QUARTERLY PERFORMANCE REPORT

BOSTON RETIREMENT SYSTEM

DECEMBER 31, 2021

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CALENDAR YEAR INDEX PERFORMANCE

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Dec	QTD	2021
S&P 500	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	31.5%	18.4%	4.5%	11.0%	28.7%
Russell 1000	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	31.4%	21.0%	4.1%	9.8%	26.5%
Russell 2000	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	25.5%	20.0%	2.2%	2.1%	14.8%
Russell 2500	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	27.8%	20.0%	3.3%	3.8%	18.2%
MSCI EAFE	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	22.0%	7.8%	5.1%	2.7%	11.3%
MSCI EM	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	18.3%	1.9%	-1.3%	-2.5%
MSCI ACWI	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	26.6%	16.3%	4.0%	6.7%	18.5%
Private Equity	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	17.2%	38.2%	-	-	23.2%
BBG TIPS	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	8.4%	11.0%	0.3%	2.4%	6.0%
BBG Municipal	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	7.5%	5.2%	0.2%	0.7%	1.5%
BBG Muni High Yield	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	10.7%	4.9%	0.3%	1.2%	7.8%
BBG US Corporate HY	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	14.3%	7.1%	1.9%	0.7%	5.3%
BBG US Agg Bond	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	8.7%	7.5%	-0.3%	0.0%	-1.5%
BBG Global Agg	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	6.8%	9.2%	-0.1%	-0.7%	-4.7%
BBG Long Treasuries	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	14.8%	17.7%	-1.4%	3.1%	-4.6%
BBG US Long Credit	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	23.4%	13.3%	-0.4%	1.5%	-1.2%
BBG US STRIPS 20+ Yr	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	20.9%	24.0%	-2.3%	5.4%	-5.2%
JPM GBI-EM Global Div	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	13.5%	2.7%	1.6%	-2.5%	-8.7%
JPM EMBI Glob Div	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	15.0%	5.3%	1.4%	-0.4%	-1.8%
CS Hedge Fund	0.5%	5.9%	10.0%	5.4%	0.2%	-0.6%	7.2%	-1.1%	6.3%	4.1%	-2.2%	-1.0%	10.2%
BBG Commodity	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	7.7%	-3.1%	3.5%	-1.6%	27.1%
Alerian Midstream	-	-	-	16.4%	-37.3%	33.8%	-2.4%	-13.3%	24.0%	-23.4%	1.1%	-0.4%	38.4%
FTSE NAREIT Equity REITs	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	26.0%	-8.0%	8.8%	16.3%	43.2%

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag
Source: FactSet, Barclays, Thomson One

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	**6,743,956,637**	**100.0**	**100.0**	**3.1**	**3.2**	**13.1**	**14.0**	**10.6**	**9.2**	**8.2**	**Aug-94**
Allocation Index				*3.0*	*3.2*	*13.0*	*13.9*	*10.4*	*8.9*	*--*	*Aug-94*
Policy Index				*3.1*	*3.3*	*13.3*	*14.2*	*11.0*	*9.4*	*--*	*Aug-94*
PRIT Core Fund/Teachers*	2,187,775,165	32.4		3.0	5.5	19.6	16.2	12.7	10.9	10.8	Jul-10
Total Equity	**3,404,904,192**	**50.5**	**48.0**	**3.9**	**4.2**	**15.3**	**19.3**	**13.8**	**12.1**	**--**	**Dec-04**
MSCI ACWI				*4.0*	*6.7*	*18.5*	*20.4*	*14.4*	*11.9*	*8.2*	*Dec-04*
Large Cap Comp	**1,241,364,454**	**18.4**	**17.0**	**2.9**	**7.8**	**21.5**	**27.1**	**19.5**	**17.6**	**11.6**	**Dec-04**
Rhumbline Advisors	314,255,739	4.7		4.5	11.0	28.7	26.0	18.4	16.5	11.1	Aug-94
DE Shaw Core Enhanced	401,014,961	5.9		4.3	10.8	26.8	26.2	18.9	17.2	16.0	Oct-09
S&P 500				*4.5*	*11.0*	*28.7*	*26.1*	*18.5*	*16.6*	*15.4*	*Oct-09*
Aristotle Value	177,298,100	2.6		4.4	7.9	26.2	--	--	--	22.5	Nov-19
Columbia Threadneedle	191,444,523	2.8		5.8	9.2	27.9	20.9	14.0	15.2	10.5	Jan-97
Russell 1000 Value				*6.3*	*7.8*	*25.2*	*17.6*	*11.2*	*13.0*	*8.9*	*Jan-97*
Zevenbergen Capital	156,897,775	2.3		-7.7	-5.7	-9.1	43.4	32.3	23.0	14.3	Aug-94
Russell 1000 Growth				*2.1*	*11.6*	*27.6*	*34.1*	*25.3*	*19.8*	*11.7*	*Aug-94*
Small Cap Comp	**496,743,638**	**7.4**	**6.0**	**4.9**	**4.2**	**16.8**	**22.0**	**16.2**	**14.8**	**11.1**	**Dec-04**
Westfield Capital Management	150,657,543	2.2		3.6	3.1	16.9	28.8	21.3	16.8	13.0	Sep-03
Russell 2000 Growth				*0.4*	*0.0*	*2.8*	*21.2*	*14.5*	*14.1*	*10.4*	*Sep-03*
Bernzott	139,193,137	2.1		6.8	4.2	13.1	18.8	15.4	--	14.1	Nov-15
Russell 2000 Value				*4.1*	*4.4*	*28.3*	*18.0*	*9.1*	*12.0*	*11.7*	*Nov-15*
Aristotle Small Cap	206,623,883	3.1		4.6	5.0	19.8	18.7	12.0	--	12.6	Nov-15
Russell 2000				*2.2*	*2.1*	*14.8*	*20.0*	*12.0*	*13.2*	*12.8*	*Nov-15*

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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	**1,666,796,100**	**24.7**	**25.0**	**4.3**	**1.7**	**10.5**	**12.8**	**9.1**	**7.2**	**6.5**	**Aug-94**
International Equity	**1,150,451,564**	**17.1**	**17.0**	**5.2**	**3.3**	**13.6**	**13.5**	**9.0**	**8.0**	**6.6**	**Dec-10**
Todd	338,121,654	5.0		4.2	2.9	12.6	16.7	10.8	--	9.5	Apr-16
MSCI ACWI ex USA				*4.1*	*1.8*	*7.8*	*13.2*	*9.6*	*7.3*	*9.2*	*Apr-16*
Panagora Asset Management	339,598,691	5.0		5.7	3.1	14.3	12.7	8.6	9.1	6.3	Aug-94
Walter Scott International Equity	332,432,327	4.9		5.2	5.1	13.1	--	--	--	20.1	Oct-20
MSCI EAFE				*5.1*	*2.7*	*11.3*	*13.5*	*9.5*	*8.0*	*22.7*	*Oct-20*
Segall Bryant Hamill	140,070,595	2.1		6.2	0.9	14.5	9.5	--	--	1.0	Nov-17
MSCI EAFE Small Cap				*4.4*	*0.1*	*10.1*	*15.6*	*11.0*	*10.8*	*7.0*	*Nov-17*
Emerging Markets	**516,344,536**	**7.7**	**8.0**	**2.4**	**-1.7**	**4.3**	**11.2**	**9.1**	**5.6**	**4.1**	**Dec-10**
ABS Emerging Markets Strategic Portfolio	114,264,316	1.7		2.2	--	--	--	--	--	-0.5	Nov-21
Columbia Emerging Markets Equity	110,566,071	1.6		-0.3	-5.7	--	--	--	--	--	Aug-21
Polunin	146,658,112	2.2		3.4	-3.3	5.5	14.4	11.7	--	8.7	Oct-13
MSCI Emerging Markets				*1.9*	*-1.3*	*-2.5*	*10.9*	*9.9*	*5.5*	*5.1*	*Oct-13*
Lazard	144,856,038	2.1		3.5	1.6	16.4	12.8	7.3	--	4.5	Oct-13
MSCI Emerging Markets Small Cap				*4.2*	*1.3*	*18.8*	*16.5*	*11.5*	*7.4*	*6.5*	*Oct-13*
Total Fixed Income	**1,727,452,209**	**25.6**	**26.0**								
Core Fixed Income	**1,096,284,514**	**16.3**	**16.0**	**0.0**	**0.1**	**1.0**	**5.9**	**4.4**	**3.7**	**4.8**	**Dec-04**
AFL-CIO H.I.T.	49,862,697	0.7		-0.2	--	--	--	--	--	-0.2	Dec-21
BlackRock SIO	367,883,875	5.5		0.4	-0.1	1.6	5.9	4.7	--	4.1	Aug-15
Wells Asset Management	345,834,015	5.1		-0.2	-0.1	-1.4	5.5	4.1	3.7	5.0	May-05
Bloomberg US Aggregate TR				*-0.3*	*0.0*	*-1.5*	*4.8*	*3.6*	*2.9*	*4.0*	*May-05*
IR&M	332,703,927	4.9		0.0	0.5	2.8	6.5	4.5	--	4.2	Jul-15
IR&M Custom Benchmark				*0.0*	*0.6*	*2.4*	*6.0*	*4.1*	*3.1*	*3.6*	*Jul-15*

- IR&M Custom Benchmark reflects Bloomberg Agg since inception through 04/30/2017, from 05/01/2017 to 9/30/2021 reflects 40% Bloomberg Agg/60% Bloomberg Intermediate TIPS and as of 10/1/2021 reflects 60% Bloomberg Agg/40% Bloomberg Intermediate 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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	**631,167,695**	**9.4**	**10.0**	**1.6**	**0.0**	**3.7**	**7.5**	**5.8**	**4.6**	**--**	
High Yield Income	**380,249,988**	**5.6**	**6.0**	**1.2**	**1.0**	**8.8**	**8.7**	**6.9**	**6.8**	**7.1**	**Jan-06**
Crescent Capital	121,558,171	1.8		1.5	0.8	6.0	7.8	5.6	--	5.8	May-15
50/50 S&P/LSTA Leveraged Loan/Bloomberg High Yield				*1.3*	*0.7*	*5.2*	*7.2*	*5.3*	*5.8*	*5.0*	*May-15*
DDJ	123,891,122	1.8		0.9	0.9	9.5	8.8	7.8	--	7.2	May-15
75% BC HY 25% S&P Leverage Loan				*1.6*	*0.7*	*5.3*	*8.0*	*5.8*	--	*5.4*	*May-15*
GoldenTree Multi Sector Opp Credit	133,770,477	2.0		1.3	1.4	10.7	9.6	7.1	--	7.2	Dec-16
Blended Index				*1.0*	*0.6*	*5.3*	*6.8*	*5.0*	--	*5.2*	*Dec-16*
S&P/LSTA Leveraged Loan TR				*0.6*	*0.7*	*5.2*	*5.6*	*4.3*	*4.7*	*4.4*	*Dec-16*
Emerging Market Debt	**250,917,707**	**3.7**	**4.0**	**2.1**	**-1.5**	**-3.6**	**5.6**	**4.2**	**1.3**	**0.9**	**Nov-11**
Aberdeen EMD Plus	250,917,394	3.7		2.1	-1.5	-3.6	5.6	--	--	5.7	Dec-18
JP Morgan EMBI Global Diversified				*1.4*	*-0.4*	*-1.8*	*5.9*	*4.7*	*5.3*	*6.2*	*Dec-18*
Total Alternative Assets	**1,540,941,692**	**22.8**	**26.0**								
Hedge Fund Composite	**310,067,089**	**4.6**	**5.0**	**0.1**	**0.5**	**7.7**	**8.5**	**5.3**	**4.6**	**3.9**	**Nov-04**
EnTrust Peruvian Bonds	4,662,513	0.1		1.2	1.0	-0.7	-2.2	--	--	-2.8	Jan-18
Blackstone	142,254,417	2.1		0.1	0.5	7.6	7.4	--	--	6.1	Feb-18
Grosvenor	161,921,664	2.4		0.1	0.5	8.1	10.5	7.1	--	5.8	Jul-13
HFRI Fund of Funds Composite Index				*0.3*	*0.3*	*6.1*	*8.4*	*5.7*	*4.5*	*4.4*	*Jul-13*
Hedge Fund Transition Account	1,228,496	0.0									
Real Estate Composite	**577,067,096**	**8.6**	**10.0**	**7.1**	**7.1**	**16.4**	**8.5**	**8.8**	**10.2**	**--**	
Private Equity & Debt	**653,807,507**	**9.7**	**11.0**	**4.7**	**4.7**	**37.2**	**13.8**	**13.4**	**10.3**	**--**	
Cash	**70,658,543**	**1.0**	**0.0**	**0.7**	**0.7**	**0.7**	**1.1**	**0.7**	**0.3**	**1.1**	**Oct-04**

- Real Estate and Private Equity & Debt report on a quarterly basis, and are lagged one quarter.
- 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

Private Markets Summary Quarter Ending September 30, 2021						
	Committed Capital	Cummulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	**$1,344,180,737**	**$700,959,137**	**$911,817,212**	**4.7%**	**37.2%**	**$653,807,507**
Private Equity	$826,202,236	$525,853,866	$599,417,386			$346,536,231
Private Debt	$517,978,501	$175,105,271	$312,399,826			$307,271,276
Real Estate IRR	**$1,146,360,421**	**$865,203,555**	**$916,426,291**	**7.1%**	**16.4%**	**$577,067,096**

DISCLAIMERS & DISCLOSURES

Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A "since inception" return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv