

Meeting Material August 11, 2020

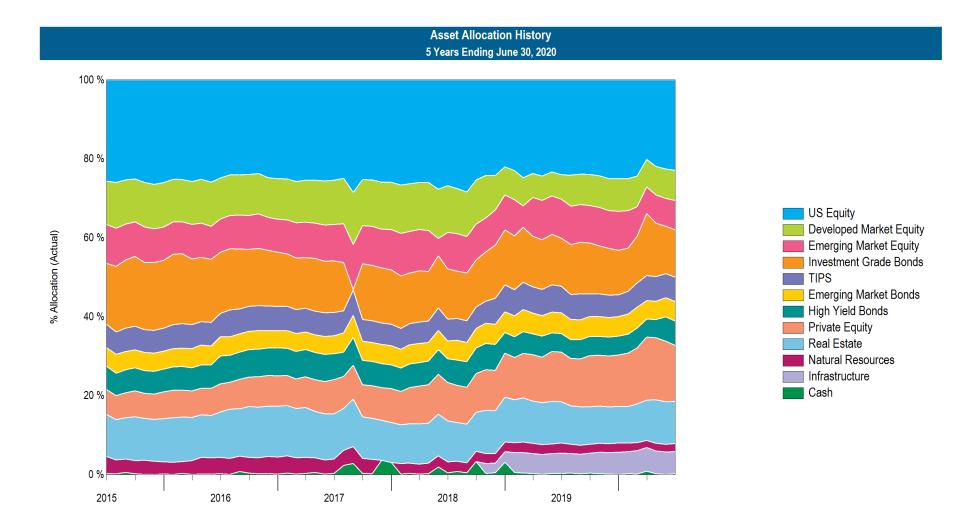
# Fund Evaluation Report

MEKETA.COM

Second Quarter 2020 Performance Review

	Allocation vs. Ta	rgets and Policy			
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$38,841,168	23%	25%	20% - 30%	Yes
Developed Market Equity	\$12,823,944	8%	10%	6% - 14%	Yes
Emerging Market Equity	\$12,727,653	8%	10%	6% - 14%	Yes
Investment Grade Bonds	\$20,309,637	12%	10%	6% - 14%	Yes
TIPS	\$10,442,787	6%	6%	4% - 8%	Yes
Emerging Market Bonds	\$8,356,565	5%	5%	3% - 7%	Yes
High Yield Bonds	\$10,408,841	6%	6%	3% - 9%	Yes
Private Equity	\$24,103,030	14%	10%	6% - 14%	No
Real Estate	\$18,080,883	11%	10%	7% - 13%	Yes
Natural Resources	\$3,404,109	2%	3%	1% - 5%	Yes
Infrastructure	\$9,567,993	6%	5%	0% - 8%	Yes
Cash	\$283,422	0%	0%	0% - 5%	Yes
Total	\$169,350,032	100%	100%		





	Asset Class Pe	formance	Summ	ary						
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	169,350,032	100.0	8.4	-2.5	3.9	6.0	5.9	7.5	5.5	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate			12.7	-2.3	3.4	5.5	5.5	6.8	5.7	Jul-01
InvMetrics Public DB \$50mm-\$250mm Net Median			13.1	-2.2	3.7	6.1	6.0	7.8	5.9	Jul-01
Domestic Equity Assets	38,841,168	22.9	22.1	-3.1	6.8	10.0	10.1	13.7	7.2	Jul-01
Russell 3000			22.0	-3.5	6.5	10.0	10.0	13.7	7.3	Jul-01
eV US Large Cap Equity Gross Median			20.1	-5.0	4.6	9.3	9.3	13.4	7.9	Jul-01
Total International Developed Market Equity	12,823,944	7.6	16.8	-11.8	-4.2	1.0	2.8	6.7	5.5	Jul-01
MSCI EAFE			14.9	-11.3	-5.1	0.8	2.1	5.7	4.5	Jul-01
eV EAFE Core Equity Gross Median			17.1	-10.9	-3.8	1.4	3.1	7.5	6.3	Jul-01
International Emerging Market Equity Assets	12,727,653	7.5	19.5	-6.5	-2.4	0.8	1.5	1.5	0.7	Jul-07
MSCI Emerging Markets			18.1	-9.8	-3.4	1.9	2.9	3.3	1.9	Jul-07
eV Emg Mkts Equity Gross Median			19.4	-10.2	-3.9	1.9	3.5	4.8	3.1	Jul-07
Investment Grade Bond Assets	20,309,637	12.0	3.9	6.1	8.7	5.3	4.3	3.9	4.9	Jul-01
BBgBarc US Aggregate TR			2.9	6.1	8.7	5.3	4.3	3.8	4.8	Jul-01
eV US Core Fixed Inc Gross Median	1		4.4	6.3	9.0	5.6	4.7	4.3	5.3	Jul-01
High Yield Bond Assets	10,408,841	6.1	12.4	-4.6	-0.9	3.0	4.4	6.2	6.0	Feb-05
CSFB High Yield Index	1		10.0	-5.3	-1.8	2.6	4.3	6.3	6.3	Feb-05
eV US High Yield Fixed Inc Gross Median			9.3	- <i>3</i> .7	0.1	3.4	4.6	6.7	6.7	Feb-05
TIPS Assets	10,442,787	6.2	4.3	6.0	8.3	5.0	3.7	3.5	4.4	Jul-07
BBgBarc US TIPS TR	1		4.2	6.0	8.3	5.0	<i>3</i> .7	3.5	4.5	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median			4.4	5.2	7.8	5.1	3.8	3.6	4.5	Jul-07
Emerging Market Debt Assets	8,356,565	4.9	13.3	-4.7	-1.2	2.3	2.3		-2.0	Mar-13
50% JPM EMBI GD / 50% JPM GBI-EM	1		11.0	-4.8	-1.1	2.4	3.9	3.9	1.6	Mar-13
Real Estate Assets	18,080,883	10.7	-0.2	-0.6	4.3	7.1	8.4	10.9	6.0	Apr-05
NCREIF ODCE (net)	1		-1.7	-1.0	1.3	4.7	6.4	9.8	6.3	Apr-05

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	24,103,030	14.2	-6.8	0.5	11.2	11.6	9.9	9.5	6.1	Oct-03
Cambridge Associates US All PE (1 Qtr Lag)			-11.9	-8.5	-4.1	8.7	9.2	12.2	13.4	Oct-03
Natural Resources & Commodities Assets	3,404,109	2.0	21.3	-17.6	-16.2	-2.9	-4.2		-6.0	Jul-11
S&P Global LargeMidCap Commodity and Resources NR USD			21.2	-18.0	-16.7	0.9	0.1	1.1	-3.0	Jul-11
Infrastructure Assets	9,567,993	5.6	1.1	-2.9	4.5				8.1	Oct-18
CPI+5%			1.0	2.0	5.7	6.8	6.6	6.7	6.2	Oct-18
Cash	283,422	0.2								



	Tra	iling Gro	ss Perfoi	mance							
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	169,350,032	100.0		8.4	-2.5	3.9	6.0	5.9	7.5	5.5	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate				12.7	-2.3	3.4	5.5	5.5	6.8	5.7	Jul-01
InvMetrics Public DB \$50mm-\$250mm Net Median				13.1	-2.2	3.7	6.1	6.0	7.8	5.9	Jul-01
Domestic Equity Assets	38,841,168	22.9	22.9	22.1	-3.1	6.8	10.0	10.1	13.7	7.2	Jul-01
Russell 3000				22.0	-3.5	6.5	10.0	10.0	13.7	7.3	Jul-01
eV US Large Cap Equity Gross Median				20.1	-5.0	4.6	9.3	9.3	13.4	7.9	Jul-01
SSgA Russell 1000 Value Index-NL	14,910,580	8.8	38.4	14.3	-16.2	-8.8	1.8	4.7	10.4	6.2	Jan-05
Russell 1000 Value				14.3	-16.3	-8.8	1.8	4.6	10.4	6.2	Jan-05
eV US Large Cap Value Equity Gross Median				16.1	-14.5	-6.4	3.3	5.6	11.0	7.1	Jan-05
SSgA Russell 1000 Growth-NL	20,588,179	12.2	53.0	27.8	9.8	23.3	18.9	15.9	17.2	11.2	Jul-07
Russell 1000 Growth				27.8	9.8	23.3	19.0	15.9	17.2	11.2	Jul-07
eV US Large Cap Growth Equity Gross Median				26.9	8.9	19.9	17.6	14.3	16.5	10.8	Jul-07
SSgA Russell 2000 Index-NL	3,342,409	2.0	8.6	25.4	-13.0	-6.6	2.0	4.4		9.9	Aug-10
Russell 2000				25.4	-13.0	-6.6	2.0	4.3	10.5	9.9	Aug-10
eV US Small Cap Core Equity Gross Median				24.9	-14.1	-8.0	2.2	5.0	11.5	10.8	Aug-10

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total International Developed Market Equity	12,823,944	7.6	7.6	16.8	-11.8	-4.2	1.0	2.8	6.7	5.5	Jul-01
MSCI EAFE				14.9	-11.3	-5.1	0.8	2.1	5.7	4.5	Jul-01
eV EAFE Core Equity Gross Median				17.1	-10.9	-3.8	1.4	3.1	7.5	6.3	Jul-01
SSgA MSCI EAFE Index-NL	7,612,046	4.5	59.4	15.1	-11.0	-4.7	1.2	2.4		5.2	Aug-10
MSCI EAFE				14.9	-11.3	-5.1	0.8	2.1	5.7	4.8	Aug-10
eV EAFE Core Equity Gross Median				17.1	-10.9	-3.8	1.4	3.1	7.5	6.6	Aug-10
SSgA MSCI EAFE Small Cap Index-NL	5,211,899	3.1	40.6	19.6	-13.0	-3.4	0.7	4.0		7.5	Aug-10
MSCI EAFE Small Cap				19.9	-13.1	-3.5	0.5	3.8	8.0	7.2	Aug-10
eV EAFE Small Cap Core Gross Median				20.5	-13.1	-3.9	0.7	3.9	9.5	8.7	Aug-10
International Emerging Market Equity Assets	12,727,653	7.5	7.5	19.5	-6.5	-2.4	0.8	1.5	1.5	0.7	Jul-07
MSCI Emerging Markets				18.1	-9.8	-3.4	1.9	2.9	3.3	1.9	Jul-07
eV Emg Mkts Equity Gross Median				19.4	-10.2	-3.9	1.9	3.5	4.8	3.1	Jul-07
LMCG Emerging Markets (Net)	4,791,811	2.8	37.6	14.5	-14.4	-9.5	-3.4			0.6	Aug-15
MSCI Emerging Markets				18.1	-9.8	-3.4	1.9	2.9	3.3	4.4	Aug-15
eV Emg Mkts Equity Net Median				20.4	-10.1	-4.0	1.2	2.8	3.9	4.1	Aug-15
GQG Partners Emerging Markets	7,935,842	4.7	62.4	22.7	-1.1	1.4				7.0	Mar-19
MSCI Emerging Markets				18.1	-9.8	-3.4	1.9	2.9	3.3	-2.2	Mar-19
eV Emg Mkts Equity Gross Median				19.4	-10.2	-3.9	1.9	3.5	4.8	-2.0	Mar-19



	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Investment Grade Bond Assets	20,309,637	12.0	12.0	3.9	6.1	8.7	5.3	4.3	3.9	4.9	Jul-01
BBgBarc US Aggregate TR				2.9	6.1	8.7	5.3	4.3	3.8	4.8	Jul-01
eV US Core Fixed Inc Gross Median				4.4	6.3	9.0	5.6	4.7	4.3	5.3	Jul-01
Longfellow Investment Grade Bond	20,309,637	12.0	100.0	3.9	6.1	8.7				5.2	Sep-17
BBgBarc US Aggregate TR				2.9	6.1	8.7	5.3	4.3	3.8	5.2	Sep-17
eV US Core Fixed Inc Gross Median				4.4	6.3	9.0	5.6	4.7	4.3	5.5	Sep-17
High Yield Bond Assets	10,408,841	6.1	6.1	12.4	-4.6	-0.9	3.0	4.4	6.2	6.0	Feb-05
CSFB High Yield Index				10.0	-5.3	-1.8	2.6	4.3	6.3	6.3	Feb-05
eV US High Yield Fixed Inc Gross Median				9.3	-3.7	0.1	3.4	4.6	6.7	6.7	Feb-05
Lord Abbett High Yield Core	10,408,841	6.1	100.0	12.4	-4.6	-0.9				-0.9	Jul-19
BBgBarc US High Yield TR				10.2	-3.8	0.0	3.3	4.8	6.7	0.0	Jul-19
eV US High Yield Fixed Inc Gross Median				9.3	<i>-3</i> .7	0.1	3.4	4.6	6.7	0.1	Jul-19
TIPS Assets	10,442,787	6.2	6.2	4.3	6.0	8.3	5.0	3.7	3.5	4.4	Jul-07
BBgBarc US TIPS TR				4.2	6.0	8.3	5.0	3.7	3.5	4.5	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median				4.4	5.2	7.8	5.1	3.8	3.6	4.5	Jul-07
SSgA TIPS-NL	10,442,787	6.2	100.0	4.3	6.0	8.3	5.0	3.7	3.5	4.4	Jul-07
BBgBarc US TIPS TR				4.2	6.0	8.3	5.0	3.7	3.5	4.5	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median				4.4	5.2	7.8	5.1	3.8	3.6	4.5	Jul-07



	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Market Debt Assets	8,356,565	4.9	4.9	13.3	-4.7	-1.2	2.3	2.3		-2.0	Mar-13
50% JPM EMBI GD / 50% JPM GBI-EM				11.0	-4.8	-1.1	2.4	3.9	3.9	1.6	Mar-13
Metlife Emerging Markets Debt $({\sf Net})$	4,076,494	2.4	48.8	14.0	-4.5	-0.8	2.3			3.7	Nov-16
MetLife Custom Benchmark				10.8	-2.8	1.0	3.1	4.4	4.6	3.6	Nov-16
Aberdeen Emerging Markets Bond Fund	4,280,071	2.5	51.2	12.7	-5.0	-1.5	2.3			4.1	Dec-16
JP Morgan EMBI Global Diversified				12.3	-2.8	0.5	3.6	5.3	6.0	5.1	Dec-16
JP Morgan GBI EM Global Diversified TR USD				9.8	-6.9	-2.8	1.1	2.3	1.6	4.3	Dec-16
Real Estate Assets	18,080,883	10.7	10.7	-0.2	-0.6	4.3	7.1	8.4	10.9	6.0	Apr-05
NCREIF ODCE (net)				-1.7	-1.0	1.3	4.7	6.4	9.8	6.3	Apr-05
TA Associates Realty Fund X	339,553	0.2	1.9								
Intercontinental U.S. REIF (Net)	9,607,478	5.7	53.1	-0.2	-0.1	5.1	7.9	9.1		9.2	Oct-14
NCREIF ODCE (net)				-1.7	-1.0	1.3	4.7	6.4	9.8	7.3	Oct-14
AEW Core Property Trust (Net)	8,133,852	4.8	45.0	-0.2	-1.3	0.8	4.5	6.2		7.0	Oct-14
NCREIF ODCE (net)				-1.7	-1.0	1.3	4.7	6.4	9.8	7.3	Oct-14

#### Retirement System Summary | As of June 30, 2020

TA Associates Realty Fund X is based on March 31, 2020 fair market value, adjusted for subsequent cash flows.

Metlife Custom Benchmark consists of 35% JP Morgan EMBI Global Diversified, 35% JP Morgan CEMBI Broad Diversified, and 30% JP Morgan GBI EM Global Diversified.

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	24,103,030	14.2	14.2	-6.8	0.5	11.2	11.6	9.9	9.5	6.1	Oct-03
Cambridge Associates US All PE (1 Qtr Lag)				-11.9	-8.5	-4.1	8.7	9.2	12.2	13.4	Oct-03
Ascent Venture Partners - Fund III	52,614	0.0	0.2								
Ascent Venture Partners - Fund IV	15,584	0.0	0.1								
Ascent Venture Partners - Fund V	787,415	0.5	3.3								
Ascent Venture Partners - Fund VI	1,363,157	0.8	5.7								
Constitution Capital Partners Ironsides III	5,367,193	3.2	22.3								
Constitution Capital Partners Ironsides IV	2,534,913	1.5	10.5								
Constitution Capital Partners Ironsides V	316,808	0.2	1.3								
Constitution Capital Direct IV	3,295,858	1.9	13.7								
Constitution Capital Direct V	1,901,817	1.1	7.9								
Goldman Sachs PEP 2005	383,941	0.2	1.6								
HarbourVest Partners VIII	513,289	0.3	2.1								
HarbourVest Partners IX	3,447,382	2.0	14.3								
HarbourVest X Buyout Fund	3,238,959	1.9	13.4								
HarbourVest Partners XI	884,099	0.5	3.7								
										L	

#### Retirement System Summary | As of June 30, 2020

Private Equity Assets are based on March 31, 2020 fair market value, adjusted for subsequent cash flows Goldman Sachs PEP 2005 is based on December 31, 2019 fair market value, adjusted for subsequent cash flows.

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Natural Resources & Commodities Assets	3,404,109	2.0	2.0	21.3	-17.6	-16.2	-2.9	-4.2		-6.0	Jul-11
S&P Global LargeMidCap Commodity and Resources NR USD				21.2	-18.0	-16.7	0.9	0.1	1.1	-3.0	Jul-11
SSgA S&P Global LargeMidCap Natural Resources Index	3,404,109	2.0	100.0	21.3	-17.6	-16.2				-7.4	Feb-18
S&P Global LargeMidCap Commodity and Resources NR USD				21.2	-18.0	-16.7	0.9	0.1	1.1	-7.8	Feb-18
Infrastructure Assets	9,567,993	5.6	5.6	1.1	-2.9	4.5				8.1	Oct-18
CPI+5%				1.0	2.0	5.7	6.8	6.6	6.7	6.2	Oct-18
IFM Global Infrastructure (U.S.), L.P.	9,567,993	5.6	100.0	1.1	-2.9	4.5				8.1	Oct-18
CPI+5%				1.0	2.0	5.7	6.8	6.6	6.7	6.2	Oct-18
Cash	283,422	0.2	0.2								
Cash STIF	283,422	0.2	100.0								



	Calendar Y	ear Perf	ormance	9						
	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
Total Retirement System	17.6	-3.0	14.5	9.6	-2.7	4.3	10.9	12.2	2.2	12.5
60% MSCI ACWI / 40% Barclays Global Aggregate	18.6	-6.0	17.1	5.7	-2.5	2.8	12.1	11.5	-2.1	10.2
Domestic Equity Assets	30.9	-5.5	21.0	13.1	0.4	12.4	33.5	16.3	1.0	17.5
Russell 3000	31.0	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9
SSgA Russell 1000 Value Index-NL	26.5	-8.3	13.8	17.3	-3.7	13.4	32.5	17.4	0.4	15.6
Russell 1000 Value	26.5	-8.3	13.7	17.3	-3.8	13.5	32.5	17.5	0.4	15.5
SSgA Russell 1000 Growth-NL	36.4	-1.7	30.2	7.2	5.6	13.1	33.5	15.4	2.6	16.7
Russell 1000 Growth	36.4	-1.5	30.2	7.1	5.7	13.0	33.5	15.3	2.6	16.7
SSgA Russell 2000 Index-NL	25.6	-11.0	14.7	21.5	-4.4	5.0	38.9	16.4	-4.1	
Russell 2000	25.5	-11.0	14.6	21.3	-4.4	4.9	38.8	16.3	-4.2	26.9
Total International Developed Market Equity	23.3	-14.7	27.5	1.6	2.0	-4.7	24.4	18.1	-12.6	11.4
MSCI EAFE	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8
SSgA MSCI EAFE Index-NL	22.5	-13.5	25.5	1.4	-0.5	-4.6	23.1	17.7	-11.9	
MSCI EAFE	22.0	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8
SSgA MSCI EAFE Small Cap Index-NL	25.0	-17.6	33.3	2.4	9.7	-4.7	29.5	20.1	-15.0	
MSCI EAFE Small Cap	25.0	-17.9	33.0	2.2	9.6	-4.9	29.3	20.0	-15.9	22.0



	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
International Emerging Market Equity Assets	16.6	-17.3	32.5	11.7	-18.1	-4.4	-3.8	18.8	-25.6	22.1
MSCI Emerging Markets	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
LMCG Emerging Markets (Net)	13.9	-18.7	35.1	7.0						
MSCI Emerging Markets	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	<i>18.2</i>	-18.4	18.9
GQG Partners Emerging Markets										
MSCI Emerging Markets	18.4	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9
Investment Grade Bond Assets	8.9	-0.1	3.5	2.7	0.8	6.1	-3.1	4.6	8.5	6.7
BBgBarc US Aggregate TR	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5
Longfellow Investment Grade Bond	8.9	-0.1								
BBgBarc US Aggregate TR	8.7	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5
High Yield Bond Assets	15.9	-3.2	7.2	11.5	-0.2	4.1	6.0	13.6	6.2	12.9
CSFB High Yield Index	14.0	-2.4	7.0	18.3	-4.9	1.9	7.5	14.7	5.5	14.4
Lord Abbett High Yield Core										
BBgBarc US High Yield TR	14.3	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1
TIPS Assets	8.4	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3
BBgBarc US TIPS TR	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3
SSgA TIPS-NL	8.4	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3
BBgBarc US TIPS TR	8.4	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3



2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
15.1	-6.9	13.3	10.0	-15.2	-8.5				
14.3	-5.2	12.7	10.2	-7.1	0.7	-7.1	17.2	2.8	13.8
14.5	-6.6	13.4							
13.7	-4.0	10.6	10.0	- <i>3.8</i>	1.9	-4.4	17.9	2.0	12.6
15.7	-7.1	13.3							
15.0	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2
13.5	-6.2	15.2	9.9	-14.9	-5.7	-9.0	16.8	-1.8	15.1
8.7	8.8	8.5	9.0	13.8	12.8	10.1	12.5	16.7	12.7
4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3
8.9	10.5	7.5	10.9	12.5					
4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3
5.1	6.6	6.6	7.6	12.8					
4.4	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3
15.7	14.0	11.8	6.3	0.8	13.5	9.5	9.2	7.9	19.9
9.5	19.2	16.8	8.7	6.0	17.9	17.5	15.2	15.1	18.3
	(%) 15.1 14.3 14.5 13.7 15.7 15.0 13.5 8.7 4.4 8.9 4.4 5.1 4.4 5.1 4.4 15.7	(%)       (%)         15.1       -6.9         14.3       -5.2         14.5       -6.6         13.7       -4.0         15.7       -7.1         15.0       -4.3         13.5       -6.2         8.7       8.8         4.4       7.4         5.1       6.6         4.4       7.4         5.1       6.6         4.4       7.4	(%) $(%)$ $(%)$ 15.1-6.913.314.3-5.212.714.5-6.613.413.7-4.010.615.7-7.113.315.0-4.310.313.5-6.215.28.78.88.54.47.46.75.16.66.64.47.46.75.16.66.64.47.46.7	(%) $(%)$ $(%)$ $(%)$ 15.1-6.913.310.014.3-5.212.710.214.5-6.613.413.7-4.010.610.015.7-7.113.315.0-4.310.310.213.5-6.215.29.98.78.88.59.04.47.46.77.85.16.66.67.64.47.46.77.85.15.16.67.64.47.46.77.85.15.16.67.64.47.46.77.85.15.16.67.64.47.46.77.85.15.16.65.65.15.16.65.15.710.95.15.15.65.15.75.15.15.35.75.15.15.75.15.15.75.15.15.75.15.75.75.15.75.15.7 <td< td=""><td>(%)<math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math>15.1-6.913.310.0-15.214.3-5.212.710.2-7.114.5-6.613.413.7-4.010.610.0-3.815.7-7.113.315.0-4.310.310.21.213.5-6.215.29.9-14.98.78.88.59.013.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.15.16.66.67.615.714.011.86.30.8</td><td>(%)<math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math>15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.714.5-6.613.413.7-4.010.610.0-3.81.915.7-7.113.315.0-4.310.310.21.27.413.5-6.215.29.9-14.9-5.78.78.88.59.013.812.84.47.46.77.814.011.55.16.66.67.612.84.47.46.77.814.011.55.16.66.67.612.84.47.46.77.814.011.55.15.16.66.67.612.84.47.46.77.814.011.5</td><td>(%)<math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math>15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.7-7.114.5-6.613.413.7-4.010.610.0-3.81.9-4.415.7-7.113.315.0-4.310.310.21.27.4-5.313.5-6.215.29.9-14.9-5.7-9.08.78.88.59.013.812.810.14.47.46.77.814.011.512.95.16.66.67.612.84.47.46.77.814.011.512.95.16.66.67.612.84.47.46.77.814.011.512.95.114.011.86.30.813.59.5</td><td>(%)<math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math>15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.7-7.117.214.5-6.613.413.7-4.010.610.0-3.81.9-4.417.915.7-7.113.315.0-4.310.310.21.27.4-5.317.413.5-6.215.29.9-14.9-5.7-9.016.88.78.88.59.013.812.810.112.54.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.114.011.86.30.813.59.59.2</td><td>(%)<math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><math>(%)</math><th< td=""></th<></td></td<>	(%) $(%)$ $(%)$ $(%)$ $(%)$ 15.1-6.913.310.0-15.214.3-5.212.710.2-7.114.5-6.613.413.7-4.010.610.0-3.815.7-7.113.315.0-4.310.310.21.213.5-6.215.29.9-14.98.78.88.59.013.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.16.66.67.612.84.47.46.77.814.05.15.16.66.67.615.714.011.86.30.8	(%) $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ 15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.714.5-6.613.413.7-4.010.610.0-3.81.915.7-7.113.315.0-4.310.310.21.27.413.5-6.215.29.9-14.9-5.78.78.88.59.013.812.84.47.46.77.814.011.55.16.66.67.612.84.47.46.77.814.011.55.16.66.67.612.84.47.46.77.814.011.55.15.16.66.67.612.84.47.46.77.814.011.5	(%) $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ 15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.7-7.114.5-6.613.413.7-4.010.610.0-3.81.9-4.415.7-7.113.315.0-4.310.310.21.27.4-5.313.5-6.215.29.9-14.9-5.7-9.08.78.88.59.013.812.810.14.47.46.77.814.011.512.95.16.66.67.612.84.47.46.77.814.011.512.95.16.66.67.612.84.47.46.77.814.011.512.95.114.011.86.30.813.59.5	(%) $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ $(%)$ 15.1-6.913.310.0-15.2-8.514.3-5.212.710.2-7.10.7-7.117.214.5-6.613.413.7-4.010.610.0-3.81.9-4.417.915.7-7.113.315.0-4.310.310.21.27.4-5.317.413.5-6.215.29.9-14.9-5.7-9.016.88.78.88.59.013.812.810.112.54.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.16.66.67.612.84.47.46.77.814.011.512.99.85.114.011.86.30.813.59.59.2	(%) $(%)$ <th< td=""></th<>

#### Retirement System Summary | As of June 30, 2020

Constitution Capital Partners Ironsides III

Metlife Custom Benchmark consists of 35% JP Morgan EMBI Global Diversified, 35% JP Morgan CEMBI Broad Diversified, and 30% JP Morgan GBI EM Global Diversified.



	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)
Constitution Capital Partners Ironsides IV										
Constitution Capital Partners Ironsides V										
Constitution Capital Direct IV										
Constitution Capital Direct V										
Goldman Sachs PEP 2005										
HarbourVest Partners VIII										
HarbourVest Partners IX										
HarbourVest X Buyout Fund										
HarbourVest Partners XI										
Natural Resources & Commodities Assets	16.2	-13.0	-0.9	53.7	-38.0	-22.6	-0.3	6.5		
S&P Global LargeMidCap Commodity and Resources NR USD	15.9	-9.4	18.1	30.8	-27.5	-9.9	-2.9	7.0	-14.1	19.5
SSgA S&P Global LargeMidCap Natural Resources Index	16.2									
S&P Global LargeMidCap Commodity and Resources NR USD	15.9	-9.4	18.1	30.8	-27.5	-9.9	-2.9	7.0	-14.1	19.5
Infrastructure Assets	14.6									
CPI+5%	7.3	6.9	7.1	7.1	5.7	5.7	6.5	6.8	8.1	6.4
IFM Global Infrastructure (U.S.), L.P.	14.6									
CPI+5%	7.3	6.9	7.1	7.1	5.7	5.7	6.5	6.8	8.1	6.4
Cash										
Cash STIF										

Statistics Summary							
	5 Years Ending June 30, 2020						
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error	
Total Retirement System	5.8%	7.4%	0.1	0.8	0.6	2.7%	
60% MSCI ACWI / 40% Barclays Global Aggregate	5.5%	9.3%		1.0	0.5	0.0%	
Total Equity	6.5%	14.7%	-1.0	0.9	0.4	3.5%	
Russell 3000	10.0%	15.4%		1.0	0.6	0.0%	
Domestic Equity Assets	10.0%	15.4%	-0.2	1.0	0.6	0.2%	
Russell 3000	10.0%	15.4%		1.0	0.6	0.0%	
SSgA Russell 1000 Value Index-NL	4.6%	15.6%	-0.4	1.0	0.2	O.1%	
Russell 1000 Value	4.6%	15.6%		1.0	0.2	0.0%	
SSgA Russell 1000 Growth-NL	15.8%	15.5%	-2.0	1.0	0.9	O.1%	
Russell 1000 Growth	15.9%	15.5%		1.0	1.0	0.0%	
SSgA Russell 2000 Index-NL	4.3%	20.3%	-0.3	1.0	0.2	O.1%	
Russell 2000	4.3%	20.3%		1.0	0.2	0.0%	
International Equity Assets	1.9%	15.1%	-0.3	1.0	0.0	2.5%	
MSCI ACWI ex USA IMI Gross	2.8%	15.0%		1.0	0.1	0.0%	
Total International Developed Market Equity	2.6%	14.9%	0.4	1.0	0.1	1.6%	
MSCI EAFE	2.1%	14.4%		1.0	0.1	0.0%	
SSgA MSCI EAFE Index-NL	2.3%	14.4%	2.1	1.0	0.1	0.1%	
MSCI EAFE	2.1%	14.4%		1.0	0.1	0.0%	

# Massachusetts Housing Finance Agency Retirement System

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
SSgA MSCI EAFE Small Cap Index-NL	3.8%	16.2%	-0.1	1.0	0.2	0.2%
MSCI EAFE Small Cap	3.8%	16.3%		1.0	0.2	0.0%
International Emerging Market Equity Assets	1.1%	17.0%	-0.6	0.9	0.0	3.0%
MSCI Emerging Markets	2.9%	17.9%		1.0	0.1	0.0%
LMCG Emerging Markets						
MSCI Emerging Markets	2.9%	17.9%		1.0	0.1	0.0%
GQG Partners Emerging Markets						
MSCI Emerging Markets	2.9%	17.9%		1.0	0.1	0.0%
Fixed Income Assets	3.9%	4.6%	-0.2	1.2	0.6	2.7%
BBgBarc US Universal TR	4.4%	3.1%		1.0	1.1	0.0%
Investment Grade Bond Assets	4.3%	3.1%	0.0	1.0	1.0	0.7%
BBgBarc US Aggregate TR	4.3%	3.1%		1.0	1.0	0.0%
Longfellow Investment Grade Bond						
BBgBarc US Aggregate TR	4.3%	3.1%		1.0	1.0	0.0%
High Yield Bond Assets	4.1%	8.8%	-0.1	1.0	0.3	2.3%
CSFB High Yield Index	4.3%	8.2%		1.0	0.4	0.0%
Lord Abbett High Yield Core						
BBgBarc US High Yield TR	4.8%	7.9%		1.0	0.5	0.0%
TIPS Assets	3.7%	3.5%	-1.5	1.0	0.7	0.0%
BBgBarc US TIPS TR	3.7%	3.5%		1.0	0.7	0.0%

# Massachusetts Housing Finance Agency Retirement System

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
SSgA TIPS-NL	3.7%	3.5%	-1.5	1.0	0.7	O.1%
BBgBarc US TIPS TR	3.7%	3.5%		1.0	0.7	0.0%
Emerging Market Debt Assets	2.2%	12.4%	-0.4	1.2	0.1	3.8%
50% JPM EMBI GD / 50% JPM GBI-EM	3.9%	9.9%		1.0	0.3	0.0%
Metlife Emerging Markets Debt						
MetLife Custom Benchmark	4.4%	8.5%		1.0	0.4	0.0%
Aberdeen Emerging Markets Bond Fund						
JP Morgan EMBI Global Diversified	5.3%	8.9%		1.0	0.5	0.0%
Real Estate Assets	8.3%	3.9%	1.3	1.1	1.8	1.5%
NCREIF ODCE (net)	6.4%	3.2%		1.0	1.6	0.0%
TA Associates Realty Fund X	15.5%	13.1%	0.8	1.9	1.1	11.9%
NCREIF ODCE (net)	6.4%	3.2%		1.0	1.6	0.0%
Intercontinental U.S. REIF	9.1%	4.4%	1.4	1.2	1.8	2.0%
NCREIF ODCE (net)	6.4%	3.2%		1.0	1.6	0.0%
AEW Core Property Trust	6.2%	3.1%	-0.2	0.9	1.6	1.2%
NCREIF ODCE (net)	6.4%	3.2%		1.0	1.6	0.0%
Private Equity Assets	9.9%	7.3%	0.3	0.7	1.2	4.4%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Ascent Venture Partners - Fund III	-14.5%	14.3%	-1.3	-0.4	-1.1	18.3%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%

# Massachusetts Housing Finance Agency Retirement System

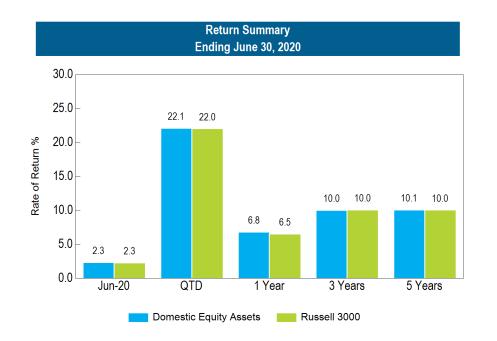
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Ascent Venture Partners - Fund IV	-49.8%	50.0%	-1.1	-0.5	-1.0	51.4%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Ascent Venture Partners - Fund V	-0.1%	8.8%	-0.9	0.4	-0.1	9.3%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Ascent Venture Partners - Fund VI						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Constitution Capital Partners Ironsides III	12.9%	13.6%	0.3	0.6	0.9	12.9%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Constitution Capital Partners Ironsides IV						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Constitution Capital Partners Ironsides V						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Constitution Capital Direct IV						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Constitution Capital Direct V						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Goldman Sachs PEP 2005	5.3%	12.6%	-0.3	0.4	0.3	12.9%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
HarbourVest Partners VIII	9.5%	9.6%	0.2	1.1	0.9	3.5%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
HarbourVest Partners IX	14.2%	9.6%	1.2	1.0	1.4	4.7%
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
HarbourVest X Buyout Fund						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
HarbourVest Partners XI						
Cambridge Associates US All PE (1 Qtr Lag)	8.7%	8.5%		1.0	0.9	0.0%
Natural Resources & Commodities Assets	-4.2%	25.6%	-0.4	1.1	-0.2	11.4%
S&P Global LargeMidCap Commodity and Resources NR USD	0.1%	20.6%		1.0	0.0	0.0%
SSgA S&P Global LargeMidCap Natural Resources Index						
S&P Global LargeMidCap Commodity and Resources NR USD	0.1%	20.6%		1.0	0.0	0.0%
Infrastructure Assets						
CPI+5%	6.6%	0.7%		1.0	7.6	0.0%
IFM Global Infrastructure (U.S.), L.P.						
CPI+5%	6.6%	0.7%		1.0	7.6	0.0%



#### Domestic Equity Assets | As of June 30, 2020

Asset Allocation on June 30, 2020						
	Actual	Actual				
SSgA Russell 1000 Growth-NL	\$20,588,179	53.0%				
SSgA Russell 1000 Value Index-NL	\$14,910,580	38.4%				
SSgA Russell 2000 Index-NL	\$3,342,409	8.6%				
Total	\$38,841,168	100.0%				



#### Domestic Equity Assets Style Map 3 Years Ending June 30, 2020

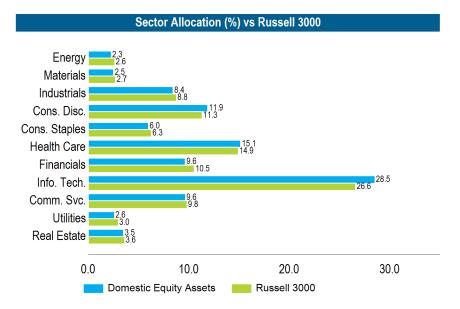


# Massachusetts Housing Finance Agency Retirement System

#### Domestic Equity Assets | As of June 30, 2020

Domestic Equity Assets Characteristics						
	Portfolio	Index	Portfolio			
	Q2-20	Q2-20	Q1-20			
Market Value						
Market Value (\$M)	38.8		31.8			
Number Of Holdings	3009	3009	2976			
Characteristics						
Weighted Avg. Market Cap. (\$B)	330.9	309.4	221.3			
Median Market Cap (\$B)	1.7	1.4	1.4			
P/E Ratio	23.3	22.4	16.8			
Yield	1.6	1.7	2.3			
EPS Growth - 5 Yrs.	13.9	13.4	12.9			
Price to Book	4.3	4.0	3.5			
Beta (holdings; domestic)	1.0	1.0	1.0			

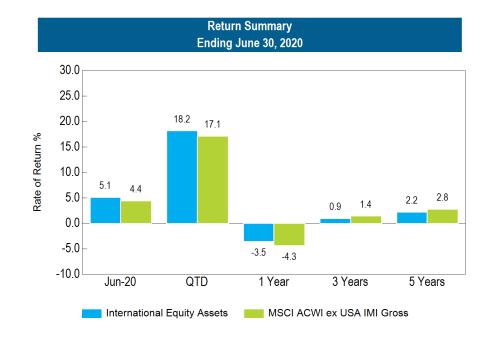
Top 10 Holdings	
MICROSOFT	5.5%
APPLE	5.4%
AMAZON.COM	4.3%
FACEBOOK CLASS A	2.0%
ALPHABET A	1.5%
ALPHABET 'C'	1.4%
VISA 'A'	1.2%
JOHNSON & JOHNSON	1.0%
UNITEDHEALTH GROUP	1.0%
MASTERCARD	1.0%
Total	24.3%



	Portfolio	Index
	Q2-20	Q2-20
Sector Performance		
Energy	32.92	31.85
Materials	25.92	26.17
Industrials	17.77	17.69
Consumer Discretionary	36.99	37.46
Consumer Staples	8.64	8.27
Health Care	15.66	16.50
Financials	12.57	12.66
Information Technology	31.84	31.50
Communication Services	20.98	21.03
Utilities	2.48	2.71
Real Estate	13.16	13.57



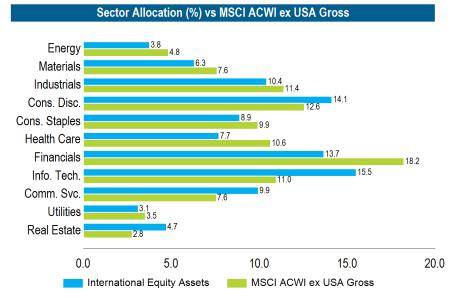
Asset Allocation on June 30, 2020						
	Actual	Actual				
GQG Partners Emerging Markets	\$7,935,842	31.1%				
LMCG Emerging Markets	\$4,791,811	18.8%				
SSgA MSCI EAFE Index-NL	\$7,612,046	29.8%				
SSgA MSCI EAFE Small Cap Index-NL	\$5,211,899	20.4%				
Total	\$25,551,598	100.0%				





Total International Equity Characteristics			
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Market Value			
Market Value (\$M)	25.6		21.6
Number Of Holdings	3444	2372	3452
Characteristics			
Weighted Avg. Market Cap. (\$B)	85.0	79.4	66.8
Median Market Cap (\$B)	1.6	7.4	1.4
P/E Ratio	16.5	16.4	13.0
Yield	2.6	2.9	3.7
EPS Growth - 5 Yrs.	10.5	8.2	10.6
Price to Book	3.0	2.7	2.6
Beta (holdings; domestic)	1.0	1.0	1.0

Top 10 Holdings	
TENCENT HOLDINGS	3.5%
TAIWAN SEMICON.MNFG.	2.5%
ALIBABA GROUP HOLDING ADR 1:8	1.8%
SAMSUNG ELECTRONICS	1.8%
MERCADOLIBRE	1.7%
ASML HOLDING	1.4%
HOUSING DEVELOPMENT FINANCE CORPORATION	1.4%
JD COM ADR 1:2	1.2%
NVIDIA	1.2%
WULIANGYE ORD A	1.2%
Total	17.6%



	Portfolio	Index
	Q2-20	Q2-20
Sector Performance		
Energy	14.31	10.59
Materials	24.99	25.99
Industrials	16.91	17.72
Consumer Discretionary	22.16	19.59
Consumer Staples	12.20	10.44
Health Care	17.07	16.57
Financials	13.39	11.84
Information Technology	22.97	24.73
Communication Services	20.08	18.18
Utilities	16.54	11.85
Real Estate	8.14	8.44



Total International Equity Region Allocation			
vs MSCI ACWI ex USA Gross			
Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	6.5%	-6.5%
United States	7.4%	0.0%	7.4%
Europe Ex U.K.	23.3%	31.5%	-8.1%
United Kingdom	7.8%	9.2%	-1.4%
Pacific Basin Ex Japan	14.3%	7.5%	6.8%
Japan	14.2%	16.5%	-2.3%
Emerging Markets	31.5%	28.3%	3.2%
Other	1.5%	0.5%	1.1%
Total	100.0%	100.0%	0.0%



Total International Equity Country Allocation vs MSCI ACWI ex USA Gross			
ARGENTINA	0.0%	0.0%	0.0%
AUSTRALIA	3.8%	4.4%	-0.6%
AUSTRIA	0.2%	0.1%	0.1%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.7%	0.6%	0.1%
BRAZIL	1.4%	1.5%	-0.1%
CANADA	0.0%	6.5%	-6.5%
CHILE	0.0%	0.2%	-0.2%
CHINA	9.1%	11.5%	-2.4%
COLOMBIA	0.0%	0.1%	-0.1%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	O.1%	0.0%	0.0%
DENMARK	1.1%	1.5%	-0.5%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.6%	0.7%	-0.1%
FRANCE	3.8%	7.1%	-3.3%
GERMANY	3.8%	6.0%	-2.2%
GREECE	0.2%	0.0%	0.2%



Country	% of	% of Bonch	0/ D:#
	Total	Bench	% Diff
HONG KONG	8.9%	2.2%	6.7%
HUNGARY	0.2%	O.1%	O.1%
INDIA	6.2%	2.3%	3.9%
INDONESIA	0.9%	0.4%	0.5%
IRELAND	0.3%	0.4%	-0.2%
ISRAEL	0.5%	0.4%	0.1%
ITALY	1.3%	1.5%	-0.2%
JAPAN	14.2%	16.5%	-2.3%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	4.6%	3.3%	1.3%
KUWAIT	0.0%	0.0%	0.0%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.1%	0.0%	0.1%
MALAYSIA	0.2%	0.5%	-0.3%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	0.2%	0.5%	-0.3%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	3.0%	2.8%	0.1%
NEW ZEALAND	0.3%	0.2%	O.1%
NIGERIA	0.0%	0.0%	0.0%



Country	% of	% of	
· · ·	Total	Bench	% Diff
NORWAY	0.6%	0.3%	0.3%
OMAN	0.0%	0.0%	0.0%
OTHER	1.0%	0.0%	1.0%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	O.1%	-0.1%
PHILIPPINES	0.1%	0.2%	-0.1%
POLAND	0.3%	0.2%	0.1%
PORTUGAL	0.1%	0.1%	0.0%
QATAR	0.0%	0.2%	-0.2%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	1.8%	0.9%	0.9%
SAUDI ARABIA	0.0%	0.8%	-0.8%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	1.3%	0.7%	0.6%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	1.0%	1.1%	-0.1%
SPAIN	1.1%	1.6%	-0.4%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	2.3%	2.0%	0.3%
SWITZERLAND	4.2%	6.7%	-2.6%
TAIWAN	3.8%	3.5%	0.3%
THAILAND	1.0%	0.7%	0.4%
TUNISIA	0.0%	0.0%	0.0%



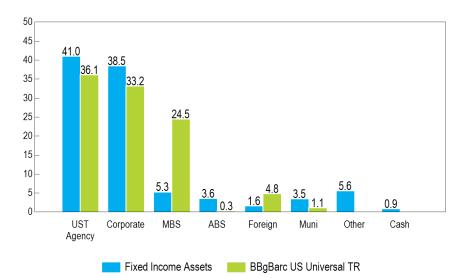
Country	% of Total	% of Bench	% Diff
TURKEY	0.7%	0.1%	0.5%
UNITED ARAB EMIRATES	0.0%	0.2%	-0.2%
UNITED KINGDOM	7.8%	9.2%	-1.4%
UNITED STATES	7.4%	0.0%	7.4%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

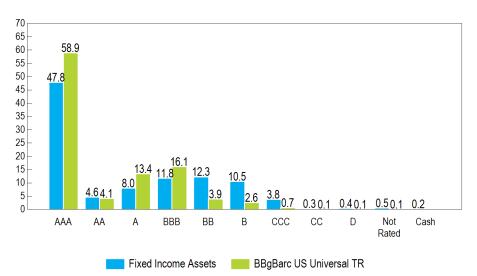
Fixed Income Assets	As of June 30, 2020
---------------------	---------------------

Asset Allocation on June 30, 2020			
	Actual	Actual	
Aberdeen Emerging Markets Bond Fund	\$4,280,071	8.6%	
Longfellow Investment Grade Bond	\$20,309,637	41.0%	
Lord Abbett High Yield Core	\$10,408,841	21.0%	
Metlife Emerging Markets Debt	\$4,076,494	8.2%	
SSgA TIPS-NL	\$10,442,787	21.1%	
Total	\$49,517,830	100.0%	

Total Fixed Income Fixed Income Characteristics			
vs. BBgBarc US Universal TR			
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Fixed Income Characteristics			
Yield to Maturity	3.22	1.92	3.65
Average Duration	5.41	6.49	5.92
Average Quality	А	AA	А
Weighted Average Maturity	8.03	12.58	7.93

#### Sector Allocation





#### Credit Quality Allocation

### SSgA Russell 1000 Value Index-NL | As of June 30, 2020

Account Information		
Account Name	SSgA Russell 1000 Value Index-NL	
Account Structure	Commingled Fund	
Investment Style	Passive	
Inception Date	1/01/05	
Account Type	Equity	
Benchmark	Russell 1000 Value	
Universe	eV US Large Cap Value Equity Gross	

Portfo	olio Per	formar	nce Su	mmar	у		
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA Russell 1000 Value Index-NL	14.3	-16.2	-8.8	1.8	4.7	6.2	Jan-05
Russell 1000 Value	14.3	-16.3	-8.8	1.8	4.6	6.2	Jan-05
eV US Large Cap Value Equity Gross Median	16.1	-14.5	-6.4	3.3	5.6	7.1	Jan-05
eV US Large Cap Value Equity Gross Rank	73	68	70	68	66	83	Jan-05

Top 10 Holdings	
BERKSHIRE HATHAWAY 'B'	2.5%
JOHNSON & JOHNSON	2.3%
JP MORGAN CHASE & CO.	2.0%
INTEL	1.8%
VERIZON COMMUNICATIONS	1.6%
AT&T	1.5%
WALT DISNEY	1.4%
CISCO SYSTEMS	1.4%
EXXON MOBIL	1.3%
BANK OF AMERICA	1.3%
Total	17.2%

SSgA Russell 1000 Value Index-NL Characteristics						
	Portfolio	Index	Portfolio			
	Q2-20	Q2-20	Q1-20			
Market Value						
Market Value (\$M)	14.9		13.0			
Number Of Holdings	817	839	761			
Characteristics						
Weighted Avg. Market Cap. (\$B)	103.2	102.4	99.2			
Median Market Cap (\$B)	8.8	8.4	6.3			
P/E Ratio	17.4	17.3	12.6			
Yield	2.6	2.6	3.5			
EPS Growth - 5 Yrs.	9.2	9.2	8.7			
Price to Book	2.4	2.4	2.2			
Beta (holdings; domestic)	1.0	1.0	1.0			
Sector Distribution						
Energy	5.3	5.3	5.4			
Materials	4.5	4.5	4.2			
Industrials	12.3	12.3	9.5			
Consumer Discretionary	6.9	7.0	5.1			
Consumer Staples	8.1	8.1	10.6			
Health Care	14.1	14.1	15.5			
Financials	18.6	18.5	21.4			
Information Technology	10.4	10.2	6.8			
Communication Services	9.2	9.3	8.6			
Utilities	5.9	5.9	7.8			
Real Estate	4.7	4.7	5.0			

# Massachusetts Housing Finance Agency Retirement System

### SSgA Russell 1000 Growth-NL | As of June 30, 2020

Ace	Account Information					
Account Name	SSgA Russell 1000 Growth-NL					
Account Structure	Commingled Fund					
Investment Style	Passive					
Inception Date	7/01/07					
Account Type	Equity					
Benchmark	Russell 1000 Growth					
Universe	eV US Large Cap Growth Equity Gross					

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA Russell 1000 Growth-NL	27.8	9.8	23.3	18.9	15.9	11.2	Jul-07
Russell 1000 Growth	27.8	9.8	23.3	19.0	15.9	11.2	Jul-07
eV US Large Cap Growth Equity Gross Median	26.9	8.9	19.9	17.6	14.3	10.8	Jul-07
eV US Large Cap Growth Equity Gross Rank	39	44	29	38	29	36	Jul-07

Top 10 Holdings	;
MICROSOFT	10.4%
APPLE	10.2%
AMAZON.COM	8.0%
FACEBOOK CLASS A	3.7%
ALPHABET A	2.3%
VISA 'A'	2.2%
ALPHABET 'C'	2.2%
MASTERCARD	1.8%
UNITEDHEALTH GROUP	1.6%
NVIDIA	1.5%
Total	44.0%

SSgA Russel	1000 Growth-NL	Characteristics	
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Market Value			
Market Value (\$M)	20.6		16.1
Number Of Holdings	418	435	531
Characteristics			
Weighted Avg. Market Cap. (\$B)	546.1	546.3	355.0
Median Market Cap (\$B)	13.5	12.7	9.8
P/E Ratio	33.5	33.5	23.8
Yield	0.9	0.9	1.3
EPS Growth - 5 Yrs.	18.5	18.5	17.0
Price to Book	10.5	10.5	6.7
Beta (holdings; domestic)	1.0	1.0	1.0
Sector Distribution			
Energy	0.1	0.1	0.1
Materials	0.8	0.8	1.2
Industrials	4.6	4.6	8.0
Consumer Discretionary	15.4	15.4	14.0
Consumer Staples	4.8	4.8	4.6
Health Care	15.0	15.0	15.1
Financials	2.1	2.1	2.9
Information Technology	43.9	43.9	39.6
Communication Services	11.1	11.1	11.6
Utilities	0.0	0.0	0.0
Real Estate	2.1	2.1	2.5

# Massachusetts Housing Finance Agency Retirement System

#### SSgA Russell 2000 Index-NL | As of June 30, 2020

SSgA	Russell 2000 Index	NL Characteristic	cs
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Market Value			
Market Value (\$M)	3.3		2.7
Number Of Holdings	2005	2005	1978
Characteristics			
Weighted Avg. Market Cap. (\$B)	2.1	2.1	2.0
Median Market Cap (\$B)	0.6	0.6	0.5
P/E Ratio	16.2	16.2	13.4
Yield	1.4	1.4	2.0
EPS Growth - 5 Yrs.	9.3	9.3	9.5
Price to Book	2.7	2.7	2.5
Beta (holdings; domestic	) 1.4	1.4	1.2
Sector Distribution			
Energy	2.3	2.2	1.7
Materials	4.0	4.0	3.4
Industrials	14.5	14.5	15.1
Consumer Discretionary	11.8	11.8	8.7
Consumer Staples	3.3	3.3	3.4
Health Care	20.6	20.6	21.2
Financials	16.4	16.4	16.7
Information Technology	13.8	13.8	15.0
Communication Services	s 2.5	2.5	2.2
Utilities	3.6	3.6	4.4
Real Estate	7.1	7.1	7.6

### Account Information

Account Name	SSgA Russell 2000 Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/10
Account Type	Equity
Benchmark	Russell 2000
Universe	eV US Small Cap Core Equity Gross

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA Russell 2000 Index-NL	25.4	-13.0	-6.6	2.0	4.4	9.9	Aug-10
Russell 2000	25.4	-13.0	-6.6	2.0	4.3	9.9	Aug-10
eV US Small Cap Core Equity Gross Median	24.9	-14.1	-8.0	2.2	5.0	10.8	Aug-10
eV US Small Cap Core Equity Gross Rank	44	45	45	52	63	75	Aug-10

Top 10 Holdings

DECKERS OUTDOOR	0.3%
LHC GROUP	0.3%
BJAS WHOLESALE CLUB HOLDINGS	0.3%
CHURCHILL DOWNS	0.3%
NOVAVAX	0.3%
MYOKARDIA	0.3%
SITEONE LANDSCAPE SUPPLY	0.3%
HELEN OF TROY	0.3%
EASTGROUP PROPS.	0.3%
ULTRAGENYX PHARM.	0.3%
Total	2.8%

# Massachusetts Housing Finance Agency Retirement System

### SSgA MSCI EAFE Index-NL | As of June 30, 2020

Account NameSSgA MSCI EAFE Index-NLAccount StructureCommingled FundInvestment StylePassiveInception Date8/01/10Account TypeEquityBenchmarkMSCI EAFEUniverseeV EAFE Core Equity Gross		Account Information	
Investment Style Passive Inception Date 8/01/10 Account Type Equity Benchmark MSCI EAFE	Account Name		SSgA MSCI EAFE Index-NL
Inception Date 8/01/10 Account Type Equity Benchmark MSCI EAFE	Account Structure		Commingled Fund
Account Type Equity Benchmark MSCI EAFE	Investment Style		Passive
Benchmark MSCI EAFE	Inception Date		8/01/10
	Account Type		Equity
Universe eV EAFE Core Equity Gross	Benchmark		MSCI EAFE
	Universe		eV EAFE Core Equity Gross

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA MSCI EAFE Index-NL	15.1	-11.0	-4.7	1.2	2.4	5.2	Aug-10
MSCI EAFE	14.9	-11.3	-5.1	0.8	2.1	4.8	Aug-10
eV EAFE Core Equity Gross Median	17.1	-10.9	-3.8	1.4	3.1	6.6	Aug-10
eV EAFE Core Equity Gross Rank	71	52	58	55	59	84	Aug-10

Top 10 Hold	ings
NESTLE 'N'	2.5%
ROCHE HOLDING	1.8%
NOVARTIS 'R'	1.4%
ASML HOLDING	1.2%
SAP	1.1%
ASTRAZENECA	1.0%
TOYOTA MOTOR	1.0%
LVMH	0.9%
AIA GROUP	0.9%
NOVO NORDISK 'B'	0.9%
Total	12.7%

SSgA MSCI EAFE Index-NL Characteristics						
	Portfolio	Index	Portfolio			
	Q2-20	Q2-20	Q1-20			
Market Value						
Market Value (\$M)	7.6		6.6			
Number Of Holdings	918	902	946			
Characteristics						
Weighted Avg. Market Cap. (\$B)	60.5	60.7	55.4			
Median Market Cap (\$B)	9.4	9.5	8.1			
P/E Ratio	17.1	17.2	13.9			
Yield	2.9	2.9	3.9			
EPS Growth - 5 Yrs.	6.1	6.1	6.7			
Price to Book	2.7	2.7	2.5			
Beta (holdings; domestic)	1.0	1.0	1.0			
Sector Distribution						
Energy	3.4	3.4	3.9			
Materials	7.3	7.3	6.6			
Industrials	14.5	14.5	14.1			
Consumer Discretionary	11.3	11.3	11.0			
Consumer Staples	12.0	12.0	12.5			
Health Care	14.4	14.5	14.1			
Financials	16.1	16.1	16.3			
Information Technology	8.4	8.3	7.6			
Communication Services	5.4	5.4	5.5			
Utilities	4.0	4.0	4.2			
Real Estate	3.1	3.1	3.3			

# Account InformationAccount NameSSgA MSCI EAFE Small Cap Index-NLAccount StructureCommingled FundInvestment StylePassiveInception Date8/01/10Account TypeEquityBenchmarkMSCI EAFE Small CapUniverseeV EAFE Small Cap Core Gross

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA MSCI EAFE Small Cap Index- NL	19.6	-13.0	-3.4	0.7	4.0	7.5	Aug-10
MSCI EAFE Small Cap	19.9	-13.1	-3.5	0.5	3.8	7.2	Aug-10
eV EAFE Small Cap Core Gross Median	20.5	-13.1	-3.9	0.7	3.9	8.7	Aug-10
eV EAFE Small Cap Core Gross Rank	63	50	50	50	42	74	Aug-10

Top 10 Holdings	
ARGENX	0.4%
HELLOFRESH	0.3%
ASM INTERNATIONAL	0.3%
RIGHTMOVE	0.3%
PENNON GROUP	0.3%
EURONEXT	0.3%
SMITH (DS)	0.3%
BECHTLE	0.2%
IMCD GROUP	0.2%
VAT GROUP	0.2%
Total	2.9%

### SSgA MSCI EAFE Small Cap Index-NL | As of June 30, 2020

SSgA MSCI EAFE Small Cap Index-NL Characteristics						
	Portfolio	Index	Portfolio			
	Q2-20	Q2-20	Q1-20			
Market Value						
Market Value (\$M)	5.2		4.4			
Number Of Holdings	2337	2322	236			
Characteristics						
Weighted Avg. Market Cap. (\$B)	2.4	2.4	2.2			
Median Market Cap (\$B)	1.0	1.0	0.8			
P/E Ratio	15.2	15.2	12.6			
Yield	2.5	2.5	3.2			
EPS Growth - 5 Yrs.	8.8	8.9	10.6			
Price to Book	2.2	2.2	2.			
Beta (holdings; domestic)	1.1	1.0	1.0			
Sector Distribution						
Energy	1.7	1.7	1.7			
Materials	8.1	8.2	8.			
Industrials	21.7	21.7	20.5			
Consumer Discretionary	12.5	12.4	11.0			
Consumer Staples	6.8	6.8	7.5			
Health Care	8.1	8.1	8.7			
Financials	10.7	10.6	10.5			
Information Technology	10.6	10.7	10.5			
Communication Services	4.5	4.5	4.7			
Utilities	2.8	2.8	2.8			
Real Estate	12.2	12.3	13.			

# MEKETA

# Massachusetts Housing Finance Agency Retirement System

## LMCG Emerging Markets | As of June 30, 2020

Account Information						
Account Name		LMCG Emerging Markets				
Account Structure		Commingled Fund				
Investment Style		Active				
Inception Date		8/01/15				
Account Type		Equity				
Benchmark		MSCI Emerging Markets				
Universe		eV Emg Mkts Equity Net				

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
LMCG Emerging Markets	14.7	-14.1	-8.9	-2.7		1.1	Aug-15
MSCI Emerging Markets	18.1	-9.8	-3.4	1.9	2.9	4.4	Aug-15
eV Emg Mkts Equity Net Median	20.4	-10.1	-4.0	1.2	2.8	4.1	Aug-15
eV Emg Mkts Equity Net Rank	90	79	75	84		84	Aug-15

Top 10 Holdings	
TENCENT HOLDINGS	7.1%
ISHARES MSCI EMERGING MARKETS ETF	5.6%
TAIWAN SEMICON.MNFG.	4.6%
SAMSUNG ELECTRONICS	3.7%
CHINA CON.BANK 'H'	1.7%
OAO GAZPROM ADS (LON)	1.2%
JD COM ADR 1:2	1.2%
LUKOIL OAO SPN.ADR 1:1	1.1%
BANK OF CHINA 'H'	1.1%
NASPERS	1.1%
Total	28.4%

LMCG Eme	erging Markets Ch	aracteristics	
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Market Value			
Market Value (\$M)	4.8		4.2
Number Of Holdings	154	1385	125
Characteristics			
Weighted Avg. Market Cap. (\$B)	82.6	130.7	63.1
Median Market Cap (\$B)	4.0	5.4	4.0
P/E Ratio	10.0	15.6	8.5
Yield	4.2	2.7	6.2
EPS Growth - 5 Yrs.	12.7	12.0	11.9
Price to Book	2.5	2.9	2.3
Beta (holdings; domestic)	1.1	1.1	1.1
Sector Distribution			
Energy	5.6	6.0	6.5
Materials	6.2	6.8	7.4
Industrials	7.0	4.6	7.1
Consumer Discretionary	10.2	17.5	9.4
Consumer Staples	5.1	6.3	4.9
Health Care	4.9	4.1	5.1
Financials	21.5	19.4	20.8
Information Technology	17.0	16.8	16.7
Communication Services	12.2	13.5	11.2
Utilities	0.9	2.3	0.7
Real Estate	3.9	2.6	4.3

# MEKETA

### GQG Partners Emerging Markets | As of June 30, 2020

Account Information					
Account Name	GQG Partners Emerging Markets				
Account Structure	Commingled Fund				
Investment Style	Active				
Inception Date	3/31/19				
Account Type	Non-US Stock Emerging				
Benchmark	MSCI Emerging Markets				
Universe	eV Emg Mkts Equity Gross				

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
GQG Partners Emerging Markets	22.7	-1.1	1.4			7.0	Mar-19
MSCI Emerging Markets	18.1	-9.8	-3.4	1.9	2.9	-2.2	Mar-19
eV Emg Mkts Equity Gross Median	19.4	-10.2	-3.9	1.9	3.5	-2.0	Mar-19
eV Emg Mkts Equity Gross Rank	33	11	25			12	Mar-19

Top 10 Holdings	
TENCENT HOLDINGS	7.1%
ALIBABA GROUP HOLDING ADR 1:8	6.1%
MERCADOLIBRE	5.6%
TAIWAN SEMICON.MNFG.	5.3%
HOUSING DEVELOPMENT FINANCE CORPORATION	4.5%
NVIDIA	3.9%
WULIANGYE ORD A	3.9%
SAMSUNG ELECTRONICS	3.6%
RELIANCE INDUSTRIES	3.5%
SEA 'A' SPN.ADR 1:1	3.5%
Total	47.0%

GQG Partners	Emerging Mark	ets Characteris	tics
	Portfolio	Index	Portfolio
	Q2-20	Q2-20	Q1-20
Market Value			
Market Value (\$M)	7.9		6.5
Number Of Holdings	56	1385	53
Characteristics			
Weighted Avg. Market Cap. (\$B)	170.7	130.7	130.0
Median Market Cap (\$B)	41.4	5.4	37.4
P/E Ratio	28.7	15.6	19.1
Yield	1.3	2.7	2.2
EPS Growth - 5 Yrs.	15.9	12.0	14.3
Price to Book	4.9	2.9	3.6
Beta (holdings; domestic)	1.0	1.1	1.0
Sector Distribution			
Energy	4.5	6.0	4.2
Materials	4.1	6.8	3.3
Industrials	0.7	4.6	4.3
Consumer Discretionary	20.5	17.5	12.1
Consumer Staples	9.6	6.3	7.7
Health Care	2.7	4.1	2.3
Financials	8.6	19.4	19.3
Information Technology	25.0	16.8	23.8
Communication Services	16.8	13.5	13.2
Utilities	3.8	2.3	4.3
Real Estate	1.6	2.6	1.6

### Longfellow Investment Grade Bond | As of June 30, 2020

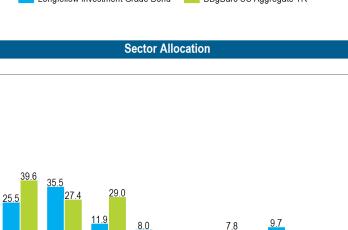
Account Information					
Account Name	Longfellow Investment Grade Bond				
Account Structure	Separate Account				
Investment Style	Active				
Inception Date	9/01/17				
Account Type	Fixed				
Benchmark	BBgBarc US Aggregate TR				
Universe	eV US Core Fixed Inc Gross				

**MEKETA** 

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
Longfellow Investment Grade Bond	3.9	6.1	8.7			5.2	Sep-17
BBgBarc US Aggregate TR	2.9	6.1	8.7	5.3	4.3	5.2	Sep-17
eV US Core Fixed Inc Gross Median	4.4	6.3	9.0	5.6	4.7	5.5	Sep-17
eV US Core Fixed Inc Gross Rank	67	59	66			76	Sep-17

Longfellow Investment Grade Bond Characteristics									
vs. BBgBarc US Aggregate TR									
Portfolio Index Portfol									
Q2-20 Q2-20 Q1									
Fixed Income Characteristics									
Yield to Maturity	1.9	1.3	2.3						
Average Duration	5.8	6.7	5.9						
Average Quality	AA	AA	AA						
Weighted Average Maturity	7.8	13.5	7.7						

**Credit Quality Allocation** 80 69.7 70 60 55.5 50 40 30 20 18.9 17.0 14.4 12.4 10 8.5 3.5 0.1 0 AAA AA BBB В А Longfellow Investment Grade Bond BBgBarc US Aggregate TR



26

Muni

BBgBarc US Aggregate TR

Foreign

04

ABS

100 -90 -80 -70 -60 -50 -40 -

30

20

10

0

UST

Agency

Corporate

MBS

Longfellow Investment Grade Bond

1.6

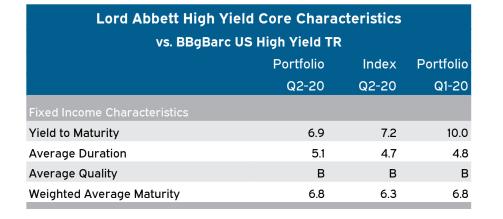
Other

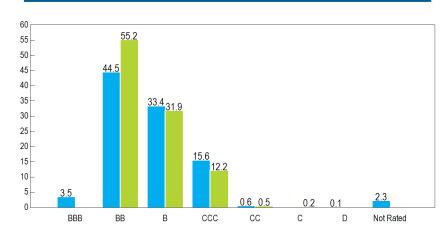
Cash

### Lord Abbett High Yield Core | As of June 30, 2020



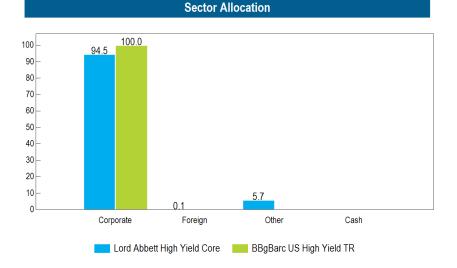
Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
Lord Abbett High Yield Core	12.4	-4.6	-0.9			-0.9	Jul-19
BBgBarc US High Yield TR	10.2	-3.8	0.0	3.3	4.8	0.0	Jul-19
eV US High Yield Fixed Inc Gross Median	9.3	-3.7	0.1	3.4	4.6	0.1	Jul-19
eV US High Yield Fixed Inc Gross Rank	7	69	69		-	69	Jul-19





**Credit Quality Allocation** 

Lord Abbett High Yield Core BBgBarc US High Yield TR



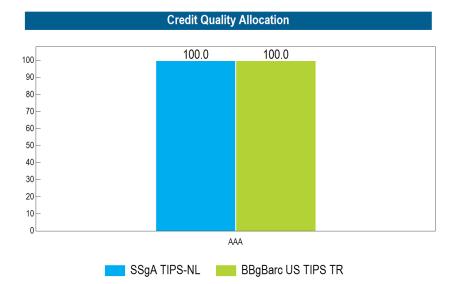
**MEKETA** 

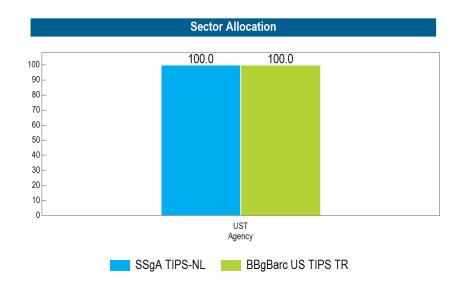
### SSgA TIPS-NL | As of June 30, 2020

Account Information						
Account Name	SSgA TIPS-NL					
Account Structure	Commingled Fund					
Investment Style	Passive					
Inception Date	7/01/07					
Account Type	Fixed					
Benchmark	BBgBarc US TIPS TR					
Universe	eV US TIPS / Inflation Fixed Inc Gross					

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
SSgA TIPS-NL	4.3	6.0	8.3	5.0	3.7	4.4	Jul-07
BBgBarc US TIPS TR	4.2	6.0	8.3	5.0	3.7	4.5	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median	4.4	5.2	7.8	5.1	3.8	4.5	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Rank	61	35	35	52	56	66	Jul-07

SSgA TIPS-NL Characteristics								
vs. BBgBarc US TIPS TR								
Portfolio Index Portf								
	Q2-20	Q2-20	Q1-20					
Fixed Income Characteristics								
Yield to Maturity	0.7	-0.7	0.9					
Average Duration	4.4	7.7	6.7					
Average Quality	AAA	AAA	AAA					
Weighted Average Maturity	8.2	8.2	8.4					





**MEKETA** 

# MEKETA

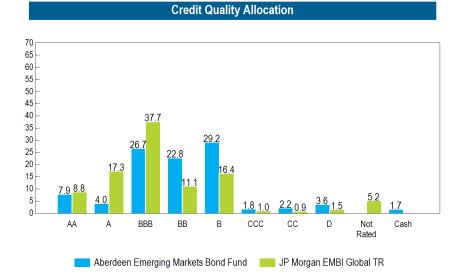
# Massachusetts Housing Finance Agency Retirement System

### Aberdeen Emerging Markets Bond Fund | As of June 30, 2020

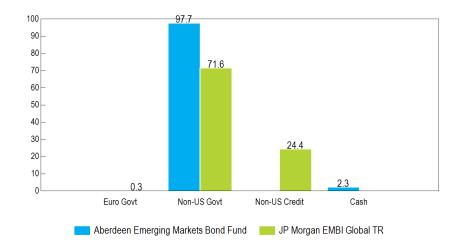
Account Information						
Account Name	Aberdeen Emerging Markets Bond Fund					
Account Structure	Commingled Fund					
Investment Style	Active					
Inception Date	12/01/16					
Account Type	Fixed					
Benchmark	JP Morgan EMBI Global Diversified					
Universe						

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
Aberdeen Emerging Markets Bond Fund	12.7	-5.0	-1.5	2.3	-	4.1	Dec-16
JP Morgan EMBI Global Diversified	12.3	-2.8	0.5	3.6	5.3	5.1	Dec-16
JP Morgan GBI EM Global Diversified TR USD	9.8	-6.9	-2.8	1.1	2.3	4.3	Dec-16

Aberdeen Emerging Markets Bond Fund Fixed Income Characteristics								
vs. JP Morgan EMBI Global TR								
Portfolio Index Portfol								
	Q2-20	Q2-20	Q1-20					
Fixed Income Characteristics								
Yield to Maturity	6.9	4.7	7.9					
Average Duration	6.9	8.2	6.3					
Average Quality BB BBB BB								
Weighted Average Maturity	11.4	13.2	10.7					

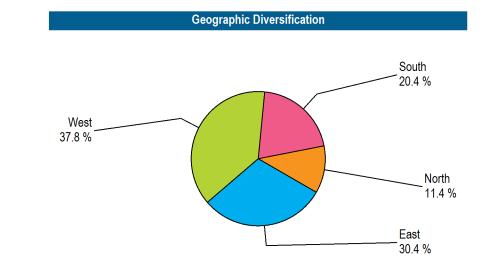


#### **Global Sector Allocation**

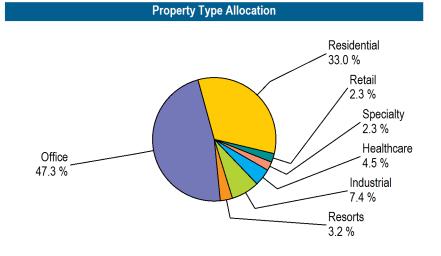


# MEKETA

## Intercontinental U.S. REIF | As of June 30, 2020



North represents Midwest.

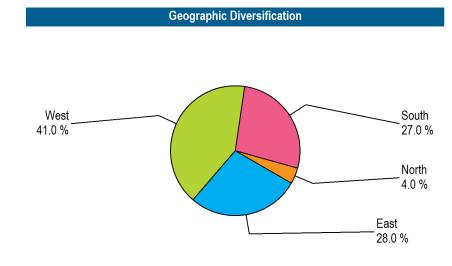


Accoun	Account Information							
Account Name	Intercontinental U.S. REIF							
Account Structure	Other							
Investment Style	Active							
Inception Date	10/01/14							
Account Type	Real Estate							
Benchmark	NCREIF ODCE (net)							
Universe								

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
Intercontinental U.S. REIF	0.0	0.3	6.1	8.3	10.1	10.4	Oct-14
NCREIF ODCE (net)	-1.7	-1.0	1.3	4.7	6.4	7.3	Oct-14

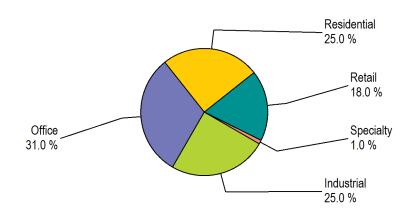
Note: As of March 31, 2020, the number of investments is 128.

### AEW Core Property Trust | As of June 30, 2020



North represents Midwest.





Accoun	t Information
Account Name	AEW Core Property Trust
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/14
Account Type	Real Estate
Benchmark	NCREIF ODCE (net)
Universe	

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inceptio n (%)	Inceptio n Date
AEW Core Property Trust NCREIF ODCE (net)	-0.2 -1.7	-1.3 <i>-1.0</i>	1.0 <i>1.3</i>	4.6 <i>4</i> .7	6.6 <i>6.4</i>	7.4 7.3	Oct-14 <i>Oct-14</i>

#### Note: As of March 31, 2020, the number of investments is 84.

**MEKETA** 

# MEKETA

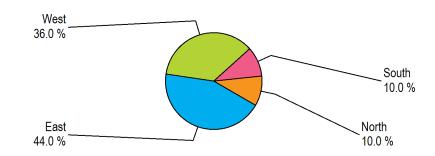
# Massachusetts Housing Finance Agency Retirement System

### TA Associates Realty Fund X | As of June 30, 2020

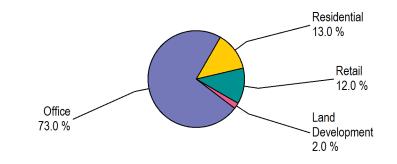
Account Information						
Account Name	TA Associates Realty Fund X					
Account Structure	Other					
Investment Style	Active					
Inception Date	4/01/13					
Account Type	Real Estate					
Benchmark	NCREIF ODCE (net)					
Universe						

	Non-Marketable Securities Overview							
	As of June 30, 2020							
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Real Estate	TA Associates Realty Fund X	2013	\$3,000,000	\$3,005,227	\$4,475,707	\$339,553	\$4,815,260	-\$5,227
	Total Account		\$3,000,000	\$3,005,227	\$4,475,707	\$339,553	\$4,815,260	-\$5,227





**Property Type Allocation** 



#### Investment Strategy:

TA Associates Realty Fund X uses a value-added strategy to create a diversified portfolio of direct real estate investments. The strategy is anticipated to target under-leased office, industrial, multifamily, and retail assets that are expected to be well-located, functional buildings with strong net operating income (NOI) growth potential. Geographically, the fund will target over 35 U.S. markets with broad regional diversification targets of 25% to 40% in the west, 20% to 35% in the east, 20% to 30% in the south, and 10% to 20% in the Midwest. The fund will target 35% leverage, with a maximum of 50%. Most value-added improvements include redevelopment, repositioning, retenanting, or recapitalization.

Note: As of March 31, 2020, the number of investments is 13 and Net IRR is 12.83%.



### Ascent Venture Partners - Fund III | As of June 30, 2020

Account Information					
Account Name	Ascent Venture Partners - Fund III				
Account Structure	Other				
Investment Style	Active				
Inception Date	6/01/01				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Ascent Venture Partners - Fund III	1999	\$1,500,000	\$1,395,000	\$1,697,063	\$52,614	\$1,749,677	\$105,000
	Total Account		\$1,500,000	\$1,395,000	\$1,697,063	\$52,614	\$1,749,677	\$105,000

#### Investment Strategy:

Ascent Venture Partners seeks to build private equity portfolios that are balanced with respect to industry (high and low technology ventures), and diverse with respects to company growth stage (from seed through buyout and re-capitalization). Ascent favors proven management teams and reasonable valuations. Ascent has shifted their focus to liquidating the remaining investments in the partnership.



### Ascent Venture Partners - Fund IV | As of June 30, 2020

Account Information						
Account Name	Ascent Venture Partners - Fund IV					
Account Structure	Other					
Investment Style	Active					
Inception Date	3/19/04					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

	Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	
Private Equity	Ascent Venture Partners - Fund IV	2004	\$1,000,000	\$1,000,000	\$155,588	\$15,584	\$171,172	\$0	
	Total Account		\$1,000,000	\$1,000,000	\$155,588	\$15,584	\$171,172	\$0	

#### Investment Strategy:

Located in Boston, Ascent Venture Partners (formerly known as Pioneer Capital) was formed in 1999, after Landmark Partners purchased Pioneer's interest. Ascent focuses primarily on high growth companies in the information technology sector. Ascent is an active investor, typically taking a board seat in portfolio companies. As a result, Ascent has focused its investments in the Eastern United States.



### Ascent Venture Partners - Fund V | As of June 30, 2020

Account Information					
Account Name	Ascent Venture Partners - Fund V				
Account Structure	Other				
Investment Style	Active				
Inception Date	9/22/08				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

	Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	
Private Equity	Ascent Venture Partners - Fund V	2011	\$1,000,000	\$920,000	\$649,106	\$787,415	\$1,436,521	\$80,000	
	Total Account		\$1,000,000	\$920,000	\$649,106	\$787,415	\$1,436,521	\$80,000	

#### Investment Strategy:

Ascent Venture Partners V is an early stage venture capital fund focused on making investments within the technology products and services industry. Specific areas of interest include next generation software (open source and Software-as-a-Service), data management and analysis, automated computing, security and compliance, financial services, and applications associated with the convergence of remote devices. The GP is located in Boston and will invest in the eastern United States and Canada. The Fund will target companies that have pre-money valuations of \$3 to \$15 million and have the potential for a \$100 million exit value.



### Ascent Venture Partners - Fund VI | As of June 30, 2020

Account Information						
Account Name	Ascent Venture Partners - Fund VI					
Account Structure	Other					
Investment Style	Active					
Inception Date	6/30/15					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

	Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment	
Private Equity	Ascent Venture Partners - Fund VI	2015	\$1,500,000	\$1,185,000	\$0	\$1,363,157	\$1,363,157	\$315,000	
	Total Account		\$1,500,000	\$1,185,000	\$0	\$1,363,157	\$1,363,157	\$315,000	

#### Investment Strategy:

Ascent Venture Partners VI is a limited partnership that was formed on November 25, 2013 under the Delaware Uniform Limited Partnership Act and commenced operations on November 16, 2015. The purpose of the Partnership is to provide early stage financing to emerging technology companies.



### Goldman Sachs PEP 2005 | As of June 30, 2020

Account Information					
Account Name	Goldman Sachs PEP 2005				
Account Structure	Other				
Investment Style	Active				
Inception Date	8/01/06				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Goldman Sachs PEP 2005	2006	\$3,000,000	\$2,928,405	\$3,402,723	\$383,941	\$3,786,664	\$71,595
	Total Account		\$3,000,000	\$2,928,405	\$3,402,723	\$383,941	\$3,786,664	\$71,595

#### Investment Strategy:

Goldman Sachs Private Equity Partners 2005 is a fund of funds formed to create a diversified portfolio of 18 to 25 partnerships. The Fund will invest opportunistically in order to commit to the "very best managers." The Fund expects to commit approximately \$40 million to each partnership. Previous funds have invested approximately 30% outside the U.S.

Note: As of December 31, 2019, the Net IRR is 4.73%.



### HarbourVest Partners VIII | As of June 30, 2020

Account Information					
Account Name	HarbourVest Partners VIII				
Account Structure	Other				
Investment Style	Active				
Inception Date	12/20/07				
Account Type	Private Equity				
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)				
Universe					

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners VIII	2006	\$2,500,000	\$2,323,678	\$3,513,714	\$513,289	\$4,027,003	\$176,322
	Total Account		\$2,500,000	\$2,323,678	\$3,513,714	\$513,289	\$4,027,003	\$176,322

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners VIII Investment Program consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital and mezzanine debt partnerships. Each vehicle will invest primarily in newly raised funds, but will also invest a portion of assets in secondary interest.



### HarbourVest Partners IX | As of June 30, 2020

Account Information						
Account Name	HarbourVest Partners IX					
Account Structure	Other					
Investment Style	Active					
Inception Date	10/22/13					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners IX	2010	\$5,000,000	\$3,655,139	\$2,876,266	\$3,447,382	\$6,323,648	\$1,344,861
	Total Account		\$5,000,000	\$3,655,139	\$2,876,266	\$3,447,382	\$6,323,648	\$1,344,861

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners IX Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



### HarbourVest X Buyout Fund | As of June 30, 2020

Account Information						
Account Name	HarbourVest X Buyout Fund					
Account Structure	Other					
Investment Style	Active					
Inception Date	4/06/16					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest X Buyout Fund	2016	\$6,500,000	\$2,752,866	\$260,971	\$3,238,959	\$3,499,930	\$3,747,134
	Total Account		\$6,500,000	\$2,752,866	\$260,971	\$3,238,959	\$3,499,930	\$3,747,134

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners X Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



### HarbourVest Partners XI | As of June 30, 2020

Account Information						
Account Name	HarbourVest Partners XI					
Account Structure	Other					
Investment Style	Passive					
Inception Date	7/31/19					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	HarbourVest Partners XI	2019	\$5,000,000	\$967,500	\$15,932	\$884,099	\$900,031	\$4,032,500
	Total Account		\$5,000,000	\$967,500	\$15,932	\$884,099	\$900,031	\$4,032,500

#### Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners XI Fund consists of three separate fund of funds, each dedicated to distinct private equity strategies: buyout, venture capital, and mezzanine debt partnerships. Each vehicle will invest primarily in newly-raised funds, but will also invest a portion of assets in secondary interests.



### Constitution Capital Partners Ironsides III | As of June 30, 2020

Account Information						
Account Name	Constitution Capital Partners Ironsides III					
Account Structure	Other					
Investment Style	Active					
Inception Date	1/29/14					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides III	2014	\$5,000,000	\$3,554,585	\$119,753	\$5,367,193	\$5,486,946	\$1,445,415
	Total Account		\$5,000,000	\$3,554,585	\$119,753	\$5,367,193	\$5,486,946	\$1,445,415

#### Investment Strategy:



### Constitution Capital Partners Ironsides IV | As of June 30, 2020

Account Information						
Account Name	<b>Constitution Capital Partners Ironsides IV</b>					
Account Structure	Other					
Investment Style	Active					
Inception Date	6/01/16					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides IV	2016	\$3,250,000	\$1,746,719	\$0	\$2,534,913	\$2,534,913	\$1,503,281
	Total Account		\$3,250,000	\$1,746,719	\$0	\$2,534,913	\$2,534,913	\$1,503,281

#### Investment Strategy:



### Constitution Capital Partners Ironsides V | As of June 30, 2020

Account Information						
Account Name	Constitution Capital Partners Ironsides V					
Account Structure	Other					
Investment Style	Passive					
Inception Date	3/09/20					
Account Type	Private Equity					
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)					
Universe						

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Partners Ironsides V	2020	\$2,500,000	\$372,978	\$2,289	\$316,808	\$319,097	\$2,127,022
	Total Account		\$2,500,000	\$372,978	\$2,289	\$316,808	\$319,097	\$2,127,022

#### Investment Strategy:



### Constitution Capital Direct IV | As of June 30, 2020

Account Information		
Account Name	Constitution Capital Direct IV	
Account Structure	Other	
Investment Style	Active	
Inception Date	6/30/16	
Account Type	Private Equity	
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)	
Universe		

Non-Marketable Securities Overview by Account Type								
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Direct IV	2016	\$3,250,000	\$3,146,050	\$855,812	\$3,295,858	\$4,151,670	\$103,950
	Total Account		\$3,250,000	\$3,146,050	\$855,812	\$3,295,858	\$4,151,670	\$103,950

#### Investment Strategy:



### Constitution Capital Direct V | As of June 30, 2020

Account Information		
Account Name	Constitution Capital Direct V	
Account Structure	Other	
Investment Style	Active	
Inception Date	3/27/19	
Account Type	Private Equity	
Benchmark	Cambridge Associates US All PE (1 Qtr Lag)	
Universe		

	Non-Marketable Securities Overview by Account Type							
Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	Constitution Capital Direct V	2019	\$2,500,000	\$2,785,319	\$768,783	\$1,901,817	\$2,670,600	-\$285,319
	Total Account		\$2,500,000	\$2,785,319	\$768,783	\$1,901,817	\$2,670,600	-\$285,319

#### Investment Strategy:

# MEKETA

# Massachusetts Housing Finance Agency Retirement System

## SSgA S&P Global LargeMidCap Natural Resources Index | As of June 30, 2020

Account Information		
Account Name	SSgA S&P Global LargeMidCap Natural Resources Index	
Account Structure	Commingled Fund	
Investment Style	Passive	
Inception Date	2/01/18	
Account Type	Real Assets	
Benchmark	S&P Global LargeMidCap Commodity and Resources NR USD	
Universe		

Portfolio Performance Summary							
	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA S&P Global LargeMidCap Natural Resources Index	21.3	-17.6	-16.2		-	-7.4	Feb-18
S&P Global LargeMidCap Commodity and Resources NR USD	21.2	-18.0	-16.7	0.9	0.1	-7.8	Feb-18

Top 10 Holdings	
ARCHER DANIELS MIDLAND	5.1%
EXXON MOBIL	5.0%
CORTEVA	4.6%
CHEVRON	4.4%
NUTRIEN	4.2%
BHP GROUP	4.0%
RIO TINTO	3.1%
FMC	3.0%
NEWMONT	2.8%
BARRICK GOLD (TSE)	2.6%
Total	38.7%

SSgA S&P Global LargeMidCap Natural Resources Index Characteristics			
	Portfolio Portfolio		
	Q2-20	Q1-20	
Market Value			
Market Value (\$M)	3.4	2.8	
Number Of Holdings	200	229	
Characteristics			
Weighted Avg. Market Cap. (\$B)	47.6	38.1	
Median Market Cap (\$B)	6.6	5.0	
P/E Ratio	15.1	11.2	
Yield	4.2	4.9	
EPS Growth - 5 Yrs.	1.2	0.7	
Price to Book	1.9	1.7	
Beta (holdings; domestic)	1.1	1.0	
Sector Distribution			
Energy	31.6	27.5	
Materials	55.9	58.7	
Industrials	0.0	0.0	
Consumer Discretionary	0.0	0.0	
Consumer Staples	12.4	13.5	
Health Care	0.0	0.0	
Financials	0.0	0.0	
Information Technology	0.0	0.0	
Communication Services	0.0	0.0	
Utilities	0.0	0.0	
Real Estate	0.0	0.0	

# Appendices



Corporate Update

Meketa Investment Group Corporate Update

## **Corporate Update**

- Staff of 206, including 141 investment professionals and 41 CFA Charterholders
- 215 clients, with over 300 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London

Infrastructure

• We advise on \$1.4 trillion in client assets

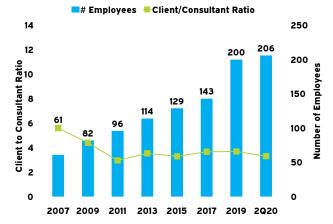
MEKETA

- Over \$125 billion in assets committed to alternative investments

<sup>1</sup> On March 15, 2019, 31 employees joined the firm as part of the merger of Meketa Investment Group and Pension Consulting Alliance.

<sup>2</sup> Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.

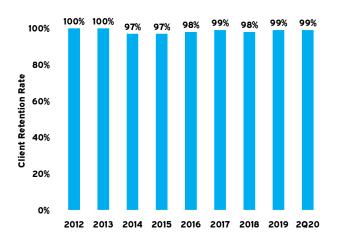
- Private Equity
  - Real Estate
    - state Hedge Funds
  - Client to Consultant Ratio<sup>1</sup>



Natural Resources

Commodities

Meketa Investment Group is proud to work for over 5 million American families everyday.



#### **Client Retention Rate<sup>2</sup>**



Domestic	International	Private	Real	Fixed	Hedge
Equities	Equities	Equity	Assets	Income	Funds
Passive Enhanced Index Large Cap Midcap Small Cap Microcap 130/30	<ul> <li>Large Cap Developed</li> <li>Small Cap Developed</li> <li>Emerging Markets</li> <li>Frontier Markets</li> </ul>	<ul> <li>Buyouts</li> <li>Venture Capital</li> <li>Private Debt</li> <li>Special Situations</li> <li>Secondaries</li> <li>Fund of Funds</li> </ul>	<ul> <li>Public REITs</li> <li>Core Real Estate</li> <li>Value Added Real Estate</li> <li>Opportunistic Real Estate</li> <li>Infrastructure</li> <li>Timber</li> <li>Natural Resources</li> <li>Commodities</li> </ul>	<ul> <li>Short-Term</li> <li>Core</li> <li>Core Plus</li> <li>TIPS</li> <li>High Yield</li> <li>Bank Loans</li> <li>Distressed</li> <li>Global</li> <li>Emerging Markets</li> </ul>	<ul> <li>Long/Short Equity</li> <li>Event Driven</li> <li>Relative Value</li> <li>Fixed Income Arbitrage</li> <li>Multi Strategy</li> <li>Market Neutra</li> <li>Global Macro</li> <li>Fund of Funds</li> <li>Portable Alph</li> </ul>



# **Disclaimer, Glossary, and Notes**



WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.



Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta\*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.



Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Standard Deviation**: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.



**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

5% (discount) = 5 (yrs. to maturity)

1% pro rata, plus 5.26% (current yield)

6.26% (yield to maturity)

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

=

**NCREIF Property Index (NPI):** Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999. The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

The Russell Indices<sup>®</sup>, TM, SM are trademarks/service marks of the Frank Russell Company.

Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.