

FUND EVALUATION REPORT

Massachusetts Housing Finance Agency Retirement System

Quarterly Review
December 31, 2018



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Retirement System Summary

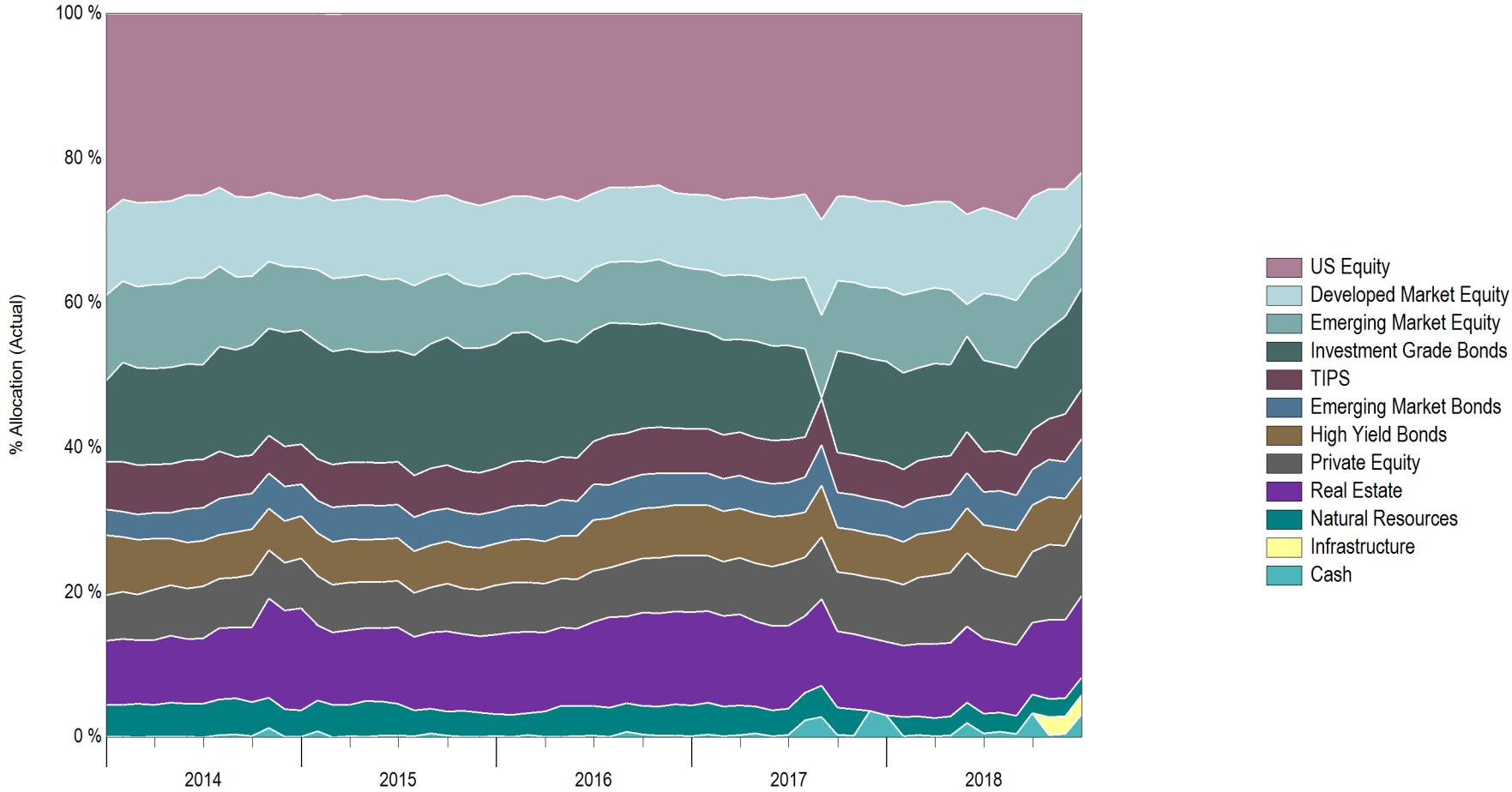
Retirement System Summary

As of December 31, 2018

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$32,230,495	22%	25%	20% - 30%	Yes
Developed Market Equity	\$10,435,996	7%	10%	6% - 14%	Yes
Emerging Market Equity	\$12,935,229	9%	10%	6% - 14%	Yes
Investment Grade Bonds	\$20,474,518	14%	10%	6% - 14%	Yes
TIPS	\$10,018,134	7%	6%	4% - 8%	Yes
Emerging Market Bonds	\$7,647,241	5%	5%	3% - 7%	Yes
High Yield Bonds	\$7,653,373	5%	6%	3% - 9%	Yes
Private Equity	\$16,434,263	11%	10%	6% - 14%	Yes
Real Estate	\$16,591,587	11%	10%	7% - 13%	Yes
Natural Resources	\$3,561,239	2%	3%	1% - 5%	Yes
Infrastructure	\$3,856,509	3%	5%	0% - 8%	Yes
Cash	\$4,621,440	3%	0%	0% - 5%	Yes
Total	\$146,460,023	100%	100%		

Asset Allocation History
5 Years Ending December 31, 2018



Retirement System Summary

As of December 31, 2018

Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	146,460,023	100.0	-5.8	-3.0	6.8	4.3	7.6	5.2	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate			-7.3	-6.0	5.2	3.1	6.8	5.3	Jul-01
InvestorForce All DB \$50mm-\$250mm Gross Median			-7.1	-4.1	5.8	4.8	8.2	5.8	Jul-01
Domestic Equity Assets	32,230,495	22.0	-14.6	-5.5	8.9	7.8	13.4	6.3	Jul-01
Russell 3000			-14.3	-5.2	9.0	7.9	13.2	6.5	Jul-01
eV US Large Cap Equity Gross Median			-13.9	-5.1	8.5	7.8	13.0	7.2	Jul-01
Total International Developed Market Equity	10,435,996	7.1	-13.5	-14.7	3.4	1.5	7.7	5.5	Jul-01
MSCI EAFE			-12.5	-13.8	2.9	0.5	6.3	4.5	Jul-01
eV EAFE Core Equity Gross Median			-14.0	-15.2	3.2	2.0	8.0	6.2	Jul-01
International Emerging Market Equity Assets	12,935,229	8.8	-9.1	-17.3	7.0	-0.8	6.7	0.0	Jul-07
MSCI Emerging Markets			-7.5	-14.6	9.2	1.6	8.0	1.6	Jul-07
eV Emg Mkts Equity Gross Median			-7.4	-15.2	9.0	2.4	9.6	2.6	Jul-07
Investment Grade Bond Assets	20,474,518	14.0	1.2	-0.1	2.0	2.6	3.9	4.4	Jul-01
BBgBarc US Aggregate TR			1.6	0.0	2.1	2.5	3.5	4.4	Jul-01
eV US Core Fixed Inc Gross Median			1.4	0.1	2.4	2.8	4.3	4.9	Jul-01
High Yield Bond Assets	7,653,373	5.2	-4.5	-3.2	5.0	3.7	9.5	5.9	Feb-05
CSFB High Yield Index			-4.8	-2.4	7.3	3.7	10.6	6.4	Feb-05
eV US High Yield Fixed Inc Gross Median			-4.0	-1.8	6.3	3.8	10.2	6.6	Feb-05
TIPS Assets	10,018,134	6.8	-0.4	-1.3	2.0	1.7	3.6	3.8	Jul-07
BBgBarc US TIPS TR			-0.4	-1.3	2.1	1.7	3.6	3.8	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median			-0.5	-1.2	2.2	1.8	3.8	3.9	Jul-07
Emerging Market Debt Assets	7,647,241	5.2	-1.3	-6.9	5.1	-2.1	--	-4.0	Mar-13
50% JPM EMBI GD / 50% JPM GBI-EM			0.4	-5.2	5.6	2.0	5.9	0.5	Mar-13
eV Emg Mkt Fixed Inc Unhedged Gross Median			-0.3	-5.0	5.9	3.3	8.0	2.3	Mar-13
Real Estate Assets	16,591,587	11.3	2.0	8.8	8.8	10.6	5.1	6.1	Apr-05
NCREIF ODCE (net)			1.5	7.4	7.3	9.4	6.0	6.7	Apr-05
Private Equity Assets	16,434,263	11.2	2.6	14.0	10.7	9.2	7.5	5.7	Oct-03
Cambridge Associates US All PE (1 Qtr Lag)			4.2	18.5	14.6	13.5	12.0	14.8	Oct-03

Retirement System Summary

As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Natural Resources & Commodities Assets	3,561,239	2.4	-12.6	-13.0	9.8	-8.7	--	-6.6	Jul-11
<i>S&P Global Large MidCap Commodity and Resources NR USD</i>			<i>-12.7</i>	<i>-9.4</i>	<i>11.9</i>	<i>-1.8</i>	<i>--</i>	<i>-3.0</i>	<i>Jul-11</i>
Infrastructure Assets	3,856,509	2.6	2.8	--	--	--	--	2.8	Oct-18
<i>CPI+5%</i>			<i>0.7</i>	<i>7.0</i>	<i>7.1</i>	<i>6.6</i>	<i>6.9</i>	<i>0.7</i>	<i>Oct-18</i>
Cash	4,621,440	3.2							

Retirement System Summary

As of December 31, 2018

Trailing Gross Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	146,460,023	100.0	--	-5.8	-3.0	6.8	4.3	7.6	5.2	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate				-7.3	-6.0	5.2	3.1	6.8	5.3	Jul-01
InvestorForce All DB \$50mm-\$250mm Gross Median				-7.1	-4.1	5.8	4.8	8.2	5.8	Jul-01
Domestic Equity Assets	32,230,495	22.0	22.0	-14.6	-5.5	8.9	7.8	13.4	6.3	Jul-01
Russell 3000				-14.3	-5.2	9.0	7.9	13.2	6.5	Jul-01
eV US Large Cap Equity Gross Median				-13.9	-5.1	8.5	7.8	13.0	7.2	Jul-01
SSgA Russell 1000 Value Index-NL	14,507,086	9.9	45.0	-11.8	-8.3	7.0	6.0	11.2	6.4	Jan-05
Russell 1000 Value				-11.7	-8.3	7.0	5.9	11.2	6.4	Jan-05
eV US Large Cap Value Equity Gross Median				-13.1	-8.4	7.4	6.3	11.9	7.4	Jan-05
SSgA Russell 1000 Growth-NL	14,660,454	10.0	45.5	-16.0	-1.7	11.1	10.4	15.3	8.8	Jul-07
Russell 1000 Growth				-15.9	-1.5	11.1	10.4	15.3	8.8	Jul-07
eV US Large Cap Growth Equity Gross Median				-15.3	-0.6	10.3	9.6	14.9	8.6	Jul-07
SSgA Russell 2000 Index-NL	3,062,955	2.1	9.5	-20.2	-11.0	7.4	4.5	--	10.6	Aug-10
Russell 2000				-20.2	-11.0	7.4	4.4	12.0	10.5	Aug-10
eV US Small Cap Core Equity Gross Median				-19.8	-10.7	7.6	5.3	13.5	11.7	Aug-10
Total International Developed Market Equity	10,435,996	7.1	7.1	-13.5	-14.7	3.4	1.5	7.7	5.5	Jul-01
MSCI EAFE				-12.5	-13.8	2.9	0.5	6.3	4.5	Jul-01
eV EAFE Core Equity Gross Median				-14.0	-15.2	3.2	2.0	8.0	6.2	Jul-01
SSgA MSCI EAFE Index-NL	6,675,756	4.6	64.0	-12.5	-13.5	3.2	0.9	--	5.0	Aug-10
MSCI EAFE				-12.5	-13.8	2.9	0.5	6.3	4.7	Aug-10
eV EAFE Core Equity Gross Median				-14.0	-15.2	3.2	2.0	8.0	6.5	Aug-10
SSgA MSCI EAFE Small Cap Index-NL	3,760,240	2.6	36.0	-16.0	-17.6	4.0	3.3	--	7.8	Aug-10
MSCI EAFE Small Cap				-16.0	-17.9	3.7	3.1	10.5	7.5	Aug-10
eV EAFE Small Cap Core Gross Median				-16.7	-19.2	3.5	3.5	11.9	9.3	Aug-10



Retirement System Summary

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
International Emerging Market Equity Assets	12,935,229	8.8	8.8	-9.1	-17.3	7.0	-0.8	6.7	0.0	Jul-07
<i>MSCI Emerging Markets</i>				-7.5	-14.6	9.2	1.6	8.0	1.6	Jul-07
<i>eV Emg Mkts Equity Gross Median</i>				-7.4	-15.2	9.0	2.4	9.6	2.6	Jul-07
LMCG Emerging Markets (Net)	12,935,229	8.8	100.0	-9.3	-18.7	5.5	--	--	1.6	Aug-15
<i>MSCI Emerging Markets</i>				-7.5	-14.6	9.2	1.6	8.0	4.4	Aug-15
<i>eV Emg Mkts Equity Net Median</i>				-7.7	-16.2	7.8	1.4	8.8	3.6	Aug-15
Investment Grade Bond Assets	20,474,518	14.0	14.0	1.2	-0.1	2.0	2.6	3.9	4.4	Jul-01
<i>BBgBarc US Aggregate TR</i>				1.6	0.0	2.1	2.5	3.5	4.4	Jul-01
<i>eV US Core Fixed Inc Gross Median</i>				1.4	0.1	2.4	2.8	4.3	4.9	Jul-01
Longfellow Investment Grade Bond	20,474,518	14.0	100.0	1.2	-0.1	--	--	--	-0.1	Sep-17
<i>BBgBarc US Aggregate TR</i>				1.6	0.0	2.1	2.5	3.5	-0.1	Sep-17
<i>eV US Core Fixed Inc Gross Median</i>				1.4	0.1	2.4	2.8	4.3	0.1	Sep-17
High Yield Bond Assets	7,653,373	5.2	5.2	-4.5	-3.2	5.0	3.7	9.5	5.9	Feb-05
<i>CSFB High Yield Index</i>				-4.8	-2.4	7.3	3.7	10.6	6.4	Feb-05
<i>eV US High Yield Fixed Inc Gross Median</i>				-4.0	-1.8	6.3	3.8	10.2	6.6	Feb-05
Columbia Institutional High Yield	7,653,373	5.2	100.0	-4.5	-3.2	4.9	3.7	--	4.9	Mar-12
<i>BBgBarc US High Yield TR</i>				-4.5	-2.1	7.2	3.8	11.1	5.3	Mar-12
<i>eV US High Yield Fixed Inc Gross Median</i>				-4.0	-1.8	6.3	3.8	10.2	5.2	Mar-12
TIPS Assets	10,018,134	6.8	6.8	-0.4	-1.3	2.0	1.7	3.6	3.8	Jul-07
<i>BBgBarc US TIPS TR</i>				-0.4	-1.3	2.1	1.7	3.6	3.8	Jul-07
<i>eV US TIPS / Inflation Fixed Inc Gross Median</i>				-0.5	-1.2	2.2	1.8	3.8	3.9	Jul-07
SSgA TIPS-NL	10,018,134	6.8	100.0	-0.4	-1.3	2.0	1.7	3.6	3.8	Jul-07
<i>BBgBarc US TIPS TR</i>				-0.4	-1.3	2.1	1.7	3.6	3.8	Jul-07
<i>eV US TIPS / Inflation Fixed Inc Gross Median</i>				-0.5	-1.2	2.2	1.8	3.8	3.9	Jul-07



Retirement System Summary

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Market Debt Assets	7,647,241	5.2	5.2	-1.3	-6.9	5.1	-2.1	--	-4.0	Mar-13
50% JPM EMBI GD / 50% JPM GBI-EM				0.4	-5.2	5.6	2.0	5.9	0.5	Mar-13
eV Emg Mkt Fixed Inc Unhedged Gross Median				-0.3	-5.0	5.9	3.3	8.0	2.3	Mar-13
Logan Circle Emerging Markets Debt (Net)	3,726,290	2.5	48.7	-1.2	-6.6	--	--	--	2.0	Nov-16
Logan Circle Custom Benchmark				0.2	-4.0	5.3	2.7	6.6	1.4	Nov-16
eV Emg Mkt Fixed Inc Unhedged Net Median				-0.3	-5.8	5.1	2.2	6.8	1.1	Nov-16
Aberdeen Emerging Markets Bond Fund	3,920,951	2.7	51.3	-1.3	-7.1	--	--	--	2.5	Dec-16
JP Morgan EMBI Global Diversified				-1.3	-4.3	5.2	4.8	8.2	3.3	Dec-16
JP Morgan GBI EM Global Diversified TR USD				2.1	-6.2	5.9	-1.0	3.4	4.7	Dec-16
eV Emg Mkt Fixed Inc Unhedged Gross Median				-0.3	-5.0	5.9	3.3	8.0	4.1	Dec-16
Real Estate Assets	16,591,587	11.3	11.3	2.0	8.8	8.8	10.6	5.1	6.1	Apr-05
NCREIF ODCE (net)				1.5	7.4	7.3	9.4	6.0	6.7	Apr-05
AG Realty Fund IV	3,950	0.0	0.0							
TA Associates Realty Fund IX	1,689	0.0	0.0							
TA Associates Realty Fund X	1,699,452	1.2	10.2							
Intercontinental U.S. REIF (Net)	7,046,881	4.8	42.5	2.1	10.5	9.6	--	--	10.5	Oct-14
NCREIF ODCE (net)				1.5	7.4	7.3	9.4	6.0	9.1	Oct-14
AEW Core Property Trust (Net)	7,839,615	5.4	47.3	1.5	6.6	6.9	--	--	8.6	Oct-14
NCREIF ODCE (net)				1.5	7.4	7.3	9.4	6.0	9.1	Oct-14

Logan Circle Custom Benchmark consists of 35% JP Morgan EMBI Global Diversified, 35% JP Morgan CEMBI Broad Diversified, and 30% JP Morgan GBI EM Global Diversified. AG Realty Fund IV, TA Associates Realty Fund IX, and TA Associates Realty Fund X are based on September 30, 2018 fair market value, adjusted for subsequent cash flows.



Retirement System Summary

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	16,434,263	11.2	11.2	2.6	14.0	10.7	9.2	7.5	5.7	Oct-03
<i>Cambridge Associates US All PE (1 Qtr Lag)</i>				4.2	18.5	14.6	13.5	12.0	14.8	Oct-03
Ascent Venture Partners - Fund II	5,873	0.0	0.0							
Ascent Venture Partners - Fund III	72,839	0.0	0.4							
Ascent Venture Partners - Fund IV	70,773	0.0	0.4							
Ascent Venture Partners - Fund V	874,205	0.6	5.3							
Ascent Venture Partners - Fund VI	1,228,118	0.8	7.5							
Constitution Capital Partners Ironsides III	3,021,124	2.1	18.4							
Constitution Capital Partners Ironsides IV	1,142,044	0.8	6.9							
Constitution Capital Direct IV	2,897,529	2.0	17.6							
Goldman Sachs PEP 2005	699,998	0.5	4.3							
HarbourVest Partners VIII	848,141	0.6	5.2							
HarbourVest Partners IX	3,266,787	2.2	19.9							
HarbourVest X Buyout Fund	2,306,832	1.6	14.0							
Natural Resources & Commodities Assets	3,561,239	2.4	2.4	-12.6	-13.0	9.8	-8.7	--	-6.6	Jul-11
<i>S&P Global Large MidCap Commodity and Resources NR USD</i>				-12.7	-9.4	11.9	-1.8	--	-3.0	Jul-11
SSgA S&P Global LargeMidCap Natural Resources Index	3,561,239	2.4	100.0	-12.6	--	--	--	--	-13.2	Feb-18
<i>S&P Global Large MidCap Commodity and Resources NR USD</i>				-12.7	-9.4	11.9	-1.8	--	-13.6	Feb-18

Retirement System Summary

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Infrastructure Assets	3,856,509	2.6	2.6	2.8	--	--	--	--	2.8	Oct-18
<i>CPI+5%</i>				0.7	7.0	7.1	6.6	6.9	0.7	Oct-18
IFM Global Infrastructure (U.S.), L.P. <i>CPI+5%</i>	3,856,509	2.6	100.0	2.8	--	--	--	--	2.8	Oct-18
				0.7	7.0	7.1	6.6	6.9	0.7	Oct-18
Cash	4,621,440	3.2	3.2							
Cash STIF	4,621,440	3.2	100.0							

Retirement System Summary

As of December 31, 2018

Calendar Year Performance

	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)
Total Retirement System	-3.0	14.5	9.6	-2.7	4.3	10.9	12.2	2.2	12.5	17.7
<i>60% MSCI ACWI / 40% Barclays Global Aggregate</i>	-6.0	17.1	5.7	-2.5	2.8	12.1	11.5	-2.1	10.2	23.3
Domestic Equity Assets	-5.5	21.0	13.1	0.4	12.4	33.5	16.3	1.0	17.5	30.8
<i>Russell 3000</i>	-5.2	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9	28.3
SSgA Russell 1000 Value Index-NL	-8.3	13.8	17.3	-3.7	13.4	32.5	17.4	0.4	15.6	20.0
<i>Russell 1000 Value</i>	-8.3	13.7	17.3	-3.8	13.5	32.5	17.5	0.4	15.5	19.7
SSgA Russell 1000 Growth-NL	-1.7	30.2	7.2	5.6	13.1	33.5	15.4	2.6	16.7	37.2
<i>Russell 1000 Growth</i>	-1.5	30.2	7.1	5.7	13.0	33.5	15.3	2.6	16.7	37.2
SSgA Russell 2000 Index-NL	-11.0	14.7	21.5	-4.4	5.0	38.9	16.4	-4.1	--	--
<i>Russell 2000</i>	-11.0	14.6	21.3	-4.4	4.9	38.8	16.3	-4.2	26.9	27.2
Total International Developed Market Equity	-14.7	27.5	1.6	2.0	-4.7	24.4	18.1	-12.6	11.4	36.3
<i>MSCI EAFE</i>	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8
SSgA MSCI EAFE Index-NL	-13.5	25.5	1.4	-0.5	-4.6	23.1	17.7	-11.9	--	--
<i>MSCI EAFE</i>	-13.8	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8
SSgA MSCI EAFE Small Cap Index-NL	-17.6	33.3	2.4	9.7	-4.7	29.5	20.1	-15.0	--	--
<i>MSCI EAFE Small Cap</i>	-17.9	33.0	2.2	9.6	-4.9	29.3	20.0	-15.9	22.0	46.8
International Emerging Market Equity Assets	-17.3	32.5	11.7	-18.1	-4.4	-3.8	18.8	-25.6	22.1	92.3
<i>MSCI Emerging Markets</i>	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5
LMCG Emerging Markets (Net)	-18.7	35.1	7.0	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	-14.6	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5

Retirement System Summary

As of December 31, 2018

	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)
Investment Grade Bond Assets	-0.1	3.5	2.7	0.8	6.1	-3.1	4.6	8.5	6.7	9.7
<i>BBgBarc US Aggregate TR</i>	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9
Longfellow Investment Grade Bond	-0.1	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>	0.0	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9
High Yield Bond Assets	-3.2	7.2	11.5	-0.2	4.1	6.0	13.6	6.2	12.9	43.2
<i>CSFB High Yield Index</i>	-2.4	7.0	18.3	-4.9	1.9	7.5	14.7	5.5	14.4	54.2
Columbia Institutional High Yield	-3.2	6.8	11.5	-0.2	4.1	6.0	--	--	--	--
<i>BBgBarc US High Yield TR</i>	-2.1	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1	58.2
TIPS Assets	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3
<i>BBgBarc US TIPS TR</i>	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4
SSgA TIPS-NL	-1.3	3.0	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3
<i>BBgBarc US TIPS TR</i>	-1.3	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4
Emerging Market Debt Assets	-6.9	13.3	10.0	-15.2	-8.5	--	--	--	--	--
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>	-5.2	12.7	10.2	-7.1	0.7	-7.1	17.2	2.8	13.8	26.0
Logan Circle Emerging Markets Debt (Net)	-6.6	13.4	--	--	--	--	--	--	--	--
<i>Logan Circle Custom Benchmark</i>	-4.0	10.6	10.0	-3.8	1.9	-4.4	17.9	2.0	12.6	27.9
Aberdeen Emerging Markets Bond Fund	-7.1	13.3	--	--	--	--	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	-4.3	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2	29.8

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



Retirement System Summary

As of December 31, 2018

	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)
Real Estate Assets	8.8	8.5	9.0	13.8	12.8	10.1	12.5	16.7	12.7	-38.9
<i>NCREIF ODCE (net)</i>	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4
AG Realty Fund IV										
TA Associates Realty Fund IX										
TA Associates Realty Fund X										
Intercontinental U.S. REIF (Net)	10.5	7.5	10.9	12.5	--	--	--	--	--	--
<i>NCREIF ODCE (net)</i>	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4
AEW Core Property Trust (Net)	6.6	6.6	7.6	12.8	--	--	--	--	--	--
<i>NCREIF ODCE (net)</i>	7.4	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4
Private Equity Assets	14.0	11.8	6.3	0.8	13.5	9.5	9.2	7.9	19.9	-14.2
<i>Cambridge Associates US All PE (1 Qtr Lag)</i>	18.5	16.8	8.7	6.0	17.9	17.5	15.2	15.1	18.3	-10.3
Ascent Venture Partners - Fund II										
Ascent Venture Partners - Fund III										
Ascent Venture Partners - Fund IV										
Ascent Venture Partners - Fund V										
Ascent Venture Partners - Fund VI										
Constitution Capital Partners Ironsides III										
Constitution Capital Partners Ironsides IV										
Constitution Capital Direct IV										
Goldman Sachs PEP 2005										

Retirement System Summary

As of December 31, 2018

	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)
HarbourVest Partners VIII										
HarbourVest Partners IX										
HarbourVest X Buyout Fund										
Natural Resources & Commodities Assets	-13.0	-0.9	53.7	-38.0	-22.6	-0.3	6.5	--	--	--
<i>S&P Global Large MidCap Commodity and Resources NR USD</i>	-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	--	--	--	--	--	--	--	--	--	--
<i>S&P Global Large MidCap Commodity and Resources NR USD</i>	-9.4	18.1	30.8	-27.5	-9.9	-2.9	7.0	-14.1	19.5	--
Infrastructure Assets	--	--	--	--	--	--	--	--	--	--
CPI+5%	7.0	7.2	7.2	5.8	5.8	6.6	6.8	8.1	6.6	7.8
IFM Global Infrastructure (U.S.), L.P.	--	--	--	--	--	--	--	--	--	--
CPI+5%	7.0	7.2	7.2	5.8	5.8	6.6	6.8	8.1	6.6	7.8
Cash										
Cash STIF										

As of December 31, 2018

Statistics Summary

5 Years Ending December 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	4.3%	6.0%	0.6	0.8	0.6	2.0%
60% MSCI ACWI / 40% Barclays Global Aggregate	3.1%	7.1%	--	1.0	0.3	0.0%
Total Equity	4.4%	11.1%	-0.9	0.9	0.3	3.9%
Russell 3000	7.9%	11.2%	--	1.0	0.7	0.0%
Domestic Equity Assets	7.8%	11.2%	-0.7	1.0	0.6	0.2%
Russell 3000	7.9%	11.2%	--	1.0	0.7	0.0%
SSgA Russell 1000 Value Index-NL	5.9%	10.8%	-0.7	1.0	0.5	0.1%
Russell 1000 Value	5.9%	10.9%	--	1.0	0.5	0.0%
SSgA Russell 1000 Growth-NL	10.3%	12.0%	-2.3	1.0	0.8	0.1%
Russell 1000 Growth	10.4%	12.0%	--	1.0	0.8	0.0%
SSgA Russell 2000 Index-NL	4.4%	15.4%	-0.3	1.0	0.2	0.1%
Russell 2000	4.4%	15.4%	--	1.0	0.2	0.0%
International Equity Assets	0.3%	12.6%	-0.4	1.0	0.0	2.7%
MSCI ACWI ex USA IMI Gross	1.3%	11.9%	--	1.0	0.1	0.0%
Total International Developed Market Equity	1.4%	11.7%	0.7	1.0	0.1	1.1%
MSCI EAFE	0.5%	11.8%	--	1.0	0.0	0.0%
SSgA MSCI EAFE Index-NL	0.8%	11.8%	1.9	1.0	0.0	0.1%
MSCI EAFE	0.5%	11.8%	--	1.0	0.0	0.0%
SSgA MSCI EAFE Small Cap Index-NL	3.1%	12.0%	0.0	1.0	0.2	0.2%
MSCI EAFE Small Cap	3.1%	12.0%	--	1.0	0.2	0.0%

Retirement System Summary

As of December 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
International Emerging Market Equity Assets	-1.0%	15.7%	-1.1	1.0	-0.1	2.5%
MSCI Emerging Markets	1.6%	15.2%	--	1.0	0.1	0.0%
LMCG Emerging Markets	--	--	--	--	--	--
MSCI Emerging Markets	1.6%	15.2%	--	1.0	0.1	0.0%
Fixed Income Assets	1.9%	3.3%	-0.5	1.1	0.4	1.8%
BBgBarc US Universal TR	2.7%	2.6%	--	1.0	0.8	0.0%
Investment Grade Bond Assets	2.6%	2.7%	0.2	1.0	0.7	0.3%
BBgBarc US Aggregate TR	2.5%	2.8%	--	1.0	0.7	0.0%
Longfellow Investment Grade Bond	--	--	--	--	--	--
BBgBarc US Aggregate TR	2.5%	2.8%	--	1.0	0.7	0.0%
High Yield Bond Assets	3.6%	4.5%	0.0	0.8	0.7	2.1%
CSFB High Yield Index	3.7%	5.2%	--	1.0	0.6	0.0%
Columbia Insitutional High Yield	3.5%	4.5%	-0.2	0.8	0.6	1.8%
BBgBarc US High Yield TR	3.8%	5.1%	--	1.0	0.6	0.0%
TIPS Assets	1.7%	3.6%	-1.1	1.0	0.3	0.0%
BBgBarc US TIPS TR	1.7%	3.6%	--	1.0	0.3	0.0%
SSgA TIPS-NL	1.6%	3.6%	-1.2	1.0	0.3	0.1%
BBgBarc US TIPS TR	1.7%	3.6%	--	1.0	0.3	0.0%
Emerging Market Debt Assets	-2.1%	10.4%	-1.1	1.3	-0.3	3.8%
50% JPM EMBI GD / 50% JPM GBI-EM	2.0%	7.8%	--	1.0	0.2	0.0%
Logan Circle Emerging Markets Debt	--	--	--	--	--	--
Logan Circle Custom Benchmark	2.7%	6.2%	--	1.0	0.3	0.0%
Aberdeen Emerging Markets Bond Fund	--	--	--	--	--	--
JP Morgan EMBI Global Diversified	4.8%	5.4%	--	1.0	0.8	0.0%

Retirement System Summary

As of December 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Real Estate Assets	10.6%	4.4%	1.0	1.1	2.2	1.1%
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
AG Realty Fund IV	-0.6%	0.9%	-2.4	0.0	-1.3	4.2%
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
TA Associates Realty Fund IX	8.4%	10.2%	-0.1	1.1	0.8	9.1%
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
TA Associates Realty Fund X	13.1%	7.1%	0.7	1.2	1.8	5.3%
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
Intercontinental U.S. REIF	--	--	--	--	--	--
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
AEW Core Property Trust	--	--	--	--	--	--
NCREIF ODCE (net)	9.4%	4.0%	--	1.0	2.2	0.0%
Private Equity Assets	9.2%	5.6%	-1.2	0.7	1.5	3.5%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Ascent Venture Partners - Fund II	38.6%	37.6%	0.7	2.0	1.0	35.8%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Ascent Venture Partners - Fund III	-10.0%	15.9%	-1.4	0.3	-0.7	16.6%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Ascent Venture Partners - Fund IV	-38.8%	41.8%	-1.2	-0.9	-0.9	43.2%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Ascent Venture Partners - Fund V	5.7%	8.3%	-0.9	0.4	0.6	8.6%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Ascent Venture Partners - Fund VI	--	--	--	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%

Retirement System Summary

As of December 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Constitution Capital Partners Ironsides III	--	--	--	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Constitution Capital Partners Ironsides IV	--	--	--	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Constitution Capital Direct IV	--	--	--	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Goldman Sachs PEP 2005	8.4%	10.2%	-0.5	0.6	0.8	9.8%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
HarbourVest Partners VIII	17.2%	7.7%	1.0	1.0	2.2	3.6%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
HarbourVest Partners IX	17.3%	8.9%	0.8	1.1	1.9	4.9%
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
HarbourVest X Buyout Fund	--	--	--	--	--	--
Cambridge Associates US All PE (1 Qtr Lag)	13.5%	6.7%	--	1.0	1.9	0.0%
Natural Resources & Commodities Assets	-8.7%	24.9%	-0.5	1.3	-0.4	13.2%
S&P Global Large MidCap Commodity and Resources NR USD	-1.8%	16.8%	--	1.0	-0.1	0.0%
SSgA S&P Global LargeMidCap Natural Resources Index	--	--	--	--	--	--
S&P Global Large MidCap Commodity and Resources NR USD	-1.8%	16.8%	--	1.0	-0.1	0.0%
Infrastructure Assets	--	--	--	--	--	--
CPI+5%	6.6%	1.0%	--	1.0	5.9	0.0%
IFM Global Infrastructure (U.S.), L.P.	--	--	--	--	--	--
CPI+5%	6.6%	1.0%	--	1.0	5.9	0.0%

Retirement System Detail

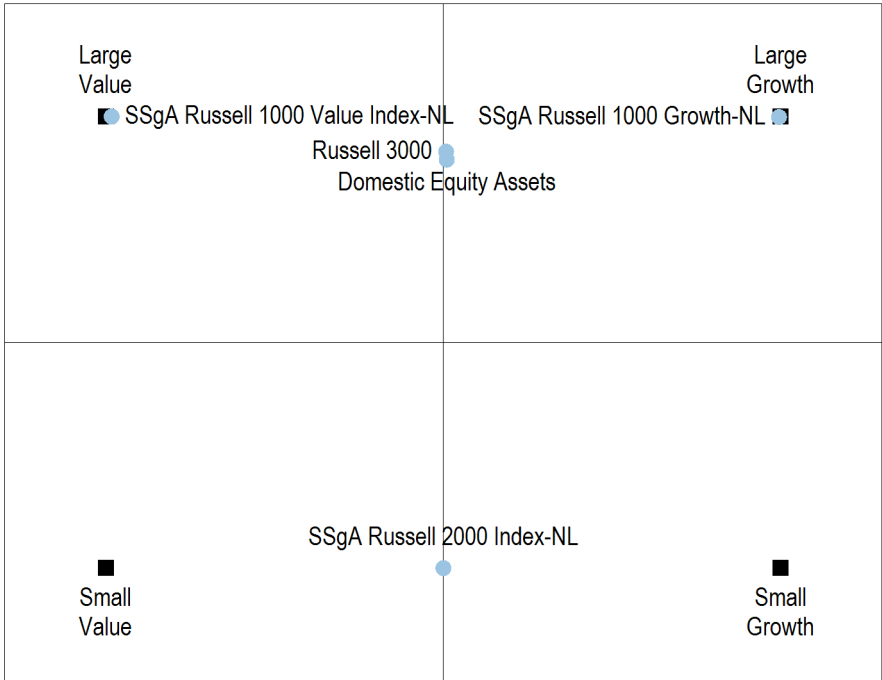
Domestic Equity Assets

Domestic Equity Assets

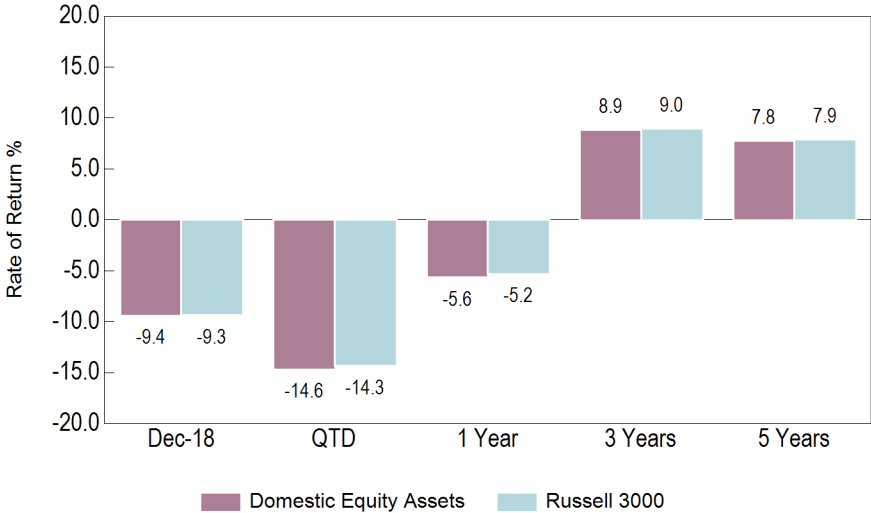
As of December 31, 2018

Asset Allocation on December 31, 2018		
	Actual	Actual
SSgA Russell 1000 Growth-NL	\$14,660,454	45.5%
SSgA Russell 1000 Value Index-NL	\$14,507,086	45.0%
SSgA Russell 2000 Index-NL	\$3,062,955	9.5%
Total	\$32,230,495	100.0%

Domestic Equity Assets Style Map
3 Years Ending December 31, 2018



Return Summary
Ending December 31, 2018



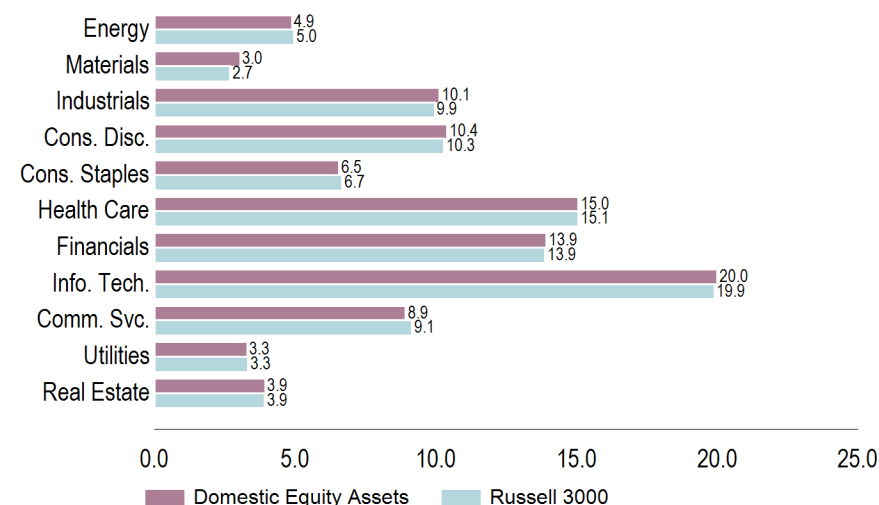
Domestic Equity Assets Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	32.2	--	39.7
Number Of Holdings	3003	3015	3008
Characteristics			
Weighted Avg. Market Cap. (\$B)	152.4	154.7	192.0
Median Market Cap (\$B)	1.7	1.4	2.2
P/E Ratio	21.9	22.3	30.8
Yield	2.1	2.1	1.7
EPS Growth - 5 Yrs.	8.4	9.0	9.8
Price to Book	5.6	4.2	6.7
Beta (holdings; domestic)	1.0	1.0	1.1

Top 10 Holdings

MICROSOFT	3.0%
APPLE	2.9%
AMAZON.COM	2.4%
BERKSHIRE HATHAWAY 'B'	1.5%
JOHNSON & JOHNSON	1.3%
ALPHABET 'C'	1.2%
JP MORGAN CHASE & CO.	1.2%
ALPHABET A	1.2%
FACEBOOK CLASS A	1.2%
EXXON MOBIL	1.1%
Total	17.2%

Sector Allocation (%) vs Russell 3000



Sector Performance

	Portfolio Q4-18	Index Q4-18
Energy	-25.13	-25.77
Materials	-14.40	-14.99
Industrials	-17.79	-18.14
Consumer Discretionary	-16.15	-16.41
Consumer Staples	-5.60	-5.58
Health Care	-10.49	-10.90
Financials	-13.55	-13.52
Information Technology	-17.68	-17.32
Communication Services	-13.48	-13.32
Utilities	0.60	0.83
Real Estate	-5.84	-6.35



International Equity Assets

International Equity Assets

As of December 31, 2018

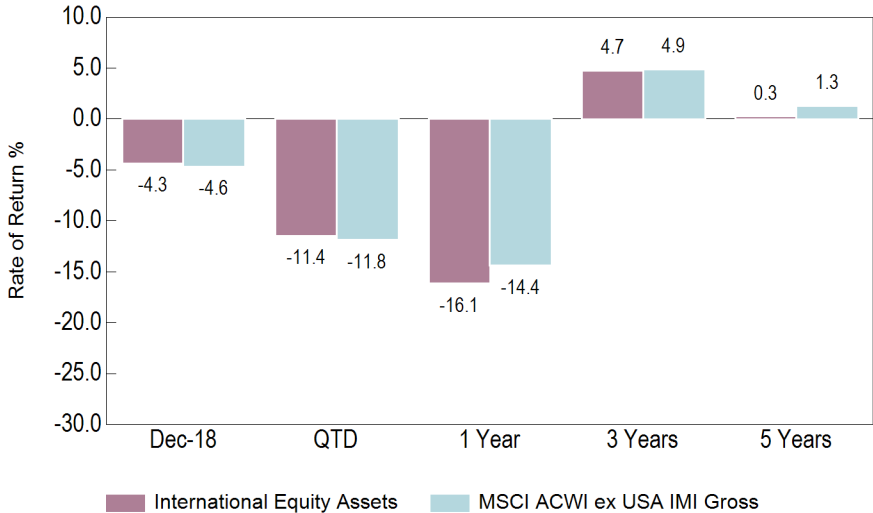
Asset Allocation on December 31, 2018

	Actual	Actual
LMCG Emerging Markets	\$12,935,229	55.3%
SSgA MSCI EAFE Index-NL	\$6,675,756	28.6%
SSgA MSCI EAFE Small Cap Index-NL	\$3,760,240	16.1%
Total	\$23,371,225	100.0%

International Equity Assets Style Map
3 Years Ending December 31, 2018



Return Summary
Ending December 31, 2018



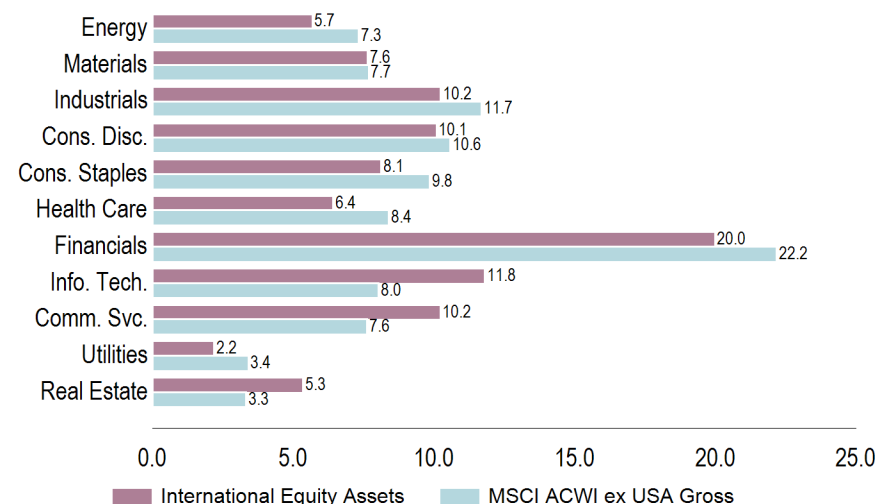
Total International Equity Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	23.4	--	31.8
Number Of Holdings	3416	2136	3434
Characteristics			
Weighted Avg. Market Cap. (\$B)	44.0	56.1	56.0
Median Market Cap (\$B)	1.6	7.0	1.9
P/E Ratio	16.1	16.4	19.6
Yield	3.6	3.4	3.0
EPS Growth - 5 Yrs.	10.1	9.5	10.5
Price to Book	2.6	2.4	3.3
Beta (holdings; domestic)	1.0	1.0	1.0

Top 10 Holdings

TENCENT HOLDINGS	2.5%
TAIWAN SEMICON.MNFG.	1.9%
SAMSUNG ELECTRONICS	1.8%
ISHARES MSCI EMRG.MKTS. IDX.FD.	1.5%
58 COM CL.A ADR 1:2	1.3%
HOUSING DEVELOPMENT FINANCE CORPORATION	0.9%
NASPERS	0.9%
CHINA CON.BANK 'H'	0.8%
LUKOIL OAO SPN.ADR 1:1	0.8%
SK HYNIX	0.7%
Total	12.9%

Sector Allocation (%) vs MSCI ACWI ex USA Gross



	Portfolio Q4-18	Index Q4-18
Sector Performance		
Energy	-16.51	-16.12
Materials	-14.89	-13.37
Industrials	-12.29	-13.66
Consumer Discretionary	-12.72	-13.79
Consumer Staples	-7.33	-7.42
Health Care	-12.63	-10.82
Financials	-7.61	-10.65
Information Technology	-13.46	-16.06
Communication Services	-8.54	-8.29
Utilities	-0.31	0.49
Real Estate	-1.48	-3.45



International Equity Assets

As of December 31, 2018

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	1.8%	0.0%	1.8%
Europe Ex U.K.	19.2%	30.7%	-11.6%
United Kingdom	7.5%	11.5%	-3.9%
Pacific Basin Ex Japan	13.4%	8.4%	5.0%
Japan	12.2%	16.6%	-4.4%
Emerging Markets	45.5%	25.7%	19.9%
Other	0.4%	0.7%	-0.2%
Total	100.0%	100.0%	0.0%

As of December 31, 2018

Total International Equity Country Allocation

vs MSCI ACWI ex USA Gross

Country	% of Total	% of Bench	% Diff
ARGENTINA	0.0%	0.0%	0.0%
AUSTRALIA	3.1%	4.7%	-1.6%
AUSTRIA	0.2%	0.2%	0.1%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.6%	0.6%	0.0%
BRAZIL	4.1%	2.0%	2.2%
BULGARIA	0.0%	0.0%	0.0%
CANADA	0.0%	6.5%	-6.5%
CHILE	0.0%	0.3%	-0.3%
CHINA	9.4%	7.9%	1.5%
COLOMBIA	0.0%	0.1%	-0.1%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	0.8%	1.2%	-0.4%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.6%	0.7%	-0.2%
FRANCE	3.6%	7.5%	-3.9%
GERMANY	3.4%	5.9%	-2.6%
GREECE	0.0%	0.1%	-0.1%
HONG KONG	8.9%	2.6%	6.3%
HUNGARY	0.9%	0.1%	0.8%
INDIA	5.7%	2.4%	3.3%

International Equity Assets

As of December 31, 2018

Country	% of Total	% of Bench	% Diff
INDONESIA	1.1%	0.6%	0.5%
IRELAND	0.2%	0.4%	-0.2%
ISRAEL	0.3%	0.4%	0.0%
ITALY	1.2%	1.5%	-0.3%
JAPAN	12.2%	16.6%	-4.4%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	8.2%	3.6%	4.6%
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%	0.6%	-0.4%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	0.9%	0.7%	0.2%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	1.7%	2.3%	-0.7%
NEW ZEALAND	0.2%	0.2%	0.1%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.6%	0.5%	0.1%
OMAN	0.0%	0.0%	0.0%
OTHER	0.1%	0.0%	0.1%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	0.1%	-0.1%
PHILIPPINES	0.0%	0.3%	-0.3%
POLAND	0.4%	0.3%	0.1%

International Equity Assets

As of December 31, 2018

Country	% of Total	% of Bench	% Diff
PORTUGAL	0.1%	0.1%	0.0%
QATAR	0.0%	0.3%	-0.3%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	2.2%	0.9%	1.2%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	1.1%	0.9%	0.2%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	3.1%	1.6%	1.5%
SPAIN	1.3%	2.1%	-0.8%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	1.7%	1.8%	-0.2%
SWITZERLAND	3.2%	5.9%	-2.6%
TAIWAN	6.9%	3.0%	3.9%
THAILAND	1.1%	0.6%	0.4%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	1.3%	0.2%	1.1%
UKRAINE	0.0%	0.0%	0.0%
UNITED ARAB EMIRATES	0.0%	0.2%	-0.2%
UNITED KINGDOM	7.5%	11.5%	-3.9%
UNITED STATES	1.8%	0.0%	1.8%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

Fixed Income Assets

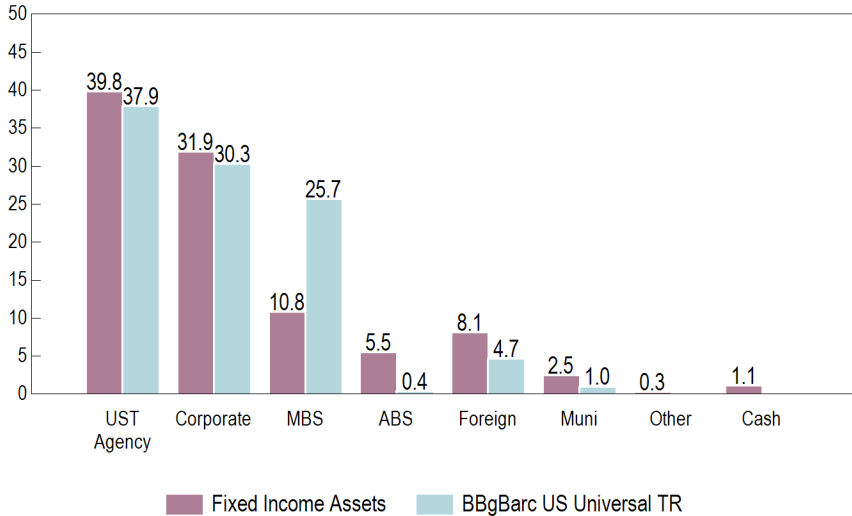
Fixed Income Assets

As of December 31, 2018

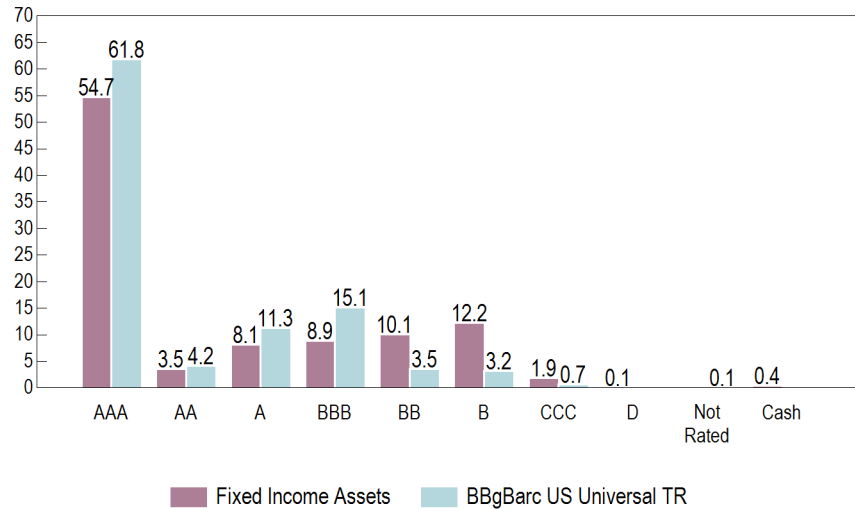
Asset Allocation on December 31, 2018		
	Actual	Actual
Aberdeen Emerging Markets Bond Fund	\$3,920,951	8.6%
Columbia Institutional High Yield	\$7,653,373	16.7%
Logan Circle Emerging Markets Debt	\$3,726,290	8.1%
Longfellow Investment Grade Bond	\$20,474,518	44.7%
SSgA TIPS-NL	\$10,018,134	21.9%
Total	\$45,793,265	100.0%

Total Fixed Income Fixed Income Characteristics vs. BBgBarc US Universal TR			
	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Fixed Income Characteristics			
Yield to Maturity	4.34	3.72	4.34
Average Duration	5.19	5.67	5.20
Average Quality	A	AA	A
Weighted Average Maturity	7.53	11.97	7.74

Sector Allocation



Credit Quality Allocation



Portfolio Reviews

SSgA Russell 1000 Value Index-NL

As of December 31, 2018

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

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA Russell 1000 Value Index-NL	-11.8	-8.3	7.0	6.0	6.4	Jan-05
Russell 1000 Value	-11.7	-8.3	7.0	5.9	6.4	Jan-05
eV US Large Cap Value Equity Gross Median	-13.1	-8.4	7.4	6.3	7.4	Jan-05
eV US Large Cap Value Equity Gross Rank	30	49	57	59	81	Jan-05

Top 10 Holdings

BERKSHIRE HATHAWAY 'B'	2.9%
JP MORGAN CHASE & CO.	2.7%
EXXON MOBIL	2.5%
JOHNSON & JOHNSON	2.4%
PFIZER	2.1%
VERIZON COMMUNICATIONS	2.0%
PROCTER & GAMBLE	1.9%
BANK OF AMERICA	1.9%
INTEL	1.8%
AT&T	1.8%
Total	22.1%

SSgA Russell 1000 Value Index-NL Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	14.5	--	16.7
Number Of Holdings	722	725	719
Characteristics			
Weighted Avg. Market Cap. (\$B)	112.2	111.5	120.3
Median Market Cap (\$B)	8.3	8.2	9.8
P/E Ratio	17.8	18.1	22.6
Yield	2.9	2.8	2.5
EPS Growth - 5 Yrs.	5.6	4.5	5.6
Price to Book	2.6	2.6	2.7
Beta (holdings; domestic)	0.9	0.9	1.0
Sector Distribution			
Energy	9.3	9.3	10.8
Materials	4.1	3.8	3.9
Industrials	7.3	7.4	8.1
Consumer Discretionary	5.2	5.2	5.2
Consumer Staples	7.8	7.8	7.2
Health Care	15.7	15.7	15.2
Financials	22.6	22.5	22.9
Information Technology	9.3	9.3	9.7
Communication Services	7.3	7.3	6.8
Utilities	6.5	6.5	5.6
Real Estate	4.8	4.9	4.5



SSgA Russell 1000 Growth-NL

As of December 31, 2018

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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA Russell 1000 Growth-NL	-16.0	-1.7	11.1	10.4	8.8	Jul-07
<i>Russell 1000 Growth</i>	-15.9	-1.5	11.1	10.4	8.8	Jul-07
<i>eV US Large Cap Growth Equity Gross Median</i>	-15.1	-0.6	10.3	9.6	8.6	Jul-07
<i>eV US Large Cap Growth Equity Gross Rank</i>	63	58	28	32	44	Jul-07

Top 10 Holdings

APPLE	6.5%
MICROSOFT	6.3%
AMAZON.COM	5.3%
ALPHABET 'C'	2.7%
ALPHABET A	2.7%
FACEBOOK CLASS A	2.7%
UNITEDHEALTH GROUP	2.1%
VISA 'A'	2.0%
HOME DEPOT	1.7%
MASTERCARD	1.5%
Total	33.5%

SSgA Russell 1000 Growth-NL Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	14.7	--	19.2
Number Of Holdings	546	546	540
Characteristics			
Weighted Avg. Market Cap. (\$B)	224.1	222.1	291.7
Median Market Cap (\$B)	10.3	10.3	12.8
P/E Ratio	27.5	23.3	40.4
Yield	1.5	1.5	1.2
EPS Growth - 5 Yrs.	13.1	12.9	13.1
Price to Book	9.8	8.6	10.9
Beta (holdings; domestic)	1.1	1.1	1.1
Sector Distribution			
Energy	0.8	0.8	0.9
Materials	1.8	1.4	1.6
Industrials	11.9	11.8	11.9
Consumer Discretionary	15.1	15.1	15.3
Consumer Staples	6.0	6.0	5.4
Health Care	14.3	14.3	13.7
Financials	4.4	4.4	4.2
Information Technology	31.6	31.5	32.4
Communication Services	11.7	11.9	12.0
Utilities	0.0	0.0	0.0
Real Estate	2.3	2.3	2.0

SSgA Russell 2000 Index-NL

As of December 31, 2018

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	1 Yr	3 Yrs	5 Yrs	Inception	Inception
	(%)	(%)	(%)	(%)	(%)	Date
SSgA Russell 2000 Index-NL	-20.2	-11.0	7.4	4.5	10.6	Aug-10
<i>Russell 2000</i>	-20.2	-11.0	7.4	4.4	10.5	Aug-10
<i>eV US Small Cap Core Equity Gross Median</i>	-19.7	-10.7	7.6	5.3	11.7	Aug-10
<i>eV US Small Cap Core Equity Gross Rank</i>	60	54	53	66	84	Aug-10

Top 10 Holdings

INTEGRATED DEVICE TECH.	0.4%
ETSY	0.3%
FIVE BELOW	0.3%
HAEMONETICS	0.3%
CIENA	0.3%
PLANET FITNESS CL.A	0.3%
IDACORP	0.3%
HUBSPOT	0.3%
LIVANOVA	0.2%
CREE	0.2%
Total	2.8%

SSgA Russell 2000 Index-NL Characteristics

	Portfolio	Index	Portfolio
	Q4-18	Q4-18	Q3-18
Market Value			
Market Value (\$M)	3.1	--	3.8
Number Of Holdings	2019	2032	2022
Characteristics			
Weighted Avg. Market Cap. (\$B)	2.0	2.0	2.4
Median Market Cap (\$B)	0.7	0.7	0.9
P/E Ratio	14.7	14.3	17.9
Yield	1.6	1.4	1.3
EPS Growth - 5 Yrs.	7.1	8.3	7.2
Price to Book	3.6	2.6	4.3
Beta (holdings; domestic)	1.2	1.2	1.2
Sector Distribution			
Energy	3.5	3.4	4.9
Materials	3.7	3.7	4.2
Industrials	14.8	14.8	15.1
Consumer Discretionary	12.2	12.2	12.3
Consumer Staples	2.9	2.9	2.6
Health Care	15.5	15.5	16.3
Financials	18.2	18.3	17.5
Information Technology	14.7	14.7	14.0
Communication Services	3.3	3.3	3.3
Utilities	3.8	3.8	3.1
Real Estate	7.3	7.2	6.8



SSgA MSCI EAFE Index-NL

As of December 31, 2018

Account Information

Account Name	SSgA MSCI EAFE Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/10
Account Type	Equity
Benchmark	MSCI EAFE
Universe	eV EAFE Core Equity Gross

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA MSCI EAFE Index-NL	-12.5	-13.5	3.2	0.9	5.0	Aug-10
MSCI EAFE	-12.5	-13.8	2.9	0.5	4.7	Aug-10
eV EAFE Core Equity Gross Median	-14.0	-15.3	3.2	1.9	6.5	Aug-10
eV EAFE Core Equity Gross Rank	22	34	50	81	88	Aug-10

Top 10 Holdings

NESTLE 'R'	2.0%
CASH - USD	1.8%
NOVARTIS 'R'	1.5%
ROCHE HOLDING	1.4%
HSBC HOLDINGS	1.3%
ROYAL DUTCH SHELL A(LON)	1.0%
TOYOTA MOTOR	1.0%
TOTAL	1.0%
BP	1.0%
ROYAL DUTCH SHELL B	0.9%
Total	12.9%

SSgA MSCI EAFE Index-NL Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	6.7	--	13.1
Number Of Holdings	956	920	959
Characteristics			
Weighted Avg. Market Cap. (\$B)	52.8	52.6	58.0
Median Market Cap (\$B)	9.0	9.1	10.5
P/E Ratio	17.1	16.7	20.4
Yield	3.6	3.6	3.1
EPS Growth - 5 Yrs.	7.4	8.6	7.9
Price to Book	2.7	2.3	3.0
Beta (holdings; domestic)	1.0	1.0	1.1
Sector Distribution			
Energy	5.7	5.9	6.0
Materials	7.2	7.4	7.9
Industrials	13.8	14.3	14.0
Consumer Discretionary	11.0	11.2	10.8
Consumer Staples	11.3	11.6	10.9
Health Care	11.4	11.2	10.9
Financials	19.0	19.5	19.2
Information Technology	5.8	6.0	6.0
Communication Services	5.4	5.6	5.4
Utilities	3.6	3.8	3.1
Real Estate	3.5	3.7	3.3



SSgA MSCI EAFE Small Cap Index-NL

As of December 31, 2018

Account Information

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

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA MSCI EAFE Small Cap Index-NL	-16.0	-17.6	4.0	3.3	7.8	Aug-10
MSCI EAFE Small Cap	-16.0	-17.9	3.7	3.1	7.5	Aug-10
eV EAFE Small Cap Core Gross Median	-16.7	-19.2	3.5	3.3	9.2	Aug-10
eV EAFE Small Cap Core Gross Rank	41	24	43	51	79	Aug-10

Top 10 Holdings

RENTOKIL INITIAL	0.4%
HALMA	0.3%
LEG IMMOBILIEN	0.3%
HISCOX DI	0.3%
SPIRAX-SARCO ENGR.	0.3%
OCADO GROUP	0.3%
ASR NEDERLAND	0.3%
SMITH (DS)	0.3%
GN STORE NORD	0.2%
CASTELLUM	0.2%
Total	2.8%

SSgA MSCI EAFE Small Cap Index-NL Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	3.8	--	4.5
Number Of Holdings	2357	2348	2372
Characteristics			
Weighted Avg. Market Cap. (\$B)	2.3	2.3	2.8
Median Market Cap (\$B)	0.9	0.9	1.1
P/E Ratio	17.8	16.4	21.9
Yield	2.9	2.8	2.4
EPS Growth - 5 Yrs.	11.1	12.1	12.0
Price to Book	2.7	2.1	3.3
Beta (holdings; domestic)	0.9	0.9	0.9
Sector Distribution			
Energy	2.5	2.4	3.1
Materials	8.6	8.5	8.6
Industrials	21.4	21.4	21.9
Consumer Discretionary	13.2	13.1	13.0
Consumer Staples	6.8	6.9	6.6
Health Care	7.6	7.5	7.5
Financials	11.6	11.7	11.8
Information Technology	9.2	9.2	9.7
Communication Services	4.7	4.7	4.7
Utilities	2.4	2.4	2.0
Real Estate	12.1	12.2	10.6



LMCG Emerging Markets

As of December 31, 2018

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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
LMCG Emerging Markets	-9.1	-18.0	6.1	--	2.1	Aug-15
MSCI Emerging Markets	-7.5	-14.6	9.2	1.6	4.4	Aug-15
eV Emg Mkts Equity Net Median	-7.8	-16.3	7.8	1.4	3.5	Aug-15
eV Emg Mkts Equity Net Rank	73	68	74	--	80	Aug-15

Top 10 Holdings

TENCENT HOLDINGS	4.6%
TAIWAN SEMICON.MNFG.	3.5%
SAMSUNG ELECTRONICS	3.2%
ISHARES MSCI EMRG.MKTS. IDX.FD.	2.7%
58 COM CL.A ADR 1:2	2.4%
HOUSING DEVELOPMENT FINANCE CORPORATION	1.7%
NASPERS	1.6%
CHINA CON.BANK 'H'	1.4%
LUKOIL OAO SPN.ADR 1:1	1.4%
SK HYNIX	1.2%
Total	23.7%

LMCG Emerging Markets Characteristics

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Market Value			
Market Value (\$M)	12.9	--	14.3
Number Of Holdings	121	1125	120
Characteristics			
Weighted Avg. Market Cap. (\$B)	51.8	70.0	71.2
Median Market Cap (\$B)	7.4	4.9	9.5
P/E Ratio	15.1	16.6	18.1
Yield	3.8	2.9	3.2
EPS Growth - 5 Yrs.	11.0	11.7	11.8
Price to Book	2.2	2.9	3.4
Beta (holdings; domestic)	1.0	1.1	1.0
Sector Distribution			
Energy	6.6	8.0	8.0
Materials	7.6	7.7	9.3
Industrials	5.0	5.5	3.6
Consumer Discretionary	8.7	10.5	11.5
Consumer Staples	6.8	6.7	5.3
Health Care	3.4	2.8	3.5
Financials	23.0	24.8	21.4
Information Technology	15.8	14.3	17.4
Communication Services	14.4	14.0	13.5
Utilities	1.3	2.7	1.7
Real Estate	4.3	3.0	2.7

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

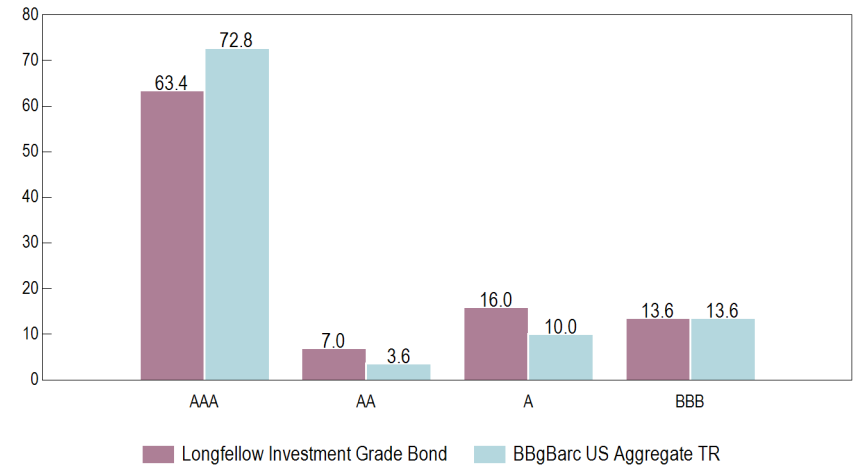
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Longfellow Investment Grade Bond	1.2	-0.1	--	--	-0.1	Sep-17
BBgBarc US Aggregate TR	1.6	0.0	2.1	2.5	-0.1	Sep-17
eV US Core Fixed Inc Gross Median	1.4	0.1	2.5	2.8	0.1	Sep-17
eV US Core Fixed Inc Gross Rank	67	62	--	--	77	Sep-17

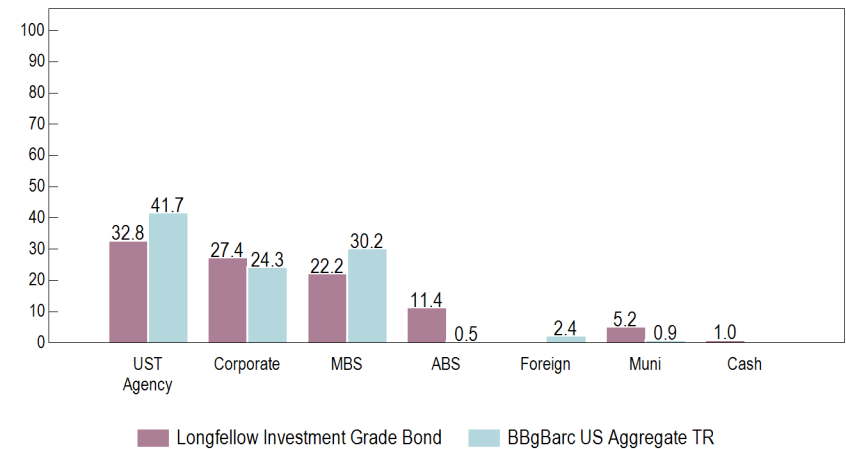
Longfellow Investment Grade Bond Characteristics vs. BBgBarc US Aggregate TR

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Fixed Income Characteristics			
Yield to Maturity	3.5	3.3	3.5
Average Duration	5.4	5.9	5.7
Average Quality	AA	AA	AA
Weighted Average Maturity	7.4	8.3	7.6

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	Columbia Insitutional High Yield
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	3/01/12
Account Type	Fixed
Benchmark	BBgBarc US High Yield TR
Universe	eV US High Yield Fixed Inc Gross

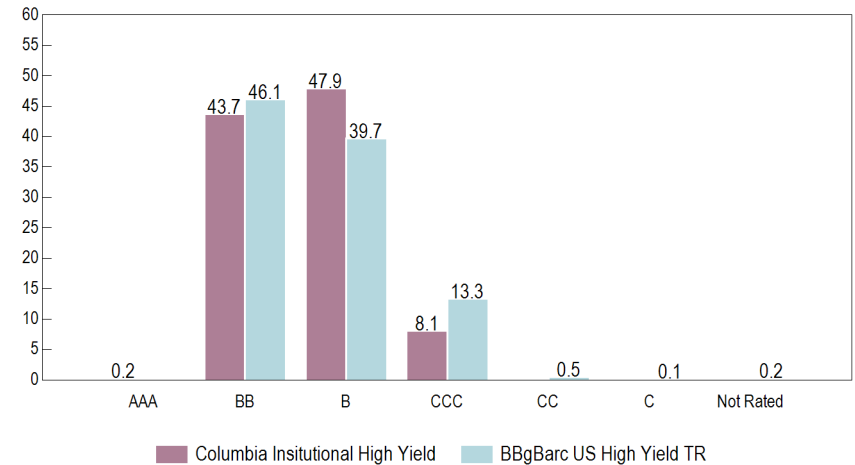
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Columbia Insitutional High Yield	-4.5	-3.2	4.9	3.7	4.9	Mar-12
BBgBarc US High Yield TR	-4.5	-2.1	7.2	3.8	5.3	Mar-12
eV US High Yield Fixed Inc Gross Median	-4.0	-1.9	6.3	3.7	5.2	Mar-12
eV US High Yield Fixed Inc Gross Rank	61	88	87	58	67	Mar-12

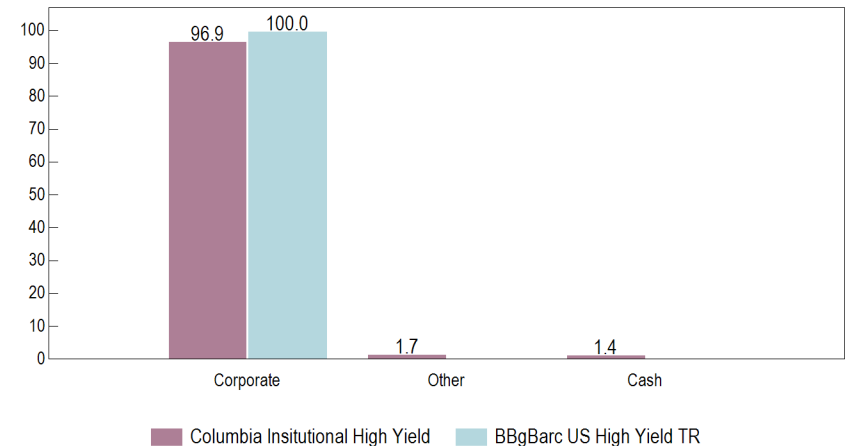
Columbia Insitutional High Yield Characteristics vs. BBgBarc US High Yield TR

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Fixed Income Characteristics			
Yield to Maturity	7.2	8.1	5.7
Average Duration	4.2	4.0	3.9
Average Quality	B	B	BB
Weighted Average Maturity	6.4	5.8	6.8

Credit Quality Allocation



Sector Allocation



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

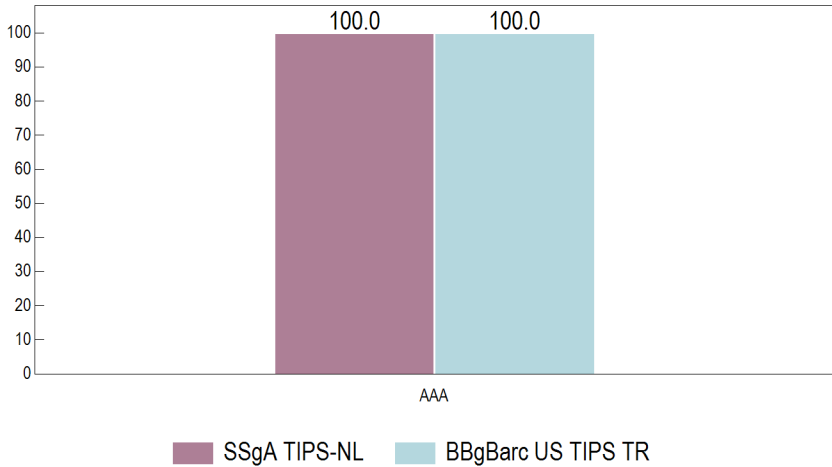
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS-NL	-0.4	-1.3	2.0	1.7	3.8	Jul-07
BBgBarc US TIPS TR	-0.4	-1.3	2.1	1.7	3.8	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Median	-0.5	-1.2	2.2	1.8	3.9	Jul-07
eV US TIPS / Inflation Fixed Inc Gross Rank	41	71	78	64	63	Jul-07

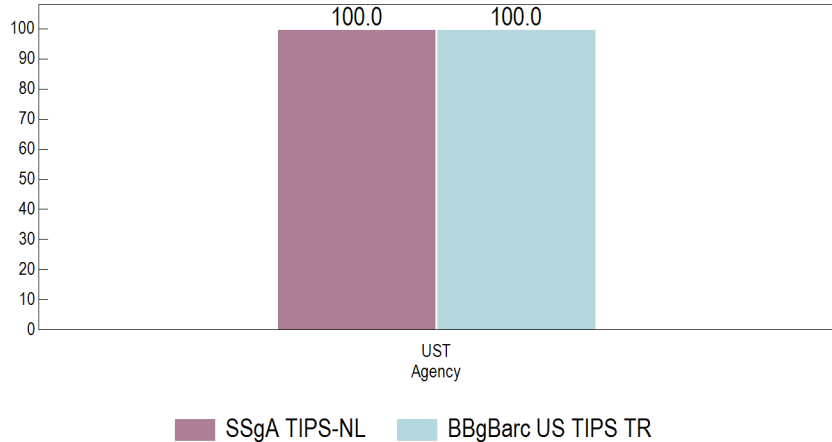
SSgA TIPS-NL Characteristics vs. BBgBarc US TIPS TR

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Fixed Income Characteristics			
Yield to Maturity	2.5	1.1	3.1
Average Duration	5.3	5.3	5.4
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	7.9	7.9	8.2

Credit Quality Allocation



Sector Allocation



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	eV Emg Mkt Fixed Inc Unhedged Gross

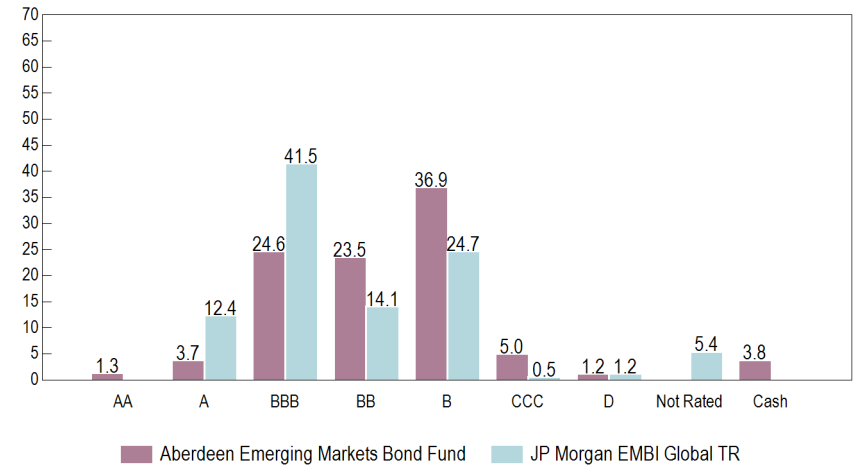
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Aberdeen Emerging Markets Bond Fund	-1.3	-7.1	--	--	2.5	Dec-16
JP Morgan EMBI Global Diversified	-1.3	-4.3	5.2	4.8	3.3	Dec-16
JP Morgan GBI EM Global Diversified TR USD	2.1	-6.2	5.9	-1.0	4.7	Dec-16
eV Emg Mkt Fixed Inc Unhedged Gross Median	-0.3	-4.9	5.9	3.4	4.1	Dec-16
eV Emg Mkt Fixed Inc Unhedged Gross Rank	80	82	--	--	96	Dec-16

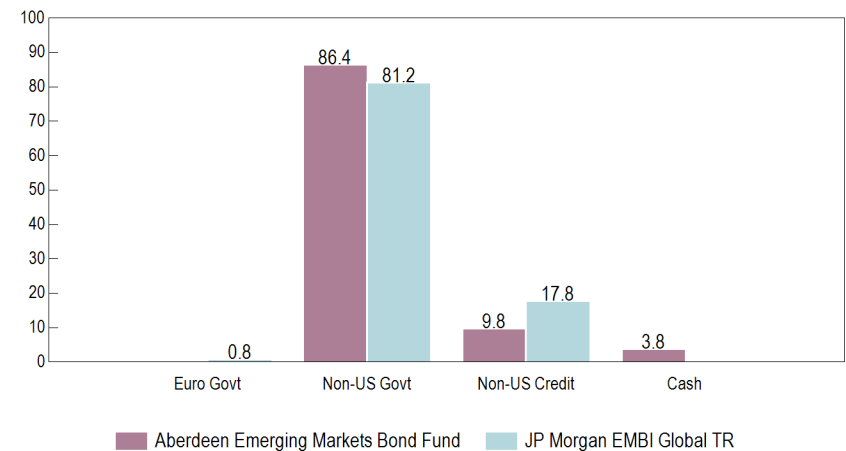
Aberdeen Emerging Markets Bond Fund Fixed Income Characteristics vs. JP Morgan EMBI Global TR

	Portfolio Q4-18	Index Q4-18	Portfolio Q3-18
Fixed Income Characteristics			
Yield to Maturity	7.7	6.6	7.4
Average Duration	5.7	6.7	5.8
Average Quality	BB	BB	BB
Weighted Average Maturity	9.6	11.0	9.7

Credit Quality Allocation



Global Sector Allocation



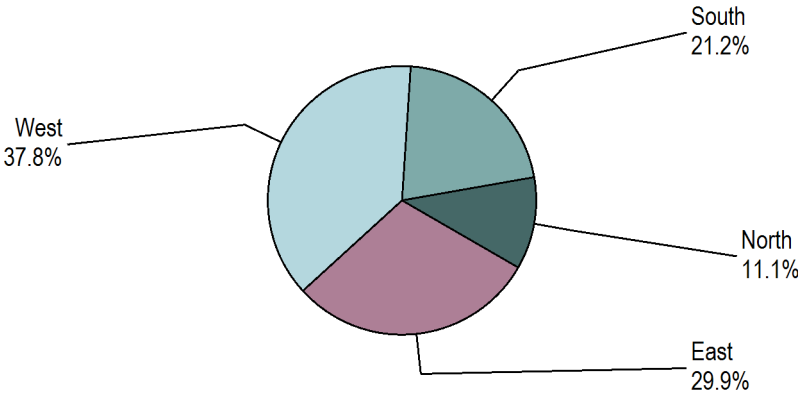
Account Information

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

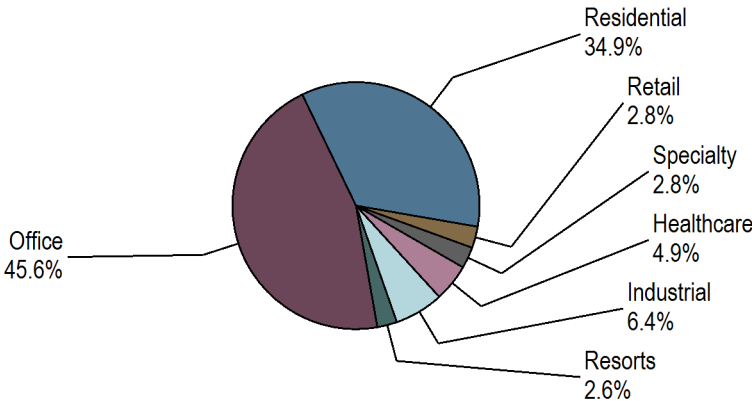
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Intercontinental U.S. REIF	2.1	10.5	10.4	--	11.9	Oct-14
NCREIF ODCE (net)	1.5	7.4	7.3	9.4	9.1	Oct-14

Geographic Diversification



North represents Midwest.

Property Type Allocation



Note: Number of investments is 122.



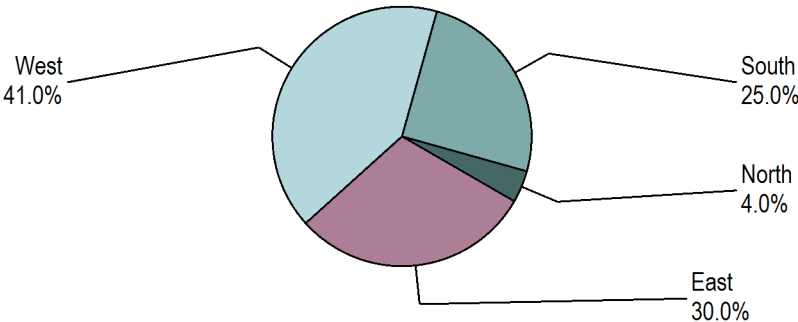
Account Information

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

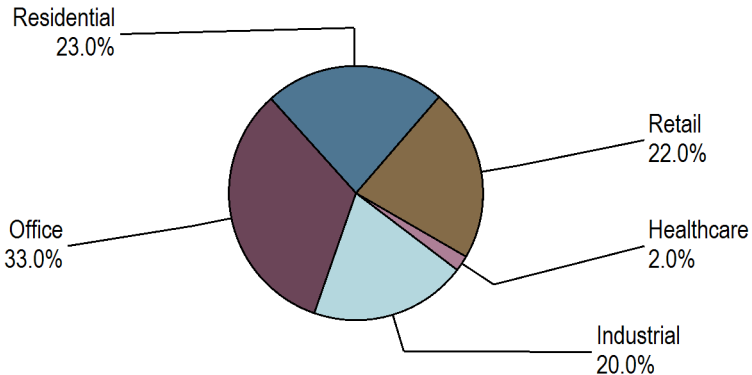
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
AEW Core Property Trust	1.5	6.6	7.4	--	9.2	Oct-14
NCREIF ODCE (net)	1.5	7.4	7.3	9.4	9.1	Oct-14

Geographic Diversification



North represents Midwest.

Property Type Allocation



Note: As of December 31 2018, the number of investments is 72 and Net IRR is 5.18%.



Account Information

Account Name	TA Associates Realty Fund IX
Account Structure	Other
Investment Style	Active
Inception Date	5/01/10
Account Type	Real Estate
Benchmark	NCREIF ODCE (net)
Universe	

Non-Marketable Securities Overview

As of December 31, 2018

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Real Estate	TA Associates Realty Fund IX	2010	\$3,000,000	\$2,880,000	\$4,727,117	\$1,689	\$4,728,806	\$120,000
	Total Account		\$3,000,000	\$2,880,000	\$4,727,117	\$1,689	\$4,728,806	\$120,000

Investment Strategy:

TA Associates Realty Fund IX uses a value-added strategy to create a diversified portfolio of direct real estate investments. Fund IX expects to invest in office, industrial, retail, and multifamily properties located primarily in major U.S. markets. Historically, TA Realty commingled funds have received about two-thirds of return from income and maintained moderate leverage of approximately 50% to 55% of the aggregate value of the Fund's real estate investments. Most value-added improvements include re-development, re-positioning, re-tenanting or recapitalization. TA Realty expects to proactively manage tenant and industry exposure with no significant concentration towards either.

Note: As of September 30 2018, the number of investments is 1 and Net IRR is 10.43%.



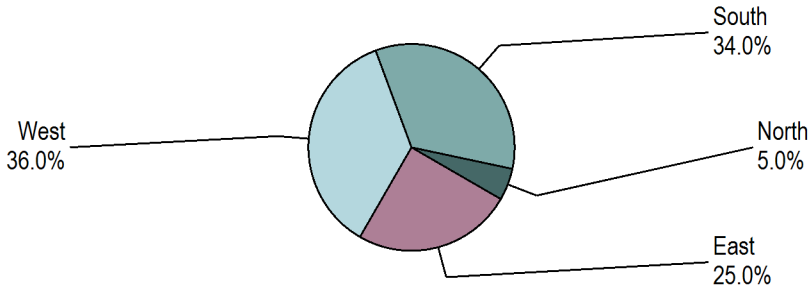
Account Information

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	

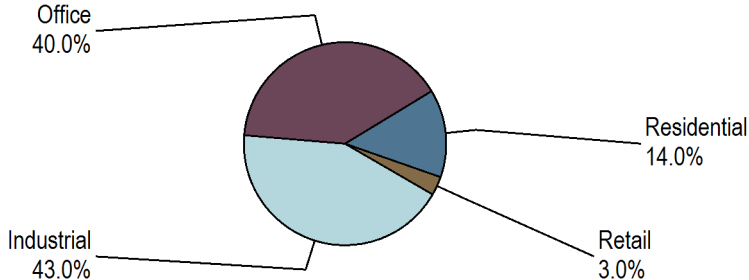
Non-Marketable Securities Overview
As of December 31, 2018

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	\$2,839,914	\$1,699,452	\$4,539,366	-\$5,227
	Total Account		\$3,000,000	\$3,005,227	\$2,839,914	\$1,699,452	\$4,539,366	-\$5,227

Geographic Diversification



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 September 30 2018, the number of investments is 62 and Net IRR is 12.47%.



Account Information

Account Name	AG Realty Fund IV
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	6/01/01
Account Type	Real Estate
Benchmark	NCREIF ODCE (net)
Universe	

Non-Marketable Securities Overview

As of December 31, 2018

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Real Estate	AG Realty Fund IV	2004	\$1,000,000	\$950,000	\$1,332,500	\$3,950	\$1,336,450	\$50,000
	Total Account		\$1,000,000	\$950,000	\$1,332,500	\$3,950	\$1,336,450	\$50,000

Investment Strategy:

Funded in 1999, Angelo Gordon's Fund IV is an opportunistic real estate portfolio. Leverage on the portfolio is about 50%. About 75% of return is expected to result from capital appreciation, with the remaining 25% coming from income. The portfolio's emphasis is on purchasing sub-performing and non-performing commercial properties in the \$30 million range. The firm then enhances these properties through redevelopment or other measures. Angelo Gordon seeks to limit downside risk in the portfolio through diversification.

Note: Number of investments is 0.



Account Information

Account Name	Ascent Venture Partners - Fund II
Account Structure	Other
Investment Style	Active
Inception Date	9/01/01
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 II	1995	\$500,000	\$484,254	\$1,607,392	\$5,873	\$1,613,265	\$15,746
	Total Account		\$500,000	\$484,254	\$1,607,392	\$5,873	\$1,613,265	\$15,746

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 respect 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.

Note: As of September 30 2018, the Net IRR is 27.02%.



As of December 31, 2018

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	\$72,839	\$1,769,901	\$105,000
	Total Account		\$1,500,000	\$1,395,000	\$1,697,063	\$72,839	\$1,769,901	\$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.

Note: As of September 30 2018 the Net IRR is 3.8%.



As of December 31, 2018

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	\$70,773	\$226,361	\$0
	Total Account		\$1,000,000	\$1,000,000	\$155,588	\$70,773	\$226,361	\$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.

Note: As of September 30 2018 the Net IRR is -20.07%.



As of December 31, 2018

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	\$890,000	\$649,106	\$874,205	\$1,523,311	\$110,000
	Total Account		\$1,000,000	\$890,000	\$649,106	\$874,205	\$1,523,311	\$110,000

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.

Note: As of September 30 2018 the Net IRR is 9.5%.



Ascent Venture Partners - Fund VI

As of December 31, 2018

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	\$915,000	\$0	\$1,228,118	\$1,228,118	\$585,000
	Total Account		\$1,500,000	\$915,000	\$0	\$1,228,118	\$1,228,118	\$585,000

Note: As of September 30 2018 the Net IRR is 12.0%.



As of December 31, 2018

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	\$2,926,669	\$3,099,741	\$699,998	\$3,799,739	\$73,331
	Total Account		\$3,000,000	\$2,926,669	\$3,099,741	\$699,998	\$3,799,739	\$73,331

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.

As of 9/30/2018 the IRR is 4.7%

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	\$2,286,178	\$3,188,905	\$848,141	\$4,037,046	\$213,822
	Total Account		\$2,500,000	\$2,286,178	\$3,188,905	\$848,141	\$4,037,046	\$213,822

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.

Note: As of September 30 2018, the Net IRR is 10.7%.



As of December 31, 2018

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

As of December 31, 2018

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	\$3,262,082	\$2,187,066	\$3,266,787	\$5,453,853	\$1,737,918
	Total Account		\$5,000,000	\$3,262,082	\$2,187,066	\$3,266,787	\$5,453,853	\$1,737,918

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.

Note: As of September 30 2018, the Net IRR is 18.0%.



As of December 31, 2018

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	

As of December 31, 2018

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	\$1,719,744	\$56,544	\$2,306,832	\$2,363,376	\$4,780,256
	Total Account		\$6,500,000	\$1,719,744	\$56,544	\$2,306,832	\$2,363,376	\$4,780,256

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.

Note: As of September 30 2018, the Net IRR is 28.8%.



Constitution Capital Partners Ironsides III

As of December 31, 2018

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

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	\$2,778,820	\$119,753	\$3,021,124	\$3,140,877	\$2,221,180
	Total Account		\$5,000,000	\$2,778,820	\$119,753	\$3,021,124	\$3,140,877	\$2,221,180

Investment Strategy:

Constitution Capital seeks investments in underlying private equity funds ranging in size from \$200 million to approximately \$1.0 billion, with a few larger potentially. Constitution has noted their preference to invest the majority of capital to funds of less than \$1 billion. Constitution has noted their preference to invest the majority of capital to funds of less than \$1 billion. Constitution targets a variety of fund types (domestic middle-market buyout, special situations, growth equity, distressed, and sector-specific) and will allocate amongst them opportunistically. The group will not invest in early-stage venture capital funds or mega buyout funds. The portfolio will have 12 to 15 underlying fund investments of approximately \$10 million to \$20 million each. For co-investments, it is anticipated that a total of 12-15 co-investments will each range from \$5 million to \$25 million. The enterprise values of the underlying companies are expected to range from \$100 million to \$1.5 billion.

Note: As of September 30 2018, the Gross IRR is 12.1%.



Constitution Capital Partners Ironsides IV

As of December 31, 2018

Account Information

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

Non-Marketable Securities Overview

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	\$1,025,881	\$0	\$1,142,044	\$1,142,044	\$2,224,119
	Total Account		\$3,250,000	\$1,025,881	\$0	\$1,142,044	\$1,142,044	\$2,224,119

Investment Strategy:

Constitution Capital seeks investments in underlying private equity funds ranging in size from \$200 million to approximately \$1.0 billion, with a few larger potentially. Constitution has noted their preference to invest the majority of capital to funds of less than \$1 billion. Constitution has noted their preference to invest the majority of capital to funds of less than \$1 billion. Constitution targets a variety of fund types (domestic middle-market buyout, special situations, growth equity, distressed, and sector-specific) and will allocate amongst them opportunistically. The group will not invest in early-stage venture capital funds or mega buyout funds. The portfolio will have 12 to 15 underlying fund investments of approximately \$10 million to \$20 million each. For co-investments, it is anticipated that a total of 12-15 co-investments will each range from \$5 million to \$25 million. The enterprise values of the underlying companies are expected to range from \$100 million to \$1.5 billion.

Note: As of September 30 2018, the Gross IRR is 14.1%.



Constitution Capital Direct IV

As of December 31, 2018

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

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	\$2,695,463	\$0	\$2,897,529	\$2,897,529	\$554,537
	Total Account		\$3,250,000	\$2,695,463	\$0	\$2,897,529	\$2,897,529	\$554,537



SSgA S&P Global LargeMidCap Natural Resources Index

As of December 31, 2018

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 Large MidCap Commodity and Resources NR USD
Universe	

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
SSgA S&P Global LargeMidCap Natural Resources Index	-12.6	--	--	--	-13.2	Feb-18
S&P Global Large MidCap Commodity and Resources NR USD	-12.7	-9.4	11.9	-1.8	-13.6	Feb-18

Top 10 Holdings

NUTRIEN (NYS)	6.4%
ARCHER DANIELS MIDLAND	5.1%
EXXON MOBIL	5.0%
BHP GROUP	4.8%
CHEVRON	3.6%
RIO TINTO	3.6%
GLENCORE	3.0%
BHP GROUP	3.0%
TOTAL	2.3%
MOSAIC	2.3%
Total	39.2%

SSgA S&P Global LargeMidCap Natural Resources Index Characteristics

	Portfolio Q4-18	Portfolio Q3-18
Market Value		
Market Value (\$M)	3.6	4.1
Number Of Holdings	177	174
Characteristics		
Weighted Avg. Market Cap. (\$B)	54.9	65.3
Median Market Cap (\$B)	9.0	10.2
P/E Ratio	21.2	25.9
Yield	3.7	3.2
EPS Growth - 5 Yrs.	-8.2	-9.0
Price to Book	1.9	2.1
Beta (holdings; domestic)	1.2	1.2
Sector Distribution		
Energy	32.1	33.1
Materials	54.5	53.7
Industrials	0.0	0.0
Consumer Discretionary	0.0	0.0
Consumer Staples	13.3	12.5
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

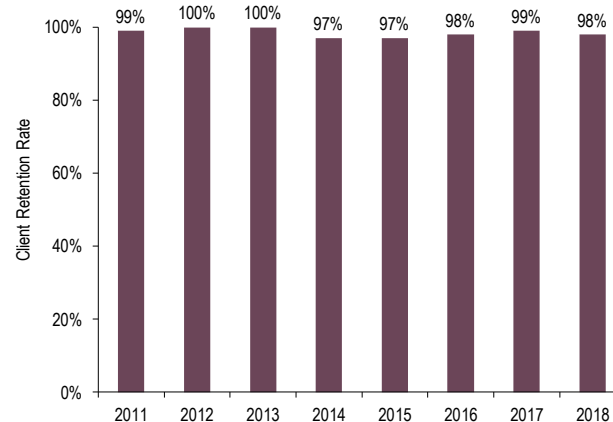
Meketa Investment Group Corporate Update

- Staff of 153, including 102 investment professionals and 31 CFA Charterholders
- 175 clients, with over 300 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, Portland (OR), San Diego, and London
- We advise on over \$640 billion in client assets
 - Over \$90 billion in assets committed to alternative investments
 - Private Equity
 - Infrastructure
 - Natural Resources
 - Real Estate
 - Hedge Funds
 - Commodities

Client to Consultant Ratio



Client Retention Rate¹



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

¹ Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.



Asset Classes Followed Intensively by Meketa Investment Group

Domestic Equities	International Equities	Private Equity	Real Assets	Fixed Income	Hedge Funds
<ul style="list-style-type: none"> - Passive - Enhanced Index - Large Cap - Midcap - Small Cap - Microcap - 130/30 	<ul style="list-style-type: none"> - Large Cap Developed - Small Cap Developed - Emerging Markets - Frontier Markets 	<ul style="list-style-type: none"> - Buyouts - Venture Capital - Private Debt - Special Situations - Secondaries - Fund of Funds 	<ul style="list-style-type: none"> - Public REITs - Core Real Estate - Value Added Real Estate - Opportunistic Real Estate - Infrastructure - Timber - Natural Resources - Commodities 	<ul style="list-style-type: none"> - Short-Term - Core - Core Plus - TIPS - High Yield - Bank Loans - Distressed - Global - Emerging Markets 	<ul style="list-style-type: none"> - Long/Short Equity - Event Driven - Relative Value - Fixed Income Arbitrage - Multi Strategy - Market Neutral - Global Macro - Fund of Funds - Portable Alpha

Meketa Investment Group Corporate Announcement



BOSTON MA
CHICAGO IL
MIAMI FL
PORTLAND OR
SAN DIEGO CA
LONDON UK

January 15, 2019

We are writing to share an important and exciting announcement. [Pension Consulting Alliance \(PCA\)](#), a leading investment consulting and advisory firm, will be joining Meketa Investment Group, Inc. (Meketa). While this will not constitute a change in control of Meketa, it will add more resources, experience, and services to our already growing platform. We plan to consummate the transaction sometime in the first half of this year.

As you may know, Portland, Oregon-based PCA is an independent, full-service investment consulting and advisory firm. Under the leadership of its founder, Allan Emkin, the 30+ member PCA team provides non-discretionary consulting services to U.S. tax-exempt and public pension fund clients with more than \$1.4 trillion in assets. PCA has expertise in general, real estate and private markets consulting. Together, Meketa and PCA's collective client assets will represent approximately \$1.7 trillion and the combined firm will consult on over \$100 billion in private markets and real estate assets.

We will continue to serve proudly as Meketa's Co-CEOs and we will be supported by the existing Meketa senior management team. The firm will continue to be known as Meketa Investment Group, Inc. Meketa's Executive Committee, and other management committees, will include representatives from both Meketa and PCA. Allan will serve on Meketa's Board of Directors and will continue to work as a consultant for several clients. Allan is regarded as one of the leading pension consultants in the industry and we're thrilled to be bringing him onboard where he will continue to provide valuable services to our clients as well as mentoring and training for our collective staff. Christy Fields, a Managing Director at PCA, will also join the Meketa Board of Directors.

All of PCA's board members will become Meketa shareholders and equity will be offered to additional PCA employees as well. There is no planned reduction in staff, with all Meketa and PCA employees remaining with the combined company. We will serve clients from six locations across the United States, as well as London. There will be no changes in client relationships and you will continue to be served by your existing consulting team.

Meketa and PCA are among the industry's most experienced - and we think many would agree - highly-regarded firms. As independent fiduciaries and fully employee-owned firms, we are each known for providing creative investment solutions to leading institutions and organizations such as yours.

Both Meketa and PCA have long been well positioned for success in a competitive marketplace and we believe that the sharing and building upon of best practices developed over many decades offers an opportunity to enhance our organizations' resources, geographic coverage, and services. For example, one of the key attributes of PCA joining Meketa will be our enhanced private markets service, particularly in real estate, an area of the marketplace ripe for growth. We are confident that leveraging the combined institutional knowledge and client experience of our firms will help ensure we remain thought leaders in the industry and further our goal of consistently providing best-in-class service to our clients.

Over the coming weeks, we will keep you apprised of developments related to this news and your consulting team will be speaking with you about this exciting event. If you have questions in the meantime, please contact your lead consultant or one of us.

PCA joining Meketa is a true milestone for our firm and would not have been possible without the hard work and dedication of our employees, and the trust our clients place in us each day. Thank you for making possible our continued success.

Sincerely,



Stephen P. McCourt, CFA
Managing Principal
Co-Chief Executive Officer



Peter S. Woolley, CFA, CLU, ChFC
Managing Principal
Co-Chief Executive Officer

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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. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

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 its 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.

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.

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.

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.

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%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

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

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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.