

**QUARTER ENDING DECEMBER 31, 2020**  
**INVESTMENT PERFORMANCE ANALYSIS**  
**EASTERN MICHIGAN BOARD OF REGENTS**

February 24, 2021

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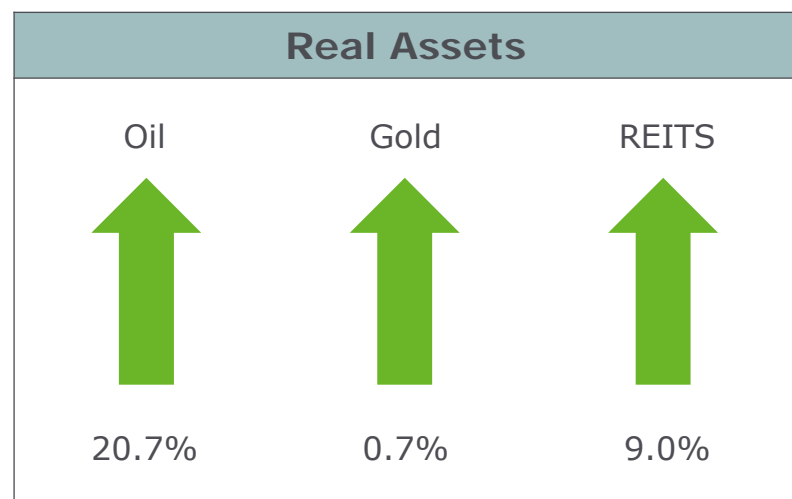
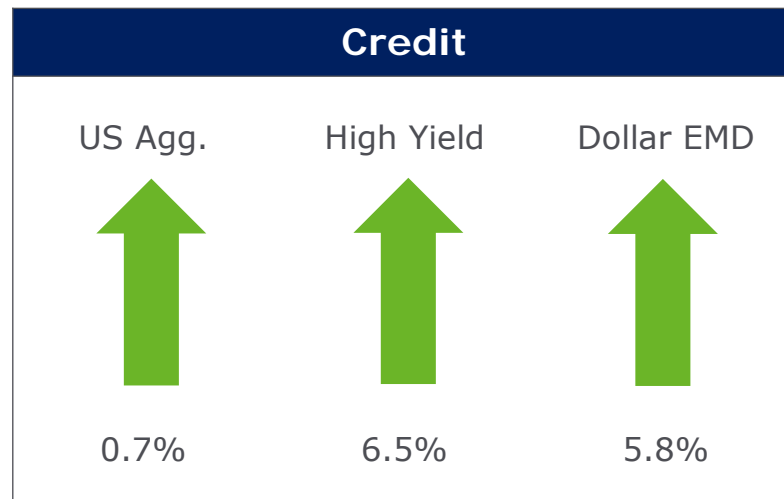
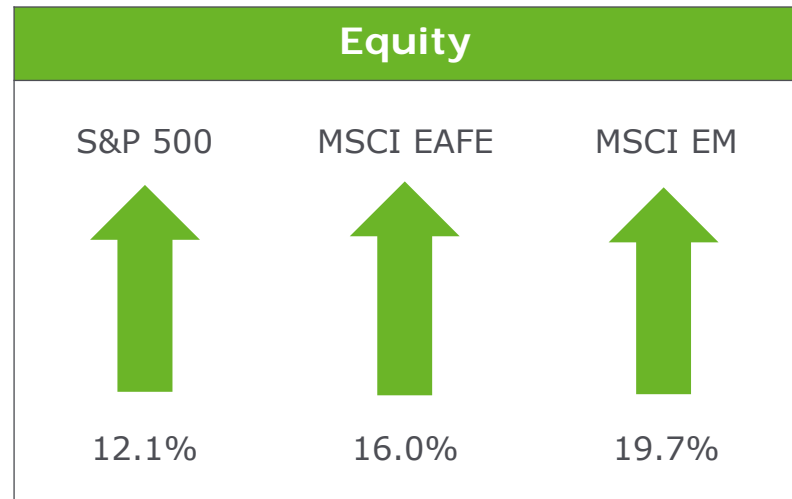
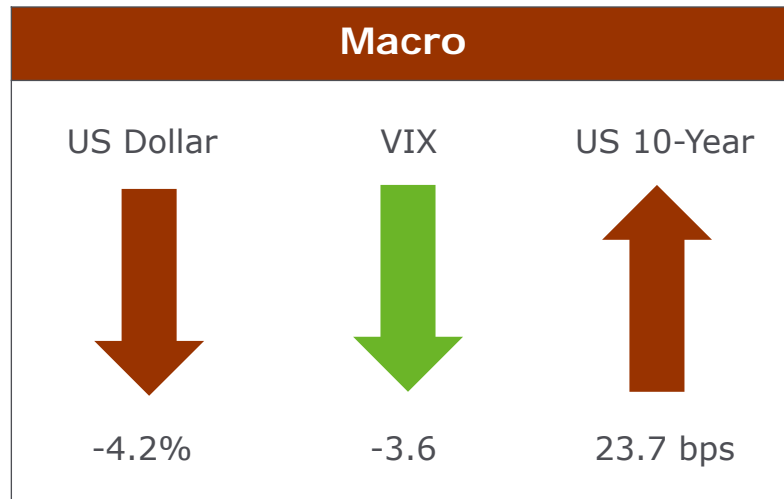


# 2020 MARKET REVIEW

NEPC, LLC

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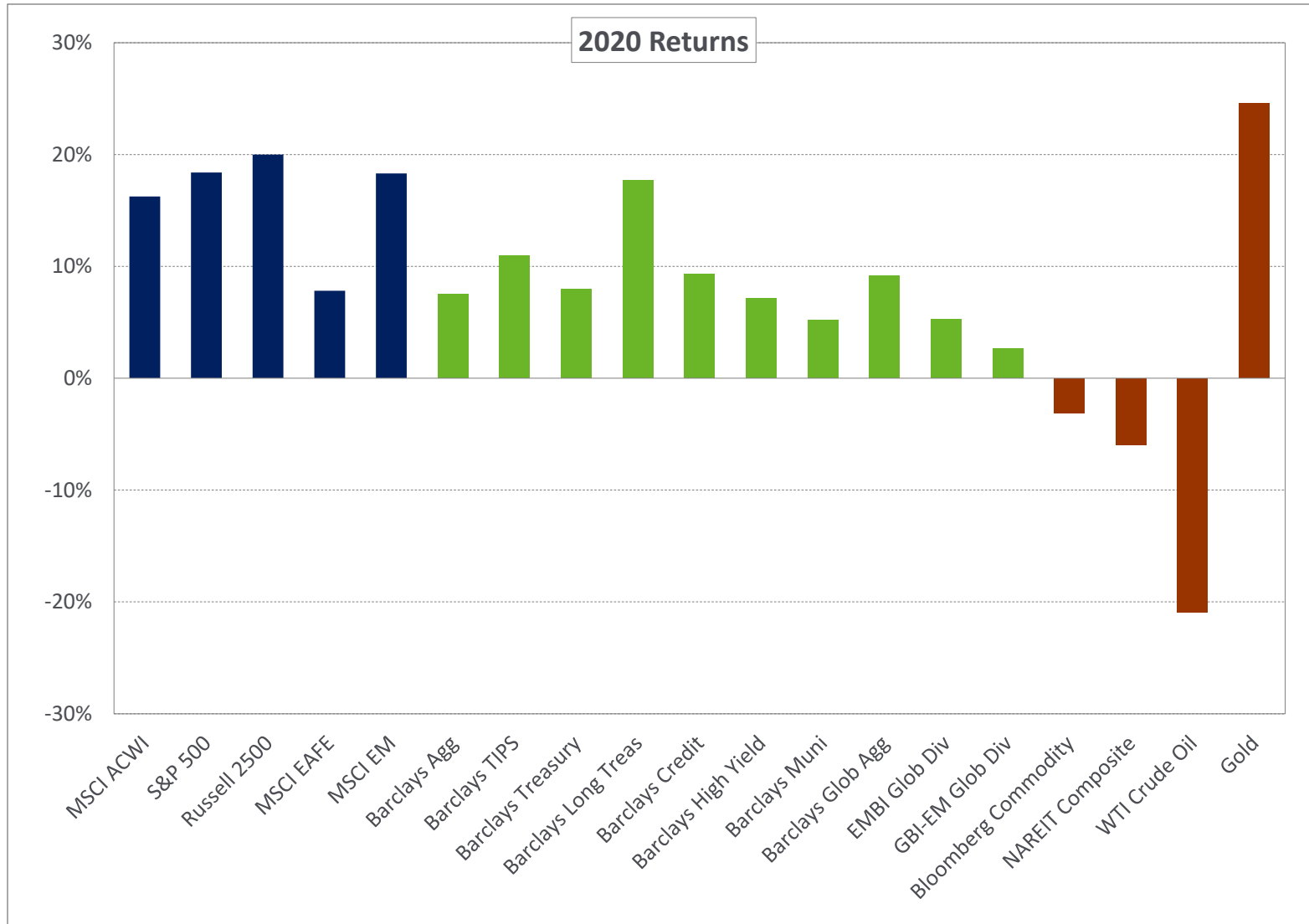
# MARKET OVERVIEW



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



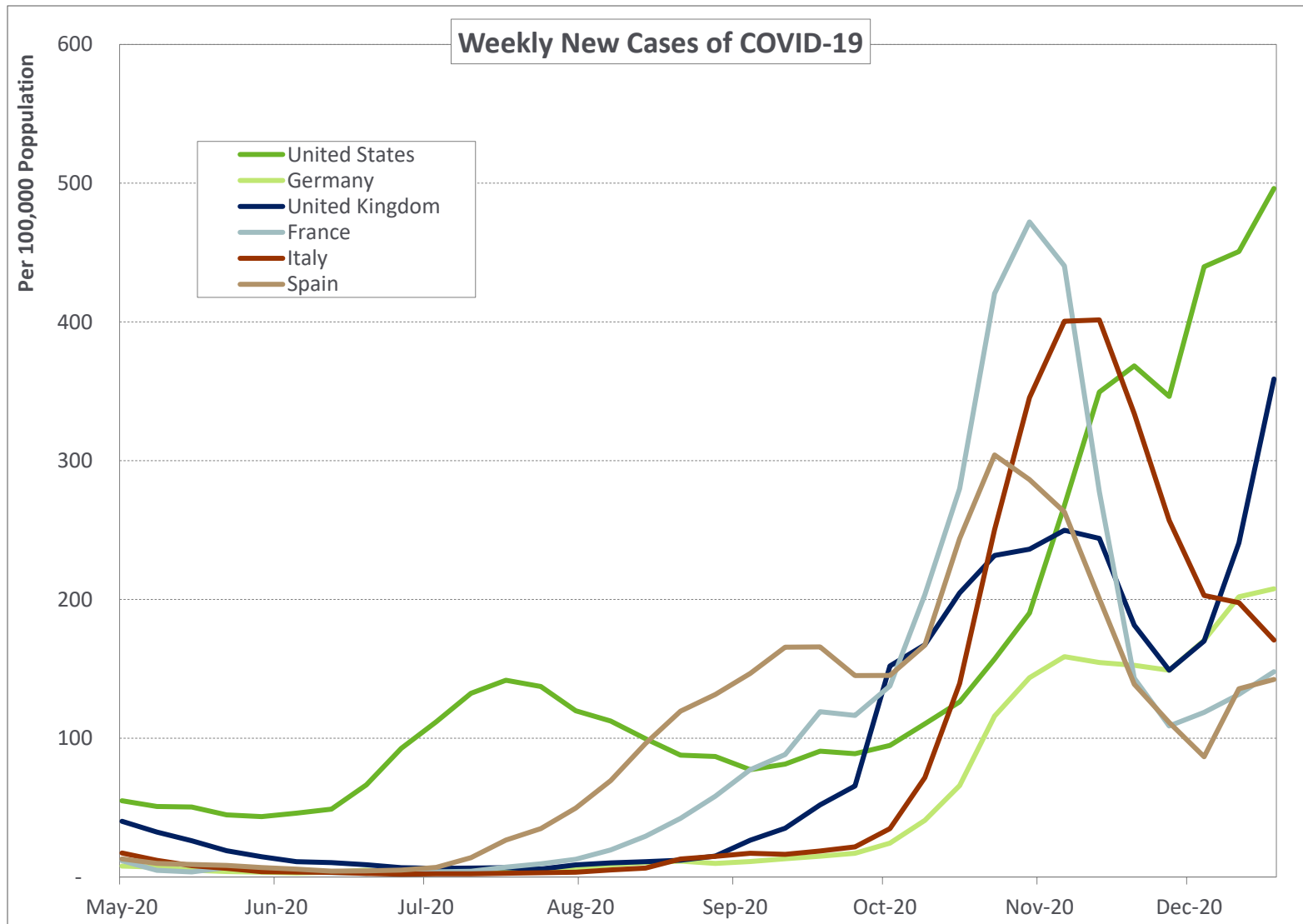
# US AND EMERGING EQUITIES OUTPERFORMED



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



# COVID-19 WEIGHED ON ECONOMIES



Source: World Health Organization, FactSet



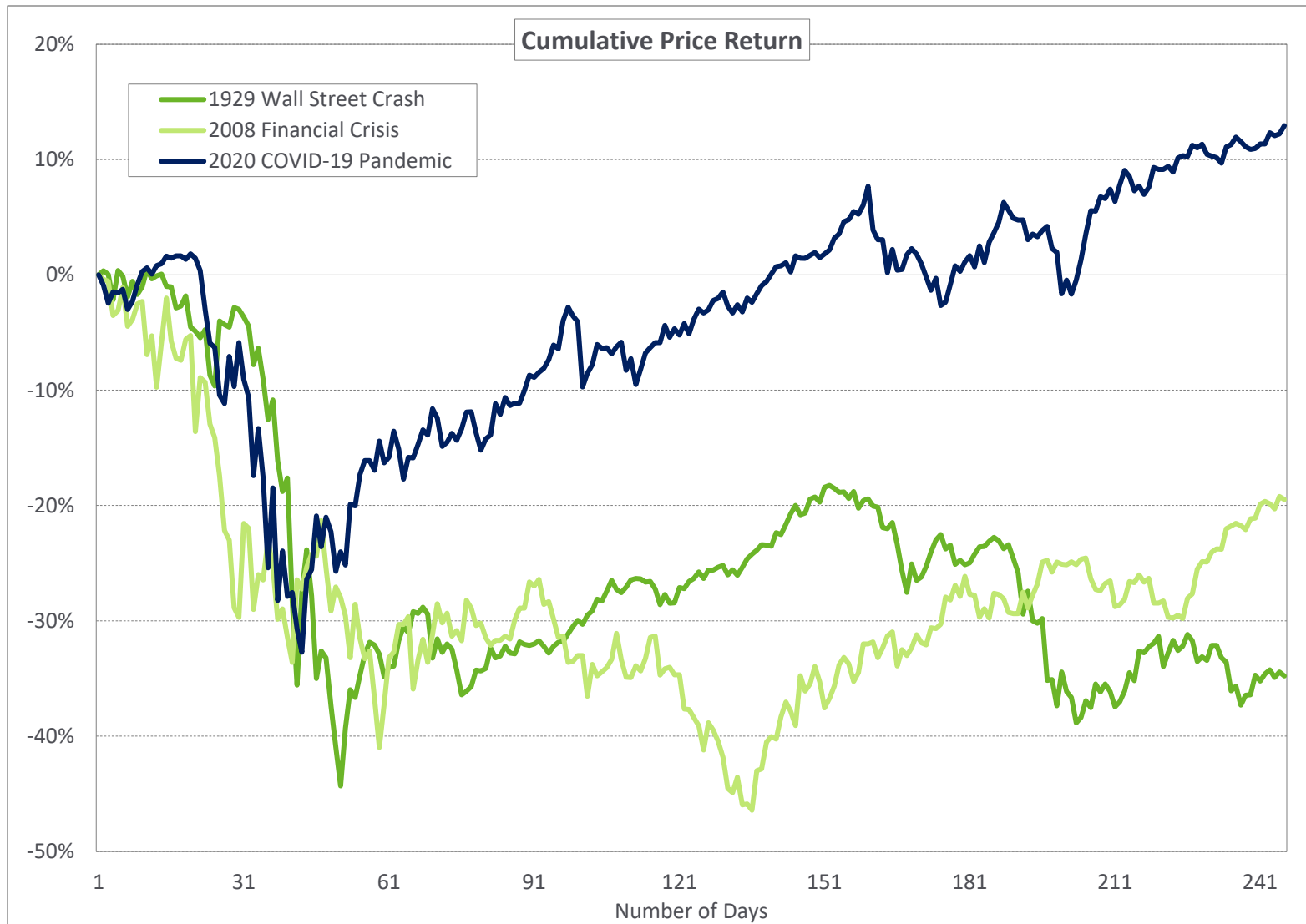
# THE WORLD ECONOMY SHRANK IN 2020



Q4 2020 real GDP figure represents IMF forecast for 2020  
GDP figures are seasonally adjusted and chained to 2005 dollars  
Source: IMF, FactSet



# SHORTEST BEAR MARKET IN HISTORY



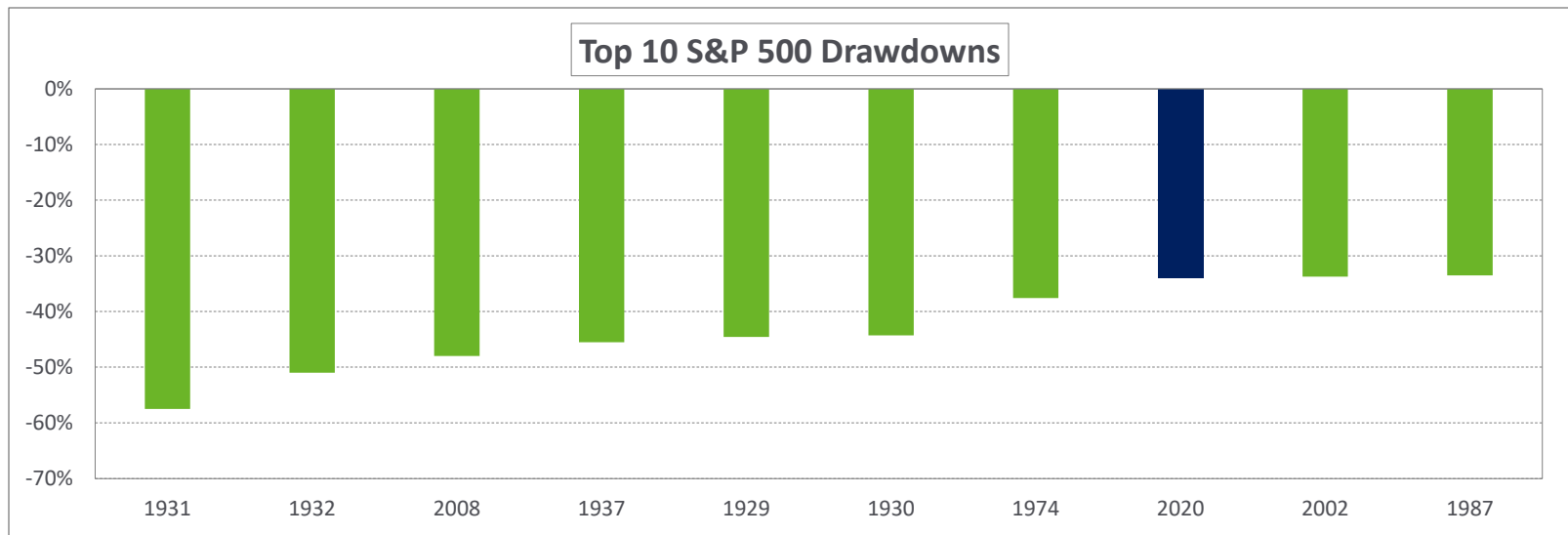
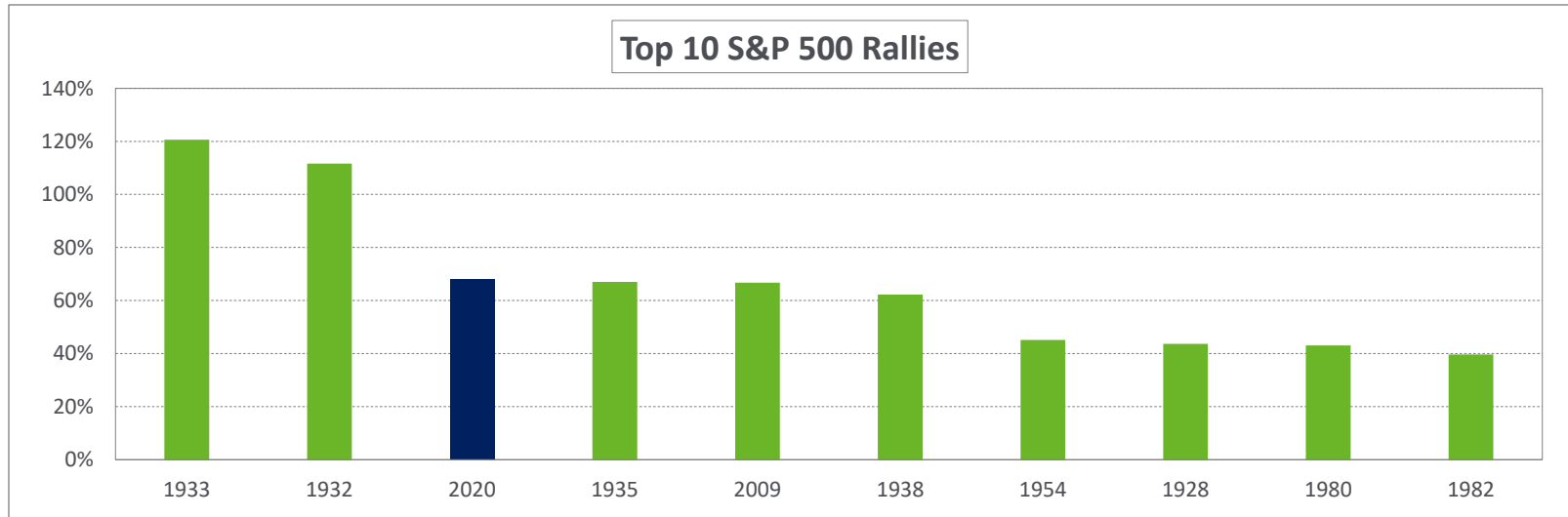
Source: S&P, FactSet

Financial Crisis represents S&P returns from 9/1/2008 – 8/10/2009; Wall Street Crash represents Dow Jones returns from 8/30/1929 – 8/25/1930; COVID-19 represents S&P returns from 1/23/2020 (representing the start of the Wuhan, China lockdown) – 12/31/2020





# LARGEST EQUITY SWINGS SINCE 1932

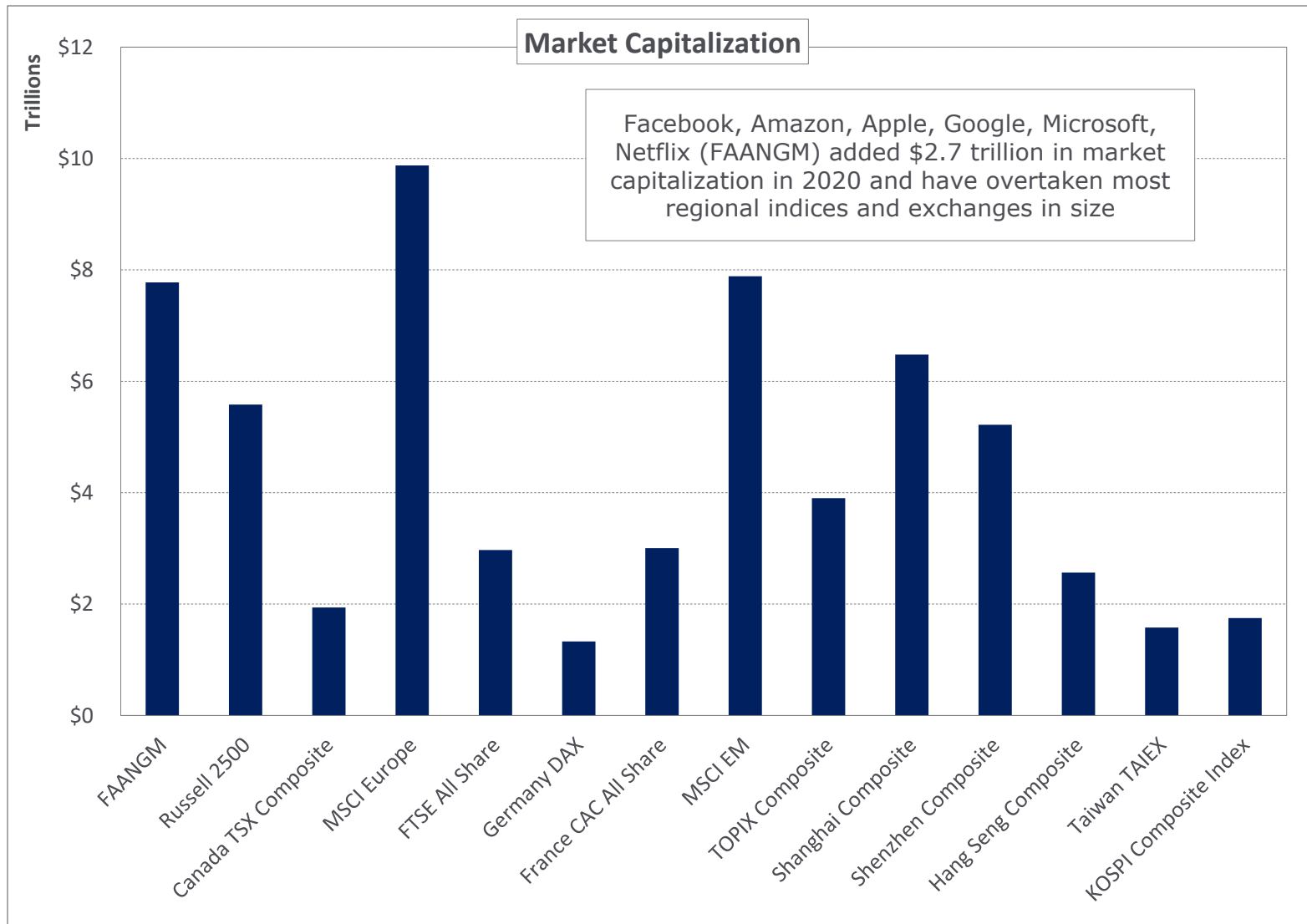


Source: S&P, FactSet

Rallies and drawdowns represent the largest trough-to-peak and peak-to-trough, respectively, within a calendar year



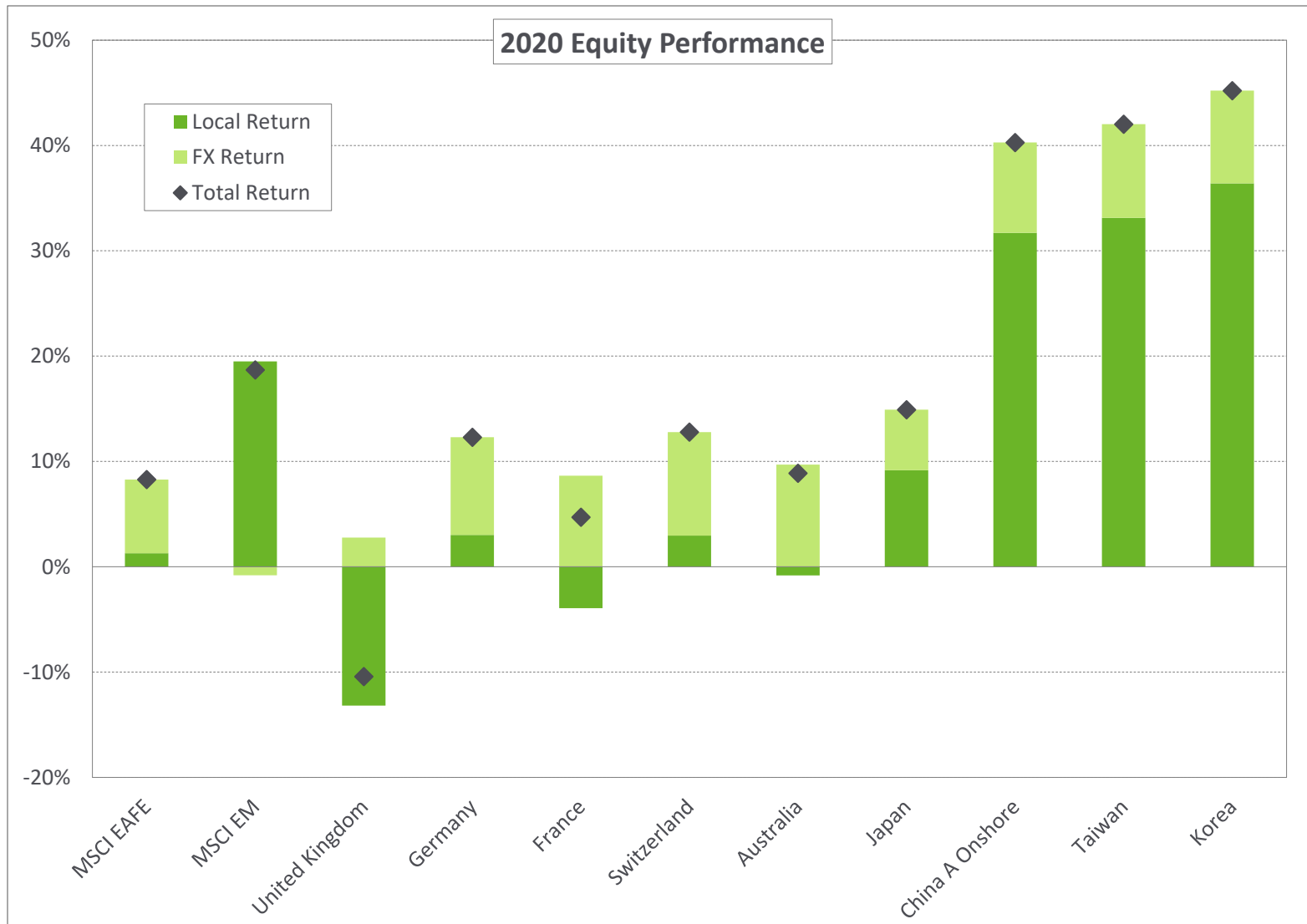
# FAANGM IS LARGER THAN MOST INDICES



Source: MSCI, S&P, Russell, FTSE, DAX, CAC, TOPIX, SSE, SZSE, Hang Seng, TAIEX, KOSPI, FactSet



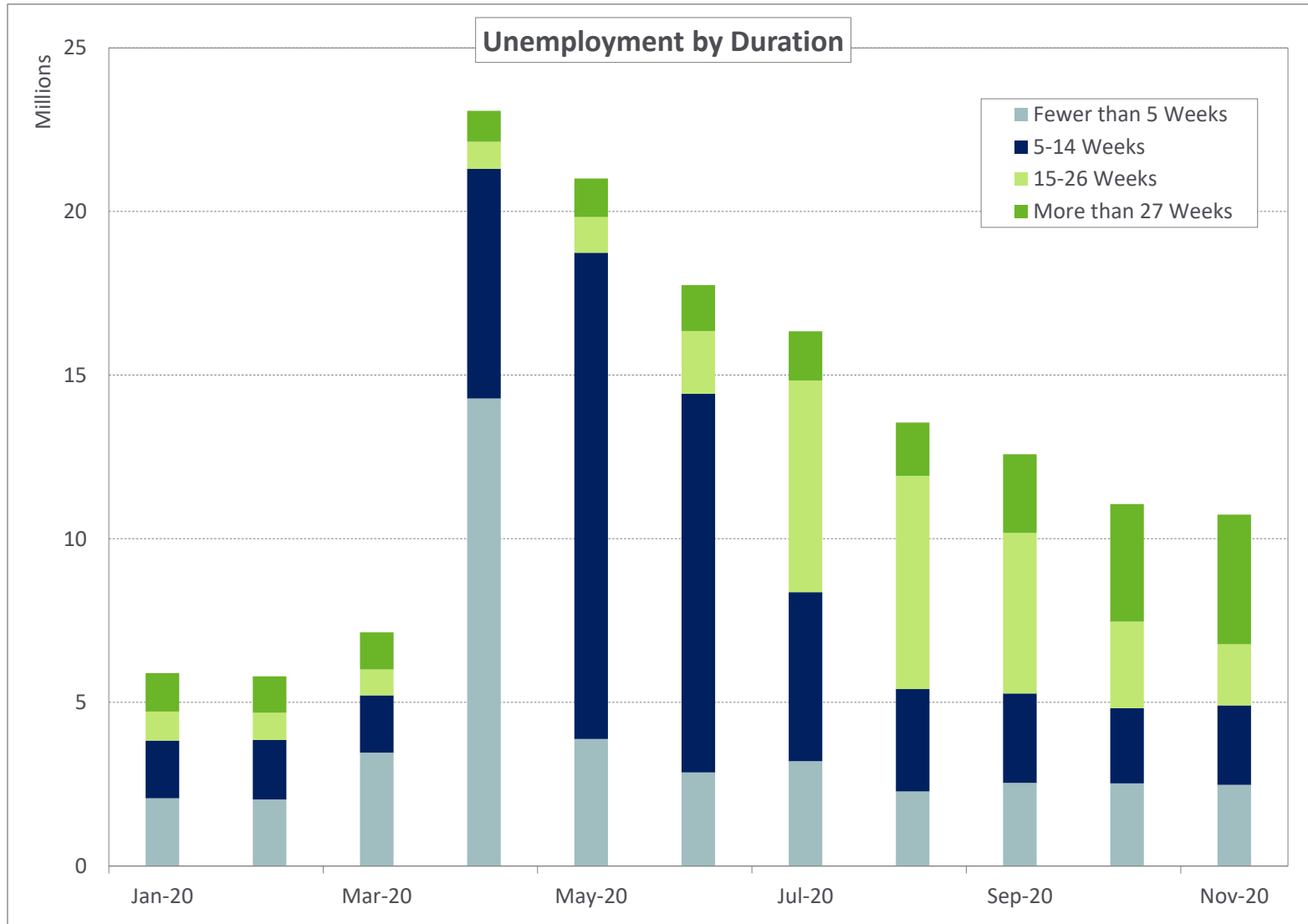
# DOLLAR WEAKNESS SUPPORTED NON-US EQUITY



Source: MSCI, FactSet



# UNEMPLOYMENT REMAINS ELEVATED



Source: Department of Labor, FactSet



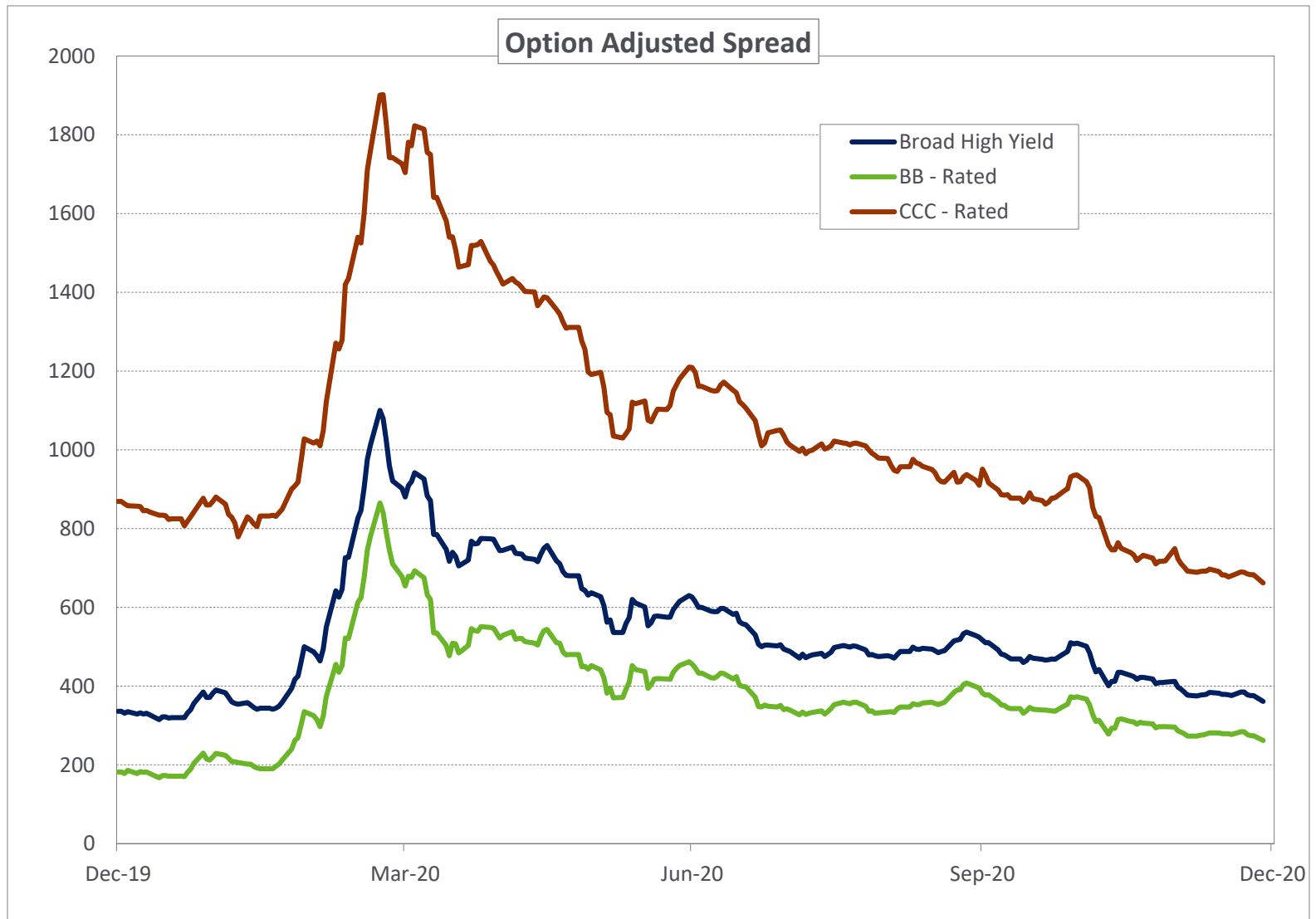
# COMPANIES TOOK ADVANTAGE OF LOW RATES



Source: Federal Reserve System, FactSet  
2020\* represents data for the first 11 months



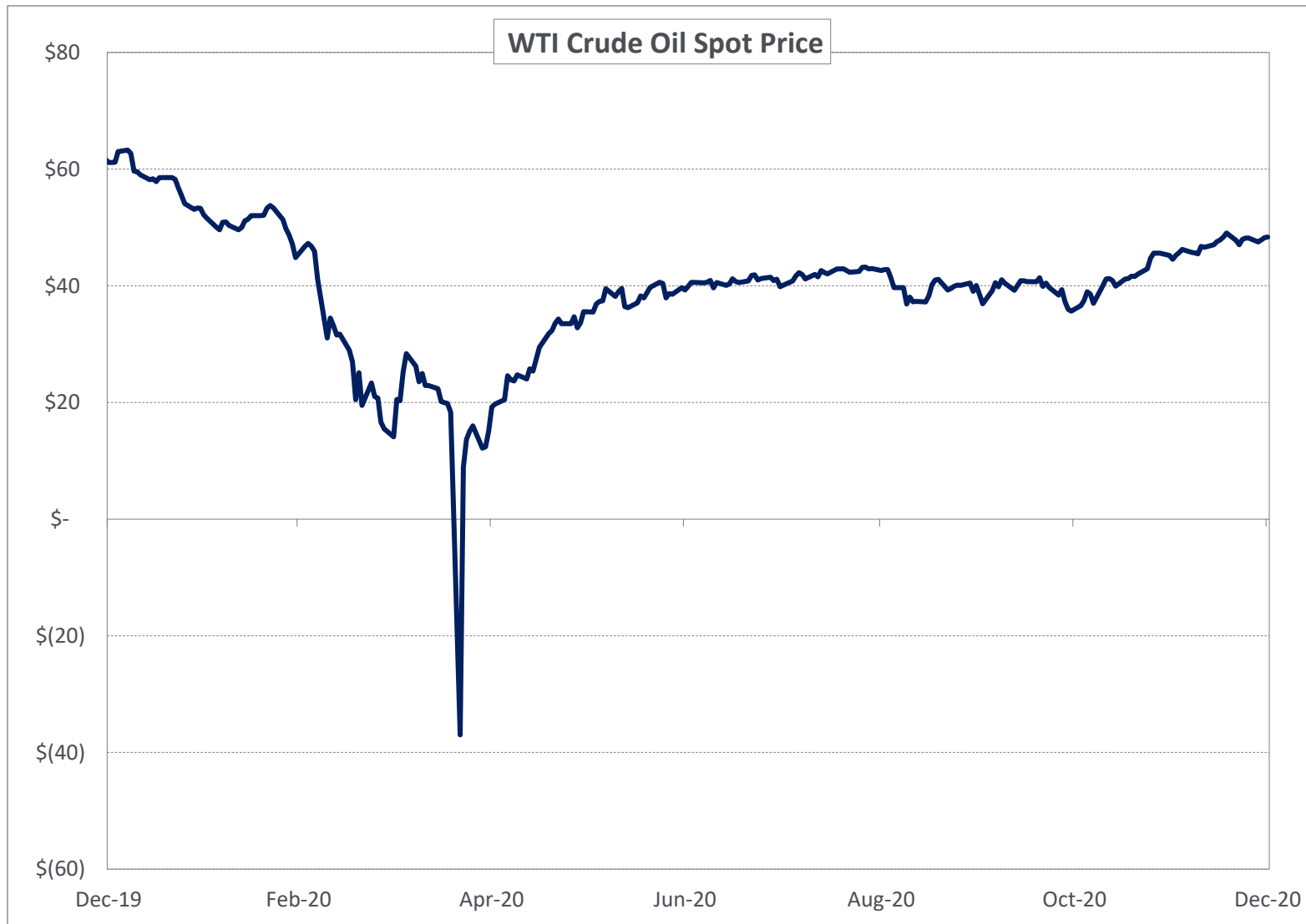
# SPREADS ENDED NEAR PRE-COVID LEVELS



Source: Bloomberg, FactSet



# OIL PRICES FELL INTO NEGATIVE TERRITORY



Source: FactSet



# ASSESSING THE KEY MARKET THEMES

## AS OF 12/31/20

	Dormant	Faded	Neutral	Prevalent	Dominant
<b>Virus Trajectory</b> <i>No Change in Status</i>					<b>Dominant</b>
		<ul style="list-style-type: none"> <li>Virus Trajectory continues to be the dominant force driving global economic outcomes</li> <li>Market sentiment improved with successful vaccine candidates, though concerns remain around distribution, logistics, and supply of the vaccine</li> <li>Uncertainty remains as worsening COVID-19 trends and a potential new strain of the virus may impact the timing of an economic recovery</li> </ul>			
<b>Permanent Interventions</b> <i>No Change in Status</i>					<b>Dominant</b>
		<ul style="list-style-type: none"> <li>Permanent Interventions continues to be the dominant force driving global markets upward</li> <li>In the US, a fifth coronavirus relief package worth about \$900 billion was passed. In Europe, the Central Bank expanded its emergency bond-buying program by €500B and extended the program</li> </ul>			
<b>Globalization Backlash</b> <i>No Change in Status</i>				<b>Prevalent</b>	Dominant
		<ul style="list-style-type: none"> <li>The importance of the theme may increase in coming years as the lasting impact from the pandemic is seen</li> <li>The world will likely be faced with an amplified wealth divide given economic and labor market disruptions, which historically has driven more volatile political outcomes</li> </ul>			
<b>China Transitions</b> <i>No Change in Status</i>			<b>Neutral</b>		Dominant
		<ul style="list-style-type: none"> <li>US-China tensions escalated as President Trump signed two executive orders that prohibited US investors from owning a select number of corporate securities from China and banned transactions with some Chinese software applications</li> <li>President-elect Biden has promised a policy review in 2021 regarding the US policy posture with China</li> </ul>			





# INVESTMENT CONSIDERATIONS

KEY MARKET THEME: *VIRUS TRAJECTORY*

**The wide range of scenarios pulls investor focus from the extremes of vaccine optimism to a renewed outbreak**

**The pandemic has amplified our PI theme, fueling fiscal and monetary expansion to the benefit of equity markets**

For risky investments, it raises the question “do valuations matter?”

**A rapid vaccine rollout can unleash economic exuberance and benefit highly cyclical assets and value stocks**

**However, the risk of an extended economic downturn and prolonged deflationary environment remain**

In such an environment, nominal government bonds offer relief



# THEMATIC MACROECONOMIC RISKS

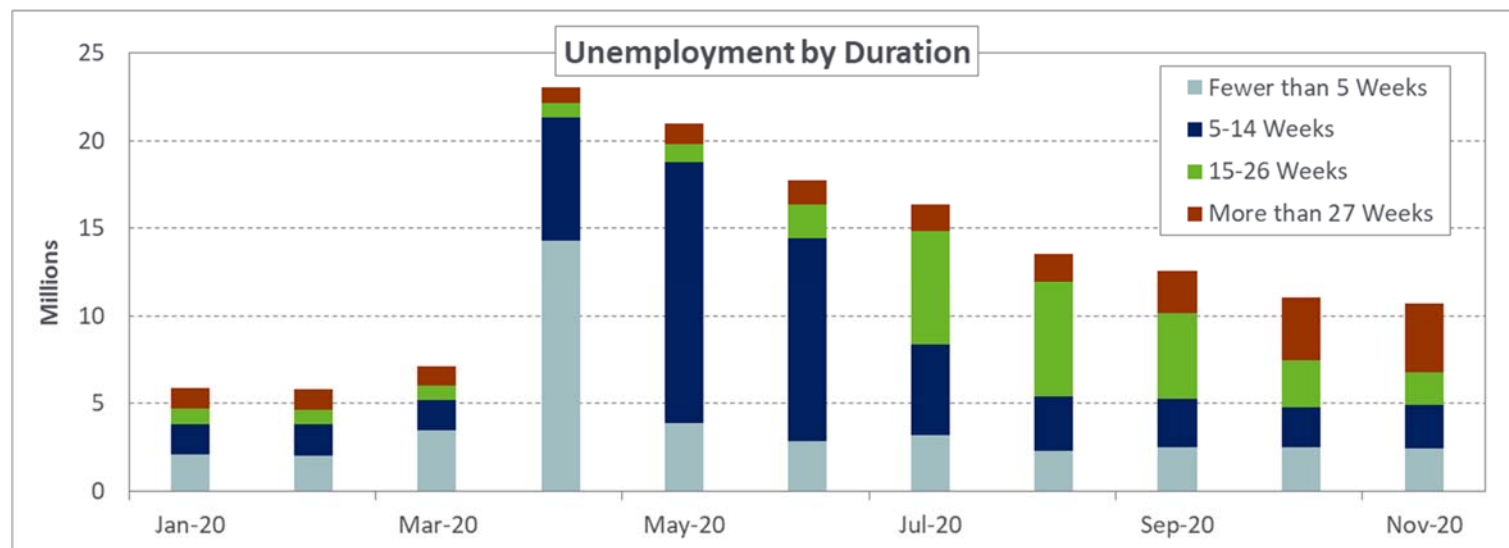
KEY MARKET THEME: *VIRUS TRAJECTORY*

## Economic dislocation from the pandemic is widespread

The negative consequences vary across the globe but can be found in labor markets, consumer spending, productivity, and imbalances

## The lingering damage from the pandemic is unclear and represents the largest economic disruption of our time

Labor markets are generally slow to recover and the pandemic may leave a lasting impact on the long-term unemployed



Source: Department of Labor, FactSet



# INVESTMENT CONSIDERATIONS

## KEY MARKET THEME: *PERMANENT INTERVENTIONS*

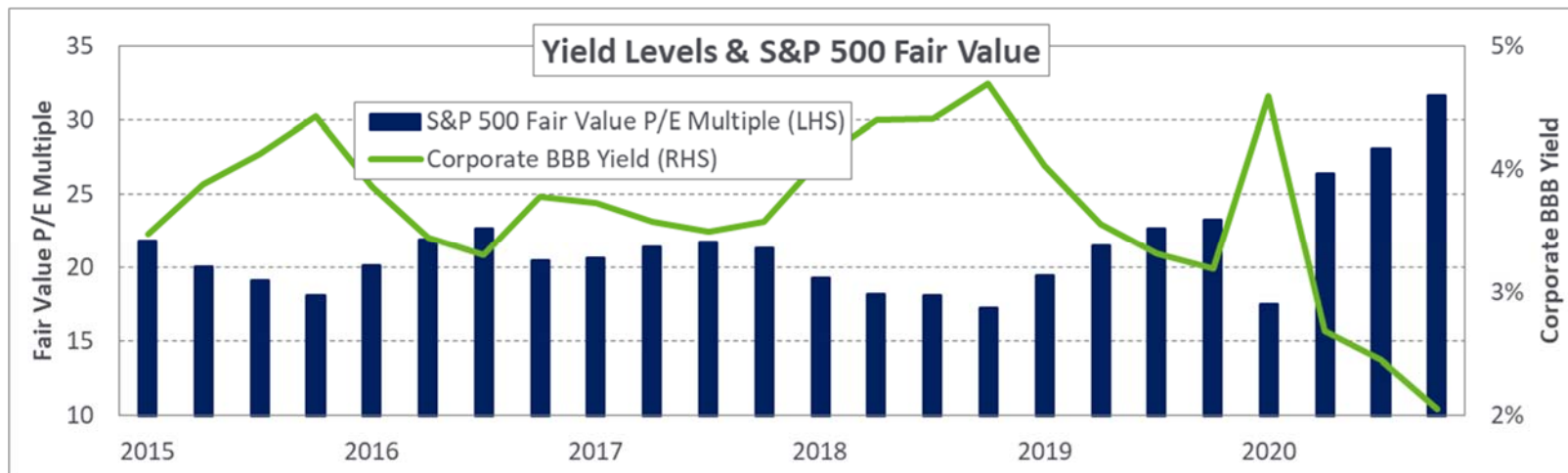
### Permanent Interventions sustains high P/E multiples and equity valuations become a less potent market signal

Low interest rates generate higher values when discounting future cash flows and increase valuation levels for equity markets

### The supportive policy environment is favorable to equity

Investors enjoy high profit margins relative to history as the surplus of central bank liquidity benefits holders of capital relative to labor

However, proactive tightening of monetary policy damages market sentiment and exposes the fragile nature of market dynamics

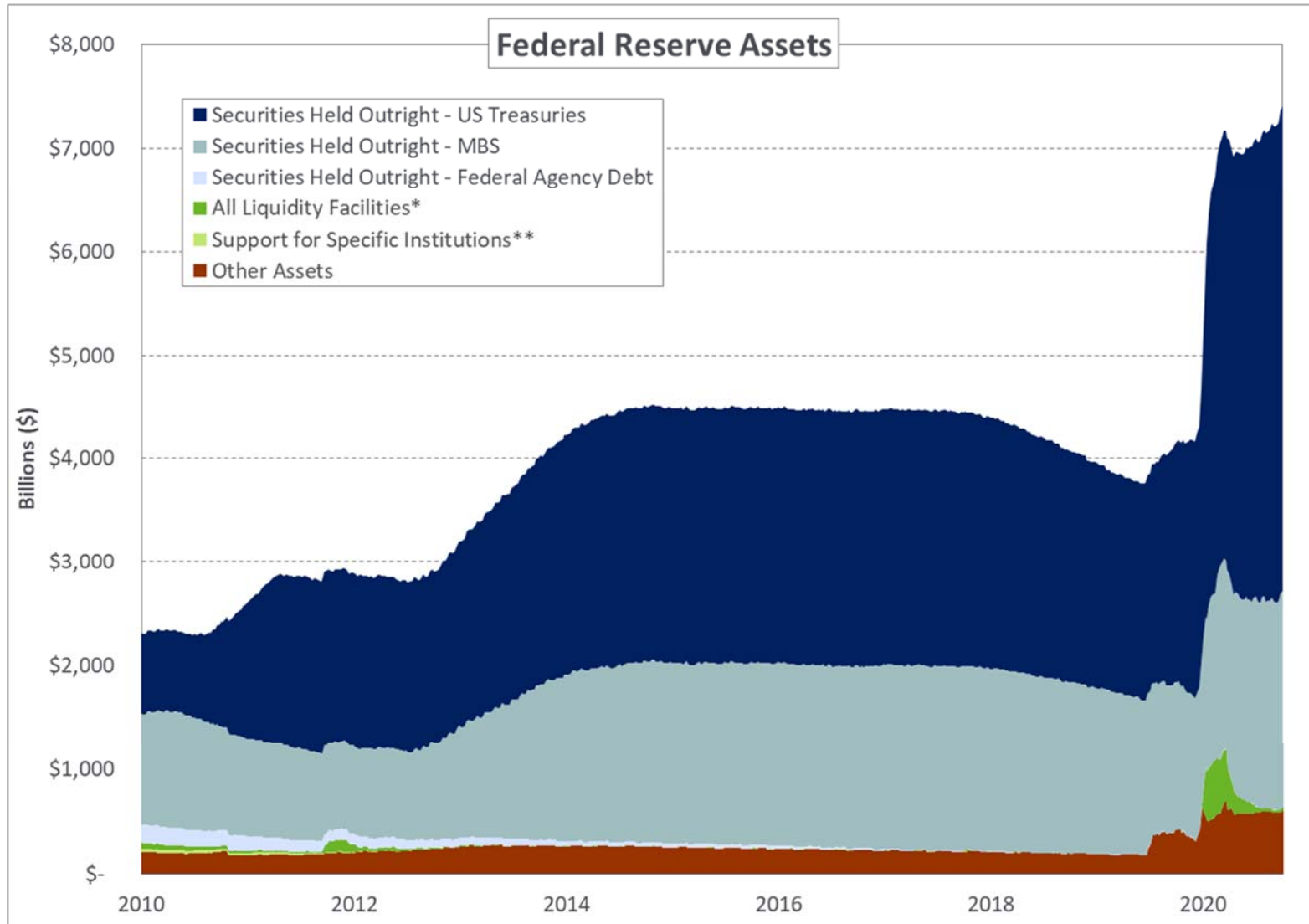


Source: FactSet, S&P, Bloomberg



# ELEVATED PERMANENT INTERVENTIONS

KEY MARKET THEME: *PERMANENT INTERVENTIONS*



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



# ASSET ALLOCATION OUTLOOK

NEPC, LLC

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# ASSET ALLOCATION THOUGHTS AND ACTIONS

Permanent Interventions **sustains positive risk asset sentiment** and boosts our return outlook

Consider **higher strategic equity targets** as the long-term return differential relative to fixed income is wide

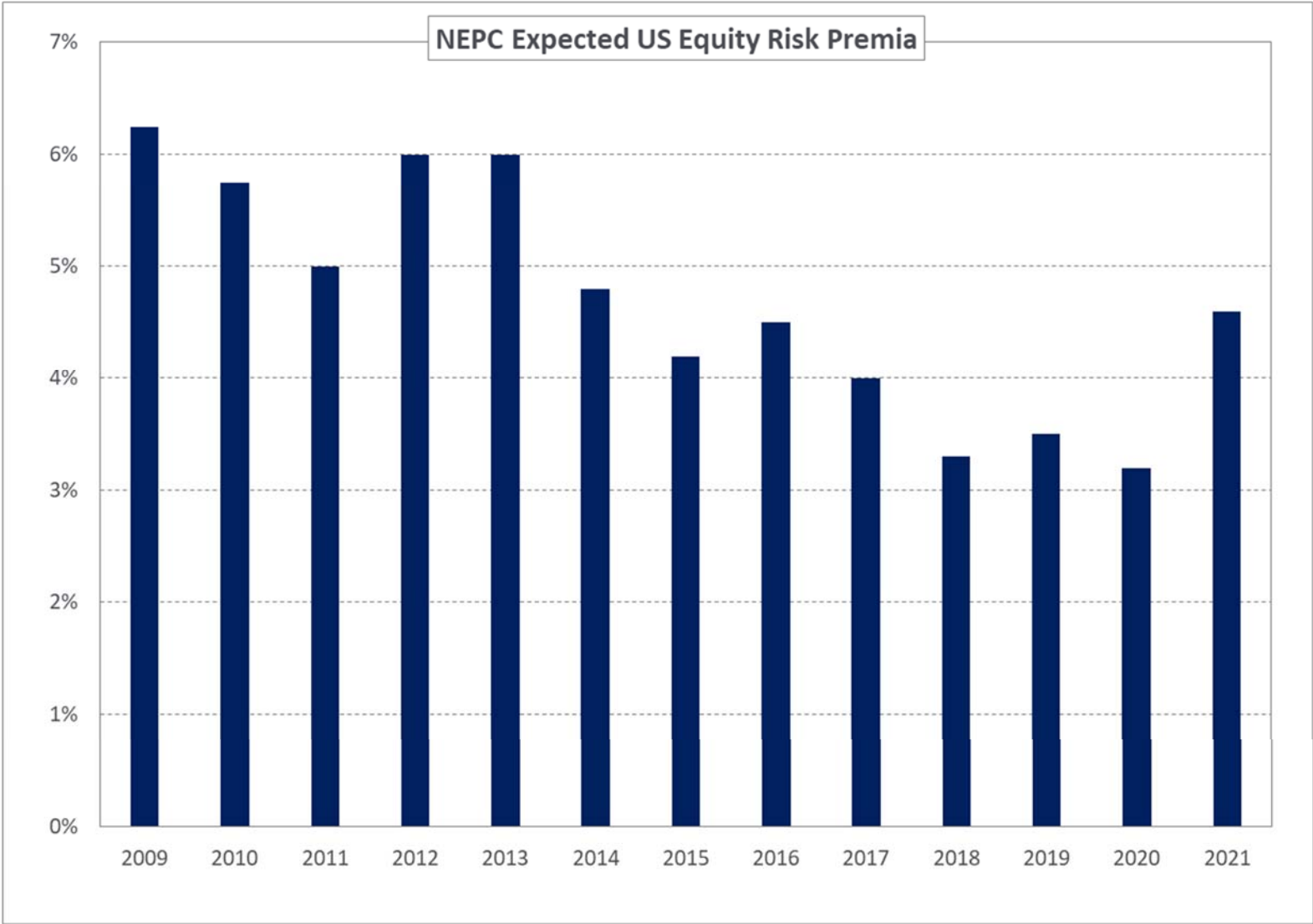
**Maintain adequate portfolio liquidity** levels as market stress can inject bouts of illiquidity across public assets

The **wide range of outcomes** associated with COVID-19 place a greater focus on strategic beliefs

Maintain a **strategic allocation to Treasuries** to serve as a source of liquidity and to provide downside protection



# CONSIDER HIGHER STRATEGIC EQUITY TARGETS



Source: NEPC

Represents the difference between 10-Year NEPC US Large-Cap and Cash Assumptions  
\*Prior to 2019, return assumption reflected a 5-7 year time horizon



# Q4 2020 PERFORMANCE SUMMARY

NEPC, LLC

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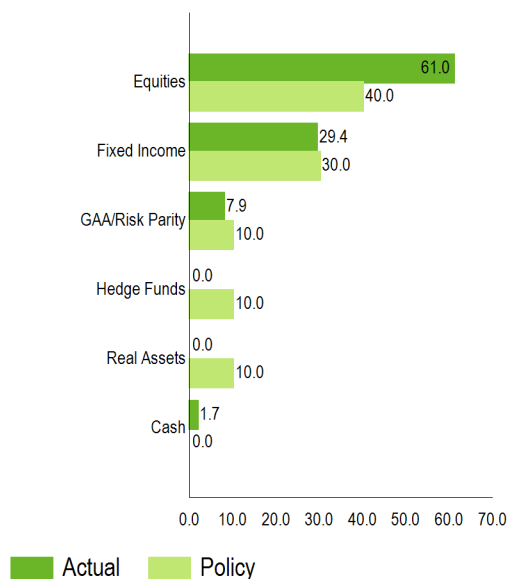


# TOTAL FUND PERFORMANCE SUMMARY

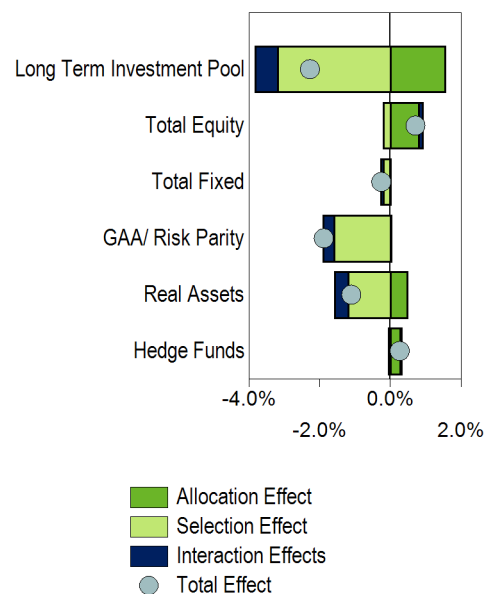
	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs
<b>Board of Regents Total Composite</b>	<b>\$21,717,375</b>	<b>4.0%</b>	<b>6.1%</b>	<b>-2.4%</b>	<b>2.4%</b>	<b>4.3%</b>
<i>Allocation Index</i>		4.2%	6.4%	3.6%	5.3%	6.0%

	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs
<b>Long Term Investment Pool</b>	<b>\$9,261,685</b>	<b>9.9%</b>	<b>15.6%</b>	<b>6.8%</b>	<b>5.4%</b>	<b>7.1%</b>
<i>Long Term Allocation Index</i>		10.5%	16.5%	17.2%	9.2%	9.7%
<i>Long Term Balanced Index</i>		8.1%	13.3%	12.2%	7.5%	8.7%

**Long Term Investment Pool Actual vs. Target Allocation**



**Long Term Investment Pool Attribution Effects 4 Years Ending December 31, 2020**



	Year to Date		
	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio
Board of Regents Total Composite	-2.41%	11.62%	-0.25
Allocation Index	3.63%	8.43%	0.38

**Composite Performance**

- HY Total Composite accrued +4.0% in Q4, continuing to erase losses experienced during the historic Q1 sell off
- The Long Term Investment Pool earned +9.9% over the same period

**Allocation Index**

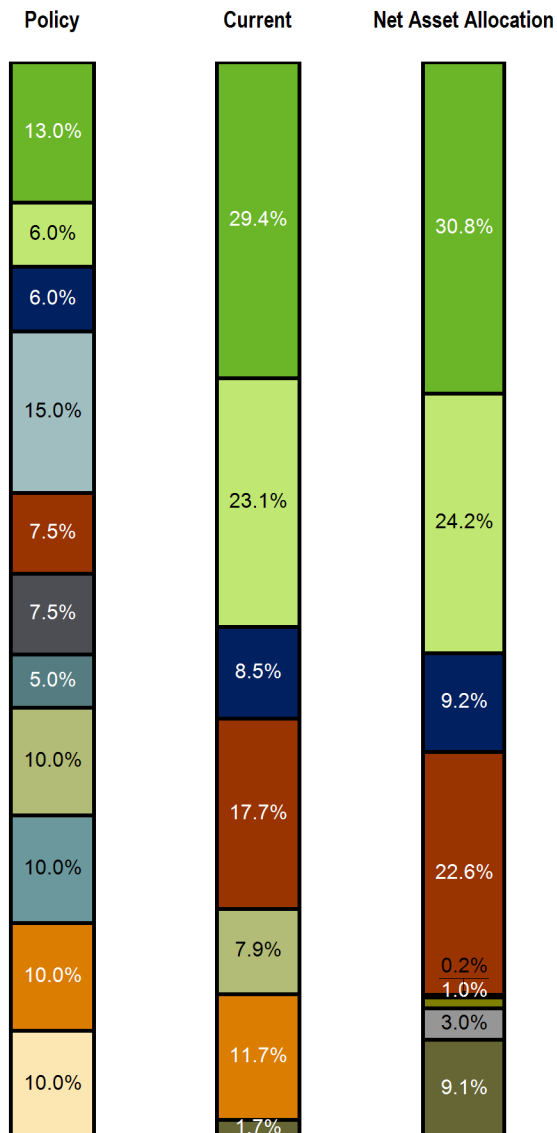
- Over the quarter, the Equity and Fixed Income portfolios continued to be additive, while Global Asset Allocation detracted

**Active Management**

- As a reminder, the remaining positions represent post Q1 trades per guidance from the team to provide liquidity for operating needs
- SEG Baxter, an active manager that invests primarily in international equities, outperformed its respective benchmark by 550bps for the 2020 calendar year
- William Blair Macro Allocation, a multi-asset manager, finished behind its corresponding benchmark for the year



# ASSET ALLOCATION VS. POLICY TARGETS



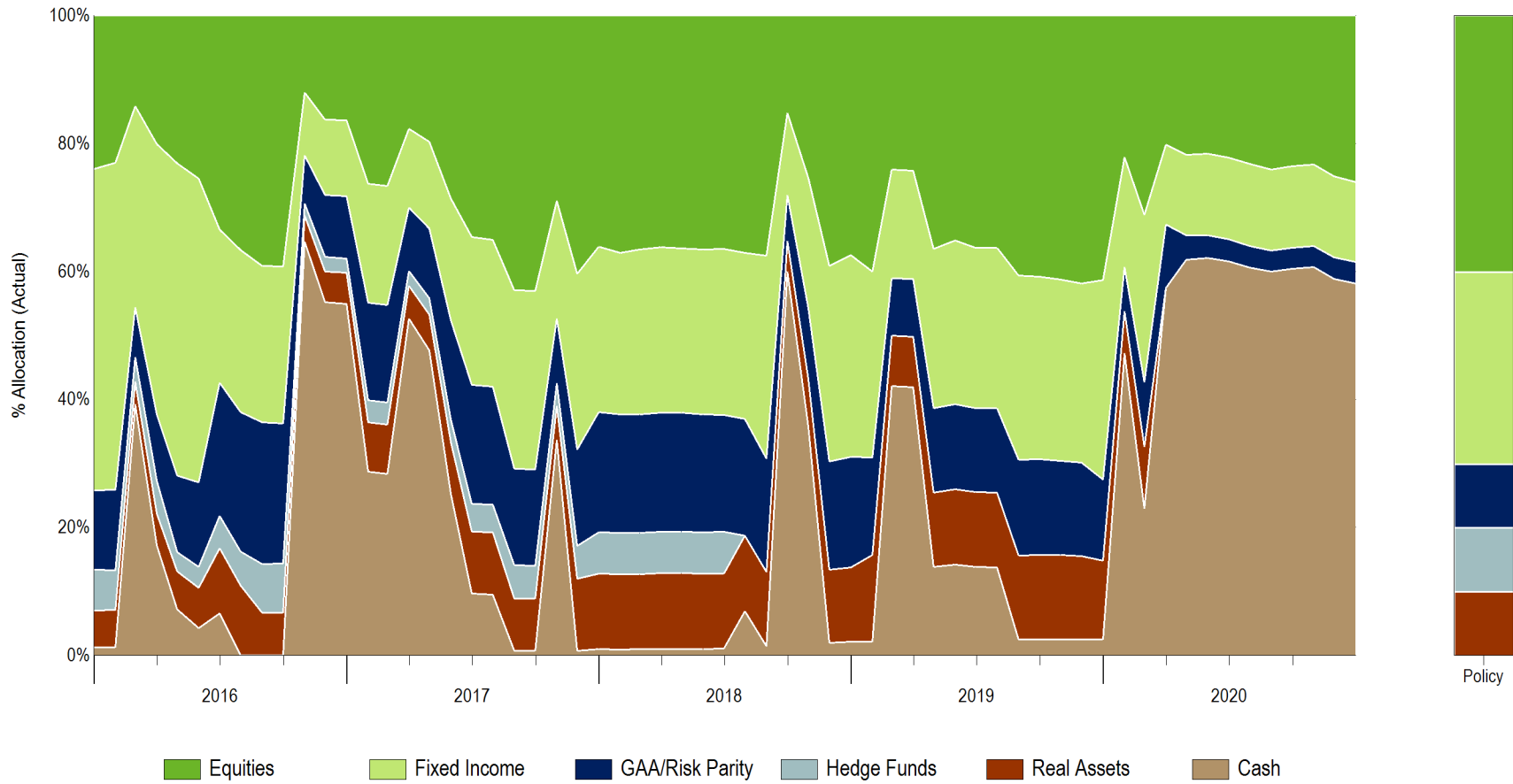
Asset Allocation vs. Target				
	Current	Policy	Current	Net Asset Allocation
Domestic Equity	\$2,718,342	13.0%	29.4%	30.8%
International Equity	\$2,141,764	6.0%	23.1%	24.2%
Emerging Markets Equity	\$788,344	6.0%	8.5%	9.2%
Global Equity	--	15.0%	--	--
Core Fixed Income	\$1,638,190	7.5%	17.7%	22.6%
High Yield	--	--	--	0.2%
TIPS	--	7.5%	--	--
Multi-Sector Fixed Income	--	5.0%	--	--
Non-US Developed Bonds	--	--	--	1.0%
Emerging Market Debt	--	--	--	3.0%
GAA/Risk Parity	\$733,296	10.0%	7.9%	--
Hedge Funds	--	10.0%	--	--
Absolute Return	\$1,080,693	10.0%	11.7%	--
Real Assets	--	10.0%	--	--
Cash	\$161,058	--	1.7%	9.1%
<b>Total</b>	<b>\$9,261,685</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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

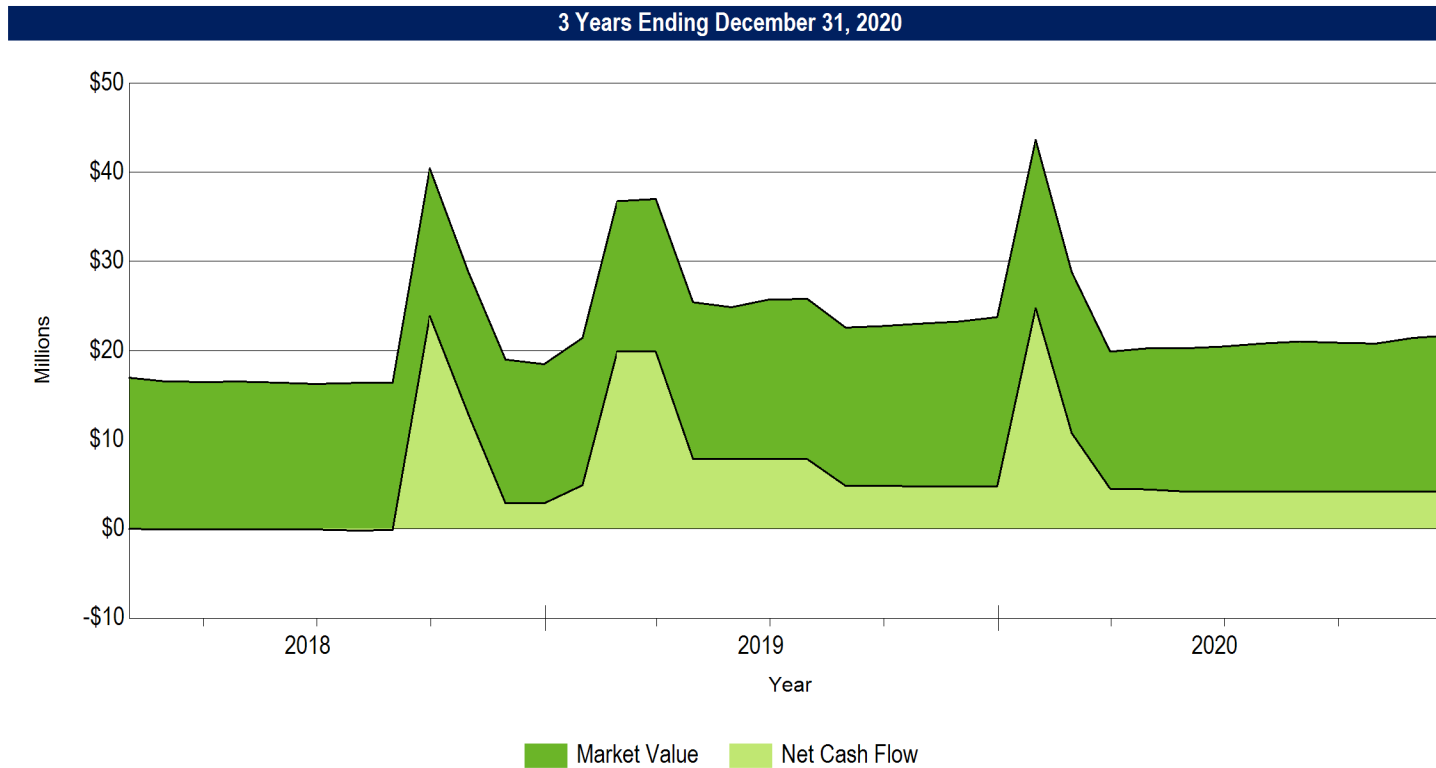


# TOTAL FUND ASSET ALLOCATION HISTORY

Asset Allocation History



# TOTAL FUND ASSET GROWTH SUMMARY



	Last Three Months	Fiscal Year-To-Date	One Year	Three Years
Beginning Market Value	\$20,879,020	\$20,455,158	\$23,750,387	\$16,466,044
Contributions	\$10,919	\$20,116	\$43,242,395	\$95,111,334
Withdrawals	-\$16,600	-\$31,039	-\$43,844,764	-\$90,949,757
Net Cash Flow	-\$5,682	-\$10,923	-\$602,369	\$4,161,577
Net Investment Change	\$844,037	\$1,273,140	-\$1,430,644	\$1,089,754
Ending Market Value	\$21,717,375	\$21,717,375	\$21,717,375	\$21,717,375



# INVESTMENT MANAGER - DUE DILIGENCE STATUS

Investment Options	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
Acadian Emerging Markets Equity	Loss of Personnel: Acadian PM Departure	FYI

Investment Options	Commentary	NEPC Rating
Acadian Emerging Markets Equity	Acadian announced the departure of Asha Mehta, SVP and PM, in their latest consultant and client updates. The departure is described as amicable given differences in her vision of what she wanted to focus on (Frontier) vs. what the firm wanted her to focus on (ESG). She is staying on in an advisory role in the meantime. While Acadian markets their quantitative strategies as being developed and run by the whole team, we know Asha has been impactful on the Frontier and EM Small Cap fronts. We have had multiple follow up conversations and did not find any major cause for concern.	1



# DUE DILIGENCE MONITOR

## NEPC Due Diligence Status Key

<b>No Action</b>	Informational items have surfaced; no action is recommended.
<b>Watch</b>	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.
<b>Hold</b>	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.
<b>Client Review</b>	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.
<b>Terminate</b>	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.



# TOTAL FUND SUMMARY

NEPC, LLC

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## Eastern Michigan University - Board of Regents

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Board of Regents Total Composite</b>	<b>21,717,375</b>	<b>100.0</b>	<b>4.0</b>		<b>6.1</b>		<b>-2.4</b>		<b>2.4</b>		<b>4.3</b>		<b>4.0</b>		<b>4.7</b>	<b>Apr-09</b>
<i>Allocation Index</i>			4.2	--	6.4	--	3.6	--	5.3	--	6.0	--	--	--	--	Apr-09
<b>Short Term Investment Pool</b>	<b>12,455,689</b>	<b>57.4</b>	<b>0.0</b>		<b>0.0</b>		<b>0.4</b>		<b>1.0</b>		<b>0.7</b>		<b>0.4</b>		<b>0.3</b>	<b>Apr-09</b>
<i>91 Day T-Bills</i>			0.0	--	0.0	--	0.5	--	1.5	--	1.1	--	0.6	--	0.5	Apr-09
Northern Inst Govt Select MMKT	12,455,689	57.4	0.0		0.0		0.4		0.5		0.4		0.2		0.2	Nov-09
<i>91 Day T-Bills</i>			0.0	--	0.0	--	0.5	--	1.5	--	1.1	--	0.6	--	0.5	Nov-09
Bank of Ann Arbor Trust Cash	0	0.0	0.0		0.0		0.2		1.1		0.7		0.3		0.3	Nov-09
<i>91 Day T-Bills</i>			0.0	--	0.0	--	0.5	--	1.5	--	1.1	--	0.6	--	0.5	Nov-09
<b>Long Term Investment Pool</b>	<b>9,261,685</b>	<b>42.6</b>	<b>9.9</b>		<b>15.6</b>		<b>6.8</b>		<b>5.4</b>		<b>7.1</b>		<b>6.1</b>		<b>5.9</b>	<b>Apr-09</b>
<i>Long Term Allocation Index</i>			10.5	--	16.5	--	17.2	--	9.2	--	9.7	--	--	--	--	Apr-09
<i>Long Term Balanced Index</i>			8.1	--	13.3	--	12.2	--	7.5	--	8.7	--	6.8	--	6.4	Apr-09
<b>Total Equity</b>	<b>5,648,450</b>	<b>26.0</b>	<b>14.7</b>	<b>47</b>	<b>24.4</b>	<b>45</b>	<b>11.5</b>	<b>60</b>	<b>9.1</b>	<b>52</b>	<b>11.4</b>	<b>47</b>	<b>--</b>	<b>--</b>	<b>9.2</b>	<b>Jan-14</b>
<i>MSCI ACWI</i>			14.7	47	24.0	48	16.3	47	10.1	47	12.3	42	9.1	52	8.9	Jan-14
<i>eV All Global Equity Net Median</i>			14.3		23.6		15.2		9.2		10.9		9.2		8.5	Jan-14
SEG Baxter	2,141,764	9.9	13.5	85	23.4	76	16.2	51	11.3	24	--	--	--	--	11.9	Jul-17
<i>MSCI ACWI ex USA</i>			17.0	44	24.3	72	10.7	64	4.9	63	8.9	62	4.9	80	7.5	Jul-17
<i>eV All ACWI ex-US Equity Net Median</i>			16.4		27.1		16.4		7.0		10.2		6.8		9.5	Jul-17
Acadian Emerging Markets Equity	788,344	3.6	19.5	55	27.5	79	15.2	65	3.5	72	11.4	63	--	--	5.5	Oct-14
<i>MSCI Emerging Markets</i>			19.7	53	31.1	52	18.3	49	6.2	46	12.8	44	3.6	58	6.5	Oct-14
<i>eV Emg Mkts Equity Net Median</i>			19.9		31.2		18.0		5.8		12.4		4.1		6.6	Oct-14
Vanguard Total Stock Market VIPERs	2,718,342	12.5	14.3	66	24.3	60	18.9	41	13.8	37	--	--	--	--	15.8	Nov-16
<i>Russell 3000</i>			14.7	64	25.2	55	20.9	37	14.5	34	15.4	31	13.8	30	16.3	Nov-16
<i>eV All US Equity Net Median</i>			17.8		26.1		14.4		10.3		12.6		11.8		12.5	Nov-16

-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: (40% - MSCI ACWI)(30% - Barclays Aggregate)(10% - 60% MSCI World (Net)/ 40% FTSE WGBI)(10% - HFRI Fund of Funds Composite)(10% - Real Assets Custom Benchmark) as of April 1, 2020  
 -Real Assets Custom Benchmark: (40% - Barclays Aggregate)(30% - Barclays TIPS)(10% - S&P 500)(10% - Barclays High Yield)(10% - JP Morgan EMBI+) as of April 1, 2020.  
 Formerly PIMCO All Asset Index.





## Eastern Michigan University - Board of Regents

# TOTAL FUND PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Fixed</b>	<b>2,818,599</b>	<b>13.0</b>	<b>2.2</b>	<b>88</b>	<b>3.9</b>	<b>89</b>	<b>5.3</b>	<b>76</b>	<b>4.1</b>	<b>79</b>	<b>5.0</b>	<b>69</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jan-14</b>
BBgBarc US Aggregate TR			0.7	98	1.3	98	7.5	54	5.3	50	4.4	84	3.8	58	4.1	Jan-14
eV All Global Fixed Inc Net Median			4.7		8.2		7.7		5.3		5.8		4.3		4.0	Jan-14
BlackRock- SIO	1,080,693	5.0	4.1	1	7.0	2	7.7	79	5.0	94	4.7	89	--	--	3.8	Oct-14
BBgBarc US Aggregate TR			0.7	99	1.3	99	7.5	84	5.3	82	4.4	95	3.8	98	3.9	Oct-14
eV US Core Plus Fixed Inc Net Median			2.1		3.8		8.4		5.9		5.3		4.7		4.5	Oct-14
Baird - Core Bond	1,638,190	7.5	1.1	45	2.1	49	8.6	36	5.8	31	5.0	23	--	--	4.2	Dec-14
BBgBarc US Aggregate TR			0.7	81	1.3	86	7.5	75	5.3	70	4.4	75	3.8	74	3.7	Dec-14
eV US Core Fixed Inc Net Median			1.0		2.1		8.2		5.6		4.7		4.1		3.9	Dec-14
US Treasury	99,717	0.5														
<b>GAA/ Risk Parity</b>	<b>794,637</b>	<b>3.7</b>	<b>6.5</b>	<b>75</b>	<b>4.1</b>	<b>99</b>	<b>-9.0</b>	<b>99</b>	<b>-3.1</b>	<b>99</b>	<b>0.3</b>	<b>98</b>	<b>--</b>	<b>--</b>	<b>-0.5</b>	<b>Dec-14</b>
60% MSCI World (Net) / 40% FTSE WGBI			9.5	39	16.1	31	14.3	17	8.7	10	9.5	16	7.0	20	7.2	Dec-14
eV Global TAA Net Median			8.7		13.9		8.9		5.0		6.6		5.7		4.8	Dec-14
William Blair Macro Allocation	733,296	3.4	6.5	75	4.1	99	-3.2	94	-0.1	94	--	--	--	--	0.6	Aug-17
60% MSCI World (Net) / 40% FTSE WGBI			9.5	39	16.1	31	14.3	17	8.7	10	9.5	16	7.0	20	9.2	Aug-17
eV Global TAA Net Median			8.7		13.9		8.9		5.0		6.6		5.7		5.7	Aug-17
AQR Global Market and Alternative Premia Offshore Fund	61,341	0.3														

- AQR GMAP value represents a holdback.



**Eastern Michigan University - Board of Regents**

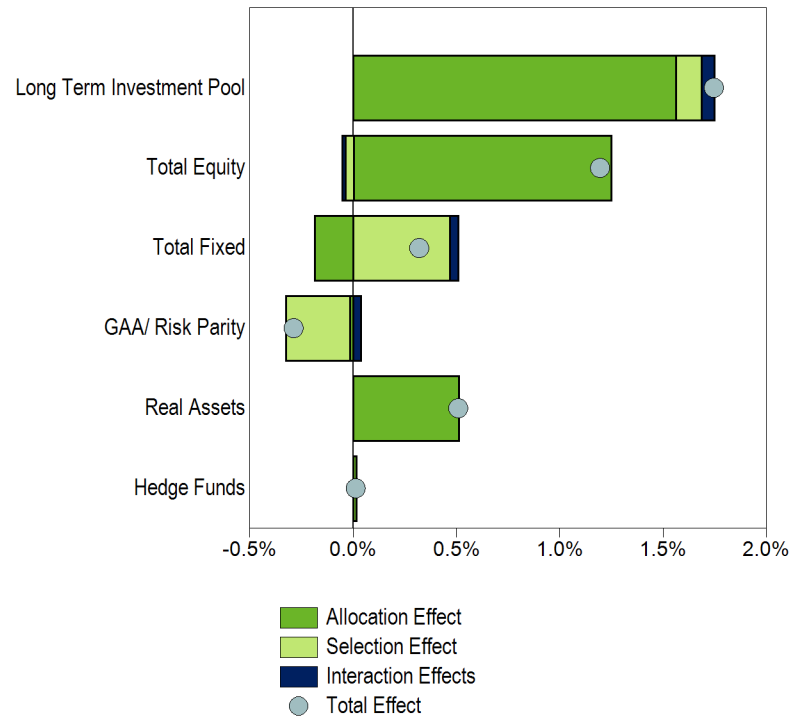
**TOTAL FUND ASSET GROWTH SUMMARY**

	Quarter Ending December 31, 2020					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
Acadian Emerging Markets Equity	\$659,746	\$0	-\$1,249	-\$1,249	\$129,847	\$788,344
AQR Global Market and Alternative Premia Offshore Fund	\$61,341	\$0	\$0	\$0	\$0	\$61,341
Baird - Core Bond	\$1,620,830	\$0	\$0	\$0	\$17,360	\$1,638,190
Bank of Ann Arbor Trust Cash	\$0	\$0	\$0	\$0	\$0	\$0
BlackRock- SIO	\$1,037,971	\$0	\$0	\$0	\$42,722	\$1,080,693
Northern Inst Govt Select MMKT	\$12,445,797	\$10,919	-\$1,586	\$9,333	\$560	\$12,455,689
SEG Baxter	\$1,886,723	\$0	\$0	\$0	\$255,041	\$2,141,764
US Treasury	\$99,633	\$0	\$0	\$0	\$84	\$99,717
Vanguard Total Stock Market VIPERs	\$2,378,549	\$0	\$0	\$0	\$339,793	\$2,718,342
William Blair Macro Allocation	\$688,430	\$0	\$0	\$0	\$44,866	\$733,296
<b>Total</b>	<b>\$20,879,020</b>	<b>\$10,919</b>	<b>-\$2,835</b>	<b>\$8,084</b>	<b>\$830,271</b>	<b>\$21,717,375</b>



# LONG TERM INVESTMENT POOL

**Attribution Effects**  
3 Months Ending December 31, 2020

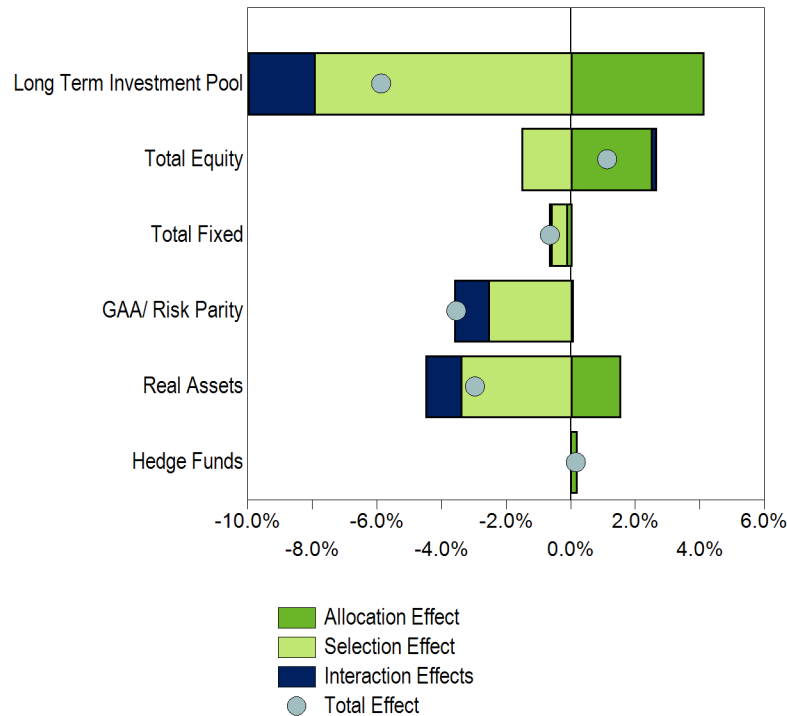


Attribution Summary							
3 Months Ending December 31, 2020							
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Equity	14.7%	14.7%	0.0%	0.0%	1.2%	0.0%	1.2%
Total Fixed	2.2%	0.7%	1.5%	0.5%	-0.2%	0.0%	0.3%
GAA/ Risk Parity	6.5%	9.5%	-3.0%	-0.3%	0.0%	0.0%	-0.3%
Real Assets	--	--	--	--	0.5%	--	--
Hedge Funds	--	--	--	--	0.0%	--	--
<b>Total</b>	<b>9.9%</b>	<b>8.1%</b>	<b>1.7%</b>	<b>0.1%</b>	<b>1.6%</b>	<b>0.1%</b>	<b>1.7%</b>



# LONG TERM INVESTMENT POOL

## Attribution Effects 1 Year Ending December 31, 2020



## Attribution Summary 1 Year Ending December 31, 2020

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Equity	11.5%	15.5%	-3.9%	-1.5%	2.6%	0.2%	1.3%
Total Fixed	5.3%	6.4%	-1.1%	-0.5%	0.0%	-0.1%	-0.6%
GAA/ Risk Parity	-9.0%	14.3%	-23.4%	-2.6%	0.0%	-1.1%	-3.6%
Real Assets	--	-2.9%	--	-3.4%	1.5%	-0.8%	-2.8%
Hedge Funds	--	--	--	--	0.2%	--	--
<b>Total</b>	<b>6.7%</b>	<b>12.1%</b>	<b>-5.5%</b>	<b>-7.9%</b>	<b>4.3%</b>	<b>-1.9%</b>	<b>-5.5%</b>



# INVESTMENT POLICY AND ASSET ALLOCATION

NEPC, LLC

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# REVISED INVESTMENT POLICY – LONG TERM INVESTMENT POOL

ASSET CLASS	PERMISSIBLE RANGE %	TARGET BENCHMARK
<del>Equity</del> <b>Total Equity</b>	20%-60%	MSCI ACWI Index
<del>Domestic All-Cap Equities</del>	<del>5%—40%</del>	
<del>International Equities</del>	<del>0%—30%</del>	
<del>Emerging International Equities</del>	<del>0%—8%</del>	
<del>Global Equity</del>	<del>10%—30%</del>	
Fixed Income	<del>20%-60%</del> <b>20% - 80%</b>	<del>Custom Benchmark<sup>(†)</sup></del>
<del>Core Fixed Income</del> <b>High Quality</b>	<del>0%—60%</del> <b>0% - 80%</b>	<b>Manager Specific</b>
<del>Absolute Return Fixed Income</del> <b>Return Seeking</b>	<del>0%—15%</del> <b>0% - 50%</b>	<b>Manager Specific</b>
<del>Emerging Market Debt</del>	<del>0%—8%</del>	-
<del>Global Multi-Sector Fixed Income</del>	<del>0%—10%</del>	-
<del>Treasury Inflation Protected Securities (TIPS)</del>	<del>0—15%</del>	-
<del>Global Asset Allocation / Risk Parity</del>	<del>0%—30%</del>	<del>60% MSCI World / 40% Citi-WGBI</del>
Alternatives	0% - 25%	
Hedge Funds	0% - 20%	HFRI Fund of Funds Composite Index
Real Assets	0% - 15%	Custom Benchmark
<b>Global Asset Allocation / Risk Parity</b>	<b>0% - 25%</b>	<b>Manager Specific</b>

- Our goal is to simplify the portfolio and the policy revisions allow for more flexibility and liquidity
- We feel the changes would benefit the Board of Regents through a variety of market environments



# REVISED ASSET ALLOCATION – LONG TERM INVESTMENT POOL

Asset Class	Current Targets	Revised
US Large-Cap Equity	15	32
Global Equity	14.5	
Emerging Market Equity	6	9
Non-US Developed Equity	9.5	13
<b>Equity</b>	<b>45</b>	<b>54</b>
US TIPS	7.5	5
US Treasury Bond		5
US Aggregate Bond	10	20
Absolute Return Fixed Income	12.5	10
Global Multi-Sector Fixed Income	5	
<b>Rates/Credit</b>	<b>35</b>	<b>40</b>
<b>Real Assets</b>	<b>10</b>	
<b>Global Asset Allocation Strategy</b>	<b>10</b>	<b>6</b>
Expected Return 10 Yr (Geometric)	4.60%	4.50%
Standard Deviation (Asset)	10.90%	10.80%
Sharpe Ratio (10 Years)	0.35	0.34

- **Per NEPC Research guidance, we would like to introduce more safe haven assets to provide a backstop to future market volatility**
  - Additionally, the Treasury positions can be viewed as a source for dry powder to leg back into the markets
- **We also recommend terminating William Blair Macro Allocation in favor of Treasuries and re-introducing PIMCO All Asset**
  - PIMCO All Asset adds diversification through its rotational positioning across asset classes, including allocations to Real Assets and Credit
  - We aim to place this strategy in the Global Asset Allocation segment of the portfolio



# REVISED ASSET ALLOCATION – LONG TERM INVESTMENT POOL

Asset Class	Portfolio Weight (%)	Recommended Implementation
US Large-Cap Equity	32	Vanguard Total Stock Market VIPERs*
Emerging Market Equity	9	Acadian Emerging Markets Equity*
Non-US Developed Equity	13	SEG Baxter*
US TIPS	5	Passive Index Exposure
US Treasury Bond	5	Passive Index Exposure
US Aggregate Bond	20	Baird - Core Bond*
Absolute Return Fixed Income	10	Blackrock Strategic Income Opportunities*
Global Asset Allocation Strategy	6	PIMCO All Asset**

\*Current manager

\*\*Held in portfolio until March 2020





# APPENDIX

NEPC, LLC

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# CORE GEOMETRIC RETURN ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Volatility
	Cash	0.8%	1.9%	0.6%
	US Inflation	2.0%	2.2%	-
Equity	US Large-Cap Equity	5.4%	6.3%	16.6%
	Non-US Developed Equity	5.9%	6.5%	19.7%
	Emerging Market Equity	7.5%	8.4%	28.7%
	<i>Global Equity*</i>	<i>6.2%</i>	<i>7.0%</i>	<i>18.1%</i>
	<i>Private Equity*</i>	<i>9.3%</i>	<i>10.1%</i>	<i>24.8%</i>
Fixed Income	US Treasury Bond	0.9%	2.0%	5.3%
	<i>US Aggregate Bond*</i>	<i>1.4%</i>	<i>2.7%</i>	<i>5.7%</i>
	US TIPS	1.0%	2.1%	5.8%
	US High Yield Corporate Bond	2.9%	5.0%	11.5%
	<i>Private Debt*</i>	<i>6.1%</i>	<i>7.5%</i>	<i>11.9%</i>
Real Assets	Commodity Futures	0.9%	3.3%	18.5%
	US REIT	5.5%	6.7%	21.4%
	Gold	2.9%	3.7%	16.4%
	Core Real Estate	4.4%	5.6%	15.0%
	Private Real Assets - Infrastructure	5.4%	6.6%	12.5%
Multi-Asset	<i>60% S&amp;P 500 &amp; 40% US Aggregate</i>	<i>4.1%</i>	<i>5.1%</i>	<i>10.3%</i>
	<i>60% MSCI ACWI &amp; 40% US Aggregate</i>	<i>4.6%</i>	<i>5.6%</i>	<i>11.19%</i>
	<i>Hedge Fund*</i>	<i>4.0%</i>	<i>5.2%</i>	<i>8.7%</i>

\*Calculated as a blend of other asset classes



## Disclaimers and Disclosures

- The opinions presented herein represent the good faith views of NEPC as of the date of this presentation and are subject to change at any time.
- The comments provided herein should be considered a general overview and do not constitute investment advice, are not predictive of any future market performance, are not provided as a sales or advertising communication, and do not represent an offer to sell or a solicitation of an offer to buy any security.
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# 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**



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- **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.**
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