



NEPC, LLC

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## **Vermont Pension Investment Committee**

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### **Third Fiscal Quarter 2017 Preliminary Investment Performance Analysis**

June 27, 2017

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# NEPC Update



# Highlights of First Quarter Happenings at NEPC

March 31, 2017

## NEPC Insights

- Will a Higher Fed Funds Rate Raise Long-Term Rates? (January 2017)
- 2016 4<sup>th</sup> Quarter Market Thoughts (January 2017)
- 2016 Q4 Endowment & Foundation Survey Results and Infographic (February 2017)
- The Times Are a Changin': NEPC's 2017 Annual Asset Allocation Letter (February 2017)
- NEPC's 2017 Healthcare Operating Fund Universe & Infographic (March 2017)
- The Fed's Masterful Move (March 2017)
- Fossil Fuel Divestment: Considerations for Institutional Portfolios (March 2017)
- Globalization Backlash – Europe's Political Roadmap (March 2017)
- Are Loose Personal Trading Policies at Hedge Funds A Red Flag? (March 2017)



MARK YOUR CALENDAR!



## Upcoming Events

NEPC's 22<sup>nd</sup> Annual Investment Conference will be held on May 9-10, 2017 at the InterContinental Hotel in Boston, MA.

This year's conference will focus on opportunities and threats in these uncertain political and economic times. In addition to the messages delivered by our exceptional keynote speakers, attendees will learn about asset allocation and investment ideas across the market spectrum. **Register today!**

<http://info.nepc.com/nepc-22nd-annual-investment-conference>

## Webinar Replays

- NEPC 2017 Market Outlook (January 2017)

To download NEPC's recent insights and webinar replays, visit: [www.NEPC.com/insights](http://www.NEPC.com/insights)

## Recent Updates

- Expanded Private Wealth business with two new NEPC Partners and three senior hires
- Opened new Private Wealth office in Portland, OR
- Launched updated NEPC website
- Collaborated with RiskFirst's Pension Risk Analytics platform, Pfaroe, to improve effectiveness of asset-liability strategies and ongoing monitoring
- **Named a "Greenwich Quality Leader" by Greenwich Associates. See [Greenwich.com](http://Greenwich.com) for more information.**



## NEPC Gives Back

Basketball teams made up of Boston's working professionals, Year Up students and alumni including two NEPC teams, participated in the Annual Year Up Basketball Tournament fundraising event. Year Up, is a nonprofit connecting low-income young adults with companies looking for talent. The program is a one-year, intensive training program providing hands-on skills development, coursework eligible for college credit, corporate internships, and wraparound support.

# Market Environment

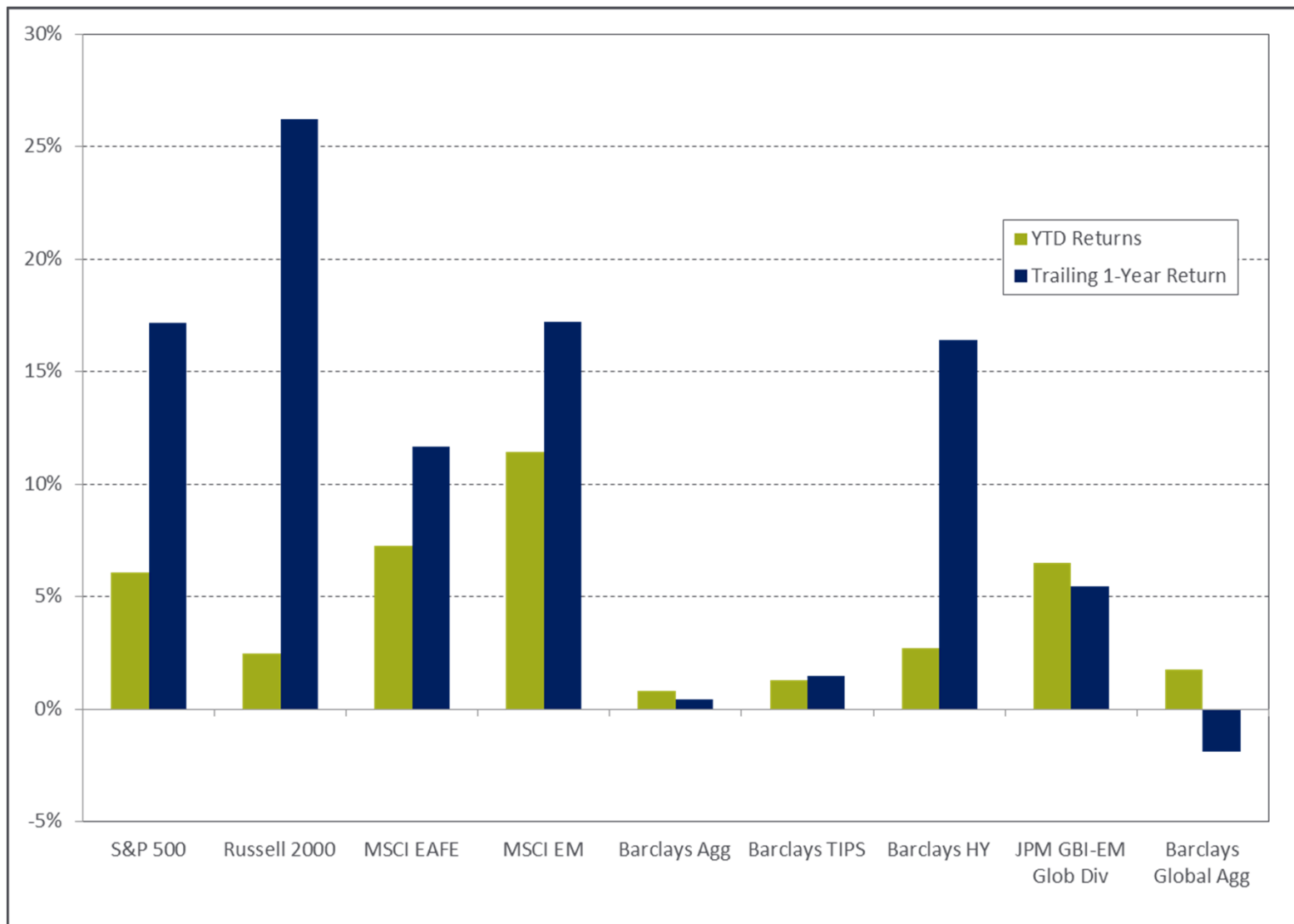


- **The US economy is experiencing an extended economic growth cycle**
  - Eight years removed from recession, US consumers continue to drive the US economy
  - Continued economic gains support positive but subdued risk asset returns
- **Federal Reserve monetary policy remains on a gradual normalization path**
  - Despite the March increase, the path for rate hikes appears subdued in 2017 and beyond
  - As the Fed looks to reduce its \$4.5 trillion balance sheet, clear messaging will be critical
  - Chair Yellen's uncertain tenure may stoke market unease as her term expires in Feb. 2018
- **Stimulative policies ease China's transition to a consumption led economy**
  - However, credit expansion and infrastructure spending risk inflating asset price bubbles
  - Central bank's yuan defense has been sizable but a rapid price fall remains a global tail-risk
- **Globalization backlash is disrupting the political and economic orthodoxy**
  - Anti-establishment political sentiment fuels a wider range of potential outcomes both at the polls (e.g. Europe) and in the actions of political leaders (e.g. US Trade Policy)
  - Capital market fundamentals are not materially altered but the associated risks of globalization backlash likely lead to larger price shifts among developed market currencies

## Current Opportunities

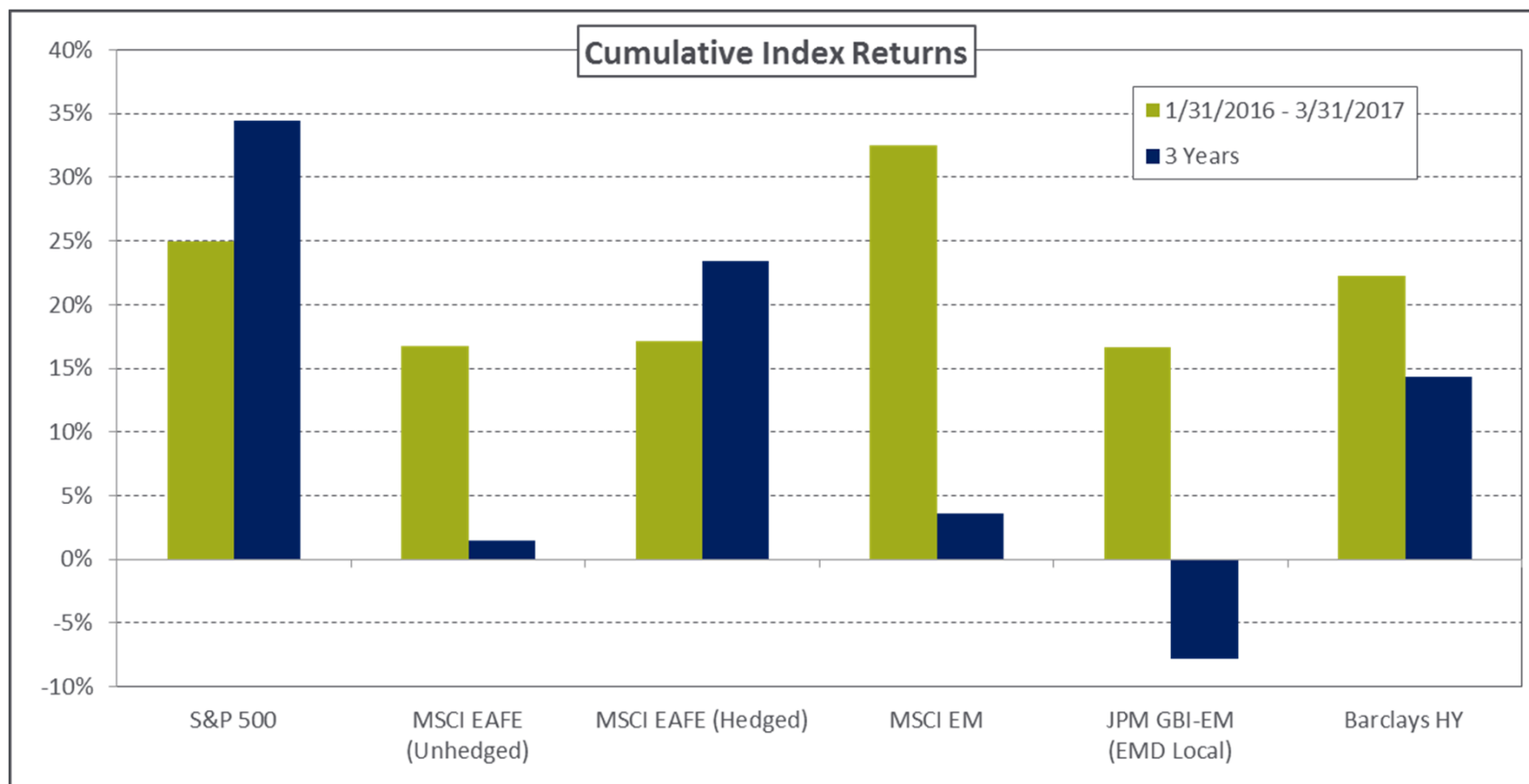
- **Trim US equity gains following a period of strong market returns**
  - Expanding valuations have driven recent gains with soft corporate earnings growth
- **Maintain overweight exposure to non-US developed market equities**
  - We believe markets offer an elevated return that compensates for Europe's political risk
- **Emerging market equities remain attractive and offer robust total returns**
  - Overweight small-cap and consumer focused strategies relative to broad mandates
- **Allocate to TIPS from core bonds as inflation expectations remain muted**
  - Duration exposure remains a critical asset allocation building block for a portfolio
- **Reduce high yield bond exposure for other credit strategies**
  - High yield credit spreads are less compelling but continue to benefit from high demand
- **For tactical investors, look to fund emerging local debt from risk assets**
  - Valuations for many emerging market currencies remain attractive despite the recent rally
- **Add macro hedge fund strategies for portfolio diversification benefits**
  - Systematic strategies tend to exhibit low correlation to equity markets

## Year to Date Performance: All Assets Have Moved Higher



Source: S&P, Russell, MSCI, Barclays, JPM, Bloomberg  
As of 03/31/2017

## Maintain a Disciplined Rebalance Approach



Source: S&P, MSCI, JPM, Barclays, Bloomberg  
As of 03/31/2017

- **US risk assets have outperformed expectations and we encourage investors to trim exposure to US equities and high yield**
- **We continue to recommend a strategic 50% currency hedge but US dollar gains over the last 3 years offer a rebalancing opportunity**



## Index Performance Summary as of 03/31/2017

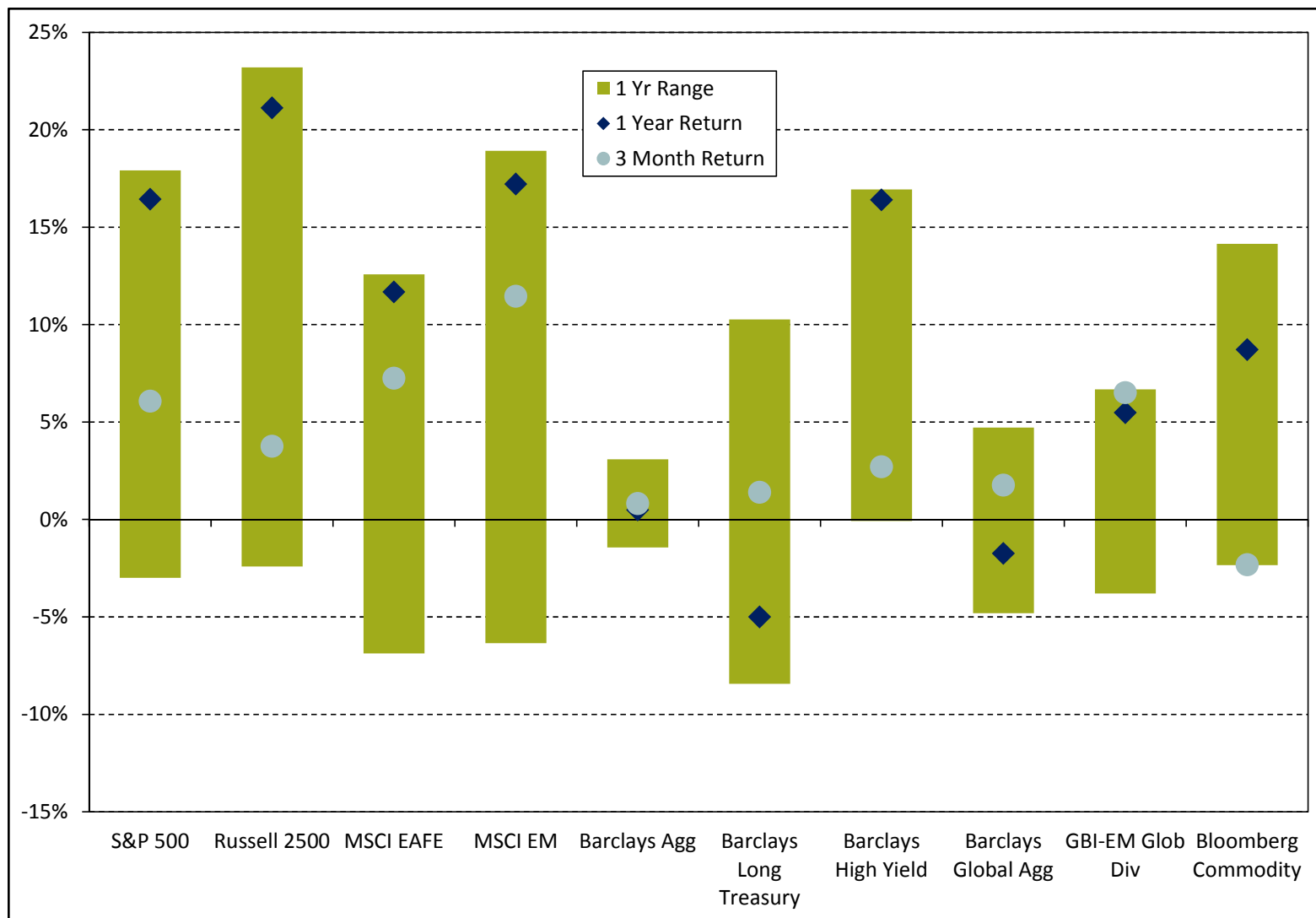
	2009	2010	2011	2012	2013	2014	2015	2016	Jan	Feb	Mar	YTD
<b>EM Equity</b>	78.5%	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	5.5%	3.1%	2.5%	11.4%
<b>Int'l Developed Equity</b>	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	2.9%	1.4%	2.8%	7.2%
<b>EM Local Credit</b>	22.0%	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	2.3%	1.8%	2.3%	6.5%
<b>US Large Cap</b>	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	1.9%	4.0%	0.1%	6.1%
<b>US Small/Mid Cap</b>	34.4%	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	1.4%	2.4%	-0.1%	3.8%
<b>US High Yield</b>	58.2%	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	1.5%	1.5%	-0.2%	2.7%
<b>Global Credit</b>	-6.5%	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	1.1%	0.5%	0.2%	1.8%
<b>US Long Treasuries</b>	-12.9%	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	0.4%	1.6%	-0.6%	1.4%
<b>US Credit</b>	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	0.2%	0.7%	-0.1%	0.8%
<b>Commodities</b>	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	0.1%	0.2%	-2.7%	-2.3%

S&P 500 = US Large Cap  
 Russell 2500 = US Small/Mid Cap  
 MSCI EAFE = International Developed Equity  
 MSCI EM = Emerging Market Equity  
 Barclays Agg = US Credit  
 Barclays Long Treasury = US Long Treasuries  
 Barclays High Yield = US HY  
 Barclays Global Agg = Global Credit  
 GBI-EM Global Diversified = EM Local Credit  
 Bloomberg Commodity = Commodities

Source: Bloomberg, Barclays, S&P, Russell, MSCI, JP Morgan, Credit Suisse

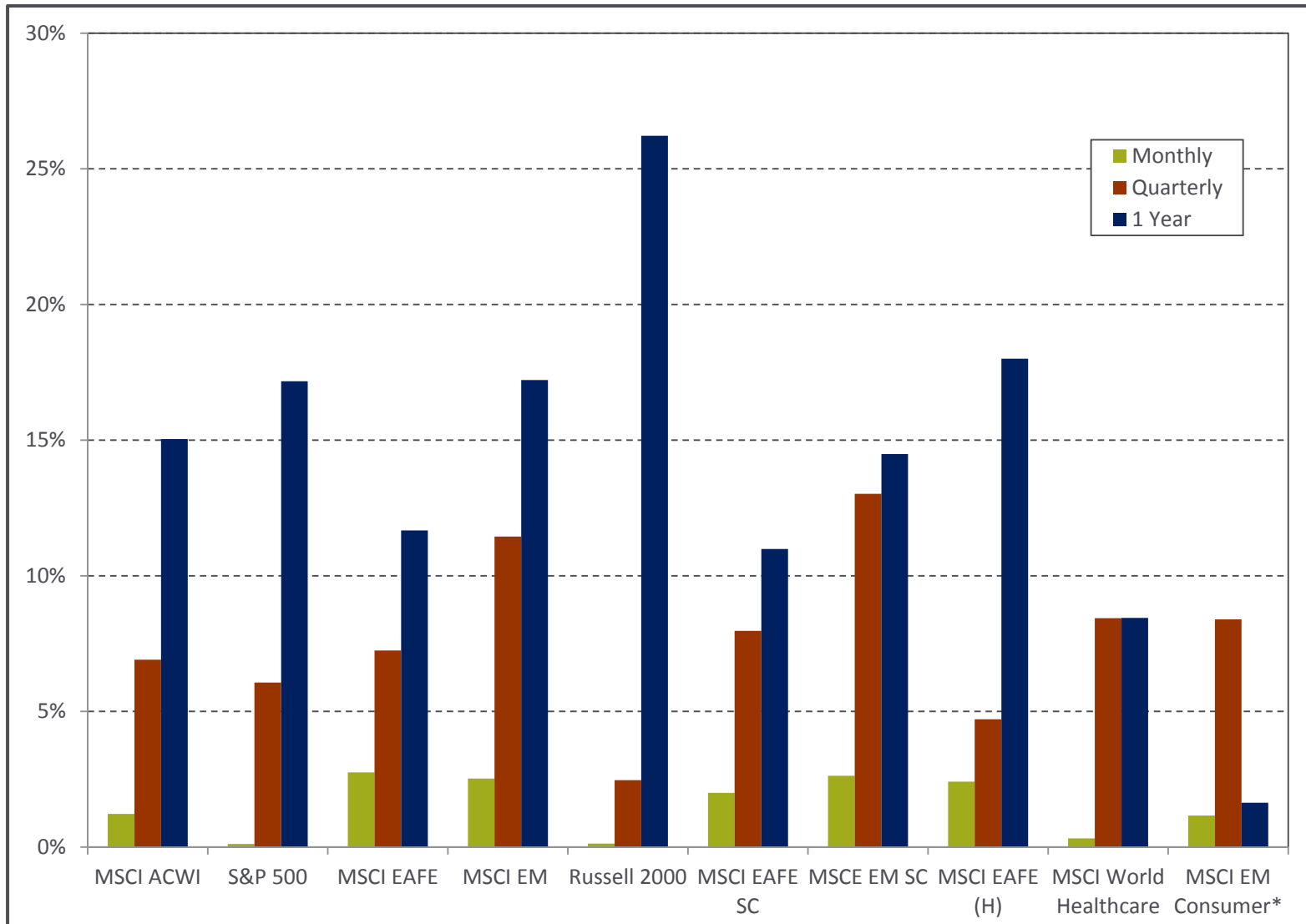


# Near Term Broad Market Performance Summary as of 03/31/2017



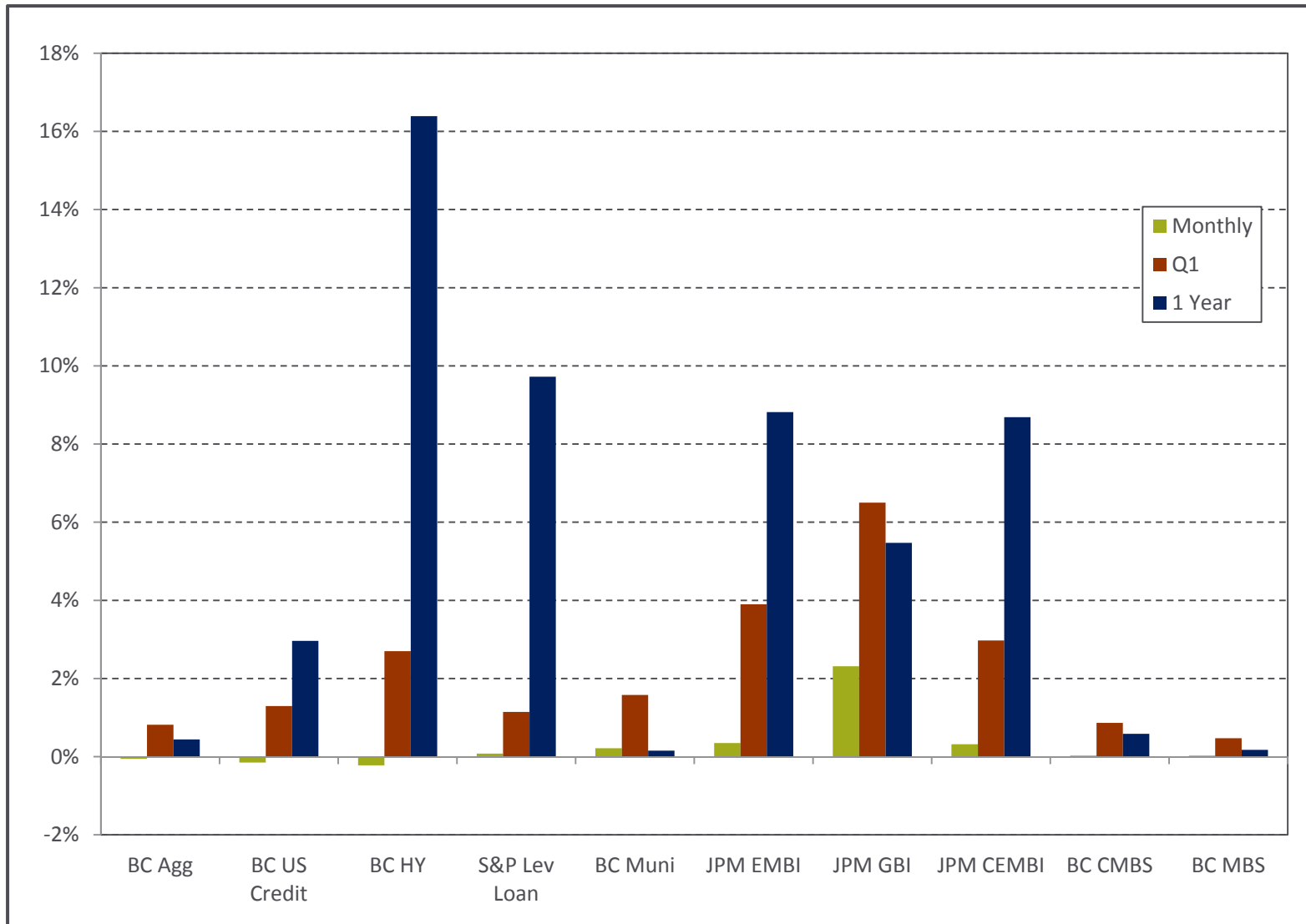
Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, JP Morgan  
 \*1 Yr Range: Represents range of cumulative high/low daily index returns for an investment made one year ago

# Equity Index Returns as of 03/31/2017



Source: MSCI, S&P, Russell, NEPC, Bloomberg

# Fixed Income Index Returns as of 03/31/2017



Source: Barclays, S&P, JPM, Bloomberg

# State Employees' Retirement System



# Vermont State Employees

## Total Fund Performance Summary - Net

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	7 Yrs	Rank	10 Yrs	Rank
<b>Employees Composite</b>	<b>\$1,698,575,114</b>	<b>4.1%</b>	<b>59</b>	<b>7.8%</b>	<b>75</b>	<b>11.0%</b>	<b>43</b>	<b>4.1%</b>	<b>83</b>	<b>5.8%</b>	<b>91</b>	<b>6.8%</b>	<b>80</b>	<b>4.2%</b>	<b>85</b>
<i>Policy Index</i>		3.5%	89	7.1%	86	9.7%	78	4.0%	86	5.6%	93	6.2%	94	4.3%	82
<i>Allocation Index</i>		3.9%	71	7.6%	81	10.2%	66	3.9%	88	5.6%	94	6.1%	95	4.3%	85
<i>InvestorForce Public DB Net Median</i>		4.2%		8.8%		10.8%		5.0%		7.2%		7.4%		5.1%	

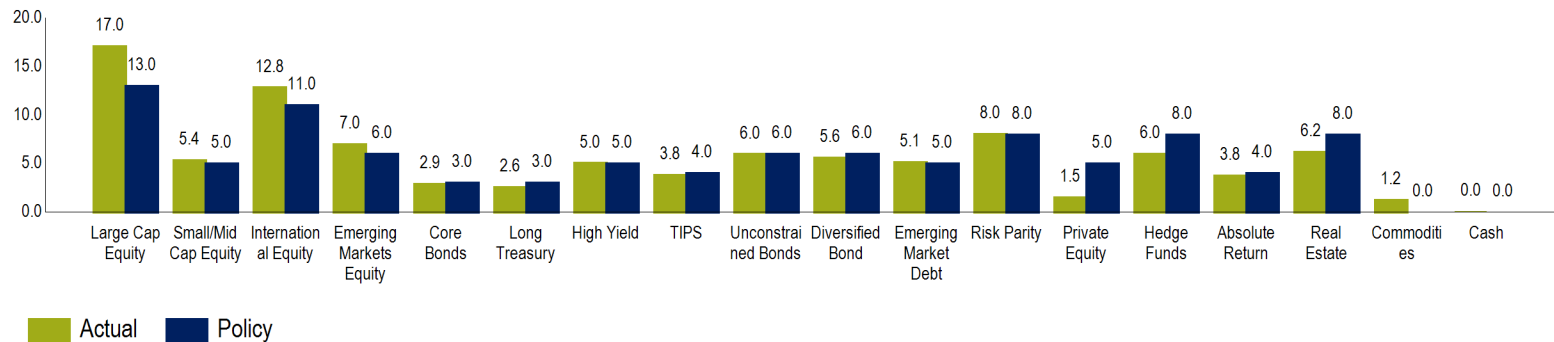
### 3 Years Ending March 31, 2017

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Employees Composite	4.10%	83	5.72%	28	0.69	73	1.20	56
Policy Index	4.04%	86	5.28%	11	0.73	65	1.29	43
Allocation Index	3.89%	88	5.50%	21	0.68	75	1.15	64

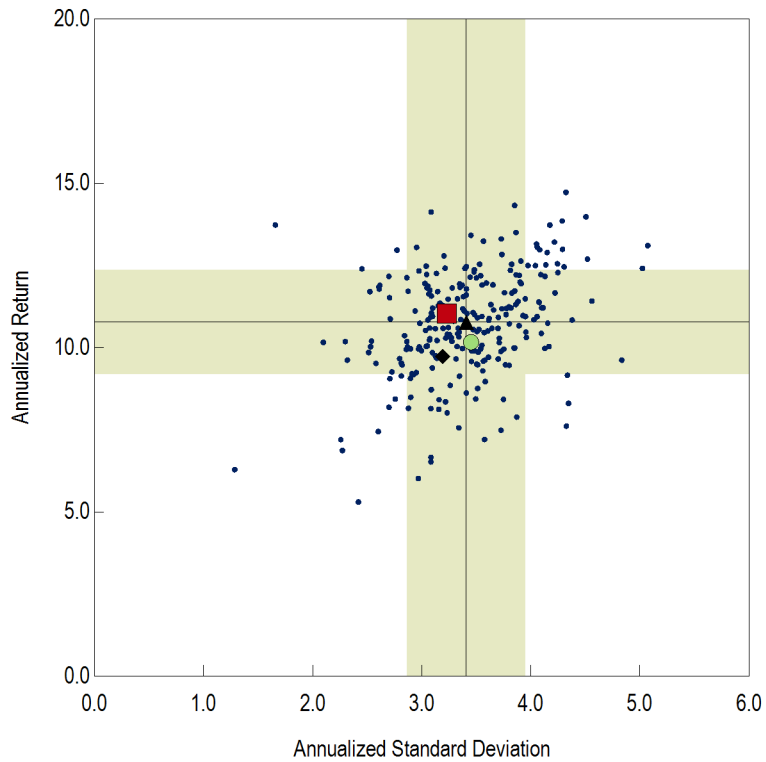
### 5 Years Ending March 31, 2017

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Employees Composite	5.84%	91	5.89%	32	0.97	81	1.59	65
Policy Index	5.61%	93	5.51%	18	1.00	77	1.57	67
Allocation Index	5.56%	94	5.61%	22	0.97	82	1.48	74

### Actual vs Target Allocation (%)



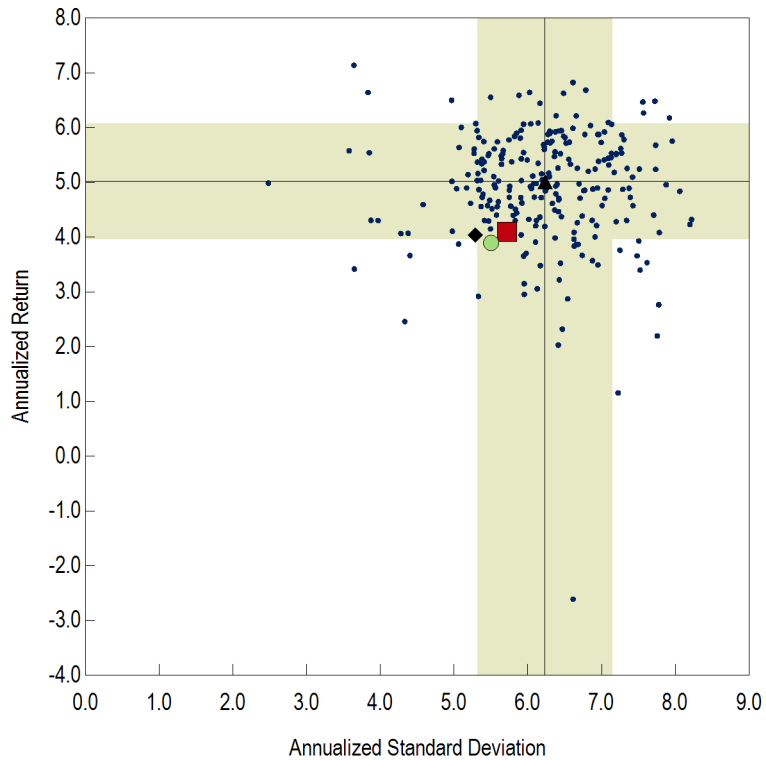
1 Year Ending March 31, 2017



1 Year Ending March 31, 2017

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Employees Composite	11.04%	43	3.23%	38	3.30	31
Policy Index	9.73%	78	3.19%	35	2.93	59
S&P 500	17.17%	1	6.24%	99	2.69	78
Citi WGBI	-3.65%	99	7.60%	99	-0.53	99
MSCI ACWI	15.04%	1	5.69%	99	2.58	85
MSCI ACWI ex USA	13.13%	5	8.13%	99	1.57	99
InvestorForce Public DB Net Median	10.78%	--	3.41%	--	3.02	--

3 Years Ending March 31, 2017



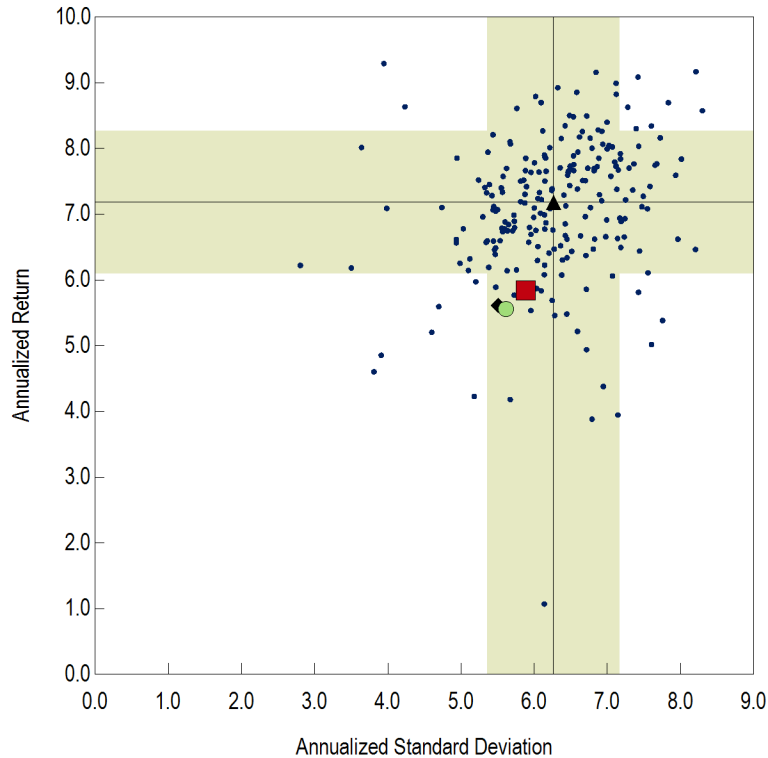
- Employees Composite
- ◆ Policy Index
- Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Net

3 Years Ending March 31, 2017

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Employees Composite	4.10%	83	5.72%	28	0.69	73
Policy Index	4.04%	86	5.28%	11	0.73	65
S&P 500	10.37%	1	10.41%	99	0.98	11
Citi WGBI	-1.20%	99	5.90%	34	-0.23	99
MSCI ACWI	5.08%	48	10.79%	99	0.45	97
MSCI ACWI ex USA	0.56%	99	12.35%	99	0.03	99
InvestorForce Public DB Net Median	5.02%	--	6.23%	--	0.79	--



5 Years Ending March 31, 2017

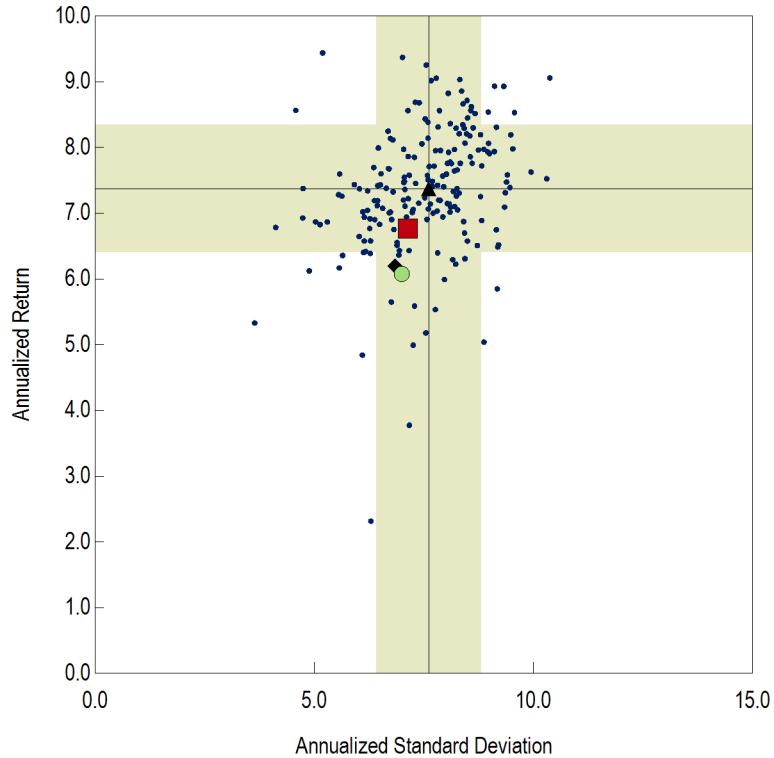


- Employees Composite
- ◆ Policy Index
- Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Net

5 Years Ending March 31, 2017

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Employees Composite	5.84%	91	5.89%	32	0.97	81
Policy Index	5.61%	93	5.51%	18	1.00	77
S&P 500	13.30%	1	10.20%	99	1.29	15
Citi WGBI	-0.58%	99	5.29%	10	-0.13	99
MSCI ACWI	8.37%	9	11.06%	99	0.75	97
MSCI ACWI ex USA	4.36%	98	12.93%	99	0.33	99
InvestorForce Public DB Net Median	7.18%	--	6.26%	--	1.13	--

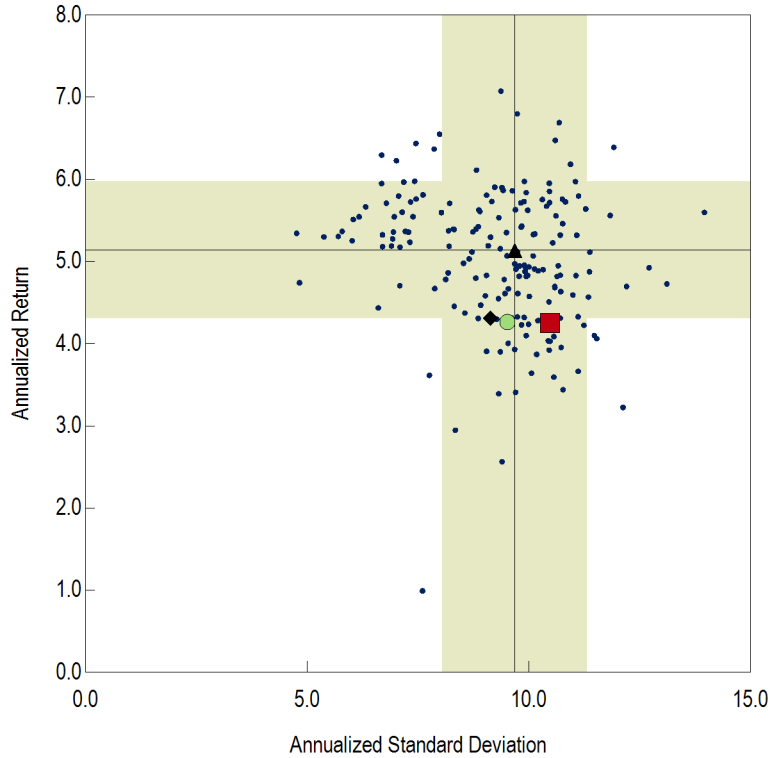
7 Years Ending March 31, 2017



7 Years Ending March 31, 2017

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Employees Composite	6.77%	80	7.13%	37	0.93	64
Policy Index	6.20%	94	6.84%	28	0.89	73
S&P 500	12.94%	1	12.44%	99	1.03	35
Citi WGBI	1.31%	99	5.68%	8	0.21	99
MSCI ACWI	7.81%	31	13.69%	99	0.56	99
MSCI ACWI ex USA	3.82%	99	15.52%	99	0.24	99
InvestorForce Public DB Net Median	7.37%	--	7.61%	--	0.97	--

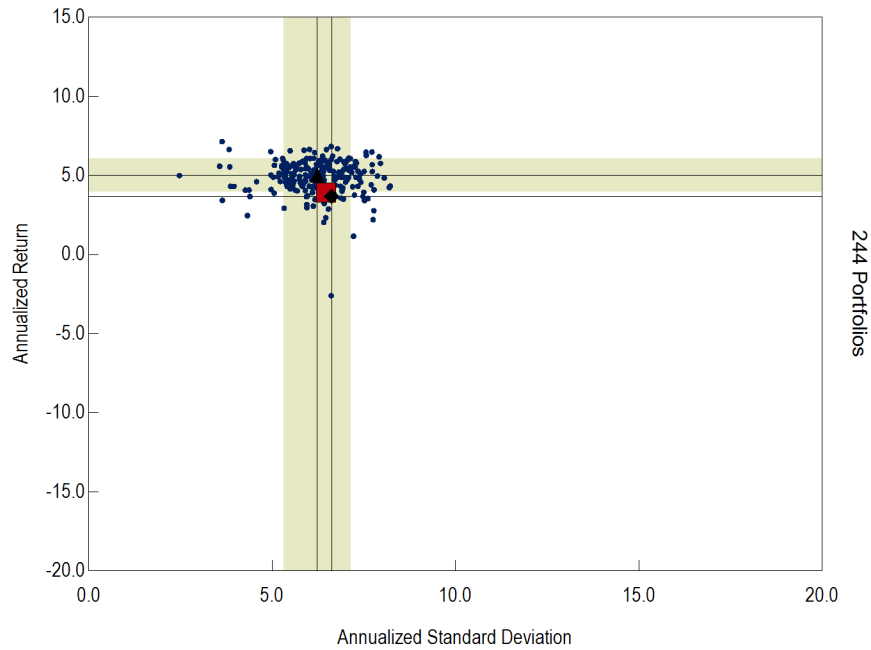
10 Years Ending March 31, 2017



10 Years Ending March 31, 2017

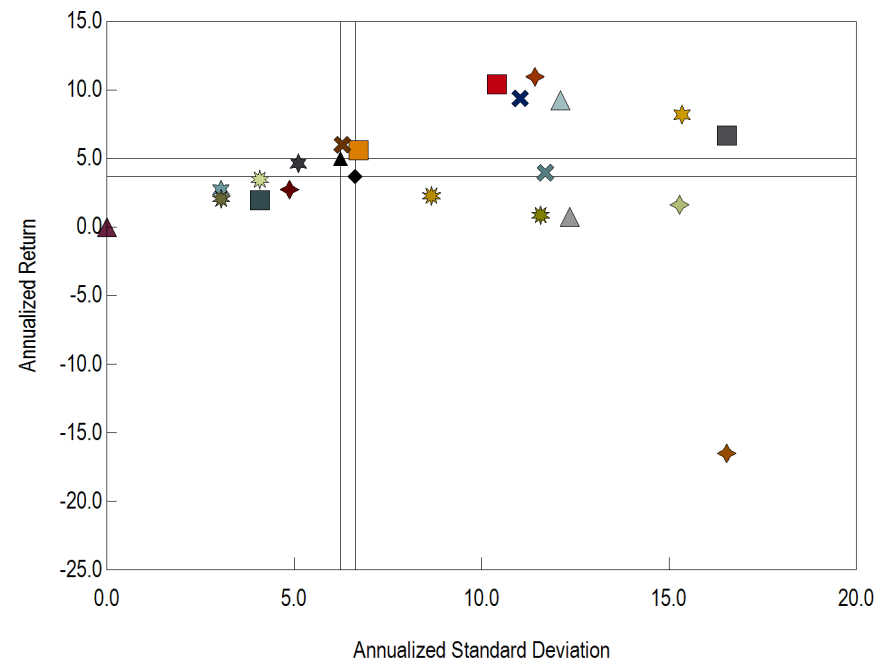
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank
Employees Composite	4.25%	85	10.47%	77	0.35	86
Policy Index	4.31%	82	9.13%	38	0.41	71
S&P 500	7.51%	1	15.30%	99	0.46	56
Citi WGBI	3.03%	99	6.82%	9	0.37	83
MSCI ACWI	4.00%	91	17.01%	99	0.20	99
MSCI ACWI ex USA	1.35%	99	19.17%	99	0.04	99
InvestorForce Public DB Net Median	5.14%	--	9.67%	--	0.48	--

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending March 31, 2017



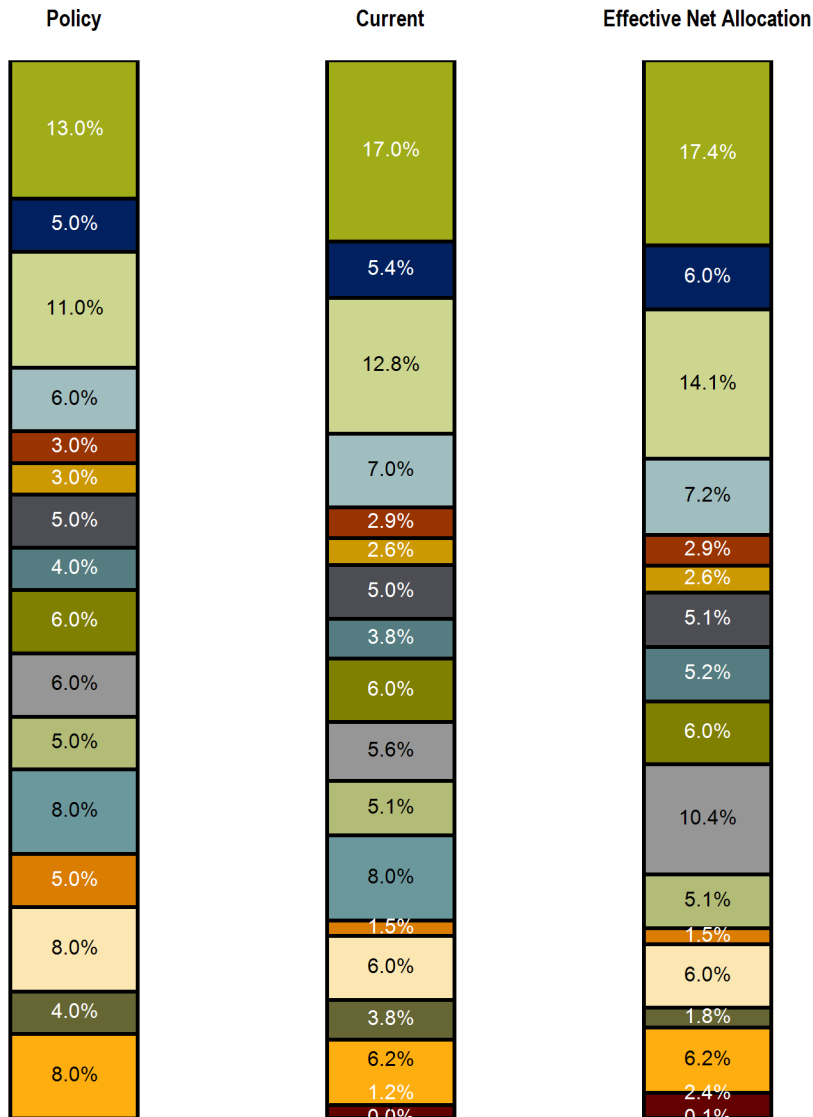
- Total Marketable Assets
- ◆ Total Marketable Assets Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Net

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending March 31, 2017



- SSgA S&P 500 Cap-Wgt
- ◆ SSgA S&P 500 Equal-Wgt
- ▲ T. Rowe
- ▲ SSgA S&P 400
- ◆ Champlain
- Wellington
- SSgA Russell 2000 Growth
- ◆ Acadian
- ◆ Mondrian
- ▲ SSgA ACWI Ex US
- ◆ Aberdeen
- ◆ PIMCO Core Plus
- Wellington DAS
- ◆ PIMCO Unconstrained
- ◆ KDP
- ◆ Guggenheim
- BlackRock TIPS
- ◆ Wellington Opportunistic EMD
- ◆ AQR Global Risk Premium
- ▲ Vermont Cash
- ◆ Schroder
- ◆ Total Marketable Assets Custom Index
- ▲ Universe Median
- 68% Confidence Interval

Total Fund Asset Allocation vs. Policy Targets



Asset Allocation vs. Target

	Policy	Current	Effective Net Allocation
Large Cap Equity	13.0%	17.0%	17.4%
Small/Mid Cap Equity	5.0%	5.4%	6.0%
International Equity	11.0%	12.8%	14.1%
Emerging Markets Equity	6.0%	7.0%	7.2%
Core Bonds	3.0%	2.9%	2.9%
Long Treasury	3.0%	2.6%	2.6%
High Yield	5.0%	5.0%	5.1%
TIPS	4.0%	3.8%	5.2%
Unconstrained Bonds	6.0%	6.0%	6.0%
Diversified Bond	6.0%	5.6%	10.4%
Emerging Market Debt	5.0%	5.1%	5.1%
Risk Parity	8.0%	8.0%	--
Private Equity	5.0%	1.5%	1.5%
Hedge Funds	8.0%	6.0%	6.0%
Absolute Return	4.0%	3.8%	1.8%
Real Estate	8.0%	6.2%	6.2%
Commodities	--	1.2%	2.4%
Cash	--	0.0%	0.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

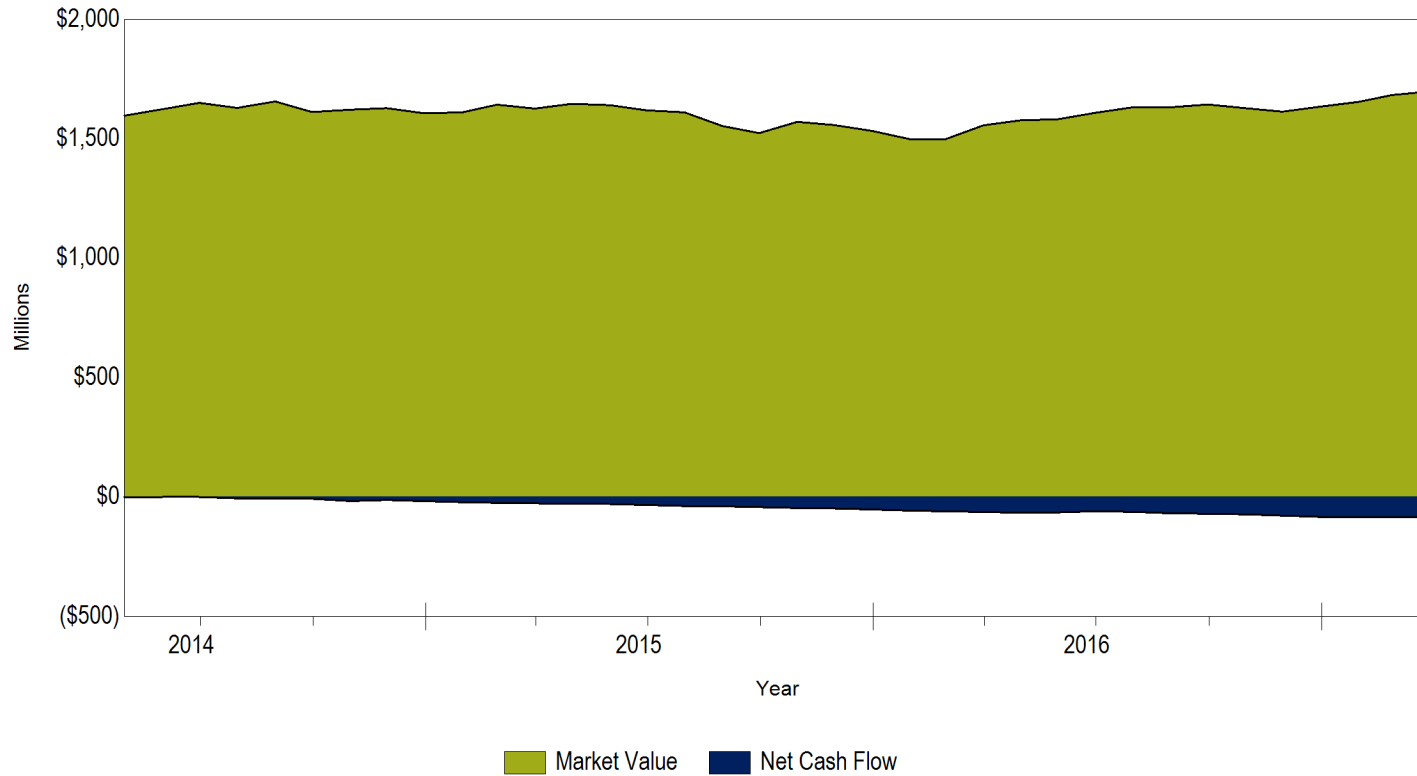
Effective Net Allocation breaks out the exposures of AQR Global Risk Premium and Mellon Dynamic Growth.

Hedge Funds include Grosvenor and Pinnacle Natural Resources, L.P.

Absolute Return includes Mellon Dynamic Growth and Allianz Structured Alpha.

Total Fund Asset Growth Summary

3 Years Ending March 31, 2017



	Last Three Months	Fiscal Year-To-Date	One Year	Three Years
Beginning Market Value	\$1,632,919,571	\$1,608,681,493	\$1,556,516,207	\$1,586,851,080
Contributions	\$9,533,826	\$46,667,357	\$92,570,574	\$666,136,150
Withdrawals	-\$11,793,960	-\$72,795,997	-\$115,602,975	-\$752,247,418
Net Cash Flow	-\$2,260,134	-\$26,128,640	-\$23,032,401	-\$86,111,268
Net Investment Change	\$67,915,677	\$116,022,262	\$165,091,308	\$197,835,302
Ending Market Value	\$1,698,575,114	\$1,698,575,114	\$1,698,575,114	\$1,698,575,114

## Vermont State Employees

### Total Fund Asset Growth Summary by Manager

	Quarter Ending March 31, 2017					Ending Market Value
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	
Aberdeen	\$105,586,934	\$200,273	-\$200,273	\$0	\$12,547,979	\$118,134,913
Acadian	\$65,532,793	\$81,458	-\$81,458	\$0	\$6,681,693	\$72,214,486
Allianz Structured Alpha	\$30,807,235	\$0	-\$159,482	-\$159,482	\$440,437	\$31,088,191
AQR Global Risk Premium	\$130,162,689	\$130,895	-\$130,895	\$0	\$6,083,823	\$136,246,511
BlackRock TIPS	\$63,843,883	\$11,749	-\$11,749	\$0	\$821,828	\$64,665,711
Champlain	\$34,326,145	\$69,618	-\$69,618	\$0	\$1,968,102	\$36,294,247
GAM	\$165,487	\$0	\$0	\$0	-\$14	\$165,474
GAM Unconstrained Bond	\$57,461,533	\$0	-\$77,440	-\$77,440	\$1,845,672	\$59,229,765
Grosvenor	\$78,886,690	\$0	\$0	\$0	\$1,413,145	\$80,299,835
Guggenheim	\$67,097,224	\$79,386	-\$79,386	\$0	\$1,432,531	\$68,529,755
Harbourvest Dover Street Fund IX	\$851,658	\$670,347	\$0	\$670,347	\$0	\$1,522,005
Harbourvest Dover VIII Fund	\$7,490,900	\$0	\$0	\$0	\$0	\$7,490,900
Harbourvest Partners IX Buyout Fund	\$6,376,993	\$0	\$0	\$0	\$0	\$6,376,993
Harbourvest Partners IX Credit Opportunities	\$923,605	\$0	\$0	\$0	\$0	\$923,605
Harbourvest Partners IX Venture Fund	\$4,579,596	\$0	\$0	\$0	\$0	\$4,579,596
Harbourvest Partners X Buyout Fund	\$1,853,230	\$0	\$0	\$0	\$0	\$1,853,230
Harbourvest Partners X Venture Fund	\$879,348	\$0	\$0	\$0	\$0	\$879,348
HIPEP VII	\$1,715,967	\$130,719	\$0	\$130,719	\$0	\$1,846,686
KDP	\$16,794,035	\$27,254	-\$27,254	\$0	\$317,066	\$17,111,101
Mellon Dynamic Growth	\$31,970,103	\$51,116	-\$51,116	\$0	\$977,656	\$32,947,759
Mondrian	\$64,772,895	\$61,911	-\$61,911	\$0	\$4,883,244	\$69,656,139
Morgan Stanley Prime Property	\$47,250,978	\$0	-\$99,227	-\$99,227	\$1,008,778	\$48,160,530
PIMCO Core Plus	\$93,650,419	\$66,622	-\$66,622	\$0	\$1,537,056	\$95,187,475
PIMCO Unconstrained	\$41,176,125	\$61,910	-\$61,910	\$0	\$919,493	\$42,095,618
Pinnacle Natural Resources, L.P.	\$16,663,707	\$7,303,335	\$0	\$7,303,335	-\$2,168,422	\$21,798,620

## Vermont State Employees

### Total Fund Asset Growth Summary by Manager

	Beginning Market Value	Contributions	Quarter Ending March 31, 2017			Ending Market Value
			Withdrawals	Net Cash Flow	Net Investment Change	
RREEF America REIT III	\$206,798	\$0	-\$645	-\$645	-\$888	\$205,264
Schroder	\$28,603,461	\$73,211	-\$7,376,546	-\$7,303,335	-\$532,724	\$20,767,402
Siguler Guff DREOF II	\$12,557,579	\$84,178	-\$8,067	\$76,111	\$477,744	\$13,111,434
Siguler Guff DREOF II Co-Investment	\$3,518,523	\$217,291	\$0	\$217,291	\$130,311	\$3,866,124
SSgA ACWI Ex US	\$70,315,578	\$12,326	-\$12,326	\$0	\$5,583,758	\$75,899,336
SSgA Barclays Aggregate Index	\$49,277,926	\$6,117	-\$6,117	\$0	\$403,306	\$49,681,232
SSgA Russell 2000 Growth	\$7,656,789	\$1,607	-\$1,607	\$0	\$417,979	\$8,074,767
SSgA S&P 400	\$9,423,005	\$1,337	-\$1,337	\$0	\$370,133	\$9,793,138
SSgA S&P 500 Cap-Wgt	\$204,135,359	\$15,826	-\$2,015,826	-\$2,000,000	\$12,317,964	\$214,453,323
SSgA S&P 500 Equal-Wgt	\$71,369,839	\$7,495	-\$7,495	\$0	\$3,753,468	\$75,123,307
T. Rowe	\$3,085	\$0	\$0	\$0	\$0	\$3,085
Transwestern / Aslan III	\$102,653	\$0	\$0	\$0	\$0	\$102,653
UBS Trumbull	\$39,165,406	\$94,818	-\$94,818	\$0	\$450,926	\$39,616,332
Vermont Cash	\$1,790,238	\$0	-\$1,017,809	-\$1,017,809	\$0	\$772,429
Wellington	\$37,435,361	\$73,025	-\$73,025	\$0	-\$449,049	\$36,986,312
Wellington DAS	\$42,746,674	\$0	\$0	\$0	\$780,191	\$43,526,865
Wellington Opportunistic EMD	\$83,791,125	\$0	\$0	\$0	\$3,502,491	\$87,293,616
<b>Total</b>	<b>\$1,632,919,571</b>	<b>\$9,533,826</b>	<b>-\$11,793,960</b>	<b>-\$2,260,134</b>	<b>\$67,915,677</b>	<b>\$1,698,575,114</b>



# Vermont State Employees

## Total Fund Performance Detail - Net

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Employees Composite</b>	<b>1,698,575,114</b>	<b>100.0</b>	<b>100.0</b>	<b>4.1</b>	<b>59</b>	<b>7.8</b>	<b>75</b>	<b>11.0</b>	<b>43</b>	<b>4.1</b>	<b>83</b>	<b>5.8</b>	<b>91</b>	<b>4.2</b>	<b>85</b>
<i>Policy Index</i>				3.5	89	7.1	86	9.7	78	4.0	86	5.6	93	4.3	82
<i>Allocation Index</i>				3.9	71	7.6	81	10.2	66	3.9	88	5.6	94	4.3	85
<i>InvestorForce Public DB Net Median</i>				4.2		8.8		10.8		5.0		7.2		5.1	
<b>Total Marketable Assets</b>	<b>1,401,740,535</b>	<b>82.5</b>	<b>--</b>	<b>4.8</b>	<b>18</b>	<b>8.4</b>	<b>59</b>	<b>11.9</b>	<b>23</b>	<b>3.9</b>	<b>88</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Total Marketable Assets Custom Index</i>				4.1	59	7.6	80	10.3	60	3.7	91	--	--	--	--
<i>InvestorForce Public DB Net Median</i>				4.2		8.8		10.8		5.0		7.2		5.1	
<b>US Equity</b>	<b>380,728,179</b>	<b>22.4</b>	<b>18.0</b>	<b>5.0</b>	<b>47</b>	<b>14.8</b>	<b>56</b>	<b>17.9</b>	<b>47</b>	<b>9.7</b>	<b>22</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Russell 3000</i>				5.7	38	15.0	53	18.1	45	9.8	21	13.2	29	7.5	48
<i>eA All US Equity Net Median</i>				4.8		15.3		17.4		7.9		12.1		7.5	
<b>Large Cap Comp</b>	<b>289,579,715</b>	<b>17.0</b>	<b>13.0</b>	<b>5.9</b>	<b>48</b>	<b>14.4</b>	<b>46</b>	<b>17.3</b>	<b>32</b>	<b>10.1</b>	<b>18</b>	<b>13.5</b>	<b>14</b>	<b>8.1</b>	<b>29</b>
<i>S&amp;P 500</i>				6.1	44	14.4	47	17.2	34	10.4	14	13.3	18	7.5	44
<i>eA US Large Cap Equity Net Median</i>				5.6		14.0		15.5		8.3		11.9		7.3	
<i>SSgA S&amp;P 500 Cap-Wgt</i>	214,453,323	12.6	10.0	6.1	44	14.4	46	17.2	33	10.4	14	13.3	18	--	--
<i>S&amp;P 500</i>				6.1	44	14.4	47	17.2	34	10.4	14	13.3	18	7.5	44
<i>SSgA S&amp;P 500 Equal-Wgt</i>	75,123,307	4.4	3.0	5.2	57	14.3	47	17.4	31	9.4	31	13.9	9	8.3	23
<i>S&amp;P 500 Equal Weighted</i>				5.4	54	14.4	46	17.4	31	9.6	28	14.0	7	8.7	17
<i>T. Rowe</i>	3,085	0.0	0.0												
<b>Small/Mid Cap Comp</b>	<b>91,148,464</b>	<b>5.4</b>	<b>5.0</b>	<b>2.4</b>	<b>79</b>	<b>16.2</b>	<b>49</b>	<b>20.2</b>	<b>35</b>	<b>9.3</b>	<b>18</b>	<b>13.3</b>	<b>22</b>	<b>8.5</b>	<b>30</b>
<i>Russell 2000</i>				2.5	79	21.6	19	26.2	8	7.2	39	12.4	37	7.1	68
<i>eA US Small-Mid Cap Equity Net Median</i>				4.2		15.9		18.7		6.6		11.6		7.9	
<i>SSgA S&amp;P 400</i>	9,793,138	0.6	0.5	3.9	72	16.2	30	20.8	20	9.3	21	13.3	26	--	--
<i>S&amp;P 400 MidCap</i>				3.9	71	16.3	29	20.9	17	9.4	20	13.3	26	9.0	26
<i>eA US Mid Cap Equity Net Median</i>				5.3		13.9		16.2		7.7		12.1		8.2	
<i>Champlain</i>	36,294,247	2.1	2.0	5.5	48	15.7	34	22.7	7	11.0	6	14.0	17	--	--
<i>Russell 2500</i>				3.8	76	17.3	23	21.5	14	7.4	55	12.6	36	7.7	60
<i>eA US Mid Cap Equity Net Median</i>				5.3		13.9		16.2		7.7		12.1		8.2	

# Vermont State Employees

## Total Fund Performance Detail - Net

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Wellington	36,986,312	2.2	2.0	-1.4	86	15.8	88	16.5	92	8.2	39	12.6	49	8.6	19
<i>Russell 2000 Value</i>				-0.1	64	24.0	21	29.4	14	7.6	52	12.5	51	6.1	81
<i>eA US Small Cap Value Equity Net Median</i>				0.5		21.2		23.4		7.7		12.6		7.3	
SSgA Russell 2000 Growth	8,074,767	0.5	0.5	5.4	57	19.3	40	23.1	47	6.7	45	12.0	48	8.0	48
<i>Russell 2000 Growth</i>				5.3	58	19.2	40	23.0	49	6.7	44	12.1	46	8.1	46
<i>eA US Small Cap Growth Equity Net Median</i>				6.1		18.3		22.4		6.3		11.9		7.9	
<b>Int'l Equity Comp</b>	<b>217,769,961</b>	<b>12.8</b>	<b>11.0</b>	<b>8.5</b>	<b>25</b>	<b>14.5</b>	<b>32</b>	<b>14.6</b>	<b>17</b>	<b>1.9</b>	<b>41</b>	<b>7.0</b>	<b>42</b>	<b>1.4</b>	<b>69</b>
<i>MSCI EAFE</i>				7.2	59	13.3	43	11.7	44	0.5	74	5.8	70	1.1	76
<i>eA All EAFE Equity Net Median</i>				7.5		12.8		11.0		1.4		6.8		2.3	
Acadian	72,214,486	4.3	4.0	10.1	6	18.4	9	19.0	3	4.0	15	9.2	18	1.5	65
Mondrian	69,656,139	4.1	4.0	7.4	54	11.2	65	11.6	45	0.9	62	6.1	64	1.8	61
<i>MSCI EAFE</i>				7.2	59	13.3	43	11.7	44	0.5	74	5.8	70	1.1	76
SSgA ACWI Ex US	75,899,336	4.5	3.0	7.9	56	14.0	36	13.4	40	0.8	60	4.6	82	--	--
<i>MSCI ACWI ex USA</i>				7.9	63	13.9	37	13.1	43	0.6	63	4.4	82	1.4	72
<i>eA ACWI ex-US All Cap Equity Net Median</i>				8.5		12.0		11.5		1.4		6.2		2.6	
<b>Emerging Market Comp</b>	<b>118,134,913</b>	<b>7.0</b>	<b>6.0</b>	<b>11.7</b>	<b>62</b>	<b>11.6</b>	<b>74</b>	<b>16.2</b>	<b>59</b>	<b>1.6</b>	<b>60</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Aberdeen	118,134,913	7.0	6.0	11.7	62	11.6	74	16.2	59	1.6	60	1.7	63	--	--
<i>MSCI Emerging Markets</i>				11.4	68	16.4	41	17.2	51	1.2	65	0.8	80	2.7	67
<i>eA Emg Mkts Equity Net Median</i>				12.2		15.2		17.2		2.1		2.1		3.4	
<b>US Fixed Income</b>	<b>440,027,523</b>	<b>25.9</b>	<b>27.0</b>	<b>1.8</b>	<b>22</b>	<b>2.2</b>	<b>25</b>	<b>5.0</b>	<b>27</b>	<b>3.7</b>	<b>27</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BBgBarc US Aggregate TR</i>				0.8	65	-1.7	84	0.4	80	2.7	52	2.3	61	4.3	54
<i>eA All US Fixed Inc Net Median</i>				1.1		0.0		1.7		2.7		2.9		4.4	
<b>Diversified Fixed</b>	<b>289,720,955</b>	<b>17.1</b>	<b>18.0</b>	<b>1.9</b>	<b>20</b>	<b>0.6</b>	<b>35</b>	<b>3.0</b>	<b>37</b>	<b>3.7</b>	<b>27</b>	<b>3.2</b>	<b>44</b>	<b>3.8</b>	<b>66</b>
<i>BBgBarc US Aggregate TR</i>				0.8	65	-1.7	84	0.4	80	2.7	52	2.3	61	4.3	54
<i>eA All US Fixed Inc Net Median</i>				1.1		0.0		1.7		2.7		2.9		4.4	
PIMCO Core Plus	95,187,475	5.6	6.0	1.6	3	-0.5	21	1.8	26	2.7	54	2.5	61	--	--
<i>BBgBarc US Aggregate TR</i>				0.8	66	-1.7	74	0.4	74	2.7	60	2.3	73	4.3	77
Wellington DAS	43,526,865	2.6	3.0	1.8	2	-6.1	99	-2.8	99	5.6	1	5.1	2	--	--
<i>Wellington Custom Benchmark*</i>				1.4	3	-6.5	99	-2.8	99	4.5	3	3.4	15	5.6	7

\*Wellington Custom Benchmark is comprised of equal weighted zero coupon bonds targeting a 10 year duration. Instruments include swaps from 7/1/07 thru 12/18/08, swaps and US Treasury STRIPS from 12/19/08 thru 12/29/08, and US Treasury STRIPS since 12/30/08.

# Vermont State Employees

## Total Fund Performance Detail - Net

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
SSgA Barclays Aggregate Index	49,681,232	2.9	3.0	0.8	68	-1.8	76	0.4	74	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>				0.8	66	-1.7	74	0.4	74	2.7	60	2.3	73	4.3	77
<i>3-Month Libor Total Return USD</i>				0.3	99	0.7	4	0.9	55	0.5	99	0.4	99	1.1	99
<i>eA US Core Fixed Inc Net Median</i>				0.9		-1.3		1.1		2.8		2.6		4.5	
<b>Unconstrained Fixed Income</b>	<b>101,325,383</b>	<b>6.0</b>	<b>6.0</b>	<b>2.7</b>	<b>40</b>	<b>6.3</b>	<b>29</b>	<b>8.3</b>	<b>32</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>25% HY, 25% EMD, 50% BC Agg</i>				2.1	61	2.4	73	6.4	58	4.0	11	4.2	35	5.8	20
<i>BBgBarc Global Aggregate TR</i>				1.8	70	-4.7	99	-1.9	99	-0.4	92	0.4	93	3.3	91
<i>eA Global Unconstrained Fixed Inc Net Median</i>				2.3		5.1		7.1		2.5		3.6		5.2	
PIMCO Unconstrained	42,095,618	2.5	2.5	2.1	61	6.0	33	7.9	35	2.1	66	1.5	91	--	--
<i>25% HY, 25% EMD, 50% BC Agg</i>				2.1	61	2.4	73	6.4	58	4.0	11	4.2	35	5.8	20
<i>3-Month Libor Total Return USD</i>				0.3	99	0.7	94	0.9	95	0.5	86	0.4	93	1.1	99
GAM Unconstrained Bond	59,229,765	3.5	3.5	3.1	30	6.4	27	8.7	31	--	--	--	--	--	--
<i>3-Month LIBOR + 3%</i>				1.0	93	3.0	69	3.9	76	3.5	20	3.4	54	4.1	76
<i>eA Global Unconstrained Fixed Inc Net Median</i>				2.3		5.1		7.1		2.5		3.6		5.2	
<b>High Yield Comp</b>	<b>85,640,857</b>	<b>5.0</b>	<b>5.0</b>	<b>2.0</b>	<b>74</b>	<b>9.8</b>	<b>38</b>	<b>15.3</b>	<b>35</b>	<b>4.3</b>	<b>32</b>	<b>6.4</b>	<b>33</b>	<b>7.0</b>	<b>36</b>
<i>BBgBarc US High Yield TR</i>				2.7	32	10.3	32	16.4	21	4.6	25	6.8	24	7.5	17
<i>eA US High Yield Fixed Inc Net Median</i>				2.3		9.1		13.8		3.8		6.1		6.7	
KDP	17,111,101	1.0	1.0	1.7	80	6.1	85	10.2	78	2.7	82	4.6	91	--	--
<i>BBgBarc US High Yield TR</i>				2.7	32	10.3	32	16.4	21	4.6	25	6.8	24	7.5	17
<i>BofA Merrill Lynch US High Yield BB-B Rated</i>				2.3	54	8.8	57	13.8	51	4.6	24	6.6	28	6.9	37
Guggenheim	68,529,755	4.0	4.0	2.0	71	10.8	22	16.6	20	4.7	23	--	--	--	--
<i>BBgBarc US High Yield TR</i>				2.7	32	10.3	32	16.4	21	4.6	25	6.8	24	7.5	17
<i>eA US High Yield Fixed Inc Net Median</i>				2.3		9.1		13.8		3.8		6.1		6.7	

# Vermont State Employees

## Total Fund Performance Detail - Net

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>TIPS</b>	<b>64,665,711</b>	<b>3.8</b>	<b>4.0</b>												
BlackRock TIPS	64,665,711	3.8	4.0	1.3	--	-0.2	--	1.5	--	2.0	--	0.9	--	--	--
<i>BBgBarc US TIPS TR</i>				1.3	--	-0.2	--	1.5	--	2.0	--	1.0	--	4.2	--
<b>Emerging Market Debt</b>	<b>87,293,616</b>	<b>5.1</b>	<b>5.0</b>												
Wellington Opportunistic EMD	87,293,616	5.1	5.0	4.2	73	6.3	25	12.5	22	6.0	8	5.8	10	--	--
<i>JP Morgan EMBI Global TR</i>				3.9	80	3.2	81	8.8	54	5.7	13	5.2	20	6.9	29
<i>eA All Emg Mkts Fixed Inc Net Median</i>				5.2		4.8		9.2		3.6		3.7		6.1	
<b>Risk Parity/GAA</b>	<b>136,246,511</b>	<b>8.0</b>	<b>8.0</b>	<b>4.6</b>	<b>32</b>	<b>4.4</b>	<b>66</b>	<b>10.4</b>	<b>29</b>	<b>2.3</b>	<b>51</b>	<b>4.1</b>	<b>47</b>	<b>4.0</b>	<b>58</b>
<b>Risk Parity</b>	<b>136,246,511</b>	<b>8.0</b>	<b>8.0</b>	<b>4.6</b>	<b>32</b>	<b>4.4</b>	<b>66</b>	<b>10.4</b>	<b>29</b>	<b>2.3</b>	<b>51</b>	<b>3.9</b>	<b>51</b>	<b>--</b>	<b>--</b>
<i>eA Global TAA Net Median</i>				3.5		5.4		7.7		2.3		3.9		4.3	
AQR Global Risk Premium	136,246,511	8.0	8.0	4.6	32	4.4	66	10.4	29	2.3	51	3.9	51	--	--
<i>60% MSCI World (Net) / 40% CITI WGBI</i>				4.4	36	5.0	60	7.1	55	2.9	41	5.4	24	4.1	57
<b>Cash</b>	<b>772,429</b>	<b>0.0</b>	<b>0.0</b>												
Vermont Cash	772,429	0.0	0.0	0.0	--	0.0	--	0.0	--	0.0	--	0.0	--	0.8	--
<i>91 Day T-Bills</i>				0.1	--	0.3	--	0.4	--	0.2	--	0.1	--	0.5	--
<b>Commodities</b>	<b>20,767,402</b>	<b>1.2</b>	<b>3.0</b>												
Schroder	20,767,402	1.2	3.0	-2.8	--	-2.9	--	10.9	--	-16.5	--	-11.6	--	--	--
<i>Bloomberg Commodity Index</i>				-2.3	--	-3.6	--	8.7	--	-13.9	--	-9.5	--	-6.2	--
<b>Total Real Estate</b>	<b>105,062,337</b>	<b>6.2</b>	<b>8.0</b>	<b>1.8</b>	<b>--</b>	<b>5.8</b>	<b>--</b>	<b>7.9</b>	<b>--</b>	<b>11.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>NCREIF Property Index</i>				1.6	--	5.1	--	7.3	--	10.6	--	10.7	--	6.7	--
<i>NCREIF ODCE</i>				1.8	--	6.1	--	8.3	--	11.8	--	12.0	--	5.6	--
Morgan Stanley Prime Property	48,160,530	2.8		1.9	--	6.7	--	9.3	--	12.7	--	13.2	--	5.9	--
UBS Trumbull	39,616,332	2.3		0.9	--	3.6	--	5.1	--	9.2	--	9.1	--	5.0	--
RREEF America REIT III	205,264	0.0		-0.7	--	-13.6	--	-13.0	--	3.1	--	9.4	--	-4.5	--
Transwestern / Aslan III	102,653	0.0		0.0	--	0.0	--	0.0	--	5.4	--	14.3	--	-20.9	--
Siguler Guff DREOF II	13,111,434	0.8		3.8	--	10.3	--	12.5	--	--	--	--	--	--	--
Siguler Guff DREOF II Co-Investment	3,866,124	0.2		3.6	--	--	--	--	--	--	--	--	--	--	--

Risk Parity Composite formerly shown as Risk Parity/GAA.

Real Estate performance reported on a quarterly basis. NCREIF Property is available 25 days after quarter end.

Real Estate values are finalized as of 03/31/2017, except for the Siguler Guff funds, they are preliminary.

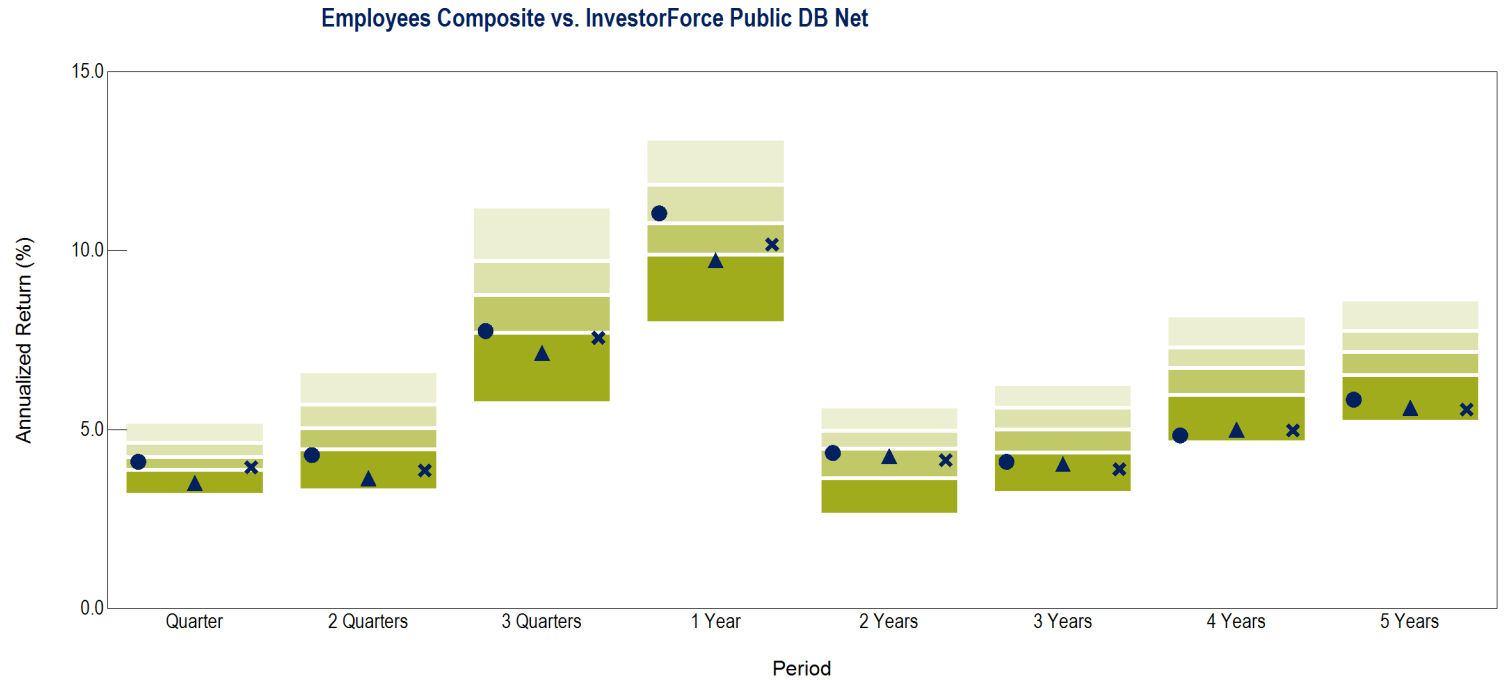
## Vermont State Employees

### Total Fund Performance Detail - Net

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Absolute Return</b>	<b>166,299,879</b>	<b>9.8</b>	<b>9.0</b>	<b>0.5</b>	<b>90</b>	<b>3.8</b>	<b>78</b>	<b>5.5</b>	<b>67</b>	<b>0.6</b>	<b>75</b>	<b>4.3</b>	<b>52</b>	<b>--</b>	<b>--</b>
<i>HFRI Fund of Funds Composite Index</i>				2.4	47	5.6	57	6.2	59	1.8	51	3.2	75	1.2	87
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.3		6.0		6.9		1.8		4.4		2.9	
Grosvenor	80,299,835	4.7	5.0	1.8	63	7.0	39	8.6	33	2.0	48	5.3	34	--	--
Mellon Dynamic Growth	32,947,759	1.9	2.0	2.9	32	2.2	92	4.9	72	5.7	7	5.5	32	2.8	52
<i>Mellon Dynamic Growth Benchmark</i>				4.1	15	5.4	59	6.9	51	2.7	41	4.9	39	3.5	32
Allianz Structured Alpha	31,088,191	1.8	2.0	0.9	85	3.6	80	4.9	72	8.9	3	8.0	7	--	--
<i>91 Day T-Bills</i>				0.1	94	0.3	95	0.4	94	0.2	87	0.1	99	0.5	96
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.3		6.0		6.9		1.8		4.4		2.9	
Pinnacle Natural Resources, L.P.	21,798,620	1.3		-8.2	--	-6.6	--	--	--	--	--	--	--	--	--
<i>Bloomberg Commodity Index</i>				-2.3	--	-3.6	--	8.7	--	-13.9	--	-9.5	--	-6.2	--
GAM	165,474	0.0	0.0												
<b>Private Equity</b>	<b>25,472,363</b>	<b>1.5</b>	<b>5.0</b>	<b>0.0</b>	<b>--</b>	<b>7.4</b>	<b>--</b>	<b>12.6</b>	<b>--</b>	<b>16.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Cambridge Associates US All PE</i>				0.0	--	8.7	--	13.0	--	8.8	--	11.8	--	9.3	--
Harbourvest Partners IX Credit Opportunities	923,605	0.1													
Harbourvest Partners IX Venture Fund	4,579,596	0.3													
Harbourvest Partners IX Buyout Fund	6,376,993	0.4													
Harbourvest Partners X Venture Fund	879,348	0.1													
Harbourvest Partners X Buyout Fund	1,853,230	0.1													
Harbourvest Dover VIII Fund	7,490,900	0.4													
Harbourvest Dover Street Fund IX	1,522,005	0.1													
HIPEP VII	1,846,686	0.1													

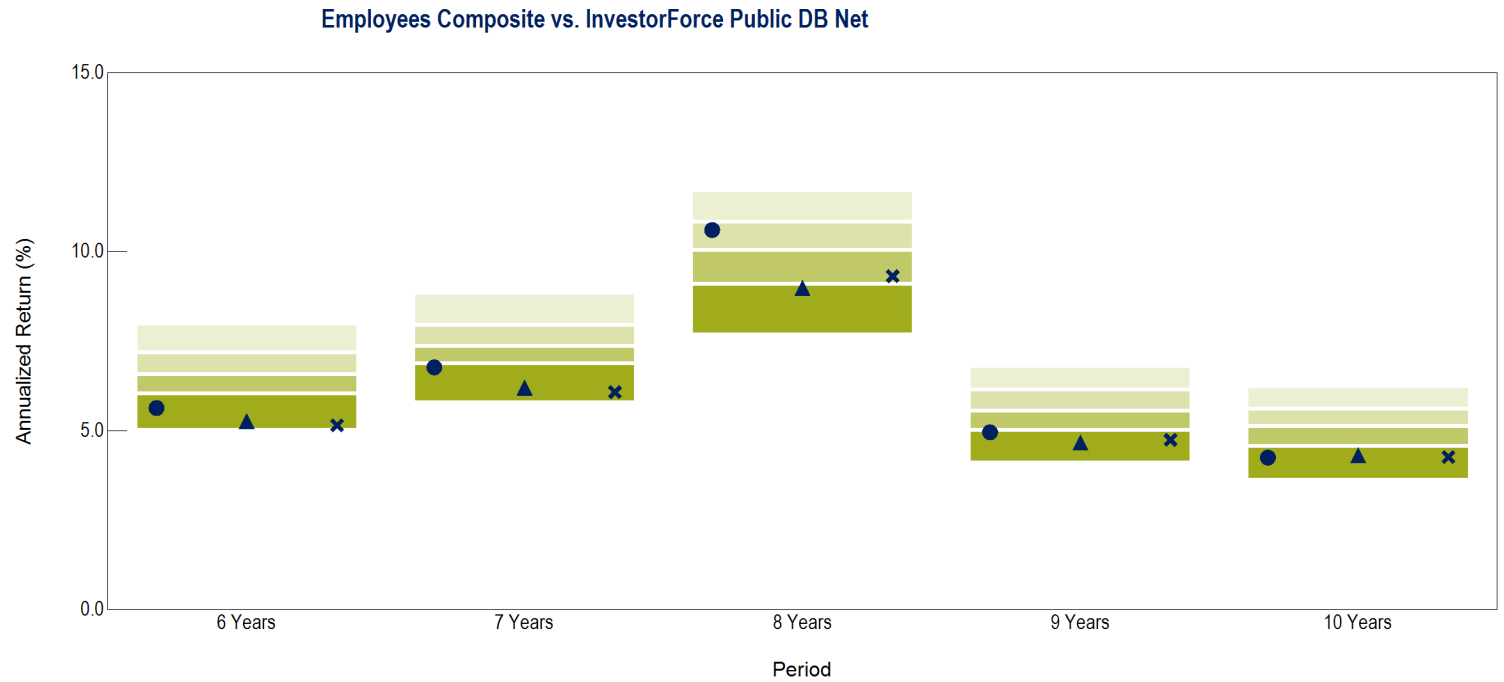
Absolute Return composite formerly shown as Hedge Funds composite. As of 04/01/2016, Absolute Return includes Mellon Dynamic Growth and Allianz Structured Alpha. Mellon Dynamic Growth was included in Risk Parity/GAA composite prior to 04/01/2016. Allianz Structured Alpha was included Diversified Fixed income composite prior to 04/01/2016. Mellon Dynamic Growth Benchmark: 60% MSCI All Country World Index IMI / 40% Citigroup GDP Weighted. Harbourvest values based on final Capital Account Statements for Q4, and cash adjusted through Q1.

Total Fund Return Summary vs. Peer Universe - Net



	Return (Rank)															
5th Percentile	5.2	6.6	11.2	13.1	5.6	6.3	8.2	8.6								
25th Percentile	4.6	5.7	9.7	11.8	5.0	5.6	7.3	7.8								
Median	4.2	5.0	8.8	10.8	4.5	5.0	6.7	7.2								
75th Percentile	3.9	4.5	7.7	9.9	3.7	4.4	6.0	6.5								
95th Percentile	3.2	3.3	5.7	8.0	2.6	3.2	4.7	5.2								
# of Portfolios	257	257	257	256	254	244	230	222								
● Employees Composite	4.1 (59)	4.3 (82)	7.8 (75)	11.0 (43)	4.3 (58)	4.1 (83)	4.8 (93)	5.8 (91)								
▲ Policy Index	3.5 (89)	3.6 (93)	7.1 (86)	9.7 (78)	4.3 (60)	4.0 (86)	5.0 (92)	5.6 (93)								
× Allocation Index	3.9 (71)	3.9 (91)	7.6 (81)	10.2 (66)	4.1 (63)	3.9 (88)	5.0 (93)	5.6 (94)								

Total Fund Return Summary vs. Peer Universe - Net



	Return (Rank)									
5th Percentile	8.0		8.8		11.7		6.8		6.2	
25th Percentile	7.2		8.0		10.8		6.2		5.6	
Median	6.6		7.4		10.1		5.6		5.1	
75th Percentile	6.1		6.9		9.1		5.0		4.6	
95th Percentile	5.0		5.8		7.7		4.1		3.6	
# of Portfolios	205		196		186		183		178	
● Employees Composite	5.6	(87)	6.8	(80)	10.6	(33)	5.0	(79)	4.2	(85)
▲ Policy Index	5.3	(93)	6.2	(94)	9.0	(79)	4.7	(87)	4.3	(82)
× Allocation Index	5.1	(94)	6.1	(95)	9.3	(71)	4.7	(86)	4.3	(85)

Total Fund Return Summary vs. Peer Universe - Net

Employees Composite vs. InvestorForce Public DB Net



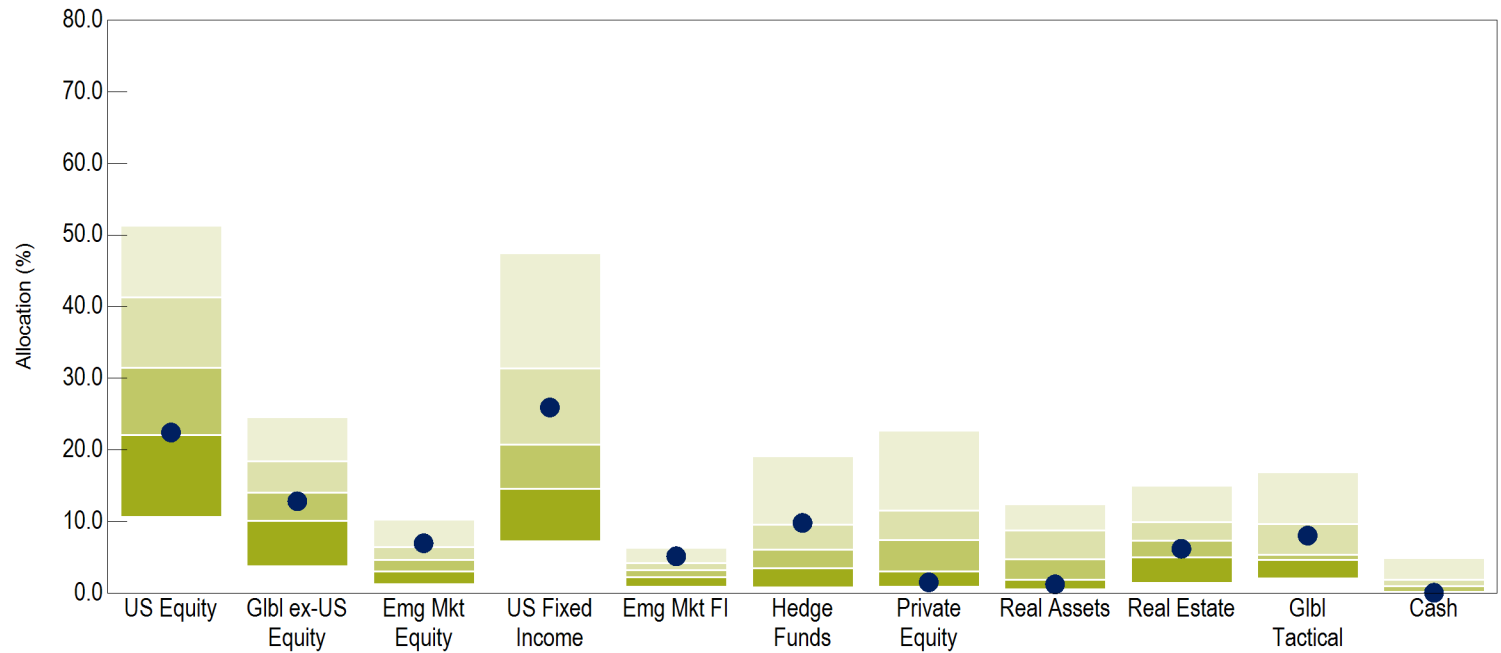
	Return (Rank)					
	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012	Fiscal 2011
5th Percentile	2.8	4.4	18.6	15.0	4.4	24.4
25th Percentile	1.4	3.6	16.7	12.9	1.9	22.1
Median	0.4	2.8	15.5	11.3	0.9	19.5
75th Percentile	-0.9	1.6	14.1	9.9	0.0	15.9
95th Percentile	-2.9	-0.1	11.9	7.4	-2.9	12.2
# of Portfolios	258	231	173	192	147	137
● Employees Composite	1.1 (33)	-0.4 (97)	14.1 (75)	8.2 (93)	1.9 (26)	20.4 (39)
▲ Policy Index	1.4 (25)	0.1 (94)	13.7 (84)	7.7 (94)	0.8 (52)	18.5 (61)
× Allocation Index	0.9 (36)	0.0 (95)	13.4 (89)	8.2 (93)	0.2 (70)	18.9 (57)



# Vermont State Employees

## Total Fund Allocation vs. Peer Universe - Net

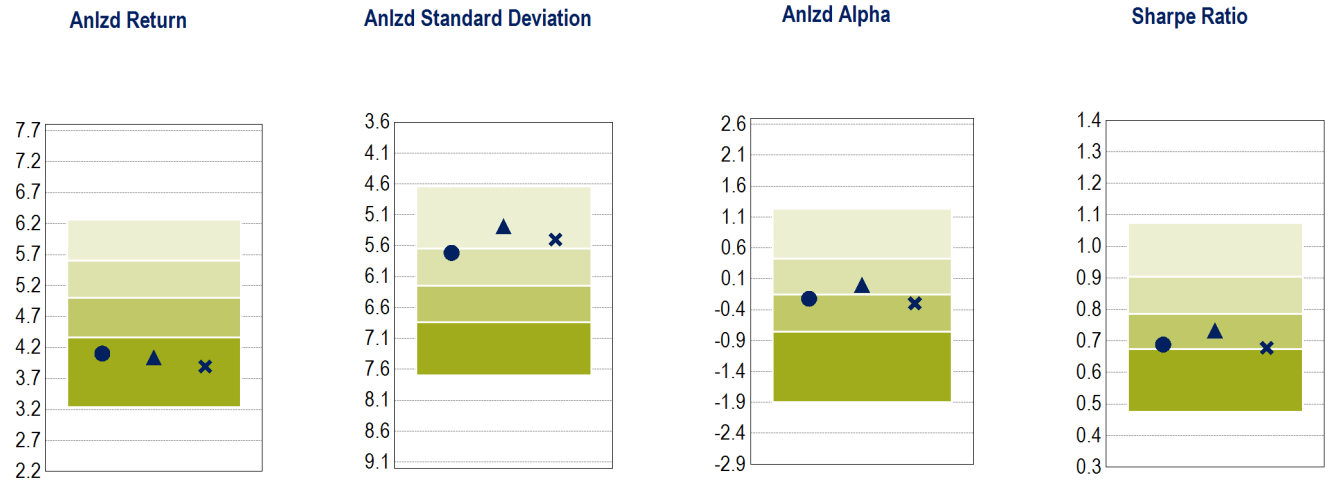
Total Plan Allocation vs. InvestorForce Public DB Net  
As of March 31, 2017



	Allocation (Rank)											
5th Percentile	51.3	24.6	10.3	47.5	6.4	19.1	22.7	12.4	15.0	16.9	4.9	--
25th Percentile	41.4	18.5	6.5	31.4	4.2	9.6	11.6	8.8	10.0	9.7	2.0	--
Median	31.5	14.1	4.7	20.8	3.3	6.2	7.5	4.8	7.4	5.4	1.0	--
75th Percentile	22.1	10.2	3.1	14.7	2.3	3.6	3.1	1.9	5.1	4.7	0.3	--
95th Percentile	10.7	3.8	1.3	7.3	1.0	0.8	0.9	0.6	1.5	2.1	0.0	--
# of Portfolios	184	205	119	187	41	88	116	66	153	68	225	--
● Employees Composite	22.4 (74)	12.8 (61)	7.0 (23)	25.9 (38)	5.1 (18)	9.8 (24)	1.5 (87)	1.2 (87)	6.2 (61)	8.0 (37)	0.0 (93)	--

Total Fund Risk Statistics vs. Peer Universe - Net

Employees Composite vs. IFx Public DB Net  
3 Years



● Employees Composite	
Value	4.10
Rank	83
▲ Policy Index	
Value	4.04
Rank	86
✕ Allocation Index	
Value	3.89
Rank	88
Universe	
5th %tile	6.26
25th %tile	5.61
Median	5.02
75th %tile	4.37
95th %tile	3.25

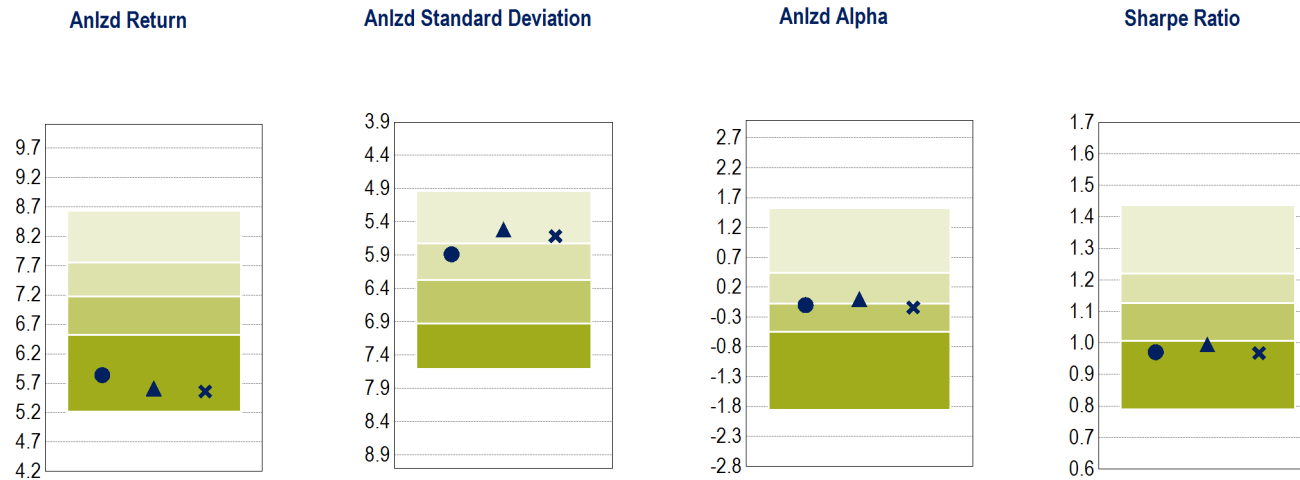
● Employees Composite	
Value	5.72
Rank	28
▲ Policy Index	
Value	5.28
Rank	11
✕ Allocation Index	
Value	5.50
Rank	21
Universe	
5th %tile	4.64
25th %tile	5.64
Median	6.23
75th %tile	6.83
95th %tile	7.69

● Employees Composite	
Value	-0.22
Rank	52
▲ Policy Index	
Value	0.00
Rank	42
✕ Allocation Index	
Value	-0.30
Rank	55
Universe	
5th %tile	1.23
25th %tile	0.44
Median	-0.14
75th %tile	-0.75
95th %tile	-1.89

● Employees Composite	
Value	0.69
Rank	73
▲ Policy Index	
Value	0.73
Rank	65
✕ Allocation Index	
Value	0.68
Rank	75
Universe	
5th %tile	1.07
25th %tile	0.91
Median	0.79
75th %tile	0.68
95th %tile	0.48

Total Fund Risk Statistics vs. Peer Universe - Net

Employees Composite vs. I/Fx Public DB Net  
5 Years



● Employees Composite	
Value	5.84
Rank	91
▲ Policy Index	
Value	5.61
Rank	93
× Allocation Index	
Value	5.56
Rank	94
Universe	
5th %tile	8.63
25th %tile	7.77
Median	7.18
75th %tile	6.53
95th %tile	5.23

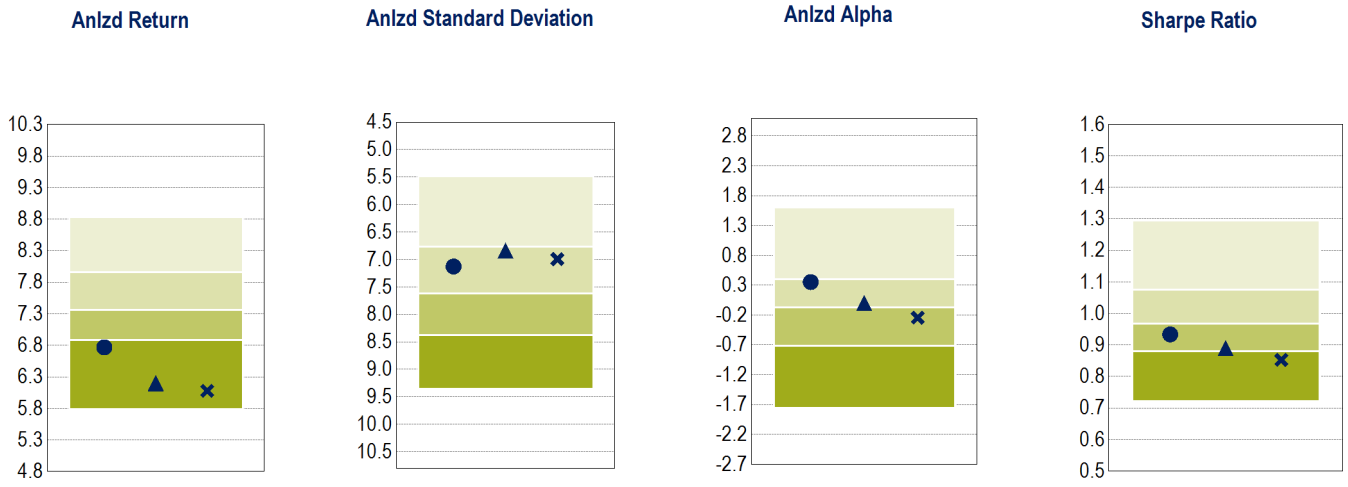
● Employees Composite	
Value	5.89
Rank	32
▲ Policy Index	
Value	5.51
Rank	18
× Allocation Index	
Value	5.61
Rank	22
Universe	
5th %tile	4.94
25th %tile	5.71
Median	6.26
75th %tile	6.92
95th %tile	7.60

● Employees Composite	
Value	-0.10
Rank	52
▲ Policy Index	
Value	0.00
Rank	46
× Allocation Index	
Value	-0.14
Rank	55
Universe	
5th %tile	1.53
25th %tile	0.45
Median	-0.06
75th %tile	-0.54
95th %tile	-1.84

● Employees Composite	
Value	0.97
Rank	81
▲ Policy Index	
Value	1.00
Rank	77
× Allocation Index	
Value	0.97
Rank	82
Universe	
5th %tile	1.44
25th %tile	1.22
Median	1.13
75th %tile	1.01
95th %tile	0.79

Total Fund Risk Statistics vs. Peer Universe - Net

Employees Composite vs. IFx Public DB Net  
7 Years



● Employees Composite	
Value	6.77
Rank	80
▲ Policy Index	
Value	6.20
Rank	94
✕ Allocation Index	
Value	6.08
Rank	95
Universe	
5th %tile	8.83
25th %tile	7.97
Median	7.37
75th %tile	6.90
95th %tile	5.80

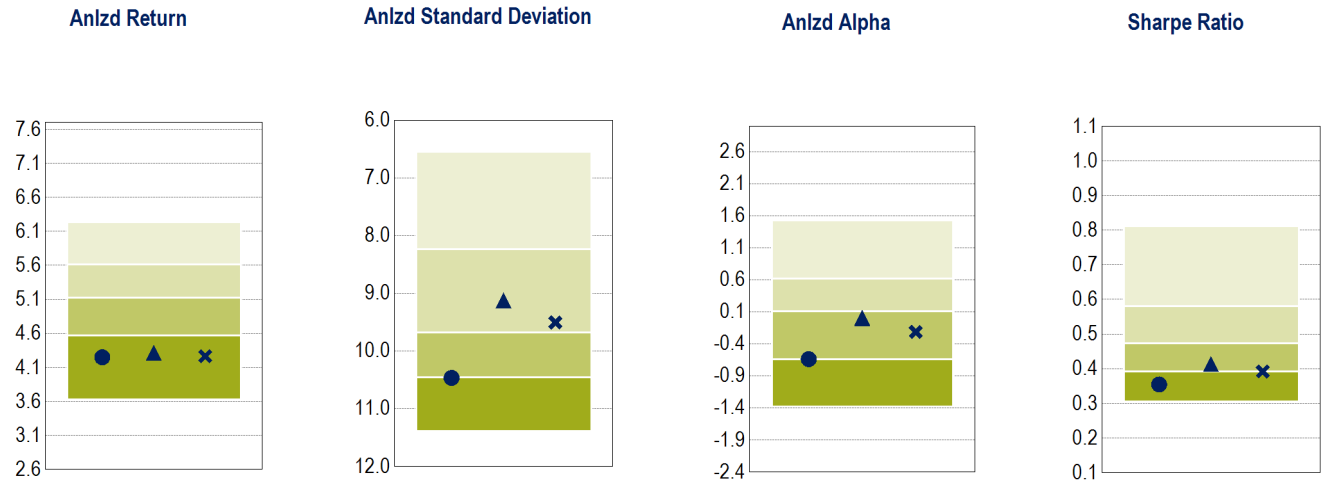
● Employees Composite	
Value	7.13
Rank	37
▲ Policy Index	
Value	6.84
Rank	28
✕ Allocation Index	
Value	6.99
Rank	31
Universe	
5th %tile	5.49
25th %tile	6.75
Median	7.61
75th %tile	8.36
95th %tile	9.34

● Employees Composite	
Value	0.35
Rank	29
▲ Policy Index	
Value	0.00
Rank	47
✕ Allocation Index	
Value	-0.25
Rank	58
Universe	
5th %tile	1.60
25th %tile	0.41
Median	-0.06
75th %tile	-0.70
95th %tile	-1.74

● Employees Composite	
Value	0.93
Rank	64
▲ Policy Index	
Value	0.89
Rank	73
✕ Allocation Index	
Value	0.85
Rank	83
Universe	
5th %tile	1.30
25th %tile	1.08
Median	0.97
75th %tile	0.88
95th %tile	0.72

Total Fund Risk Statistics vs. Peer Universe - Net

Employees Composite vs. IFx Public DB Net  
10 Years



● Employees Composite	
Value	4.25
Rank	85
▲ Policy Index	
Value	4.31
Rank	82
× Allocation Index	
Value	4.26
Rank	85
Universe	
5th %tile	6.24
25th %tile	5.62
Median	5.14
75th %tile	4.58
95th %tile	3.64

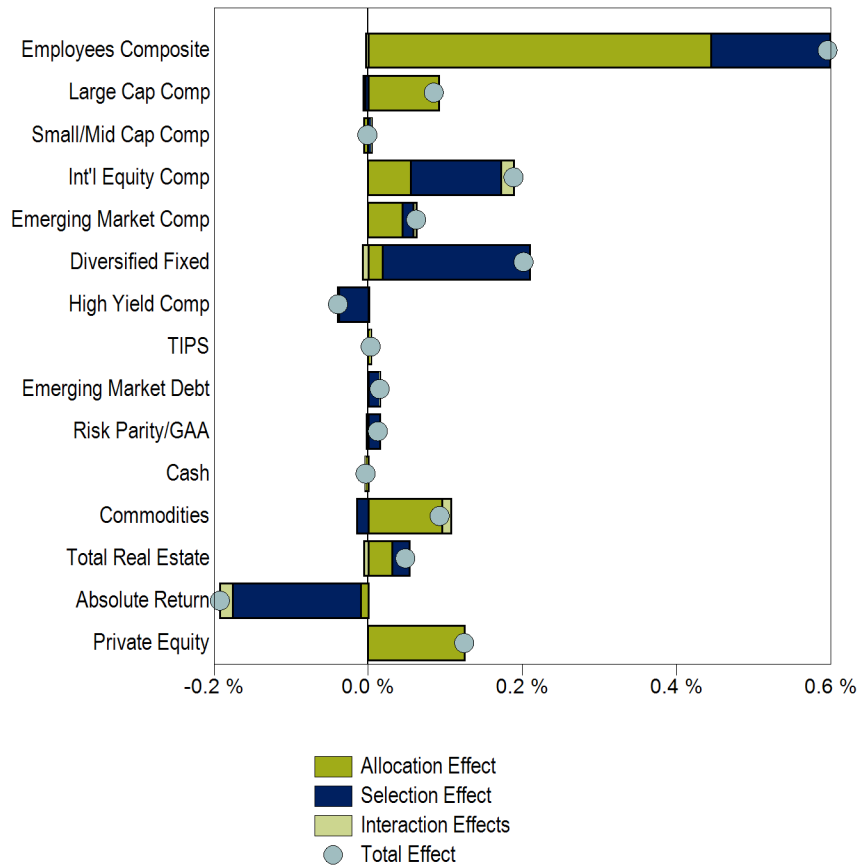
● Employees Composite	
Value	10.47
Rank	77
▲ Policy Index	
Value	9.13
Rank	38
× Allocation Index	
Value	9.51
Rank	48
Universe	
5th %tile	6.55
25th %tile	8.23
Median	9.67
75th %tile	10.45
95th %tile	11.38

● Employees Composite	
Value	-0.64
Rank	76
▲ Policy Index	
Value	0.00
Rank	54
× Allocation Index	
Value	-0.22
Rank	62
Universe	
5th %tile	1.52
25th %tile	0.63
Median	0.11
75th %tile	-0.64
95th %tile	-1.37

● Employees Composite	
Value	0.35
Rank	86
▲ Policy Index	
Value	0.41
Rank	71
× Allocation Index	
Value	0.39
Rank	76
Universe	
5th %tile	0.81
25th %tile	0.58
Median	0.48
75th %tile	0.39
95th %tile	0.31

Total Fund Attribution Analysis - Net

Attribution Effects Relative to Policy Index  
3 Months Ending March 31, 2017



Attribution Summary  
3 Months Ending March 31, 2017

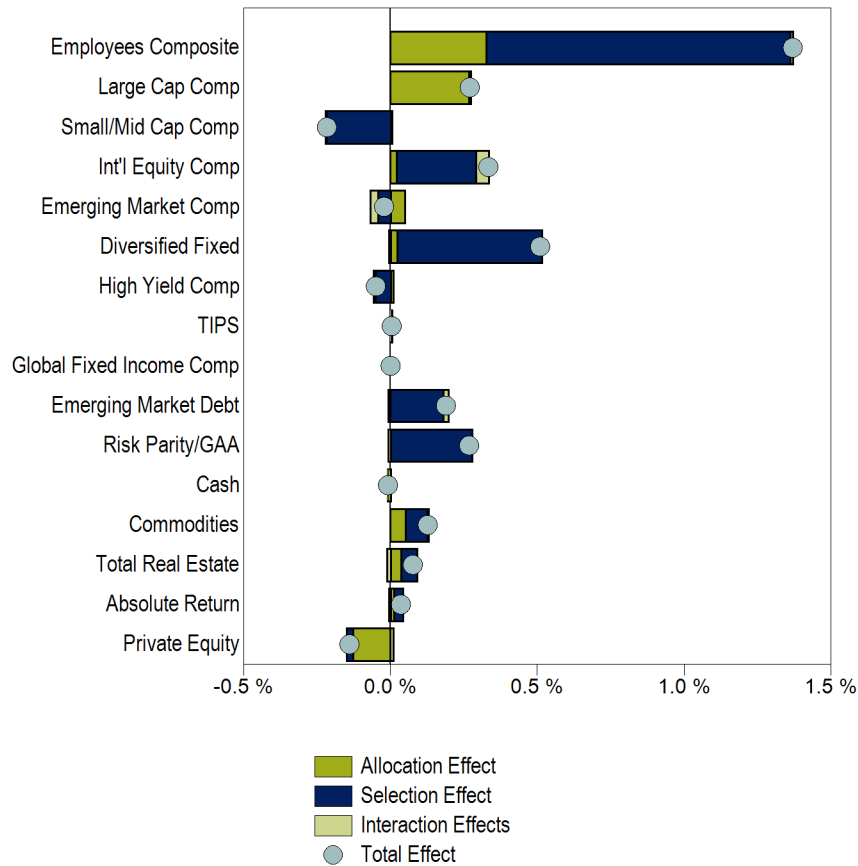
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Large Cap Comp	5.9%	5.9%	0.0%	0.0%	0.1%	0.0%	0.1%
Small/Mid Cap Comp	2.4%	2.4%	0.1%	0.0%	0.0%	0.0%	0.0%
Int'l Equity Comp	8.5%	7.4%	1.1%	0.1%	0.1%	0.0%	0.2%
Emerging Market Comp	11.7%	11.4%	0.2%	0.0%	0.0%	0.0%	0.1%
Diversified Fixed	1.9%	0.8%	1.0%	0.2%	0.0%	0.0%	0.2%
High Yield Comp	2.0%	2.7%	-0.7%	0.0%	0.0%	0.0%	0.0%
TIPS	1.3%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Emerging Market Debt	4.2%	3.9%	0.3%	0.0%	0.0%	0.0%	0.0%
Risk Parity/GAA	4.6%	4.4%	0.1%	0.0%	0.0%	0.0%	0.0%
Cash	0.0%	0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%
Commodities	-2.8%	-2.3%	-0.4%	0.0%	0.1%	0.0%	0.1%
Total Real Estate	1.8%	1.6%	0.3%	0.0%	0.0%	0.0%	0.0%
Absolute Return	0.5%	2.4%	-1.8%	-0.2%	0.0%	0.0%	-0.2%
Private Equity	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
<b>Total</b>	<b>4.1%</b>	<b>3.5%</b>	<b>0.6%</b>	<b>0.2%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>0.6%</b>

Note: Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result, the total returns shown may vary from the calculated returns shown on the performance report.  
The target return shown for each composite is a custom index, based on aggregated policy indices. This policy index asset weights the underlying policy indices of each option in the plan and the respective benchmark.  
The allocation, selection, and interaction effects are calculated using the custom index described above along with the policy or target weight of each composite.  
May not add up due to rounding.

Absolute Return's Wtd. index Return is calculated using a weighting of the respective benchmarks for each underlying strategy part of the composite.

**Total Fund Attribution Analysis - Net**

**Attribution Effects Relative to Policy Index  
1 Year Ending March 31, 2017**



**Attribution Summary  
1 Year Ending March 31, 2017**

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Large Cap Comp	17.3%	17.3%	0.0%	0.0%	0.3%	0.0%	0.3%
Small/Mid Cap Comp	20.2%	24.8%	-4.6%	-0.2%	0.0%	0.0%	-0.2%
Int'l Equity Comp	14.6%	12.0%	2.6%	0.3%	0.0%	0.0%	0.3%
Emerging Market Comp	16.2%	17.2%	-1.0%	0.0%	0.0%	0.0%	0.0%
Diversified Fixed	3.0%	0.4%	2.5%	0.5%	0.0%	0.0%	0.5%
High Yield Comp	15.3%	16.4%	-1.1%	-0.1%	0.0%	0.0%	-0.1%
TIPS	1.5%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Global Fixed Income Comp	--	--	--	--	0.0%	--	--
Emerging Market Debt	12.5%	8.8%	3.6%	0.2%	0.0%	0.0%	0.2%
Risk Parity/GAA	10.4%	7.1%	3.3%	0.3%	0.0%	0.0%	0.3%
Cash	0.0%	0.4%	-0.4%	0.0%	0.0%	0.0%	0.0%
Commodities	10.9%	8.7%	2.2%	0.1%	0.1%	0.0%	0.1%
Total Real Estate	7.9%	7.3%	0.6%	0.1%	0.0%	0.0%	0.1%
Absolute Return	5.5%	5.2%	0.3%	0.0%	0.0%	0.0%	0.0%
Private Equity	12.6%	13.0%	-0.4%	0.0%	-0.1%	0.0%	-0.1%
<b>Total</b>	<b>11.1%</b>	<b>9.7%</b>	<b>1.4%</b>	<b>1.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>1.4%</b>

Note: Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result, the total returns shown may vary from the calculated returns shown on the performance report.

The target return shown for each composite is a custom index, based on aggregated policy indices. This policy index asset weights the underlying policy indices of each option in the plan and the respective benchmark.

The allocation, selection, and interaction effects are calculated using the custom index described above along with the policy or target weight of each composite.

May not add up due to rounding.

Absolute Return's Wtd. index Return is calculated using a weighting of the respective benchmarks for each underlying strategy part of the composite.

**Asset Allocation Effect** - Measures VPIC's ability to effectively allocate their portfolio's assets to various asset classes. The allocation effect determines whether the overweighting or underweighting of asset classes relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is overweighted in an asset class that outperforms the benchmark. Negative allocation occurs when the portfolio is overweighted in an asset class that underperforms the benchmark and underweighted in an asset class that outperforms the benchmark.

**Selection Effect** - Measures VPIC's ability to select managers within a given asset class relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by VPIC's allocation to the asset class. The weight of the manager in the portfolio determines the size of the effect -- the larger the manager, the larger the effect is, positive or negative.

**Interaction Effect** - The interaction effect measures the combined impact of VPIC's manager selection and manager allocation decisions within an asset class. For example, if VPIC had superior manager selection and overweighted that particular asset class, the interaction effect is positive. If VPIC had superior manager selection, but underweighted that asset class, the interaction effect is negative. In this case, VPIC did not take advantage of the superior manager selection by allocating more assets to that asset class.



## Vermont State Employees

### Risk Statistics - 3 Years Ending March 31, 2017 - Net

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank	Tracking Error	Rank
Employees Composite	100.00%	4.10%	83	5.72%	28	-0.21%	52	0.69	73	1.20	56	0.90%	32
Policy Index	--	4.04%	86	5.28%	11	0.00%	41	0.73	65	1.29	43	0.00%	1
US Equity	22.41%	9.68%	22	10.97%	31	-0.21%	26	0.87	19	1.49	22	1.50%	2
Russell 3000	--	9.75%	21	10.71%	25	0.00%	24	0.90	15	1.48	23	0.00%	1
Large Cap Comp	17.05%	10.09%	18	10.54%	36	-0.38%	23	0.94	17	1.71	14	0.71%	1
S&P 500	--	10.37%	14	10.41%	33	0.00%	17	0.98	12	1.66	17	0.00%	1
Small/Mid Cap Comp	5.37%	9.25%	18	13.15%	50	3.30%	25	0.69	25	1.45	10	3.94%	1
Russell 2000	--	7.22%	39	15.68%	92	0.00%	63	0.45	56	0.78	54	0.00%	1
Int'l Equity Comp	12.82%	1.94%	41	11.53%	41	1.46%	41	0.15	39	0.27	38	2.06%	6
MSCI EAFE	--	0.50%	74	12.23%	77	0.00%	74	0.03	74	0.05	74	0.00%	1
Emerging Market Comp	6.95%	1.63%	60	15.28%	58	0.56%	60	0.10	60	0.18	54	5.31%	60
MSCI Emerging Markets	--	1.18%	65	16.11%	78	0.00%	65	0.06	65	0.12	65	0.00%	1
US Fixed Income	25.91%	3.74%	27	3.02%	61	1.41%	26	1.19	25	1.74	27	1.69%	36
BBgBarc US Aggregate TR	--	2.68%	52	2.94%	60	0.00%	76	0.86	58	1.17	66	0.00%	1
Diversified Fixed	17.06%	3.71%	27	3.06%	62	1.14%	29	1.16	27	1.48	41	1.23%	24
BBgBarc US Aggregate TR	--	2.68%	52	2.94%	60	0.00%	76	0.86	58	1.17	66	0.00%	1
Unconstrained Fixed Income	5.97%	--	--	--	--	--	--	--	--	--	--	--	--
25% HY, 25% EMD, 50% BC Agg	--	3.95%	11	3.73%	50	0.00%	37	1.02	22	1.73	22	0.00%	1
High Yield Comp	5.04%	4.28%	32	5.01%	39	0.58%	38	0.82	39	1.50	46	1.65%	41
BBgBarc US High Yield TR	--	4.56%	25	6.08%	82	0.00%	59	0.72	56	1.62	38	0.00%	1
TIPS	3.81%	1.98%	25	4.08%	68	-0.08%	22	0.45	24	0.79	21	0.18%	4
BBgBarc US TIPS TR	--	2.03%	22	4.01%	67	0.00%	17	0.46	19	0.83	18	0.00%	1
Emerging Market Debt	5.14%	6.01%	8	6.28%	29	0.36%	15	0.93	11	1.47	16	1.33%	9
JP Morgan EMBI Global TR	--	5.73%	13	6.23%	28	0.00%	19	0.89	16	1.34	19	0.00%	1
Total Real Estate	6.19%	11.44%	--	4.91%	--	0.69%	--	0.67	--	0.65	--	1.39%	--
NCREIF Property Index	--	10.58%	--	4.41%	--	0.00%	--	0.55	--	0.48	--	0.00%	--
Absolute Return	9.79%	0.62%	75	3.18%	23	-0.93%	67	0.14	68	0.17	71	1.42%	1
HFRI Fund of Funds Composite Index	--	1.80%	51	3.41%	31	0.00%	51	0.48	42	0.59	45	0.00%	1
Risk Parity/GAA	8.02%	2.30%	51	7.66%	64	-0.31%	53	0.28	59	0.47	52	4.60%	40
60% MSCI World (Net) / 40% CITI WGBI	--	2.94%	41	7.01%	50	0.00%	51	0.40	43	0.79	33	0.00%	1

## Vermont State Employees

### Risk Statistics - 5 Years Ending March 31, 2017 - Net

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank	Tracking Error	Rank
Employees Composite	100.00%	5.84%	91	5.89%	32	-0.09%	52	0.97	81	1.59	65	0.85%	23
Policy Index	--	5.61%	93	5.51%	18	0.00%	45	1.00	77	1.57	67	0.00%	1
US Equity	22.41%	--	--	--	--	--	--	--	--	--	--	--	--
Russell 3000	--	13.18%	29	10.45%	19	0.00%	25	1.25	13	2.04	17	0.00%	1
Large Cap Comp	17.05%	13.46%	14	10.37%	31	-0.01%	20	1.29	12	2.20	11	0.75%	1
S&P 500	--	13.30%	18	10.20%	26	0.00%	20	1.29	11	2.12	15	0.00%	1
Small/Mid Cap Comp	5.37%	13.30%	22	12.49%	48	2.78%	34	1.06	26	1.97	15	3.40%	1
Russell 2000	--	12.35%	37	14.36%	86	0.00%	78	0.85	64	1.41	58	0.00%	1
Int'l Equity Comp	12.82%	7.01%	42	12.61%	50	1.50%	48	0.55	45	0.82	42	2.07%	6
MSCI EAFE	--	5.83%	70	13.21%	81	0.00%	79	0.43	75	0.65	72	0.00%	1
Emerging Market Comp	6.95%	--	--	--	--	--	--	--	--	--	--	--	--
MSCI Emerging Markets	--	0.81%	80	15.33%	71	0.00%	81	0.04	81	0.07	79	0.00%	1
US Fixed Income	25.91%	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc US Aggregate TR	--	2.34%	61	2.88%	53	0.00%	83	0.77	77	1.05	74	0.00%	1
Diversified Fixed	17.06%	3.24%	44	3.27%	65	0.77%	49	0.95	56	1.25	59	1.18%	24
BBgBarc US Aggregate TR	--	2.34%	61	2.88%	53	0.00%	83	0.77	77	1.05	74	0.00%	1
Unconstrained Fixed Income	5.97%	--	--	--	--	--	--	--	--	--	--	--	--
25% HY, 25% EMD, 50% BC Agg	--	4.22%	35	3.83%	53	0.00%	67	1.07	40	1.58	40	0.00%	1
High Yield Comp	5.04%	6.41%	33	4.44%	30	0.90%	32	1.42	28	2.34	43	1.42%	40
BBgBarc US High Yield TR	--	6.82%	24	5.38%	75	0.00%	64	1.24	59	2.43	38	0.00%	1
TIPS	3.81%	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc US TIPS TR	--	0.97%	36	4.64%	63	0.00%	35	0.18	26	0.24	31	0.00%	1
Emerging Market Debt	5.14%	--	--	--	--	--	--	--	--	--	--	--	--
JP Morgan EMBI Global TR	--	5.25%	20	7.10%	33	0.00%	24	0.72	23	1.07	23	0.00%	1
Total Real Estate	6.19%	--	--	--	--	--	--	--	--	--	--	--	--
NCREIF Property Index	--	10.69%	--	4.35%	--	0.00%	--	0.15	--	0.14	--	0.00%	--
Absolute Return	9.79%	4.29%	52	3.53%	34	1.24%	45	1.18	38	1.72	40	1.50%	1
HFRI Fund of Funds Composite Index	--	3.22%	75	3.39%	31	0.00%	64	0.91	49	1.27	50	0.00%	1
Risk Parity/GAA	8.02%	4.06%	47	7.62%	60	-0.77%	73	0.52	66	0.77	64	4.25%	35
60% MSCI World (Net) / 40% CITI WGBI	--	5.44%	24	7.21%	52	0.00%	52	0.74	23	1.25	20	0.00%	1

# Appendix

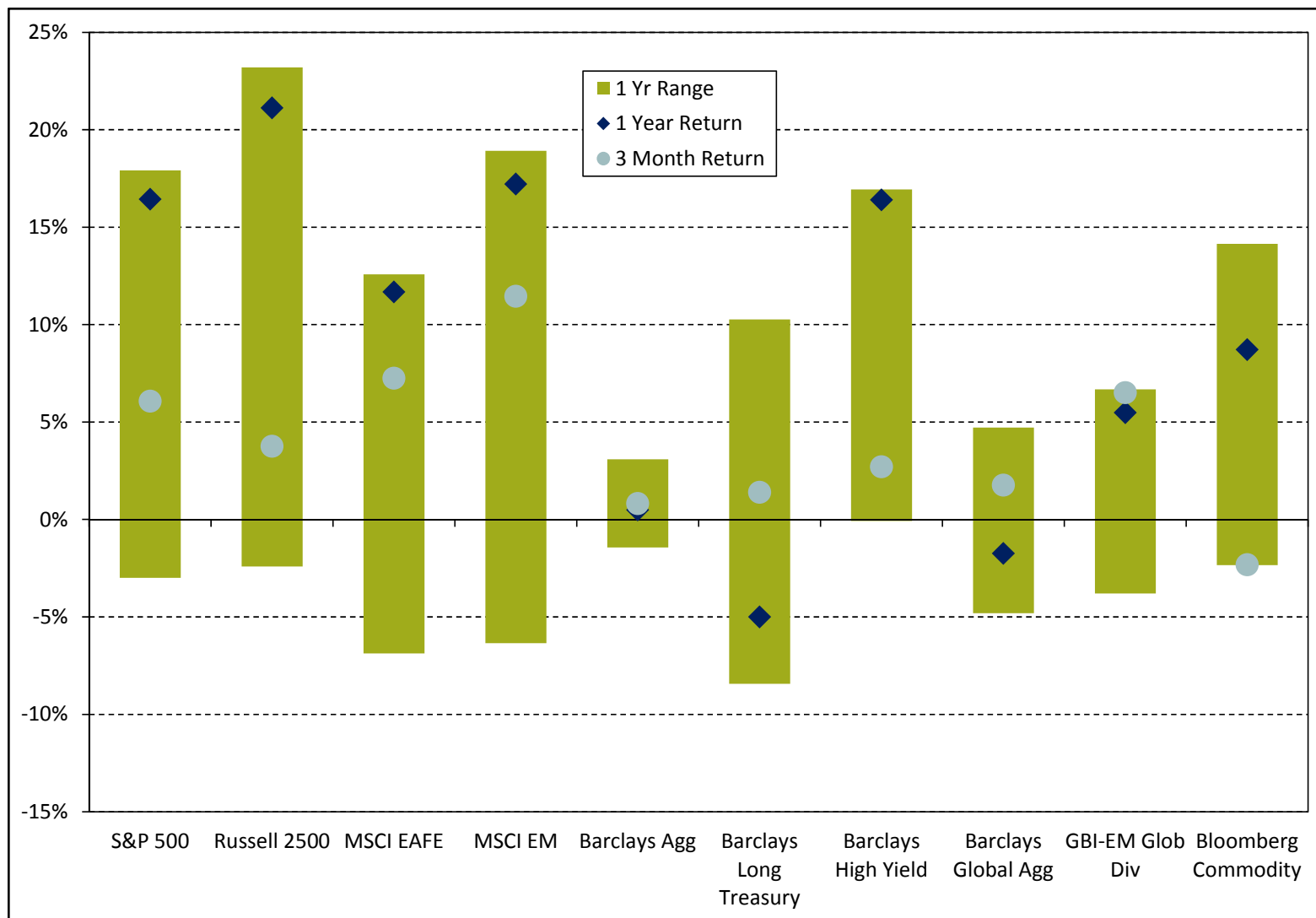


## Index Performance Summary as of 03/31/2017

	2009	2010	2011	2012	2013	2014	2015	2016	Jan	Feb	Mar	YTD
<b>MSCI EM</b>	78.5%	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	5.5%	3.1%	2.5%	11.4%
<b>MSCI EAFE</b>	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	2.9%	1.4%	2.8%	7.2%
<b>MSCI ACWI</b>	34.6%	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	2.7%	2.8%	1.2%	6.9%
<b>JPM GBI-EM Global Div</b>	22.0%	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	2.3%	1.8%	2.3%	6.5%
<b>S&amp;P 500</b>	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	1.9%	4.0%	0.1%	6.1%
<b>Russell 1000</b>	28.4%	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	2.0%	3.9%	0.1%	6.0%
<b>Alerian MLP</b>	76.4%	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	4.9%	0.4%	-1.3%	3.9%
<b>JPM EMBI Glob Div</b>	29.8%	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	1.4%	2.0%	0.4%	3.9%
<b>Russell 2500</b>	34.4%	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	1.4%	2.4%	-0.1%	3.8%
<b>Barclays US Corporate HY</b>	58.2%	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	1.5%	1.5%	-0.2%	2.7%
<b>Russell 2000</b>	27.2%	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	0.4%	1.9%	0.1%	2.5%
<b>BC US STRIPS 20+ Yr</b>	-36.0%	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	0.5%	2.3%	-1.0%	1.8%
<b>BC Global Agg</b>	-6.5%	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	1.1%	0.5%	0.2%	1.8%
<b>Credit Suisse Hedge Fund</b>	18.6%	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	0.7%	1.0%	-	1.7%
<b>BC US Long Credit</b>	16.8%	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	0.2%	2.0%	-0.6%	1.7%
<b>BC Municipal</b>	12.9%	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	0.7%	0.7%	0.2%	1.6%
<b>BC US Govt/Credit Long</b>	1.9%	10.2%	22.5%	8.8%	-8.8%	19.3%	-3.3%	6.7%	0.3%	1.8%	-0.6%	1.6%
<b>BC TIPS</b>	11.4%	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	0.8%	0.5%	-0.1%	1.3%
<b>CS Leveraged Loan</b>	44.9%	10.0%	1.8%	9.4%	6.2%	2.1%	-0.4%	9.9%	0.5%	0.6%	0.1%	1.2%
<b>FTSE NAREIT Equity REITs</b>	28.0%	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	0.1%	3.4%	-2.3%	1.2%
<b>BC US Agg Bond</b>	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	0.2%	0.7%	-0.1%	0.8%
<b>BC US Agg Interm</b>	6.5%	6.1%	6.0%	3.6%	-1.0%	4.1%	1.2%	2.0%	0.2%	0.5%	0.0%	0.7%
<b>BC US Govt/Credit 1-3 Yr</b>	3.8%	2.8%	1.6%	1.3%	0.6%	0.8%	0.7%	1.3%	0.2%	0.2%	0.1%	0.4%
<b>Bloomberg Commodity</b>	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	0.1%	0.2%	-2.7%	-2.3%

Source: Bloomberg, Barclays, Alerian, Nareit, MSCI, JP Morgan, Credit Suisse

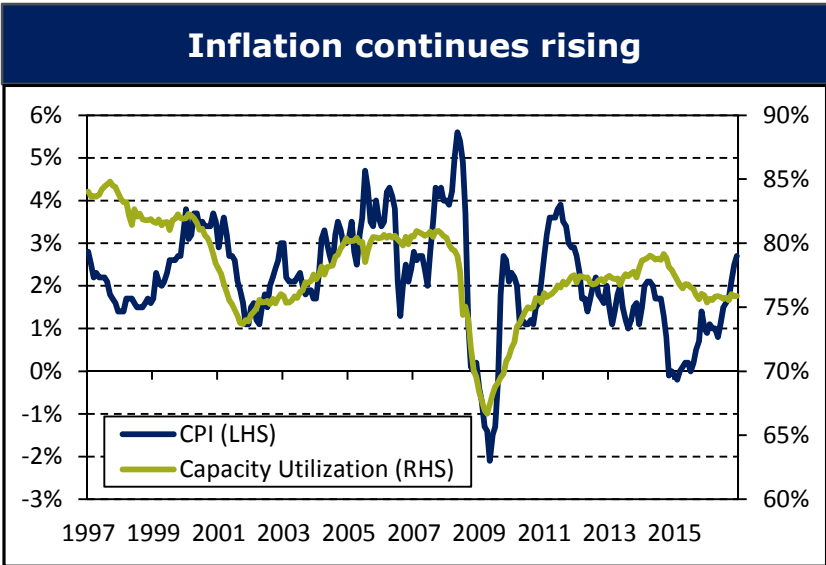
# Near Term Broad Market Performance Summary as of 03/31/2017



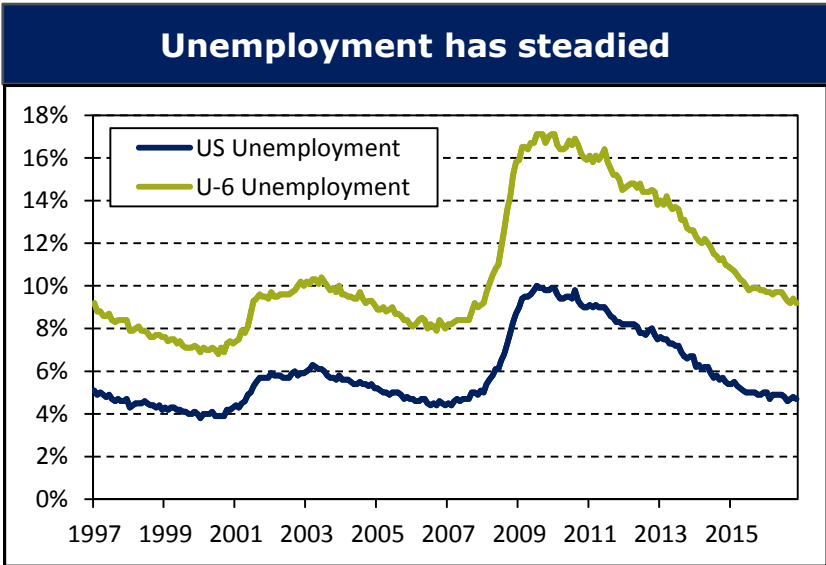
Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, JP Morgan  
 \*1 Yr Range: Represents range of cumulative high/low daily index returns for an investment made one year ago



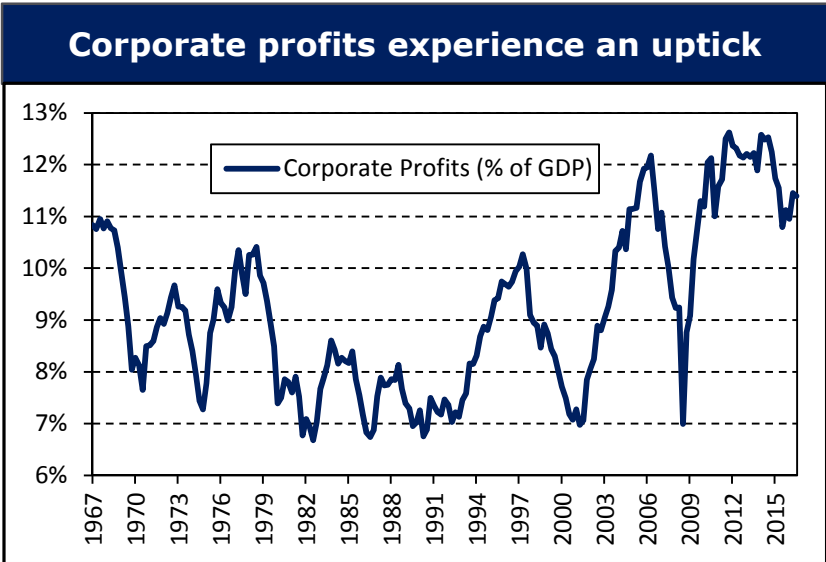
# US Economic Indicators



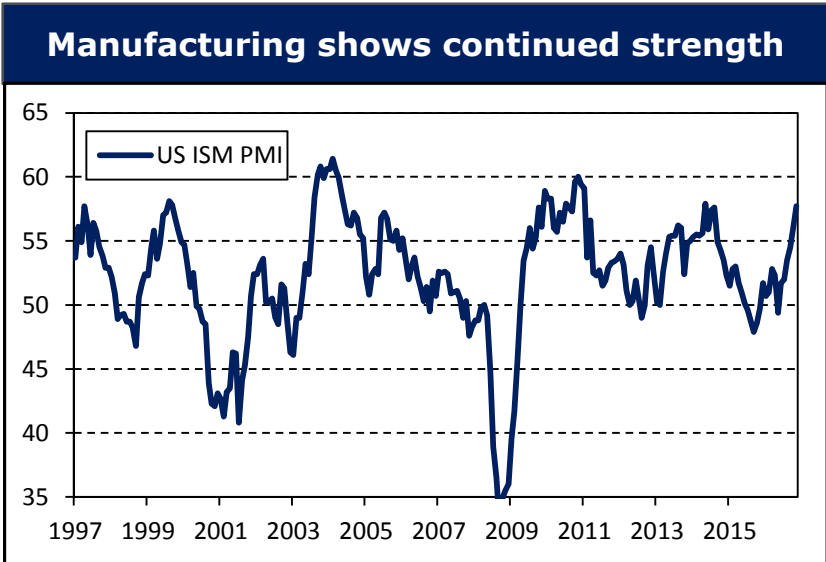
Source: Bloomberg, Federal Reserve, Bureau of Labor Statistics



Source: Bloomberg, Bureau of Labor Statistics



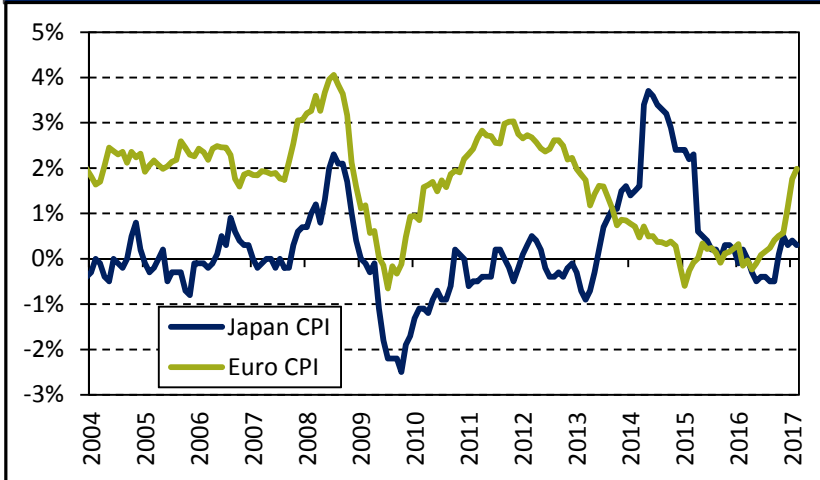
Source: Bloomberg, Bureau of Economic Analysis



Source: Bloomberg, Institute for Supply Management

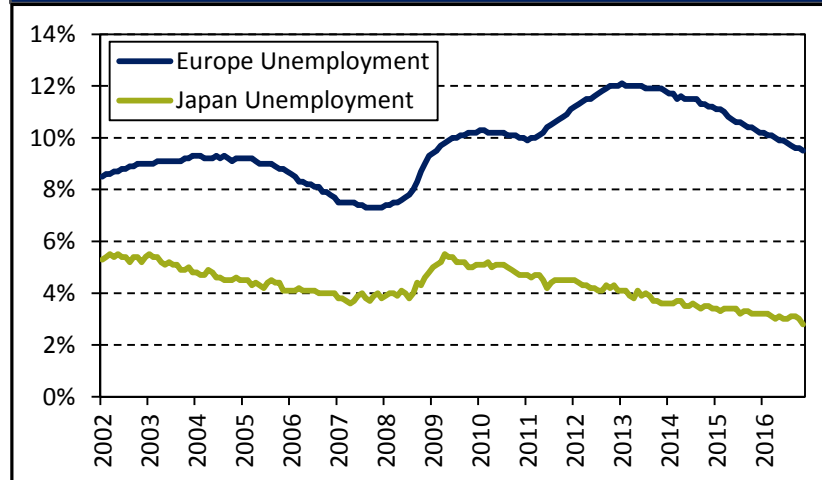
# International Economic Indicators

## Eurozone inflation continues to rise



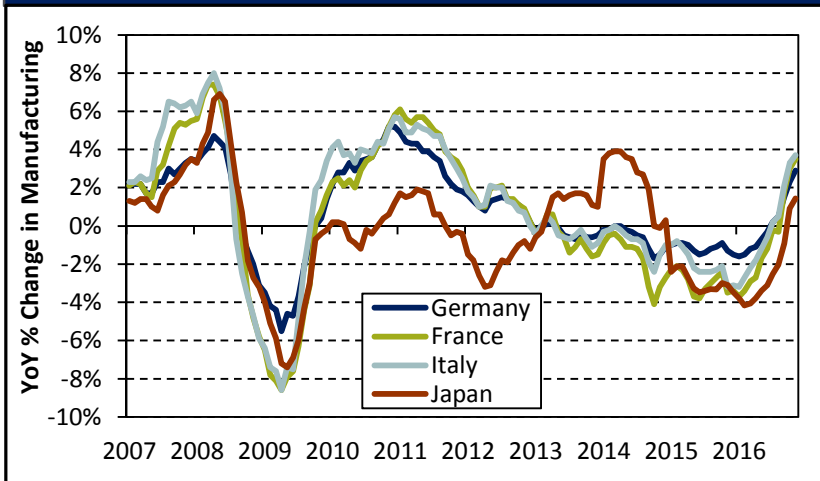
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

## Europe unemployment edges lower



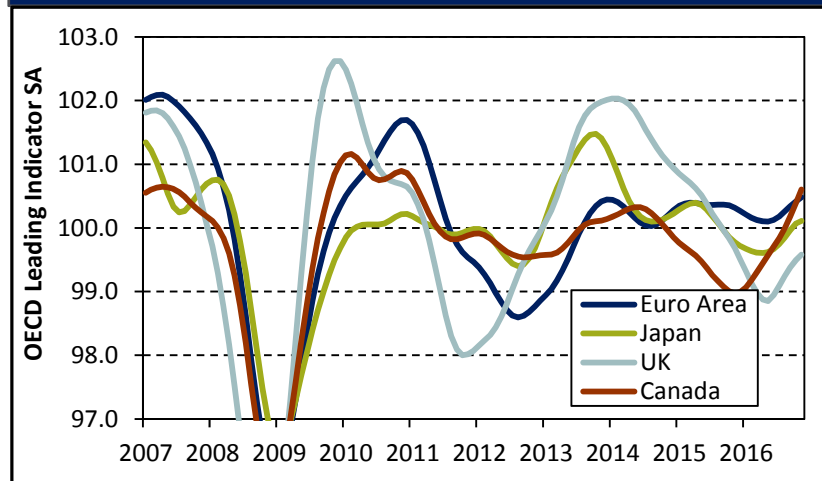
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

## Manufacturing shows continued strength



Source: Bloomberg, OECD, Eurostat

## Leading indicators are trending higher



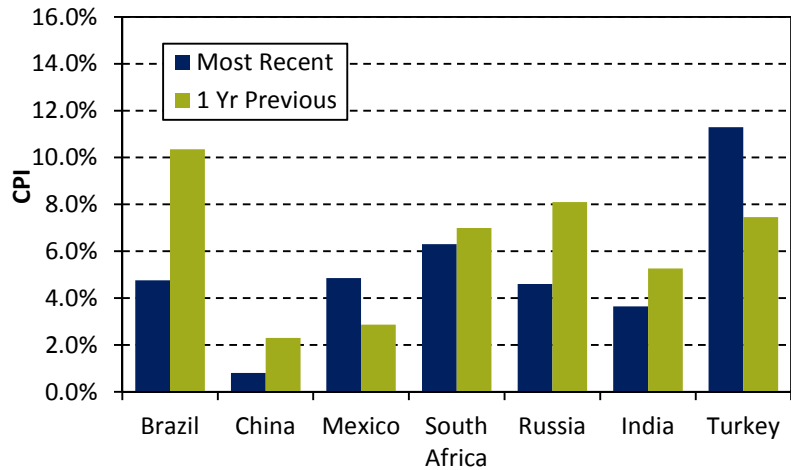
Source: Bloomberg, OECD





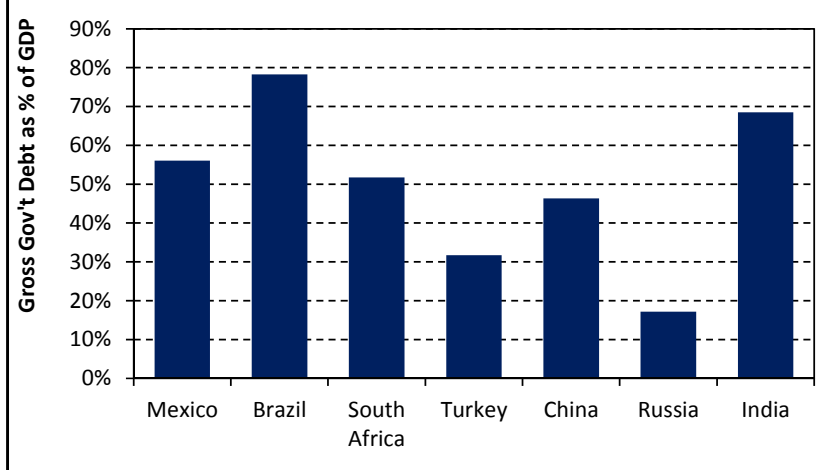
# Emerging Market Economic Indicators

## EM inflation varies by country



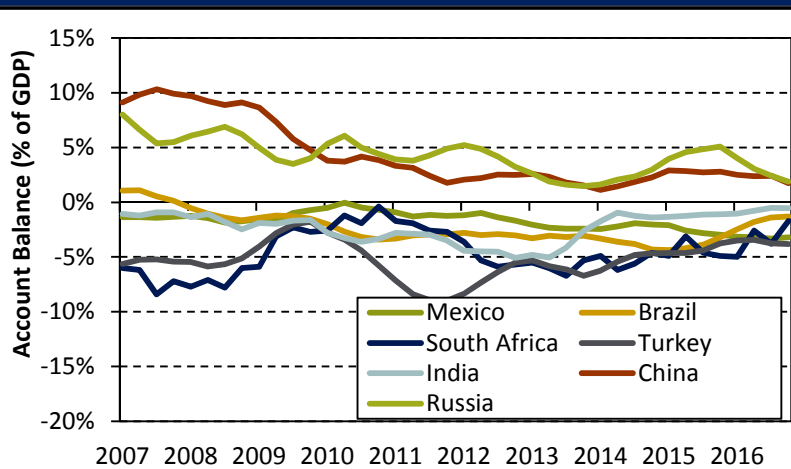
Source: Bloomberg

## Relatively healthy Debt/GDP ratios



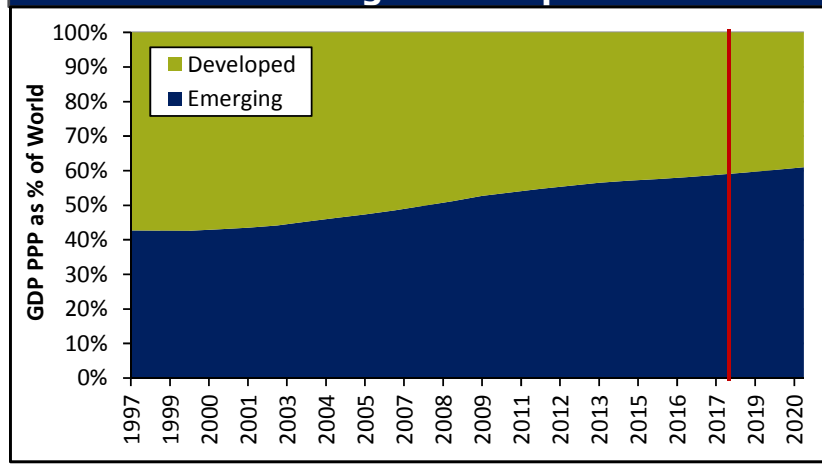
Source: Bloomberg, IMF

## Account balances remain steady



Source: Bloomberg

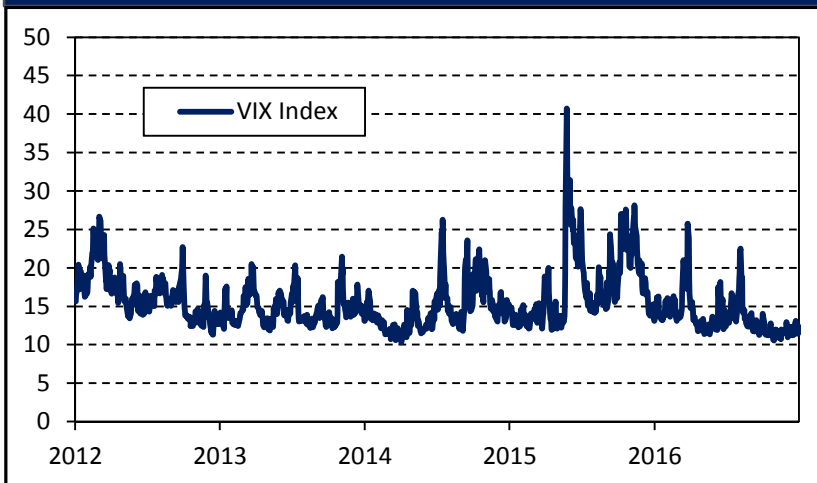
## EM continues trending higher as a percent of global output



Source: Bloomberg, IMF

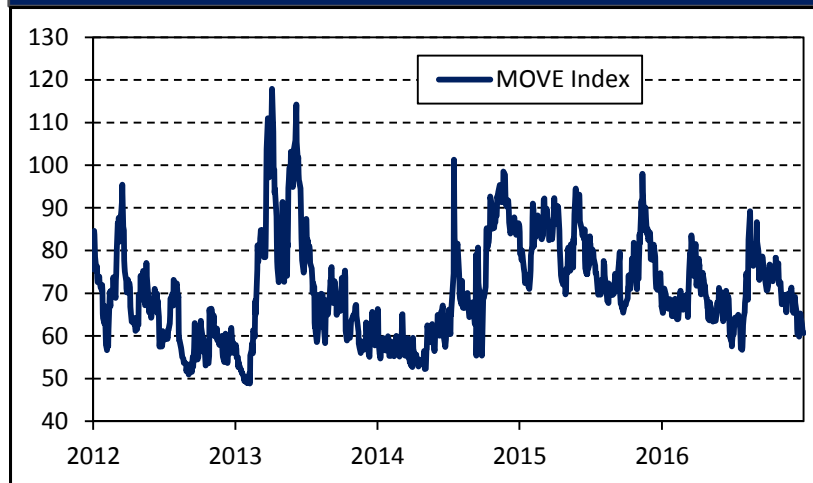
# Volatility

## Equity volatility remains low



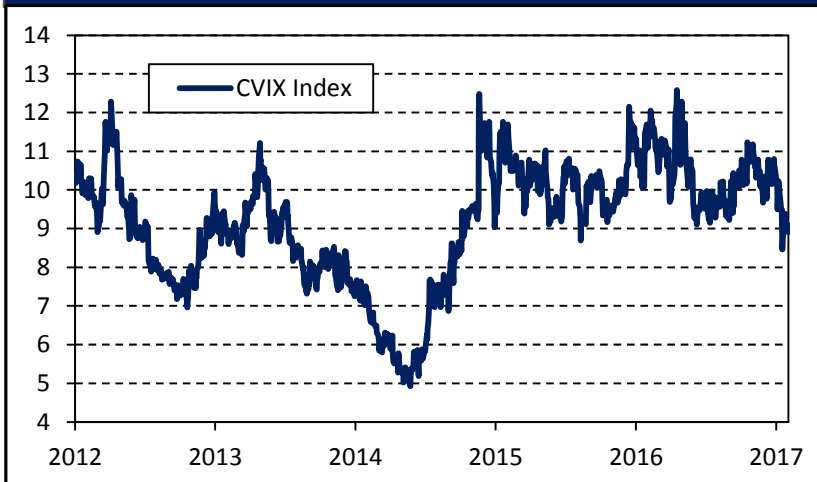
Source: Bloomberg, CBOE

## Treasury volatility has recently subsided



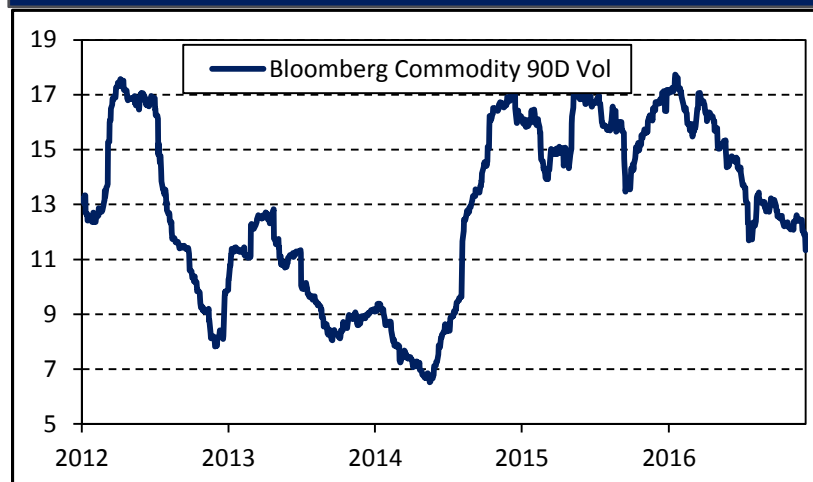
Source: Bloomberg, Merrill Lynch

## Currency volatility remains elevated



Source: Bloomberg, Deutsche Bank

## Commodity volatility continues to decline

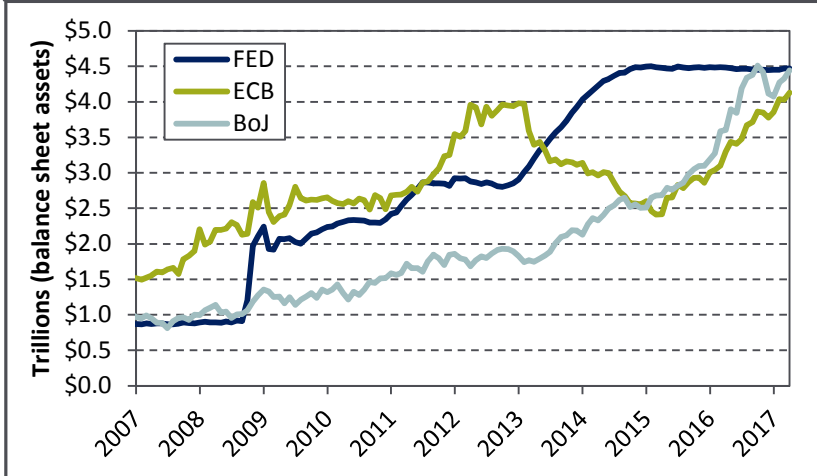


Source: Bloomberg, Merrill Lynch



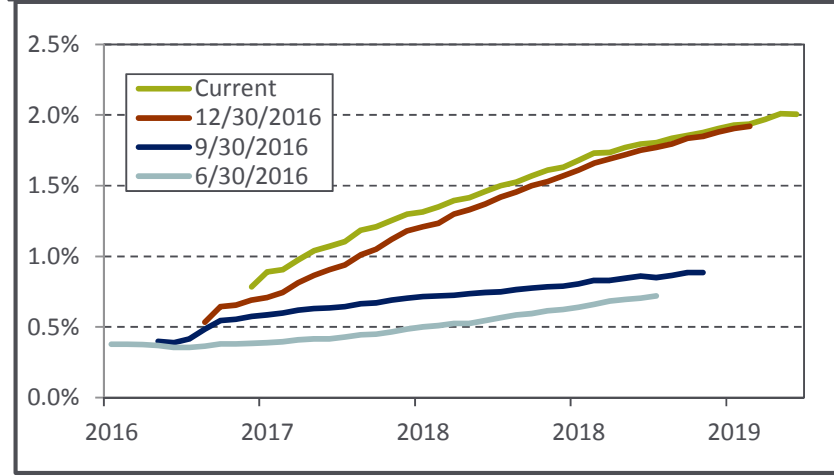
# Central Banks

## Currency movement continues impacting the value of the BoJ's balance sheet



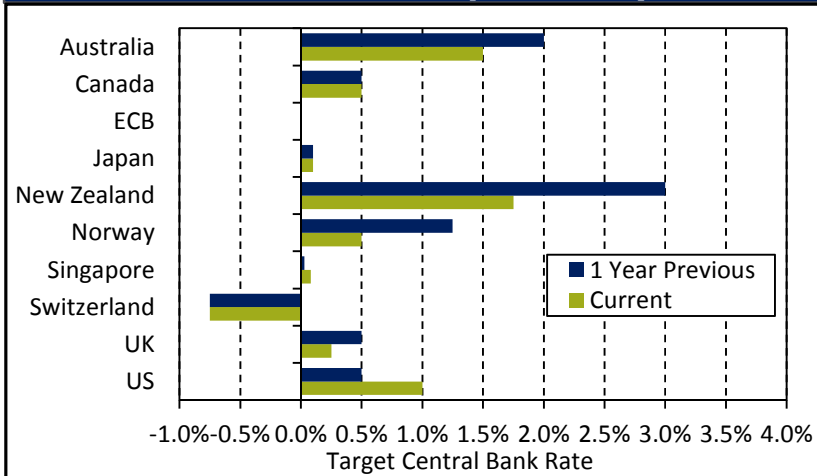
Source: Bloomberg, Federal Reserve, Bank of Japan, ECB, NEPC

## Post-election yield curve has increased slightly with the Fed rate hike



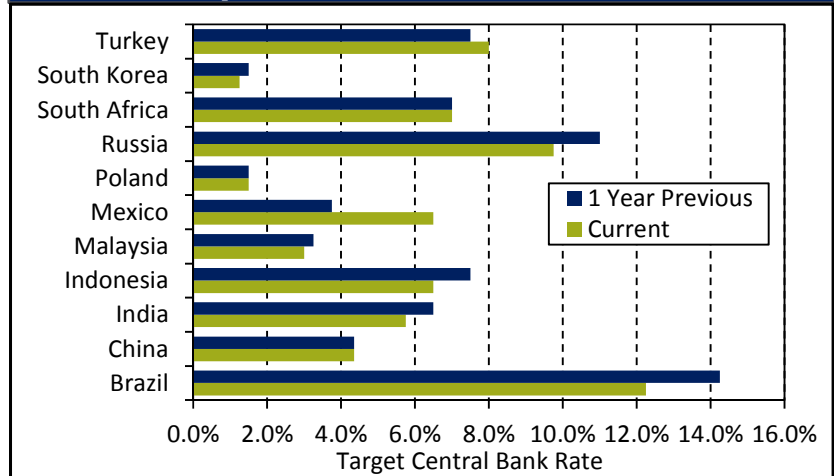
Source: Bloomberg, Federal Reserve

## Ex- US developed market interest rates are lower than the previous year



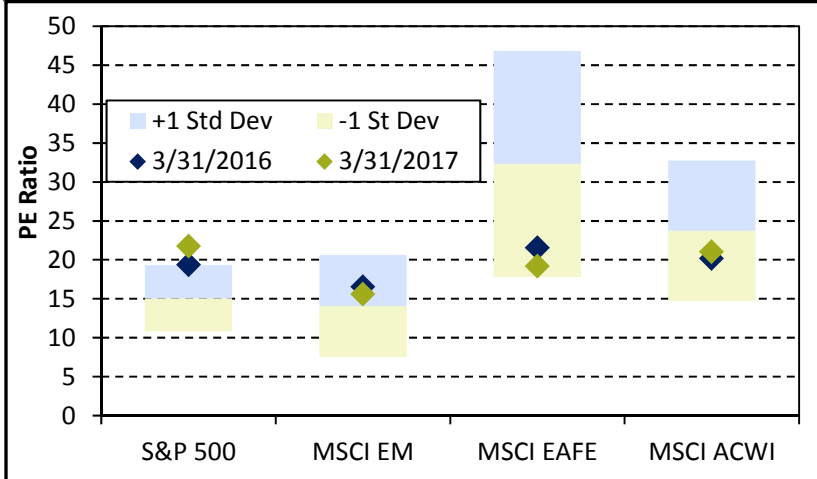
Source: Bloomberg

## EM central bank policies vary by country-specific economic conditions



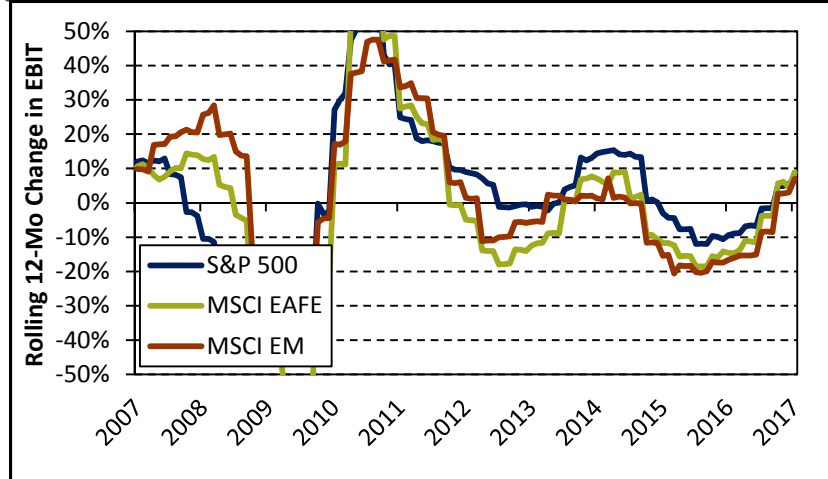
Source: Bloomberg

## EM and EAFE valuations remain lower than the previous year



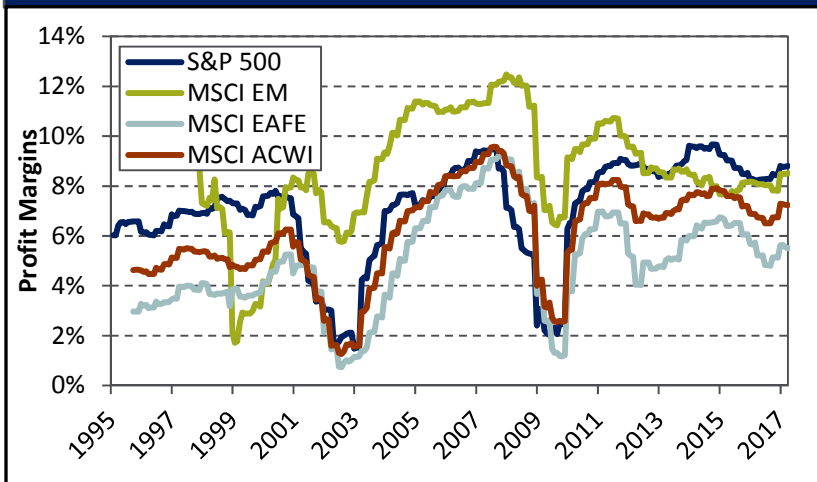
Source: Bloomberg, Standard and Poors, MSCI \*MSCI EAFE is ex UK Telecom  
\*Standard deviation calculations on 20 years of data except S&P 500 (30 years)

## Rolling annual earnings growth continues trending upward off contraction



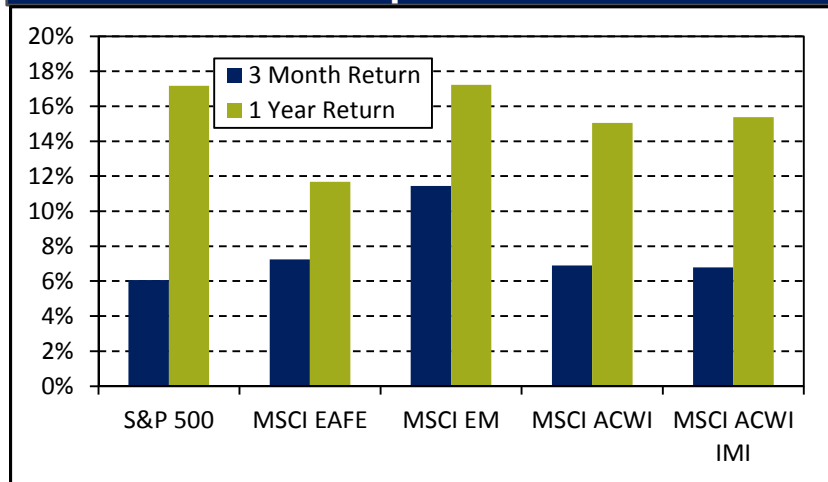
Source: Bloomberg, Standard and Poors, MSCI

## Profit margins continue to increase



Source: Bloomberg, MSCI

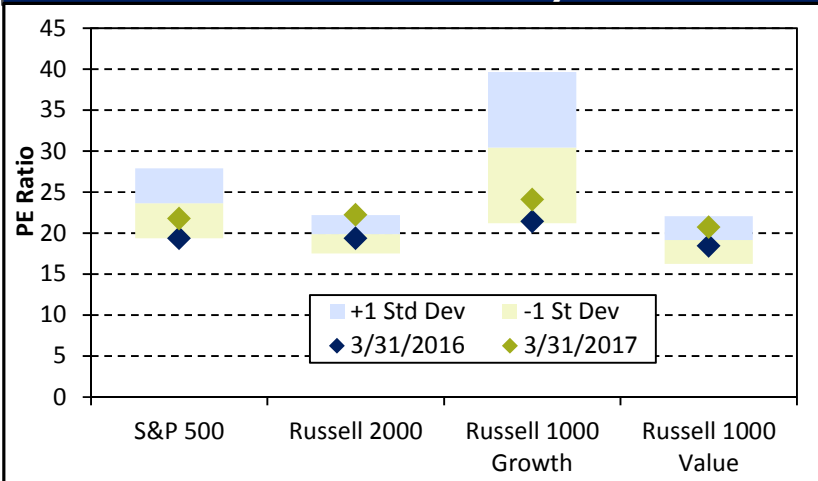
## Equities have experienced positive short-term performance



Source: Bloomberg, MSCI

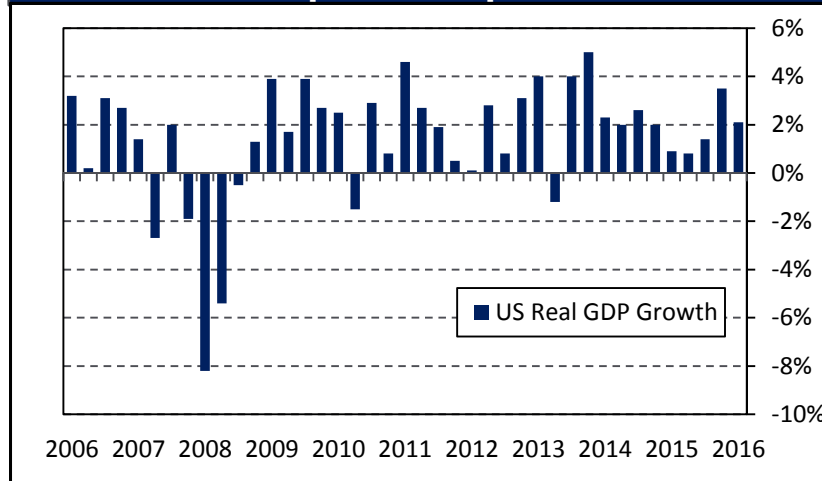
# US Equity

## US equity valuations remain elevated relative to last year



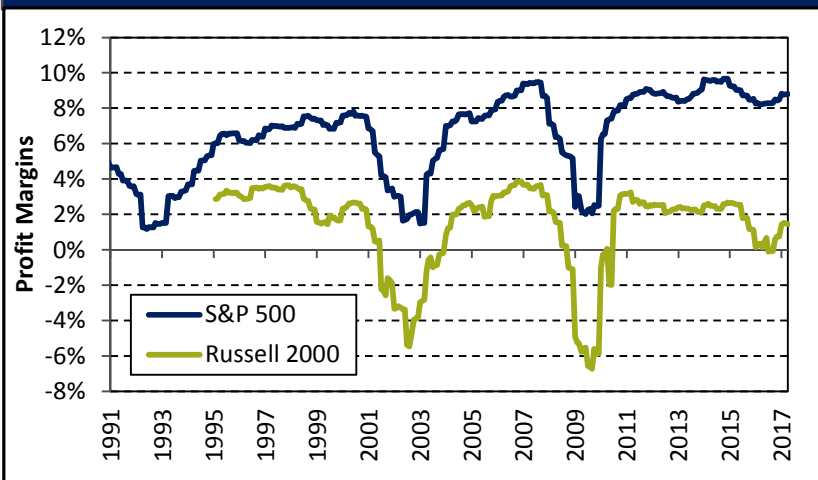
Source: Bloomberg, Standard and Poors, Russell \*Russell 2000 PE is index adjusted positive\* Standard deviation calculations based on 20 years of data

## Real GDP growth declined from the previous quarter



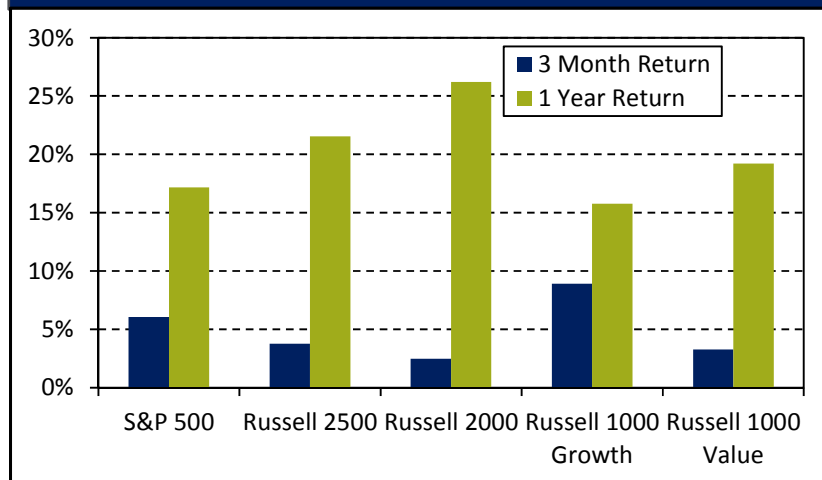
Source: Bloomberg, Bureau of Economic Analysis

## Profit margins experience a slight uptick



Source: Bloomberg, Standard and Poors, Russell

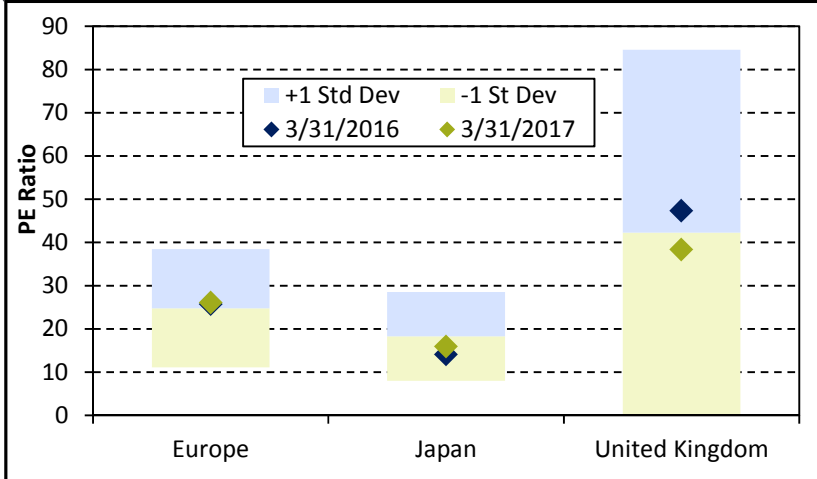
## US equity posts positive short-term returns



Source: Bloomberg, Standard and Poors, Russell

# International Equity

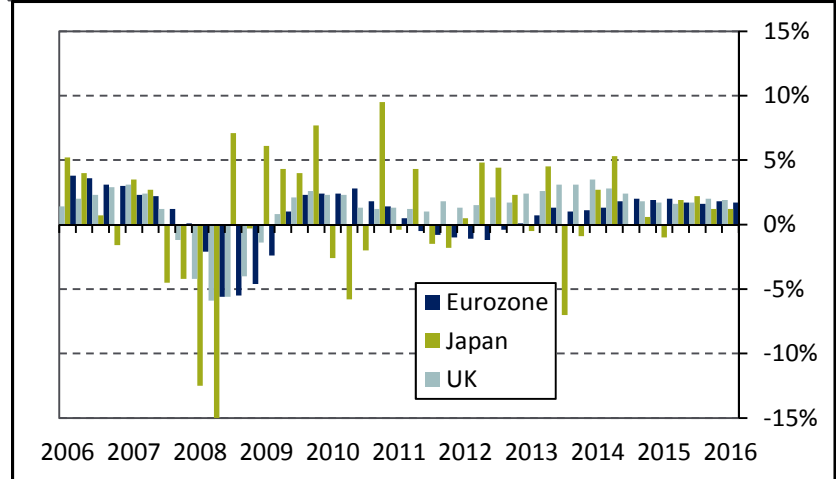
## UK valuation falls below previous year level



Source: Bloomberg, MSCI, FTSE \*UK represented by FTSE 100 Index

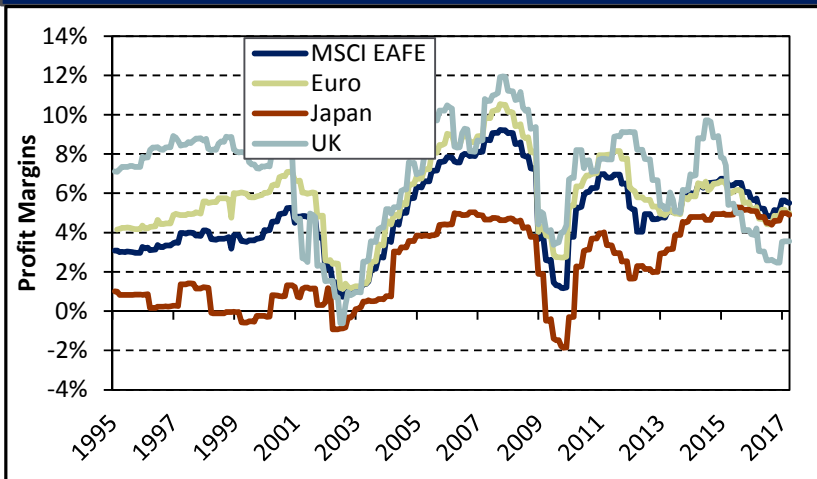
\*Standard deviation calculations based on 20 years of data, with Europe since 12/1998

## International growth has steadied



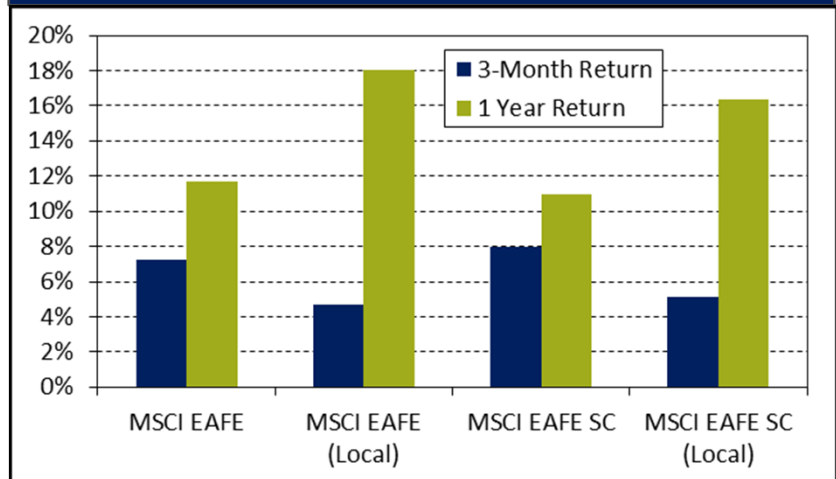
Source: Bloomberg

## Profit margins continue trending higher



Source: Bloomberg, MSCI

## Strong short-term performance for EAFE



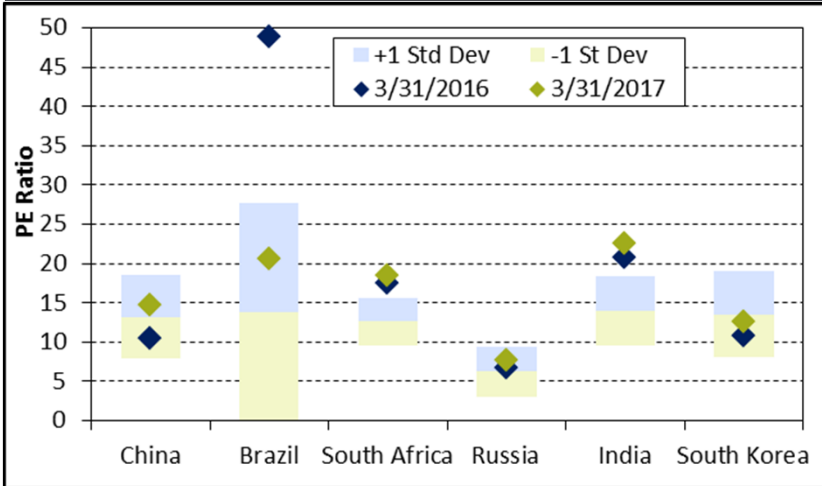
Source: Bloomberg, MSCI



NEPC, LLC

# Emerging Markets Equity

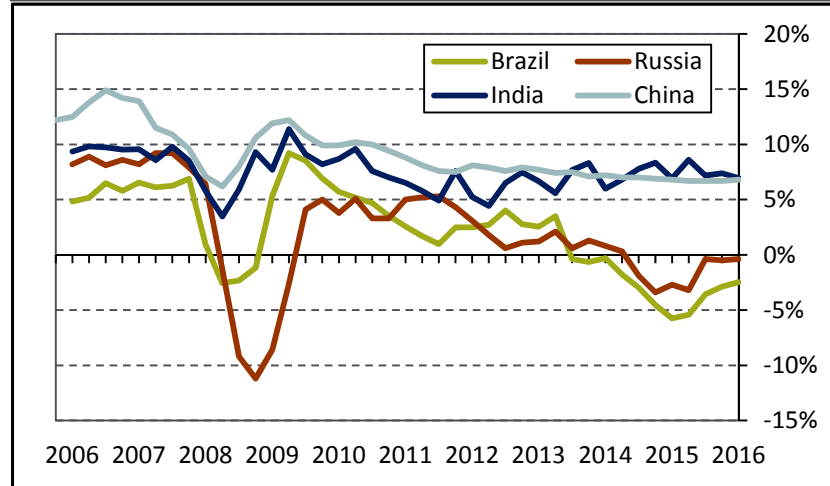
## Ex-Brazil, current year valuations remain higher than the previous year



Source: Bloomberg, MSCI

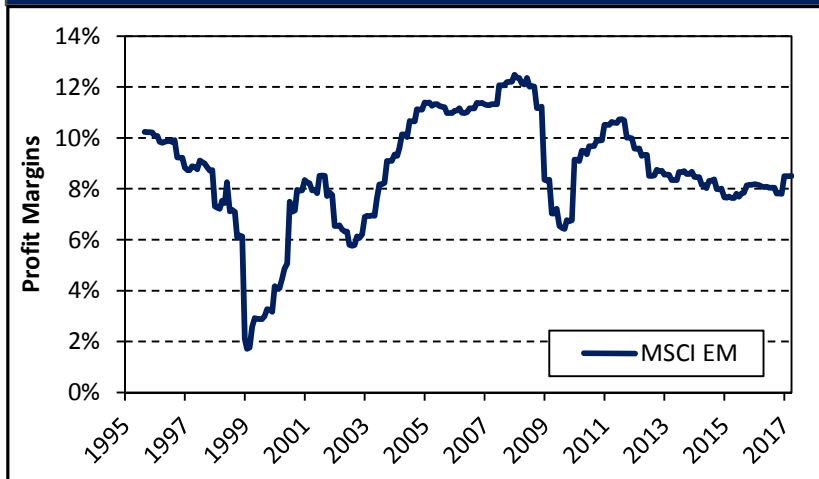
\*Standard deviation calculations based on 20 years of data, with Russia since 01/1998

## Brazil continues to rebound off earnings contraction



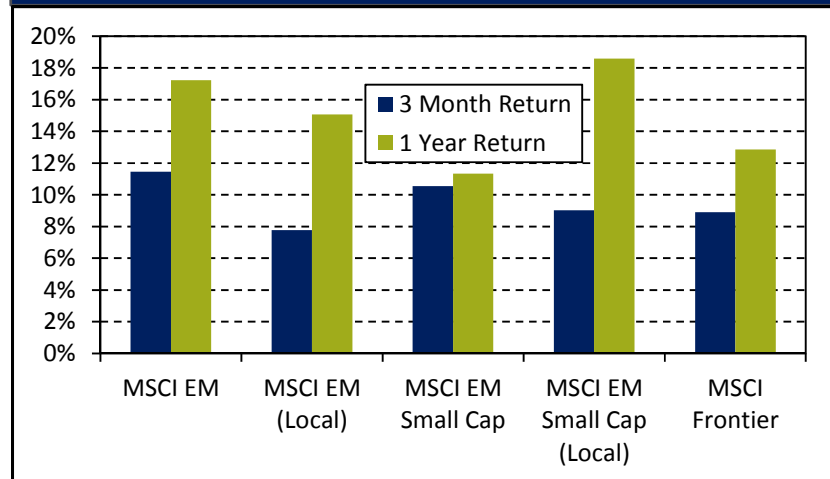
Source: Bloomberg

## Profit margins experience slight uptick



Source: Bloomberg, MSCI

## EM posts strong short-term returns



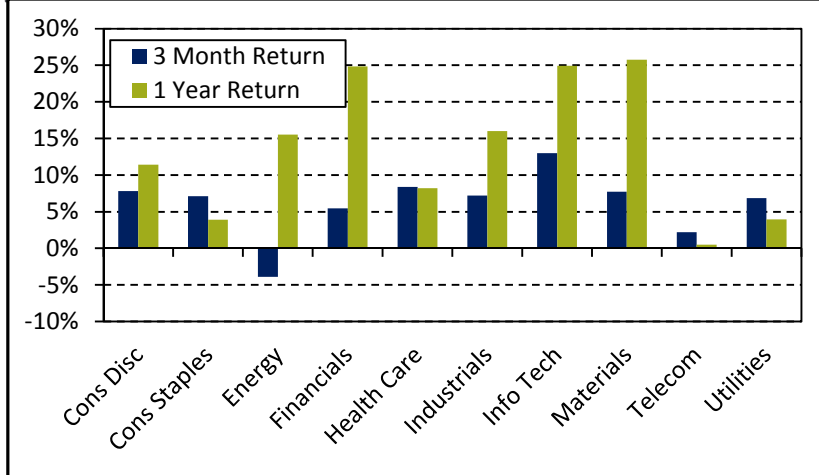
Source: Bloomberg, MSCI



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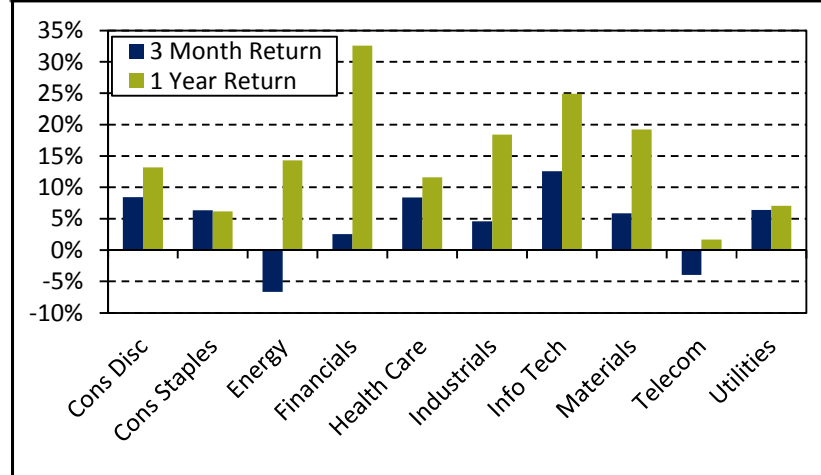
# Global Equity by Sector

## Ex-energy, MSCI ACWI has posted broad short-term returns



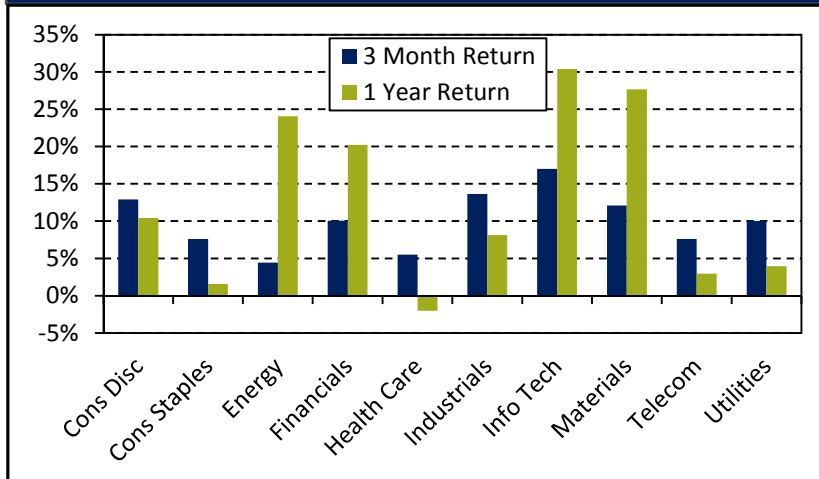
Source: Bloomberg, MSCI

## Energy and Telecom sectors drag S&P 500 short-term returns



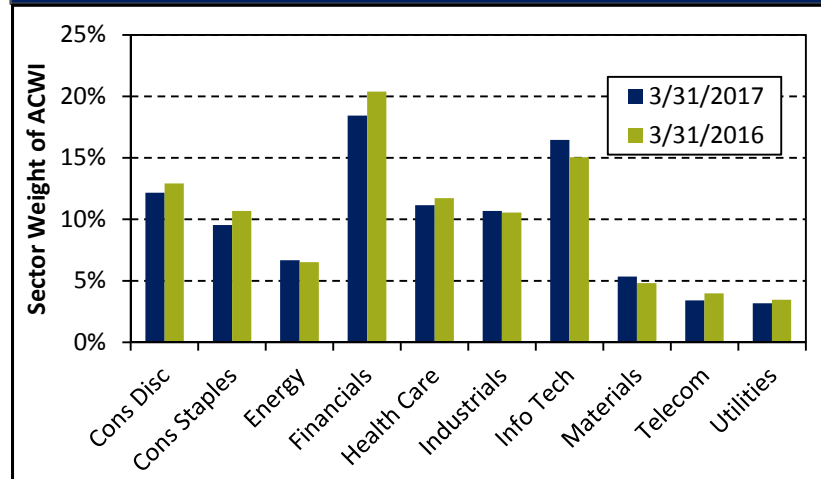
Source: Bloomberg, Standard and Poors

## MSCI EM posts positive short-term returns across all sectors



Source: Bloomberg, MSCI

## Financials sector weight has decreased in favor of Info Tech and Materials



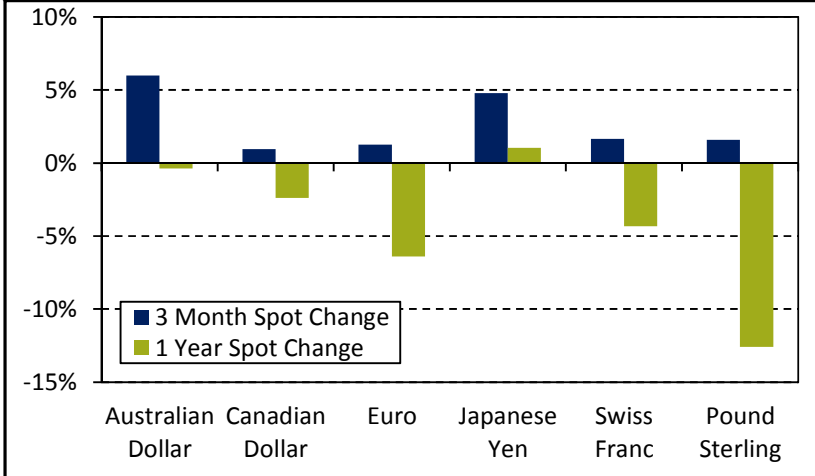
Source: Bloomberg, MSCI





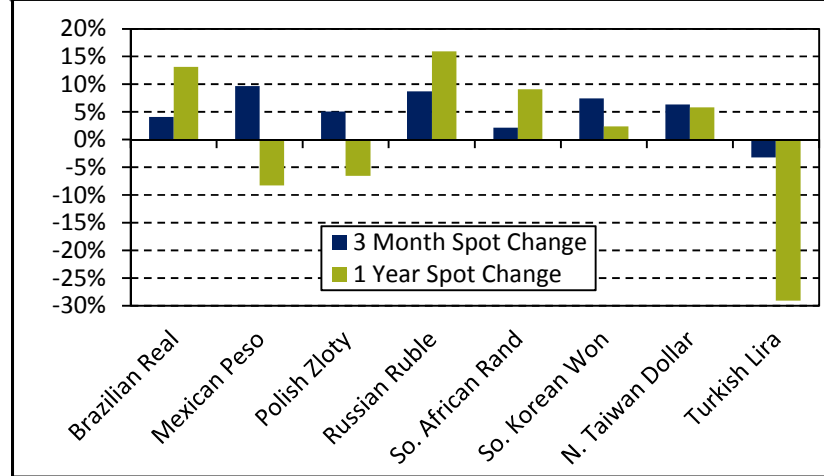
# Currencies

## International currencies have appreciated with the dollar decline



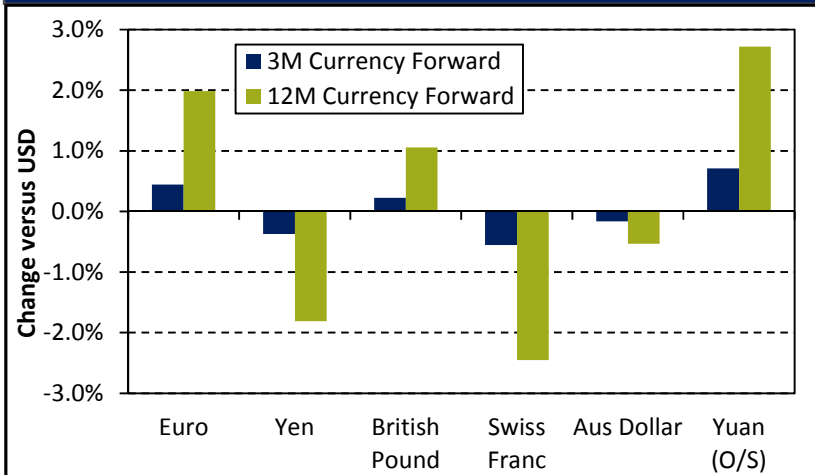
Source: Bloomberg

## The Lira has experienced sharp depreciation



Source: Bloomberg

## USD expectations vary across developed markets



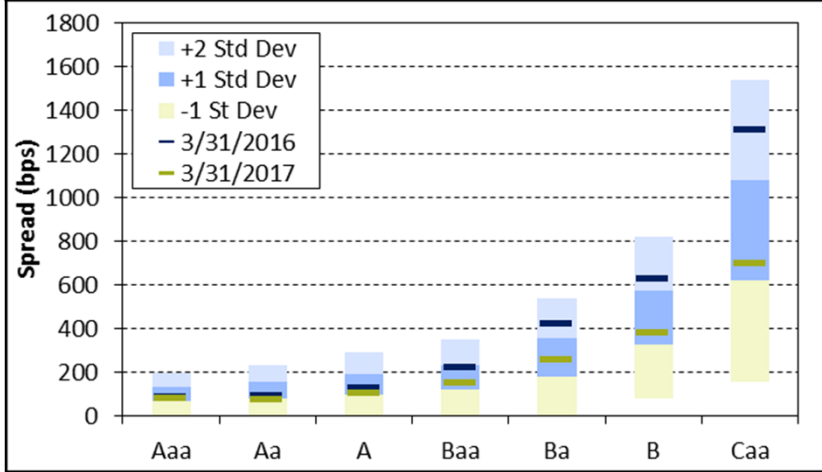
Source: Bloomberg

## The dollar has steadied in 2017



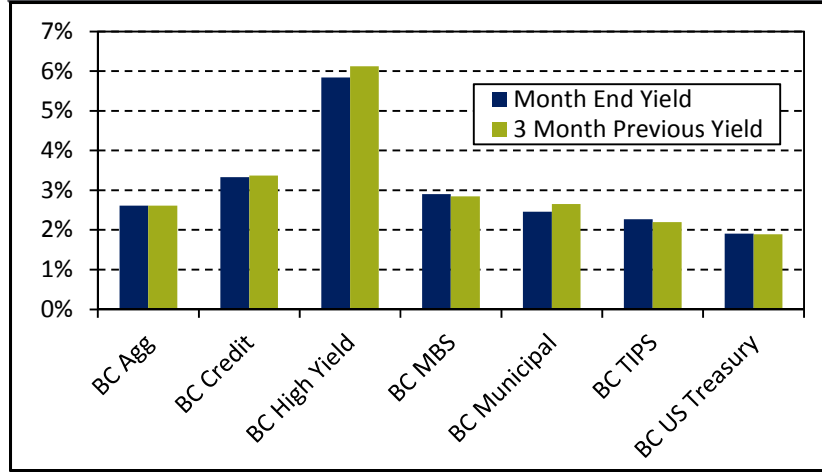
Source: Bloomberg, Federal Reserve

## Spreads remain lower than the previous year



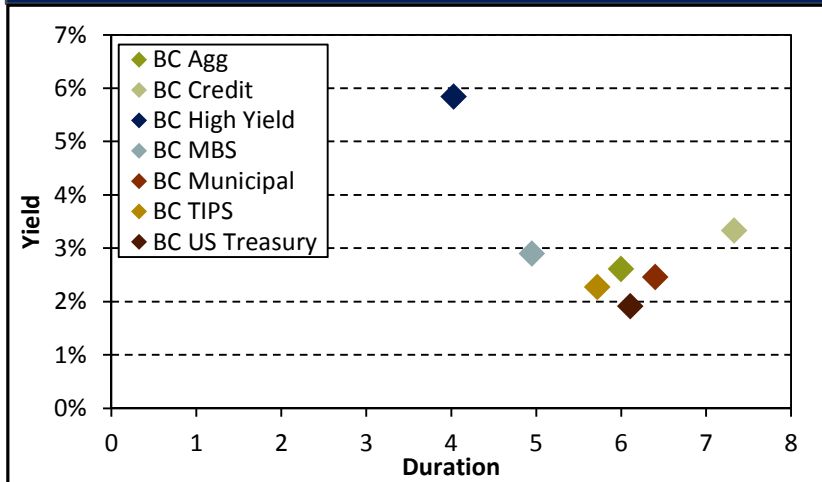
Source: Bloomberg, Barclays  
\*Standard deviation calculations based on 20 years of data

## Yields are similar to three months prior



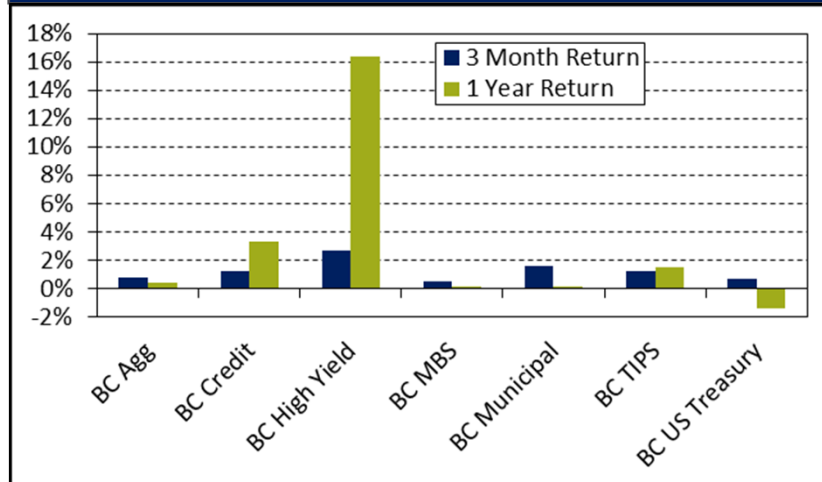
Source: Bloomberg, Barclays

## Similar duration/yield profiles among core indices



Source: Bloomberg, Barclays

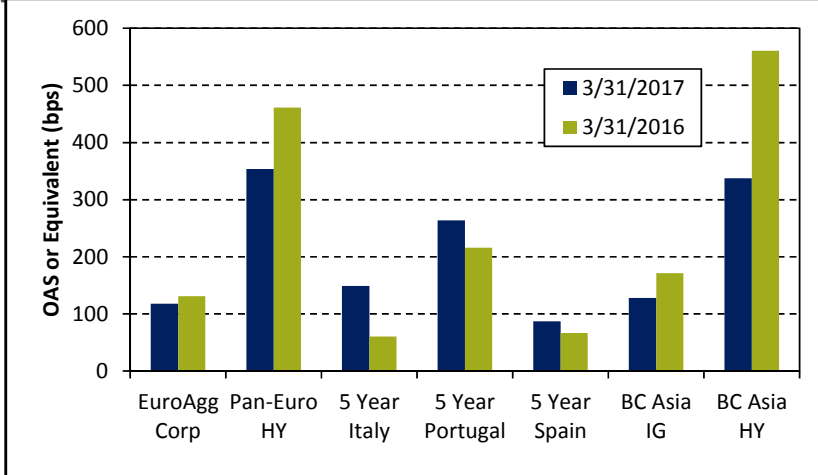
## High yield continues to outperform other fixed income indices



Source: Bloomberg, Barclays

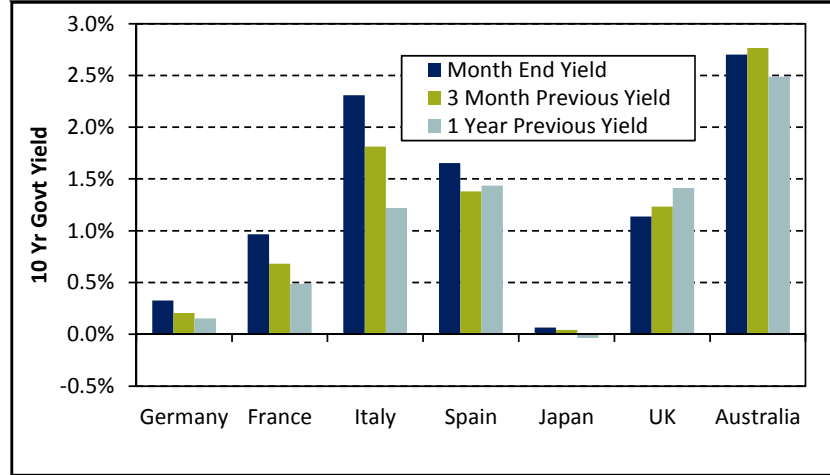
# International Developed Fixed Income

## European periphery yields vary relative to Germany



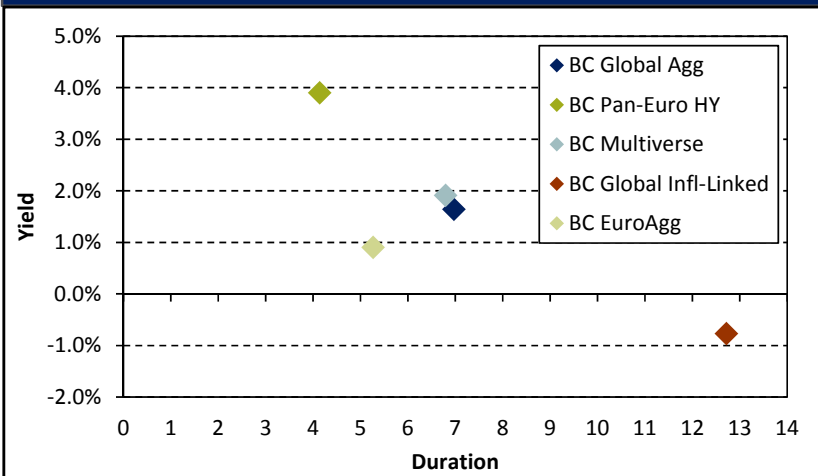
Source: Barclays, Bloomberg, \*European periphery spreads are over equivalent German Bund

## Ex the UK and Australia, international developed market yields have increased



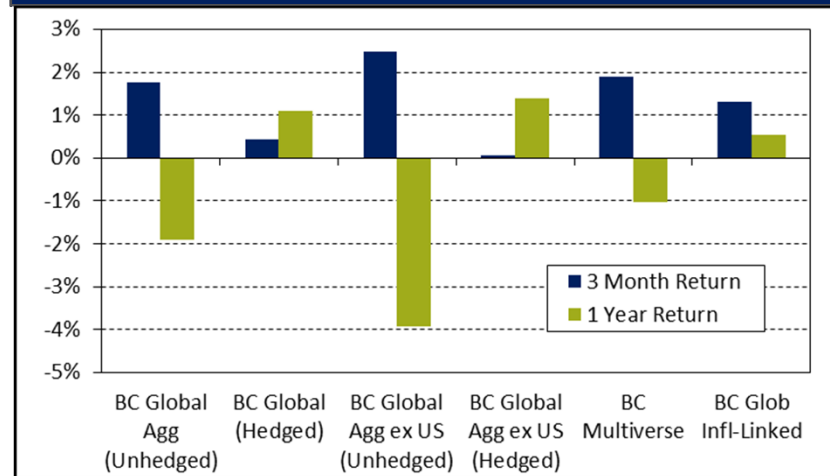
Source: Bloomberg

## Low yields persist in global bond universe



Source: Bloomberg, Citigroup, Barclays

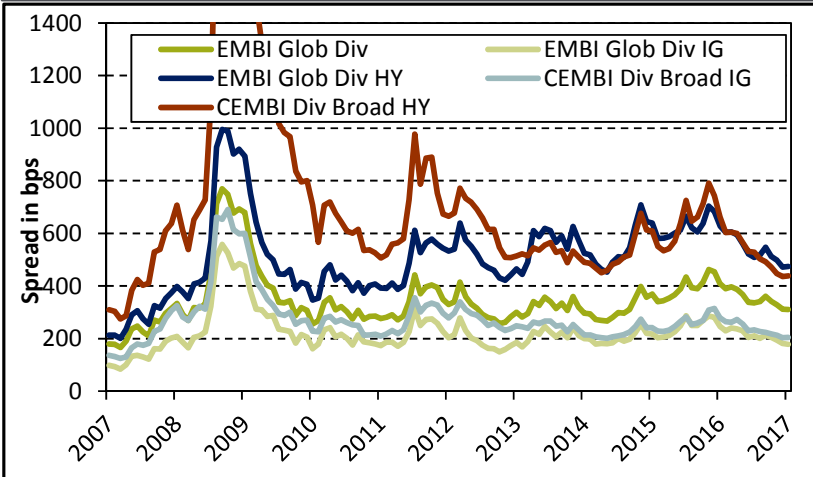
## Global bonds post relatively strong short-term returns



Source: Bloomberg, Citigroup, Barclays

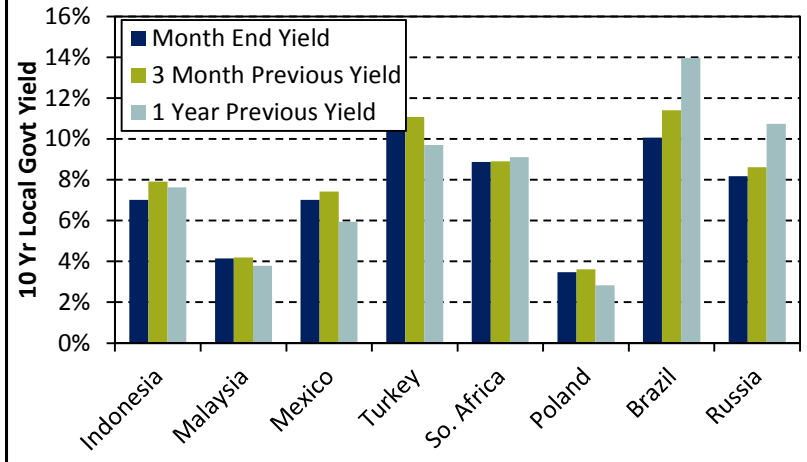
# Emerging Markets Fixed Income

## Spreads continue to decline



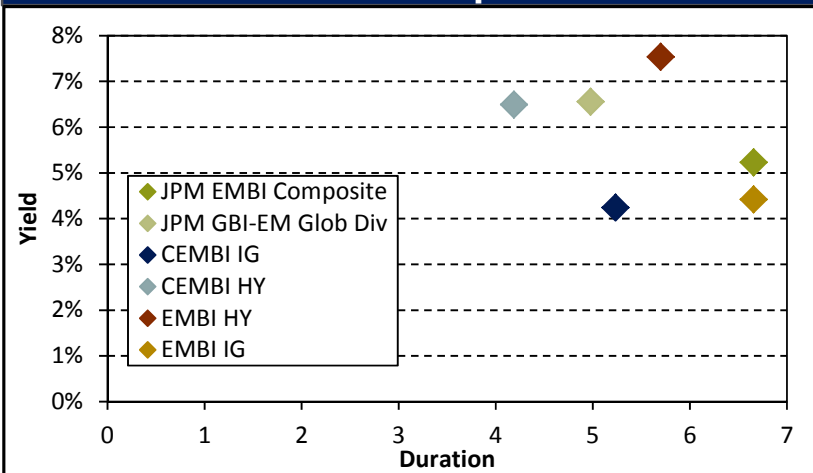
Source: Bloomberg, JP Morgan

## Ex Russia and Brazil, EM local bond yields remain largely unchanged for the year



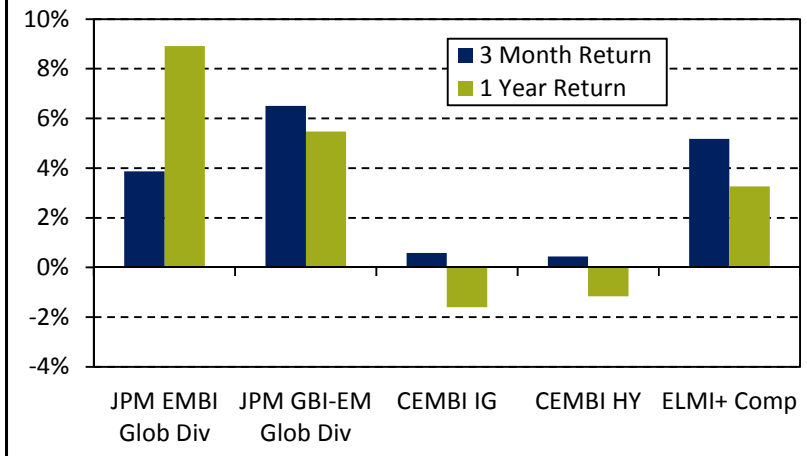
Source: Bloomberg

## EM yields remain attractive versus global counterparts



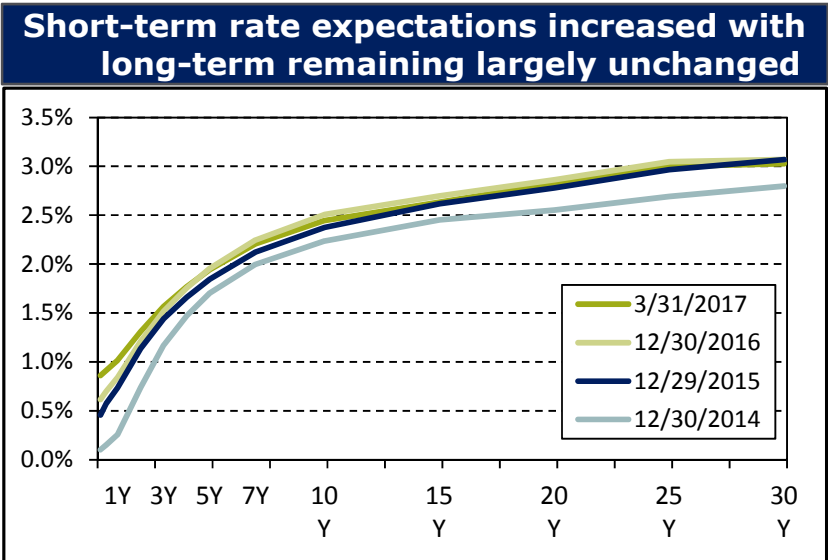
Source: Bloomberg, JP Morgan

## EM debt posts strong positive short-term returns

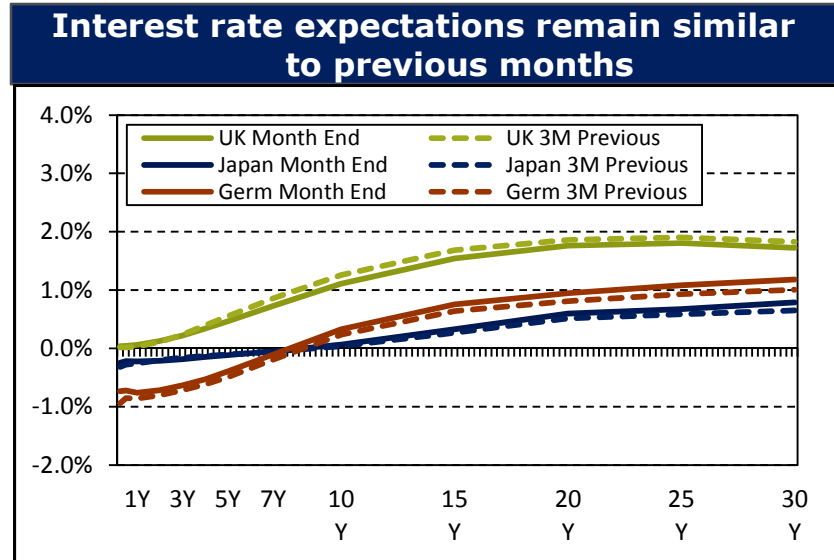


Source: Bloomberg, JP Morgan

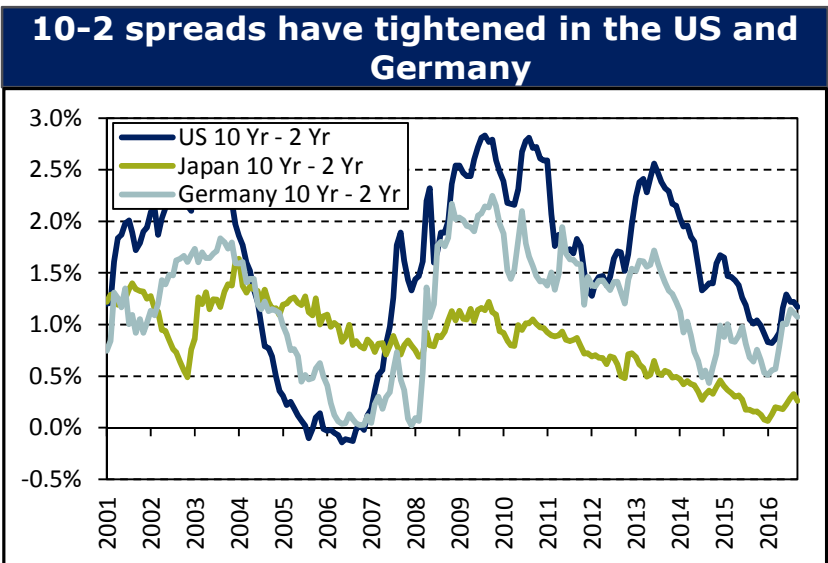




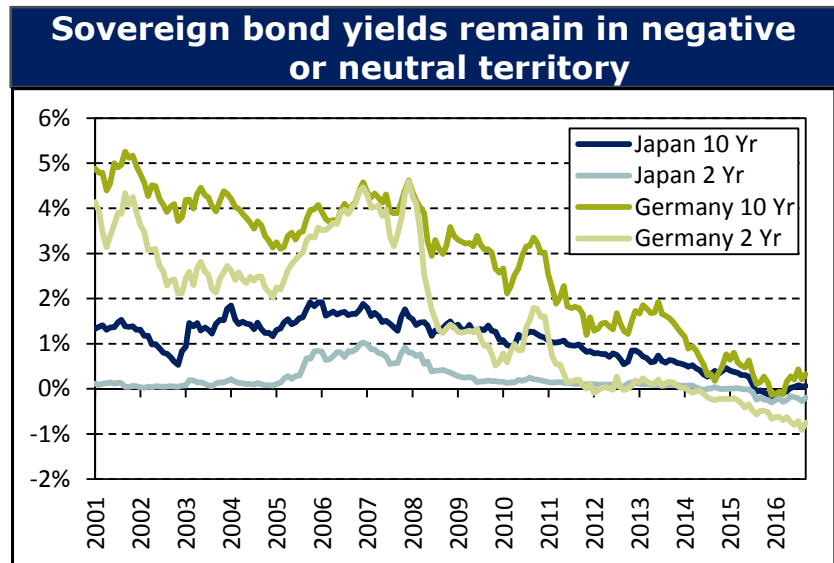
Source: Bloomberg



Source: Bloomberg



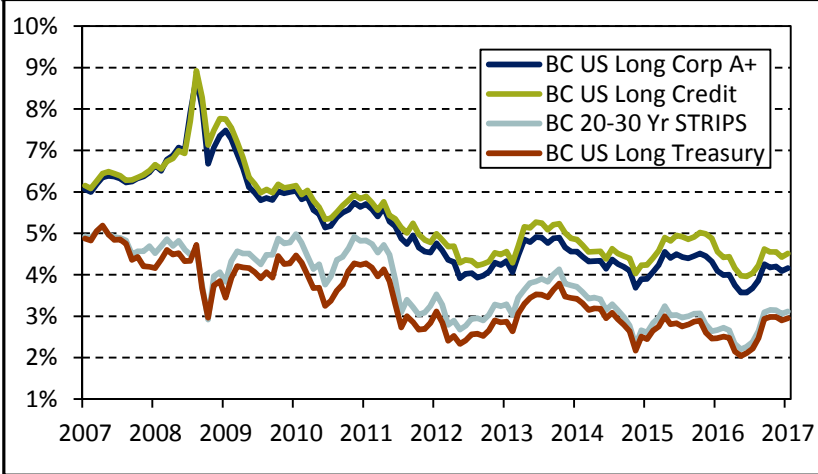
Source: Bloomberg



Source: Bloomberg

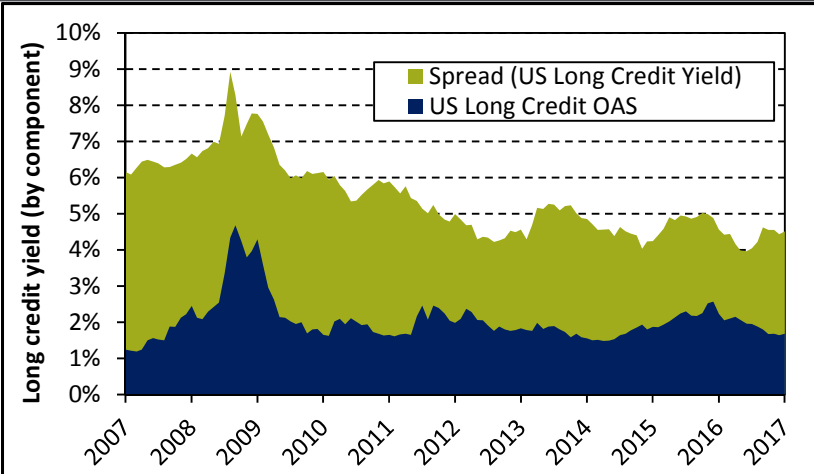
# Long Rates and Liability

## Long duration yields have steadied



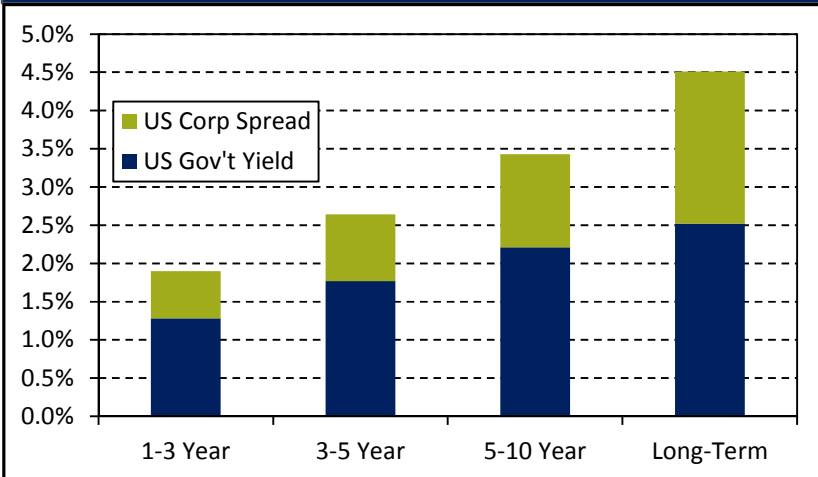
Source: Bloomberg, Citigroup, Barclays

## Long credit yield remains in line with previous years



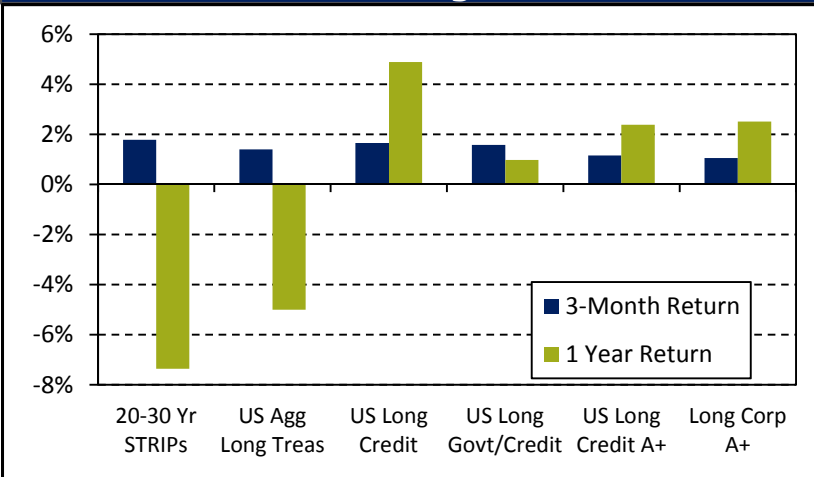
Source: Bloomberg, US Treasury, Barclays, NEPC

## Yield and spread components continue to offer modest returns



Source: Bloomberg, Barclays

## Long duration fixed income posts short-term gains

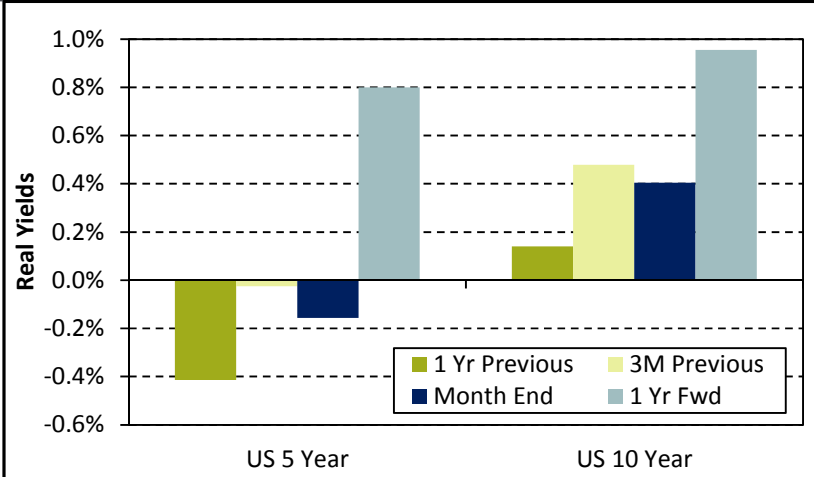


Source: Bloomberg, Barclays



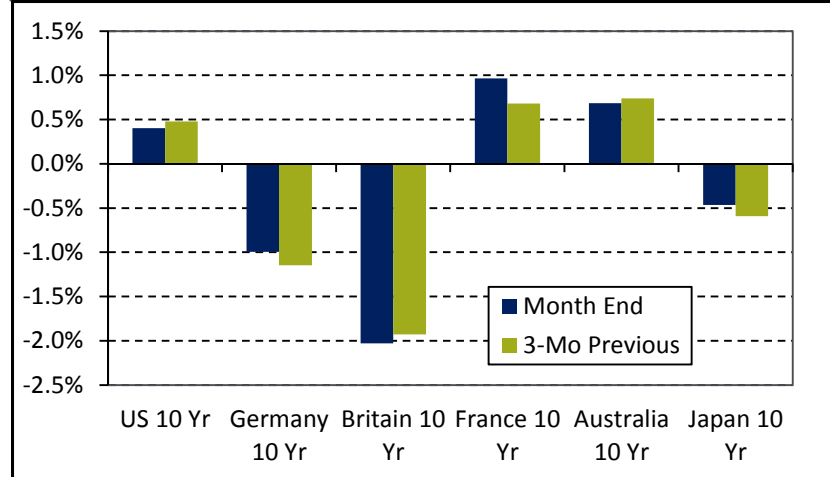
# Inflation and Real Rates

## US 5 and 10 year real yields decreased from three months prior



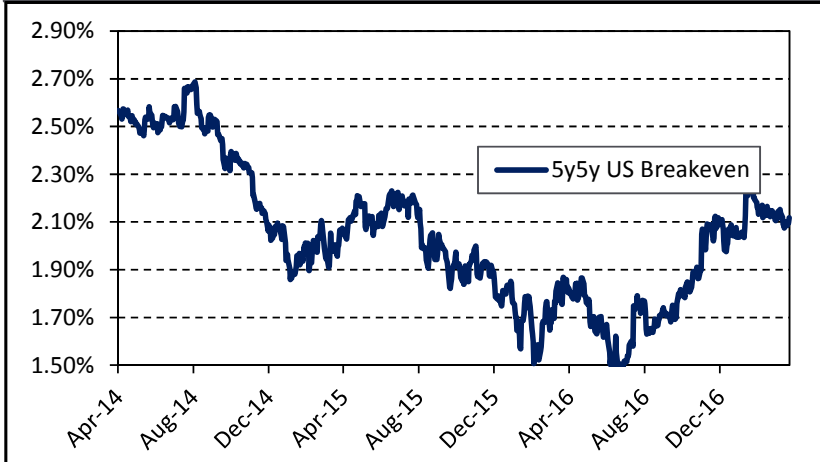
Source: Bloomberg

## France's yield has increased with election uncertainty



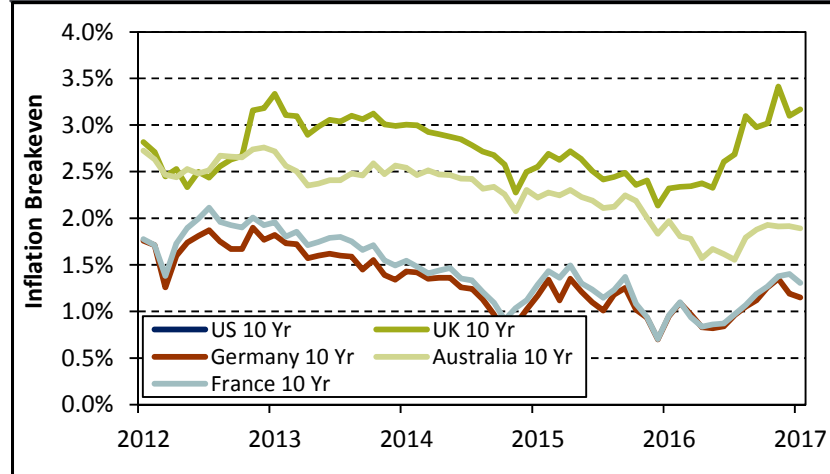
Source: Bloomberg

## US inflation expectations have decreased off of post US election highs



Source: Bloomberg

## Germany and France inflation expectations have begun to fall

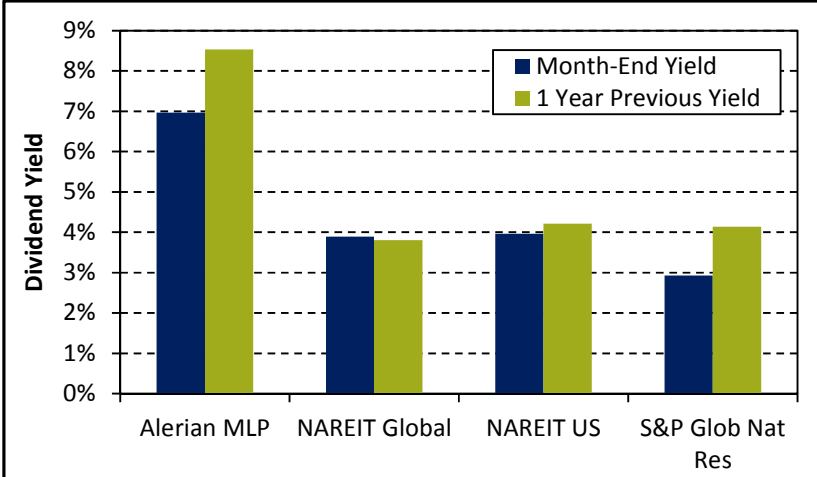


Source: Bloomberg



# Inflation-Sensitive Growth Assets

## MLP yields remain similar to the previous year



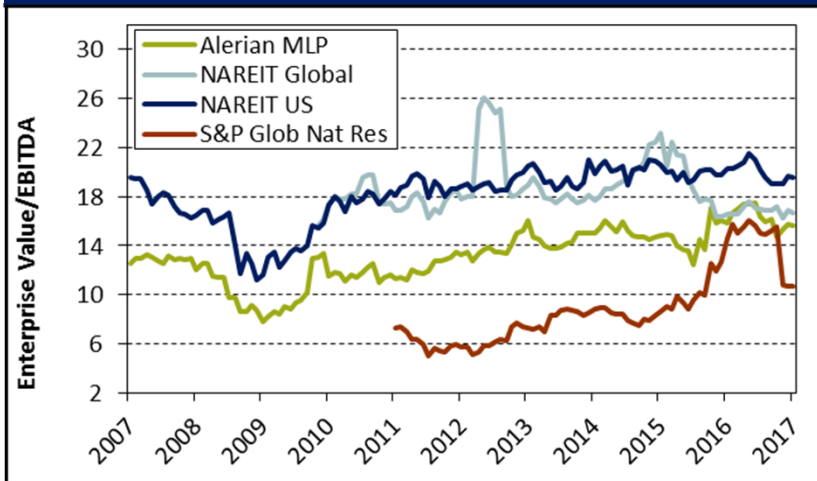
Source: Bloomberg, Alerian, Nareit, Standard and Poors

## Sustained recovery in commercial real estate occupancy rates



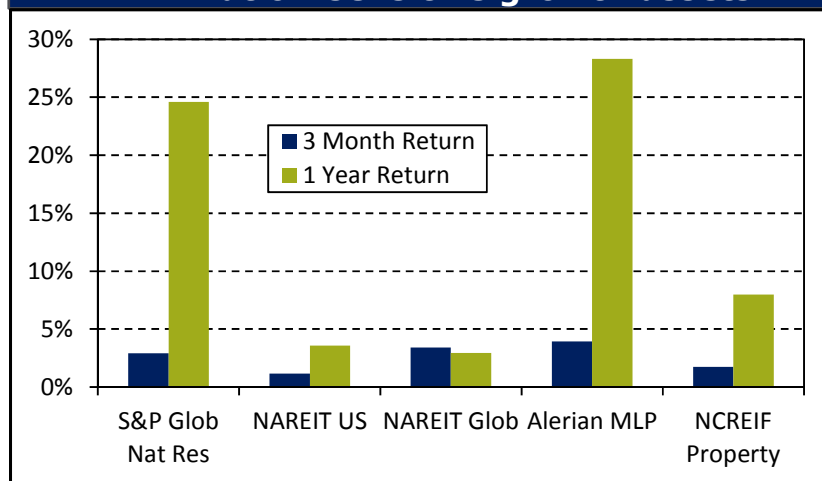
Source: NCREIF

## US REIT valuations have steadied



Source: Bloomberg, US Census Bureau

## Positive short-term performance for inflation-sensitive growth assets



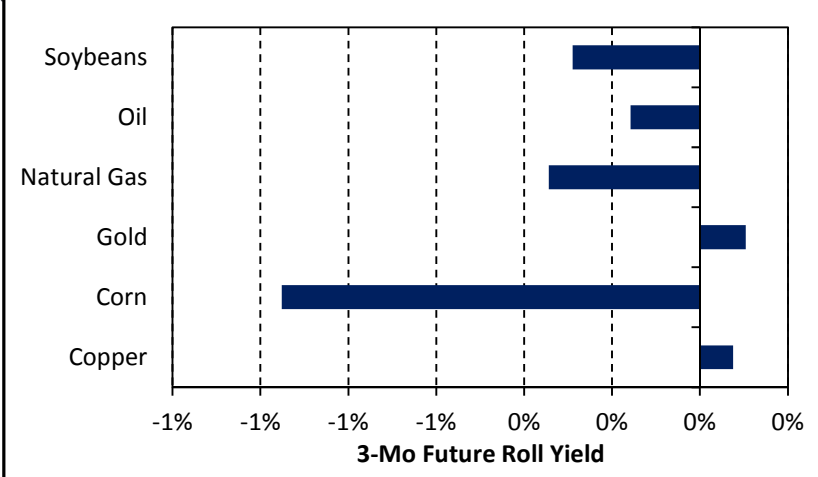
Source: Bloomberg, Alerian, Nareit, Standard and Poors





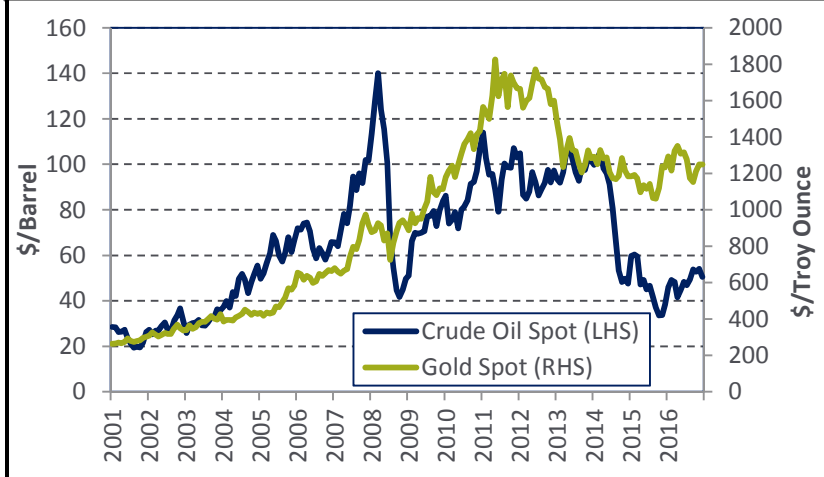
# Commodities

## Negative roll yields remain a hurdle for investing directly in oil and natural gas



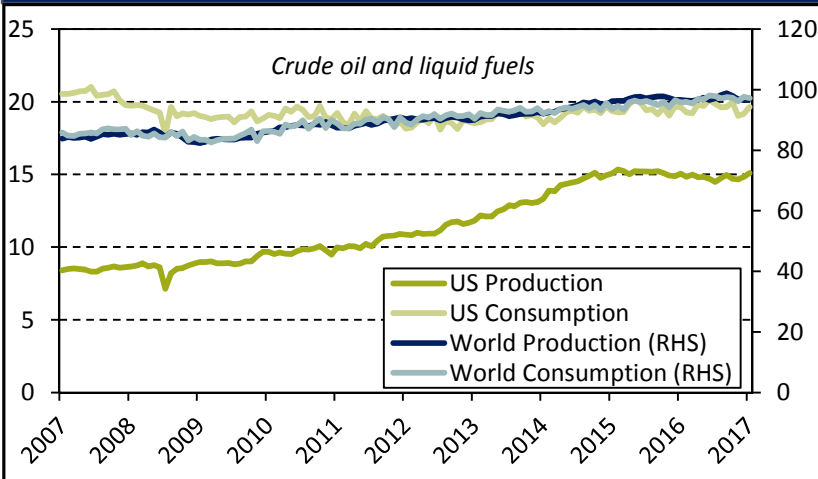
Source: Bloomberg

## Oil has slightly declined for the month



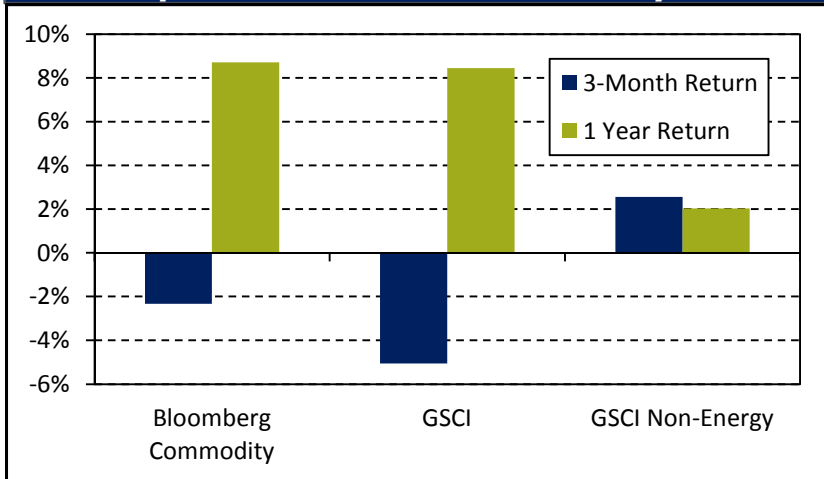
Source: Bloomberg

## Oil production and consumption has steadied



Source: Bloomberg, US Department of Energy \*Crude oil and liquid fuels

## Non-energy commodities have outperformed broad commodity indices



Source: Bloomberg, Standard and Poors



## Glossary of Investment Terminology

The calculation methodology for each measure of performance is outlined below.

Measurement	Description	Equation
<b>Policy Target</b>	Measures policy allocation decisions.	= TARGET ASSET WEIGHTS X INDEX RETURNS
<b>Allocation Index</b>	Measures actual allocation decisions. Deviations from the policy target can be derived. (Allocation Index – Policy Index)	= ACTUAL ASSET WEIGHTS X INDEX RETURNS
<b>Composite (Total Return)</b>	Measures actual performance and can derive active management decisions. (Composite – Allocation Index)	= ACTUAL ASSET WEIGHTS X ACTUAL RETURNS

The calculation methodology for each measure of attribution is outlined below.

Measurement	Description	Equation
<b>Allocation Effect</b>	Measure the effects of overweighting or underweighting managers and asset classes.	= (ACTUAL MANAGER WEIGHT – POLICY TARGET WEIGHT) X POLICY INDEX RETURN
<b>Selection Effect</b>	Measures the managers’ ability to add excess return relative to the policy index.	= (ACTUAL MANAGER RETURN – INDEX RETURN) X POLICY TARGET WEIGHT
<b>Interaction Effect</b>	Measures the cross correlation of both selection and allocation affects and is often referred to as an “error term”.	= (ACTUAL MANAGER RETURN X (ACTUAL MANAGER WEIGHT – POLICY TARGET WEIGHT)) – ((MANAGER WEIGHT – POLICY TARGET WEIGHT) X INDEX RETURN)

- **Past performance is no guarantee of future results.**
- **The goal of this report is to provide a basis for monitoring financial markets. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.**
- **Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.**
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