

QUARTERLY PERFORMANCE REPORT

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

September 30, 2018

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VCERA
VENTURA COUNTY EMPLOYEES'
RETIREMENT ASSOCIATION



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MARKET ENVIRONMENT UPDATE AND OUTLOOK

NEPC, LLC

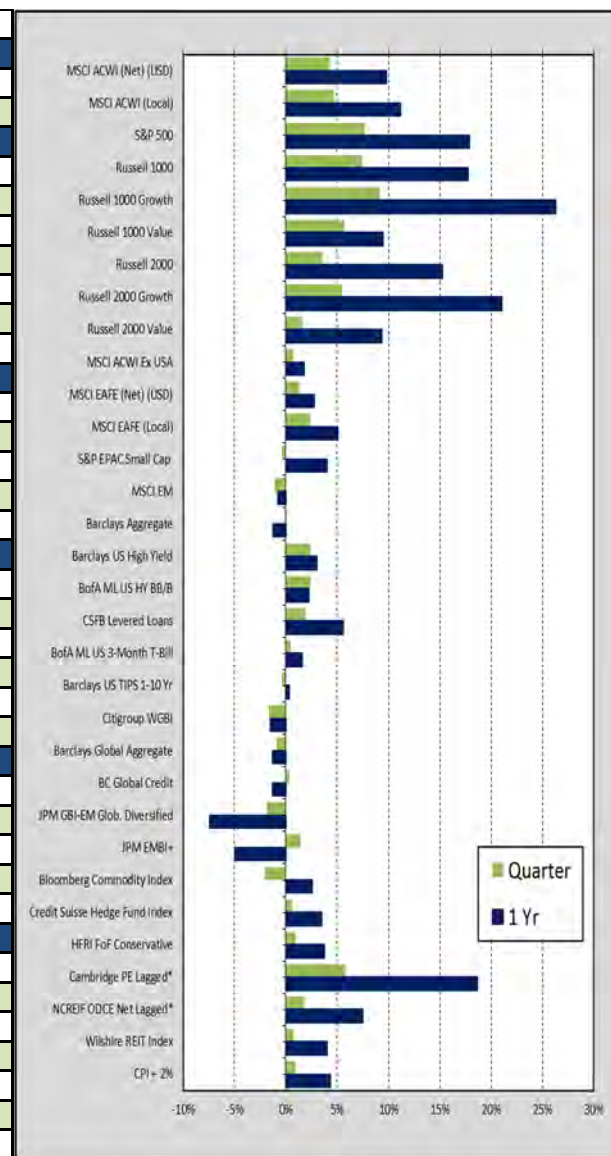
ECONOMIC ENVIRONMENT

- **Real GDP (third quarter) increased at an annual rate of 3.5% (advance estimate).**
 - Retail sales ended August at +4.0% on a YoY basis. In the same period last year the YoY growth rate was 3.6%.
 - Corporate profits (ended April) as a percent of GDP increased to 9.6% from 9.5% (in January) and remain elevated relative to historical levels.
 - The inventory-to-sales ratio ended August flat at 1.3 and has remained relatively constant since early 2010.
 - The U.S. trade deficit widened 6.4% as exports fell.
- **The unemployment rate decreased to 3.7% from 4.0% ended Q3; U-6, a broader measure of unemployment, decreased to 7.5% from 7.8% during the third quarter.**
- **The Case-Shiller Home Price Index (ended July) increased to 205.4 from 200.9 and remains at levels higher than that of pre-financial crisis levels of 150.9.**
- **Rolling 12-month seasonally-adjusted CPI saw a down-tick to 2.3% from 2.9% ended September; Capacity Utilization increased to 78.1% from 78.0% in Q3.**
- **Fed Funds rate was increased 0.25% to a targeted range of 2.00% - to – 2.25%. The 10-year Treasury Yield (constant maturity) finished Q3 at 3.0% up from 2.9%.**
- **The Fed balance sheet decreased slightly during Q3 2018, while the European Central Bank balance sheet continues to increase.**
 - ECB held its benchmark refinancing rate at 0%, deposit rates -0.4% and reaffirmed that asset purchases may end in December.
- **S&P valuations increased slightly in Q2, remaining above the 10-year and long-term averages.**
 - Cyclically adjusted Shiller PE ratio (32.8x) is above the long-term average of 16.6x and above the 10-year average of 23.95x.



MARKET ENVIRONMENT – Q3 2018 OVERVIEW

		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
World Equity Benchmarks						
MSCI ACWI (Net) (USD)	World	4.3%	9.8%	13.4%	8.7%	8.2%
MSCI ACWI (Local)	World (Local Currency)	4.7%	11.2%	13.3%	10.4%	8.9%
Domestic Equity Benchmarks						
S&P 500	Large Core	7.7%	17.9%	17.3%	14.0%	12.0%
Russell 1000	Large Core	7.4%	17.8%	17.1%	13.7%	12.1%
Russell 1000 Growth	Large Growth	9.2%	26.3%	20.6%	16.6%	14.3%
Russell 1000 Value	Large Value	5.7%	9.5%	13.6%	10.7%	9.8%
Russell 2000	Small Core	3.6%	15.2%	17.1%	11.1%	11.1%
Russell 2000 Growth	Small Growth	5.5%	21.1%	18.0%	12.1%	12.7%
Russell 2000 Value	Small Value	1.6%	9.3%	16.1%	9.9%	9.5%
International Equity Benchmarks						
MSCI ACWI Ex USA	World ex-US	0.7%	1.8%	10.0%	4.1%	5.2%
MSCI EAFE (Net) (USD)	Int'l Developed	1.4%	2.7%	9.2%	4.4%	5.4%
MSCI EAFE (Local)	Int'l Developed (Local Currency)	2.4%	5.1%	9.4%	7.9%	6.7%
S&P EPAC Small Cap	Small Cap Int'l	-0.4%	4.0%	12.2%	8.3%	9.3%
MSCI EM	Emerging Equity	-1.1%	-0.8%	12.4%	3.6%	5.4%
Domestic Fixed Income Benchmarks						
Barclays Aggregate	Core Bonds	0.0%	-1.2%	1.3%	2.2%	3.8%
Barclays US High Yield	High Yield	2.4%	3.1%	8.2%	5.5%	9.5%
BofA ML US HY BB/B	High Yield	2.4%	2.3%	7.3%	5.4%	8.6%
CSFB Levered Loans	Bank Loans	1.9%	5.6%	5.4%	4.4%	5.9%
BofA ML US 3-Month T-Bill	Cash	0.5%	1.6%	0.8%	0.5%	0.3%
Barclays US TIPS 1-10 Yr	Inflation	-0.4%	0.3%	1.7%	0.9%	2.5%
Global Fixed Income Benchmarks						
Citigroup WGBI	World Gov. Bonds	-1.6%	-1.5%	1.7%	0.2%	2.2%
Barclays Global Aggregate	Global Core Bonds	-0.9%	-1.3%	2.0%	0.8%	2.9%
BC Global Credit	Global Bonds	0.3%	-1.3%	2.9%	2.0%	4.5%
JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local Currency)	-1.8%	-7.4%	5.2%	-1.7%	2.7%
JPM EMBI+	Em. Mkt. Bonds	1.5%	-5.0%	4.8%	4.2%	6.8%
Alternative Benchmarks						
Bloomberg Commodity Index	Commodities	-2.0%	2.6%	-0.1%	-7.2%	-6.2%
Credit Suisse Hedge Fund Index	Hedge Fund	0.6%	3.5%	3.1%	3.4%	4.5%
HFRI FoF Conservative	Fund of Hedge Funds	0.9%	3.8%	2.9%	3.0%	2.2%
Cambridge PE Lagged*	Private Equity	5.8%	18.7%	12.7%	13.8%	10.8%
NCREIF ODCE Net Lagged*	Real Estate	1.8%	7.5%	8.4%	10.0%	4.3%
Wilshire REIT Index	REIT	0.7%	4.0%	7.1%	9.3%	7.4%
CPI + 2%	Inflation/Real Assets	1.0%	4.3%	4.0%	3.6%	3.5%















* As of 6/30/2018



PERFORMANCE OVERVIEW

Q3 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
0.7%	-4.0	20 bps	7.7%	1.4%	-1.1%	0.0%	2.4%	1.9%	-1.2%	-4.8%	0.7%

- **US equities increased during the quarter, supported by strong macroeconomic data and a tight labor market**
- **Emerging market equities broadly declined with ongoing currency weakness and trade tensions weighing on sentiment**
- **The Federal Reserve hiked rates for the third time this year and is expected to hike rates again in December**

Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM Emerging Market Bond Index), Crude Oil (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITs (NAREIT Composite Index).



MACRO PERFORMANCE OVERVIEW

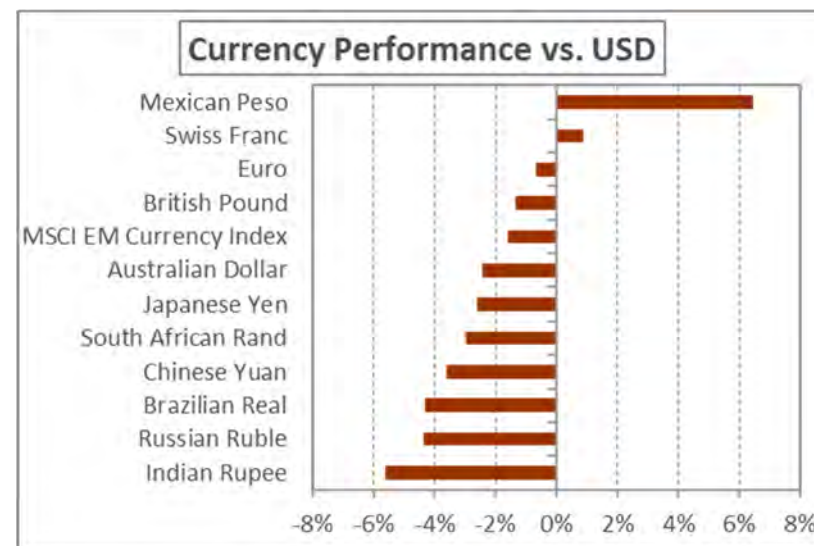
Q3 Macro Market Summary

- The global growth outlook remains in tact, despite trade policy issues
- Global bond yields increased as central banks transition toward tighter monetary policy
- Higher rates in the US supported the dollar – adding further pressure to emerging market currencies

	Yield 06/30/18	Yield 09/30/18	Δ
US 10-Yr	2.86%	3.06%	0.20%
US 30-Yr	2.99%	3.21%	0.22%
US Real 10-Yr	0.74%	0.92%	0.18%
German 10-Yr	0.30%	0.47%	0.17%
Japan 10-Yr	0.04%	0.13%	0.09%
China 10-Yr	3.48%	3.63%	0.15%
EM Local Debt	6.59%	6.62%	0.03%

Source: Bloomberg

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	2.00% - 2.25%	2.7%	The Fed increased its benchmark interest rate to 2.00% - 2.25% in September and is expected to hike rates one more time in 2018
European Central Bank	0.0%	2.1%	The ECB maintained its current benchmark interest rate, but continues its plan to scale back its QE Program
Bank of Japan	-0.1%	1.3%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target



Source: Bloomberg



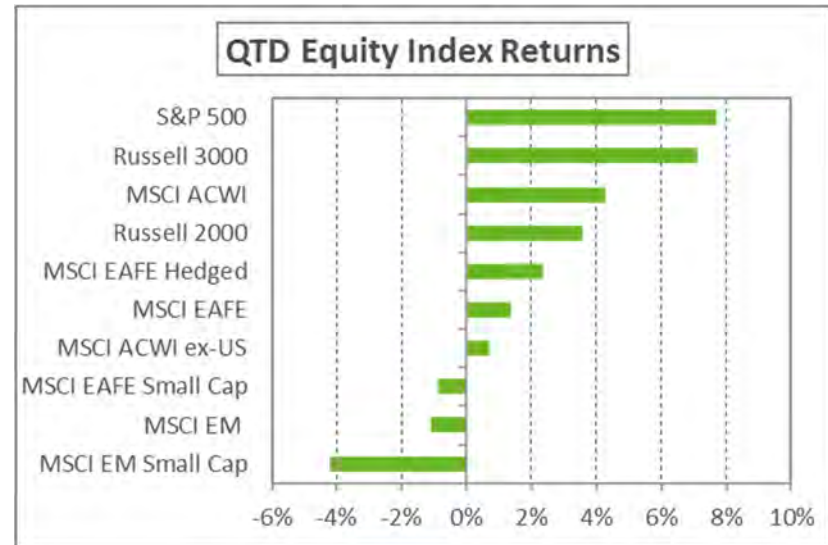
EQUITY PERFORMANCE OVERVIEW

Q3 Equity Market Summary

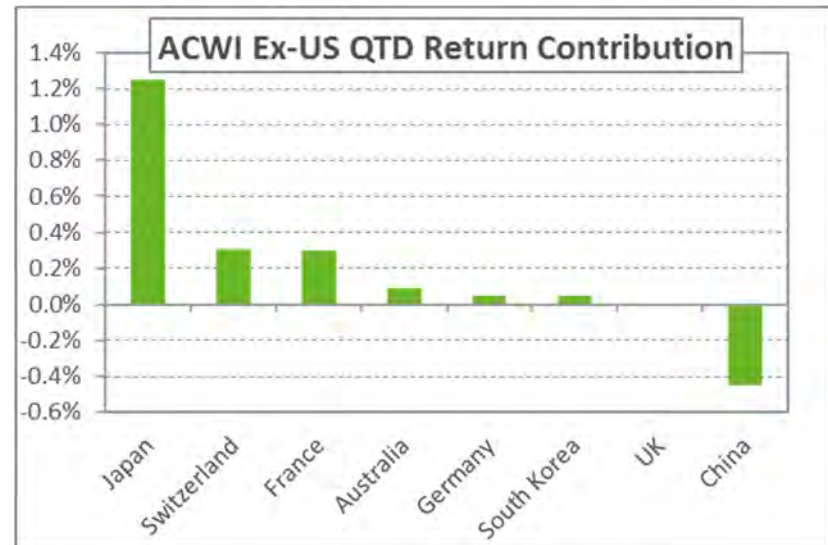
- Strong economic data and positive sentiment helped US equities to outperform global equities
- Trade-sensitive economies disproportionately declined as escalating trade tensions and currency weakness weighed on returns

Russell 3000 QTD Sector Return Contribution	
Information Technology	1.7%
Consumer Discretionary	0.3%
Financials	0.5%
Industrials	1.4%
Consumer Staples	0.0%
Energy	0.4%
Materials	0.0%
Health Care	0.5%
Real Estate	0.6%
Communication Services	-1.0%
Utilities	0.1%

Source: Russell, Bloomberg



Source: MSCI, Russell, S&P, Bloomberg



Source: MSCI, Bloomberg. QTD top country contributors to index return



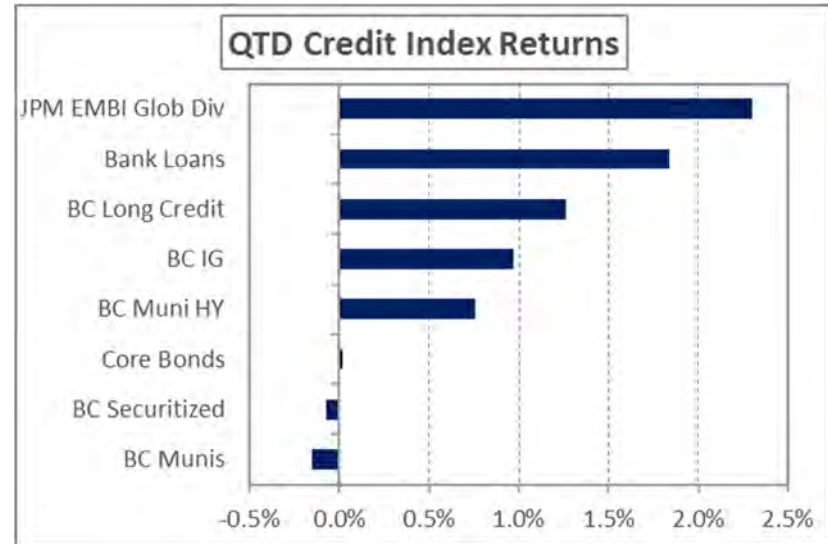
CREDIT PERFORMANCE OVERVIEW

Q3 Credit Market Summary

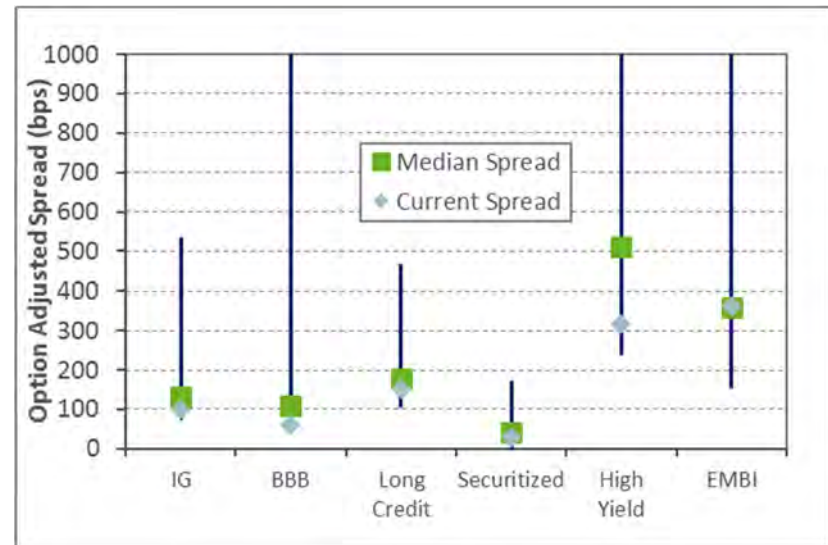
- Credit spreads broadly declined and remain below medians in most areas of the credit market
- Dollar-denominated emerging market debt increased by 2.3% as spreads tightened

Credit Spread (Basis Points)	06/30/18	09/30/18	\Delta
BC IG Credit	116	100	-16
BC Long Credit	174	153	-21
BC Securitized	28	28	0
BC High Yield	363	316	-47
Muni HY	253	198	-55
JPM EMBI	388	362	-26
Bank Loans - Libor	303	281	-22

Source: Barclays, Merrill Lynch, JPM, Bloomberg, NEPC



Source: Barclays, JPM, S&P, Bloomberg



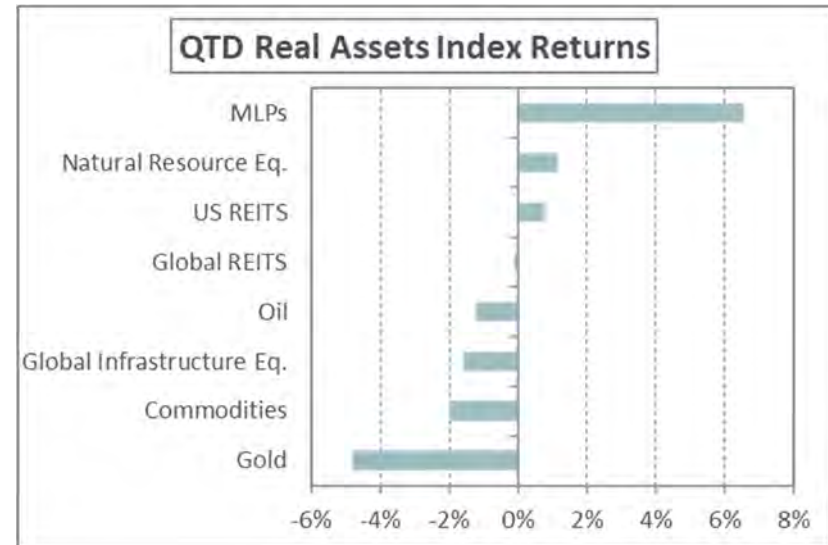
Source: Barclays, JPM, S&P, Bloomberg; as of 01/31/2000



REAL ASSETS PERFORMANCE OVERVIEW

Q3 Real Assets Market Summary

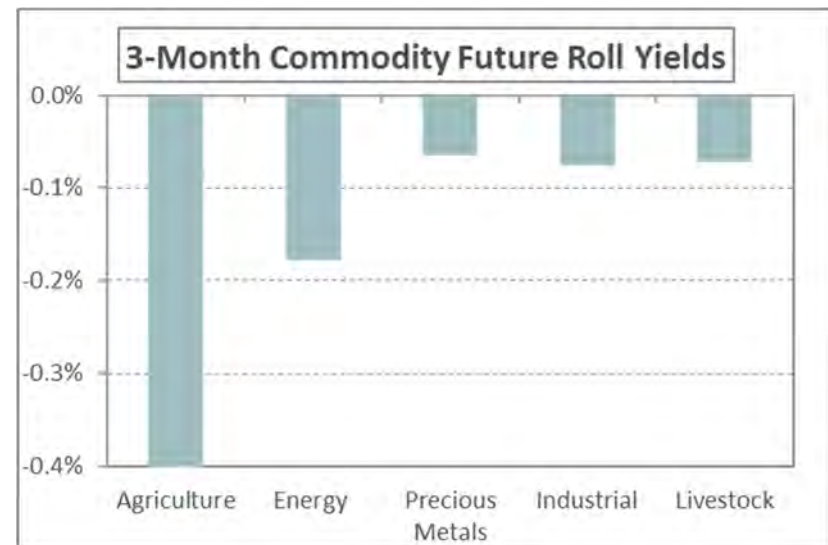
- Oil declined 1.2% for the quarter, but is up 41.8% for the year
- Agricultural commodities declined substantially due to robust supply and trade war-related concerns
- MLP's increased 6.6%, supported by rising commodity prices and ongoing industry simplification



Source: S&P, NAREIT, Alerian, Bloomberg

Real Asset Yields	06/30/18	09/30/18
MLPs	8.1%	8.0%
Core Real Estate	4.2%	4.4%
US REITs	4.4%	4.2%
Global REITs	3.7%	3.7%
Global Infrastructure Equities	4.4%	4.5%
Natural Resource Equities	3.5%	3.5%
US 10-Yr Breakeven Inflation	2.1%	2.1%
Commodity Index Roll Yield	0.1%	-1.2%

Source: NCREIF, Alerian, NAREIT, S&P, Bloomberg



Source: Bloomberg, NEPC Calculated as of 09/28/2018



THE END OF FEDERAL RESERVE GRADUALISM

Key Market Themes Change

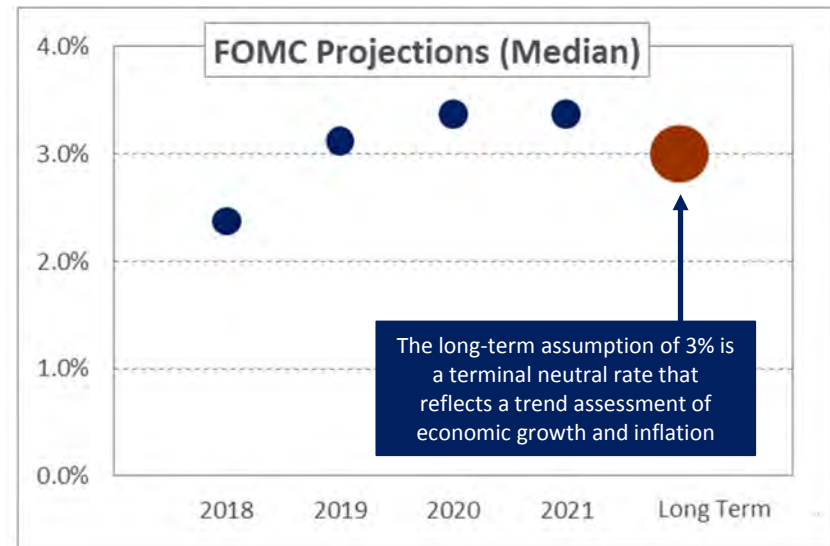
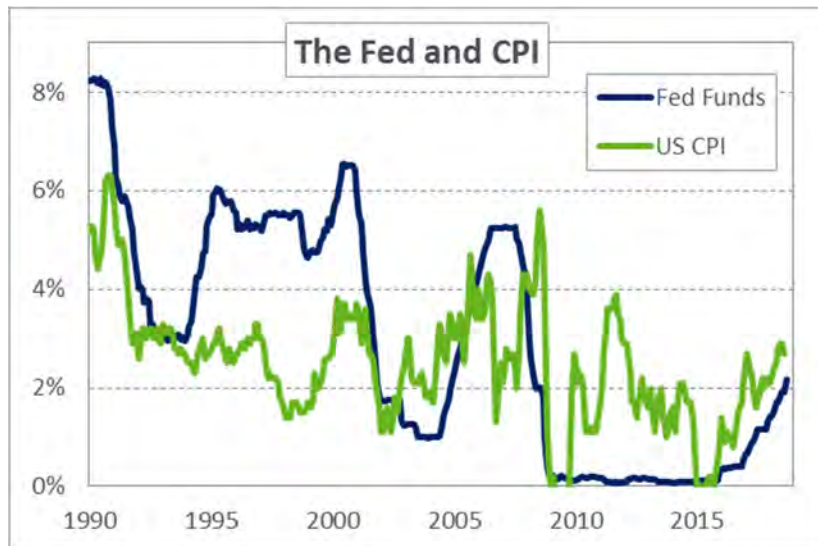
The end of Fed Gradualism: The Fed has shifted from a “lower for longer” policy to a more balanced posture of raising rates in-line with higher inflation

The Fed appears less willing to accept some inflation to repair the past deflationary impact of the 2008 financial crisis and is now looking to manage inflation closer to its target range

Based on the FOMC projections, the Fed is communicating a tightening path as their forecast for interest rate hikes moves beyond the long-term neutral rate

Markets are discounting a more muted pace of rate hikes relative to Fed projections, which increases the potential of a “Fed surprise” disrupting equity, fixed income, and currency markets

Fed is expected to be careful and data dependent when assessing the timing of interest rate increases relative to changes in inflation levels

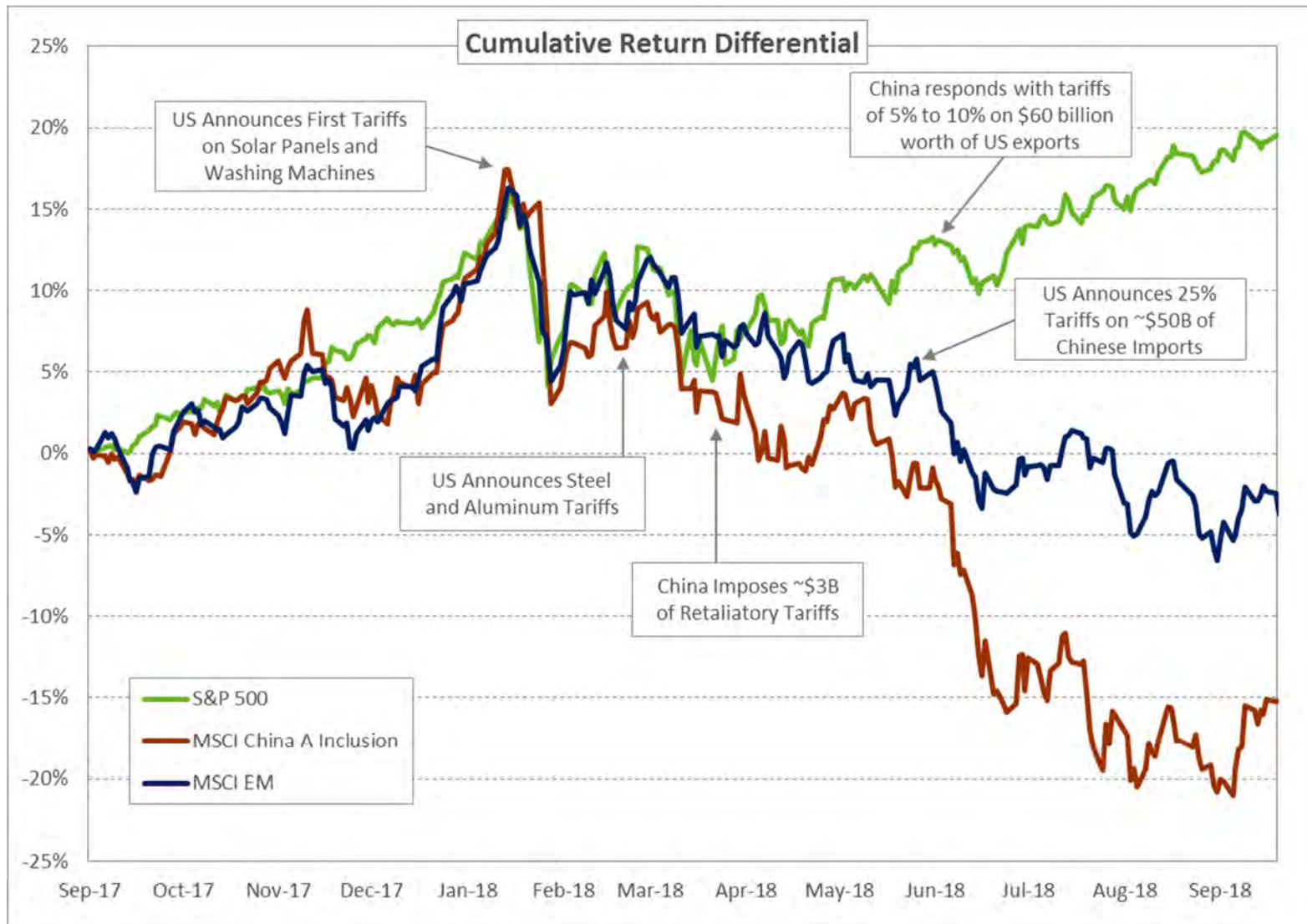


Source: (Left) Bloomberg

Source: (Right) FOMC



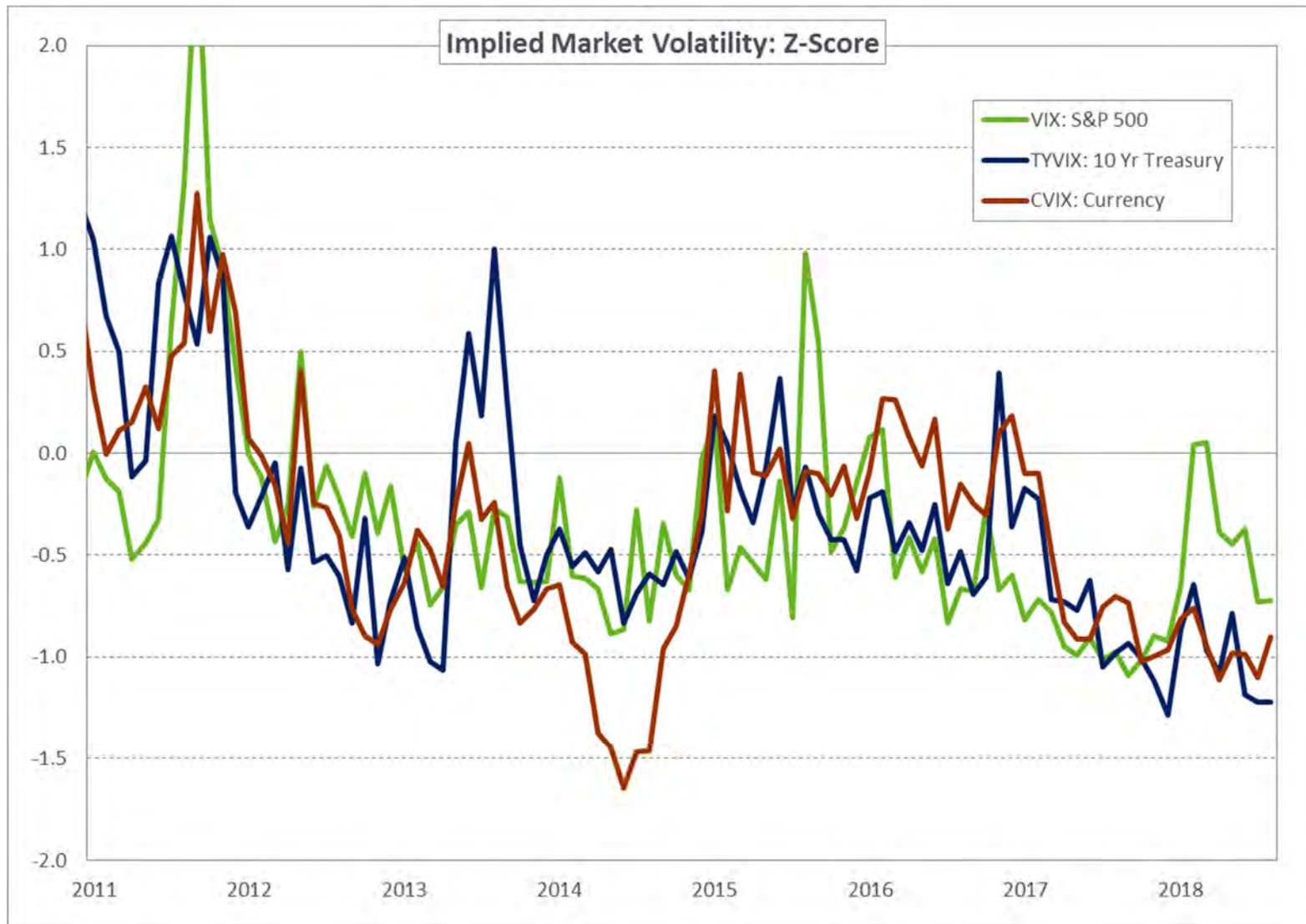
TRADE TENSIONS WEIGHED ON RETURNS



Source: S&P, MSCI, Bloomberg, NEPC



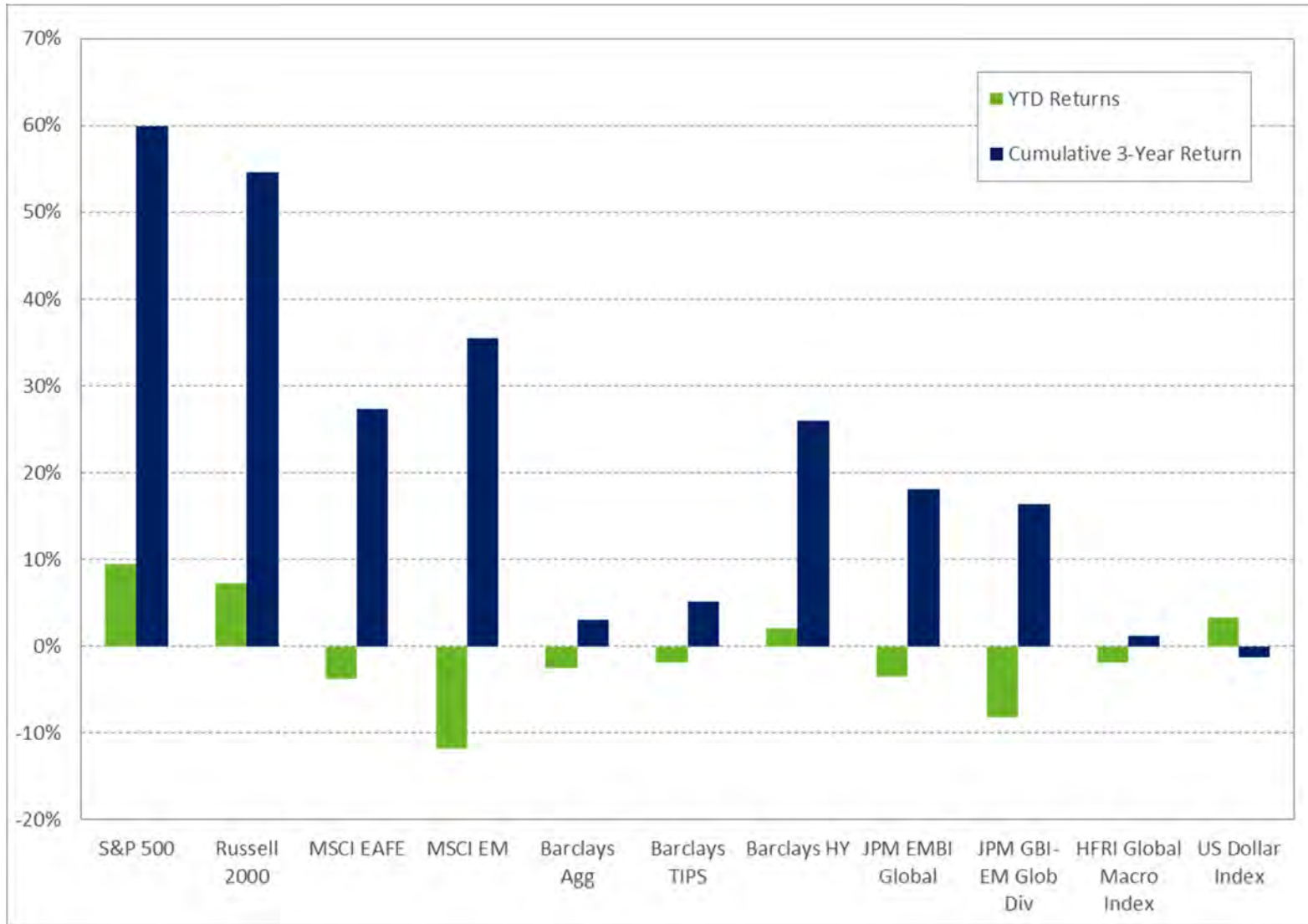
MARKET VOLATILITY IS WELL BELOW AVERAGE



Source: Bloomberg



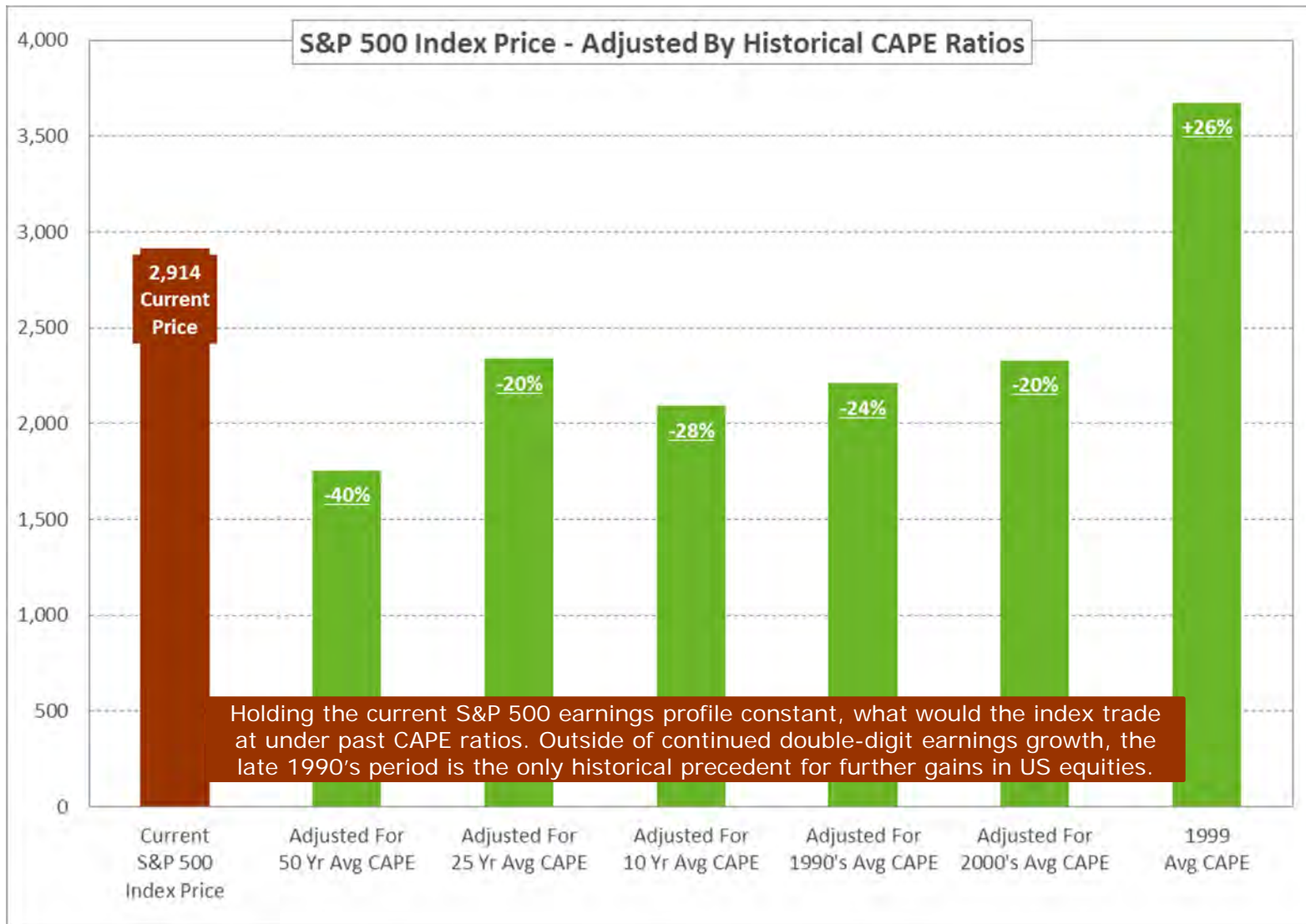
US EQUITIES ARE THE OUTLIER IN 2018



Source: Bloomberg



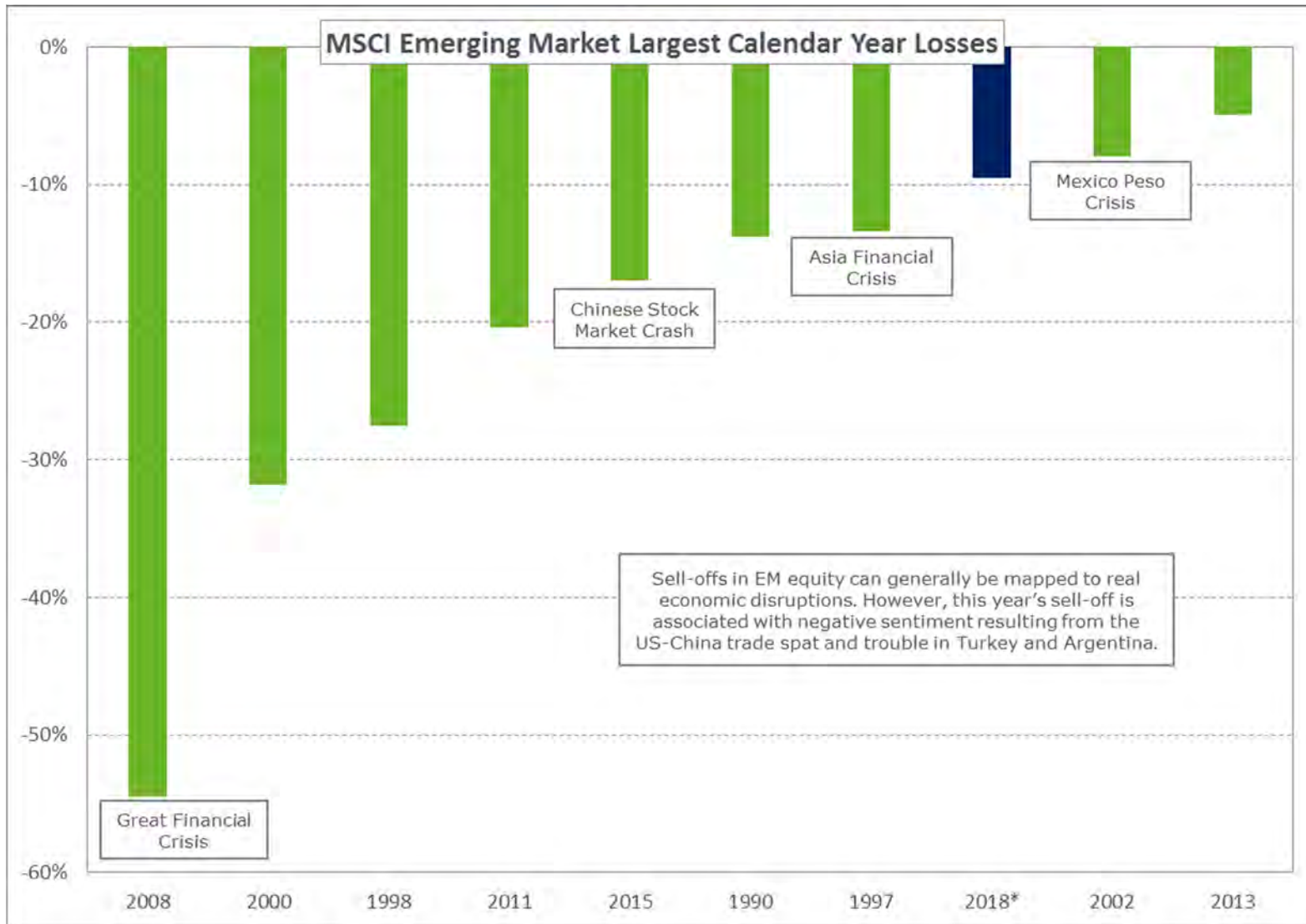
CAN VALUATIONS SUPPORT FURTHER GAINS?



Source: Bloomberg, Yale, Robert Shiller



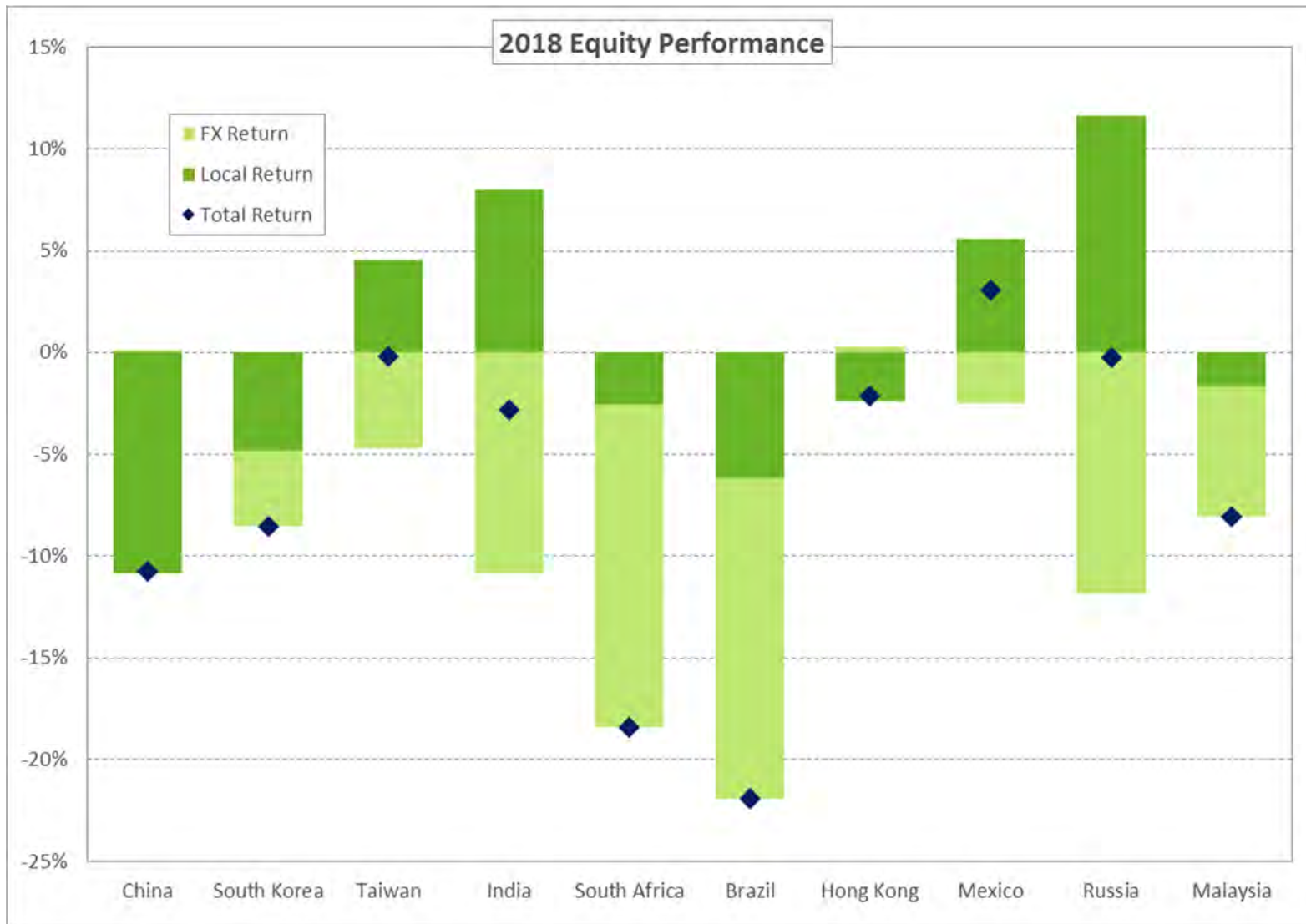
EM HAS DECLINED, BUT IT COULD BE WORSE



Data Source: MSCI, Bloomberg, NEPC
 2018 represents returns for 12/29/2017-09/30/2018



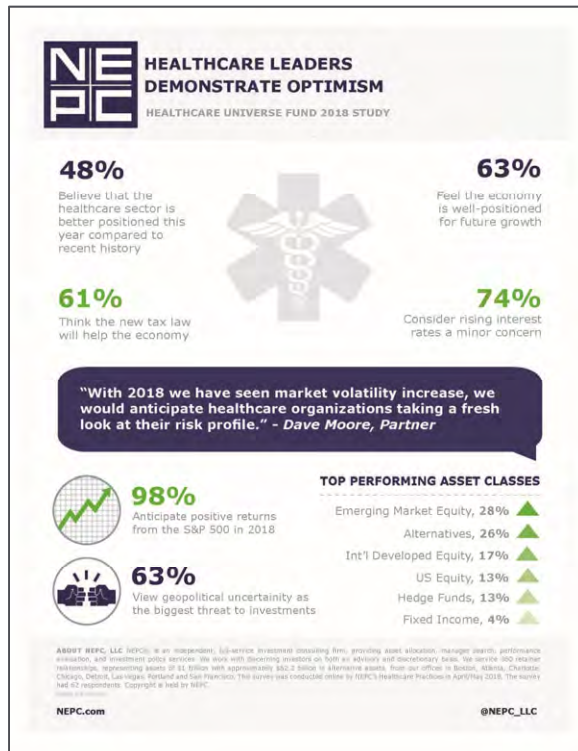
CURRENCY DETRACTED FROM TOTAL RETURNS



Source: MSCI, Bloomberg, NEPC



HIGHLIGHTS OF THIRD QUARTER HAPPENINGS AT NEPC



RECENT UPDATES

- **SAVE THE DATE!** NEPC will host our 10th annual Public Funds Workshop on January 31st and February 1st, 2019 at the Tempe Mission Palms in Tempe Arizona.
- **SAVE THE DATE!** NEPC will host our 24th Annual Investment Conference on May 7th and 8th, 2019 at the Boston Park Plaza. More details to come!

NEPC INSIGHTS

- Taking Stock: Is Technology Driving Low Inflation?
- Taking Stock: Increasing Pension Contributions and Improving Corporate Pension Funding Ratios: Now What?
- NEPC 2018 ESG Flash Poll Results and Infographic
- NEPC 2018 ESG Flash Poll – Healthcare Highlights
- 2018 Second Quarter Market Thoughts
- The Evaluation of Tax Liabilities
- Healthcare Optimistic About Economy But Wary of Volatility and Geopolitical Risks (Healthcare Operating Fund Universe Results/ Infographic)
- Taking Stock: Trouble in Turkey Creates Opportunity in Emerging Markets
- State of the Union: A Look Back on 2018 and What to Expect Moving Forward
- Opportunity Zones: Doing Good in a Tax-Advantaged Way
- Taking Stock: Globalization Backlash: US-China Tariffs are Here to Stay
- Taking Stock: Total Enterprise Management: a 360 View of Investment Strategy
- Market Chatter: Potential End Game for US-China Trade Spat: The Good, the Bad, the Ugly

WEBINAR REPLAYS

- NEPC's Second Quarter 2018 Quarterly Markets Call



To download NEPC's recent insights and webinar replays, visit: www.NEPC.com/insights

TOTAL FUND PERFORMANCE SUMMARY

NEPC, LLC

Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE SUMMARY (NET)

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	Inception	Inception Date
Total Fund	\$5,681,345,338	3.5%	2	4.4%	13	8.7%	8	10.6%	8	7.8%	28	8.3%	13	8.1%	Apr-94
<i>Policy Index</i>		3.6%	2	4.8%	9	9.1%	7	10.9%	7	8.5%	5	8.3%	14	8.2%	Apr-94
<i>60% MSCI ACWI (Net) / 40% FTSE WGBI</i>		1.9%	68	1.3%	99	5.2%	94	8.7%	83	5.3%	97	6.0%	95	--	Apr-94
<i>60% S&P 500 / 40% BBgBarc Aggregate</i>		4.6%	1	5.6%	5	10.0%	5	10.8%	7	9.2%	2	8.9%	2	8.4%	Apr-94
<i>InvestorForce Public DB > \$1B Net Median</i>		2.1%		2.9%		6.5%		9.3%		7.1%		7.3%		7.4%	Apr-94

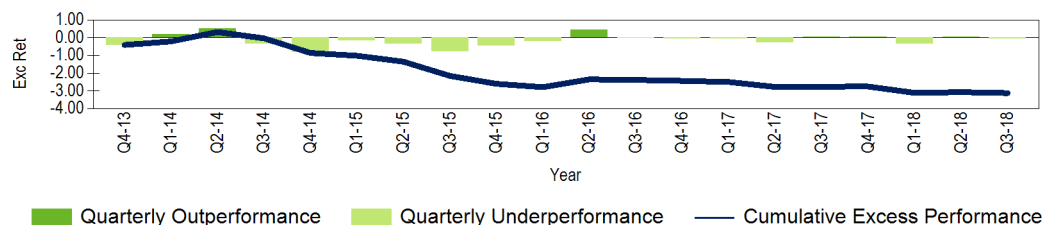
- For the five year period ending September 30, 2018, the Fund returned 7.8% trailing the policy index by 0.7% and ranking in the 28th percentile of its peers and outperforming the actuarial assumed rate of 7.5%. The Fund's volatility, as measured by standard deviation, ranked in the 80th percentile of its peers, and the risk-adjusted return, or Sharpe Ratio, ranks in the 44th percentile. This means that the Fund has earned more return per unit of volatility taken than 56% of its peers.

- For the three-year period, the Fund returned 10.6%, trailing the policy index by 0.3% and ranking in the 8th percentile of its peers. The Fund's volatility ranks in the 84th percentile of its peers over this period, with the Fund's Sharpe Ratio ranking in the 50th percentile.

- For the one-year period, the Fund returned 8.7%, underperforming the policy index by 0.4% and ranking in the 8th percentile of the InvestorForce Public Funds > \$1 Billion Universe (Net of fees).

- For the one-year period, the Fund experienced a net investment gain of \$458.2 million which includes a net investment gain of \$185.4 million in the quarter. Assets increased from \$5.26 billion one year ago to \$5.68 billion.

Quarterly and Cumulative Excess Performance



3 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	10.6%	8	5.8%	84	1.7	50	2.2	58
Policy Index	10.9%	7	5.7%	81	1.8	33	2.3	38
InvestorForce Public DB > \$1B Net Median	9.3%	--	5.0%	--	1.7	--	2.3	--

5 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	7.8%	28	6.0%	80	1.2	44	1.9	33
Policy Index	8.5%	5	5.8%	75	1.4	25	2.1	19
InvestorForce Public DB > \$1B Net Median	7.1%	--	5.4%	--	1.2	--	1.7	--

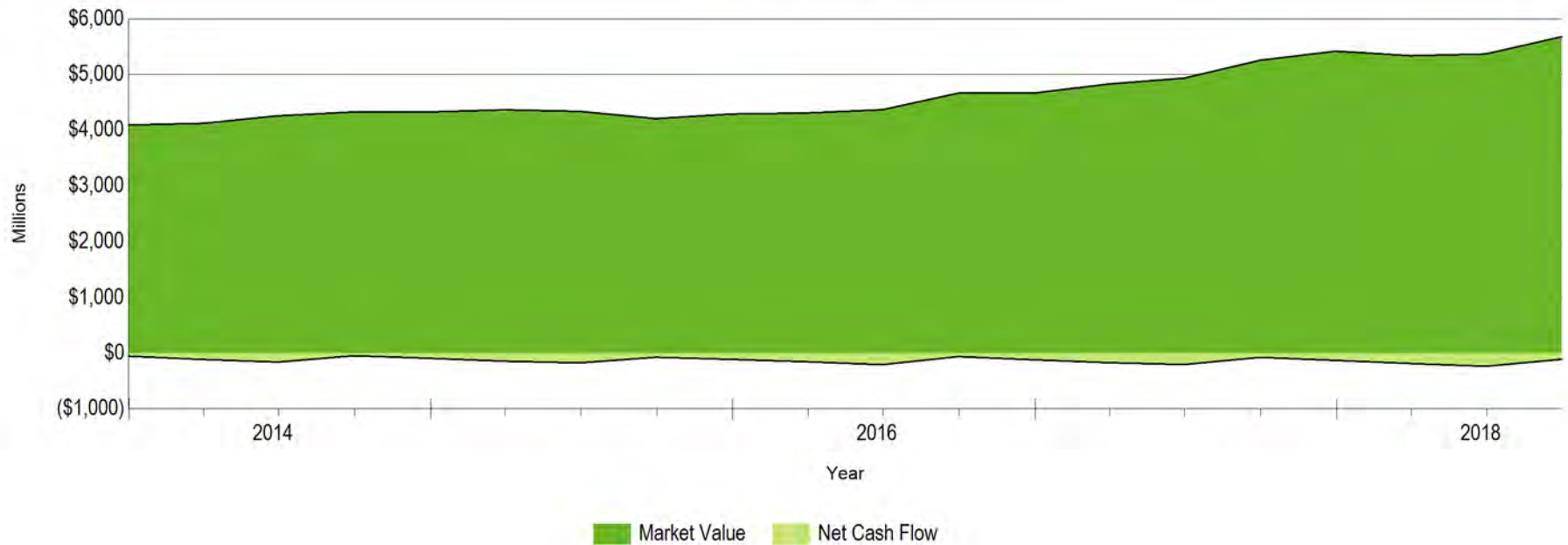
Policy Index as of January 2016: 28% Russell 3000 Index, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% Russell 3000 Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.



Ventura County Employees' Retirement Association

TOTAL FUND ASSET GROWTH SUMMARY

Market Value History
5 Years Ending September 30, 2018

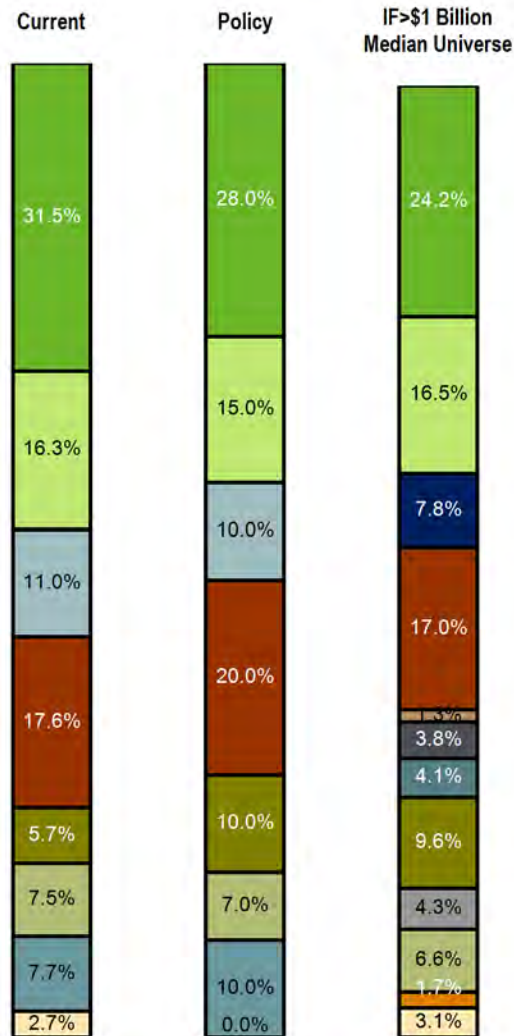


Summary of Cash Flows				
	Last Three Months	One Year	Three Years	Five Years
Beginning Market Value	\$5,370,442,517	\$5,257,900,164	\$4,208,105,148	\$3,944,521,428
Net Cash Flow	\$125,489,979	-\$34,797,706	-\$36,662,232	-\$109,724,968
Net Investment Change	\$185,412,842	\$458,242,881	\$1,509,902,422	\$1,846,548,879
Ending Market Value	\$5,681,345,338	\$5,681,345,338	\$5,681,345,338	\$5,681,345,338



Ventura County Employees' Retirement Association

TOTAL FUND ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target						
	Current	Current	Policy	Difference*	Policy Range	Within Range
U.S. Equity	\$1,791,876,444	31.5%	28.0%	3.5%	24.0% - 32.0%	Yes
Non-US Equity	\$924,699,272	16.3%	15.0%	1.3%	12.0% - 18.0%	Yes
Emerging Markets Equity	--	--	--	0.0%		
Global Equity	\$624,455,589	11.0%	10.0%	1.0%	7.0% - 13.0%	Yes
U.S. Fixed Income	\$999,261,399	17.6%	20.0%	-2.4%	16.0% - 24.0%	Yes
Fixed Income - Emerging	--	--	--	0.0%		
Fixed Income - Global	--	--	--	0.0%		
GTAA	--	--	--	0.0%		
Private Equity	\$323,593,771	5.7%	10.0%	-4.3%	0.0% - 12.0%	Yes
Hedge Funds	--	--	--	0.0%		
Real Estate	\$426,285,322	7.5%	7.0%	0.5%	4.0% - 10.0%	Yes
Real Assets	\$436,743,206	7.7%	10.0%	-2.3%	5.0% - 15.0%	Yes
Commodities/ Real Assets	--	--	--	0.0%		
Cash	\$154,430,335	2.7%	0.0%	2.7%	0.0% - 3.0%	Yes
Total	\$5,681,345,338	100.0%	100.0%			

*Difference between Policy and Current Allocation

Cash represents assets in Parametric Overlay.

Policy Index as of January 2016: , 28% Russell 3000 Index, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% Russell 3000 Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

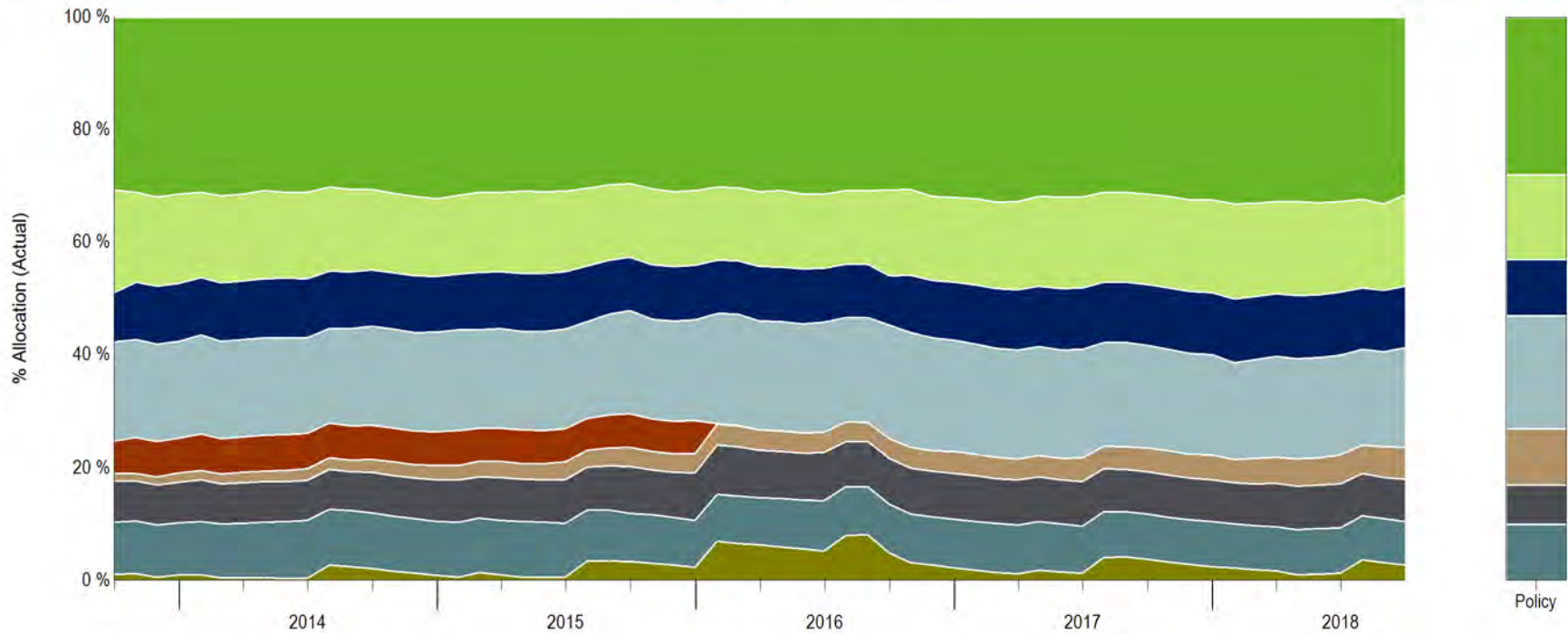
Asset Allocation vs. Policy Targets chart does not reflect Overlay adjusted weights.



Ventura County Employees' Retirement Association

TOTAL FUND ALLOCATION HISTORY

Asset Allocation History
5 Years Ending September 30, 2018



- U.S. Equity
- Global Equity
- Global Bonds
- Private Equity
- Real Estate
- Real Assets
- Cash
- Non-US Equity
- U.S. Fixed Income

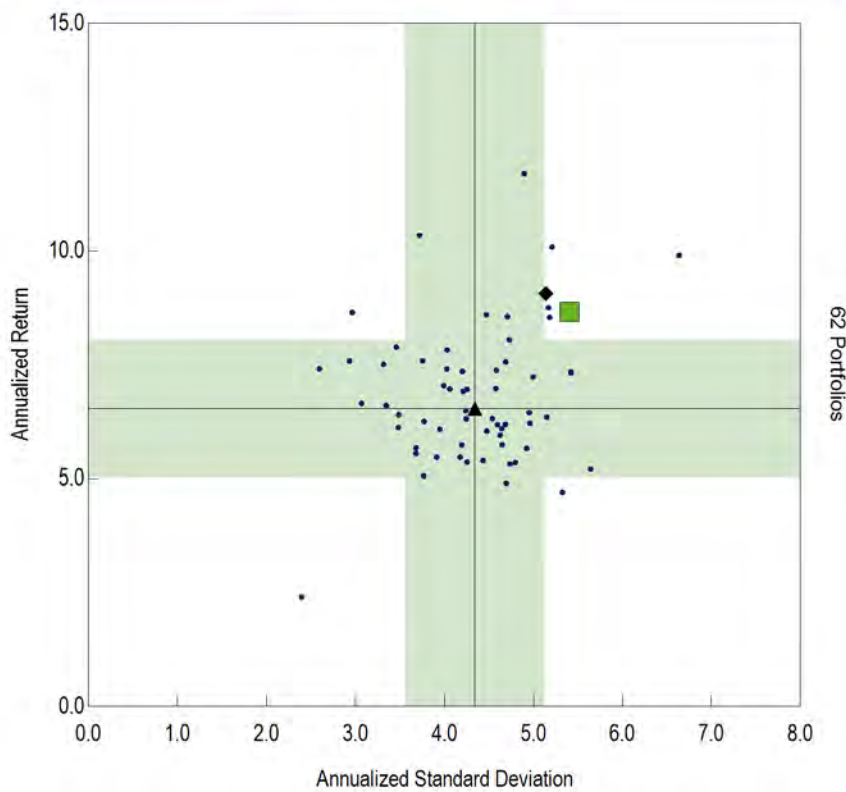
Policy Index shown is most recently approved index



Ventura County Employees' Retirement Association

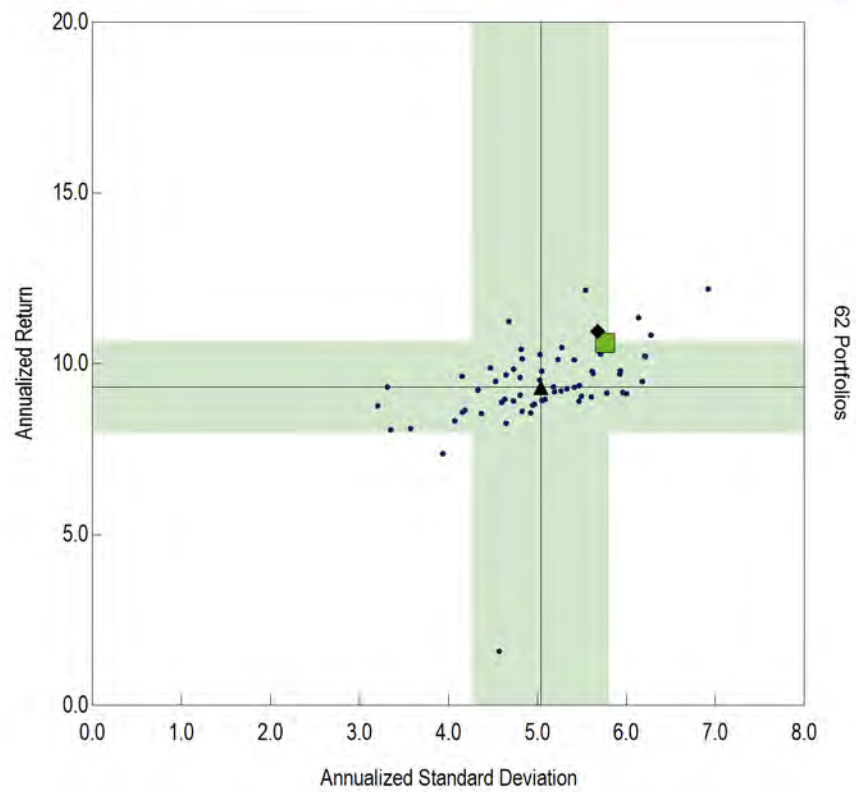
TOTAL FUND RISK/RETURN

1 Years Ending September 30, 2018



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

3 Years Ending September 30, 2018



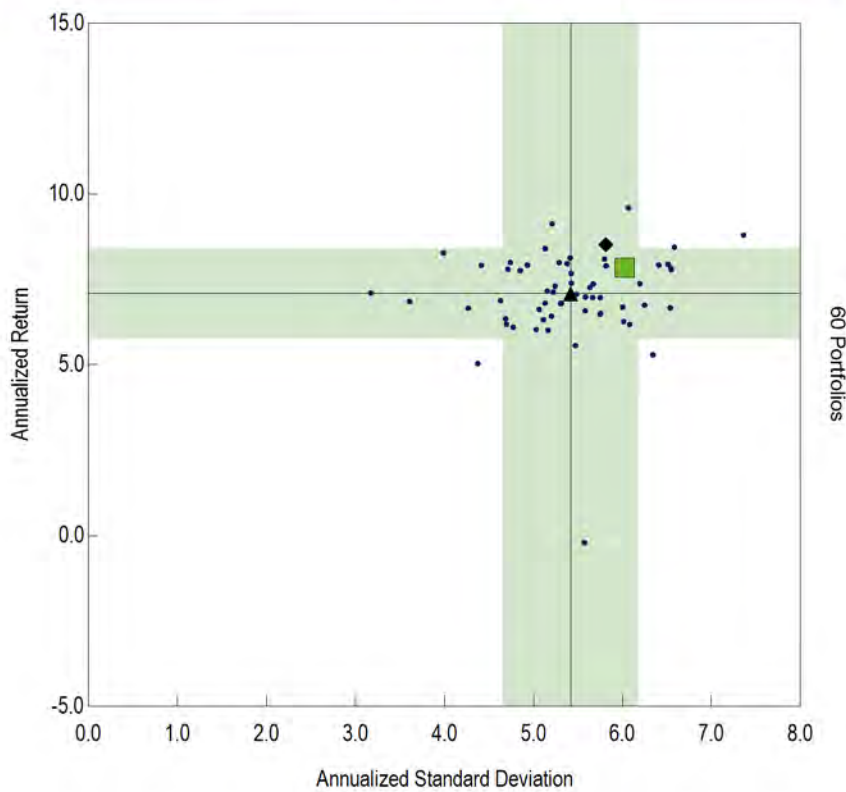
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net



Ventura County Employees' Retirement Association

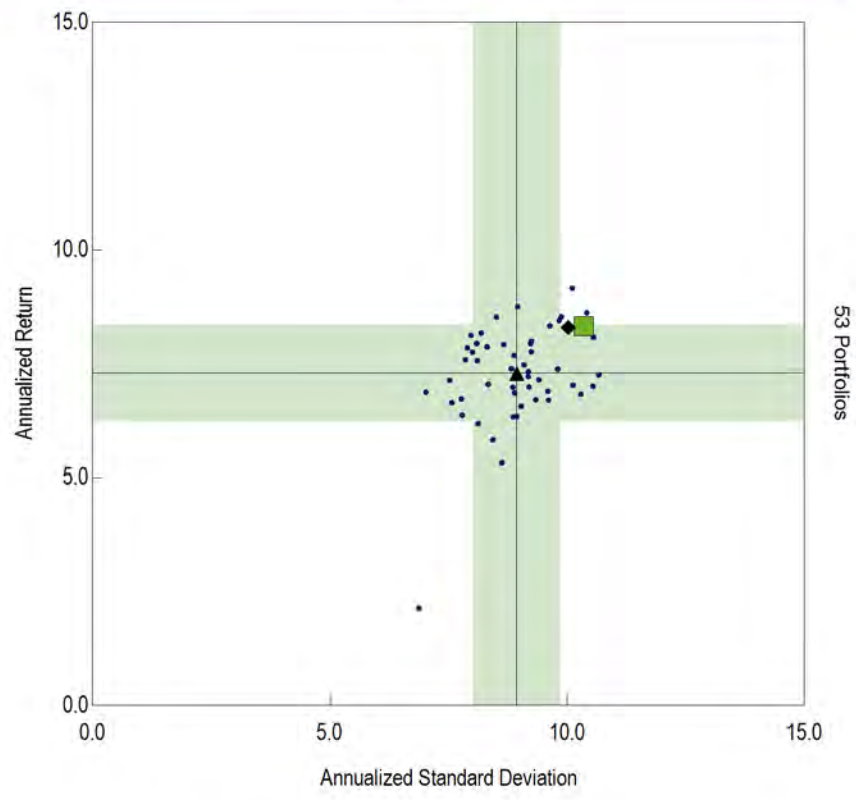
TOTAL FUND RISK/RETURN

5 Years Ending September 30, 2018



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

10 Years Ending September 30, 2018



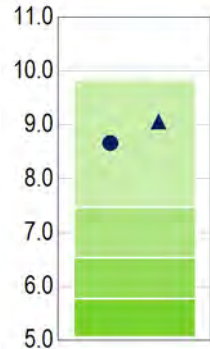
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

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

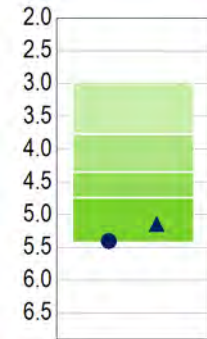
Anlzd Return



● Total Fund
Value 8.7
Rank 8
▲ Policy Index
Value 9.1
Rank 7

Universe
5th %tile 9.8
25th %tile 7.5
Median 6.5
75th %tile 5.8
95th %tile 5.1

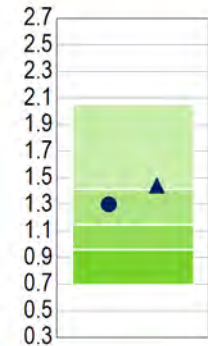
Anlzd Standard Deviation



● Total Fund
Value 5.4
Rank 95
▲ Policy Index
Value 5.1
Rank 87

Universe
5th %tile 3.0
25th %tile 3.8
Median 4.3
75th %tile 4.7
95th %tile 5.4

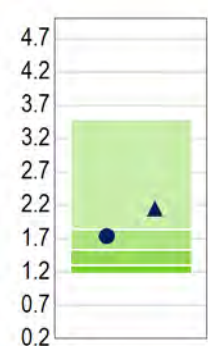
Sharpe Ratio



● Total Fund
Value 1.3
Rank 37
▲ Policy Index
Value 1.4
Rank 25

Universe
5th %tile 2.1
25th %tile 1.4
Median 1.2
75th %tile 1.0
95th %tile 0.7

Sortino Ratio



● Total Fund
Value 1.7
Rank 31
▲ Policy Index
Value 2.2
Rank 11

Universe
5th %tile 3.5
25th %tile 1.8
Median 1.5
75th %tile 1.3
95th %tile 1.2



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

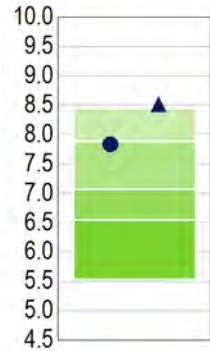
Total Fund vs. InvestorForce Public DB > \$1B Net
3 Years



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

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

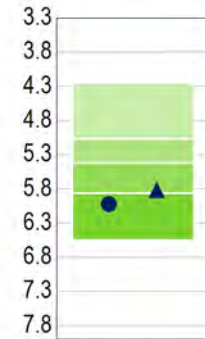
Anlzd Return



● Total Fund
Value 7.8
Rank 28
▲ Policy Index
Value 8.5
Rank 5

Universe
5th %tile 8.5
25th %tile 7.9
Median 7.1
75th %tile 6.6
95th %tile 5.5

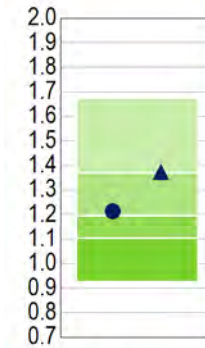
Anlzd Standard Deviation



● Total Fund
Value 6.0
Rank 80
▲ Policy Index
Value 5.8
Rank 75

Universe
5th %tile 4.3
25th %tile 5.1
Median 5.4
75th %tile 5.9
95th %tile 6.5

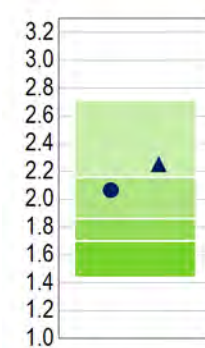
Sharpe Ratio



● Total Fund
Value 1.2
Rank 44
▲ Policy Index
Value 1.4
Rank 25

Universe
5th %tile 1.7
25th %tile 1.4
Median 1.2
75th %tile 1.1
95th %tile 0.9

Sortino Ratio



● Total Fund
Value 2.1
Rank 33
▲ Policy Index
Value 2.3
Rank 20

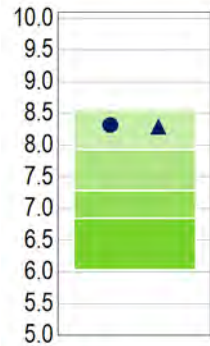
Universe
5th %tile 2.7
25th %tile 2.2
Median 1.9
75th %tile 1.7
95th %tile 1.4



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

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

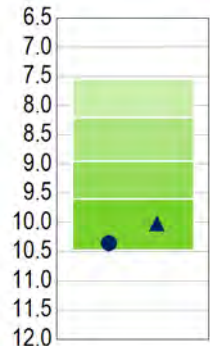
Anlzd Return



● Total Fund
Value 8.3
Rank 13
▲ Policy Index
Value 8.3
Rank 14

Universe
5th %tile 8.6
25th %tile 7.9
Median 7.3
75th %tile 6.9
95th %tile 6.0

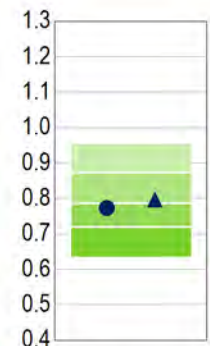
Anlzd Standard Deviation



● Total Fund
Value 10.4
Rank 94
▲ Policy Index
Value 10.0
Rank 86

Universe
5th %tile 7.5
25th %tile 8.2
Median 8.9
75th %tile 9.6
95th %tile 10.5

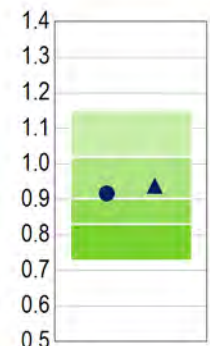
Sharpe Ratio



● Total Fund
Value 0.8
Rank 59
▲ Policy Index
Value 0.8
Rank 49

Universe
5th %tile 1.0
25th %tile 0.9
Median 0.8
75th %tile 0.7
95th %tile 0.6

Sortino Ratio

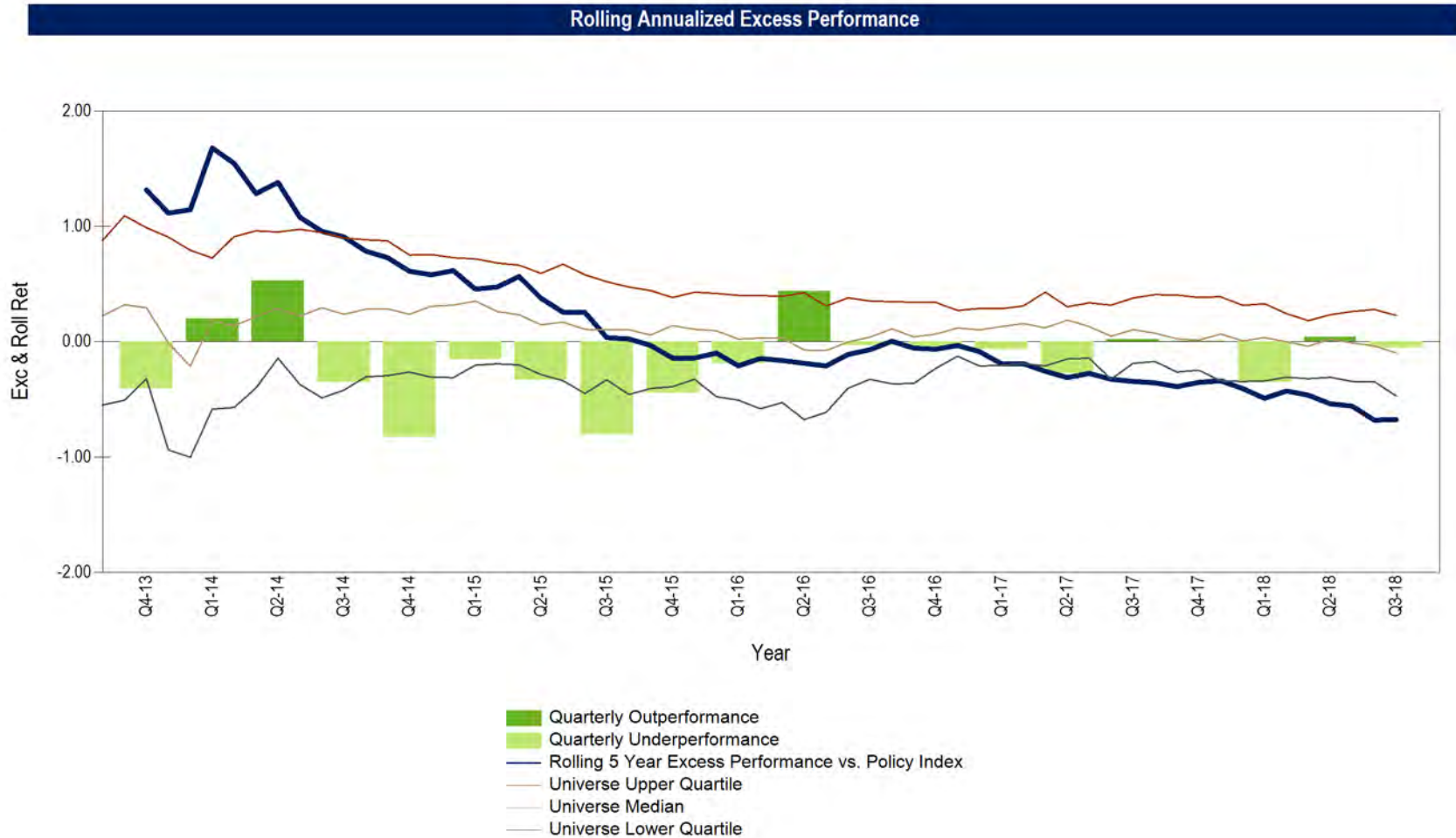


● Total Fund
Value 0.9
Rank 44
▲ Policy Index
Value 0.9
Rank 37

Universe
5th %tile 1.1
25th %tile 1.0
Median 0.9
75th %tile 0.8
95th %tile 0.7

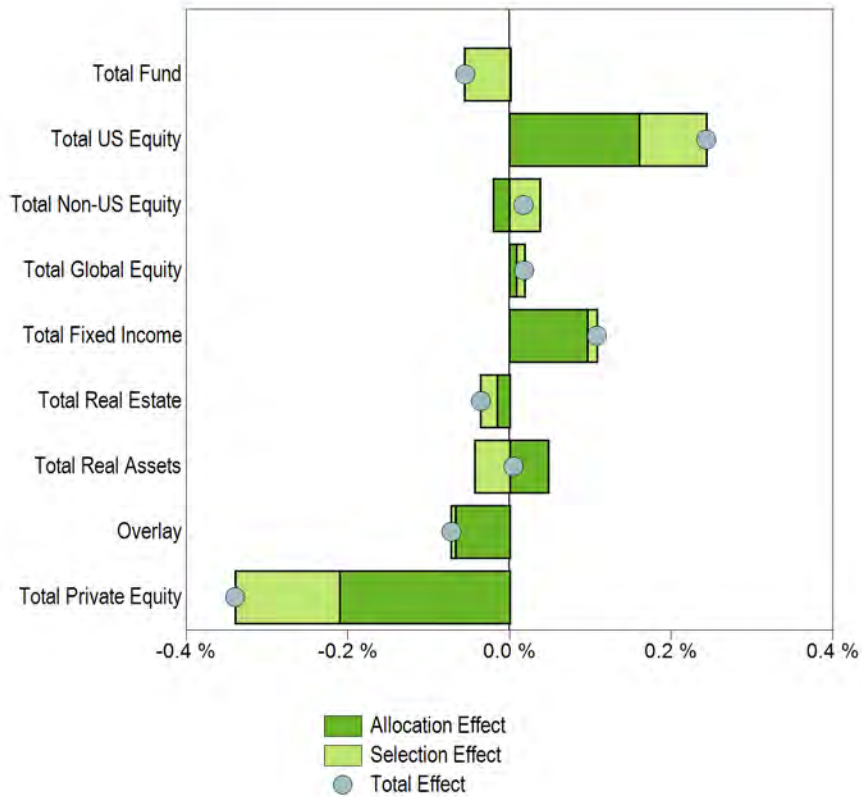


ROLLING 5 YEAR EXCESS RETURNS- NET OF FEES



TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
3 Months Ending September 30, 2018

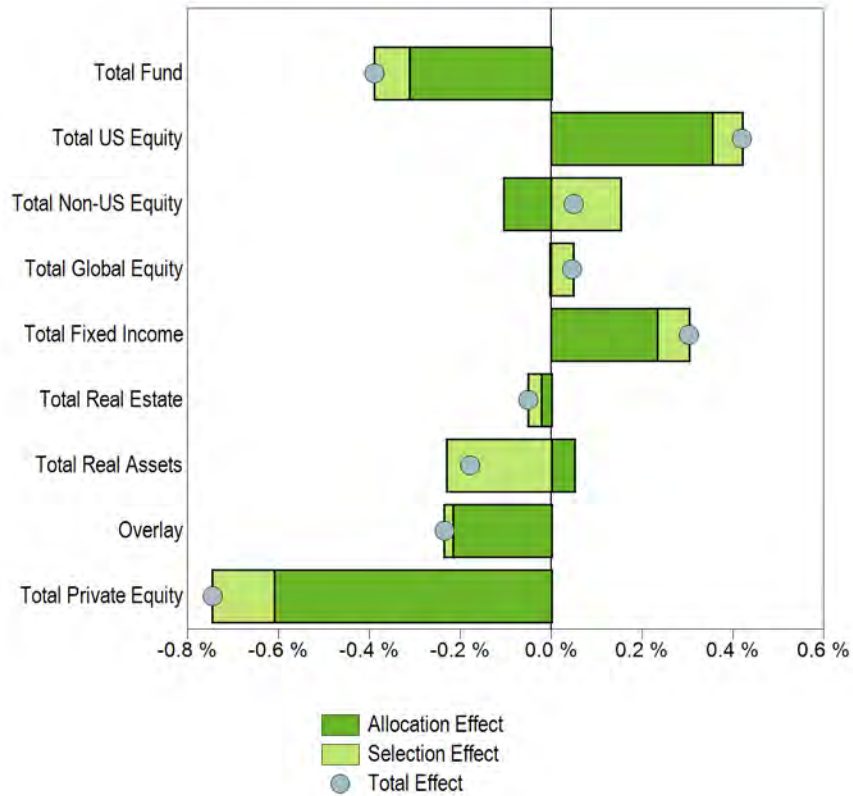


Attribution Summary						
3 Months Ending September 30, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total US Equity	7.4%	7.1%	0.3%	0.1%	0.2%	0.2%
Total Non-US Equity	1.0%	0.7%	0.3%	0.0%	0.0%	0.0%
Total Global Equity	4.4%	4.3%	0.1%	0.0%	0.0%	0.0%
Total Fixed Income	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%
Total Real Estate	1.6%	1.9%	-0.3%	0.0%	0.0%	0.0%
Total Real Assets	0.6%	1.2%	-0.6%	0.0%	0.0%	0.0%
Overlay	0.4%	0.5%	-0.1%	0.0%	-0.1%	-0.1%
Total Private Equity	5.1%	7.9%	-2.8%	-0.1%	-0.2%	-0.3%
Total	3.5%	3.6%	-0.1%	-0.1%	0.0%	-0.1%



TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
1 Year Ending September 30, 2018

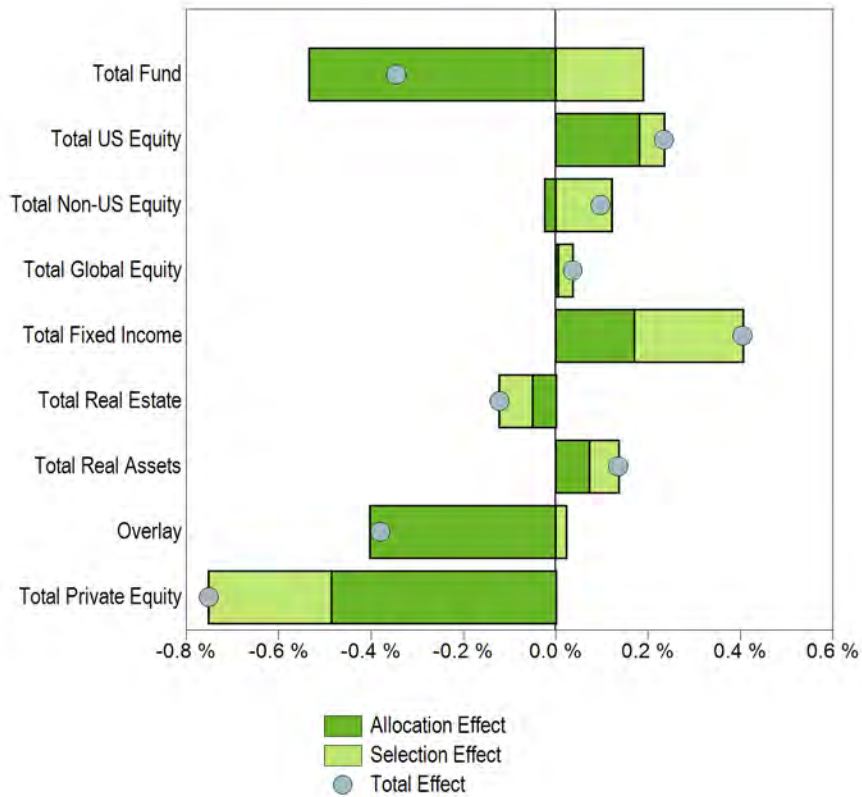


Attribution Summary						
1 Year Ending September 30, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total US Equity	17.8%	17.6%	0.2%	0.1%	0.4%	0.4%
Total Non-US Equity	2.7%	1.8%	0.9%	0.2%	-0.1%	0.0%
Total Global Equity	10.2%	9.8%	0.4%	0.0%	0.0%	0.0%
Total Fixed Income	-0.9%	-1.2%	0.4%	0.1%	0.2%	0.3%
Total Real Estate	7.4%	7.7%	-0.4%	0.0%	0.0%	-0.1%
Total Real Assets	3.4%	6.4%	-3.0%	-0.2%	0.1%	-0.2%
Overlay	1.1%	1.6%	-0.5%	0.0%	-0.2%	-0.2%
Total Private Equity	18.3%	21.1%	-2.7%	-0.1%	-0.6%	-0.7%
Total	8.7%	9.1%	-0.4%	-0.1%	-0.3%	-0.4%



TOTAL FUND ATTRIBUTION ANALYSIS

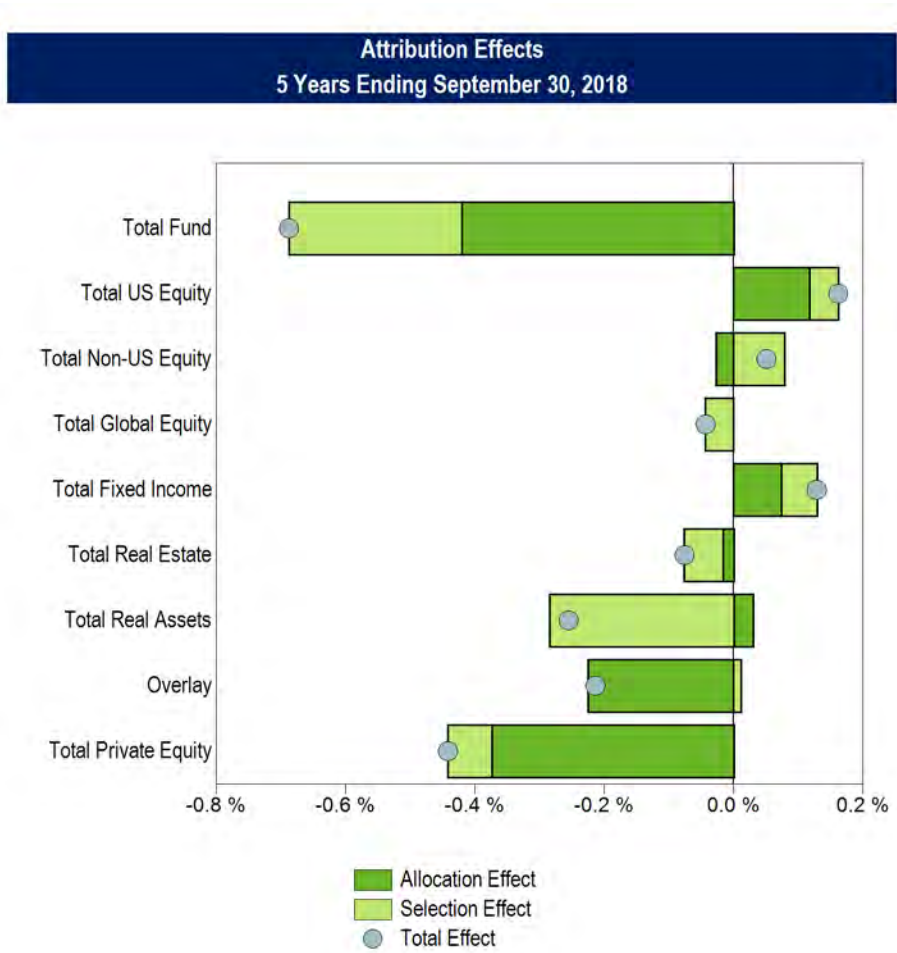
Attribution Effects
3 Years Ending September 30, 2018



Attribution Summary						
3 Years Ending September 30, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total US Equity	17.2%	17.1%	0.2%	0.1%	0.2%	0.2%
Total Non-US Equity	10.9%	10.0%	0.9%	0.1%	0.0%	0.1%
Total Global Equity	13.7%	13.4%	0.3%	0.0%	0.0%	0.0%
Total Fixed Income	2.5%	1.3%	1.2%	0.2%	0.2%	0.4%
Total Real Estate	7.0%	7.8%	-0.9%	-0.1%	-0.1%	-0.1%
Total Real Assets	6.4%	6.1%	0.3%	0.1%	0.1%	0.1%
Overlay	2.0%	0.9%	1.1%	0.0%	-0.4%	-0.4%
Total Private Equity	13.9%	20.5%	-6.7%	-0.3%	-0.5%	-0.8%
Total	10.6%	10.9%	-0.3%	0.2%	-0.5%	-0.3%



TOTAL FUND ATTRIBUTION ANALYSIS



Attribution Summary						
5 Years Ending September 30, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total US Equity	13.6%	13.4%	0.1%	0.0%	0.1%	0.2%
Total Non-US Equity	4.8%	4.1%	0.6%	0.1%	0.0%	0.1%
Total Global Equity	8.3%	8.7%	-0.4%	0.0%	0.0%	0.0%
Total Fixed Income	2.1%	1.8%	0.4%	0.1%	0.1%	0.1%
Total Real Estate	9.0%	9.7%	-0.8%	-0.1%	0.0%	-0.1%
Total Real Assets	3.4%	6.7%	-3.3%	-0.3%	0.0%	-0.3%
Overlay	1.1%	0.5%	0.6%	0.0%	-0.2%	-0.2%
Total Private Equity	15.5%	16.8%	-1.3%	-0.1%	-0.4%	-0.4%
Total	7.8%	8.5%	-0.7%	-0.3%	-0.4%	-0.7%



Ventura County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

1 Year Ending September 30, 2018												
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	58.8%	12.1%	36	8.3%	92	2.7%	13	1.1%	46	2.1	2	1.0
MSCI ACWI	--	9.8%	70	8.6%	99	0.0%	47	0.0%	1	--	--	1.0
Total US Equity	31.5%	17.8%	23	8.8%	97	0.0%	45	0.4%	5	0.5	17	1.0
Russell 3000	--	17.6%	26	8.7%	95	0.0%	43	0.0%	1	--	--	1.0
Total Non-US Equity	16.3%	2.7%	23	9.2%	53	0.9%	19	0.8%	10	1.1	5	0.9
MSCI ACWI ex USA	--	1.8%	39	9.7%	80	0.0%	34	0.0%	1	--	--	1.0
Total Global Equity	11.0%	10.2%	34	8.6%	77	0.4%	41	0.1%	1	3.5	1	1.0
MSCI ACWI	--	9.8%	37	8.6%	77	0.0%	52	0.0%	1	--	--	1.0
Total Fixed Income	17.6%	-0.9%	62	1.7%	72	-0.4%	73	0.8%	42	0.5	54	0.7
Total Fixed Income Policy Index	--	-1.2%	94	2.3%	91	0.0%	54	0.0%	1	--	--	1.0
Total US Fixed Income	17.6%	-0.9%	70	1.7%	70	-0.4%	83	0.8%	64	0.5	72	0.7
BBgBarc US Aggregate TR	--	-1.2%	91	2.3%	92	0.0%	62	0.0%	1	--	--	1.0
Total Real Assets	7.7%	3.4%	--	7.0%	--	5.0%	--	7.1%	--	-0.4	--	-0.7
CPI + 4% (Unadjusted)	--	6.4%	--	0.7%	--	0.0%	--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	7.5%	7.4%	67	3.1%	58
NCREIF ODCE Net	--	7.7%	57	3.2%	61
Total Private Equity	5.7%	18.3%	23	5.3%	28
Russell 3000 + 3%	--	21.1%	13	8.7%	82

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, 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.

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

Composite rankings are used for Total Equity (InvestorForce Public DB Total Eq consists of 86 portfolios), Total US Equity (InvestorForce Public DB US Eq consists of 175 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 118 portfolios), Total Global Equity (InvestorForce Public DB Gbl Eq consists of 43 portfolios), Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 87 portfolios), Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 105 portfolios), Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 63 portfolios) and Total Private Equity (InvestorForce Public DB Private Eq consists of 41 portfolios).



Ventura County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

3 Years Ending September 30, 2018												
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	58.8%	14.9%	6	9.1%	64	1.9%	11	1.2%	39	1.2	1	1.0
MSCI ACWI	--	13.4%	84	9.4%	91	0.0%	73	0.0%	1	--	--	1.0
Total US Equity	31.5%	17.2%	11	9.4%	63	0.0%	18	0.4%	3	0.5	5	1.0
Russell 3000	--	17.1%	17	9.3%	53	0.0%	21	0.0%	1	--	--	1.0
Total Non-US Equity	16.3%	10.9%	23	10.4%	45	1.3%	27	1.1%	8	0.8	6	1.0
MSCI ACWI ex USA	--	10.0%	53	10.9%	77	0.0%	62	0.0%	1	--	--	1.0
Total Global Equity	11.0%	13.7%	6	9.3%	70	0.5%	62	0.6%	1	0.5	6	1.0
MSCI ACWI	--	13.4%	15	9.4%	71	0.0%	81	0.0%	1	--	--	1.0
Total Fixed Income	17.6%	2.5%	57	2.5%	49	1.3%	47	1.5%	57	0.8	44	0.8
Total Fixed Income Policy Index	--	1.3%	70	2.7%	63	0.0%	84	0.0%	1	--	--	1.0
Total US Fixed Income	17.6%	2.5%	31	2.5%	69	1.3%	30	1.5%	75	0.8	40	0.8
BBgBarc US Aggregate TR	--	1.3%	56	2.7%	75	0.0%	84	0.0%	1	--	--	1.0
Total Real Assets	7.7%	6.4%	--	7.8%	--	-6.6%	--	7.6%	--	0.0	--	2.3
CPI + 4% (Unadjusted)	--	6.1%	--	0.8%	--	0.0%	--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	7.5%	7.0%	89	2.9%	40
NCREIF ODCE Net	--	7.8%	65	3.3%	45
Total Private Equity	5.7%	13.9%	26	5.2%	37
Russell 3000 + 3%	--	20.5%	7	9.3%	89

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, 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.

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

Composite rankings are used for Total Equity (InvestorForce Public DB Total Eq consists of 80 portfolios), Total US Equity (InvestorForce Public DB US Eq consists of 164 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 109 portfolios), Total Global Equity (InvestorForce Public DB Gbl Eq consists of 37 portfolios), Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 81 portfolios), Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 104 portfolios), Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 62 portfolios) and Total Private Equity (InvestorForce Public DB Private Eq consists of 40 portfolios).



Ventura County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

5 Years Ending September 30, 2018

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	58.8%	10.2%	41	9.5%	63	1.8%	10	1.2%	36	1.3	1	1.0
MSCI ACWI	--	8.7%	78	9.8%	90	0.0%	66	0.0%	1	--	--	1.0
Total US Equity	31.5%	13.6%	6	9.7%	55	0.1%	14	0.3%	1	0.5	1	1.0
Russell 3000	--	13.4%	12	9.7%	48	0.0%	17	0.0%	1	--	--	1.0
Total Non-US Equity	16.3%	4.8%	42	10.6%	38	0.8%	38	1.1%	6	0.6	13	0.9
MSCI ACWI ex USA	--	4.1%	67	11.2%	76	0.0%	62	0.0%	1	--	--	1.0
Total Global Equity	11.0%	8.3%	64	9.9%	61	-0.5%	96	1.0%	1	-0.4	99	1.0
MSCI ACWI	--	8.7%	61	9.8%	53	0.0%	84	0.0%	1	--	--	1.0
Total Fixed Income	17.6%	2.1%	60	2.2%	28	0.8%	40	1.6%	55	0.2	50	0.7
Total Fixed Income Policy Index	--	1.8%	78	2.6%	46	0.0%	83	0.0%	1	--	--	1.0
Total US Fixed Income	17.6%	2.4%	48	2.2%	45	0.9%	25	1.8%	85	0.2	63	0.6
BBgBarc US Aggregate TR	--	2.2%	53	2.7%	74	0.0%	82	0.0%	1	--	--	1.0
Total Real Assets	7.7%	3.4%	--	8.7%	--	-5.0%	--	8.4%	--	-0.4	--	1.3
CPI + 4% (Unadjusted)	--	6.7%	--	1.6%	--	0.0%	--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	7.5%	9.0%	82	3.8%	47
NCREIF ODCE Net	--	9.7%	65	4.1%	52
Total Private Equity	5.7%	15.5%	26	6.4%	54
Russell 3000 + 3%	--	16.8%	17	9.7%	86

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, 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.

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

Composite rankings are used for Total Equity (InvestorForce Public DB Total Eq consists of 61 portfolios), Total US Equity (InvestorForce Public DB US Eq consists of 140 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 99 portfolios), Total Global Equity (InvestorForce Public DB Gbl Eq consists of 23 portfolios), Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 68 portfolios), Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 93 portfolios), Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 55 portfolios) and Total Private Equity (InvestorForce Public DB Private Eq consists of 36 portfolios).



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fund	5,681,345,338	100.0	100.0	3.5	2	4.4	13	8.7	8	10.6	8	7.8	28	8.3	13	8.1	Apr-94
Policy Index				3.6	2	4.8	9	9.1	7	10.9	7	8.5	5	8.3	14	8.2	Apr-94
Over/Under				-0.1		-0.4		-0.4		-0.3		-0.7		0.0		-0.1	
60% MSCI ACWI (Net) / 40% FTSE WGBI				1.9	68	1.3	99	5.2	94	8.7	83	5.3	97	6.0	95	--	Apr-94
60% S&P 500 / 40% BBgBarc Aggregate				4.6	1	5.6	5	10.0	5	10.8	7	9.2	2	8.9	2	8.4	Apr-94
InvestorForce Public DB > \$1B Net Median				2.1		2.9		6.5		9.3		7.1		7.3		7.4	Apr-94
Total Fund ex Parametric*	5,635,279,979	99.2	--	3.4	--	4.3	--	8.6	--	10.5	--	7.8	--	8.2	--	8.1	Apr-94
Total Fund ex Private Equity	5,357,751,568	94.3	--	3.4	2	3.9	25	8.2	15	10.4	12	7.6	37	--	--	9.1	Jan-12
Policy Index				3.6	2	4.8	9	9.1	7	10.9	7	8.5	5	8.3	14	9.8	Jan-12
Over/Under				-0.2		-0.9		-0.9		-0.5		-0.9				-0.7	
InvestorForce Public DB > \$1B Net Median				2.1		2.9		6.5		9.3		7.1		7.3		8.7	Jan-12
Total US Equity	1,791,876,444	31.5	28.0	7.4	6	10.5	32	17.8	23	17.2	11	13.6	6	12.2	12	9.6	Dec-93
Russell 3000				7.1	12	10.6	32	17.6	26	17.1	17	13.4	12	12.0	23	9.9	Dec-93
Over/Under				0.3		-0.1		0.2		0.1		0.2		0.2		-0.3	
InvestorForce Public DB US Eq Net Median				6.6		9.8		16.7		16.4		12.8		11.6		9.6	Dec-93
Western U.S. Index Plus	218,737,707	3.9		8.0	19	10.4	39	18.0	34	18.1	21	14.5	13	12.7	27	6.5	May-07
S&P 500				7.7	23	10.6	39	17.9	34	17.3	28	13.9	17	12.0	42	8.1	May-07
Over/Under				0.3		-0.2		0.1		0.8		0.6		0.7		-1.6	
eV All US Equity Net Median				5.6		8.4		14.6		15.1		11.6		11.5		8.0	May-07
Blackrock Russell 1000 Index	1,505,409,046	26.5		7.4	34	10.5	36	17.8	36	--	--	--	--	--	--	17.4	May-17
Russell 1000				7.4	34	10.5	36	17.8	37	17.1	27	13.7	31	12.1	34	17.4	May-17
Over/Under				0.0		0.0		0.0								0.0	
eV US Large Cap Equity Net Median				6.7		8.3		15.3		15.1		12.2		11.2		15.4	May-17
Blackrock Russell 2500 Index	67,729,691	1.2		4.7	51	10.5	46	16.3	45	--	--	--	--	--	--	16.0	May-17
Russell 2500				4.7	51	10.4	46	16.2	46	16.1	38	11.4	37	12.0	42	16.0	May-17
Over/Under				0.0		0.1		0.1								0.0	
eV US Small-Mid Cap Equity Net Median				4.7		9.0		14.9		14.8		10.6		11.7		14.5	May-17

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, 28% Russell 3000 Index, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% Russell 3000 Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, 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	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Non-US Equity	924,699,272	16.3	15.0	1.0	23	-2.2	22	2.7	23	10.9	23	4.8	42	5.8	46	6.5	Mar-94
MSCI ACWI ex USA				0.7	33	-3.1	42	1.8	39	10.0	53	4.1	67	5.2	71	5.3	Mar-94
Over/Under				0.3		0.9		0.9		0.9		0.7		0.6		1.2	
MSCI EAFE				1.4	12	-1.4	15	2.7	22	9.2	79	4.4	57	5.4	65	4.9	Mar-94
MSCI ACWI ex USA NR LCL				1.5	7	0.3	5	4.5	9	10.0	53	7.7	1	6.7	19	--	Mar-94
MSCI EAFE NR LCL				2.4	5	1.4	2	5.1	5	9.4	75	7.9	1	6.7	20	5.0	Mar-94
InvestorForce Public DB ex-US Eq Net Median				0.3		-3.3		1.3		10.0		4.5		5.7		5.8	Mar-94
BlackRock ACWI ex-U.S. Index	474,689,679	8.4		0.4	50	-3.1	65	2.0	63	10.4	43	4.6	65	5.7	70	2.8	Mar-07
MSCI ACWI ex USA IMI				0.4	50	-3.3	74	1.8	64	10.1	46	4.4	69	5.6	70	2.6	Mar-07
Over/Under				0.0		0.2		0.2		0.3		0.2		0.1		0.2	
MSCI ACWI ex USA NR LCL				1.5	21	0.3	23	4.5	33	10.0	47	7.7	18	6.7	51	3.5	Mar-07
eV ACWI ex-US All Cap Equity Net Median				0.4		-2.2		2.6		9.8		5.9		6.8		3.7	Mar-07
Sprucegrove	230,075,924	4.0		0.8	37	-3.0	62	2.7	50	12.2	30	5.0	60	6.5	55	7.6	Mar-02
MSCI ACWI ex USA				0.7	40	-3.1	66	1.8	64	10.0	47	4.1	73	5.2	75	6.6	Mar-02
Over/Under				0.1		0.1		0.9		2.2		0.9		1.3		1.0	
MSCI EAFE				1.4	22	-1.4	38	2.7	50	9.2	65	4.4	69	5.4	71	6.1	Mar-02
MSCI ACWI ex USA NR LCL				1.5	21	0.3	23	4.5	33	10.0	47	7.7	18	6.7	51	5.5	Mar-02
MSCI EAFE NR LCL				2.4	10	1.4	17	5.1	28	9.4	60	7.9	17	6.7	51	4.7	Mar-02
eV ACWI ex-US All Cap Equity Net Median				0.4		-2.2		2.6		9.8		5.9		6.8		7.3	Mar-02
Hexavest	91,686,105	1.6		0.9	51	-3.1	72	-0.7	82	6.5	92	3.1	89	--	--	4.2	Dec-10
MSCI EAFE				1.4	36	-1.4	55	2.7	52	9.2	47	4.4	67	5.4	70	5.2	Dec-10
Over/Under				-0.5		-1.7		-3.4		-2.7		-1.3				-1.0	
MSCI EAFE NR LCL				2.4	16	1.4	23	5.1	29	9.4	44	7.9	11	6.7	38	7.8	Dec-10
eV EAFE All Cap Equity Net Median				0.9		-0.7		3.2		9.1		5.6		6.2		6.0	Dec-10
Walter Scott	128,247,564	2.3		3.2	6	2.7	10	7.8	10	13.4	21	6.1	44	--	--	6.3	Dec-10
MSCI ACWI ex USA				0.7	40	-3.1	66	1.8	64	10.0	47	4.1	73	5.2	75	4.0	Dec-10
Over/Under				2.5		5.8		6.0		3.4		2.0				2.3	
MSCI ACWI ex USA NR LCL				1.5	21	0.3	23	4.5	33	10.0	47	7.7	18	6.7	51	6.9	Dec-10
MSCI EAFE				1.4	22	-1.4	38	2.7	50	9.2	65	4.4	69	5.4	71	5.2	Dec-10
eV ACWI ex-US All Cap Equity Net Median				0.4		-2.2		2.6		9.8		5.9		6.8		6.0	Dec-10



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Global Equity	624,455,589	11.0	10.0	4.4	12	4.2	60	10.2	34	13.7	6	8.3	64	7.3	17	6.4	May-05
MSCI ACWI				4.3	22	3.8	66	9.8	37	13.4	15	8.7	61	8.2	9	7.2	May-05
Over/Under				0.1		0.4		0.4		0.3		-0.4		-0.9		-0.8	
InvestorForce Public DB Gbl Eq Net Median				4.2		4.3		9.0		12.3		9.2		5.4		5.9	May-05
BlackRock MSCI ACWI Equity Index	624,455,589	11.0		4.4	36	4.2	45	10.2	42	13.9	31	9.1	44	--	--	11.2	Aug-12
MSCI ACWI				4.3	38	3.8	48	9.8	45	13.4	37	8.7	51	8.2	59	10.8	Aug-12
Over/Under				0.1		0.4		0.4		0.5		0.4				0.4	
eV All Global Equity Net Median				3.6		3.6		9.0		12.4		8.7		8.6		11.2	Aug-12



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Private Equity	323,593,771	5.7	10.0	5.1	27	14.8	25	18.3	23	13.9	26	15.5	26	--	--	14.9	Jan-12
<i>Russell 3000 + 3%</i>				<u>7.9</u>	3	<u>13.0</u>	44	<u>21.1</u>	13	<u>20.5</u>	7	<u>16.8</u>	17	<u>15.3</u>	1	<u>19.0</u>	<i>Jan-12</i>
Over/Under				-2.8		1.8		-2.8		-6.6		-1.3				-4.1	
<i>Cambridge Associates Global All PE (Qtr Lag)</i>				4.4	39	12.7	48	17.3	32	11.7	54	13.2	50	9.6	56	13.2	<i>Jan-12</i>
<i>InvestorForce Public DB Private Eq Net Median</i>				3.9		12.3		15.7		12.4		13.1		10.0		13.3	<i>Jan-12</i>
Adams Street Global Fund Series	158,857,692	2.8		4.8	--	14.6	--	19.7	--	12.6	--	13.7	--	--	--	13.5	Jan-12
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>19.0</u>	<i>Jan-12</i>
Over/Under				-3.1		1.6		-1.4		-7.9		-3.1				-5.5	
Harbourvest	78,794,085	1.4		7.2	--	19.4	--	20.4	--	17.2	--	21.1	--	--	--	20.3	Aug-13
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>16.5</u>	<i>Aug-13</i>
Over/Under				-0.7		6.4		-0.7		-3.3		4.3				3.8	
Pantheon Global Secondary Funds	38,465,959	0.7		5.6	--	13.9	--	16.9	--	17.2	--	15.8	--	--	--	13.5	Jan-12
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>19.0</u>	<i>Jan-12</i>
Over/Under				-2.3		0.9		-4.2		-3.3		-1.0				-5.5	
Drive Capital Fund	5,207,167	0.1		3.1	--	-1.0	--	-3.9	--	--	--	--	--	--	--	-30.8	Sep-16
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>20.9</u>	<i>Sep-16</i>
Over/Under				-4.8		-14.0		-25.0								-51.7	
Abbott Secondary Opportunities	12,359,251	0.2		21.3	--	21.3	--	--	--	--	--	--	--	--	--	21.3	Jan-18
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>13.0</u>	<i>Jan-18</i>
Over/Under				13.4		8.3										8.3	
CVI Credit Value Fund	7,652,303	0.1		1.3	--	3.6	--	--	--	--	--	--	--	--	--	3.6	Jan-18
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>13.0</u>	<i>Jan-18</i>
Over/Under				-6.6		-9.4										-9.4	
Clearlake Capital Partners V	2,432,220	0.0		13.0	--	--	--	--	--	--	--	--	--	--	--	10.3	Mar-18
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>10.9</u>	<i>Mar-18</i>
Over/Under				5.1												-0.6	
Battery Ventures XII	1,623,398	0.0		-5.9	--	--	--	--	--	--	--	--	--	--	--	-5.9	Apr-18
<i>Russell 3000 + 3%</i>				<u>7.9</u>	--	<u>13.0</u>	--	<u>21.1</u>	--	<u>20.5</u>	--	<u>16.8</u>	--	<u>15.3</u>	--	<u>12.9</u>	<i>Apr-18</i>
Over/Under				-13.8												-18.8	

Private equity performance shown above is calculated using a time-weighted return methodology. Market values shown are cash-adjusted based on the current period's cash flows.

Adams Street Global Fund Series includes Adams Street 2010 U.S. Fund, 2010 Non-U.S. Developed Markets Fund, 2010 Non-U.S. Emerging Markets Fund, 2010 Direct Fund, 2013, and 2016 Global Fund.

Pantheon Global Secondary Funds includes Pantheon Global Secondary Fund IV and Global Secondary Fund V.



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Insight Venture Partners X	5,002,174	0.1		-6.2	--	--	--	--	--	--	--	--	--	--	--	-6.2	May-18
Russell 3000 + 3%				7.9	--	13.0	--	21.1	--	20.5	--	16.8	--	15.3	--	12.2	May-18
Over/Under				-14.1												-18.4	
GTCR Fund XII	783,932	0.0		-38.7	--	--	--	--	--	--	--	--	--	--	--	-38.7	Jun-18
Russell 3000 + 3%				7.9	--	13.0	--	21.1	--	20.5	--	16.8	--	15.3	--	8.9	Jun-18
Over/Under				-46.6												-47.6	
Buenaventure One, LLC	12,415,590	0.2		0.0	--	--	--	--	--	--	--	--	--	--	--	0.0	Jul-18
Russell 3000 + 3%				7.9	--	13.0	--	21.1	--	20.5	--	16.8	--	15.3	--	7.9	Jul-18
Over/Under				-7.9												-7.9	

*One or more accounts have been excluded from the composite for the purposes of performance calculations and market value.



VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION PRIVATE EQUITY LIMITED PARTNERSHIP PERFORMANCE

Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date ¹	Outstanding Commitment ¹	Call Ratio	Add'l Fees ²	Distributions to Date	Valuation	Total Value	Net Benefit	IRR	Since Inception	
													Distributions to Paid In Multiple (DPI)	Total Value to Paid In Multiple (TVPI)
Abbott Secondary Opportunities, LP.	2017	12/21/2017	\$25,000,000	\$13,348,706	\$12,014,011	53%	--	\$2,000,000	\$12,359,249	\$14,359,249	\$1,010,543	28.5%	0.15x	1.08x
Adams Street 2010 U.S. Fund	2010	5/21/2010	\$42,500,000	\$37,442,500	\$5,057,500	88%	\$15,213	\$24,264,925	\$37,219,346	\$61,484,271	\$24,026,558	14.1%	0.65x	1.64x
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	\$25,500,000	\$22,325,249	\$3,174,751	88%	\$1,589	\$14,463,457	\$18,313,844	\$32,777,301	\$10,450,463	11.5%	0.65x	1.47x
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	\$8,500,000	\$7,378,000	\$1,122,000	87%	\$0	\$2,030,308	\$9,687,102	\$11,717,410	\$4,339,410	11.8%	0.28x	1.59x
Adams Street 2010 Direct Fund	2010	5/21/2010	\$8,500,000	\$8,046,100	\$453,900	95%	\$6,697	\$8,862,974	\$5,084,280	\$13,947,254	\$5,894,457	13.0%	1.1x	1.73x
Adams Street 2013 Global Fund	2013	6/27/2013	\$75,000,000	\$56,625,000	\$18,375,000	76%	\$10,728	\$8,075,792	\$66,678,199	\$74,753,991	\$18,118,263	10.6%	0.14x	1.32x
Adams Street 2016 Global Fund	2016	12/22/2016	\$60,000,000	\$21,150,000	\$38,850,000	35%	\$0	\$2,082,389	\$22,082,443	\$24,164,832	\$3,014,832	20.8%	0.1x	1.14x
Battery Ventures XII	2018	2/1/2018	\$9,050,000	\$1,104,100	\$7,945,900	12%	\$0	\$0	\$1,020,640	\$1,020,640	-\$83,460	-22.3%	0x	0.92x
Battery Ventures XII Side Fund	2018	2/1/2018	\$5,050,000	\$616,100	\$4,433,900	12%	\$0	\$0	\$602,758	\$602,758	-\$13,342	-9.3%	0x	0.98x
Buenaventure One, LLC	2018	1/5/2018	\$57,250,000	\$12,415,590	\$44,834,410	22%	--	--	\$12,415,590	\$12,415,590	--	0.0%	--	1x
CapVest Equity Partners IV	2018	7/11/2018	\$12,790,323	--	\$12,790,323	0%	--	--	--	--	--	--	--	--
Clearlake Capital Partners V	2017	12/22/2017	\$9,950,000	\$2,189,963	\$7,760,847	22%	\$46,158	\$2,397	\$2,432,220	\$2,434,617	\$198,496	26.1%	0x	1.11x
CVI Credit Value Fund IV	2017	12/31/2017	\$30,000,000	\$7,500,000	\$22,500,000	25%	--	\$6,147	\$7,618,286	\$7,624,433	\$124,433	4.5%	0x	1.02x
Drive Capital Fund II	2016	9/1/2016	\$15,000,000	\$5,661,809	\$9,341,401	38%	\$3,210	\$0	\$5,207,167	\$5,207,167	-\$457,852	-8.5%	0x	0.92x
ECl 11	2018	7/5/2018	\$9,768,000	--	\$9,768,000	0%	--	--	--	--	--	--	--	--
GGV Capital VII	2018	8/15/2018	\$10,160,000	--	\$10,160,000	0%	--	--	--	--	--	--	--	--
GGV Capital VII Plus	2018	8/15/2018	\$2,540,000	--	\$2,540,000	0%	--	--	--	--	--	--	--	--
GGV Discovery II	2018	8/15/2018	\$2,100,000	--	\$2,100,000	0%	--	--	--	--	--	--	--	--
GTCR Fund XII	2017	9/29/2017	\$30,000,000	\$1,548,000	\$28,547,792	5%	--	\$264,502	\$493,991	\$758,493	-\$789,507	-97.3%	0.17x	0.49x
Insight Venture Partners X	2017	10/13/2017	\$25,000,000	\$5,250,000	\$19,750,000	21%	--	--	\$5,002,175	\$5,002,175	-\$247,825	-17.5%	--	0.95x
HarbourVest - Dover Street VIII	2013	5/30/2013	\$67,500,000	\$60,834,954	\$6,750,000	90%	\$84,954	\$64,366,660	\$26,586,014	\$90,952,674	\$30,032,766	20.7%	1.06x	1.5x
HarbourVest - Dover Street IX	2016	12/16/2016	\$60,000,000	\$25,200,000	\$34,800,000	42%	\$0	\$6,528,406	\$23,984,067	\$30,512,473	\$5,312,473	33.5%	0.26x	1.21x
HarbourVest - PRTNS CO INVEST IV L.P.	2017	6/2/2017	\$30,000,000	\$21,156,100	\$9,040,640	71%	\$0	\$0	\$23,621,904	\$23,621,904	\$2,465,804	11.8%	0x	1.12x
HarbourVest - PRTNS CO INVEST V L.P.	2018	7/31/2018	\$35,000,000	--	\$35,000,000	0%	--	--	--	--	--	--	--	--
Hellman & Friedman Capital Partners IX	2018	9/28/2018	\$19,800,000	--	\$19,800,000	0%	--	--	--	--	--	--	--	--
M/C Partners VIII	2018	4/2/2018	\$10,000,000	--	\$10,000,000	0%	--	--	--	--	--	--	--	--
Pantheon Global Secondary Fund IV	2010	8/20/2010	\$15,000,000	\$9,960,000	\$5,040,000	66%	\$0	\$12,450,001	\$3,194,820	\$15,644,821	\$5,684,821	14.0%	1.25x	1.57x
Pantheon Global Secondary Fund V	2015	2/26/2015	\$50,000,000	\$32,141,509	\$17,858,491	64%	(\$162,514)	\$8,412,603	\$33,234,322	\$41,646,925	\$9,667,930	18.0%	0.26x	1.3x
The Resolute Fund IV	2018	5/2/2018	\$20,000,000	--	\$20,000,000	0%	--	--	\$75,113	\$75,113	--	--	--	--
Riverside Micro-Cap Fund V	2018	8/21/2018	\$10,000,000	--	\$10,000,000	0%	--	--	--	--	--	--	--	--
Total VCERA Private Equity Program	--	5/21/2010	\$780,958,323	\$351,893,680	\$429,808,866	45%	\$6,035	\$153,810,561	\$316,913,530	\$470,724,091	\$118,749,263	14.4%	0.44x	1.34x

1. Includes recycled/recallable distributions received to date.

2. Add'l Fees represents notional interest paid/(received).

2. Add'l Fees for Pantheon Global Secondary Fund V includes notional interest paid/(received) and management fee rebates paid to VCERA.

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

Performance shown is based on 9/30/2018 recent statement of investments produced by Abbott Capital.



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total US Fixed Income	999,261,399	17.6	20.0	0.1	74	-1.3	81	-0.9	70	2.5	31	2.4	48	5.8	10	5.7	Feb-94
BBgBarc US Aggregate TR				0.0	86	-1.6	90	-1.2	91	1.3	56	2.2	53	3.8	59	5.1	Feb-94
Over/Under				0.1		0.3		0.3		1.2		0.2		2.0		0.6	
InvestorForce Public DB US Fix Inc Net Median				0.2		-0.7		-0.7		1.6		2.4		4.1		5.4	Feb-94
BlackRock U.S. Debt Fund	269,705,929	4.7		0.0	77	-1.6	80	-1.2	82	1.4	67	2.2	56	3.9	59	5.0	Nov-95
BBgBarc US Aggregate TR				0.0	78	-1.6	80	-1.2	83	1.3	68	2.2	58	3.8	60	4.9	Nov-95
Over/Under				0.0		0.0		0.0		0.1		0.0		0.1		0.1	
eV All US Fixed Inc Net Median				0.4		-0.3		-0.1		2.0		2.4		4.3		4.8	Nov-95
Western	292,447,760	5.1		0.0	81	-2.1	88	-1.4	88	2.6	42	3.3	39	5.7	31	5.9	Dec-96
BBgBarc US Aggregate TR				0.0	78	-1.6	80	-1.2	83	1.3	68	2.2	58	3.8	60	4.9	Dec-96
Over/Under				0.0		-0.5		-0.2		1.3		1.1		1.9		1.0	
eV All US Fixed Inc Net Median				0.4		-0.3		-0.1		2.0		2.4		4.3		4.9	Dec-96
Reams	307,299,976	5.4		-0.1	87	-0.7	60	-0.7	66	2.4	44	1.2	84	5.9	29	5.1	Sep-01
Reams Custom Index				0.6	37	1.7	18	2.1	19	1.3	69	0.9	91	3.3	70	3.8	Sep-01
Over/Under				-0.7		-2.4		-2.8		1.1		0.3		2.6		1.3	
BBgBarc US Aggregate TR				0.0	78	-1.6	80	-1.2	83	1.3	68	2.2	58	3.8	60	4.1	Sep-01
3-Month LIBOR + 3%				1.3	20	3.9	5	5.1	5	4.3	25	3.9	30	3.7	61	4.8	Sep-01
eV All US Fixed Inc Net Median				0.4		-0.3		-0.1		2.0		2.4		4.3		4.3	Sep-01
Loomis Strategic Alpha	47,001,422	0.8		0.7	32	1.7	18	2.3	17	3.4	33	2.8	43	--	--	2.7	Jul-13
BBgBarc US Aggregate TR				0.0	78	-1.6	80	-1.2	83	1.3	68	2.2	58	3.8	60	2.2	Jul-13
Over/Under				0.7		3.3		3.5		2.1		0.6		0.5		0.5	
3-Month LIBOR + 3%				1.3	20	3.9	5	5.1	5	4.3	25	3.9	30	3.7	61	3.9	Jul-13
eV All US Fixed Inc Net Median				0.4		-0.3		-0.1		2.0		2.4		4.3		2.5	Jul-13
Loomis Sayles Multi Strategy	82,806,312	1.5		1.0	25	-0.8	61	0.0	49	4.8	21	4.4	23	8.1	13	6.2	Jul-05
Loomis Custom Index				0.7	32	-0.3	50	0.1	47	3.3	35	3.1	41	5.4	34	4.8	Jul-05
Over/Under				0.3		-0.5		-0.1		1.5		1.3		2.7		1.4	
BBgBarc US Govt/Credit TR				0.1	76	-1.8	84	-1.4	86	1.4	63	2.2	56	4.0	57	3.8	Jul-05
eV All US Fixed Inc Net Median				0.4		-0.3		-0.1		2.0		2.4		4.3		3.9	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

As of January 2016, Loomis Strategic Alpha was moved from the Total Global Fixed Income composite to the Total US Fixed Income composite.



Ventura County Employees' Retirement Association

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Real Estate	426,285,322	7.5	7.0	1.6	59	5.2	70	7.4	67	7.0	89	9.0	82	3.4	86	7.8	Mar-94
<i>NCREIF ODCE Net</i>				<u>1.9</u>	47	<u>5.8</u>	51	<u>7.7</u>	57	<u>7.8</u>	65	<u>9.7</u>	65	<u>4.6</u>	66	<u>8.1</u>	<i>Mar-94</i>
Over/Under				-0.3		-0.6		-0.3		-0.8		-0.7		-1.2		-0.3	
<i>InvestorForce Public DB Real Estate Pub+Priv Net Median</i>				1.8		5.8		7.9		8.6		10.1		5.2		8.9	<i>Mar-94</i>
Prudential Real Estate	153,766,357	2.7		2.3	--	6.4	--	8.3	--	8.2	--	10.4	--	4.2	--	6.3	Jun-04
<i>NCREIF ODCE Net</i>				<u>1.9</u>	--	<u>5.8</u>	--	<u>7.7</u>	--	<u>7.8</u>	--	<u>9.7</u>	--	<u>4.6</u>	--	<u>7.1</u>	<i>Jun-04</i>
Over/Under				0.4		0.6		0.6		0.4		0.7		-0.4		-0.8	
<i>NCREIF ODCE</i>				2.1	--	6.5	--	8.7	--	8.8	--	10.7	--	5.6	--	8.1	<i>Jun-04</i>
UBS Real Estate	272,518,965	4.8		1.2	--	4.6	--	6.8	--	6.3	--	8.1	--	4.6	--	7.4	Mar-03
<i>NCREIF ODCE Net</i>				<u>1.9</u>	--	<u>5.8</u>	--	<u>7.7</u>	--	<u>7.8</u>	--	<u>9.7</u>	--	<u>4.6</u>	--	<u>7.3</u>	<i>Mar-03</i>
Over/Under				-0.7		-1.2		-0.9		-1.5		-1.6		0.0		0.1	
<i>NCREIF ODCE</i>				2.1	--	6.5	--	8.7	--	8.8	--	10.7	--	5.6	--	8.3	<i>Mar-03</i>

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	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Real Assets	436,743,206	7.7	10.0	0.6	--	0.6	--	3.4	--	6.4	--	3.4	--	--	--	4.5	Apr-13
<i>CPI + 4% (Unadjusted)</i>				<u>1.2</u>	--	<u>5.4</u>	--	<u>6.4</u>	--	<u>6.1</u>	--	<u>6.7</u>	--	--	--	<u>6.3</u>	<i>Apr-13</i>
Over/Under				-0.6		-4.8		-3.0		0.3		-3.3				-1.8	
Bridgewater All Weather Fund	312,911,975	5.5		-0.3	--	-0.5	--	3.6	--	6.6	--	4.4	--	--	--	4.8	Aug-13
<i>CPI + 5% (Unadjusted)</i>				<u>1.4</u>	--	<u>6.2</u>	--	<u>7.4</u>	--	<u>7.1</u>	--	<u>6.6</u>	--	--	--	<u>6.6</u>	<i>Aug-13</i>
Over/Under				-1.7		-6.7		-3.8		-0.5		-2.2				-1.8	
Tortoise Energy Infrastructure	123,831,231	2.2		2.8	--	3.6	--	2.8	--	5.8	--	1.2	--	--	--	1.8	Apr-13
<i>Wells Fargo MLP Index</i>				<u>5.2</u>	--	<u>3.6</u>	--	<u>2.9</u>	--	<u>3.4</u>	--	<u>-2.2</u>	--	--	--	<u>-1.9</u>	<i>Apr-13</i>
Over/Under				-2.4		0.0		-0.1		2.4		3.4				3.7	
Overlay	154,430,335	2.7	0.0														
Parametric	39,293,629	0.7															
Abbott Capital Cash	115,136,707	2.0															

Overlay performance is not applicable on an individual account level.

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



MANAGER DUE DILIGENCE

NEPC, LLC

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 Russell 1000 Index	-	-	-	-		10/2013
Western U.S. Index Plus	Top Quartile	-	-	-		6/2014
BlackRock Russell 2500 Index	-	-	-	-		10/2013
BlackRock MSCI ACWI ex-U.S. Index	-	-	-	-		10/2013
Sprucegrove	-	-	-	-		N/A
Hexavest	-	-	-	Watch (Board Driven)	On Watch for Performance Issues	1/2013
Walter Scott	Top Quartile	-	-	-		10/2012
BlackRock MSCI ACWI Index	-	-	-	-		10/2013
Adams Street	N/A	-	-	-		11/2013
HarbourVest	N/A	-	-	-		3/2014
Pantheon	N/A	-	-	-		1/2015
Drive	N/A	-	-	-		
Abbott Secondary Opps.	N/A	-	-	-		
Carval Credit Value	N/A	-	-	-		
Battery Ventures	N/A	-	-	-		
Buenaventure One	N/A	-	-	-		
Clearlake Capital	N/A	-	-	-		
BlackRock U.S. Debt Fund	Bottom Quartile	-	-	-		10/2013
Western	Bottom Quartile	-	-	-		6/2014
Reams	Bottom Quartile	-	-	-		11/2013



DUE DILIGENCE MONITOR

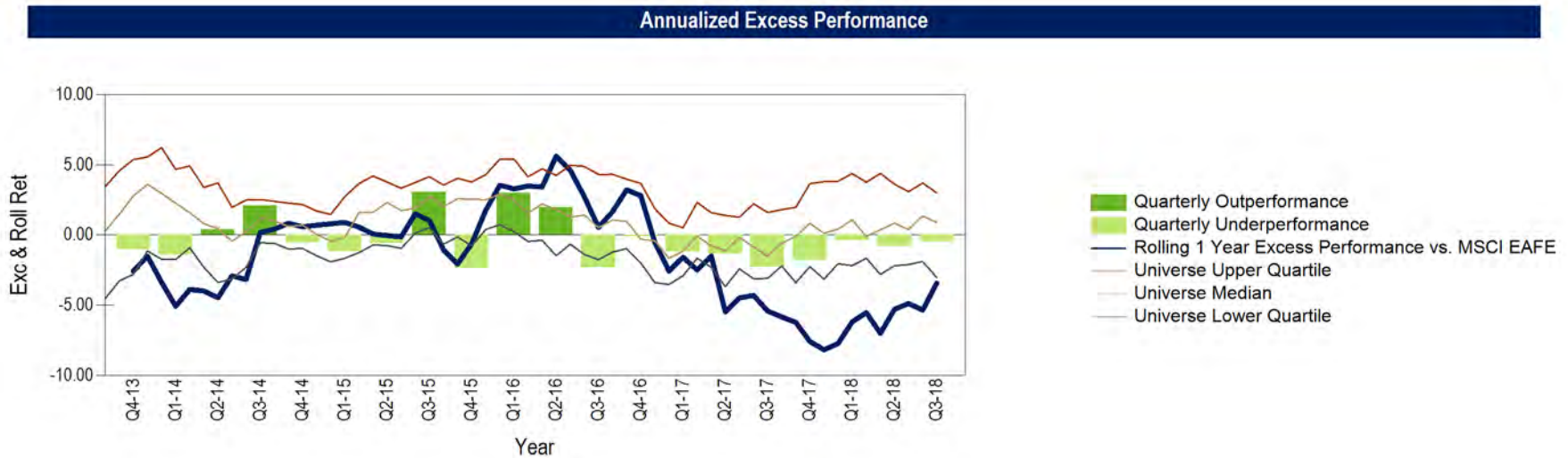
	Performance (Recent Quarter)	Changes/ Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
Loomis Sayles Strategic Alpha	-	-	-	-		11/2013
Loomis Sayles Multi-Sector Full Discretion	Top Quartile	-	-	-		11/2013
Prudential	N/A	-	-	-		7/2014
RREEF	N/A	-	-	-		7/2013
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

No Action	Informational items have surfaced; no action is recommended.
Watch	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.
Hold	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.
Client Review	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.
Terminate	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.



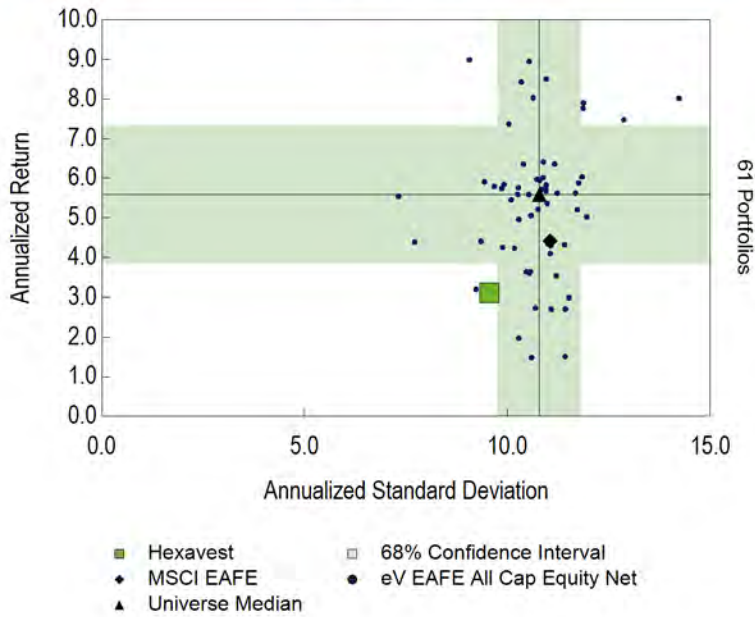
HEXAVEST



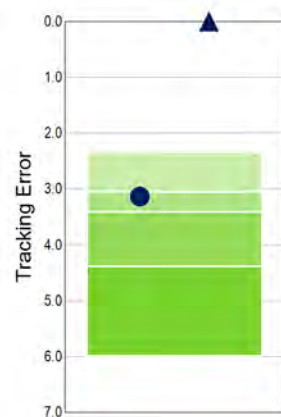
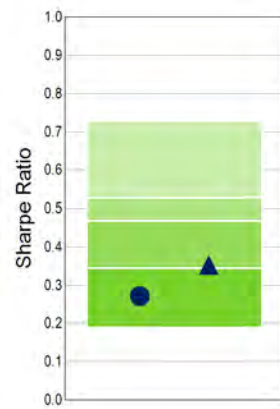
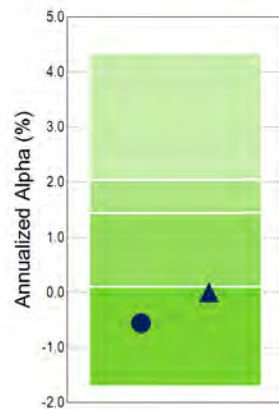
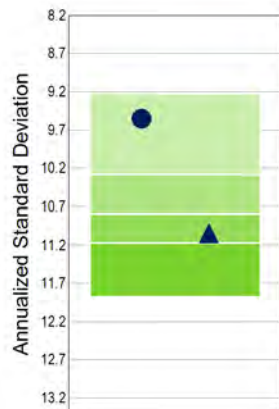
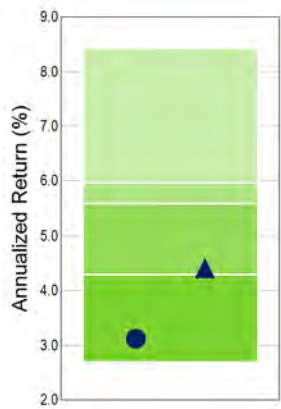
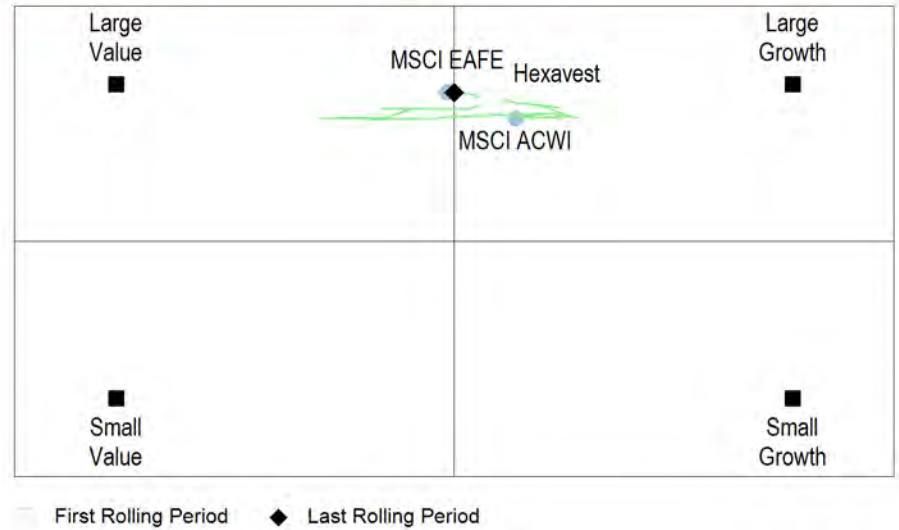
Ventura County Employees' Retirement Association

HEXAVEST

5 Year Risk Return



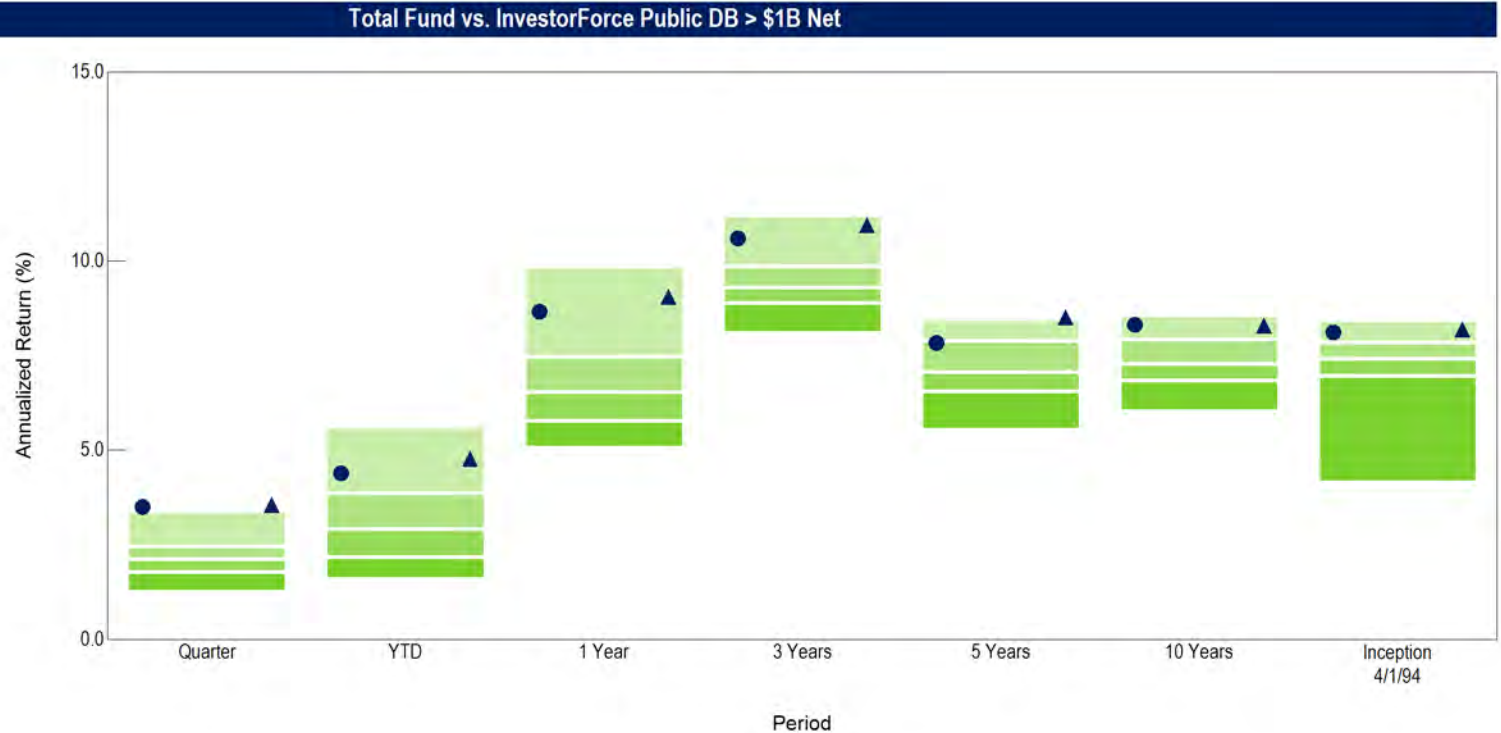
5 Year Style Map



- Hexavest
- ▲ MSCI EAFE
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile



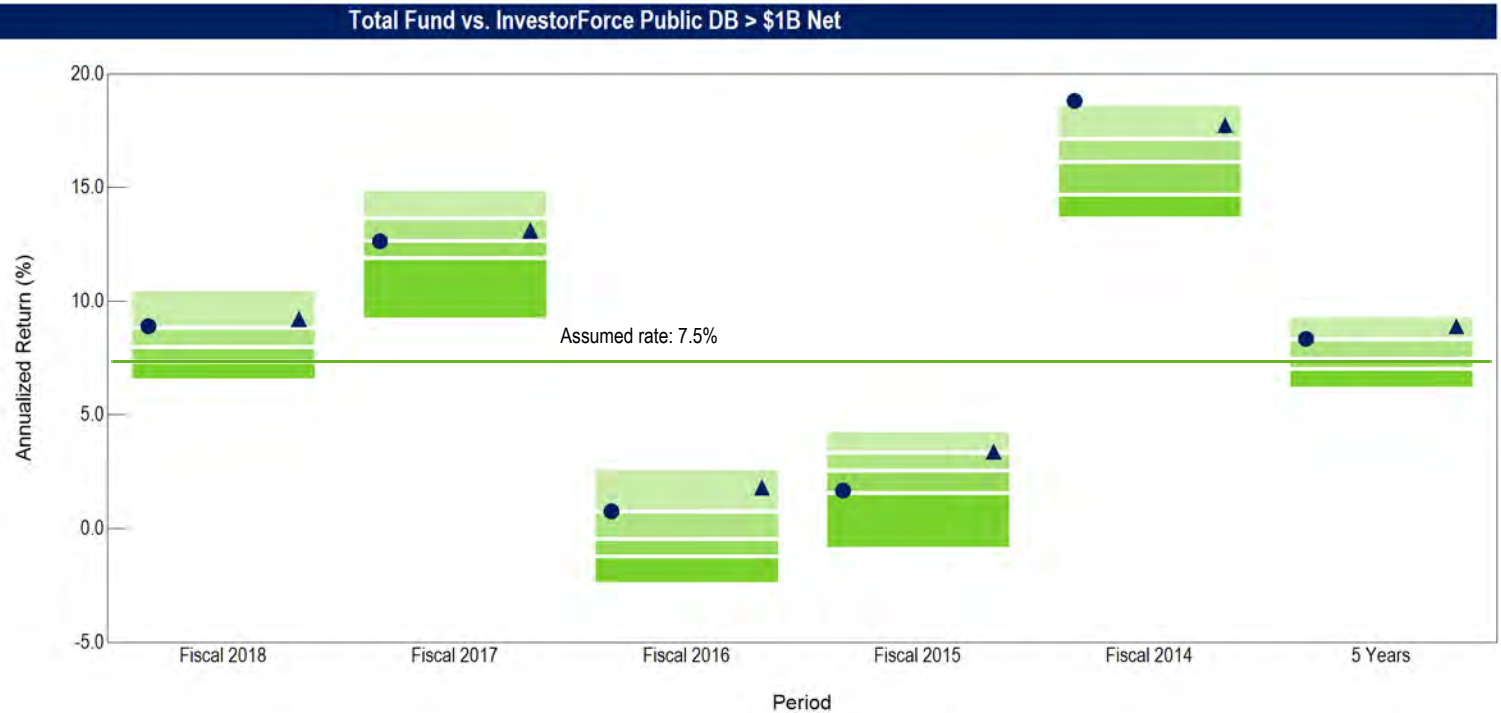
TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE



	Return (Rank)													
5th Percentile	3.4	5.6	9.8	11.2	8.5	8.6	8.4							
25th Percentile	2.5	3.9	7.5	9.9	7.9	7.9	7.9							
Median	2.1	2.9	6.5	9.3	7.1	7.3	7.4							
75th Percentile	1.8	2.2	5.8	8.9	6.6	6.9	7.0							
95th Percentile	1.3	1.6	5.1	8.1	5.5	6.0	4.2							
# of Portfolios	63	62	62	62	60	53	34							
● Total Fund	3.5	(2)	4.4	(13)	8.7	(8)	10.6	(8)	7.8	(28)	8.3	(13)	8.1	(18)
▲ Policy Index	3.6	(2)	4.8	(9)	9.1	(7)	10.9	(7)	8.5	(5)	8.3	(14)	8.2	(16)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

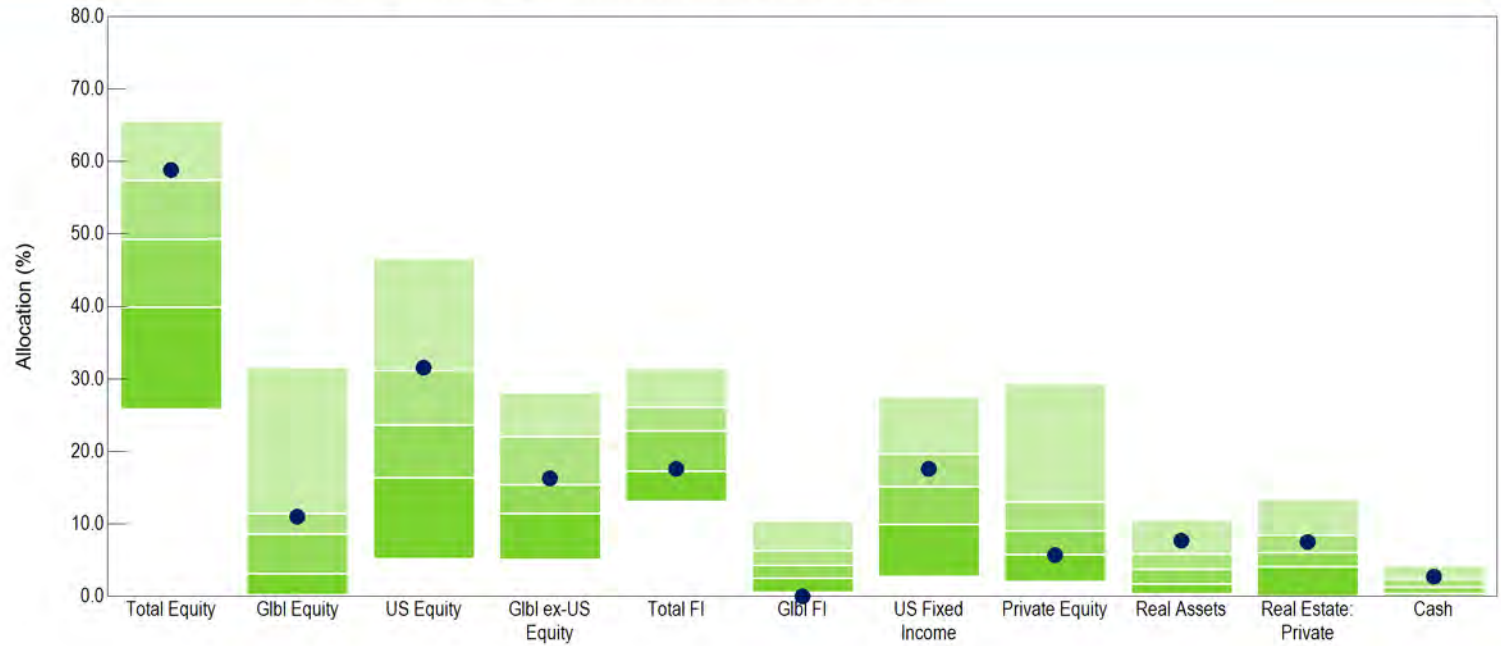


	Fiscal 2018		Fiscal 2017		Fiscal 2016		Fiscal 2015		Fiscal 2014		5 Years	
Return (Rank)												
5th Percentile	10.5		14.9		2.7		4.3		18.7		9.3	
25th Percentile	8.8		13.7		0.8		3.3		17.2		8.3	
Median	8.0		12.7		-0.5		2.6		16.1		7.5	
75th Percentile	7.3		11.9		-1.2		1.6		14.7		7.0	
95th Percentile	6.5		9.2		-2.4		-0.9		13.6		6.2	
# of Portfolios	51		65		55		53		43		51	
● Total Fund	8.9	(23)	12.6	(53)	0.8	(26)	1.7	(71)	18.8	(4)	8.3	(23)
▲ Policy Index	9.2	(13)	13.1	(37)	1.8	(9)	3.4	(25)	17.7	(19)	8.9	(8)



TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

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



	Allocation (Rank)																						
5th Percentile	65.6	31.6	46.6	28.1	31.5	10.5	27.5	29.4	10.6	13.3	4.3	--	--	--									
25th Percentile	57.4	11.5	31.2	22.2	26.1	6.4	19.7	13.1	5.9	8.5	2.5	--	--	--									
Median	49.3	8.6	23.7	15.5	22.9	4.4	15.2	9.1	3.9	6.1	1.3	--	--	--									
75th Percentile	40.0	3.2	16.5	11.5	17.3	2.6	10.1	5.9	1.8	4.2	0.5	--	--	--									
95th Percentile	25.9	0.3	5.2	5.1	13.2	0.6	2.8	2.2	0.4	0.2	0.1	--	--	--									
# of Portfolios	58	22	48	53	59	26	49	51	31	48	59	--	--	--									
● Total Fund	58.8	(18)	11.0	(27)	31.5	(24)	16.3	(48)	17.6	(73)	0.0	(99)	17.6	(36)	5.7	(77)	7.7	(13)	7.5	(38)	2.7	(24)	--



Ventura County Employees' Retirement Association

TOTAL FUND CALENDAR YEAR RETURN SUMMARY

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total Fund	16.0	8.6	-0.9	6.3	18.1	14.0	0.3	15.1	24.2	-30.9	7.0
Policy Index	16.3	8.4	0.8	6.8	17.2	12.9	0.5	13.2	21.0	-27.1	8.5
Over/Under	-0.3	0.2	-1.7	-0.5	0.9	1.1	-0.2	1.9	3.2	-3.8	-1.5
60% MSCI ACWI (Net) / 40% FTSE WGBI	17.1	5.5	-2.6	2.3	11.4	10.3	-1.8	10.0	21.3	-24.1	11.6
60% S&P 500 / 40% BBgBarc Aggregate	14.2	8.3	1.3	10.6	17.6	11.3	4.7	12.1	18.4	-22.1	6.2
Total Fund ex Parametric*	15.9	8.6	-0.9	6.3	17.8	13.7	0.6	14.5	23.3	-30.3	6.9
Total Fund ex Private Equity	15.9	8.6	-1.4	6.1	16.2	13.3	--	--	--	--	--
Policy Index	16.3	8.4	0.8	6.8	17.2	12.9	0.5	13.2	21.0	-27.1	8.5
Over/Under	-0.4	0.2	-2.2	-0.7	-1.0	0.4					
Total US Equity	21.4	13.0	0.5	12.5	34.0	16.9	0.9	18.5	29.2	-40.0	4.3
Russell 3000	21.1	12.7	0.4	12.4	33.5	16.4	1.1	17.5	28.6	-37.2	5.5
Over/Under	0.3	0.3	0.1	0.1	0.5	0.5	-0.2	1.0	0.6	-2.8	-1.2
Western U.S. Index Plus	22.7	13.8	1.1	14.2	32.9	20.7	1.0	24.7	42.6	-56.3	--
S&P 500	21.8	12.0	1.4	13.7	32.4	16.0	2.1	15.1	26.5	-37.0	5.5
Over/Under	0.9	1.8	-0.3	0.5	0.5	4.7	-1.1	9.6	16.1	-19.3	
Blackrock Russell 1000 Index	--	--	--	--	--	--	--	--	--	--	--
Russell 1000	21.7	12.1	0.9	13.2	33.1	16.4	1.5	16.1	28.4	-37.6	5.8
Over/Under											
Blackrock Russell 2500 Index	--	--	--	--	--	--	--	--	--	--	--
Russell 2500	16.8	17.6	-2.9	7.1	36.8	17.9	-2.5	26.7	34.4	-36.8	1.4
Over/Under											



Ventura County Employees' Retirement Association

TOTAL FUND CALENDAR YEAR RETURN SUMMARY

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total Non-US Equity	26.5	6.6	-4.8	-3.6	16.3	17.9	-13.6	13.5	37.4	-44.1	11.7
<i>MSCI ACWI ex USA</i>	<i>27.2</i>	<i>4.5</i>	<i>-5.7</i>	<i>-3.9</i>	<i>15.3</i>	<i>16.8</i>	<i>-13.7</i>	<i>11.2</i>	<i>41.4</i>	<i>-45.5</i>	<i>16.7</i>
Over/Under	<i>-0.7</i>	<i>2.1</i>	<i>0.9</i>	<i>0.3</i>	<i>1.0</i>	<i>1.1</i>	<i>0.1</i>	<i>2.3</i>	<i>-4.0</i>	<i>1.4</i>	<i>-5.0</i>
<i>MSCI EAFE</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>	<i>-4.9</i>	<i>22.8</i>	<i>17.3</i>	<i>-12.1</i>	<i>7.8</i>	<i>31.8</i>	<i>-43.4</i>	<i>11.2</i>
<i>MSCI ACWI ex USA NR LCL</i>	<i>18.2</i>	<i>7.0</i>	<i>1.9</i>	<i>6.0</i>	<i>20.1</i>	<i>16.3</i>	<i>-12.2</i>	<i>7.6</i>	<i>31.7</i>	<i>-40.9</i>	<i>8.5</i>
<i>MSCI EAFE NR LCL</i>	<i>15.2</i>	<i>5.3</i>	<i>5.3</i>	<i>5.9</i>	<i>26.9</i>	<i>17.3</i>	<i>-12.2</i>	<i>4.8</i>	<i>24.7</i>	<i>-40.3</i>	<i>3.5</i>
BlackRock ACWI ex-U.S. Index	28.1	4.7	-4.5	-3.8	16.0	17.2	-14.1	12.8	43.1	-45.6	--
<i>MSCI ACWI ex USA IMI</i>	<i>27.8</i>	<i>4.4</i>	<i>-4.6</i>	<i>-3.9</i>	<i>15.8</i>	<i>17.0</i>	<i>-14.3</i>	<i>12.7</i>	<i>43.6</i>	<i>-46.0</i>	<i>16.1</i>
Over/Under	<i>0.3</i>	<i>0.3</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	<i>0.2</i>	<i>0.2</i>	<i>0.1</i>	<i>-0.5</i>	<i>0.4</i>	
<i>MSCI ACWI ex USA NR LCL</i>	<i>18.2</i>	<i>7.0</i>	<i>1.9</i>	<i>6.0</i>	<i>20.1</i>	<i>16.3</i>	<i>-12.2</i>	<i>7.6</i>	<i>31.7</i>	<i>-40.9</i>	<i>8.5</i>
Sprucegrove	27.5	11.9	-9.1	-3.2	17.1	17.2	-10.7	18.8	36.2	-42.4	5.8
<i>MSCI ACWI ex USA</i>	<i>27.2</i>	<i>4.5</i>	<i>-5.7</i>	<i>-3.9</i>	<i>15.3</i>	<i>16.8</i>	<i>-13.7</i>	<i>11.2</i>	<i>41.4</i>	<i>-45.5</i>	<i>16.7</i>
Over/Under	<i>0.3</i>	<i>7.4</i>	<i>-3.4</i>	<i>0.7</i>	<i>1.8</i>	<i>0.4</i>	<i>3.0</i>	<i>7.6</i>	<i>-5.2</i>	<i>3.1</i>	<i>-10.9</i>
<i>MSCI EAFE</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>	<i>-4.9</i>	<i>22.8</i>	<i>17.3</i>	<i>-12.1</i>	<i>7.8</i>	<i>31.8</i>	<i>-43.4</i>	<i>11.2</i>
<i>MSCI ACWI ex USA NR LCL</i>	<i>18.2</i>	<i>7.0</i>	<i>1.9</i>	<i>6.0</i>	<i>20.1</i>	<i>16.3</i>	<i>-12.2</i>	<i>7.6</i>	<i>31.7</i>	<i>-40.9</i>	<i>8.5</i>
<i>MSCI EAFE NR LCL</i>	<i>15.2</i>	<i>5.3</i>	<i>5.3</i>	<i>5.9</i>	<i>26.9</i>	<i>17.3</i>	<i>-12.2</i>	<i>4.8</i>	<i>24.7</i>	<i>-40.3</i>	<i>3.5</i>
Hexavest	17.4	3.8	-1.4	-4.3	20.2	13.7	-9.6	--	--	--	--
<i>MSCI EAFE</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>	<i>-4.9</i>	<i>22.8</i>	<i>17.3</i>	<i>-12.1</i>	<i>7.8</i>	<i>31.8</i>	<i>-43.4</i>	<i>11.2</i>
Over/Under	<i>-7.6</i>	<i>2.8</i>	<i>-0.6</i>	<i>0.6</i>	<i>-2.6</i>	<i>-3.6</i>	<i>2.5</i>				
<i>MSCI EAFE NR LCL</i>	<i>15.2</i>	<i>5.3</i>	<i>5.3</i>	<i>5.9</i>	<i>26.9</i>	<i>17.3</i>	<i>-12.2</i>	<i>4.8</i>	<i>24.7</i>	<i>-40.3</i>	<i>3.5</i>
Walter Scott	26.6	5.1	-0.4	-3.5	11.8	20.4	-9.3	--	--	--	--
<i>MSCI ACWI ex USA</i>	<i>27.2</i>	<i>4.5</i>	<i>-5.7</i>	<i>-3.9</i>	<i>15.3</i>	<i>16.8</i>	<i>-13.7</i>	<i>11.2</i>	<i>41.4</i>	<i>-45.5</i>	<i>16.7</i>
Over/Under	<i>-0.6</i>	<i>0.6</i>	<i>5.3</i>	<i>0.4</i>	<i>-3.5</i>	<i>3.6</i>	<i>4.4</i>				
<i>MSCI ACWI ex USA NR LCL</i>	<i>18.2</i>	<i>7.0</i>	<i>1.9</i>	<i>6.0</i>	<i>20.1</i>	<i>16.3</i>	<i>-12.2</i>	<i>7.6</i>	<i>31.7</i>	<i>-40.9</i>	<i>8.5</i>
<i>MSCI EAFE</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>	<i>-4.9</i>	<i>22.8</i>	<i>17.3</i>	<i>-12.1</i>	<i>7.8</i>	<i>31.8</i>	<i>-43.4</i>	<i>11.2</i>
Total Global Equity	24.5	9.0	-3.8	1.9	22.0	14.4	-3.9	11.4	17.8	-37.3	11.3
<i>MSCI ACWI</i>	<i>24.0</i>	<i>7.9</i>	<i>-2.4</i>	<i>4.2</i>	<i>22.8</i>	<i>16.1</i>	<i>-7.3</i>	<i>12.7</i>	<i>34.6</i>	<i>-42.2</i>	<i>11.7</i>
Over/Under	<i>0.5</i>	<i>1.1</i>	<i>-1.4</i>	<i>-2.3</i>	<i>-0.8</i>	<i>-1.7</i>	<i>3.4</i>	<i>-1.3</i>	<i>-16.8</i>	<i>4.9</i>	<i>-0.4</i>
BlackRock MSCI ACWI Equity Index	24.5	8.4	-2.0	4.6	23.2	--	--	--	--	--	--
<i>MSCI ACWI</i>	<i>24.0</i>	<i>7.9</i>	<i>-2.4</i>	<i>4.2</i>	<i>22.8</i>	<i>16.1</i>	<i>-7.3</i>	<i>12.7</i>	<i>34.6</i>	<i>-42.2</i>	<i>11.7</i>
Over/Under	<i>0.5</i>	<i>0.5</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>						



Ventura County Employees' Retirement Association

TOTAL FUND CALENDAR YEAR RETURN SUMMARY

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total Private Equity	16.9	7.6	14.7	19.0	17.9	10.3	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under	-7.8	-8.5	11.2	3.1	-19.6	-9.6					
Cambridge Associates Global All PE (Qtr Lag)	15.9	8.5	7.0	16.3	15.9	13.0	12.6	17.1	-9.3	-7.2	34.8
Adams Street Global Fund Series	13.4	7.1	10.3	19.6	15.7	10.8	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under	-11.3	-9.0	6.8	3.7	-21.8	-9.1					
Harbourvest	23.2	6.7	28.5	18.5	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under	-1.5	-9.4	25.0	2.6							
Pantheon Global Secondary Funds	24.1	15.5	6.4	16.7	14.9	0.9	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under	-0.6	-0.6	2.9	0.8	-22.6	-19.0					
Drive Capital Fund	-33.7	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under	-58.4										
Abbott Secondary Opportunities	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
CVI Credit Value Fund	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
Clearlake Capital Partners V	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
Battery Ventures XII	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
Insight Venture Partners X	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
GTCR Fund XII	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											
Buenaventure One, LLC	--	--	--	--	--	--	--	--	--	--	--
Russell 3000 + 3%	24.7	16.1	3.5	15.9	37.5	19.9	4.1	20.4	32.1	-35.3	8.3
Over/Under											



Ventura County Employees' Retirement Association

TOTAL FUND CALENDAR YEAR RETURN SUMMARY

	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total US Fixed Income	4.4	4.9	0.3	3.0	-0.1	9.6	7.3	10.6	25.6	-8.7	6.3
BBgBarc US Aggregate TR	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
Over/Under	0.9	2.3	-0.2	-3.0	1.9	5.4	-0.5	4.1	19.7	-13.9	-0.7
BlackRock U.S. Debt Fund	3.6	2.7	0.6	6.2	-2.0	4.3	7.9	6.7	6.0	5.4	7.0
BBgBarc US Aggregate TR	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
Over/Under	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.0
Western	6.0	4.1	0.9	7.4	-1.2	9.7	7.3	11.3	18.9	-8.9	4.8
BBgBarc US Aggregate TR	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
Over/Under	2.5	1.5	0.4	1.4	0.8	5.5	-0.5	4.8	13.0	-14.1	-2.2
Reams	2.5	6.0	0.3	-3.6	2.5	10.0	8.4	10.0	33.6	-11.0	7.4
Reams Custom Index	1.3	0.7	0.3	0.2	-0.5	4.2	7.8	6.5	5.9	5.2	7.0
Over/Under	1.2	5.3	0.0	-3.8	3.0	5.8	0.6	3.5	27.7	-16.2	0.4
BBgBarc US Aggregate TR	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
3-Month LIBOR + 3%	4.4	3.8	3.3	3.2	3.3	3.5	3.3	3.4	3.8	6.2	8.7
Loomis Strategic Alpha	3.3	6.1	-1.0	2.4	--	--	--	--	--	--	--
BBgBarc US Aggregate TR	3.5	2.6	0.5	6.0	-2.0	4.2	7.8	6.5	5.9	5.2	7.0
Over/Under	-0.2	3.5	-1.5	-3.6							
3-Month LIBOR + 3%	4.4	3.8	3.3	3.2	3.3	3.5	3.3	3.4	3.8	6.2	8.7
Loomis Sayles Multi Strategy	8.4	8.2	-2.3	6.8	1.4	16.7	4.2	13.6	37.6	-19.7	6.4
Loomis Custom Index	4.5	7.0	-1.2	4.6	0.8	7.5	7.1	8.7	18.8	-4.6	5.1
Over/Under	3.9	1.2	-1.1	2.2	0.6	9.2	-2.9	4.9	18.8	-15.1	1.3
BBgBarc US Govt/Credit TR	4.0	3.0	0.1	6.0	-2.4	4.8	8.7	6.6	4.5	5.7	7.2
Total Real Estate	5.9	6.8	12.8	11.6	10.6	9.1	14.4	15.4	-31.2	-16.0	12.8
NCREIF ODCE Net	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.8
Over/Under	-0.8	-1.0	-1.2	0.1	-2.3	-0.7	-0.6	0.1	-0.8	-5.3	-2.0
Prudential Real Estate	7.0	8.2	14.5	12.5	13.8	8.8	18.0	17.2	-34.8	-13.6	16.7
NCREIF ODCE Net	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.8
Over/Under	0.3	0.4	0.5	1.0	0.9	-1.0	3.0	1.9	-4.4	-2.9	1.9
NCREIF ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0	16.0
UBS Real Estate	5.4	6.2	11.9	10.6	9.3	9.0	12.1	15.9	-22.9	-8.3	12.8
NCREIF ODCE Net	6.7	7.8	14.0	11.5	12.9	9.8	15.0	15.3	-30.4	-10.7	14.8
Over/Under	-1.3	-1.6	-2.1	-0.9	-3.6	-0.8	-2.9	0.6	7.5	2.4	-2.0
NCREIF ODCE	7.6	8.8	15.0	12.5	13.9	10.9	16.0	16.4	-29.8	-10.0	16.0



Ventura County Employees' Retirement Association

TOTAL FUND CALENDAR YEAR RETURN SUMMARY

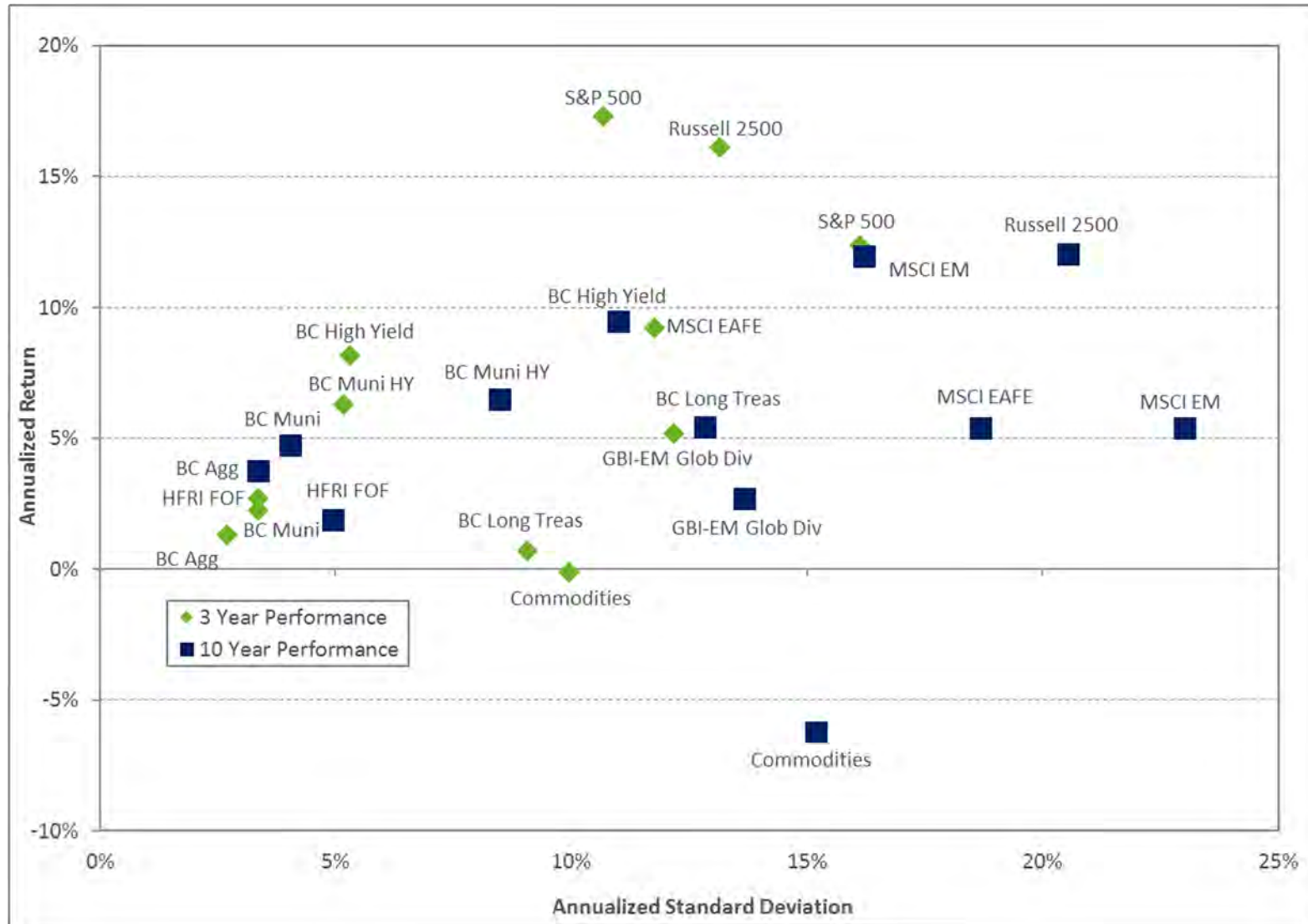
	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)	2011 (%)	2010 (%)	2009 (%)	2008 (%)	2007 (%)
Total Real Assets	7.2	11.7	-13.8	10.2	--	--	--	--	--	--	--
CPI + 4% (Unadjusted)	6.2	6.2	4.8	4.8	28.8	5.4	13.5	--	--	--	--
Over/Under	1.0	5.5	-18.6	5.4							
Bridgewater All Weather Fund	11.9	10.0	-6.8	7.6	--	--	--	--	--	--	--
CPI + 5% (Unadjusted)	7.2	7.2	5.8	5.8	--	--	--	--	--	--	--
Over/Under	4.7	2.8	-12.6	1.8							
Tortoise Energy Infrastructure	-3.5	15.9	-27.1	15.7	--	--	--	--	--	--	--
Wells Fargo MLP Index	-5.7	21.0	-34.1	8.0	28.8	5.4	13.5	--	--	--	--
Over/Under	2.2	-5.1	7.0	7.7							
Overlay											
Parametric											
Abbott Capital Cash											



APPENDIX: MARKET ENVIRONMENT

NEPC, LLC

LONG-TERM PERFORMANCE SUMMARY



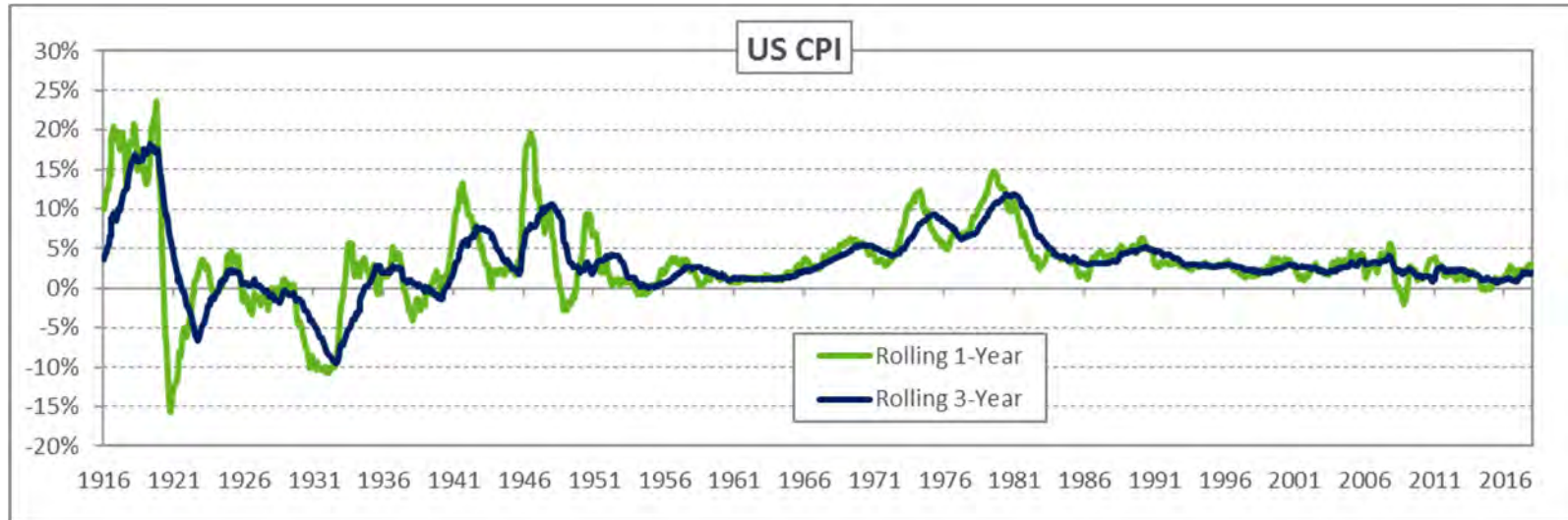
Source: Bloomberg, Standard and Poor's, Russell, MSCI, Barclays, JP Morgan



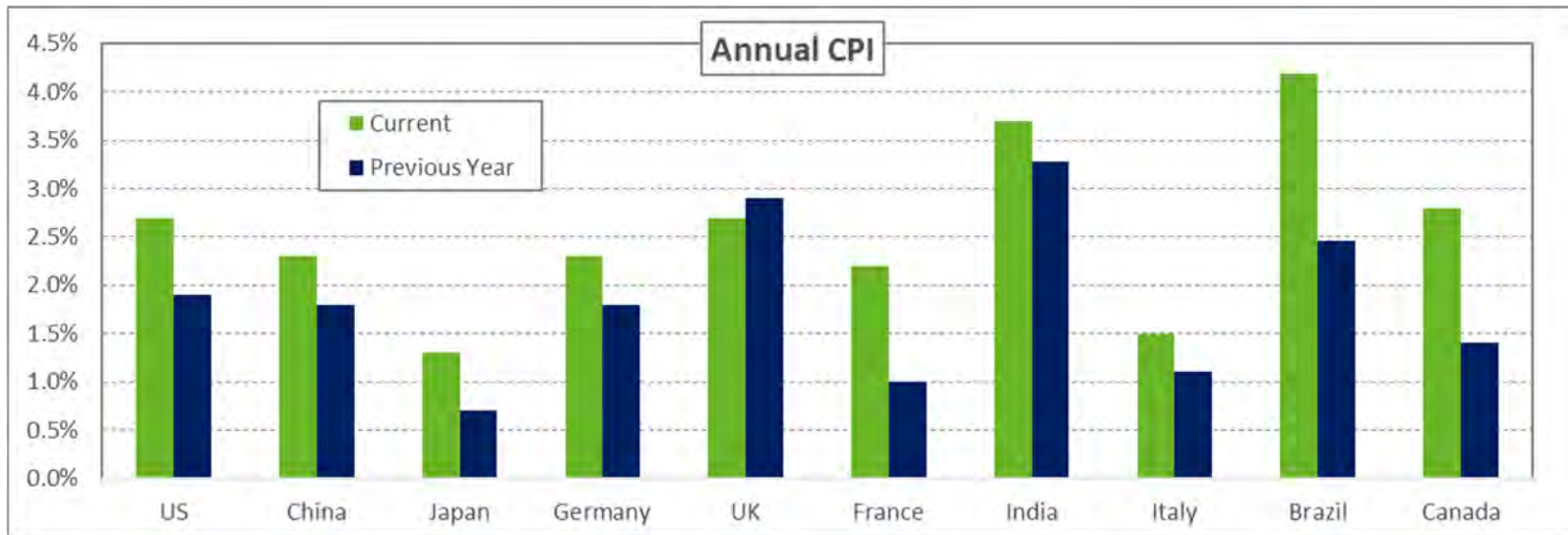
MACRO

NEPC, LLC

INFLATION



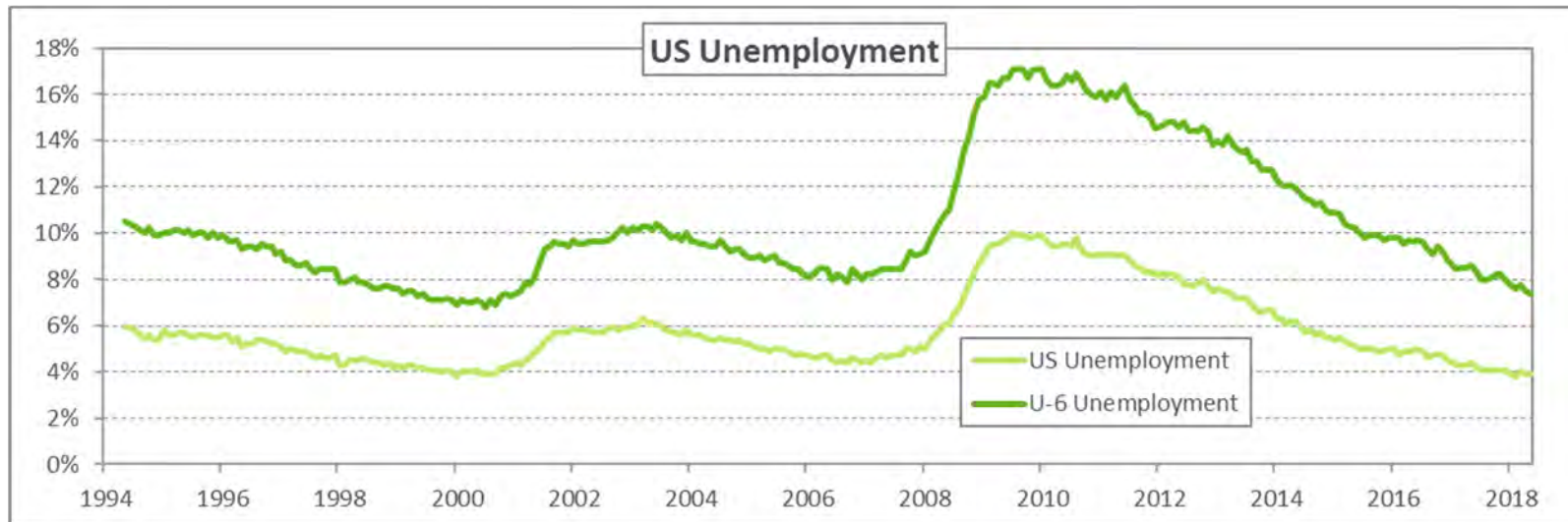
Source: Bureau of Labor Statistics, Bloomberg, NEPC



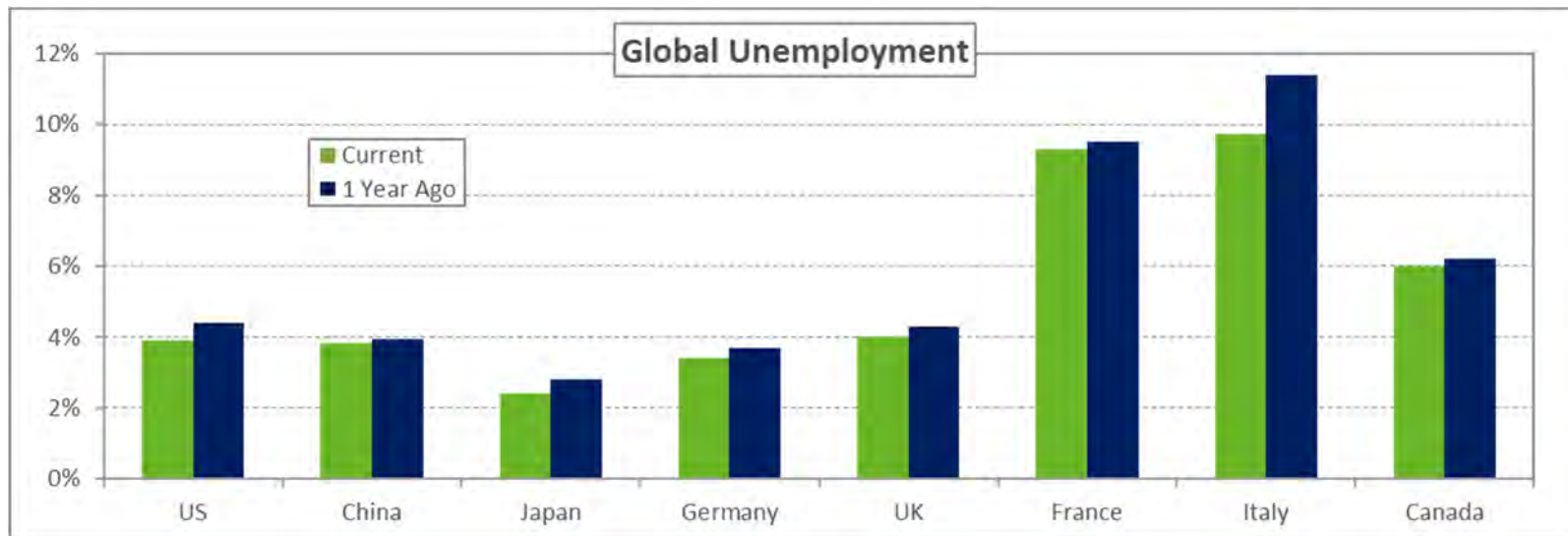
Source: Bureau of Labor Statistics, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, India Central Statistical Organization, ISTAT, IBGE, STCA, Bloomberg



UNEMPLOYMENT



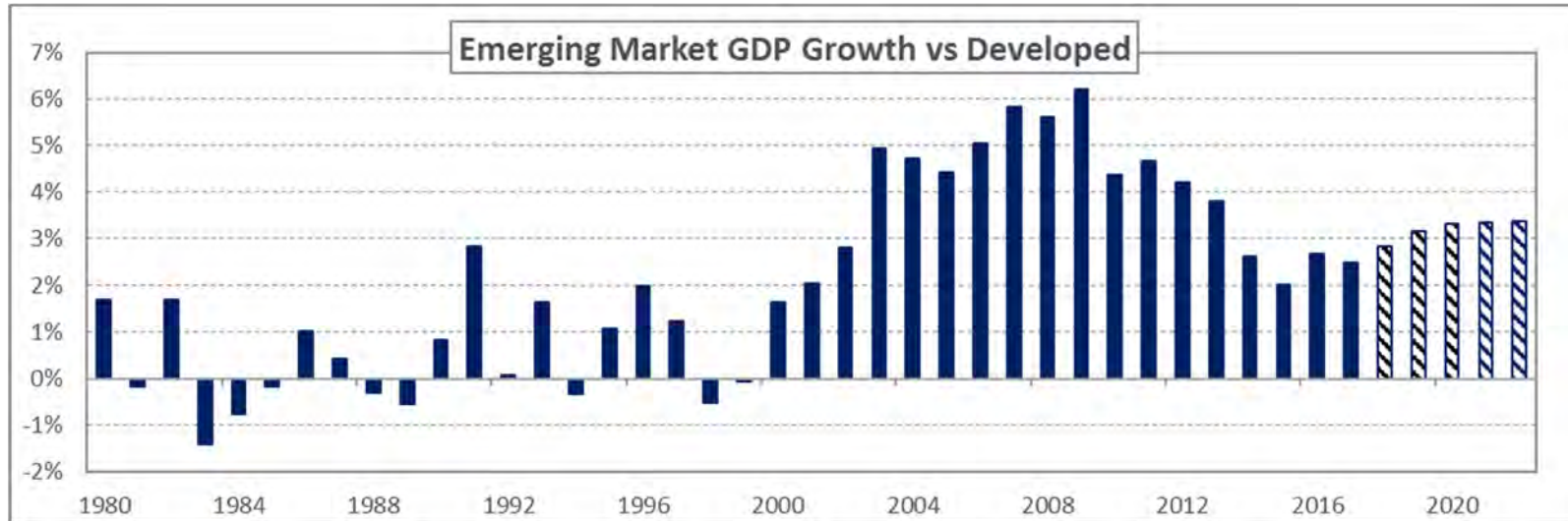
Source: Bureau of Labor Statistics, Bloomberg



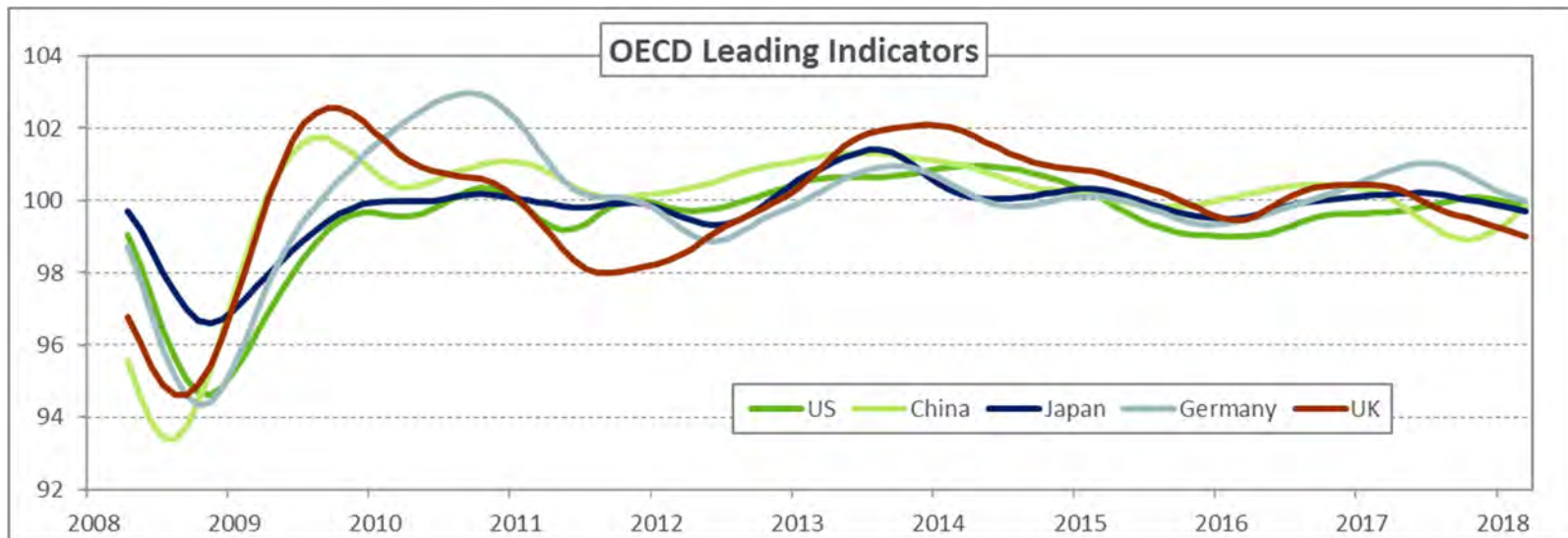
Source: Bureau of Labor Statistics, STA, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, ISTAT, IBGE, Bloomberg



ECONOMIC INDICATORS



Source: IMF



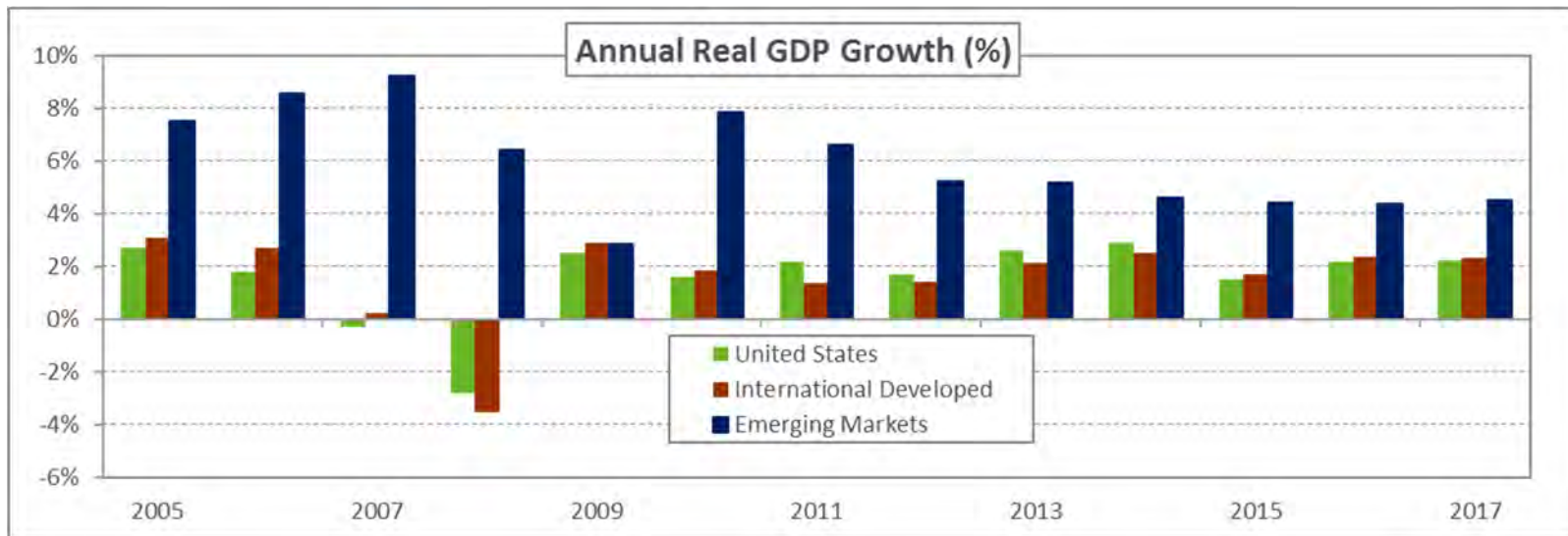
Source: OECD, Bloomberg



GROSS DOMESTIC PRODUCT



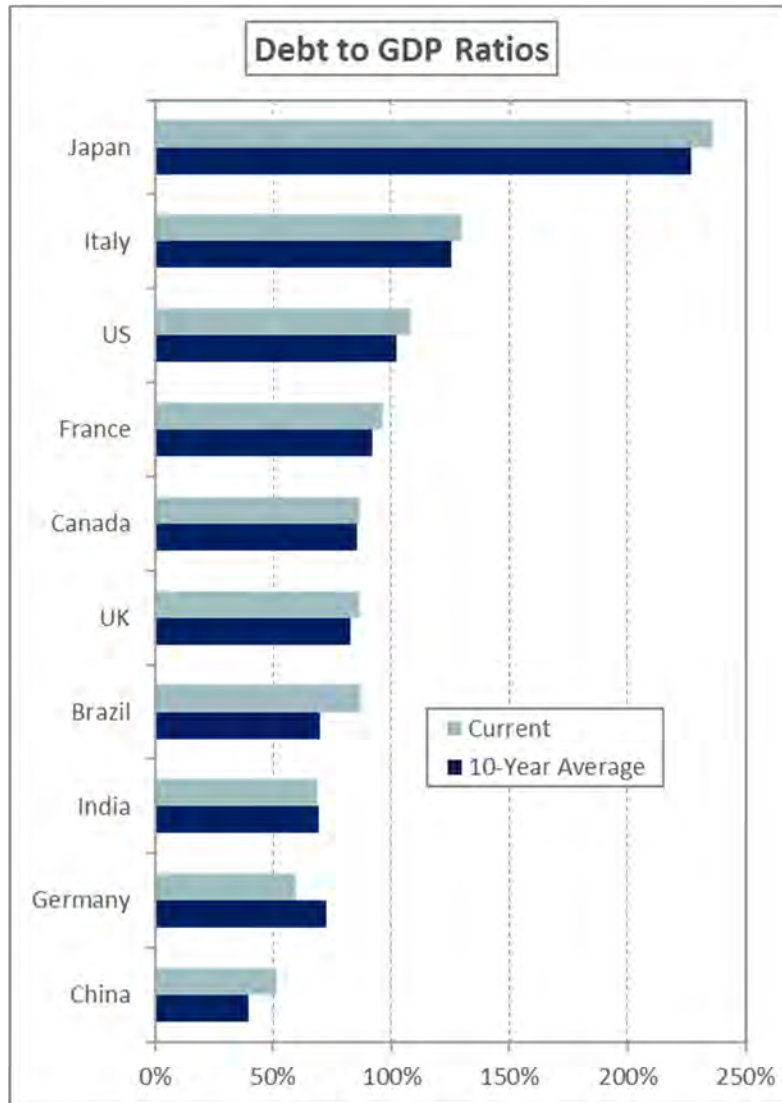
Source: Bloomberg



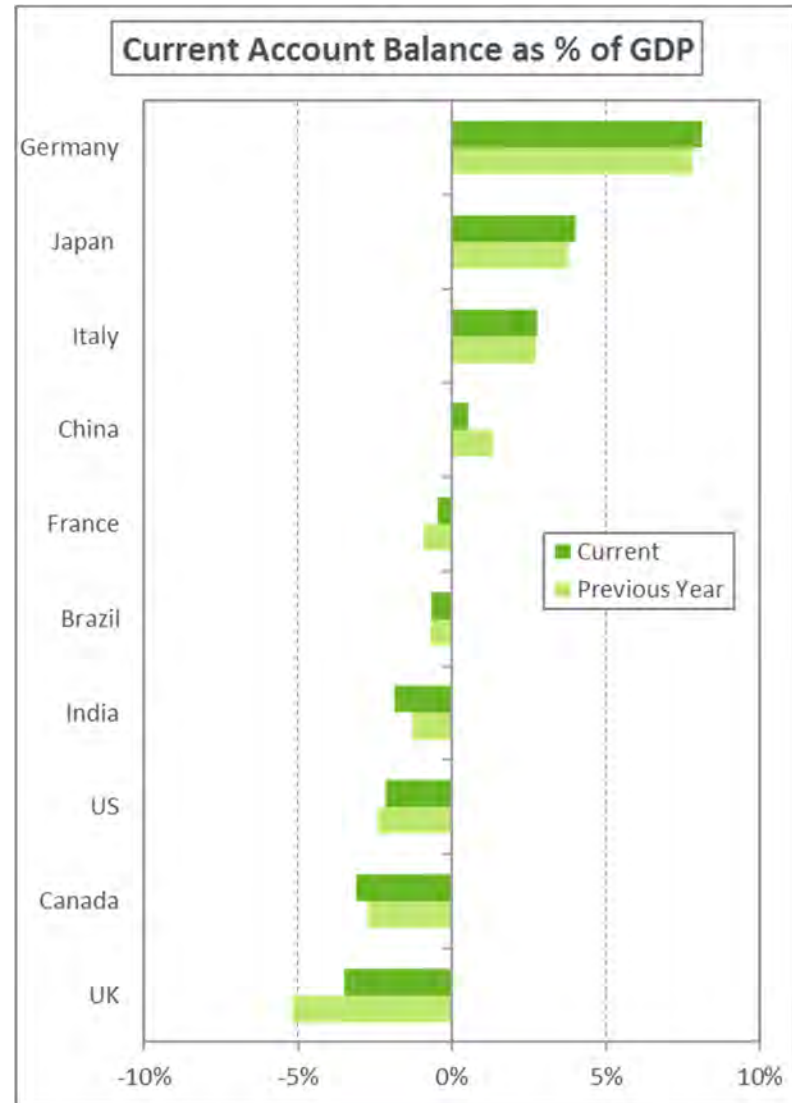
Source: Bloomberg



GROSS DOMESTIC PRODUCT METRICS



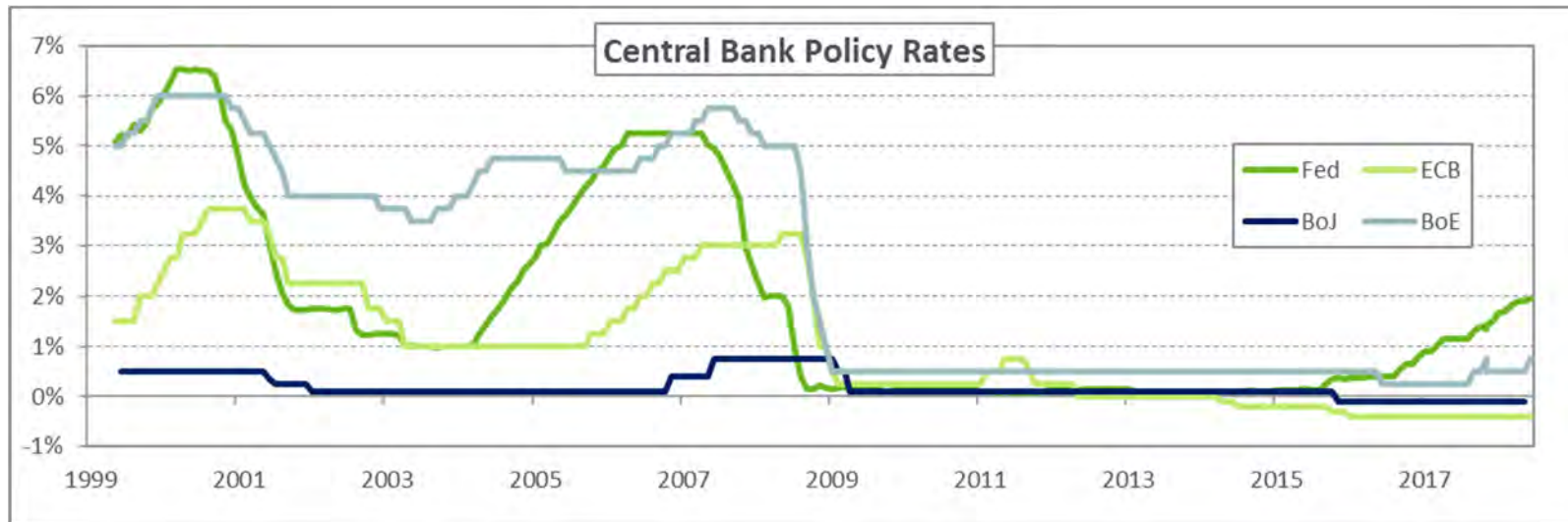
Source: IMF, Bloomberg



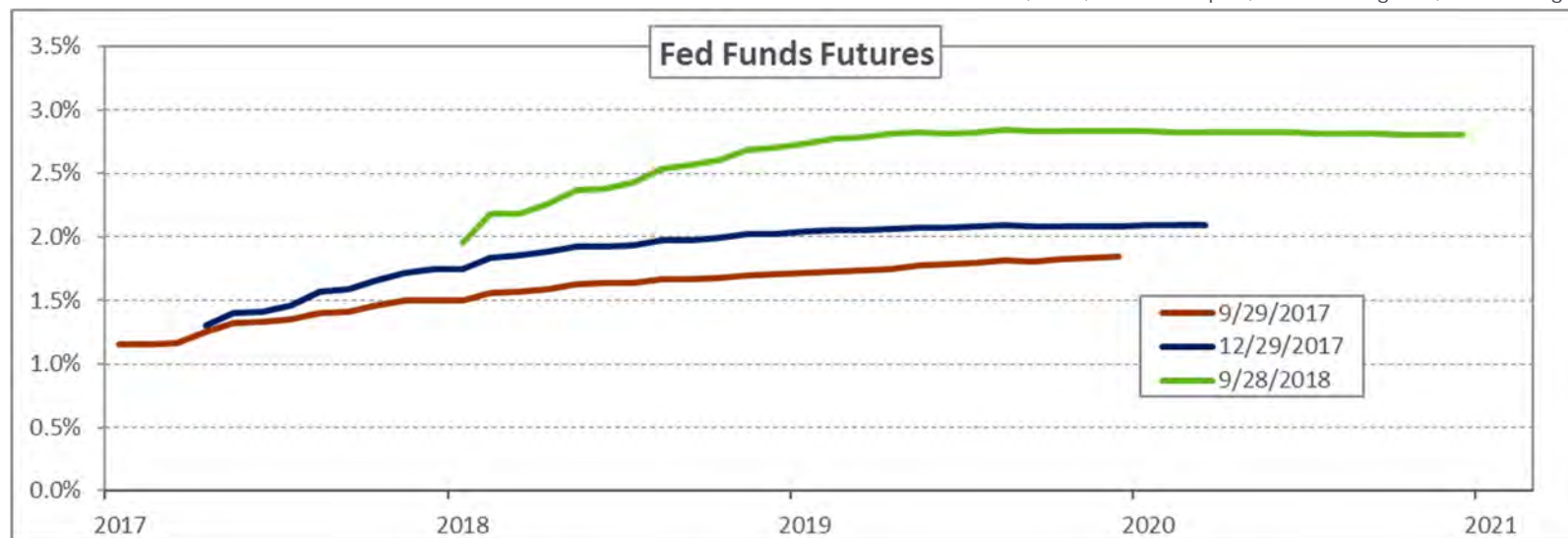
Source: Bloomberg



CENTRAL BANK RATES



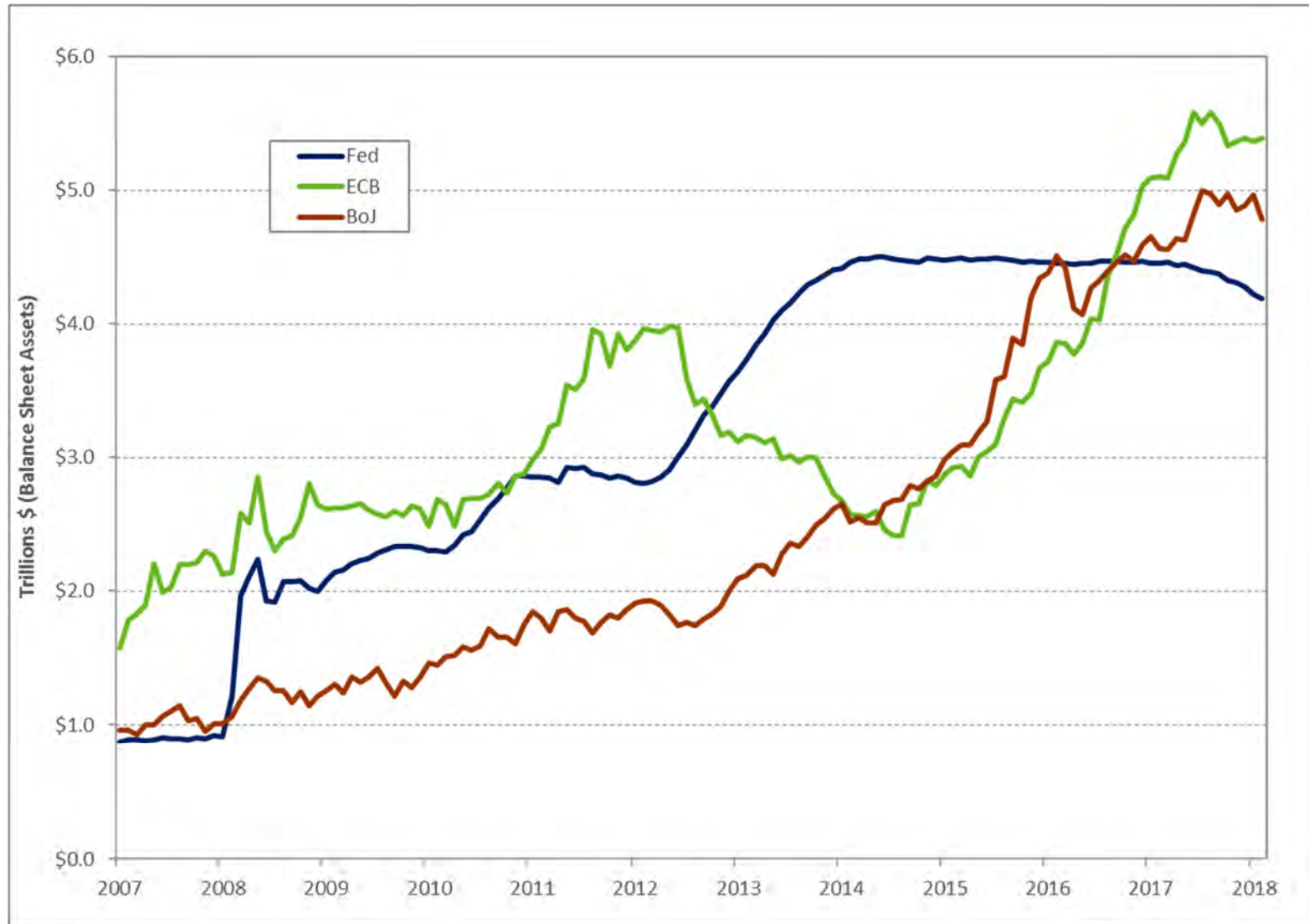
Source: Federal Reserve, ECB, Bank of Japan, Bank of England, Bloomberg



Source: Bloomberg



CENTRAL BANK BALANCE SHEETS



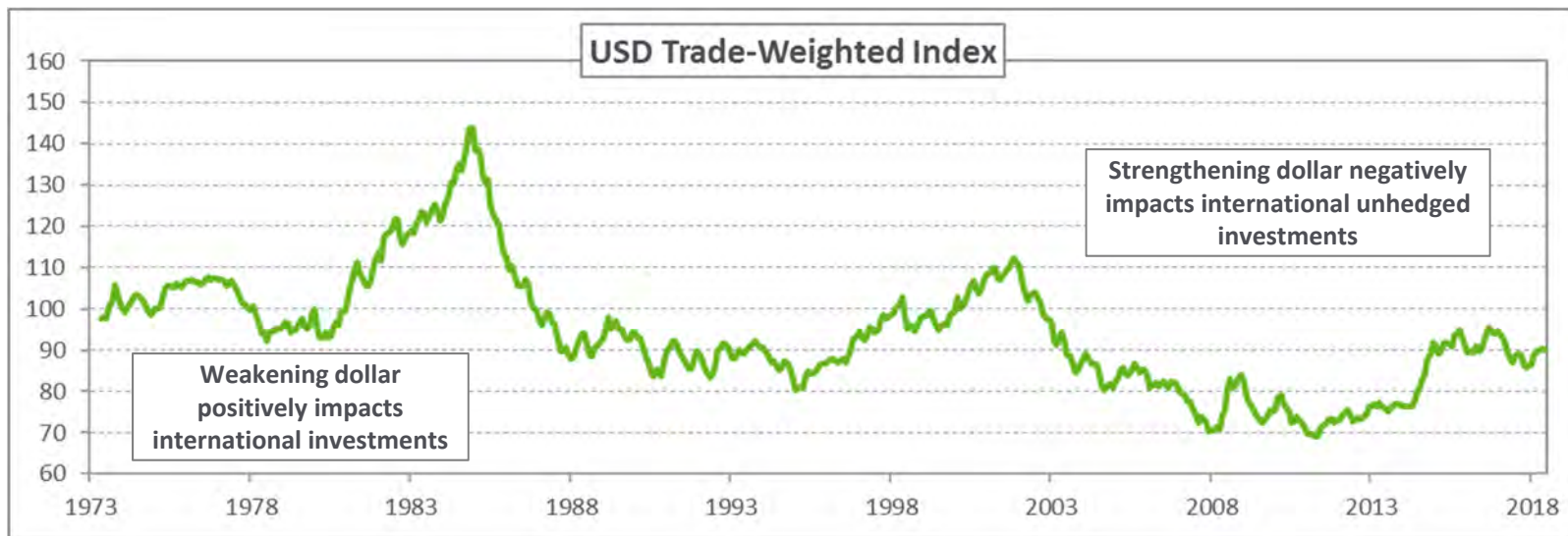
Source: Federal Reserve, Bank of Japan, ECB, Bloomberg, NEPC



CURRENCIES

Currencies	% Change Relative to USD			
	Spot	1 Month	YTD	1 Year
Euro	1.16	0.0%	-3.9%	-1.8%
British Pound	1.30	0.5%	-5.3%	-2.8%
Japanese Yen	113.70	-2.4%	-3.8%	-1.0%
Swiss Franc	0.98	-1.3%	0.9%	-1.3%
Australian Dollar	0.72	0.4%	-4.1%	-7.8%
Chinese Yuan	6.87	-0.5%	-7.8%	-3.4%
Brazilian Real	4.05	0.1%	-13.5%	-21.9%
Russian Ruble	65.61	2.8%	-4.0%	-12.3%
Indian Rupee	72.54	-2.4%	-8.4%	-9.9%
Mexican Peso	18.72	1.9%	0.0%	-2.5%
South African Rand	14.15	3.8%	-12.0%	-4.1%

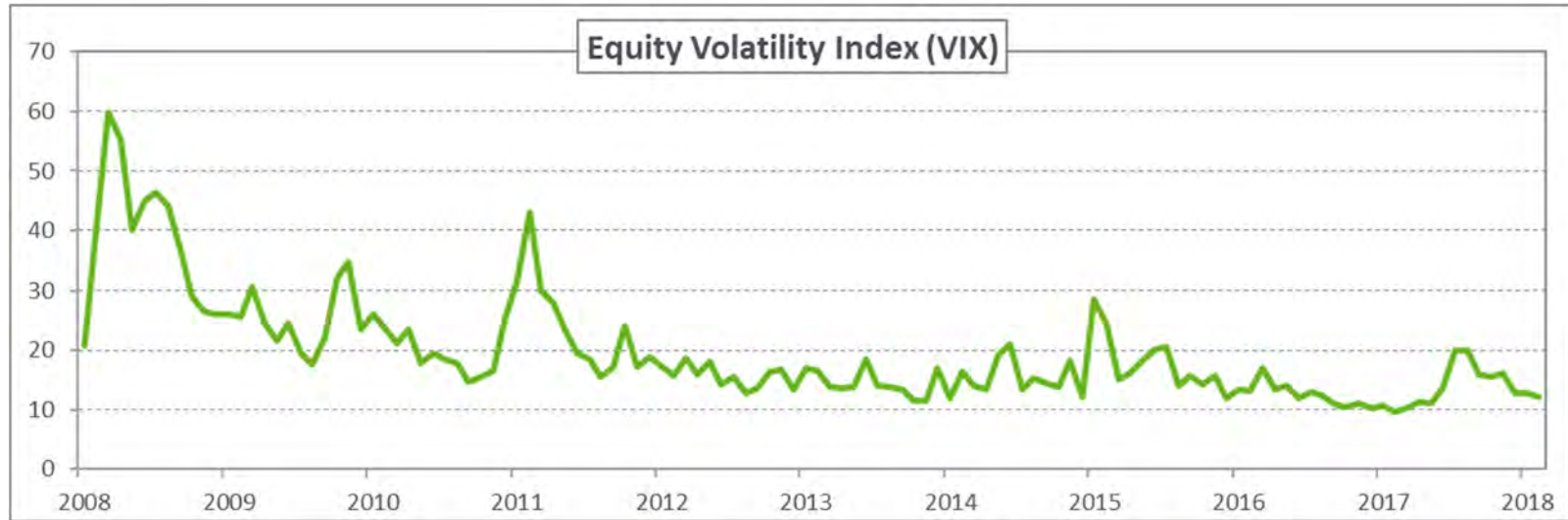
Source: Bloomberg



Source: Bloomberg



VOLATILITY



Source: CBOE, Bloomberg



Source: Merrill Lynch, Bloomberg



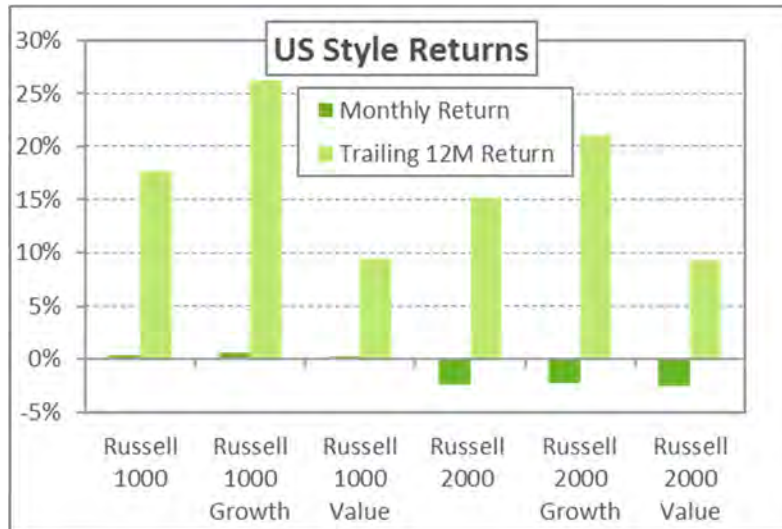
Source: Deutsche Bank, Bloomberg



EQUITY

NEPC, LLC

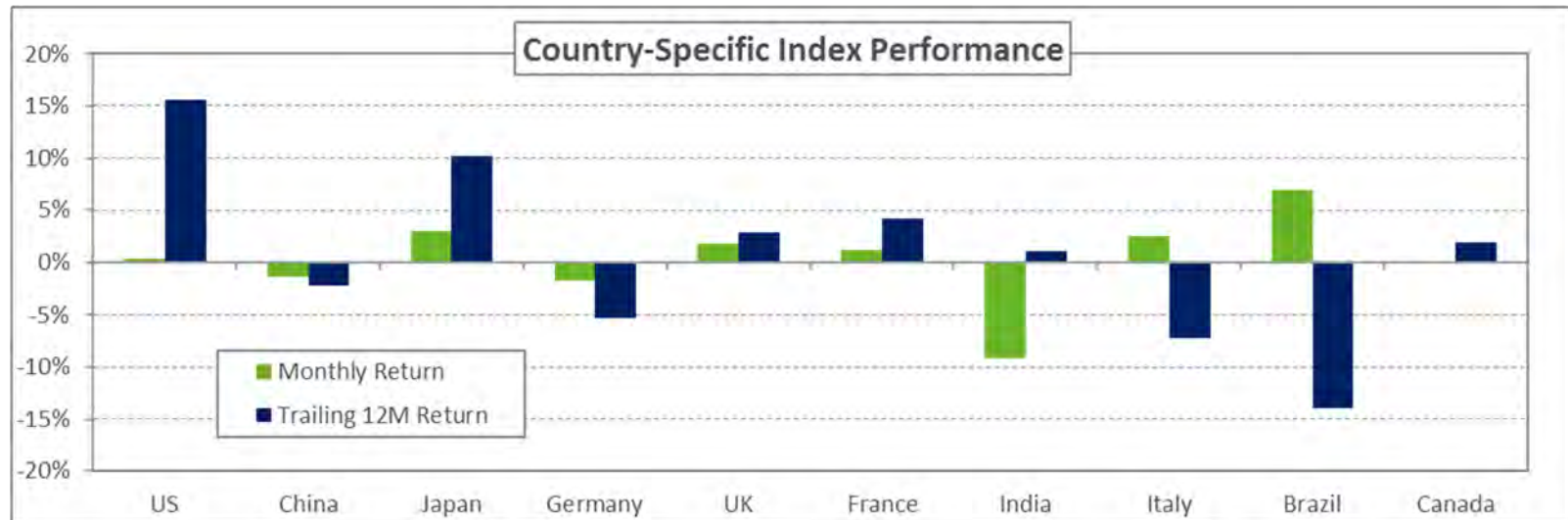
EQUITY INDEX PERFORMANCE



Source: Russell, Bloomberg



Source: MSCI, Bloomberg



Source: MSCI, Bloomberg
Represents returns in USD

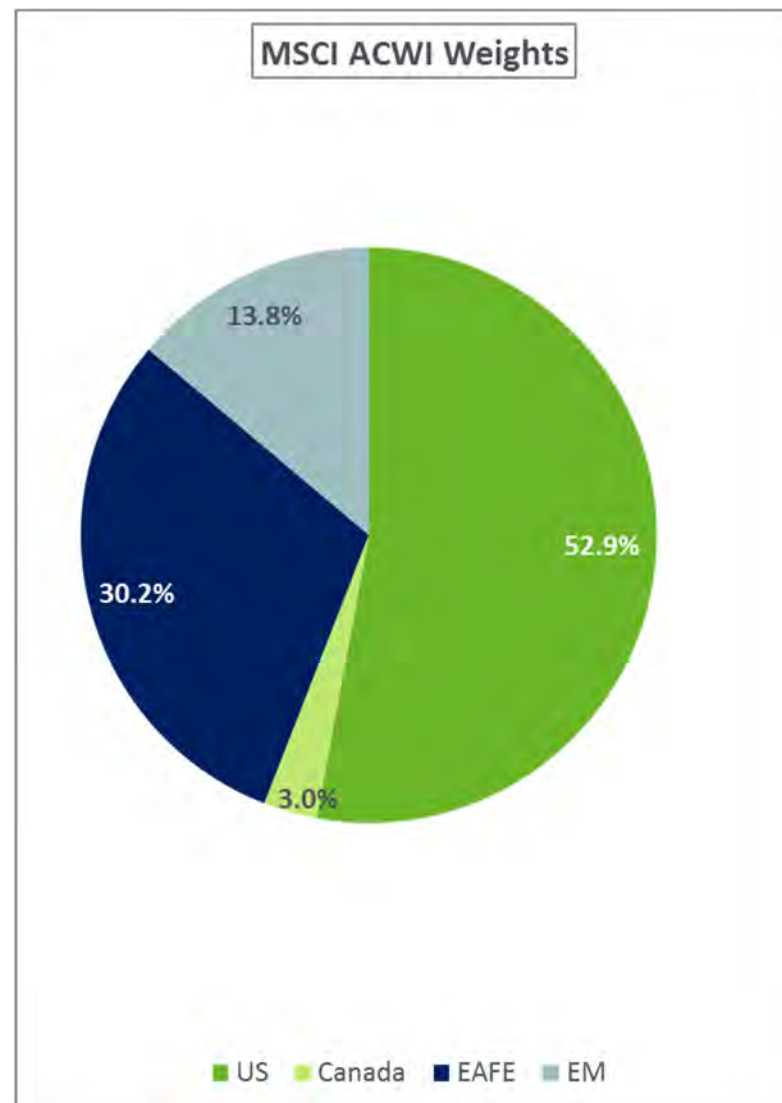


INDEX COMPOSITION

	MTD	QTD	YTD	Index Weight
S&P 500	0.6%	7.7%	10.6%	100%
Cons Disc	1.0%	8.1%	20.3%	10.4%
Cons Staples	0.9%	5.5%	-4.0%	6.8%
Energy	2.5%	0.4%	6.8%	6.1%
Financials	-2.3%	4.2%	-0.3%	12.8%
Health Care	2.9%	14.4%	16.2%	15.3%
Industrials	2.1%	9.8%	4.4%	9.8%
Info Tech	-0.4%	8.7%	20.3%	20.8%
Materials	-2.1%	0.2%	-3.2%	2.5%
Real Estate	-2.8%	0.6%	0.9%	2.7%
Telecom	4.3%	9.5%	-0.5%	10.1%
Utilities	-0.7%	2.1%	1.9%	2.9%

	MTD	QTD	YTD	Index Weight
MSCI ACWI	0.5%	4.4%	4.2%	100%
Cons Disc	0.1%	3.0%	7.1%	12.0%
Cons Staples	0.3%	2.1%	-4.2%	7.9%
Energy	3.5%	2.4%	8.6%	6.6%
Financials	-0.4%	2.5%	-4.3%	17.6%
Health Care	1.8%	10.9%	12.5%	11.6%
Industrials	1.6%	6.0%	1.4%	11.0%
Info Tech	-0.8%	6.0%	13.6%	19.6%
Materials	0.8%	0.2%	-3.1%	5.1%
Real Estate	-2.6%	-1.6%	-3.9%	2.9%
Telecom	2.0%	4.9%	-5.0%	2.9%
Utilities	-0.4%	0.6%	0.6%	2.9%

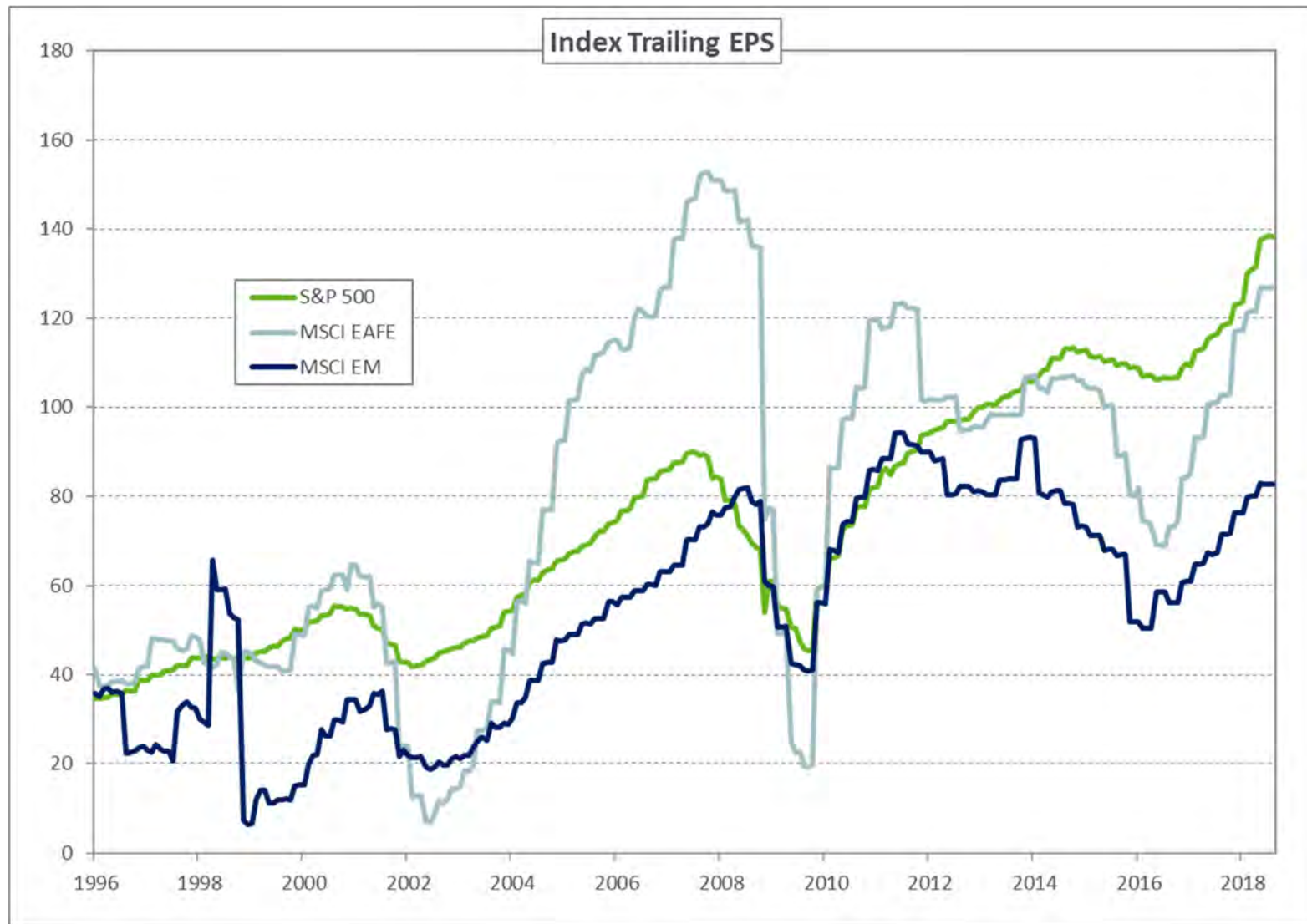
Source: S&P, MSCI, Bloomberg



Source: MSCI, Bloomberg



EARNINGS



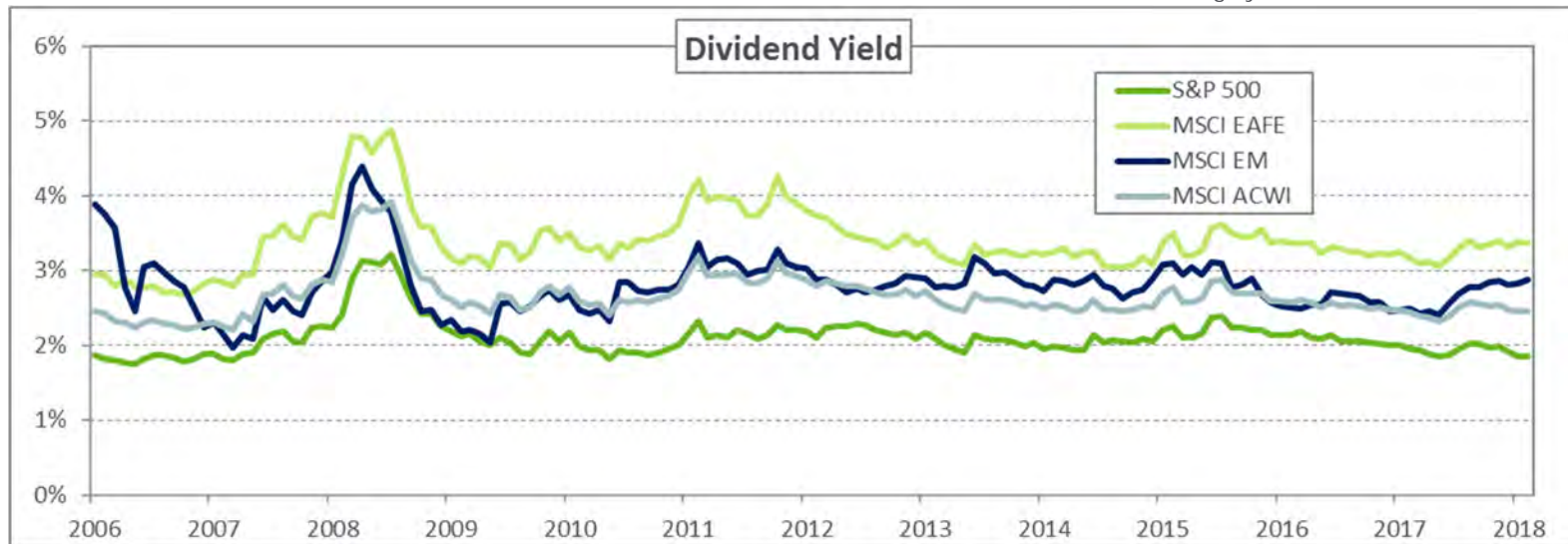
Source: S&P, MSCI, Bloomberg



YIELDS



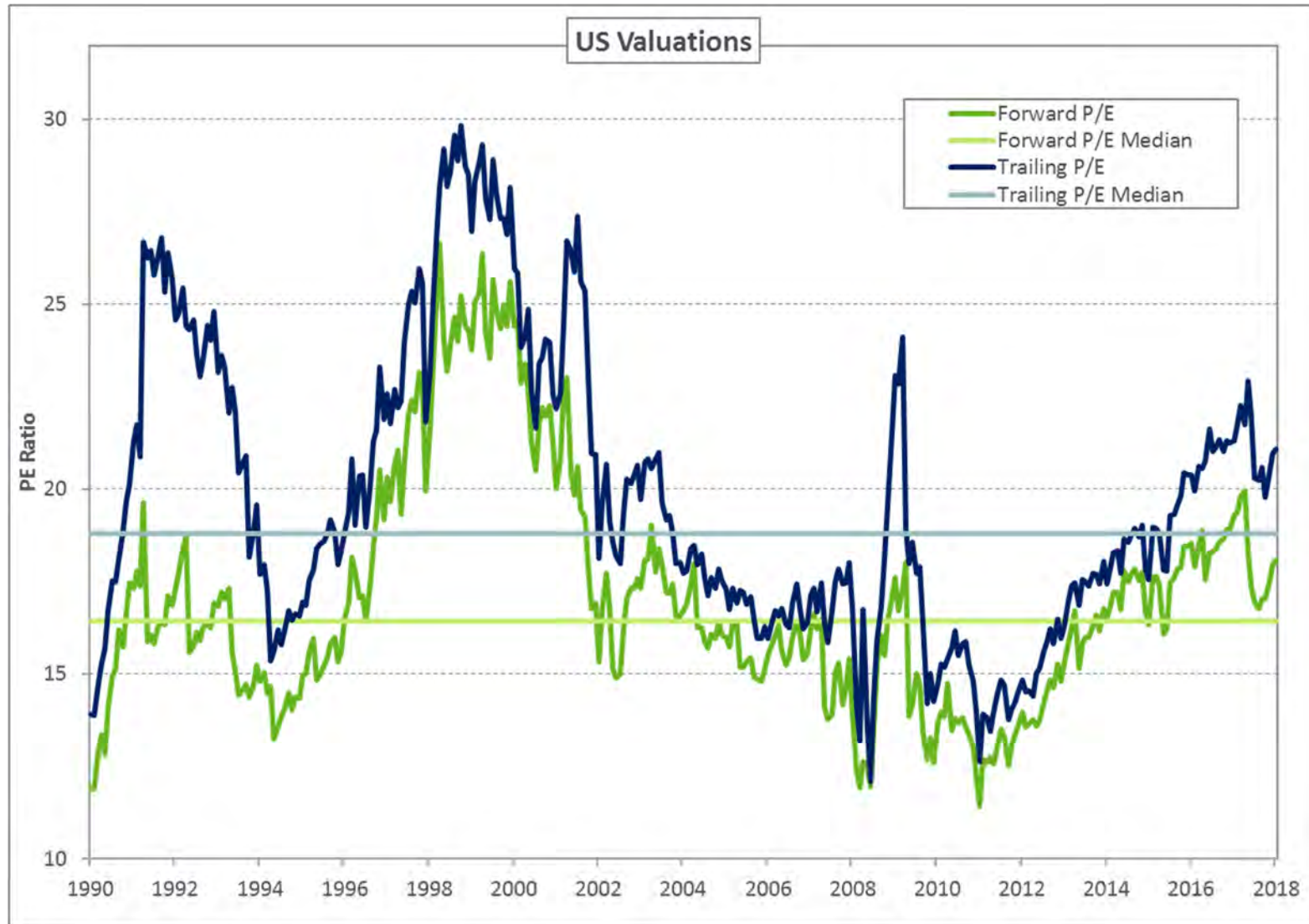
Source: S&P, MSCI, Bloomberg
Earnings yield calculated as 1/PE Ratio



Source: S&P, MSCI, Bloomberg



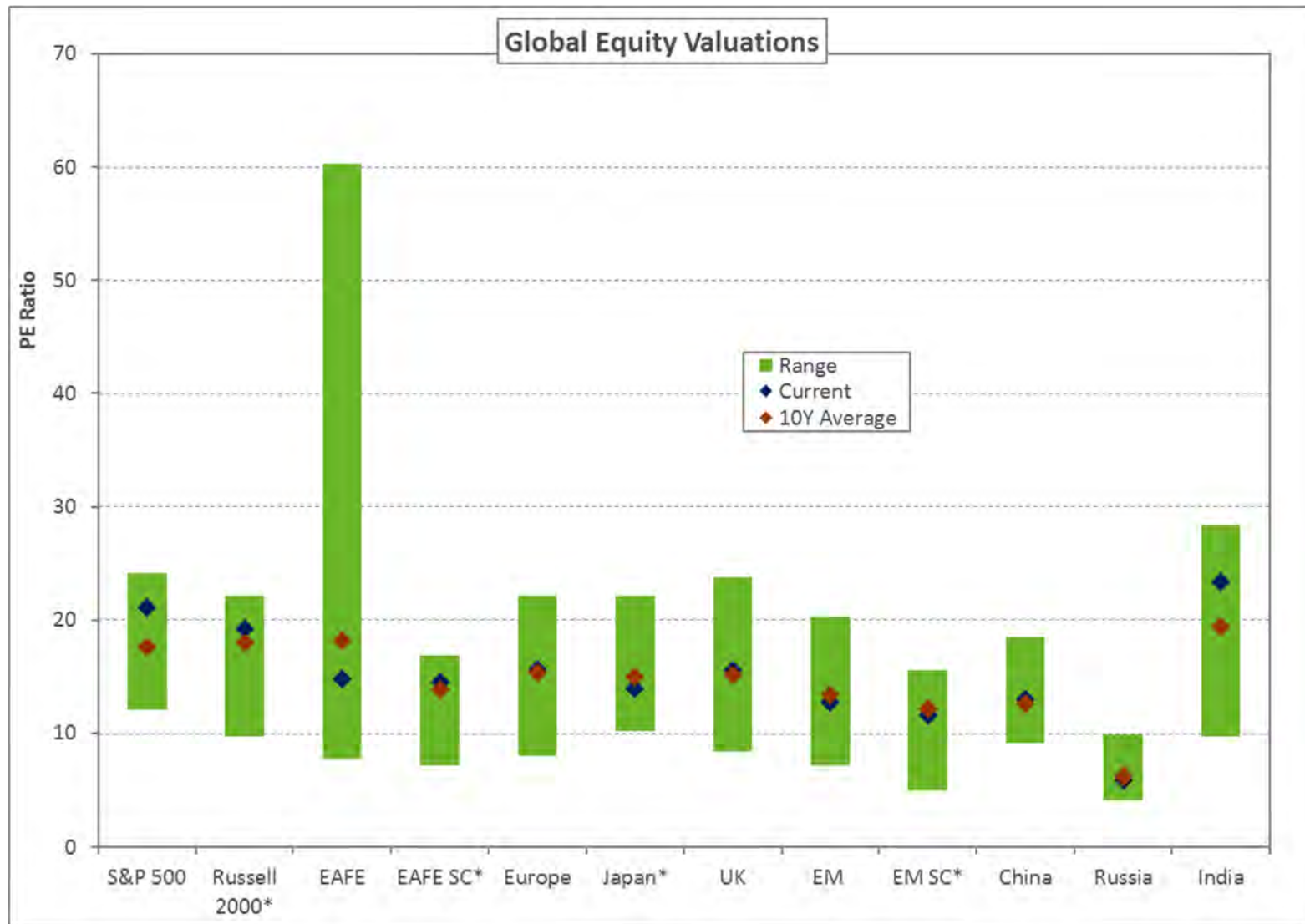
US EQUITY VALUATIONS



Source: S&P, Bloomberg
Medians calculated as of 01/31/1990



GLOBAL EQUITY VALUATIONS



Source: S&P, Russell, MSCI, Bloomberg, NEPC
 *Denotes the use of index-adjusted positive PE ratio
 Ranges calculated using trailing 10-year figures



CREDIT

NEPC, LLC

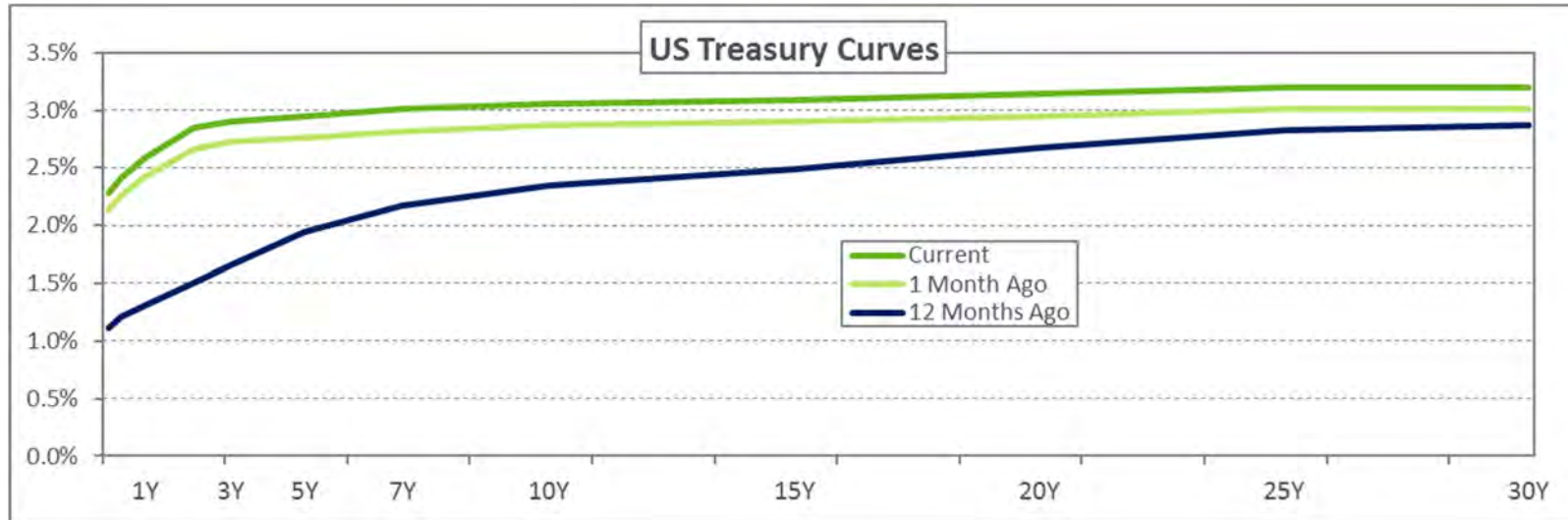
FIXED INCOME CHARACTERISTICS

	Averages			Total Returns (%)		
	Yield to Worst	Spread (bps)	Duration (Years)	1-Month	YTD	1-Year
Barclays Aggregate	3.5%	39	6.0	-0.6%	0.0%	-1.2%
Barclays Treasury	3.0%	-	6.0	-0.9%	-0.6%	-1.6%
Barclays Agency	3.0%	12	3.9	-0.4%	0.0%	-0.6%
Barclays MBS	3.6%	28	5.3	-0.6%	-0.1%	-0.9%
Barclays ABS	3.2%	33	2.3	-0.1%	0.5%	0.2%
Barclays CMBS	3.6%	60	5.3	-0.5%	0.5%	-0.6%
Barclays Corp IG	4.1%	106	7.2	-0.4%	1.0%	-1.2%
Barclays Muni	2.9%	-	6.2	-0.6%	-0.2%	0.3%
Barclays HY Muni	4.9%	-	8.0	-0.4%	0.8%	6.4%
Barclays TIPS	3.2%	-	5.4	-1.1%	-0.8%	0.4%
Barclays HY	6.2%	316	3.8	0.6%	2.4%	3.0%
Barclays Global Agg	2.2%	45	7.0	-0.9%	-0.9%	-1.3%
JPM EMBI Glob Div	6.5%	361.73	7.2	1.5%	2.3%	-1.9%
JPM CEMBI Broad	5.3%	286.26	4.5	0.9%	1.3%	-0.9%
JPM GBI - EM	6.6%	-	5.1	2.6%	-1.8%	-7.4%

Source: Barclays, JPM, Bloomberg



TREASURIES



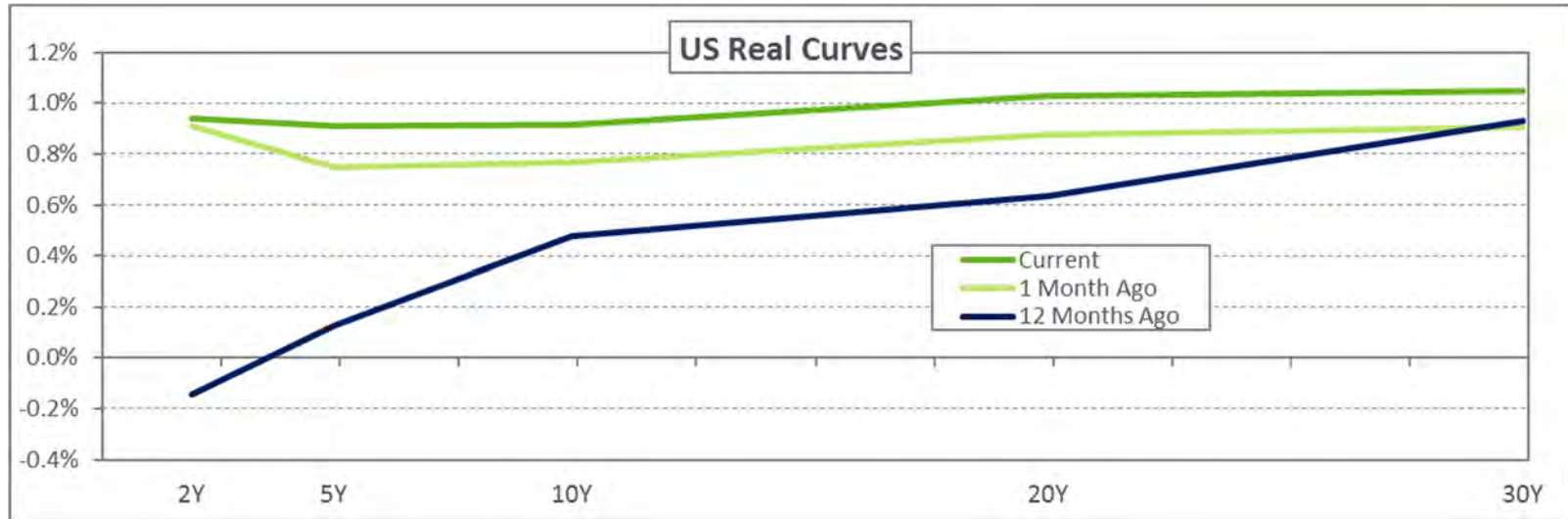
Source: Bloomberg

	Yield (%)			Total Return (%)	
	Current	1 Month Ago	12 Months Ago	1 Month	12 Months
3M Treasury	2.28%	2.14%	1.11%	0.16%	1.52%
6M Treasury	2.41%	2.26%	1.21%	0.17%	1.57%
2Y Treasury	2.84%	2.66%	1.51%	-0.12%	-0.21%
5Y Treasury	2.95%	2.76%	1.95%	-0.72%	-2.05%
10Y Treasury	3.06%	2.87%	2.34%	-1.48%	-3.97%
30Y Treasury	3.20%	3.01%	2.87%	-3.34%	-3.75%

Source: Barclays, Bloomberg



REAL YIELDS



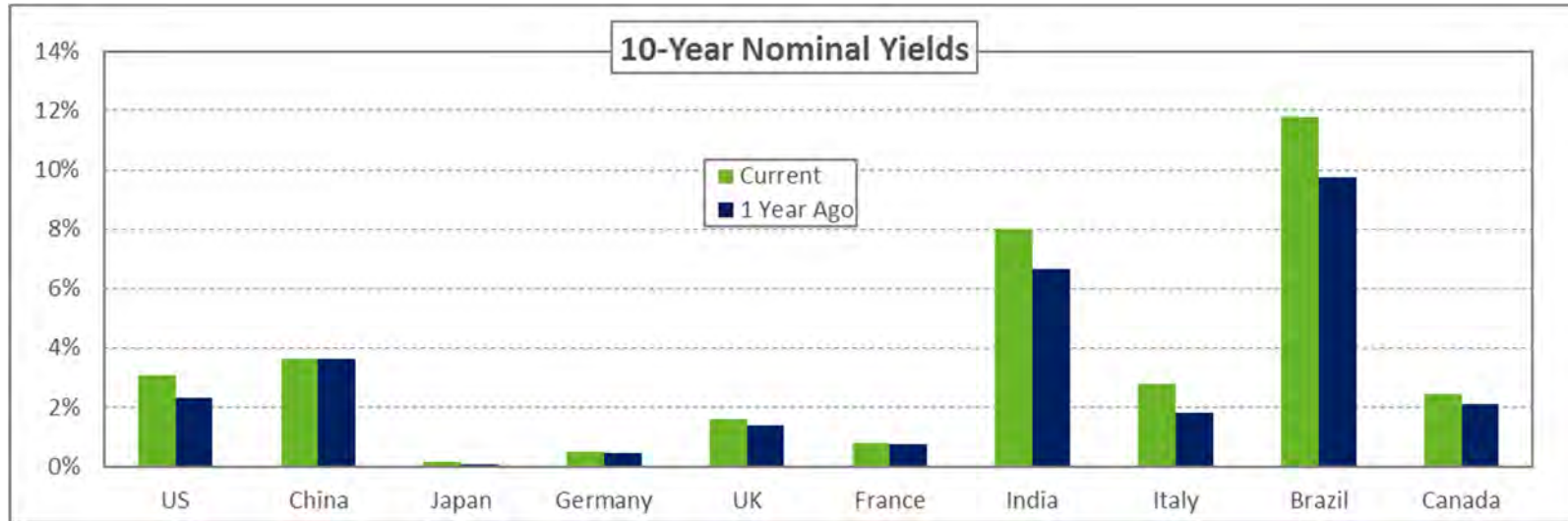
Source: Bloomberg

	Real Rates			Breakeven Rates	
	Current	1 Month Ago	12 Months Ago	Current	12 Months Ago
2Y Treasury	0.94%	0.91%	-0.14%	1.81%	1.56%
5Y Treasury	0.91%	0.75%	0.13%	2.03%	1.78%
10Y Treasury	0.91%	0.77%	0.48%	2.14%	1.85%
20Y Treasury	1.03%	0.88%	0.64%	2.08%	1.76%
30Y Treasury	1.05%	0.90%	0.93%	2.16%	1.93%

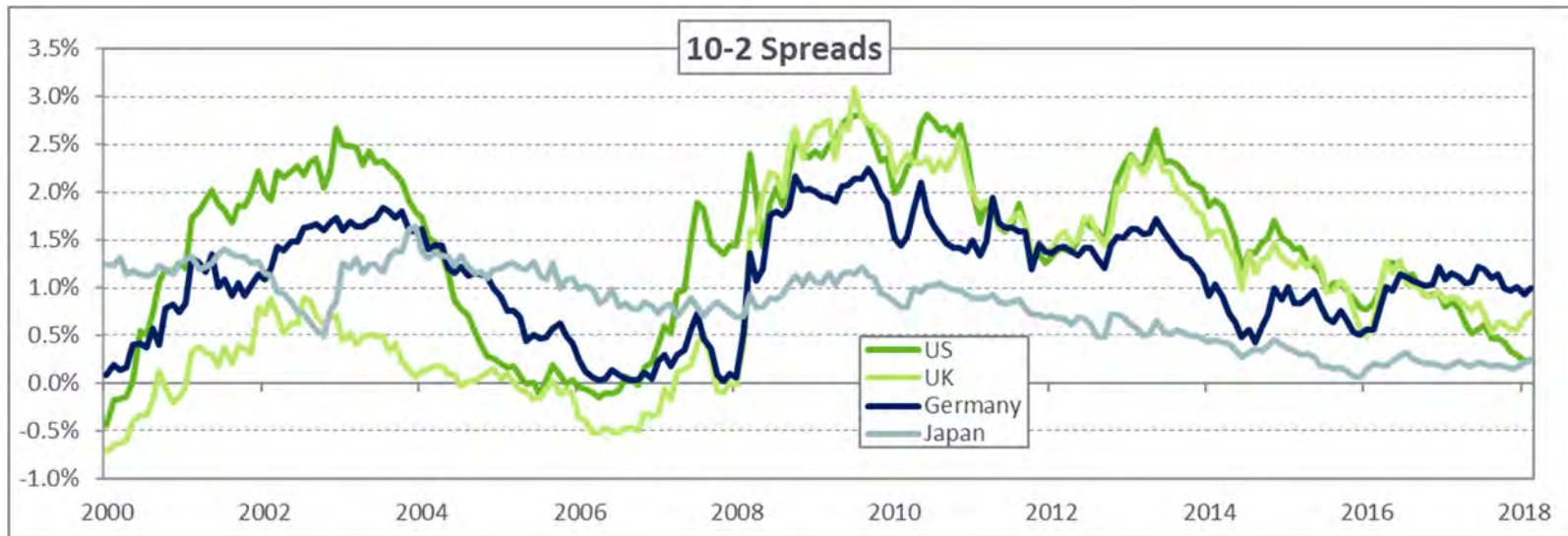
Source: Barclays, Bloomberg



NOMINAL YIELDS



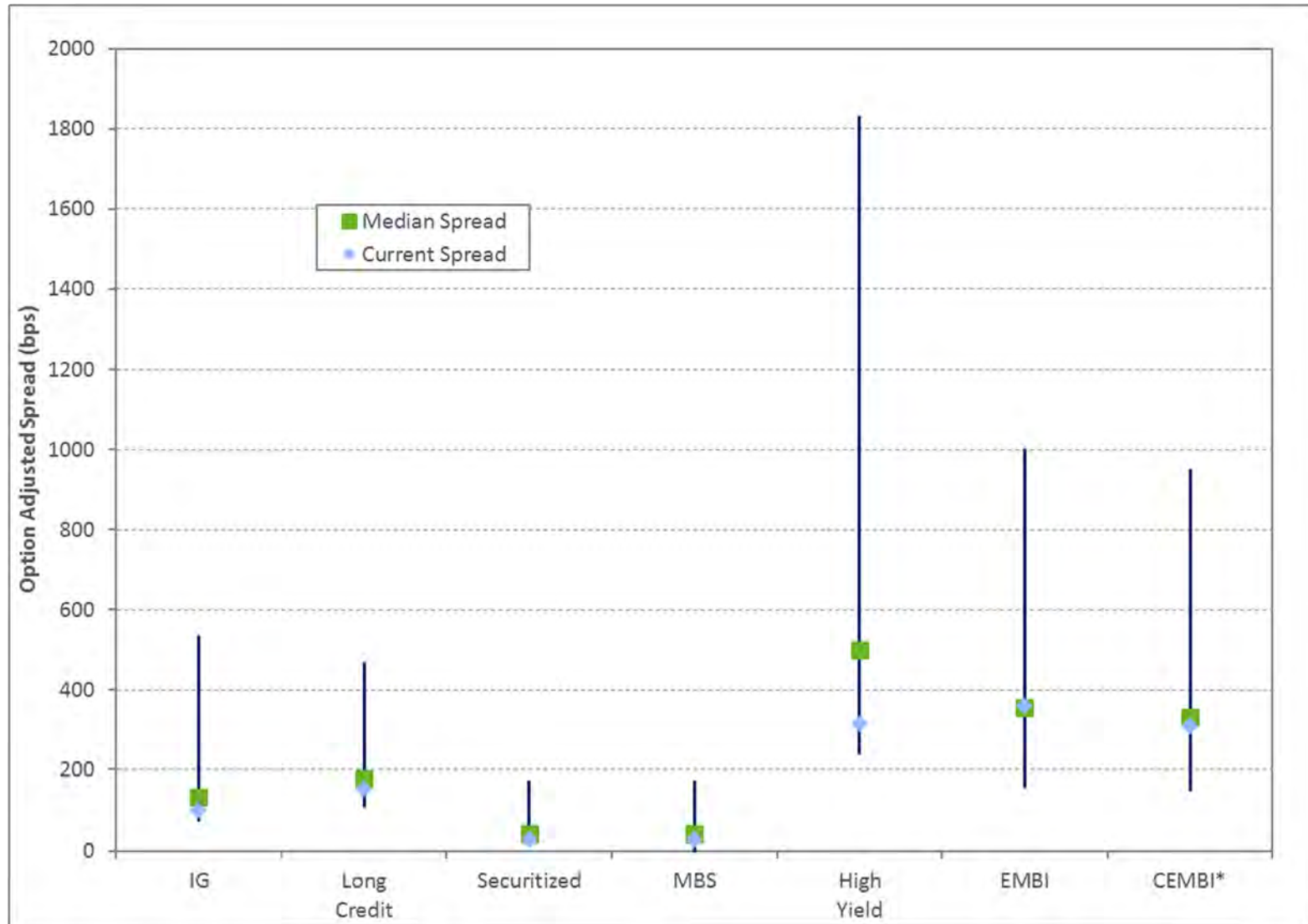
Source: Bloomberg



Source: Bloomberg



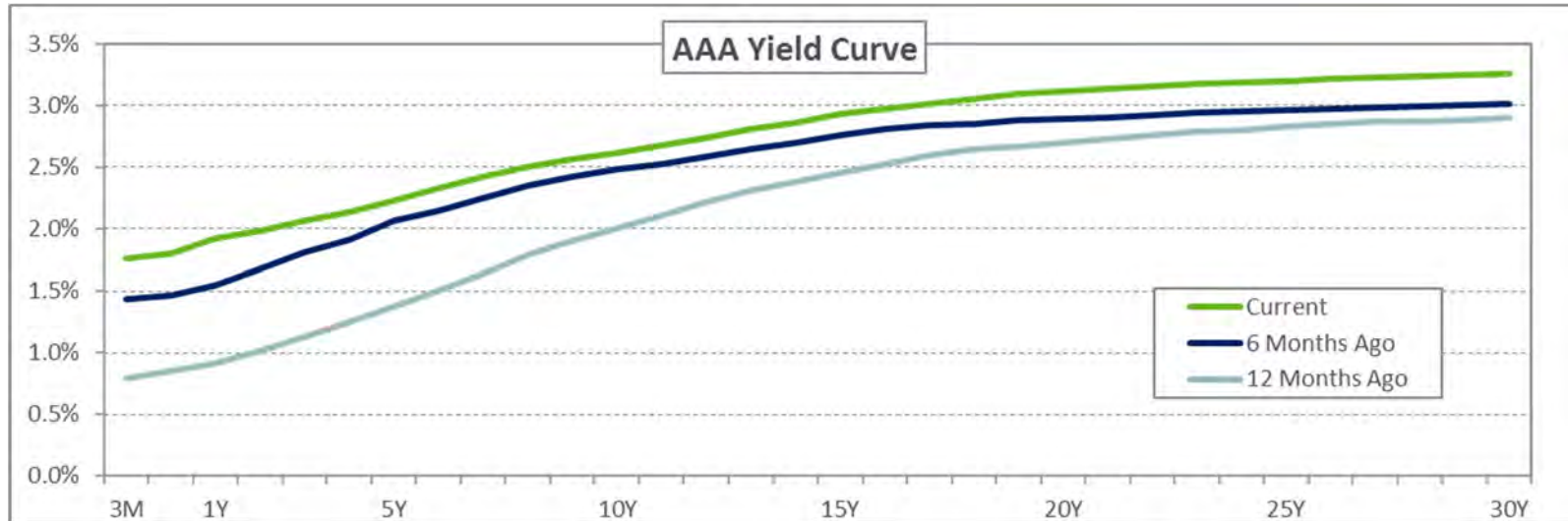
CREDIT SPREADS



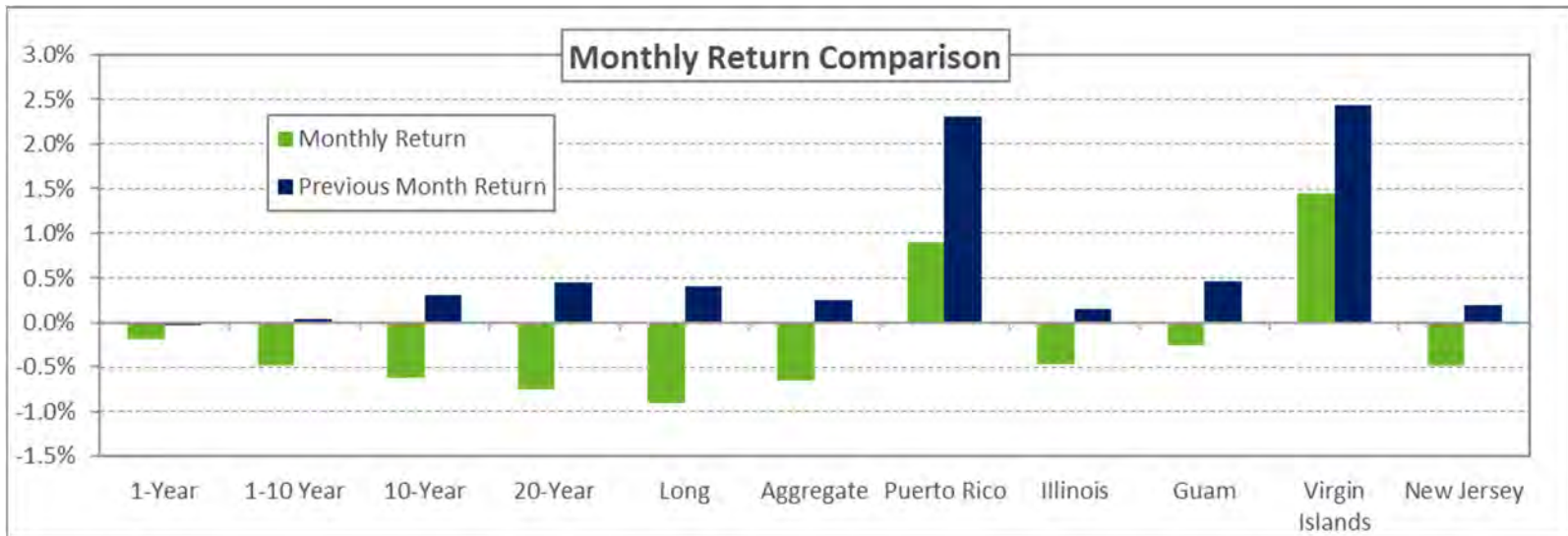
Source: Barclays, JPM, Bloomberg
 Data range: 01/31/2000 through month-end
 *JPM CEMBI calculated since 12/31/2001



MUNICIPAL BONDS



Source: Bloomberg



Source: Barclays, Bloomberg



MUNICIPAL BOND YIELDS



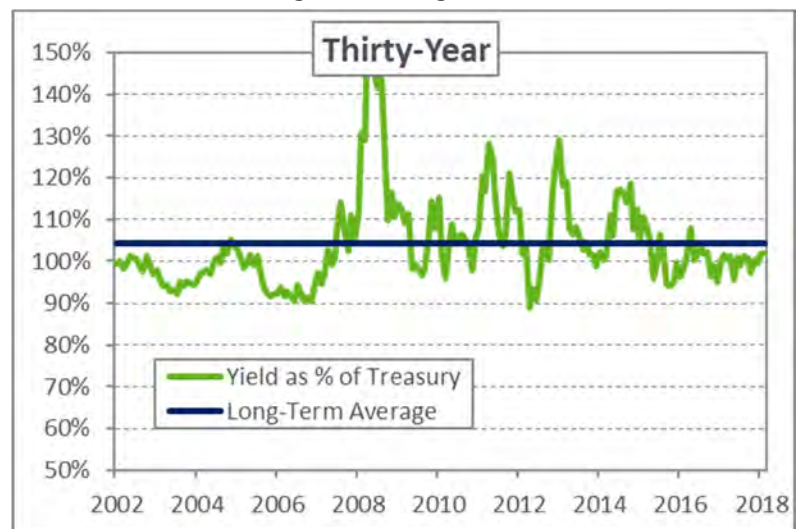
Source: Bloomberg
Long-term average calculated since 08/30/2002



Source: Bloomberg
Long-term average calculated since 08/30/2002



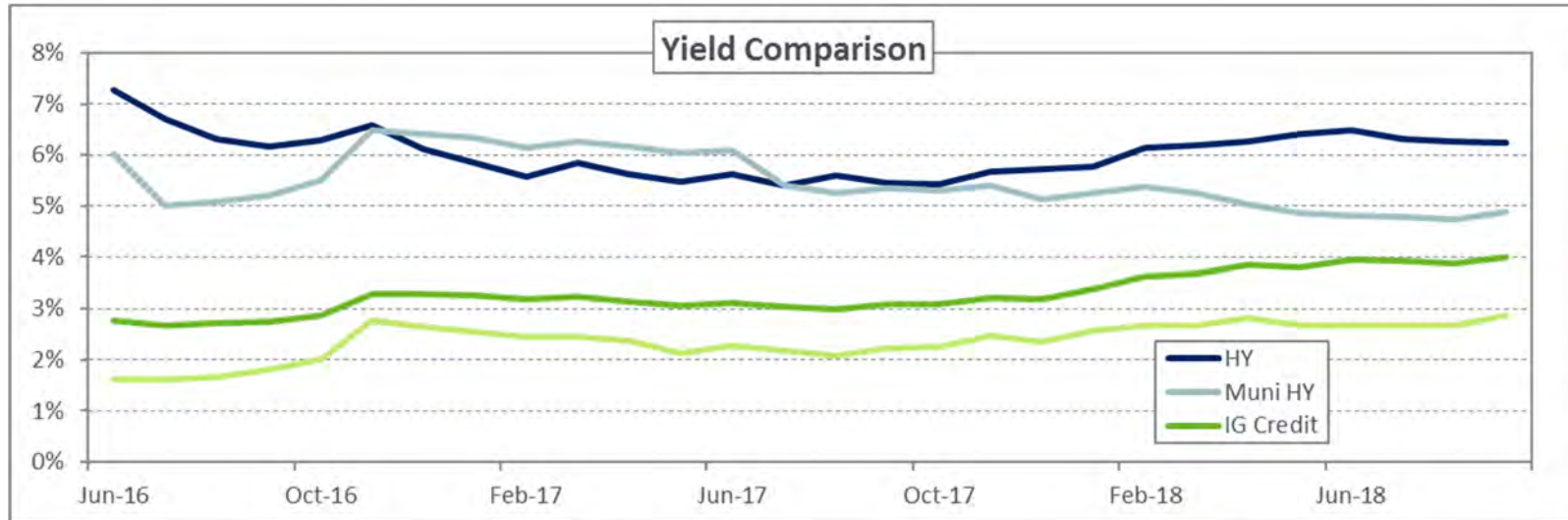
Source: Bloomberg
Long-term average calculated since 08/30/2002



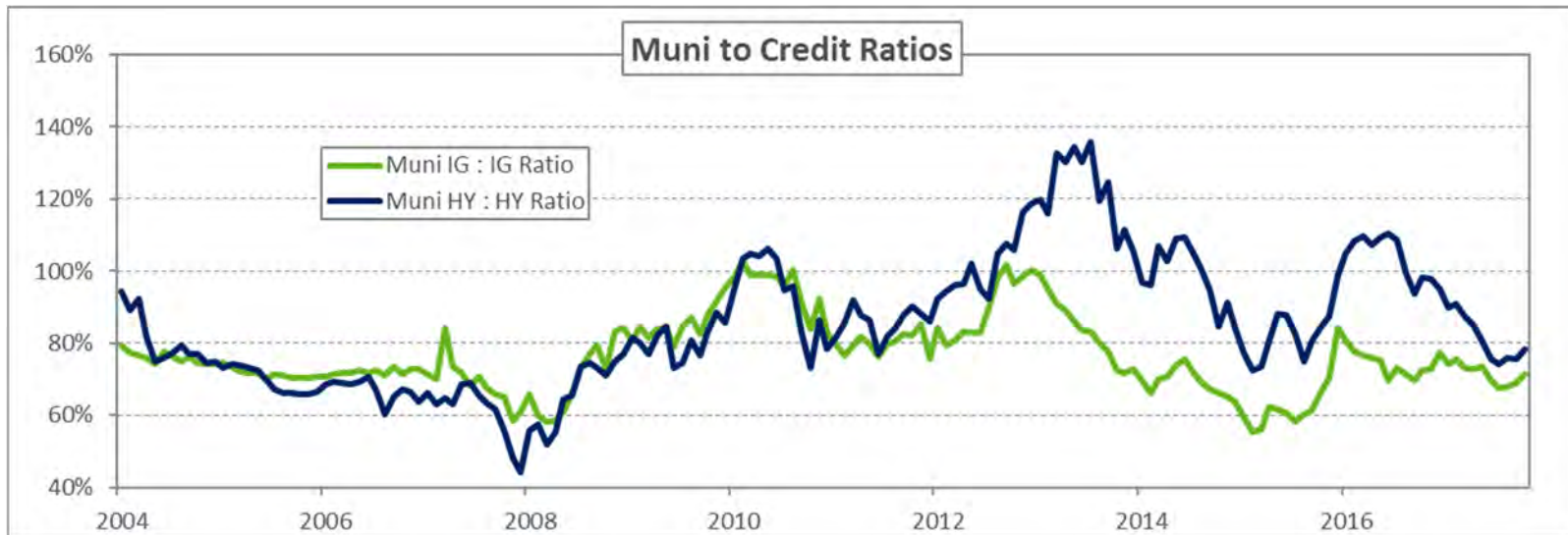
Source: Bloomberg
Long-term average calculated since 08/30/2002



MUNICIPAL BOND RATIOS



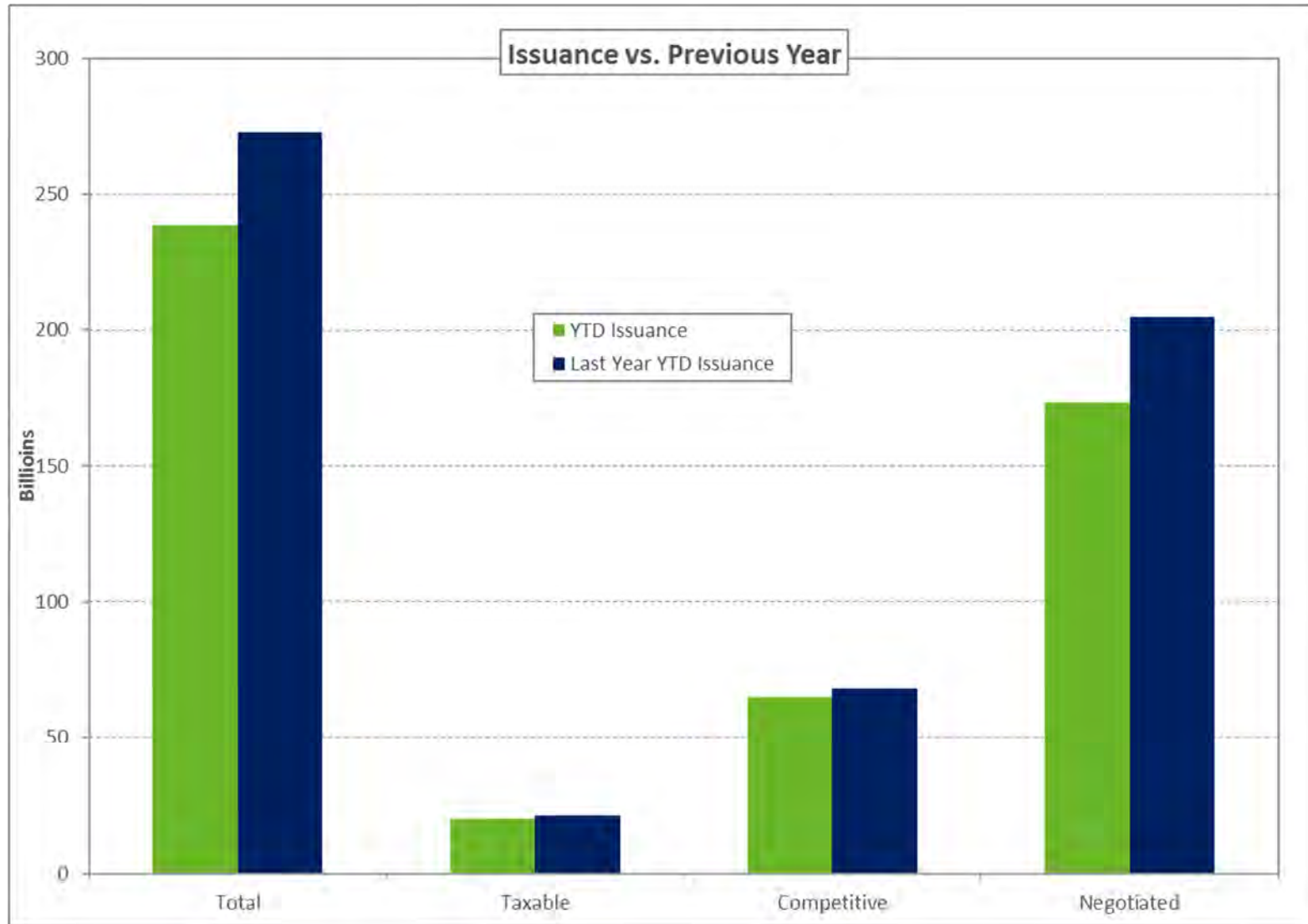
Source: Barclays, Bloomberg



Source: Barclays, Bloomberg, NEPC



MUNICIPAL BOND ISSUANCE



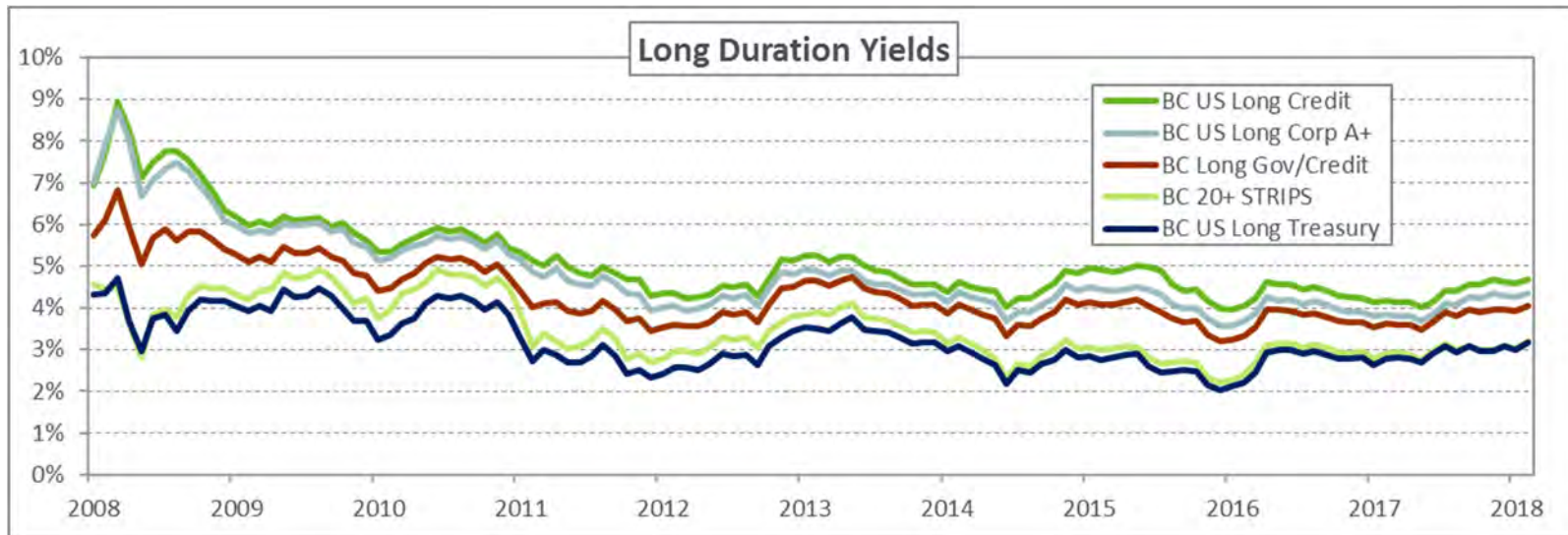
Source: Bloomberg



LONG DURATION

Index	Month-End Yield	1 Month Prior Yield	1 Year Prior Yield	Duration
Barclays Long Treasury	3.2%	3.0%	2.8%	17.0
Barclays 20+ STRIPS	3.2%	3.0%	2.9%	25.3
Barclays Long Gov/Credit	4.1%	3.9%	3.6%	14.8
Barclays Long Credit	4.7%	4.6%	4.2%	13.4
Barclays Long Corp A+	4.4%	4.3%	3.8%	14.1

Source: Barclays, Bloomberg



Source: Barclays, Bloomberg



REAL ASSETS

NEPC, LLC

REAL ASSETS INDEX PERFORMANCE

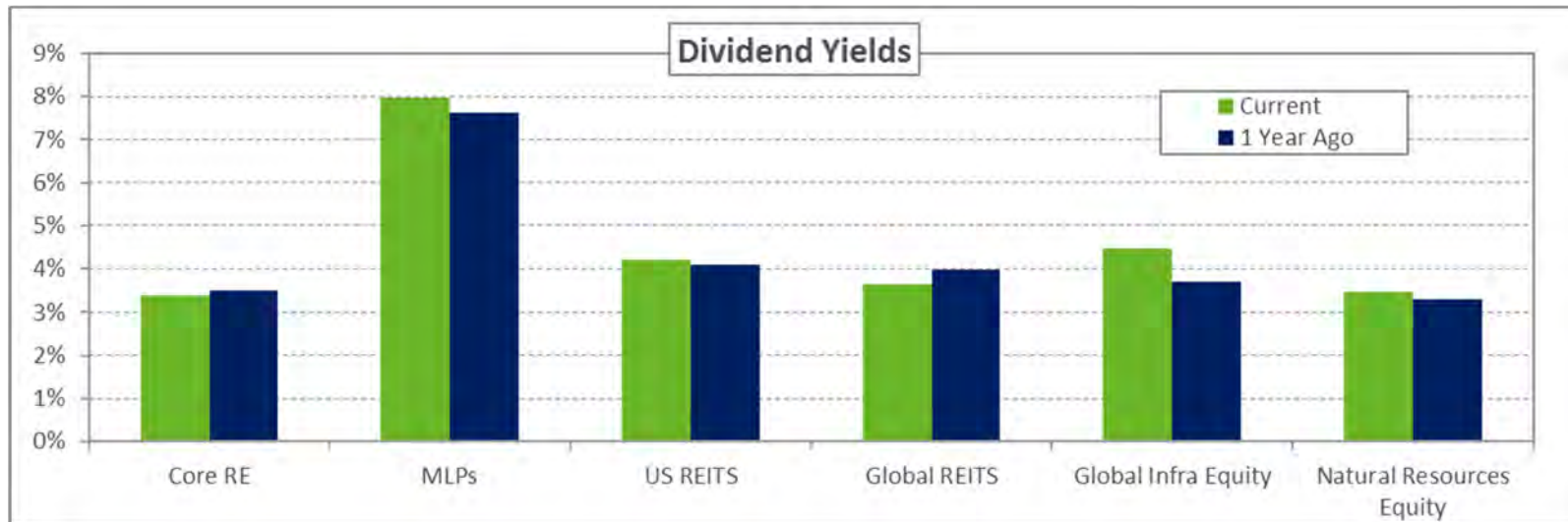
Index	1 Month	3 Month	YTD	1 Year	3 Year	5 Year
Bloomberg Commodity Index	1.9%	-2.0%	-2.0%	2.6%	-0.1%	-7.2%
Bloomberg Sub Agriculture Index	-2.1%	-5.4%	-10.9%	-12.7%	-7.5%	-10.0%
Coffee	0.8%	-13.0%	-24.1%	-26.9%	-13.9%	-10.9%
Corn	-2.2%	-4.0%	-7.1%	-11.4%	-12.6%	-13.6%
Cotton	-7.0%	-8.5%	-0.4%	14.4%	9.0%	-0.8%
Soybean	0.2%	-3.9%	-15.8%	-18.2%	-5.5%	-6.3%
Soybean Oil	0.8%	-2.5%	-16.2%	-15.9%	-3.0%	-10.8%
Sugar	-1.0%	-14.1%	-31.6%	-26.2%	-9.5%	-17.9%
Wheat	-6.5%	-1.7%	6.2%	-2.5%	-13.7%	-15.3%
Bloomberg Sub Energy	5.2%	4.4%	17.6%	28.1%	0.4%	-12.7%
Brent Crude	7.3%	5.8%	30.1%	55.1%	11.1%	-11.1%
Heating Oil	4.7%	6.2%	17.0%	33.2%	7.4%	-8.3%
Natural Gas	2.5%	2.9%	-0.1%	-11.9%	-18.2%	-20.2%
Unleaded Gas	5.6%	5.5%	14.6%	30.3%	4.6%	-8.2%
WTI Crude Oil	5.8%	3.3%	27.2%	47.6%	3.1%	-14.8%
Bloomberg Sub Industrial Metals	2.2%	-6.9%	-11.8%	-2.4%	7.9%	-1.4%
Aluminum	-2.5%	-2.5%	-6.8%	0.3%	8.3%	-0.9%
Copper	5.2%	-5.7%	-16.0%	-6.5%	4.5%	-4.4%
Nickel	-1.6%	-15.6%	-1.5%	19.5%	5.3%	-3.3%
Zinc	7.8%	-6.2%	-18.2%	-13.4%	16.3%	5.7%
Bloomberg Sub Precious Metals	-0.3%	-6.0%	-10.7%	-8.8%	1.0%	-4.2%
Gold	-0.7%	-5.0%	-9.4%	-7.7%	1.5%	-2.7%
Silver	1.2%	-9.3%	-14.8%	-12.6%	-0.8%	-8.7%
Bloomberg Sub Livestock	7.9%	2.9%	-2.4%	0.8%	-1.8%	-2.7%
Lean Hogs	15.1%	-0.9%	-8.8%	-1.7%	-7.8%	-9.5%
Live Cattle	5.2%	5.1%	0.6%	1.6%	1.5%	1.4%

Source: Bloomberg

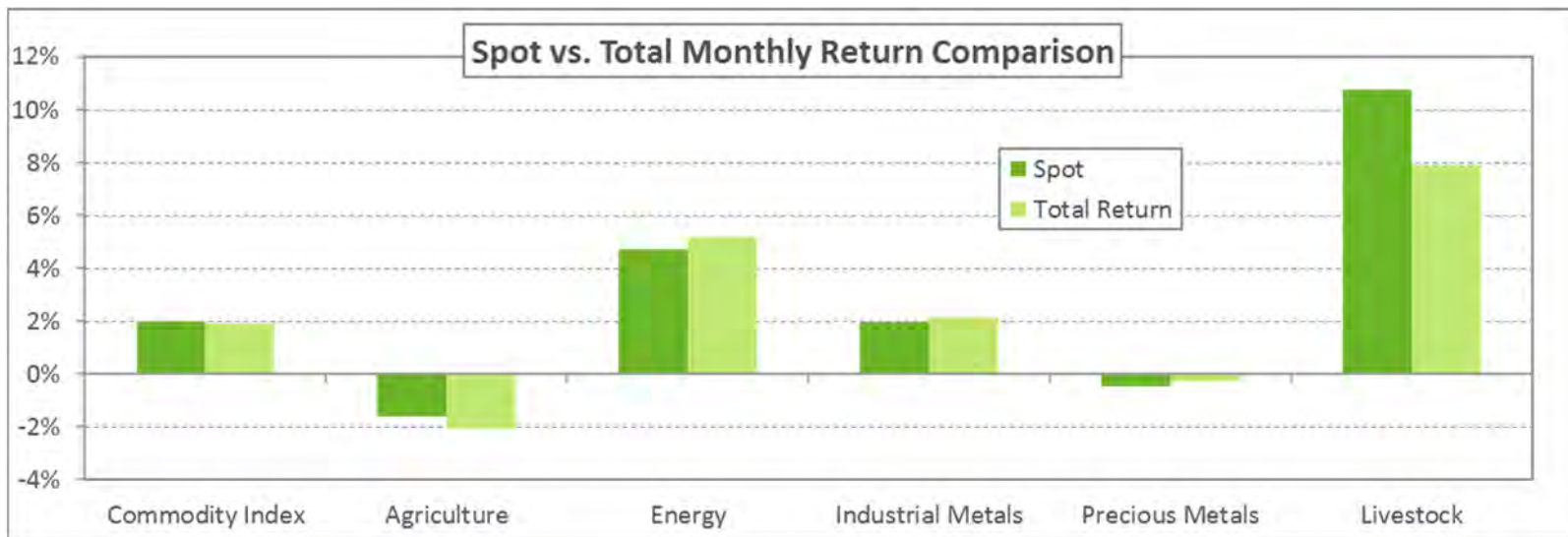
Bloomberg subindex total return indices reflects the return of the underlying one month commodity futures price movements



INCOME YIELD



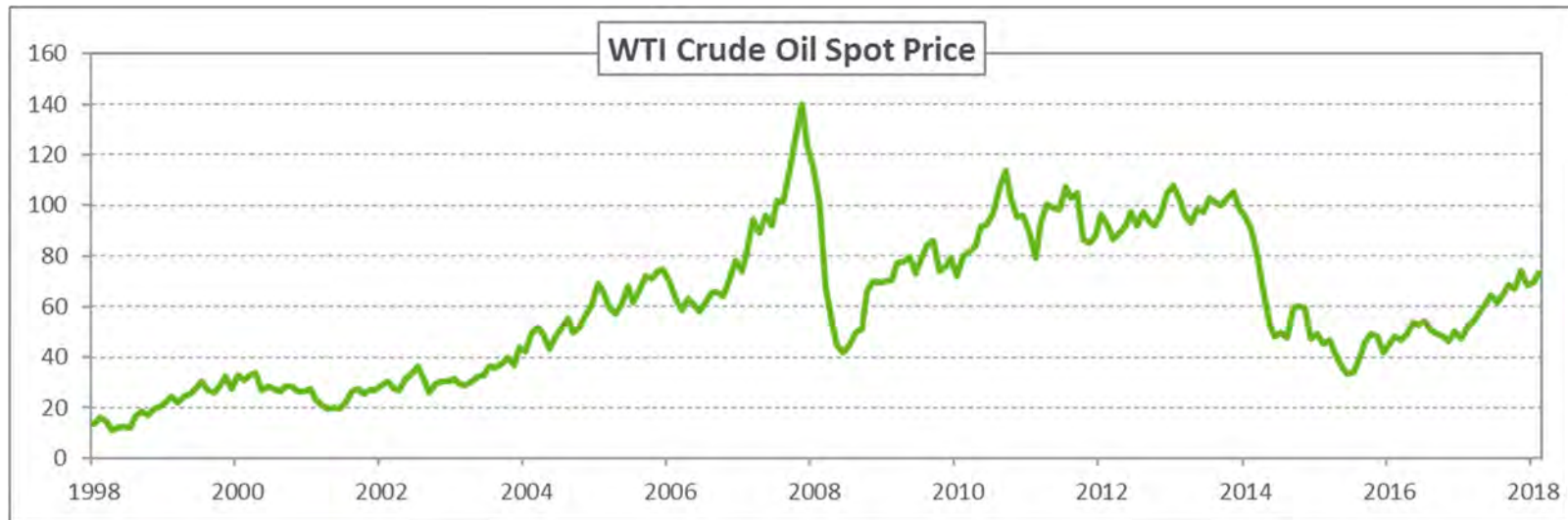
Source: Alerian, NAREIT, S&P, Bloomberg



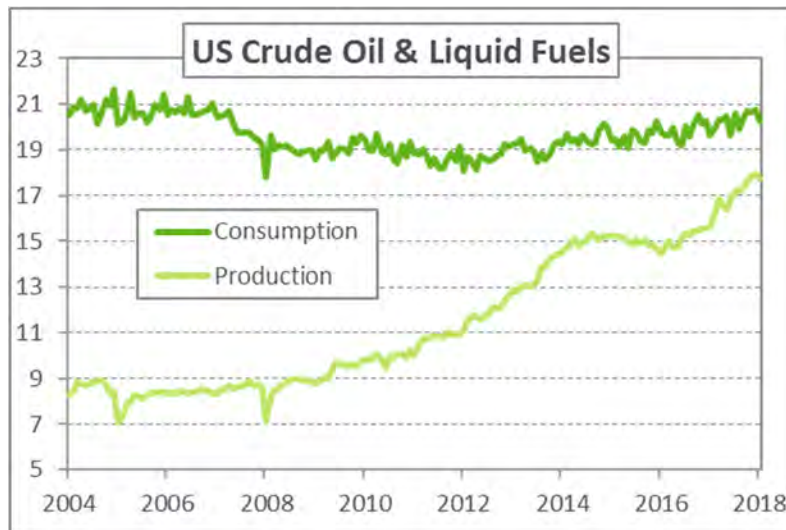
Source: Bloomberg, NEPC



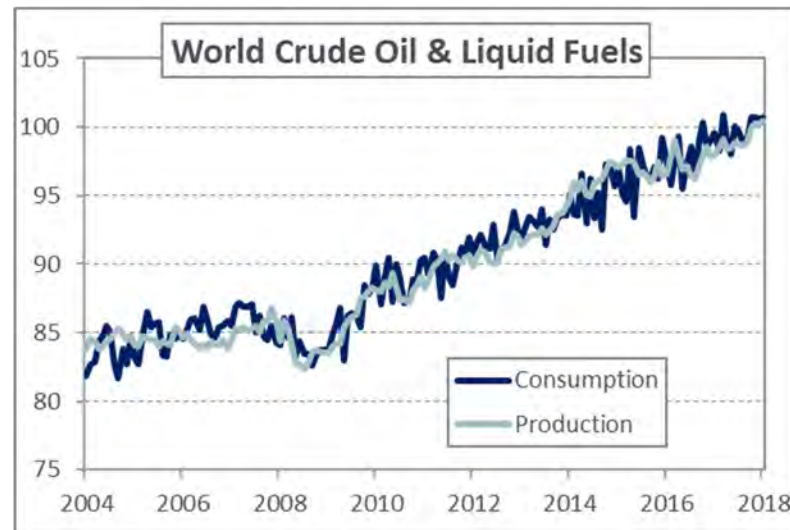
OIL MARKETS



Source: New York Mercantile Exchange, Bloomberg



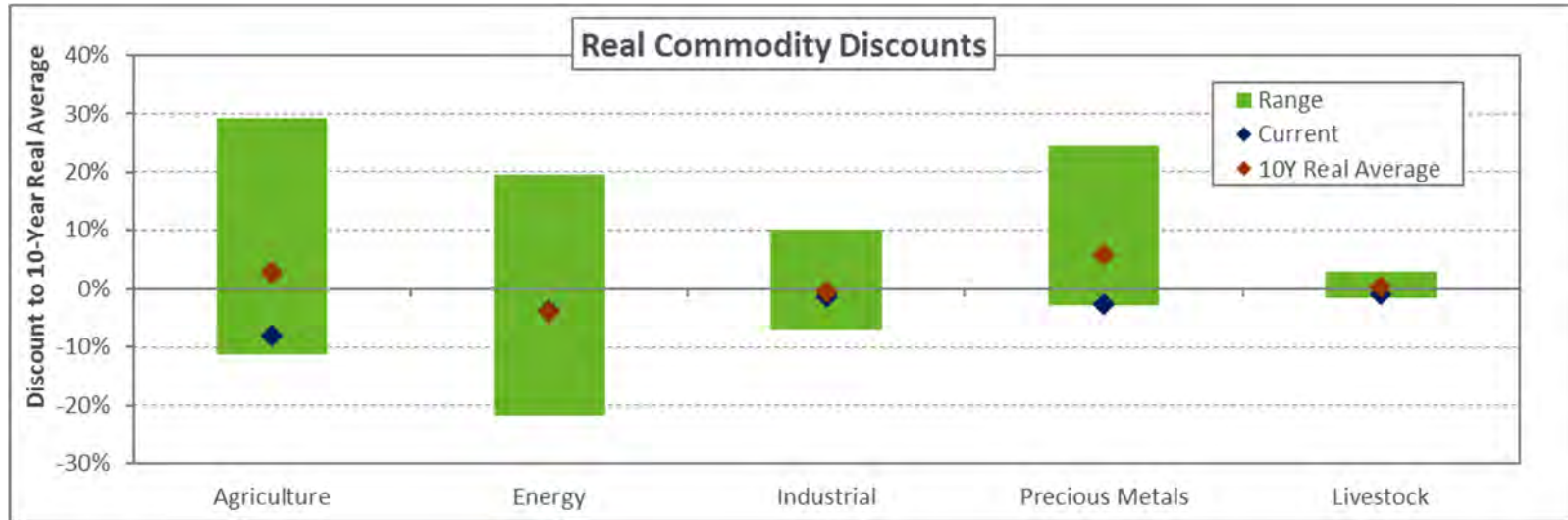
Source: US Department of Energy, Bloomberg



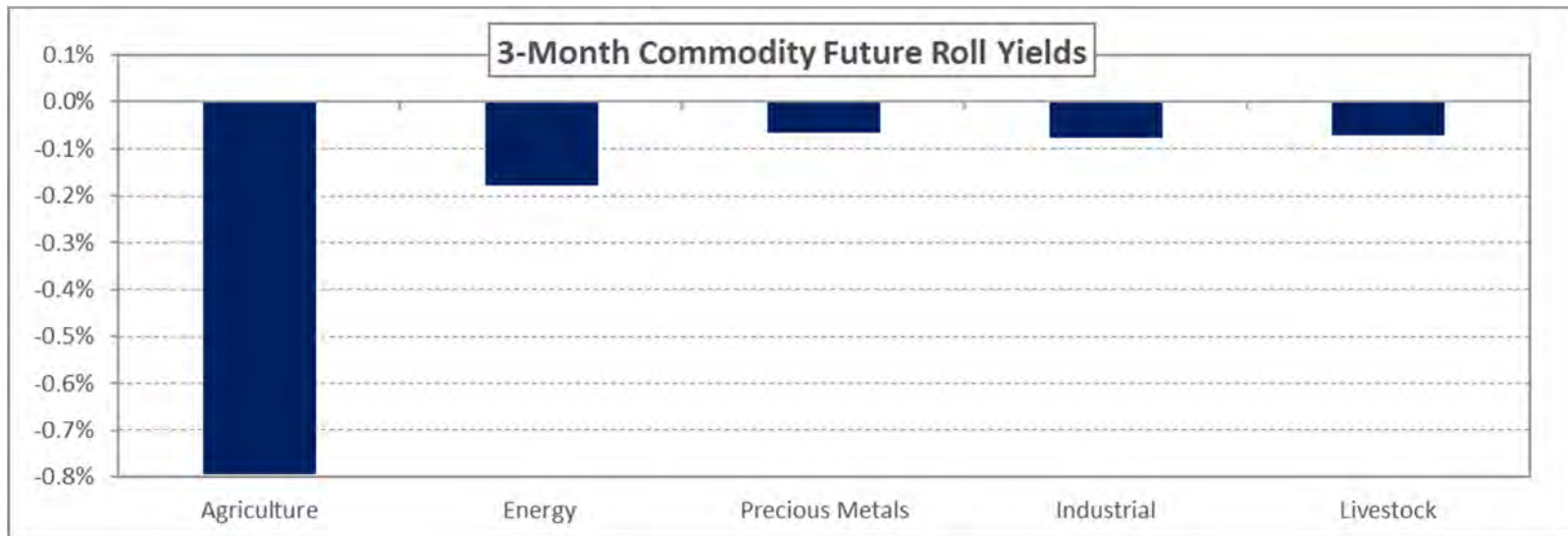
Source: OECD, Bloomberg



VALUATIONS



Source: Bloomberg, NEPC



Source: Bloomberg



GLOSSARY OF INVESTMENT TERMINOLOGY

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

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.

$\text{Upside Capture} = \text{Total Return}(\text{Fund Returns}) / \text{Total Returns}(\text{BM Return})$ when Period Benchmark Return is $> = 0$

$\text{Downside Capture} = \text{Total Return}(\text{Fund Returns}) / \text{Total Returns}(\text{BM Return})$ when Benchmark < 0

Data Source: InvestorForce



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Of Portfolios/Observations¹ – The total number of data points that make up a specified universe

Allocation Index³ - 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 Effect² - 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)³ - 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)³ - 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.

Attribution³ - 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 Maturity⁴ - 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 Average¹ - 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) Attribution¹ - 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) Attribution¹ - 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)⁴ - 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.

Correlation¹ - 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: ¹InvestorForce, ²Interaction Effect Performance Attribution, ³NEPC, LLC, ⁴Investopedia, ⁵Hedgeco.net



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Coupon⁴ – 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 Effect¹ - Is the effect that changes in currency exchange rates over time affect excess performance.

Derivative Instrument³ - 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 Deviation¹ - 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.

Duration³ - 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 Ratio¹ – 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 Bond³ - 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 Hurdle⁵ – 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 Mark⁴ - 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 Rate⁴ - 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 Effects² - 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.

Median³ - 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 Duration³ - The percentage change in the price of a fixed income security that results from a change in yield.

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

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

Net Investment Change¹ – Is the change in an investment after accounting for all Net Cash Flows.

Performance Fee⁴ - 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: ¹InvestorForce, ²Interaction Effect Performance Attribution, ³NEPC, LLC, ⁴Investopedia, ⁵Hedgeco.net



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Policy Index³ - 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)⁴ - 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)³ - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

Price to Sales (P/S)⁴ - 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)⁴ - 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) Effect² - 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 rate⁵ - is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

Tiered Fee¹ - 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 Effects² - 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 Return¹ - 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.

Universe³ - The list of all assets eligible for inclusion in a portfolio.

Upside Deviation¹ - Standard Deviation of Positive Returns

Weighted Avg. Market Cap.⁴ - 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 (%)³ - The current yield of a security is the current indicated annual dividend rate divided by current price.

Yield to Maturity³ - The discount rate that equates the present value of cash flows, both principal and interest, to market price.

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



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