

QUARTERLY PERFORMANCE REPORT

OKLAHOMA STATE PENSION COMMISSION



September 30, 2019

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

MARKET ENVIRONMENT UPDATE AND OUTLOOK

NEPC, LLC

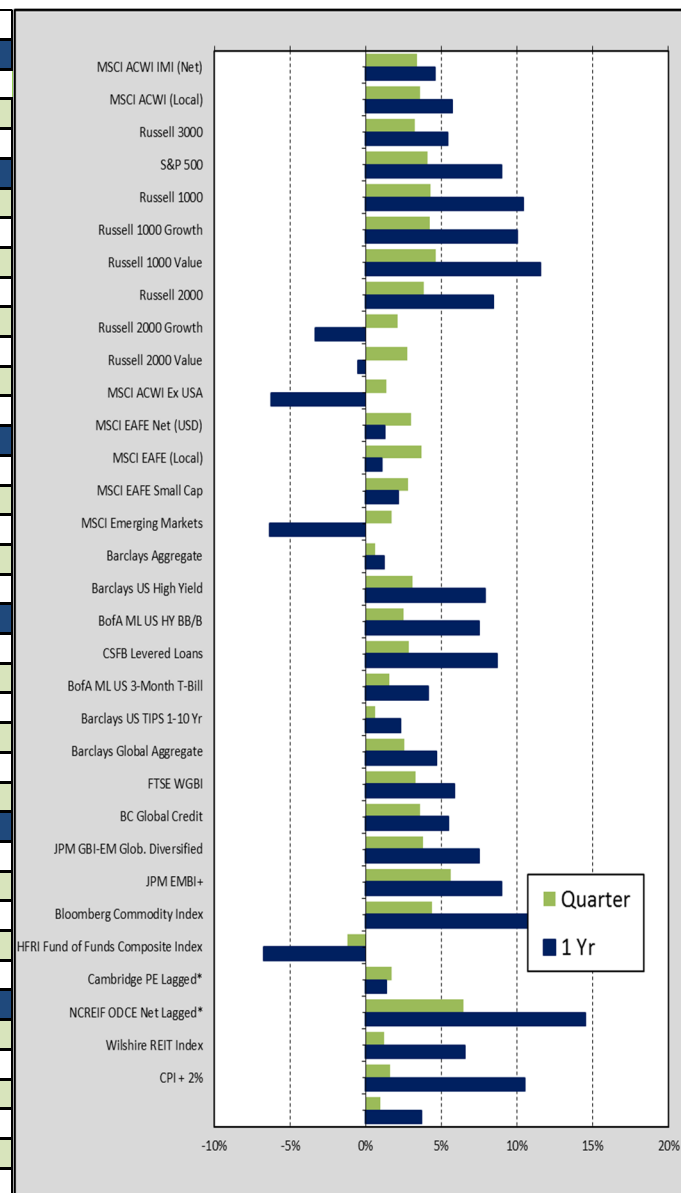
ECONOMIC ENVIRONMENT

- **Q3 Real GDP (advance estimate) increased at an annual rate of 1.9%.**
 - Retail sales ended August at +4.4% on a YoY basis. In the same period last year the YoY growth rate was 3.3%.
 - Corporate profits (ended April) as a percent of GDP increased to 8.7% from 8.5% (in January) and remain elevated relative to historical levels.
 - The inventory-to-sales ratio ended August flat at 1.4 from June levels and has remained relatively constant since early 2010.
 - The U.S. trade deficit widened ended August as imports increased at a faster pace than exports. The trade deficit with China declined sharply (3.1%).
- **The unemployment rate decreased to 3.5% in Q3 from 3.7% in Q2; U-6, a broader measure of unemployment, decreased to 6.9% from 7.2% during the third quarter.**
- **The Case-Shiller Home Price Index (ended August) increased to 212.1 from 210.9 (in June) 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 1.74% from 1.78% ended Q2; Capacity Utilization decreased to 77.5% from 77.7% in Q3.**
- **Fed Funds rate was decreased by 0.50% in Q3 to a targeted range of 1.75%-to-2.00%. The 10-year Treasury Yield (constant maturity) finished Q3 down to 1.7% from 2.1%.**
- **The Fed balance sheet increased in size ended Q3, while the European Central Bank balance sheet continues to grow.**
 - The Fed voted to end (as of July 31), two months earlier than planned, the reduction of bonds held on its balance sheet.
 - ECB held its benchmark refinance rate at 0%, deposit rates were cut to -0.5% from -0.4%.
- **S&P valuations decreased in Q3, remaining above the 10-year and long-term averages.**
 - Cyclically adjusted Shiller PE ratio (28.91x) is above the long-term average of 16.6x and above the 10-year average of 25.3x.



MARKET ENVIRONMENT – Q3 2019 OVERVIEW

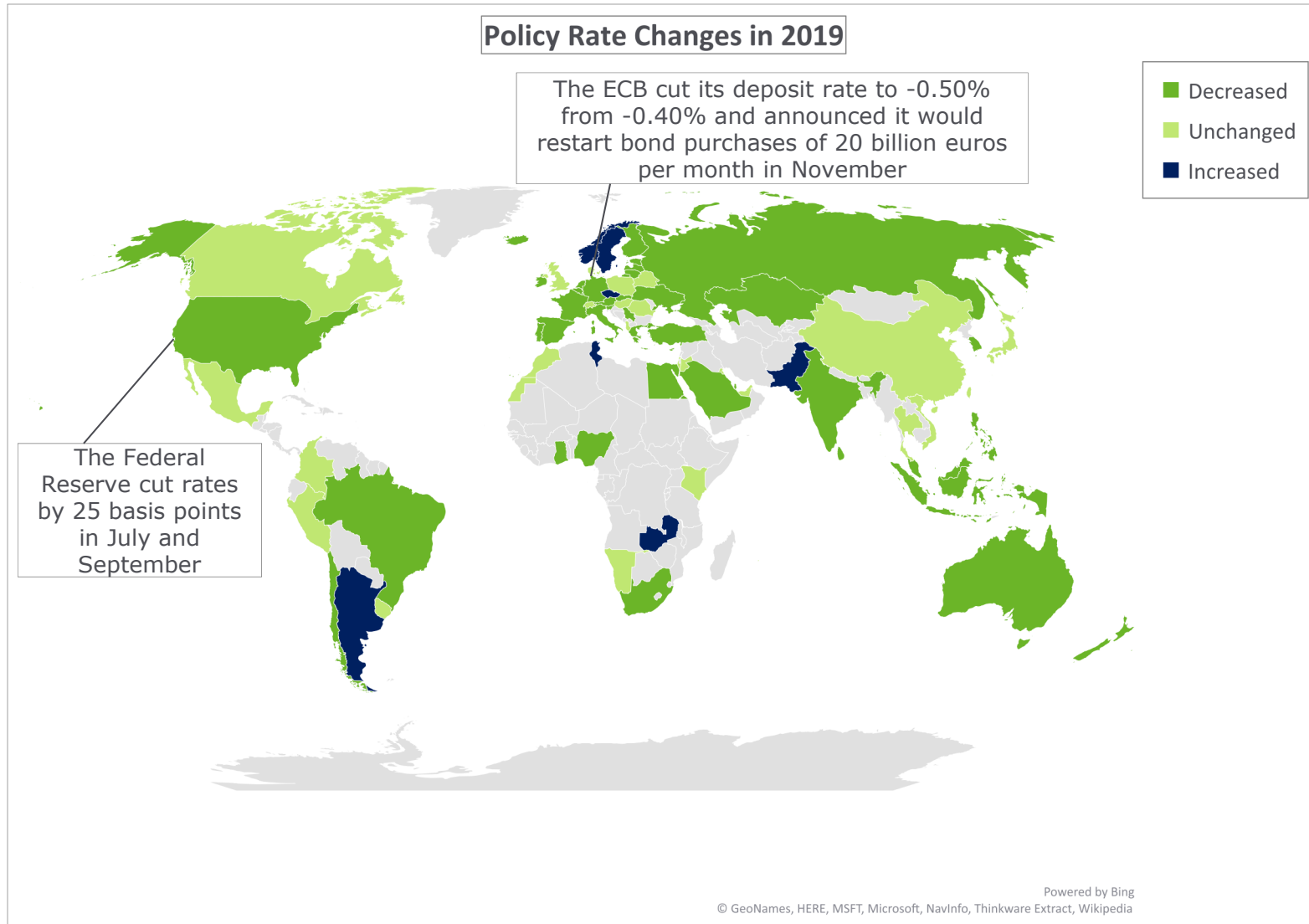
		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
World Equity Benchmarks						
MSCI ACWI IMI (Net)	World with Small Cap	3.37%	4.56%	11.42%	6.03%	10.32%
MSCI ACWI Net (USD)	World W/O Small Cap	3.61%	5.74%	11.62%	6.16%	10.15%
MSCI ACWI (Local)	World (Local Currency)	3.23%	5.41%	11.65%	7.78%	10.77%
Domestic Equity Benchmarks						
Russell 3000	US Equity	4.10%	8.98%	14.02%	10.19%	14.67%
S&P 500	Large Core	4.30%	10.42%	14.19%	10.71%	14.70%
Russell 1000	Large Core	4.25%	10.02%	14.15%	10.45%	14.77%
Russell 1000 Growth	Large Growth	4.64%	11.56%	18.07%	13.39%	16.28%
Russell 1000 Value	Large Value	3.84%	8.46%	10.19%	7.46%	13.19%
Russell 2000	Small Core	2.10%	-3.31%	12.30%	7.06%	13.45%
Russell 2000 Growth	Small Growth	2.75%	-0.49%	14.69%	8.63%	14.41%
Russell 2000 Value	Small Value	1.38%	-6.24%	9.81%	5.39%	12.40%
International Equity Benchmarks						
MSCI ACWI Ex USA	World ex-US	2.98%	1.29%	9.39%	2.16%	6.54%
MSCI EAFE Net (USD)	Int'l Developed	3.68%	1.08%	9.11%	2.25%	6.90%
MSCI EAFE (Local)	Int'l Developed (Local Currency)	2.80%	2.17%	9.80%	5.85%	8.35%
MSCI EAFE Small Cap	Small Cap Int'l	1.71%	-6.35%	9.06%	4.40%	9.67%
MSCI Emerging Markets	Emerging Equity	0.61%	1.21%	10.66%	2.49%	5.81%
Domestic Fixed Income Benchmarks						
Barclays Aggregate	Core Bonds	3.08%	7.87%	2.31%	2.95%	3.90%
Barclays US High Yield	High Yield	2.50%	7.48%	7.52%	4.70%	9.24%
BofA ML US HY BB/B	High Yield	2.84%	8.67%	7.16%	4.80%	8.62%
CSFB Levered Loans	Bank Loans	1.58%	4.15%	5.43%	3.85%	6.30%
BofA ML US 3-Month T-Bill	Cash	0.64%	2.31%	1.38%	0.87%	0.49%
Barclays US TIPS 1-10 Yr	Inflation	2.53%	4.67%	1.93%	1.42%	2.93%
Global Fixed Income Benchmarks						
Barclays Global Aggregate	Global Core Bonds	3.30%	5.85%	1.62%	1.20%	2.89%
FTSE WGBI	World Gov. Bonds	3.57%	5.48%	1.00%	0.85%	2.21%
BC Global Credit	Global Bonds	3.79%	7.49%	3.41%	2.12%	4.54%
JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local Currency)	5.64%	8.99%	4.24%	-0.45%	3.41%
JPM EMBI+	Em. Mkt. Bonds	4.36%	11.68%	3.50%	4.21%	7.11%
Alternative Benchmarks						
Bloomberg Commodity Index	Commodities	-1.19%	-6.75%	-2.18%	-9.15%	-3.74%
HFRI Fund of Funds Composite Index	Fund of Hedge Funds	1.69%	1.36%	4.32%	2.23%	3.23%
Cambridge PE Lagged*	Private Equity	6.47%	14.52%	16.00%	12.21%	14.84%
NCREIF ODCE Net Lagged*	Real Estate	1.20%	6.55%	7.01%	9.18%	7.73%
Wilshire REIT Index	REIT	1.63%	10.52%	4.11%	7.84%	15.66%
CPI + 2%	Inflation/Real Assets	0.95%	3.69%	4.11%	3.51%	3.78%



* As of 6/30/2019



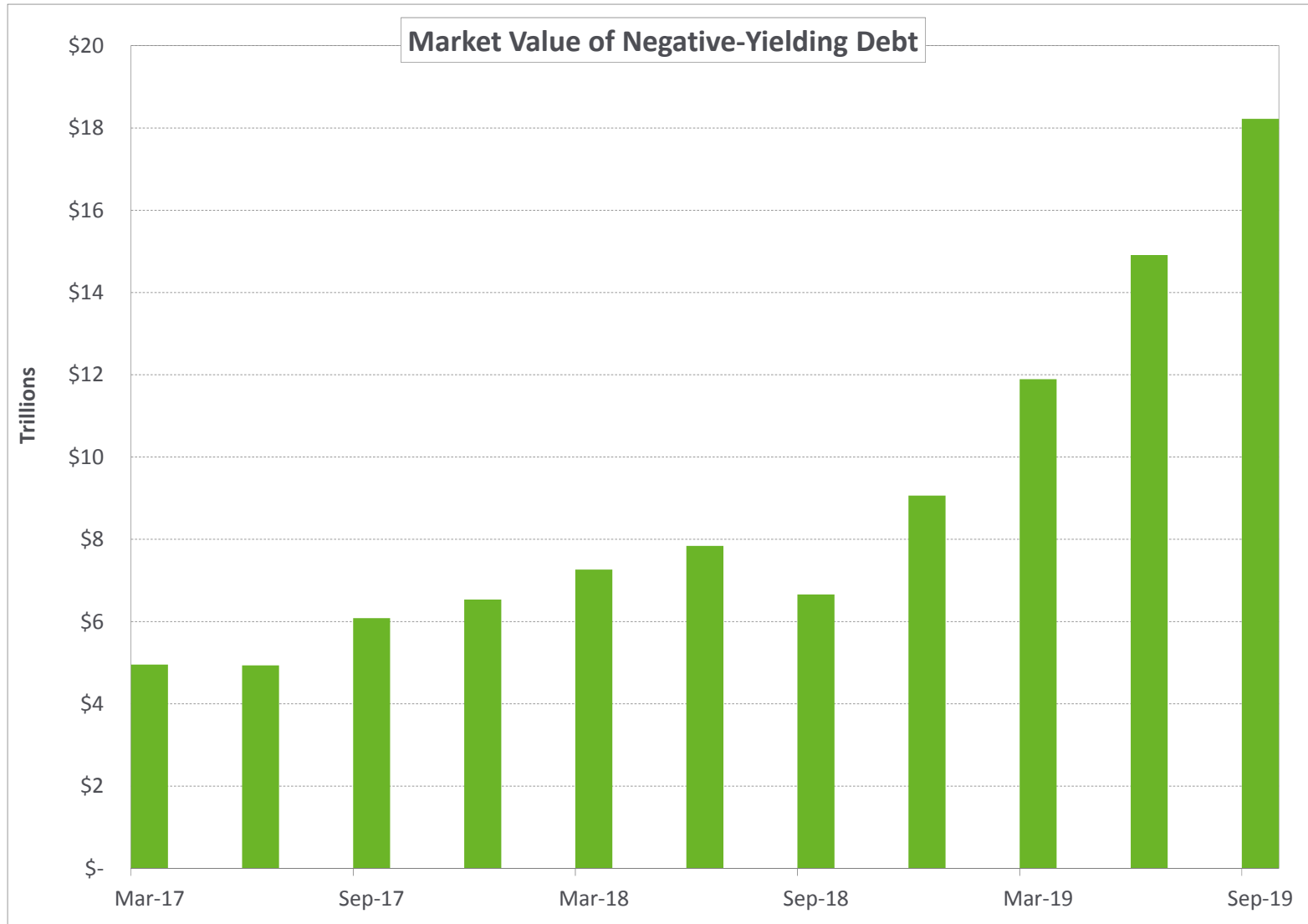
A SHIFT TOWARD EASIER MONETARY POLICY



Source: FactSet



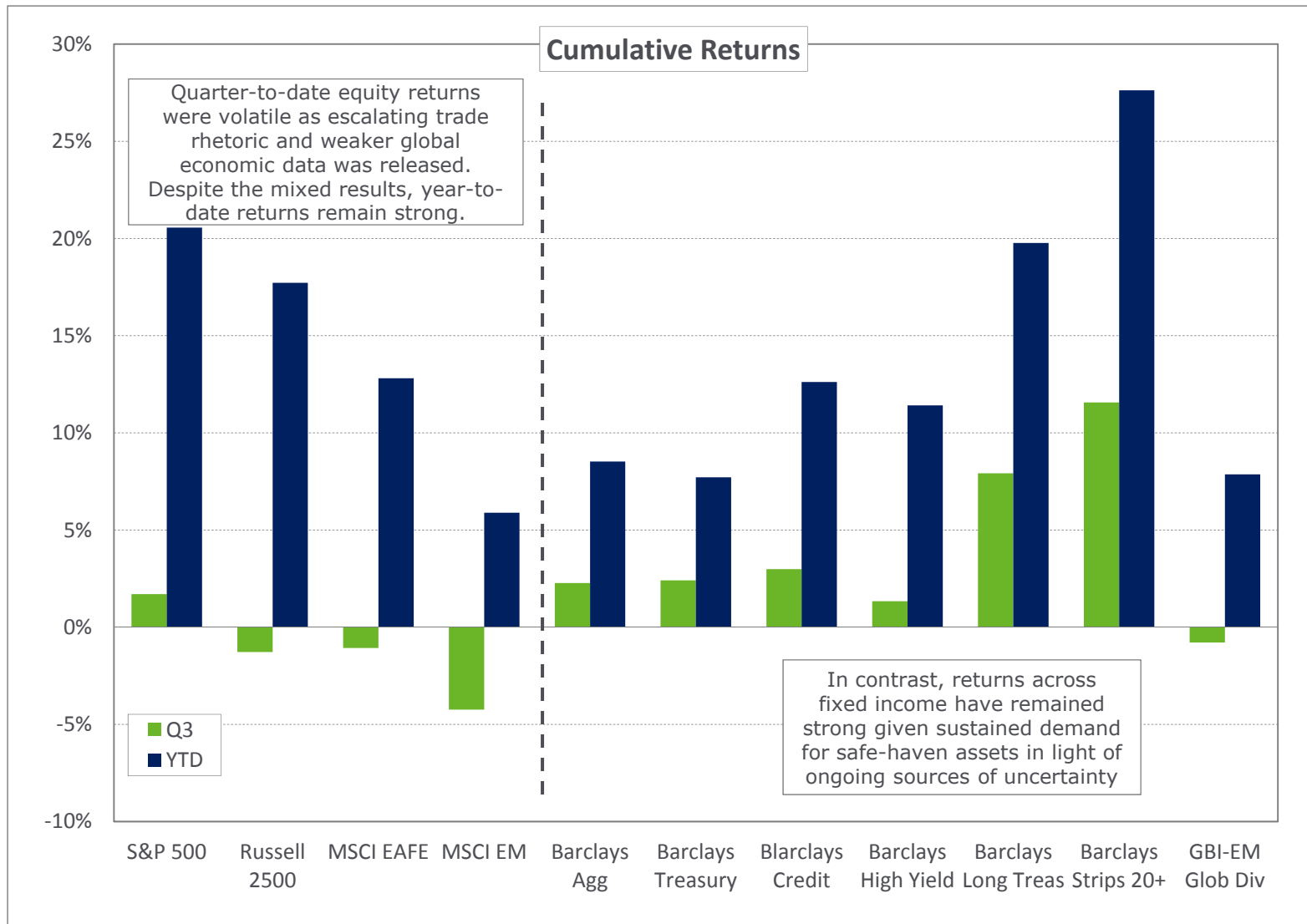
NEGATIVE YIELDS CONTINUE TO SPREAD



Source: FactSet



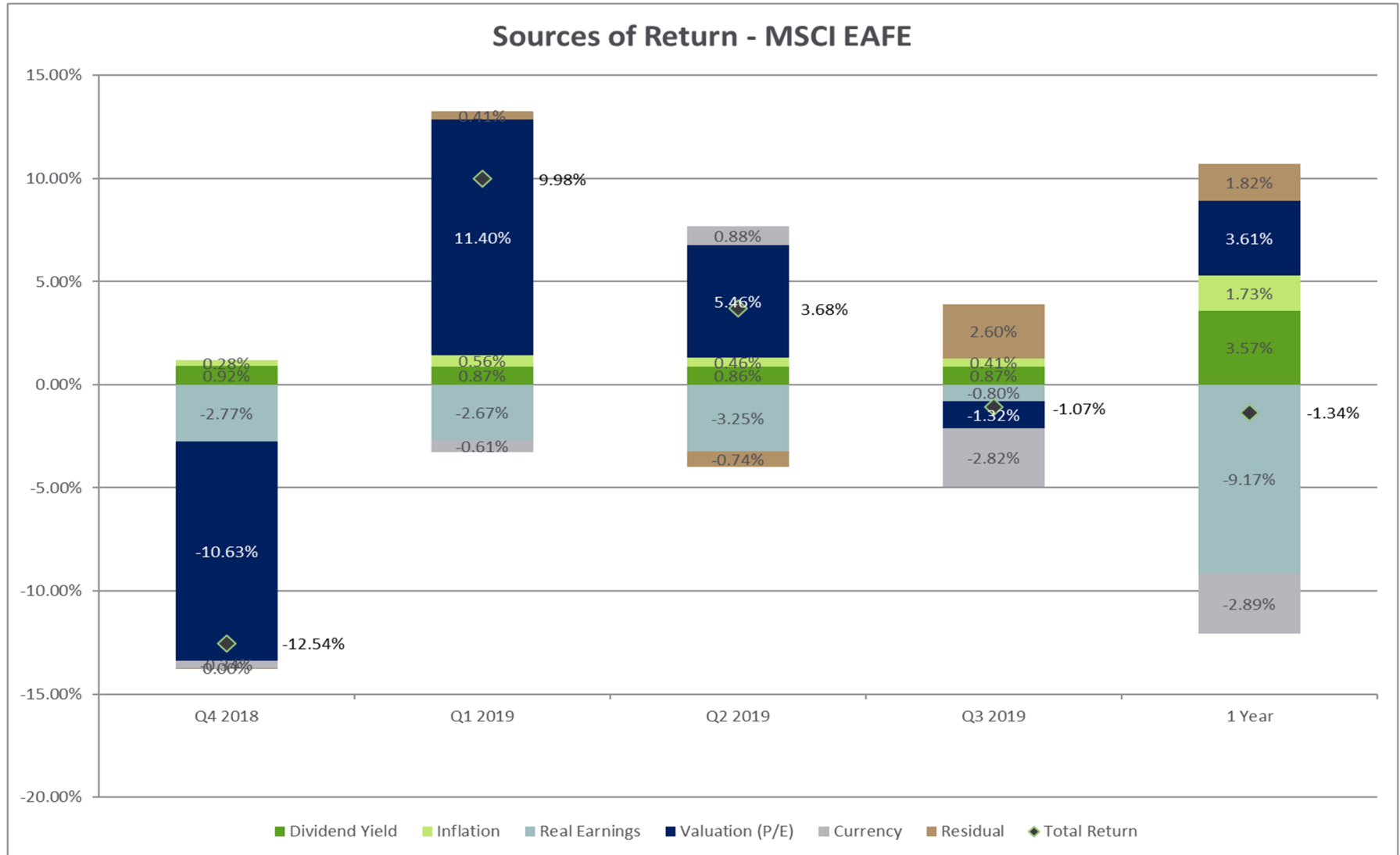
YTD RETURNS HAVE BEEN STRONG, QTD MIXED



Source: S&P, Russell, MSCI, Barclays, JP Morgan, FactSet; as of 09/30/2019



1 YEAR ATTRIBUTION OF MSCI EAFE RETURNS



Spot Rates

1 USD = 0.871 Euro

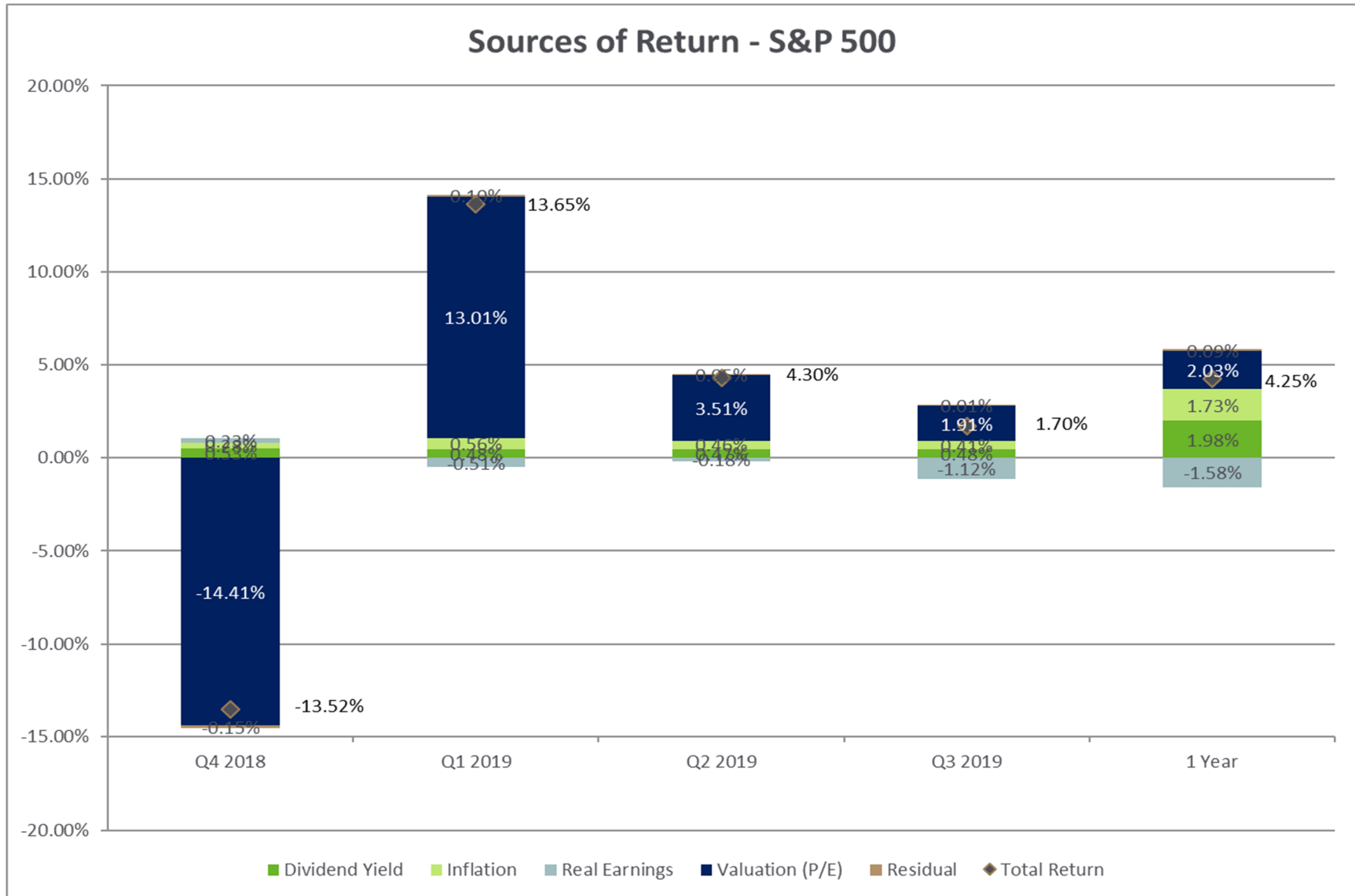
1 USD = 0.890 Euro

1 USD = 0.880 Euro

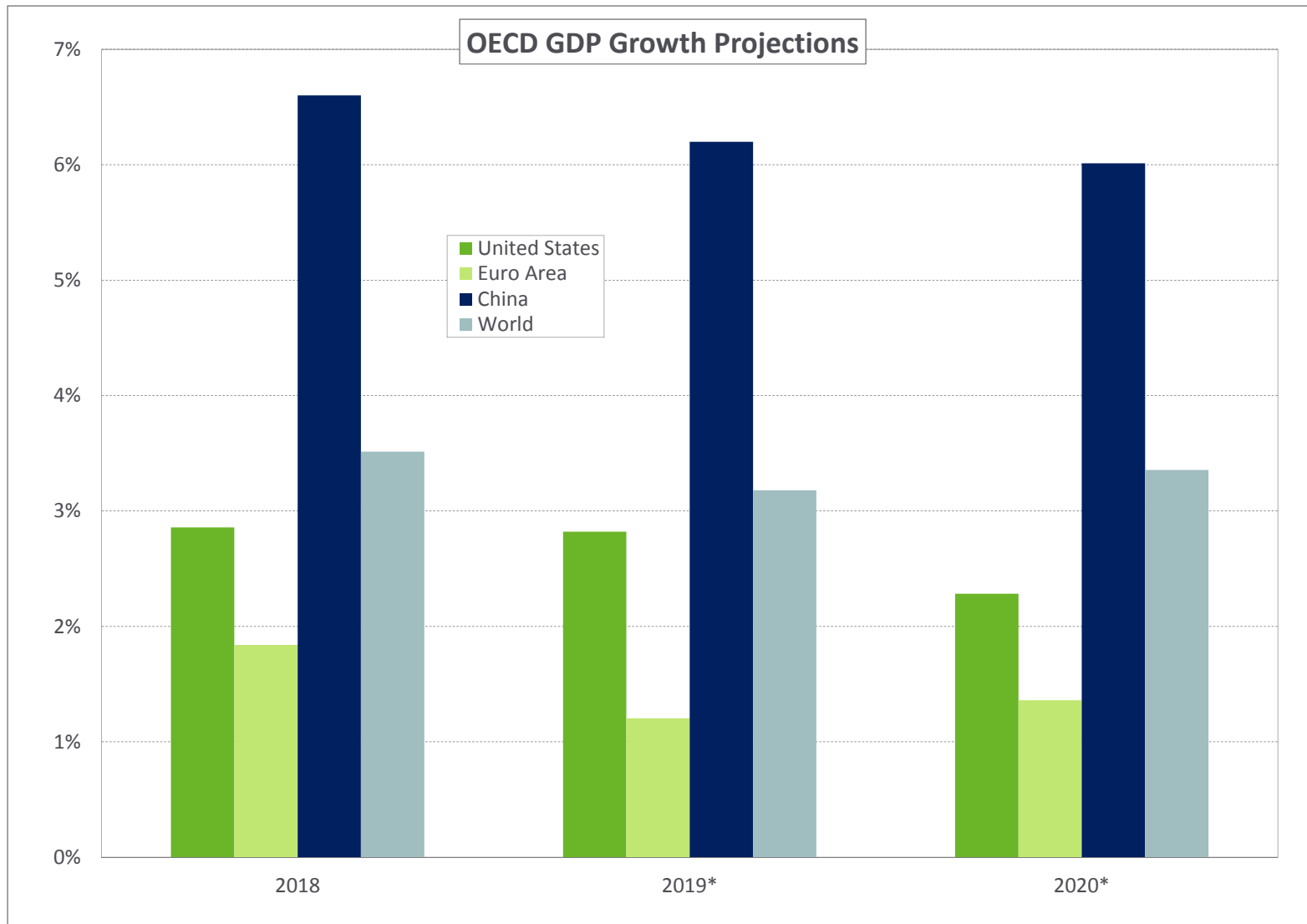
1 USD = 0.912 Euro



1 YEAR ATTRIBUTION OF S&P 500 RETURNS



THE ECONOMIC OUTLOOK HAS DETERIORATED



Source: OECD
2019 and 2020 data represents forecasted data as of 10/7/2019



2019 TRADE TIMELINE



OK Pension Commission

NEPC, LLC

OKLAHOMA STATE PENSION COMMISSION

ASSET ALLOCATION SUMMARY

Key Policy Items		Teachers [^]	TRS 9/30/18	PERS*	PERS 9/30/18	Firefighters	FTRS 9/30/18	Police **	POLICE 9/30/18
TOTAL EQUITY	Target	57.5%	57.5%	68.0%	68.0%	65.0%	57.0%	50.0%	50.0%
	Actual	59.9%	58.9%	67.4%	70.6%	62.6%	67.4%	52.7%	55.50%
	Range	37.5-73.5	37.5-73.5	59.2-76.8	59.2-76.8	60-70	42-62	25-80	25-80
<i>Large Cap</i>	Target	17.0%	17.0%	34.0%	34.0%	39.0%	29.4%	15.0%	15.0%
	Actual	22.4%	18.9%	34.2%	36.0%	35.4%	35.2%	18.2%	18.8%
	Range	12-23	12-23	31.2-36.8	31.2-36.8	34-44	24.4-34.4	10-20	10-20
<i>MidCap</i>	Target	13.0%	13.0%	-	-	-	-	-	-
	Actual	10.6%	11.2%	-	-	-	-	-	-
	Range	8-18	8-18	-	-	-	-	-	-
<i>Small Cap</i>	Target	10.0%	10.0%	6.0%	6.0%	13.0%	12.6%	5.0%	5.0%
	Actual	9.4%	10.2%	6.0%	7.2%	13.0%	17.0%	5.9%	8.0%
	Range	5-15	5-15	3.2-8.8	3.2-8.8	8-18	7.6-17.6	0-15	0-15
<i>International / Equity</i>	Target	17.5%	17.5%	28.0%	28.0%	15.0%	15.0%	15.0%	15.0%
	Actual	17.5%	18.6%	27.2%	27.4%	14.2%	15.2%	14.3%	14.6%
	Range	12.5-22.5	12.5-22.5	25-31	25-31	10-20	10-20	5-25	5-25
<i>Long/Short Equity</i>	Target	-	-	-	-	-	-	15.0%	15.0%
	Actual	-	-	-	-	-	-	14.3%	14.1%
	Range	-	-	-	-	-	-	10-20	10-20
TOTAL FIXED INCOME	Target	23.5%	23.5%	32.0%	32.0%	27.5%	20.0%	15.0%	15.0%
	Actual	22.4%	20.5%	32.3%	29.1%	18.9%	14.0%	17.4%	15.0%
	Range	18.5-28.5	18.5-28.5	27.5-36.5	27.5-36.5	22.5-32.5	10-30	10-20	10-20
<i>Dom. Fixed Income/High Yield</i>	Target	23.5%	23.5%	32.0%	32.0%	17.9%	13.0%	-	-
	Actual	22.4%	20.5%	32.3%	29.1%	12.9%	8.5%	-	-
	Range	18.5-28.5	18.5-28.5	27.5-36.5	27.5-36.5	12.9-22.9	0-28	-	-
<i>Int'l & Global Fixed Income</i>	Target	-	-	-	-	9.6%	7.0%	7.5%	7.5%
	Actual	-	-	-	-	6.0%	5.5%	17.4%	15.0%
	Range	-	-	-	-	4.6-14.6	2-12	10-20	10-20
TOTAL ALTERNATIVES	Target	19.0%	19%	0%	0%	7.5%	23%	35.0%	35.0%
	Actual	16.6%	20.2%	0.1%	0.1%	17.7%	18.2%	28.3%	28.3%
	Range	17.1-20.9	17.1-20.9	0-5	0-5	2.5-12.5	5-40	10-60	10-60
<i>Low Volatility Hedge Funds</i>	Target	-	-	-	-	0.0%	5.0%	10.0%	10.0%
	Actual	-	-	-	-	2.9%	3.4%	6.4%	7.5%
	Range	-	-	-	-	0-10	0-10	5-15	5-15
<i>Private Equity/MLP's</i>	Target	12.0%	12.0%	-	-	0.0%	8.0%	10.0%	10.0%
	Actual	9.3%	13.0%	-	-	3.6%	2.9%	10.7%	8.9%
	Range	7-17	7-17	-	-	0-10	0-15	5-15	5-15
<i>Real Estate/Real Assets</i>	Target	7.0%	7%	0%	0%	7.5%	10%	15.0%	15.0%
	Actual	7.3%	7.2%	0.1%	0.1%	11.2%	11.9%	11.2%	11.9%
	Range	2-12	2-12	0-5	0-5	2.5-12.5	5-15	0-30	0-30
CASH	Actual	1.2%	0.5%	0.2%	0.2%	0.7%	0.3%	1.6%	1.1%
Actuarial Assumed Rates		7.5%		7.0%		7.5%		7.5%	

[^]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 ASSET ALLOCATION SUMMARY

Key Policy Items		Law	Law 9/30/18	Judges	Judges 9/30/18	Wildlife	Wildlife 9/30/18
TOTAL EQUITY	Target	55.0%	55.0%	68.0%	68.0%	50.0%	50.0%
	Actual	58.5%	60.9%	67.9%	71.2%	57.2%	54.1%
	Range	55-65	55-65	59.2-76.8	59.2-76.8	40-65	40-65
<i>Large Cap</i>	Target	20.0%	20.0%	34.0%	34.0%	50.0%	50.0%
	Actual	28.3%	30.4%	34.5%	36.4%	36.9%	43.1%
	Range	15-25	15-25	31.2-36.8	31.2-36.8	40-65	40-65
<i>MidCap</i>	Target	-	-	-	-	0.0%	0.0%
	Actual	-	-	-	-	9.5%	4.9%
	Range	-	-	-	-	0-10	0-10
<i>Small Cap</i>	Target	10.0%	10.0%	6.0%	6.0%	0.0%	0.0%
	Actual	6.0%	6.3%	6.2%	7.2%	4.7%	1.7%
	Range	5-15	5-15	3.2-8.8	3.2-8.8	0-10	0-10
<i>International / Equity</i>	Target	15.0%	15.0%	28.0%	28.0%	0.0%	0.0%
	Actual	14.0%	13.8%	27.2%	27.6%	6.1%	4.4%
	Range	5-15	5-15	25-31	25-31	0-15	0-15
<i>Long/Short Equity</i>	Target	10.0%	10.0%	-	-	-	-
	Actual	10.2%	10.4%	-	-	-	-
	Range	5-15	5-15	-	-	-	-
TOTAL FIXED INCOME	Target	30.0%	30.0%	32.0%	32.0%	40.0%	40.0%
	Actual	27.8%	25.6%	32.1%	28.7%	36.9%	40.7%
	Range	25-35	25-35	27.5-36.5	27.5-36.5	35-55	35-55
<i>Dom. Fixed Income/High Yield</i>	Target	20.0%	20.0%	32.0%	32.0%	40.0%	40.0%
	Actual	19.3%	18.0%	32.1%	28.7%	36.9%	40.7%
	Range	15-25	15-25	27.5-36.5	27.5-36.5	35-55	35-55
<i>Int'l & Global Fixed Income</i>	Target	10.0%	10.0%	-	-	-	-
	Actual	8.5%	7.6%	-	-	-	-
	Range	5-15	5-15	-	-	-	-
TOTAL ALTERNATIVES	Target	15.0%	15.0%	-	-	10.0%	10.0%
	Actual	13.4%	13.3%	-	-	5.1%	3.8%
	Range	5-15	5-15	-	-	0-10	0-10
<i>Low Volatility Hedge Funds</i>	Target	-	-	-	-	-	-
	Actual	-	-	-	-	-	-
	Range	-	-	-	-	-	-
<i>Private Equity/MLP's</i>	Target	5.0%	5.0%	-	-	-	-
	Actual	3.4%	3.0%	-	-	-	-
	Range	0-5	0-5	-	-	-	-
<i>Real Estate/Real Assets</i>	Target	10.0%	0.10	-	-	-	-
	Actual	10.0%	10.3%	-	-	-	-
	Range	2-12	2-12	-	-	-	-
CASH	Actual	0.3%	0.1%	0.0%	0.2%	1.0%	1.2%
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

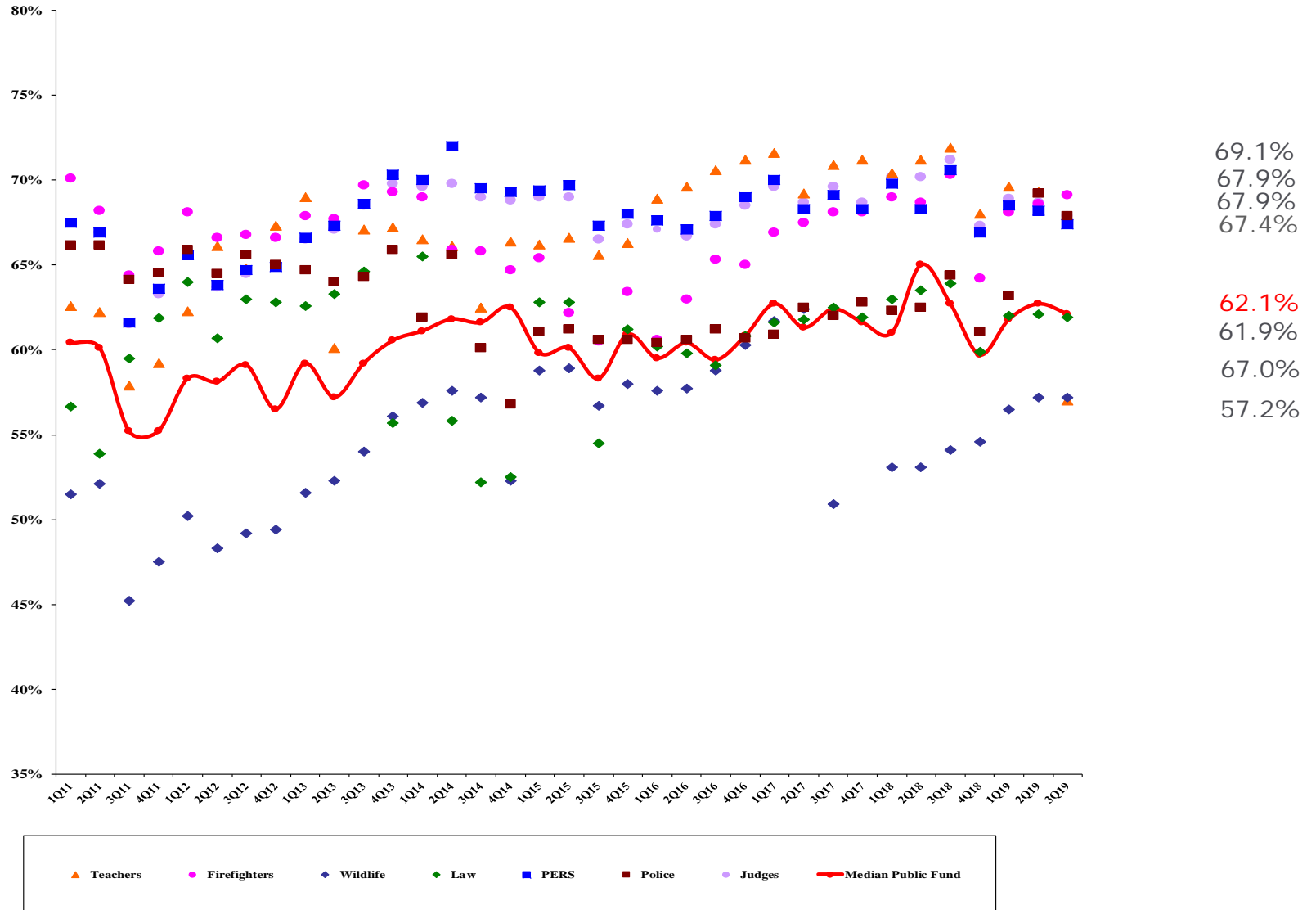
**Real Assets are included in Real Estate

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



Total Fund Attribution Analysis

Performance Attribution

Teachers Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	0.8%	14.0%	3.1%	8.7%	6.7%
Wtd. Index Return *	0.5%	13.9%	3.6%	8.2%	5.5%
Excess Return	0.3%	0.1%	-0.5%	0.4%	1.2%
Selection Effect	0.1%	0.7%	-0.2%	0.5%	0.4%
Allocation Effect	0.0%	0.3%	-0.6%	0.1%	-0.3%
Interaction Effect	0.2%	-0.7%	0.3%	0.1%	0.1%

PERS Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	0.6%	14.2%	3.7%	7.9%	6.5%
Wtd. Index Return *	0.8%	14.4%	4.4%	7.9%	6.3%
Excess Return	-0.1%	-0.2%	-0.8%	0.0%	0.2%
Selection Effect	-0.1%	0.2%	-0.1%	0.1%	0.2%
Allocation Effect	0.0%	-0.3%	-0.6%	-0.1%	-0.1%
Interaction Effect	0.0%	0.0%	0.0%	0.0%	0.0%

Firefighters Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	-0.2%	13.6%	3.6%	9.8%	8.2%
Wtd. Index Return *	1.0%	14.7%	4.7%	8.9%	7.5%
Excess Return	-1.2%	-1.2%	-1.2%	0.9%	0.7%
Selection Effect	-1.3%	-0.1%	-0.7%	0.6%	0.5%
Allocation Effect	-0.1%	-1.4%	-0.8%	0.2%	0.3%
Interaction Effect	0.2%	0.3%	0.3%	0.1%	-0.1%

Police Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	0.5%	10.3%	2.5%	7.3%	6.3%
Wtd. Index Return *	0.6%	12.5%	3.7%	7.3%	5.4%
Excess Return	0.0%	-2.2%	-1.2%	0.0%	0.9%
Selection Effect	-0.1%	-2.7%	-1.7%	-0.2%	0.7%
Allocation Effect	0.1%	0.1%	-0.1%	0.1%	0.4%
Interaction Effect	0.1%	0.5%	0.6%	0.0%	-0.1%



Total Fund Attribution Analysis

Law Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	-0.2%	11.2%	1.4%	7.2%	5.7%
Wtd. Index Return *	0.8%	13.4%	3.7%	7.9%	6.3%
Excess Return	-0.9%	-2.3%	-2.3%	-0.7%	-0.7%
Selection Effect	-0.6%	-1.6%	-0.8%	0.1%	-0.1%
Allocation Effect	0.1%	-1.2%	-0.2%	-0.6%	-0.7%
Interaction Effect	-0.4%	0.9%	-1.2%	0.1%	0.4%

Judges Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	0.8%	14.5%	4.0%	8.0%	6.5%
Wtd. Index Return *	0.8%	14.5%	4.6%	8.1%	6.4%
Excess Return	0.0%	-0.1%	-0.6%	-0.1%	0.1%
Selection Effect	0.1%	0.2%	0.1%	0.0%	0.1%
Allocation Effect	-0.1%	-0.2%	-0.7%	-0.1%	-0.1%
Interaction Effect	0.0%	0.0%	0.0%	0.0%	0.0%

Wildlife Attribution Analysis	Last 3 Mo.	YTD	1 Yr	3 Yrs	5 Yrs
Wtd. Actual Return	3.3%	14.0%	8.5%	9.3%	6.6%
Wtd. Index Return *	3.0%	8.9%	6.0%	5.0%	3.6%
Excess Return	0.3%	5.0%	2.5%	4.3%	3.0%
Selection Effect	0.2%	2.8%	0.2%	2.9%	1.2%
Allocation Effect	0.0%	0.7%	0.5%	0.3%	0.2%
Interaction Effect	0.1%	1.6%	1.8%	1.1%	1.5%

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	33,882,723,767	100.0	0.5	73	13.5	40	3.1	78	8.3	30	6.7	41	9.0	11
S&P 500			1.7	3	20.6	1	4.3	48	13.4	1	10.8	1	13.2	1
BBgBarc US Aggregate TR			2.3	1	8.5	99	10.3	1	2.9	99	3.4	99	3.7	99
60% S&P 500 / 40% BBgBarc Aggregate			2.0	2	15.9	4	7.1	2	9.3	5	8.0	3	9.6	2
MSCI EAFE			-1.1	99	12.8	52	-1.3	99	6.5	95	3.3	99	4.9	99
Teachers	17,080,033,207	50.4	0.6	69	13.8	32	2.9	81	8.6	18	6.7	39	9.8	1
TEACHERS Allocation Index			0.2	86	12.7	53	2.6	85	7.8	57	6.7	39	8.9	16
TEACHERS Policy Index			0.4	78	14.0	26	3.5	70	7.8	58	6.3	59	8.7	23
PERS	9,917,746,117	29.3	0.6	64	14.2	22	3.7	63	7.9	56	6.5	51	8.3	40
PERS Allocation Index			0.8	54	14.0	27	3.7	61	7.7	61	6.4	54	7.9	60
PERS Policy Index			0.8	52	14.5	14	4.6	38	8.1	49	6.6	42	8.2	51
Firefighters	2,825,026,581	8.3	-0.2	95	13.5	38	3.6	67	9.8	3	8.2	1	9.3	6
FIREFIGHTERS Allocation Index			0.4	77	13.3	44	2.4	87	8.7	16	7.3	10	9.1	11
FIREFIGHTERS Policy Index			1.3	11	15.0	8	5.1	25	9.4	4	7.9	3	9.6	2
Police	2,598,233,310	7.7	0.4	76	10.1	96	2.2	90	7.2	80	6.0	75	7.6	71
POLICE Allocation Index			-0.1	95	9.6	99	2.1	91	6.7	94	5.2	95	7.6	72
POLICE Policy Index			0.7	60	12.6	54	3.8	60	7.3	79	5.3	93	7.9	62
Law	998,155,136	2.9	-0.2	95	11.2	80	2.0	92	7.4	72	5.8	82	8.1	52
LAW Allocation Index			0.8	46	11.4	78	3.5	70	7.6	68	6.5	49	8.2	51
LAW Policy Index			0.8	52	12.7	54	3.7	62	7.8	60	6.8	30	8.4	37
Judges	346,399,110	1.0	0.8	51	14.5	14	4.0	55	8.0	55	6.5	49	8.2	46
JUDGES Allocation Index			0.7	60	14.1	24	3.7	63	7.7	61	6.3	59	7.8	63
JUDGES Policy Index			0.8	52	14.5	14	4.6	38	8.1	49	6.6	42	8.2	51
Wildlife	117,130,306	0.3	1.1	23	14.0	28	5.1	24	8.1	45	6.7	39	7.8	65
WILDLIFE Allocation Index			1.3	10	14.4	16	5.5	12	8.3	30	7.0	23	7.9	60
WILDLIFE Policy Index			0.6	65	12.3	60	3.4	73	6.4	96	5.4	91	7.5	72
InvMetrics Public DB Gross Median			0.8		13.0		4.1		8.0		6.5		8.2	

Returns are gross of manager fees.



Oklahoma State Pension Commission

TOTAL FUND PERFORMANCE DETAIL

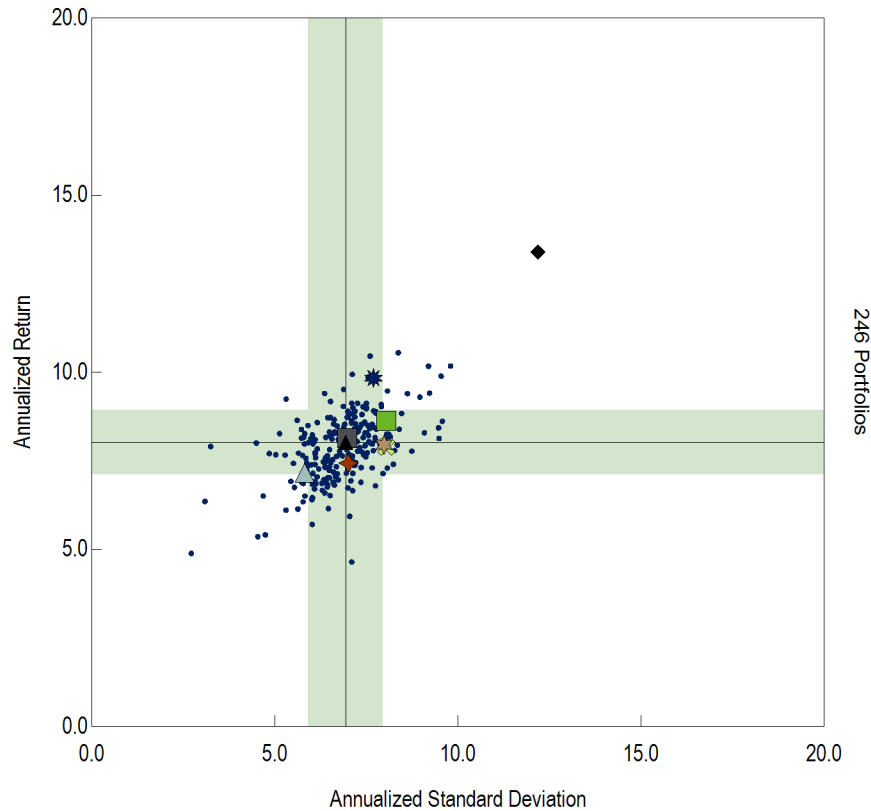
	Market Value (\$)	% of Portfolio	2018 (%)	Rank	2017 (%)	Rank	2016 (%)	Rank	2015 (%)	Rank	2014 (%)	Rank
Oklahoma State Pension Commission	33,882,723,767	100.0	-5.0	79	16.4	28	9.5	5	-1.5	83	7.5	12
S&P 500			-4.4	61	21.8	1	12.0	1	1.4	11	13.7	1
BBgBarc US Aggregate TR			0.0	2	3.5	99	2.6	99	0.5	35	6.0	45
60% S&P 500 / 40% BBgBarc Aggregate			-2.3	12	14.2	72	8.3	27	1.3	13	10.6	1
MSCI EAFE			-13.8	99	25.0	1	1.0	99	-0.8	75	-4.9	99
Teachers	17,080,033,207	50.4	-5.0	78	16.1	34	11.4	1	-2.9	98	8.1	4
TEACHERS Allocation Index			-4.7	70	14.3	70	11.0	1	-2.0	89	8.2	4
TEACHERS Policy Index			-5.1	80	14.1	74	10.6	1	-2.5	95	6.7	28
PERS	9,917,746,117	29.3	-6.5	97	17.1	17	7.7	52	-0.8	74	7.4	15
PERS Allocation Index			-6.5	97	16.5	26	8.1	34	-0.9	77	7.0	21
PERS Policy Index			-6.1	94	16.9	21	8.1	34	-0.9	76	7.0	21
Firefighters	2,825,026,581	8.3	-2.4	13	18.7	4	7.3	61	2.1	6	6.9	24
FIREFIGHTERS Allocation Index			-3.9	49	15.6	44	9.4	5	0.5	35	6.1	40
FIREFIGHTERS Policy Index			-3.8	45	16.4	28	8.7	15	1.6	10	8.7	3
Police	2,598,233,310	7.7	-2.4	14	13.2	86	7.5	57	1.0	21	5.1	68
POLICE Allocation Index			-3.7	42	13.8	77	6.7	80	-0.4	63	5.0	70
POLICE Policy Index			-5.3	83	15.5	48	7.1	70	-1.9	89	4.5	79
Law	998,155,136	2.9	-4.6	65	14.6	63	7.2	66	-0.4	65	6.8	28
LAW Allocation Index			-3.5	35	14.6	63	8.3	29	0.3	42	7.1	20
LAW Policy Index			-3.7	40	13.4	86	8.6	18	1.0	22	7.0	21
Judges	346,399,110	1.0	-6.4	96	16.9	21	8.1	36	-1.1	79	7.0	22
JUDGES Allocation Index			-6.5	97	16.7	24	7.9	44	-1.2	81	6.7	29
JUDGES Policy Index			-6.1	94	16.9	21	8.1	34	-0.9	76	7.0	21
Wildlife	117,130,306	0.3	-3.5	36	14.3	71	6.6	82	0.1	49	7.9	7
WILDLIFE Allocation Index			-3.7	42	14.4	69	8.0	37	-0.3	61	7.7	10
WILDLIFE Policy Index			-4.9	76	13.0	88	7.4	60	-1.3	81	5.8	51
InvMetrics Public DB Gross Median			-4.0		15.3		7.7		0.1		5.8	

Returns are gross of manager fees.



TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2019



- Teachers
- ✱ PERS
- ★ Firefighters
- ▲ Police
- ◆ Law
- ✱ Judges
- Wildlife
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross
- ◆ S&P 500

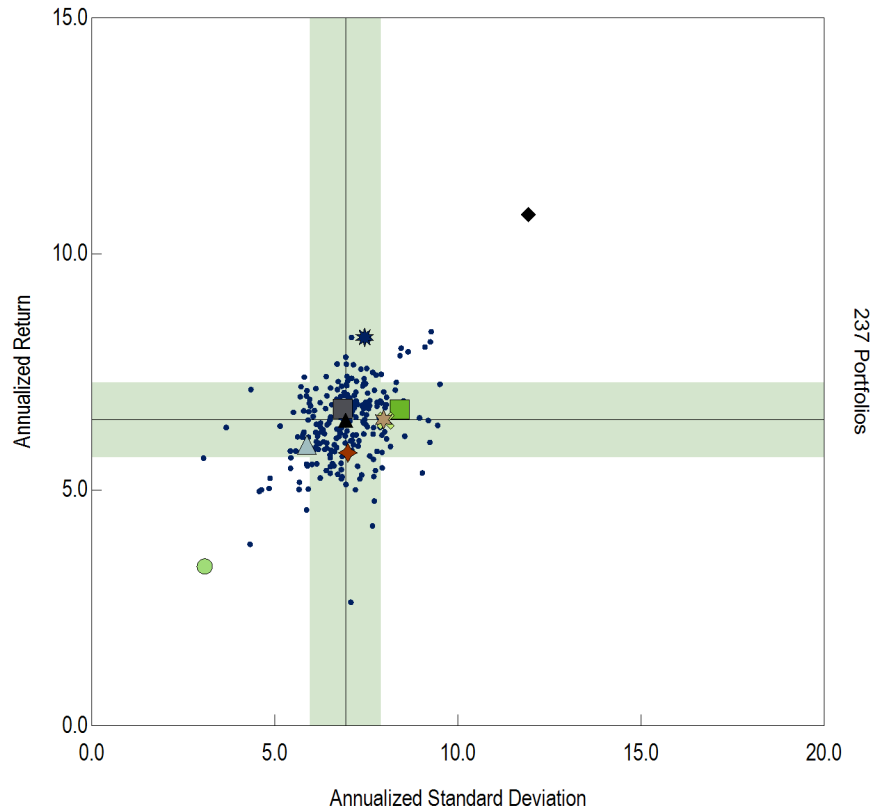
3 Years Ending September 30, 2019				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Oklahoma State Pension Commission	8.34%	30	7.75%	85
Teachers	8.64%	18	8.04%	91
PERS	7.90%	56	8.04%	91
Firefighters	9.84%	3	7.69%	83
Police	7.16%	80	5.81%	12
Law	7.44%	72	7.00%	55
Judges	7.96%	55	7.98%	90
Wildlife	8.14%	45	6.97%	52

3 Years Ending September 30, 2019				
	Sharpe Ratio	Rank	Sortino Ratio	Rank
Oklahoma State Pension Commission	0.88	66	1.22	66
Teachers	0.88	64	1.37	40
PERS	0.79	91	1.12	87
Firefighters	1.08	13	1.46	20
Police	0.97	36	1.34	46
Law	0.84	77	1.17	78
Judges	0.80	90	1.10	88
Wildlife	0.95	43	1.29	53



TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2019



- Teachers
- ✦ PERS
- ★ Firefighters
- ▲ Police
- ◆ Law
- ✧ Judges
- Wildlife
- ◆ S&P 500
- BBgBarc US Aggregate TR
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross

5 Years Ending September 30, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Oklahoma State Pension Commission	6.66%	41	7.89%	88
Teachers	6.71%	39	8.40%	95
PERS	6.47%	51	8.02%	92
Firefighters	8.23%	1	7.45%	76
Police	5.95%	75	5.87%	13
Law	5.79%	82	6.99%	57
Judges	6.49%	49	7.97%	91
Wildlife	6.72%	39	6.84%	46

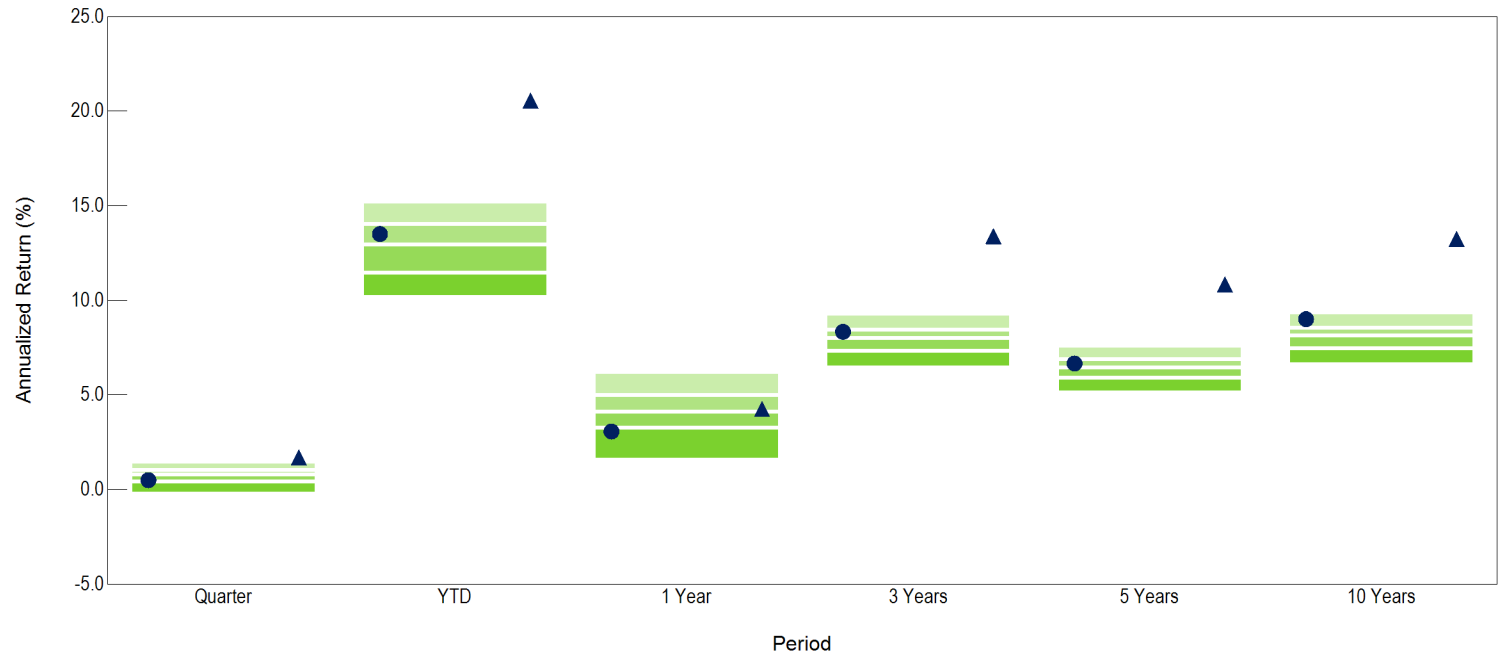
5 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
Oklahoma State Pension Commission	0.72	75	1.08	74
Teachers	0.68	85	1.04	86
PERS	0.68	84	1.04	85
Firefighters	0.97	8	1.40	16
Police	0.85	32	1.32	29
Law	0.69	83	1.07	79
Judges	0.69	83	1.04	84
Wildlife	0.84	37	1.23	47



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Oklahoma State Pension Commission vs. InvMetrics Public DB Gross

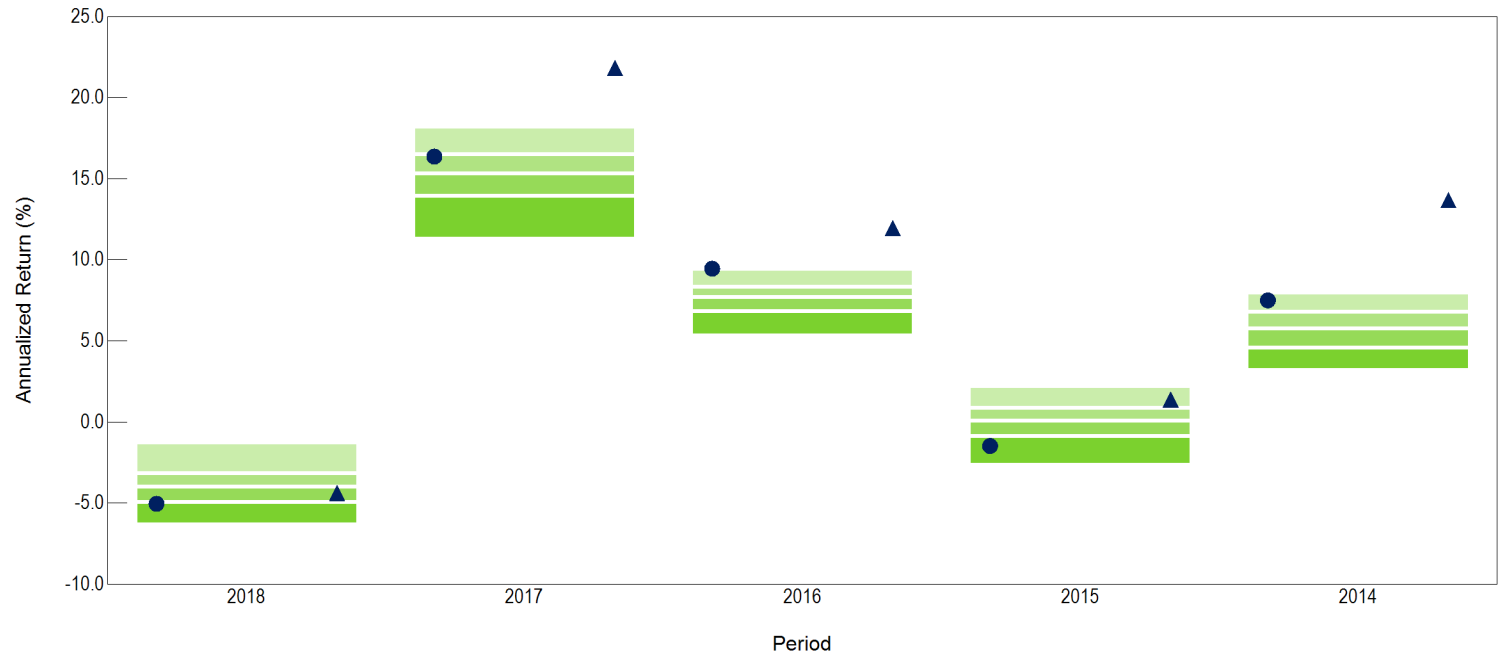


	Return (Rank)											
5th Percentile	1.5	15.2	6.2	9.3	7.6	9.4						
25th Percentile	1.1	14.1	5.0	8.5	6.9	8.6						
Median	0.8	13.0	4.1	8.0	6.5	8.2						
75th Percentile	0.5	11.5	3.3	7.3	5.9	7.5						
95th Percentile	-0.2	10.2	1.6	6.5	5.2	6.7						
# of Portfolios	262	259	256	246	237	199						
● Oklahoma State Pension Commission	0.5	(73)	13.5	(40)	3.1	(78)	8.3	(30)	6.7	(41)	9.0	(11)
▲ S&P 500	1.7	(3)	20.6	(1)	4.3	(48)	13.4	(1)	10.8	(1)	13.2	(1)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Oklahoma State Pension Commission vs. InvMetrics Public DB Gross



	2018		2017		2016		2015		2014	
Return (Rank)										
5th Percentile	-1.3		18.2		9.4		2.2		8.0	
25th Percentile	-3.1		16.5		8.4		0.9		6.8	
Median	-4.0		15.3		7.7		0.1		5.8	
75th Percentile	-4.9		14.0		6.9		-0.9		4.6	
95th Percentile	-6.3		11.3		5.3		-2.6		3.2	
# of Portfolios	319		304		305		316		248	
● Oklahoma State Pension Commission	-5.0	(79)	16.4	(28)	9.5	(5)	-1.5	(83)	7.5	(12)
▲ S&P 500	-4.4	(61)	21.8	(1)	12.0	(1)	1.4	(11)	13.7	(1)



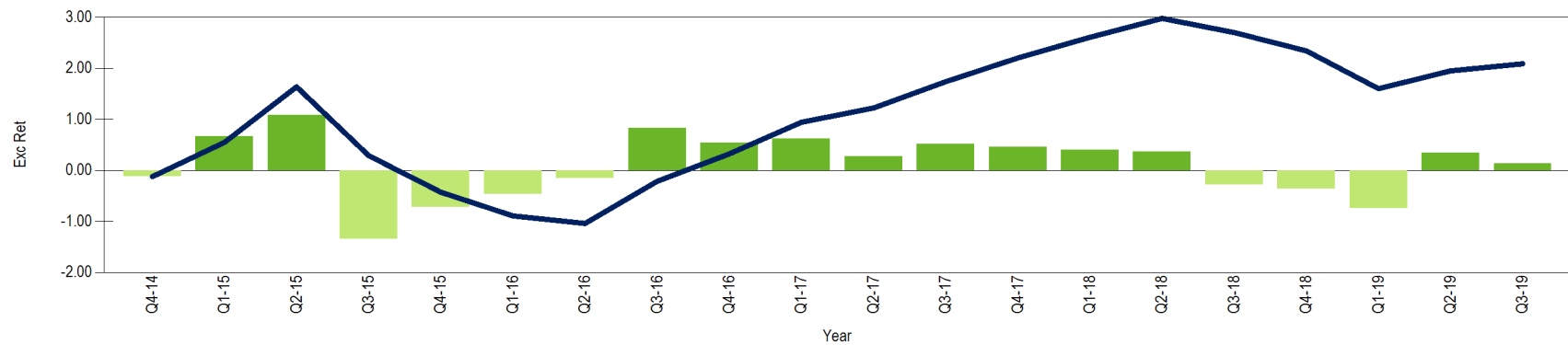
OKLAHOMA TEACHERS



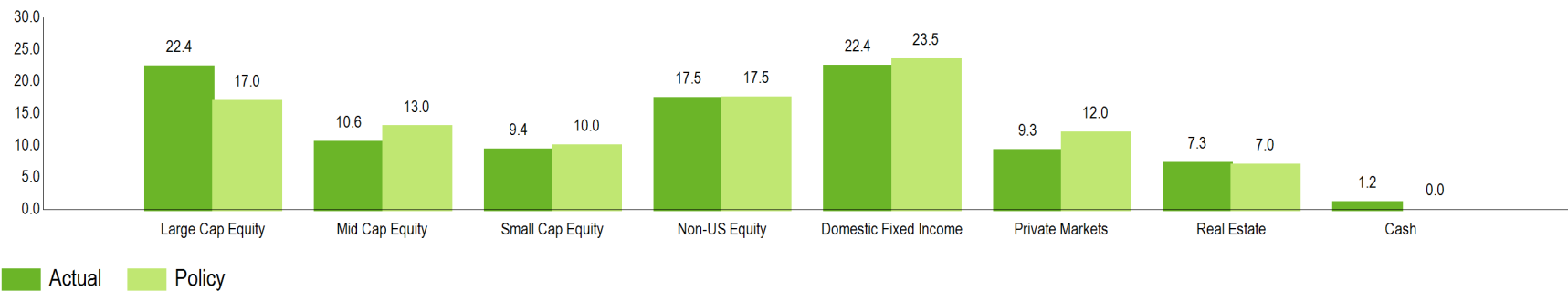
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK TEACHERS	\$17,080,033,207	0.6%	70	13.8%	32	2.9%	81	8.6%	18	6.7%	39	9.8%	1
<i>TEACHERS Allocation Index</i>		0.2%	86	12.7%	53	2.6%	85	7.8%	57	6.7%	39	8.9%	16
<i>TEACHERS Policy Index</i>		0.4%	78	14.0%	26	3.5%	70	7.8%	58	6.3%	59	8.7%	23
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)

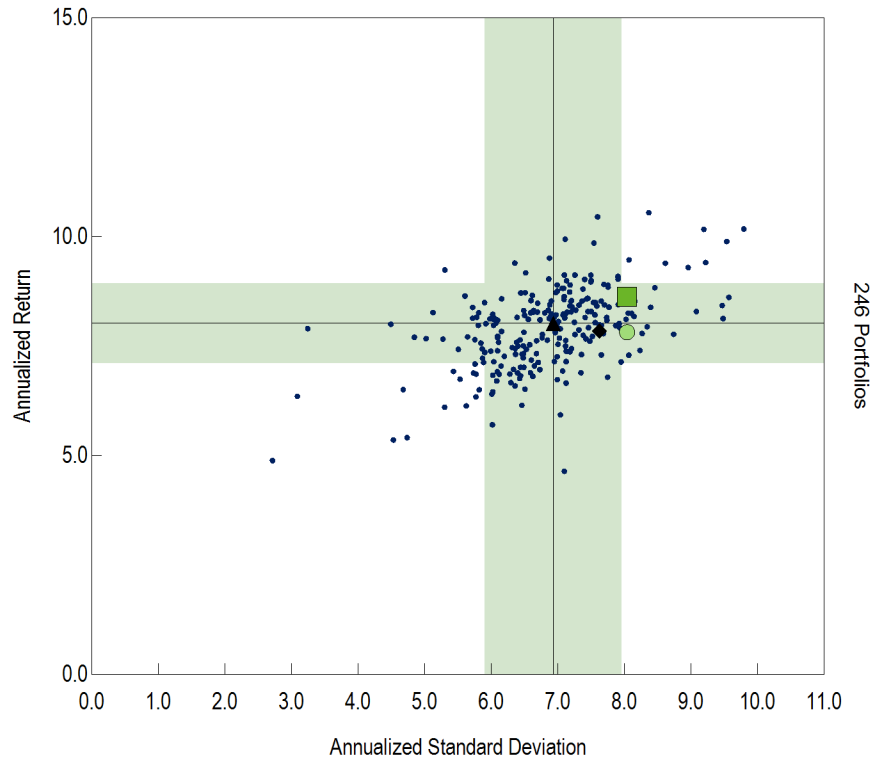


Returns are gross of manager fees.



TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2019



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

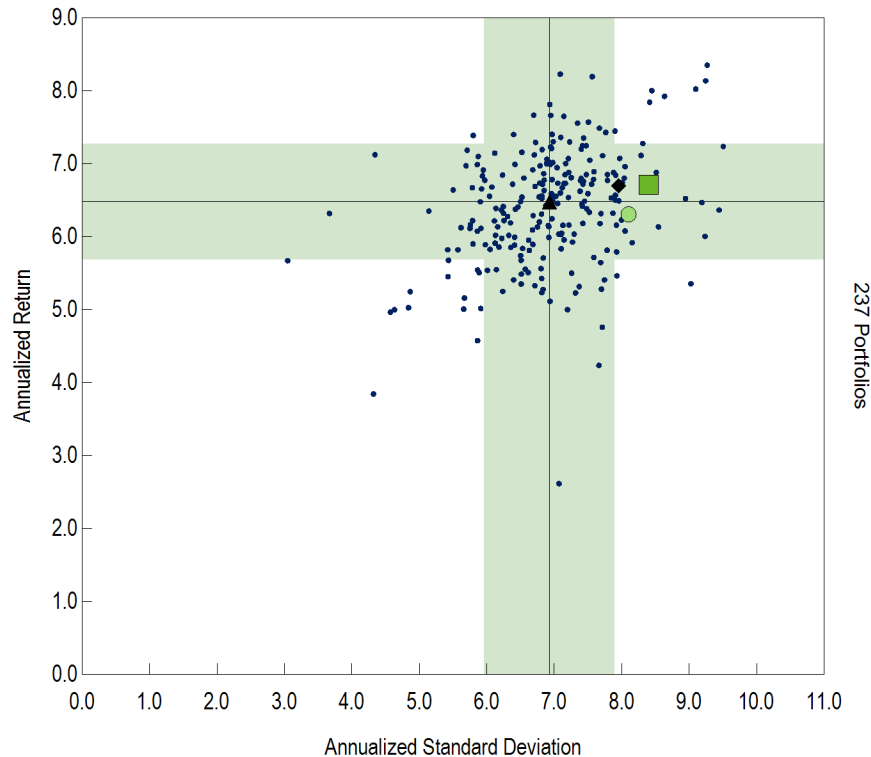
3 Years Ending September 30, 2019				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK TEACHERS	8.63%	18	8.04%	91
TEACHERS Allocation Index	7.85%	57	7.62%	81
TEACHERS Policy Index	7.82%	58	8.04%	91

3 Years Ending September 30, 2019				
	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK TEACHERS	0.88	64	1.36	40
TEACHERS Allocation Index	0.83	80	1.19	73
TEACHERS Policy Index	0.78	92	1.12	86



TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2019



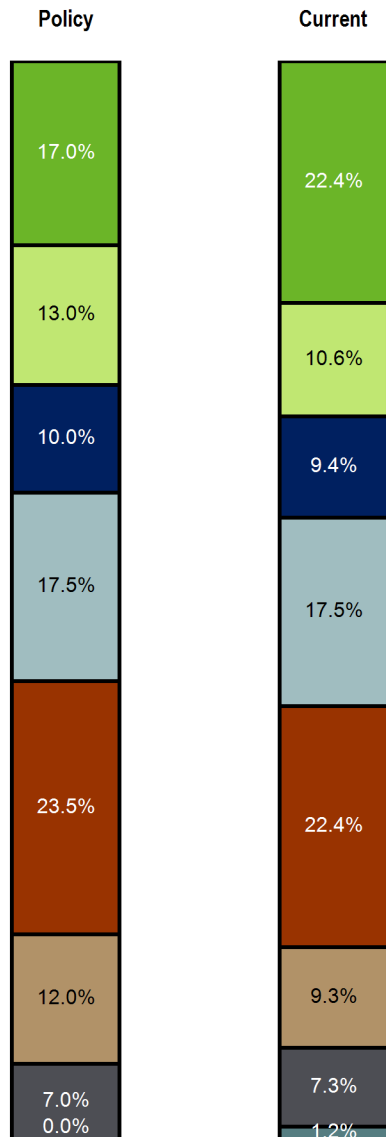
- OK TEACHERS
- ◆ TEACHERS Allocation Index
- TEACHERS Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross

5 Years Ending September 30, 2019				
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK TEACHERS	6.71%	39	8.40%	95
TEACHERS Allocation Index	6.70%	39	7.96%	91
TEACHERS Policy Index	6.31%	59	8.10%	94

5 Years Ending September 30, 2019				
	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK TEACHERS	0.68	85	1.04	86
TEACHERS Allocation Index	0.72	75	1.10	71
TEACHERS Policy Index	0.66	88	1.04	86



TOTAL FUND ASSET ALLOCATION VS. POLICY



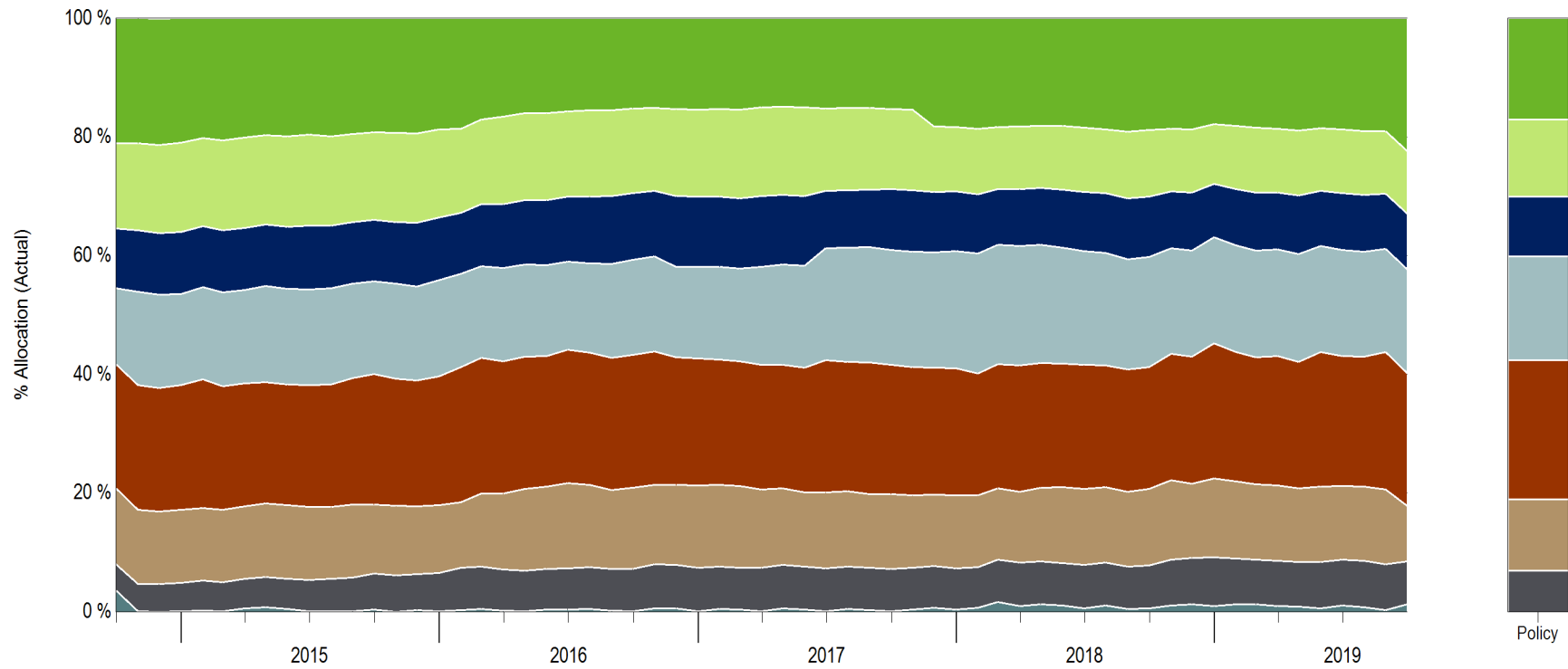
Asset Allocation vs. Target							
	Current	Policy	Current Difference*	Policy Range	Within Range		
Large Cap Equity	\$3,819,958,183	17.0%	22.4%	5.4%	12.0% - 23.0%	Yes	
Mid Cap Equity	\$1,802,302,034	13.0%	10.6%	-2.4%	8.0% - 18.0%	Yes	
Small Cap Equity	\$1,605,492,381	10.0%	9.4%	-0.6%	5.0% - 15.0%	Yes	
Non-US Equity	\$2,981,749,607	17.5%	17.5%	0.0%	12.5% - 22.5%	Yes	
Domestic Fixed Income	\$3,830,329,185	23.5%	22.4%	-1.1%	18.5% - 28.5%	Yes	
Private Markets	\$1,592,648,621	12.0%	9.3%	-2.7%	7.0% - 17.0%	Yes	
Real Estate	\$1,245,219,214	7.0%	7.3%	0.3%	2.0% - 12.0%	Yes	
Cash	\$202,333,982	0.0%	1.2%	1.2%	0.0% - 5.0%	Yes	
Total	\$17,080,033,207	100.0%	100.0%				

*Difference between Policy and Current Allocation



TOTAL FUND ASSET ALLOCATION HISTORY

Asset Allocation History



- Large Cap Equity
- Small Cap Equity
- Domestic Fixed Income
- Real Estate
- Cash
- Mid Cap Equity
- Non-US Equity
- Private Markets



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
OK TEACHERS	17,080,033,207	100.0	0.6	70	13.8	32	2.9	81	8.6	18	6.7	39	9.8	1
TEACHERS Allocation Index			0.2	86	12.7	53	2.6	85	7.8	57	6.7	39	8.9	16
Over/Under			0.4		1.1		0.3		0.8		0.0		0.9	
TEACHERS Policy Index			0.4	78	14.0	26	3.5	70	7.8	58	6.3	59	8.7	23
InvMetrics Public DB Gross Median			0.8		13.0		4.1		8.0		6.5		8.2	
Total Equity Composite	10,209,502,205	59.8	-0.8	68	16.6	53	-1.8	72	10.1	43	7.7	45	10.7	27
Russell 3000			1.2	26	20.1	27	2.9	42	12.8	15	10.4	15	13.1	9
Over/Under			-2.0		-3.5		-4.7		-2.7		-2.7		-2.4	
eV All Global Equity Gross Median			0.0		16.9		1.5		9.6		7.5		9.7	
Transition Account	2,073,791,486	12.1												
91 Day T-Bills			0.5	--	1.7	--	2.3	--	1.5	--	1.0	--	0.5	--
Over/Under														
U.S. Equity Comp	5,153,961,112	30.2	0.3	56	19.9	44	0.0	54	12.1	44	9.5	53	12.7	56
S&P 500			1.7	30	20.6	38	4.3	29	13.4	32	10.8	33	13.2	42
Over/Under			-1.4		-0.7		-4.3		-1.3		-1.3		-0.5	
eV All US Equity Gross Median			0.7		19.0		0.7		11.5		9.7		12.9	
Sawgrass Large Growth	644,764	0.0	2.7	11	21.5	59	8.8	17	16.2	50	12.3	57	14.4	53
Russell 1000 Growth			1.5	29	23.3	40	3.7	53	16.9	40	13.4	35	14.9	35
Over/Under			1.2		-1.8		5.1		-0.7		-1.1		-0.5	
eV US Large Cap Growth Equity Gross Median			0.6		22.4		3.9		16.2		12.7		14.5	
Hotchkis & Wiley Large Cap Value	2,106,971	0.0	1.2	65	21.6	13	-0.1	69	11.6	29	8.2	51	12.6	28
Russell 1000 Value			1.4	62	17.8	50	4.0	40	9.4	71	7.8	64	11.5	65
Over/Under			-0.2		3.8		-4.1		2.2		0.4		1.1	
eV US Large Cap Value Equity Gross Median			1.8		17.7		2.6		10.5		8.2		11.9	
Aronson Mid Cap	436,325,202	2.6	-0.8	71	16.7	85	-1.9	77	9.4	67	6.9	85	12.8	63
Russell MidCap			0.5	49	21.9	53	3.2	44	10.7	57	9.1	57	13.1	57
Over/Under			-1.3		-5.2		-5.1		-1.3		-2.2		-0.3	
eV US Mid Cap Equity Gross Median			0.4		22.4		2.3		12.0		9.6		13.3	
Frontier	487,580,578	2.9	-0.7	47	23.8	67	5.2	51	13.4	78	11.3	63	13.6	73
Russell MidCap Growth			-0.7	46	25.2	54	5.2	51	14.5	62	11.1	68	14.1	57
Over/Under			0.0		-1.4		0.0		-1.1		0.2		-0.5	

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
Wellington	517,026,471	3.0	0.9	15	29.3	26	6.7	37	19.3	13	12.6	37	13.2	84
<i>Russell MidCap Growth</i>			<u>-0.7</u>	46	<u>25.2</u>	54	<u>5.2</u>	51	<u>14.5</u>	62	<u>11.1</u>	68	<u>14.1</u>	57
Over/Under			1.6		4.1		1.5		4.8		1.5		-0.9	
<i>eV US Mid Cap Growth Equity Gross Median</i>			-0.8		26.4		5.2		15.2		11.8		14.2	
Hotchkis & Wiley Mid Cap	361,369,783	2.1	-6.9	99	4.6	99	-21.8	99	1.8	99	1.3	99	10.9	87
<i>Russell MidCap Value</i>			<u>1.2</u>	56	<u>19.5</u>	57	<u>1.6</u>	43	<u>7.8</u>	67	<u>7.6</u>	51	<u>12.3</u>	46
Over/Under			-8.1		-14.9		-23.4		-6.0		-6.3		-1.4	
<i>eV US Mid Cap Value Equity Gross Median</i>			1.7		20.4		0.5		9.0		7.7		12.2	
Shapiro Capital	724,414,642	4.2	-2.0	83	16.3	41	-9.6	74	9.3	24	8.0	40	13.0	16
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			-1.4		3.5		-1.4		2.8		0.8		2.9	
Frontier Capital Management Small Cap Value	210,529,379	1.2	-0.3	54	18.6	20	-6.4	52	7.5	42	8.9	24	--	--
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			0.3		5.8		1.8		1.0		1.7		--	--
Neumeier Poma Investment Counsel Small Cap Value	245,561,329	1.4	-0.7	61	15.1	54	-2.8	24	11.9	8	12.0	2	--	--
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			-0.1		2.3		5.4		5.4		4.8		--	--
<i>eV US Small Cap Value Equity Gross Median</i>			-0.2		15.3		-6.3		7.1		7.5		11.7	
Geneva Capital Management Small Cap Growth	209,135,578	1.2	-2.3	18	20.6	36	-3.2	32	15.9	30	14.8	12	--	--
<i>Russell 2000 Growth</i>			<u>-4.2</u>	46	<u>15.3</u>	66	<u>-9.6</u>	72	<u>9.8</u>	83	<u>9.1</u>	79	<u>12.2</u>	87
Over/Under			1.9		5.3		6.4		6.1		5.7		--	--

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
Wasatch Advisors Small Cap Growth	215,851,453	1.3	0.0	5	25.6	14	3.3	7	17.9	17	15.4	10	--	--
<i>Russell 2000 Growth</i>			<u>-4.2</u>	46	<u>15.3</u>	66	<u>-9.6</u>	72	<u>9.8</u>	83	<u>9.1</u>	79	<u>12.2</u>	87
Over/Under			4.2		10.3		12.9		8.1		6.3			
<i>eV US Small Cap Growth Equity Gross Median</i>			-4.4		18.0		-6.7		13.4		11.4		14.1	
Domestic Passive Equity	1,743,414,962	10.2	2.5	--	21.1	--	5.5	--	12.7	--	10.1	--	--	--
<i>S&P 500</i>			<u>1.7</u>	--	<u>20.6</u>	--	<u>4.3</u>	--	<u>13.4</u>	--	<u>10.8</u>	--	<u>13.2</u>	--
Over/Under			0.8		0.5		1.2		-0.7		-0.7			
Northern Trust Russell 1000	684,313,545	4.0	1.4	--	20.5	--	3.9	--	--	--	--	--	--	--
<i>Russell 1000</i>			<u>1.4</u>	--	<u>20.5</u>	--	<u>3.9</u>	--	<u>13.2</u>	--	<u>10.6</u>	--	<u>13.2</u>	--
Over/Under			0.0		0.0		0.0							
Sci Beta US HFE MBMS	1,059,101,417	6.2	3.3	--	21.4	--	6.5	--	--	--	--	--	--	--
<i>S&P 500</i>			<u>1.7</u>	--	<u>20.6</u>	--	<u>4.3</u>	--	<u>13.4</u>	--	<u>10.8</u>	--	<u>13.2</u>	--
Over/Under			1.6		0.8		2.2							
International Equity Composite	2,981,749,607	17.5	-2.1	65	11.0	69	-4.5	76	6.2	64	3.8	63	5.7	73
<i>MSCI ACWI ex USA</i>			<u>-1.8</u>	52	<u>11.6</u>	67	<u>-1.2</u>	46	<u>6.3</u>	61	<u>2.9</u>	78	<u>4.5</u>	91
Over/Under			-0.3		-0.6		-3.3		-0.1		0.9		1.2	
<i>eV All ACWI ex-US Equity Gross Median</i>			-1.8		13.1		-1.7		6.8		4.6		6.8	
Causeway - Value	446,088,627	2.6	-2.1	77	10.4	46	-4.1	45	6.4	34	2.4	66	5.7	50
<i>MSCI EAFE</i>			<u>-1.1</u>	50	<u>12.8</u>	20	<u>-1.3</u>	21	<u>6.5</u>	34	<u>3.3</u>	47	<u>4.9</u>	64
Over/Under			-1.0		-2.4		-2.8		-0.1		-0.9		0.8	
<i>eV EAFE Value Equity Gross Median</i>			-1.2		10.1		-4.7		5.7		3.0		5.6	
Allianz Intl	969,678,925	5.7	-1.8	55	8.8	84	-2.5	59	6.7	55	--	--	--	--
<i>MSCI ACWI ex USA</i>			<u>-1.8</u>	53	<u>11.6</u>	68	<u>-1.2</u>	47	<u>6.3</u>	63	<u>2.9</u>	79	<u>4.5</u>	92
Over/Under			0.0		-2.8		-1.3		0.4					
<i>eV ACWI ex-US Equity Unhedged Gross Median</i>			-1.7		13.4		-1.5		7.0		4.8		7.0	
Wellington Intl	508,746,752	3.0	-0.7	19	18.3	23	2.1	17	10.2	13	--	--	--	--
<i>MSCI ACWI ex USA</i>			<u>-1.8</u>	53	<u>11.6</u>	68	<u>-1.2</u>	47	<u>6.3</u>	63	<u>2.9</u>	79	<u>4.5</u>	92
Over/Under			1.1		6.7		3.3		3.9					
<i>eV ACWI ex-US Equity Unhedged Gross Median</i>			-1.7		13.4		-1.5		7.0		4.8		7.0	
Northern Trust Intl - Liquidating	12,457	0.0												

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
International Small Cap Equity	1,057,222,846	6.2	-3.1	74	9.9	61	-9.3	79	4.0	84	3.9	77	--	--
MSCI ACWI ex USA			<u>-1.8</u>	31	<u>11.6</u>	56	<u>-1.2</u>	17	<u>6.3</u>	60	<u>2.9</u>	86	<u>4.5</u>	99
Over/Under			-1.3		-1.7		-8.1		-2.3		1.0			
eV ACWI ex-US Small Cap Equity Gross Median			-2.3		13.0		-6.1		6.7		6.2		8.9	
Advisory Research Int'l Small Cap	860,865	0.0	-3.6	82	-3.5	99	-4.8	44	2.4	85	1.6	93	--	--
MSCI ACWI ex USA			<u>-1.8</u>	31	<u>11.6</u>	56	<u>-1.2</u>	17	<u>6.3</u>	60	<u>2.9</u>	86	<u>4.5</u>	99
Over/Under			-1.8		-15.1		-3.6		-3.9		-1.3			
EPOCH Int'l Small Cap	248,422,181	1.5	-2.8	68	8.0	81	-11.6	90	3.2	84	3.0	85	--	--
MSCI ACWI ex USA			<u>-1.8</u>	31	<u>11.6</u>	56	<u>-1.2</u>	17	<u>6.3</u>	60	<u>2.9</u>	86	<u>4.5</u>	99
Over/Under			-1.0		-3.6		-10.4		-3.1		0.1			
Wasatch Int'l Small Cap	299,391,466	1.8	-3.3	81	17.8	17	-7.7	64	6.6	52	8.0	23	--	--
MSCI ACWI ex USA			<u>-1.8</u>	31	<u>11.6</u>	56	<u>-1.2</u>	17	<u>6.3</u>	60	<u>2.9</u>	86	<u>4.5</u>	99
Over/Under			-1.5		6.2		-6.5		0.3		5.1			
Wellington Int'l Small Cap	249,985,913	1.5	-1.7	27	10.6	58	-12.7	93	2.4	85	2.8	86	--	--
MSCI ACWI ex USA			<u>-1.8</u>	31	<u>11.6</u>	56	<u>-1.2</u>	17	<u>6.3</u>	60	<u>2.9</u>	86	<u>4.5</u>	99
Over/Under			0.1		-1.0		-11.5		-3.9		-0.1			
eV ACWI ex-US Small Cap Equity Gross Median			-2.3		13.0		-6.1		6.7		6.2		8.9	
SSGA Emerging Market Small Cap	258,562,421	1.5	-4.5	95	3.2	88	-5.1	44	3.8	84	--	--	--	--
MSCI Emerging Markets Small Cap Gross			<u>-4.4</u>	95	<u>2.1</u>	89	<u>-5.1</u>	45	<u>1.7</u>	85	<u>0.2</u>	99	<u>3.5</u>	99
Over/Under			-0.1		1.1		0.0		2.1					
eV ACWI ex-US Small Cap Equity Gross Median			-2.3		13.0		-6.1		6.7		6.2		8.9	
Fixed Composite	3,830,329,185	22.4	3.0	13	11.9	20	11.7	15	4.7	30	4.8	28	6.2	26
BBgBarc US Aggregate TR			<u>2.3</u>	30	<u>8.5</u>	44	<u>10.3</u>	27	<u>2.9</u>	62	<u>3.4</u>	58	<u>3.7</u>	62
Over/Under			0.7		3.4		1.4		1.8		1.4		2.5	
eV All US Fixed Inc Gross Median			1.5		7.7		7.9		3.4		3.7		4.3	
Loomis Sayles Core Plus	1,049,240,672	6.1	1.2	98	8.5	87	7.4	95	3.4	89	3.5	94	5.7	25
BBgBarc US Aggregate TR			<u>2.3</u>	58	<u>8.5</u>	87	<u>10.3</u>	57	<u>2.9</u>	97	<u>3.4</u>	95	<u>3.7</u>	99
Over/Under			-1.1		0.0		-2.9		0.5		0.1		2.0	

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
Mackay Shields Core Plus	1,058,418,268	6.2	2.1	78	10.7	14	9.5	83	3.6	76	3.2	98	5.1	59
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	58	<u>8.5</u>	87	<u>10.3</u>	57	<u>2.9</u>	97	<u>3.4</u>	95	<u>3.7</u>	99
Over/Under			-0.2		2.2		-0.8		0.7		-0.2		1.4	
Lord Abbett Core Plus	1,055,913,412	6.2	1.8	89	9.8	38	9.7	75	3.5	85	3.8	77	5.0	64
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	58	<u>8.5</u>	87	<u>10.3</u>	57	<u>2.9</u>	97	<u>3.4</u>	95	<u>3.7</u>	99
Over/Under			-0.5		1.3		-0.6		0.6		0.4		1.3	
<i>eV US Core Plus Fixed Inc Gross Median</i>			2.3		9.5		10.4		3.9		4.1		5.2	
Hoisington Long Bonds	666,756,833	3.9	9.9	5	23.8	6	29.1	6	4.4	96	7.6	22	7.8	81
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	99	<u>8.5</u>	99	<u>10.3</u>	99	<u>2.9</u>	99	<u>3.4</u>	99	<u>3.7</u>	99
Over/Under			7.6		15.3		18.8		1.5		4.2		4.1	
<i>eV US Long Duration Fixed Inc Gross Median</i>			6.2		21.7		21.2		6.1		7.1		8.2	
Total Private Equity	1,592,071,564	9.3	5.1	--	11.3	--	15.2	--	17.0	--	14.8	--	--	--
<i>Cambridge Associates US All PE</i>			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			5.1		1.6		7.4		2.8		3.4		--	
Legacy LP - Aldus PE	14,623,072	0.1	0.0	--	-3.1	--	-4.6	--	0.1	--	2.5	--	6.7	--
Pimco Bravo	1,131,150	0.0	-44.0	--	-65.4	--	-66.4	--	-14.8	--	-6.0	--	--	--
PIMCO Bravo 2	76,161,444	0.4	2.3	--	1.3	--	3.4	--	7.5	--	8.4	--	--	--
OK - OTRS/Franklin Park	1,272,356,111	7.4	5.8	--	13.7	--	18.3	--	19.3	--	16.6	--	--	--
Pimco COF II	86,814,480	0.5	1.7	--	1.9	--	2.9	--	11.4	--	--	--	--	--
PIMCO Bravo 3	140,985,307	0.8	3.2	--	5.2	--	7.0	--	--	--	--	--	--	--
Master Limited Partnerships	577,057	0.0	-1.4	--	15.6	--	-5.6	--	-2.2	--	-6.7	--	--	--
<i>Alerian MLP Index</i>			<u>-5.0</u>	--	<u>11.1</u>	--	<u>-8.1</u>	--	<u>-2.5</u>	--	<u>-8.6</u>	--	<u>6.2</u>	--
Over/Under			3.6		4.5		2.5		0.3		1.9		--	
Chickasaw Capital Management	278,058	0.0	-2.2	--	16.4	--	-7.5	--	-3.7	--	-6.8	--	--	--
<i>Alerian MLP Index</i>			<u>-5.0</u>	--	<u>11.1</u>	--	<u>-8.1</u>	--	<u>-2.5</u>	--	<u>-8.6</u>	--	<u>6.2</u>	--
Over/Under			2.8		5.3		0.6		-1.2		1.8		--	

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
Swank Capital Cushing	298,999	0.0	-1.0	--	15.2	--	-4.5	--	-0.8	--	-6.2	--	--	--
<i>Alerian MLP Index</i>			<u>-5.0</u>	--	<u>11.1</u>	--	<u>-8.1</u>	--	<u>-2.5</u>	--	<u>-8.6</u>	--	<u>6.2</u>	--
Over/Under			4.0		4.1		3.6		1.7		2.4			
Total Core Real Estate	1,245,219,214	7.3	-0.6	--	5.2	--	7.1	--	7.1	--	9.2	--	--	--
<i>NCREIF Property Index</i>			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			-2.0		0.4		0.9		0.3		0.6			
L & B Real Estate	185,213,299	1.1	-5.0	--	-4.9	--	-3.1	--	3.9	--	8.0	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-6.3		-8.7		-8.7		-3.4		-1.3			
Heitman Real Estate	324,940,440	1.9	0.2	--	2.0	--	4.3	--	6.9	--	9.1	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-1.1		-1.8		-1.3		-0.4		-0.2			
AEW Real Estate	323,266,651	1.9	1.3	--	4.6	--	6.1	--	6.8	--	8.9	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.0		0.8		0.5		-0.5		-0.4			
L & B Gold Driller	84,387,306	0.5	0.0	--	39.6	--	39.6	--	13.8	--	7.6	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-1.3		35.8		34.0		6.5		-1.7			
Greenoak Real Estate II	37,835,027	0.2	-0.4	--	1.7	--	2.9	--	7.2	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-1.7		-2.1		-2.7		-0.1					
Greenoak Real Estate III	13,587,187	0.1	-5.8	--	-5.3	--	-9.7	--	--	--	--	--	--	--
Lyrical-OTRS Realty Partner IV	63,272,555	0.4	2.1	--	55.8	--	53.1	--	9.7	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.8		52.0		47.5		2.4					
Dune Real Estate	57,273,623	0.3	1.1	--	5.7	--	11.8	--	11.6	--	--	--	--	--
<i>NCREIF ODCE</i>			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.2		1.9		6.2		4.3					

Returns are gross of manager fees.



Oklahoma Teachers

TOTAL FUND PERFORMANCE DETAIL

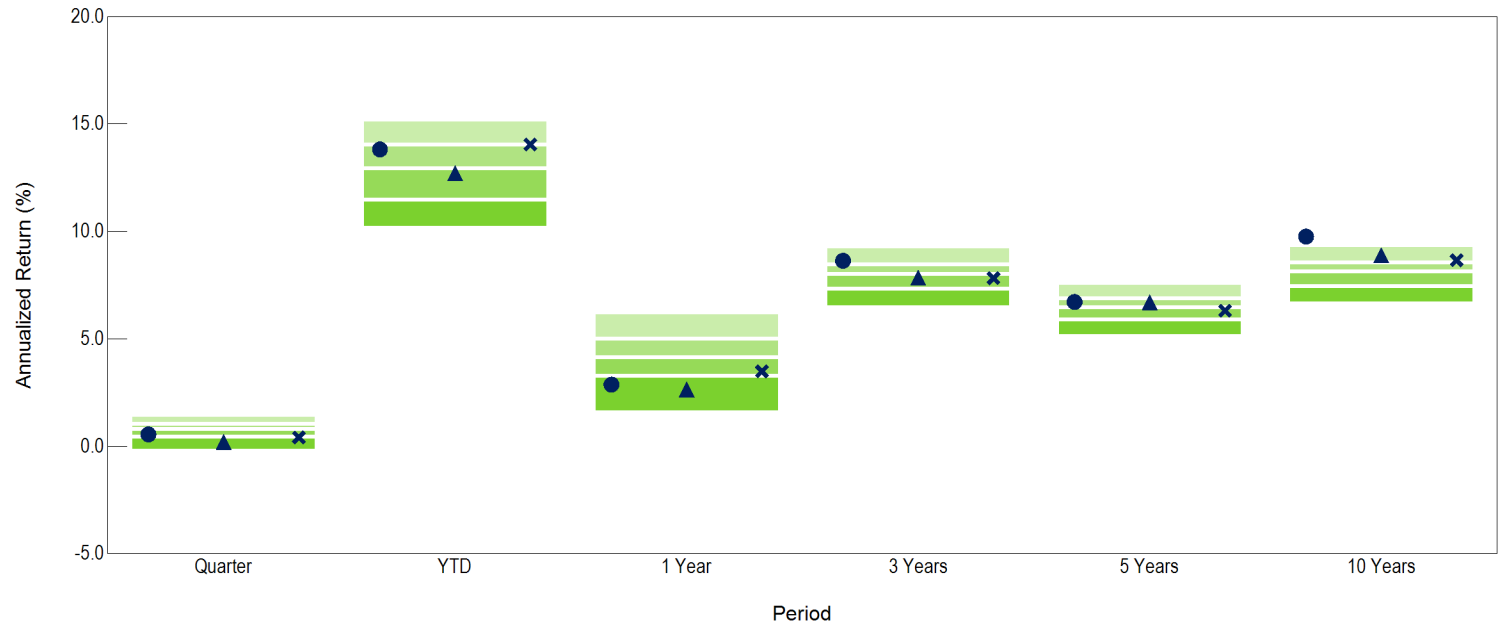
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Landmark Realty	16,703,924	0.1	-0.4	--	-1.2	--	-0.3	--	4.6	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-1.7		-5.0		-5.9		-2.7					
American Realty	65,038,112	0.4	2.0	--	6.5	--	8.8	--	10.0	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.7		2.7		3.2		2.7					
Starwood Capital	26,116,206	0.2	1.5	--	3.1	--	7.7	--	13.7	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.2		-0.7		2.1		6.4					
Starwood Opportunity XI	8,056,982	0.0	1.4	--	19.8	--	33.3	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.1		16.0		27.7							
FCP Realty Fund IV, L.P.	5,302,789	0.0	-12.7	--	-39.4	--	--	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-14.0		-43.2									
Harbert European Real Estate V	4,612,043	0.0	-5.3	--	-31.2	--	--	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-6.6		-35.0									

Returns are gross of manager fees.



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK TEACHERS vs. InvMetrics Public DB Gross

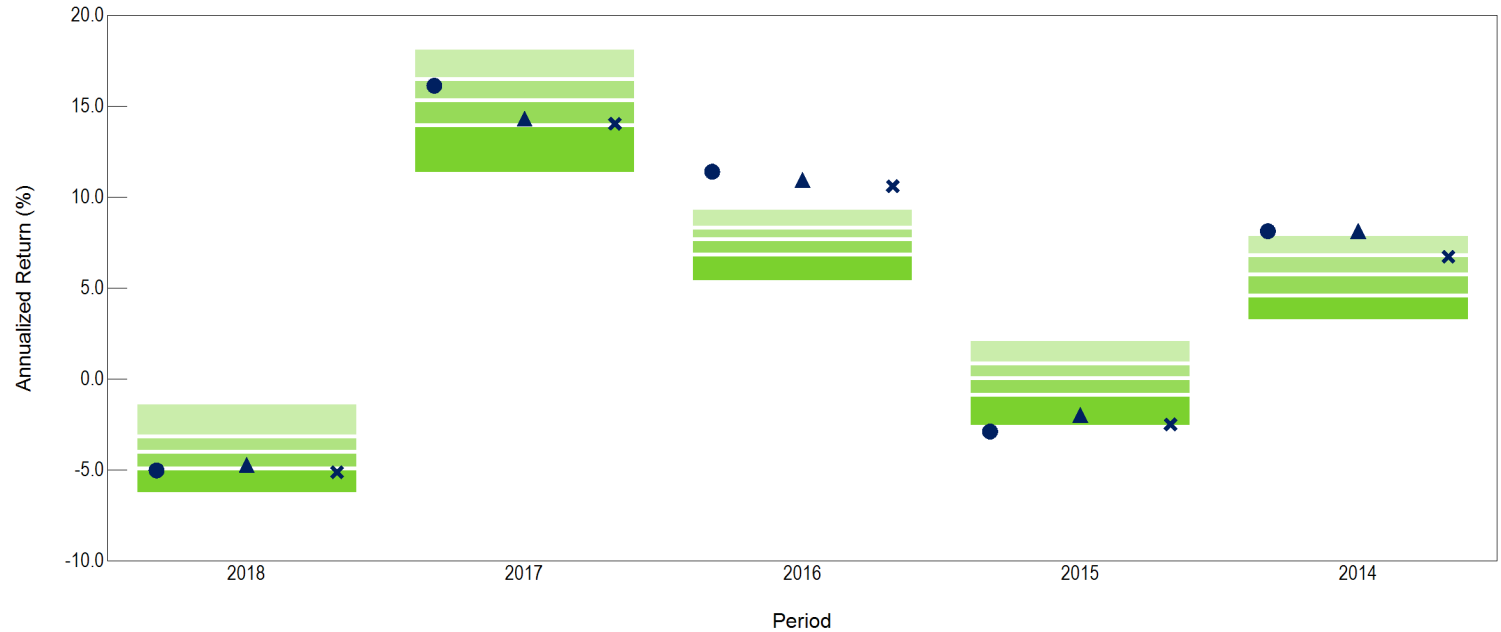


	Return (Rank)											
5th Percentile	1.5		15.2		6.2		9.3		7.6		9.4	
25th Percentile	1.1		14.1		5.0		8.5		6.9		8.6	
Median	0.8		13.0		4.1		8.0		6.5		8.2	
75th Percentile	0.5		11.5		3.3		7.3		5.9		7.5	
95th Percentile	-0.2		10.2		1.6		6.5		5.2		6.7	
# of Portfolios	262		259		256		246		237		199	
● OK TEACHERS	0.6	(70)	13.8	(32)	2.9	(81)	8.6	(18)	6.7	(39)	9.8	(1)
▲ TEACHERS Allocation Index	0.2	(86)	12.7	(53)	2.6	(85)	7.8	(57)	6.7	(39)	8.9	(16)
× TEACHERS Policy Index	0.4	(78)	14.0	(26)	3.5	(70)	7.8	(58)	6.3	(59)	8.7	(23)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK TEACHERS vs. InvMetrics Public DB Gross



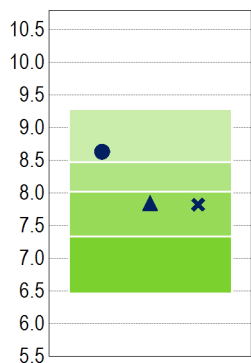
	Return (Rank)									
5th Percentile	-1.3		18.2		9.4		2.2		8.0	
25th Percentile	-3.1		16.5		8.4		0.9		6.8	
Median	-4.0		15.3		7.7		0.1		5.8	
75th Percentile	-4.9		14.0		6.9		-0.9		4.6	
95th Percentile	-6.3		11.3		5.3		-2.6		3.2	
# of Portfolios	319		304		305		316		248	
● OK TEACHERS	-5.0	(78)	16.1	(34)	11.4	(1)	-2.9	(97)	8.1	(4)
▲ TEACHERS Allocation Index	-4.7	(70)	14.3	(70)	11.0	(1)	-2.0	(89)	8.2	(4)
× TEACHERS Policy Index	-5.1	(80)	14.1	(74)	10.6	(1)	-2.5	(95)	6.7	(28)



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK TEACHERS vs. InvMetrics Public DB Gross 3 Years

Anlzd Return

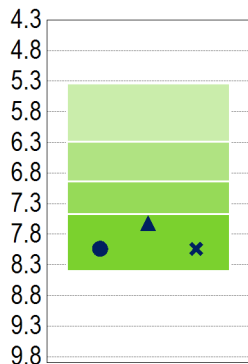


- OK TEACHERS
Value 8.63
Rank 18
- ▲ TEACHERS Allocation Index
Value 7.85
Rank 57
- × TEACHERS Policy Index
Value 7.82
Rank 58

Universe

5th %tile	9.28
25th %tile	8.48
Median	8.03
75th %tile	7.34
95th %tile	6.47

Anlzd Standard Deviation

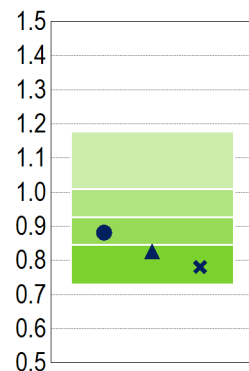


- OK TEACHERS
Value 8.04
Rank 91
- ▲ TEACHERS Allocation Index
Value 7.62
Rank 81
- × TEACHERS Policy Index
Value 8.04
Rank 91

Universe

5th %tile	5.34
25th %tile	6.28
Median	6.93
75th %tile	7.46
95th %tile	8.39

Sharpe Ratio

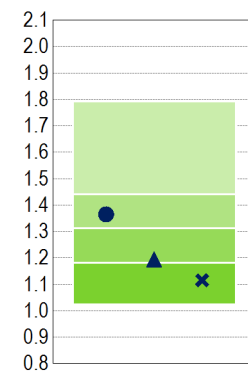


- OK TEACHERS
Value 0.88
Rank 64
- ▲ TEACHERS Allocation Index
Value 0.83
Rank 80
- × TEACHERS Policy Index
Value 0.78
Rank 92

Universe

5th %tile	1.18
25th %tile	1.01
Median	0.93
75th %tile	0.85
95th %tile	0.73

Sortino Ratio



- OK TEACHERS
Value 1.36
Rank 40
- ▲ TEACHERS Allocation Index
Value 1.19
Rank 73
- × TEACHERS Policy Index
Value 1.12
Rank 86

Universe

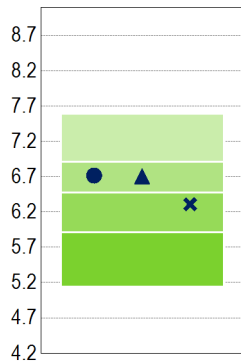
5th %tile	1.79
25th %tile	1.44
Median	1.31
75th %tile	1.18
95th %tile	1.03



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK TEACHERS vs. InvMetrics Public DB Gross 5 Years

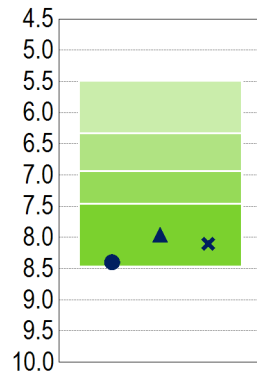
Anlzd Return



● OK TEACHERS	
Value	6.71
Rank	39
▲ TEACHERS Allocation Index	
Value	6.70
Rank	39
× TEACHERS Policy Index	
Value	6.31
Rank	59

Universe	
5th %tile	7.59
25th %tile	6.92
Median	6.48
75th %tile	5.92
95th %tile	5.15

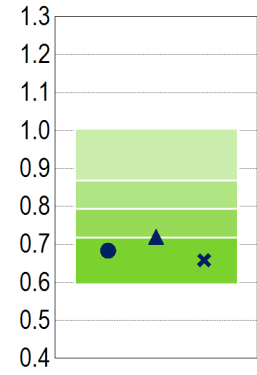
Anlzd Standard Deviation



● OK TEACHERS	
Value	8.40
Rank	95
▲ TEACHERS Allocation Index	
Value	7.96
Rank	91
× TEACHERS Policy Index	
Value	8.10
Rank	94

Universe	
5th %tile	5.49
25th %tile	6.33
Median	6.93
75th %tile	7.45
95th %tile	8.46

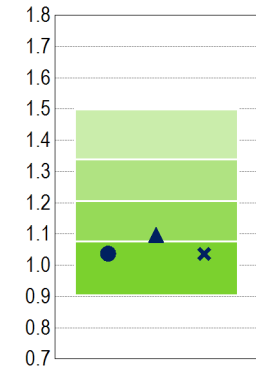
Sharpe Ratio



● OK TEACHERS	
Value	0.68
Rank	85
▲ TEACHERS Allocation Index	
Value	0.72
Rank	75
× TEACHERS Policy Index	
Value	0.66
Rank	88

Universe	
5th %tile	1.01
25th %tile	0.87
Median	0.80
75th %tile	0.72
95th %tile	0.60

Sortino Ratio



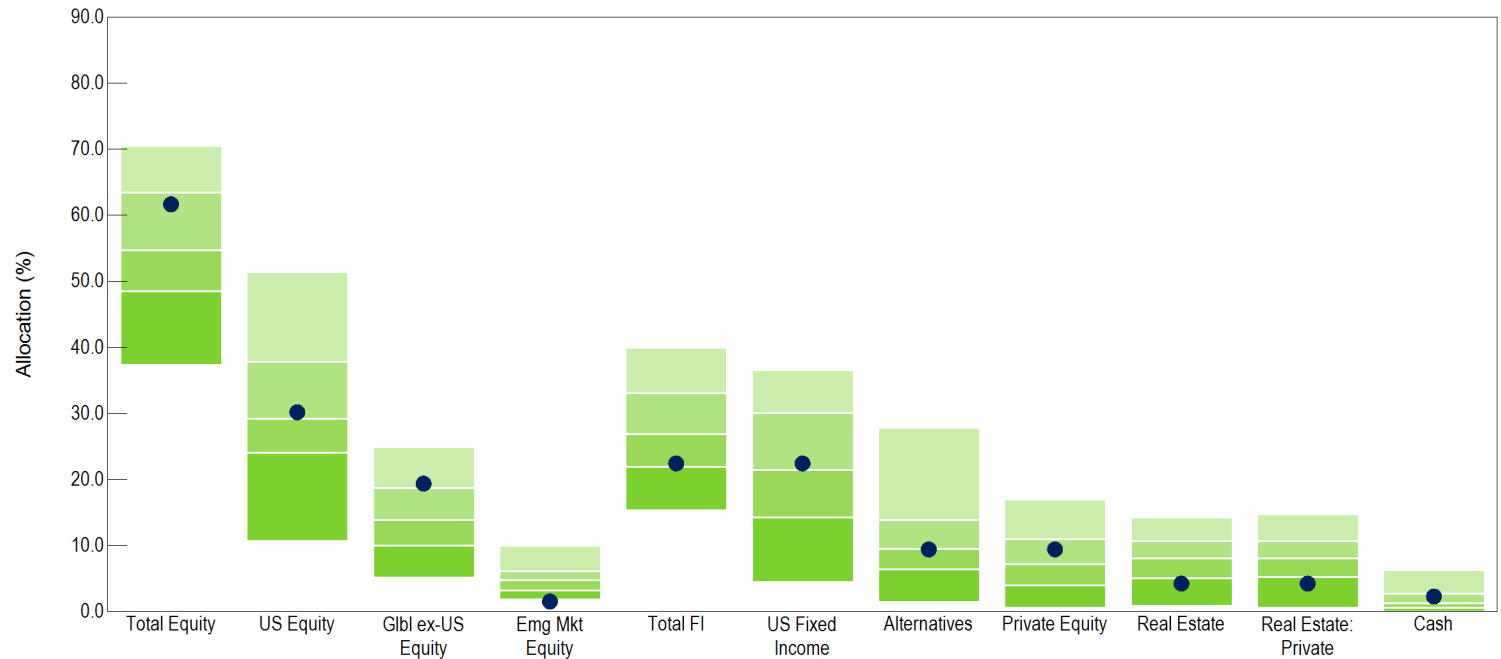
● OK TEACHERS	
Value	1.04
Rank	86
▲ TEACHERS Allocation Index	
Value	1.10
Rank	71
× TEACHERS Policy Index	
Value	1.04
Rank	86

Universe	
5th %tile	1.50
25th %tile	1.34
Median	1.21
75th %tile	1.08
95th %tile	0.91



TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB Gross



Allocation (Rank)

	Total Equity	US Equity	Gbl ex-US Equity	Emg Mkt Equity	Total FI	US Fixed Income	Alternatives	Private Equity	Real Estate	Real Estate: Private	Cash	
5th Percentile	70.6	51.4	24.9	10.0	40.0	36.5	27.8	16.9	14.3	14.7	6.3	--
25th Percentile	63.6	37.9	18.8	6.2	33.2	30.2	14.0	11.0	10.7	10.7	2.8	--
Median	54.8	29.3	14.0	4.8	26.9	21.6	9.6	7.3	8.1	8.1	1.3	--
75th Percentile	48.6	24.2	10.1	3.3	22.0	14.4	6.5	4.1	5.2	5.3	0.7	--
95th Percentile	37.4	10.7	5.2	2.0	15.4	4.5	1.6	0.7	0.9	0.6	0.0	--
# of Portfolios	202	135	170	86	198	117	127	81	146	111	186	--
● OK TEACHERS	61.7 (29)	30.2 (46)	19.4 (22)	1.5 (98)	22.4 (73)	22.4 (46)	9.4 (53)	9.4 (35)	4.2 (82)	4.2 (84)	2.3 (31)	--



OK TEACHERS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return	0.8%	14.1%	3.1%
Wtd. Index Return *	0.5%	13.9%	3.6%
Excess Return	0.3%	0.2%	-0.5%
Selection Effect	0.1%	0.7%	-0.2%
Allocation Effect	0.0%	0.1%	-0.6%
Interaction Effect	0.2%	-0.7%	0.3%
Returns by Asset Class			
OK TEACHERS	0.6%	13.8%	2.9%
Total Equity Composite	-0.8%	16.6%	-1.8%
U.S. Equity Comp	0.3%	19.9%	0.0%
Domestic Passive Equity	2.5%	21.1%	5.5%
International Equity Composite	-2.1%	11.0%	-4.5%
International Small Cap Equity	-3.1%	9.9%	-9.3%
Fixed Composite	3.0%	11.9%	11.7%
Total Private Equity	5.1%	11.3%	15.2%
Master Limited Partnerships	-1.4%	15.6%	-5.6%
Total Core Real Estate	-0.6%	5.2%	7.1%
Other	0.5%	1.8%	2.4%

*Calculated from benchmark returns and weightings of each component.



OKLAHOMA PERS

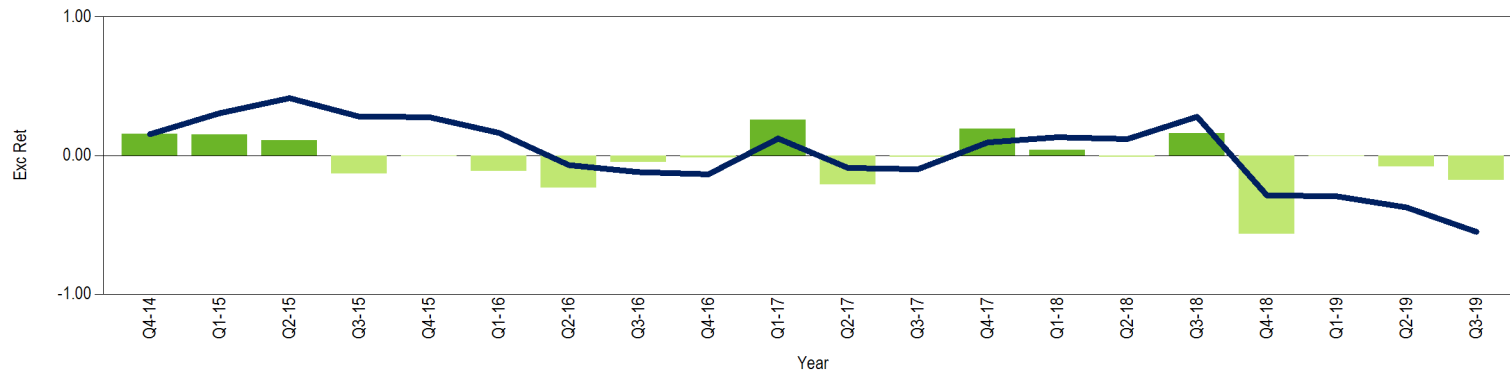


Oklahoma PERS

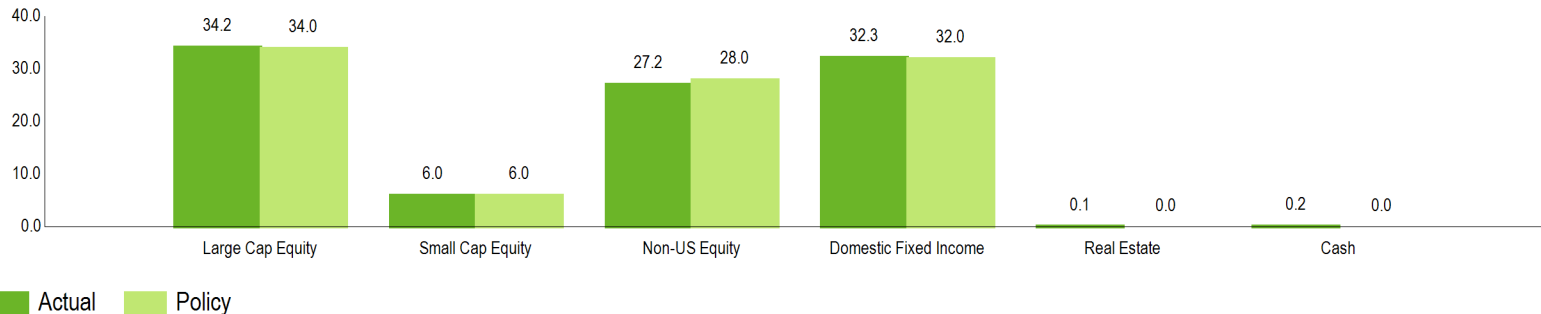
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK PERS	\$9,917,746,117	0.6%	65	14.2%	22	3.7%	64	7.9%	56	6.5%	51	8.3%	39
<i>PERS Allocation Index</i>		0.8%	54	14.0%	27	3.7%	61	7.7%	61	6.4%	54	7.9%	60
<i>PERS Policy Index</i>		0.8%	52	14.5%	14	4.6%	38	8.1%	49	6.6%	42	8.2%	51
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)

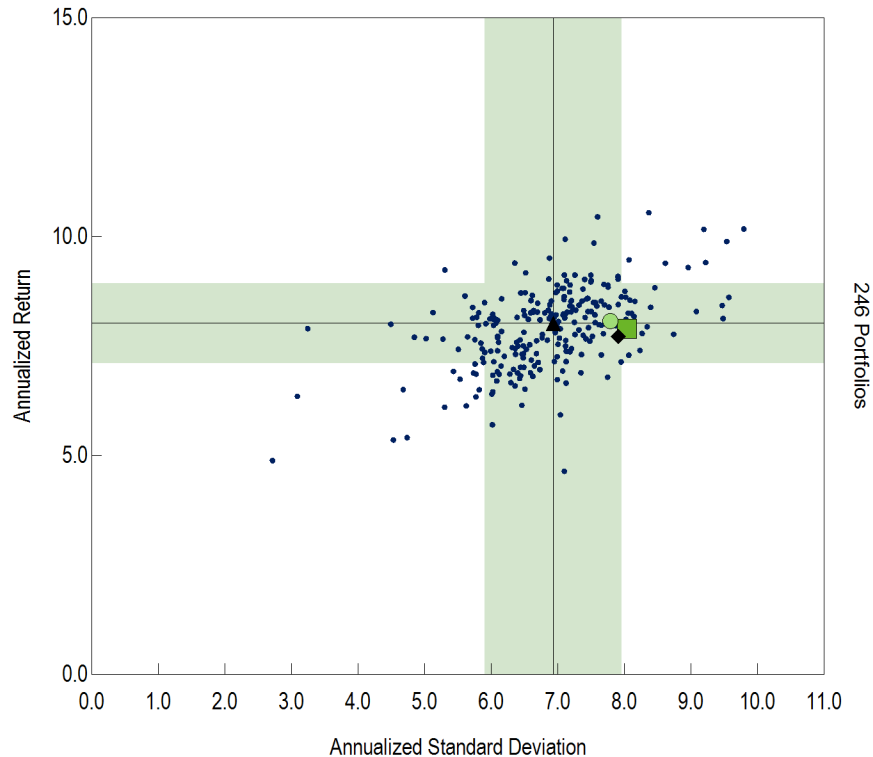


Returns are gross of manager fees.



TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2019



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

3 Years Ending September 30, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK PERS	7.90%	56	8.04%	91
PERS Allocation Index	7.73%	61	7.91%	88
PERS Policy Index	8.08%	49	7.79%	86

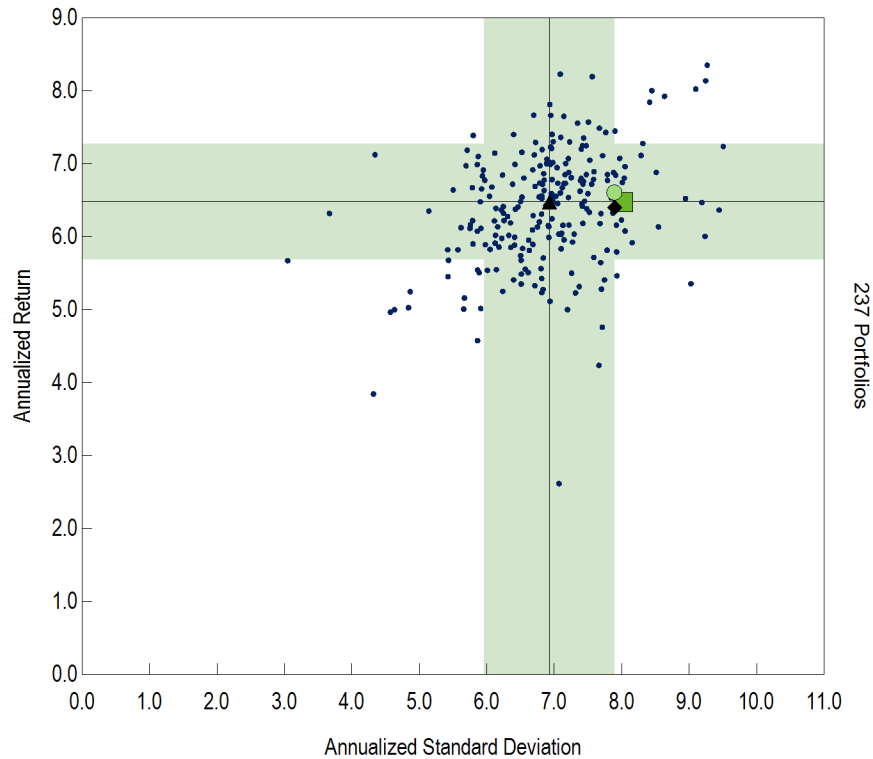
3 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK PERS	0.79	91	1.12	87
PERS Allocation Index	0.78	92	1.09	91
PERS Policy Index	0.84	78	1.17	77



TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2019



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

5 Years Ending September 30, 2019

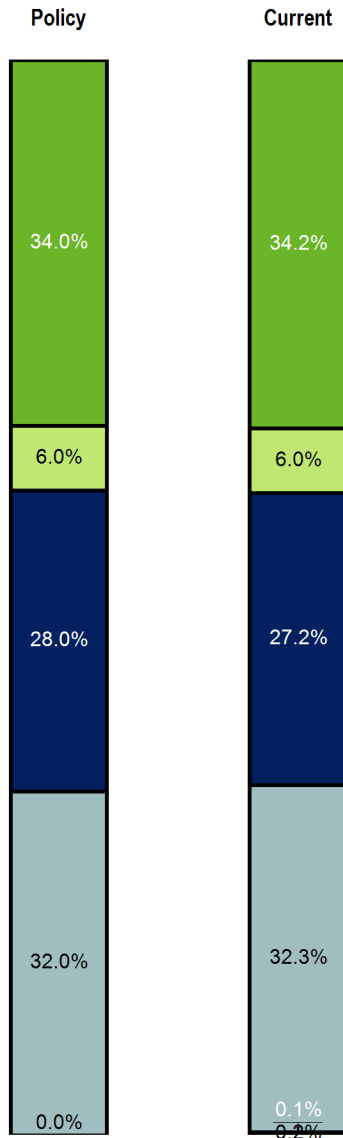
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK PERS	6.47%	51	8.02%	92
PERS Allocation Index	6.40%	54	7.90%	88
PERS Policy Index	6.61%	42	7.89%	88

5 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK PERS	0.69	84	1.04	85
PERS Allocation Index	0.69	83	1.04	85
PERS Policy Index	0.71	76	1.10	71



TOTAL FUND ASSET ALLOCATION VS. POLICY



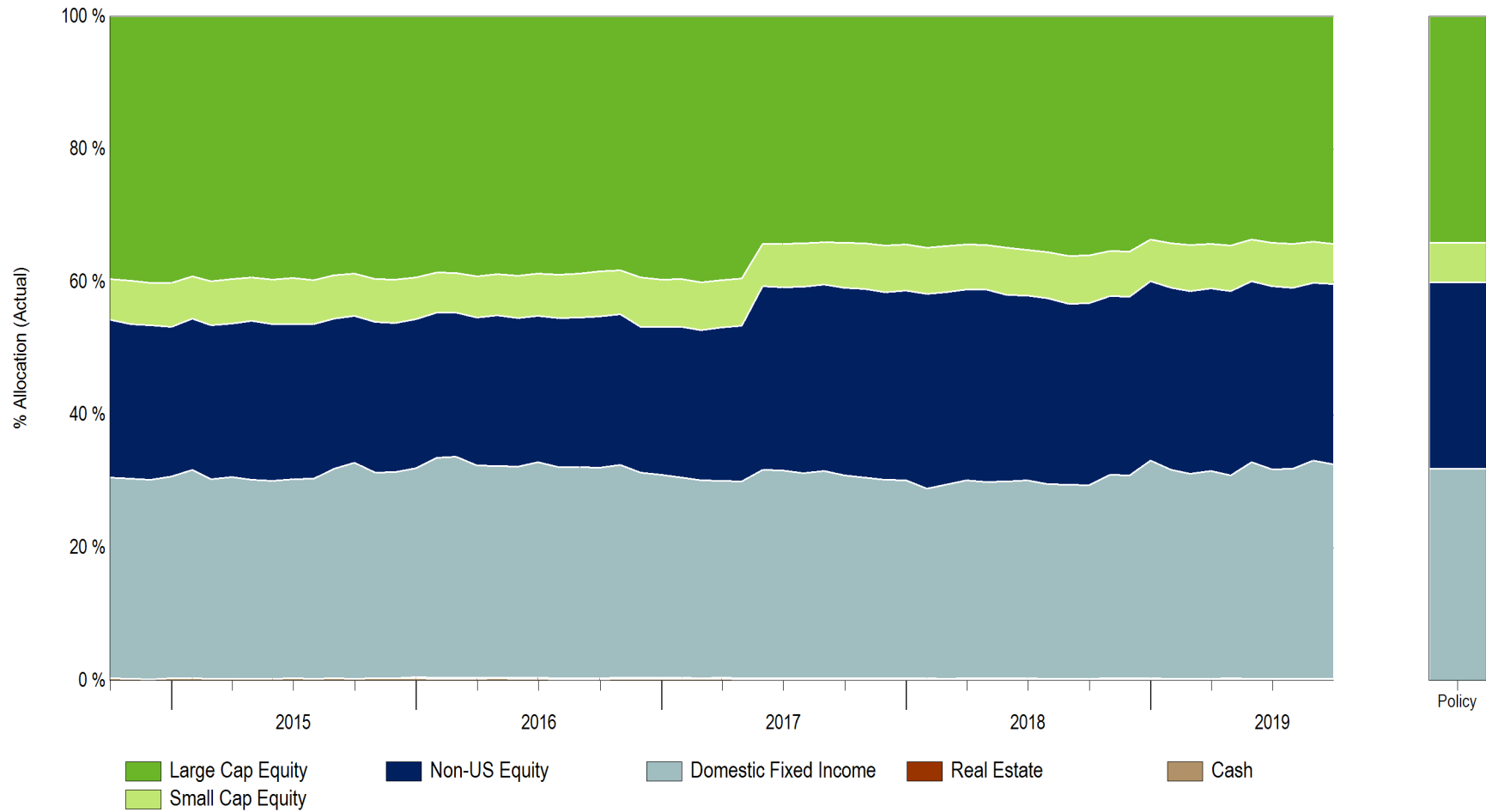
Asset Allocation vs. Target						
	Current	Policy	Current	Difference*	Policy Range	Within Range
Large Cap Equity	\$3,395,972,576	34.0%	34.2%	0.2%	31.2% - 36.8%	Yes
Small Cap Equity	\$596,151,260	6.0%	6.0%	0.0%	3.2% - 8.8%	Yes
Non-US Equity	\$2,694,890,023	28.0%	27.2%	-0.8%	25.0% - 31.0%	Yes
Domestic Fixed Income	\$3,201,696,571	32.0%	32.3%	0.3%	27.5% - 36.5%	Yes
Real Estate	\$11,750,000	0.0%	0.1%	0.1%	0.0% - 5.0%	Yes
Cash	\$17,285,687	0.0%	0.2%	0.2%	0.0% - 5.0%	Yes
Total	\$9,917,746,117	100.0%	100.0%			

*Difference between Policy and Current Allocation



TOTAL FUND ASSET ALLOCATION HISTORY

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
OK PERS	9,917,746,117	100.0	0.6	65	14.2	22	3.7	64	7.9	56	6.5	51	8.3	39
<i>PERS Allocation Index</i>			<u>0.8</u>	54	<u>14.0</u>	27	<u>3.7</u>	61	<u>7.7</u>	61	<u>6.4</u>	54	<u>7.9</u>	60
Over/Under			-0.2		0.2		0.0		0.2		0.1		0.4	
<i>PERS Policy Index</i>			0.8	52	14.5	14	4.6	38	8.1	49	6.6	42	8.2	51
<i>InvMetrics Public DB Gross Median</i>			0.8		13.0		4.1		8.0		6.5		8.2	
Domestic Equity Composite	3,992,123,836	40.3	0.3	56	18.7	53	0.6	51	12.3	43	9.9	47	13.0	50
<i>Domestic Equity Benchmark</i>			<u>0.9</u>	46	<u>19.7</u>	45	<u>2.2</u>	42	<u>12.6</u>	40	<u>10.4</u>	41	<u>13.0</u>	49
Over/Under			-0.6		-1.0		-1.6		-0.3		-0.5		0.0	
<i>eV All US Equity Gross Median</i>			0.7		19.0		0.7		11.5		9.7		12.9	
Aronson Johnson & Ortiz	304,821,659	3.1	-0.1	90	14.3	87	-2.1	87	8.8	79	6.2	85	11.3	69
<i>Russell 1000 Value</i>			<u>1.4</u>	62	<u>17.8</u>	50	<u>4.0</u>	40	<u>9.4</u>	71	<u>7.8</u>	64	<u>11.5</u>	65
Over/Under			-1.5		-3.5		-6.1		-0.6		-1.6		-0.2	
<i>eV US Large Cap Value Equity Gross Median</i>			1.8		17.7		2.6		10.5		8.2		11.9	
Mellon	550,839,967	5.6	0.3	88	14.0	92	-1.5	92	10.9	84	8.3	89	12.5	73
<i>Russell 1000</i>			<u>1.4</u>	60	<u>20.5</u>	42	<u>3.9</u>	48	<u>13.2</u>	43	<u>10.6</u>	42	<u>13.2</u>	44
Over/Under			-1.1		-6.5		-5.4		-2.3		-2.3		-0.7	
State Street Enhanced Index	561,297,993	5.7	2.2	37	20.4	43	4.2	45	13.2	43	10.7	41	13.6	28
<i>Russell 1000</i>			<u>1.4</u>	60	<u>20.5</u>	42	<u>3.9</u>	48	<u>13.2</u>	43	<u>10.6</u>	42	<u>13.2</u>	44
Over/Under			0.8		-0.1		0.3		0.0		0.1		0.4	
Blackrock Russell 1000	1,674,494,411	16.9	1.5	60	20.6	41	3.9	47	13.2	42	10.6	41	--	--
<i>Russell 1000</i>			<u>1.4</u>	60	<u>20.5</u>	42	<u>3.9</u>	48	<u>13.2</u>	43	<u>10.6</u>	42	<u>13.2</u>	44
Over/Under			0.1		0.1		0.0		0.0		0.0			
<i>eV US Large Cap Core Equity Gross Median</i>			1.7		19.9		3.6		12.8		10.3		13.1	
UBS Global Asset Mgmt	193,966,658	2.0	-6.8	76	20.5	38	-8.5	63	13.1	54	10.1	69	15.0	32
<i>Russell 2000 Growth</i>			<u>-4.2</u>	46	<u>15.3</u>	66	<u>-9.6</u>	72	<u>9.8</u>	83	<u>9.1</u>	79	<u>12.2</u>	87
Over/Under			-2.6		5.2		1.1		3.3		1.0		2.8	
<i>eV US Small Cap Growth Equity Gross Median</i>			-4.4		18.0		-6.7		13.4		11.4		14.1	

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	199,174,376	2.0	-2.6	88	12.8	73	-14.5	93	7.0	53	7.4	53	12.1	34
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			-2.0		0.0		-6.3		0.5		0.2		2.0	
DePrince Race & Zollo	203,010,227	2.0	-0.4	55	18.0	24	-0.6	15	10.1	17	8.9	24	--	--
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			0.2		5.2		7.6		3.6		1.7			
<i>eV US Small Cap Value Equity Gross Median</i>			-0.2		15.3		-6.3		7.1		7.5		11.7	
Westfield	304,518,546	3.1	-0.7	76	21.8	56	2.2	65	--	--	--	--	--	--
<i>Russell 1000 Growth</i>			<u>1.5</u>	29	<u>23.3</u>	40	<u>3.7</u>	53	<u>16.9</u>	40	<u>13.4</u>	35	<u>14.9</u>	35
Over/Under			-2.2		-1.5		-1.5							
<i>eV US Large Cap Growth Equity Gross Median</i>			0.6		22.4		3.9		16.2		12.7		14.5	
Domestic Fixed Income Composite	3,201,696,571	32.3	3.1	12	10.5	26	12.3	13	3.4	49	4.0	40	4.6	44
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	30	<u>8.5</u>	44	<u>10.3</u>	27	<u>2.9</u>	62	<u>3.4</u>	58	<u>3.7</u>	62
Over/Under			0.8		2.0		2.0		0.5		0.6		0.9	
<i>eV All US Fixed Inc Gross Median</i>			1.5		7.7		7.9		3.4		3.7		4.3	
Blackrock	1,555,883,242	15.7	2.3	51	9.0	52	10.6	45	3.2	64	3.7	59	4.2	66
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	69	<u>8.5</u>	79	<u>10.3</u>	65	<u>2.9</u>	91	<u>3.4</u>	87	<u>3.7</u>	92
Over/Under			0.0		0.5		0.3		0.3		0.3		0.5	
Met West	946,459,292	9.5	2.4	47	9.1	44	10.9	25	3.6	29	3.7	51	5.1	13
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	69	<u>8.5</u>	79	<u>10.3</u>	65	<u>2.9</u>	91	<u>3.4</u>	87	<u>3.7</u>	92
Over/Under			0.1		0.6		0.6		0.7		0.3		1.4	
<i>eV US Core Fixed Inc Gross Median</i>			2.3		9.0		10.5		3.3		3.7		4.3	
Hoisington	370,278,884	3.7	9.8	5	23.4	9	28.7	6	4.6	96	7.9	12	8.0	64
<i>BBgBarc US Treasury Long TR</i>			<u>7.9</u>	8	<u>19.8</u>	89	<u>24.8</u>	9	<u>4.1</u>	99	<u>6.8</u>	87	<u>6.9</u>	97
Over/Under			1.9		3.6		3.9		0.5		1.1		1.1	
<i>eV US Long Duration Fixed Inc Gross Median</i>			6.2		21.7		21.2		6.1		7.1		8.2	
Blackrock TIPS	329,075,153	3.3	1.3	75	7.6	8	7.2	88	2.4	86	2.6	88	--	--
<i>BBgBarc US TIPS TR</i>			<u>1.3</u>	75	<u>7.6</u>	9	<u>7.1</u>	90	<u>2.2</u>	95	<u>2.4</u>	95	<u>3.5</u>	48
Over/Under			0.0		0.0		0.1		0.2		0.2			
<i>eV US Interm Duration Fixed Inc Gross Median</i>			1.4		6.6		8.1		2.7		2.9		3.4	

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
International Equity Composite	2,694,890,023	27.2	-1.8	53	12.3	61	-0.6	40	6.4	59	3.6	65	5.1	80
MSCI ACWI ex USA			-1.8	52	11.6	67	-1.2	46	6.3	61	2.9	78	4.5	91
Over/Under			0.0		0.7		0.6		0.1		0.7		0.6	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Baillie Gifford	348,174,901	3.5	-1.3	41	19.2	38	0.5	43	6.8	84	6.1	47	--	--
MSCI ACWI ex USA Growth			-0.8	27	16.2	64	2.0	29	7.4	73	4.9	86	5.8	97
Over/Under			-0.5		3.0		-1.5		-0.6		1.2			
eV ACWI ex-US All Cap Growth Eq Gross Median			-1.6		18.8		-0.4		7.9		5.8		8.0	
Blackrock ACWI Ex US	1,426,209,638	14.4	-1.8	52	11.8	65	-1.0	43	6.6	53	3.2	72	4.9	84
MSCI ACWI ex USA			-1.8	52	11.6	67	-1.2	46	6.3	61	2.9	78	4.5	91
Over/Under			0.0		0.2		0.2		0.3		0.3		0.4	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Blackrock ACWI Ex US Growth	326,178,594	3.3	-1.3	41	15.2	67	1.4	32	7.4	72	4.7	91	5.9	97
MSCI ACWI ex USA Growth			-0.8	27	16.2	64	2.0	29	7.4	73	4.9	86	5.8	97
Over/Under			-0.5		-1.0		-0.6		0.0		-0.2		0.1	
eV ACWI ex-US All Cap Growth Eq Gross Median			-1.6		18.8		-0.4		7.9		5.8		8.0	
Mondrian	594,326,889	6.0	-2.4	76	8.2	86	-1.6	50	5.1	82	2.4	85	4.7	87
MSCI ACWI ex USA Value			-2.8	84	6.9	91	-4.5	76	5.2	80	0.9	96	3.1	99
Over/Under			0.4		1.3		2.9		-0.1		1.5		1.6	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Real Estate	11,750,000	0.1	2.1	--	0.7	--	2.4	--	-1.3	--	--	--	--	--
NCREIF ODCE			1.3	--	3.8	--	5.6	--	7.3	--	9.3	--	10.9	--
Over/Under			0.8		-3.1		-3.2		-8.6					
Grand Centre	11,750,000	0.1	2.1	--	0.7	--	2.4	--	-1.3	--	--	--	--	--
NCREIF ODCE			1.3	--	3.8	--	5.6	--	7.3	--	9.3	--	10.9	--
Over/Under			0.8		-3.1		-3.2		-8.6					

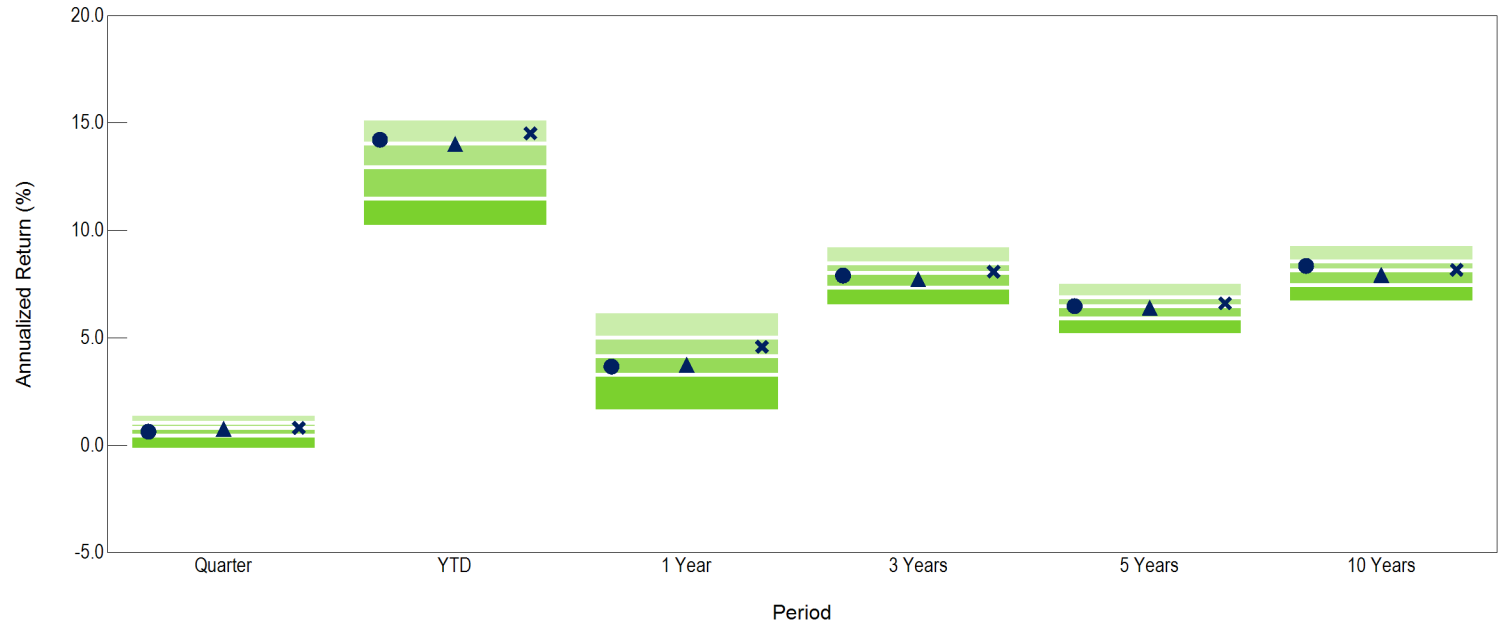
New Policy Index effective as of November 1, 2013 consist of 38% Large Cap Equity, 6% Small Cap Equity, 24% International Equity, and 32% Domestic Fixed Income.

Returns are gross of manager fees.



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK PERS vs. InvMetrics Public DB Gross

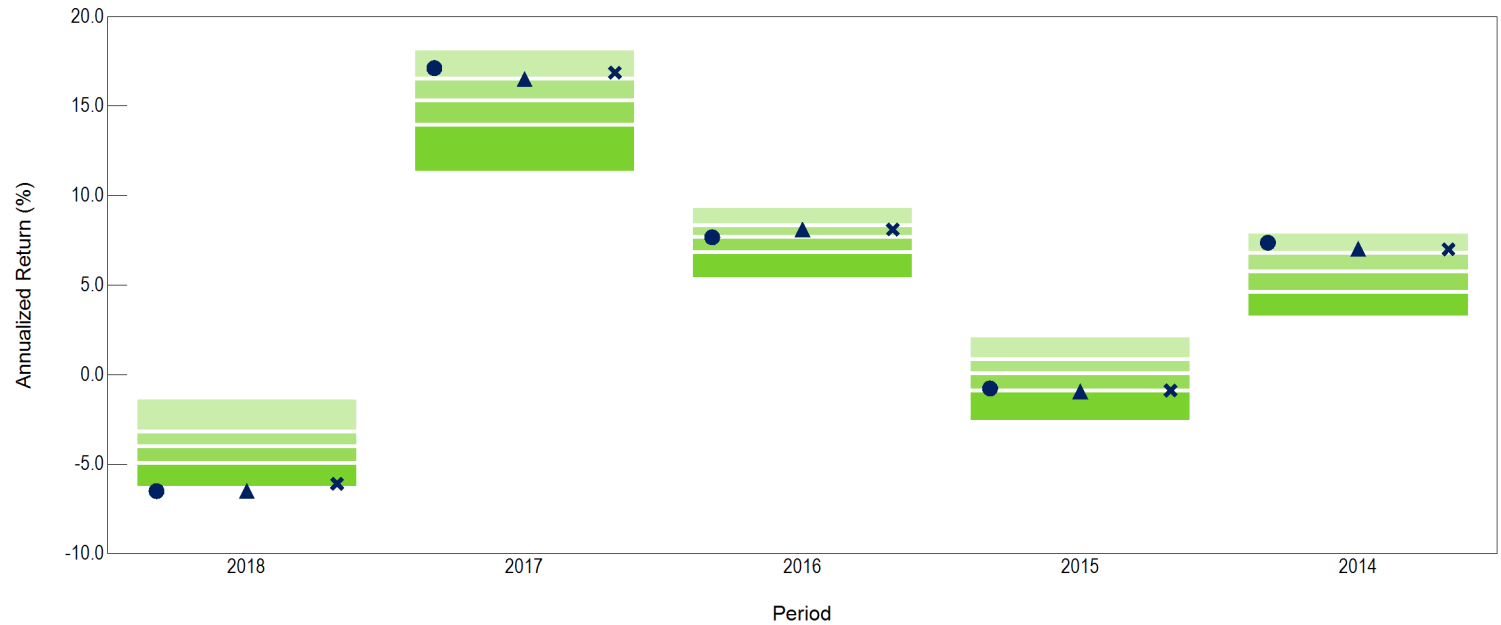


	Return (Rank)											
5th Percentile	1.5		15.2		6.2		9.3		7.6		9.4	
25th Percentile	1.1		14.1		5.0		8.5		6.9		8.6	
Median	0.8		13.0		4.1		8.0		6.5		8.2	
75th Percentile	0.5		11.5		3.3		7.3		5.9		7.5	
95th Percentile	-0.2		10.2		1.6		6.5		5.2		6.7	
# of Portfolios	262		259		256		246		237		199	
● OK PERS	0.6	(65)	14.2	(22)	3.7	(64)	7.9	(56)	6.5	(51)	8.3	(39)
▲ PERS Allocation Index	0.8	(54)	14.0	(27)	3.7	(61)	7.7	(61)	6.4	(54)	7.9	(60)
× PERS Policy Index	0.8	(52)	14.5	(14)	4.6	(38)	8.1	(49)	6.6	(42)	8.2	(51)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK PERS vs. InvMetrics Public DB Gross



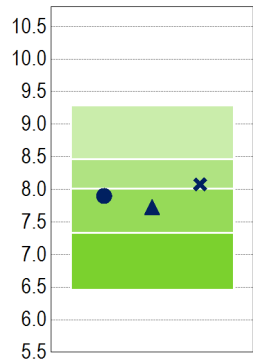
	Return (Rank)									
5th Percentile	-1.3		18.2		9.4		2.2		8.0	
25th Percentile	-3.1		16.5		8.4		0.9		6.8	
Median	-4.0		15.3		7.7		0.1		5.8	
75th Percentile	-4.9		14.0		6.9		-0.9		4.6	
95th Percentile	-6.3		11.3		5.3		-2.6		3.2	
# of Portfolios	319		304		305		316		248	
● OK PERS	-6.5	(97)	17.1	(17)	7.7	(52)	-0.8	(73)	7.4	(15)
▲ PERS Allocation Index	-6.5	(97)	16.5	(26)	8.1	(34)	-0.9	(77)	7.0	(21)
× PERS Policy Index	-6.1	(94)	16.9	(21)	8.1	(34)	-0.9	(76)	7.0	(21)



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

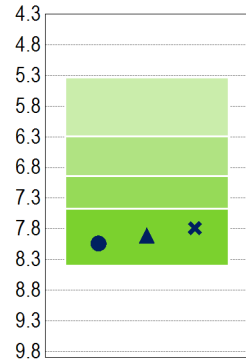
OK PERS vs. InvMetrics Public DB Gross 3 Years

Anlzd Return



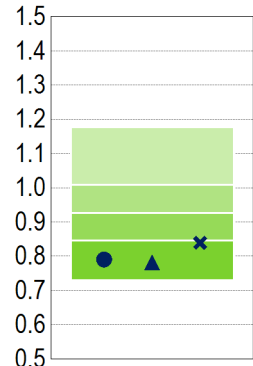
● OK PERS	
Value	7.90
Rank	56
▲ PERS Allocation Index	
Value	7.73
Rank	61
✕ PERS Policy Index	
Value	8.08
Rank	49
Universe	
5th %tile	9.28
25th %tile	8.48
Median	8.03
75th %tile	7.34
95th %tile	6.47

Anlzd Standard Deviation



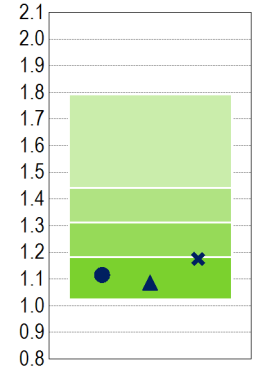
● OK PERS	
Value	8.04
Rank	91
▲ PERS Allocation Index	
Value	7.91
Rank	88
✕ PERS Policy Index	
Value	7.79
Rank	86
Universe	
5th %tile	5.34
25th %tile	6.28
Median	6.93
75th %tile	7.46
95th %tile	8.39

Sharpe Ratio



● OK PERS	
Value	0.79
Rank	91
▲ PERS Allocation Index	
Value	0.78
Rank	92
✕ PERS Policy Index	
Value	0.84
Rank	78
Universe	
5th %tile	1.18
25th %tile	1.01
Median	0.93
75th %tile	0.85
95th %tile	0.73

Sortino Ratio



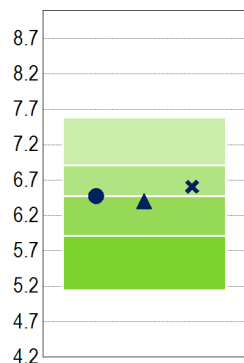
● OK PERS	
Value	1.12
Rank	87
▲ PERS Allocation Index	
Value	1.09
Rank	91
✕ PERS Policy Index	
Value	1.17
Rank	77
Universe	
5th %tile	1.79
25th %tile	1.44
Median	1.31
75th %tile	1.18
95th %tile	1.03



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK PERS vs. InvMetrics Public DB Gross 5 Years

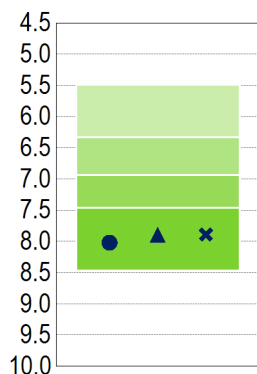
Anlzd Return



● OK PERS	
Value	6.47
Rank	51
▲ PERS Allocation Index	
Value	6.40
Rank	54
× PERS Policy Index	
Value	6.61
Rank	42

Universe	
5th %tile	7.59
25th %tile	6.92
Median	6.48
75th %tile	5.92
95th %tile	5.15

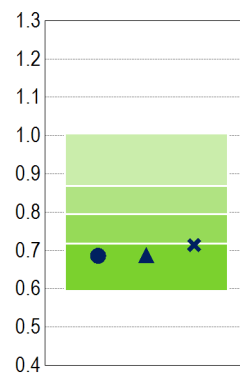
Anlzd Standard Deviation



● OK PERS	
Value	8.02
Rank	92
▲ PERS Allocation Index	
Value	7.90
Rank	88
× PERS Policy Index	
Value	7.89
Rank	88

Universe	
5th %tile	5.49
25th %tile	6.33
Median	6.93
75th %tile	7.45
95th %tile	8.46

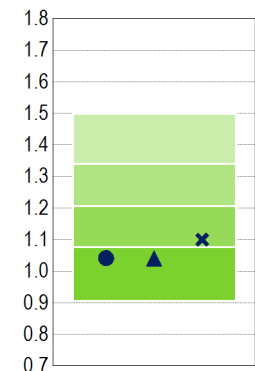
Sharpe Ratio



● OK PERS	
Value	0.69
Rank	84
▲ PERS Allocation Index	
Value	0.69
Rank	83
× PERS Policy Index	
Value	0.71
Rank	76

Universe	
5th %tile	1.01
25th %tile	0.87
Median	0.80
75th %tile	0.72
95th %tile	0.60

Sortino Ratio



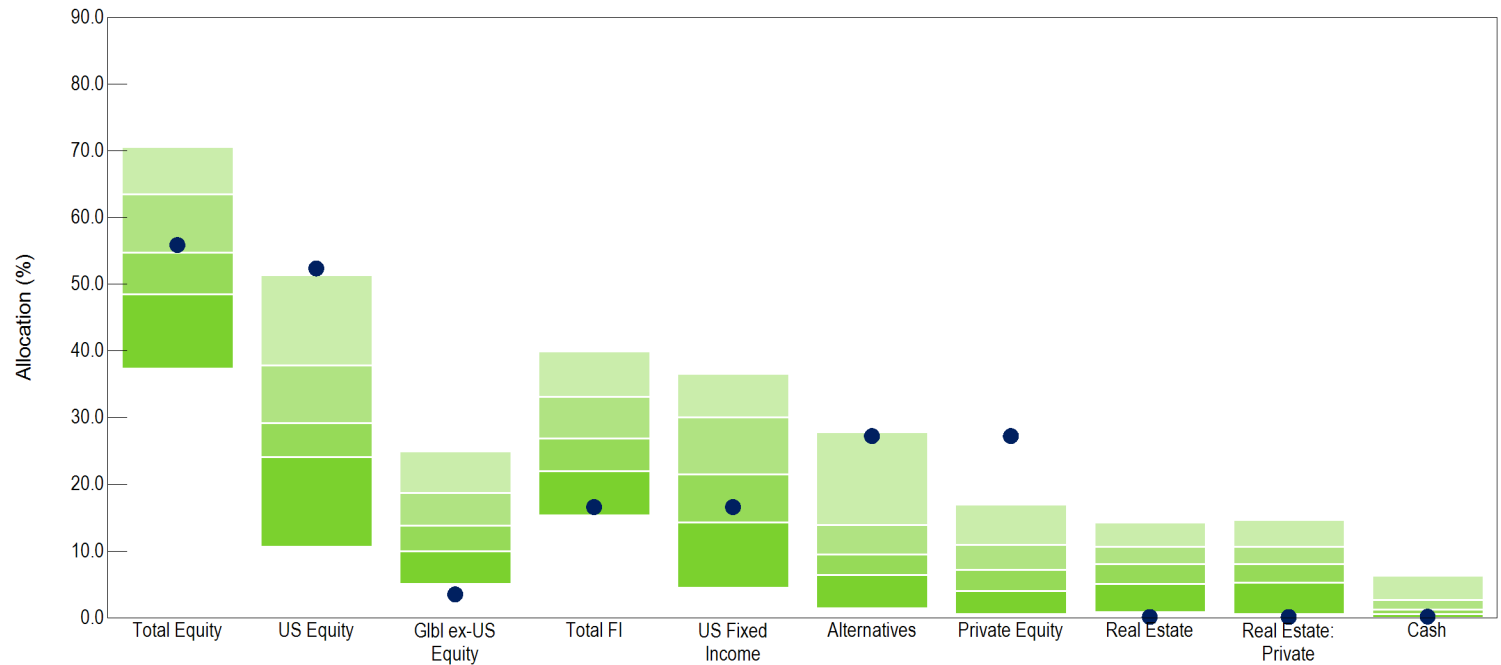
● OK PERS	
Value	1.04
Rank	85
▲ PERS Allocation Index	
Value	1.04
Rank	85
× PERS Policy Index	
Value	1.10
Rank	71

Universe	
5th %tile	1.50
25th %tile	1.34
Median	1.21
75th %tile	1.08
95th %tile	0.91



TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB Gross



Allocation (Rank)

	Total Equity	US Equity	Gbl ex-US Equity	Total FI	US Fixed Income	Alternatives	Private Equity	Real Estate	Real Estate: Private	Cash
5th Percentile	70.6	51.4	24.9	40.0	36.5	27.8	16.9	14.3	14.7	6.3
25th Percentile	63.6	37.9	18.8	33.2	30.2	14.0	11.0	10.7	10.7	2.8
Median	54.8	29.3	14.0	26.9	21.6	9.6	7.3	8.1	8.1	1.3
75th Percentile	48.6	24.2	10.1	22.0	14.4	6.5	4.1	5.2	5.3	0.7
95th Percentile	37.4	10.7	5.2	15.4	4.5	1.6	0.7	0.9	0.6	0.0
# of Portfolios	202	135	170	198	117	127	81	146	111	186
● OK PERS	55.9 (46)	52.4 (5)	3.5 (99)	16.6 (93)	16.6 (69)	27.2 (7)	27.2 (2)	0.1 (99)	0.1 (99)	0.2 (92)



TOTAL FUND ATTRIBUTION ANALYSIS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return	0.6%	14.2%	3.7%
Wtd. Index Return *	0.8%	14.4%	4.4%
Excess Return	-0.1%	-0.1%	-0.8%
Selection Effect	-0.1%	0.2%	-0.1%
Allocation Effect	0.0%	-0.3%	-0.6%
Interaction Effect	0.0%	0.0%	0.0%
Asset Class Returns			
OK PERS	0.6%	14.2%	3.7%
Domestic Equity Composite	0.3%	18.7%	0.6%
Domestic Fixed Income Composite	3.1%	10.5%	12.3%
International Equity Composite	-1.8%	12.3%	-0.6%
Cash Composite	2.1%	3.4%	4.1%
Z TERMINATED - R/E Composite			
Real Estate	2.1%	0.7%	2.4%

*Calculated from benchmark returns and weightings of each component.

Z TERMINATED represents Composite that fully liquidated.



OKLAHOMA FIREFIGHTERS

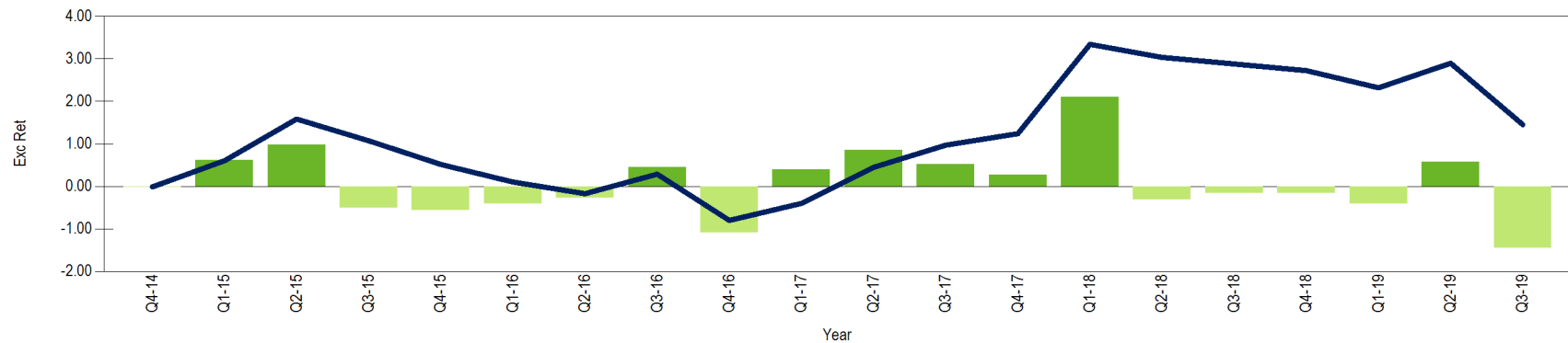


Oklahoma Firefighters

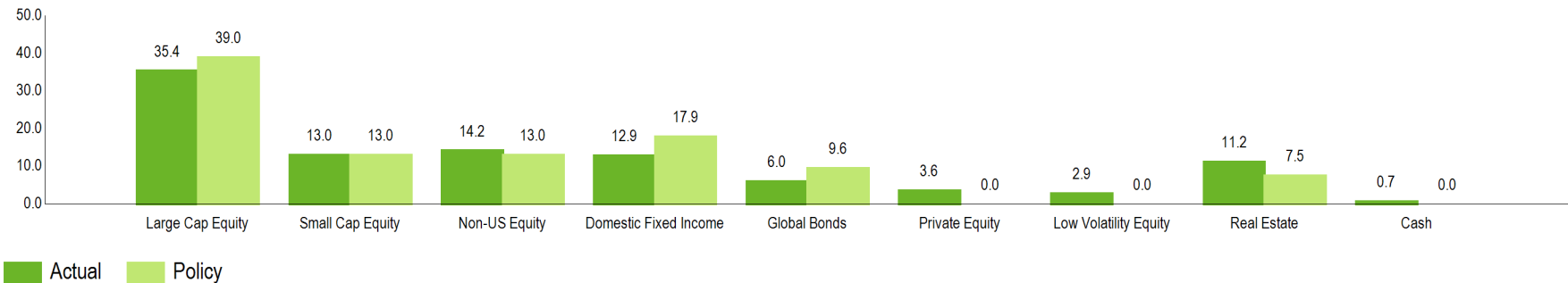
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK FIREFIGHTERS	\$2,825,026,581	-0.2%	95	13.5%	38	3.6%	67	9.8%	3	8.2%	1	9.3%	6
<i>FIREFIGHTERS Allocation Index</i>		0.4%	77	13.3%	44	2.4%	87	8.7%	16	7.3%	10	9.1%	11
<i>FIREFIGHTERS Policy Index</i>		1.3%	11	15.0%	8	5.1%	25	9.4%	4	7.9%	3	9.6%	2
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)



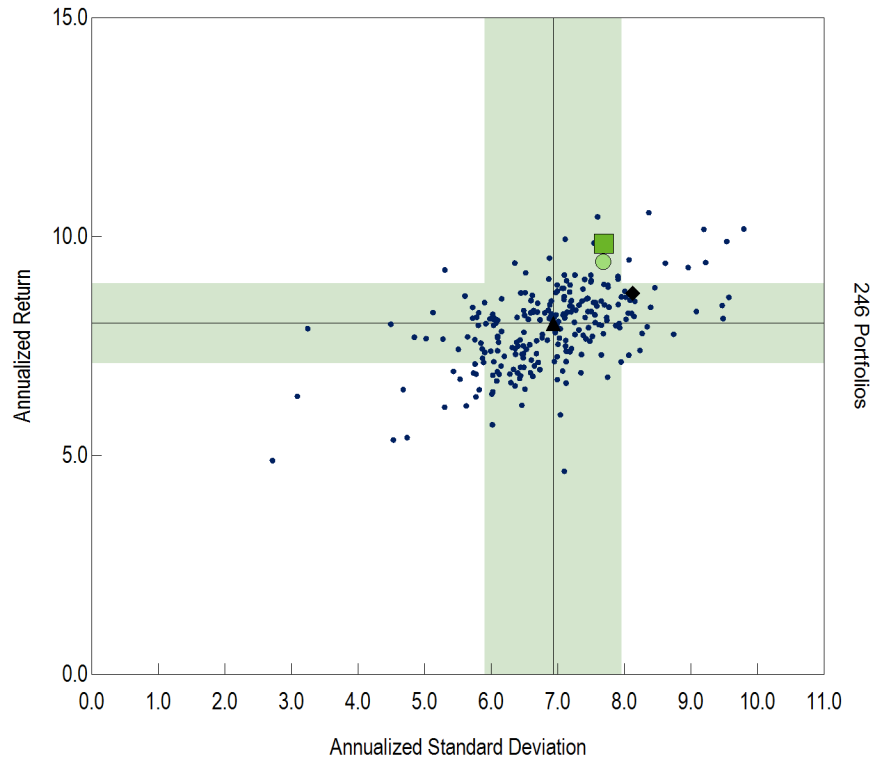
Returns are gross of manager fees.



Oklahoma Firefighters

TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2019



- OK FIREFIGHTERS
- ◆ FIREFIGHTERS Allocation Index
- FIREFIGHTERS Policy Index
- ▲ Universe Median
- ▭ 68% Confidence Interval
- InvMetrics Public DB Gross

3 Years Ending September 30, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK FIREFIGHTERS	9.84%	3	7.69%	83
FIREFIGHTERS Allocation Index	8.71%	16	8.13%	93
FIREFIGHTERS Policy Index	9.43%	4	7.68%	83

3 Years Ending September 30, 2019

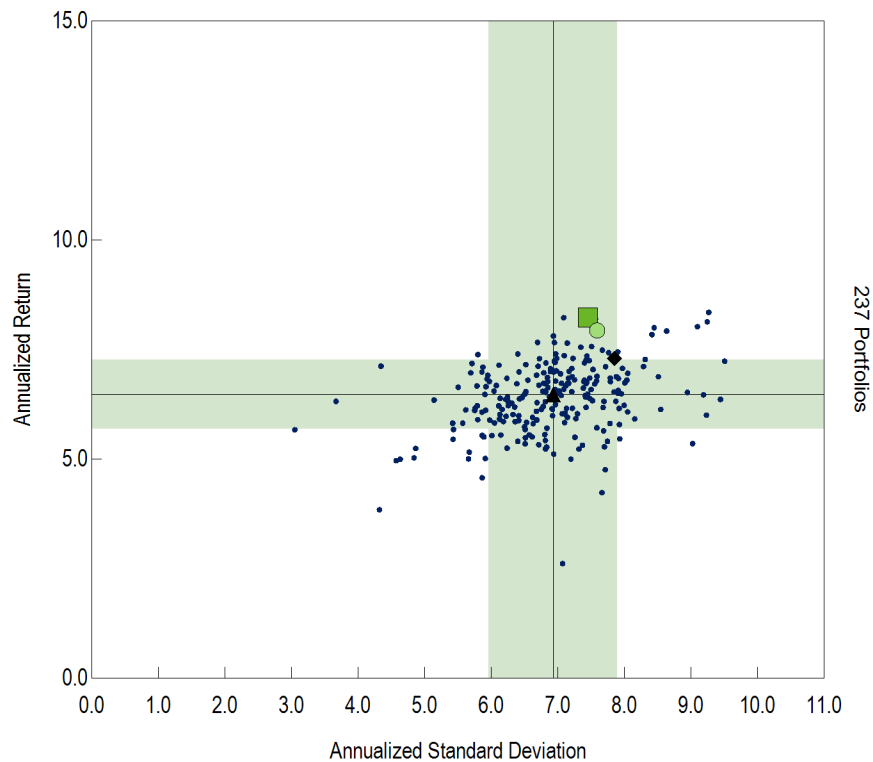
	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK FIREFIGHTERS	1.08	13	1.46	20
FIREFIGHTERS Allocation Index	0.88	64	1.29	54
FIREFIGHTERS Policy Index	1.03	22	1.52	15



Oklahoma Firefighters

TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2019



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

5 Years Ending September 30, 2019

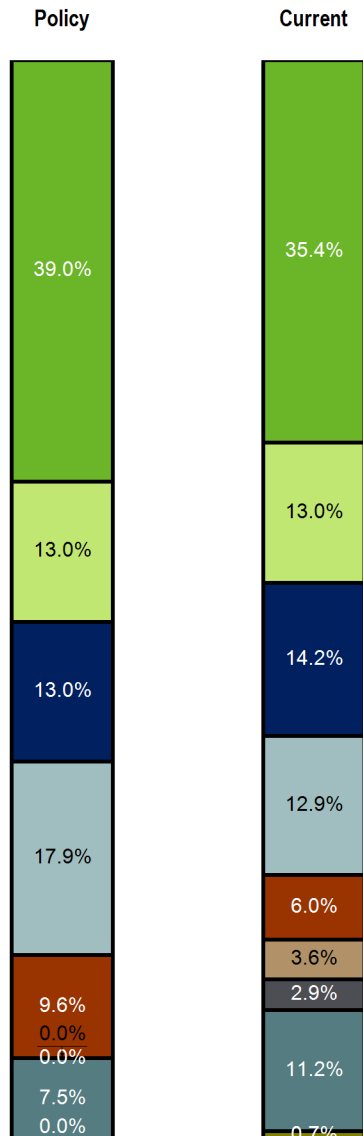
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK FIREFIGHTERS	8.24%	1	7.45%	76
FIREFIGHTERS Allocation Index	7.30%	10	7.85%	87
FIREFIGHTERS Policy Index	7.94%	3	7.59%	81

5 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK FIREFIGHTERS	0.98	8	1.40	16
FIREFIGHTERS Allocation Index	0.81	47	1.13	67
FIREFIGHTERS Policy Index	0.92	14	1.35	24



TOTAL PLAN ASSET ALLOCATION VS. POLICY



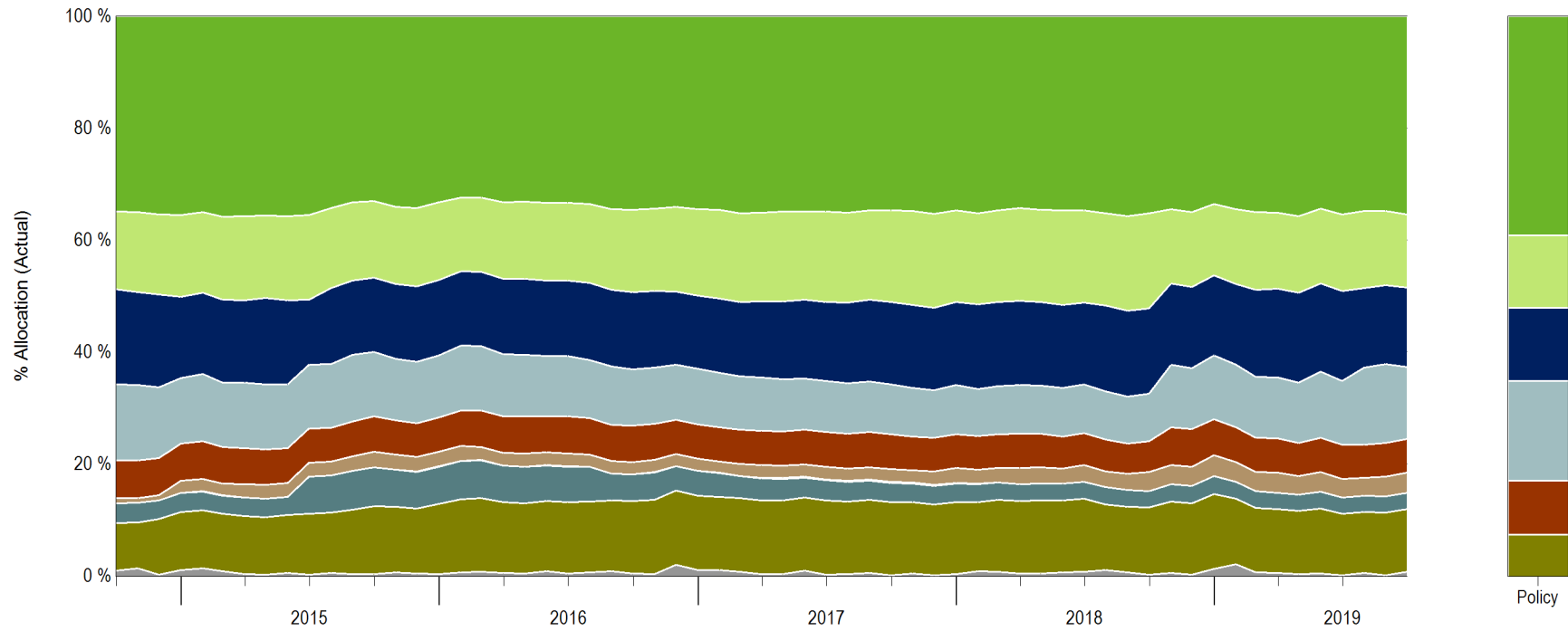
		Asset Allocation vs. Target					
		Current	Policy	Current	Difference*	Policy Range	Within Range
	Large Cap Equity	\$999,680,812	39.0%	35.4%	-3.6%	34.0% - 44.0%	Yes
	Small Cap Equity	\$368,464,267	13.0%	13.0%	0.0%	8.0% - 18.0%	Yes
	Non-US Equity	\$400,848,381	13.0%	14.2%	1.2%	8.0% - 18.0%	Yes
	Domestic Fixed Income	\$364,288,393	17.9%	12.9%	-5.0%	12.9% - 22.9%	No
	Global Bonds	\$169,391,823	9.6%	6.0%	-3.6%	4.6% - 14.6%	Yes
	Private Equity	\$102,955,931	0.0%	3.6%	3.6%	0.0% - 10.0%	Yes
	Low Volatility Equity	\$80,991,825	0.0%	2.9%	2.9%	0.0% - 10.0%	Yes
	Real Estate	\$317,736,476	7.5%	11.2%	3.7%	2.5% - 12.5%	Yes
	Cash	\$20,668,672	0.0%	0.7%	0.7%	0.0% - 5.0%	Yes
Total		\$2,825,026,581	100.0%	100.0%			

*Difference between Policy and Current Allocation



TOTAL PLAN ASSET ALLOCATION HISTORY

Asset Allocation History



- Large Cap Equity
- Non-US Equity
- Global Bonds
- Long/Short Equity
- Real Estate
- Small Cap Equity
- Domestic Fixed Income
- Private Equity
- Low Volatility Equity
- Cash



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
OK FIREFIGHTERS	2,825,026,581	100.0	-0.2	95	13.5	38	3.6	67	9.8	3	8.2	1	9.3	6
<i>FIREFIGHTERS Allocation Index</i>			<u>0.4</u>	77	<u>13.3</u>	44	<u>2.4</u>	87	<u>8.7</u>	16	<u>7.3</u>	10	<u>9.1</u>	11
Over/Under			-0.6		0.2		1.2		1.1		0.9		0.2	
<i>FIREFIGHTERS Policy Index</i>			1.3	11	15.0	8	5.1	25	9.4	4	7.9	3	9.6	2
<i>InvMetrics Public DB Gross Median</i>			0.8		13.0		4.1		8.0		6.5		8.2	
Domestic Equity Composite	1,368,145,080	48.4	-0.7	69	20.1	42	2.8	39	13.3	33	10.6	37	12.7	56
<i>Russell 3000</i>			<u>1.2</u>	42	<u>20.1</u>	43	<u>2.9</u>	38	<u>12.8</u>	38	<u>10.4</u>	40	<u>13.1</u>	47
Over/Under			-1.9		0.0		-0.1		0.5		0.2		-0.4	
<i>eV All US Equity Gross Median</i>			0.7		19.0		0.7		11.5		9.7		12.9	
Large Cap Equity Composite	999,680,812	35.4	1.2	41	20.7	36	3.8	33	13.1	35	10.3	43	13.0	48
<i>Russell 1000</i>			<u>1.4</u>	36	<u>20.5</u>	38	<u>3.9</u>	32	<u>13.2</u>	34	<u>10.6</u>	36	<u>13.2</u>	42
Over/Under			-0.2		0.2		-0.1		-0.1		-0.3		-0.2	
<i>eV All US Equity Gross Median</i>			0.7		19.0		0.7		11.5		9.7		12.9	
Aronson	93,067,210	3.3	-0.2	92	14.6	85	-2.3	89	9.0	77	6.2	85	11.3	70
<i>Russell 1000 Value</i>			<u>1.4</u>	62	<u>17.8</u>	50	<u>4.0</u>	40	<u>9.4</u>	71	<u>7.8</u>	64	<u>11.5</u>	65
Over/Under			-1.6		-3.2		-6.3		-0.4		-1.6		-0.2	
SSgA Equity Index	213,107,202	7.5	1.7	51	20.6	41	4.3	43	13.4	39	10.9	34	13.3	42
<i>S&P 500</i>			<u>1.7</u>	52	<u>20.6</u>	42	<u>4.3</u>	44	<u>13.4</u>	40	<u>10.8</u>	36	<u>13.2</u>	44
Over/Under			0.0		0.0		0.0		0.0		0.1		0.1	
SSgA EQ Wtd S&P	207,359,032	7.3	1.1	69	20.8	39	3.8	50	11.2	82	9.6	68	13.5	32
<i>S&P 500</i>			<u>1.7</u>	52	<u>20.6</u>	42	<u>4.3</u>	44	<u>13.4</u>	40	<u>10.8</u>	36	<u>13.2</u>	44
Over/Under			-0.6		0.2		-0.5		-2.2		-1.2		0.3	
Intech	205,853,917	7.3	1.7	52	22.5	24	3.9	47	12.9	48	10.7	38	13.5	34
<i>S&P 500</i>			<u>1.7</u>	52	<u>20.6</u>	42	<u>4.3</u>	44	<u>13.4</u>	40	<u>10.8</u>	36	<u>13.2</u>	44
Over/Under			0.0		1.9		-0.4		-0.5		-0.1		0.3	
<i>eV US Large Cap Core Equity Gross Median</i>			1.7		19.9		3.6		12.8		10.3		13.1	

Returns are gross of manager fees.



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
Fred Alger Management	184,855,160	6.5	-0.5	72	22.0	54	3.4	56	16.8	41	13.0	43	--	--
<i>Russell 1000 Growth</i>			<u>1.5</u>	29	<u>23.3</u>	40	<u>3.7</u>	53	<u>16.9</u>	40	<u>13.4</u>	35	<u>14.9</u>	35
Over/Under			-2.0		-1.3		-0.3		-0.1		-0.4			
<i>eV US Large Cap Growth Equity Gross Median</i>			0.6		22.4		3.9		16.2		12.7		14.5	
Beutel Goodman Company	95,438,291	3.4	3.8	--	20.8	--	8.8	--	13.1	--	--	--	--	--
<i>Russell 1000 Value</i>			<u>1.4</u>	--	<u>17.8</u>	--	<u>4.0</u>	--	<u>9.4</u>	--	<u>7.8</u>	--	<u>11.5</u>	--
Over/Under			2.4		3.0		4.8		3.7					
Small Cap Equity Composite	344,988,658	12.2	-5.4	89	21.2	17	1.5	9	14.7	15	11.9	16	13.4	32
<i>Russell 2000</i>			<u>-2.4</u>	62	<u>14.2</u>	63	<u>-8.9</u>	65	<u>8.2</u>	58	<u>8.2</u>	58	<u>11.2</u>	79
Over/Under			-3.0		7.0		10.4		6.5		3.7		2.2	
<i>eV US Small Cap Equity Gross Median</i>			-1.6		15.9		-6.9		9.0		8.8		12.4	
Earnest Partner	88,455,990	3.1	-0.1	47	23.1	5	2.9	6	12.2	8	10.3	9	13.1	15
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			0.5		10.3		11.1		5.7		3.1		3.0	
River Road	84,339,375	3.0	-2.3	86	19.7	14	1.3	8	12.8	6	11.6	4	11.7	49
<i>Russell 2000 Value</i>			<u>-0.6</u>	59	<u>12.8</u>	73	<u>-8.2</u>	63	<u>6.5</u>	65	<u>7.2</u>	57	<u>10.1</u>	87
Over/Under			-1.7		6.9		9.5		6.3		4.4		1.6	
<i>eV US Small Cap Value Equity Gross Median</i>			-0.2		15.3		-6.3		7.1		7.5		11.7	
Lord Abbet	84,881,862	3.0	-11.1	99	23.7	21	-5.7	45	18.3	14	11.0	55	--	--
<i>Russell 2000 Growth</i>			<u>-4.2</u>	46	<u>15.3</u>	66	<u>-9.6</u>	72	<u>9.8</u>	83	<u>9.1</u>	79	<u>12.2</u>	87
Over/Under			-6.9		8.4		3.9		8.5		1.9			
Delaware Small Growth	87,311,431	3.1	-7.6	86	18.3	50	-1.3	20	14.9	39	14.3	16	--	--
<i>Russell 2500 Growth</i>			<u>-3.2</u>	34	<u>20.0</u>	43	<u>-4.1</u>	41	<u>12.3</u>	62	<u>10.2</u>	68	<u>13.5</u>	65
Over/Under			-4.4		-1.7		2.8		2.6		4.1			
<i>eV US Small Cap Growth Equity Gross Median</i>			-4.4		18.0		-6.7		13.4		11.4		14.1	

Returns are gross of manager fees.



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
Tortoise Direct Opportunities	23,475,610	0.8	-3.6	--	-4.8	--	-8.8	--	1.4	--	--	--	--	--
Alerian MLP Index			<u>-5.0</u>	--	<u>11.1</u>	--	<u>-8.1</u>	--	<u>-2.5</u>	--	<u>-8.6</u>	--	<u>6.2</u>	--
Over/Under			1.4		<u>-15.9</u>		<u>-0.7</u>		3.9					
International Equity Composite	400,848,105	14.2	-1.9	58	17.3	27	1.5	22	8.9	22	6.6	22	5.5	75
MSCI ACWI ex USA			<u>-1.8</u>	52	<u>11.6</u>	67	<u>-1.2</u>	46	<u>6.3</u>	61	<u>2.9</u>	78	<u>4.5</u>	91
Over/Under			<u>-0.1</u>		5.7		2.7		2.6		3.7		1.0	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Chautauqua	135,421,849	4.8	-1.9	55	18.2	22	-2.1	55	8.0	32	6.7	22	--	--
MSCI EAFE			<u>-1.1</u>	27	<u>12.8</u>	56	<u>-1.3</u>	46	<u>6.5</u>	57	<u>3.3</u>	71	<u>4.9</u>	83
Over/Under			<u>-0.8</u>		5.4		<u>-0.8</u>		1.5		3.4			
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
WCM	165,501,521	5.9	-0.2	12	24.9	1	9.6	1	13.4	3	11.1	3	--	--
MSCI EAFE			<u>-1.1</u>	27	<u>12.8</u>	56	<u>-1.3</u>	46	<u>6.5</u>	57	<u>3.3</u>	71	<u>4.9</u>	83
Over/Under			0.9		12.1		10.9		6.9		7.8			
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Emerging Markets Equity Composite	99,895,999	3.5	-4.7	77	5.7	69	-3.9	85	3.7	90	0.6	96	--	--
MSCI Emerging Markets			<u>-4.2</u>	62	<u>5.9</u>	66	<u>-2.0</u>	69	<u>6.0</u>	56	<u>2.3</u>	71	<u>3.4</u>	92
Over/Under			<u>-0.5</u>		<u>-0.2</u>		<u>-1.9</u>		<u>-2.3</u>		<u>-1.7</u>			
eV Emg Mkts Equity Gross Median			-3.8		7.9		0.0		6.3		3.4		4.9	
ClariVest Emerging Market Equity	59,722	0.0	0.0	2	7.0	57	-3.8	84	5.2	71	0.9	93	--	--
MSCI Emerging Markets			<u>-4.2</u>	62	<u>5.9</u>	66	<u>-2.0</u>	69	<u>6.0</u>	56	<u>2.3</u>	71	<u>3.4</u>	92
Over/Under			4.2		1.1		<u>-1.8</u>		<u>-0.8</u>		<u>-1.4</u>			
eV Emg Mkts Equity Gross Median			-3.8		7.9		0.0		6.3		3.4		4.9	
RBC GAM EMERGING MARKETS	49,717,282	1.8	-5.1	83	--	--	--	--	--	--	--	--	--	--
MSCI Emerging Markets			<u>-4.2</u>	62	<u>5.9</u>	66	<u>-2.0</u>	69	<u>6.0</u>	56	<u>2.3</u>	71	<u>3.4</u>	92
Over/Under			<u>-0.9</u>											
eV Emg Mkts Equity Gross Median			-3.8		7.9		0.0		6.3		3.4		4.9	
Wellington Emerging Markets	50,118,995	1.8	-4.3	63	--	--	--	--	--	--	--	--	--	--
MSCI Emerging Markets			<u>-4.2</u>	62	<u>5.9</u>	66	<u>-2.0</u>	69	<u>6.0</u>	56	<u>2.3</u>	71	<u>3.4</u>	92
Over/Under			<u>-0.1</u>											
eV Emg Mkts Equity Gross Median			-3.8		7.9		0.0		6.3		3.4		4.9	

Returns are gross of manager fees.



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
Fixed Income Composite	533,680,216	18.9	0.7	87	5.6	73	5.5	72	2.5	74	2.9	69	4.2	53
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	30	<u>8.5</u>	44	<u>10.3</u>	27	<u>2.9</u>	62	<u>3.4</u>	58	<u>3.7</u>	62
Over/Under			-1.6		-2.9		-4.8		-0.4		-0.5		0.5	
<i>eV All US Fixed Inc Gross Median</i>			1.5		7.7		7.9		3.4		3.7		4.3	
Core Bonds Composite	228,742,336	8.1	2.3	69	7.8	92	9.0	94	2.9	88	3.5	81	--	--
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	69	<u>8.5</u>	79	<u>10.3</u>	65	<u>2.9</u>	91	<u>3.4</u>	87	<u>3.7</u>	92
Over/Under			0.0		-0.7		-1.3		0.0		0.1			
<i>eV US Core Fixed Inc Gross Median</i>			2.3		9.0		10.5		3.3		3.7		4.3	
Orleans Capital Management	78,049,571	2.8	2.1	87	9.1	42	10.3	68	3.2	59	3.6	70	--	--
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	69	<u>8.5</u>	79	<u>10.3</u>	65	<u>2.9</u>	91	<u>3.4</u>	87	<u>3.7</u>	92
Over/Under			-0.2		0.6		0.0		0.3		0.2			
<i>eV US Core Fixed Inc Gross Median</i>			2.3		9.0		10.5		3.3		3.7		4.3	
Garcia Hamilton Associates	150,692,765	5.3	2.4	44	7.2	95	8.5	95	3.2	66	3.8	42	--	--
<i>BBgBarc US Aggregate TR</i>			<u>2.3</u>	69	<u>8.5</u>	79	<u>10.3</u>	65	<u>2.9</u>	91	<u>3.4</u>	87	<u>3.7</u>	92
Over/Under			0.1		-1.3		-1.8		0.3		0.4			
<i>eV US Core Fixed Inc Gross Median</i>			2.3		9.0		10.5		3.3		3.7		4.3	
Intermediate Bonds Composite	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit Int TR</i>			<u>1.4</u>	68	<u>6.4</u>	64	<u>8.2</u>	40	<u>2.4</u>	86	<u>2.7</u>	84	<u>3.0</u>	87
Over/Under														
<i>eV US Interm Duration Fixed Inc Gross Median</i>			1.4		6.6		8.1		2.7		2.9		3.4	
Garrison Middle Market Funding	6,277,671	0.2	2.1	78	1.7	99	1.9	99	2.9	97	3.3	97	--	--
<i>Credit Suisse Leveraged Loans</i>			<u>0.9</u>	98	<u>6.4</u>	98	<u>3.1</u>	99	<u>4.7</u>	9	<u>4.1</u>	45	<u>5.4</u>	34
Over/Under			1.2		-4.7		-1.2		-1.8		-0.8			
<i>eV US Core Plus Fixed Inc Gross Median</i>			2.3		9.5		10.4		3.9		4.1		5.2	
Medley Opportunity Fund II	16,950,589	0.6	-5.0	99	-8.6	99	-15.0	99	-5.5	99	-1.1	99	--	--
<i>Credit Suisse Leveraged Loans</i>			<u>0.9</u>	75	<u>6.4</u>	73	<u>3.1</u>	68	<u>4.7</u>	45	<u>4.1</u>	72	<u>5.4</u>	69
Over/Under			-5.9		-15.0		-18.1		-10.2		-5.2			
<i>eV US Float-Rate Bank Loan Fixed Inc Gross Median</i>			1.2		7.0		3.5		4.6		4.3		5.6	
PIMCO Corporate Opp Fund II	30,887,919	1.1	1.7	92	1.9	99	2.8	99	--	--	--	--	--	--
<i>BBgBarc US High Yield TR</i>			<u>1.3</u>	97	<u>11.4</u>	82	<u>6.4</u>	98	<u>6.1</u>	1	<u>5.4</u>	21	<u>7.9</u>	1
Over/Under			0.4		-9.5		-3.6							
<i>eV US Corporate Fixed Inc Gross Median</i>			3.0		13.3		13.0		4.8		5.1		6.2	

Returns are gross of manager fees.



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	40,212,291	1.4	3.2	13	5.1	99	6.8	97	--	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	99	<u>9.7</u>	83	<u>7.8</u>	96	<u>14.2</u>	1	<u>11.4</u>	1	<u>14.0</u>	1
Over/Under			3.2		-4.6		-1.0							
eV US Corporate Fixed Inc Net Median			3.0		13.1		12.5		4.5		4.7		5.8	
PIMCO Private Income Fund	41,217,587	1.5	0.5	99	--	--	--	--	--	--	--	--	--	--
BBGBarc US High Yield TR			<u>1.3</u>	97	<u>11.4</u>	82	<u>6.4</u>	98	<u>6.1</u>	1	<u>5.4</u>	21	<u>7.9</u>	1
Over/Under			-0.8											
eV US Corporate Fixed Inc Gross Median			3.0		13.3		13.0		4.8		5.1		6.2	
Global Fixed Composite	169,391,823	6.0	-1.7	89	4.9	78	3.9	75	1.8	78	1.8	76	--	--
FTSE WGBI TR			<u>0.8</u>	61	<u>6.3</u>	69	<u>8.1</u>	39	<u>1.2</u>	87	<u>1.8</u>	76	<u>1.7</u>	89
Over/Under			-2.5		-1.4		-4.2		0.6		0.0			
eV All Global Fixed Inc Gross Median			1.1		7.9		7.1		3.8		3.2		4.0	
Brandywine	169,391,823	6.0	-1.7	89	4.9	78	3.9	75	1.8	78	1.8	76	4.8	36
FTSE WGBI TR			<u>0.8</u>	61	<u>6.3</u>	69	<u>8.1</u>	39	<u>1.2</u>	87	<u>1.8</u>	76	<u>1.7</u>	89
Over/Under			-2.5		-1.4		-4.2		0.6		0.0		3.1	
eV All Global Fixed Inc Gross Median			1.1		7.9		7.1		3.8		3.2		4.0	
Real Estate Composite	317,736,476	11.2	1.3	--	4.0	--	6.0	--	7.8	--	10.0	--	--	--
NCREIF Property Index			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			-0.1		-0.8		-0.2		1.0		1.4			
JP Morgan RE	109,034,344	3.9	0.4	--	2.1	--	3.9	--	6.5	--	8.7	--	10.6	--
NCREIF Property Index			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			-1.0		-2.7		-2.3		-0.3		0.1		0.8	
Portfolio Advisors RE III	3,385,019	0.1	-5.1	--	-4.9	--	-6.9	--	-0.2	--	7.3	--	4.1	--
NCREIF Property Index			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			-6.5		-9.7		-13.1		-7.0		-1.3		-5.7	
Portfolio Advisors RE IV	2,175,182	0.1	-1.2	--	-6.1	--	-3.6	--	6.8	--	11.0	--	--	--
NCREIF Property Index			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			-2.6		-10.9		-9.8		0.0		2.4			
Angelo Gordon Net Lease Realty III LP	24,511,785	0.9	1.7	--	5.8	--	7.4	--	8.5	--	6.8	--	--	--
NCREIF Property Index			<u>1.4</u>	--	<u>4.8</u>	--	<u>6.2</u>	--	<u>6.8</u>	--	<u>8.6</u>	--	<u>9.8</u>	--
Over/Under			0.3		1.0		1.2		1.7		-1.8			

Returns are gross of manager fees.



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	27,470,359	1.0	1.1	--	9.9	--	10.6	--	10.4	--	8.1	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-0.3		5.1		4.4		3.6		-0.5			
Dune Real Estate Fund III	27,099,851	1.0	0.9	--	5.6	--	11.3	--	12.6	--	13.0	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-0.5		0.8		5.1		5.8		4.4			
OK FF Portfolio Advisors	7,320,607	0.3	-0.3	--	-0.6	--	-0.3	--	1.6	--	9.8	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-1.7		-5.4		-6.5		-5.2		1.2			
Landmark RE VII	12,293,714	0.4	-0.4	--	-1.2	--	-0.3	--	4.6	--	16.3	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-1.8		-6.0		-6.5		-2.2		7.7			
JP Morgan Special Situation Property	71,060,814	2.5	2.7	--	5.2	--	7.6	--	9.5	--	--	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			1.3		0.4		1.4		2.7		--		--	--
Hall Capital III	10,937,852	0.4	0.6	--	6.1	--	7.3	--	9.2	--	--	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-0.8		1.3		1.1		2.4		--		--	--
Portfolio Advisors RE VI	15,835,769	0.6	6.6	--	6.9	--	11.4	--	--	--	--	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			5.2		2.1		5.2		--		--		--	--
Hall Capital Real Estate Fund	2,959,054	0.1	1.1	--	1.5	--	1.6	--	--	--	--	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			-0.3		-3.3		-4.6		--		--		--	--
Dune Real Estate IV LP	3,652,128	0.1	--	--	--	--	--	--	--	--	--	--	--	--
NCREIF Property Index			1.4	--	4.8	--	6.2	--	6.8	--	8.6	--	9.8	--
Over/Under			--		--		--		--		--		--	--

Returns are gross of manager fees.



Oklahoma Firefighters

TOTAL PLAN PERFORMANCE DETAIL

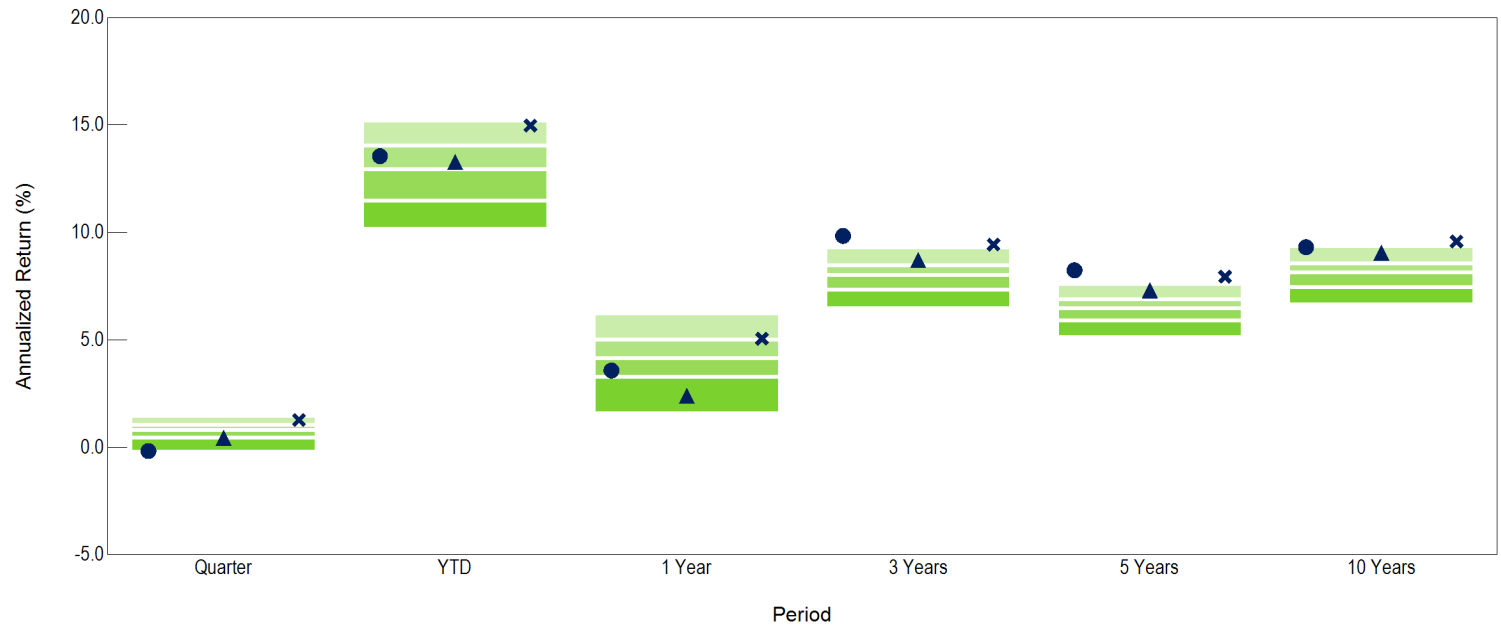
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Hedge Fund Composite	80,992,101	2.9	-1.3	--	3.9	--	-1.4	--	3.9	--	1.7	--	3.7	--
HFRI FOF: Conservative Index			<u>-0.3</u>	--	<u>4.4</u>	--	<u>1.0</u>	--	<u>3.1</u>	--	<u>2.0</u>	--	<u>2.7</u>	--
Over/Under			-1.0		-0.5		-2.4		0.8		-0.3		1.0	
Permal	80,991,825	2.9	-1.2	--	0.6	--	-1.3	--	3.8	--	--	--	--	--
HFRI Fund of Funds Composite Index			<u>-0.9</u>	--	<u>5.2</u>	--	<u>0.0</u>	--	<u>3.2</u>	--	<u>1.9</u>	--	<u>2.7</u>	--
Over/Under			-0.3		-4.6		-1.3		0.6		--		--	
Allianz Global Investors DMAP	276	0.0	0.3	--	11.9	--	0.8	--	5.8	--	--	--	--	--
Russell 2500 Growth			<u>-3.2</u>	--	<u>20.0</u>	--	<u>-4.1</u>	--	<u>12.3</u>	--	<u>10.2</u>	--	<u>13.5</u>	--
Over/Under			3.5		-8.1		4.9		-6.5		--		--	
Private Equity Composite	102,955,931	3.6	4.4	--	5.4	--	11.0	--	15.2	--	14.5	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			4.4		-4.3		3.2		1.0		3.1		--	
Pomona Captial Fund VIII	4,175,025	0.1	0.7	--	-1.6	--	9.8	--	15.6	--	14.0	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			0.7		-11.3		2.0		1.4		2.6		--	
Ardian	25,524,310	0.9	3.8	--	4.1	--	10.8	--	12.9	--	14.5	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			3.8		-5.6		3.0		-1.3		3.1		--	
Dynamics Global Secondaries IV	29,931,504	1.1	3.3	--	2.9	--	8.8	--	15.8	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			3.3		-6.8		1.0		1.6		--		--	
AESF VI	25,610,778	0.9	5.9	--	6.7	--	8.1	--	--	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			5.9		-3.0		0.3		--		--		--	
Pomona Capital Fund IX	12,156,797	0.4	4.5	--	16.5	--	30.2	--	--	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			4.5		6.8		22.4		--		--		--	
Argonaut Private Equity Fund IV	5,557,517	0.2	8.8	--	7.7	--	6.0	--	--	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			8.8		-2.0		-1.8		--		--		--	

Returns are gross of manager fees.



TOTAL PLAN RETURN SUMMARY VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvMetrics Public DB Gross

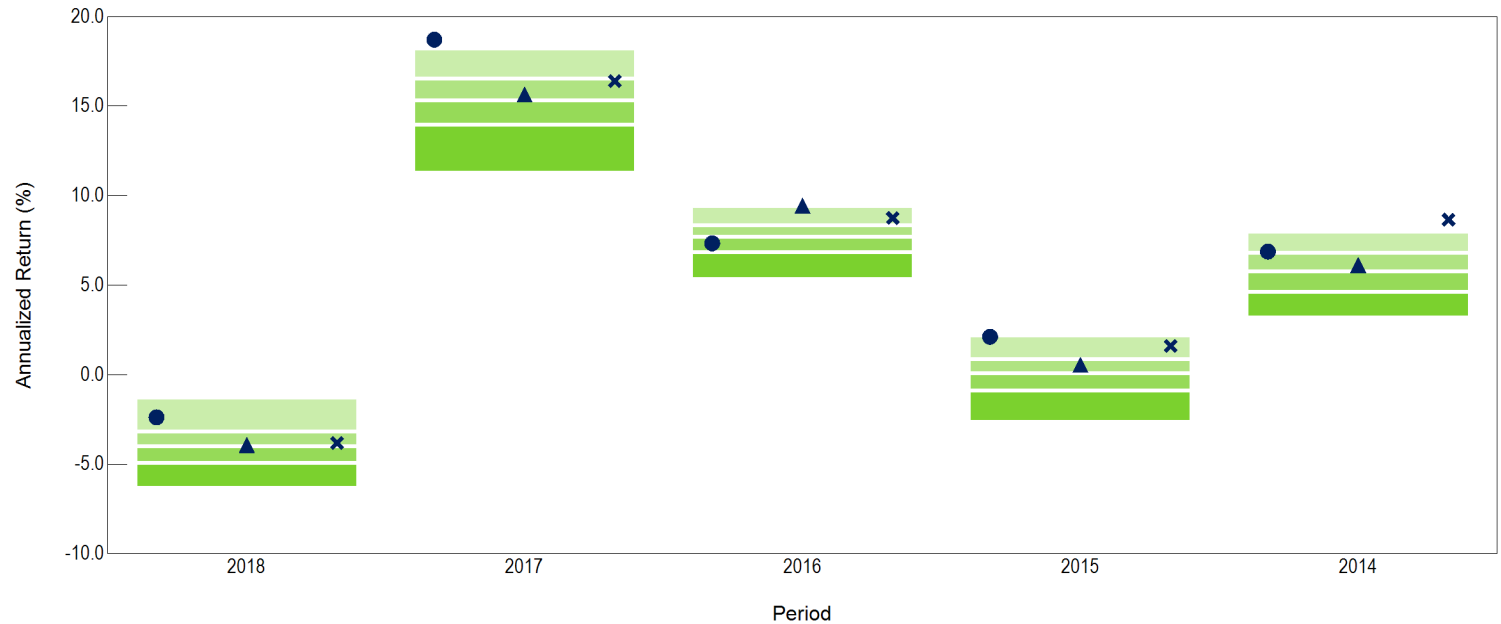


	Return (Rank)											
5th Percentile	1.5		15.2		6.2		9.3		7.6		9.4	
25th Percentile	1.1		14.1		5.0		8.5		6.9		8.6	
Median	0.8		13.0		4.1		8.0		6.5		8.2	
75th Percentile	0.5		11.5		3.3		7.3		5.9		7.5	
95th Percentile	-0.2		10.2		1.6		6.5		5.2		6.7	
# of Portfolios	262		259		256		246		237		199	
● OK FIREFIGHTERS	-0.2	(95)	13.5	(38)	3.6	(67)	9.8	(3)	8.2	(1)	9.3	(6)
▲ FIREFIGHTERS Allocation Index	0.4	(77)	13.3	(44)	2.4	(87)	8.7	(16)	7.3	(10)	9.1	(11)
× FIREFIGHTERS Policy Index	1.3	(11)	15.0	(8)	5.1	(25)	9.4	(4)	7.9	(3)	9.6	(2)



TOTAL PLAN RETURN SUMMARY VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvMetrics Public DB Gross



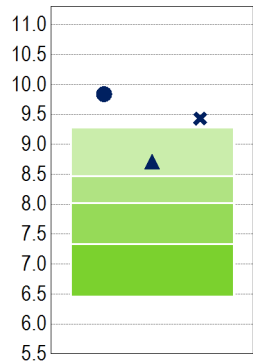
	Return (Rank)									
5th Percentile	-1.3		18.2		9.4		2.2		8.0	
25th Percentile	-3.1		16.5		8.4		0.9		6.8	
Median	-4.0		15.3		7.7		0.1		5.8	
75th Percentile	-4.9		14.0		6.9		-0.9		4.6	
95th Percentile	-6.3		11.3		5.3		-2.6		3.2	
# of Portfolios	319		304		305		316		248	
● OK FIREFIGHTERS	-2.4	(13)	18.7	(4)	7.3	(61)	2.1	(6)	6.9	(24)
▲ FIREFIGHTERS Allocation Index	-3.9	(49)	15.6	(44)	9.4	(5)	0.5	(35)	6.1	(40)
× FIREFIGHTERS Policy Index	-3.8	(45)	16.4	(28)	8.7	(15)	1.6	(10)	8.7	(3)



TOTAL PLAN RISK STATISTICS VS. PEER UNIVERSE

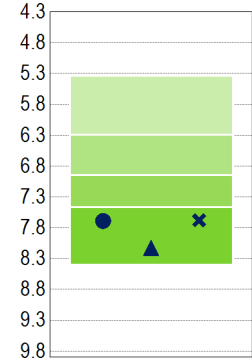
OK FIREFIGHTERS vs. InvMetrics Public DB Gross 3 Years

Anlzd Return



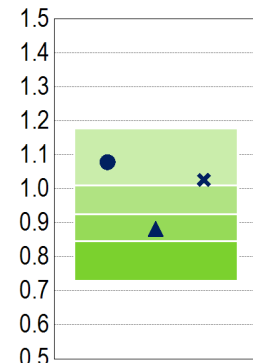
● OK FIREFIGHTERS	
Value	9.84
Rank	3
▲ FIREFIGHTERS Allocation Index	
Value	8.71
Rank	16
× FIREFIGHTERS Policy Index	
Value	9.43
Rank	4
Universe	
5th %tile	9.28
25th %tile	8.48
Median	8.03
75th %tile	7.34
95th %tile	6.47

Anlzd Standard Deviation



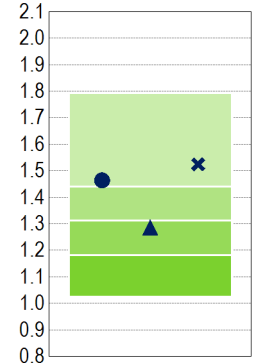
● OK FIREFIGHTERS	
Value	7.69
Rank	83
▲ FIREFIGHTERS Allocation Index	
Value	8.13
Rank	93
× FIREFIGHTERS Policy Index	
Value	7.68
Rank	83
Universe	
5th %tile	5.34
25th %tile	6.28
Median	6.93
75th %tile	7.46
95th %tile	8.39

Sharpe Ratio



● OK FIREFIGHTERS	
Value	1.08
Rank	13
▲ FIREFIGHTERS Allocation Index	
Value	0.88
Rank	64
× FIREFIGHTERS Policy Index	
Value	1.03
Rank	22
Universe	
5th %tile	1.18
25th %tile	1.01
Median	0.93
75th %tile	0.85
95th %tile	0.73

Sortino Ratio



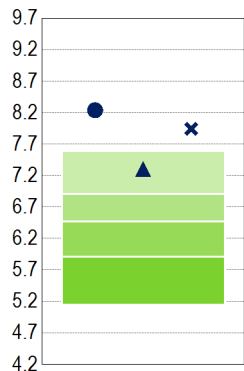
● OK FIREFIGHTERS	
Value	1.46
Rank	20
▲ FIREFIGHTERS Allocation Index	
Value	1.29
Rank	54
× FIREFIGHTERS Policy Index	
Value	1.52
Rank	15
Universe	
5th %tile	1.79
25th %tile	1.44
Median	1.31
75th %tile	1.18
95th %tile	1.03



TOTAL PLAN RISK STATISTICS VS. PEER UNIVERSE

OK FIREFIGHTERS vs. InvMetrics Public DB Gross 5 Years

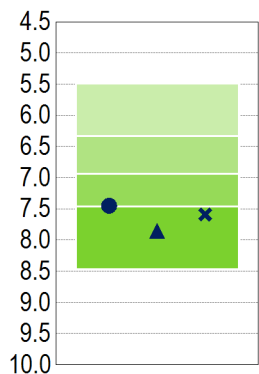
Anlzd Return



● OK FIREFIGHTERS	
Value	8.24
Rank	1
▲ FIREFIGHTERS Allocation Index	
Value	7.30
Rank	10
× FIREFIGHTERS Policy Index	
Value	7.94
Rank	3

Universe	
5th %tile	7.59
25th %tile	6.92
Median	6.48
75th %tile	5.92
95th %tile	5.15

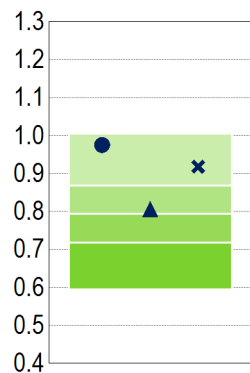
Anlzd Standard Deviation



● OK FIREFIGHTERS	
Value	7.45
Rank	76
▲ FIREFIGHTERS Allocation Index	
Value	7.85
Rank	87
× FIREFIGHTERS Policy Index	
Value	7.59
Rank	81

Universe	
5th %tile	5.49
25th %tile	6.33
Median	6.93
75th %tile	7.45
95th %tile	8.46

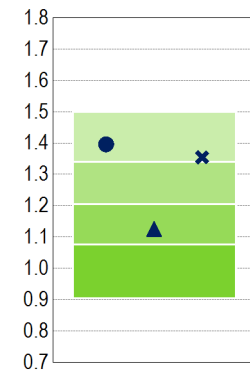
Sharpe Ratio



● OK FIREFIGHTERS	
Value	0.98
Rank	8
▲ FIREFIGHTERS Allocation Index	
Value	0.81
Rank	47
× FIREFIGHTERS Policy Index	
Value	0.92
Rank	14

Universe	
5th %tile	1.01
25th %tile	0.87
Median	0.80
75th %tile	0.72
95th %tile	0.60

Sortino Ratio



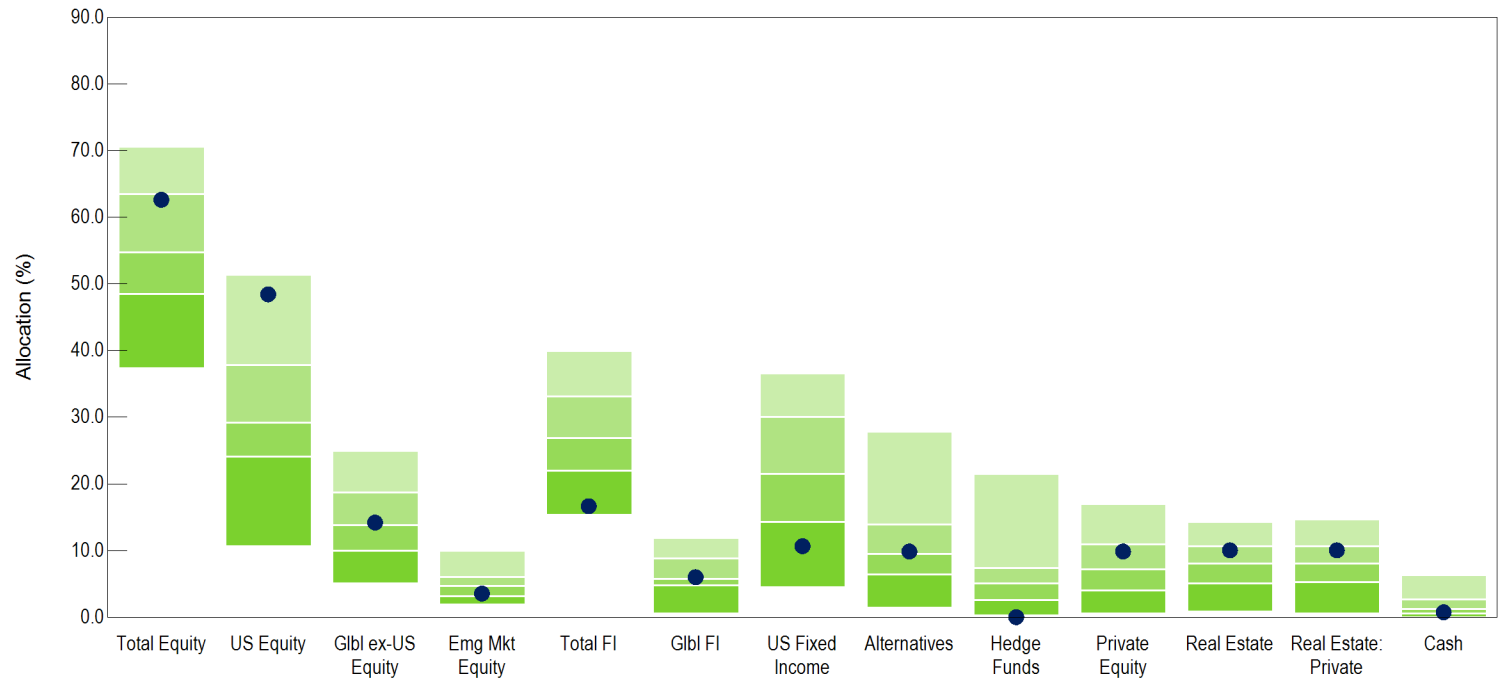
● OK FIREFIGHTERS	
Value	1.40
Rank	16
▲ FIREFIGHTERS Allocation Index	
Value	1.13
Rank	67
× FIREFIGHTERS Policy Index	
Value	1.35
Rank	24

Universe	
5th %tile	1.50
25th %tile	1.34
Median	1.21
75th %tile	1.08
95th %tile	0.91



TOTAL PLAN ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB Gross



	Allocation (Rank)													
5th Percentile	70.6	51.4	24.9	10.0	40.0	11.9	36.5	27.8	21.5	16.9	14.3	14.7	6.3	--
25th Percentile	63.6	37.9	18.8	6.2	33.2	8.9	30.2	14.0	7.5	11.0	10.7	10.7	2.8	--
Median	54.8	29.3	14.0	4.8	26.9	5.8	21.6	9.6	5.2	7.3	8.1	8.1	1.3	--
75th Percentile	48.6	24.2	10.1	3.3	22.0	4.9	14.4	6.5	2.7	4.1	5.2	5.3	0.7	--
95th Percentile	37.4	10.7	5.2	2.0	15.4	0.7	4.5	1.6	0.4	0.7	0.9	0.6	0.0	--
# of Portfolios	202	135	170	86	198	25	117	127	64	81	146	111	186	--
● OK FIREFIGHTERS	62.6 (28)	48.4 (9)	14.2 (50)	3.5 (68)	16.6 (93)	6.0 (45)	10.6 (85)	9.8 (47)	0.0 (99)	9.8 (33)	10.0 (30)	10.0 (33)	0.7 (73)	--



TOTAL PLAN ATTRIBUTION ANALYSIS

Performance Attribution		
	Last 3 Mo.	1 Yr
Wtd. Actual Return	-0.2%	3.5%
Wtd. Index Return *	0.9%	3.8%
Excess Return	-1.1%	-0.4%
Selection Effect	-1.1%	-0.4%
Allocation Effect	0.0%	0.0%
Interaction Effect	0.0%	0.0%
Asset Class Returns		
OK FIREFIGHTERS	-0.2%	3.6%
Domestic Equity Composite	-0.7%	2.8%
Large Cap Equity Composite	1.2%	3.8%
Small Cap Equity Composite	-5.4%	1.5%
Z TERMINATED - Long/Short Equity Composite		
International Equity Composite	-1.9%	1.5%
Emerging Markets Equity Composite	-4.7%	-3.9%
Fixed Income Composite	0.7%	5.5%
Domestic Fixed Income	1.8%	6.3%
Core Bonds Composite	2.3%	9.0%
Intermediate Bonds Composite		
Global Fixed Composite	-1.7%	3.9%
OTHER	1.5%	5.2%
Real Estate Composite	1.3%	6.0%
Hedge Fund Composite	-1.3%	-1.4%
Private Equity Composite	4.4%	11.0%

*Calculated from benchmark returns and weightings of each component.

Z TERMINATED represents Composite that fully liquidated.



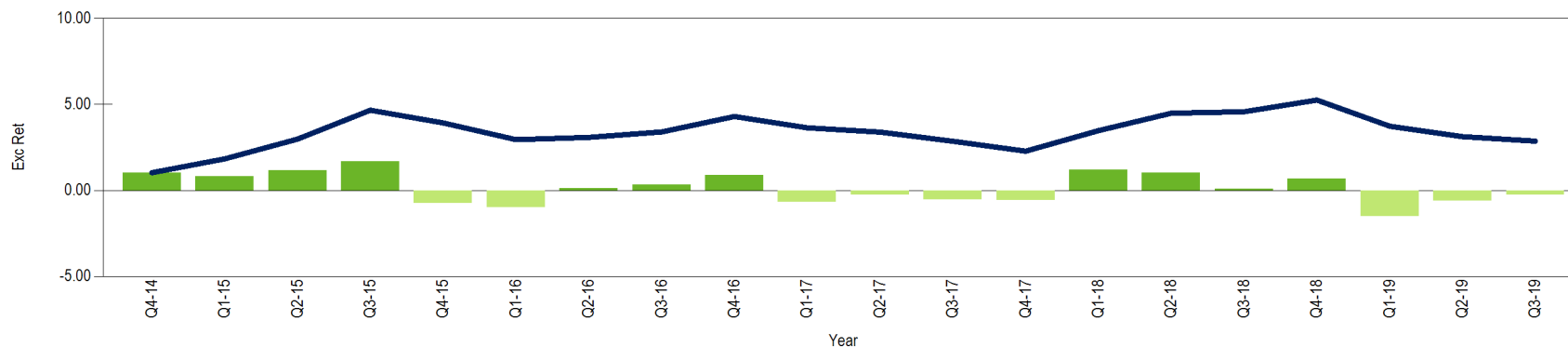
OKLAHOMA POLICE



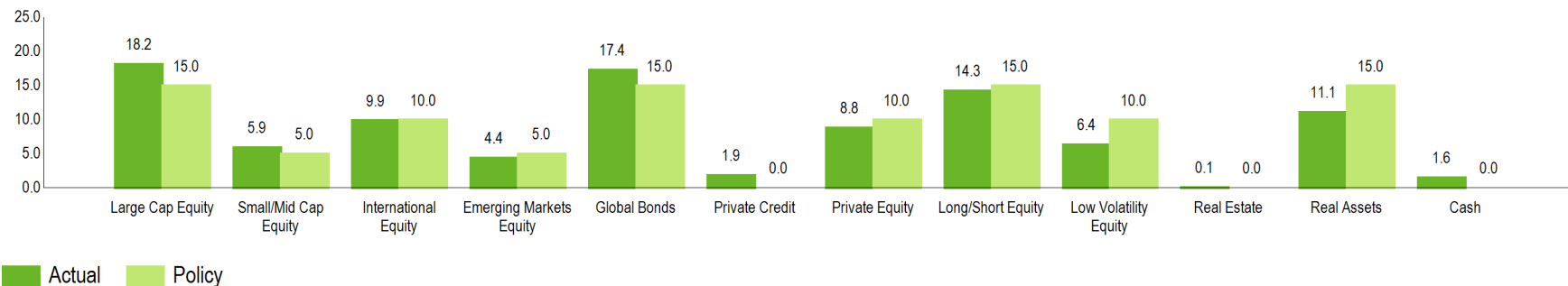
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK POLICE	\$2,598,233,310	0.4%	76	10.1%	96	2.2%	90	7.2%	80	6.0%	75	7.6%	71
<i>POLICE Allocation Index</i>		-0.1%	95	9.6%	99	2.1%	91	6.7%	94	5.2%	95	7.6%	72
<i>POLICE Policy Index</i>		0.7%	60	12.6%	54	3.8%	60	7.3%	79	5.3%	93	7.9%	62
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)

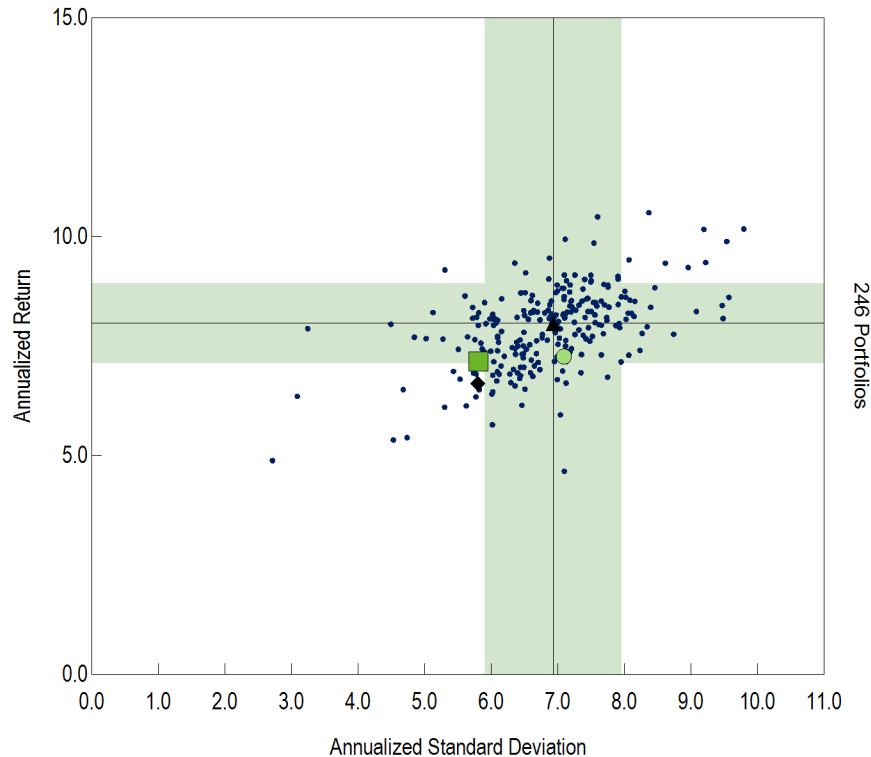


Returns are gross of manager fees.



TOTAL FUND RISK/RETURN - 3 YEARS

3 Years Ending September 30, 2019



- OK POLICE
- ◆ POLICE Allocation Index
- POLICE Policy Index
- ▲ Universe Median
- ▭ 68% Confidence Interval
- InvMetrics Public DB Gross

3 Years Ending September 30, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK POLICE	7.16%	80	5.81%	12
POLICE Allocation Index	6.65%	94	5.79%	11
POLICE Policy Index	7.27%	79	7.09%	59

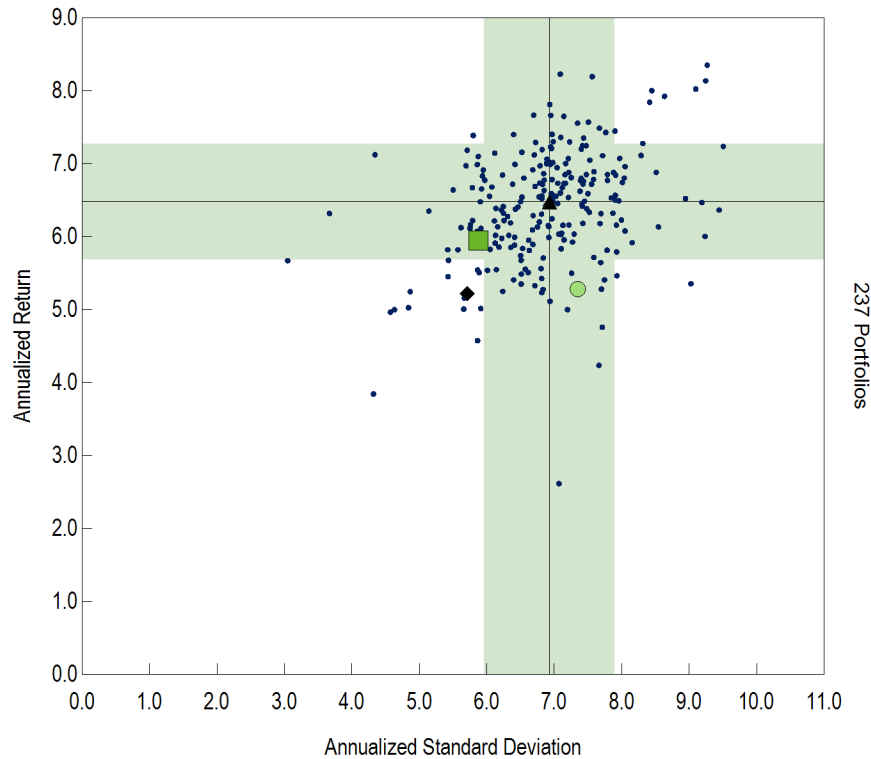
3 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK POLICE	0.97	36	1.34	46
POLICE Allocation Index	0.88	64	1.34	45
POLICE Policy Index	0.81	90	1.20	73



TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending September 30, 2019



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

5 Years Ending September 30, 2019

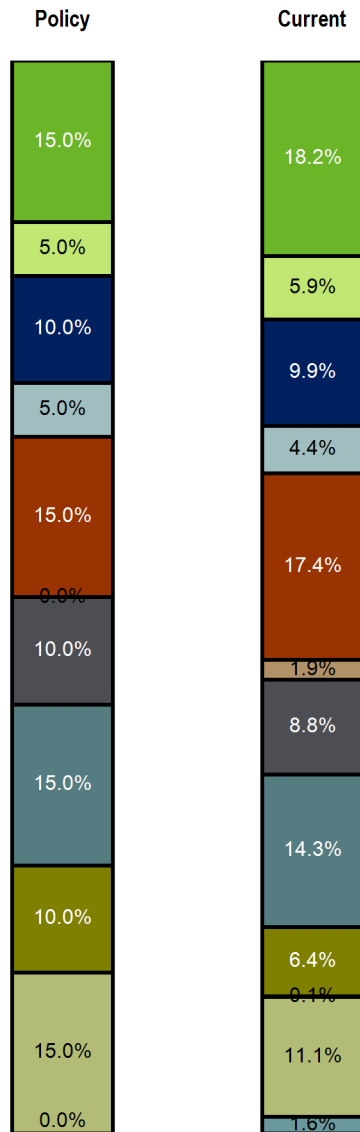
	Anlzd Ret	Rank	Anlzd Std Dev	Rank
OK POLICE	5.95%	75	5.87%	13
POLICE Allocation Index	5.22%	95	5.71%	8
POLICE Policy Index	5.28%	93	7.35%	70

5 Years Ending September 30, 2019

	Sharpe Ratio	Rank	Sortino Ratio	Rank
OK POLICE	0.85	32	1.32	29
POLICE Allocation Index	0.74	69	1.11	70
POLICE Policy Index	0.59	96	1.03	86



TOTAL FUND ASSET ALLOCATION VS. POLICY



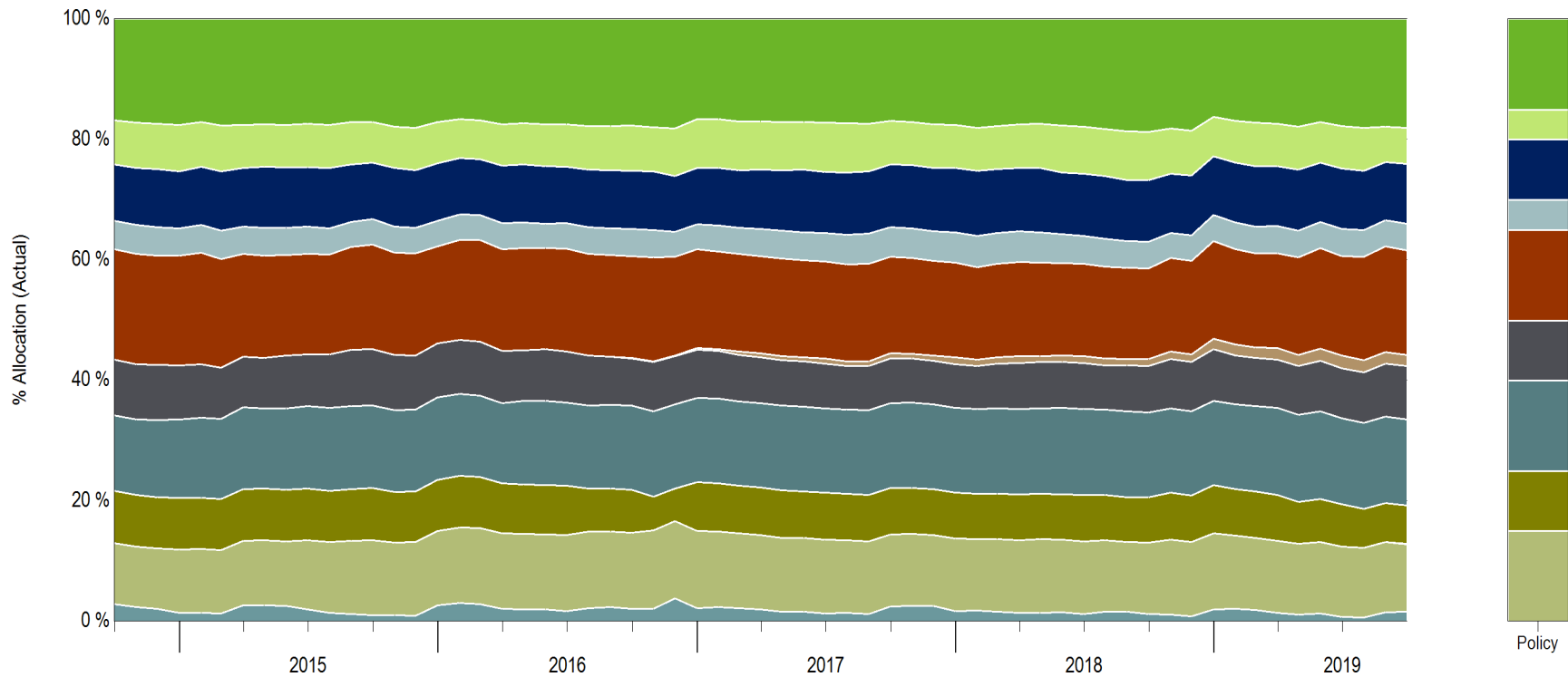
Asset Allocation vs. Target							
	Current	Policy	Current	Difference*	Policy Range	Within Range	
Large Cap Equity	\$472,079,542	15.0%	18.2%	3.2%	10.0% - 20.0%	Yes	
Small/Mid Cap Equity	\$154,235,120	5.0%	5.9%	0.9%	0.0% - 15.0%	Yes	
International Equity	\$257,579,720	10.0%	9.9%	-0.1%	5.0% - 15.0%	Yes	
Emerging Markets Equity	\$115,061,829	5.0%	4.4%	-0.6%	0.0% - 10.0%	Yes	
Global Bonds	\$451,136,616	15.0%	17.4%	2.4%	10.0% - 20.0%	Yes	
Private Credit	\$48,976,226	0.0%	1.9%	1.9%	0.0% - 5.0%	Yes	
Private Equity	\$229,441,668	10.0%	8.8%	-1.2%	5.0% - 15.0%	Yes	
Long/Short Equity	\$370,595,396	15.0%	14.3%	-0.7%	10.0% - 20.0%	Yes	
Low Volatility Equity	\$166,447,404	10.0%	6.4%	-3.6%	5.0% - 15.0%	Yes	
Real Estate	\$2,512,074	--	0.1%	0.1%	--	No	
Real Assets	\$289,535,597	15.0%	11.1%	-3.9%	0.0% - 30.0%	Yes	
Cash	\$40,632,118	0.0%	1.6%	1.6%	0.0% - 5.0%	Yes	
Total	\$2,598,233,310	100.0%	100.0%				

*Difference between Policy and Current Allocation



TOTAL FUND ASSET ALLOCATION HISTORY

Asset Allocation History



- Large Cap Equity
- Emerging Markets Equity
- Private Equity
- Low Volatility Equity
- Real Assets
- Small/Mid Cap Equity
- Global Bonds
- Long/Short Equity
- Real Estate
- Cash
- International Equity
- Private Credit



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
OK POLICE	2,598,233,310	100.0	0.4	76	10.1	96	2.2	90	7.2	80	6.0	75	7.6	71
<i>POLICE Allocation Index</i>			<u>-0.1</u>	95	<u>9.6</u>	99	<u>2.1</u>	91	<u>6.7</u>	94	<u>5.2</u>	95	<u>7.6</u>	72
Over/Under			0.5		0.5		0.1		0.5		0.8		0.0	
<i>POLICE Policy Index</i>			<u>0.7</u>	60	<u>12.6</u>	54	<u>3.8</u>	60	<u>7.3</u>	79	<u>5.3</u>	93	<u>7.9</u>	62
<i>InvMetrics Public DB Gross Median</i>			<u>0.8</u>		<u>13.0</u>		<u>4.1</u>		<u>8.0</u>		<u>6.5</u>		<u>8.2</u>	
Equity Composite	998,956,211	38.4	-0.2	55	15.9	59	-0.5	65	9.8	49	7.8	45	9.5	55
<i>Russell 3000</i>			<u>1.2</u>	26	<u>20.1</u>	27	<u>2.9</u>	42	<u>12.8</u>	15	<u>10.4</u>	15	<u>13.1</u>	9
Over/Under			-1.4		-4.2		-3.4		-3.0		-2.6		-3.6	
<i>eV All Global Equity Gross Median</i>			0.0		16.9		1.5		9.6		7.5		9.7	
Domestic Equity Composite	626,314,662	24.1	0.4	54	19.0	50	0.4	52	12.2	44	10.2	44	12.9	51
<i>S&P 500</i>			<u>1.7</u>	30	<u>20.6</u>	38	<u>4.3</u>	29	<u>13.4</u>	32	<u>10.8</u>	33	<u>13.2</u>	42
Over/Under			-1.3		-1.6		-3.9		-1.2		-0.6		-0.3	
<i>eV All US Equity Gross Median</i>			0.7		19.0		0.7		11.5		9.7		12.9	
<i>Northern Trust Russell 1000 Index Fund</i>	472,079,542	18.2	1.4	60	20.5	42	3.9	47	13.2	43	10.6	42	13.2	44
<i>Russell 1000</i>			<u>1.4</u>	60	<u>20.5</u>	42	<u>3.9</u>	48	<u>13.2</u>	43	<u>10.6</u>	42	<u>13.2</u>	44
Over/Under			0.0		0.0		0.0		0.0		0.0		0.0	
<i>eV US Large Cap Core Equity Gross Median</i>			1.7		19.9		3.6		12.8		10.3		13.1	
<i>Boston Partners</i>	77,025,331	3.0	1.6	18	21.3	13	-2.3	32	7.1	59	7.2	52	11.4	57
<i>Russell 2500 Value</i>			<u>0.1</u>	52	<u>15.4</u>	72	<u>-4.4</u>	58	<u>6.9</u>	67	<u>7.0</u>	55	<u>11.0</u>	76
Over/Under			1.5		5.9		2.1		0.2		0.2		0.4	
<i>eV US Small-Mid Cap Value Equity Gross Median</i>			0.3		17.4		-3.9		7.7		7.3		11.8	
<i>Silvercrest - Cortina Small Cap Growth</i>	77,209,789	3.0	-5.5	67	9.9	87	-12.7	84	12.5	60	10.9	57	--	--
<i>Russell 2000 Growth</i>			<u>-4.2</u>	46	<u>15.3</u>	66	<u>-9.6</u>	72	<u>9.8</u>	83	<u>9.1</u>	79	<u>12.2</u>	87
Over/Under			-1.3		-5.4		-3.1		2.7		1.8			
<i>eV US Small Cap Growth Equity Gross Median</i>			-4.4		18.0		-6.7		13.4		11.4		14.1	

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

Returns are gross of manager fees.



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
International Equity Composite	372,641,549	14.3	-1.3	35	10.6	70	-2.0	54	5.7	74	3.7	65	4.1	93
MSCI ACWI ex USA			-1.8	52	11.6	67	-1.2	46	6.3	61	2.9	78	4.5	91
Over/Under			0.5		-1.0		-0.8		-0.6		0.8		-0.4	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Mondrian Int'l Value	137,979,483	5.3	-2.0	52	8.3	51	-2.3	34	5.4	43	2.5	46	5.0	49
MSCI ACWI ex USA			-1.8	47	11.6	30	-1.2	28	6.3	31	2.9	33	4.5	65
Over/Under			-0.2		-3.3		-1.1		-0.9		-0.4		0.5	
eV ACWI ex-US Value Equity Gross Median			-1.9		8.3		-4.2		5.1		2.4		4.9	
Baring Focused Intl Equity	119,600,237	4.6	-0.8	20	13.9	45	-3.8	70	6.9	49	6.0	28	--	--
MSCI ACWI ex USA			-1.8	52	11.6	67	-1.2	46	6.3	61	2.9	78	4.5	91
Over/Under			1.0		2.3		-2.6		0.6		3.1		--	
eV All ACWI ex-US Equity Gross Median			-1.8		13.1		-1.7		6.8		4.6		6.8	
Wasatch EM Small Cap	36,538,255	1.4	1.4	1	16.3	3	9.0	1	5.7	31	3.3	38	--	--
MSCI Emerging Markets Small Cap			-4.6	66	1.8	91	-5.5	88	1.3	92	-0.1	96	3.2	99
Over/Under			6.0		14.5		14.5		4.4		3.4		--	
eV Emg Mkts Small Cap Equity Gross Median			-3.7		6.6		-1.1		4.3		2.6		7.2	
AB EM Strategic Core Equity	78,523,575	3.0	-2.2	--	7.8	--	-3.1	--	--	--	--	--	--	--
MSCI Emerging Markets			-4.2	--	5.9	--	-2.0	--	6.0	--	2.3	--	3.4	--
Over/Under			2.0		1.9		-1.1		--		--		--	
Total Long/Short	370,595,396	14.3	-0.9	55	9.9	43	0.5	46	5.8	52	4.9	53	--	--
HFRI FOF: Strategic Index			-1.7	62	5.7	65	-1.1	53	3.2	69	1.9	76	2.8	88
Over/Under			0.8		4.2		1.6		2.6		3.0		--	
eV Alt Fundamental - Long/Short Equity Median			-0.3		8.2		-0.4		5.9		5.1		7.0	
Grosvenor	370,595,396	14.3	-0.9	55	9.9	43	0.5	46	5.8	52	4.9	53	5.7	63
HFRI FOF: Strategic Index			-1.7	62	5.7	65	-1.1	53	3.2	69	1.9	76	2.8	88
Over/Under			0.8		4.2		1.6		2.6		3.0		2.9	
eV Alt Fundamental - Long/Short Equity Median			-0.3		8.2		-0.4		5.9		5.1		7.0	

Returns are gross of manager fees.



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
Private Equity	229,441,668	8.8	4.7	--	9.9	--	12.5	--	12.1	--	10.6	--	12.3	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			4.7		0.2		4.7		-2.1		-0.8		-1.7	
Fixed Income Composite	451,136,616	17.4	1.2	49	8.1	47	7.5	45	3.5	55	3.7	44	5.0	35
BBgBarc US Aggregate TR			<u>2.3</u>	17	<u>8.5</u>	45	<u>10.3</u>	16	<u>2.9</u>	61	<u>3.4</u>	48	<u>3.7</u>	55
Over/Under			-1.1		-0.4		-2.8		0.6		0.3		1.3	
eV All Global Fixed Inc Gross Median			1.1		7.9		7.1		3.8		3.2		4.0	
Oaktree	128,149,766	4.9	-0.6	99	6.5	63	2.0	99	4.4	34	4.3	34	6.7	23
BBgBarc US Aggregate TR			<u>2.3</u>	30	<u>8.5</u>	44	<u>10.3</u>	27	<u>2.9</u>	62	<u>3.4</u>	58	<u>3.7</u>	62
Over/Under			-2.9		-2.0		-8.3		1.5		0.9		3.0	
Agincourt	240,914,985	9.3	2.3	26	9.2	35	10.8	20	3.5	48	3.8	45	4.4	47
BBgBarc US Aggregate TR			<u>2.3</u>	30	<u>8.5</u>	44	<u>10.3</u>	27	<u>2.9</u>	62	<u>3.4</u>	58	<u>3.7</u>	62
Over/Under			0.0		0.7		0.5		0.6		0.4		0.7	
eV All US Fixed Inc Gross Median			1.5		7.7		7.9		3.4		3.7		4.3	
Loomis Sayles	82,071,866	3.2	0.7	64	7.4	56	8.1	39	2.2	70	2.5	61	3.2	66
FTSE WGBI TR			<u>0.8</u>	61	<u>6.3</u>	69	<u>8.1</u>	39	<u>1.2</u>	87	<u>1.8</u>	76	<u>1.7</u>	89
Over/Under			-0.1		1.1		0.0		1.0		0.7		1.5	
eV All Global Fixed Inc Gross Median			1.1		7.9		7.1		3.8		3.2		4.0	
Total Low Volatility Strategies	166,447,404	6.4	0.4	--	3.6	--	1.9	--	3.4	--	1.6	--	--	--
HFRI FOF: Conservative Index			<u>-0.3</u>	--	<u>4.4</u>	--	<u>1.0</u>	--	<u>3.1</u>	--	<u>2.0</u>	--	<u>2.7</u>	--
Over/Under			0.7		-0.8		0.9		0.3		-0.4			
PAAMCO	89,388,419	3.4	-0.2	33	3.4	65	-0.1	32	2.8	60	1.2	65	3.6	67
HFRI FOF: Conservative Index			<u>-0.3</u>	33	<u>4.4</u>	56	<u>1.0</u>	25	<u>3.1</u>	57	<u>2.0</u>	56	<u>2.7</u>	74
Over/Under			0.1		-1.0		-1.1		-0.3		-0.8		0.9	
eV All Fund of Funds - All Single Strategy Median			-1.4		4.6		-1.6		3.5		2.4		4.1	
Wellington Global Total Return	77,058,985	3.0	0.9	19	3.5	64	5.5	6	--	--	--	--	--	--
HFRI FOF Conservative (1 Mo Lag)			<u>0.7</u>	20	<u>3.7</u>	63	<u>1.6</u>	18	<u>3.3</u>	56	<u>2.1</u>	55	<u>2.9</u>	72
Over/Under			0.2		-0.2		3.9							
eV All Fund of Funds - All Single Strategy Median			-1.4		4.6		-1.6		3.5		2.4		4.1	

*The Private Real Estate returns are time weighted.

Returns are gross of manager fees.



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
Private Credit	48,976,226	1.9	2.4	--	6.1	--	8.9	--	9.1	--	--	--	--	--
Cambridge Associates US All PE			<u>0.0</u>	--	<u>9.7</u>	--	<u>7.8</u>	--	<u>14.2</u>	--	<u>11.4</u>	--	<u>14.0</u>	--
Over/Under			2.4		-3.6		1.1		-5.1					
Real Estate	266,156,214	10.2	1.2	--	3.8	--	6.9	--	8.0	--	9.8	--	--	--
NCREIF ODCE Net			<u>1.1</u>	--	<u>3.1</u>	--	<u>4.6</u>	--	<u>6.3</u>	--	<u>8.4</u>	--	<u>9.8</u>	--
Over/Under			0.1		0.7		2.3		1.7		1.4			
Total Core Real Estate	218,512,435	8.4	0.7	--	2.8	--	5.0	--	7.4	--	9.4	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.6		-1.0		-0.6		0.1		0.1			
Columbus Square	4,826,443	0.2	1.1	--	4.0	--	5.7	--	7.6	--	11.8	--	15.4	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.2		0.2		0.1		0.3		2.5		4.5	
JP Morgan	129,712,490	5.0	0.4	--	2.1	--	3.9	--	6.5	--	8.7	--	10.6	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.9		-1.7		-1.7		-0.8		-0.6		-0.3	
Blackstone Property Partners	83,973,502	3.2	1.3	--	5.1	--	8.3	--	10.1	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.0		1.3		2.7		2.8					
Private Real Estate	47,643,779	1.8	3.2	--	7.2	--	13.7	--	10.2	--	10.9	--	--	--
Siguler Guff Distressed RE	4,383,255	0.2	1.9	--	5.6	--	9.8	--	13.9	--	14.9	--	--	--
TA Associates Realty X	3,565,505	0.1	13.8	--	24.0	--	28.8	--	18.0	--	14.1	--	--	--

*Returns are gross of manager fees.



Oklahoma Police

TOTAL FUND PERFORMANCE DETAIL

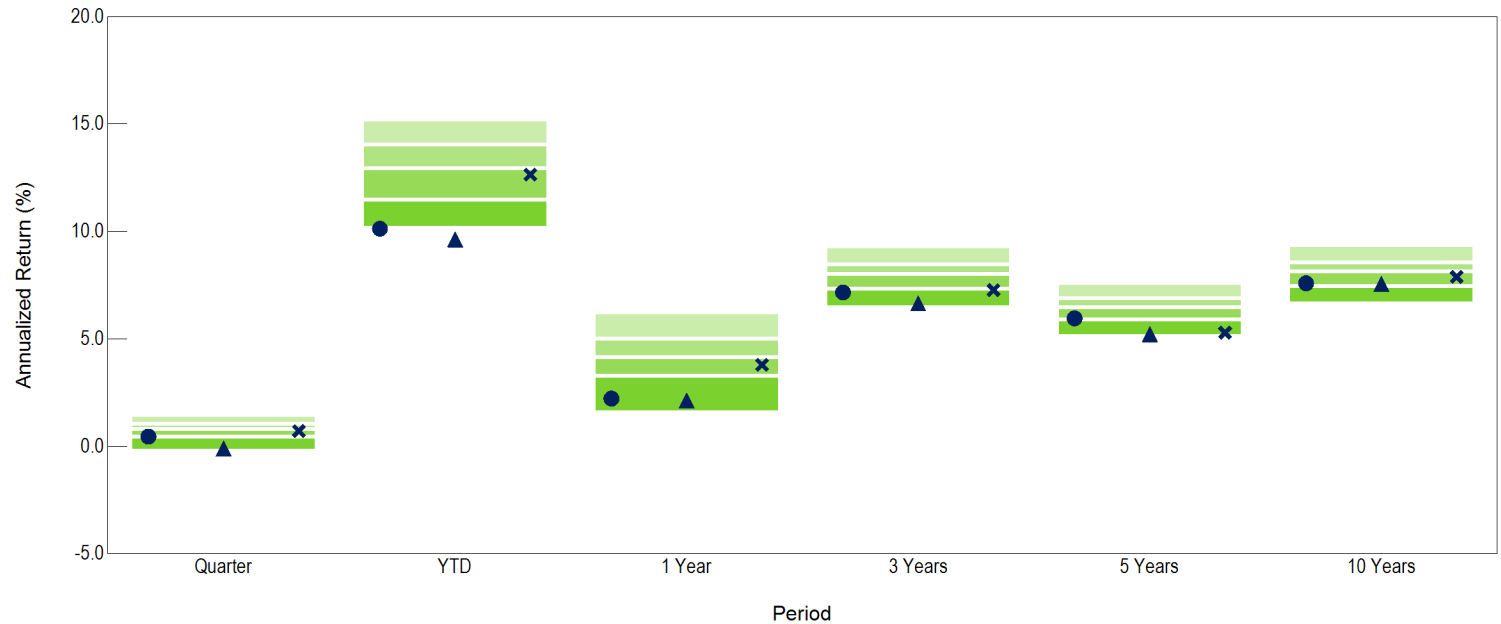
	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Cerberus Real Estate Fund III	9,502,784	0.4	1.1	--	6.5	--	17.1	--	5.9	--	10.2	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.2		2.7		11.5		-1.4		0.9			
Hall Capital Fund III	5,468,925	0.2	1.4	--	6.6	--	7.8	--	10.4	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.1		2.8		2.2		3.1					
Siguler Guff Distressed RE II	6,900,877	0.3	2.0	--	2.2	--	6.2	--	13.7	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			0.7		-1.6		0.6		6.4					
Cerberus Real Estate Partners IV	10,538,674	0.4	4.4	--	12.4	--	15.5	--	-23.1	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			3.1		8.6		9.9		-30.4					
Siguler Guff Dist. Real Estate Opp. II B	4,771,685	0.2	0.4	--	-9.5	--	11.1	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-0.9		-13.3		5.5							
Angelo Gordon Realty Value Fund X	1,252,926	0.0	-16.5	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under			-17.8											
Blackstone Real Estate Partners Fund IX	1,259,148	0.0	--	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE			<u>1.3</u>	--	<u>3.8</u>	--	<u>5.6</u>	--	<u>7.3</u>	--	<u>9.3</u>	--	<u>10.9</u>	--
Over/Under														
Mt Lucas Peak	25,891,457	1.0	-3.0	--	-8.8	--	-19.3	--	-1.9	--	-0.9	--	-0.3	--

*Returns are gross of manager fees.



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK POLICE vs. InvMetrics Public DB Gross

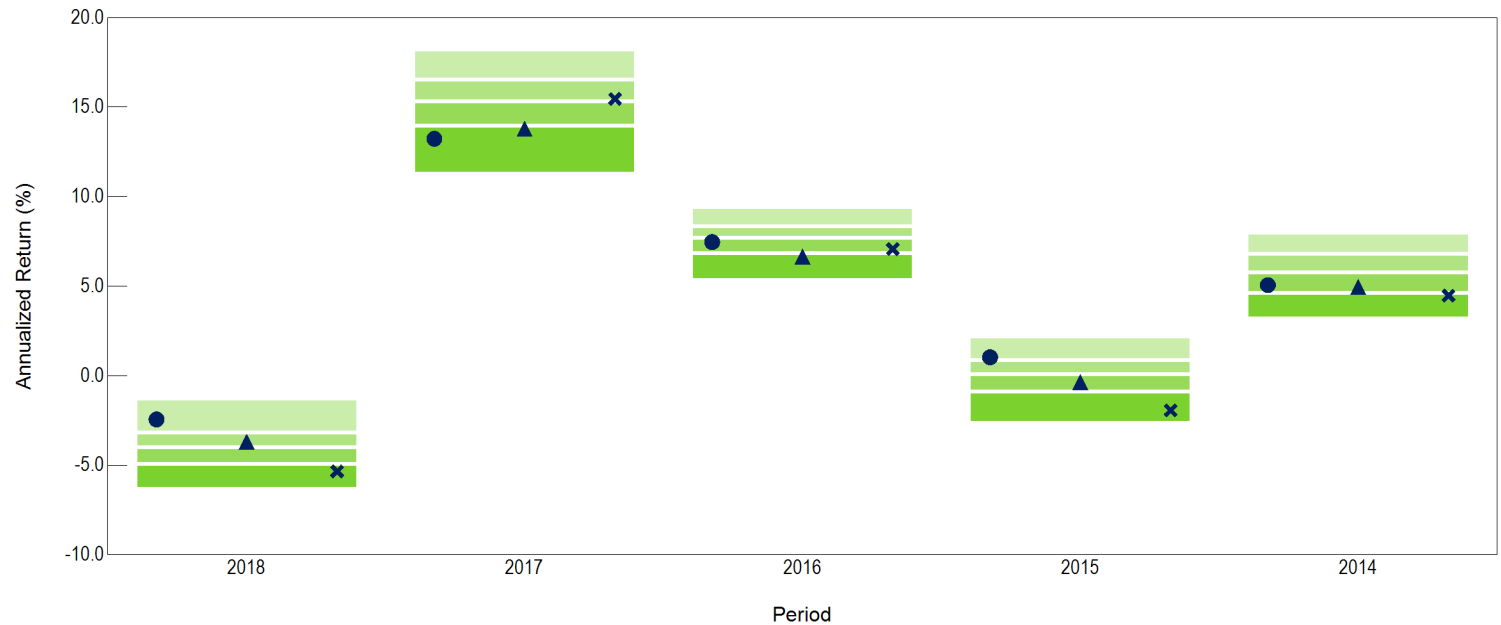


	Return (Rank)											
5th Percentile	1.5	15.2	6.2	9.3	7.6	9.4						
25th Percentile	1.1	14.1	5.0	8.5	6.9	8.6						
Median	0.8	13.0	4.1	8.0	6.5	8.2						
75th Percentile	0.5	11.5	3.3	7.3	5.9	7.5						
95th Percentile	-0.2	10.2	1.6	6.5	5.2	6.7						
# of Portfolios	262	259	256	246	237	199						
● OK POLICE	0.4	(76)	10.1	(96)	2.2	(90)	7.2	(80)	6.0	(75)	7.6	(71)
▲ POLICE Allocation Index	-0.1	(95)	9.6	(99)	2.1	(91)	6.7	(94)	5.2	(95)	7.6	(72)
× POLICE Policy Index	0.7	(60)	12.6	(54)	3.8	(60)	7.3	(79)	5.3	(93)	7.9	(62)



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

OK POLICE vs. InvMetrics Public DB Gross



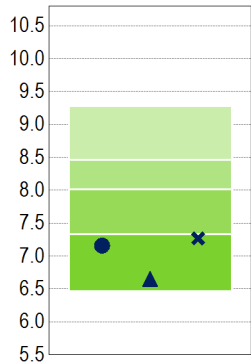
	Return (Rank)									
5th Percentile	-1.3		18.2		9.4		2.2		8.0	
25th Percentile	-3.1		16.5		8.4		0.9		6.8	
Median	-4.0		15.3		7.7		0.1		5.8	
75th Percentile	-4.9		14.0		6.9		-0.9		4.6	
95th Percentile	-6.3		11.3		5.3		-2.6		3.2	
# of Portfolios	319		304		305		316		248	
● OK POLICE	-2.4	(14)	13.2	(86)	7.5	(57)	1.0	(21)	5.1	(68)
▲ POLICE Allocation Index	-3.7	(42)	13.8	(77)	6.7	(80)	-0.4	(63)	5.0	(70)
× POLICE Policy Index	-5.3	(83)	15.5	(48)	7.1	(70)	-1.9	(89)	4.5	(79)



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

OK POLICE vs. InvMetrics Public DB Gross 3 Years

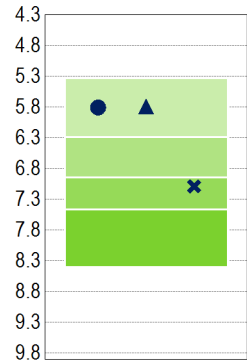
Anlzd Return



● OK POLICE	
Value	7.16
Rank	80
▲ POLICE Allocation Index	
Value	6.65
Rank	94
× POLICE Policy Index	
Value	7.27
Rank	79

Universe	
5th %tile	9.28
25th %tile	8.48
Median	8.03
75th %tile	7.34
95th %tile	6.47

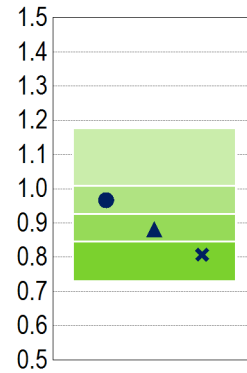
Anlzd Standard Deviation



● OK POLICE	
Value	5.81
Rank	12
▲ POLICE Allocation Index	
Value	5.79
Rank	11
× POLICE Policy Index	
Value	7.09
Rank	59

Universe	
5th %tile	5.34
25th %tile	6.28
Median	6.93
75th %tile	7.46
95th %tile	8.39

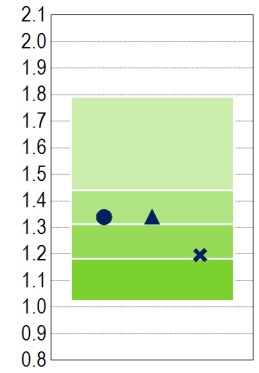
Sharpe Ratio



● OK POLICE	
Value	0.97
Rank	36
▲ POLICE Allocation Index	
Value	0.88
Rank	64
× POLICE Policy Index	
Value	0.81
Rank	90

Universe	
5th %tile	1.18
25th %tile	1.01
Median	0.93
75th %tile	0.85
95th %tile	0.73

Sortino Ratio



● OK POLICE	
Value	1.34
Rank	46
▲ POLICE Allocation Index	
Value	1.34
Rank	45
× POLICE Policy Index	
Value	1.20
Rank	73

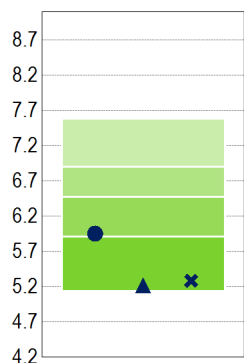
Universe	
5th %tile	1.79
25th %tile	1.44
Median	1.31
75th %tile	1.18
95th %tile	1.03



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

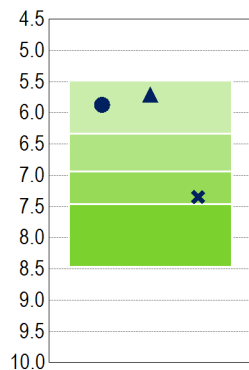
OK POLICE vs. InvMetrics Public DB Gross 5 Years

Anlzd Return



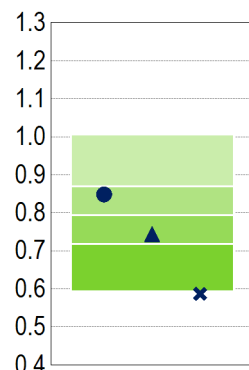
● OK POLICE	
Value	5.95
Rank	75
▲ POLICE Allocation Index	
Value	5.22
Rank	95
× POLICE Policy Index	
Value	5.28
Rank	93
Universe	
5th %tile	7.59
25th %tile	6.92
Median	6.48
75th %tile	5.92
95th %tile	5.15

Anlzd Standard Deviation



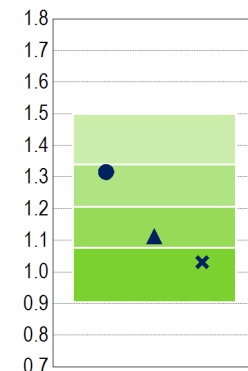
● OK POLICE	
Value	5.87
Rank	13
▲ POLICE Allocation Index	
Value	5.71
Rank	8
× POLICE Policy Index	
Value	7.35
Rank	70
Universe	
5th %tile	5.49
25th %tile	6.33
Median	6.93
75th %tile	7.45
95th %tile	8.46

Sharpe Ratio



● OK POLICE	
Value	0.85
Rank	32
▲ POLICE Allocation Index	
Value	0.74
Rank	69
× POLICE Policy Index	
Value	0.59
Rank	96
Universe	
5th %tile	1.01
25th %tile	0.87
Median	0.80
75th %tile	0.72
95th %tile	0.60

Sortino Ratio

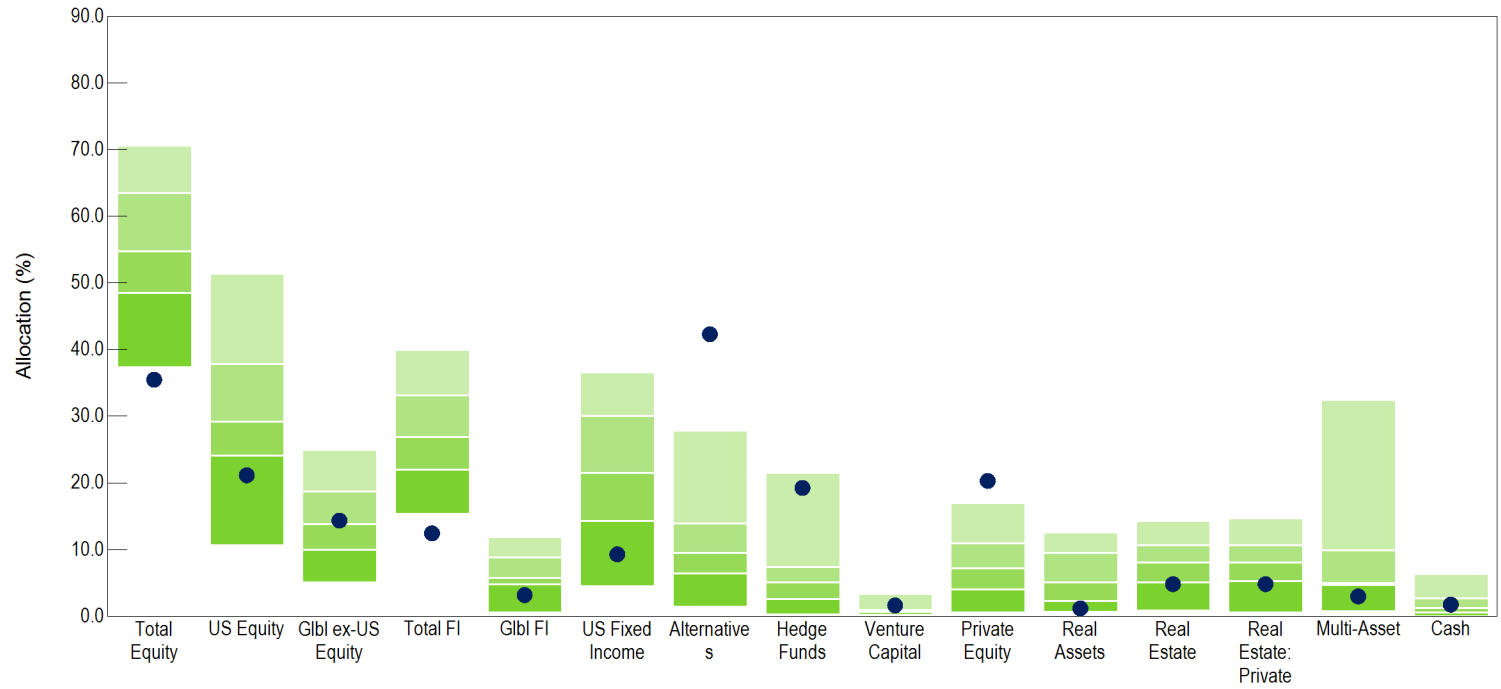


● OK POLICE	
Value	1.32
Rank	29
▲ POLICE Allocation Index	
Value	1.11
Rank	70
× POLICE Policy Index	
Value	1.03
Rank	86
Universe	
5th %tile	1.50
25th %tile	1.34
Median	1.21
75th %tile	1.08
95th %tile	0.91



TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB Gross



	Allocation (Rank)															
5th Percentile	70.6	51.4	24.9	40.0	11.9	36.5	27.8	21.5	3.4	16.9	12.6	14.3	14.7	32.4	6.3	--
25th Percentile	63.6	37.9	18.8	33.2	8.9	30.2	14.0	7.5	1.0	11.0	9.6	10.7	10.7	10.0	2.8	--
Median	54.8	29.3	14.0	26.9	5.8	21.6	9.6	5.2	0.8	7.3	5.2	8.1	8.1	5.1	1.3	--
75th Percentile	48.6	24.2	10.1	22.0	4.9	14.4	6.5	2.7	0.2	4.1	2.4	5.2	5.3	4.8	0.7	--
95th Percentile	37.4	10.7	5.2	15.4	0.7	4.5	1.6	0.4	0.0	0.7	0.8	0.9	0.6	0.9	0.0	--
# of Portfolios	202	135	170	198	25	117	127	64	19	81	50	146	111	54	186	--
● OK POLICE	35.5 (96)	21.1 (83)	14.3 (49)	12.4 (99)	3.2 (83)	9.3 (90)	42.3 (1)	19.2 (6)	1.6 (9)	20.3 (3)	1.2 (91)	4.8 (80)	4.8 (83)	3.0 (90)	1.7 (41)	--



TOTAL FUND ATTRIBUTION ANALYSIS

Performance Attribution			
	Last 3 Mo.	YTD	1 Yr
Wtd. Actual Return	0.5%	10.3%	2.5%
Wtd. Index Return *	0.6%	12.5%	3.7%
Excess Return	0.0%	-2.2%	-1.2%
Selection Effect	-0.1%	-2.7%	-1.7%
Allocation Effect	0.1%	0.1%	-0.1%
Interaction Effect	0.1%	0.5%	0.6%
Asset Class Returns			
OK POLICE	0.4%	10.1%	2.2%
Equity	0.3%	13.6%	1.2%
Equity Composite	-0.2%	15.9%	-0.5%
Domestic Equity Composite	0.4%	19.0%	0.4%
International Equity Composite	-1.3%	10.6%	-2.0%
Total Long/Short	-0.9%	9.9%	0.5%
Private Equity	4.7%	9.9%	12.5%
Fixed Income	1.1%	6.7%	5.9%
Fixed Income Composite	1.2%	8.1%	7.5%
Total Low Volatility Strategies	0.4%	3.6%	1.9%
Private Credit	2.4%	6.1%	8.9%
Total Real Assets	0.0%	2.1%	1.0%
Real Estate	1.2%	3.8%	6.9%
Total Core Real Estate	0.7%	2.8%	5.0%
Private Real Estate	3.2%	7.2%	13.7%
Commodity	-3.0%	-8.8%	-19.3%



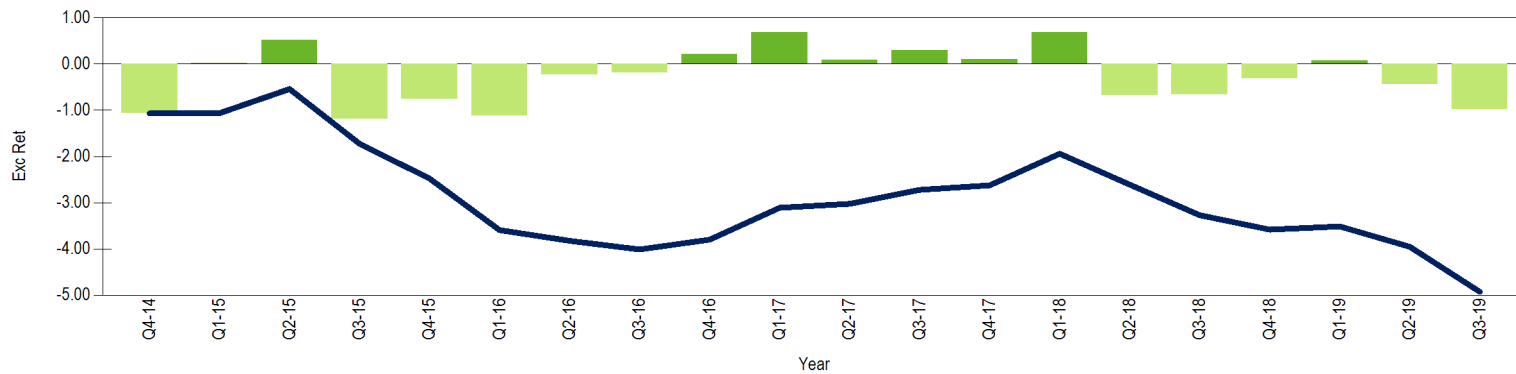
OKLAHOMA LAW



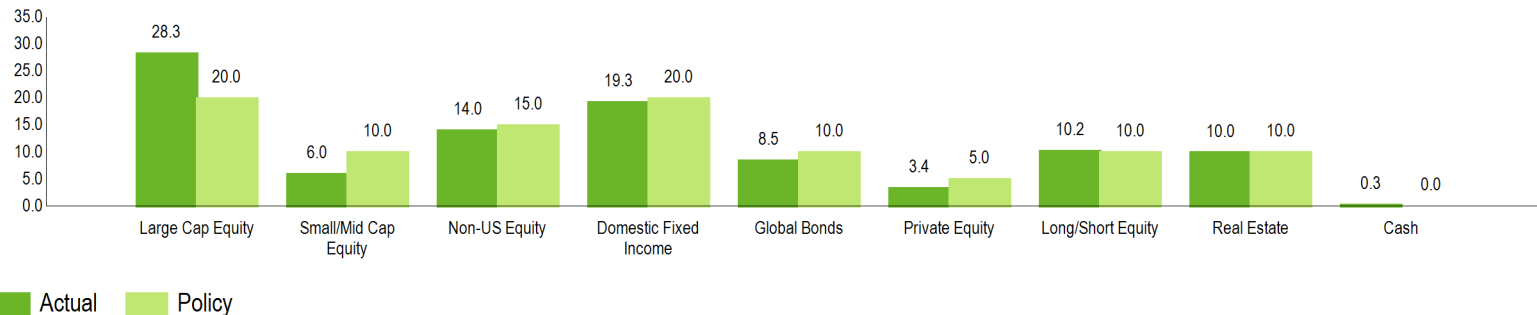
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK LAW	\$998,155,136	-0.2%	95	11.2%	80	2.0%	92	7.4%	73	5.8%	82	8.1%	52
LAW Allocation Index		0.8%	46	11.4%	78	3.5%	70	7.6%	68	6.5%	49	8.2%	51
LAW Policy Index		0.8%	52	12.7%	54	3.7%	62	7.8%	60	6.8%	30	8.4%	37
InvMetrics Public DB Gross Median		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



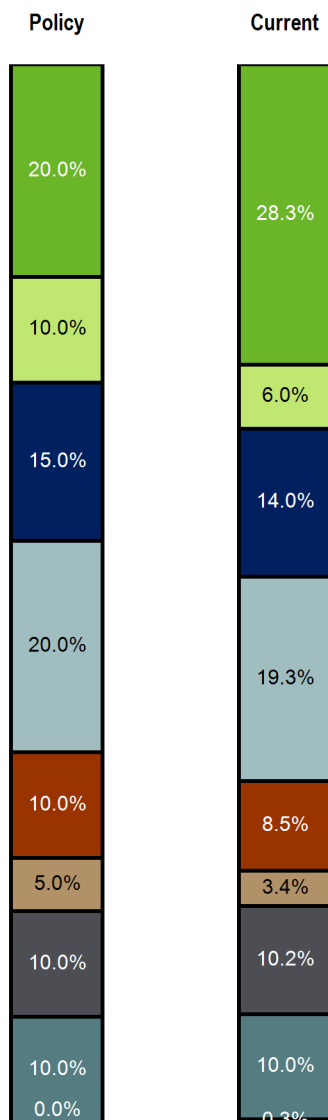
Actual vs Target Allocation (%)



Returns are gross of manager fees.



TOTAL FUND ASSET ALLOCATION VS. POLICY



Asset Allocation vs. Target							
	Current	Policy	Current	Difference*	Policy Range	Within Range	
Large Cap Equity	\$282,849,411	20.0%	28.3%	8.3%	15.0% - 25.0%	No	
Small/Mid Cap Equity	\$60,093,993	10.0%	6.0%	-4.0%	5.0% - 15.0%	Yes	
Non-US Equity	\$139,966,389	15.0%	14.0%	-1.0%	5.0% - 15.0%	Yes	
Domestic Fixed Income	\$192,986,615	20.0%	19.3%	-0.7%	15.0% - 25.0%	Yes	
Global Bonds	\$84,360,558	10.0%	8.5%	-1.5%	5.0% - 15.0%	Yes	
Private Equity	\$33,585,516	5.0%	3.4%	-1.6%	0.0% - 5.0%	Yes	
Long/Short Equity	\$101,933,803	10.0%	10.2%	0.2%	5.0% - 15.0%	Yes	
Real Estate	\$99,403,861	10.0%	10.0%	0.0%	2.0% - 12.0%	Yes	
Cash	\$2,974,990	0.0%	0.3%	0.3%	0.0% - 5.0%	Yes	
Total	\$998,155,136	100.0%	100.0%				



OKLAHOMA JUDGES

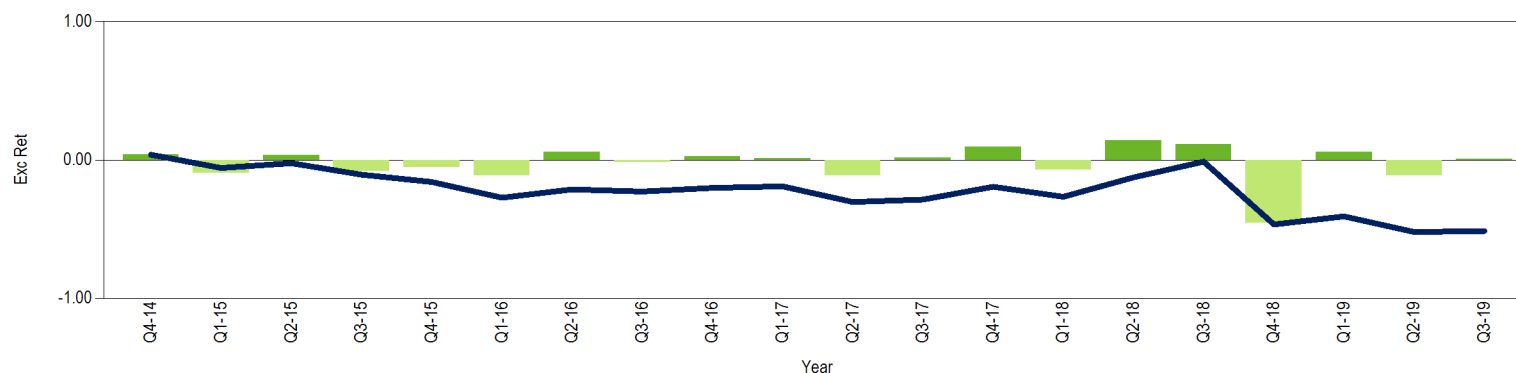


Oklahoma Judges

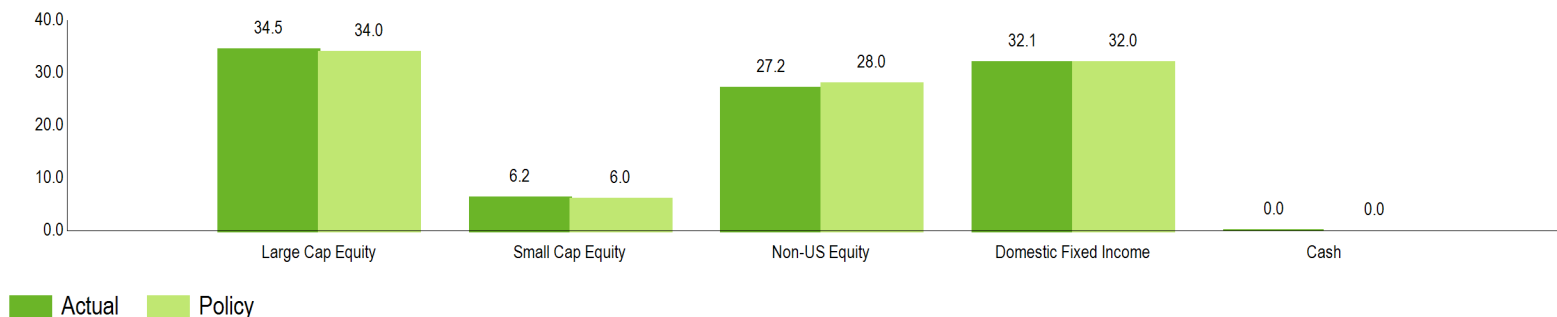
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo Rank	YTD Rank	1 Yr Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank						
OK JUDGES	\$346,399,110	0.8%	51	14.5%	15	4.0%	55	8.0%	55	6.5%	49	8.2%	46
<i>JUDGES Allocation Index</i>		0.7%	60	14.1%	24	3.7%	63	7.7%	61	6.3%	59	7.8%	63
<i>JUDGES Policy Index</i>		0.8%	52	14.5%	14	4.6%	38	8.1%	49	6.6%	42	8.2%	51
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



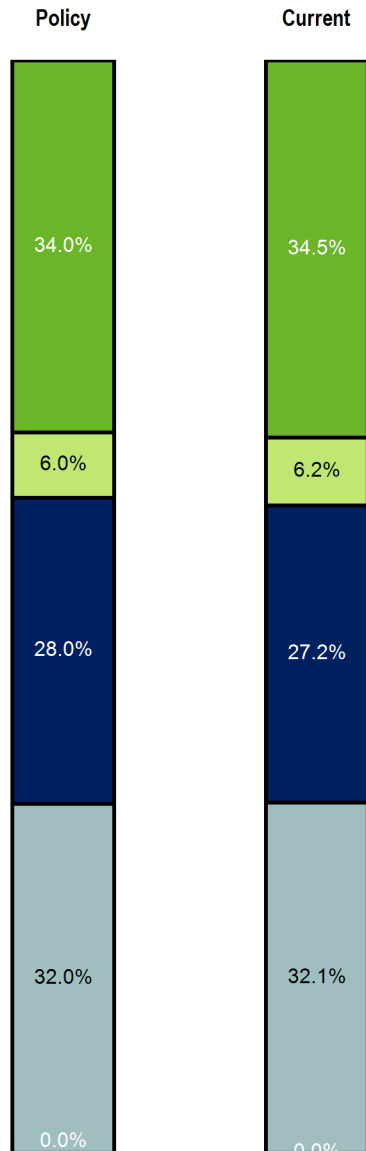
Actual vs Target Allocation (%)



Returns are gross of manager fees.



TOTAL FUND ASSET ALLOCATION VS. POLICY



Asset Allocation vs. Target						
	Current	Policy	Current Difference*	Policy Range	Within Range	
Large Cap Equity	\$119,475,118	34.0%	34.5%	0.5%	31.2% - 36.8%	Yes
Small Cap Equity	\$21,594,362	6.0%	6.2%	0.2%	3.2% - 8.8%	Yes
Non-US Equity	\$94,198,487	28.0%	27.2%	-0.8%	25.0% - 31.0%	Yes
Domestic Fixed Income	\$111,058,782	32.0%	32.1%	0.1%	27.5% - 36.5%	Yes
Cash	\$72,361	0.0%	0.0%	0.0%	0.0% - 5.0%	Yes
Total	\$346,399,110	100.0%	100.0%			

*Difference between Policy and Current Allocation



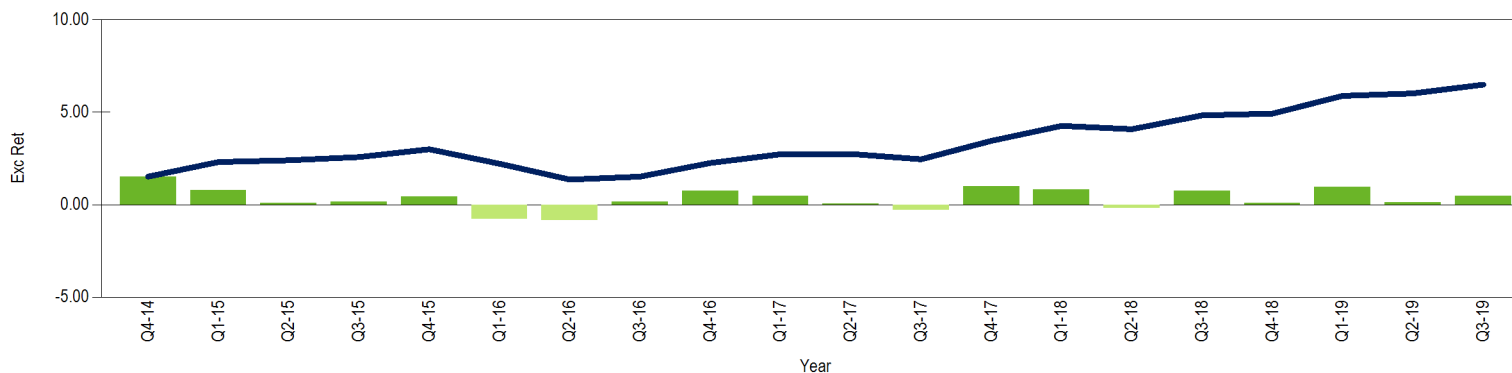
OKLAHOMA WILDLIFE



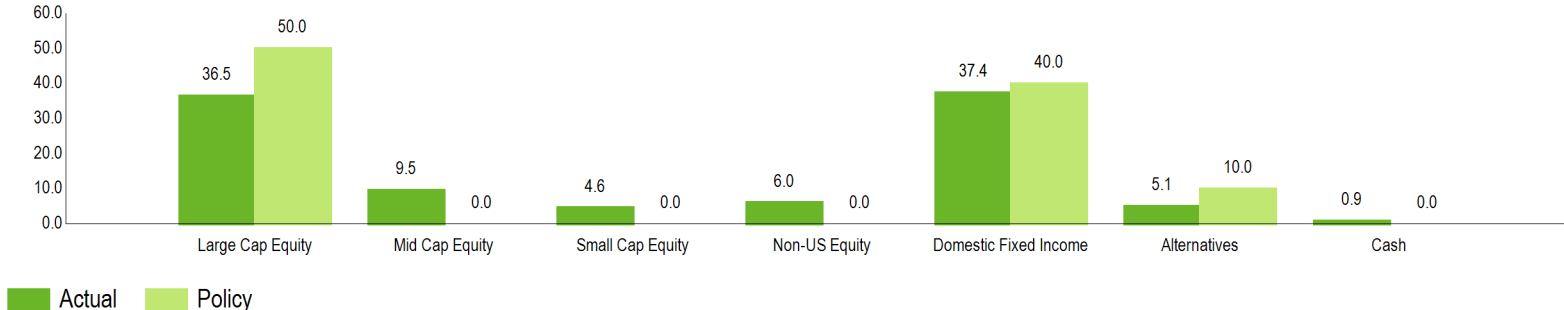
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
OK WILDLIFE	\$117,130,306	1.1%	23	14.0%	28	5.1%	24	8.1%	45	6.7%	36	7.8%	64
<i>WILDLIFE Allocation Index</i>		1.3%	10	14.4%	16	5.5%	12	8.3%	30	7.0%	23	7.9%	60
<i>WILDLIFE Policy Index</i>		0.6%	65	12.3%	60	3.4%	73	6.4%	96	5.4%	91	7.5%	72
<i>InvMetrics Public DB Gross Median</i>		0.8%		13.0%		4.1%		8.0%		6.5%		8.2%	

Quarterly and Cumulative Excess Performance



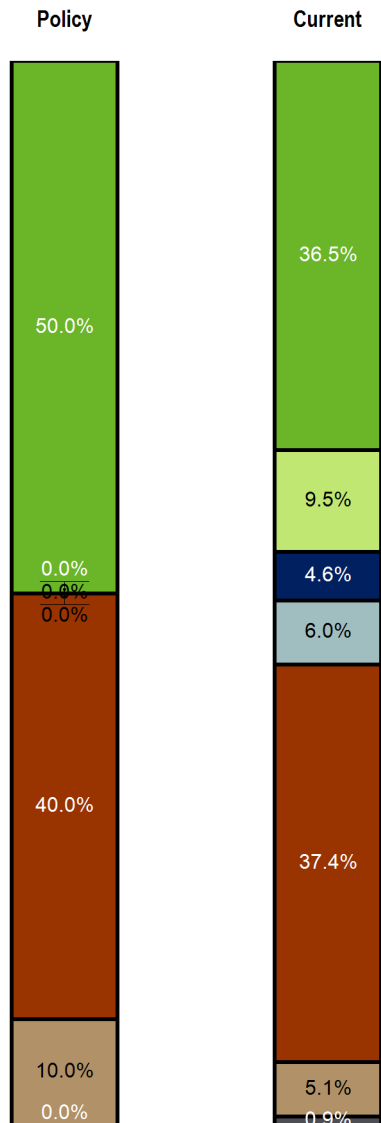
Actual vs Target Allocation (%)



Returns are gross of manager fees.



TOTAL FUND ASSET ALLOCATION VS. POLICY



Asset Allocation vs. Target						
	Current	Policy	Current	Difference*	Policy Range	Within Range
Large Cap Equity	\$42,794,365	50.0%	36.5%	-13.5%	40.0% - 65.0%	No
Mid Cap Equity	\$11,173,495	0.0%	9.5%	9.5%	0.0% - 10.0%	Yes
Small Cap Equity	\$5,365,662	0.0%	4.6%	4.6%	0.0% - 10.0%	Yes
Non-US Equity	\$7,084,522	0.0%	6.0%	6.0%	0.0% - 15.0%	Yes
Domestic Fixed Income	\$43,761,052	40.0%	37.4%	-2.6%	35.0% - 55.0%	Yes
Alternatives	\$5,955,148	10.0%	5.1%	-4.9%	0.0% - 10.0%	Yes
Cash	\$996,061	0.0%	0.9%	0.9%	0.0% - 5.0%	Yes
Total	\$117,130,306	100.0%	100.0%			

*Difference between Policy and Current Allocation



Information Disclaimer

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

Reporting Methodology

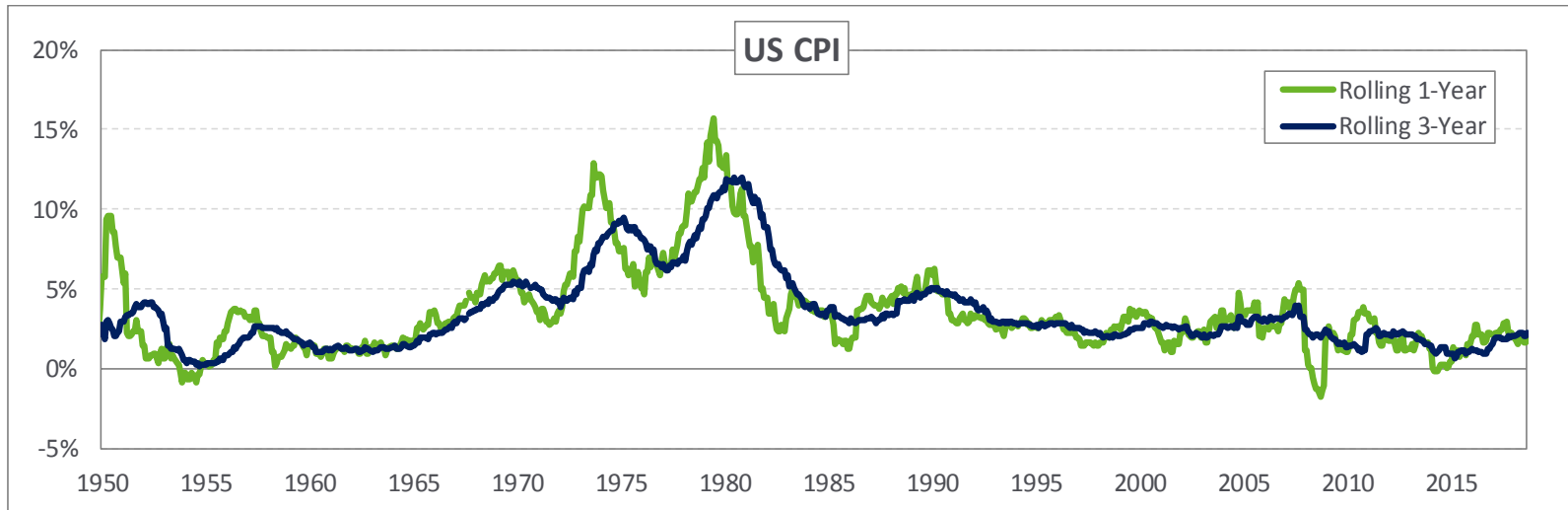
- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding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



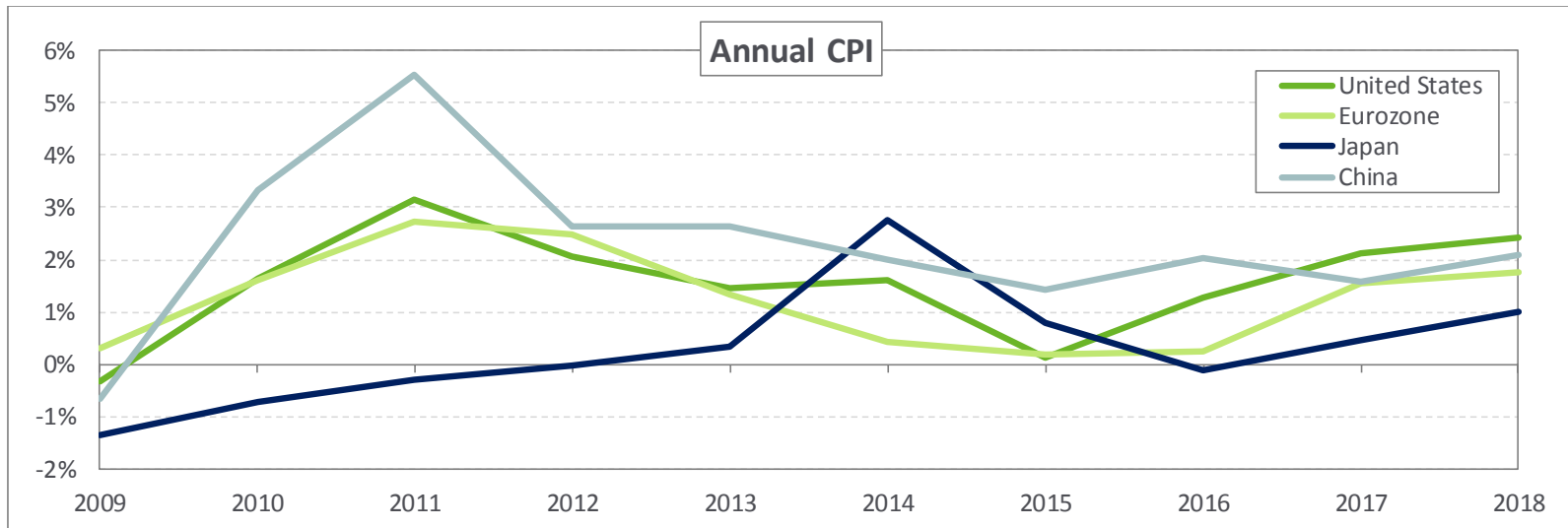
MACRO

NEPC, LLC

INFLATION



Source: Bureau of Labor Statistics, FactSet



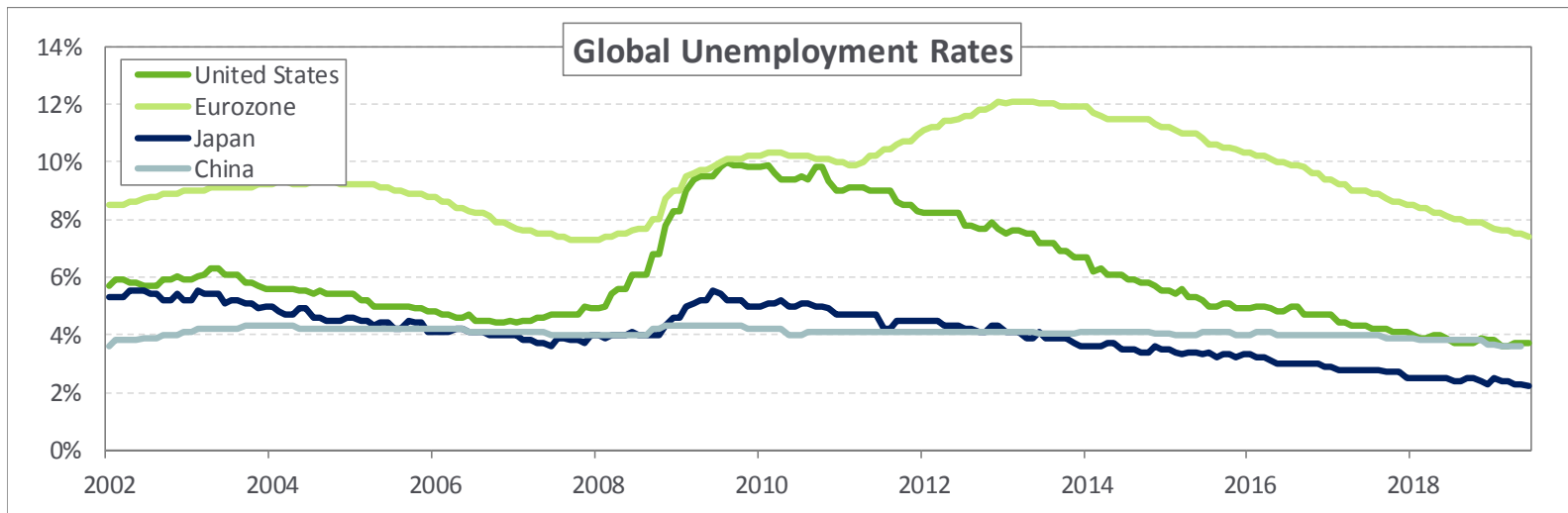
Source: FactSet



UNEMPLOYMENT



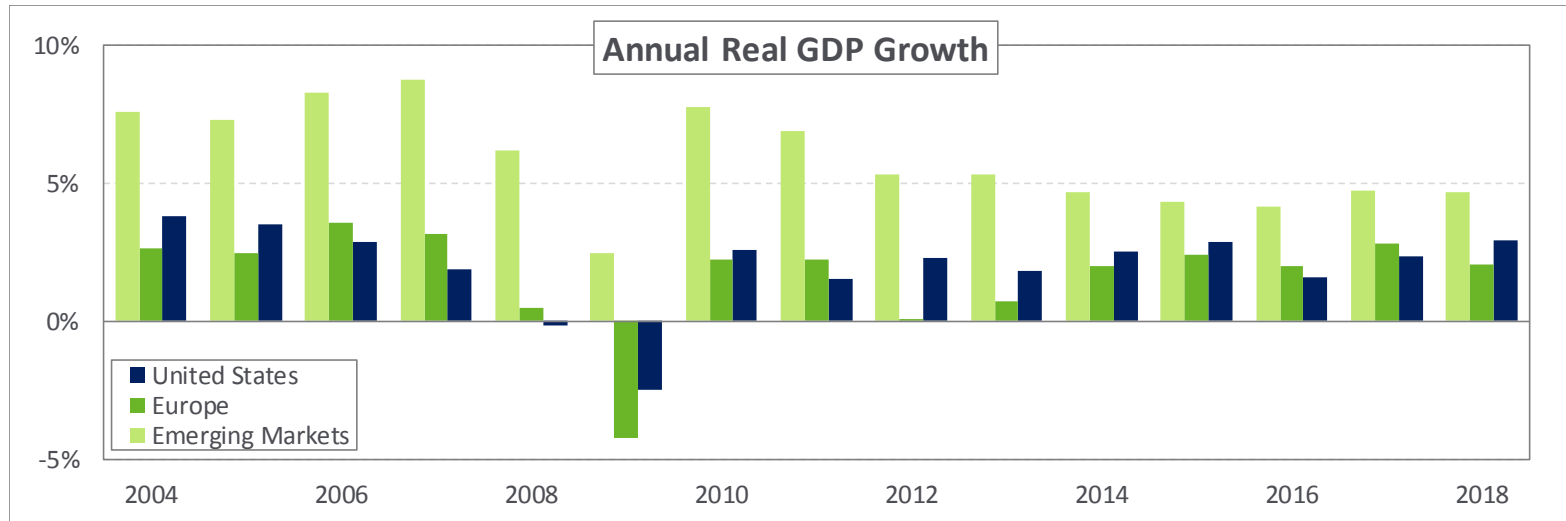
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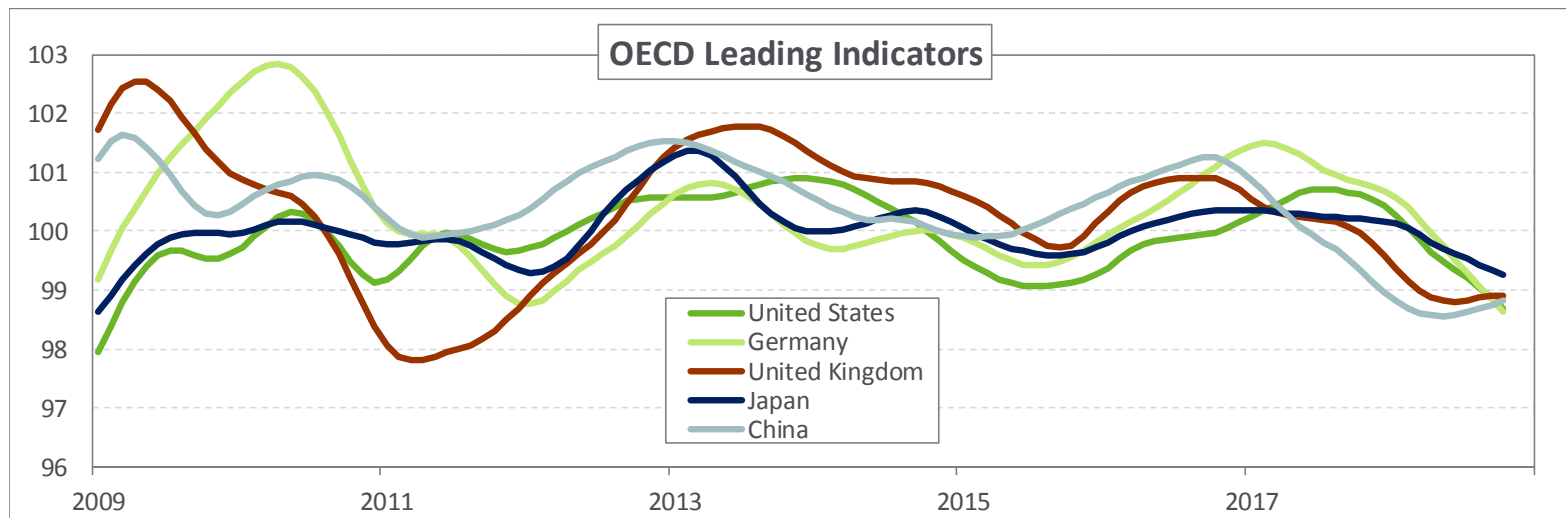
Source: FactSet



ECONOMIC INDICATORS



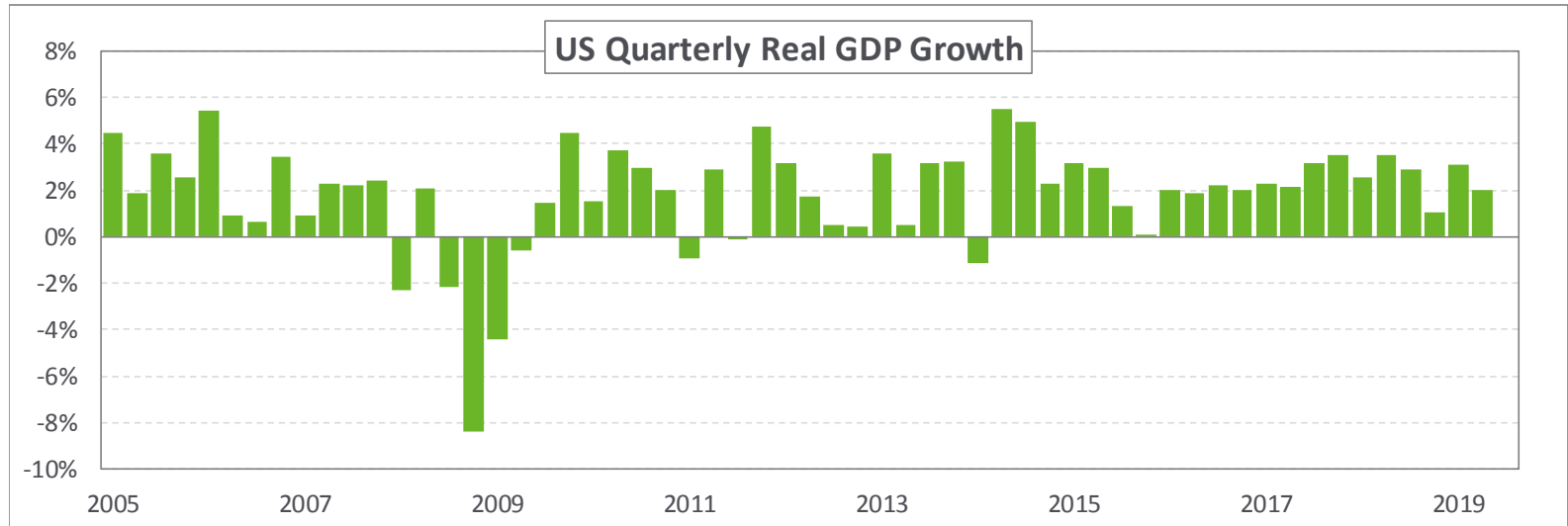
Source: Bureau of Economic Analysis, Oxford Economics, FactSet



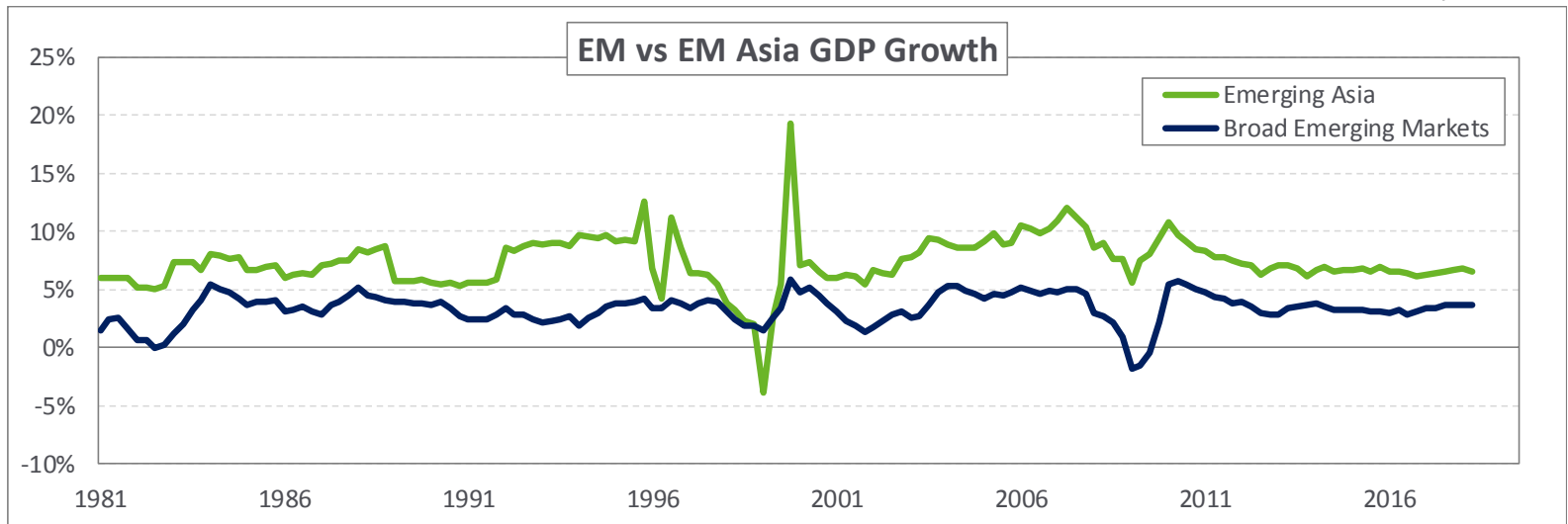
Source: OECD, FactSet



GROSS DOMESTIC PRODUCT



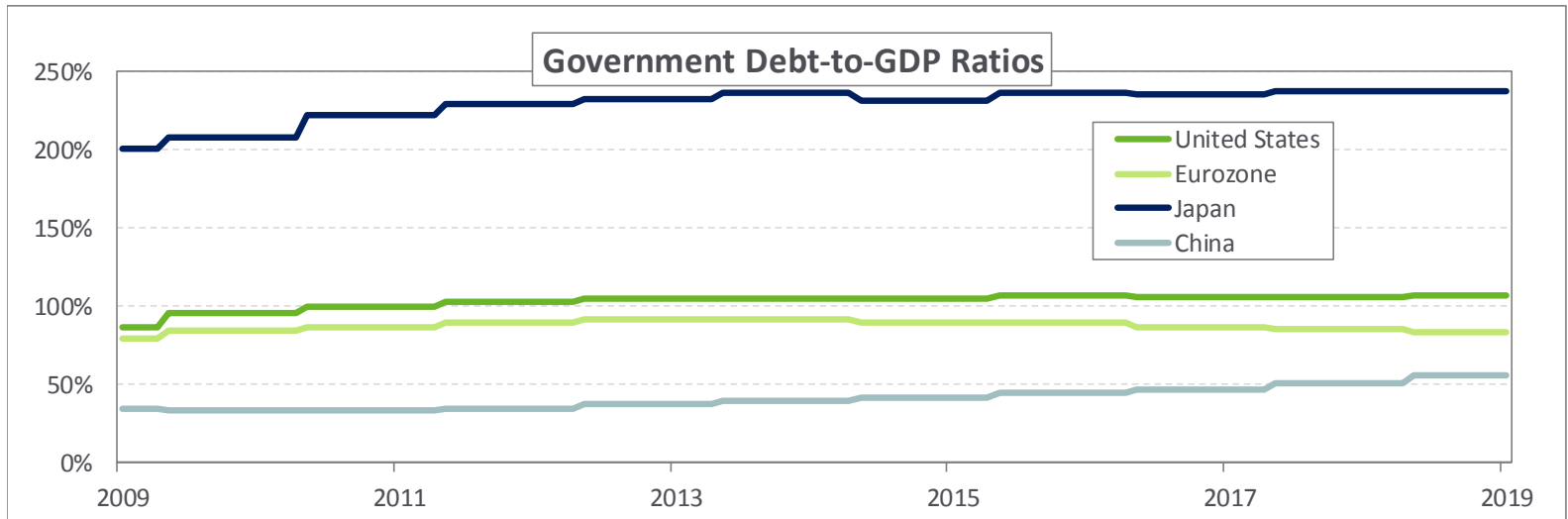
Source: Bureau of Economic Analysis, FactSet



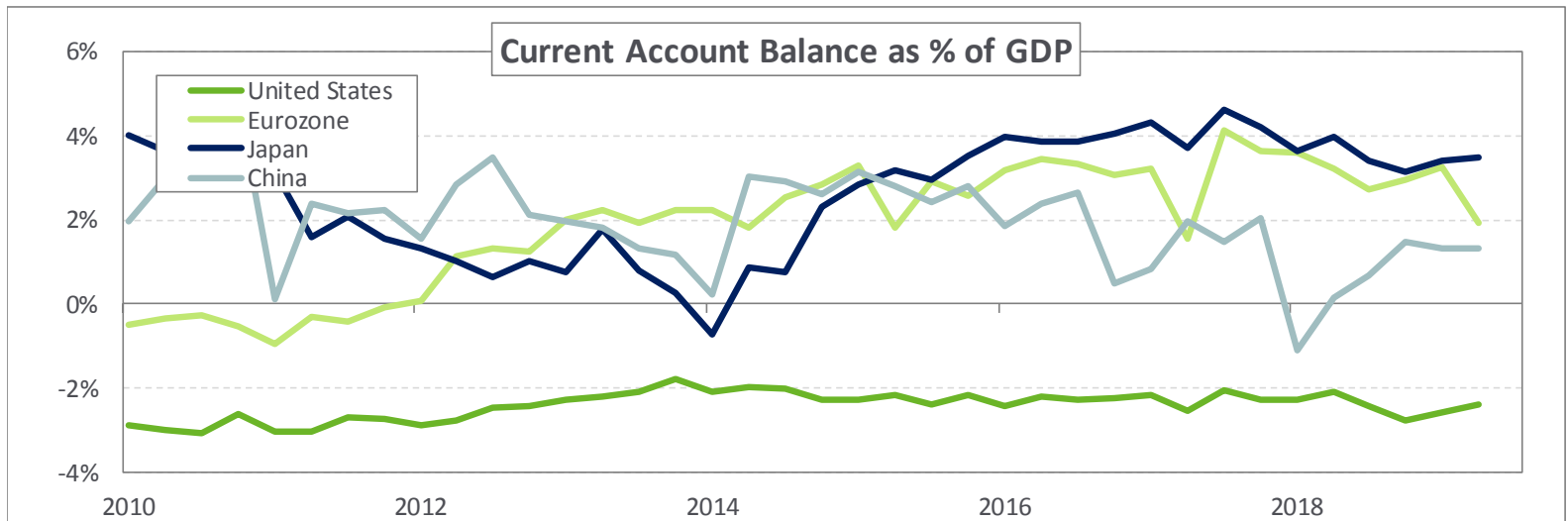
Source: IMF, FactSet



GROSS DOMESTIC PRODUCT METRICS



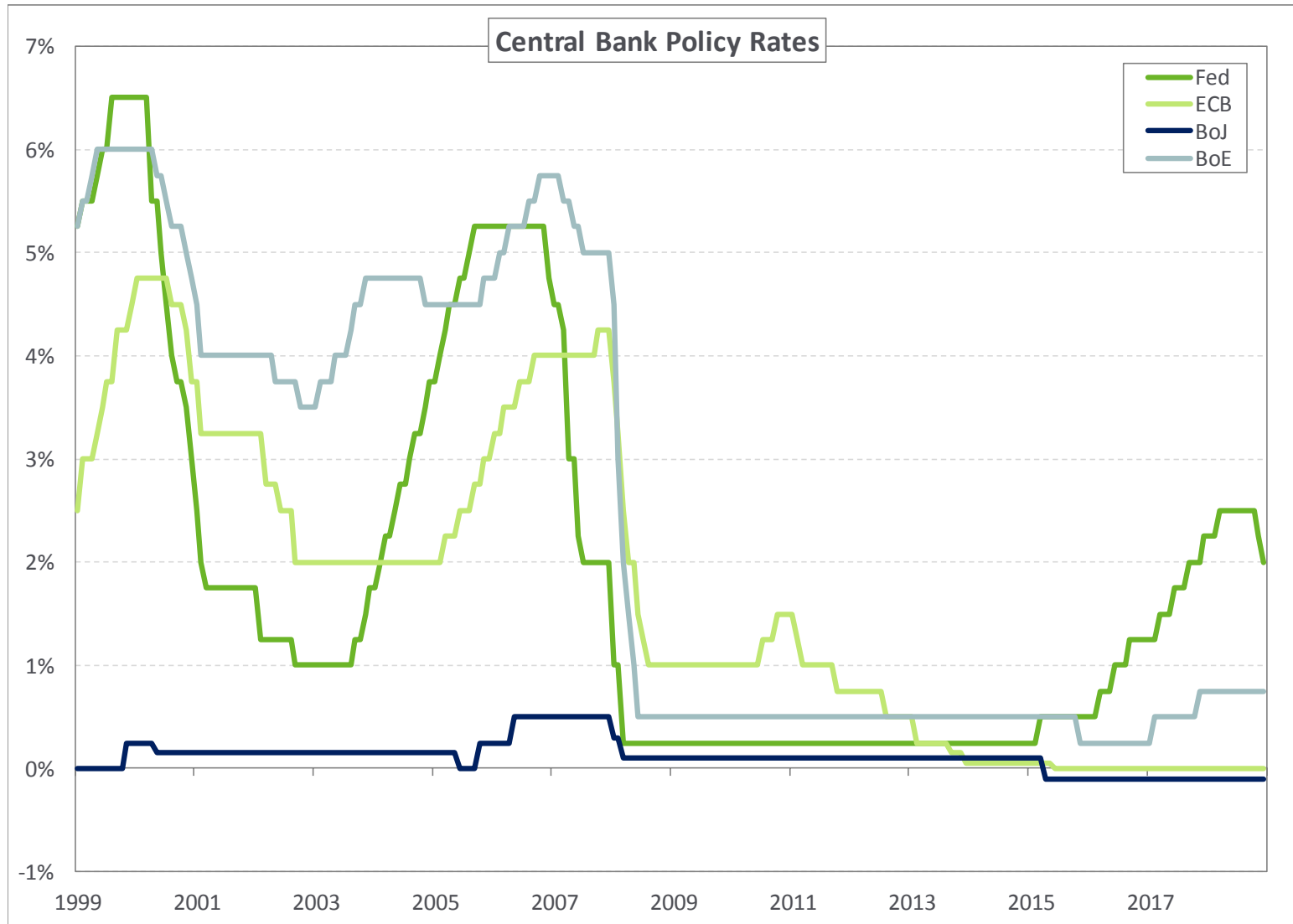
Source: IMF, FactSet



Source: FactSet



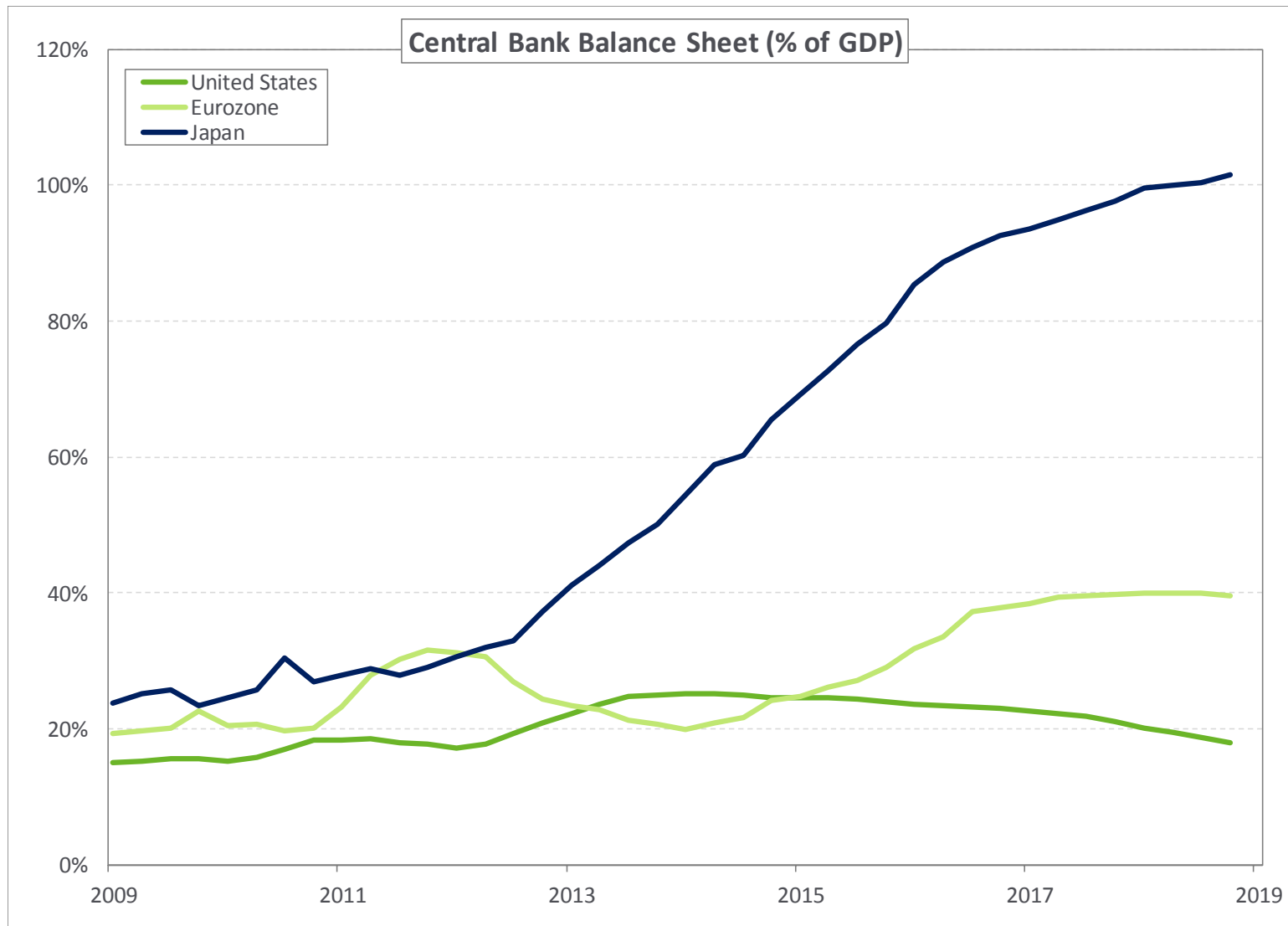
CENTRAL BANK RATES



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



CENTRAL BANK BALANCE SHEETS



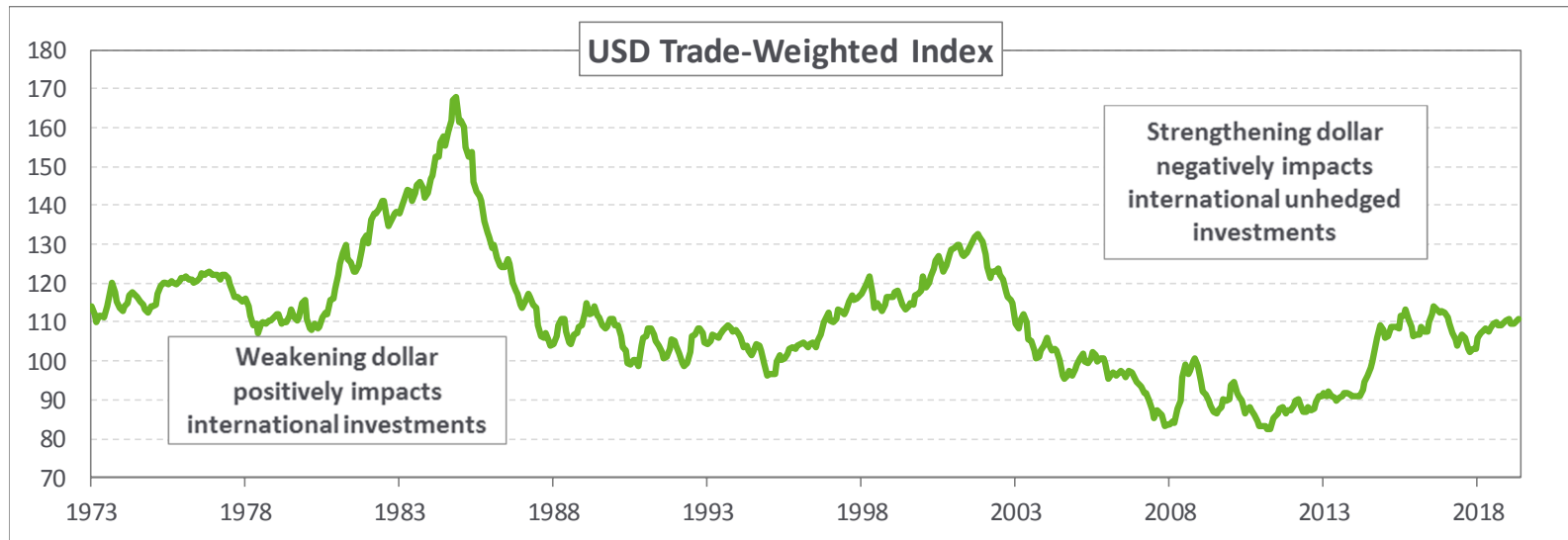
Source: FactSet



CURRENCIES

Currencies	% Change Relative to USD			
	Spot	1 Month	YTD	1 Year
Euro	1.09	-1.00%	-4.63%	-5.89%
British Pound	1.23	1.19%	-3.24%	-5.53%
Japanese Yen	108.08	1.82%	-1.49%	-5.16%
Swiss Franc	1.00	0.78%	1.15%	1.38%
Australian Dollar	0.67	0.10%	-4.20%	-6.58%
Chinese Yuan	7.14	-0.10%	3.97%	3.75%
Brazilian Real	4.17	0.80%	7.47%	3.40%
Russian Ruble	64.88	-2.60%	-6.47%	-0.98%
Indian Rupee	70.87	-0.75%	1.51%	-2.74%
Mexican Peso	19.74	-1.61%	0.26%	5.78%
South African Rand	15.16	-0.14%	5.40%	6.76%

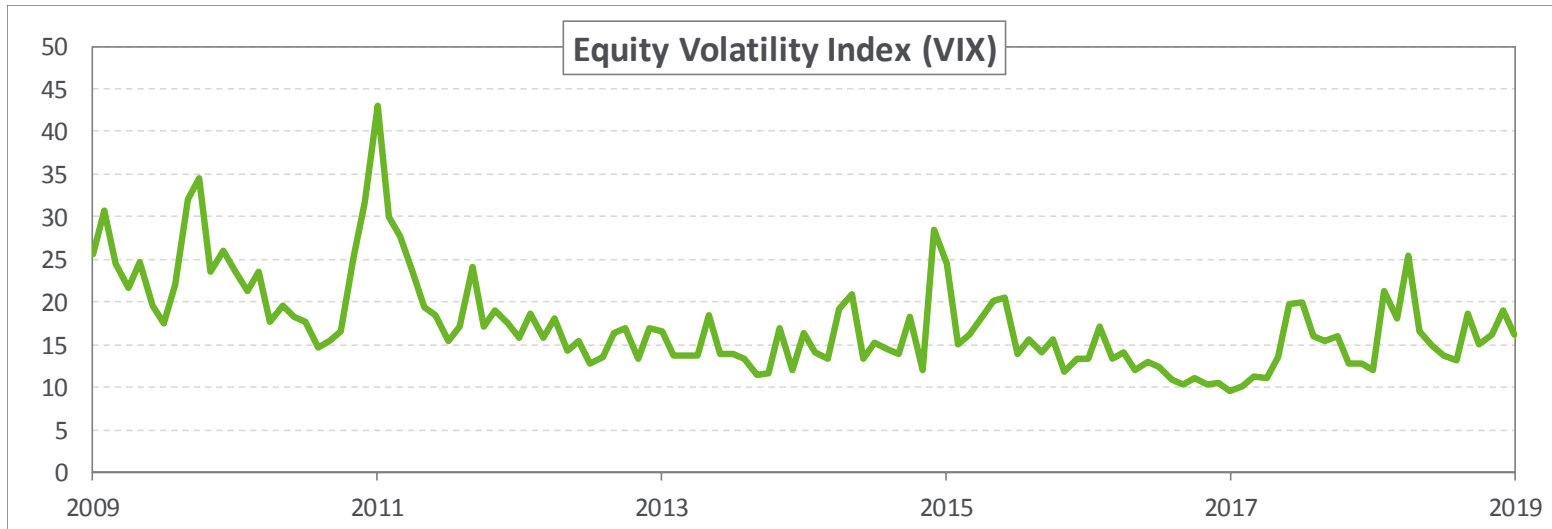
Source: FactSet



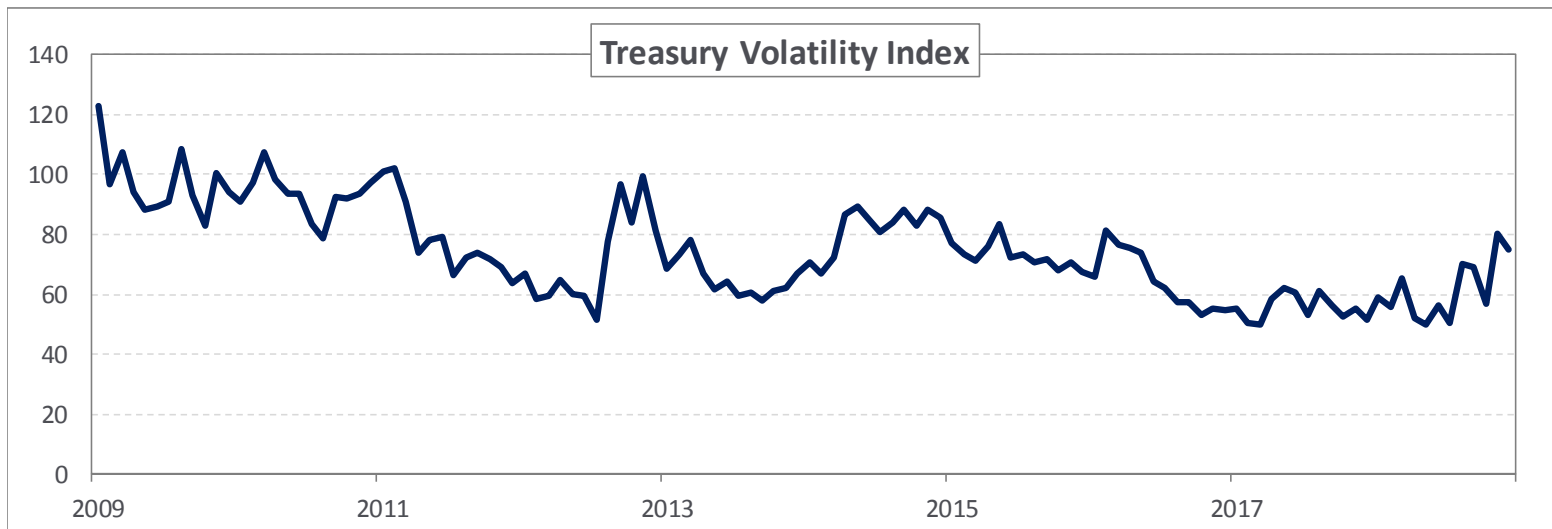
Source: FactSet



VOLATILITY



Source: CBOE, FactSet



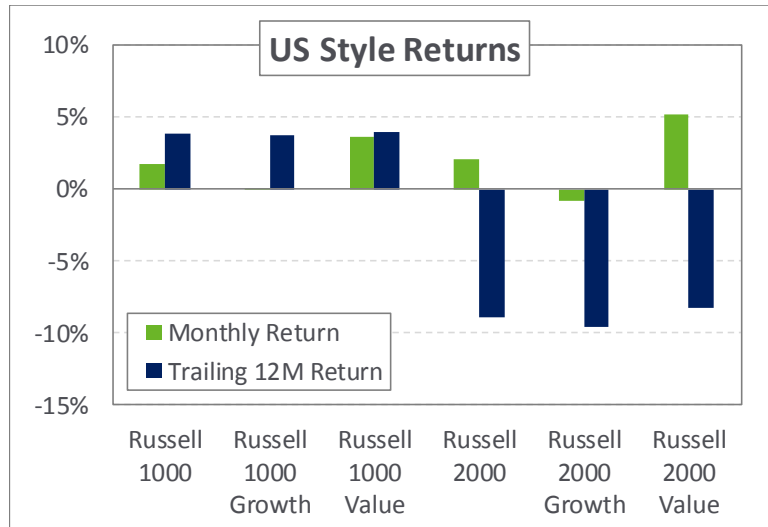
Source: Merrill Lynch, FactSet



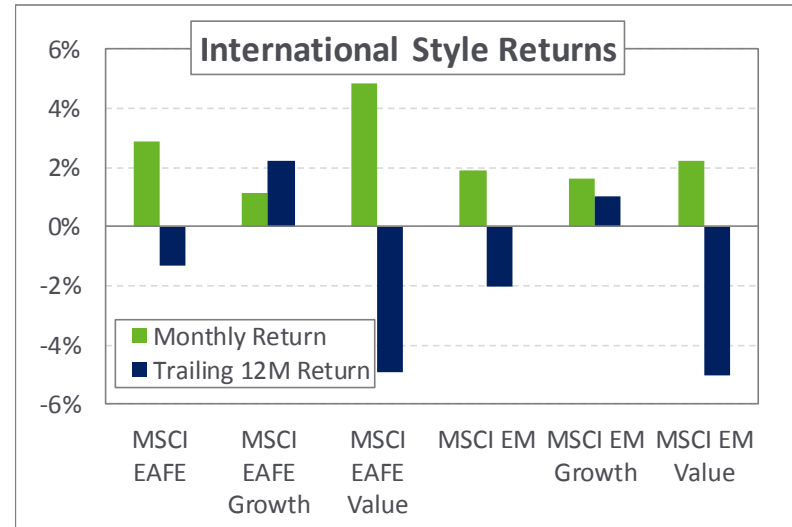
EQUITY

NEPC, LLC

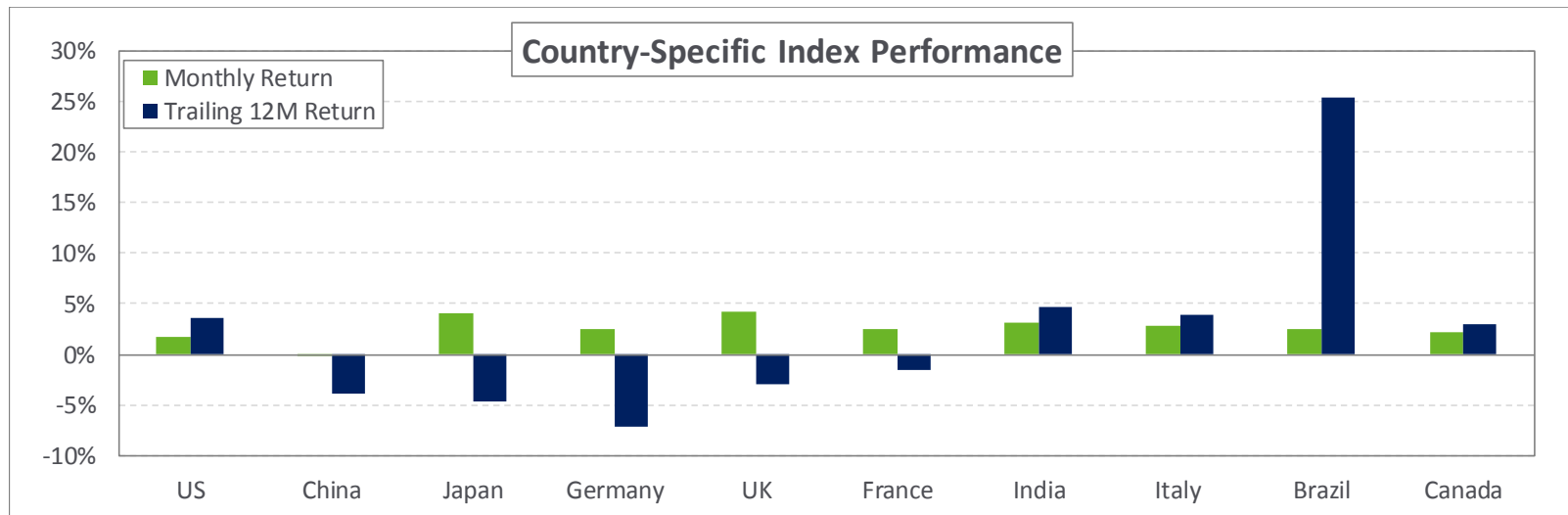
EQUITY INDEX PERFORMANCE



Source: Russell, FactSet



Source: MSCI, FactSet



Source: MSCI, FactSet
Represents returns in USD



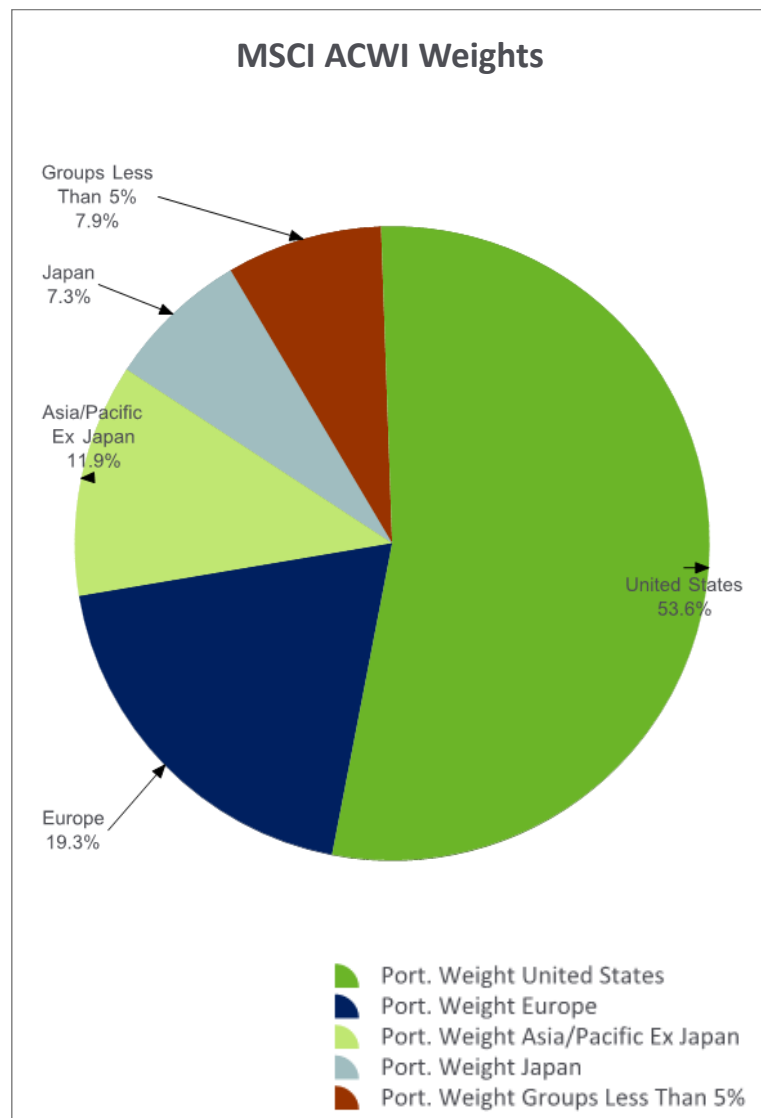
INDEX COMPOSITION

	MTD	QTD	YTD	Index Weight
S&P 500	1.9%	1.7%	20.6%	100.0%
Communication Services	0.0%	0.2%	2.2%	10.4%
Consumer Discretionary	0.1%	0.1%	2.3%	10.1%
Consumer Staples	0.1%	0.5%	1.7%	7.6%
Energy	0.2%	-0.3%	0.4%	4.5%
Financials	0.6%	0.2%	2.6%	12.9%
Health Care	0.0%	-0.3%	1.0%	13.7%
Industrials	0.3%	0.1%	2.1%	9.3%
Information Technology	0.3%	0.7%	6.0%	21.9%
Materials	0.1%	0.0%	0.5%	2.7%
Real Estate	0.0%	0.2%	0.9%	3.2%
Utilities	0.1%	0.3%	0.9%	3.6%

Source: S&P, FactSet

	MTD	QTD	YTD	Index Weight
MSCI ACWI	2.1%	0.0%	16.2%	100.0%
Communication Services	0.0%	0.0%	1.3%	8.8%
Consumer Discretionary	0.1%	0.0%	1.9%	10.8%
Consumer Staples	0.1%	0.3%	1.5%	8.6%
Energy	0.2%	-0.3%	0.5%	5.5%
Financials	0.8%	-0.2%	2.3%	16.7%
Health Care	0.0%	-0.2%	1.0%	11.3%
Industrials	0.3%	-0.1%	1.8%	10.5%
Information Technology	0.3%	0.4%	3.9%	16.3%
Materials	0.1%	-0.2%	0.5%	4.7%
Real Estate	0.0%	0.1%	0.6%	3.3%
Utilities	0.1%	0.2%	0.6%	3.5%

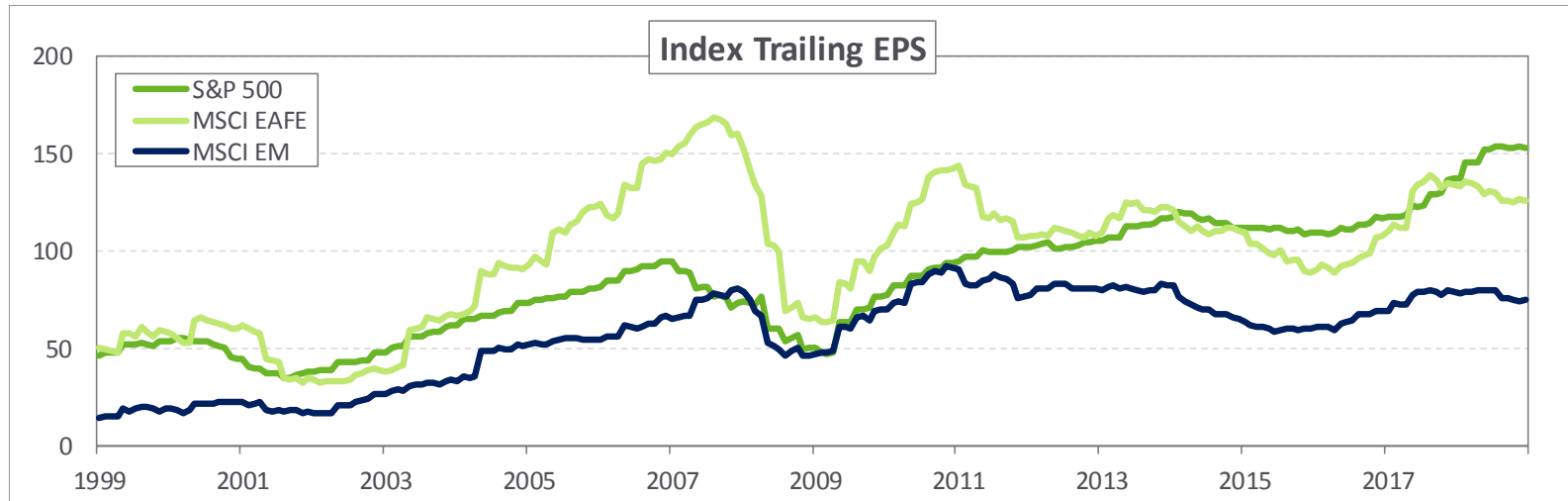
Source: MSCI, FactSet



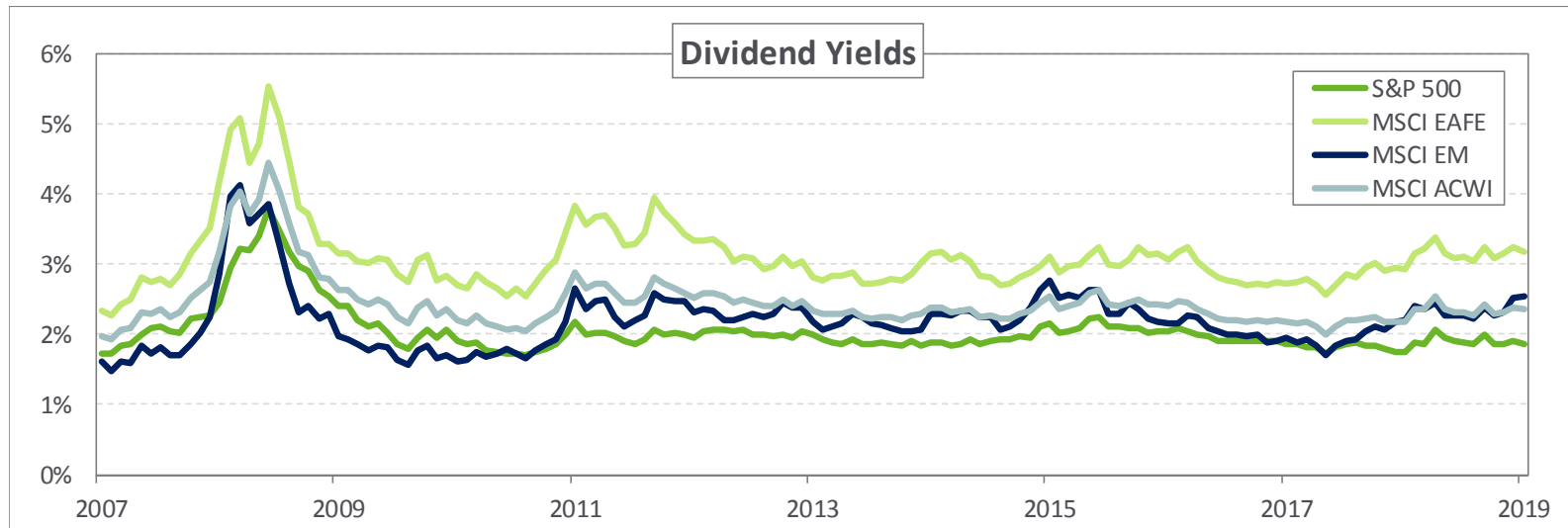
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EARNINGS & YIELDS



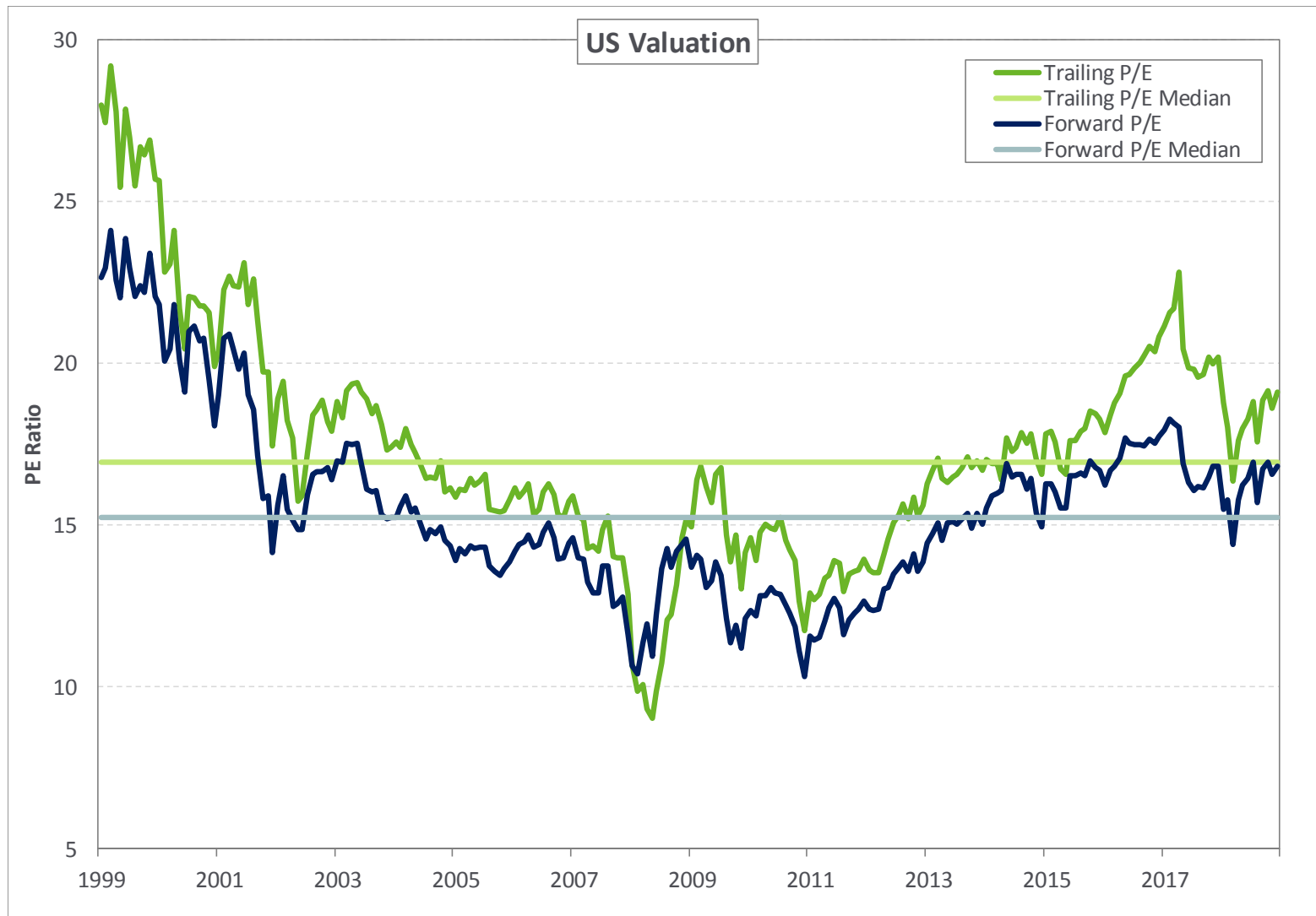
Source: FactSet



Source: FactSet



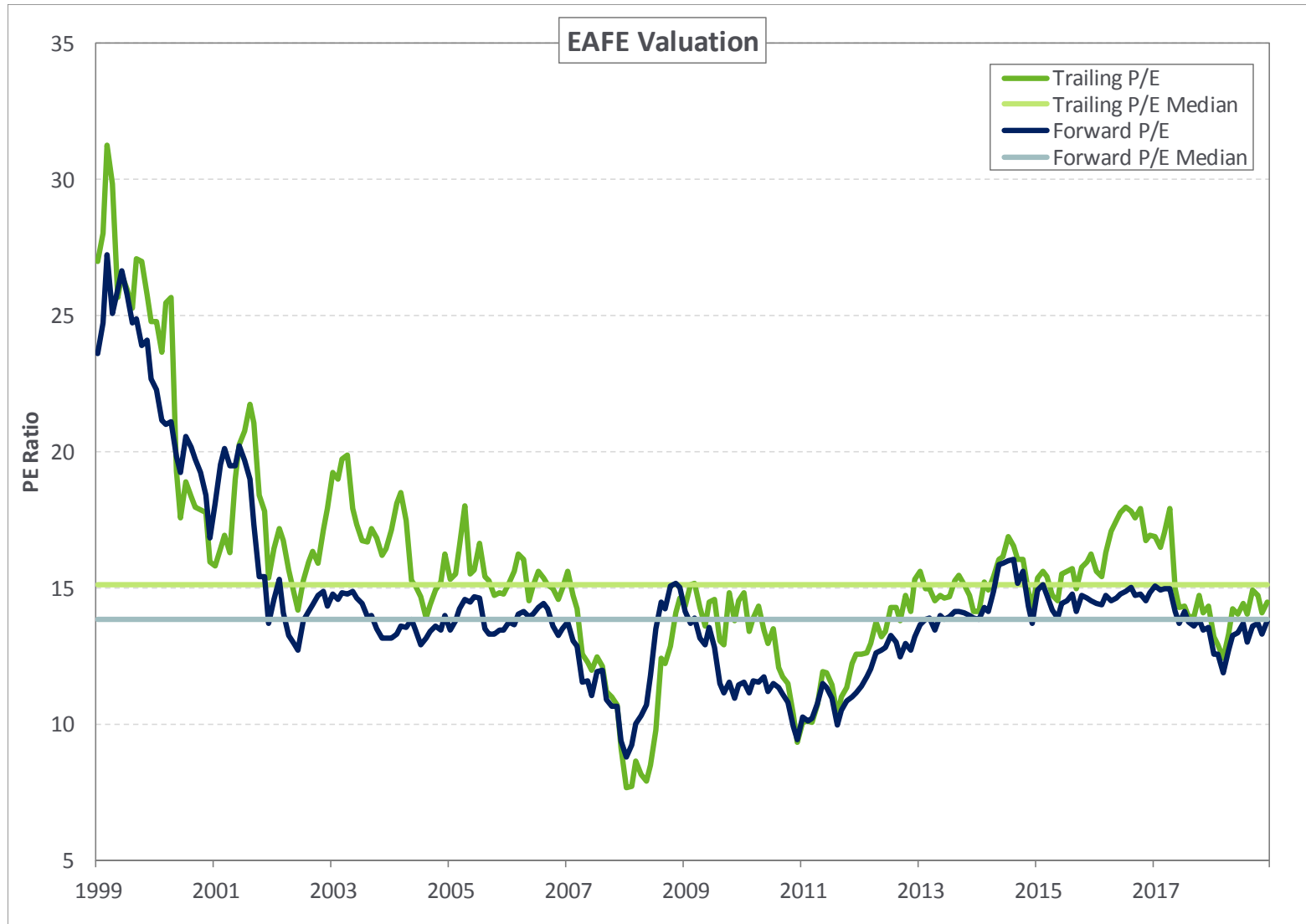
US EQUITY VALUATIONS



Source: S&P, FactSet



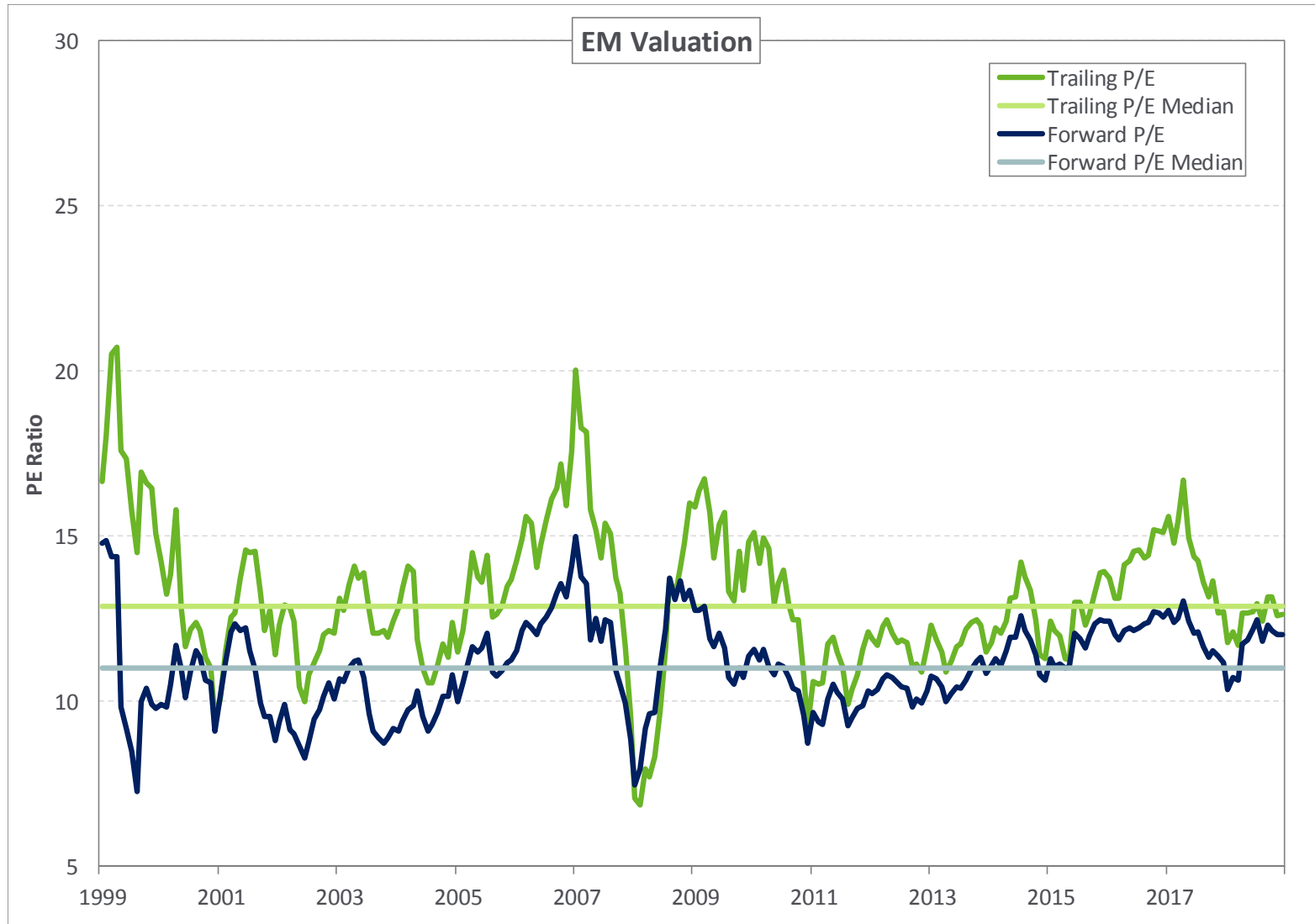
EAFE EQUITY VALUATIONS



Source: MSCI, FactSet



EM EQUITY VALUATIONS



Source: MSCI, FactSet



CREDIT

NEPC, LLC

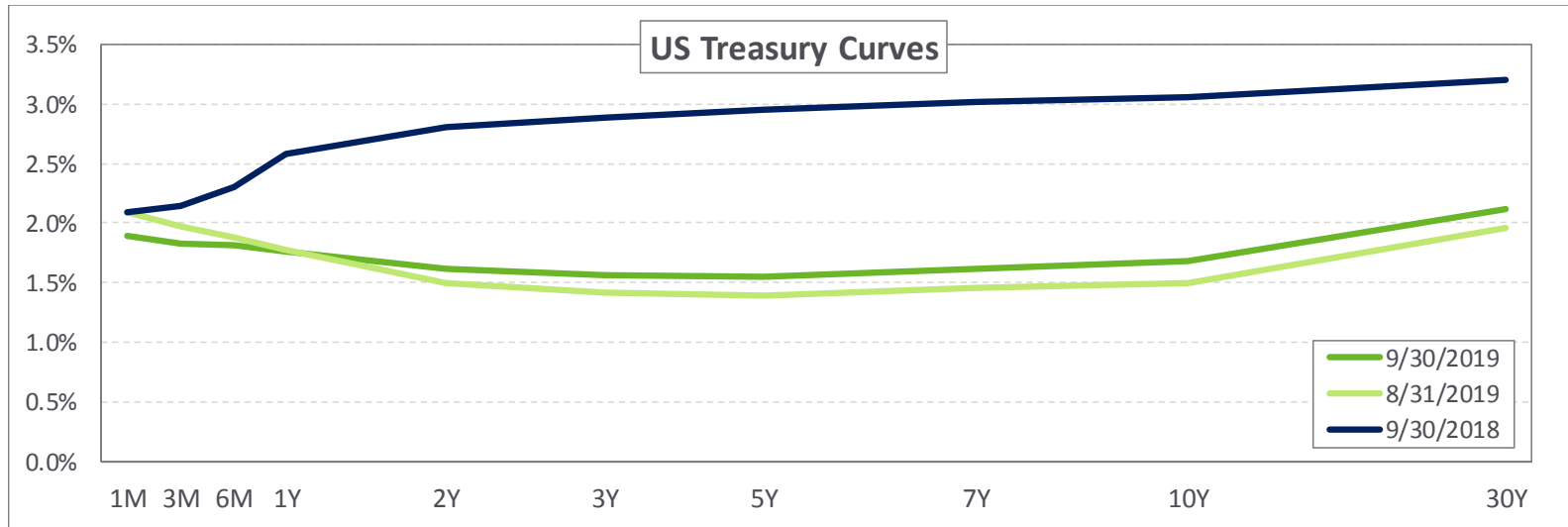
FIXED INCOME CHARACTERISTICS

	Averages			Total Returns (%)		
	Yield to Worst	Spread (bps)	Duration (Years)	1-Month	YTD	1-Year
Barclays Aggregate	2.26%	46	5.8	-0.5%	8.5%	10.3%
Barclays Treasury	1.72%	-	6.6	-0.8%	7.7%	10.4%
Barclays Agency	1.87%	11	4.1	-0.5%	6.0%	8.0%
Barclays MBS	2.45%	46	2.7	0.1%	5.6%	7.8%
Barclays ABS	2.04%	37	2.2	-0.1%	4.1%	5.4%
Barclays CMBS	2.19%	56	5.4	-0.7%	8.0%	10.3%
Barclays Corp IG	2.91%	115	7.8	-0.7%	13.2%	12.9%
Barclays Muni	1.86%	-	5.2	-0.8%	6.7%	8.5%
Barclays HY Muni	4.06%	-	6.7	-0.2%	9.7%	10.0%
Barclays TIPS	1.88%	-	4.9	-1.4%	7.6%	7.1%
Barclays HY	5.65%	373	3.1	0.4%	11.4%	6.3%
Barclays Global Agg	1.30%	44	7.2	-1.0%	6.3%	7.6%
JPM EMBI Glob Div	-	336	7.3	-0.5%	13.0%	11.5%
JPM GBI - EM	4.94%	-	5.4	1.0%	7.9%	10.1%

Source: Barclays, JP Morgan, FactSet



TREASURIES



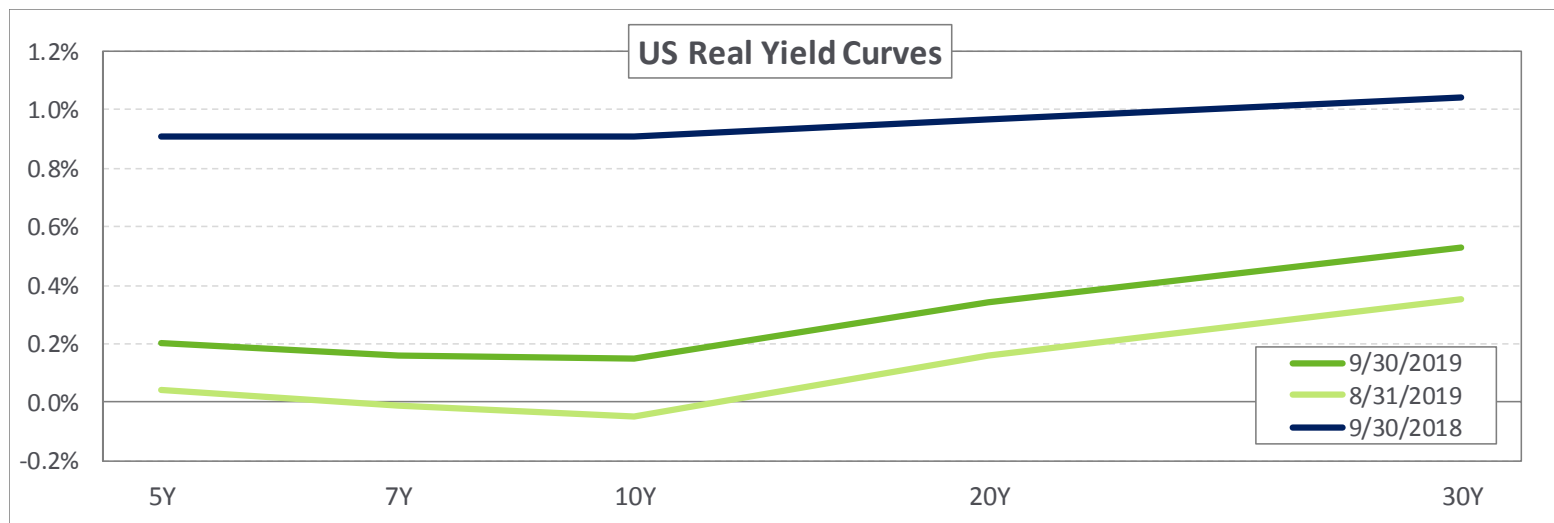
Source: FactSet

	Yield (%)			Total Return (%)	
	Current	1 Month Ago	12 Months Ago	1 Month	12 Months
3M Treasury	1.82%	1.98%	2.15%	0.17%	2.39%
6M Treasury	1.82%	1.87%	2.30%	0.17%	2.64%
2Y Treasury	1.62%	1.50%	2.81%	-0.13%	4.37%
5Y Treasury	1.55%	1.39%	2.95%	-0.62%	9.16%
10Y Treasury	1.68%	1.50%	3.05%	-1.41%	15.15%
30Y Treasury	2.12%	1.96%	3.20%	-3.08%	27.40%

Source: FactSet



REAL YIELDS



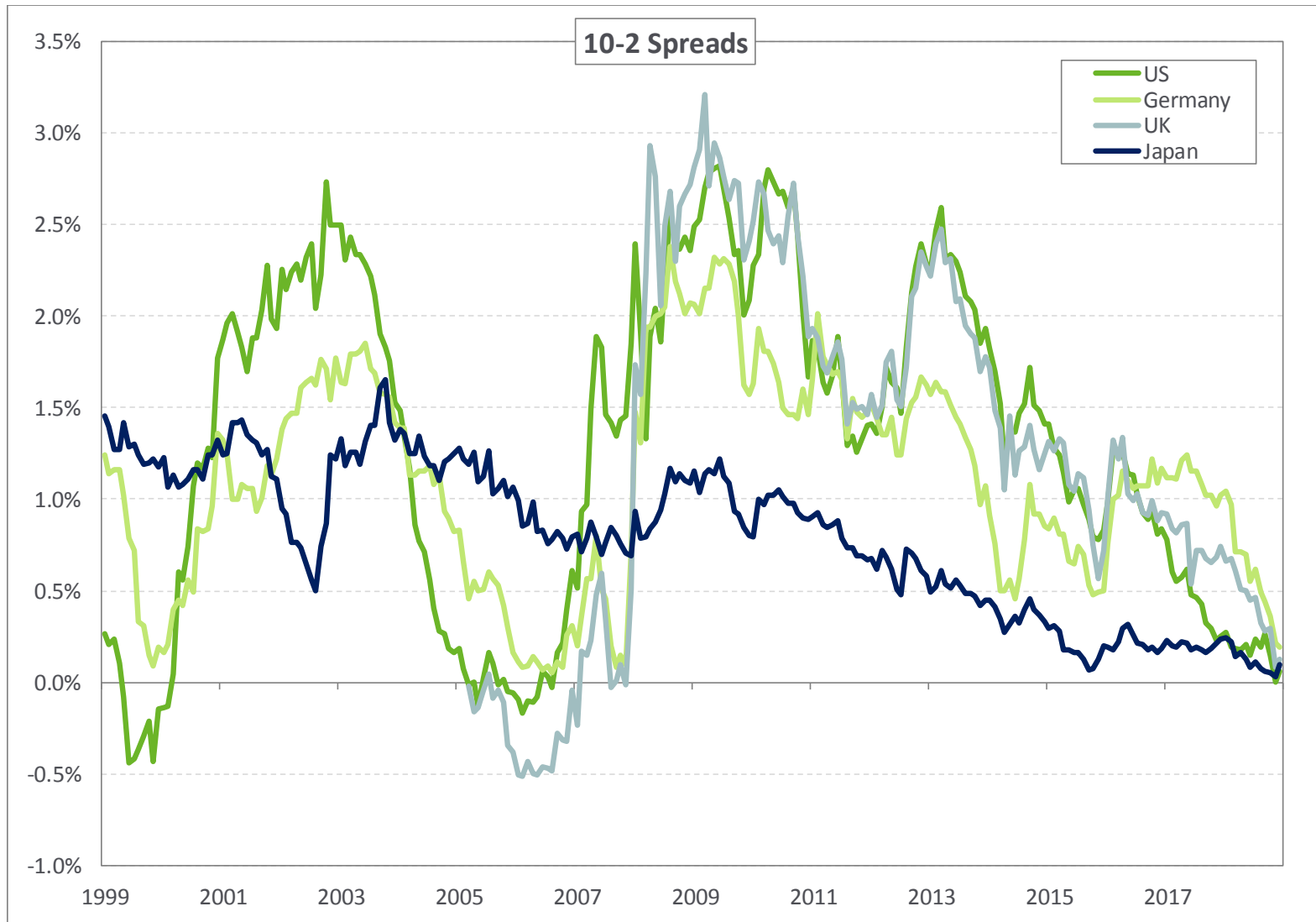
Source: FactSet

	Real Rates			Breakeven Rates	
	Current	1 Month Ago	12 Months Ago	Current	12 Months Ago
2-Year	-0.21%	-0.26%	0.30%	1.34%	3.11%
5-Year	-0.26%	-0.33%	0.37%	1.23%	3.25%
10-Year	-0.26%	-0.37%	0.44%	1.23%	3.40%
20-Year	-0.18%	-0.30%	0.52%	1.40%	3.56%
30-Year	-0.11%	-0.25%	0.56%	1.53%	3.64%

Source: FactSet



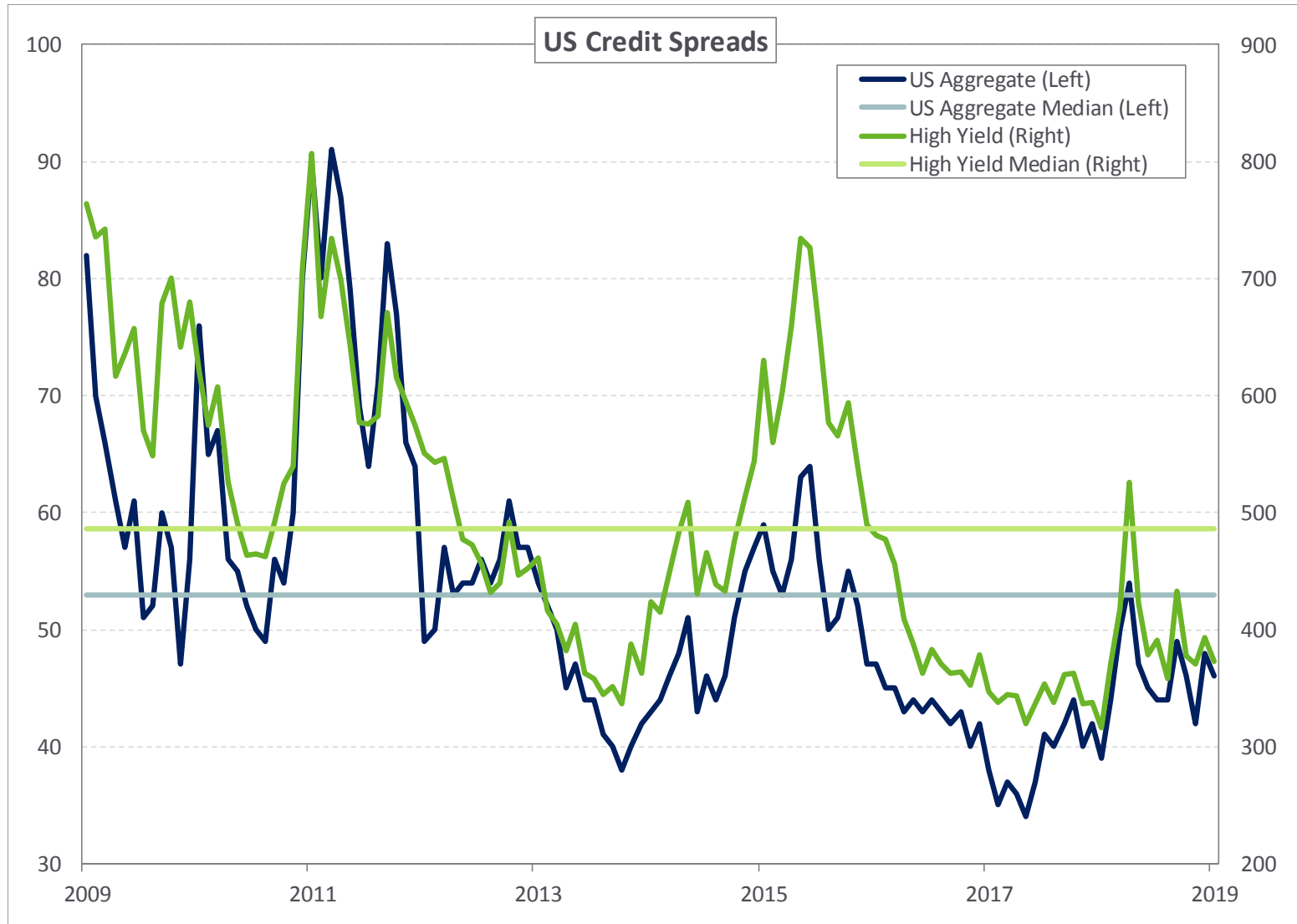
NOMINAL YIELDS



Source: FactSet



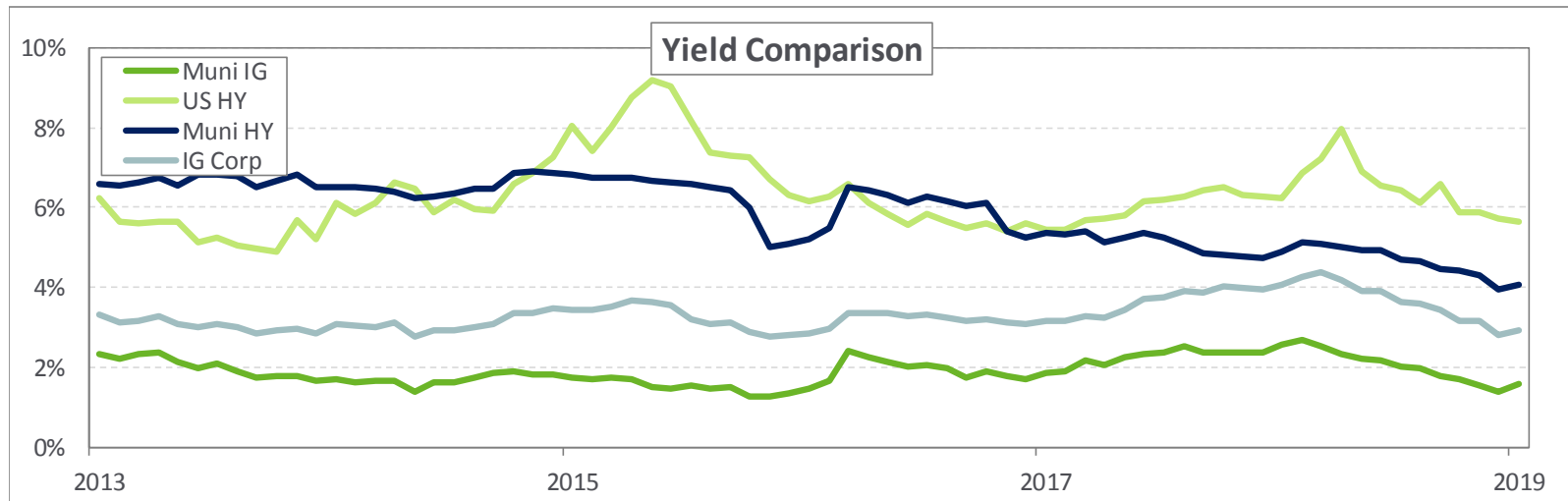
CREDIT SPREADS



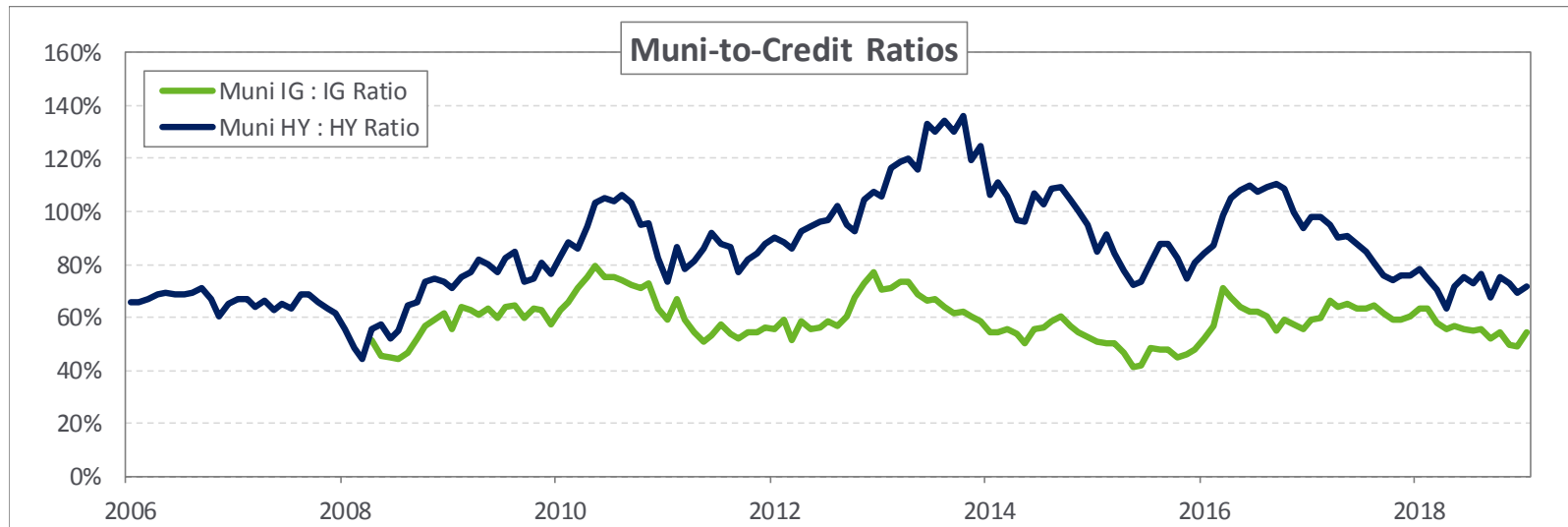
Source: Barclays, FactSet



MUNICIPAL BOND RATIOS



Source: Barclays, FactSet



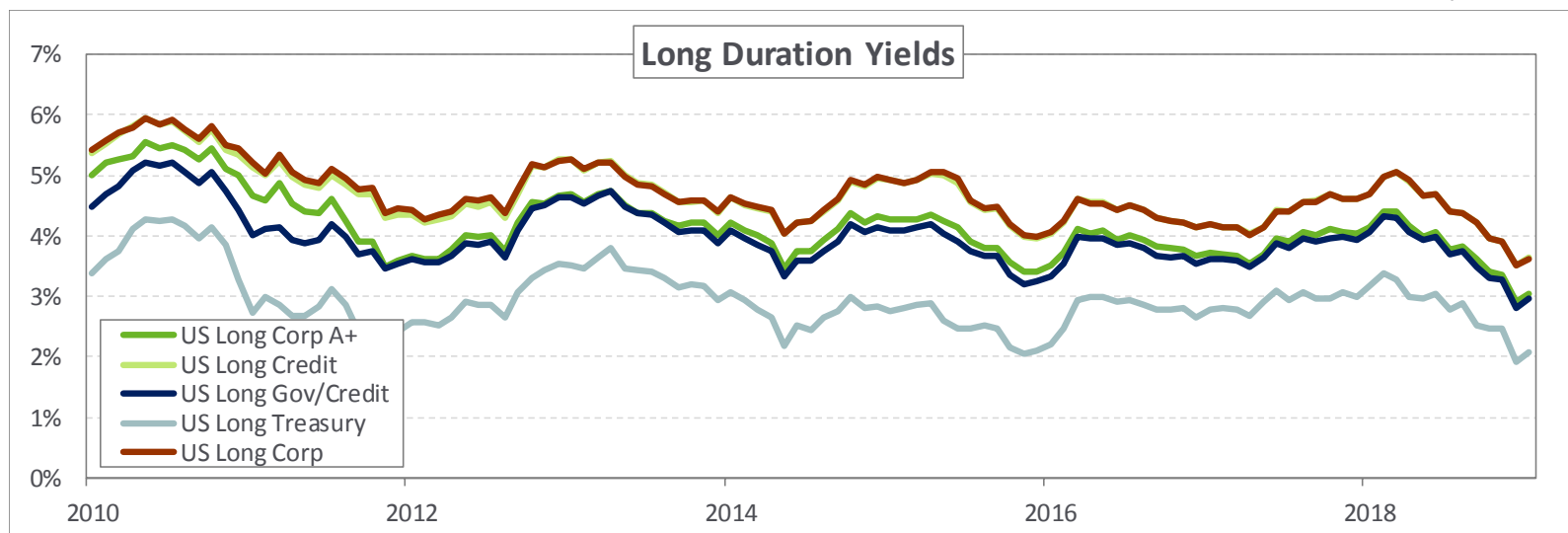
Source: Barclays, FactSet



LONG DURATION

Index	Month-End Yield	1 Month Prior Yield	1 Year Prior Yield	Duration
Barclays Long Treasury	2.1%	1.9%	3.2%	18.3
Barclays 20+ STRIPS	2.2%	2.0%	3.2%	26.2
Barclays Long Gov/Credit	3.6%	3.5%	4.7%	14.2
Barclays Long Credit	3.0%	2.8%	4.1%	16.0
Barclays Long Corp A+	3.2%	3.1%	4.4%	15.2

Source: Barclays, FactSet



Source: Barclays, FactSet



REAL ASSETS

NEPC, LLC

REAL ASSETS INDEX PERFORMANCE

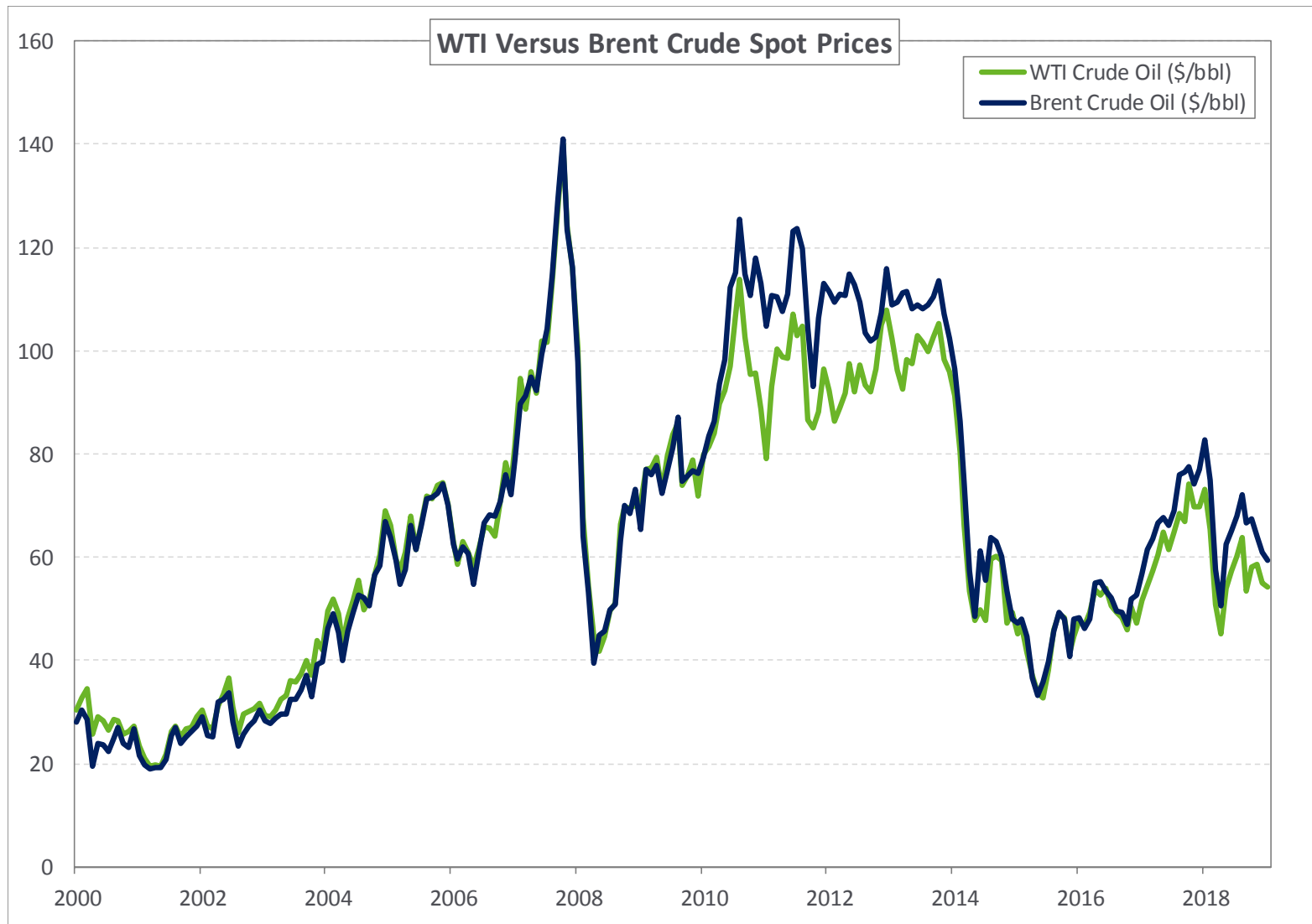
Index	1 Month	3 Month	YTD	1 Year	3 Year	5 Year
Bloomberg Commodity Index	1.2%	-1.8%	3.1%	-6.5%	-1.5%	-7.2%
Bloomberg Sub Agriculture Index	4.2%	-6.1%	-5.0%	-4.9%	-9.6%	-7.2%
Coffee	4.6%	-10.3%	-10.1%	-12.9%	-21.1%	-20.5%
Corn	5.1%	-10.2%	-3.3%	-0.7%	-6.1%	-6.7%
Cotton	3.6%	-7.5%	-15.7%	-21.4%	-3.2%	0.1%
Soybean	4.4%	-1.3%	-3.1%	0.1%	-6.7%	-3.2%
Soybean Oil	1.1%	1.4%	1.5%	-3.5%	-8.0%	-5.9%
Sugar	3.9%	-8.0%	-4.3%	3.4%	-23.4%	-11.4%
Wheat	7.4%	-6.1%	-2.5%	-4.9%	-4.9%	-8.6%
Bloomberg Sub Energy	1.1%	-4.5%	5.6%	-21.5%	-0.8%	-16.8%
Brent Crude	1.4%	-6.0%	16.7%	-23.6%	6.8%	-14.2%
Heating Oil	3.3%	-2.6%	14.1%	-17.7%	6.4%	-10.0%
Natural Gas	0.4%	-1.7%	-24.2%	-24.1%	-17.4%	-26.4%
Unleaded Gas	4.4%	-4.4%	27.4%	-20.2%	1.9%	-11.7%
WTI Crude Oil	-1.3%	-6.6%	18.1%	-26.1%	1.9%	-18.9%
Bloomberg Sub Industrial Metals	0.5%	2.4%	7.2%	-2.1%	5.8%	-1.7%
Aluminum	-1.5%	-4.7%	-8.4%	-18.3%	0.3%	-4.6%
Copper	1.2%	-4.8%	-1.1%	-7.2%	4.3%	-3.9%
Nickel	-4.5%	35.5%	60.9%	36.4%	16.8%	0.0%
Zinc	9.4%	-3.0%	3.0%	-0.9%	4.2%	2.4%
Bloomberg Sub Precious Metals	-4.4%	5.3%	12.8%	20.4%	0.9%	2.2%
Gold	-3.5%	3.8%	14.2%	22.4%	3.0%	3.3%
Silver	-7.2%	10.5%	8.5%	14.2%	-5.1%	-1.3%
Bloomberg Sub Livestock	7.5%	0.8%	-6.1%	-5.5%	5.8%	-6.6%
Lean Hogs	10.8%	3.3%	-5.0%	-7.2%	4.3%	-11.7%
Live Cattle	5.7%	-0.7%	-7.4%	-5.6%	6.0%	-4.0%

Source: Bloomberg, FactSet

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



OIL MARKETS



Source: FactSet



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