

FLASH REPORT (GROSS)

Boston Retirement System

October 31, 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	Oct	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	2.2%	23.2%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	2.1%	23.1%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	2.6%	17.2%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	1.9%	20.0%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	3.6%	16.9%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	4.2%	10.4%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	2.7%	19.4%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	0.3%	7.9%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	0.2%	6.9%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	0.2%	9.9%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.3%	11.7%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	0.3%	8.8%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	0.7%	7.0%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	-0.9%	18.7%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	0.5%	22.6%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	-1.4%	26.6%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	2.9%	11.0%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	0.3%	13.3%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	6.7%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	2.0%	5.2%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-6.2%	4.2%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	1.4%	28.7%

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	5,170,828,670	100.0	100.0	1.5	1.4	12.0	8.8	8.4	6.0	8.0	7.7	Aug-94
Allocation Index				1.6	1.9	12.6	10.0	8.4	6.0	7.5	--	Aug-94
Policy Index				1.6	2.0	12.6	10.5	9.2	6.6	8.1	--	Aug-94
PRIT Core Fund/Teachers*	1,660,456,321	32.1		1.4	2.6	13.1	11.0	9.8	7.7	--	9.6	Jul-10
Total Equity	2,535,130,470	49.0	48.0	2.9	1.6	17.7	10.8	10.9	6.9	--	--	Dec-04
Large Cap Comp	946,103,904	18.3	17.0	2.3	1.5	22.9	13.8	15.5	11.2	14.5	9.5	Dec-04
Rhumblin Advisors	251,033,353	4.9		2.2	2.4	23.1	14.3	14.9	10.7	13.7	9.9	Aug-94
DE Shaw Core Enhanced	93,213,170	1.8		2.2	2.9	23.5	15.1	15.6	11.4	14.3	14.1	Oct-09
DE Shaw 130/30	238,708,312	4.6		2.7	3.3	22.0	13.9	15.1	12.4	15.1	15.0	Oct-09
Russell 1000				2.1	2.0	23.1	14.2	14.7	10.5	13.7	13.3	Oct-09
Aristotle Value	131,580,713	2.5										
Columbia Threadneedle	129,390,140	2.5		2.6	1.4	18.4	9.4	12.5	8.6	13.5	9.6	Jan-97
Russell 1000 Value				1.4	1.9	19.5	11.2	10.5	7.6	12.0	8.3	Jan-97
Zevenbergen Capital	101,835,734	2.0		4.1	-8.5	29.0	13.6	21.6	12.4	15.8	11.9	Aug-94
Russell 1000 Growth				2.8	2.0	26.8	17.1	18.9	13.4	15.4	9.9	Aug-94
Small Cap Comp	324,772,300	6.3	6.0	1.7	-1.1	18.6	5.7	14.8	8.7	13.7	9.6	Dec-04
Westfield Capital Management	103,131,303	2.0		2.2	-1.5	21.4	10.7	16.4	8.9	14.7	10.9	Sep-03
Russell 2000 Growth				2.8	-2.4	18.6	6.4	13.2	8.4	13.4	9.1	Sep-03
Bernzott	116,281,706	2.2		2.2	-1.5	17.1	3.5	15.7	--	--	12.0	Nov-15
Russell 2000 Value				2.4	1.7	15.5	3.2	8.6	6.2	11.1	8.6	Nov-15
Aristotle Small Cap	105,358,592	2.0		0.7	-0.4	17.5	3.7	12.5	--	--	9.9	Nov-15
Russell 2000				2.6	-0.4	17.2	4.9	11.0	7.4	12.3	9.2	Nov-15

- J&W Seligman is now named Columbia Threadneedle.
- PRIT Core Fund valuation is based off the Policy Index as of 10/31/2019.
- Aristotle Value funded 10/31/2019.

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	1,264,254,267	24.4	25.0	3.6	2.5	14.3	9.8	7.0	3.5	5.0	6.1	Aug-94
International Equity	863,054,783	16.7	17.0	3.8	3.6	16.5	9.2	7.5	3.9	--	5.6	Dec-10
Todd	240,628,005	4.7		3.5	2.7	19.3	10.6	7.9	--	--	6.7	Apr-16
<i>MSCI ACWI ex USA</i>				3.5	2.9	15.5	11.3	8.1	3.8	4.9	8.1	Apr-16
Panagora Asset Management	242,905,302	4.7		3.8	4.1	13.1	7.3	6.7	4.8	6.8	5.9	Aug-94
Fisher	0	0.0		3.5	3.1	19.9	13.8	10.0	5.8	7.0	4.9	Feb-06
State Street Transition Account	258,278,171	5.0										
<i>MSCI EAFE</i>				3.6	3.8	16.9	11.0	8.5	4.3	5.4	--	Nov-19
Segall Bryant Hamill	120,527,270	2.3		4.8	5.3	10.9	0.9	--	--	--	-6.1	Nov-17
<i>MSCI EAFE Small Cap</i>				4.5	4.8	17.1	8.8	8.6	7.4	8.1	0.2	Nov-17
Emerging Markets	401,199,484	7.8	8.0	3.1	0.2	9.8	11.5	5.8	2.9	--	2.6	Dec-10
Vontobel	103,498,693	2.0		1.2	-1.9	13.0	17.6	6.9	3.5	8.1	9.9	Oct-05
Polunin	109,255,050	2.1		4.0	0.8	9.2	11.1	8.6	5.5	--	6.4	Oct-13
SSgA Emerging Markets	92,428,428	1.8		2.9	0.0	5.7	5.3	5.7	1.4	--	1.5	Oct-13
<i>MSCI Emerging Markets</i>				4.2	1.0	10.4	11.9	7.4	2.9	3.8	3.3	Oct-13
Lazard	96,017,313	1.9		4.3	2.1	11.9	13.6	1.5	1.3	--	1.9	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				3.8	0.6	5.7	9.7	3.1	1.0	3.5	1.9	Oct-13
Total Fixed Income	1,487,040,119	28.8	26.0	0.4	1.6	7.8	9.1	3.6	3.5	4.4	4.8	Dec-04
Core Fixed Income	955,088,296	18.5	16.0	0.4	1.6	7.8	9.1	3.6	3.5	4.4	4.8	Dec-04
Wells Asset Management	318,588,077	6.2		0.3	2.3	8.9	11.5	3.5	3.6	4.6	5.3	May-05
BlackRock SIO	320,071,906	6.2		0.5	1.1	7.1	7.0	4.6	--	--	3.7	Aug-15
<i>BBgBarc US Aggregate TR</i>				0.3	2.4	8.8	11.5	3.3	3.2	3.7	3.5	Aug-15
IR&M	316,428,313	6.1		0.3	1.3	7.4	8.8	2.8	--	--	3.6	Jul-15
<i>IR&M Custom Benchmark</i>				0.3	1.7	8.3	10.0	2.7	2.9	3.5	3.2	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.
 - Fisher has been terminated and the assets have been transferred to the State Street Transition 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	531,951,822	10.3	10.0	0.2	-0.2	9.1	7.4	5.5	3.6	--	--	
High Yield Income	318,875,850	6.2	6.0	-0.2	-0.6	6.8	3.8	5.6	4.9	7.3	6.9	Jan-06
Crescent Capital	107,705,816	2.1		0.2	1.1	9.2	6.5	5.3	--	--	5.4	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				-0.1	0.4	9.0	5.5	5.1	4.5	6.5	4.6	May-15
DDJ	100,675,295	1.9		-0.9	-2.8	3.5	0.9	6.4	--	--	5.6	May-15
75% BC HY 25% S&P Leverage Loan				0.1	0.7	10.3	6.9	5.5	--	--	5.0	May-15
GoldenTree Multi Sector Opp Credit	109,356,784	2.1		0.1	-0.2	7.6	4.0	--	--	--	5.3	Dec-16
Blended Index				0.0	0.3	7.9	5.4	4.7	--	--	4.8	Dec-16
S&P/LSTA Leveraged Loan TR				-0.4	-0.3	6.3	2.7	4.1	3.8	5.1	4.1	Dec-16
Emerging Market Debt	188,645,867	3.6	4.0	0.7	0.1	13.5	13.7	5.5	0.6	--	0.7	Nov-11
Aberdeen EMD Plus	188,645,554	3.6		0.7	0.1	13.5	--	--	--	--	14.6	Dec-18
JP Morgan EMBI Global Diversified				0.3	0.6	13.3	14.3	5.1	5.4	6.9	14.8	Dec-18
Global Fixed Income	24,430,105	0.5	0.0	0.7	1.6	7.4	9.4	3.2	2.6	3.1	5.2	Jul-95
Loomis Sayles	24,430,105	0.5		0.7	1.6	7.4	9.4	3.2	2.6	3.1	5.7	Nov-99
FTSE WGBI TR				0.5	1.9	6.8	9.9	2.6	2.0	1.7	4.2	Nov-99
Total Alternative Assets	1,101,145,853	21.3	26.0									
Hedge Fund Composite	238,208,144	4.6	5.0	0.4	0.1	4.3	1.4	2.4	0.6	2.9	3.1	Nov-04
EnTrust Peruvian Bonds	4,880,855	0.1		-0.2	-2.1	-3.1	-5.3	--	--	--	-4.2	Jan-18
Blackstone	115,460,163	2.2		0.3	0.5	6.4	5.7	--	--	--	4.8	Feb-18
Grosvenor	115,703,583	2.2		0.6	-0.1	3.7	0.5	3.5	2.3	--	3.5	Jul-13
HFRI Fund of Funds Composite Index				0.4	-0.8	5.6	3.4	3.4	2.2	2.7	2.8	Jul-13
Hedge Fund Transition Account	2,163,544	0.0										
Real Estate Composite	500,073,176	9.7	10.0	0.0	1.6	5.1	7.6	8.6	9.9	10.0	--	
Private Equity & Debt	362,864,533	7.0	11.0	0.0	1.9	2.7	5.1	9.8	7.5	8.4	--	
Cash	47,512,228	0.9	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 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.
- EnTrust Peruvian Bonds is preliminary as of 10/31/2019.

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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