

QUARTER ENDING SEPTEMBER 30, 2019
INVESTMENT PERFORMANCE ANALYSIS
EASTERN MICHIGAN UNIVERSITY BOARD OF
REGENTS

November 18, 2019

Gary A. Wyniemko, CFA, Principal

James E. Reichert, CFA, Partner

Varun Raman, Senior Analyst



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

TABLE OF CONTENTS

	Page
NEPC Update	3
Quarterly Review	6
Key Themes and Opportunities	18
Q3 Executive Summary	27
Total Fund Summary	32
Appendix	51
- Market Overview	



NEPC UPDATE

NEPC, LLC

HIGHLIGHTS OF 2019 THIRD QUARTER HAPPENINGS AT NEPC

NEPC INSIGHTS

- 2019 Second Quarter Market Thoughts
- White Paper: "Determining Spending Levels for an Individual Portfolio"
- White Paper: "Are you Getting Independent and Objective Investment Advice?"
- "What a Long, Strange Trip It's Been – The Journey of the First 401(k) Participants"
- "Dollars and Cents: Transitioning Decisions into Dollars for Defined Contribution Participants"
- Taking Stock: "What is the Yield Curve Signaling? Part 2"
- Taking Stock: "What Happened to the Data-Dependent Fed?"
- Taking Stock: "A Multi-Asset Strategy That's the Right Fit For You"
- Taking Stock: "Healthcare Organizations Maintain Economic Optimism Despite Geopolitical Concerns"
- Taking Stock: "Getting Those Dollars and Cents to Add Up in Retirement Planning"
- Taking Stock: "Dear Millennials, What Do You Want from Your Investment Portfolio?"
- Taking Stock: "Is Help on the Way for Struggling Multiemployer Pensions?"
- Taking Stock: "Pension Liabilities Rise in Q2"

WEBINAR REPLAYS

- NEPC's 2019 Q2 Quarterly Market Thoughts Call

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



HIGHLIGHTS OF 2019 THIRD QUARTER HAPPENINGS AT NEPC

NEPC GIVES BACK

- NEPC sponsored a volunteer day with the Greater Boston chapter of Habitat for Humanity. Our volunteers spent their day helping to build homes for low-income families in need of decent and affordable housing.
- NEPC employees volunteered at the Greater Boston Food Bank (GBFB) on October 3rd. GBFB is the largest hunger-relief organization in New England and among the largest food banks in the country. The food banks are committed to increasing food distribution to provide at least one meal a day to every person in need, while supporting healthy lives and healthy communities. We had a group of about 20 volunteers who sorted and packed a total of 6,961 pounds of food and drink, which came to a total of 5,801 meals.















QUARTERLY REVIEW

NEPC, LLC

PERFORMANCE OVERVIEW

Q3 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
3.4%	1.4	-32 bps	1.7%	-1.1%	-4.2%	2.3%	1.3%	1.5%	-7.0%	4.4%	7.4%

Global central banks shifted toward easier monetary policy, providing support for risk-assets, even as uncertainty around trade and slowing global growth continue to temper returns

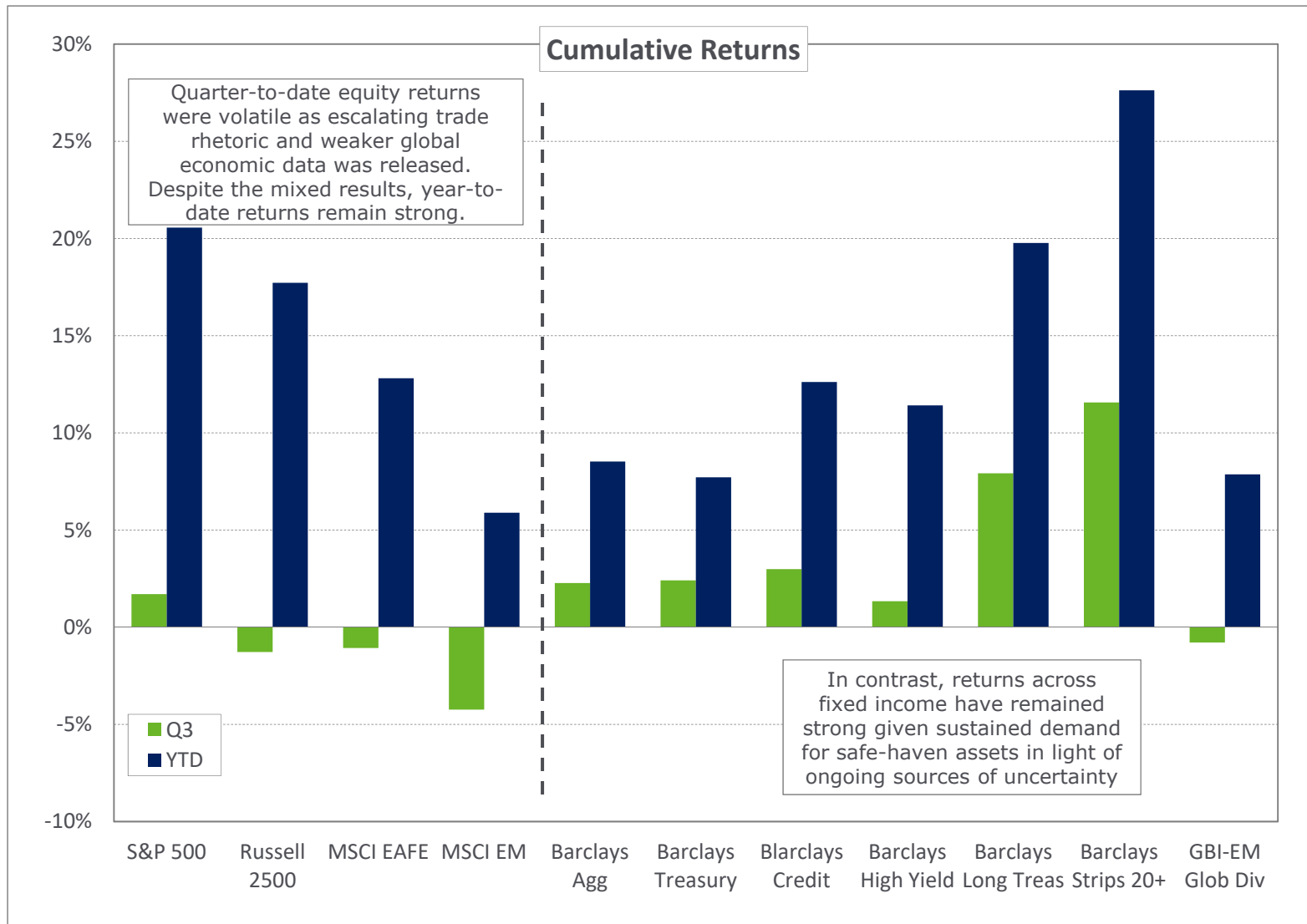
The decline in global yields also reflected these concerns – leading to positive returns across safe-haven fixed income. Within credit, spreads were relatively flat, but broadly remain below medians

Oil experienced a volatile month as geopolitical concerns influenced spot prices following a bombing of Saudi Arabia’s oil infrastructure

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



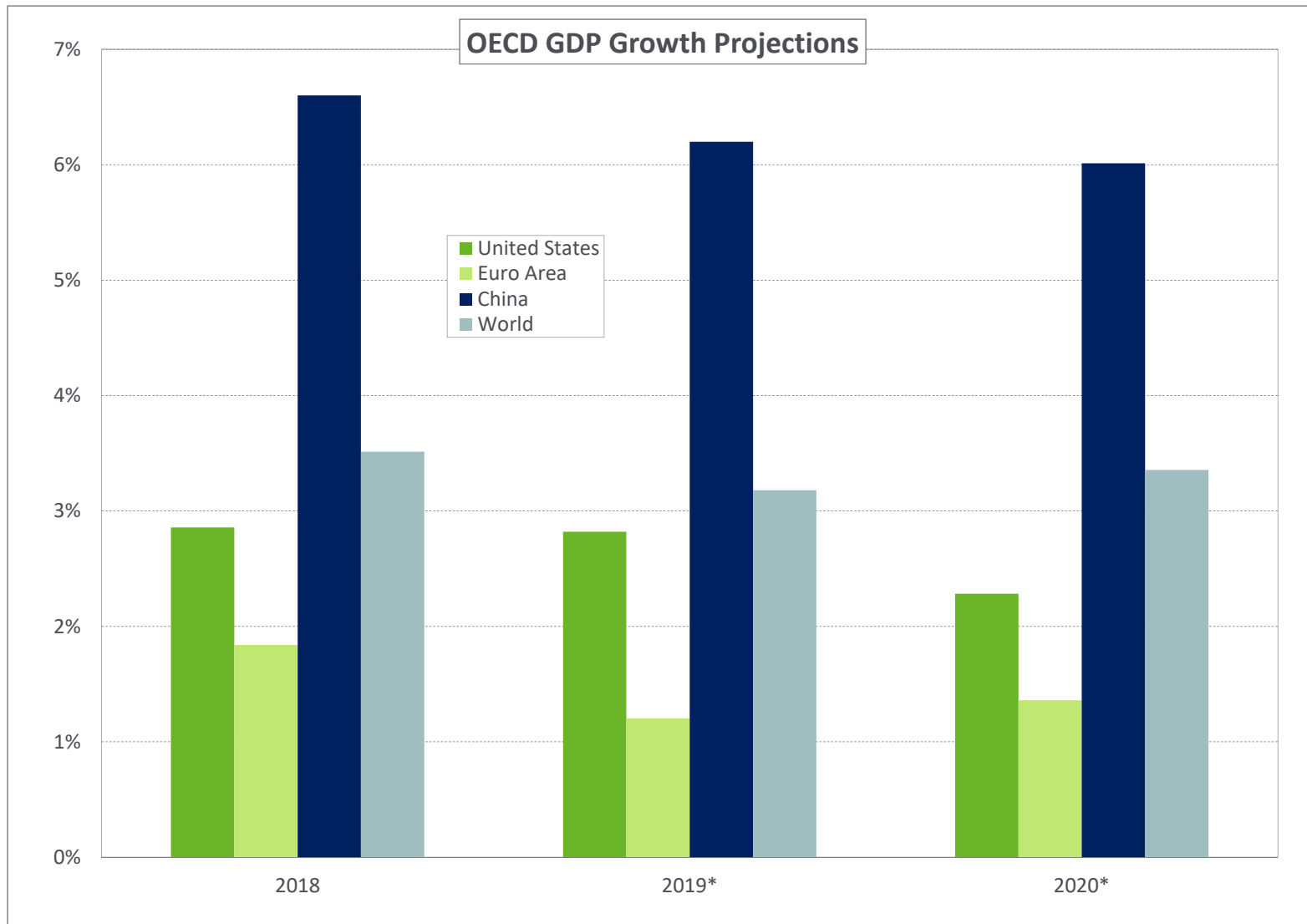
YTD RETURNS HAVE BEEN STRONG, QTD MIXED



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



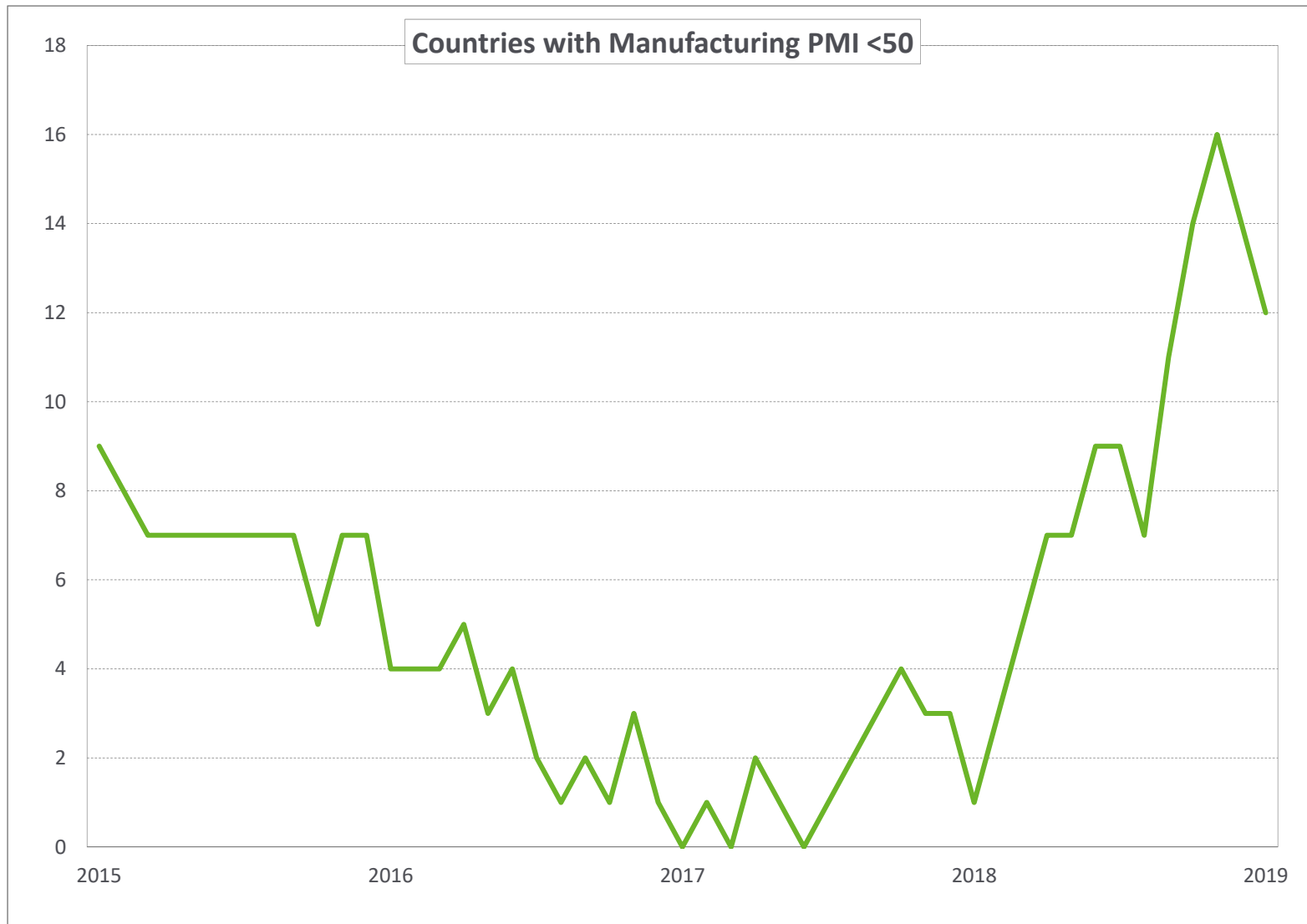
THE ECONOMIC OUTLOOK HAS DETERIORATED



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



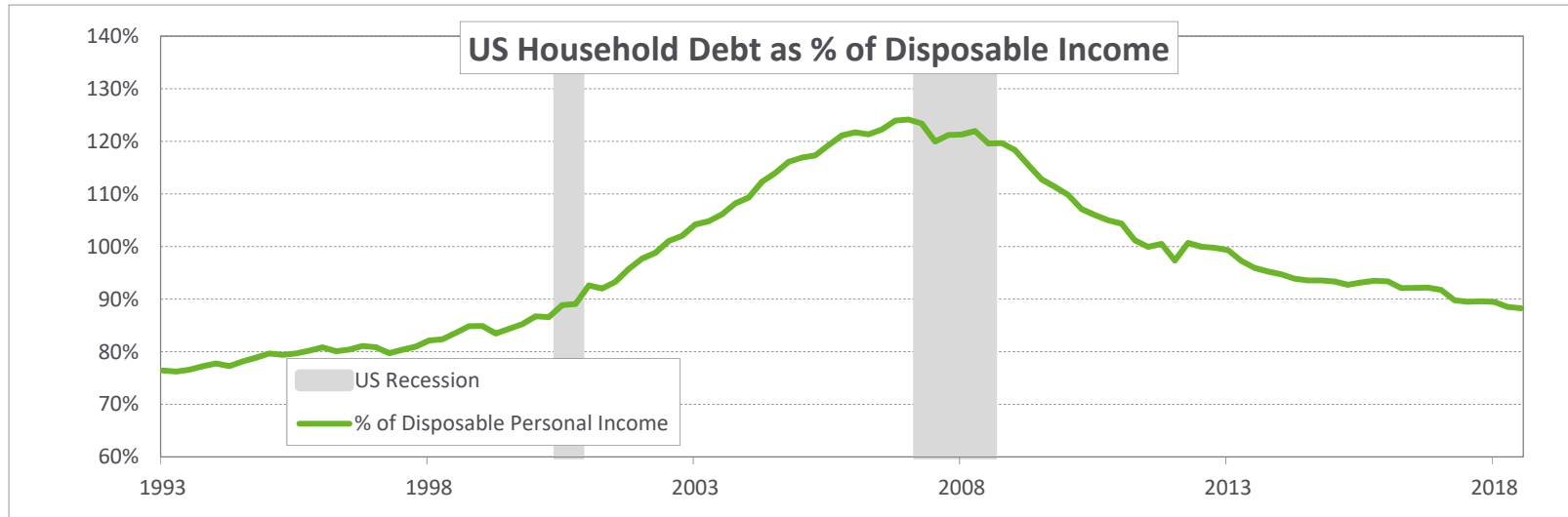
A SOFTER GLOBAL BACKDROP



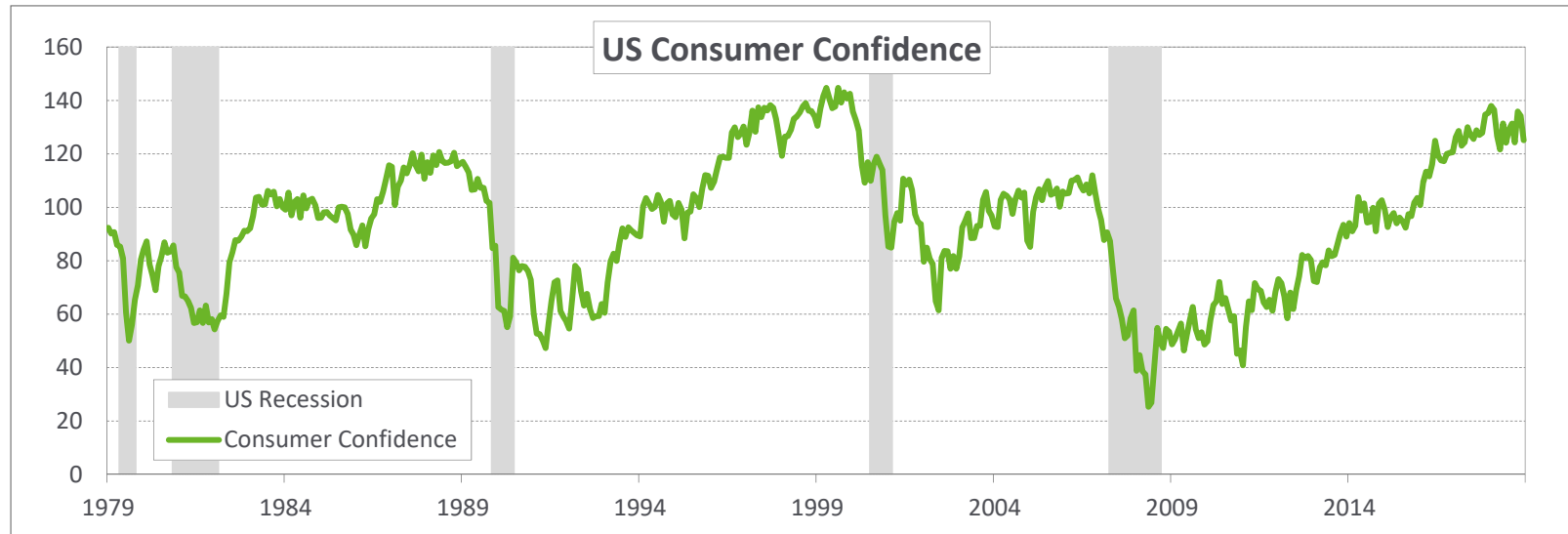
Source: Markit, FactSet;
Represents the number of the top 20 largest economies with manufacturing PMIs less than 50



...BUT THE CONSUMER HAS PROVIDED SUPPORT



Source: FactSet



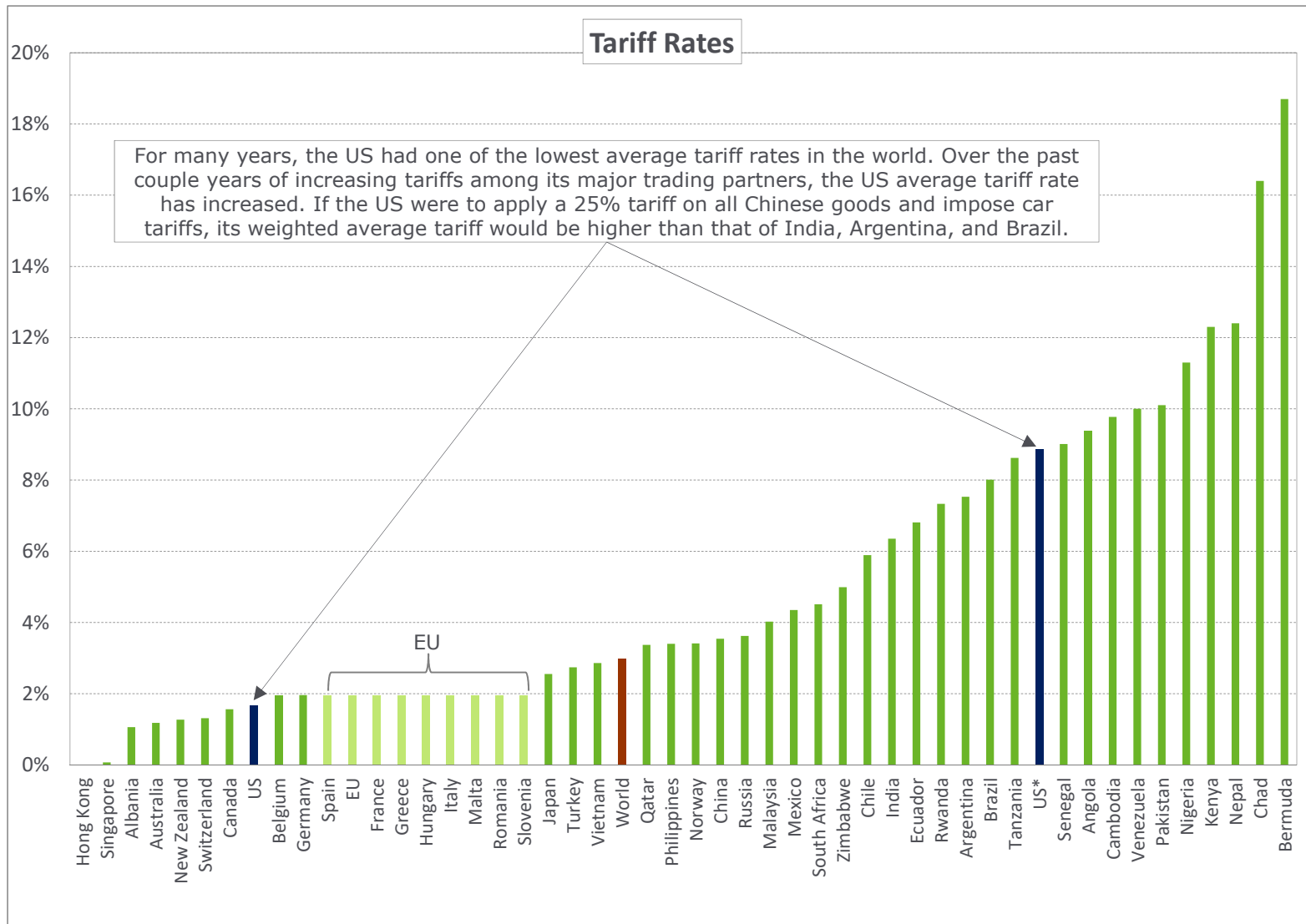
Source: Conference Board US, FactSet



2019 TRADE TIMELINE



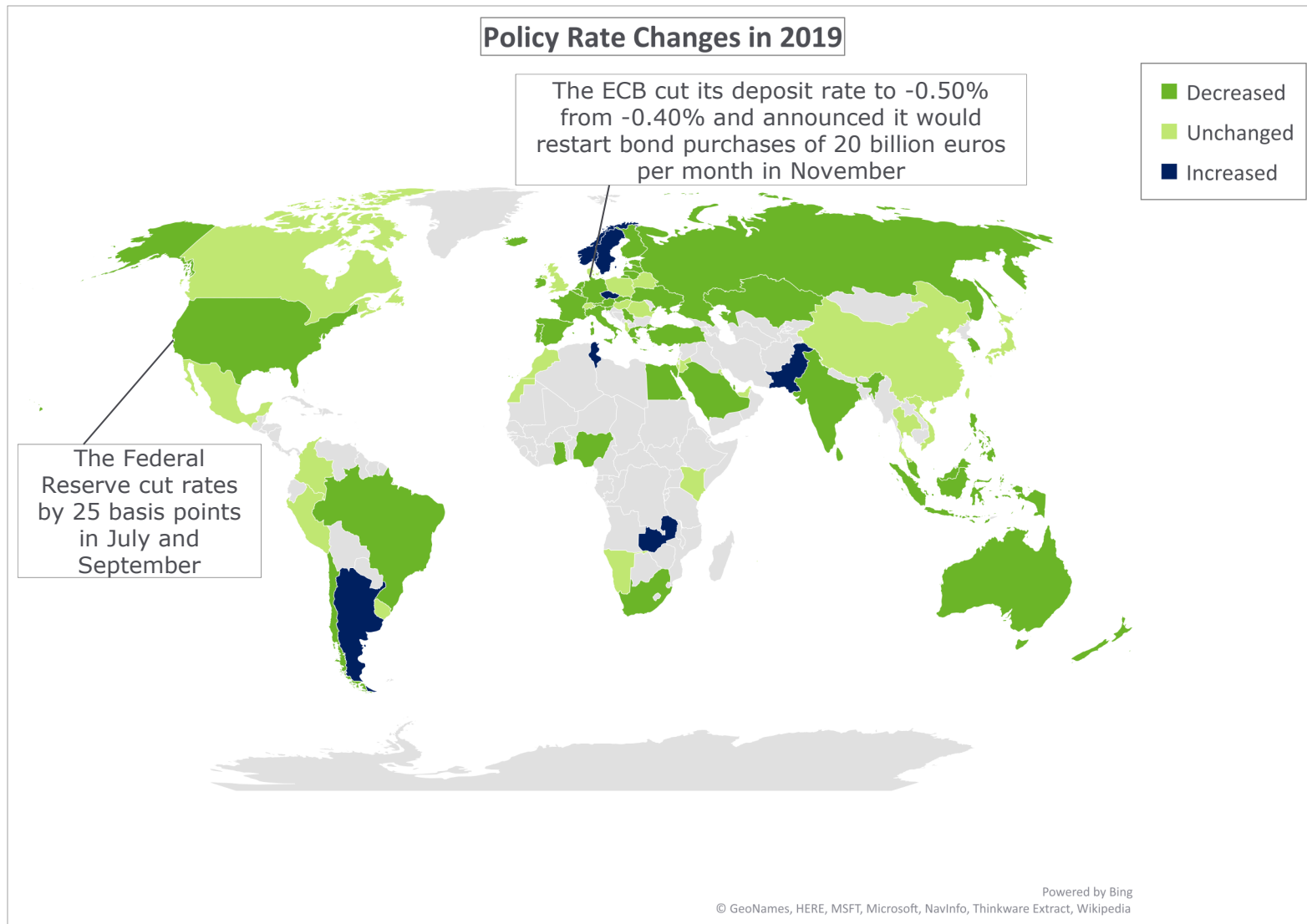
THE TARIFFS IN CONTEXT



Source: World Bank, UBS, NEPC; Represents 2016 applied tariff rate, weighted mean for all products
 US* represents potential average tariff rate estimate sourced from UBS



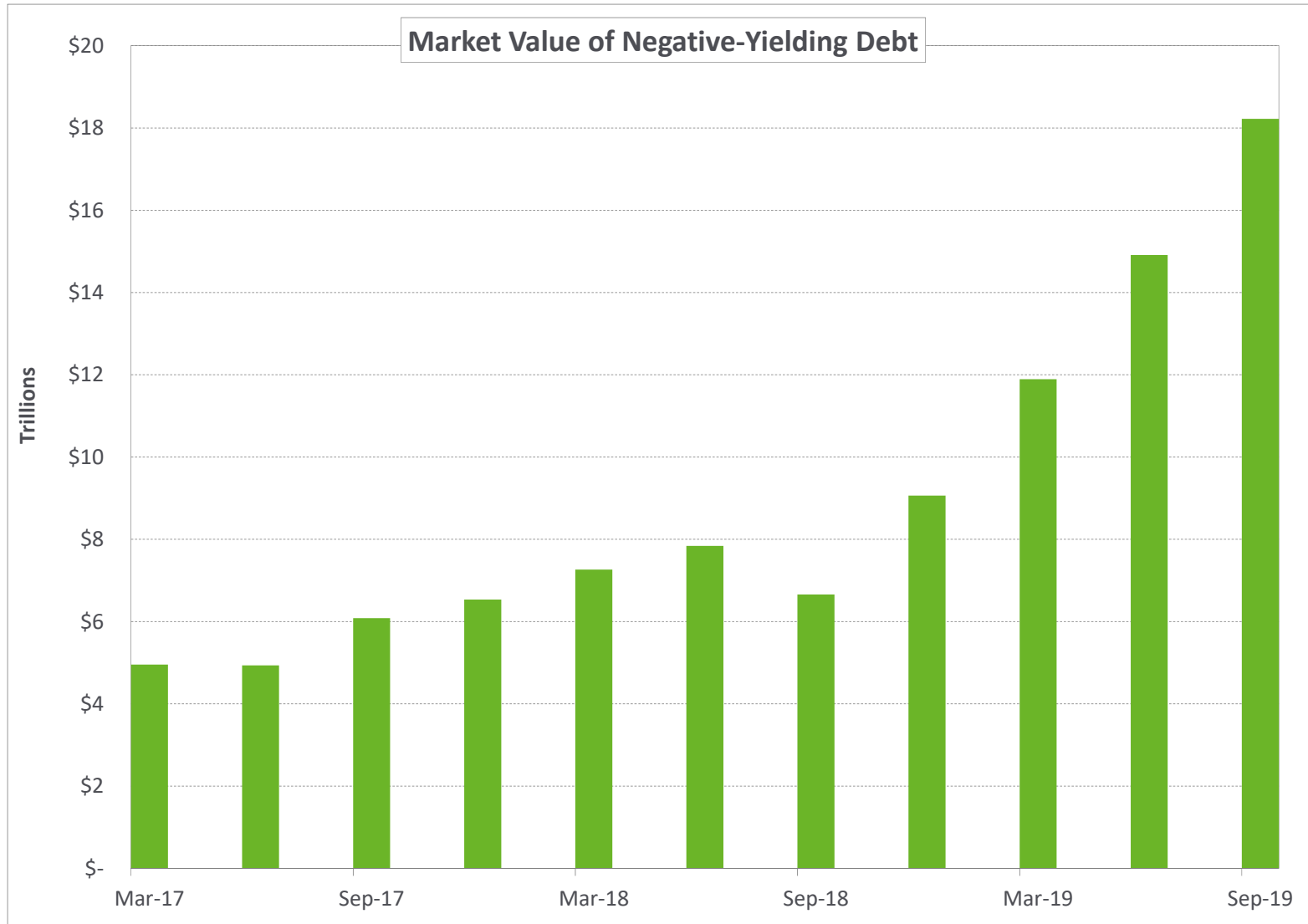
A SHIFT TOWARD EASIER MONETARY POLICY



Source: FactSet



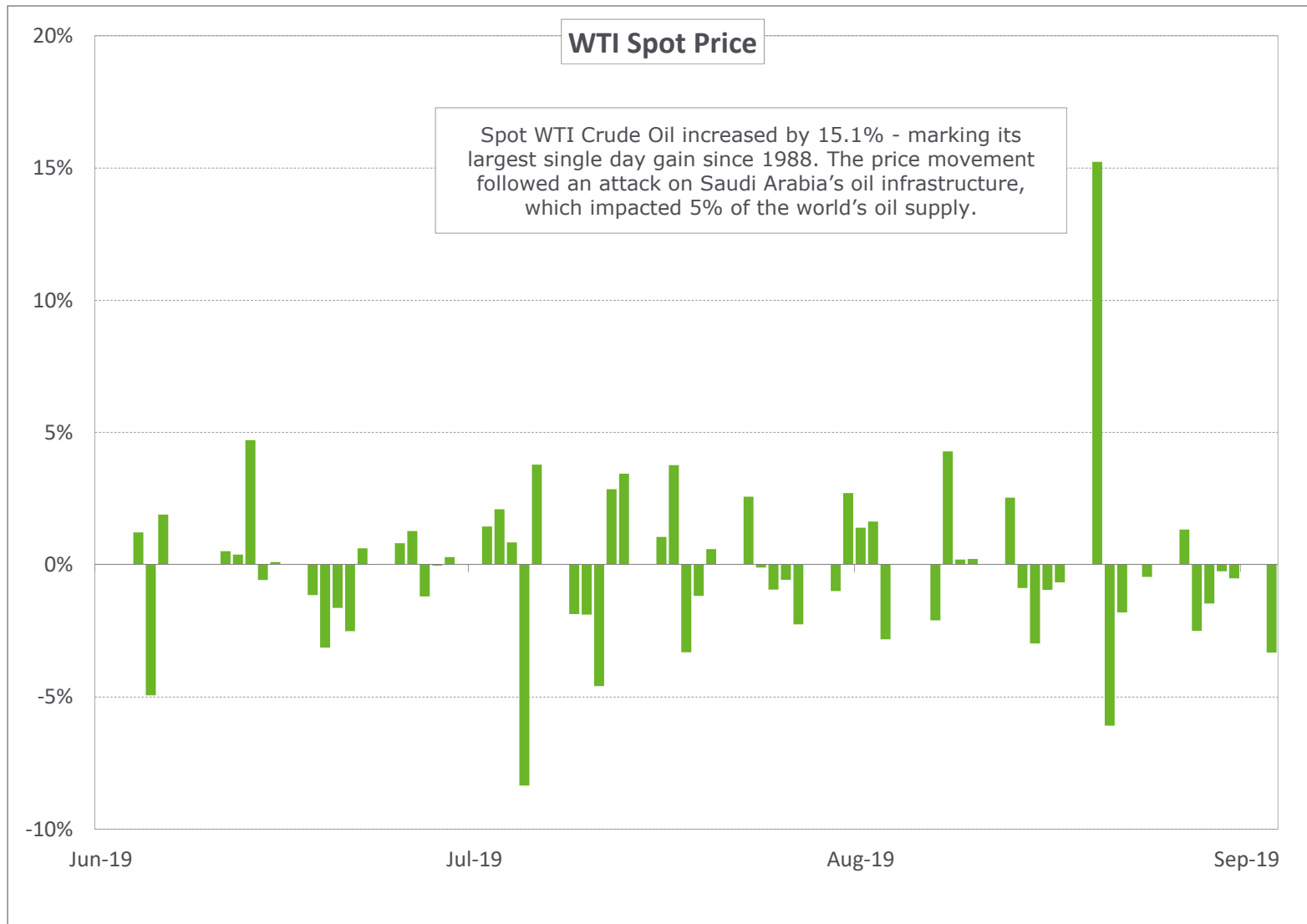
NEGATIVE YIELDS CONTINUE TO SPREAD



Source: FactSet



GEOPOLITICAL TENSIONS IMPACTED OIL



Source: FactSet



KEY MARKET THEMES

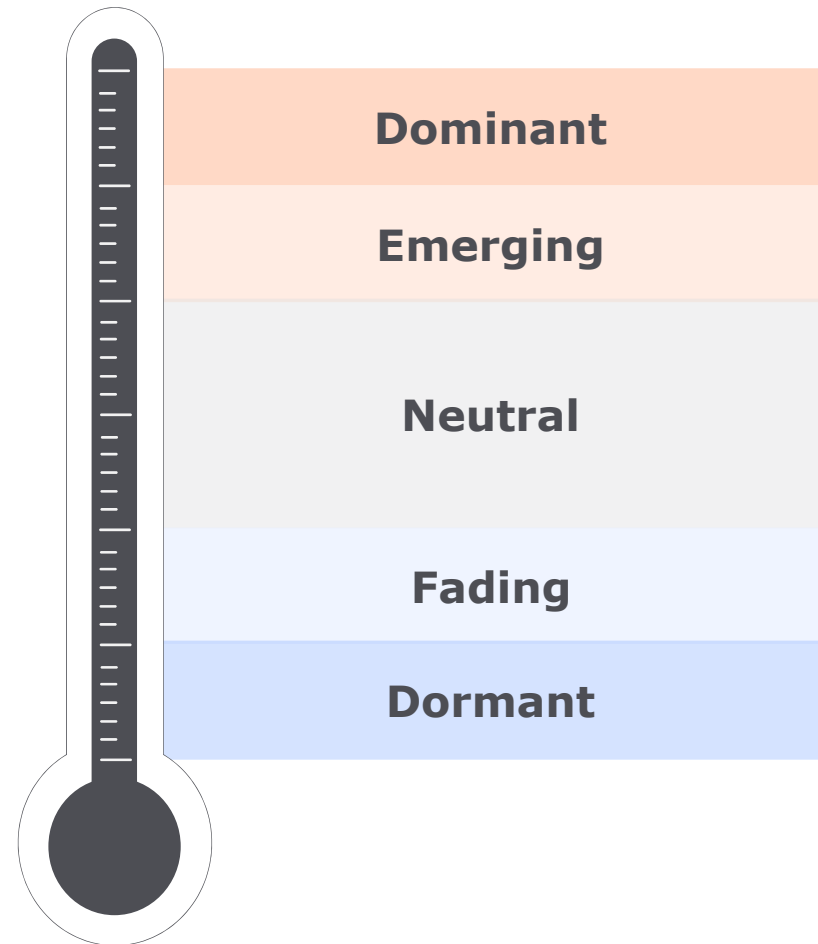
NEPC, LLC

KEY MARKET THEMES OVERVIEW

Thermometer

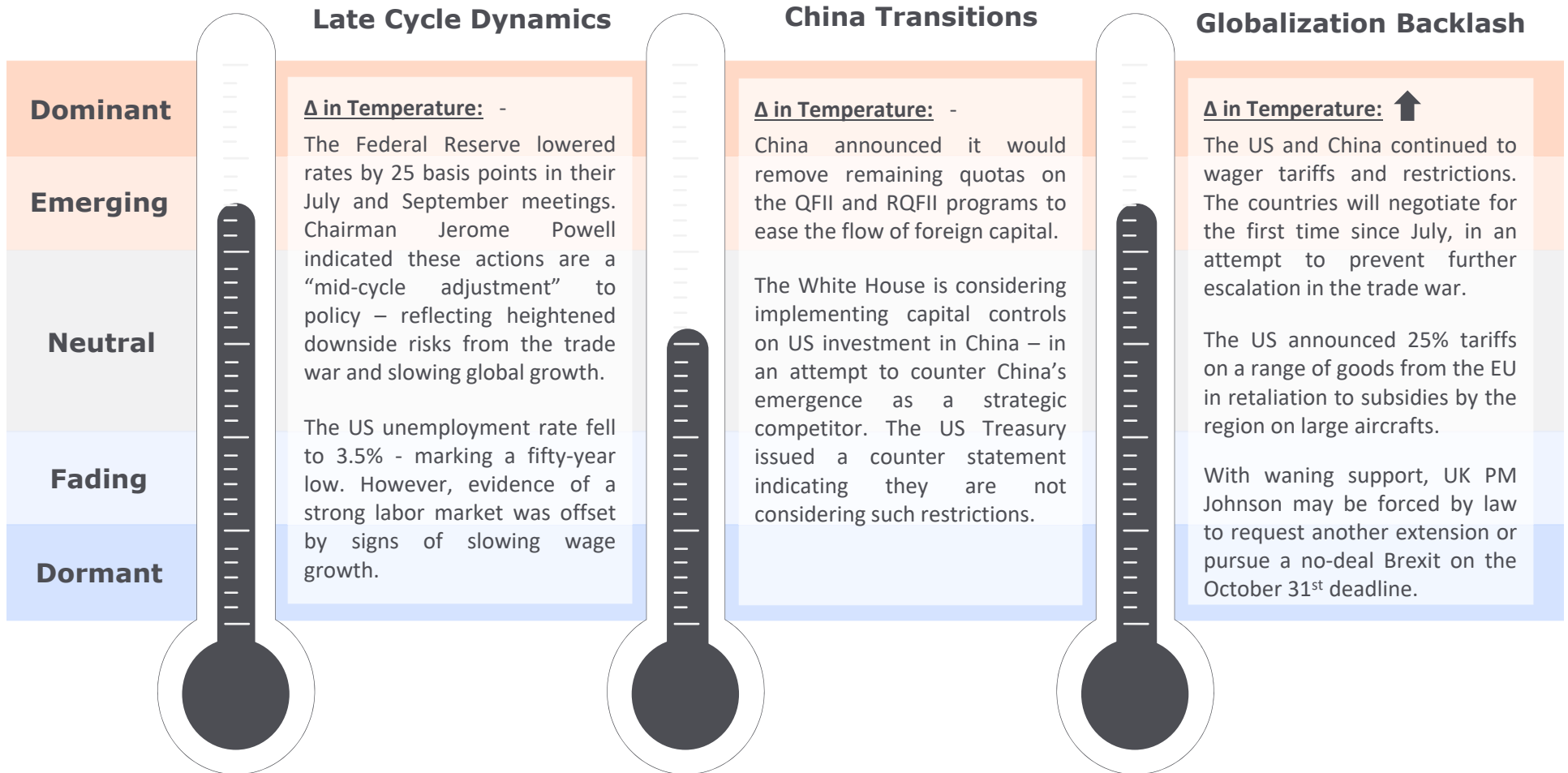
Each Key Market Theme is represented by a thermometer used to assess the current “temperature” of a theme. Themes may trend hotter or colder as market dynamics and underlying conditions change.

We expect temperatures to fluctuate as the theme’s activity level and influence on the market environment and asset pricing varies throughout its lifespan. Our intent is to use this as a communication tool, providing greater clarity on ongoing changes to the themes.



ASSESSING THE KEY MARKET THEMES

Current Temperature



KEY MARKET THEMES

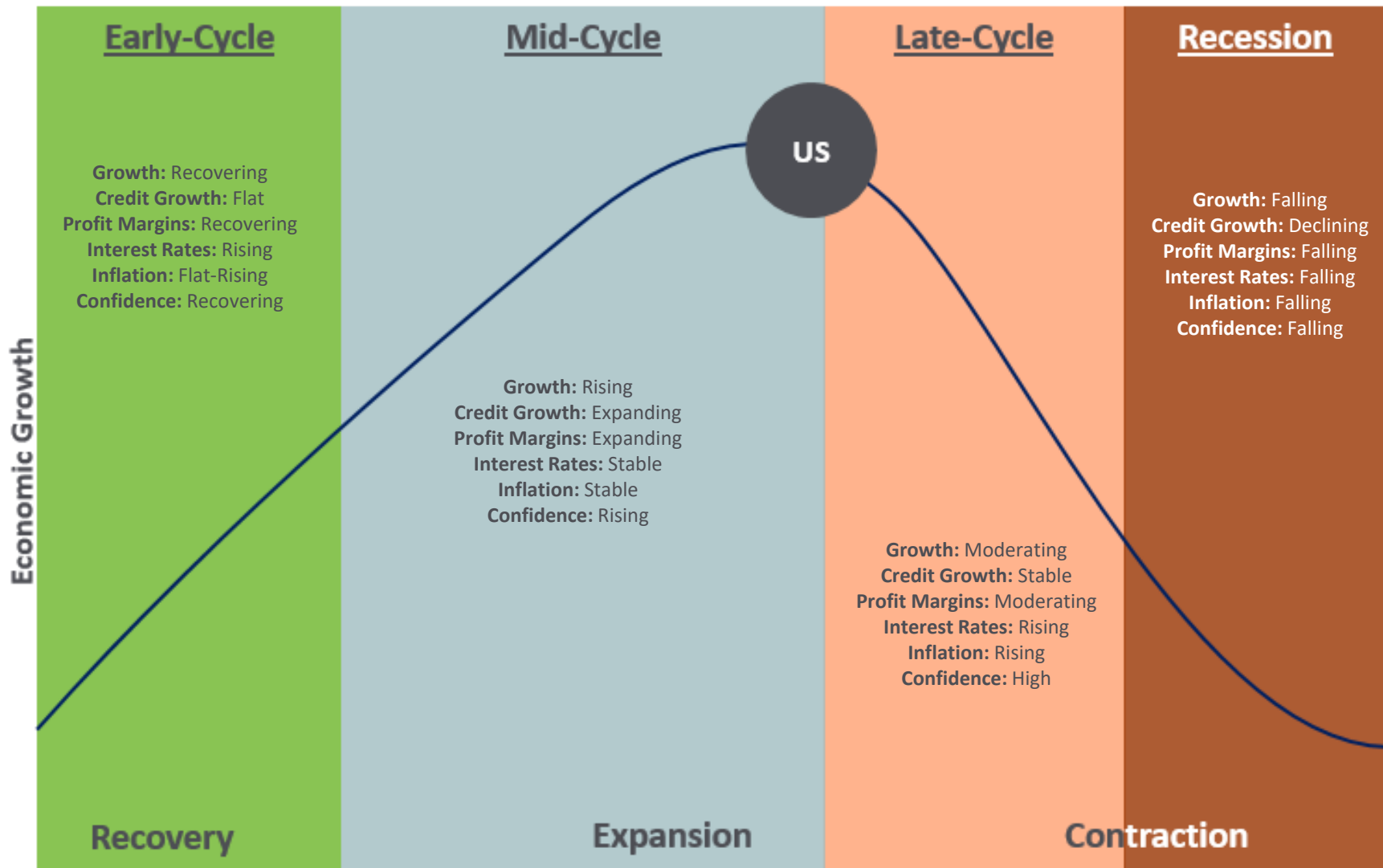
Late Cycle Dynamics

China Transitions

Globalization Backlash



ECONOMIC CYCLES



CURRENT OPPORTUNITIES

NEPC, LLC

CURRENT OPPORTUNITIES

Reduce Lower Quality Credit Exposure

Funding Destination: "Dry powder", safe-haven, and short-term debt

Rebalance Developed Market Equities

Funding Sources: EAFE equity, US equity, and global equity strategies

Overweight Emerging Market Equities

Funding Sources: US equity and EAFE equity

Add Long Volatility Exposure

Funding Sources: Multi-asset strategies

Fund Public Midstream Energy Exposure

Funding Sources: Commodities, high yield, equity

Fund Emerging Local Debt

Funding Sources: High yield and equity



CURRENT OPPORTUNITIES

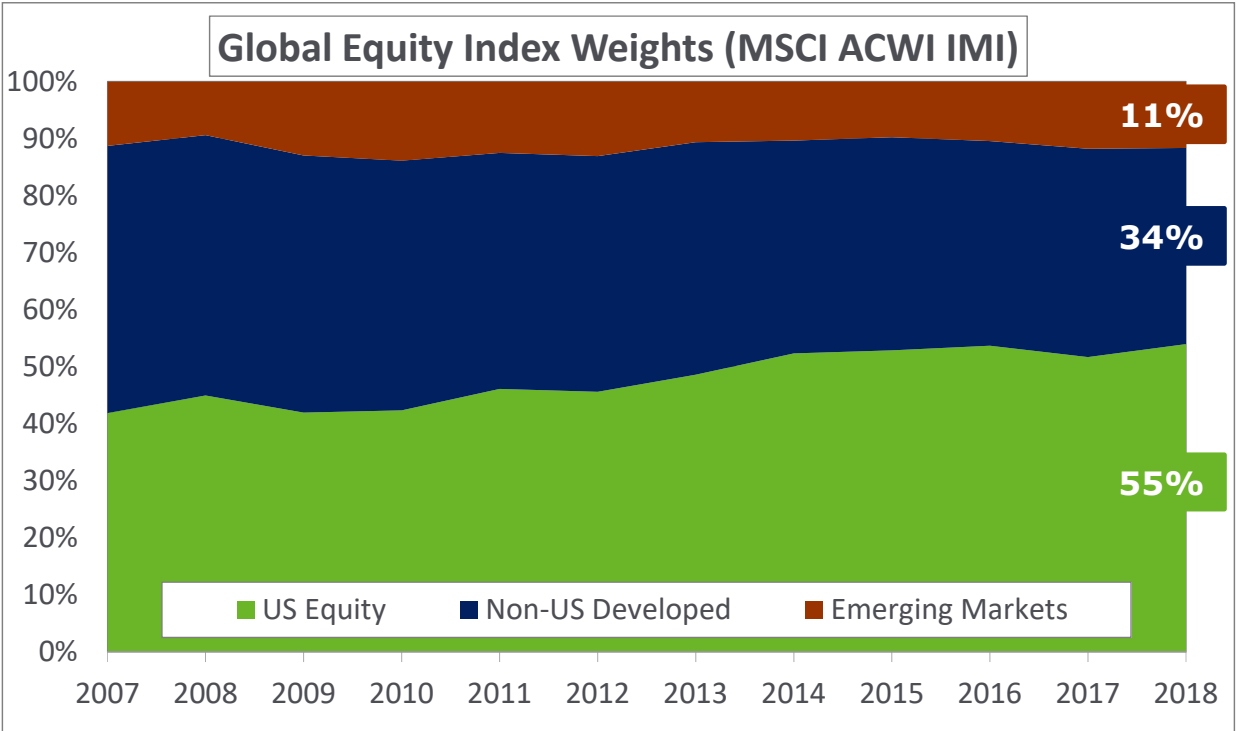
Rebalance Developed Market Equities

Rebalance developed market equities following stellar gains in 2019

*We encourage a global equity target weight of 52% to the US, 30% EAFE, and 18% to EM.
A larger overweight to EM can be funded pro rata from developed equity*

More frequent rebalancing shifts are a characteristic of a late-cycle market and will likely impact global equities more than other asset classes

A reduction to total equity exposure may be warranted should markets continue their run and look to build dry powder with short-term safe-haven fixed income



Source: MSCI, Bloomberg, NEPC; represents free float market cap weights as of 12/31 each year



CURRENT OPPORTUNITIES

Reduce Lower Quality Credit Exposure

Lower-rated credit exposure does not adequately compensate investors for the risk relative to safer alternatives

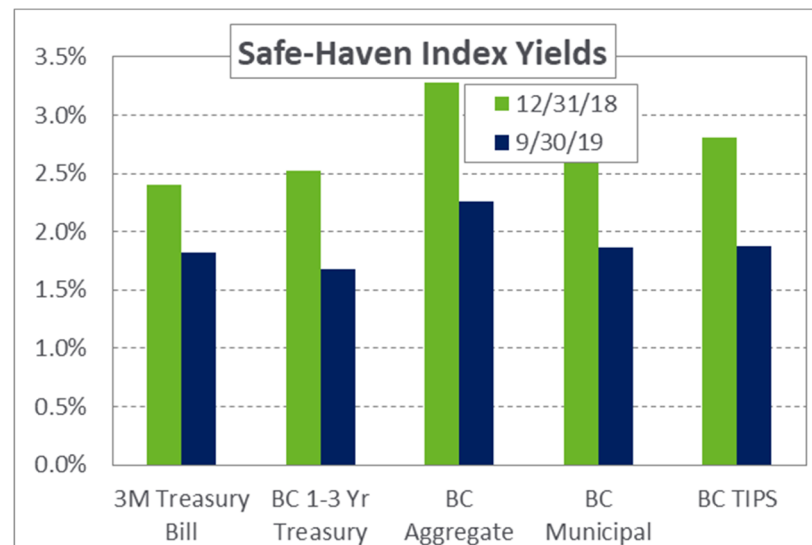
Late-cycle markets generally exhibit higher than average credit default rates, acutely impacting debt rated BBB and below

With index credit spreads trading below median levels, we encourage moving away from lower quality credit and look to alternatives such as safe-haven fixed income, IG CLO's, and short-term debt

Look to build “dry powder” with short-term safe-haven fixed income

Short-term Treasuries and cash equivalents offer better value due to the level of rates across the yield curve and uncertainty around the path of Fed policy

We encourage tapping lower quality credit segments as a funding source to raise “dry powder”. In addition, equity rebalancing is a potential source of funds for “dry powder” and short-term fixed income



Source: (Top) BofA Merrill Lynch, FactSet
Source: (Bottom) Barclays, FactSet



Q3 EXECUTIVE SUMMARY

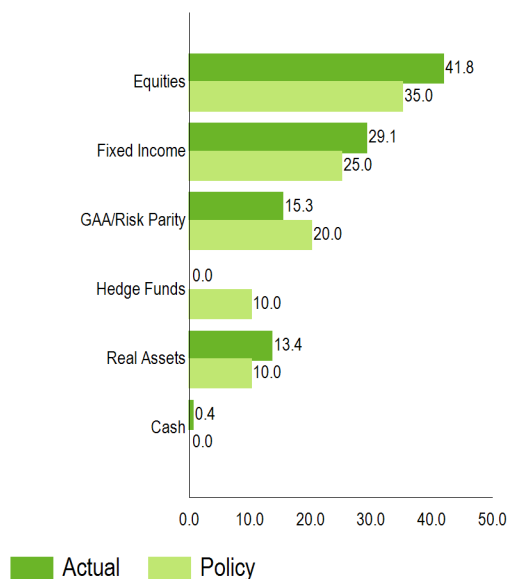
NEPC, LLC

TOTAL FUND PERFORMANCE SUMMARY

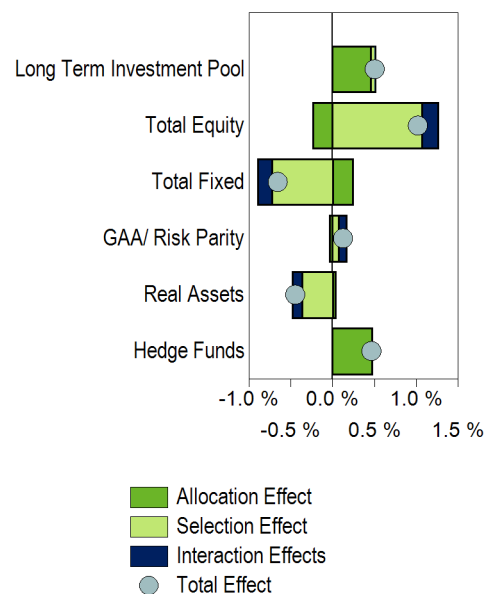
	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Board of Regents Total Composite	\$22,743,451	0.1%	99	9.7%	30	5.6%	61	5.0%	34	3.6%	60
<i>Allocation Index</i>		0.7%	87	10.3%	25	6.3%	46	5.4%	26	4.2%	44

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Long Term Investment Pool	\$22,261,615	0.1%	68	11.0%	73	4.9%	18	5.9%	80	4.6%	73
<i>Long Term Allocation Index</i>		0.6%	41	11.8%	61	4.7%	20	6.3%	70	5.3%	48
<i>Long Term Balanced Index</i>		0.5%	53	11.5%	66	4.4%	25	6.2%	72	5.2%	52

Long Term Investment Pool Actual vs. Target Allocation



Long Term Investment Pool Attribution Effects 2 Years 9 Months Ending September 30, 2019



	Year to Date					
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank
Board of Regents Total Composite	9.67%	30	7.12%	97	1.12	98
Allocation Index	10.34%	25	6.91%	96	1.25	97

Composite Performance

The Total Composite returned +0.1% for the quarter, bringing the year to date return to 9.7%; Portfolio performance was behind the Allocation Index for the quarter and on par with expectations for the year

Allocation Index

Equities continue to ride the global bull markets, while Fixed Income has detracted due to compressed yields worldwide

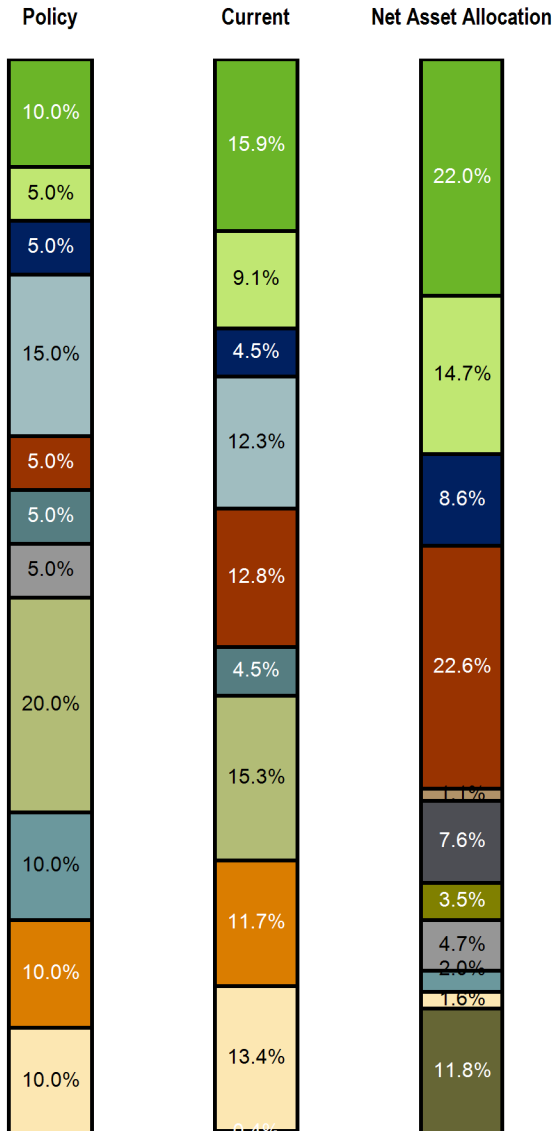
Active Management

Hexavest Global Equity added 50bps of alpha for the quarter - success was attributed to its comparatively less defensive position, coupled with overweights to Asia Pacific and Emerging Markets

Franklin Templeton Global Multisector, a compelling absolute return fixed income manager, struggled due to their interest rate and currency strategies - all postured defensively



ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target					Net Asset Allocation
	Current	Policy	Current		
Domestic Equity	\$3,550,161	10.0%	15.9%	22.0%	22.0%
International Equity	\$2,016,428	5.0%	9.1%	14.7%	14.7%
Emerging Markets Equity	\$998,161	5.0%	4.5%	8.6%	8.6%
Global Equity	\$2,731,296	15.0%	12.3%	--	--
Core Fixed Income	\$2,859,359	5.0%	12.8%	22.6%	22.6%
High Yield	--	--	--	1.1%	1.1%
TIPS	--	--	--	7.6%	7.6%
Multi-Sector Fixed Income	\$1,011,203	5.0%	4.5%	--	--
Non-US Developed Bonds	--	--	--	3.5%	3.5%
Emerging Market Debt	--	5.0%	--	4.7%	4.7%
GAA/Risk Parity	\$3,401,881	20.0%	15.3%	--	--
Hedge Funds	--	10.0%	--	2.0%	2.0%
Absolute Return	\$2,607,204	10.0%	11.7%	--	--
Real Assets	\$2,991,020	10.0%	13.4%	1.6%	1.6%
Cash	\$94,712	--	0.4%	11.8%	11.8%
Total	\$22,261,425	100.0%	100.0%	100.0%	100.0%

Net Asset Allocation breaks multi-asset investments like GAA and Global Equity into their underlying asset classes providing a look through to your actual asset allocation

-Asset Allocation vs. Policy Targets analytics are based on the Long Term Investment Pool.



INVESTMENT MANAGER - DUE DILIGENCE STATUS

Investment Options	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
<p>PIMCO <i>PIMCO All Asset Strategy</i></p>	<p>Litigation: PIMCO Discrimination Lawsuit 10/21/19</p>	<p>1. No Action</p>

Investment Options	Commentary	NEPC Rating
<p>PIMCO <i>PIMCO All Asset Strategy</i></p>	<p>PIMCO and Stacy Schaus have settled their litigation out of court. This comes with good/bad news. The good news is that this matter is resolved without further public mud-slinging on either side. The bad news is that the matter resolved privately, and thus we don't have access to the terms of the agreement. NEPC discussed the settlement with Lauren Tracy from PIMCO – the findings include:</p> <ul style="list-style-type: none"> • PIMCO continues to believe that Ms. Schaus was treated fairly in her employment at PIMCO <ul style="list-style-type: none"> • Both sides are bound by confidentiality regarding the settlement <ul style="list-style-type: none"> • Ms. Schaus retired from PIMCO as of November 21 • She is not precluded from working in the industry for any amount of time <p>After discussion within NEPC's Unfavorable News Committee, PIMCO will be removed from WATCH due diligence status at year-end. As a reminder, we placed PIMCO on WATCH status after learning of this litigation and in consideration of this lawsuit in addition to what we know of PIMCO's culture. The WATCH remains until year end, as there remains the risk that a financial settlement around this claim brings forward further claims.</p>	<p>1</p>



INVESTMENT MANAGER DUE DILIGENCE

NEPC Due Diligence Committee Recommendation Key	
No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
Hold	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
Client Review	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.



TOTAL FUND SUMMARY

NEPC, LLC

Eastern Michigan University - Board of Regents

TOTAL FUND PERFORMANCE SUMMARY

	Market Value (\$)	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank
Board of Regents Total Composite	22,743,451	0.1	99	9.7	30	5.6	61	5.0	34	3.6	60
<i>Allocation Index</i>		0.7	87	10.3	25	6.3	46	5.4	26	4.2	44
<i>InvMetrics Trust Funds >60% Fixed Income Net Median</i>		1.3		8.1		6.1		4.4		3.9	
Short Term Investment Pool	481,836	0.3		1.4		1.7		0.8		0.5	
<i>91 Day T-Bills</i>		0.5	--	1.7	--	2.3	--	1.5	--	1.0	--
Long Term Investment Pool	22,261,615	0.1	68	11.0	73	4.9	18	5.9	80	4.6	73
<i>Long Term Allocation Index</i>		0.6	41	11.8	61	4.7	20	6.3	70	5.3	48
<i>Long Term Balanced Index</i>		0.5	53	11.5	66	4.4	25	6.2	72	5.2	52
Total Equity	9,296,046	-0.1	49	17.9	40	3.3	35	9.3	45	7.9	33
<i>MSCI ACWI</i>		0.0	46	16.2	53	1.4	46	9.7	39	6.7	55
<i>eV All Global Equity Net Median</i>		-0.2		16.5		0.8		8.9		6.9	
Total Fixed	6,572,478	0.7	53	6.1	68	6.5	49	4.1	33	3.1	35
<i>BBgBarc US Aggregate TR</i>		2.3	2	8.5	35	10.3	4	2.9	54	3.4	28
<i>eV Global Fixed Inc Unhedged Net Median</i>		0.9		7.3		6.4		3.2		2.4	
GAA/ Risk Parity	3,402,070	0.5	50	6.8	75	5.4	29	2.5	79	--	--
<i>60% MSCI World (Net) / 40% FTSE WGBI</i>		0.7	42	13.2	25	4.7	31	6.7	30	5.2	28
<i>eV Global TAA Net Median</i>		0.4		10.6		1.7		5.4		3.8	
Real Assets	2,991,020	-0.6	58	7.6	57	4.0	17	5.1	20	--	--
<i>PIMCO All Asset Index</i>		1.2	13	9.3	45	7.9	8	3.9	29	4.1	19
<i>Bloomberg Commodity Index</i>		-1.8	73	3.1	84	-6.6	74	-1.5	73	-7.2	70
<i>InvMetrics All E&F Real Assets/Commodities Net Median</i>		-0.4		8.7		-2.1		1.5		-2.6	

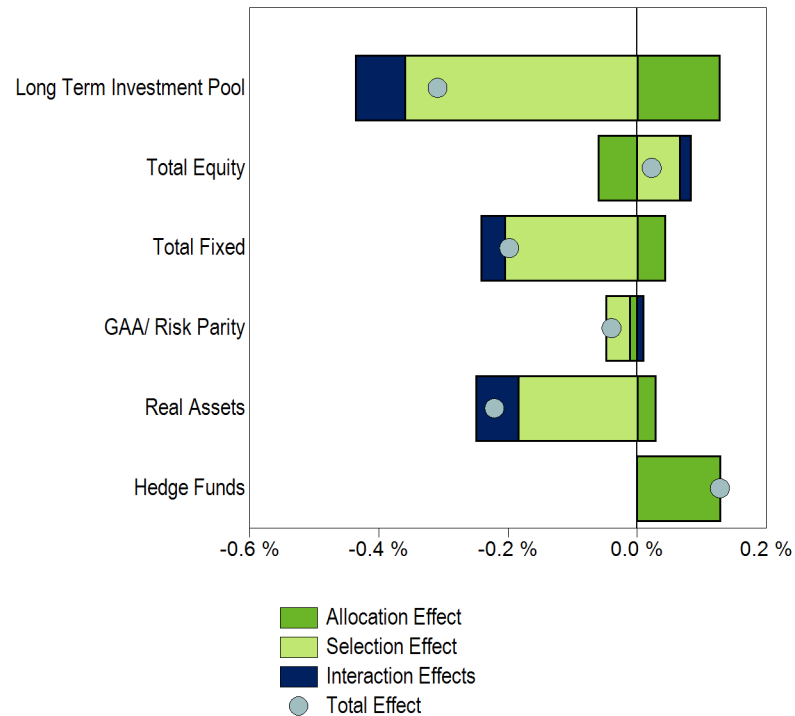
Intermediate Term Balanced Index comprised of 50.0% Barclays Intermediate U.S. GV/CR Index and 50.0% BofA ML 1-3 Year Treasury Index.

Allocation Index: Used to measure the value add from active management. Calculated as the asset weight from the prior month end multiplied by the specified market index.



LONG TERM INVESTMENT POOL

Attribution Effects
3 Months Ending September 30, 2019

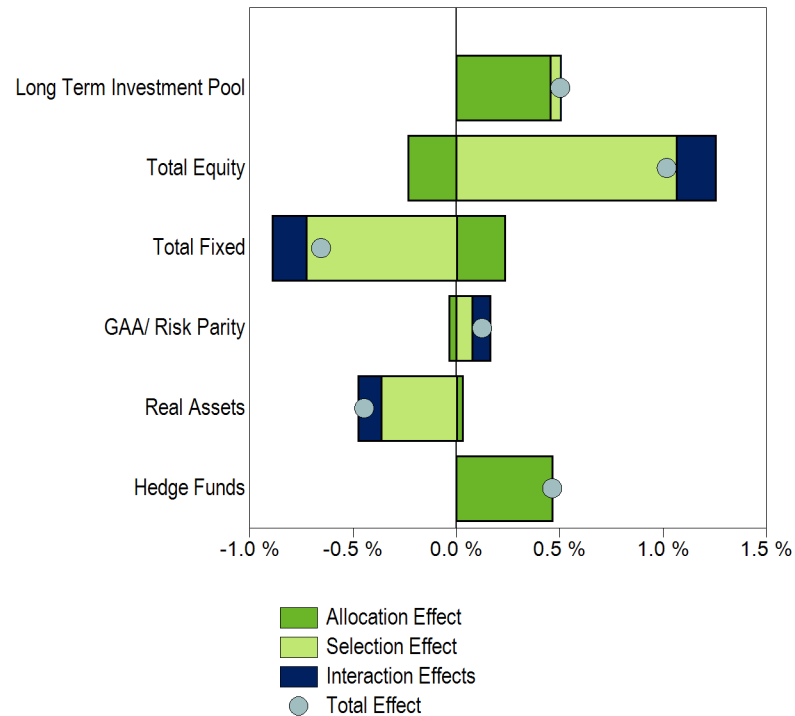


Attribution Summary							
3 Months Ending September 30, 2019							
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Equity	-0.1%	-0.4%	0.2%	0.1%	-0.1%	0.0%	0.0%
Total Fixed	0.7%	1.5%	-0.8%	-0.2%	0.0%	0.0%	-0.2%
GAA/ Risk Parity	0.5%	0.7%	-0.2%	0.0%	0.0%	0.0%	0.0%
Real Assets	-0.6%	1.2%	-1.8%	-0.2%	0.0%	-0.1%	-0.2%
Hedge Funds	--	--	--	--	0.1%	--	--
Total	0.1%	0.5%	-0.3%	-0.4%	0.1%	-0.1%	-0.3%



LONG TERM INVESTMENT POOL

Attribution Effects 1 Year Ending September 30, 2019

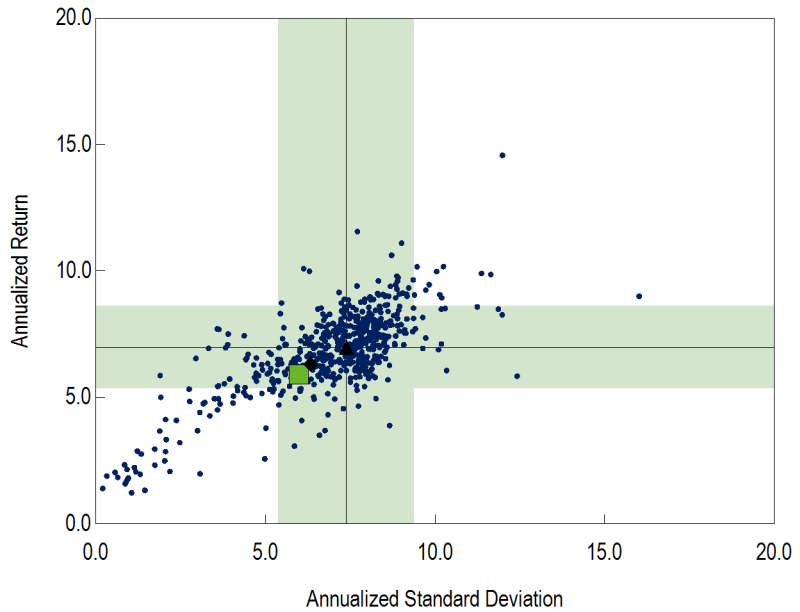


Attribution Summary 1 Year Ending September 30, 2019							
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Equity	3.3%	0.3%	3.0%	1.1%	-0.2%	0.2%	1.0%
Total Fixed	6.5%	9.5%	-3.0%	-0.7%	0.2%	-0.2%	-0.7%
GAA/ Risk Parity	5.4%	4.7%	0.7%	0.1%	0.0%	0.1%	0.1%
Real Assets	4.0%	7.9%	-3.9%	-0.4%	0.0%	-0.1%	-0.4%
Hedge Funds	--	--	--	--	0.5%	--	--
Total	4.9%	4.4%	0.5%	0.0%	0.5%	0.0%	0.5%



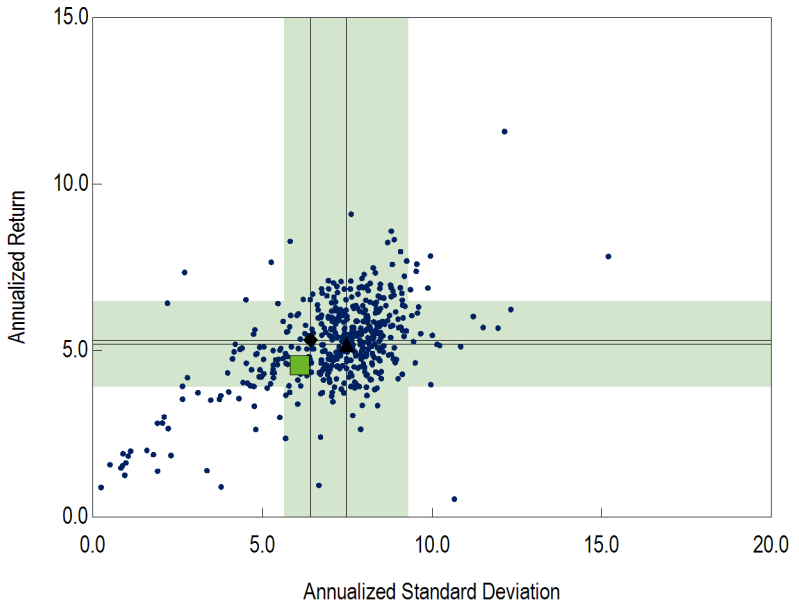
LONG TERM INVESTMENT POOL RISK VS. RETURN

3 Years Ending September 30, 2019



- Long Term Investment Pool
- ◆ Long Term Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics All E&F < \$50mm Net

5 Years Ending September 30, 2019



- Long Term Investment Pool
- ◆ Long Term Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics All E&F < \$50mm Net

3 Years Ending September 30, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank
Long Term Investment Pool	5.92%	80	5.99%	22	0.73	60
Long Term Allocation Index	6.31%	70	6.34%	27	0.75	52
Long Term Balanced Index	6.21%	72	6.28%	26	0.74	54

5 Years Ending September 30, 2019

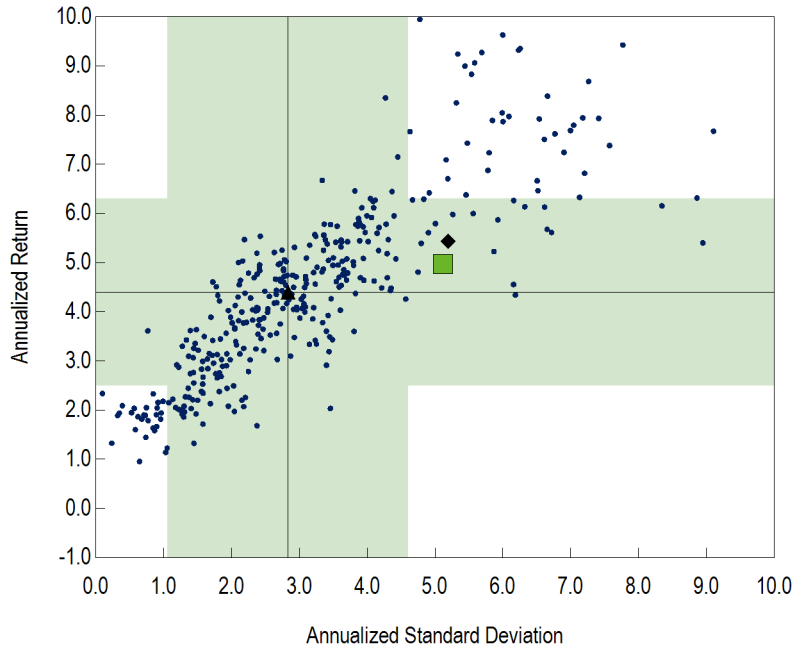
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank
Long Term Investment Pool	4.55%	73	6.09%	20	0.59	49
Long Term Allocation Index	5.31%	48	6.42%	24	0.68	28
Long Term Balanced Index	5.17%	52	6.39%	24	0.66	34

- Above Risk vs. Return analytics are based on the Long Term Investment Pool.



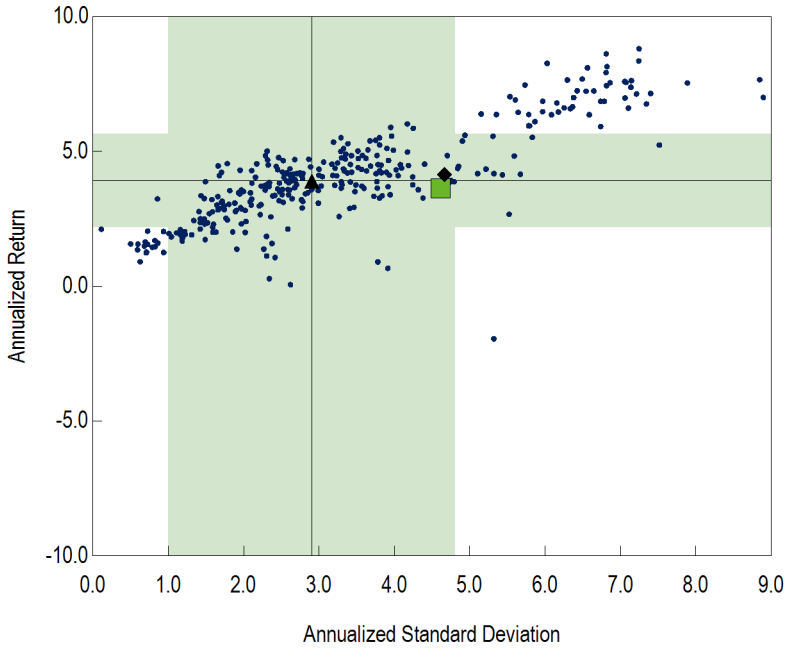
TOTAL FUND RISK VS. RETURN

3 Years Ending September 30, 2019



- Board of Regents Total Composite
- ◆ Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Trust Funds >60% Fixed Income Net

5 Years Ending September 30, 2019



- Board of Regents Total Composite
- ◆ Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Trust Funds >60% Fixed Income Net

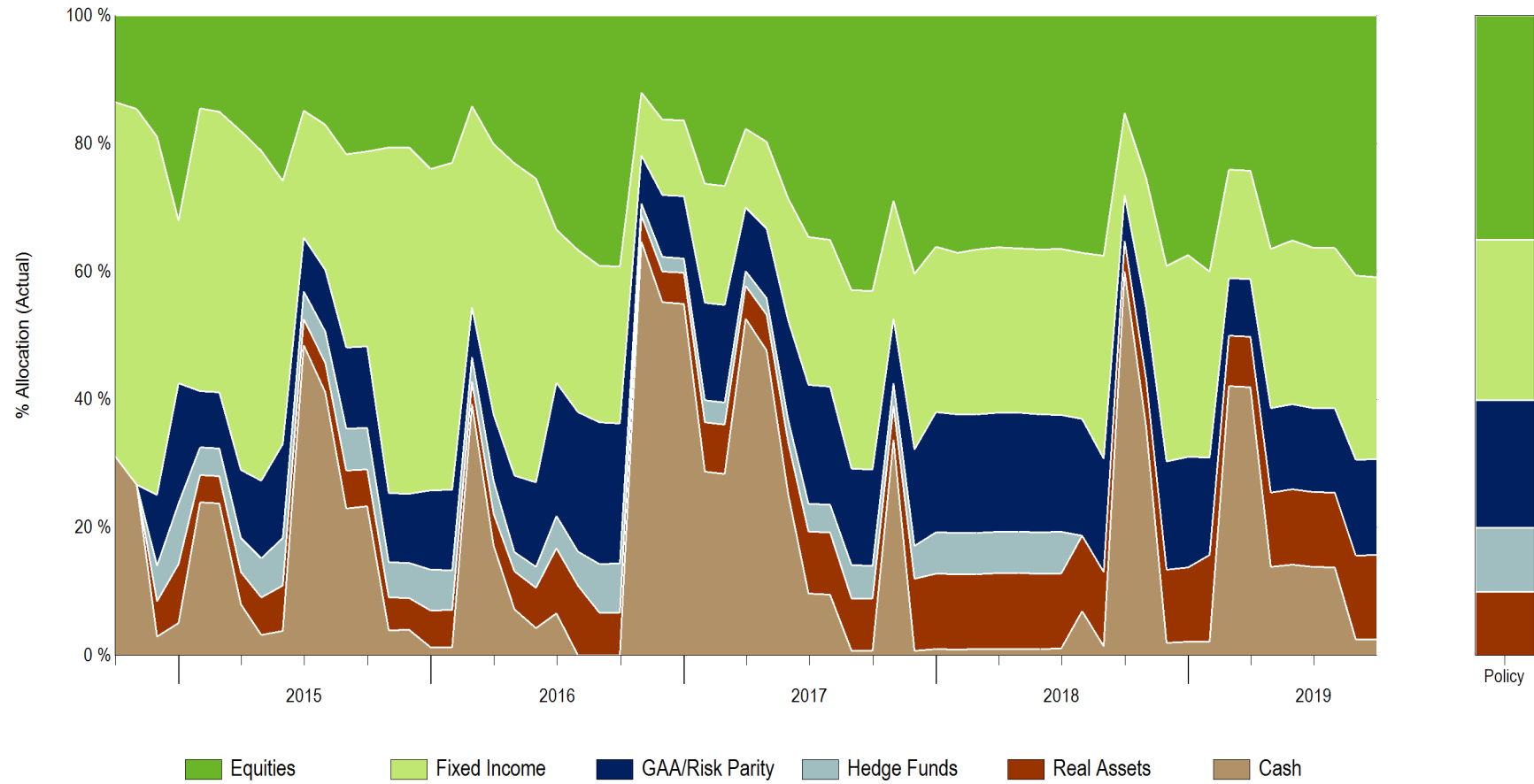
	3 Years Ending September 30, 2019					
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank
Board of Regents Total Composite	4.97%	34	5.11%	34	0.67	78
Allocation Index	5.43%	26	5.19%	26	0.75	72

	5 Years Ending September 30, 2019					
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank
Board of Regents Total Composite	3.64%	60	4.61%	60	0.58	92
Allocation Index	4.15%	44	4.66%	44	0.68	85

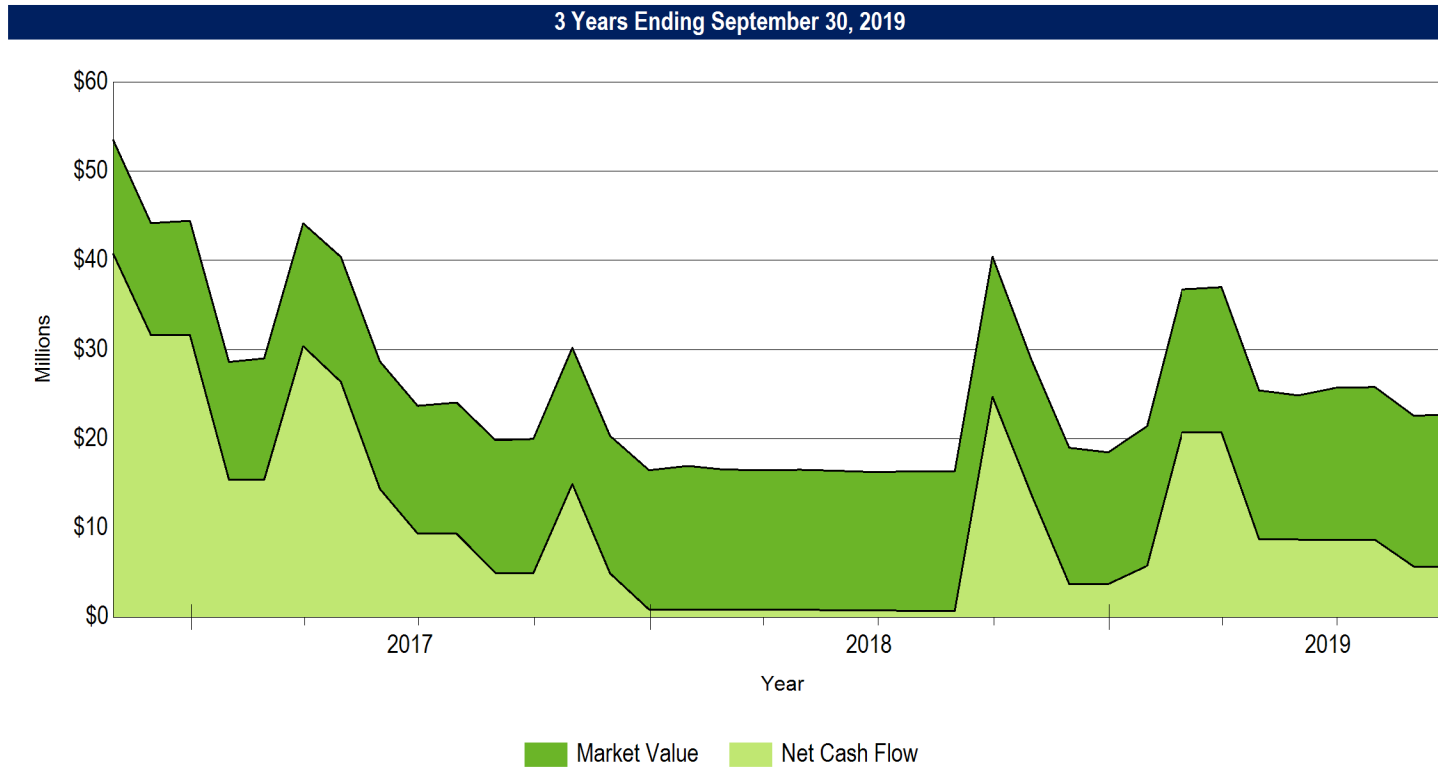


TOTAL FUND ASSET ALLOCATION HISTORY

Asset Allocation History



TOTAL FUND ASSET GROWTH SUMMARY



	Last Three Months	Year-To-Date	One Year	Three Years
Beginning Market Value	\$25,713,932	\$18,472,863	\$40,422,995	\$12,867,323
Contributions	\$109,833	\$19,384,304	\$22,901,848	\$147,298,474
Withdrawals	-\$3,151,132	-\$17,446,478	-\$41,961,526	-\$141,656,012
Net Cash Flow	-\$3,041,299	\$1,937,826	-\$19,059,678	\$5,642,462
Net Investment Change	\$70,817	\$2,332,762	\$1,380,134	\$4,233,666
Ending Market Value	\$22,743,451	\$22,743,451	\$22,743,451	\$22,743,451



Eastern Michigan University - Board of Regents

TOTAL FUND ASSET GROWTH SUMMARY

	Quarter Ending September 30, 2019					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Acadian Emerging Markets Equity	\$1,044,871	\$0	-\$1,922	-\$1,922	-\$44,788	\$998,161
AQR Global Market and Alternative Premia Offshore Fund	\$1,485,224	\$0	\$0	\$0	\$24,172	\$1,509,396
Artisan Global Opportunities	\$1,423,753	\$0	\$0	\$0	\$6,770	\$1,430,523
Baird - Core Bond	\$1,486,887	\$0	\$0	\$0	\$35,852	\$1,522,740
Bank of Ann Arbor Trust Cash	\$452,671	\$109,833	-\$83,064	\$26,769	\$2,396	\$481,836
BlackRock- SIO	\$2,591,951	\$0	-\$7,470	-\$7,470	\$22,723	\$2,607,204
Franklin Templeton- Global Multi-Sector Plus	\$1,043,644	\$0	\$0	\$0	-\$32,441	\$1,011,203
Hexavest GE	\$1,294,334	\$0	\$0	\$0	\$6,439	\$1,300,774
Northern Inst Govt Select MMKT	\$3,005,521	\$0	-\$3,006,011	-\$3,006,011	\$490	\$0
PIMCO All Asset	\$3,008,996	\$0	\$0	\$0	-\$17,976	\$2,991,020
SEG Baxter	\$2,036,370	\$0	\$0	\$0	-\$19,942	\$2,016,428
US Treasury	\$93,798	\$0	\$0	\$0	\$914	\$94,712
Vanguard Inflation Protected Fund	\$1,317,968	\$0	\$0	\$0	\$18,652	\$1,336,620
Vanguard Total Stock Market VIPERs	\$3,528,766	\$0	-\$16,458	-\$16,458	\$37,853	\$3,550,161
William Blair Macro Allocation	\$1,899,178	\$0	\$0	\$0	-\$6,504	\$1,892,674
Total	\$25,713,932	\$109,833	-\$3,114,925	-\$3,005,092	\$34,610	\$22,743,451



Eastern Michigan University - Board of Regents

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	Inception (%)	Inception Date
Board of Regents Total Composite	22,743,451	100.0	0.1	99	9.7	30	5.6	61	5.0	34	3.6	60	4.7	50	5.1	Apr-09
Allocation Index			0.7	87	10.3	25	6.3	46	5.4	26	4.2	44	--	--	--	Apr-09
InvMetrics Trust Funds >60% Fixed Income Net Median			1.3		8.1		6.1		4.4		3.9		4.6		5.4	Apr-09
Short Term Investment Pool	481,836	2.1	0.3		1.4		1.7		0.8		0.5		0.3		0.3	Apr-09
91 Day T-Bills			0.5	--	1.7	--	2.3	--	1.5	--	1.0	--	0.5	--	0.5	Apr-09
Bank of Ann Arbor Trust Cash	481,836	2.1	0.5	73	1.6	91	2.1	91	0.9	99	0.5	99	--	--	0.3	Nov-09
91 Day T-Bills			0.5	90	1.7	89	2.3	82	1.5	71	1.0	71	0.5	67	0.5	Nov-09
eV US Cash Management Net Median			0.6		1.8		2.4		1.7		1.1		0.6		0.6	Nov-09
Long Term Investment Pool	22,261,615	97.9	0.1	68	11.0	73	4.9	18	5.9	80	4.6	73	6.2	84	5.5	Apr-09
Long Term Allocation Index			0.6	41	11.8	61	4.7	20	6.3	70	5.3	48	--	--	--	Apr-09
Long Term Balanced Index			0.5	53	11.5	66	4.4	25	6.2	72	5.2	52	6.1	85	5.5	Apr-09
Total Equity	9,296,046	40.9	-0.1	49	17.9	40	3.3	35	9.3	45	7.9	33	--	--	7.7	Jan-14
MSCI ACWI			0.0	46	16.2	53	1.4	46	9.7	39	6.7	55	8.3	61	6.4	Jan-14
eV All Global Equity Net Median			-0.2		16.5		0.8		8.9		6.9		9.0		6.6	Jan-14
SEG Baxter	2,016,428	8.9	-1.0	--	21.7	--	9.7	--	--	--	--	--	--	--	8.5	Jul-17
MSCI ACWI ex USA			-1.8	--	11.6	--	-1.2	--	6.3	--	2.9	--	4.5	--	2.9	Jul-17
Acadian Emerging Markets Equity	998,161	4.4	-4.3	62	5.1	73	-5.2	90	4.9	60	1.6	70	--	--	1.6	Oct-14
MSCI Emerging Markets			-4.2	61	5.9	67	-2.0	64	6.0	44	2.3	53	3.4	74	2.3	Oct-14
eV Emg Mkts Equity Net Median			-3.8		7.7		-0.6		5.7		2.5		4.0		2.5	Oct-14
Artisan Global Opportunities	1,430,523	6.3	0.5	34	24.2	9	5.1	27	11.9	19	--	--	--	--	11.0	Dec-14
MSCI ACWI			0.0	46	16.2	53	1.4	46	9.7	39	6.7	55	8.3	61	6.4	Dec-14
eV All Global Equity Net Median			-0.2		16.5		0.8		8.9		6.9		9.0		6.5	Dec-14
Hexavest GE	1,300,774	5.7	0.5	34	11.4	80	1.2	46	6.1	80	--	--	--	--	5.4	Dec-14
MSCI ACWI			0.0	46	16.2	53	1.4	46	9.7	39	6.7	55	8.3	61	6.4	Dec-14
eV All Global Equity Net Median			-0.2		16.5		0.8		8.9		6.9		9.0		6.5	Dec-14
Vanguard Total Stock Market VIPERs	3,550,161	15.6	1.1	39	19.9	40	2.9	33	--	--	--	--	--	--	12.7	Nov-16
Russell 3000			1.2	37	20.1	38	2.9	33	12.8	30	10.4	29	13.1	30	12.8	Nov-16
eV All US Equity Net Median			0.4		18.5		-0.3		10.6		8.8		12.1		10.1	Nov-16

-Intermediate Term Balanced Index: 50.0% Barclays Intermediate U.S. GV/CR Index and 50.0% BofA ML 1-3 Year Treasury Index.

-Allocation Index: Used to measure the value add from active management. Calculated as the asset weight from the prior month end multiplied by the specified market index.

-Long-Term Balanced Index: (10% - Russell 3000)(5% - MSCI EAFE Small Cap)(5% - MSCI Emerging Markets)(15% - MSCI ACWI)(15% - Barclays Aggregate)(5% - 50%JPM EMBI GD/ 25% JPM ELMI+/- 25% JPM GBI EM GD)(5% - Barclays Multi-verse)(20% - 60% MSCI World (Net)/ 40% CITI WGBI)(10% - HFRI Fund of Funds Composite)(10% - PIMCO All Asset Index).



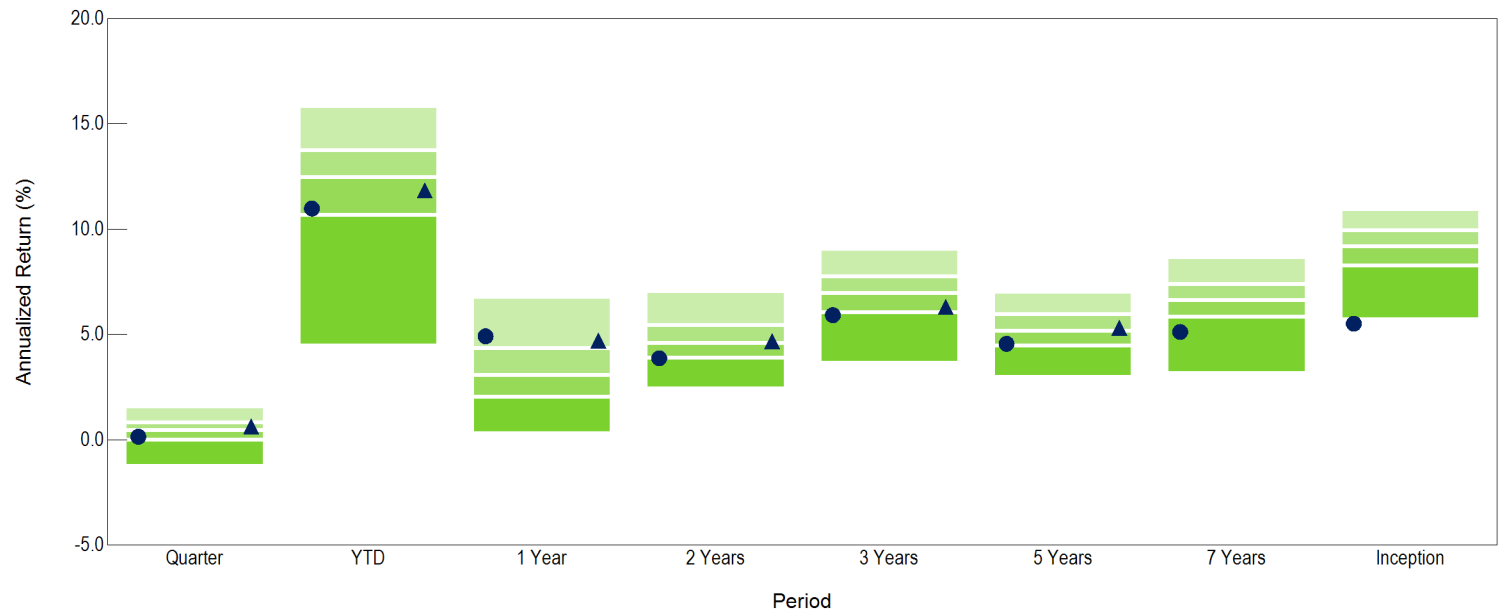
TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fixed	6,572,478	28.9	0.7	53	6.1	68	6.5	49	4.1	33	3.1	35	--	--	3.3	Jan-14
BBgBarc US Aggregate TR			2.3	2	8.5	35	10.3	4	2.9	54	3.4	28	3.7	43	3.7	Jan-14
eV Global Fixed Inc Unhedged Net Median			0.9		7.3		6.4		3.2		2.4		3.3		2.5	Jan-14
Franklin Templeton- Global Multi-Sector Plus	1,011,203	4.4	-3.1	99	0.2	99	2.3	99	4.4	2	1.4	87	--	--	1.4	Oct-14
BBgBarc Multiverse			0.6	63	6.5	72	7.5	72	1.8	61	2.1	48	2.5	81	2.1	Oct-14
eV Global Agg Fixed Inc Net Median			1.0		7.7		8.4		1.9		2.1		2.8		2.1	Oct-14
BlackRock- SIO	2,607,204	11.5	0.9	97	5.9	97	5.5	99	3.8	31	2.8	96	--	--	2.8	Oct-14
BBgBarc US Aggregate TR			2.3	46	8.5	82	10.3	41	2.9	90	3.4	76	3.7	99	3.4	Oct-14
eV US Core Plus Fixed Inc Net Median			2.3		9.2		10.1		3.6		3.8		4.9		3.8	Oct-14
Baird - Core Bond	1,522,740	6.7	2.4	25	9.2	32	10.7	25	3.3	30	--	--	--	--	3.5	Dec-14
BBgBarc US Aggregate TR			2.3	55	8.5	73	10.3	49	2.9	66	3.4	63	3.7	73	3.1	Dec-14
eV US Core Fixed Inc Net Median			2.3		8.9		10.3		3.1		3.5		4.0		3.2	Dec-14
Vanguard Inflation Protected Fund	1,336,620	5.9	1.4		7.6		7.0		--		--		--		5.5	Sep-18
BBgBarc US TIPS TR			1.3	--	7.6	--	7.1	--	2.2	--	2.4	--	3.5	--	5.5	Sep-18
US Treasury	94,712	0.4														
GAA/ Risk Parity	3,402,070	15.0	0.5	50	6.8	75	5.4	29	2.5	79	--	--	--	--	1.3	Dec-14
60% MSCI World (Net) / 40% FTSE WGBI			0.7	42	13.2	25	4.7	31	6.7	30	5.2	28	6.2	43	5.1	Dec-14
eV Global TAA Net Median			0.4		10.6		1.7		5.4		3.8		5.7		3.6	Dec-14
William Blair Macro Allocation	1,892,674	8.3	-0.3	69	2.3	92	5.3	29	--	--	--	--	--	--	1.6	Aug-17
60% MSCI World (Net) / 40% FTSE WGBI			0.7	42	13.2	25	4.7	31	6.7	30	5.2	28	6.2	43	5.6	Aug-17
eV Global TAA Net Median			0.4		10.6		1.7		5.4		3.8		5.7		3.5	Aug-17
AQR Global Market and Alternative Premia Offshore Fund	1,509,396	6.6	1.6	19	13.1	25	5.7	25	--	--	--	--	--	--	0.4	Mar-18
60% MSCI World (Net) / 40% FTSE WGBI			0.7	42	13.2	25	4.7	31	6.7	30	5.2	28	6.2	43	4.5	Mar-18
Real Assets	2,991,020	13.2	-0.6	58	7.6	57	4.0	17	5.1	20	--	--	--	--	3.3	Dec-14
PIMCO All Asset Index			1.2	13	9.3	45	7.9	8	3.9	29	4.1	19	5.1	25	3.9	Dec-14
Bloomberg Commodity Index			-1.8	73	3.1	84	-6.6	74	-1.5	73	-7.2	70	-4.3	98	-6.5	Dec-14
InvMetrics All E&F Real Assets/Commodities Net Median			-0.4		8.7		-2.1		1.5		-2.6		1.7		-1.9	Dec-14
PIMCO All Asset	2,991,020	13.2	-0.6	72	7.6	70	4.0	33	5.1	52	--	--	--	--	3.3	Dec-14
PIMCO All Asset Index			1.2	25	9.3	64	7.9	15	3.9	63	4.1	47	5.1	63	3.9	Dec-14
Bloomberg Commodity Index			-1.8	89	3.1	89	-6.6	97	-1.5	99	-7.2	99	-4.3	99	-6.5	Dec-14
eV Global TAA Net Median			0.4		10.6		1.7		5.4		3.8		5.7		3.6	Dec-14



RETURN SUMMARY VS. PEER UNIVERSE

Long Term Investment Pool vs. InvMetrics All E&F < \$50mm Net



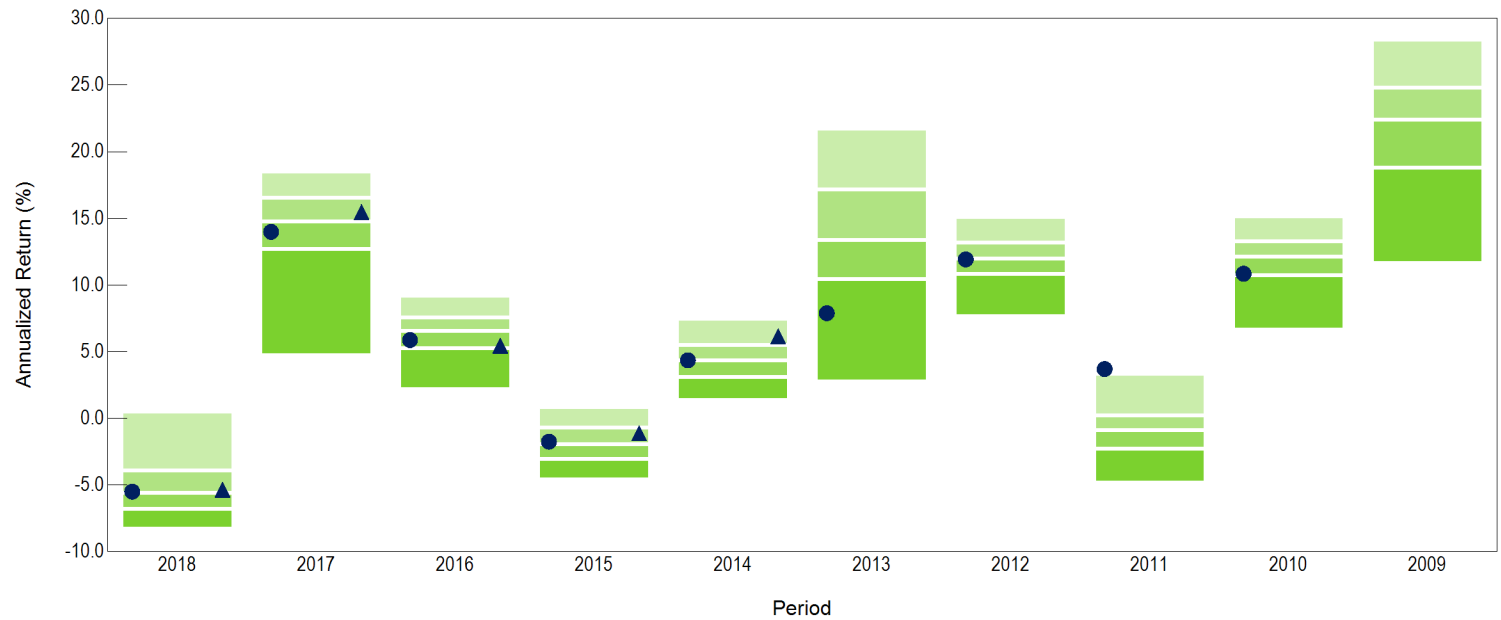
	Return (Rank)															
5th Percentile	1.6	15.8	6.8	7.1	9.1	7.0	8.7	10.9								
25th Percentile	0.8	13.8	4.4	5.5	7.8	6.0	7.4	10.0								
Median	0.5	12.5	3.1	4.6	7.0	5.2	6.7	9.2								
75th Percentile	0.0	10.7	2.0	3.9	6.1	4.5	5.8	8.3								
95th Percentile	-1.2	4.5	0.3	2.4	3.7	3.0	3.2	5.7								
# of Portfolios	684	671	660	620	585	492	413	303								
● Long Term Investment Pool	0.1	(68)	11.0	(73)	4.9	(18)	3.9	(76)	5.9	(80)	4.6	(73)	5.1	(88)	5.5	(96)
▲ Long Term Allocation Index	0.6	(41)	11.8	(61)	4.7	(20)	4.7	(48)	6.3	(70)	5.3	(48)	--	(--)	--	(--)

-The above Return Summary vs. Peer Universe analytic is based on the Long Term Investment Pool.



RETURN SUMMARY VS. PEER UNIVERSE

Long Term Investment Pool vs. InvMetrics All E&F < \$50mm Net



	Return (Rank)															
5th Percentile	0.5	18.5	9.2	0.8	7.5	21.7	15.1	3.3	15.1	28.4						
25th Percentile	-3.9	16.6	7.6	-0.7	5.5	17.2	13.2	0.2	13.3	24.8						
Median	-5.6	14.8	6.6	-1.9	4.4	13.4	12.0	-0.9	12.1	22.4						
75th Percentile	-6.8	12.7	5.3	-3.0	3.1	10.5	10.9	-2.3	10.7	18.8						
95th Percentile	-8.3	4.8	2.2	-4.6	1.4	2.8	7.7	-4.8	6.7	11.7						
# of Portfolios	673	486	496	466	400	267	249	216	194	181						
● Long Term Investment Pool	-5.5 (49)	14.0 (62)	5.9 (68)	-1.8 (46)	4.3 (51)	7.9 (84)	11.9 (53)	3.7 (4)	10.8 (74)	-- (--)						
▲ Long Term Allocation Index	-5.4 (46)	15.5 (42)	5.4 (73)	-1.1 (35)	6.2 (14)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)						

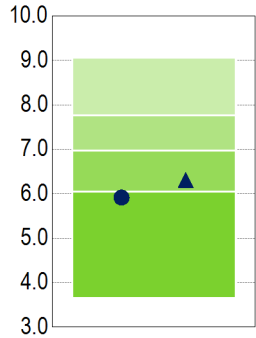
-The above Return Summary vs. Peer Universe analytic is based on the Long Term Investment Pool.



RISK STATISTICS VS. PEER UNIVERSE

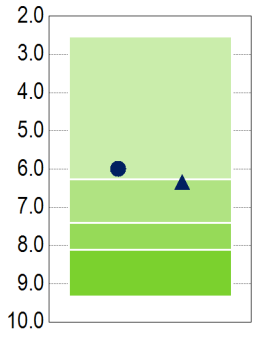
Long Term Investment Pool vs. InvMetrics All E&F < \$50mm Net 3 Years

Anlzd Return



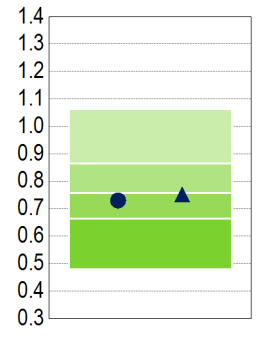
● Long Term Investment Pool	
Value	5.92
Rank	80
▲ Long Term Allocation Index	
Value	6.31
Rank	70
Universe	
5th %tile	9.07
25th %tile	7.78
Median	6.98
75th %tile	6.06
95th %tile	3.67

Anlzd Standard Deviation



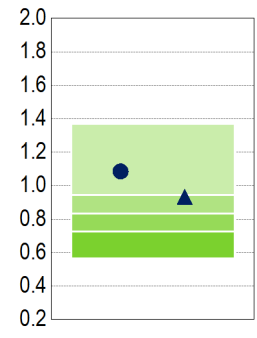
● Long Term Investment Pool	
Value	5.99
Rank	22
▲ Long Term Allocation Index	
Value	6.34
Rank	27
Universe	
5th %tile	2.53
25th %tile	6.25
Median	7.39
75th %tile	8.09
95th %tile	9.32

Sharpe Ratio



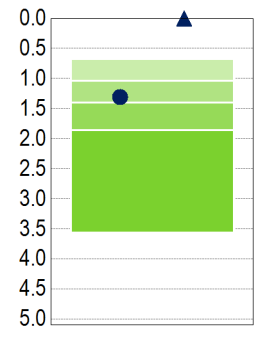
● Long Term Investment Pool	
Value	0.73
Rank	60
▲ Long Term Allocation Index	
Value	0.75
Rank	52
Universe	
5th %tile	1.06
25th %tile	0.87
Median	0.76
75th %tile	0.66
95th %tile	0.48

Sortino Ratio RF



● Long Term Investment Pool	
Value	1.09
Rank	12
▲ Long Term Allocation Index	
Value	0.93
Rank	29
Universe	
5th %tile	1.37
25th %tile	0.95
Median	0.84
75th %tile	0.73
95th %tile	0.57

Tracking Error



● Long Term Investment Pool	
Value	1.31
Rank	47
▲ Long Term Allocation Index	
Value	0.00
Rank	1
Universe	
5th %tile	0.68
25th %tile	1.03
Median	1.39
75th %tile	1.84
95th %tile	3.55

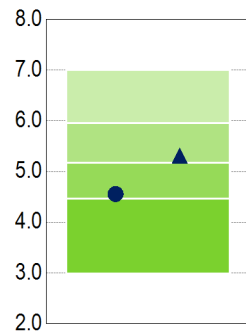
-The above Risk Statistics vs. Peer Universe analytics are based on the Long Term Investment Pool.



RISK STATISTICS VS. PEER UNIVERSE

Long Term Investment Pool vs. InvMetrics All E&F < \$50mm Net 5 Years

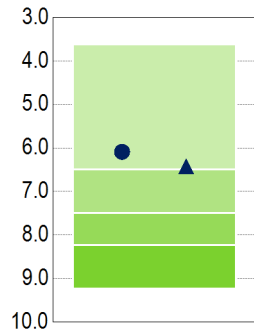
Anlzd Return



● Long Term Investment Pool	
Value	4.55
Rank	73
▲ Long Term Allocation Index	
Value	5.31
Rank	48

Universe	
5th %tile	7.00
25th %tile	5.97
Median	5.19
75th %tile	4.48
95th %tile	3.00

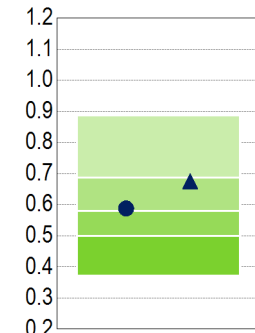
Anlzd Standard Deviation



● Long Term Investment Pool	
Value	6.09
Rank	20
▲ Long Term Allocation Index	
Value	6.42
Rank	24

Universe	
5th %tile	3.62
25th %tile	6.48
Median	7.48
75th %tile	8.22
95th %tile	9.22

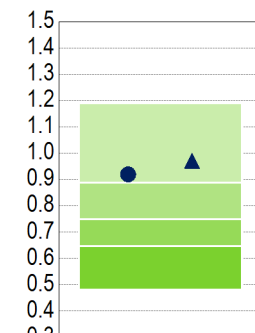
Sharpe Ratio



● Long Term Investment Pool	
Value	0.59
Rank	49
▲ Long Term Allocation Index	
Value	0.68
Rank	28

Universe	
5th %tile	0.89
25th %tile	0.69
Median	0.58
75th %tile	0.50
95th %tile	0.37

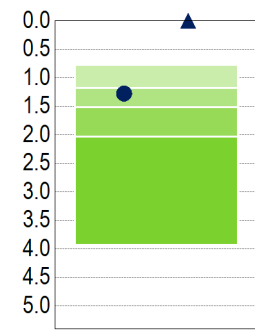
Sortino Ratio RF



● Long Term Investment Pool	
Value	0.92
Rank	20
▲ Long Term Allocation Index	
Value	0.97
Rank	16

Universe	
5th %tile	1.19
25th %tile	0.89
Median	0.75
75th %tile	0.65
95th %tile	0.48

Tracking Error



● Long Term Investment Pool	
Value	1.28
Rank	35
▲ Long Term Allocation Index	
Value	0.00
Rank	1

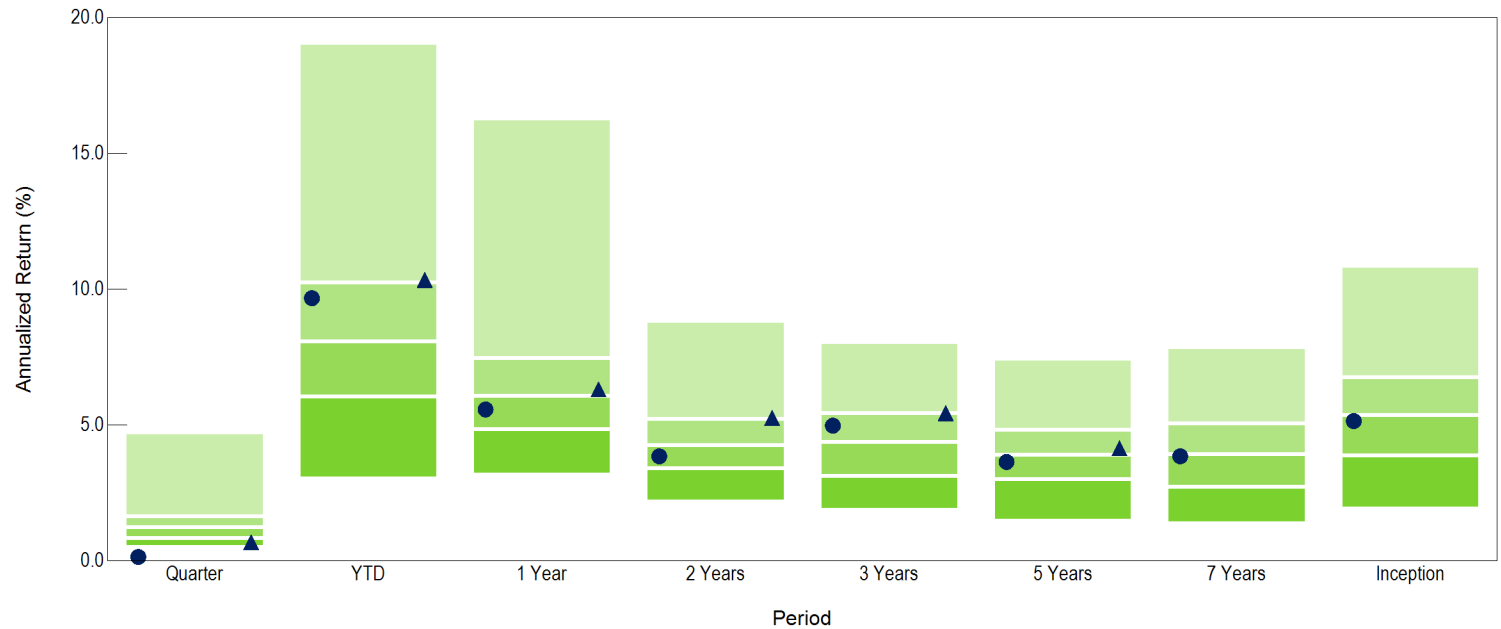
Universe	
5th %tile	0.78
25th %tile	1.16
Median	1.51
75th %tile	2.02
95th %tile	3.92

-The above Risk Statistics vs. Peer Universe analytics are based on the Long Term Investment Pool.



RETURN SUMMARY VS. PEER UNIVERSE

Board of Regents Total Composite vs. InvMetrics Trust Funds >60% Fixed Income Net

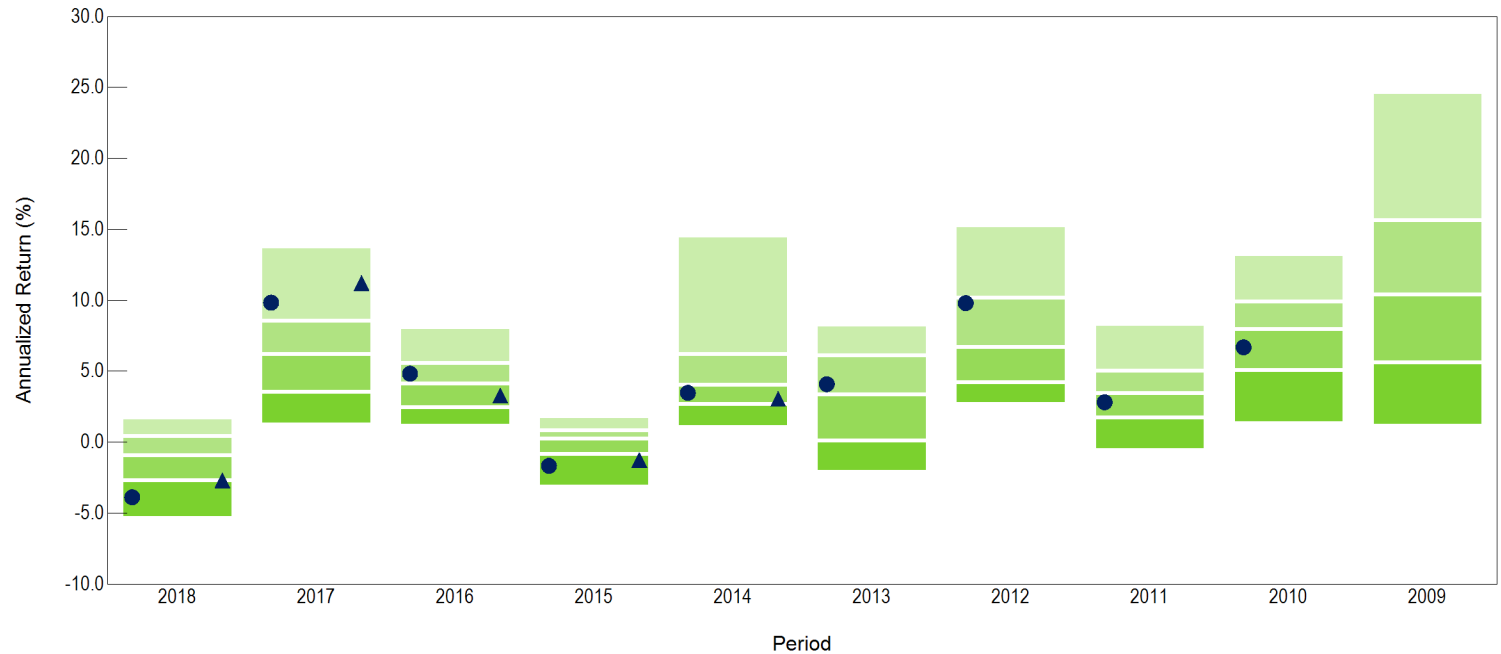


	Return (Rank)															
5th Percentile	4.7	19.1	16.3	8.8	8.0	7.4	7.9	10.9								
25th Percentile	1.6	10.3	7.5	5.2	5.5	4.8	5.1	6.8								
Median	1.3	8.1	6.1	4.3	4.4	3.9	4.0	5.4								
75th Percentile	0.9	6.1	4.9	3.4	3.1	3.0	2.7	3.9								
95th Percentile	0.5	3.0	3.2	2.2	1.9	1.5	1.4	1.9								
# of Portfolios	422	414	406	388	364	322	293	235								
● Board of Regents Total Composite	0.1	(99)	9.7	(30)	5.6	(61)	3.8	(64)	5.0	(34)	3.6	(60)	3.8	(52)	5.1	(54)
▲ Allocation Index	0.7	(87)	10.3	(25)	6.3	(46)	5.3	(25)	5.4	(26)	4.2	(44)	--	(--)	--	(--)



RETURN SUMMARY VS. PEER UNIVERSE

Board of Regents Total Composite vs. InvMetrics Trust Funds >60% Fixed Income Net



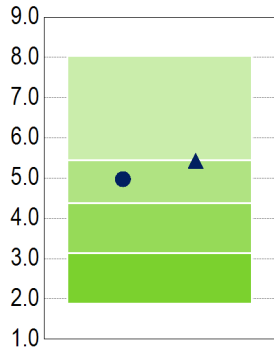
	Return (Rank)																			
5th Percentile	1.7	13.8	8.1	1.8	14.5	8.3	15.3	8.3	13.2	24.7										
25th Percentile	0.5	8.6	5.6	0.9	6.3	6.2	10.2	5.1	9.9	15.7										
Median	-0.9	6.2	4.2	0.3	4.1	3.4	6.7	3.5	8.0	10.4										
75th Percentile	-2.7	3.6	2.5	-0.8	2.7	0.2	4.3	1.8	5.1	5.7										
95th Percentile	-5.3	1.3	1.2	-3.1	1.1	-2.1	2.7	-0.5	1.4	1.2										
# of Portfolios	429	336	298	309	201	46	46	44	43	40										
● Board of Regents Total Composite	-3.9	(87)	9.8	(17)	4.8	(38)	-1.7	(84)	3.5	(63)	4.1	(44)	9.8	(29)	2.8	(55)	6.7	(59)	--	(--)
▲ Allocation Index	-2.7	(76)	11.2	(11)	3.3	(64)	-1.3	(80)	3.1	(70)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)



RISK STATISTICS VS. PEER UNIVERSE

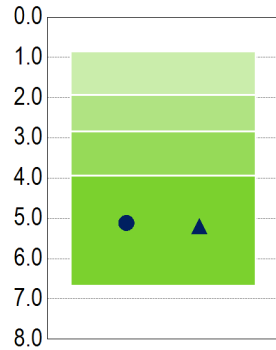
Total Composite vs. InvestorForce Trust Funds >60% Fixed Income Net
3 Years

Anlzd Return



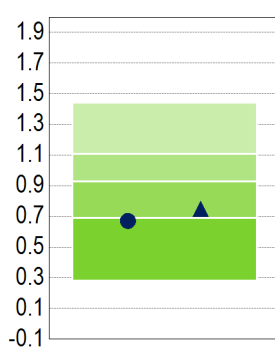
● Board of Regents Total Composite	
Value	4.97
Rank	34
▲ Allocation Index	
Value	5.43
Rank	26
Universe	
5th %tile	8.03
25th %tile	5.46
Median	4.40
75th %tile	3.15
95th %tile	1.89

Anlzd Standard Deviation



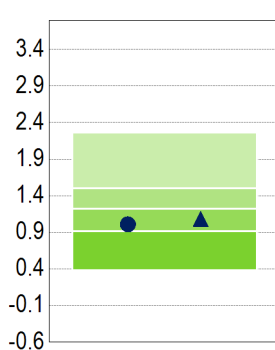
● Board of Regents Total Composite	
Value	5.11
Rank	86
▲ Allocation Index	
Value	5.19
Rank	86
Universe	
5th %tile	0.85
25th %tile	1.92
Median	2.83
75th %tile	3.93
95th %tile	6.66

Sharpe Ratio



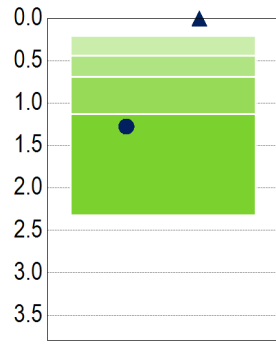
● Board of Regents Total Composite	
Value	0.67
Rank	78
▲ Allocation Index	
Value	0.75
Rank	72
Universe	
5th %tile	1.44
25th %tile	1.11
Median	0.93
75th %tile	0.70
95th %tile	0.29

Sortino Ratio RF



● Board of Regents Total Composite	
Value	1.01
Rank	69
▲ Allocation Index	
Value	1.08
Rank	62
Universe	
5th %tile	2.27
25th %tile	1.51
Median	1.23
75th %tile	0.93
95th %tile	0.39

Tracking Error



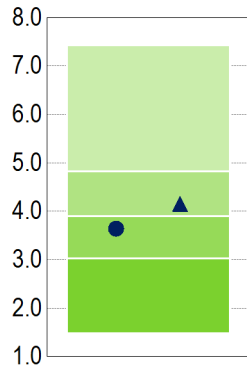
● Board of Regents Total Composite	
Value	1.28
Rank	84
▲ Allocation Index	
Value	0.00
Rank	1
Universe	
5th %tile	0.20
25th %tile	0.43
Median	0.68
75th %tile	1.12
95th %tile	2.32



RISK STATISTICS VS. PEER UNIVERSE

Total Composite vs. InvestorForce Trust Funds >60% Fixed Income Net
5 Years

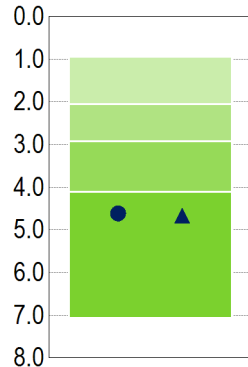
Anlzd Return



● Board of Regents Total Comp
Value 3.64
Rank 60
▲ Allocation Index
Value 4.15
Rank 44

Universe
5th %tile 7.43
25th %tile 4.84
Median 3.91
75th %tile 3.03
95th %tile 1.49

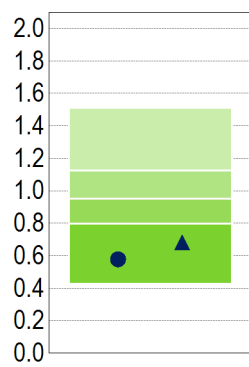
Anlzd Standard Deviation



● Board of Regents Total Comp
Value 4.61
Rank 79
▲ Allocation Index
Value 4.66
Rank 79

Universe
5th %tile 0.94
25th %tile 2.05
Median 2.91
75th %tile 4.09
95th %tile 7.05

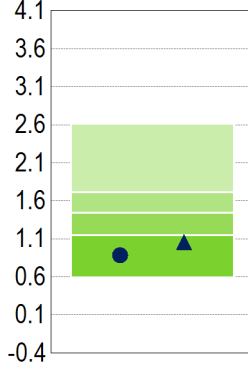
Sharpe Ratio



● Board of Regents Total Comp
Value 0.58
Rank 92
▲ Allocation Index
Value 0.68
Rank 85

Universe
5th %tile 1.51
25th %tile 1.13
Median 0.96
75th %tile 0.80
95th %tile 0.43

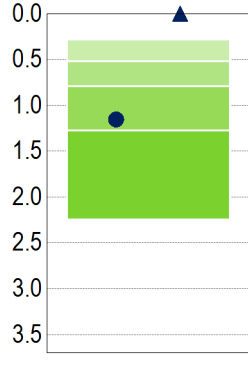
Sortino Ratio RF



● Board of Regents Total Comp
Value 0.88
Rank 90
▲ Allocation Index
Value 1.06
Rank 82

Universe
5th %tile 2.61
25th %tile 1.72
Median 1.45
75th %tile 1.16
95th %tile 0.60

Tracking Error



● Board of Regents Total Comp
Value 1.16
Rank 71
▲ Allocation Index
Value 0.00
Rank 1

Universe
5th %tile 0.28
25th %tile 0.52
Median 0.79
75th %tile 1.27
95th %tile 2.24



APPENDIX

NEPC, LLC

MACRO PERFORMANCE OVERVIEW

Q3 Macro Market Summary

The Fed and ECB enacted easier monetary policy programs in an attempt to counter growing downside risks

The market value of negative-yielding debt increased to over \$18T

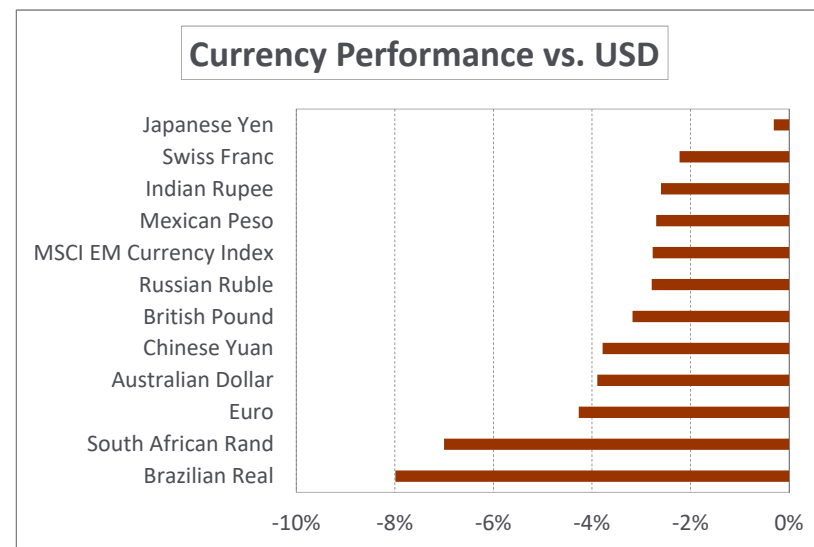
The dollar strengthened, reflecting a flight-to-quality amid ongoing growth concerns

	Yield 6/30/19	Yield 9/30/19	\Delta
US 10-Yr	2.00%	1.68%	-0.32%
US 30-Yr	2.53%	2.12%	-0.40%
US Real 10-Yr	0.31%	0.15%	-0.16%
German 10-Yr	-0.31%	-0.58%	-0.27%
Japan 10-Yr	-0.16%	-0.23%	-0.07%
China 10-Yr	3.30%	3.17%	-0.13%
EM Local Debt	5.69%	5.21%	-0.48%

Source: FactSet

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	1.75% - 2.00%	1.8%	The Fed cut interest rates twice this quarter to a range of 1.75% - 2.00%
European Central Bank	0.00%	1.0%	The ECB cut its deposit rate to -0.50% from -0.40% and announced it would restart bond purchases in November.
Bank of Japan	-0.10%	0.3%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target

Source: FactSet



Source: FactSet



EQUITY PERFORMANCE OVERVIEW

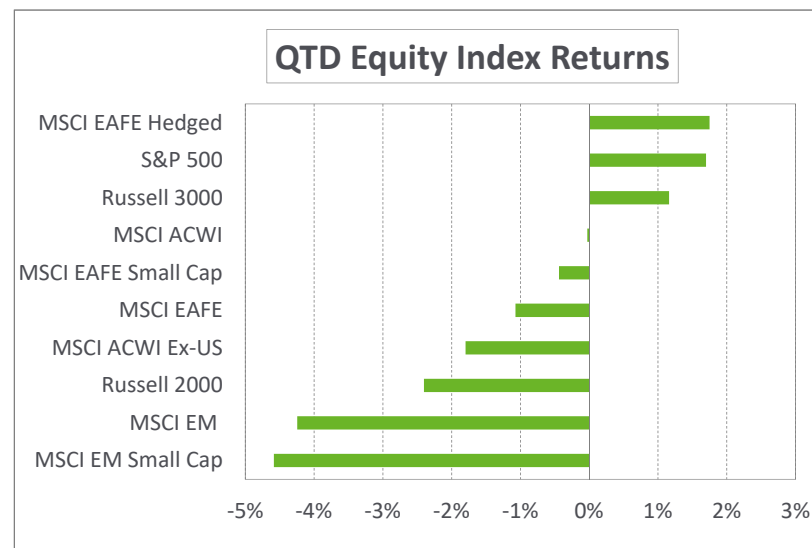
Q3 Equity Market Summary

US equities ended the quarter modestly higher on the back of more accommodative monetary policy

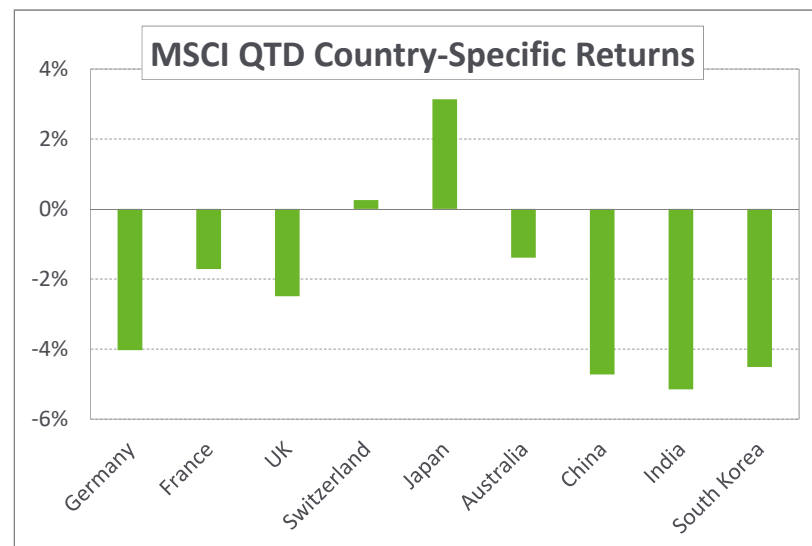
Trade concerns and currency weakness versus the dollar broadly weighed on international and emerging market local equity returns

Russell 3000 QTD Sector Returns	
Technology	3.4%
Health Care	-3.6%
Consumer Discretionary	-0.4%
Consumer Staples	5.7%
Energy	-7.6%
Materials & Processing	-0.3%
Producer Durables	0.5%
Financial Services	2.6%
Utilities	8.5%

Source: FactSet



Source: FactSet



Source: FactSet



CREDIT PERFORMANCE OVERVIEW

Q3 Credit Market Summary

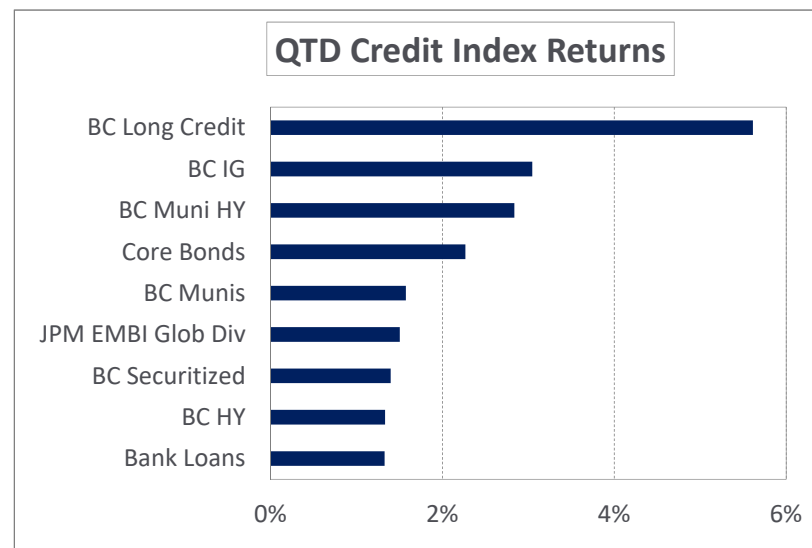
Demand for safe-haven assets increased with ongoing trade and global growth uncertainties

Spreads across the credit complex remained relatively flat during the quarter, but remain below medians

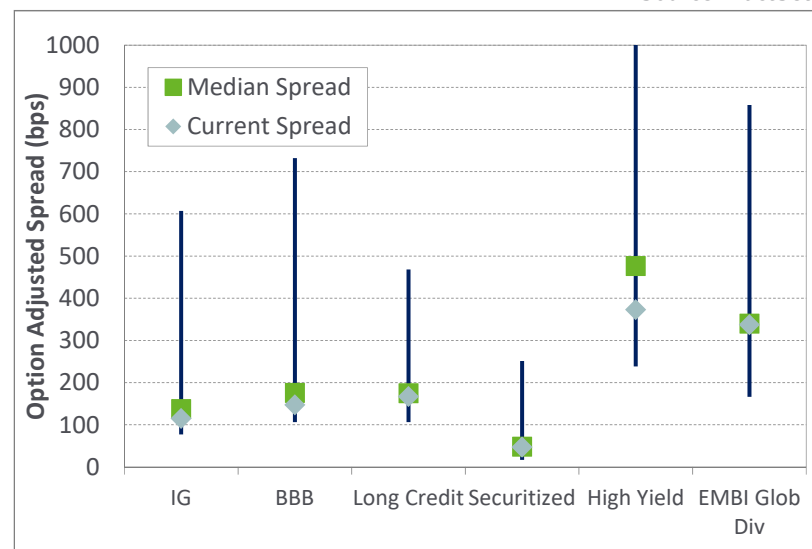
Long duration assets benefitted from a significant decline in rates on the long-end of the yield curve

Credit Spread (Basis Points)	6/30/2019	9/30/2019	Δ
BC IG Credit	113	115	+2
BC Long Credit	159	167	+8
BC Securitized	48	47	-1
BC High Yield	367	373	+6
Muni HY	255	246	-9
JPM EMBI	337	337	-
Bank Loans - Libor	391	398	+7

Source: FactSet



Source: FactSet



Source: FactSet; Ranges calculated since 11/30/2000



REAL ASSETS PERFORMANCE OVERVIEW

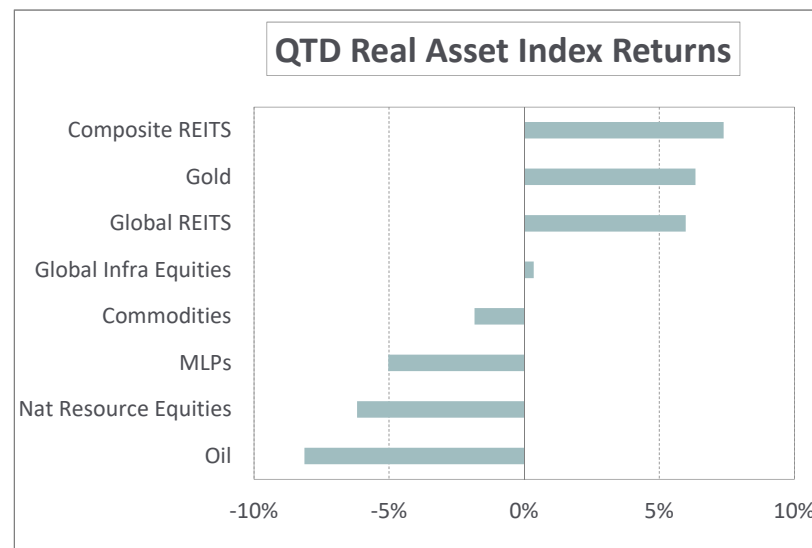
Q3 Real Assets Market Summary

Oil experienced a negative quarter with an attack on Saudi Arabia's oil facilities coupled with global growth concerns pushing volatility higher

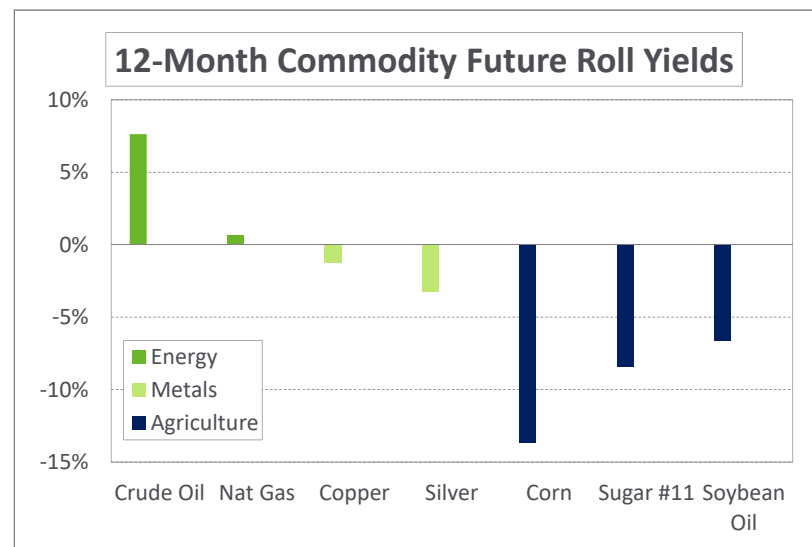
Gold increased 4.4% during the quarter reflecting concerns around global growth and a lower-yield environment

Real Asset Yields	6/30/19	9/30/19
MLPs	7.7%	7.8%
Core Real Estate	4.6%	4.5%
Composite REITs	4.2%	3.9%
Global REITs	4.2%	4.1%
Global Infrastructure Equities	4.3%	4.2%
Natural Resource Equities	4.2%	4.3%
US 10-Year Breakeven Inflation	1.73%	1.53%
Commodity Index Roll Yield	-2.0%	-3.0%
10-Year TIPS Real Yield	0.3%	0.2%

Source: FactSet



Source: FactSet



Source: FactSet



CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Oct	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	2.2%	23.2%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	2.1%	23.1%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	2.6%	17.2%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	1.9%	20.0%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	3.6%	16.9%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	4.2%	10.4%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	2.7%	19.4%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	0.3%	7.9%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	0.2%	6.9%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	0.2%	9.9%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.3%	11.7%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	0.3%	8.8%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	0.7%	7.0%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	-0.9%	18.7%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	0.5%	22.6%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	-1.4%	26.6%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	2.9%	11.0%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	0.3%	13.3%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	6.7%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	2.0%	5.2%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-6.2%	4.2%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	1.4%	28.7%

Source: FactSet, Barclays, Thomson One

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag



DUE DILIGENCE MONITOR

NEPC Due Diligence Status Key

No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
Hold	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
Client Review	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.

NEPC Due Diligence Rating Key

1	A high conviction investment product. Product has a clear and economically-grounded investment thesis, and is managed by an investment team that is sufficiently resourced and incented to execute on the thesis.
2	NEPC has a positive view of the strategy. Strategy has a compelling and sound investment thesis. The manager is sufficiently resourced and incented to execute on the thesis. Strengths outweigh the weaknesses, but the strategy does not meet all requirements for a 1 rating.
3	A satisfactory investment product. The strategy lacks a compelling investment thesis, however there are no significant concerns around the manager's viability.
4	The strategy may have an unclear or ambiguous investment thesis or the manager may lack the ability to execute on the stated thesis. The strategy likely has strengths and weaknesses and the weaknesses may outweigh the strengths.
5	A strategy that lacks an investment thesis or NEPC has no confidence in the manager's ability to execute on the thesis, and/or the investment firm may not be viable. Serious issues have been identified with an investment manager or product. This rating aligns with a Terminate Due Diligence status for client-owned products.
NR	Due diligence has not been sufficiently completed on the product or manager.



INFORMATION DISCLAIMER

- **Past performance is no guarantee of future results.**
- **The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.**
- **Information on market indices was provided by 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.**
- **All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.**
- **This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.**



ALTERNATIVE INVESTMENT DISCLOSURES

It is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds and private equity:

- 1. Performance can be volatile and investors could lose all or a substantial portion of their investment**
- 2. Leverage and other speculative practices may increase the risk of loss**
- 3. Past performance may be revised due to the revaluation of investments**
- 4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms**
- 5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value**
- 6. These funds are not subject to the same regulatory requirements as registered investment vehicles**
- 7. Managers may not be required to provide periodic pricing or valuation information to investors**
- 8. These funds may have complex tax structures and delays in distributing important tax information**
- 9. These funds often charge high fees**
- 10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy**

