

QUARTERLY PERFORMANCE REPORT

SAN BERNARDINO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



September 30, 2018

Allan Martin, Partner

Sam Austin, Partner

Michael Malchenko, Senior Analyst



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

MARKET ENVIRONMENT UPDATE AND OUTLOOK

NEPC, LLC

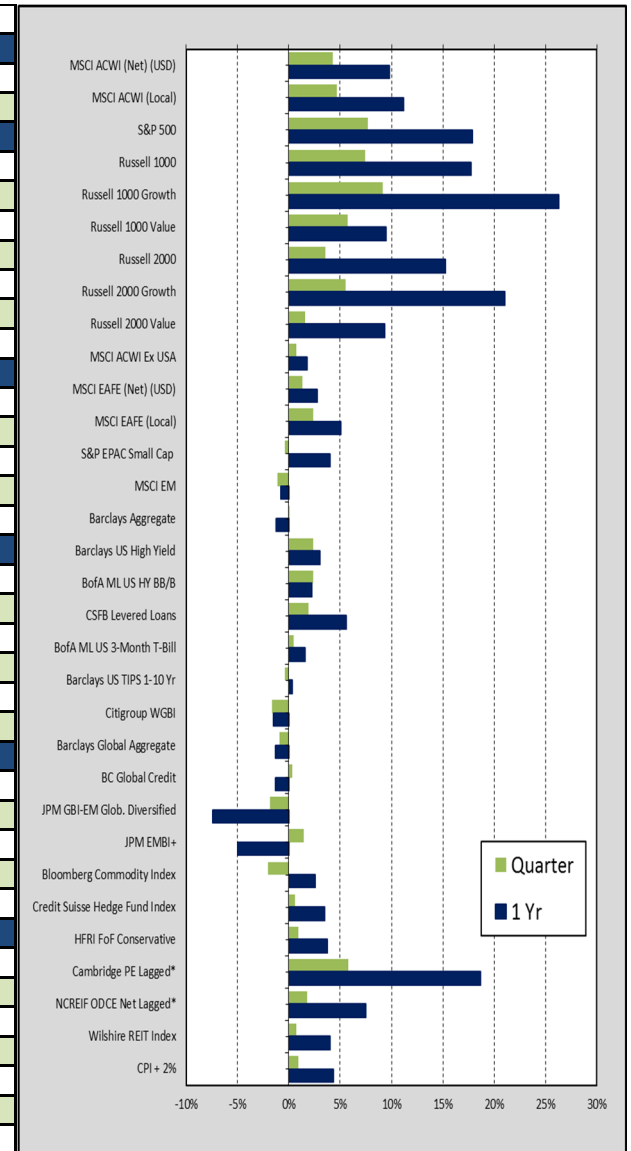
ECONOMIC ENVIRONMENT

- **Real GDP (second quarter) increased at an annual rate of 4.2%.**
 - 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 refinance 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

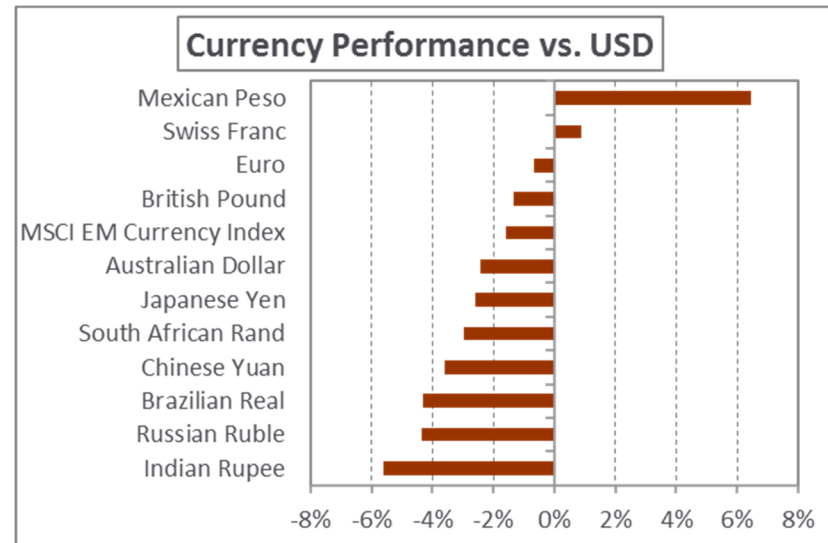
Q3 Macro Market Summary

- 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



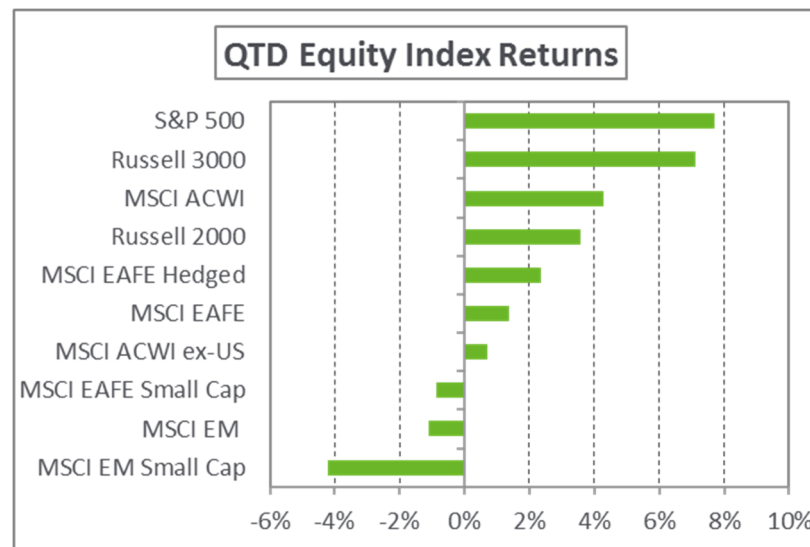
EQUITY PERFORMANCE OVERVIEW

Q3 Equity Market Summary

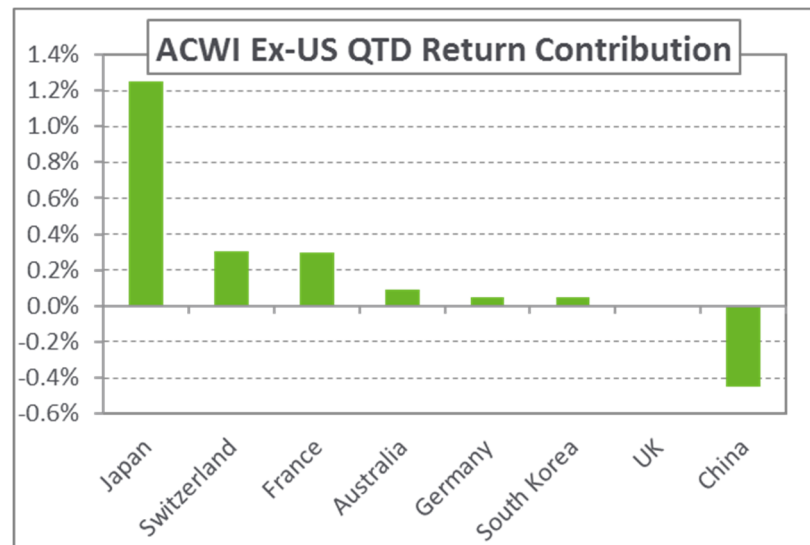
- **Strong economic data and positive sentiment helped US equities to outperform global equities**
- **Trade-sensitive economies disproportionately declined as escalating trade tensions and currency weakness weighed on returns**

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



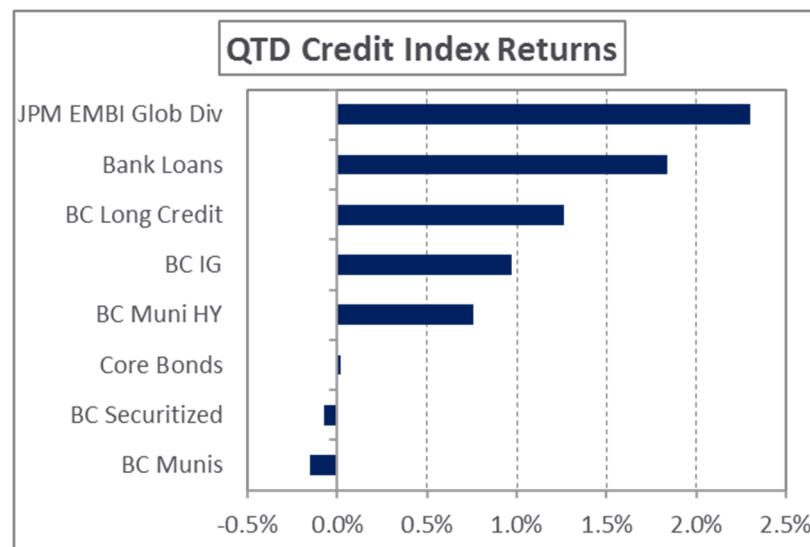
CREDIT PERFORMANCE OVERVIEW

Q3 Credit Market Summary

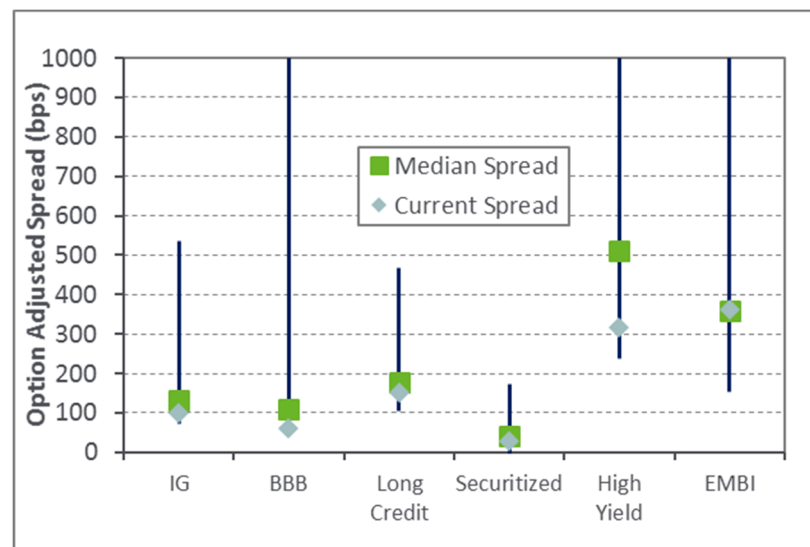
- **Credit spreads broadly declined and remain below medians in most areas of the credit market**
- **Dollar-denominated emerging market debt increased by 2.3% as spreads tightened**

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



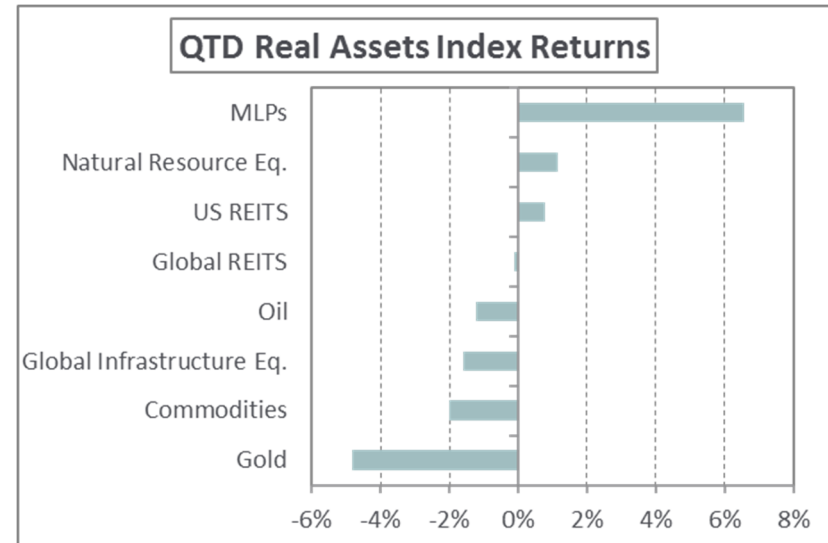
Source: Barclays, JPM, S&P, Bloomberg; as of 01/31/2000



REAL ASSETS PERFORMANCE OVERVIEW

Q3 Real Assets Market Summary

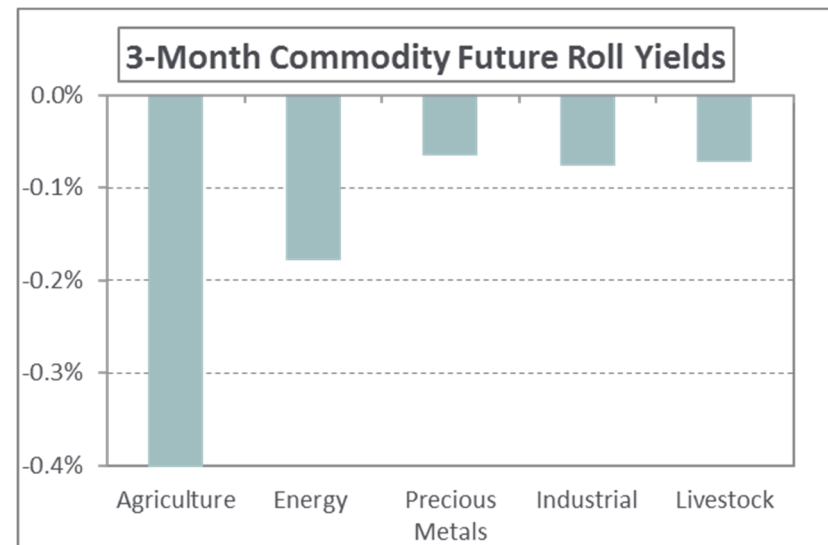
- **Oil declined 1.2% for the quarter, but is up 41.8% for the year**
- **Agricultural commodities declined substantially due to robust supply and trade war-related concerns**
- **MLP's increased 6.6%, supported by rising commodity prices and ongoing industry simplification**



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

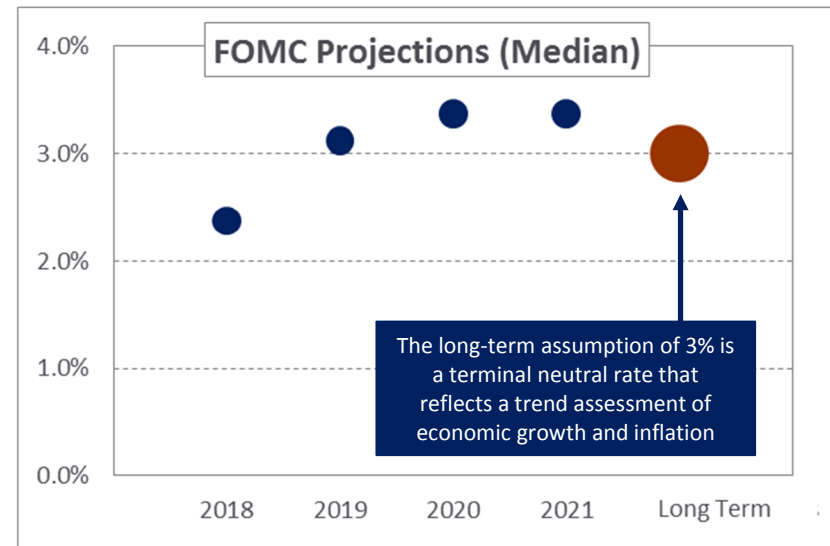
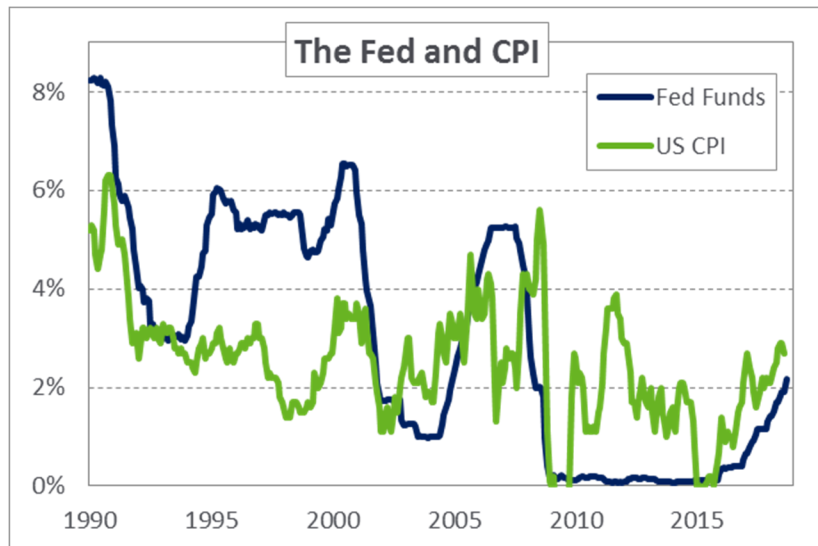
The end of Fed Gradualism: The Fed has shifted from a “lower for longer” policy to a more balanced posture of raising rates in-line with higher inflation

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

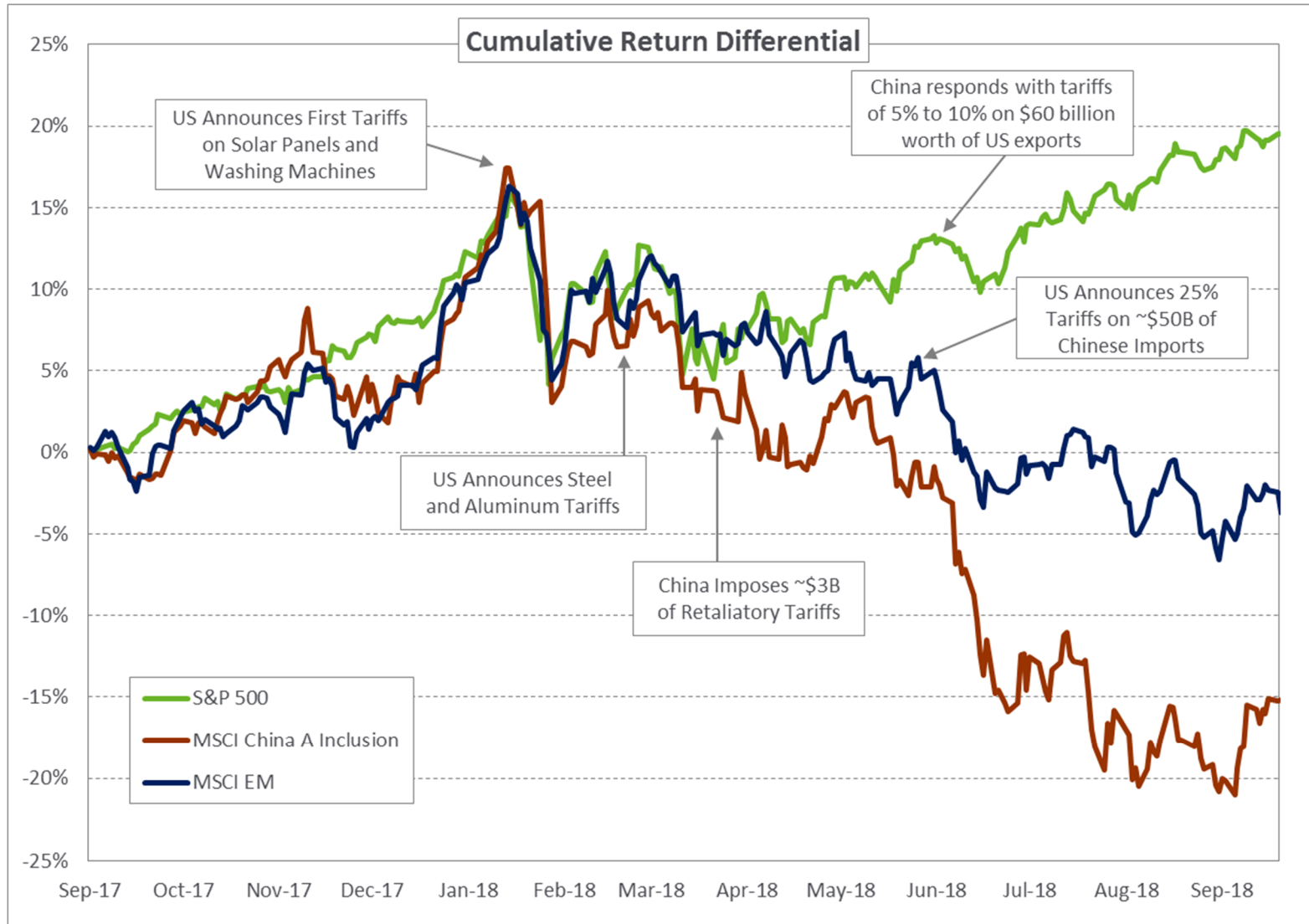
Fed is expected to be careful and data dependent when assessing the timing of interest rate increases relative to changes in inflation levels



Source: (Left) Bloomberg
Source: (Right) FOMC



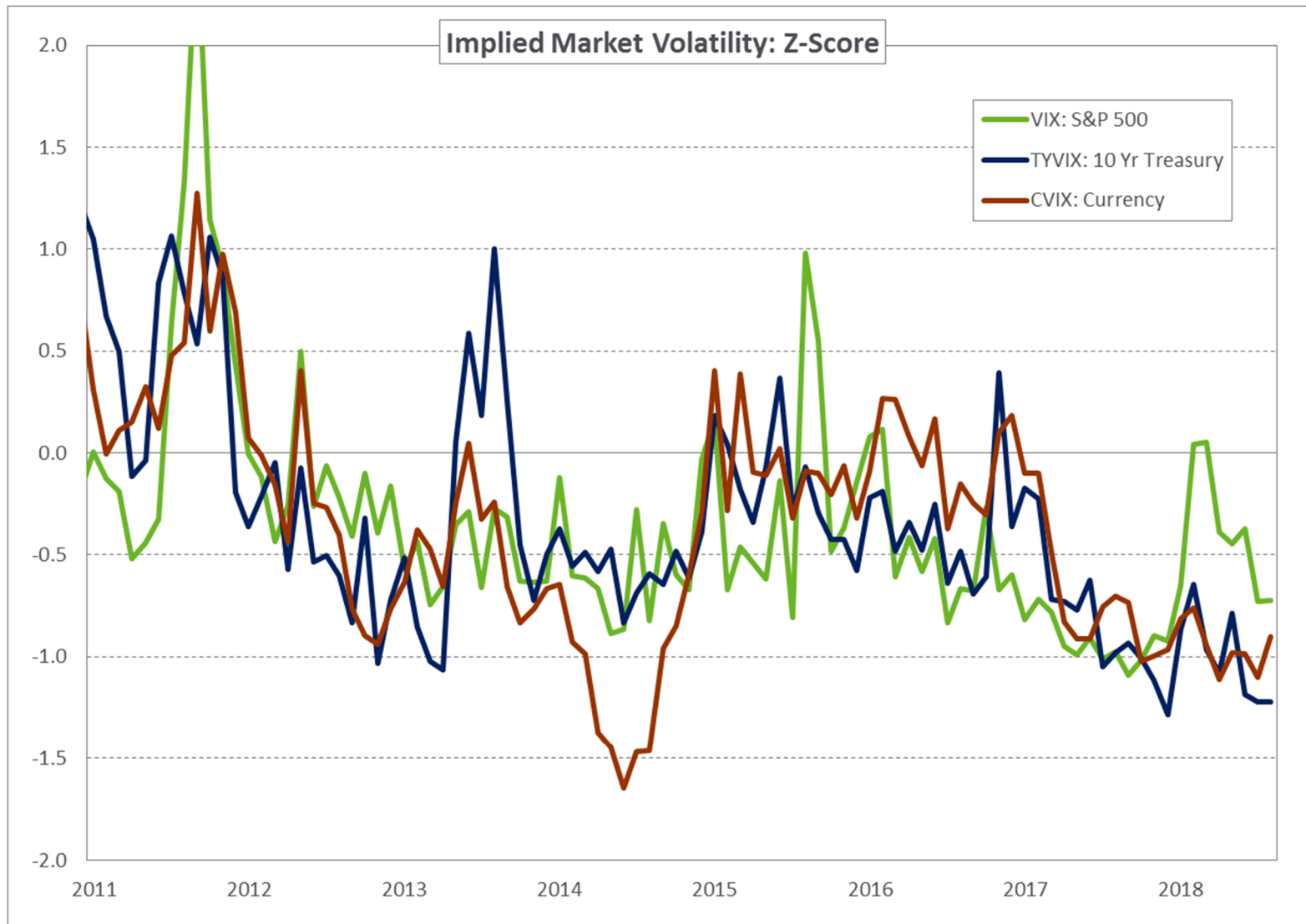
TRADE TENSIONS WEIGHED ON RETURNS



Source: S&P, MSCI, Bloomberg, NEPC



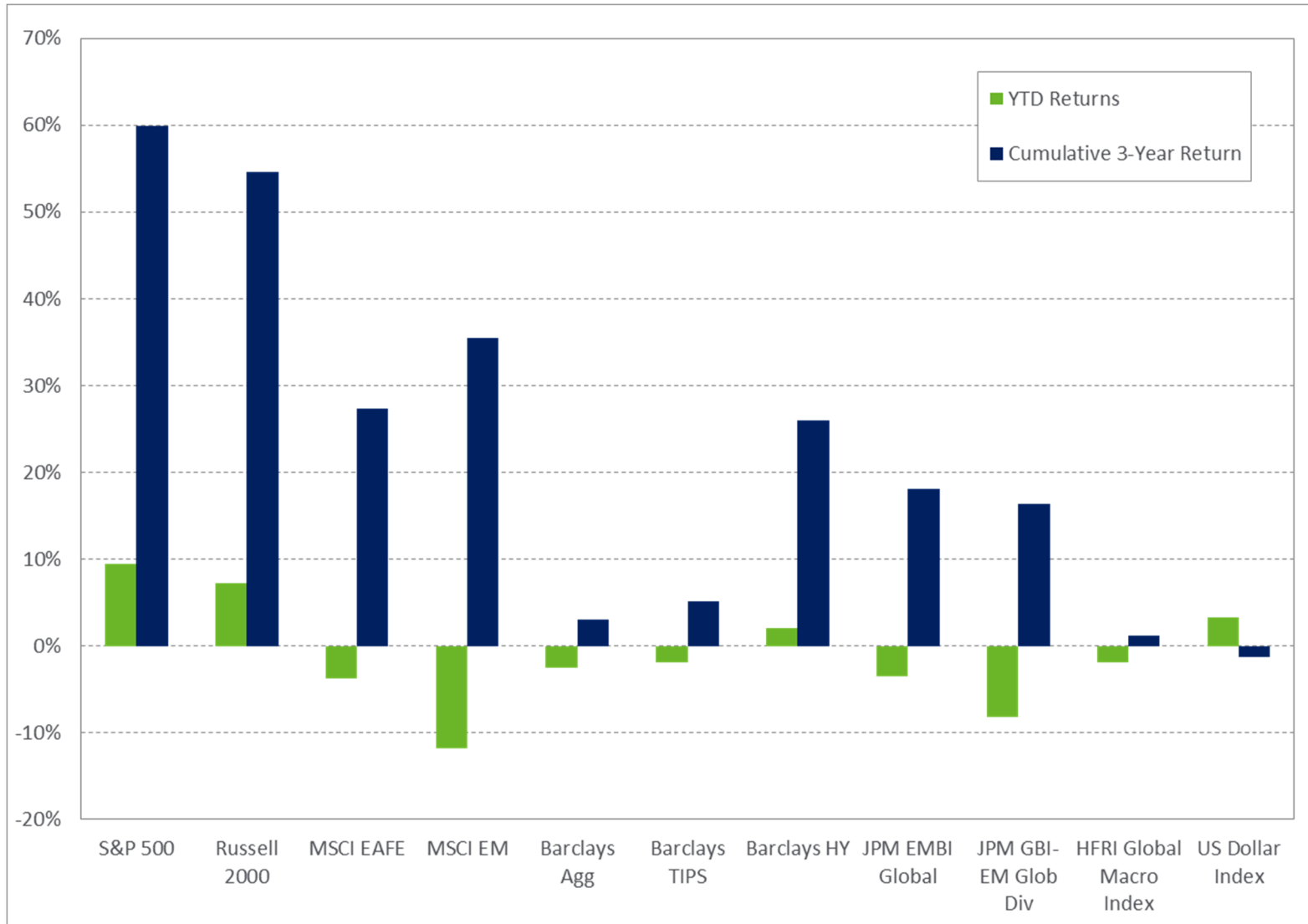
MARKET VOLATILITY IS WELL BELOW AVERAGE



Source: Bloomberg



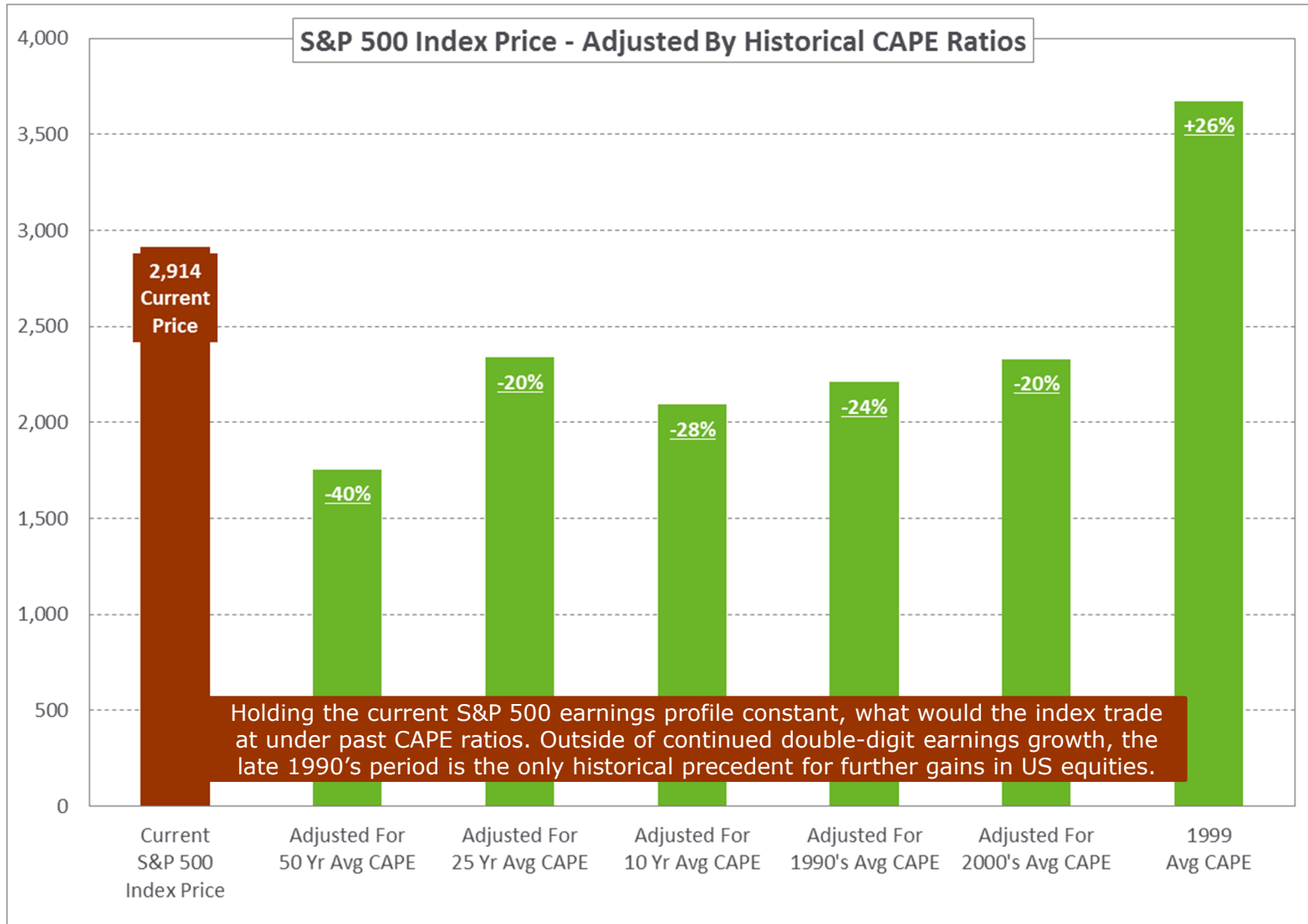
US EQUITIES ARE THE OUTLIER IN 2018



Source: Bloomberg



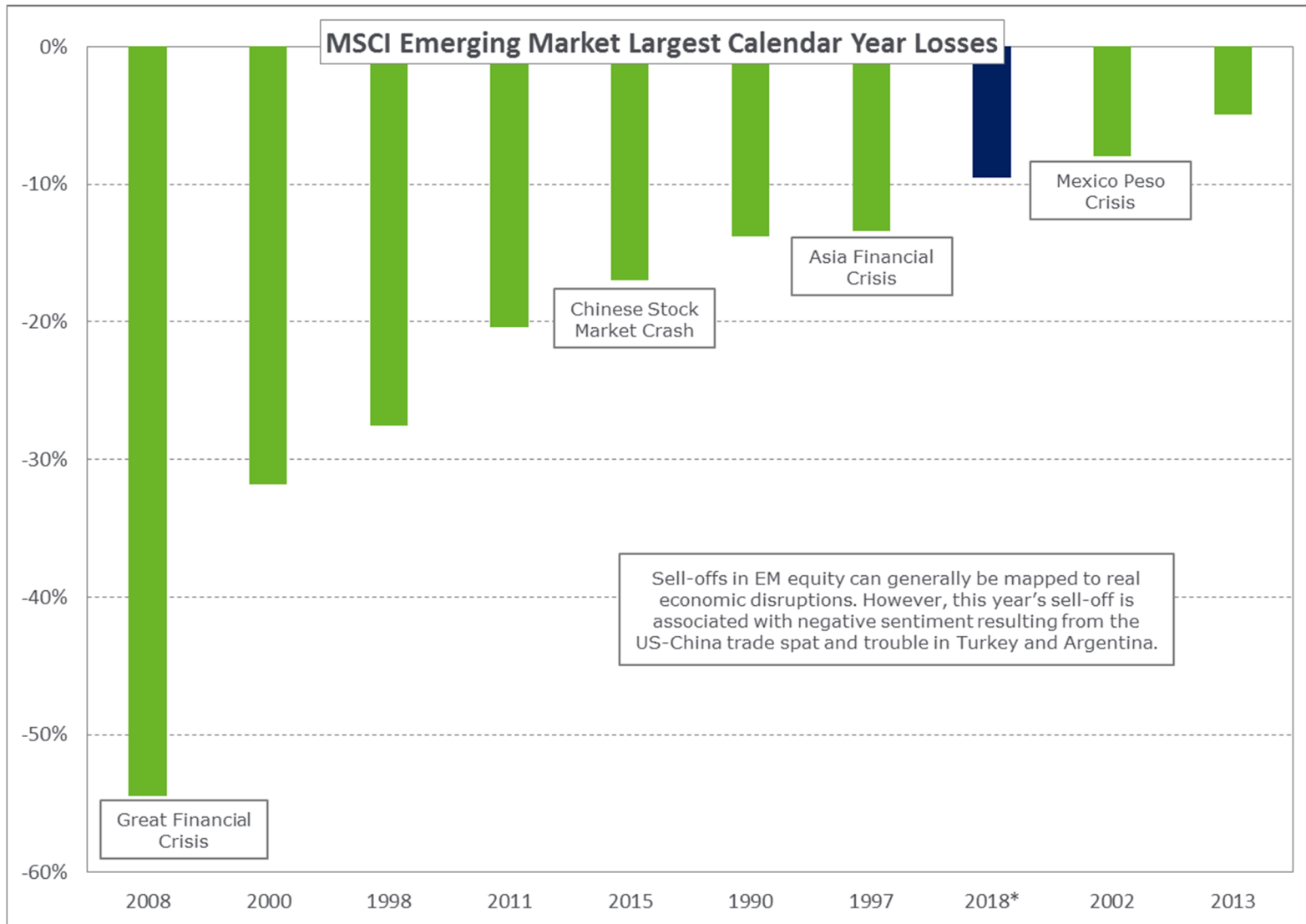
CAN VALUATIONS SUPPORT FURTHER GAINS?



Source: Bloomberg, Yale, Robert Shiller



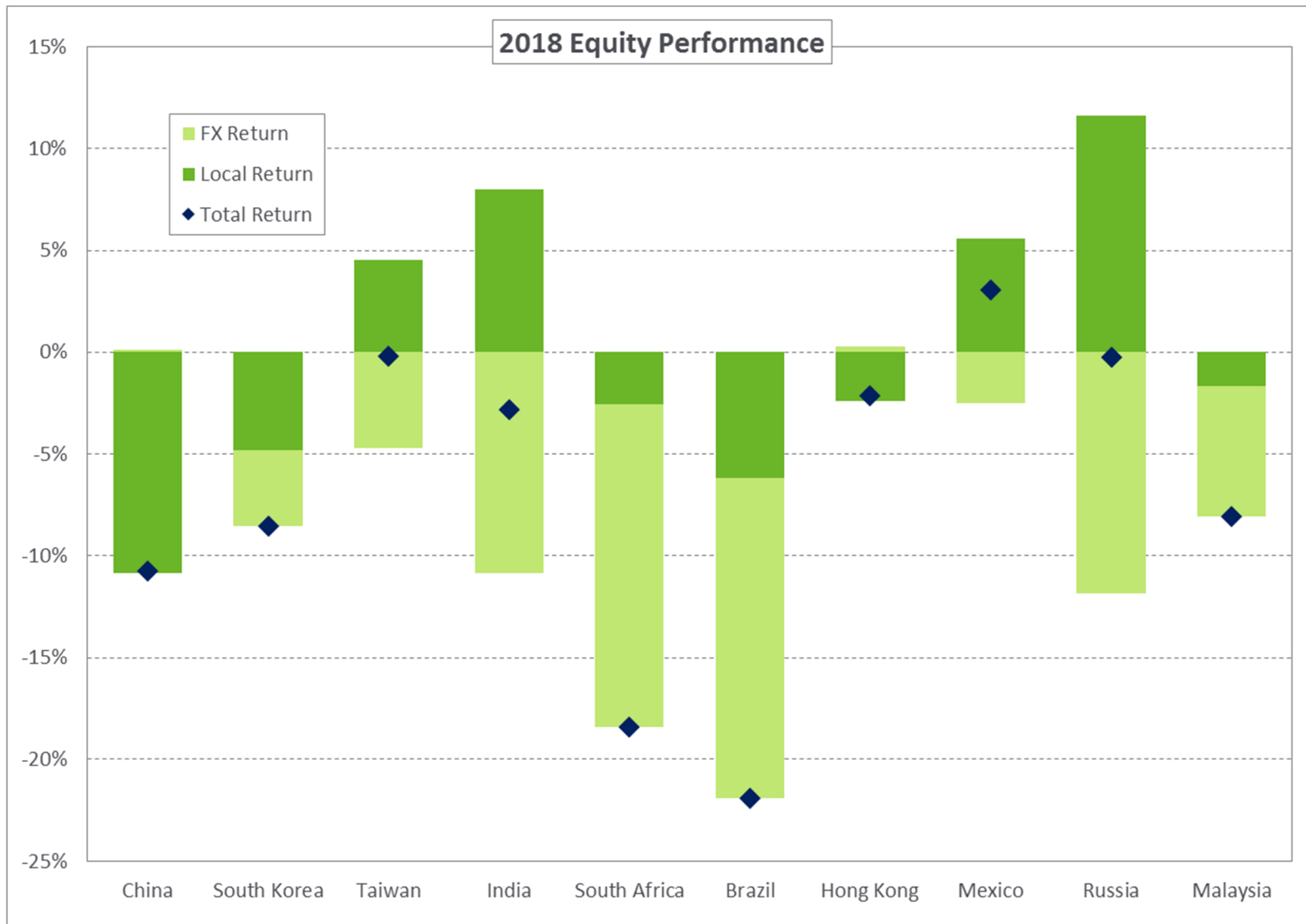
EM HAS DECLINED, BUT IT COULD BE WORSE



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



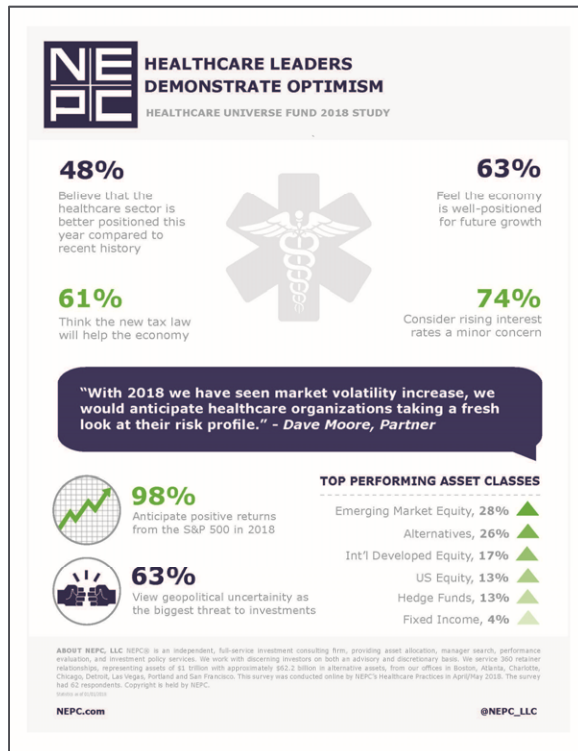
CURRENCY DETRACTED FROM TOTAL RETURNS



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

NEPC, LLC

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
Total Fund	\$10,376,326,840	2.0%	77	4.9%	12	7.6%	30	9.1%	89	7.3%	53	6.4%	94
Policy Index		1.9%	79	2.3%	77	5.6%	88	8.1%	98	5.9%	98	6.7%	87
S&P 500		7.7%	1	10.6%	1	17.9%	1	17.3%	1	13.9%	1	12.0%	1
BBgBarc US Aggregate TR		0.0%	99	-1.6%	99	-1.2%	99	1.3%	99	2.2%	99	3.8%	99
60% MSCI ACWI (Net) / 40% FTSE WGBI		1.9%	80	1.3%	93	5.2%	94	8.7%	94	5.3%	99	6.0%	96
InvestorForce Public DB > \$1B Gross Median		2.2%		3.1%		7.1%		9.7%		7.4%		7.7%	

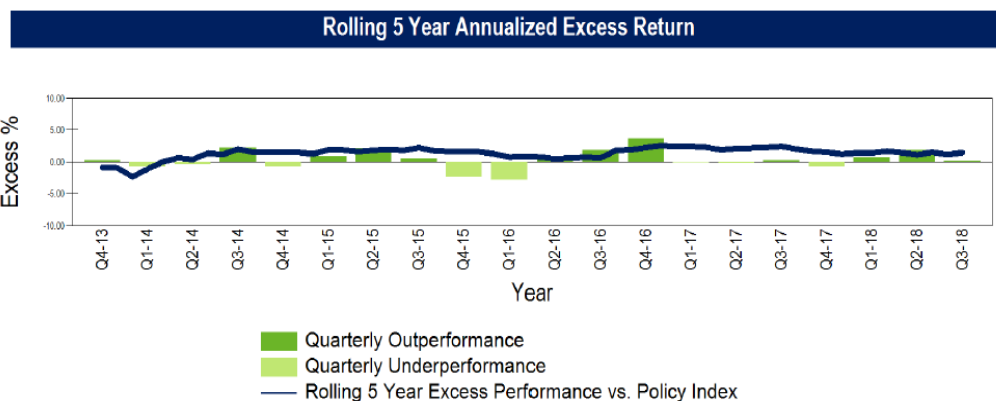
In the year ended September 30, 2018 the Fund returned 7.6% ranking in the 30th percentile of Public Funds > \$1 Billion and significantly outperformed the actuarial assumed rate of 7.25%. The Fund's assets totaled \$10.4 billion, an increase of \$709.9 million from a year ago.

The Fund experienced a net investment gain of \$733.0 million during the year including a net investment gain of \$206.8 million in the third calendar quarter.

In the three-year period ended September 30, 2018 the Fund returned 9.1% and ranked in the 89th percentile among its peers. The Sharpe Ratio over this period of 2.5 ranks in the 1st percentile, indicating that the Fund earned a higher rate of return for each incremental unit of risk taken during the period versus its peers.

In the five-year period ended September 30, 2018 the Fund returned 7.3% per annum and ranked in the 53rd percentile among its peers. On a risk adjusted basis the Fund's Sharpe and Sortino Ratios rank in the 1st percentile indicating both strong returns per unit of risk taken and strong returns per unit of downside risk experienced when compared to a universe of public fund peers >\$1B.

Note: InvestorForce Public Funds >\$1B Gross of Fee prelim universe contains 18 portfolios with \$141 billion in assets.



Statistics Summary

3 Years Ending September 30, 2018

	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	2.5	1	3.5	1
InvestorForce Public DB > \$1B Gross Median	1.7	--	2.4	--

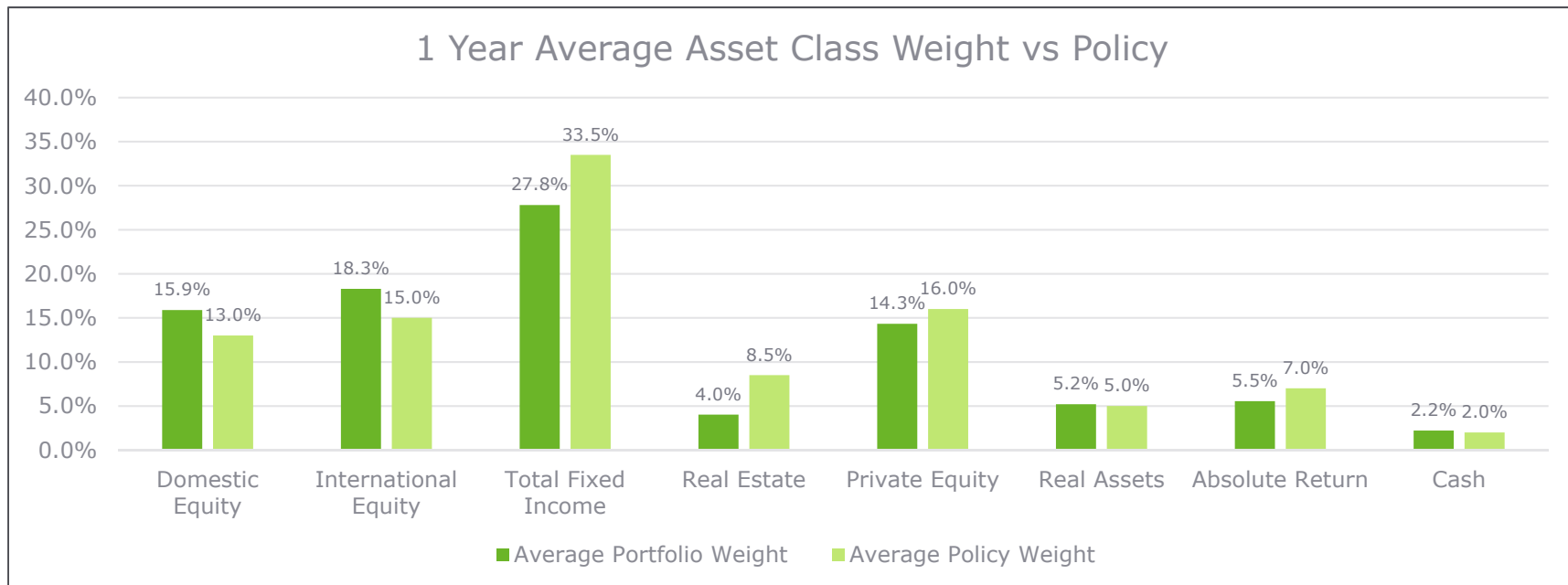
5 Years Ending September 30, 2018

	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	2.1	1	3.7	1
InvestorForce Public DB > \$1B Gross Median	1.2	--	1.9	--



BETA OVERLAY CONTRIBUTION TO RETURN

COMPOSITE	3 Months	1 Year	3 Years	5 Years
Total Plan <i>With</i> Beta Overlay	2.01	7.54	9.02	7.29
Total Plan <i>Without</i> Beta Overlay	1.95	7.14	7.91	7.10
<i>Over/Under</i>	0.06	0.40	1.11	0.19



San Bernardino County Employees' Retirement Association

TOTAL FUND PERFORMANCE SUMMARY

Statistics Summary								
1 Year Ending September 30, 2018								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	7.6%	30	2.7%	1	2.2	1	6.2	1
InvestorForce Public DB > \$1B Gross Median	7.1%	--	4.9%	--	1.2	--	1.6	--

Statistics Summary								
3 Years Ending September 30, 2018								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	9.1%	89	3.3%	1	2.5	1	3.5	1
InvestorForce Public DB > \$1B Gross Median	9.7%	--	5.5%	--	1.7	--	2.4	--

Statistics Summary								
5 Years Ending September 30, 2018								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	7.3%	53	3.2%	1	2.1	1	3.7	1
InvestorForce Public DB > \$1B Gross Median	7.4%	--	5.8%	--	1.2	--	1.9	--

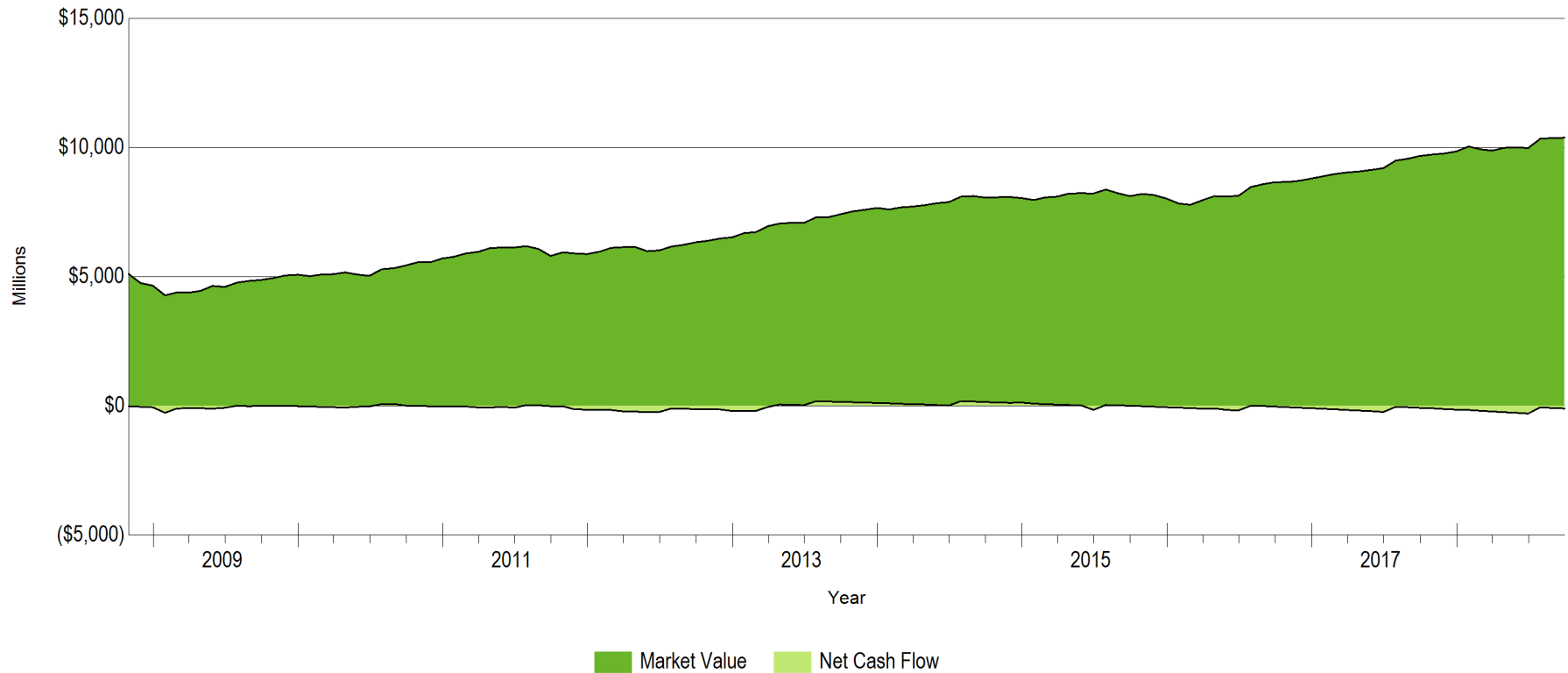
Sortino Ratio requires at least two negative points during the time period in order to calculate



San Bernardino County Employees' Retirement Association

TOTAL FUND ASSET GROWTH SUMMARY

10 Years Ending September 30, 2018

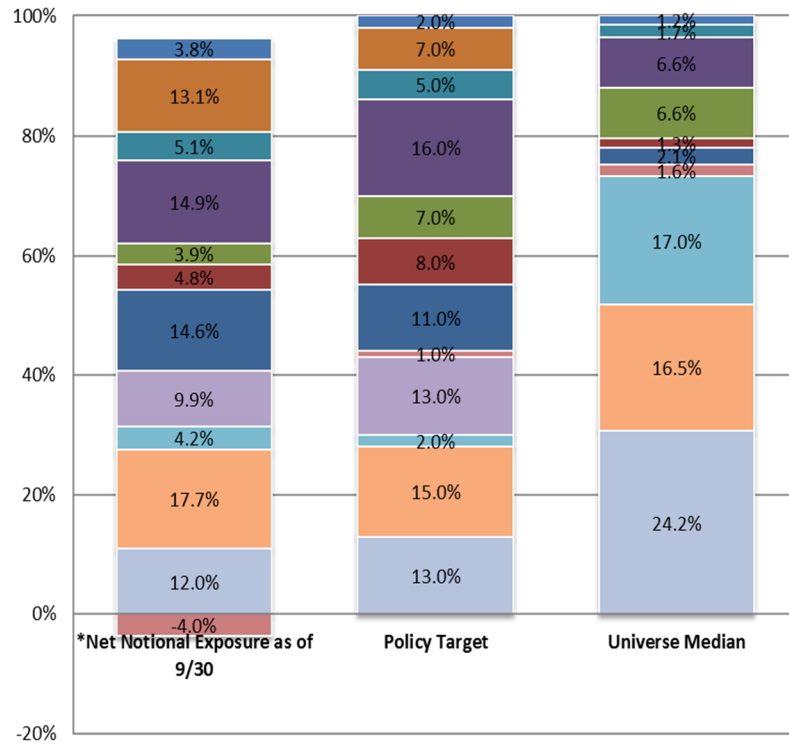


	Last Three Months	Year-To-Date	One Year	Five Years	Ten Years
Beginning Market Value	\$9,972,950,140	\$9,844,615,850	\$9,666,461,859	\$7,411,654,875	\$5,706,171,591
Net Cash Flow	\$196,567,243	\$43,993,454	-\$23,085,280	-\$251,910,065	-\$96,145,239
Net Investment Change	\$206,809,457	\$487,717,536	\$732,950,260	\$3,216,582,029	\$4,766,300,488
Ending Market Value	\$10,376,326,840	\$10,376,326,840	\$10,376,326,840	\$10,376,326,840	\$10,376,326,840



San Bernardino County Employees' Retirement Association

TOTAL FUND PERFORMANCE SUMMARY



	*Net Notional Exposure	*Net Notional Exposure as of 9/30	Policy Target	*Difference	Policy Ranges	Within Range
US Equities	1,248,053	12.0%	13.0%	-1.0%	8%-18%	Yes
Int'l Equities	1,839,884	17.7%	15.0%	2.7%	10%-20%	Yes
U.S. Core	432,600	4.2%	2.0%	2.2%	-3%-7%	Yes
US Credit	1,028,459	9.9%	13.0%	-3.1%	8%-18%	Yes
Non-US Core Fixed Income	(415,053)	-4.0%	1.0%	-5.0%	-4%-6%	Yes
Non-US Credit	1,514,150	14.6%	11.0%	3.6%	6%-16%	Yes
Emerging Market Debt	494,113	4.8%	8.0%	-3.2%	3%-13%	Yes
Real Estate	402,711	3.9%	7.0%	-3.1%	0%-14%	Yes
Private Equity	1,542,377	14.9%	16.0%	-1.1%	6%-21%	Yes
Real Assets	530,873	5.1%	5.0%	0.1%	0%-10%	Yes
Absolute Return	1,363,234	13.1%	7.0%	6.1%	0%-12%	No
Cash	394,924	3.8%	2.0%	1.8%	0%-10%	Yes
	10,376,327	100.0%	100.0%			

- US Equities
- Int'l Equities
- U.S. Core
- US Credit
- Non-US Core Fixed Income
- Non-US Credit
- Emerging Market Debt
- Real Estate
- Private Equity
- Real Assets
- Absolute Return
- Cash



San Bernardino County Employees' Retirement Association

TOTAL FUND PERFORMANCE SUMMARY

Asset Class	Physical Exposure		Delta Adjusted Synthetic Exposure		Net Position		Overlay Target		Policy Target	
Total Market Value	10,047.6	100.0%	0.0	0.0%	10,047.6	100.0%	10,047.6	100.0%	10,047.6	100.00%
Cash	1,015.1	10.1%	-989.9	-9.85%	25.2	0.25%	0.0	0.0%	0.0	0.00%
Cash	1,015.1	10.1%	-989.9	-9.85%	25.2	0.25%	0.0	0.0%	0.0	0.00%
Equity	1,716.9	17.09%	1,368.6	13.62%	3,085.4	30.71%	3,106.8	30.92%	3,014.3	30.00%
Emerging Markets	441.8	4.4%	297.1	2.96%	739.0	7.35%	750.8	7.47%	728.5	7.25%
Equity Delta Hedge	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.00%
International Developed	124.3	1.24%	977.4	9.73%	1,101.7	10.96%	1,113.3	11.08%	1,080.1	10.75%
US Large Cap	1,150.5	11.45%	-48.2	-0.48%	1,102.4	10.97%	1,082.2	10.77%	1,050.0	10.45%
US Small Cap	0.2	0.0%	142.2	1.41%	142.4	1.42%	160.5	1.6%	155.7	1.55%
Fixed	3,429.8	34.14%	-378.7	-3.77%	3,051.2	30.37%	3,055.0	30.41%	2,964.1	29.50%
EM High Yield CDX	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.00%
Global ex US Fixed Income	2,374.2	23.63%	-811.3	-8.07%	1,562.9	15.55%	1,553.4	15.46%	1,507.1	15.00%
High Yield **	1,055.7	10.51%	0.0	0.0%	1,055.7	10.51%	957.9	9.53%	929.4	9.25%
US Fixed Income	0.0	0.0%	432.6	4.31%	432.6	4.31%	543.7	5.41%	527.5	5.25%
Other	3,885.9	38.67%	0.0	0.0%	3,885.9	38.67%	3,885.9	38.67%	4,069.3	40.50%
Alternatives	116.8	1.16%	0.0	0.0%	116.8	1.16%	116.8	1.16%	120.6	1.20%
Commodities	195.1	1.94%	0.0	0.0%	195.1	1.94%	195.1	1.94%	201.0	2.00%
Infrastructure	208.9	2.08%	0.0	0.0%	208.9	2.08%	208.9	2.08%	201.0	2.00%
Private Equity	1,215.9	12.1%	0.0	0.0%	1,215.9	12.1%	1,215.9	12.1%	1,547.3	15.40%
Real Estate	541.5	5.39%	0.0	0.0%	541.5	5.39%	541.5	5.39%	391.9	3.90%
Tactical Cash	1,607.6	16.0%	0.0	0.0%	1,607.6	16.0%	1,607.6	16.0%	1,607.6	16.00%

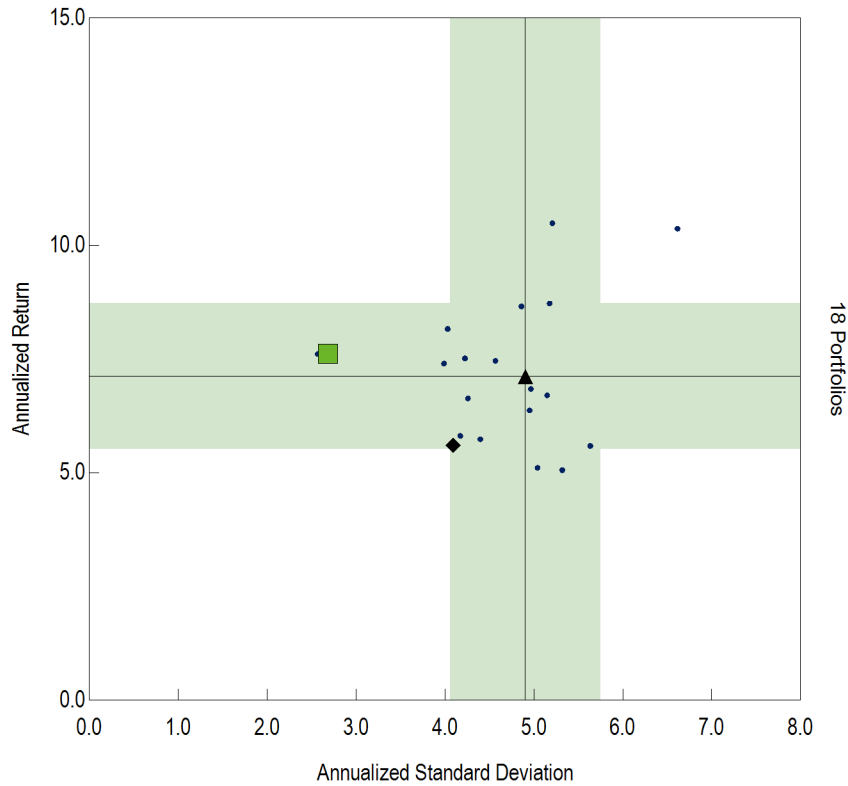
Source: Russell Investments



San Bernardino County Employees' Retirement Association

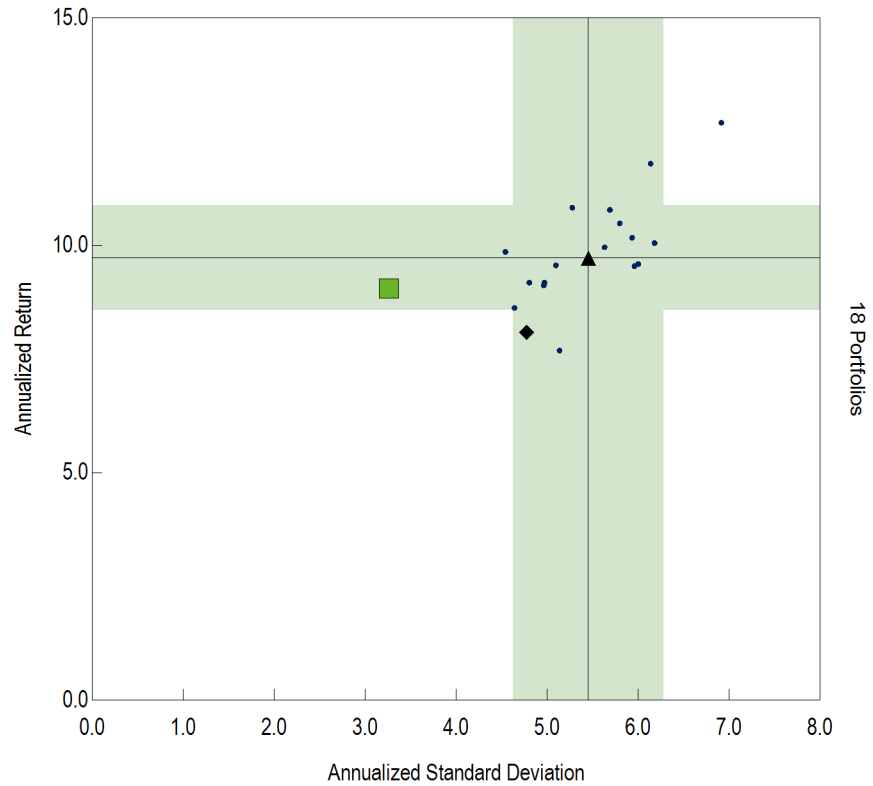
TOTAL FUND RISK/RETURN

1 Year Ending September 30, 2018



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

3 Years Ending September 30, 2018



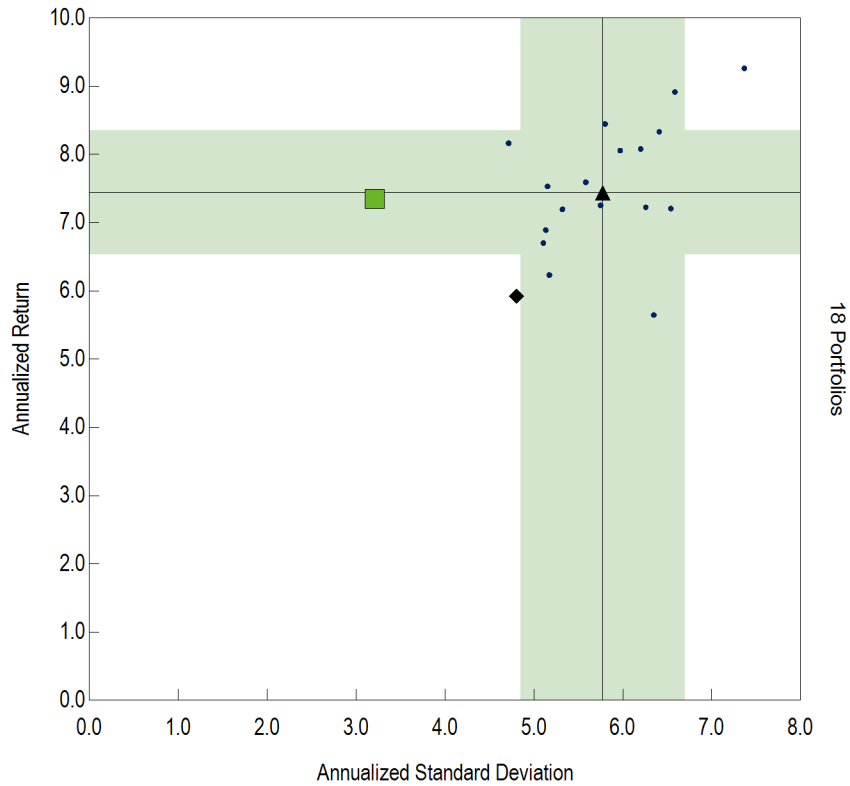
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross



San Bernardino County Employees' Retirement Association

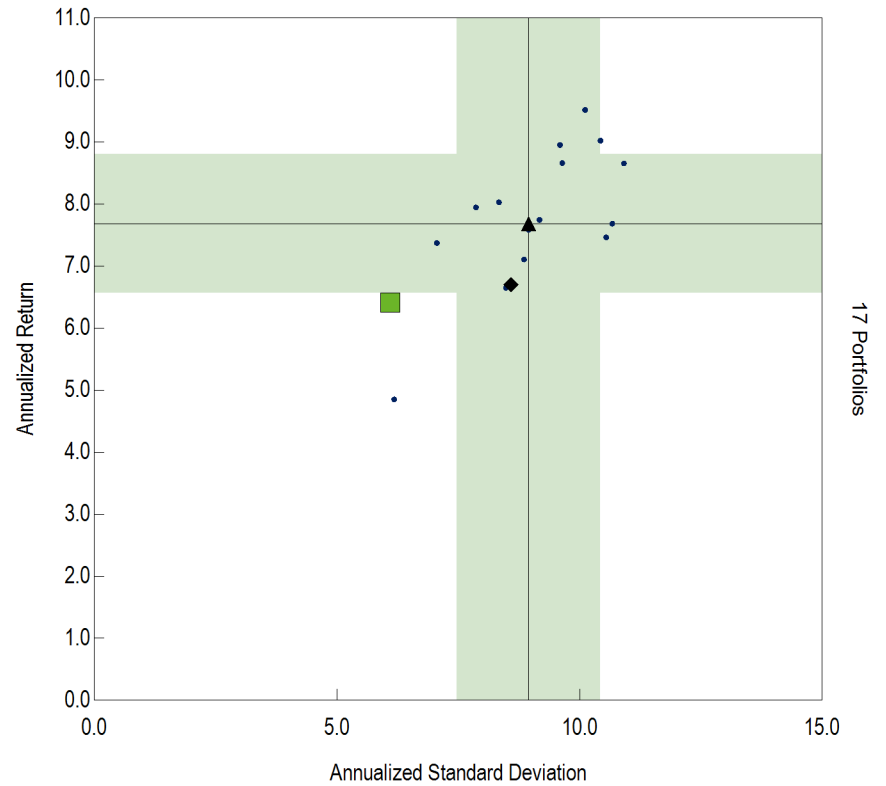
TOTAL FUND RISK/RETURN

5 Years Ending September 30, 2018



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

10 Years Ending September 30, 2018

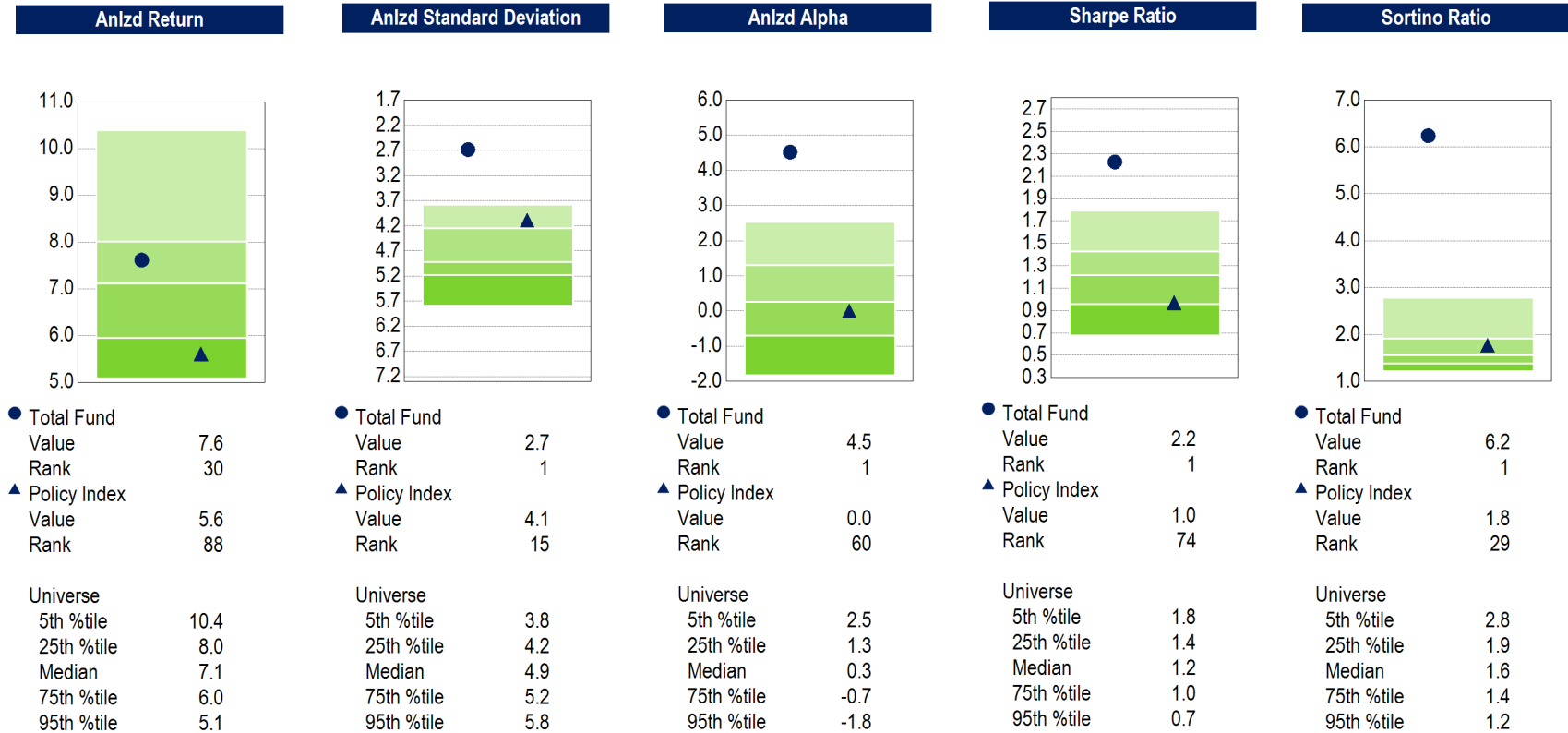


- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund vs. InvestorForce Public DB > \$1B Gross (USD) 1 Year



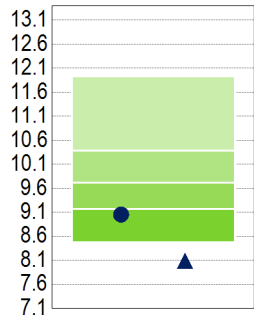
Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 18 Portfolios



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

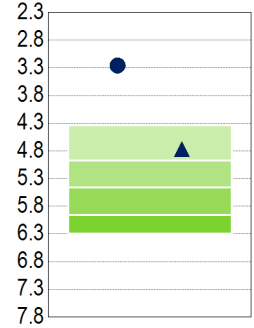
**Total Fund vs. InvestorForce Public DB > \$1B Gross (USD)
3 Years**

Anlzd Return



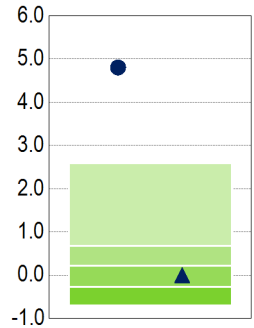
● Total Fund	
Value	9.1
Rank	89
▲ Policy Index	
Value	8.1
Rank	98
Universe	
5th %tile	11.9
25th %tile	10.4
Median	9.7
75th %tile	9.2
95th %tile	8.5

Anlzd Standard Deviation



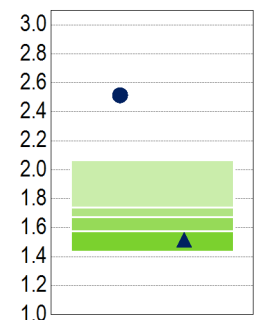
● Total Fund	
Value	3.3
Rank	1
▲ Policy Index	
Value	4.8
Rank	17
Universe	
5th %tile	4.3
25th %tile	5.0
Median	5.5
75th %tile	6.0
95th %tile	6.3

Anlzd Alpha



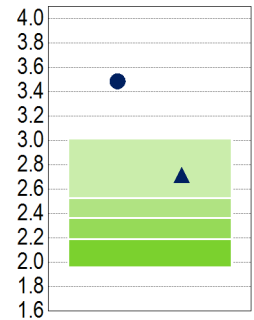
● Total Fund	
Value	4.8
Rank	1
▲ Policy Index	
Value	0.0
Rank	69
Universe	
5th %tile	2.6
25th %tile	0.7
Median	0.2
75th %tile	-0.3
95th %tile	-0.7

Sharpe Ratio



● Total Fund	
Value	2.5
Rank	1
▲ Policy Index	
Value	1.5
Rank	81
Universe	
5th %tile	2.1
25th %tile	1.7
Median	1.7
75th %tile	1.6
95th %tile	1.4

Sortino Ratio



● Total Fund	
Value	3.5
Rank	1
▲ Policy Index	
Value	2.7
Rank	12
Universe	
5th %tile	3.0
25th %tile	2.5
Median	2.4
75th %tile	2.2
95th %tile	2.0

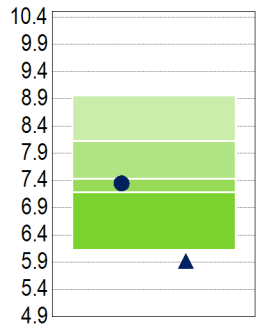
Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 18 Portfolios



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

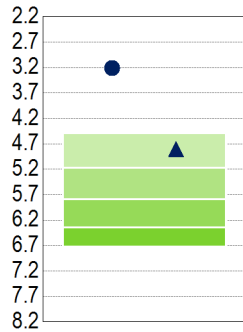
Total Fund vs. InvestorForce Public DB > \$1B Gross (USD) 5 Years

Anlzd Return



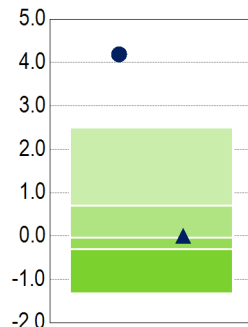
● Total Fund	
Value	7.3
Rank	53
▲ Policy Index	
Value	5.9
Rank	98
Universe	
5th %tile	9.0
25th %tile	8.1
Median	7.4
75th %tile	7.2
95th %tile	6.1

Anlzd Standard Deviation



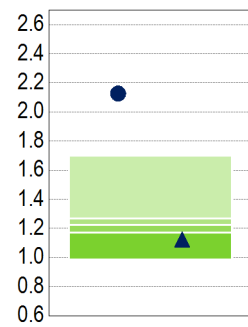
● Total Fund	
Value	3.2
Rank	1
▲ Policy Index	
Value	4.8
Rank	8
Universe	
5th %tile	4.5
25th %tile	5.2
Median	5.8
75th %tile	6.3
95th %tile	6.7

Anlzd Alpha



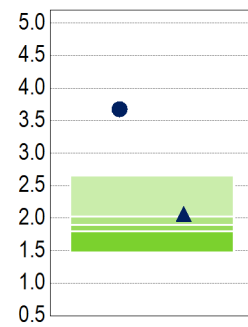
● Total Fund	
Value	4.2
Rank	1
▲ Policy Index	
Value	0.0
Rank	49
Universe	
5th %tile	2.5
25th %tile	0.7
Median	0.0
75th %tile	-0.3
95th %tile	-1.3

Sharpe Ratio



● Total Fund	
Value	2.1
Rank	1
▲ Policy Index	
Value	1.1
Rank	81
Universe	
5th %tile	1.7
25th %tile	1.3
Median	1.2
75th %tile	1.2
95th %tile	1.0

Sortino Ratio



● Total Fund	
Value	3.7
Rank	1
▲ Policy Index	
Value	2.1
Rank	16
Universe	
5th %tile	2.7
25th %tile	2.0
Median	1.9
75th %tile	1.8
95th %tile	1.5

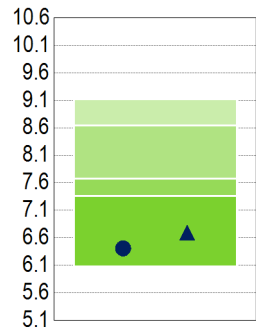
Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 18 Portfolios



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

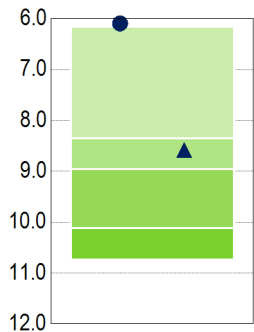
**Total Fund vs. InvestorForce Public DB > \$1B Gross (USD)
10 Years**

Anlzd Return



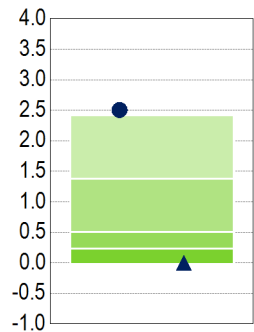
● Total Fund	
Value	6.4
Rank	94
▲ Policy Index	
Value	6.7
Rank	87
Universe	
5th %tile	9.1
25th %tile	8.7
Median	7.7
75th %tile	7.4
95th %tile	6.1

Anlzd Standard Deviation



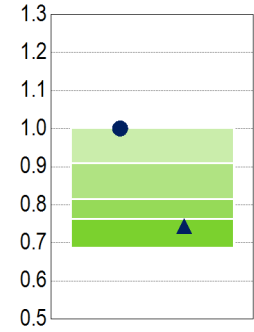
● Total Fund	
Value	6.1
Rank	2
▲ Policy Index	
Value	8.6
Rank	34
Universe	
5th %tile	6.2
25th %tile	8.3
Median	8.9
75th %tile	10.1
95th %tile	10.7

Anlzd Alpha



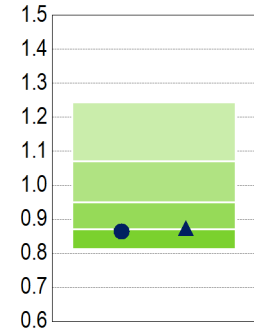
● Total Fund	
Value	2.5
Rank	1
▲ Policy Index	
Value	0.0
Rank	94
Universe	
5th %tile	2.4
25th %tile	1.4
Median	0.5
75th %tile	0.2
95th %tile	0.0

Sharpe Ratio



● Total Fund	
Value	1.0
Rank	7
▲ Policy Index	
Value	0.7
Rank	84
Universe	
5th %tile	1.0
25th %tile	0.9
Median	0.8
75th %tile	0.8
95th %tile	0.7

Sortino Ratio



● Total Fund	
Value	0.9
Rank	82
▲ Policy Index	
Value	0.9
Rank	75
Universe	
5th %tile	1.2
25th %tile	1.1
Median	1.0
75th %tile	0.9
95th %tile	0.8

Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 18 Portfolios



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

1 Years Ending September 30, 2018								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity	11.1%	7.5%	--	6.1%	--	4.3%	-2.3	--
Russell 3000	--	17.6%	--	8.7%	--	0.0%	--	--
International Developed	1.2%	0.4%	97	1.3%	1	8.6%	-0.3	--
MSCI EAFE	--	2.7%	31	9.1%	46	0.0%	--	--
International Emerging	4.3%	2.4%	--	11.3%	--	3.3%	1.0	--
MSCI Emerging Markets	--	-0.8%	--	13.3%	--	0.0%	--	--
U.S. Credit Strategies	10.2%	7.3%	1	1.9%	27	1.9%	1.8	1
50% CS Leveraged Loan / 50% ICE BofA ML US HY BB-B Rated Constrained Index	--	3.9%	1	1.4%	5	0.0%	--	--
Non-U.S. Credit Composite	14.4%	9.2%	--	2.0%	--	8.6%	1.2	--
ICE BofAML Euro High Yield Constrained TR	--	-1.1%	--	7.9%	--	0.0%	--	--
Emerging Markets Debt Composite	8.6%	-4.4%	63	3.2%	12	6.5%	0.0	64
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	-4.6%	64	7.6%	64	0.0%	--	--
Alpha Pool Composite	18.9%	5.3%	--	1.3%	--	1.3%	0.5	--
91 Day T-Bill + 3%	--	4.7%	--	0.1%	--	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	14.9%	16.6%	--	3.3%	--
Cambridge Associates Global All PE (Qtr Lag)	--	17.3%	--	7.1%	--
Real Estate Composite	3.9%	7.6%	73	2.2%	68
NCREIF Property Index 1 Qtr. Lag	--	7.2%	86	3.0%	72
Real Assets Composite	5.1%	6.3%	29	5.7%	45
Real Assets Custom Blend	--	3.2%	87	3.7%	36

Percent of Total equals 92.6% because Beta Overlay is not included as these statistics are not relevant for alternative asset classes.



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

3 Years Ending September 30, 2018								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity	11.1%	4.0%	--	4.5%	--	9.8%	-1.3	--
Russell 3000	--	17.1%	--	9.3%	--	0.0%	--	--
International Developed	1.2%	12.9%	4	18.6%	99	16.0%	0.2	16
MSCI EAFE	--	9.2%	37	10.8%	77	0.0%	--	--
International Emerging	4.3%	9.4%	--	11.6%	--	3.8%	-0.8	--
MSCI Emerging Markets	--	12.4%	--	14.3%	--	0.0%	--	--
U.S. Credit Strategies	10.2%	7.7%	1	3.2%	33	3.7%	0.4	1
50% CS Leveraged Loan / 50% ICE BofA ML US HY BB-B Rated Constrained Index	--	6.4%	1	3.2%	34	0.0%	--	--
Non-U.S. Credit Composite	14.4%	10.1%	--	3.2%	--	10.4%	0.3	--
ICE BofAML Euro High Yield Constrained TR	--	7.0%	--	9.3%	--	0.0%	--	--
Emerging Markets Debt Composite	8.6%	7.1%	28	5.7%	33	6.2%	0.2	43
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	5.7%	69	8.2%	64	0.0%	--	--
Alpha Pool Composite	18.9%	6.1%	--	3.7%	--	3.7%	0.6	--
91 Day T-Bill + 3%	--	3.9%	--	0.2%	--	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	14.9%	13.0%	--	3.6%	--
Cambridge Associates Global All PE (Qtr Lag)	--	11.7%	--	5.9%	--
Real Estate Composite	3.9%	8.2%	77	2.8%	60
NCREIF Property Index 1 Qtr. Lag	--	8.3%	76	3.5%	65
Real Assets Composite	5.1%	1.9%	75	5.9%	26
Real Assets Custom Blend	--	1.8%	78	5.1%	19

Percent of Total equals 92.6% because Beta Overlay is not included as these statistics are not relevant for alternative asset classes.



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

5 Years Ending September 30, 2018								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity	11.1%	1.6%	--	4.7%	--	11.6%	-1.0	--
Russell 3000	--	13.5%	--	9.7%	--	0.0%	--	--
International Developed	1.2%	3.7%	95	18.4%	99	14.5%	-0.1	--
MSCI EAFE	--	4.4%	51	11.0%	79	0.0%	--	--
International Emerging	4.3%	2.4%	--	11.9%	--	4.5%	-0.3	--
MSCI Emerging Markets	--	3.6%	--	14.7%	--	0.0%	--	--
U.S. Credit Strategies	10.2%	6.9%	1	3.0%	10	3.5%	0.6	1
50% CS Leveraged Loan / 50% ICE BofA ML US HY BB-B Rated Constrained Index	--	4.9%	12	3.2%	31	0.0%	--	--
Non-U.S. Credit Composite	14.4%	7.7%	--	3.2%	--	9.5%	0.6	--
ICE BofAML Euro High Yield Constrained TR	--	2.0%	--	9.4%	--	0.0%	--	--
Emerging Markets Debt Composite	8.6%	4.2%	49	5.5%	27	5.4%	0.4	53
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	1.9%	64	7.9%	64	0.0%	--	--
Alpha Pool Composite	18.9%	4.9%	--	3.2%	--	3.1%	0.4	--
91 Day T-Bill + 3%	--	3.5%	--	0.2%	--	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	14.9%	13.7%	--	4.0%	--
Cambridge Associates Global All PE (Qtr Lag)	--	13.2%	--	6.6%	--
Real Estate Composite	3.9%	9.6%	80	3.4%	61
NCREIF Property Index 1 Qtr. Lag	--	9.8%	74	4.1%	64
Real Assets Composite	5.1%	2.2%	1	5.3%	1
Real Assets Custom Blend	--	-0.6%	30	6.0%	7

Percent of Total equals 92.6% because Beta Overlay is not included as these statistics are not relevant for alternative asset classes.



PUBLIC EQUITY PORTFOLIO

Public Equity Portfolio (28% Target)	US Equities (13% Target)	Large Cap (8%)	Russell Investments (Russell1000 Index) StateStreet Global Advisors S&P500 Buy/Write Call Option Strategy TOBAM Anti-Benchmark US Equity Fund
		Small Cap (2%)	Russell Investments (Russell2000 Index)
		Volatility (3%)	Russell Investments (Russell1000 Index)
	International Equities (15% Target)	Developed Markets (6%)	Russell Investments (MSCI EAFE Index) TOBAM Anti-Benchmark World ex-US Fund
			Mondrian Emerging Markets Equity Fund LP Russell Investments (MSCI EM Index) TOBAM Anti-Benchmark EM Equity Fund
		Volatility (3%)	Russell Investments (MSCI EAFE Index)



San Bernardino County Employees' Retirement Association

GLOBAL EQUITY STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Equity	1,717,053,226	16.5	2.5	98	2.2	98	6.7	99	7.6	99	3.1	99	4.7	99
MSCI ACWI			4.3	78	3.8	83	9.8	83	13.4	98	8.7	97	8.2	84
Excess Return			-1.8		-1.6		-3.1		-5.8		-5.6		-3.5	
InvestorForce Public DB Total Eq Gross Median			5.0		6.3		12.3		14.6		11.1		9.3	
Domestic Equity With Beta Overlay*	1,248,052,877	12.0	4.2	98	8.7	81	13.8	96	9.1	99	--	--	--	--
Russell 3000			7.1	8	10.6	22	17.6	20	17.1	15	13.5	18	12.0	34
Excess Return			-2.9		-1.9		-3.8		-8.0					
InvestorForce Public DB US Eq Gross Median			6.4		9.7		16.6		16.5		12.8		11.7	
Domestic Equity	1,152,195,208	11.1	4.2	--	5.0	--	7.5	--	4.0	--	1.6	--	2.3	--
Russell 3000			7.1	--	10.6	--	17.6	--	17.1	--	13.5	--	12.0	--
Excess Return			-2.9		-5.6		-10.1		-13.1		-11.9		-9.7	
Tobam AB US Equity	309,396,300	3.0	1.4	89	--	--	--	--	--	--	--	--	--	--
Russell 3000			7.1	34	10.6	41	17.6	39	17.1	39	13.5	34	12.0	59
Excess Return			-5.7											
eV All US Equity Gross Median			5.9		9.1		15.5		16.0		12.4		12.3	
Large Cap Equity	842,558,805	8.1	5.2	59	6.3	69	8.8	84	5.9	99	3.0	99	3.2	99
S&P 500			7.7	25	10.6	42	17.9	37	17.3	35	13.9	27	12.0	60
Excess Return			-2.5		-4.3		-9.1		-11.4		-10.9		-8.8	
eV All US Equity Gross Median			5.9		9.1		15.5		16.0		12.4		12.3	
SsgA S&P500	839,497,091	8.1	5.2	59	6.5	68	9.5	81	9.6	96	8.0	95	6.0	99
S&P 500			7.7	25	10.6	42	17.9	37	17.3	35	13.9	27	12.0	60
Excess Return			-2.5		-4.1		-8.4		-7.7		-5.9		-6.0	
eV All US Equity Gross Median			5.9		9.1		15.5		16.0		12.4		12.3	
Russell US Large Cap Volatility	3,061,714	0.0												
Small Cap Equity	240,104	0.0												
Russell US Small Cap Volatility	240,104	0.0												

* Based on data provided by Russell Investments



San Bernardino County Employees' Retirement Association

GLOBAL EQUITY STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
International Equity With Beta Overlay*	1,839,884,392	17.7	0.6	90	-2.4	91	2.5	90	10.6	88	--	--	--	--
MSCI ACWI ex USA Gross			0.8	89	-2.7	92	2.3	91	10.5	89	4.6	92	5.7	56
Excess Return			-0.2		0.3		0.2		0.1					
InvestorForce Public DB Gbl Eq Gross Median			4.4		5.0		9.8		13.3		10.0		5.7	
International Equity	564,858,018	5.4	-0.7	--	-4.2	--	2.2	--	12.3	--	3.8	--	6.2	--
MSCI ACWI			4.3	--	3.8	--	9.8	--	13.4	--	8.7	--	8.2	--
Excess Return			-5.0		-8.0		-7.6		-1.1		-4.9		-2.0	
International Developed	123,173,720	1.2	0.3	90	0.1	14	0.4	97	12.9	4	3.7	95	8.6	1
MSCI EAFE			1.4	23	-1.4	34	2.7	31	9.2	37	4.4	51	5.4	99
Excess Return			-1.1		1.5		-2.3		3.7		-0.7		3.2	
InvestorForce Public DB Dev Mkt ex-US Eq Gross Median			1.1		-2.7		1.4		8.8		4.5		7.2	
Russell International Volatility	74,323,370	0.7												
Tobam AB World Ex-US Equity	48,850,350	0.5												
International Emerging	441,684,298	4.3	-0.9	--	-5.4	--	2.4	--	9.4	--	2.4	--	4.5	--
MSCI Emerging Markets			-1.1	--	-7.7	--	-0.8	--	12.4	--	3.6	--	5.4	--
Excess Return			0.2		2.3		3.2		-3.0		-1.2		-0.9	
Mondrian	137,321,881	1.3	0.6	16	-8.6	51	-2.8	56	8.0	93	1.6	97	5.3	85
MSCI Emerging Markets			-1.1	39	-7.7	37	-0.8	34	12.4	53	3.6	72	5.4	81
Excess Return			1.7		-0.9		-2.0		-4.4		-2.0		-0.1	
eV Emg Mkts Equity Gross Median			-2.1		-8.6		-2.3		12.5		4.5		6.8	
Gramercy Emerging Market Equity	400,250	0.0	0.0	24	2.9	1	6.3	3	15.2	13	--	--	--	--
MSCI Emerging Markets			-1.1	39	-7.7	37	-0.8	34	12.4	53	3.6	72	5.4	81
Excess Return			1.1		10.6		7.1		2.8					
eV Emg Mkts Equity Gross Median			-2.1		-8.6		-2.3		12.5		4.5		6.8	
Tobam	303,862,999	2.9	-1.6	45	-4.7	12	5.4	4	--	--	--	--	--	--
MSCI Emerging Markets			-1.1	39	-7.7	37	-0.8	34	12.4	53	3.6	72	5.4	81
Excess Return			-0.5		3.0		6.2							
eV Emg Mkts Equity Gross Median			-2.1		-8.6		-2.3		12.5		4.5		6.8	

* Based on data provided by Russell Investments



GLOBAL DEBT STRATEGIES

Global Debt Strategies (35% Target)	US Fixed Income (15% Target)	Core Fixed Income (2%)	Russell Investments (Bloomberg Barclays US Agg. Bond TR Index)
		Credit Strategies/ High Yield Strategies (13%)	Apollo Credit Strategies Fund LP (MCA) Beach Point Select Fund LP GoldenTree Credit Opportunities - Gold Coast X GoldenTree Distressed Debt Fund 2010 GoldenTree Asset Management SMA - Gold Coast X Halcyon Direct Portfolio (MCA) Halcyon Solutions Fund LP (MCA) MacKay Shields High Yield Bond Strategy - Gold Coast III Manulife Asset Management - Gold Coast IV Tricadia Credit Strategies LTD Waterfall - Sutherland REIT Holdings LP (MCA) Waterfall Asset Management SMA (MCA) Waterfall Victoria Fund LP (MCA)
	Global Fixed Income (20% Target)	International Core (1%)	Russell Investments (Barclays Global Aggregate ex US Unhedged)
		International Credit (11%)	Alcentra Clareant European Direct Lending Fund - Kneiff Tower Alcentra Clareant Strategic Credit Fund - Kneiff Tower Alcentra Limited SMA - Kneiff Tower Alcentra Mezzanine III/Alcentra Capital Corp. - Kneiff Tower Alcentra Structured Credit Opportunity Fund III - Kneiff Tower Cairn Capital Limited SMA - Kneiff Tower Cairn European CLO Strategy - Kneiff Tower Cairn Loan Investments - Kneiff Tower Cairn Special Opportunities Credit Fund - Kneiff Tower Cairn Strata Credit Fund - Kneiff Tower Cairn Subordinated Financials Fund II - Kneiff Tower Halcyon European Credit Opportunities Fund Ltd. (MCA) Marathon Asset Management SMA - Gold Coast I Marathon CLO Equity Fund - Gold Coast I Marathon Distressed Debt Fund - Gold Coast I Marathon European Credit Opportunity Fund II - Gold Coast I Marathon European Credit Opportunity Fund III - Gold Coast I Marathon Structured Product Strategies Fund - Gold Coast I York Global Credit Income Fund
		Emerging Market Debt (8%)	Ashmore Emerging Markets MCA Gramercy Distressed Argentina Fund III Private (MCA) Gramercy Distressed Opportunity Fund II (MCA) Gramercy Distressed Opportunity Fund III (MCA) Gramercy Emerging Markets Debt Allocation Fund (MCA) Gramercy Separate Account (MCA) Gramercy Venezuela Opportunity Fund (MCA) Marathon Global Emerging Markets Fund - Gold Coast I PGIM Emerging Market Debt Opportunities Fund



San Bernardino County Employees' Retirement Association

GLOBAL DEBT STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Global Fixed Income With Beta Overlay*	3,059,051,840	29.5	0.5	--	3.4	--	4.1	--	2.8	--	--	--	--	--
Total Fixed	3,437,751,840	33.1	1.0	8	4.3	1	5.1	1	8.4	1	6.6	1	8.5	1
<i>InvestorForce Public DB Total Fix Inc Gross Median</i>			0.3		-0.6		-0.5		1.4		2.1		4.9	
U.S. Credit Strategies	1,053,238,171	10.2	1.7	8	6.9	1	7.3	1	7.7	1	6.9	1	10.6	1
<i>50% CS Leveraged Loan / 50% ICE BofA ML US HY BB-B Rated Constrained Index</i>			2.1	2	3.1	1	3.9	1	6.4	1	4.9	12	7.2	1
<i>Excess Return</i>			-0.4		3.8		3.4		1.3		2.0		3.4	
<i>ICE BofAML US High Yield TR</i>			2.4	1	2.5	1	2.9	1	8.2	1	5.5	5	9.4	1
<i>eV Global Credit Fixed Income Gross Median</i>			0.9		-1.3		-0.3		4.0		3.6		5.7	
AG Capital	77,638	0.0	1.5	12	-8.3	99	-17.2	99	-5.5	99	-2.1	99	2.9	99
Golden Tree Asset Management	393,965,080	3.8	1.4	15	9.1	1	8.6	1	10.5	1	11.1	1	--	--
Beach Point Capital (Formerly Post)	156,898,710	1.5	2.0	3	5.7	1	6.5	1	8.8	1	8.2	1	--	--
Golden Tree Distressed Debt	22,979,689	0.2	-4.3	99	-3.5	89	1.1	14	2.0	92	11.7	1	--	--
Mackay / Gold Coast	106,760,548	1.0	1.6	9	0.0	10	1.1	15	5.7	3	5.2	6	8.9	1
Mariner Tricadia	17,919,010	0.2	-0.5	90	0.2	9	2.9	1	1.6	93	2.9	63	--	--
MD SASS Waterfall Victoria	28,606,380	0.3	2.8	--	8.8	--	11.8	--	9.4	--	--	--	--	--
Russell Interest Rate Hedging	24,778,843	0.2	5.4	1	39.9	1	5.4	1	-13.0	99	-22.2	99	--	--
Stone Tower Credit (Apollo)	90,327,597	0.9	2.5	3	5.6	1	9.2	1	8.1	5	5.8	7	--	--
Gold Coast Capital IV	99,861,181	1.0	1.0	--	3.1	--	4.1	--	4.6	--	--	--	--	--
Waterfall Asset Management	62,531,014	0.6	3.9	--	15.0	--	16.0	--	22.3	--	--	--	--	--
Waterfall Victoria	48,333,745	0.5	1.3	--	9.1	--	11.1	--	9.9	--	--	--	--	--

* Based on data provided by Russell Investments



San Bernardino County Employees' Retirement Association

GLOBAL DEBT STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Non-U.S. Fixed Income Composite	2,384,513,669	23.0	0.7	10	3.0	2	4.1	1	8.9	1	6.5	1	5.7	27
<i>BBgBarc Global Aggregate TR</i>			<i>-0.9</i>	<i>99</i>	<i>-2.4</i>	<i>99</i>	<i>-1.3</i>	<i>99</i>	<i>2.0</i>	<i>45</i>	<i>0.7</i>	<i>99</i>	<i>2.9</i>	<i>95</i>
<i>Excess Return</i>			<i>1.6</i>		<i>5.4</i>		<i>5.4</i>		<i>6.9</i>		<i>5.8</i>		<i>2.8</i>	
<i>InvestorForce Public DB Total Fix Inc Gross Median</i>			<i>0.3</i>		<i>-0.6</i>		<i>-0.5</i>		<i>1.4</i>		<i>2.1</i>		<i>4.9</i>	
Non-U.S. Credit Composite	1,494,153,658	14.4	2.1	--	6.7	--	9.2	--	10.1	--	7.7	--	--	--
<i>ICE BofAML Euro High Yield Constrained TR</i>			<i>1.1</i>	<i>--</i>	<i>-3.3</i>	<i>--</i>	<i>-1.1</i>	<i>--</i>	<i>7.0</i>	<i>--</i>	<i>2.0</i>	<i>--</i>	<i>8.1</i>	<i>--</i>
<i>Excess Return</i>			<i>1.0</i>		<i>10.0</i>		<i>10.3</i>		<i>3.1</i>		<i>5.7</i>		<i>--</i>	
Marathon/Gold Coast	229,680,723	2.2	2.7	1	9.1	1	14.3	1	8.8	1	8.8	1	--	--
Alcentra Core European Credit	493,927,616	4.8	2.6	1	9.0	1	11.5	1	13.0	1	12.7	1	--	--
Halcyon Asset Management	190,706,700	1.8	3.5	1	13.9	1	12.1	1	12.3	1	--	--	--	--
<i>ICE BofAML Euro High Yield Constrained TR</i>			<i>1.1</i>	<i>26</i>	<i>-3.3</i>	<i>88</i>	<i>-1.1</i>	<i>66</i>	<i>7.0</i>	<i>1</i>	<i>2.0</i>	<i>87</i>	<i>8.1</i>	<i>1</i>
<i>Excess Return</i>			<i>2.4</i>		<i>17.2</i>		<i>13.2</i>		<i>5.3</i>		<i>--</i>		<i>--</i>	
<i>eV Global Credit Fixed Income Gross Median</i>			<i>0.9</i>		<i>-1.3</i>		<i>-0.3</i>		<i>4.0</i>		<i>3.6</i>		<i>5.7</i>	
York Global Credit	160,420,920	1.5	1.9	4	4.4	1	7.2	1	8.5	1	7.6	1	--	--
<i>ICE BofAML Euro High Yield Constrained TR</i>			<i>1.1</i>	<i>26</i>	<i>-3.3</i>	<i>88</i>	<i>-1.1</i>	<i>66</i>	<i>7.0</i>	<i>1</i>	<i>2.0</i>	<i>87</i>	<i>8.1</i>	<i>1</i>
<i>Excess Return</i>			<i>0.8</i>		<i>7.7</i>		<i>8.3</i>		<i>1.5</i>		<i>5.6</i>		<i>--</i>	
<i>eV Global Credit Fixed Income Gross Median</i>			<i>0.9</i>		<i>-1.3</i>		<i>-0.3</i>		<i>4.0</i>		<i>3.6</i>		<i>5.7</i>	
Cairn Composite	419,417,699	4.0	0.6	74	1.1	5	3.6	1	9.3	1	5.4	6	--	--
<i>ICE BofAML Euro High Yield Constrained TR</i>			<i>1.1</i>	<i>26</i>	<i>-3.3</i>	<i>88</i>	<i>-1.1</i>	<i>66</i>	<i>7.0</i>	<i>1</i>	<i>2.0</i>	<i>87</i>	<i>8.1</i>	<i>1</i>
<i>Excess Return</i>			<i>-0.5</i>		<i>4.4</i>		<i>4.7</i>		<i>2.3</i>		<i>3.4</i>		<i>--</i>	
<i>eV Global Credit Fixed Income Gross Median</i>			<i>0.9</i>		<i>-1.3</i>		<i>-0.3</i>		<i>4.0</i>		<i>3.6</i>		<i>5.7</i>	



San Bernardino County Employees' Retirement Association

GLOBAL DEBT STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Emerging Markets Debt Composite	890,360,011	8.6	-1.6	81	-3.1	32	-4.4	63	7.1	28	4.2	49	3.3	79
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified			0.2	62	-5.6	64	-4.6	64	5.7	69	1.9	64	5.2	64
Excess Return			-1.8		2.5		0.2		1.4		2.3		-1.9	
eV All Emg Mkts Fixed Inc Gross Median			1.2		-4.3		-3.2		6.2		3.8		7.0	
Ashmore Emerging Markets Liquid Investments	152,650,760	1.5	0.2	62	-5.6	64	-4.6	64	5.7	69	1.9	64	5.2	64
JP Morgan GBI - EM Global Diversified Index			-1.8	84	-8.1	82	-7.4	84	5.2	77	-1.7	91	2.7	84
Excess Return			2.0		2.5		2.8		0.5		3.6		2.5	
eV All Emg Mkts Fixed Inc Gross Median			1.2		-4.3		-3.2		6.2		3.8		7.0	
Ashmore Local Currency	100,838,947	1.0	0.0	62	-6.1	98	-5.2	97	7.0	13	-1.2	98	--	--
JPM ELMI+ TR USD			-1.1	88	-4.5	93	-2.6	86	3.3	57	-1.1	97	0.4	99
Excess Return			1.1		-1.6		-2.6		3.7		-0.1			
JP Morgan EMBI Global Index			1.9	17	-3.5	85	-2.9	88	5.7	22	4.6	21	7.3	17
eV All Global Fixed Inc Gross Median			0.4		-1.0		-0.3		3.7		2.7		4.6	
Gramercy Funds Management LLC	547,493,904	5.3	-1.8	84	-1.3	12	-4.2	61	7.7	17	7.8	1	--	--
JPM ELMI+ TR USD			-1.1	77	-4.5	53	-2.6	46	3.3	98	-1.1	85	0.4	99
Excess Return			-0.7		3.2		-1.6		4.4		8.9			
JP Morgan EMBI Global Index			1.9	26	-3.5	41	-2.9	49	5.7	68	4.6	42	7.3	48
eV All Emg Mkts Fixed Inc Gross Median			1.2		-4.3		-3.2		6.2		3.8		7.0	
PGIM Fixed Income	89,376,400	0.9	-6.9	99	-10.0	93	-10.9	99	5.8	66	--	--	--	--
JPM ELMI+ TR USD			-1.1	77	-4.5	53	-2.6	46	3.3	98	-1.1	85	0.4	99
Excess Return			-5.8		-5.5		-8.3		2.5					
JP Morgan EMBI Global Index			1.9	26	-3.5	41	-2.9	49	5.7	68	4.6	42	7.3	48
eV All Emg Mkts Fixed Inc Gross Median			1.2		-4.3		-3.2		6.2		3.8		7.0	



ABSOLUTE RETURN (ALPHA POOL)

<p style="text-align: center;">Absolute Return (Alpha Pool) (7% Target)</p>	<p>Core & Credit Strategies (7%)</p> <ul style="list-style-type: none">Apollo Accord Fund (MCA)Apollo Global SMA (MCA)Apollo MicCap Financial Holdings Trust (MCA)Apollo Offshore Credit Fund LTD (MCA)Apollo Structured Credit Recovery Fund III (MCA)Ares Enhanced Credit Opportunites Master Fund II, LTD (MCA)Birch Grove Credit Strategies FundCorrum Capital Global Credit Opportunities FundCorrum Capital GCO Co-Invest FundStateStreet Global Advisors Short Term Treasury Strategy SMAZais Group SMAZais Opportunity Fund, LTDZais Zephyr A-6, LP
--	--



San Bernardino County Employees' Retirement Association

ALPHA POOL STRATEGIES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Alpha Pool Composite	1,958,755,729	18.9	1.2	--	4.4	--	5.3	--	6.1	--	4.9	--	5.6	--
<i>91 Day T-Bill + 3%</i>			<u>1.2</u>	--	<u>3.6</u>	--	<u>4.7</u>	--	<u>3.9</u>	--	<u>3.5</u>	--	<u>3.3</u>	--
Excess Return			0.0		0.8		0.6		2.2		1.4		2.3	
Alpha Liquidity (Ssga)	159,615,211	1.5	0.5	49	1.4	19	1.7	26	1.0	93	0.7	81	0.7	99
Apollo Global Management	57,767,034	0.6	3.9	1	13.1	1	15.4	1	19.7	1	--	--	--	--
Ares Eco Master Fund II	453,284,423	4.4	0.5	49	2.4	9	0.8	37	--	--	--	--	--	--
Birch Grove Credit Strategies	128,609,897	1.2	1.9	17	5.8	1	7.7	1	5.0	29	5.6	9	--	--
Sterling Stamos	271,724,769	2.6	1.8	18	8.2	1	10.1	1	7.4	11	6.5	4	3.4	73
Stone Tower Off (Apollo)	371,008,799	3.6	1.6	23	3.4	5	4.7	6	5.8	21	5.8	7	--	--
Zais	134,598,203	1.3	0.2	58	2.4	9	3.7	8	4.7	36	5.9	7	12.8	1
Zais Group Invest Advisors	264,292,484	2.5	1.0	36	5.5	1	8.6	1	12.2	1	9.0	1	--	--
Zais Zephyr A 6 LP	89,912,134	0.9	2.3	--	8.2	--	10.5	--	--	--	--	--	--	--
Apollo Accord	2,569,089	0.0	0.5	49	5.3	1	6.3	2	--	--	--	--	--	--



PRIVATE ASSETS

Private Assets (16% Target)	Private Equity	Diversified	Partners Group SMA (MCA) Pathway Capital SMA (MCA) Pathway PE Fund VII LLC SL Capital European Strategic Partners 2004 SL Capital European Strategic Partners 2008
		Buyout Funds	Aurora Equity Partners IV Kayne Partners Fund IV LP (MCA) Partners Group Direct Equity 2016 (MCA) Partners Group Direct Investments 2012 LP (MCA) Partners Group European Buyout 2005 (A) LP (MCA) Waterfall Sentinel Fund (MCA)
		Venture Funds	Industry Ventures Direct LP (MCA) Industry Ventures Fund V LP (MCA) Industry Ventures Fund VI LP (MCA) Industry Ventures Partnership Holdings II LP (MCA) Industry Ventures Partnership Holdings III LP (MCA) Industry Ventures Partnership Holdings III-A LP (MCA) Industry Ventures Partnership Holdings IV LP (MCA) Industry Ventures Special Opportunities Fund II-A LP (MCA)
		Secondary Funds	Industry Ventures Secondary VII LP (MCA) Industry Ventures Secondary VIII LP (MCA) Lexington Capital Partners VI Lexington Capital Partners VII Lexington Middle Market Investors I Lexington Middle Market Investors II Newberger Berman Secondary Opportunities Fund II Partners Group Secondary 2004 LP (MCA) Partners Group Secondary 2006 LP (MCA) Partners Group Secondary 2008 LP (MCA) SL Capital Secondary Opportunities Fund I SL Capital Secondary Opportunities Fund II SL Capital Secondary Opportunities Fund III
		Sector Specific Funds	Kayne Anderson Energy Fund VII LP (MCA) Tennenbaum Energy Opportunities Fund LP (MCA)
		Direct Lending	Ares Private Credit Solutions Fund (MCA) Tennenbaum Lending Fund VIII LLC (MCA) Tennenbaum Waterman Fund LP (MCA)
	Private Debt	Mezzanine Funds	Crescent Mezzanine Partners V Partners Group European Mezzanine 2005 (MCA)
		Credit/Distressed/ Opportunistic/ Special Situations	Apollo Private Equity Fund VII Ares European Loan Funding LP (MCA) Ares ICOF II (MCA) Ares ICOF III (MCA) Ares SMA (MCA) Ares Special Situations Fund IV (MCA) Catalyst Fund LP II Crestline Portfolio Financing Fund Sigular Guff Distressed Opportunity Fund III LP Tennenbaum Opportunities Fund V LLC (MCA) Tennenbaum Opportunities Fund VI LLC (MCA) Tennenbaum Special Situations Fund IX LLC (MCA)



REAL ESTATE

Real Estate Portfolio (7% Target)	Core Real Estate (3.5%)	Core Real Estate	<p>PRISA II</p> <p>348 West Hospitality</p> <p>Invesco Real Estate Asia Fund</p>
	Non-Core Real Estate (3.5%)	Enhanced Real Estate/ High Return	<p>Apollo Real Estate Fund II LP (MCA)</p> <p>Bryanston Retail Opportunity</p> <p>Fortress Japan Opportunity Fund II</p> <p>Kayne Anderson Real Estate Partners V LP (MCA)</p> <p>Morgan Stanley RE Fund V International</p> <p>Oaktree RE Opportunities Fund V</p> <p>Starwood Global Opportunity Fund VII-A</p> <p>Starwood Opportunity Fund VII</p> <p>Walton Street Real Estate Fund V</p>
		Real Estate Secondaries	<p>Partners Group Real Estate Secondary 2013 A LP (MCA)</p> <p>Partners Group Real Estate Secondary 2017 A LP (MCA)</p>
		Real Estate Debt	<p>Kayne Anderson Real Estate Debt III (MCA)</p> <p>Marathon Real Estate Debt Fund</p> <p>Pramerica Real Estate Capital VI LP</p> <p>Square Mile Partners III</p> <p>Tri Continental Capital VII</p>



REAL ASSETS

Real Asset Portfolio (5% Target)	Commodities (2% Target)	Energy Spectrum Partners VI LP
		Pinnacle Natural Resources LP
		Pinnacle Physicals & Financing LTD
		Starwood Energy Infrastructure Fund
	Infrastructure (1% Target)	Fortress Worldwide Transportation & Infrastructure LP
		Highstar Capital III
		Kayne Anderson MLP Strategy (MCA)
	Timber (2% Target)	Hancock Timberland VII & VIII LP
		Timbervest Crossover Partners II LP
Timbervest Partners II LP		



San Bernardino County Employees' Retirement Association

ALTERNATIVES - GROSS

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Private Equity Composite	1,542,377,464	14.9	5.1	--	11.4	--	16.6	--	13.0	--	13.7	--	9.6	--
Cambridge Associates Global All PE (Qtr Lag)			<u>4.4</u>	--	<u>12.7</u>	--	<u>17.3</u>	--	<u>11.7</u>	--	<u>13.2</u>	--	<u>9.6</u>	--
Excess Return			0.7		-1.3		-0.7		1.3		0.5		0.0	
Russell 3000			7.1	--	10.6	--	17.6	--	17.1	--	13.5	--	12.0	--
Cambridge Associates US All PE (1 Qtr Lag)			5.8	--	14.2	--	18.7	--	12.7	--	13.8	--	10.8	--
Real Estate Composite	402,711,330	3.9	1.2	67	6.4	34	7.6	73	8.2	77	9.6	80	1.9	99
NCREIF Property Index 1 Qtr. Lag			<u>1.8</u>	64	<u>5.4</u>	74	<u>7.2</u>	86	<u>8.3</u>	76	<u>9.8</u>	74	<u>6.2</u>	36
Excess Return			-0.6		1.0		0.4		-0.1		-0.2		-4.3	
InvestorForce Public DB Real Estate Pub+Priv Gross Median			2.2		5.8		8.0		8.8		10.6		5.9	
Real Assets Composite	530,873,451	5.1	1.3	58	4.0	43	6.3	29	1.9	75	2.2	1	2.3	--
Real Assets Custom Blend			<u>-0.8</u>	77	<u>0.5</u>	70	<u>3.2</u>	87	<u>1.8</u>	78	<u>-0.6</u>	30	<u>-0.9</u>	--
Excess Return			2.1		3.5		3.1		0.1		2.8		3.2	
NCREIF Timberland 1 Qtr. Lag			0.5	67	2.9	56	3.6	80	3.5	64	6.0	1	4.0	--
Timber	116,814,506	1.1	0.2	--	3.0	--	2.3	--	0.6	--	2.6	--	1.1	--
NCREIF Timberland 1 Qtr. Lag			<u>0.5</u>	--	<u>2.9</u>	--	<u>3.6</u>	--	<u>3.5</u>	--	<u>6.0</u>	--	<u>4.0</u>	--
Excess Return			-0.3		0.1		-1.3		-2.9		-3.4		-2.9	
Infrastructure	205,439,866	2.0	3.2	--	-2.8	--	5.0	--	5.1	--	2.3	--	5.7	--
Russell 3000			<u>7.1</u>	--	<u>10.6</u>	--	<u>17.6</u>	--	<u>17.1</u>	--	<u>13.5</u>	--	<u>12.0</u>	--
Excess Return			-3.9		-13.4		-12.6		-12.0		-11.2		-6.3	
Commodities	208,619,079	2.0	0.1	--	8.9	--	11.4	--	3.1	--	1.8	--	3.4	--
Bloomberg Commodity Index			<u>-2.0</u>	--	<u>-2.0</u>	--	<u>2.6</u>	--	<u>-0.1</u>	--	<u>-7.2</u>	--	<u>-6.2</u>	--
Excess Return			2.1		10.9		8.8		3.2		9.0		9.6	



APPENDIX: PRIVATE EQUITY, REAL ESTATE AND REAL ASSETS PERFORMANCE

NEPC, LLC

REAL ESTATE PERFORMANCE ENDED JUNE 30, 2018

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
American Realty Advisors	1996	\$ 128,009,773	\$ 128,009,773	\$ 276,867,963	\$ 1,999,837	2.18	6.90%
American Realty Value Add	2006	\$ 13,125,215	\$ 13,125,215	\$ 32,080,321	\$ -	2.44	10.92%
Apollo US Real Estate Fund II	2015	\$ 20,000,000	\$ 8,810,661	\$ 2,763,046	\$ 10,293,428	1.48	19.07%
Beacon Capital Strategic Partners IV, L.P.	2006	\$ 39,000,000	\$ 38,000,000	\$ 31,402,655	\$ 15,594	0.83	-3.26%
Beacon Capital Strategic Partners V, L.P.	2007	\$ 20,000,000	\$ 18,000,000	\$ 11,167,865	\$ 18,937	0.62	-7.84%
BlackRock Diamond Property Fund	2005	\$ 25,000,000	\$ 25,000,000	\$ 15,216,267	\$ 19,799	0.61	-9.31%
Bryanston Real Estate Opportunity Fund II, L.P.	2009	\$ 20,000,000	\$ 8,589,256	\$ 11,842,516	\$ -	1.38	10.18%
Bryanston Retail Opportunity Fund, L.P.	2004	\$ 20,000,000	\$ 8,228,165	\$ 18,828,095	\$ 6,780,092	3.11	70.81%
CBRE Strategic Partners III	2003	\$ 10,000,000	\$ 10,000,000	\$ 12,698,783	\$ -	1.27	8.02%
CBRE Strategic Partners IV	2005	\$ 40,000,000	\$ 40,000,000	\$ 2,609,685	\$ -	0.07	-27.76%
Fillmore East Fund	2006	\$ 25,000,000	\$ 31,403,818	\$ 20,777,177	\$ -	0.66	-9.78%
Fillmore West Fund	2008	\$ 20,000,000	\$ 19,561,557	\$ 21,175,799	\$ -	1.08	1.14%
Fortress Japan Opportunity Fund II	2012	\$ 21,739,130	\$ 3,214,956	\$ 16,943,780	\$ 8,303,566	7.38	26.10%
Invesco Asian Real Estate Partners II (USD), LP	2007	\$ 20,000,000	\$ 8,412,833	\$ 11,324,754	\$ 148,931	1.37	7.56%
Invesco High Yield Debt Fund I	2007	\$ 20,000,000	\$ 20,000,000	\$ 8,567,605	\$ -	0.43	-35.57%
Invesco Real Estate Asia Fund	2014	\$ 51,732,500	\$ 51,732,500	\$ 7,153,464	\$ 62,865,217	1.33	7.80%
INVESCO Real Estate Fund I	2005	\$ 10,000,000	\$ 9,248,390	\$ 10,015,656	\$ -	1.08	1.54%
Kayne Anderson Real Estate Debt III	2018	\$ 20,000,000	\$ 7,200,000	\$ -	\$ 7,297,888	1.01	1.59%
Kayne Anderson Real Estate Partners V	2017	\$ 10,000,000	\$ 5,000,000	\$ -	\$ 4,472,951	0.92	-14.22%
LaSalle Income & Growth Fund IV	2005	\$ 20,000,000	\$ 19,469,417	\$ 13,482,024	\$ -	0.69	-5.51%
North Haven Real Estate Fund V International	2005	\$ 27,500,000	\$ 27,377,414	\$ 31,921,668	\$ 1,336,847	1.21	6.98%
Oaktree Real Estate Opportunities V	2012	\$ 25,000,000	\$ 25,000,000	\$ 36,701,185	\$ 3,433,725	1.58	13.44%
Partners Group Project Camino	2016	\$ 8,415,776	\$ 5,652,121	\$ -	\$ 6,425,266	1.14	6.92%
Partners Group RE Secondary 2013 (USD) A	2014	\$ 65,000,000	\$ 49,541,590	\$ 14,625,710	\$ 54,613,668	1.41	19.38%
Partners Group RE Secondary 2017 (USD) A	2017	\$ 75,000,000	\$ 12,650,979	\$ 1,144	\$ 12,490,334	0.98	-4.63%
Pramerica Real Estate Capital VI	2016	\$ 26,194,494	\$ 10,064,128	\$ 4,068,236	\$ 8,013,360	1.19	18.40%
Prologis Japan Fund	2005	\$ 25,290,819	\$ 25,290,819	\$ 33,126,118	\$ -	1.31	4.81%
Prudential PRISA II	2004	\$ 140,000,000	\$ 140,000,000	\$ 40,512,823	\$ 164,704,811	1.40	8.38%
Prudential PRISA III	2003	\$ 75,000,000	\$ 47,755,490	\$ 42,243,112	\$ 44,932,723	1.69	18.75%
RREEF America REIT III	2004	\$ 20,000,000	\$ 20,539,309	\$ 23,658,675	\$ -	1.15	3.00%
Square Mile Partners II	2007	\$ 20,000,000	\$ 19,831,232	\$ 5,311,330	\$ 28,453	0.27	-18.94%
Square Mile Partners III LP	2008	\$ 20,000,000	\$ 19,730,190	\$ 28,295,651	\$ 659,549	1.47	11.63%
Starwood Capital Hospitality Fund I-2	2006	\$ 30,000,000	\$ 30,000,000	\$ 26,182,035	\$ 3,517,086	0.99	-0.14%
Starwood Debt Fund II, LP	2008	\$ 20,000,000	\$ 17,599,882	\$ 21,912,511	\$ -	1.25	6.45%
Starwood Opportunity Fund VII - A	2006	\$ 25,000,000	\$ 25,000,000	\$ 18,224,737	\$ 1,724,807	0.80	-2.49%
Structured Real Estate III, LP (Guggenheim)	2008	\$ 20,000,000	\$ 20,000,000	\$ 16,320,664	\$ -	0.82	-4.99%
Tri Continental Capital VII	2005	\$ 23,000,000	\$ 22,277,928	\$ 2,650,303	\$ 822,347	0.16	-16.80%
Tuckerman Multi-Family Development Fund III	2002	\$ 10,000,000	\$ 10,219,311	\$ 16,939,699	\$ -	1.66	26.67%
Walton Street Real Estate Fund IV, LP	2003	\$ 10,000,000	\$ 9,770,890	\$ 15,885,696	\$ 146,678	1.64	10.75%
Walton Street Real Estate Fund V, LP	2006	\$ 40,000,000	\$ 40,000,000	\$ 22,399,244	\$ 9,597,931	0.80	-2.51%
Total: San Bernardino		\$ 1,259,007,707	\$ 1,051,307,824	\$ 925,897,999	\$ 414,663,824	1.26	4.06%

Note: All metrics are calculated since inception

* Denotes cash adjusted



REAL ASSETS PERFORMANCE ENDED JUNE 30, 2018

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Fortress Transportation Infrastructure LLC	2015	\$ 45,403,354	\$ 45,403,354	\$ 9,694,953	\$ 48,261,103	1.28	10.71%
Hancock Timberland VII	2005	\$ 90,000,000	\$ 90,000,000	\$ 58,548,600	\$ 48,910,298	1.19	1.60%
Hancock Timberland VIII	2006	\$ 40,000,000	\$ 40,000,000	\$ 5,097,950	\$ 34,246,654	0.98	-0.17%
Highstar Capital III, L.P.	2007	\$ 60,000,000	\$ 59,119,119	\$ 37,729,377	\$ 29,250,175	1.13	1.67%
Timbervest Crossover Partners II, L.P.	2008	\$ 30,000,000	\$ 30,000,000	\$ 13,215,000	\$ 14,903,204	0.94	-1.08%
Timbervest Partners II, L.P.	2007	\$ 50,000,000	\$ 50,000,000	\$ 25,525,000	\$ 29,476,854	1.10	1.05%
Total: San Bernardino		\$ 315,403,354	\$ 314,522,473	\$ 149,810,880	\$ 205,048,288	1.13	1.46%

Note: All metrics are calculated since inception

** Denotes cash adjusted*



PRIVATE EQUITY PERFORMANCE ENDED JUNE 30, 2018

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Advent International GPE VIII, LP	2016	\$ 10,000,000	\$ 4,915,000	\$ -	\$ 5,414,206	1.10	9.94%
Apollo Accord Fund, LP	2017	\$ 30,000,000	\$ 7,500,000	\$ 3,804,383	\$ 4,276,183	1.08	8.06%
Apollo European Principal Finance Fund (Feeder), LP	2009	\$ 54,107,143	\$ 46,373,293	\$ 68,835,428	\$ 511,043	1.49	11.82%
Apollo Investment Fund VII, L.P.	2008	\$ 10,000,000	\$ 8,564,325	\$ 15,265,256	\$ 2,357,637	2.06	23.59%
Apollo PCPL Webb V	2010	\$ 4,844,398	\$ 4,844,398	\$ 5,196,757	\$ 35,491	1.08	6.43%
Apollo PCPL Webb VIII	2010	\$ 4,734,303	\$ 4,734,303	\$ 12,146,258	\$ 2,440	2.57	46.47%
ARES European Loan Opp Fund	2015	\$ 15,000,000	\$ 8,413,136	\$ 7,613,498	\$ -	0.90	-6.02%
Ares Special Situations Fund IV, LP	2015	\$ 50,000,000	\$ 30,524,752	\$ 105,724	\$ 25,625,852	0.84	-8.68%
Aurora Equity Partners III, L.P.	2005	\$ 25,000,000	\$ 23,544,536	\$ 41,738,196	\$ 188,378	1.67	13.62%
Aurora Equity Partners IV, L.P.	2012	\$ 20,000,000	\$ 15,995,098	\$ 25,383,037	\$ 11,816,069	2.01	19.41%
Aurora Resurgence Fund, L.P.	2008	\$ 15,000,000	\$ 5,653,009	\$ 10,350,965	\$ -	1.82	17.60%
Baring Asia Private Equity Fund IV, L.P.	2015	\$ 2,931,918	\$ 2,584,265	\$ 3,168,279	\$ 265,839	1.33	11.56%
BNY Mellon - Alcetra Mezzanine III	2012	\$ 25,000,000	\$ 23,254,658	\$ 26,736,979	\$ -	1.15	12.73%
Catalyst Fund II, L.P.	2007	\$ 10,000,000	\$ 9,427,306	\$ 4,259,103	\$ 17,070,391	2.25	10.77%
Catalyst Fund LP IV, L.P.	2015	\$ 8,000,000	\$ 5,492,203	\$ -	\$ 6,790,095	1.24	12.18%
Charlesbank Equity Fund VIII	2015	\$ 7,500,000	\$ 6,444,500	\$ 1,234,442	\$ 7,377,742	1.34	16.28%
DRI II, L.P.	2009	\$ 20,000,000	\$ 19,917,669	\$ 26,302,807	\$ -	1.33	19.64%
European Strategic Partners 2004	2004	\$ 241,540,978	\$ 220,526,197	\$ 259,983,859	\$ 18,537,252	1.26	3.95%
European Strategic Partners 2008	2010	\$ 31,527,890	\$ 28,504,203	\$ 21,890,792	\$ 19,053,936	1.43	9.46%
Industry Ventures Direct, LP	2016	\$ 25,000,000	\$ 11,171,962	\$ 1,732,925	\$ 10,034,225	1.05	5.97%
Industry Ventures Fund V	2008	\$ 10,000,000	\$ 9,500,000	\$ 21,477,009	\$ 7,515,337	3.05	30.91%
Industry Ventures Fund VI	2011	\$ 20,000,000	\$ 18,400,000	\$ 14,264,047	\$ 9,806,101	1.31	8.32%
Industry Ventures Partnership Holdings Fund II, L.P.	2012	\$ 25,000,000	\$ 23,500,000	\$ 7,696,624	\$ 50,994,802	2.50	24.67%
Industry Ventures Partnership Holdings Fund III, L.P.	2013	\$ 25,000,000	\$ 22,125,000	\$ 4,001,806	\$ 27,263,875	1.41	14.48%
Industry Ventures Partnership Holdings Fund III-A, L.P.	2014	\$ 12,500,000	\$ 10,437,500	\$ 3,466,172	\$ 6,843,370	0.99	-0.50%
Industry Ventures Partnership Holdings IV, LP	2016	\$ 25,000,000	\$ 8,625,000	\$ 102,308	\$ 10,300,370	1.21	16.95%
Industry Ventures Secondary VII, L.P.	2013	\$ 25,000,000	\$ 21,500,000	\$ 5,552,226	\$ 23,518,748	1.35	12.01%
Industry Ventures Secondary VIII	2017	\$ 25,000,000	\$ 2,500,000	\$ 54,785	\$ 4,227,159	1.71	91.60%
Industry Ventures Special Opportunities II-A	2016	\$ 12,500,000	\$ 781,250	\$ -	\$ 1,069,129	1.37	60.55%
Insight Venture Partners III Co-Invest	2014	\$ 4,000,000	\$ 4,000,000	\$ 134,902	\$ 7,161,247	1.82	18.90%
Kayne Anderson Energy Fund VII, L.P.	2017	\$ 10,000,000	\$ 6,928,473	\$ 118,129	\$ 8,975,694	1.31	22.59%
Kayne Partners Fund IV (QP), LP	2017	\$ 20,000,000	\$ 6,296,085	\$ -	\$ 6,109,833	0.95	-7.35%
Kayne Solutions Fund LP	2018	\$ 20,000,000	\$ 4,800,894	\$ 58,885	\$ 4,792,471	1.01	0.99%
Lexington Capital Partners VI-B	2006	\$ 25,000,000	\$ 24,591,319	\$ 31,703,571	\$ 3,081,865	1.41	6.91%
Lexington Capital Partners VII (Offshore)	2011	\$ 25,000,000	\$ 20,202,136	\$ 23,701,416	\$ 8,188,335	1.57	15.53%
Lexington Middle Market I	2005	\$ 25,000,000	\$ 24,771,942	\$ 36,070,063	\$ 4,543,499	1.64	11.74%
Lexington Middle Market II - Offshore	2008	\$ 10,000,000	\$ 9,773,736	\$ 11,514,638	\$ 4,397,100	1.62	14.37%
Madison Dearborn VII	2016	\$ 10,000,000	\$ 3,837,472	\$ -	\$ 4,243,723	1.10	8.39%
NB Secondary Opportunities I, LP	2005	\$ 20,000,000	\$ 18,500,843	\$ 24,183,590	\$ 164,109	1.32	6.50%
NB Secondary Opportunities II, LP	2008	\$ 20,000,000	\$ 17,080,642	\$ 23,847,866	\$ 2,849,951	1.54	14.49%
Partners Group Access 216 LP	2017	\$ 7,202,210	\$ 8,498,837	\$ -	\$ 10,828,486	1.28	25.84%
Partners Group Access 384, L.P.	2017	\$ 8,360,000	\$ 8,360,000	\$ -	\$ 8,592,387	1.03	1.90%
Partners Group Access 632, L.P.	2014	\$ 2,782,028	\$ 2,782,028	\$ 4,627,741	\$ 1	1.65	16.01%
Partners Group Access 648, L.P.	2014	\$ 4,343,940	\$ 4,843,537	\$ 19,449	\$ 3,658,212	0.76	-7.98%
Partners Group Access 680 L.P.	2015	\$ 7,278,889	\$ 7,202,719	\$ -	\$ 11,561,729	1.61	20.28%
Partners Group Access 906, L.P.	2017	\$ 15,000,000	\$ 15,000,000	\$ 17,269	\$ 15,529,867	1.04	3.64%
Partners Group CA Infrastructure, LP Inc	2016	\$ 6,246,500	\$ 2,630,627	\$ -	\$ 3,039,810	1.15	16.44%
Partners Group Client Access 8 LP	2014	\$ 5,531,585	\$ 5,531,585	\$ 30,646,223	\$ 51,114	5.55	69.66%
Partners Group Direct Equity 2016 USD A	2016	\$ 20,000,000	\$ 10,637,157	\$ 3,277	\$ 11,458,355	1.09	7.04%
Partners Group Direct Investment 2012, L.P.	2013	\$ 18,234,455	\$ 16,509,621	\$ 13,238,963	\$ 15,781,952	1.76	20.01%
Partners Group European Mandate, L.P.	2004	\$ 239,462,416	\$ 196,136,552	\$ 243,431,972	\$ 23,327,358	1.37	5.82%

Note: All metrics are calculated since inception. * Denotes Cash adjusted value



PRIVATE EQUITY PERFORMANCE ENDED JUNE 30, 2018

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Partners Group European Mezzanine 2005	2005	\$ 101,076,654	\$ 101,076,654	\$ 119,472,418	\$ 2,575,702	1.21	3.08%
Partners Group Global Opp Limited	2017	\$ 4,001,119	\$ 4,001,119	\$ 888,306	\$ 5,454,531	1.59	55.62%
Partners Group Princess Learning IC LTD	2014	\$ 9,062,217	\$ 4,495,710	\$ -	\$ 9,011,402	2.00	25.57%
Partners Group Seabras Holdings, LLC	2015	\$ 4,660,000	\$ 3,332,156	\$ -	\$ 3,549,906	1.07	2.70%
Partners Group Secondary 2006 LP	2006	\$ 54,575,845	\$ 51,077,528	\$ 55,468,290	\$ 5,749,357	1.20	3.70%
Partners Group Secondary 2008, L.P.	2009	\$ 26,742,699	\$ 23,690,725	\$ 31,296,238	\$ 4,043,752	1.48	9.11%
Partners Group Starfrost Limited	2014	\$ 6,360,269	\$ 3,736,806	\$ 1,880,411	\$ 3,674,558	1.49	10.34%
Pathway Private Equity Fund VII, L.P.	2004	\$ 904,500,000	\$ 810,274,329	\$ 954,416,086	\$ 454,275,400	1.70	10.63%
Quad-C Partners IX, LP	2017	\$ 8,000,000	\$ 2,026,529	\$ -	\$ 2,124,031	1.05	8.89%
Quantum Energy Partners IV, L.P.	2014	\$ 2,907,301	\$ 2,359,080	\$ 1,153,386	\$ 755,141	0.71	-12.49%
Quantum Energy Partners VI, L.P.	2015	\$ 8,000,000	\$ 4,250,079	\$ 1,720,633	\$ 5,603,001	1.72	41.07%
Quantum Energy Partners VII Co-Investment Fund, LP	2017	\$ 1,300,000	\$ 380,618	\$ 20	\$ 364,676	0.96	-5.42%
Quantum Energy Partners VII, LP	2017	\$ 6,700,000	\$ 1,914,078	\$ 73,494	\$ 1,705,667	0.93	-12.95%
Quantum Parallel Partners VI-C, LP	2015	\$ 3,290,000	\$ 1,636,762	\$ 215,034	\$ 2,172,713	1.46	38.13%
Siguler Guff DOF II	2006	\$ 30,000,000	\$ 30,000,000	\$ 42,260,397	\$ 392,301	1.43	8.74%
Siguler Guff DOF III	2008	\$ 10,000,000	\$ 9,700,000	\$ 13,616,012	\$ 1,888,633	1.60	10.74%
SL Capital SOF I LP	2014	\$ 25,000,000	\$ 20,135,680	\$ 11,067,922	\$ 15,874,714	1.34	12.99%
SL Capital SOF III LP	2017	\$ 25,000,000	\$ 4,900,038	\$ -	\$ 7,164,404	1.46	79.40%
TCP Direct Lending Fund VIII-L, LLC	2016	\$ 40,000,000	\$ 12,594,385	\$ -	\$ 13,525,789	1.07	5.28%
TCV IX, L.P.	2016	\$ 10,000,000	\$ 3,324,000	\$ -	\$ 3,649,041	1.10	13.74%
TCW/Crescent Mezzanine IV, L.P.	2006	\$ 40,000,000	\$ 39,590,976	\$ 44,955,179	\$ 101,528	1.14	3.03%
TCW/Crescent Mezzanine V, L.P.	2008	\$ 20,000,000	\$ 19,949,723	\$ 25,279,574	\$ 1,413,751	1.34	9.54%
Tennenbaum Energy Opportunities Fund, LP	2016	\$ 20,000,000	\$ 13,985,747	\$ 2,784,018	\$ 14,192,651	1.21	17.31%
Tennenbaum Opportunities Fund V, L.P.	2007	\$ 10,000,000	\$ 10,000,000	\$ 11,224,122	\$ 3,445,152	1.47	5.82%
Tennenbaum Opportunities Fund VI, L.P.	2011	\$ 20,000,000	\$ 12,332,075	\$ 10,525,565	\$ 9,592,281	1.63	8.86%
Tennenbaum Special Situations Fund IX	2015	\$ 50,000,000	\$ 27,123,775	\$ 8,337,817	\$ 25,104,601	1.23	11.77%
Tennenbaum Waterman Fund, LP	2012	\$ 70,000,000	\$ 70,000,000	\$ 34,582,234	\$ 70,698,583	1.50	10.99%
The Huron Fund V	2017	\$ 10,000,000	\$ 1,075,000	\$ -	\$ 906,252	0.84	-15.70%
The Resolute Fund II - Secondary	2016	\$ 1,720,184	\$ 3,125,996	\$ 619,991	\$ 2,921,521	1.13	13.95%
The Resolute Fund III	2014	\$ 8,000,000	\$ 7,197,933	\$ 2,035,822	\$ 7,866,413	1.38	21.20%
Thoma Bravo Discover Fund I	2015	\$ 3,000,000	\$ 2,243,313	\$ 315,308	\$ 3,112,031	1.53	31.35%
Thoma Bravo XI	2014	\$ 8,000,000	\$ 7,086,492	\$ 2,414,224	\$ 12,140,616	2.05	25.36%
Thoma Bravo XII	2016	\$ 10,000,000	\$ 6,305,511	\$ -	\$ 7,019,541	1.11	8.80%
Towerbrook III 2ndry	2017	\$ 1,520,778	\$ 383,292	\$ 248,474	\$ 263,898	1.32	33.98%
Towerbrook IV (OS) 2ndry	2017	\$ 760,389	\$ 401,851	\$ 19,863	\$ 493,543	1.28	32.15%
Vista Foundation Fund III	2016	\$ 10,000,000	\$ 4,401,589	\$ -	\$ 4,259,536	0.97	-3.99%
Total: San Bernardino		\$ 2,877,806,109	\$ 2,344,779,318	\$ 2,412,552,459	\$ 1,136,319,383	1.50	8.95%

Note: All metrics are calculated since inception

* Denotes Cash adjusted value

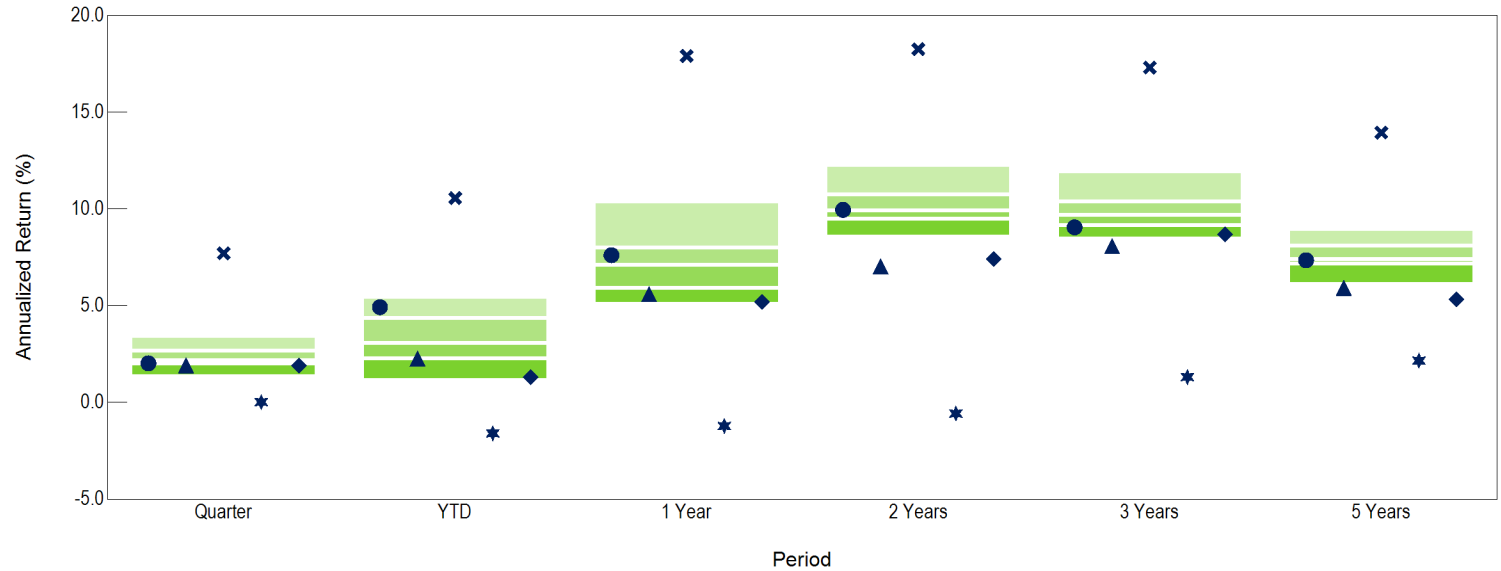


APPENDIX: MARKET ENVIRONMENT

NEPC, LLC

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

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

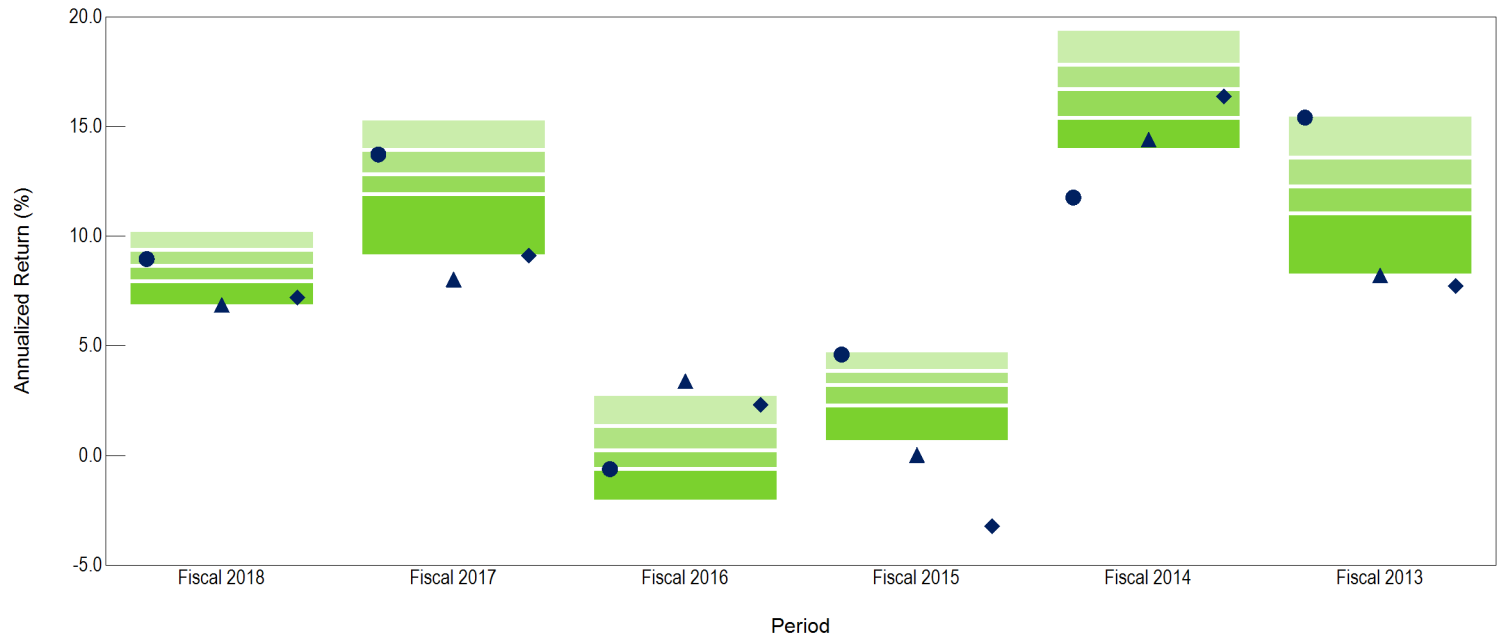


	Return (Rank)					
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years
5th Percentile	3.4	5.4	10.4	12.3	11.9	9.0
25th Percentile	2.7	4.4	8.0	10.8	10.4	8.1
Median	2.2	3.1	7.1	10.0	9.7	7.4
75th Percentile	2.0	2.3	6.0	9.5	9.2	7.2
95th Percentile	1.4	1.2	5.1	8.6	8.5	6.1
# of Portfolios	18	18	18	18	18	18
● Total Fund	2.0 (77)	4.9 (12)	7.6 (30)	10.0 (53)	9.1 (89)	7.3 (53)
▲ Policy Index	1.9 (79)	2.3 (77)	5.6 (88)	7.0 (99)	8.1 (98)	5.9 (98)
× S&P 500	7.7 (1)	10.6 (1)	17.9 (1)	18.3 (1)	17.3 (1)	13.9 (1)
* BBgBarc US Aggregate TR	0.0 (99)	-1.6 (99)	-1.2 (99)	-0.6 (99)	1.3 (99)	2.2 (99)
◆ 60% MSCI ACWI (Net) / 40% FTSE WGBI	1.9 (80)	1.3 (93)	5.2 (94)	7.4 (99)	8.7 (94)	5.3 (99)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

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



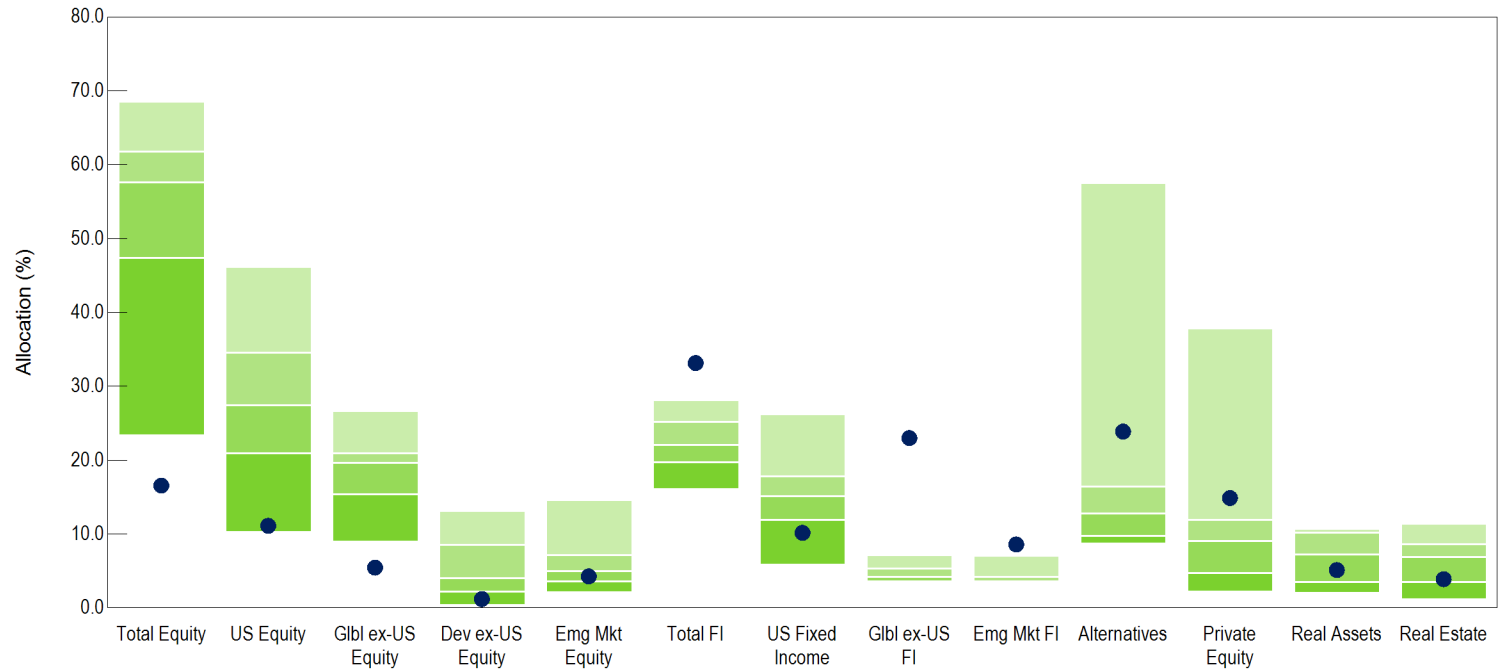
	Fiscal 2018		Fiscal 2017		Fiscal 2016		Fiscal 2015		Fiscal 2014		Fiscal 2013	
	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)	Return	(Rank)
5th Percentile	10.3		15.3		2.8		4.8		19.4		15.5	
25th Percentile	9.4		14.0		1.4		3.9		17.8		13.6	
Median	8.7		12.9		0.3		3.2		16.7		12.3	
75th Percentile	8.0		11.9		-0.6		2.3		15.4		11.0	
95th Percentile	6.8		9.1		-2.1		0.6		13.9		8.2	
# of Portfolios	62		108		91		92		65		78	
● Total Fund	9.0	(38)	13.7	(29)	-0.6	(77)	4.6	(7)	11.8	(99)	15.4	(7)
▲ Policy Index	6.9	(94)	8.0	(97)	3.4	(3)	0.0	(97)	14.4	(87)	8.2	(96)
◆ 60% MSCI ACWI (Net) / 40% FTSE WGBI	7.2	(90)	9.1	(95)	2.3	(11)	-3.2	(99)	16.4	(58)	7.7	(97)



San Bernardino County Employees' Retirement Association

TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

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



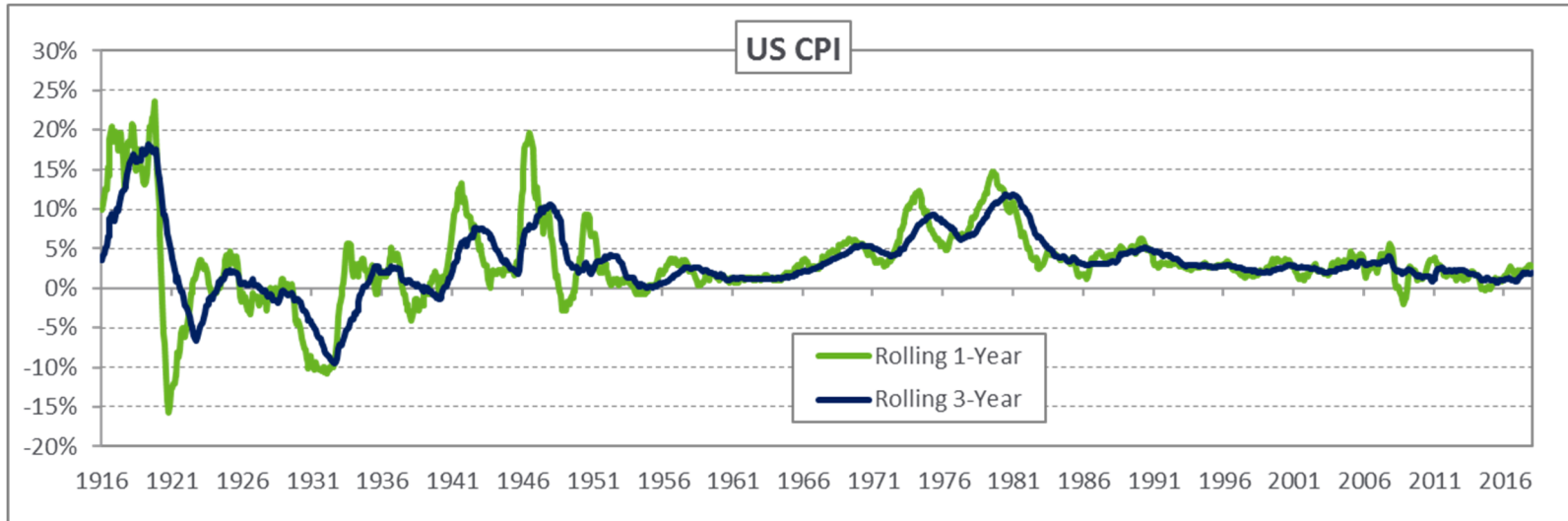
	Allocation (Rank)													
	Total Equity	US Equity	Gbl ex-US Equity	Dev ex-US Equity	Emg Mkt Equity	Total FI	US Fixed Income	Gbl ex-US FI	Emg Mkt FI	Alternatives	Private Equity	Real Assets	Real Estate	
5th Percentile	68.6	46.1	26.6	13.1	14.6	28.1	26.2	7.2	7.0	57.5	37.9	10.7	11.4	--
25th Percentile	61.8	34.6	21.0	8.6	7.2	25.3	17.9	5.4	4.2	16.5	12.0	10.3	8.7	--
Median	57.6	27.5	19.7	4.1	5.0	22.1	15.2	4.2	3.7	12.9	9.2	7.3	7.0	--
75th Percentile	47.5	21.0	15.5	2.3	3.6	19.8	12.0	3.6	3.6	9.8	4.8	3.6	3.6	--
95th Percentile	23.5	10.4	9.1	0.5	2.2	16.2	5.9	3.5	3.5	8.8	2.3	2.1	1.2	--
# of Portfolios	16	12	14	8	12	17	13	7	5	14	12	5	13	--
● Total Fund	16.5 (99)	11.1 (91)	5.4 (98)	1.2 (88)	4.3 (70)	33.1 (1)	10.2 (88)	23.0 (1)	8.6 (1)	23.9 (19)	14.9 (9)	5.1 (65)	3.9 (74)	--



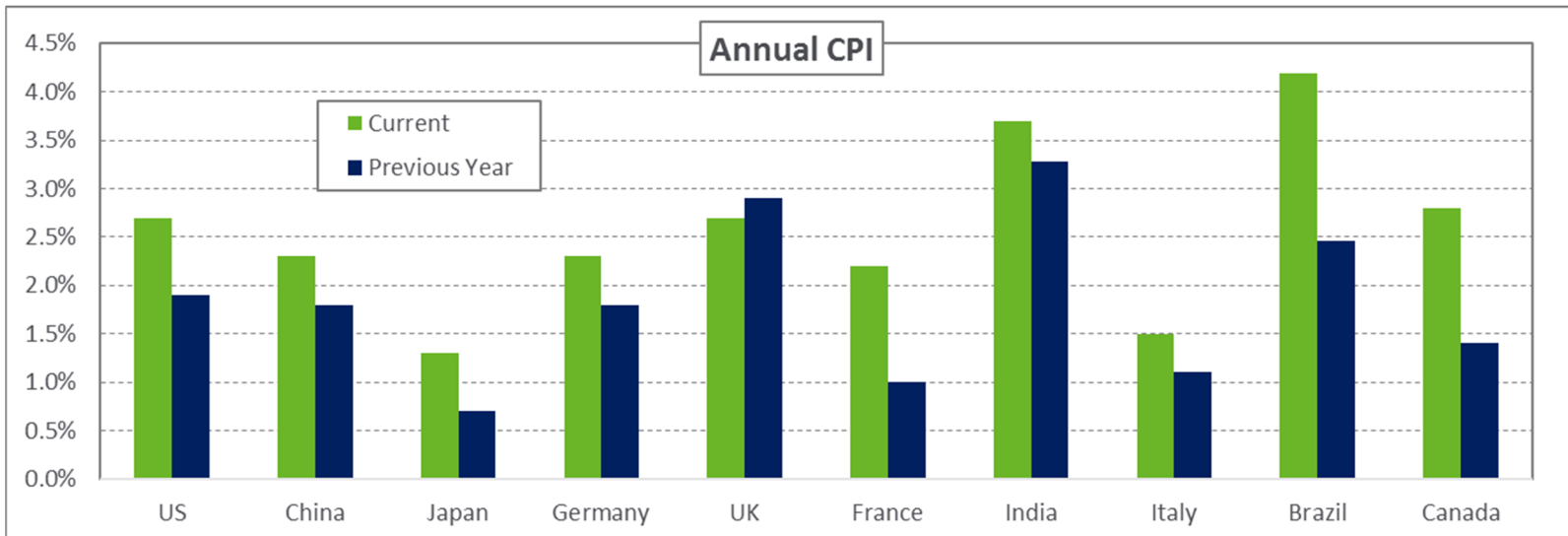
MACRO

NEPC, LLC

INFLATION



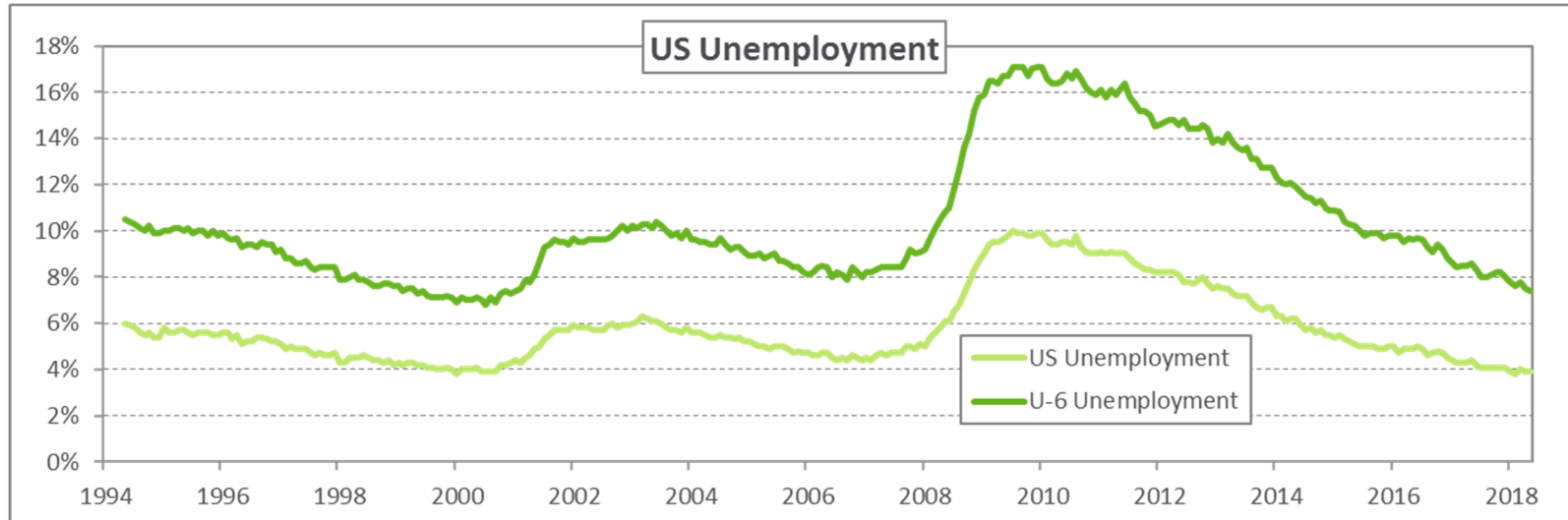
Source: Bureau of Labor Statistics, Bloomberg, NEPC



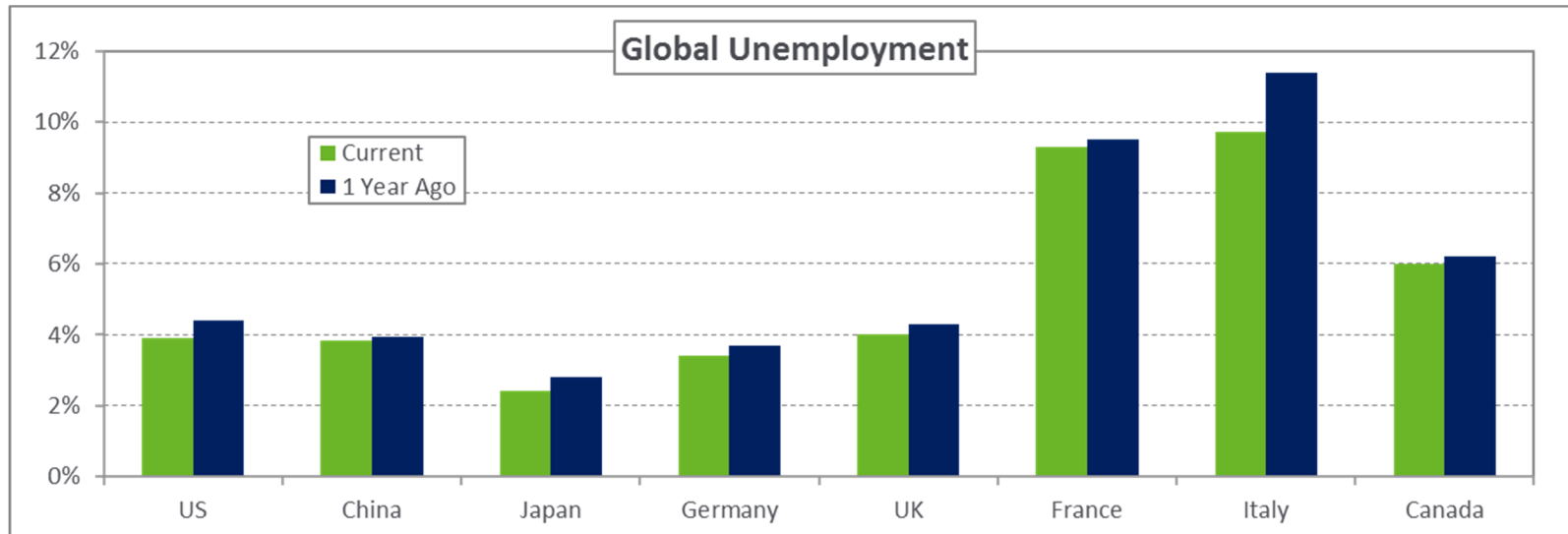
Source: Bureau of Labor Statistics, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, India Central Statistical Organization, ISTAT, IBGE, STCA, Bloomberg



UNEMPLOYMENT



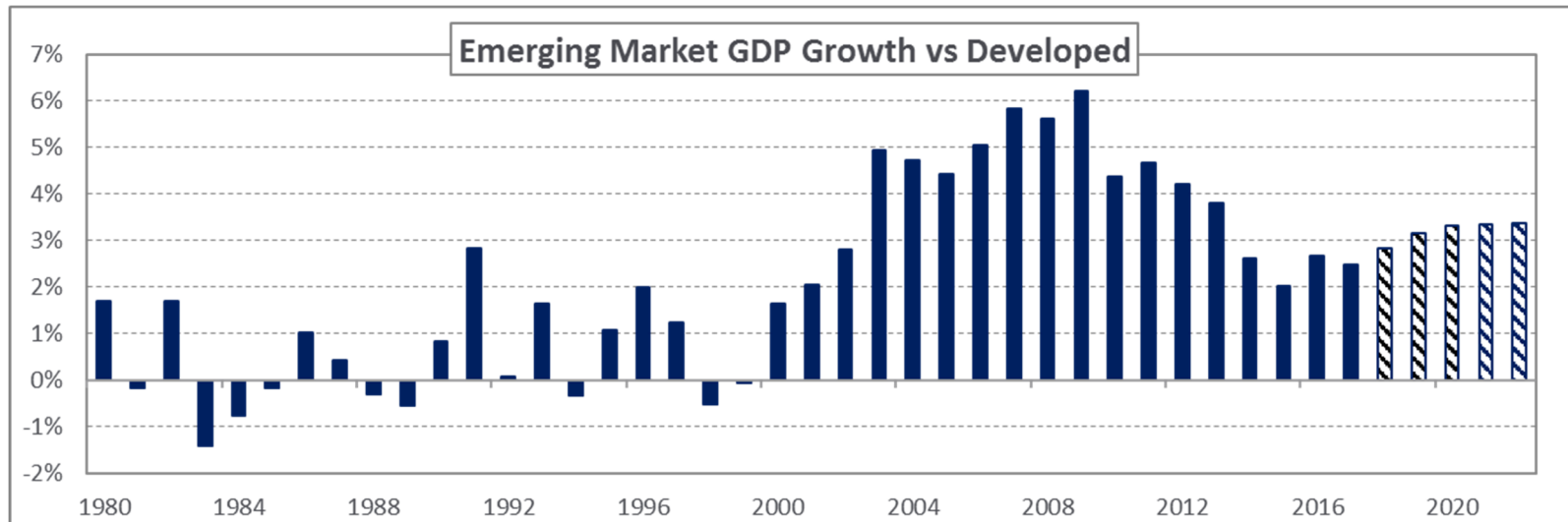
Source: Bureau of Labor Statistics, Bloomberg



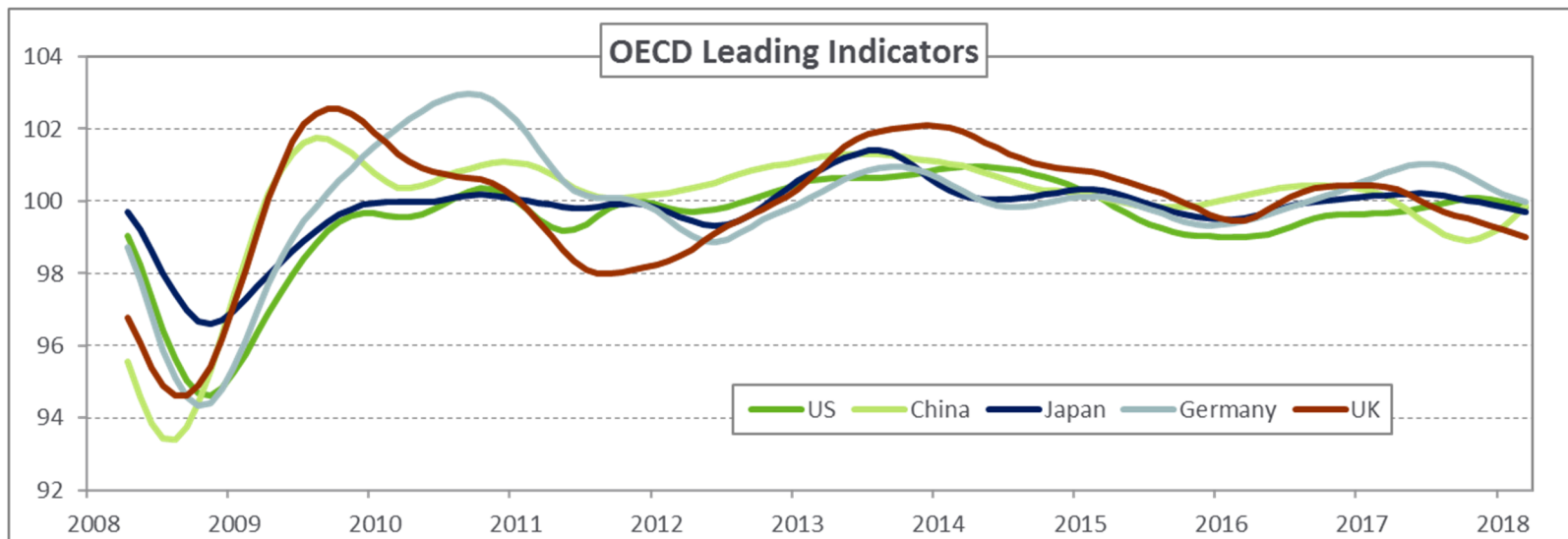
Source: Bureau of Labor Statistics, STA, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, ISTAT, IBGE, Bloomberg



ECONOMIC INDICATORS



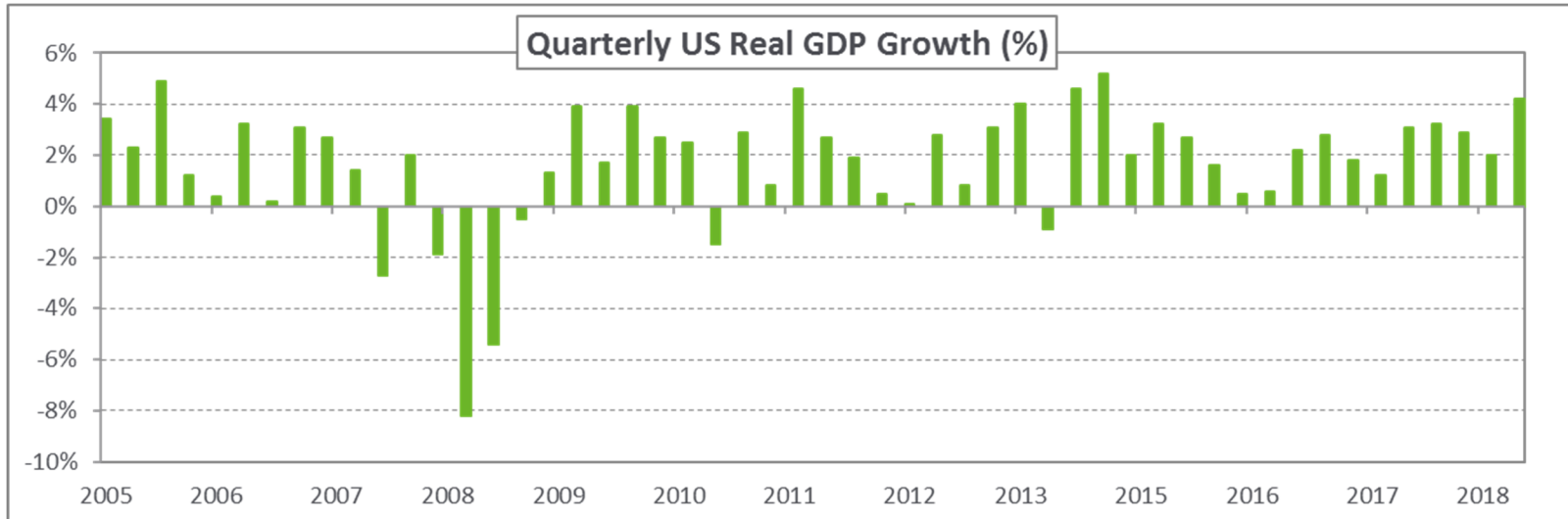
Source: IMF



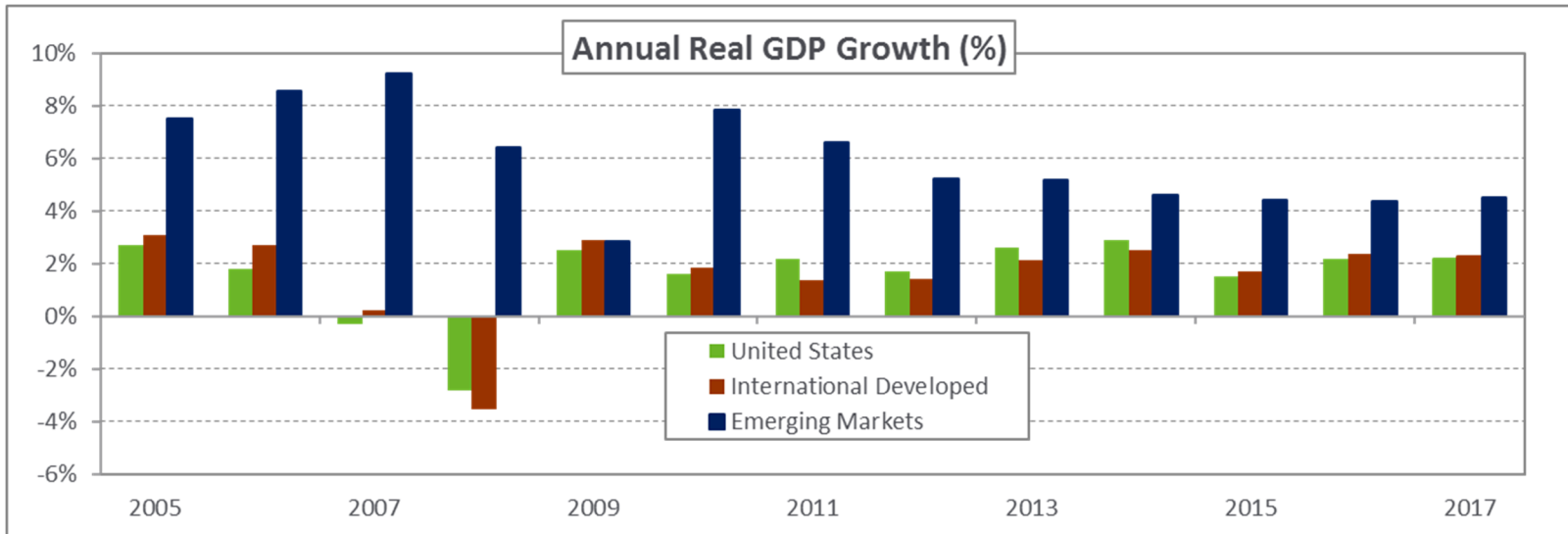
Source: OECD, Bloomberg



GROSS DOMESTIC PRODUCT



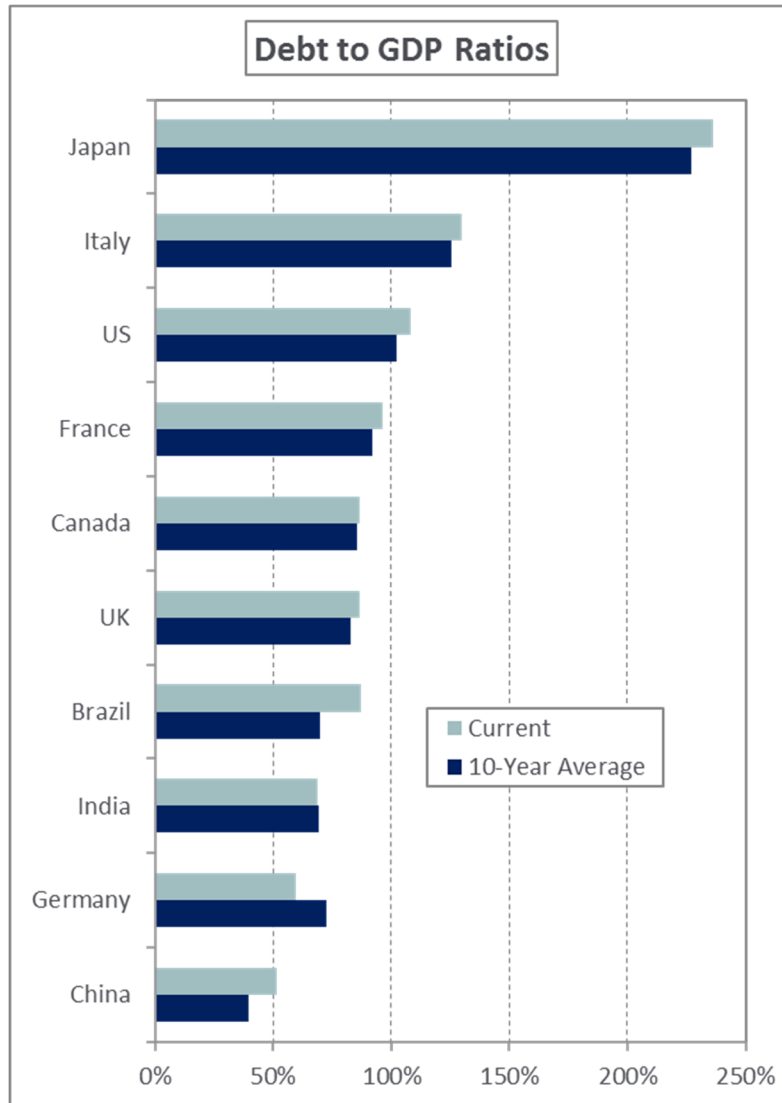
Source: Bloomberg



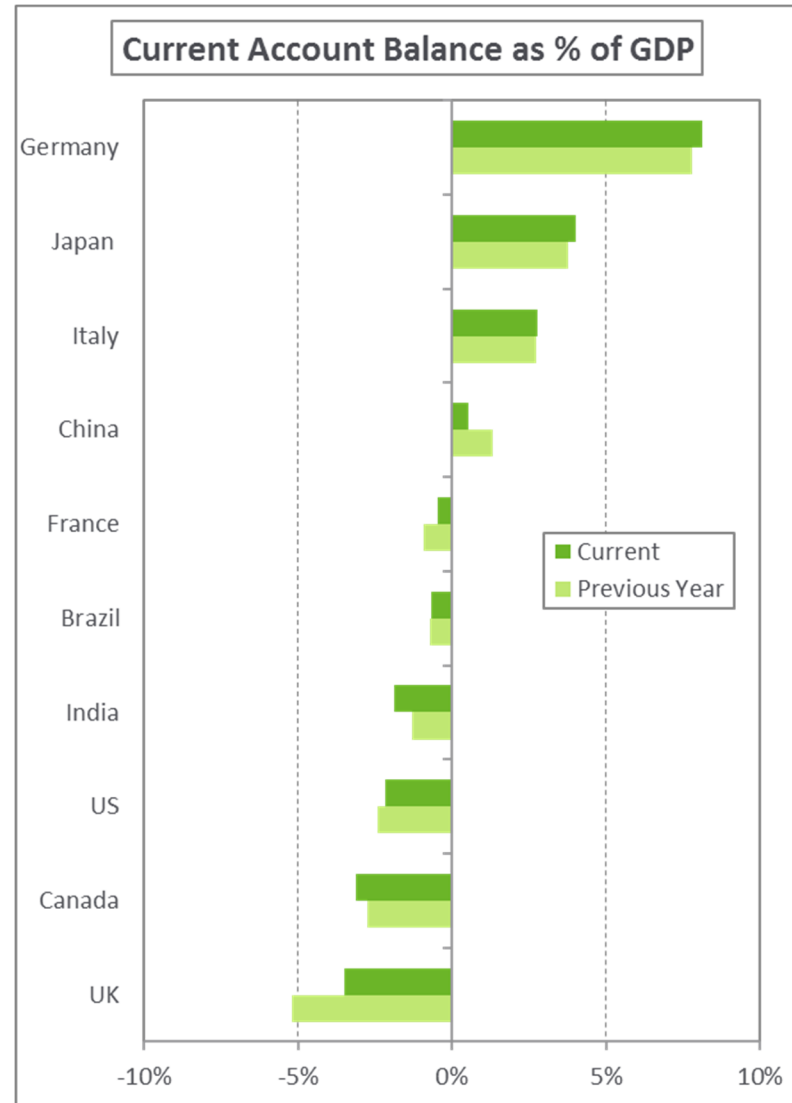
Source: Bloomberg



GROSS DOMESTIC PRODUCT METRICS



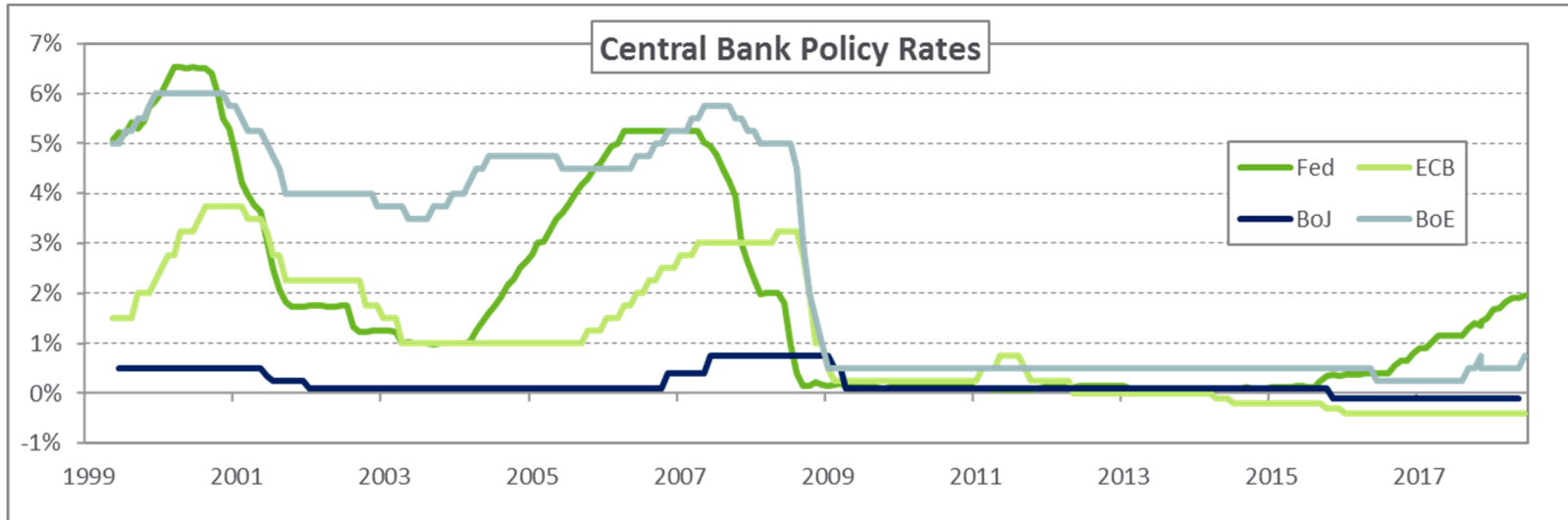
Source: IMF, Bloomberg



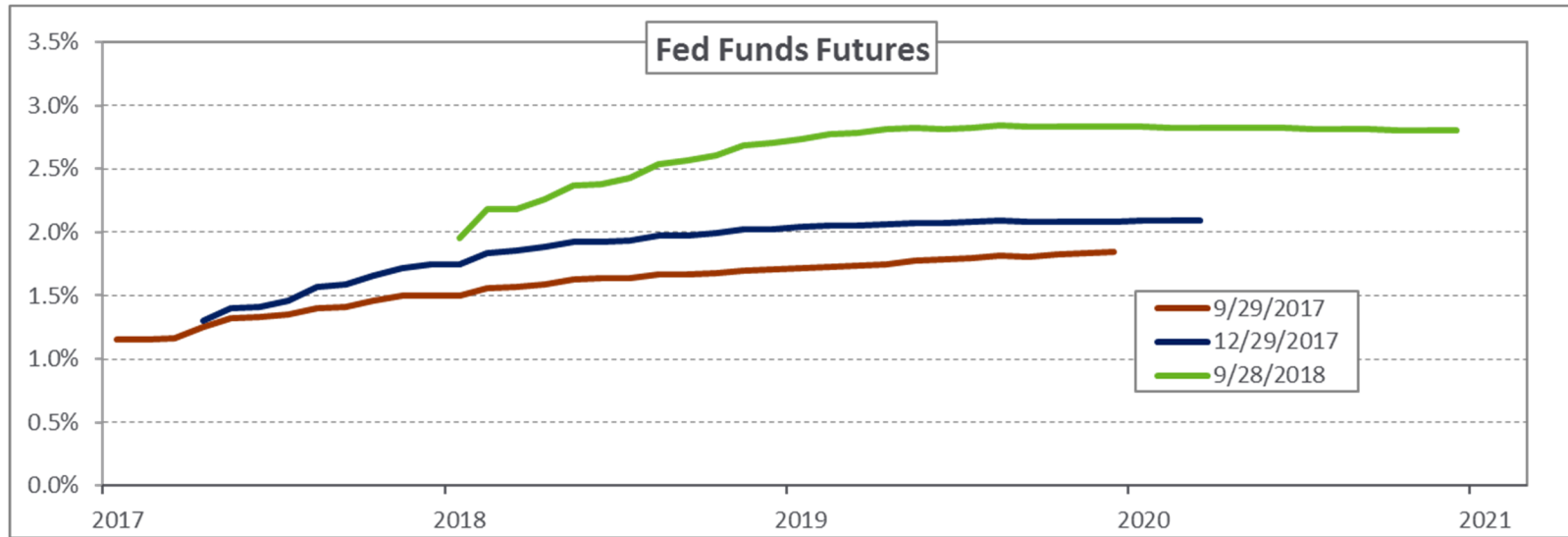
Source: Bloomberg



CENTRAL BANK RATES



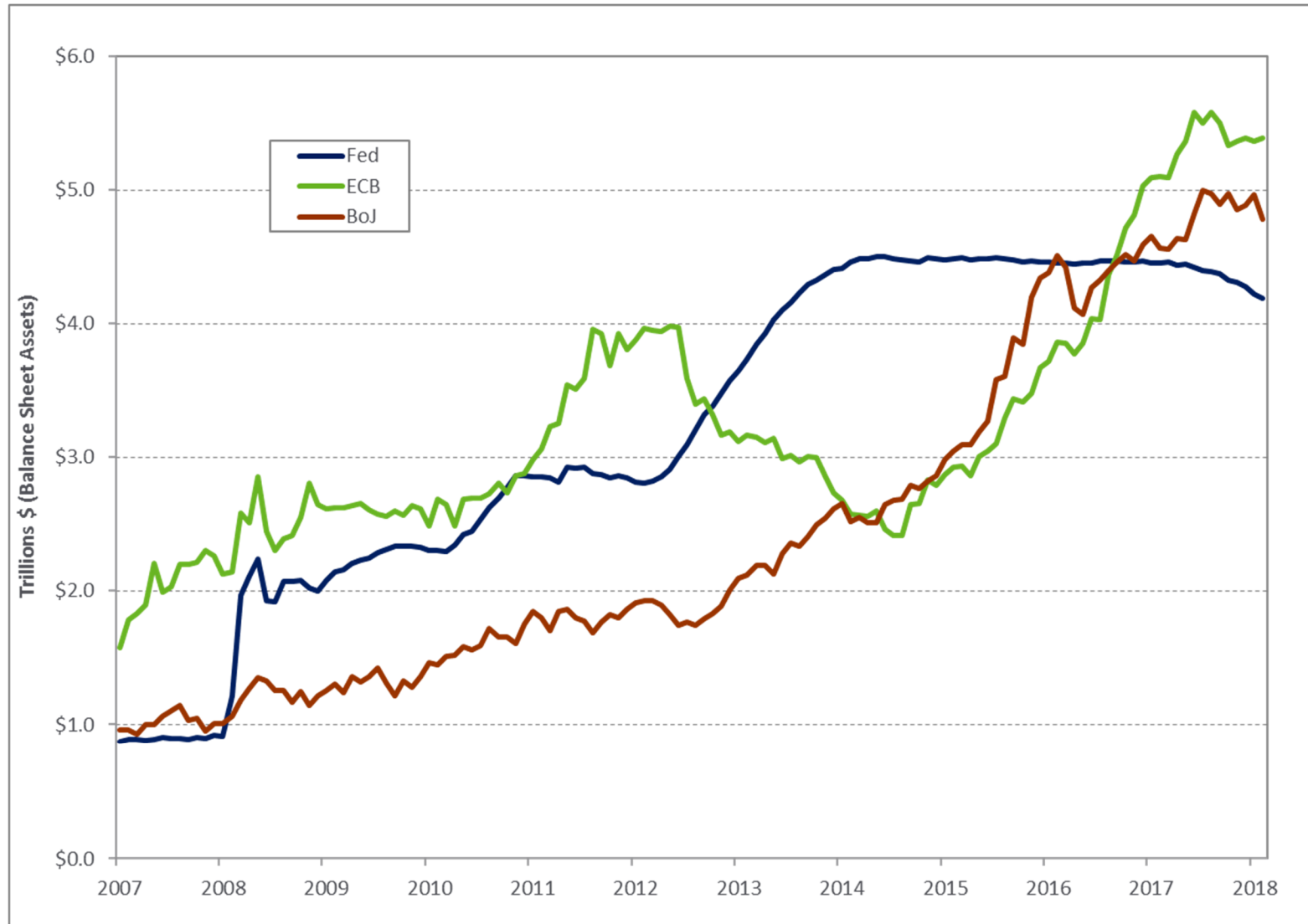
Source: Federal Reserve, ECB, Bank of Japan, Bank of England, Bloomberg



Source: Bloomberg



CENTRAL BANK BALANCE SHEETS



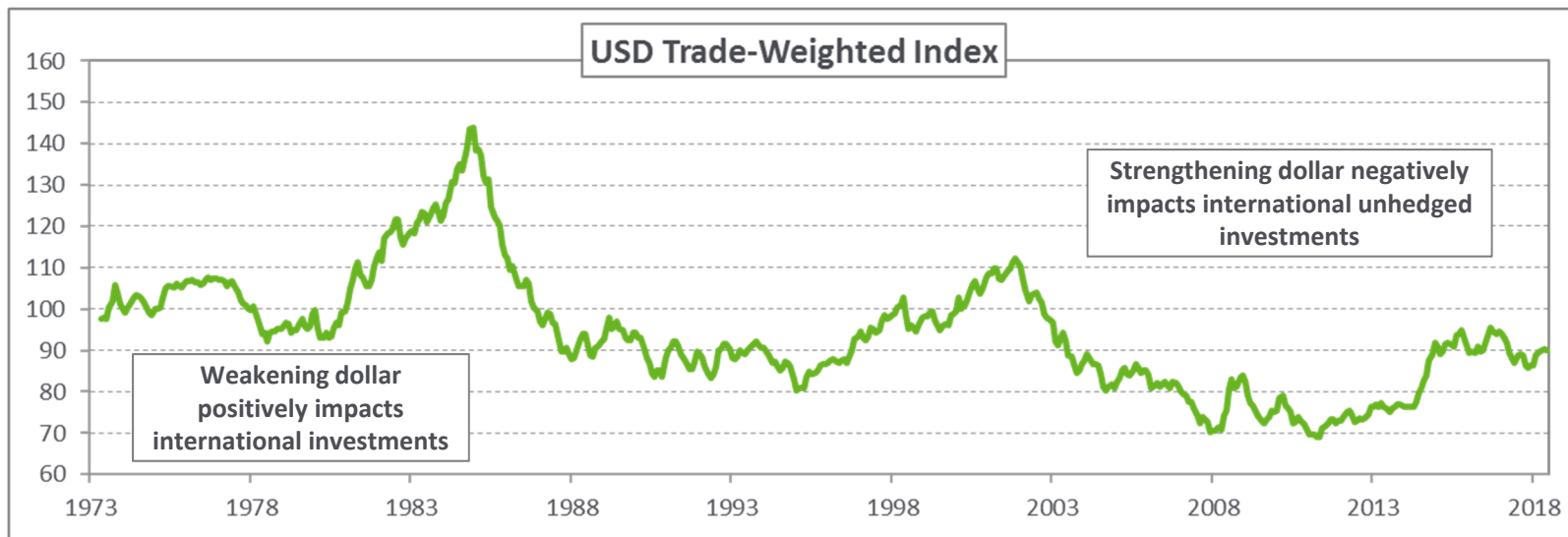
Source: Federal Reserve, Bank of Japan, ECB, Bloomberg, NEPC



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%

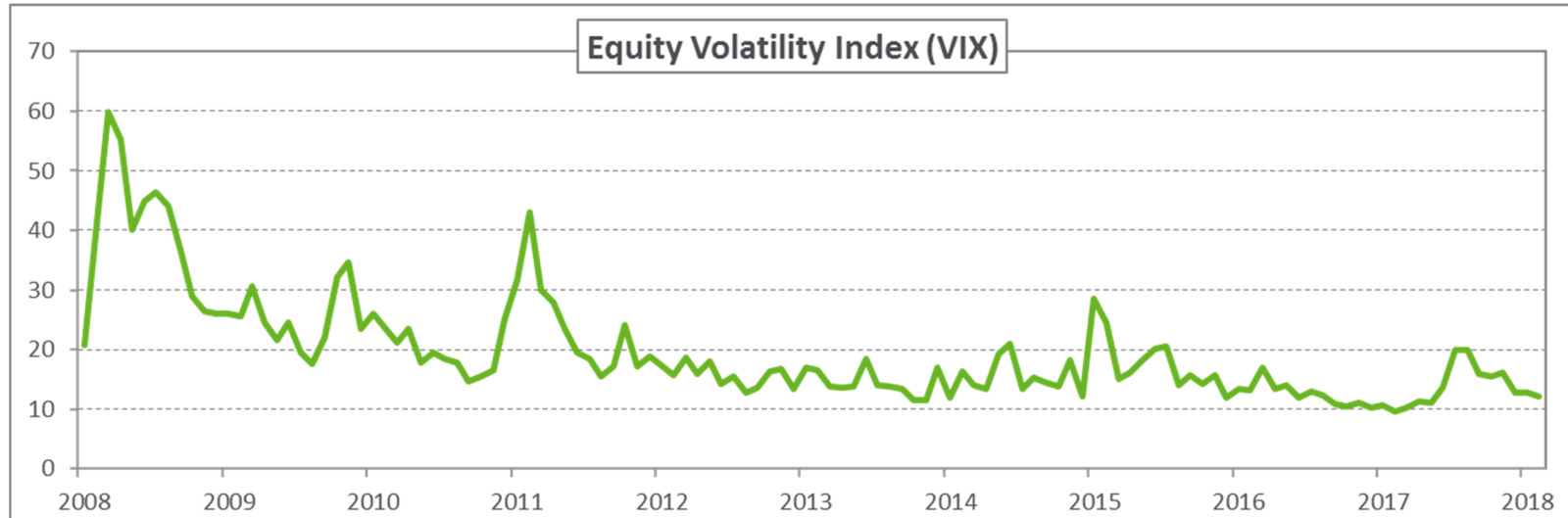
Source: Bloomberg



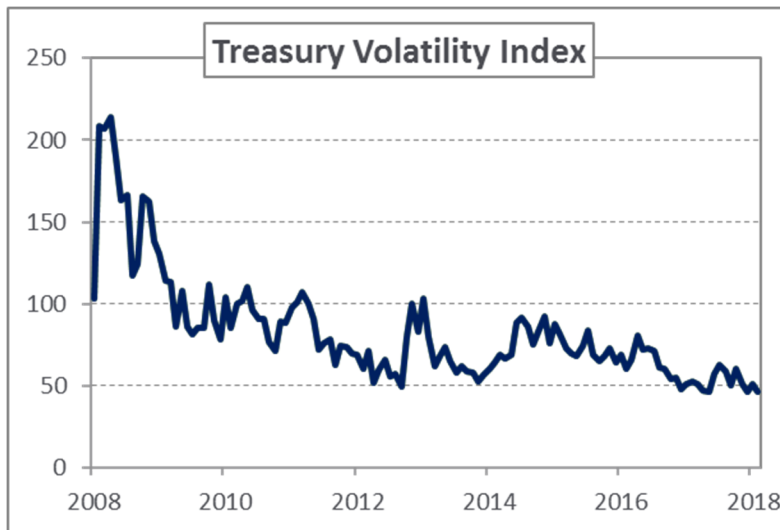
Source: Bloomberg



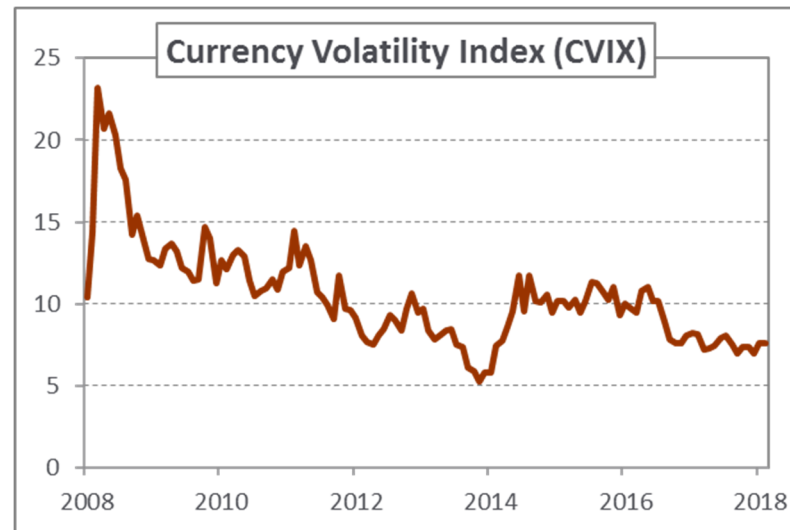
VOLATILITY



Source: CBOE, Bloomberg



Source: Merrill Lynch, Bloomberg



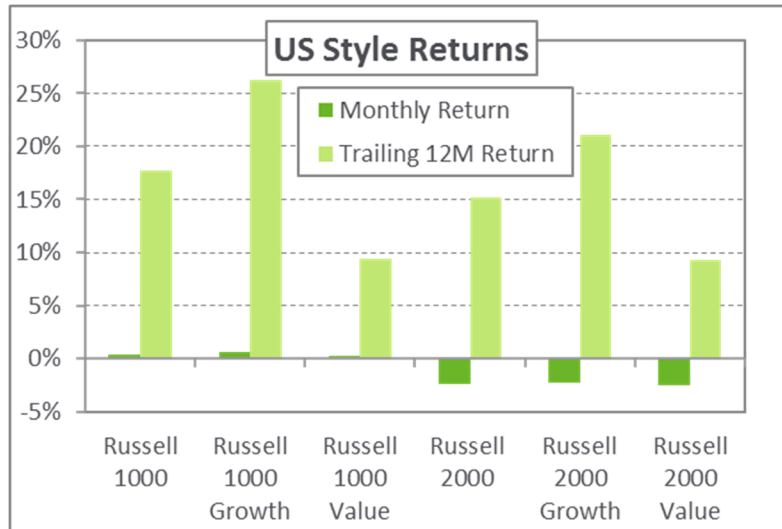
Source: Deutsche Bank, Bloomberg



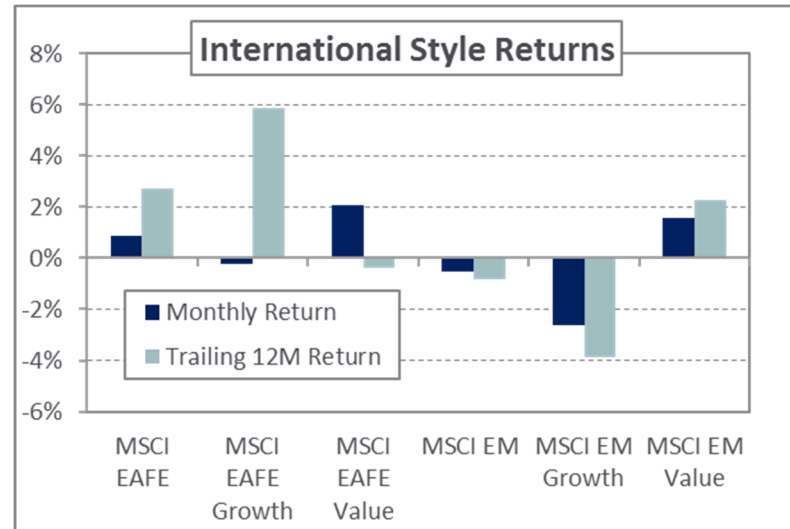
EQUITY

NEPC, LLC

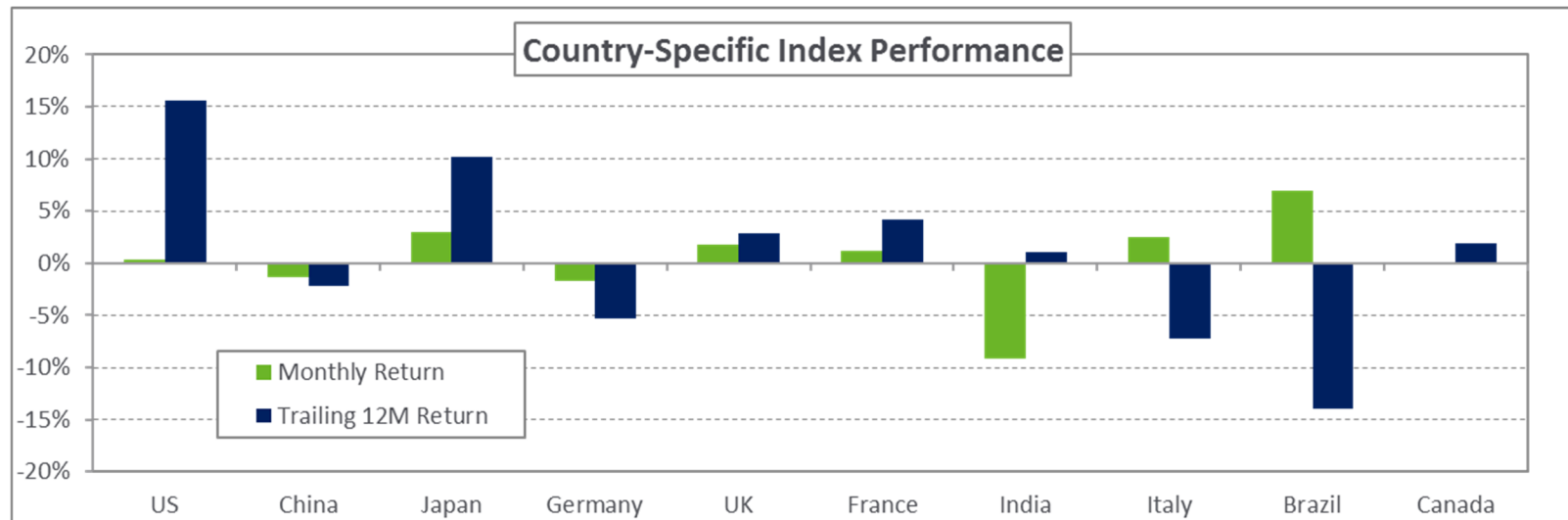
EQUITY INDEX PERFORMANCE



Source: Russell, Bloomberg



Source: MSCI, Bloomberg



Source: MSCI, Bloomberg
Represents returns in USD

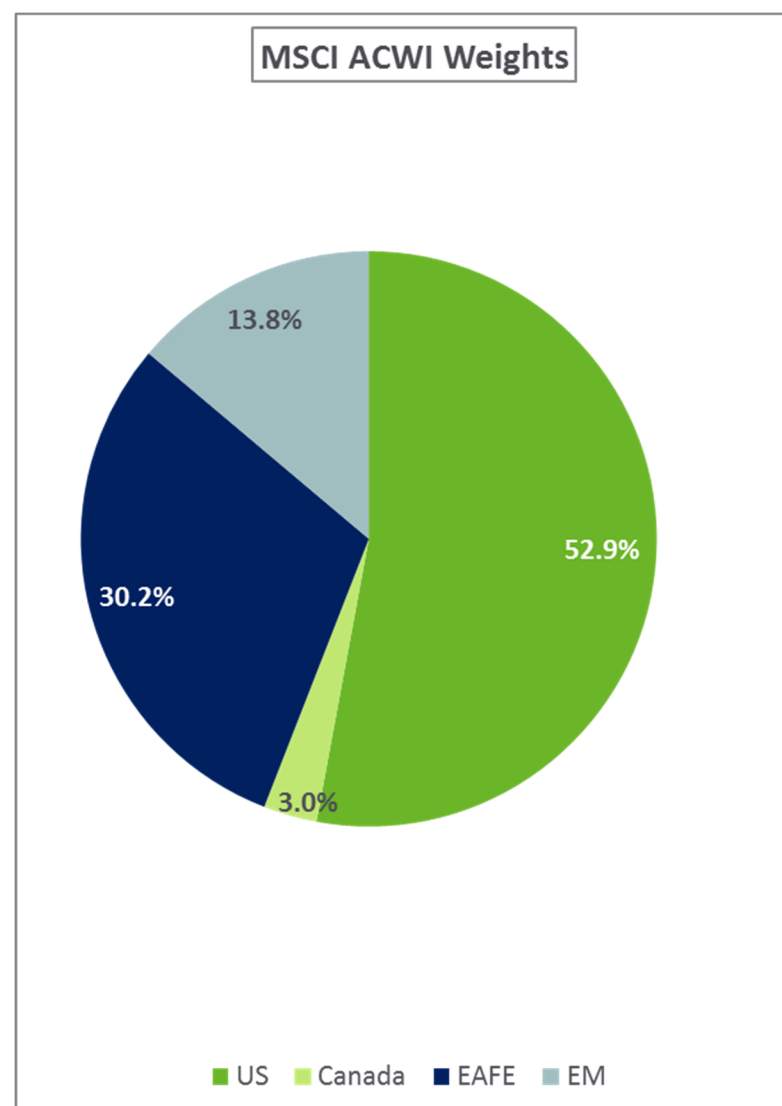


INDEX COMPOSITION

	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%

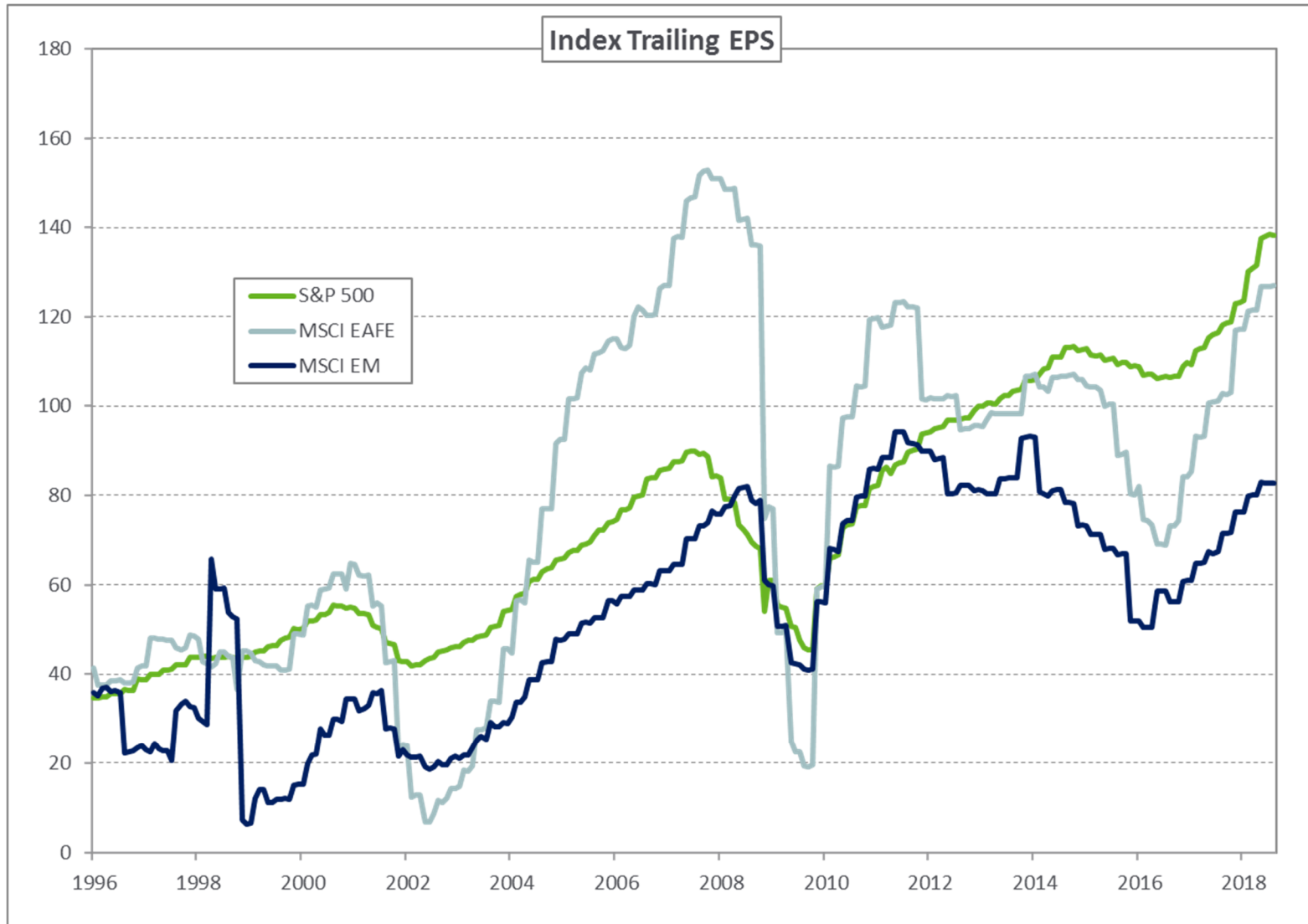
Source: S&P, MSCI, Bloomberg



Source: MSCI, Bloomberg



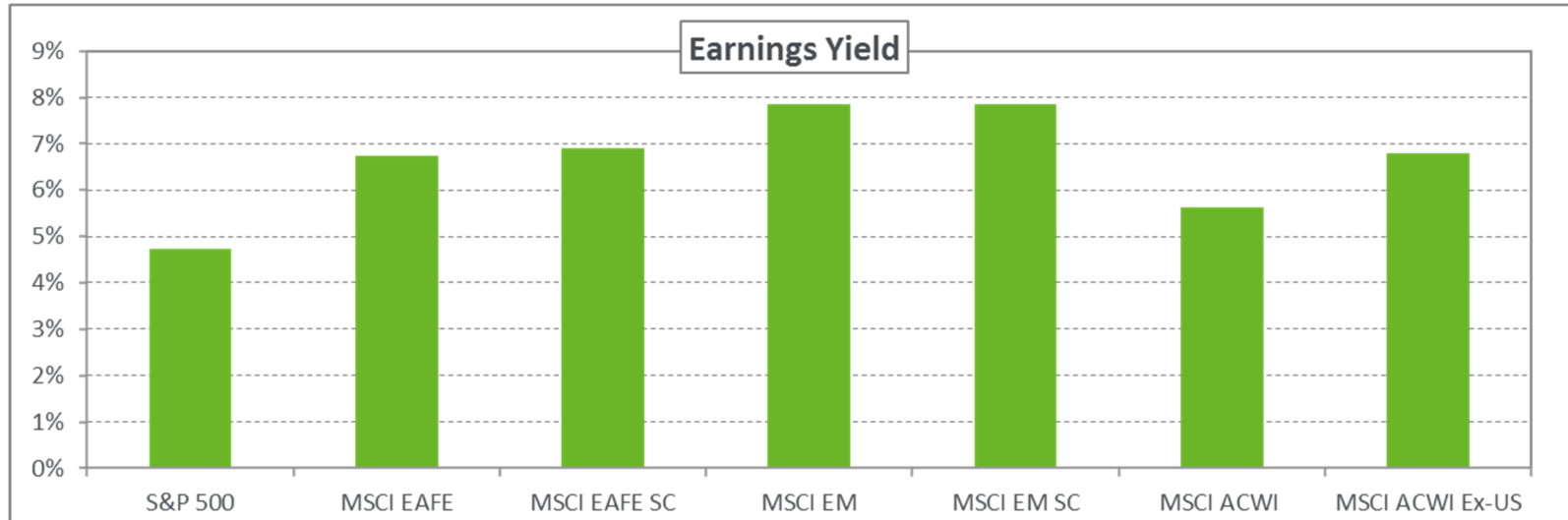
EARNINGS



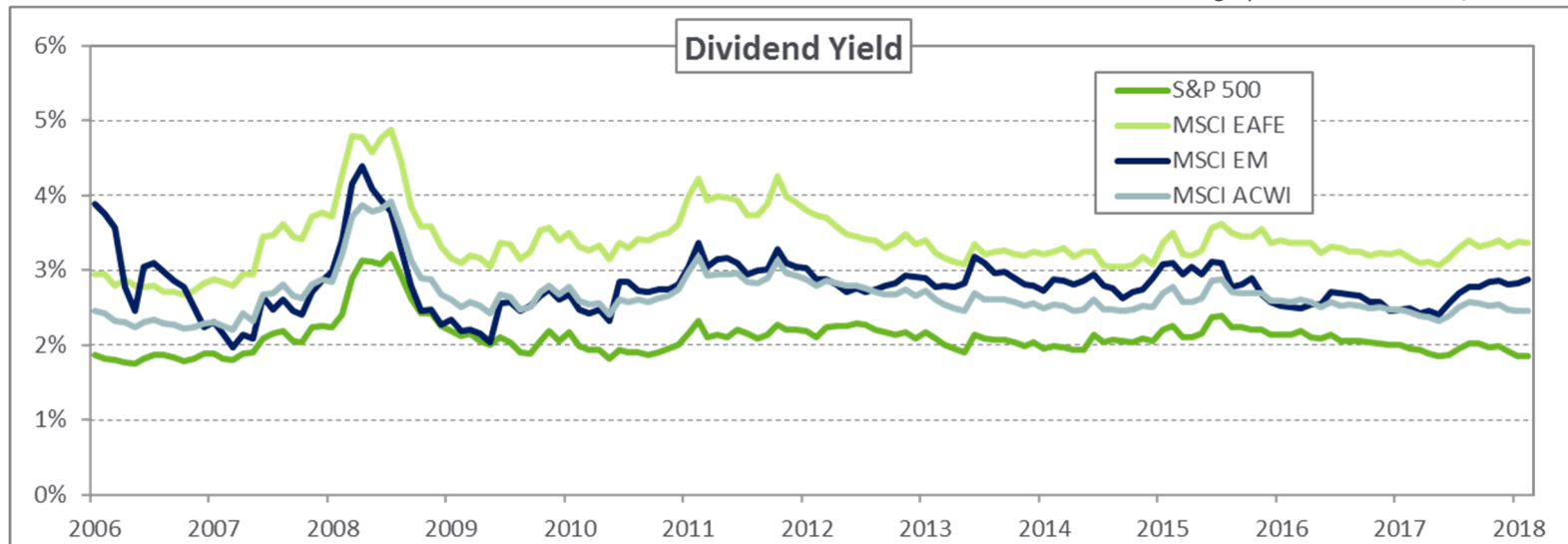
Source: S&P, MSCI, Bloomberg



YIELDS



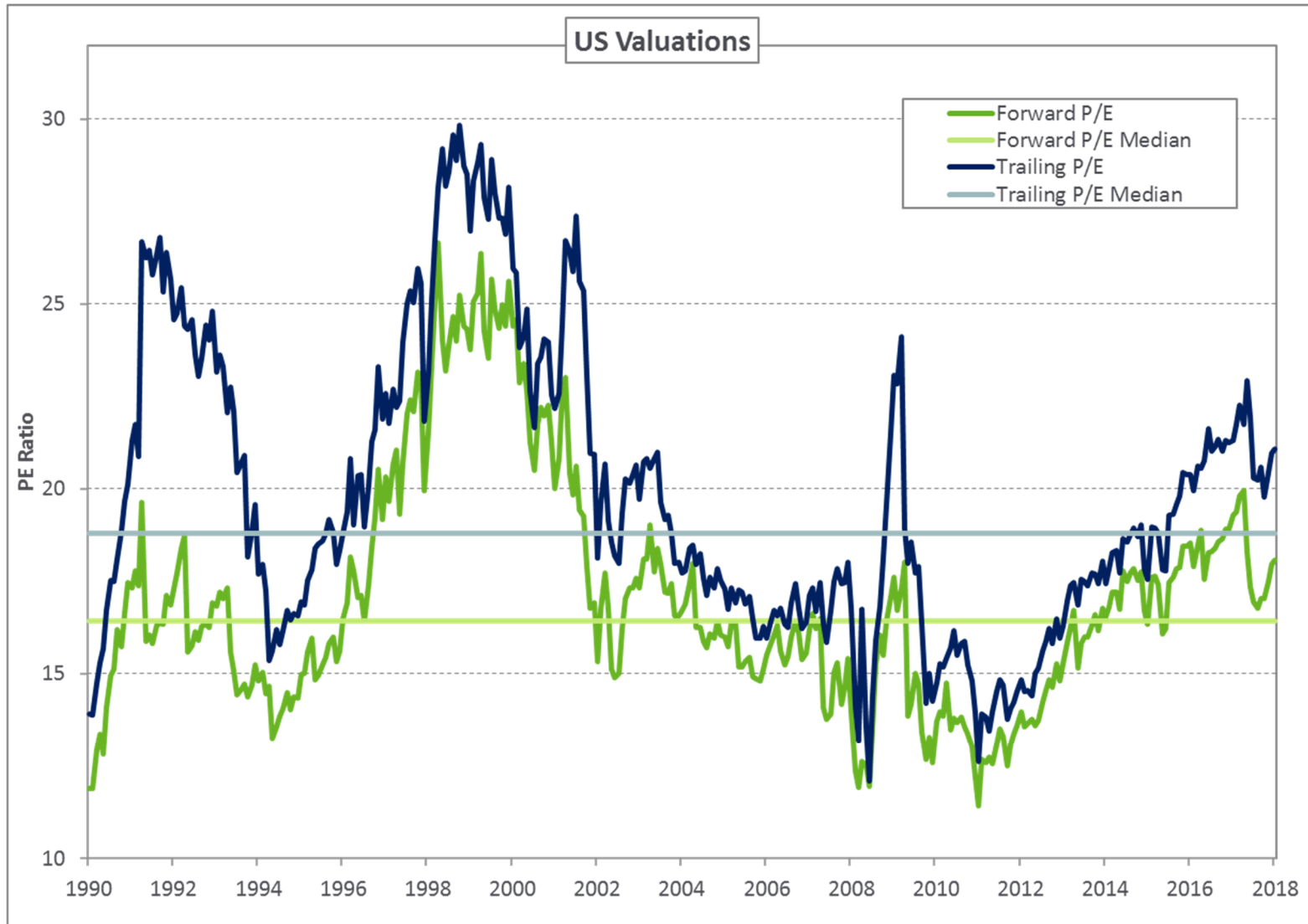
Source: S&P, MSCI, Bloomberg
Earnings yield calculated as 1/PE Ratio



Source: S&P, MSCI, Bloomberg



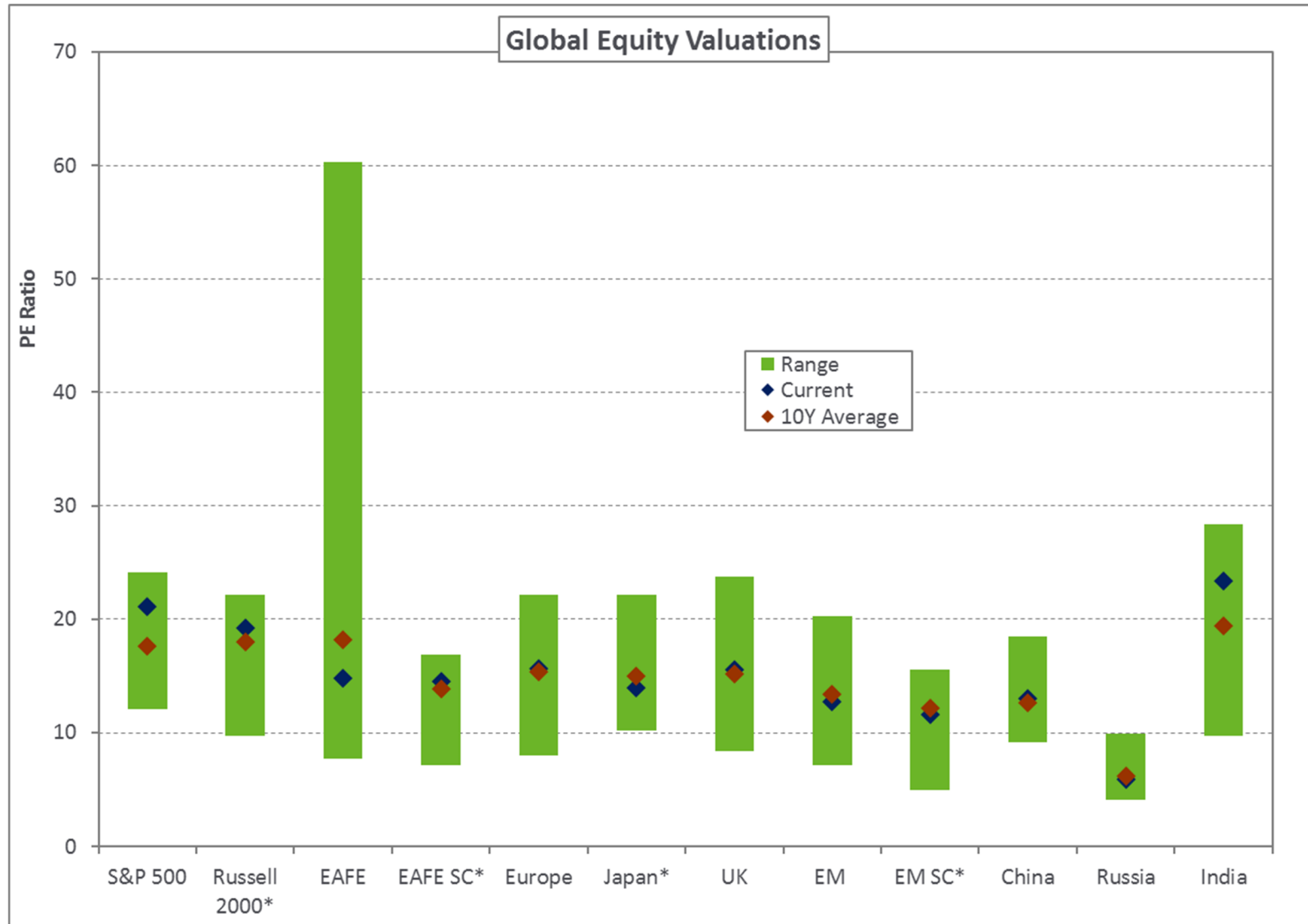
US EQUITY VALUATIONS



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

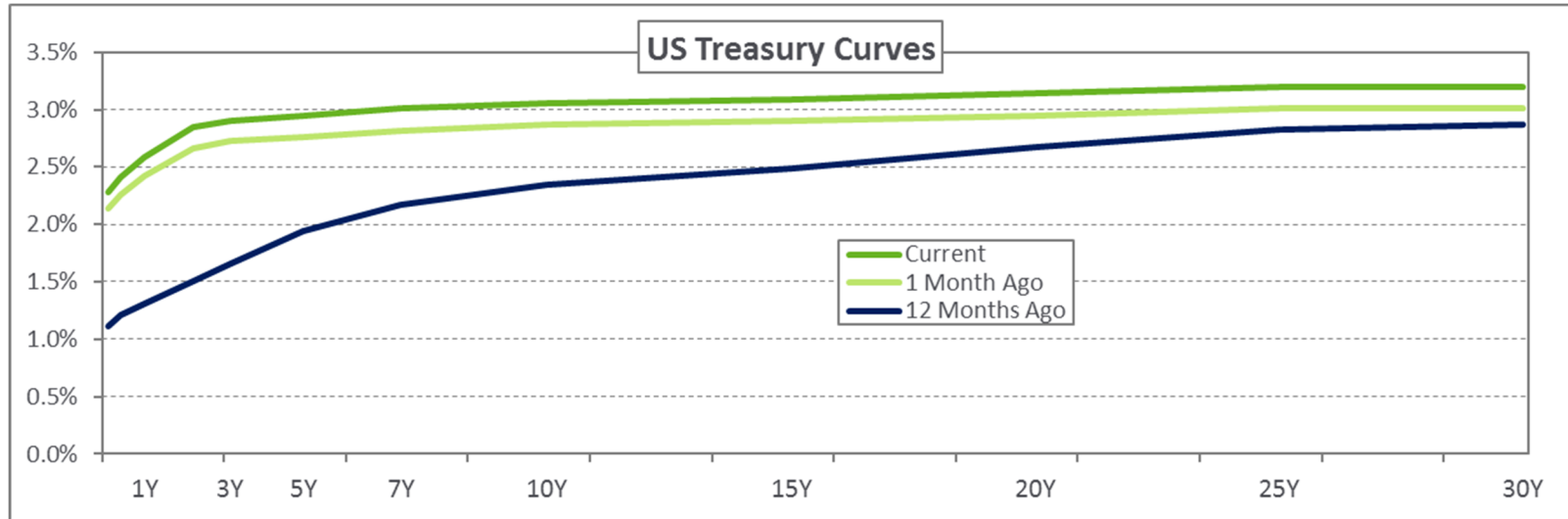
FIXED INCOME CHARACTERISTICS

	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



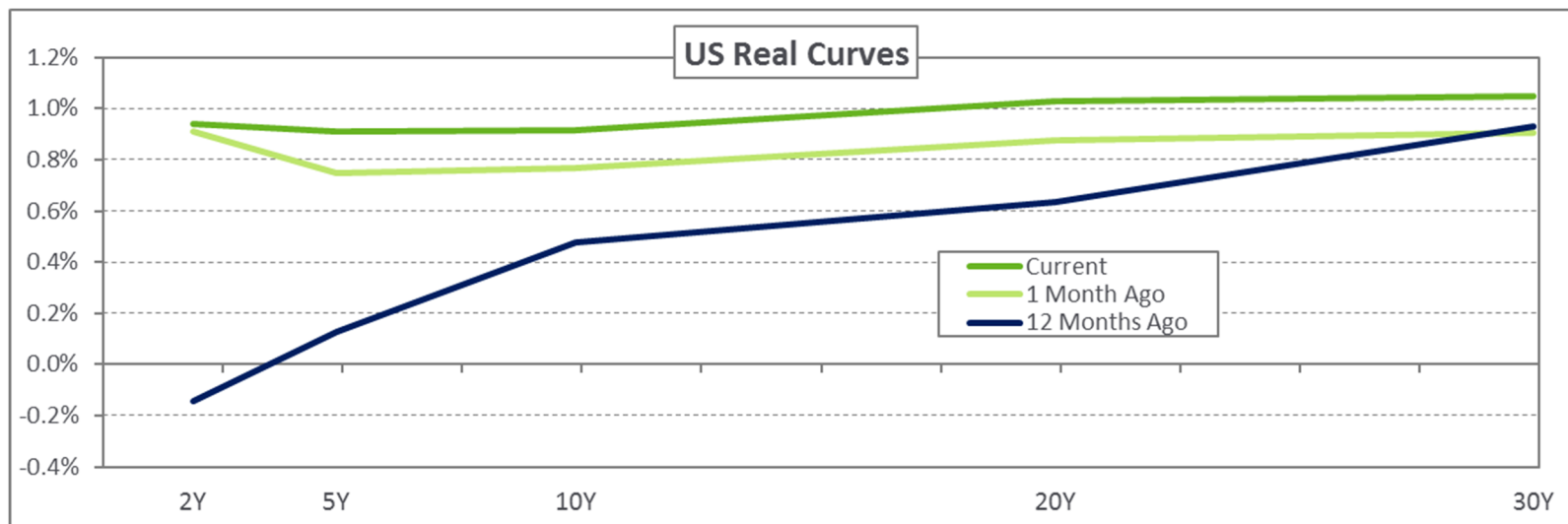
Source: Bloomberg

	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



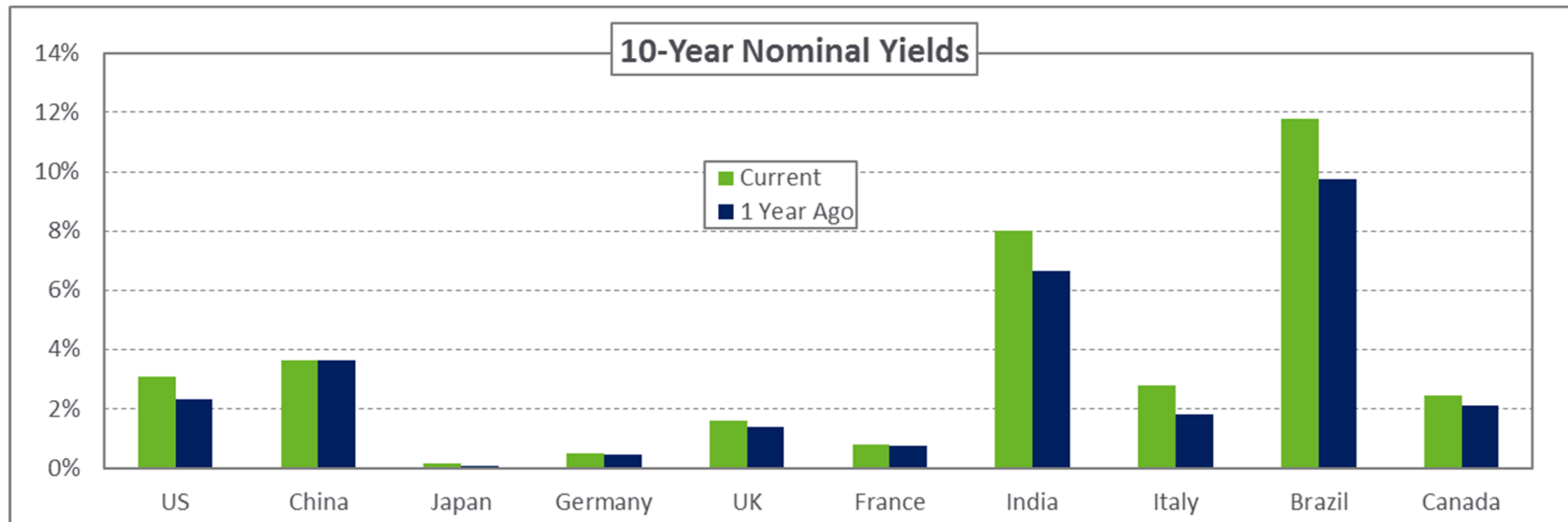
Source: Bloomberg

	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%

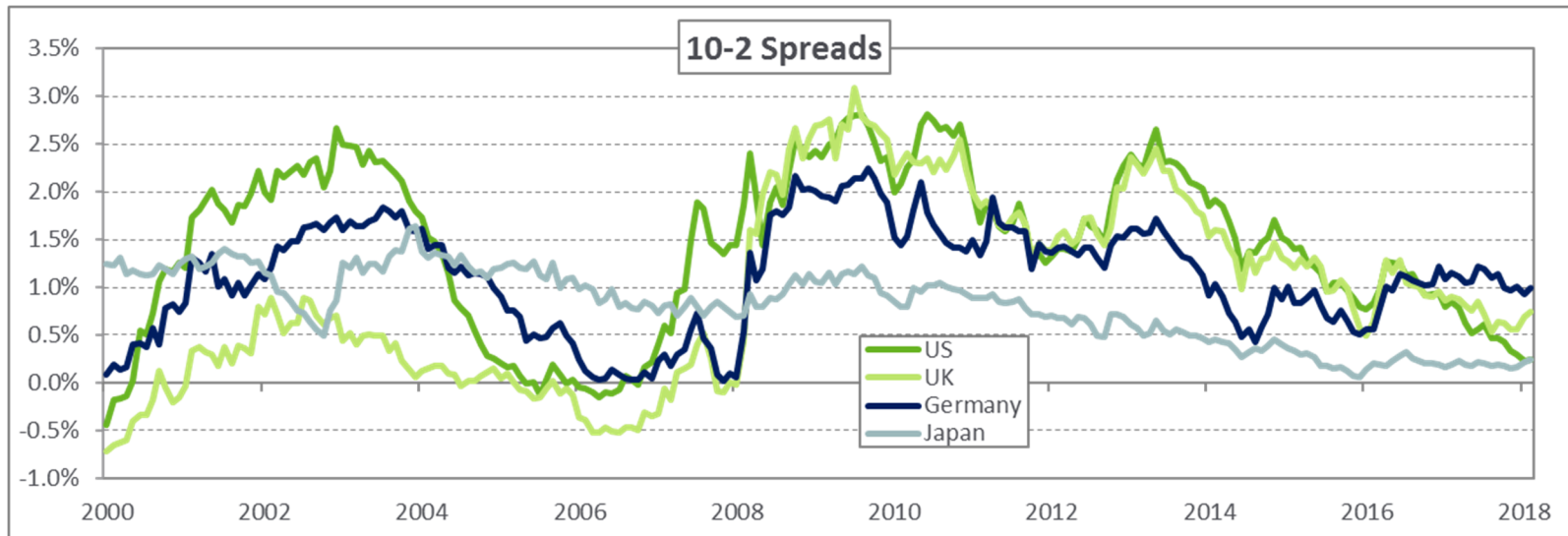
Source: Barclays, Bloomberg



NOMINAL YIELDS



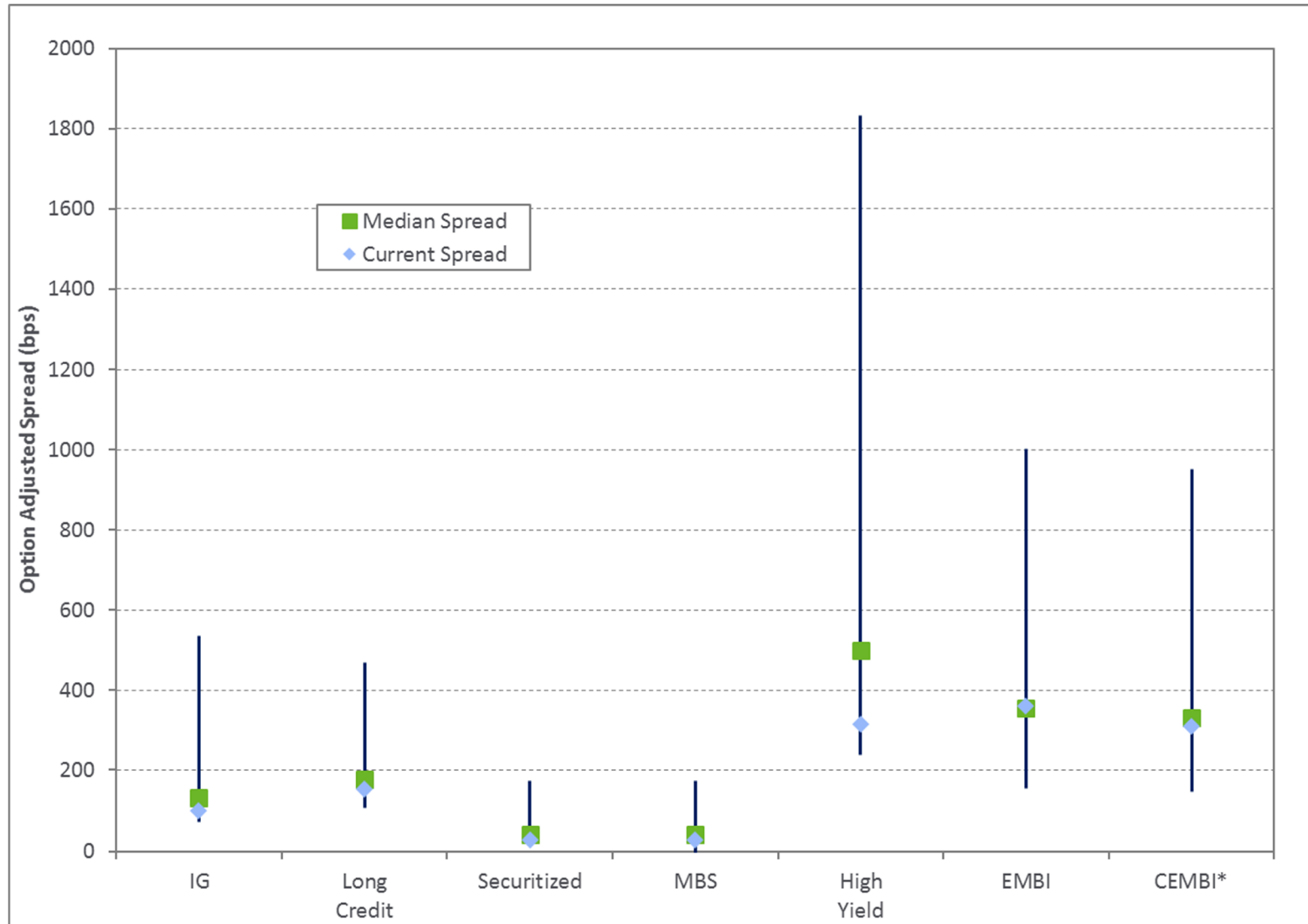
Source: Bloomberg



Source: Bloomberg



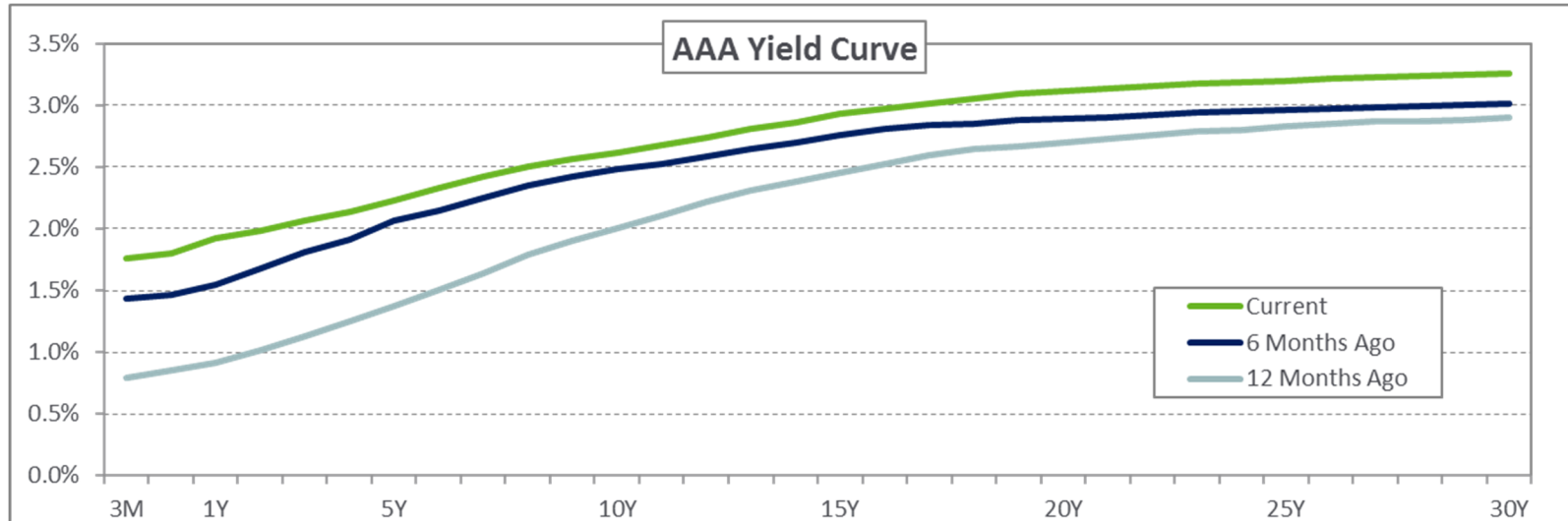
CREDIT SPREADS



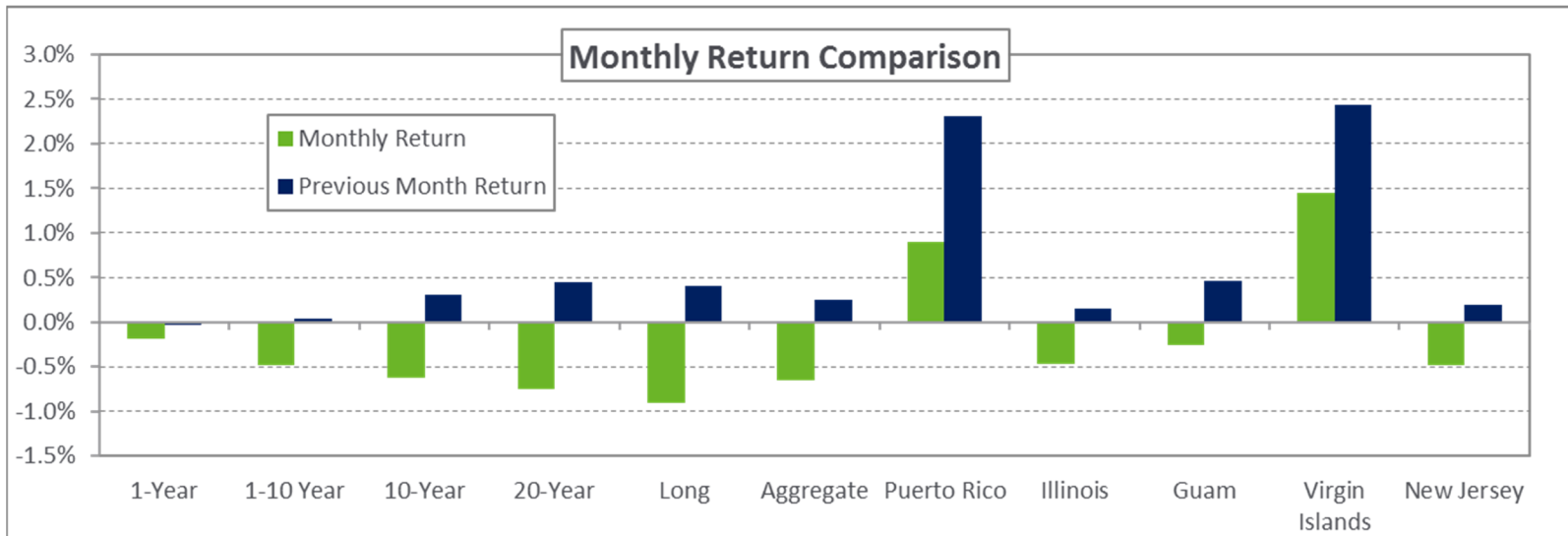
Source: Barclays, JPM, Bloomberg
Data range: 01/31/2000 through month-end
*JPM CEMBI calculated since 12/31/2001



MUNICIPAL BONDS



Source: Bloomberg



Source: Barclays, Bloomberg



MUNICIPAL BOND YIELDS



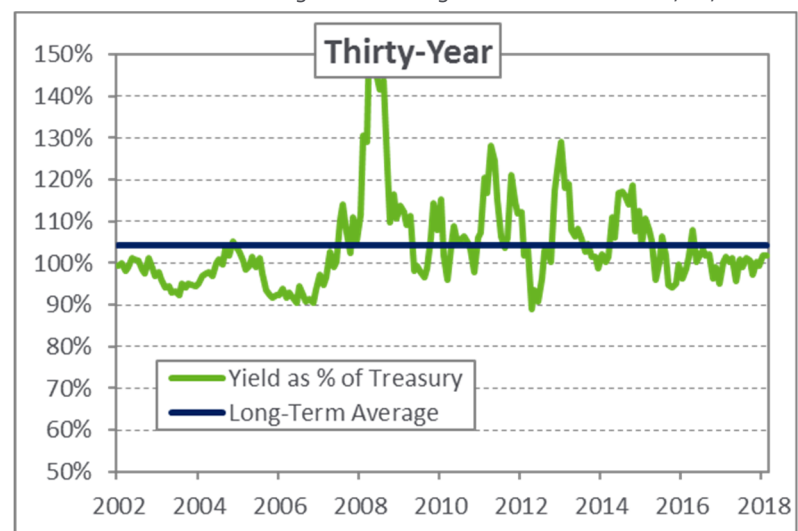
Source: Bloomberg
Long-term average calculated since 08/30/2002



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



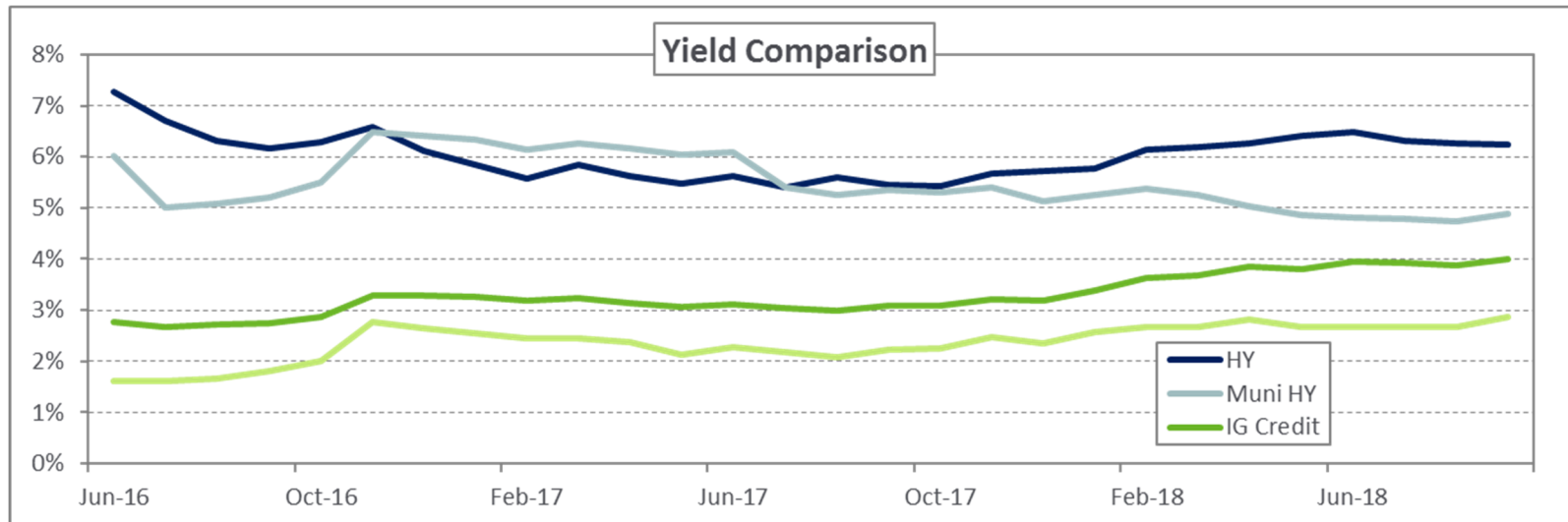
Source: Bloomberg
Long-term average calculated since 08/30/2002



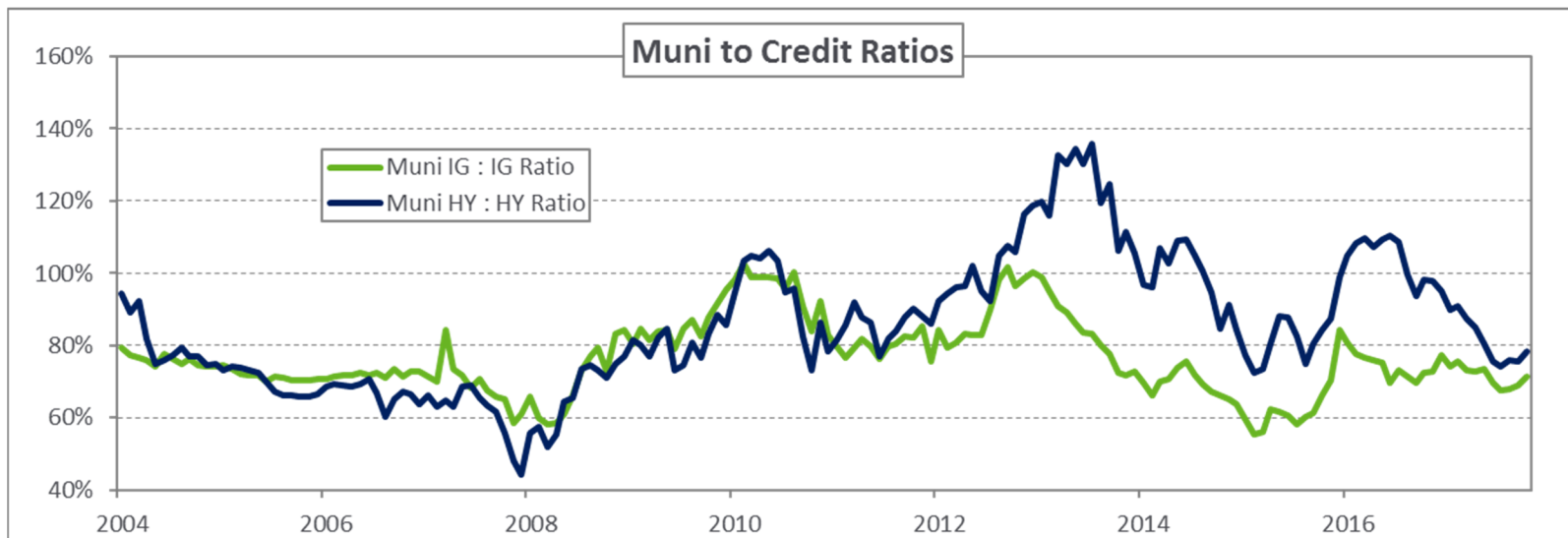
Source: Bloomberg
Long-term average calculated since 08/30/2002



MUNICIPAL BOND RATIOS



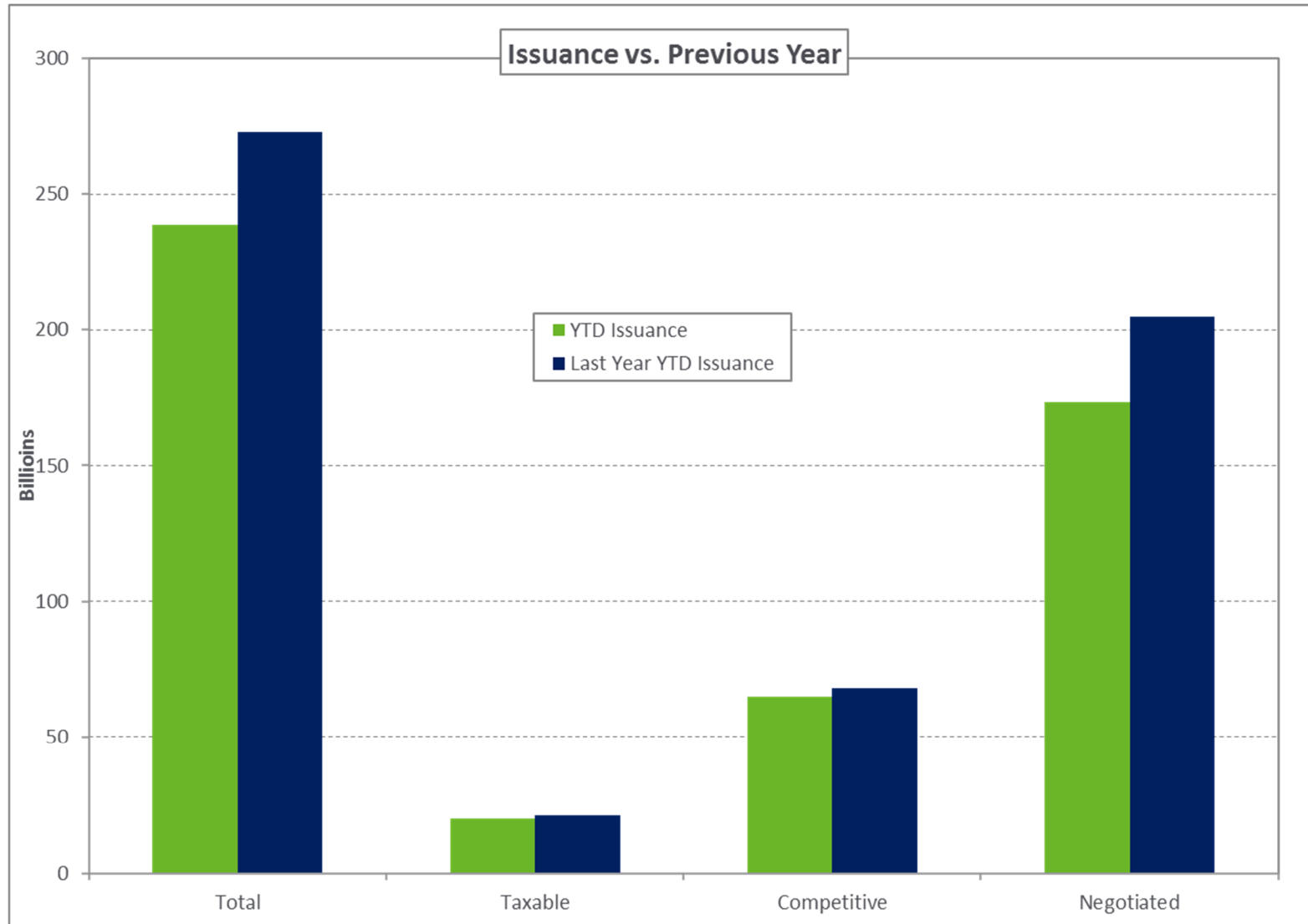
Source: Barclays, Bloomberg



Source: Barclays, Bloomberg, NEPC



MUNICIPAL BOND ISSUANCE



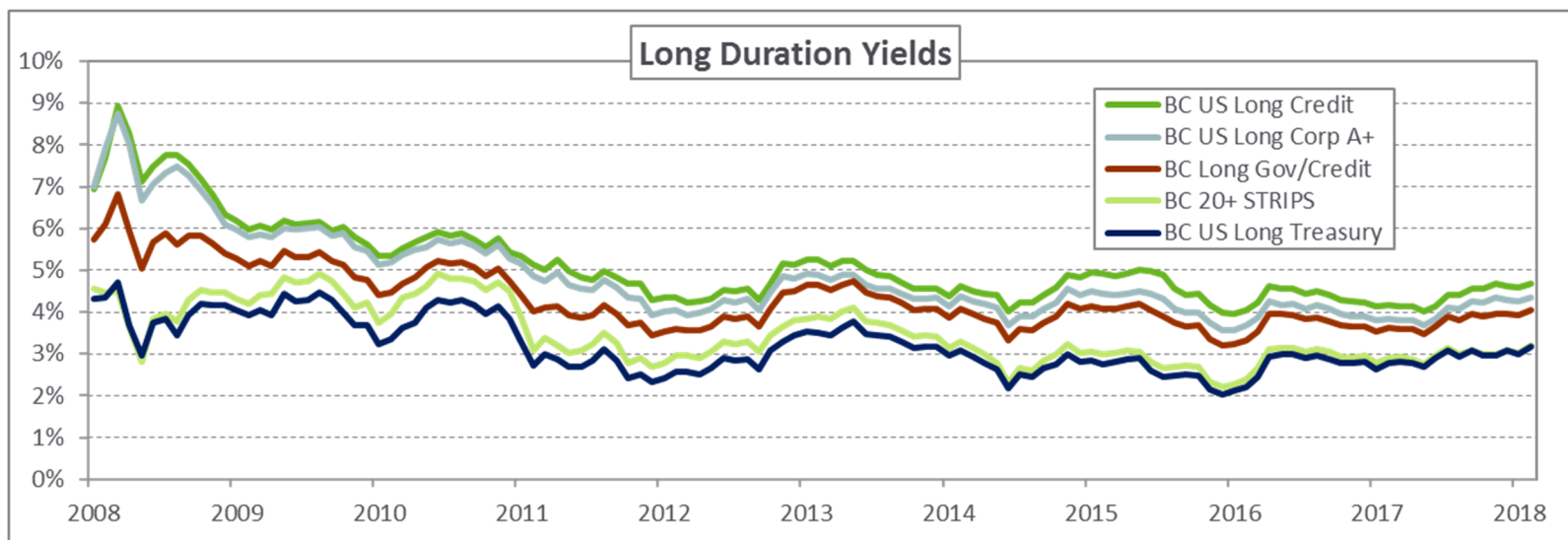
Source: Bloomberg



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

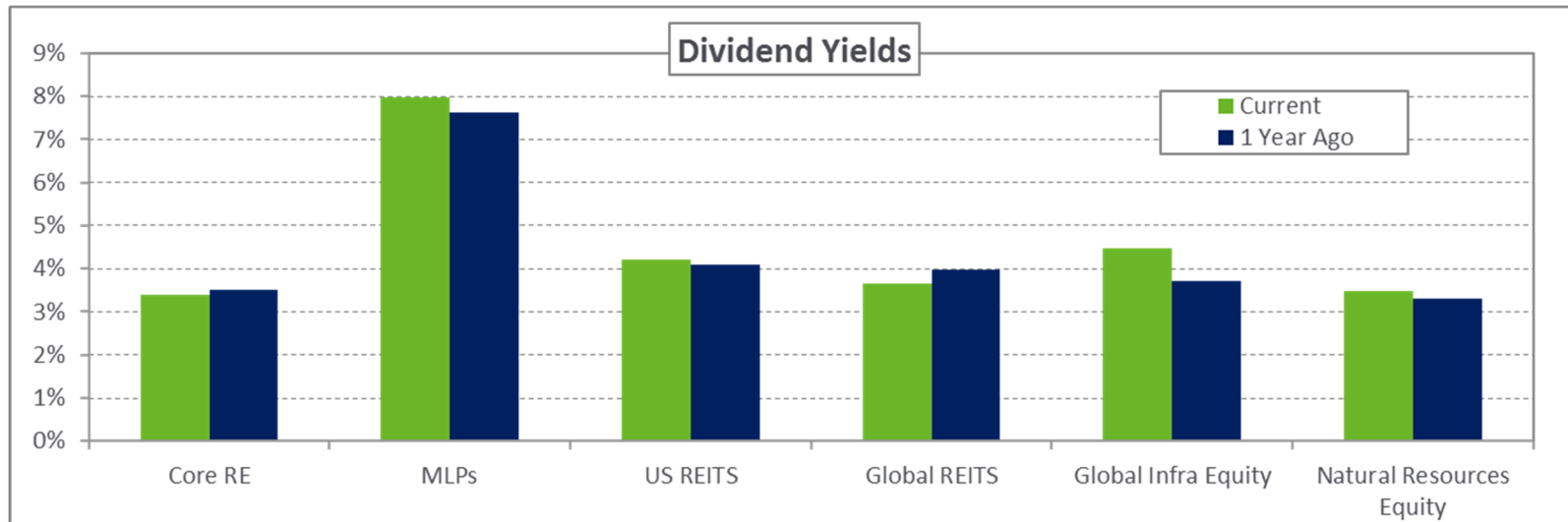
Index	1 Month	3 Month	YTD	1 Year	3 Year	5 Year
Bloomberg Commodity Index	1.9%	-2.0%	-2.0%	2.6%	-0.1%	-7.2%
Bloomberg Sub Agriculture Index	-2.1%	-5.4%	-10.9%	-12.7%	-7.5%	-10.0%
Coffee	0.8%	-13.0%	-24.1%	-26.9%	-13.9%	-10.9%
Corn	-2.2%	-4.0%	-7.1%	-11.4%	-12.6%	-13.6%
Cotton	-7.0%	-8.5%	-0.4%	14.4%	9.0%	-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

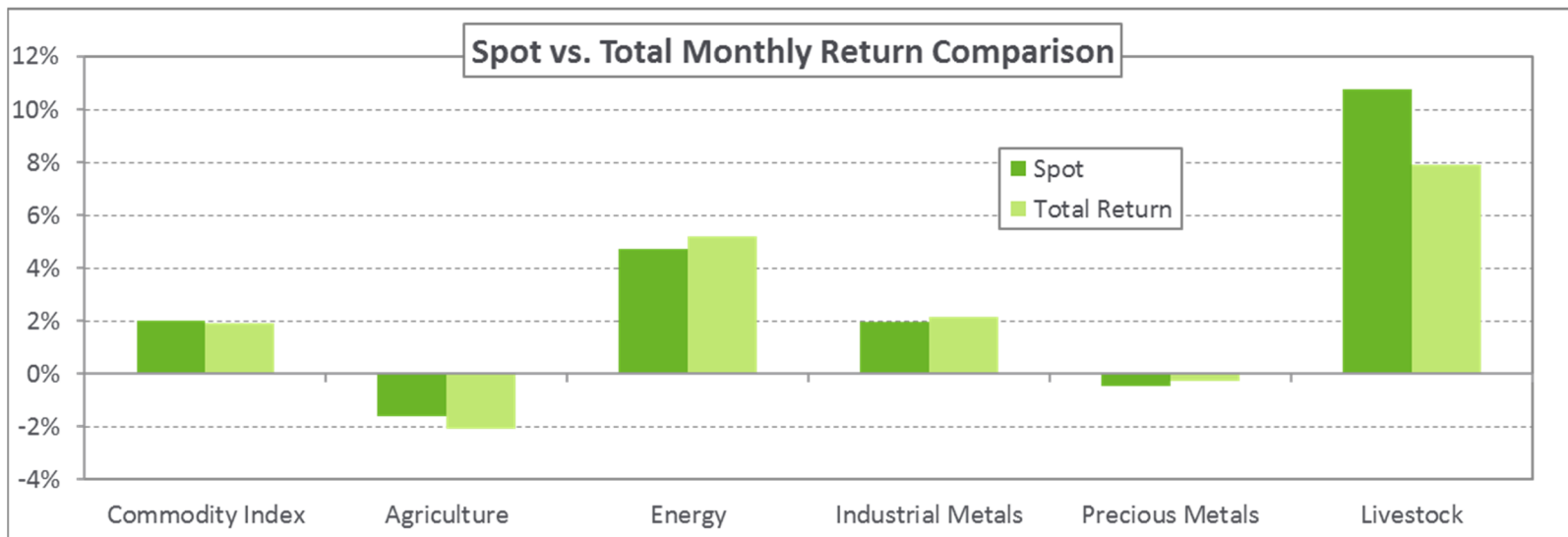
Bloomberg subindex total return indices reflects the return of the underlying one month commodity futures price movements



INCOME YIELD



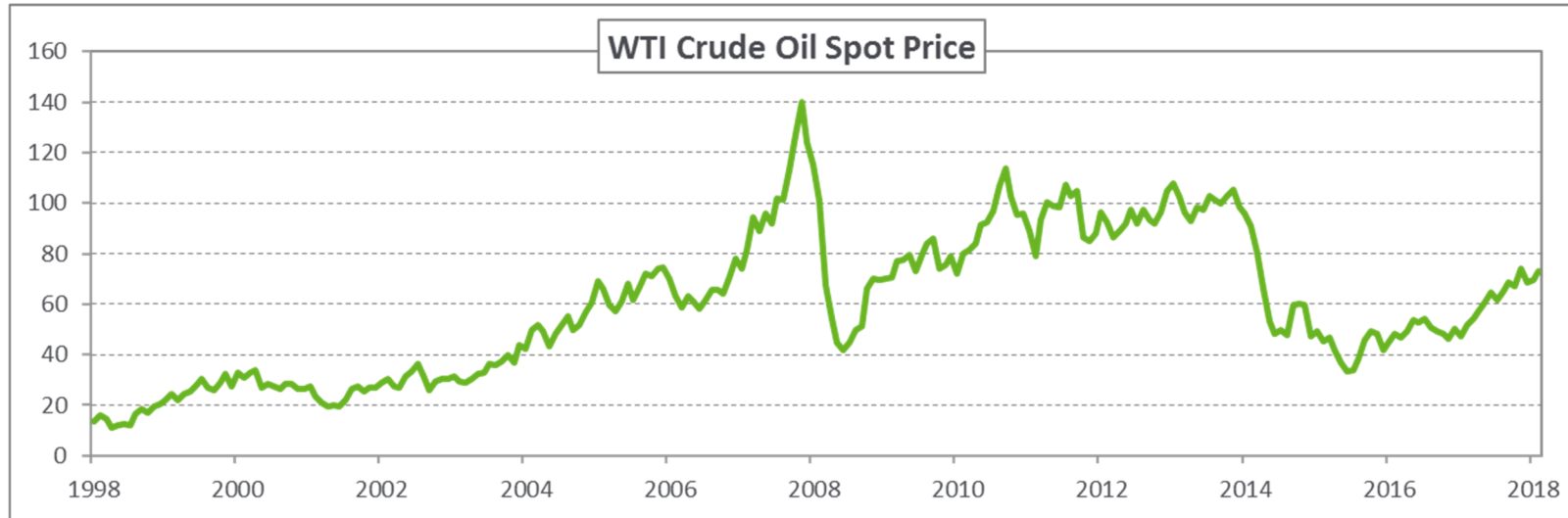
Source: Alerian, NAREIT, S&P, Bloomberg



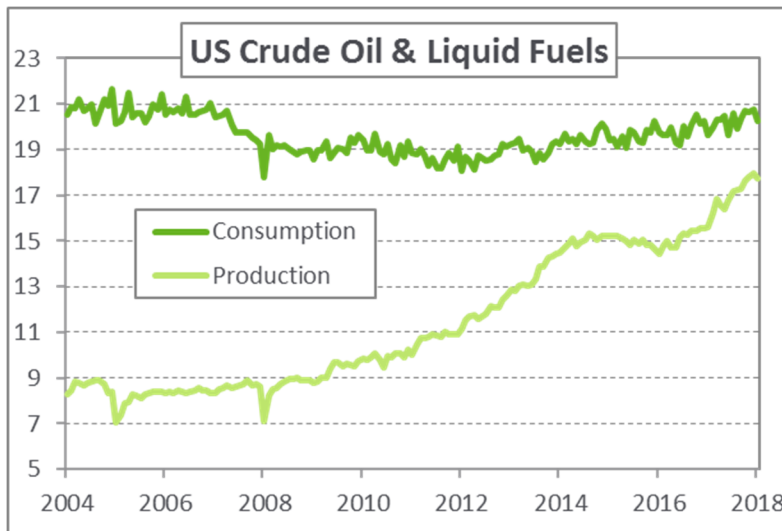
Source: Bloomberg, NEPC



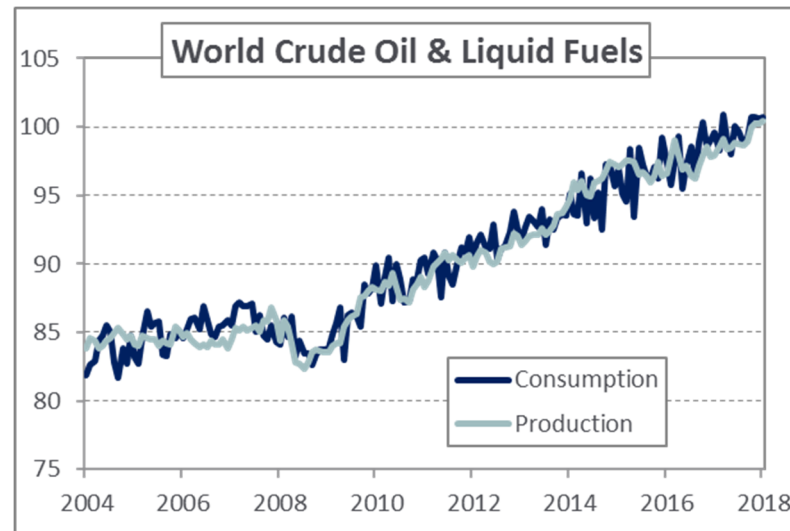
OIL MARKETS



Source: New York Mercantile Exchange, Bloomberg



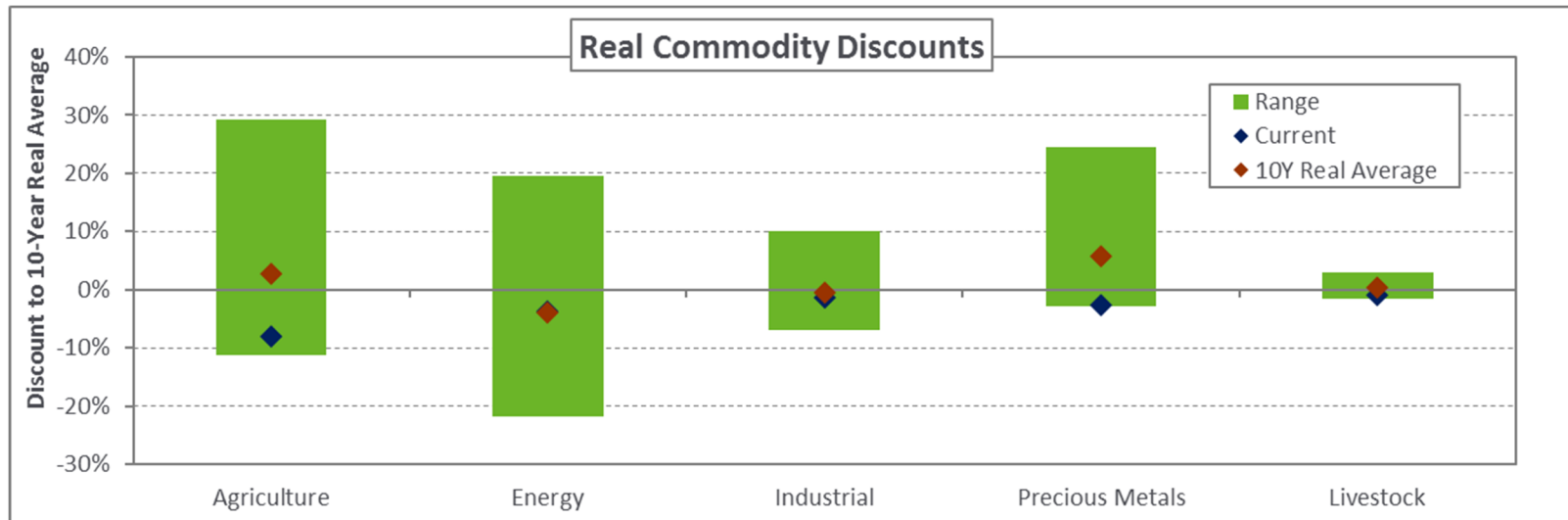
Source: US Department of Energy, Bloomberg



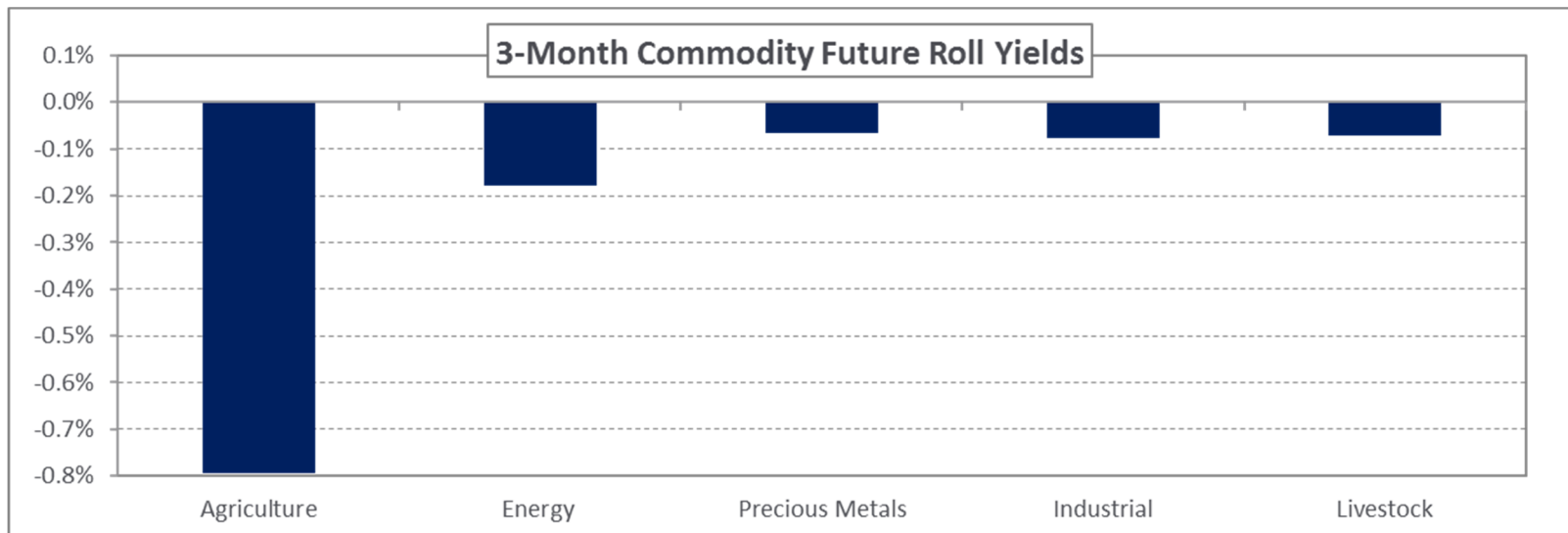
Source: OECD, Bloomberg



VALUATIONS



Source: Bloomberg, NEPC



Source: Bloomberg



Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

