

# QUARTERLY PERFORMANCE REPORT

## OKLAHOMA STATE PENSION COMMISSION



**September 30, 2018**

Don Stracke, CFA, CAIA, Senior Consultant  
Tony Ferrara, CAIA, Consultant  
Yang Yue, Senior Performance Analyst



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## **MARKET ENVIRONMENT UPDATE AND OUTLOOK**

NEPC, LLC

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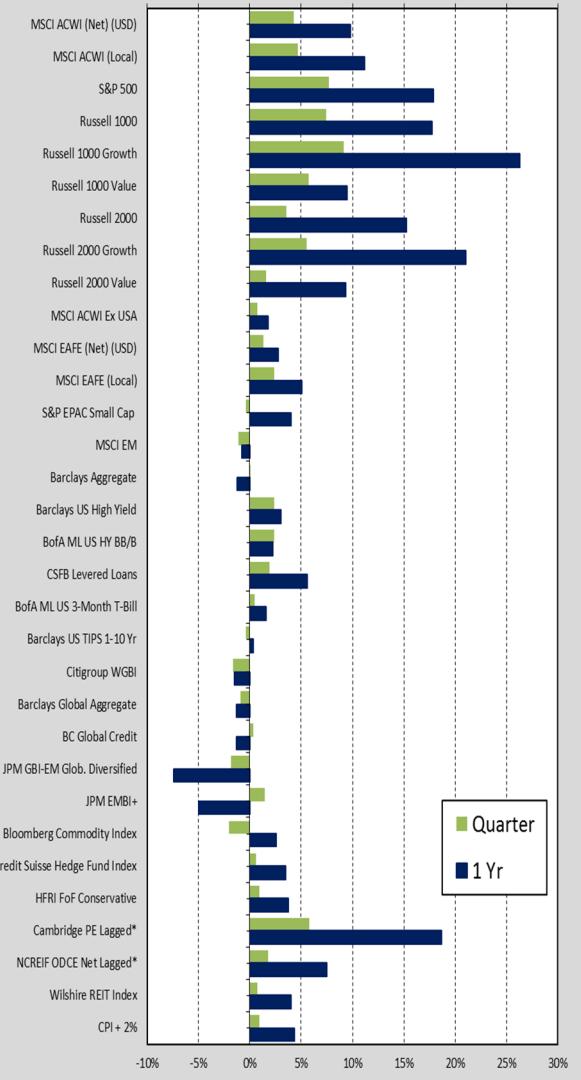
# ECONOMIC ENVIRONMENT

- **Real GDP (third quarter) increased at an annual rate of 3.5% (advance estimate).**
  - Retail sales ended August at +4.0% on a YoY basis. In the same period last year the YoY growth rate was 3.6%.
  - Corporate profits (ended April) as a percent of GDP increased to 9.6% from 9.5% (in January) and remain elevated relative to historical levels.
  - The inventory-to-sales ratio ended August flat at 1.3 and has remained relatively constant since early 2010.
  - The U.S. trade deficit widened 6.4% as exports fell.
- **The unemployment rate decreased to 3.7% from 4.0% ended Q3; U-6, a broader measure of unemployment, decreased to 7.5% from 7.8% during the third quarter.**
- **The Case-Shiller Home Price Index (ended July) increased to 205.4 from 200.9 and remains at levels higher than that of pre-financial crisis levels of 150.9.**
- **Rolling 12-month seasonally-adjusted CPI saw a down-tick to 2.3% from 2.9% ended September; Capacity Utilization increased to 78.1% from 78.0% in Q3.**
- **Fed Funds rate was increased 0.25% to a targeted range of 2.00% - to – 2.25%. The 10-year Treasury Yield (constant maturity) finished Q3 at 3.0% up from 2.9%.**
- **The Fed balance sheet decreased slightly during Q3 2018, while the European Central Bank balance sheet continues to increase.**
  - ECB held its benchmark 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.
<b>World Equity Benchmarks</b>						
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%
<b>Domestic Equity Benchmarks</b>						
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%
<b>International Equity Benchmarks</b>						
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%
<b>Domestic Fixed Income Benchmarks</b>						
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%
<b>Global Fixed Income Benchmarks</b>						
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%
<b>Alternative Benchmarks</b>						
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

Performance details:

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

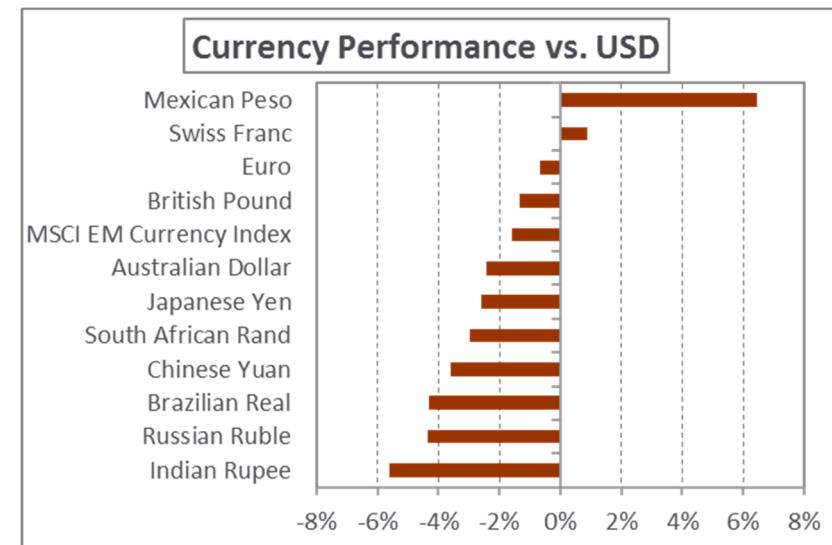
## Q3 Macro Market Summary

- 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



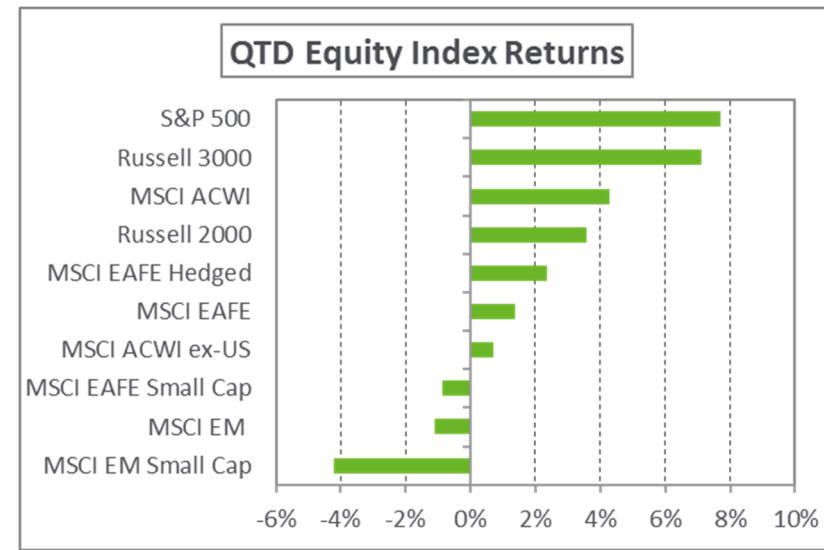
# EQUITY PERFORMANCE OVERVIEW

## Q3 Equity Market Summary

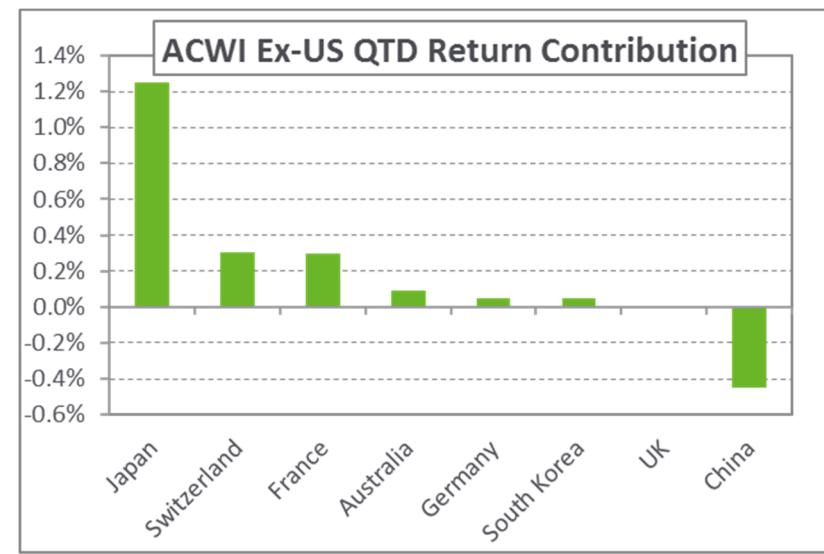
- Strong economic data and positive sentiment helped US equities to outperform global equities**
- Trade-sensitive economies disproportionately declined as escalating trade tensions and currency weakness weighed on returns**

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



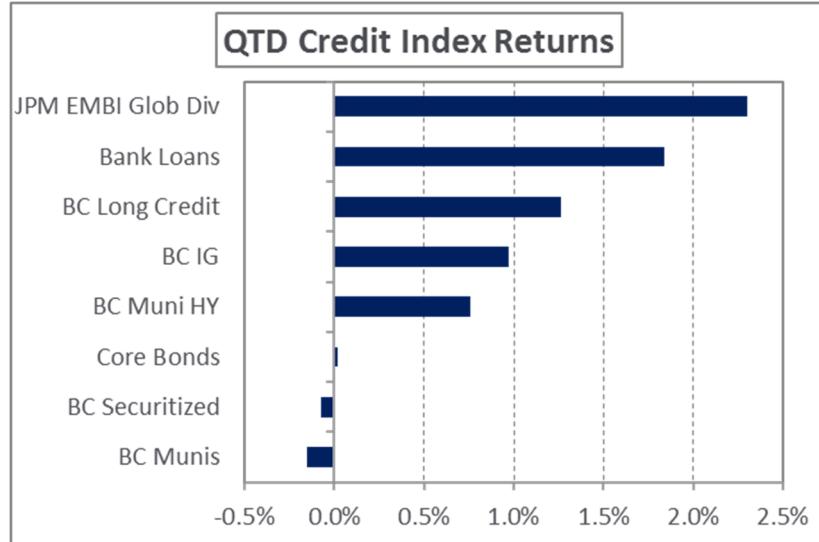
# CREDIT PERFORMANCE OVERVIEW

## Q3 Credit Market Summary

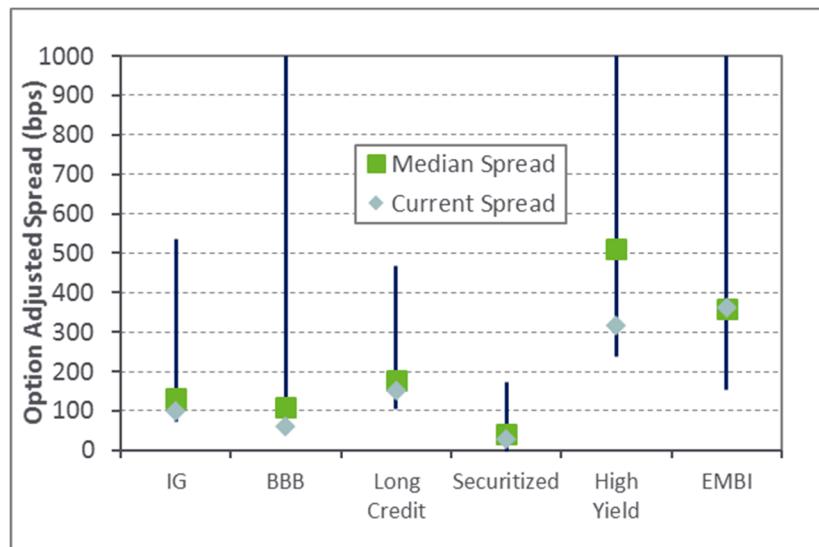
- Credit spreads broadly declined and remain below medians in most areas of the credit market**
- Dollar-denominated emerging market debt increased by 2.3% as spreads tightened**

Credit Spread (Basis Points)	06/30/18	09/30/18	Δ
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



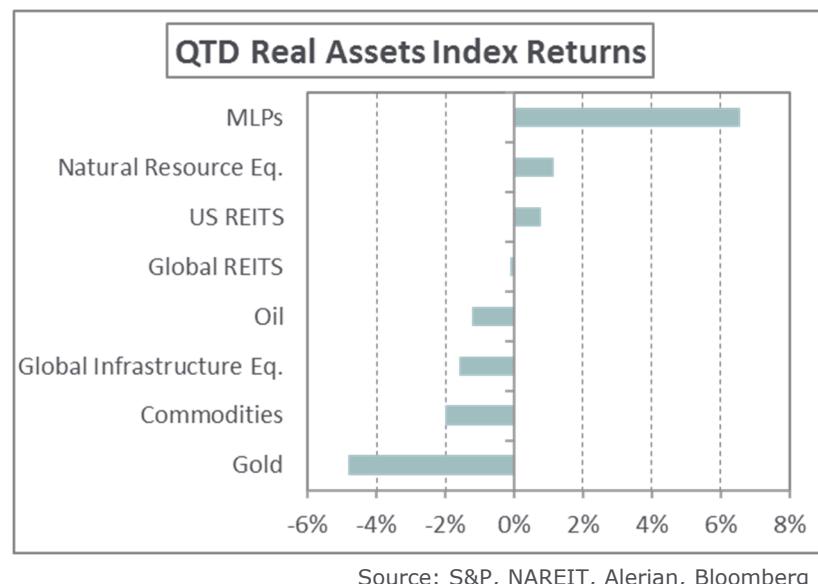
Source: Barclays, JPM, S&P, Bloomberg; as of 01/31/2000



# REAL ASSETS PERFORMANCE OVERVIEW

## Q3 Real Assets Market Summary

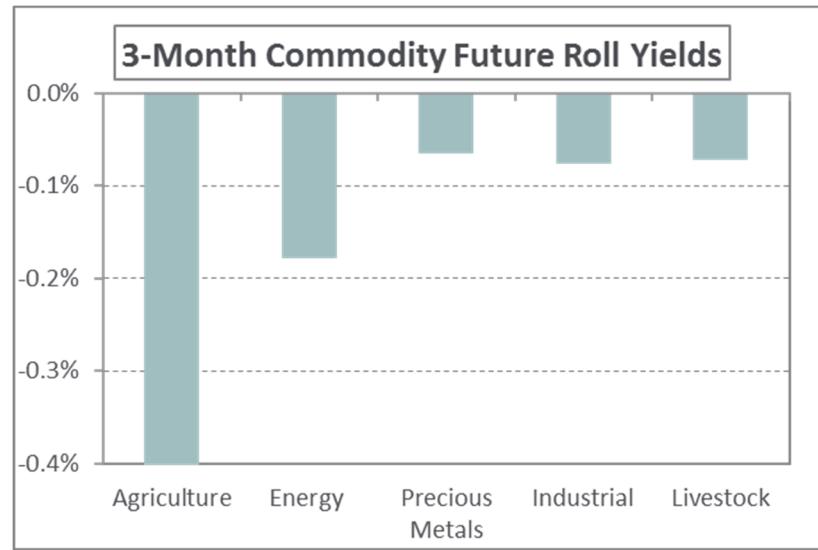
- Oil declined 1.2% for the quarter, but is up 41.8% for the year**
- Agricultural commodities declined substantially due to robust supply and trade war-related concerns**
- MLP's increased 6.6%, supported by rising commodity prices and ongoing industry simplification**



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

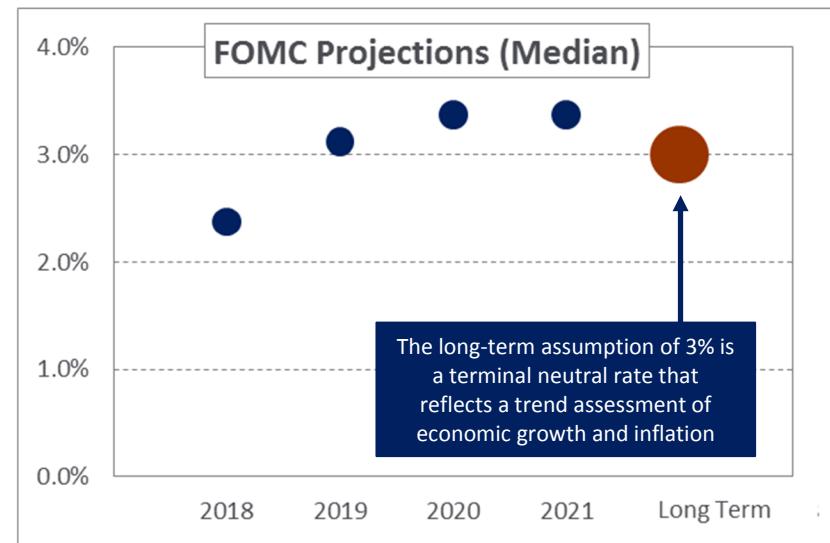
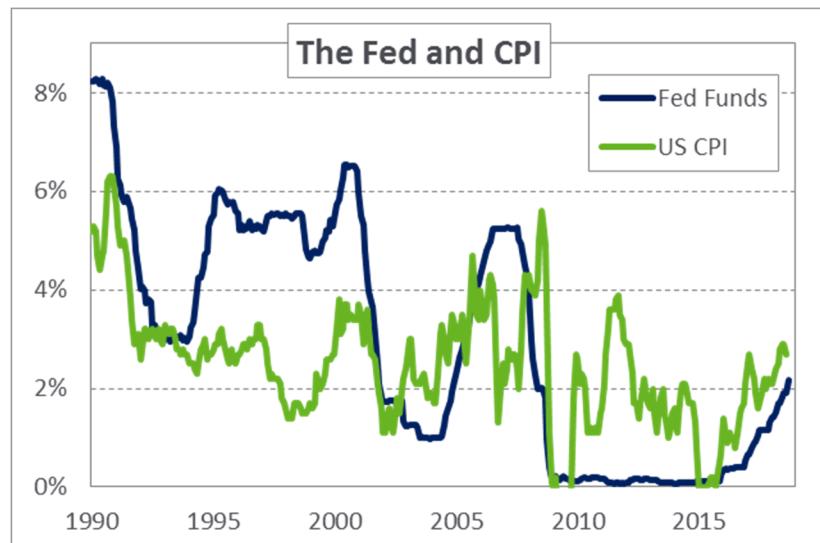
**The end of Fed Gradualism: The Fed has shifted from a “lower for longer” policy to a more balanced posture of raising rates in-line with higher inflation**

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

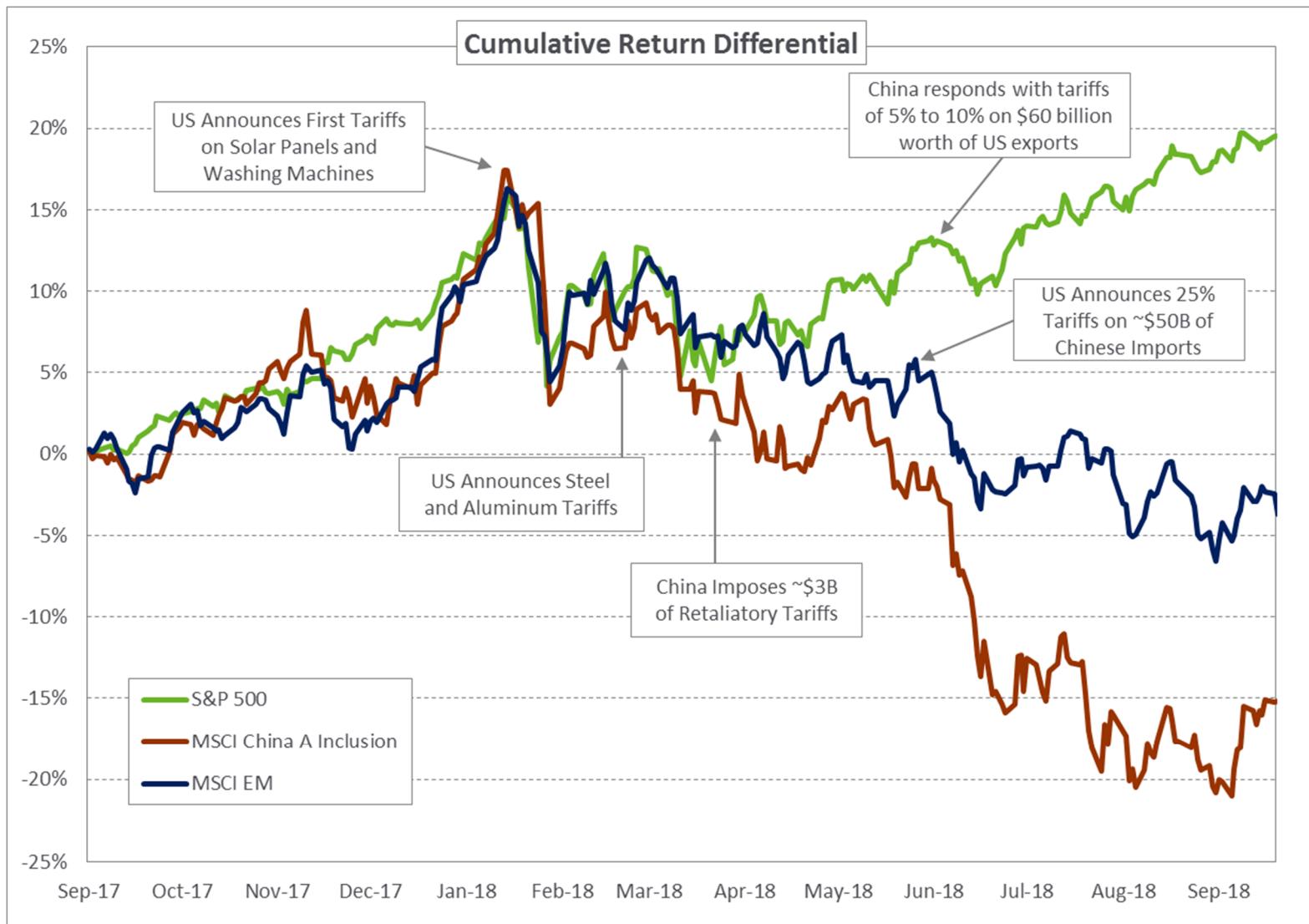


Source: (Left) Bloomberg

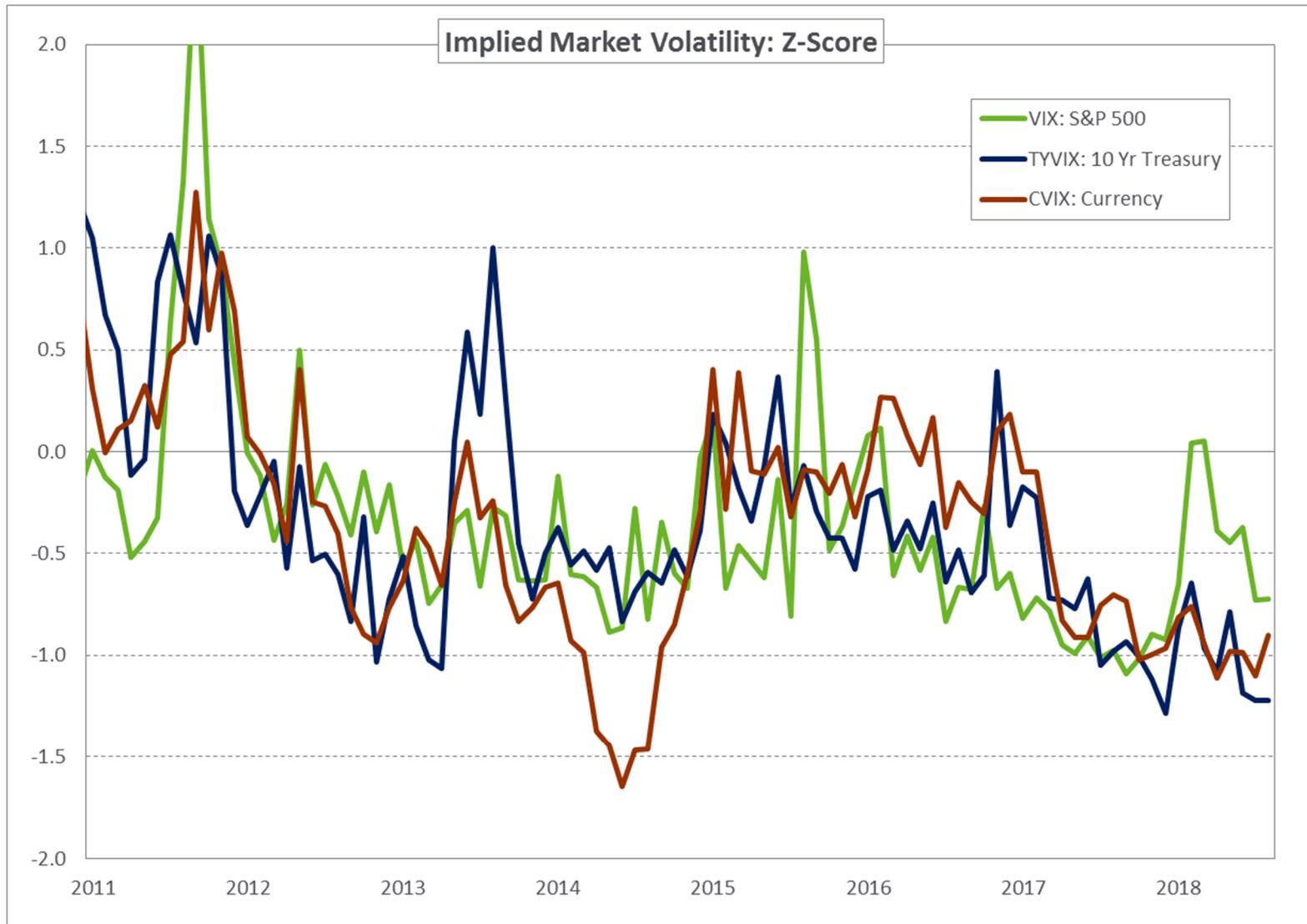
Source: (Right) FOMC



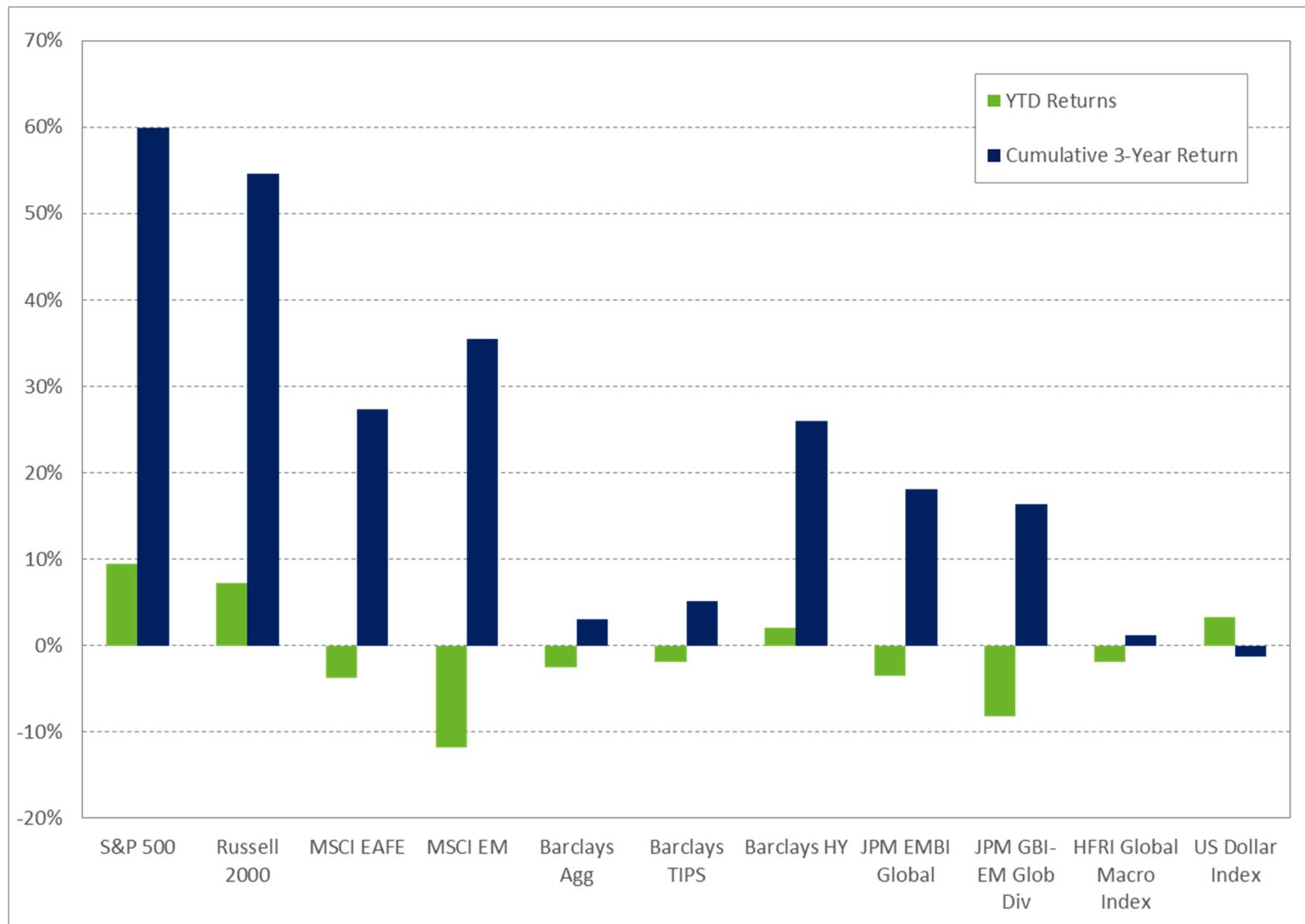
# TRADE TENSIONS WEIGHED ON RETURNS



# MARKET VOLATILITY IS WELL BELOW AVERAGE



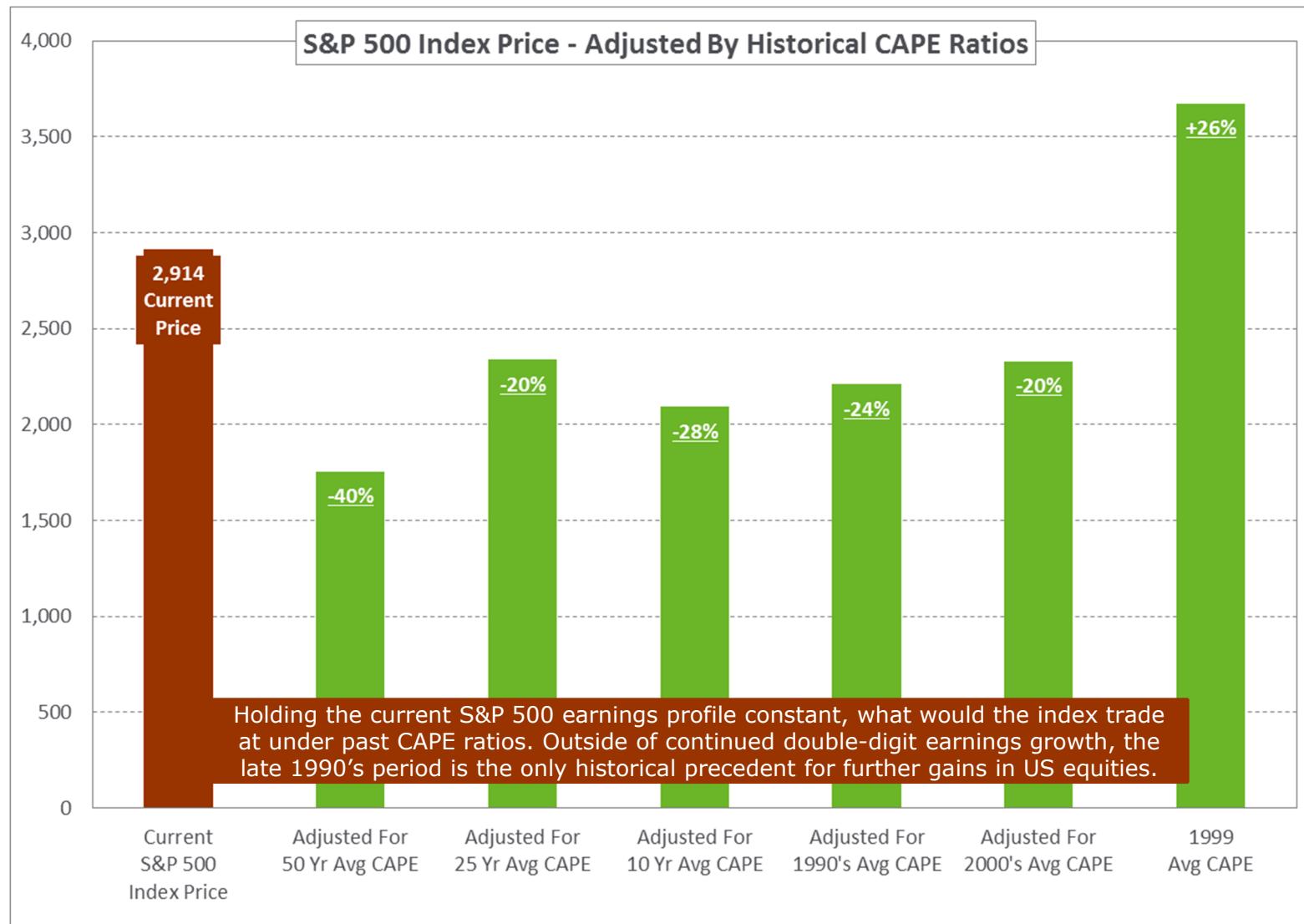
# US EQUITIES ARE THE OUTLIER IN 2018



Source: Bloomberg



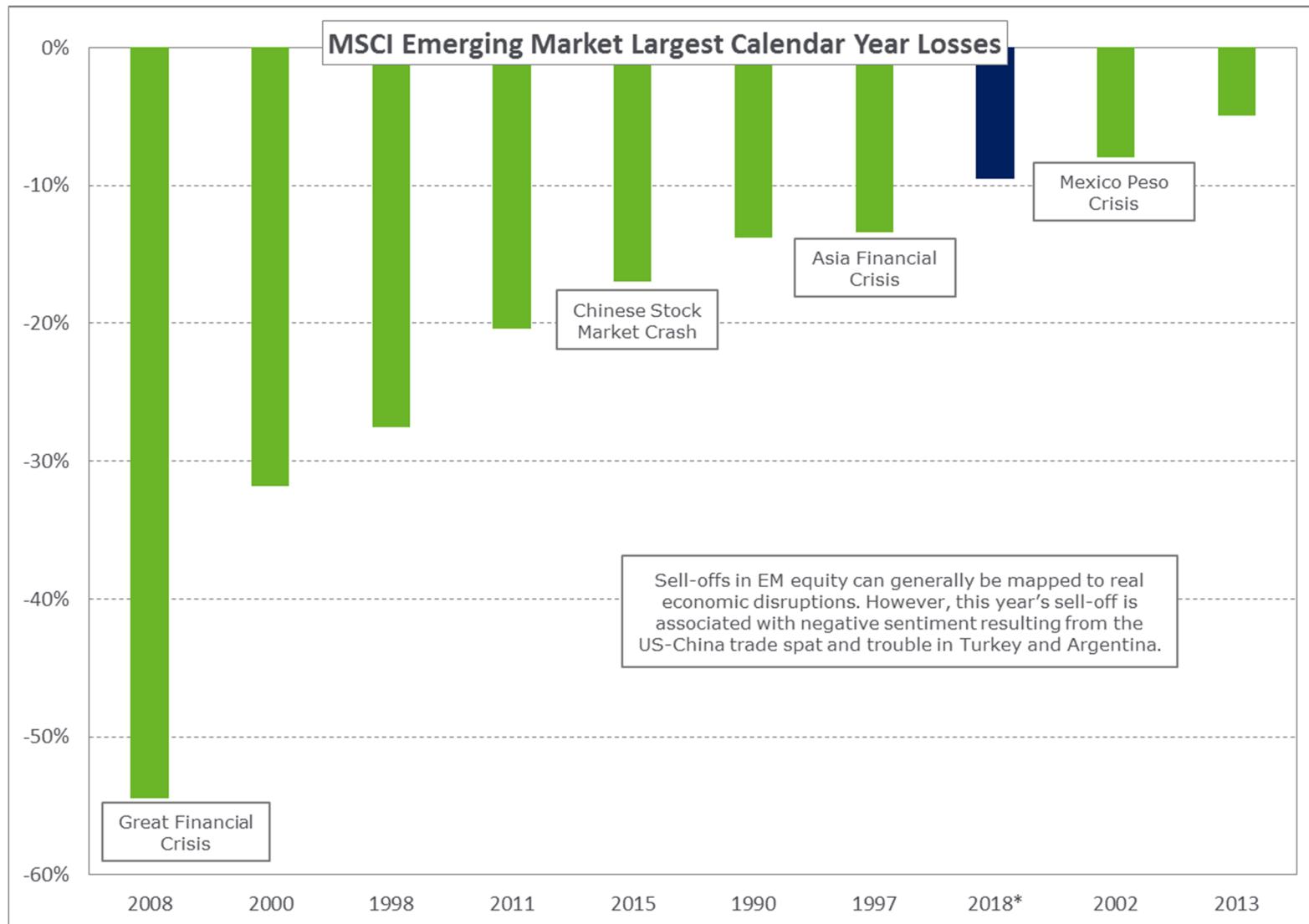
# CAN VALUATIONS SUPPORT FURTHER GAINS?



Source: Bloomberg, Yale, Robert Shiller



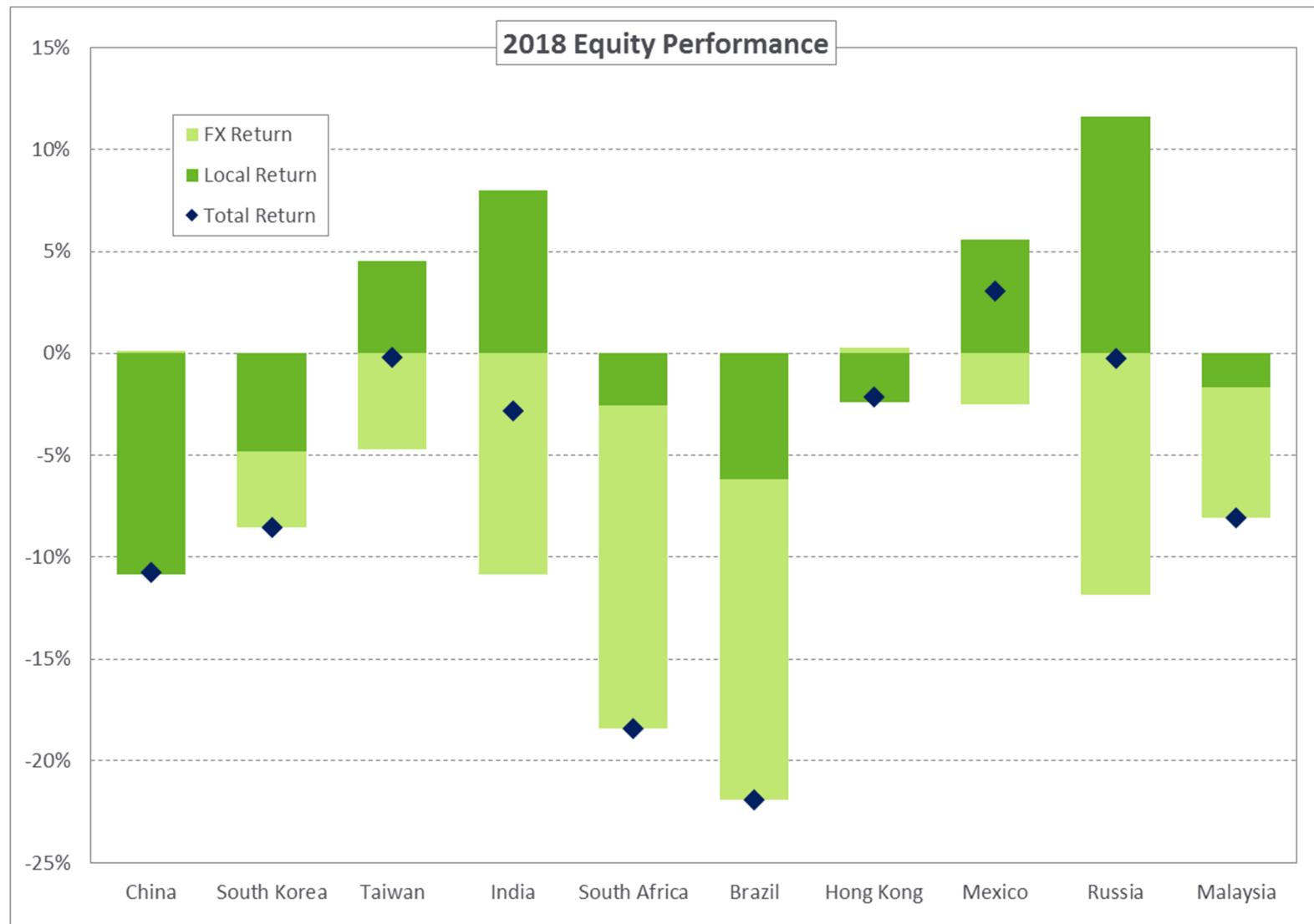
# EM HAS DECLINED, BUT IT COULD BE WORSE



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



# CURRENCY DETRACTED FROM TOTAL RETURNS



Source: MSCI, Bloomberg, NEPC



# **OK Pension Commission**

NEPC, LLC —

# OKLAHOMA STATE PENSION COMMISSION

## ASSET ALLOCATION SUMMARY

Key Policy Items		Teachers ^	TRS 9/30/17	PERS*	PERS 9/30/17	Firefighters	FTRS 9/30/17	Police **	POLICE 9/30/17
TOTAL EQUITY	Target	57.5%	57.5%	68.0%	68.0%	57.0%	57.0%	50.0%	50.0%
	Actual	58.9%	58.3%	70.6%	69.1%	67.4%	65.8%	55.5%	53.8%
	Range	37.5-73.5	37.5-73.5	59.2-76.8	59.2-76.8	42-62	42-62	25-80	25-80
Large Cap	Target	17.0%	17.0%	34.0%	38.0%	29.4%	29.4%	15.0%	15.0%
	Actual	18.9%	15.3%	36.0%	34.1%	35.2%	34.7%	18.8%	17.0%
	Range	12-23	12-23	31.2-36.8	35-41	24.4-34.4	24.4-34.4	10-20	10-20
MidCap	Target	13.0%	13.0%	-	-	-	-	-	-
	Actual	11.2%	13.5%	-	-	-	-	-	-
	Range	8-18	8-18	-	-	-	-	-	-
Small Cap	Target	10.0%	10.0%	6.0%	6.0%	12.6%	12.6%	5.0%	5.0%
	Actual	10.2%	10.2%	7.2%	6.8%	17.0%	16.4%	8.0%	7.2%
	Range	5-15	5-15	3.2-8.8	3.2-8.8	7.6-17.6	7.6-17.6	0-15	0-15
International Equity	Target	17.5%	17.5%	28.0%	24.0%	15.0%	15.0%	15.0%	15.0%
	Actual	18.6%	19.3%	27.4%	28.2%	15.2%	14.6%	14.6%	15.4%
	Range	12.5-22.5	12.5-22.5	25-31	21-27	10-20	10-20	5-25	5-25
Long/Short Equity	Target	-	-	-	-	-	-	15.0%	15.0%
	Actual	-	-	-	-	-	0.1%	14.1%	14.2%
	Range	-	-	-	-	-	-	10-20	10-20
TOTAL FIXED INCOME	Target	23.5%	23.5%	32.0%	32.0%	20.0%	20.0%	15.0%	15.0%
	Actual	20.5%	21.9%	29.1%	30.6%	14.0%	15.1%	15.0%	16.0%
	Range	18.5-28.5	18.5-28.5	27.5-36.5	27.5-36.5	10-30	10-30	10-20	10-20
Dom. Fixed Income/High Yield	Target	23.5%	23.5%	32.0%	32.0%	13.0%	13.0%	-	17.5%
	Actual	20.5%	21.9%	29.1%	30.6%	8.5%	8.9%	-	-
	Range	18.5-28.5	18.5-28.5	27.5-36.5	27.5-36.5	0-28	0-28	-	12.5-30
Int'l & Global Fixed Income	Target	-	-	-	-	7.0%	7.0%	7.5%	7.5%
	Actual	-	-	-	-	5.5%	6.2%	15.0%	16.0%
	Range	-	-	-	-	2-12	2-12	10-20	5-10
TOTAL ALTERNATIVES	Target	19.0%	19%	0%	0%	23.0%	23%	35.0%	35.0%
	Actual	20.2%	19.7%	0.1%	0.1%	18.2%	18.8%	28.3%	27.9%
	Range	17.1-20.9	17.1-20.9	0-5	0-5	5-40	5-40	10-60	10-60
Low Volatility Hedge Funds	Target	-	-	-	-	5.0%	5.0%	10.0%	10.0%
	Actual	-	-	-	-	3.4%	3.4%	7.5%	7.7%
	Range	-	-	-	-	0-10	0-10	5-15	5-15
Private Equity/MLP's	Target	12.0%	12.0%	-	-	8.0%	8.0%	10.0%	10.0%
	Actual	13.0%	12.6%	-	-	2.9%	2.3%	8.9%	8.2%
	Range	7-17	7-17	-	-	0-15	0-15	5-15	5-15
Real Estate/Real Assets	Target	7.0%	7%	0%	0%	10.0%	10%	15.0%	15.0%
	Actual	7.2%	7.1%	0.1%	0.1%	11.9%	13.1%	11.9%	12.0%
	Range	2-12	2-12	0-5	0-5	5-15	5-15	0-30	0-30
CASH	Actual	0.5%	0.0%	0.2%	0.2%	0.3%	0.2%	1.1%	2.4%
Actuarial Assumed Rates		7.5%		7.0%		7.5%		7.5%	

Out of Range

^Master Limited Partnerships included in Private Equity allocation.

\*The Russell 3000 index was broken down into Large Cap & Small Cap allocations for the PERS retirement plan

\*\*Real Assets are included in Real Estate

Please note that allocations may not add to 100% due to rounding.



# OKLAHOMA STATE PENSION COMMISSION ASSET ALLOCATION SUMMARY

Key Policy Items		Law	Law 9/30/17	Judges	Judges 9/30/17	Wildlife	Wildlife 9/30/17
TOTAL EQUITY	Target Actual Range	55.0% 60.9% 55-65	55.0% 59.8% 55-65	68.0% 71.2% 59.2-76.8	68.0% 69.6% 59.2-76.8	50.0% 54.1% 40-65	50.0% 51.0% 40-65
Large Cap	Target Actual Range	20.0% 30.4% 15-25	20.0% 29.0% 15-25	34.0% 36.4% 31.2-36.8	38.0% 34.6% 35-41	50.0% 43.1% 40-65	50.0% 38.4% 40-65
MidCap	Target Actual Range	- -	- -	- -	- -	0.0% 4.9% 0-10	0.0% 4.7% 0-10
Small Cap	Target Actual Range	10.0% 6.3% 5-15	10.0% 6.2% 5-15	6.0% 7.2% 3.2-8.8	6.0% 6.5% 3.2-8.8	0.0% 1.7% 0-10	0.0% 1.5% 0-10
International Equity	Target Actual Range	15.0% 13.8% 5-15	15.0% 14.3% 5-15	28.0% 27.6% 25-31	24.0% 28.5% 21-27	0.0% 4.4% 0-15	0.0% 6.4% 0-15
Long/Short Equity	Target Actual Range	10.0% 10.4% 5-15	10.0% 10.3% 5-15	- -	- -	- -	- -
TOTAL FIXED INCOME	Target Actual Range	30.0% 25.6% 25-35	30.0% 27.2% 25-35	32.0% 28.7% 27.5-36.5	32.0% 30.3% 27.5-36.5	40.0% 40.7% 35-55	40.0% 43.4% 35-55
Dom. Fixed Income/High Yield	Target Actual Range	20.0% 18.0% 15-25	20.0% 19.2% 15-25	32.0% 28.7% 27.5-36.5	32.0% 30.3% 27.5-36.5	40.0% 40.7% 35-55	40.0% 43.4% 35-55
Int'l & Global Fixed Income	Target Actual Range	10.0% 7.6% 5-15	10.0% 8.0% 5-15	- -	- -	- -	- -
TOTAL ALTERNATIVES	Target Actual Range	15.0% 13.3% 5-15	15.0% 12.8% 5-15	- -	- -	10.0% 3.8% 0-10	10.0% 3.2% 0-10
Low Volatility Hedge Funds	Target Actual Range	- -	- -	- -	- -	- -	- -
Private Equity/MLP's	Target Actual Range	5.0% 3.0% 0-5	5.0% 2.7% 0-5	- -	- -	- -	- -
Real Estate/Real Assets	Target Actual Range	10.0% 10.3% 2-12	0.10 10.1% 2-12	- -	- -	- -	- -
CASH	Actual	0.1%	0.1%	0.2%	0.2%	1.2%	2.5%
Actuarial Assumed Rates		7.5%		7.0%		7.0%	

^Master Limited Partnerships included in Private Equity allocation.

\*The Russell 3000 index was broken down into Large Cap & Small Cap allocations for the PERS retirement plan

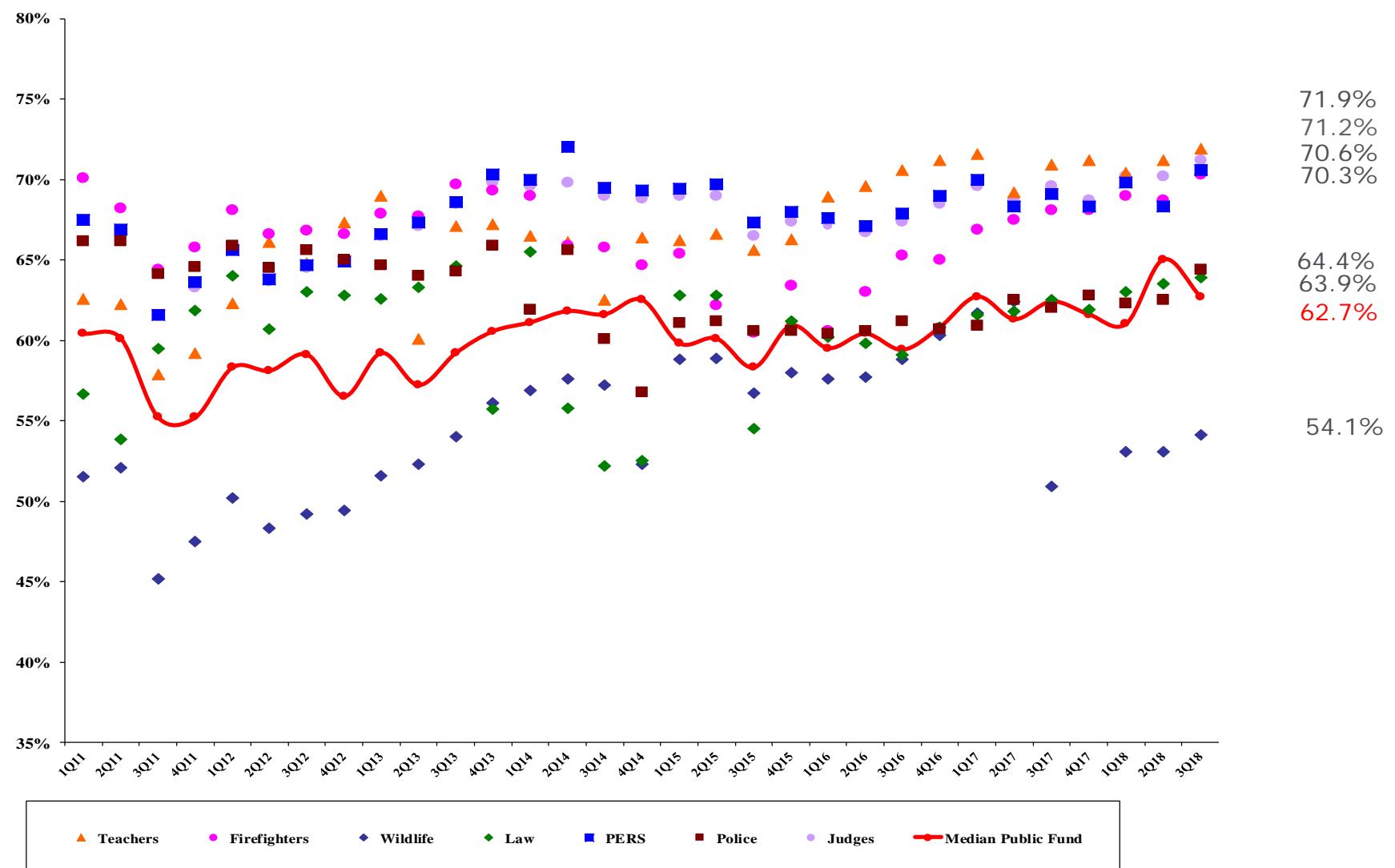
\*\*Real Assets are included in Real Estate

Please note that allocations may not add to 100% due to rounding.

Out of Range



# OKLAHOMA STATE PENSION COMMISSION EQUITY COMMITMENT (PUBLIC EQUITY + PRIVATE EQUITY)



\*Cash allocations not broken out for individual managers.

\*Before Q2 2012, the Median Public Fund assumes 4.6% allocation to private equity



## Oklahoma State Pension Commission

# Total Fund Attribution Analysis

Performance Attribution					
	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
<b>Teachers Attribution Analysis</b>					
Wtd. Actual Return	3.1%	5.1%	9.3%	11.5%	8.8%
Wtd. Index Return *	3.4%	4.6%	8.3%	10.6%	7.7%
<b>Excess Return</b>	-0.3%	0.5%	1.0%	0.8%	1.1%
Selection Effect	-0.4%	0.1%	0.4%	0.3%	0.9%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.2%	0.4%	0.7%	0.6%	0.3%
<b>PERS Attribution Analysis</b>					
Wtd. Actual Return	3.0%	3.0%	7.4%	10.3%	7.9%
Wtd. Index Return *	2.8%	2.8%	7.0%	10.3%	7.7%
<b>Excess Return</b>	0.2%	0.2%	0.4%	0.0%	0.2%
Selection Effect	0.0%	0.0%	0.2%	-0.1%	0.1%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.2%	0.2%	0.2%	0.1%	0.1%
<b>Firefighters Attribution Analysis</b>					
Wtd. Actual Return	4.0%	6.9%	11.6%	12.2%	9.6%
Wtd. Index Return *	4.1%	5.3%	9.6%	11.5%	9.3%
<b>Excess Return</b>	-0.1%	1.6%	2.0%	0.7%	0.2%
Selection Effect	-0.1%	1.6%	2.0%	0.7%	0.2%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Police Attribution Analysis</b>					
Wtd. Actual Return	2.9%	5.1%	8.5%	9.1%	7.3%
Wtd. Index Return *	2.8%	2.7%	6.7%	9.1%	6.4%
<b>Excess Return</b>	0.1%	2.4%	1.8%	-0.1%	0.9%
Selection Effect	-0.1%	2.2%	1.6%	-0.6%	0.6%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.2%	0.1%	0.3%	0.5%	0.3%



# Total Fund Attribution Analysis

Law Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	2.3%	4.0%	7.5%	9.4%	7.4%
Wtd. Index Return *	2.9%	4.7%	8.1%	9.9%	8.0%
<b>Excess Return</b>	<b>-0.7%</b>	<b>-0.7%</b>	<b>-0.6%</b>	<b>-0.6%</b>	<b>-0.6%</b>
Selection Effect	-1.0%	-1.1%	-1.2%	-1.0%	-0.8%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.3%	0.4%	0.6%	0.4%	0.2%
Judges Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	2.9%	3.0%	7.3%	10.3%	7.7%
Wtd. Index Return *	2.8%	2.8%	7.0%	10.3%	7.7%
<b>Excess Return</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>
Selection Effect	-0.1%	0.0%	0.0%	0.0%	-0.1%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	0.2%	0.2%	0.3%	0.0%	0.1%
Wildlife Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	3.2%	4.7%	8.7%	9.4%	7.6%
Wtd. Index Return *	3.8%	4.7%	8.5%	9.3%	8.1%
<b>Excess Return</b>	<b>-0.6%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.1%</b>	<b>-0.4%</b>
Selection Effect	-2.1%	-2.7%	-3.1%	-1.1%	-2.4%
Allocation Effect	0.0%	0.0%	0.0%	0.0%	0.0%
Interaction Effect	1.5%	2.7%	3.4%	1.2%	2.0%

- Returns are gross of manager fees.
- Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result the total returns shown may vary from the calculated returns shown on the performance summary.



## Oklahoma State Pension Commission

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Oklahoma State Pension Commission	33,641,530,802	100.0	3.1	32	4.6	23	8.8	22	10.9	13	8.4	17	9.1	6
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% S&P 500 / 40% BBgBarc Aggregate			4.6	1	5.6	9	10.0	10	10.8	15	9.2	3	8.9	9
MSCI EAFE			1.4	97	-1.4	99	2.7	99	9.2	68	4.4	98	5.4	98
Teachers	16,881,896,966	50.2	3.1	32	5.1	15	9.3	15	11.5	5	8.8	9	9.9	1
TEACHERS Allocation Index			3.0	38	4.4	31	8.2	32	10.8	15	8.4	18	8.9	9
TEACHERS Policy Index			3.4	25	4.6	23	8.3	32	10.6	18	7.7	42	8.4	26
PERS	9,896,822,719	29.4	3.0	37	3.0	69	7.4	49	10.3	30	7.9	37	8.5	21
PERS Allocation Index			2.9	43	2.8	76	7.0	61	10.2	35	7.7	42	8.2	31
PERS Policy Index			2.8	46	2.8	76	7.0	61	10.3	30	7.7	41	8.1	35
Firefighters	2,790,280,604	8.3	3.9	6	7.0	1	11.7	1	12.2	3	9.6	2	8.8	11
FIREFIGHTERS Allocation Index			3.7	11	6.2	6	10.6	5	11.6	5	8.8	9	8.7	12
FIREFIGHTERS Policy Index			4.1	2	5.3	12	9.6	12	11.5	5	9.3	3	9.1	6
Police	2,602,695,845	7.7	2.9	44	5.1	14	8.5	27	9.1	74	7.4	55	7.4	60
POLICE Allocation Index			1.7	95	3.1	67	6.9	65	8.4	88	6.5	83	7.4	60
POLICE Policy Index			2.8	47	2.7	77	6.7	68	9.1	73	6.4	84	7.3	63
Law	1,008,386,317	3.0	2.3	73	4.0	39	7.5	46	9.3	64	7.4	53	8.0	38
LAW Allocation Index			2.9	44	3.9	44	7.7	41	9.8	51	7.8	39	7.8	46
LAW Policy Index			2.9	39	4.7	21	8.1	34	9.9	46	8.0	34	8.0	37
Judges	344,711,003	1.0	2.9	41	3.0	70	7.3	54	10.3	27	7.7	41	8.3	27
JUDGES Allocation Index			2.9	40	2.9	74	7.1	58	10.1	37	7.5	47	7.9	44
JUDGES Policy Index			2.8	46	2.8	76	7.0	61	10.3	30	7.7	41	8.0	37
Wildlife	116,737,346	0.3	3.2	30	4.7	21	8.8	22	9.4	62	7.6	43	7.1	76
WILDLIFE Allocation Index			3.7	12	4.4	29	8.1	34	10.0	44	7.8	39	7.6	54
WILDLIFE Policy Index			3.8	10	4.7	22	8.5	27	9.3	66	8.1	28	8.2	31
InvestorForce Public DB Gross Median			2.7		3.6		7.4		9.8		7.5		7.7	

Returns are gross of manager fees.



## Oklahoma State Pension Commission

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	2017 (%)	Rank	2016 (%)	Rank	2015 (%)	Rank	2014 (%)	Rank	2013 (%)	Rank
Oklahoma State Pension Commission	33,641,530,802	100.0	16.4	28	9.5	5	-1.5	83	7.5	12	20.4	7
S&P 500			21.8	1	12.0	1	1.4	11	13.7	1	32.4	1
BBgBarc US Aggregate TR			3.5	99	2.6	99	0.5	35	6.0	45	-2.0	99
60% S&P 500 / 40% BBgBarc Aggregate			14.2	72	8.3	27	1.3	13	10.6	1	17.6	30
MSCI EAFE			25.0	1	1.0	99	-0.8	75	-4.9	99	22.8	1
Teachers	16,881,896,966	50.2	16.1	34	11.4	1	-2.9	98	8.1	4	24.0	1
TEACHERS Allocation Index			14.3	70	11.0	1	-2.0	89	8.2	4	21.2	3
TEACHERS Policy Index			14.1	74	10.6	1	-2.5	95	6.7	28	18.7	20
PERS	9,896,822,719	29.4	17.1	17	7.7	52	-0.8	74	7.4	15	16.6	40
PERS Allocation Index			16.5	26	8.1	34	-0.9	77	7.0	21	15.9	48
PERS Policy Index			16.9	21	8.1	34	-0.9	76	7.0	21	15.3	53
Firefighters	2,790,280,604	8.3	18.7	4	7.3	61	2.1	6	6.9	24	21.1	3
FIREFIGHTERS Allocation Index			15.6	44	9.4	5	0.5	35	6.1	40	21.5	3
FIREFIGHTERS Policy Index			16.4	28	8.7	15	1.6	10	8.7	3	19.8	12
Police	2,602,695,845	7.7	13.2	86	7.5	57	1.0	21	5.1	68	16.1	46
POLICE Allocation Index			13.8	77	6.7	80	-0.4	63	5.0	70	14.8	59
POLICE Policy Index			15.5	48	7.1	70	-1.9	89	4.5	79	14.8	59
Law	1,008,386,317	3.0	14.6	63	7.2	66	-0.4	65	6.8	28	16.8	38
LAW Allocation Index			14.6	63	8.3	29	0.3	42	7.1	20	14.6	62
LAW Policy Index			13.4	86	8.6	18	1.0	22	7.0	21	17.5	31
Judges	344,711,003	1.0	16.9	21	8.1	36	-1.1	79	7.0	22	16.0	47
JUDGES Allocation Index			16.7	24	7.9	44	-1.2	81	6.7	29	15.9	48
JUDGES Policy Index			16.9	21	8.1	34	-0.9	76	7.0	21	15.3	53
Wildlife	116,737,346	0.3	14.3	71	6.6	82	0.1	49	7.9	7	15.5	50
WILDLIFE Allocation Index			14.4	69	8.0	37	-0.3	61	7.7	10	14.4	64
WILDLIFE Policy Index			12.8	89	7.2	67	1.0	22	9.5	1	15.4	51
InvestorForce Public DB Gross Median			15.3		7.7		0.1		5.8		15.5	

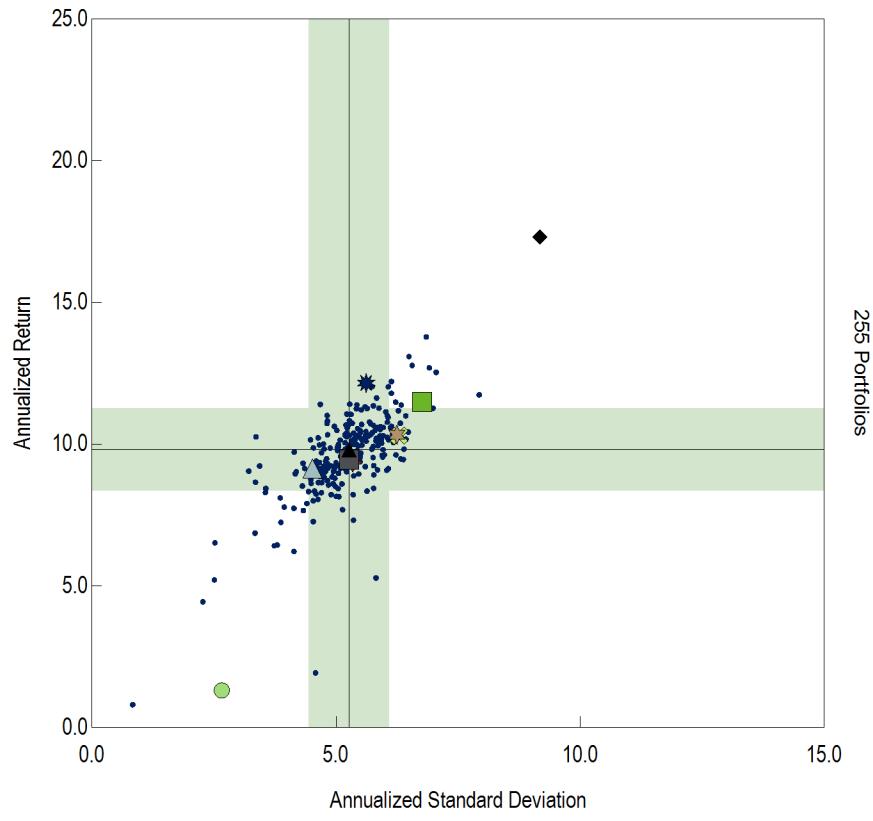
Returns are gross of manager fees.



## Oklahoma State Pension Commission

# TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2018



- Teachers
- ✖ PERS
- \* Firefighters
- ▲ Police
- ◆ Law
- \* Judges
- Wildlife
- ◆ S&P 500
- BBgBarc US Aggregate TR
- ▲ Universe Median
- InvestorForce Public DB Gross
- 68% Confidence Interval

3 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Oklahoma State Pension Commission	10.92%	13	6.22%	93
Teachers	11.50%	5	6.77%	98
PERS	10.30%	30	6.30%	94
Firefighters	12.16%	3	5.62%	71
Police	9.14%	74	4.52%	12
Law	9.35%	64	5.34%	56
Judges	10.33%	27	6.25%	94
Wildlife	9.44%	62	5.27%	50

3 Years Ending September 30, 2018

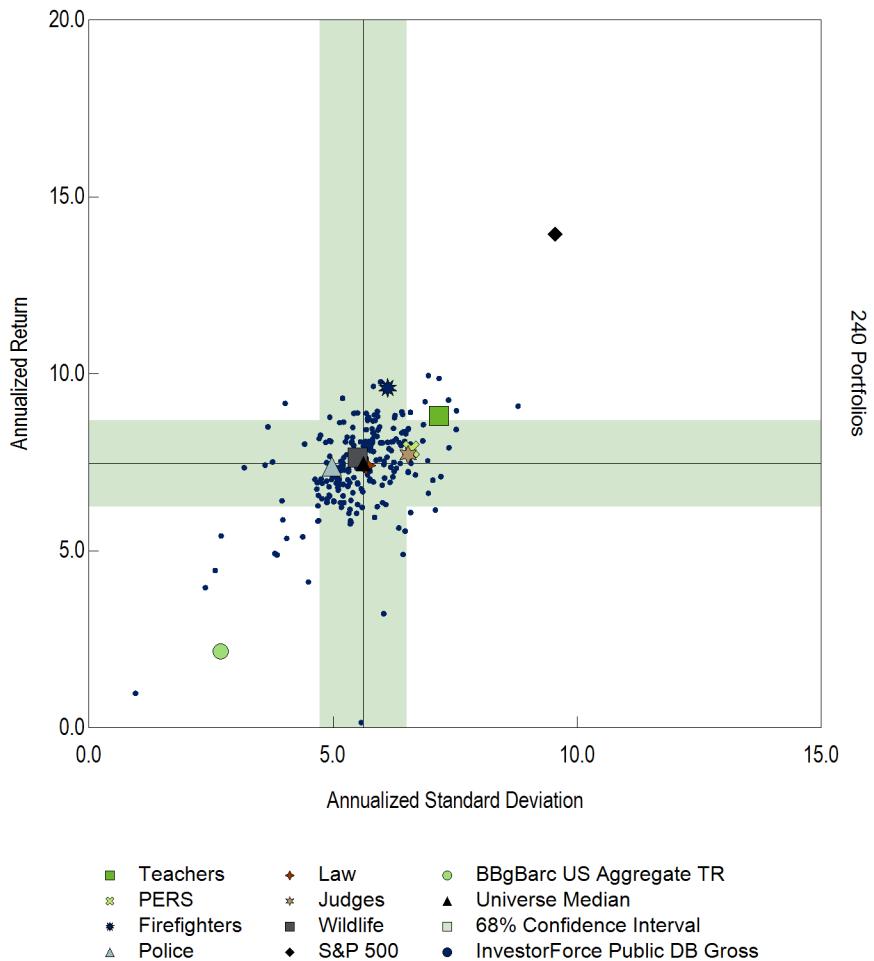
	Sharpe Ratio	Rank	Sortino Ratio	Rank
Oklahoma State Pension Commission	1.62	68	2.07	89
Teachers	1.57	77	1.94	96
PERS	1.50	87	2.27	75
Firefighters	2.01	6	2.73	21
Police	1.83	20	2.64	28
Law	1.59	74	2.22	78
Judges	1.52	85	2.20	80
Wildlife	1.63	67	2.41	57



## Oklahoma State Pension Commission

# TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2018



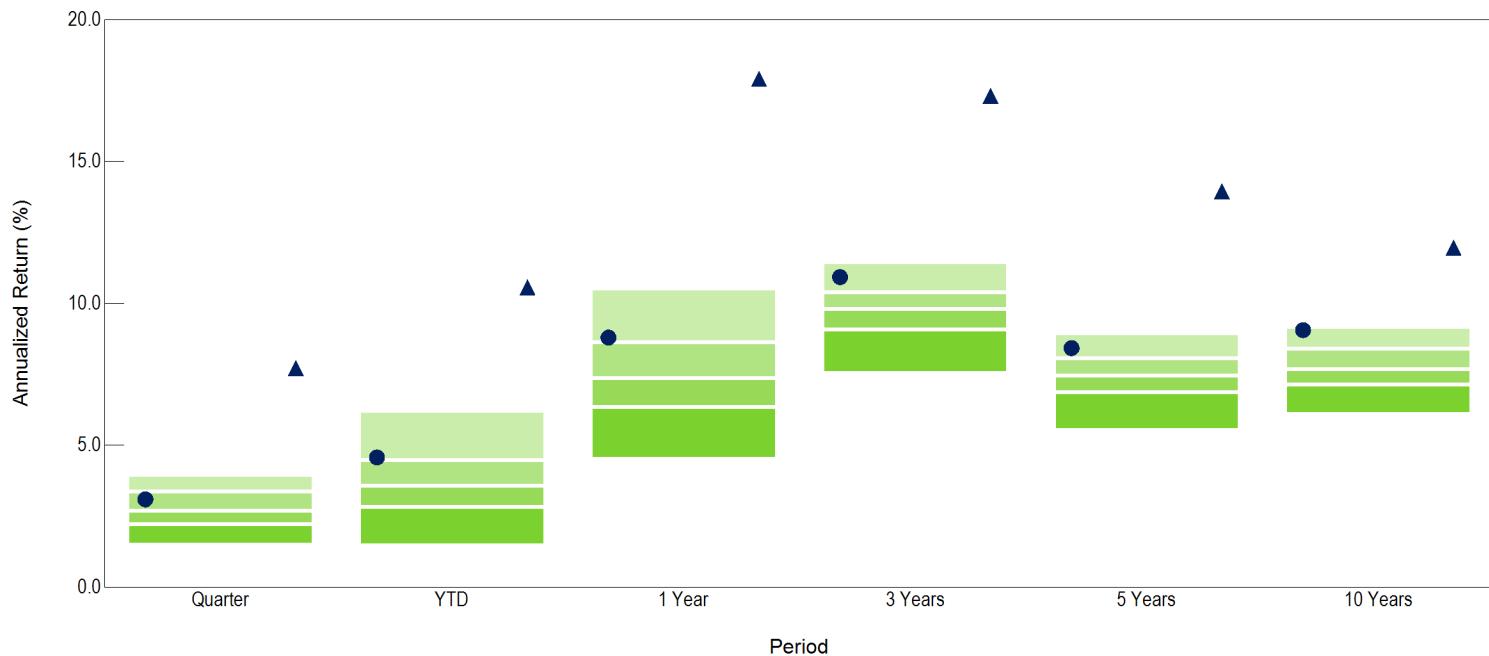
5 Years Ending September 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Oklahoma State Pension Commission	8.42%	17	6.61%	93
Teachers	8.81%	9	7.17%	98
PERS	7.87%	37	6.60%	93
Firefighters	9.60%	2	6.12%	77
Police	7.38%	55	4.97%	20
Law	7.41%	53	5.68%	55
Judges	7.72%	41	6.54%	90
Wildlife	7.63%	43	5.51%	46

5 Years Ending September 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio	Rank
Oklahoma State Pension Commission	1.19	65	1.80	72
Teachers	1.16	73	1.68	83
PERS	1.11	80	1.76	77
Firefighters	1.48	10	2.38	11
Police	1.38	19	2.29	18
Law	1.21	60	1.88	64
Judges	1.10	83	1.72	81
Wildlife	1.29	41	2.06	39



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Oklahoma State Pension Commission vs. InvestorForce Public DB Gross



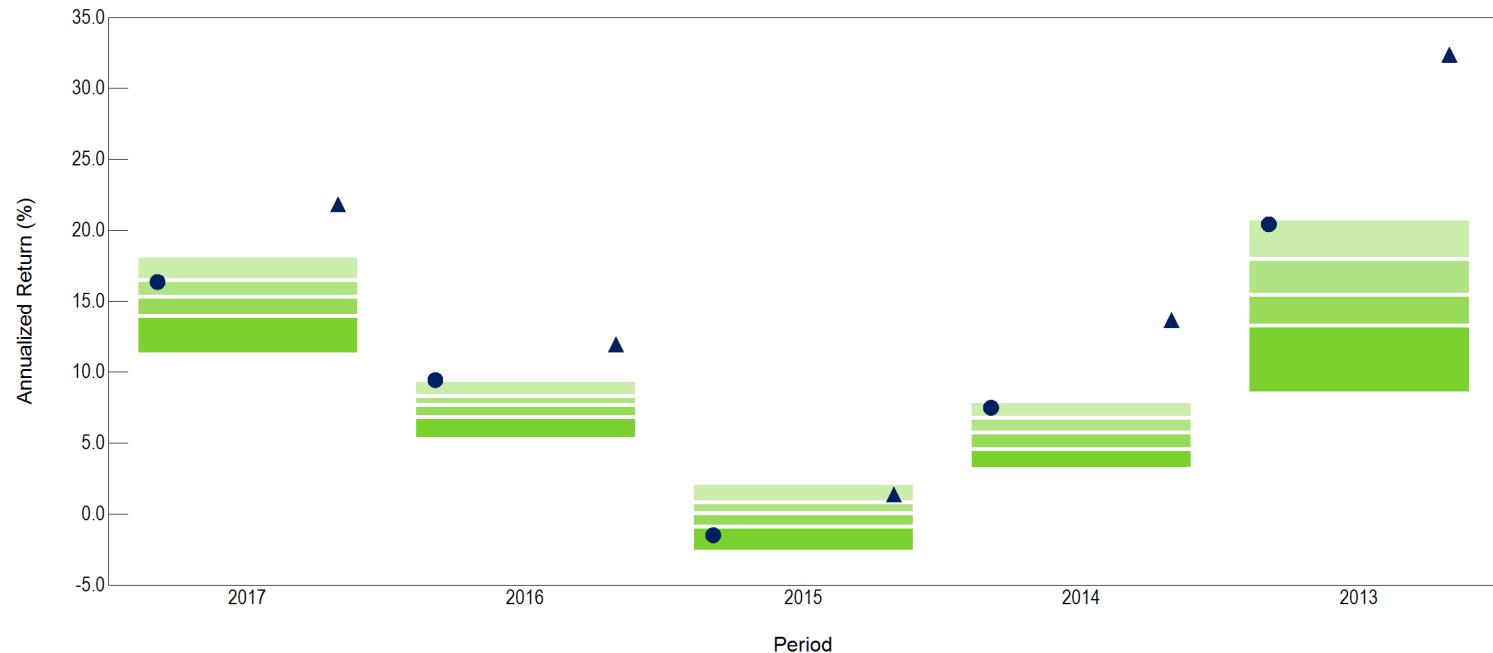
	Return (Rank)					
5th Percentile	3.9	6.2	10.5	11.4	8.9	9.2
25th Percentile	3.4	4.5	8.6	10.4	8.1	8.4
Median	2.7	3.6	7.4	9.8	7.5	7.7
75th Percentile	2.2	2.8	6.4	9.1	6.9	7.2
95th Percentile	1.5	1.5	4.5	7.6	5.6	6.1
# of Portfolios	267	266	265	255	240	208
● Oklahoma State Pension Commission	3.1	(32)	4.6	(23)	10.9	(13)
▲ S&P 500	7.7	(1)	10.6	(1)	17.3	(1)



## Oklahoma State Pension Commission

# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Oklahoma State Pension Commission vs. InvestorForce Public DB Gross



	Return (Rank)					
5th Percentile	18.2	9.4	2.2	8.0	20.8	
25th Percentile	16.5	8.4	0.9	6.8	18.0	
Median	15.3	7.7	0.1	5.8	15.5	
75th Percentile	14.0	6.9	-0.9	4.6	13.3	
95th Percentile	11.3	5.3	-2.6	3.2	8.5	
# of Portfolios	304	305	316	248	231	
● Oklahoma State Pension Commission	16.4	(28)	9.5	(5)	-1.5	7.5
▲ S&P 500	21.8	(1)	12.0	(1)	1.4	(12)
						20.4
						(7)
						32.4
						(1)



# OKLAHOMA TEACHERS



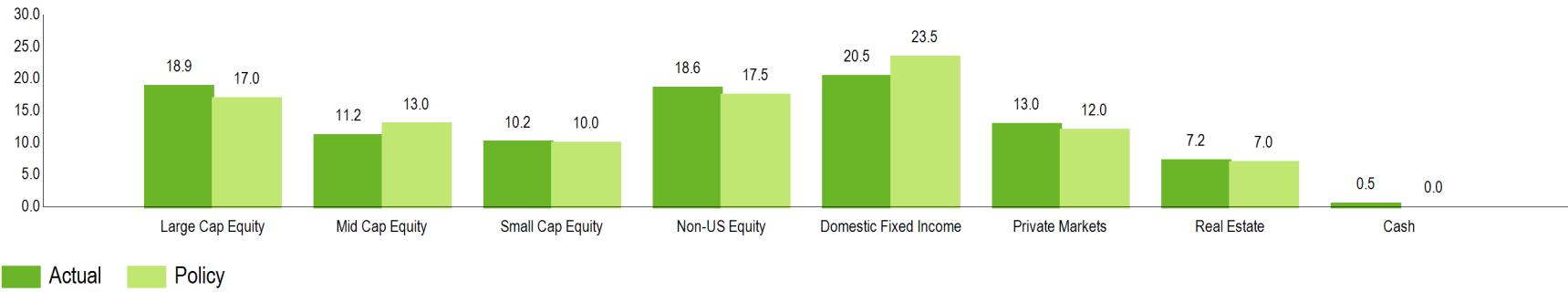
# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK TEACHERS</b>	<b>\$16,881,896,966</b>	<b>3.1%</b>	<b>32</b>	<b>5.1%</b>	<b>15</b>	<b>9.3%</b>	<b>15</b>	<b>11.5%</b>	<b>5</b>	<b>8.8%</b>	<b>8</b>	<b>9.9%</b>	<b>1</b>
TEACHERS Allocation Index		3.0%	38	4.4%	31	8.2%	32	10.8%	15	8.4%	18	8.9%	9
TEACHERS Policy Index		3.4%	25	4.6%	23	8.3%	32	10.6%	18	7.7%	42	8.4%	26
InvestorForce Public DB Gross Median		2.7%		3.6%		7.4%		9.8%		7.5%		7.7%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)

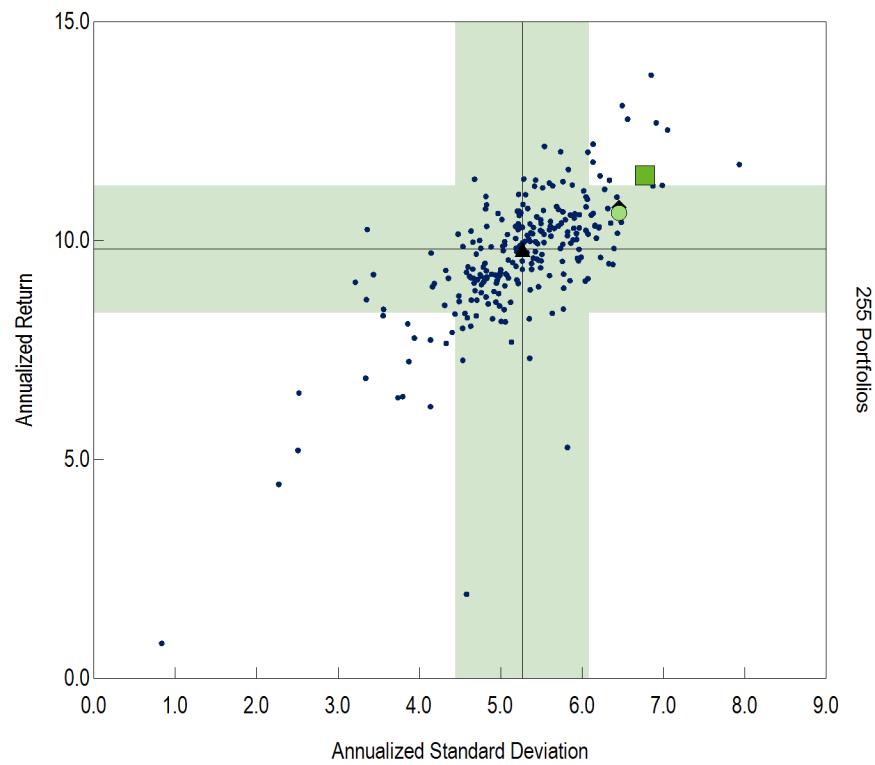


Returns are gross of manager fees.



# TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2018



- OK TEACHERS
- ◆ TEACHERS Allocation Index
- TEACHERS Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

3 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK TEACHERS	11.50%	5	6.77%	98
TEACHERS Allocation Index	10.76%	15	6.46%	97
TEACHERS Policy Index	10.64%	18	6.46%	97

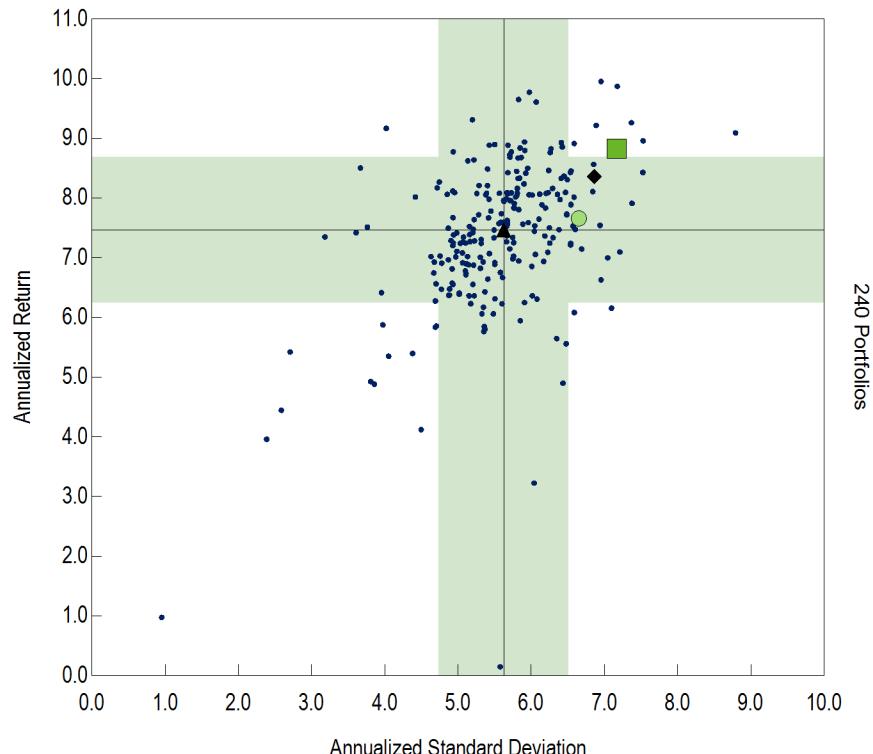
3 Years Ending September 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK TEACHERS	1.57	77	1.94	96
TEACHERS Allocation Index	1.53	83	1.98	95
TEACHERS Policy Index	1.51	85	2.05	90

## Oklahoma Teachers

# TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2018



5 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK TEACHERS	8.82%	8	7.17%	98
TEACHERS Allocation Index	8.36%	18	6.86%	95
TEACHERS Policy Index	7.66%	42	6.65%	94

5 Years Ending September 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK TEACHERS	1.16	73	1.68	83
TEACHERS Allocation Index	1.14	74	1.70	83
TEACHERS Policy Index	1.07	86	1.69	83

# TOTAL FUND ASSET ALLOCATION VS. POLICY

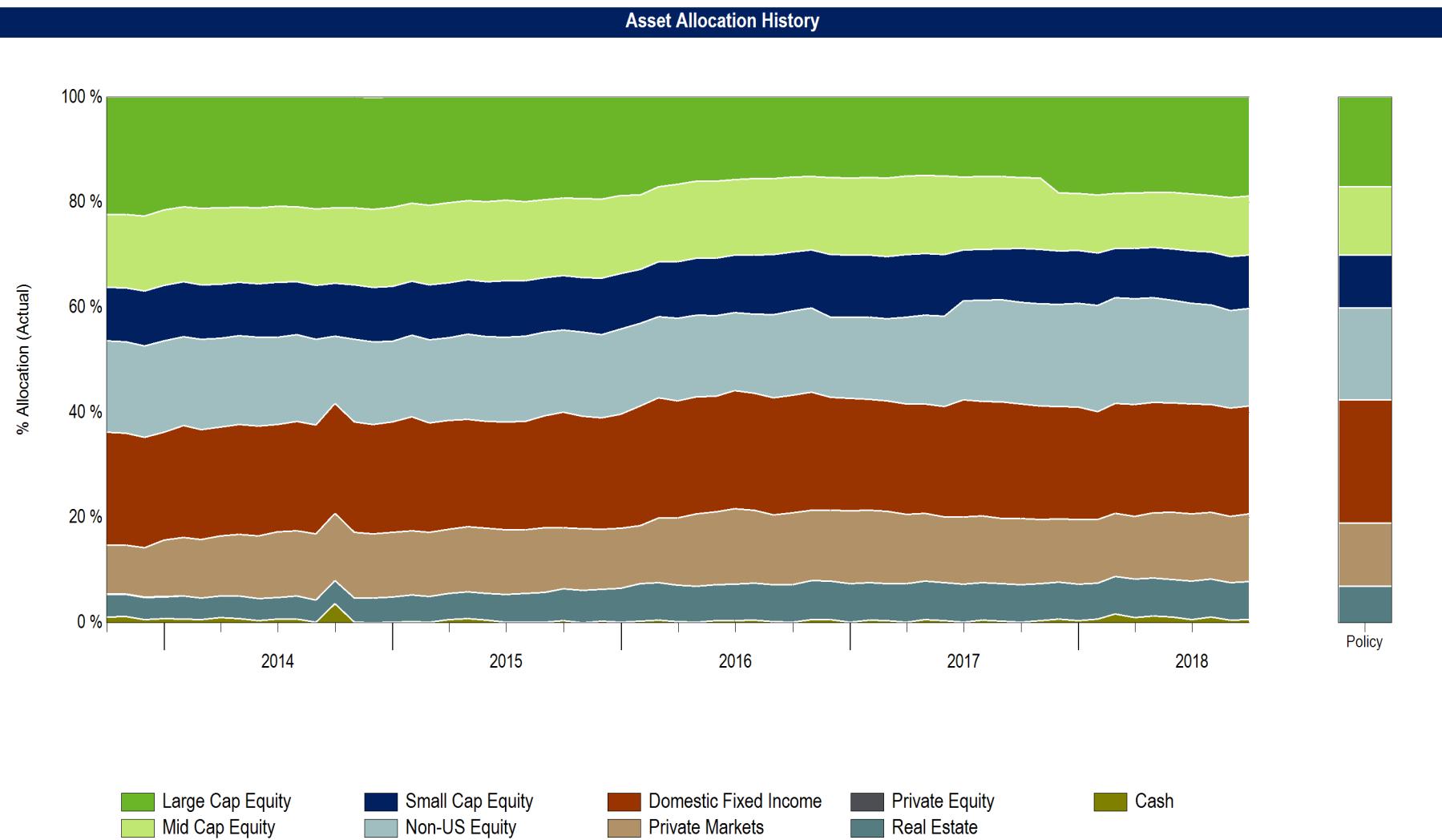


Asset Allocation vs. Target						
	Current	Policy	Current Difference*	Policy Range		Within Range
Large Cap Equity	\$3,186,796,366	17.0%	18.9%	1.9%	12.0% - 23.0%	Yes
Mid Cap Equity	\$1,889,250,825	13.0%	11.2%	-1.8%	8.0% - 18.0%	Yes
Small Cap Equity	\$1,715,846,533	10.0%	10.2%	0.2%	5.0% - 15.0%	Yes
Non-US Equity	\$3,138,644,899	17.5%	18.6%	1.1%	12.5% - 22.5%	Yes
Domestic Fixed Income	\$3,454,586,522	23.5%	20.5%	-3.0%	18.5% - 28.5%	Yes
Private Markets	\$2,191,140,052	12.0%	13.0%	1.0%	7.0% - 17.0%	Yes
Real Estate	\$1,222,018,237	7.0%	7.2%	0.2%	2.0% - 12.0%	Yes
Cash	\$83,613,532	0.0%	0.5%	0.5%	0.0% - 5.0%	Yes
<b>Total</b>	<b>\$16,881,896,966</b>	<b>100.0%</b>	<b>100.0%</b>			

\*Difference between Policy and Current Allocation



# TOTAL FUND ASSET ALLOCATION HISTORY



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>OK TEACHERS</b>	<b>16,881,896,966</b>	<b>100.0</b>	<b>3.1</b>	<b>32</b>	<b>5.1</b>	<b>15</b>	<b>9.3</b>	<b>15</b>	<b>11.5</b>	<b>5</b>	<b>8.8</b>	<b>8</b>	<b>9.9</b>	<b>1</b>
TEACHERS Allocation Index			3.0	38	4.4	31	8.2	32	10.8	15	8.4	18	8.9	9
Over/Under			0.1		0.7		1.1		0.7		0.4		1.0	
TEACHERS Policy Index			3.4	25	4.6	23	8.3	32	10.6	18	7.7	42	8.4	26
InvestorForce Public DB Gross Median			2.7		3.6		7.4		9.8		7.5		7.7	
<b>Total Equity Composite</b>	<b>9,930,538,623</b>	<b>58.8</b>	<b>3.9</b>	<b>50</b>	<b>6.1</b>	<b>29</b>	<b>12.3</b>	<b>28</b>	<b>14.7</b>	<b>28</b>	<b>10.6</b>	<b>29</b>	<b>10.8</b>	<b>23</b>
Russell 3000			7.1	5	10.6	10	17.6	9	17.1	11	13.5	7	12.0	13
Over/Under			-3.2		-4.5		-5.3		-2.4		-2.9		-1.2	
eV All Global Equity Gross Median			3.8		4.0		9.7		13.4		9.4		9.2	
<b>U.S. Equity Comp</b>	<b>6,791,893,724</b>	<b>40.2</b>	<b>6.0</b>	<b>49</b>	<b>10.5</b>	<b>43</b>	<b>17.0</b>	<b>43</b>	<b>16.7</b>	<b>43</b>	<b>12.6</b>	<b>48</b>	<b>12.3</b>	<b>50</b>
S&P 500			7.7	26	10.6	42	17.9	38	17.3	35	13.9	27	12.0	59
Over/Under			-1.7		-0.1		-0.9		-0.6		-1.3		0.3	
eV All US Equity Gross Median			5.9		9.2		15.6		16.0		12.5		12.3	
Sawgrass Large Growth	760,109,364	4.5	10.3	9	15.4	61	23.8	57	17.1	76	14.4	74	12.7	73
Russell 1000 Growth			9.2	27	17.1	47	26.3	39	20.6	25	16.6	34	14.3	34
Over/Under			1.1		-1.7		-2.5		-3.5		-2.2		-1.6	
eV US Large Cap Growth Equity Gross Median			8.3		16.5		24.5		19.0		15.8		13.7	
Hotchkis & Wiley Large Cap Value	752,396,301	4.5	4.9	72	5.3	49	13.6	35	16.1	19	12.2	33	12.9	7
Russell 1000 Value			5.7	53	3.9	71	9.5	76	13.6	73	10.7	68	9.8	82
Over/Under			-0.8		1.4		4.1		2.5		1.5		3.1	
eV US Large Cap Value Equity Gross Median			5.8		5.2		11.8		14.6		11.4		10.8	
Aronson Mid Cap	445,396,845	2.6	3.3	73	4.8	68	12.5	58	12.8	76	11.5	56	12.7	52
Russell MidCap			5.0	49	7.5	49	14.0	52	14.5	55	11.7	54	12.3	68
Over/Under			-1.7		-2.7		-1.5		-1.7		-0.2		0.4	
eV US Mid Cap Equity Gross Median			4.9		7.1		14.2		14.9		11.8		12.8	
Frontier	466,098,108	2.8	7.1	65	11.3	77	15.7	92	14.5	79	13.0	52	13.0	57
Russell MidCap Growth			7.6	56	13.4	64	21.1	60	16.6	48	13.0	52	13.5	46
Over/Under			-0.5		-2.1		-5.4		-2.1		0.0		-0.5	
Wellington	513,452,739	3.0	9.5	19	23.0	12	28.0	21	19.2	24	13.3	42	12.8	70
Russell MidCap Growth			7.6	56	13.4	64	21.1	60	16.6	48	13.0	52	13.5	46
Over/Under			1.9		9.6		6.9		2.6		0.3		-0.7	
eV US Mid Cap Growth Equity Gross Median			7.8		15.6		22.3		16.4		13.1		13.2	

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Hotchkis & Wiley Mid Cap	464,303,133	2.8	3.3	47	9.9	5	17.0	2	13.9	43	9.5	77	15.6	1
Russell MidCap Value			3.3	46	3.1	59	8.8	54	13.1	55	10.7	54	11.3	70
Over/Under			0.0		6.8		8.2		0.8		-1.2		4.3	
eV US Mid Cap Value Equity Gross Median			3.2		4.1		9.3		13.5		10.9		12.3	
Shapiro Capital	805,850,141	4.8	1.8	45	4.8	58	11.2	35	22.4	3	13.6	4	14.4	8
Russell 2000 Value			1.6	49	7.1	33	9.3	49	16.1	35	9.9	66	9.5	94
Over/Under			0.2		-2.3		1.9		6.3		3.7		4.9	
Frontier Capital Management Small Cap Value	226,865,727	1.3	2.6	35	9.4	18	13.1	21	17.1	25	12.3	17	--	--
Russell 2000 Value			1.6	49	7.1	33	9.3	49	16.1	35	9.9	66	9.5	94
Over/Under			1.0		2.3		3.8		1.0		2.4			
Neumeier Poma Investment Counsel Small Cap Value	202,141,634	1.2	2.6	35	7.1	33	13.6	19	19.2	11	15.0	1	--	--
Russell 2000 Value			1.6	49	7.1	33	9.3	49	16.1	35	9.9	66	9.5	94
Over/Under			1.0		0.0		4.3		3.1		5.1			
eV US Small Cap Value Equity Gross Median			1.6		5.4		9.1		15.1		10.7		11.8	
Geneva Capital Management Small Cap Growth	244,264,217	1.4	11.3	16	25.3	30	29.3	42	21.5	33	15.4	18	--	--
Russell 2000 Growth			5.5	77	15.8	78	21.1	79	18.0	73	12.1	75	12.7	83
Over/Under			5.8		9.5		8.2		3.5		3.3			
Wasatch Advisors Small Cap Growth	236,724,814	1.4	7.6	54	21.1	52	30.7	35	21.1	35	14.9	25	--	--
Russell 2000 Growth			5.5	77	15.8	78	21.1	79	18.0	73	12.1	75	12.7	83
Over/Under			2.1		5.3		9.6		3.1		2.8			
eV US Small Cap Growth Equity Gross Median			7.8		21.3		27.1		19.8		13.5		14.4	

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Domestic Passive Equity</b>	<b>1,674,290,701</b>	<b>9.9</b>	<b>6.7</b>	--	<b>9.0</b>	--	<b>15.0</b>	--	<b>15.7</b>	--	<b>12.8</b>	--	--	--
S&P 500			7.7	--	10.6	--	17.9	--	17.3	--	13.9	--	12.0	--
Over/Under			-1.0		-1.6		-2.9		-1.6		-1.1			
Northern Trust Russell 1000	658,763,888	3.9	7.4	--	10.7	--	--	--	--	--	--	--	--	--
Russell 1000			7.4	--	10.5	--	17.8	--	17.1	--	13.7	--	12.1	--
Over/Under			0.0		0.2									
Sci Beta US HFE MBMS	1,015,526,813	6.0	6.3	--	7.9	--	--	--	--	--	--	--	--	--
S&P 500			7.7	--	10.6	--	17.9	--	17.3	--	13.9	--	12.0	--
Over/Under			-1.4		-2.7									
<b>International Equity Composite</b>	<b>3,138,644,899</b>	<b>18.6</b>	<b>-0.4</b>	<b>73</b>	<b>-2.2</b>	<b>47</b>	<b>3.4</b>	<b>41</b>	<b>10.3</b>	<b>59</b>	<b>5.5</b>	<b>59</b>	<b>6.5</b>	<b>68</b>
MSCI ACWI ex USA			0.7	42	-3.1	64	1.8	61	10.0	65	4.1	85	5.2	89
Over/Under			-1.1		0.9		1.6		0.3		1.4		1.3	
eV All ACWI ex-US Equity Gross Median			0.5		-2.4		2.5		11.0		6.1		7.5	
Causeway - Value	466,906,356	2.8	0.2	61	-5.2	85	0.6	58	9.5	54	4.4	80	6.8	47
MSCI EAFE			1.4	37	-1.4	24	2.7	26	9.2	57	4.4	77	5.4	74
Over/Under			-1.2		-3.8		-2.1		0.3		0.0		1.4	
eV EAFE Value Equity Gross Median			0.8		-3.0		1.3		9.7		5.0		6.6	
Allianz Intl	997,711,352	5.9	0.3	56	-3.7	72	1.3	69	--	--	--	--	--	--
MSCI ACWI ex USA			0.7	43	-3.1	65	1.8	63	10.0	66	4.1	85	5.2	90
Over/Under			-0.4		-0.6		-0.5							
eV ACWI ex-US Equity Unhedged Gross Median			0.5		-2.4		2.6		11.1		6.2		7.6	
Wellington Intl	501,009,291	3.0	0.9	36	3.2	10	8.5	11	--	--	--	--	--	--
MSCI ACWI ex USA			0.7	43	-3.1	65	1.8	63	10.0	66	4.1	85	5.2	90
Over/Under			0.2		6.3		6.7							
eV ACWI ex-US Equity Unhedged Gross Median			0.5		-2.4		2.6		11.1		6.2		7.6	
Northern Trust Intl - Liquidating	15	0.0												
<b>International Small Cap Equity</b>	<b>1,173,017,885</b>	<b>6.9</b>	<b>-1.8</b>	<b>64</b>	<b>-2.0</b>	<b>50</b>	<b>4.1</b>	<b>55</b>	<b>10.4</b>	<b>80</b>	<b>6.6</b>	<b>63</b>	--	--
MSCI ACWI ex USA			0.7	14	-3.1	60	1.8	63	10.0	84	4.1	99	5.2	99
Over/Under			-2.5		1.1		2.3		0.4		2.5			
eV ACWI ex-US Small Cap Equity Gross Median			-1.4		-2.0		4.9		13.2		8.2		11.1	

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Advisory Research Int'l Small Cap	933,604	0.0	0.2	26	-2.7	56	-1.8	86	7.0	94	4.6	99	--	--
<i>MSCI ACWI ex USA</i>			<u>0.7</u>	14	<u>-3.1</u>	60	<u>1.8</u>	63	<u>10.0</u>	84	<u>4.1</u>	99	<u>5.2</u>	99
Over/Under			<u>-0.5</u>		<u>0.4</u>		<u>-3.6</u>		<u>-3.0</u>		0.5			
EPOCH Int'l Small Cap	282,703,073	1.7	-4.2	97	-3.5	65	2.3	59	10.2	82	6.2	80	--	--
<i>MSCI ACWI ex USA</i>			<u>0.7</u>	14	<u>-3.1</u>	60	<u>1.8</u>	63	<u>10.0</u>	84	<u>4.1</u>	99	<u>5.2</u>	99
Over/Under			<u>-4.9</u>		<u>-0.4</u>		0.5		0.2		2.1			
Wasatch Int'l Small Cap	327,066,147	1.9	1.8	8	9.1	6	14.5	6	14.7	25	9.1	38	--	--
<i>MSCI ACWI ex USA</i>			<u>0.7</u>	14	<u>-3.1</u>	60	<u>1.8</u>	63	<u>10.0</u>	84	<u>4.1</u>	99	<u>5.2</u>	99
Over/Under			1.1		12.2		12.7		4.7		5.0			
Wellington Int'l Small Cap	288,001,953	1.7	-2.1	66	-5.1	77	1.3	67	9.0	89	6.2	80	--	--
<i>MSCI ACWI ex USA</i>			<u>0.7</u>	14	<u>-3.1</u>	60	<u>1.8</u>	63	<u>10.0</u>	84	<u>4.1</u>	99	<u>5.2</u>	99
Over/Under			<u>-2.8</u>		<u>-2.0</u>		<u>-0.5</u>		<u>-1.0</u>		2.1			
<i>eV ACWI ex-US Small Cap Equity Gross Median</i>			<u>-1.4</u>		<u>-2.0</u>		4.9		13.2		8.2		11.1	
SSGA Emerging Market Small Cap	274,313,108	1.6	-3.1	86	-8.4	93	-1.7	85	--	--	--	--	--	--
<i>MSCI Emerging Markets Small Cap Gross</i>			<u>-4.0</u>	94	<u>-12.1</u>	99	<u>-3.9</u>	91	<u>7.7</u>	93	<u>3.0</u>	99	<u>7.7</u>	99
Over/Under			0.9		3.7		2.2							
<i>eV ACWI ex-US Small Cap Equity Gross Median</i>			<u>-1.4</u>		<u>-2.0</u>		4.9		13.2		8.2		11.1	
<b>Fixed Composite</b>	<b>3,454,586,522</b>	<b>20.5</b>	<b>0.4</b>	<b>59</b>	<b>-1.1</b>	<b>74</b>	<b>0.1</b>	<b>51</b>	<b>4.0</b>	<b>28</b>	<b>4.0</b>	<b>31</b>	<b>6.9</b>	<b>22</b>
<i>BBgBarc US Aggregate TR</i>			<u>0.0</u>	83	<u>-1.6</u>	84	<u>-1.2</u>	89	<u>1.3</u>	77	<u>2.2</u>	65	<u>3.8</u>	64
Over/Under			0.4		0.5		1.3		2.7		1.8		3.1	
<i>eV All US Fixed Inc Gross Median</i>			0.5		-0.2		0.1		2.1		2.7		4.5	
Loomis Sayles Core Plus	674,823,580	4.0	0.5	41	-0.4	17	0.4	13	4.0	7	3.6	20	7.1	6
<i>BBgBarc US Aggregate TR</i>			<u>0.0</u>	90	<u>-1.6</u>	86	<u>-1.2</u>	91	<u>1.3</u>	99	<u>2.2</u>	98	<u>3.8</u>	99
Over/Under			0.5		1.2		1.6		2.7		1.4		3.3	
Mackay Shields Core Plus	647,337,221	3.8	0.7	17	-1.6	84	-1.0	87	2.4	67	2.5	93	5.3	60
<i>BBgBarc US Aggregate TR</i>			<u>0.0</u>	90	<u>-1.6</u>	86	<u>-1.2</u>	91	<u>1.3</u>	99	<u>2.2</u>	98	<u>3.8</u>	99
Over/Under			0.7		0.0		0.2		1.1		0.3		1.5	

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Lord Abbett Core Plus	661,995,296	3.9	0.4	53	-1.1	57	-0.6	69	2.5	59	3.1	56	5.5	48
BBgBarc US Aggregate TR			0.0	90	-1.6	86	-1.2	91	1.3	99	2.2	98	3.8	99
Over/Under			0.4		0.5		0.6		1.2		0.9		1.7	
eV US Core Plus Fixed Inc Gross Median			0.4		-1.1		-0.4		2.6		3.1		5.5	
Hoisington Long Bonds	517,111,984	3.1	-3.9	96	-6.8	95	-3.6	96	0.5	99	5.2	82	6.2	95
BBgBarc US Aggregate TR			0.0	55	-1.6	2	-1.2	6	1.3	98	2.2	99	3.8	99
Over/Under			-3.9		-5.2		-2.4		-0.8		3.0		2.4	
eV US Long Duration Fixed Inc Gross Median			0.3		-5.3		-2.3		4.4		5.7		8.3	
Loomis High Yield	303,763,778	1.8	2.1	70	2.0	71	2.7	66	7.5	43	5.3	54	--	--
ICE BofAML US High Yield TR			2.4	34	2.5	47	2.9	57	8.2	22	5.5	41	9.4	23
Over/Under			-0.3		-0.5		-0.2		-0.7		-0.2			
Lord Abbett High Yield	326,716,338	1.9	2.9	3	1.9	74	3.2	50	8.6	15	6.7	8	--	--
ICE BofAML US High Yield TR			2.4	34	2.5	47	2.9	57	8.2	22	5.5	41	9.4	23
Over/Under			0.5		-0.6		0.3		0.4		1.2			
Mackay High Yield	322,838,325	1.9	2.5	30	2.7	39	3.5	36	8.4	16	6.3	15	--	--
ICE BofAML US High Yield TR			2.4	34	2.5	47	2.9	57	8.2	22	5.5	41	9.4	23
Over/Under			0.1		0.2		0.6		0.2		0.8			
eV US High Yield Fixed Inc Gross Median			2.3		2.5		3.1		7.3		5.4		8.9	
<b>Total Private Equity</b>	<b>1,416,986,219</b>	<b>8.4</b>	<b>6.7</b>	--	<b>16.9</b>	--	<b>20.0</b>	--	<b>15.3</b>	--	<b>16.4</b>	--	--	--
Cambridge Associates US All PE			0.0	--	8.7	--	14.2	--	13.2	--	12.7	--	11.7	--
Over/Under			6.7		8.2		5.8		2.1		3.7			
Legacy LP - Aldus PE	22,208,445	0.1	4.3	--	-1.0	--	0.6	--	5.2	--	6.8	--	5.4	--
Pimco Bravo	4,451,645	0.0	-5.3	--	105.3	--	95.3	--	22.4	--	23.1	--	--	--
PIMCO Bravo 2	116,261,168	0.7	2.3	--	4.9	--	6.0	--	8.8	--	13.4	--	--	--
OK - OTRS/Franklin Park	1,160,827,543	6.9	7.3	--	18.9	--	22.4	--	17.1	--	17.3	--	--	--
Pimco COF II	50,258,481	0.3	6.5	--	9.9	--	15.7	--	--	--	--	--	--	--
PIMCO Bravo 3	62,978,937	0.4	6.2	--	14.2	--	17.0	--	--	--	--	--	--	--

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Master Limited Partnerships</b>	<b>774,153,833</b>	<b>4.6</b>	<b>1.5</b>	--	<b>0.7</b>	--	<b>1.8</b>	--	<b>4.3</b>	--	<b>1.0</b>	--	--	--
Alerian MLP Index			<u>6.6</u>	--	<u>5.9</u>	--	<u>4.9</u>	--	<u>4.4</u>	--	<u>-2.7</u>	--	<u>9.2</u>	--
Over/Under			<u>-5.1</u>		<u>-5.2</u>		<u>-3.1</u>		<u>-0.1</u>		<u>3.7</u>			
Chickasaw Capital Management	288,057,424	1.7	<u>2.4</u>	--	<u>-0.9</u>	--	<u>-1.0</u>	--	<u>4.6</u>	--	<u>2.7</u>	--	--	--
Alerian MLP Index			<u>6.6</u>	--	<u>5.9</u>	--	<u>4.9</u>	--	<u>4.4</u>	--	<u>-2.7</u>	--	<u>9.2</u>	--
Over/Under			<u>-4.2</u>		<u>-6.8</u>		<u>-5.9</u>		<u>0.2</u>		<u>5.4</u>			
Swank Capital Cushing	486,096,409	2.9	<u>0.9</u>	--	<u>1.7</u>	--	<u>3.6</u>	--	<u>5.1</u>	--	<u>2.0</u>	--	--	--
Alerian MLP Index			<u>6.6</u>	--	<u>5.9</u>	--	<u>4.9</u>	--	<u>4.4</u>	--	<u>-2.7</u>	--	<u>9.2</u>	--
Over/Under			<u>-5.7</u>		<u>-4.2</u>		<u>-1.3</u>		<u>0.7</u>		<u>4.7</u>			
<b>Total Core Real Estate</b>	<b>1,222,018,237</b>	<b>7.2</b>	<b>2.1</b>	--	<b>5.8</b>	--	<b>7.2</b>	--	<b>8.7</b>	--	<b>10.1</b>	--	--	--
NCREIF Property Index			<u>1.7</u>	--	<u>5.3</u>	--	<u>7.2</u>	--	<u>7.8</u>	--	<u>9.6</u>	--	<u>6.4</u>	--
Over/Under			<u>0.4</u>		<u>0.5</u>		<u>0.0</u>		<u>0.9</u>		<u>0.5</u>			
L & B Real Estate	282,223,386	1.7	<u>2.2</u>	--	<u>5.9</u>	--	<u>7.7</u>	--	<u>9.7</u>	--	<u>11.0</u>	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
Over/Under			<u>0.1</u>		<u>-0.6</u>		<u>-1.0</u>		<u>0.9</u>		<u>0.3</u>			
Heitman Real Estate	313,839,021	1.9	<u>1.1</u>	--	<u>6.5</u>	--	<u>8.6</u>	--	<u>9.9</u>	--	<u>10.8</u>	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
Over/Under			<u>-1.0</u>		<u>0.0</u>		<u>-0.1</u>		<u>1.1</u>		<u>0.1</u>			
AEW Real Estate	304,687,813	1.8	<u>3.1</u>	--	<u>6.7</u>	--	<u>6.8</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
Over/Under			<u>1.0</u>		<u>0.2</u>		<u>-1.9</u>		<u>-0.5</u>		<u>-0.9</u>			
L & B Gold Driller	69,305,473	0.4	<u>0.0</u>	--	<u>0.0</u>	--	<u>0.0</u>	--	<u>1.8</u>	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
Over/Under			<u>-2.1</u>		<u>-6.5</u>		<u>-8.7</u>		<u>-7.0</u>					
Greenoak Real Estate II	41,950,775	0.2	<u>6.8</u>	--	<u>8.8</u>	--	<u>8.3</u>	--	<u>7.3</u>	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
Over/Under			<u>4.7</u>		<u>2.3</u>		<u>-0.4</u>		<u>-1.5</u>					
Greenoak Real Estate III	6,027,793	0.0	<u>-26.7</u>	--	--	--	--	--	--	--	--	--	--	--

Returns are gross of manager fees.



## Oklahoma Teachers

# TOTAL FUND PERFORMANCE DETAIL

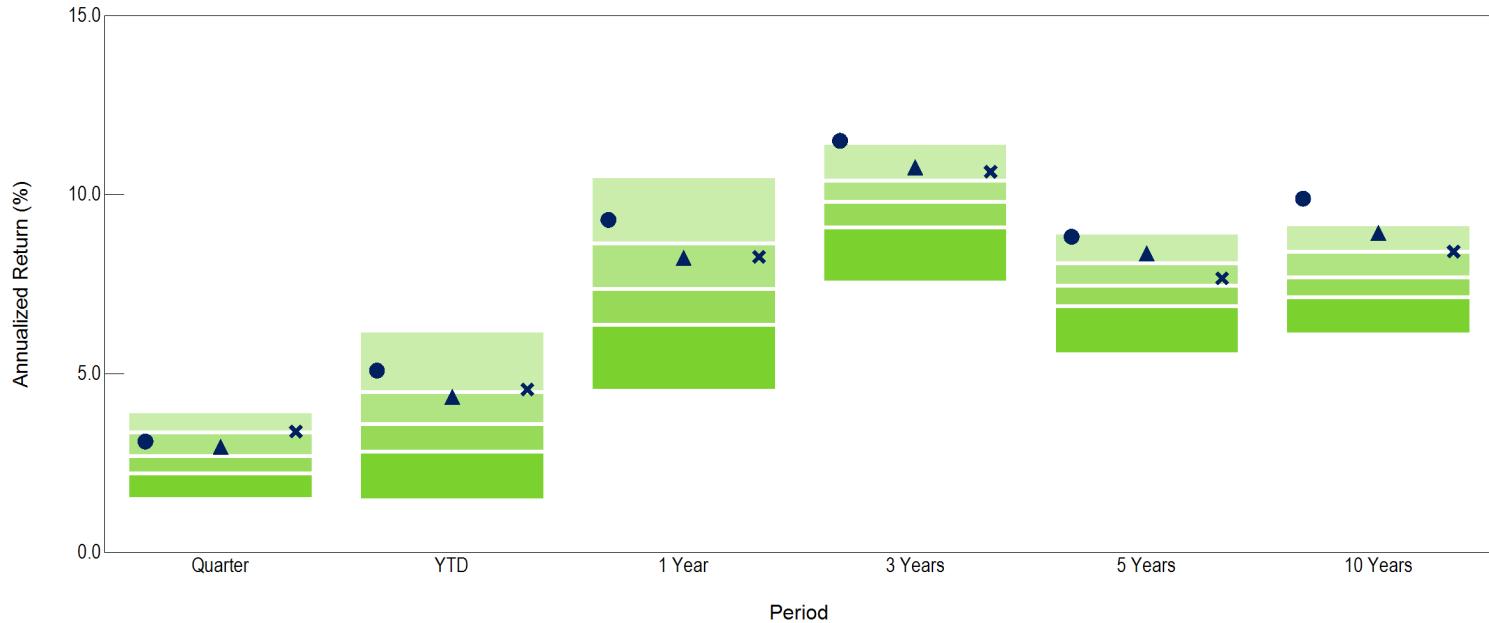
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Lyrical-OTRS Realty Partner IV	43,303,205	0.3	-1.5	--	-1.0	--	-2.7	--	-4.8	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
<i>Over/Under</i>			<u>-3.6</u>		<u>-7.5</u>		<u>-11.4</u>		<u>-13.6</u>					
Dune Real Estate	53,157,288	0.3	4.9	--	7.6	--	12.4	--	10.6	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
<i>Over/Under</i>			2.8		1.1		3.7		1.8					
Landmark Realty	21,683,575	0.1	1.0	--	3.0	--	7.7	--	20.6	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
<i>Over/Under</i>			<u>-1.1</u>		<u>-3.5</u>		<u>-1.0</u>		11.8					
American Realty	60,452,472	0.4	2.8	--	7.6	--	10.3	--	12.0	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
<i>Over/Under</i>			0.7		1.1		1.6		3.2					
Starwood Capital	23,379,698	0.1	6.3	--	13.0	--	18.6	--	--	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--	<u>5.6</u>	--
<i>Over/Under</i>			4.2		6.5		9.9							
Starwood Opportunity XI	2,007,738	0.0	--	--	--	--	--	--	--	--	--	--	--	--
<i>NCREIF ODCE</i>					<u>2.1</u>	--	<u>6.5</u>	--	<u>8.7</u>	--	<u>8.8</u>	--	<u>10.7</u>	--
<i>Over/Under</i>													<u>5.6</u>	--

Returns are gross of manager fees.



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK TEACHERS vs. InvestorForce Public DB Gross

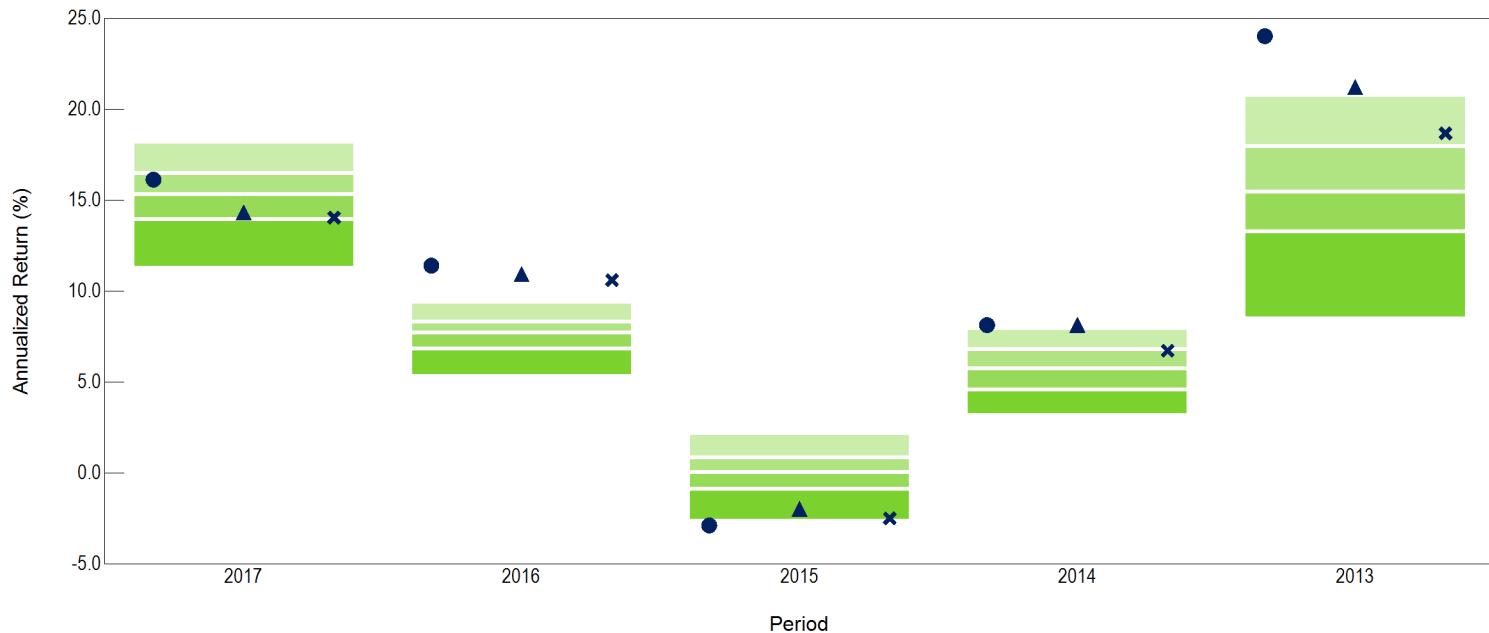


	Return (Rank)								
5th Percentile	3.9	6.2	10.5	11.4	8.9	9.2			
25th Percentile	3.4	4.5	8.6	10.4	8.1	8.4			
Median	2.7	3.6	7.4	9.8	7.5	7.7			
75th Percentile	2.2	2.8	6.4	9.1	6.9	7.2			
95th Percentile	1.5	1.5	4.5	7.6	5.6	6.1			
# of Portfolios	267	266	265	255	240	208			
● OK TEACHERS	3.1	(32)	5.1	(15)	9.3	(15)	11.5	(5)	8.8
▲ TEACHERS Allocation Index	3.0	(38)	4.4	(31)	8.2	(32)	10.8	(15)	8.4
✖ TEACHERS Policy Index	3.4	(25)	4.6	(23)	8.3	(32)	10.6	(18)	7.7



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK TEACHERS vs. InvestorForce Public DB Gross



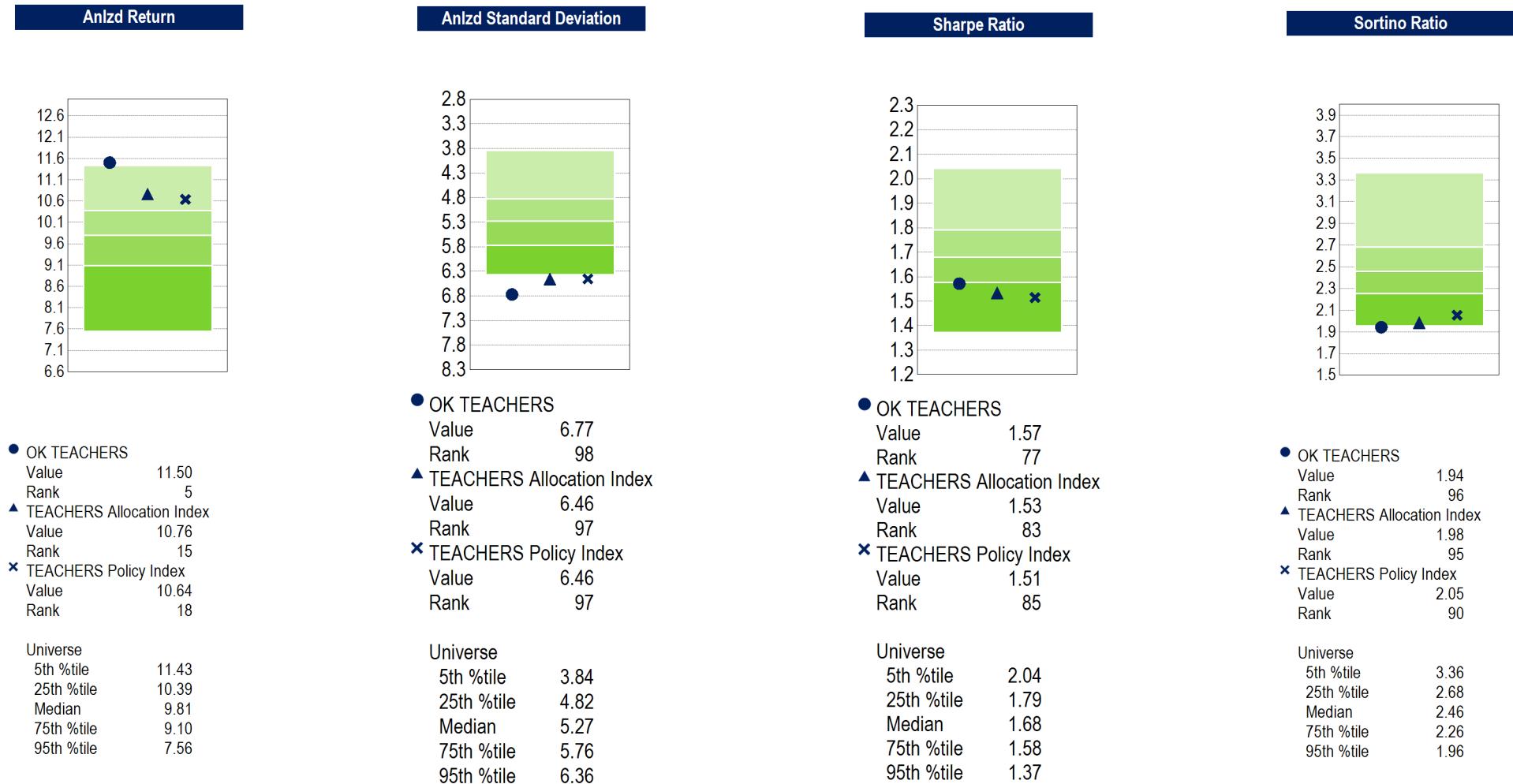
	Return (Rank)							
5th Percentile	18.2		9.4		2.2		8.0	20.8
25th Percentile	16.5		8.4		0.9		6.8	18.0
Median	15.3		7.7		0.1		5.8	15.5
75th Percentile	14.0		6.9		-0.9		4.6	13.3
95th Percentile	11.3		5.3		-2.6		3.2	8.5
# of Portfolios	304		305		316		248	231
● OK TEACHERS	16.1	(34)	11.4	(1)	-2.9	(97)	8.1	(4)
▲ TEACHERS Allocation Index	14.3	(70)	11.0	(1)	-2.0	(89)	8.2	(4)
✖ TEACHERS Policy Index	14.1	(74)	10.6	(1)	-2.5	(95)	6.7	(28)



## Oklahoma Teachers

# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK TEACHERS vs. InvestorForce Public DB Gross  
3 Years



## Oklahoma Teachers

# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

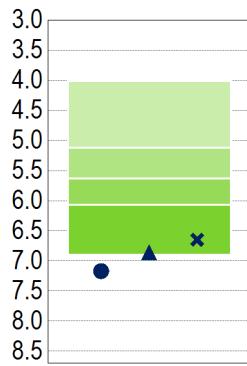
OK TEACHERS vs. InvestorForce Public DB Gross  
5 Years

Anlzd Return



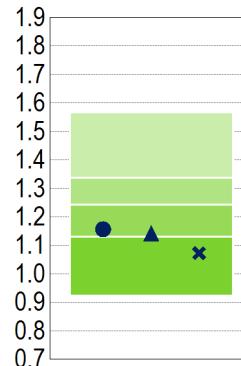
- OK TEACHERS  
Value 8.82  
Rank 8
- ▲ TEACHERS Allocation Index  
Value 8.36  
Rank 18
- ✖ TEACHERS Policy Index  
Value 7.66  
Rank 42

Anlzd Standard Deviation



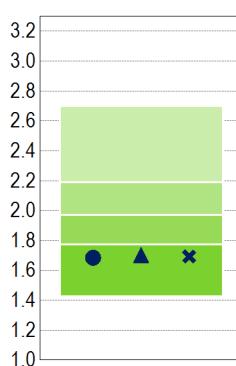
- OK TEACHERS  
Value 7.17  
Rank 98
- ▲ TEACHERS Allocation Index  
Value 6.86  
Rank 95
- ✖ TEACHERS Policy Index  
Value 6.65  
Rank 94

Sharpe Ratio



- OK TEACHERS  
Value 1.16  
Rank 73
- ▲ TEACHERS Allocation Index  
Value 1.14  
Rank 74
- ✖ TEACHERS Policy Index  
Value 1.07  
Rank 86

Sortino Ratio



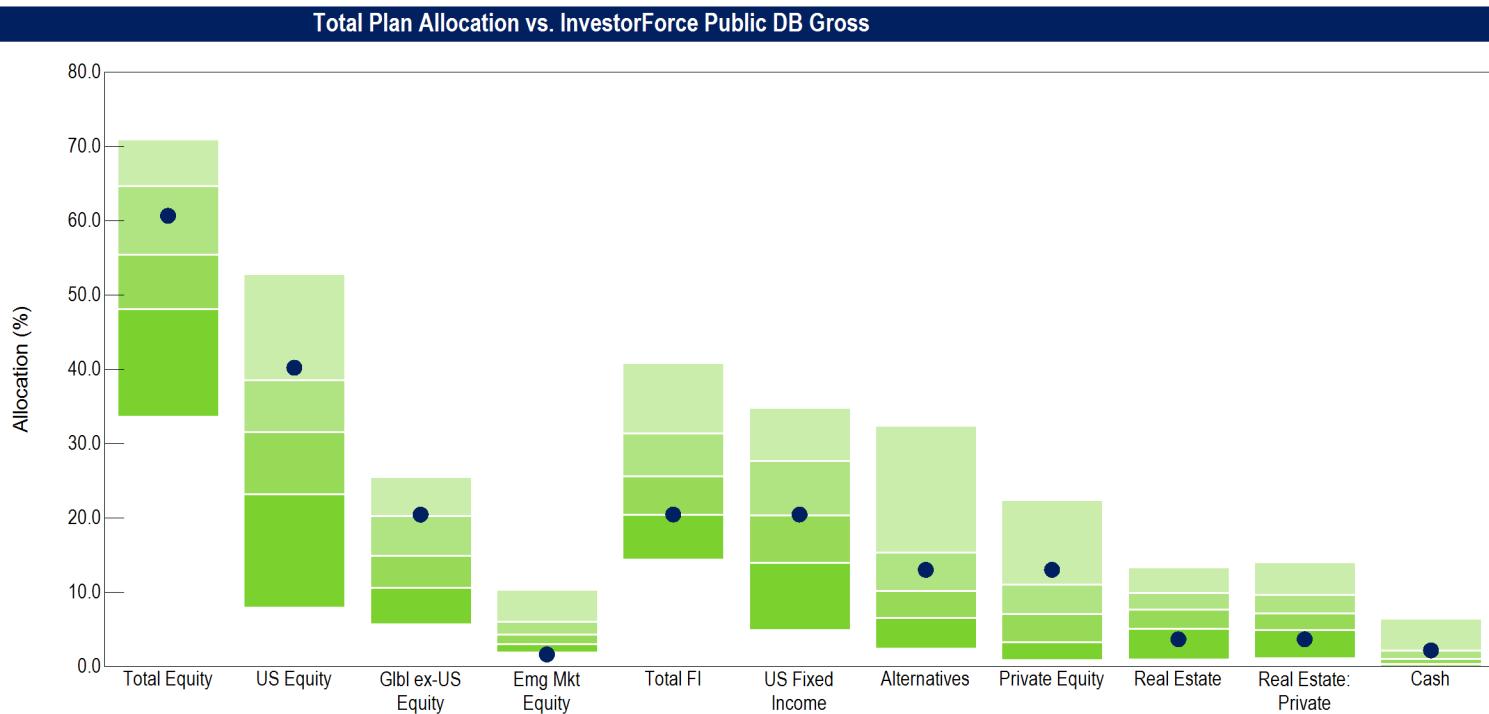
- OK TEACHERS  
Value 1.68  
Rank 83
- ▲ TEACHERS Allocation Index  
Value 1.70  
Rank 83
- ✖ TEACHERS Policy Index  
Value 1.69  
Rank 83

Universe	5th %tile	15th %tile
5th %tile	8.93	4.02
25th %tile	8.09	5.11
Median	7.47	5.62
75th %tile	6.89	6.06
95th %tile	5.55	6.89

Universe	5th %tile	25th %tile	Median	75th %tile	95th %tile
5th %tile	2.70				
25th %tile	2.19				
Median	1.98				
75th %tile	1.78				
95th %tile	1.43				



# TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE



	Allocation (Rank)												
5th Percentile	71.0	52.8	25.5	10.3	40.9	34.8	32.4	22.4	13.4	14.1	6.4	--	--
25th Percentile	64.7	38.6	20.3	6.1	31.4	27.8	15.5	11.1	10.0	9.7	2.2	--	--
Median	55.5	31.6	15.0	4.4	25.7	20.4	10.3	7.2	7.7	7.2	1.1	--	--
75th Percentile	48.2	23.3	10.7	3.1	20.5	14.1	6.6	3.4	5.2	5.0	0.4	--	--
95th Percentile	33.7	8.0	5.7	1.9	14.5	5.0	2.5	1.0	1.1	1.2	0.1	--	--
# of Portfolios	252	184	211	114	251	173	163	117	172	127	234	--	--
● OK TEACHERS	60.7 (37)	40.2 (20)	20.5 (25)	1.6 (97)	20.5 (76)	20.5 (50)	13.0 (36)	13.0 (21)	3.7 (87)	3.7 (86)	2.2 (26)	--	--



# OK TEACHERS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return	3.1%	5.1%	9.3%
Wtd. Index Return *	3.4%	4.6%	8.3%
<b>Excess Return</b>	<b>-0.3%</b>	<b>0.5%</b>	<b>1.0%</b>
Selection Effect	-0.4%	0.1%	0.4%
Allocation Effect	0.0%	0.0%	0.0%
Interaction Effect	0.2%	0.4%	0.6%
Returns by Asset Class			
OK TEACHERS	3.1%	5.1%	9.3%
Total Equity Composite	3.9%	6.1%	12.3%
U.S. Equity Comp	6.0%	10.5%	17.0%
Domestic Passive Equity	6.7%	9.0%	15.0%
International Equity Composite	-0.4%	-2.2%	3.4%
International Small Cap Equity	-1.8%	-2.0%	4.1%
Fixed Composite	0.4%	-1.1%	0.1%
Total Private Equity	6.7%	16.9%	20.0%
Master Limited Partnerships	1.5%	0.7%	1.8%
Total Core Real Estate	2.1%	5.8%	7.2%
Other	0.5%	1.3%	1.6%

\*Calculated from benchmark returns and weightings of each component.



# OKLAHOMA PERS



## Oklahoma PERS

# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK PERS	\$9,896,822,719	3.0%	37	3.0%	69	7.4%	49	10.3%	30	7.9%	37	8.5%	21
PERS Allocation Index		2.9%	43	2.8%	76	7.0%	61	10.2%	35	7.7%	42	8.2%	31
PERS Policy Index		2.8%	46	2.8%	76	7.0%	61	10.3%	30	7.7%	41	8.1%	35
InvestorForce Public DB Gross Median		2.7%		3.6%		7.4%		9.8%		7.5%		7.7%	

Quarterly and Cumulative Excess Performance



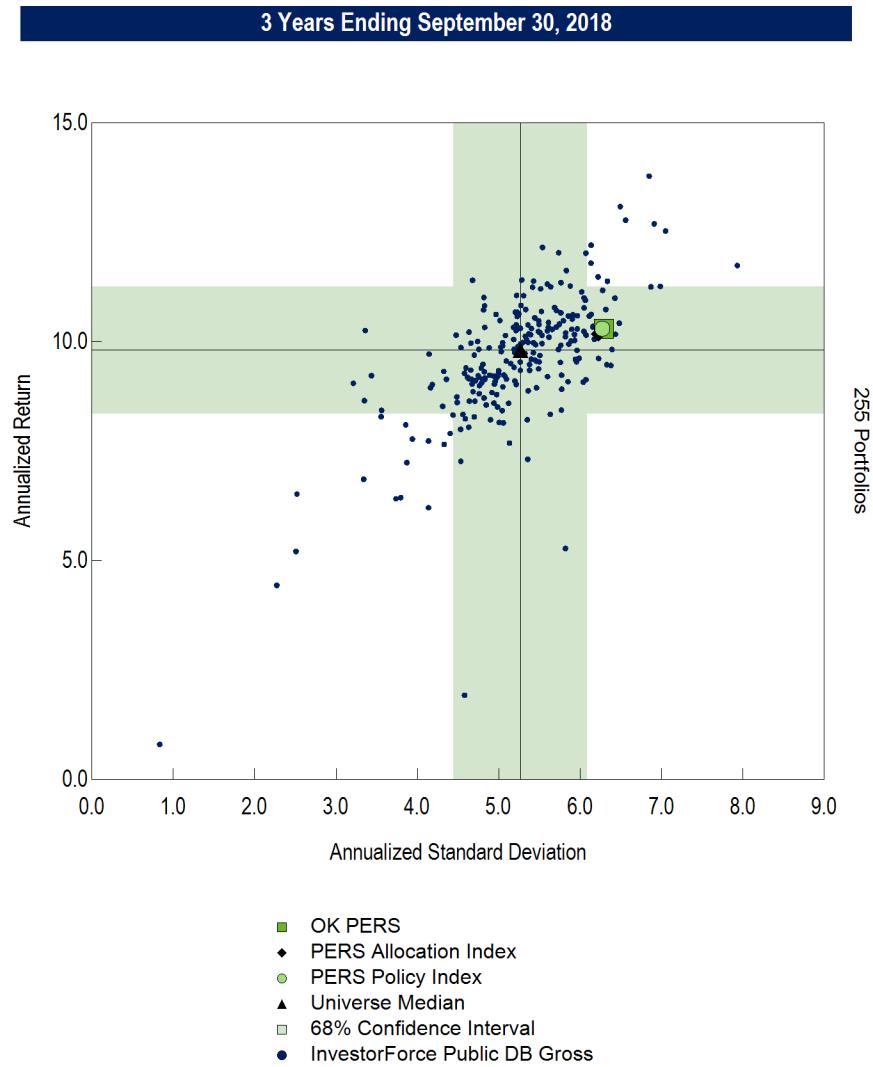
Actual vs Target Allocation (%)



Returns are gross of manager fees.



# TOTAL FUND RISK/RETURN - 3 YEARS

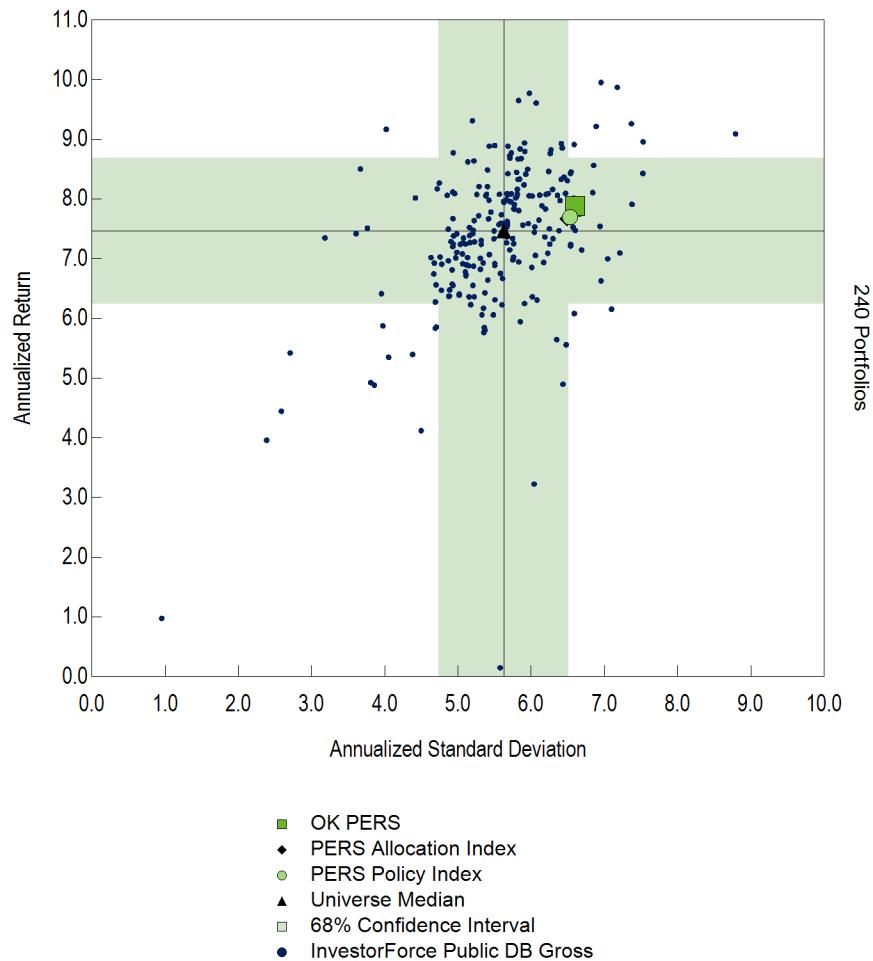


3 Years Ending September 30, 2018				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK PERS	10.30%	30	6.30%	94
PERS Allocation Index	10.18%	35	6.23%	93
PERS Policy Index	10.30%	30	6.27%	94

3 Years Ending September 30, 2018				
	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK PERS	1.50	87	2.27	75
PERS Allocation Index	1.50	87	2.15	86
PERS Policy Index	1.50	86	2.22	78

# TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2018



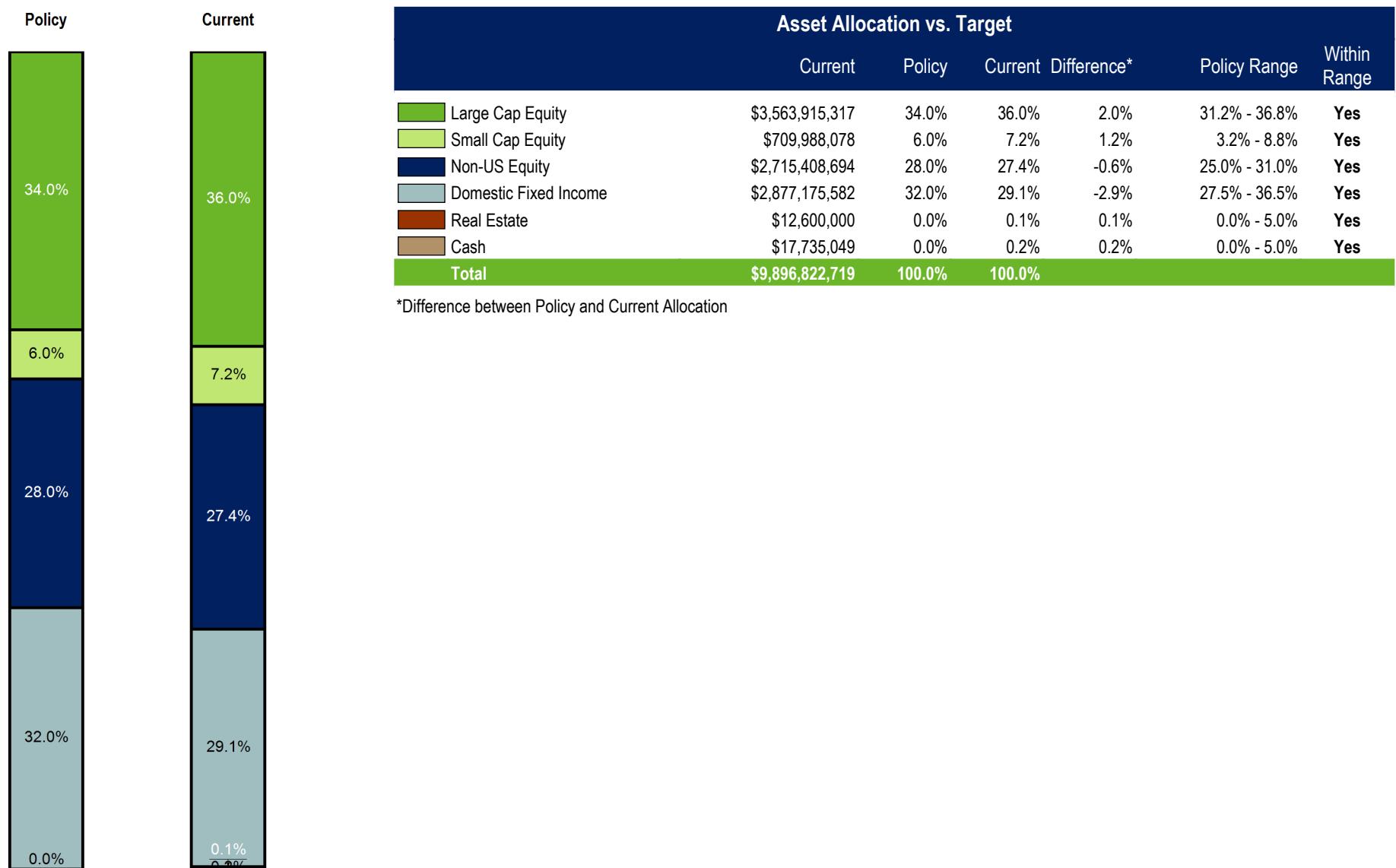
5 Years Ending September 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK PERS	7.88%	37	6.60%	93
PERS Allocation Index	7.67%	42	6.49%	89
PERS Policy Index	7.70%	41	6.53%	89

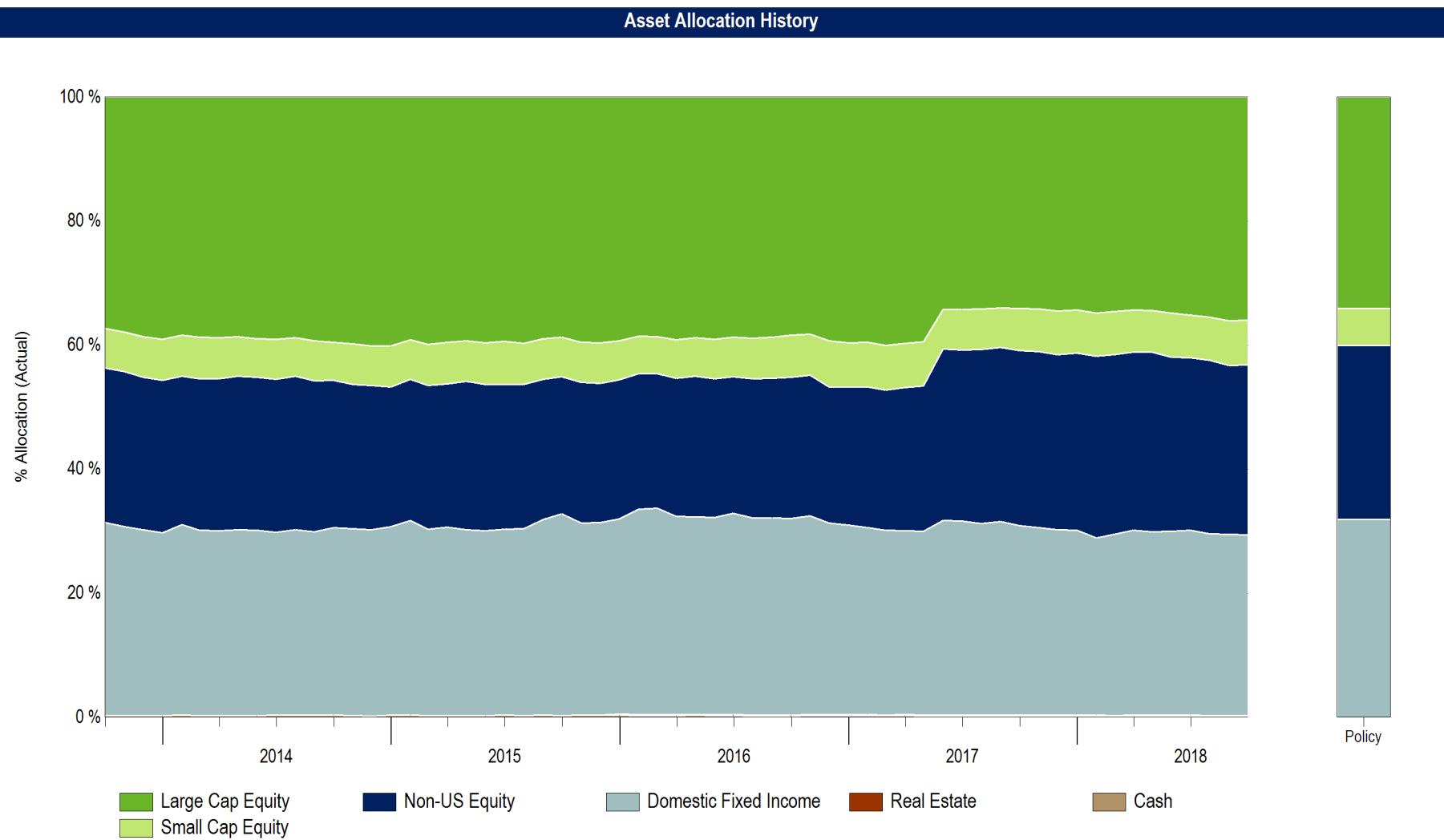
5 Years Ending September 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK PERS	1.12	80	1.77	77
PERS Allocation Index	1.10	83	1.73	79
PERS Policy Index	1.10	83	1.73	80

# TOTAL FUND ASSET ALLOCATION VS. POLICY



# TOTAL FUND ASSET ALLOCATION HISTORY



## Oklahoma PERS

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>OK PERS</b>	<b>9,896,822,719</b>	<b>100.0</b>	<b>3.0</b>	<b>37</b>	<b>3.0</b>	<b>69</b>	<b>7.4</b>	<b>49</b>	<b>10.3</b>	<b>30</b>	<b>7.9</b>	<b>37</b>	<b>8.5</b>	<b>21</b>
PERS Allocation Index			2.9	43	2.8	76	7.0	61	10.2	35	7.7	42	8.2	31
Over/Under			0.1		0.2		0.4		0.1		0.2		0.3	
PERS Policy Index			2.8	46	2.8	76	7.0	61	10.3	30	7.7	41	8.1	35
InvestorForce Public DB Gross Median			2.7		3.6		7.4		9.8		7.5		7.7	
<b>Domestic Equity Composite</b>	<b>4,273,903,395</b>	<b>43.2</b>	<b>6.9</b>	<b>39</b>	<b>10.5</b>	<b>43</b>	<b>17.6</b>	<b>40</b>	<b>17.0</b>	<b>40</b>	<b>13.4</b>	<b>35</b>	<b>12.2</b>	<b>53</b>
Domestic Equity Benchmark			6.9	37	10.6	41	17.5	41	17.1	38	13.4	35	12.0	58
Over/Under			0.0		-0.1		0.1		-0.1		0.0		0.2	
eV All US Equity Gross Median			5.9		9.2		15.6		16.0		12.5		12.3	
Aronson Johnson & Ortiz	311,407,625	3.1	4.6	76	3.6	76	11.3	56	11.9	89	10.3	77	10.5	61
Russell 1000 Value			5.7	53	3.9	71	9.5	76	13.6	73	10.7	68	9.8	82
Over/Under			-1.1		-0.3		1.8		-1.7		-0.4		0.7	
eV US Large Cap Value Equity Gross Median			5.8		5.2		11.8		14.6		11.4		10.8	
Mellon	585,718,055	5.9	5.6	83	8.8	61	15.1	69	15.6	64	13.0	62	11.8	54
Russell 1000			7.4	45	10.5	38	17.8	41	17.1	29	13.7	43	12.1	45
Over/Under			-1.8		-1.7		-2.7		-1.5		-0.7		-0.3	
State Street Enhanced Index	591,730,664	6.0	7.8	36	9.7	46	17.2	47	16.4	43	14.2	27	12.0	48
Russell 1000			7.4	45	10.5	38	17.8	41	17.1	29	13.7	43	12.1	45
Over/Under			0.4		-0.8		-0.6		-0.7		0.5		-0.1	
Blackrock Russell 1000	1,724,656,797	17.4	7.4	45	10.5	38	17.8	41	17.1	29	13.7	43	--	--
Russell 1000			7.4	45	10.5	38	17.8	41	17.1	29	13.7	43	12.1	45
Over/Under			0.0		0.0		0.0		0.0		0.0		0.0	
eV US Large Cap Core Equity Gross Median			7.2		9.5		17.0		16.2		13.4		11.9	
UBS Global Asset Mgmt	242,620,267	2.5	9.6	27	27.1	27	35.2	22	19.9	49	13.1	61	14.4	47
Russell 2000 Growth			5.5	77	15.8	78	21.1	79	18.0	73	12.1	75	12.7	83
Over/Under			4.1		11.3		14.1		1.9		1.0		1.7	
eV US Small Cap Growth Equity Gross Median			7.8		21.3		27.1		19.8		13.5		14.4	

Domestic Equity Benchmark is 86.4% Russell 1000 and 13.6% Russell 2000.

Returns are gross of manager fees.



## Oklahoma PERS

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Barrow Hanley	234,123,003	2.4	4.3	14	7.7	30	12.3	27	18.2	18	12.1	19	15.3	2
Russell 2000 Value			<u>1.6</u>	49	<u>7.1</u>	33	<u>9.3</u>	49	<u>16.1</u>	35	<u>9.9</u>	66	<u>9.5</u>	94
Over/Under			2.7		0.6		3.0		2.1		2.2		5.8	
DePrince Race & Zollo	233,244,808	2.4	4.6	12	2.8	82	10.7	38	18.3	17	10.3	59	--	--
Russell 2000 Value			<u>1.6</u>	49	<u>7.1</u>	33	<u>9.3</u>	49	<u>16.1</u>	35	<u>9.9</u>	66	<u>9.5</u>	94
Over/Under			3.0		<u>-4.3</u>		1.4		2.2		0.4			
eV US Small Cap Value Equity Gross Median			1.6		5.4		9.1		15.1		10.7		11.8	
Westfield	350,402,176	3.5	8.2	52	17.4	44	24.4	52	--	--	--	--	--	--
Russell 1000 Growth			<u>9.2</u>	27	<u>17.1</u>	47	<u>26.3</u>	39	<u>20.6</u>	25	<u>16.6</u>	34	<u>14.3</u>	34
Over/Under			<u>-1.0</u>		0.3		<u>-1.9</u>							
eV US Large Cap Growth Equity Gross Median			8.3		16.5		24.5		19.0		15.8		13.7	
<b>Domestic Fixed Income Composite</b>	<b>2,877,175,582</b>	<b>29.1</b>	<b>-0.4</b>	<b>96</b>	<b>-1.8</b>	<b>88</b>	<b>-1.0</b>	<b>84</b>	<b>1.6</b>	<b>63</b>	<b>2.7</b>	<b>51</b>	<b>4.6</b>	<b>47</b>
BBgBarc US Aggregate TR			<u>0.0</u>	83	<u>-1.6</u>	84	<u>-1.2</u>	89	<u>1.3</u>	77	<u>2.2</u>	65	<u>3.8</u>	64
Over/Under			<u>-0.4</u>		<u>-0.2</u>		0.2		0.3		0.5		0.8	
eV All US Fixed Inc Gross Median			0.5		-0.2		0.1		2.1		2.7		4.5	
Blackrock	1,408,164,092	14.2	0.1	66	-1.4	61	-1.0	74	1.7	63	2.4	65	4.3	70
BBgBarc US Aggregate TR			<u>0.0</u>	87	<u>-1.6</u>	82	<u>-1.2</u>	89	<u>1.3</u>	90	<u>2.2</u>	91	<u>3.8</u>	95
Over/Under			0.1		0.2		0.2		0.4		0.2		0.5	
Met West	854,478,634	8.6	0.1	79	-1.1	26	-0.6	31	1.7	53	2.5	55	5.3	14
BBgBarc US Aggregate TR			<u>0.0</u>	87	<u>-1.6</u>	82	<u>-1.2</u>	89	<u>1.3</u>	90	<u>2.2</u>	91	<u>3.8</u>	95
Over/Under			0.1		0.5		0.6		0.4		0.3		1.5	
eV US Core Fixed Inc Gross Median			0.2		-1.3		-0.8		1.8		2.6		4.6	
Hoisington	307,668,452	3.1	-3.7	96	-6.8	95	-3.5	95	0.7	99	5.7	54	6.3	94
BBgBarc US Treasury Long TR			<u>-2.9</u>	95	<u>-5.8</u>	86	<u>-3.6</u>	95	<u>0.7</u>	99	<u>4.4</u>	95	<u>5.4</u>	99
Over/Under			<u>-0.8</u>		<u>-1.0</u>		0.1		0.0		1.3		0.9	
eV US Long Duration Fixed Inc Gross Median			0.3		-5.3		-2.3		4.4		5.7		8.3	
Blackrock TIPS	306,864,404	3.1	-0.8	99	-0.7	85	0.6	2	2.3	7	1.5	89	--	--
BBgBarc US TIPS TR			<u>-0.8</u>	99	<u>-0.8</u>	95	<u>0.4</u>	5	<u>2.0</u>	10	<u>1.4</u>	94	<u>3.3</u>	90
Over/Under			0.0		0.1		0.2		0.3		0.1			
eV US Interim Duration Fixed Inc Gross Median			0.4		-0.5		-0.4		1.4		1.9		3.8	

Returns are gross of manager fees.



## Oklahoma PERS

# TOTAL FUND PERFORMANCE DETAIL

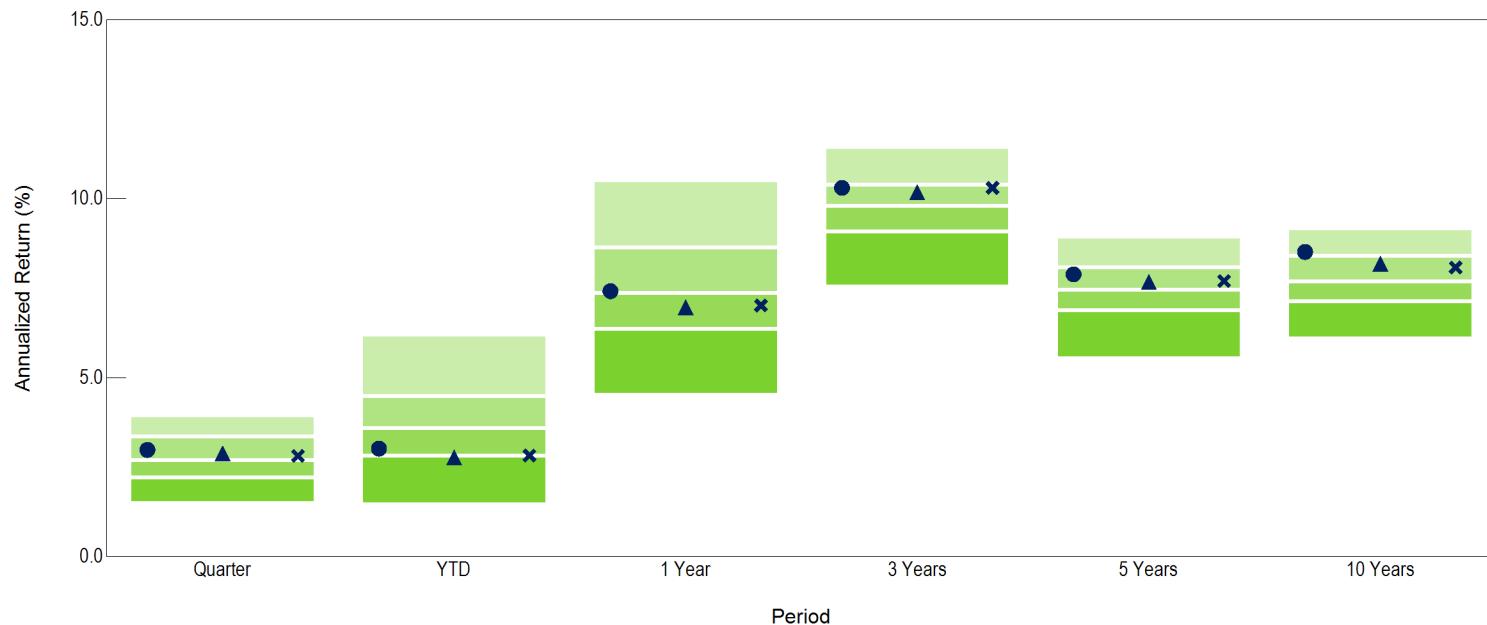
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>International Equity Composite</b>	<b>2,715,408,694</b>	<b>27.4</b>	<b>0.8</b>	<b>39</b>	<b>-2.4</b>	<b>52</b>	<b>2.3</b>	<b>52</b>	<b>10.3</b>	<b>59</b>	<b>4.9</b>	<b>72</b>	<b>5.7</b>	<b>80</b>
MSCI ACWI ex USA			0.7	42	-3.1	64	1.8	61	10.0	65	4.1	85	5.2	89
Over/Under			0.1		0.7		0.5		0.3		0.8		0.5	
eV All ACWI ex-US Equity Gross Median			0.5		-2.4		2.5		11.0		6.1		7.5	
Baillie Gifford	347,272,508	3.5	-0.9	62	-1.4	71	3.4	85	12.5	50	6.6	78	--	--
MSCI ACWI ex USA Growth			-0.3	52	-2.5	85	3.1	87	10.6	67	5.3	98	5.8	96
Over/Under			-0.6		1.1		0.3		1.9		1.3			
eV ACWI ex-US All Cap Growth Eq Gross Median			-0.1		0.8		6.3		12.5		7.4		8.3	
Blackrock ACWI Ex US	1,440,109,860	14.6	0.7	41	-2.8	59	2.1	55	10.3	59	4.4	82	--	--
MSCI ACWI ex USA			0.7	42	-3.1	64	1.8	61	10.0	65	4.1	85	5.2	89
Over/Under			0.0		0.3		0.3		0.3		0.3			
eV All ACWI ex-US Equity Gross Median			0.5		-2.4		2.5		11.0		6.1		7.5	
Blackrock ACWI Ex US Growth	321,896,029	3.3	0.9	35	-1.5	72	4.1	74	11.0	61	5.2	99	--	--
MSCI ACWI ex USA Growth			-0.3	52	-2.5	85	3.1	87	10.6	67	5.3	98	5.8	96
Over/Under			1.2		1.0		1.0		0.4		-0.1			
eV ACWI ex-US All Cap Growth Eq Gross Median			-0.1		0.8		6.3		12.5		7.4		8.3	
Mondrian	606,130,297	6.1	1.9	14	-2.7	56	1.4	66	8.7	83	4.5	79	5.4	84
MSCI ACWI ex USA Value			1.7	17	-3.7	71	0.4	78	9.3	77	2.9	97	4.5	95
Over/Under			0.2		1.0		1.0		-0.6		1.6		0.9	
eV All ACWI ex-US Equity Gross Median			0.5		-2.4		2.5		11.0		6.1		7.5	
<b>Real Estate</b>	<b>12,600,000</b>	<b>0.1</b>	<b>-3.0</b>	<b>--</b>	<b>-4.5</b>	<b>--</b>	<b>-3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
NCREIF ODCE			2.1	--	6.5	--	8.7	--	8.8	--	10.7	--	5.6	--
Over/Under			-5.1		-11.0		-11.8							
<b>Grand Centre</b>	<b>12,600,000</b>	<b>0.1</b>	<b>-3.0</b>	<b>--</b>	<b>-4.5</b>	<b>--</b>	<b>-3.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
NCREIF ODCE			2.1	--	6.5	--	8.7	--	8.8	--	10.7	--	5.6	--
Over/Under			-5.1		-11.0		-11.8							

New Policy Index effective as of November 1, 2013 consist of 38% Large Cap Equity, 6% Small Cap Equity, 24% International Equity, and 32% Domestic Fixed Income. Returns are gross of manager fees.



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK PERS vs. InvestorForce Public DB Gross



	Return (Rank)					
5th Percentile	3.9	6.2	10.5	11.4	8.9	9.2
25th Percentile	3.4	4.5	8.6	10.4	8.1	8.4
Median	2.7	3.6	7.4	9.8	7.5	7.7
75th Percentile	2.2	2.8	6.4	9.1	6.9	7.2
95th Percentile	1.5	1.5	4.5	7.6	5.6	6.1
# of Portfolios	267	266	265	255	240	208
● OK PERS	3.0 (37)	3.0 (69)	7.4 (49)	10.3 (30)	7.9 (37)	8.5 (21)
▲ PERS Allocation Index	2.9 (43)	2.8 (76)	7.0 (61)	10.2 (35)	7.7 (42)	8.2 (31)
✖ PERS Policy Index	2.8 (46)	2.8 (76)	7.0 (61)	10.3 (30)	7.7 (41)	8.1 (34)



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK PERS vs. InvestorForce Public DB Gross



	Return (Rank)									
5th Percentile	18.2		9.4		2.2		8.0		20.8	
25th Percentile	16.5		8.4		0.9		6.8		18.0	
Median	15.3		7.7		0.1		5.8		15.5	
75th Percentile	14.0		6.9		-0.9		4.6		13.3	
95th Percentile	11.3		5.3		-2.6		3.2		8.5	
# of Portfolios	304		305		316		248		231	
● OK PERS	17.1	(17)	7.7	(52)	-0.8	(73)	7.4	(15)	16.6	(40)
▲ PERS Allocation Index	16.5	(26)	8.1	(34)	-0.9	(77)	7.0	(21)	15.9	(48)
✖ PERS Policy Index	16.9	(21)	8.1	(34)	-0.9	(76)	7.0	(21)	15.3	(53)



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

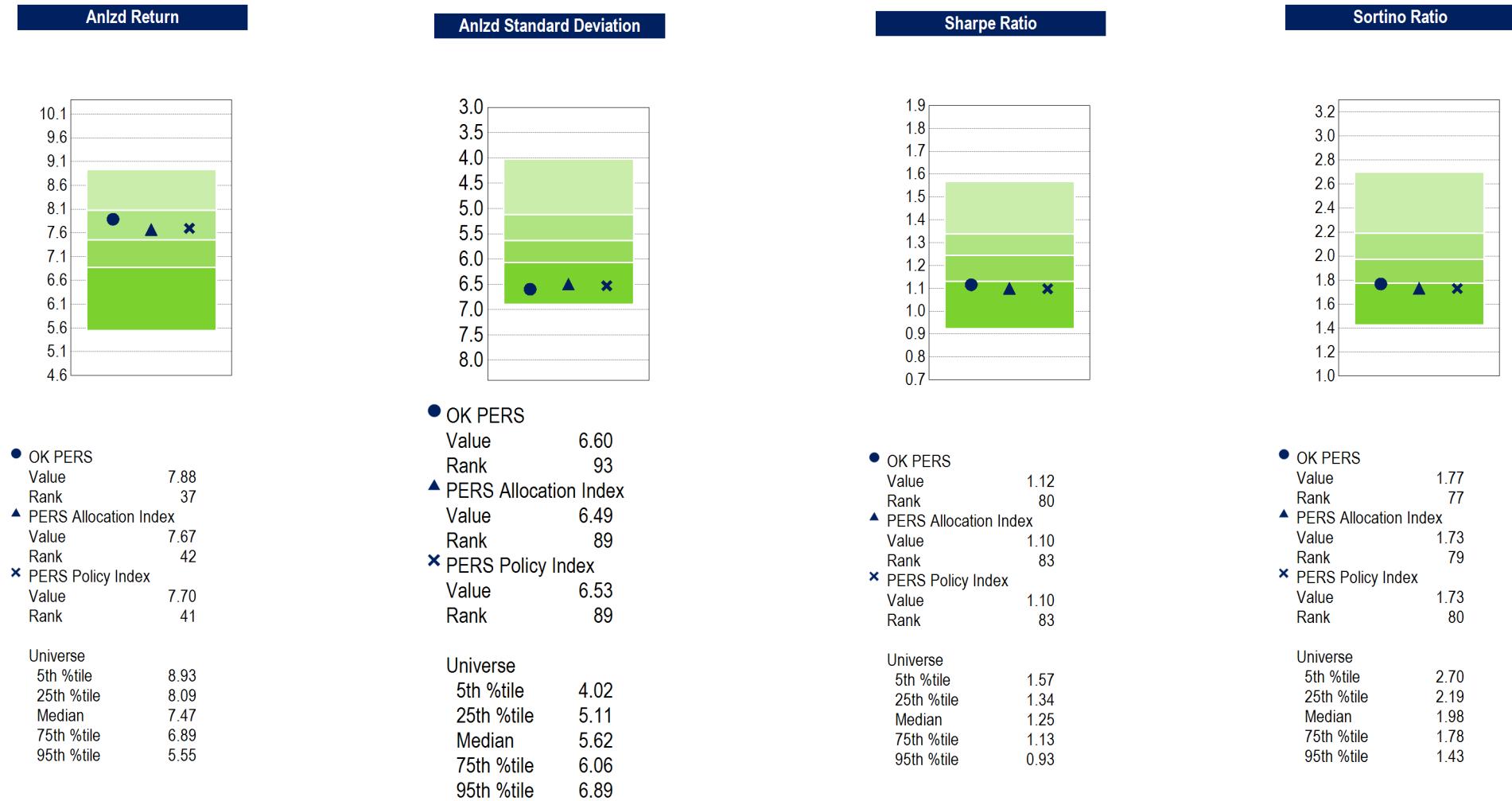
OK PERS vs. InvestorForce Public DB Gross

3 Years

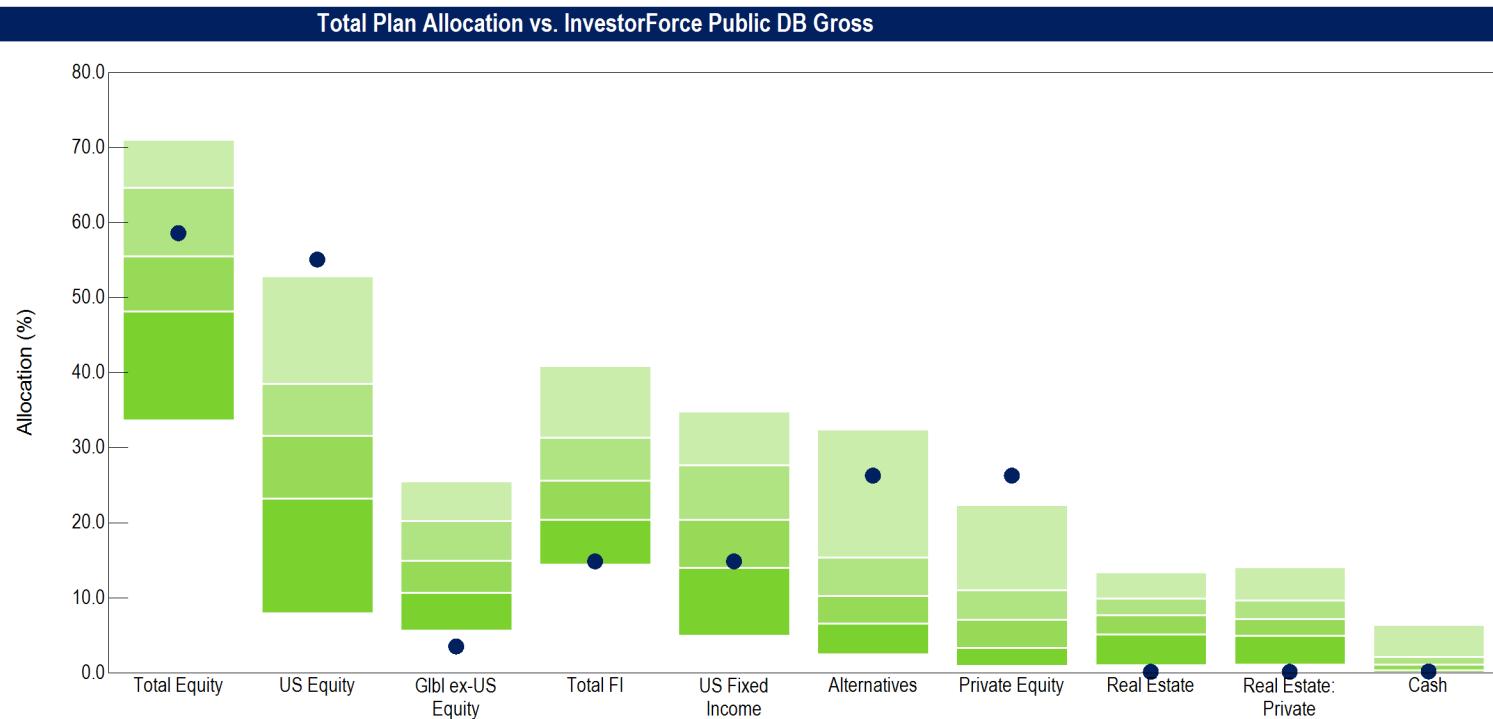


# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK PERS vs. InvestorForce Public DB Gross  
5 Years



# TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE



	Allocation (Rank)											
5th Percentile	71.0	52.8	25.5	40.9	34.8	32.4	22.4	13.4	14.1	6.4	-	-
25th Percentile	64.7	38.6	20.3	31.4	27.8	15.5	11.1	10.0	9.7	2.2	-	-
Median	55.5	31.6	15.0	25.7	20.4	10.3	7.2	7.7	7.2	1.1	-	-
75th Percentile	48.2	23.3	10.7	20.5	14.1	6.6	3.4	5.2	5.0	0.4	-	-
95th Percentile	33.7	8.0	5.7	14.5	5.0	2.5	1.0	1.1	1.2	0.1	-	-
# of Portfolios	252	184	211	251	173	163	117	172	127	234	-	-
● OK PERS	58.6 (45)	55.1 (4)	3.5 (99)	14.8 (94)	14.8 (73)	26.3 (9)	26.3 (5)	0.1 (99)	0.1 (99)	0.2 (88)	-	-



# TOTAL FUND ATTRIBUTION ANALYSIS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return			
Wtd. Index Return *			
<b>Excess Return</b>			
Selection Effect			
Allocation Effect			
Interaction Effect			
 Asset Class Returns			
OK PERS	3.0%	3.0%	7.4%
Domestic Equity Composite	6.9%	10.5%	17.6%
Domestic Fixed Income Composite	-0.4%	-1.8%	-1.0%
International Equity Composite	0.8%	-2.4%	2.3%
Cash Composite	3.5%	4.4%	4.7%
Z TERMINATED - R/E Composite			
Real Estate	-3.0%	-4.5%	-3.1%

\*Calculated from benchmark returns and weightings of each component.

Z TERMINATED represents Composite that fully liquidated.



# OKLAHOMA FIREFIGHTERS

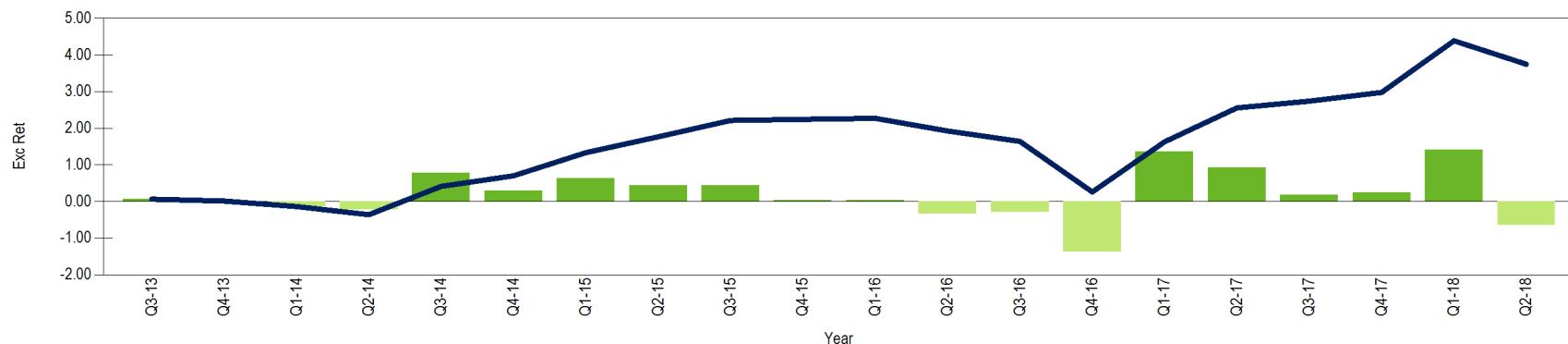


## Oklahoma Firefighters

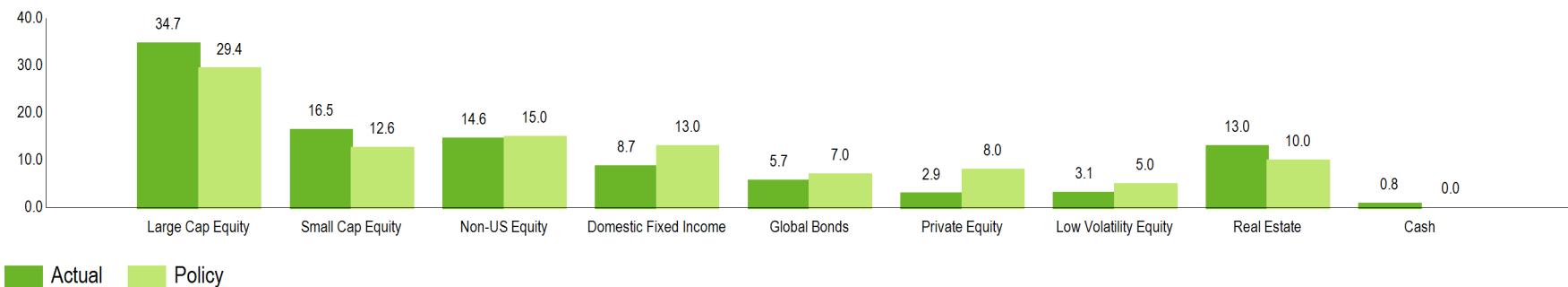
# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK FIREFIGHTERS</b>	<b>\$2,705,595,511</b>	<b>1.6%</b>	<b>10</b>	<b>3.0%</b>	<b>2</b>	<b>11.7%</b>	<b>1</b>	<b>8.9%</b>	<b>1</b>	<b>10.0%</b>	<b>1</b>	<b>7.4%</b>	<b>14</b>
<i>FIREFIGHTERS Allocation Index</i>		2.3%	3	2.2%	7	10.4%	4	8.2%	5	9.2%	7	7.4%	13
<i>FIREFIGHTERS Policy Index</i>		1.9%	6	1.1%	29	8.9%	26	8.4%	3	9.5%	3	8.0%	5
<i>InvestorForce Public DB Gross Median</i>		0.9%		0.7%		8.0%		6.8%		7.8%		6.5%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)

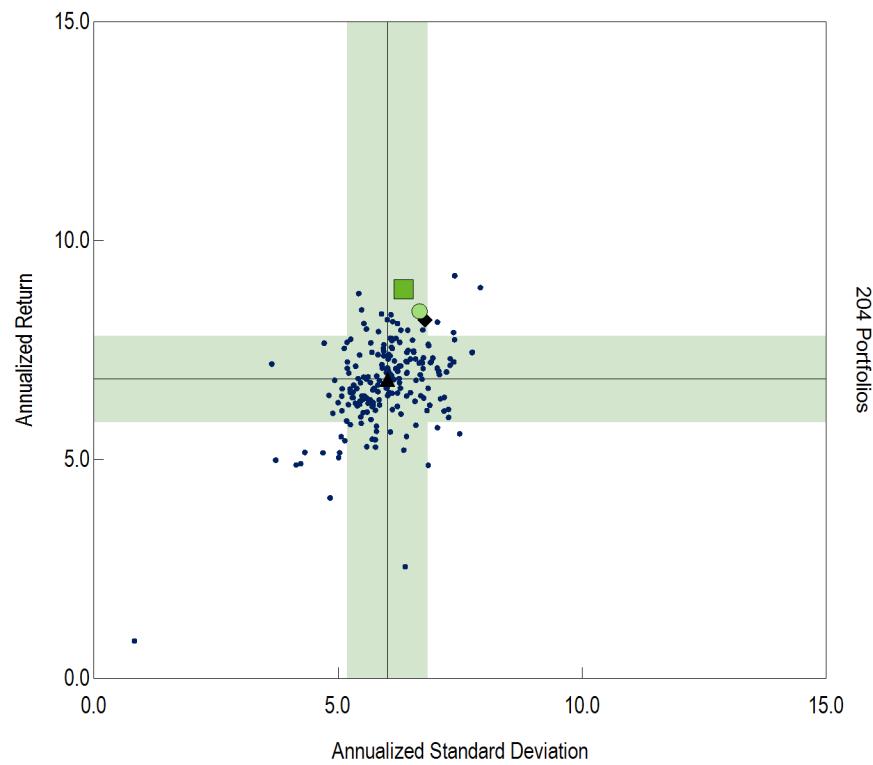


Actual Policy



# TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending June 30, 2018



3 Years Ending June 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK FIREFIGHTERS	8.89%	1	6.34%	70
FIREFIGHTERS Allocation Index	8.19%	5	6.79%	85
FIREFIGHTERS Policy Index	8.39%	3	6.67%	80

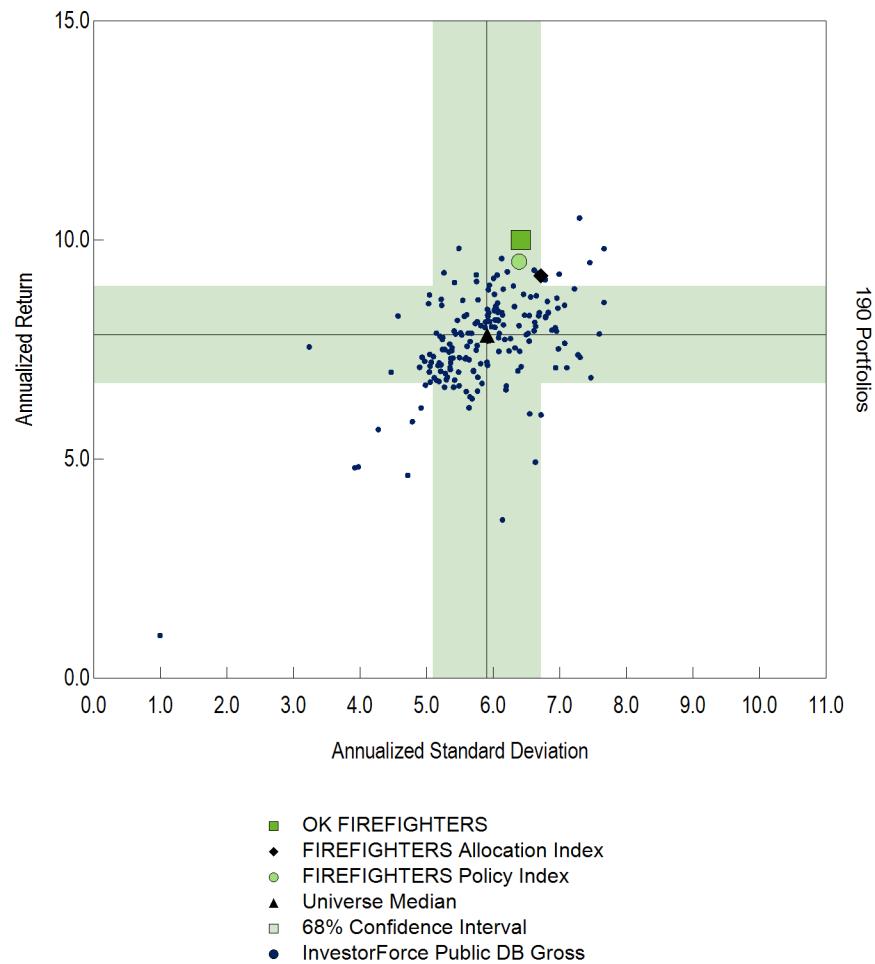
3 Years Ending June 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK FIREFIGHTERS	1.29	5	1.93	4
FIREFIGHTERS Allocation Index	1.10	26	1.58	41
FIREFIGHTERS Policy Index	1.15	16	1.71	25

## Oklahoma Firefighters

# TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending June 30, 2018



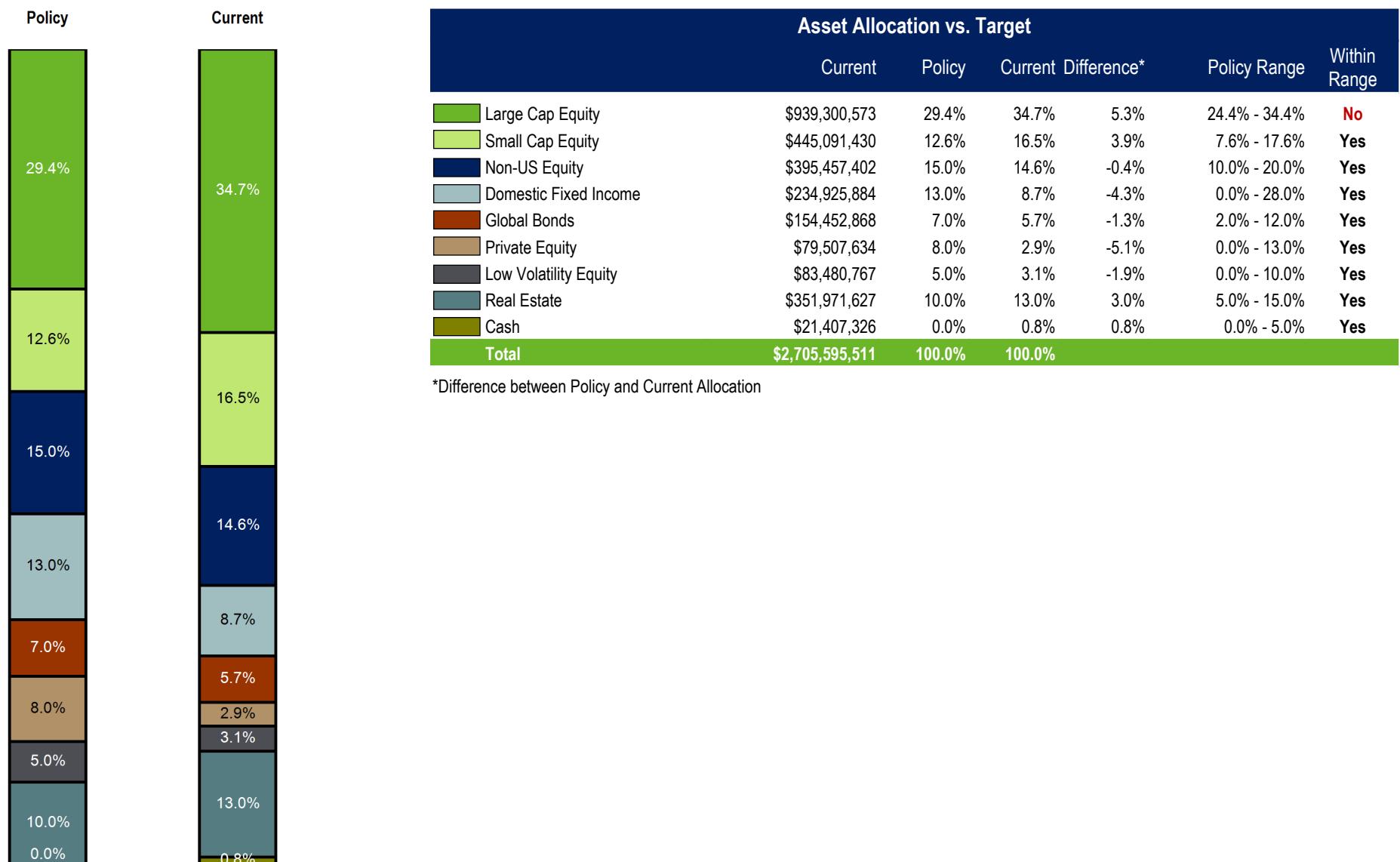
5 Years Ending June 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK FIREFIGHTERS	10.00%	1	6.42%	77
FIREFIGHTERS Allocation Index	9.19%	7	6.72%	87
FIREFIGHTERS Policy Index	9.51%	3	6.39%	76

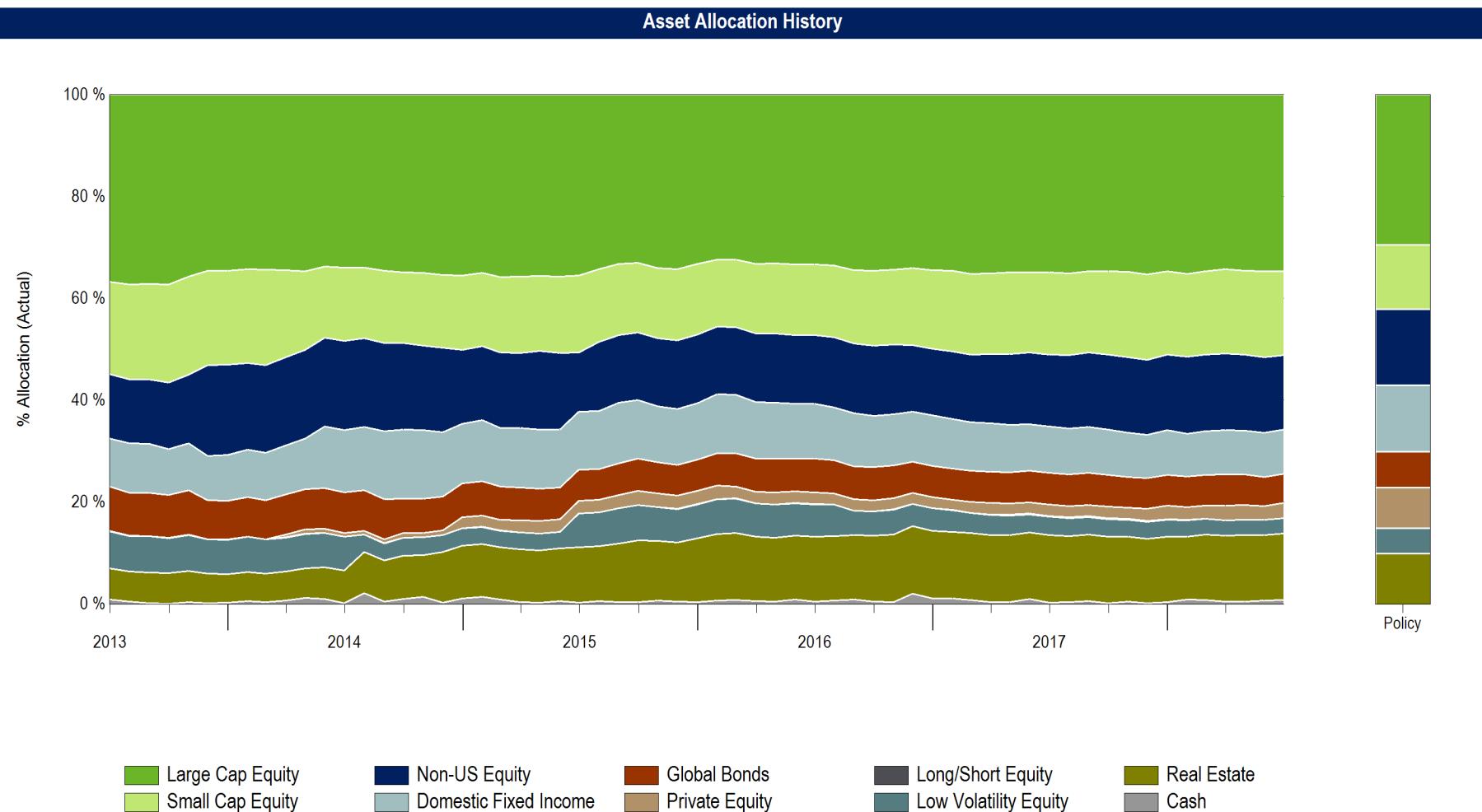
5 Years Ending June 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK FIREFIGHTERS	1.49	7	2.55	8
FIREFIGHTERS Allocation Index	1.30	38	2.08	56
FIREFIGHTERS Policy Index	1.42	12	2.45	16

# TOTAL PLAN ASSET ALLOCATION VS. POLICY



# TOTAL PLAN ASSET ALLOCATION HISTORY



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>OK FIREFIGHTERS</b>	<b>2,705,595,511</b>	<b>100.0</b>	<b>1.6</b>	<b>10</b>	<b>3.0</b>	<b>2</b>	<b>11.7</b>	<b>1</b>	<b>8.9</b>	<b>1</b>	<b>10.0</b>	<b>1</b>	<b>7.4</b>	<b>14</b>
<i>FIREFIGHTERS Allocation Index</i>			<u>2.3</u>	3	<u>2.2</u>	7	<u>10.4</u>	4	<u>8.2</u>	5	<u>9.2</u>	7	<u>7.4</u>	13
Over/Under			<u>-0.7</u>		0.8		1.3		0.7		0.8		0.0	
<i>FIREFIGHTERS Policy Index</i>			1.9	6	1.1	29	8.9	26	8.4	3	9.5	3	8.0	5
<i>InvestorForce Public DB Gross Median</i>			0.9		0.7		8.0		6.8		7.8		6.5	
<b>Domestic Equity Composite</b>	<b>1,384,392,003</b>	<b>51.2</b>	<b>3.7</b>	<b>54</b>	<b>4.5</b>	<b>41</b>	<b>15.9</b>	<b>40</b>	<b>11.3</b>	<b>43</b>	<b>13.5</b>	<b>38</b>	<b>10.0</b>	<b>68</b>
<i>Russell 3000</i>			<u>3.9</u>	51	<u>3.2</u>	51	<u>14.8</u>	48	<u>11.6</u>	39	<u>13.3</u>	43	<u>10.2</u>	62
Over/Under			<u>-0.2</u>		1.3		1.1		<u>-0.3</u>		0.2		<u>-0.2</u>	
<i>eV All US Equity Gross Median</i>			3.9		3.3		14.4		10.8		12.8		10.7	
<b>Large Cap Equity Composite</b>	<b>939,300,573</b>	<b>34.7</b>	<b>3.1</b>	<b>63</b>	<b>2.7</b>	<b>56</b>	<b>14.4</b>	<b>51</b>	<b>11.1</b>	<b>46</b>	<b>13.5</b>	<b>39</b>	<b>10.0</b>	<b>69</b>
<i>Russell 1000</i>			<u>3.6</u>	57	<u>2.9</u>	54	<u>14.5</u>	50	<u>11.6</u>	38	<u>13.4</u>	42	<u>10.2</u>	63
Over/Under			<u>-0.5</u>		<u>-0.2</u>		<u>-0.1</u>		<u>-0.5</u>		0.1		<u>-0.2</u>	
<i>eV All US Equity Gross Median</i>			3.9		3.3		14.4		10.8		12.8		10.7	
Aronson	90,860,975	3.4	1.7	52	-0.9	58	11.6	32	7.3	85	10.6	67	9.2	62
<i>Russell 1000 Value</i>			<u>1.2</u>	66	<u>-1.7</u>	71	<u>6.8</u>	86	<u>8.3</u>	73	<u>10.3</u>	72	<u>8.5</u>	79
Over/Under			0.5		0.8		4.8		<u>-1.0</u>		0.3		0.7	
<b>SSgA Equity Index</b>	<b>189,798,980</b>	<b>7.0</b>	<b>3.4</b>	<b>33</b>	<b>2.6</b>	<b>37</b>	<b>14.4</b>	<b>44</b>	<b>12.0</b>	<b>26</b>	<b>13.5</b>	<b>39</b>	<b>10.2</b>	<b>47</b>
<i>S&amp;P 500</i>			<u>3.4</u>	33	<u>2.6</u>	37	<u>14.4</u>	44	<u>11.9</u>	28	<u>13.4</u>	40	<u>10.2</u>	51
Over/Under			0.0		0.0		0.0		0.1		0.1		0.0	
<b>SSgA EQ Wtd S&amp;P</b>	<b>189,602,032</b>	<b>7.0</b>	<b>2.9</b>	<b>47</b>	<b>1.8</b>	<b>55</b>	<b>12.1</b>	<b>73</b>	<b>10.5</b>	<b>62</b>	<b>12.8</b>	<b>59</b>	<b>11.7</b>	<b>8</b>
<i>S&amp;P 500</i>			<u>3.4</u>	33	<u>2.6</u>	37	<u>14.4</u>	44	<u>11.9</u>	28	<u>13.4</u>	40	<u>10.2</u>	51
Over/Under			<u>-0.5</u>		<u>-0.8</u>		<u>-2.3</u>		<u>-1.4</u>		<u>-0.6</u>		1.5	
<b>Intech</b>	<b>185,625,019</b>	<b>6.9</b>	<b>1.2</b>	<b>90</b>	<b>2.5</b>	<b>39</b>	<b>14.0</b>	<b>49</b>	<b>11.5</b>	<b>36</b>	<b>13.8</b>	<b>27</b>	<b>10.4</b>	<b>40</b>
<i>S&amp;P 500</i>			<u>3.4</u>	33	<u>2.6</u>	37	<u>14.4</u>	44	<u>11.9</u>	28	<u>13.4</u>	40	<u>10.2</u>	51
Over/Under			<u>-2.2</u>		<u>-0.1</u>		<u>-0.4</u>		<u>-0.4</u>		0.4		0.2	
<i>eV US Large Cap Core Equity Gross Median</i>			2.8		2.0		13.9		10.9		13.1		10.2	
<b>Fred Alger Management</b>	<b>185,961,410</b>	<b>6.9</b>	<b>7.1</b>	<b>18</b>	<b>10.2</b>	<b>30</b>	<b>24.3</b>	<b>34</b>	<b>14.0</b>	<b>46</b>	<b>17.5</b>	<b>22</b>	--	--
<i>Russell 1000 Growth</i>			<u>5.8</u>	43	<u>7.3</u>	55	<u>22.5</u>	46	<u>15.0</u>	29	<u>16.4</u>	44	<u>11.8</u>	40
Over/Under			1.3		2.9		1.8		<u>-1.0</u>		1.1			
<i>eV US Large Cap Growth Equity Gross Median</i>			5.4		7.8		22.0		13.5		16.0		11.4	



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beutel Goodman Company	97,452,157	3.6	0.7	--	-4.9	--	4.2	--	--	--	--	--	--	--
Russell 1000 Value			1.2	--	-1.7	--	6.8	--	8.3	--	10.3	--	8.5	--
Over/Under			-0.5		-3.2		-2.6							
Herndon Capital - Liquidating	0	0.0												
<b>Small Cap Equity Composite</b>	<b>409,601,311</b>	<b>15.1</b>	<b>6.5</b>	<b>58</b>	<b>10.1</b>	<b>27</b>	<b>22.5</b>	<b>26</b>	<b>12.3</b>	<b>39</b>	<b>14.0</b>	<b>37</b>	<b>11.5</b>	<b>55</b>
Russell 2000			7.8	40	7.7	42	17.6	44	11.0	56	12.5	62	10.6	76
Over/Under			-1.3		2.4		4.9		1.3		1.5		0.9	
eV US Small Cap Equity Gross Median			7.0		6.5		16.6		11.3		13.1		11.7	
Earnest Partner	82,882,699	3.1	0.9	99	-0.4	95	13.2	47	11.3	41	13.8	18	10.3	74
Russell 2000 Value			8.3	19	5.4	29	13.1	47	11.2	42	11.2	69	9.9	84
Over/Under			-7.4		-5.8		0.1		0.1		2.6		0.4	
River Road	78,038,792	2.9	4.4	73	4.5	40	9.8	82	12.6	19	11.5	62	9.6	88
Russell 2000 Value			8.3	19	5.4	29	13.1	47	11.2	42	11.2	69	9.9	84
Over/Under			-3.9		-0.9		-3.3		1.4		0.3		-0.3	
eV US Small Cap Value Equity Gross Median			5.7		3.8		12.8		10.5		12.1		11.5	
Lord Abbet	80,085,604	3.0	15.7	6	24.3	4	43.8	4	10.1	77	14.2	59	--	--
Russell 2000 Growth			7.2	75	9.7	71	21.9	70	10.6	72	13.6	69	11.2	72
Over/Under			8.5		14.6		21.9		-0.5		0.6			
Delaware Small Growth	87,171,653	3.2	6.0	90	16.9	21	31.5	20	15.9	18	16.6	20	--	--
Russell 2500 Growth			5.5	93	8.0	84	21.5	73	10.9	69	13.9	65	11.4	68
Over/Under			0.5		8.9		10.0		5.0		2.7			
eV US Small Cap Growth Equity Gross Median			8.8		12.4		24.8		12.3		14.7		12.3	
SSgA Russell Small Cap	81,422,563	3.0	5.9	65	6.1	54	16.8	49	10.4	63	12.7	57	--	--
Russell 2000			7.8	40	7.7	42	17.6	44	11.0	56	12.5	62	10.6	76
Over/Under			-1.9		-1.6		-0.8		-0.6		0.2			
eV US Small Cap Equity Gross Median			7.0		6.5		16.6		11.3		13.1		11.7	
Tortoise Direct Opportunities	35,490,120	1.3	-9.2	--	-6.8	--	-7.8	--	--	--	--	--	--	--
Alerian MLP Index			11.8	--	-0.6	--	-4.6	--	-5.9	--	-4.1	--	6.5	--
Over/Under			-21.0		-6.2		-3.2							
<b>International Equity Composite</b>	<b>339,750,052</b>	<b>12.6</b>	<b>-1.9</b>	<b>39</b>	<b>-0.1</b>	<b>26</b>	<b>14.0</b>	<b>20</b>	<b>9.3</b>	<b>26</b>	<b>8.4</b>	<b>44</b>	<b>2.4</b>	<b>94</b>
MSCI ACWI ex USA			-2.6	52	-3.8	70	7.3	70	5.1	77	6.0	86	2.5	92
Over/Under			0.7		3.7		6.7		4.2		2.4		-0.1	
eV All ACWI ex-US Equity Gross Median			-2.5		-2.8		8.7		6.5		8.1		4.9	



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Chautauqua	126,895,972	4.7	-1.1	28	1.1	17	18.4	12	10.6	18	10.8	17	--	--
MSCI EAFE			-1.2	32	-2.7	50	6.8	73	4.9	78	6.4	81	2.8	88
Over/Under			0.1		3.8		11.6		5.7		4.4			
eV All ACWI ex-US Equity Gross Median			-2.5		-2.8		8.7		6.5		8.1		4.9	
WCM	133,952,131	5.0	1.7	8	3.1	8	14.6	19	11.9	10	11.8	10	--	--
MSCI EAFE			-1.2	32	-2.7	50	6.8	73	4.9	78	6.4	81	2.8	88
Over/Under			2.9		5.8		7.8		7.0		5.4			
eV All ACWI ex-US Equity Gross Median			-2.5		-2.8		8.7		6.5		8.1		4.9	
<b>Emerging Markets Equity Composite</b>	<b>78,809,556</b>	<b>2.9</b>	<b>-8.6</b>	<b>61</b>	<b>-6.8</b>	<b>55</b>	<b>6.6</b>	<b>64</b>	<b>3.6</b>	<b>89</b>	<b>3.7</b>	<b>89</b>	--	--
MSCI Emerging Markets			-8.0	45	-6.7	51	8.2	48	5.6	67	5.0	69	2.3	85
Over/Under			-0.6		-0.1		-1.6		-2.0		-1.3			
eV Emg Mkts Equity Gross Median			-8.2		-6.6		7.9		6.7		6.1		3.7	
Wasatch	23,405,951	0.9	-6.4	17	-5.6	30	8.3	47	3.3	90	2.8	95	--	--
MSCI Emerging Markets			-8.0	45	-6.7	51	8.2	48	5.6	67	5.0	69	2.3	85
Over/Under			1.6		1.1		0.1		-2.3		-2.2			
eV Emg Mkts Equity Gross Median			-8.2		-6.6		7.9		6.7		6.1		3.7	
ClariVest Emerging Market Equity	55,403,605	2.0	-9.6	79	-7.4	65	5.9	70	3.8	87	4.1	84	--	--
MSCI Emerging Markets			-8.0	45	-6.7	51	8.2	48	5.6	67	5.0	69	2.3	85
Over/Under			-1.6		-0.7		-2.3		-1.8		-0.9			
eV Emg Mkts Equity Gross Median			-8.2		-6.6		7.9		6.7		6.1		3.7	
Thornburg - Liquidating	60,855	0.0												
<b>Fixed Income Composite</b>	<b>389,378,752</b>	<b>14.4</b>	<b>-3.3</b>	<b>99</b>	<b>-1.9</b>	<b>85</b>	<b>0.1</b>	<b>67</b>	<b>2.7</b>	<b>43</b>	<b>2.8</b>	<b>50</b>	<b>4.6</b>	<b>43</b>
BBgBarc US Aggregate TR			-0.2	78	-1.6	80	-0.4	86	1.7	68	2.3	65	3.7	63
Over/Under			-3.1		-0.3		0.5		1.0		0.5		0.9	
eV All US Fixed Inc Gross Median			0.3		-0.5		0.5		2.3		2.8		4.3	
<b>Core Bonds Composite</b>	<b>168,986,541</b>	<b>6.2</b>	<b>0.2</b>	<b>10</b>	<b>-1.0</b>	<b>15</b>	<b>0.4</b>	<b>21</b>	<b>2.3</b>	<b>32</b>	<b>2.6</b>	<b>56</b>	--	--
BBgBarc US Aggregate TR			-0.2	63	-1.6	70	-0.4	82	1.7	88	2.3	89	3.7	92
Over/Under			0.4		0.6		0.8		0.6		0.3			
eV US Core Fixed Inc Gross Median			-0.1		-1.5		-0.1		2.1		2.7		4.4	



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
SSgA NL Fixed Income	1,022	0.0	-0.5	97	-2.0	92	-0.7	96	1.6	94	2.2	94	--	--
BBgBarc US Aggregate TR			-0.2	63	-1.6	70	-0.4	82	1.7	88	2.3	89	3.7	92
Over/Under			-0.3		-0.4		-0.3		-0.1		-0.1			
eV US Core Fixed Inc Gross Median			-0.1		-1.5		-0.1		2.1		2.7		4.4	
Orleans Capital Management	48,813,467	1.8	0.0	20	-1.9	92	-0.3	75	2.0	59	--	--	--	--
BBgBarc US Aggregate TR			-0.2	63	-1.6	70	-0.4	82	1.7	88	2.3	89	3.7	92
Over/Under			0.2		-0.3		0.1		0.3					
eV US Core Fixed Inc Gross Median			-0.1		-1.5		-0.1		2.1		2.7		4.4	
Garcia Hamilton Associates	120,172,052	4.4	0.7	1	0.1	4	1.5	5	3.0	7	--	--	--	--
BBgBarc US Aggregate TR			-0.2	63	-1.6	70	-0.4	82	1.7	88	2.3	89	3.7	92
Over/Under			0.9		1.7		1.9		1.3					
eV US Core Fixed Inc Gross Median			-0.1		-1.5		-0.1		2.1		2.7		4.4	
<b>Intermediate Bonds Composite</b>	<b>1,063</b>	<b>0.0</b>	<b>-0.2</b>	<b>99</b>	<b>-1.3</b>	<b>97</b>	<b>-0.6</b>	<b>96</b>	<b>1.2</b>	<b>88</b>	<b>1.8</b>	<b>80</b>	<b>--</b>	<b>--</b>
BBgBarc US Govt/Credit Int TR			0.0	86	-1.0	78	-0.6	95	1.2	88	1.6	87	3.1	93
Over/Under			-0.2		-0.3		0.0		0.0		0.2			
eV US Interim Duration Fixed Inc Gross Median			0.1		-0.8		-0.1		1.5		2.0		3.6	
SSgA Barclays Intermediate	1,063	0.0	-0.2	99	-1.3	97	-0.6	96	1.2	88	1.8	80	3.3	83
BBgBarc US Govt/Credit Int TR			0.0	86	-1.0	78	-0.6	95	1.2	88	1.6	87	3.1	93
Over/Under			-0.2		-0.3		0.0		0.0		0.2		0.2	
eV US Interim Duration Fixed Inc Gross Median			0.1		-0.8		-0.1		1.5		2.0		3.6	
Garrison Middle Market Funding	15,714,505	0.6	0.2	12	2.7	1	6.3	1	2.1	87	--	--	--	--
Credit Suisse Leveraged Loans			0.8	1	2.4	1	4.7	1	4.3	4	4.2	4	5.0	58
Over/Under			-0.6		0.3		1.6		-2.2					
eV US Core Plus Fixed Inc Gross Median			-0.2		-1.5		0.3		2.6		3.2		5.1	
Medley Opportunity Fund II	23,835,503	0.9	-5.5	99	-5.5	99	-5.7	99	1.6	99	--	--	--	--
Credit Suisse Leveraged Loans			0.8	27	2.4	18	4.7	39	4.3	58	4.2	65	5.0	73
Over/Under			-6.3		-7.9		-10.4		-2.7					
eV US Float-Rate Bank Loan Fixed Inc Gross Median			0.7		2.1		4.5		4.5		4.4		5.5	
PIMCO Corporate Opp Fund II	12,987,390	0.5	0.4	1	3.1	1	10.8	1	--	--	--	--	--	--
BBgBarc US High Yield TR			1.0	1	0.2	1	2.6	1	5.5	1	5.5	1	8.2	1
Over/Under			-0.6		2.9		8.2							
eV US Corporate Fixed Inc Gross Median			-0.9		-3.0		-0.4		3.3		4.0		6.1	



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
PIMCO Bravo III	13,400,881	0.5	2.3	1	9.3	1	--	--	--	--	--	--	--	--
Cambridge Associates US All PE			0.0	1	2.7	1	12.2	1	10.6	1	12.5	1	10.2	1
Over/Under			2.3		6.6									
eV US Corporate Fixed Inc Net Median			-1.0		-3.1		-0.7		3.0		3.7		5.8	
<b>Global Fixed Composite</b>	<b>154,452,868</b>	<b>5.7</b>	<b>-7.5</b>	<b>99</b>	<b>-3.9</b>	<b>91</b>	<b>-0.9</b>	<b>93</b>	<b>3.2</b>	<b>53</b>	<b>2.5</b>	<b>60</b>	<b>--</b>	<b>--</b>
Citi WGBI			-3.4	74	-0.9	42	1.9	40	2.8	65	1.1	85	2.1	90
Over/Under			-4.1		-3.0		-2.8		0.4		1.4			
eV All Global Fixed Inc Gross Median			-1.5		-1.4		1.5		3.3		3.0		4.0	
Brandywine	154,452,868	5.7	-7.5	99	-3.9	91	-0.9	93	3.2	53	2.5	60	--	--
Citi WGBI			-3.4	74	-0.9	42	1.9	40	2.8	65	1.1	85	2.1	90
Over/Under			-4.1		-3.0		-2.8		0.4		1.4			
eV All Global Fixed Inc Gross Median			-1.5		-1.4		1.5		3.3		3.0		4.0	
<b>Real Estate Composite</b>	<b>351,971,627</b>	<b>13.0</b>	<b>2.3</b>	<b>--</b>	<b>4.9</b>	<b>--</b>	<b>8.7</b>	<b>--</b>	<b>9.7</b>	<b>--</b>	<b>10.8</b>	<b>--</b>	<b>--</b>	<b>--</b>
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			0.5		1.4		1.5		1.4		1.0			
JP Morgan RE	156,968,276	5.8	2.0	--	4.2	--	7.9	--	9.0	--	10.8	--	5.9	--
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			0.2		0.7		0.7		0.7		1.0		-0.3	
Portfolio Advisors RE III	3,975,878	0.1	-0.2	--	0.9	--	3.5	--	8.6	--	13.2	--	0.3	--
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			-2.0		-2.6		-3.7		0.3		3.4		-5.9	
Realty Associates IX Corp	61,092	0.0	10.5	--	10.6	--	9.2	--	8.9	--	9.6	--	--	--
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			8.7		7.1		2.0		0.6		-0.2			
Portfolio Advisors RE IV	3,623,662	0.1	0.2	--	3.5	--	12.0	--	11.3	--	13.5	--	--	--
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			-1.6		0.0		4.8		3.0		3.7			
Angelo Gordon Net Lease Realty III LP	18,211,297	0.7	2.0	--	5.8	--	8.1	--	6.6	--	--	--	--	--
NCREIF Property Index			1.8	--	3.5	--	7.2	--	8.3	--	9.8	--	6.2	--
Over/Under			0.2		2.3		0.9		-1.7					



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Mesirow	29,158,589	1.1	9.1	--	9.1	--	11.5	--	10.3	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			7.3		5.6		4.3		2.0					
Dune Real Estate Fund III	25,735,264	1.0	0.1	--	4.0	--	13.1	--	12.8	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			<u>-1.7</u>		0.5		5.9		4.5					
OK FF Portfolio Advisors	12,091,800	0.4	-0.7	--	1.6	--	1.0	--	5.3	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			<u>-2.5</u>		<u>-1.9</u>		<u>-6.2</u>		<u>-3.0</u>					
Landmark RE VII	16,620,396	0.6	1.6	--	2.0	--	6.9	--	18.3	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			<u>-0.2</u>		<u>-1.5</u>		<u>-0.3</u>		10.0					
JP Morgan Special Situation Property	64,317,132	2.4	3.2	--	6.0	--	11.4	--	11.9	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			1.4		2.5		4.2		3.6					
Hall Capital III	11,542,973	0.4	2.0	--	3.2	--	4.3	--	3.2	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			0.2		<u>-0.3</u>		<u>-2.9</u>		<u>-5.1</u>					
Portfolio Advisors RE VI	9,665,269	0.4	-1.0	--	13.7	--	18.4	--	--	--	--	--	--	--
<i>NCREIF Property Index</i>			<u>1.8</u>	--	<u>3.5</u>	--	<u>7.2</u>	--	<u>8.3</u>	--	<u>9.8</u>	--	<u>6.2</u>	--
Over/Under			<u>-2.8</u>		10.2		11.2							
<b>Hedge Fund Composite</b>	<b>139,188,117</b>	<b>5.1</b>	<b>0.1</b>	--	<b>1.2</b>	--	<b>4.9</b>	--	<b>3.1</b>	--	<b>3.0</b>	--	<b>3.3</b>	--
<i>HFRI FOF: Conservative Index</i>			<u>1.1</u>	--	<u>1.6</u>	--	<u>4.2</u>	--	<u>1.9</u>	--	<u>3.0</u>	--	<u>1.2</u>	--
Over/Under			<u>-1.0</u>		<u>-0.4</u>		0.7		1.2		0.0		2.1	
Private Advisors	1,645,717	0.1	-3.9	--	-4.9	--	-9.7	--	-1.9	--	-0.1	--	1.8	--
<i>HFRI Fund of Funds Composite Index</i>			<u>0.4</u>	--	<u>0.7</u>	--	<u>5.1</u>	--	<u>1.9</u>	--	<u>3.5</u>	--	<u>1.4</u>	--
Over/Under			<u>-4.3</u>		<u>-5.6</u>		<u>-14.8</u>		<u>-3.8</u>		<u>-3.6</u>		0.4	
Permal	81,835,050	3.0	2.1	--	3.4	--	5.9	--	2.9	--	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>			<u>0.4</u>	--	<u>0.7</u>	--	<u>5.1</u>	--	<u>1.9</u>	--	<u>3.5</u>	--	<u>1.4</u>	--
Over/Under			1.7		2.7		0.8		1.0					
Allianz Global Investors DMAP	55,707,350	2.1	-2.5	--	-1.3	--	5.8	--	--	--	--	--	--	--
<i>Russell 2500 Growth</i>			<u>5.5</u>	--	<u>8.0</u>	--	<u>21.5</u>	--	<u>10.9</u>	--	<u>13.9</u>	--	<u>11.4</u>	--
Over/Under			<u>-8.0</u>		<u>-9.3</u>		<u>-15.7</u>							



## Oklahoma Firefighters

# TOTAL PLAN PERFORMANCE DETAIL

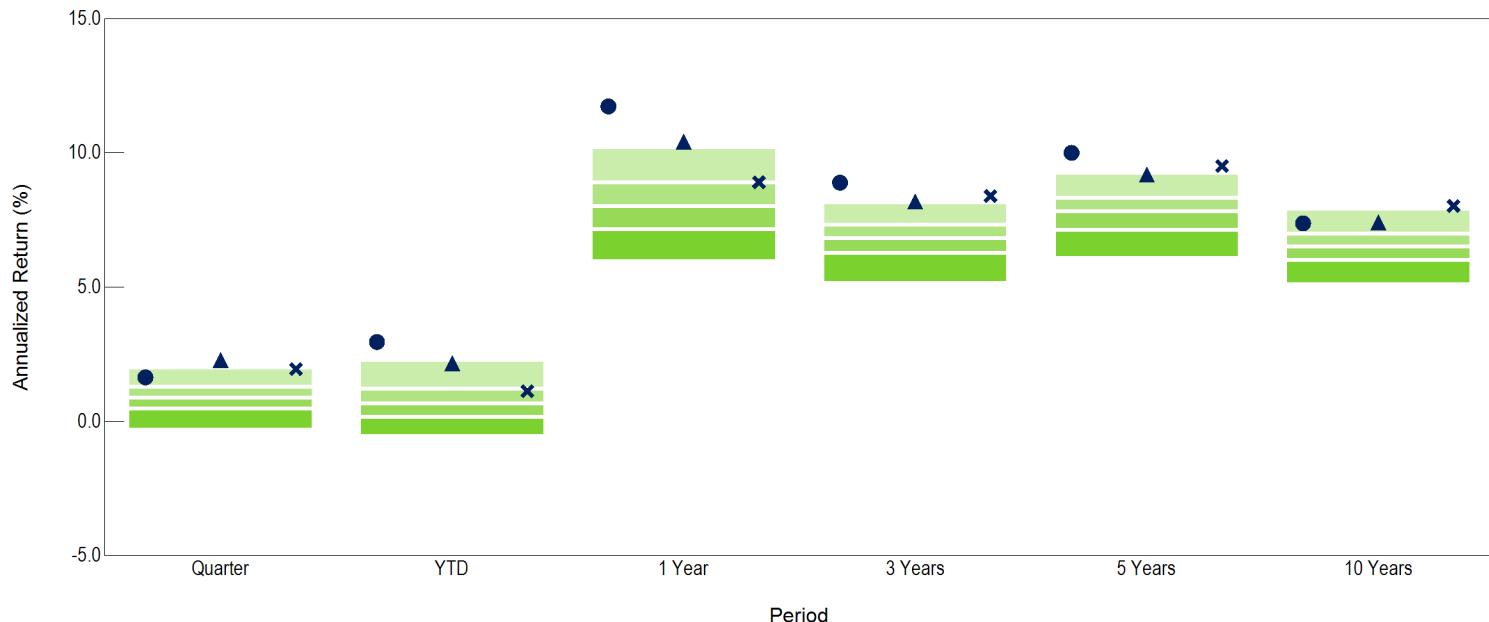
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Private Equity Composite</b>	<b>79,507,634</b>	<b>2.9</b>	<b>6.6</b>	--	<b>10.3</b>	--	<b>20.6</b>	--	<b>12.3</b>	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			6.6	7.6			8.4		1.7					
Pomona Capital Fund VIII	9,131,352	0.3	3.1	--	3.1	--	16.9	--	15.2	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			3.1	0.4			4.7		4.6					
Ardian	25,221,269	0.9	1.6	--	5.4	--	14.7	--	10.6	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			1.6	2.7			2.5		0.0					
Dynamics Global Secondaries IV	27,719,032	1.0	12.7	--	13.2	--	21.3	--	9.6	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			12.7	10.5			9.1		-1.0					
AESF VI	15,311,718	0.6	-1.7	--	11.0	--	21.6	--	--	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			-1.7	8.3			9.4							
Pomona Capital Fund IX	2,124,262	0.1	75.1	--	--	--	--	--	--	--	--	--	--	--
Cambridge Associates US All PE			0.0	--	2.7	--	12.2	--	10.6	--	12.5	--	10.2	--
Over/Under			75.1											

Performance Numbers are shown gross of fees.



# TOTAL PLAN RETURN SUMMARY VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvestorForce Public DB Gross

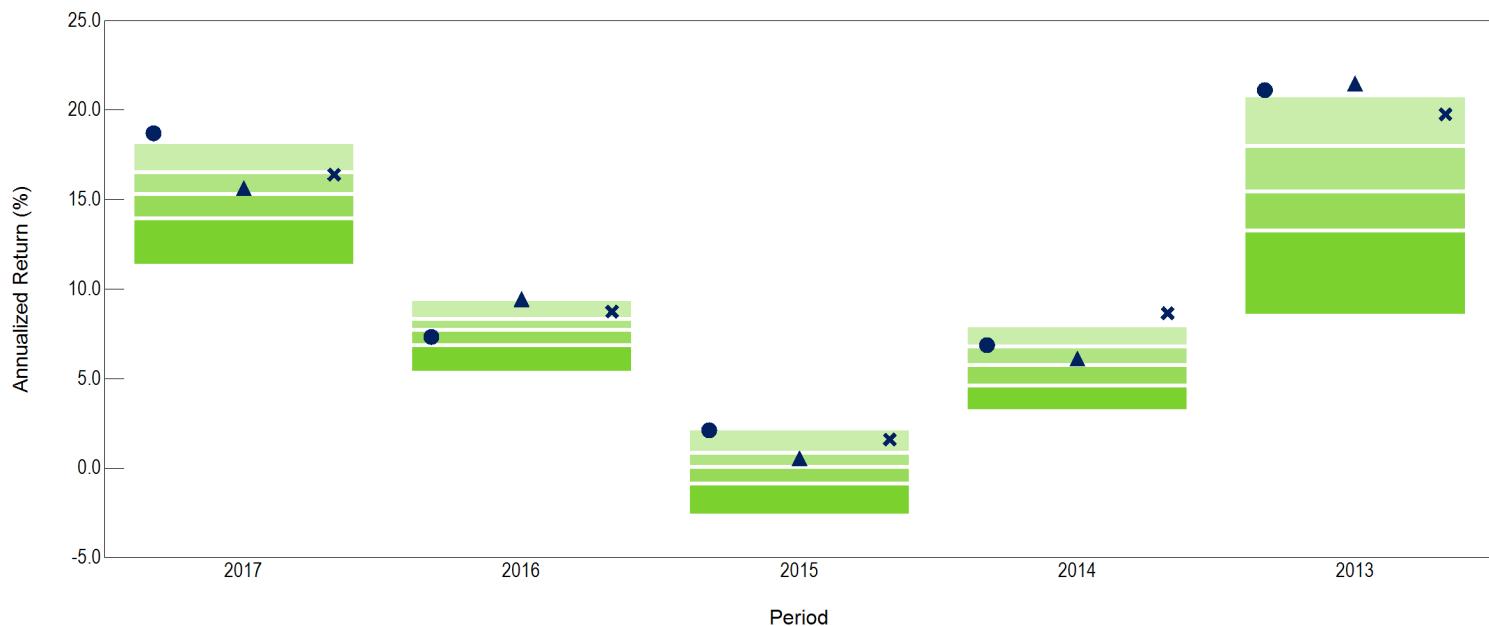


	Return (Rank)									
5th Percentile	2.0	2.3	10.2	8.1	9.2	7.9				
25th Percentile	1.3	1.2	8.9	7.3	8.3	7.0				
Median	0.9	0.7	8.0	6.8	7.8	6.5				
75th Percentile	0.5	0.2	7.2	6.3	7.1	6.0				
95th Percentile	-0.3	-0.5	6.0	5.2	6.1	5.1				
# of Portfolios	211	211	209	204	190	162				
● OK FIREFIGHTERS	1.6	(10)	3.0	(2)	11.7	(1)	8.9	(1)	10.0	(1)
▲ FIREFIGHTERS Allocation Index	2.3	(3)	2.2	(7)	10.4	(4)	8.2	(5)	9.2	(7)
✖ FIREFIGHTERS Policy Index	1.9	(6)	1.1	(29)	8.9	(26)	8.4	(3)	9.5	(3)
									7.4	(14)
									7.4	(13)
									8.0	(5)



# TOTAL PLAN RETURN SUMMARY VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvestorForce Public DB Gross



	Return (Rank)								
5th Percentile	18.2		9.4		2.2		8.0		20.8
25th Percentile	16.5		8.4		0.9		6.8		18.0
Median	15.3		7.7		0.1		5.8		15.5
75th Percentile	14.0		6.9		-0.9		4.6		13.3
95th Percentile	11.3		5.3		-2.6		3.2		8.5
# of Portfolios	304		305		316		248		231
● OK FIREFIGHTERS	18.7	(4)	7.3	(61)	2.1	(6)	6.9	(24)	21.1
▲ FIREFIGHTERS Allocation Index	15.6	(44)	9.4	(5)	0.5	(35)	6.1	(40)	21.5
✖ FIREFIGHTERS Policy Index	16.4	(28)	8.7	(15)	1.6	(10)	8.7	(3)	19.8
									(12)



# TOTAL PLAN RISK STATISTICS VS. PEER UNIVERSE

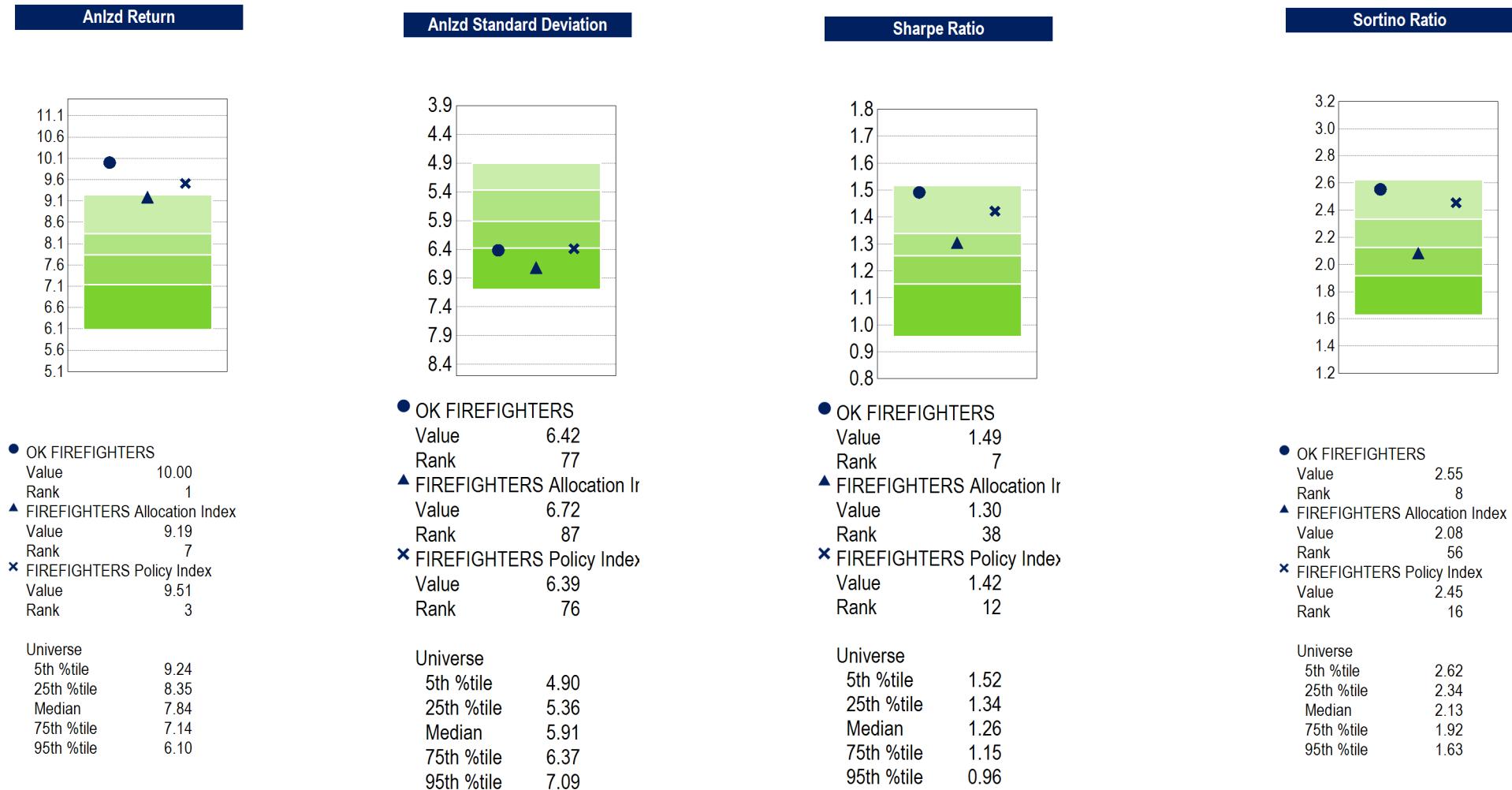
OK FIREFIGHTERS vs. InvestorForce Public DB Gross  
3 Years



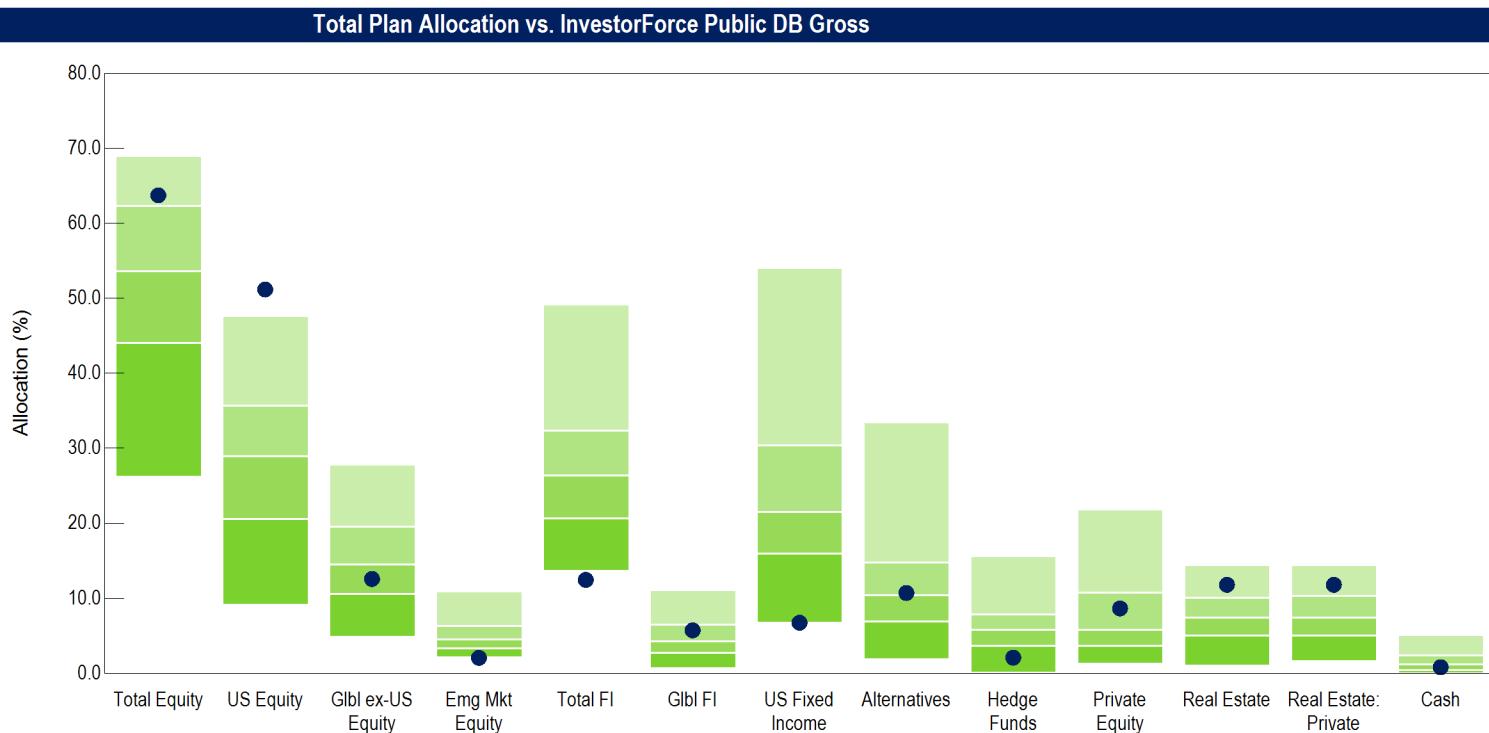
## OKLAHOMA FIREFIGHTERS

# TOTAL PLAN RISK STATISTICS VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvestorForce Public DB Gross  
5 Years



# TOTAL PLAN ALLOCATIONS VS. PEER UNIVERSE



	Allocation (Rank)															
5th Percentile	69.0	47.7	27.8	10.9	49.2	11.1	54.0	33.5	15.6	21.8	14.4	14.4	5.1	--	--	
25th Percentile	62.4	35.7	19.6	6.4	32.5	6.5	30.5	14.9	8.0	10.9	10.1	10.4	2.5	--	--	
Median	53.7	29.0	14.5	4.6	26.5	4.3	21.6	10.5	5.9	5.9	7.5	7.5	1.2	--	--	
75th Percentile	44.1	20.6	10.7	3.4	20.7	2.8	16.0	7.0	3.8	3.7	5.1	5.1	0.5	--	--	
95th Percentile	26.3	9.2	5.0	2.2	13.7	0.8	6.8	2.0	0.1	1.4	1.1	1.6	0.1	--	--	
# of Portfolios	196	137	162	92	195	25	134	126	64	83	118	88	179	--	--	
● OK FIREFIGHTERS	63.7	(20)	51.2	(3)	12.6	(66)	2.0	(97)	12.4	(98)	5.7	(38)	6.7	(96)	10.7	(46)



# TOTAL PLAN ATTRIBUTION ANALYSIS

Performance Attribution		
	Last 3 Mo.	1 Yr
Wtd. Actual Return	1.5%	11.5%
Wtd. Index Return *	2.2%	9.7%
<b>Excess Return</b>	<b>-0.6%</b>	<b>1.8%</b>
Selection Effect	-0.6%	1.8%
Allocation Effect	0.0%	0.0%
Interaction Effect	0.0%	0.0%
 Asset Class Returns		
OK FIREFIGHTERS	1.6%	11.7%
Domestic Equity Composite	3.7%	15.9%
Large Cap Equity Composite	3.1%	14.4%
Small Cap Equity Composite	6.5%	22.5%
TERMINATED - Long/Short Equity Composite		
International Equity Composite	-1.9%	14.0%
Emerging Markets Equity Composite	-8.6%	6.6%
Fixed Income Composite	-3.3%	0.1%
Domestic Fixed Income	-0.4%	0.6%
Core Bonds Composite	0.2%	0.4%
Intermediate Bonds Composite	-0.2%	-0.6%
Global Fixed Composite	-7.5%	-0.9%
Real Estate Composite	2.3%	8.7%
Hedge Fund Composite	0.1%	4.9%
Private Equity Composite	6.6%	20.6%

\*Calculated from benchmark returns and weightings of each component.



# OKLAHOMA POLICE

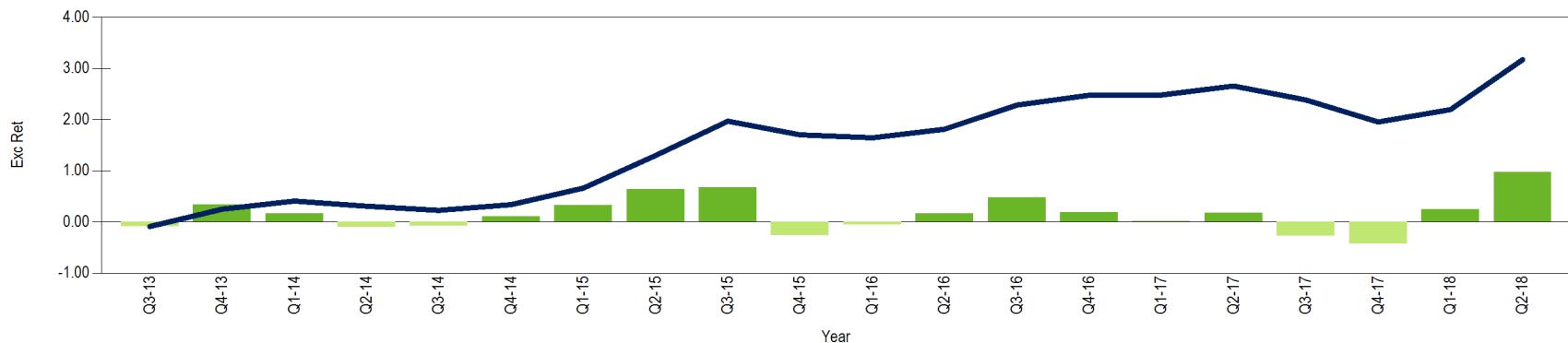


## Oklahoma Police

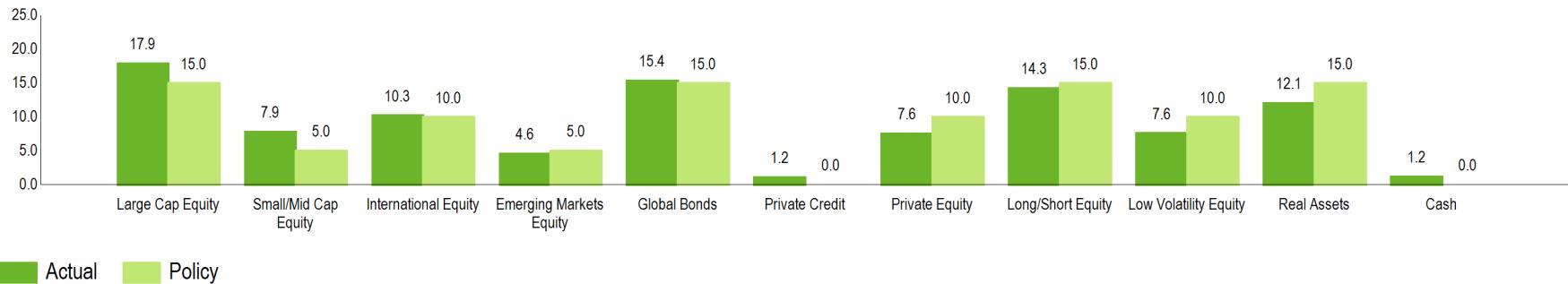
# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK POLICE</b>	<b>\$2,539,694,665</b>	<b>1.6%</b>	<b>12</b>	<b>2.2%</b>	<b>7</b>	<b>8.7%</b>	<b>30</b>	<b>6.5%</b>	<b>62</b>	<b>7.7%</b>	<b>57</b>	<b>6.1%</b>	<b>72</b>
POLICE Allocation Index		0.6%	67	0.9%	39	8.1%	47	5.9%	87	7.0%	82	6.2%	69
POLICE Policy Index		0.3%	82	-0.3%	92	7.2%	74	5.9%	87	6.9%	84	6.2%	66
InvestorForce Public DB Gross Median		0.9%		0.7%		8.0%		6.8%		7.8%		6.5%	

Quarterly and Cumulative Excess Performance

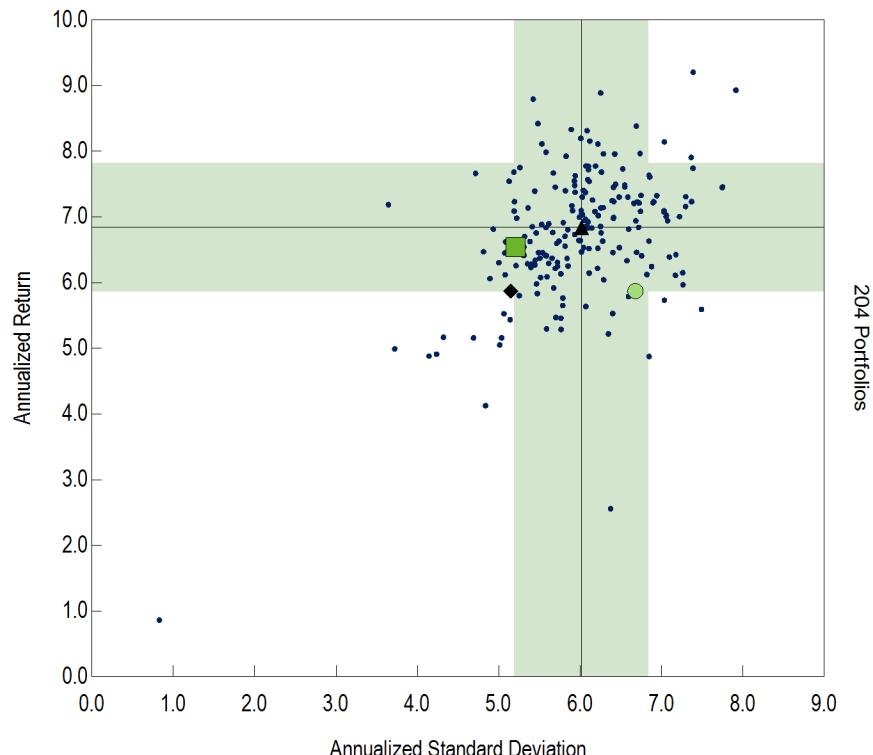


Actual vs Target Allocation (%)



# TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending June 30, 2018



3 Years Ending June 30, 2018

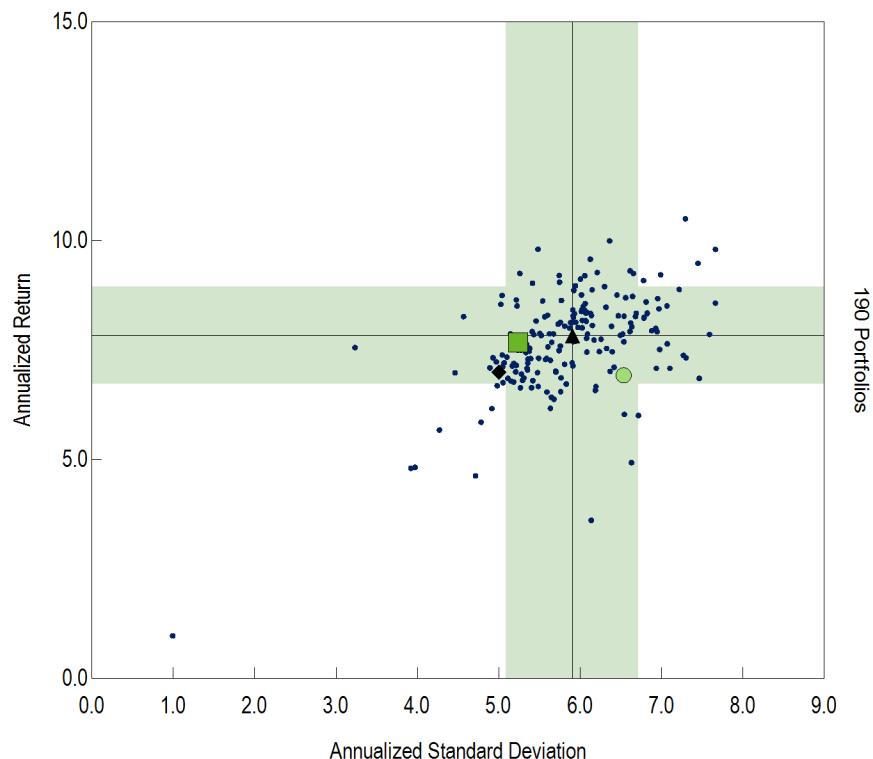
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK POLICE	6.54%	62	5.21%	13
POLICE Allocation Index	5.87%	87	5.15%	10
POLICE Policy Index	5.87%	87	6.68%	80

3 Years Ending June 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK POLICE	1.12	23	1.71	25
POLICE Allocation Index	1.00	56	1.45	64
POLICE Policy Index	0.77	95	1.24	89

# TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending June 30, 2018



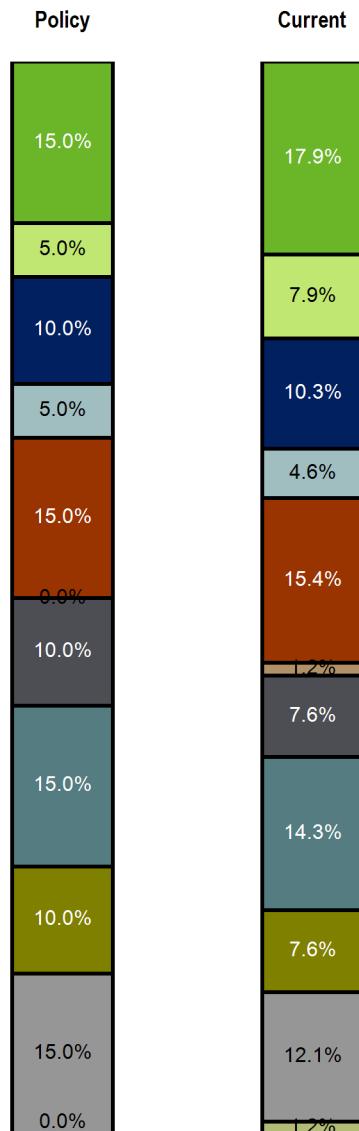
5 Years Ending June 30, 2018

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK POLICE	7.68%	57	5.24%	20
POLICE Allocation Index	7.00%	82	5.01%	8
POLICE Policy Index	6.93%	84	6.54%	80

5 Years Ending June 30, 2018

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK POLICE	1.38	17	2.45	17
POLICE Allocation Index	1.31	34	2.10	55
POLICE Policy Index	0.99	94	1.82	82

# TOTAL FUND ASSET ALLOCATION VS. POLICY

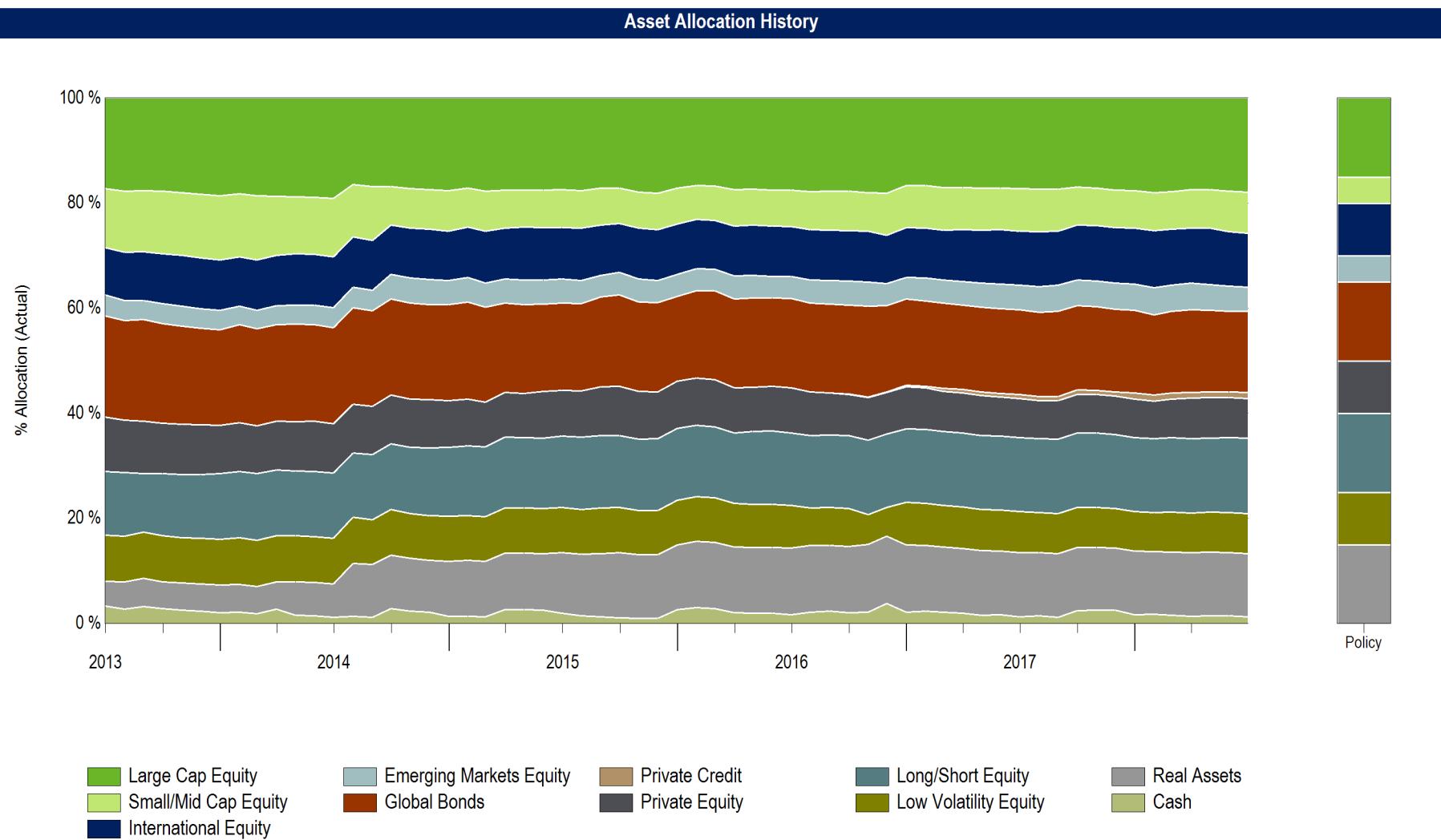


	Asset Allocation vs. Target					
	Current	Policy	Current	Difference*	Policy Range	Within Range
Large Cap Equity	\$455,017,748	15.0%	17.9%	2.9%	10.0% - 20.0%	Yes
Small/Mid Cap Equity	\$199,813,116	5.0%	7.9%	2.9%	0.0% - 15.0%	Yes
International Equity	\$260,469,278	10.0%	10.3%	0.3%	5.0% - 15.0%	Yes
Emerging Markets Equity	\$117,672,819	5.0%	4.6%	-0.4%	0.0% - 10.0%	Yes
Global Bonds	\$389,969,187	15.0%	15.4%	0.4%	10.0% - 20.0%	Yes
Private Credit	\$29,706,333	0.0%	1.2%	1.2%	0.0% - 5.0%	Yes
Private Equity	\$193,011,865	10.0%	7.6%	-2.4%	5.0% - 15.0%	Yes
Long/Short Equity	\$363,676,282	15.0%	14.3%	-0.7%	10.0% - 20.0%	Yes
Low Volatility Equity	\$193,685,340	10.0%	7.6%	-2.4%	5.0% - 15.0%	Yes
Real Assets	\$306,200,578	15.0%	12.1%	-2.9%	0.0% - 30.0%	Yes
Cash	\$30,472,119	0.0%	1.2%	1.2%	0.0% - 5.0%	Yes
<b>Total</b>	<b>\$2,539,694,665</b>	<b>100.0%</b>	<b>100.0%</b>			

\*Difference between Policy and Current Allocation



# TOTAL FUND ASSET ALLOCATION HISTORY



█ Large Cap Equity  
█ Small/Mid Cap Equity  
█ International Equity

█ Emerging Markets Equity  
█ Global Bonds

█ Private Credit  
█ Private Equity

█ Long/Short Equity  
█ Low Volatility Equity

█ Real Assets  
█ Cash

## Oklahoma Police

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>OK POLICE</b>	<b>2,539,694,665</b>	<b>100.0</b>	<b>1.6</b>	<b>12</b>	<b>2.2</b>	<b>7</b>	<b>8.7</b>	<b>30</b>	<b>6.5</b>	<b>62</b>	<b>7.7</b>	<b>57</b>	<b>6.1</b>	<b>72</b>
POLICE Allocation Index			0.6	67	0.9	39	8.1	47	5.9	87	7.0	82	6.2	69
Over/Under			1.0		1.3		0.6		0.6		0.7		-0.1	
POLICE Policy Index			0.3	82	-0.3	92	7.2	74	5.9	87	6.9	84	6.2	66
InvestorForce Public DB Gross Median			0.9		0.7		8.0		6.8		7.8		6.5	
<b>Equity Composite</b>	<b>1,032,972,961</b>	<b>40.7</b>	<b>2.0</b>	<b>35</b>	<b>1.9</b>	<b>29</b>	<b>12.0</b>	<b>42</b>	<b>9.7</b>	<b>31</b>	<b>10.7</b>	<b>40</b>	<b>7.5</b>	<b>42</b>
Russell 3000			3.9	15	3.2	19	14.8	25	11.6	16	13.3	12	10.2	11
Over/Under			-1.9		-1.3		-2.8		-1.9		-2.6		-2.7	
eV All Global Equity Gross Median			1.2		0.4		11.1		8.6		10.2		7.1	
<b>Domestic Equity Composite</b>	<b>654,830,864</b>	<b>25.8</b>	<b>5.3</b>	<b>36</b>	<b>5.3</b>	<b>36</b>	<b>15.4</b>	<b>43</b>	<b>12.0</b>	<b>32</b>	<b>13.1</b>	<b>47</b>	<b>10.6</b>	<b>53</b>
S&P 500			3.4	58	2.6	57	14.4	51	11.9	34	13.4	40	10.2	65
Over/Under			1.9		2.7		1.0		0.1		-0.3		0.4	
eV All US Equity Gross Median			3.9		3.3		14.4		10.8		12.8		10.7	
Northern Trust Russell 1000 Index Fund	455,017,748	17.9	3.6	30	2.8	33	14.4	43	11.6	34	13.4	42	10.2	47
Russell 1000			3.6	30	2.9	33	14.5	42	11.6	34	13.4	42	10.2	49
Over/Under			0.0		-0.1		-0.1		0.0		0.0		0.0	
eV US Large Cap Core Equity Gross Median			2.8		2.0		13.9		10.9		13.1		10.2	
Boston Partners	92,197,802	3.6	2.6	75	0.6	80	8.1	82	9.2	57	11.5	48	11.8	25
Russell 2500 Value			5.8	24	3.0	42	11.5	56	9.8	41	10.8	69	10.1	74
Over/Under			-3.2		-2.4		-3.4		-0.6		0.7		1.7	
eV US Small-Mid Cap Value Equity Gross Median			3.8		2.5		11.7		9.4		11.4		11.2	
Cortina Small Cap Growth	107,615,314	4.2	16.2	5	22.8	5	27.8	38	16.7	15	--	--	--	--
Russell 2000 Growth			7.2	75	9.7	71	21.9	70	10.6	72	13.6	69	11.2	72
Over/Under			9.0		13.1		5.9		6.1					
eV US Small Cap Growth Equity Gross Median			8.8		12.4		24.8		12.3		14.7		12.3	

Northern Trust Russell 1000 Index fund was Mellon Capital Passive Index fund before 10/30/2014.



## Oklahoma Police

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>International Equity Composite</b>	<b>378,142,097</b>	<b>14.9</b>	<b>-3.2</b>	<b>70</b>	<b>-3.6</b>	<b>66</b>	<b>6.6</b>	<b>75</b>	<b>5.9</b>	<b>63</b>	<b>6.4</b>	<b>81</b>	<b>2.0</b>	<b>97</b>
<b>MSCI ACWI ex USA</b>			<b>-2.6</b>	<b>52</b>	<b>-3.8</b>	<b>70</b>	<b>7.3</b>	<b>70</b>	<b>5.1</b>	<b>77</b>	<b>6.0</b>	<b>86</b>	<b>2.5</b>	<b>92</b>
Over/Under			<b>-0.6</b>		0.2		<b>-0.7</b>		0.8		0.4		<b>-0.5</b>	
eV All ACWI ex-US Equity Gross Median			-2.5		-2.8		8.7		6.5		8.1		4.9	
<b>Mondrian Int'l Value</b>	<b>138,343,406</b>	<b>5.4</b>	<b>-2.0</b>	<b>24</b>	<b>-3.6</b>	<b>39</b>	<b>5.2</b>	<b>45</b>	<b>4.3</b>	<b>69</b>	<b>6.5</b>	<b>66</b>	<b>3.4</b>	<b>54</b>
<b>MSCI ACWI ex USA</b>			<b>-2.6</b>	<b>32</b>	<b>-3.8</b>	<b>41</b>	<b>7.3</b>	<b>26</b>	<b>5.1</b>	<b>55</b>	<b>6.0</b>	<b>69</b>	<b>2.5</b>	<b>79</b>
Over/Under			0.6		0.2		<b>-2.1</b>		<b>-0.8</b>		0.5		0.9	
eV ACWI ex-US Value Equity Gross Median			-3.3		-4.5		5.0		5.3		7.0		3.9	
<b>Baring Focused Intl Equity</b>	<b>122,125,872</b>	<b>4.8</b>	<b>0.6</b>	<b>13</b>	<b>-0.8</b>	<b>30</b>	<b>10.0</b>	<b>43</b>	<b>8.3</b>	<b>34</b>	<b>8.0</b>	<b>52</b>	<b>--</b>	<b>--</b>
<b>MSCI ACWI ex USA</b>			<b>-2.6</b>	<b>52</b>	<b>-3.8</b>	<b>70</b>	<b>7.3</b>	<b>70</b>	<b>5.1</b>	<b>77</b>	<b>6.0</b>	<b>86</b>	<b>2.5</b>	<b>92</b>
Over/Under			3.2		3.0		2.7		3.2		2.0			
eV All ACWI ex-US Equity Gross Median			-2.5		-2.8		8.7		6.5		8.1		4.9	
<b>Wasatch EM Small Cap</b>	<b>36,568,985</b>	<b>1.4</b>	<b>-6.1</b>	<b>26</b>	<b>-4.9</b>	<b>39</b>	<b>9.9</b>	<b>34</b>	<b>4.1</b>	<b>74</b>	<b>3.7</b>	<b>83</b>	<b>--</b>	<b>--</b>
<b>MSCI Emerging Markets Small Cap</b>			<b>-8.6</b>	<b>62</b>	<b>-8.5</b>	<b>79</b>	<b>5.6</b>	<b>63</b>	<b>2.5</b>	<b>90</b>	<b>4.3</b>	<b>77</b>	<b>4.4</b>	<b>99</b>
Over/Under			2.5		3.6		4.3		1.6		<b>-0.6</b>			
eV Emg Mkts Small Cap Equity Gross Median			-7.8		-5.3		7.3		6.4		6.9		6.8	
<b>AB EM Strategic Core Equity</b>	<b>81,103,834</b>	<b>3.2</b>	<b>-9.1</b>	<b>--</b>	<b>-6.7</b>	<b>--</b>	<b>2.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>MSCI Emerging Markets</b>			<b>-8.0</b>	<b>--</b>	<b>-6.7</b>	<b>--</b>	<b>8.2</b>	<b>--</b>	<b>5.6</b>	<b>--</b>	<b>5.0</b>	<b>--</b>	<b>2.3</b>	<b>--</b>
Over/Under			<b>-1.1</b>		0.0		<b>-5.4</b>							
<b>Fixed Income Composite</b>	<b>389,969,187</b>	<b>15.4</b>	<b>-0.8</b>	<b>40</b>	<b>-1.1</b>	<b>44</b>	<b>1.4</b>	<b>54</b>	<b>3.3</b>	<b>49</b>	<b>3.3</b>	<b>43</b>	<b>5.0</b>	<b>31</b>
<b>BBgBarc US Aggregate TR</b>			<b>-0.2</b>	<b>26</b>	<b>-1.6</b>	<b>58</b>	<b>-0.4</b>	<b>90</b>	<b>1.7</b>	<b>86</b>	<b>2.3</b>	<b>64</b>	<b>3.7</b>	<b>56</b>
Over/Under			<b>-0.6</b>		0.5		1.8		1.6		1.0		1.3	
eV All Global Fixed Inc Gross Median			-1.5		-1.4		1.5		3.3		3.0		4.0	
<b>Oaktree</b>	<b>123,595,910</b>	<b>4.9</b>	<b>1.2</b>	<b>6</b>	<b>0.0</b>	<b>38</b>	<b>2.7</b>	<b>16</b>	<b>5.0</b>	<b>14</b>	<b>5.4</b>	<b>16</b>	<b>7.3</b>	<b>15</b>
<b>BBgBarc US Aggregate TR</b>			<b>-0.2</b>	<b>78</b>	<b>-1.6</b>	<b>80</b>	<b>-0.4</b>	<b>86</b>	<b>1.7</b>	<b>68</b>	<b>2.3</b>	<b>65</b>	<b>3.7</b>	<b>63</b>
Over/Under			1.4		1.6		3.1		3.3		3.1		3.6	
<b>Agincourt</b>	<b>169,624,447</b>	<b>6.7</b>	<b>-0.2</b>	<b>79</b>	<b>-1.7</b>	<b>82</b>	<b>-0.1</b>	<b>74</b>	<b>2.2</b>	<b>53</b>	<b>2.7</b>	<b>53</b>	<b>4.3</b>	<b>50</b>
<b>BBgBarc US Aggregate TR</b>			<b>-0.2</b>	<b>78</b>	<b>-1.6</b>	<b>80</b>	<b>-0.4</b>	<b>86</b>	<b>1.7</b>	<b>68</b>	<b>2.3</b>	<b>65</b>	<b>3.7</b>	<b>63</b>
Over/Under			0.0		<b>-0.1</b>		0.3		0.5		0.4		0.6	
eV All US Fixed Inc Gross Median			0.3		-0.5		0.5		2.3		2.8		4.3	



## Oklahoma Police

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Loomis Sayles	96,748,830	3.8	-4.1	82	-1.5	53	2.3	32	3.8	35	1.9	71	3.4	59
Citi WGBI			-3.4	74	-0.9	42	1.9	40	2.8	65	1.1	85	2.1	90
Over/Under			-0.7		-0.6		0.4		1.0		0.8		1.3	
eV All Global Fixed Inc Gross Median			-1.5		-1.4		1.5		3.3		3.0		4.0	
<b>Total Long/Short</b>	<b>363,676,282</b>	<b>14.3</b>	<b>2.3</b>	<b>45</b>	<b>3.1</b>	<b>42</b>	<b>8.8</b>	<b>47</b>	<b>4.6</b>	<b>56</b>	<b>6.7</b>	<b>52</b>	<b>--</b>	<b>--</b>
HFRI FOF: Strategic Index			0.0	64	0.4	59	5.7	62	2.2	75	4.0	78	1.6	92
Over/Under			2.3		2.7		3.1		2.4		2.7			
eV Alt Fundamental - Long/Short Equity Median			1.4		1.4		8.1		5.3		7.0		6.9	
Grosvenor	363,676,282	14.3	2.3	45	3.1	42	8.8	47	4.6	56	6.8	51	4.4	74
HFRI FOF: Strategic Index			0.0	64	0.4	59	5.7	62	2.2	75	4.0	78	1.6	92
Over/Under			2.3		2.7		3.1		2.4		2.8		2.8	
eV Alt Fundamental - Long/Short Equity Median			1.4		1.4		8.1		5.3		7.0		6.9	
<b>Total Real Assets</b>	<b>306,200,578</b>	<b>12.1</b>	<b>2.0</b>	<b>--</b>	<b>4.2</b>	<b>--</b>	<b>9.2</b>	<b>--</b>	<b>6.2</b>	<b>--</b>	<b>6.9</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>Total Core Real Estate</b>	<b>168,958,437</b>	<b>6.7</b>	<b>2.1</b>	<b>--</b>	<b>4.3</b>	<b>--</b>	<b>8.4</b>	<b>--</b>	<b>9.9</b>	<b>--</b>	<b>11.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
NCREIF ODCE			2.1		4.3		8.4		9.4		11.0		--	5.3
Over/Under			0.0		0.0		0.0		0.5		0.4			
Columbus Square	4,719,256	0.2	3.1	--	2.6	--	4.2	--	13.0	--	14.5	--	14.8	--
NCREIF ODCE			2.1		4.3		8.4		9.4		11.0		--	5.3
Over/Under			1.0		-1.7		-4.2		3.6		3.5		9.5	
JP Morgan	123,954,500	4.9	2.0	--	4.2	--	7.9	--	9.0	--	10.8	--	5.9	--
NCREIF ODCE			2.1		4.3		8.4		9.4		11.0		--	5.3
Over/Under			-0.1		-0.1		-0.5		-0.4		-0.2		0.6	
Blackstone Property Partners	40,284,681	1.6	2.6	--	4.9	--	10.4	--	12.1	--	--	--	--	--
NCREIF ODCE			2.1		4.3		8.4		9.4		11.0		--	5.3
Over/Under			0.5		0.6		2.0		2.7					
<b>Private Real Estate</b>	<b>52,386,911</b>	<b>2.1</b>	<b>4.4</b>	<b>--</b>	<b>5.8</b>	<b>--</b>	<b>9.7</b>	<b>--</b>	<b>9.4</b>	<b>--</b>	<b>11.9</b>	<b>--</b>	<b>--</b>	<b>--</b>
Siguler Guff Distressed RE	7,008,907	0.3	7.9	--	7.9	--	33.4	--	15.1	--	20.2	--	--	--
TA Associates Realty X	12,585,908	0.5	2.3	--	5.6	--	15.9	--	9.6	--	10.7	--	--	--
Cerberus Real Estate Fund III	14,102,245	0.6	2.8	--	4.9	--	1.5	--	8.3	--	10.0	--	--	--
NCREIF ODCE			2.1		4.3		8.4		9.4		11.0		--	5.3
Over/Under			0.7		0.6		-6.9		-1.1		-1.0			

\*The Private Real Estate returns are time weighted.



## Oklahoma Police

# TOTAL FUND PERFORMANCE DETAIL

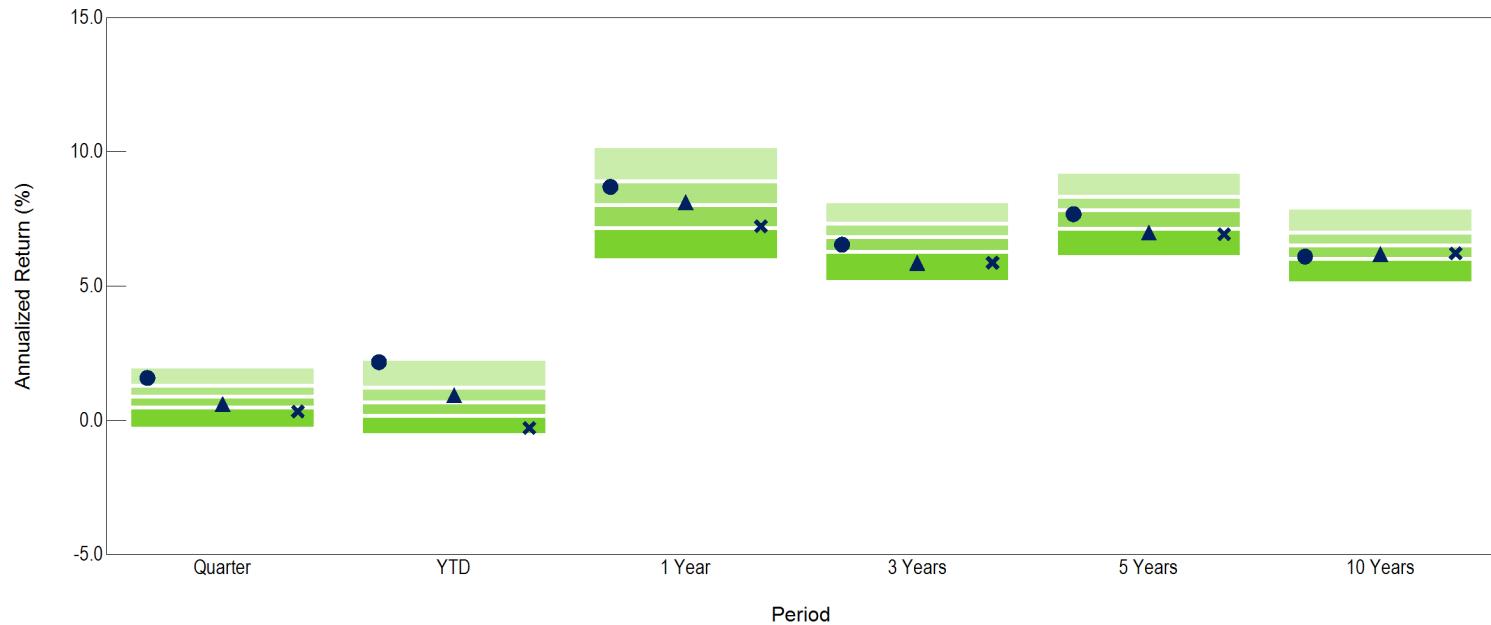
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Hall Capital Fund III	5,656,570	0.2	2.1	--	2.1	--	-15.1	--	3.7	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>4.3</u>	--	<u>8.4</u>	--	<u>9.4</u>	--	<u>11.0</u>	--	<u>5.3</u>	--
Over/Under			0.0		-2.2		-23.5		-5.7					
Siguler Guff Distressed RE II	7,445,280	0.3	11.4	--	11.4	--	26.5	--	12.2	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>4.3</u>	--	<u>8.4</u>	--	<u>9.4</u>	--	<u>11.0</u>	--	<u>5.3</u>	--
Over/Under			9.3		7.1		18.1		2.8					
Cerberus Real Estate Partners IV	4,575,866	0.2	0.9	--	0.6	--	-8.1	--	--	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>4.3</u>	--	<u>8.4</u>	--	<u>9.4</u>	--	<u>11.0</u>	--	<u>5.3</u>	--
Over/Under			-1.2		-3.7		-16.5							
Siguler Guff Dist. Real Estate Opp. II B	1,012,135	0.0	11.3	--	11.3	--	--	--	--	--	--	--	--	--
NCREIF ODCE			<u>2.1</u>	--	<u>4.3</u>	--	<u>8.4</u>	--	<u>9.4</u>	--	<u>11.0</u>	--	<u>5.3</u>	--
Over/Under			9.2		7.0									
Mt Lucas Peak	31,700,330	1.2	-3.0	--	4.7	--	8.4	--	2.2	--	6.2	--	3.0	--
Gresham Tap Fund	53,154,900	2.1	1.9	--	1.9	--	12.4	--	-3.6	--	--	--	--	--
<b>Total Low Volatility Strategies</b>	<b>193,685,340</b>	<b>7.6</b>	<b>2.1</b>	<b>--</b>	<b>2.8</b>	<b>--</b>	<b>4.4</b>	<b>--</b>	<b>0.9</b>	<b>--</b>	<b>3.0</b>	<b>--</b>	<b>--</b>	<b>--</b>
HFRI FOF: Conservative Index			<u>1.1</u>	--	<u>1.6</u>	--	<u>4.2</u>	--	<u>1.9</u>	--	<u>3.0</u>	--	<u>1.2</u>	--
Over/Under			1.0		1.2		0.2		-1.0		0.0			
PAAMCO	130,350,680	5.1	1.9	26	2.1	43	3.7	72	1.0	79	3.1	72	2.3	72
HFRI FOF: Conservative Index			<u>1.1</u>	54	<u>1.6</u>	49	<u>4.2</u>	66	<u>1.9</u>	61	<u>3.0</u>	73	<u>1.2</u>	89
Over/Under			0.8		0.5		-0.5		-0.9		0.1		1.1	
eV Alt Fund of Funds - All Single Strategy Median			1.1		1.5		5.8		2.5		4.3		3.3	
Wellington Global Total Return	63,334,660	2.5	2.5	22	4.3	15	6.0	46	--	--	--	--	--	--
HFRI FOF Conservative (1 Mo Lag)			<u>1.1</u>	54	<u>2.1</u>	43	<u>4.0</u>	69	<u>1.7</u>	70	<u>2.9</u>	75	<u>1.2</u>	89
Over/Under			1.4		2.2		2.0							
eV Alt Fund of Funds - All Single Strategy Median			1.1		1.5		5.8		2.5		4.3		3.3	

\*Returns are gross of manager fees.



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK POLICE vs. InvestorForce Public DB Gross

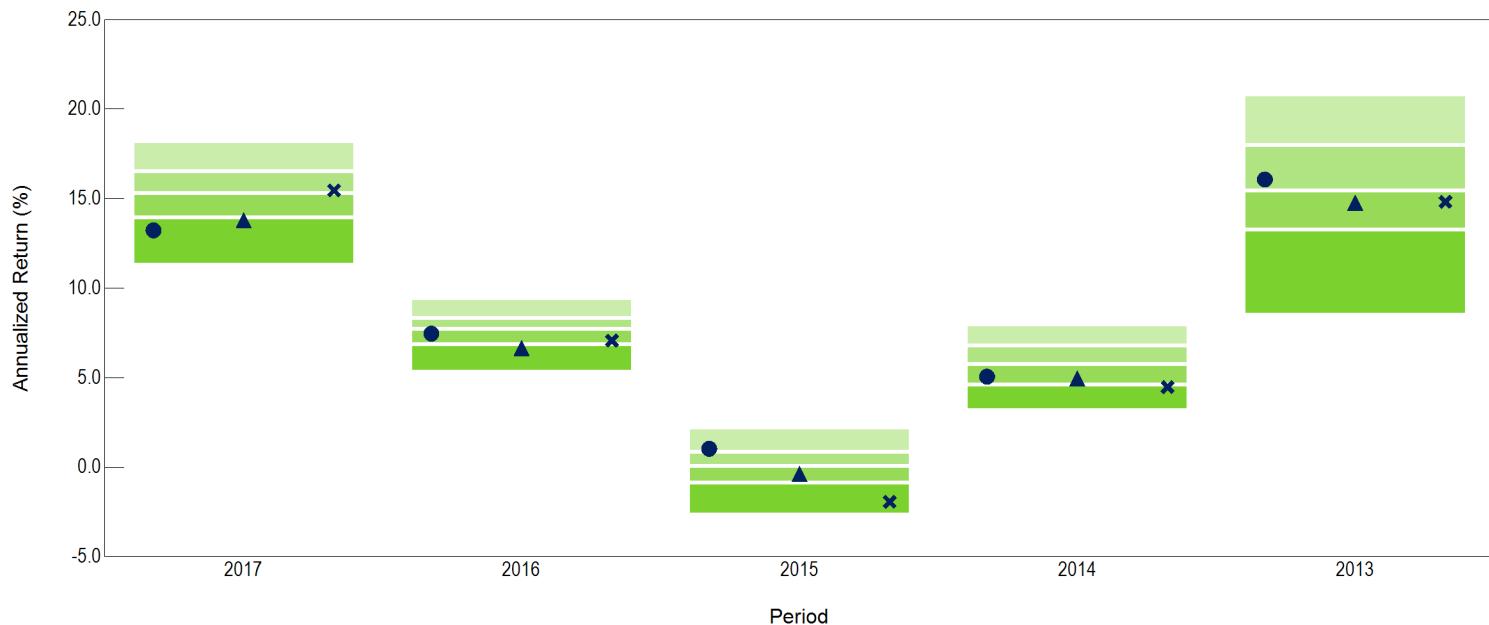


	Return (Rank)								
5th Percentile	2.0	2.3	10.2	8.1	9.2	7.9			
25th Percentile	1.3	1.2	8.9	7.3	8.3	7.0			
Median	0.9	0.7	8.0	6.8	7.8	6.5			
75th Percentile	0.5	0.2	7.2	6.3	7.1	6.0			
95th Percentile	-0.3	-0.5	6.0	5.2	6.1	5.1			
# of Portfolios	211	211	209	204	190	162			
● OK POLICE	1.6	(12)	2.2	(7)	8.7	(30)	6.5	(62)	7.7
▲ POLICE Allocation Index	0.6	(67)	0.9	(39)	8.1	(47)	5.9	(87)	7.0
✖ POLICE Policy Index	0.3	(82)	-0.3	(92)	7.2	(74)	5.9	(87)	6.9



# TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK POLICE vs. InvestorForce Public DB Gross



	Return (Rank)									
5th Percentile	18.2		9.4		2.2		8.0		20.8	
25th Percentile	16.5		8.4		0.9		6.8		18.0	
Median	15.3		7.7		0.1		5.8		15.5	
75th Percentile	14.0		6.9		-0.9		4.6		13.3	
95th Percentile	11.3		5.3		-2.6		3.2		8.5	
# of Portfolios	304		305		316		248		231	
● OK POLICE	13.2	(86)	7.5	(57)	1.0	(21)	5.1	(68)	16.1	(46)
▲ POLICE Allocation Index	13.8	(77)	6.7	(80)	-0.4	(63)	5.0	(70)	14.8	(59)
✖ POLICE Policy Index	15.5	(48)	7.1	(70)	-1.9	(89)	4.5	(79)	14.8	(59)



# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK POLICE vs. InvestorForce Public DB Gross

3 Years



## Oklahoma Police

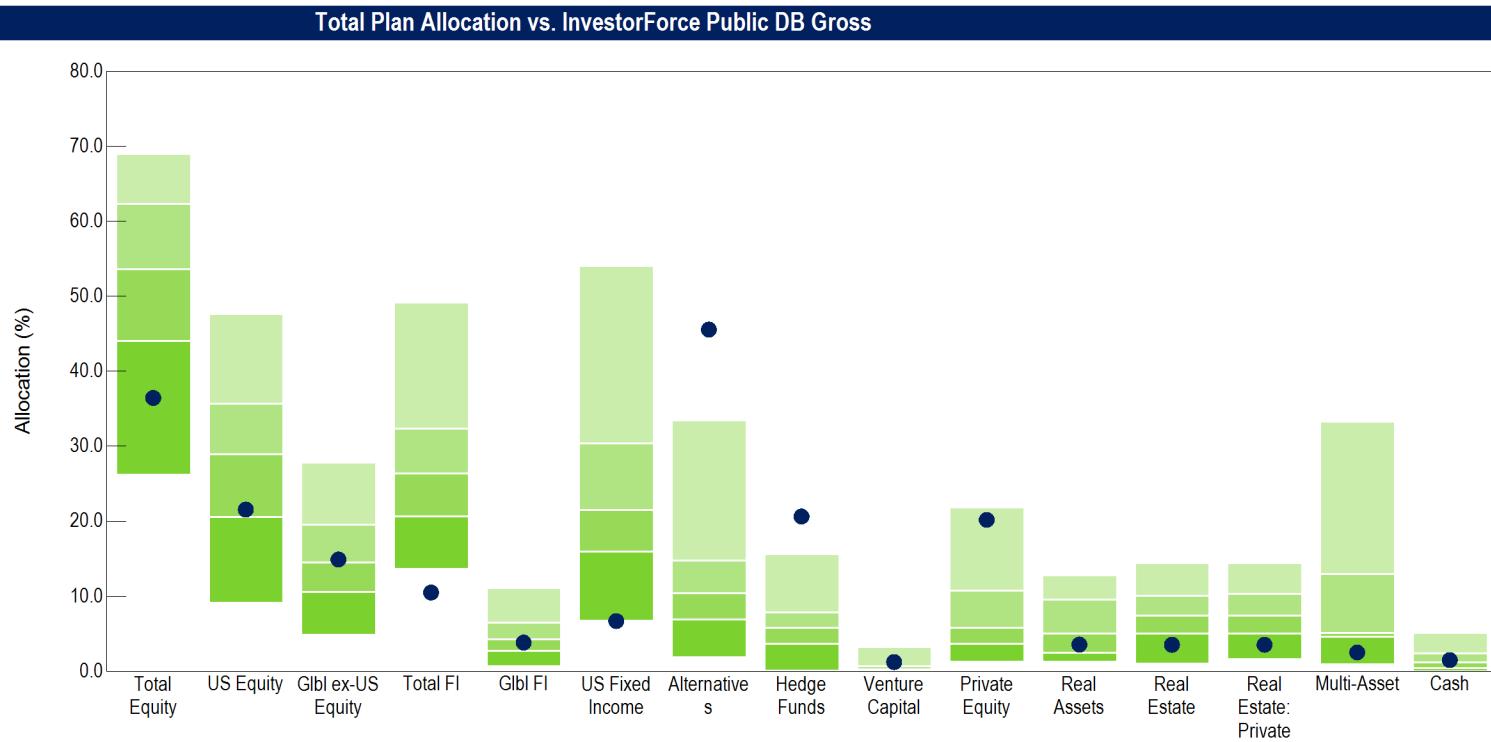
# TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK POLICE vs. InvestorForce Public DB Gross

5 Years



# TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE



	Allocation (Rank)																	
5th Percentile	69.0	47.7	27.8	49.2	11.1	54.0	33.5	15.6	3.2	21.8	12.8	14.4	14.4	33.3	5.1	--	--	
25th Percentile	62.4	35.7	19.6	32.5	6.5	30.5	14.9	8.0	0.7	10.9	9.6	10.1	10.4	13.0	2.5	--	--	
Median	53.7	29.0	14.5	26.5	4.3	21.6	10.5	5.9	0.3	5.9	5.1	7.5	7.5	5.2	1.2	--	--	
75th Percentile	44.1	20.6	10.7	20.7	2.8	16.0	7.0	3.8	0.3	3.7	2.5	5.1	5.1	4.7	0.5	--	--	
95th Percentile	26.3	9.2	5.0	13.7	0.8	6.8	2.0	0.1	0.1	1.4	1.4	1.1	1.6	1.0	0.1	--	--	
# of Portfolios	196	137	162	195	25	134	126	64	18	83	62	118	88	67	179	--	--	
● OK POLICE	36.4	(91)	21.5	(74)	14.9	(50)	10.5	(99)	3.8	(64)	6.7	(96)	45.5	(2)	20.6	(3)	1.2	(43)



# TOTAL FUND ATTRIBUTION ANALYSIS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return	1.6%	2.1%	8.7%
Wtd. Index Return *	0.7%	1.0%	7.9%
<b>Excess Return</b>	<b>0.8%</b>	<b>1.2%</b>	<b>0.7%</b>
Selection Effect	0.8%	1.4%	0.9%
Allocation Effect	0.1%	-0.2%	0.2%
Interaction Effect	0.0%	0.0%	0.0%
 Asset Class Returns			
OK POLICE	1.6%	2.2%	8.7%
Equity Composite	2.0%	1.9%	12.0%
Domestic Equity Composite	5.3%	5.3%	15.4%
International Equity Composite	-3.2%	-3.6%	6.6%
Fixed Income Composite	-0.8%	-1.1%	1.4%
Total Long/Short	2.3%	3.1%	8.8%
Total Real Assets	2.0%	4.2%	9.2%
Total Core Real Estate	2.1%	4.3%	8.4%
Private Real Estate	4.4%	5.8%	9.7%
Total Low Volatility Strategies	2.1%	2.8%	4.4%
Private Credit	2.6%	4.8%	12.6%
Private Equity	1.7%	4.9%	11.7%
Cash	0.5%	1.0%	1.8%

\*Calculated from benchmark returns and weightings of each component.



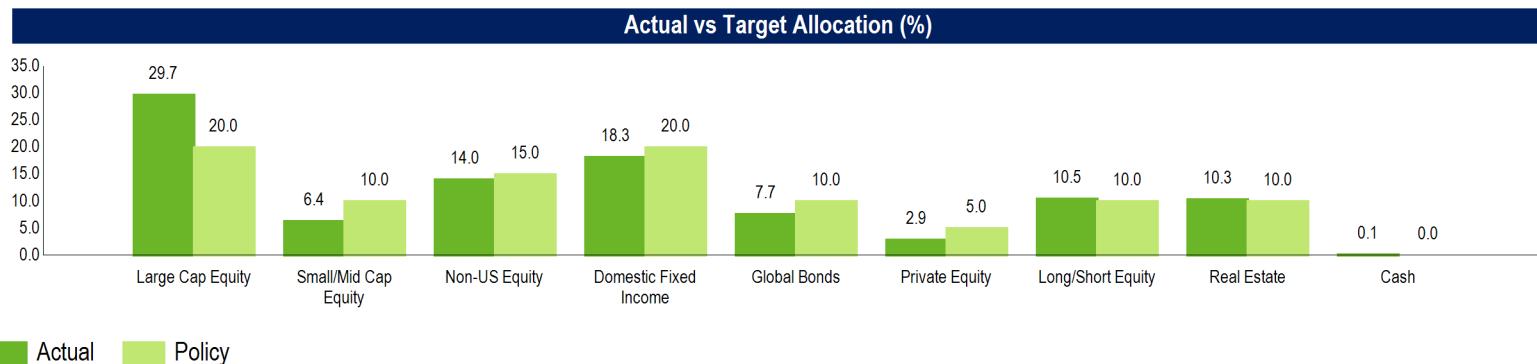
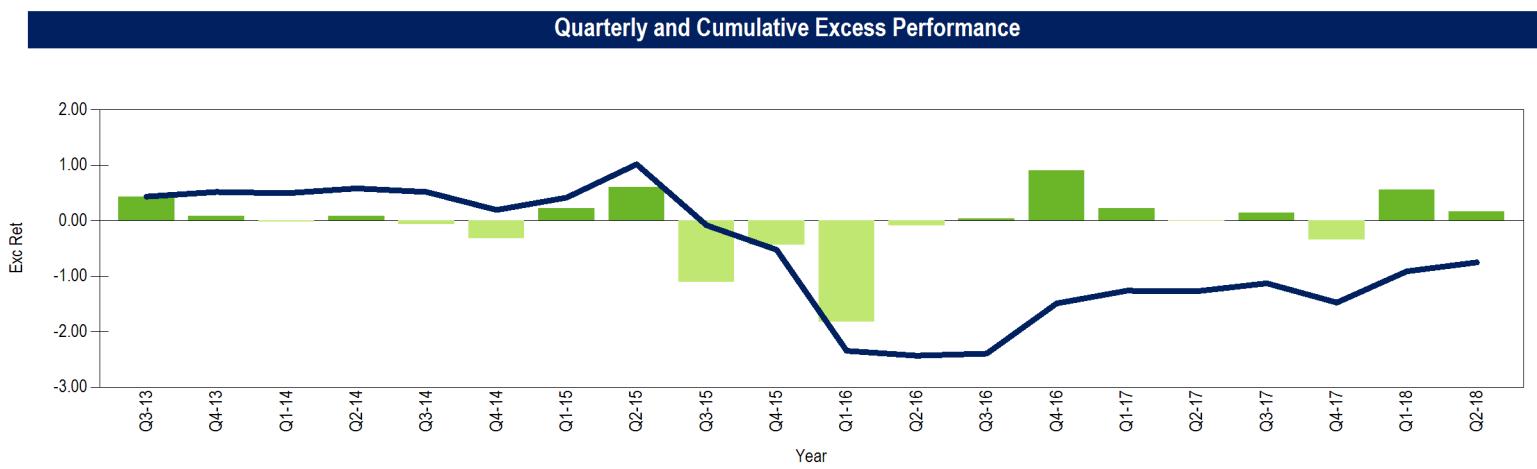
# OKLAHOMA LAW



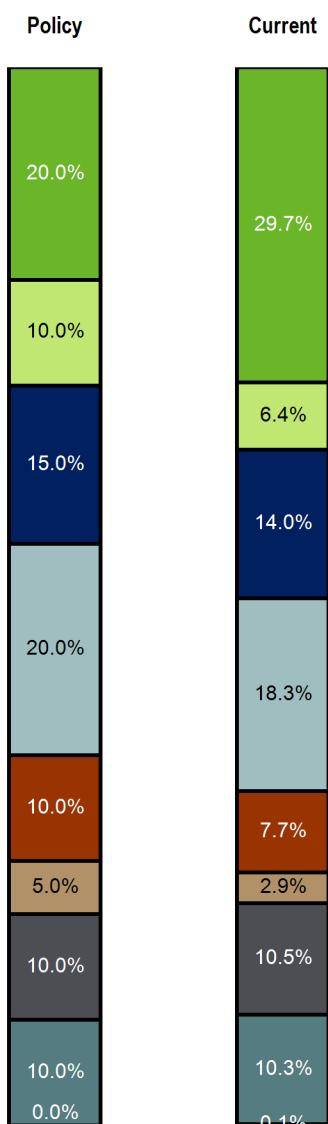
## Oklahoma Law

# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK LAW</b>	<b>\$994,136,797</b>	<b>1.5%</b>	<b>16</b>	<b>1.7%</b>	<b>12</b>	<b>9.0%</b>	<b>22</b>	<b>6.5%</b>	<b>64</b>	<b>7.9%</b>	<b>44</b>	<b>6.9%</b>	<b>27</b>
LAW Allocation Index		1.3%	26	1.0%	35	8.4%	34	7.1%	36	8.1%	39	6.8%	34
LAW Policy Index		2.1%	4	1.7%	14	8.5%	32	7.2%	29	8.4%	25	7.0%	24
InvestorForce Public DB Gross Median		0.9%		0.7%		8.0%		6.8%		7.8%		6.5%	



# TOTAL FUND ASSET ALLOCATION VS. POLICY



Policy	Current	Asset Allocation vs. Target					
		Current	Policy	Current	Difference*	Policy Range	Within Range
Large Cap Equity	\$295,537,957	20.0%	29.7%	9.7%	15.0% - 25.0%	No	
Small/Mid Cap Equity	\$63,153,256	10.0%	6.4%	-3.6%	5.0% - 15.0%	Yes	
Non-US Equity	\$139,608,413	15.0%	14.0%	-1.0%	5.0% - 15.0%	Yes	
Domestic Fixed Income	\$181,485,070	20.0%	18.3%	-1.7%	15.0% - 25.0%	Yes	
Global Bonds	\$76,440,474	10.0%	7.7%	-2.3%	5.0% - 15.0%	Yes	
Private Equity	\$29,141,588	5.0%	2.9%	-2.1%	0.0% - 5.0%	Yes	
Long/Short Equity	\$104,708,980	10.0%	10.5%	0.5%	5.0% - 15.0%	Yes	
Real Estate	\$102,747,789	10.0%	10.3%	0.3%	2.0% - 12.0%	Yes	
Cash	\$1,313,270	0.0%	0.1%	0.1%	0.0% - 5.0%	Yes	
<b>Total</b>	<b>\$994,136,797</b>	<b>100.0%</b>	<b>100.0%</b>				

# OKLAHOMA JUDGES

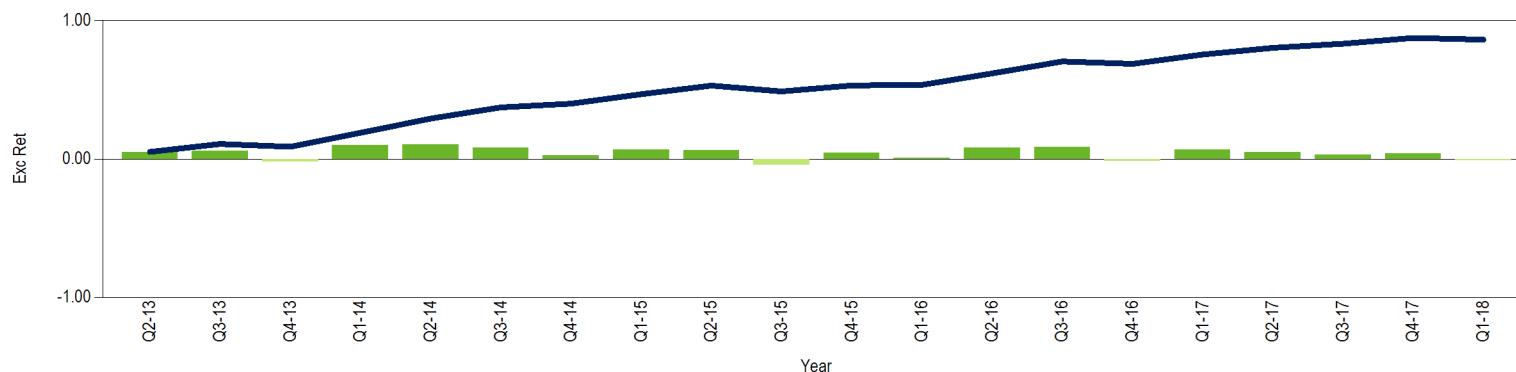


## Oklahoma Judges

# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK JUDGES</b>	<b>\$335,880,883</b>	<b>-1.1%</b>	<b>97</b>	<b>7.1%</b>	<b>48</b>	<b>10.5%</b>	<b>45</b>	<b>6.5%</b>	<b>55</b>	<b>7.9%</b>	<b>48</b>	<b>6.7%</b>	<b>37</b>
JUDGES Allocation Index		-1.0%	96	7.0%	50	10.4%	47	6.4%	59	7.7%	54	6.4%	49
JUDGES Policy Index		-1.0%	94	7.0%	49	10.6%	43	6.6%	50	7.8%	50	6.4%	48
InvestorForce Public DB Gross Median		-0.2%		7.0%		10.2%		6.6%		7.8%		6.4%	

Quarterly and Cumulative Excess Performance



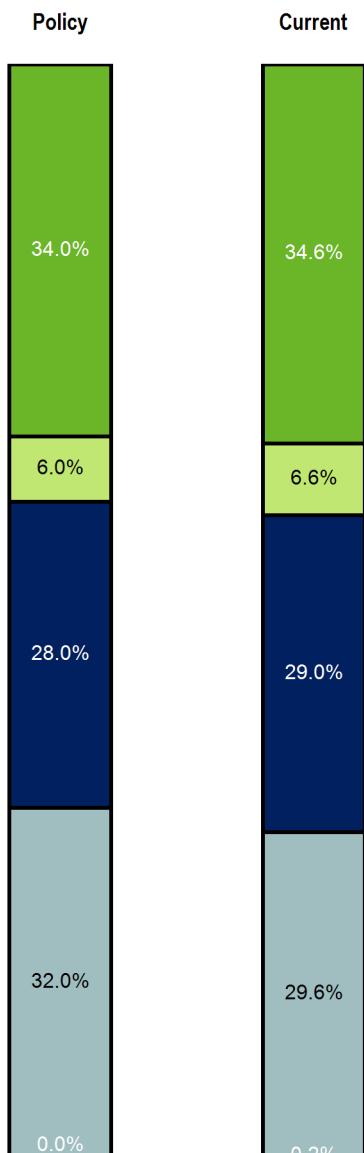
Actual vs Target Allocation (%)



Actual      Policy



# TOTAL FUND ASSET ALLOCATION VS. POLICY



	Asset Allocation vs. Target					Within Range
	Current	Policy	Current Difference*	Policy Range		
Large Cap Equity	\$116,375,730	34.0%	34.6%	0.6%	31.2% - 36.8%	Yes
Small Cap Equity	\$22,103,782	6.0%	6.6%	0.6%	3.2% - 8.8%	Yes
Non-US Equity	\$97,544,431	28.0%	29.0%	1.0%	25.0% - 31.0%	Yes
Domestic Fixed Income	\$99,297,179	32.0%	29.6%	-2.4%	27.5% - 36.5%	Yes
Cash	\$559,761	0.0%	0.2%	0.2%	0.0% - 5.0%	Yes
<b>Total</b>	<b>\$335,880,883</b>	<b>100.0%</b>	<b>100.0%</b>			

\*Difference between Policy and Current Allocation



# OKLAHOMA WILDLIFE

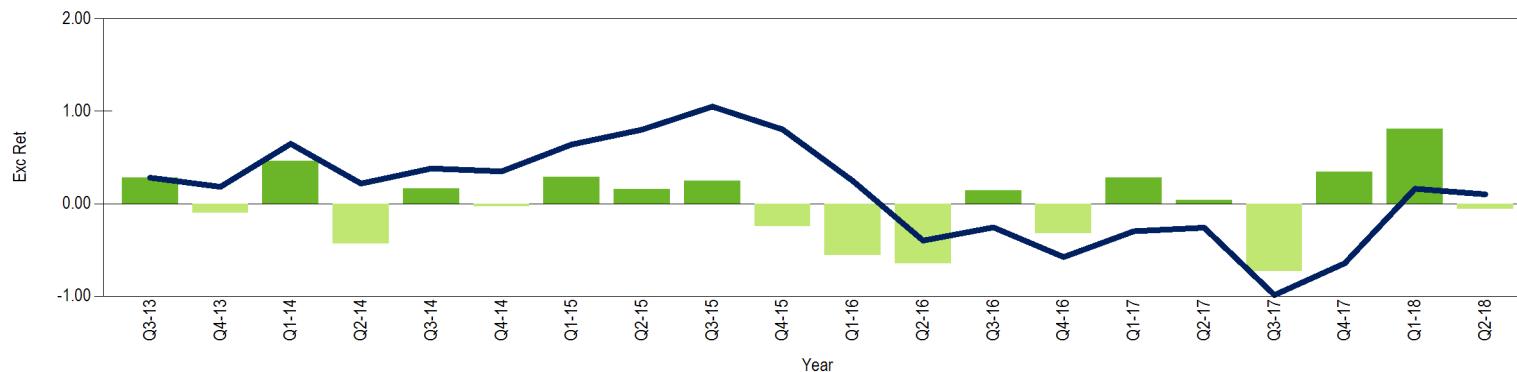


## OKLAHOMA WILDLIFE

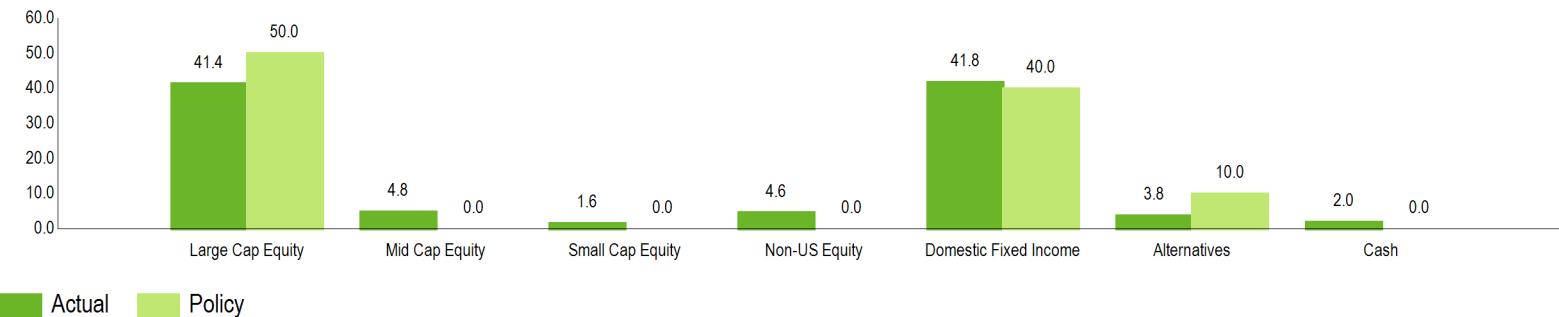
# TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>OK WILDLIFE</b>	<b>\$114,185,383</b>	<b>1.6%</b>	<b>12</b>	<b>1.5%</b>	<b>20</b>	<b>8.2%</b>	<b>41</b>	<b>6.7%</b>	<b>56</b>	<b>7.9%</b>	<b>48</b>	<b>6.2%</b>	<b>68</b>
WILDLIFE Allocation Index		1.6%	11	0.7%	49	7.8%	56	6.9%	46	7.8%	50	6.7%	42
WILDLIFE Policy Index		1.7%	10	0.8%	44	7.5%	67	6.8%	53	8.0%	44	7.3%	16
InvestorForce Public DB Gross Median		0.9%		0.7%		8.0%		6.8%		7.8%		6.5%	

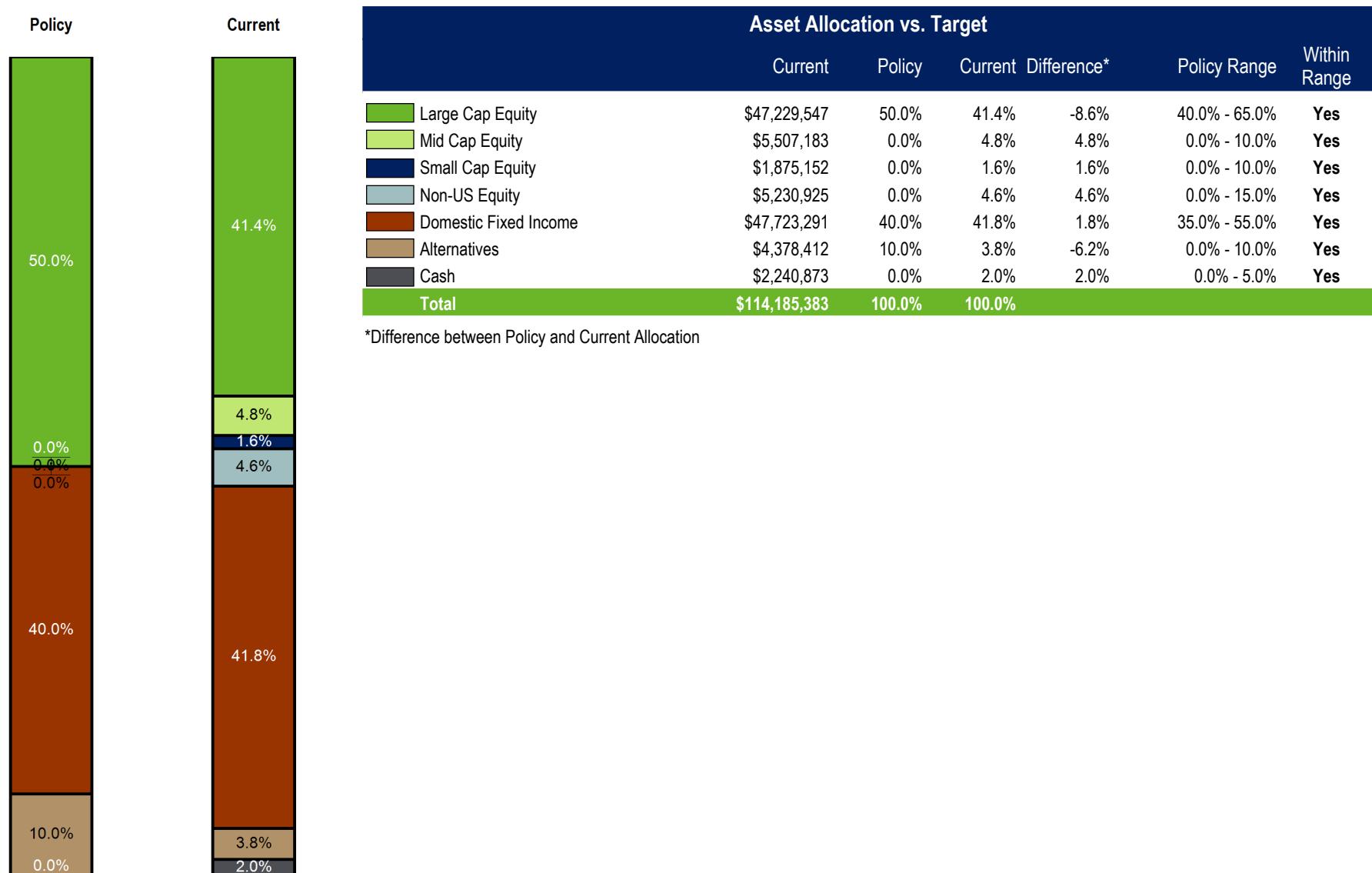
Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)



# TOTAL FUND ASSET ALLOCATION VS. POLICY

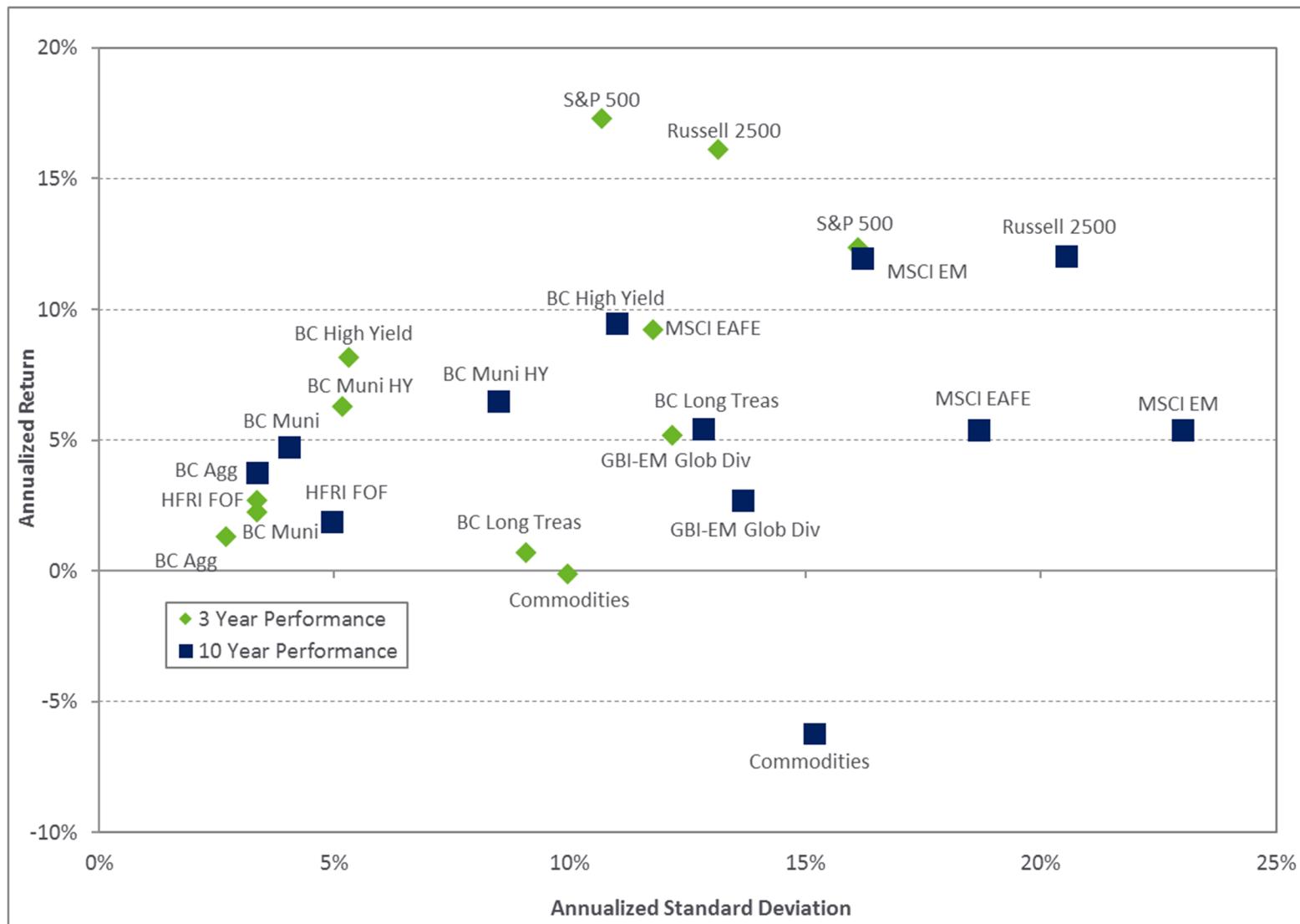


## **APPENDIX: MARKET ENVIRONMENT**

NEPC, LLC

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# LONG-TERM PERFORMANCE SUMMARY



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

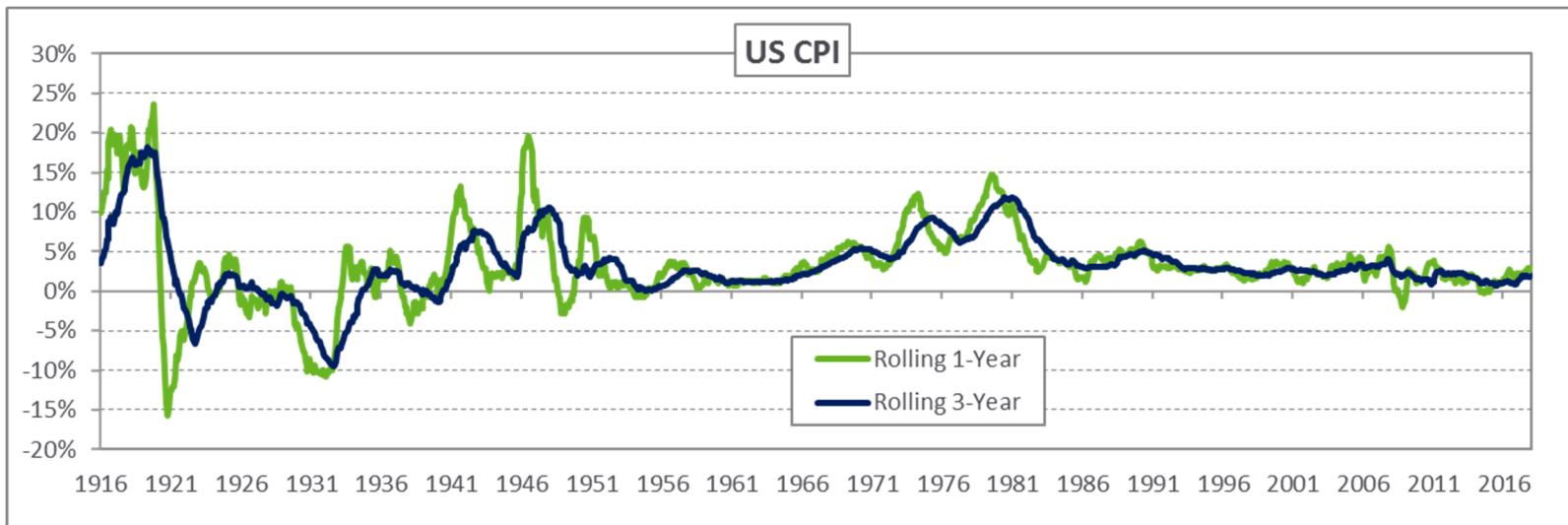


# MACRO

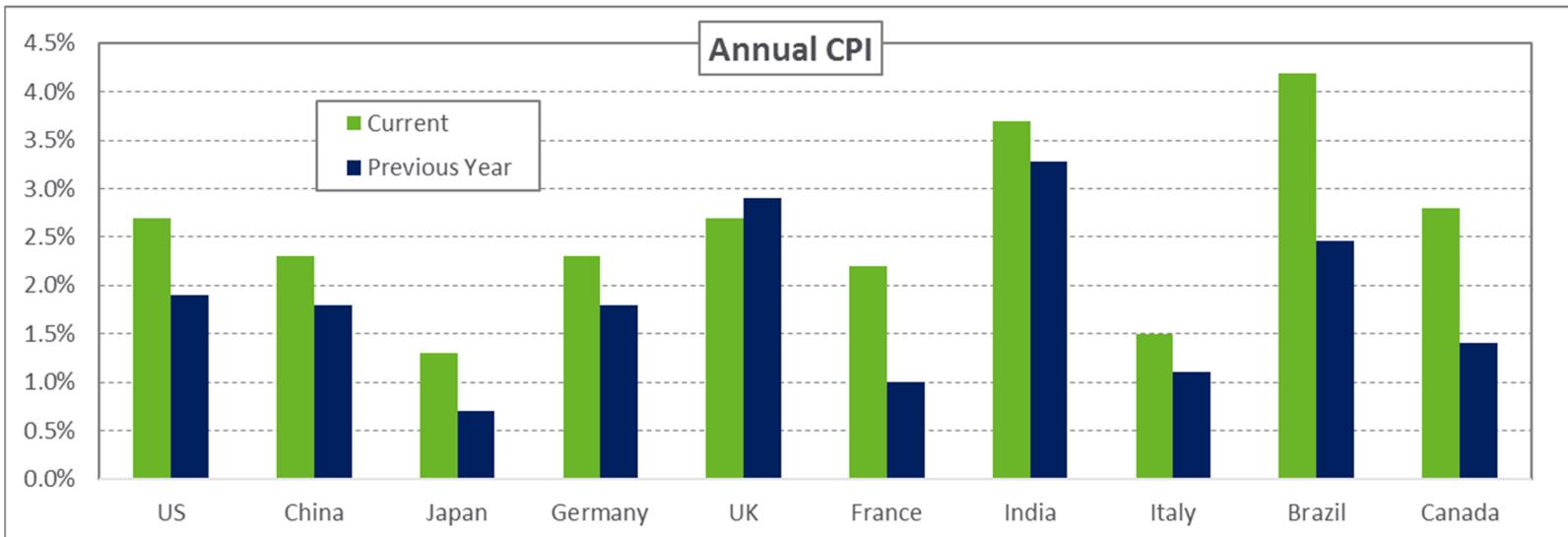
NEPC, LLC

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# INFLATION



Source: Bureau of Labor Statistics, Bloomberg, NEPC



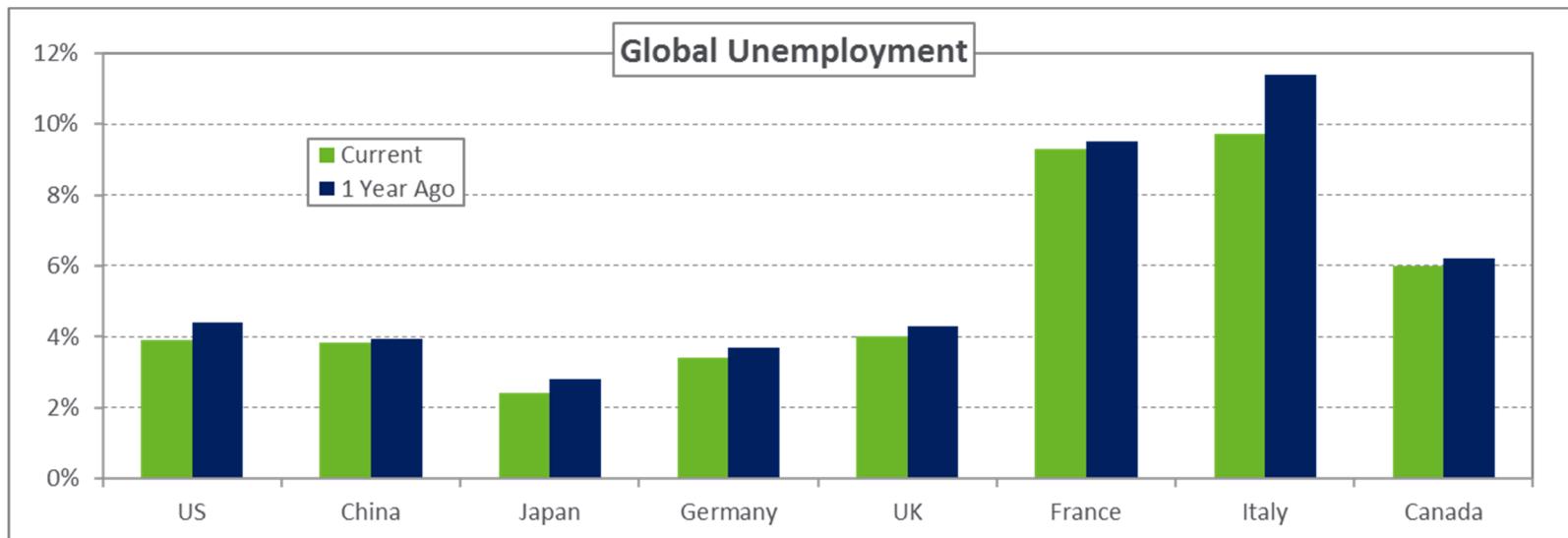
Source: Bureau of Labor Statistics, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, India Central Statistical Organization, ISTAT, IBGE, STCA, Bloomberg



# UNEMPLOYMENT



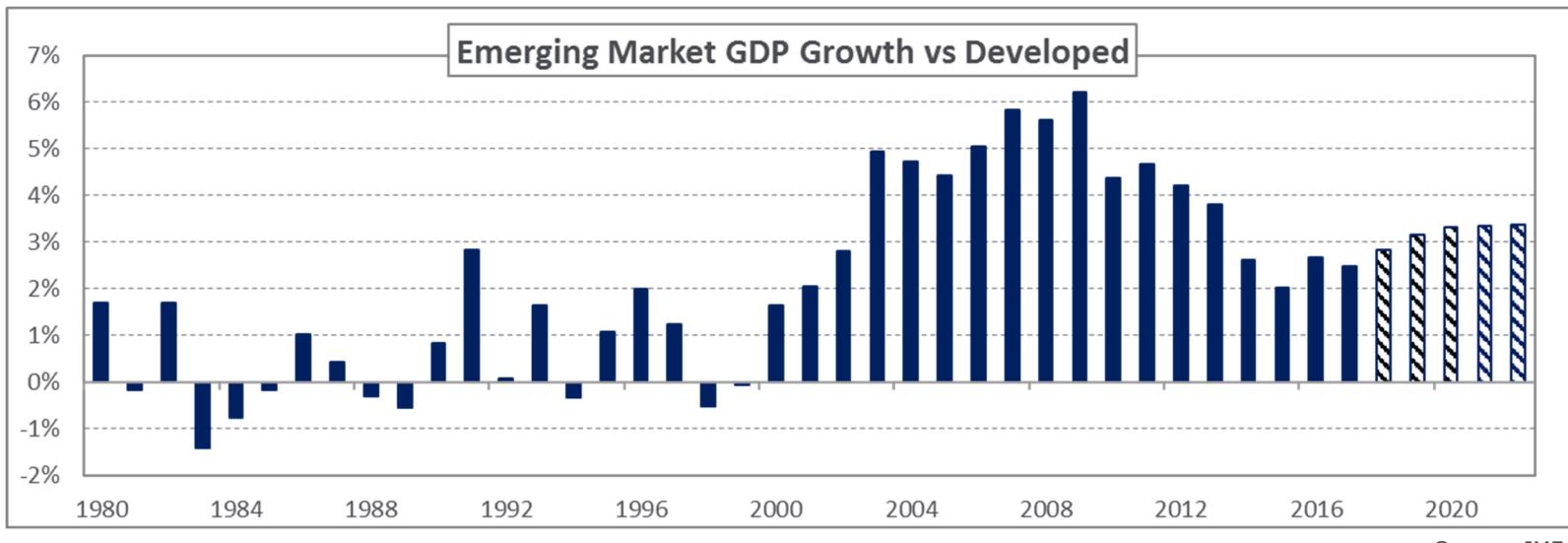
Source: Bureau of Labor Statistics, Bloomberg



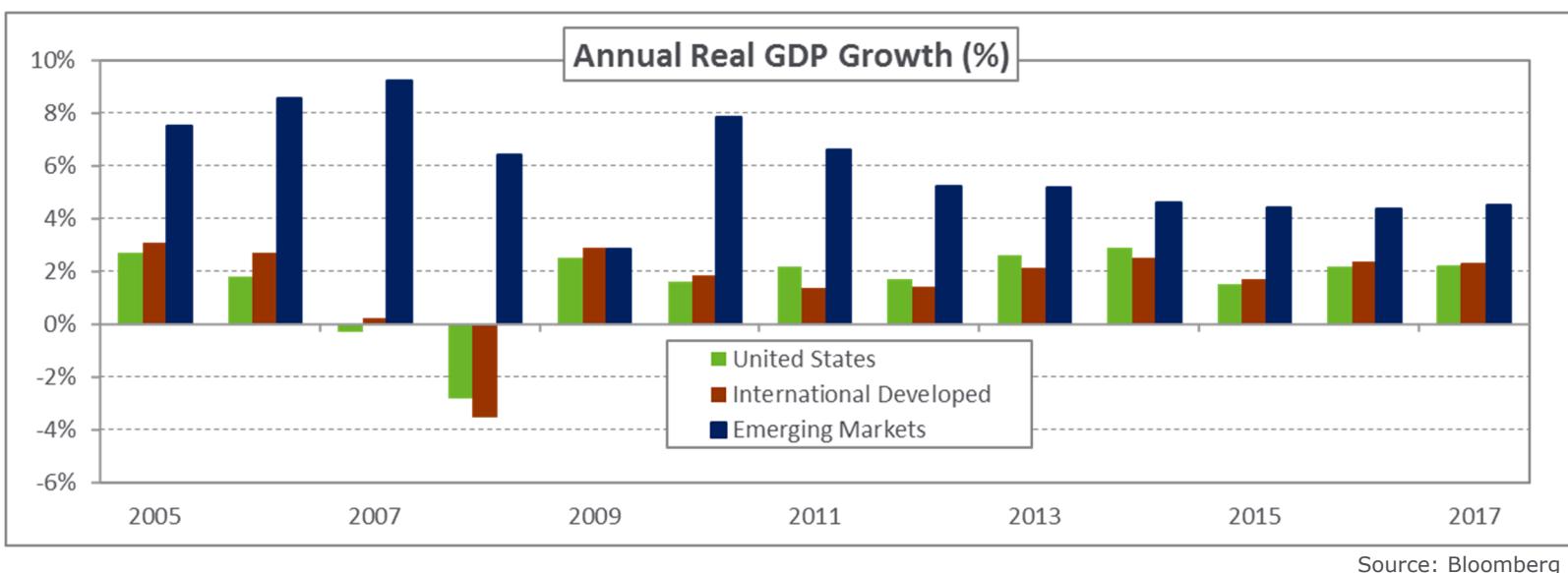
Source: Bureau of Labor Statistics, STA, National Bureau of Statistics of China, Ministry of Internal Affairs and Communications (Japan), German Federal Statistics Office, UK Office for National Statistics, National Statistics Office of France, ISTAT, IBGE, Bloomberg



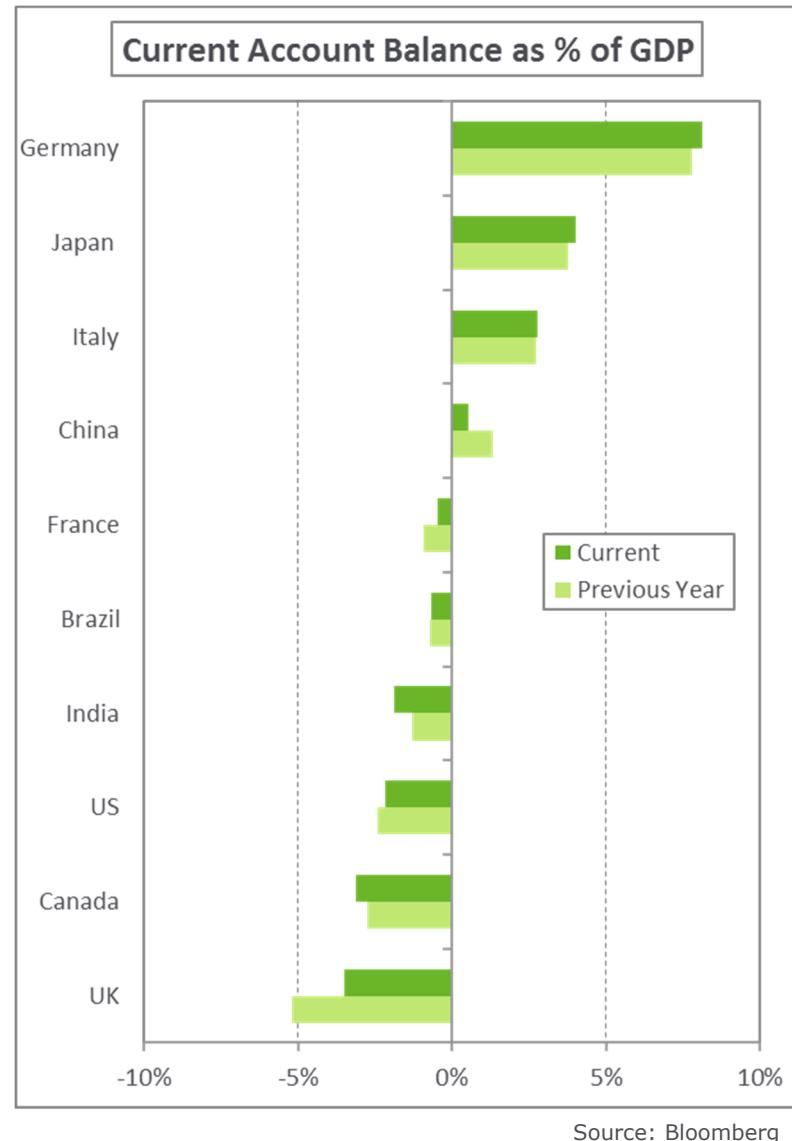
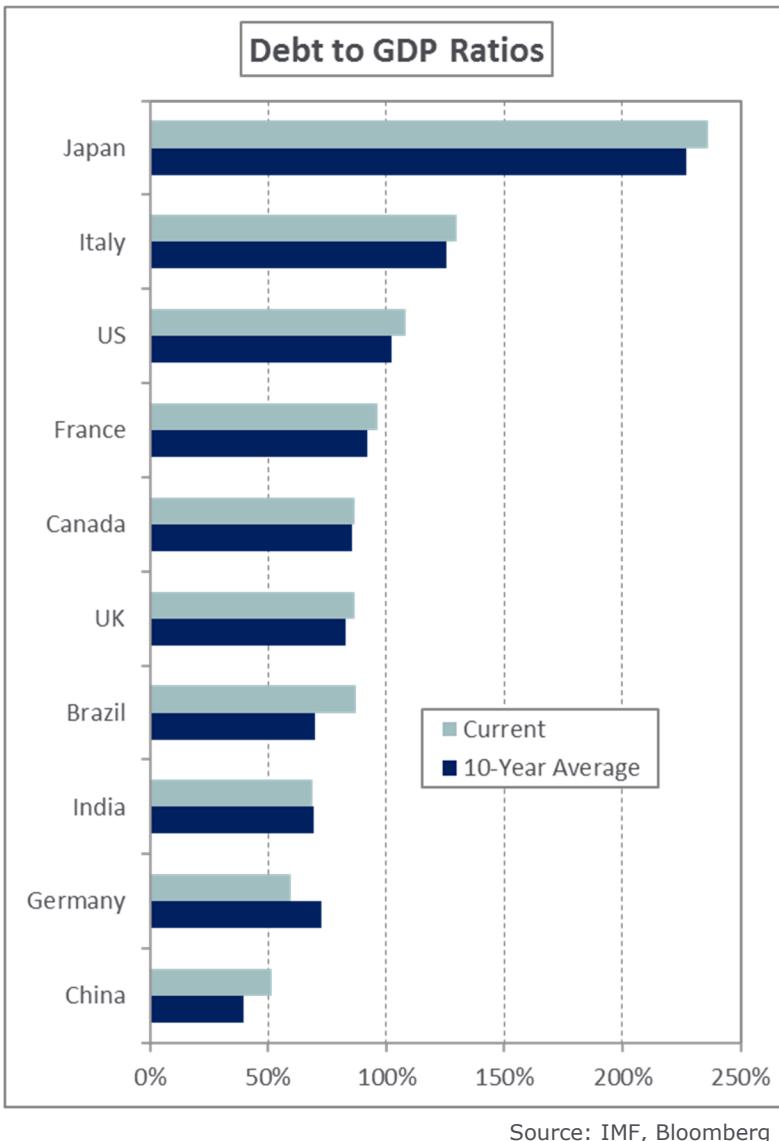
# ECONOMIC INDICATORS



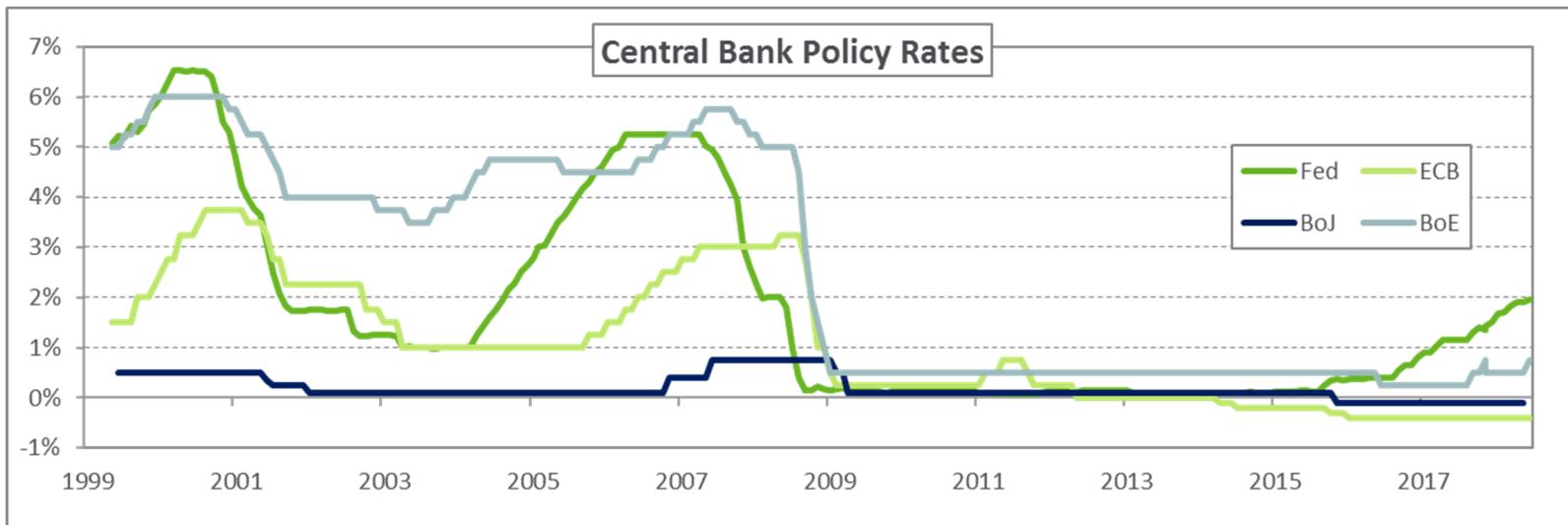
# GROSS DOMESTIC PRODUCT



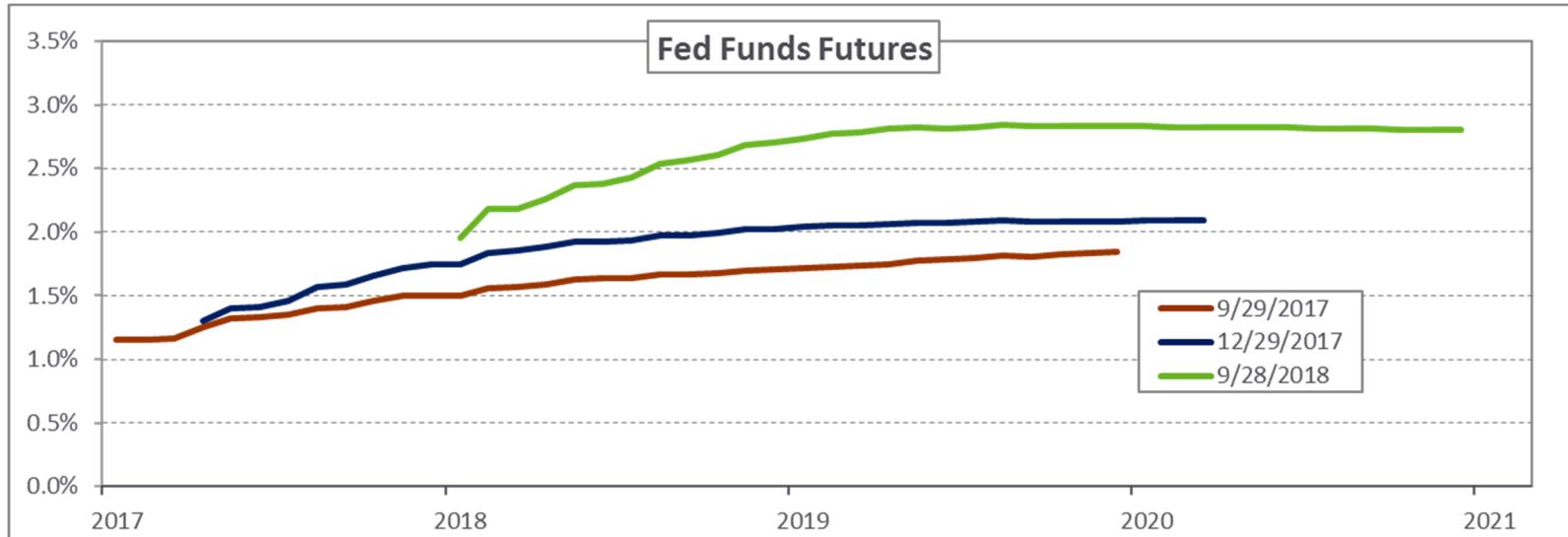
# GROSS DOMESTIC PRODUCT METRICS



# CENTRAL BANK RATES



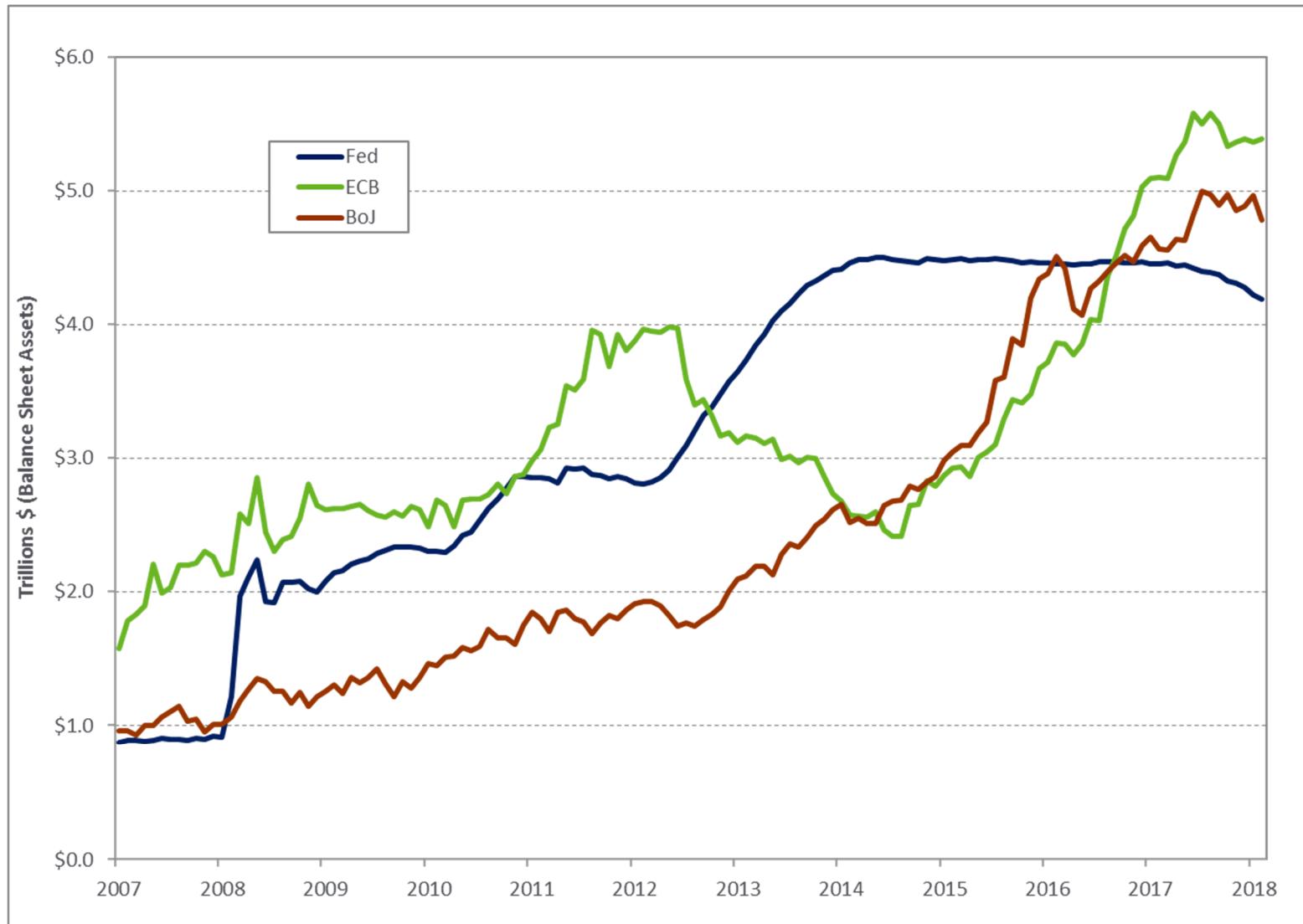
Source: Federal Reserve, ECB, Bank of Japan, Bank of England, Bloomberg



Source: Bloomberg



# CENTRAL BANK BALANCE SHEETS



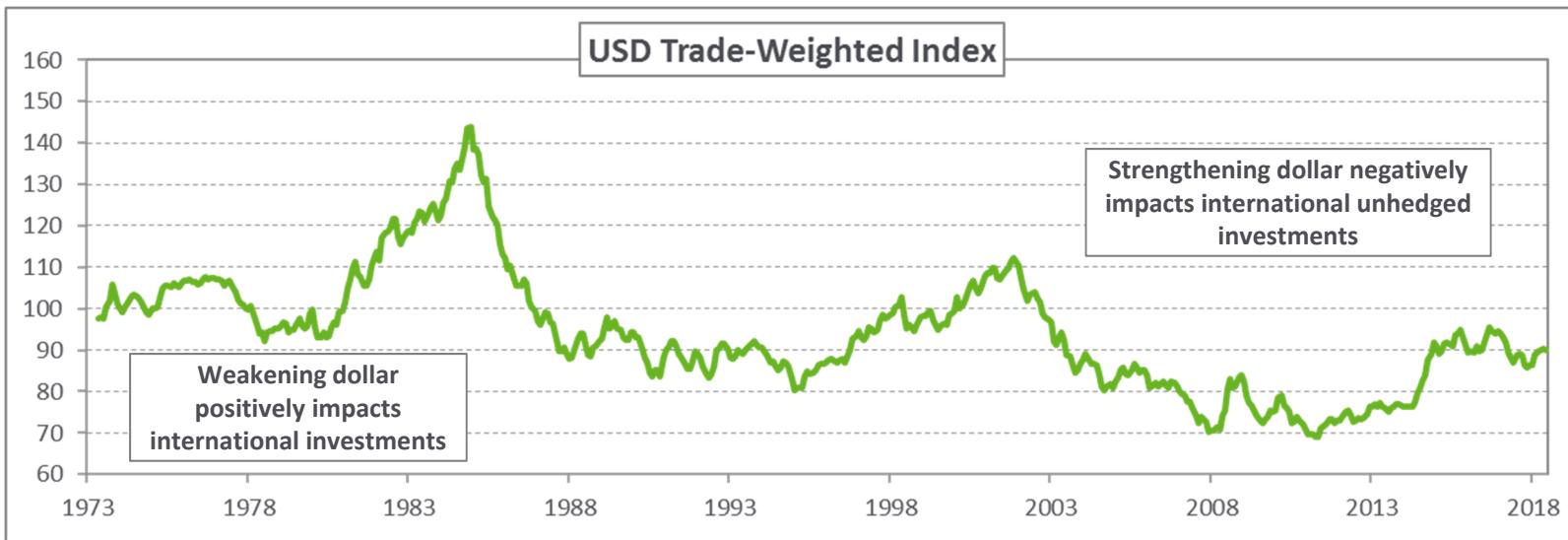
Source: Federal Reserve, Bank of Japan, ECB, Bloomberg, NEPC



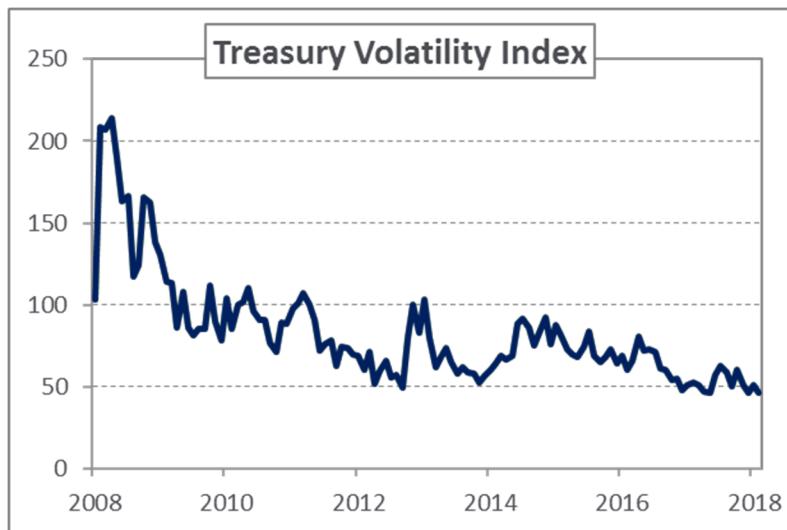
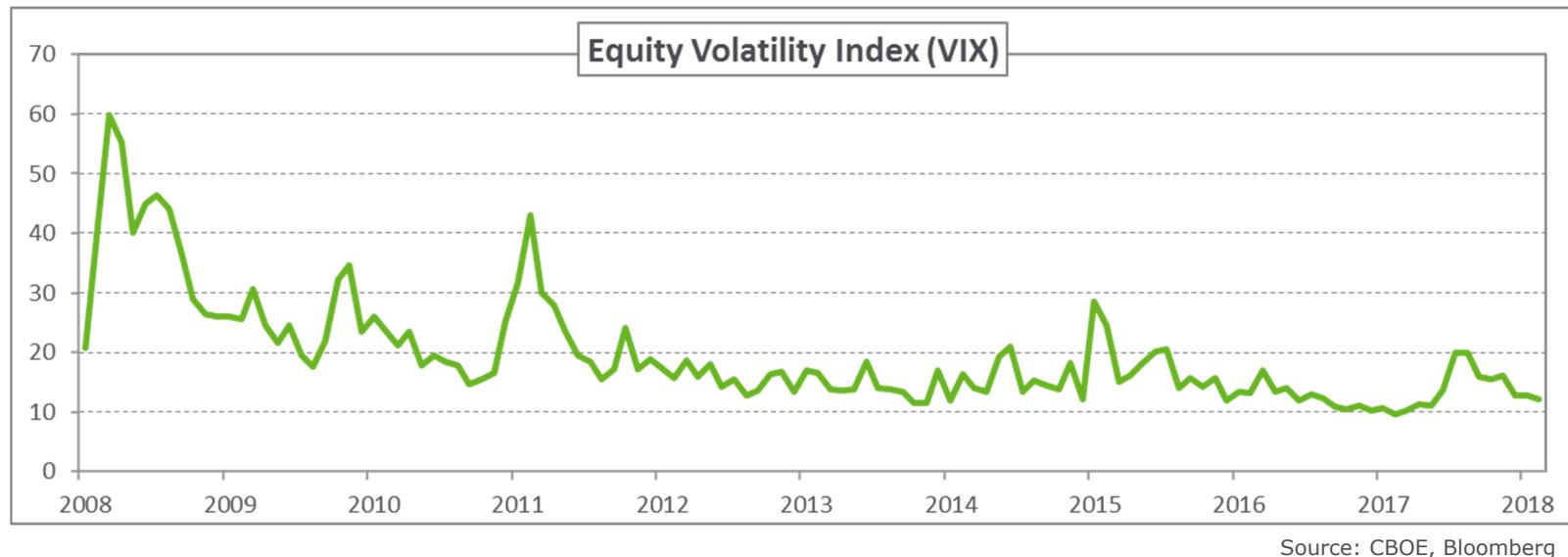
# CURRENCIES

Currencies	Spot	% Change Relative to USD		
		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%

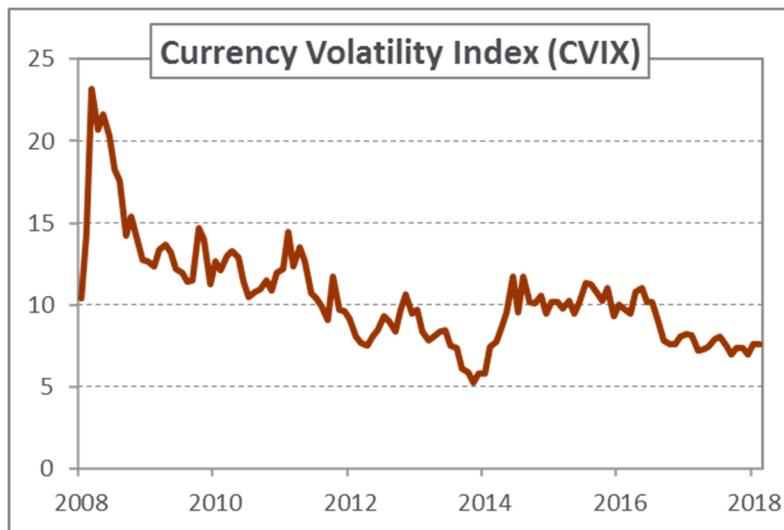
Source: Bloomberg



# VOLATILITY



Source: Merrill Lynch, Bloomberg



Source: Deutsche Bank, Bloomberg

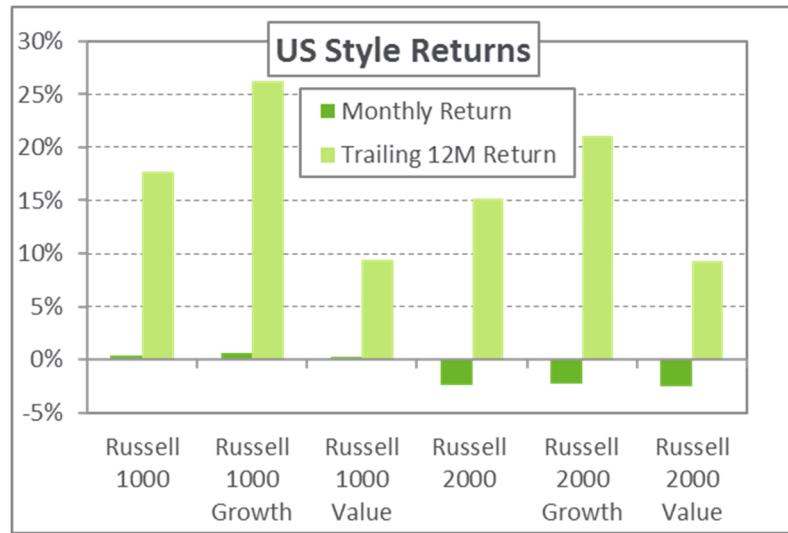


# EQUITY

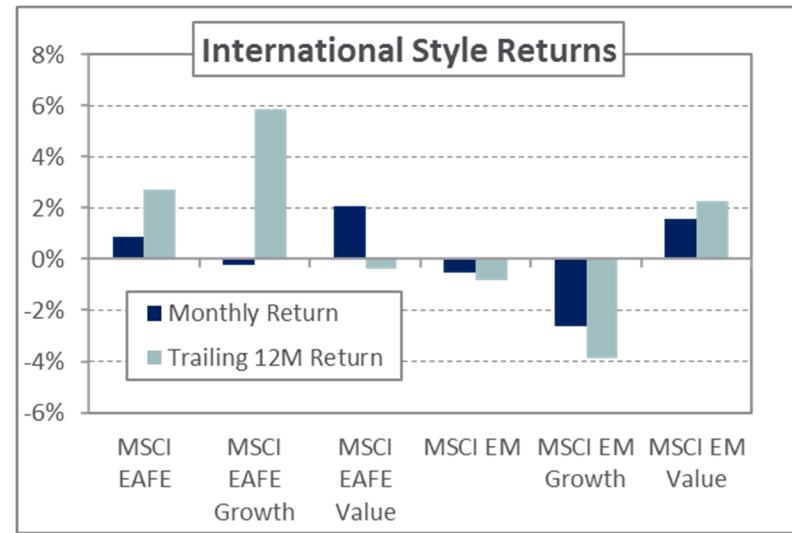
NEPC, LLC

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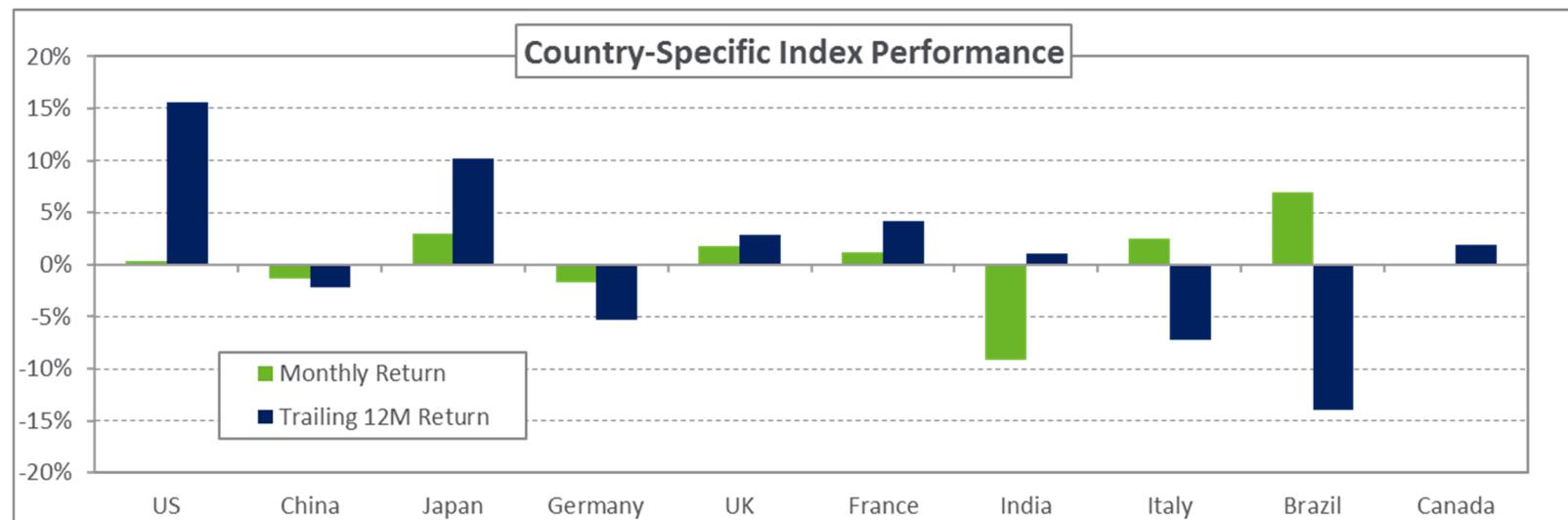
# EQUITY INDEX PERFORMANCE



Source: Russell, Bloomberg



Source: MSCI, Bloomberg



Source: MSCI, Bloomberg  
Represents returns in USD

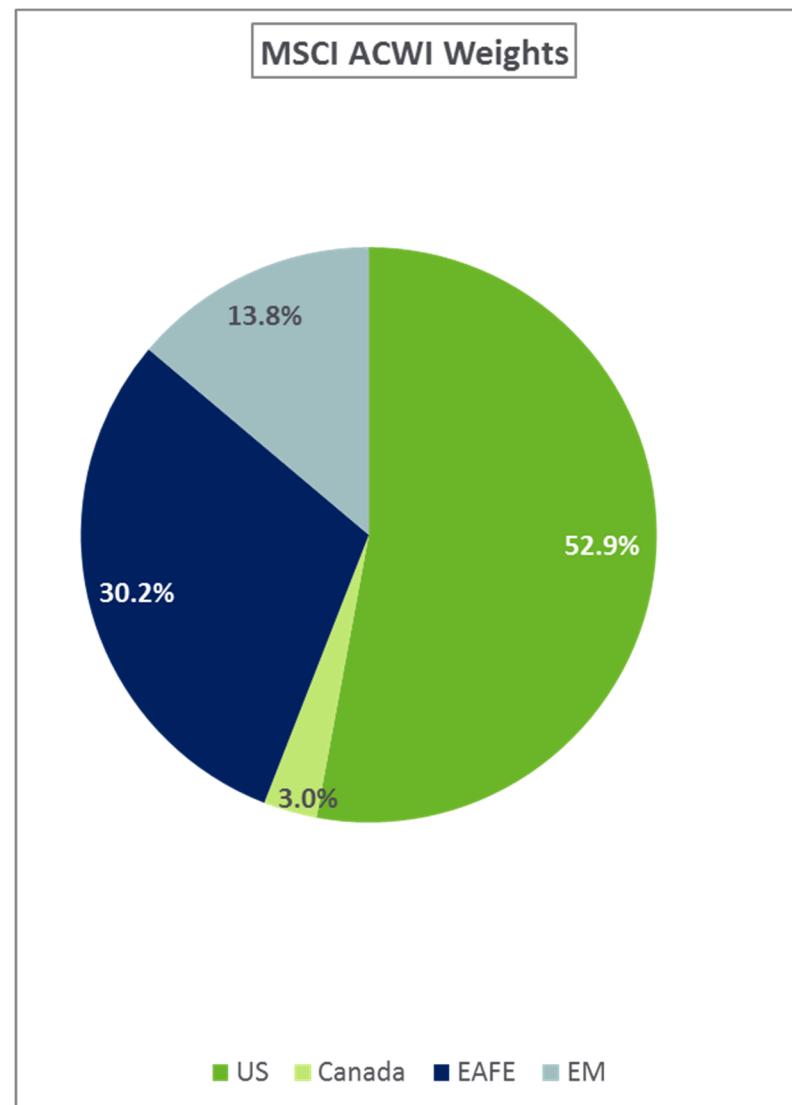


# INDEX COMPOSITION

	MTD	QTD	YTD	Index Weight
<b>S&amp;P 500</b>	<b>0.6%</b>	<b>7.7%</b>	<b>10.6%</b>	<b>100%</b>
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
<b>MSCI ACWI</b>	<b>0.5%</b>	<b>4.4%</b>	<b>4.2%</b>	<b>100%</b>
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%

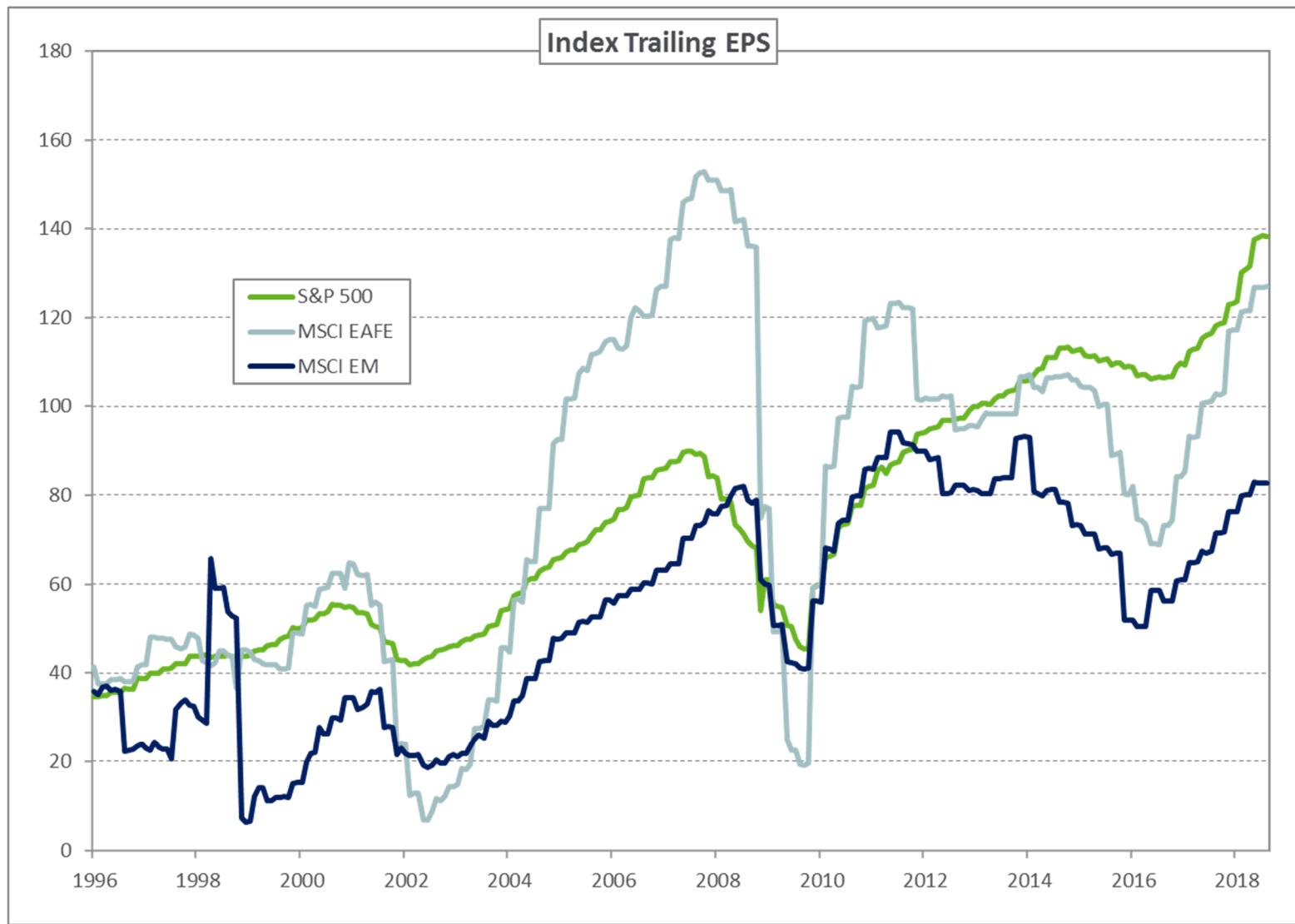
Source: S&P, MSCI, Bloomberg



Source: MSCI, Bloomberg



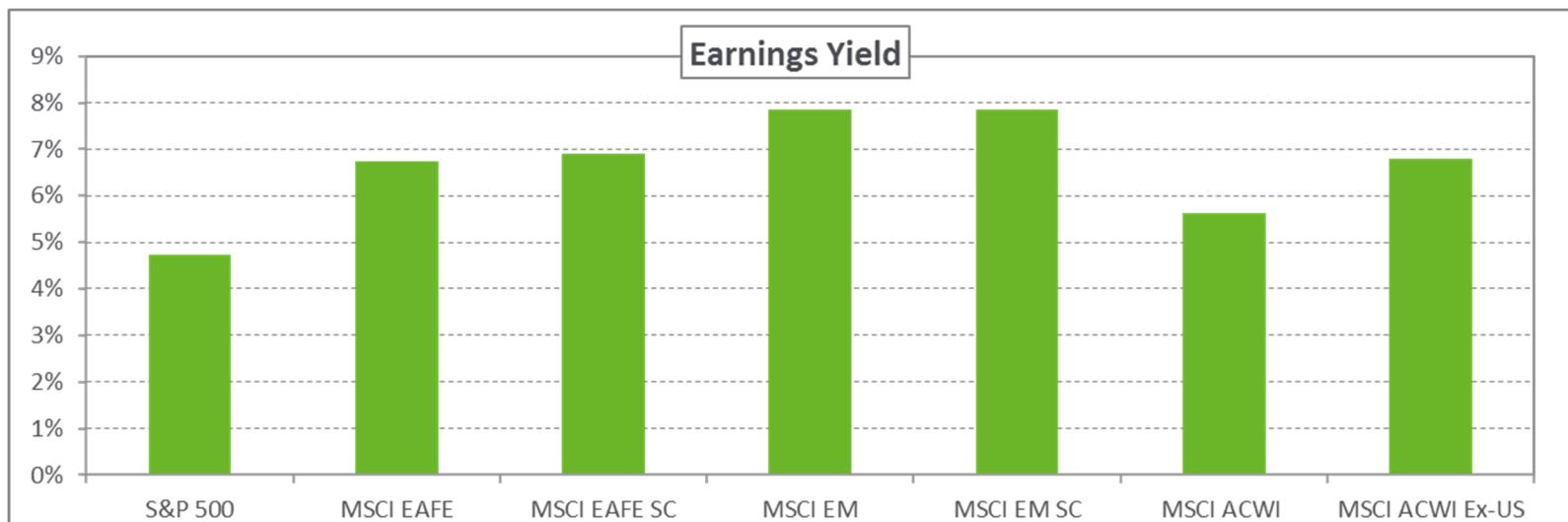
# EARNINGS



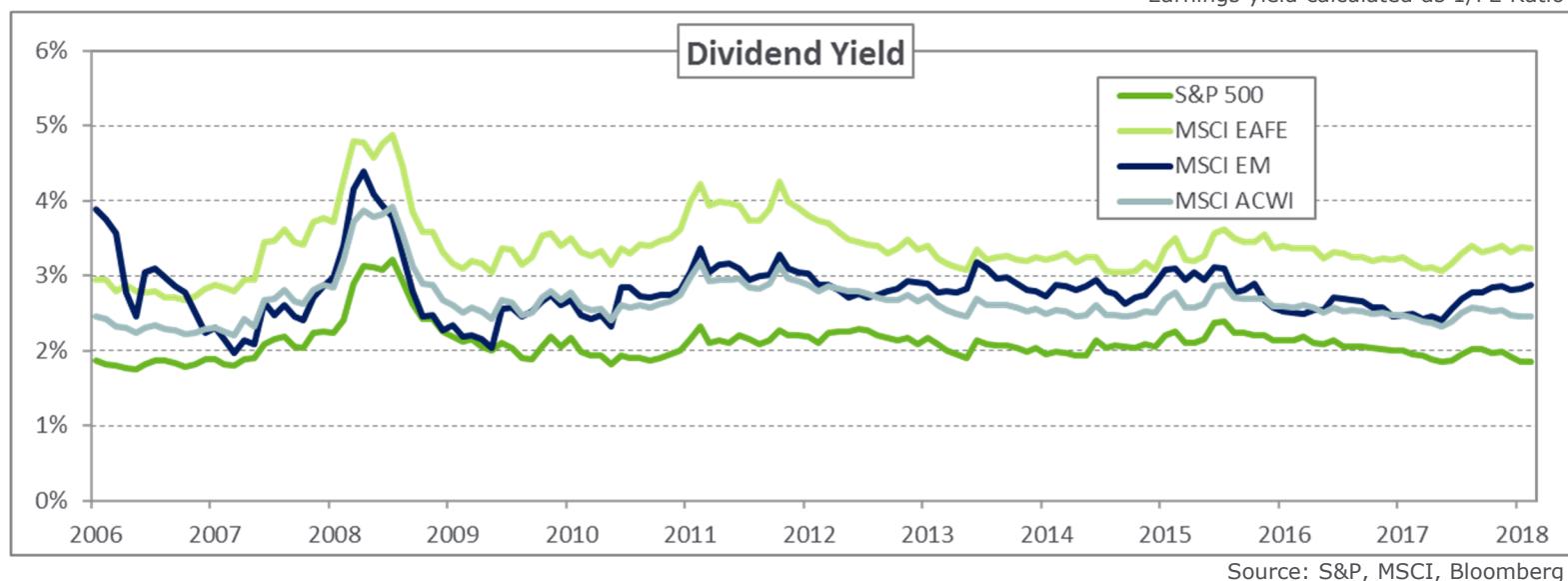
Source: S&P, MSCI, Bloomberg



# YIELDS



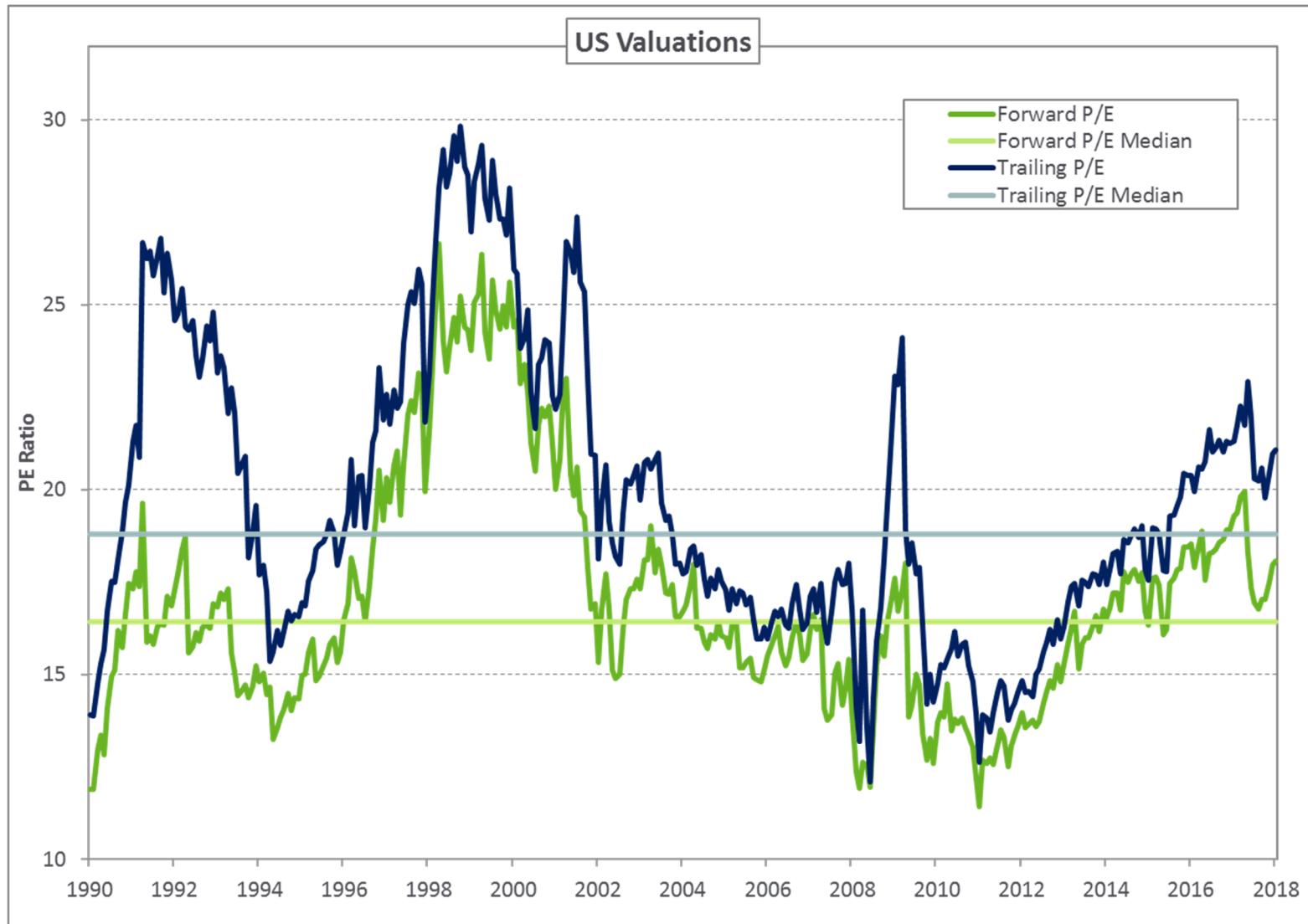
Source: S&P, MSCI, Bloomberg  
Earnings yield calculated as 1/PE Ratio



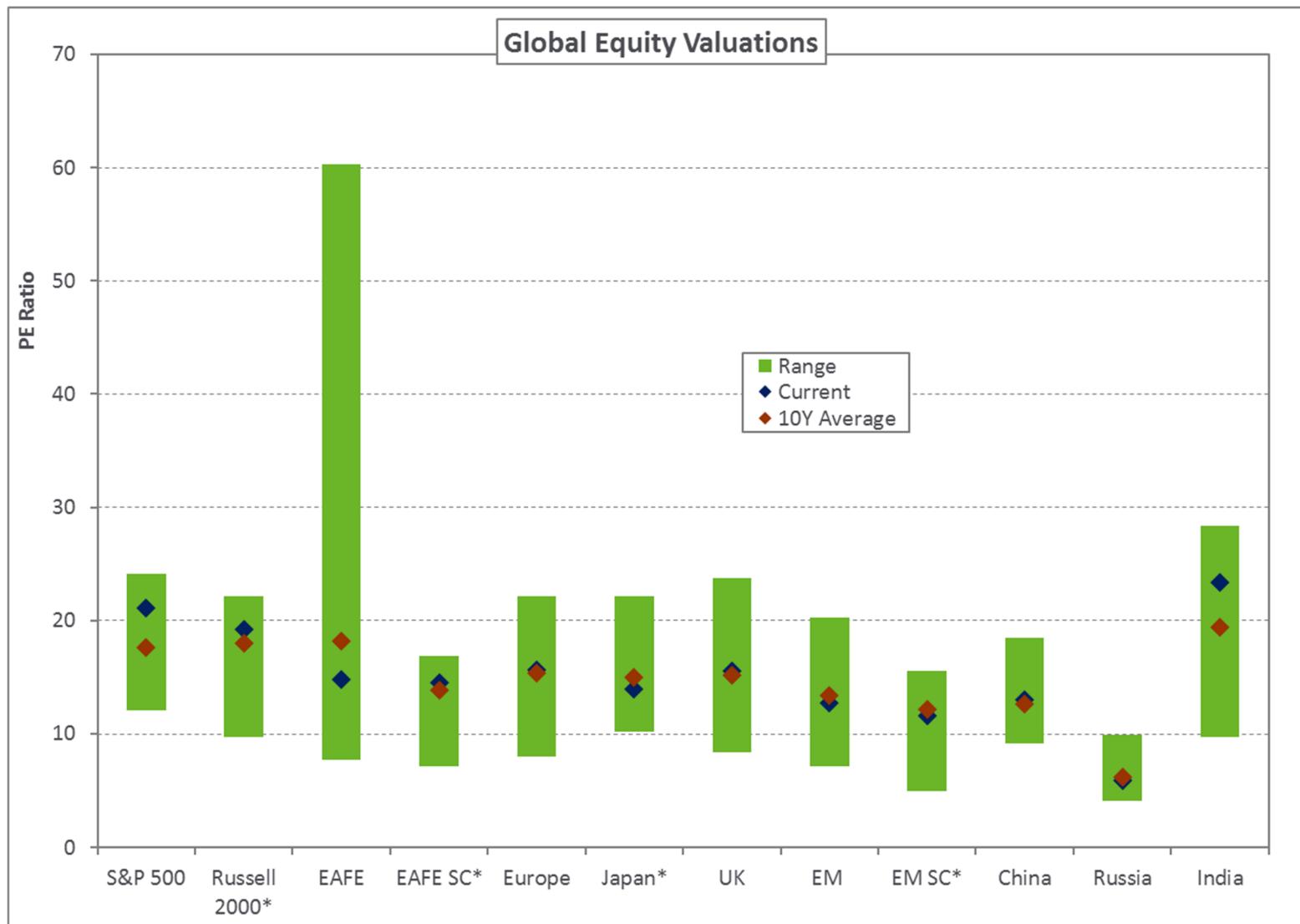
Source: S&P, MSCI, Bloomberg



# US EQUITY VALUATIONS



# 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

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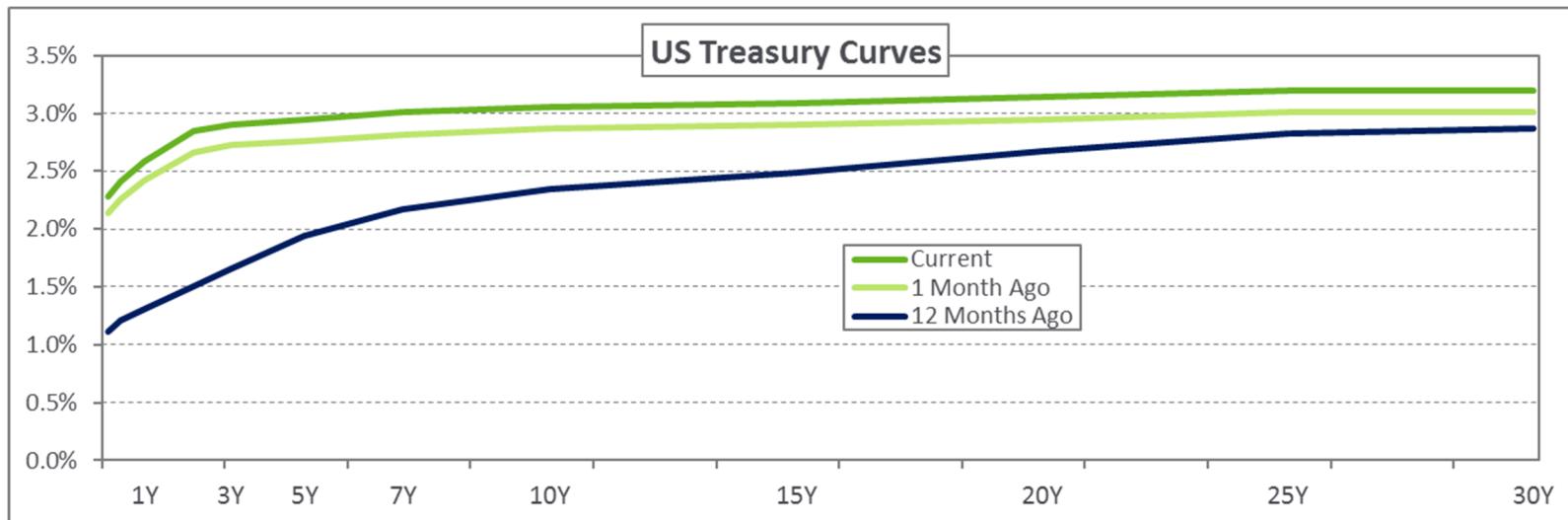
# FIXED INCOME CHARACTERISTICS

	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



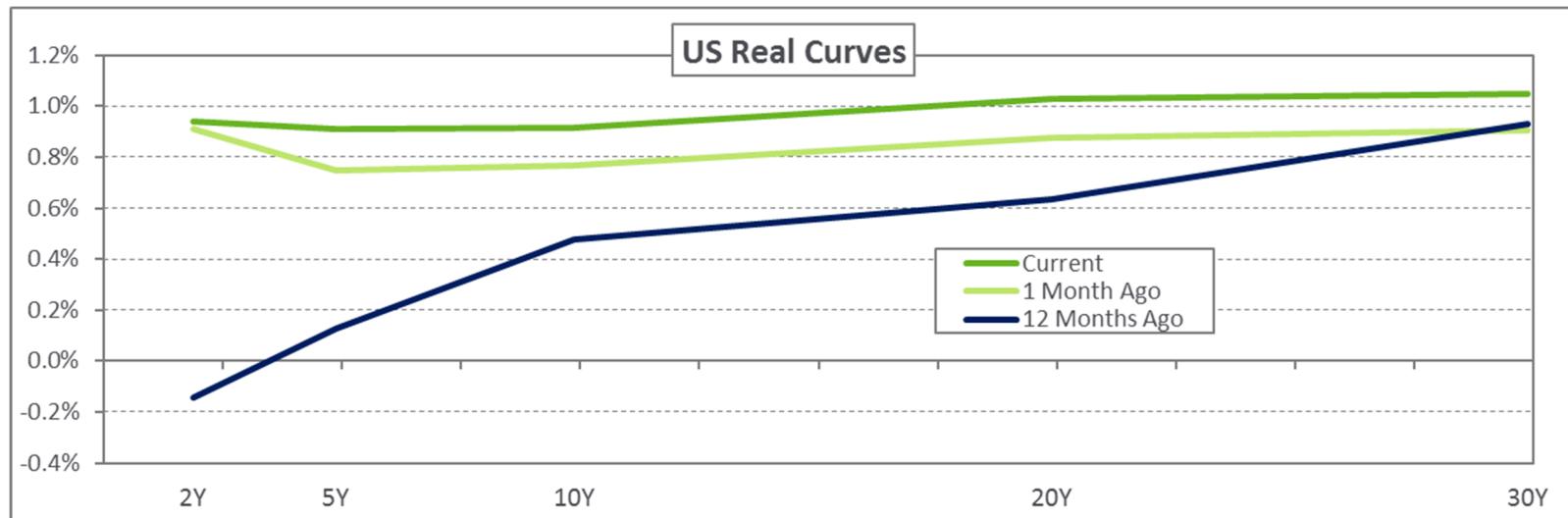
Source: Bloomberg

	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



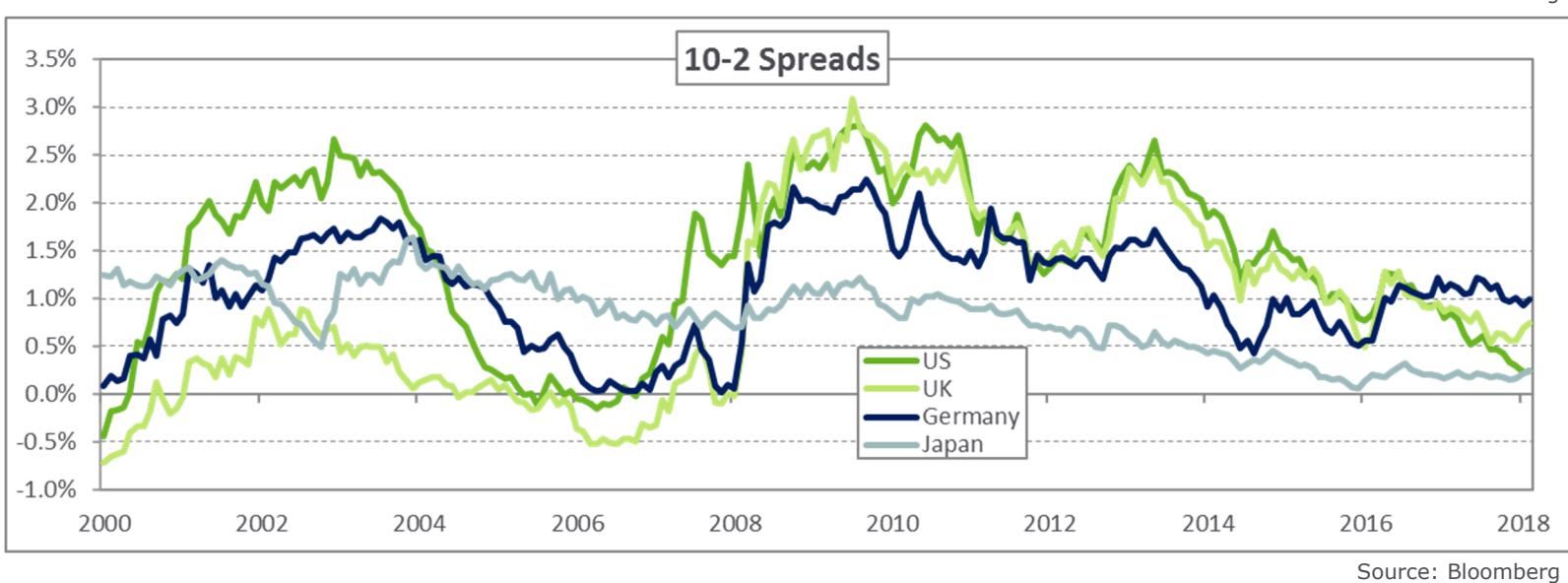
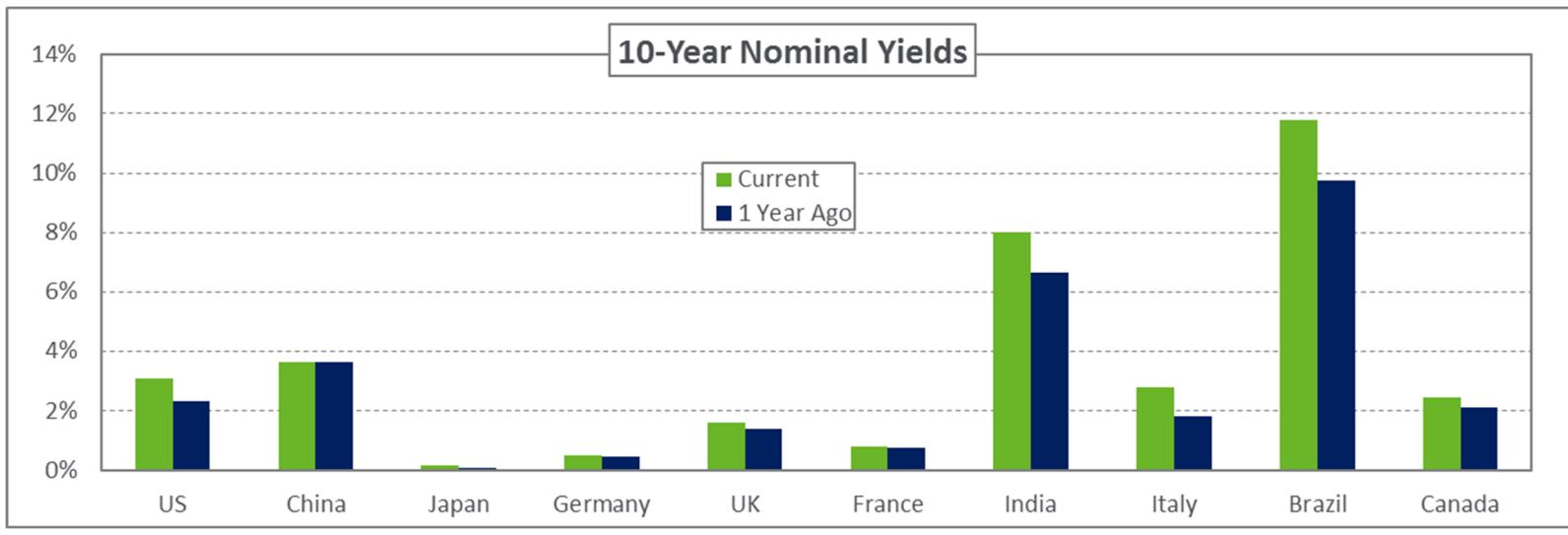
Source: Bloomberg

	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%

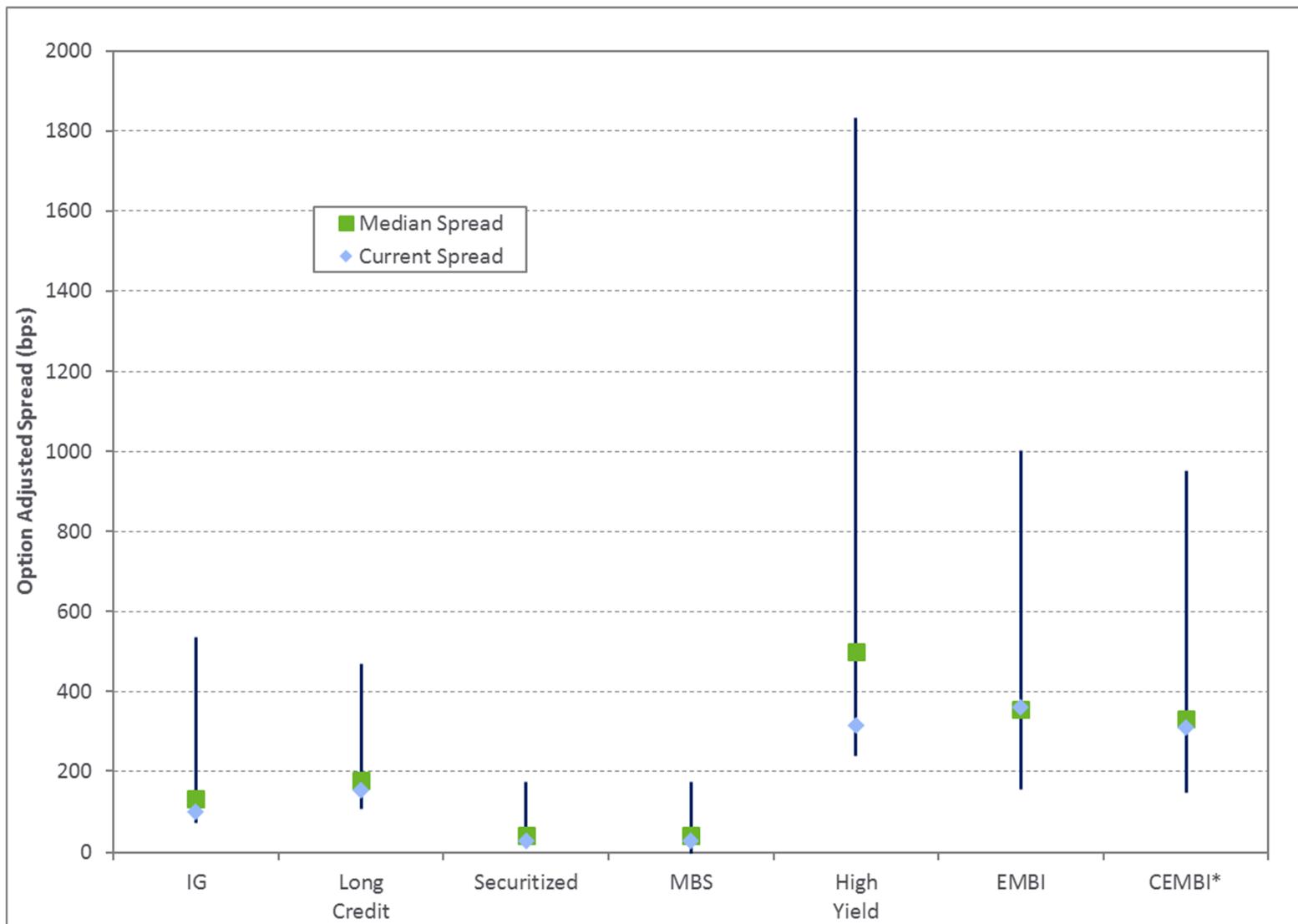
Source: Barclays, Bloomberg



# NOMINAL YIELDS



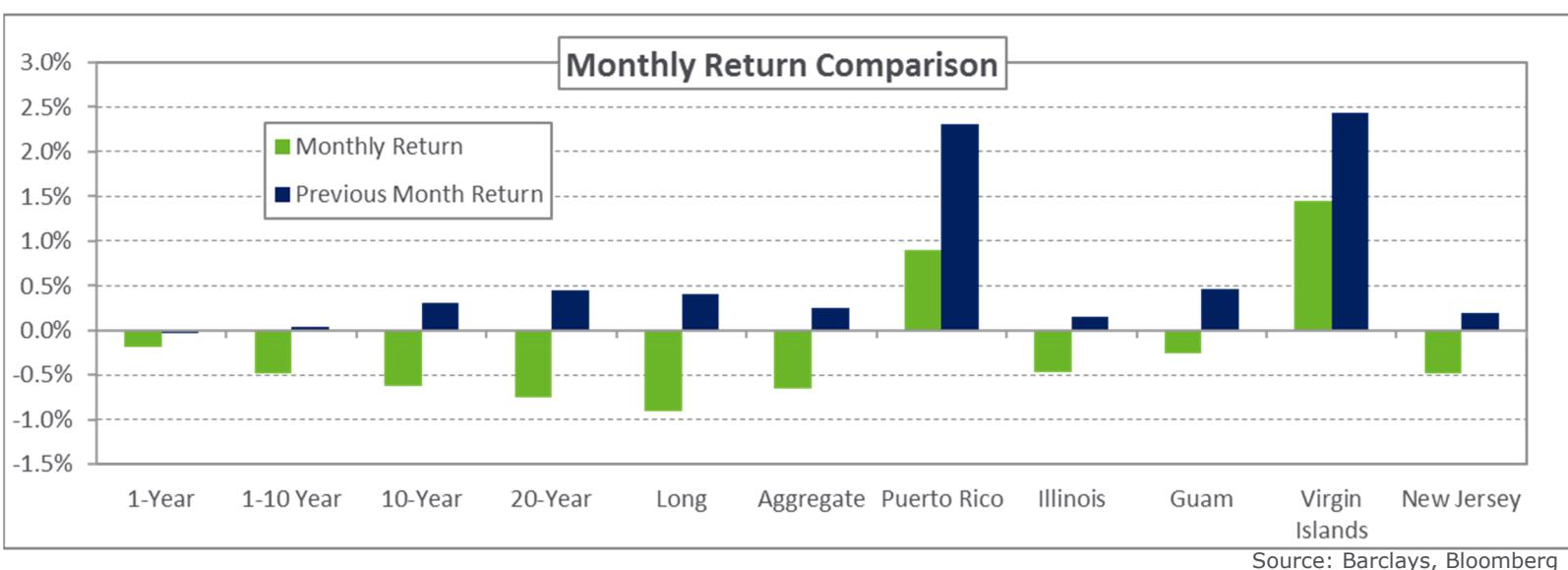
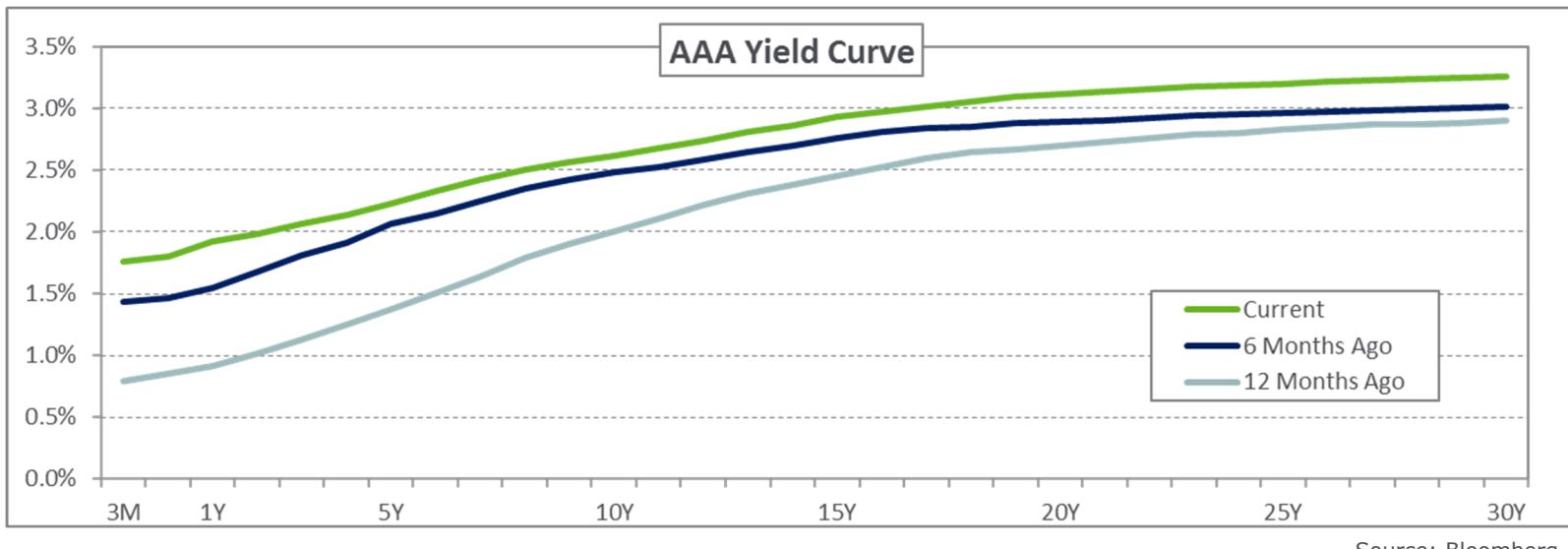
# CREDIT SPREADS



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



# MUNICIPAL BONDS



# MUNICIPAL BOND YIELDS



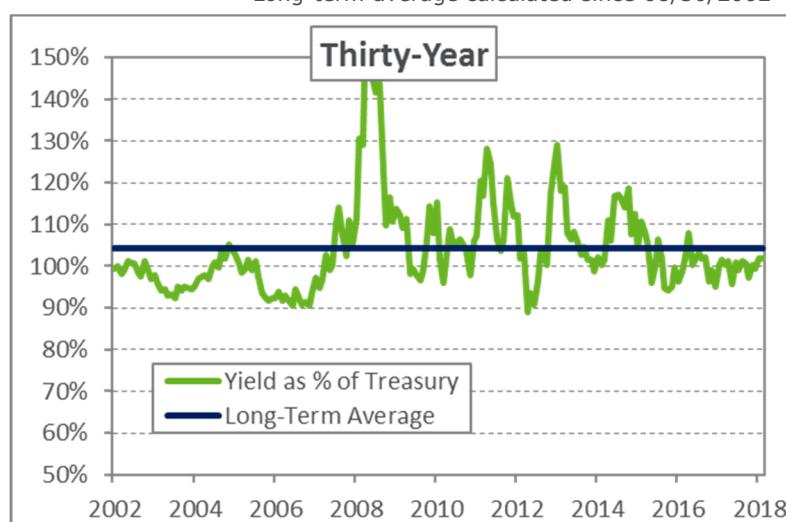
Source: Bloomberg  
Long-term average calculated since 08/30/2002



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



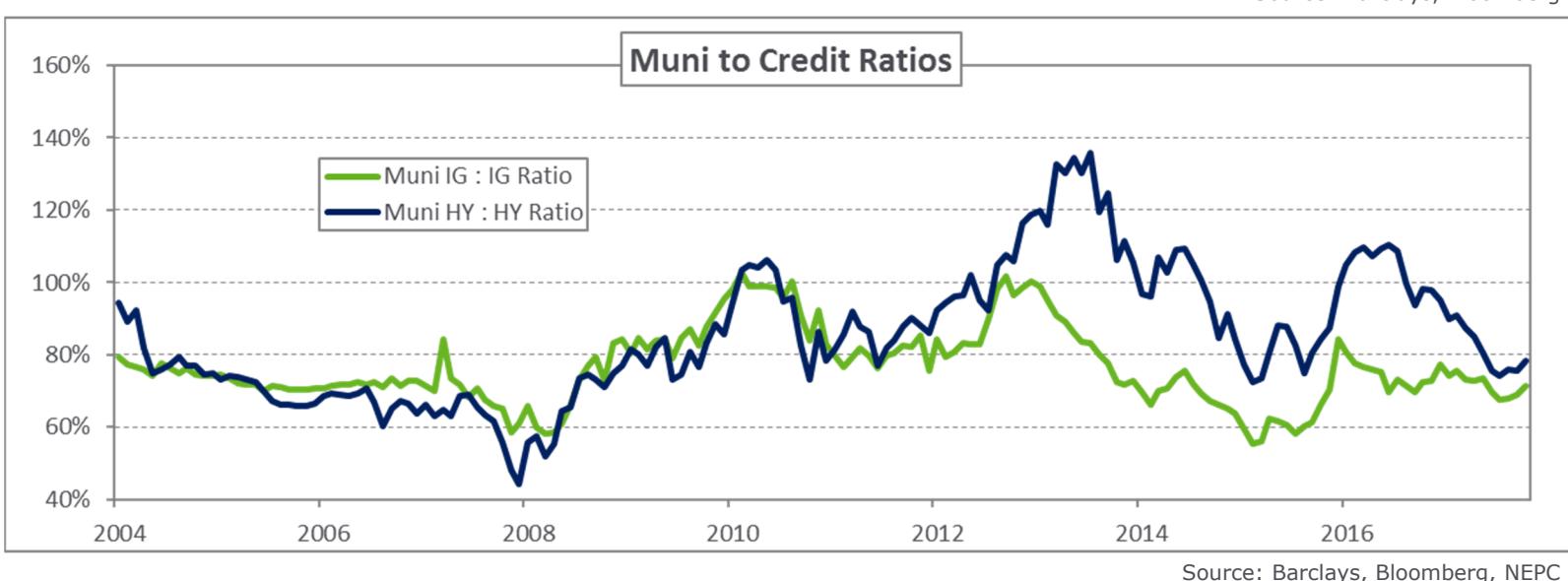
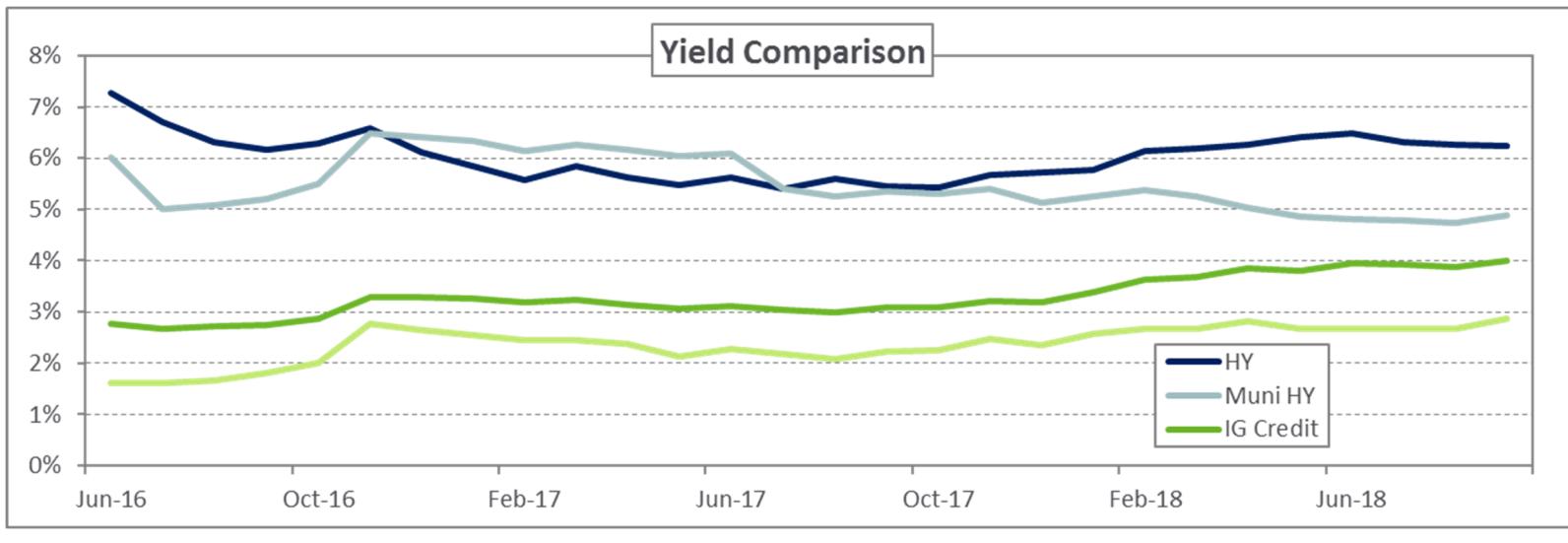
Source: Bloomberg  
Long-term average calculated since 08/30/2002



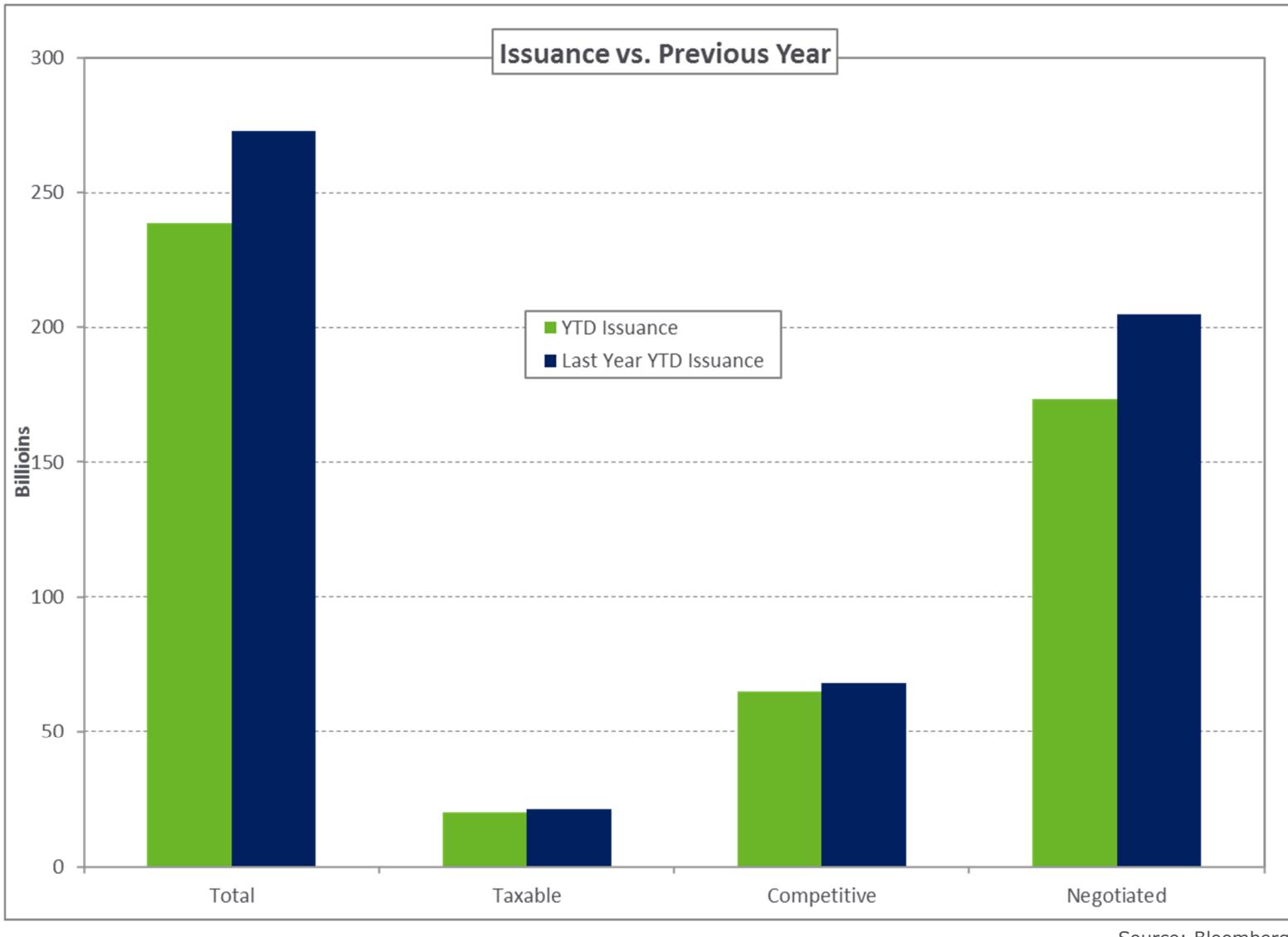
Source: Bloomberg  
Long-term average calculated since 08/30/2002



# MUNICIPAL BOND RATIOS



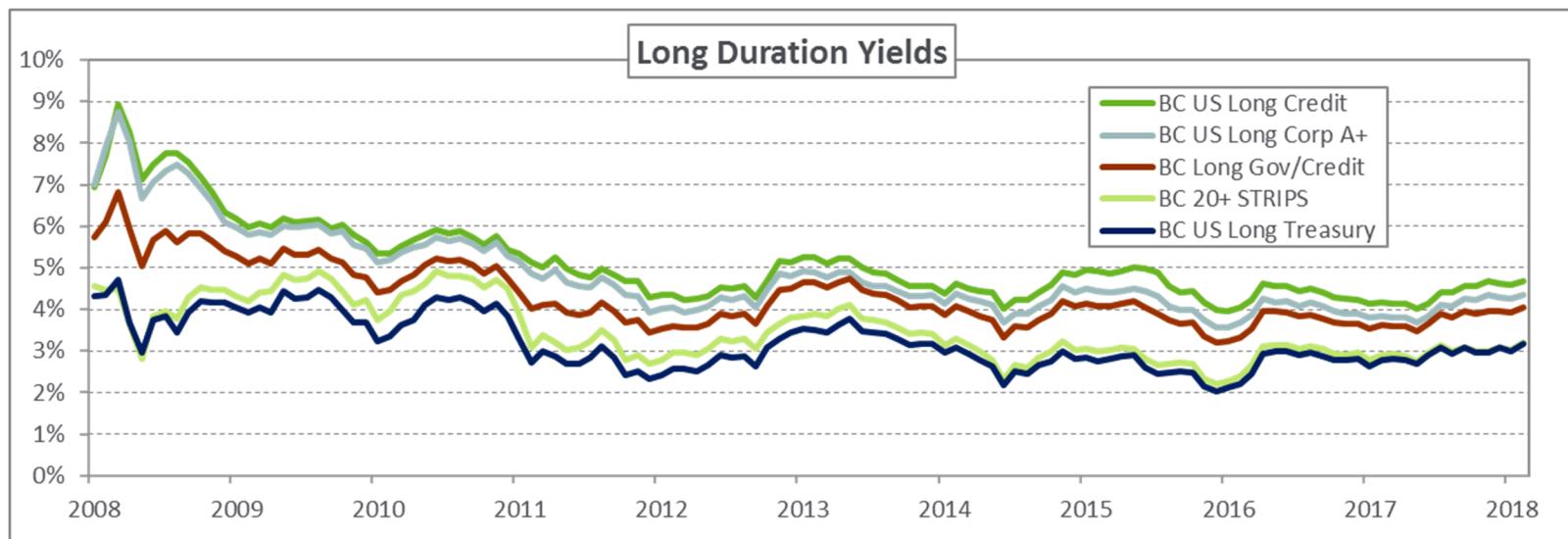
# MUNICIPAL BOND ISSUANCE



# 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

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# REAL ASSETS INDEX PERFORMANCE

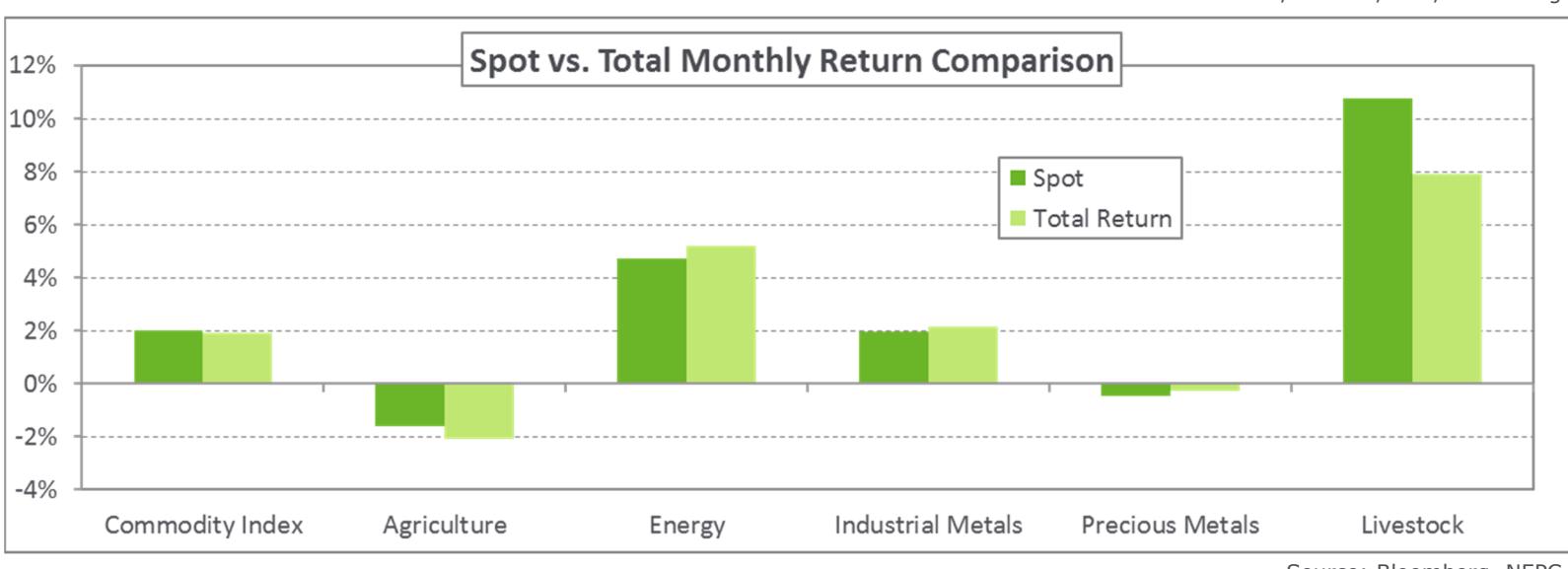
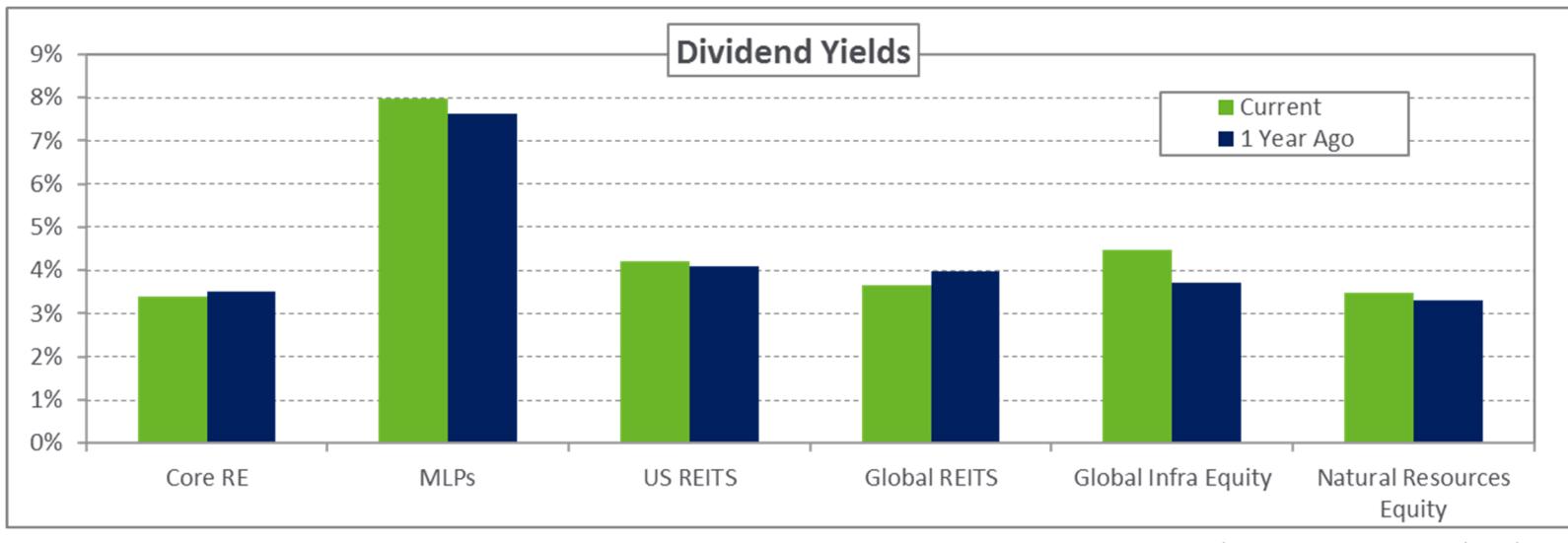
Index	1 Month	3 Month	YTD	1 Year	3 Year	5 Year
Bloomberg Commodity Index	1.9%	-2.0%	-2.0%	2.6%	-0.1%	-7.2%
Bloomberg Sub Agriculture Index	-2.1%	-5.4%	-10.9%	-12.7%	-7.5%	-10.0%
Coffee	0.8%	-13.0%	-24.1%	-26.9%	-13.9%	-10.9%
Corn	-2.2%	-4.0%	-7.1%	-11.4%	-12.6%	-13.6%
Cotton	-7.0%	-8.5%	-0.4%	14.4%	9.0%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

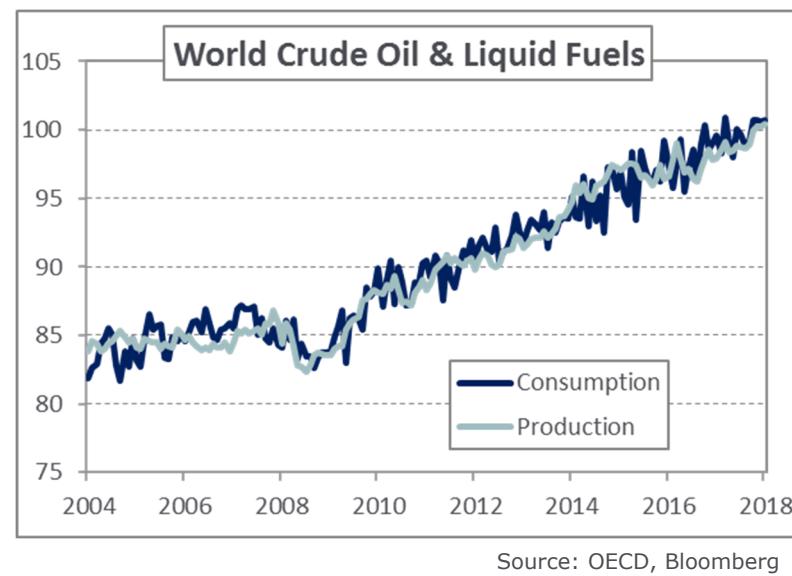
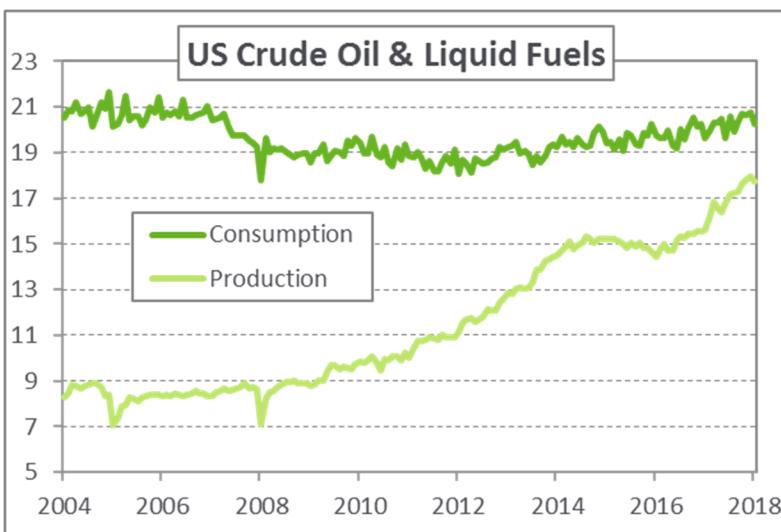
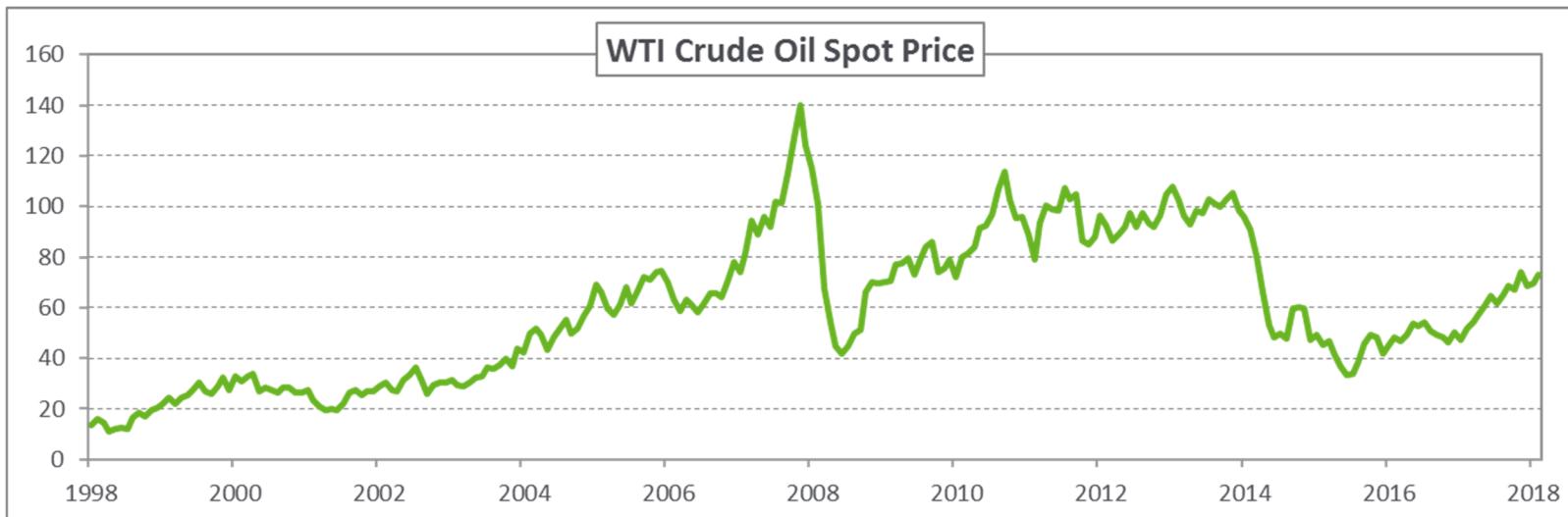
Bloomberg subindex total return indices reflects the return of the underlying one month commodity futures price movements



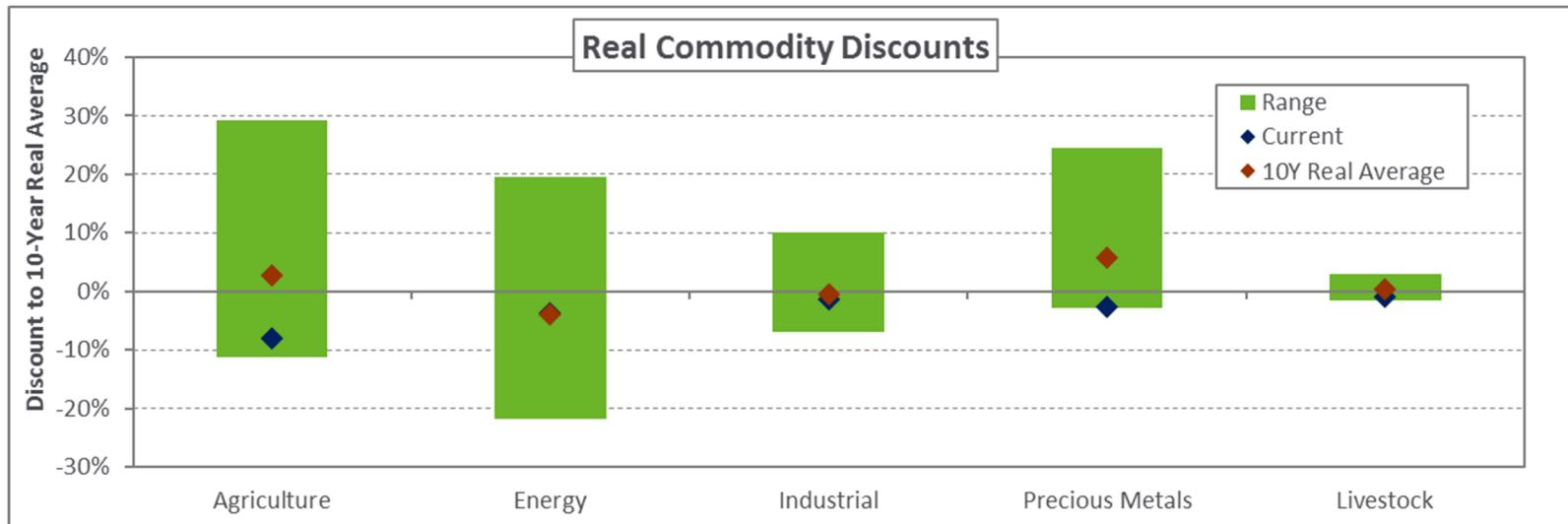
# INCOME YIELD



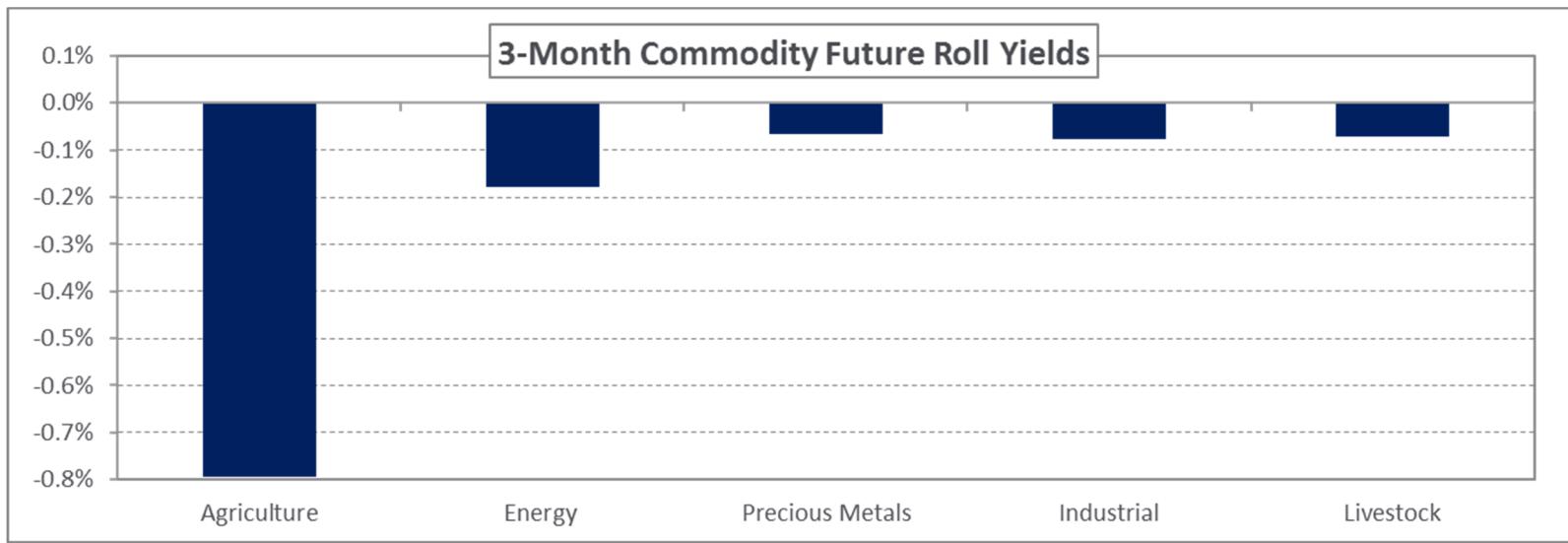
# OIL MARKETS



# VALUATIONS



Source: Bloomberg, NEPC



Source: Bloomberg



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- **Past performance is no guarantee of future results.**
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- 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.

