.8	5.3	-10.5	Nov-19
Segall Bryant Hamill	98,712,189	2.0		5.4	-9.9	-23.2	-11.3	--	--	--	-11.7	Nov-17
<i>MSCI EAFE Small Cap</i>				7.1	-2.1	-14.3	-0.8	0.1	3.3	7.8	-3.3	Nov-17
Emerging Markets	350,636,622	7.0	8.0	1.4	-8.7	-18.3	-8.3	-3.1	0.0	--	1.0	Dec-10
Vontobel	91,232,203	1.8		0.7	-8.4	-16.4	-8.4	-0.9	1.7	5.9	8.6	Oct-05
Polunin	95,976,022	1.9		2.2	-5.3	-18.5	-6.8	-1.3	1.1	--	3.9	Oct-13
SSgA Emerging Markets	79,878,033	1.6		-1.0	-9.6	-19.1	-10.3	-3.2	-1.1	--	-0.8	Oct-13
<i>MSCI Emerging Markets</i>				0.8	-6.9	-16.0	-4.4	-0.2	0.9	2.5	1.4	Oct-13
Lazard	83,550,364	1.7		3.9	-11.9	-19.2	-7.8	-7.1	-1.8	--	-0.4	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				2.4	-10.3	-20.0	-13.1	-5.5	-4.0	1.0	-0.8	Oct-13
Total Fixed Income	1,368,500,739	27.2	26.0	1.2	0.4	3.0	6.9	4.3	3.8	4.3	4.9	Dec-04
Core Fixed Income	887,073,792	17.6	16.0	1.2	0.4	3.0	6.9	4.3	3.8	4.3	4.9	Dec-04
Wells Asset Management	316,215,460	6.3		0.9	2.1	5.9	10.1	5.4	4.3	4.7	5.4	May-05
BlackRock SIO	260,945,957	5.2		2.2	-2.0	-1.0	3.5	3.4	--	--	3.3	Aug-15
<i>BBgBarc US Aggregate TR</i>				0.5	1.6	5.5	9.4	5.1	3.9	3.9	4.2	Aug-15
IR&M	309,912,375	6.2		0.8	1.2	4.1	7.3	4.2	--	--	4.1	Jul-15
<i>IR&M Custom Benchmark</i>				0.6	1.1	4.0	7.2	4.0	3.2	3.6	3.5	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.
- Total Fixed Income Composite value includes the liquidating Loomis Sayles account.

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	481,426,947	9.6	10.0	5.1	-7.1	-7.1	-2.4	1.6	3.1	--	--	
High Yield Income	303,999,421	6.0	6.0	4.3	-6.8	-7.1	-3.5	1.9	3.7	6.3	6.3	Jan-06
Crescent Capital	103,035,681	2.0		3.4	-5.2	-6.0	-0.5	2.1	4.0	--	4.0	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				4.1	-4.2	-5.2	-0.8	2.4	3.4	5.4	3.4	May-15
DDJ	95,113,918	1.9		4.2	-9.1	-8.9	-7.0	1.2	4.0	--	3.8	May-15
75% BC HY 25% S&P Leverage Loan				4.3	-3.8	-5.0	0.3	2.7	3.9	--	3.8	May-15
GoldenTree Multi Sector Opp Credit	104,810,644	2.1		5.3	-6.1	-6.5	-2.9	2.3	--	--	3.2	Dec-16
Blended Index				3.5	-4.1	-4.6	-0.9	2.2	--	--	3.1	Dec-16
S&P/LSTA Leveraged Loan TR				3.8	-4.9	-5.7	-2.9	1.7	2.6	4.0	2.3	Dec-16
Emerging Market Debt	176,294,792	3.5	4.0	6.6	-8.5	-8.3	-1.5	0.6	1.6	--	-0.2	Nov-11
Aberdeen EMD Plus	176,294,478	3.5		6.6	-8.5	-8.3	-1.5	--	--	--	4.7	Dec-18
JP Morgan EMBI Global Diversified				6.1	-6.6	-6.1	0.4	2.4	4.2	5.9	6.2	Dec-18
Total Alternative Assets	1,135,204,304	22.5	26.0									
Hedge Fund Composite	237,256,201	4.7	5.0	1.7	-1.2	-1.7	1.9	1.4	-0.2	2.6	3.0	Nov-04
EnTrust Peruvian Bonds	4,651,180	0.1		-0.4	-1.0	-1.5	-6.7	--	--	--	-5.0	Jan-18
Blackstone	113,756,727	2.3		1.8	-2.2	-2.2	1.8	--	--	--	3.2	Feb-18
Grosvenor	117,190,760	2.3		1.8	-0.2	-1.1	2.5	2.5	1.8	--	3.3	Jul-13
HFRI Fund of Funds Composite Index				2.3	-2.3	-3.5	0.1	1.6	0.9	2.5	2.4	Jul-13
Hedge Fund Transition Account	1,657,534	0.0										
Real Estate Composite	505,401,853	10.0	10.0	0.0	2.6	2.6	8.2	8.7	9.5	11.4	--	
Private Equity & Debt	392,546,250	7.8	11.0	0.0	2.6	2.6	8.2	10.1	7.6	8.3	--	
Cash	35,922,238	0.7	0.0	0.0	0.2	0.4	1.8	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 12/31/2019.
- 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 December 31, 2019						
	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	\$986,871,262	\$599,316,281	\$735,815,465	2.6%	8.2%	\$392,546,250
Private Equity	\$604,892,761	\$462,355,153	\$502,634,067			\$213,706,705
Private Debt	\$381,978,501	\$136,961,128	\$233,181,398			\$178,839,545
Real Estate IRR	\$1,018,829,477	\$769,271,714	\$829,994,436	2.6%	8.2%	\$505,401,853



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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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