FLASH REPORT (Gross)

Boston Retirement System

April 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	Apr	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	31.5%	12.8%	-9.3%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	31.4%	13.2%	-9.7%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	25.5%	13.7%	-21.1%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	27.8%	14.6%	-19.5%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	22.0%	6.5%	-17.8%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	9.2%	-16.6%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	26.6%	10.7%	-12.9%
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%	2.8%	4.5%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	7.5%	-1.3%	-1.9%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	10.7%	-3.4%	-10.0%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	14.3%	4.5%	-8.8%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	8.7%	1.8%	5.0%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	6.8%	2.0%	1.6%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	14.8%	2.0%	23.4%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	23.4%	6.7%	1.7%
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%	2.1%	32.7%
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%	3.9%	-11.9%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	15.0%	2.2%	-11.4%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	9.3%	-	-9.0%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	7.7%	-1.5%	-24.5%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	6.6%	49.6%	-35.9%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	26.0%	8.3%	-21.3%

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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	**4,879,243,180**	**100.0**	**100.0**	**6.3**	**-7.6**	**-8.2**	**-2.0**	**3.8**	**4.2**	**6.6**	**7.4**	**Aug-94**
Allocation Index				*5.8*	*-7.2*	*-7.7*	*-1.4*	*4.1*	*4.3*	*6.2*	*--*	*Aug-94*
Policy Index				*5.9*	*-6.6*	*-7.2*	*-0.3*	*4.9*	*5.0*	*6.8*	*--*	*Aug-94*
PRIT Core Fund/Teachers*	1,655,823,789	33.9		4.5	-5.7	-5.8	1.5	6.2	6.0	--	8.7	Jul-10
Total Equity	**2,388,783,303**	**49.0**	**48.0**	**11.9**	**-13.7**	**-15.3**	**-8.0**	**2.7**	**3.7**	**--**	**--**	**Dec-04**
MSCI ACWI				*10.7*	*-12.0*	*-12.9*	*-5.0*	*4.5*	*4.4*	*6.9*	*6.0*	*Dec-04*
Large Cap Comp	**976,779,451**	**20.0**	**17.0**	**14.3**	**-8.3**	**-7.9**	**2.1**	**10.0**	**9.9**	**12.6**	**9.1**	**Dec-04**
Rhumbline Advisors	284,336,333	5.8		12.8	-9.2	-9.3	0.9	9.0	9.1	11.7	9.6	Aug-94
DE Shaw Core Enhanced	320,299,748	6.6		13.1	-9.3	-9.4	1.5	9.7	9.7	12.2	13.1	Oct-09
Aristotle Value	120,696,540	2.5		12.8	-13.2	-14.5	--	--	--	--	-8.2	Nov-19
Columbia Threadneedle	113,591,156	2.3		14.0	-14.6	-18.3	-11.5	2.9	5.2	10.2	8.8	Jan-97
Russell 1000 Value				*11.2*	*-16.7*	*-18.5*	*-11.0*	*1.4*	*3.9*	*8.5*	*7.4*	*Jan-97*
Zevenbergen Capital	137,528,957	2.8		22.3	8.7	20.7	30.4	27.0	18.9	17.5	13.0	Aug-94
Russell 1000 Growth				*14.8*	*-3.5*	*-1.4*	*10.8*	*15.7*	*13.3*	*14.4*	*10.0*	*Aug-94*
Small Cap Comp	**322,193,604**	**6.6**	**6.0**	**16.9**	**-17.2**	**-18.6**	**-11.8**	**3.8**	**5.1**	**9.8**	**8.4**	**Dec-04**
Westfield Capital Management	100,677,922	2.1		17.6	-12.4	-12.1	-2.4	9.1	7.0	12.0	10.4	Sep-03
Russell 2000 Growth				*14.9*	*-13.8*	*-14.7*	*-9.2*	*4.2*	*5.2*	*10.0*	*8.3*	*Sep-03*
Bernzott	97,762,867	2.0		14.8	-22.1	-22.6	-15.9	3.3	--	--	6.5	Nov-15
Russell 2000 Value				*12.3*	*-23.6*	*-27.7*	*-23.8*	*-6.1*	*0.3*	*5.3*	*1.4*	*Nov-15*
Aristotle Small Cap	123,603,118	2.5		18.0	-16.9	-20.8	-17.0	-1.0	--	--	4.7	Nov-15
Russell 2000				*13.7*	*-18.5*	*-21.1*	*-16.4*	*-0.8*	*2.9*	*7.7*	*4.2*	*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.

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	**1,089,810,249**	**22.3**	**25.0**	**8.4**	**-17.2**	**-20.2**	**-14.6**	**-2.7**	**-1.1**	**2.6**	**5.3**	**Aug-94**
International Equity	**743,928,284**	**15.2**	**17.0**	**7.4**	**-17.9**	**-20.5**	**-14.8**	**-2.6**	**-1.4**	**--**	**3.3**	**Dec-10**
Todd	205,963,343	4.2		8.7	-16.7	-19.8	-12.4	-0.9	--	--	2.0	Apr-16
MSCI ACWI ex USA				*7.6*	*-15.3*	*-17.5*	*-11.5*	*-0.3*	*-0.2*	*2.9*	*3.4*	*Apr-16*
Panagora Asset Management	225,221,978	4.6		6.9	-17.8	-19.6	-15.1	-3.3	-0.6	4.5	5.0	Aug-94
State Street Transition Account	218,840,184	4.5		5.9	-16.4	-18.8	--	--	--	--	-15.3	Nov-19
MSCI EAFE				*6.5*	*-16.1*	*-17.8*	*-11.3*	*-0.6*	*-0.2*	*3.5*	*-14.2*	*Nov-19*
Segall Bryant Hamill	93,677,939	1.9		9.2	-24.0	-27.2	-21.6	--	--	--	-13.9	Nov-17
MSCI EAFE Small Cap				*10.4*	*-17.6*	*-20.0*	*-12.3*	*-1.0*	*2.1*	*5.7*	*-6.0*	*Nov-17*
Emerging Markets	**345,881,964**	**7.1**	**8.0**	**10.7**	**-15.5**	**-19.4**	**-14.1**	**-2.8**	**-0.6**	**--**	**0.8**	**Dec-10**
Vontobel	90,706,481	1.9		8.2	-14.5	-17.0	-13.8	0.2	1.3	5.3	8.6	Oct-05
Polunin	94,025,156	1.9		13.3	-13.6	-20.2	-12.2	-1.8	0.2	--	3.6	Oct-13
SSgA Emerging Markets	80,706,011	1.7		8.0	-13.1	-18.3	-15.0	-2.2	-1.5	--	-0.7	Oct-13
MSCI Emerging Markets				*9.2*	*-12.5*	*-16.6*	*-12.0*	*0.6*	*-0.1*	*1.4*	*1.3*	*Oct-13*
Lazard	80,444,317	1.6		13.6	-20.6	-22.2	-15.7	-7.5	-2.5	--	-1.0	Oct-13
MSCI Emerging Markets Small Cap				*13.9*	*-18.5*	*-21.8*	*-19.3*	*-6.0*	*-4.3*	*-0.3*	*-1.2*	*Oct-13*
Total Fixed Income	**1,334,838,709**	**27.4**	**26.0**									
Core Fixed Income	**876,578,070**	**18.0**	**16.0**	**2.5**	**0.3**	**1.7**	**6.8**	**4.2**	**3.5**	**4.3**	**4.8**	**Dec-04**
Wells Asset Management	313,580,807	6.4		2.5	3.0	5.0	11.0	5.3	4.1	4.7	5.4	May-05
BlackRock SIO	255,351,324	5.2		2.6	-3.9	-3.2	1.5	2.9	--	--	2.9	Aug-15
BBgBarc US Aggregate TR				*1.8*	*3.0*	*5.0*	*10.8*	*5.2*	*3.8*	*4.0*	*4.1*	*Aug-15*
IR&M	307,645,940	6.3		2.2	1.7	3.3	7.9	4.2	--	--	4.0	Jul-15
IR&M Custom Benchmark				*1.9*	*1.8*	*3.4*	*8.0*	*3.9*	*3.0*	*3.6*	*3.4*	*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.

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	**458,260,639**	**9.4**	**10.0**	**2.7**	**-12.6**	**-11.6**	**-7.5**	**0.2**	**1.9**	**--**	**--**	
High Yield Income	**291,749,964**	**6.0**	**6.0**	**3.1**	**-11.6**	**-10.9**	**-8.1**	**0.8**	**2.7**	**5.6**	**6.0**	**Jan-06**
Crescent Capital	99,770,760	2.0		3.2	-9.3	-9.1	-4.2	1.1	3.3	--	3.3	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				*4.5*	*-9.2*	*-8.9*	*-5.4*	*1.2*	*2.7*	*4.6*	*2.7*	*May-15*
DDJ	91,267,060	1.9		2.1	-13.7	-12.6	-12.1	0.2	3.0	--	3.0	May-15
75% BC HY 25% S&P Leverage Loan				*4.5*	*-9.0*	*-8.8*	*-4.7*	*1.5*	*3.0*	--	*3.0*	*May-15*
GoldenTree Multi Sector Opp Credit	99,557,723	2.0		3.9	-12.1	-11.2	-8.1	0.7	--	--	1.7	Dec-16
Blended Index				*3.5*	*-8.3*	*-7.9*	*-4.7*	*1.2*	--	--	*2.2*	*Dec-16*
S&P/LSTA Leveraged Loan TR				*4.5*	*-9.6*	*-9.1*	*-6.6*	*0.5*	*1.8*	*3.4*	*1.3*	*Dec-16*
Emerging Market Debt	**165,369,878**	**3.4**	**4.0**	**2.0**	**-15.2**	**-14.0**	**-7.5**	**-1.0**	**-0.3**	**--**	**-0.9**	**Nov-11**
Aberdeen EMD Plus	165,369,564	3.4		2.0	-15.2	-14.0	-7.5	--	--	--	0.3	Dec-18
JP Morgan EMBI Global Diversified				*2.2*	*-12.8*	*-11.4*	*-5.0*	*0.7*	*2.9*	*5.1*	*2.3*	*Dec-18*
Global Fixed Income	**1,140,797**	**0.0**	**0.0**	**-1.8**	**-7.7**	**-6.7**	**-2.4**	**1.0**	**1.5**	**2.4**	**4.8**	**Jul-95**
Loomis Sayles	1,140,797	0.0		-1.8	-7.7	-6.7	-2.4	1.0	1.5	2.4	5.2	Nov-99
FTSE WGBI TR				*1.2*	*1.6*	*3.2*	*8.0*	*4.2*	*3.0*	*2.3*	*4.2*	*Nov-99*
Total Alternative Assets	**1,131,301,795**	**23.2**	**26.0**									
Hedge Fund Composite	**233,353,692**	**4.8**	**5.0**	**2.5**	**-3.6**	**-3.3**	**-0.3**	**0.9**	**-0.4**	**2.2**	**2.9**	**Nov-04**
EnTrust Peruvian Bonds	4,673,747	0.1		-0.4	-0.8	-1.0	-6.3	--	--	--	-5.0	Jan-18
Blackstone	111,875,192	2.3		2.0	-4.3	-3.9	0.0	--	--	--	2.5	Feb-18
Grosvenor	115,145,559	2.4		3.2	-3.1	-2.8	-0.2	1.9	1.7	--	3.1	Jul-13
HFRI Fund of Funds Composite Index				*3.4*	*-5.9*	*-5.7*	*-3.1*	*0.9*	*0.6*	*2.0*	*2.1*	*Jul-13*
Hedge Fund Transition Account	1,659,194	0.0										
Real Estate Composite	**505,401,853**	**10.4**	**10.0**	**0.0**	**2.6**	**2.6**	**8.2**	**8.7**	**9.5**	**11.4**	**--**	
Private Equity & Debt	**392,546,250**	**8.0**	**11.0**	**0.0**	**2.6**	**2.6**	**8.2**	**10.1**	**7.6**	**8.3**	**--**	
Cash	**24,319,373**	**0.5**	**0.0**	**0.1**	**0.3**	**0.4**	**2.0**	**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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