FLASH REPORT (Gross)

Boston Retirement System

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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	2019	Mar	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	31.5%	-12.4%	-19.6%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	31.4%	-13.2%	-20.2%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	25.5%	-21.7%	-30.6%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	27.8%	-21.7%	-29.7%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	22.0%	-13.3%	-22.8%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	-15.4%	-23.6%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	26.6%	-13.5%	-21.4%
Private Equity*	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	11.0%	-	11.0%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	8.4%	-1.8%	1.7%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	7.5%	-3.6%	-0.6%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	10.7%	-11.0%	-6.9%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	14.3%	-11.5%	-12.7%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	8.7%	-0.6%	3.1%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	6.8%	-2.2%	-0.3%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	14.8%	6.1%	20.9%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	23.4%	-10.2%	-4.7%
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%	8.6%	30.0%
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%	-11.1%	-15.2%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	15.0%	-13.8%	-13.4%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	9.3%	-	-1.8%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	7.7%	-12.8%	-23.3%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	6.6%	-47.2%	-57.2%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	26.0%	-21.9%	-27.3%

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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	**4,612,915,516**	**100.0**	**100.0**	**-9.6**	**-13.6**	**-6.1**	**2.2**	**3.2**	**6.1**	**7.2**	**Aug-94**
Allocation Index				*-8.6*	*-12.7*	*-5.2*	*2.6*	*3.5*	*5.7*	*--*	*Aug-94*
Policy Index				*-8.3*	*-12.3*	*-4.3*	*3.4*	*4.1*	*6.3*	*--*	*Aug-94*
PRIT Core Fund/Teachers*	1,598,989,395	34.7		-6.8	-9.9	-1.2	5.1	5.3	--	8.3	Jul-10
Total Equity	**2,114,777,211**	**45.8**	**48.0**	**-16.2**	**-24.3**	**-15.0**	**-0.4**	**1.9**	**--**	**--**	**Dec-04**
MSCI ACWI				*-13.5*	*-21.4*	*-11.3*	*1.5*	*2.8*	*5.9*	*5.3*	*Dec-04*
Large Cap Comp	**854,735,928**	**18.5**	**17.0**	**-13.5**	**-19.4**	**-6.6**	**5.7**	**7.1**	**11.3**	**8.2**	**Dec-04**
Rhumbline Advisors	252,124,259	5.5		-12.3	-19.5	-6.9	5.1	6.7	10.5	9.1	Aug-94
DE Shaw Core Enhanced	283,132,210	6.1		-12.6	-19.9	-6.5	5.6	7.2	11.0	11.9	Oct-09
Aristotle Value	107,041,808	2.3		-15.8	-24.1	--	--	--	--	-18.6	Nov-19
Columbia Threadneedle	99,674,183	2.2		-17.1	-28.3	-17.5	-1.2	2.6	8.9	8.2	Jan-97
Russell 1000 Value				*-17.1*	*-26.7*	*-17.2*	*-2.2*	*1.9*	*7.7*	*7.0*	*Jan-97*
Zevenbergen Capital	112,459,556	2.4		-12.1	-1.3	12.6	20.3	14.9	15.3	12.2	Aug-94
Russell 1000 Growth				*-9.8*	*-14.1*	*0.9*	*11.3*	*10.4*	*13.0*	*9.4*	*Aug-94*
Small Cap Comp	**275,710,381**	**6.0**	**6.0**	**-22.0**	**-30.3**	**-21.4**	**-0.8**	**1.5**	**8.5**	**7.4**	**Dec-04**
Westfield Capital Management	85,596,173	1.9		-19.8	-25.3	-13.0	4.0	3.3	10.4	9.4	Sep-03
Russell 2000 Growth				*-19.1*	*-25.8*	*-18.6*	*0.1*	*1.7*	*8.9*	*7.5*	*Sep-03*
Bernzott	85,184,499	1.8		-24.2	-32.6	-24.6	-0.7	--	--	3.4	Nov-15
Russell 2000 Value				*-24.7*	*-35.7*	*-29.6*	*-9.5*	*-2.4*	*4.8*	*-1.2*	*Nov-15*
Aristotle Small Cap	104,780,013	2.3		-21.9	-32.9	-26.2	-5.5	--	--	0.9	Nov-15
Russell 2000				*-21.7*	*-30.6*	*-24.0*	*-4.6*	*-0.2*	*6.9*	*1.3*	*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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	**984,330,901**	**21.3**	**25.0**	**-16.9**	**-26.4**	**-19.3**	**-4.4**	**-1.7**	**1.7**	**5.0**	**Aug-94**
International Equity	**671,835,522**	**14.6**	**17.0**	**-16.0**	**-26.0**	**-18.1**	**-4.1**	**-1.9**	**--**	**2.5**	**Dec-10**
Todd	189,442,276	4.1		-17.7	-26.3	-16.3	-3.1	--	--	-0.1	Apr-16
MSCI ACWI ex USA				*-14.5*	*-23.4*	*-15.6*	*-2.0*	*-0.6*	*2.1*	*1.6*	*Apr-16*
Panagora Asset Management	189,684,851	4.1		-15.0	-24.8	-19.3	-4.7	-1.1	3.7	4.8	Aug-94
State Street Transition Account	206,605,382	4.5		-12.8	-23.4	--	--	--	--	-20.0	Nov-19
MSCI EAFE				*-13.3*	*-22.8*	*-14.4*	*-1.8*	*-0.6*	*2.7*	*-19.4*	*Nov-19*
Segall Bryant Hamill	85,879,788	1.9		-21.7	-33.3	-26.8	--	--	--	-17.4	Nov-17
MSCI EAFE Small Cap				*-17.2*	*-27.5*	*-18.1*	*-2.9*	*1.0*	*4.8*	*-10.0*	*Nov-17*
Emerging Markets	**312,495,380**	**6.8**	**8.0**	**-18.7**	**-27.2**	**-21.5**	**-5.2**	**-1.4**	**--**	**-0.2**	**Dec-10**
Vontobel	83,927,125	1.8		-15.8	-23.2	-17.6	-1.4	0.0	4.9	8.1	Oct-05
Polunin	83,024,781	1.8		-18.2	-29.6	-22.7	-5.0	-0.2	--	1.7	Oct-13
SSgA Emerging Markets	74,748,309	1.6		-15.4	-24.3	-20.1	-4.0	-1.7	--	-1.9	Oct-13
MSCI Emerging Markets				*-15.4*	*-23.6*	*-17.7*	*-1.6*	*-0.4*	*0.7*	*0.0*	*Oct-13*
Lazard	70,795,164	1.5		-25.4	-31.5	-25.7	-10.5	-3.6	--	-2.9	Oct-13
MSCI Emerging Markets Small Cap				*-23.1*	*-31.4*	*-29.0*	*-9.6*	*-5.2*	*-1.3*	*-3.1*	*Oct-13*
Total Fixed Income	**1,343,838,664**	**29.1**	**26.0**								
Core Fixed Income	**895,569,935**	**19.4**	**16.0**	**-3.2**	**-0.8**	**4.6**	**3.5**	**2.9**	**4.1**	**4.7**	**Dec-04**
Wells Asset Management	305,806,756	6.6		-1.3	2.4	8.2	4.7	3.5	4.6	5.3	May-05
BlackRock SIO	268,854,371	5.8		-6.6	-5.7	-0.4	2.1	--	--	2.4	Aug-15
BBgBarc US Aggregate TR				*-0.6*	*3.1*	*8.9*	*4.8*	*3.4*	*3.9*	*3.8*	*Aug-15*
IR&M	320,908,808	7.0		-1.8	1.1	5.9	3.7	--	--	3.6	Jul-15
IR&M Custom Benchmark				*-1.3*	*1.4*	*6.3*	*3.5*	*2.6*	*3.5*	*3.1*	*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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	**448,268,729**	**9.7**	**10.0**	**-13.9**	**-13.9**	**-9.0**	**-0.3**	**1.6**	**--**	**--**	
High Yield Income	**283,016,108**	**6.1**	**6.0**	**-13.3**	**-13.6**	**-9.5**	**0.1**	**2.2**	**5.4**	**5.8**	**Jan-06**
Crescent Capital	96,641,561	2.1		-11.2	-12.0	-6.2	0.4	--	--	2.7	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				*-11.9*	*-12.9*	*-8.0*	*0.0*	*2.0*	*4.4*	*1.8*	*May-15*
DDJ	89,390,618	1.9		-14.6	-14.4	-12.2	0.0	--	--	2.6	May-15
75% BC HY 25% S&P Leverage Loan				*-11.7*	*-12.8*	*-7.5*	*0.4*	--	--	*2.2*	*May-15*
GoldenTree Multi Sector Opp Credit	95,829,509	2.1		-14.1	-14.5	-10.2	-0.3	--	--	0.6	Dec-16
Blended Index				*-10.6*	*-11.0*	*-6.7*	*0.3*	--	--	*1.2*	*Dec-16*
S&P/LSTA Leveraged Loan TR				*-12.4*	*-13.0*	*-9.2*	*-0.8*	*1.1*	*3.1*	*0.0*	*Dec-16*
Emerging Market Debt	**162,048,269**	**3.5**	**4.0**	**-15.9**	**-15.7**	**-9.2**	**-1.2**	**-0.1**	**--**	**-1.2**	**Nov-11**
Aberdeen EMD Plus	162,047,956	3.5		-15.9	-15.7	-9.2	--	--	--	-1.2	Dec-18
JP Morgan EMBI Global Diversified				*-13.8*	*-13.4*	*-6.8*	*0.4*	*2.8*	*4.9*	*0.7*	*Dec-18*
Global Fixed Income	**3,204,352**	**0.1**	**0.0**	**-6.1**	**-4.9**	**-0.7**	**2.0**	**2.1**	**2.7**	**4.8**	**Jul-95**
Loomis Sayles	3,204,352	0.1		-6.1	-4.9	-0.7	2.0	2.1	2.7	5.3	Nov-99
FTSE WGBI TR				*-0.6*	*2.0*	*6.2*	*4.3*	*3.0*	*2.2*	*4.2*	*Nov-99*
Total Alternative Assets	**1,125,629,025**	**24.4**	**26.0**								
Hedge Fund Composite	**227,680,922**	**4.9**	**5.0**	**-5.3**	**-5.7**	**-2.3**	**0.2**	**-0.8**	**2.0**	**2.8**	**Nov-04**
EnTrust Peruvian Bonds	4,694,261	0.1		-0.2	-0.6	-6.0	--	--	--	-5.0	Jan-18
Blackstone	109,789,866	2.4		-5.8	-5.8	-1.3	--	--	--	1.7	Feb-18
Grosvenor	111,532,294	2.4		-5.0	-5.9	-2.6	1.0	1.0	--	2.7	Jul-13
HFRI Fund of Funds Composite Index				*-7.6*	*-8.8*	*-5.5*	*0.0*	*0.0*	*1.7*	*1.6*	*Jul-13*
Hedge Fund Transition Account	1,664,502	0.0									
Real Estate Composite	**505,401,853**	**11.0**	**10.0**	**2.6**	**2.6**	**8.2**	**8.7**	**9.5**	**11.4**	**--**	
Private Equity & Debt	**392,546,250**	**8.5**	**11.0**	**2.6**	**2.6**	**8.2**	**10.1**	**7.6**	**8.3**	**--**	
Cash	**28,670,616**	**0.6**	**0.0**	**0.1**	**0.3**	**2.1**	**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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- 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.