

FUND EVALUATION REPORT

Massachusetts Housing Finance Agency Retirement System

Quarterly Review
September 30, 2017



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System Summary
As of September 30, 2017

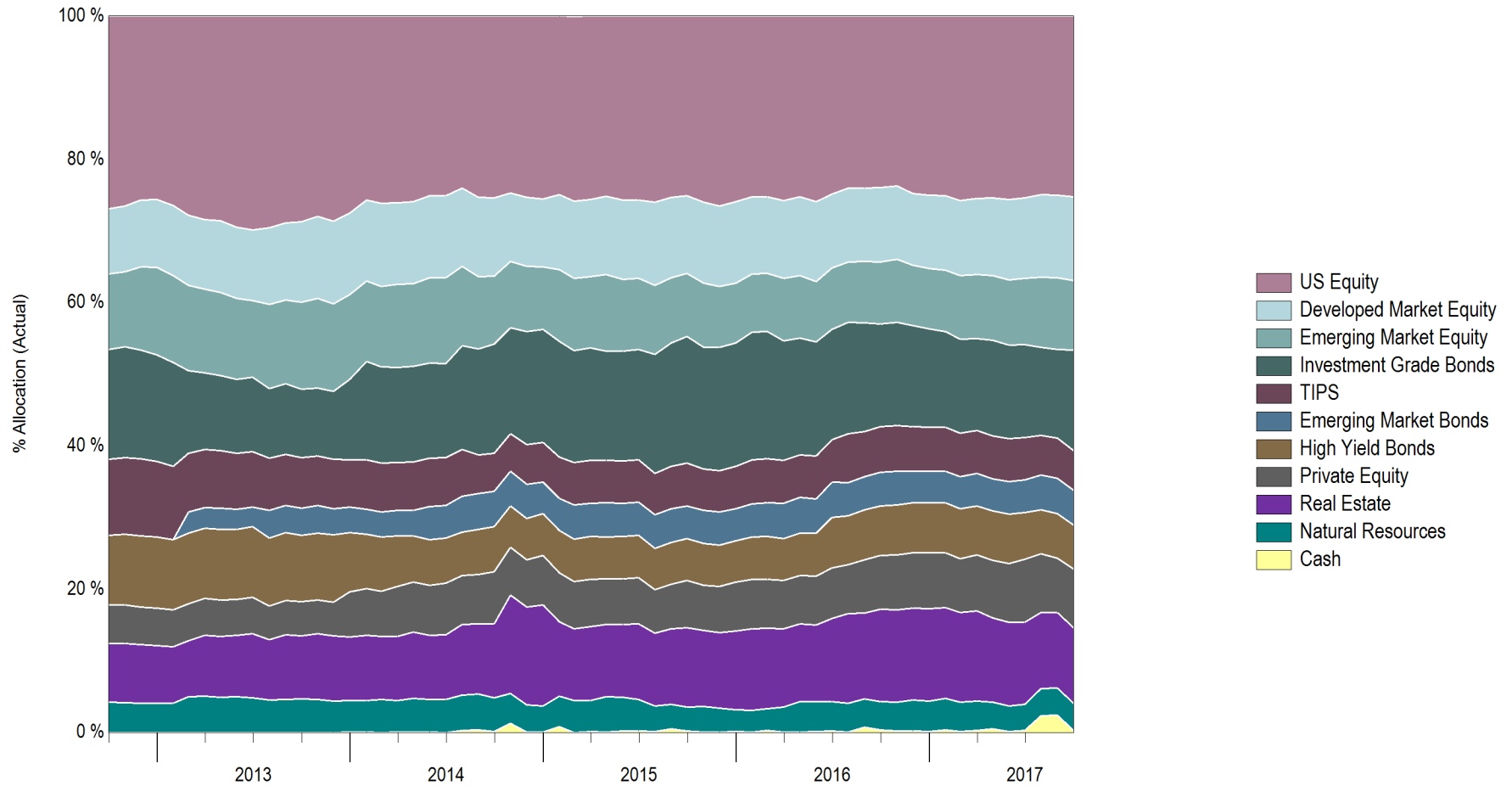
Total Retirement System

As of September 30, 2017

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$36,810,683	25%	25%	20% - 30%	Yes
Developed Market Equity	\$17,019,826	12%	10%	6% - 14%	Yes
Emerging Market Equity	\$14,149,173	10%	10%	6% - 14%	Yes
Investment Grade Bonds	\$20,516,813	14%	10%	6% - 14%	Yes
TIPS	\$8,013,635	5%	6%	4% - 8%	Yes
Emerging Market Bonds	\$7,098,573	5%	5%	3% - 7%	Yes
High Yield Bonds	\$8,984,707	6%	6%	3% - 9%	Yes
Private Equity	\$11,924,811	8%	10%	6% - 14%	Yes
Real Estate	\$15,367,156	11%	10%	7% - 13%	Yes
Natural Resources	\$5,532,034	4%	3%	1% - 5%	Yes
Infrastructure	--	--	5%	0% - 8%	Yes
Cash	\$417,488	0%	0%	0% - 5%	Yes
Total	\$145,834,899	100%	100%		

Asset Allocation History
5 Years Ending September 30, 2017



Total Retirement System

As of September 30, 2017

Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Retirement System	145,834,899	100.0	3.7	10.7	11.4	5.7	6.9	4.6	5.6	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate			3.8	12.7	10.3	5.1	6.3	4.0	5.9	Jul-01
Domestic Equity Assets	36,810,683	25.2	4.6	13.8	18.7	10.7	14.2	7.6	6.8	Jul-01
Russell 3000			4.6	13.9	18.7	10.7	14.2	7.6	7.0	Jul-01
Total International Developed Market Equity	17,019,826	11.7	6.0	21.8	20.2	6.9	9.8	3.0	6.6	Jul-01
MSCI EAFE			5.4	20.0	19.1	5.0	8.4	1.3	5.5	Jul-01
International Emerging Market Equity Assets	14,149,173	9.7	5.5	23.1	19.0	1.8	2.1	0.2	1.1	Jul-07
MSCI Emerging Markets			7.9	27.8	22.5	4.9	4.0	1.3	2.6	Jul-07
Investment Grade Bond Assets	20,516,813	14.1	0.6	3.0	0.0	2.8	1.9	4.5	4.8	Jul-01
BBgBarc US Aggregate TR			0.8	3.1	0.1	2.7	2.1	4.3	4.7	Jul-01
High Yield Bond Assets	8,984,707	6.2	1.9	6.7	7.5	6.2	6.2	6.9	6.7	Feb-05
CSFB High Yield Index			2.0	6.5	9.1	5.6	6.2	7.4	7.3	Feb-05
TIPS Assets	8,013,635	5.5	0.9	1.7	-0.7	1.6	0.0	3.9	4.2	Jul-07
BBgBarc US TIPS TR			0.9	1.7	-0.7	1.6	0.0	3.9	4.3	Jul-07
Emerging Market Debt Assets	7,098,573	4.9	3.8	12.2	6.1	-1.2	--	--	-3.9	Mar-13
JP Morgan GBI EM Global Diversified TR USD			3.6	14.3	7.3	0.3	-0.9	3.8	-1.9	Mar-13
Real Estate Assets	15,367,156	10.5	2.9	6.8	9.2	11.1	11.0	3.1	5.8	Apr-05
NCREIF-ODCE			1.9	5.4	7.7	10.8	11.6	5.0	7.6	Apr-05
Private Equity Assets	11,924,811	8.2	2.2	8.7	11.2	6.0	9.1	6.1	5.0	Oct-03
Russell 3000 + 3% (1 Quarter Lagged)			3.8	16.0	22.0	12.4	18.0	10.5	12.5	Oct-03
Natural Resources & Commodities Assets	5,532,034	3.8	13.0	1.9	8.6	-8.4	-6.0	--	-5.3	Jul-11
S&P Global Natural Resources Index TR USD			10.8	13.0	20.5	1.3	1.1	-0.7	-1.2	Jul-11
Cash	417,488	0.3								

Total Retirement System

As of September 30, 2017

Trailing Gross Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Retirement System	145,834,899	100.0	--	3.7	10.7	11.4	5.7	6.9	4.6	5.6	Jul-01
60% MSCI ACWI / 40% Barclays Global Aggregate				3.8	12.7	10.3	5.1	6.3	4.0	5.9	Jul-01
InvestorForce All DB \$50mm-\$250mm Gross Median				3.3	10.9	11.6	6.8	8.4	5.5	6.2	Jul-01
Domestic Equity Assets	36,810,683	25.2	25.2	4.6	13.8	18.7	10.7	14.2	7.6	6.8	Jul-01
Russell 3000				4.6	13.9	18.7	10.7	14.2	7.6	7.0	Jul-01
eA US Large Cap Equity Net Median				4.5	13.6	18.2	9.4	13.4	7.3	7.2	Jul-01
SSgA Russell 1000 Value Index-NL	16,471,163	11.3	44.7	3.2	8.0	15.2	8.6	13.2	6.0	7.4	Jan-05
Russell 1000 Value				3.1	7.9	15.1	8.5	13.2	5.9	7.3	Jan-05
eA US Large Cap Value Equity Net Median				4.0	10.1	17.1	8.4	12.9	6.3	7.8	Jan-05
SSgA Russell 1000 Growth-NL	17,010,229	11.7	46.2	5.9	20.7	22.0	12.7	15.3	9.1	9.3	Jul-07
Russell 1000 Growth				5.9	20.7	21.9	12.7	15.3	9.1	9.3	Jul-07
eA US Large Cap Growth Equity Net Median				5.3	20.3	20.4	11.0	14.2	8.2	8.6	Jul-07
SSgA Russell 2000 Index-NL	3,329,291	2.3	9.0	5.7	11.0	20.8	12.3	13.9	--	13.9	Aug-10
Russell 2000				5.7	10.9	20.7	12.2	13.8	7.8	13.8	Aug-10
eA US Small Cap Core Equity Net Median				5.2	10.1	19.9	12.0	14.1	8.0	14.2	Aug-10
Total International Developed Market Equity	17,019,826	11.7	11.7	6.0	21.8	20.2	6.9	9.8	3.0	6.6	Jul-01
MSCI EAFE				5.4	20.0	19.1	5.0	8.4	1.3	5.5	Jul-01
eA EAFE Core Equity Net Median				6.2	22.2	20.3	6.3	9.6	2.5	6.4	Jul-01
SSgA MSCI EAFE Index-NL	12,716,624	8.7	74.7	5.5	20.4	19.6	5.4	8.7	--	7.5	Aug-10
MSCI EAFE				5.4	20.0	19.1	5.0	8.4	1.3	7.2	Aug-10
eA EAFE Core Equity Net Median				6.2	22.2	20.3	6.3	9.6	2.5	8.6	Aug-10
SSgA MSCI EAFE Small Cap Index-NL	4,303,202	3.0	25.3	7.5	25.7	22.1	11.4	13.1	--	11.3	Aug-10
MSCI EAFE Small Cap				7.5	25.4	21.8	11.1	12.8	4.6	10.9	Aug-10
eA EAFE Small Cap Core Net Median				8.4	27.5	24.3	11.0	13.8	4.5	13.2	Aug-10

Total Retirement System

As of September 30, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
International Emerging Market Equity Assets	14,149,173	9.7	9.7	5.5	23.1	19.0	1.8	2.1	0.2	1.1	Jul-07
MSCI Emerging Markets				7.9	27.8	22.5	4.9	4.0	1.3	2.6	Jul-07
eA Emg Mkts Equity Net Median				7.7	28.5	22.0	5.4	5.3	2.3	3.3	Jul-07
DFA Emerging Markets Value (net) (Net)	2,591,284	1.8	18.3	5.6	24.0	22.8	4.2	3.5	0.9	1.8	Jul-07
MSCI Emerging Markets Value NR USD				5.5	19.9	18.6	1.6	1.3	0.8	2.1	Jul-07
eA Emg Mkts Equity Net Median				7.7	28.5	22.0	5.4	5.3	2.3	3.3	Jul-07
LMCG Emerging Markets	5,872,141	4.0	41.5	6.6	27.1	21.4	--	--	--	9.7	Aug-15
MSCI Emerging Markets				7.9	27.8	22.5	4.9	4.0	1.3	11.3	Aug-15
eA Emg Mkts Equity Gross Median				7.8	28.5	23.1	6.4	5.9	2.8	12.6	Aug-15
KB Investors Emerging Markets Equity	5,685,747	3.9	40.2	4.3	19.1	15.1	--	--	--	14.3	Oct-15
MSCI Emerging Markets				7.9	27.8	22.5	4.9	4.0	1.3	19.6	Oct-15
eA Emg Mkts Equity Gross Median				7.8	28.5	23.1	6.4	5.9	2.8	20.8	Oct-15
Investment Grade Bond Assets	20,516,813	14.1	14.1	0.6	3.0	0.0	2.8	1.9	4.5	4.8	Jul-01
BBgBarc US Aggregate TR				0.8	3.1	0.1	2.7	2.1	4.3	4.7	Jul-01
eA US Core Fixed Inc Gross Median				0.9	3.5	0.6	3.1	2.5	4.9	5.2	Jul-01
Longfellow Investment Grade Bond	20,516,813	14.1	100.0	--	--	--	--	--	--	-0.5	Sep-17
BBgBarc US Aggregate TR				0.8	3.1	0.1	2.7	2.1	4.3	-0.5	Sep-17
eA US Core Fixed Inc Gross Median				0.9	3.5	0.6	3.1	2.5	4.9	-0.4	Sep-17
High Yield Bond Assets	8,984,707	6.2	6.2	1.9	6.7	7.5	6.2	6.2	6.9	6.7	Feb-05
CSFB High Yield Index				2.0	6.5	9.1	5.6	6.2	7.4	7.3	Feb-05
eA US High Yield Fixed Inc Gross Median				2.0	6.8	8.4	5.5	6.2	7.6	7.5	Feb-05
Columbia Institutional High Yield	8,984,707	6.2	100.0	1.9	6.7	7.5	6.2	6.2	--	6.7	Mar-12
BBgBarc US High Yield TR				2.0	7.0	8.9	5.8	6.4	7.8	6.8	Mar-12
eA US High Yield Fixed Inc Gross Median				2.0	6.8	8.4	5.5	6.2	7.6	6.8	Mar-12

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Total Retirement System

As of September 30, 2017											
	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
TIPS Assets	8,013,635	5.5	5.5	0.9	1.7	-0.7	1.6	0.0	3.9	4.2	Jul-07
BBgBarc US TIPS TR				0.9	1.7	-0.7	1.6	0.0	3.9	4.3	Jul-07
eA TIPS / Infl Indexed Fixed Inc Net Median				0.9	1.7	-0.7	1.4	-0.1	4.0	4.4	Jul-07
SSgA TIPS-NL	8,013,635	5.5	100.0	0.9	1.7	-0.7	1.6	0.0	3.9	4.2	Jul-07
BBgBarc US TIPS TR				0.9	1.7	-0.7	1.6	0.0	3.9	4.3	Jul-07
eA TIPS / Infl Indexed Fixed Inc Net Median				0.9	1.7	-0.7	1.4	-0.1	4.0	4.4	Jul-07
Emerging Market Debt Assets	7,098,573	4.9	4.9	3.8	12.2	6.1	-1.2	--	--	-3.9	Mar-13
JP Morgan GBI EM Global Diversified TR USD				3.6	14.3	7.3	0.3	-0.9	3.8	-1.9	Mar-13
eA Emg Mkt Fixed Inc Unhedged Gross Median				3.4	10.7	7.7	5.1	4.0	7.2	3.8	Mar-13
Logan Circle Emerging Markets Debt (Net)	3,429,051	2.4	48.3	3.9	12.4	--	--	--	--	10.8	Nov-16
50% JPM EMBI GD / 50% JPM GBI-EM				3.1	11.6	6.0	3.4	2.0	5.7	7.1	Nov-16
eA Emg Mkt Fixed Inc Unhedged Gross Median				3.4	10.7	7.7	5.1	4.0	7.2	8.4	Nov-16
Aberdeen Emerging Markets Bond Fund	3,669,522	2.5	51.7	3.7	12.0	--	--	--	--	12.0	Dec-16
50% JPM EMBI GD / 50% JPM GBI-EM				3.1	11.6	6.0	3.4	2.0	5.7	13.4	Dec-16
eA Emg Mkt Fixed Inc Unhedged Gross Median				3.4	10.7	7.7	5.1	4.0	7.2	12.7	Dec-16
Real Estate Assets	15,367,156	10.5	10.5	2.9	6.8	9.2	11.1	11.0	3.1	5.8	Apr-05
NCREIF-ODCE				1.9	5.4	7.7	10.8	11.6	5.0	7.6	Apr-05
AG Realty Fund IV	4,198	0.0	0.0								
TA Associates Realty Fund IX	349,682	0.2	2.3								
TA Associates Realty Fund X	2,396,772	1.6	15.6								
Intercontinental U.S. REIF (Net)	5,393,449	3.7	35.1	1.1	3.8	8.4	10.1	--	--	10.1	Oct-14
NCREIF-ODCE				1.9	5.4	7.7	10.8	11.6	5.0	10.8	Oct-14

AG Realty Fund IV, TA Associates Realty Fund IX, and TA Associates Realty Fund X are based on June 30, 2017 fair market value, adjusted for subsequent cash flows.

Private Equity Assets: Based on June 30, 2017 fair market value, adjusted for subsequent cash flows.



Total Retirement System

As of September 30, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
AEW Core Property Trust (Net)	7,223,055	5.0	47.0	1.5	4.7	6.6	9.4	--	--	9.4	Oct-14
NCREIF-ODCE				1.9	5.4	7.7	10.8	11.6	5.0	10.8	Oct-14
Private Equity Assets	11,924,811	8.2	8.2	2.2	8.7	11.2	6.0	9.1	6.1	5.0	Oct-03
<i>Russell 3000 + 3% (1 Quarter Lagged)</i>				3.8	16.0	22.0	12.4	18.0	10.5	12.5	Oct-03
Ascent Venture Partners - Fund II	6,126	0.0	0.1								
Ascent Venture Partners - Fund III	84,090	0.1	0.7								
Ascent Venture Partners - Fund IV	162,111	0.1	1.4								
Ascent Venture Partners - Fund V	931,460	0.6	7.8								
Ascent Venture Partners - Fund VI	666,757	0.5	5.6								
Constitution Capital Partners Ironsides III	1,851,006	1.3	15.5								
Constitution Capital Partners Ironsides IV	265,586	0.2	2.2								
Constitution Capital Direct IV	1,766,582	1.2	14.8								
Goldman Sachs PEP 2005	1,045,576	0.7	8.8								
HarbourVest Partners VIII	1,198,118	0.8	10.0								
HarbourVest Partners IX	3,085,702	2.1	25.9								
HarbourVest X Buyout Fund	861,697	0.6	7.2								

Massachusetts Housing Finance Agency Retirement System

Total Retirement System

As of September 30, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Natural Resources & Commodities Assets	5,532,034	3.8	3.8	13.0	1.9	8.6	-8.4	-6.0	--	-5.3	Jul-11
<i>S&P Global Natural Resources Index TR USD</i>				<i>10.8</i>	<i>13.0</i>	<i>20.5</i>	<i>1.3</i>	<i>1.1</i>	<i>-0.7</i>	<i>-1.2</i>	<i>Jul-11</i>
RS Global Natural Resources (Net)	5,532,034	3.8	100.0	13.0	1.9	8.6	-8.4	-6.0	--	-5.3	Jul-11
<i>S&P Global Natural Resources Index TR USD</i>				<i>10.8</i>	<i>13.0</i>	<i>20.5</i>	<i>1.3</i>	<i>1.1</i>	<i>-0.7</i>	<i>-1.2</i>	<i>Jul-11</i>
Cash	417,488	0.3	0.3								
Cash STIF	417,488	0.3	100.0								



Total Retirement System

As of September 30, 2017

Calendar Year Performance

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total Retirement System	9.6	-2.7	4.3	10.9	12.2	2.2	12.5	17.7	-24.7	7.9
Domestic Equity Assets	13.1	0.4	12.4	33.5	16.3	1.0	17.5	30.8	-38.3	3.9
<i>Russell 3000</i>	12.7	0.5	12.6	33.6	16.4	1.0	16.9	28.3	-37.3	5.1
SSgA Russell 1000 Value Index-NL	17.3	-3.7	13.4	32.5	17.4	0.4	15.6	20.0	-36.8	-0.1
<i>Russell 1000 Value</i>	17.3	-3.8	13.5	32.5	17.5	0.4	15.5	19.7	-36.8	-0.2
SSgA Russell 1000 Growth-NL	7.2	5.6	13.1	33.5	15.4	2.6	16.7	37.2	-38.4	--
<i>Russell 1000 Growth</i>	7.1	5.7	13.0	33.5	15.3	2.6	16.7	37.2	-38.4	11.8
SSgA Russell 2000 Index-NL	21.5	-4.4	5.0	38.9	16.4	-4.1	--	--	--	--
<i>Russell 2000</i>	21.3	-4.4	4.9	38.8	16.3	-4.2	26.9	27.2	-33.8	-1.6
Total International Developed Market Equity	1.6	2.0	-4.7	24.4	18.1	-12.6	11.4	36.3	-41.5	9.8
<i>MSCI EAFE</i>	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4	11.2
SSgA MSCI EAFE Index-NL	1.4	-0.5	-4.6	23.1	17.7	-11.9	--	--	--	--
<i>MSCI EAFE</i>	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4	11.2
SSgA MSCI EAFE Small Cap Index-NL	2.4	9.7	-4.7	29.5	20.1	-15.0	--	--	--	--
<i>MSCI EAFE Small Cap</i>	2.2	9.6	-4.9	29.3	20.0	-15.9	22.0	46.8	-47.0	1.4
International Emerging Market Equity Assets	11.7	-18.1	-4.4	-3.8	18.8	-25.6	22.1	92.3	-53.9	--
<i>MSCI Emerging Markets</i>	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3	39.4
DFA Emerging Markets Value (net) (Net)	19.8	-18.8	-4.4	-3.8	18.8	-25.6	22.1	92.3	-53.9	--
<i>MSCI Emerging Markets Value NR USD</i>	14.9	-18.6	-4.1	-5.1	15.9	-17.9	19.8	79.1	-50.3	42.2
LMCG Emerging Markets	7.0	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3	39.4

Massachusetts Housing Finance Agency Retirement System

Total Retirement System

As of September 30, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
KB Investors Emerging Markets Equity	12.0	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3	39.4
Investment Grade Bond Assets	2.7	0.8	6.1	-3.1	4.6	8.5	6.7	9.7	3.8	6.2
<i>BBgBarc US Aggregate TR</i>	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
Longfellow Investment Grade Bond	--	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
High Yield Bond Assets	11.5	-0.2	4.1	6.0	13.6	6.2	12.9	43.2	-23.3	2.2
<i>CSFB High Yield Index</i>	18.3	-4.9	1.9	7.5	14.7	5.5	14.4	54.2	-26.2	2.6
Columbia Institutional High Yield	11.5	-0.2	4.1	6.0	--	--	--	--	--	--
<i>BBgBarc US High Yield TR</i>	17.1	-4.5	2.5	7.4	15.8	5.0	15.1	58.2	-26.2	1.9
TIPS Assets	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3	-2.4	--
<i>BBgBarc US TIPS TR</i>	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4	-2.4	11.6
SSgA TIPS-NL	4.5	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3	-2.4	--
<i>BBgBarc US TIPS TR</i>	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4	-2.4	11.6
Emerging Market Debt Assets	10.0	-15.2	-8.5	--	--	--	--	--	--	--
<i>JP Morgan GBI EM Global Diversified TR USD</i>	9.9	-14.9	-5.7	-9.0	16.8	-1.8	15.1	22.0	-5.2	18.1
Logan Circle Emerging Markets Debt (Net)	--	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>	10.2	-7.1	0.7	-7.1	17.2	2.8	13.8	26.0	-8.6	12.0
Aberdeen Emerging Markets Bond Fund	--	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>	10.2	-7.1	0.7	-7.1	17.2	2.8	13.8	26.0	-8.6	12.0

Massachusetts Housing Finance Agency Retirement System

Total Retirement System

As of September 30, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Real Estate Assets	9.0	13.8	12.8	10.1	12.5	16.7	12.7	-38.9	-14.2	23.6
<i>NCREIF-ODCE</i>	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0	16.0
AG Realty Fund IV										
TA Associates Realty Fund IX										
TA Associates Realty Fund X										
Intercontinental U.S. REIF (Net)	10.9	12.5	--	--	--	--	--	--	--	--
<i>NCREIF-ODCE</i>	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0	16.0
AEW Core Property Trust (Net)	7.6	12.8	--	--	--	--	--	--	--	--
<i>NCREIF-ODCE</i>	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0	16.0
Private Equity Assets	6.3	0.8	13.5	9.5	9.2	7.9	19.9	-14.2	-2.8	17.3
<i>Russell 3000 + 3% (1 Quarter Lagged)</i>	18.4	2.5	21.2	25.2	34.0	3.6	14.3	-3.6	-19.1	20.0
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										

Massachusetts Housing Finance Agency Retirement System

Total Retirement System

As of September 30, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
HarbourVest Partners VIII										
HarbourVest Partners IX										
HarbourVest X Buyout Fund										
Natural Resources & Commodities Assets	53.7	-38.0	-22.6	-0.3	6.5	--	--	--	--	--
<i>S&P Global Natural Resources Index TR USD</i>	32.3	-24.0	-9.7	1.5	7.2	-14.9	11.0	36.1	-38.3	41.7
RS Global Natural Resources (Net)	53.7	-38.0	-22.6	-0.3	6.5	--	--	--	--	--
<i>S&P Global Natural Resources Index TR USD</i>	32.3	-24.0	-9.7	1.5	7.2	-14.9	11.0	36.1	-38.3	41.7
Cash										
Cash STIF										



Statistics Summary
5 Years Ending September 30, 2017

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	6.9%	6.0%	0.3	0.9	1.1	1.9%
60% MSCI ACWI / 40% Barclays Global Aggregate	6.3%	6.8%	--	1.0	0.9	0.0%
Total Equity	10.4%	10.1%	-1.0	0.9	1.0	4.0%
Russell 3000	14.2%	9.8%	--	1.0	1.4	0.0%
Domestic Equity Assets	14.2%	9.8%	-0.4	1.0	1.4	0.1%
Russell 3000	14.2%	9.8%	--	1.0	1.4	0.0%
SSgA Russell 1000 Value Index-NL	13.1%	9.9%	-1.1	1.0	1.3	0.1%
Russell 1000 Value	13.2%	9.9%	--	1.0	1.3	0.0%
SSgA Russell 1000 Growth-NL	15.2%	10.1%	-2.4	1.0	1.5	0.0%
Russell 1000 Growth	15.3%	10.1%	--	1.0	1.5	0.0%
SSgA Russell 2000 Index-NL	13.8%	14.0%	-0.3	1.0	1.0	0.1%
Russell 2000	13.8%	14.0%	--	1.0	1.0	0.0%
Total International Equity	5.8%	12.4%	-0.7	1.0	0.4	2.9%
MSCI ACWI ex USA IMI Gross	7.8%	11.5%	--	1.0	0.7	0.0%
Total International Developed Market Equity	9.7%	11.5%	1.2	1.0	0.8	1.1%
MSCI EAFE	8.4%	11.7%	--	1.0	0.7	0.0%
SSgA MSCI EAFE Index-NL	8.6%	11.7%	2.0	1.0	0.7	0.1%
MSCI EAFE	8.4%	11.7%	--	1.0	0.7	0.0%
SSgA MSCI EAFE Small Cap Index-NL	12.8%	11.6%	-0.2	1.0	1.1	0.2%
MSCI EAFE Small Cap	12.8%	11.6%	--	1.0	1.1	0.0%

As of September 30, 2017

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
International Emerging Market Equity Assets	2.1%	15.3%	-0.7	1.0	0.1	2.9%
MSCI Emerging Markets	4.0%	14.4%	--	1.0	0.3	0.0%
DFA Emerging Markets Value (net)	3.5%	16.2%	0.9	1.0	0.2	2.4%
MSCI Emerging Markets Value NR USD	1.3%	15.5%	--	1.0	0.1	0.0%
LMCG Emerging Markets	--	--	--	--	--	--
MSCI Emerging Markets	4.0%	14.4%	--	1.0	0.3	0.0%
KB Investors Emerging Markets Equity	--	--	--	--	--	--
MSCI Emerging Markets	4.0%	14.4%	--	1.0	0.3	0.0%
Total Fixed Income	1.8%	4.0%	-0.4	1.3	0.4	1.9%
BBgBarc US Universal TR	2.5%	2.8%	--	1.0	0.8	0.0%
Investment Grade Bond Assets	1.9%	3.0%	-0.5	1.0	0.6	0.3%
BBgBarc US Aggregate TR	2.1%	2.8%	--	1.0	0.7	0.0%
Longfellow Investment Grade Bond	--	--	--	--	--	--
BBgBarc US Aggregate TR	2.1%	2.8%	--	1.0	0.7	0.0%
High Yield Bond Assets	6.2%	4.7%	0.0	0.8	1.3	2.1%
CSFB High Yield Index	6.2%	5.3%	--	1.0	1.1	0.0%
Columbia Institutional High Yield	6.2%	4.7%	-0.1	0.8	1.3	1.9%
BBgBarc US High Yield TR	6.4%	5.2%	--	1.0	1.2	0.0%
TIPS Assets	0.0%	4.5%	-0.5	1.0	0.0	0.0%
BBgBarc US TIPS TR	0.0%	4.5%	--	1.0	0.0	0.0%
SSgA TIPS-NL	0.0%	4.5%	-0.9	1.0	-0.1	0.1%
BBgBarc US TIPS TR	0.0%	4.5%	--	1.0	0.0	0.0%
Emerging Market Debt Assets	--	--	--	--	--	--
JP Morgan GBI EM Global Diversified TR USD	-0.9%	11.0%	--	1.0	-0.1	0.0%

As of September 30, 2017

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Logan Circle Emerging Markets Debt	--	--	--	--	--	--
50% JPM EMBI GD / 50% JPM GBI-EM	2.0%	8.3%	--	1.0	0.2	0.0%
Aberdeen Emerging Markets Bond Fund	--	--	--	--	--	--
50% JPM EMBI GD / 50% JPM GBI-EM	2.0%	8.3%	--	1.0	0.2	0.0%
Real Estate Assets	11.0%	4.5%	-0.5	0.9	2.4	1.2%
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
AG Realty Fund IV	0.0%	0.0%	-2.4	0.0	--	4.8%
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
TA Associates Realty Fund IX	10.3%	5.3%	-0.4	0.9	1.9	3.0%
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
TA Associates Realty Fund X	--	--	--	--	--	--
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
Intercontinental U.S. REIF	--	--	--	--	--	--
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
AEW Core Property Trust	--	--	--	--	--	--
NCREIF-ODCE	11.6%	4.8%	--	1.0	2.4	0.0%
Private Equity Assets	9.1%	5.9%	-0.8	0.0	1.5	11.1%
Russell 3000 + 3% (1 Quarter Lagged)	18.0%	9.8%	--	1.0	1.8	0.0%
Ascent Venture Partners - Fund II	39.2%	37.6%	0.5	-0.4	1.0	39.9%
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Ascent Venture Partners - Fund III	-4.5%	18.5%	-1.0	-0.1	-0.3	21.2%
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Ascent Venture Partners - Fund IV	-24.8%	37.7%	-1.1	0.4	-0.7	37.9%

Massachusetts Housing Finance Agency Retirement System

As of September 30, 2017

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Ascent Venture Partners - Fund V	14.6%	15.1%	-0.2	0.0	1.0	18.1%
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Ascent Venture Partners - Fund VI	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Constitution Capital Partners Ironsides III	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Constitution Capital Partners Ironsides IV	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Constitution Capital Direct IV	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Goldman Sachs PEP 2005	6.4%	7.5%	-0.9	0.0	0.8	12.7%
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
HarbourVest Partners VIII	15.2%	7.0%	-0.2	-0.1	2.1	12.6%
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
HarbourVest Partners IX	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
HarbourVest X Buyout Fund	--	--	--	--	--	--
Russell 3000 + 3%	17.6%	9.8%	--	1.0	1.8	0.0%
Natural Resources & Commodities Assets	-6.0%	24.9%	-0.5	1.3	-0.3	13.7%
S&P Global Natural Resources Index TR USD	1.1%	16.2%	--	1.0	0.1	0.0%
RS Global Natural Resources	-6.0%	24.9%	-0.5	1.3	-0.3	13.7%
S&P Global Natural Resources Index TR USD	1.1%	16.2%	--	1.0	0.1	0.0%

System Detail
As of September 30, 2017

Domestic Equity Assets

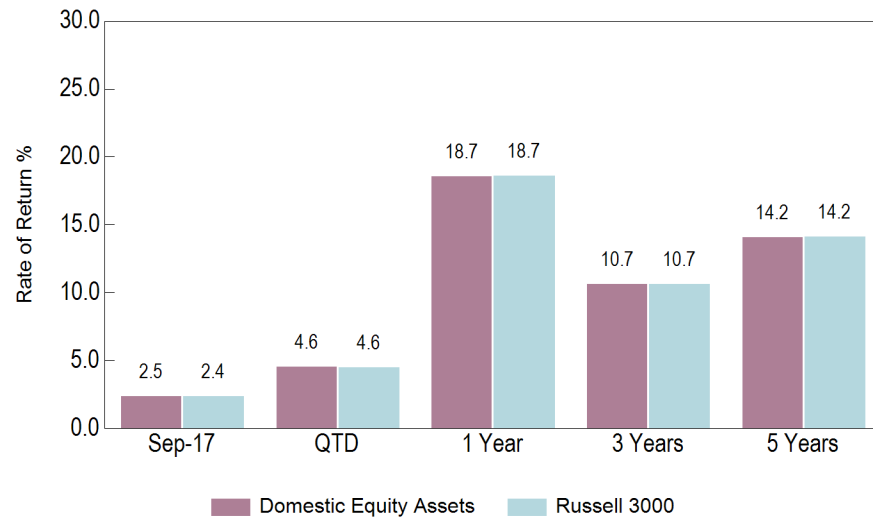
Domestic Equity Assets

As of September 30, 2017

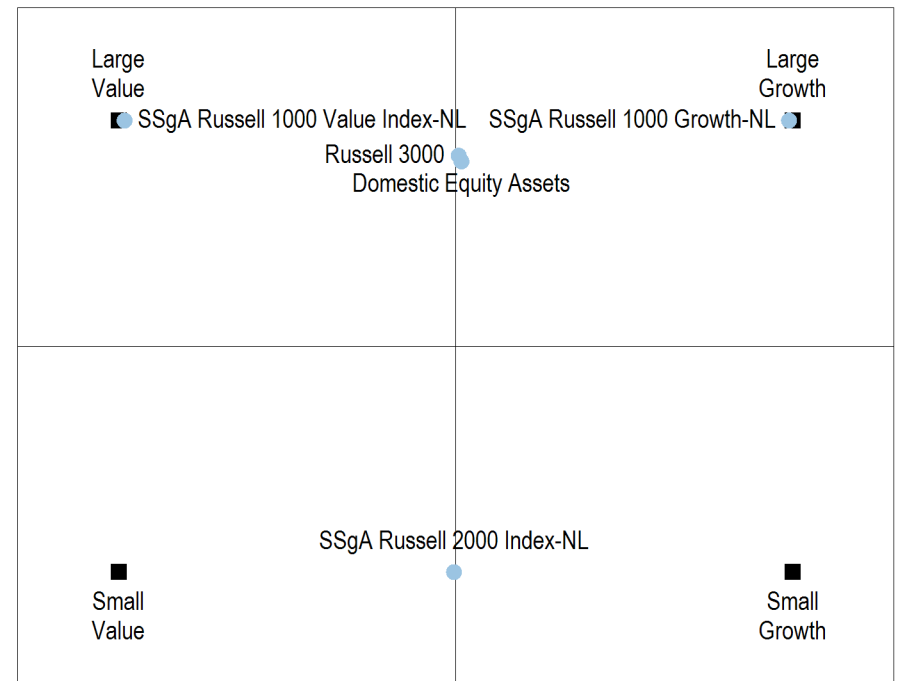
Asset Allocation on September 30, 2017

	Actual	Actual
SSgA Russell 1000 Growth-NL	\$17,010,229	46.2%
SSgA Russell 1000 Value Index-NL	\$16,471,163	44.7%
SSgA Russell 2000 Index-NL	\$3,329,291	9.0%
Total	\$36,810,683	100.0%

Return Summary
Ending September 30, 2017



Domestic Equity Assets Style Map
3 Years Ending September 30, 2017



Domestic Equity Assets

As of September 30, 2017

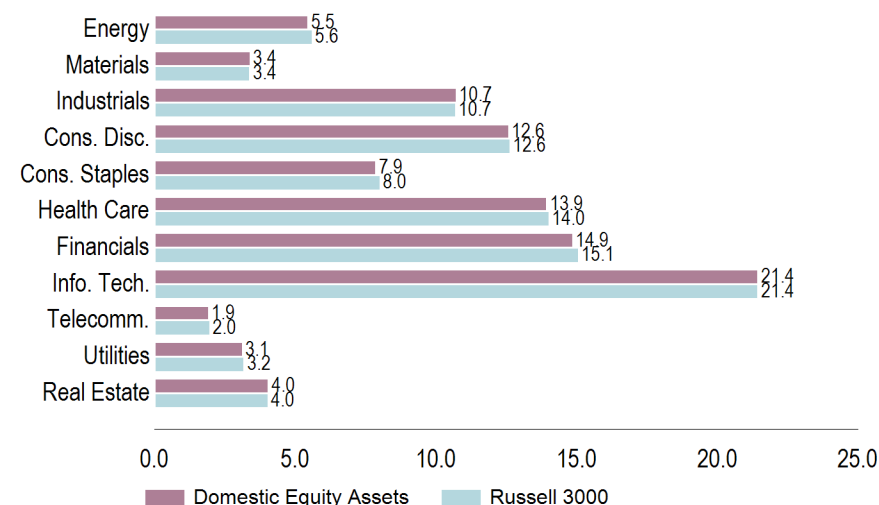
Domestic Equity Assets Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	36.8	--	34.2
Number Of Holdings	2982	2981	2998
Characteristics			
Weighted Avg. Market Cap. (\$B)	135.8	135.9	126.9
Median Market Cap (\$B)	2.0	1.6	1.9
P/E Ratio	25.6	25.1	25.5
Yield	1.8	1.8	1.9
EPS Growth - 5 Yrs.	12.7	10.2	9.9
Price to Book	5.2	4.4	5.0
Beta (holdings; domestic)	1.0	1.0	1.0

Top 10 Holdings

APPLE	3.0%
MICROSOFT	2.0%
AMAZON.COM	1.5%
FACEBOOK CLASS A	1.4%
JOHNSON & JOHNSON	1.4%
EXXON MOBIL	1.3%
BERKSHIRE HATHAWAY 'B'	1.2%
JP MORGAN CHASE & CO.	1.2%
ALPHABET 'A'	1.1%
ALPHABET 'C'	1.1%
Total	15.3%

Sector Allocation (%) vs Russell 3000



Sector Performance

	Portfolio Q2-17	Index Q2-17
Energy	-7.41	-7.66
Materials	2.94	2.62
Industrials	4.56	4.20
Consumer Discretionary	3.02	3.02
Consumer Staples	1.41	1.26
Health Care	7.26	7.36
Financials	4.12	3.77
Information Technology	4.13	4.28
Telecommunication Services	-6.78	-6.56
Utilities	2.29	2.22
Real Estate	2.50	2.33

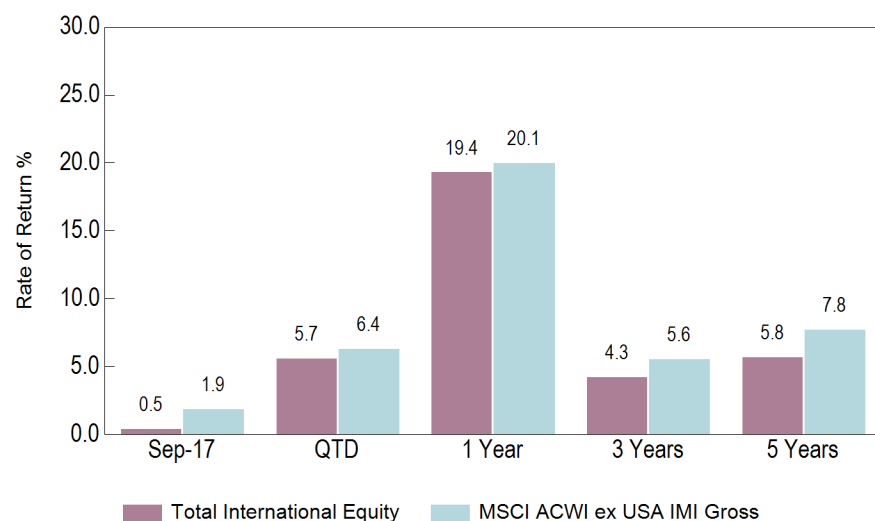
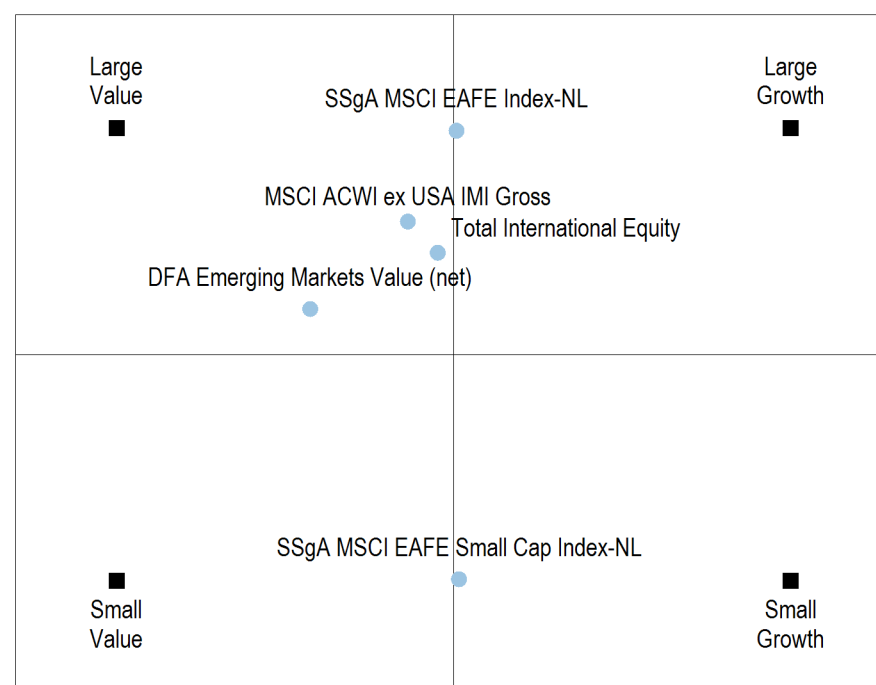
Total International Equity

Total International Equity

As of September 30, 2017

Asset Allocation on September 30, 2017

	Actual	Actual
DFA Emerging Markets Value (net)	\$2,591,284	8.3%
KB Investors Emerging Markets Equity	\$5,685,747	18.2%
LMCG Emerging Markets	\$5,872,141	18.8%
SSgA MSCI EAFE Index-NL	\$12,716,624	40.8%
SSgA MSCI EAFE Small Cap Index-NL	\$4,303,202	13.8%
Total	\$31,168,999	100.0%

Return Summary
Ending September 30, 2017Total International Equity Style Map
3 Years Ending September 30, 2017

Total International Equity

As of September 30, 2017

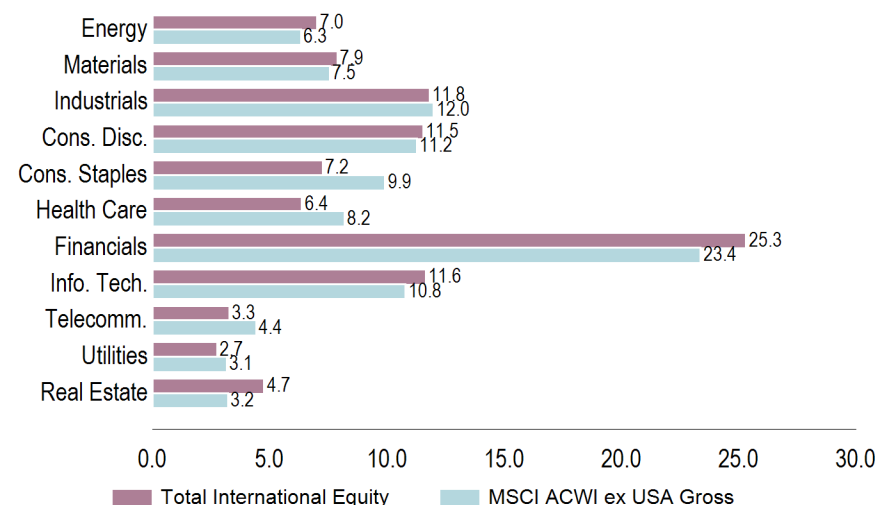
Total International Equity Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	31.2	--	27.5
Number Of Holdings	4442	1859	5593
Characteristics			
Weighted Avg. Market Cap. (\$B)	50.8	62.9	41.6
Median Market Cap (\$B)	1.2	8.0	1.2
P/E Ratio	19.5	21.1	18.9
Yield	3.0	2.8	3.1
EPS Growth - 5 Yrs.	7.7	6.0	6.7
Price to Book	3.0	2.6	2.7
Beta (holdings; domestic)	1.1	1.1	1.1

Top 10 Holdings

BANCO SANTANDER CHILE	2.2%
CHINA CON.BANK 'H'	2.0%
INDL.& COML.BK.OF CHINA 'H'	1.7%
IRPC	1.7%
BANK OF CHINA 'H'	1.5%
AGRICULTURAL BK.OF CHIN. 'H'	1.0%
TAIWAN SEMICON.MNFG.	1.0%
SAMSUNG ELECTRONICS	0.9%
NESTLE 'R'	0.8%
TENCENT HOLDINGS	0.7%
Total	13.6%

Sector Allocation (%) vs MSCI ACWI ex USA Gross



	Portfolio Q2-17	Index Q2-17
Sector Performance		
Energy	-3.77	-2.65
Materials	5.80	1.74
Industrials	7.35	7.00
Consumer Discretionary	8.27	5.72
Consumer Staples	4.91	7.59
Health Care	7.74	7.22
Financials	6.79	5.91
Information Technology	11.04	13.03
Telecommunication Services	1.79	4.22
Utilities	2.24	5.37
Real Estate	7.88	5.88

Total International Equity

As of September 30, 2017

Total International Equity Region Allocation

vs MSCI ACWI ex USA Gross

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	6.7%	-6.7%
United States	0.7%	0.0%	0.7%
Europe Ex U.K.	23.5%	32.5%	-9.0%
United Kingdom	8.6%	12.3%	-3.7%
Pacific Basin Ex Japan	10.7%	8.1%	2.6%
Japan	12.2%	16.0%	-3.8%
Emerging Markets	43.8%	23.8%	20.0%
Other	0.5%	0.5%	0.0%
Total	100.0%	100.0%	0.0%

Total International Equity

As of September 30, 2017

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	3.4%	4.7%	-1.3%
AUSTRIA	0.2%	0.2%	0.0%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.7%	0.8%	-0.2%
BRAZIL	3.8%	1.8%	2.0%
BULGARIA	0.0%	0.0%	0.0%
CANADA	0.0%	6.7%	-6.7%
CHILE	0.3%	0.3%	0.0%
CHINA	8.0%	7.1%	0.9%
COLOMBIA	0.1%	0.1%	0.0%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	1.0%	1.3%	-0.3%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.6%	0.7%	-0.1%
FRANCE	4.9%	7.4%	-2.5%
GERMANY	4.6%	6.7%	-2.1%
GREECE	0.0%	0.1%	-0.1%
HONG KONG	6.4%	2.4%	4.1%
HUNGARY	0.5%	0.1%	0.4%
INDIA	5.5%	2.0%	3.5%

Total International Equity

As of September 30, 2017

Country	% of Total	% of Bench	% Diff
INDONESIA	0.7%	0.5%	0.2%
IRELAND	0.2%	0.3%	-0.1%
ISRAEL	0.2%	0.3%	-0.1%
ITALY	1.4%	1.7%	-0.3%
JAPAN	12.2%	16.0%	-3.8%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	6.9%	3.6%	3.3%
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	0.7%	0.6%	0.1%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	1.5%	0.8%	0.7%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	2.1%	2.6%	-0.5%
NEW ZEALAND	0.1%	0.1%	0.0%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.4%	0.5%	-0.1%
OMAN	0.0%	0.0%	0.0%
OTHER	0.2%	0.0%	0.2%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.0%	0.1%	-0.1%
PHILIPPINES	0.1%	0.3%	-0.2%
POLAND	0.4%	0.3%	0.1%

Total International Equity

As of September 30, 2017

Country	% of Total	% of Bench	% Diff
PORTUGAL	0.1%	0.1%	0.0%
QATAR	0.1%	0.1%	-0.1%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	1.2%	0.8%	0.4%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.7%	0.9%	-0.1%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	3.2%	1.5%	1.6%
SPAIN	1.6%	2.4%	-0.7%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	1.6%	2.0%	-0.4%
SWITZERLAND	4.1%	5.7%	-1.6%
TAIWAN	7.4%	2.8%	4.7%
THAILAND	1.5%	0.5%	0.9%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	1.6%	0.3%	1.3%
UKRAINE	0.0%	0.0%	0.0%
UNITED ARAB EMIRATES	0.3%	0.2%	0.2%
UNITED KINGDOM	8.6%	12.3%	-3.7%
UNITED STATES	0.7%	0.0%	0.7%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

Total Fixed Income

Total Fixed Income

As of September 30, 2017

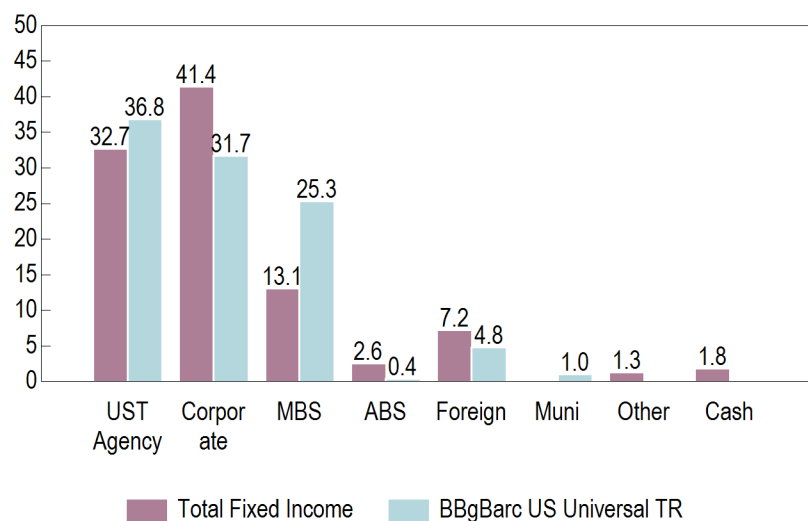
Asset Allocation on September 30, 2017

	Actual	Actual
Aberdeen Emerging Markets Bond Fund	\$3,669,522	8.2%
Columbia Institutional High Yield	\$8,984,707	20.1%
Logan Circle Emerging Markets Debt	\$3,429,051	7.7%
Longfellow Investment Grade Bond	\$20,516,813	46.0%
SSgA TIPS-NL	\$8,013,635	18.0%
Total	\$44,613,728	100.0%

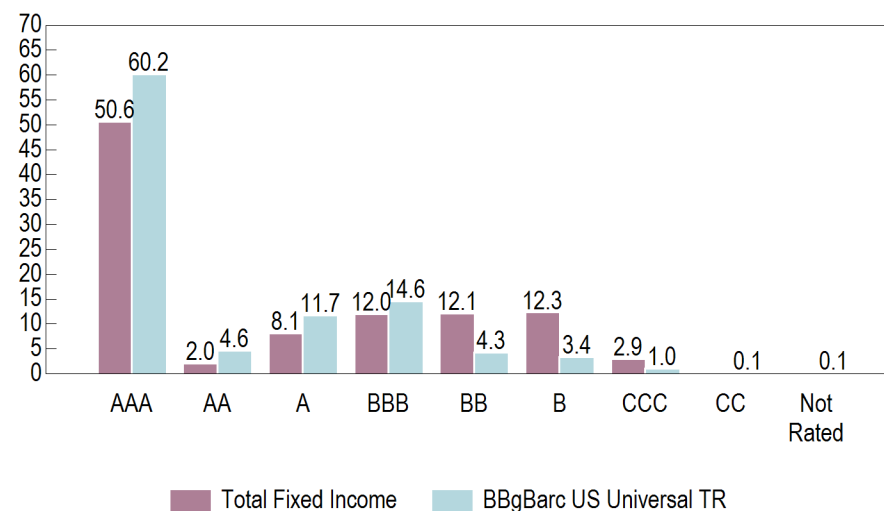
Total Fixed Income Fixed Income Characteristics
vs. BBgBarc US Universal TR

	Portfolio Q2-17	Index Q2-17	Portfolio Q1-17
Fixed Income Characteristics			
Yield to Maturity	3.32	2.88	3.53
Average Duration	5.36	5.80	5.29
Average Quality	A	AA	A
Weighted Average Maturity	7.95	11.97	7.70

Sector Allocation



Credit Quality Allocation



Portfolio Reviews
As of September 30, 2017

SSgA Russell 1000 Value Index-NL

As of September 30, 2017

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	eA US Large Cap Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA Russell 1000 Value Index-NL	3.2	15.2	8.6	13.2	7.4	Jan-05
Russell 1000 Value	3.1	15.1	8.5	13.2	7.3	Jan-05
eA US Large Cap Value Equity Net Median	4.0	17.1	8.4	12.9	7.8	Jan-05
eA US Large Cap Value Equity Net Rank	77	70	46	45	70	Jan-05

Top 10 Holdings

BERKSHIRE HATHAWAY 'B'	2.9%
EXXON MOBIL	2.9%
JP MORGAN CHASE & CO.	2.8%
JOHNSON & JOHNSON	2.5%
BANK OF AMERICA	2.1%
WELLS FARGO & CO	2.1%
AT&T	2.0%
CHEVRON	1.8%
PROCTER & GAMBLE	1.8%
PFIZER	1.8%
Total	22.6%

SSgA Russell 1000 Value Index-NL Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	16.5	--	15.5
Number Of Holdings	716	716	713
Characteristics			
Weighted Avg. Market Cap. (\$B)	113.0	112.8	108.9
Median Market Cap (\$B)	8.5	8.5	8.6
P/E Ratio	22.4	21.3	22.4
Yield	2.4	2.4	2.4
EPS Growth - 5 Yrs.	11.6	5.9	7.1
Price to Book	2.4	2.6	2.3
Beta (holdings; domestic)	1.0	1.0	1.0
Sector Distribution			
Energy	10.9	10.9	10.5
Materials	2.8	2.8	2.8
Industrials	8.6	8.6	8.6
Consumer Discretionary	6.8	6.8	6.9
Consumer Staples	8.7	8.7	9.2
Health Care	13.9	13.9	14.2
Financials	26.0	26.0	25.6
Information Technology	8.2	8.2	8.0
Telecommunication Services	3.2	3.2	3.1
Utilities	6.1	6.2	6.1
Real Estate	4.8	4.8	4.9



SSgA Russell 1000 Growth-NL

As of September 30, 2017

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	eA US Large Cap Growth Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA Russell 1000 Growth-NL	5.9	22.0	12.7	15.3	9.3	Jul-07
Russell 1000 Growth	5.9	21.9	12.7	15.3	9.3	Jul-07
eA US Large Cap Growth Equity Net Median	5.3	20.4	11.0	14.2	8.6	Jul-07
eA US Large Cap Growth Equity Net Rank	36	32	19	18	25	Jul-07

Top 10 Holdings

APPLE	6.7%
MICROSOFT	4.7%
FACEBOOK CLASS A	3.3%
AMAZON.COM	3.2%
ALPHABET 'C'	2.4%
ALPHABET 'A'	2.4%
HOME DEPOT	1.6%
VISA 'A'	1.6%
UNITEDHEALTH GROUP	1.6%
COMCAST 'A'	1.4%
Total	29.0%

SSgA Russell 1000 Growth-NL Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	17.0	--	15.6
Number Of Holdings	550	550	553
Characteristics			
Weighted Avg. Market Cap. (\$B)	182.7	181.9	170.7
Median Market Cap (\$B)	10.8	10.8	10.0
P/E Ratio	28.8	28.6	28.7
Yield	1.4	1.4	1.4
EPS Growth - 5 Yrs.	14.4	14.0	12.8
Price to Book	8.7	7.9	8.2
Beta (holdings; domestic)	1.0	1.0	1.0
Sector Distribution			
Energy	0.9	0.9	0.8
Materials	3.8	3.8	3.8
Industrials	12.5	12.5	12.0
Consumer Discretionary	17.7	17.7	18.3
Consumer Staples	6.7	6.7	7.5
Health Care	13.8	13.8	13.5
Financials	3.4	3.4	3.4
Information Technology	37.6	37.6	35.7
Telecommunication Services	1.0	1.0	0.9
Utilities	0.0	0.0	0.0
Real Estate	2.6	2.6	2.6



SSgA Russell 2000 Index-NL

As of September 30, 2017

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	eA US Small Cap Core Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA Russell 2000 Index-NL	5.7	20.8	12.3	13.9	13.9	Aug-10
Russell 2000	5.7	20.7	12.2	13.8	13.8	Aug-10
eA US Small Cap Core Equity Net Median	5.2	19.9	12.0	14.1	14.2	Aug-10
eA US Small Cap Core Equity Net Rank	43	47	45	56	56	Aug-10

Top 10 Holdings

KITE PHARMA	0.4%
BLUEBIRD BIO	0.3%
EXACT SCIS.	0.3%
KNIGHT TRANSPORTATION	0.3%
MKS INSTRUMENTS	0.2%
CATALENT	0.2%
ASPEN TECHNOLOGY	0.2%
MGIC INVESTMENT	0.2%
STARWOOD WAYPOINT HOMES	0.2%
CURTISS WRIGHT	0.2%
Total	2.7%

SSgA Russell 2000 Index-NL Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	3.3	--	3.2
Number Of Holdings	1999	2000	2010
Characteristics			
Weighted Avg. Market Cap. (\$B)	2.2	2.2	2.0
Median Market Cap (\$B)	0.8	0.8	0.8
P/E Ratio	25.9	24.6	25.6
Yield	1.3	1.1	1.3
EPS Growth - 5 Yrs.	8.8	7.9	8.8
Price to Book	3.8	3.2	3.5
Beta (holdings; domestic)	1.3	1.3	1.3
Sector Distribution			
Energy	3.6	3.5	3.5
Materials	4.4	4.4	4.4
Industrials	15.0	15.1	14.6
Consumer Discretionary	11.9	11.9	12.5
Consumer Staples	2.7	2.7	2.7
Health Care	15.6	15.7	15.0
Financials	18.3	18.3	18.6
Information Technology	16.8	16.8	17.0
Telecommunication Services	0.8	0.8	0.9
Utilities	3.6	3.6	3.7
Real Estate	7.0	7.0	7.1



SSgA MSCI EAFE Index-NL

As of September 30, 2017

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	eA EAFE Core Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA MSCI EAFE Index-NL	5.5	19.6	5.4	8.7	7.5	Aug-10
MSCI EAFE	5.4	19.1	5.0	8.4	7.2	Aug-10
eA EAFE Core Equity Net Median	6.2	20.3	6.3	9.6	8.6	Aug-10
eA EAFE Core Equity Net Rank	68	55	74	67	79	Aug-10

Top 10 Holdings

NESTLE 'R'	1.9%
HSBC HDG. (ORD \$0.50)	1.4%
NOVARTIS 'R'	1.4%
ROCHE HOLDING	1.3%
TOYOTA MOTOR	1.1%
ROYAL DUTCH SHELL A(LON)	0.9%
TOTAL	0.9%
BP	0.9%
BRITISH AMERICAN TOBACCO	0.8%
ROYAL DUTCH SHELL B	0.8%
Total	11.2%

SSgA MSCI EAFE Index-NL Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	12.7	--	11.1
Number Of Holdings	962	926	944
Characteristics			
Weighted Avg. Market Cap. (\$B)	58.9	58.7	55.8
Median Market Cap (\$B)	10.5	10.9	10.2
P/E Ratio	22.3	20.9	22.6
Yield	3.0	3.0	3.0
EPS Growth - 5 Yrs.	4.7	4.7	4.4
Price to Book	3.1	2.6	3.0
Beta (holdings; domestic)	1.1	1.1	1.1
Sector Distribution			
Energy	5.0	5.1	4.7
Materials	7.8	7.8	7.5
Industrials	14.4	14.5	14.4
Consumer Discretionary	12.2	12.2	12.0
Consumer Staples	11.3	11.2	11.4
Health Care	10.6	10.6	10.7
Financials	21.4	21.4	21.4
Information Technology	6.3	6.3	6.0
Telecommunication Services	4.1	4.1	4.2
Utilities	3.3	3.3	3.4
Real Estate	3.5	3.5	3.6



SSgA MSCI EAFE Small Cap Index-NL

As of September 30, 2017

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	eA EAFE Small Cap Core Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA MSCI EAFE Small Cap Index-NL	7.5	22.1	11.4	13.1	11.3	Aug-10
MSCI EAFE Small Cap	7.5	21.8	11.1	12.8	10.9	Aug-10
eA EAFE Small Cap Core Net Median	8.4	24.3	11.0	13.8	13.2	Aug-10
eA EAFE Small Cap Core Net Rank	80	81	42	67	75	Aug-10

Top 10 Holdings

INFORMA	0.7%
SMURFIT KAPPA GROUP	0.7%
KINGSPAN GROUP	0.6%
TEMENOS GROUP	0.6%
BANCO BPM	0.5%
HALMA	0.5%
MELROSE INDUSTRIES	0.5%
UNIPER SE	0.5%
FISHER & PAYKEL HLTHCR.	0.5%
SPIRAX-SARCO ENGR.	0.5%
Total	5.4%

SSgA MSCI EAFE Small Cap Index-NL Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	4.3	--	4.0
Number Of Holdings	1052	2252	2268
Characteristics			
Weighted Avg. Market Cap. (\$B)	2.8	2.8	2.6
Median Market Cap (\$B)	1.1	1.1	1.1
P/E Ratio	23.2	20.3	21.9
Yield	2.1	2.2	2.3
EPS Growth - 5 Yrs.	12.9	12.0	12.1
Price to Book	3.0	2.6	3.0
Beta (holdings; domestic)	0.9	0.9	0.9
Sector Distribution			
Energy	2.9	2.6	2.4
Materials	8.4	9.3	9.1
Industrials	23.4	22.4	22.3
Consumer Discretionary	15.4	15.9	15.8
Consumer Staples	7.2	6.5	6.7
Health Care	7.3	6.7	7.0
Financials	12.6	11.4	11.5
Information Technology	11.6	11.4	11.2
Telecommunication Services	1.0	1.3	1.3
Utilities	2.2	2.1	2.1
Real Estate	7.5	10.2	10.4

DFA Emerging Markets Value (net)

As of September 30, 2017

Account Information

Account Name	DFA Emerging Markets Value (net)
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	7/01/07
Account Type	Equity
Benchmark	MSCI Emerging Markets Value NR USD
Universe	eA Emg Mkts Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
DFA Emerging Markets Value (net)	5.6	22.8	4.2	3.5	1.8	Jul-07
MSCI Emerging Markets Value NR USD	5.5	18.6	1.6	1.3	2.1	Jul-07
eA Emg Mkts Equity Net Median	7.7	22.0	5.4	5.3	3.3	Jul-07
eA Emg Mkts Equity Net Rank	75	44	71	84	90	Jul-07

Top 10 Holdings

CHINA CON.BANK 'H'	2.8%
RELIANCE INDUSTRIES	2.2%
INDL.& COML.BK.OF CHINA 'H'	1.9%
VALE ON	1.4%
VALE ON ADR 1:1	1.3%
HYUNDAI MOTOR	1.3%
BANK OF CHINA 'H'	1.2%
PTT FB	1.0%
STANDARD BK.GP.	1.0%
POSCO	0.9%
Total	15.1%

DFA Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	2.6	--	2.5
Number Of Holdings	2313	514	2250
Characteristics			
Weighted Avg. Market Cap. (\$B)	20.6	39.6	18.7
Median Market Cap (\$B)	0.4	5.4	0.4
P/E Ratio	15.4	13.5	14.1
Yield	2.9	3.3	2.9
EPS Growth - 5 Yrs.	0.2	2.6	-0.8
Price to Book	1.3	1.7	1.3
Beta (holdings; domestic)	1.2	1.2	1.2
Sector Distribution			
Energy	13.3	11.9	12.4
Materials	17.9	10.2	16.6
Industrials	9.0	5.7	9.3
Consumer Discretionary	9.4	6.2	10.1
Consumer Staples	3.5	2.7	3.6
Health Care	0.4	0.3	0.4
Financials	28.9	35.3	29.8
Information Technology	9.5	11.9	9.9
Telecommunication Services	2.3	8.2	2.2
Utilities	1.6	3.4	1.6
Real Estate	4.2	4.3	4.0

LMCG Emerging Markets

As of September 30, 2017

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	eA Emg Mkts Equity Gross

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
Aberdeen Emerging Markets Bond Fund	3.7	--	--	--	12.0	Dec-16
50% JPM EMBI GD / 50% JPM GBI-EM	3.1	6.0	3.4	2.0	13.4	Dec-16
eA Emg Mkt Fixed Inc Unhedged Gross Median	3.4	7.7	5.1	4.0	12.7	Dec-16
eA Emg Mkt Fixed Inc Unhedged Gross Rank	29	--	--	--	55	Dec-16

Top 10 Holdings

SAMSUNG ELECTRONICS	5.4%
TENCENT HOLDINGS	4.7%
ALIBABA GROUP HLDG.SPN. ADR 1:1	3.7%
TAIWAN SEMICON.MNFG.	3.5%
ISHARES MSCI EMRG.MKTS. IDX.FD.	2.0%
CHINA CON.BANK 'H'	2.0%
NASPERS	1.9%
ITAU UNIBANCO HOLDING PN	1.6%
BANK OF CHINA 'H'	1.3%
ITAUSA INVESTIMENTOS ITAU PN	1.2%
Total	27.3%

LMCG Emerging Markets Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	5.9	--	4.8
Number Of Holdings	117	839	123
Characteristics			
Weighted Avg. Market Cap. (\$B)	77.9	80.6	64.1
Median Market Cap (\$B)	9.8	5.5	8.7
P/E Ratio	19.3	21.5	17.6
Yield	2.6	2.3	3.1
EPS Growth - 5 Yrs.	13.3	11.2	11.7
Price to Book	4.0	2.8	3.2
Beta (holdings; domestic)	1.1	1.1	1.1
Sector Distribution			
Energy	8.6	6.8	7.6
Materials	8.3	7.2	8.4
Industrials	3.9	5.4	4.8
Consumer Discretionary	10.9	10.3	12.1
Consumer Staples	6.7	6.5	5.8
Health Care	3.7	2.3	4.2
Financials	17.2	23.4	20.6
Information Technology	27.4	27.6	26.8
Telecommunication Services	4.6	5.1	4.5
Utilities	2.3	2.6	2.6
Real Estate	4.4	2.9	2.6



KB Investors Emerging Markets Equity

As of September 30, 2017

Account Information

Account Name	KB Investors Emerging Markets Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/15
Account Type	Equity
Benchmark	MSCI Emerging Markets
Universe	eA Emg Mkts Equity Gross

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
KB Investors Emerging Markets Equity	4.3	15.1	--	--	14.3	Oct-15
MSCI Emerging Markets	7.9	22.5	4.9	4.0	19.6	Oct-15
eA Emg Mkts Equity Gross Median	7.8	23.1	6.4	5.9	20.8	Oct-15
eA Emg Mkts Equity Gross Rank	90	89	--	--	92	Oct-15

Top 10 Holdings

TAIWAN SEMICON.MNFG.	4.4%
CHINA CON.BANK 'H'	3.6%
INDL. & COML.BK.OF CHINA 'H'	3.3%
HON HAI PRECN.IND.	3.0%
HCL TECHNOLOGIES	2.8%
INFOSYS	2.4%
TATA CONSULTANCY SVS.	2.3%
THAI OIL FB	2.3%
NETEASE ADR 1:25	2.3%
BAJAJ AUTO	2.1%
Total	28.5%

KB Investors Emerging Markets Equity Characteristics

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Market Value			
Market Value (\$M)	5.7	--	5.2
Number Of Holdings	121	839	130
Characteristics			
Weighted Avg. Market Cap. (\$B)	36.2	80.6	31.7
Median Market Cap (\$B)	6.8	5.5	6.2
P/E Ratio	14.5	21.5	11.8
Yield	3.9	2.3	4.3
EPS Growth - 5 Yrs.	10.0	11.2	6.8
Price to Book	2.5	2.8	1.6
Beta (holdings; domestic)	1.0	1.1	1.2
Sector Distribution			
Energy	7.7	6.8	12.8
Materials	7.9	7.2	2.7
Industrials	5.4	5.4	5.1
Consumer Discretionary	8.8	10.3	7.0
Consumer Staples	5.0	6.5	1.3
Health Care	1.1	2.3	0.8
Financials	26.4	23.4	48.0
Information Technology	26.4	27.6	11.2
Telecommunication Services	4.9	5.1	1.9
Utilities	3.2	2.6	2.5
Real Estate	3.2	2.9	5.1

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	eA US High Yield Fixed Inc Gross

Portfolio Performance Summary

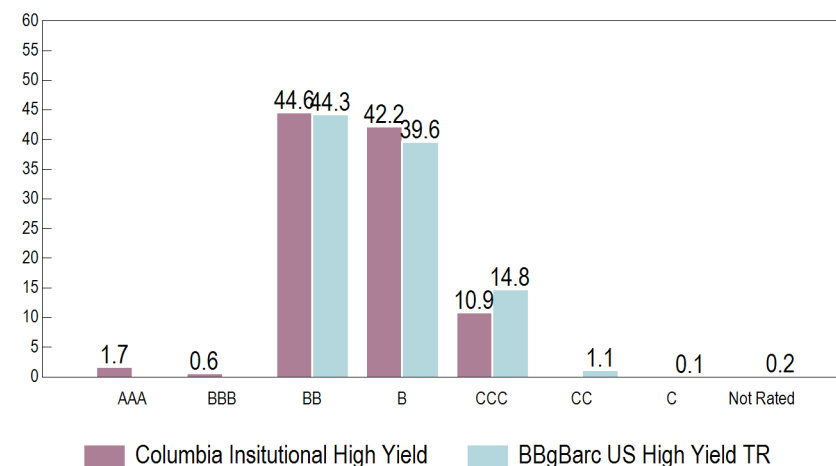
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
Columbia Insitutional High Yield	1.9	7.5	6.2	6.2	6.7	Mar-12
BBgBarc US High Yield TR	2.0	8.9	5.8	6.4	6.8	Mar-12
eA US High Yield Fixed Inc Gross Median	2.0	8.4	5.5	6.2	6.8	Mar-12
eA US High Yield Fixed Inc Gross Rank	54	73	27	52	57	Mar-12

Columbia Insitutional High Yield Characteristics

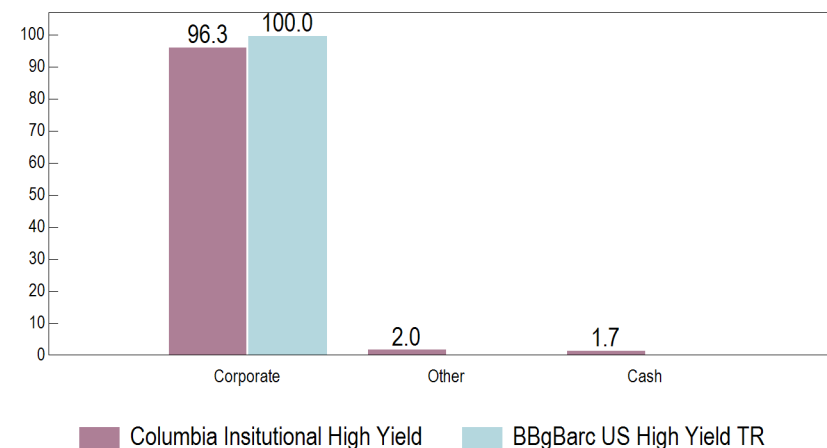
vs. BBgBarc US High Yield TR

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Fixed Income Characteristics			
Yield to Maturity	4.6	6.0	4.8
Average Duration	3.8	3.8	3.9
Average Quality	BB	B	BB
Weighted Average Maturity	6.9	6.3	7.0

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	eA TIPS / Infl Indexed Fixed Inc Net

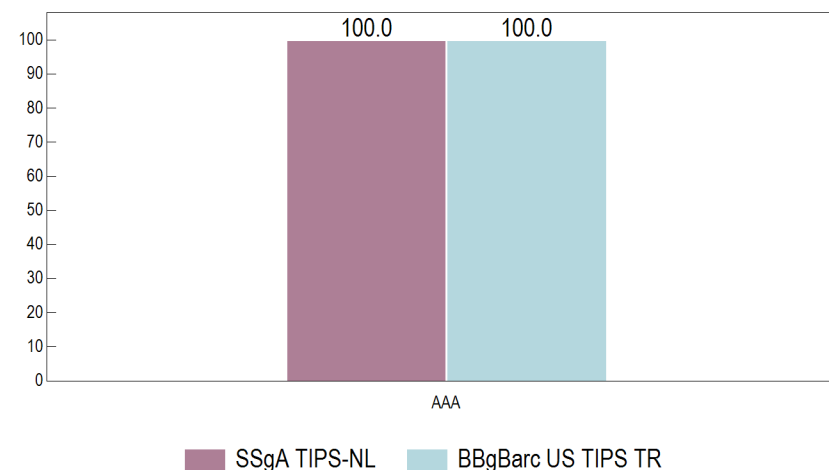
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
SSgA TIPS-NL	0.9	-0.7	1.6	0.0	4.2	Jul-07
BBgBarc US TIPS TR	0.9	-0.7	1.6	0.0	4.3	Jul-07
eA TIPS / Infl Indexed Fixed Inc Net Median	0.9	-0.7	1.4	-0.1	4.4	Jul-07
eA TIPS / Infl Indexed Fixed Inc Net Rank	54	58	30	48	69	Jul-07

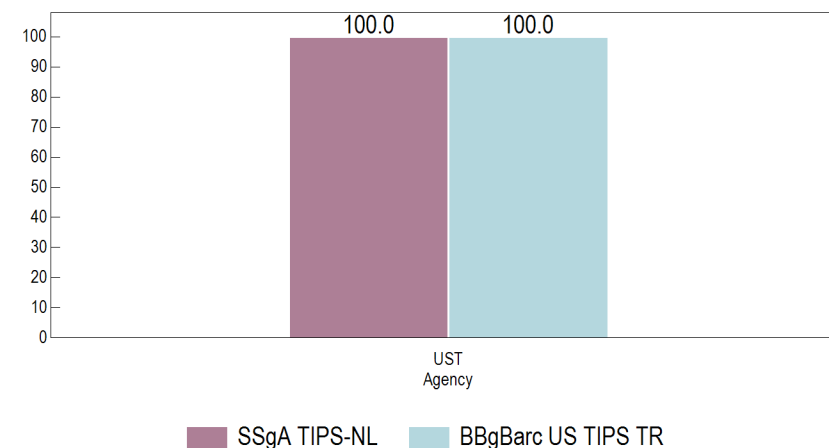
SSgA TIPS-NL Characteristics
vs. BBgBarc US TIPS TR

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Fixed Income Characteristics			
Yield to Maturity	2.4	0.3	2.2
Average Duration	6.0	6.0	5.4
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	8.4	8.3	8.5

Credit Quality Allocation



Sector Allocation



Aberdeen Emerging Markets Bond Fund

As of June 30, 2017

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	50% JPM EMBI GD / 50% JPM GBI-EM
Universe	eA Emg Mkt Fixed Inc Unhedged Gross

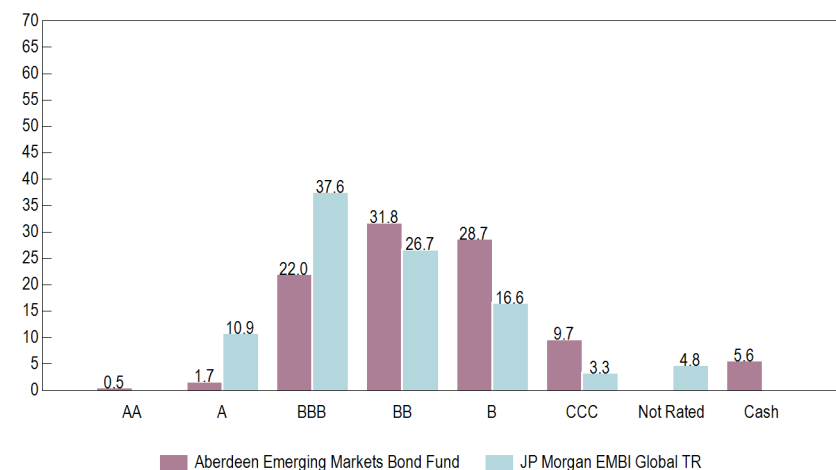
Portfolio Performance Summary

	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Aberdeen Emerging Markets Bond Fund	3.6	11.7	--	--	--	--	11.7	Dec-16
50% JPM EMBI GD / 50% JPM GBI-EM	3.1	11.6	6.0	3.4	2.0	5.7	13.4	Dec-16
eA Emg Mkt Fixed Inc Unhedged Gross Median	3.4	10.7	7.7	5.1	4.0	7.2	12.7	Dec-16
eA Emg Mkt Fixed Inc Unhedged Gross Rank	35	45	--	--	--	--	59	Dec-16

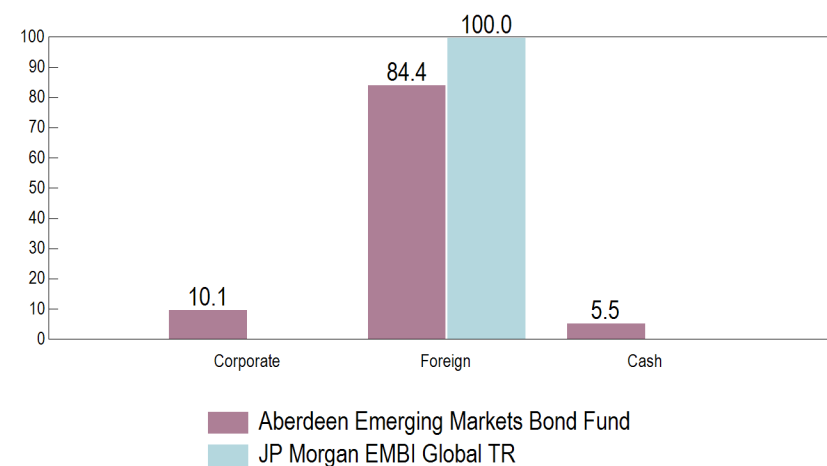
Aberdeen Emerging Markets Bond Fund Fixed Income Characteristics
vs. JP Morgan EMBI Global TR

	Portfolio Q3-17	Index Q3-17	Portfolio Q2-17
Fixed Income Characteristics			
Yield to Maturity	5.9	5.1	6.0
Average Duration	6.0	7.0	6.1
Average Quality	BB	BB	BB
Weighted Average Maturity	9.5	10.9	9.8

Credit Quality Allocation



US Sector Allocation



As of September 30, 2017

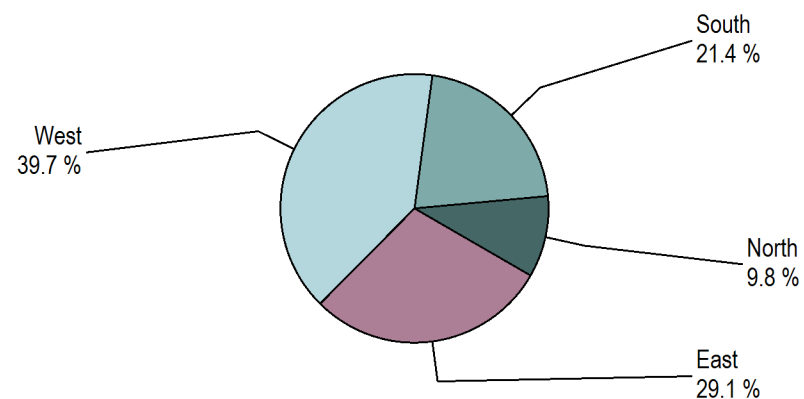
Account Information

Account Name	Intercontinental U.S. REIF
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/14
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

Portfolio Performance Summary

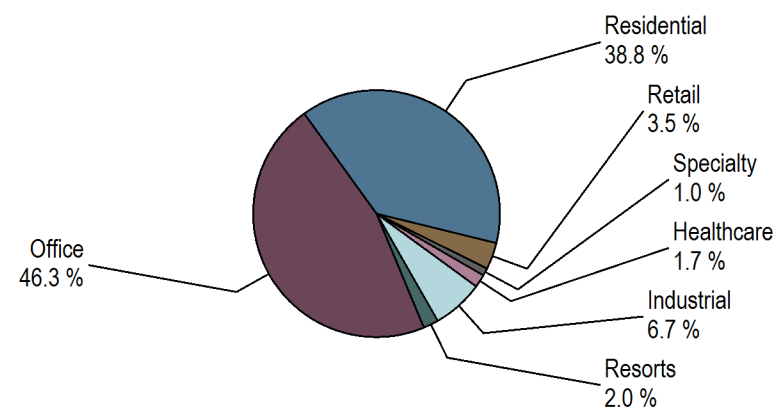
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
Intercontinental U.S. REIF	1.3	10.3	12.2	--	12.2	Oct-14
NCREIF-ODCE	1.9	7.7	10.8	11.6	10.8	Oct-14

Geographic Diversification



North represents Midwest.

Property Type Allocation



Note: Number of investments is 114.



As of September 30, 2017

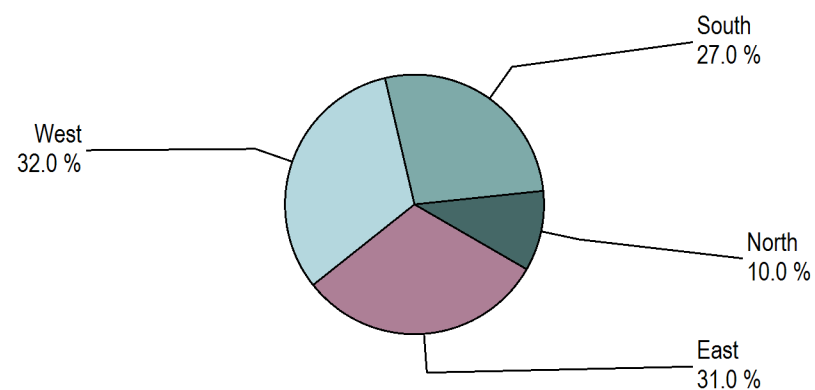
Account Information

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
Universe	

Portfolio Performance Summary

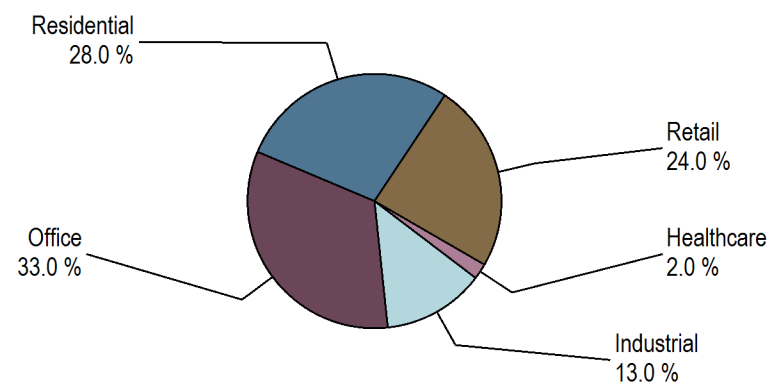
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
AEW Core Property Trust	1.5	7.2	10.2	--	10.2	Oct-14
NCREIF-ODCE	1.9	7.7	10.8	11.6	10.8	Oct-14

Geographic Diversification



North represents Midwest.

Property Type Allocation



Note: Number of investments is 67 and Net IRR is 9.51%.



As of September 30, 2017

Account Information

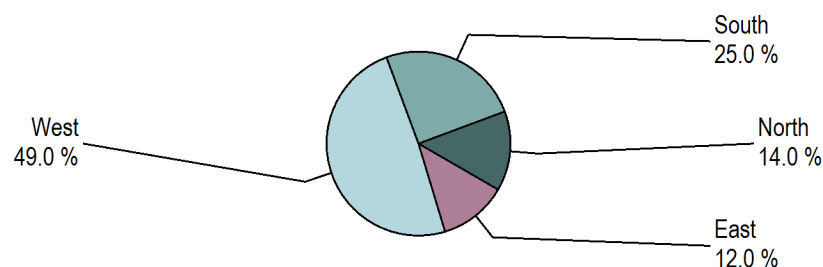
Account Name	TA Associates Realty Fund IX
Account Structure	Other
Investment Style	Active
Inception Date	5/01/10
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

Non-Marketable Securities Overview

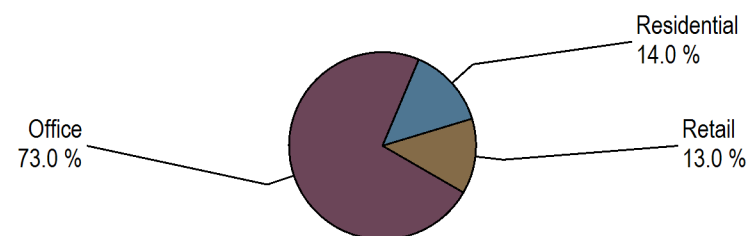
As of September 30, 2017

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	\$4,381,942	\$349,682	\$4,731,624	\$120,000
	Total Account		\$3,000,000	\$2,880,000	\$4,381,942	\$349,682	\$4,731,624	\$120,000

Geographic Diversification



Property Type Allocation



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 June 2017, the number of investments is 17 and Net IRR is 10.532%.



As of September 30, 2017

Account Information

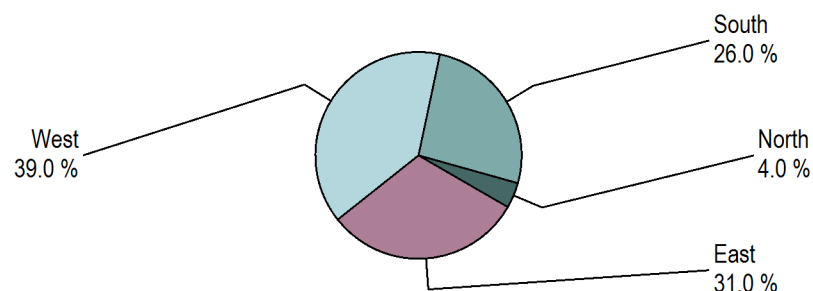
Account Name	TA Associates Realty Fund X
Account Structure	Other
Investment Style	Active
Inception Date	4/01/13
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

Non-Marketable Securities Overview

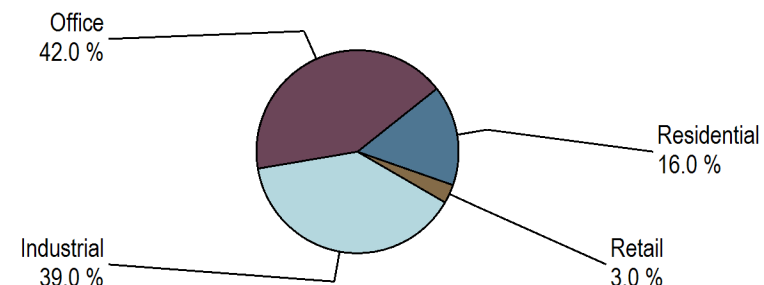
As of September 30, 2017

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	\$1,983,668	\$2,396,772	\$4,380,440	-\$5,227
	Total Account		\$3,000,000	\$3,005,227	\$1,983,668	\$2,396,772	\$4,380,440	-\$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 June 30 2017, the number of investments is 88 and Net IRR is 12.397%.



Account Information

Account Name	AG Realty Fund IV
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	

Non-Marketable Securities Overview

As of September 30, 2017

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	\$0	\$1,332,500	\$50,000
	Total Account		\$1,000,000	\$950,000	\$1,332,500	\$0	\$1,332,500	\$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.



Ascent Venture Partners - Fund II

As of September 30, 2017

Account Information

Account Name	Ascent Venture Partners - Fund II
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	\$6,126	\$1,613,518	\$15,746
	Total Account		\$500,000	\$484,254	\$1,607,392	\$6,126	\$1,613,518	\$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 June 30, 2017, the Net IRR is 26.64%.



Ascent Venture Partners - Fund III

As of September 30, 2017

Account Information

Account Name	Ascent Venture Partners - Fund III
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	\$84,090	\$1,781,153	\$105,000
	Total Account		\$1,500,000	\$1,395,000	\$1,697,063	\$84,090	\$1,781,153	\$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 June 30, 2017 the Net IRR is 3.97%.



Ascent Venture Partners - Fund IV

As of September 30, 2017

Account Information

Account Name	Ascent Venture Partners - Fund IV
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	2003	\$1,000,000	\$1,000,000	\$155,588	\$162,111	\$317,699	\$0
	Total Account		\$1,000,000	\$1,000,000	\$155,588	\$162,111	\$317,699	\$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 June 30, 2017 the Net IRR is -15.72%.



Ascent Venture Partners - Fund V

As of September 30, 2017

Account Information

Account Name	Ascent Venture Partners - Fund V
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	2010	\$1,000,000	\$880,000	\$569,783	\$931,460	\$1,501,244	\$120,000
	Total Account		\$1,000,000	\$880,000	\$569,783	\$931,460	\$1,501,244	\$120,000

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 June 30, 2017 the Net IRR is 11.08%.



Ascent Venture Partners - Fund VI

As of September 30, 2017

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	Russell 3000 + 3%
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	\$540,000	\$0	\$666,757	\$666,757	\$960,000
	Total Account		\$1,500,000	\$540,000	\$0	\$666,757	\$666,757	\$960,000



Account Information

Account Name	Goldman Sachs PEP 2005
Account Structure	Other
Investment Style	Active
Inception Date	8/01/06
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	\$2,926,055	\$2,729,440	\$1,045,576	\$3,775,016	\$73,945
	Total Account		\$3,000,000	\$2,926,055	\$2,729,440	\$1,045,576	\$3,775,016	\$73,945

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 6/30/2017 the IRR is 4.54%

Account Information

Account Name	HarbourVest Partners VIII
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	\$2,350,000	\$2,669,466	\$1,198,118	\$3,867,584	\$150,000
	Total Account		\$2,500,000	\$2,350,000	\$2,669,466	\$1,198,118	\$3,867,584	\$150,000

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 June 30, 2017, the Net IRR is 10.4%.



As of September 30, 2017

Account Information

Account Name	HarbourVest Partners IX
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
Universe	

Non-Marketable Securities Overview

As of September 30, 2017

As of September 30, 2017

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	\$3,012,500	\$1,242,402	\$3,085,702	\$4,328,104	\$1,987,500
	Total Account		\$5,000,000	\$3,012,500	\$1,242,402	\$3,085,702	\$4,328,104	\$1,987,500

Investment Strategy:

HarbourVest Partners, known as Hancock Venture Partners until 1997, was founded in 1982 to invest in private equity partnerships. The HarbourVest Partners 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 June 30, 2017 the Net IRR is 16.6%.



Account Information

Account Name	HarbourVest X Buyout Fund
Account Structure	Other
Investment Style	Active
Inception Date	4/06/16
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
Universe	

As of September 30, 2017

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	\$641,327	\$56,544	\$861,697	\$918,241	\$5,858,673
	Total Account		\$6,500,000	\$641,327	\$56,544	\$861,697	\$918,241	\$5,858,673

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, 2016, the Net IRR is 14.9%.



Constitution Capital Partners Ironsides III

As of September 30, 2017

Account Information

Account Name	Constitution Capital Partners Ironsides III
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
Universe	

Non-Marketable Securities Overview

As of September 30, 2017

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	\$1,856,218	\$119,753	\$1,851,006	\$1,970,759	\$3,143,782
	Total Account		\$5,000,000	\$1,856,218	\$119,753	\$1,851,006	\$1,970,759	\$3,143,782

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 March 31, 2017, the Gross IRR is 14.1%.



Constitution Capital Partners Ironsides IV

As of June 30, 2017

Account Information

Account Name	Constitution Capital Partners Ironsides IV
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%

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	\$238,723	\$0	\$265,586	\$265,586	\$3,011,277
	Total Account		\$3,250,000	\$238,723	\$0	\$265,586	\$265,586	\$3,011,277

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 March 31, 2017, the Gross IRR is 25.6%.



Constitution Capital Direct IV

As of June 30, 2017

Account Information

Account Name	Constitution Capital Direct IV
Account Structure	Other
Investment Style	Active
Inception Date	
Account Type	Private Equity
Benchmark	Russell 3000 + 3%
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	\$2,292,801	\$472,771	\$1,766,582	\$2,239,353	\$957,199
	Total Account		\$3,250,000	\$2,292,801	\$472,771	\$1,766,582	\$2,239,353	\$957,199



RS Global Natural Resources

As of September 30, 2017

Account Information

Account Name	RS Global Natural Resources
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	7/01/11
Account Type	Equity
Benchmark	S&P Global Natural Resources Index TR USD
Universe	

Portfolio Performance Summary

	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Return (%)	Since
RS Global Natural Resources	13.0	1.9	8.6	-8.4	-6.0	-5.3	Jul-11
S&P Global Natural Resources Index TR USD	10.8	13.0	20.5	1.3	1.1	-1.2	Jul-11

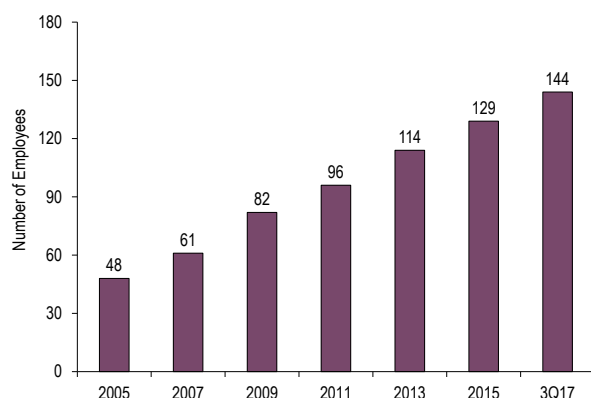
RS Global Natural Resources Characteristics

	Portfolio Q3-17	Portfolio Q2-17
Market Value		
Market Value (\$M)	5.5	4.9
Number Of Holdings	19	24
Characteristics		
Weighted Avg. Market Cap. (\$B)	5.8	4.4
Median Market Cap (\$B)	3.9	3.1
P/E Ratio	26.4	38.4
Yield	0.6	0.7
EPS Growth - 5 Yrs.	22.7	0.2
Price to Book	3.6	2.9
Beta (holdings; domestic)	1.6	1.7
Sector Distribution		
Energy	64.3	50.8
Materials	29.2	31.5
Industrials	0.0	0.0
Consumer Discretionary	0.0	0.0
Consumer Staples	0.0	0.0
Health Care	0.0	0.0
Financials	0.0	0.0
Information Technology	0.0	0.0
Telecommunication Services	0.0	0.0
Utilities	0.0	9.8
Real Estate	0.0	0.0

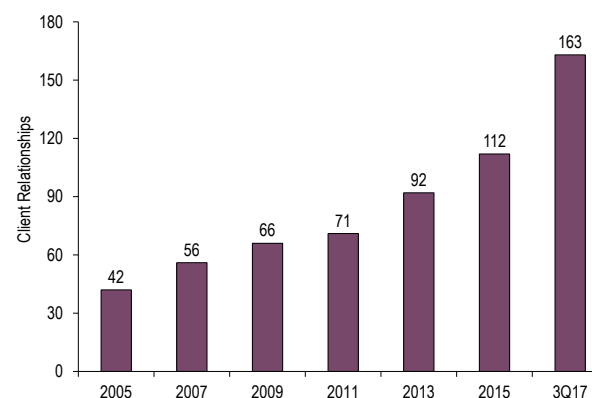
Meketa Investment Group Corporate Update

- Staff of 144, including 97 investment professionals and 31 CFA Charterholders
- 163 clients, with over 270 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 \$600 billion in client assets
 - Over \$90 billion in assets committed to alternative investments
 - Private Equity ▪ Infrastructure ▪ Natural Resources
 - Real Estate ▪ Hedge Funds ▪ Commodities

Employee Growth



Client Growth



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



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

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In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material. Note that for unlisted securities the valuations may be lagged by one or more calendar quarters, or may reflect original cost.

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In some cases, Meketa Investment Group assists the Board Members in handling capital calls or asset transfers among investment managers. In these cases, we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the Retirement Board.

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.