



NEPC, LLC

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## Ventura County Employees' Retirement Association

**Investment Summary**  
**Quarter Ending December 31, 2015**

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# Market Environment Update and Outlook



## Economic Environment

- **Fourth quarter GDP growth rate (first estimate) printed at a modest 0.7%.**
  - Retail sales (ended November) at +0.9% on a year-over-year growth rate basis. In the same period last year the YoY growth rate was 4.6%.
  - The inventory-to-sales ratio ending November was flat at 1.4 and has remained relatively flat since early 2010.
  - Corporate profits (ended June) as a percent of GDP declined slightly vs first quarter GDP to 9.9% from 10.3% and remain elevated relative to historical levels.
  - The U.S. trade deficit declined slightly in November.
- **The unemployment rate fell to 5.0% in Q4 from 5.6% in Q4 2014; U-6, a broader measure of unemployment, fell to 9.9% during the fourth quarter.**
- **The Case-Shiller Home Price Index (as of 10/31) increased slightly to 175.7 from second quarter levels (170.0) and is at levels higher than that of pre-financial crisis levels of 150.9.**
- **Rolling 12-month seasonally adjusted CPI increased to 0.6% from -0.02% at the end of September; Capacity Utilization decreased to 76.5% in December from 77.9% in September.**
- **Fed Funds rate was raised to 0.50% from 0.25%; The 10-year Treasury Yield (constant maturity) finished Q4 at 2.2% flat from Q3.**
- **The Fed balance sheet remained little changed in Q4 2015, while the European Central Bank balance sheet continues to increase.**
  - ECB continues asset purchases of €60 billion per month.
- **S&P valuations decreased in December remaining above the 10-year and long-term averages**
  - Cyclically adjusted Shiller PE ratio (23.95x) is above the long-term average of 16.4x and above the 10-year average of 22.9x.
- **The U.S. Dollar continues its strength against a basket of major currencies**
  - Currency volatility has seen a sustained uptick since Q1 2015.

## Market Environment

### Global Equity

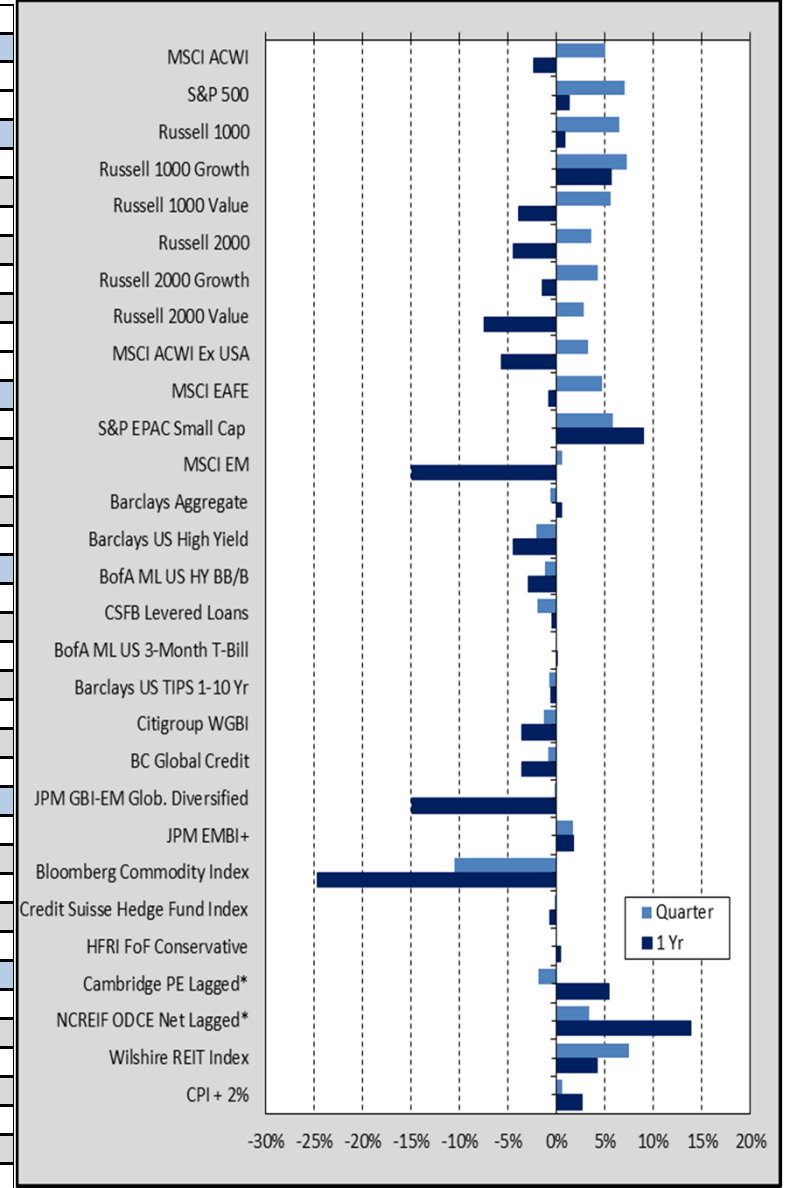
- **U.S. equities posted solid gains in the fourth quarter as global volatility continued.**
- **Small cap stocks underperformed large cap stocks during the quarter, with the Russell 2000 Index returning 3.6%% and the Russell 1000 Index returning 6.5%.**
- **International equities underperformed U.S. markets during the quarter, returning 3.2%, as measured by the MSCI ACWI ex-U.S. Index.**
  - Developed markets returned 4.7% as measured by the MSCI EAFE Index. The Pacific Region led returns posting a 9.0% gain with New Zealand leading the group up 18.2%. Europe posted modest gains, up 2.5%
  - Emerging markets returned 0.7% as measured by the MSCI Emerging Markets Index in U.S. dollar terms. Indonesia and China led gains returning 20.8% and 13.1% respectively.

### Private Equity

- **New private equity commitments totaled \$312 billion in calendar year 2015.**
  - Represents a 14% decline from the \$360 billion raised in 2014, resulting from public equity market volatility and increased economic uncertainties.
- **Buyout and Special Situations fundraising down over 20% from post crisis high in 2014.**
- **Venture capital raised approximately \$43.9 billion in calendar 2015.**
  - VC fundraising as a percent of total new PE funds is in line with historical post-dot com levels at approximately 14%.
- **Energy funds raised \$38.6 billion representing 12% of capital raised in 2015.**
  - Investors are opportunistically approaching the energy market dislocation.
- **Asian private equity commitments slowed to total 8% of total funds raised down from 11% in 2014.**
- **European commitments comprised 23% of all new PE commitments in 2015.**
  - Fifteen pan-European buyout managers with closes on over \$1 billion each raised over half of 2015 total

# Market Environment – Q4 2015 Overview

		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>World Equity Benchmarks</b>						
MSCI ACWI	World	5.0%	-2.4%	7.7%	6.1%	4.8%
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>Domestic Equity Benchmarks</b>						
S&P 500	Large Core	7.0%	1.4%	15.1%	12.6%	7.3%
Russell 1000	Large Core	6.5%	0.9%	15.0%	12.4%	7.4%
Russell 1000 Growth	Large Growth	7.3%	5.7%	16.8%	13.5%	8.5%
Russell 1000 Value	Large Value	5.6%	-3.8%	13.1%	11.3%	6.2%
Russell 2000	Small Core	3.6%	-4.4%	11.7%	9.2%	6.8%
Russell 2000 Growth	Small Growth	4.3%	-1.4%	14.3%	10.7%	8.0%
Russell 2000 Value	Small Value	2.9%	-7.5%	9.1%	7.7%	5.6%
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>International Equity Benchmarks</b>						
MSCI ACWI Ex USA	World ex-US	3.2%	-5.7%	1.5%	1.1%	2.9%
MSCI EAFE	Int'l Developed	4.7%	-0.8%	5.0%	3.6%	3.0%
S&P EPAC Small Cap	Small Cap Int'l	5.9%	9.0%	10.7%	6.9%	5.7%
MSCI EM	Emerging Equity	0.7%	-14.9%	-6.8%	-4.8%	3.6%
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>Domestic Fixed Income Benchmarks</b>						
Barclays Aggregate	Core Bonds	-0.6%	0.5%	1.4%	3.2%	4.5%
Barclays US High Yield	High Yield	-2.1%	-4.5%	1.7%	5.0%	7.0%
BofA ML US HY BB/B	High Yield	-1.1%	-2.9%	2.2%	5.3%	6.5%
CSFB Levered Loans	Bank Loans	-2.0%	-0.4%	2.6%	3.8%	4.1%
BofA ML US 3-Month T-Bill	Cash	0.0%	0.1%	0.1%	0.1%	1.2%
Barclays US TIPS 1-10 Yr	Inflation	-0.7%	-0.5%	-1.8%	1.6%	3.5%
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>Global Fixed Income Benchmarks</b>						
Citigroup WGBI	World Gov. Bonds	-1.2%	-3.6%	-2.7%	-0.1%	3.4%
BC Global Credit	Global Bonds	-0.8%	-3.5%	-0.3%	2.8%	4.3%
JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local)	-0.0%	-14.9%	-10.0%	-3.5%	4.3%
JPM EMBI+	Em. Mkt. Bonds	1.8%	1.8%	-0.3%	5.0%	6.7%
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>Alternative Benchmarks</b>						
Bloomberg Commodity Index	Commodity	-10.5%	-24.7%	-17.3%	-13.5%	-6.4%
Credit Suisse Hedge Fund Index	Hedge Fund	-0.1%	-0.7%	4.3%	3.6%	5.0%
HFRI FoF Conservative	Fund of Funds	0.1%	0.4%	3.7%	2.3%	2.0%
Cambridge PE Lagged*	Private Equity	-1.8%	5.4%	13.5%	14.1%	12.1%
NCREIF ODCE Net Lagged*	Real Estate	3.4%	13.9%	12.4%	12.9%	5.7%
Wilshire REIT Index	REIT	7.5%	4.2%	11.8%	12.4%	7.3%
CPI + 2%	Inflation/Real Assets	0.6%	2.7%	3.0%	3.6%	3.9%



\* As of 9/30/2015

## Market Environment

### Fixed Income

- The yield curve shifted up with intermediate yields increasing 21-39 basis points and long duration yields increasing 14 basis points.
- The spread between two and 10-year rates decreased to 121 basis points from 141 basis points ended December. Treasury Inflation-Protected Securities, or TIPS, returned -0.7% during the quarter, as measured by the Barclays US TIPS 1-10 Yr Index.
- The Barclays Long Duration Credit Index lost -0.67% as the long end of the curve ended the quarter 14 basis points higher.
- Long Treasuries lost -1.38% and investment-grade corporate debt lost -0.52%.
- The Barclays 1-3 year Government/ Credit Index returned -0.36% and US high yield bonds lost -2.1%.
- Emerging markets debt continued to slow in local currency and was modestly positive in US denominated terms.
  - US dollar-denominated debt, as measured by the JP Morgan EMBI Index, gained 1.8%; local currency debt was flat, according to the JP Morgan GBI-EM Index.

### Real Assets/Inflation-Linked Assets

- **Massive energy market dislocation.**
  - Seek inflation sensitive asset classes that offer positive yield
  - Oil prices trending lower.
  - Private equity and private debt opportunities may be relatively attractive.
  - Potential for public stressed/distressed credit, equity and commodity plays.
- **OPEC and Saudi Arabia have indicated a willingness to allow lower oil prices to persist in efforts to cement market share and reduce marginal supply.**
- **Select infrastructure opportunities are attractive.**
  - Target opportunistic strategies in niche sub-sectors to take advantage of market dislocations.
- **NEPC continues to believe in the long-term demand drivers in agriculture.**
  - Long-term commodity prices driven by growing emerging market demand.
  - Softness in commodity prices may provide attractive entry point.
- **Timber opportunity set limited but warrants further review**
  - 45% increase in housing starts forecasted; timber prices highly correlated

## Market Environment

### Commodities

- **Commodities retracted significantly with the Bloomberg Commodity Index posting a -10.5%.**
  - Commodities ended the year down -24.6% with 21 of the 22 single-commodity indexes posting losses.

### Real Estate

- **NEPC continues to be neutral on core real estate in the US and remains positive on non-core real estate, that is, value-add and opportunistic strategies.**
- **Within U.S. core real estate, strong fundamentals continue to be the story along with attractive income spreads relative to interest rates.**
  - Real estate fundamentals and debt terms are attractive, however valuations are high and the possibility of rising interest rates and the impact on cap rates causes concern.
- **Overall, the non-core real estate investment environment in the U.S. is normalizing; however, select areas remain attractive.**
- **Europe is viewed as the best place for a marginal dollar of non-core real estate investment.**
  - Europe is emerging from multi-year recession, but recovery is slow and uneven with global markets experiencing large capital inflows.
  - Banks in EU are still overleveraged and have significant real estate exposure to jettison.

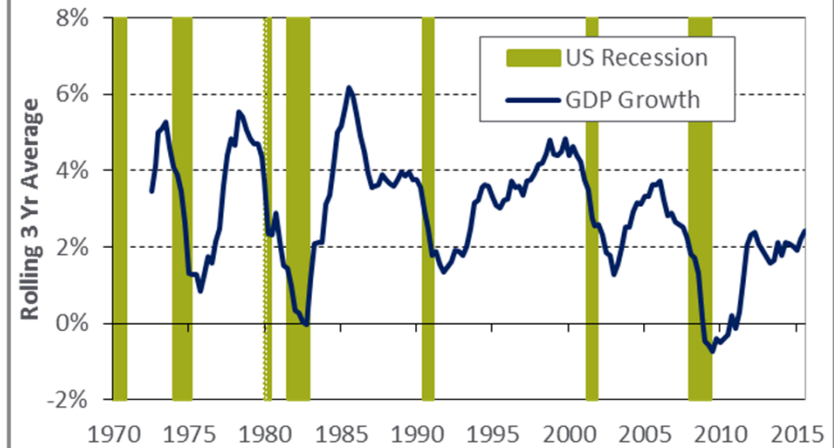


# Tale of Two Economies: Corporate Sector and the US Consumer

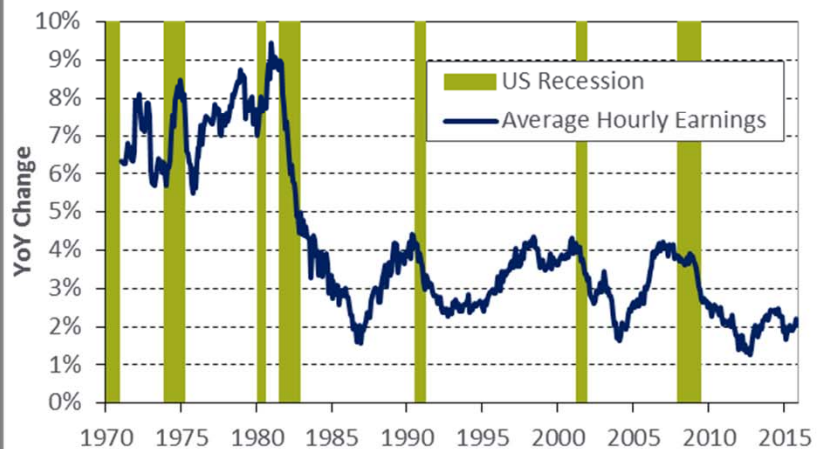
## Corporate Profits: Mid-Late Cycle



## Economic Growth Levels: Mid Cycle



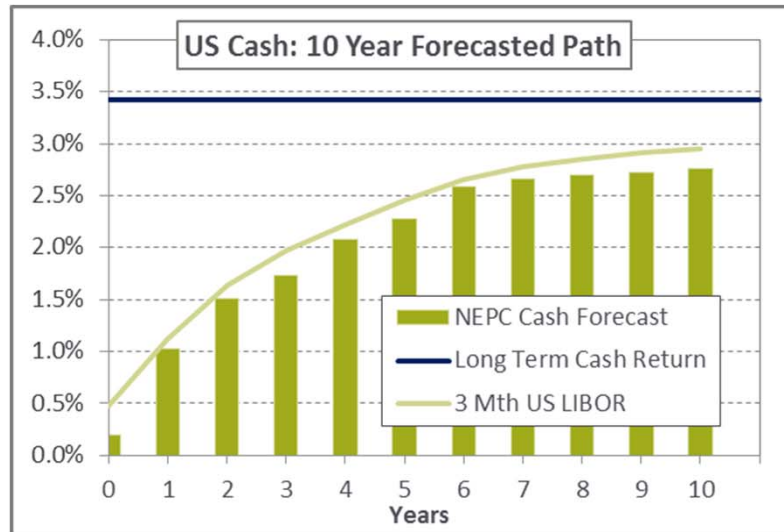
## Wage Growth: Early Cycle



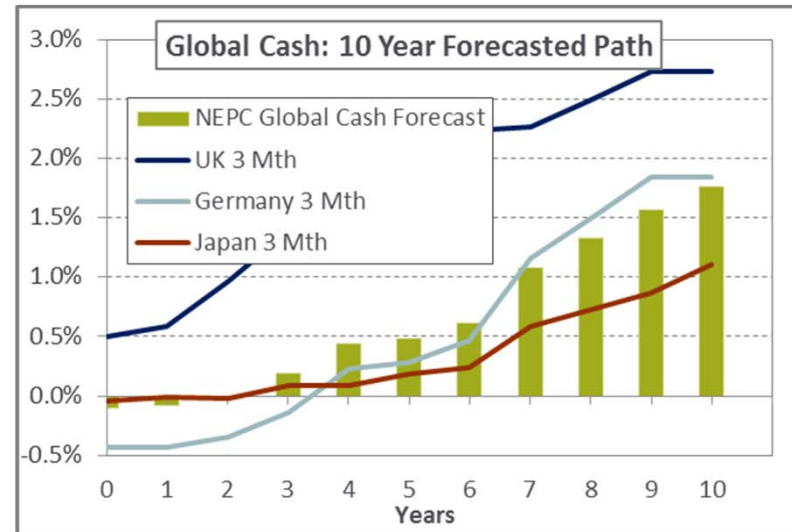
## Where Are We In the Economic Cycle?

- **Relative to the average length of economic cycles the US expansion is in its later stages**
- **Improvement in wage growth and consumer spending can potentially extend the expansion**
- **Continued US expansion provides a positive foundation for US risk assets**

## Global Central Bank Policy: "Lower for Longer"



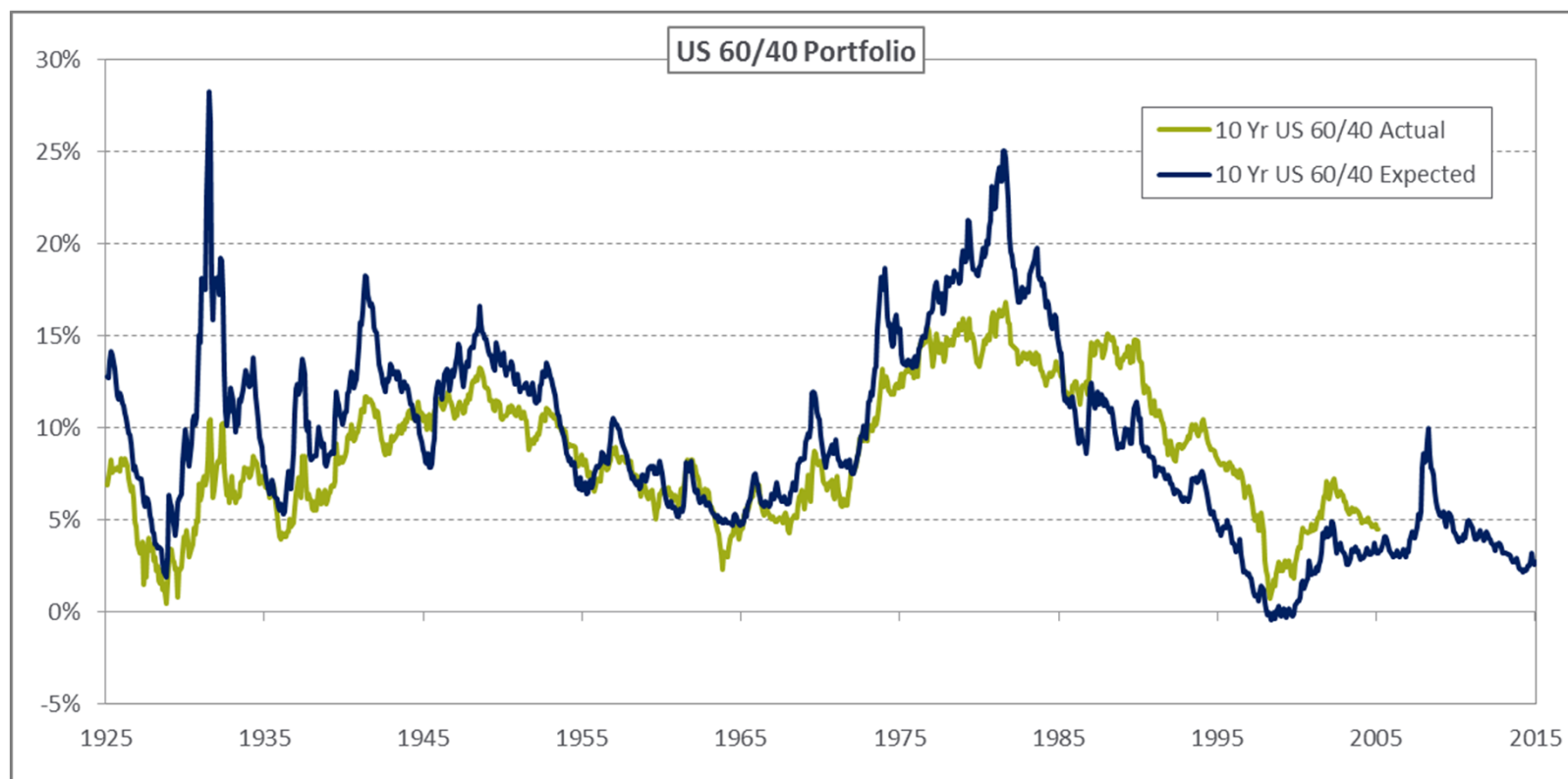
Source: Bloomberg, NEPC



Source: Bloomberg, NEPC

- **Accommodative global monetary policies flow through to markets distorting the traditional asset return profile**
  - QE and negative interest rates suppress income while supporting higher valuations
  - Provides near term support for market conditions in Europe and Japan
- **Potential extended period of low cash rates beyond the market expectations pose challenges for all investors**
  - Subdued long term cash expectations in the developed world compress long term expected returns for both fixed income and equity

## Low Global Cash Rates Suppress Long Term Return Expectations



Source: Shiller Data, NEPC

- **US centric portfolios like 60/40 have worked historically but forward looking return prospects are subdued**
  - Asset prices can be sustained but low yields portend below average expected returns
- **Conventional investment approaches may fall short going forward**
  - Index focused approaches, such as core bonds, suboptimal in current environment
  - Adjustments will be necessary to effectively meet and exceed long-term objectives

- **Maintain exposure to US risk assets in a low return environment**
  - Lower returns expected but risk premia can still be harvested as cycle extends
  - Economic cycle is in the advanced stages but macro policy remains supportive
  - Low core bond returns warrant a more positive tilt to equity, especially after sell-offs
- **Overweight non-US developed market equities**
  - Central bank support and dollar strength provide a positive economic backdrop
  - Corporate earnings remain well below 2007 levels despite recent earnings recovery
  - EAFE equity markets offer the potential for outsized returns relative to US equities
- **Reaffirm commitment to emerging market equities**
  - Valuations and long-term fundamentals suggest an overweight
  - China uncertainty, dollar pressure and idiosyncratic country risks temper excitement
  - Overweight small-cap and consumer focused strategies relative to broad mandates
- **Seek tactical fixed income strategies but preserve duration exposure**
  - Spreads have widened but credit selection is critical as credit cycle matures
  - US duration continues to have a role in a diversified and risk-aware portfolio
  - TIPS offer an attractive duration profile with inflation expectations at secular lows
- **Explore positive yielding assets revealed from energy market distress**
  - Private strategy returns are compelling but suggest patience
  - Focus on segments of the public markets that offer a yield

## Highlights of Fourth Quarter Happenings at NEPC

### After 30 Years NEPC's Founder has Transitioned to Chairman Emeritus

- NEPC's founder and chairman Richard "Dick" Charlton retired on January 1, 2016 after overseeing a decade-long succession process that involved a change in corporate structure and a planned approach to distributing his ownership shares. Dick had the foresight to begin distributing equity to partners 25 years ago and the formal succession process began in late 2007. Dick's vision for a client-focused organization continues to be the hallmark of NEPC and this deep-rooted culture will live on for generations to come. Mike Manning continues in his leadership role as Managing Partner with the guidance of our Partnership; a Partnership recognized throughout the industry for its depth, talent and culture. We are well positioned to lead in this increasingly competitive marketplace. NEPC has never been stronger.



### Professional Staff Updates

- **New Principals:** Lenia Ascenso, Principal and Director of Discretionary Operations; Devan Dewey, Principal and Chief Technology Officer; and Matt Lombardi, Principal and Chief Financial Officer
- We are also pleased to announce that Wyatt Crumpler joined NEPC in November as a Principal and Senior Consultant from American Beacon Advisors, Inc., and Sam Pollack joined NEPC as a Senior Consultant from DiMeo Schneider and Associates. Wyatt is a member of NEPC's Corporate consulting group and Sam is a member of NEPC's Endowment & Foundation consulting group.

### Upcoming/Recent Events

- 2016 Market Outlook Webinar: January 26, 2016 at 2:00 PM EST.
- NEPC's 21st Annual Client Conference: May 10-11, 2016 in Boston at the Hynes Convention Center.
  - This year we will be offering an optional pre-conference workshop on Monday, May 9th at NEPC's Boston office.
- NEPC hosted a Manager Diversity Program event at our Boston office on October 12, 2015 in an effort to continue and enhance our firm's efforts in this area. The purpose of the gathering was to provide an opportunity for diverse managers to meet NEPC and have an open discussion about our research efforts in the arena of minority- and female-owned firms.

## Highlights of Fourth Quarter Happenings at NEPC - continued

### NEPC Research

#### Recent White Papers

- *2015 Fourth Quarter Market Thoughts*
- *Governance: The Cornerstone of Successful Investment Programs* (January 2016) – Endowment & Foundation Practice Team
- *Green Bonds: An Overview* (December 2015) – NEPC Impact Investing Committee
- *Completing the Analysis: ESG Integration* (November 2015) – NEPC Impact Investing Committee
- *NEPC's Survey on Hedge Fund Operations* (November 2015) – Hedge Fund Operational Due Diligence team
- *Market Chatter: The Rise and Fall (and Rise?) of Oil Prices* (October 2015)

### NEPC Recognitions

- NEPC, LLC was awarded "Best Full-Service Investment Consulting Firm - USA" by Acquisition International for the 2016 Hedge Fund Awards <sup>1</sup>



### NEPC Client Recognitions

- Congratulations to the following NEPC clients for their nominations as Asset Owner Finalists for the 2015 CIO Industry Innovation Awards. Five NEPC clients who won awards in their categories are also highlighted below.
  - **Foundation:** Wisconsin Alumni Research Foundation (Carrie Thome) - Category Winner; Northwest Area Foundation (Amy Jensen)
  - **Endowment:** Fordham University (Eric Wood); Texas Tech University System (Tim Barrett)
  - **Public Defined Benefit Plan Below \$15B:** Orange County Employees Retirement System (Girard Miller) - Category Winner; MoDOT and Patrol Employees' Retirement System (Larry Krummen)
  - **Public Defined Benefit Plan Between \$15B and \$100B:** Massachusetts PRIM (Michael Trotsky) - Category Winner
  - **Public Defined Benefit Plan Above \$100B:** New York City Retirement System (Scott Evans); State of Wisconsin Investment Board (David Villa)
  - **Health Care Organization:** Baylor Scott and White Health (Mark Amiri) - Category Winner; Trinity Health (Dina Richards)
  - **Next Generation:** Massachusetts PRIM (Sarah Samuels) - Category Winner

# Total Fund Performance

Note: All of the data shown on the following pages is as of December 31, 2015 and reflects the deduction of investment manager fees, unless otherwise noted.





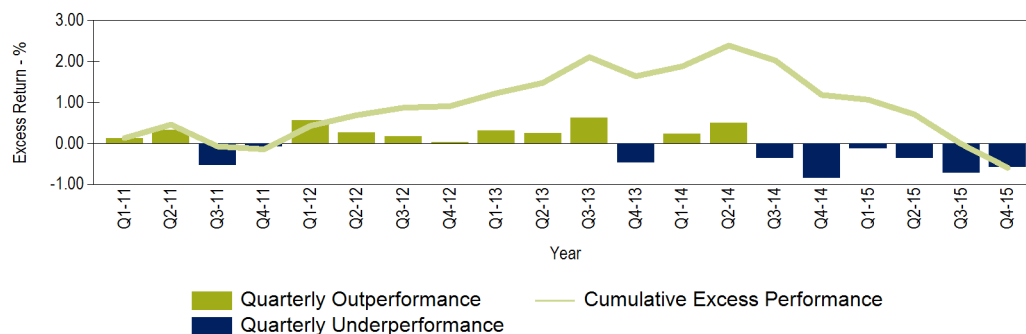
# Ventura County Employees' Retirement Association

## Total Fund Performance Summary (Net)

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	Return	Since
<b>Total Fund</b>	<b>\$4,290,811,595</b>	<b>2.8%</b>	<b>31</b>	<b>-2.7%</b>	<b>43</b>	<b>-0.9%</b>	<b>68</b>	<b>7.6%</b>	<b>33</b>	<b>7.3%</b>	<b>28</b>	<b>5.6%</b>	<b>42</b>	<b>7.8%</b>	<b>Apr-94</b>
<i>Policy Index</i>		3.3%	10	-1.4%	19	0.9%	28	8.1%	14	7.5%	24	5.9%	23	7.9%	Apr-94
<i>Allocation Index</i>		3.5%	5	-2.4%	36	-0.5%	63	7.3%	44	6.9%	45	5.4%	62	--	Apr-94
<i>60% MSCI World (Net) / 40% CITI WGBI</i>		2.8%	29	-1.7%	22	-1.7%	88	4.7%	90	4.7%	95	4.7%	81	6.2%	Apr-94
<i>InvestorForce Public DB &gt; \$1B Net Median</i>		2.4%		-2.9%		-0.1%		6.9%		6.8%		5.5%		7.4%	Apr-94

- For the five-year period ending December 31, 2015, the Fund returned 7.3%, trailing the policy index by 0.2% and ranking in the 28th percentile of its peers. The Fund's volatility, as measured by standard deviation, ranked in the 75th percentile of its peers, and the risk-adjusted return, or Sharpe Ratio, ranks in the 52nd percentile. This means that the Fund has earned more return per unit of volatility taken than 48% of its peers.

Quarterly and Cumulative Excess Performance



- For the three-year period ending December 31, 2015, the Fund returned 7.6%, trailing the policy index by 0.5% and ranking in the 33rd percentile of its peers. The Fund's volatility ranks in the bottom third of its peers over this period, with the Fund's Sharpe Ratio ranking in the 56th percentile.

3 Years Ending December 31, 2015

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	7.6%	33	6.8%	67	1.1	56	2.2	43
Policy Index	8.1%	14	6.6%	56	1.2	32	2.4	26
InvestorForce Public DB > \$1B Net Median	6.9%	--	6.3%	--	1.1	--	2.2	--

- For the one-year period ending December 31, 2015, the Fund returned -0.9%, trailing the policy index by 1.8% and ranking in the 68th percentile of the InvestorForce Public Funds > \$1 Billion Universe (Net of Fees).

5 Years Ending December 31, 2015

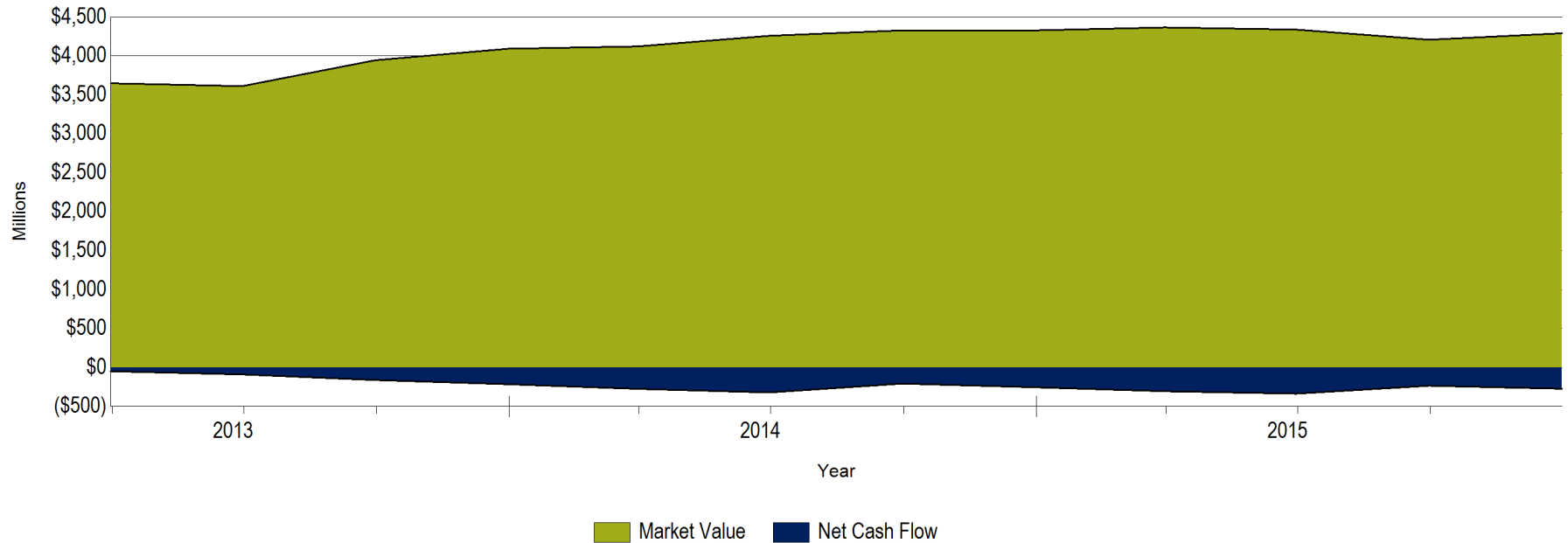
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	7.3%	28	8.0%	75	0.9	52	1.4	51
Policy Index	7.5%	24	7.9%	69	0.9	47	1.4	47
InvestorForce Public DB > \$1B Net Median	6.8%	--	7.3%	--	0.9	--	1.4	--

- For the one-year period ending December 31, 2015, the Fund experienced a net investment loss of \$19 million, which includes a net investment loss of \$121 million in the quarter. Assets decreased from \$4.33 billion one year ago to \$4.29 billion on December 31, 2015.



**Total Fund Asset Growth Summary**

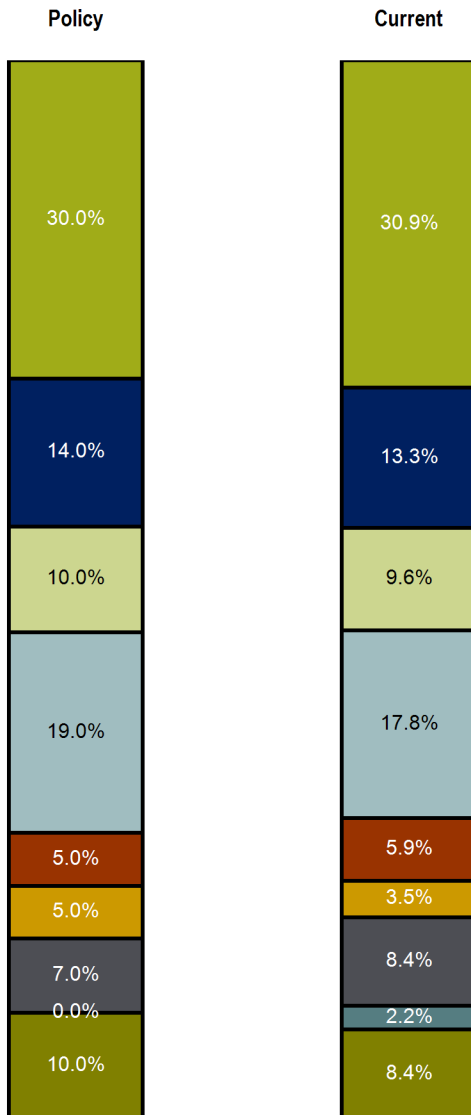
**Market Value History**  
3 Years Ending December 31, 2015



**Summary of Cash Flows**

Sources of Portfolio Growth	Fourth Quarter	Fiscal Year-To-Date	One Year	Three Years
Beginning Market Value	\$4,208,105,148	\$4,338,136,581	\$4,328,232,756	\$3,498,758,840
Net Additions/Withdrawals	-\$38,412,108	\$63,170,263	-\$18,843,202	-\$272,732,959
Investment Earnings	\$121,118,555	-\$110,495,249	-\$18,577,959	\$1,064,785,714
Ending Market Value	\$4,290,811,595	\$4,290,811,595	\$4,290,811,595	\$4,290,811,595

**Total Fund Asset Allocation vs. Policy Targets**



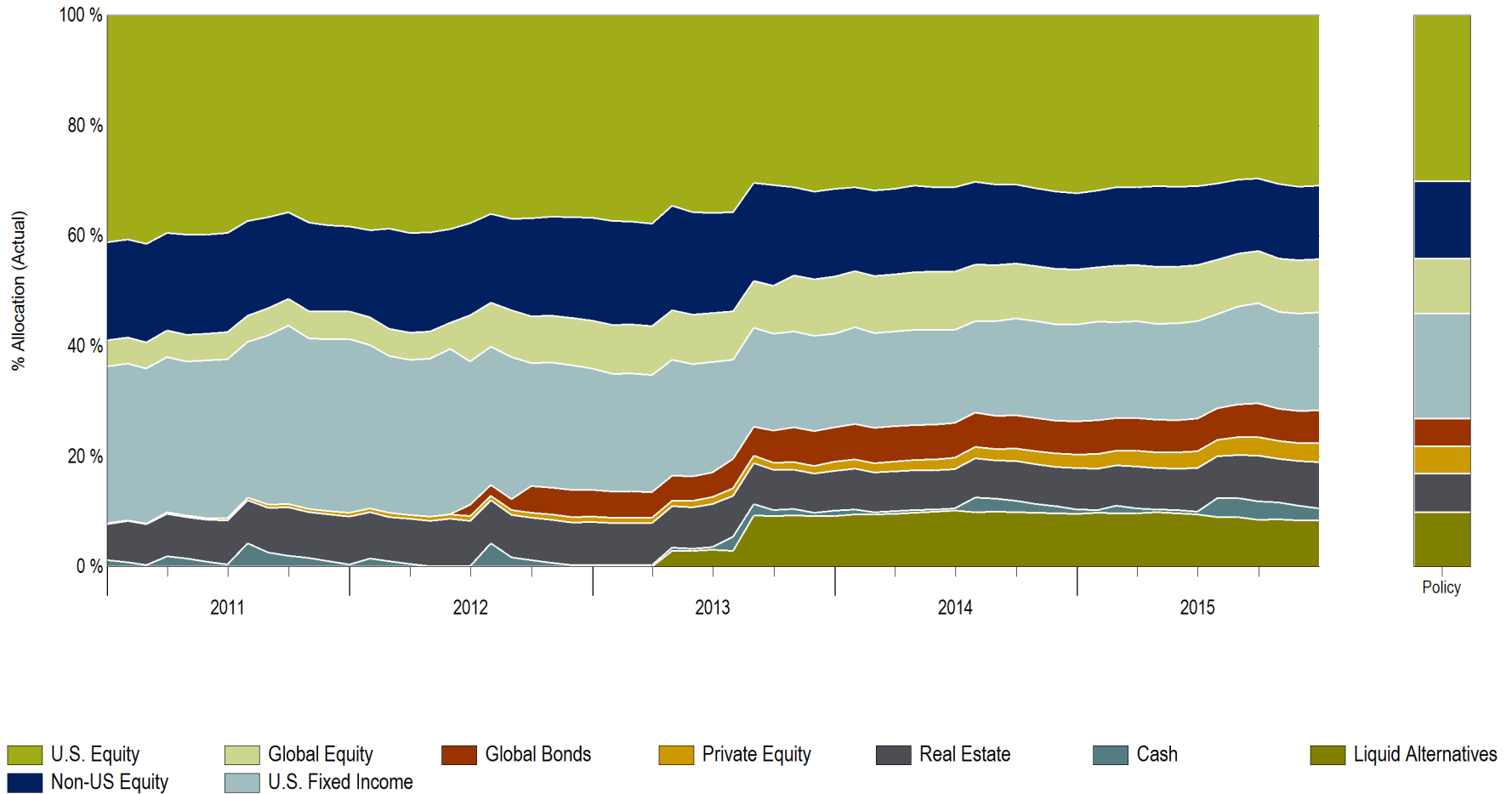
	Current	Current	Policy	Difference *	Policy Range	Within Range
U.S. Equity	\$1,324,103,315	30.9%	30.0%	0.9%	26.0% - 34.0%	Yes
Non-US Equity	\$571,025,742	13.3%	14.0%	-0.7%	11.0% - 17.0%	Yes
Global Equity	\$413,921,378	9.6%	10.0%	-0.4%	7.0% - 13.0%	Yes
U.S. Fixed Income	\$763,529,805	17.8%	19.0%	-1.2%	15.0% - 23.0%	Yes
Global Bonds	\$252,651,309	5.9%	5.0%	0.9%	3.0% - 7.0%	Yes
Private Equity	\$149,484,817	3.5%	5.0%	-1.5%	3.0% - 7.0%	Yes
Real Estate	\$358,956,726	8.4%	7.0%	1.4%	4.0% - 10.0%	Yes
Cash	\$96,458,273	2.2%	0.0%	2.2%	0.0% - 3.0%	Yes
Liquid Alternatives	\$360,680,230	8.4%	10.0%	-1.6%	7.0% - 13.0%	Yes
<b>Total</b>	<b>\$4,290,811,595</b>	<b>100.0%</b>	<b>100.0%</b>			

\*Difference between Policy and Current Allocation

Cash represents assets in Parametric Overlay

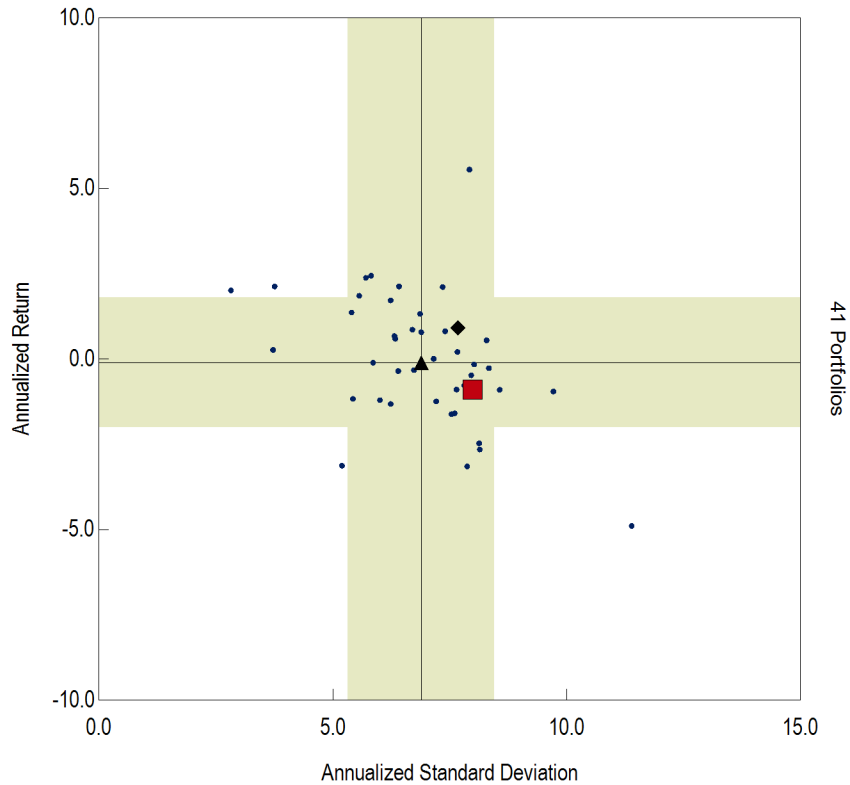
**Total Fund Allocation History**

**Asset Allocation History**  
5 Years Ending December 31, 2015



Total Fund Risk/Return

1 Years Ending December 31, 2015



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net

1 Years Ending December 31, 2015

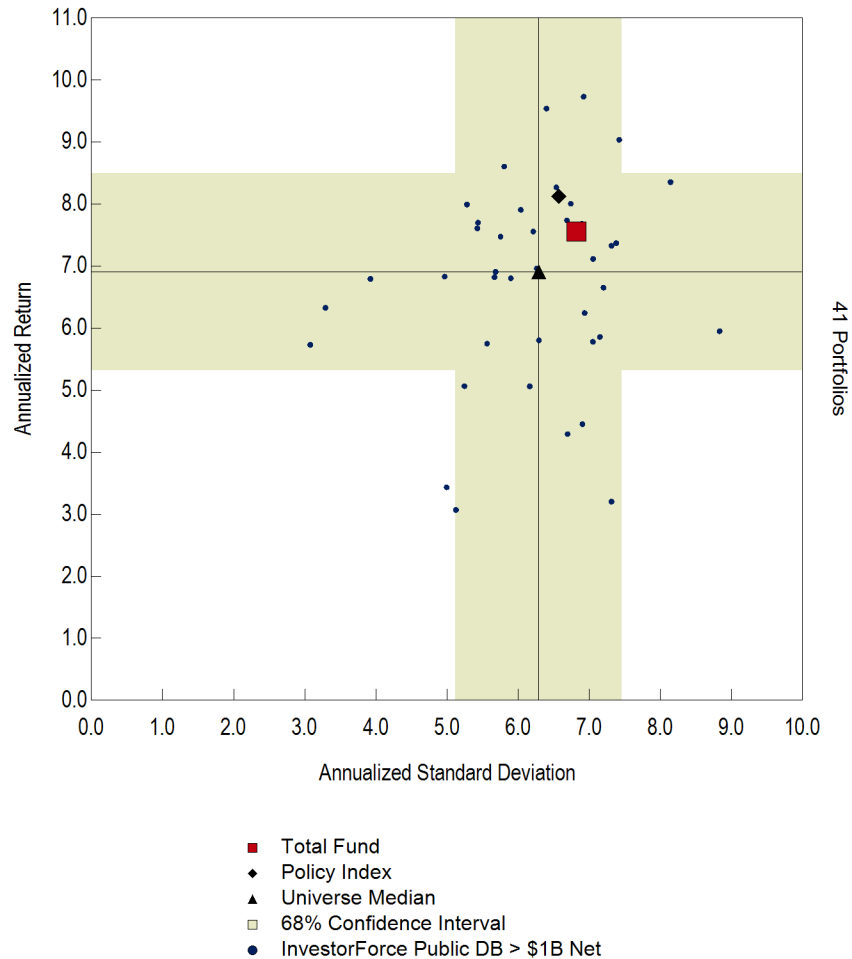
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Fund	-0.9%	68	8.0%	82
Policy Index	0.9%	28	7.7%	71
InvestorForce Public DB > \$1B Net Median	-0.1%	--	6.9%	--

1 Years Ending December 31, 2015

	Sharpe Ratio	Rank	Sortino Ratio	Rank
Total Fund	-0.1	72	-0.2	73
Policy Index	0.1	30	0.2	28
InvestorForce Public DB > \$1B Net Median	0.0	--	0.0	--

Total Fund Risk/Return

3 Years Ending December 31, 2015



3 Years Ending December 31, 2015

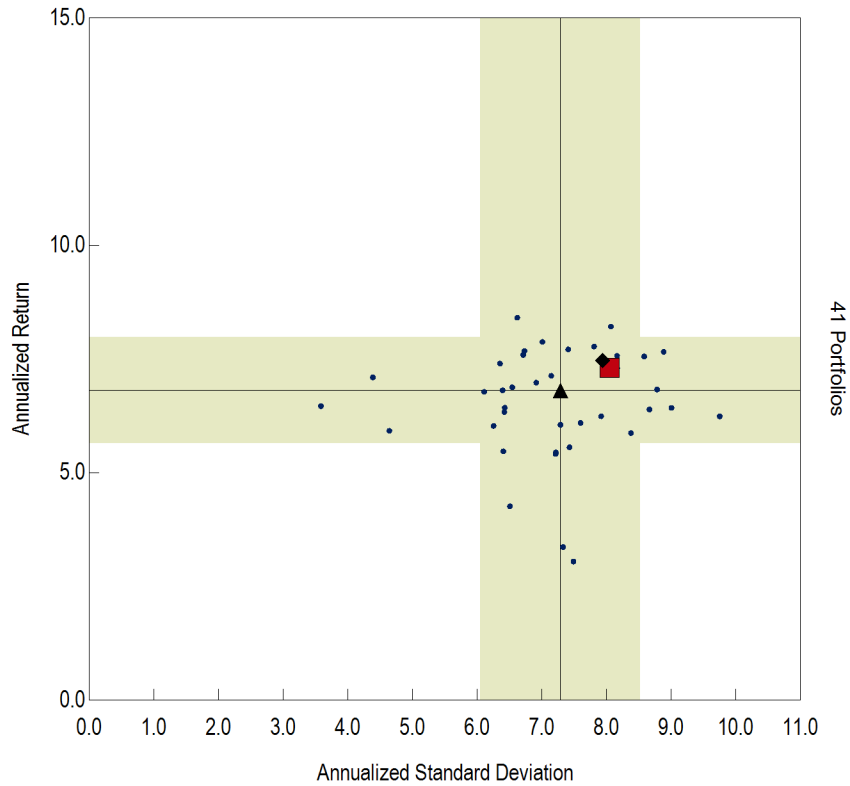
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Policy Index	8.1%	14	6.6%	56
InvestorForce Public DB > \$1B Net Median	6.9%	--	6.3%	--

3 Years Ending December 31, 2015

	Sharpe Ratio	Rank	Sortino Ratio	Rank
Total Fund	1.1	56	2.3	43
Policy Index	1.2	32	2.4	26
InvestorForce Public DB > \$1B Net Median	1.1	--	2.2	--

Total Fund Risk/Return

5 Years Ending December 31, 2015



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net

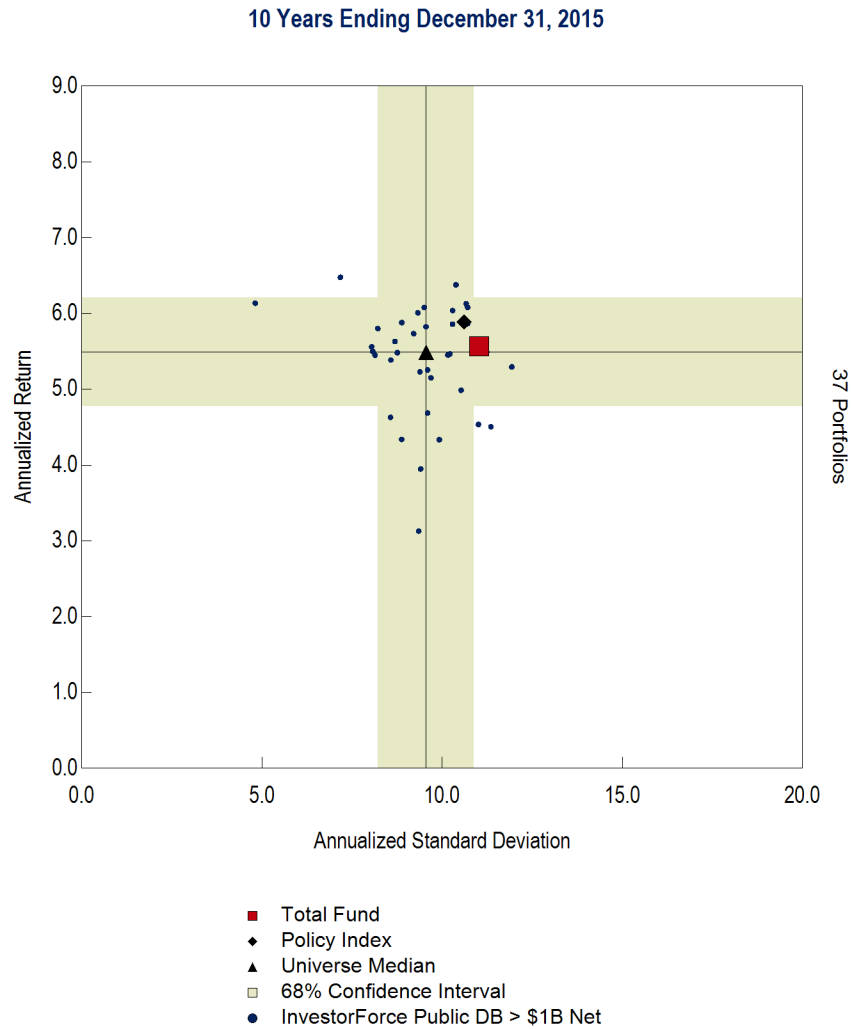
5 Years Ending December 31, 2015

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Fund	7.3%	28	8.0%	75
Policy Index	7.5%	24	7.9%	69
InvestorForce Public DB > \$1B Net Median	6.8%	--	7.3%	--

5 Years Ending December 31, 2015

	Sharpe Ratio	Rank	Sortino Ratio	Rank
Total Fund	0.9	52	1.4	51
Policy Index	0.9	47	1.4	47
InvestorForce Public DB > \$1B Net Median	0.9	--	1.4	--

Total Fund Risk/Return



10 Years Ending December 31, 2015

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Fund	5.6%	42	11.0%	92
Policy Index	5.9%	23	10.6%	80
InvestorForce Public DB > \$1B Net Median	5.5%	--	9.6%	--

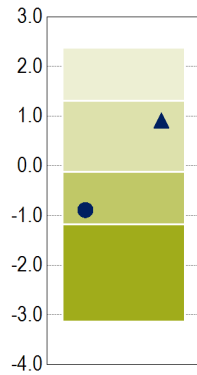
10 Years Ending December 31, 2015

	Sharpe Ratio	Rank	Sortino Ratio	Rank
Total Fund	0.4	73	0.6	70
Policy Index	0.5	52	0.7	51
InvestorForce Public DB > \$1B Net Median	0.5	--	0.7	--

Total Fund Risk Statistics vs. Peer Universe

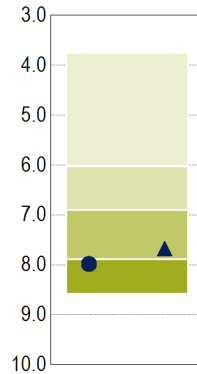
Total Fund vs. InvestorForce Public DB > \$1B Net  
1 Year

Anlzd Return



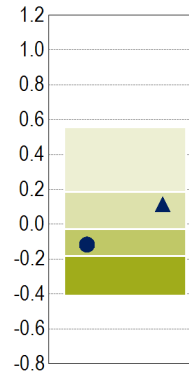
● Total Fund	
Value	-0.9
%tile	68
▲ Policy Index	
Value	0.9
%tile	28
Universe	
5th %tile	2.4
25th %tile	1.3
Median	-0.1
75th %tile	-1.2
95th %tile	-3.1

Anlzd Standard Deviation



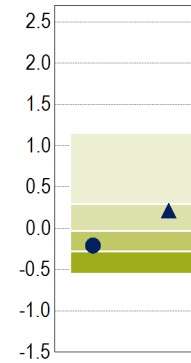
● Total Fund	
Value	8.0
%tile	82
▲ Policy Index	
Value	7.7
%tile	71
Universe	
5th %tile	3.8
25th %tile	6.0
Median	6.9
75th %tile	7.9
95th %tile	8.6

Sharpe Ratio



● Total Fund	
Value	-0.1
%tile	72
▲ Policy Index	
Value	0.1
%tile	30
Universe	
5th %tile	0.6
25th %tile	0.2
Median	0.0
75th %tile	-0.2
95th %tile	-0.4

Sortino Ratio

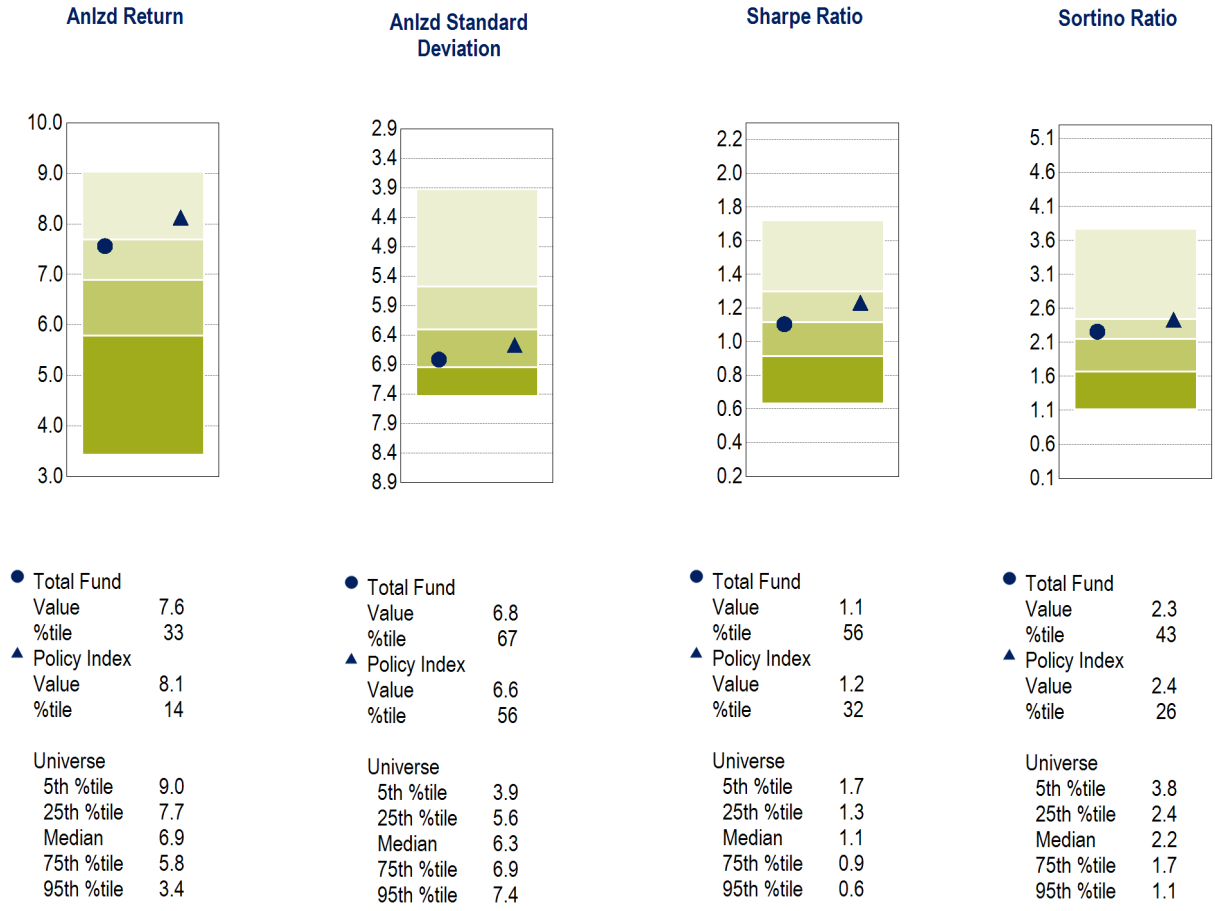


● Total Fund	
Value	-0.2
%tile	73
▲ Policy Index	
Value	0.2
%tile	28
Universe	
5th %tile	1.2
25th %tile	0.3
Median	0.0
75th %tile	-0.3
95th %tile	-0.5



Total Fund Risk Statistics vs. Peer Universe

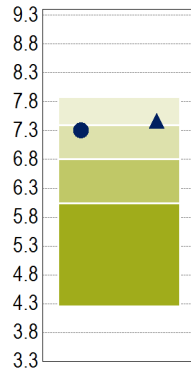
Total Fund vs. InvestorForce Public DB > \$1B Net  
3 Years



Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net  
5 Years

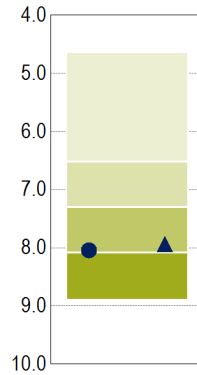
Anlzd Return



● Total Fund	
Value	7.3
%tile	28
▲ Policy Index	
Value	7.5
%tile	24

Universe	
5th %tile	7.9
25th %tile	7.4
Median	6.8
75th %tile	6.1
95th %tile	4.3

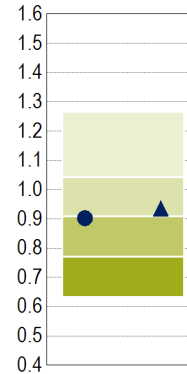
Anlzd Standard Deviation



● Total Fund	
Value	8.0
%tile	75
▲ Policy Index	
Value	7.9
%tile	69

Universe	
5th %tile	4.6
25th %tile	6.5
Median	7.3
75th %tile	8.1
95th %tile	8.9

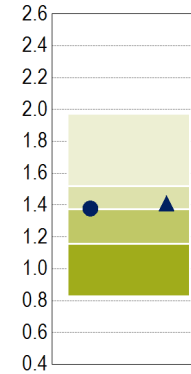
Sharpe Ratio



● Total Fund	
Value	0.9
%tile	52
▲ Policy Index	
Value	0.9
%tile	47

Universe	
5th %tile	1.3
25th %tile	1.0
Median	0.9
75th %tile	0.8
95th %tile	0.6

Sortino Ratio



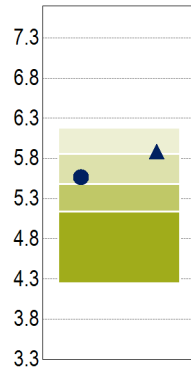
● Total Fund	
Value	1.4
%tile	51
▲ Policy Index	
Value	1.4
%tile	47

Universe	
5th %tile	2.0
25th %tile	1.5
Median	1.4
75th %tile	1.2
95th %tile	0.8

Total Fund Risk Statistics vs. Peer Universe

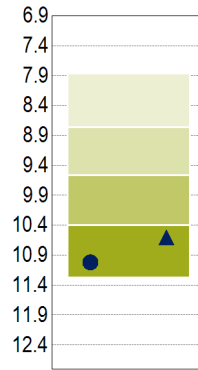
Total Fund vs. InvestorForce Public DB > \$1B Net  
10 Years

Anlzd Return



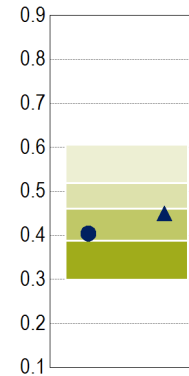
● Total Fund	
Value	5.6
%tile	42
▲ Policy Index	
Value	5.9
%tile	23
Universe	
5th %tile	6.2
25th %tile	5.9
Median	5.5
75th %tile	5.1
95th %tile	4.3

Anlzd Standard Deviation



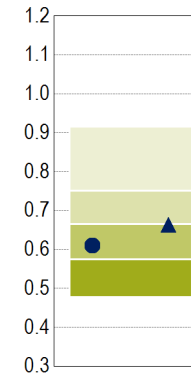
● Total Fund	
Value	11.0
%tile	92
▲ Policy Index	
Value	10.6
%tile	80
Universe	
5th %tile	7.9
25th %tile	8.8
Median	9.6
75th %tile	10.4
95th %tile	11.3

Sharpe Ratio



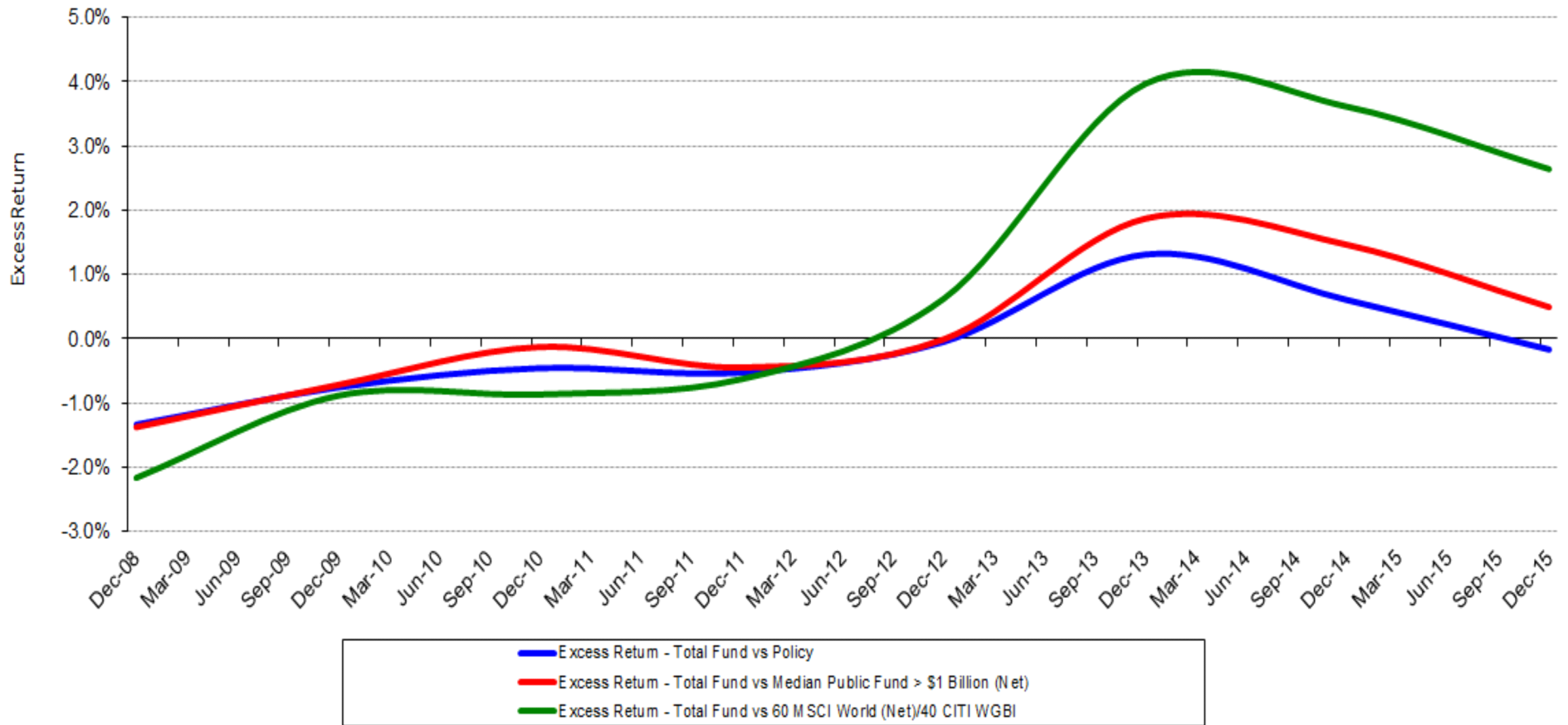
● Total Fund	
Value	0.4
%tile	73
▲ Policy Index	
Value	0.5
%tile	52
Universe	
5th %tile	0.6
25th %tile	0.5
Median	0.5
75th %tile	0.4
95th %tile	0.3

Sortino Ratio



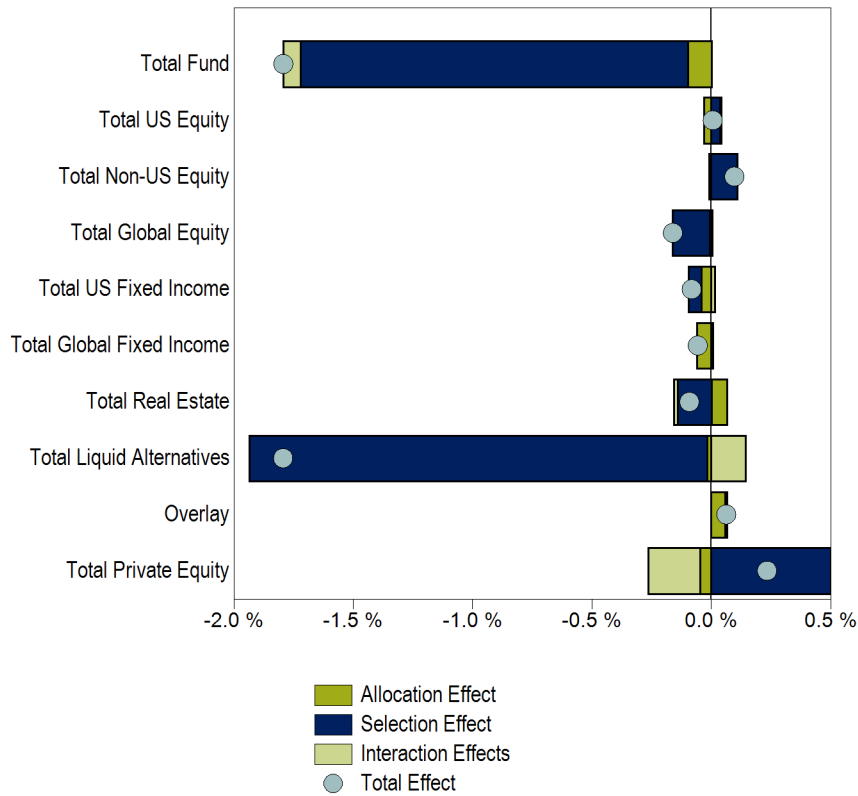
● Total Fund	
Value	0.6
%tile	70
▲ Policy Index	
Value	0.7
%tile	51
Universe	
5th %tile	0.9
25th %tile	0.8
Median	0.7
75th %tile	0.6
95th %tile	0.5

Rolling 5 Year Excess Returns- Net of Fees



**Total Fund Attribution Analysis**

**Attribution Effects**  
1 Year Ending December 31, 2015



**Attribution Summary**  
1 Year Ending December 31, 2015

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	0.5%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%
Total Non-US Equity	-4.8%	-5.7%	0.8%	0.1%	0.0%	0.0%	0.1%
Total Global Equity	-3.8%	-2.4%	-1.5%	-0.2%	0.0%	0.0%	-0.2%
Total US Fixed Income	0.3%	0.5%	-0.2%	-0.1%	0.0%	0.0%	-0.1%
Total Global Fixed Income	-3.1%	-3.2%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Total Real Estate	12.8%	15.0%	-2.2%	-0.1%	0.1%	0.0%	-0.1%
Total Liquid Alternatives	-13.8%	4.9%	-18.7%	-1.9%	0.0%	0.1%	-1.8%
Overlay	5.3%	0.0%	5.3%	0.0%	0.1%	0.0%	0.1%
Total Private Equity	14.7%	3.5%	11.2%	0.5%	0.0%	-0.2%	0.2%
<b>Total</b>	<b>-0.9%</b>	<b>0.9%</b>	<b>-1.8%</b>	<b>-1.6%</b>	<b>-0.1%</b>	<b>-0.1%</b>	<b>-1.8%</b>

# Ventura County Employees' Retirement Association

## Total Fund Risk Statistics

### 1 Year Ending December 31, 2015

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Anlzd AJ	Rank	Beta
Total Fund	100.0%	-0.9%	81	8.0%	84	-0.1	79	0.8%	14	-2.3	--	-1.8%	93	1.0
Policy Index	--	0.9%	39	7.7%	73	0.1	41	0.0%	1	--	--	0.0%	63	1.0
Total Equity	53.8%	-1.7%	68	13.3%	60	-0.1	67	1.3%	1	0.5	52	0.6%	67	1.0
MSCI ACWI	--	-2.4%	73	13.9%	72	-0.2	72	0.0%	1	--	--	0.0%	72	1.0
Total US Equity	30.9%	0.5%	40	13.3%	53	0.0	41	0.1%	1	1.4	9	0.1%	40	1.0
Total U.S. Equity Benchmark	--	0.4%	42	13.2%	52	0.0	42	0.0%	1	--	--	0.0%	42	1.0
Total Non-US Equity	13.3%	-4.8%	94	14.3%	75	-0.3	94	1.0%	1	0.8	82	0.5%	94	0.9
Total Non-US Equity Benchmark	--	-5.7%	96	15.1%	90	-0.4	96	0.0%	1	--	--	0.0%	95	1.0
Total Global Equity	9.6%	-3.8%	79	13.9%	72	-0.3	79	1.4%	2	-1.0	--	-1.5%	79	1.0
MSCI ACWI	--	-2.4%	73	13.9%	72	-0.2	72	0.0%	1	--	--	0.0%	72	1.0
Total Fixed Income	23.7%	-0.6%	66	1.9%	16	-0.3	69	2.9%	86	0.9	24	0.2%	38	0.3
Barclays Global Aggregate	--	-3.2%	93	3.1%	85	-1.0	96	0.0%	1	--	--	0.0%	57	1.0
Total US Fixed Income	17.8%	0.3%	65	2.0%	36	0.1	65	2.6%	63	-0.1	--	0.1%	62	0.3
Barclays Aggregate	--	0.5%	60	3.0%	66	0.2	64	0.0%	1	--	--	0.0%	65	1.0
Total Global Fixed Income	5.9%	-3.1%	61	2.5%	14	-1.3	86	1.6%	11	0.0	61	-1.0%	53	0.7
Barclays Global Aggregate	--	-3.2%	61	3.1%	33	-1.0	75	0.0%	1	--	--	0.0%	37	1.0

Total Private Equity	3.5%	14.7%	17	7.7%	73	1.9	35
DJ U.S. Total Stock Market Index + 3%	--	3.5%	82	13.3%	92	0.3	83
Total Real Estate	8.4%	12.8%	44	5.2%	66	2.4	63
Total Real Estate Benchmark	--	15.0%	21	6.1%	84	2.5	63
Total Liquid Alternatives	8.4%	-13.8%	--	11.9%	--	-1.2	--
CPI + 4% (Unadjusted)	--	4.9%	--	1.2%	--	4.1	--

# Ventura County Employees' Retirement Association

## Total Fund Risk Statistics

3 Years Ending December 31, 2015

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Anlzd AJ	Rank	Beta
Total Fund	100.0%	7.6%	50	6.8%	69	1.1	61	0.8%	15	-0.7	--	-0.8%	82	1.0
Policy Index	--	8.1%	37	6.6%	60	1.2	45	0.0%	1	--	--	0.0%	76	1.0
Total Equity	53.8%	9.8%	52	10.6%	27	0.9	46	1.4%	2	1.5	12	2.4%	54	1.0
MSCI ACWI	--	7.7%	75	10.9%	41	0.7	71	0.0%	1	--	--	0.0%	78	1.0
Total US Equity	30.9%	14.9%	41	10.8%	24	1.4	30	0.3%	1	0.7	13	0.2%	43	1.0
Total U.S. Equity Benchmark	--	14.6%	45	10.7%	22	1.4	32	0.0%	1	--	--	0.0%	45	1.0
Total Non-US Equity	13.3%	2.2%	95	11.6%	33	0.2	94	1.1%	1	0.6	87	0.8%	95	0.9
Total Non-US Equity Benchmark	--	1.5%	97	12.3%	70	0.1	97	0.0%	1	--	--	0.0%	97	1.0
Total Global Equity	9.6%	6.1%	85	11.0%	44	0.6	84	1.2%	2	-1.3	--	-1.6%	86	1.0
MSCI ACWI	--	7.7%	75	10.9%	41	0.7	71	0.0%	1	--	--	0.0%	78	1.0
Total Fixed Income	23.7%	0.6%	85	2.4%	26	0.2	80	2.6%	90	0.9	18	1.3%	14	0.5
Barclays Global Aggregate	--	-1.7%	99	4.0%	90	-0.4	99	0.0%	1	--	--	0.0%	68	1.0
Total US Fixed Income	17.8%	1.1%	79	2.3%	39	0.5	78	1.9%	46	-0.2	--	0.2%	72	0.6
Barclays Aggregate	--	1.4%	64	2.9%	58	0.5	76	0.0%	1	--	--	0.0%	81	1.0
Total Global Fixed Income	5.9%	-1.3%	69	3.8%	30	-0.4	75	1.2%	10	0.3	63	0.3%	71	0.9
Barclays Global Aggregate	--	-1.7%	77	4.0%	38	-0.4	81	0.0%	1	--	--	0.0%	77	1.0

Total Private Equity	3.5%	17.2%	10	7.3%	72	2.4	35							
DJ U.S. Total Stock Market Index + 3%	--	18.1%	9	10.7%	86	1.7	68							
Total Real Estate	8.4%	11.7%	71	4.7%	66	2.5	69							
Total Real Estate Benchmark	--	13.8%	29	5.5%	79	2.5	66							
Total Liquid Alternatives	8.4%	--	--	--	--	--	--							
CPI + 4% (Unadjusted)	--	5.1%	--	1.1%	--	4.4	--							

# Ventura County Employees' Retirement Association

## Total Fund Risk Statistics

### 5 Years Ending December 31, 2015

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Anlzd AJ	Rank	Beta
Total Fund	100.0%	7.3%	51	8.0%	75	0.9	69	0.8%	8	-0.2	--	-0.2%	81	1.0
Policy Index	--	7.5%	47	7.9%	72	0.9	57	0.0%	1	--	--	0.0%	72	1.0
Total Equity	53.8%	8.4%	45	12.3%	19	0.7	35	1.6%	3	1.4	8	2.8%	43	0.9
MSCI ACWI	--	6.1%	77	13.1%	37	0.5	73	0.0%	1	--	--	0.0%	75	1.0
Total US Equity	30.9%	12.3%	39	12.2%	26	1.0	29	0.3%	1	0.7	7	0.1%	37	1.0
Total U.S. Equity Benchmark	--	12.1%	43	12.1%	24	1.0	30	0.0%	1	--	--	0.0%	38	1.0
Total Non-US Equity	13.3%	1.7%	95	14.1%	30	0.1	94	1.3%	1	0.5	88	0.7%	94	0.9
Total Non-US Equity Benchmark	--	1.1%	96	15.0%	69	0.1	96	0.0%	1	--	--	0.0%	96	1.0
Total Global Equity	9.6%	5.6%	80	12.1%	18	0.5	74	2.2%	8	-0.2	--	0.0%	75	0.9
MSCI ACWI	--	6.1%	77	13.1%	37	0.5	73	0.0%	1	--	--	0.0%	75	1.0
Total Fixed Income	23.7%	3.6%	41	2.6%	32	1.4	27	2.6%	73	1.1	13	3.2%	13	0.5
Barclays Global Aggregate	--	0.9%	99	4.1%	84	0.2	99	0.0%	1	--	--	0.0%	89	1.0
Total US Fixed Income	17.8%	4.0%	45	2.5%	43	1.5	34	2.0%	45	0.4	46	1.8%	27	0.7
Barclays Aggregate	--	3.2%	63	2.7%	49	1.2	71	0.0%	1	--	--	0.0%	86	1.0
Total Global Fixed Income	5.9%	--	--	--	--	--	--	--	--	--	--	--	--	--
Barclays Global Aggregate	--	0.9%	83	4.1%	26	0.2	76	0.0%	1	--	--	0.0%	79	1.0
Total Real Estate	8.4%	11.7%	71	4.8%	48	2.4	52							
Total Real Estate Benchmark	--	13.7%	30	5.5%	60	2.5	47							
Total Liquid Alternatives	8.4%	--	--	--	--	--	--							
CPI + 4% (Unadjusted)	--	5.6%	--	1.2%	--	4.6	--							



# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Fund</b>	<b>4,290,811,595</b>	<b>100.0</b>	<b>100.0</b>	<b>2.8</b>	<b>31</b>	<b>-2.7</b>	<b>43</b>	<b>-0.9</b>	<b>68</b>	<b>7.6</b>	<b>33</b>	<b>7.3</b>	<b>28</b>	<b>5.6</b>	<b>42</b>	<b>7.8</b>	<b>Apr-94</b>
Policy Index				3.3	10	-1.4	19	0.9	28	8.1	14	7.5	24	5.9	23	7.9	Apr-94
Over/Under				-0.5		-1.3		-1.8		-0.5		-0.2		-0.3		-0.1	
Allocation Index				3.5	5	-2.4	36	-0.5	63	7.3	44	6.9	45	5.4	62	--	Apr-94
60% MSCI World (Net) / 40% CITI WGBI				2.8	29	-1.7	22	-1.7	88	4.7	90	4.7	95	4.7	81	6.2	Apr-94
InvestorForce Public DB > \$1B Net Median				2.4		-2.9		-0.1		6.9		6.8		5.5		7.4	Apr-94
<b>Total Fund ex Parametric</b>	<b>4,194,353,322</b>	<b>97.8</b>	<b>--</b>	<b>2.7</b>	<b>--</b>	<b>-2.6</b>	<b>--</b>	<b>-0.8</b>	<b>--</b>	<b>7.5</b>	<b>--</b>	<b>7.3</b>	<b>--</b>	<b>5.5</b>	<b>--</b>	<b>7.8</b>	<b>Apr-94</b>
<b>Total Fund ex Private Equity</b>	<b>4,141,326,778</b>	<b>96.5</b>	<b>--</b>	<b>2.8</b>	<b>30</b>	<b>-3.1</b>	<b>61</b>	<b>-1.4</b>	<b>83</b>	<b>6.7</b>	<b>62</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.3</b>	<b>Jan-12</b>
Policy Index				3.3	10	-1.4	19	0.9	28	8.1	14	7.5	24	5.9	23	9.3	Jan-12
Over/Under				-0.5		-1.7		-2.3		-1.4						-1.0	
InvestorForce Public DB > \$1B Net Median				2.4		-2.9		-0.1		6.9		6.8		5.5		8.5	Jan-12
<b>Total US Equity</b>	<b>1,324,103,315</b>	<b>30.9</b>	<b>30.0</b>	<b>6.3</b>	<b>23</b>	<b>-1.5</b>	<b>26</b>	<b>0.5</b>	<b>36</b>	<b>14.9</b>	<b>31</b>	<b>12.3</b>	<b>27</b>	<b>7.0</b>	<b>61</b>	<b>8.7</b>	<b>Dec-93</b>
Total U.S. Equity Benchmark				6.2	24	-1.5	26	0.4	38	14.6	34	12.1	31	7.4	48	9.1	Dec-93
Over/Under				0.1		0.0		0.1		0.3		0.2		-0.4		-0.4	
eA All US Equity Net Median				4.4		-4.7		-1.3		13.4		10.9		7.4		10.0	Dec-93
BlackRock Equity Market Fund	1,138,027,993	26.5		6.3	23	-1.4	25	0.6	36	14.8	33	12.2	30	--	--	6.8	Dec-07
Dow Jones U.S. Total Stock Market				6.3	23	-1.5	26	0.4	37	14.7	34	12.1	31	7.5	47	6.7	Dec-07
Over/Under				0.0		0.1		0.2		0.1		0.1				0.1	
eA All US Equity Net Median				4.4		-4.7		-1.3		13.4		10.9		7.4		6.7	Dec-07
Western U.S. Index Plus	140,954,199	3.3		7.0	16	-0.2	18	1.1	33	15.3	25	13.4	14	--	--	3.3	May-07
S&P 500				7.0	15	0.2	16	1.4	30	15.1	28	12.6	24	7.3	53	5.7	May-07
Over/Under				0.0		-0.4		-0.3		0.2		0.8				-2.4	
eA All US Equity Net Median				4.4		-4.7		-1.3		13.4		10.9		7.4		5.7	May-07
BlackRock Extended Equity Index	45,121,123	1.1		3.2	39	-7.7	49	-3.2	58	12.9	36	10.5	37	7.9	42	11.3	Oct-02
Dow Jones U.S. Completion Total Stock Market				3.1	41	-7.8	51	-3.4	59	12.8	38	10.2	41	7.9	44	11.3	Oct-02
Over/Under				0.1		0.1		0.2		0.1		0.3		0.0		0.0	
eA US Small-Mid Cap Equity Net Median				2.6		-7.8		-2.5		12.0		9.8		7.6		10.8	Oct-02

Color Coding: PERFORMANCE: Green-Over performance, Red-Under performance / Color Coding: RANKS: 1 - 25 Green - Positive Result, 26 - 50 Yellow, 50 - 75 Orange, 76 - 100 Red - Negative Result

Policy Index: Currently, 30% Total U.S. Equity Benchmark, 19% Barclays Aggregate, 14% MSCI ACWI ex U.S., 10% MSCI ACWI, 5% Barclays Global Aggregate, 5% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index

Total U.S. Equity Benchmark: The Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Non-US Equity</b>	<b>571,025,742</b>	<b>13.3</b>	<b>14.0</b>	<b>3.4</b>	<b>77</b>	<b>-8.1</b>	<b>84</b>	<b>-4.8</b>	<b>94</b>	<b>2.2</b>	<b>96</b>	<b>1.7</b>	<b>93</b>	<b>2.8</b>	<b>82</b>	<b>6.0</b>	<b>Mar-94</b>
<i>Total Non-US Equity Benchmark</i>				<u>3.2</u>	80	<u>-9.3</u>	91	<u>-5.7</u>	96	<u>1.5</u>	98	<u>1.1</u>	95	<u>2.9</u>	80	<u>4.7</u>	<i>Mar-94</i>
<i>Over/Under</i>				0.2		1.2		0.9		0.7		0.6		-0.1		1.3	
<i>eA All EAFE Equity Net Median</i>				4.6		-4.8		1.2		5.9		4.7		3.9		6.1	<i>Mar-94</i>
<b>BlackRock ACWI ex-U.S. Index</b>	<b>238,272,497</b>	<b>5.6</b>		<b>3.5</b>	<b>78</b>	<b>-8.8</b>	<b>83</b>	<b>-4.5</b>	<b>79</b>	<b>2.2</b>	<b>85</b>	<b>1.4</b>	<b>85</b>	--	--	<b>0.7</b>	<b>Mar-07</b>
<i>MSCI ACWI ex USA</i>				<u>3.2</u>	82	<u>-9.3</u>	87	<u>-5.7</u>	86	<u>1.5</u>	86	<u>1.1</u>	86	<u>2.9</u>	75	<u>0.2</u>	<i>Mar-07</i>
<i>Over/Under</i>				0.3		0.5		1.2		0.7		0.3				0.5	
<i>eA ACWI ex-US All Cap Equity Net Median</i>				4.8		-6.1		-0.3		5.0		3.9		3.8		1.9	<i>Mar-07</i>
<b>Sprucegrove</b>	<b>164,524,429</b>	<b>3.8</b>		<b>2.0</b>	<b>92</b>	<b>-10.4</b>	<b>90</b>	<b>-9.1</b>	<b>94</b>	<b>1.0</b>	<b>91</b>	<b>1.5</b>	<b>85</b>	<b>3.3</b>	<b>67</b>	<b>6.6</b>	<b>Mar-02</b>
<i>MSCI ACWI ex USA</i>				<u>3.2</u>	82	<u>-9.3</u>	87	<u>-5.7</u>	86	<u>1.5</u>	86	<u>1.1</u>	86	<u>2.9</u>	75	<u>6.0</u>	<i>Mar-02</i>
<i>Over/Under</i>				-1.2		-1.1		-3.4		-0.5		0.4		0.4		0.6	
<i>eA ACWI ex-US All Cap Equity Net Median</i>				4.8		-6.1		-0.3		5.0		3.9		3.8		7.0	<i>Mar-02</i>
<b>Hexavest</b>	<b>76,630,517</b>	<b>1.8</b>		<b>2.3</b>	<b>97</b>	<b>-5.0</b>	<b>50</b>	<b>-1.4</b>	<b>75</b>	<b>4.3</b>	<b>82</b>	<b>3.1</b>	<b>82</b>	--	--	<b>3.1</b>	<b>Dec-10</b>
<i>MSCI EAFE</i>				<u>4.7</u>	53	<u>-6.0</u>	62	<u>-0.8</u>	71	<u>5.0</u>	67	<u>3.6</u>	70	<u>3.0</u>	74	<u>3.6</u>	<i>Dec-10</i>
<i>Over/Under</i>				-2.4		1.0		-0.6		-0.7		-0.5				-0.5	
<i>eA EAFE All Cap Equity Net Median</i>				4.8		-5.0		1.8		6.4		4.6		3.6		4.6	<i>Dec-10</i>
<b>Walter Scott</b>	<b>91,598,300</b>	<b>2.1</b>		<b>6.6</b>	<b>14</b>	<b>-4.3</b>	<b>25</b>	<b>-0.4</b>	<b>55</b>	<b>2.4</b>	<b>84</b>	<b>3.3</b>	<b>62</b>	--	--	<b>3.3</b>	<b>Dec-10</b>
<i>MSCI ACWI ex USA</i>				<u>3.2</u>	82	<u>-9.3</u>	87	<u>-5.7</u>	86	<u>1.5</u>	86	<u>1.1</u>	86	<u>2.9</u>	75	<u>1.1</u>	<i>Dec-10</i>
<i>Over/Under</i>				3.4		5.0		5.3		0.9		2.2				2.2	
<i>eA ACWI ex-US All Cap Equity Net Median</i>				4.8		-6.1		-0.3		5.0		3.9		3.8		3.9	<i>Dec-10</i>

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Global Equity</b>	<b>413,921,378</b>	<b>9.6</b>	<b>10.0</b>	<b>4.0</b>	<b>67</b>	<b>-6.6</b>	<b>76</b>	<b>-3.8</b>	<b>76</b>	<b>6.1</b>	<b>81</b>	<b>5.6</b>	<b>79</b>	<b>3.7</b>	<b>85</b>	<b>4.6</b>	<b>May-05</b>
MSCI ACWI				5.0	43	-4.9	60	-2.4	69	7.7	69	6.1	74	4.8	71	5.8	May-05
Over/Under				-1.0		-1.7		-1.4		-1.6		-0.5		-1.1		-1.2	
eA All Global Equity Net Median				4.7		-3.9		-0.6		9.1		7.5		5.7		6.9	May-05
<b>BlackRock MSCI ACWI Equity Index</b>	<b>218,138,004</b>	<b>5.1</b>		<b>5.1</b>	<b>42</b>	<b>-4.7</b>	<b>60</b>	<b>-2.0</b>	<b>66</b>	<b>8.1</b>	<b>65</b>	--	--	--	--	<b>9.8</b>	<b>Jul-12</b>
MSCI ACWI				5.0	43	-4.9	60	-2.4	69	7.7	69	6.1	74	4.8	71	9.5	Jul-12
Over/Under				0.1		0.2		0.4		0.4						0.3	
eA All Global Equity Net Median				4.7		-3.9		-0.6		9.1		7.5		5.7		10.6	Jul-12
<b>GMO Global Equity</b>	<b>195,783,374</b>	<b>4.6</b>		<b>2.9</b>	<b>83</b>	<b>-8.6</b>	<b>87</b>	<b>-5.8</b>	<b>85</b>	<b>4.1</b>	<b>88</b>	<b>4.9</b>	<b>83</b>	<b>4.4</b>	<b>76</b>	<b>5.4</b>	<b>Apr-05</b>
MSCI ACWI				5.0	43	-4.9	60	-2.4	69	7.7	69	6.1	74	4.8	71	5.8	Apr-05
Over/Under				-2.1		-3.7		-3.4		-3.6		-1.2		-0.4		-0.4	
eA All Global Equity Net Median				4.7		-3.9		-0.6		9.1		7.5		5.7		6.9	Apr-05

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Private Equity</b>	<b>149,484,817</b>	<b>3.5</b>	<b>5.0</b>	<b>2.2</b>	<b>15</b>	<b>8.5</b>	<b>12</b>	<b>14.7</b>	<b>15</b>	<b>17.2</b>	<b>10</b>	--	--	--	--	<b>15.4</b>	<b>Jan-12</b>
<i>DJ U.S. Total Stock Market Index + 3%</i>				<u>7.0</u>	1	<u>0.0</u>	83	<u>3.5</u>	82	<u>18.1</u>	5	<u>15.5</u>	5	--	--	<u>18.5</u>	<i>Jan-12</i>
Over/Under				-4.8		8.5		11.2		-0.9						-3.1	
<i>InvestorForce Public DB Private Eq Net Median</i>				<u>0.0</u>		<u>2.8</u>		<u>9.2</u>		<u>12.9</u>		<u>11.9</u>		<u>9.5</u>		<u>12.1</u>	<i>Jan-12</i>
Adams Street Partners	92,909,698	2.2		<b>2.7</b>	--	<b>5.7</b>	--	<b>10.3</b>	--	<b>15.1</b>	--	--	--	--	--	<b>14.0</b>	Jan-12
<i>DJ U.S. Total Stock Market Index + 3%</i>				<u>7.0</u>	--	<u>0.0</u>	--	<u>3.5</u>	--	<u>18.1</u>	--	<u>15.5</u>	--	--	--	<u>18.5</u>	<i>Jan-12</i>
Over/Under				-4.3		5.7		6.8		-3.0						-4.5	
Harbourvest	40,715,182	0.9		<b>2.7</b>	--	<b>13.6</b>	--	<b>28.5</b>	--	--	--	--	--	--	--	<b>22.4</b>	Jul-13
<i>DJ U.S. Total Stock Market Index + 3%</i>				<u>7.0</u>	--	<u>0.0</u>	--	<u>3.5</u>	--	<u>18.1</u>	--	<u>15.5</u>	--	--	--	<u>15.1</u>	<i>Jul-13</i>
Over/Under				-4.3		13.6		25.0								7.3	
Pantheon Global Secondary Fund IV	15,859,937	0.4		<b>-1.4</b>	--	<b>11.5</b>	--	<b>6.4</b>	--	<b>12.6</b>	--	--	--	--	--	<b>9.5</b>	Jan-12
<i>DJ U.S. Total Stock Market Index + 3%</i>				<u>7.0</u>	--	<u>0.0</u>	--	<u>3.5</u>	--	<u>18.1</u>	--	<u>15.5</u>	--	--	--	<u>18.5</u>	<i>Jan-12</i>
Over/Under				-8.4		11.5		2.9		-5.5						-9.0	

Private Equity performance is shown on a time-weighted return basis. Values are cash adjusted with current quarter cash flows.

# Ventura County Employees' Retirement Association

## Private Equity Limited Partnership Performance

Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date <sup>1</sup>	Outstanding Commitment <sup>1</sup>	Call Ratio	Interest Paid/(Rec'd)	Distributions to Date	Valuation	Total Value	Net Benefit	IRR	Since Inception	
													Distributions to Paid In Multiple (DPI)	Total Value to Paid In Multiple (TVPI)
Adams Street 2010 U.S. Fund	2010	5/21/2010	\$42,500,000	\$29,665,000	\$12,835,000	70%	\$15,213	\$10,764,481	\$31,435,448	\$42,199,929	\$12,519,716	15.2%	0.36x	1.42x
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	\$25,500,000	\$17,697,000	\$7,803,000	69%	\$1,589	\$5,557,179	\$14,622,929	\$20,180,108	\$2,481,519	6.3%	0.31x	1.14x
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	\$8,500,000	\$6,111,500	\$2,388,500	72%	\$0	\$314,436	\$7,126,675	\$7,441,111	\$1,329,611	9.6%	0.05x	1.22x
Adams Street 2010 Direct Fund	2010	5/21/2010	\$8,500,000	\$7,837,000	\$663,000	92%	\$6,697	\$3,933,030	\$8,133,406	\$12,066,436	\$4,222,739	14.4%	0.5x	1.54x
<b>Total Adams Street 2010</b>	<b>2010</b>	<b>5/21/2010</b>	<b>\$85,000,000</b>	<b>\$61,310,500</b>	<b>\$23,689,500</b>	<b>72%</b>	<b>\$23,499</b>	<b>\$20,569,126</b>	<b>\$61,318,458</b>	<b>\$81,887,584</b>	<b>\$20,553,585</b>	<b>12.5%</b>	<b>0.34x</b>	<b>1.34x</b>
Adams Street 2013 Global Fund	2013	6/27/2013	\$75,000,000	\$31,387,500	\$43,612,500	42%	\$10,728	\$1,509,878	\$31,591,242	\$33,101,120	\$1,702,892	4.7%	0.05x	1.05x
HarbourVest - Dover Street VIII	2013	5/30/2013	\$67,500,000	\$42,525,000	\$24,975,000	63%	\$84,954	\$19,244,036	\$40,715,189	\$59,959,225	\$17,349,271	33.5%	0.45x	1.41x
Pantheon Global Secondary Fund IV	2010	8/20/2010	\$15,000,000	\$9,960,000	\$5,040,000	66%	\$0	\$8,130,001	\$6,412,558	\$14,542,559	\$4,582,559	0.0%	0.82x	1.46x
Pantheon Global Secondary Fund V	2015	2/26/2015	\$50,000,000	\$8,972,068	\$41,027,932	18%	\$10,480	\$87,808	\$9,811,060	\$9,898,868	\$916,320	13.1%	0.01x	1.1x
<b>Total VCERA Private Equity Program</b>	<b>--</b>	<b>5/21/2010</b>	<b>\$292,500,000</b>	<b>\$154,155,068</b>	<b>\$138,344,932</b>	<b>53%</b>	<b>\$129,661</b>	<b>\$49,540,849</b>	<b>\$149,848,507</b>	<b>\$199,389,356</b>	<b>\$45,104,627</b>	<b>16.3%</b>	<b>0.32x</b>	<b>1.29x</b>

1. Includes recycled/recallable distributions received to date.

Note: Private equity performance data is reported net of fees.

Distributions to Date shown for Pantheon Global Secondary Fund V includes management fee rebates paid to VCERA.

Performance shown is based on cash-adjusted market values as of 12/31/2015.

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total US Fixed Income</b>	<b>763,529,805</b>	<b>17.8</b>	<b>19.0</b>	<b>-0.4</b>	<b>41</b>	<b>-0.4</b>	<b>69</b>	<b>0.3</b>	<b>54</b>	<b>1.1</b>	<b>66</b>	<b>4.0</b>	<b>40</b>	<b>5.6</b>	<b>25</b>	<b>6.0</b>	<b>Feb-94</b>
Barclays Aggregate				-0.6	57	0.7	24	0.5	45	1.4	51	3.2	56	4.5	51	5.6	Feb-94
Over/Under				0.2		-1.1		-0.2		-0.3		0.8		1.1		0.4	
eA All US Fixed Inc Net Median				-0.5		0.1		0.4		1.5		3.5		4.6		5.4	Feb-94
<b>BlackRock U.S. Debt Fund</b>	<b>140,124,897</b>	<b>3.3</b>		<b>-0.6</b>	<b>60</b>	<b>0.7</b>	<b>24</b>	<b>0.6</b>	<b>44</b>	<b>1.5</b>	<b>47</b>	<b>3.3</b>	<b>55</b>	<b>4.6</b>	<b>48</b>	<b>5.4</b>	<b>Nov-95</b>
Barclays Aggregate				-0.6	57	0.7	24	0.5	45	1.4	51	3.2	56	4.5	51	5.4	Nov-95
Over/Under				0.0		0.0		0.1		0.1		0.1		0.1		0.0	
eA All US Fixed Inc Net Median				-0.5		0.1		0.4		1.5		3.5		4.6		5.3	Nov-95
<b>Western</b>	<b>269,340,240</b>	<b>6.3</b>		<b>-0.1</b>	<b>25</b>	<b>0.6</b>	<b>27</b>	<b>0.9</b>	<b>30</b>	<b>2.3</b>	<b>21</b>	<b>4.7</b>	<b>26</b>	<b>5.3</b>	<b>30</b>	<b>6.3</b>	<b>Dec-96</b>
Barclays Aggregate				-0.6	57	0.7	24	0.5	45	1.4	51	3.2	56	4.5	51	5.4	Dec-96
Over/Under				0.5		-0.1		0.4		0.9		1.5		0.8		0.9	
eA All US Fixed Inc Net Median				-0.5		0.1		0.4		1.5		3.5		4.6		5.4	Dec-96
<b>Reams</b>	<b>283,655,646</b>	<b>6.6</b>		<b>-0.3</b>	<b>37</b>	<b>-0.9</b>	<b>74</b>	<b>0.3</b>	<b>54</b>	<b>-0.3</b>	<b>97</b>	<b>3.4</b>	<b>52</b>	<b>5.7</b>	<b>22</b>	<b>5.5</b>	<b>Sep-01</b>
Reams Custom Index				0.1	14	0.2	43	0.3	54	0.0	96	2.4	75	4.1	62	4.3	Sep-01
Over/Under				-0.4		-1.1		0.0		-0.3		1.0		1.6		1.2	
Barclays Aggregate				-0.6	57	0.7	24	0.5	45	1.4	51	3.2	56	4.5	51	4.6	Sep-01
eA All US Fixed Inc Net Median				-0.5		0.1		0.4		1.5		3.5		4.6		4.7	Sep-01
<b>Loomis Sayles Multi Strategy</b>	<b>70,409,023</b>	<b>1.6</b>		<b>-1.0</b>	<b>83</b>	<b>-3.7</b>	<b>89</b>	<b>-2.3</b>	<b>83</b>	<b>1.9</b>	<b>32</b>	<b>5.2</b>	<b>20</b>	<b>6.5</b>	<b>12</b>	<b>6.3</b>	<b>Jul-05</b>
Loomis Custom Index				-1.1	85	-2.0	83	-1.2	76	1.4	54	3.7	45	5.2	31	5.0	Jul-05
Over/Under				0.1		-1.7		-1.1		0.5		1.5		1.3		1.3	
Barclays Govt/Credit				-0.7	71	0.4	32	0.1	60	1.2	61	3.4	53	4.5	53	4.4	Jul-05
eA All US Fixed Inc Net Median				-0.5		0.1		0.4		1.5		3.5		4.6		4.5	Jul-05

Reams Custom Index: Merrill Lynch 3 Month Libor Constant Maturity Index, prior to February 2013 the Barclays Aggregate

Loomis Custom Index: 65% Barclays Aggregate, 30% Citigroup High Yield Market Index and 5% JPM Non-US Hedged Bond Index

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Global Fixed Income</b>	<b>252,651,309</b>	<b>5.9</b>	<b>5.0</b>	<b>-0.7</b>	<b>56</b>	<b>-1.0</b>	<b>40</b>	<b>-3.1</b>	<b>54</b>	<b>-1.3</b>	<b>67</b>	--	--	--	--	<b>-0.2</b>	<b>Jun-12</b>
<i>Barclays Global Aggregate</i>				<i>-0.9</i>	<i>63</i>	<i>-0.1</i>	<i>22</i>	<i>-3.2</i>	<i>54</i>	<i>-1.7</i>	<i>74</i>	<i>0.9</i>	<i>79</i>	<i>3.7</i>	<i>80</i>	<i>-0.7</i>	<i>Jun-12</i>
<i>Over/Under</i>				<i>0.2</i>		<i>-0.9</i>		<i>0.1</i>		<i>0.4</i>						<i>0.5</i>	
<i>eA All Global Fixed Inc Net Median</i>				<i>-0.6</i>		<i>-1.8</i>		<i>-2.9</i>		<i>0.1</i>		<i>2.8</i>		<i>4.5</i>		<i>2.0</i>	<i>Jun-12</i>
<b>PIMCO Global Fixed Income</b>	<b>122,630,656</b>	<b>2.9</b>		<b>-0.5</b>	<b>42</b>	<b>-0.2</b>	<b>24</b>	<b>-2.9</b>	<b>49</b>	<b>-1.3</b>	<b>60</b>	--	--	--	--	<b>-1.4</b>	<b>Sep-12</b>
<i>Barclays Global Aggregate</i>				<i>-0.9</i>	<i>65</i>	<i>-0.1</i>	<i>22</i>	<i>-3.2</i>	<i>53</i>	<i>-1.7</i>	<i>70</i>	<i>0.9</i>	<i>75</i>	<i>3.7</i>	<i>70</i>	<i>-1.7</i>	<i>Sep-12</i>
<i>Over/Under</i>				<i>0.4</i>		<i>-0.1</i>		<i>0.3</i>		<i>0.4</i>						<i>0.3</i>	
<i>eA Global Fixed Inc Unhedged Net Median</i>				<i>-0.6</i>		<i>-1.5</i>		<i>-2.9</i>		<i>-0.4</i>		<i>2.1</i>		<i>4.3</i>		<i>0.3</i>	<i>Sep-12</i>
<b>Loomis Strategic Alpha</b>	<b>41,711,873</b>	<b>1.0</b>		<b>-0.8</b>	<b>61</b>	<b>-2.3</b>	<b>59</b>	<b>-1.0</b>	<b>25</b>	--	--	--	--	--	--	<b>1.1</b>	<b>Jul-13</b>
<i>Barclays Global Aggregate</i>				<i>-0.9</i>	<i>65</i>	<i>-0.1</i>	<i>22</i>	<i>-3.2</i>	<i>53</i>	<i>-1.7</i>	<i>70</i>	<i>0.9</i>	<i>75</i>	<i>3.7</i>	<i>70</i>	<i>-0.6</i>	<i>Jul-13</i>
<i>Over/Under</i>				<i>0.1</i>		<i>-2.2</i>		<i>2.2</i>								<i>1.7</i>	
<i>eA Global Fixed Inc Unhedged Net Median</i>				<i>-0.6</i>		<i>-1.5</i>		<i>-2.9</i>		<i>-0.4</i>		<i>2.1</i>		<i>4.3</i>		<i>0.4</i>	<i>Jul-13</i>
<b>Loomis Sayles Global Fixed Income</b>	<b>88,308,779</b>	<b>2.1</b>		<b>-1.0</b>	<b>67</b>	<b>-1.3</b>	<b>48</b>	<b>-4.4</b>	<b>79</b>	<b>-2.2</b>	<b>79</b>	--	--	--	--	<b>-0.8</b>	<b>Jun-12</b>
<i>Barclays Global Aggregate</i>				<i>-0.9</i>	<i>65</i>	<i>-0.1</i>	<i>22</i>	<i>-3.2</i>	<i>53</i>	<i>-1.7</i>	<i>70</i>	<i>0.9</i>	<i>75</i>	<i>3.7</i>	<i>70</i>	<i>-0.7</i>	<i>Jun-12</i>
<i>Over/Under</i>				<i>-0.1</i>		<i>-1.2</i>		<i>-1.2</i>		<i>-0.5</i>						<i>-0.1</i>	
<i>eA Global Fixed Inc Unhedged Net Median</i>				<i>-0.6</i>		<i>-1.5</i>		<i>-2.9</i>		<i>-0.4</i>		<i>2.1</i>		<i>4.3</i>		<i>1.1</i>	<i>Jun-12</i>

# Ventura County Employees' Retirement Association

## 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	Return (%)	Since
<b>Total Real Estate</b>	<b>358,956,726</b>	<b>8.4</b>	<b>7.0</b>	<b>2.8</b>	<b>64</b>	<b>6.5</b>	<b>51</b>	<b>12.8</b>	<b>40</b>	<b>11.7</b>	<b>72</b>	<b>11.7</b>	<b>82</b>	<b>4.2</b>	<b>85</b>	<b>8.0</b>	<b>Mar-94</b>
<i>Total Real Estate Benchmark</i>				<u>3.3</u>	42	<u>7.1</u>	24	<u>15.0</u>	5	<u>13.8</u>	15	<u>13.7</u>	12	<u>6.5</u>	36	<u>9.1</u>	<i>Mar-94</i>
Over/Under				-0.5		-0.6		-2.2		-2.1		-2.0		-2.3		-1.1	
<i>InvestorForce Public DB Real Estate Pub+Priv Net Median</i>				3.1		6.6		11.3		12.6		12.8		5.7		8.0	<i>Mar-94</i>
Prudential Real Estate	124,454,632	2.9		<b>3.0</b>	--	<b>7.8</b>	--	<b>14.5</b>	--	<b>13.6</b>	--	<b>13.5</b>	--	<b>5.3</b>	--	<b>6.0</b>	Jun-04
<i>NCREIF ODCE</i>				<u>3.3</u>	--	<u>7.1</u>	--	<u>15.0</u>	--	<u>13.8</u>	--	<u>13.7</u>	--	<u>6.5</u>	--	<u>8.1</u>	<i>Jun-04</i>
Over/Under				-0.3		0.7		-0.5		-0.2		-0.2		-1.2		-2.1	
UBS Real Estate	232,900,873	5.4		<b>2.8</b>	--	<b>6.0</b>	--	<b>11.9</b>	--	<b>10.6</b>	--	<b>10.6</b>	--	<b>5.8</b>	--	<b>7.7</b>	Mar-03
<i>NCREIF ODCE</i>				<u>3.3</u>	--	<u>7.1</u>	--	<u>15.0</u>	--	<u>13.8</u>	--	<u>13.7</u>	--	<u>6.5</u>	--	<u>8.3</u>	<i>Mar-03</i>
Over/Under				-0.5		-1.1		-3.1		-3.2		-3.1		-0.7		-0.6	
RREEF	1,601,221	0.0		<b>-0.9</b>	--	<b>-6.2</b>	--	<b>7.5</b>	--	<b>16.1</b>	--	<b>24.2</b>	--	--	--	<b>-5.0</b>	Sep-07
<i>NCREIF ODCE</i>				<u>3.3</u>	--	<u>7.1</u>	--	<u>15.0</u>	--	<u>13.8</u>	--	<u>13.7</u>	--	<u>6.5</u>	--	<u>4.4</u>	<i>Sep-07</i>
Over/Under				-4.2		-13.3		-7.5		2.3		10.5				-9.4	

Total Real Estate Benchmark: NCREIF ODCE; prior to January 2006, the NCREIF Property Index



# Ventura County Employees' Retirement Association

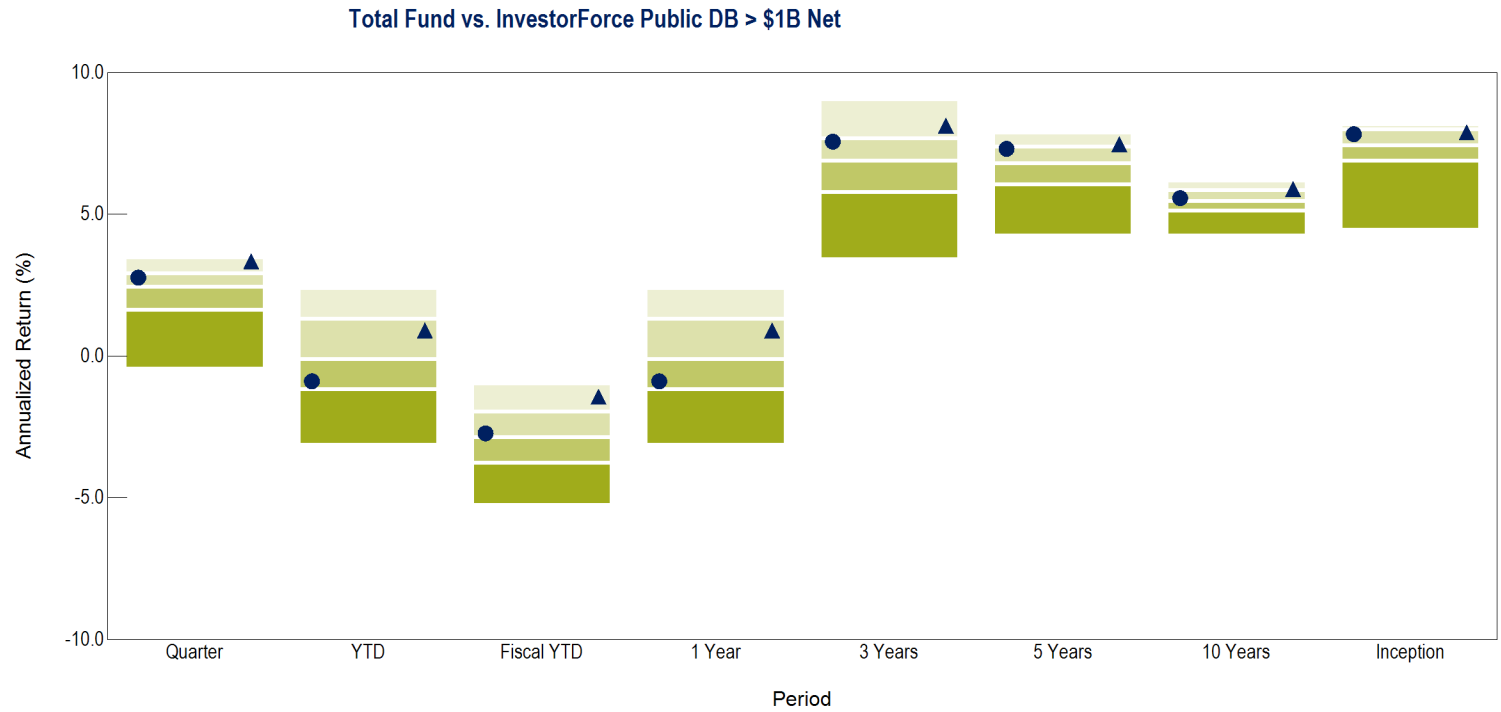
## Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
<b>Total Liquid Alternatives</b>	<b>360,680,230</b>	<b>8.4</b>	<b>10.0</b>	<b>-0.1</b>	--	<b>-12.5</b>	--	<b>-13.8</b>	--	--	--	--	--	--	--	<b>2.0</b>	<b>Apr-13</b>
CPI + 4% (Unadjusted)				0.4	--	1.1	--	4.8	--	5.0	--	5.6	--	5.9	--	4.7	Apr-13
Over/Under				-0.5		-13.6		-18.6								-2.7	
Bridgewater All Weather Fund	255,595,228	6.0		-1.0	--	-7.3	--	-6.8	--	--	--	--	--	--	--	1.6	Aug-13
CPI + 5% (Unadjusted)				0.6	--	1.6	--	5.8	--	--	--	--	--	--	--	5.5	Aug-13
Over/Under				-1.6		-8.9		-12.6								-3.9	
Tortoise Energy Infrastructure	105,085,003	2.4		2.1	--	-22.9	--	-27.2	--	--	--	--	--	--	--	-2.0	Apr-13
Wells Fargo MLP Index				-4.0	--	-27.8	--	-32.7	--	-2.7	--	2.0	--	--	--	-9.6	Apr-13
Over/Under				6.1		4.9		5.5								7.6	
<b>Overlay</b>	<b>96,458,273</b>	<b>2.2</b>	<b>0.0</b>														
Parametric	96,458,273	2.2															

Overlay performance is not applicable on an individual account level

# Ventura County Employees' Retirement Association

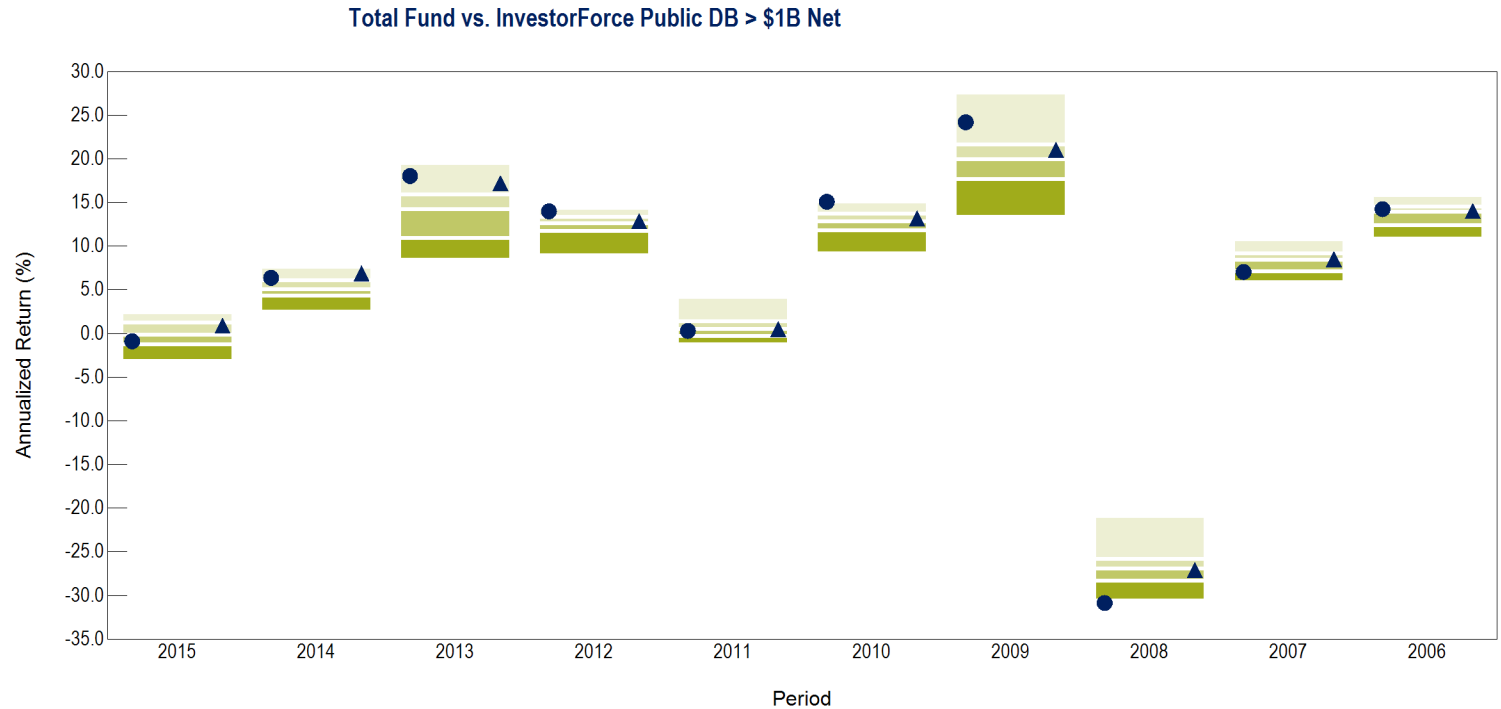
## Total Fund Return Summary vs. Peer Universe



	Return (Rank)															
5th Percentile	3.5		2.4		-1.0		2.4		9.0		7.9		6.2		8.2	
25th Percentile	2.9		1.3		-1.9		1.3		7.7		7.4		5.9		8.0	
Median	2.4		-0.1		-2.9		-0.1		6.9		6.8		5.5		7.4	
75th Percentile	1.6		-1.2		-3.8		-1.2		5.8		6.1		5.1		6.9	
95th Percentile	-0.4		-3.1		-5.2		-3.1		3.4		4.3		4.3		4.5	
# of Portfolios	41		41		41		41		41		41		37		23	
● Total Fund	2.8	(31)	-0.9	(68)	-2.7	(43)	-0.9	(68)	7.6	(33)	7.3	(28)	5.6	(42)	7.8	(32)
▲ Policy Index	3.3	(10)	0.9	(28)	-1.4	(19)	0.9	(28)	8.1	(14)	7.5	(24)	5.9	(23)	7.9	(31)

# Ventura County Employees' Retirement Association

## Total Fund Return Summary vs. Peer Universe

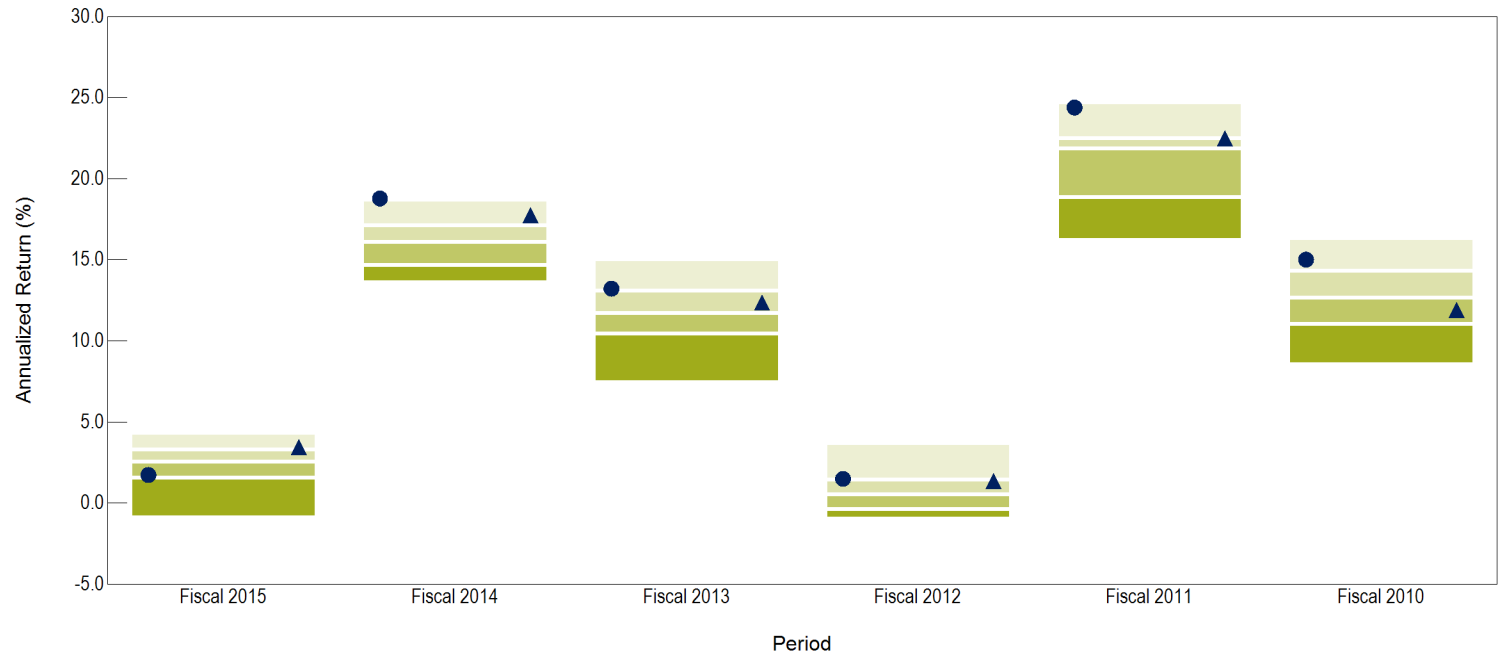


	Return (Rank)									
5th Percentile	2.4	7.6	19.5	14.3	4.2	15.1	27.5	-20.9	10.7	15.8
25th Percentile	1.3	6.1	16.0	13.4	1.5	13.8	21.7	-25.7	9.2	14.6
Median	-0.1	5.1	14.3	12.7	0.6	12.8	20.0	-26.9	8.5	14.0
75th Percentile	-1.2	4.4	11.0	11.8	-0.3	11.8	17.7	-28.3	7.1	12.5
95th Percentile	-3.1	2.6	8.5	9.0	-1.2	9.3	13.4	-30.5	5.9	10.9
# of Portfolios	41	55	48	44	42	41	40	39	39	38
● Total Fund	-0.9 (68)	6.4 (19)	18.0 (10)	14.0 (15)	0.3 (61)	15.1 (6)	24.2 (16)	-30.9 (98)	7.0 (77)	14.2 (41)
▲ Policy Index	0.9 (28)	6.9 (11)	17.2 (14)	12.9 (41)	0.5 (55)	13.2 (44)	21.0 (33)	-27.1 (54)	8.5 (50)	14.0 (50)

# Ventura County Employees' Retirement Association

## Total Fund Return Summary vs. Peer Universe

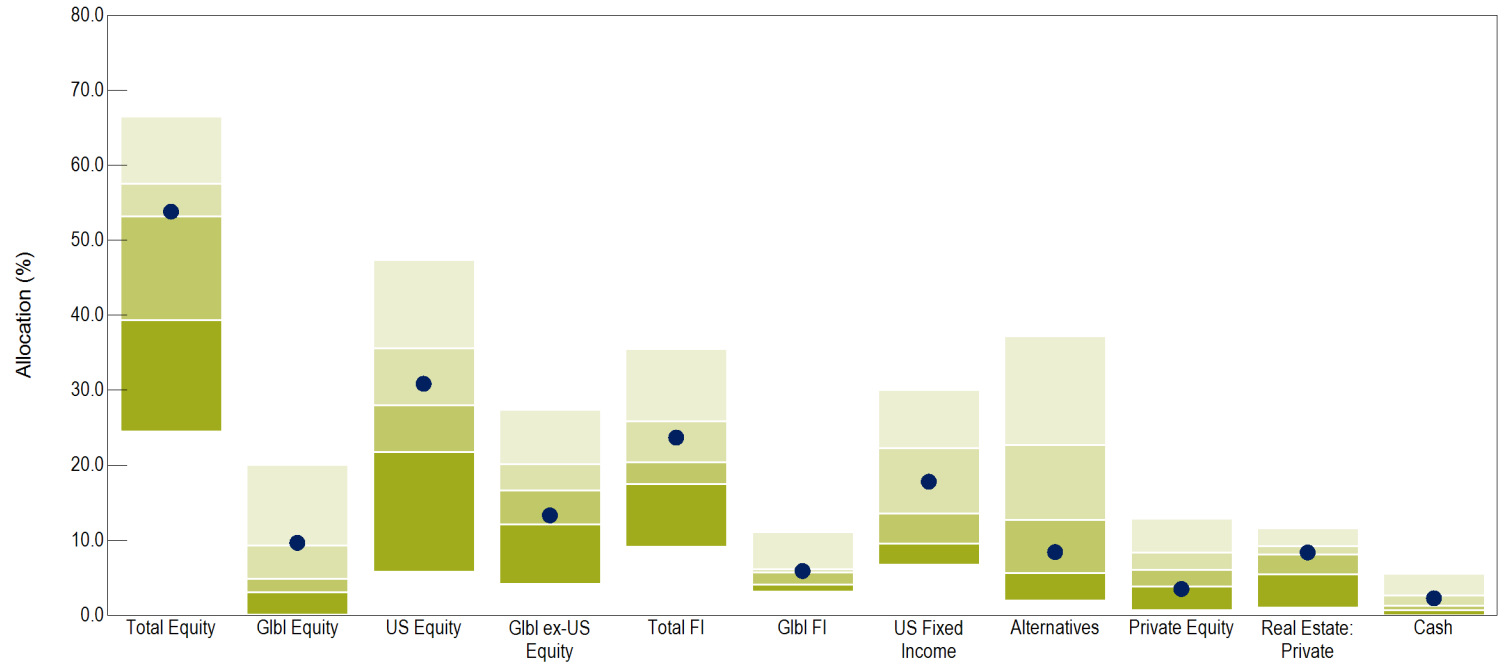
Total Fund vs. InvestorForce Public DB > \$1B Net



	Fiscal 2015		Fiscal 2014		Fiscal 2013		Fiscal 2012		Fiscal 2011		Fiscal 2010	
	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)
5th Percentile	4.3		18.7		15.0		3.7		24.7		16.3	
25th Percentile	3.3		17.2		13.1		1.5		22.5		14.4	
Median	2.6		16.1		11.8		0.5		21.9		12.7	
75th Percentile	1.6		14.7		10.5		-0.3		18.9		11.1	
95th Percentile	-0.9		13.6		7.5		-0.9		16.3		8.6	
# of Portfolios	53		43		56		41		42		41	
● Total Fund	1.7	(70)	18.8	(5)	13.2	(22)	1.5	(25)	24.4	(10)	15.0	(15)
▲ Policy Index	3.4	(24)	17.7	(19)	12.4	(39)	1.4	(27)	22.5	(30)	11.9	(64)

Total Fund Allocations vs. Peer Universe

Total Plan Allocation vs. InvestorForce Public DB > \$1B Net



	Allocation (Rank)											
5th Percentile	66.5	20.0	47.4	27.4	35.5	11.1	30.1	37.2	12.8	11.6	5.6	--
25th Percentile	57.6	9.4	35.7	20.2	26.0	6.2	22.4	22.8	8.4	9.3	2.7	--
Median	53.3	4.9	28.1	16.7	20.4	5.8	13.6	12.8	6.2	8.1	1.3	--
75th Percentile	39.4	3.1	21.8	12.2	17.6	4.1	9.6	5.7	3.9	5.5	0.7	--
95th Percentile	24.6	0.2	5.9	4.2	9.2	3.2	6.8	2.0	0.7	1.1	0.1	--
# of Portfolios	39	18	36	36	39	17	33	34	31	30	36	--
● Total Fund	53.8 (45)	9.6 (24)	30.9 (35)	13.3 (66)	23.7 (40)	5.9 (38)	17.8 (35)	8.4 (61)	3.5 (81)	8.4 (42)	2.2 (33)	--

# Manager Due Diligence



## Ventura County Employees' Retirement Association

### Due Diligence Monitor

The items below summarize the recent quarter's performance and any changes or announcements from the Plan's managers/products. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a brief summary is provided on the following pages. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determine if any action should be taken (by NEPC and/or by our clients). Events are rated: No Action, Watch, Hold, Client Review or Terminate. NEPC's recommendation in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data) is refreshed quarterly.

Investment Options	Performance (Recent Quarter)	Changes/Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
BlackRock Equity Market Index	Top Quartile	-	-	-		10/2013
Western U.S. Index Plus	Top Quartile	-	-	-		6/2014
BlackRock Extended Equity Index	-	Yes	No Action	No Action		10/2013
BlackRock MSCI ACWI ex-U.S. Index	Bottom Quartile	Yes	No Action	No Action		10/2013
Sprucegrove	Bottom Decile	No	Hold	No Action	3Q 2014 Departure	N/A
Hexavest	Bottom Decile	-	-	-		1/2013
Walter Scott	Top Decile	-	-	-		10/2012
BlackRock MSCI ACWI Index	-	-	-	-		10/2013
GMO	Bottom Quartile	-	-	-		7/2014
Adams Street	N/A	-	-	-		11/2013
HarbourVest	N/A	-	-	-		3/2014
Pantheon	N/A	-	-	-		1/2015
BlackRock U.S. Debt Fund	-	Yes	No Action	No Action		10/2013
Western	Top Quartile	-	-	-		6/2014
Reams	-	-	-	-		11/2013
Loomis Sayles Multi-Sector Full Discretion	Bottom Quartile	-	-	-		11/2013
Loomis Sayles Global Fixed Income	-	-	-	-		11/2013
PIMCO Global Fixed Income	-	No	Watch	No Action	Bill Gross Lawsuit	10/2015

Due Diligence Monitor Continued

Investment Options	Performance (Recent Quarter)	Changes/Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
Loomis Sayles Strategic Alpha	-	-	-	-		11/2013
Prudential	N/A	-	-	-		7/2014
RREEF	N/A	-	-	-		7/2013
UBS	N/A	-	-	-		8/2011
Bridgewater	N/A	-	-	-		9/2012
Tortoise	N/A	-	-	-		8/2013
Parametric/Clifton	N/A	-	-	-		7/2013

NEPC Due Diligence Committee Recommendation Key

<b>No Action</b>	Informational items have surfaced; no action is recommended.
<b>Watch</b>	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
<b>Hold</b>	Serious issues have surfaced to be concerned over; manager cannot participate in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
<b>Client Review</b>	Very serious issues have surfaced with an Investment Manager; manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to review the manager.
<b>Terminate</b>	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



### Due Diligence Commentary

Below is a summary of manager changes, announcements and due diligence events since the issuance of our last quarterly report.

#### Manager Changes/Announcements

##### **BlackRock**

In mid-January BlackRock announced some structural changes to their investment platform. Their co-head of Americas Fixed Income, Kevin Holt, is assuming a new role in the Multi-Asset Group. This is the biggest structural change in their effort to build a more global and integrated reporting structure. Mr. Holt took the reports of several investors and will now be reporting to either Tim Webb or Rick Rieder. Mr. Webb was formally Head of International Fixed Income and will now serve as Head of Global Fixed Income and will be responsible for the Americas. Mr. Reider was CIO of Fundamental Fixed Income and Co-Head of Americas Fixed Income along with Mr. Holt. He will now serve as CIO of Global Fixed Income.

Although these changes are occurring on the top of BlackRock's organization chart, not much will change aside from Mr. Holt's transition to the Multi-Asset Team and a few reporting lines within their group. There were no changes to portfolio manager assignments on either the Multi-Asset or Fixed Income teams. BlackRock's overall goal in the change is to position the firm's leaders to maximize potential for BlackRock and its clients.

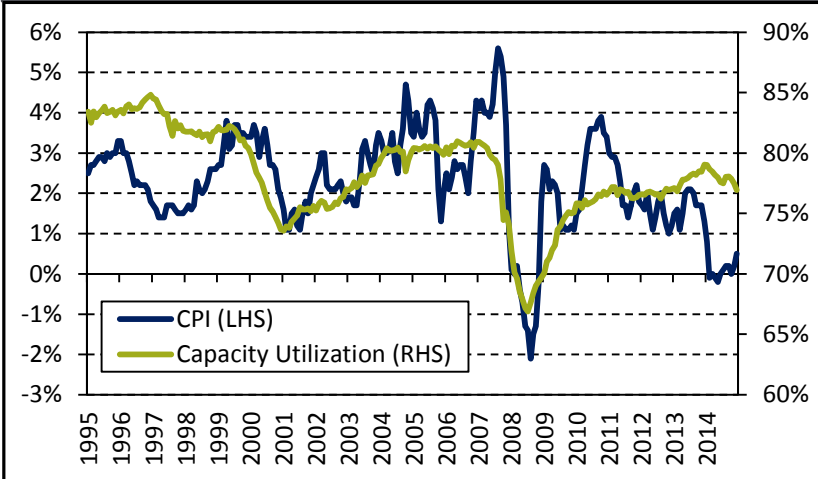
*NEPC recommends No Action at this time. We will continue to monitor the situation and provide updates as necessary.*

# Appendix: Market Environment



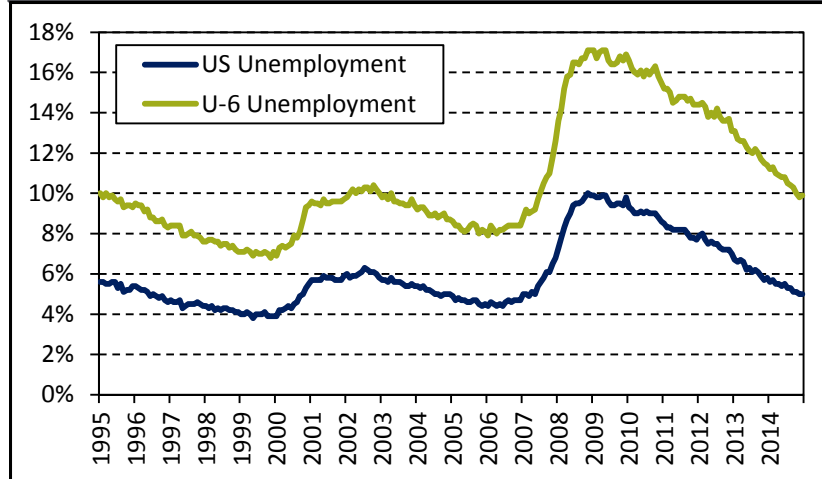
# US Economic Indicators

## Inflation has stayed low



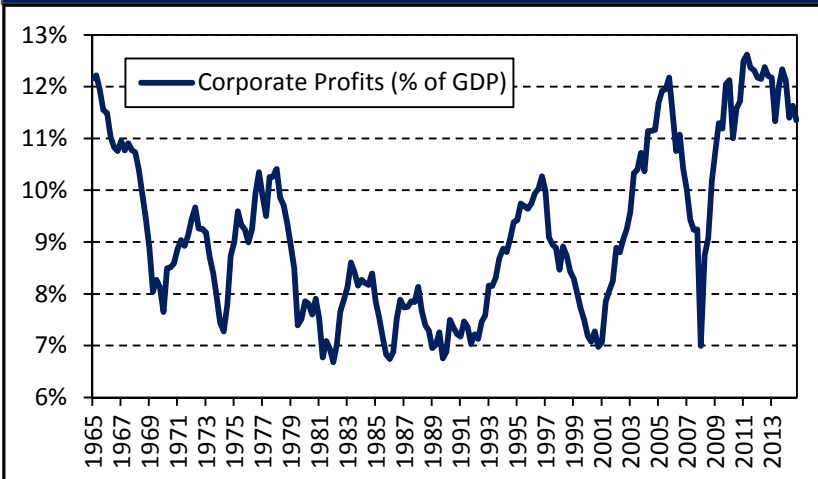
Source: Bloomberg, Federal Reserve, Bureau of Labor Statistics

## Unemployment steadily improving



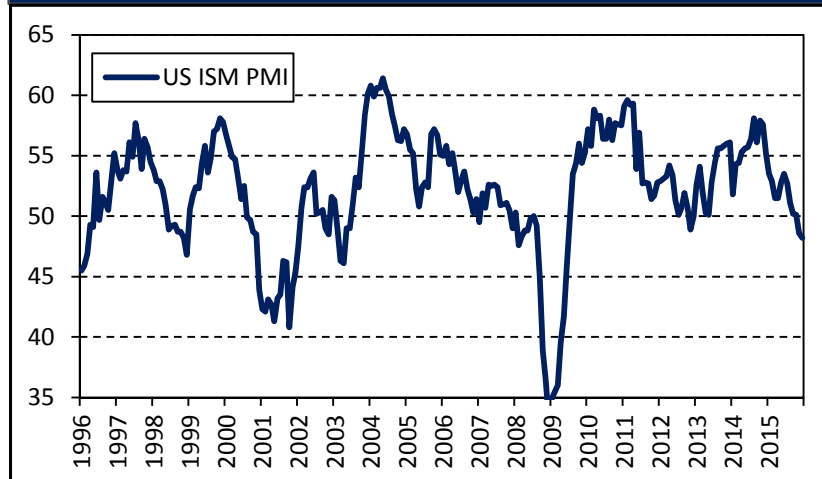
Source: Bloomberg, Bureau of Labor Statistics

## Corporate profits slightly off secular highs



Source: Bloomberg, Bureau of Economic Analysis

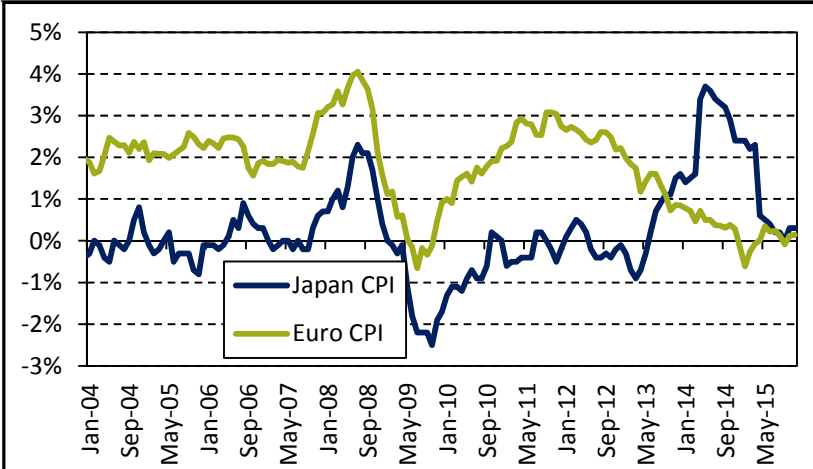
## Manufacturing trending lower



Source: Bloomberg, Institute for Supply Management

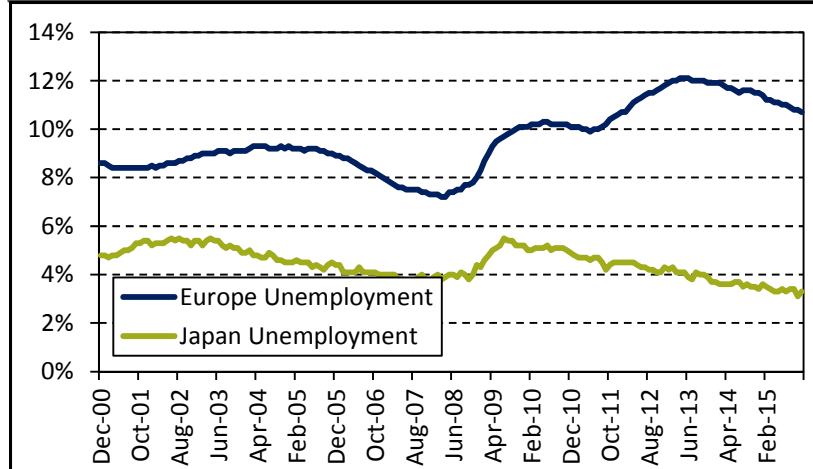
# International Economic Indicators

## Inflation remains muted



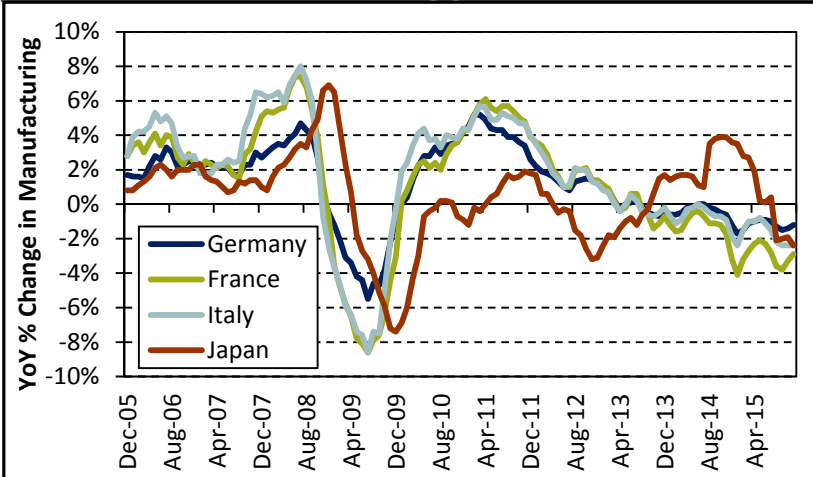
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

## Europe employment recovery lagging



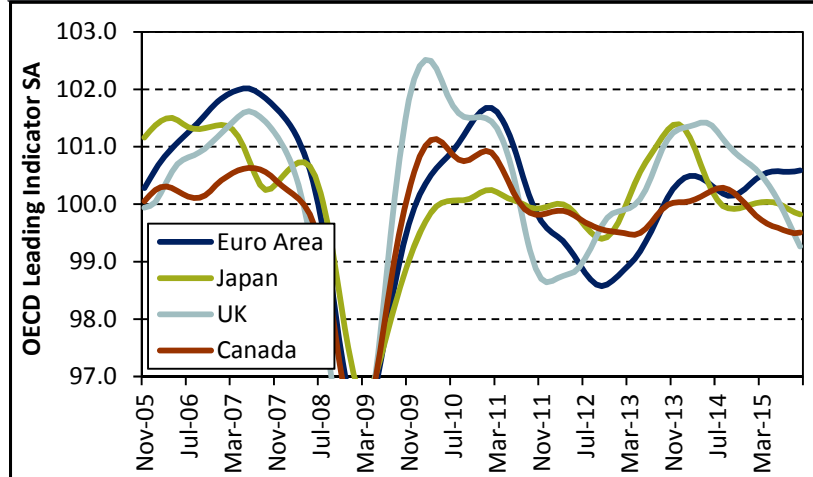
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

## Manufacturing in developed economies has lagged



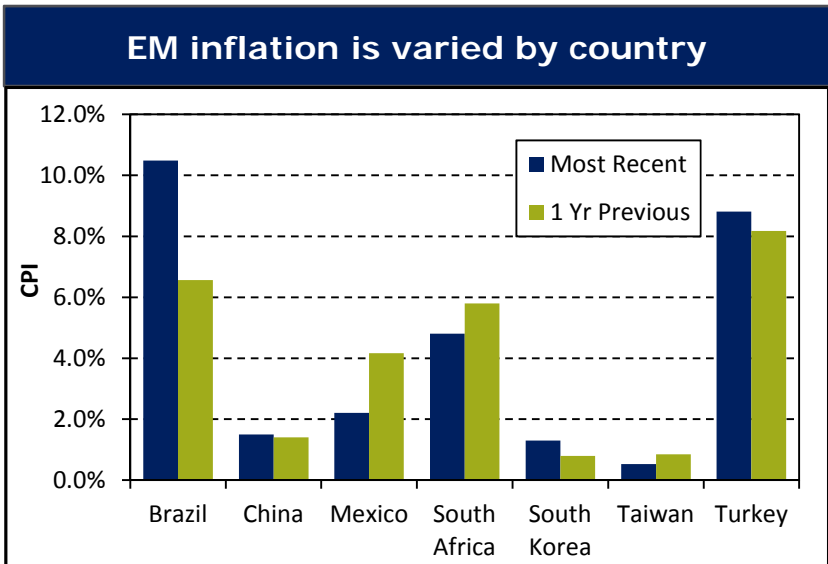
Source: Bloomberg, OECD, Eurostat

## Leading indicators mostly neutral

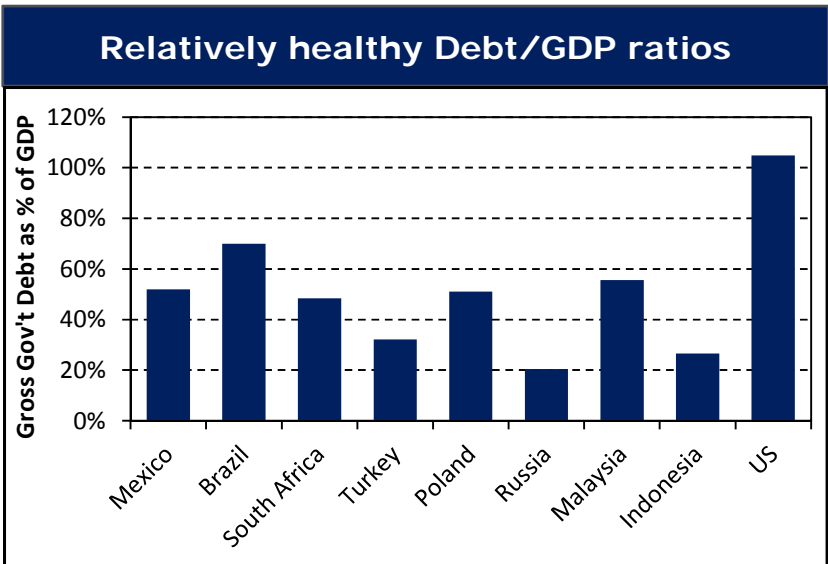


Source: Bloomberg, OECD

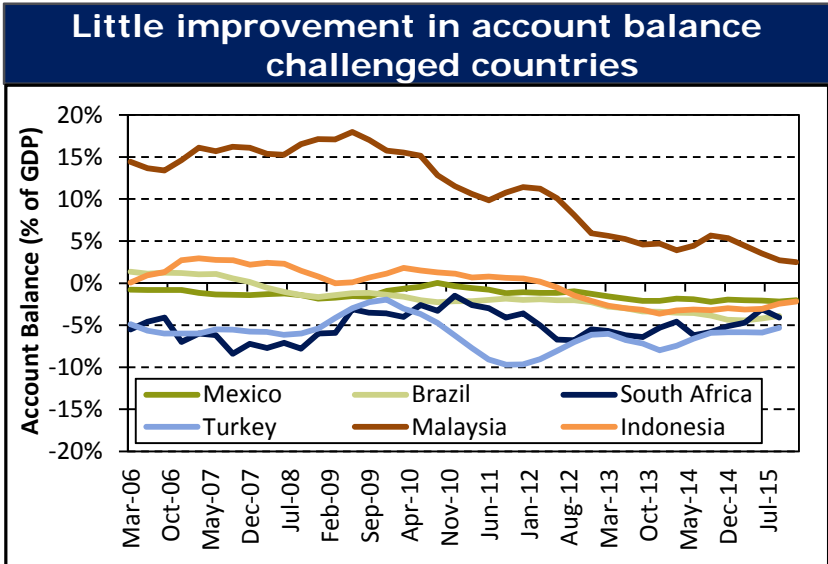
# Emerging Market Economic Indicators



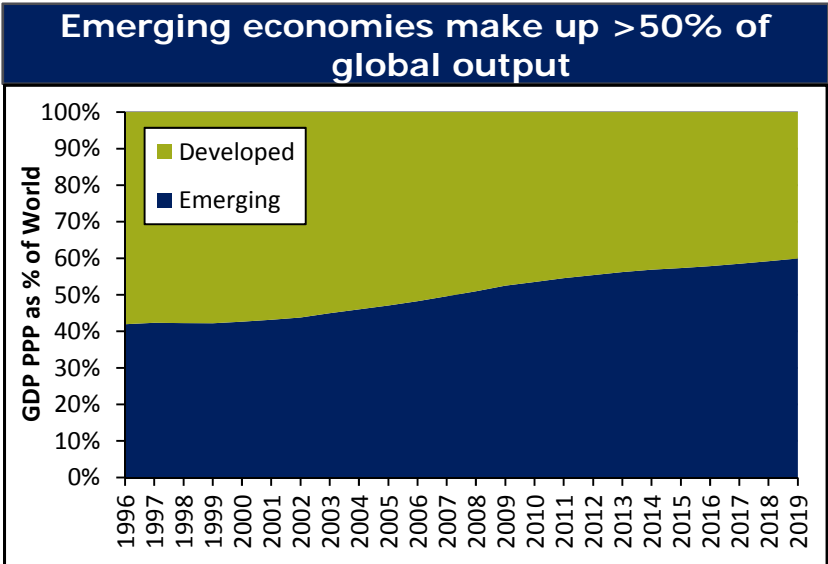
Source: Bloomberg



Source: Bloomberg, IMF



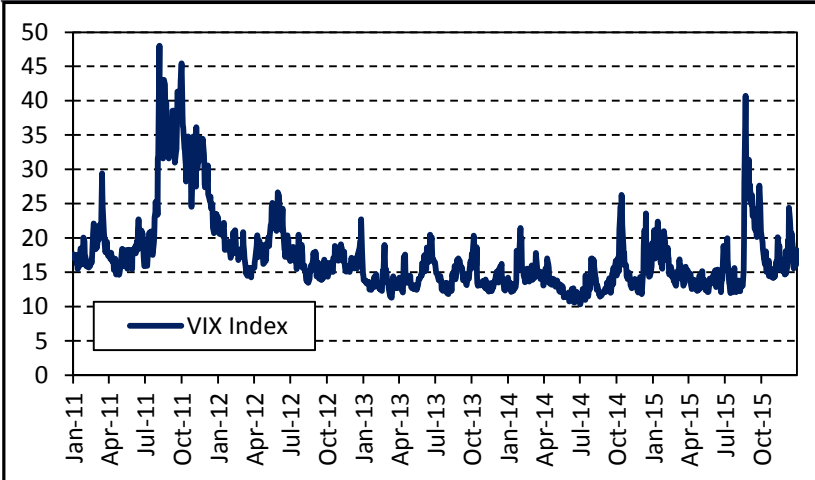
Source: Bloomberg



Source: Bloomberg, IMF

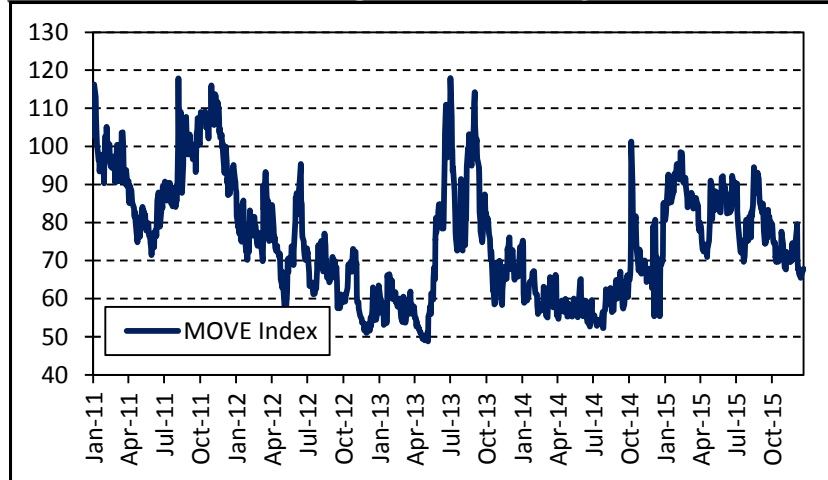
# Volatility

**Equity volatility has seen recent spike and decline**



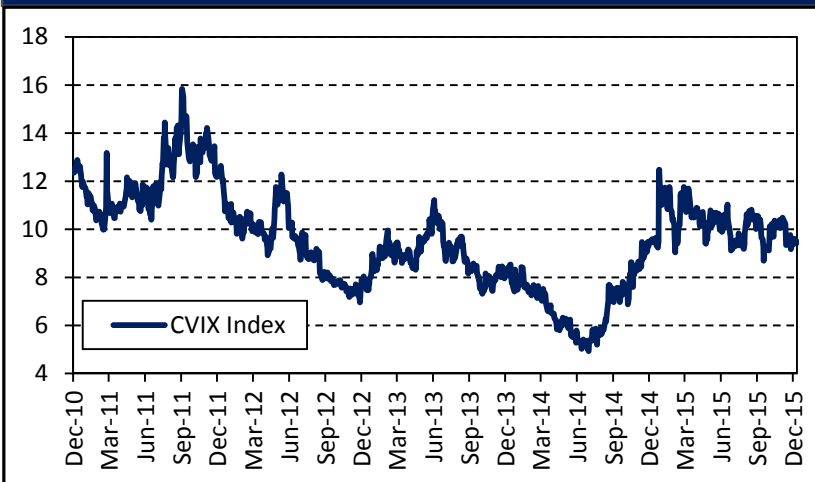
Source: Bloomberg, CBOE

**Treasury rates experiencing periods of higher volatility**



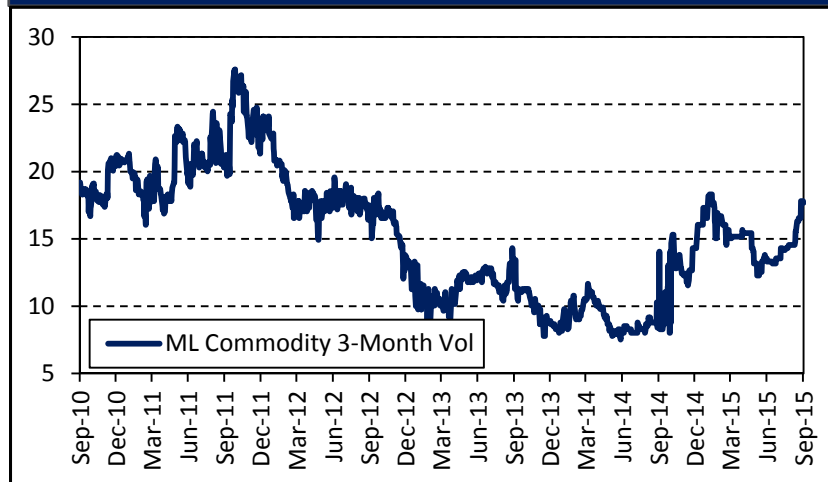
Source: Bloomberg, Merrill Lynch

**Sustained uptick in currency volatilities**



Source: Bloomberg, Deutsche Bank

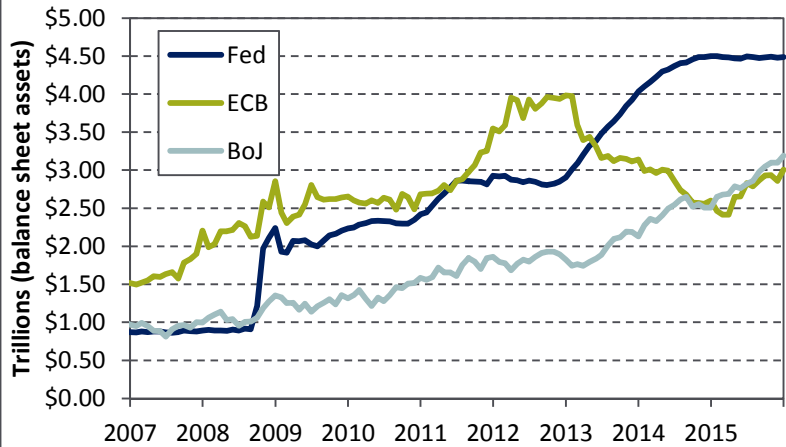
**Commodity pricing volatility has increased**



Source: Bloomberg, Merrill Lynch

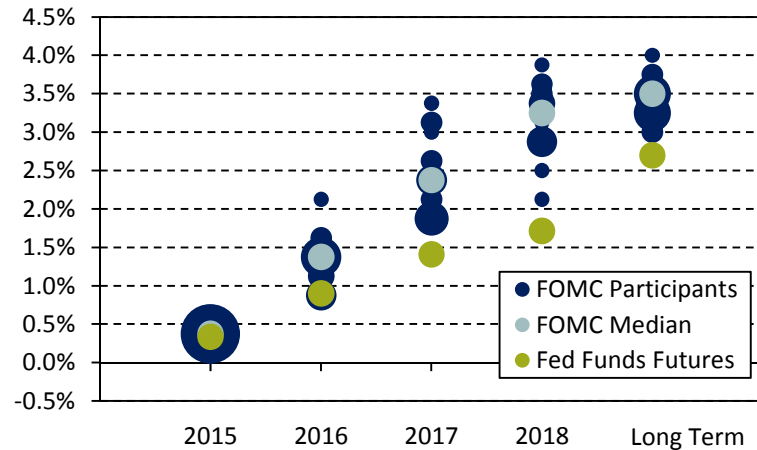
# Central Banks

## Major central bank policy divergence



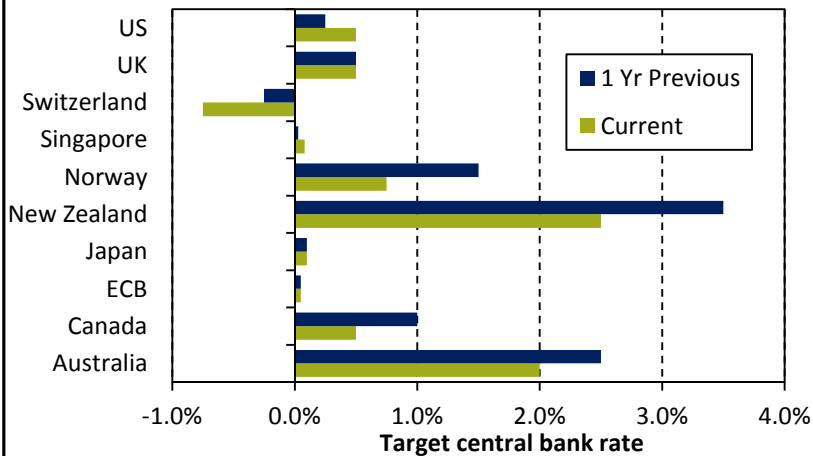
Source: Bloomberg, Federal Reserve, Bank of Japan, ECB, NEPC

## Fed's ideal rate of policy firming above market expectations



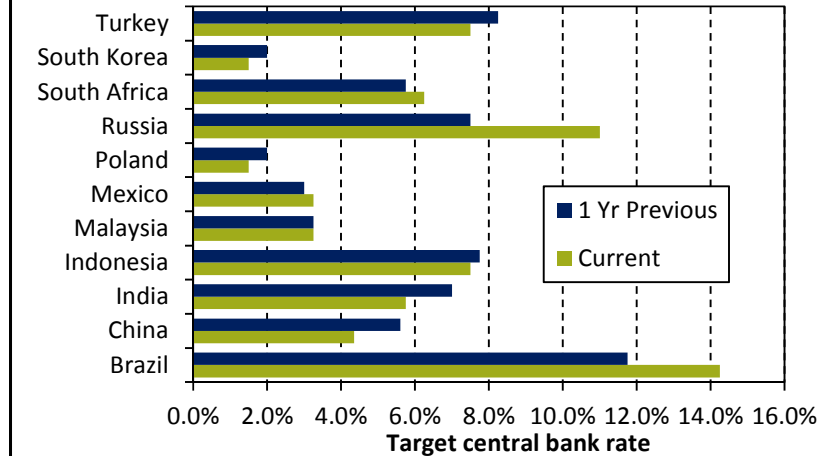
Source: Bloomberg, Federal Reserve, NEPC

## Many developed central banks have maintained low interest rates



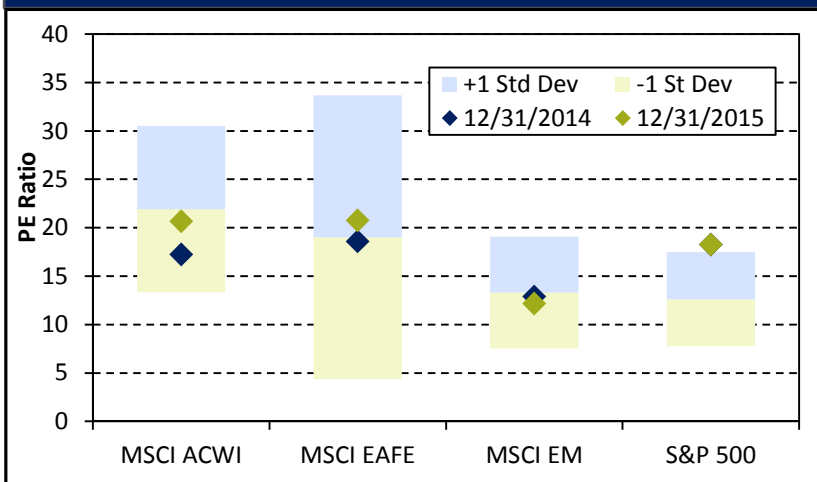
Source: Bloomberg

## EM central bank policies have varied by circumstance



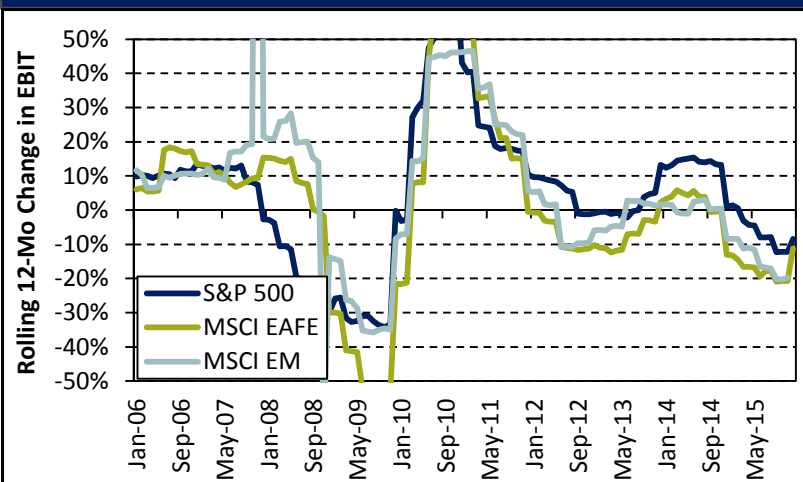
Source: Bloomberg

## Global valuations are mixed



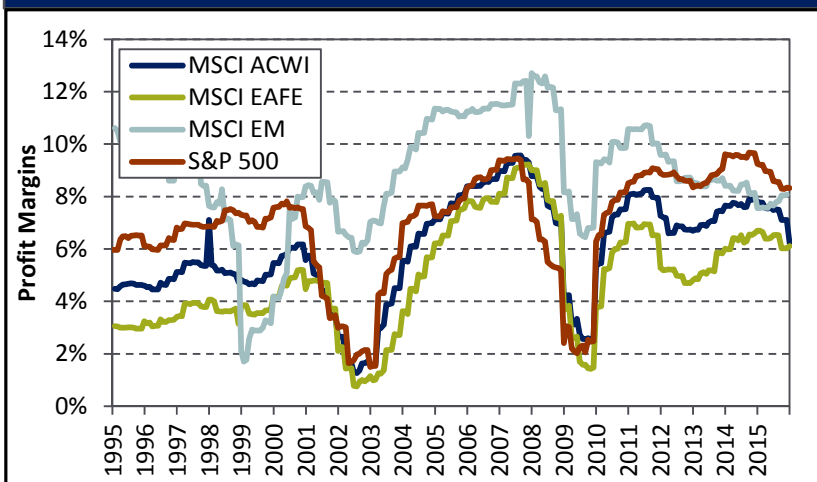
Source: Bloomberg, Standard and Poors, MSCI \*MSCI EAFE is ex UK Telecom

## Earnings growth trending lower



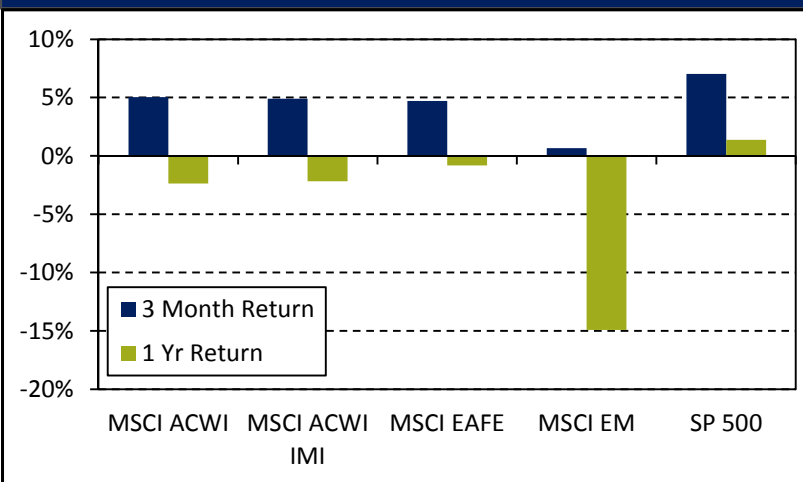
Source: Bloomberg, Standard and Poors, MSCI

## Margins elevated, but largely a US story



Source: Bloomberg, MSCI

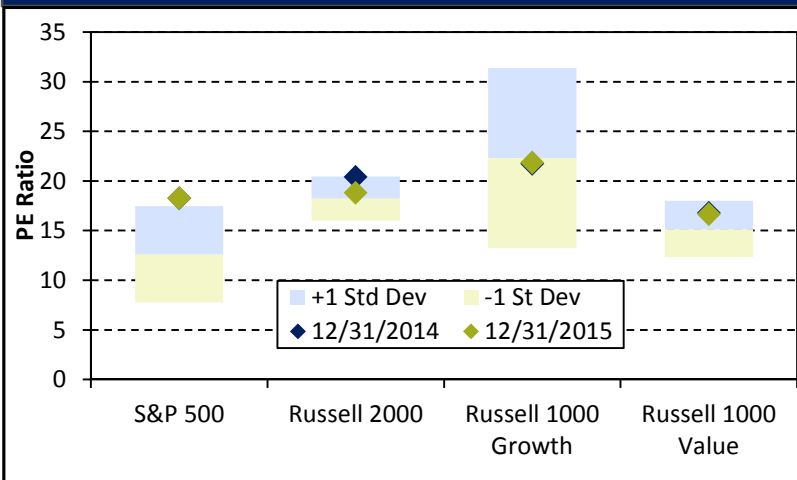
## Global equity returns have been mixed



Source: Bloomberg, MSCI



## Valuations near or above historical norms



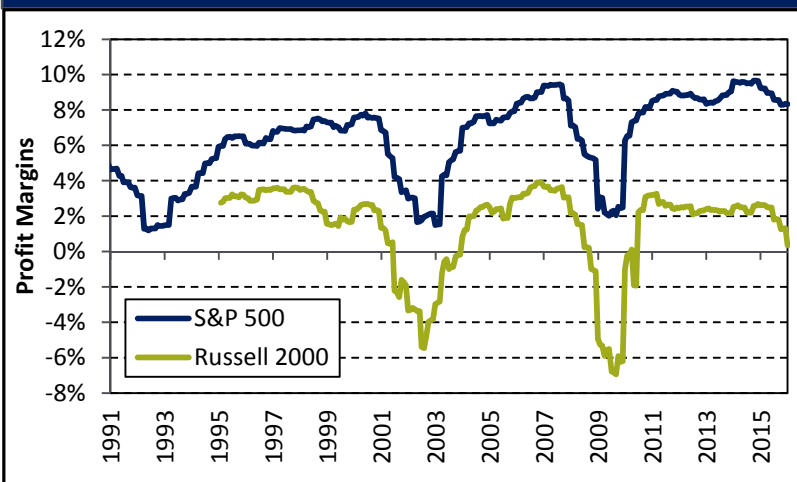
Source: Bloomberg, Standard and Poors, Russell \*Russell 2000 PE is index adjusted positive

## Growth recovery marked by inconsistency



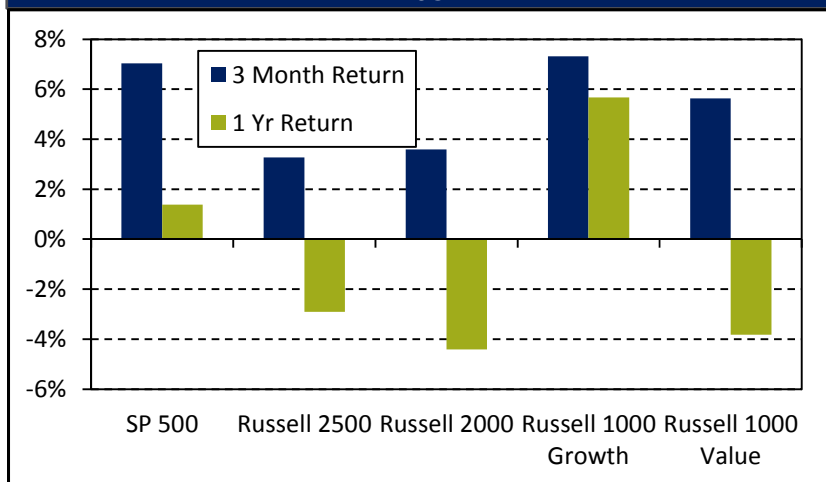
Source: Bloomberg, Bureau of Economic Analysis

## Profit margins remain elevated



Source: Bloomberg, Standard and Poors, Russell

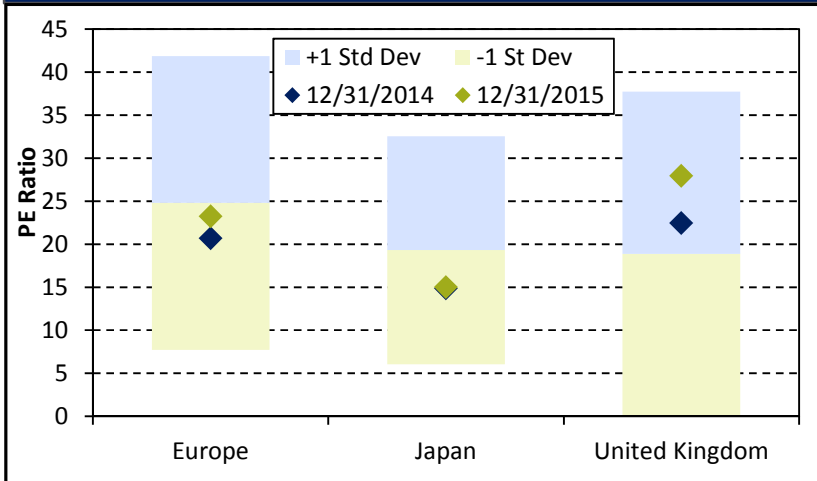
## Trailing performance is positive in near term



Source: Bloomberg, Standard and Poors, Russell

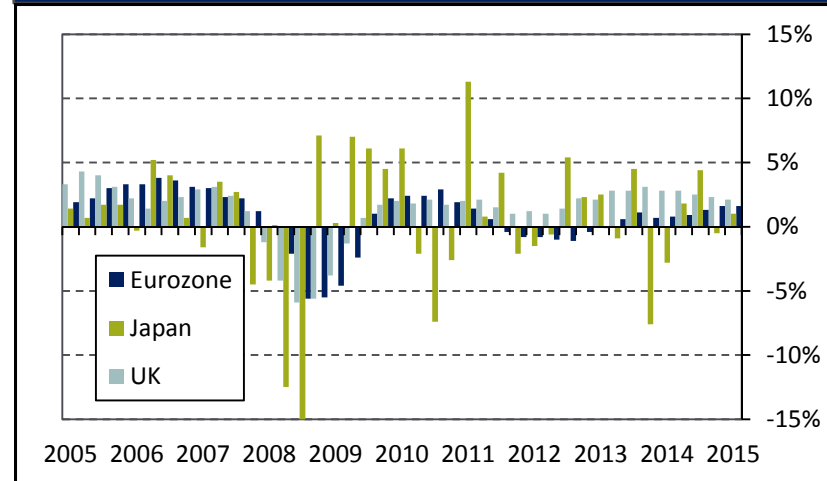
# International Equity

## PEs near historical medians



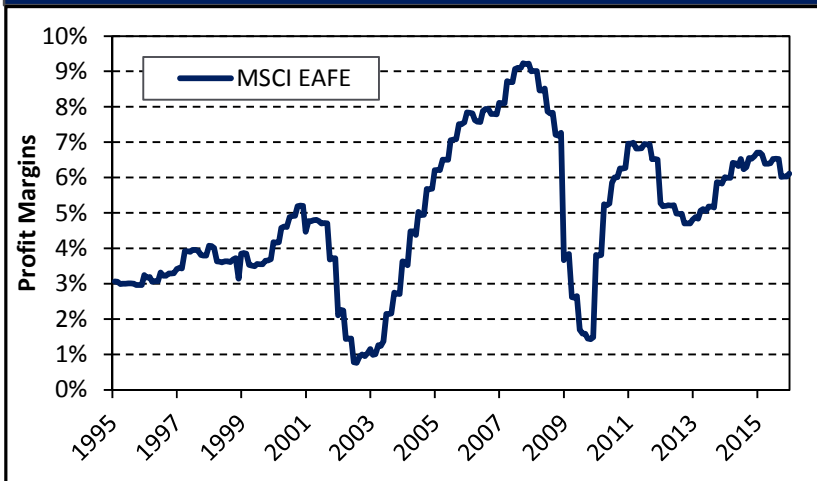
Source: Bloomberg, MSCI, FTSE \*UK represented by FTSE 100 Index

## Slow Global Growth



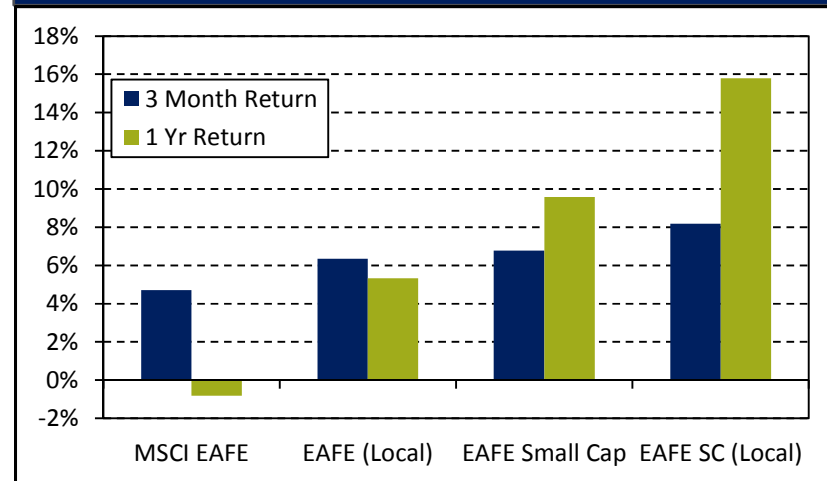
Source: Bloomberg

## Margins elevated but not at extremes



Source: Bloomberg, MSCI

## Returns pulled lower by dollar strength

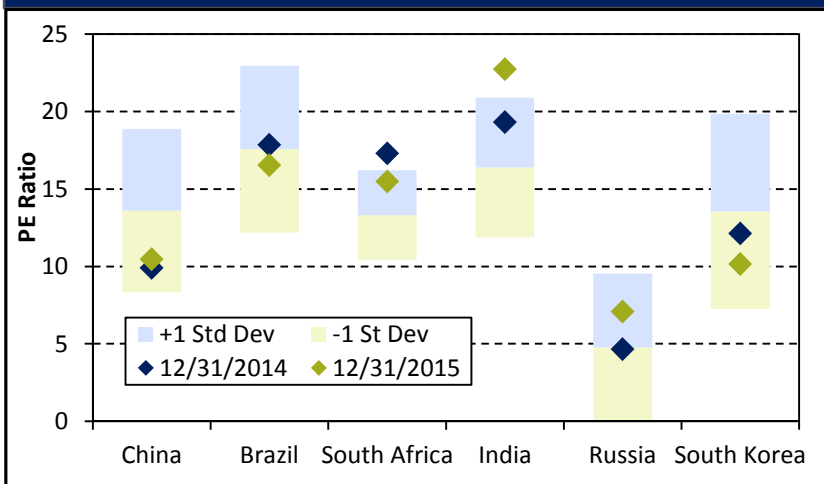


Source: Bloomberg, MSCI



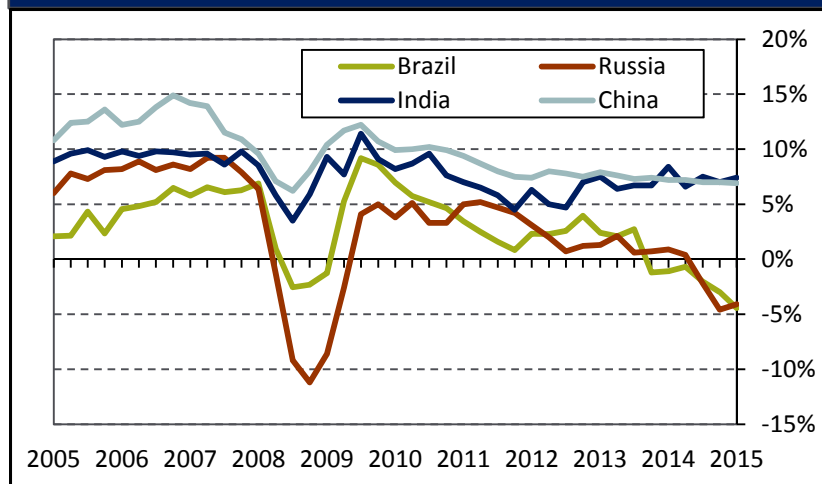
# Emerging Markets Equity

## Regional valuations show divergence



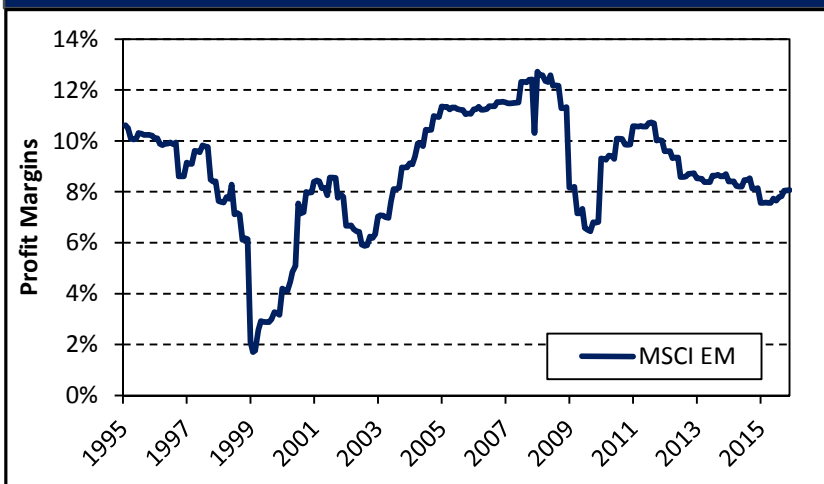
Source: Bloomberg, MSCI

## Slowing growth in major economies



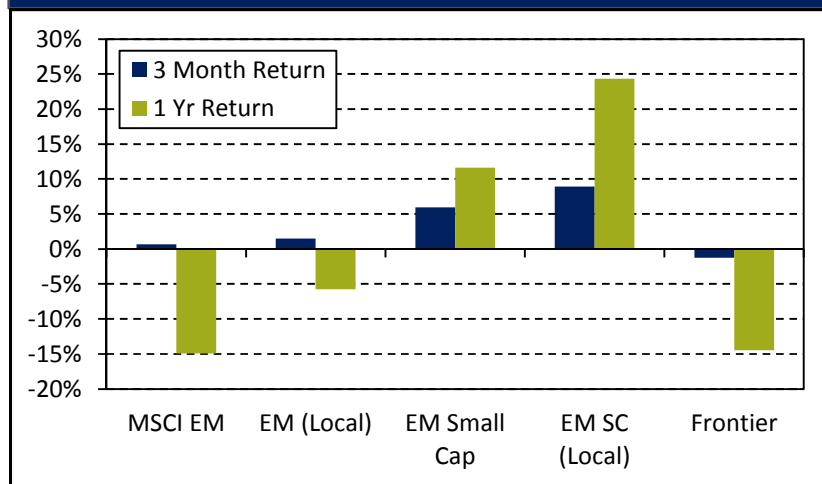
Source: Bloomberg

## Profit margins in line with history



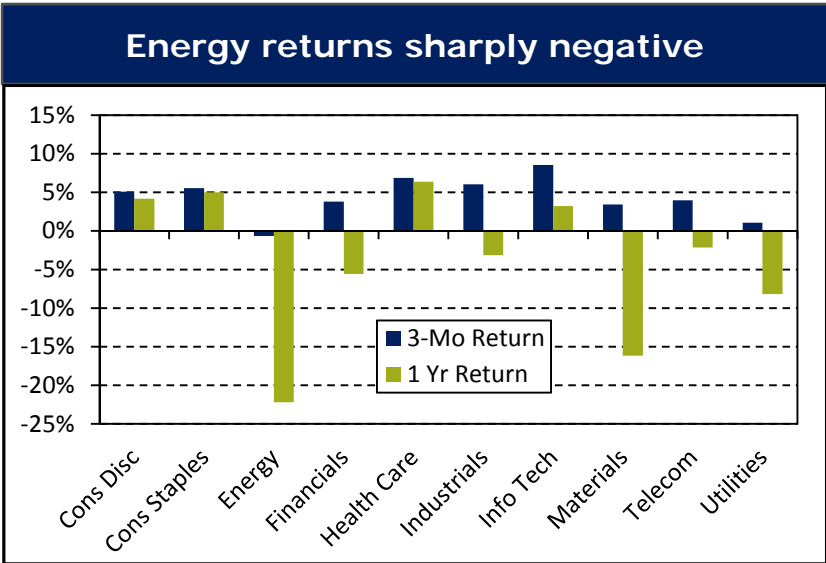
Source: Bloomberg, MSCI

## Small cap EM issues have outperformed

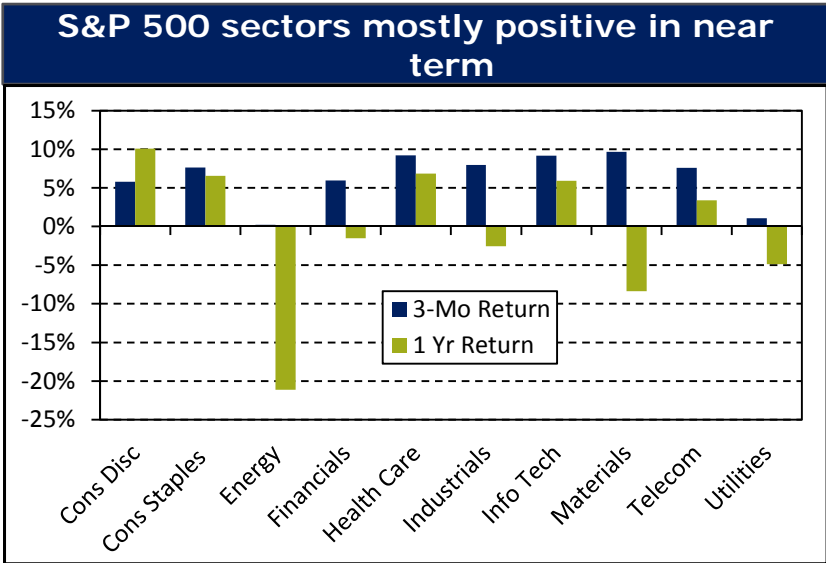


Source: Bloomberg, MSCI

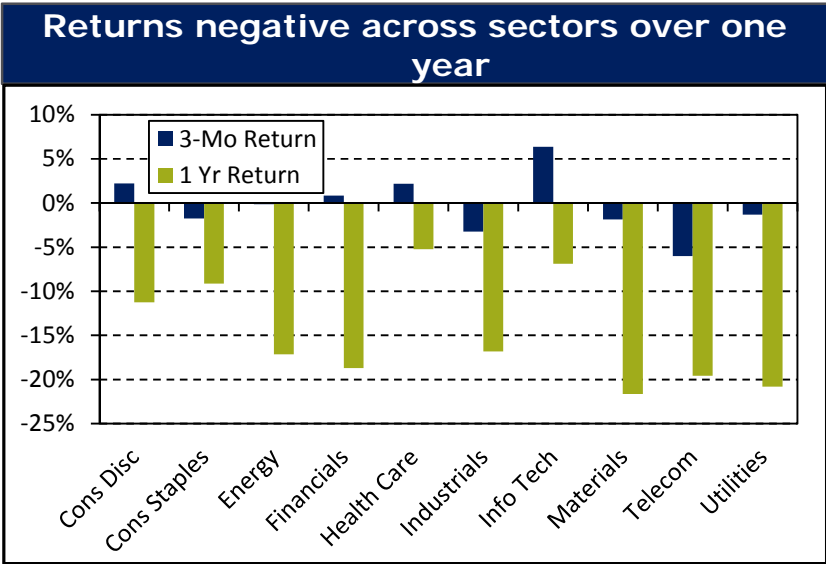
# Global Equity by Sector



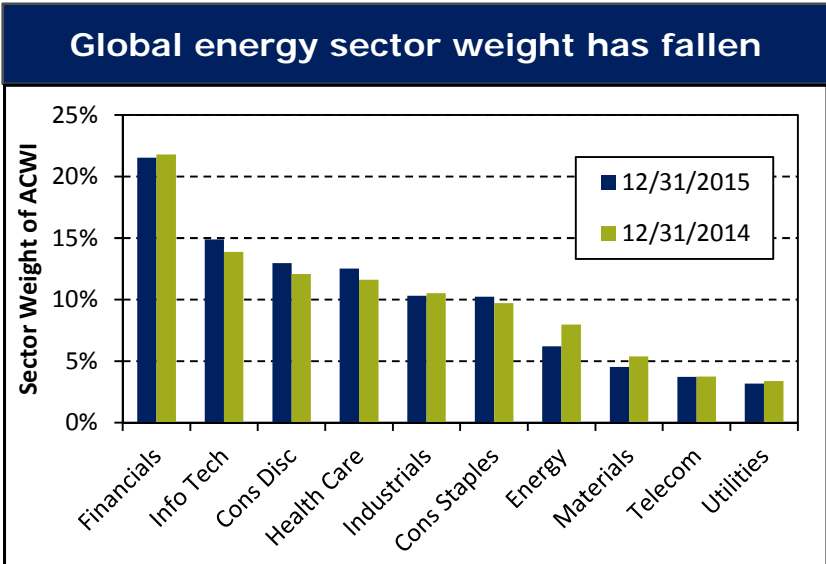
Source: Bloomberg, MSCI



Source: Bloomberg, Standard and Poors



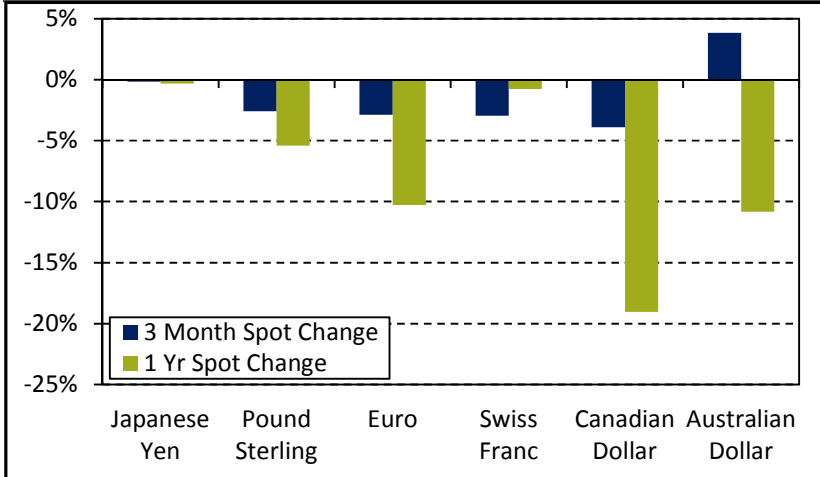
Source: Bloomberg, MSCI



Source: Bloomberg, MSCI

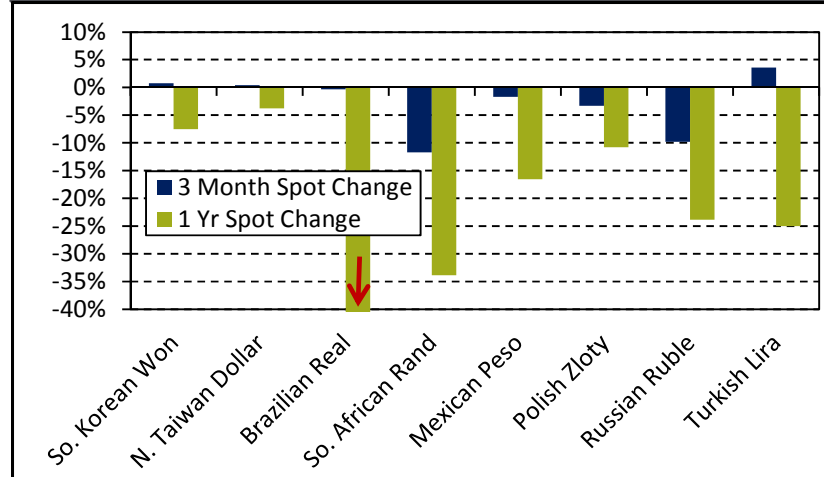
# Currencies

## Developed currencies mostly negative versus the dollar



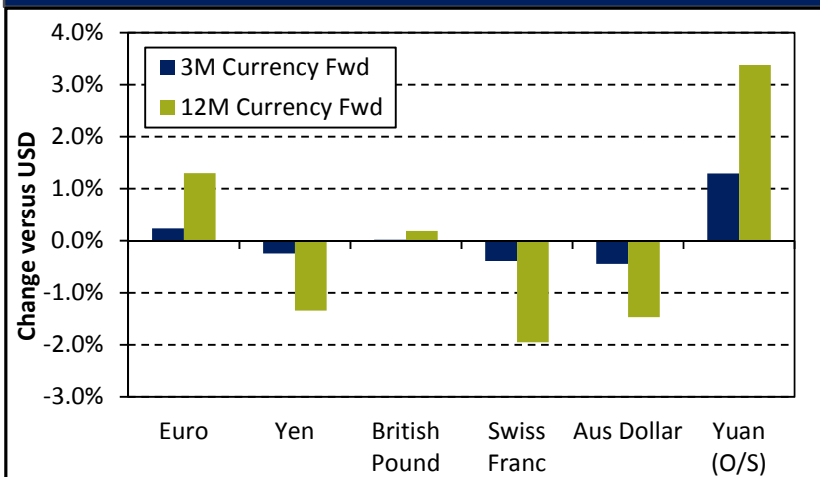
Source: Bloomberg

## EM currencies have suffered in unique fashions



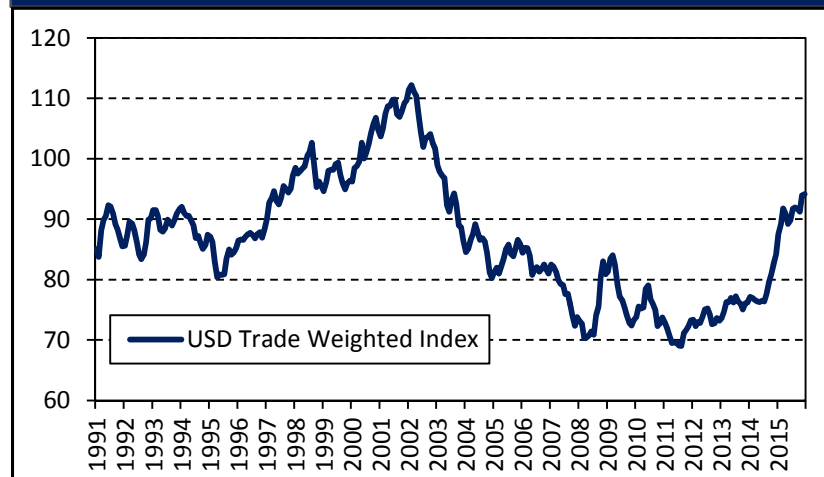
Source: Bloomberg

## Yen expected to decline versus USD



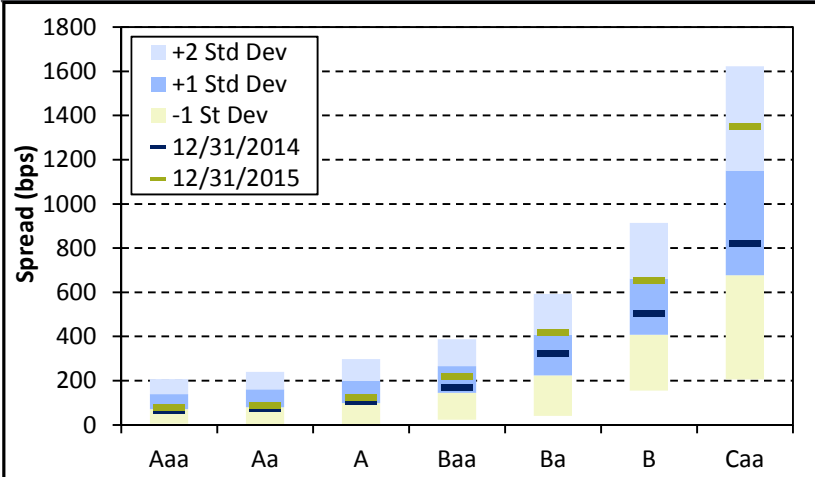
Source: Bloomberg

## Recent dollar strength pronounced



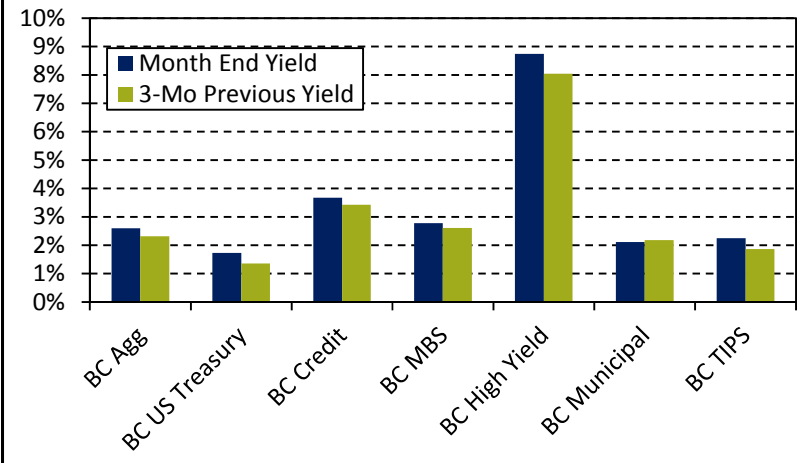
Source: Bloomberg, Federal Reserve

## Spread levels above historical medians



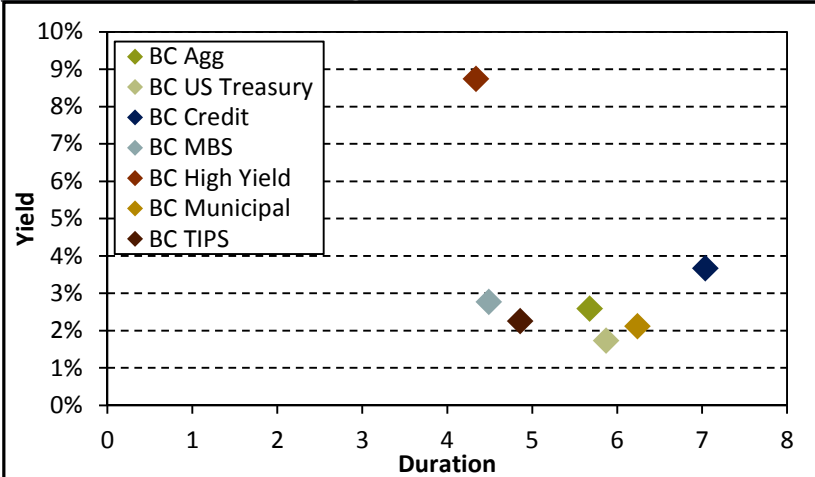
Source: Bloomberg, Barclays

## Most yields have increased



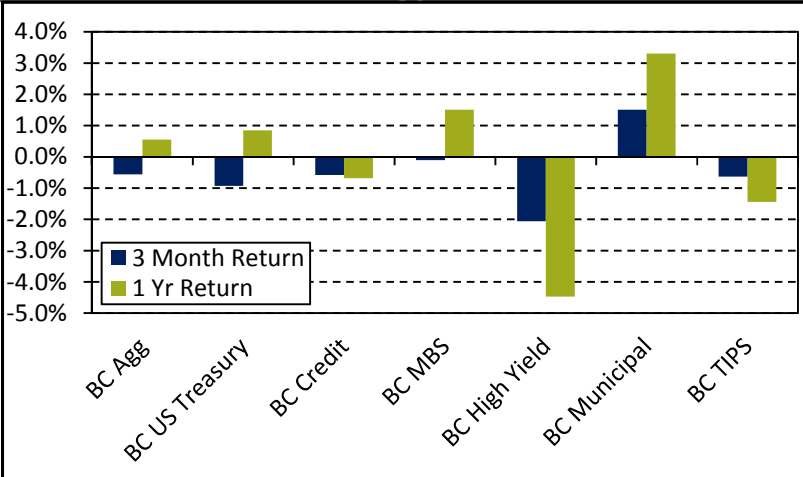
Source: Bloomberg, Barclays

## Similar yield/duration tradeoff among major US indices



Source: Bloomberg, Barclays

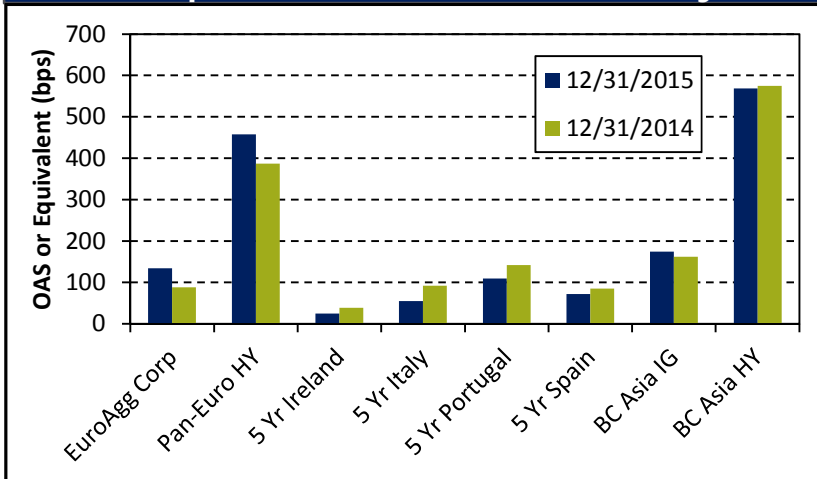
## Negative high yield returns driven by energy distress



Source: Bloomberg, Barclays

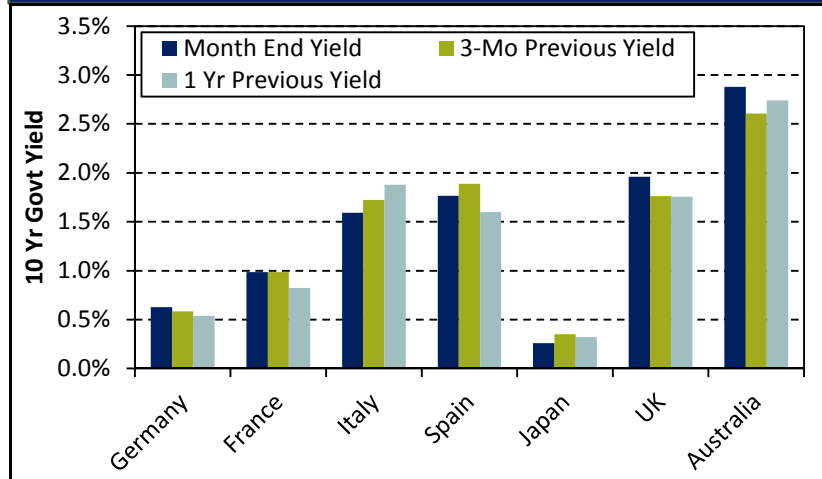
# International Developed Fixed Income

## European periphery yields at small premium relative to Germany



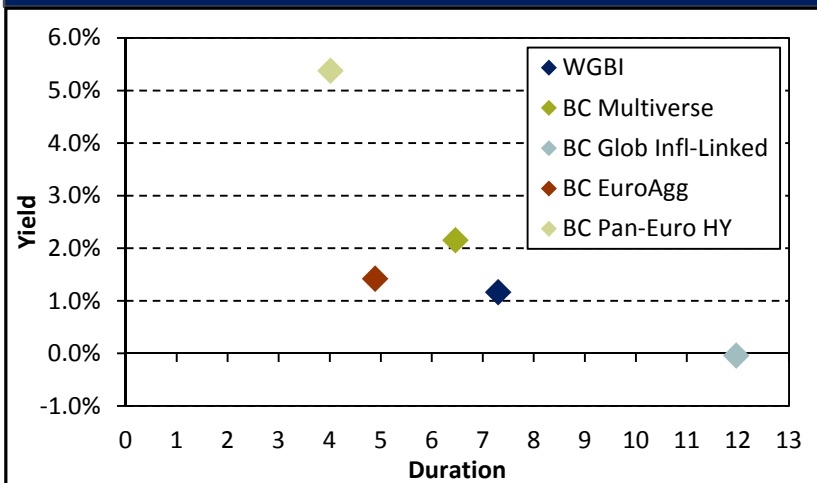
Source: Barclays, Bloomberg, \*European periphery spreads are over equivalent German Bund

## Global yields are at or near historic lows



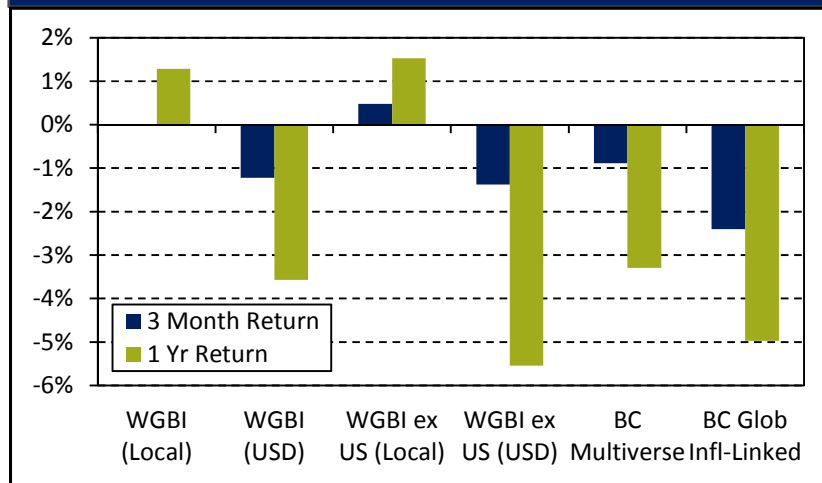
Source: Bloomberg

## Low global yields relative to duration



Source: Bloomberg, Citigroup, Barclays

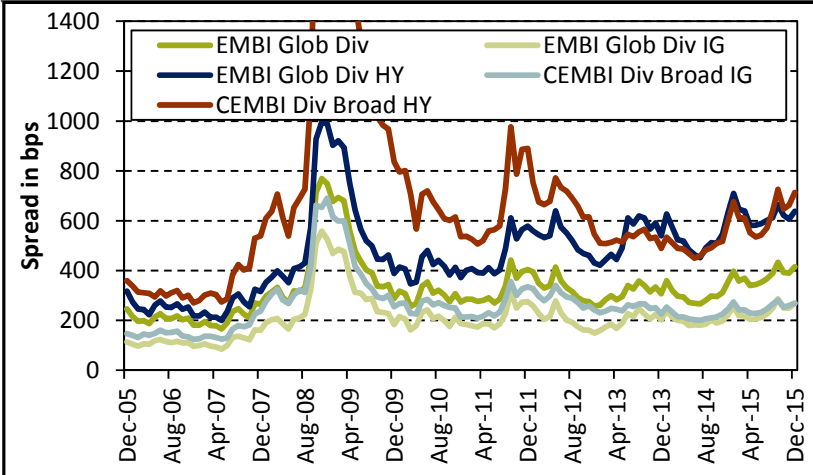
## Global bonds negative over one year in USD terms



Source: Bloomberg, Citigroup, Barclays

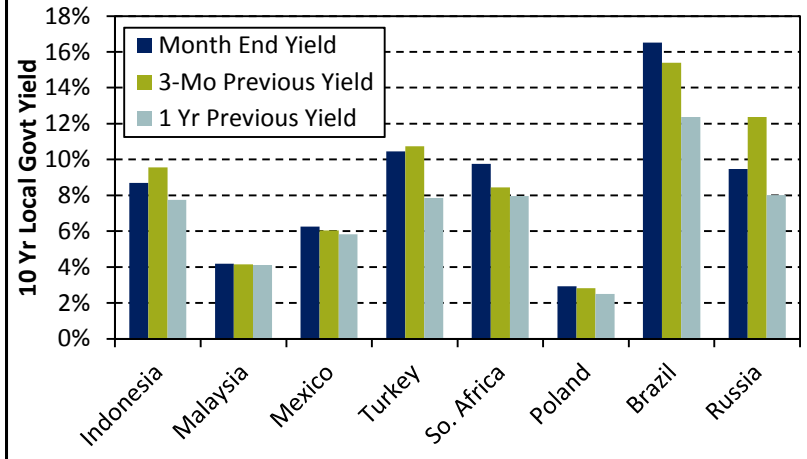
# Emerging Markets Fixed Income

## Spreads have widened recently



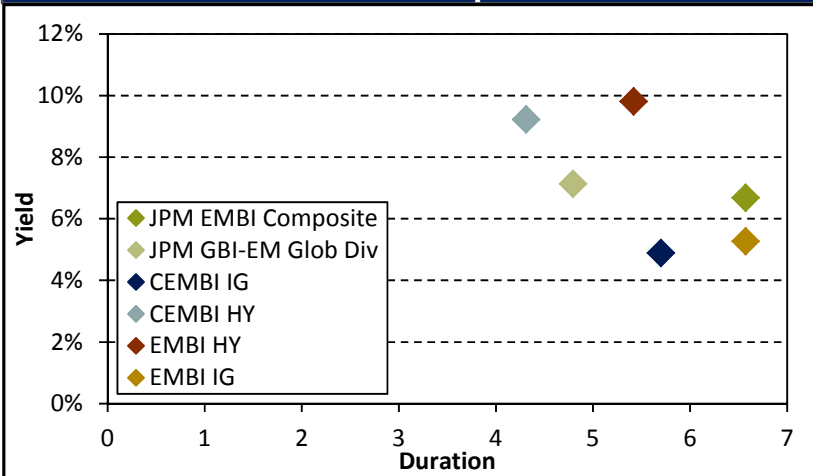
Source: Bloomberg, JP Morgan

## Emerging market bond yield changes have varied directionally



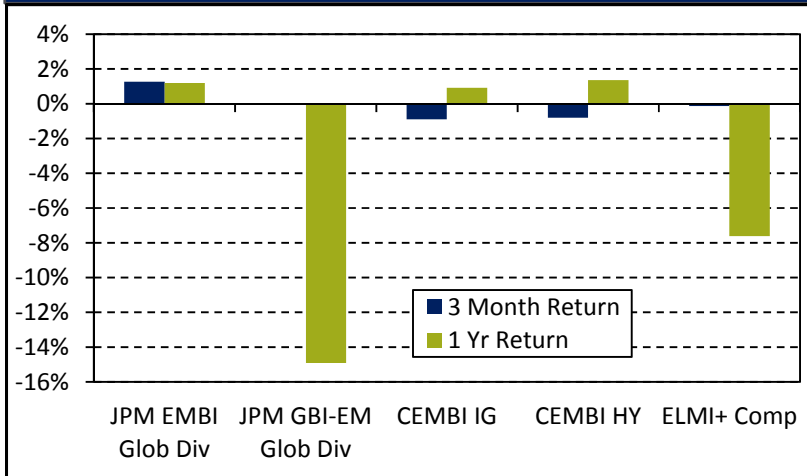
Source: Bloomberg

## EM yields higher versus global counterparts



Source: Bloomberg, JP Morgan

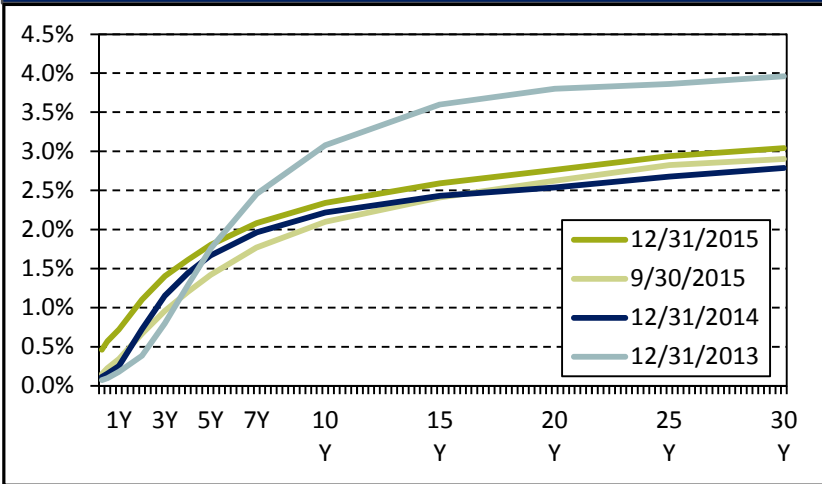
## Currency effect pronounced in EMD returns



Source: Bloomberg, JP Morgan

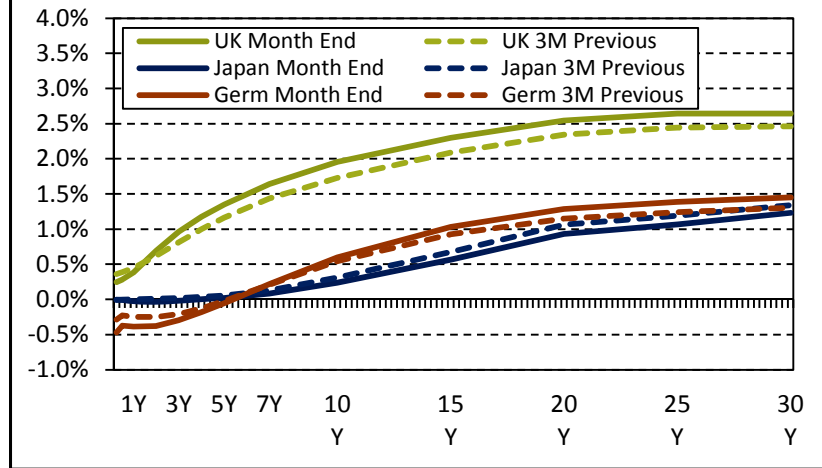


Treasury yield curve moderately rising



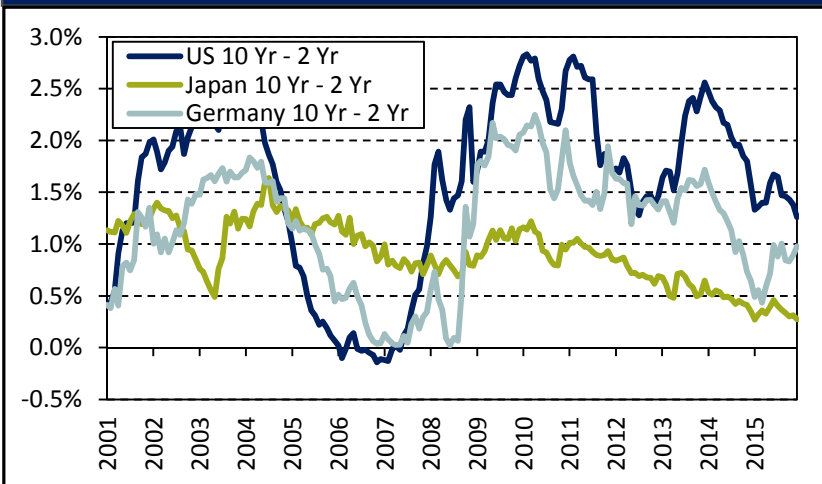
Source: Bloomberg

UK and German yield curves have shifted slightly upwards



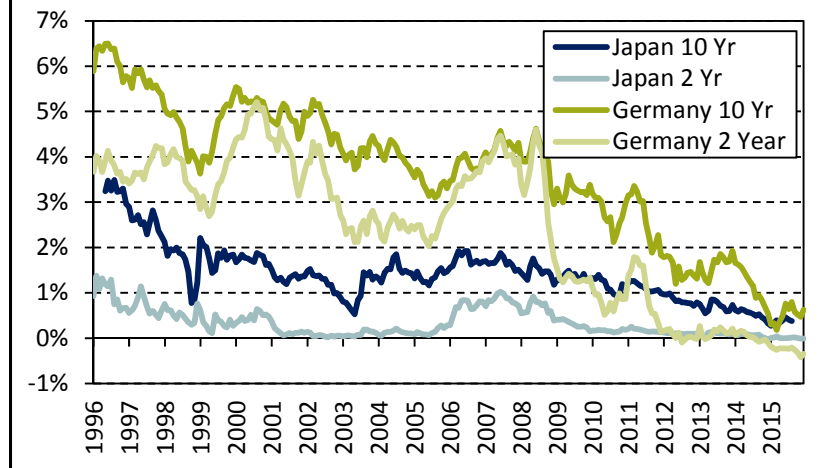
Source: Bloomberg

Global yield curves have mostly flattened



Source: Bloomberg

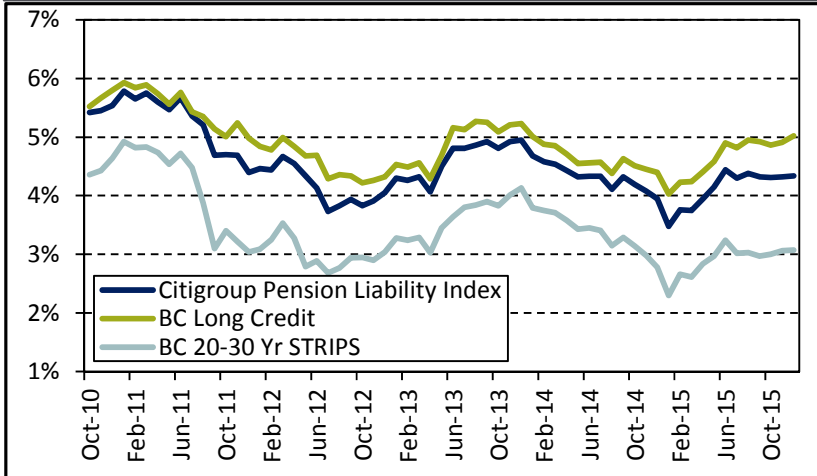
Global yields have trended lower over long term



Source: Bloomberg

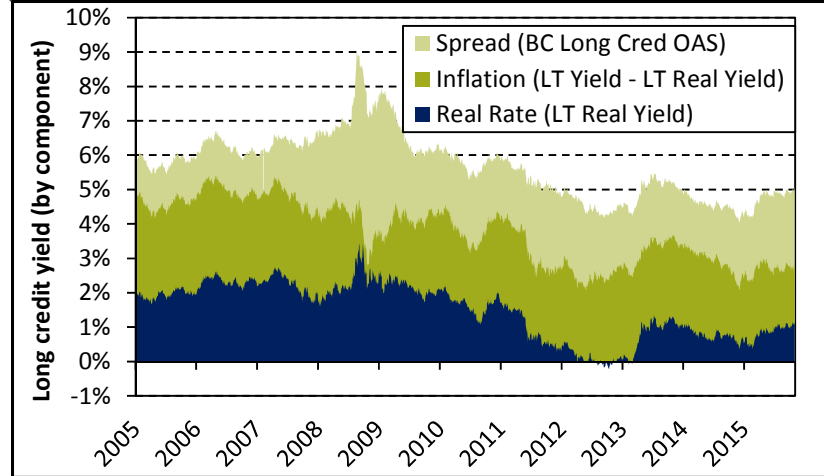
# Long Rates and Liability

## Long duration yields have fallen over last few years even with recent uptick



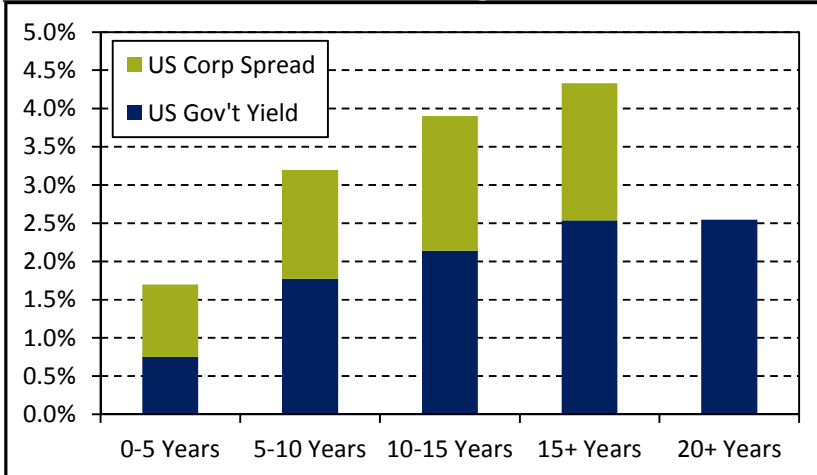
Source: Bloomberg, Citigroup, Barclays

## Lower yields driven by low inflation expectations and real rates



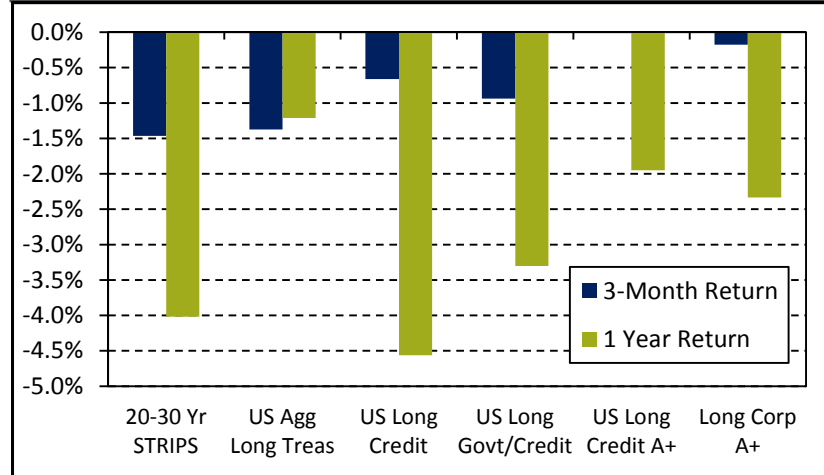
Source: Bloomberg, US Treasury, Barclays, NEPC

## Yields are low but spreads above historic averages



Source: Bloomberg, BofA Merrill Lynch, Barclays \*No index for 20+ year corporate

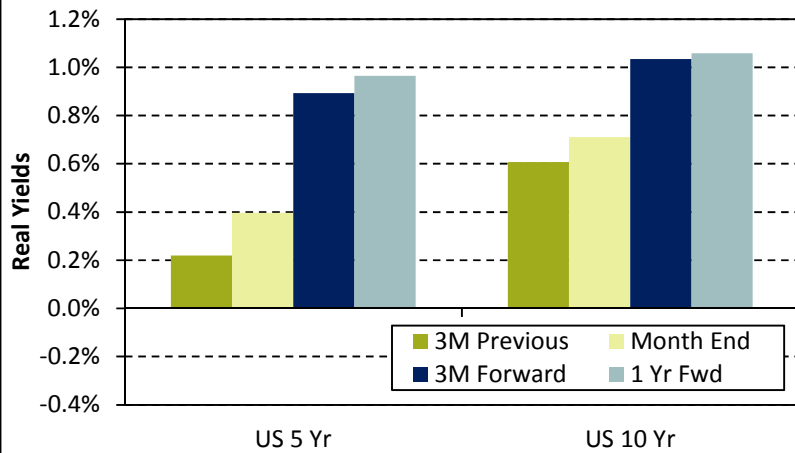
## Returns recently negative



Source: Bloomberg, Barclays

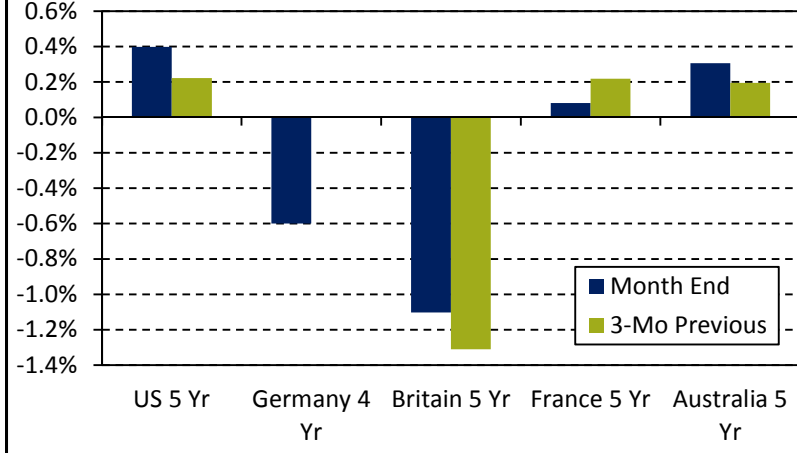
# Inflation and Real Rates

## US real yields have risen slightly



Source: Bloomberg

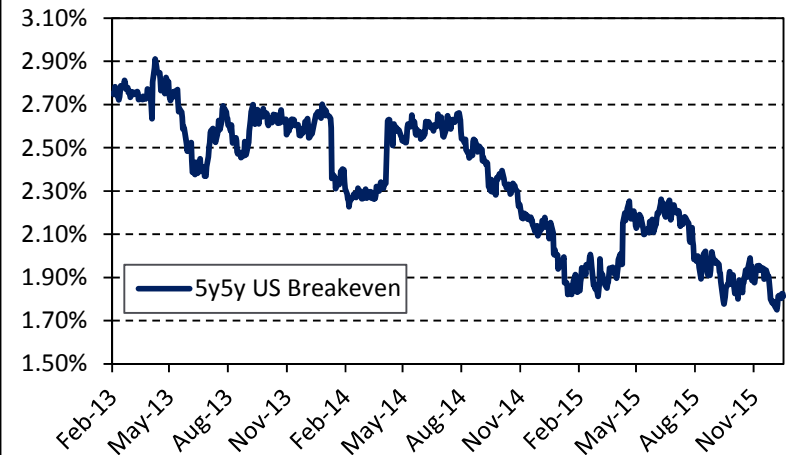
## Global real yields are flat to negative



\*3-Mo data not available for Germany 4 year rate

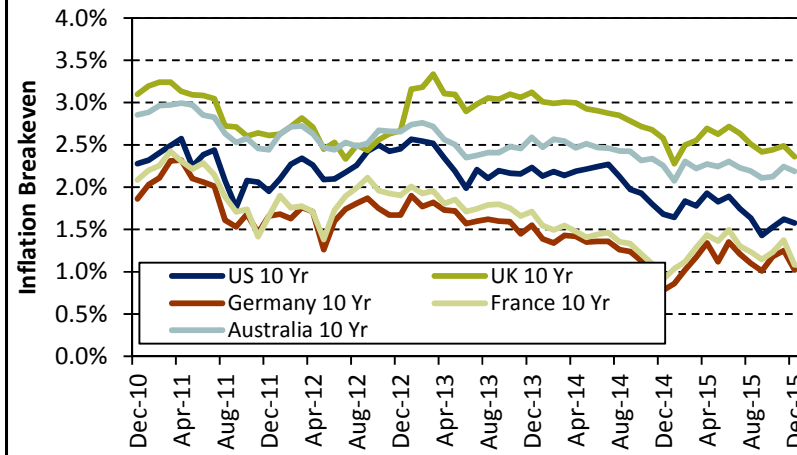
Source: Bloomberg

## US inflation expectations very low



Source: Bloomberg

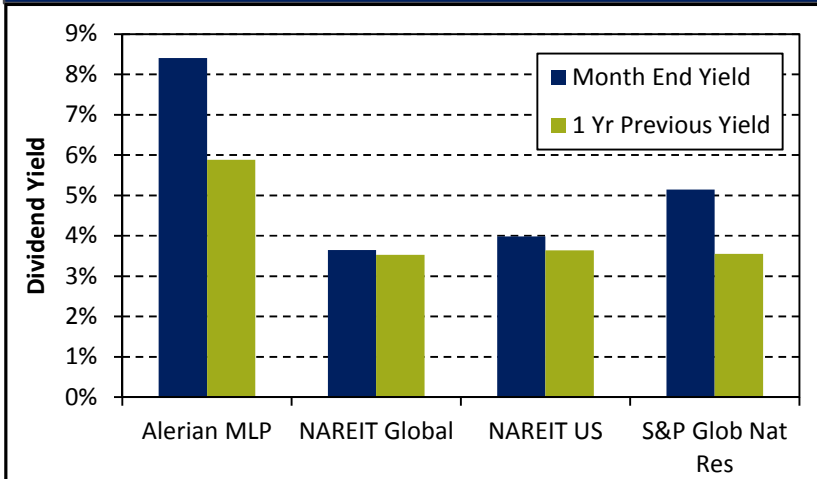
## Global inflation expectations remain subdued



Source: Bloomberg

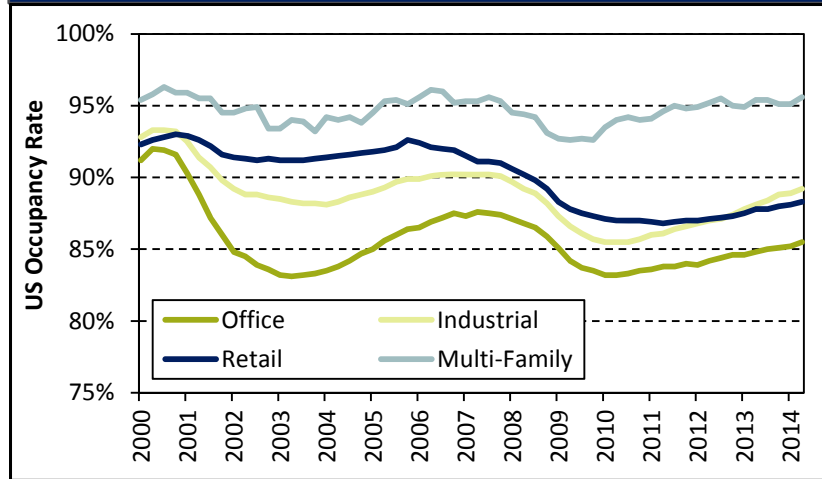
# Inflation Sensitive Growth Assets

## Yields higher relative to last year



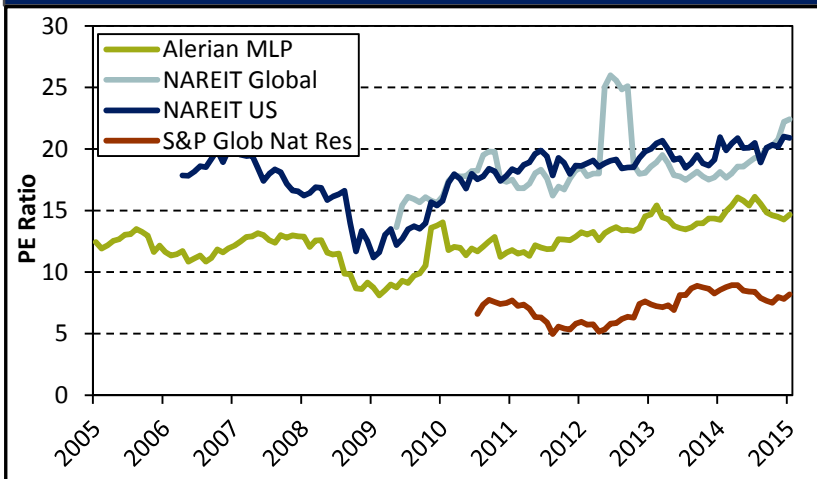
Source: Bloomberg, Alerian, Nareit, Standard and Poors

## Gradual recovery in occupancy rates



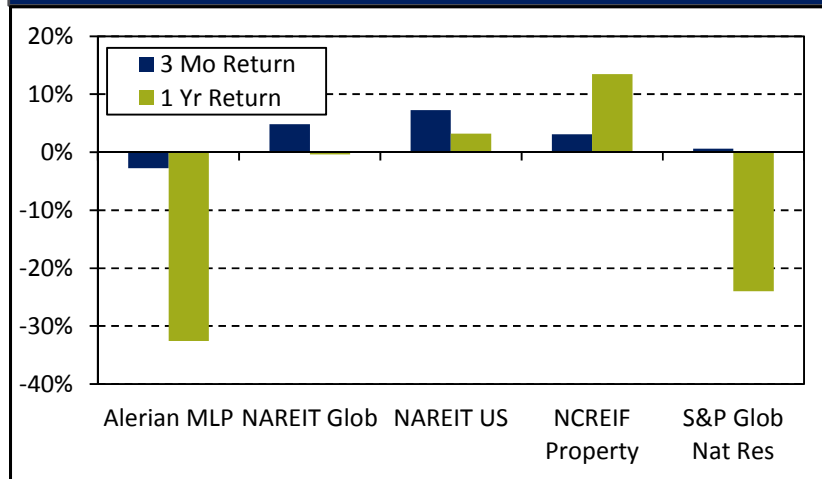
Source: Bloomberg, CB Richard Ellis

## PE Ratios near or above averages



Source: Bloomberg, US Census Bureau

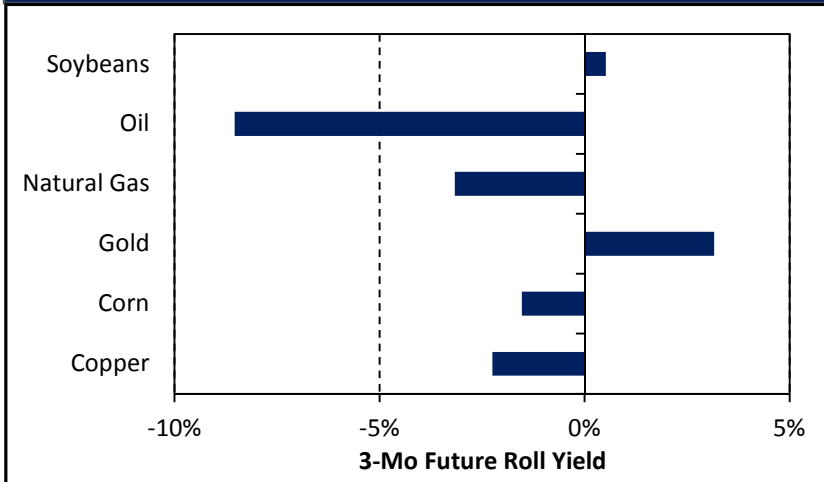
## Recent MLP selloff and energy pressure



Source: Bloomberg, Alerian, Nareit, Standard and Poors

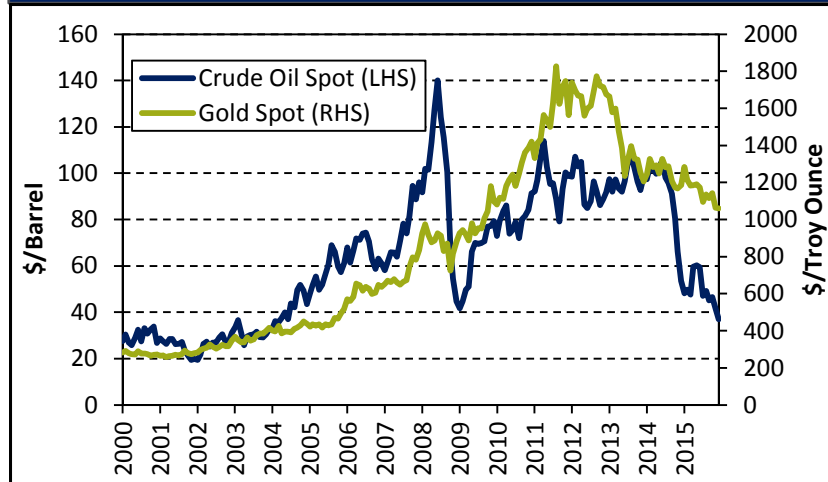
# Commodities

## Contango in major commodity futures



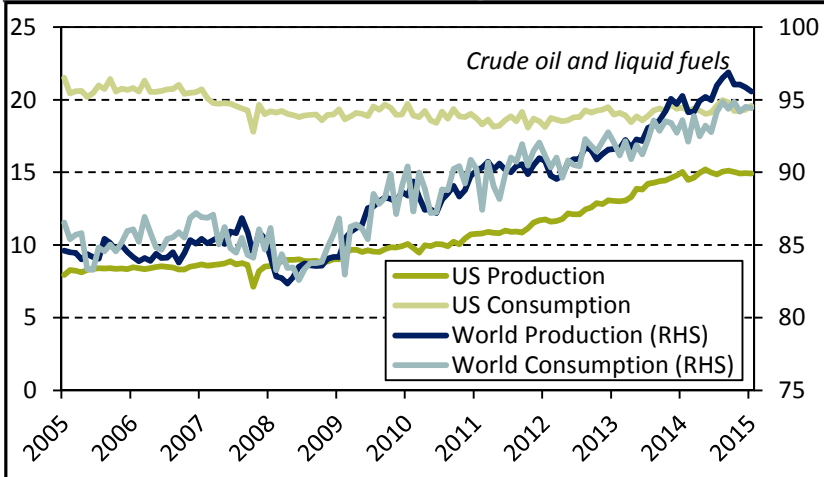
Source: Bloomberg

## Precipitous fall in oil prices



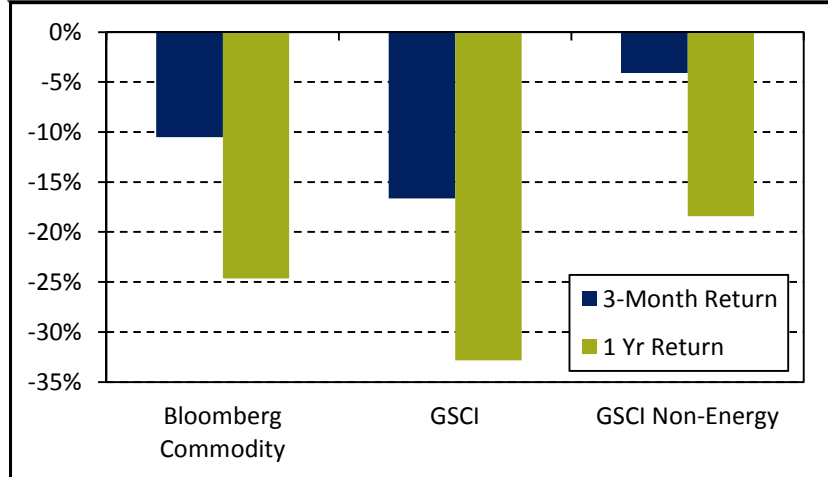
Source: Bloomberg

## US fuel production closing gap with consumption



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

## Commodity indices negative after oil-induced decline



Source: Bloomberg, Standard and Poors

## Glossary of Investment Terminology—Risk Statistics

**Alpha** - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

**Alpha Jensen** - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

**Annualized Excess Return over Benchmark** - Annualized fund return minus the annualized benchmark return for the calculated return.

**Annualized Return** - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

**Beta** - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

**Information Ratio** - A measure of the risk adjusted return of a financial security, asset, or portfolio.

*Formula:*  
 $(\text{Annualized Return of Portfolio} - \text{Annualized Return of Benchmark}) / \text{Annualized Standard Deviation}(\text{Period Portfolio Return} - \text{Period Benchmark Return})$ . To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.

**R-Squared** - Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

**Sharpe Ratio** - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

**Sortino Ratio** - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

*Formula:*  
 $\text{Calculation Average } (X-Y) / \text{Downside Deviation } (X-Y) * 2$   
Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)

**Standard Deviation** - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

*Formula:*  
 $(\text{Annualized Return of Portfolio} - \text{Annualized Return of Risk Free}) / \text{Annualized Standard Deviation (Portfolio Returns)}$

**Tracking Error** - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

*Formula:*  
 $\text{Tracking Error} = \text{Standard Deviation } (X-Y) * \sqrt{(\# \text{ of periods per year})}$   
Where X = periods portfolio return and Y = the period's benchmark return  
For monthly returns, the periods per year = 12  
For quarterly returns, the periods per year = 4

**Treynor Ratio** - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

*Formula:*  
 $(\text{Portfolio Average Return} - \text{Average Return of Risk-Free Rate}) / \text{Portfolio Beta}$

**Up/Down Capture Ratio** - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

$\text{UpsideCapture} = \text{TotalReturn}(\text{FundReturns}) / \text{TotalReturns}(\text{BMReturn})$  when Period Benchmark Return is  $> = 0$

$\text{DownsideCapture} = \text{TotalReturn}(\text{FundReturns}) / \text{TotalReturns}(\text{BMReturn})$  when Benchmark  $< 0$

Data Source: InvestorForce

## Glossary of Investment Terminology

**# Of Portfolios/Observations<sup>1</sup>** – The total number of data points that make up a specified universe

**Allocation Index<sup>3</sup>** - The allocation index measures the value added (or subtracted) to each portfolio by active management. It is calculated monthly: The portfolio asset allocation to each category from the prior month-end is multiplied by a specified market index.

**Asset Allocation Effect<sup>2</sup>** - Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.

**Agency Bonds (Agencies)<sup>3</sup>** - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk-high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.

**Asset Backed Securities (ABS)<sup>3</sup>** - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.

**Attribution<sup>3</sup>** - Attribution is an analytical technique that allows us to evaluate the performance of the portfolio relative to the benchmark. A proper attribution tells us where value was added or subtracted as a result of the manager's decisions.

**Average Effective Maturity<sup>4</sup>** - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.

For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.

**Batting Average<sup>1</sup>** - A measurement representing an investment manager's ability to meet or beat an index.

*Formula: Divide the number of days (or months, quarters, etc.) in which the manager beats or matches the index by the total number of days (or months, quarters, etc.) in the period of question and multiply that factor by 100.*

**Brinson Fachler (BF) Attribution<sup>1</sup>** - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.

**Brinson Hood Beebower (BHB) Attribution<sup>1</sup>** - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.

**Corporate Bond (Corp)<sup>4</sup>** - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.

**Correlation<sup>1</sup>** - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.

Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net

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**Coupon<sup>4</sup>** – The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."

**Currency Effect<sup>1</sup>** - Is the effect that changes in currency exchange rates over time affect excess performance.

**Derivative Instrument<sup>3</sup>** - A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.

**Downside Deviation<sup>1</sup>** - Equals the standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns.

*Formula:*

*Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.*

**Duration<sup>3</sup>** - Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.

**Equity/Debt/Cash Ratio<sup>1</sup>** – The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. A 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).

**Foreign Bond<sup>3</sup>** - A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.

**Hard Hurdle<sup>5</sup>** – is a hurdle rate that once beaten allows a fund manager to charge a performance fee on only the funds above the specified hurdle rate.

**High-Water Mark<sup>4</sup>** - The highest peak in value that an investment fund/account has reached. This term is often used in the context of fund manager compensation, which is performance based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.

**Hurdle Rate<sup>4</sup>** - The minimum rate of return on an investment required, in order for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.

**Interaction Effects<sup>2</sup>** - The interaction effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with the either effect.

**Median<sup>3</sup>** - The value (rate of return, market sensitivity, etc.) that exceeds one-half of the values in the population and that is exceeded by one-half of the values. The median has a percentile rank of 50.

**Modified Duration<sup>3</sup>** - The percentage change in the price of a fixed income security that results from a change in yield.

**Mortgage Backed Securities (MBS)<sup>3</sup>** - Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages.

**Municipal Bond (Muni)<sup>4</sup>** - A debt security issued by a state, municipality or county to finance its capital expenditures.

**Net Investment Change<sup>1</sup>** – Is the change in an investment after accounting for all Net Cash Flows.

**Performance Fee<sup>4</sup>** - A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.

Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net



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**Policy Index<sup>3</sup>** - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement.

**Price to Book (P/B)<sup>4</sup>** - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".

**Price to Earnings (P/E)<sup>3</sup>** - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

**Price to Sales (P/S)<sup>4</sup>** - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.

**Return on Equity (ROE)<sup>4</sup>** - The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

**Selection (or Manager) Effect<sup>2</sup>** - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect—the larger the sector, the larger the effect is, positive or negative.

**Soft Hurdle rate<sup>5</sup>** - is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

**Tiered Fee<sup>1</sup>** - A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first \$10M invested, 0.90% on the next \$10M, and 0.80% on the remaining balance).

**Total Effects<sup>2</sup>** - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.

**Total Return<sup>1</sup>** - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over a defined time period.

**Universe<sup>3</sup>** - The list of all assets eligible for inclusion in a portfolio.

**Upside Deviation<sup>1</sup>** - Standard Deviation of Positive Returns

**Weighted Avg. Market Cap.<sup>4</sup>** - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500.

**Yield (%)<sup>3</sup>** - The current yield of a security is the current indicated annual dividend rate divided by current price.

**Yield to Maturity<sup>3</sup>** -The discount rate that equates the present value of cash flows, both principal and interest, to market price.

Data Source: <sup>1</sup>InvestorForce, <sup>2</sup>Interaction Effect Performance Attribution, <sup>3</sup>NEPC, LLC, <sup>4</sup>Investopedia, <sup>5</sup>Hedgeco.net