

QUARTERLY PERFORMANCE REPORT

SAN BERNARDINO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

June 30, 2020

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San Bernardino County Employees'
Retirement Association



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

MARKET ENVIRONMENT UPDATE AND OUTLOOK

NEPC, LLC

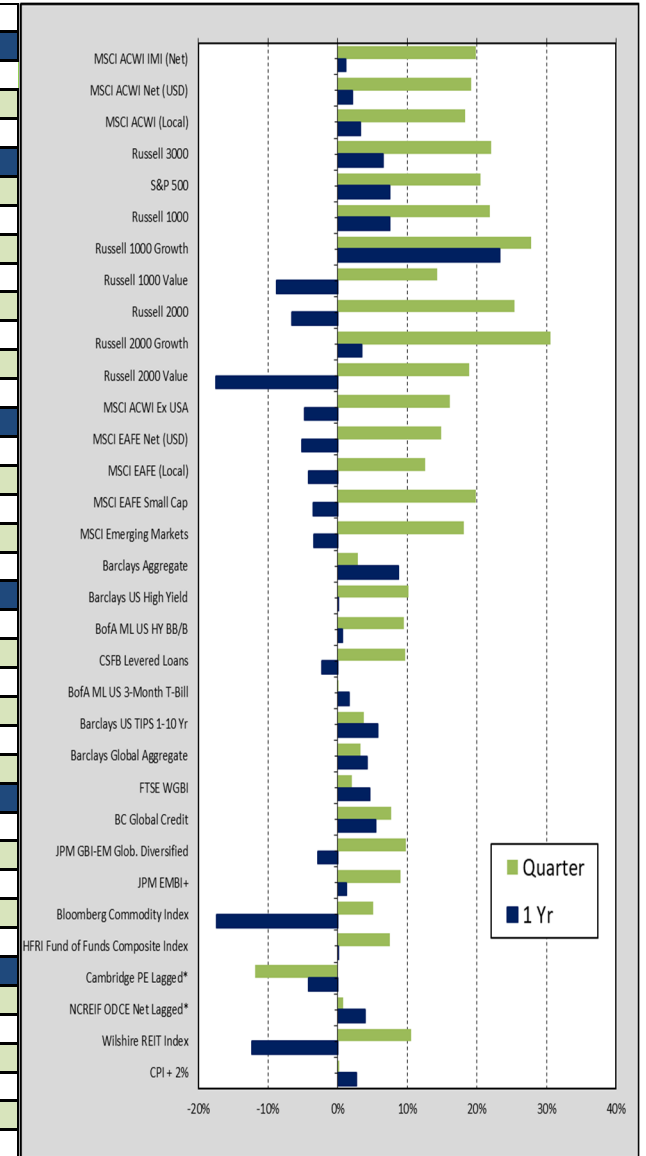
ECONOMIC ENVIRONMENT

- **Q2 Real GDP (advance estimate) plunged to an annual rate of -32.9%.**
 - Retail sales ended May at -1.3% on a YoY basis (April retail sales were down 15.5% YoY). In the same period last year the YoY growth rate was 5.7%.
 - Corporate profits (ended January) as a percent of GDP decreased to 7.6% from 8.7% (in October) and remain elevated relative to historical levels.
 - The inventory-to-sales ratio ended May at 1.5 up from 1.4 in December. Levels have remained relatively constant since early 2010 with a spike to 1.7 in April.
 - The U.S. trade deficit widened (ended May) as the value of exports decreased by 4.4%.
- **The unemployment rate spiked up to 11.1% ended June, up from 4.4% in Q1; U-6, a broader measure of unemployment, increased to 18.0% in Q2 from 8.7% in Q1.**
- **The Case-Shiller Home Price Index (ended May) increased to 218.9 from 215.2 (in March) 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 0.71% in Q2 from 1.52% ended Q1; Capacity Utilization decreased to 68.6 in Q2 from 73.5% in Q1.**
- **Fed Funds rate remains at a targeted range of 0.00%-to-0.25%. The 10-year Treasury Yield (constant maturity) finished Q2 down to 0.7% from 0.9% in Q1.**
- **The Fed remains committed to continuing stimulative action as needed to support the US economy. The Fed's balance sheet continues to grow in wake of the pandemic.**
- **S&P valuations increased in Q2 to 29.96x, and is higher than the 10-year average of 25.9x.**
 - Cyclically adjusted Shiller PE ratio remains above the long-term average of 16.7x



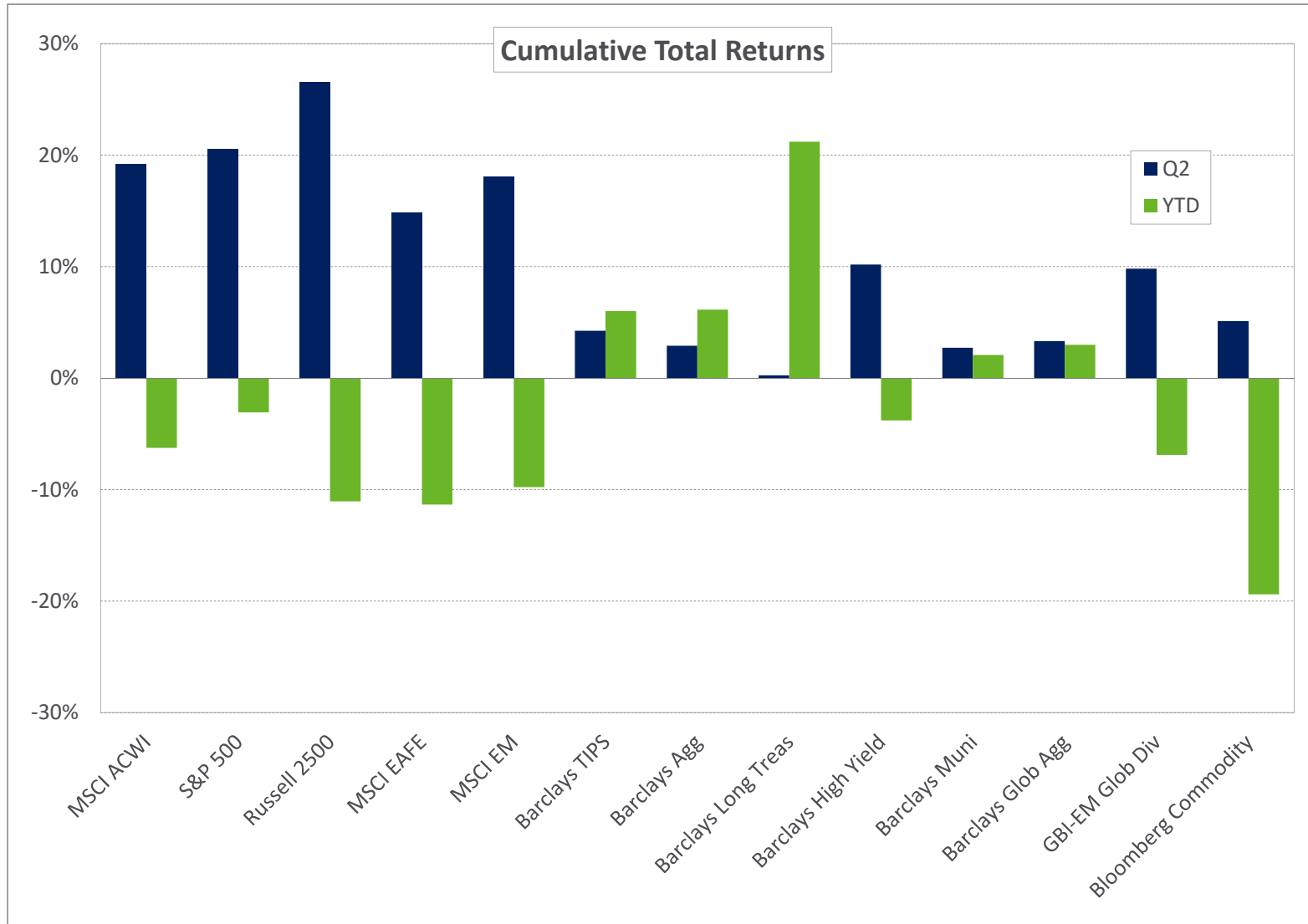
MARKET ENVIRONMENT – Q2 2020 OVERVIEW

		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
World Equity Benchmarks						
MSCI ACWI IMI (Net)	World with Small Cap	19.83%	1.17%	5.55%	6.11%	9.10%
MSCI ACWI Net (USD)	World W/O Small Cap	19.22%	2.11%	6.14%	6.46%	9.16%
MSCI ACWI (Local)	World (Local Currency)	18.27%	3.27%	6.45%	6.78%	9.82%
Domestic Equity Benchmarks						
Russell 3000	Domestic All Cap	22.03%	6.53%	10.04%	10.03%	13.72%
S&P 500	Large Core	20.54%	7.50%	10.73%	10.73%	13.99%
Russell 1000	Large Core	21.82%	7.48%	10.64%	10.47%	13.97%
Russell 1000 Growth	Large Growth	27.84%	23.28%	18.99%	15.89%	17.23%
Russell 1000 Value	Large Value	14.29%	-8.84%	1.82%	4.64%	10.41%
Russell 2000	Small Core	25.42%	-6.63%	2.01%	4.29%	10.50%
Russell 2000 Growth	Small Growth	30.58%	3.48%	7.86%	6.86%	12.92%
Russell 2000 Value	Small Value	18.91%	-17.48%	-4.35%	1.26%	7.82%
International Equity Benchmarks						
MSCI ACWI Ex USA	World ex-US	16.12%	-4.80%	1.13%	2.26%	4.97%
MSCI EAFE Net (USD)	Int'l Developed	14.88%	-5.13%	0.81%	2.05%	5.73%
MSCI EAFE (Local)	Int'l Developed (Local Currency)	12.60%	-4.24%	1.26%	2.63%	6.86%
MSCI EAFE Small Cap	Small Cap Int'l	19.88%	-3.52%	0.53%	3.81%	8.02%
MSCI Emerging Markets	Emerging Equity	18.08%	-3.39%	1.90%	2.86%	3.27%
Domestic Fixed Income Benchmarks						
Barclays Aggregate	Core Bonds	2.90%	8.74%	5.32%	4.30%	3.82%
Barclays US High Yield	High Yield	10.18%	0.03%	3.33%	4.79%	6.68%
BofA ML US HY BB/B	High Yield	9.52%	0.69%	3.67%	4.81%	6.57%
CSFB Levered Loans	Bank Loans	9.71%	-2.27%	2.13%	2.94%	4.33%
BofA ML US 3-Month T-Bill	Cash	0.02%	1.63%	1.77%	1.19%	0.64%
Barclays US TIPS 1-10 Yr	Inflation	3.76%	5.75%	3.94%	2.97%	2.66%
Global Fixed Income Benchmarks						
Barclays Global Aggregate	Global Core Bonds	3.32%	4.22%	3.79%	3.55%	2.81%
FTSE WGBI	World Gov. Bonds	2.04%	4.60%	3.98%	3.70%	2.37%
BC Global Credit	Global Bonds	7.68%	5.49%	4.49%	4.23%	4.26%
JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local Currency)	9.82%	-2.82%	1.14%	2.34%	1.64%
JPM EMBI+	Em. Mkt. Bonds	9.06%	1.23%	2.66%	4.91%	5.53%
Alternative Benchmarks						
Bloomberg Commodity Index	Commodities	5.08%	-17.38%	-6.14%	-7.69%	-5.82%
HFRI Fund of Funds Composite Index	Fund of Hedge Funds	7.48%	0.09%	2.12%	1.41%	2.75%
Cambridge PE Lagged*	Private Equity	-11.88%	-4.18%	7.89%	8.72%	11.88%
NCREIF ODCE Net Lagged*	Real Estate	0.75%	3.93%	5.85%	7.48%	10.42%
Wilshire REIT Index	REIT	10.56%	-12.31%	0.23%	3.98%	9.22%
CPI + 2%	Inflation/Real Assets	0.21%	2.72%	3.81%	3.63%	3.74%



* As of 3/31/2020

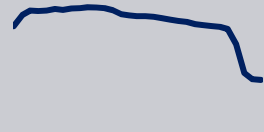



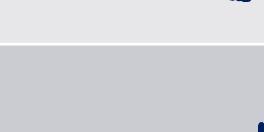

RISK ASSETS RALLIED SIGNIFICANTLY IN Q2



Source: S&P, Russell, MSCI, JPM, Bloomberg, FactSet



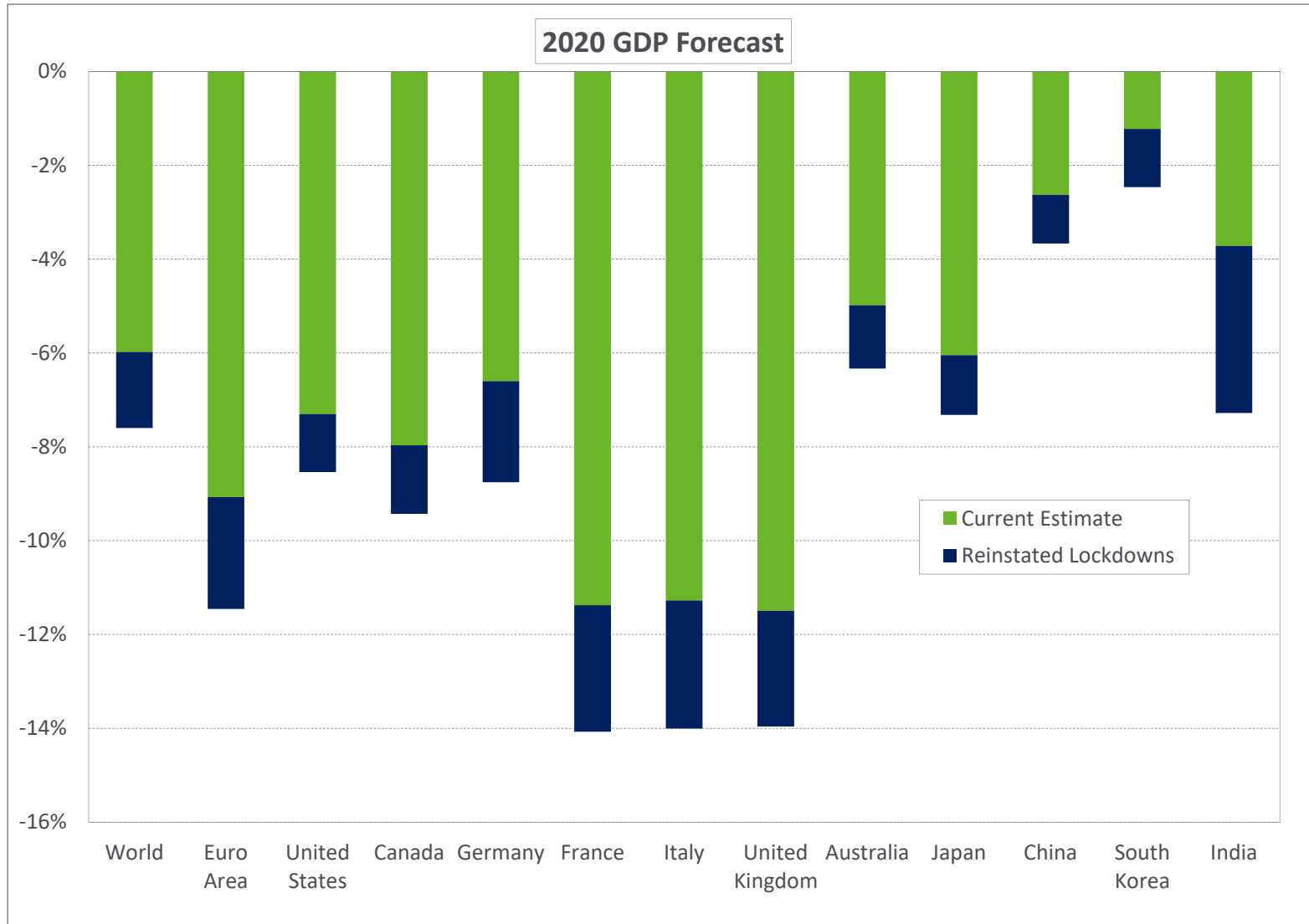
THE ECONOMIC BACKDROP IS CHALLENGED

Metric	12/31/19	03/31/20	06/30/20	Trend
S&P 500 CY 2020 Earnings Estimate	\$177.81	\$160.40	\$126.89	
US Real GDP (QoQ%)	2.1%	-5.0%	-33.4%*	
US CY 2020 Real GDP Growth Consensus	1.8%	-0.7%	-5.2%	
US Unemployment Rate	3.5%	4.4%	11.1%	
Continued Claims for Unemployment	1.7M	3.5M	19.1M	
Federal Reserve Balance Sheet as % of Nominal GDP	19.2%	24.4%	32.9%	

Source: US Bureau of Labor Statistics, Federal Reserve, FactSet, NEPC
 *The 06/30/20 real GDP figure represents the consensus estimate from FactSet



COVID WEIGHS ON GROWTH FORECASTS

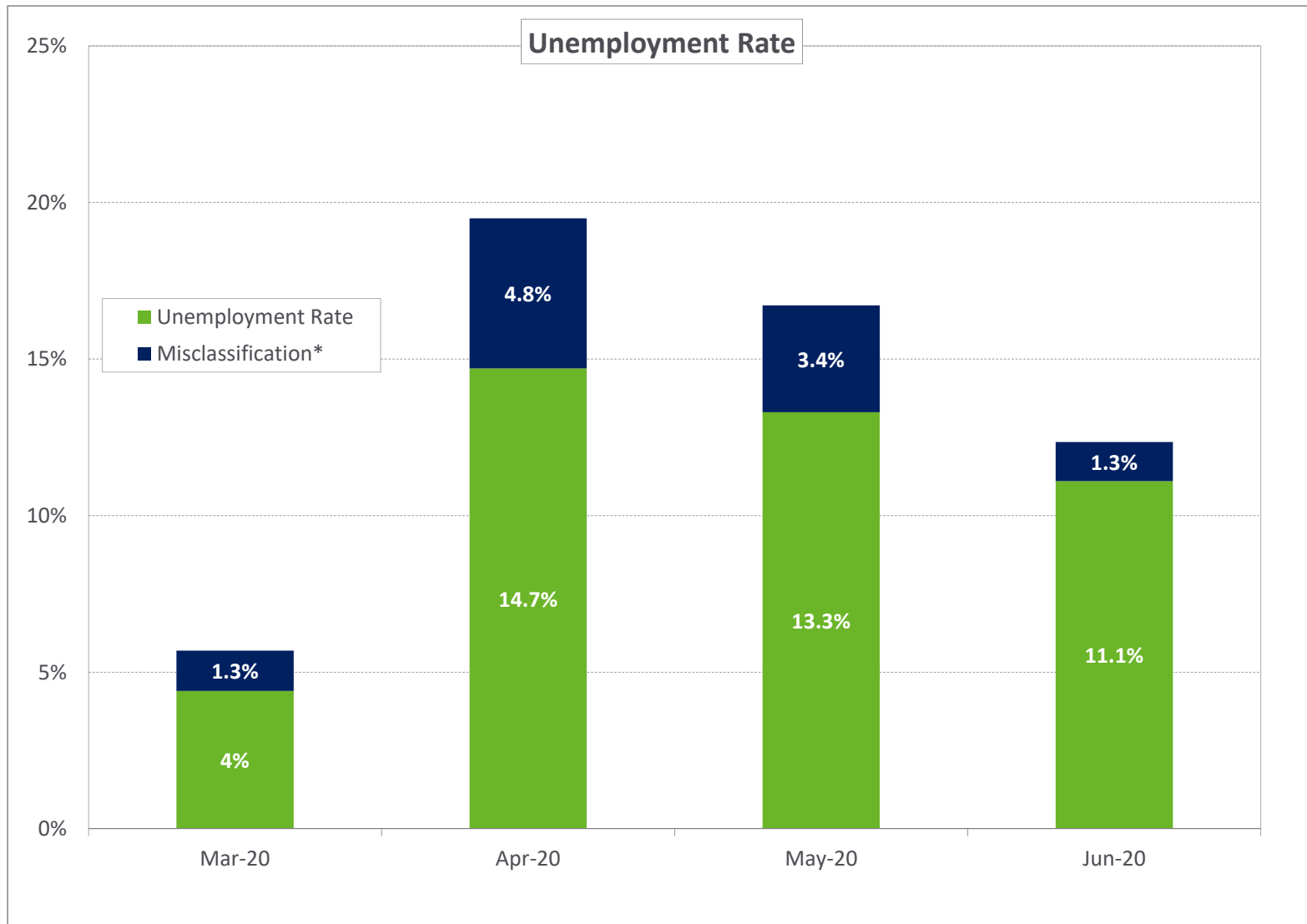


Source: OECD

The additional decline in economic growth from reinstated lockdowns represents a renewed outbreak of infections that forces economies to re-implement restrictions.



UNEMPLOYMENT MAY BE WORSE THAN REPORTED

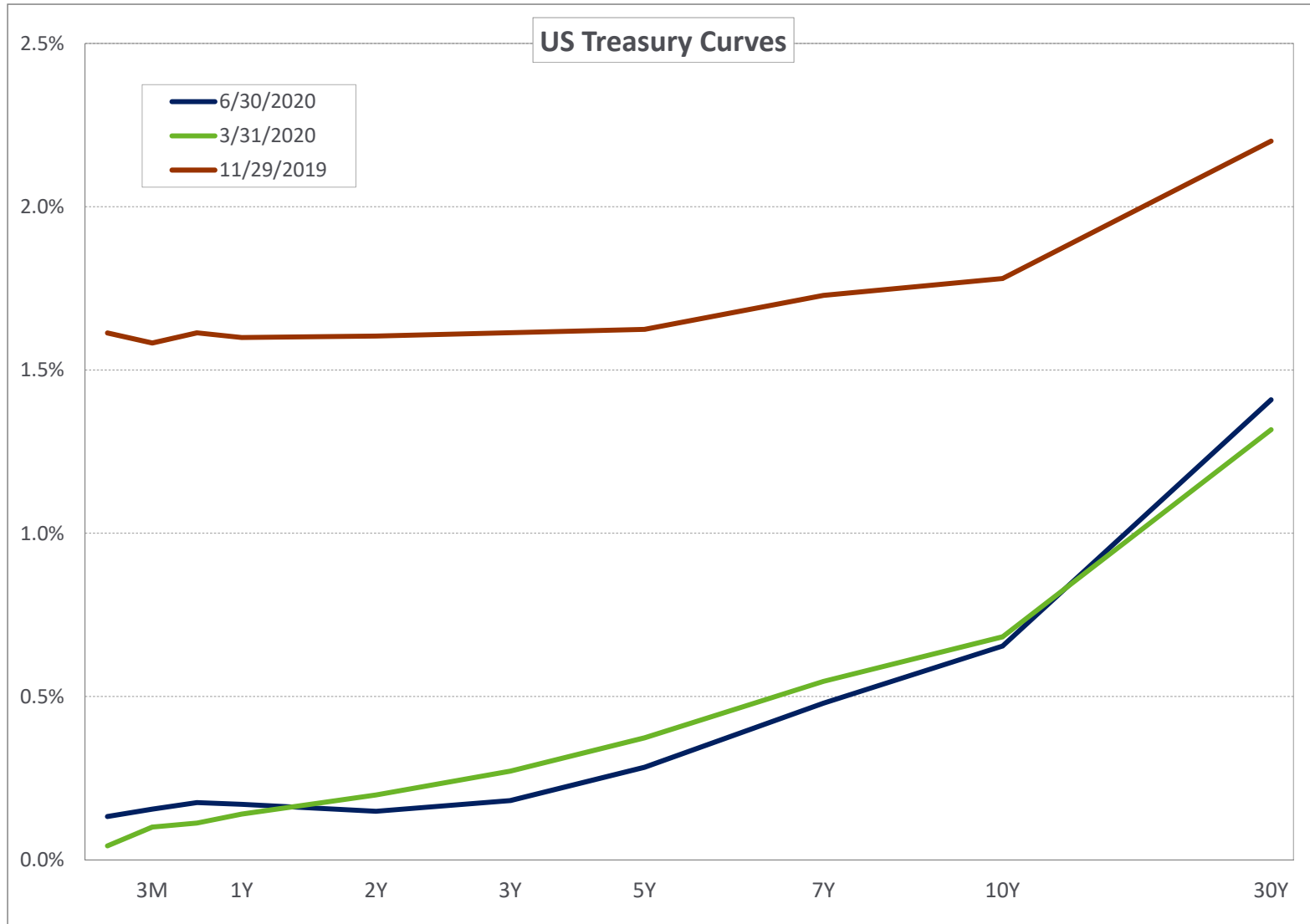


Source: Department of Labor

Misclassification* represents an estimate of "unemployed on temporary leave" mislabeled as "employed but absent from work"



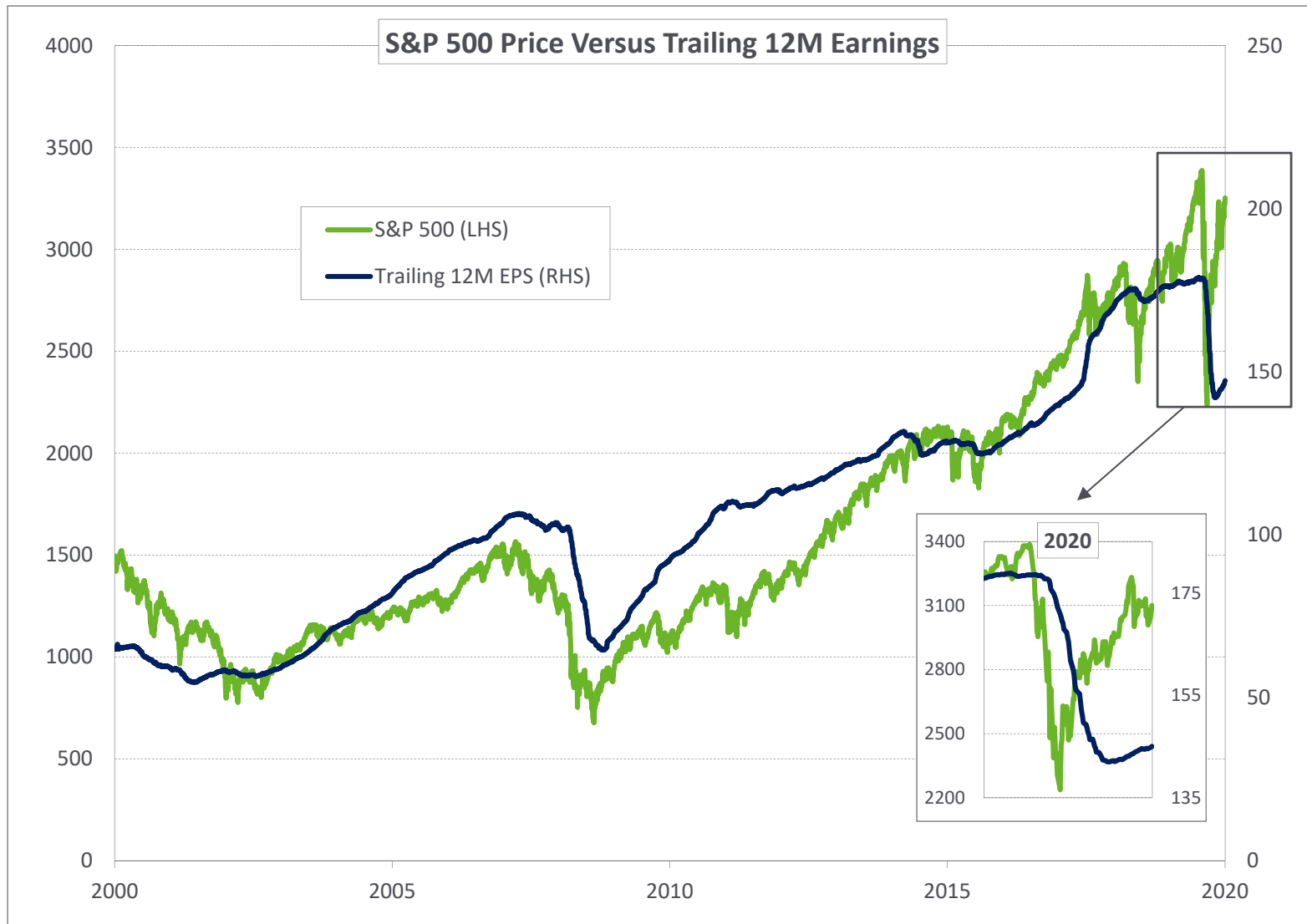
INTEREST RATES REFLECT ECONOMIC CONCERNS



Source: FactSet



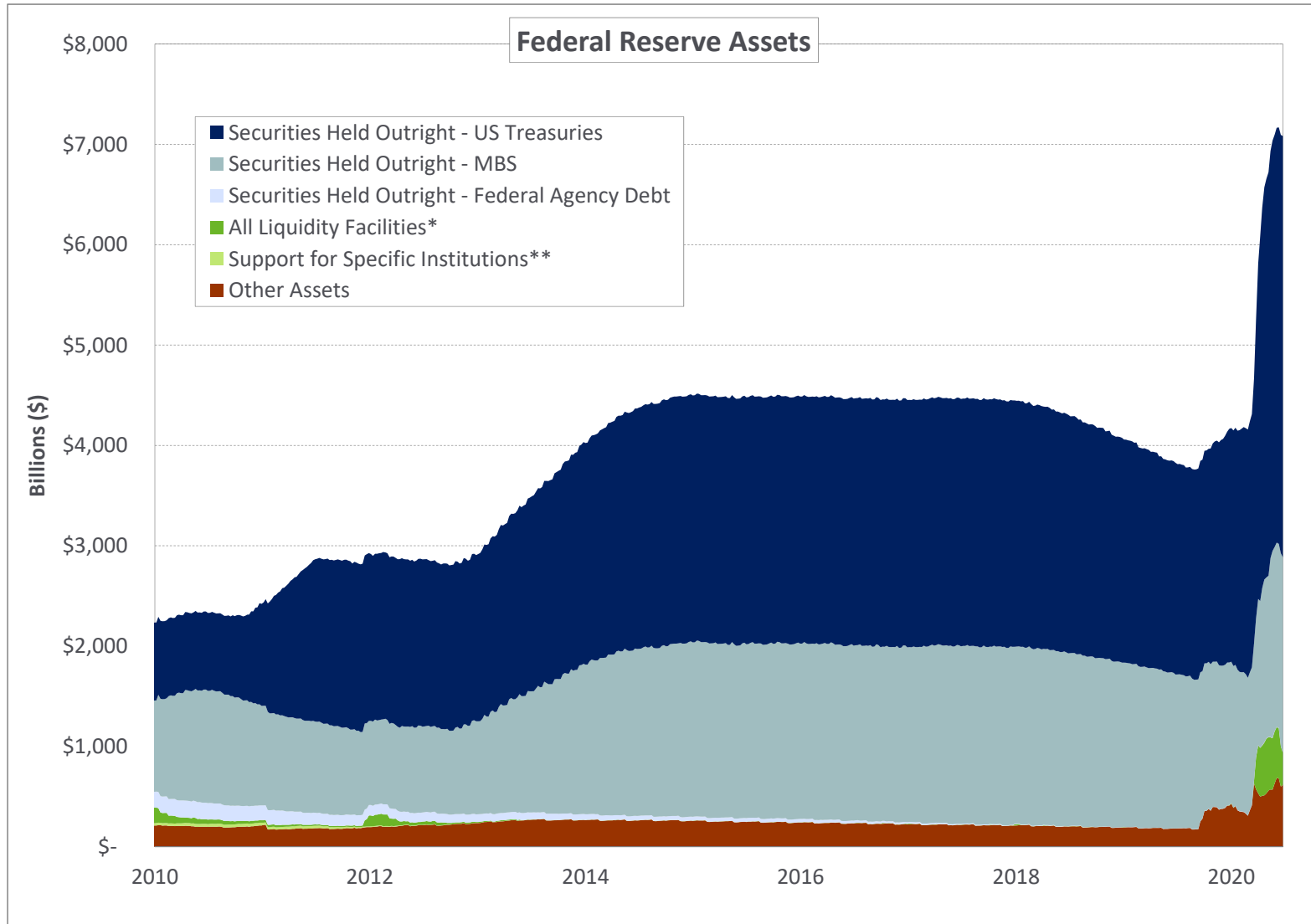
EQUITY PRICES DETACHED FROM FUNDAMENTALS



Source: S&P, FactSet
Data as of 7/20/2020



FED BALANCE SHEET GROWTH



Sources: Federal Reserve, FactSet, NEPC; *All Liquidity Facilities includes term auction credit, primary credit, secondary credit, seasonal credit, Primary Dealer Credit Facility, Asset-Backed Commercial Paper, Money Market Mutual Fund Liquidity Facility, and central bank liquidity swaps; **Support for Specific Institutions includes credit extended to AIG and Maiden Lane LLCs



TOTAL FUND PERFORMANCE

NEPC, LLC

TOTAL FUND PERFORMANCE SUMMARY (NET OF FEES)

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
Total Fund	\$10,102,541,405	4.1%	99	-7.3%	99	-3.1%	99	3.4%	99	4.4%	92	7.4%	70
<i>Policy Index</i>		10.3%	74	-1.2%	1	3.7%	7	5.6%	21	5.6%	38	7.3%	79
<i>S&P 500</i>		20.5%	1	-3.1%	11	7.5%	1	10.7%	1	10.7%	1	14.0%	1
<i>BBgBarc US Aggregate TR</i>		2.9%	99	6.1%	1	8.7%	1	5.3%	25	4.3%	93	3.8%	99
<i>60% MSCI ACWI (Net) / 40% FTSE WGBI</i>		12.2%	45	-1.8%	2	3.7%	7	5.6%	21	5.6%	38	6.6%	99
<i>InvMetrics Public DB > \$1B Net Median</i>		11.4%		-4.9%		1.0%		5.1%		5.4%		7.8%	

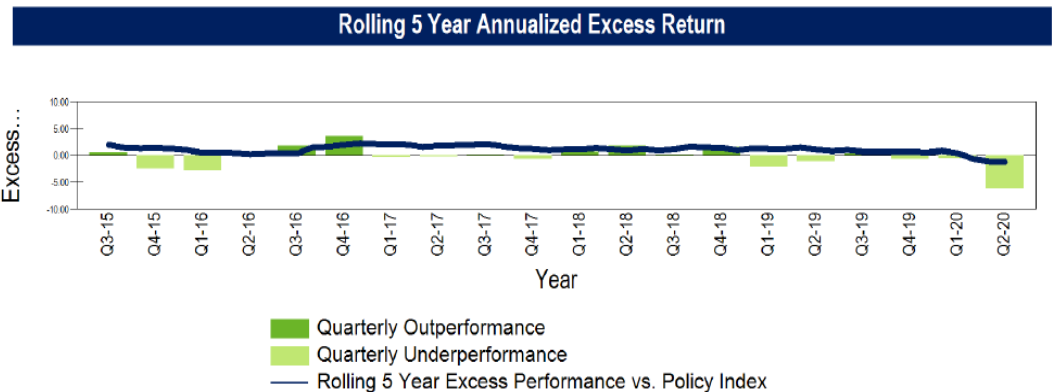
In the year ended June 30, 2020 the Fund return of -3.1% ranked in the 99th percentile of Public Funds > \$1 Billion. The Fund's assets totaled \$10.10 billion, down from \$10.46 billion in the past year.

The Fund experienced a net investment loss of \$272.43 million in the past year including an investment gain of \$421.82 million in the second calendar quarter.

In the three-year period ended June 30, 2020 the Fund return of 3.4% ranked in the 99th percentile among its peers. The Sharpe Ratio over this period of 0.3 ranks in the 73rd percentile.

In the five-year period ended June 30, 2020 the Fund return of 4.4% ranked in the 92nd percentile among its peers. On a risk adjusted basis the Fund's Sharpe and Sortino Ratios rank in the 14th and 27th percentile, indicating top quartile returns per unit of risk taken and near top quartile returns per unit of downside risk experienced when compared to public fund peers with assets greater than \$1B.

Note: InvestMetrics Public Funds >\$1B Net of Fee universe contains 19 portfolios.



3 Years Ending June 30, 2020						
	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank
Total Fund	0.3	73	0.4	81	6.5%	1
InvMetrics Public DB > \$1B Net Median	0.3	--	0.5	--	10.1%	--

5 Years Ending June 30, 2020						
	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank
Total Fund	0.6	14	0.7	27	5.6%	1
InvMetrics Public DB > \$1B Net Median	0.5	--	0.6	--	9.0%	--

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TOTAL FUND PERFORMANCE SUMMARY

Statistics Summary								
1 Year Ending June 30, 2020								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	-3.1%	99	9.8%	1	-0.5	99	-0.2	99
InvMetrics Public DB > \$1B Net Median	1.0%	--	13.9%	--	0.0	--	0.1	--

Statistics Summary								
3 Years Ending June 30, 2020								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	3.4%	99	6.5%	1	0.3	73	0.4	81
InvMetrics Public DB > \$1B Net Median	5.1%	--	10.1%	--	0.3	--	0.5	--

Statistics Summary								
5 Years Ending June 30, 2020								
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Sortino Ratio	Sortino Ratio Rank
Total Fund	4.4%	92	5.6%	1	0.6	14	0.7	27
InvMetrics Public DB > \$1B Net Median	5.4%	--	9.0%	--	0.5	--	0.6	--

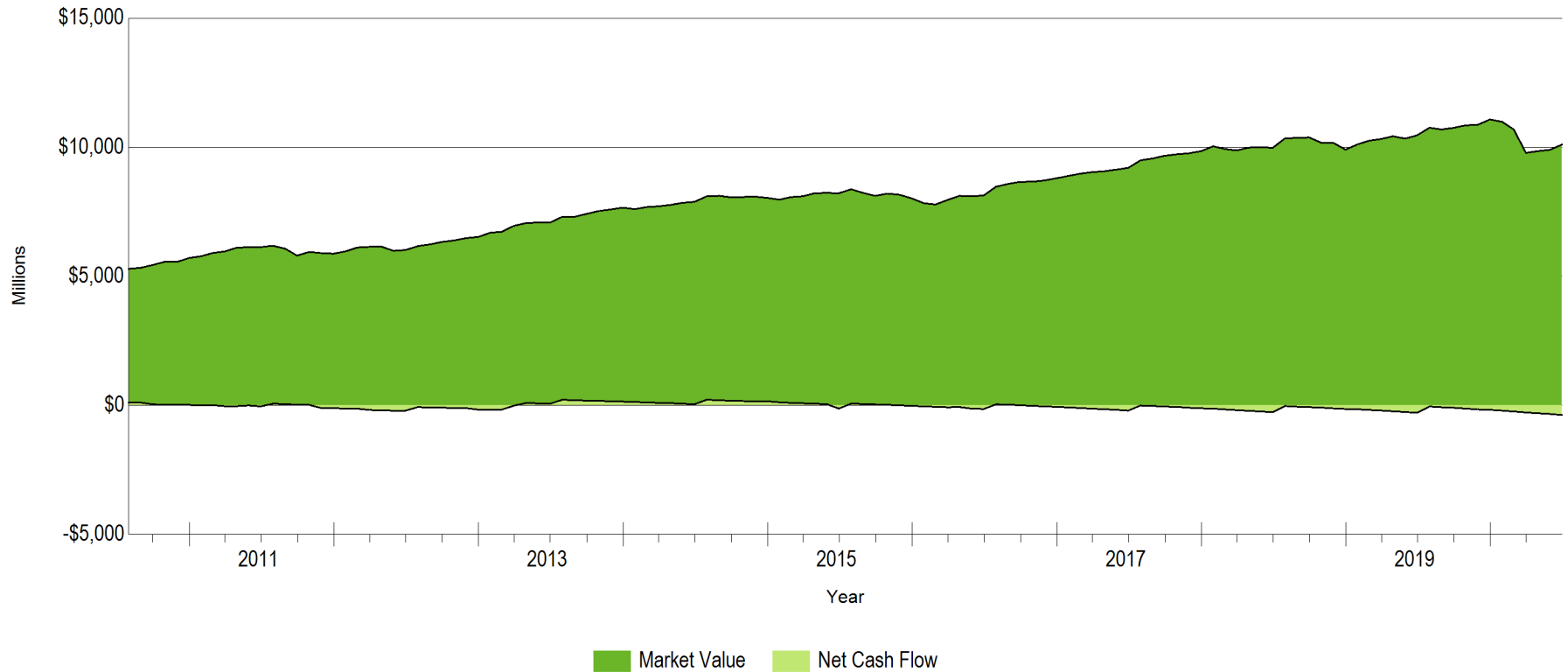
Sortino Ratio requires at least two negative points during the time period in order to calculate



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TOTAL FUND ASSET GROWTH SUMMARY

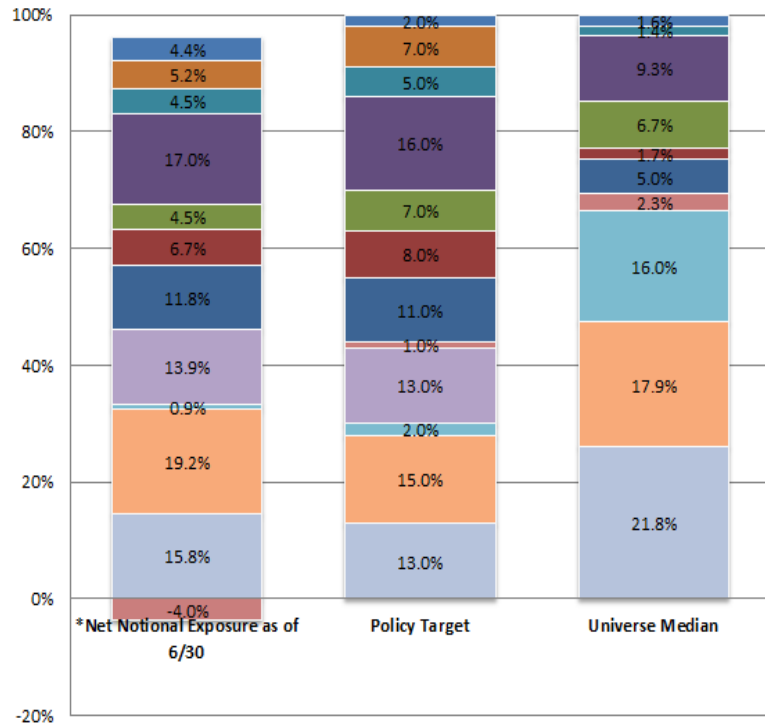
10 Years Ending June 30, 2020



	Last Three Months	Year-To-Date	One Year	Five Years	Ten Years
Beginning Market Value	\$9,778,845,943	\$11,074,080,814	\$10,459,614,886	\$8,215,718,262	\$5,026,688,359
Net Cash Flow	-\$98,122,800	-\$201,203,103	-\$84,643,814	-\$249,148,439	-\$372,139,752
Net Investment Change	\$421,818,263	-\$770,336,306	-\$272,429,667	\$2,135,971,582	\$5,447,992,798
Ending Market Value	\$10,102,541,405	\$10,102,541,405	\$10,102,541,405	\$10,102,541,405	\$10,102,541,405



TOTAL FUND PERFORMANCE SUMMARY



	*Net Notional Exposure	*Net Notional Exposure as of 6/30	Policy Target	*Difference	Policy Ranges	Within Range
US Equities	1,596,814	15.8%	13.0%	2.8%	8%-18%	Yes
Int'l Equities	1,941,797	19.2%	15.0%	4.2%	10%-20%	Yes
U.S. Core Fixed Income	94,000	0.9%	2.0%	-1.1%	-3%-7%	Yes
US Credit	1,408,216	13.9%	13.0%	0.9%	8%-18%	Yes
Non-US Core Fixed Income	(404,102)	-4.0%	1.0%	-5.0%	-4%-6%	Yes
Non-US Credit	1,189,087	11.8%	11.0%	0.8%	6%-16%	Yes
Emerging Market Debt	677,543	6.7%	8.0%	-1.3%	3%-13%	Yes
Real Estate	455,147	4.5%	7.0%	-2.5%	0%-14%	Yes
Private Equity	1,715,485	17.0%	16.0%	1.0%	6%-21%	Yes
Real Assets	459,047	4.5%	5.0%	-0.5%	0%-10%	Yes
Absolute Return	524,322	5.2%	7.0%	-1.8%	0%-12%	Yes
Cash	445,185	4.4%	2.0%	2.4%	0%-10%	Yes
	10,102,541	100.0%	100.0%			

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



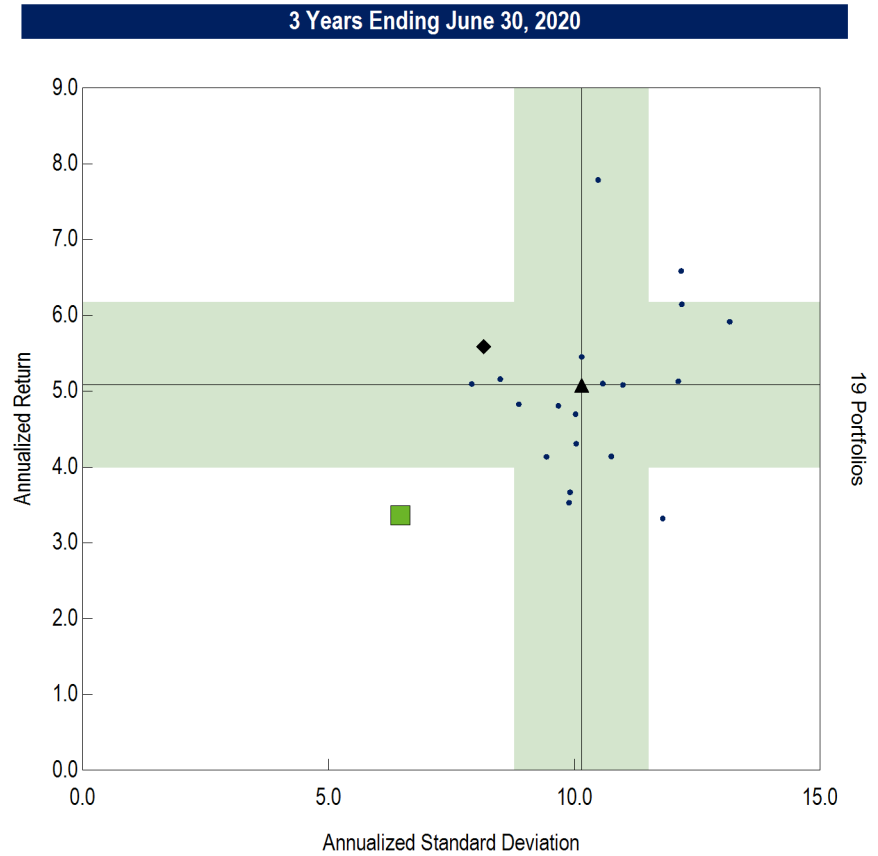
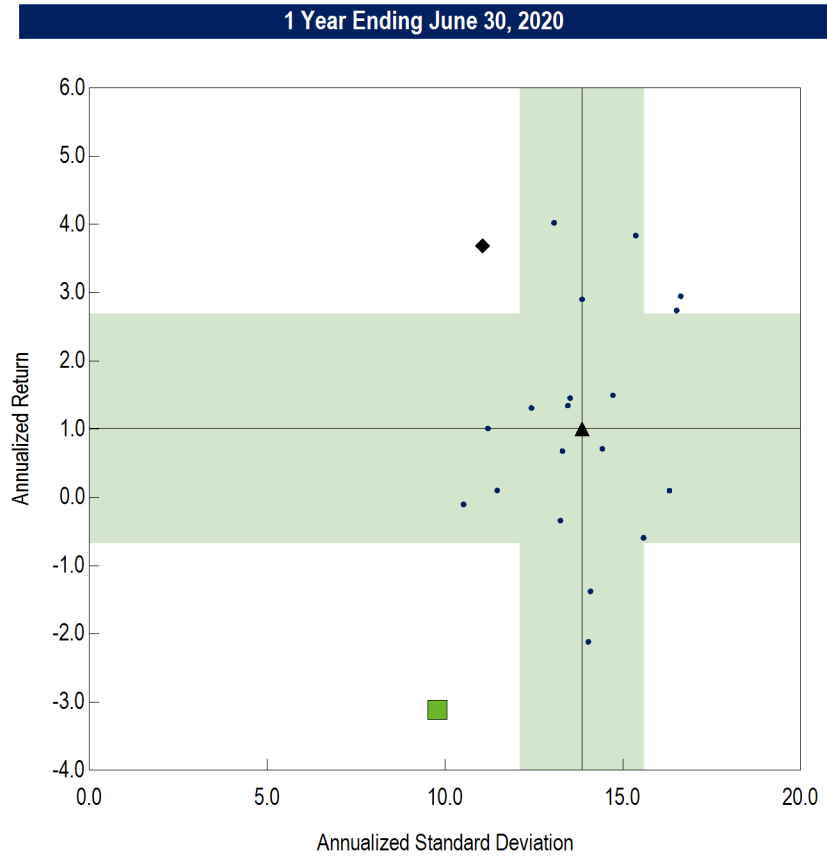
TOTAL FUND PERFORMANCE SUMMARY

<u>Asset Class</u>	<u>Physical Exposure</u>		<u>Delta Adjusted Synthetic Exposure</u>		<u>Net Position</u>		<u>Overlay Target</u>		<u>Policy Target</u>	
Total Market Value	10,230.1	100.0%	-0.0	0.0%	10,230.1	100.0%	10,230.1	100.0%	10,230.1	100.00%
Cash	1,728.6	16.9%	-1,454.2	-14.22%	274.3	2.68%	0.0	0.0%	0.0	0.00%
Cash	1,728.6	16.9%	-1,454.2	-14.22%	274.3	2.68%	0.0	0.0%	0.0	0.00%
Equity	1,488.2	14.55%	2,058.3	20.12%	3,546.4	34.67%	3,791.5	37.06%	3,734.0	36.50%
Emerging Markets	424.6	4.15%	386.5	3.78%	811.0	7.93%	805.0	7.87%	792.8	7.75%
Equity Delta Hedge	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.00%
International Developed	46.7	0.46%	1,088.1	10.64%	1,134.8	11.09%	1,116.7	10.92%	1,099.7	10.75%
US Large Cap	1,016.7	9.94%	226.2	2.21%	1,242.9	12.15%	1,506.2	14.72%	1,483.4	14.50%
US Small Cap	0.2	0.0%	357.5	3.49%	357.7	3.5%	363.6	3.55%	358.1	3.50%
Fixed	3,665.1	35.83%	-604.0	-5.9%	3,061.0	29.92%	3,090.3	30.21%	3,043.4	29.75%
EM High Yield CDX	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.00%
Global ex US Fixed Income	2,247.9	21.97%	-698.0	-6.82%	1,549.9	15.15%	1,558.1	15.23%	1,534.5	15.00%
High Yield	1,109.1	10.84%	0.0	0.0%	1,109.1	10.84%	986.8	9.65%	971.9	9.50%
US Fixed Income	308.0	3.01%	94.0	0.92%	402.0	3.93%	545.4	5.33%	537.1	5.25%
Other	3,348.3	32.73%	0.0	0.0%	3,348.3	32.73%	3,348.3	32.73%	3,452.6	33.75%
Alternatives	48.1	0.47%	0.0	0.0%	48.1	0.47%	48.1	0.47%	51.2	0.50%
Commodities	260.8	2.55%	0.0	0.0%	260.8	2.55%	260.8	2.55%	266.0	2.60%
Infrastructure	142.0	1.39%	0.0	0.0%	142.0	1.39%	142.0	1.39%	30.7	0.30%
Private Equity	1,763.7	17.24%	0.0	0.0%	1,763.7	17.24%	1,763.7	17.24%	1,902.8	18.60%
Real Estate	473.8	4.63%	0.0	0.0%	473.8	4.63%	473.8	4.63%	542.2	5.30%
Tactical Cash	659.8	6.45%	0.0	0.0%	659.8	6.45%	659.8	6.45%	659.8	6.45%



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK/RETURN



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

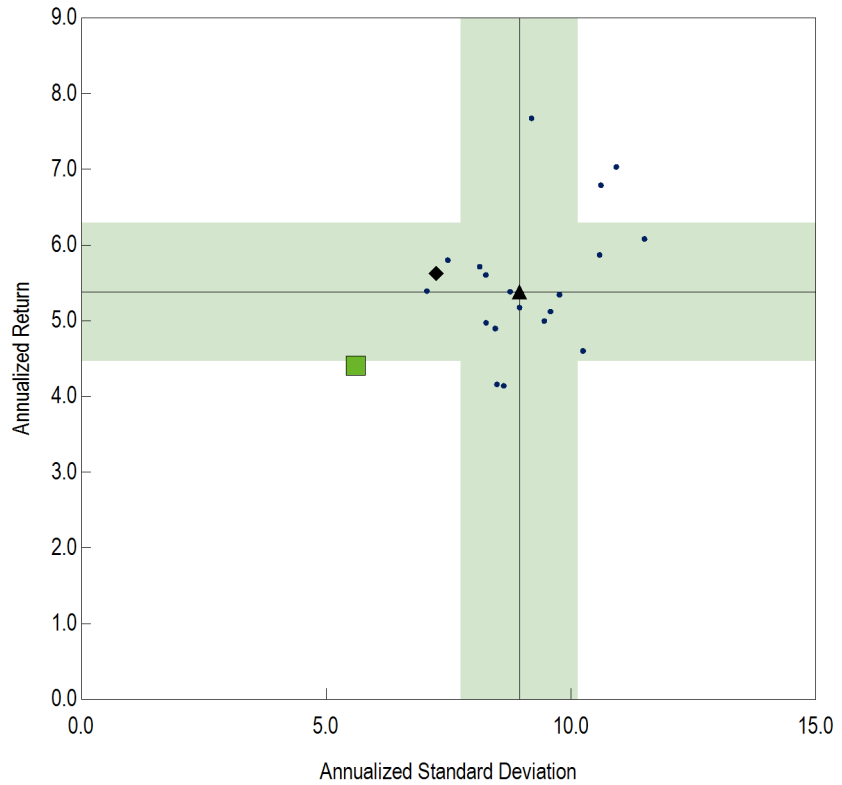
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net



San Bernardino County Employees' Retirement Association

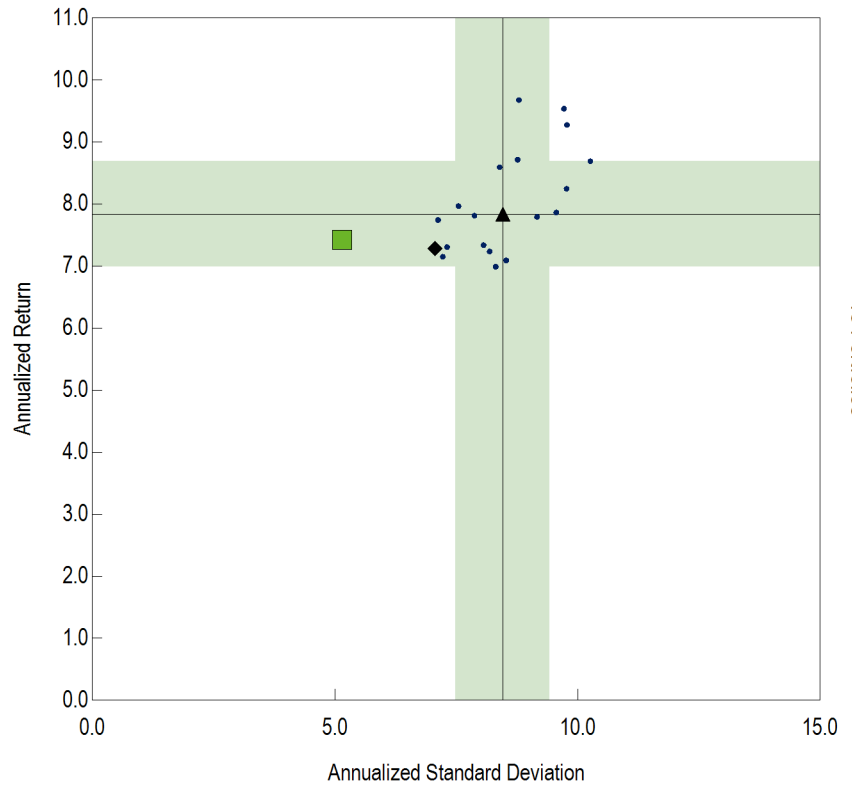
TOTAL FUND RISK/RETURN

5 Years Ending June 30, 2020



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

10 Years Ending June 30, 2020



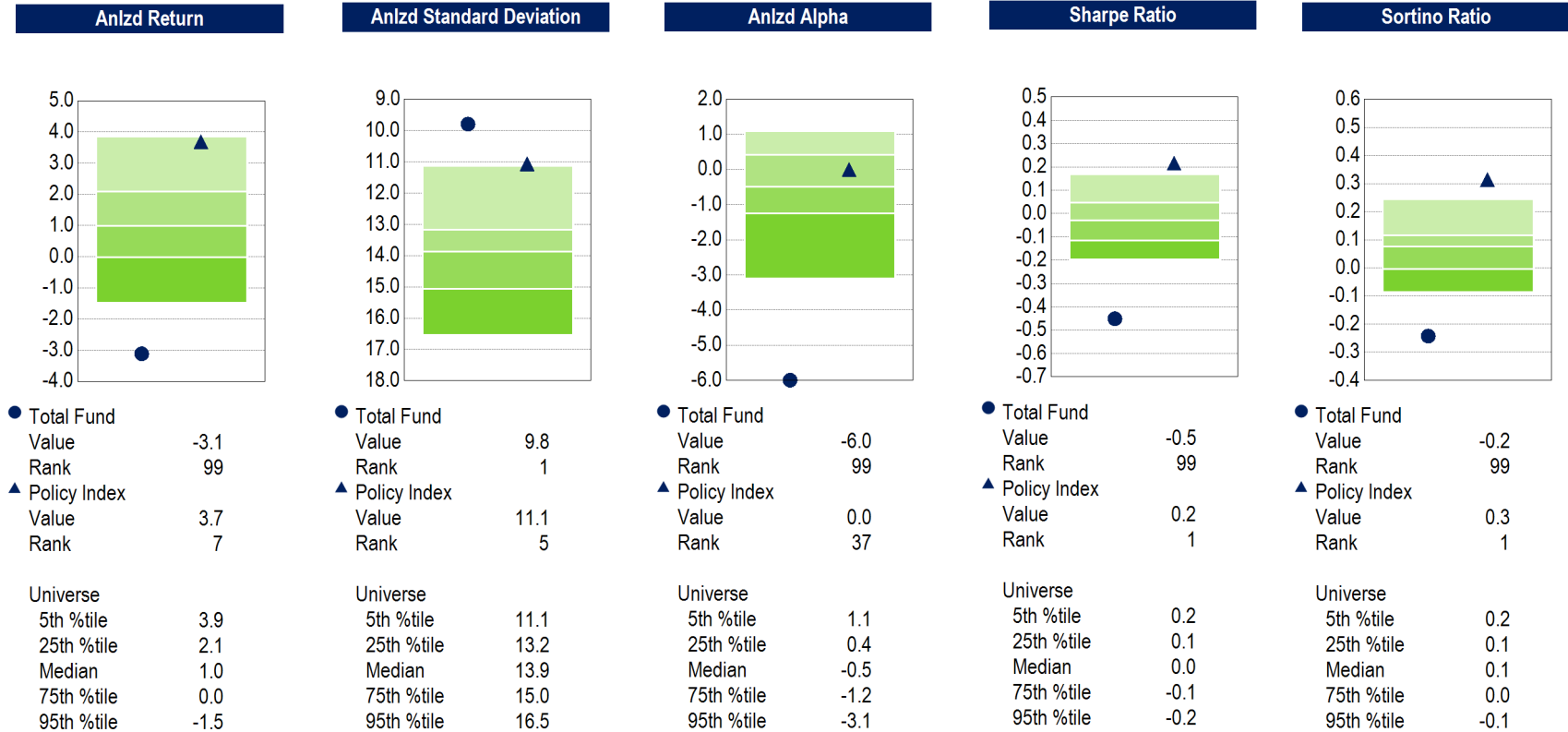
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Net



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund vs. InvMetrics Public DB > \$1B Net (USD)
1 Year



Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 19 Portfolios

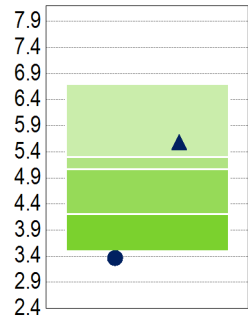


San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

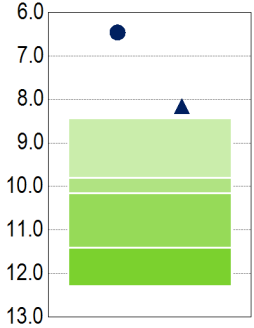
Total Fund vs. InvMetrics Public DB > \$1B Net (USD)
3 Years

Anlzd Return



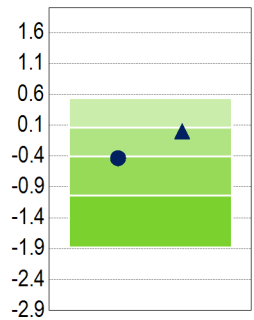
● Total Fund	
Value	3.4
Rank	99
▲ Policy Index	
Value	5.6
Rank	21
Universe	
5th %tile	6.7
25th %tile	5.3
Median	5.1
75th %tile	4.2
95th %tile	3.5

Anlzd Standard Deviation



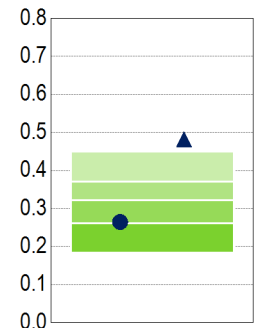
● Total Fund	
Value	6.5
Rank	1
▲ Policy Index	
Value	8.2
Rank	3
Universe	
5th %tile	8.4
25th %tile	9.8
Median	10.1
75th %tile	11.4
95th %tile	12.3

Anlzd Alpha



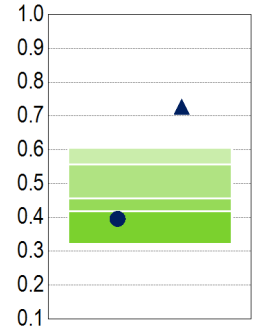
● Total Fund	
Value	-0.4
Rank	55
▲ Policy Index	
Value	0.0
Rank	30
Universe	
5th %tile	0.5
25th %tile	0.1
Median	-0.4
75th %tile	-1.0
95th %tile	-1.9

Sharpe Ratio



● Total Fund	
Value	0.3
Rank	73
▲ Policy Index	
Value	0.5
Rank	4
Universe	
5th %tile	0.4
25th %tile	0.4
Median	0.3
75th %tile	0.3
95th %tile	0.2

Sortino Ratio



● Total Fund	
Value	0.4
Rank	81
▲ Policy Index	
Value	0.7
Rank	2
Universe	
5th %tile	0.6
25th %tile	0.6
Median	0.5
75th %tile	0.4
95th %tile	0.3

Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 19 Portfolios

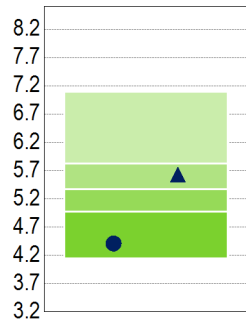


San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

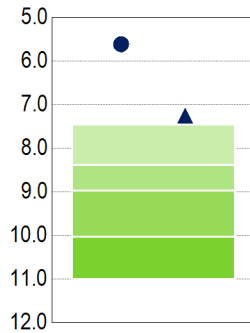
**Total Fund vs. InvMetrics Public DB > \$1B Net (USD)
5 Years**

Anlzd Return



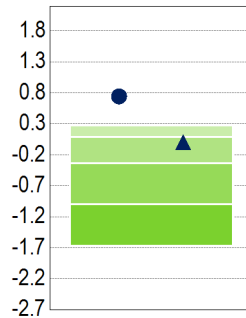
● Total Fund	
Value	4.4
Rank	92
▲ Policy Index	
Value	5.6
Rank	38
Universe	
5th %tile	7.1
25th %tile	5.8
Median	5.4
75th %tile	5.0
95th %tile	4.2

Anlzd Standard Deviation



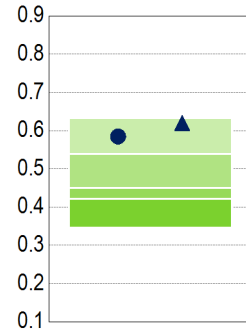
● Total Fund	
Value	5.6
Rank	1
▲ Policy Index	
Value	7.2
Rank	3
Universe	
5th %tile	7.4
25th %tile	8.4
Median	9.0
75th %tile	10.0
95th %tile	11.0

Anlzd Alpha



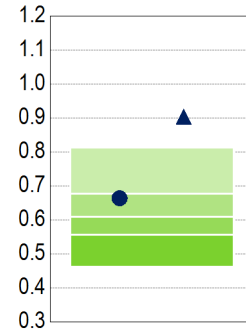
● Total Fund	
Value	0.7
Rank	1
▲ Policy Index	
Value	0.0
Rank	30
Universe	
5th %tile	0.3
25th %tile	0.1
Median	-0.3
75th %tile	-1.0
95th %tile	-1.7

Sharpe Ratio



● Total Fund	
Value	0.6
Rank	14
▲ Policy Index	
Value	0.6
Rank	7
Universe	
5th %tile	0.6
25th %tile	0.5
Median	0.5
75th %tile	0.4
95th %tile	0.3

Sortino Ratio



● Total Fund	
Value	0.7
Rank	27
▲ Policy Index	
Value	0.9
Rank	1
Universe	
5th %tile	0.8
25th %tile	0.7
Median	0.6
75th %tile	0.6
95th %tile	0.5

Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 19 Portfolios

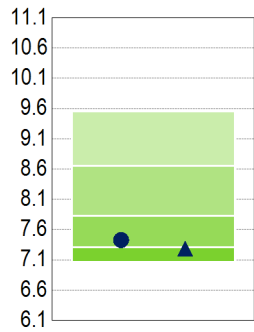


San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

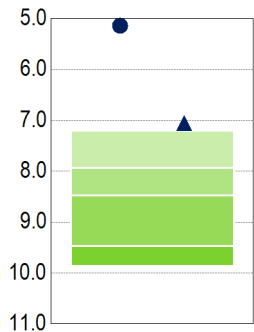
**Total Fund vs. InvMetrics Public DB > \$1B Net (USD)
10 Years**

Anlzd Return



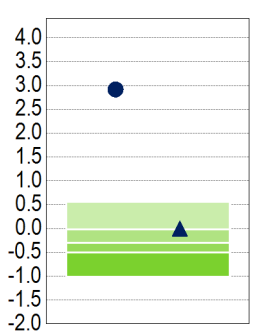
● Total Fund	
Value	7.4
Rank	70
▲ Policy Index	
Value	7.3
Rank	79
Universe	
5th %tile	9.6
25th %tile	8.7
Median	7.8
75th %tile	7.3
95th %tile	7.1

Anlzd Standard Deviation



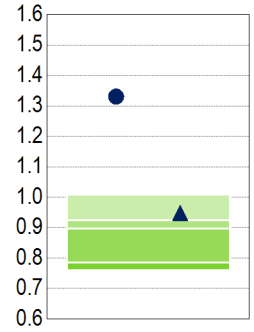
● Total Fund	
Value	5.1
Rank	1
▲ Policy Index	
Value	7.1
Rank	1
Universe	
5th %tile	7.2
25th %tile	7.9
Median	8.5
75th %tile	9.5
95th %tile	9.9

Anlzd Alpha



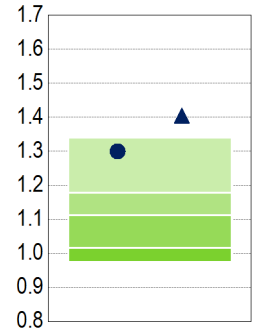
● Total Fund	
Value	2.9
Rank	1
▲ Policy Index	
Value	0.0
Rank	25
Universe	
5th %tile	0.6
25th %tile	0.0
Median	-0.3
75th %tile	-0.5
95th %tile	-1.0

Sharpe Ratio



● Total Fund	
Value	1.3
Rank	1
▲ Policy Index	
Value	0.9
Rank	19
Universe	
5th %tile	1.0
25th %tile	0.9
Median	0.9
75th %tile	0.8
95th %tile	0.8

Sortino Ratio



● Total Fund	
Value	1.3
Rank	11
▲ Policy Index	
Value	1.4
Rank	1
Universe	
5th %tile	1.3
25th %tile	1.2
Median	1.1
75th %tile	1.0
95th %tile	1.0

Sortino Ratio requires at least two negative points during the time period in order to calculate.
Sample size is 19 Portfolios



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

1 Year Ending June 30, 2020								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity With Beta Overlay	15.8%	3.7%	24	26.0%	98	3.2%	-0.9	--
Russell 3000	--	6.5%	5	23.3%	60	0.0%	--	--
International Equity With Beta Overlay	19.2%	-5.1%	68	20.9%	11	1.6%	-0.5	--
MSCI ACWI ex USA Gross	--	-4.4%	60	21.3%	17	0.0%	--	--
Global Fixed Income With Beta Overlay	29.2%	-4.7%	--	10.8%	--	9.7%	-0.9	--
BBgBarc Global Aggregate TR	--	4.2%	--	4.3%	--	0.0%	--	--
U.S. Credit Strategies	14.0%	-1.0%	99	12.1%	81	9.3%	0.0	99
50% CS Leveraged Loan / 50% ICE BofA US HY BB-B Rated Constrained Index	--	-0.9%	99	13.8%	85	0.0%	--	--
Non-U.S. Credit Composite	11.6%	-11.8%	99	13.4%	99	12.1%	-0.7	--
ICE BofA Euro High Yield Constrained TR	--	-3.2%	98	17.0%	99	0.0%	--	--
Emerging Markets Debt Composite	9.6%	-7.6%	97	10.4%	2	12.5%	-0.5	--
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	-1.1%	50	15.5%	27	0.0%	--	--
Alpha Pool Composite	13.8%	-8.2%	90	10.0%	39	10.0%	-1.3	--
91 Day T-Bill + 3%	--	4.3%	10	0.2%	1	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	17.0%	-0.3%	--	7.8%	--
CJA Global All PE (Qtr Lag)	--	-0.8%	--	11.5%	--
Real Estate Composite	4.5%	3.7%	13	2.8%	67
NCREIF Property Index 1 Qtr. Lag	--	5.3%	3	2.3%	58
Real Assets Composite	4.5%	-3.7%	--	17.6%	--
Real Assets Custom Blend	--	-9.3%	--	12.1%	--

US Credit and Non-US Credit composites are based on physical assets.



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

3 Years Ending June 30, 2020								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity With Beta Overlay	15.8%	6.9%	84	17.8%	53	3.0%	-1.1	--
Russell 3000	--	10.0%	9	17.7%	44	0.0%	--	--
International Equity With Beta Overlay	19.2%	0.7%	54	15.1%	8	2.3%	-0.4	--
MSCI ACWI ex USA Gross	--	1.6%	20	15.9%	14	0.0%	--	--
Global Fixed Income With Beta Overlay	29.2%	-0.4%	--	6.7%	--	7.0%	-0.6	--
BBgBarc Global Aggregate TR	--	3.8%	--	3.9%	--	0.0%	--	--
U.S. Credit Strategies	14.0%	3.8%	88	7.3%	77	6.1%	0.1	89
50% CS Leveraged Loan / 50% ICE BofA US HY BB-B Rated Constrained Index	--	2.9%	90	8.3%	83	0.0%	--	--
Non-U.S. Credit Composite	11.6%	0.0%	99	8.4%	99	10.5%	-0.1	--
ICE BofA Euro High Yield Constrained TR	--	1.0%	99	11.7%	99	0.0%	--	--
Emerging Markets Debt Composite	9.6%	-2.1%	99	6.7%	2	9.0%	-0.5	--
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	2.4%	48	10.6%	29	0.0%	--	--
Alpha Pool Composite	13.8%	1.0%	57	6.4%	22	6.3%	-0.6	--
91 Day T-Bill + 3%	--	4.7%	1	0.2%	1	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	17.0%	9.3%	--	5.7%	--
CJA Global All PE (Qtr Lag)	--	9.1%	--	8.7%	--
Real Estate Composite	4.5%	6.2%	25	2.3%	52
NCREIF Property Index 1 Qtr. Lag	--	6.4%	23	2.7%	63
Real Assets Composite	4.5%	0.7%	--	11.1%	--
Real Assets Custom Blend	--	-2.1%	--	7.8%	--

US Credit and Non-US Credit composites are based on physical assets.



San Bernardino County Employees' Retirement Association

TOTAL FUND RISK STATISTICS

5 Years Ending June 30, 2020								
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Tracking Error	Info Ratio	Rank
Domestic Equity	10.0%	4.5%	--	12.8%	--	9.0%	-0.6	--
Russell 3000	--	10.0%	--	15.4%	--	0.0%	--	--
International Developed	0.4%	-0.5%	99	19.8%	99	14.1%	-0.2	--
MSCI EAFE	--	2.1%	51	14.4%	24	0.0%	--	--
International Emerging	4.2%	0.9%	--	16.5%	--	4.4%	-0.5	--
MSCI Emerging Markets	--	2.9%	--	17.9%	--	0.0%	--	--
U.S. Credit Strategies	14.0%	4.1%	77	6.1%	66	5.4%	0.0	77
50% CS Leveraged Loan / 50% ICE BofA US HY BB-B Rated Constrained Index	--	3.9%	85	6.9%	83	0.0%	--	--
Non-U.S. Credit Composite	11.6%	3.4%	63	6.9%	99	10.5%	0.0	32
ICE BofA Euro High Yield Constrained TR	--	3.4%	62	10.9%	99	0.0%	--	--
Emerging Markets Debt Composite	9.6%	2.1%	80	6.7%	5	8.0%	-0.2	--
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified	--	3.9%	57	9.9%	43	0.0%	--	--
Alpha Pool Composite	13.8%	2.2%	21	5.7%	35	5.7%	-0.3	--
91 Day T-Bill + 3%	--	4.2%	1	0.2%	1	0.0%	--	--

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Private Equity Composite	17.0%	9.9%	--	5.0%	--
CJA Global All PE (Qtr Lag)	--	9.1%	--	7.5%	--
Real Estate Composite	4.5%	7.2%	43	2.8%	52
NCREIF Property Index 1 Qtr. Lag	--	7.6%	19	3.3%	62
Real Assets Composite	4.5%	-0.3%	--	9.3%	--
Real Assets Custom Blend	--	-2.6%	--	7.4%	--

Percent of Total equals 89.6% because Beta Overlay is not included as these statistics are not relevant for alternative asset classes.

Universe information is unavailable for the Private Equity and Real Assets Composites.



TOP 10 MANAGERS BY AUM: AS OF JUNE 30, 2020

Manager	Market Value	Portfolio %
SSGA S&P500 Flagship Fund	666,262,965	6.60%
Total Ares	644,128,997	6.38%
Gramercy Funds Management	629,415,398	6.23%
Total Tobam	624,813,737	6.18%
Total Russell	615,084,857	6.09%
Total Pathway	593,947,225	5.88%
Total Apollo	526,742,838	5.21%
Total GoldenTree	463,534,038	4.59%
Total Alcentra	457,577,629	4.53%
Total Zais	436,378,533	4.32%
Total	5,657,886,216	56.00%



PUBLIC EQUITY PORTFOLIO

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



San Bernardino County Employees' Retirement Association

GLOBAL EQUITY STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Equity	1,477,844,605	14.6	21.0	19	-5.5	12	2.3	25	5.0	92	4.0	97	5.7	99
MSCI ACWI			19.2	60	-6.3	23	2.1	31	6.1	64	6.5	78	9.2	99
Excess Return			1.8		0.8		0.2		-1.1		-2.5		-3.5	
InvMetrics Public DB Total Eq Net Median			19.5		-7.2		0.8		6.3		7.1		10.4	
Domestic Equity With Beta Overlay	1,596,814,125	15.8	23.9	6	-5.4	29	3.7	24	6.9	84	5.7	99	--	--
Russell 3000			22.0	30	-3.5	11	6.5	5	10.0	9	10.0	8	13.7	5
Excess Return			1.9		-1.9		-2.8		-3.1		-4.3			
InvMetrics Public DB US Eq Net Median			20.9		-6.2		2.3		8.3		8.9		12.6	
Domestic Equity	1,011,192,405	10.0	21.0	--	-3.8	--	5.9	--	6.3	--	4.5	--	5.0	--
Russell 3000			22.0	--	-3.5	--	6.5	--	10.0	--	10.0	--	13.7	--
Excess Return			-1.0		-0.3		-0.6		-3.7		-5.5		-8.7	
Tobam AB US Equity	336,232,200	3.3	23.2	43	0.2	27	8.6	27	--	--	--	--	--	--
Russell 3000			22.0	49	-3.5	36	6.5	33	10.0	33	10.0	28	13.7	29
Excess Return			1.2		3.7		2.1							
eV All US Equity Net Median			21.9		-8.7		-1.0		5.9		6.7		11.7	
Large Cap Equity	674,711,823	6.7	19.9	64	-5.4	41	4.6	37	6.7	47	5.6	58	5.9	98
S&P 500			20.5	60	-3.1	35	7.5	29	10.7	29	10.7	24	14.0	25
Excess Return			-0.6		-2.3		-2.9		-4.0		-5.1		-8.1	
eV All US Equity Net Median			21.9		-8.7		-1.0		5.9		6.7		11.7	
SSgA S&P500	666,262,965	6.6	20.5	60	-5.3	41	5.0	36	7.4	45	6.9	49	8.5	87
S&P 500			20.5	60	-3.1	35	7.5	29	10.7	29	10.7	24	14.0	25
Excess Return			0.0		-2.2		-2.5		-3.3		-3.8		-5.5	
eV All US Equity Net Median			21.9		-8.7		-1.0		5.9		6.7		11.7	
Russell US Large Cap Volatility	8,448,858	0.1												
Small Cap Equity	248,382	0.0												
Russell US Small Cap Volatility	248,382	0.0												



San Bernardino County Employees' Retirement Association

GLOBAL EQUITY STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
International Equity With Beta Overlay	1,941,796,723	19.2	16.3	86	-10.9	59	-5.1	68	0.7	54	1.8	69	--	--
MSCI ACWI ex USA Gross			<u>16.3</u>	86	<u>-10.8</u>	49	<u>-4.4</u>	60	<u>1.6</u>	20	<u>2.7</u>	38	<u>5.5</u>	70
Excess Return			0.0		-0.1		-0.7		-0.9		-0.9			
InvMetrics Public DB ex-US Eq Net Median			19.2		-10.8		-4.1		0.8		2.4		5.8	
International Equity	466,652,200	4.6	20.9	--	-9.7	--	-6.0	--	0.7	--	1.0	--	5.3	--
MSCI ACWI			<u>19.2</u>	--	<u>-6.3</u>	--	<u>2.1</u>	--	<u>6.1</u>	--	<u>6.5</u>	--	<u>9.2</u>	--
Excess Return			1.7		-3.4		-8.1		-5.4		-5.5		-3.9	
International Developed	45,247,287	0.4	16.9	38	-7.3	27	-3.7	45	-1.3	90	-0.5	99	9.0	18
MSCI EAFE			<u>14.9</u>	97	<u>-11.3</u>	49	<u>-5.1</u>	49	<u>0.8</u>	46	<u>2.1</u>	51	<u>5.7</u>	73
Excess Return			2.0		4.0		1.4		-2.1		-2.6		3.3	
InvMetrics Public DB Dev Mkt ex-US Eq Net Median			16.8		-11.6		-5.7		0.4		2.2		7.9	
Russell International Volatility	16,437	0.0												
Tobam AB World Ex-US Equity	45,230,850	0.4	18.0	56	-8.7	51	-5.0	65	--	--	--	--	--	--
MSCI ACWI ex USA			<u>16.1</u>	74	<u>-11.0</u>	62	<u>-4.8</u>	64	<u>1.1</u>	60	<u>2.3</u>	65	<u>5.0</u>	81
Excess Return			1.9		2.3		-0.2							
eV All ACWI ex-US Equity Net Median			18.6		-8.4		-0.7		2.8		3.8		6.9	
International Emerging	421,404,913	4.2	21.4	--	-10.0	--	-6.2	--	1.0	--	0.9	--	2.1	--
MSCI Emerging Markets			<u>18.1</u>	--	<u>-9.8</u>	--	<u>-3.4</u>	--	<u>1.9</u>	--	<u>2.9</u>	--	<u>3.3</u>	--
Excess Return			3.3		-0.2		-2.8		-0.9		-2.0		-1.2	
Mondrian	132,823,376	1.3	15.2	88	-14.9	82	-8.3	74	-1.4	78	0.0	83	2.5	80
MSCI Emerging Markets			<u>18.1</u>	68	<u>-9.8</u>	48	<u>-3.4</u>	48	<u>1.9</u>	41	<u>2.9</u>	49	<u>3.3</u>	62
Excess Return			-2.9		-5.1		-4.9		-3.3		-2.9		-0.8	
eV Emg Mkts Equity Net Median			20.4		-10.1		-4.0		1.2		2.8		3.9	
Tobam	288,581,537	2.9	24.5	28	-7.5	32	-5.2	57	2.3	37	--	--	--	--
MSCI Emerging Markets			<u>18.1</u>	68	<u>-9.8</u>	48	<u>-3.4</u>	48	<u>1.9</u>	41	<u>2.9</u>	49	<u>3.3</u>	62
Excess Return			6.4		2.3		-1.8		0.4					
eV Emg Mkts Equity Net Median			20.4		-10.1		-4.0		1.2		2.8		3.9	



GLOBAL DEBT STRATEGIES

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



San Bernardino County Employees' Retirement Association

GLOBAL DEBT STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Global Fixed Income With Beta Overlay	2,954,418,985	29.2	0.9	--	-7.1	--	-4.7	--	-0.4	--	1.3	--	--	--
BBgBarc Global Aggregate TR			<u>3.3</u>	--	<u>3.0</u>	--	<u>4.2</u>	--	<u>3.8</u>	--	<u>3.6</u>	--	<u>2.8</u>	--
Excess Return			-2.4		-10.1		-8.9		-4.2		-2.3			
Total Fixed	3,558,444,769	35.2	0.8	97	-8.6	99	-6.6	99	1.0	99	3.4	61	5.7	1
InvMetrics Public DB Total Fix Inc Net Median			3.9		4.8		6.7		4.3		3.5		3.5	
U.S. Credit Strategies	1,413,469,296	14.0	3.4	99	-4.8	99	-1.0	99	3.8	88	4.1	77	6.8	1
50% CS Leveraged Loan / 50% ICE BofA US HY BB-B Rated Constrained Index			<u>9.6</u>	52	<u>-4.2</u>	96	<u>-0.9</u>	99	<u>2.9</u>	90	<u>3.9</u>	85	<u>5.4</u>	16
Excess Return			-6.2		-0.6		-0.1		0.9		0.2		1.4	
ICE BofA US High Yield TR			9.6	52	-4.8	99	-1.1	99	3.0	90	4.6	70	6.5	1
eV Global Credit Fixed Inc Net Median			9.7		3.0		6.7		5.0		5.1		4.9	
Golden Tree Asset Management	445,656,473	4.4	12.2	10	-8.3	99	-4.0	99	4.8	63	5.2	40	--	--
Beach Point Capital (Formerly Post)	158,151,762	1.6	-6.1	99	-5.2	99	-1.3	99	3.3	89	5.2	40	7.6	1
Golden Tree Distressed Debt	17,877,565	0.2	0.0	99	4.8	11	0.5	98	1.9	92	1.8	97	8.0	1
Mackay / Gold Coast	115,384,983	1.1	8.6	67	-3.0	92	3.2	87	3.1	89	3.8	86	6.2	1
MD SASS Waterfall Victoria	33,296,369	0.3	32.5	--	31.6	--	51.5	--	15.9	--	--	--	--	--
Russell Interest Rate Hedging	5,253,733	0.1	36.9	1	-33.8	99	-50.8	99	-41.0	99	-34.4	99	-27.3	99
Stone Tower Credit (Apollo)	110,212,172	1.1	5.6	75	10.7	1	16.5	1	10.9	1	8.9	1	--	--
Gold Coast Capital IV	104,998,571	1.0	7.7	--	-3.8	--	-0.8	--	3.3	--	3.9	--	--	--
Waterfall Asset Management	45,218,616	0.4	3.6	--	-27.6	--	-24.0	--	-1.2	--	7.3	--	--	--
Waterfall Victoria	50,153,020	0.5	-8.9	--	-7.1	--	-1.3	--	5.6	--	7.1	--	--	--
Stone Tower Offshore Credit (Apollo)	327,232,500	3.2	-5.5	--	-4.5	--	-2.5	--	1.7	--	3.2	--	6.7	--
AG Capital	6,853	0.0	47.4	1	47.4	1	45.3	1	9.8	1	5.2	40	6.2	1



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GLOBAL DEBT STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Non-U.S. Fixed Income Composite	2,144,975,474	21.2	-0.9	99	-11.0	99	-9.9	99	-0.6	99	3.0	89	4.8	10
<i>BBgBarc Global Aggregate ex US</i>			<u>3.4</u>	68	<u>0.6</u>	88	<u>0.7</u>	95	<u>2.6</u>	97	<u>3.0</u>	90	<u>2.0</u>	99
Excess Return			-4.3		-11.6		-10.6		-3.2		0.0		2.8	
<i>InvMetrics Public DB Total Fix Inc Net Median</i>			3.9		4.8		6.7		4.3		3.5		3.5	
Non-U.S. Credit Composite	1,173,536,909	11.6	-1.7	99	-14.0	99	-11.8	99	0.0	99	3.4	63	5.6	1
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	1	<u>-4.9</u>	98	<u>-3.2</u>	98	<u>1.0</u>	99	<u>3.4</u>	62	<u>5.6</u>	1
Excess Return			-15.6		-9.1		-8.6		-1.0		0.0		0.0	
Marathon/Gold Coast	233,565,506	2.3	-1.8	99	-0.4	85	5.9	64	9.5	1	7.8	1	6.3	1
Halcyon Asset Management	168,167,941	1.7	-19.7	99	-22.0	99	-20.4	99	-5.8	99	--	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	4	<u>-4.9</u>	99	<u>-3.2</u>	99	<u>1.0</u>	99	<u>3.4</u>	88	<u>5.6</u>	10
Excess Return			-33.6		-17.1		-17.2		-6.8					
<i>eV Global Credit Fixed Inc Net Median</i>			9.7		3.0		6.7		5.0		5.1		4.9	
Caim Composite	318,264,343	3.2	2.0	99	-8.4	99	-4.1	99	1.1	96	4.4	74	5.4	19
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	4	<u>-4.9</u>	99	<u>-3.2</u>	99	<u>1.0</u>	99	<u>3.4</u>	88	<u>5.6</u>	10
Excess Return			-11.9		-3.5		-0.9		0.1		1.0		-0.2	
<i>eV Global Credit Fixed Inc Net Median</i>			9.7		3.0		6.7		5.0		5.1		4.9	
Alcentra - KT1	342,804,812	3.4	12.9	--	-21.0	--	-19.3	--	-0.8	--	4.9	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	--	<u>-4.9</u>	--	<u>-3.2</u>	--	<u>1.0</u>	--	<u>3.4</u>	--	<u>5.6</u>	--
Excess Return			-1.0		-16.1		-16.1		-1.8		1.5			
Alcentra SP1 - KT1	5,516,211	0.1	-7.1	--	-6.1	--	-69.4	--	--	--	--	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	--	<u>-4.9</u>	--	<u>-3.2</u>	--	<u>1.0</u>	--	<u>3.4</u>	--	<u>5.6</u>	--
Excess Return			-21.0		-1.2		-66.2							
Alcentra SP2 - KT1	20,972,529	0.2	2.3	--	-5.1	--	-24.4	--	-6.4	--	--	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	--	<u>-4.9</u>	--	<u>-3.2</u>	--	<u>1.0</u>	--	<u>3.4</u>	--	<u>5.6</u>	--
Excess Return			-11.6		-0.2		-21.2		-7.4					
Alcentra SP3 - KT1	31,509,012	0.3	-39.1	--	-38.8	--	-26.0	--	-10.1	--	--	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	--	<u>-4.9</u>	--	<u>-3.2</u>	--	<u>1.0</u>	--	<u>3.4</u>	--	<u>5.6</u>	--
Excess Return			-53.0		-33.9		-22.8		-11.1					
Alcentra SP4 - KT1	52,733,296	0.5	-1.4	--	1.2	--	4.0	--	--	--	--	--	--	--
<i>ICE BofA Euro High Yield Constrained TR</i>			<u>13.9</u>	--	<u>-4.9</u>	--	<u>-3.2</u>	--	<u>1.0</u>	--	<u>3.4</u>	--	<u>5.6</u>	--
Excess Return			-15.3		6.1		7.2							
International Core	3,259	0.0												
OCM Intl Convertibles SMA	3,259	0.0												



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GLOBAL DEBT STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Emerging Markets Debt Composite	971,438,565	9.6	0.0	99	-7.2	78	-7.6	97	-2.1	99	2.1	80	3.1	67
50% JPM EMBI Global Diversified/50% JPM GBI - EM Global Diversified			11.0	72	-4.8	61	-1.1	50	2.4	48	3.9	57	3.9	65
Excess Return			-11.0		-2.4		-6.5		-4.5		-1.8		-0.8	
eV All Emg Mkts Fixed Inc Net Median			12.4		-4.1		-1.2		2.4		4.3		5.0	
Ashmore Emerging Markets Liquid Investments	151,491,506	1.5	11.0	72	-4.8	61	-1.1	50	2.4	48	3.9	57	3.9	65
JP Morgan GBI - EM Global Diversified Index			9.8	89	-6.9	76	-2.8	67	1.1	68	2.3	77	1.6	79
Excess Return			1.2		2.1		1.7		1.3		1.6		2.3	
eV All Emg Mkts Fixed Inc Net Median			12.4		-4.1		-1.2		2.4		4.3		5.0	
Ashmore Local Currency	96,844,141	1.0	16.4	5	-14.3	99	-14.9	99	-2.6	99	0.4	98	--	--
JP Morgan ELM+ TR USD			3.4	89	-5.3	89	-3.9	95	0.0	95	0.8	95	0.4	99
Excess Return			13.0		-9.0		-11.0		-2.6		-0.4			
JP Morgan EMBI Global Index			11.2	20	-1.9	64	1.5	62	3.3	51	5.1	12	5.8	18
eV All Global Fixed Inc Net Median			8.3		0.1		2.5		3.3		3.8		4.2	
Gramercy Funds Management LLC	629,415,398	6.2	-3.2	99	-4.5	55	-6.2	95	-3.5	99	2.1	80	--	--
JP Morgan ELM+ TR USD			3.4	99	-5.3	64	-3.9	80	0.0	84	0.8	97	0.4	95
Excess Return			-6.6		0.8		-2.3		-3.5		1.3			
JP Morgan EMBI Global Index			11.2	71	-1.9	27	1.5	27	3.3	35	5.1	21	5.8	16
eV All Emg Mkts Fixed Inc Net Median			12.4		-4.1		-1.2		2.4		4.3		5.0	
PGIM Fixed Income	93,687,520	0.9	-12.8	99	-12.5	99	-6.9	95	-0.9	96	3.2	65	--	--
JP Morgan ELM+ TR USD			3.4	99	-5.3	64	-3.9	80	0.0	84	0.8	97	0.4	95
Excess Return			-16.2		-7.2		-3.0		-0.9		2.4			
JP Morgan EMBI Global Index			11.2	71	-1.9	27	1.5	27	3.3	35	5.1	21	5.8	16
eV All Emg Mkts Fixed Inc Net Median			12.4		-4.1		-1.2		2.4		4.3		5.0	



ABSOLUTE RETURN (ALPHA POOL)

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

ALPHA POOL STRATEGIES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Alpha Pool Composite	1,396,499,018	13.8	-4.2	99	-8.8	89	-8.2	90	1.0	57	2.2	21	5.3	7
<i>91 Day T-Bill + 3%</i>			<u>0.8</u>	87	<u>1.9</u>	6	<u>4.3</u>	10	<u>4.7</u>	1	<u>4.2</u>	1	<u>3.6</u>	31
Excess Return			-5.0		-10.7		-12.5		-3.7		-2.0		1.7	
Alpha Liquidity (Ssga)	6,228,970	0.1	0.4	98	1.5	41	2.7	49	2.2	76	1.5	92	0.9	99
Apollo Global Management	50,099,580	0.5	8.9	43	8.8	2	22.0	1	17.6	1	18.6	1	--	--
Ares Eco Master Fund II	487,704,710	4.8	-6.2	99	-3.9	76	-2.9	92	1.6	82	--	--	--	--
Birch Grove Credit Strategies	144,795,717	1.4	1.2	97	4.3	13	7.1	12	7.5	2	5.5	6	--	--
Sterling Stamos	246,291,508	2.4	-12.0	99	-17.0	99	-17.5	99	-1.4	98	1.7	91	2.5	89
Zais	101,222,652	1.0	-23.6	99	-22.4	99	-26.7	99	-7.9	99	-3.3	99	9.9	1
Zais Group Invest Advisors	262,269,982	2.6	17.1	4	-13.2	99	-14.3	99	-0.4	97	3.3	62	--	--
Zais Zephyr A 6 LP	12,910,101	0.1	-46.9	99	-46.9	99	-39.2	99	-7.6	99	--	--	--	--
Zais Zephyr 8	34,041,179	0.3	-6.3	99	-4.2	78	-2.9	92	--	--	--	--	--	--
Zais Zephyr 7	25,934,620	0.3	29.7	1	--	--	--	--	--	--	--	--	--	--



PRIVATE ASSETS

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



REAL ESTATE

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



REAL ASSETS

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



San Bernardino County Employees' Retirement Association

ALTERNATIVES - NET

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Private Equity Composite	1,715,485,480	17.0	-8.3	--	-6.0	--	-0.3	--	9.3	--	9.9	--	12.4	--
<i>CJA Global All PE (Qtr Lag)</i>			<u>-9.2</u>	--	<u>-4.9</u>	--	<u>-0.8</u>	--	<u>9.1</u>	--	<u>9.1</u>	--	<u>11.4</u>	--
Excess Return			0.9		-1.1		0.5		0.2		0.8		1.0	
<i>Russell 3000</i>			22.0	--	-3.5	--	6.5	--	10.0	--	10.0	--	13.7	--
<i>CJA US All PE (1 Qtr Lag)</i>			-11.9	--	-8.5	--	-4.2	--	7.9	--	8.7	--	11.9	--
Real Estate Composite	455,147,412	4.5	-1.8	91	1.0	14	3.7	13	6.2	25	7.2	43	9.4	89
<i>NCREIF Property Index 1 Qtr. Lag</i>			<u>0.7</u>	24	<u>2.3</u>	10	<u>5.3</u>	3	<u>6.4</u>	23	<u>7.6</u>	19	<u>10.2</u>	84
Excess Return			-2.5		-1.3		-1.6		-0.2		-0.4		-0.8	
<i>InvMetrics Public DB Real Estate Pub+Priv Net Median</i>			-1.5		-1.1		1.8		5.5		7.1		11.2	
Real Assets Composite	459,047,004	4.5	11.1	--	-7.4	--	-3.7	--	0.7	--	-0.3	--	2.2	--
<i>Real Assets Custom Blend</i>			<u>4.8</u>	--	<u>-11.5</u>	--	<u>-9.3</u>	--	<u>-2.1</u>	--	<u>-2.6</u>	--	<u>-0.6</u>	--
Excess Return			6.3		4.1		5.6		2.8		2.3		2.8	
<i>67% Bloomberg Commodity/ 33% Barclays US TIPS</i>			4.8	--	-11.5	--	-9.3	--	-2.4	--	-3.9	--	-2.6	--
Timber	47,670,742	0.5	-2.2	--	-2.8	--	-2.9	--	-3.1	--	-2.2	--	1.1	--
<i>NCREIF Timberland 1 Qtr. Lag</i>			<u>0.1</u>	--	<u>0.1</u>	--	<u>1.3</u>	--	<u>2.5</u>	--	<u>2.8</u>	--	<u>4.5</u>	--
Excess Return			-2.3		-2.9		-4.2		-5.6		-5.0		-3.4	
Infrastructure	140,458,554	1.4	35.6	--	-28.1	--	-26.4	--	-7.8	--	-4.7	--	0.9	--
<i>Russell 3000</i>			<u>22.0</u>	--	<u>-3.5</u>	--	<u>6.5</u>	--	<u>10.0</u>	--	<u>10.0</u>	--	<u>13.7</u>	--
Excess Return			13.6		-24.6		-32.9		-17.8		-14.7		-12.8	
Commodities	270,917,709	2.7	4.8	--	6.5	--	14.4	--	10.5	--	5.4	--	4.7	--
<i>Bloomberg Commodity Index</i>			<u>5.1</u>	--	<u>-19.4</u>	--	<u>-17.4</u>	--	<u>-6.1</u>	--	<u>-7.7</u>	--	<u>-5.8</u>	--
Excess Return			-0.3		25.9		31.8		16.6		13.1		10.5	

Universe information is unavailable for the Private Equity and Real Assets Composites.



**APPENDIX: PRIVATE EQUITY, REAL ESTATE AND
REAL ASSETS PERFORMANCE**

NEPC, LLC

REAL ESTATE PERFORMANCE ENDED MARCH 31, 2020

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Distributions	Valuation	TVPI Ratio	IRR
American Realty Advisors	1996	\$ 128,009,773	\$ 128,009,773	\$ 278,401,963	\$ 112,188	2.18	6.89%
American Realty Value Add	2006	\$ 13,125,215	\$ 13,125,215	\$ 32,080,321	\$ -	2.44	10.92%
Apollo US Real Estate Fund II	2015	\$ 20,000,000	\$ 12,198,723	\$ 3,440,335	\$ 13,477,002	1.38	15.08%
Beacon Capital Strategic Partners IV, L.P.	2006	\$ 38,000,000	\$ 38,000,000	\$ 31,424,699	\$ -	0.83	-3.26%
Beacon Capital Strategic Partners V, L.P.	2007	\$ 18,000,000	\$ 18,000,000	\$ 11,174,695	\$ -	0.62	-7.87%
BlackRock Diamond Property Fund	2005	\$ 25,000,000	\$ 25,000,000	\$ 15,233,347	\$ -	0.61	-9.31%
Bryanston Real Estate Opportunity Fund II, L.P.	2009	\$ 20,000,000	\$ 8,589,256	\$ 11,847,997	\$ -	1.38	10.19%
Bryanston Retail Opportunity Fund, L.P.	2004	\$ 20,000,000	\$ 8,228,165	\$ 18,828,095	\$ 8,489,324	3.32	70.78%
CBRE Strategic Partners III	2003	\$ 10,000,000	\$ 10,000,000	\$ 12,698,783	\$ -	1.27	8.02%
CBRE Strategic Partners IV	2005	\$ 40,000,000	\$ 40,000,000	\$ 2,609,685	\$ -	0.07	-27.76%
Fillmore East Fund	2006	\$ 25,000,000	\$ 31,403,818	\$ 20,777,177	\$ -	0.66	-9.78%
Fillmore West Fund	2008	\$ 20,000,000	\$ 19,561,557	\$ 21,175,799	\$ -	1.08	1.14%
Fortress Japan Opportunity Fund II	2012	\$ 21,739,130	\$ 3,687,253	\$ 21,309,152	\$ 6,525,334	7.06	26.22%
Invesco Asian Real Estate Partners II (USD), LP	2007	\$ 20,000,000	\$ 8,412,833	\$ 11,324,754	\$ 143,567	1.37	7.54%
Invesco High Yield Debt Fund I	2007	\$ 20,000,000	\$ 20,000,000	\$ 8,567,605	\$ -	0.43	-35.57%
Invesco Real Estate Asia Fund	2014	\$ 51,732,500	\$ 51,732,500	\$ 10,180,821	\$ 63,423,098	1.38	7.30%
INVESCO Real Estate Fund I	2005	\$ 10,000,000	\$ 9,248,390	\$ 10,015,656	\$ -	1.08	1.54%
Kayne Anderson Real Estate Debt III	2018	\$ 20,000,000	\$ 6,539,413	\$ 1,034,223	\$ 5,923,628	1.06	6.51%
Kayne Anderson Real Estate Partners V	2017	\$ 10,000,000	\$ 8,857,979	\$ -	\$ 8,607,487	0.99	-1.33%
LaSalle Income & Growth Fund IV	2005	\$ 20,000,000	\$ 19,469,417	\$ 13,482,024	\$ -	0.69	-5.51%
North Haven Real Estate Fund V International	2005	\$ 27,500,000	\$ 27,377,414	\$ 32,070,486	\$ 1,165,045	1.21	6.90%
Oaktree Real Estate Opportunities V	2012	\$ 25,000,000	\$ 25,000,000	\$ 37,781,185	\$ 2,357,099	1.58	13.24%
Partners Group Project Camino	2016	\$ 8,415,776	\$ 5,735,568	\$ -	\$ 7,464,069	1.30	9.55%
Partners Group RE Secondary 2013 (USD) A	2014	\$ 65,000,000	\$ 49,541,590	\$ 18,625,904	\$ 53,644,879	1.47	15.69%
Partners Group RE Secondary 2017 (USD) A	2017	\$ 75,000,000	\$ 22,530,341	\$ 118,130	\$ 24,652,974	1.10	10.63%
Pramerica Real Estate Capital VI	2016	\$ 23,133,514	\$ 13,696,576	\$ 6,345,268	\$ 9,192,205	1.13	9.77%
Prologis Japan Fund	2005	\$ 25,290,819	\$ 25,290,819	\$ 33,126,118	\$ -	1.31	4.81%
Prudential PRISA II	2004	\$ 140,000,000	\$ 140,000,000	\$ 46,105,553	\$ 169,357,135	1.47	8.10%
Prudential PRISA III	2003	\$ 75,000,000	\$ 54,806,772	\$ 46,506,501	\$ 51,004,784	1.66	18.00%
RREEF America REIT III	2004	\$ 20,000,000	\$ 20,539,309	\$ 23,658,675	\$ -	1.15	3.00%
Square Mile Partners II	2007	\$ 19,831,232	\$ 19,831,232	\$ 5,311,330	\$ -	0.27	-19.11%
Square Mile Partners III LP	2008	\$ 20,000,000	\$ 19,730,190	\$ 28,756,613	\$ 128,185	1.46	11.55%
Starwood Capital Hospitality Fund I-2	2006	\$ 30,000,000	\$ 30,000,000	\$ 26,182,035	\$ 4,252,017	1.01	0.19%
Starwood Debt Fund II, LP	2008	\$ 20,000,000	\$ 17,599,882	\$ 21,912,511	\$ -	1.25	6.45%
Starwood Opportunity Fund VII - A	2006	\$ 25,000,000	\$ 25,000,000	\$ 18,224,737	\$ 2,028,221	0.81	-2.29%
Structured Real Estate III, LP (Guggenheim)	2008	\$ 20,000,000	\$ 20,000,000	\$ 16,320,664	\$ -	0.82	-4.99%
Tri Continental Capital VII	2005	\$ 23,000,000	\$ 22,277,928	\$ 2,847,785	\$ 789,339	0.16	-15.86%
Tuckerman Multi-Family Development Fund III	2002	\$ 10,000,000	\$ 10,219,311	\$ 16,939,699	\$ -	1.66	26.67%
Walton Street Real Estate Fund IV, LP	2003	\$ 10,000,000	\$ 9,770,890	\$ 15,939,604	\$ 5,893,527	2.23	13.64%
Walton Street Real Estate Fund V, LP	2006	\$ 40,000,000	\$ 40,000,000	\$ 24,654,170	\$ 5,893,527	0.76	-2.97%
Total: San Bernardino		\$1,252,777,960	\$1,079,012,114	\$957,034,102	\$444,524,634	1.28	4.22%

Note: All metrics are calculated since inception

* Denotes cash adjusted



REAL ASSETS PERFORMANCE ENDED MARCH 31, 2020

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Fortress Transportation Infrastructure LLC	2015	\$ 45,403,354	\$ 45,403,354	\$ 13,220,391	\$ 40,328,869	1.18	5.35%
Hancock Timberland VII	2005	\$ 90,000,000	\$ 90,000,000	\$ 77,327,100	\$ 27,420,355	1.16	1.33%
Hancock Timberland VIII	2006	\$ 40,000,000	\$ 40,000,000	\$ 7,221,925	\$ 29,757,793	0.92	-0.76%
Highstar Capital III, L.P.	2007	\$ 60,000,000	\$ 59,119,119	\$ 51,263,318	\$ 12,235,577	1.07	0.92%
Timbervest Crossover Partners II, L.P.	2008	\$ 30,000,000	\$ 30,000,000	\$ 15,495,000	\$ 12,906,961	0.95	-0.85%
Timbervest Partners II, L.P.	2007	\$ 50,000,000	\$ 50,000,000	\$ 40,150,000	\$ 12,944,756	1.06	0.64%
Total: San Bernardino		\$ 315,403,354	\$ 314,522,473	\$ 204,677,734	\$ 135,594,311	1.08	0.91%

Note: All metrics are calculated since inception

* Denotes cash adjusted



PRIVATE EQUITY PERFORMANCE ENDED MARCH 31, 2020

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Advantech Capital II, L.P.	2018	3,000,000	1,045,048	-	955,261	0.91	-15.80%
Advent International GPE VIII, LP	2016	10,000,000	8,409,999	-	10,349,955	1.23	15.71%
Apollo Accord Fund, LP	2017	30,000,000	7,500,000	5,511,478	2,571,890	1.08	5.90%
Apollo European Principal Finance Fund (Feeder), LP	2009	53,899,305	46,403,245	69,083,088	293,314	1.49	11.80%
Apollo Investment Fund VII, L.P.	2008	10,000,000	8,756,428	15,706,389	1,633,988	1.98	22.90%
Apollo PCPL Webb V	2010	4,844,398	4,844,398	5,196,757	30,555	1.08	6.36%
Apollo PCPL Webb VIII	2010	4,734,303	4,734,303	12,146,258	2,101	2.57	46.47%
ARES European Loan Opp Fund	2015	15,000,000	8,413,136	7,613,498	-	0.90	-6.02%
Ares Special Situations Fund IV, LP	2015	50,000,000	47,686,469	199,120	44,478,404	0.94	-3.13%
Aurora Equity Partners III, L.P.	2005	25,000,000	23,544,536	41,738,196	187,019	1.67	13.61%
Aurora Equity Partners IV, L.P.	2012	20,000,000	16,785,610	30,861,074	7,694,557	1.99	18.84%
Aurora Resurgence Fund, L.P.	2008	15,000,000	5,653,009	10,350,965	-	1.82	17.60%
Baring Asia Private Equity Fund IV, L.P.	2015	2,931,918	2,591,669	3,221,120	327,076	1.37	12.35%
Blue Point Capital Partners IV, LP	2018	3,550,000	1,020,391	-	1,048,176	1.03	4.93%
BNY Mellon - Alcentra Mezzanine III	2012	25,000,000	23,254,658	26,736,979	-	1.15	12.73%
Catalyst Fund II, L.P.	2007	10,000,000	9,927,306	4,259,103	16,968,459	2.12	9.49%
Catalyst Fund LP IV, L.P.	2015	8,000,000	6,556,305	-	9,246,042	1.41	14.55%
Centerbridge Capital Partners II	2018	2,244,228	1,929,729	91,960	1,120,268	0.63	-39.06%
Charlesbank Equity Fund VIII	2015	7,500,000	6,775,721	4,424,468	5,827,593	1.51	18.32%
Clearlake Capital Partners V, L.P.	2018	10,000,000	4,715,565	61,006	7,147,089	1.53	63.83%
Crestline Portfolio Financing Fund	2018	50,000,000	18,108,110	-	19,692,609	1.09	9.52%
DRI II, L.P.	2009	20,000,000	19,917,669	26,302,807	-	1.33	19.64%
European Strategic Partners 2004	2004	240,974,965	220,679,633	265,791,019	14,627,340	1.27	4.01%
European Strategic Partners 2008	2010	31,441,878	28,273,807	28,212,632	13,305,943	1.46	9.11%
Flywheel Co-investment LLC	2018	8,000,000	6,400,000	796,264	6,397,727	1.12	12.37%
GTCR Fund XII	2018	8,000,000	1,980,800	70,534	1,603,887	0.85	-23.87%
Industry Ventures Direct, LP	2016	25,000,000	17,071,292	1,900,632	17,025,714	1.11	7.74%
Industry Ventures Fund V	2008	10,000,000	9,500,000	22,139,234	6,969,685	3.06	30.21%
Industry Ventures Fund VI	2011	20,000,000	18,400,000	17,915,137	6,294,716	1.32	7.76%
Industry Ventures Partnership Holdings Fund II, L.P.	2012	25,000,000	23,500,000	15,979,999	51,082,786	2.85	23.51%
Industry Ventures Partnership Holdings Fund III, L.P.	2013	25,000,000	23,277,042	4,673,818	40,973,195	1.96	21.89%
Industry Ventures Partnership Holdings Fund III-A, L.P.	2014	12,500,000	10,793,396	3,582,626	7,558,205	1.03	1.04%
Industry Ventures Partnership Holdings IV, LP	2016	25,000,000	16,000,000	1,224,603	17,857,469	1.19	14.25%
Industry Ventures Partnership Holdings V, LP	2018	25,000,000	2,125,000	65,247	2,694,348	1.30	47.55%
Industry Ventures Secondary VII, L.P.	2013	25,000,000	22,500,000	17,417,276	18,737,725	1.61	15.61%
Industry Ventures Secondary VIII	2017	25,000,000	11,750,000	2,748,194	14,840,664	1.50	61.38%
Industry Ventures Special Opportunities II-A	2016	12,500,000	867,500	439,632	1,079,748	1.75	47.47%
Industry Ventures Tech Buyout LP	2018	25,000,000	3,418,023	-	3,064,477	0.90	-10.96%
Insight Venture Partners III Co-Invest	2014	4,000,000	4,000,000	8,864,478	1,883,586	2.69	27.22%
Kayne Anderson Energy Fund VII, L.P.	2017	10,000,000	7,378,811	215,495	7,634,263	1.06	2.85%
Kayne Anderson Private Energy Income Fund II, L.P.	2018	20,000,000	3,820,000	430,171	3,492,677	1.03	2.57%
Kayne Partners Fund IV (QP), LP	2017	20,000,000	10,402,580	-	11,405,123	1.08	8.01%
Kayne Solutions Fund LP	2018	20,000,000	5,331,927	1,746,256	4,302,858	1.13	12.27%

Note: All metrics are calculated since inception

* Denotes Cash adjusted value



PRIVATE EQUITY PERFORMANCE ENDED MARCH 31, 2020

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Lexington Capital Partners VI-B	2006	25,000,000	24,591,319	32,662,950	2,368,988	1.42	6.94%
Lexington Capital Partners VII (Offshore)	2011	25,000,000	20,409,757	25,978,274	6,599,889	1.59	15.06%
Lexington Middle Market I	2005	25,000,000	24,771,942	37,697,581	3,049,124	1.64	11.65%
Lexington Middle Market II - Offshore	2008	10,000,000	9,773,736	12,812,563	3,485,390	1.66	14.18%
Madison Dearborn VII	2016	10,000,000	6,158,845	-	7,369,073	1.19	11.23%
NB Secondary Opportunities I, LP	2005	20,000,000	18,500,843	24,330,105	-	1.32	6.49%
NB Secondary Opportunities II, LP	2008	20,000,000	17,080,642	26,888,038	-	1.54	14.40%
Partners Group Access 1003, L.P.	2018	3,186,023	1,447,387	-	1,626,122	1.12	18.33%
Partners Group Access 1065 LP	2019	7,750,000	6,833,699	-	6,833,699	1.00	0.00%
Partners Group Access 1083 LP	2019	8,040,000	4,400,000	-	4,400,000	1.00	0.00%
Partners Group Access 216 LP	2017	7,236,560	8,893,335	-	14,016,843	1.58	25.68%
Partners Group Access 384, L.P.	2017	8,360,000	8,360,000	-	6,543,479	0.78	-9.50%
Partners Group Access 632, L.P.	2014	2,782,028	2,782,028	4,627,741	1	1.65	16.01%
Partners Group Access 648, L.P.	2014	4,465,137	4,843,537	19,449	4,508,720	0.93	-1.54%
Partners Group Access 680 L.P.	2015	7,276,842	7,202,719	3,544	12,851,966	1.78	17.66%
Partners Group Access 780 LP	2018	5,922,000	1,113,863	-	2,619,154	2.35	136.41%
Partners Group Access 906, L.P.	2017	15,000,000	15,000,000	17,269	20,300,363	1.35	19.49%
Partners Group Access 932, L.P.	2018	7,395,010	6,628,136	-	7,002,927	1.06	8.95%
Partners Group Access 952 LP	2018	6,097,115	6,092,930	206,881	5,690,580	0.97	-2.96%
Partners Group Access 967 L.P.	2018	14,727,006	14,727,006	-	15,868,715	1.08	8.06%
Partners Group Access 990 LP	2018	14,438,450	13,980,450	-	16,087,678	1.15	14.89%
Partners Group Borssele Access 2, L.P.	2018	14,041,787	1,071,804	-	863,989	0.81	-25.23%
Partners Group CA Infrastructure, LP Inc	2016	6,246,500	2,630,627	-	3,486,118	1.32	15.52%
Partners Group Client Access 28 LP	2018	7,361,897	7,361,897	1,586	7,938,518	1.08	8.08%
Partners Group Client Access 8 LP	2014	5,531,585	5,531,585	30,646,223	-	5.54	69.61%
Partners Group Direct Equity 2016 USD A	2016	20,000,000	12,602,005	3,277	19,649,768	1.58	24.02%
Partners Group Direct Investment 2012, L.P.	2013	18,188,103	16,509,621	13,841,499	16,854,797	1.86	18.82%
Partners Group European Mandate, L.P.	2004	238,298,688	196,155,787	261,514,414	3,827,850	1.36	5.70%
Partners Group European Mezzanine 2005	2005	101,076,654	101,076,654	121,118,042	1,058,975	1.21	3.09%
Partners Group Global Opp Limited	2017	4,001,119	4,001,119	4,816,866	2,144,097	1.74	37.83%
Partners Group Greenlink Access 2, L.P.	2019	10,447,929	784,406	-	789,788	1.01	0.69%
Partners Group Hawthorne Holdings LLC	2018	9,000,000	2,432,384	-	2,343,651	0.96	-5.24%
Partners Group Lock Access, L.P.	2018	6,004,797	2,849,911	-	3,601,018	1.26	26.83%
Partners Group Princess Learning IC LTD	2014	8,936,785	6,593,355	-	17,127,562	2.60	33.92%
Partners Group Seabras Holdings, LLC	2015	4,660,000	3,355,016	-	3,134,195	0.93	-2.02%
Partners Group Secondary 2006 LP	2006	54,481,832	51,077,528	59,438,017	739,232	1.18	3.37%
Partners Group Secondary 2008, L.P.	2009	26,660,682	23,690,725	32,261,012	2,987,787	1.48	8.91%
Partners Group Starfrost Limited	2014	6,289,767	3,736,806	1,880,411	3,979,275	1.57	10.06%
Pathway Private Equity Fund VII, L.P.	2004	904,500,000	817,633,742	1,085,532,925	367,800,579	1.74	10.58%
Quad-C Partners IX, LP	2017	8,000,000	3,180,979	17,427	3,296,078	1.04	3.40%
Quantum Energy Partners IV, L.P.	2014	2,907,301	2,359,080	1,184,616	346,936	0.57	-19.01%
Quantum Energy Partners VI, L.P.	2015	8,000,000	5,918,261	2,845,111	7,356,996	1.72	34.10%
Quantum Energy Partners VII Co-Investment Fund, LP	2017	1,300,000	473,811	525	467,597	0.99	-0.98%
Quantum Energy Partners VII, LP	2017	6,700,000	2,885,401	117,410	2,861,412	1.03	2.81%
Quantum Parallel Partners VI-C, LP	2015	3,290,000	2,073,691	153,819	2,886,836	1.46	23.20%

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



PRIVATE EQUITY PERFORMANCE ENDED MARCH 31, 2020

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Cumulative Distributions	Valuation	TVPI Ratio	IRR
Redview Capital II L.P.	2018	3,000,000	375,579	3,126	104,344	0.29	-98.84%
Riverside Micro-Cap Fund V, L.P.	2018	4,700,000	408,480	-	314,854	0.77	-22.92%
Siguler Guff DOF II	2006	30,000,000	30,000,000	42,439,715	-	1.42	8.66%
Siguler Guff DOF III	2008	10,000,000	9,700,000	13,937,532	1,565,579	1.60	10.55%
SL Capital SOF I LP	2014	25,000,000	20,721,610	15,791,950	12,163,568	1.35	11.39%
SL Capital SOF III LP	2017	25,000,000	10,483,161	23,253	14,578,838	1.39	44.49%
Spectrum Equity Investors VIII-A	2018	8,000,000	1,840,000	-	2,097,616	1.14	40.95%
TCP Direct Lending Fund VIII-L, LLC	2016	40,000,000	31,377,482	1,721,775	31,917,815	1.07	6.10%
TCV IX, L.P.	2016	10,000,000	7,356,000	-	7,767,497	1.06	4.85%
TCW/Crescent Mezzanine IV, L.P.	2006	40,000,000	39,590,976	44,955,179	87,644	1.14	3.03%
TCW/Crescent Mezzanine V, L.P.	2008	20,000,000	20,291,044	26,182,895	604,667	1.32	9.24%
Tennenbaum Energy Opportunities Fund, LP	2016	20,000,000	13,163,829	4,513,906	13,682,779	1.38	15.96%
Tennenbaum Opportunities Fund V, L.P.	2007	10,000,000	10,000,000	11,678,297	2,370,968	1.40	5.12%
Tennenbaum Opportunities Fund VI, L.P.	2011	20,000,000	11,633,962	11,278,455	6,964,688	1.57	7.25%
Tennenbaum Special Situations Fund IX	2015	50,000,000	45,678,928	10,710,072	45,042,240	1.22	11.74%
Tennenbaum Waterman Fund, LP	2012	70,000,000	70,000,000	43,766,234	69,815,586	1.62	11.17%
The Huron Fund V	2017	10,000,000	2,585,000	-	2,915,222	1.13	16.91%
The Resolute Fund II - Secondary	2016	9,330,964	7,821,224	1,130,418	7,322,765	1.08	7.03%
The Resolute Fund III	2014	8,000,000	7,244,772	2,863,553	8,408,202	1.56	20.03%
The Resolute Fund IV, L.P.	2018	6,000,000	1,232,681	328,297	1,435,320	1.43	63.85%
Thoma Bravo Discover Fund I	2015	3,000,000	2,469,789	315,308	4,356,228	1.89	31.28%
Thoma Bravo Discover Fund II	2018	4,000,000	933,576	-	880,898	0.94	-7.03%
Thoma Bravo XI	2014	8,000,000	7,086,492	4,406,939	12,923,135	2.45	25.45%
Thoma Bravo XII	2016	10,000,000	9,305,612	-	11,784,303	1.27	13.93%
Thoma Bravo XIII	2018	8,000,000	2,857,965	-	2,824,797	0.99	-1.85%
Towerbrook III 2ndry	2017	1,520,778	379,714	302,058	177,644	1.25	18.24%
Towerbrook IV (OS) 2ndry	2017	760,389	528,528	60,831	669,199	1.38	24.75%
Vista Foundation Fund III	2016	10,000,000	7,029,890	-	9,731,826	1.38	25.67%
Waterfall Sentinel Co-Investments	2019	30,000,000	15,000,000	-	14,958,501	1.00	-0.28%
Waterfall Sentinel Fund	2019	30,000,000	12,359,551	-	12,259,322	0.99	-0.81%
Total: San Bernardino		3,246,034,722	2,625,077,324	2,674,744,883	1,298,898,303	1.50	9.13%

Note: All metrics are calculated since inception

* Denotes Cash adjusted value



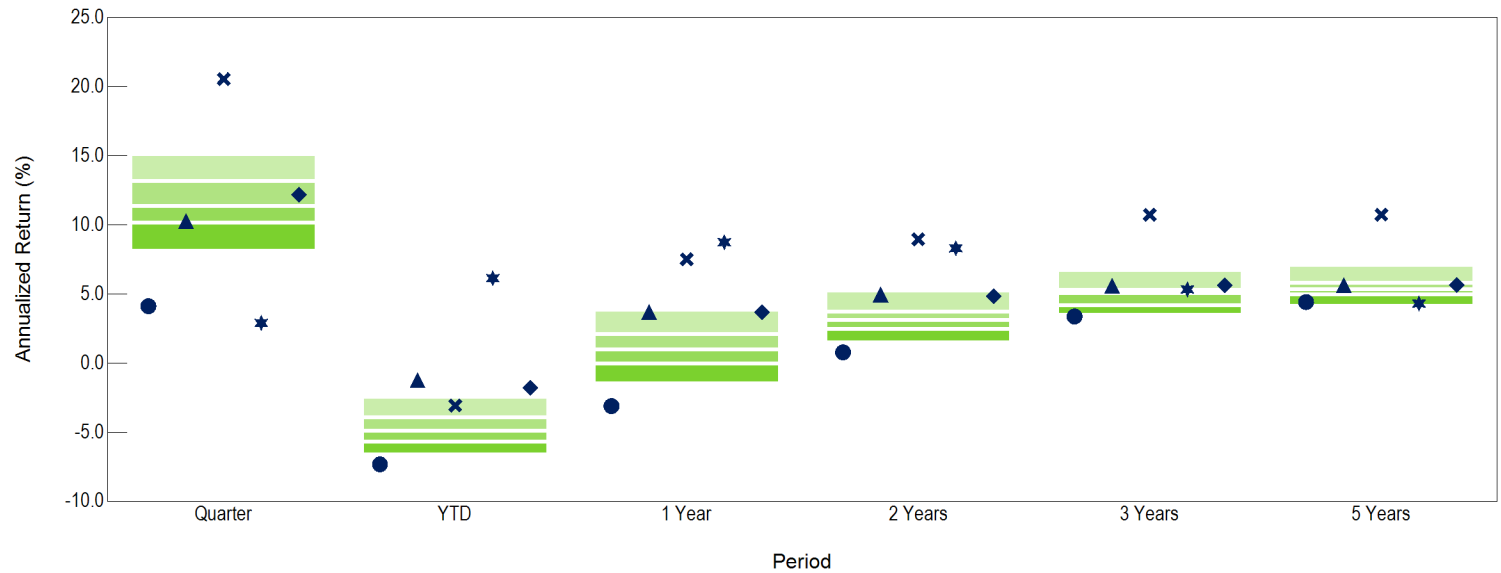
APPENDIX MARKET OUTLOOK

NEPC, LLC

San Bernardino County Employees' Retirement Association

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

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



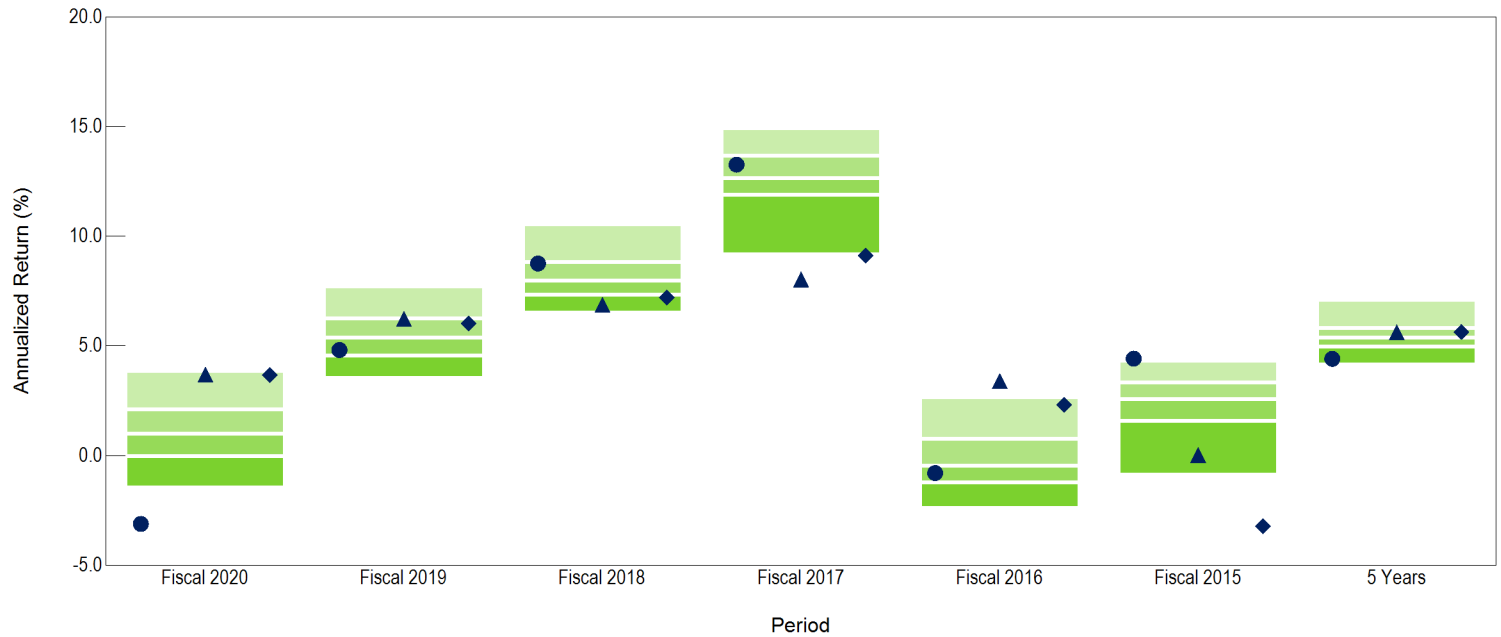
	Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)	
5th Percentile	15.1		-2.5		3.9		5.2		6.7		7.1	
25th Percentile	13.2		-3.9		2.1		3.7		5.3		5.8	
Median	11.4		-4.9		1.0		3.2		5.1		5.4	
75th Percentile	10.2		-5.7		0.0		2.5		4.2		5.0	
95th Percentile	8.1		-6.6		-1.5		1.5		3.5		4.2	
# of Portfolios	19		19		19		19		19		19	
● Total Fund	4.1	(99)	-7.3	(99)	-3.1	(99)	0.8	(99)	3.4	(99)	4.4	(92)
▲ Policy Index	10.3	(74)	-1.2	(1)	3.7	(7)	5.0	(11)	5.6	(21)	5.6	(38)
× S&P 500	20.5	(1)	-3.1	(11)	7.5	(1)	9.0	(1)	10.7	(1)	10.7	(1)
* BBGBarc US Aggregate TR	2.9	(99)	6.1	(1)	8.7	(1)	8.3	(1)	5.3	(25)	4.3	(93)
◆ 60% MSCI ACWI (Net) / 40% FTSE WGBI	12.2	(45)	-1.8	(2)	3.7	(7)	4.8	(12)	5.6	(21)	5.6	(38)



San Bernardino County Employees' Retirement Association

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

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

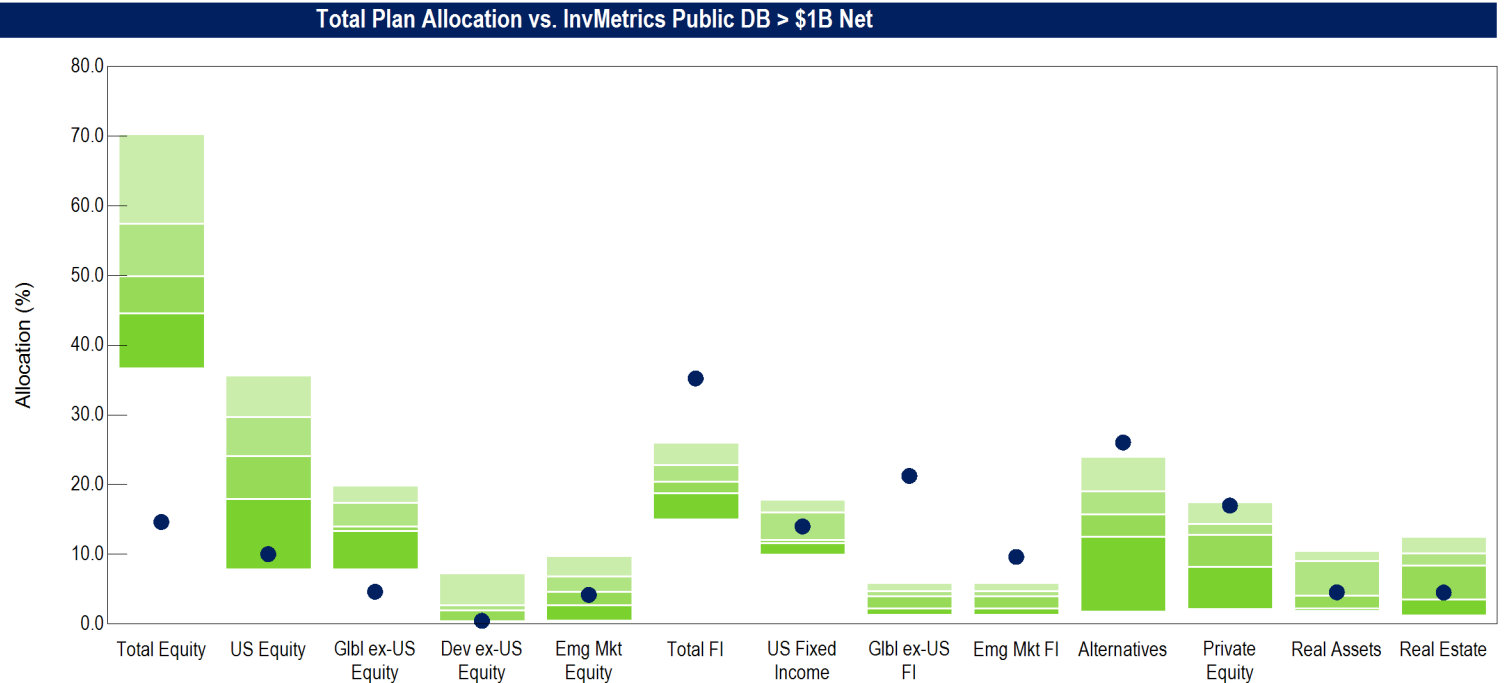


	Fiscal 2020		Fiscal 2019		Fiscal 2018		Fiscal 2017		Fiscal 2016		Fiscal 2015		5 Years	
Return (Rank)														
5th Percentile	3.9		7.7		10.5		14.9		2.7		4.3		7.1	
25th Percentile	2.1		6.3		8.8		13.7		0.8		3.3		5.8	
Median	1.0		5.4		8.0		12.7		-0.5		2.6		5.4	
75th Percentile	0.0		4.6		7.3		11.9		-1.2		1.6		5.0	
95th Percentile	-1.5		3.5		6.5		9.2		-2.4		-0.9		4.2	
# of Portfolios	19		77		51		65		55		53		19	
● Total Fund	-3.1	(99)	4.8	(69)	8.8	(29)	13.3	(33)	-0.8	(66)	4.4	(2)	4.4	(92)
▲ Policy Index	3.7	(7)	6.2	(27)	6.9	(91)	8.0	(96)	3.4	(1)	0.0	(93)	5.6	(38)
◆ 60% MSCI ACWI (Net) / 40% FTSE WGBI	3.7	(7)	6.0	(31)	7.2	(79)	9.1	(96)	2.3	(8)	-3.2	(99)	5.6	(38)



San Bernardino County Employees' Retirement Association

TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE



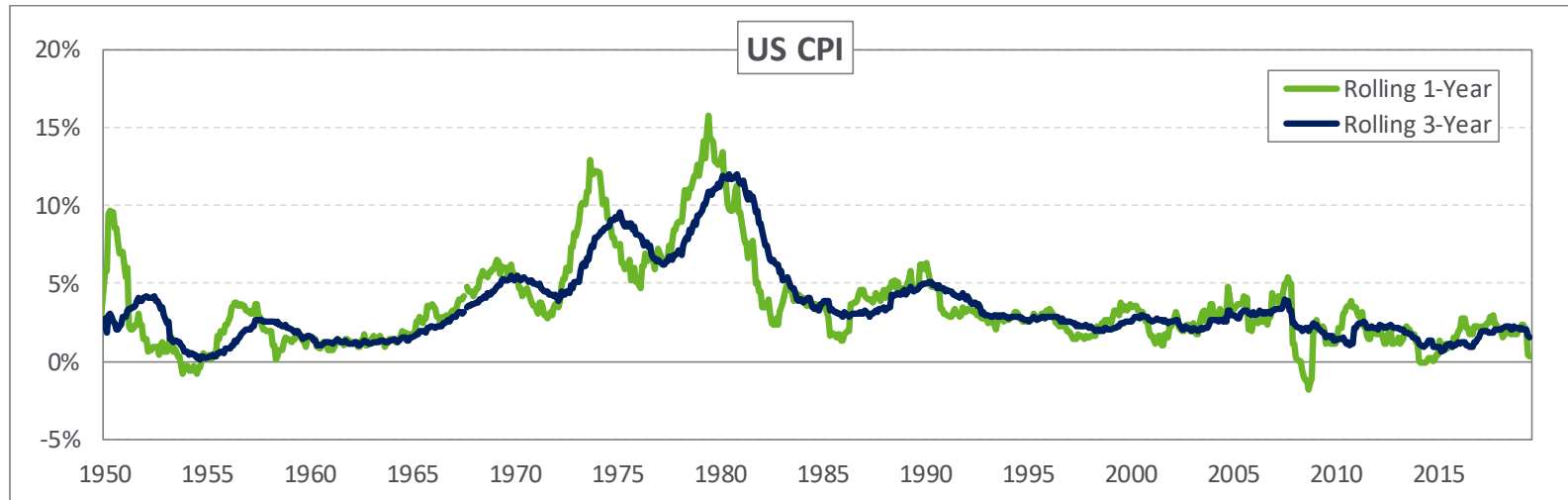
	Total Equity	US Equity	Gbl ex-US Equity	Dev ex-US Equity	Emg Mkt Equity	Total FI	US Fixed Income	Gbl ex-US FI	Emg Mkt FI	Alternatives	Private Equity	Real Assets	Real Estate	
5th Percentile	70.2	35.7	19.9	7.3	9.7	26.0	17.8	5.9	5.9	24.0	17.5	10.5	12.5	--
25th Percentile	57.5	29.8	17.5	2.8	6.9	22.9	16.1	4.8	4.8	19.1	14.4	9.1	10.2	--
Median	50.0	24.2	14.1	2.0	4.7	20.5	12.1	4.1	4.1	15.8	12.8	4.2	8.5	--
75th Percentile	44.7	18.0	13.5	0.5	2.8	18.8	11.7	2.3	2.3	12.6	8.3	2.4	3.6	--
95th Percentile	36.8	7.9	7.9	0.3	0.6	15.1	10.0	1.4	1.4	1.9	2.2	1.9	1.3	--
# of Portfolios	14	9	13	5	12	14	8	7	7	14	12	6	13	--
• Total Fund	14.6 (99)	10.0 (87)	4.6 (99)	0.4 (81)	4.2 (53)	35.2 (1)	14.0 (37)	21.2 (1)	9.6 (1)	26.0 (1)	17.0 (11)	4.5 (48)	4.5 (70)	--



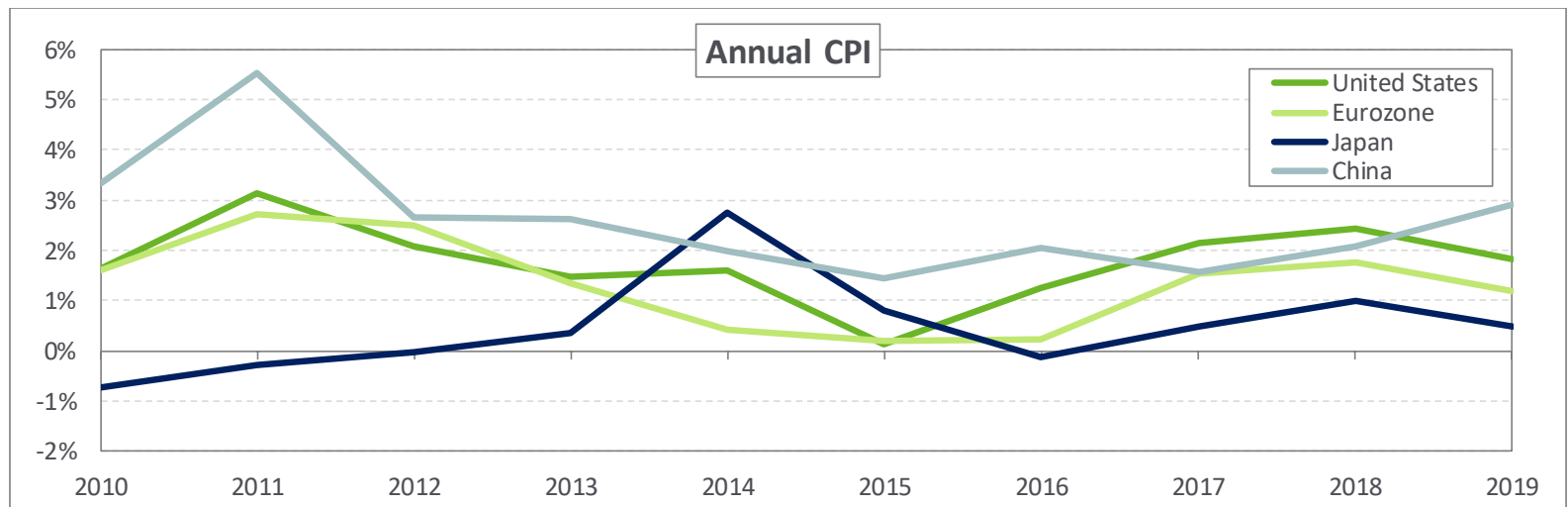
MACRO

NEPC, LLC

INFLATION



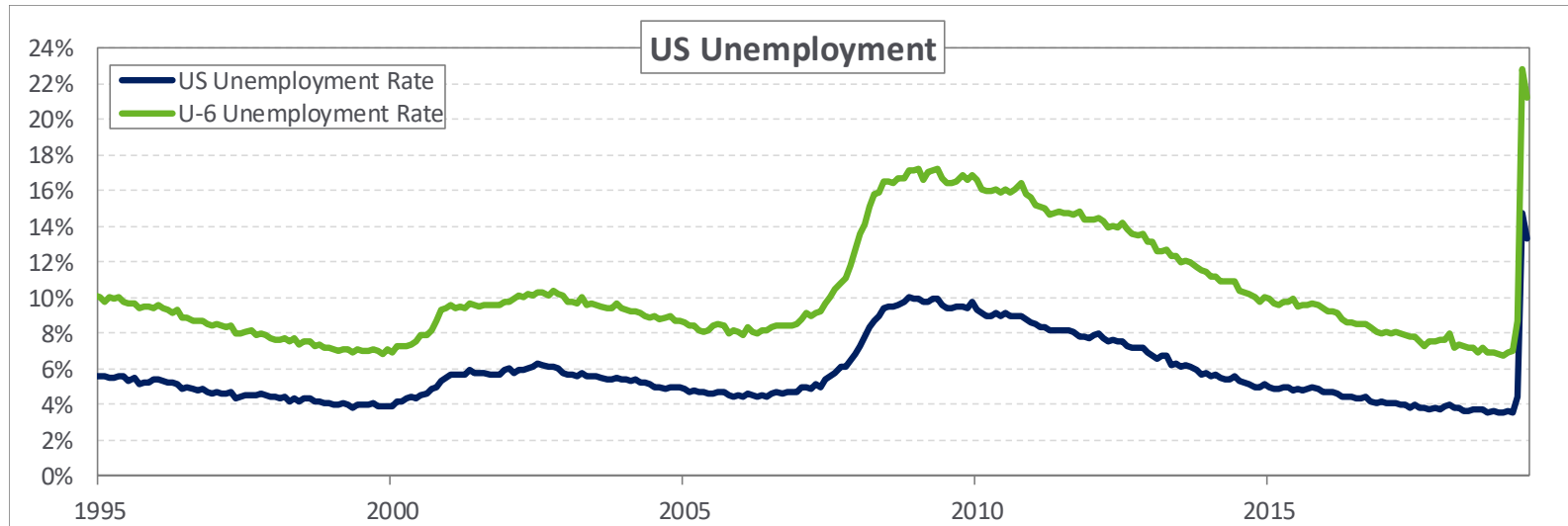
Source: Bureau of Labor Statistics, FactSet



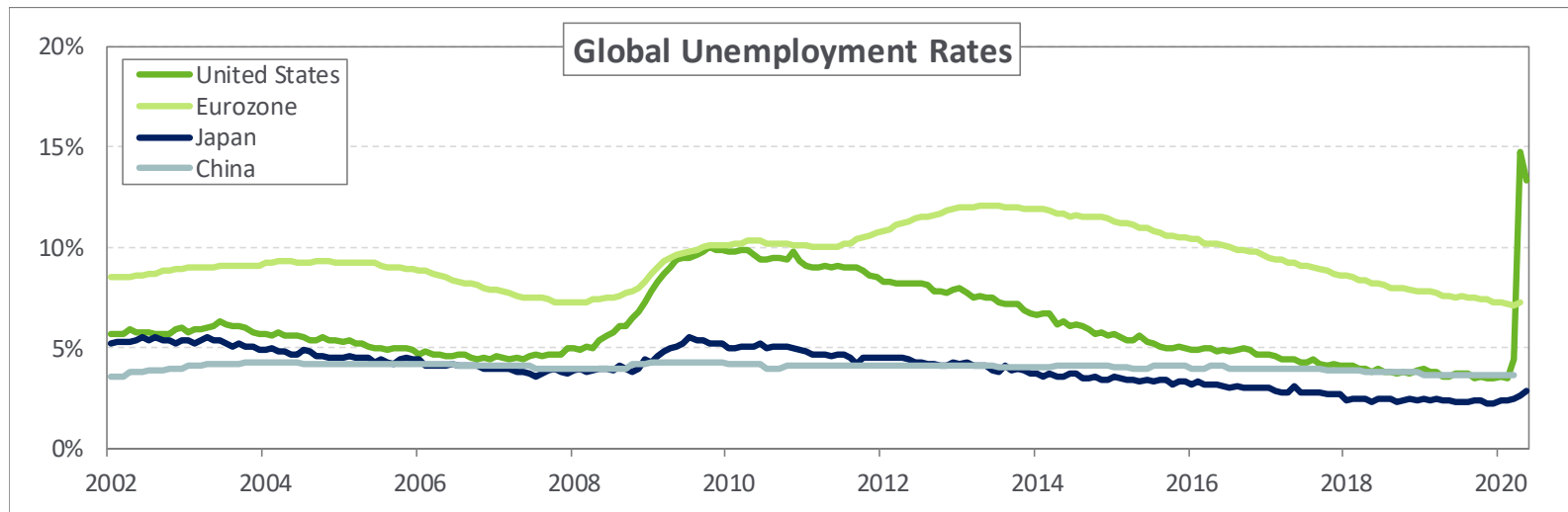
Source: FactSet



UNEMPLOYMENT



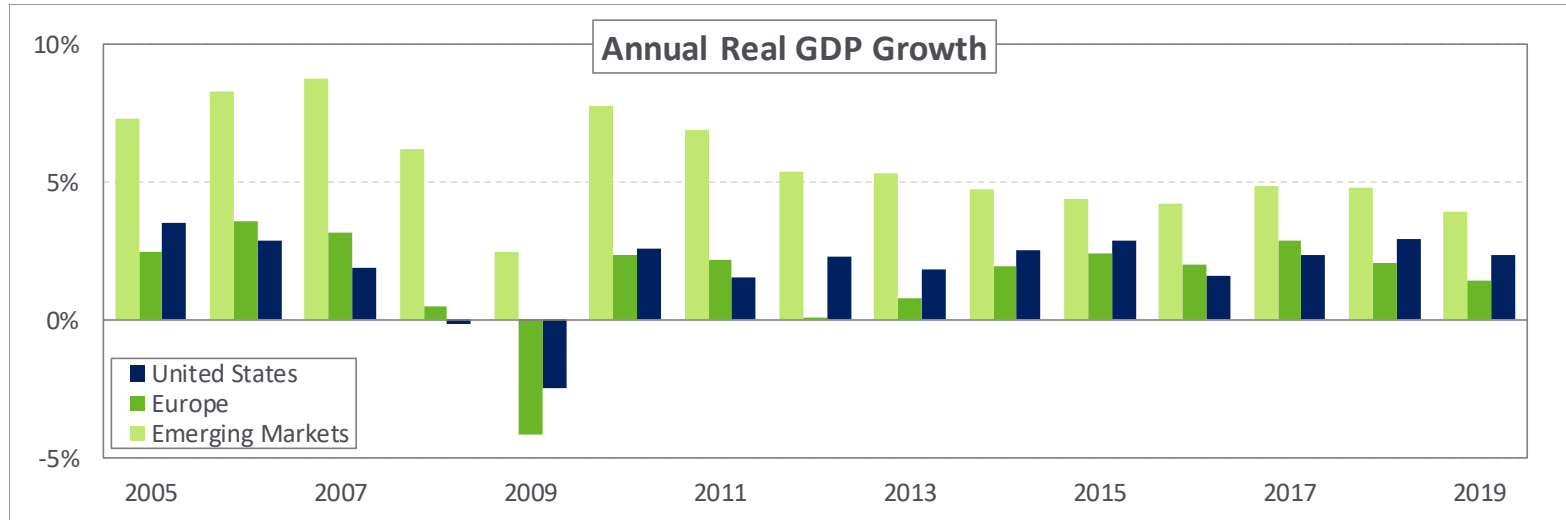
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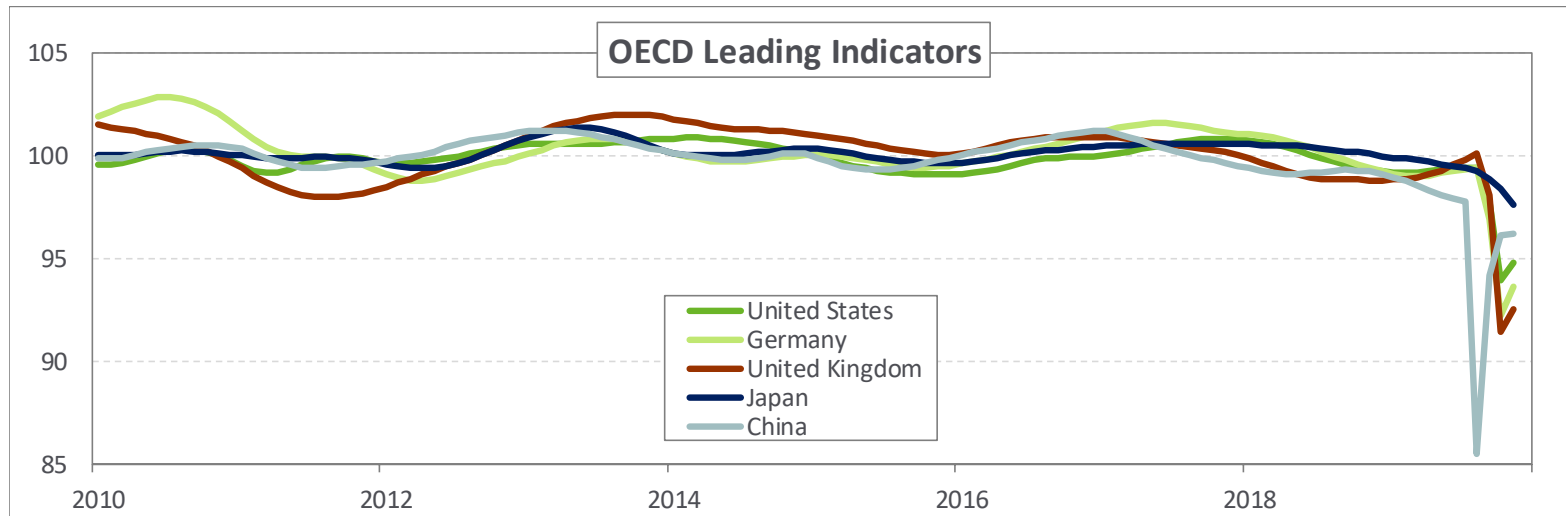
Source: FactSet



ECONOMIC INDICATORS



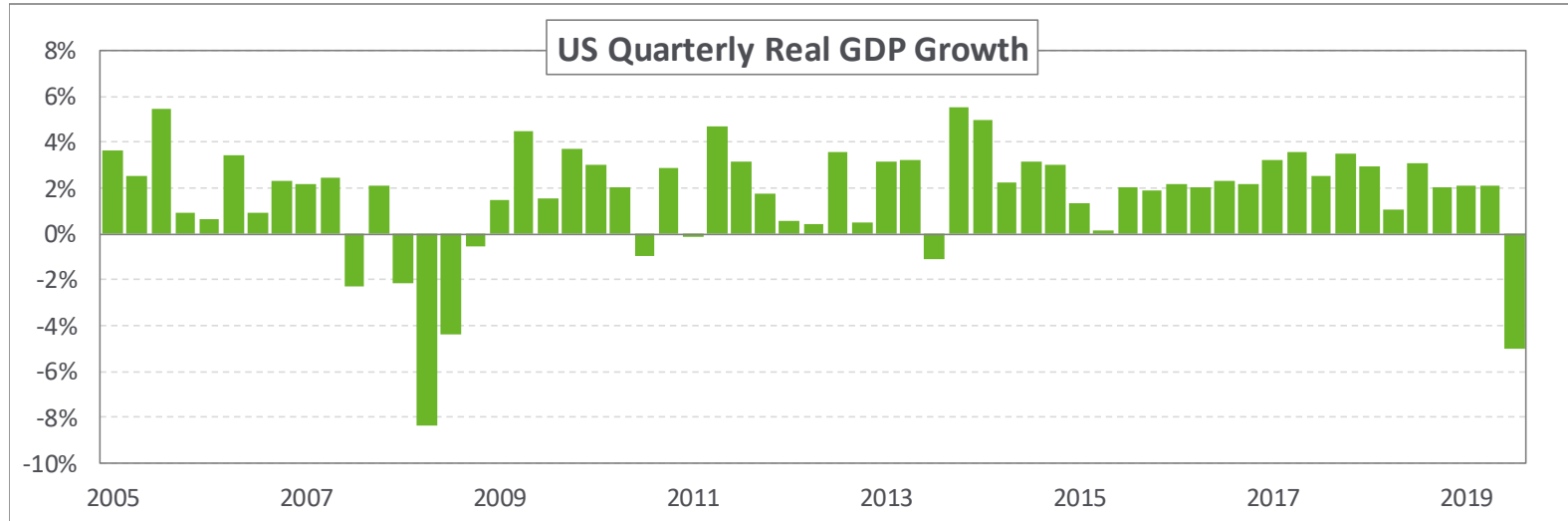
Source: Bureau of Economic Analysis, Oxford Economics, FactSet



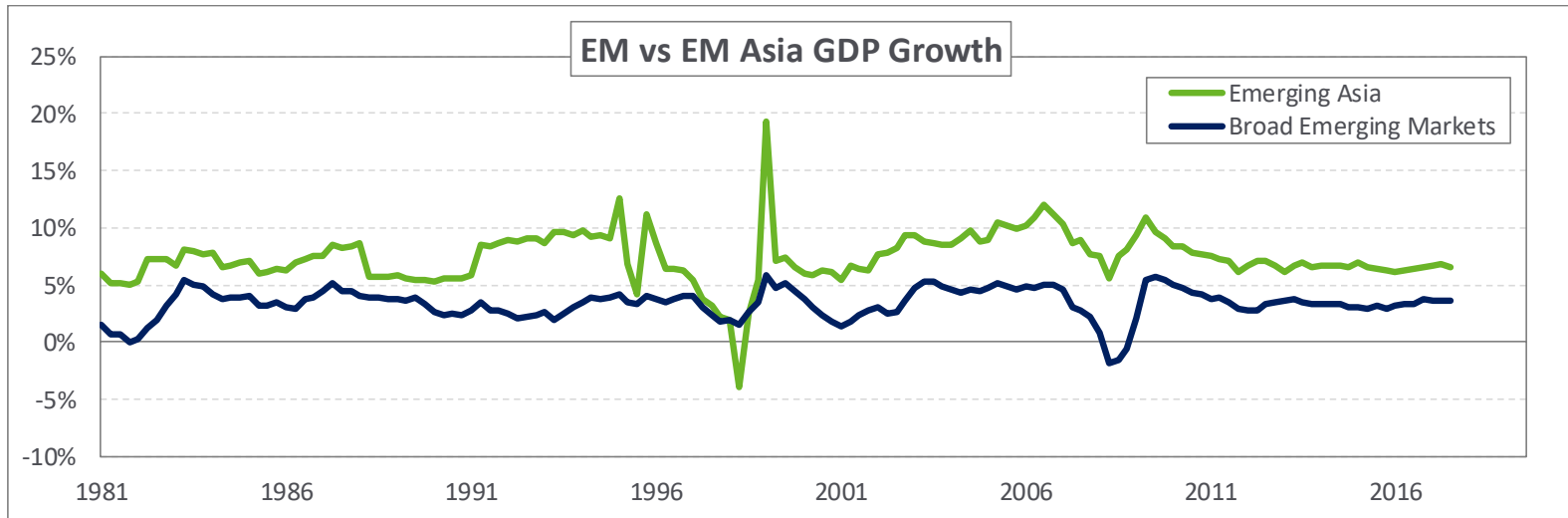
Source: OECD, FactSet



GROSS DOMESTIC PRODUCT



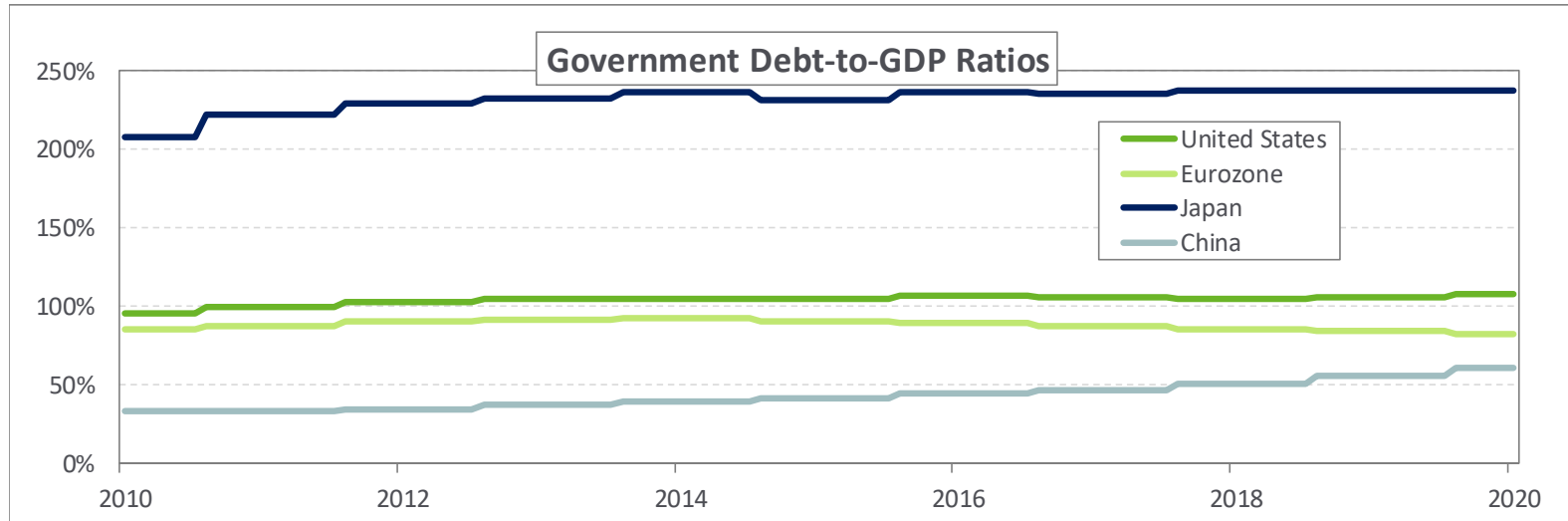
Source: Bureau of Economic Analysis, FactSet



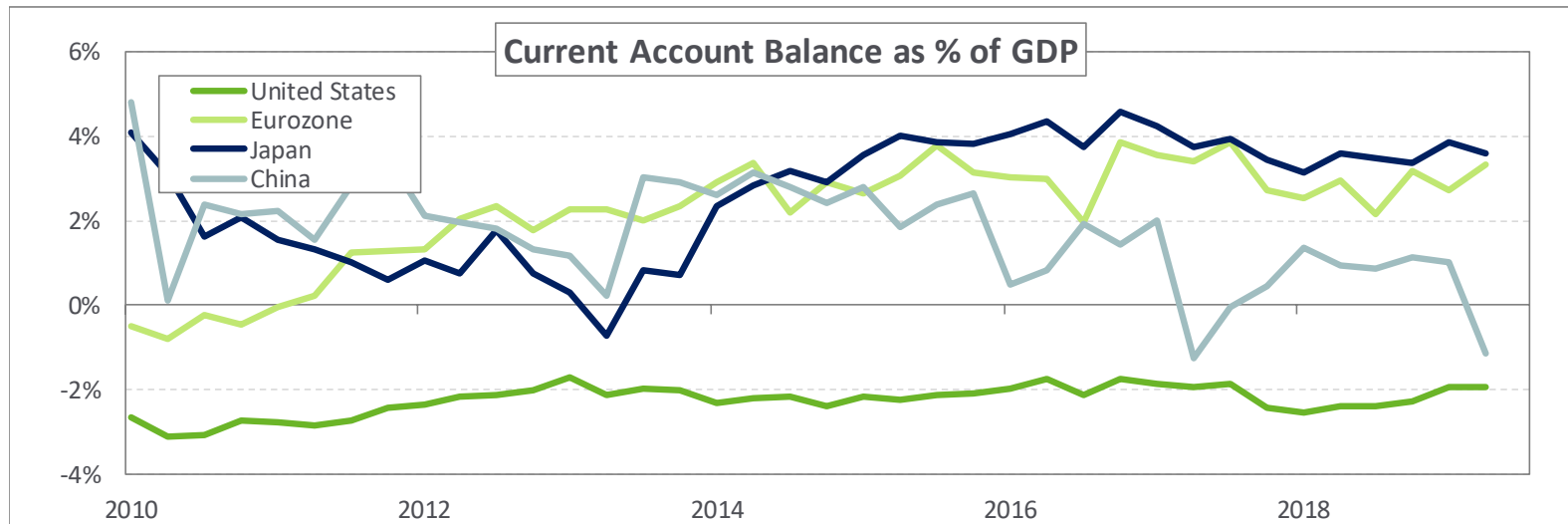
Source: IMF, FactSet



GROSS DOMESTIC PRODUCT METRICS



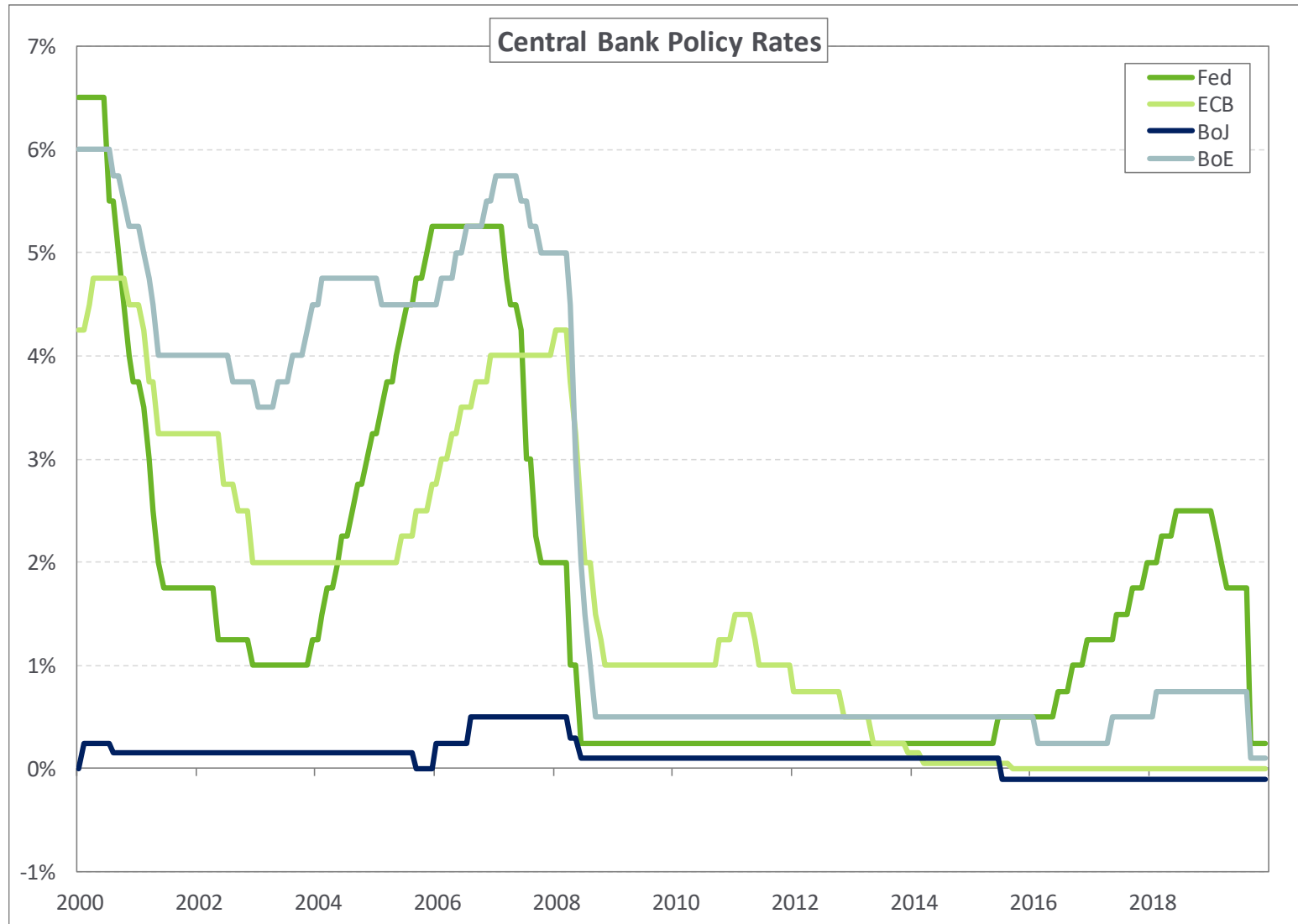
Source: IMF, FactSet



Source: FactSet



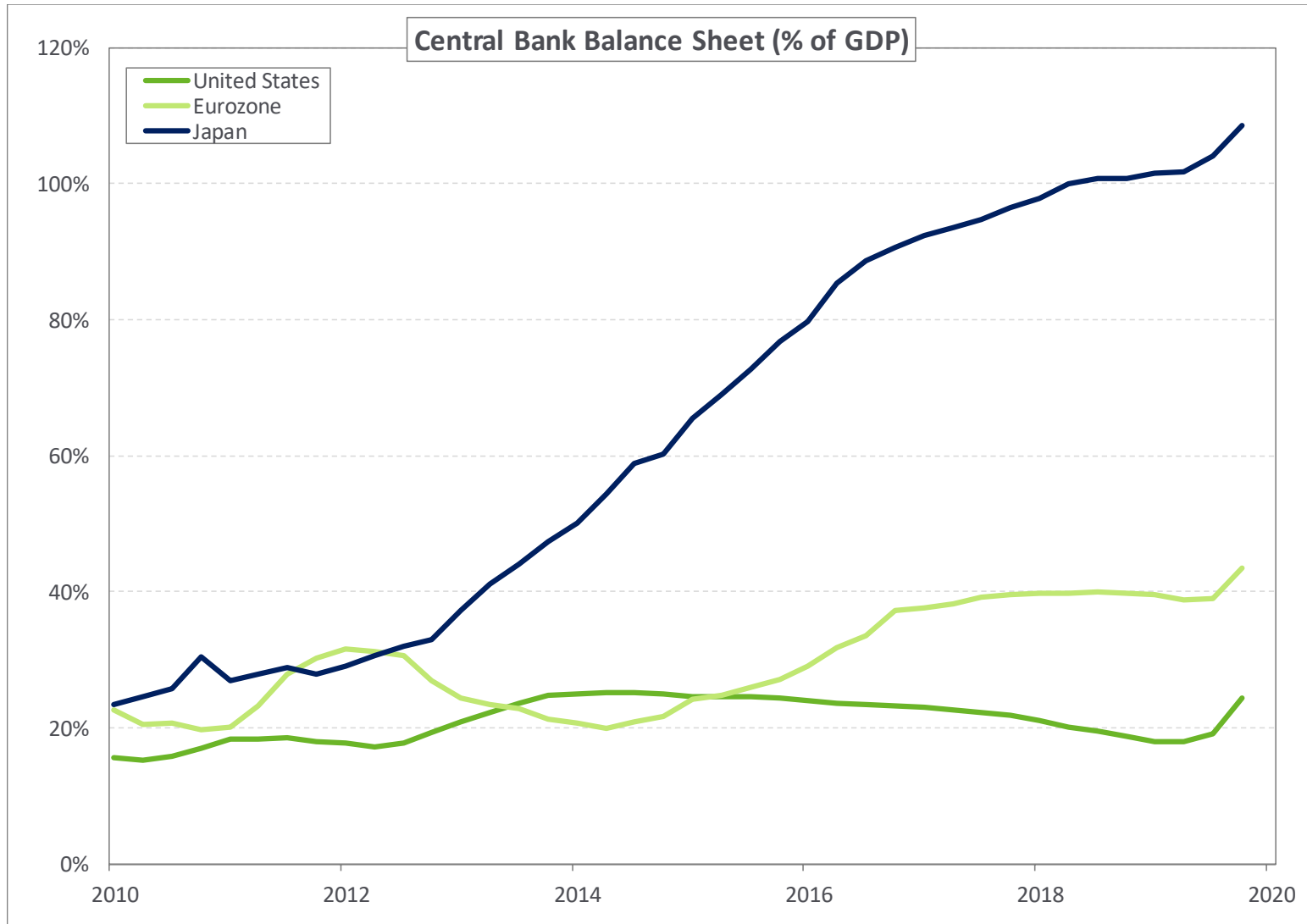
CENTRAL BANK RATES



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



CENTRAL BANK BALANCE SHEETS



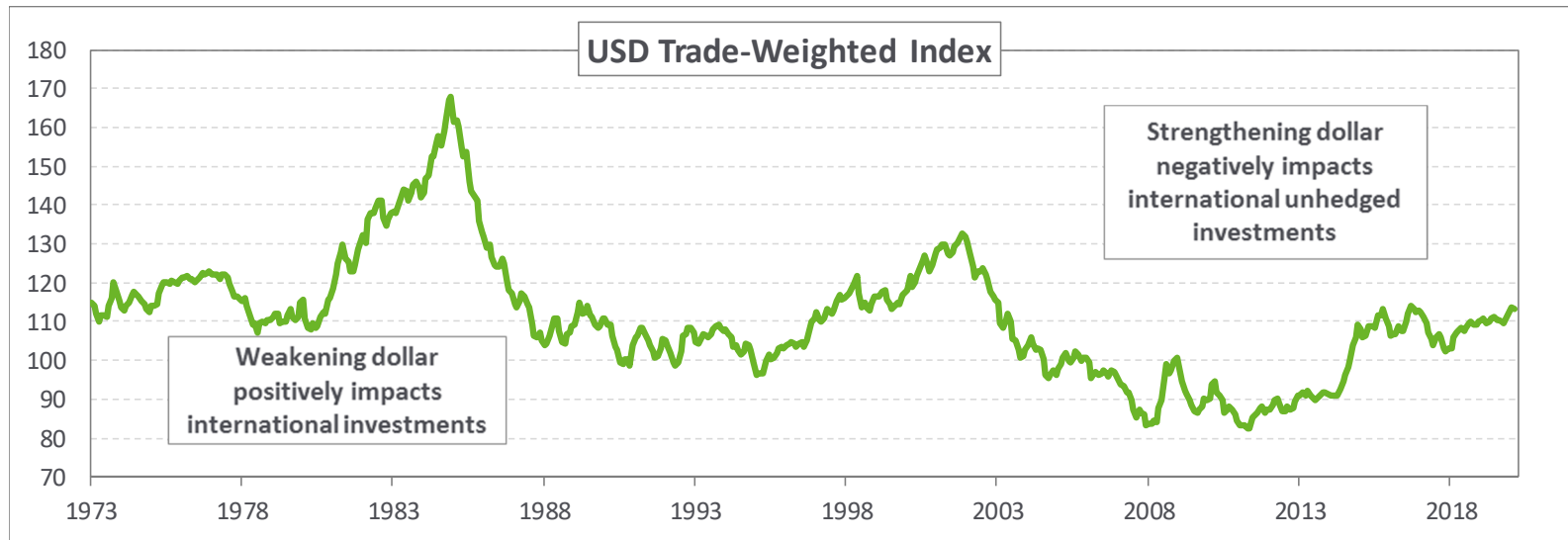
Source: FactSet



CURRENCIES

% Change Relative to USD				
Currencies	Spot	1 Month	YTD	1 Year
Euro	1.12	1.0%	0.1%	-1.4%
British Pound	1.24	-0.1%	-6.7%	-2.9%
Japanese Yen	107.89	-0.1%	0.7%	-0.1%
Swiss Franc	0.95	1.4%	2.2%	2.9%
Australian Dollar	0.69	3.7%	-2.1%	-1.9%
Chinese Yuan	7.07	1.0%	-1.5%	-2.9%
Brazilian Real	5.49	-1.1%	-26.7%	-30.2%
Russian Ruble	71.25	-0.9%	-12.8%	-11.5%
Indian Rupee	75.50	0.1%	-5.5%	-8.6%
Mexican Peso	23.11	-4.2%	-18.3%	-16.9%
South African Rand	17.38	1.5%	-19.5%	-18.8%

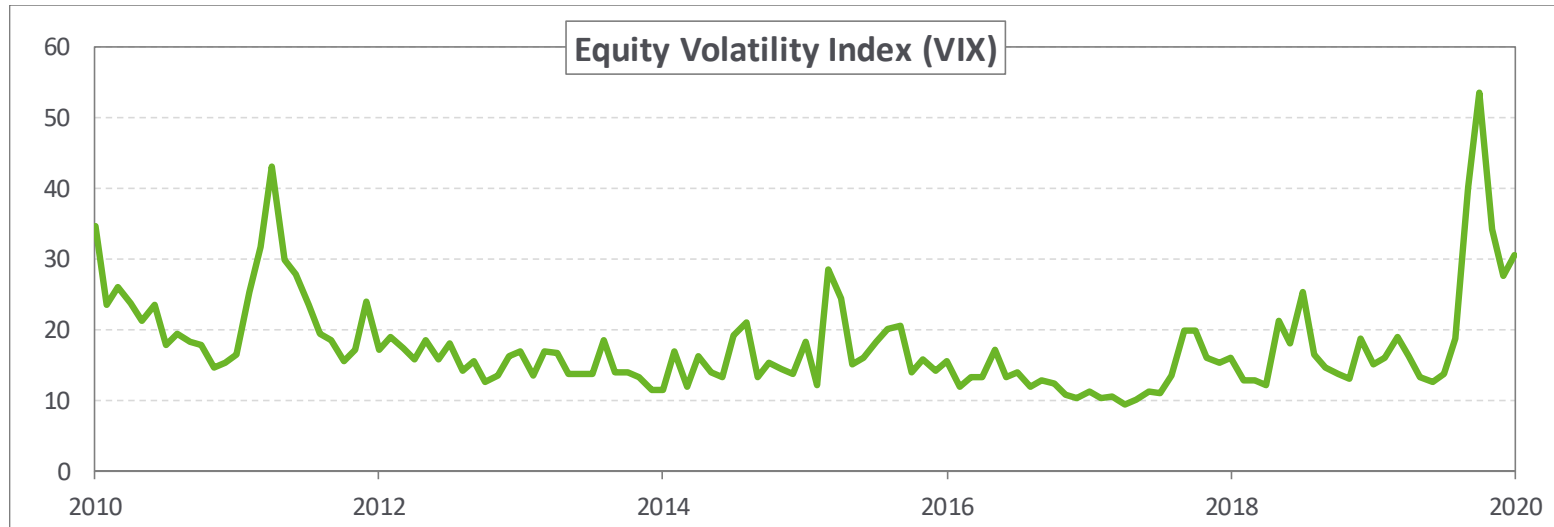
Source: FactSet



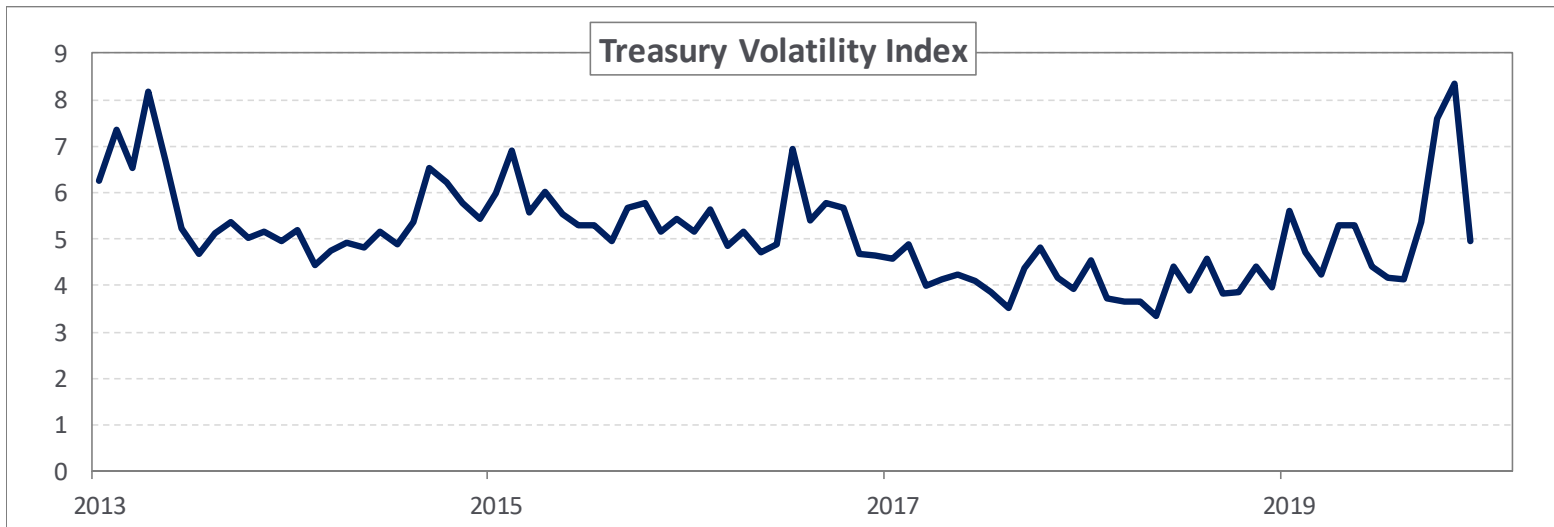
Source: FactSet



VOLATILITY



Source: CBOE, FactSet



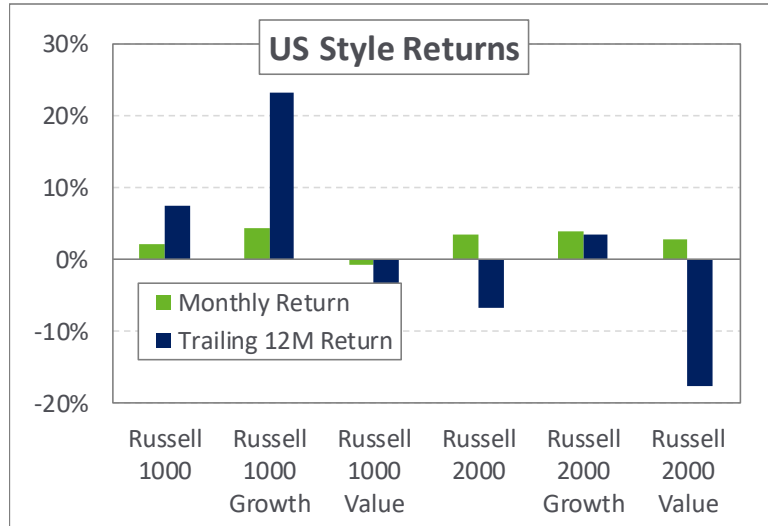
Source: Merrill Lynch, FactSet



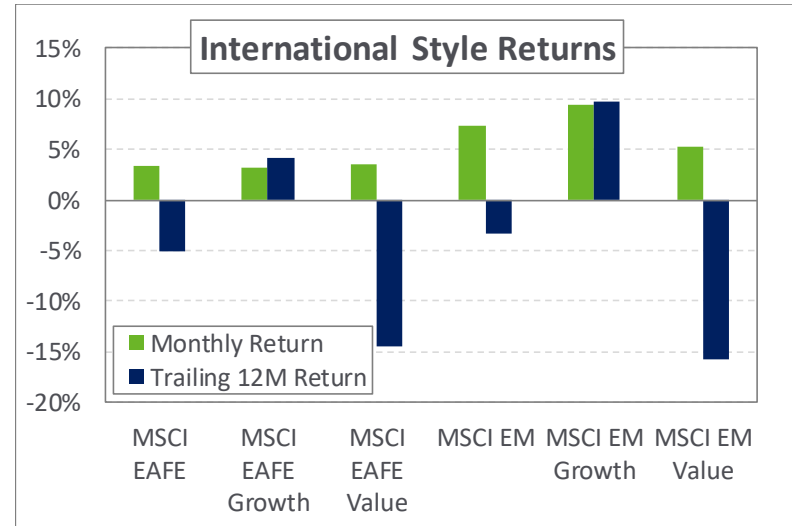
EQUITY

NEPC, LLC

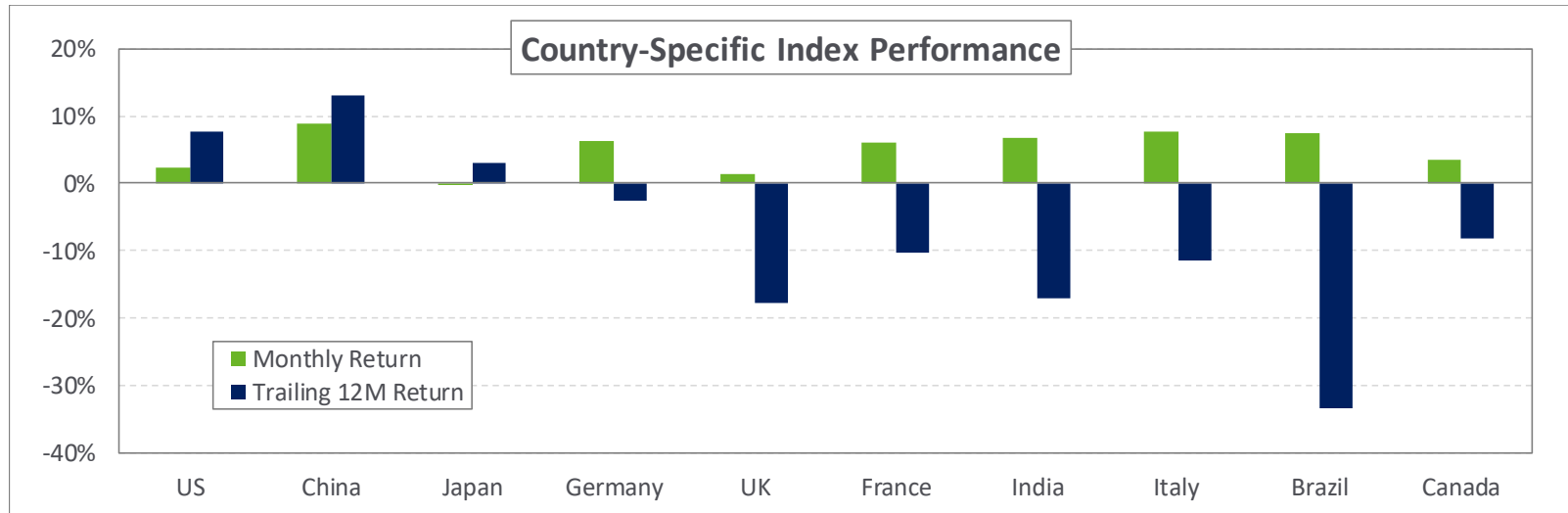
EQUITY INDEX PERFORMANCE



Source: Russell, FactSet



Source: MSCI, FactSet



Source: MSCI, FactSet
Represents returns in USD



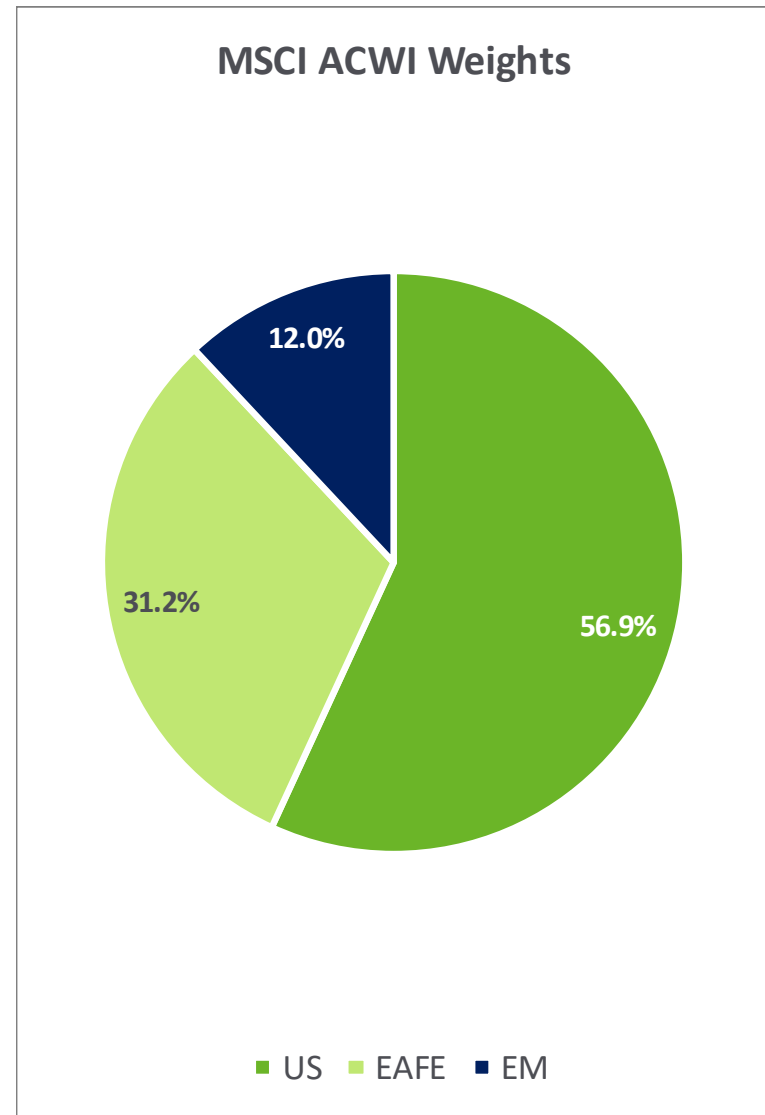
INDEX COMPOSITION

	MTD	QTD	YTD	Index Weight
S&P 500	2.0%	20.5%	-3.1%	100.0%
Communication Services	-0.1%	2.2%	0.0%	10.8%
Consumer Discretionary	0.5%	3.1%	1.0%	10.8%
Consumer Staples	0.0%	0.7%	-0.6%	7.0%
Energy	0.0%	0.9%	-1.5%	2.8%
Financials	0.0%	1.4%	-3.5%	10.1%
Health Care	-0.4%	2.2%	0.0%	14.6%
Industrials	0.2%	1.4%	-1.5%	8.0%
Information Technology	1.8%	7.5%	4.3%	27.5%
Materials	0.1%	0.6%	-0.2%	2.5%
Real Estate	0.0%	0.4%	-0.5%	2.8%
Utilities	-0.1%	0.1%	-0.6%	3.1%

Source: S&P, FactSet

	MTD	QTD	YTD	Index Weight
MSCI ACWI	3.2%	19.2%	-6.3%	100.0%
Communication Services	0.2%	1.9%	0.2%	9.4%
Consumer Discretionary	0.6%	3.1%	0.4%	11.8%
Consumer Staples	0.1%	0.8%	-0.6%	8.1%
Energy	0.0%	0.7%	-1.7%	3.6%
Financials	0.5%	1.6%	-4.7%	13.4%
Health Care	-0.1%	2.2%	0.5%	12.9%
Industrials	0.2%	1.6%	-1.5%	9.4%
Information Technology	1.5%	5.6%	2.8%	20.7%
Materials	0.2%	1.1%	-0.3%	4.6%
Real Estate	0.1%	0.4%	-0.8%	2.9%
Utilities	0.0%	0.2%	-0.5%	3.2%

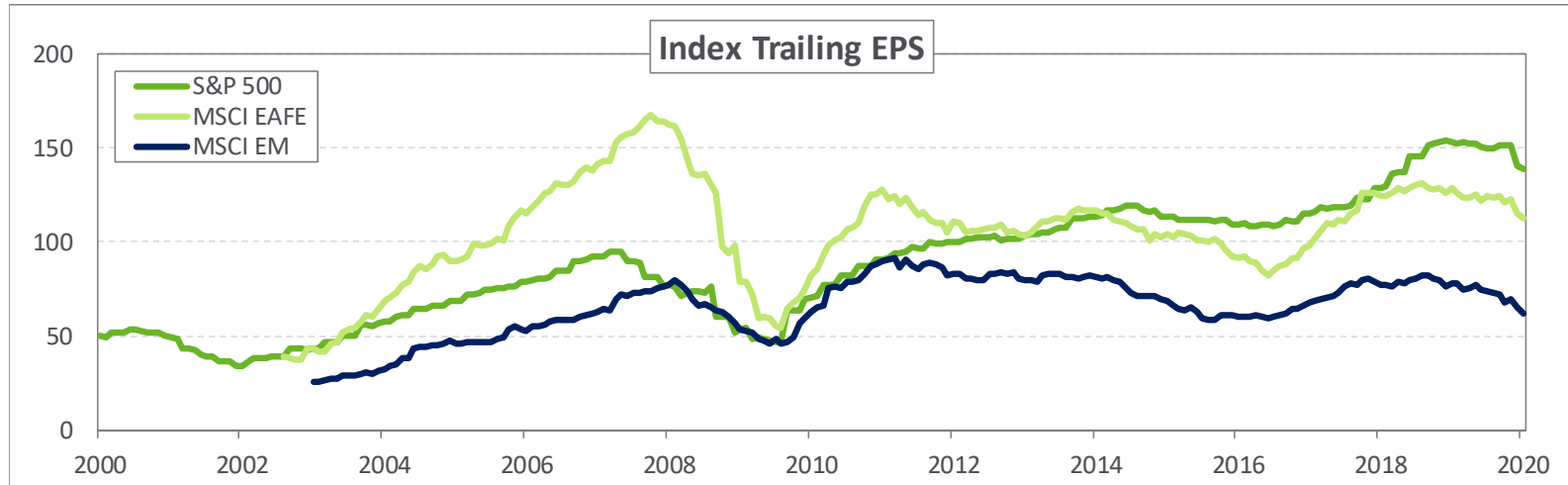
Source: MSCI, FactSet



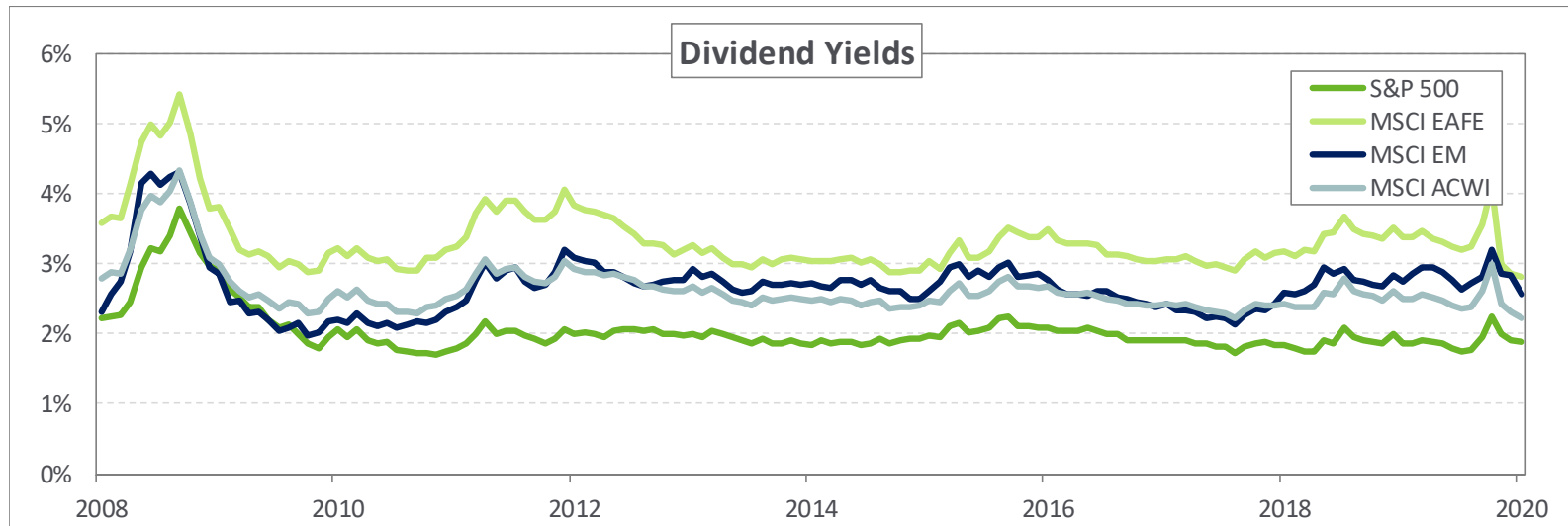
Source: MSCI, FactSet



EARNINGS & YIELDS



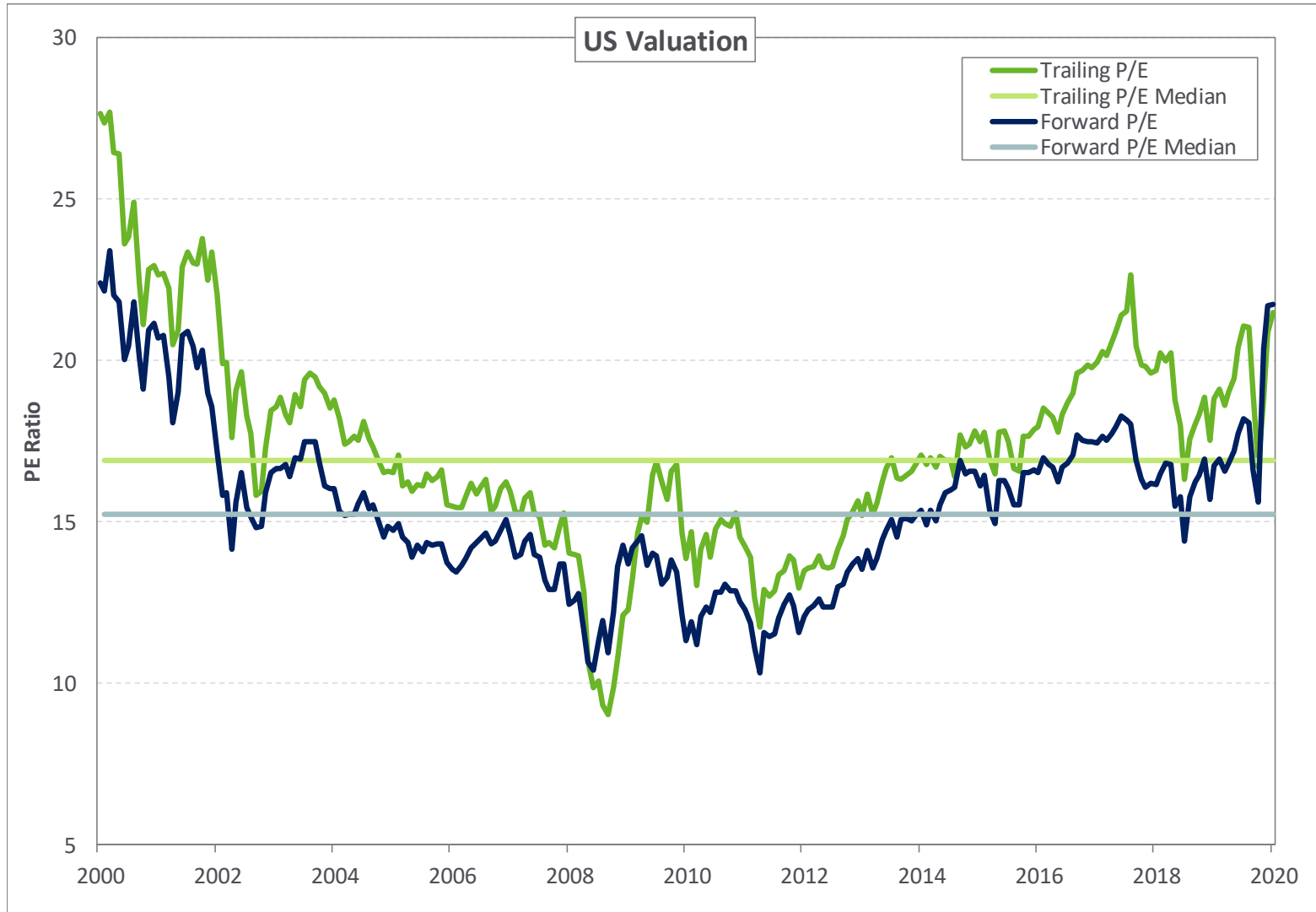
Source: FactSet



Source: FactSet



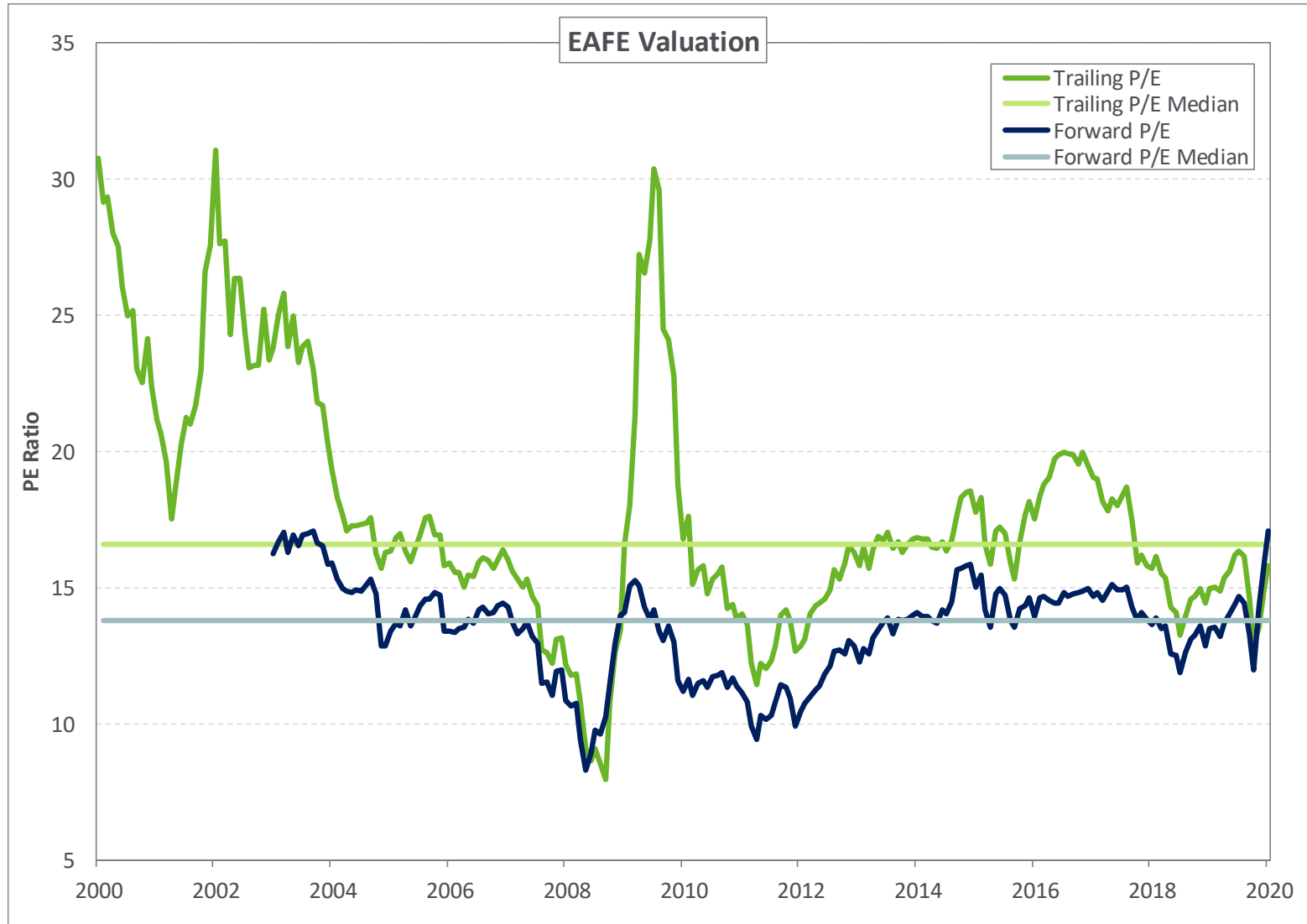
US EQUITY VALUATIONS



Source: S&P, FactSet



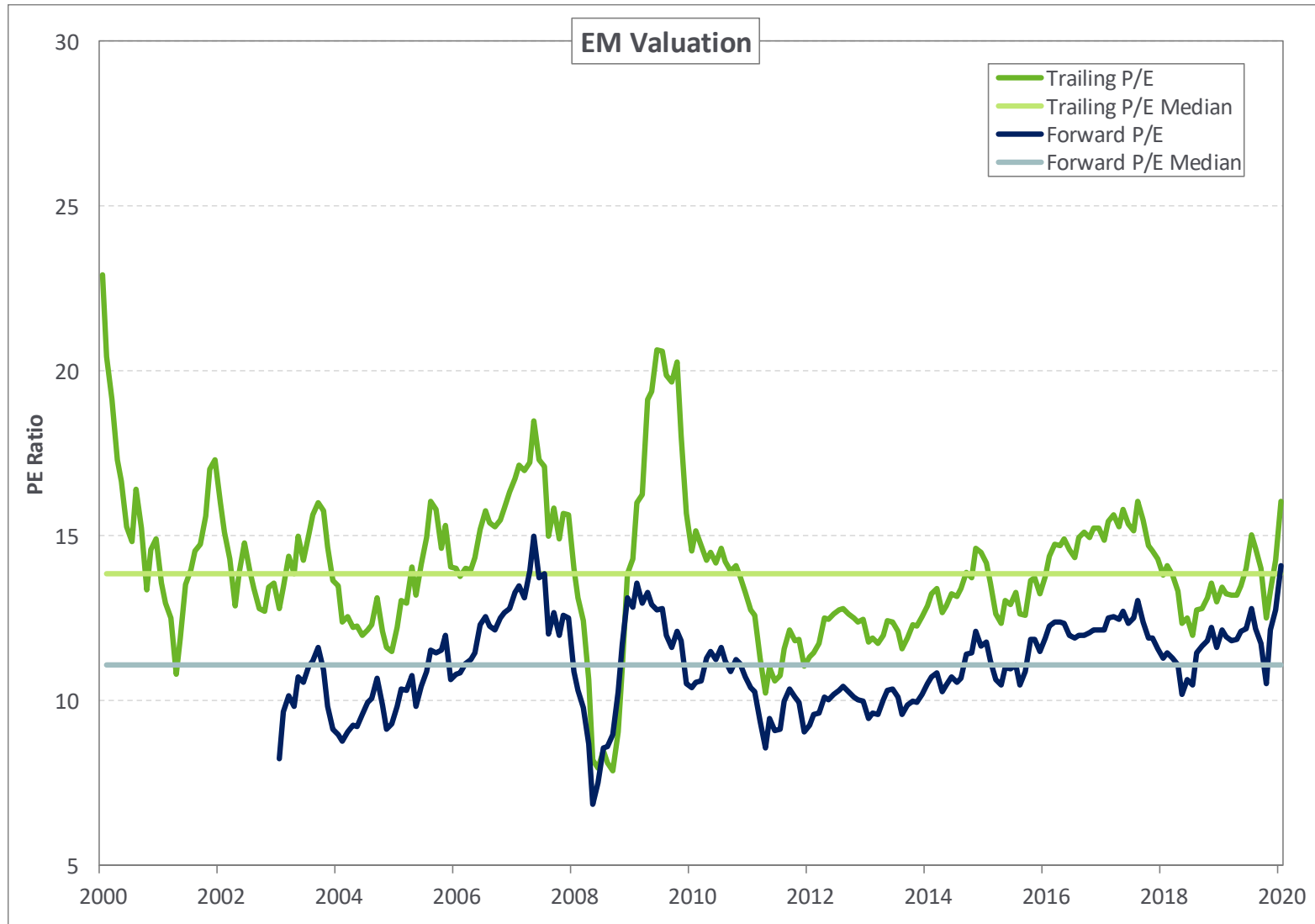
EAFE EQUITY VALUATIONS



Source: MSCI, FactSet



EM EQUITY VALUATIONS



Source: MSCI, FactSet



CREDIT

NEPC, LLC

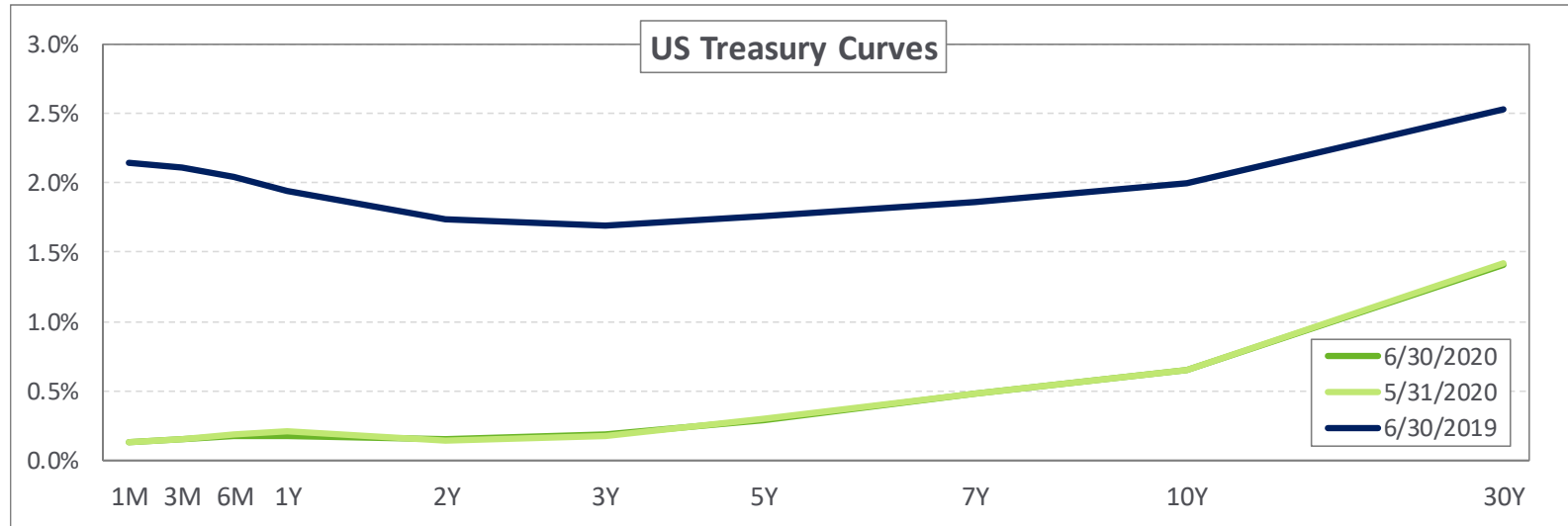
FIXED INCOME CHARACTERISTICS

	Averages			Total Returns (%)		
	Yield to Worst	Spread (bps)	Duration (Years)	1-Month	YTD	1-Year
Barclays Aggregate	1.25%	68	6.0	0.6%	6.1%	8.7%
Barclays Treasury	0.50%	-	7.2	0.1%	8.7%	10.4%
Barclays Agency	0.54%	21	3.7	0.2%	5.1%	6.7%
Barclays MBS	1.36%	70	2.1	-0.1%	3.5%	5.6%
Barclays ABS	0.85%	68	2.1	1.1%	3.3%	4.6%
Barclays CMBS	1.18%	77	5.7	1.1%	7.6%	9.0%
Barclays Corp IG	2.15%	150	8.5	2.0%	5.0%	9.4%
Barclays Muni	1.50%	-	5.4	0.8%	2.1%	4.4%
Barclays HY Muni	4.89%	-	9.5	4.0%	-2.6%	1.0%
Barclays TIPS	0.72%	-	4.4	1.1%	6.0%	8.2%
Barclays HY	6.87%	626	3.9	1.0%	-3.8%	0.0%
Barclays Global Agg	0.95%	58	7.3	0.9%	3.0%	4.2%
JPM EMBI Glob Div	-	474	7.7	3.5%	-2.8%	0.5%
JPM GBI - EM	4.29%	-	5.6	0.5%	-6.9%	-2.8%

Source: Barclays, JP Morgan, FactSet



TREASURIES



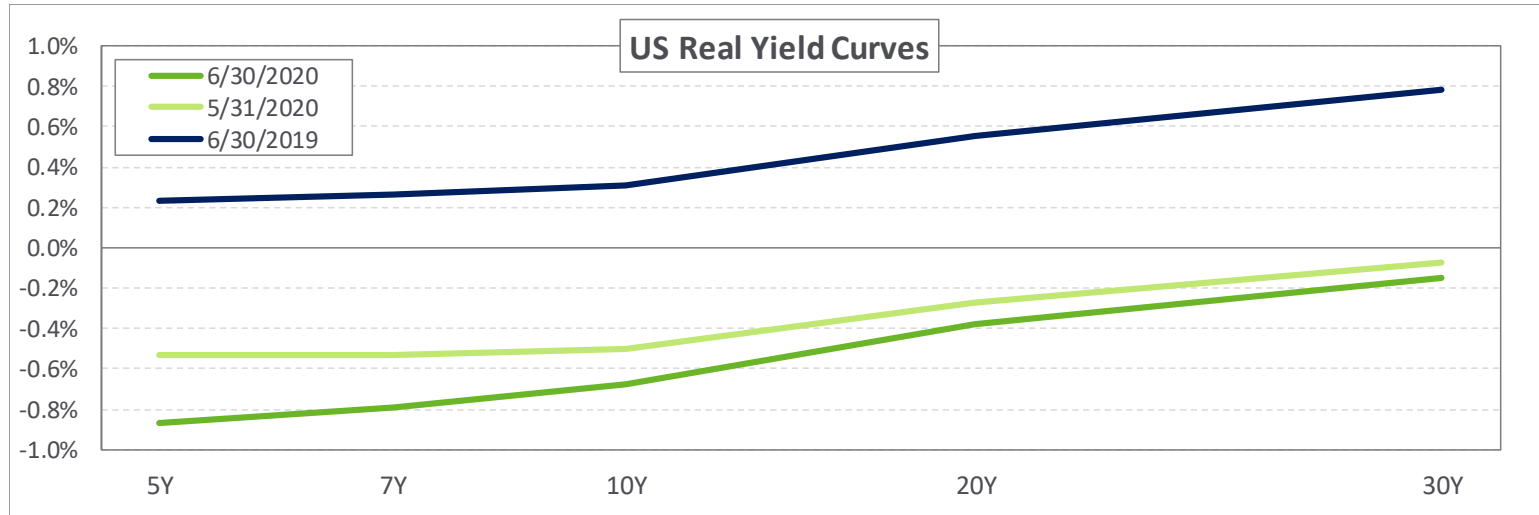
Source: FactSet

	Yield (%)			Total Return (%)	
	Current	1 Month Ago	12 Months Ago	1 Month	12 Months
3M Treasury	0.16%	0.15%	2.12%	0.01%	1.63%
6M Treasury	0.18%	0.18%	2.04%	0.02%	2.11%
2Y Treasury	0.15%	0.14%	1.73%	0.00%	3.96%
5Y Treasury	0.28%	0.30%	1.75%	0.17%	8.44%
10Y Treasury	0.65%	0.65%	2.00%	-0.01%	14.21%
30Y Treasury	1.41%	1.42%	2.53%	-0.04%	29.60%

Source: FactSet



REAL YIELDS



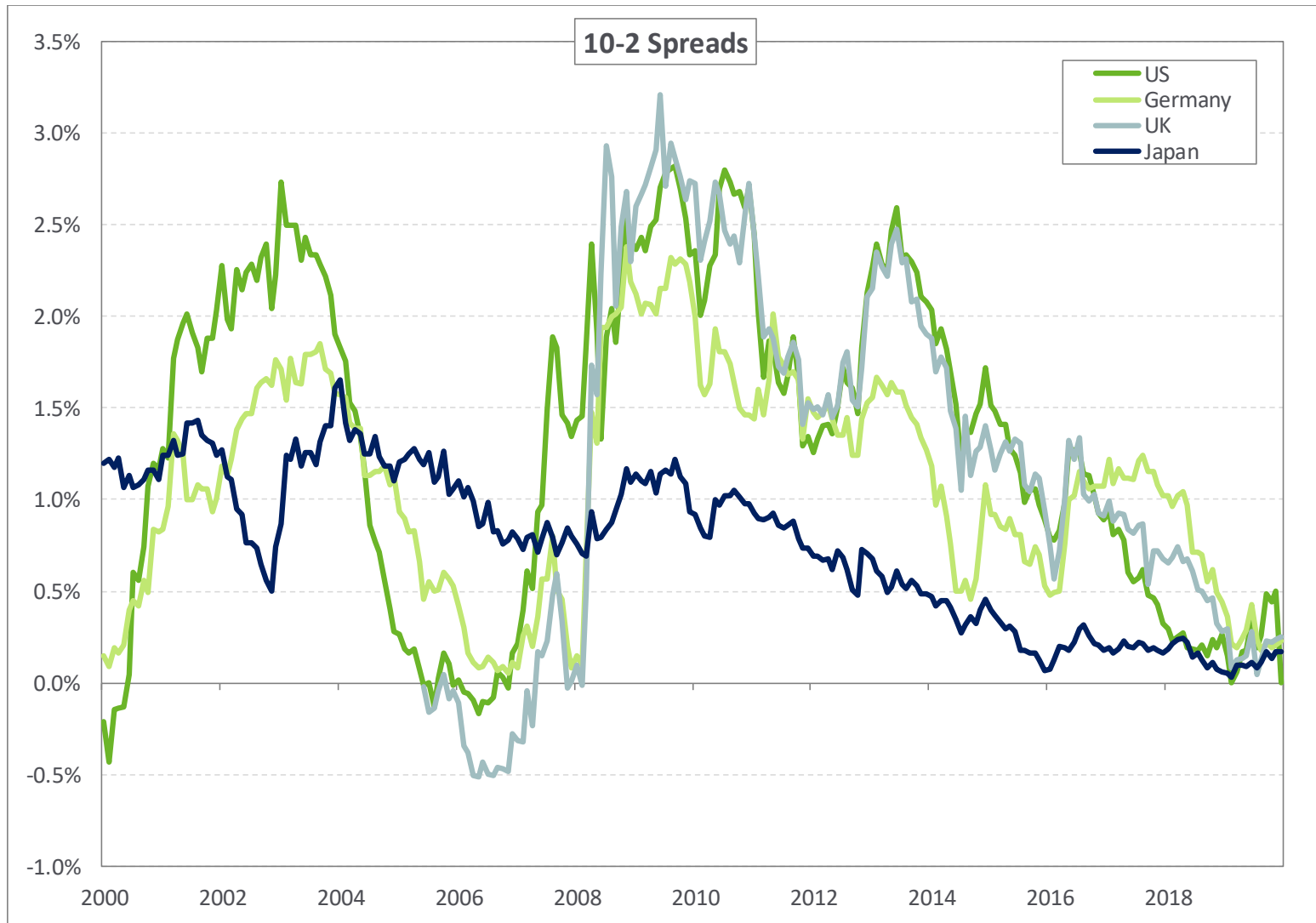
Source: FactSet

	Real Rates			Breakeven Rates	
	Current	1 Month Ago	12 Months Ago	Current	12 Months
5-Year	-0.87%	-0.53%	0.23%	1.15%	1.52%
7-Year	-0.79%	-0.53%	0.26%	1.27%	1.61%
10-Year	-0.68%	-0.50%	0.31%	1.33%	1.69%
30-Year	-0.15%	-0.07%	0.78%	1.56%	1.75%

Source: FactSet



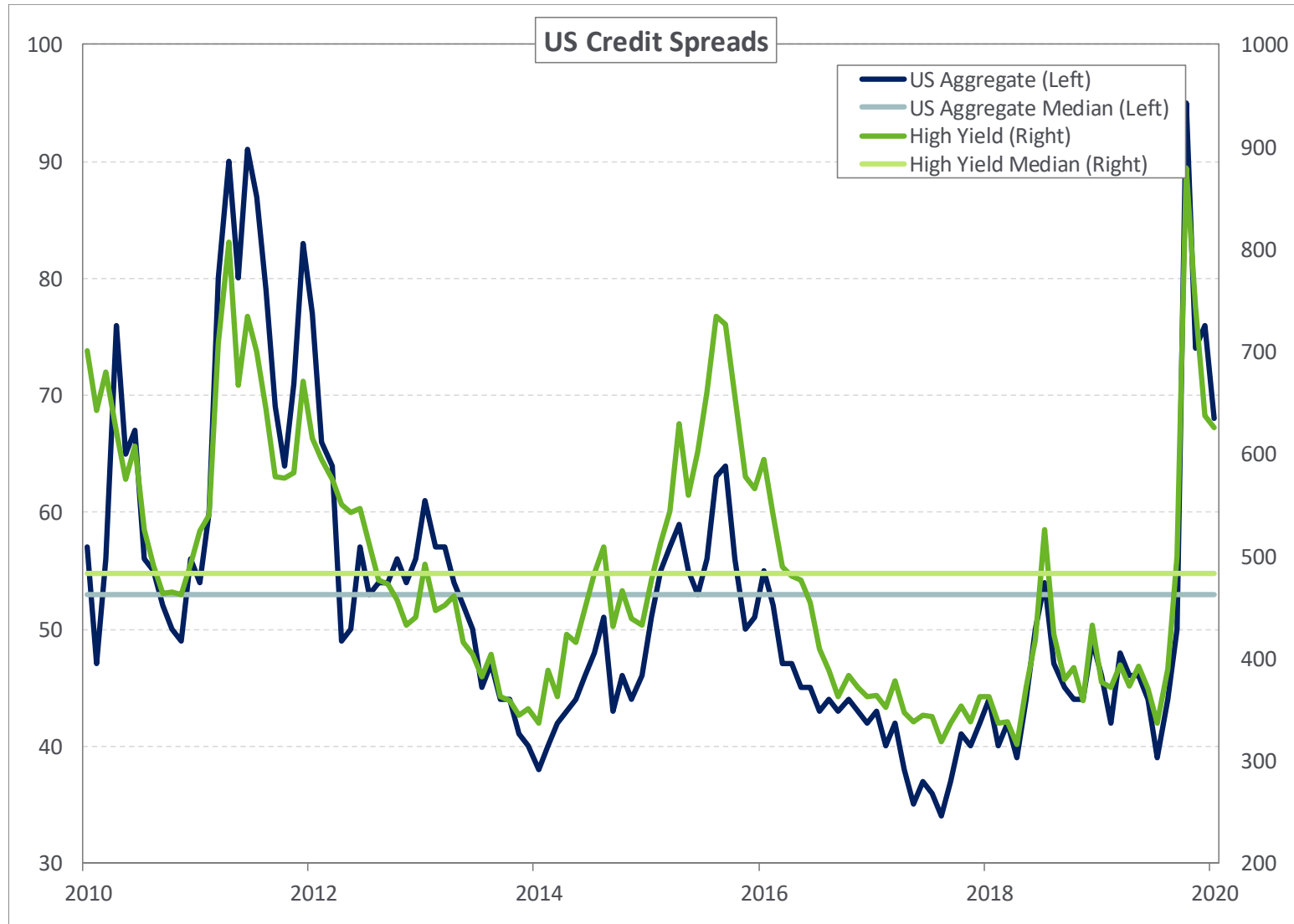
NOMINAL YIELDS



Source: FactSet



CREDIT SPREADS



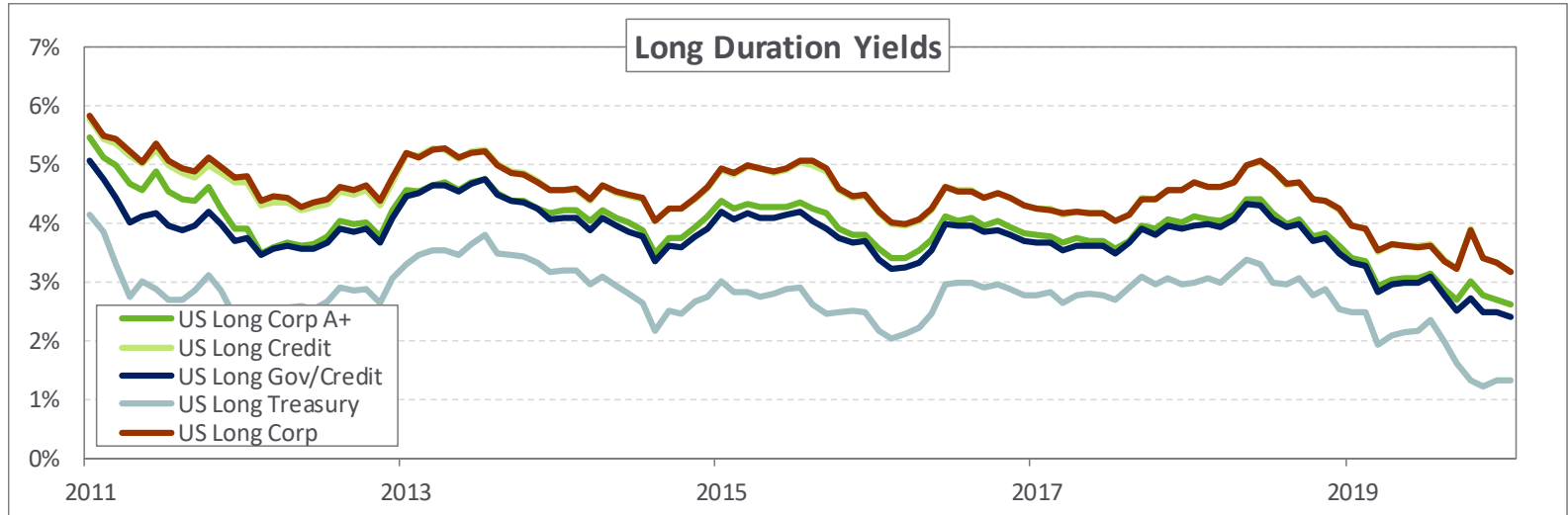
Source: Barclays, FactSet



LONG DURATION

Index	Current	1 Month Ago	12 Months Ago	Duration
Barclays Long Treasury	1.3%	1.3%	2.5%	19.4
Barclays 20+ STRIPS	1.5%	1.5%	2.6%	27.3
Barclays Long Credit	3.1%	3.3%	3.9%	14.8
Barclays Long Gov/Credit	2.4%	2.5%	3.3%	16.6
Barclays Long Corp A+	2.8%	2.9%	3.6%	15.8

Source: Barclays, FactSet



Source: Barclays, FactSet



REAL ASSETS

NEPC, LLC

REAL ASSETS INDEX PERFORMANCE

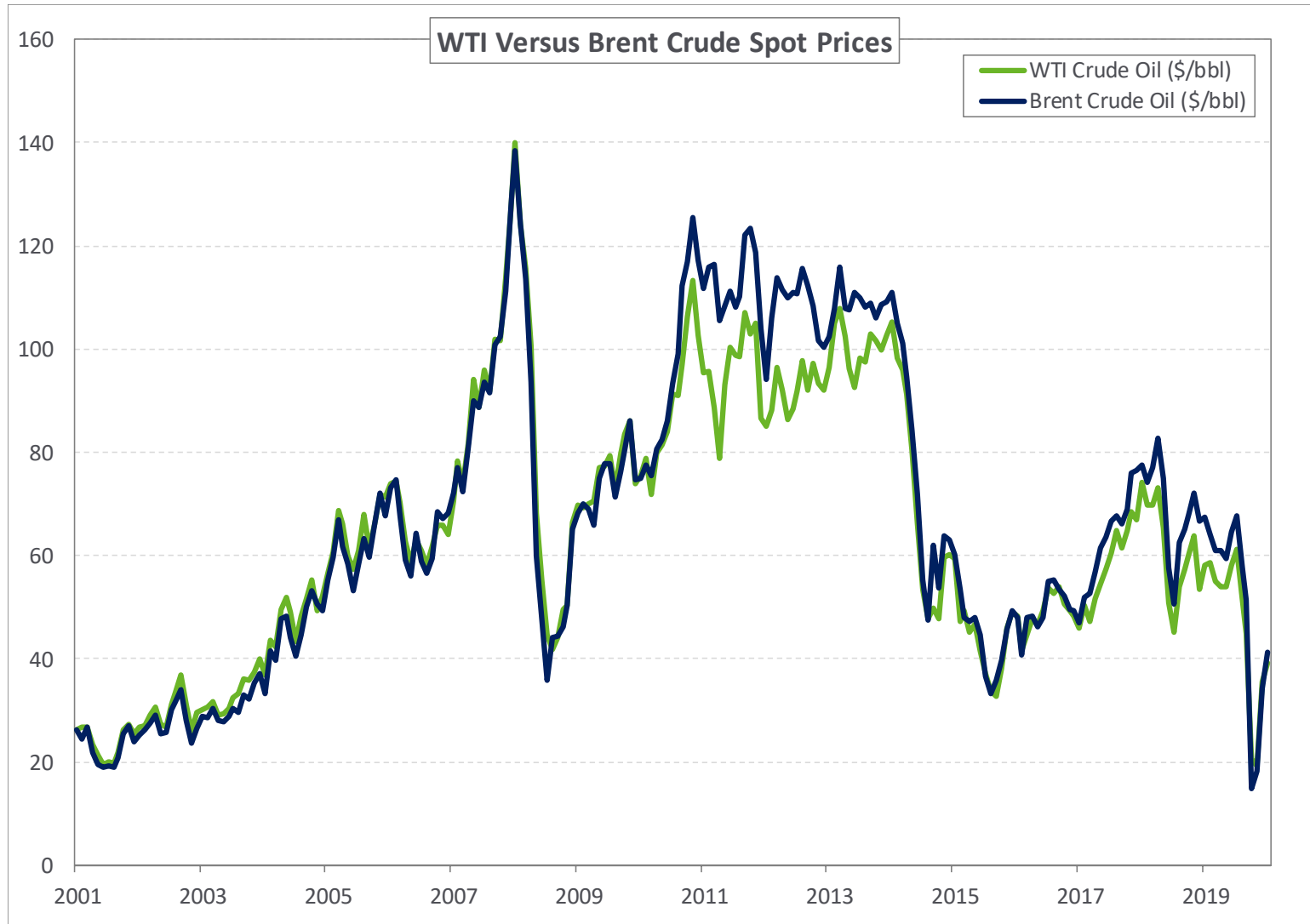
Index	1 Month	3 Month	YTD	1 Year	3 Year	5 Year
Bloomberg Commodity Index	2.3%	5.1%	-19.4%	-17.3%	-6.1%	-7.7%
Bloomberg Sub Agriculture Index	1.8%	-4.8%	-14.2%	-13.7%	-10.5%	-9.6%
Coffee	3.0%	-17.8%	-25.5%	-16.4%	-16.1%	-14.2%
Corn	3.3%	-2.8%	-15.4%	-25.3%	-13.0%	-13.2%
Cotton	6.6%	19.5%	-12.0%	-9.6%	-4.3%	-2.5%
Soybean	3.5%	-2.6%	-10.6%	-9.4%	-8.0%	-7.3%
Soybean Oil	1.9%	1.9%	-21.5%	-6.0%	-8.9%	-7.6%
Sugar	8.5%	12.8%	-9.8%	-11.5%	-10.2%	-6.7%
Wheat	-6.6%	-14.5%	-12.7%	-8.0%	-9.9%	-13.1%
Bloomberg Sub Energy	2.2%	9.8%	-46.3%	-45.5%	-14.4%	-18.9%
Brent Crude	8.1%	31.3%	-42.6%	-37.0%	-3.0%	-12.4%
Heating Oil	11.1%	6.4%	-46.9%	-43.2%	-8.3%	-14.0%
Natural Gas	-10.8%	-14.2%	-37.8%	-49.1%	-30.8%	-28.8%
Unleaded Gas	9.1%	69.5%	-45.9%	-41.1%	-9.9%	-14.7%
WTI Crude Oil	8.7%	23.6%	-58.6%	-55.8%	-17.0%	-22.6%
Bloomberg Sub Industrial Metals	6.9%	12.3%	-8.4%	-6.4%	-1.4%	0.0%
Aluminum	4.0%	4.0%	-13.5%	-13.4%	-6.8%	-2.9%
Copper	11.9%	21.2%	-3.5%	-0.3%	-0.5%	-0.2%
Nickel	3.7%	10.8%	-9.6%	0.9%	10.6%	0.6%
Zinc	2.6%	6.8%	-10.6%	-16.7%	-5.4%	2.4%
Bloomberg Sub Precious Metals	2.2%	15.0%	13.8%	24.0%	9.8%	6.7%
Gold	2.8%	12.1%	17.1%	25.4%	12.1%	8.0%
Silver	-0.3%	29.2%	1.9%	18.0%	2.2%	2.0%
Bloomberg Sub Livestock	-8.5%	-8.6%	-34.3%	-33.5%	-16.6%	-11.0%
Lean Hogs	-19.1%	-23.9%	-51.9%	-57.4%	-30.6%	-19.4%
Live Cattle	-3.3%	-0.6%	-23.1%	-16.4%	-8.7%	-6.6%

Source: Bloomberg, FactSet

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



OIL MARKETS



Source: FactSet



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.
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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.

