# INVESTMENT PERFORMANCE SUMMARY QUARTER ENDING JUNE 30, 2020

# OFFICE OF THE STATE TREASURER & CASH MANAGEMENT POLICY BOARD

June 30, 2020
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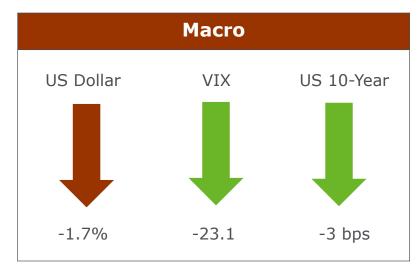


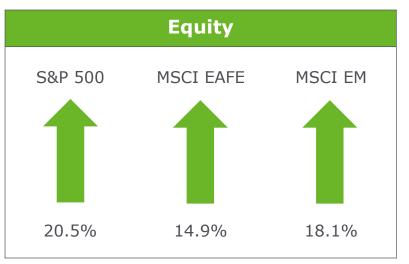


## **MARKET OVERVIEW**

NEPC, LLC —

#### **MARKET OVERVIEW**





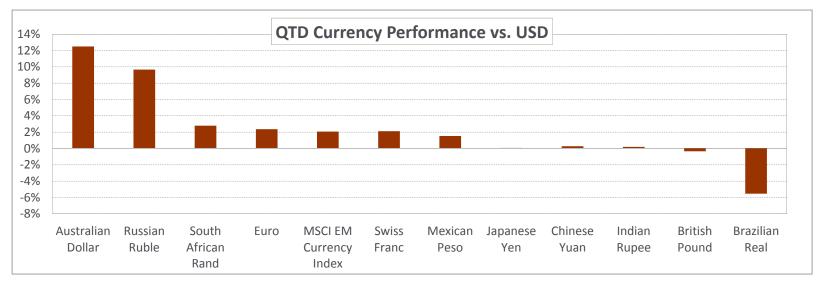




Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), 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



## **MACRO OVERVIEW**



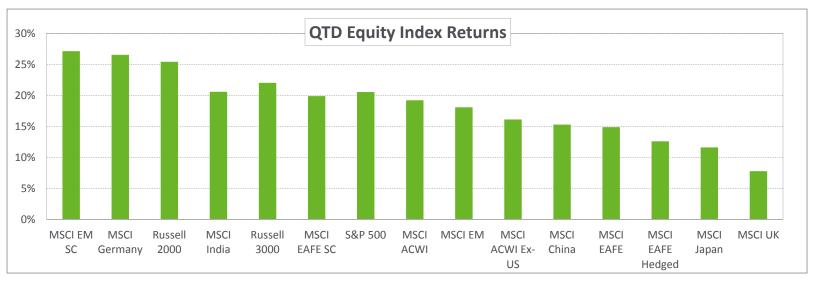
Source: FactSet

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	0.00% - 0.25%	0.2%	The Fed provided additional liquidity to small businesses and municipalities and expanded asset purchases from ETFs to include single name corporate bonds
European Central Bank	0.00% 0.1%		The ECB maintained its current benchmark rates and expanded its QE program by €600 billion to roughly €1.35 trillion
Bank of Japan	-0.10%	0.0%	The BoJ announced plans to purchase additional ¥60 trillion worth of longer-dated government bonds, bringing the total QE program to ¥213 trillion

Source: FactSet



## **EQUITY OVERVIEW**



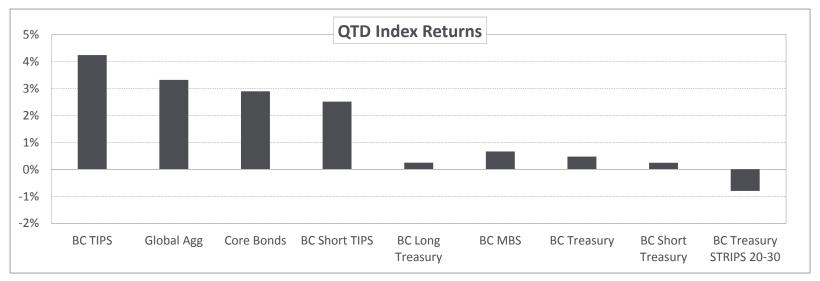
Source: S&P, MSCI, Russell, FactSet

Russell 3000 QTD Sector Returns	QTD	YTD
Technology	31.2%	15.7%
Health Care	16.9%	2.1%
Consumer Discretionary	30.9%	4.2%
Consumer Staples	9.3%	-6.9%
Energy	33.2%	-35.1%
Materials & Processing	27.0%	-8.4%
Producer Durables	18.3%	-14.5%
Financial Services	16.1%	-16.8%
Utilities	3.8%	-11.5%





## **RATES OVERVIEW**



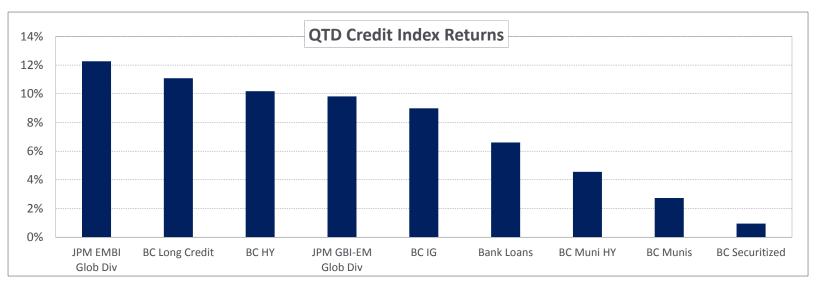
Source: S&P, MSCI, Russell, FactSet

	Previous Quarter Yield	Current Quarter Yield	Δ
US 10-Year	0.68%	0.65%	-0.03%
US 30-Year	1.32%	1.41%	0.09%
US Real 10-Year	-0.17%	-0.68%	-0.51%
German 10-Year	-0.49%	-0.48%	0.01%
Japan 10-Year	0.02%	0.02%	0.00%
China 10-Year	2.61%	2.90%	0.29%
EM Local Debt	5.36%	4.51%	-0.85%

Source: Barclays, JPM, FactSet



## **CREDIT OVERVIEW**



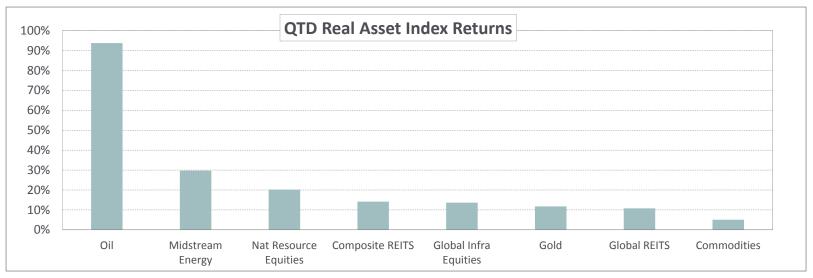
Source: S&P, MSCI, Russell, JPM, FactSet

	Previous Quarter Spread (bps)	Current Quarter Spread (bps)	Δ	Median
BC IG Credit	272	150	-122	138
BC Long Credit	279	202	-77	176
BC Securitized	72	75	3	49
BC High Yield	880	626	-254	479
Muni HY	476	449	-27	639
JPM EMBI Glob Div	626	474	-152	341
Bank Loans - Libor	736	582	-154	437

Source: Barclays, JPM, FactSet; Medians calculated since 11/30/2000



## **REAL ASSETS OVERVIEW**

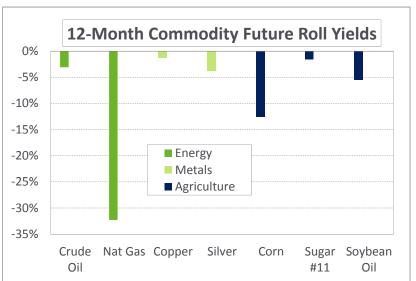


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Source: S&P, MSCI, Russell, FactSet

Source: FactSet

Real Asset Yields	Previous Quarter	Current Quarter
Midstream Energy	11.3%	8.6%
Core Real Estate*	4.5%	4.5%
Composite REITs	5.8%	4.3%
Global REITs	6.1%	5.0%
Global Infrastructure Equities	4.3%	4.7%
Natural Resource Equities	4.8%	4.7%
Commodity Index Roll Yield	-14.3%	-6.8%







# **EXECUTIVE SUMMARY**

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NEPC, LLC —

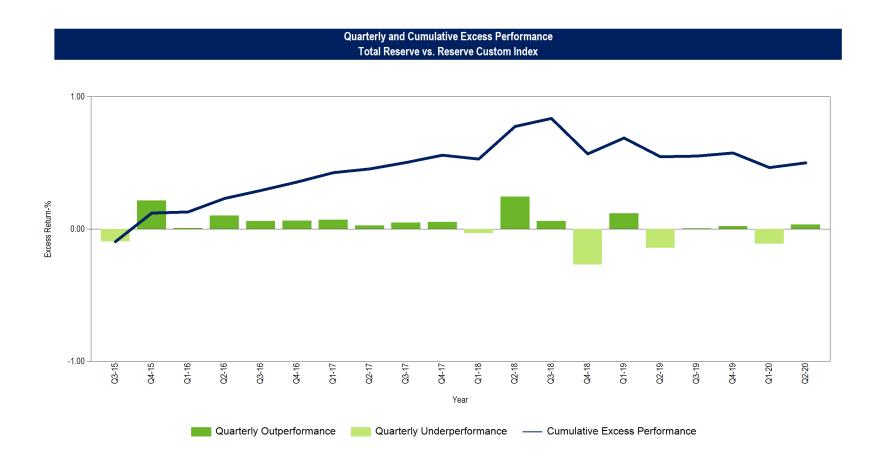
## **TOTAL FUND PERFORMANCE SUMMARY**

	Market Value	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	Inception	Inception Date
Delaware Total Consolidation	\$3,849,034,640	1.63%	4.44%	6.17%	4.09%	2.94%	2.37%	Jan-05
Total Liquidity & Reserve	\$2,922,567,178	1.62%	4.99%	6.60%	4.15%		3.71%	Nov-16
Total Liquidity	\$910,739,015	0.83%	1.30%	2.53%	2.22%	1.68%	1.85%	Jan-05
eV US Cash Management Net Median		0.22%	0.56%	1.62%	1.84%	1.35%	1.50%	Jan-05
Total Reserve	\$2,011,828,163	1.86%	6.02%	7.73%	4.93%	3.45%	2.80%	Jan-05
Reserve Custom Index		1.82%	6.10%	7.78%	4.91%	3.34%	2.99%	Jan-05
eV US Interm Duration Fixed Inc Net Median		3.70%	4.89%	6.80%	4.30%	3.46%	4.00%	Jan-05
Total Endowment	\$71,593,839	14.53%	-3.43%	2.35%	5.07%		5.21%	Aug-15
Endowment Custom Index		12.61%	-0.70%	5.73%	6.50%	6.14%	5.95%	Aug-15
eV Global Balanced Net Median		12.19%	-4.67%	-0.47%	3.40%	5.72%	5.64%	Aug-15

Fiscal year ends June 30

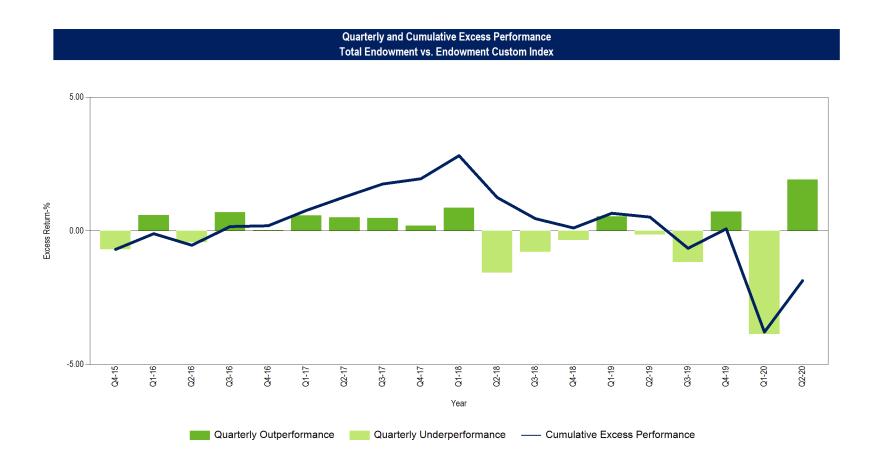


## **TOTAL FUND PERFORMANCE SUMMARY**



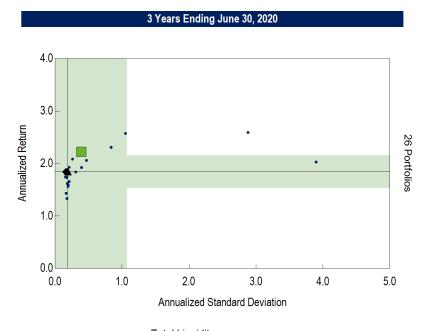


## **TOTAL FUND PERFORMANCE SUMMARY**



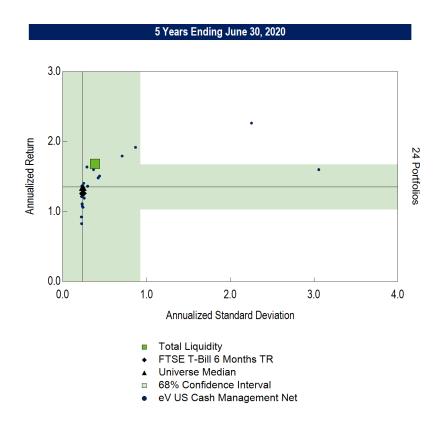


## LIQUIDITY RISK/RETURN - 3 & 5 YEARS



- Total Liquidity
- ◆ FTSE T-Bill 6 Months TR
- ▲ Universe Median
- 68% Confidence Interval
- eV US Cash Management Net

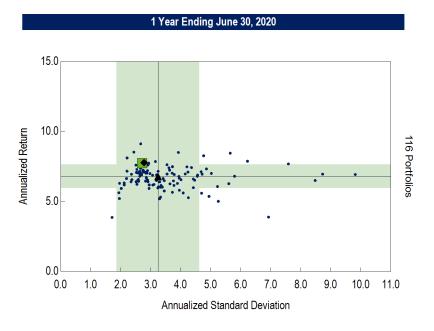
3 Years Ending June 30, 2020					
Anlzd Ret Anlzd Std Dev Sharpe Rat					
Total Liquidity	2.22%	0.39%	1.45		



5 Years Ending June 30, 2020					
	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio		
Total Liquidity	1.68%	0.38%	1.43		

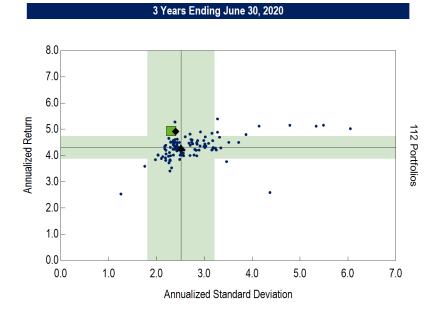


## **RESERVE RISK/RETURN - 1 & 3 YEARS**



- Total Reserve
- Reserve Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Interm Duration Fixed Inc Net

1 Year Ending June 30, 2020					
Anlzd Ret Anlzd Std Dev Sharpe Ratio					
Total Reserve	7.73%	2.71%	2.34		
Reserve Custom Index	7.78%	2.78%	2.30		

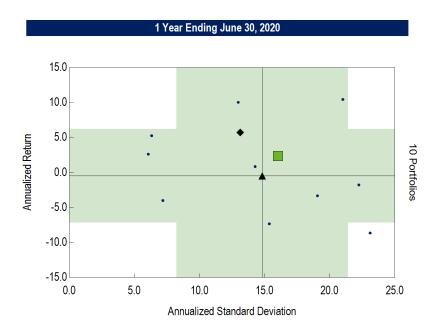


- Total Reserve
- · Reserve Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Interm Duration Fixed Inc Net

3 Years Ending June 30, 2020					
Anlzd Ret Anlzd Std Dev Sharpe Rat					
Total Reserve	4.93%	2.31%	1.43		
Reserve Custom Index	4.91%	2.40%	1.36		

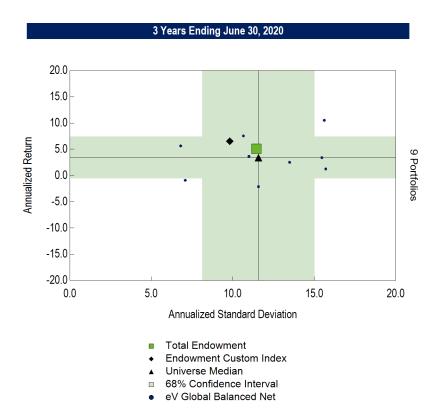


## **ENDOWMENT RISK/RETURN - 1 & 3 YEARS**



- Total Endowment
- Endowment Custom Index
- Universe Median
- 68% Confidence Interval
- eV Global Balanced Net

1 Year Ending June 30, 2020					
Anlzd Ret Anlzd Std Dev Sharpe Ratio					
Total Endowment	2.35%	16.04%	0.07		
Endowment Custom Index	5.73%	13.13%	0.34		



3 Years Ending June 30, 2020						
Anlzd Ret Anlzd Std Dev Sharpe Ratio						
Total Endowment	5.07%	11.46%	0.30			
Endowment Custom Index	6.50%	9.82%	0.49			



## **TOTAL FUND PERFORMANCE DETAIL - NET OF FEES**

	Market Value (\$)	% of Portfolio	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Delaware Total Consolidation</b>	3,849,034,640	100.00	1.63		4.44		6.17		4.09		2.94		2.37	Jan-05
Delaware Total Consolidation ex. CARES	2,994,161,017	77.79	1.92		4.74		6.47		4.19		3.00		2.38	Jan-05
Total Liquidity & Reserve	2,922,567,178	75.93	1.62		4.99		6.60		4.15				3.71	Nov-16
Total Liquidity	910,739,015	23.66	0.83	22	1.30	5	2.53	9	2.22	11	1.68	12	1.85	Jan-05
eV US Cash Management Net Median			0.22		0.56		1.62		1.84		1.35		1.50	Jan-05
PFM Asset Management	456,492,365	11.86	0.68	27	1.28	7	2.51	11	2.22	12	1.73	11	1.38	Jun-13
Wilmington Liquidity	454,246,650	11.80	0.98	16	1.32	4	2.54	7	2.20	12	1.63	15	4.14	Jan-85
Total Reserve	2,011,828,163	52.27	1.86	95	6.02	4	7.73	8	4.93	7	3.45	52	2.80	Jan-05
Reserve Custom Index			1.82	95	6.10	4	7.78	8	4.91	7	3.34	63	2.99	Jan-05
eV US Interm Duration Fixed Inc Net Median			3.70		4.89		6.80		4.30		3.46		4.00	Jan-05
JPM Intermediate	477,223,108	12.40	1.34	80	3.20	23	4.47	24	3.02	36	2.29	45	1.89	Jun-13
J.P. Morgan Custom Index			0.69	93	2.93	38	4.18	43	2.84	55	2.11	62	1.77	Jun-13
Blackrock Financial Mangement	486,370,073	12.64	1.57	77	4.09	4	5.48	6					4.77	Mar-18
Blackrock Custom Index			1.03	88	4.03	5	5.35	8	3.50	7	2.51	32	4.66	Mar-18
Chandler Asset Management	526,857,829	13.69	3.40	83	8.29	3	10.48	5	6.47	2	4.40	49	3.37	Jun-13
Lazard Financial Management	521,377,153	13.55	1.08	99	8.34	3	10.31	8					8.55	Mar-18
Chandler/Lazard Custom Index			2.78	92	8.77	2	10.84	4	6.67	2	4.38	51	8.79	Mar-18
Total Endowment	71,593,839	1.86	14.53	36	-3.43	37	2.35	35	5.07	29			5.21	Aug-15
Endowment Custom Index			12.61	45	-0.70	26	5.73	22	6.50	20	6.14	31	5.95	Aug-15
eV Global Balanced Net Median			12.19		-4.67		-0.47		3.40		5.72		5.64	Aug-15
SEI Funds	25,440,594	0.66	14.95	33	-1.15	28	5.31	23	6.18	22			6.58	Aug-15
MSIFT Global Strategist	6	0.00	13.61	40	-6.26	59	-1.08	53	3.59	41			3.98	Aug-15
JP Morgan Diversified	5	0.00	14.96	33	-3.06	34	2.60	34	5.42	27			5.47	Aug-15
Cash Account	46,153,234	1.20	0.01	95	0.34	93	1.27	94	1.41	97			0.96	Aug-15

Notes: Net of Fees. Results for periods longer than one year are annualized.

Performance history through 12/2015 is from BNY Mellon. NEPC Performance start date is January 2016. Fiscal Year end is June 30.

Reserve Custom Index consists of 25% ICE BofAML 1-5 Yrs AAA-A US Corp & Govt TR / 25% ICE BofAML 1-3 Yrs AAA-A US Corp & Govt / 50% ICE BofAML US Gov/Credit 5-10 Yrs A Rated and Above, as of 4/1/2018. Prior to this, the index comprised 75% ICE BofAML 1-5 Yrs AAA-A US Corp & Govt TR / 25% ICE BofAML 6 Months US T-Bills TR.

Endowment Custom Index consists of 60% MSCI World Index/40% BBgBarc US Aggregate.

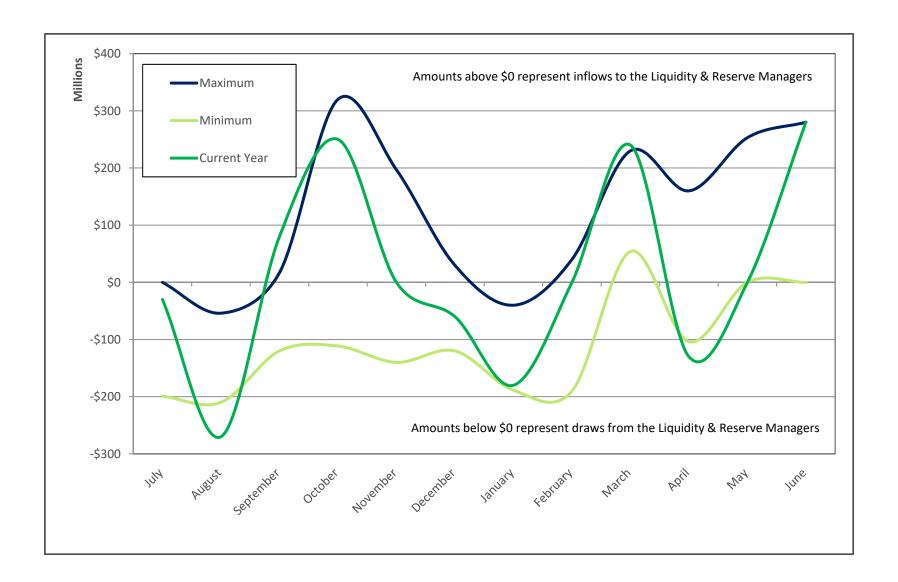
BlackRock Custom Index consists of 100% ICE BofAML 1-5 Yrs AAA-A US Corp & Govt TR.

J.P. Morgan Custom Index consists of 100% ICE BofAML 1-3 Yrs AAA-A US Corp & Govt.

Chandler/Lazard Custom Index consists of ICE BofAML US Gov/Credit 5-10 Yrs A Rated and Above.



## **CASH FLOWS - FISCAL YEAR 2020**





## **MONTH ENDED JUNE 30, 2020**

							_	in Market Va										
						Month	En	ding June 30	, 202	20								
		Beginning										Unrealized Gain		Realized Gain	Å	Amortization /	Е	nding Market
		Market Value		Contributions		Withdrawals		Fees		Income		(Loss)		(Loss)		Accretion		Value
Liquidity Managers																		
PFM Asset Management	\$	276,240,696	\$	180,000,000	ċ	_	Ś	_	\$	528,454	ċ	(152,108)	ċ	3,393	ċ	(128,069)	ċ	456,492,365
Wilmington Liquidity	\$		\$		\$	-	\$	-	\$	402,350		92,976		935		(91,469)		454,246,650
Total Liquidity Managers	\$		\$		\$	-	\$	-	\$	930,804	_	(59,132)	•	4,328	_	(219,538)		910,739,015
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Reserve Managers																		
BlackRock Financial Management	\$	505,328,223	\$	-	\$	(20,000,000)	\$	-	\$	786,742	\$	(1,200,719)	\$	1,586,540	\$	(130,713)	\$	486,370,073
Chandler Asset Management	\$	543,318,512	\$	-	\$	(20,000,000)	\$	-	\$	989,625	\$	685,852	\$	1,871,978	\$	(8,138)	\$	526,857,829
JPM Intermediate	\$	496,304,880	\$	-	\$	(20,000,000)	\$	-	\$	731,285	\$	(742,712)	\$	985,023	\$	(55,369)	\$	477,223,108
Lazard Asset Management	\$	539,643,086	\$	-	\$	(20,000,000)	\$	-	\$	942,966	\$	(6,669,215)	\$	7,402,802	\$	57,514		521,377,153
Total Reserve Managers	\$	2,084,594,701	\$	-	\$	(80,000,000)	\$	-	\$	3,450,618	\$	(7,926,795)	\$	11,846,343	\$	(136,705)	\$ 2	2,011,828,163
Total Liquidity & Reserve Managers	\$ :	2,634,677,254	\$	360,000,000	\$	(80,000,000)	\$	-	\$	4,381,422	\$	(7,985,927)	\$	11,850,671	\$	(356,242)	\$ 2	2,922,567,178
110 W.15.1																		
Land & Water Endowment		25 220 256	_		_	(536,000)	_			40.633	,	477.065	_	440.754	_		_	25 440 504
SEI Funds	\$	25,330,356	-	-	\$	(536,000)	•	-	\$	19,622	-	477,865		148,751		-	\$	25,440,594
MSIFT Global Strategist	\$	22,369,849	\$	-	\$	(22,833,413)	•	-	\$	464		1,182,873	•	(719,767)		-	\$	6
JP Morgan Diversified	\$		\$	-	\$	(24,390,945)	•	-	\$	5	\$	,,-	\$	(1,593,485)		-	\$	5
Cash Account	\$	426	\$	47,760,358	\$	(1,608,000)		-	\$	449	\$		\$	-	\$	-	\$	46,153,234
Total Land & Water Endowment	\$	71,495,718	\$	47,760,358	\$	(49,368,358)	Ş	-	\$	20,540	Ş	3,850,081	\$	(2,164,500)	\$	-	Ş	71,593,839
CARES																		
PFM CARES	\$	463,696,601	\$	-	\$	(36,294,844)	\$	-	\$	34,957	\$	-	\$	-	\$	-	\$	427,436,714
Wilmington CARES	\$		\$	-	\$	(36,294,844)		-	\$	34,957			\$	-	\$	-	\$	427,436,909
Total CARES	\$	927,393,397	_	-	\$	(72,589,688)	_	-	\$	69,914		-	\$	-	\$	-	\$	854,873,623
Total	\$	3,633,566,369	\$	407,760,358	\$	(201,958,046)	\$	-	\$	4,471,876	\$	(4,135,846)	\$	9,686,171	\$	(356,242)	\$ 3	,849,034,640

#### Footnotes:

Values provided by Northern Trust and are reconciled to the audited custodian reports. Income is a product of income received during the month plus accrued income.

Numbers may not add due to rounding.



## **FISCAL YEAR TO DATE**

Change in Market Value Fiscal Year-to-Date Through June 30, 2020																
		Beginning Market Value		Contributions		Withdrawals	Fees	Income		Jnrealized Gain (Loss)	ļ	Realized Gain (Loss)		ization / .ccretion	E	Inding Market Value
		Warket Value		Contribations		Witharawais	1003	meom	_	(2033)		(2033)		icci c ti oii		Value
Liquidity Managers																
PFM Asset Management	\$	379,459,861	\$	489,999,900	\$	(420,000,200) \$	(255,514) \$	6,155,547	\$	661,062	\$	593,346	\$ (	121,638)	\$	456,492,365
Wilmington Liquidity	\$	377,298,107	\$	490,000,000	\$	(420,000,000) \$	(263,926) \$	5,319,713	\$	474,531	\$	708,435	\$	709,788	\$	454,246,650
Total Liquidity Managers	\$	756,757,968	\$	979,999,900	\$	(840,000,200) \$	(519,440) \$	11,475,260	\$	1,135,594	\$	1,301,782	\$	588,151	\$	910,739,015
D																
Reserve Managers					_	(22.222.22) 4	(0.1.1.00=) 4					7.540.550		= 60 046		
BlackRock Financial Management	\$	450,402,164		30,000,000	•	(20,000,000) \$	(314,987) \$	10,367,775			•	7,512,568		568,016)		486,370,073
Chandler Asset Management	\$	465,725,064	•	30,000,000		(20,000,000) \$	(311,087) \$	12,190,831				5,689,540	•	929,978	\$	526,857,829
JPM Intermediate	\$	446,232,523	\$	30,000,000	•	(20,000,000) \$	(351,775) \$	9,772,269				5,526,188				477,223,108
Lazard Asset Management	\$	461,513,160	\$	,,	\$	(20,000,000) \$	(519,147) \$	11,784,213			\$	12,536,152		` ' '		521,377,153
Total Reserve Managers	Ş	1,823,872,911	Ş	120,000,000	\$	(80,000,000) \$	(1,496,996) \$	44,115,088	\$	73,965,700	\$	31,264,448	\$	107,013	\$ 7	2,011,828,163
Total Liquidity & Reserve Managers	\$ :	2,580,630,879	\$	1,099,999,900	\$	(920,000,200) \$	(2,016,436) \$	55,590,348	\$	75,101,293	\$	32,566,230	\$	695,164	\$ 2	2,922,567,178
Land & Water Endowment																
SEI Funds	\$	24,666,596	Ś	26,436	Ś	(554,000) \$	(87,088) \$	638,725	Ś	197,792	Ś	552,133	Ś	_	\$	25,440,594
MSIFT Global Strategist	Ś	23,080,612		26,436	•	(22,851,413) \$	- \$	50,671		,		(348,446)		_	Ś	6
JP Morgan Diversified	\$	23,772,475	•	26,527		(24,409,445) \$	- \$	369,184		•	\$	84,640	•	-	\$	5
Cash Account	\$	413	\$	47,809,120	\$	(1,656,762) \$	- \$	462		· -	\$	-	\$	-	\$	46,153,234
Total Land & Water Endowment	\$	71,520,096	\$	47,888,519	\$	(49,471,620) \$	(87,088) \$	1,059,042	\$	396,561	\$	288,327	\$	-	\$	71,593,839
CARES																
PFM CARES	\$	-	\$	463,616,666	\$	(36,294,844) \$	- \$	114,892	Ś	-	\$	-	\$	-	\$	427,436,714
Wilmington CARES	\$	-	\$		\$	(36,294,844) \$	- \$				\$	2,862		1,963	\$	427,436,909
Total CARES	\$	-	\$	927,233,332	\$	(72,589,688) \$	- \$		\$	-	\$	2,862		1,963	\$	854,873,623
Total	\$ :	2,652,150,975	\$	2,075,121,751	\$(	1,042,061,508) \$	(2,103,524) \$	56,874,544	\$	75,497,854	\$	32,857,419	\$	697,127	\$ :	3,849,034,640

#### Footnotes:

Values provided by Northern Trust and are reconciled to the audited custodian reports.

Income is a product of income received during the month plus accrued income.

Numbers may not add due to rounding.



## YIELD AND DURATION POSITIONING

		Liquidity P	ortfolio Yie	eld and Duratio	n Analysis						
	Portfolio				Bend	hmark					
	<u>Portfolio Value</u>	% of Assets	<u>Yield</u>	<u>Duration</u>		<u>Yield</u>	Duration				
PFM \$	456,492,365	15.6%	0.51%	0.43	6-Month Treasury Bill	0.17%	0.48				
Wilmington Trust \$	454,246,650	15.5%	0.41%	0.90	6-Month Treasury Bill	0.17%	0.48				
Total Liquidity \$	910,739,015	31.2%	0.46%	0.66	6-Month Treasury Bill	0.17%	0.48				
Reserve Portfolio Yield and Duration Analysis											
	Portfolio				Bend	hmark					
	<u>Portfolio Value</u>	% of Assets	<u>Yield</u>	<u>Duration</u>		<u>Yield</u>	Duration				
JP Morgan \$	477,223,108	16.3%	0.34%	1.69	BAML 1-3 Yr Govt/Credit A+	0.28%	1.89				
BlackRock \$	486,370,073	16.6%	0.47%	2.45	BAML 1-5 Yr Govt/Credit A+	0.34%	2.66				
Chandler \$	526,857,829	18.0%	0.89%	6.12	BAML 5-10 Yr Govt/Credit A+	0.83%	6.57				
Lazard \$	521,377,153	17.8%	0.56%	6.13	BAML 5-10 Yr Govt/Credit A+	0.83%	6.57				
Total Reserve \$	2,011,828,163	68.8%	0.57%	4.18	Custom Reserve Benchmark	0.57%	4.42				
	Total Liquidity & Reserve Portfolio Yield and Duration Analysis										
	Portfolio				•	chmark					
	<u>Portfolio Value</u>	% of Assets	<u>Yield</u>	Duration		<u>Yield</u>	Duration				
otal Liquidity & Reserve \$	2,922,567,178	100.0%	0.54%	3.09	Weighted Average	0.47%	3.44				

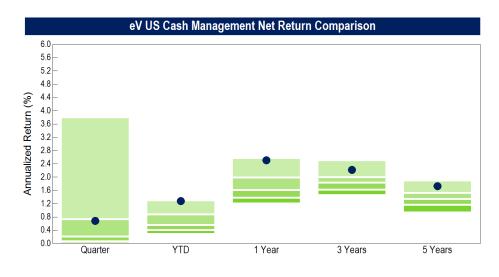
As of June 1, 2020, the target allocation between Liquidity and Reserve Portfolios was adjusted to 70%/30%. The previous target allocation was 75%/25%.

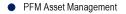


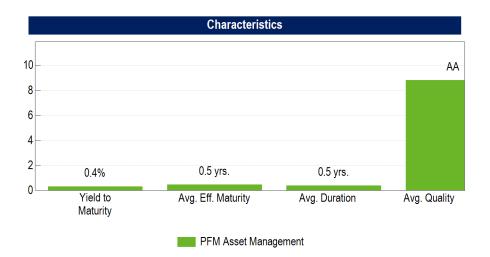
# LIQUIDITY MANAGER REVIEW

NEPC, LLC -

## **PFM ASSET MANAGEMENT**







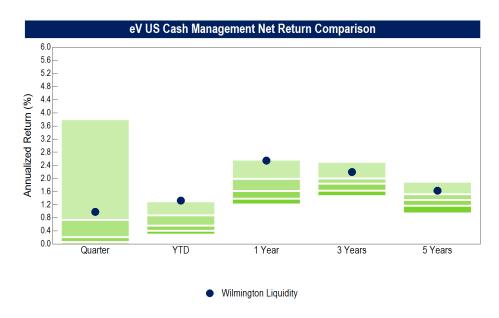


- PFM Asset Management
- ◆ Liquidity Custom Index
- Universe Median
- 68% Confidence Interval
- eV US Cash Management Net

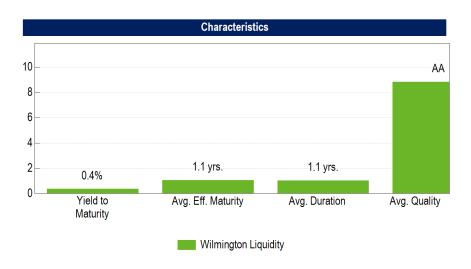




## WILMINGTON LIQUIDITY







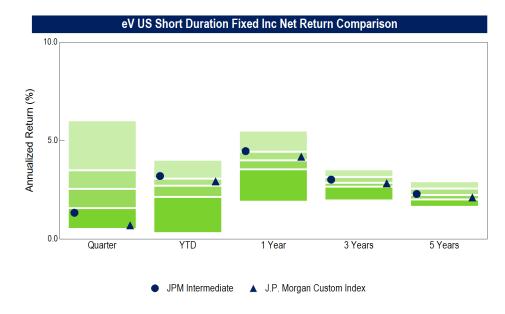


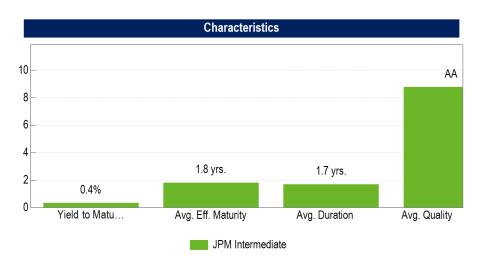


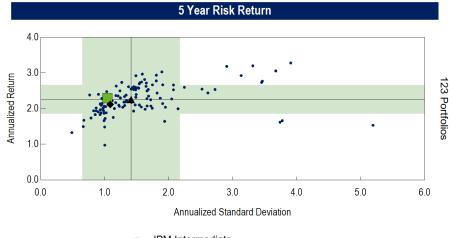
# RESERVE MANAGER REVIEW

NEPC, LLC —

## JPM INTERMEDIATE







- JPM Intermediate
- ◆ J.P. Morgan Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Short Duration Fixed Inc Net

#### **Qualitative Attribution**

**Duration and Yield Positioning:** JPM reduced the duration of the portfolio during the quarter with the thought that rates would remain steady with a slight risk of increase from the current levels.

**Result:** Duration/curve positioning had a neutral effect for quarter on the portfolio as rates remained largely unchanged during the quarter.

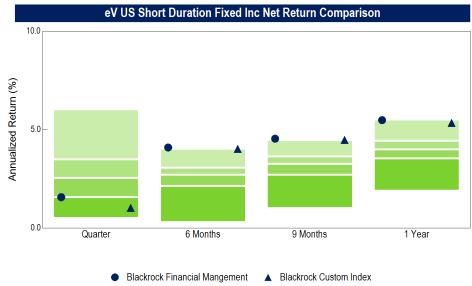
**Credit Positioning:** The portfolio maintained its overweight investment grade credit with a corresponding underweight to Treasuries.

**Result**: The overweight position in investment grade credit was additive to the portfolio's return as credit spreads tightened during the quarter.

**Other Positioning:** Going forward JPM expects Treasury rates to remain at current yield levels given the recent posturing and comments by the Federal Reserve Board.

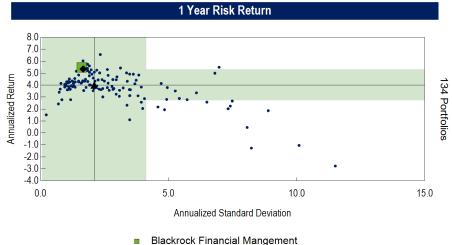


## **BLACKROCK FINANCIAL MANAGEMENT**





Blackrock Financial Mangement



- Blackrock Custom Index
- Universe Median
- 68% Confidence Interval
- eV US Short Duration Fixed Inc Net

#### **Qualitative Attribution**

Duration and Yield Positioning: The portfolio's duration positioning was shortened, relative to the benchmark during the guarter.

Result: BlackRock's duration and curve positioning was not a meaningful contributor to performance during the quarter.

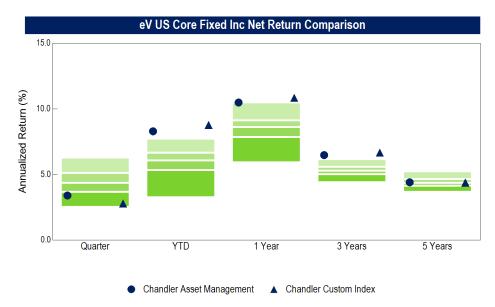
Credit Positioning: Overall, the portfolio had an overweight to securitized assets such as MBS and ABS, and a slight overweight to Investment Grade Corporates. Treasuries were reduced during the quarter with the bulk of the assets flowing to US Agencies.

Result: The portfolio's shifts were additive as Investment Grade Credit spreads compressed during the quarter. The shift away from Treasuries was also contributed positively to performance.

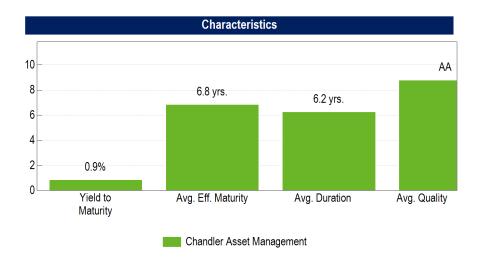
Other Positioning: BlackRock remains cautious in the current environment and favors an elevated position in higher quality agency securities relative to an extended overweight to in corporate securities.



## **CHANDLER ASSET MANAGEMENT**







#### **Qualitative Attribution**

**Duration and Yield Positioning:** The portfolio continues to be positioned with a duration below the benchmark.

**Result:** Interest rates were relatively stable during the quarter and did not materially add or detract from performance during the period.

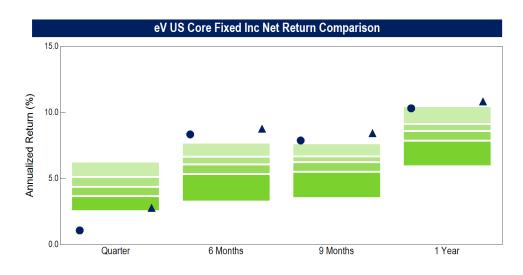
**Credit Positioning:** The portfolio was positioned with significant positions to the Treasury and corporate sectors during the quarter.

**Result:** The overweight positions in high quality corporate securities was the larges contributor to the portfolios excess return as high quality credit spreads significantly tightened during the quarter.

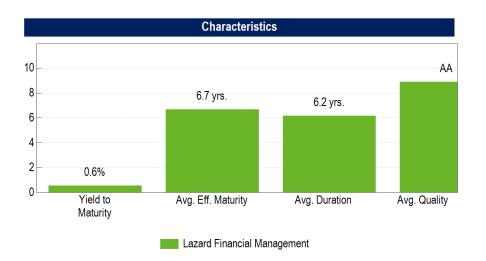
**Other Positioning:** Overall the portfolios positioning remained stable during the quarter with some minor adjustments in in the underlying holdings to maintain the structure and duration in line with the Chandler's current market outlook.



## LAZARD FINANCIAL MANAGEMENT









- Lazard Financial Management
- Chandler/Lazard Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Core Fixed Inc Net

#### **Qualitative Attribution**

**Duration and Yield Positioning:** The portfolio shifted to a below benchmark duration position during the quarter as the firm's viewed pivoted to a neutral interest rate environment as a result of the pandemic and recent Federal Reserve's actions.

**Result:** Interest rates were relatively stable during the quarter and did not materially add or detract from performance during the period.

**Credit Positioning:** The portfolio's overall credit exposure has consistently maintained a defensive posture, carrying an underweight to both Corporate and Non-US Government credit risk.

**Result:** The portfolio's overweight to Treasuries and underweight to investment grade corporate credit detracted from returns during the quarter. Further, the write-down of two airline Equipment Trust Certificate (ETCs) holdings was a significant drag on performance during the quarter.

**Other Positioning:** Lazard continues to search for attractively priced A-rated corporate positions.

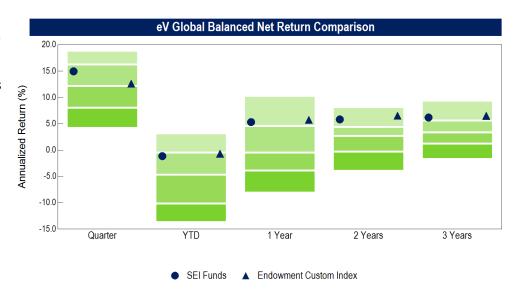


# ENDOWMENT MANAGER REVIEW

NEPC, LLC —

#### **SEI FUNDS**

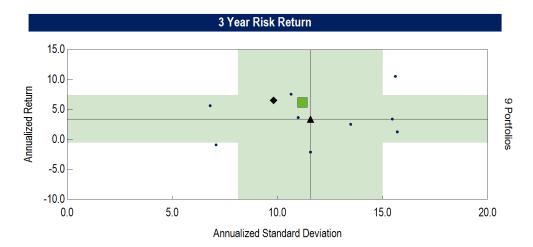
SEI Funds manages a multi-asset class portfolio subject to a 60% target equity allocation which will be held in a range of 45% to 75%, with international equities not to exceed 35% of the equity allocation. A combination of fixed income, alternative investments, and cash will account for the remaining 40% target allocation. Funds will be managed by the following SEI strategies: SEI US Managed Volatility Strategy, SEI S&P 500 Index Strategy, SEI Extended Markets Index Strategy, SEI Small Cap II Equity Strategy, SEI World Equity ex-US Strategy, SEI Core Fixed Income Strategy, SEI High Yield Strategy, and SEI Emerging Markets Debt Strategy.



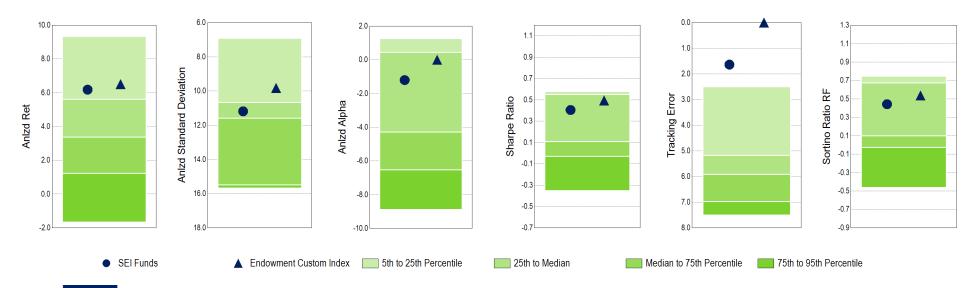




## **SEI FUNDS**



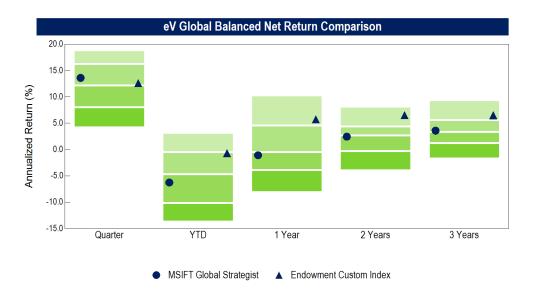
- SEI Funds
- ◆ Endowment Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Balanced Net





#### **MSIFT GLOBAL STRATEGIST**

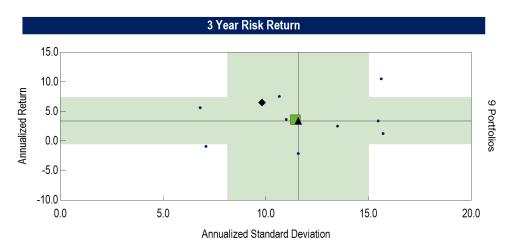
Morgan Stanley manages a multi-asset class portfolio. The portfolio seeks to achieve its investment objective by investing primarily in a blend of equity and fixed income securities of U.S. and non-U.S. issuers. The equity portfolio will be diversified by types of securities (i.e. common and preferred shares of equity), issuer, industry and sectors. The fixed income portfolio will be diversified by security types (i.e government, agency and corporate bonds), issuer, duration and yield characteristics.



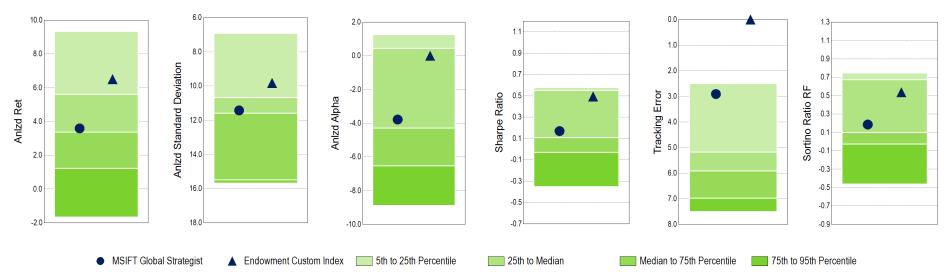




## **MSIFT GLOBAL STRATEGIST**

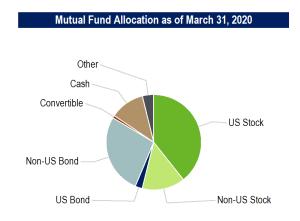


- MSIFT Global Strategist
- ◆ Endowment Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Balanced Net





## **MSIFT GLOBAL STRATEGIST**



Portfolio Fund Information as of	March 31, 2020
Ticker	MPBAX
Morningstar Category	World Allocation
Average Market Cap (\$mm)	73,932.21
Net Assets (\$mm)	49.35
% Assets in Top 10 Holdings	62.09
Total Number of Holdings	1,641
Manager Name	Mark A. Bavoso
Manager Tenure	9
Expense Ratio	0.74%
Closed to New Investors	No

Fund Characteristics as of March	1 31, 2020
Sharpe Ratio (3 Year)	-0.11
Average Market Cap (\$mm)	73,932.21
Price/Earnings	14.94
Price/Book	1.90
Price/Sales	1.41
Price/Cash Flow	7.62
Dividend Yield	3.00
Number of Equity Holdings	1,294
R-Squared (3 Year)	0.94
Alpha (3 Year)	-0.26%

Top Holdings as of March 31, 2020	
E-MINI S&P 500 FUTURES JUNE20	16.43%
10 YEAR TREASURY NOTE FUTURE JUNE 20	9.92%
1266845 TRS USD P V 03MLIBOR II9354570200123 EQUITYTRS	5.90%
MS INST. FUND TRUST GLBL STRATEGIST CAYMAN POR LTD	5.87%
1266891 TRS USD P V 03MLIBOR II5603190200207 EQUITYTRS	4.69%
1266845 TRS USD R E II9356470200123 EQUITYTRS	4.43%
US ULTRA BOND CBT JUN20 XCBT 20200619	4.09%
1266891 TRS USD R E II5604150200207 EQUITYTRS	3.89%
UNITED STATES TREASURY BILLS 0.01%	3.74%
2 YEAR TREASURY NOTE FUTURE JUNE 20	3.12%

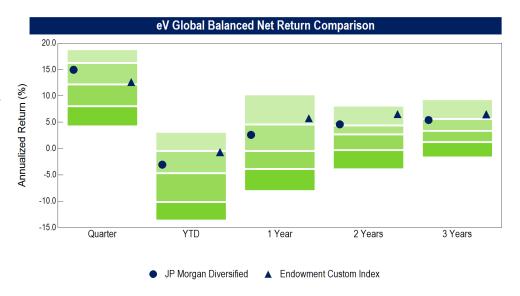
Sector Allocation as of March 31, 2020	
BASIC MATERIALS	3.91%
COMMUNICATION SERVICES	8.84%
CONSUMER CYCLICAL	9.71%
CONSUMER DEFENSIVE	9.00%
ENERGY	3.35%
FINANCIAL SERVICES	14.84%
HEALTHCARE	14.40%
INDUSTRIALS	10.37%
REAL ESTATE	4.68%
TECHNOLOGY	17.25%
UTILITIES	3.63%

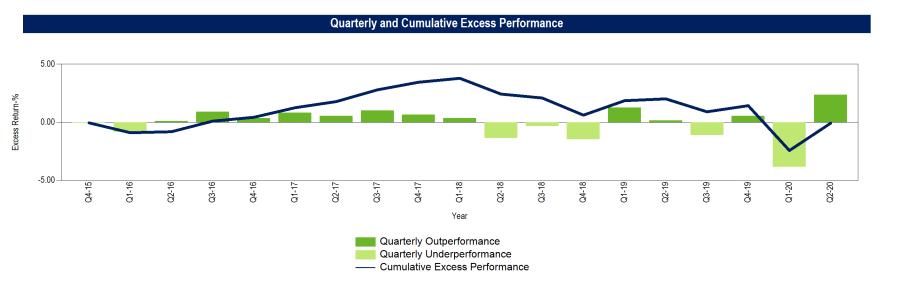
Data as of 3/31/2020



#### JP MORGAN DIVERSIFIED

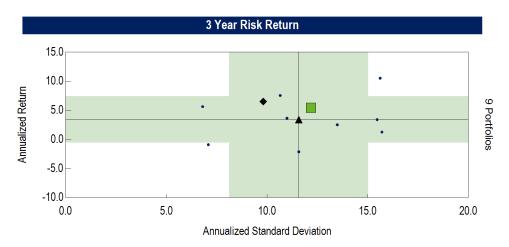
J.P Morgan manages a diversified mutli-asset class portfolio. The strategy seeks to provide a high total return from a diversified portfolio of equity and fixed income investments based on a model allocation. JP Morgan may periodically increase or decrease the Fund's actual asset allocation according to the relative attractiveness of each asset class. Within its equity allocations, the Fund primarily invests in the common stock and convertible securities of U.S. and foreign companies. Within its fixed income allocations, the Fund primarily invests in corporate bonds, mortgage-backed securities, mortgage "dollar rolls" and U.S. government securities.



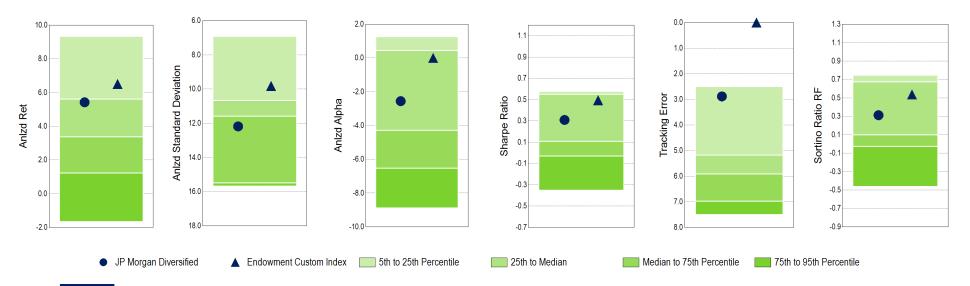




## JP MORGAN DIVERSIFIED



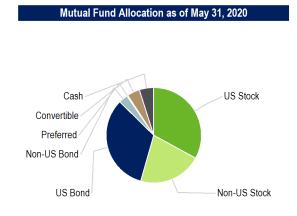
- JP Morgan Diversified
- ◆ Endowment Custom Index
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Balanced Net





#### **Delaware Office of the State Treasurer**

### JP MORGAN DIVERSIFIED



Portfolio Fund Information as of May 31, 2020				
Ticker	JPDVX			
Morningstar Category	Allocation50% to 70% Equity			
Average Market Cap (\$mm)	57,733.95			
Net Assets (\$mm)	144.48			
% Assets in Top 10 Holdings	19.44			
Total Number of Holdings	2,868			
Manager Name	Jeffrey A. Geller			
Manager Tenure	1			
Expense Ratio	0.66%			
Closed to New Investors	No			

Fund Characteristics as of May 31, 2020				
0.25				
57,733.95				
20.84				
2.26				
1.73				
9.00				
2.45				
1,503				
0.98				
-0.19%				

Top Holdings as of May 31, 2020	
JPMORGAN CORPORATE BOND R6	10.23%
UNITED STATES TREASURY NOTES 2.5%	2.12%
MICROSOFT CORP	1.57%
AMAZON.COM INC	1.30%
APPLE INC	0.99%
ALPHABET INC CLASS C	0.74%
UNITEDHEALTH GROUP INC	0.68%
MASTERCARD INC A	0.65%
TENCENT HOLDINGS LTD	0.60%
NESTLE SA	0.56%

Sector Allocation as of May 31, 2020			
BASIC MATERIALS	3.23%		
COMMUNICATION SERVICES	7.80%		
CONSUMER CYCLICAL	13.60%		
CONSUMER DEFENSIVE	6.30%		
ENERGY	2.73%		
FINANCIAL SERVICES	17.95%		
HEALTHCARE	13.17%		
INDUSTRIALS	11.35%		
REAL ESTATE	2.66%		
TECHNOLOGY	18.19%		
UTILITIES	3.02%		

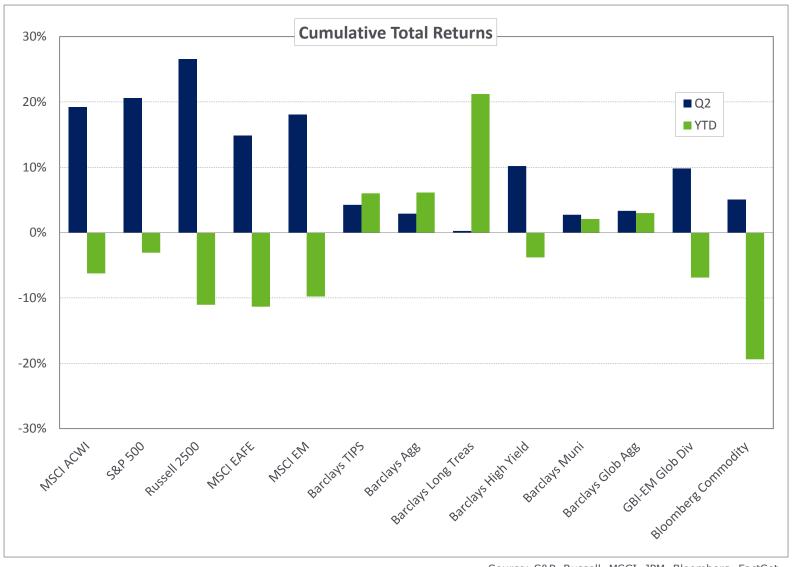
Data as of 5/31/2020



# REPORT APPENDIX

NEPC, LLC —

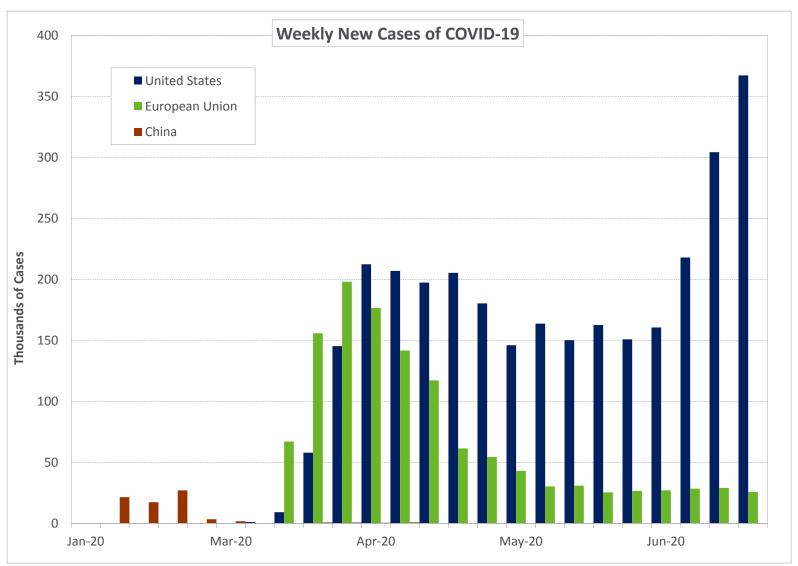
## **RISK ASSETS RALLIED SIGNIFICANTLY IN Q2**







### **CONFIRMED COVID-19 CASES CONTINUE TO RISE**







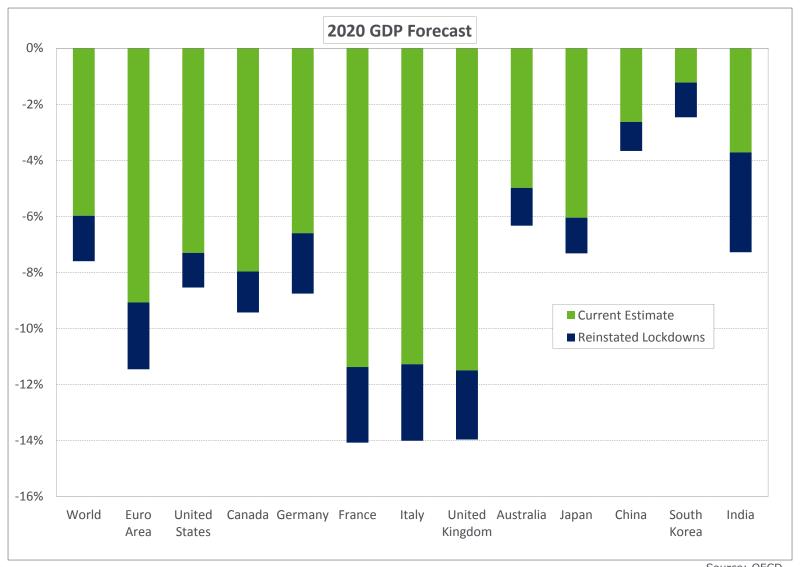
### THE ECONOMIC BACKDROP IS CHALLENGED

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%*	monthmen
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 SPREAD WEIGHS ON GROWTH FORECASTS**

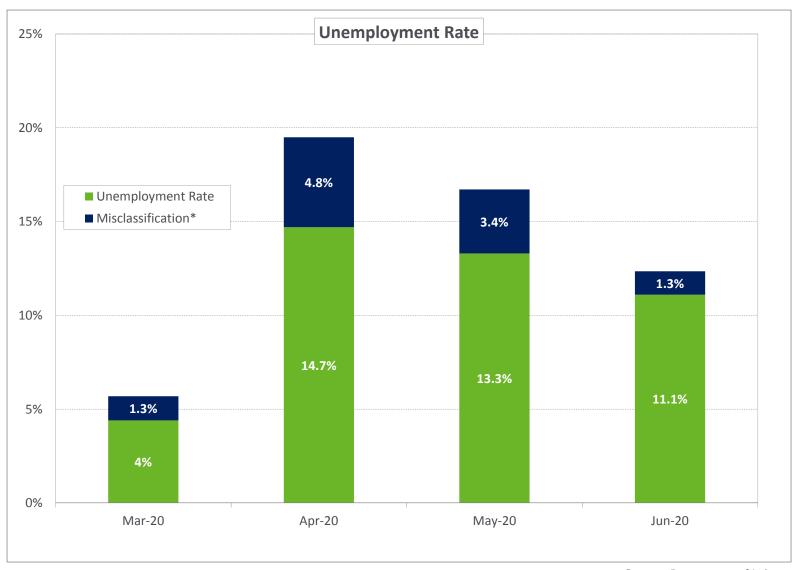




The additional decline in economic growth from reinstated lockdowns represents a renewed outbreak of infections that forces economies to re-implement restrictions.



#### **UNEMPLOYMENT MAY BE WORSE THAN REPORTED**

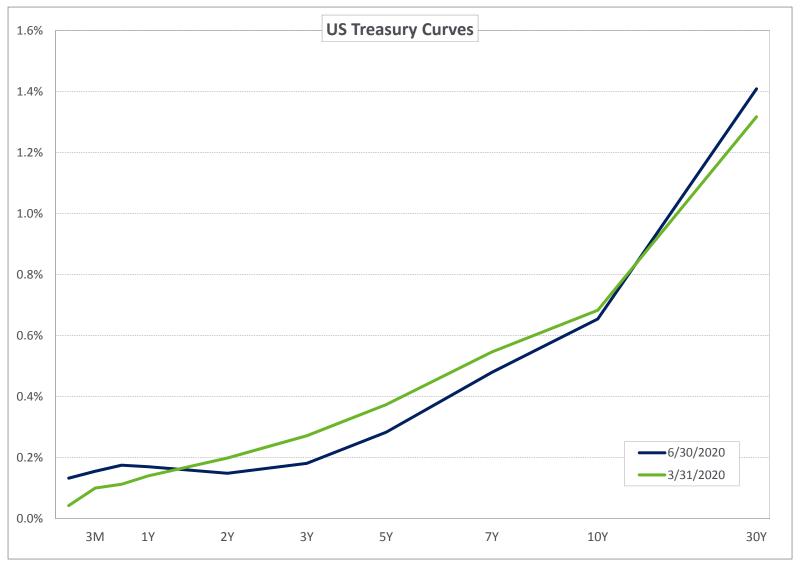


Source: Department of Labor

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



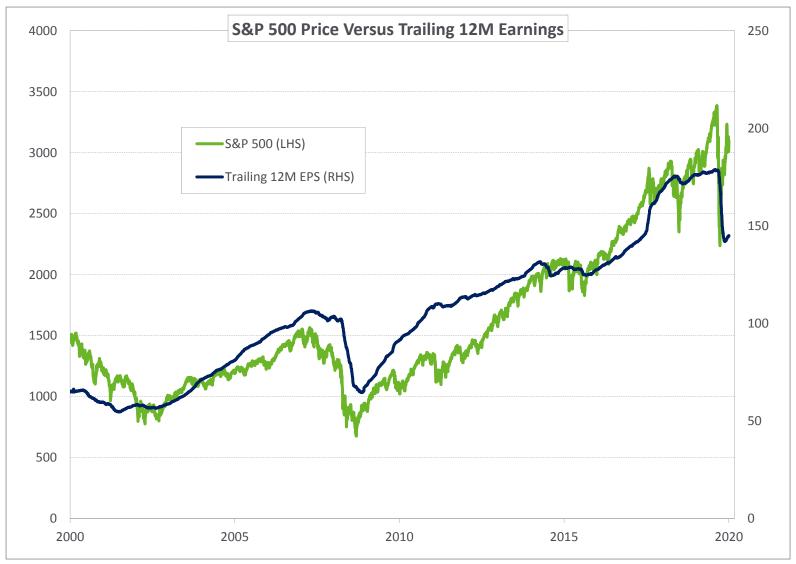
### **INTEREST RATES REFLECT ECONOMIC CONCERNS**

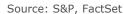






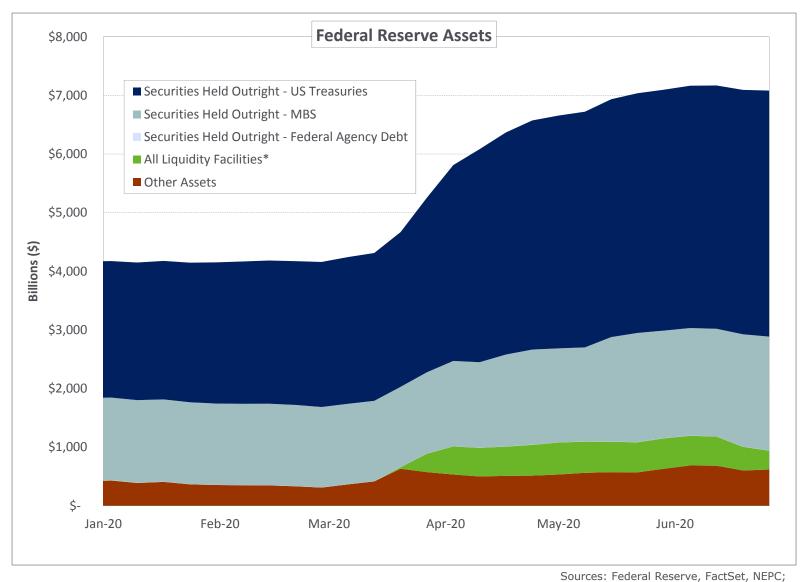
# **EQUITY PRICES DETACHED FROM FUNDAMENTALS**







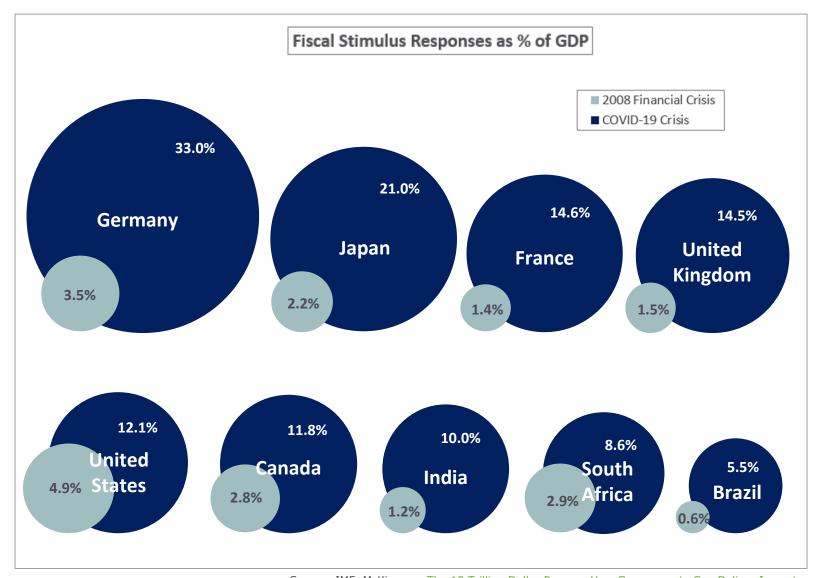
### FED BALANCE SHEET GROWTH





\*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;

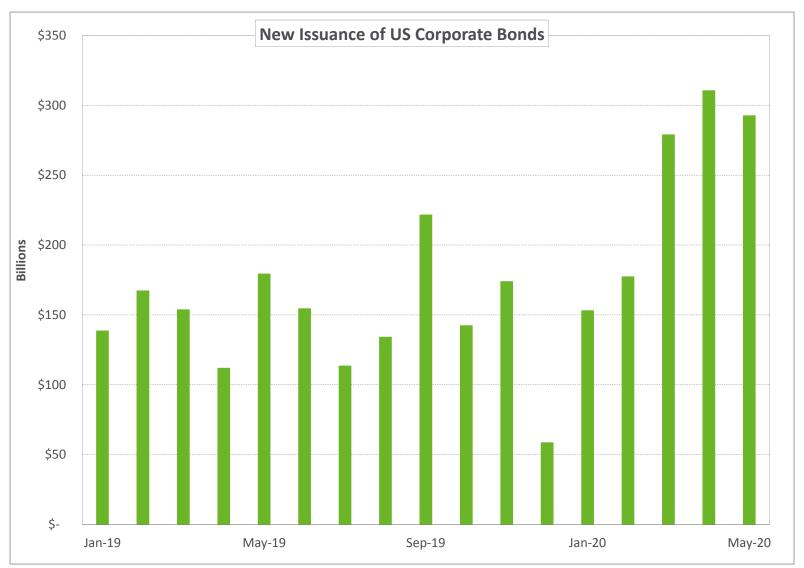
#### THE GLOBAL FISCAL STIMULUS PICTURE





Source: IMF, McKinsey – <u>The 10 Trillion Dollar Rescue: How Governments Can Deliver Impact</u> COVID-19 Crisis includes 2019 GDP for calculations; 2008 Financial Crisis incorporates data published by the IMF in March 2009 and includes discretionary measures announced for 2008-2010

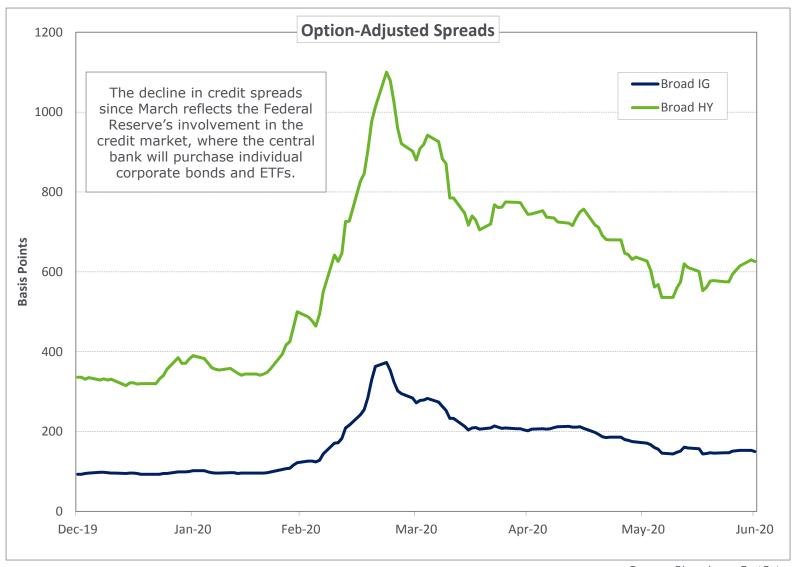
### **DEBT ISSUANCE SETTING MONTHLY RECORDS**







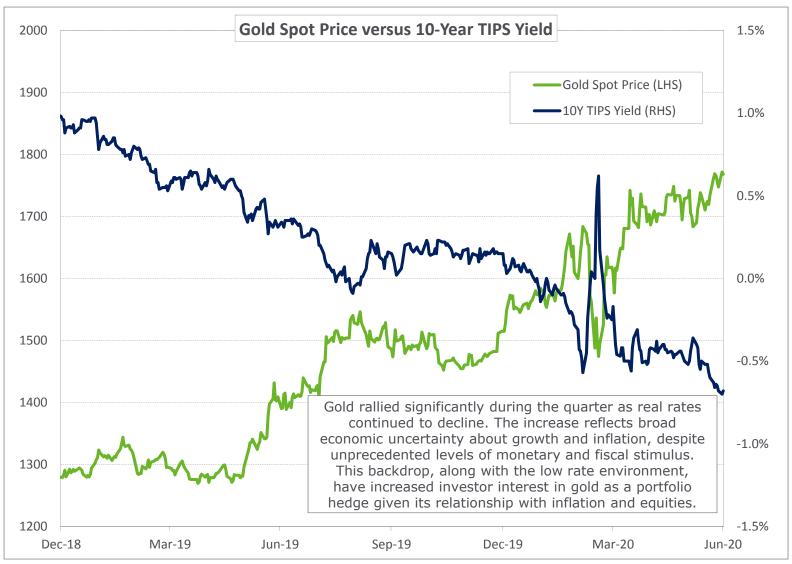
#### **CREDIT SPREADS HAVE FALLEN SINCE MARCH**







#### **GOLD RALLIED AS REAL INTEREST RATES FELL**







#### GLOSSARY OF INVESTMENT TERMINOLOGY

# Of Portfolios/Observations<sup>1</sup> – The total number of data points that make up a specified universe

**Allocation Index**<sup>3</sup> - The allocation index measures the value added (or subtracted) to each portfolio by active management. It is calculated monthly: The portfolio asset allocation to each category from the prior month-end is multiplied by a specified market index.

Asset Allocation Effect<sup>2</sup> - Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.

Agency Bonds (Agencies)<sup>3</sup> - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk-high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.

**Asset Backed Securities (ABS)**<sup>3</sup> - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.

Attribution<sup>3</sup> - Attribution is an analytical technique that allows us to evaluate the performance of the portfolio relative to the benchmark. A proper attribution tells us where value was added or subtracted as a result of the manager's decisions

**Average Effective Maturity** - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.

For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.

**Batting Average<sup>1</sup>** - A measurement representing an investment manager's ability to meet or beat an index.

Formula: Divide the number of days (or months, quarters, etc.) in which the manager beats or matches the index by the total number of days (or months, quarters, etc.) in the period of question and multiply that factor by 100.

**Brinson Fachler (BF) Attribution<sup>1</sup>** - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.

Brinson Hood Beebower (BHB) Attribution<sup>1</sup> - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.

Corporate Bond (Corp) <sup>4</sup> - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.

**Correlation¹** - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.

Data Source: 1InvestorForce, 2Interaction Effect Performance Attribution, 3NEPC, LLC, 4Investopedia, 5Hedgeco.net



#### **GLOSSARY OF INVESTMENT TERMINOLOGY**

Coupon<sup>4</sup> – The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."

Currency Effect<sup>1</sup> - Is the effect that changes in currency exchange rates over time affect excess performance.

**Derivative Instrument**<sup>3</sup> - A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.

**Downside Deviation<sup>1</sup>** - Equals the standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns

#### Formula:

Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.

**Duration**<sup>3</sup> - Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.

Equity/Debt/Cash Ratio<sup>1</sup> – The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. A 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).

Foreign Bond<sup>3</sup> - A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.

Hard Hurdle<sup>5</sup> – is a hurdle rate that once beaten allows a fund manager to charge a performance fee on only the funds above the specified hurdle rate. **High-Water Mark**<sup>4</sup> - The highest peak in value that an investment fund/ account has reached. This term is often used in the context of fund manager compensation, which is performance based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.

**Hurdle Rate**<sup>4</sup> - The minimum rate of return on an investment required, in order for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.

Interaction Effects<sup>2</sup> - The interaction effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with the either effect.

Median<sup>3</sup> - The value (rate of return, market sensitivity, etc.) that exceeds onehalf of the values in the population and that is exceeded by one-half of the values. The median has a percentile rank of 50.

Modified Duration<sup>3</sup> - The percentage change in the price of a fixed income security that results from a change in yield.

Mortgage Backed Securities (MBS)<sup>3</sup> - Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages.

Municipal Bond (Muni) <sup>4</sup> - A debt security issued by a state, municipality or county to finance its capital expenditures.

**Net Investment Change<sup>1</sup>** – Is the change in an investment after accounting for all Net Cash Flows.

Performance Fee<sup>4</sup> - A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.

Data Source: 1InvestorForce, 2Interaction Effect Performance Attribution, 3NEPC, LLC, 4Investopedia, 5Hedgeco.net



#### **GLOSSARY OF INVESTMENT TERMINOLOGY**

**Policy Index**<sup>3</sup> - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement.

**Price to Book** (P/B)<sup>4</sup> - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".

Price to Earnings (P/E)<sup>3</sup> - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

Price to Sales (P/S)<sup>4</sup> - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.

Return on Equity (ROE)<sup>4</sup> - The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

Selection (or Manager) Effect<sup>2</sup> - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect—the larger the sector, the larger the effect is, positive or negative.

Soft Hurdle rate<sup>5</sup> – is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

**Tiered Fee<sup>1</sup>** – A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first \$10M invested, 0.90% on the next \$10M, and 0.80% on the remaining balance).

**Total Effects²** - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.

**Total Return<sup>1</sup>** - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over a defined time period.

Universe3 - The list of all assets eligible for inclusion in a portfolio.

Upside Deviation - Standard Deviation of Positive Returns

**Weighted Avg. Market Cap.** <sup>4</sup> - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500.

Yield (%)<sup>3</sup> - The current yield of a security is the current indicated annual dividend rate divided by current price.

**Yield to Maturity**<sup>3</sup> -The discount rate that equates the present value of cash flows, both principal and interest, to market price.

Data Source: ¹InvestorForce, ²Interaction Effect Performance Attribution, ³NEPC, LLC, ⁴Investopedia, ⁵Hedgeco.net



#### **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.
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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.

