

FUND EVALUATION REPORT

City of Marlborough Contributory Retirement System

Quarterly Review
March 31, 2018



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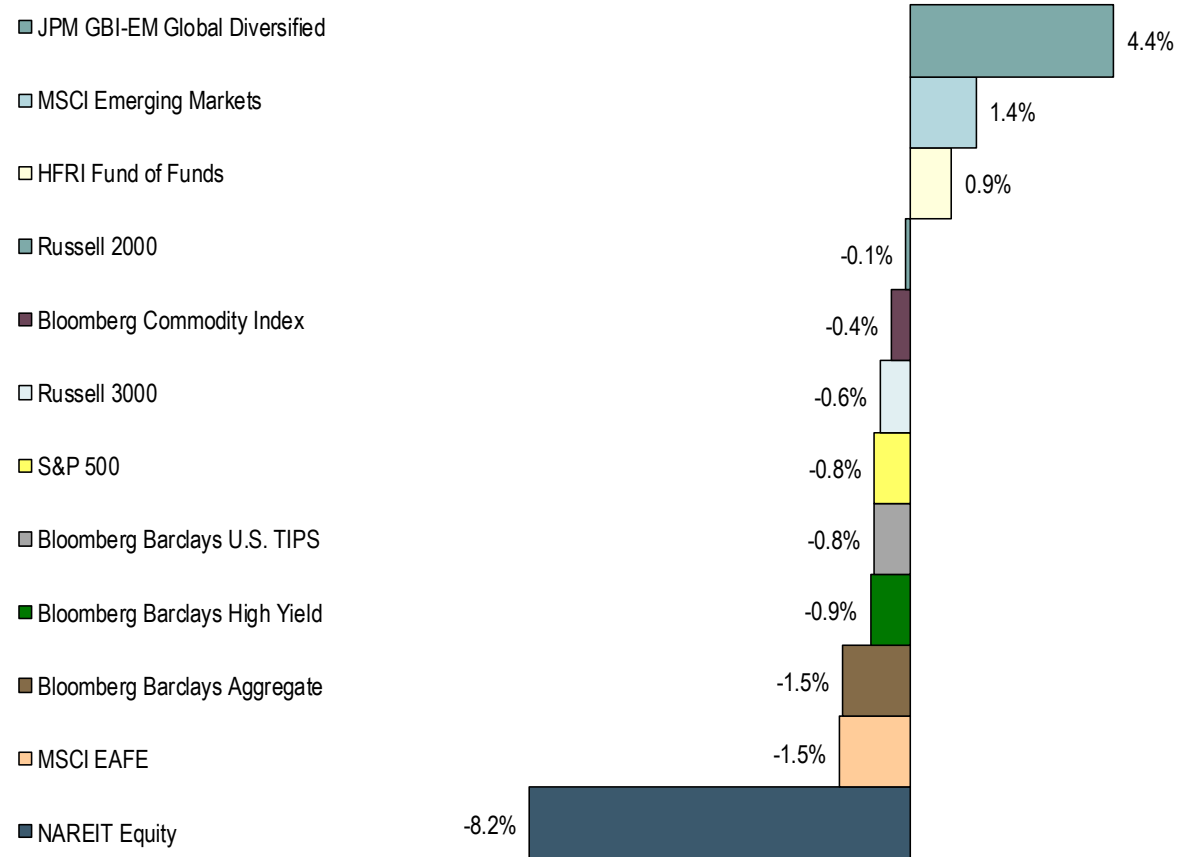
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The World Markets First Quarter of 2018

The World Markets¹ First Quarter of 2018



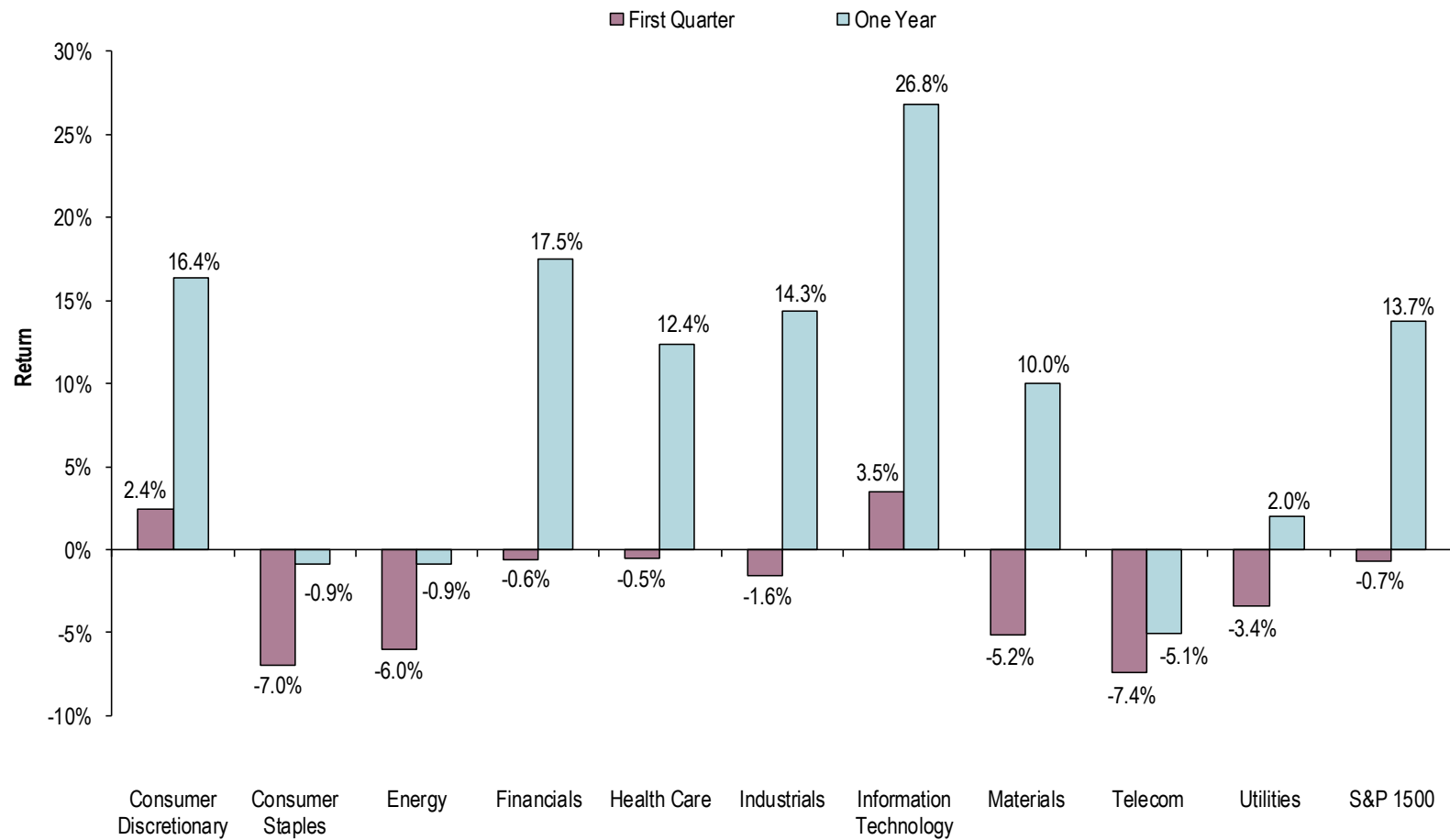
¹ Source: InvestorForce.

Index Returns¹

	1Q18 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
Russell 3000	-0.6	13.8	10.2	13.0	9.6
Russell 1000	-0.7	14.0	10.4	13.2	9.6
Russell 1000 Growth	1.4	21.3	12.9	15.5	11.3
Russell 1000 Value	-2.8	6.9	7.9	10.8	7.8
Russell MidCap	-0.5	12.2	8.0	12.1	10.2
Russell MidCap Growth	2.2	19.7	9.2	13.3	10.6
Russell MidCap Value	-2.5	6.5	7.2	11.1	9.8
Russell 2000	-0.1	11.8	8.4	11.5	9.8
Russell 2000 Growth	2.3	18.6	8.8	12.9	11.0
Russell 2000 Value	-2.6	5.1	7.9	10.0	8.6
Foreign Equity					
MSCI ACWI (ex. U.S.)	-1.2	16.5	6.2	5.9	2.7
MSCI EAFE	-1.5	14.8	5.6	6.5	2.7
MSCI EAFE (Local Currency)	-4.3	5.3	3.4	8.5	4.5
MSCI EAFE Small Cap	0.2	23.5	12.3	11.1	6.5
MSCI Emerging Markets	1.4	24.9	8.8	5.0	3.0
MSCI Emerging Markets (Local Currency)	0.7	22.0	9.0	8.3	5.4
Fixed Income					
Bloomberg Barclays Universal	-1.4	1.5	1.7	2.2	4.0
Bloomberg Barclays Aggregate	-1.5	1.2	1.2	1.8	3.6
Bloomberg Barclays U.S. TIPS	-0.8	0.9	1.3	0.0	2.9
Bloomberg Barclays High Yield	-0.9	3.8	5.2	5.0	8.3
JPM GBI-EM Global Diversified	4.4	12.9	5.4	-0.7	3.7
Other					
NAREIT Equity	-8.2	-4.5	1.1	5.9	6.4
Bloomberg Commodity Index	-0.4	3.7	-3.2	-8.3	-7.7
HFRI Fund of Funds	0.9	6.2	2.1	3.5	1.6

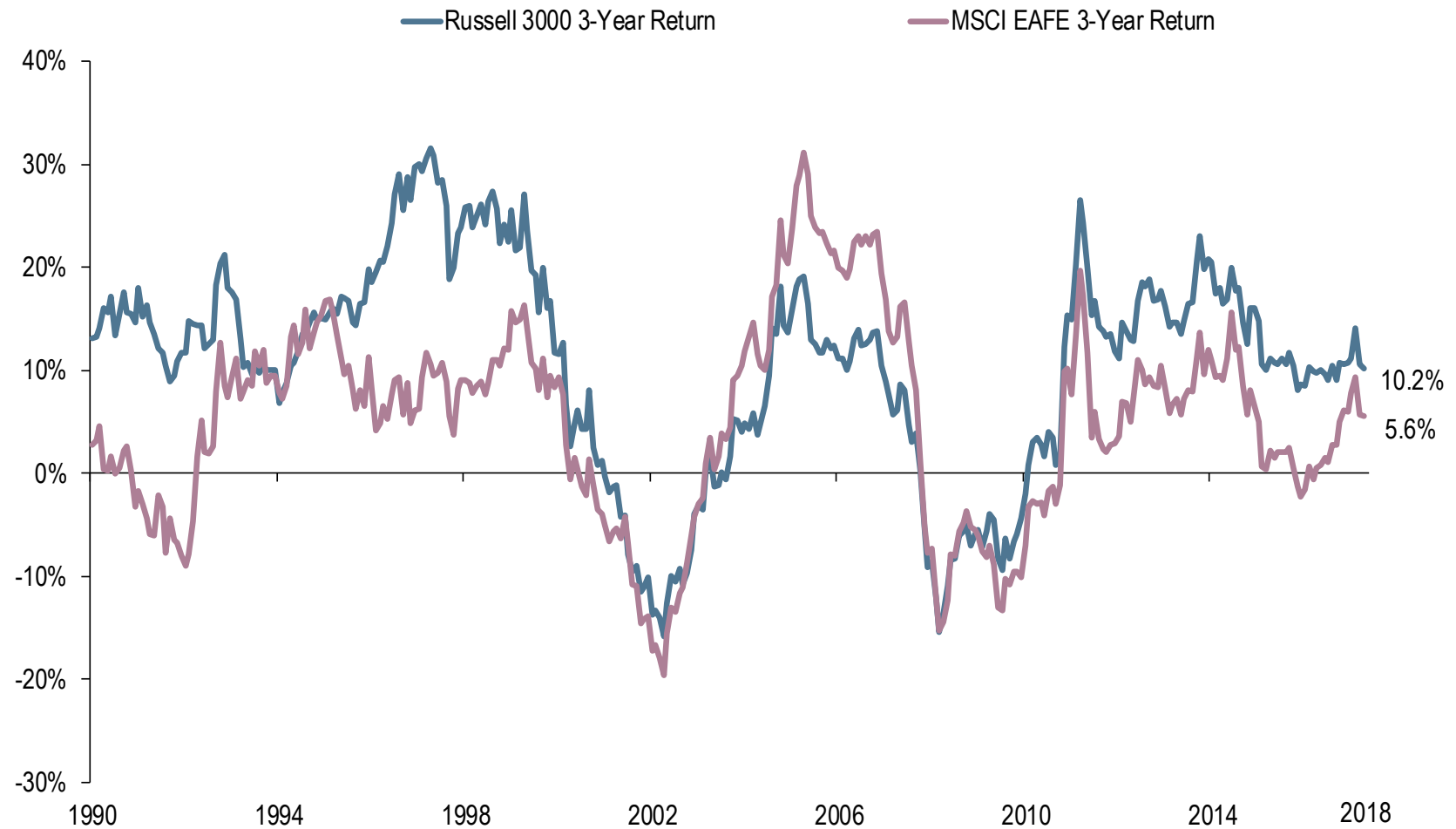
¹ Source: InvestorForce.

S&P Sector Returns¹



¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.

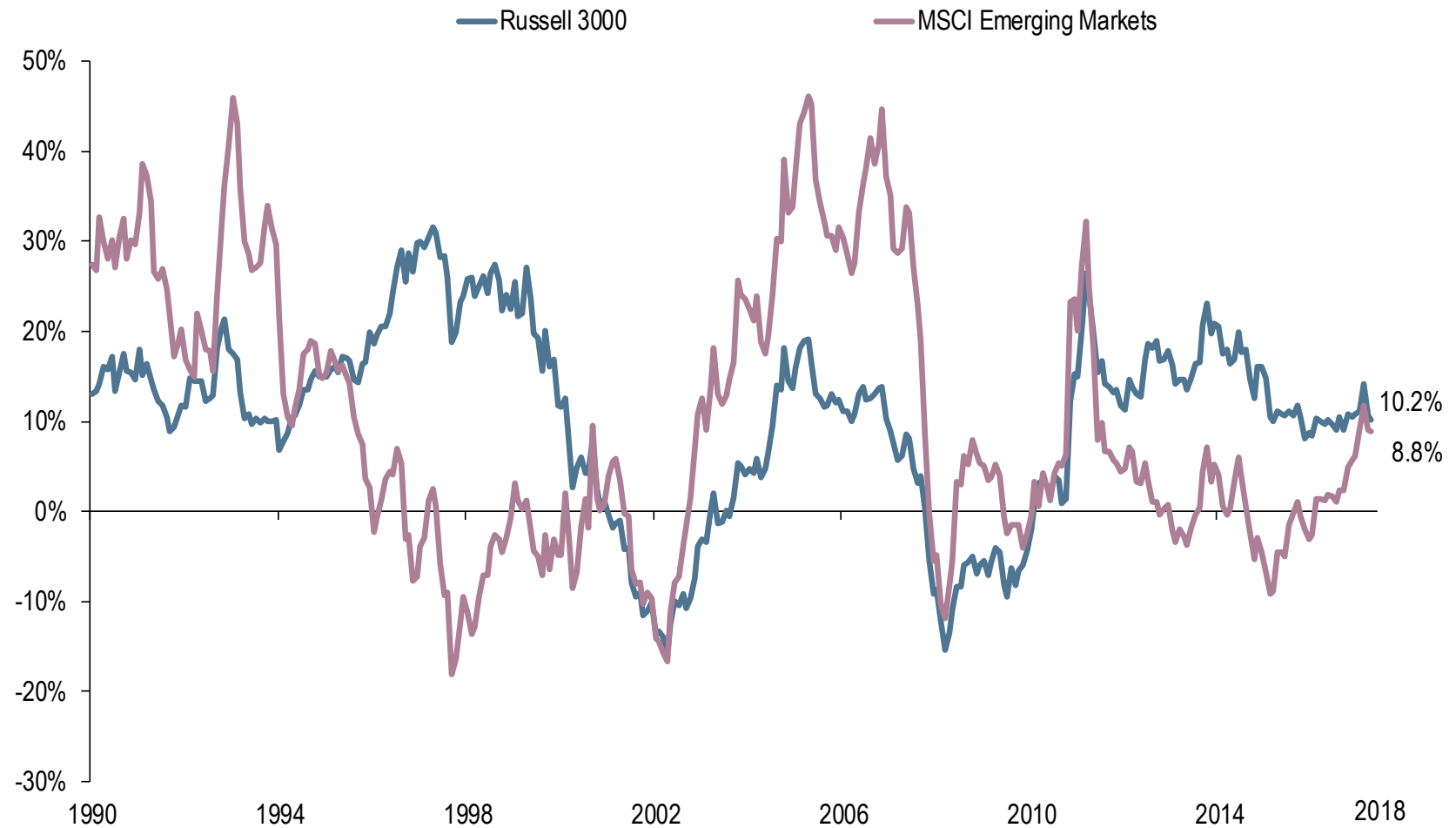
U.S. and Developed Market Foreign Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.



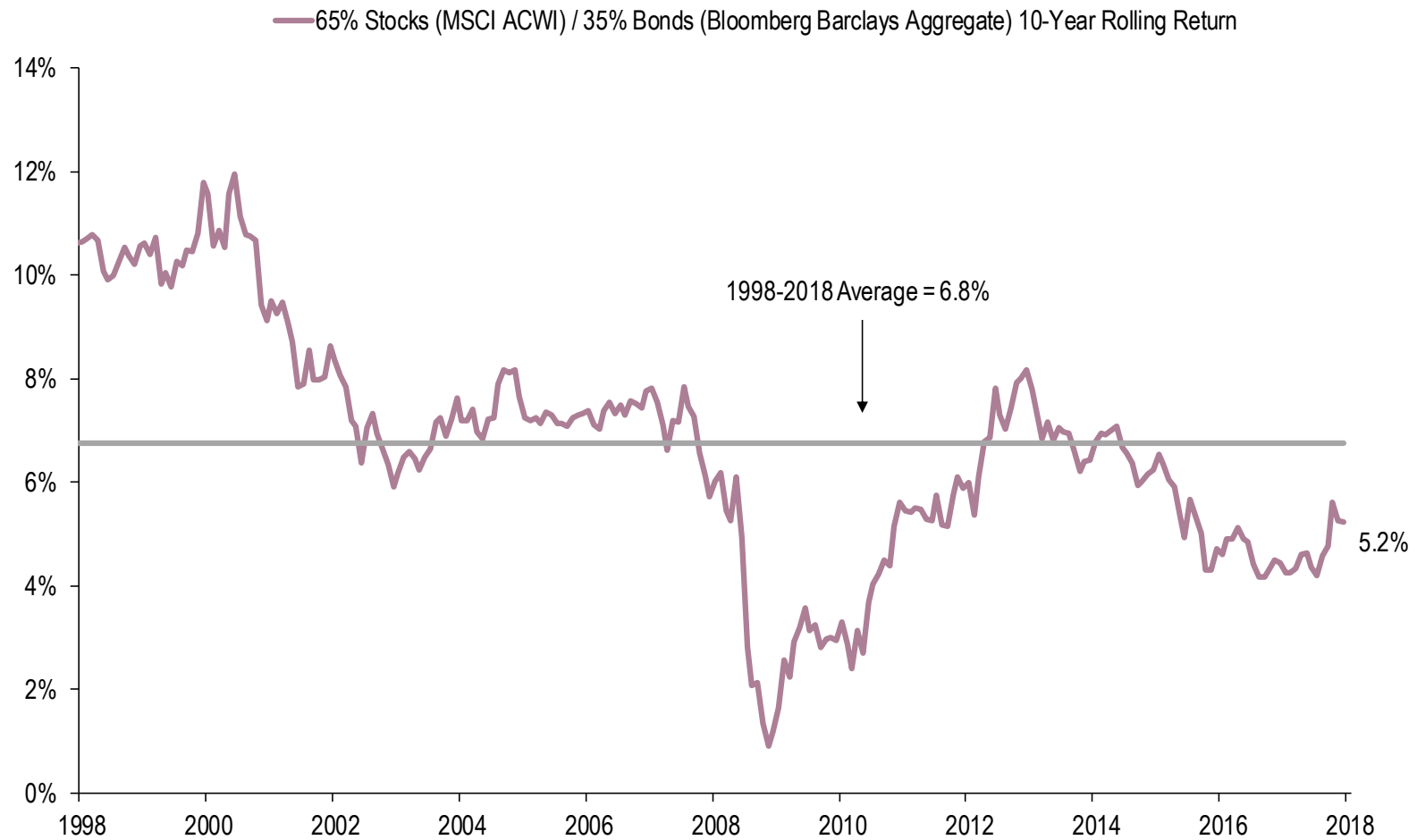
U.S. and Emerging Market Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.



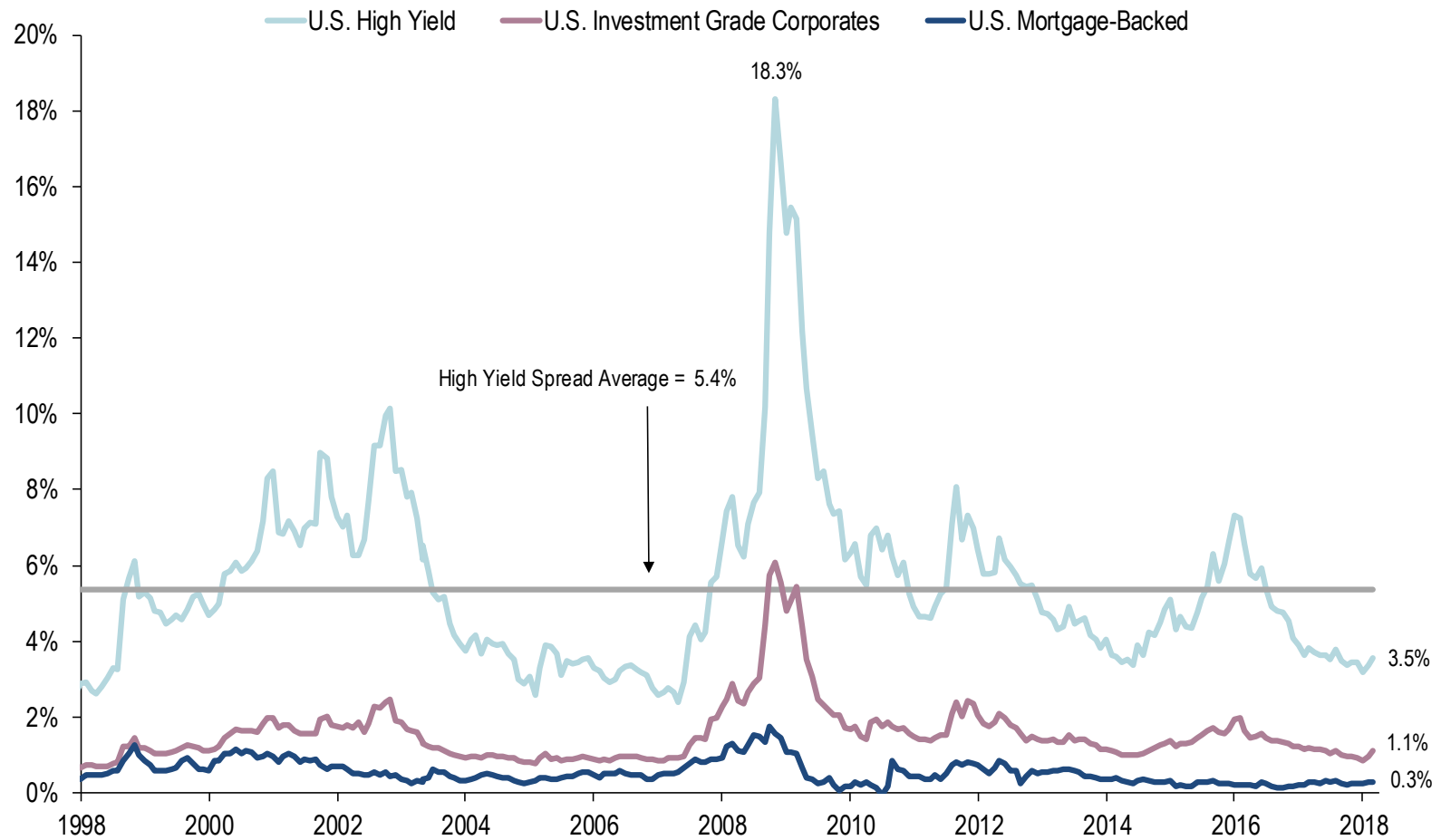
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds¹



¹ Source: InvestorForce.



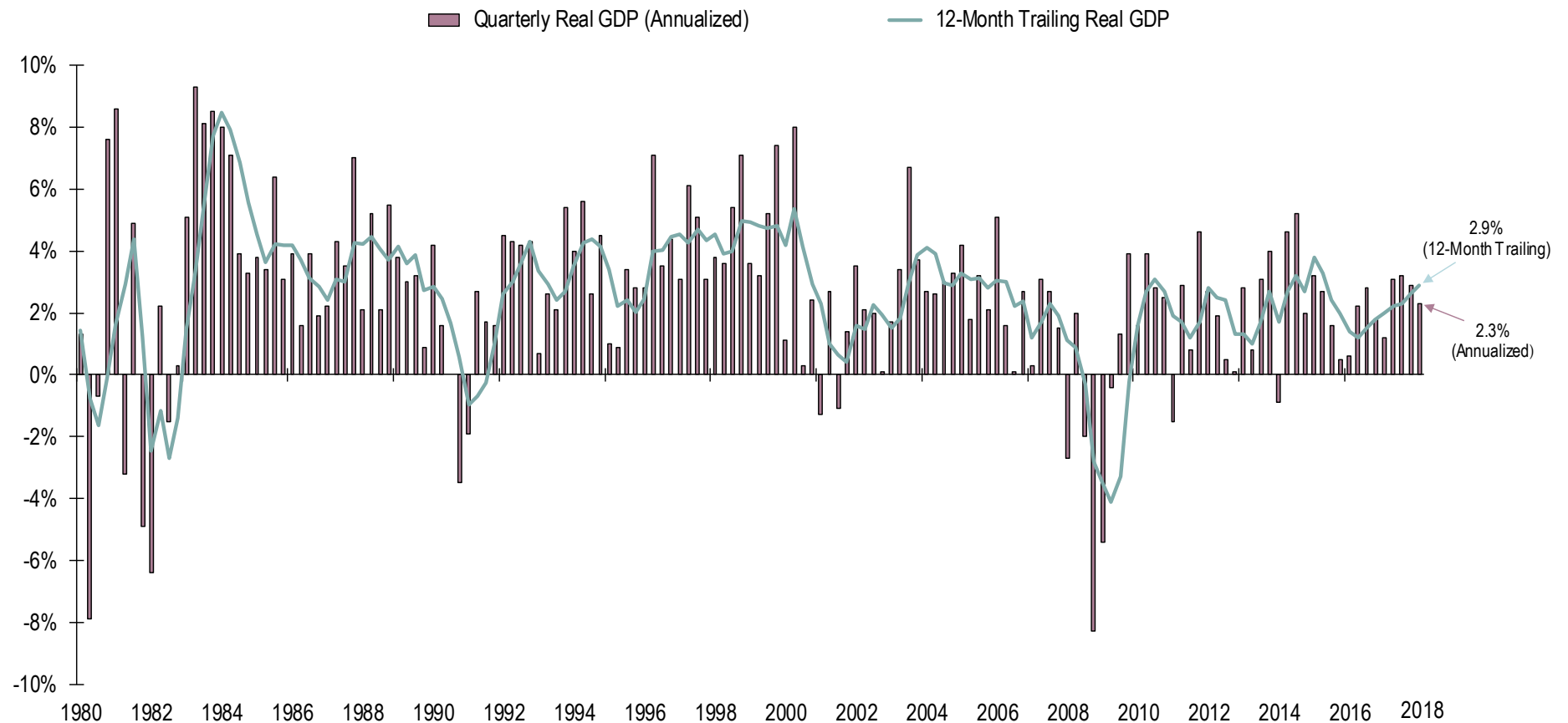
Credit Spreads vs. U.S. Treasury Bonds^{1,2}



¹ Source: Barclays Live.

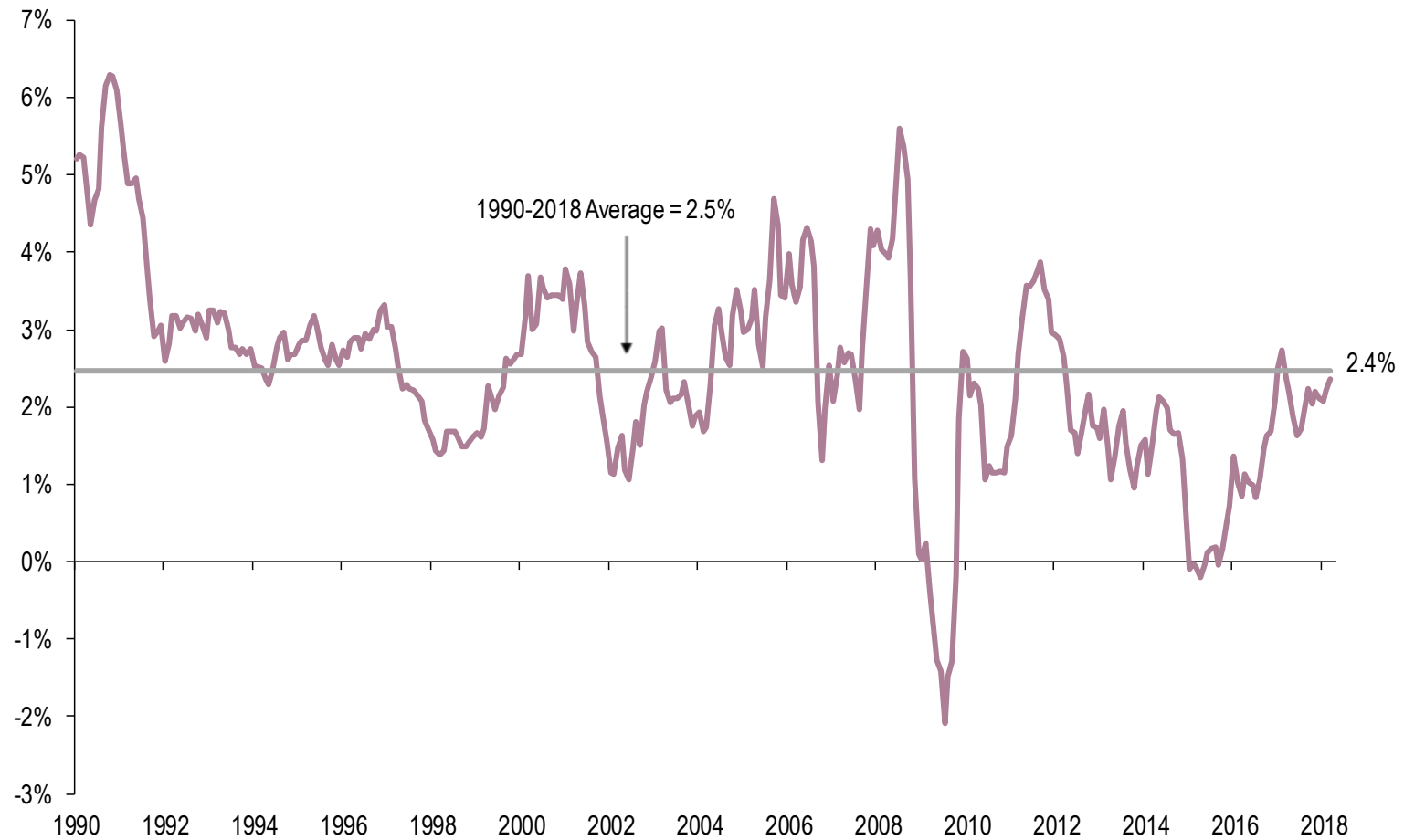
² The median high yield spread was 4.9% from 1997-2018.

U.S. Real Gross Domestic Product (GDP) Growth¹



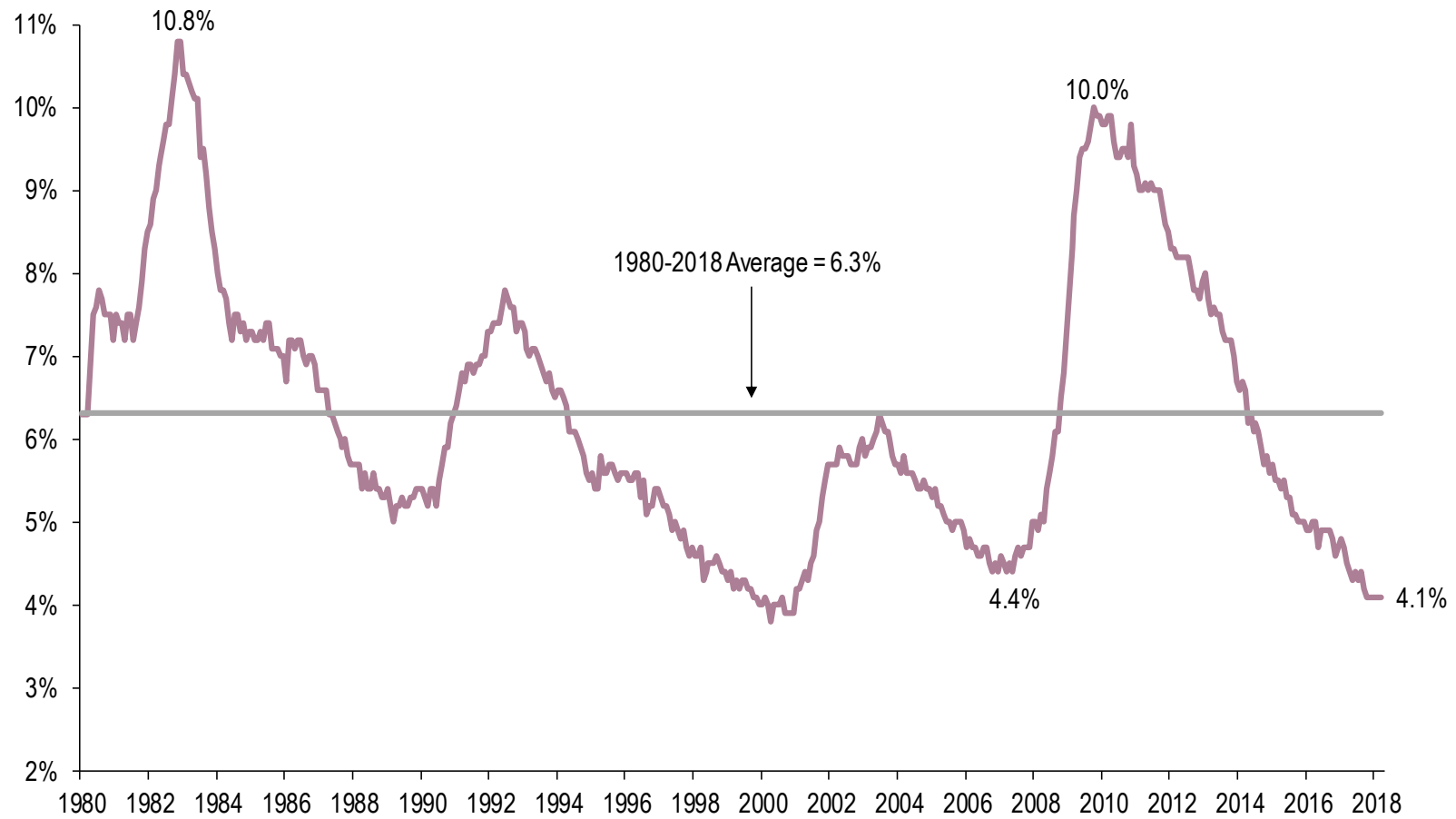
¹ Source: Bureau of Economic Analysis. Data is as of Q1 2018 and represents the first estimate.

U.S. Inflation (CPI) Trailing Twelve Months¹



¹ 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, 2018.

U.S. Unemployment¹










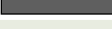


¹ Source: Bureau of Labor Statistics. Data is as of March 31, 2018.

Retirement System Summary

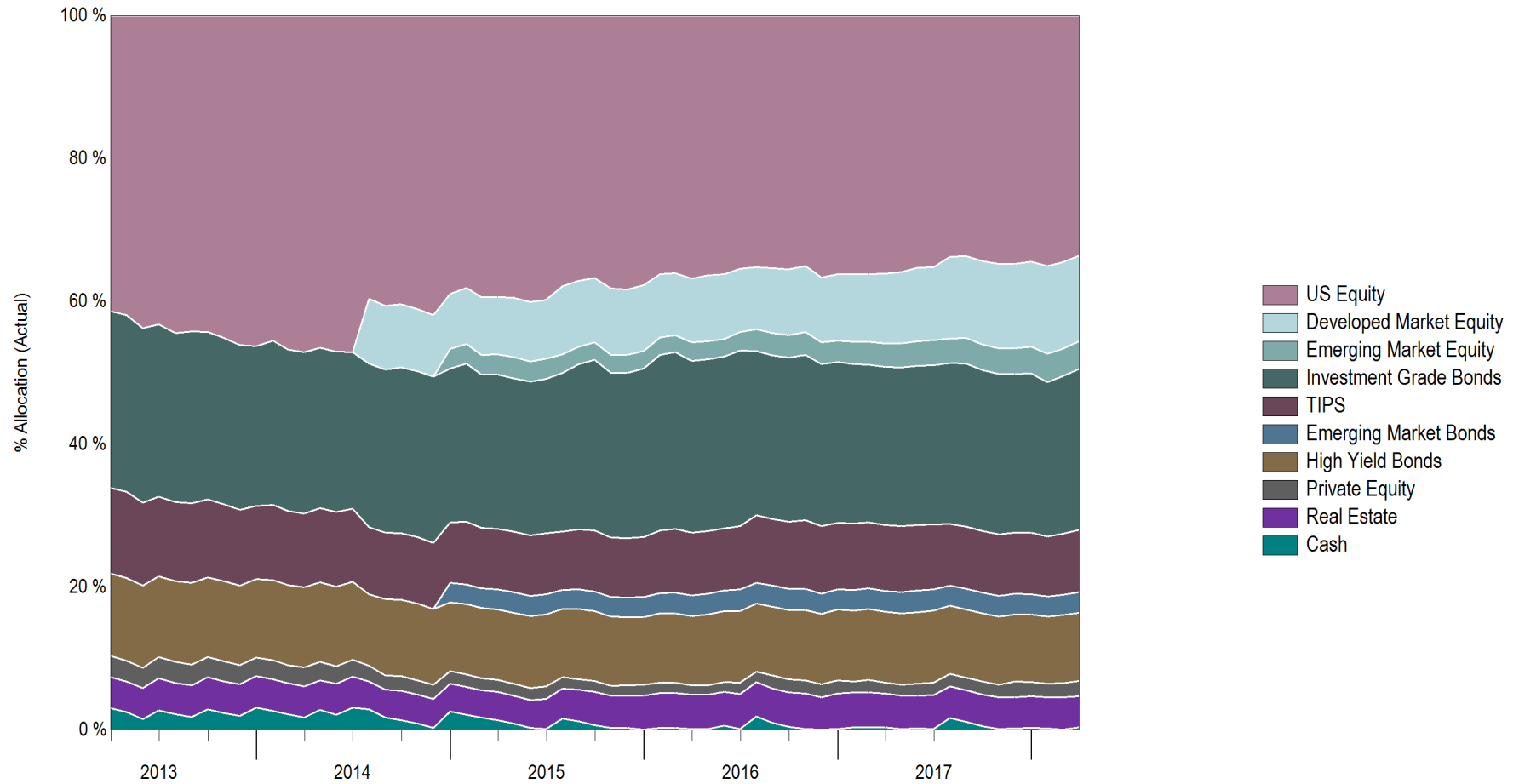
Total Retirement System

As of March 31, 2018

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Policy Range
 US Equity	\$56,351,335	34%	33%	28% - 38%
 Developed Market Equity	\$20,223,719	12%	9%	5% - 13%
 Emerging Market Equity	\$6,569,803	4%	3%	1% - 5%
 Investment Grade Bonds	\$37,734,837	22%	22%	17% - 27%
 TIPS	\$14,602,587	9%	10%	7% - 13%
 Emerging Market Bonds	\$4,909,804	3%	3%	1% - 5%
 High Yield Bonds	\$16,103,759	10%	10%	7% - 13%
 Private Equity	\$3,482,886	2%	5%	3% - 7%
 Real Estate	\$7,390,391	4%	5%	2% - 8%
 Cash	\$667,336	0%	0%	0% - 100%
Total	\$168,036,458	100%	100%	

Asset Allocation History
5 Years Ending March 31, 2018



Total Retirement System

As of March 31, 2018

	Actual Asset Allocation (%)	Target Allocation (%)	Target Range (%)	PRIT Asset Allocation ¹ (%)
Total Retirement System	NA	NA	NA	NA
<i>Equity Assets</i>	50	45	34-56	44
Domestic Equity Assets	34	33	28-38	19
International Equity Assets	16	12	6-18	25
<i>Fixed Income Assets</i>	42	45	32-58	20
Domestic Investment Grade Assets	22	22	17-27	12
High Yield Bond Assets	10	10	7-13	8
TIPS	9	10	7-13	-
Emerging Market Debt	3	3	1-5	-
<i>Absolute Return Assets</i>	NA	NA	NA	8
<i>Portfolio Completion Strategies</i>	NA	NA	NA	3
<i>Real Estate Assets</i>	4	5	2-8	8
<i>Private Equity</i>	2	5	3-7	11
<i>Timber/Natural Resources</i>	NA	NA	NA	4
<i>Cash</i>	< 1	0	< 5	1

¹ PRIT asset allocation as of March 2018. TIPS and Emerging Market Debt are reflected in PRIT's Core and Value-Added Fixed Income Sleeves, respectively.

Total Retirement System

As of March 31, 2018

Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	168,036,458	100.0	-0.9	-0.9	7.9	5.9	7.1	6.1	6.4	7.8	Jul-88
55% MSCI World & 45% Barclays Aggregate			-1.3	-1.3	7.9	5.0	6.2	5.2	5.4	7.0	Jul-88
Consumer Price Index			1.2	1.2	2.4	1.9	1.4	1.6	2.2	2.5	Jul-88
PRIT Core Fund			0.6	0.6	13.0	8.0	9.0	6.1	7.2	9.0	Jul-88
Domestic Equity Assets	56,351,335	33.5	-1.4	-1.4	11.9	9.3	12.6	9.3	--	8.1	Oct-06
Russell 3000			-0.6	-0.6	13.8	10.2	13.0	9.6	6.7	8.5	Oct-06
PRIT Domestic Equity			-0.3	-0.3	14.3	10.2	12.9	8.6	6.5	7.4	Oct-06
International Developed Markets Equity Assets	20,223,719	12.0	-1.6	-1.6	14.7	5.6	5.6	2.9	--	2.9	Oct-06
MSCI EAFE			-1.5	-1.5	14.8	5.6	6.5	2.7	4.4	3.4	Oct-06
International Emerging Markets Equity Assets	6,569,803	3.9	1.9	1.9	26.8	9.9	--	--	--	9.9	Jan-15
MSCI Emerging Markets			1.4	1.4	24.9	8.8	5.0	3.0	7.6	8.8	Jan-15
Investment Grade Bonds Assets	37,734,837	22.5	-1.4	-1.4	1.3	1.2	1.8	3.6	4.8	6.1	Jul-88
BBgBarc US Aggregate TR			-1.5	-1.5	1.2	1.2	1.8	3.6	4.8	6.2	Jul-88
PRIT Core Fixed Income			-1.4	-1.4	2.6	0.7	3.4	4.1	5.4	7.0	Jul-88
High Yield Bond Assets	16,103,759	9.6	-0.7	-0.7	4.0	4.1	4.7	7.4	--	6.8	Sep-03
BBgBarc US High Yield TR			-0.9	-0.9	3.8	5.2	5.0	8.3	6.5	7.9	Sep-03
PRIT Public Value-Added Fixed Income			1.0	1.0	6.1	5.2	2.7	5.7	--	7.1	Sep-03
TIPS Assets	14,602,587	8.7	-0.8	-0.8	0.9	1.3	0.0	2.9	--	3.7	Oct-05
BBgBarc US TIPS TR			-0.8	-0.8	0.9	1.3	0.0	2.9	5.4	3.7	Oct-05
Emerging Market Debt Assets	4,909,804	2.9	-1.1	-1.1	6.5	6.3	--	--	--	6.4	Jan-15
JP Morgan EMBI Global Diversified			-1.7	-1.7	4.3	5.8	4.7	7.0	8.5	6.0	Jan-15
Open-Ended Real Estate	5,411,417	3.2	2.6	2.6	8.9	10.5	11.8	3.9	7.6	8.2	Oct-95
NCREIF-ODCE			2.2	2.2	8.1	10.0	11.4	5.1	8.9	9.2	Oct-95
Total Closed End Real Estate	1,978,974	1.2	0.0	0.0	11.5	14.1	16.0	--	--	15.2	Jan-13
NCREIF ODCE			2.2	2.2	8.1	10.0	11.4	5.1	8.9	11.4	Jan-13
Private Equity Assets	3,482,886	2.1									
Cash	667,336	0.4									

Total Retirement System

As of March 31, 2018

Trailing Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	168,036,458	100.0	--	-0.9	-0.9	7.9	5.9	7.1	6.1	6.4	7.8	Jul-88
55% MSCI World & 45% Barclays Aggregate				-1.3	-1.3	7.9	5.0	6.2	5.2	5.4	7.0	Jul-88
Consumer Price Index				1.2	1.2	2.4	1.9	1.4	1.6	2.2	2.5	Jul-88
PRIT Core Fund				0.6	0.6	13.0	8.0	9.0	6.1	7.2	9.0	Jul-88
Domestic Equity Assets	56,351,335	33.5	33.5	-1.4	-1.4	11.9	9.3	12.6	9.3	--	8.1	Oct-06
Russell 3000				-0.6	-0.6	13.8	10.2	13.0	9.6	6.7	8.5	Oct-06
PRIT Domestic Equity				-0.3	-0.3	14.3	10.2	12.9	8.6	6.5	7.4	Oct-06
RhumbLine S&P 500 Index	18,156,227	10.8	32.2	-0.8	-0.8	14.0	10.8	13.3	9.5	--	6.1	Mar-99
S&P 500				-0.8	-0.8	14.0	10.8	13.3	9.5	6.5	6.1	Mar-99
Fiduciary Large Cap Equity	21,573,073	12.8	38.3	-1.1	-1.1	11.8	8.7	11.5	--	--	12.9	Sep-12
Russell 3000				-0.6	-0.6	13.8	10.2	13.0	9.6	6.7	14.3	Sep-12
Frontier Capital Appreciation	16,622,036	9.9	29.5	-2.5	-2.5	9.6	7.3	12.8	--	--	13.7	Feb-13
Russell 2500 Growth				2.4	2.4	19.9	9.1	13.4	11.2	7.7	14.0	Feb-13
International Developed Markets Equity Assets	20,223,719	12.0	12.0	-1.6	-1.6	14.7	5.6	5.6	2.9	--	2.9	Oct-06
MSCI EAFE				-1.5	-1.5	14.8	5.6	6.5	2.7	4.4	3.4	Oct-06
Rhumblin MSCI EAFE Index	20,223,719	12.0	100.0	-1.6	-1.6	14.7	5.6	--	--	--	3.8	Aug-14
MSCI EAFE				-1.5	-1.5	14.8	5.6	6.5	2.7	4.4	3.7	Aug-14
International Emerging Markets Equity Assets	6,569,803	3.9	3.9	1.9	1.9	26.8	9.9	--	--	--	9.9	Jan-15
MSCI Emerging Markets				1.4	1.4	24.9	8.8	5.0	3.0	7.6	8.8	Jan-15
DFA Emerging Markets	3,214,009	1.9	48.9	1.7	1.7	22.1	9.2	--	--	--	9.1	Jan-15
MSCI Emerging Markets				1.4	1.4	24.9	8.8	5.0	3.0	7.6	8.8	Jan-15

Total Retirement System

As of March 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	3,355,793	2.0	51.1	2.2	2.2	31.7	10.5	--	--	--	10.7	Jan-15
MSCI Emerging Markets				1.4	1.4	24.9	8.8	5.0	3.0	7.6	8.8	Jan-15
Investment Grade Bonds Assets	37,734,837	22.5	22.5	-1.4	-1.4	1.3	1.2	1.8	3.6	4.8	6.1	Jul-88
BBgBarc US Aggregate TR				-1.5	-1.5	1.2	1.2	1.8	3.6	4.8	6.2	Jul-88
PRIT Core Fixed Income				-1.4	-1.4	2.6	0.7	3.4	4.1	5.4	7.0	Jul-88
SSgA U.S. Aggregate Bond Index	37,734,837	22.5	100.0	-1.4	-1.4	1.3	1.2	1.8	3.6	--	4.5	May-01
BBgBarc US Aggregate TR				-1.5	-1.5	1.2	1.2	1.8	3.6	4.8	4.5	May-01
High Yield Bond Assets	16,103,759	9.6	9.6	-0.7	-0.7	4.0	4.1	4.7	7.4	--	6.8	Sep-03
BBgBarc US High Yield TR				-0.9	-0.9	3.8	5.2	5.0	8.3	6.5	7.9	Sep-03
PRIT Public Value-Added Fixed Income				1.0	1.0	6.1	5.2	2.7	5.7	--	7.1	Sep-03
Shenkman Capital	16,103,759	9.6	100.0	-0.7	-0.7	4.0	4.1	4.7	7.4	--	6.8	Apr-06
BBgBarc US High Yield TR				-0.9	-0.9	3.8	5.2	5.0	8.3	6.5	7.5	Apr-06
TIPS Assets	14,602,587	8.7	8.7	-0.8	-0.8	0.9	1.3	0.0	2.9	--	3.7	Oct-05
BBgBarc US TIPS TR				-0.8	-0.8	0.9	1.3	0.0	2.9	5.4	3.7	Oct-05
SSgA TIPS Index-NL	14,602,587	8.7	100.0	-0.8	-0.8	0.9	1.3	0.0	2.9	--	3.7	Oct-05
BBgBarc US TIPS TR				-0.8	-0.8	0.9	1.3	0.0	2.9	5.4	3.7	Oct-05
Emerging Market Debt Assets	4,909,804	2.9	2.9	-1.1	-1.1	6.5	6.3	--	--	--	6.4	Jan-15
JP Morgan EMBI Global Diversified				-1.7	-1.7	4.3	5.8	4.7	7.0	8.5	6.0	Jan-15
Payden Emerging Market Bond	4,909,804	2.9	100.0	-1.1	-1.1	6.5	6.3	--	--	--	6.4	Jan-15
JP Morgan EMBI Global Diversified				-1.7	-1.7	4.3	5.8	4.7	7.0	8.5	6.0	Jan-15

Total Retirement System

As of March 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Open-Ended Real Estate	5,411,417	3.2	3.2	2.6	2.6	8.9	10.5	11.8	3.9	7.6	8.2	Oct-95
<i>NCREIF-ODCE</i>				2.2	2.2	8.1	10.0	11.4	5.1	8.9	9.2	Oct-95
Clarion Partners	5,411,417	3.2	100.0	2.6	2.6	8.9	10.5	11.8	3.9	--	7.3	Oct-02
<i>NCREIF-ODCE</i>				2.2	2.2	8.1	10.0	11.4	5.1	8.9	8.3	Oct-02
Total Closed End Real Estate	1,978,974	1.2	1.2	0.0	0.0	11.5	14.1	16.0	--	--	15.2	Jan-13
<i>NCREIF ODCE</i>				2.2	2.2	8.1	10.0	11.4	5.1	8.9	11.4	Jan-13
Colony Realty Partners IV	1,978,974	1.2	100.0	0.0	0.0	11.5	14.1	--	--	--	--	Jan-13
<i>NCREIF-ODCE</i>				2.2	2.2	8.1	10.0	11.4	5.1	8.9	11.4	Jan-13
Private Equity Assets	3,482,886	2.1	2.1									
North American Strategic Partners 2006	1,218,279	0.7	35.0									
Ironsides Partnership Fund IV	413,067	0.2	11.9									
Ironsides Direct Investment Fund IV	1,851,541	1.1	53.2									
Cash	667,336	0.4	0.4									

Total Retirement System

As of March 31, 2018

Calendar Year Performance

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)
Total Retirement System	13.1	8.7	-0.2	6.3	14.0	10.9	2.4	12.3	16.8	-20.8
55% MSCI World & 45% Barclays Aggregate	13.6	5.5	0.0	5.5	13.0	10.7	0.7	10.0	19.2	-22.5
Consumer Price Index	2.1	2.1	0.7	0.8	1.5	1.7	3.0	1.5	2.7	0.1
PRIT Core Fund	17.7	8.0	1.1	8.1	15.2	13.9	0.1	13.6	17.7	-29.5
Domestic Equity Assets	20.3	14.6	-1.6	13.1	33.1	15.3	0.0	18.8	29.8	-38.9
Russell 3000	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9	28.3	-37.3
PRIT Domestic Equity	20.8	12.9	0.3	11.7	33.7	16.9	1.1	16.8	25.4	-42.3
RhumbLine S&P 500 Index	21.8	11.9	1.4	13.6	32.2	16.0	2.1	15.0	26.6	-36.6
S&P 500	21.8	12.0	1.4	13.7	32.4	16.0	2.1	15.1	26.5	-37.0
Fiduciary Large Cap Equity (net)	19.2	13.8	-2.4	12.4	30.5	--	--	--	--	--
Russell 3000	21.1	12.7	0.5	12.6	33.6	16.4	1.0	16.9	28.3	-37.3
Frontier Capital Appreciation (net)	19.1	20.5	-6.5	12.4	--	--	--	--	--	--
Russell 2500 Growth	24.5	9.7	-0.2	7.1	40.6	16.1	-1.6	28.9	41.7	-41.5
International Developed Markets Equity Assets	24.9	1.4	-0.8	-8.7	21.2	15.0	-14.1	10.6	34.1	-40.0
MSCI EAFE	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4
Rhumbline MSCI EAFE Index (net)	24.9	1.4	-0.8	--	--	--	--	--	--	--
MSCI EAFE	25.0	1.0	-0.8	-4.9	22.8	17.3	-12.1	7.8	31.8	-43.4
International Emerging Markets Equity Assets	39.7	9.4	-12.7	--	--	--	--	--	--	--
MSCI Emerging Markets	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3
DFA Emerging Markets (net)	36.6	12.4	-14.9	--	--	--	--	--	--	--
MSCI Emerging Markets	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3

Total Retirement System

As of March 31, 2018

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)
Driehaus Emerging Market Equity (net)	42.9	6.5	-10.6	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	37.3	11.2	-14.9	-2.2	-2.6	18.2	-18.4	18.9	78.5	-53.3
Investment Grade Bonds Assets	3.6	2.6	0.6	6.0	-2.0	4.3	7.8	6.6	6.0	5.3
<i>BBgBarc US Aggregate TR</i>	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2
<i>PRIT Core Fixed Income</i>	5.4	4.0	-2.0	15.2	-2.8	6.4	8.1	7.5	11.9	-5.2
SSgA U.S. Aggregate Bond Index	3.6	2.6	0.6	6.0	-2.0	4.3	7.8	6.6	6.0	5.3
<i>BBgBarc US Aggregate TR</i>	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2
High Yield Bond Assets	7.2	12.7	-2.3	2.9	6.4	12.4	6.0	12.8	34.3	-14.2
<i>BBgBarc US High Yield TR</i>	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1	58.2	-26.2
<i>PRIT Public Value-Added Fixed Income</i>	9.0	11.7	-4.7	-0.2	-1.5	14.7	5.3	13.6	39.7	-22.3
Shenkman Capital	7.2	12.7	-2.3	2.9	6.4	12.4	6.0	12.8	34.3	-14.2
<i>BBgBarc US High Yield TR</i>	7.5	17.1	-4.5	2.5	7.4	15.8	5.0	15.1	58.2	-26.2
TIPS Assets	3.0	4.7	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3	-2.3
<i>BBgBarc US TIPS TR</i>	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4	-2.4
SSgA TIPS Index-NL	3.0	4.7	-1.4	3.6	-8.6	6.9	13.5	6.3	11.3	-2.3
<i>BBgBarc US TIPS TR</i>	3.0	4.7	-1.4	3.6	-8.6	7.0	13.6	6.3	11.4	-2.4
Emerging Market Debt Assets	12.0	11.5	-0.8	--	--	--	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2	29.8	-12.0
Payden Emerging Market Bond (net)	12.0	11.5	-0.8	--	--	--	--	--	--	--
<i>JP Morgan EMBI Global Diversified</i>	10.3	10.2	1.2	7.4	-5.3	17.4	7.3	12.2	29.8	-12.0

Total Retirement System

As of March 31, 2018

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)
Open-Ended Real Estate	7.9	9.1	15.7	13.2	12.8	10.9	18.7	19.2	-38.6	-12.5
NCREIF-ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0
Clarion Partners	7.9	9.1	15.7	13.2	12.8	10.9	18.7	19.2	-38.6	-12.5
NCREIF-ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0
Total Closed End Real Estate	15.1	9.5	23.8	13.3	18.8	--	--	--	--	--
NCREIF ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0
Colony Realty Partners IV	15.1	9.5	23.8	13.3	--	--	--	--	--	--
NCREIF-ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0
Private Equity Assets										
North American Strategic Partners 2006 (net)										
Ironsides Partnership Fund IV (net)										
Ironsides Direct Investment Fund IV (net)										
Cash										

As of March 31, 2018

Statistics Summary
5 Years Ending March 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	7.1%	5.4%	0.7	0.9	1.2	1.3%
55% MSCI World & 45% Barclays Aggregate	6.2%	5.8%	--	1.0	1.0	0.0%
Equity Assets	11.0%	9.8%	-1.0	1.0	1.1	2.1%
Russell 3000	13.0%	10.0%	--	1.0	1.3	0.0%
Domestic Equity Assets	12.6%	10.0%	-0.3	1.0	1.2	1.7%
Russell 3000	13.0%	10.0%	--	1.0	1.3	0.0%
RhumbLine S&P 500 Index	13.3%	9.8%	-0.8	1.0	1.3	0.0%
S&P 500	13.3%	9.9%	--	1.0	1.3	0.0%
Fiduciary Large Cap Equity	11.5%	9.6%	-0.5	0.9	1.2	3.3%
Russell 3000	13.0%	10.0%	--	1.0	1.3	0.0%
Frontier Capital Appreciation	12.7%	13.2%	-0.1	0.9	0.9	4.9%
Russell 2500 Growth	13.4%	12.9%	--	1.0	1.0	0.0%
International Developed Markets Equity Assets	5.6%	11.7%	-0.6	1.0	0.5	1.6%
MSCI EAFE	6.5%	11.9%	--	1.0	0.5	0.0%
Rhumblin MSCI EAFE Index	--	--	--	--	--	--
MSCI EAFE	6.5%	11.9%	--	1.0	0.5	0.0%
International Emerging Markets Equity Assets	--	--	--	--	--	--
MSCI Emerging Markets	5.0%	15.0%	--	1.0	0.3	0.0%
DFA Emerging Markets	--	--	--	--	--	--
MSCI Emerging Markets	5.0%	15.0%	--	1.0	0.3	0.0%

Total Retirement System

As of March 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Driehaus Emerging Market Equity	--	--	--	--	--	--
MSCI Emerging Markets	5.0%	15.0%	--	1.0	0.3	0.0%
Investment Grade Bonds Assets	1.8%	2.9%	0.6	1.0	0.5	0.0%
BBgBarc US Aggregate TR	1.8%	2.9%	--	1.0	0.5	0.0%
SSgA U.S. Aggregate Bond Index	1.8%	2.9%	0.6	1.0	0.5	0.0%
BBgBarc US Aggregate TR	1.8%	2.9%	--	1.0	0.5	0.0%
High Yield Bond Assets	4.6%	4.8%	-0.4	0.9	0.9	1.0%
BBgBarc US High Yield TR	5.0%	5.3%	--	1.0	0.9	0.0%
Shenkman Capital	4.5%	4.8%	-0.4	0.9	0.9	1.0%
BBgBarc US High Yield TR	5.0%	5.3%	--	1.0	0.9	0.0%
TIPS Assets	0.0%	4.5%	-0.1	1.0	-0.1	0.0%
BBgBarc US TIPS TR	0.0%	4.5%	--	1.0	-0.1	0.0%
SSgA TIPS Index-NL	0.0%	4.5%	-0.2	1.0	-0.1	0.0%
BBgBarc US TIPS TR	0.0%	4.5%	--	1.0	-0.1	0.0%
Emerging Market Debt Assets	--	--	--	--	--	--
JP Morgan EMBI Global Diversified	4.7%	6.2%	--	1.0	0.7	0.0%
Payden Emerging Market Bond	--	--	--	--	--	--
JP Morgan EMBI Global Diversified	4.7%	6.2%	--	1.0	0.7	0.0%
Open-Ended Real Estate	11.8%	5.0%	0.4	1.0	2.3	1.1%
NCREIF-ODCE	11.4%	4.8%	--	1.0	2.3	0.0%
Clarion Partners	11.8%	5.0%	0.4	1.0	2.3	1.1%
NCREIF-ODCE	11.4%	4.8%	--	1.0	2.3	0.0%

Total Retirement System

As of March 31, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Closed End Real Estate	16.0%	9.1%	0.7	1.5	1.7	6.3%
NCREIF ODCE	11.4%	4.8%	--	1.0	2.3	0.0%
Colony Realty Partners IV	--	--	--	--	--	--
NCREIF-ODCE	11.4%	4.8%	--	1.0	2.3	0.0%
Comerica Short Term Fund	0.2%	0.1%	-1.2	0.3	-1.7	0.1%
91 Day T-Bills	0.3%	0.1%	--	1.0	0.0	0.0%

April Performance Estimate

Estimated Performance¹

	April Estimate (%)	YTD ² (%)	1 YR ² (%)	3 YR ² (%)	5 YR ² (%)	10 YR ² (%)
Total Retirement System	0.2	-0.7	6.8	5.7	6.8	5.9
<i>Static Benchmark³</i>	-0.1	-0.1	10.1	5.4	5.6	4.1
<i>Russell 3000</i>	0.4	-0.3	13.1	10.2	12.8	9.1
<i>MSCI EAFE</i>	2.3	0.7	14.5	4.9	5.9	2.4
<i>MSCI EM</i>	-0.4	1.0	21.7	6.0	4.7	2.2
<i>Barclays Aggregate</i>	-0.7	-2.2	-0.3	1.1	1.5	3.6
<i>Barclays TIPS</i>	-0.1	-0.9	0.3	1.0	-0.1	3.1
<i>Barclays High Yield</i>	0.7	-0.2	3.3	5.0	4.8	7.9
<i>JPM EMBI Global Diversified</i>	-1.5	-3.2	1.3	4.7	3.8	6.8

¹ The April performance estimates are calculated using index returns as of April 30, 2018 for each asset class. No performance estimate was included for the private equity.

² Periods ending April 2018.

³ The Static Benchmark is composed of 60% MSCI ACWI and 40% Barclays Global Aggregate indexes.

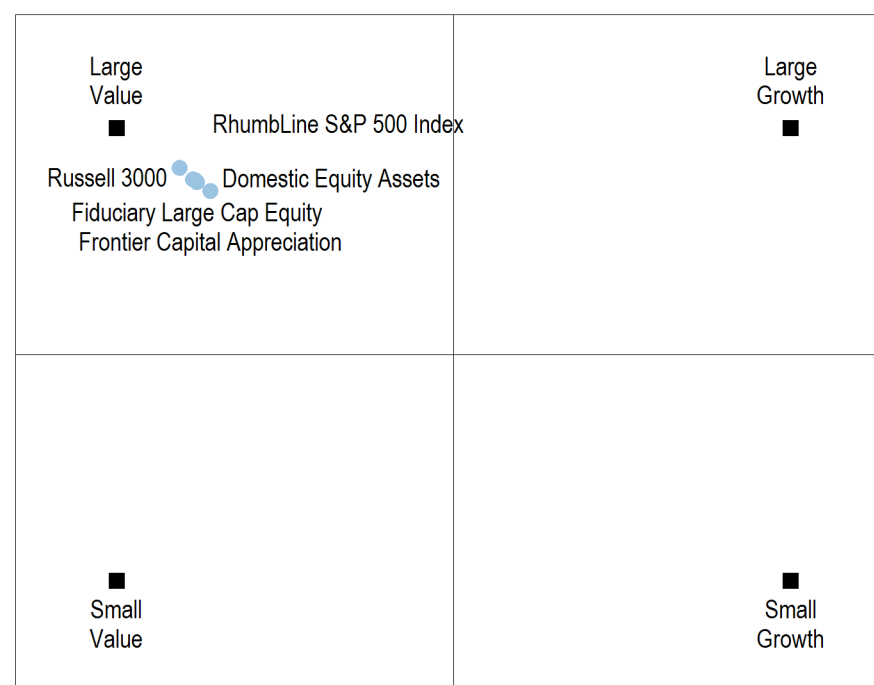
Retirement System Detail

Domestic Equity Assets

As of March 31, 2018

Asset Allocation on March 31, 2018

	Actual	Actual
Fiduciary Large Cap Equity	\$21,573,073	38.3%
Frontier Capital Appreciation	\$16,622,036	29.5%
RhumbLine S&P 500 Index	\$18,156,227	32.2%
Total	\$56,351,335	100.0%

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

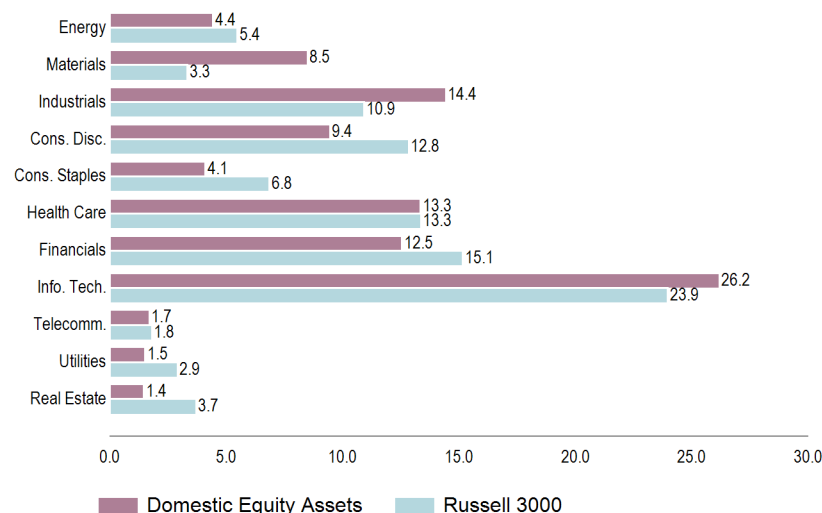
Domestic Equity Assets

As of March 31, 2018

Domestic Equity Assets Characteristics

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	56.4	--	59.1
Number Of Holdings	626	2958	629
Characteristics			
Weighted Avg. Market Cap. (\$B)	100.5	152.0	105.7
Median Market Cap (\$B)	16.1	1.7	16.0
P/E Ratio	23.8	23.5	24.2
Yield	1.5	1.8	1.4
EPS Growth - 5 Yrs.	15.1	9.4	12.6
Price to Book	4.6	4.3	5.2
Beta (holdings; domestic)	1.1	1.0	1.2

Sector Allocation (%) vs Russell 3000



Top 10 Holdings

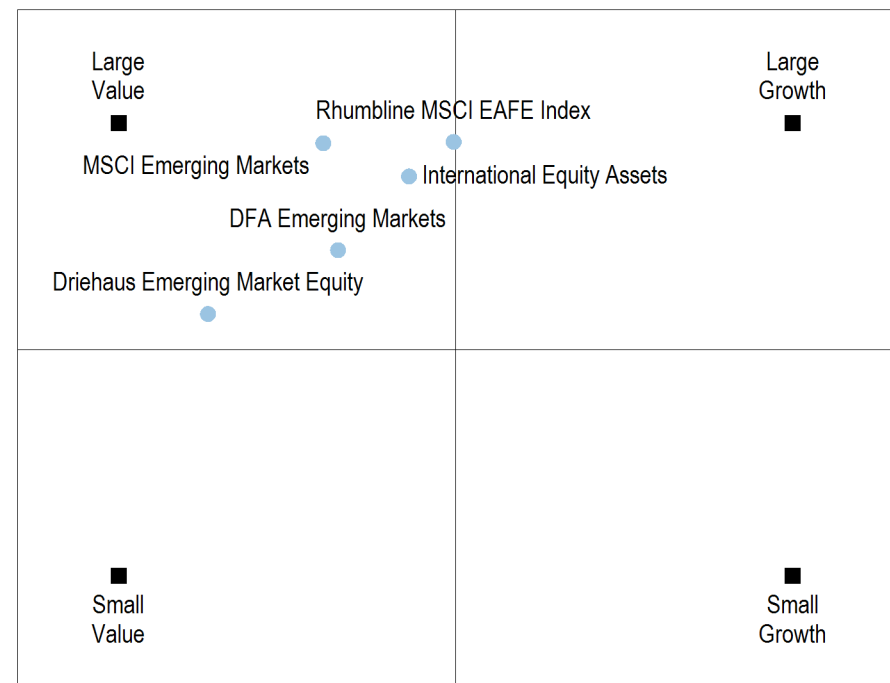
CASH - USD	2.6%
APPLE	2.0%
UNITED CONTINENTAL HDG.	1.8%
MICROSOFT	1.6%
AMAZON.COM	1.3%
INSULET	1.3%
ALLEGHENY TECHS.	0.9%
BERKSHIRE HATHAWAY 'B'	0.9%
FACEBOOK CLASS A	0.9%
JP MORGAN CHASE & CO.	0.9%
Total	14.2%

International Equity Assets

As of March 31, 2018

Asset Allocation on March 31, 2018

	Actual	Actual
DFA Emerging Markets	\$3,214,009	12.0%
Driehaus Emerging Market Equity	\$3,355,793	12.5%
Rhumblin MSCI EAFE Index	\$20,223,719	75.5%
Total	\$26,793,522	100.0%

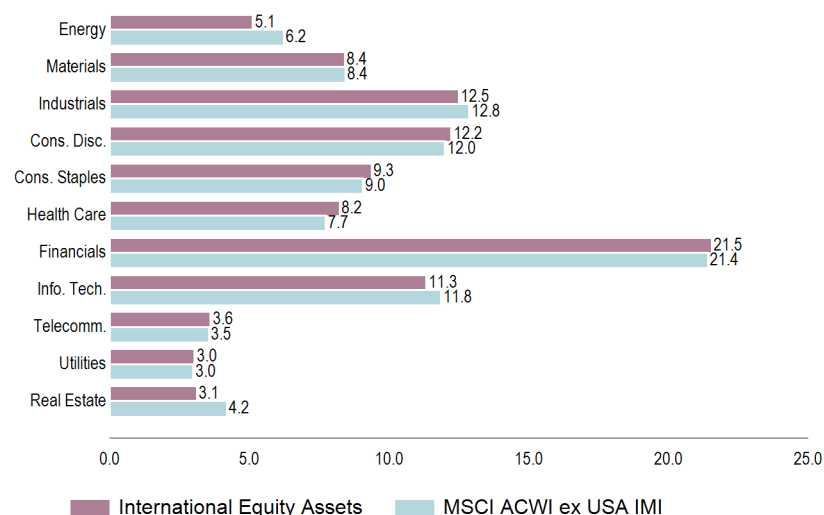
International Equity Assets Style Map
3 Years Ending March 31, 2018

International Equity Assets

As of March 31, 2018

International Equity Characteristics			
	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	26.8	--	27.0
Number Of Holdings	5082	6193	5724
Characteristics			
Weighted Avg. Market Cap. (\$B)	61.9	55.9	63.5
Median Market Cap (\$B)	0.9	1.5	0.8
P/E Ratio	19.4	18.8	21.4
Yield	3.0	2.9	2.7
EPS Growth - 5 Yrs.	10.2	10.2	6.5
Price to Book	3.2	2.5	3.5
Beta (holdings; domestic)	1.1	1.1	1.1

Sector Allocation (%) vs MSCI ACWI ex USA IMI



Top 10 Holdings

NESTLE 'R'	1.3%
ISHARES MSCI EAFE	1.0%
HSBC HOLDINGS	0.9%
TENCENT HOLDINGS	0.9%
NOVARTIS 'R'	0.9%
TOYOTA MOTOR	0.9%
SAMSUNG ELECTRONICS	0.8%
ROCHE HOLDING	0.8%
AIA GROUP	0.8%
TAIWAN SEMICON.SPN.ADR 1:5	0.7%
Total	9.0%

As of March 31, 2018

Performance Summary Report

As of 3/31/2018

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.0%	6.1%	-6.1%
United States	2.1%	0.0%	2.1%
Europe Ex U.K.	35.1%	31.0%	4.1%
United Kingdom	12.2%	12.0%	0.2%
Pacific Basin Ex Japan	11.4%	8.0%	3.4%
Japan	18.4%	17.5%	0.9%
Emerging Markets	20.4%	24.8%	-4.4%
Other	0.4%	0.6%	-0.2%
Total	100.0%	100.0%	0.0%

International Equity Assets

As of March 31, 2018

International Equity Country Allocation

vs MSCI ACWI ex USA IMI

Country	% of Total	% of Bench	% Diff
ARGENTINA	0.1%	0.0%	0.1%
AUSTRALIA	4.9%	4.5%	0.4%
AUSTRIA	0.3%	0.2%	0.0%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.8%	0.9%	0.0%
BRAZIL	2.1%	1.8%	0.4%
BULGARIA	0.0%	0.0%	0.0%
CANADA	0.0%	6.1%	-6.1%
CHILE	0.2%	0.3%	-0.1%
CHINA	2.6%	7.2%	-4.6%
COLOMBIA	0.1%	0.1%	0.0%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	1.4%	1.2%	0.1%
EGYPT	0.1%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.8%	0.8%	0.0%
FRANCE	8.0%	6.8%	1.2%
GERMANY	7.3%	6.2%	1.0%
GREECE	0.1%	0.1%	0.0%
HONG KONG	5.2%	2.3%	2.9%
HUNGARY	0.2%	0.1%	0.1%
INDIA	2.8%	2.2%	0.6%

International Equity Assets

As of March 31, 2018

Country	% of Total	% of Bench	% Diff
INDONESIA	0.6%	0.5%	0.0%
IRELAND	0.2%	0.4%	-0.2%
ISRAEL	0.3%	0.4%	-0.2%
ITALY	1.8%	1.9%	-0.1%
JAPAN	18.4%	17.5%	0.9%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	3.2%	3.8%	-0.7%
KUWAIT	0.0%	0.0%	0.0%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.2%	0.0%	0.2%
MALAYSIA	0.5%	0.7%	-0.2%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	0.8%	0.7%	0.0%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	3.3%	2.4%	0.9%
NEW ZEALAND	0.1%	0.2%	-0.1%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.5%	0.6%	-0.1%
OMAN	0.0%	0.0%	0.0%
OTHER	0.1%	0.0%	0.1%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.2%	0.1%	0.1%
PHILIPPINES	0.2%	0.2%	0.0%
POLAND	0.2%	0.3%	-0.1%

International Equity Assets

As of March 31, 2018

Country	% of Total	% of Bench	% Diff
PORTUGAL	0.1%	0.1%	0.0%
QATAR	0.0%	0.1%	-0.1%
ROMANIA	0.0%	0.0%	0.0%
RUSSIA	1.0%	0.8%	0.2%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	1.1%	1.0%	0.2%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	1.4%	1.7%	-0.3%
SPAIN	2.4%	2.2%	0.3%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	2.0%	2.1%	-0.1%
SWITZERLAND	5.8%	5.1%	0.7%
TAIWAN	3.4%	3.1%	0.3%
THAILAND	0.7%	0.7%	0.0%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.3%	0.3%	0.0%
UKRAINE	0.0%	0.0%	0.0%
UNITED ARAB EMIRATES	0.0%	0.1%	-0.1%
UNITED KINGDOM	12.2%	12.0%	0.2%
UNITED STATES	2.1%	0.0%	2.1%
VIETNAM	0.0%	0.0%	0.0%
Total	100.0%	100.0%	0.0%

Fixed Income Assets

As of March 31, 2018

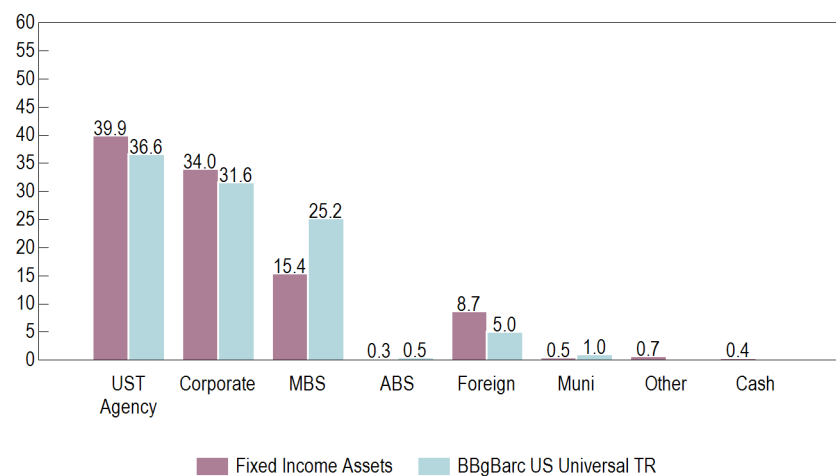
Asset Allocation on March 31, 2018

	Actual	Actual
Payden Emerging Market Bond	\$4,909,804	6.7%
Shenkman Capital	\$16,103,759	22.0%
SSgA TIPS Index-NL	\$14,602,587	19.9%
SSgA U.S. Aggregate Bond Index	\$37,734,837	51.4%
Total	\$73,350,988	100.0%

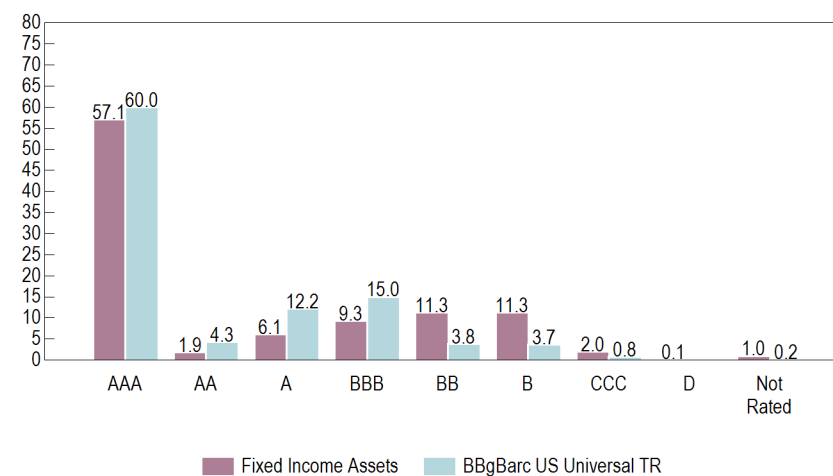
Fixed Income Characteristics
vs. BBgBarc US Universal TR

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Fixed Income Characteristics			
Yield to Maturity	4.0	3.3	3.5
Average Duration	5.4	5.9	5.6
Average Quality	A	AA	A
Weighted Average Maturity	8.1	12.0	8.0

Sector Allocation



Credit Quality Allocation



Portfolio Reviews

RhumbLine S&P 500 Index

As of March 31, 2018

Account Information

Account Name	RhumbLine S&P 500 Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	3/01/99
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Passive S&P 500 Equity Gross

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine S&P 500 Index	-0.8	-0.8	14.0	10.8	13.3	9.5	6.1	Mar-99
S&P 500	-0.8	-0.8	14.0	10.8	13.3	9.5	6.1	Mar-99

Top 10 Holdings

APPLE	3.8%
MICROSOFT	3.1%
AMAZON.COM	2.6%
BERKSHIRE HATHAWAY 'B'	1.7%
FACEBOOK CLASS A	1.7%
JP MORGAN CHASE & CO.	1.7%
JOHNSON & JOHNSON	1.5%
EXXON MOBIL	1.4%
ALPHABET 'C'	1.4%
ALPHABET A	1.4%
Total	20.2%

RhumbLine S&P 500 Index Characteristics

	Portfolio Q1-18	Index Q1-18
Market Value		
Market Value (\$M)	18.2	--
Number Of Holdings	506	505
Characteristics		
Weighted Avg. Market Cap. (\$B)	183.2	182.2
Median Market Cap (\$B)	20.7	20.7
P/E Ratio	26.6	24.2
Yield	2.0	1.9
EPS Growth - 5 Yrs.	15.4	8.6
Price to Book	5.6	4.6
Beta (holdings; domestic)	1.0	1.0
Sector Distribution		
Energy	5.7	5.7
Materials	2.9	2.9
Industrials	10.1	10.2
Consumer Discretionary	12.6	12.7
Consumer Staples	7.6	7.7
Health Care	13.7	13.7
Financials	15.0	14.7
Information Technology	24.8	24.9
Telecommunication Services	1.9	1.9
Utilities	2.9	2.9
Real Estate	2.8	2.8

Fiduciary Large Cap Equity

As of March 31, 2018

Account Information

Account Name	Fiduciary Large Cap Equity
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	9/01/12
Account Type	US Equity
Benchmark	Russell 3000
Universe	eV US Large Cap Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Fiduciary Large Cap Equity	-1.1	-1.1	11.8	8.7	11.5	--	12.9	Sep-12
Russell 3000	-0.6	-0.6	13.8	10.2	13.0	9.6	14.3	Sep-12

Top Holdings as of March 31, 2018

BERKSHIRE HATHAWAY INC B	5.19%
UNITEDHEALTH GROUP INC	5.04%
TJX COMPANIES INC	4.69%
DOLLAR GENERAL CORP	4.56%
HONEYWELL INTERNATIONAL INC	4.39%
JPMORGAN CHASE & CO	4.19%
ACCENTURE PLC A	4.18%
PROGRESSIVE CORP	4.00%
EBAY INC	3.98%
TE CONNECTIVITY LTD	3.60%

Fund Characteristics as of March 31, 2018

Versus Russell 3000

Sharpe Ratio (3 Year)	0.81
Average Market Cap (\$mm)	67,240.24
Price/Earnings	17.64
Price/Book	3.01
Price/Sales	1.82
Price/Cash Flow	10.61
Dividend Yield	1.93
Number of Equity Holdings	27
R-Squared (3 Year)	0.89
Alpha (3 Year)	-0.04%

Sector Allocation as of March 31, 2018

BASIC MATERIALS	3.27%
COMMUNICATION SERVICES	6.33%
CONSUMER CYCLICAL	16.18%
CONSUMER DEFENSIVE	10.22%
ENERGY	3.39%
FINANCIAL SERVICES	18.23%
HEALTHCARE	10.78%
INDUSTRIALS	14.12%
REAL ESTATE	0.00%
TECHNOLOGY	17.46%
UTILITIES	0.00%

Frontier Capital Appreciation

As of March 31, 2018

Account Information

Account Name	Frontier Capital Appreciation
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/13
Account Type	US Equity
Benchmark	Russell 2500 Growth
Universe	eV US Small-Mid Cap Growth Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	-2.7	-2.7	9.1	7.2	12.7	--	13.6	Feb-13
Russell 2500 Growth	2.4	2.4	19.9	9.1	13.4	11.2	14.0	Feb-13

Top 10 Holdings

CASH - USD	5.4%
UNITED CONTINENTAL HDG.	3.7%
INSULET	2.7%
ALLEGHENY TECHS.	2.0%
BERRY GLOBAL GROUP	1.7%
COOPER COS.	1.6%
QORVO	1.6%
MONOLITHIC PWR.SYS.	1.6%
TUTOR PERINI	1.6%
KRATON	1.5%
Total	23.3%

Frontier Capital Appreciation Characteristics

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	16.6	--	17.1
Number Of Holdings	137	1450	142

Characteristics

Weighted Avg. Market Cap. (\$B)	5.7	5.9	5.9
Median Market Cap (\$B)	2.8	1.3	2.9
P/E Ratio	20.5	25.7	19.9
Yield	0.9	0.7	0.7
EPS Growth - 5 Yrs.	14.6	15.1	11.0
Price to Book	3.6	5.9	3.8
Beta (holdings; domestic)	1.3	1.2	1.3

Sector Distribution

Energy	2.9	1.4	3.3
Materials	14.6	5.9	15.6
Industrials	19.1	19.7	19.7
Consumer Discretionary	5.9	14.3	5.9
Consumer Staples	0.2	2.2	0.8
Health Care	12.9	18.2	11.0
Financials	9.8	7.6	9.8
Information Technology	27.7	26.3	28.2
Telecommunication Services	1.4	0.7	1.4
Utilities	0.0	0.4	0.0
Real Estate	0.0	3.3	0.0

Rhumbline MSCI EAFE Index

As of March 31, 2018

Account Information

Account Name	Rhumbline MSCI EAFE Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/14
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE All Cap Equity Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumbline MSCI EAFE Index	-1.6	-1.6	14.7	5.6	--	--	3.8	Aug-14
MSCI EAFE	-1.5	-1.5	14.8	5.6	6.5	2.7	3.7	Aug-14

Top 10 Holdings

NESTLE 'R'	1.6%
ISHARES MSCI EAFE	1.3%
HSBC HOLDINGS	1.2%
NOVARTIS 'R'	1.2%
TOYOTA MOTOR	1.1%
ROCHE HOLDING	1.1%
ROYAL DUTCH SHELL A(LON)	0.9%
TOTAL	0.9%
BRITISH AMERICAN TOBACCO	0.9%
BP	0.9%
Total	11.2%

Rhumbline MSCI EAFE Index Characteristics

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	20.2	--	20.6
Number Of Holdings	930	926	902
Characteristics			
Weighted Avg. Market Cap. (\$B)	57.3	56.9	61.4
Median Market Cap (\$B)	11.2	11.2	11.9
P/E Ratio	19.0	18.1	20.6
Yield	3.2	3.2	3.0
EPS Growth - 5 Yrs.	9.6	8.7	5.2
Price to Book	2.9	2.5	3.2
Beta (holdings; domestic)	1.1	1.0	1.1

Sector Distribution

Energy	5.2	5.3	5.3
Materials	7.9	8.0	7.6
Industrials	14.2	14.6	13.9
Consumer Discretionary	12.3	12.6	11.9
Consumer Staples	10.8	11.0	10.8
Health Care	9.9	10.2	9.6
Financials	20.6	21.1	21.0
Information Technology	6.4	6.5	6.1
Telecommunication Services	3.7	3.8	3.8
Utilities	3.2	3.3	3.1
Real Estate	3.5	3.5	3.5

DFA Emerging Markets

As of March 31, 2018

Account Information

Account Name	DFA Emerging Markets
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkt Equity Hedged Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DFA Emerging Markets	1.7	1.7	22.1	9.2	--	--	9.1	Jan-15
MSCI Emerging Markets	1.4	1.4	24.9	8.8	5.0	3.0	8.8	Jan-15

Top 10 Holdings

SAMSUNG ELECTRONICS	3.0%
TENCENT HOLDINGS	2.4%
TAIWAN SEMICON.SPN.ADR 1:5	1.6%
TAIWAN SEMICON.MNFG.	1.3%
SAMSUNG ELECTRONICS REG S GDR	1.3%
ITAU UNIBANCO HOLDING PN	0.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.9%
PING AN INSURANCE (GROUP) OF CHINA 'H'	0.8%
SK HYNIX	0.8%
HON HAI PRECN.IND.	0.7%
Total	13.9%

DFA Emerging Markets Characteristics

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	3.2	--	3.2
Number Of Holdings	4131	847	4808
Characteristics			
Weighted Avg. Market Cap. (\$B)	51.5	91.9	45.6
Median Market Cap (\$B)	0.5	5.9	0.5
P/E Ratio	19.0	20.3	20.3
Yield	2.4	2.3	2.3
EPS Growth - 5 Yrs.	10.9	13.1	8.4
Price to Book	3.5	2.7	3.6
Beta (holdings; domestic)	1.1	1.1	1.1
Sector Distribution			
Energy	4.9	7.2	5.2
Materials	11.4	7.3	11.1
Industrials	8.5	5.2	9.1
Consumer Discretionary	10.7	9.6	11.5
Consumer Staples	7.0	6.4	7.5
Health Care	2.3	2.8	3.4
Financials	19.5	24.0	18.3
Information Technology	24.6	27.7	21.7
Telecommunication Services	3.9	4.6	3.9
Utilities	3.5	2.4	3.2
Real Estate	3.5	2.8	3.4

Driehaus Emerging Market Equity

As of March 31, 2018

Account Information

Account Name	Driehaus Emerging Market Equity
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkt Equity Hedged Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	2.2	2.2	31.7	10.5	--	--	10.7	Jan-15
MSCI Emerging Markets	1.4	1.4	24.9	8.8	5.0	3.0	8.8	Jan-15

Top 10 Holdings

TENCENT HOLDINGS	5.3%
TAIWAN SEMICON.SPN.ADR 1:5	4.5%
ALIBABA GROUP HLDG.SPN. ADR 1:1	4.2%
SAMSUNG ELECTRONICS	3.7%
SBERBANK OF RUSSIA (LON) ADR	3.1%
HDFC BANK ADR 1:3	2.6%
CHINA CON.BANK 'H'	2.6%
BANK CENTRAL ASIA	2.0%
AIA GROUP	2.0%
TATA CONSULTANCY SVS.	1.9%
Total	31.9%

Driehaus Emerging Market Equity Characteristics

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Market Value			
Market Value (\$M)	3.4	--	3.3
Number Of Holdings	95	847	97
Characteristics			
Weighted Avg. Market Cap. (\$B)	104.2	91.9	97.1
Median Market Cap (\$B)	14.7	5.9	17.0
P/E Ratio	22.6	20.3	28.1
Yield	2.0	2.3	1.7
EPS Growth - 5 Yrs.	13.8	13.1	13.3
Price to Book	5.7	2.7	6.0
Beta (holdings; domestic)	1.2	1.1	1.2
Sector Distribution			
Energy	4.7	7.2	4.8
Materials	8.6	7.3	5.2
Industrials	5.3	5.2	3.2
Consumer Discretionary	13.1	9.6	19.5
Consumer Staples	2.5	6.4	4.4
Health Care	3.3	2.8	2.5
Financials	29.6	24.0	29.7
Information Technology	29.3	27.7	25.3
Telecommunication Services	2.5	4.6	3.8
Utilities	1.0	2.4	0.9
Real Estate	0.0	2.8	0.9

SSgA U.S. Aggregate Bond Index

As of March 31, 2018

Account Information

Account Name	SSgA U.S. Aggregate Bond Index
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	5/01/01
Account Type	US Fixed Income Investment Grade
Benchmark	BBgBarc US Aggregate TR
Universe	eV US Core Fixed Inc Gross

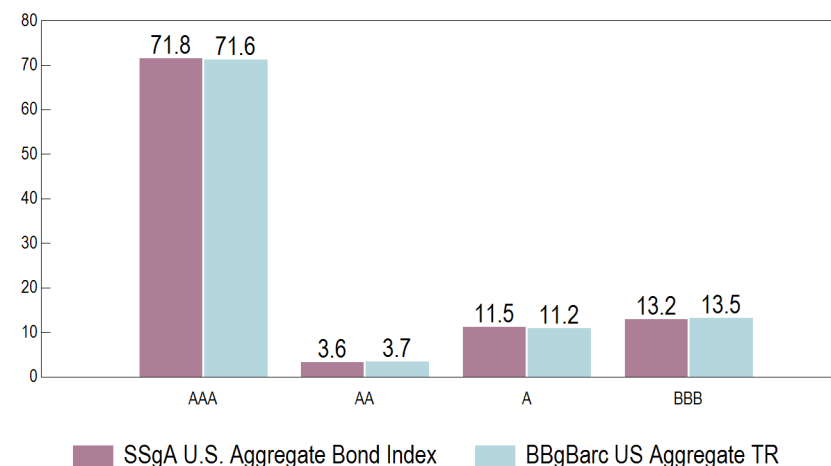
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	-1.4	-1.4	1.3	1.2	1.8	3.6	4.5	May-01
BBgBarc US Aggregate TR	-1.5	-1.5	1.2	1.2	1.8	3.6	4.5	May-01

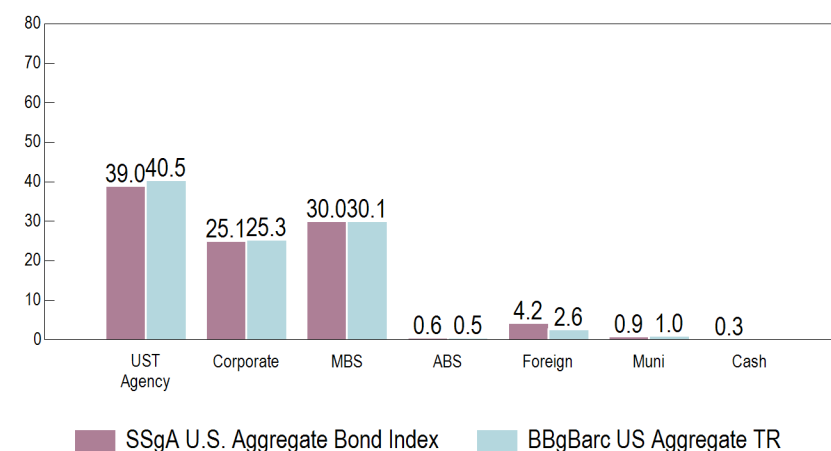
SSgA U.S. Aggregate Bond Index Characteristics
vs. BBgBarc US Aggregate TR

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Fixed Income Characteristics			
Yield to Maturity	3.1	3.0	2.7
Average Duration	6.1	6.1	6.3
Average Quality	AA	AA	AA
Weighted Average Maturity	8.4	13.0	8.3

Credit Quality Allocation



Sector Allocation



As of March 31, 2018

Account Information

Account Name	Shenkman Capital
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/01/06
Account Type	US Fixed Income High Yield
Benchmark	BBgBarc US High Yield TR
Universe	eV US High Yield Fixed Inc Gross

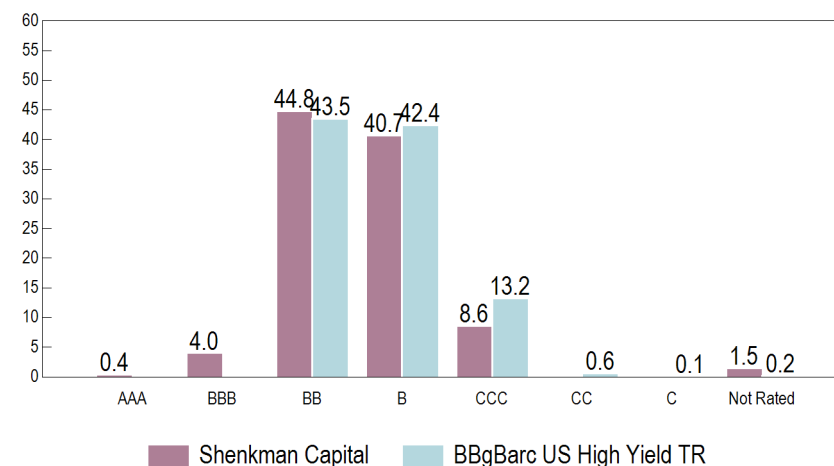
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	-0.8	-0.8	3.4	3.9	4.5	7.3	6.7	Apr-06
BBgBarc US High Yield TR	-0.9	-0.9	3.8	5.2	5.0	8.3	7.5	Apr-06

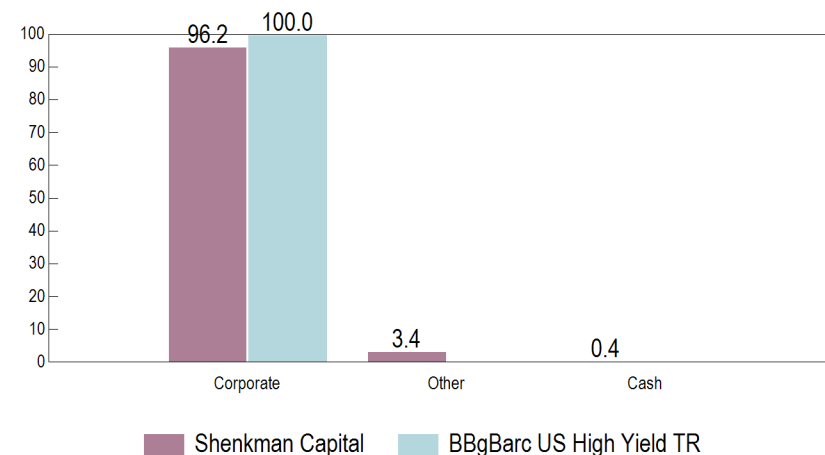
Shenkman Capital Characteristics
vs. BBgBarc US High Yield TR

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Fixed Income Characteristics			
Yield to Maturity	6.1	6.2	5.7
Average Duration	3.9	4.1	3.3
Average Quality	BB	B	BB
Weighted Average Maturity	6.0	6.2	6.1

Credit Quality Allocation



Sector Allocation



SSgA TIPS Index-NL

As of March 31, 2018

Account Information

Account Name	SSgA TIPS Index-NL
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	10/01/05
Account Type	US Inflation Protected Fixed
Benchmark	BBgBarc US TIPS TR
Universe	eV US TIPS / Inflation Fixed Inc Gross

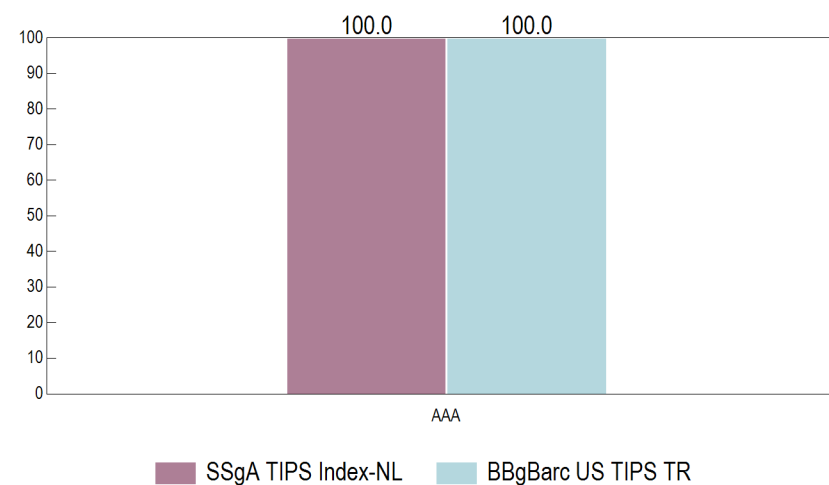
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	-0.8	-0.8	0.9	1.3	0.0	2.9	3.7	Oct-05
BBgBarc US TIPS TR	-0.8	-0.8	0.9	1.3	0.0	2.9	3.7	Oct-05

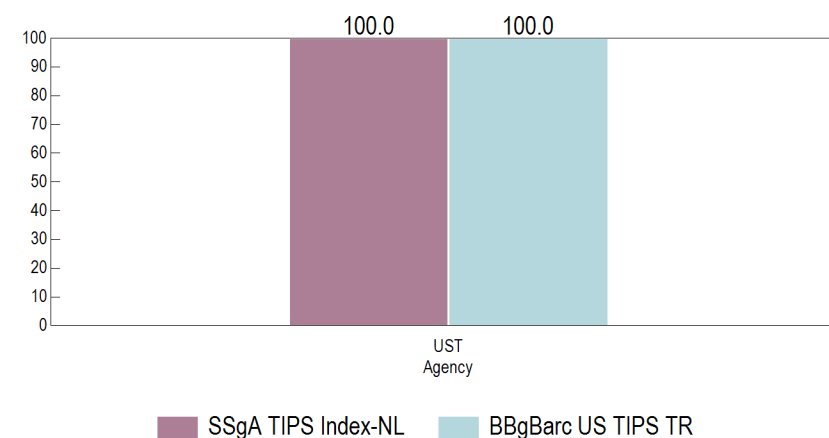
SSgA TIPS Index-NL Characteristics
vs. BBgBarc US TIPS TR

	Portfolio Q1-18	Index Q1-18	Portfolio Q4-17
Fixed Income Characteristics			
Yield to Maturity	2.8	0.5	2.3
Average Duration	5.0	5.0	5.7
Average Quality	AAA	AAA	AAA
Weighted Average Maturity	8.2	8.2	8.3

Credit Quality Allocation



Sector Allocation



Payden Emerging Market Bond

As of March 31, 2018

Account Information

Account Name	Payden Emerging Market Bond
Account Structure	Mutual Fund
Investment Style	Active
Inception Date	1/01/15
Account Type	International Emerging Market Debt
Benchmark	JP Morgan EMBI Global Diversified
Universe	eV Emg Mkt Fixed Inc Hedged Net

Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	-1.1	-1.1	6.5	6.3	--	--	6.4	Jan-15
JP Morgan EMBI Global Diversified	-1.7	-1.7	4.3	5.8	4.7	7.0	6.0	Jan-15

Fund Characteristics as of March 31, 2018

Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	1.02
Average Duration	6.85
Average Coupon	6.72%
Average Effective Maturity	11.47
R-Squared (3 Year)	0.97
Alpha (3 Year)	0.02%
Beta (3 Year)	1.05

Payden Emerging Market Bond Characteristics

vs. JP Morgan EMBI Global TR

	Portfolio Q1-18	Index Q1-18
Fixed Income Characteristics		
Yield to Maturity	7.0	5.4
Average Duration	6.9	7.0
Average Quality	BB	BB
Weighted Average Maturity	11.5	11.2

Fixed Income Sectors as of March 31, 2018

GOVERNMENT	71.54%
MUNICIPAL	0.00%
CORPORATE	18.28%
SECURITIZED	0.00%
CASH & EQUIVALENTS	4.70%
DERIVATIVE	5.48%

Credit Quality as of March 31, 2018

AAA	2.00%
AA	0.00%
A	4.00%
BBB	22.00%
BB	30.00%
B	39.00%
Below B	3.00%
Not Rated	0.00%

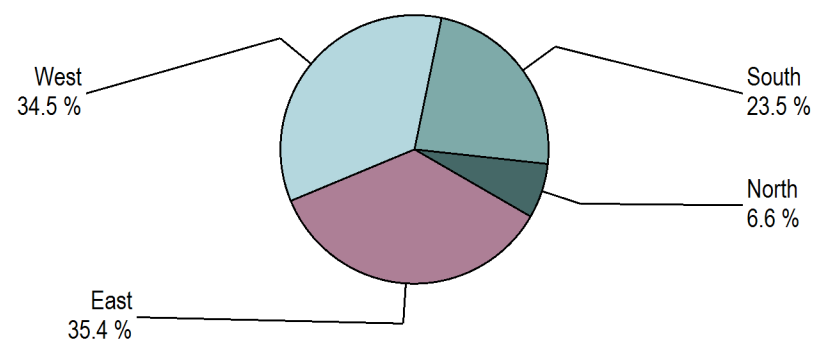
Account Information

Account Name	Clarion Partners
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	10/01/02
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	US Real Estate Equity

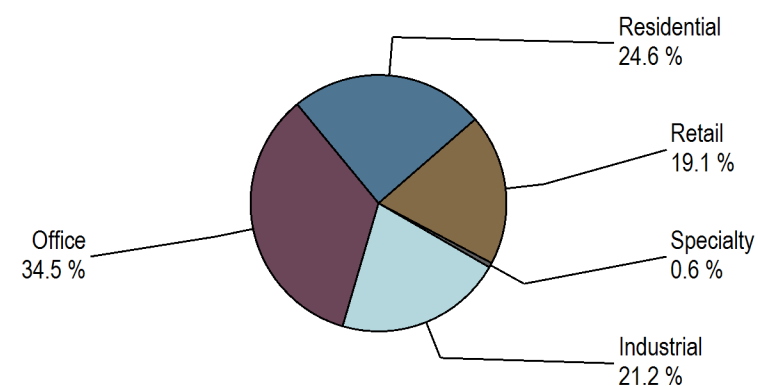
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	2.6	2.6	8.9	10.5	11.8	3.9	7.3	Oct-02
NCREIF-ODCE	2.2	2.2	8.1	10.0	11.4	5.1	8.3	Oct-02

Geographic Diversification



Property Type Allocation

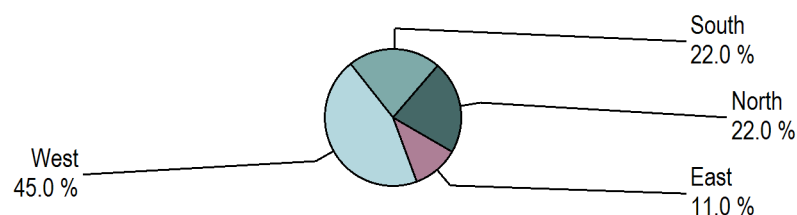


As of March 31, 2018

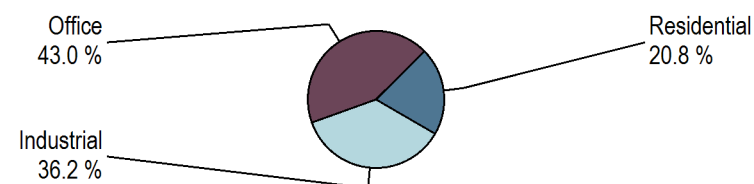
Account Information

Account Name	Colony Realty Partners IV
Account Structure	Other
Investment Style	Active
Inception Date	1/01/13
Account Type	Real Estate
Benchmark	NCREIF-ODCE
Universe	US Real Estate Equity

Geographic Diversification



Property Type Allocation



Non-Marketable Securities Overview

As of March 31, 2018

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Real Estate	Colony Realty Partners IV	2012	\$2,000,000	\$2,162,030	\$1,358,514	\$1,978,974	\$3,337,488	-\$162,030
	Total Account		\$2,000,000	\$2,162,030	\$1,358,514	\$1,978,974	\$3,337,488	-\$162,030

Colony IV 's net IRR was 17% as of June 30, 2017. Geographic Diversification and Property Type Allocation are as of September 30th, 2017



Private Equity Assets

As of March 31, 2018

Non-Marketable Securities Overview by Account Type

As of March 31, 2018

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	Total Value (RV + Dist)	Unfunded Commitment
Private Equity	North American Strategic Partners 2006	2006	\$4,539,998	\$4,369,826	\$3,261,050	\$1,218,279	\$4,479,329	\$170,172
	Ironsides Partnership Fund IV	2015	\$2,500,000	\$375,000	\$0	\$413,067	\$413,067	\$2,125,000
	Ironsides Direct Investment Fund IV	2015	\$2,500,000	\$1,805,432	\$0	\$1,851,541	\$1,851,541	\$694,568
	Total Account		\$9,539,998	\$6,550,258	\$3,261,050	\$3,482,886	\$6,743,937	\$2,989,740

North American Strategic Partners' net IRR was 7.5% as of September 30, 2016.



As of March 31, 2018

Annual Investment Expense Analysis
As Of March 31, 2018

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Assets		\$83,144,857		
Domestic Equity Assets		\$56,351,335		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	\$18,156,227	\$12,709	0.07%
Fiduciary Large Cap Equity	0.85% of Assets	\$21,573,073	\$183,371	0.85%
Frontier Capital Appreciation	0.75% of Assets	\$16,622,036	\$124,665	0.75%
International Equity Assets		\$26,793,522		
International Developed Markets Equity Assets		\$20,223,719		
Rhumblin MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	\$20,223,719	\$16,179	0.08%
International Emerging Markets Equity Assets		\$6,569,803		
DFA Emerging Markets	0.53% of Assets	\$3,214,009	\$17,034	0.53%
Driehaus Emerging Market Equity	1.47% of Assets	\$3,355,793	\$49,330	1.47%
Fixed Income Assets		\$73,350,988		
Investment Grade Bonds Assets		\$37,734,837		
SSgA U.S. Aggregate Bond Index	0.06% of First 50.0 Mil, 0.05% of Next 50.0 Mil, 0.04% Thereafter	\$37,734,837	\$22,641	0.06%
High Yield Bond Assets		\$16,103,759		
Shenkman Capital	0.45% of Assets	\$16,103,759	\$72,467	0.45%
TIPS Assets		\$14,602,587		
SSgA TIPS Index-NL	0.06% of Assets	\$14,602,587	\$8,762	0.06%
Emerging Market Debt Assets		\$4,909,804		
Payden Emerging Market Bond	0.75% of Assets	\$4,909,804	\$36,824	0.75%

Total Retirement System

As of March 31, 2018

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Real Estate Assets		\$7,390,391		
Open-Ended Real Estate		\$5,411,417		
Clarion Partners	1.10% of Assets	\$5,411,417	\$59,526	1.10%
Total Closed End Real Estate		\$1,978,974		
Colony Realty Partners IV	1.5% management fee based on committed equity during the investment period and invested equity thereafter	\$1,978,974		
Private Equity Assets		\$3,482,886		
North American Strategic Partners 2006	0.8% on drawn and undrawn capital less investments sold or written off 5% carried interest, 8% preferred return	\$1,218,279		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	\$413,067		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	\$1,851,541		
Cash		\$667,336		
Comerica Short Term Fund		\$667,336		
Total		\$168,036,458	\$603,508	0.36%

Appendices

Fixed Income Indexing RFP

SEARCH DESCRIPTION

The Board Members of the Marlborough Retirement System (hereinafter "Board") are seeking proposals from passive index managers. The requested portfolios along with estimated market values and other pertinent information are provided below:

Asset Class	Preferred Benchmark	Projected Size (\$mm)	Preferred Vehicle Type
Investment Grade Bonds	Bloomberg Barclays U.S. Aggregate	\$20	Commingled Fund
Inflation-Protected Securities	Bloomberg Barclays U.S. TIPS	\$15	Commingled Fund

Only proposals for experienced managers of indexing strategies will be considered. Respondents must have been in operation for at least three years and have total assets under management exceeding \$500 million. Preference will be given to firms which can provide all services but partial responses will be considered. The objective of this Request for Proposal shall be to identify that manager whose expertise will best meet the Board's goals and needs.

The funds shall be managed in compliance with Massachusetts General Laws, Chapter 32 and Chapter 176, the regulations of the Massachusetts Division of Public Employee Retirement Administration Commission, 840 CMR, and the Placement Agent Policy (available at <http://www.mass.gov/perac/docs/forms-pub/memos/2011/perac-placement-agents-policy.pdf>).

All bidders are hereby advised that any proposal selected shall be subject to (1) approval of the Board, (2) a written contract and (3) approval of the engagement by the Massachusetts Public Employee Retirement Administration Commission (PERAC).

Any questions pertaining to this Request for Proposal are to be emailed directly to:

Steve MacLellan
Meketa Investment Group
100 Lowder Brook Drive, Suite 1100
Westwood, MA 02090
smaclellan@meketagroup.com

INSTRUCTIONS

Please read instructions before completing this questionnaire.

1. Proposals must be received at the Board prior to 3:00 PM Eastern Standard Time on June 20, 2018 at the Board's offices.

Proposals or unsolicited amendments will not be accepted after the closing date and time.

2. Bidders mailing materials should allow adequate time to assure timely arrival. Bidders may correct, modify, or withdraw their proposals prior to the deadline only. Correction or modification must be in writing and must be admitted and received in the same manner as the original proposal. Requests to withdraw proposals must be in writing.
3. All questions and all blank space must be completed in precise detail. Blank or incomplete responses to applicable questions may preclude the proposal from consideration.
4. Please answer as N/A, should any question not be applicable.
5. Please forward one copy of your firm's Proposal to:

Margaret Shea
Director
Marlborough Retirement System
255 Main Street, Room 201
Marlborough, MA 01752

6. *Proposals must be directed solely to the Administrator.*
7. Additionally, please send via e-mail an electronic copy to Meketa Investment Group at rfpresponse@meketagroup.com with E-mail Subject: "2018 Marlborough Index Search"

E-mail: rfpresponse@meketagroup.com

E-mail Subject: "2018 Marlborough Index Search"

8. If deemed necessary by the Board, bidders may be selected for interview. Each bidder selected for an interview will be allotted sufficient time to orally present its proposal and to answer any questions that may be posed by the person(s) appointed by the Board to interview bidders. The bidders would be evaluated on the basis of the criteria set forth in this request for proposal.

INSTRUCTIONS (continued)

9. The Board reserves the right to make an award without interviews of the bidders. Therefore, the proposals should be submitted initially on the most favorable terms of both price and technical approach that the bidder can propose to the Board. The Board also reserves the right to reject at its sole discretion any and all proposals received, whether prior to or after the bidders' interviews. The Board shall have sole discretion in deciding which bidders, if any, will be considered and/or interviewed.
10. All bidders are hereby advised that any proposal selected shall be subject to (1) approval of the Board, (2) a written contract and (3) approval of the engagement by the Massachusetts Public Employee Retirement Administration Commission (PERAC). Failure to agree on mutually acceptable contract language will void the award of the proposed engagement to the selected bidder.
11. The Board shall have sole discretion in determining whether the parties are unable to reach agreement on the language of the written contract. Note that the Board may require that the contract contain mandatory contractual terms and language (see Exhibit A).
12. The proposal shall be signed by an official with the power to bind the bidder.
13. The Board reserves the right to waive certain requirements or other protections in the event that the Board deems it to be in its best interest.
14. The proposal shall contain a certification that the proposal has been submitted in good faith and without collusion or fraud with any other person; additionally, it shall contain a statement disclosing any outside marketing or other relationships that the firm may have. Additionally, four PERAC documents are required, the New Vendor Disclosures, New Vendor Contact Information form, Vendor Certification form, and the Placement Agent Statement. These may be obtained from the PERAC website: <http://www.mass.gov/perac/compliance-investments/compliance-forms/>. Bidders must submit three copies of the PERAC forms.
15. The Board reserves the right to waive any minor informalities.
16. With respect to the RFP, all answers should be in specific reference to the subject product.
17. All questions *and* all blank space must be completed in precise detail. Blank or incomplete responses to applicable questions may preclude the proposal from consideration.
18. Please answer as N/A, should any question not be applicable.

MINIMUM CRITERIA CERTIFICATION

If you do not satisfy all of the minimum criteria, please do not respond to this RFP

Bidders must meet all of the following minimum criteria. Failure to satisfy any of the minimum criteria will result in the disqualification of the bidder. Please respond to each of the following by initialing the "YES" response to certify that you do meet the minimum criteria.

1. The bidder and each key individual is a registered investment advisor pursuant to the Investment Advisors Act of 1940, or is exempt from registration (with the nature of the exemption provided). _____ Yes
2. The firm has been in operation for at least three years and has total assets under management exceeding \$500 million as of 3/31/2018. _____ Yes
3. The bidder has experience managing investments for tax-exempt or state, municipal, or other governmental defined benefit plans. _____ Yes
4. The firm has managed assets in a manner that satisfies Massachusetts Laws Chapter 32, including the regulations of the Massachusetts Division of Public Employee Retirement Administration Commission, 840 CMR. _____ Yes
5. The firm has filled out and attached the four required PERAC forms. (See <http://www.mass.gov/perac/compliance-investments/compliance-forms/>) _____ Yes
6. If selected, the Firm is willing and able to include the mandatory contractual terms and conditions into the contract, as required under Massachusetts General Laws Chapter 32, as amended by Chapter 176 of the Acts of 2011. (See *Exhibit A*.) _____ Yes

Certified and Initialized by:

Name Title Date

This RFP is organized into 9 sections. These sections are: I. General information, II. Firm Information, III. Product Information, IV. Investment Team, V. Investment Philosophy & Strategy, VI. Investment Process & Portfolio Construction, VII. Portfolio Performance and Characteristics, VIII. Compliance and Operational information and IX. Fees and Related Management Costs. Unless stated otherwise, please answer each question in the field provided.

We appreciate you taking the time to complete this document. Thank you.

a. I. GENERAL INFORMATION

Firm Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Contact Name: _____ Phone: _____
Title: _____ Fax: _____
E-mail: _____
Strategy under Consideration: _____
Projected Allocation Amount: Approximately \$35mm RFP Due Date: 6/20/18
Notes: _____

b. II. FIRM INFORMATION

1. When was the firm's inception date?

2. Where is the firm located (include headquarters and satellite offices)?

3. Is the Firm a Registered SEC Investment Advisor? Yes: ____ No: ____
If *yes*, please complete the following:
 - a. Name of Firm (as registered with the SEC):

 - b. SEC File Number:

4. What is the firm's ownership structure? Note any recent (within the last five years) or pending changes in ownership structure.

5. Does the firm have any broker/dealer affiliations? If yes, please describe the relationship between the firm and its broker/dealer and whether the firm would utilize its services for this mandate.
6. What is the firm's policy regarding the use of soft dollars? Please provide the absolute level of soft dollars generated and the percentage of commissions this represented over each of the last three years.
7. List the top five brokerage firms with whom you have conducted trades in the last year. Provide the percentage of your total trading volume that each firm accounted for, along with the average commission for each.
8. Please provide a brief description of any past or pending regulatory action, litigation or other legal proceedings involving the firm or any registered employees and/or principals.
9. Who is the firm's current auditor? Has the firm changed auditors in the past five years? If so, please explain why.
10. What types of liability insurance (e.g. Errors and Omissions) and other forms of coverage does your firm carry to protect your clients? Please provide dollar amounts and proof of coverage.
11. Please provide an organization chart that includes all senior management and all investment professionals. (In the Investment Team section we will ask for an organization chart of all the investment professionals who work on the investment product under consideration in this RFP.)
12. Are any investment professionals under employment contracts? If so, please discuss the nature of the contracts.
13. Does the firm have a Chief Compliance Officer (CCO)? Who is that individual? What is their background and why are they qualified to be CCO? Do they have legal training? Please attach their biography and a copy of your compliance manual. (The manual should be attached in a separate file.)
14. Has your firm ever experienced a significant violation of your compliance policy? If this has occurred, explain what happened.
15. What are the CCO's responsibilities? Is compliance their sole function or do they have other responsibilities? Approximately what portion of their time is spent on compliance issues?

16. Does your firm have in-house counsel? If not, do you retain outside counsel to address legal and regulatory matters? What is the name of this firm and who is your attorney?

17. Please complete the following table:

	As of: 3/31/18	As of: 3/31/17	As of: 3/31/16	As of: 3/31/15	As of: 3/31/14	As of: 3/31/13
Total Firm Assets						
Total No. of Clients						

18. Please provide a current list of all the relevant investment products/strategies offered by the firm. Include the total amount of assets managed under each strategy, whether the strategy is open or closed, and, if applicable, the amount of capacity currently available in each strategy.

19. Please list any products the firm has completely liquidated or merged with an existing product. Briefly explain why the product was liquidated or merged.

20. What percentage of the firm's assets under management are institutional (separate) accounts? Commingled funds? Mutual funds? High net worth individuals?

21. If selected as a finalist candidate to present to the client, will you provide a complete copy of your form ADV and a statement of your financial condition?

22. Please provide Meketa Investment Group with your firm's most recent 408(b)(2) filing.

23. What is your firm's plan regarding the backup of computer files and systems? In the event of a disaster, how long would it take to become fully functional?

24. What systems are in place for ensuring that portfolios are in compliance with client guidelines?

25. What systems do you use for order entry (trading), portfolio accounting, and portfolio analysis?

26. Please state your firm's ethics policy. Does the firm have a Code of Ethics? If so, please include this document as an attachment.

27. Have there ever been any violations of this policy? How are violations of the firm's ethics policies handled?

28. How do you ensure that your clients adhere to policies set forth for the protection of the firm's other clients (e.g., prevention of market timing)?

29. Is your firm represented by any third party organization or individual whose purpose is marketing and/or gathering assets for your firm? If so, list all relationships and their nature.

30. Will any third party organization or individual be compensated if your firm were to be hired for this mandate?

III. PRODUCT INFORMATION

1. What is the inception date of these products? When did the current portfolio managers or investment committees start managing these products? If there has been a portfolio manager change, please show the periods when each portfolio manager managed each product?

2. Please complete the following table:

	As of: 3/31/18	As of: 3/31/17	As of: 3/31/16	As of: 3/31/15	As of: 3/31/14	As of: 3/31/13
Assets Managed in each strategy						
No. of Clients in each strategy						

3. Please provide the number of clients in each strategy that have been gained and lost, and the respective amounts, during the past five years. For clients lost, please state the reason.

4. For your three largest current indexing client relationships, please provide the size of the mandate and the inception date for each account/relationship.

5. Please provide two client references for your indexing strategies. Include name and phone number of contact person, the type and size of the account and the inception date of the account.

6. Please provide the names of the portfolio manager(s) and client service personnel who will be assigned to this account.

7. Do you offer (or sub-advise) a mutual fund for these strategies? If so, what are their names and symbols?

8. Do you offer commingled portfolios for these strategies? Separate accounts?

IV. INVESTMENT TEAM

1. If it is different than the organization chart requested earlier, please provide an organization chart with all the investment professionals involved in the proposed strategies and the bios of these individuals. We would like as much detail as possible. This information can be included separately. In addition, please complete the table below.

Name	Tenure at Company	Tenure with Strategy	Industry Experience	Education/Credentials	Areas of Specialization	Other Products Supported

2. Where is the individual/team that runs this strategy located?

3. How was the investment team built and how long has it been together?

4. In addition to the proposed strategy, what other product responsibilities do the portfolio managers/ research analysts have?

5. Please list additions and departures to the management and research team(s) responsible for the indexing strategies in the last five years, including their responsibilities. Provide a brief explanation for each departure, and list any replacement for these vacancies.

Additions: Name	Title	Coverage Responsibilities	Product Responsibilities	Date of Hire

Departures: Name	Title	Coverage Responsibilities	Product Responsibilities	Reason for Departure

6. Explain your approach to bringing new analysts/portfolio managers onto the team. Do you prefer to bring in seasoned/experienced individuals or do you hire younger investment professionals and train them? Why do you take this approach?

7. How do you evaluate your analysts and portfolio managers? Describe the compensation structure for portfolio managers and research analysts. What kind of behavior are you trying to encourage?

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V. INVESTMENT PHILOSOPHY AND STRATEGY

1. How do you approach the potential tradeoff between tracking error and trading costs to track a relevant index? What factors influence the use of full replication versus various types of portfolio optimization/sampling?
2. What strategies or processes does your firm employ to efficiently trade through index changes (e.g., index reconstitutions, delistings, corporate actions etc.)?
3. For vehicles with commingled assets, does the vehicle utilize securities lending? If so, please describe the parameters of the securities lending program.
4. What portions of the investment process (if any) are performed by outside firms (i.e., services that are “outsourced”). Please explain your rationale for outsourcing any investment tasks and to what outside firm they are delegated to.

VI. INVESTMENT PROCESS & PORTFOLIO CONSTRUCTION

1. What method is used to replicate the targeted index(es) (e.g. full replication, optimization, sampling, etc.)? Please list any software used to construct the portfolio (e.g. optimizers, etc.).

2. What measures are taken to control tracking error? Are possible tracking error impacts taken into account when trading, if so, how?

3. What portions of the investment process (if any) are performed by outside firms (i.e., services that are “outsourced”). Please explain your rationale for outsourcing any investment tasks and to what outside firm they are delegated to.

VII. PORTFOLIO PERFORMANCE AND CHARACTERISTICS

1. Please provide monthly performance history since inception for the proposed strategies and their respective benchmarks. Include a discussion of the performance calculation methodology and whether it is GIPS compliant.

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If possible, please provide information both gross and net of fees. This information should be in an Excel spreadsheet, formatted as follows:

	A	B	C
1		Index Strategy (Gross)	Index Strategy (Net)
2	Jan-10	0.00442	0.00442
3	Feb-10	0.02216	0.02216
4	Mar-10	0.05762	0.05762
5	Apr-10	-0.01122	-0.01122
6	May-10	0.00762	0.00762

- a. Cell (A1) must be empty.
- b. The first row, starting with the second column (B1) must contain the firm and product name, up to 40 characters (spaces count as characters).
- c. Dates in column A must be in either mmm-yy (Jan-10) or mmm-yyyy (Jan-2010) format.
- d. Numbers can be in percent or decimal format.
- e. Data must start from earliest and end with latest.
- f. Empty cells for which there is no return should have a N/A entered, otherwise a zero will be read.

Note: Please detail the dollar amount of assets in the performance composite annually, as well as the number of accounts. Include all other composite footnotes.

2. Has the product performance been audited and verified by a third party? If so, by whom and for what period?

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3. In a separate Excel file, please provide a sample client portfolio as of 3/31/18 detailing individual holdings (including security name, CUSIP, # of shares, price, and % of the portfolio). Also, please include historical quarterly portfolio holdings for the last 5 calendar years and the current year.

4. Please complete the following table for the portfolios:

	As of 3/31/18	As of 12/31/17	As of 9/30/17	As of 6/30/17
Price-Earnings Ratio				
Price-Book Value Ratio				
Historical Earnings Growth Rate				
Projected Earnings Growth				
Weighted Average Market Cap				
Median Market Cap				
Number of Holdings				
Industry/Sector Weightings: <i>(show % and in parentheses show % for benchmark)</i> 1) Three largest weightings 2) Three largest overweights 3) Three largest underweights				
Percent Portfolio in Top 5 / Top 10 Holdings				
Trailing 5-Year Tracking Error				

VIII. COMPLIANCE AND OPERATIONAL INFORMATION

1. Does the firm have a Chief Compliance Officer (CCO)? Who is that individual? Do they have legal training? Please attach their biography and a copy of your compliance manual. (The manual should be attached in a separate file.)
2. What are the CCO's responsibilities? Is compliance their sole function or do they have other responsibilities? Approximately what portion of their time is spent on compliance issues?
3. Please state your firm's ethics policy. Does the firm have a Code of Ethics? If so, please include this document as an attachment.
4. Has your firm ever experienced a significant violation of your compliance or ethics policy? If a violation has occurred, please explain what happened, how the violation of the firm's policies was handled, and how the issue was resolved.
5. How does the firm monitor employee investment and trading?
6. How often are employees trained in compliance policies?
7. What systems are in place for ensuring that portfolios are in compliance with client guidelines? Does the firm use any outside firms to help with compliance issues?
8. What is the firm's policy regarding the use of soft dollars? Are all soft dollars used strictly for the benefit of clients. Please provide the absolute level of soft dollars generated and the percentage of commissions this represented over each of the last three years.
9. Please explain how brokers are approved and briefly explain why you have selected these brokers. List the top five brokerage firms with whom you have conducted trades in the last year. Provide the percentage of your total trading volume that each firm accounted for, along with the average commission for each.
10. Has the firm recently ended any brokerage relationships? If so, why?
11. What systems and tools do you use for order entry (trading), portfolio accounting, and portfolio analysis?
12. Please describe how trade orders are created, submitted, and executed.

13. How much of the trading process is automated vs. manual?
14. What percentage of trades are executed through ECNs?
15. How are trades allocated between client accounts? Does the firm have a written allocation policy?
16. How are client investment restrictions incorporated into the order and trading process?
17. How are trade confirmations tracked?
18. How does the firm handle trading errors?
19. Does the firm track broker best execution? If so, how is this tracking performed? Can you provide a recent Trading Cost Analysis (TCA) report for the portfolio?
20. How does the firm monitor best execution on foreign currency transactions, if any?
21. Describe the firm's settlement process and what software is used.
22. Describe the firm's valuation process and procedures for securities. Does the firm use an independent pricing service? If so, what is the name of the service? How long does it take from month end for clients to receive estimate, final and administrator values in accounts?
23. Describe the reconciliation process for equity, cash, dividend receivables and other transactions.
24. Describe how the firm receives corporate action information. How do corporate actions elections take place?
25. Which individuals at the firm are authorized to place trades with broker-dealers, and issue trade settlement, corporate action and proxy statement instructions to custodian banks, and perform portfolio accounting functions?
26. How does your firm back up computer files and systems? Do you have a disaster recovery plan in place? Please explain your plan, in the event of a disaster, how long would it take to become fully functional?

27. What security measures does your firm have in place to ensure the protection of firm and client assets?

28. Please attach a sample of a quarterly client report.

IX. FEES & RELATED MANAGEMENT COSTS

1. Please provide the fee schedules for the proposed strategies, for a separate account, a commingled account, and mutual fund (if available). For any funds (commingled and mutual) or similar vehicles which collectively pool assets, please detail the nature and amount of any additional expenses (e.g. custody, audit, etc.) that accrue against the net assets of the vehicle and disclose the Total Expense Ratio of the vehicle (including any reimbursement associated with the TER) and include a copy of the latest audited financial statement.

2. Do all clients pay the same fee? Please explain any discrepancies.

3. What is your account minimum for a separately managed portfolio? Commingled vehicle? Mutual fund?

4. Is there a minimum fee?

5. Do you offer a performance-based fee? If so, please provide a performance-based fee schedule. Over what period is performance evaluated and against what benchmark? What is the base fee? Is there a maximum fee (a cap)?

6. Do you offer a Most Favored Nations (MFN) clause? If so, would you be willing to provide this client an MFN?

7. Does this product have any liquidity constraints? Discuss in detail your policy on subscriptions and redemptions for all applicable vehicles. What special provisions (i.e., lock-ups, reserves, in-kind payments, exit fees, delayed payments, queues, etc.) if any, exist?

Placement Agent Disclosure

List all placement agents, third-party marketers, and other entities currently and/or previously engaged by the Firm and its affiliates, directly or indirectly, for the purpose of securing limited partner commitments, and the Firm's primary contact at each entity. Additionally, for each provide the following information

- a) indicate whether it is a registered investment advisor, registered as a broker-dealer with the SEC, pursuant to the Securities Act of 1934, the NASD, members of FINRA, or any other financial regulatory agency.
- b) describe the terms of agreements and compensation arrangements between the Firm and the entity. Also, indicate whether such compensation is paid by the Firm, the Fund, or another entity.
- c) disclose whether the entity has in the last 10 years been, or is anticipated to be, the subject of any actions, inquiries, or investigations by any federal, state, or local government agencies or regulatory bodies.

Core Real Estate RFP



SEARCH DESCRIPTION

The Board Members of the Marlborough Retirement System (hereinafter "Board") are seeking proposals from managers of open-end core real estate funds.

The Board intends to commit approximately \$5 million. Only proposals for experienced managers of open-end core real estate funds will be considered. More specifically, the investment proposed should: 1) have a minimum net asset value of \$1 billion and 2) be well diversified both geographically and by property type with greater than 30 properties. Secondary and fund-of-funds investments will not be considered. The objective of this Request for Proposal shall be to identify that manager whose expertise will best meet the Board's goals and needs.

The funds shall be managed in compliance with Massachusetts General Laws, Chapter 32 and Chapter 176, the regulations of the Massachusetts Division of Public Employee Retirement Administration Commission, 840 CMR, and the Placement Agent Policy (available from <http://www.mass.gov/perac/docs/forms-pub/memos/2011/perac-placement-agents-policy.pdf>).

All bidders are hereby advised that any proposal selected shall be subject to (1) approval of the Board, (2) a written contract and (3) approval of the engagement by the Massachusetts Public Employee Retirement Administration Commission (PERAC).

Any questions pertaining to this Request for Proposal are to be emailed directly to:

Derek Proctor or Steve MacLellan
Meketa Investment Group
100 Lowder Brook Drive, Suite 1100
Westwood, MA 02090
dproctor@meketagroup.com or smaclellan@meketagroup.com



INSTRUCTIONS

Please read instructions before completing this questionnaire.

1. Proposals must be received at the Board prior to 3:00 PM Eastern Standard Time on June 20, 2018 at the System's offices.

*Proposals or unsolicited amendments will not be accepted after
the closing date and time.*

2. Bidders mailing materials should allow adequate time to assure timely arrival. Bidders may correct, modify, or withdraw their proposals prior to the deadline only. Correction or modification must be in writing and must be admitted and received in the same manner as the original proposal. Requests to withdraw proposals must be in writing.
3. All questions and all blank space must be completed in precise detail. Blank or incomplete responses to applicable questions may preclude the proposal from consideration.
4. Please answer as N/A, should any question not be applicable.
5. Please forward one copy of your firm's Proposal to:

Margaret Shea
Director
Marlborough Retirement System
255 Main Street, Room 201
Marlborough, MA 01752

6. *Proposals must be directed solely to the Administrator.*
7. Additionally, please send via e-mail an electronic copy to Meketa Investment Group at rfpresponse@meketagroup.com with E-mail Subject: "2018 Marlborough Real Estate"

E-mail: rfpresponse@meketagroup.com

E-mail Subject: "2018 Marlborough Real Estate"

8. If deemed necessary by the Board, bidders may be selected for interview. Each bidder selected for an interview will be allotted sufficient time to orally present its proposal and to answer any questions that may be posed by the person(s) appointed by the Board to interview bidders. The bidders would be evaluated on the basis of the criteria set forth in this request for proposal.



Minimum Criteria Certification

If you do not satisfy all of the minimum criteria, please do not respond to this RFP

Bidders must meet all of the following minimum criteria. Failure to satisfy any of the minimum criteria will result in the disqualification of the bidder. Please respond to each of the following by initialing the "YES" response to certify that you do meet the minimum criteria.

1. The bidder and each key individual is a registered investment advisor pursuant to the Investment Advisors Act of 1940, or is exempt from registration (with the nature of the exemption provided). _____ Yes
2. The firm has been in operation for at least five years and has total net assets under management exceeding \$1 billion as of 12/31/2017. _____ Yes
3. The bidder has experience managing investments for tax-exempt or state, municipal, or other governmental defined benefit plans. _____ Yes
4. The firm has managed assets in a manner that satisfies Massachusetts Laws Chapter 32, including the regulations of the Massachusetts Division of Public Employee Retirement Administration Commission, 840 CMR. _____ Yes
5. The firm has filled out and attached required PERAC disclosures (Vendor Contact Form, New Vendor Disclosures, Placement Agent Statement, Vendor Certification) in their entirety. (See <http://www.mass.gov/perac/compliance-investments/compliance-forms/>) _____ Yes
6. If selected, the Firm is willing and able to include the mandatory contractual terms and conditions into the contract, as required under Massachusetts General Laws Chapter 32, as amended by Chapter 176 of the Acts of 2011. (See Exhibit A.) _____ Yes
7. The investment proposed: 1) has a minimum net asset value of \$1 billion and 2) is well diversified, with greater than 30 properties. _____ Yes

Certified and Initialized by:

Name Title Date



MARLBOROUGH RETIREMENT SYSTEM
REQUEST FOR PROPOSAL

REQUEST FOR PROPOSAL
CORE REAL ESTATE

REQUEST FOR PROPOSAL

I. GENERAL INFORMATION

Firm Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Contact Name: _____ Phone: _____
Title: _____ Fax: _____
E-mail: _____
Strategy/Fund/Product under
Consideration: _____
Projected Allocation Amount: \$5mm RFP Due Date: June 20, 2018
Notes: _____

II. FIRM INFORMATION

1. When was the Firm's inception date?

2. Where is the Firm located (include headquarters and satellite offices)?

3. Is the Firm a Registered SEC Investment Advisor? Yes: ____ No: ____
If yes, please complete the following:
 - a. Name of Firm (as registered with the SEC):

 - b. SEC File Number:

4. Is the Firm a Qualified Professional Asset Manager (QPAM)? Yes: ☐
No: ☐
5. Is the Firm a Real Estate Operating Company (REOC)? Yes: ☐
No: ☐
6. Firm's legal/ownership structure: Please note any recent (within the last five years) or pending changes in ownership structure. (If the firm is a subsidiary, please indicate what percentage of the parent company's revenue the firm generates.)
Public Corporation: _____ Employee-Owned: _____
Private Corporation: _____ Subsidiary of: _____
Partnership: _____ % of Parent's Revenue: _____
Sole Proprietorship: _____ Other (Please specify): _____
Notes: _____



MARLBOROUGH RETIREMENT SYSTEM
REQUEST FOR PROPOSAL

REQUEST FOR PROPOSAL
CORE REAL ESTATE

7. Type of Firm (please check one):

Broker	_____	Insurance Co.	_____	Merchant Bank Affiliate	_____
Broker Affiliate	_____	Insurance Co. Affiliate	_____	Investment Bank Affiliate	_____
Joint Venture	_____	Bank/Trust Co.	_____	Group Trust	_____
Limited Partnership	_____	Bank Affiliate	_____	Private REIT	_____
Other (Please specify)	_____				

8. How is the Firm capitalized?

9. If applicable, please provide the percentage ownership of each owner of the Firm (provide data for the last three years).

10. Please provide a brief description of any past or pending regulatory action, litigation or other legal proceedings involving the Firm or any registered employees and/or principals. Has the firm ever been out of compliance with the SEC, Department of Labor, or other regulatory agency? If so, please explain

11. Who is the Firm's current auditor? Has the Firm changed auditors in the past five years? If so, please explain.

12. What types of liability insurance (e.g. Errors and Omissions) and other forms of coverage does your Firm carry to protect your clients? Please provide dollar amounts and proof of coverage.

13. Please provide a Firmwide organization chart with all investment professionals.

14. Are any investment professionals under employment contracts? If so, please discuss the nature of the contracts.

15. Please complete the following table on an end-of-year basis, with year-to-date through 3/31/2018.

Assets and Clients	YTD 2018	2017	2016	2015	2014	2013
Total Firm AUM						
Total # of Clients						
Real Estate AUM						
Total # of Real Estate Clients						
Public Fund Clients						



MARLBOROUGH RETIREMENT SYSTEM
REQUEST FOR PROPOSAL

REQUEST FOR PROPOSAL
CORE REAL ESTATE

16. Please provide the number of real estate clients, and their portfolio value, gained and lost during the past five years. For clients lost, please state the reason.

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17. Please complete the following table through 3/31/2018. Please categorize your real estate clients account types for both commingled funds and separate accounts.

<i>Accounts by Type (as of March 31, 2018): Tax Exempt Commingled Funds</i>	<i># of Accounts</i>	<i>Gross Market Value</i>
Employee-Benefit Funds:		
Corporate:		
Multi-Employer:		
Public:		
Endowments and Foundations:		
Other: <i>(please specify)</i>		
Total:		
<i>Accounts by Type (as of March 31, 2018): Tax Exempt Separate Accounts</i>	<i># of Accounts</i>	<i>Gross Market Value</i>
Employee-Benefit Funds:		
Corporate:		
Multi-Employer:		
Public:		
Endowments and Foundations:		
Other: <i>(please specify)</i>		
Total:		

18. Please provide a list of all the real estate investment products the Firm manages, including: name of the strategy/fund, total gross assets, structure, strategy, inception date, and if applicable, legal life of the vehicle:

Name of Strategy	Gross Size (\$mm)	Open, Closed-Ended, Separate Accts.	Investment Strategy <i>(core, value-add, etc.)</i>	Date Formed	Legal Life

19. Which real estate products is the Firm currently emphasizing?

--

20. Please list any real estate products the Firm has completely liquidated or merged with an existing product. *Include the reason(s) why the product was liquidated/merged.*

--

21. What is the Firm's growth strategy for the next three years?

--

22. How does the Firm allocate resources to investment products? How will new and existing resources be allocated?

--



23. What percentage of AUM are in discretionary accounts? Non-discretionary?

24. Describe your Firm's policy with respect to union labor and construction or development projects. Provide detail, such as the use of union labor for building services such as janitorial work.

25. Please state your Firm's ethics policy. How do you ensure that employees follow this ethics policy? How are violations of the Firm's ethics policy handled? How are conflicts of interest managed?

26. Do your ethics policies, procedures, and culture differentiate your Firm?

27. Is your Firm represented by any third party firm or individual whose purpose is marketing and/or gathering assets for the Firm and are compensated as such? If so, list all relationships and their nature.

28. Will any third party or individual be compensated if your Firm were to be hired for a future mandate?

III. FUND INFORMATION

1. Please provide an organization chart with all investment professionals involved in this Fund. Please clearly state dedicated versus shared resources.

2. Where is the individual/team that runs this Fund located?

3. What is the inception date of this Fund?

4. Please complete the following table on an end-of-year basis, with year-to-date through 3/31/2018.

<i>Assets and Clients</i>	YTD 2018	2017	2016	2015	2014	2013
Fund AUM						
Total # of Fund Clients						
<i>Public Fund Clients</i>						

5. Please provide the number of this Fund's clients, and their portfolio value, gained and lost during the past five years. For clients lost, please state the reason.



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6. Please identify any real estate products that compete or overlaps with this Fund. What percentage of the portfolios overlap?
7. For your three largest client relationships in this Fund, please provide the investment size of the mandate and the inception date for each account/relationship.
8. Please provide two client references for this Fund. Include name and phone number of contact person, the type and size of the account and the inception date of the account.
9. Please provide the names of the portfolio manager(s) and client service personnel who will be assigned to this Fund.
10. What is your account minimum for this Fund? Any exceptions to the minimum?
11. What is the legal structure of this Fund (eg. *Limited Partnership, REIT, LLC, etc.*)?
12. What types of investors are permitted to invest in this Fund (e.g. *Pension Funds, High Net Worth Individuals, employees, etc.*)?
13. Does this Fund have any liquidity constraints? Discuss in detail your policy for honoring client contribution and redemption requests for this Fund. How can clients contribute and withdraw funds or receive cash income and capital gain distributions? What special provisions (i.e., lock-ups, reserves, distributions-in-kind payments, exit fees, delayed payments, queues, etc.) if any, exist? Please comment on liquidity and redemptions satisfied during the global financial crisis.
14. Describe the Fund's current investment and redemption queues in terms of:
 - a. Amount (aggregate dollar amount)
 - b. Percentage (weight of the dollar queue)
 - c. Payout (expected amount paid next quarter)
 - d. Distribution (first come first serve basis or pro-rata)?
 - e. Date (date of queue inception)
 - f. Restrictions (restrictions that may withhold redemptions)
15. What is the aggregate commitment target of this Fund? What are the investor, firm, and aggregate minimum and maximum commitment constraints for this Fund (percent and numeric terms)? For open-ended funds, does the Firm have a policy limiting AUM for this strategy? If yes, what is the stated level? If no, what do you think is the Fund's capacity?
16. Does this Fund have a "clawback provision?" If so, please describe.



17. Describe this Fund's policy with respect to union labor and construction or development projects. Provide detail, such as the use of union labor for building services such as janitorial work.

18. Do you offer separate accounts for this strategy? What is the account minimum?

IV. INVESTMENT STRATEGY

1. Please describe your investment strategy for this Fund.

2. What is the performance benchmark employed for the Fund? Does this benchmark include all asset types, property types and life-cycle stage you would consider investing in?

3. What are the projected total gross and net returns? Approximately what proportion of the Fund's total return is expected to be generated from income, and what proportion from capital appreciation?

4. Describe the Fund's target, or typical investment strategy in terms of:

- Expected number of investments and assets
- Expected maximum percentage of total capital commitments to be allocated to a single investment
- Expected size (investment and gross market value) and capital structure of investments
- Regions, property types and/or industries that will be avoided
- Risk/Return Profile (Core, Core-Plus, Value-Add)
- Quality (occupancy, age, tenant profile) of assets
- Criteria for selecting target markets and/or sub-markets
- Criteria for selecting potential projects within target market

5. To what degree, if any, are development, renovation, and property repositioning components of the Fund's strategy? For each component, please provide an example. Please describe any additional strategy components.

6. Current Fund Holdings -- Please specify what percentage of the Fund's assets (gross market value) is composed of the following categories. Each section should total 100% and dollars should be in millions.

- a. Property Type: If the level of detail required below is not available, please complete the top-level categories (Office, Apartments, Retail, Industrial, Hospitality, Land, Other).

Property Type	%	\$	Age	Years
Office				
Suburban				
CBD				
Apartments				
Garden				



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<i>Property Type</i>	<i>%</i>	<i>\$</i>	<i>Age</i>	<i>Years</i>
High Rise				
Retail				
Mall				
Shopping Center				
Convenience Center				
Strip Commercial Development				
Outlet/Off-Price Center				
Industrial				
Multi-Tenant Business Park				
Warehouse/Distribution				
Research & Development				
Hospitality				
Hotel				
Motel				
Resort				
Land				
Other <i>(please specify)</i>				

b. Geographic Region

<i>Region</i>	<i>Percent</i>	<i>GMV</i>
East, Total		
Northeast		
Mideast		
Midwest, Total		
East N. Central		
West N. Central		
South, Total		
Pacific		
Mountain		
West, Total		
Pacific		
Mountain		
Non-US, Total		
Western Europe		
Eastern Europe		
East Asia		
South Asia		

c. Property Size

<i>Amount (\$ in millions)</i>	<i>Number</i>	<i>GAV</i>	<i>Percent</i>
\$0 - 20			
\$20 - 50			
\$50 - 100			
\$100 - 150			
Over \$150			



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d. Investment Life Cycle

<i>Life Cycle</i>	<i>Number</i>	<i>GAV</i>	<i>Percent</i>
Pre-Development (Land)			
Development			
Leasing			
Fully/Substantially Leased			
Redevelopment			
Forward Commitments			
Other <i>(please specify)</i>			

e. Financial Structure

<i>Financial Structure</i>	<i>Number</i>	<i>GAV</i>	<i>Percent</i>	<i>NAV</i>	<i>Percent</i>
Un-Leveraged Equity Ownership					
Direct Equity Ownership					
JV Equity Ownership					
Leveraged Equity Ownership					
Direct Equity Ownership					
JV Equity Ownership					
Preferred Equity					
Mezzanine Debt					
B-Note Mortgage					
First Mortgage					
Other <i>(please specify)</i>					

7. Describe the Fund's expected use of joint ventures and operating partners. Historically, what percentage of investments has been with joint venture partners? What percentage of joint venture partnerships has the Fund been a controlling partner?
8. Does the Fund intend to be a lead investor, control investor, co-investor, or sole investor in portfolio investments? How, in the view of the Manager, is a control position defined and achieved? Once established, what level of control does the Manager plan on exercising?
9. If not control, to whom would the Fund be secondary: operating partners, portfolio company management, other investors, or other parties? To what extent (as a percentage of total portfolio investments) does the Fund plan to be a lead investor?
10. How is leverage employed on a total Fund basis and on an individual property basis? Is there a policy for limiting leverage (i.e. maximum level of debt financing permitted in a single investment and a portfolio basis)? What is the Fund's current leverage on both a total Fund and individual property basis (if applicable)? How has this range changed in terms of macro issues and in response to the current lending environment, vis-à-vis interest rates and tightening/loosening credit standards?



11. Describe your loan, or debt, sourcing process. What terms other than interest rates, maturities, and payment forms are discussed? How are these determined, through negotiations or a Dutch Auction?

12. Are there any restrictions on what may be purchased for the Fund under the proposed strategy? If so, please describe.

13. How has the investment strategy of the Fund changed over time in response to: market conditions, opportunistic investments, competition, pricing disciplines, the knowledge and experience of the Manager? What has the Manager been able to learn from past disappointments and how has that impacted the investment thesis going forward?

14. Describe this Fund's competitive advantages. How does the product differentiate itself with respect to the competition?

V. INVESTMENT PROCESS

1. Who is the decision-making body that has final authority for this Fund (e.g. Does it take the form of an investment policy committee, a team of portfolio managers and/or investment professionals, or some other form)? Include the name and background of all investment committee members. Describe in detail how the Manager sets investment policy and/or strategy and how significant investment decisions will be made. Is there a separate investment policy committee that governs the proposed Fund and/or real estate strategy in general? If so, who sits on these committees?

2. Describe the level of consent (e.g., unanimous, majority (>50%), supermajority (>67%), etc.) required from the members of the investment committee to approve an investment.

3. How frequently does the committee meet?

4. What are the responsibilities of the committee and of the individual portfolio managers? What latitude do portfolio managers have to override investment committee and/or research recommendations?

5. Describe the expected source(s) of deal flow, both in terms of overall deal flow and in terms of deals executed. How does the Firm generate proprietary deal flow? Describe the expected source(s) of deal flow and the strategy the Manager employs to source and diligence deals?

6. Who manages the daily operations of the portfolio properties? Are property management responsibilities outsourced or performed in-house?



7. Describe the due diligence process that is used to screen potential investments. To the extent permissible, provide copies of the standard acquisition due diligence checklist, questionnaires, and/or other internal control documents.

8. Please provide a copy of a recent investment committee memorandums for a completed acquisition.

9. Describe the Firm's asset management team and process.

10. How does the Firm's asset managers handle investments in joint venture structures?

11. How will the Manager monitor the success or performance of portfolio investments?

12. What are the anticipated exit strategies for the properties in this Fund?

13. How do you decide to sell an investment? Who is primarily responsible for handling dispositions?

VI. VALUATION

1. Does the Manager expect the Fund to comply with GAAP accounting standards, and, in turn, FAS 157 (ASC 820) valuation standards?

2. If the Manager does not expect the Fund to comply with GAAP accounting standards, to what accounting standards is the Fund expecting to comply?

3. Provide the Manager's valuation policy for the Fund. Please include frequency, sources (third-party, internal, etc.), and valuation methodologies.

VII. INVESTMENT RESEARCH

1. Describe the research process for the Fund. What is distinctive about the research process relative to your peers?

2. How are research ideas communicated to portfolio managers? What latitude do portfolio managers have to deviate from investment committee policies and/or recommendations?



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3. Please provide specific examples of how your research can be differentiated from your competitors.

--

4. What external research sources do you use in the real estate process? Please approximate annual expenditures for third-party research (and associated technology) in each of the past three years.

--

5. What is the Firm's investment outlook for the next five (5) years? How are concerns being addressed?

--

VIII. INVESTMENT RESOURCES

1. In addition to the organization chart requested above, please detail the real estate investment professionals below (both involved in this product as well as Firmwide). Please make sure that the table adds to the total number of real estate professionals; this may require allocating portions of professionals to various strategies.

As of March 31, 2018	# in Fund	# Firmwide
Portfolio Management		
Research		
Acquisitions		
Asset Management		
Dispositions/ Asset Sales		
Property Management		
Leasing		
Accounting/Financial		
Investment Committee		
Legal		
Other: (please specify)		
Total:		

2. Please list the key professionals involved in this Fund. Please include the portfolio manager(s) targeted for this Fund and all investment committee members.

Name	Title / Responsibility	Location	Education/ Credentials	# Yrs With Firm	# Yrs of RE Experience

3. Please indicate the turnover of the management team(s) responsible for this Fund over the past five years as follows:

Name/Title	Date Left	Reason for Leaving	Replaced By

4. How does the Firm address turnover of investment professionals?

--



5. Please list the portfolio managers and investment professionals responsible for this Fund who invest their own assets in this product. What percentage of their assets does each invest in this Fund? What percentage does each invest in the Firm's other products?

6. Discuss the current level of staff (both investment professionals and other staff) relative to the level that the Firm believes is appropriate to optimally execute the activities of the Firm and Fund. Does the Firm expect any personnel departures or additions during the next 18 months?

7. Will any of the investment professionals allocate any business time and attention to activities that are not related to the activities of the Firm and/or Fund ("outside activities")? Please describe the nature of and expected time requirement for the outside activities of each investment professionals.

8. What are your organization's plans for management succession? For all employee-owners, please describe the arrangements for repurchasing the interest of retiring or deceased partners.

9. Describe the compensation structure for portfolio managers and investment professionals.

10. How many assets (value, number of properties, and as a share of total real estate assets) are assigned to each portfolio manager under this strategy?

11. What software and hardware resources are used to evaluate investment opportunities?

12. Are computer systems developed internally or provided by vendors?

13. What is your Firm's plan regarding the backup of computer files and systems? In the event of a disaster, how long would it take to become fully functional?

IX. PERFORMANCE

1. Time-weighted returns -- Please provide net of fees quarterly performance history since inception for the Real Estate Fund offered. Define what fee load is assumed in the net performance provided. Include a discussion of the performance calculation methodology and whether it is GIPS compliant.

If available, please include the following additional information:

- Gross of fee returns.
- Two parallel series of returns that indicate the income and capital (gain / loss) components of the total return.
- A series of total return figures calculated to eliminate the effect of leverage.



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This information **must be in an Excel spreadsheet**, and emailed to recorrespondence@meketagroup.com, or sent via a disc, formatted as follows:

	A	B	C	D
1		Fund Name Gross Return	Fund Name Net Return	Fund Name Un-Levered Gross Return
2	Jun-02	0.00442	0.00442	0.00442
3	Sep-02	0.02216	0.02216	0.02216
4	Dec-02	0.05762	0.05762	0.05762
5	Mar-03	-0.01122	-0.01122	-0.01122
6	Jun-03	0.00762	0.00762	0.00762

Cell (A1) must be empty.

The first row, starting with the second column (B1) must contain the firm name, up to 40 characters (spaces count as characters).

Dates in column A must be in either mmm-yy (Jan-) or mmm-yyyy (Jan-2007) format.

Numbers can be in percent or decimal format.

Data must start from earliest and end with latest.

Empty cells for which there is no return should have a N/A entered, otherwise a zero will be read.

Or, input returns in the attached spreadsheet.

Note: If performance composite figures are shown, please detail the dollar amount of assets in the composite annually, as well as the number of accounts. Include all other composite footnotes.

1. For Fund performance measures, is debt marked to market? If not, please provide an account of portfolio performance with debt marked to market.

2. Is Fund accounting performed in house or by a third party vendor? If third party vendor, please provide the name of the auditor.

3. How soon after month/quarter/year end are Fund returns available?

4. Please provide a table with the Fund's gross and net performance by NCREIF-defined property type and geographic region in accordance with the Real Estate Information Standards published by NCREIF (if available).

5. Please provide a detailed summary of all previous funds and/or partnerships created by the Firm. Include the fund's inception year, strategy, total capital commitment, number of investments, number of properties, gross annualized IRR, gross multiple of equity invested, net annualized IRR, net multiple of equity invested for each fund/or partnership.



6. Provide a detailed summary of three recent investments by the Firm. Include a description of the investment, the fit of the investment within the overall portfolio strategy, the reasons for the investment, and the expected return of the investment. Include all relevant support documentation, such as industry analysis, comparable analysis, and multiple scenario analysis.

--

7. What elements of your strategy have had the greatest influence on returns?

--

X. FEES & RELATED MANAGEMENT COSTS

1. Please provide a management fee structure (in numbers and words) for the Fund. Include a sample fee schedule at the following asset levels:

--

Assets (Millions)	Fee
\$5	
10	
20	

2. Please detail (numbers and words) any incentive fee structure(s) associated with this Fund. Over what period is performance evaluated and against what benchmark? Is there a maximum fee (a cap)?

--

3. Please specify any additional fee structures according to the following categories:

--

Category	Fee
Acquisition	
Asset Management	
Disposition	
Incentive	
Other: (Detail)	

4. Do all clients pay the same fee? Please explain any discrepancies. Do you offer a Most Favored Nations (MFN) clause? If so, would you be willing to provide future clients a MFN?

--

5. How are fees paid? Are fees paid on the basis of committed, contributed, or invested capital?

--

6. Are there any other fees or expenses which will impact the client's returns? Please explain.

--

XI. SUPPLEMENTAL INFORMATION

1. Provide biographical information for each of the Fund's senior investment professionals.

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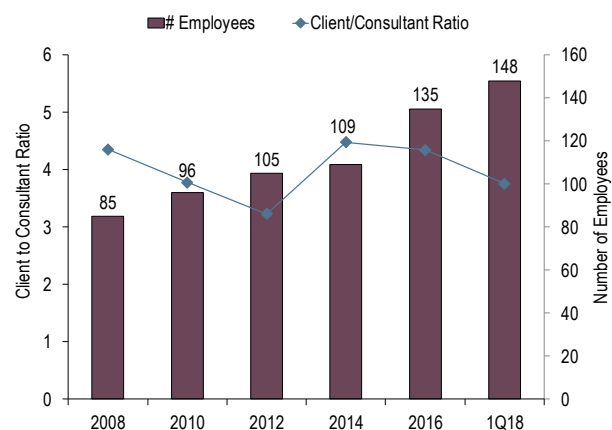
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2. Provide a copy of the Private Placement Memorandum for the Fund.
3. Provide one copy each of the "clean" version of the Limited Partnership Agreement for the Fund, and the "black lined" version of the Limited Partnership Agreement for the Fund against the prior Fund's agreement, if available.
4. Please provide the latest Investment Management Agreement, Operating Agreement, Subscription Agreement, and Contribution Agreement, if available.
5. Please provide the Fund's labor policy agreement or memo, if available.
6. Provide a copy of a recent new investor presentation for this Fund and the Firm, if available.
7. Please provide a sample of a recent market outlook or strategy letter to clients, as well as a sample client report for the proposed strategy (if available).
8. Provide a copy of opportunities that Manager is currently evaluating as prospective investments for the Fund.
9. Provide a copy of the Firm's internal investment memorandum created for each of the most recent investments.
10. Provide a copy of "Watch-list" investments.
11. Provide a copy of the Fund's valuation methodology.
12. Please provide a complete copy of your form ADV, and a statement of your financial condition.

Meketa Investment Group Corporate Update

- Staff of 148, including 98 investment professionals and 32 CFA Charterholders
- 169 clients, with over 290 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, Portland (OR), San Diego, and London
- We advise on over \$600 billion in client assets
 - Over \$90 billion in assets committed to alternative investments
 - Private Equity ▪ Infrastructure ▪ Natural Resources
 - Real Estate ▪ Hedge Funds ▪ Commodities

Client to Consultant Ratio



Client Retention Rate¹



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

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

Asset Classes Followed Intensively by Meketa Investment Group

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

Disclaimer, Glossary, and Notes

The material contained in this report is confidential and may not be reproduced, disclosed, or distributed, in whole or in part, to any person or entity other than the intended recipient. The data are provided for informational purposes only, may not be complete, and cannot be relied upon for any purpose other than for discussion.

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 Retirement System 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. 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.