FLASH REPORT (GROSS)

Boston Retirement System

September 30, 2020

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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	Sep	Q3	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	31.5%	-3.8%	-0.2%	5.6%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	31.4%	-3.7%	0.0%	6.4%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	25.5%	-3.3%	-10.5%	-8.7%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	27.8%	-2.6%	-9.2%	-5.8%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	22.0%	-2.6%	-8.5%	-7.1%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	-1.6%	-3.1%	-1.2%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	26.6%	-3.2%	-3.0%	1.4%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	17.2%	-	17.2%	-7.3%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	8.4%	-0.4%	6.4%	9.2%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	7.5%	0.0%	2.4%	3.3%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	10.7%	0.1%	-2.4%	0.4%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	14.3%	-1.0%	-1.9%	0.6%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	8.7%	-0.1%	6.1%	6.8%
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%	3.6%	5.7%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	14.8%	0.4%	17.8%	21.3%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	23.4%	-0.5%	6.0%	8.0%
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%	0.4%	23.2%	28.9%
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%	-2.0%	-3.0%	-6.3%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	15.0%	-1.9%	-0.8%	-0.5%
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%	0.9%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	7.7%	-3.4%	-15.3%	-12.1%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	6.6%	-13.6%	-30.2%	-46.2%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	26.0%	-3.3%	-19.2%	-17.5%

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	**5,416,965,411**	**100.0**	**100.0**	**-1.0**	**5.4**	**1.5**	**7.2**	**5.1**	**7.7**	**7.5**	**7.7**	**Aug-94**
Allocation Index				*-1.1*	*5.2*	*1.1*	*6.4*	*5.3*	*7.7*	*7.1*	*--*	*Aug-94*
Policy Index				*-0.5*	*5.4*	*1.6*	*7.0*	*6.0*	*8.4*	*7.6*	*--*	*Aug-94*
PRIT Core Fund/Teachers*	1,722,972,401			0.6	6.2	2.5	7.2	6.9	8.9	8.6	9.3	Jul-10
Total Equity	**2,697,191,395**	**49.8**	**48.0**	**-2.7**	**7.7**	**-0.5**	**9.5**	**5.2**	**9.8**	**--**	**--**	**Dec-04**
MSCI ACWI				*-3.2*	*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*6.8*	*Dec-04*
Large Cap Comp	**1,073,641,034**	**19.8**	**17.0**	**-3.1**	**10.1**	**11.1**	**22.4**	**14.2**	**15.8**	**15.1**	**10.2**	**Dec-04**
Rhumbline Advisors	290,796,266	5.4		-3.8	8.9	5.6	15.2	12.3	14.1	13.7	10.1	Aug-94
DE Shaw Core Enhanced	373,491,615	6.9		-4.0	8.7	6.0	15.9	12.9	14.8	14.5	14.2	Oct-09
Russell 1000				*-3.7*	*9.5*	*6.4*	*16.0*	*12.4*	*14.1*	*13.8*	*13.5*	*Oct-09*
Aristotle Value	139,620,439	2.6		-1.9	8.0	-1.0	--	--	--	--	6.2	Nov-19
Columbia Threadneedle	127,741,011	2.4		-2.9	6.6	-8.0	1.6	4.4	10.1	12.1	9.2	Jan-97
Russell 1000 Value				*-2.5*	*5.6*	*-11.6*	*-5.0*	*2.6*	*7.7*	*9.9*	*7.7*	*Jan-97*
Zevenbergen Capital	141,545,650	2.6		-1.2	19.8	82.2	112.7	40.8	30.7	21.9	14.6	Aug-94
Russell 1000 Growth				*-4.7*	*13.2*	*24.3*	*37.5*	*21.7*	*20.1*	*17.3*	*10.8*	*Aug-94*
Small Cap Comp	**377,790,295**	**7.0**	**6.0**	**-2.9**	**6.4**	**-4.3**	**6.2**	**6.5**	**10.8**	**12.1**	**9.3**	**Dec-04**
Westfield Capital Management	125,835,315	2.3		-0.1	9.6	10.3	26.0	15.3	14.9	14.8	11.7	Sep-03
Russell 2000 Growth				*-2.1*	*7.2*	*3.9*	*15.7*	*8.2*	*11.4*	*12.3*	*9.4*	*Sep-03*
Bernzott	117,342,187	2.2		-3.6	8.9	-6.9	3.7	6.1	--	--	10.0	Nov-15
Russell 2000 Value				*-4.7*	*2.6*	*-21.5*	*-14.9*	*-5.1*	*4.1*	*7.1*	*3.0*	*Nov-15*
Aristotle Small Cap	134,459,368	2.5		-4.7	1.5	-13.9	-7.7	-1.3	--	--	6.1	Nov-15
Russell 2000				*-3.3*	*4.9*	*-8.7*	*0.4*	*1.8*	*8.0*	*9.9*	*6.9*	*Nov-15*

- J&W Seligman is now named Columbia Threadneedle.

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	**1,245,760,065**	**23.0**	**25.0**	**-2.3**	**6.0**	**-8.5**	**0.4**	**-1.4**	**5.1**	**3.7**	**5.7**	**Aug-94**
International Equity	**845,715,421**	**15.6**	**17.0**	**-2.3**	**5.4**	**-9.4**	**-0.9**	**-1.6**	**4.2**	**--**	**4.5**	**Dec-10**
Todd	235,499,792	4.3		-3.0	4.7	-8.1	1.9	-0.1	--	--	4.9	Apr-16
MSCI ACWI ex USA				*-2.5*	*6.3*	*-5.4*	*3.0*	*1.2*	*6.2*	*4.0*	*6.3*	*Apr-16*
Panagora Asset Management	255,349,487	4.7		-2.6	5.2	-8.7	-1.5	-1.9	4.4	5.5	5.4	Aug-94
Walter Scott International Equity	247,631,894	4.6		--	--	--	--	--	--	--	--	Oct-20
MSCI EAFE				*-2.6*	*4.8*	*-7.1*	*0.5*	*0.6*	*5.3*	*4.6*	*--*	*Oct-20*
Segall Bryant Hamill	107,003,894	2.0		-1.3	8.0	-16.5	-6.2	--	--	--	-7.8	Nov-17
MSCI EAFE Small Cap				*-0.7*	*10.3*	*-4.2*	*6.8*	*1.4*	*7.4*	*7.3*	*0.9*	*Nov-17*
Emerging Markets	**400,044,645**	**7.4**	**8.0**	**-2.3**	**7.1**	**-6.6**	**3.3**	**-1.1**	**7.0**	**--**	**2.3**	**Dec-10**
Vontobel	108,109,102	2.0		-1.8	9.9	-0.7	6.6	3.0	7.8	5.4	9.7	Oct-05
Polunin	108,612,747	2.0		-3.5	6.7	-7.5	4.3	-0.4	9.6	--	5.6	Oct-13
SSgA Emerging Markets	91,780,987	1.7		-0.6	9.8	-7.0	2.2	-1.7	6.2	--	1.2	Oct-13
MSCI Emerging Markets				*-1.6*	*9.6*	*-1.2*	*10.5*	*2.4*	*9.0*	*2.5*	*3.7*	*Oct-13*
Lazard	91,541,809	1.7		-3.0	2.2	-11.5	-0.6	-5.4	4.0	--	0.9	Oct-13
MSCI Emerging Markets Small Cap				*-1.6*	*11.8*	*-2.4*	*6.9*	*-1.1*	*4.6*	*1.0*	*2.1*	*Oct-13*
Total Fixed Income	**1,490,481,353**	**27.5**	**26.0**									
Core Fixed Income	**944,665,263**	**17.4**	**16.0**	**0.0**	**2.0**	**6.2**	**7.2**	**5.1**	**4.5**	**4.1**	**5.0**	**Dec-04**
Wells Asset Management	322,651,423	6.0		0.0	1.2	8.1	8.4	5.8	4.7	4.5	5.5	May-05
BlackRock SIO	302,374,601	5.6		0.0	2.9	3.5	5.3	4.3	4.4	--	4.0	Aug-15
BBgBarc US Aggregate TR				*-0.1*	*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*4.1*	*Aug-15*
IR&M	319,639,239	5.9		-0.2	2.0	7.4	8.2	5.2	4.4	--	4.4	Jul-15
IR&M Custom Benchmark				*-0.2*	*1.8*	*6.7*	*7.5*	*4.8*	*3.7*	*3.4*	*3.8*	*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.

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
Value Added Fixed Income	**545,816,090**	**10.1**	**10.0**	**-0.6**	**4.5**	**-0.2**	**2.4**	**3.1**	**5.6**	**--**	**--**	
High Yield Income	**328,627,594**	**6.1**	**6.0**	**0.2**	**5.7**	**0.5**	**3.2**	**3.8**	**5.8**	**6.2**	**6.7**	**Jan-06**
Crescent Capital	109,219,974	2.0		-0.4	5.0	-0.3	2.2	3.4	5.5	--	4.9	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				*-0.2*	*4.4*	*0.0*	*2.2*	*3.7*	*5.4*	*5.4*	*4.2*	*May-15*
DDJ	105,860,914	2.0		1.5	7.7	1.7	4.7	3.9	7.3	--	5.7	May-15
75% BC HY 25% S&P Leverage Loan				*-0.6*	*4.5*	*0.3*	*2.7*	*3.9*	*6.1*	*--*	*4.6*	*May-15*
GoldenTree Multi Sector Opp Credit	112,577,242	2.1		-0.3	4.7	0.4	3.0	3.9	--	--	4.8	Dec-16
Blended Index				*0.0*	*3.8*	*0.5*	*2.3*	*3.5*	*--*	*--*	*4.3*	*Dec-16*
S&P/LSTA Leveraged Loan TR				*0.6*	*4.1*	*-0.7*	*1.1*	*3.1*	*4.0*	*4.3*	*3.5*	*Dec-16*
Emerging Market Debt	**217,188,496**	**4.0**	**4.0**	**-2.2**	**2.5**	**-2.6**	**-0.1**	**1.5**	**5.2**	**--**	**0.5**	**Nov-11**
Aberdeen EMD Plus	217,188,183	4.0		-2.2	2.5	-2.6	-0.1	--	--	--	7.3	Dec-18
JP Morgan EMBI Global Diversified				*-1.9*	*2.3*	*-0.5*	*1.3*	*3.5*	*6.1*	*5.4*	*8.4*	*Dec-18*
Total Alternative Assets	**1,186,141,983**	**21.9**	**26.0**									
Hedge Fund Composite	**252,281,794**	**4.7**	**5.0**	**0.4**	**4.5**	**4.9**	**7.3**	**3.1**	**2.4**	**3.1**	**3.4**	**Nov-04**
EnTrust Peruvian Bonds	4,609,847	0.1		-0.1	-0.4	-2.2	-5.3	--	--	--	-4.6	Jan-18
Blackstone	118,022,103	2.2		-0.2	2.4	1.8	3.6	--	--	--	4.4	Feb-18
Grosvenor	128,284,174	2.4		1.0	6.7	8.3	11.6	5.1	4.3	--	4.5	Jul-13
HFRI Fund of Funds Composite Index				*-0.2*	*4.3*	*2.6*	*5.7*	*2.9*	*3.1*	*2.9*	*3.2*	*Jul-13*
Hedge Fund Transition Account	1,365,670	0.0										
Real Estate Composite	**507,748,596**	**9.4**	**10.0**	**-1.0**	**-1.0**	**1.5**	**3.4**	**6.9**	**7.9**	**10.8**	**--**	
Private Equity & Debt	**426,111,593**	**7.9**	**11.0**	**7.1**	**7.1**	**-1.7**	**-0.5**	**6.6**	**5.6**	**7.9**	**--**	
Cash	**43,150,680**	**0.8**	**0.0**	**0.0**	**0.0**	**0.4**	**0.9**	**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 6/30/2020.
- 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.
- Liquidating account Perella Weinberg is carried as of 9/30/2020.

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

Private Markets & Real Estate Summary						
Quarter Ending June 30, 2020						
	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	**$1,061,871,623**	**$614,141,318**	**$799,319,547**	**7.1%**	**-0.5%**	**$426,111,593**
Private Equity	$604,893,122	$469,822,949	$516,285,075			$217,786,033
Private Debt	$456,978,501	$144,318,369	$283,034,472			$208,325,560
Real Estate IRR	**$1,037,176,734**	**$782,609,965**	**$851,209,177**	**-1.0%**	**3.4%**	**$507,748,596**

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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.
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