

# FUND EVALUATION REPORT

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## Plymouth County Retirement Association

Investment Review  
June 27, 2017



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## 1. Performance Review

- Performance Update as of March 31, 2017
- Hedge Fund Update as of March 31, 2017
- Fourth Quarter 2016 Private Markets Review

## 2. Current Issues

- Investment Policy Statement Update
- Investment Policy Statement Review

## 3. Appendices

- The World Markets in the First Quarter of 2017
- Capital Markets Outlook
- Disclaimer, Glossary, and Notes

# Performance Review

**Performance Update  
As of March 31, 2017**

As of March 31, 2017

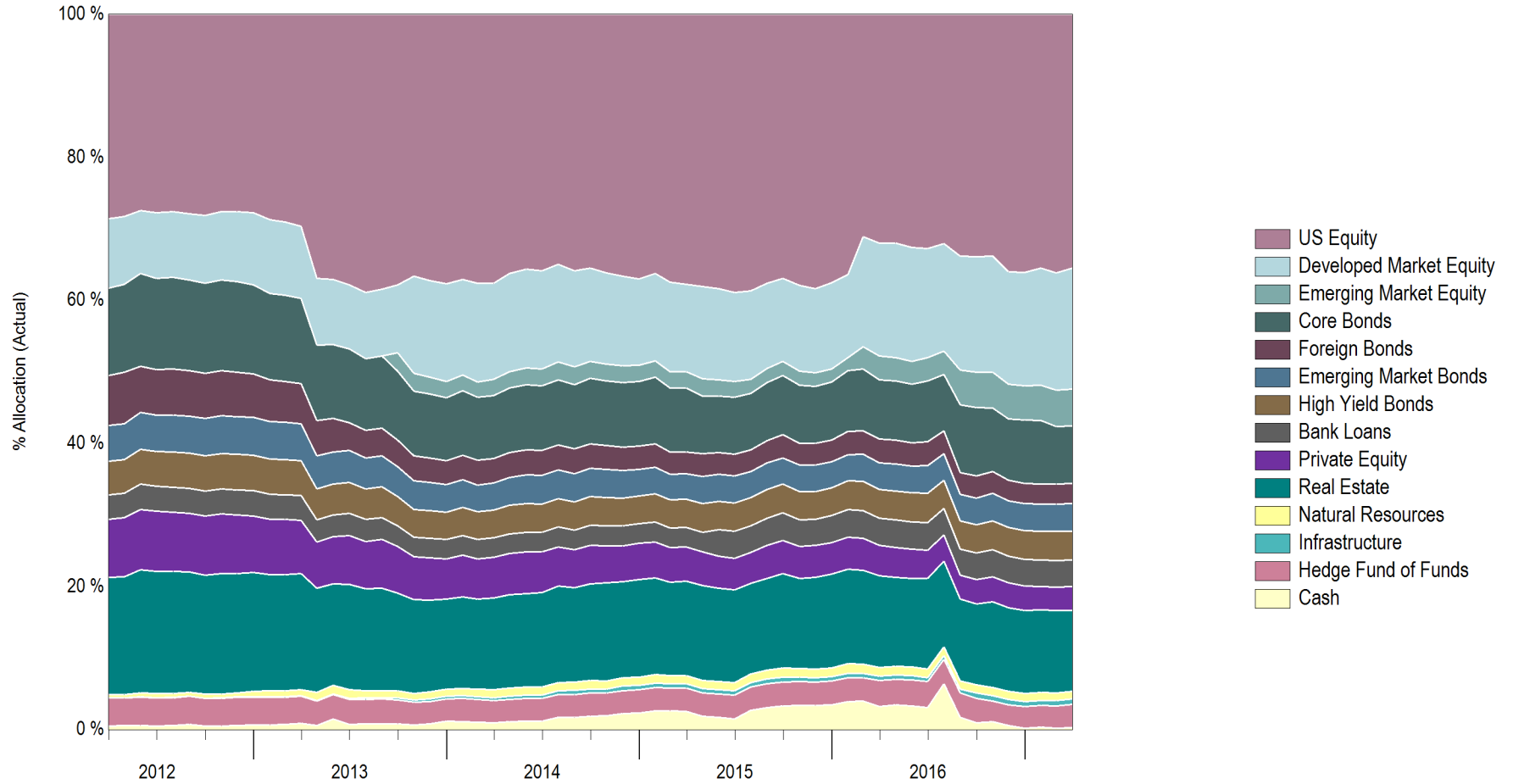
## Allocation vs. Target

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	\$318,857,443	35%	27%	22% - 32%	No
Developed Market Equity	\$151,854,085	17%	16%	11% - 21%	Yes
Emerging Market Equity	\$46,403,981	5%	4%	2% - 6%	Yes
Core Bonds	\$72,210,763	8%	12%	7% - 17%	Yes
Foreign Bonds	\$25,363,154	3%	3%	1% - 5%	Yes
Emerging Market Bonds	\$34,452,033	4%	4%	2% - 6%	Yes
High Yield Bonds	\$36,267,876	4%	4%	2% - 6%	Yes
Bank Loans	\$33,398,027	4%	3%	1% - 5%	Yes
Private Equity	\$30,066,611	3%	10%	5% - 15%	No
Real Estate	\$101,319,271	11%	10%	5% - 15%	Yes
Natural Resources	\$9,755,529	1%	1%	0% - 3%	Yes
Infrastructure	\$6,592,979	1%	2%	0% - 4%	Yes
Hedge Fund of Funds	\$29,064,995	3%	4%	2% - 6%	Yes
Cash	\$2,675,362	0%	1%	0% - 3%	Yes
<b>Total</b>	<b>\$898,282,108</b>	<b>100%</b>	<b>100%</b>		

Plymouth County Retirement Association adopted a new asset allocation as of May 2017.



Asset Allocation History  
5 Years Ending March 31, 2017



As of March 31, 2017

## Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Retirement Association</b>	<b>898,282,108</b>	<b>100.0</b>	<b>4.2</b>	<b>10.7</b>	<b>5.1</b>	<b>7.5</b>	<b>4.8</b>	<b>8.2</b>	<b>Nov-89</b>
<i>Custom Benchmark - Policy Benchmark<sup>1</sup></i>			3.7	11.8	5.7	8.3	6.0	--	Nov-89
<b>Domestic Equity Assets</b>	<b>318,857,443</b>	<b>35.5</b>	<b>4.6</b>	<b>20.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>15.9</b>	<b>Jan-16</b>
<i>Russell 3000</i>			5.7	18.1	9.8	13.2	7.5	15.1	Jan-16
<b>International Developed Market Equity Assets</b>	<b>151,854,085</b>	<b>16.9</b>	<b>8.4</b>	<b>10.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.6</b>	<b>Jan-16</b>
<i>MSCI EAFE</i>			7.2	11.7	0.5	5.8	1.1	6.6	Jan-16
<b>International Emerging Market Equity Assets</b>	<b>46,403,981</b>	<b>5.2</b>	<b>11.4</b>	<b>14.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>15.6</b>	<b>Jan-16</b>
<i>MSCI Emerging Markets</i>			11.4	17.2	1.2	0.8	2.7	18.7	Jan-16
<b>Domestic Fixed Income</b>	<b>72,210,763</b>	<b>8.0</b>	<b>0.9</b>	<b>1.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	<b>Jan-16</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>			0.9	0.7	2.4	1.9	--	3.1	Jan-16
<b>Value Added Fixed Income</b>	<b>69,665,903</b>	<b>7.8</b>	<b>1.9</b>	<b>10.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.8</b>	<b>Jan-16</b>
<i>50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans</i>			1.9	13.0	4.2	5.9	5.9	12.4	Jan-16
<b>International Fixed Income</b>	<b>59,815,187</b>	<b>6.7</b>	<b>3.5</b>	<b>5.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.6</b>	<b>Jan-16</b>
<i>Global Fixed Income Policy</i>			3.2	3.8	3.0	3.1	--	8.3	Jan-16
<b>Private Equity</b>	<b>30,066,610</b>	<b>3.3</b>	<b>0.0</b>	<b>0.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.2</b>	<b>Jan-16</b>
<i>Cambridge Associates Fund of Funds Composite 1-Quarter Lag</i>			1.1	4.5	8.5	10.3	8.1	4.5	Jan-16
<b>Real Estate</b>	<b>101,319,270</b>	<b>11.3</b>	<b>0.6</b>	<b>1.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	<b>Jan-16</b>
<i>NCREIF ODCE (net)</i>			1.5	7.4	10.8	10.9	4.6	7.5	Jan-16
<b>Real Assets</b>	<b>16,348,508</b>	<b>1.8</b>	<b>0.0</b>	<b>-5.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-2.9</b>	<b>Jan-16</b>
<i>CPI+3%</i>			1.7	5.4	4.1	4.3	4.8	5.5	Jan-16
<b>Hedge Fund</b>	<b>29,064,995</b>	<b>3.2</b>	<b>4.9</b>	<b>10.3</b>	<b>3.5</b>	<b>5.4</b>	<b>--</b>	<b>4.8</b>	<b>Feb-10</b>
<i>HFRI Fund of Funds Composite Index</i>			2.4	6.2	1.8	3.2	1.2	2.7	Feb-10
<b>Cash and Cash Equivalent</b>	<b>2,675,362</b>	<b>0.3</b>							

<sup>1</sup> The Custom Benchmark – Target Allocation reflects the target allocations set forth in the investment policy statement, weighted for the performance of the following indexes: Russell 3000, MSCI EAFE, MSCI Emerging Markets, Cambridge Associates Fund of Funds (1-Quarter lag), Bbg Barclays High Yield, S&P LSTA Leveraged Loan, Bbg Barclays Global Agg, JP Morgan GBI-EM Global Diversified USD, 90 day T-bill, Bbg Barclays Aggregate, Bbg Barclays US Tips, NCREIF ODCE(net), S&P Global Natural Resources and CPI + 3%



As of March 31, 2017

## Trailing Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Retirement Association</b>	<b>898,282,108</b>	<b>100.0</b>	<b>--</b>	<b>4.2</b>	<b>10.7</b>	<b>5.1</b>	<b>7.5</b>	<b>4.8</b>	<b>8.2</b>	<b>Nov-89</b>
<i>Custom Benchmark - Policy Benchmark</i>				3.7	11.8	5.7	8.3	6.0	--	Nov-89
<b>Domestic Equity Assets</b>	<b>318,857,443</b>	<b>35.5</b>	<b>35.5</b>	<b>4.6</b>	<b>20.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>15.9</b>	<b>Jan-16</b>
<i>Russell 3000</i>				5.7	18.1	9.8	13.2	7.5	15.1	Jan-16
Rhumblin Russell 1000 Value	66,328,380	7.4	20.8	3.3	19.0	8.5	--	--	11.5	Apr-13
<i>Russell 1000 Value</i>				3.3	19.2	8.7	13.1	5.9	11.6	Apr-13
<i>eA US Large Cap Value Equity Net Median</i>				3.9	17.0	7.8	12.2	6.4	11.1	Apr-13
<i>eA US Large Cap Value Equity Net Rank</i>				68	29	31	--	--	42	Apr-13
Rhumblin Russell 1000 Growth	52,017,750	5.8	16.3	8.9	15.7	11.2	13.3	--	15.1	Jul-09
<i>Russell 1000 Growth</i>				8.9	15.8	11.3	13.3	9.1	15.2	Jul-09
<i>eA US Large Cap Growth Equity Net Median</i>				8.9	14.6	9.4	11.8	8.2	13.7	Jul-09
<i>eA US Large Cap Growth Equity Net Rank</i>				50	37	13	16	--	14	Jul-09
Fisher Midcap Value	47,853,545	5.3	15.0	6.4	23.2	8.4	11.6	--	8.0	Apr-07
<i>Russell MidCap Value</i>				3.8	19.8	8.9	14.1	7.5	7.2	Apr-07
<i>eA US Mid Cap Value Equity Net Median</i>				3.6	19.3	8.3	12.7	7.9	7.4	Apr-07
<i>eA US Mid Cap Value Equity Net Rank</i>				6	8	50	80	--	39	Apr-07
Geneva Capital	37,900,592	4.2	11.9	6.6	10.1	6.8	--	--	10.2	Apr-13
<i>Russell MidCap Growth</i>				6.9	14.1	7.9	12.0	8.1	11.6	Apr-13
<i>eA US Mid Cap Growth Equity Gross Median</i>				7.8	15.3	7.1	11.3	9.0	11.5	Apr-13
<i>eA US Mid Cap Growth Equity Gross Rank</i>				80	92	60	--	--	80	Apr-13

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Boston Company Small Growth	47,029,313	5.2	14.7	3.5	29.0	7.5	13.6	--	15.0	Aug-09
<i>Russell 2000 Growth</i>				5.3	23.0	6.7	12.1	8.1	14.5	Aug-09
<i>eA US Small Cap Growth Equity Net Median</i>				6.1	22.4	6.3	11.9	7.9	14.8	Aug-09
<i>eA US Small Cap Growth Equity Net Rank</i>				86	10	38	27	--	48	Aug-09
Lee Munder Small Cap Value	67,647,738	7.5	21.2	1.6	24.7	10.7	13.3	--	11.2	Mar-11
<i>Russell 2000 Value</i>				-0.1	29.4	7.6	12.5	6.1	10.2	Mar-11
<i>eA US Small Cap Value Equity Net Median</i>				0.5	23.4	7.7	12.6	7.3	10.6	Mar-11
<i>eA US Small Cap Value Equity Net Rank</i>				30	39	7	37	--	36	Mar-11
<b>International Developed Market Equity Assets</b>	<b>151,854,085</b>	<b>16.9</b>	<b>16.9</b>	<b>8.4</b>	<b>10.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.6</b>	<b>Jan-16</b>
<i>MSCI EAFE</i>				7.2	11.7	0.5	5.8	1.1	6.6	Jan-16
HGK TS International Equity	52,105,220	5.8	34.3	10.5	11.3	0.2	9.0	--	5.6	Feb-11
<i>MSCI EAFE</i>				7.2	11.7	0.5	5.8	1.1	3.4	Feb-11
<i>eA EAFE All Cap Equity Net Median</i>				7.3	10.7	1.4	6.4	1.7	4.8	Feb-11
<i>eA EAFE All Cap Equity Net Rank</i>				3	45	74	12	--	24	Feb-11
Denver Investments	31,993,835	3.6	21.1	6.4	6.3	-2.1	--	--	-1.3	Oct-13
<i>MSCI EAFE Small Cap</i>				8.0	11.0	3.6	9.2	3.0	5.0	Oct-13
<i>eA EAFE Small Cap Equity Net Median</i>				8.6	12.3	4.2	10.0	3.6	5.5	Oct-13
<i>eA EAFE Small Cap Equity Net Rank</i>				92	90	99	--	--	99	Oct-13
KBI EAFE Master Account	67,755,030	7.5	44.6	7.9	12.3	-0.4	5.4	0.2	3.7	Jul-05
<i>MSCI EAFE</i>				7.2	11.7	0.5	5.8	1.1	4.3	Jul-05
<i>eA EAFE Core Equity Net Median</i>				7.7	10.8	1.2	7.0	1.9	4.8	Jul-05
<i>eA EAFE Core Equity Net Rank</i>				43	23	82	78	95	86	Jul-05

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>International Emerging Market Equity Assets</b>	<b>46,403,981</b>	<b>5.2</b>	<b>5.2</b>	<b>11.4</b>	<b>14.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>15.6</b>	<b>Jan-16</b>
<i>MSCI Emerging Markets</i>				11.4	17.2	1.2	0.8	2.7	18.7	Jan-16
Lee Munder Emerging Markets	46,403,981	5.2	100.0	11.4	14.7	-0.2	--	--	-0.5	Sep-13
<i>MSCI Emerging Markets</i>				11.4	17.2	1.2	0.8	2.7	1.4	Sep-13
<i>eA Emg Mkts Equity Net Median</i>				12.2	17.2	2.1	2.1	3.4	2.2	Sep-13
<i>eA Emg Mkts Equity Net Rank</i>				70	71	85	--	--	92	Sep-13
<b>Domestic Fixed Income</b>	<b>72,210,763</b>	<b>8.0</b>	<b>8.0</b>	<b>0.9</b>	<b>1.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	<b>Jan-16</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				0.9	0.7	2.4	1.9	--	3.1	Jan-16
IR&M Core Bonds	72,210,763	8.0	100.0	0.9	1.5	2.7	2.7	4.9	4.6	Nov-04
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				0.9	0.7	2.4	1.9	--	--	Nov-04
<i>eA US Core Fixed Inc Gross Median</i>				0.9	1.1	3.0	2.8	4.8	4.7	Nov-04
<i>eA US Core Fixed Inc Gross Rank</i>				53	38	78	68	43	60	Nov-04
<b>Value Added Fixed Income</b>	<b>69,665,903</b>	<b>7.8</b>	<b>7.8</b>	<b>1.9</b>	<b>10.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.8</b>	<b>Jan-16</b>
<i>50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans</i>				1.9	13.0	4.2	5.9	5.9	12.4	Jan-16
Eaton Vance High Yield	36,267,876	4.0	52.1	2.3	12.2	5.3	7.3	7.5	7.9	Apr-06
<i>BofA Merrill Lynch High Yield Master</i>				2.7	16.9	4.6	6.9	7.3	7.7	Apr-06
<i>eA US High Yield Fixed Inc Net Median</i>				2.3	13.8	3.8	6.1	6.7	7.1	Apr-06
<i>eA US High Yield Fixed Inc Net Rank</i>				54	66	7	13	16	15	Apr-06
THL Bank Loan Select Fund	33,398,027	3.7	47.9	1.5	9.6	4.6	6.0	--	6.0	Sep-10
<i>Credit Suisse Leveraged Loans</i>				1.2	9.7	3.7	4.9	4.2	5.1	Sep-10
<i>Bank Loan MStar MF Median</i>				1.1	9.1	3.3	4.4	3.8	4.7	Sep-10
<i>Bank Loan MStar MF Rank</i>				14	45	2	4	--	7	Sep-10

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>International Fixed Income</b>	<b>59,815,187</b>	<b>6.7</b>	<b>6.7</b>	<b>3.5</b>	<b>5.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.6</b>	<b>Jan-16</b>
<i>Global Fixed Income Policy</i>				3.2	3.8	3.0	3.1	--	8.3	Jan-16
McDonnell Foreign Bonds	25,363,154	2.8	42.4	2.2	-4.6	-2.3	-1.5	3.1	4.4	May-95
<i>Citi WGBI ex US</i>				2.0	-4.8	-2.6	-1.5	2.6	3.6	May-95
<i>eA All EAFE Fixed Inc Net Median</i>				2.7	0.3	-1.1	1.6	4.7	6.0	May-95
<i>eA All EAFE Fixed Inc Net Rank</i>				77	95	75	80	81	81	May-95
Franklin Templeton Emerging Market Bonds	34,452,033	3.8	57.6	4.4	13.8	4.1	4.8	6.7	7.2	May-06
<i>JP Morgan EMBI Global Diversified</i>				3.9	8.9	6.2	5.8	7.0	7.7	May-06
<i>eA Emg Mkt Fixed Inc Unhedged Net Median</i>				4.4	9.0	4.4	3.8	6.1	7.5	May-06
<i>eA Emg Mkt Fixed Inc Unhedged Net Rank</i>				52	11	55	23	35	63	May-06
<b>Private Equity</b>	<b>30,066,610</b>	<b>3.3</b>	<b>3.3</b>	<b>0.0</b>	<b>0.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.2</b>	<b>Jan-16</b>
<i>Cambridge Associates Fund of Funds Composite 1-Quarter Lag</i>				1.1	4.5	8.5	10.3	8.1	4.5	Jan-16
<b>Private Equity General</b>	<b>21,368,319</b>	<b>2.4</b>	<b>71.1</b>							
Lexington Capital Partners VII	4,103,044	0.5	19.2							
Euro Choice V Programme	4,018,501	0.4	18.8							
TRG Growth Partnership II	3,046,123	0.3	14.3							
Landmark Equity Partners XIV	2,380,257	0.3	11.1							
Siguler Guff Distressed Opportunities Fund III, LP	1,627,290	0.2	7.6							
Leeds Equity Partners V	1,874,463	0.2	8.8							
Leeds Equity Partners IV	1,041,368	0.1	4.9							
Mesirow Financial Capital partners VII, LP	879,934	0.1	4.1							
DN Partners II, LP	740,872	0.1	3.5							

## International Equity Assets

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Euro Choice II	293,248	0.0	1.4							
Charles River Partnership XI	159,622	0.0	0.7							
RIMCO Production Company	159,083	0.0	0.7							
Audax Mezzaine Debt IV	1,044,515	0.1	4.9							
<b>Venture Capital</b>	<b>8,698,291</b>	<b>1.0</b>	<b>28.9</b>							
Ascent Ventures V	4,498,796	0.5	51.7							
Globespan Capital V	3,307,214	0.4	38.0							
Ascend Ventures II	563,074	0.1	6.5							
Ascent Ventures IV	329,207	0.0	3.8							
<b>Real Estate</b>	<b>101,319,270</b>	<b>11.3</b>	<b>11.3</b>	<b>0.6</b>	<b>1.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	<b>Jan-16</b>
<i>NCREIF ODCE (net)</i>				1.5	7.4	10.8	10.9	4.6	7.5	Jan-16
<b>Core Real Estate</b>	<b>80,042,371</b>	<b>8.9</b>	<b>79.0</b>	<b>0.9</b>	<b>4.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	
<i>NCREIF ODCE (net)</i>				1.5	7.4	10.8	10.9	4.6	--	
PRISA I	35,938,545	4.0	44.9	1.3	7.3	11.3	11.1	4.2	6.7	Jun-04
<i>NCREIF ODCE (net)</i>				1.5	7.4	10.8	10.9	4.6	7.1	Jun-04
Invesco REIT	29,306,599	3.3	36.6	2.6	4.7	10.3	9.9	5.5	12.6	Dec-02
<i>Wilshire REIT</i>				0.0	2.0	10.2	9.8	4.4	11.1	Dec-02
Multi Employer Property Trust	14,797,226	1.6	18.5	1.3	6.5	10.2	9.6	3.9	6.6	Jan-00
<i>NCREIF ODCE (net)</i>				1.5	7.4	10.8	10.9	4.6	7.4	Jan-00

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Non-Core Real Estate</b>	<b>21,276,900</b>	<b>2.4</b>	<b>21.0</b>							
Mesirow Financial International Real Estate Fund I	6,277,619	0.7	29.5							
DSF Multi-Family Real Estate Fund III	5,044,854	0.6	23.7							
DSF Capital Partners IV	4,778,284	0.5	22.5							
New Boston Institutional Fund, LP VII	2,014,350	0.2	9.5							
Hunt Redevelopment & Renovation	1,663,082	0.2	7.8							
1921 Realty, Inc	947,566	0.1	4.5							
Berkshire Multifamily Value Fund II	412,324	0.0	1.9							
Intercontinental Real Estate Investment Fund IV	76,977	0.0	0.4							
Intercontinental Real Estate Investment Fund III	61,844	0.0	0.3							
<b>Real Assets</b>	<b>16,348,508</b>	<b>1.8</b>	<b>1.8</b>	<b>0.0</b>	<b>-5.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-2.9</b>	<b>Jan-16</b>
<i>CPI+3%</i>				<i>1.7</i>	<i>5.4</i>	<i>4.1</i>	<i>4.3</i>	<i>4.8</i>	<i>5.5</i>	<i>Jan-16</i>
Timbervest Partners III, LP	5,818,480	0.6	35.6							
JP Morgan Global Maritime Investment	5,153,667	0.6	31.5							
BTG Pactual Global Timberland Resources	3,937,049	0.4	24.1							
Global Infrastructure Partners III	1,439,312	0.2	8.8							

As of March 31, 2017

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Hedge Fund</b>	<b>29,064,995</b>	<b>3.2</b>	<b>3.2</b>	<b>4.9</b>	<b>10.3</b>	<b>3.5</b>	<b>5.4</b>	<b>--</b>	<b>4.8</b>	<b>Feb-10</b>
<i>HFRI Fund of Funds Composite Index</i>				2.4	6.2	1.8	3.2	1.2	2.7	Feb-10
ABS Offshore SPC - Global Segregated Portfolio	15,502,884	1.7	53.3	4.2	6.2	2.5	5.4	--	5.4	Aug-10
<i>HFRI Fund of Funds Composite Index</i>				2.4	6.2	1.8	3.2	1.2	3.0	Aug-10
Aetos Capital Prime Portfolio	7,993,390	0.9	27.5	2.7	8.0	2.5	4.4	--	3.8	Feb-10
<i>HFRI Fund of Funds Composite Index</i>				2.4	6.2	1.8	3.2	1.2	2.7	Feb-10
Entrust Special Opportunities Fund III, Ltd.	5,568,722	0.6	19.2	9.9	--	--	--	--	26.8	Oct-16
<i>HFRI Fund of Funds Composite Index</i>				2.4	6.2	1.8	3.2	1.2	3.3	Oct-16
<b>Cash and Cash Equivalent</b>	<b>2,675,362</b>	<b>0.3</b>	<b>0.3</b>							
Cash	2,675,362	0.3	100.0							

As of March 31, 2017

## Calendar Year Performance

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
<b>Domestic Equity Assets</b>	<b>14.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Russell 3000</i>	12.7	0.5	12.6	33.6	16.4	1.0	16.9	28.3	-37.3	5.1
Rhumblin Russell 1000 Value	17.1	-3.9	13.3	--	--	--	--	--	--	--
<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
Rhumblin Russell 1000 Growth	7.0	5.7	13.0	33.4	15.2	2.6	16.7	--	--	--
<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
Fisher Midcap Value	15.1	0.4	5.3	32.9	14.4	0.3	29.0	44.5	-40.6	--
<i>Russell MidCap Value</i>	20.0	-4.8	14.7	33.5	18.5	-1.4	24.8	34.2	-38.4	-1.4
Geneva Capital	2.2	4.5	6.0	--	--	--	--	--	--	--
<i>Russell MidCap Growth</i>	7.3	-0.2	11.9	35.7	15.8	-1.7	26.4	46.3	-44.3	11.4
Boston Company Small Growth	18.0	0.3	4.1	47.9	11.5	-0.1	25.0	--	--	--
<i>Russell 2000 Growth</i>	11.3	-1.4	5.6	43.3	14.6	-2.9	29.1	34.5	-38.5	7.0
Lee Munder Small Cap Value	28.3	0.4	5.0	33.9	15.6	--	--	--	--	--
<i>Russell 2000 Value</i>	31.7	-7.5	4.2	34.5	18.0	-5.5	24.5	20.6	-28.9	-9.8



## Total Retirement Association

As of March 31, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
<b>International Developed Market Equity Assets</b>	<b>1.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>MSCI EAFE</i>	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4	11.2
HGK TS International Equity	-1.1	2.8	-9.8	41.8	21.4	--	--	--	--	--
<i>MSCI EAFE</i>	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4	11.2
Denver Investments	0.8	4.4	-17.8	--	--	--	--	--	--	--
<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
KBI EAFE Master Account	2.3	-6.0	-2.7	19.4	18.3	-11.9	6.5	30.3	-42.5	7.0
<i>MSCI EAFE</i>	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4	11.2
<b>International Emerging Market Equity Assets</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<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
Lee Munder Emerging Markets	7.4	-18.5	0.9	--	--	--	--	--	--	--
<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

As of March 31, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
<b>Domestic Fixed Income</b>	<b>3.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>	3.0	0.3	4.7	-2.9	4.4	8.1	--	--	--	--
IR&M Core Bonds	3.8	0.2	5.6	-2.3	7.1	7.7	7.1	13.8	-2.6	11.7
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>	3.0	0.3	4.7	-2.9	4.4	8.1	--	--	--	--
<b>Value Added Fixed Income</b>	<b>11.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans</i>	13.5	-2.4	2.3	6.8	12.6	3.4	12.5	51.5	-27.3	1.9
Eaton Vance High Yield	13.9	-0.9	4.0	7.4	15.7	5.8	15.9	55.9	-27.5	2.7
<i>BofA Merrill Lynch High Yield Master</i>	17.5	-4.6	2.5	7.4	15.6	4.4	15.2	57.5	-26.4	2.2
THL Bank Loan Select Fund	9.8	1.3	2.7	7.7	12.4	0.1	--	--	--	--
<i>Credit Suisse Leveraged Loans</i>	9.9	-0.4	2.1	6.2	9.4	1.8	10.0	44.9	-28.8	1.9
<b>International Fixed Income</b>	<b>7.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Global Fixed Income Policy</i>	7.1	-1.3	3.7	-5.0	11.4	6.6	9.7	--	--	--
McDonnell Foreign Bonds	1.0	-6.8	-0.1	-6.3	2.4	7.7	9.0	4.1	10.4	10.9
<i>Citi WGBI ex US</i>	1.8	-5.5	-2.7	-4.6	1.5	5.2	5.2	4.4	10.1	11.5
Franklin Templeton Emerging Market Bonds	12.4	-2.4	-0.8	1.1	17.1	1.6	13.8	57.7	-27.6	11.1
<i>JP Morgan EMBI Global Diversified</i>	10.2	1.2	7.4	-5.3	17.4	7.3	12.2	29.8	-12.0	6.2

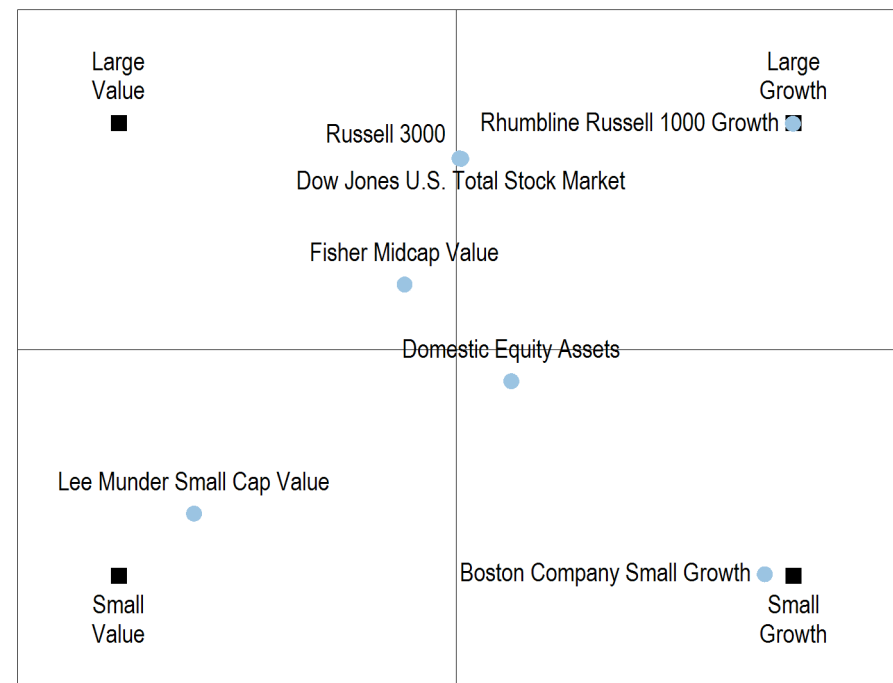
As of March 31, 2017

	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
<b>Core Real Estate</b>	<b>7.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>NCREIF ODCE (net)</i>	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.9
PRISA I	8.3	14.4	12.4	13.7	8.6	17.8	17.0	-34.9	-13.7	16.5
<i>NCREIF ODCE (net)</i>	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.9
Invesco REIT	7.0	2.6	29.6	2.6	18.0	9.5	24.4	30.8	-33.6	-15.4
<i>Wilshire REIT</i>	7.2	4.2	31.8	1.9	17.6	9.2	28.6	28.6	-39.2	-17.6
Multi Employer Property Trust	8.0	12.0	12.2	11.8	4.7	13.0	13.9	-28.9	-10.4	15.2
<i>NCREIF ODCE (net)</i>	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.9
<b>Hedge Fund</b>	<b>0.0</b>	<b>1.8</b>	<b>4.7</b>	<b>14.2</b>	<b>5.7</b>	<b>-2.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>HFRI Fund of Funds Composite Index</i>	0.5	-0.3	3.4	9.0	4.8	-5.7	5.7	11.5	-21.4	10.3
ABS Offshore SPC - Global Segregated Portfolio	-4.3	3.8	4.5	19.5	5.0	-3.1	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	0.5	-0.3	3.4	9.0	4.8	-5.7	5.7	11.5	-21.4	10.3
Aetos Capital Prime Portfolio	1.0	0.4	4.8	10.8	6.0	-2.8	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	0.5	-0.3	3.4	9.0	4.8	-5.7	5.7	11.5	-21.4	10.3
Entrust Special Opportunities Fund III, Ltd.	--	--	--	--	--	--	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	0.5	-0.3	3.4	9.0	4.8	-5.7	5.7	11.5	-21.4	10.3

Asset Allocation on March 31, 2017

	Actual	Actual
Rhumblin Russell 1000 Value	\$66,328,380	20.8%
Rhumblin Russell 1000 Growth	\$52,017,750	16.3%
Fisher Midcap Value	\$47,853,545	15.0%
Geneva Capital	\$37,900,592	11.9%
Boston Company Small Growth	\$47,029,313	14.8%
Lee Munder Small Cap Value	\$67,647,738	21.2%
<b>Total</b>	<b>\$318,777,317</b>	<b>100.0%</b>

Domestic Equity Assets Style Map  
3 Years Ending March 31, 2017

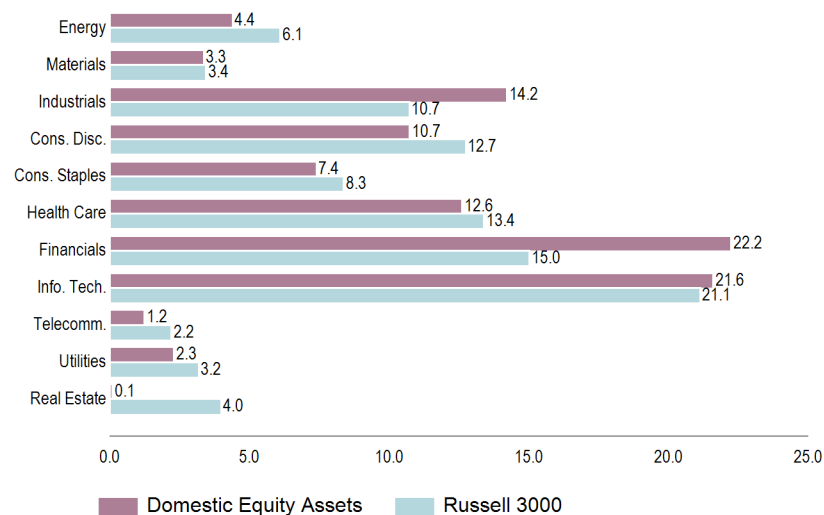


As of March 31, 2017

**Domestic Equity Assets Characteristics**

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	318.9	--
Number Of Holdings	1148	2943
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	54.8	127.3
Median Market Cap (\$B)	7.5	1.6
P/E Ratio	26.6	23.8
Yield	1.5	1.9
EPS Growth - 5 Yrs.	9.5	9.4
Price to Book	4.4	4.1
Beta (holdings; domestic)	1.1	1.0

**Sector Allocation (%) vs Russell 3000**



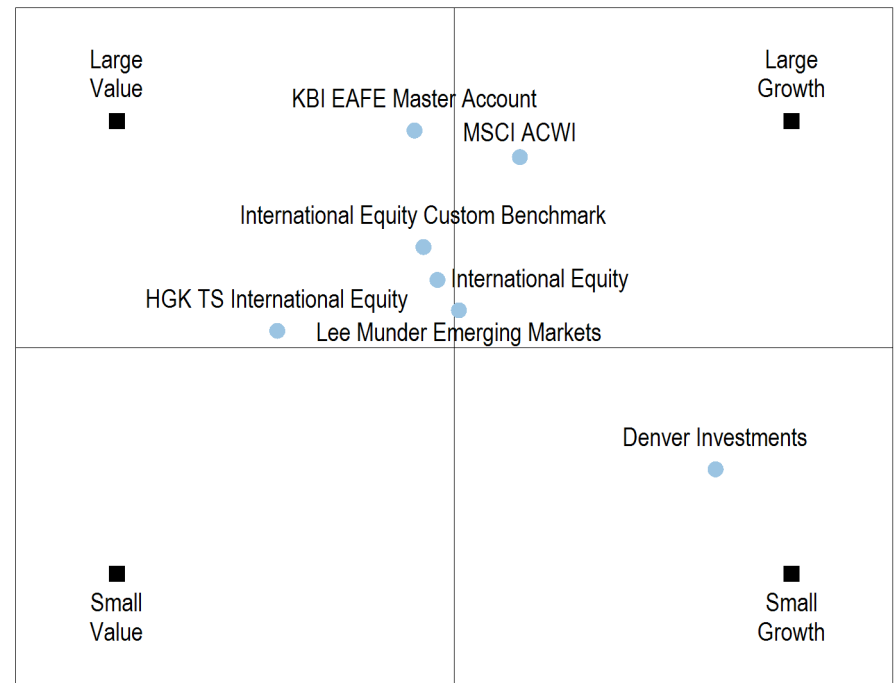
**Top 10 Holdings**

APPLE	1.2%
MICROSOFT	0.7%
RAYMOND JAMES FINL.	0.7%
EXXON MOBIL	0.6%
JOHNSON & JOHNSON	0.6%
HANCOCK HOLDING	0.6%
JP MORGAN CHASE & CO.	0.6%
SVB FINANCIAL GROUP	0.6%
BERKSHIRE HATHAWAY 'B'	0.6%
HENRY SCHEIN	0.6%
<b>Total</b>	<b>6.9%</b>

**Asset Allocation on March 31, 2017**

	Actual	Actual
Denver Investments	\$31,993,835	16.1%
HGK TS International Equity	\$52,105,220	26.3%
KBI EAFE Master Account	\$67,755,030	34.2%
Lee Munder Emerging Markets	\$46,403,981	23.4%
<b>Total</b>	<b>\$198,258,066</b>	<b>100.0%</b>

**International Equity Style Map  
3 Years Ending March 31, 2017**

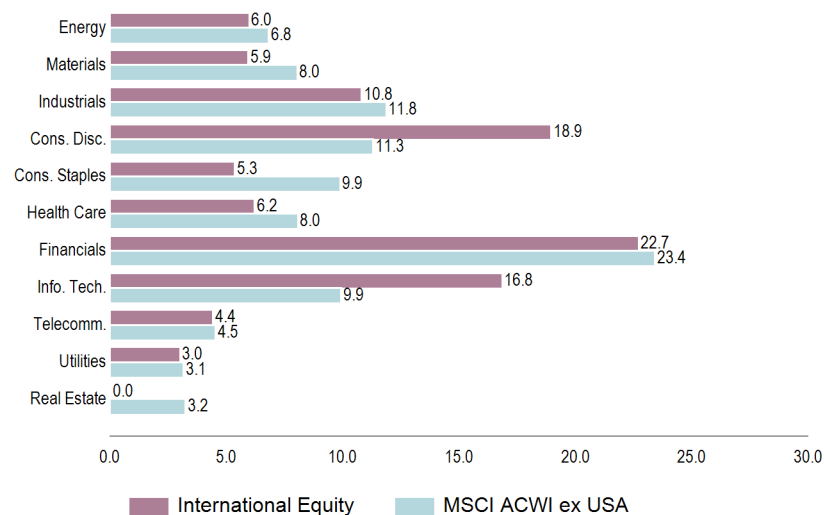


As of March 31, 2017

International Equity Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	198.3	--
Number Of Holdings	356	1853
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	42.6	53.1
Median Market Cap (\$B)	7.9	7.3
P/E Ratio	18.9	20.7
Yield	3.2	2.9
EPS Growth - 5 Yrs.	11.2	4.8
Price to Book	2.8	2.5
Beta (holdings; domestic)	1.0	1.1

Sector Allocation (%) vs MSCI ACWI ex USA



Top 10 Holdings

NIPPON TELG. & TEL.	1.5%
SAMSUNG ELECTRONICS	1.5%
TAIWAN SEMICON.MNFG.	1.4%
ALIBABA GROUP HLDG.SPN. ADR 1:1	1.3%
DAIMLER	1.2%
CARNIVAL	1.2%
TELENOR	1.2%
SIEMENS	1.2%
MEDIASET ESPANA COMUNICACION	1.2%
TENCENT HOLDINGS	1.2%
<b>Total</b>	<b>12.9%</b>

As of March 31, 2017

## International Equity Region Allocation

vs MSCI ACWI ex USA

Region	% of Total	% of Bench	% Diff
North America ex U.S.	2.3%	6.9%	-4.6%
United States	1.6%	0.0%	1.6%
Europe Ex U.K.	25.2%	31.6%	-6.4%
United Kingdom	9.2%	12.4%	-3.3%
Pacific Basin Ex Japan	12.3%	8.8%	3.5%
Japan	16.3%	16.3%	-0.1%
Emerging Markets	31.8%	23.3%	8.5%
Other	1.4%	0.7%	0.7%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>



Fixed Income Assets

As of March 31, 2017

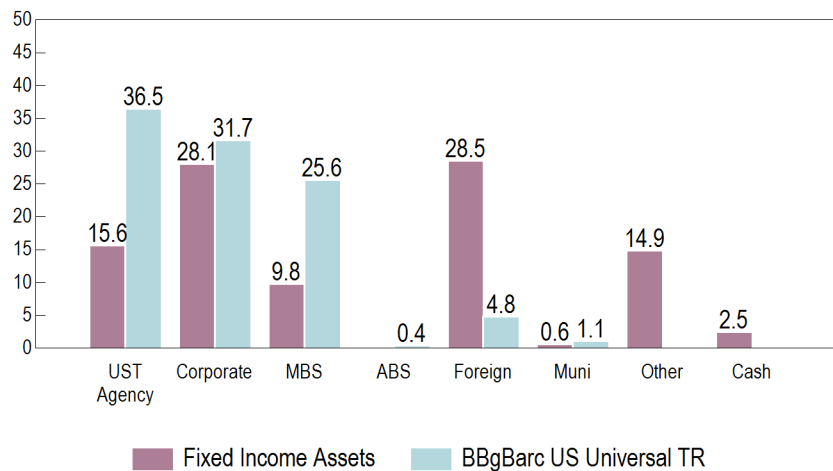
Asset Allocation on March 31, 2017

	Actual	Actual
Eaton Vance High Yield	\$36,267,876	18.0%
Franklin Templeton Emerging Market Bonds	\$34,452,033	17.1%
IR&M Core Bonds	\$72,210,763	35.8%
McDonnell Foreign Bonds	\$25,363,154	12.6%
THL Bank Loan Select Fund	\$33,398,027	16.6%
<b>Total</b>	<b>\$201,691,853</b>	<b>100.0%</b>

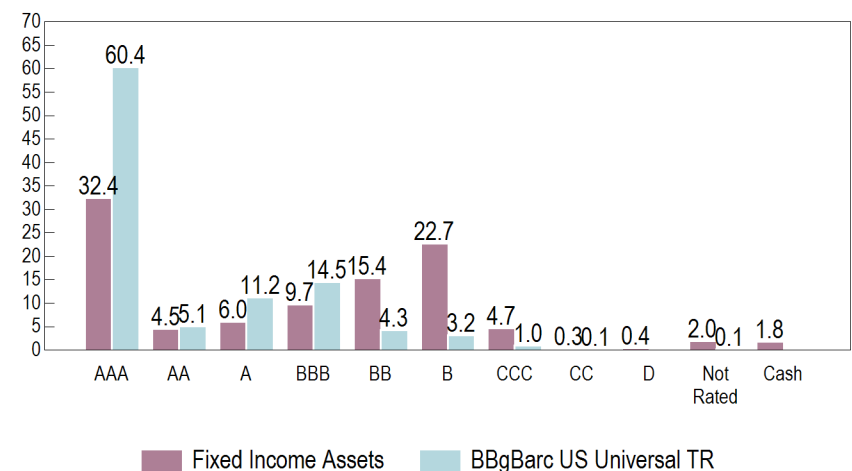
Fixed Income Assets Characteristics  
vs. BBgBarc US Universal TR

	Portfolio Q1-17	Index Q1-17
<b>Fixed Income Characteristics</b>		
Yield to Maturity	4.5	2.9
Average Duration	4.5	5.8
Average Quality	BBB	AA
Weighted Average Maturity	7.3	11.9

Sector Allocation



Credit Quality Allocation



## Private Market Assets

As of March 31, 2017

Partnership	Commitment	Total Contributions	Total Distributions	Adjusted Value	Net IRR <sup>1</sup>	Net Multiple
Landmark Equity Partners XIV, L.P.	6,000,000	5,697,943	4,986,462	2,380,257	10.8%	1.3x
Lexington Capital Partners VII, L.P.	10,000,000	10,307,492	10,495,735	4,103,044	15.0%	1.4x
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	1,349,056	879,934	-6.9%	0.6x
Ascend Ventures II, L.P.	2,500,000	2,324,355	235,385	563,074	-11.7%	0.3x
Ascent Venture Partners IV, L.P.	2,500,000	2,502,219	388,970	329,207	-18.1%	0.3x
Charles River Partnership XI, L.P.	1,839,000	1,820,323	1,936,362	159,622	3.2%	1.2x
Ascent Venture Partners V, L.P.	5,000,000	4,804,731	3,036,252	4,498,796	11.7%	1.6x
DN Partners II, L.P.	5,000,000	2,294,879	0	740,872	-18.2%	0.3x
Euro Choice II, L.P.	4,650,750	1,202,672	2,578,122	293,248	14.2%	2.4x
Euro Choice V, L.P.	5,688,655	4,753,791	1,280,060	4,018,501	5.6%	1.1x
Globespan Capital Partners V, L.P.	5,000,000	4,667,500	4,646,458	3,307,214	10.5%	1.7x
Leeds Equity Partners IV, L.P.	5,000,000	5,042,908	5,234,258	1,041,368	3.5%	1.2x
Leeds Equity Partners V, L.P.	2,500,000	3,567,250	2,774,782	1,874,463	10.4%	1.3x
Rimco Production Company, Inc	2,000,000	2,000,000	7,442,525	159,083	29.1%	3.8x
Siguler Guff Distressed Opportunities Fund III, L.	6,000,000	5,820,000	7,237,778	1,627,290	10.1%	1.5x
TRG Growth Partnership II, L.P.	7,500,000	7,405,074	6,179,643	3,046,123	5.0%	1.2x
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	0	0	0	NM	NM
Audax Mezzanine Fund IV, L.P.	10,000,000	1,114,150	0	1,044,515	NM	NM
<b>Total Plymouth County - PE</b>	<b>95,178,406</b>	<b>69,166,018</b>	<b>59,801,849</b>	<b>30,066,610</b>		<b>1.3x</b>

## Private Market Assets

As of March 31, 2017

Partnership	Commitment	Total Contributions	Total Distributions	Adjusted Value	Net IRR <sup>1</sup>	Net Multiple
Intercontinental Real Estate Investment Fund IV, L	4,000,000	4,557,108	2,369,303	76,977	-8.0%	0.5x
Multi-Employer Property Trust	5,000,000	5,000,000	0	14,797,226	6.5%	3.0x
PRISA I	14,995,000	17,227,013	0	35,938,545	6.5%	2.1x
Berkshire Multifamily Value Fund II, L.P.	10,000,000	11,258,620	17,542,148	412,324	11.0%	1.6x
DSF Capital Partners IV, L.P.	5,000,000	5,000,000	876,515	4,778,284	4.0%	1.1x
Hunt Redevelopment and Renovation Fund, LLC	10,000,000	8,971,078	9,809,307	1,663,082	4.8%	1.3x
Intercontinental Real Estate Investment Fund III,	4,000,000	4,583,128	5,605,251	61,844	2.4%	1.2x
Invesco Equity Real Estate Securities Trust	22,000,000	23,711,519	13,000,000	29,306,599	8.5%	1.8x
Real Estate International Partnership Fund I, L.P.	15,000,000	12,674,036	6,947,855	6,277,619	0.8%	1.0x
New Boston Institutional Fund, L.P. VII	5,000,000	3,012,998	1,850,020	2,014,350	5.4%	1.3x
1921 Realty, Inc.	5,000,000	5,378,194	0	947,566	-18.0%	0.2x
DSF Multi-Family Real Estate Fund III, L.P.	15,000,000	5,175,831	0	5,044,854	-5.5%	1.0x
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	0	0	0	NM	NM
<b>Total Plymouth County - RE</b>	<b>139,995,001</b>	<b>106,717,885</b>	<b>58,000,399</b>	<b>101,319,270</b>		<b>1.5x</b>

Partnership	Commitment	Total Contributions	Total Distributions	Adjusted Value	Net IRR <sup>1</sup>	Net Multiple
BTG Pactual Global Timberland Resources Fund, LLC	5,384,196	5,043,536	108,722	3,937,049	-5.7%	0.8x
Global Infrastructure Partners III, L.P.	10,000,000	1,872,068	189,465	1,439,312	-25.2%	0.9x
JPMorgan Global Maritime Investment	10,000,000	8,807,967	797,538	5,153,667	-16.0%	0.7x
Timbervest Partners III, L.P.	5,000,000	5,000,000	250,000	5,818,480	4.5%	1.2x
<b>Total Plymouth County - RA</b>	<b>30,384,197</b>	<b>20,750,725</b>	<b>1,345,725</b>	<b>16,348,508</b>	<b>-5.2%</b>	<b>0.9x</b>

As of March 31, 2017

## Account Information

Account Name	Rhumbline Russell 1000 Value
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	4/30/13
Account Type	US Equity
Benchmark	Russell 1000 Value
Universe	eA US Large Cap Value Equity Net

## Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Return	Since
	(%)	(%)	(%)	(%)	(%)	(%)	
Rhumbline Russell 1000 Value	3.3	19.0	8.5	--	--	11.5	Apr-13
<i>Russell 1000 Value</i>	3.3	19.2	8.7	13.1	5.9	11.6	Apr-13
<i>eA US Large Cap Value Equity Net Median</i>	3.9	17.0	7.8	12.2	6.4	11.1	Apr-13
<i>eA US Large Cap Value Equity Net Rank</i>	68	29	31	--	--	42	Apr-13

## Top 10 Holdings

EXXON MOBIL	3.0%
JP MORGAN CHASE & CO.	2.8%
BERKSHIRE HATHAWAY 'B'	2.8%
JOHNSON & JOHNSON	2.5%
AT&T	2.3%
WELLS FARGO & CO	2.3%
BANK OF AMERICA	2.2%
PROCTER & GAMBLE	2.0%
GENERAL ELECTRIC	2.0%
CHEVRON	1.8%
<b>Total</b>	<b>23.7%</b>

## Rhumbline Russell 1000 Value Characteristics

	Portfolio	Index
	Q1-17	Q1-17
<b>Market Value</b>		
Market Value (\$M)	66.3	--
Number Of Holdings	692	692
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	115.4	115.4
Median Market Cap (\$B)	8.4	8.3
P/E Ratio	22.2	21.1
Yield	2.4	2.4
EPS Growth - 5 Yrs.	5.7	4.8
Price to Book	2.3	2.5
Beta (holdings; domestic)	1.0	1.0
<b>Sector Distribution</b>		
Energy	12.0	12.2
Materials	3.2	3.0
Industrials	10.2	10.0
Consumer Discretionary	4.8	4.5
Consumer Staples	8.5	8.5
Health Care	10.4	10.8
Financials	30.5	26.5
Information Technology	10.1	10.0
Telecommunication Services	3.7	3.6
Utilities	6.4	6.2
Real Estate	0.2	4.6

As of March 31, 2017

## Account Information

Account Name	Rhumblin Russell 1000 Growth
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	7/31/09
Account Type	US Equity
Benchmark	Russell 1000 Growth
Universe	eA US Large Cap Growth Equity Net

## Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Return	Since
	(%)	(%)	(%)	(%)	(%)	(%)	
Rhumblin Russell 1000 Growth	8.9	15.6	11.2	13.2	--	15.0	Jul-09
Russell 1000 Growth	8.9	15.8	11.3	13.3	9.1	15.2	Jul-09
eA US Large Cap Growth Equity Net Median	8.9	14.6	9.4	11.8	8.2	13.7	Jul-09
eA US Large Cap Growth Equity Net Rank	51	38	13	17	--	16	Jul-09

## Top 10 Holdings

APPLE	6.3%
MICROSOFT	4.4%
AMAZON.COM	3.0%
FACEBOOK CLASS A	2.8%
ALPHABET 'A'	2.2%
ALPHABET 'C'	2.2%
WALT DISNEY	1.6%
HOME DEPOT	1.6%
VISA 'A'	1.5%
COMCAST 'A'	1.5%
<b>Total</b>	<b>27.1%</b>

## Rhumble Russell 1000 Growth Characteristics

	Portfolio	Index
	Q1-17	Q1-17
<b>Market Value</b>		
Market Value (\$M)	52.0	--
Number Of Holdings	607	609
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	160.1	159.7
Median Market Cap (\$B)	9.3	9.3
P/E Ratio	26.9	26.2
Yield	1.5	1.5
EPS Growth - 5 Yrs.	13.4	12.8
Price to Book	7.5	7.1
Beta (holdings; domestic)	1.0	1.0
<b>Sector Distribution</b>		
Energy	0.4	0.5
Materials	3.4	3.5
Industrials	11.0	10.7
Consumer Discretionary	21.2	20.9
Consumer Staples	9.1	9.1
Health Care	15.7	15.9
Financials	3.8	2.8
Information Technology	32.9	32.7
Telecommunication Services	1.8	1.0
Utilities	0.1	0.0
Real Estate	0.1	2.7

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## Account Information

Account Name	Fisher Midcap Value
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/30/07
Account Type	US Equity
Benchmark	Russell MidCap Value
Universe	eA US Mid Cap Value Equity Net

## Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Return	Since
	(%)	(%)	(%)	(%)	(%)	(%)	
Fisher Midcap Value	6.2	22.2	7.5	10.8	--	7.2	Apr-07
<i>Russell MidCap Value</i>	3.8	19.8	8.9	14.1	7.5	7.2	Apr-07
<i>eA US Mid Cap Value Equity Net Median</i>	3.6	19.3	8.3	12.7	7.9	7.4	Apr-07
<i>eA US Mid Cap Value Equity Net Rank</i>	10	16	72	90	--	62	Apr-07

## Top 10 Holdings

SVB FINANCIAL GROUP	3.8%
PRESTIGE BRANDS HOLDINGS	2.9%
RAYMOND JAMES FINL.	2.9%
EQUIFAX	2.9%
FIRST REPUBLIC BANK	2.9%
HENRY SCHEIN	2.6%
AUTODESK	2.4%
PERKINELMER	2.1%
E*TRADE FINANCIAL	2.1%
FIDELITY NAT.INFO.SVS.	2.1%
<b>Total</b>	<b>26.7%</b>

## Fisher Midcap Value Characteristics

	Portfolio	Index
	Q1-17	Q1-17
<b>Market Value</b>		
Market Value (\$M)	47.9	--
Number Of Holdings	70	565
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	11.1	13.7
Median Market Cap (\$B)	8.9	6.4
P/E Ratio	26.8	21.0
Yield	1.2	2.2
EPS Growth - 5 Yrs.	12.1	7.2
Price to Book	3.4	2.4
Beta (holdings; domestic)	1.1	1.1
<b>Sector Distribution</b>		
Energy	2.4	9.6
Materials	0.5	6.4
Industrials	12.9	12.6
Consumer Discretionary	9.0	8.6
Consumer Staples	6.0	3.3
Health Care	13.0	4.1
Financials	37.5	19.7
Information Technology	18.7	9.5
Telecommunication Services	0.0	1.2
Utilities	0.0	11.2
Real Estate	0.0	13.8

## Account Information

Account Name	Geneva Capital
Account Structure	Separate Account
Investment Style	Active
Inception Date	4/30/13
Account Type	US Equity
Benchmark	Russell MidCap Growth
Universe	eA US Mid Cap Growth Equity Gross

## Portfolio Performance Summary

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Return	Since
	(%)	(%)	(%)	(%)	(%)	(%)	
Geneva Capital	6.4	9.4	6.1	--	--	9.5	Apr-13
<i>Russell MidCap Growth</i>	6.9	14.1	7.9	12.0	8.1	11.6	Apr-13
<i>eA US Mid Cap Growth Equity Gross Median</i>	7.8	15.3	7.1	11.3	9.0	11.5	Apr-13
<i>eA US Mid Cap Growth Equity Gross Rank</i>	82	93	72	--	--	88	Apr-13

## Top 10 Holdings

AMPHENOL 'A'	3.0%
FISERV	3.0%
O REILLY AUTOMOTIVE	2.9%
C R BARD	2.6%
CHURCH & DWIGHT CO.	2.5%
MIDDLEBY	2.5%
PANERA BREAD 'A'	2.4%
INTERCONTINENTAL EX.	2.4%
GARTNER 'A'	2.4%
TYLER TECHNOLOGIES	2.3%
<b>Total</b>	<b>25.9%</b>

## Geneva Capital Characteristics

	Portfolio	Index
	Q1-17	Q1-17
<b>Market Value</b>		
Market Value (\$M)	37.9	--
Number Of Holdings	53	470
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	11.8	14.2
Median Market Cap (\$B)	9.0	7.1
P/E Ratio	31.9	29.6
Yield	0.6	1.1
EPS Growth - 5 Yrs.	14.6	12.7
Price to Book	6.9	6.2
Beta (holdings; domestic)	1.0	1.0
<b>Sector Distribution</b>		
Energy	0.0	1.3
Materials	0.0	5.1
Industrials	24.9	14.8
Consumer Discretionary	12.3	23.0
Consumer Staples	4.2	7.1
Health Care	20.4	15.6
Financials	10.3	5.4
Information Technology	27.9	22.3
Telecommunication Services	0.0	0.2
Utilities	0.0	0.0
Real Estate	0.0	5.1

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## Account Information

Account Name	Boston Company Small Growth
Account Structure	Separate Account
Investment Style	Active
Inception Date	8/31/09
Account Type	US Equity
Benchmark	Russell 2000 Growth
Universe	eA US Small Cap Growth Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Boston Company Small Growth	3.4	28.1	6.6	12.6	--	14.0	Aug-09
<i>Russell 2000 Growth</i>	5.3	23.0	6.7	12.1	8.1	14.5	Aug-09
<i>eA US Small Cap Growth Equity Net Median</i>	6.1	22.4	6.3	11.9	7.9	14.8	Aug-09
<i>eA US Small Cap Growth Equity Net Rank</i>	86	14	47	40	--	69	Aug-09

## Top 10 Holdings

MERCURY SYSTEMS	2.7%
US.LIME & MINERALS	2.5%
IMPINJ ORD	2.4%
POWER INTEGRATIONS	2.4%
INPHI	2.3%
NATIONAL BANK HDG.CL.A	2.2%
SHOPIFY SUBD.VTG.SHS.'A'	2.2%
MIMECAST	2.1%
PANHANDLE OIL & GAS	2.1%
MAXLINEAR 'A'	2.1%
<b>Total</b>	<b>22.9%</b>

## Boston Company Small Growth Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	47.0	--
Number Of Holdings	74	1157
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	1.6	2.4
Median Market Cap (\$B)	1.5	0.9
P/E Ratio	37.3	29.9
Yield	0.5	0.7
EPS Growth - 5 Yrs.	9.3	10.4
Price to Book	5.1	4.8
Beta (holdings; domestic)	1.3	1.3
<b>Sector Distribution</b>		
Energy	4.1	1.2
Materials	6.0	5.5
Industrials	7.8	15.9
Consumer Discretionary	11.2	14.8
Consumer Staples	8.5	3.0
Health Care	16.0	21.8
Financials	10.2	5.7
Information Technology	36.2	25.0
Telecommunication Services	0.0	0.8
Utilities	0.0	0.8
Real Estate	0.0	5.4





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## Account Information

Account Name	Lee Munder Small Cap Value
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	3/31/11
Account Type	US Equity
Benchmark	Russell 2000 Value
Universe	eA US Small Cap Value Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Lee Munder Small Cap Value	1.4	23.6	9.7	12.3	--	10.2	Mar-11
Russell 2000 Value	-0.1	29.4	7.6	12.5	6.1	10.2	Mar-11
eA US Small Cap Value Equity Net Median	0.5	23.4	7.7	12.6	7.3	10.6	Mar-11
eA US Small Cap Value Equity Net Rank	33	49	13	53	--	57	Mar-11

## Top 10 Holdings

TREEHOUSE FOODS	2.6%
STERLING BANCORP	2.4%
MURPHY USA	2.1%
BLACKHAWK NETWORK HDG.	2.0%
IBERIABANK	1.9%
BLACKSTONE MGE.TST.CL.A	1.9%
HANCOCK HOLDING	1.9%
BANKUNITED	1.9%
SLM	1.9%
HORACE MANN EDUCATORS	1.7%
<b>Total</b>	<b>20.2%</b>

## Lee Munder Small Cap Value Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	67.6	--
Number Of Holdings	93	1352
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	3.2	2.1
Median Market Cap (\$B)	2.6	0.7
P/E Ratio	22.5	20.8
Yield	1.7	1.7
EPS Growth - 5 Yrs.	4.2	5.3
Price to Book	2.6	1.8
Beta (holdings; domestic)	1.1	1.2
<b>Sector Distribution</b>		
Energy	3.8	5.5
Materials	5.3	4.8
Industrials	20.1	12.8
Consumer Discretionary	8.4	9.8
Consumer Staples	6.9	2.8
Health Care	5.5	4.7
Financials	32.1	32.8
Information Technology	12.9	10.3
Telecommunication Services	0.7	0.6
Utilities	4.3	6.3
Real Estate	0.0	9.5

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## Account Information

Account Name	HGK TS International Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/28/11
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eA EAFE All Cap Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
HGK TS International Equity	10.5	11.3	0.2	9.0	--	5.6	Feb-11
MSCI EAFE	7.2	11.7	0.5	5.8	1.1	3.4	Feb-11
eA EAFE All Cap Equity Net Median	7.3	10.7	1.4	6.4	1.7	4.8	Feb-11
eA EAFE All Cap Equity Net Rank	3	45	74	12	--	24	Feb-11

## Top 10 Holdings

CARNIVAL	9.8%
NIPPON TELG. & TEL.	9.7%
MEDIASET ESPANA COMUNICACION	9.4%
MURATA MANUFACTURING	9.1%
HENDERSON LD.DEV.	9.1%
COPA HOLDINGS S A	8.8%
DONG ENERGY ORD	8.5%
FERROVIAL	8.2%
TOYOTA MOTOR	8.2%
CONTINENTAL	7.3%
<b>Total</b>	<b>88.0%</b>

## HGK TS International Equity Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	52.1	--
Number Of Holdings	12	929
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	56.0	53.0
Median Market Cap (\$B)	27.3	9.4
P/E Ratio	19.2	21.2
Yield	2.1	3.0
EPS Growth - 5 Yrs.	23.1	3.5
Price to Book	2.6	2.4
Beta (holdings; global)	1.3	1.1
<b>Sector Distribution</b>		
Energy	5.8	5.0
Materials	0.0	8.0
Industrials	17.0	14.3
Consumer Discretionary	34.7	12.2
Consumer Staples	0.0	11.4
Health Care	0.0	10.7
Financials	9.1	21.3
Information Technology	15.3	5.7
Telecommunication Services	9.7	4.4
Utilities	8.5	3.4
Real Estate	0.0	3.7



As of March 31, 2017

## Account Information

Account Name	Denver Investments
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	10/31/13
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE Small Cap
Universe	eA EAFE Small Cap Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Denver Investments	6.4	6.3	-2.1	--	--	-1.3	Oct-13
MSCI EAFE Small Cap	8.0	11.0	3.6	9.2	3.0	5.0	Oct-13
eA EAFE Small Cap Equity Net Median	8.6	12.3	4.2	10.0	3.6	5.5	Oct-13
eA EAFE Small Cap Equity Net Rank	92	90	99	--	--	99	Oct-13

## Top 10 Holdings

CORPORATE TRVL.MAN.(OTC)	5.4%
JAPAN PROPERTY MAN.CZ.	5.1%
CONSTELLATION SOFTWARE	4.9%
ARCLAND SERVICE (OTC)	4.7%
MAGIC SOFTWARE ENTS. (NAS)	4.7%
CHINA MED.SY.HDG.(DI)	4.7%
WEBJET (OTC)	4.6%
INGENICO GROUP (OTC)	4.6%
RIGHTMOVE (OTC)	4.6%
TSURUHA HOLDINGS (OTC)	4.4%
<b>Total</b>	<b>47.7%</b>

## Denver Investments Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	32.0	--
Number Of Holdings	27	2218
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	2.5	2.4
Median Market Cap (\$B)	1.6	1.0
P/E Ratio	28.5	20.2
Yield	2.0	2.3
EPS Growth - 5 Yrs.	22.3	9.9
Price to Book	6.9	2.5
Beta (holdings; global)	0.8	1.1
<b>Sector Distribution</b>		
Energy	0.0	2.8
Materials	0.0	9.4
Industrials	6.3	22.1
Consumer Discretionary	32.6	15.8
Consumer Staples	4.4	6.7
Health Care	9.6	7.2
Financials	10.9	11.4
Information Technology	36.2	10.8
Telecommunication Services	0.0	1.1
Utilities	0.0	2.0
Real Estate	0.0	10.7

As of March 31, 2017

## Account Information

Account Name	KBI EAFE Master Account
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	7/31/05
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eA EAFE Core Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
KBI EAFE Master Account	7.9	12.3	-0.4	5.4	0.2	3.7	Jul-05
MSCI EAFE	7.2	11.7	0.5	5.8	1.1	4.3	Jul-05
eA EAFE Core Equity Net Median	7.7	10.8	1.2	7.0	1.9	4.8	Jul-05
eA EAFE Core Equity Net Rank	43	23	82	78	95	86	Jul-05

## Top 10 Holdings

DAIMLER	3.0%
TELENOR	2.9%
SIEMENS	2.9%
ROCHE HOLDING	2.8%
ASSICURAZIONI GENERALI	2.5%
NORDEA BANK	2.4%
BERKELEY GROUP HDG.(THE)	2.3%
COMMONWEALTH BK.OF AUS.	2.3%
REPSOL YPF	2.1%
UPM-KYMMENE	2.1%
<b>Total</b>	<b>25.3%</b>

## KBI EAFE Master Account Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	67.8	--
Number Of Holdings	235	929
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	42.2	53.0
Median Market Cap (\$B)	8.7	9.4
P/E Ratio	18.3	21.2
Yield	4.0	3.0
EPS Growth - 5 Yrs.	5.1	3.5
Price to Book	2.4	2.4
Beta (holdings; global)	1.1	1.1
<b>Sector Distribution</b>		
Energy	5.4	5.0
Materials	7.8	8.0
Industrials	14.0	14.3
Consumer Discretionary	16.0	12.2
Consumer Staples	6.6	11.4
Health Care	9.2	10.7
Financials	26.8	21.3
Information Technology	5.6	5.7
Telecommunication Services	5.5	4.4
Utilities	3.0	3.4
Real Estate	0.0	3.7

As of March 31, 2017

## Account Information

Account Name	Lee Munder Emerging Markets
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	9/30/13
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eA Emg Mkts Equity Net

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Lee Munder Emerging Markets	11.4	14.7	-0.2	--	--	-0.5	Sep-13
MSCI Emerging Markets	11.4	17.2	1.2	0.8	2.7	1.4	Sep-13
eA Emg Mkts Equity Net Median	12.2	17.2	2.1	2.1	3.4	2.2	Sep-13
eA Emg Mkts Equity Net Rank	70	71	85	--	--	92	Sep-13

## Top 10 Holdings

SAMSUNG ELECTRONICS	4.8%
TAIWAN SEMICON.MNFG.	4.2%
TENCENT HOLDINGS	3.7%
HON HAI PRECN.IND.	2.2%
CHINA CON.BANK 'H'	2.2%
ALIBABA GROUP HLDG.SPN. ADR 1:1	1.7%
ITAU UNIBANCO HOLDING PN	1.6%
GEELY AUTOMOBILE HDG.	1.6%
BANK OF CHINA 'H'	1.5%
CHINA MOBILE	1.5%
<b>Total</b>	<b>25.2%</b>

## Lee Munder Emerging Markets Characteristics

	Portfolio Q1-17	Index Q1-17
<b>Market Value</b>		
Market Value (\$M)	46.4	--
Number Of Holdings	119	830
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	54.9	56.9
Median Market Cap (\$B)	8.3	5.1
P/E Ratio	15.5	19.4
Yield	3.1	2.4
EPS Growth - 5 Yrs.	10.3	9.3
Price to Book	2.7	2.7
Beta (holdings; global)	0.9	0.9
<b>Sector Distribution</b>		
Energy	9.5	7.3
Materials	8.6	7.4
Industrials	6.1	5.9
Consumer Discretionary	10.1	10.4
Consumer Staples	6.2	7.0
Health Care	3.0	2.4
Financials	28.3	24.2
Information Technology	23.2	24.4
Telecommunication Services	2.8	5.7
Utilities	2.2	2.8
Real Estate	0.0	2.6

Account Information

Account Name	IR&M Core Bonds
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	11/30/04
Account Type	US Fixed Income Investment Grade
Benchmark	75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year
Universe	eA US Core Fixed Inc Gross

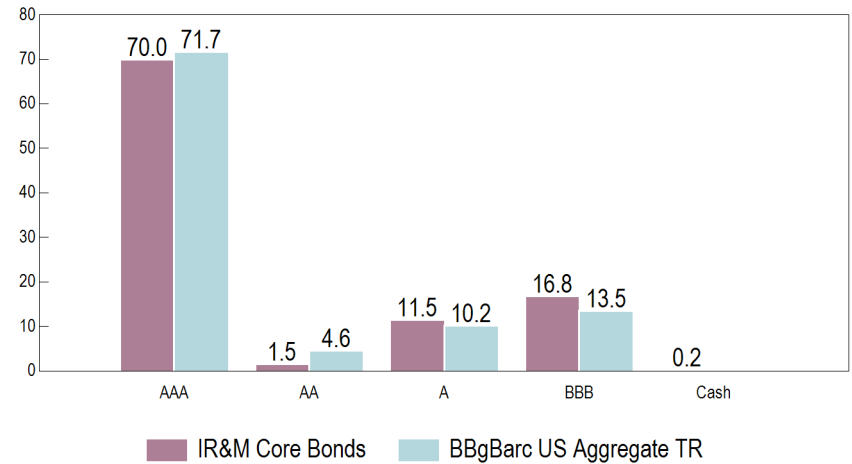
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
IR&M Core Bonds	0.9	1.2	2.5	2.4	4.7	4.3	Nov-04
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year	0.9	0.7	2.4	1.9	--	--	Nov-04
eA US Core Fixed Inc Gross Median	0.9	1.1	3.0	2.8	4.8	4.7	Nov-04
eA US Core Fixed Inc Gross Rank	65	45	91	83	66	84	Nov-04

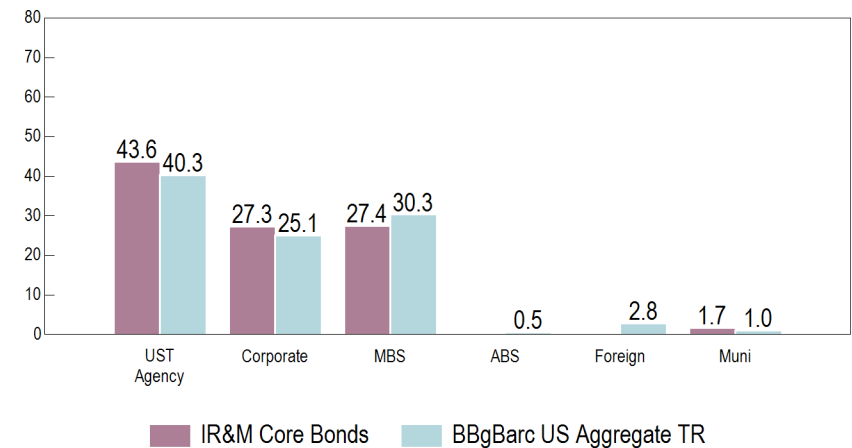
IR&M Core Bonds Characteristics vs. BBgBarc US Aggregate TR

	Portfolio Q1-17	Index Q1-17
Fixed Income Characteristics		
Yield to Maturity	2.2	2.5
Average Duration	5.8	6.0
Average Quality	AA	AA
Weighted Average Maturity	8.0	12.9

Credit Quality Allocation



Sector Allocation



**Account Information**

Account Name	<b>Eaton Vance High Yield</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>4/30/06</b>
Account Type	<b>US Fixed Income High Yield</b>
Benchmark	<b>BofA Merrill Lynch High Yield Master</b>
Universe	<b>eA US High Yield Fixed Inc Net</b>

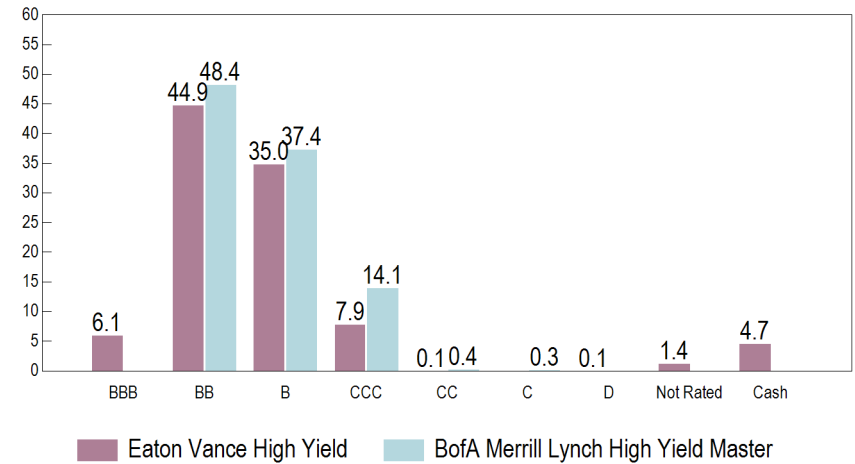
**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Eaton Vance High Yield	2.1	11.6	4.7	6.7	7.0	7.4	Apr-06
BofA Merrill Lynch High Yield Master	2.7	16.9	4.6	6.9	7.3	7.7	Apr-06
eA US High Yield Fixed Inc Net Median	2.3	13.8	3.8	6.1	6.7	7.1	Apr-06
eA US High Yield Fixed Inc Net Rank	64	70	20	26	36	30	Apr-06

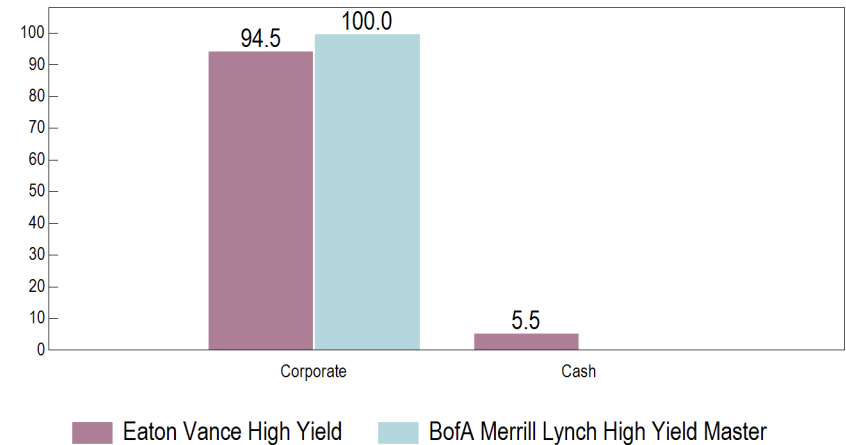
**Eaton Vance High Yield Characteristics vs. BofA Merrill Lynch High Yield Master**

	Portfolio Q1-17	Index Q1-17
<b>Fixed Income Characteristics</b>		
Yield to Maturity	5.4	6.2
Average Duration	3.2	4.8
Average Quality	BB	B
Weighted Average Maturity	5.8	6.3

**Credit Quality Allocation**



**Sector Allocation**



**Account Information**

Account Name	<b>THL Bank Loan Select Fund</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>9/30/10</b>
Account Type	<b>US Fixed Income High Yield</b>
Benchmark	<b>Credit Suisse Leveraged Loans</b>
Universe	<b>Bank Loan MStar MF</b>

**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
THL Bank Loan Select Fund	1.5	9.6	4.6	6.0	--	6.0	Sep-10
<i>Credit Suisse Leveraged Loans</i>	1.2	9.7	3.7	4.9	4.2	5.1	Sep-10
<i>Bank Loan MStar MF Median</i>	1.1	9.1	3.3	4.4	3.8	4.7	Sep-10
<i>Bank Loan MStar MF Rank</i>	14	45	2	4	--	7	Sep-10

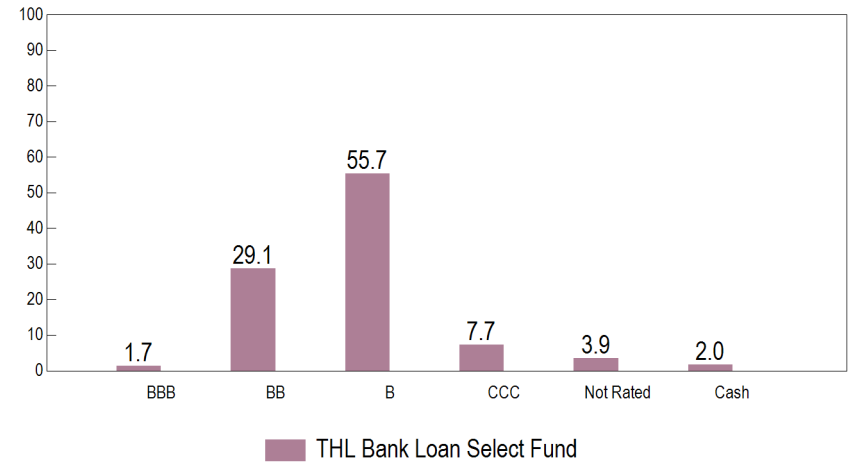
**THL Bank Loan Select Fund Characteristics**

Portfolio  
Q1-17

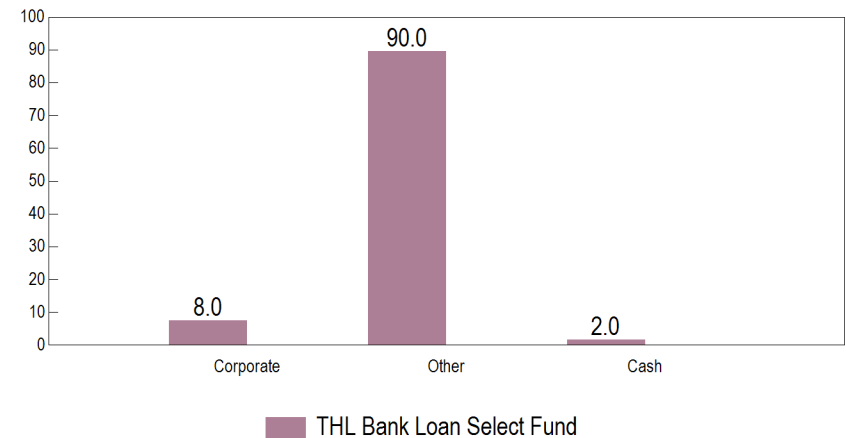
**Fixed Income Characteristics**

Yield to Maturity	6.2
Average Duration	0.5
Average Quality	B
Weighted Average Maturity	4.8

**Credit Quality Allocation**



**Sector Allocation**





**Account Information**

Account Name	<b>McDonnell Foreign Bonds</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>5/31/95</b>
Account Type	<b>Non-US Fixed Income</b>
Benchmark	<b>Citi WGBI ex US</b>
Universe	<b>eA All EAFE Fixed Inc Net</b>

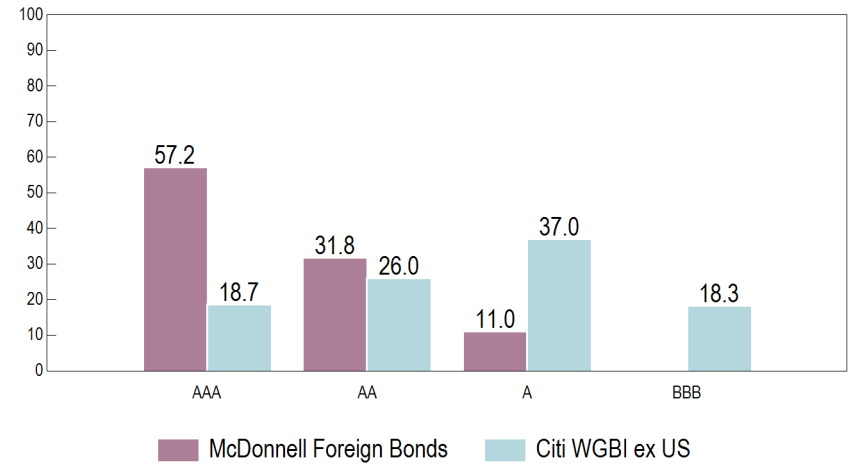
**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
McDonnell Foreign Bonds	2.2	-4.6	-2.3	-1.5	3.1	4.4	May-95
Citi WGBI ex US	2.0	-4.8	-2.6	-1.5	2.6	3.6	May-95
eA All EAFE Fixed Inc Net Median	2.7	0.3	-1.1	1.6	4.7	6.0	May-95
eA All EAFE Fixed Inc Net Rank	77	95	75	80	81	81	May-95

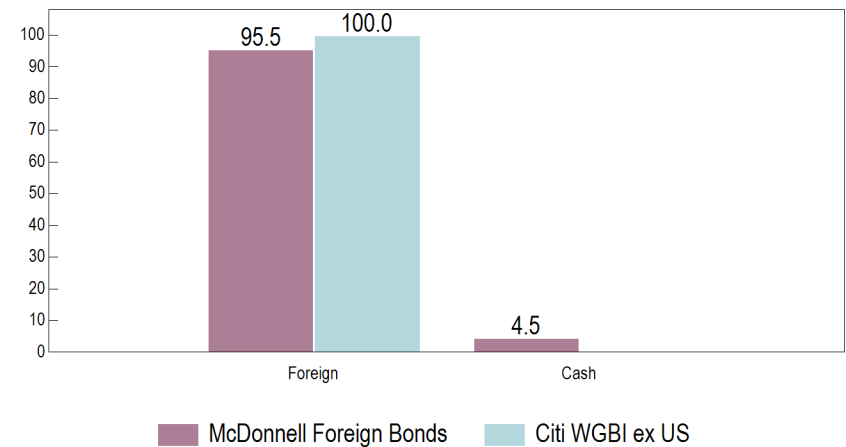
**McDonnell Foreign Bonds Characteristics vs. Citi WGBI ex US**

	Portfolio Q1-17	Index Q1-17
<b>Fixed Income Characteristics</b>		
Yield to Maturity	0.9	0.7
Average Duration	8.3	8.6
Average Quality	AA	A
Weighted Average Maturity	10.1	10.4

**Credit Quality Allocation**



**Sector Allocation**



As of March 31, 2017

**Account Information**

Account Name	<b>Franklin Templeton Emerging Market Bonds</b>
Account Structure	<b>Commingled Fund</b>
Investment Style	<b>Active</b>
Inception Date	<b>5/31/06</b>
Account Type	<b>Non-US Fixed Income</b>
Benchmark	<b>JP Morgan EMBI Global Diversified</b>
Universe	<b>eA Emg Mkt Fixed Inc Unhedged Net</b>

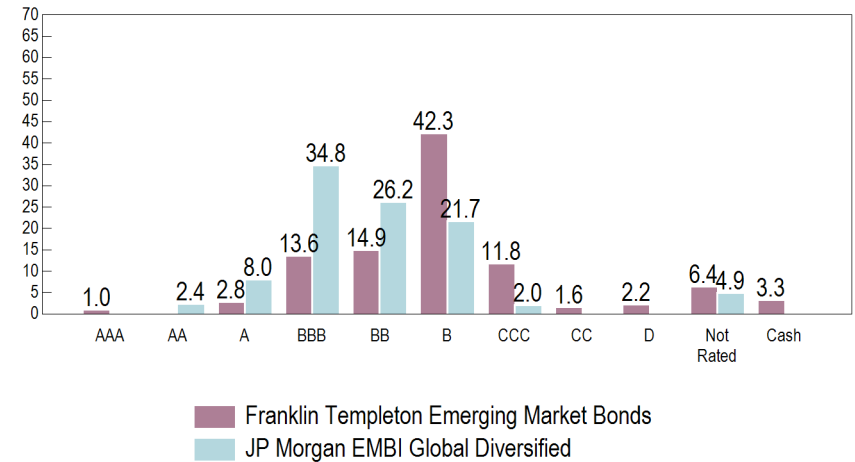
**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Franklin Templeton Emerging Market Bonds	4.4	13.8	4.1	4.8	6.7	7.2	May-06
JP Morgan EMBI Global Diversified	3.9	8.9	6.2	5.8	7.0	7.7	May-06
eA Emg Mkt Fixed Inc Unhedged Net Median	4.4	9.0	4.4	3.8	6.1	7.5	May-06
eA Emg Mkt Fixed Inc Unhedged Net Rank	52	11	55	23	35	63	May-06

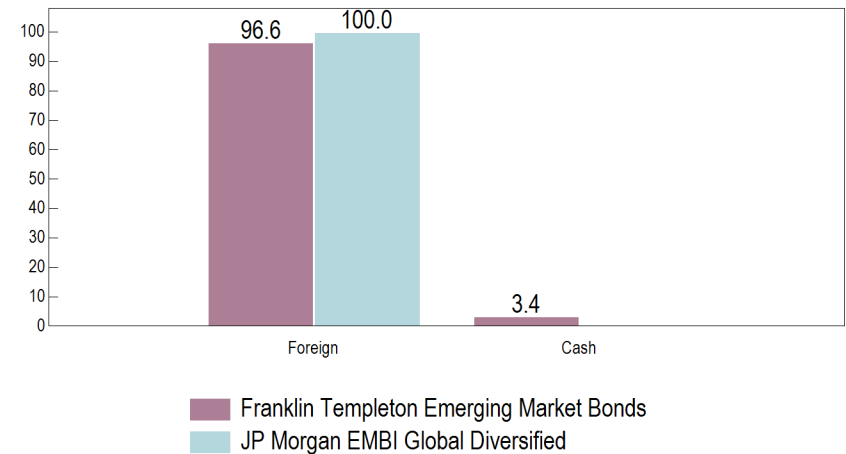
**Franklin Templeton Emerging Market Bonds Characteristics vs. JP Morgan EMBI Global Diversified**

	Portfolio Q1-17	Index Q1-17
<b>Fixed Income Characteristics</b>		
Yield to Maturity	9.5	5.2
Average Duration	4.4	6.7
Average Quality	B	BB
Weighted Average Maturity	7.8	10.3

**Credit Quality Allocation**



**Sector Allocation**



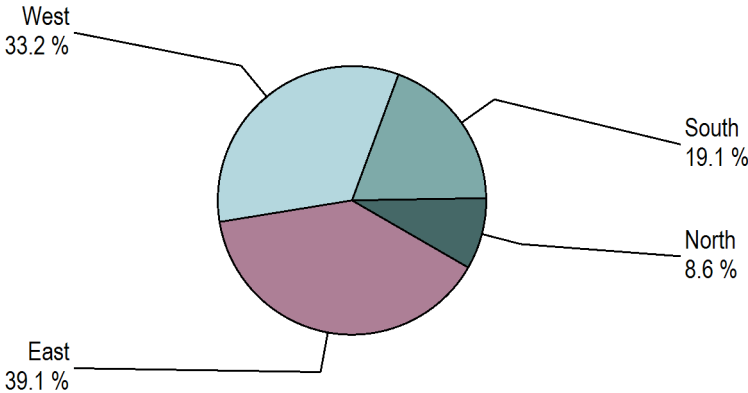
**Account Information**

Account Name	PRISA I
Account Structure	Other
Investment Style	Active
Inception Date	6/30/04
Account Type	Real Estate
Benchmark	NCREIF ODCE (net)

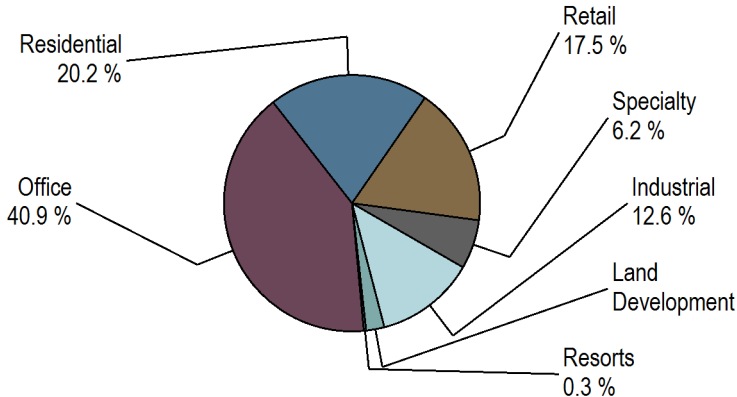
**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
PRISA I	1.3	7.3	11.3	11.1	4.2	6.7	Jun-04
NCREIF ODCE (net)	1.5	7.4	10.8	10.9	4.6	7.1	Jun-04

**Geographic Diversification**



**Property Type Allocation**



As of March 31, 2017

## Account Information

Account Name	Invesco REIT
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	12/31/02
Account Type	Real Estate
Benchmark	Wilshire REIT

## Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Invesco REIT	2.4	4.0	9.6	9.1	4.7	11.8	Dec-02
Wilshire REIT	0.0	2.0	10.2	9.8	4.4	11.1	Dec-02

## Top 10 Holdings

SIMON PROPERTY GROUP	7.0%
AMERICAN TOWER	6.1%
PUBLIC STORAGE	4.6%
BOSTON PROPERTIES	4.5%
WEYERHAEUSER	4.2%
CROWN CASTLE INTL.	3.9%
VORNADO REALTY TRUST	3.5%
EQUITY RESD.TST.PROPS. SHBI	3.5%
EQUINIX	3.4%
WELLTOWER	3.1%
<b>Total</b>	<b>43.8%</b>

## Invesco REIT Characteristics

Portfolio  
Q1-17

## Market Value

Market Value (\$M)	29.3
Number Of Holdings	56

## Characteristics

Weighted Avg. Market Cap. (\$B)	20.7
Median Market Cap (\$B)	6.5
P/E Ratio	37.4
Yield	3.4
EPS Growth - 5 Yrs.	20.3
Price to Book	3.6
Beta (holdings; domestic)	0.7

## Sector Distribution

Energy	0.0
Materials	4.2
Industrials	1.3
Consumer Discretionary	1.0
Consumer Staples	0.0
Health Care	0.5
Financials	75.9
Information Technology	3.4
Telecommunication Services	11.4
Utilities	0.0
Real Estate	2.3

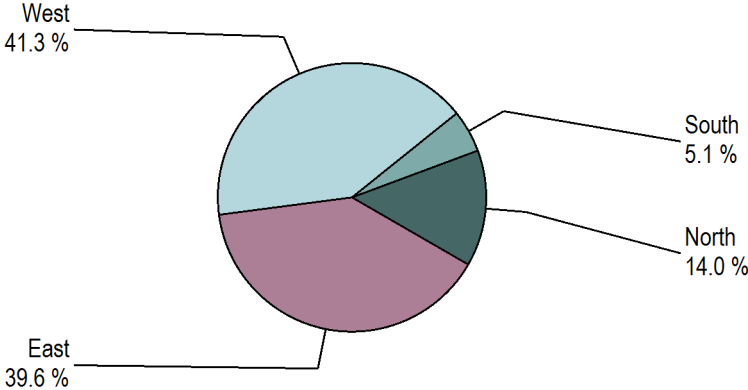
**Account Information**

Account Name	Multi Employer Property Trust
Account Structure	Other
Investment Style	Active
Inception Date	1/31/00
Account Type	Real Estate
Benchmark	NCREIF ODCE (net)

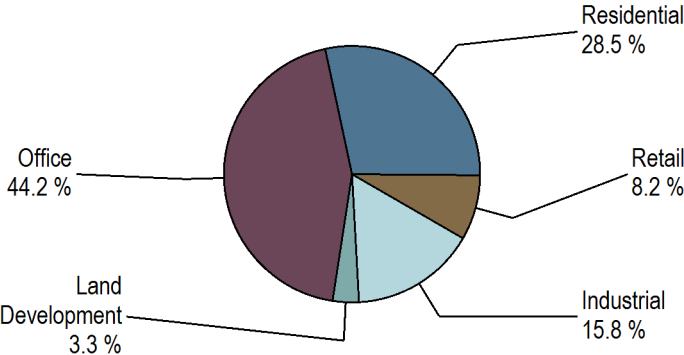
**Portfolio Performance Summary**

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Multi Employer Property Trust	1.3	6.5	10.2	9.6	3.9	6.6	Jan-00
NCREIF ODCE (net)	1.5	7.4	10.8	10.9	4.6	7.4	Jan-00

**Geographic Diversification**



**Property Type Allocation**



As of March 31, 2017

## Annual Investment Expense Analysis

As Of March 31, 2017

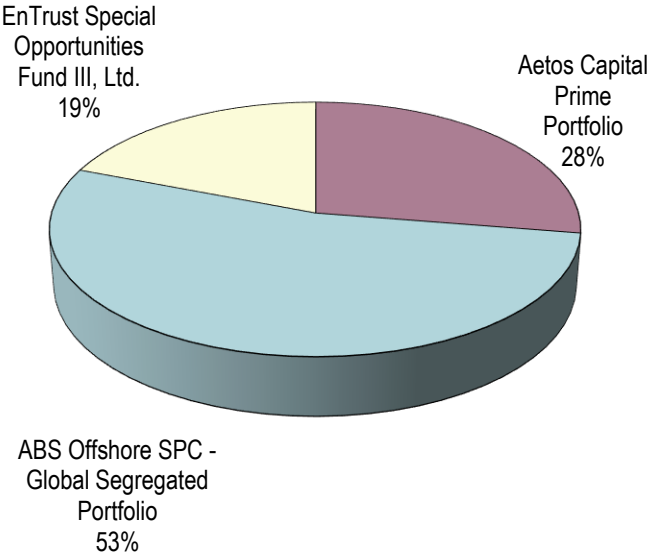
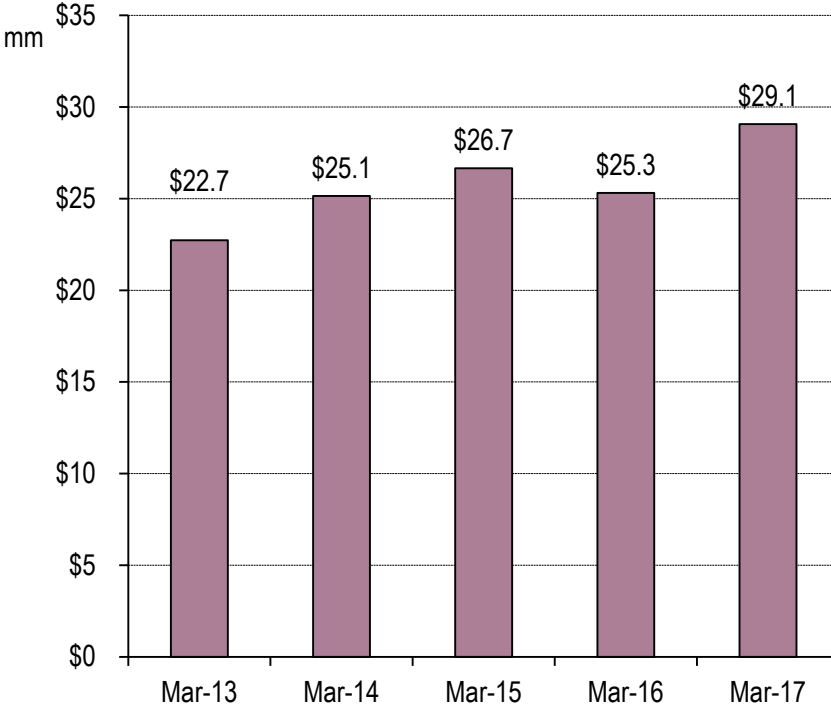
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Domestic Equity Assets</b>		<b>\$318,857,443</b>		
Rhumblin Russell 1000 Value	0.05% of First \$25.0 Mil, 0.04% of Next \$25.0 Mil, 0.03% Thereafter	\$66,328,380	\$27,399	0.04%
Rhumblin Russell 1000 Growth	0.05% of First \$25.0 Mil, 0.04% of Next \$25.0 Mil, 0.03% Thereafter	\$52,017,750	\$23,105	0.04%
Fisher Midcap Value	0.80% of First \$25.0 Mil, 0.75% of Next \$25.0 Mil, 0.67% Thereafter	\$47,853,545	\$371,402	0.78%
Geneva Capital	0.65% of Assets	\$37,900,592	\$246,354	0.65%
Boston Company Small Growth	0.45% of Assets	\$47,029,313	\$211,632	0.45%
Lee Munder Small Cap Value	0.90% of Assets	\$67,647,738	\$608,830	0.90%
<b>International Developed Market Equity Assets</b>		<b>\$151,854,085</b>		
HGK TS International Equity	1.00% of Assets	\$52,105,220	\$521,052	1.00%
Denver Investments	1.00% of Assets	\$31,993,835	\$319,938	1.00%
KBI EAFE Master Account	0.65% of Assets	\$67,755,030	\$440,408	0.65%
<b>International Emerging Market Equity Assets</b>		<b>\$46,403,981</b>		
Lee Munder Emerging Markets	0.75% of Assets	\$46,403,981	\$348,030	0.75%
<b>Domestic Fixed Income</b>		<b>\$72,210,763</b>		
IR&M Core Bonds	0.25% of First \$50.0 Mil, 0.20% of Next \$50.0 Mil, 0.15% Thereafter	\$72,210,763	\$169,422	0.23%
<b>Value Added Fixed Income</b>		<b>\$69,665,903</b>		
Eaton Vance High Yield	0.50% of Assets	\$36,267,876	\$181,339	0.50%
THL Bank Loan Select Fund	0.50% of Assets	\$33,398,027	\$166,990	0.50%
<b>International Fixed Income</b>		<b>\$59,815,187</b>		

As of March 31, 2017

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
McDonnell Foreign Bonds	0.32% of First \$20.0 Mil, 0.28% of Next \$10.0 Mil, 0.24% of Next \$10.0 Mil, 0.20% Thereafter	\$25,363,154	\$79,017	0.31%
Franklin Templeton Emerging Market Bonds	0.99% of Assets	\$34,452,033	\$341,075	0.99%

**Hedge Fund Update  
As of March 31, 2017**





	Market Value 3/31/2017	% of Total	Current Allocation (%)	Target Allocation (%)	Target Range (%)	Market Value 12/31/2016
<b>Total Hedge Fund Assets</b>	<b>\$29,064,995</b>	<b>100</b>	<b>3.2</b>	<b>4.0</b>	<b>2% - 6%</b>	<b>\$26,624,364</b>
Aetos Capital Prime Portfolio	\$7,993,390	28	0.9			\$7,783,951
ABS Offshore SPC Global	\$15,502,884	53	1.7			\$14,883,166
EnTrust Special Opportunities III	\$5,568,722	19	0.6			\$3,957,247

- Plymouth County Retirement Association (“PCRA”) has approximately \$29.1 million in their hedge fund program as of March 31, 2017. This accounts for 3.2% of the total portfolio, which is underweight the hedge fund program’s target by 80 basis points. This still remains within the target range of 2% to 6% of the overall Plan.
- PCRA received \$7.6 million of their investment from Aetos Capital (“Aetos”) in October 2016, which reduced PCRA’s hedge fund allocation to 3.0% of the plan from 3.6% in Q3 2016. Aetos now accounts for approximately 28% of the total Hedge Fund Program.
- On February 22, 2017, EnTrust made the third capital call since PCRA committed \$25 million to Special Opportunities III. The total amount of capital called is \$4.76 million, which represents 19.02% of the total commitment. In dollar terms, \$20.24 million of the initial commitment remains.

## Trailing 5-Year Risk Summary

As of March 31, 2017

	1Q17 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Inception Date	Since Inception (%)
<b>Total Hedge Fund Assets</b>	<b>4.9</b>	<b>10.3</b>	<b>3.5</b>	<b>5.4</b>	<b>2/1/2010</b>	<b>4.8</b>
Aetos Capital Prime Portfolio	2.7	8.0	2.5	4.4	8/1/2010	3.9
ABS Offshore SPC - Global Segregated Portfolio	4.2	6.2	2.5	5.4	2/1/2010	5.6
EnTrust Special Opportunities Fund III, Ltd. <sup>1</sup>	9.9	NA	NA	NA	10/1/2016	26.8
<i>HFRI Fund of Funds Composite</i>	2.4	6.2	1.8	3.2	2/1/2010	6.7
<i>MSCI ACWI</i>	6.9	15.0	5.1	8.4	2/1/2010	8.8

- PCRA's Hedge Fund Program outperformed the HFRI Fund of Funds Composite benchmark by 250 basis points over the first quarter, but on an absolute basis trailed the broad equity markets by 200 basis points. However on a relative basis, the Hedge Fund Program fared well. The average net exposure for PCRA's portfolio was 58%, which implies a 90 basis point outperformance versus the MSCI ACWI.<sup>2</sup>
- Attribution over the quarter was largely driven from ABS' performance, relative to their counterparts Aetos and Entrust. ABS added 223 basis points – approximately 45% of PCRA's quarterly return. Aetos was the worst performing investment for PCRA, contributing 76 basis points to PCRA's quarterly performance. Aetos slightly outperformed the HFRI Fund of Funds Composite by 30 basis points and trailed the MSCI ACWI by 320 basis points.

<sup>1</sup> EnTrust 1Q17 return is estimated. Deutsche Bank has not yet released final 1Q17 Capital Account Statement.

<sup>2</sup> MIG Research uses net exposure (gross long exposure minus gross short exposure) as a measure of market risk. Therefore we measure relative performance of the program against the net exposure adjusted equity performance.



As of March 31, 2017

	Standard Deviation (%)	Sharpe Ratio	Max Drawdown (%)	Max Drawdown Length	Beta <sup>3</sup>	Correlation	Kurtosis	Skew
<b>Total Hedge Fund Assets<sup>4</sup></b>	<b>4.6</b>	<b>1.14</b>	<b>-6.2</b>	<b>36</b>	<b>1.2</b>	<b>0.90</b>	<b>1.0</b>	<b>-0.8</b>
Aetos Capital Prime Portfolio	3.3	1.28	-4.7	23	0.8	0.89	1.4	-0.9
ABS Offshore SPC - Global Segregated Portfolio	6.2	0.86	-8.6	36	1.6	0.92	1.1	-0.9
EnTrust Special Opportunities Fund III	NA	NA	NA	NA	NA	NA	NA	NA
<i>HFRI Fund of Funds Composite</i>	3.5	0.89	-4.8	36	1.0	1.00	0.6	-0.8
<i>MSCI ACWI</i>	12.0	0.69	-13.9	3	2.6	0.79	1.0	-0.4

- PCRA's portfolio volatility has increased from 4.3% to 4.6% quarter over quarter, which is significant when you consider the volatility of the HFRI Fund of Funds Composite has remained at 3.5%. This is likely due to the fact that both ABS and Aetos have deliberately increased the net exposure of their respective products. Since June 2016, ABS' net exposure has increased from 37% to 52% and Aetos' net exposure from 35% to 42%.
- It appears the increasing net exposure of ABS and Aetos has improved the program's risk-adjusted performance. PCRA's Sharpe Ratio has increased from 0.06 in Q4 2016 to 1.14 as of Q1 2017. It is important to note that there is some endpoint bias within this improvement because risk statistics are reported on a rolling 5-Year basis. The relative improvement of PCRA's Sharpe Ratio compared to the broader equity market is more telling. The MSCI ACWI Sharpe Ratio has improved from 0.42 to 0.69, which is a marginal increase relative to PCRA's portfolio.

<sup>3</sup> HFRI Fund of Funds Composite

<sup>4</sup> Sixty Months



Liquidity Schedule	6/30/2017	9/30/2017	12/31/2017	3/31/2018
Aetos Capital Prime Portfolio	Full 90 Days' Notice	Full 90 Days' Notice	Full 90 Days' Notice	Full 90 Days' Notice
ABS Offshore SPC - Global Segregated Portfolio	Full 45 Days' Notice	Full 45 Days' Notice	Full 45 Days' Notice	Full 45 Days' Notice
EnTrust Special Opportunities Fund III, Ltd.	None Due to Lockup	None Due to Lockup	None Due to Lockup	None Due to Lockup
Available Program Liquidity	81%	81%	81%	81%

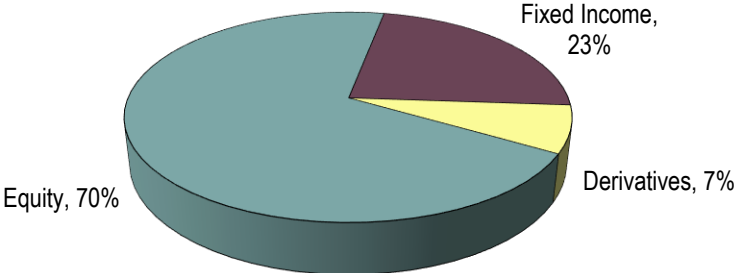
- The percentage of PCRA's hedge fund assets that are out of any lock-up is 81%, and 19% of program liquidity is locked up in the EnTrust Special Opportunities III fund. If PCRA would like to submit redemptions to the current program for the next available liquidity date (September 30, 2017), the deadlines to submit are below:
  - Aetos Capital: July 3, 2017
  - ABS Investment Management: August 16, 2017
- EnTrust made an additional capital call of \$3.72 million on April 21, 2017, bringing the total capital called to \$8.48 million, or 33.9% of capital committed.

## Quarterly Update

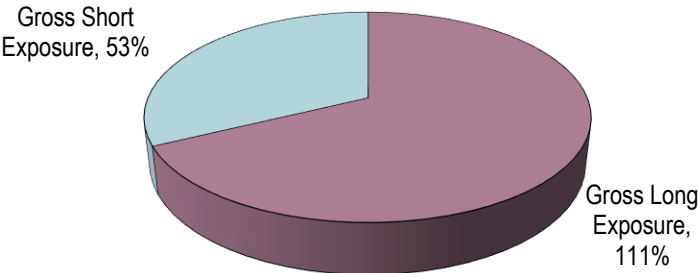
Hedge Fund Summary	<p>The HFRI Fund Composite Index returned 2.34% in the first quarter compared to 3.74% for a 60% equity/40% bond portfolio. This represents a 63% capture rate, which is an encouraging signal for hedge fund investors. According to data we have collected from the major prime brokerages, hedge funds have historically maintained a net exposure (long minus short) between 45% and 55%. Any performance capture beyond these thresholds implies that hedge funds have added value relative to the amount of risk they are taking. What is more encouraging is that market dynamics, as they relate to active management, appear to be improving. Many of the managers we follow reported on the decrease of stock correlation within the equity markets. This is part of the reason why Long Short Equity was the best performing hedge fund strategy in the first quarter. The HFRI Equity Hedge returned 3.62% compared to 6.07% for the S&amp;P 500, and 5.74% for the Russell 3000. Almost unanimously the strong relative performance in Long Short Equity is the result of equity markets reversing course on Trump's economic agenda. Most managers have referenced his failure to gain consensus on healthcare reform, despite having a majority in the house and senate, as an indicator of effectiveness. Meketa's best performing Long Short Equity managers were directionally long the Information Technology, Healthcare, and Consumer Discretionary sectors whereas the worst performing were defensively positioned managers who still had elements of the post-election reflation trade. It also appears that hedge fund equities were in favor during the first quarter. The Goldman Sachs VIP Index, which tracks the 50 most popular hedge fund securities, was up 12.3%. The worst performing hedge fund strategy over the quarter was the HFRI Macro strategy, which was down 0.15%. Of our invested managers the best performing managers were currency specialists, and the worst performing were managers with a tilt towards commodities.</p>
Aetos Capital Prime Portfolio	<p>Aetos finished the first quarter +2.69%, outperforming their stated benchmark, the HFRI Fund of Funds Conservative Index by 1.47%. Over 50% of their attribution came from long short equity strategy, which contributed +1.59%. The biggest detractor within the long short equity allocation, was the short biased equity sub-strategy which lost 10 basis points over the course of the quarter. The distressed program, which is a 30% allocation to the program and invests in short-biased credit and distressed credit, contributed 48 basis points of attribution. The smallest of the program's allocations, the Aetos Multi-Strategy Arbitrage Fund, contributed 84 basis points of attribution. The best performing sub-strategy was the Event-Driven category, which is no surprise as despite M&amp;A activity cooling off in the face of political uncertainty there was still a number of high profile deals such as the J&amp;J/Actellion announcement.</p>
ABS Offshore SPC - Global Segregated Portfolio	<p>ABS finished the first quarter +4.16%, beating the HFRI Fund of Funds Strategic Index by 69 basis points. ABS has also grown to peak assets under management of \$5.2 billion. They ended the quarter with a net exposure of 53%, which is nearly 10% above their historical average. ABS is seeing similar behavior to Meketa across their managers. As volatility in the equity markets remains low, and valuations remain high, managers are turning to increasing gross and net exposure to achieve their return objectives. Over the course of Q1 exposure increases appeared to be exacerbated by the decrease in correlations among equity securities. Much like their counterpart Aetos, ABS generated the bulk of their returns within the global long short equity and TMT long short equity strategies. 2.55% of the gross return came from these two categories. The strategy added Latin America long short equity specialist SAGIL. SAGIL is a London-based hedge fund that invests exclusively in Latin America, with a focus on Brazil and Mexico. ABS also redeemed from Roystone Capital and Polar Capital. According to the team, both managers were not executing on their mandate. Roystone was settling into crowded hedge fund names and maintaining a significantly high net exposure and Polar was consistently purchasing less liquid longs and short high beta names. They are currently searching for a financials specialist given it is their largest underweight.</p>
EnTrust Special Opportunities Fund III, Ltd.	<p>Entrust gained 9.85% on called capital in Q1 and 12.51% on PCRA's invested capital. Entrust has made a total of 26 investments since launching Special Opportunities III of which they have exited 8 for an average IRR of 12.97%. PCRA has participated in 6 deals since committing to Class D in October 2016. There has only been one exit during that time. The deal was Snapchat (IPO), which was managed by Glade Brook Private Investors who began monetizing the deal immediately and currently has realized a cumulative return of 31.68% - the largest return of the Class D investments. Special Opportunities III has called 65.4% of overall commitments, 34.6% is uncalled. Overall total commitments are \$1.82 billion in aggregate.</p>

As of March 31, 2017

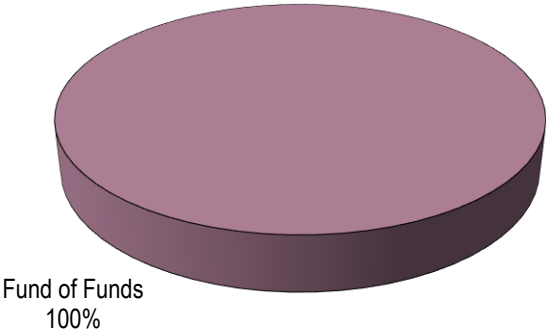
Instrument Allocation



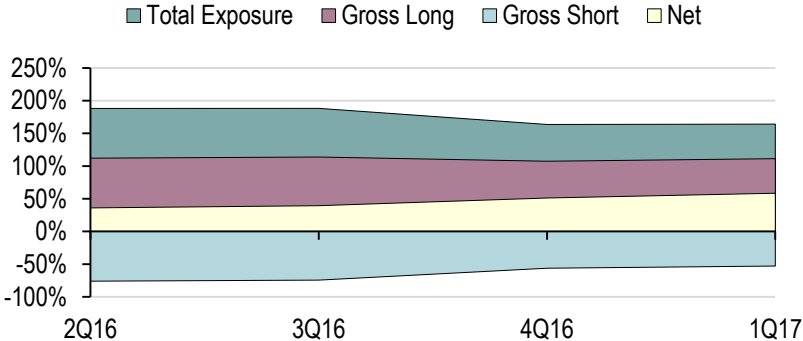
Exposure Report



Strategy Allocation



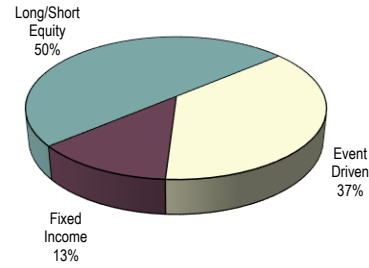
Exposure History



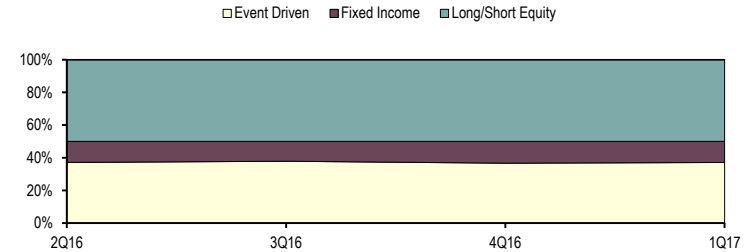
Account Information

**Mandate:** Hedge Fund- Fund of Funds  
**Market Value:** \$8 M  
**Portfolio Manager:** Team  
**Location:** New York, NY  
**Inception Date:** 2/1/2010  
**Account Type:** Limited Partnership  
**# of Investments:** 38  
 0.75% management fee;  
 10% incentive fee over  
**Fee Schedule:** 3-month T-Bills  
**Liquidity Constraints:** Quarterly

Strategy



Historical Strategy Allocations



Geographic Exposure (%)	3/31/2017	12/31/2016	9/30/2016	6/30/2016
North America	60	65	65	65
Developed Europe	26	25	24	23
Emerging Markets	8	5	5	7
Developed Asia	5	6	6	5

Exposure Report (%)	3/31/2017	12/31/2016	9/30/2016	6/30/2016
Total Gross Exposure	225	224	220	226
Gross Long Exposure	133	132	130	130
Gross Short Exposure	91	91	90	96
Net Exposure	42	41	40	35

**Strategy:** Aetos portfolios are designed to exhibit low standard deviation, low betas and correlations to the standard market indexes, and are diversified by strategy. This is done from the bottom-up as the team invests with managers that are truly hedged with low market directionality.

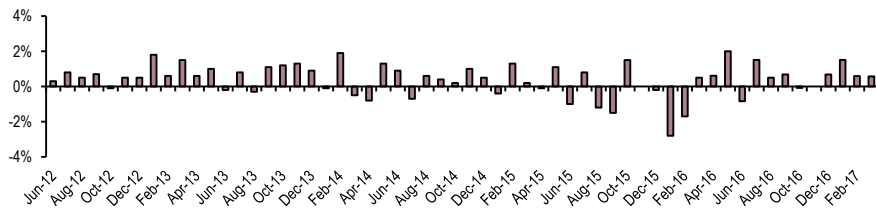
Portfolio Performance Summary

	1Q17 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 2/1/10 (%)
Aetos Capital Prime Portfolio	2.7	8.0	2.5	4.4	3.9
HFRI Fund of Funds Composite	2.4	6.2	1.8	3.2	6.7

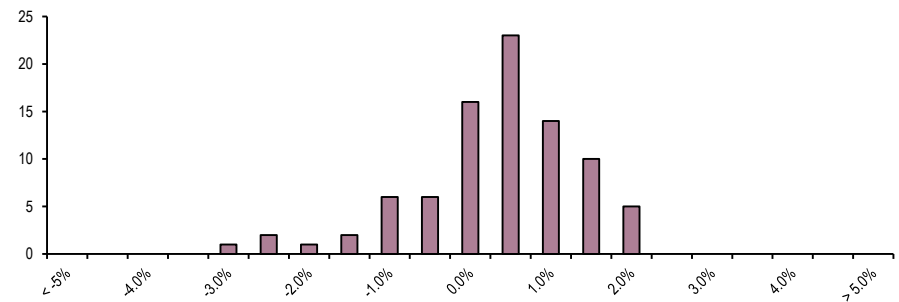
Risk

	Standard Deviation (%)	Max Drawdown (%)	Max Drawdown Length	Kurtosis	Skew
Aetos Capital Prime Portfolio	3.3	-4.7	23	1.4	-0.9
HFRI Fund of Funds Composite	3.5	-4.8	36	0.6	-0.8

Historical Monthly Returns



Return Distribution

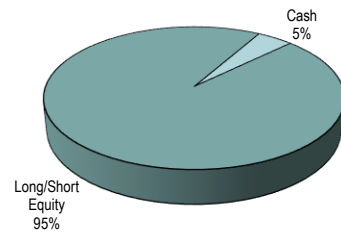




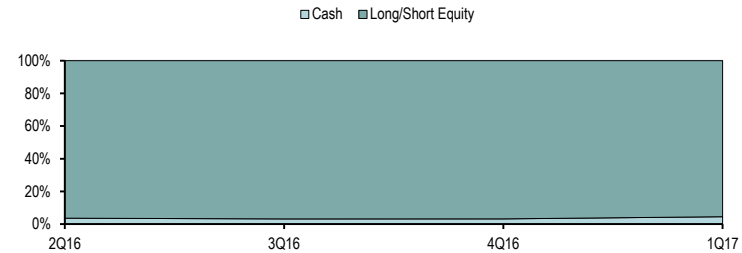
**Account Information**

**Mandate:** Hedge Fund - Fund of Funds  
**Market Value:** \$15.5 M  
**Portfolio Manager:** Team  
**Location:** Greenwich, CT  
**Inception Date:** 8/1/2010  
**Account Type:** Limited Partnership  
**# of Investments:** 24  
**Fee Schedule:** 1.00 % on all assets  
**Liquidity Constraints:** Quarterly

**Strategy**



**Historical Strategy Allocations**



**Strategy:** ABS uses a qualitative, bottom-up process to select and invest with managers, and relies upon research performed in house. ABS believes that equity long/short strategies' combination of net long exposure to the equity markets (market beta), active exposure management (flexible beta), and stock selection (alpha), provide an attractive risk/reward opportunity over a full market cycle.

**Geographic Exposure (%)**

	3/31/2017	12/31/2016	9/30/2016	6/30/2016
North America	61	62	62	62
Developed Europe	19	21	21	21
Developed Asia	11	12	11	11
Emerging Markets	8	5	6	6

**Exposure Report (%)**

	3/31/2017	12/31/2016	9/30/2016	6/30/2016
Total Gross Exposure	156	150	155	148
Gross Long Exposure	104	99	97	93
Gross Short Exposure	52	51	58	55
Net Exposure	52	48	39	37

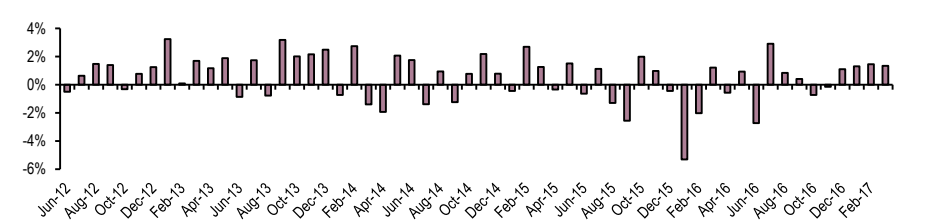
**Portfolio Performance Summary**

	1Q17 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 8/1/10 (%)
ABS Offshore SPC - Global Segregated Portfolio	4.2	6.2	2.5	5.4	5.6
HFRI Fund of Funds Composite	2.4	6.2	1.8	3.2	6.7

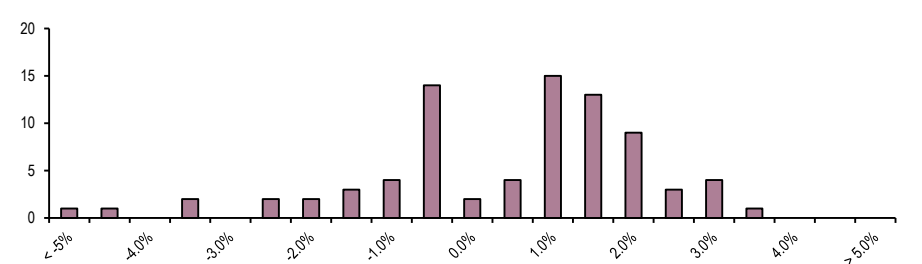
**Risk**

	Standard Deviation (%)	Max Drawdown (%)	Max Drawdown Length	Kurtosis	Skew
ABS Offshore SPC - Global Segregated Portfolio	6.2	-8.6	36	1.1	-0.9
HFRI Fund of Funds Composite	3.5	-4.8	36	0.6	-0.8

**Historical Monthly Returns**



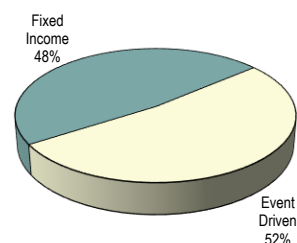
**Return Distribution**



As of March 31, 2017

**Account Information** **Strategy**

**Mandate:** Hedge Fund – Fund of Funds  
**Market Value:** \$5.6 M  
**Portfolio Manager:** Team  
**Location:** New York, New York  
**Inception Date:** 10/1/2016  
**Account Type:** Limited Partnership  
**# of Investments:** 4  
**Fee Schedule:** 1.25% management fee;  
 10% performance fee;  
 7.5% hurdle  
 3 Year Lockup (4 years max)  
 Quarterly with 95 days' notice



**Liquidity Constraints:** Quarterly with 95 days' notice

**Strategy:** EnTrustPermal's Special Opportunities Funds focus on thematic high conviction ideas that arise due to market dislocations or event driven investments. They structure the funds as committed capital and drawdown vehicles in order to quickly take advantage of co-investment opportunities. Fund III takes advantage of a similar portion of the liquidity spectrum as the previous funds. The strategy targets investments with 2 to 5 year investment horizons, seeking to exploit the period that is generally too short for private market investments, but too long for most hedge fund structures.

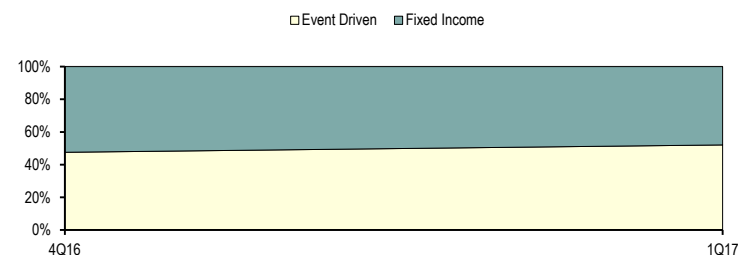
**Portfolio Performance Summary**

	1Q17 (%)	Since 10/1/16 (%)
EnTrust Special Opportunities Fund III, Ltd.	9.9	26.8
HFRI Fund of Funds Composite	2.4	3.3

**Risk**

	Standard Deviation (%)	Max Drawdown (%)	Max Drawdown Length	Kurtosis	Skew
EnTrust Special Opportunities Fund III, Ltd.	NA <sup>1</sup>	NA	NA	NA	NA
HFRI Fund of Funds Composite	NA	NA	NA	NA	NA

**Historical Strategy Allocations**



**Geographic Exposure (%)** **3/31/2017** **12/31/2016**

North America	94	94
Developed Europe	6	6
Developed Asia	0	0
Emerging Markets	0	0

**Exposure Report (%)** **3/31/2017** **12/31/2016**

Total Gross Exposure	100	100
Gross Long Exposure	100	100
Gross Short Exposure	0	0
Net Exposure	100	100

<sup>1</sup> Return stream not long enough.



# INTERIM REPORT

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## Plymouth County Retirement Association

Private Markets Program  
December 31, 2016



**Confidentiality:** This evaluation is prepared by Meketa Investment Group, Inc. for the exclusive use of the Plymouth County Retirement Association. This evaluation is not to be used for any other purpose or by any parties other than Plymouth County Retirement Association, employees, agents, attorneys, and/or consultants. No other parties are authorized to review or utilize the information contained herein without expressed written consent.

The purpose of this document is to offer a review of the Retirement Association's aggregate private market investments. As of December 31, 2016, the Retirement Association had committed \$271.5 million to 38 partnerships; four additional investments were excluded from this report due to lack of availability of historical data. The reported fair value of those 38 partnerships, in aggregate, was \$148.6 million at the end of the fourth quarter.

Aggregate Private Equity Program <sup>1</sup>		Aggregate Real Assets Program <sup>1</sup>		Aggregate Real Estate Program <sup>1</sup>	
<b>Number of Partnerships<sup>2</sup></b>	21	<b>Number of Partnerships</b>	4	<b>Number of Partnerships</b>	13
<b>Committed Capital<sup>3</sup></b>	\$101.1 million	<b>Committed Capital<sup>3</sup></b>	\$30.4 million	<b>Committed Capital</b>	\$140.0 million
<b>Capital Called</b>	\$75.1 million	<b>Capital Called</b>	\$20.4 million	<b>Capital Called</b>	\$106.3 million
<b>Distributions</b>	\$58.2 million	<b>Distributions</b>	\$1.3 million	<b>Distributions</b>	\$55.6 million
<b>Reported Value</b>	\$29.9 million	<b>Reported Value</b>	\$16.0 million	<b>Reported Value</b>	\$102.7 million
<b>Total Value Multiple</b>	1.2x	<b>Total Value Multiple</b>	0.9x	<b>Total Value Multiple</b>	1.5x
<b>Net IRR<sup>4</sup></b>	3.5%	<b>Net IRR</b>	-5.6%	<b>Net IRR</b>	5.5%
<b>Q4 2016 IRR<sup>5</sup></b>	1.6%	<b>Q4 2016 IRR<sup>5</sup></b>	-3.0%	<b>Q4 2016 IRR<sup>5</sup></b>	-2.8%
<b>Trailing Year IRR<sup>5</sup></b>	1.2%	<b>Trailing Year IRR<sup>5</sup></b>	-4.2%	<b>Trailing Year IRR<sup>5</sup></b>	2.0%

<sup>1</sup> Throughout this report, numbers may not sum due to rounding.

<sup>2</sup> Due to lack of availability of historical data, the following partnerships were excluded from the report: Charles River Partnership X, L.P., Charles River Partnership XI, L.P., Rimco Production Company, Inc., and Senior Tour Players, L.P.

<sup>3</sup> Some partnership commitments were made in foreign currency. This total reflects committed capital in U.S. dollars, adjusted for foreign currency exchange rates, as of the report date.

<sup>4</sup> Net IRR is net of fees, expenses, and carried interest for each partnership, but gross of Meketa Investment Group fees

<sup>5</sup> The two trailing period internal-rate of returns are gross of Meketa Investment Group fees.

**The Retirement Association did not make any additional commitments during the fourth quarter.**

**In aggregate, approximately \$ 0.4 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

- Leeds Equity Partners V called approximately \$0.2 million from the Association during the fourth quarter to fund a follow-on investment in Project Management Academy which will be used to fund the acquisition of Prosci.
- Lexington Capital Partners VII called approximately \$0.1 million from the Association during the fourth quarter to pay down debt used to fund capital calls from existing investments and pay the 3Q16 and 4Q16 Advisory fee.
- Globespan Capital Partners V called approximately \$0.1 million from the Association during the fourth quarter for follow-on investments and management fees.

**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$1.7 million.**

- TRG Growth Partnership II distributed \$0.4 million in proceeds to the Association during the quarter, primarily from the full divestment of Sharekhan Limited, which was sold to BNP Paribas.
- Levine Leichtman Capital Partners Deep Value Fund distributed \$0.4 million to the Association during the quarter from proceeds from the investment in JES.
- Siguler Guff Distressed Opportunities Fund III distributed \$0.3 million to the Association during the quarter in proceeds from Centerbridge Credit Partners TE, Standard Broadcasting II, Castle Creek Capital Partners IV, JMIR Denver, and Sun National Bank.

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**In aggregate, approximately \$0.3 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

- JPMorgan Global Maritime Investment Fund called approximately \$0.2 million from the Association during the quarter to repay previous draws from the working capital facility used for investments and working capital.
- Global Infrastructure Partners III called less than \$0.1 million during the quarter primarily for management fees and partnership expenses.

**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$0.3 million.**

- Global Infrastructure Partners Fund III distributed \$0.2 million to the Association during the quarter primarily from proceeds and adjustments from the investment in Gas Natural SDG, SA.
- BTG Pactual Global Timberland Resources Fund distributed \$0.1 million in dividend income to the Association during the quarter.

**The Retirement Association did not make any new commitments during the fourth quarter of 2016.**

**In aggregate, \$5.2 million was called by the underlying managers from the Retirement Association during the fourth quarter.**

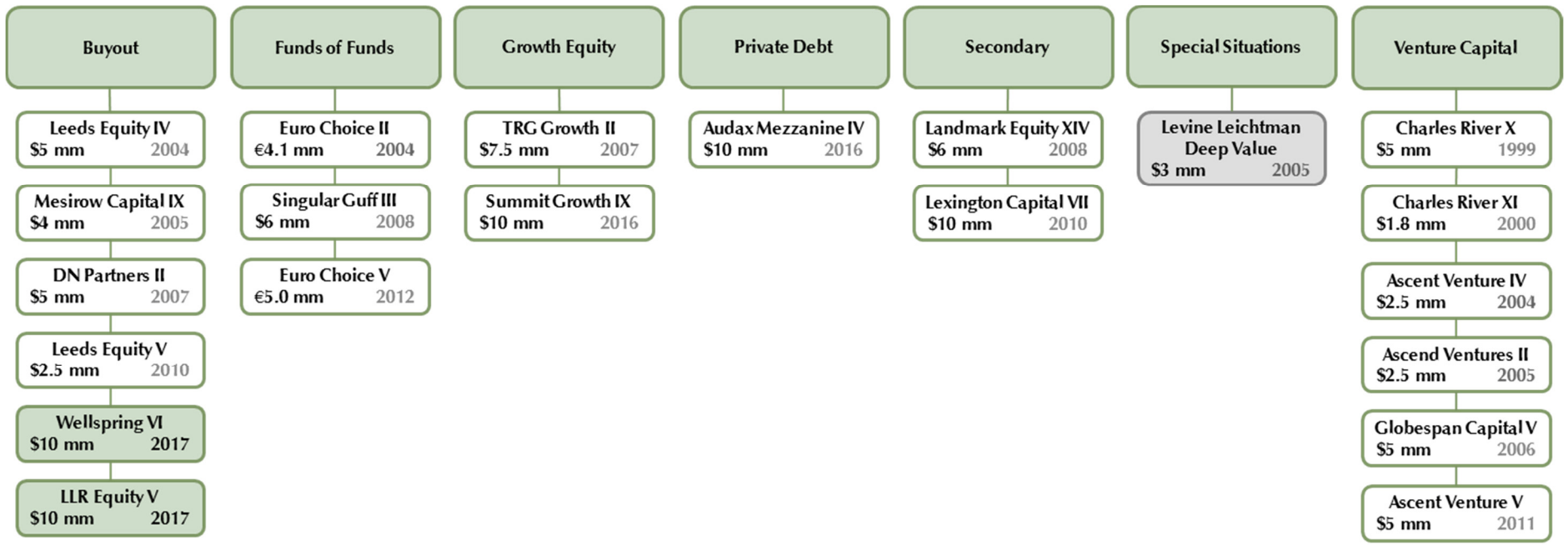
- DSF Multi-Family Real Estate Fund III called \$5.2 million in order to purchase the partnership's second property, a 412-unit high rise apartment complex located in New Rochelle, NY.

**Distributions received by the Retirement Association from underlying partnerships during the fourth quarter totaled approximately \$2.0 million.**

- New Boston Institutional Fund VII distributed \$0.8 million to the Association during the quarter from a return of equity and operating income.
- Berkshire Multifamily Value Fund VIII distributed \$0.7 million to the Association from proceeds from the sale of remaining interests in Freddie Mac CME K-4 and K-703, and net proceeds from the sales of Kirby Residences on Main and Union Place.
- Real Estate International Partnership Fund I distributed \$0.5 million to the Association during the quarter from a distribution of a preferred return.

# Plymouth County Retirement Association Private Equity Program

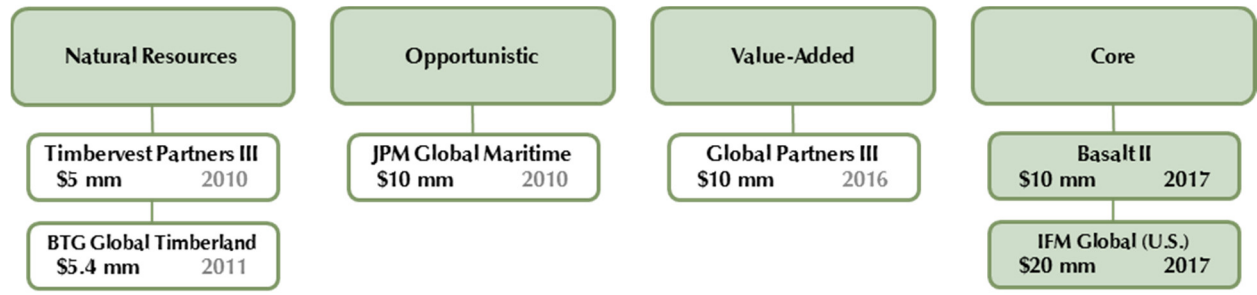
# Executive Summary Investment Roadmap as of 6/15/17



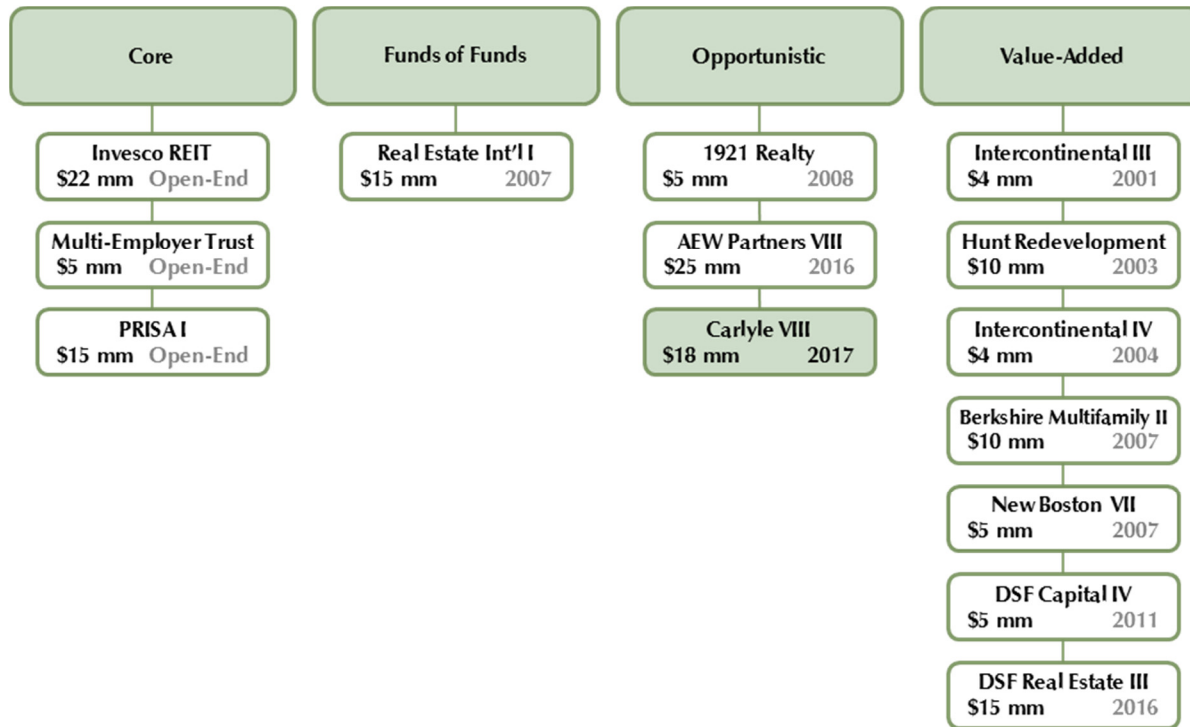
- White box: Current investment.
- Green box: Investment made subsequent to quarter end and, as such, is not included in any other section of this report.
- Gray box: Liquidated Investment.







- White box: Current investment.



- White box: Current Investment.

**Plymouth County Retirement Association  
Private Equity Program**

**Aggregate Program  
Partnership Roster as of 12/31/16**

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program<sup>1</sup></b>		<b>101.1</b>	<b>100</b>	<b>29.9</b>	<b>100</b>
<b>Growth Equity</b>		<b>17.5</b>	<b>17</b>	<b>3.0</b>	<b>10</b>
TRG Growth Partnership II, L.P.	2007	7.5	7	3.0	10
Summit Partners Growth Equity Fund IX, L.P.	2016	10.0	10	0.0	0
<b>Private Debt</b>		<b>10.0</b>	<b>10</b>	<b>0.2</b>	<b>1</b>
Audax Mezzanine Fund IV, L.P.	2015	10.0	10	0.2	1
<b>Fund of Funds</b>		<b>16.3</b>	<b>16</b>	<b>6.5</b>	<b>22</b>
Euro Choice II, L.P. <sup>2</sup>	2004	4.6	5	0.3	1
Siguler Guff Distressed Opportunities Fund III, L.P.	2008	6.0	6	1.9	7
Euro Choice V, L.P. <sup>3</sup>	2012	5.7	5	4.3	14

<sup>1</sup> Due to lack of availability of historical data, the following partnerships were excluded from the report: Rimco Production Company, Inc. and Senior Tour Players, L.P.

<sup>2</sup> The Retirement Association committed €4.1 million to the Partnership in 2004. The \$4.6 million is an estimated amount based on the contributed capital and unfunded commitment as of 12/31/16.

<sup>3</sup> The Retirement Association committed €5.0 million to the Partnership in 2013. The \$5.7 million is an estimated amount based on the contributed capital and unfunded commitment as of 12/31/16.

**Plymouth County Retirement Association  
Private Equity Program**

**Aggregate Program  
Partnership Roster as of 12/31/16**

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Secondary</b>		<b>16.0</b>	<b>16</b>	<b>6.9</b>	<b>23</b>
Landmark Equity Partners XIV, L.P.	2008	6.0	6	2.4	8
Lexington Capital Partners VII, L.P.	2009	10.0	10	4.5	15
<b>Buyout</b>		<b>16.5</b>	<b>16</b>	<b>4.6</b>	<b>15</b>
Leeds Equity Partners IV, L.P.	2004	5.0	5	1.0	4
Mesirow Financial Capital Partners IX, L.P.	2005	4.0	4	0.9	3
DN Partners II, L.P.	2007	5.0	5	0.7	2
Leeds Equity Partners V, L.P.	2010	2.5	2	1.9	7
<b>Special Situations</b>		<b>3.0</b>	<b>3</b>	<b>0.0</b>	<b>0</b>
Levine Leichtman Capital Partners Deep Value Fund, L.P.	2005	3.0	3	0.0	0
<b>Venture Capital</b>		<b>21.8</b>	<b>22</b>	<b>8.8</b>	<b>29</b>
Charles River Partnership X, L.P.	1999	5.0	5	0.0	0
Charles River Partnership XI, L.P.	2000	1.8	2	0.2	1
Ascent Venture Partners IV, L.P.	2004	2.5	2	0.3	1
Ascend Ventures II, L.P.	2005	2.5	2	0.6	2
Globespan Capital Partners V, L.P.	2006	5.0	5	3.3	11
Ascent Venture Partners V, L.P.	2011	5.0	5	4.4	15

**Plymouth County Retirement Association  
Real Assets Program**

**Aggregate Program  
Partnership Roster as of 12/31/16**

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program</b>		<b>30.4</b>	<b>100</b>	<b>16.0</b>	<b>100</b>
<b>Natural Resources</b>		<b>10.4</b>	<b>34</b>	<b>9.8</b>	<b>61</b>
Timbervest Partners III, L.P.	2010	5.0	16	5.8	36
BTG Pactual Global Timberland Resources Fund, LLC <sup>1</sup>	2011	5.4	18	3.9	25
<b>Opportunistic</b>		<b>10.0</b>	<b>33</b>	<b>4.8</b>	<b>30</b>
JPMorgan Global Maritime Investment Fund	2010	10.0	33	4.8	30
<b>Value-Added</b>		<b>10.0</b>	<b>33</b>	<b>1.4</b>	<b>9</b>
Global Infrastructure Partners III, L.P.	2016	10.0	33	1.4	9

<sup>1</sup> The Retirement Association committed €4.3 million to the Partnership in 2010. The \$5.4 million is an estimated amount based on the contributed capital and unfunded commitment as of 12/31/16.

**Plymouth County Retirement Association  
Real Estate Program**

**Aggregate Program  
Partnership Roster as of 12/31/16**

	Vintage Year	Commitment (\$ mm)	Committed (%)	Reported Fair Value (\$ mm)	Reported Fair Value (%)
<b>Total Program</b>		<b>140.0</b>	<b>100</b>	<b>102.7</b>	<b>100</b>
<b>Core</b>		<b>42.0</b>	<b>30</b>	<b>79.3</b>	<b>77</b>
PRISA I	Open-End	15.0	11	35.9	35
Multi-Employer Property Trust	Open-End	5.0	4	14.8	14
Invesco Equity Real Estate Securities Trust	Open-End	22.0	16	28.6	28
<b>Opportunistic</b>		<b>30.0</b>	<b>22</b>	<b>0.8</b>	<b>1</b>
1921 Realty, Inc.	2008	5.0	4	0.9	1
AEW Partners Real Estate Fund VIII, L.P.	2016	25.0	18	-0.2	0
<b>Value-Added</b>		<b>53.0</b>	<b>38</b>	<b>16.0</b>	<b>16</b>
Intercontinental Real Estate Investment Fund III, LLC	2001	4.0	3	0.5	1
Hunt Redevelopment and Renovation Fund, LLC	2003	10.0	7	2.5	2
Intercontinental Real Estate Investment Fund IV, LLC	2004	4.0	3	0.1	< 1
Berkshire Multifamily Value Fund II, L.P.	2007	10.0	7	0.8	1
New Boston Institutional Fund, L.P. VII	2007	5.0	4	2.0	2
DSF Capital Partners IV, L.P.	2011	5.0	4	5.0	5
DSF Multi-Family Real Estate Fund III, L.P.	2016	15.0	11	5.0	5
<b>Fund of Funds</b>		<b>15.0</b>	<b>10</b>	<b>6.6</b>	<b>6</b>
Real Estate International Partnership Fund I, L.P.	2007	15.0	10	6.6	6

**Plymouth County Retirement Association  
Private Equity Program**

**Aggregate Program  
Performance Summary as of 12/31/16**

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Total Program<sup>5</sup></b>		<b>101.1</b>	<b>75.1</b>	<b>29.7</b>	<b>58.2</b>	<b>29.9</b>	<b>88.1</b>	<b>3.5</b>	<b>1.2</b>
<b>Vintage Year 1999</b>		<b>5.0</b>	<b>4.4</b>	<b>0.6</b>	<b>2.2</b>	<b>0.0</b>	<b>2.2</b>	<b>-14.9</b>	<b>0.5</b>
Charles River Partnership X, L.P.	Venture Capital	5.0	4.4	0.6	2.2	0.0	2.2	-14.9	0.5
<b>Vintage Year 2000</b>		<b>1.8</b>	<b>1.8</b>	<b>&lt;0.1</b>	<b>1.9</b>	<b>0.2</b>	<b>2.1</b>	<b>3.2</b>	<b>1.2</b>
Charles River Partnership XI, L.P.	Venture Capital	1.8	1.8	<0.1	1.9	0.2	2.1	3.2	1.2
<b>Vintage Year 2004</b>		<b>12.1</b>	<b>8.7</b>	<b>3.5</b>	<b>8.2</b>	<b>1.7</b>	<b>9.9</b>	<b>1.9</b>	<b>1.1</b>
Ascent Venture Partners IV, L.P.	Venture Capital	2.5	2.5	0.0	0.4	0.3	0.7	-18.6	0.3
Euro Choice II, L.P.	Fund of Funds	4.6	1.2	3.5	2.6	0.3	2.9	14.2	2.4
Leeds Equity Partners IV, L.P.	Buyout	5.0	5.0	0.0	5.2	1.0	6.3	3.5	1.2
<b>Vintage Year 2005</b>		<b>9.5</b>	<b>11.0</b>	<b>0.3</b>	<b>6.7</b>	<b>1.4</b>	<b>8.1</b>	<b>-5.8</b>	<b>0.7</b>
Ascend Ventures II, L.P.	Venture Capital	2.5	2.3	0.2	0.2	0.6	0.8	-12.0	0.3
Levine Leichtman Capital Partners Deep Value Fund, L.P.	Special Situations	3.0	4.9	0.0	5.1	0.0	5.1	1.3	1.0
Mesirov Financial Capital Partners IX, L.P.	Buyout	4.0	3.8	0.2	1.3	0.9	2.2	-7.0	0.6
<b>Vintage Year 2006</b>		<b>5.0</b>	<b>4.7</b>	<b>0.3</b>	<b>4.6</b>	<b>3.3</b>	<b>8.0</b>	<b>10.6</b>	<b>1.7</b>
Globespan Capital Partners V, L.P.	Venture Capital	5.0	4.7	0.3	4.6	3.3	8.0	10.6	1.7

<sup>1</sup> In certain instances, Total Contributions Paid to Date may exceed Capital Committed as certain partnerships may call fees outside of commitment and most partnerships reserve a limited right to recycle capital and/or recall distributions.

<sup>2</sup> Unfunded Commitment amounts are an approximation due to the inclusion of recallable distributions.

<sup>3</sup> The Net IRR calculations were performed by Meketa Investment Group. Total Program IRR is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year IRRs are net of partnership fees but gross of Meketa Investment Group fees.

<sup>4</sup> The Inv. Multiple calculations were performed by Meketa Investment Group. Total Program Inv. Multiple is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year Inv. Multiples are net of partnership fees but gross of Meketa Investment Group fees.

<sup>5</sup> Due to lack of availability of historical data, the following partnerships were excluded from the report: Rimco Production Company, Inc. and Senior Tour Players, L.P.

**Plymouth County Retirement Association  
Private Equity Program**

**Aggregate Program  
Performance Summary as of 12/31/16**

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date (\$ mm)	Unfunded Commitment (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR (%)	Inv. Multiple (x)
<b>Vintage Year 2007</b>		<b>12.5</b>	<b>9.7</b>	<b>2.8</b>	<b>6.2</b>	<b>3.8</b>	<b>9.9</b>	<b>0.5</b>	<b>1.0</b>
	DN Partners II, L.P.	5.0	2.3	2.7	0.0	0.7	0.7	-19.1	0.3
	TRG Growth Partnership II, L.P.	7.5	7.4	0.1	6.2	3.0	9.2	5.1	1.2
<b>Vintage Year 2008</b>		<b>12.0</b>	<b>11.5</b>	<b>0.5</b>	<b>11.9</b>	<b>4.3</b>	<b>16.2</b>	<b>10.5</b>	<b>1.4</b>
	Landmark Equity Partners XIV, L.P.	6.0	5.7	0.3	4.9	2.4	7.3	11.1	1.3
	Siguler Guff Distressed Opportunities Fund III, L.P.	6.0	5.8	0.2	6.9	1.9	8.9	10.2	1.5
<b>Vintage Year 2009</b>		<b>10.0</b>	<b>10.2</b>	<b>0.0</b>	<b>10.1</b>	<b>4.5</b>	<b>14.5</b>	<b>15.3</b>	<b>1.4</b>
	Lexington Capital Partners VII, L.P.	10.0	10.2	0.0	10.1	4.5	14.5	15.3	1.4
<b>Vintage Year 2010</b>		<b>2.5</b>	<b>3.6</b>	<b>0.0</b>	<b>2.7</b>	<b>1.9</b>	<b>4.6</b>	<b>10.7</b>	<b>1.3</b>
	Leeds Equity Partners V, L.P.	2.5	3.6	0.0	2.7	1.9	4.6	10.7	1.3
<b>Vintage Year 2011</b>		<b>5.0</b>	<b>4.7</b>	<b>0.5</b>	<b>3.0</b>	<b>4.4</b>	<b>7.4</b>	<b>12.1</b>	<b>1.6</b>
	Ascent Venture Partners V, L.P.	5.0	4.7	0.5	3.0	4.4	7.4	12.1	1.6
<b>Vintage Year 2012</b>		<b>5.7</b>	<b>4.5</b>	<b>1.4</b>	<b>0.8</b>	<b>4.3</b>	<b>5.0</b>	<b>6.1</b>	<b>1.1</b>
	Euro Choice V, L.P.	5.7	4.5	1.4	0.8	4.3	5.0	6.1	1.1
<b>Vintage Year 2015</b>		<b>10.0</b>	<b>0.2</b>	<b>9.8</b>	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>	<b>NM</b>	<b>0.7</b>
	Audax Mezzanine Fund IV, L.P.	10.0	0.2	9.8	0.0	0.2	0.2	NM	0.7
<b>Vintage Year 2016</b>		<b>10.0</b>	<b>0.0</b>	<b>10.0</b>	<b>0.0</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
	Summit Partners Growth Equity Fund IX, L.P.	10.0	0.0	10.0	0.0	NA	NA	NA	NA



**Plymouth County Retirement Association  
Real Assets Program**

**Aggregate Program  
Performance Summary as of 12/31/16**

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Total Program</b>		<b>30.4</b>	<b>20.4</b>	<b>10.3</b>	<b>1.3</b>	<b>16.0</b>	<b>17.4</b>	<b>-5.6</b>	<b>0.9</b>
<b>Vintage Year 2010</b>		<b>15.0</b>	<b>13.5</b>	<b>1.8</b>	<b>1.0</b>	<b>10.7</b>	<b>11.7</b>	<b>-4.7</b>	<b>0.9</b>
JPMorgan Global Maritime Investment Fund	Opportunistic	10.0	8.5	1.8	0.8	4.8	5.6	-17.7	0.7
Timbervest Partners III, L.P.	Natural Resources	5.0	5.0	0.0	0.3	5.8	6.1	4.8	1.2
<b>Vintage Year 2011</b>		<b>5.4</b>	<b>5.0</b>	<b>0.3</b>	<b>0.1</b>	<b>3.9</b>	<b>4.0</b>	<b>-6.0</b>	<b>0.8</b>
BTG Pactual Global Timberland Resources Fund, LLC	Natural Resources	5.4	5.0	0.3	0.1	3.9	4.0	-6.0	0.8
<b>Vintage Year 2016</b>		<b>10.0</b>	<b>1.9</b>	<b>8.1</b>	<b>0.2</b>	<b>1.4</b>	<b>1.6</b>	<b>NM</b>	<b>0.9</b>
Global Infrastructure Partners III, L.P.	Value-Added	10.0	1.9	8.1	0.2	1.4	1.6	NM	0.9

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<sup>2</sup> Unfunded Commitment amounts are an approximation due to the inclusion of recallable distributions.

<sup>3</sup> The Net IRR calculations were performed by Meketa Investment Group. Total Program IRR is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year IRRs are net of partnership fees but gross of Meketa Investment Group fees.

<sup>4</sup> The Inv. Multiple calculations were performed by Meketa Investment Group. Total Program Inv. Multiple is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year Inv. Multiples are net of partnership fees but gross of Meketa Investment Group fees.

**Plymouth County Retirement Association  
Real Estate Program**

**Aggregate Program  
Performance Summary as of 12/31/16**

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date <sup>1</sup> (\$ mm)	Unfunded Commitment <sup>2</sup> (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR <sup>3</sup> (%)	Inv. Multiple <sup>4</sup> (x)
<b>Total Real Estate Program</b>		<b>140.0</b>	<b>106.3</b>	<b>41.0</b>	<b>55.6</b>	<b>102.7</b>	<b>158.3</b>	<b>5.5</b>	<b>1.5</b>
<b>Total Closed-End Private Real Estate</b>		<b>98.0</b>	<b>60.4</b>	<b>41.0</b>	<b>42.6</b>	<b>23.3</b>	<b>66.0</b>	<b>1.7</b>	<b>1.1</b>
<b>Vintage Year 2001</b>		<b>4.0</b>	<b>4.6</b>	<b>0.0</b>	<b>5.1</b>	<b>0.5</b>	<b>5.7</b>	<b>2.4</b>	<b>1.2</b>
	Intercontinental Real Estate Investment Fund III, LLC	4.0	4.6	0.0	5.1	0.5	5.7	2.4	1.2
<b>Vintage Year 2003</b>		<b>10.0</b>	<b>9.0</b>	<b>1.9</b>	<b>9.1</b>	<b>2.5</b>	<b>11.6</b>	<b>5.0</b>	<b>1.3</b>
	Redevelopment and Renovation Fund, LLC	10.0	9.0	1.9	9.1	2.5	11.6	5.0	1.3
<b>Vintage Year 2004</b>		<b>4.0</b>	<b>4.6</b>	<b>0.0</b>	<b>2.4</b>	<b>0.1</b>	<b>2.4</b>	<b>-8.0</b>	<b>0.5</b>
	Intercontinental Real Estate Investment Fund IV, LLC	4.0	4.6	0.0	2.4	0.1	2.4	-8.0	0.5
<b>Vintage Year 2007</b>		<b>30.0</b>	<b>26.7</b>	<b>4.3</b>	<b>25.4</b>	<b>9.4</b>	<b>34.8</b>	<b>5.8</b>	<b>1.3</b>
	Berkshire Multifamily Value Fund II, L.P.	10.0	11.0	0.0	16.9	0.8	17.7	11.1	1.6
	New Boston Institutional Fund, L.P. VII	5.0	3.0	2.0	1.8	2.0	3.9	5.5	1.3
	Real Estate International Partnership Fund I, L.P.	15.0	12.7	2.3	6.6	6.6	13.2	0.9	1.0
<b>Vintage Year 2008</b>		<b>5.0</b>	<b>5.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.9</b>	<b>-18.5</b>	<b>0.2</b>
	1921 Realty, Inc.	5.0	5.4	0.0	0.0	0.9	0.9	-18.5	0.2
<b>Vintage Year 2011</b>		<b>5.0</b>	<b>5.0</b>	<b>0.0</b>	<b>0.6</b>	<b>5.0</b>	<b>5.7</b>	<b>4.3</b>	<b>1.1</b>
	DSF Capital Partners IV, L.P.	5.0	5.0	0.0	0.6	5.0	5.7	4.3	1.1

<sup>1</sup> In certain instances, Total Contributions Paid to Date may exceed Capital Committed as certain partnerships may call fees outside of commitment and most partnerships reserve a limited right to recycle capital and/or recall distributions.

<sup>2</sup> Unfunded Commitment amounts are an approximation due to the inclusion of recallable distributions.

<sup>3</sup> The Net IRR calculation was performed by Meketa Investment Group. Total Program IRR is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year IRRs are net of partnership fees but gross of Meketa Investment Group fees.

<sup>4</sup> The Inv. Multiple calculation was performed by Meketa Investment Group. Total Program Inv. Multiple is net of fees, expenses, and carried interest for each partnership and net of Meketa Investment Group fees. Partnership and Vintage Year Inv. Multiples are net of partnership fees but gross of Meketa Investment Group fees.

**Plymouth County Retirement Association  
Real Estate Program**

**Aggregate Program  
Performance Summary as of 12/31/16**

	Investment Strategy	Capital Committed (\$ mm)	Total Contributions Paid to Date (\$ mm)	Unfunded Commitment (\$ mm)	Total Distributions Received to Date (\$ mm)	Reported Fair Value (\$ mm)	Reported Fair Value Plus Distributions (\$ mm)	Net IRR (%)	Inv. Multiple (x)
<b>Total Closed-End Private Real Estate (Continued)</b>									
<b>Vintage Year 2016</b>		<b>40.0</b>	<b>5.2</b>	<b>34.8</b>	<b>0.0</b>	<b>4.9</b>	<b>4.9</b>	<b>NM</b>	<b>0.9</b>
	AEW Partners Real Estate Fund VIII, L.P.	25.0	0.0	25.0	0.0	-0.2	-0.2 <sup>1</sup>	NA	NA
	DSF Multi-Family Real Estate Fund III, L.P.	15.0	5.2	9.8	0.0	5.0	5.0	NM	1.0
<b>Total Open-End Real Estate</b>		<b>42.0</b>	<b>45.9</b>	<b>0.0</b>	<b>13.0</b>	<b>79.3</b>	<b>92.3</b>	<b>7.3</b>	<b>2.0</b>
	Invesco Equity Real Estate Securities Trust	22.0	23.7	0.0	13.0	28.6	41.6	8.7	1.8
	Multi-Employer Property Trust	5.0	5.0	0.0	0.0	14.8	14.8	6.6	3.0
	PRISA I	15.0	17.2	0.0	0.0	35.9	35.9	6.7	2.1

<sup>1</sup> Due to management fee liabilities and capital not having been called to date, the fair market value is negative.

**Plymouth County Retirement Association  
Real Estate Program**

**Open-End Real Estate  
Time-Weighted Performance as of 12/31/16**

	<b>4Q16</b> (%)	<b>1 YR</b> (%)	<b>3 YR</b> (%)	<b>5 YR</b> (%)	<b>Inception</b> <b>Date</b>	<b>Since</b> <b>Inception</b> (%)
<b>Total Open-End Real Estate</b>	<b>0.5</b>	<b>7.3</b>	<b>11.2</b>	<b>10.6</b>	<b>12/30/99</b>	<b>7.0</b>
PRISA I	2.2	8.3	11.7	11.4	6/30/04	6.8
<i>NCREIF ODCE Equal Weighted (net)</i>	2.0	8.3	11.3	11.2		6.9
Multi-Employer Property Trust	1.4	8.0	10.7	9.7	12/30/99	6.6
<i>NCREIF ODCE Equal Weighted (net)</i>	2.0	8.3	11.3	11.2		7.1
Invesco Equity Real Estate Securities Trust	-2.0	5.7	11.0	9.9	12/31/02	8.7
<i>MSCI U.S. REIT</i>	-3.3	8.0	13.0	11.7		11.1

The IRR (internal rate of return) and investment multiple are the most meaningful measures of performance for a private market program. IRR measures how assets are performing in relation to time. Investment multiple shows the cash on cash return generated on the invested capital by the underlying assets. “NM” indicates that a fund is early in its investment period; therefore, the return is not yet meaningful. A not meaningful return is generated by funds with less than 24 months of investment activity.

As of December 31, 2016, the Retirement Association’s Private Equity Program (excluding two investments for which information was not available) generated a 3.5% net IRR and a 1.2x net TVM. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program increased by approximately \$0.3 million or 1.1% which was primarily driven by increases in the valuations of Ascend Ventures II (\$0.2 million or 44.8%), Globespan Capital Partners V (\$0.1 million or 3.9%), and Lexington Capital Partners VII (\$0.1 million or 3.9%).

As of December 31, 2016, the Retirement Association’s Real Assets Program generated a -5.6% net IRR and a 0.9x net TVM. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program decreased by approximately \$0.5 million or 3.0%. Performance was primarily driven by a decrease in the valuation of BTG Pactual Global Timberland Resources Fund (-\$0.3 million or -6.2%), JPMorgan Global Maritime Investment (-\$0.2 million or -3.7%), and Global Infrastructure Partners (-\$0.1 million or -5.8%).

As of December 31, 2016, the Retirement Association’s Real Estate Program generated a 5.5% net IRR and a 1.5x net investment multiple. After adjusting for capital calls and distributions that occurred during the quarter, the reported fair value of the Program decreased by approximately \$2.9 million, or 2.8%. Performance was primarily driven by decreases in the valuations of Invesco Equity Real Estate Securities Trust (-\$0.6 million or -2.0%) and 1921 Realty (-\$0.4 million or -27.4%), as well as a catchup capital call for DSF Multi-Family Real Estate Fund III, which was marked at \$2.7 million in the third quarter prior to calling capital.

**Appendices**  
**As of December 31, 2016**

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**Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.**

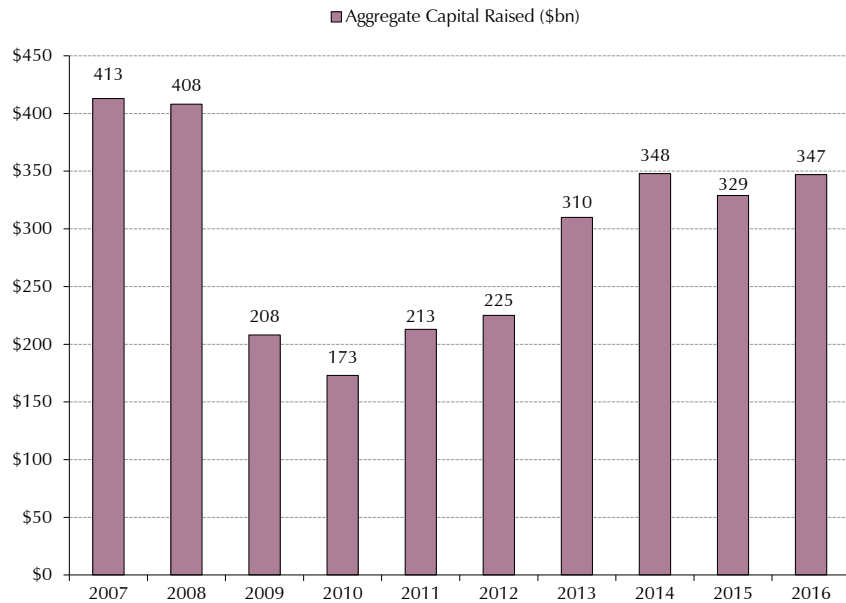
**Market and Industry Analysis**  
**As of December 31, 2016**



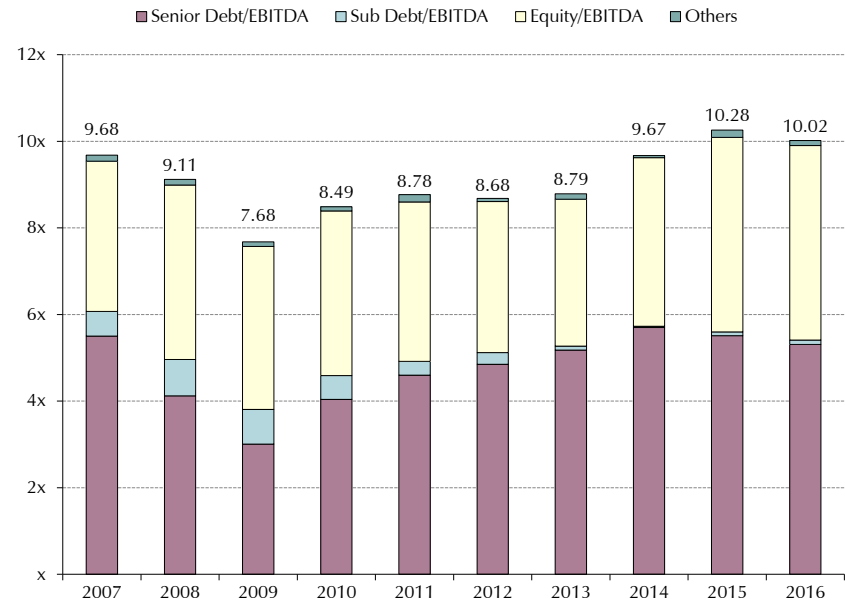
**Private Equity in 2016**

The fundraising market for private equity in 2016 continued to be very robust, with \$347 billion of commitments raised during the year. Strong public market returns in North America in 2016 and a relatively robust debt market continued to drive attractive exit valuations in private equity buyout investments. Meanwhile, dry powder levels for private equity overall continued to rise, to \$820 billion at the end of December<sup>1</sup>, raising concerns of increasing competition to find attractive deals. Fundraising for European-focused funds increased to €100 billion, the largest total for the region since prior to the financial crisis, with investors viewing such investments as contrarian given the continued fears over the Eurozone economy and geopolitical tensions. Asia-focused funds raised \$40 billion in 2016, marking the second consecutive year of decline by private equity funds targeting the region. China accounted for approximately 62%, or \$25 billion, of capital raised despite growing concerns over debt levels, slowing growth, and the temporary IPO freeze. Venture capital fundraising, investment pace, and distribution activity all continued their growth in 2016, with \$55 billion of total capital raised. Venture capital in North America continued to lead the way in terms of investment activity and fundraising, followed by Asia, which maintained its lead over Europe.

**Global Fundraising<sup>2</sup>**



**Purchase Price break-down All LBO, North America<sup>2</sup>**



<sup>1</sup> Source: Preqin

<sup>2</sup> Source: S&P Leverage Finance

### **Buyout**

North American buyout activity continued to surpass all other regions in fundraising and capital deployment, representing 57% and 59%, respectively, of the global totals in 2016<sup>1</sup>. Following a significant increase in 2015, North American buyout valuations as reported by S&P Capital IQ fell, to an average 10.0x trailing EBITDA through December 2016. Debt markets were slightly less active in 2016 compared to 2015. Debt levels for all U.S. buyouts averaged approximately 5.3x trailing EBITDA through December 2016. The largest North American deal was Apollo Global Management's \$15 billion take-private of ADT Security Services, Inc., which Apollo merged with its existing portfolio company, Protection 1. The IT sector comprised approximately 30% of the aggregate buyout volume, followed by the Consumer & Retail and Healthcare sectors, at 13% each. The European buyout market represented 33% by number and 28% by aggregate value of global deals. Meanwhile, the Asia buyout market represented 6% of all deals globally by number and 8% of aggregate global investment value. In terms of exits by type, trade sales represented the largest at 55% of total global aggregate value, with IPOs at 12%, which was a decrease from 18% in 2015. The growth of sponsor-to-sponsor exit activity seen in 2015 extended into 2016, albeit at a slower pace, representing 31% of the exit market, driven by continued capital overhang and pressure to return cash back to investors.

### **Private Debt**

Leveraged credit markets continued their sell off from 2015 into the beginning of 2016, but then snapped back and recovered all of their losses by the end of the year. Total returns for the year were 17.1% for high yield bonds and 9.9% for bank loans. The high yield option-adjusted spread finished the year at 410 basis points, approximately 110 basis points below the historical average and 250 basis points lower than where it started the year. Default rates for bank loans actually slightly decreased while the high yield default rate doubled, albeit off of a low starting rate, to 3.6%. Defaults were concentrated in commodity-related industries such as energy and metals/mining, where the high yield market had much higher exposure than the loan market. Distressed managers benefited from lower prices in the beginning of 2016, but the sharp recovery in credit markets made timing of capital deployment an important factor. By the end of the year, bonds rated CCC were priced in the mid-\$90s and those below CCC were near \$80. As the commodity-related industries recovered, some health care and retail companies began to show weakness later in 2016, which created additional potential distressed opportunities. Issuance of mezzanine and other subordinated debt increased slightly in 2016 as borrowers were forced to accept slightly higher borrowing rates due to the sell off in the broad credit markets. BDCs continued to struggle and few were in a position to issue additional equity, which limited their ability to maintain their underwriting volumes. Mezzanine and other subordinated debt providers could be well positioned to fill this void.

### **Venture Capital**

2016 turned out to be a challenging exit environment as the global venture capital market saw a 21% drop, to \$63 billion, in the aggregate value of exits, down from \$80 billion in 2015. Corporate acquisitions accounted for the largest proportion of venture-backed liquidity events in 2016, as the IPO window remained fairly tight for venture-backed companies. Despite this decline in exit valuations, the aggregate value of venture capital deals announced globally in 2016 remained strong at \$134 billion and was the second highest aggregate deal value on record behind only the record setting level in 2015. Fundraising in 2016 was a banner year, as over 350 funds closed on over \$55 billion, surpassing the record fundraising levels seen in both 2014 and 2015. North America continued to lead all regions in fundraising and deal and exit activity. However, venture activity in Greater China continued to catch up to North America, accounting for 21% of global deal volume in 2016, after averaging 8% during the period from 2007 to 2014. Deal value in China increased 20% to \$48 billion in 2016, while deal value in North America amounted to \$61 billion, down 15% from 2015. Seven of the top ten venture capital deals in 2016 involved China-based companies, including Ant Financial, Meituan-Dianping, and Didi Chuxing, which eventually bought Uber's China operations in August. Again, concerns continued to be raised over lofty valuations of VC-backed companies, coupled with weakness in the exit markets over the past couple of years.

<sup>1</sup> Source: Preqin

### **The Global Economy**

Stagnant global trade, weak investment, and increased political uncertainty weighed on the global economy in 2016 as the world continues to slowly recover from the financial crisis. Both the IMF and OECD estimate global GDP growth in 2016 to have been close to 3.0%, but project more promising GDP growth rates over the next couple of years. The primary factor behind the strengthening global outlook is the projected pickup in growth of the emerging market and developing economies (EMDEs), which led the way in 2016 with a 4.1% growth rate, while advanced economies grew at a 1.6% rate. This trend is expected to continue as EMDEs are estimated to grow at 4.8% in 2018, while developed economies are projected to grow at a relatively meager 2.0% in 2018. Looking beyond the headline numbers, the economies of the United States and the United Kingdom continued to fare better while the economies of countries in the Euro-area, Latin America, and Japan continued to face headwinds.

The headlines in 2016 were dominated by geopolitical risks and other noneconomic factors - civil war and domestic conflict in parts of the Middle East and Africa, the refugee crisis in and around Europe, and the continuation of terrorist attacks worldwide. The year got off to a shaky start with oil prices continuing their precipitous fall to a low of \$28 per barrel, but eventually ended up at over \$50 per barrel by the end of the year. The Eurozone slowed from 2% in 2015 to 1.6% in 2016 as both domestic demand and exports lost momentum; however, business confidence proved to be more resilient than expected despite Britain's vote in June 2016 to leave the EU. The European Union remains fragile as key elections in 2017 across Europe could further shift EU countries toward protectionist and populist policies. Major economies, including Brazil, continued to face challenges in 2016, with Brazil's GDP declining by 3.5% while Russia was impacted by the lower oil prices and continued geopolitical tensions. China's economic growth decelerated slightly to 6.7%, as the country continues to rebalance its economy from industry to services and from investment to consumption. China remains the driver of world economic growth and the risk of a slowdown remains heightened given the country's rapid credit expansion, non-performing corporate debt, and persistent government support for inefficient state-owned firms. India along with the ASEAN-5 countries were among the few bright spots among emerging markets, as they achieved GDP growth rates of 6.6% and 4.8%, respectively. Growth in emerging market economies will likely remain uneven, with some economies particularly feeling the impact of continued dollar strength and potential U.S. protectionist policies.

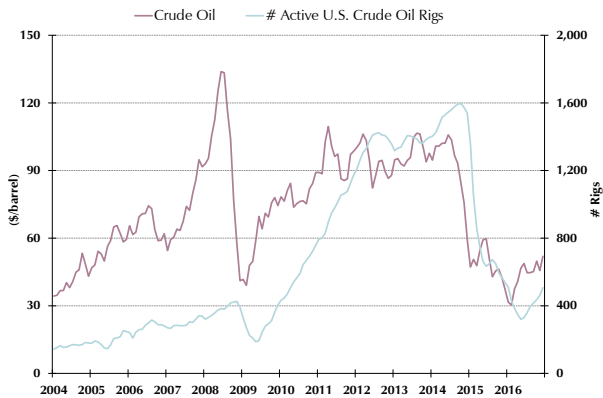
The U.S. has experienced largely stable growth since the end of the financial crisis, but at levels below prior recoveries. The U.S. economy's subdued growth in 2016 remained hampered by a strong U.S. dollar and low oil prices, although the economy continued to move closer to the Federal Reserve's full employment and inflation targets. As largely expected, the U.S. Federal Reserve increased short-term interest rates by 0.25% in December to 0.75%. The election of Donald Trump as President of the United States shocked many. Since the election, investors have focused more on the potential for pro-growth policies including lower taxes, more infrastructure spending, and less regulation, while seemingly placing less emphasis on the potential for policies that could potentially hurt growth such as a protectionist trade stance and tougher immigration policies. Looking ahead, the distinction between campaign rhetoric and enacted policy will be a key consideration. Timing is also important, as the impact of fiscal policy will likely not be felt until 2018, or later.

**OPEC coordinated a supply cut to help bolster oil prices; commodity prices, in general, were mixed during the fourth quarter.**

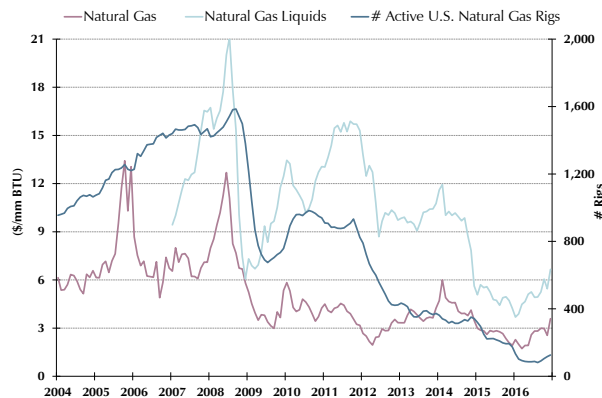
- Oil prices increased by 15% to \$52 per barrel during the quarter. Additionally, operational improvements, cost reductions, and utilization of technology continues to improve the well economics in many oil basins in the U.S. As a result, the number of oil rigs began to increase in 2016. During the fourth quarter, 91 oil rigs were added bringing the U.S. total to 507.
- Gasoline prices increased by 2% to end the quarter at an average price of \$2.39/gallon for regular blend. Relative to one year prior, gasoline prices were up by 7%.
- Natural gas prices surged 20% during the fourth quarter to \$3.59/MM BTU driven by record levels of natural gas-generated electricity during the summer and expectations of a colder winter. Natural gas prices were up 86% from one year prior. The rig count for natural gas increased by 35 during the quarter to 126.
- Gold prices settled at \$1,151 per ounce, representing a 13% quarterly decline and an 8% increase from one year prior.
- Copper prices ended the quarter at \$2.57 per pound, representing a 20% quarterly increase and a 22% increase from one year prior.
- Grain inventories in the U.S. remain high after robust harvests in the U.S. and globally. The price of wheat was flat for the quarter but down 25% from one year prior. Corn and soybeans were up 3% and 5%, respectively, during the quarter and down 7% and up 16%, respectively, relative last year. After significant rainfall in California, the multi-year drought was officially declared over.
- Continued strength in new residential construction contributed to improved prices for lumber and paneling products. Relative to one year prior, lumber and panel prices were up 14% and 3%, respectively.

Extracted Resources

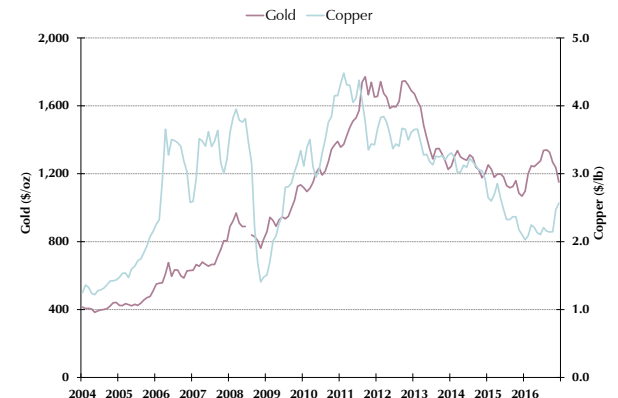
Crude Oil Price vs. Active U.S. Rigs<sup>1</sup>



Natural Gas Price vs. Active U.S. Rigs<sup>1</sup>



Metals Prices<sup>2</sup>



U.S. shale exploration and production companies able to recapitalize balance sheets, reduce costs, implement better processes and techniques, and utilize new technology have emerged stronger. Companies are choosing to focus on core areas and are divesting non-core assets. While some regions continue to be uneconomical at today’s low prices, there are many basins that can generate attractive returns in a low oil price environment. Scarcity of skilled labor is becoming an issue in certain regions and has the potential to increase operating expenses for companies.

Oil prices are likely to be range bound over the medium term. Shale oil has a quick timeline from exploration to production. As a result, it is relatively easy for U.S. oil companies to ramp up production should prices rise or reduce activity should prices fall.

Natural gas production from the Utica and Marcellus in the Northeast remain strong and continues to increase. New fracturing techniques, more frack stages, longer horizontal laterals, and increased usage of sand proppant are increasing efficiencies and natural gas production. The significant buildout of midstream energy infrastructure is alleviating bottlenecks and improving transportation to end markets.

Power generation companies have significantly invested in natural gas-powered turbines due to increased regulation on coal power plans during the Obama presidency. It is unclear what impact the Trump presidency will have on the coal industry and power generation industry.

Access to capital continues to be challenging for mining companies, in general, which has slowed the development of new project supply. The demand for metals, minerals, and other commodities is expected to increase over the long term driven by increasing populations, urbanization, and rising disposable income.

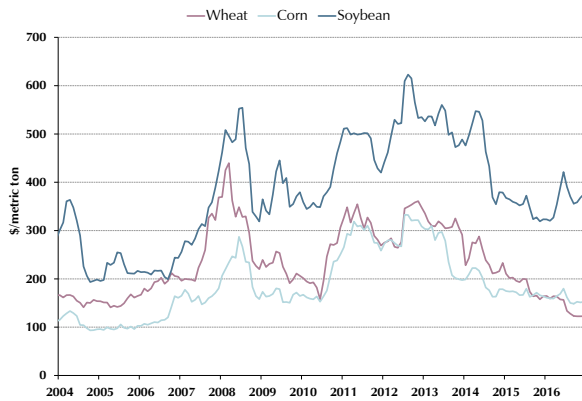
President Trump’s initiatives to increase domestic infrastructure spending and building a border wall with Mexico may significantly increase the demand for commodity resources. Demand and prices for steel making inputs, such as iron ore, metallurgical coal, manganese, and nickel, may increase as a result.

<sup>1</sup> Source: EIA and Baker Hughes

<sup>2</sup> Source: Index Mundi and Kitco

Harvested Resources

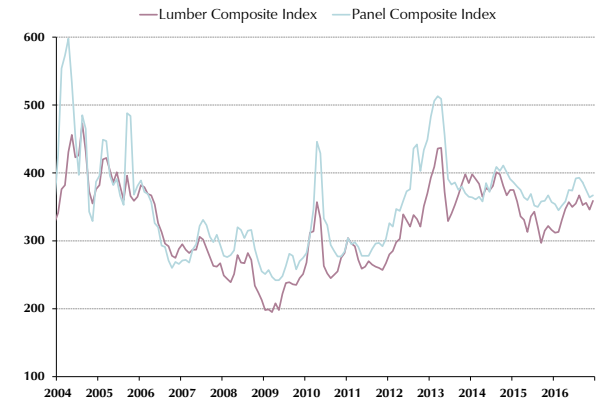
Wheat, Corn, & Soybean<sup>1</sup>



Trailing Period Returns<sup>2</sup>

As of December 31, 2016	Q4 16	1 Year	5 Years	10 Years
NCREIF Farmland	2.9%	7.1%	13.8%	13.1%
NCREIF Timberland	1.2	2.6	7.1	5.8
S&P 500	3.8	10.9	14.7	7.0
Barclays Aggregate	-3.0	2.7	2.2	4.4

Lumber & Panel Composites<sup>3</sup>



Favorable weather conditions contributed to strong harvests in the U.S. as well globally during 2016. The bumper crops helped drive grain inventories higher, resulting in weaker prices. Regions that generally produce high levels of corn, such as the Midwest, were affected the most which contributed to reductions in farmland prices.

Over the past several years, drought conditions in the Pacific West region have forced farmers to discontinue lower value water-intensive crops. Farmers growing higher value permanent crops such as citrus, persimmons, grapes, and nuts were able to generate strong returns. Significant rainfall during the second half of the year resulted in an official end to the multi-year drought in California.

Harvested strategies posted positive returns during the fourth quarter with both farmland and timberland outperforming the Barclays Aggregate index while underperforming the S&P 500 index.

Farmland returns during the quarter were driven by 2.5% in income and 0.5% in appreciation gains. Row crops returned a total of 1.2%, and permanent crops generated 5.1% during the quarter. The Pacific-West region produced the strongest returns of 4.9%. The Corn Belt region generated the weakest returns of -1.4% during the quarter.

Timberland returns were driven by 0.5% in appreciation and 0.7% in income during the quarter. The Lake States region generated the strongest geographical returns of 6.7%, whereas the Northeast region generated the weakest returns of -2.8%.

New housing starts continued its upward trend throughout the year. New construction activity and remodeling activity helped improve the demand and pricing for finished timber products such as lumber and panel. Lumber exports from the U.S. to China reached near record levels. The Pacific Northwest region is expected to continue to benefit from export activities to Asia. During the fourth quarter, lumber prices increased by 2% while panel prices fell by 5%. Relative to one year prior, lumber and panel pricing increased by 14% and 3%, respectively.

<sup>1</sup> Source: Index Mundi

<sup>2</sup> Source: National Council of Real Estate Investment Fiduciaries (NCREIF)

<sup>3</sup> Source: Random Lengths

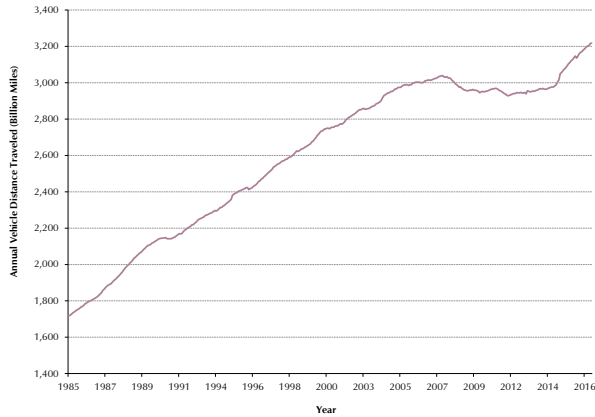
**Infrastructure fundraising and transactions**

- 51 unlisted infrastructure funds closed in 2016, raising a combined \$58 billion, a 32% increase from 2015. At year-end 2016, a total of 181 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$141 billion.
- Notable final closes held in the fourth quarter included Antin Infrastructure Partners III, which raised €3.6 billion, and Carlyle Energy Mezzanine Opportunities Fund II, which raised \$2.8 billion.
- As reported by Preqin, 1,774 deals were completed in 2016, a slight increase from 2015. The average annual deal size increased to a record \$364 million, a 14% increase from 2015.

**Several notable transactions reached financial close during the fourth quarter**

- A consortium led by Allianz Capital Partners, China Investment Corporation, Macquarie Infrastructure and Qatar Investment Authority agreed to acquire a 61% ownership stake in National Grid's gas distribution business for £3.6 billion. National Grid has 82,000 miles of pipelines which deliver gas to 11 million households and businesses.
- A consortium led by Global Infrastructure Partners agreed to acquire a 20% equity stake in Gas Natural Fenosa for €3.8 billion. Gas Natural Fenosa is a Spanish natural gas utility that provides natural gas transmission and distribution services to over 23 million customers in more than 30 countries.
- A consortium comprised of IFM Investors and Australian Super agreed to acquire a 50.4% stake in Ausgrid, the electricity distribution network of the state of New South Wales, for \$12.3 billion. Ausgrid is the largest electricity network in Australia, supplying power to 1.7 million homes and businesses.

**Moving 12-month Total on All Roads (U.S.)**

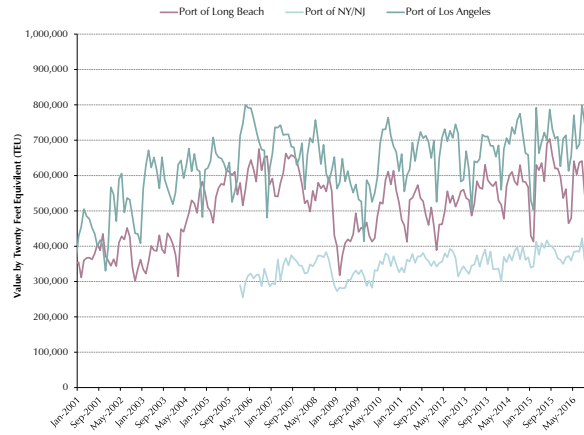


During the fourth quarter of 2016, travel on U.S. roads totaled approximately 802 billion miles. This represented an increase of 2.1% over the same period in 2015. On a year-to-date basis, Federal Highway Administration data showed vehicle miles traveled increased by 62 billion miles, up 2.0% from 2015.

In 2016, the average U.S. price of a gallon of gas came down to a monthly average of \$2.25, with a peak of \$2.47. This compares to \$2.52 and \$2.89 seen in 2015.

According to INRIX data, none of the top ten most congested routes in the U.S. were toll roads.

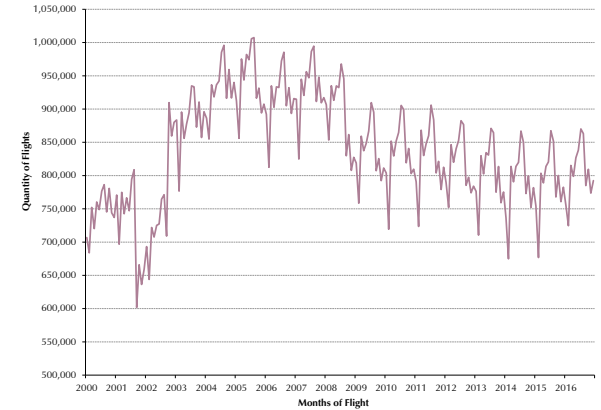
**U.S. Port Activity – Container Trade in TEUs**



The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the fourth quarter of 2016, volumes at the three ports increased by approximately 333,000 TEU, or 6.7% over same period in 2015. On a year-over-year basis, the combined port volumes increased by 232,000 TEU, or 1.2%, over 2015. There was some variation by region. The Port of Los Angeles recorded an increase of 8.5% (696,000 TEU) from 2015 while Long Beach and the Port of NY/NJ saw decreases of -5.8% and -1.0%, respectively, over the same period.

**Total Flights (U.S.)**

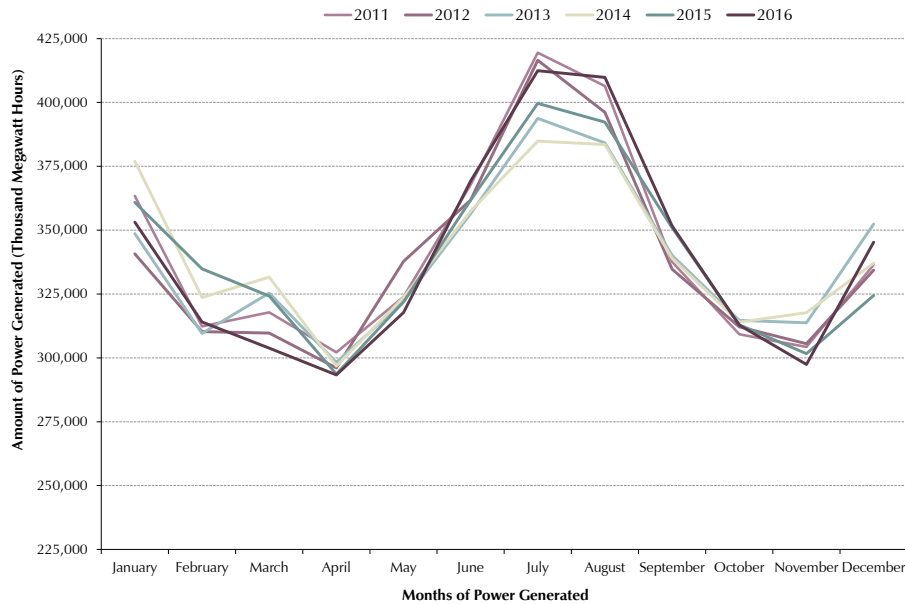


The summary totals in the chart above represent all U.S. domestic and international flights, excluding foreign point-to-point flights. As shown in the chart, air traffic is cyclical with peaks in the summer months and declines in the winter months.

There were 32,200 more flights during the fourth quarter of 2016, representing a 1.4% increase over the same period in 2015. Air traffic activity also increased by 1.7% for the year over year period. In addition to the number of flights during the fourth quarter increasing year-over-year, the total number of passengers travelling on U.S. airlines increased by 1.8%, which indicates higher capacity factors among airlines compared to the prior period.

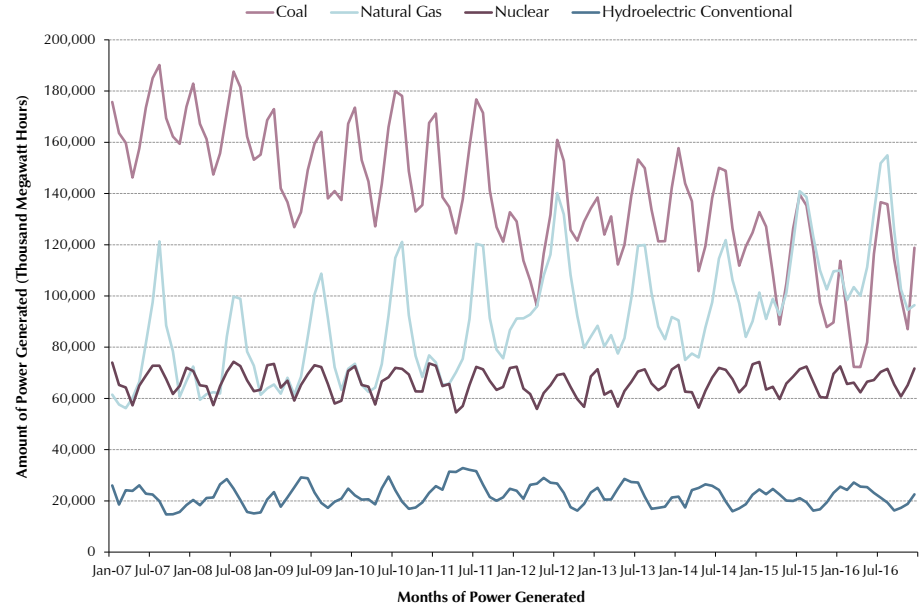


**Total Power Generation (U.S.)**



Net energy generation in the U.S. increased by 1.7% during the fourth quarter, compared to the same period in 2015. In December 2016, the price of Henry Hub natural gas had reached \$3.70/MMBtu a meaningful increase from the 2015 December price of \$1.93/MMBtu. Due to this price increase, natural gas consumption decreased in the fourth quarter as compared to the previous year.

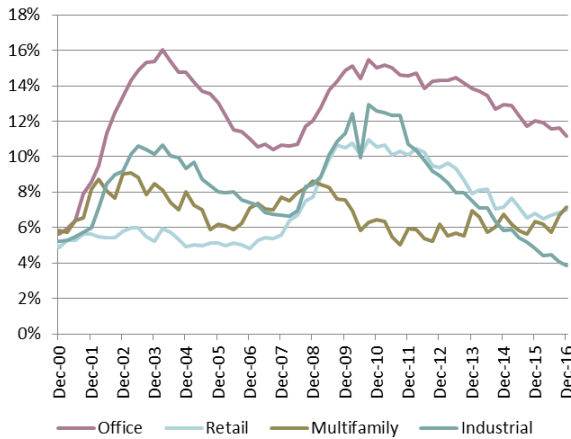
**Power Generation by Source (U.S.)**



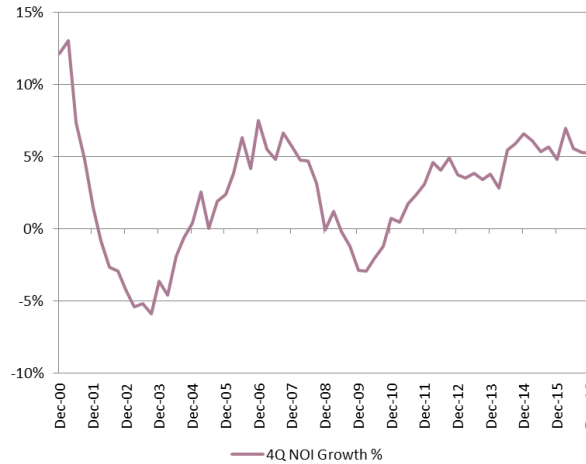
When comparing individual generation sources in the U.S., natural gas and hydroelectric generation were down 8.9%, and 1.1%, respectively, during the fourth quarter compared to the same period in 2015. However, coal and nuclear generation were up by 11.0% and 3.7%, respectively, compared to the same period in 2015. In 2016, natural gas and coal supply are in line with each other, accounting for 71% of U.S. power generation combined. Nuclear generation represented 23%, while conventional hydroelectric power was 7% of total U.S. power generation.

Real Estate Fundamentals

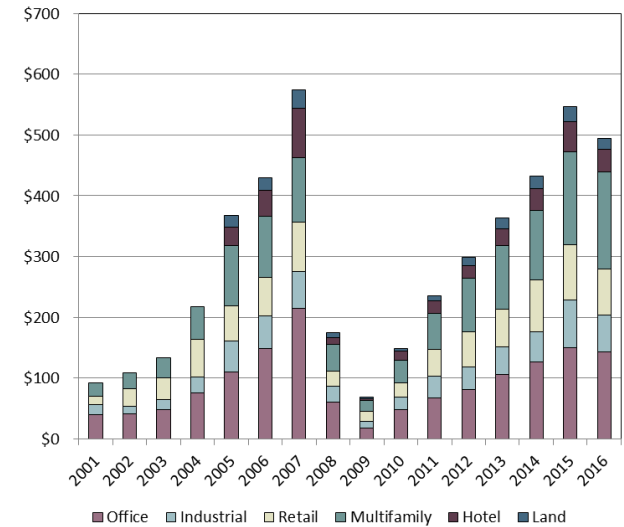
Vacancy by Property Type



NOI Growth



Transaction Volume (\$bn)



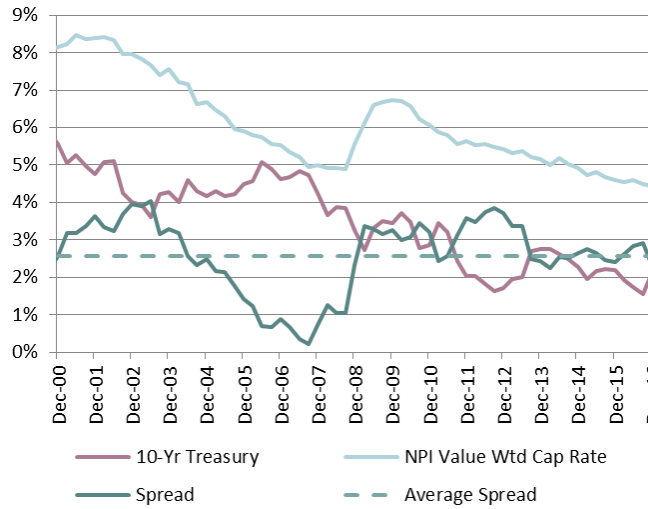
Private real estate occupancy rates were mixed throughout 2016, with industrial and office vacancy decreasing, while multifamily and retail vacancy increased slightly when compared to year-end 2015. Overall, total vacancy decreased by 36 basis points during the year and remains at cycle lows. Industrial properties recorded the largest improvement, decreasing by 92 basis points and ending the year with a total vacancy of 3.9%.

The trailing twelve month rate of NOI growth continued at a strong pace, remaining above 5% for all of 2016. This is largely due to the continued growth of the U.S. economy coupled with moderate new construction, allowing property owners to increase rents and lease vacant space. The strongest NOI growth was seen across industrial properties, which grew at 7.4% over 2016.

Private real estate transaction volume for properties valued over \$2.5 million declined 10% year-over-year, although 2016 volume remained above that of 2014. The volume decline was widespread, with multifamily the only property type with increasing volume. Apartment and office properties remain the largest percentage of total transactions, at 32% and 29% of total volume, respectively.

Real Estate Capital Markets

Cap Rates vs 10-Year Treasury



Trailing Period Returns

As of December 31, 2016	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	8.4%	11.3%	11.2%	4.7%
NCREIF Property Index	8.0	11.1	11.0	7.0
NFI-CEVA (EW, net)	9.7	15.0	13.8	5.2
NAREIT Index	8.5	13.4	12.0	5.1

ODCE Return Components (Equal Weight, net)



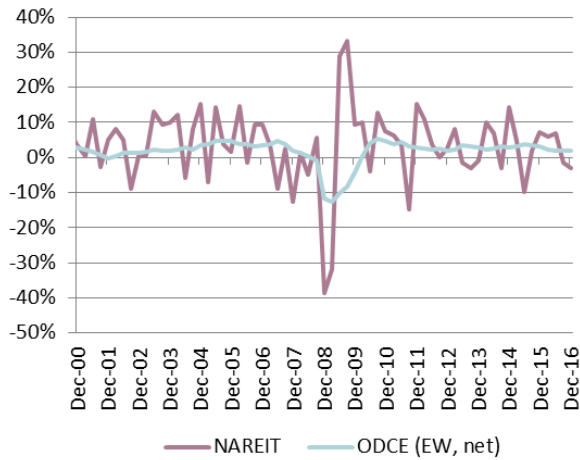
The NPI Value Weighted Cap Rate continued its downward trend, decreasing by 16 basis points and ending the year at 4.4%. Although the spread between cap rates and the 10-year Treasury remains in line with historical average, an uptick in Treasury yields decreased the spread by 63 basis points during the fourth quarter. A further increase in bond yields could put upward pressure on cap rates, limiting appreciation generated by cap rate compression.

Public and private real estate indices posted positive, yet moderating returns for the year, driven by strong property-level fundamentals and a low interest rate environment. The NFI-CEVA (Closed-End Value Add) Index has outperformed over relevant time periods, although the funds included in the index utilize higher leverage and vacancy risk than the comparable indices, which generally include stabilized properties.

The NFI-ODCE Equal Weight return for 2016 was 8.4%, net of fees, consisting of a 4.5% appreciation return and a 3.8% income return. The decline from 2015's net return of 14.2% is almost entirely attributable to a slowdown in appreciation, which returned 10.0% throughout 2015. Moderate returns from appreciation are expected in the near term.

Public REIT Market

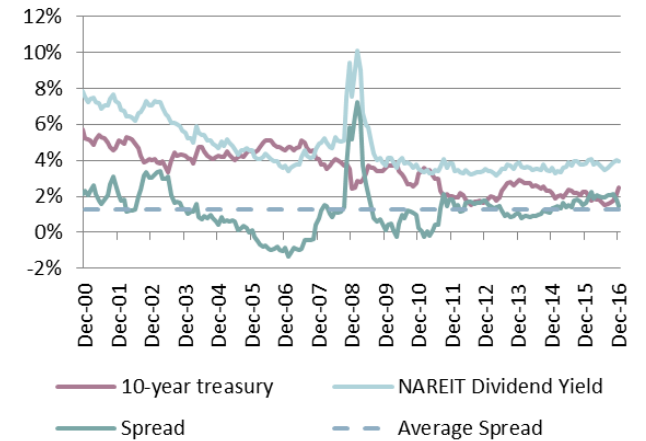
Public vs Private Real Estate Returns



REIT Premium/Discount to NAV<sup>1</sup>



NAREIT Dividend Yield



REITs have outperformed private core real estate in relevant trailing periods, however private vehicles exhibit significantly less volatility. Volatility, as measured by the 10-year standard deviation of quarterly returns, was 12.6% for the NAREIT compared to 4.3% for the ODCE.

REITs traded at a 5% discount to underlying property NAV as of December 2016, which is below the historical average of a 3% premium since 2000. REITs traded as low as a 10% discount during 2016 at the end of November, and rebounded following a 4.7% total return in December.

The NAREIT Dividend Yield has remained relatively steady following the GFC and ended 2016 at 4.0% with the spread to the 10-year Treasury at 1.5%, slightly above the average spread since 2000 of 1.3%. Public REITs trade similarly to long duration bonds, whose prices are highly sensitive to interest rates, so caution should be paid to REIT prices as the Federal Reserve signals further increases to its benchmark interest rate.

<sup>1</sup> Data from Green Street Advisors

**Disclaimers and Valuation Policies**  
**As of December 31, 2016**

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Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

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.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions (“Forward Statements”). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the Fund will receive a return of the amount invested.

In some cases Meketa Investment Group assists the Fund 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 Fund.

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The values of companies and partnerships in this review are based on audited reports for December 31, 2016 provided by the General Partners, unless otherwise noted.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

While all private markets partnerships are audited by an independent entity, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.

Private markets investors have developed a number of unique terms to describe their investment work. The following glossary of private markets terms is intended to help make sense of these terms. Where the term “private equity” is used, the definition will generally also apply to private debt funds that are structured in a similar manner.

**Absorption:** The amount of inventory or units of a specific commercial property type that become occupied during a specified time period (usually a year) in a given market, typically reported as the absorption rate.

**Advisory Board:** Partnerships often establish an advisory board comprised of representatives of the Limited Partners to oversee the on-going work of the General Partners. Advisory boards typically meet once each year to review the partnership’s investments. It is important to note that unlike the Board of Directors of a public company, the advisory board has very little power to control the activities of the General Partners.

**Angel Investor:** Angel investors are individuals who invest their own capital directly in small, early stage companies. Angels are an alternative source of funding for entrepreneurs. Such investments are characterized by high levels of risk and potentially a large return on investment.

**Appreciation:** An increase in the value or price of a real estate asset.

**Appreciation return:** The portion of the total return generated by the change in the value of the real estate assets during the current quarter, as measured by both appraisals and sales of assets.

**Appraisal:** An estimate of a property’s fair market value that is typically based on replacement cost, discounted cash flow analysis and/or comparable sales price.

**Asset management:** The various disciplines involved with managing real property assets from the time of investment through the time of disposition, including acquisition, management, leasing, operational/financial reporting, appraisals, audits, market review and asset disposition plans.

**Asset management fee:** A fee charged to investors based on the amount invested into real estate assets for the fund or account.

**Barrel:** 42 U.S. gallons of oil.

**Base metals:** Non-precious, non-ferrous metals that include copper, aluminum, lead, nickel, tin, and zinc.

**Base rent:** A set amount used as a minimum rent with provisions for increasing the rent over the term of the lease.

**Biofuels:** Biofuels are combustible fuels, such as bio-ethanol, that are made and processed from vegetation sources such as corn, sugar cane, barley, or wheat.

**Blind Pool:** Most limited partnerships are organized as blind pools, meaning that Limited Partners commit capital to the partnership before any actual investments are made. At the point of commitment, the Limited Partners do not know specifically how their money will be used (hence the term blind pool), and must therefore rely entirely upon the track record and experience of the General Partner.

**BOE/day:** a daily production metric equivalent to the energy content of a barrel of oil equivalent often related to natural gas, natural liquids, and condensates.

**Broker:** A person who acts as an intermediary between two or more parties in connection with a transaction.



**Brownfield:** A project with an operating history. The initial outlay is entirely to the public entity. Brownfield can be considered an easier starting point for investors, given the shorter J-curve and lower level of risk. Meketa Investment Group categorizes a Fund as brownfield if the Fund's investment strategy calls for over 65% of its underlying investments to be in brownfield (operating) assets.

**Buyout Fund:** A buyout partnership uses the partners' capital to purchase existing, established businesses. The acquired firms may be family owned prior to purchase, or may be operating divisions of larger companies seeking to restructure their businesses. In a few cases, the buyout partners may purchase all of the outstanding shares of a publicly traded company, effectively taking it private. Buyout funds are not involved in venture capital or startups.

Buyout partnerships own the acquired companies outright, or in combination with other buyout partnerships. In some cases the buyout partners will replace the existing management with a new team, or the acquired firm will be left autonomous. The buyout partners frequently take one or more board seats in order to ensure control of the business.

**Capital Appreciation:** The change in market value of a property or portfolio adjusted for capital improvements and partial sales.

**Capital Call (Contribution):** Once a partnership has declared its first close, the General Partners will begin to make portfolio investments. As each investment is made, the capital necessary to fund the investment is "called" from the Limited Partners.

**Capitalization Rate:** A percentage that relates the value of an income-producing property to its future income, expressed as net operating income divided by purchase price. This is also referred to as *cap rate*.

**Carried Interest:** The share of profits that the fund manager is due once it has returned the cost of investment to investors. Carried interest is normally expressed as a percentage of the total profits of the fund. The industry norm is 20%. The fund manager will normally therefore receive 20% of the profits generated by the fund and distribute the remaining 80% of the profits to investors.

**Carrying Value:** The General Partner must list on the partnership's balance sheet a value for every investment held. These valuations are called carrying values, and in most cases are simply the original cost of the investment. Note that carrying values in most cases are not audited and do not represent actual market values.

**Capital Call (Contribution):** Once a partnership has declared its first close, the General Partners will begin to make portfolio investments. As each investment is made, the capital necessary to fund the investment is "called" from the Limited Partners.

**Cash Flow Positive:** When a company generates more free cash than it consumes in normal operations, it is deemed to be cash flow positive. Such companies may not need extra financing or debt in order to grow.

**Cash Leasing Farmland:** A low risk/return strategy that shifts the operational risk of farming to a local operator. Farmland investors receive stable lease payments from the local operators who are allowed to farm the land. Cash leasing is typically used for row croplands.

**Cash on Cash Return:** The simple gross total return earned by the Limited Partners, calculated as the total distributions received divided by the total contributions made. Thus, if an investor supplied a total of \$100 in cash calls and contributions, and received over the life of the partnership \$200 in distributions, the cash on cash return would be 100%. The cash on cash return is typically reported as a multiple. In the example above, the investment returned 2x (two times).

**Chip-N-Saw:** Produced from mid-sized trees that are cut and chipped to pulpwood chips or small dimension lumber. Chip-N-Saw is typically derived from trees measuring 10-13" DBH.

**Claw-Back Provision:** A claw-back provision ensures that a General Partner does not receive more than its agreed percentage of carried interest over the life of the fund. So, for example, if a General Partner receives 21% of the partnership's profits instead of the agreed 20%, Limited Partners can claw back the extra one percent.

**Cleantech:** A broad term used to classify products or services that improve energy productivity, performance, or efficiency while reducing input costs, consumption, waste, or pollution. Common products associated with cleantech are wind farms, photovoltaics, fuel cells, biofuels, and smart grid technologies.

**Closed-end fund:** A commingled fund that has a targeted range of investor capital and a finite life.

**Closings and Closing Dates:** Every partnership must specify the date upon which the General Partners will cease fundraising and begin making actual investments with the Limited Partners' committed capital. That date is called the closing date, and defines the vintage year of the partnership. Most partnerships, however, have several closing dates, and all partnerships must eventually have a final closing. In most cases, the final closing lags six to nine months after the first closing. If a majority of the original Limited Partners consent, a partnership can remain open to new investors after the final closing and while early investments are being made, in order to have time to attract additional investors.

**Co-Investment:** In some cases, Limited Partners want the right to make additional direct investments in one or more of the underlying companies purchased by the General Partner. If the partnership agreement gives co-investment rights to specific Limited Partners, then they may elect to invest additional monies "along side" the General Partner in various deals. In these cases, the co-investing Limited Partners would have two investments in an underlying property: their share of the partnership's investment, and their direct additional co-investment on the side. Note that co-investment rights may be available only to the largest Limited Partners.

Co-investment rights are often negotiated by very large Limited Partners when they have strong convictions about the deal finding skills of the General Partners, because co-investment rights permit them to make even larger investments in the underlying properties than would otherwise be possible, without paying carried interest.

**Committed Capital:** When a Limited Partnership is formed, each Limited Partner agrees to contribute a specific amount of capital to be invested over the life of the partnership. Once the agreement is signed, the Limited Partners are legally bound and committed to supply the agreed upon capital when it is called for by the General Partner.

**Concession (Infrastructure):** A business operated under a contract or license associated with a degree of exclusivity. In the case of a public service concession, a private company (the concessionaire) enters into an agreement with the government to have the exclusive right to operate, maintain and carry out investment in a public asset (such as a utility) for a given number of years.

**Concessions (Real Estate):** Cash or cash equivalents expended by the landlord in the form of rental abatement, additional tenant finish allowance, moving expenses, or other monies expended to influence or persuade a tenant to sign a lease.

**Construction loan:** Interim financing during the developmental phase of a property.

**Consolidation (Roll Up):** Many industries in America are highly fragmented, as the market space is serviced by a large number of locally owned businesses. By consolidating fragmented industries (i.e., purchasing many local businesses), private equity firms can create a single larger company with greater market control, more attractive financial characteristics, and potentially, better pricing flexibility and lower costs.

**Convertible Bonds:** Some private equity partnerships, generally those that provide mezzanine financing, may take convertible bonds as part of their compensation for providing investment capital. The convertible bond pays interest like other bonds, but can be exchanged for shares of the company stock at a favorable price if certain conditions are met, hence the term convertible.

**Core properties:** The major property types - specifically office, retail, industrial and multifamily. Core assets tend to be built within the past five years or recently renovated. They are substantially leased (90% or better) with higher-credit tenants and well-structured long-term leases with the majority fairly early in the term of the lease. Core assets generate good, stable income that, together with potential appreciation, is expected to generate total returns in the 10% to 12% range.

**Crude Oil:** An unpurified mixture of liquid hydrocarbons derived from rock formations, containing different levels or impurities such as water or sulfur.

**DBH:** DBH (Diameter at Breast Height) is the most common measure made by a forester to determine the growth, volume, yield, and potential of a tree. DBH is defined as 4.5 ft above the ground on the uphill side of a tree.

**Development Well:** A well drilled in a proven area of an oil or gas reservoir to a depth known to be productive.

**Direct Investment:** Partnerships that invest in companies are said to make direct investments. The alternative is a partnership that invests in other partnerships, a fund of funds.

**Direct Operation Farmland:** A strategy typically employed with permanent crops to retain complete control over the assets. Farmland investors use farmland management firms to operate the farm and add value through increased quality and output. The primary risks associated with direct operation are operating, weather, and marketing risks.

**Diversification:** The process of consummating individual investments in a manner that insulates a portfolio against the risk of reduced yield or capital loss, accomplished by allocating individual investments among a variety of asset types, each with different characteristics.

**Downstream:** Portion of the energy chain that includes oil refineries, petrochemical plants, power generation, and distribution outlets.

**Dry Hole:** An oil well that fails to find or produce any oil or gas.

**Due Diligence:** The process of examining a property, related documents, and procedures conducted by or for the potential lender or purchaser to reduce risk. Applying a consistent standard of inspection and investigation one can determine if the actual conditions do or do not reflect the information as represented.

**E&P:** Acronym for "Exploration and Production" that relates to the exploration, development, and production of crude oil or natural gas reserves. E&P is also referred to as the upstream sector.

**EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization):** The "top line" profits of a private company are the monies earned before paying interest and taxes, and adding back depreciation and amortization. Unlike public companies, which are valued as the multiple of bottom line earnings to the stock price (P/E or price to earnings), private companies are valued as the multiple of EBITDA to the price of the stock.

There is no simple conversion factor that will convert an EBITDA multiple to a P/E for all companies, but in general, a factor of 2 is appropriate. Thus, a private company selling for an EBITDA multiple of 6 is priced about as richly as a public company with a P/E of 12.

**EBITDA Multiples:** The ratio of a private company's top line earnings to the price of its shares. See EBITDA above.

**Enterprise Value:** A measure of a company's value, often used as an alternative to straightforward market capitalization. Enterprise Value is calculated as market cap plus debt, minority interest and preferred shares, minus total cash and cash equivalents.

**Exploratory Well:** A well drilled to find and produce oil or gas in an unproven area or expand production of a previously known reservoir.

**Fee Income:** The General Partners in a limited partnership generally receive two types of compensation: fee income as payment for their portfolio management services, and a share of any profits (carried interest) as incentive compensation.

**Fuel Cell:** A device that captures the electricity generated from a chemical reaction between a fuel and an oxidant. An example is a hydrogen fuel cell, which uses hydrogen as the fuel and oxygen as the oxidant to produce electricity and water.

**Fund of Funds:** A limited partnership that consists primarily of investments in other partnerships, as opposed to direct investments in individual companies and deals. The General Partners of a fund of funds thus act as a manager of managers to create a diversified portfolio of partnerships, each of which in turn consists of a portfolio of direct investment deals.

Although a fund of funds is a collection of partnerships, the fund of funds itself is a partnership, and therefore has a vintage year, a commitment period, a distribution phase, and a final end. Thus, fund of funds have finite lifetimes, just like their underlying partnerships.

The advantages of a fund of funds are high diversification and "one stop shopping," i.e., the client has a single relationship with the fund of funds manager.

The disadvantages of fund of funds are higher costs (another entire layer of management fees and carried interest), an additional loss of liquidity, and an additional loss of control by the Limited Partners. Just as with direct limited partnerships, a fund of funds is organized as a blind pool. That is, when a new fund of funds is announced, and a subscription target set, early investors do not know what specific sub-funds will be selected by the manager. Generally, the Private Placement Memorandum gives the General Partner almost unlimited latitude in making subsequent investments.

**General Partner:** The control partner in private equity partnerships, analogous to the portfolio manager in a public stock portfolio. Under the IRS code, the General Partner must commit some personal capital to the partnership (a minimum of 1% of the partnership's committed capital), and unlike the Limited Partners, is liable for leverage and other losses generated by the partnership.

**Geothermal Energy:** Energy extracted from the earth's interior to produce heat and electricity. Applications of geothermal energy include conventional geothermal (use of steam to drive turbines), geothermal heat pumps (pipes sunk beneath the earth's surface to act as a heat exchanger during the warmer and colder seasons), and direct heat (hot water pumped from the earth for use as a heat source).

**Greenfield:** A project without an operating history. Some of the initial outlay may be to the public entity, but the majority is used for construction. Greenfield opportunities may take an exceptionally long time to come to fruition. Meketa Investment Group categorizes a Fund as Greenfield if the Fund's investment strategy calls for over 65% of its underlying investments to be in greenfield assets.

**Growth (Expansion Capital):** A strategy that entails providing capital to a private company with the intention that the capital be used to expand operations. Generally, expansion capital strategies result in minority equity positions in companies, but with some degree of control over how the expansion capital is spent.

**Hedging:** Strategy used to limit or offset exposure to pricing risk of an underlying commodity. A common way to execute this strategy is through the use of futures contracts, a financial derivative that allows for the sale of a commodity at a pre-specified price in the future, whether or not the market price increases or decreases at the time. Counterparties to the futures contracts are speculators who are willing to accept the risk of price fluctuations in exchange for the potential upside.

**High-rise:** In the central business district, this could mean a building higher than 25 stories above ground level, but in suburban markets, it generally refers to buildings higher than seven or eight stories.

**Hurdle Rate:** The minimum rate of return that the Limited Partners must receive before the General Partners have a right to a share of any additional profits (carried interest) produced by the partnership's investments. For example, the partnership may specify that once the Limited Partners have received distributions representing an 8% total return on their commitment (the hurdle rate), the General Partner will share in all future distributions until they have been allocated 80% to the Limited Partners, and 20% to the General Partners (their carried interest).

**Hydrocarbon:** A hydrogen and carbon compound created from the decomposition of organic material over time. Most hydrocarbons are found naturally in fossil fuels such as crude oil, natural gas, and coal.

**Hydro Energy:** Energy derived from the natural movement of falling or flowing water. The most common form of hydro energy comes from dammed water driving a turbine and generator to produce electricity. Once a hydroelectric complex is built, no direct waste is produced.

**Independent Oil Company:** A company involved in the exploration, production, and development of oil and natural gas that is not a Major Oil Company.

**In-Kind Distribution:** Most distributions from private equity partnerships are in cash. However, in some cases, a private deal will be taken public through an initial public offering (IPO), or through a trade sale for stock to a public company. In these cases, the Limited Partners will receive their distributions in the form of publicly traded common stocks and/or rights and warrants.

**Improvements:** In the context of leasing, the term typically refers to the improvements made to or inside a building but may include any permanent structure or other development, such as a street, sidewalk, utilities, etc.

**Investment Period:** The period of time after the first closing during which the General Partner will call capital from the Limited Partners and make partnership investments. Legally, the investment period is usually six years. Practically, it is three to four years. Not to be confused with the term of the partnership, generally ten to twelve years.

**IPO (Initial Public Offering):** When a private company issues publicly traded stock, it becomes known as a public company. The initial sale of publicly available stock is called the initial public offering, or IPO.

**IRR (Internal Rate of Return):** The annualized rate of return on capital that is generated or capable of being generated within an investment or portfolio over a period of time, assuming all cash flows can be reinvested at the same rate. Mathematically, the IRR of an investment is the discount rate applied to that investment such that the net present value of the investment is zero. IRR is commonly used to measure profitability by applying the calculation to the after tax cash flows to arrive at an after-tax equity yield rate.

**J-Curve:** Many limited partnerships have small negative returns in their first years of operation as capital is invested. The negative returns result because the partnership's investments have not matured and turned a profit, but the partnership has nevertheless experienced various operating costs. When early deals begin to mature and are liquidated at a profit, the partnership's returns should become positive. Thus, the graph of the partnership's returns versus time can resemble the capital letter "J."

**Landfill Methane:** Landfill methane is generated from the decomposition of waste in landfills. Bacteria break down the organic matter, releasing a gas that is rich in methane. By capturing the methane, greenhouse gases released into the atmosphere are reduced, and the gases can be used as an energy source.

**Later Stage Fund:** A venture capital partnership that specializes in investing in startup companies that have already achieved at least some actual revenues, or a venture fund that provides subsequent rounds of venture financing after all of the capital provided in the first rounds has been consumed.

**Lead Investor:** Describes a General Partner who is the "lead" investor in a deal, as opposed to co-investors or follow-on investors. The term implies that the lead investor has taken the lead in sourcing, evaluating, and executing the deal.

**Lease:** An agreement whereby the owner of real property gives the right of possession to another for a specified period of time and for a specified consideration.

**Lease Rate:** The period rental payment to a lessor for the use of assets. It may also be considered as the implicit interest rate in minimum lease payments.

**Leverage:** Many General Partners use both equity capital provided by the Limited Partners and money borrowed from banks or other lenders to finance their investments. Any borrowed money is called leverage. If a deal is successful, leverage can often enhance the returns of the Limited Partners substantially. On the other hand, too much leverage can cripple an investment with interest and financing costs. It is important to note that the Limited Partners are not responsible for the repayment of any borrowed money. In real estate funds, positive leverage occurs when the interest rate is lower than the capitalization rate or projected internal rate of return whereas negative leverage occurs when the current return on equity is diminished by the employment of debt.

**Leveraged Buyouts:** The purchase of a private or public company wherein the bulk of the purchase price is paid using borrowed money.

**Lifecycle:** The various developmental stages of a property: pre-development, development, leasing, operating and redevelopment (or rehab).

**Limited Partner:** All investors in a Limited Partnership other than the named General Partner are defined under the IRS code as Limited Partners. Limited Partners have only the control rights defined for them in the Private Placement Memorandum, and are generally passive investors in the partnership's deals.

A very important point is that Limited Partner's total liability for all deals made by the partnership are limited strictly by law to the Limited Partner's committed capital. Thus, even if the General Partners borrow a great deal of money (leverage), and lose it all, the lenders have no recourse to the assets of the Limited Partners. In effect, a Limited Partner can lose no more than the amount of money invested.

**Look-Back Provision:** See Claw-Back Provision above.

**Low-rise:** A building with fewer than four stories above ground level.

**Major Oil Company:** One of the original "Seven Sisters" consisting initially of Exxon, British Petroleum, Chevron, Gulf, Mobil, Texaco, and Royal Dutch Shell.



**Market Strategy:** A course of action defined with respect to a particular real estate market phase. For example, consider the market strategy of avoiding real estate transactions when there is an oversupply of space available in the market.

**Market Value:** The most probable price that a property would bring in a competitive and open market under fair sale conditions. Market value also refers to an estimate of this price.

**Mezzanine Financing:** An additional level of financing provided to a private company to expand sales, market share, or develop new products. Most mezzanine financing is structured as a package of high coupon bonds with equity “kickers,” i.e., rights to acquire the company’s stock at a favorable price at a future point. Companies seeking mezzanine financing often have substantial revenues, and if not actual profits, the expectation of imminent profitability.

**Midstream:** Portion of the energy chain that transports and stores commodities such as oil and natural gas.

**MMCF:** One million cubic feet.

**Multiples and Multiple Expansion:** Managers purchasing public common stocks often buy companies with low price to earnings multiples when they believe some factor will induce other investors to bid up the price of the stock without an increase in actual earnings, thus causing the price multiple to expand. In the same fashion, a General Partner may purchase a private company with a low EBITDA multiple, expecting to profit through an expansion of that multiple. A typical example of a multiple expansion plan is consolidation. Many small companies, operating independently, may each be priced at relatively low multiples. But if purchased and combined into a larger, cohesive entity, investors might be willing to pay a higher multiple for the aggregate than for any individual component.

**Natural Gas:** A gaseous fossil fuel consisting primarily of methane and other heavier hydrocarbons. Natural gas burns cleaner than oil and coal and is a major source of electricity generation through the use of gas and steam turbines.

**Net Metering:** An arrangement that allows a facility to sell any excess energy it generates back to the electrical grid to offset its consumption.

**Net Operating Income (NOI):** The potential rental income plus other income, less vacancy, credit losses, and operating expenses.

**Oil Sands:** Naturally occurring mixtures of a very dense, tar-like form of petroleum called bitumen and sand or clay. Because of the high production and refining costs associated with oil sands, economic feasibility only occurs with high oil prices.

**OPEC:** OPEC (Organization of Petroleum Exporting Countries) is an oil cartel comprising twelve countries around the world.

**Open-end fund:** A commingled fund that does not have a finite life, it continually accepts new investor capital and makes new property investments.

**Operator (Infrastructure):** The party responsible for managing the asset; may be (and usually is) different than the owner/lessee of the asset.

**Operator (Natural Resources):** An individual or company responsible for the exploration, production, and development of an oil or gas well.

**Opportunistic:** A phrase generally used by advisers and managers to describe investments in underperforming and/or undermanaged assets that hold the expectation of near-term increases in cash flow and value. Total return objectives for opportunistic strategies tend to be 20% or higher. Opportunistic investments typically involve a high degree of leverage - typically 60% to 100% on an asset basis and 60% to 80% on a portfolio basis.

**Permanent Crops:** Permanent crops include those grown on a tree or vine such as almonds, wine grapes, apples, and oranges. They are usually directly operated to produce higher income returns from crop sales but can carry a higher level of risk.

**PFI:** The Private Finance Initiative specifies a method, developed initially by the U.K. government, to provide financial support for Public-Private Partnerships. This has since been adopted as part of a wider reform program for the delivery of public services which is driven by the WTO, IMF & World Bank as a part of their “deregulation” and privatization drive. In return for their services, the private sector receives payment linked to its performance.

**Pipeline:** A system made of steel piping used to transport oil, gas, and other liquids from one location to another.

**Placement Agent:** Unlike public stock management companies, most of whom utilize an in-house sales force to market their services, private equity partnerships are generally marketed by third-party placement agents. These outside marketing firms and individuals are paid a commission by the General Partner.

**Platform Company:** Some private equity buyout funds attempt to add value by merging companies into larger, more cost efficient enterprises. This strategy generally begins with the acquisition of a platform company, often a market leader, to which other companies are added.

**Possible Reserves:** Reserves of oil or natural gas that have a less likely chance of being recovered than probable reserves. These reserves are often claimed as having a 10% certainty of being produced and are also known as P10 or 3P.

**PPM (Private Placement Memorandum):** Because Limited Partnership interests are not registered with the SEC, private equity managers must distribute a comprehensive document to prospective investors that describes the broad investment thesis of the partnership, and highlights any risks involved in the partnership. This document is called a Private Placement Memorandum.

**PPP:** A Public Private Partnership (or P3) is a system in which a government service or private business venture is funded and operated through a partnership of government and one or more private sector companies. Also referred to as Collective Development Agreements or Alternative Finance Procurement.

**Precious Metals:** Precious metals include gold, silver, palladium, and platinum. These metals have wide industrial uses but are better known for their usage in jewelry, art, and store of value.

**Pre-merch (merchantable):** Logs that do not meet the minimum size, quality, or usable volume required for the commercial sale of timber.

**Privatization:** The transfer of property or control of assets used to provide public services from the public sector to the private sector.

**Probable Reserves:** Probable reserves are those reserves based on median estimates and claim a 50% confidence of recoverability. These reserves are also known as P50 or 2P.

**Producing Well:** A well that produces oil and gas in sufficient quantities such that the revenue generated exceeds the associated production costs and taxes.

**Property Type:** The classification of commercial real estate based on its primary use. The four primary property types are: retail, industrial, office, and multi-family residential.

**Proved Reserves:** Reserves of oil or natural gas that are claimed to have a 90% certainty of being recovered using existing technology. The SEC only allows oil companies to report proved reserves to investors. Proved reserves are also known as P90 or 1P.



**Public to Private:** If a private partnership (or group of private partnerships) purchases all of the outstanding shares of a publicly traded company, the company's shares may be de-listed from the stock exchange. The company is then said to have been "taken private." For example, in June 1989, the private partnership Wings Holdings acquired the public stock of Northwest Airlines in a \$3.65 billion-dollar leveraged buyout. Following this acquisition, Northwest became a privately held corporation for the first time since 1941.

**Pulpwood:** Wood cut and chipped for the manufacturing of paper and paper related products. Pulpwood is typically too small or insufficient quality for sawtimber and is classified as 6-9" DBH.

**Real Estate Cycles (phases):** The regularly repeating sequence of economic downturns and upturns and associated changes in real estate market transactions tied to market dynamics and changing macroeconomic conditions, whose phases include (in order) recession, recovery, expansion, and oversupply.

**Real Estate Investment Trust (REIT):** An investment vehicle in which investors purchase certificates of ownership in the trust, which in turn invests the money in real property and then distributes any profits to the investors. The trust is not subject to corporate income tax as long as it complies with the tax requirements for a REIT.

Shareholders must include their share of the REIT's income in their personal tax returns. (Barron's Dictionary of Real Estate Terms and Encyclopedia of Real Estate Terms 2nd Edition, Damien Abbott)

**Real Estate Trends:** Long-term movements or tendencies in the demand for commercial real estate (which can typically last for years or decades), usually tied to macro-economic or business cycles.

**Renewable Energy:** Energy derived from natural resources such as solar, wind, geothermal, or biofuels. Unlike oil, natural gas, or coal, these sources of energy are naturally replenished, providing a potential source of cleaner and more sustainable energy.

**Row Crops:** Row crops are those that are planted and harvested annually from the soil, as opposed to trees or vines, and include corn, cotton, rice, soybeans, and vegetables. Row crops are often eligible to receive federal subsidies.

**Sawtimber:** Timber of sufficient size and quality to be cut and harvested for lumber or other solid wood products. Sawtimber is usually derived from trees measuring 14"+ DBH.

**Secondary Fund:** Occasionally, a Limited Partner will wish to sell his interest in a partnership before the term of the partnership is completed. Any such sale is termed a secondary market sale. A secondary fund creates a portfolio of partnership interests from earlier partnerships purchased in the secondary market. The advantage of a secondary fund is that it gives investors an opportunity to invest in seasoned partnerships from closed funds of prior vintage years.

**Shadow Tolls:** Payments made by government to the private sector operator of a road based, at least in part, on the number of vehicles using the road. They are currently in operation on some roads in the U.K., and they have also been adopted in other countries.

**Solar Energy:** Source of energy derived from the sun's light and heat. Common solar technologies include photovoltaics (PV) and solar thermal.

**Sponsor:** Every private equity opportunity that Meketa Investment Group evaluates is assigned to a sponsor. This individual, who is a member of Meketa Investment Group's Private Equity Investment Committee, is responsible for the collection of information and the evaluation of the opportunity.

**Submarket:** A segment or portion of a larger geographic market defined and identified on the basis of one or more attributes that distinguish it from other submarkets or locations.

**Take Down/Draw Down:** A take down or a draw down is the same as a capital call.

**Term:** The term of a limited partnership is its expected lifetime, and is specified in the Private Placement Memorandum. Most partnerships have a term of ten years, with the option to extend the term once or twice by an additional year if the Limited Partners approve.

The term of a partnership consists of several phases. After the final closing, no new commitments are accepted and the partnership enters the commitment phase or investment phase, legally lasting up to six years, but generally lasting three to four years, during which the individual investments are made. A distribution phase follows, during which mature investments are realized and profits distributed to the partners. The final phase is the liquidation phase, during which all remaining properties and assets are sold in order to terminate the partnership.

**Trade Sale:** The most prevalent exit strategy for many private equity managers involves selling a company in the private markets, usually through an auction process, to other private equity investors or to larger companies. This type of exit is termed a trade sale.

**Turnaround:** A turnaround strategy involves buying a troubled company, usually for a relatively low price, and making significant managerial or organizational changes to better the company's operations and enhance profitability.

**Upstream:** Portion of the energy industry engaged in the exploration, production, and development of crude oil and natural gas reserves.

**VCOC (Venture Capital Operating Company):** The IRS code defines one category of private partnerships to be venture capital operating companies for tax purposes. The General Partners of VCOCs are not required to register with the SEC as investment advisors. The name venture capital operating company relates only to the partnership's legal and tax structure, and does not imply that the partnership will invest in venture capital deals. For example, a middle market buyout fund, which invests only in mature companies with enterprise values of between \$200 million and \$1 billion, may be structured as a venture capital operating company.

**Vacancy:** The number of units or space (of a specific commercial type) that are vacant and available for occupancy at a particular point in time within a given market (usually expressed as a vacancy rate).

**Vacancy Rate:** The percentage of the total supply of units or space of a specific commercial type that is vacant and available for occupancy at a particular point in time within a given market.

**Value-added:** A phrase generally used by advisers and managers to describe investments in underperforming and/or undermanaged assets. The objective is to generate 13% to 18% returns.

**Veneer:** Continuous sheets of thin wood cut from trees measuring at least 16"+ DBH. Veneer is commonly used in the manufacture of furniture and plywood.

**Venture Capital:** Money supplied to entrepreneurs to create new businesses is called venture capital. It is the first stage of financing for any new venture.

Traditionally, the recipient of the venture capital was a small group of entrepreneurs with an idea and a business plan, but no management team, corporate structure, revenues or profits. In the 1990s, however, venture capital was often used to seed established teams of entrepreneurs with well-defined products and in-place corporate structures. Thus, there is great variability in the meaning of venture capital and in the types of deals financed with venture capital money.

**Vintage Year:** The calendar year in which the first cash flow to a partnership occurred. This cash flow can be intended for management fees or investment capital. Vintage year can be used to differentiate the partnerships established over time by a General Partner, to track portfolio commitment pacing, and to benchmark portfolio performance.

**Warrants:** Just like publicly traded companies, private companies may issue warrants to their shareholders or to other groups providing some form of financing. A warrant is the right to purchase shares of the company's stock at a future date at a predetermined price, called the exercise price. Warrants become valuable if the exercise price is below the market price of the stock.

**Wind Energy:** Source of energy derived from wind motion that can be converted to electricity by turning a turbine and generator.

## **Current Issues**

# **Investment Policy Statement Update**

## Investment Policy Statement

An Investment Policy Statement (“IPS”) represents one of the most important governance tools for an asset pool. The written policy serves to identify and formalize the objectives and constraints governing the fund and to establish guidelines for the implementation of investment strategy.

A well-developed IPS thoughtfully merges client-specific goals with the realities of the capital markets. The IPS should be long term and stable in nature, and should focus on core fund-level policy issues. Once established, permanent changes to the IPS should take place only in response to significant changes in the objectives and constraints of the fund. Among other items, the documents should include the fund’s long-term strategic Asset Allocation Policies.

**Recommendation:**

Meketa Investment Group has reviewed the Association's current Investment Policy Statement and recommends the Trustees consider the following changes as shown below. The Investment Policy Statement should be reviewed periodically by the Trustees to ensure that the objectives and constraints remain relevant.

Generally speaking, Meketa Investment Group believes that elements of the IPS that are subject to change due to varying market and business circumstances (e.g., asset allocation targets and manager specific issues) should be moved to an appendix. This would help to streamline the document to focus on core fund-level policy issues.

Specifically, we believe the Association's IPS could be improved with the following changes:

- Moving the asset allocation components, weights, and ranges to the appendix.
- Moving the Policy Index components and weights to the appendix.
- Updating and moving the list of Fund-level permissible and prohibited investments to the appendix.
- Updating and moving the Assignment of Responsibilities to the appendix.
- Including a set of assumptions guiding the asset allocation decision in the appendix. This exhibit would include expected return, volatility, and correlations for each asset class.
- Changing the Fund's rebalancing policies to state the rebalancing policy should allow for assets to be rebalanced within target ranges.
- Update the Watch List policy and move to the appendix.
- Removing the regulatory language that is subject to change.
- Additional proposed changes include updating the asset class benchmarks, moving manager guidelines to a separate document, and adding a Crisis Response Plan.
- Consider adding GASB language per auditor.

Plymouth County  
Retirement Association  
  
Investment Policy Statement

1

~~Plymouth County Retirement Association~~  
~~10 Cordage Park Circle, Suite 34, Plymouth, MA 02360~~  
~~(508) 830-1803, [www.per-ma.org](http://www.per-ma.org)~~  
~~August 2010~~



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## **I. Overview & Purpose**

This Investment Policy Statement has been developed to provide a framework around which to manage and monitor the assets of the Plymouth County Retirement Association (the "System"). The purpose of the Investment Policy Statement is to define policies to guide the implementation of the System's investment goals and objectives in addition to establishing delegations of authority and responsibility, with the end result being effective management and control of the investment process.

The Investment Policy Statement shall:

- Document the System's objectives and set forth appropriate and prudent policies and guidelines to assist in the achievement of those objectives.
- Provide an investment framework for the System that sets parameters to ensure prudence and care in the execution of the investment program.
- Establish criteria to evaluate the System's investment performance.
- Communicate investment policies, objectives, guidelines, and performance criteria to the Board, staff, external investment managers, advisors, consultants, custodians and all other interested parties.
- Serve as a document to guide ongoing oversight of the System's investments.
- Comply with regulations established by the Public Employee Retirement Administration Committee ("PERAC").
- Document the fulfillment of the overall fiduciary responsibilities of the Board.

This Investment Policy Statement may, from time to time and in writing, be modified as appropriate.

## **II. Fiduciaries & Standard of Prudence**

The Board members are Trustees of the System and are, therefore, fiduciaries. In addition, Consultants, the Board's Executive Director and staff are also fiduciaries of the System. All fiduciaries shall:

1. Discharge all of his/her duties solely in the interest of members and their beneficiaries for the exclusive purpose of providing benefits to members and their beneficiaries.

~~2. Defray expenses of administering the system.~~

3.2. Act with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims.

4.3. Diversify the investments of the ~~system~~ System so as to minimize the risk of large losses, unless it is clearly prudent to do so.

5.4. Adhere to the Massachusetts General Laws and the rules and regulations promulgated by PERAC.

These standards of prudence also apply to other fiduciaries, which include the employees of the System who exercise discretionary authority or control over the management or administration of the System or its assets as well as persons designated by the Board to carry out fiduciary responsibilities including the external investment managers, the general investment consultant, specialized investment consultants, and the custodian.

### III. — Duties & Responsibilities

~~The Board is responsible for the general administration and proper operation of the System, including investment of the System's assets. Specific duties and responsibilities of the Trustees, consultants, investment managers and custodians are outlined below in tabular format. However, it should be noted that the Trustees are responsible for all aspects of the System's investments. Trustees may not absolve themselves of this responsibility by assigning specific duties to one or more of these parties.~~

	Board	Consultant	Investment Manager	Custodian
Asset Allocation Investment Policy	X	X		
Formation of Investment Policy	X	X		
Manager Guidelines	X	X	X	
Manager Selection	X	X		
Performance Evaluation	X	X		
Compliance with Manager Guidelines	X	X	X	
Execution of Trades			X	X
Collection of Dividends & Interest			X	X
Cash Sweeps			X	X
Recapture Programs	X		X	X
Securities Lending	X			X
Proxy Voting			X	X

Trading Verification			✗	✗
Valuation of Securities			✗	✗
Performance Calculation			✗	✗

**IV-III. Investment Objectives**

The investment objective of the System is to fully fund the plan by generating sufficient long-term inflation adjusted capital appreciation while providing sufficient liquidity to meet short-term withdrawal requirements. The Board desires to balance the goal of higher long-term returns with the goal of minimizing contribution volatility, recognizing that these are often competing goals. This [balance](#) requires taking both assets and liabilities into account when setting investment strategy. Therefore, the investment objectives over extended periods of time are to achieve an annualized investment return that:

1. In nominal terms, equals or exceeds the actuarial investment return assumption of the System adopted by the Board. ~~As of this writing, the actuarial rate of return for the System was 8.25%.~~ The Board acknowledges the investment portfolio may achieve higher returns in some years and lower returns in other years.
2. Meets or exceeds the System’s total fund policy index benchmark, which equals the weighted average of the benchmarks for each asset class and the target weightings for each asset class. The policy benchmark enables comparison of the System’s actual performance to a passively managed proxy, and it measures the contribution of active investment management and policy implementation.
3. ~~Over the short term, generates sufficient income to make monthly payroll payments.~~

**Commented [SM1]:** Payroll can be paid via liquidation if appropriate

The Board members of the System recognize the long-term return requirements of the System and, therefore, short-term fluctuations in value are secondary to the long-term objective.

**IV-IV. Investment Restrictions**

The System is a Massachusetts Contributory Retirement System and is, therefore, governed by Chapter 32 of the Massachusetts General Laws. [Investment procedures and restrictions stipulated under these regulations must be followed.](#)

~~The Board intends that the assets of the System at all times are invested in accordance with the provisions of Massachusetts State laws and, specifically, 840 C.M.R., the “investment regulations” established and maintained by the Public Employee Retirement Administration Commission (PERAC). The Board will retain legal counsel when appropriate to review contracts and provide advice with respect to applicable statutes and regulations. The System will comply with PERAC guidelines as they refer to prohibited investments under sections 840 CMR 21.00: M.G.L. c. 7, § 50; M.G.L. c. 32, §§ 21 and 23. Except for private equity partnerships, real estate/real asset partnerships and hedge fund of funds, which are approved investments per PERAC regulations, no investments made by the System or by any bank pooled~~

**Commented [SM2]:** Most of this is statute, can be incorporated by reference

~~fund, mutual fund, group trust, limited partnership, insurance company separate account or other form of pooled investment of any board shall consider any of the following:~~

~~1. Purchases of securities by partial payment of their cost (purchases on margin).~~

~~Sale of securities not owned by the System at the time of sale (short sales).~~

~~Future contracts other than as follows:~~

~~Forward currency contracts may be written against securities in the international portfolio by an investment advisor registered under the Investment Advisors Act of 1940 and who has been the subject of an exemption for international investment.~~

~~Forward currency contracts may be written against securities in an international portfolio to a maximum 25% of the international portfolio non-dollar holdings at market value. Speculative currency positions unrelated to underlying portfolio holdings are strictly prohibited.~~

~~Call options written against securities in the portfolio other than as follows:~~

~~Call options may be written against equity securities (excluding international equities) in the portfolio by a qualified investment adviser registered under the Investment Advisors Act of 1940.~~

~~Call options may be written against equity securities (excluding international equities) in the portfolio to a maximum of 25% of the market value of the equity portfolio (excluding international equities).~~

~~Only options listed on a U.S. registered exchange may be written.~~

~~Purchases of options other than as required to close out options positions.~~

~~Lettered or restricted stock (with the exception of those investments that are leveraged buyout investments).~~

~~Direct investment in mortgages.~~

~~Collateral loans (with the exception of those investments that are leveraged buyout investments), provided, however that boards may participate in so-called "securities lending" programs through a custodian and provided, further, that the lending of securities is limited to brokers, dealers, and financial institutions and that the loan is collateralized by cash or United States Government securities according to applicable regulatory requirement.~~

~~Loans to employees or individuals.~~

~~Direct purchase or lease of real estate.~~

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In Addition, the System's portfolio must also adhere to the following allocations measured as a percentage of the total fund assets:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Max Alloc. Per PERAC</u>
Hedge Fund of Funds <sup>1</sup>	4.0%	8.0%
Private Equity/Venture Capital <sup>2</sup>	7.5%	7.5%
Real Estate <sup>2</sup>	10.0%	15.0%
Real Assets <sup>3</sup>	3.0%	--

### Asset Allocation

The Fiduciaries of the System believe that the return objective can be best achieved by constructing a fully diversified portfolio and maintaining target asset class weights over long holding periods and through all market environments. It is expected that over long holding periods, a diversified strategy will play a critical role in balancing the risks of different markets in which the System will invest and help generate superior risk adjusted returns.

Asset allocation studies will be conducted using an optimization process when there is a change in the investment policy that will not be satisfied by the current allocation. Such a change may be, but not limited to a change in liquidity needs, a fully funded status or the introduction of an asset class in which the System does not currently invest. While the Board acknowledges the limitations and assumptions inherent in conducting an asset allocation study, they will be performed in order to illustrate how changes to the existing allocation will affect the long-term risk and return profile of the Plan.

~~When conducting an asset allocation study, the Board members will first conduct an analysis of the current portfolio, which entails analyzing the structure of the current portfolio and classifying each security held by each manager according to style, capitalization, duration, and sector. The existing allocation will then be used to assess the expected future return, volatility, and yield. Then the allocation will be optimized to assess whether there is a more efficient portfolio in which the Plan could invest to reach its objectives.~~

On an annual basis, the Board reviews its asset allocation policy. At this time, the Board determines whether there have been significant changes with regard to (1) the economic environment, (2) the Board's objectives, and/or (3) other considerations affecting the asset allocation policy, including liquidity needs. If deemed appropriate, the Board will commission an asset allocation study to reassess and possibly

<sup>1</sup>The System is permitted to invest up to 4% in a hedge fund of funds manager(s) of its choice while the remaining 4% must be invested with the PRIT fund.

<sup>2</sup>As a result of a supplementary regulation the System was granted approval on July 7, 2009 to increase its target exposures to private equity/venture capital and real estate to 7.5% and 15.0% of the overall portfolio respectively.

<sup>3</sup>The System has adopted a target allocation to real assets of 3%, however, as of this writing PERAC does mandate a maximum allocation to real assets.

change its asset allocation policy. Adoption of the asset allocation recommendation requires a vote of the majority of the Board.

Effective January 1, 2010, the System's portfolio target weights at the broad asset class level are as follows detailed in Appendix C:

<u>Asset Class</u>	<u>Portfolio Target Weight</u>	<u>Policy Range</u>
Domestic Equity	33.0%	28.0%–38.0%
Foreign Equity	16.0%	11.0%–21.0%
Total Fixed Income	25.5%	20.5%–30.5%
Real Estate / Real Assets	13.0%	10.0%–15.0%
Private Equity	7.5%	5.0%–10.0%
Hedge Fund of Funds	4.0%	2.0%–6.0%
Cash	4.0%	0.0%–3.0%

The portfolio will be allowed to fluctuate at the broad asset class level within the policy ranges noted above in Appendix C. The System will diversify within each of the broad asset classes according to the target weight on the following page. In an effort to minimize the J-curve effect associated with real estate / real assets and private equity limited partnership investments, the System will over commit to these investments by an amount equal to 25–50% more than what is called for by the target weights consistent with the System's annual private market pacing study.

Asset Class Assumptions

<u>Asset Class</u>	<u>Portfolio Target Weight</u>	<u>Expected Return</u>	<u>Expected Risk</u>	<u>Expected Yield</u>	<u>Index Proxy</u>
Large Cap Value	5.50%	9.43%	16.92%	2.65%	Russell 1000 Value
Large Cap Growth	4.50%	8.64%	18.16%	1.72%	Russell 1000 Growth
Mid-Cap Value	6.0%	10.70%	17.55%	2.25%	Russell Midcap Value
Mid-Cap Growth	5.0%	9.80%	18.90%	1.40%	Russell Midcap Growth
Small Cap Value	6.50%	11.80%	18.77%	1.10%	Russell 2000 Value
Small Cap Growth	5.50%	10.90%	19.44%	0.00%	Russell 2000 Growth

Int'l-Equity-Dev-Markets	13.0%	9.80%	17.99%	0.00%	MSCI-EAFE-Index-\$
Int'l-Equity-Emerg-Markets	3.00%	12.10%	29.11%	0.00%	MSCI-Emerg-Free-\$
Intermediate-Gov/Corp	14.50%	6.50%	6.20%	6.00%	Barclays-Int-Gov+/Credit
High-Yield-Bonds	4.00%	9.00%	11.76%	8.00%	Barclays-High-Yield
Int'l-Bonds-Dev-/Emerg-Mkts	7.00%	8.30%	10.90%	7.00%	CITI-Non-US-WGBL-All\$
Real-Estate-/Real-Assets	13.00%	9.30%	5.61%	0.00%	NCREIF-Property-Index
Private-Equity	7.50%	14.60%	21.40%	0.00%	CAMB-US-Private-Equity
Hedge-FOF	4.00%	8.70%	6.55%	0.00%	HFRI-Fund-of-Funds-Comp
Cash	1.00%	3.97%	1.80%	4.75%	MERL-Ready-Assets

**VI.V. Rebalancing Policy**

The Trustees, The Board and Staff will review the current portfolio weightings relative to the target weighting on a monthly basis or whenever performance reports are disseminated and rebalance as they see appropriate within the target ranges. The decision to rebalance will depend on various factors including but not limited to: the timing and size of the benefit payments, market conditions and the portfolio weightings relative to the policy ranges. Forced scheduled rebalancing to target weights can create unnecessary transaction costs and it is, therefore, not advisable.

In general, cash flows to and from the Association or its investments will be allocated in such a manner as to keep each asset class within its target range.

The Board recognizes that, periodically, market forces may move the PCRA's allocations outside the target ranges. The Board also recognizes that failing to rebalance the allocations would unintentionally change the PCRA's structure and risk posture. Consequently, the Board has established a process to rebalance the allocations periodically.

On at least an annual basis, if any strategic allocation is outside the specified target range, assets will be shifted to return the strategy to the target range. The specific plan for rebalancing will identify those assets that can be shifted at the lowest possible risk and cost, if the rebalancing cannot be accomplished solely by allocating contributions and withdrawals.

The Board also recognizes that the asset allocation represents long-term target ranges and not short-term imperatives. As such, the Board authorizes the Executive Director and Investment Officer to work with the consultant to make transfers among asset classes and managers as long as such transfers do not move asset classes outside target ranges.



#### **VII.VI. Revenue Enhancing Programs**

If deemed appropriate, The Trustees will engage in two revenue enhancing programs to increase the annual cash flows to the System: commission recapture and securities lending.

##### **1. Commission Recapture**

The Trustees acknowledge that brokerage commissions are an asset of the System. Further, Trustees recognize that commissions costs are only one component of execution costs and that managers should follow a best execution strategy; trading style, transaction order flow, broker selection decisions and research requirements of the managers should not be adversely affected by the commission recapture program.

Eligible investment managers are encouraged to participate in the commission recapture program, should there be one in place, and provided commission are competitive. Investment managers are not precluded from ~~one~~ using brokerage firms with whom they have a “soft dollar” arrangement, provided said firms offer competitive execution services.

##### **2. Securities Lending**

The securities lending program actively lends securities through a single securities lending program to qualified borrowers in order to provide incremental income to the System. Borrowers in return provide liquid collateral in exchange for the right to borrow securities. Securities shall be fully collateralized at all times. Cash collateral shall be invested in a pool vehicle selected by the Trustees on which interest is paid. A negotiated portion of this interest shall be paid to the borrower while the balance shall be kept by the lending agent and the System.

#### **VII.VII. Performance Benchmarks**

To facilitate the periodic reporting and to provide a relative measure to gauge success, performance benchmarks will be utilized at the broad asset class level and at the manager level. Customized benchmarks will be utilized at the broad asset class level and will be computed as a weighted average of the underlying asset classes in the portfolio. A summary of approved benchmarks is provided below:

<b>Broad Asset Class</b>	<b>Benchmark</b>
Total Portfolio	Customized*
Domestic Equity, <del>International Equity, Fixed Income</del>	Customized* <a href="#">Russell 3000</a>
<a href="#">International Developed Equity</a>	<a href="#">MSCI EAFE</a>
<a href="#">International Emerging Market Equity</a>	<a href="#">MSCI Emerging Markets</a>
<a href="#">Core Fixed Income</a>	<a href="#">Bloomberg Barclays U.S. Aggregate</a>
<a href="#">Value-Added Fixed Income</a>	<a href="#">Bloomberg Barclays High Yield, CSFB Bank Loan Index</a>

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Real Estate	NCREIF <a href="#">ODCE</a>
Private Equity / Venture Capital	State Street Private Equity
Hedge Funds	HFRI Fund of Funds Composite
Cash	Three Month T-Bill

*\* This index is a weighted average of the underlying asset classes comprising the broad asset class.*

**Commented [SM3]:** Depending on outcome of asset allocation, may need to change benchmarks

In addition to benchmarks for asset classes, the System employs benchmarks for each one of its investment managers. The individual investment manager benchmarks are approved by the Board ~~and set forth in the investment manager guidelines.~~

**IX.VIII. Investment Manager Selection**

The selection and hiring of investment managers, commission recapture brokers and securities lending managers shall be subject to a competitive process that satisfies the Boards’ fiduciary duty and meets the requirements of M.G.L. c. 32 and 840 CMR.

- ~~• The investment consultant creates a detailed Request for Proposal (“RFP”) questionnaire covering all pertinent quantitative and qualitative issues. All investment managers submitting a bid or proposal to provide services to the Board shall certify, in writing, on the bid or proposal, as follows: “The undersigned certifies under penalties of perjury that this bid or proposal has been submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, club, or other organization, entity or group of individuals.”~~
- ~~• The investment consultant will be asked to send the Board the names of investment managers who responded to the RFP and qualify based upon the minimum criteria established by the Board.~~
- ~~• The Board and the investment consultant will review responses to the RFP and eliminate those firms that are not likely to be hired based on the screening criteria. The Board may revise or reaffirm the screening criteria in light of the data gathered.~~
- ~~• The investment manager must be a “qualified investment manager” as defined in 840 CMR 16.01. No person who is not a qualified investment manager as defined by 840 CMR 16.01 shall advise the Board on the purchase and sale of investments or manage the funds of the System.~~
- ~~• The investment consultant will provide a written report as specified by the Board to assist them in reviewing the data.~~
- ~~• The Board will select finalists and conduct investment manager interviews.~~
- ~~• The Board approves the hiring of one or more of the finalists.~~

- ~~The Staff and the Consultant will complete a checklist to ensure that the transition is completed and effective on the official book of record with the Custodian.~~
- ~~Prior to retention of the investment manager, the Board shall notify PERAC that a competitive process that satisfies the Boards' fiduciary duty and meets the requirements of M.G.L. c. 32 and 840 CMR were adhered to.~~
- ~~Prior to the delegation of investment authority to the investment manager, the investment manager must execute a written contract.~~
- ~~The contract must state all terms and conditions of employment including, but not limited to, investment objectives, brokerage practices, proxy voting and tender offer exercise procedures, term of employment, fees and termination provisions.~~
- ~~No contract shall contain a provision that requires the indemnification of the investment manager by the retirement board.~~
- ~~A copy of every contract shall be retained by the board and be subject to audit.~~
- ~~The contract must state that the investment manager is a fiduciary with respect to the fund in which the Board invests pursuant to the investment manager's advice regarding the purchase and sale of investments or the funds that the investment manager manages, as the case may be.~~
- ~~Each investment manager is selected to meet specific investment objectives and/or performance standards.~~
- ~~The investment manager has full discretion to prudently execute investment transactions on behalf of the Plan in accordance with the Board approval of the delegation and guidelines.~~
- ~~Procurement file for each such competitive process and selection shall be maintained by the Board and be subject to audit. The file shall contain the request for proposals, selection process, selection criteria and other information relative to the Board meeting its fiduciary responsibility with respect to the selection.~~

~~This policy statement should make clear that the Trustees are solely responsible for selection, monitoring, evaluation and removal of all investment alternatives made available to the Plan participants. The System may hire consultants and advisors to assist it in these activities; however, nothing changes the ultimate responsibility of the Trustees. While a consultant or advisor may make recommendations for action by the Trustees, the Trustees are free to act in any regard within the scope of its responsibilities with or without prior advice or recommendation from a consultant or advisor. A recommendation from such advisors is not a prerequisite for action by the Trustees.~~

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### X.IX. Portfolio Monitoring Procedures

The Trustees will meet with the Consultant no less frequently than quarterly to review portfolio performance, review portfolio weights relative to target weights and manager's performance. Further, the Board will endeavor to meet with each of its investment managers at least once per year in accordance with PERAC requirements.

The investment managers managing separate accounts on behalf of the System will be issued investment manager guidelines and they will be monitored at two levels of contract review: Watchlist and Probation, the latter being a more heightened level of review.

The Consultant will recommend to the Board members when a manager should be placed on or removed from Watchlist or Probation. When an investment manager is placed on the Watchlist/Probation, it is effective immediately. There is no minimum time requirement on the Watchlist/Probation before a termination may be made. An investment manager's contract may be terminated for any reason at any time, whether on Watchlist/Probation or not.

A representative listing of potential reasons an investment manager may be added to Watchlist/Probation ~~include but are not limited to~~ is detailed in Appendix D:

#### ~~Organizational Issues (People)~~

~~Change in ownership or control of the company~~

~~Significant change in team composition or responsibilities~~

~~Material change in the business organization of the investment manager~~

~~Departure of significant personnel~~

#### ~~Performance~~

~~1, 3 and 5 year performance net of fees below benchmark~~

~~1, 3 and 5 year performance net of fees below peers (below median of relevant peer universe)~~

~~Performance inconsistent with the investment manager's style and risk control~~

~~Deviation from style~~

#### ~~Other~~

~~Material guideline violation not brought to our attention by the investment manager~~

~~Failure to comply with terms of contract that is not corrected within 60 days~~

~~Any extraordinary regulatory action or other proceeding affecting the investment~~

~~Unsatisfactory client service~~

During an investment manager's tenure on the Watchlist/Probation, the investment consultant will provide the Board with regular reports, including background information and support, about the progress the investment manager is or is not making. An investment manager may be removed from heightened alert if the Board believes the issues that placed the firm on the Watchlist/Probation are resolved.

Should the manager's performance not improve over a reasonable time period, the Consultant will recommend further action and possible termination after a careful review of the manager's performance, portfolio structure and the market environment. Before a manager is officially dismissed, the Consultant will recommend to the Board a plan of action for managing (internally, externally, or in combination) or liquidating the assets.

Circumstances may warrant that the Trustees take immediate action to terminate a manager. Therefore, the Trustees reserve the right to bypass the course outlined above and remove a manager immediately if deemed prudent and in the best interests of the Plan participants.

#### X. Investment Costs

The Board intends to monitor and control investment costs at every level of the System and seek the highest net-of-fee returns.

- Professional fees will be negotiated whenever possible.
- Where appropriate, passive portfolios will be used to minimize management fees and portfolio turnover.
- Where appropriate, assets will be transferred in-kind during manager transitions and System restructurings to eliminate unnecessary turnover expenses.
- Managers will be instructed to minimize brokerage and execution costs.

#### **XI. Proxy Voting Policy & Corporate Governance**

The Board recognizes that the voting of proxies is important to the overall performance of the System-. The Board has delegated the responsibility of voting all proxies on behalf of the System to the investment managers. The Board expects that managers will execute all proxies in a timely fashion. Also, the Board expects the managers to provide a full accounting of all proxy votes, and upon request, a written

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~~explanation of individual voting decisions. The Board has determined that the investment managers will vote all proxy votes on behalf of the System.~~

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APPENDIX A

PERMISSIBLE ASSET CLASSES

<u>Asset Class</u>	<u>Purpose</u>
<u>Public Domestic Equity</u>	<u>Total Return Potential</u>
<u>Public Foreign Equity</u>	<u>Total Return Potential</u> <u>Diversification</u>
<u>Private Equity</u>	<u>Total Return Potential</u>
<u>Real Estate</u>	<u>Total Return Potential</u> <u>Diversification</u> <u>Income</u>
<u>Investment Grade Bonds</u>	<u>Return Stability</u> <u>Income</u>
<u>High Yield Bonds</u>	<u>Total Return Potential</u> <u>Diversification</u> <u>Income</u>
<u>Non-U.S. Bonds</u>	<u>Total Return Potential</u> <u>Diversification</u> <u>Income</u>
<u>Private Debt</u>	<u>Total Return Potential</u> <u>Diversification</u> <u>Income</u>
<u>Real Assets</u>	<u>Total Return Potential</u> <u>Diversification</u> <u>Income</u>
<u>Hedge Funds</u>	<u>Total Return Potential</u> <u>Diversification</u>

## APPENDIX B

### TWENTY-YEAR, SINGLE ASSET CLASS AND SUB-ASSET CLASS FORECAST<sup>4</sup>

<u>Asset Class / Sub-Asset Class</u>	<u>Expected Return</u>	<u>Standard Deviation of Expected 20-Year Annual Return</u>
<u>Cash Equivalents</u>	<u>2.0%</u>	<u>1.5%</u>
<u>Stable Value</u>	<u>3.4</u>	<u>2.0</u>
<u>Short-Term Investment Grade Bonds</u>	<u>2.7</u>	<u>2.5</u>
<u>TIPS</u>	<u>5.3</u>	<u>6.5</u>
<u>Investment Grade Bonds</u>	<u>4.0</u>	<u>6.0</u>
<u>High Yield Bonds</u>	<u>8.5</u>	<u>11.0</u>
<u>Bank Debt</u>	<u>7.0</u>	<u>9.0</u>
<u>Foreign Bonds (hedged)</u>	<u>3.6</u>	<u>6.0</u>
<u>Foreign Bonds (unhedged)</u>	<u>4.1</u>	<u>11.5</u>
<u>Emerging Market Bonds</u>	<u>6.6</u>	<u>12.0</u>
<u>Emerging Market Bonds (local)</u>	<u>5.2</u>	<u>17.0</u>
<u>Core Private Real Estate</u>	<u>7.5</u>	<u>11.5</u>
<u>Public Real Estate (REITs)</u>	<u>7.5</u>	<u>18.0</u>
<u>Natural Resources</u>	<u>11.0</u>	<u>21.0</u>
<u>Timber</u>	<u>6.0</u>	<u>14.0</u>
<u>Commodities</u>	<u>6.6</u>	<u>22.0</u>
<u>Infrastructure</u>	<u>9.6</u>	<u>14.0</u>
<u>Public Domestic Equity</u>	<u>9.4</u>	<u>16.0</u>
<u>Public Domestic Equity (Large)</u>	<u>9.2</u>	<u>16.0</u>
<u>Public Domestic Equity (Mid)</u>	<u>9.5</u>	<u>18.0</u>
<u>Public Domestic Equity (Small)</u>	<u>9.8</u>	<u>21.5</u>
<u>Public Domestic Equity (Micro)</u>	<u>10.5</u>	<u>23.0</u>
<u>Public Foreign Equity (Developed)</u>	<u>9.9</u>	<u>18.0</u>
<u>Public Foreign Equity (Small)</u>	<u>11.1</u>	<u>23.0</u>
<u>Public Foreign Equity (Emerging)</u>	<u>11.6</u>	<u>24.0</u>
<u>Private Equity</u>	<u>11.9</u>	<u>24.0</u>
<u>Hedge Funds</u>	<u>6.2</u>	<u>10.5</u>

<sup>4</sup> Based on Meketa Investment Group 2017 Asset Study.



**APPENDIX B (CONTINUED)**  
**EXPECTED CORRELATIONS AMONG ASSET CLASSES AND SUB-ASSET CLASSES<sup>5</sup>**

Asset Class/ Sub Asset Class	Short-Term Investment Grade Bonds	Investment Grade Bonds	TIPS	High Yield Bonds	Public Domestic Equity	Public Foreign Equity (Dev.)	Public Foreign Equity (Em.)	Real Estate	Infrastructure	Private Equity	Hedge Funds
Short-Term Investment Grade Bonds	1.00										
Investment Grade Bonds	0.90	1.00									
TIPS	0.65	0.80	1.00								
High Yield Bonds	0.15	0.35	0.30	1.00							
Public Domestic Equity	-0.05	0.25	0.00	0.65	1.00						
Public Foreign Equity (Dev.)	-0.05	0.20	0.10	0.55	0.80	1.00					
Public Foreign Equity (Em.)	-0.10	0.00	0.10	0.50	0.75	0.80	1.00				
Real Estate	0.10	0.25	0.10	0.50	0.40	0.35	0.30	1.00			
Infrastructure	0.20	0.35	0.30	0.45	0.40	0.35	0.35	0.45	1.00		
Private Equity	0.00	0.15	0.00	0.65	0.80	0.70	0.60	0.45	0.50	1.00	
Hedge Funds	0.10	0.25	0.10	0.50	0.60	0.55	0.50	0.20	0.30	0.55	1.00

<sup>5</sup> Based on Meketa Investment Group 2017 Asset Study.

APPENDIX C

ASSET ALLOCATION TARGETS

<u>Asset Class</u>	<u>Portfolio Target Weight</u>	<u>Policy Range</u>
<u>Domestic Equity</u>	<del>33.0%</del> <u>27.0%</u> <del>26%</del>	<del>28.0% - 38.0%</del> <u>22.0% - 32.0%</u> <del>21% - 31%</del>
<u>Developed Foreign Intl. Equity</u>	<del>16.0%</del> <u>20.06%</u>	<del>11.0% - 21.0%</del> <u>15.01% - 25.011%</u>
<u>Emerging Intl. Equity</u>	10%	5% - 15%
<u>Global Equity</u>	10%	5% - 15%
<u>Total Fixed Income</u>	<del>25.5%</del> <u>27.015%</u>	<del>20.5% - 30.5%</del> <u>10.22.0% - 20.32.0%</u>
<u>Real Estate / Real Assets</u>	<del>13.0%</del> <u>16%</u>	<del>10.013% - 15.019%</del>
<u>Private Equity</u>	<del>7.5%</del> <u>10.013%</u>	<del>5.0% - 10.5.08-18%</del>
<u>Hedge Fund of Funds</u>	4.0%	2.0% - 6.0%
<u>Cash</u>	<del>1.00%</del>	<del>0.0% - 3.0</del> < 5%

Based upon the expected asset returns, risks, and correlations cited in Appendix B, this target allocation exhibits an expected annual return of 7.6% and an expected annual standard deviation of 14.1%.

Plymouth County Retirement Association

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**Plymouth County Retirement Association**

10 Cordage Park Circle, Suite 34, Plymouth, MA 02360

(508) 830-1803, [www.per-ma.org](http://www.per-ma.org)

August 2010

Plymouth County Retirement Association

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	<u>Board</u>	<u>Consultant</u>	<u>Investment Manager</u>	<u>Custodian</u>
<u>Asset Allocation Investment Policy</u>	<u>X</u>	<u>X</u>		
<u>Formation of Investment Policy</u>	<u>X</u>	<u>X</u>		
<u>Manager Guidelines</u>	<u>X</u>	<u>X</u>	<u>X</u>	
<u>Manager Selection</u>	<u>X</u>	<u>X</u>		
<u>Performance Evaluation</u>	<u>X</u>	<u>X</u>		
<u>Compliance with Manager Guidelines</u>	<u>X</u>	<u>X</u>	<u>X</u>	
<u>Execution of Trades</u>			<u>X</u>	<u>X</u>
<u>Collection of Dividends &amp; Interest</u>			<u>X</u>	<u>X</u>
<u>Cash Sweeps</u>			<u>X</u>	<u>X</u>
<u>Recapture Programs</u>	<u>X</u>		<u>X</u>	<u>X</u>
<u>Securities Lending</u>	<u>X</u>			<u>X</u>
<u>Proxy Voting</u>			<u>X</u>	<u>X</u>
<u>Trading Verification</u>			<u>X</u>	<u>X</u>
<u>Valuation of Securities</u>			<u>X</u>	<u>X</u>
<u>Performance Calculation</u>			<u>X</u>	<u>X</u>

## APPENDIX D

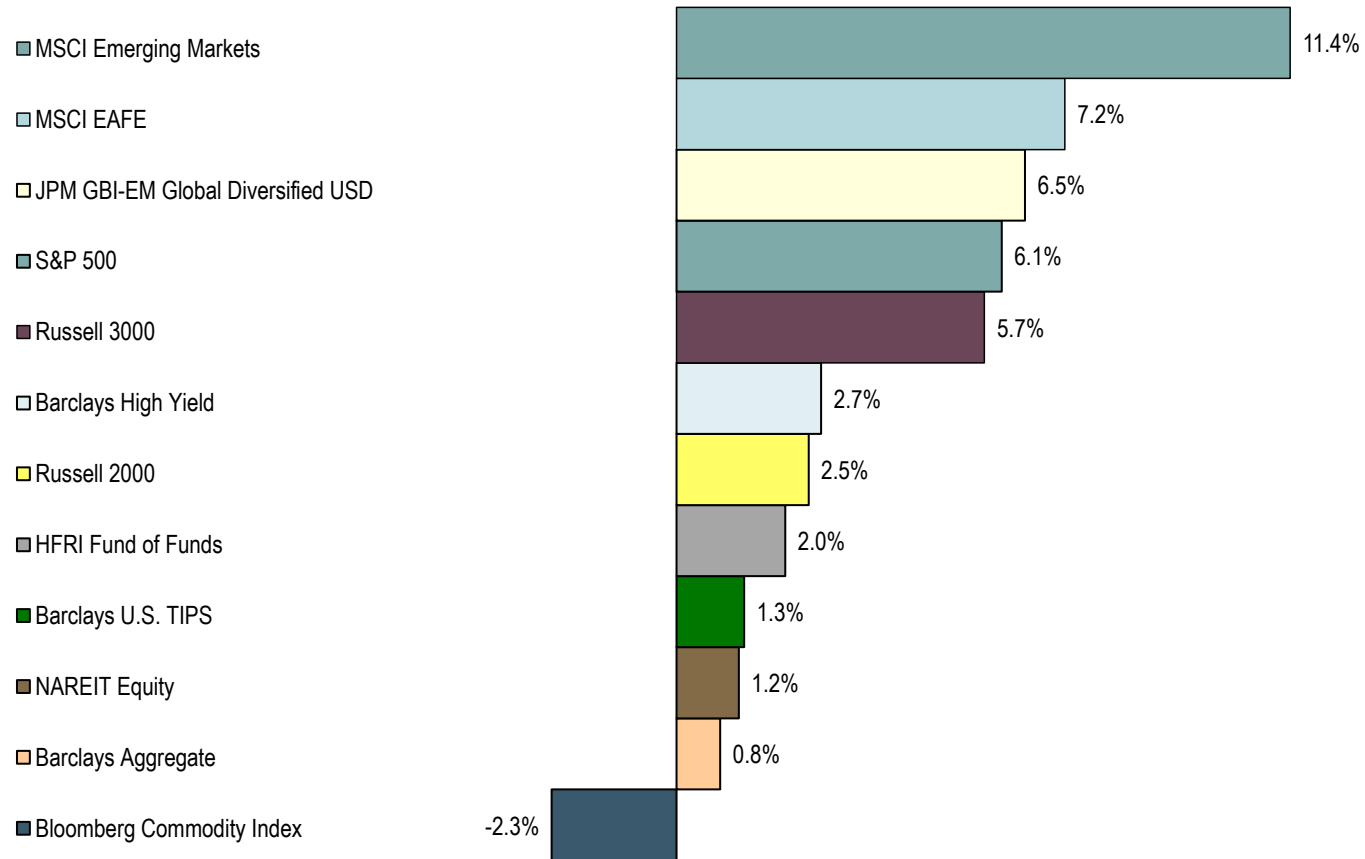
### WATCHLIST AND PROBATION POLICY

- a. Organizational Issues (People)
- Change in ownership or control of the company
  - Significant change in team composition or responsibilities
  - Material change in the business organization of the investment manager
  - Departure of significant personnel
- b. Performance
- 1, 3 and 5-year performance net of fees below benchmark
  - 1, 3 and 5-year performance net of fees below peers (below median of relevant peer universe)
  - Performance inconsistent with the investment manager's style and risk controls
- c. Deviation from style Investment Process
- Deviation from investment style
  - Deviation from risk controls
- e.d. Other
- Material guideline violation not brought to our attention by the investment manager
  - Material guideline violation not sufficiently explained by the investment manager
  - Failure to comply with terms of contract that is not corrected within 60 days
  - Any extraordinary regulatory action or other proceeding affecting the investment
  - Failure to abide by Massachusetts law and investment restrictions
  - Unsatisfactory client service

# Appendices

**The World Markets  
First Quarter of 2017**

### The World Markets<sup>1</sup> First Quarter of 2017



<sup>1</sup> Source: Thomson Reuters.



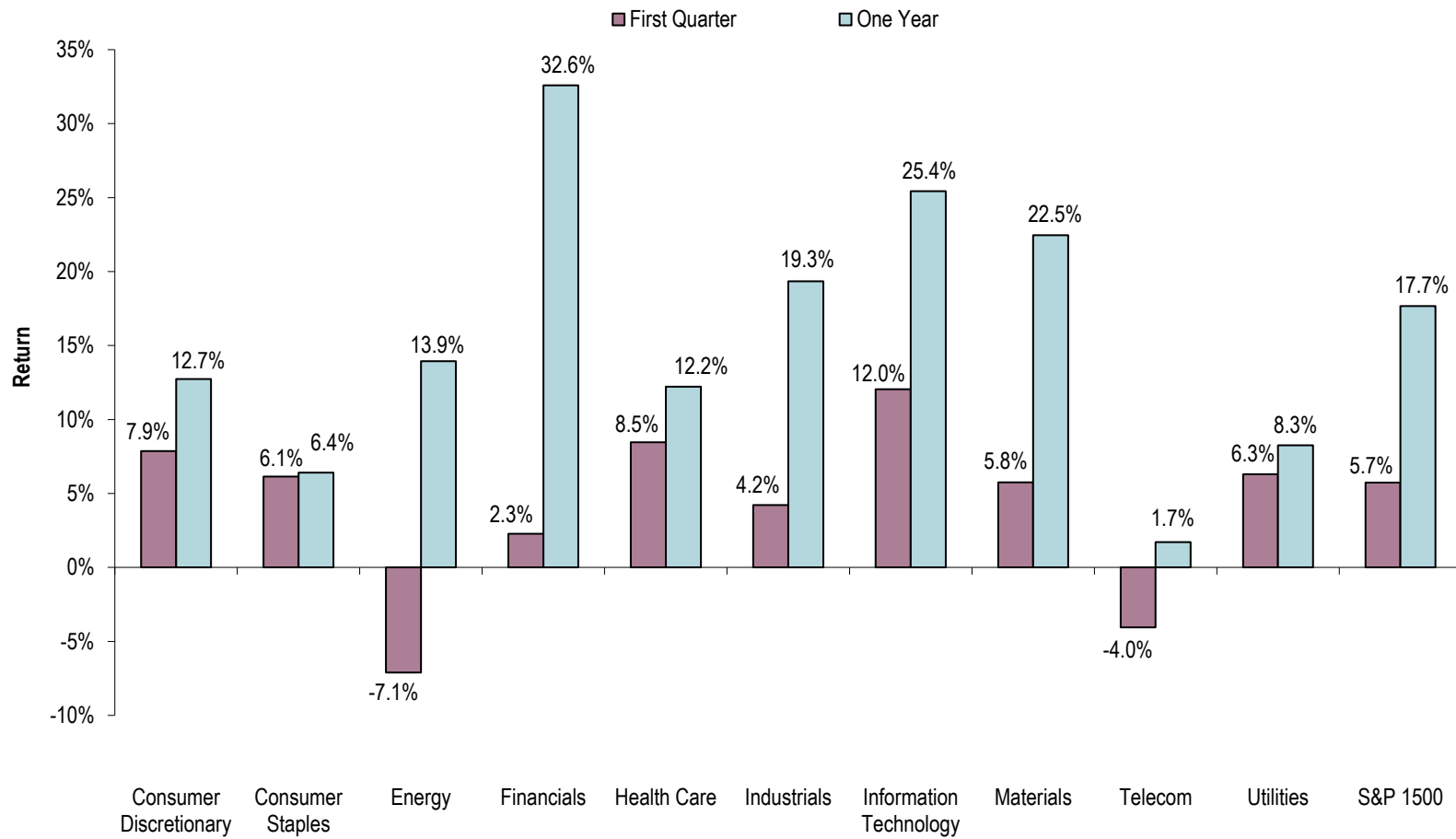


Index Returns<sup>1</sup>

	1Q17 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>					
Russell 3000	5.7	18.1	9.8	13.2	7.5
Russell 1000	6.0	17.4	10.0	13.3	7.6
Russell 1000 Growth	8.9	15.8	11.3	13.3	9.1
Russell 1000 Value	3.3	19.2	8.7	13.1	5.9
Russell MidCap	5.1	17.0	8.5	13.1	7.9
Russell MidCap Growth	6.9	14.1	7.9	12.0	8.1
Russell MidCap Value	3.8	19.8	8.9	14.1	7.5
Russell 2000	2.5	26.2	7.2	12.4	7.1
Russell 2000 Growth	5.3	23.0	6.7	12.1	8.1
Russell 2000 Value	-0.1	29.4	7.6	12.5	6.1
<b>Foreign Equity</b>					
MSCI ACWI (ex. U.S.)	7.9	13.1	0.6	4.4	1.4
MSCI EAFE	7.2	11.7	0.5	5.8	1.1
MSCI EAFE (local currency)	4.7	18.0	7.3	10.7	2.3
MSCI EAFE Small Cap	8.0	11.0	3.6	9.2	3.0
MSCI Emerging Markets	11.4	17.2	1.2	0.8	2.7
MSCI Emerging Markets (local currency)	7.8	15.1	5.6	5.1	4.9
<b>Fixed Income</b>					
Bloomberg Barclays Universal	1.1	1.9	3.0	2.8	4.5
Bloomberg Barclays Aggregate	0.8	0.4	2.7	2.3	4.3
Bloomberg Barclays U.S. TIPS	1.3	1.5	2.0	1.0	4.2
Bloomberg Barclays High Yield	2.7	16.4	4.6	6.8	7.5
JPMorgan GBI-EM Global Diversified USD	6.5	5.5	-2.7	-1.6	4.1
<b>Other</b>					
NAREIT Equity	1.2	3.6	10.3	10.0	4.8
Bloomberg Commodity Index	-2.3	8.7	-13.9	-9.5	-6.2
HFRI Fund of Funds	2.0	5.9	1.7	3.1	1.2

<sup>1</sup> Source: Thomson Reuters.

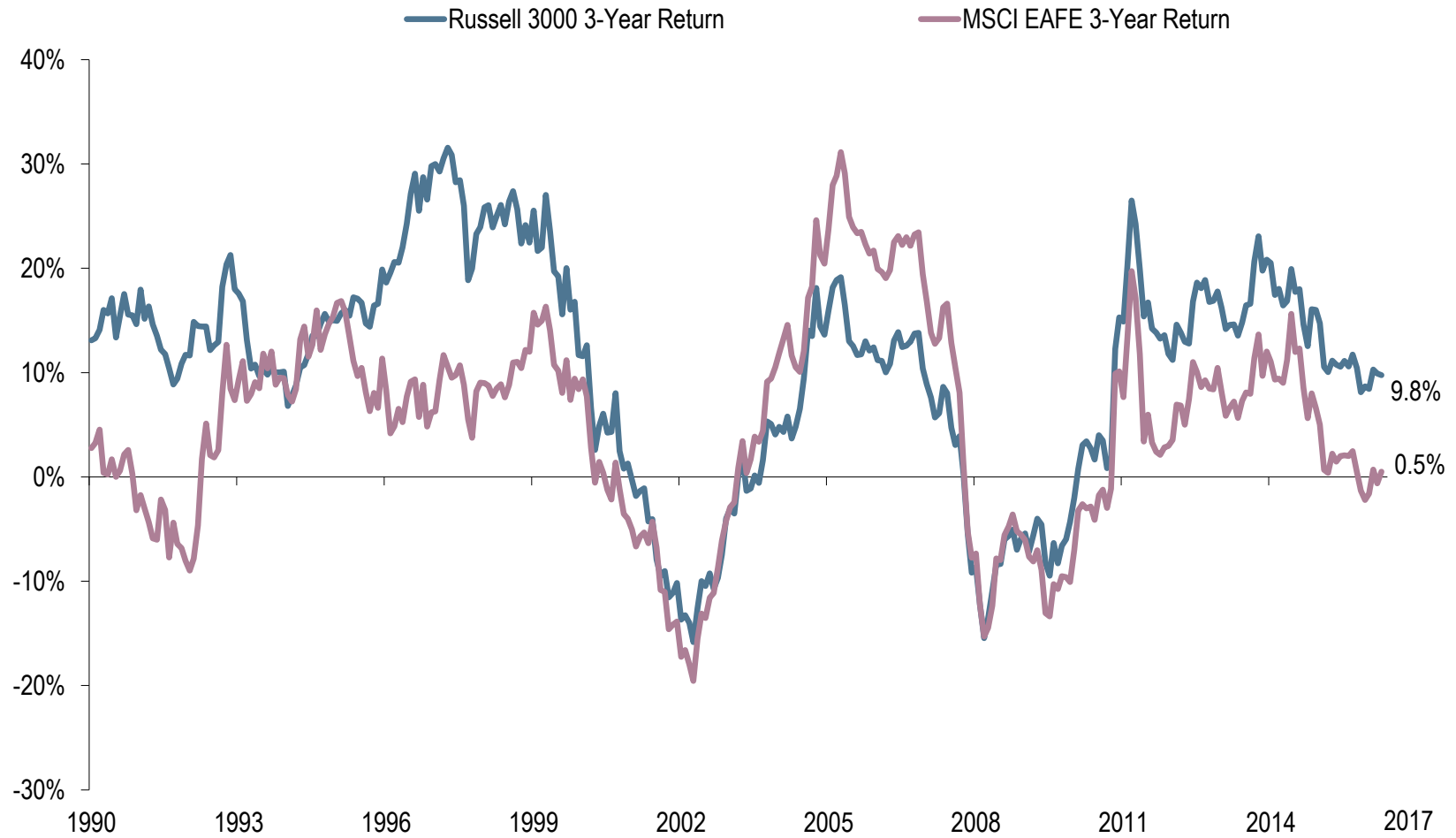
### S&P Sector Returns<sup>1</sup>



<sup>1</sup> Source: Thomson Reuters. Represents S&P 1500 (All Cap) data.



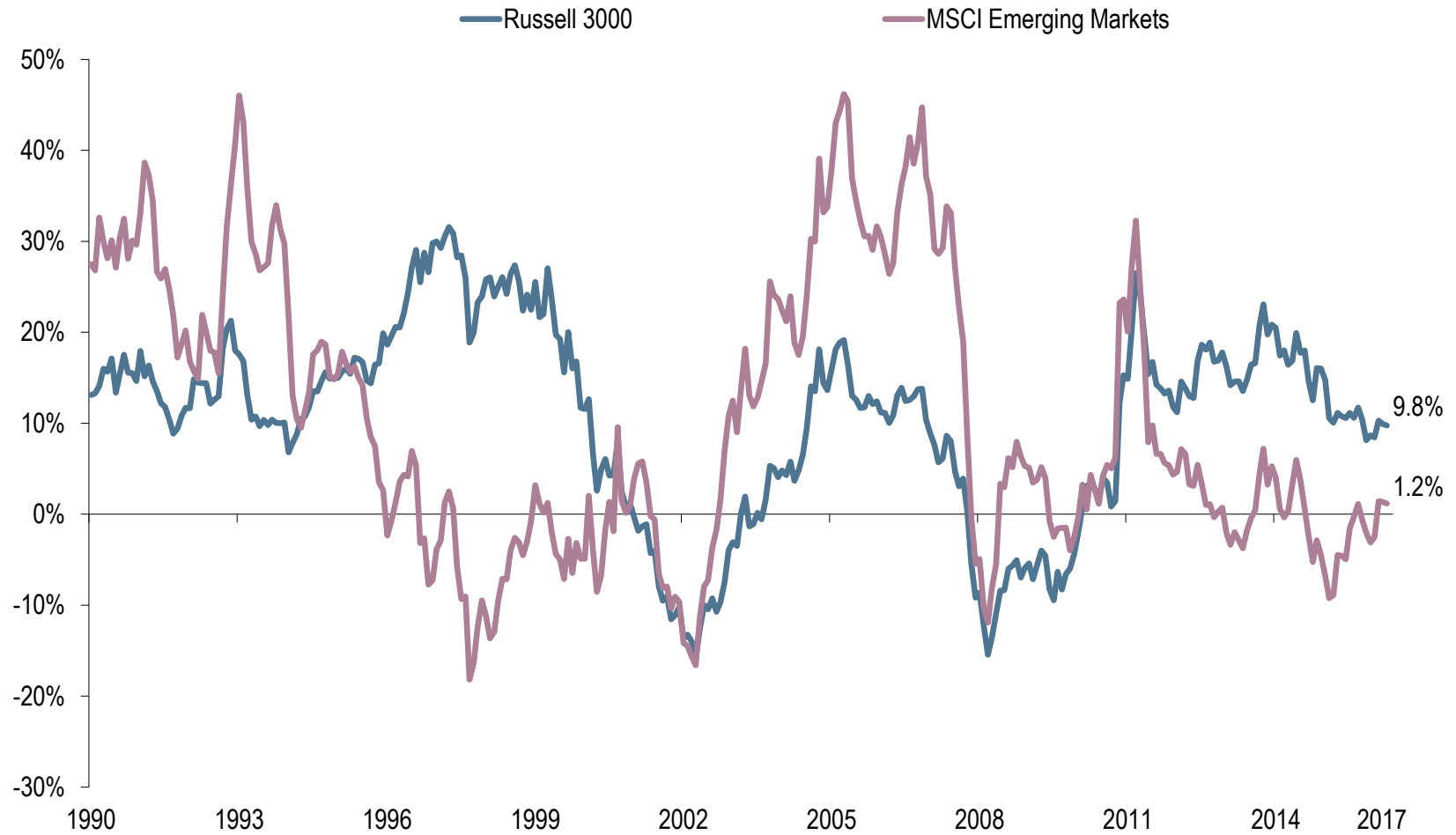
### U.S. and Developed Market Foreign Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: Thomson Reuters.



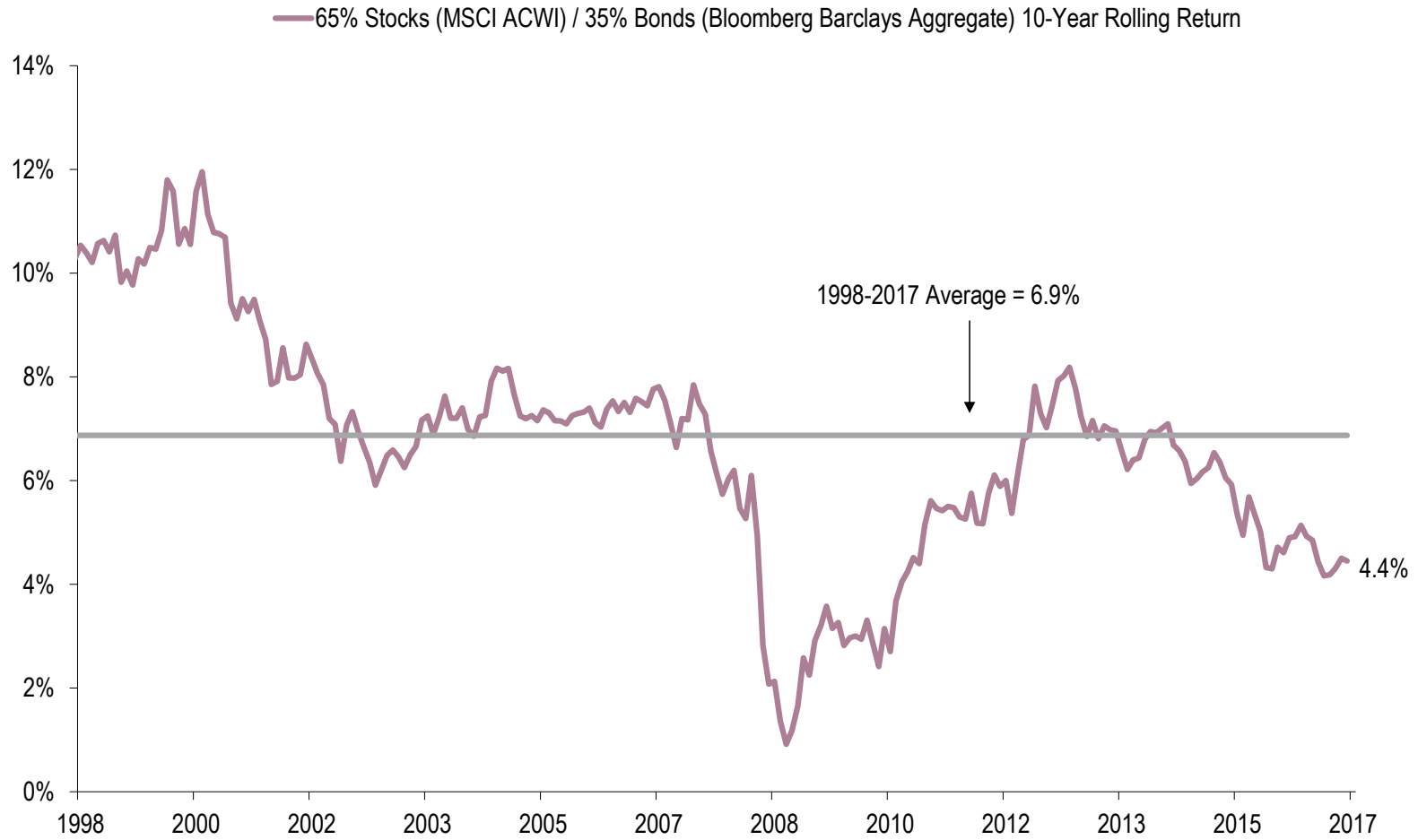
### U.S. and Emerging Market Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: Thomson Reuters.



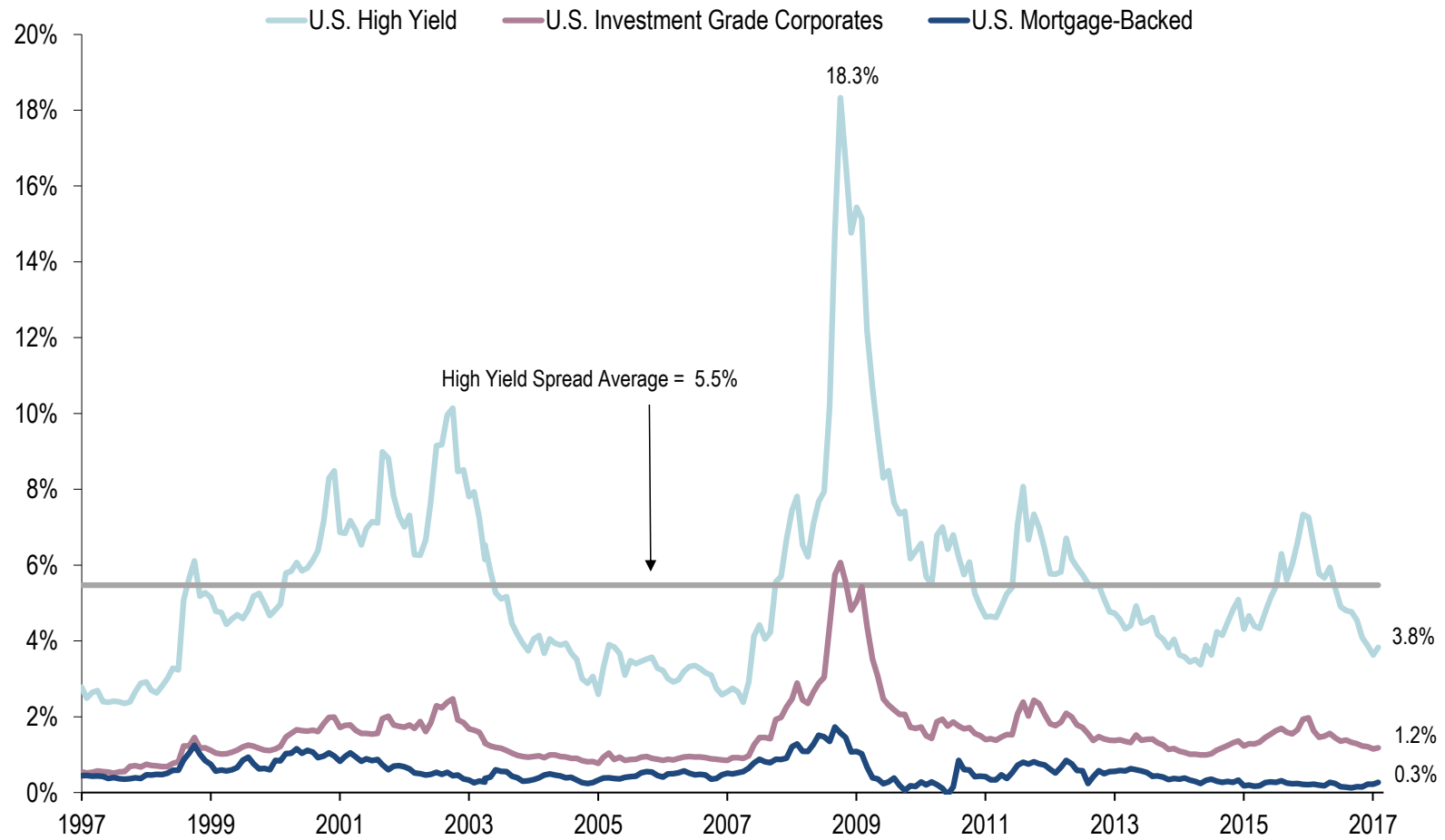
### Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>



<sup>1</sup> Source: Thomson Reuters.



### Credit Spreads vs. U.S. Treasury Bonds<sup>1,2</sup>

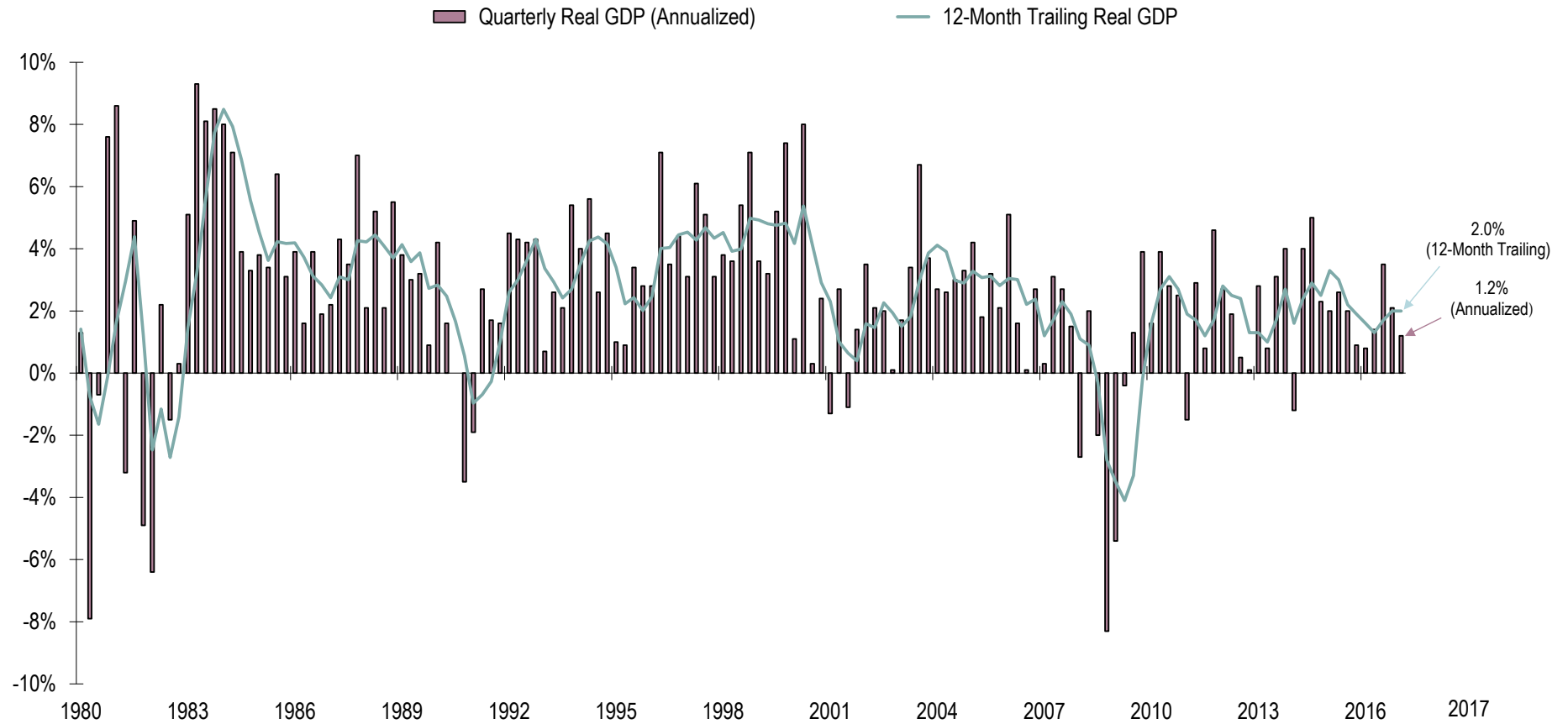


<sup>1</sup> Source: Barclays Live.

<sup>2</sup> The median high yield spread was 5.1% from 1997-2017.



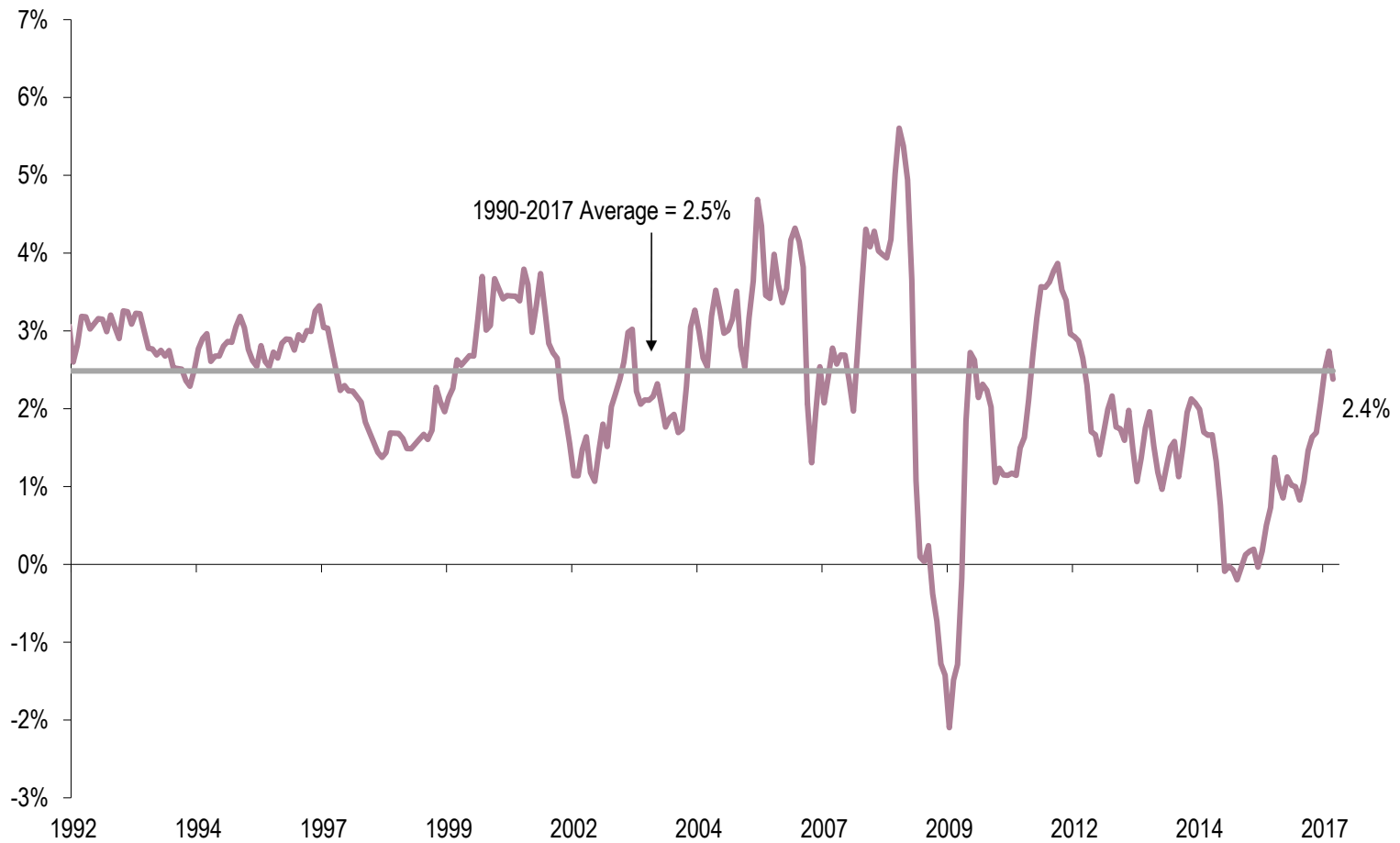
## U.S. Real Gross Domestic Product (GDP) Growth<sup>1</sup>



<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q1 2017 and represents the second estimate.



### U.S. Inflation (CPI) Trailing Twelve Months<sup>1</sup>

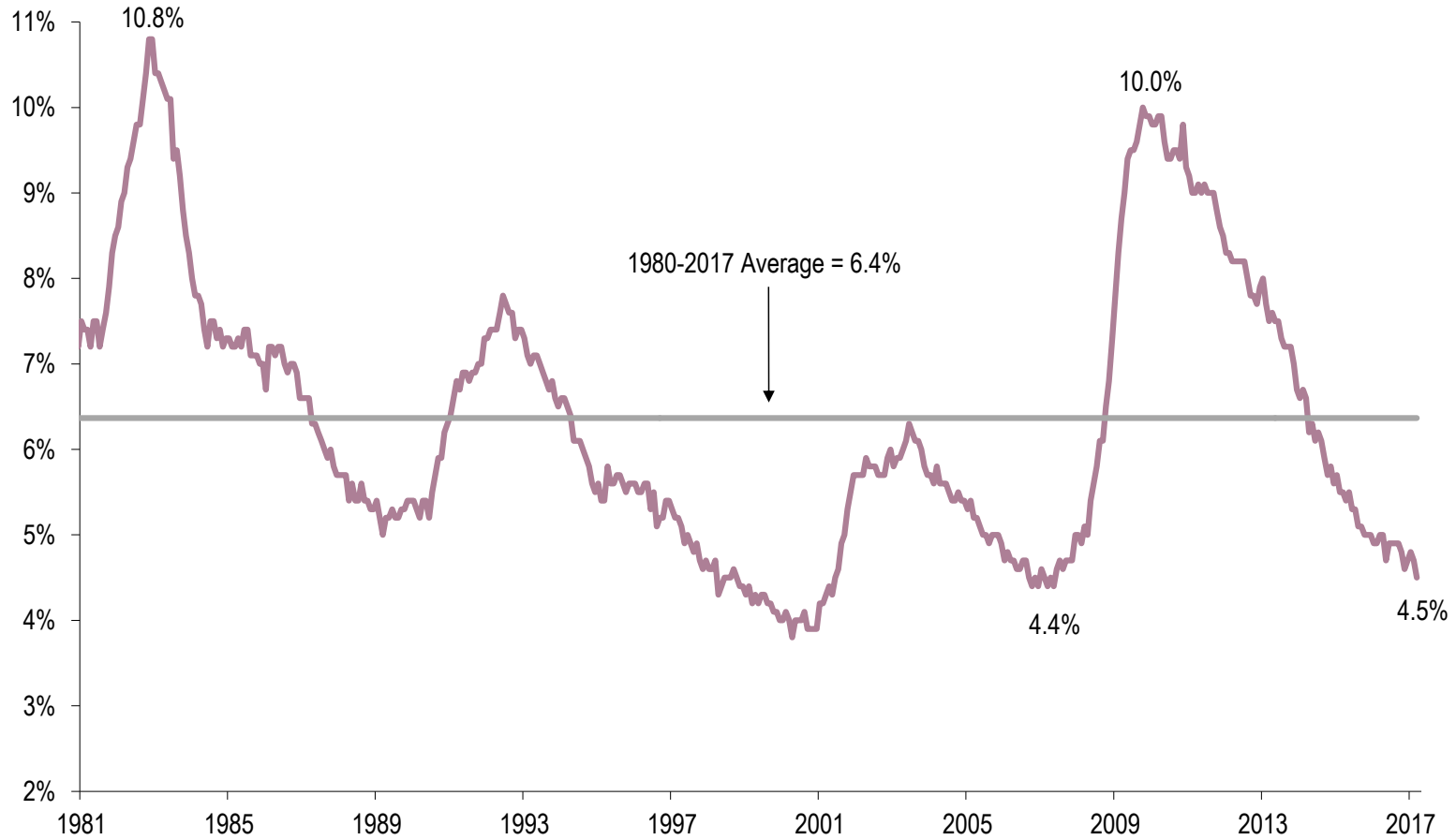


<sup>1</sup> Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of March 31, 2017.





### U.S. Unemployment<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is as of March 31, 2017.



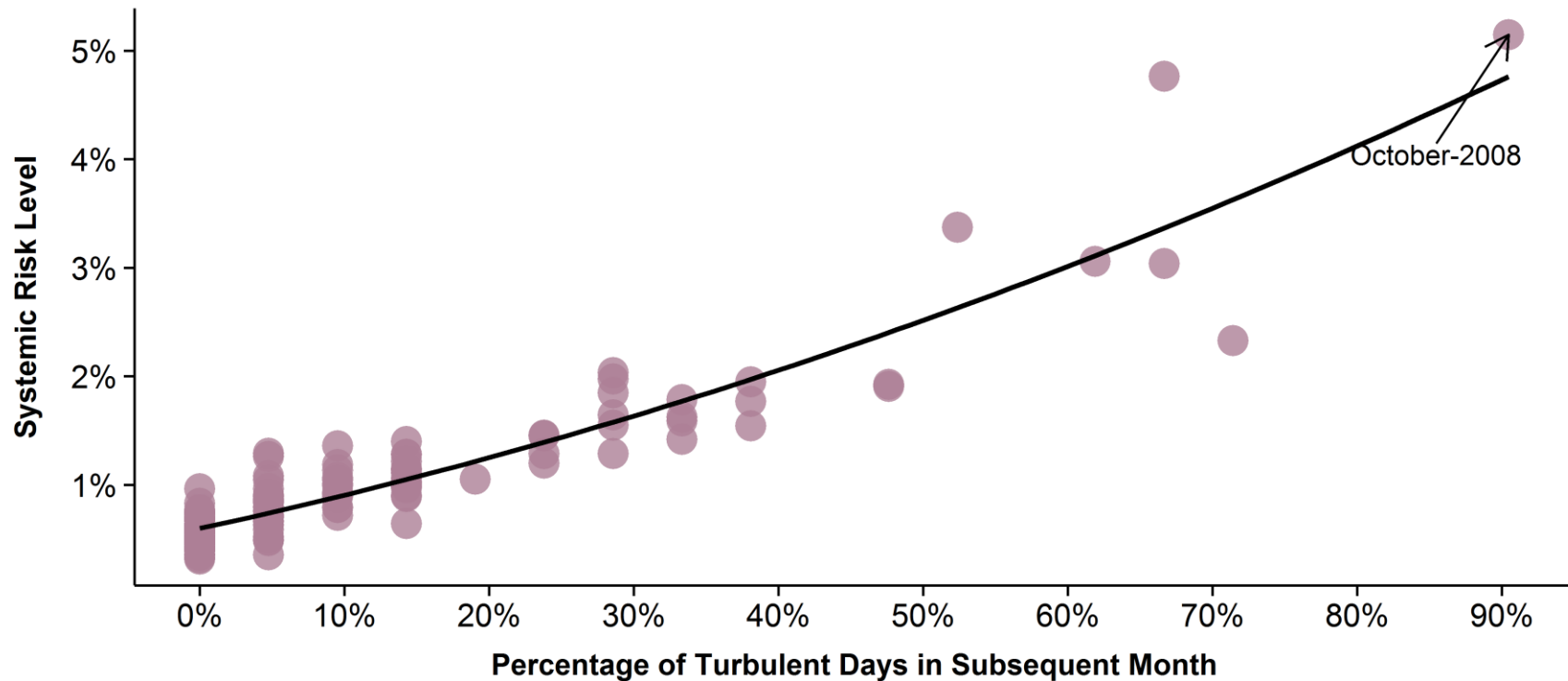
# Capital Markets Outlook

## Capital Markets Outlook<sup>1</sup>

- Investors are faced with three primary issues in the near-term: 1) historically low bond yields, 2) the potential for a transition into a rising rate environment, 3) higher volatility going forward as global political, fiscal, and monetary policy uncertainty remains high.
  - The price of the U.S. stock market relative to ten-year average earnings has trended up after the financial crisis, and remains above its historical average (26.2x versus 20.7x).
    - Within U.S. Equity markets, valuations for companies based on both size (small vs. large cap) and value (growth vs. value) remain within a reasonable range.
  - Developed international and emerging market stocks are trading at lower valuations than U.S. stocks.
    - These valuations have been kept lower because of sovereign debt issues, weak economic growth in Europe, and a cyclical slowdown in emerging economies.
    - Both of these measures have seen sustained positive trends as the issues and economic fundamentals mentioned above have improved in recent months.
  - Risk across markets measured by our Systemic Risk metric remains subdued and while this is positive in the short term many serious medium term risks loom large.
    - The recent 'Brexit' vote, along with other political upheaval and monetary policy changes by central banks, will continue to have a meaningful impact.
  - As of April 13th, spreads for both high yield and investment grade corporate bonds were below their respective historical averages (3.5% and 0.9%).
  - At 2.2%, the yield on the ten-year Treasury remained far below its post-WWII average of 5.9%.

<sup>1</sup> Sources: Bloomberg, U.S. Treasury, and Meketa Investment Group. Data is as of April 13, 2017.

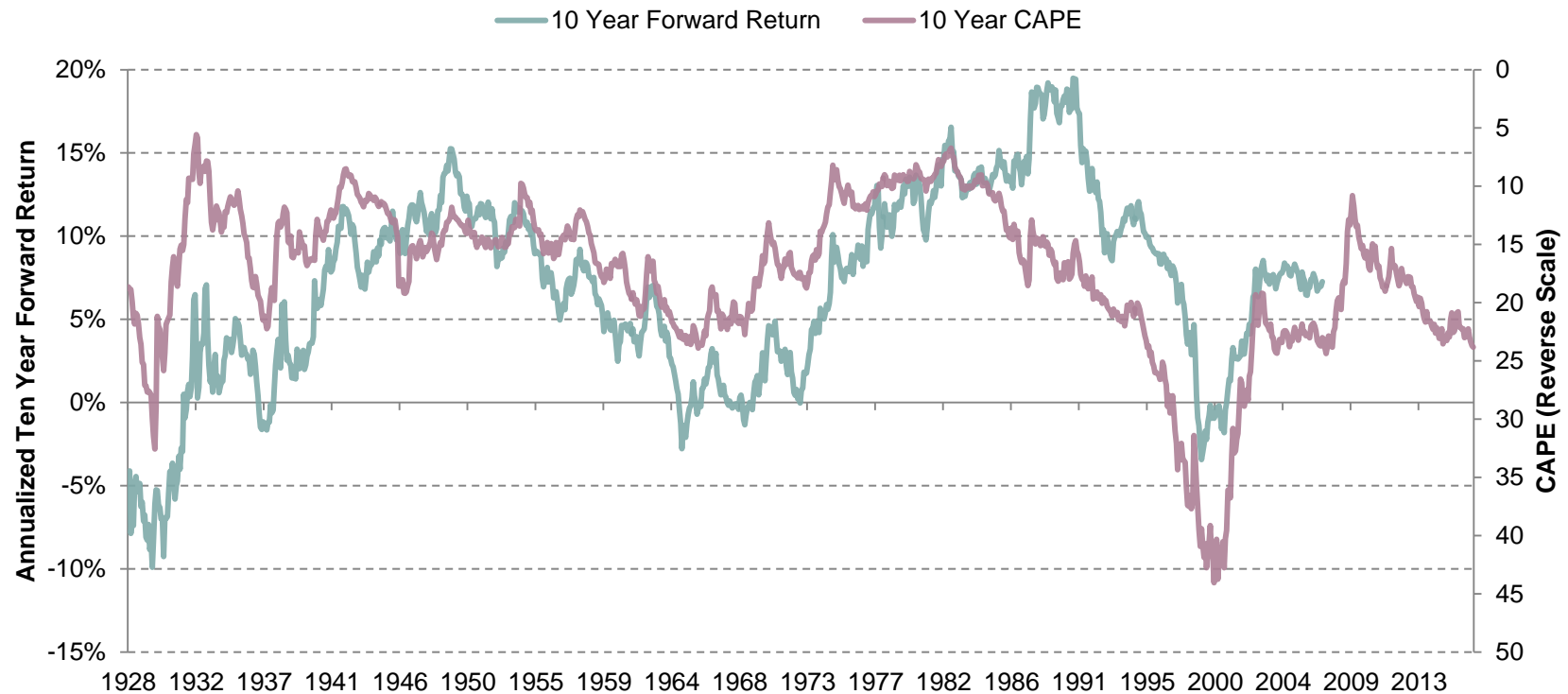
### Systemic Risk and Volatile Market Days<sup>1</sup>



- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.
- After a volatile start to the year, our Systemic Risk measure has returned to reasonable levels. While the number of volatile days can differ, this indicates that the next month should be in the lowest 14%.

<sup>1</sup> Source: Meketa Investment Group, as of April 12, 2017. Volatile days are defined as the top 10 percent of realized turbulence which is a multivariate distance between asset returns.

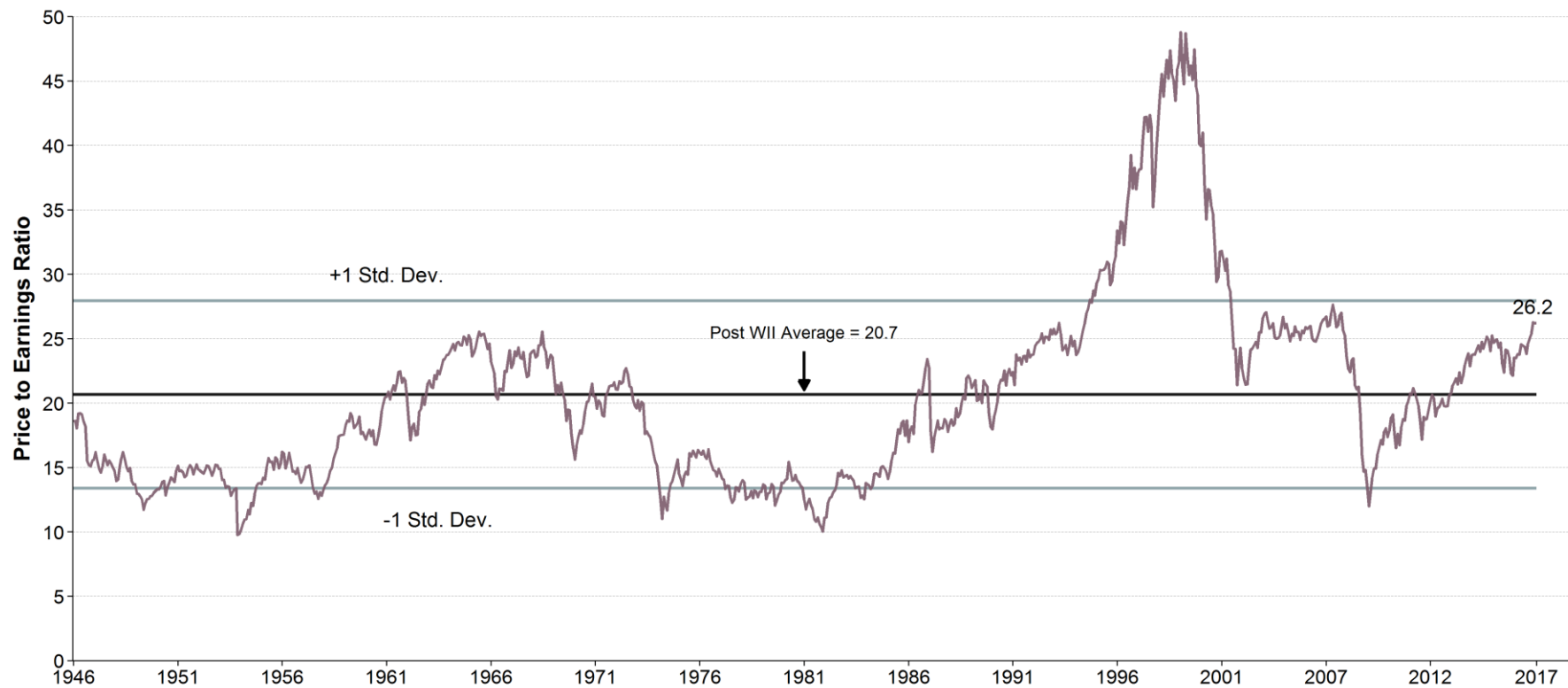
## The U.S. Cyclically Adjusted P/E<sup>1</sup> and Long-Term Equity Returns



- One of the most powerful predictors of long-term equity returns has been the Cyclically Adjusted Price to Earnings Ratio (CAPE).
- This fundamentally driven measure is highly correlated with future returns, which are shown in the chart above using the CAPE metric on a reverse scale.

<sup>1</sup> Source: PE data are from Robert Shiller's website from 1927 - 1946; S&P and Bloomberg 1946 - present. S&P 500 equity returns are from Bloomberg for the entire period. Data is from December 31, 1927 to April 13, 2017.

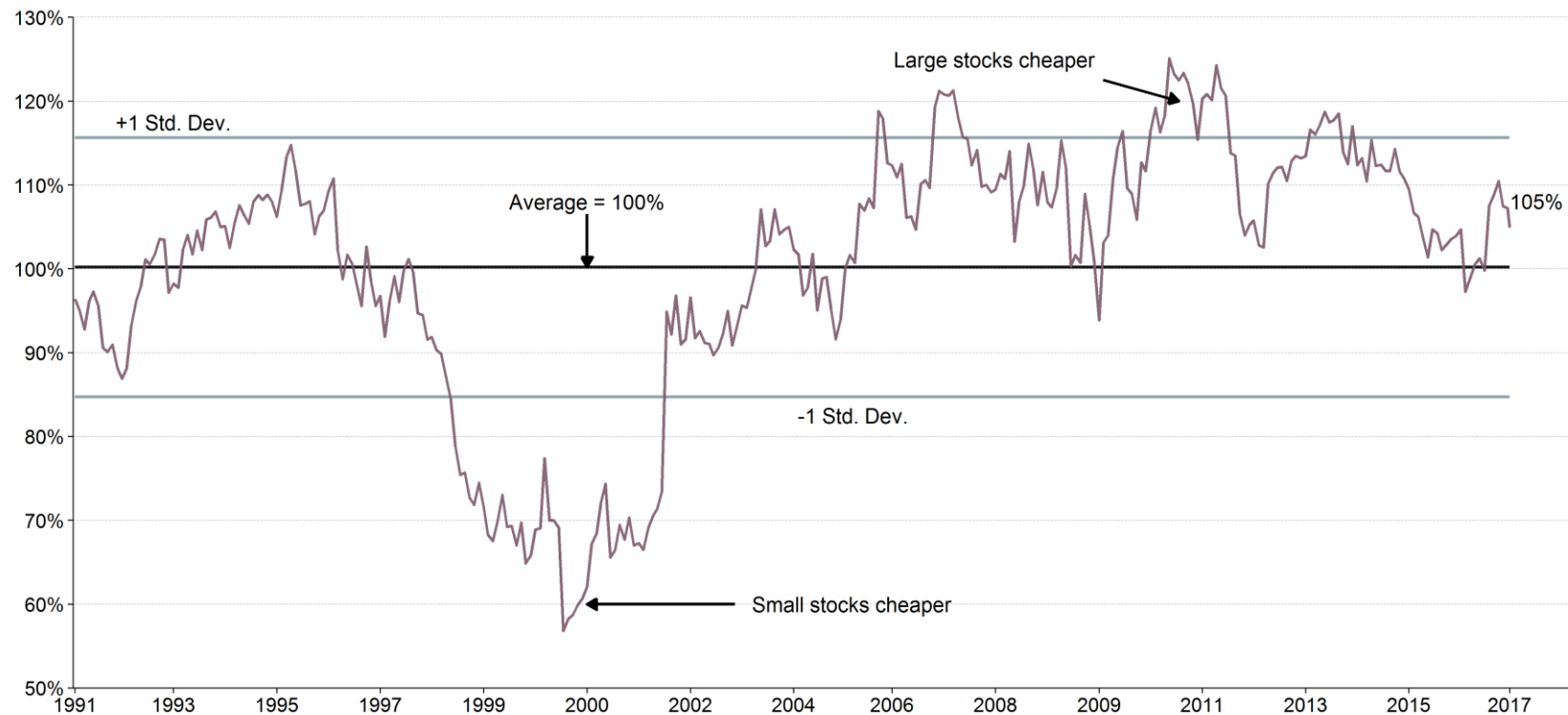
## U.S. Equity Cyclically Adjusted P/E<sup>1</sup>



- As of April 13th, the cyclically adjusted P/E ratio for the S&P 500 was 26.2x which is above its post-WWII average of 20.7x.
- Historically, a P/E ratio at this level has led to below average future returns over a 10 year horizon.

<sup>1</sup> Source: Standard & Poor's. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is from January 31, 1946 to April 13, 2017.

## Small Cap P/E vs. Large Cap P/E<sup>1</sup>



- The P/E ratio of small cap stocks (Russell 2000) relative to large cap stocks (Russell 1000) has been a consistent indicator of the relative valuation between companies based on their size.
- At 105%, this relative valuation metric currently indicates that large size companies are slightly cheaper than smaller size companies.

<sup>1</sup> Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings. Data is as of April 13, 2017.

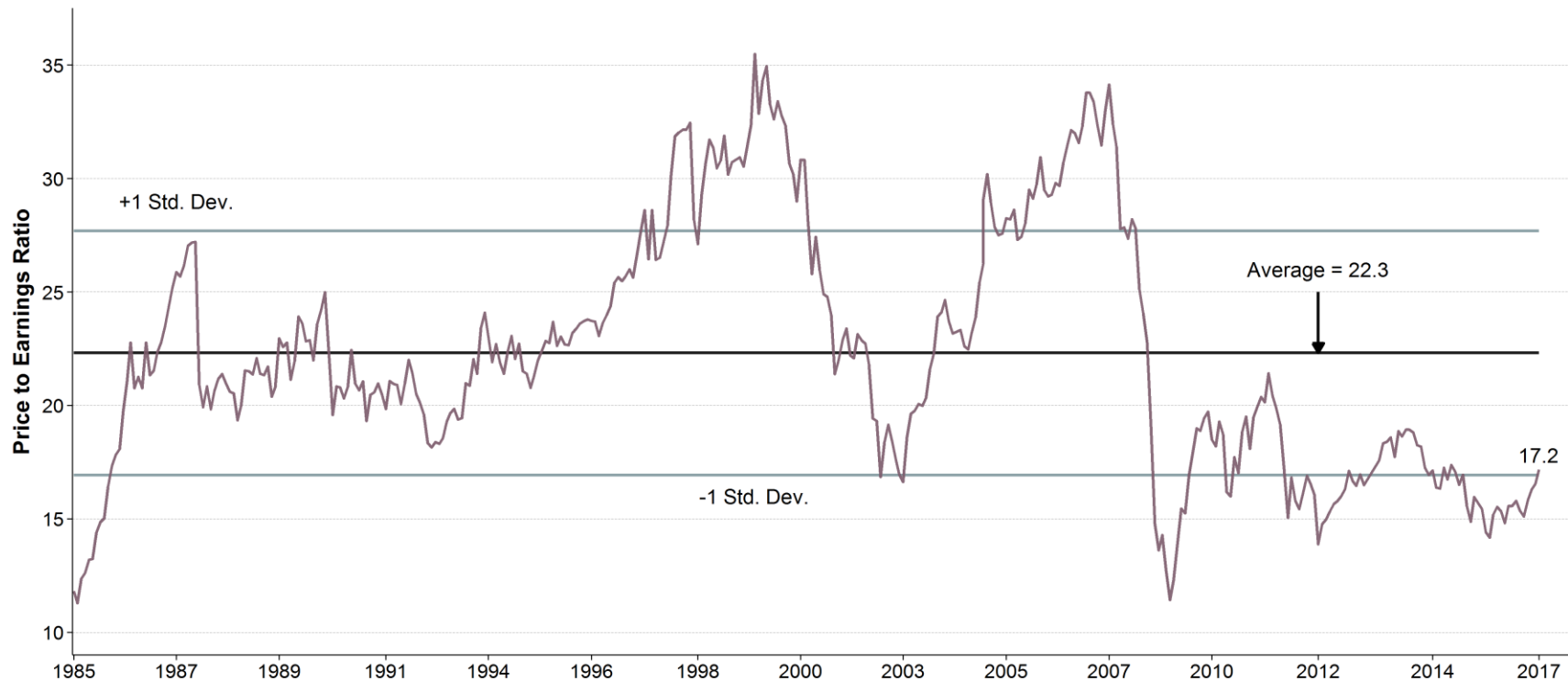
Growth P/E vs. Value P/E<sup>1</sup>

- The P/E ratio of growth stocks (Russell 3000 Growth) relative to value stocks (Russell 3000 Value) was at a level of 119% as of April 13th, which is slightly below its long-term average.
- Of note, the long-term average was sharply influenced by the technology bubble of the late 1990s.

<sup>1</sup> Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings. Data is as of April 13, 2017.



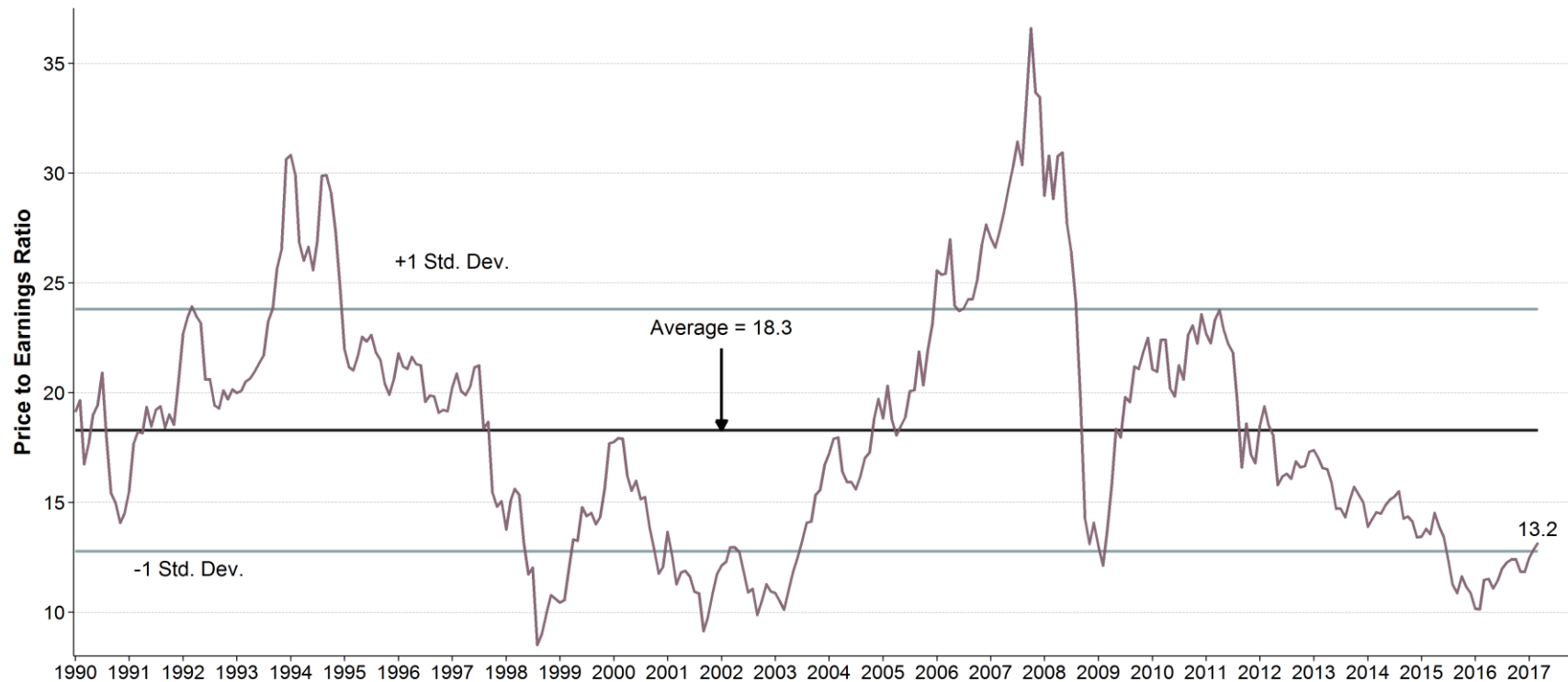
## Developed International Equity Cyclically Adjusted P/E<sup>1</sup>



- As of March 31st the price to earnings valuation for the MSCI EAFE (ex-Japan) is significantly below the historical average.
- Sovereign debt concerns and the slow pace of economic growth in Europe likely account for the low valuation levels.

<sup>1</sup> Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of March 31, 2017.

## Emerging Market Equity Cyclically Adjusted P/E<sup>1</sup>



- Emerging market equities (MSCI Emerging Markets) are priced significantly below their (brief) historical average.
- By this metric, emerging market equities are trading at a much lower valuation than U.S. equities, and at a slightly lower valuation than non-U.S. developed market equities.

<sup>1</sup> Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of March 31, 2017.

## Ten-Year Treasury Yields<sup>1</sup>



- As of April 13th the ten-year Treasury yield was 2.2%, well below the post-WWII average, but above the 1.8% level of one year ago.
- Markets have begun to focus on the path of central bank interest rates; at the beginning of last year, the FOMC began the first rising rate environment since 2006, and guidance is for multiple hikes to occur in 2017.

<sup>1</sup> Source: U.S. Treasury. Data is as of April 13, 2017.

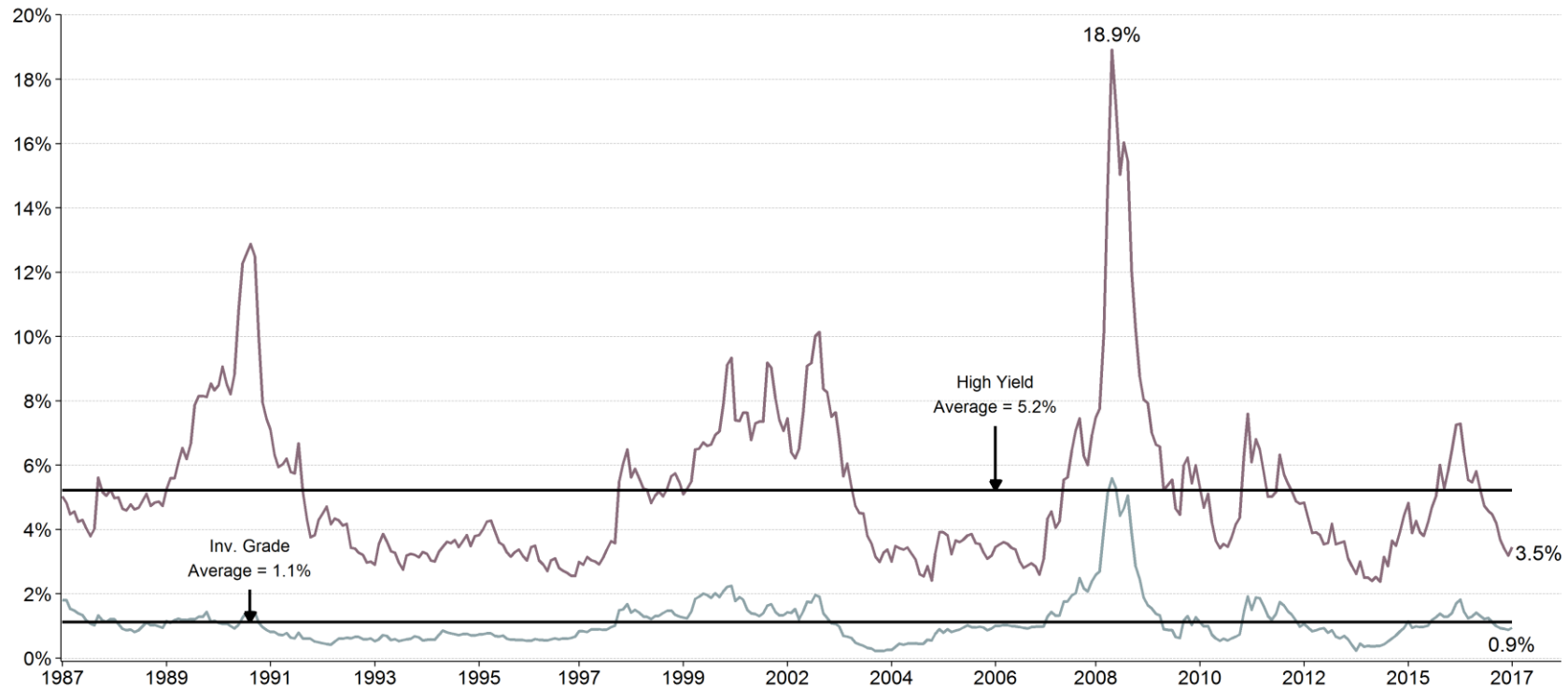
## Ten-Year Breakeven Inflation<sup>1</sup>



- Breakeven (or expected) inflation, the difference between the nominal yield on a ten-year Treasury and the real yield on a ten-year TIPS, is slightly below its twenty-year average.
- The most recent year-over-year inflation rate was 2.4%, indicating that the market future expectation is for inflation to be roughly in line relative to current inflation.

<sup>1</sup> Source: U.S. Treasury and Federal Reserve. Data is as of April 13, 2017 for TIPS and Treasuries. Inflation is measured by the Consumer Price Index (CPI-U NSA) for which the most recent data point is from March 31, 2017.

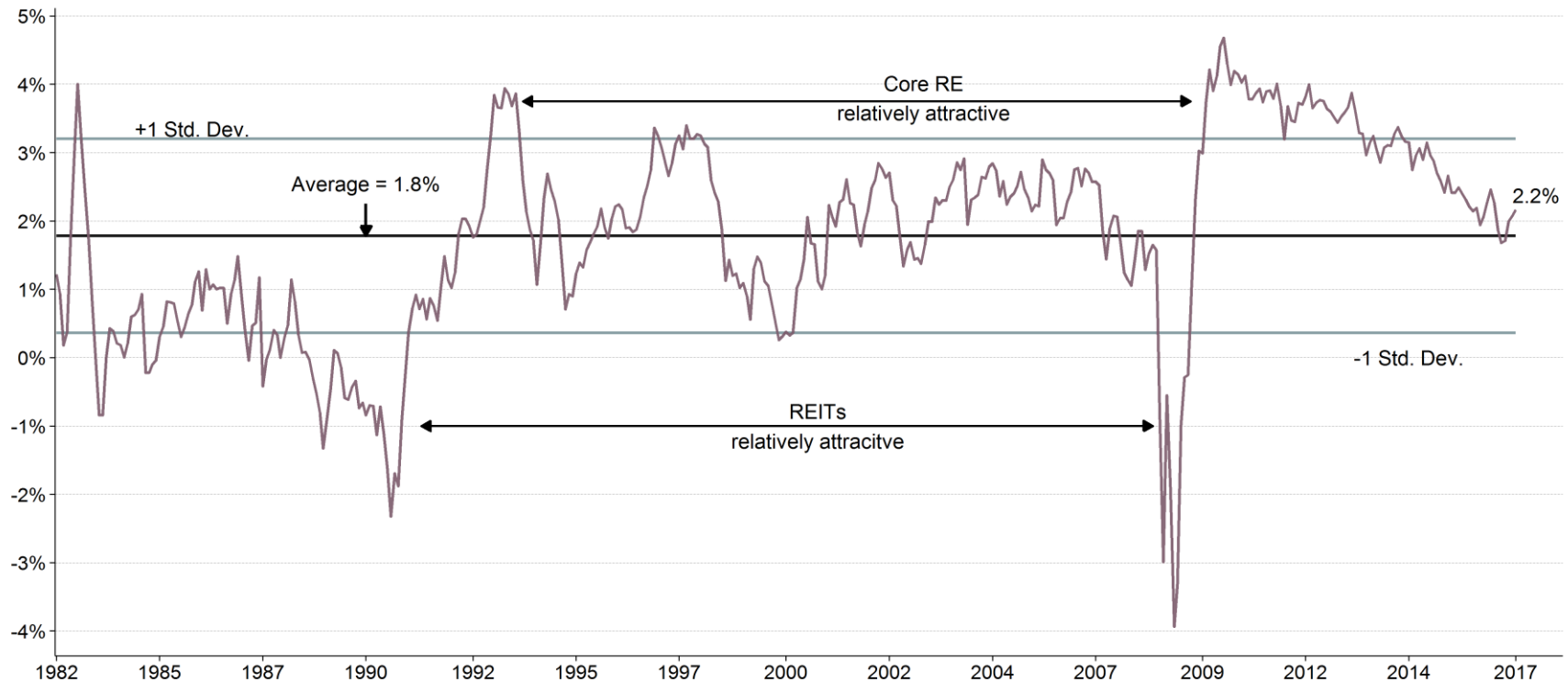
### Credit Spreads<sup>1</sup>



- As of March 31st, credit spreads (versus U.S. Treasury bonds) for both high yield and investment grade corporate bonds were below their respective historical averages.

<sup>1</sup> Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays U.S. Corporate Investment Grade index. Data is as of March 31, 2017.

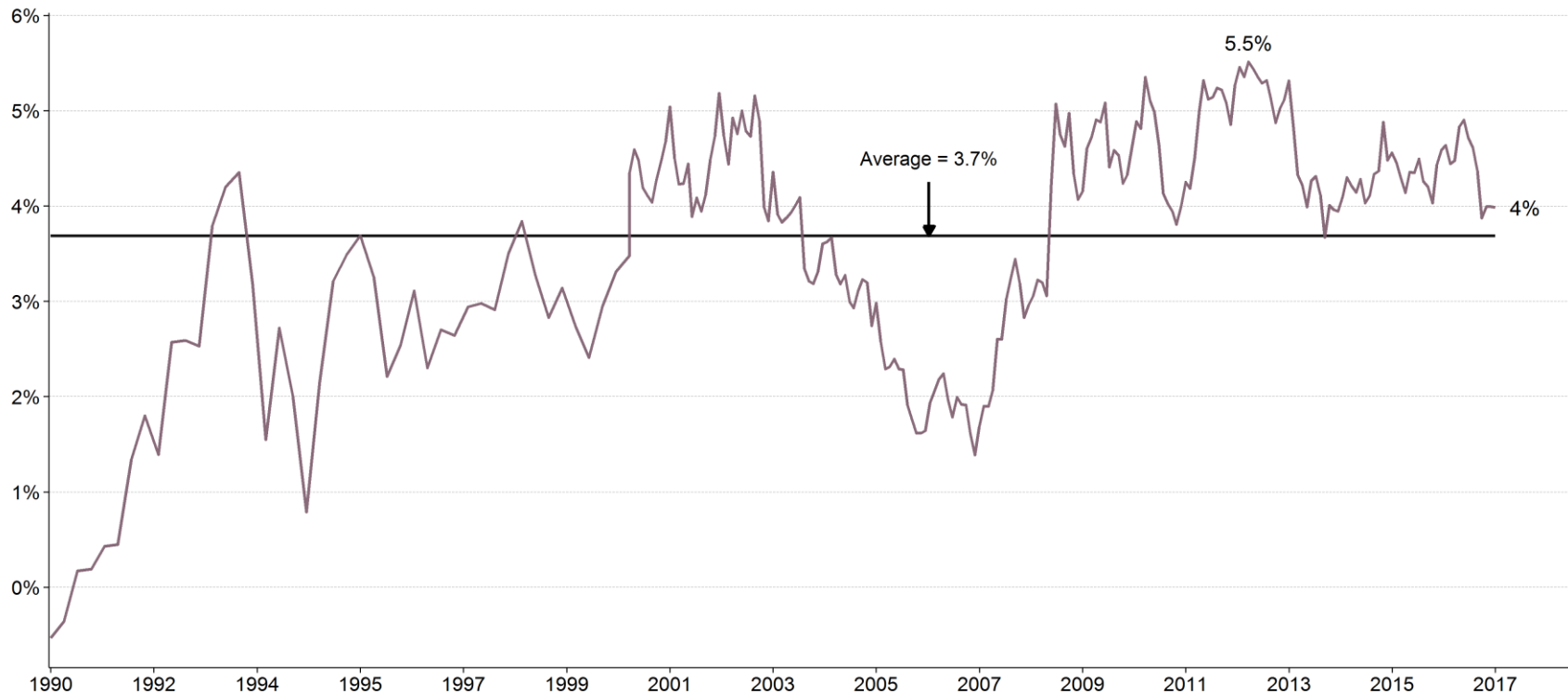


Core Real Estate vs. REITs<sup>1</sup>

- The spread between core real estate cap rates and REIT yields was 2.2%, reaching slightly above the long-term historical average level.
- REITs were yielding 3.9%, well below the 10.1% level of early 2009.

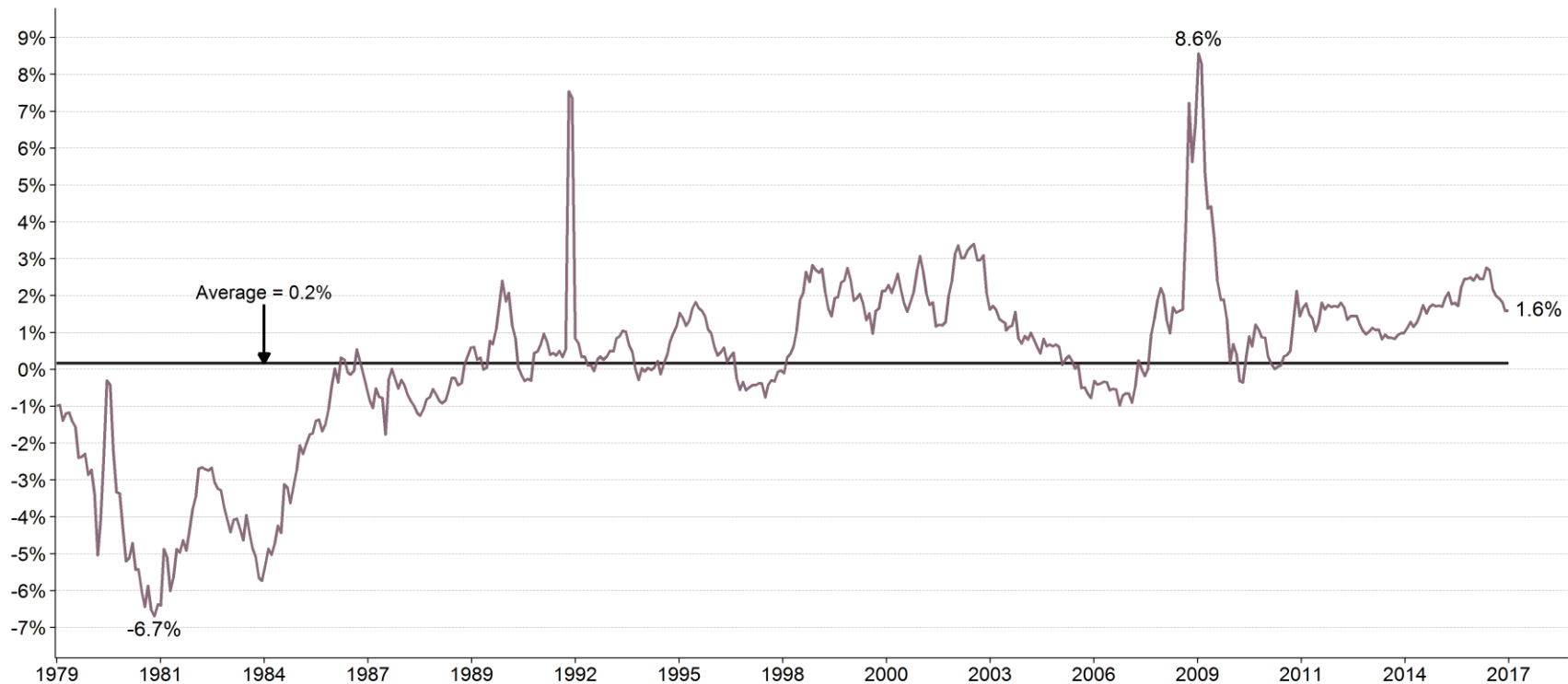
<sup>1</sup> Sources: Bloomberg, Real Capital Analytics, NCREIF, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group and data is as of February 28, 2017. REITs are proxied by the yield for the NAREIT Equity index and data is as of April 13, 2017.

## Core Real Estate Spread vs. Ten-Year Treasury<sup>1</sup>



- At 4%, the difference between the 6.4% cap rate for core real estate and the 2.2% yield for the ten-year Treasury is above its historical average.
- Still, the absolute level of core real estate cap rates is near a historical low.

<sup>1</sup> Source: Real Capital Analytics, U.S. Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group and data is as of February 28, 2017. U.S. Treasury data uses the latest yield data which is as of April 13, 2017.

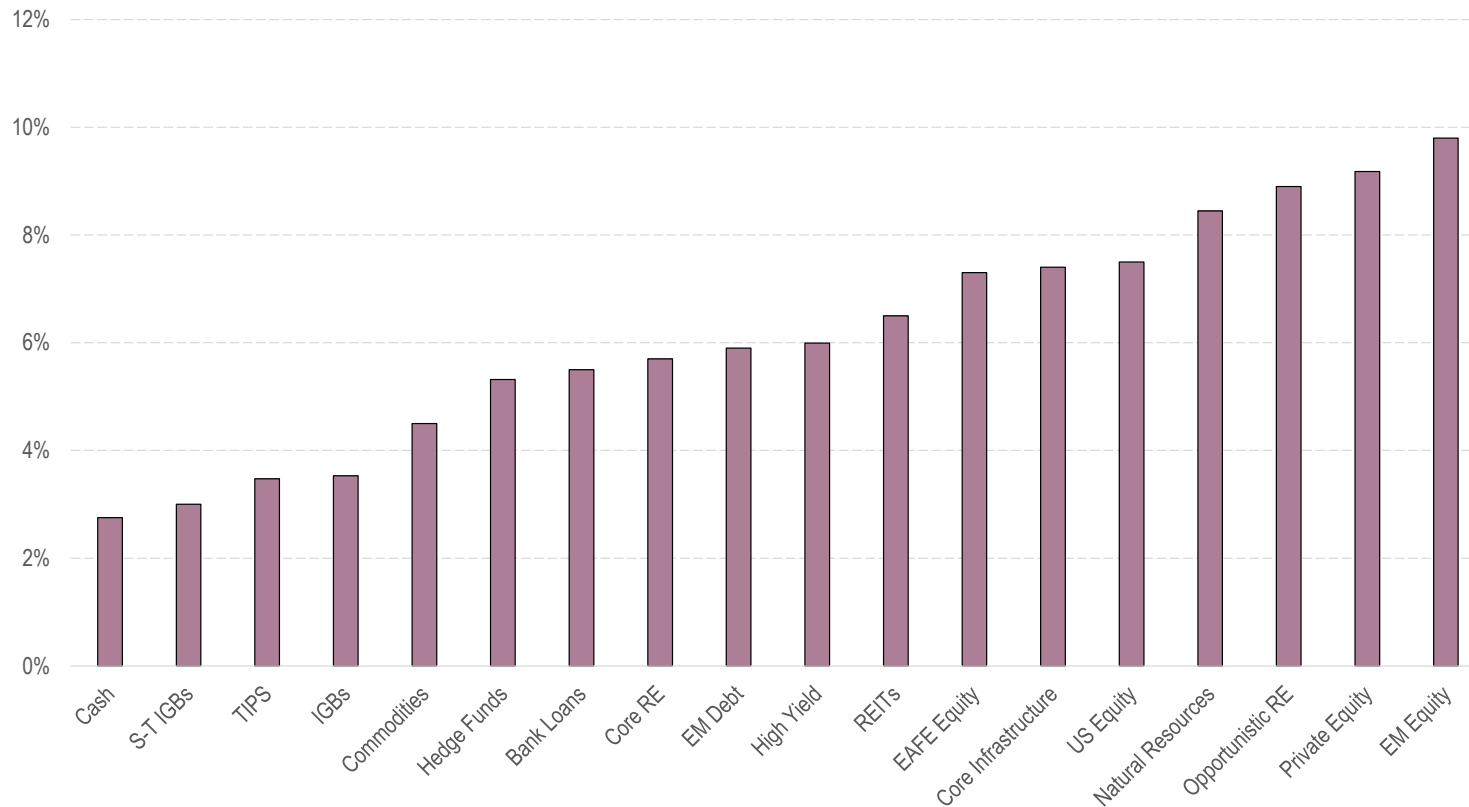
REITs Dividend Yield Spread vs. Ten-Year Treasury<sup>1</sup>

- As of April 13th, REIT yield spreads were 1.6%. This spread represents a change of -0.9% from the previous year.
- As with core real estate, the absolute level of REIT dividend yields is near a historical low.

<sup>1</sup> Source: NAREIT, U.S. Treasury. REITs are proxied by the yield for the NAREIT Equity index. Data is as of April 13, 2017.



### Long-Term Outlook<sup>1</sup>



- Based on Meketa Investment Group’s long-term expectations, only a handful of asset classes are priced to produce returns above 8% per year. All of these asset classes incorporate a high degree of volatility.

<sup>1</sup> Twenty-year expected returns based upon Meketa Investment Group’s 2017 Annual Asset Study.



### Total Return Comparison of Barclays U.S. Aggregate Minus Barclays U.S. TIPS<sup>1</sup>

		Changes In Rates (bps)				
		-100	-50	0	50	100
Inflation Rate Scenarios	4.0%	-3.67%	-3.59%	-3.67%	-3.92%	-4.33%
	3.0%	-2.67%	-2.59%	-2.67%	-2.92%	-3.33%
	2.0%	-1.67%	-1.59%	-1.67%	-1.92%	-2.33%
	1.0%	-0.67%	-0.59%	-0.67%	-0.92%	-1.33%
	0.0%	0.33%	0.41%	0.33%	0.08%	-0.33%

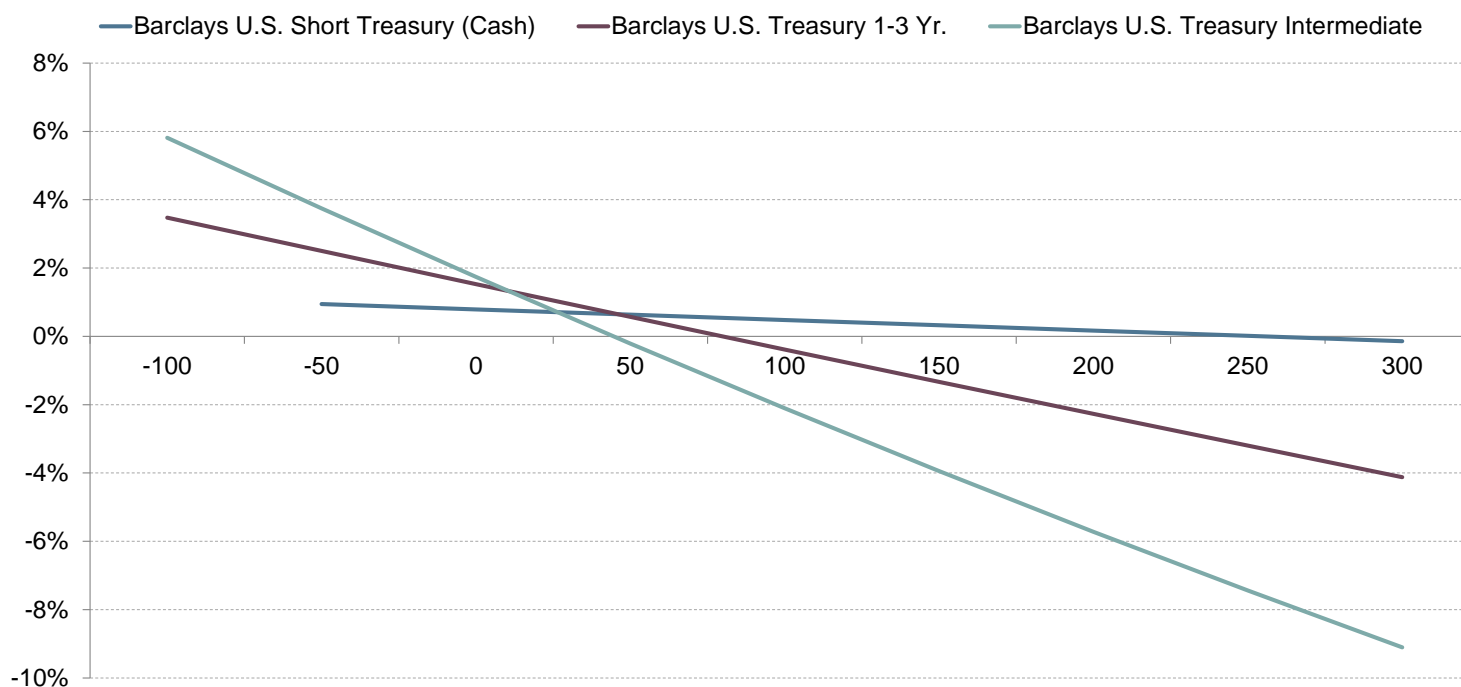
#### Total Return Scenario: 100 bps Rate Increase and 2% Inflation

Total Return Over Longer Holding Periods	1 Year	3 Year	5 Year	7 Year	10 Year
Barclays U.S. Aggregate	-3.30%	1.16%	2.08%	2.48%	2.78%
Barclays U.S. Treasury U.S. TIPS	-0.98%	2.96%	3.77%	4.11%	4.38%

<sup>1</sup> Data is as of March 31, 2017 via Barclays, Bloomberg, and Meketa Investment Group. Scenario assumes that the rate increase happens over one year.



### Total Return Given Changes in Interest Rates (bps)<sup>1</sup>



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays U.S. Short Treasury (Cash)		0.9%	0.8%	0.6%	0.5%	0.3%	0.2%	0.0%	-0.1%	0.31	0.79%
Barclays U.S. Treasury 1-3 Yr.	3.5%	2.5%	1.5%	0.6%	-0.4%	-1.3%	-2.3%	-3.2%	-4.1%	1.93	1.53%
Barclays U.S. Treasury Intermediate	5.8%	3.7%	1.7%	-0.2%	-2.1%	-3.9%	-5.7%	-7.4%	-9.1%	3.96	1.74%
Barclays U.S. Treasury Long	22.5%	12.2%	3.0%	-5.3%	-12.5%	-18.7%	-24.0%	-28.2%	-31.4%	17.5	2.96%

<sup>1</sup> Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Data is as of March 31, 2017 via Barclays, Bloomberg, and Meketa Investment Group.



## **Disclaimer, Glossary, and Notes**

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Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

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.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions (“Forward Statements”). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the Fund will receive a return of the amount invested.

In some cases, Meketa Investment Group assists the Trustees 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 Trustees.

**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.