



# WILSHIRE ASSOCIATES

Wilshire Consulting



## Grand Rapids Police and Fire Retirement

Quarterly Executive Summary

*June 30, 2020*

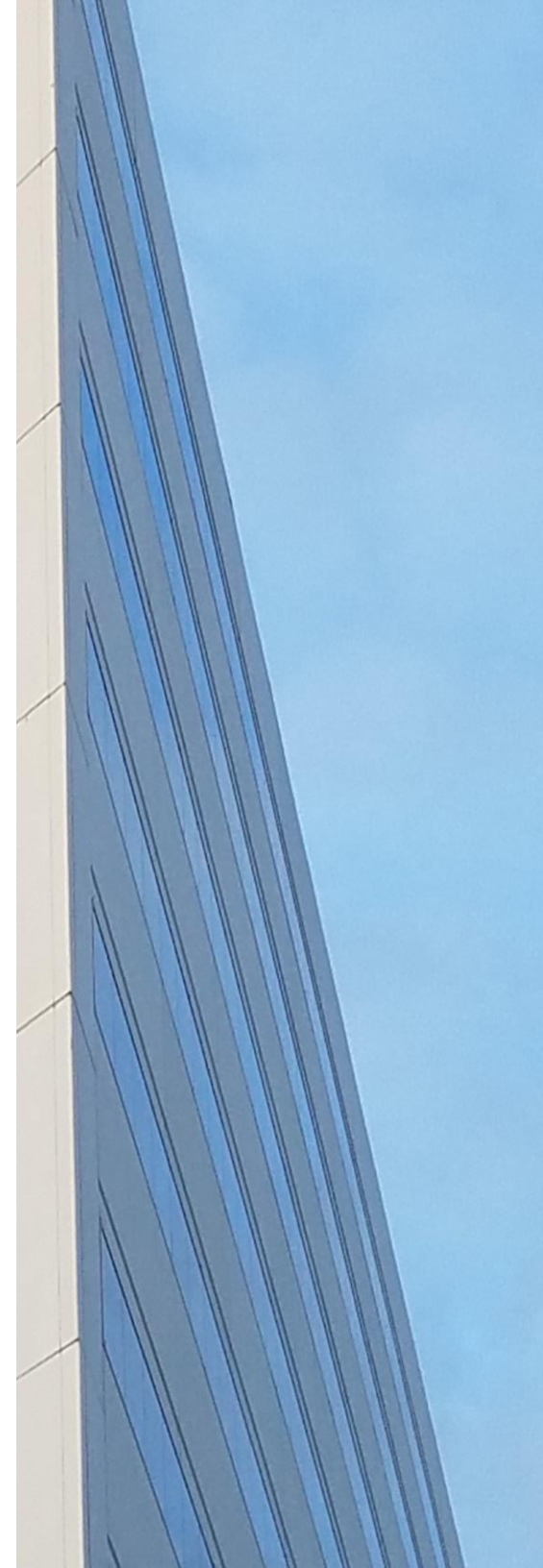
Wilshire Consulting  
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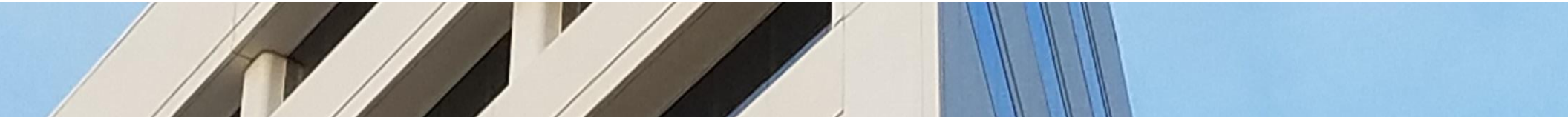
Capital Market Review

Tab 1

Investment Performance

Tab 2





# CAPITAL MARKET REVIEW

# ASSET CLASS PERFORMANCE

ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 6/20
2015	2016	2017	2018	2019	2020 YTD	
REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	Core Bond 6.1%	U.S. Equity 10.3%
U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	U.S. TIPS 6.0%	High Yield 4.8%
Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	T-Bills 0.7%	Core Bond 4.3%
T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	U.S. Equity -3.3%	REITs 4.0%
Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	High Yield -3.8%	U.S. TIPS 3.7%
U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	Emrg Mrkts -9.7%	Emrg Mrkts 3.2%
High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	Developed -11.1%	Developed 2.5%
Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	Commodities 7.7%	REITs -17.8%	T-Bills 1.2%
Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -13.4%	MLPs 6.6%	Commodities -19.4%	Commodities -7.7%
MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 2.3%	Midstream -29.6%	MLPs -12.9%

Data sources: Bloomberg

Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

# MARKET COMMENTARY

## U.S. Equity

The U.S. stock market was up 21.9% for the second quarter of 2020. Although parts of the country have begun to loosen Coronavirus-related restrictions, considerable uncertainty about 2020 economic growth prospects remain. According to a report by the Federal Reserve Bank of Philadelphia, expectations for real GDP growth this year are approximately -5% with an unemployment rate remaining above 10%.

A surprising employment report in May speaks well for an eventual recovery. Unemployment claims are beginning to point towards a bottom and perhaps the beginning of a recovery, albeit off extremely weak levels. Other signals are not as encouraging. The ratio of employed persons to the overall population stands at 52.8%, down nearly 10%-points from the beginning of the year. Taken together, it seems that robust fiscal stimulus programs, targeting both households and businesses, are working well.

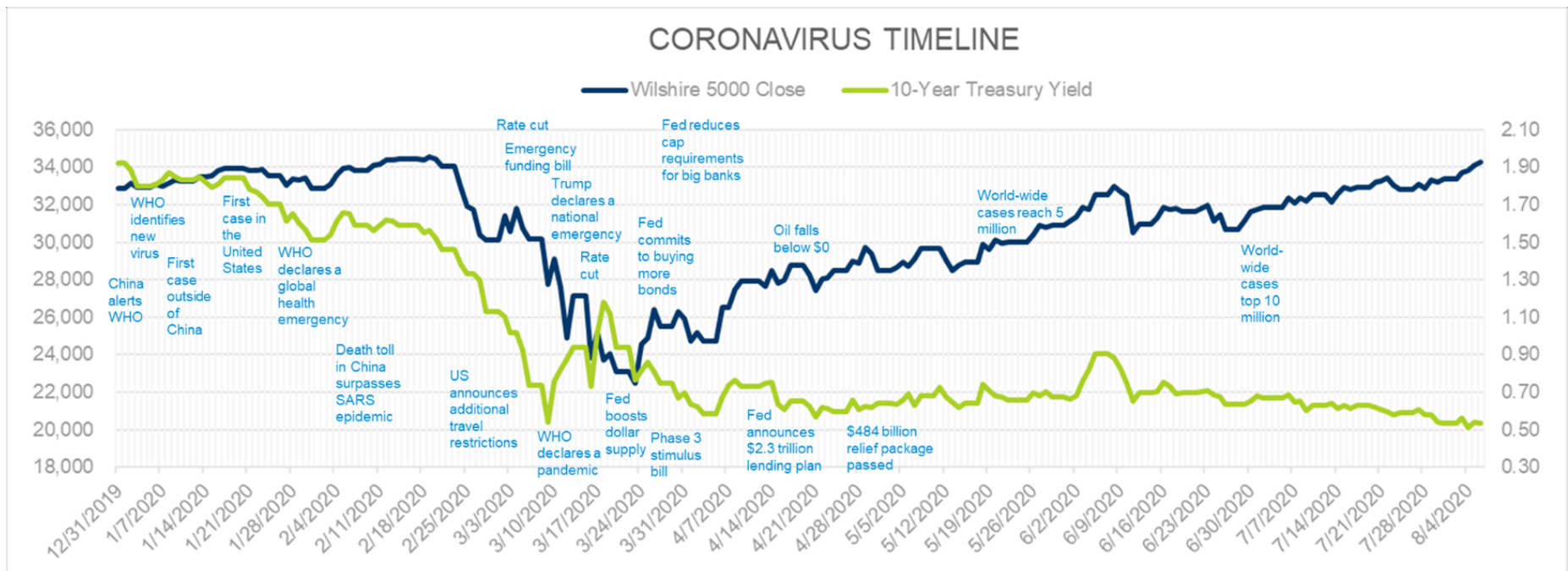
## Non-U.S. Equity

Employment data in the U.K. shows that nearly a third of their workforce is on furlough with the government supporting a majority of those employees' wages. Inflation statistics in Germany indicate that service providers have been able to successfully raise prices to counter Coronavirus-related restrictions. China's economic recovery continues due, in part, to government support policies and the reopening of some overseas markets.

## Fixed Income

The 10-year U.S. Treasury yield ended the quarter at 0.66%, down just 4 basis points from March. The FOMC met twice during the quarter, as scheduled, with no change to their overnight rate, which they expect will be near zero until at least 2022. Credit spreads tightened significantly during the quarter, as evidenced by the double-digit return within the high yield market.

# CORONAVIRUS TIMELINE

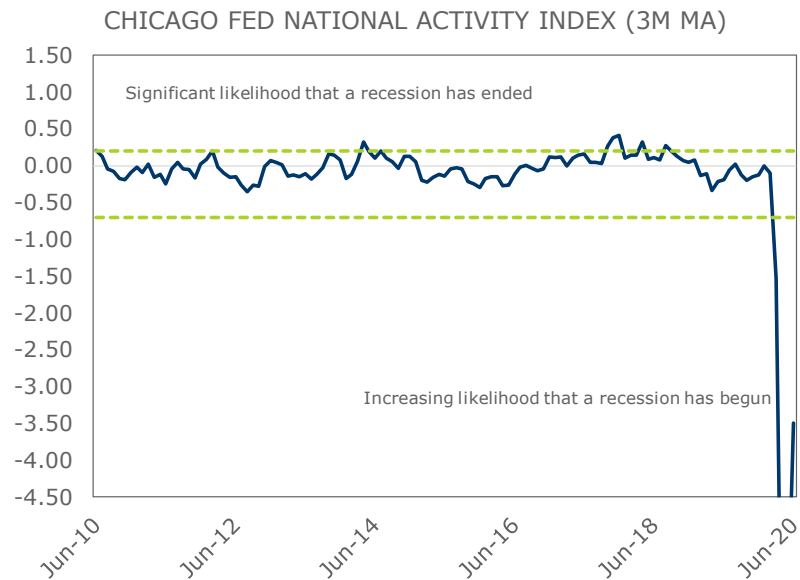
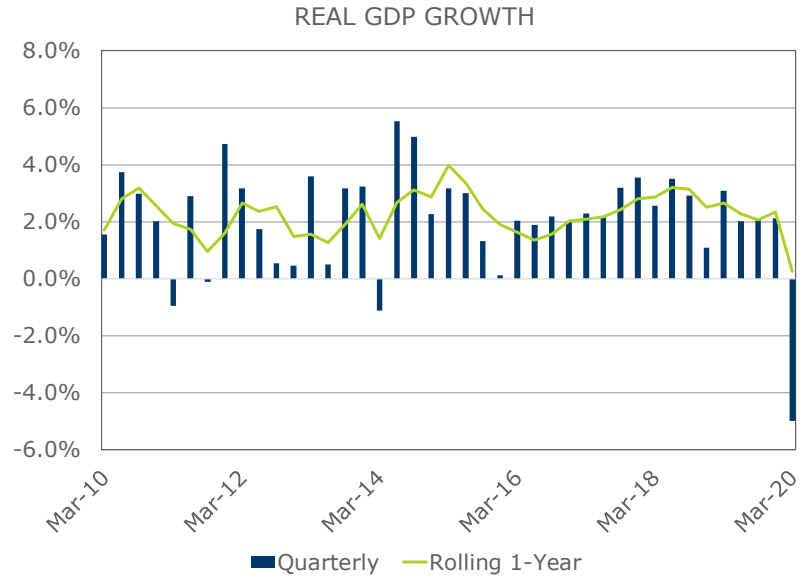


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# JUNE 2020 ASSET CLASS ASSUMPTIONS

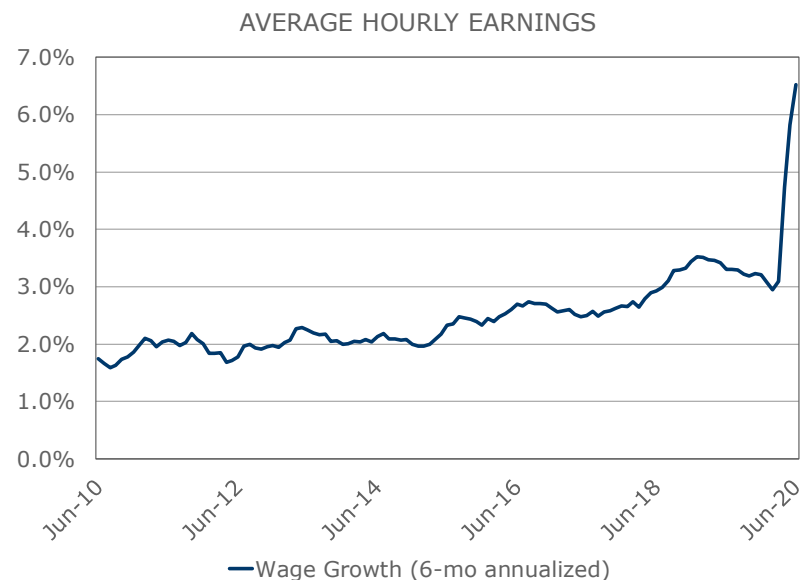
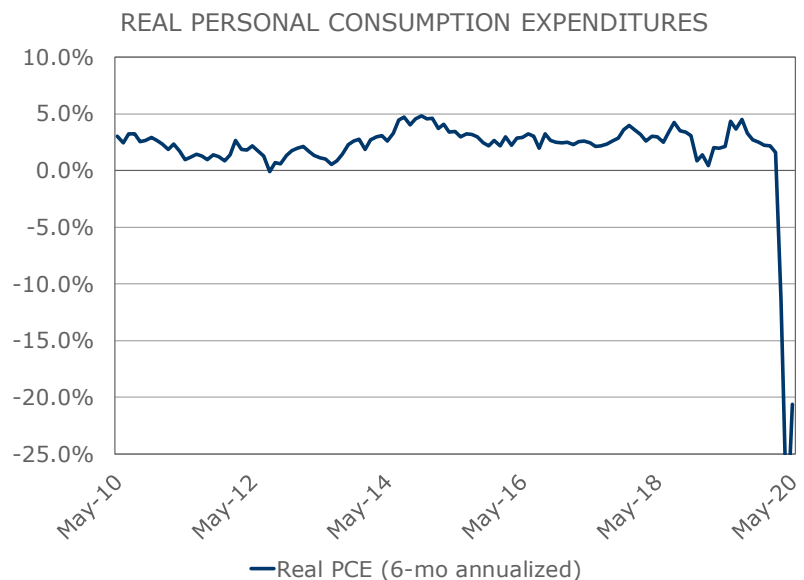
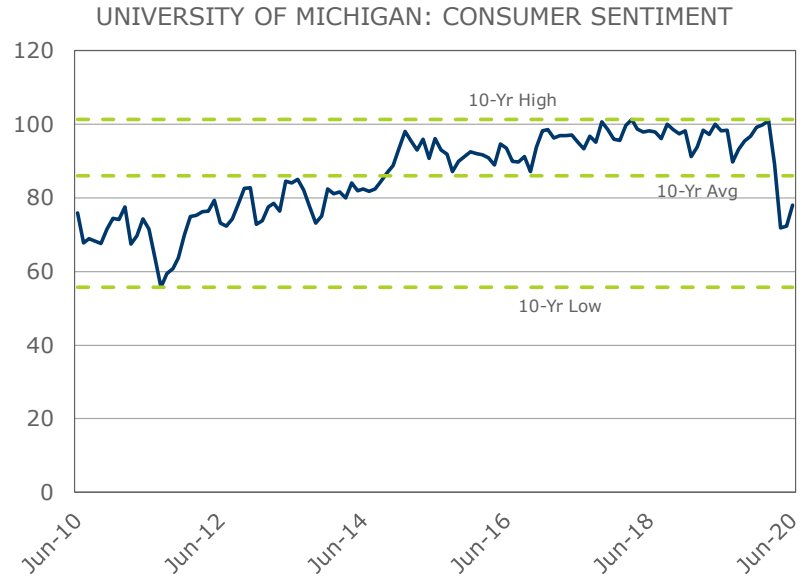
	EQUITY						FIXED INCOME						REAL ASSETS						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	Real Estate			Cmnty	Real Assets	US CPI	
		US RES	Global RES	Private RE	Core Bond	US RES			Global RES				Private RE						
COMPOUND RETURN (%)	6.00	6.50	6.50	6.75	6.45	8.15	0.75	1.25	2.10	0.30	4.00	0.40	5.10	5.30	6.80	2.25	5.45	1.50	
ARITHMETIC RETURN (%)	7.30	7.95	9.45	8.35	7.80	11.50	0.75	1.40	2.55	0.50	4.50	0.45	6.45	6.45	7.70	3.30	5.80	1.50	
EXPECTED RISK (%)	17.00	18.00	26.00	18.95	17.10	28.00	1.25	5.15	9.85	6.00	10.00	3.50	17.00	15.80	14.00	15.00	8.75	1.75	
CASH YIELD (%)	2.00	3.00	2.50	2.85	2.40	0.00	0.75	1.85	2.65	1.15	7.00	1.10	4.00	4.00	2.60	0.75	2.25	0.00	
GROWTH EXPOSURE	8.00	9.00	7.50	8.60	8.25	14.00	0.00	-0.90	-2.30	-3.00	4.00	-1.00	8.00	8.00	5.50	0.00	1.90	0.00	
INFLATION EXPOSURE	0.00	3.00	12.00	5.45	2.40	1.00	0.00	-2.50	-6.70	2.50	1.00	-3.00	0.00	1.35	0.00	12.00	4.40	1.00	
<b>CORRELATIONS</b>																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.81	1.00																	
Emerging Mkt Stock	0.74	0.74	1.00																
Global ex-US Stock	0.83	0.96	0.87	1.00															
Global Stock	0.95	0.92	0.83	0.94	1.00														
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00											
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.93	1.00										
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.60	0.47	1.00									
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00								
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.18	0.18	0.26	0.10	0.67	0.66	0.39	0.26	1.00							
US RE Securities	0.59	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00						
Global RE Securities	0.65	0.59	0.56	0.62	0.66	0.58	-0.05	0.17	0.22	0.11	0.62	0.03	0.94	1.00					
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.78	0.76	1.00				
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00			
Real Assets	0.42	0.43	0.50	0.48	0.47	0.43	0.01	0.24	0.25	0.41	0.53	0.06	0.65	0.69	0.69	0.59	1.00		
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00	

# ECONOMIC GROWTH

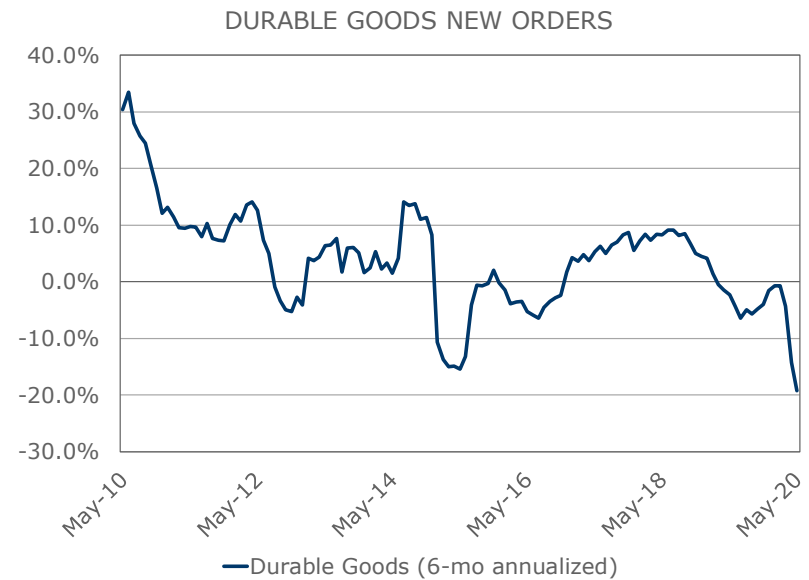
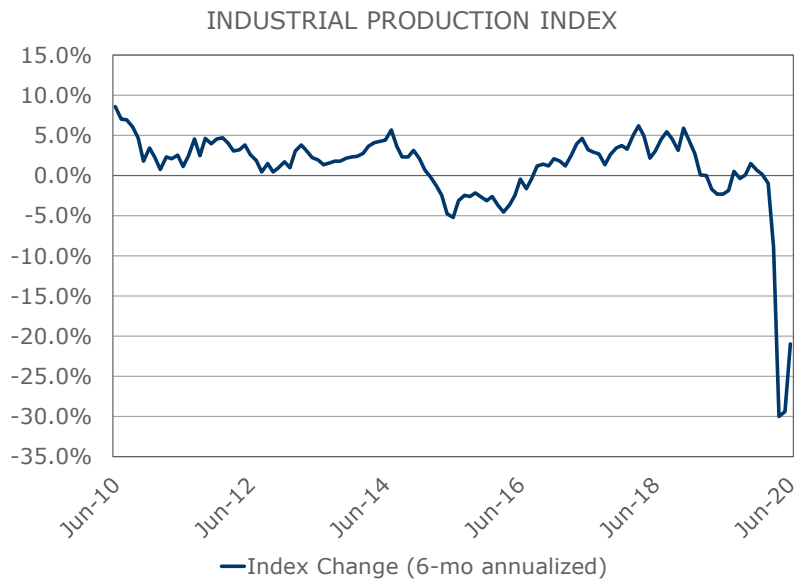
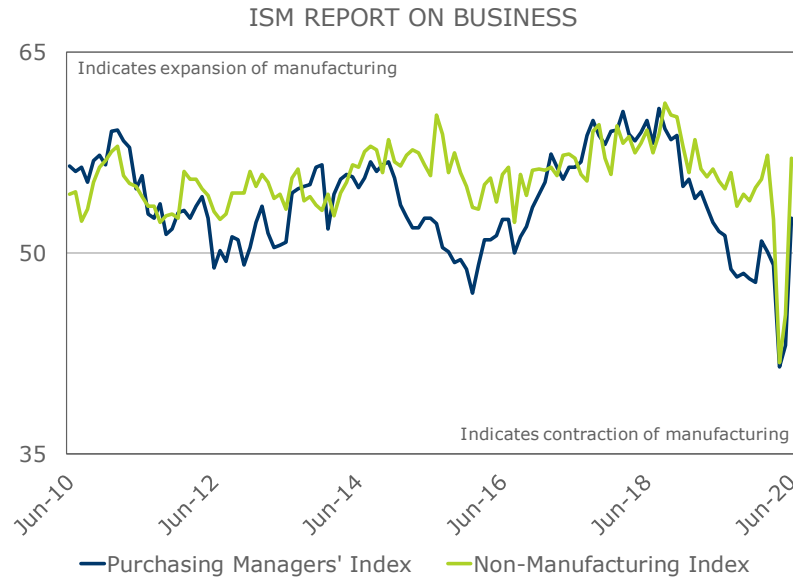




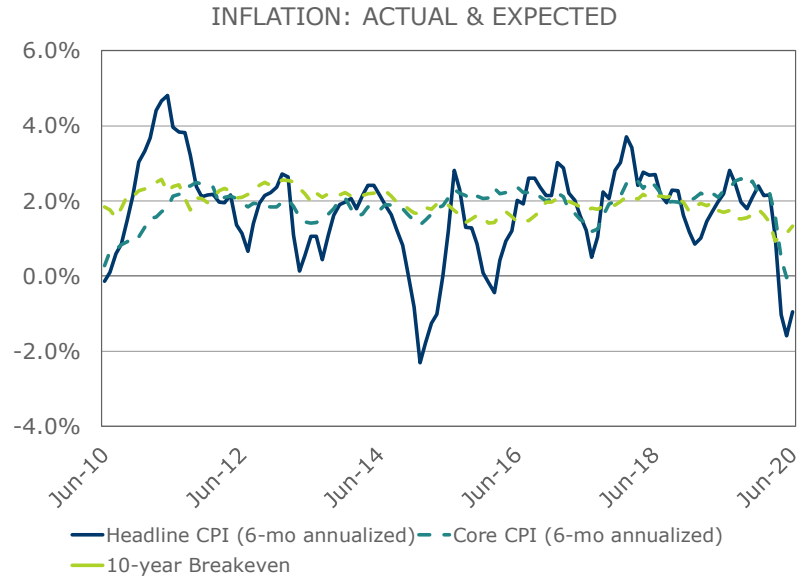
# CONSUMER ACTIVITY



# BUSINESS ACTIVITY



# INFLATION AND EMPLOYMENT

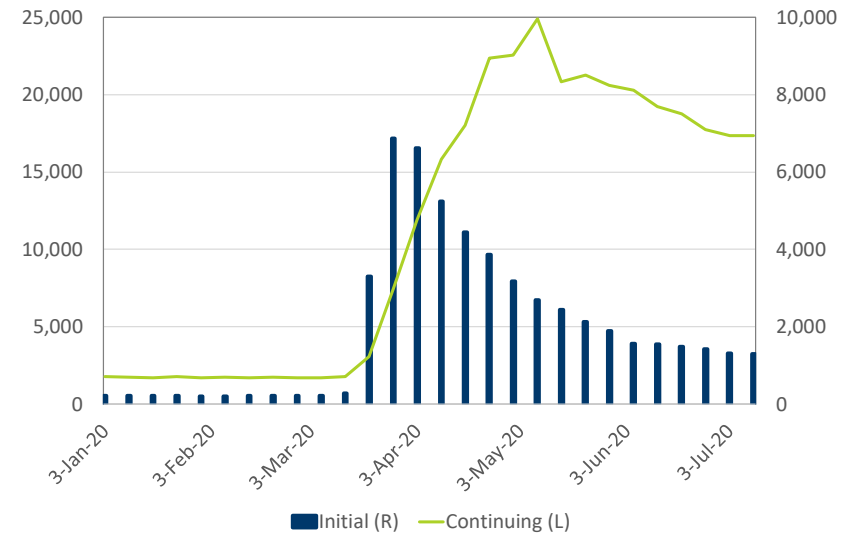


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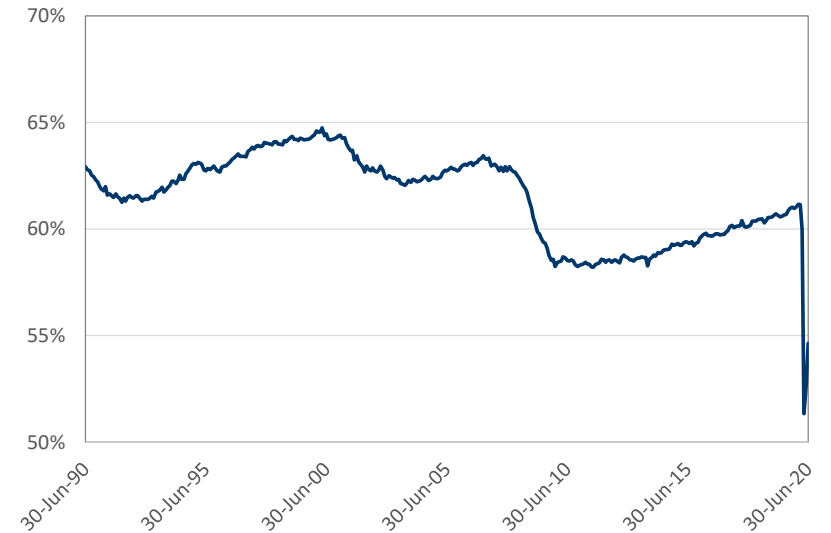
## U.S. EMPLOYMENT

- Employment conditions have been volatile this year with massive gains and losses, as seen on the previous page
- Unemployment claims have been declining with continued claims currently at 17 million
- Employment as a percent of the civilian, non-institutional population dropped to nearly 50%
- The ratio has never been that low in the post-WWII history

UNEMPLOYMENT CLAIMS (000)



EMPLOYED PERSONS / CIVILIAN POPULATION



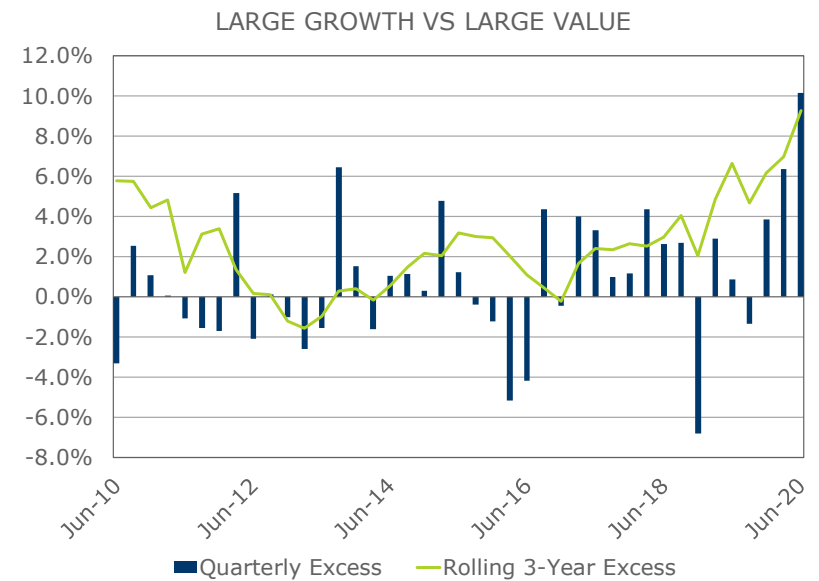
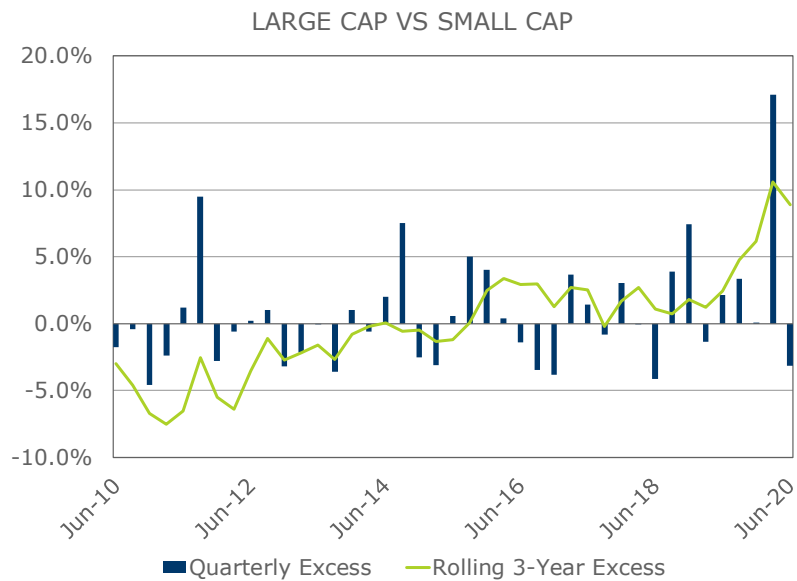
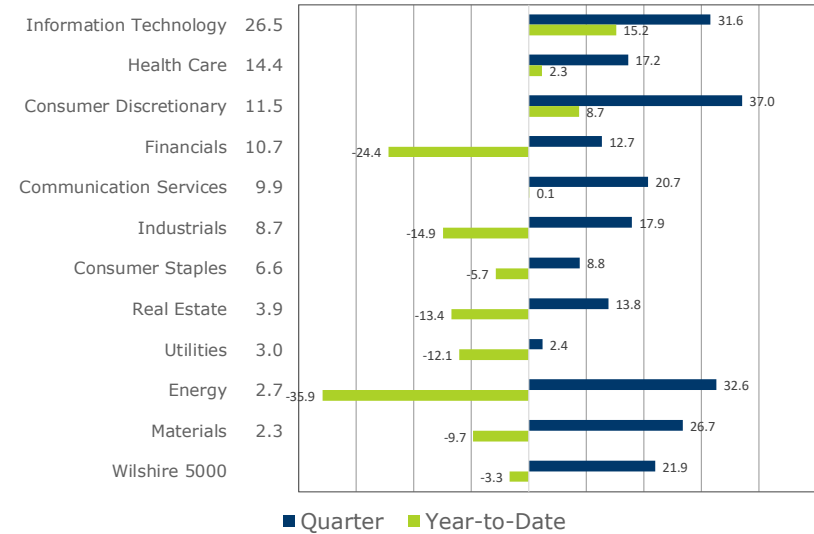
Data sources: Federal Reserve, Bloomberg

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## U.S. EQUITY MARKET

AS OF 6/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	21.9	-3.3	6.8	10.1	10.3	13.7
WILSHIRE U.S. LARGE CAP	21.6	-2.3	8.2	11.0	10.9	14.0
WILSHIRE U.S. SMALL CAP	25.6	-13.8	-7.7	1.9	4.3	11.0
WILSHIRE U.S. LARGE GROWTH	27.3	5.5	18.3	15.9	13.7	16.2
WILSHIRE U.S. LARGE VALUE	15.6	-10.0	-1.5	6.1	7.9	11.8
WILSHIRE U.S. SMALL GROWTH	29.9	-6.7	0.0	6.6	6.2	12.6
WILSHIRE U.S. SMALL VALUE	21.3	-20.5	-14.9	-2.7	2.1	9.3
WILSHIRE REIT INDEX	10.6	-17.8	-12.3	0.2	4.0	9.2
MSCI USA MIN. VOL. INDEX	12.9	-6.5	0.5	9.8	11.0	14.0
FTSE RAFI U.S. 1000 INDEX	18.1	-13.1	-4.3	4.3	6.3	11.7

U.S. SECTOR WEIGHT AND RETURN (%)

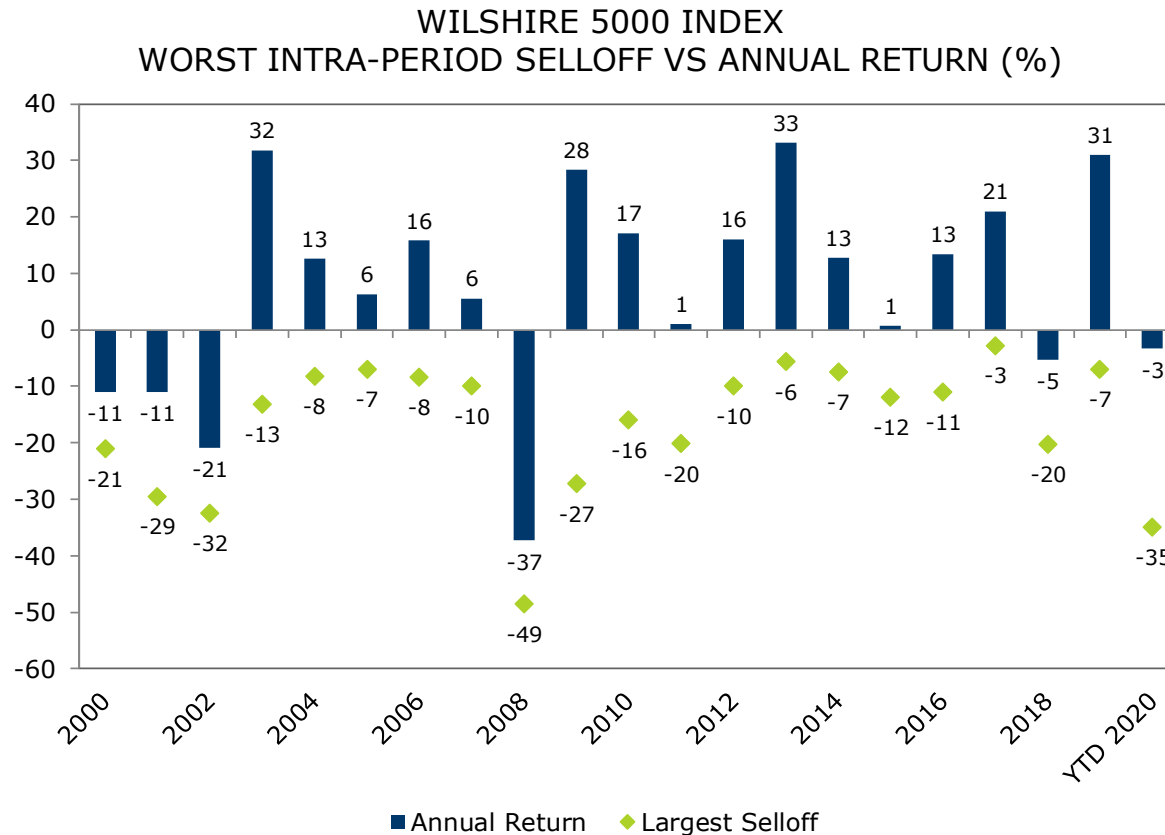


Data sources: Bloomberg, Wilshire Atlas

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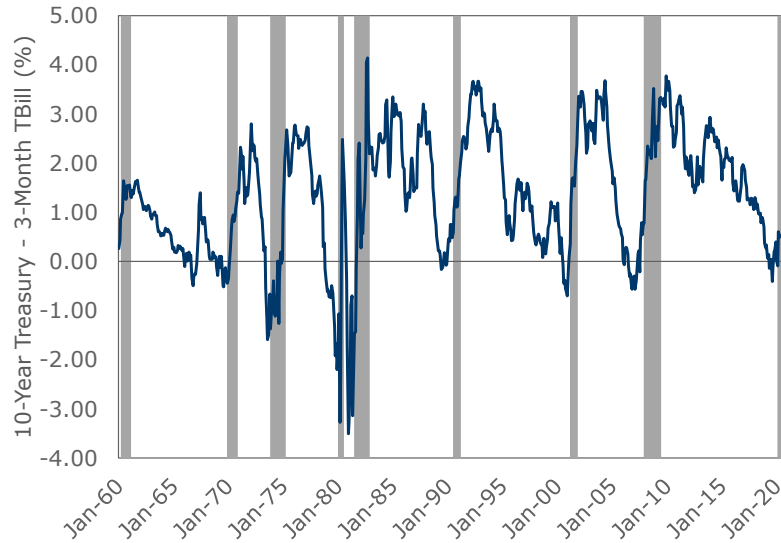
## ANNUAL RETURNS

- Coronavirus sell-off began in late February and reached -35% in late March
- Q2 return of 21.9% was the strongest quarterly return in 21 years

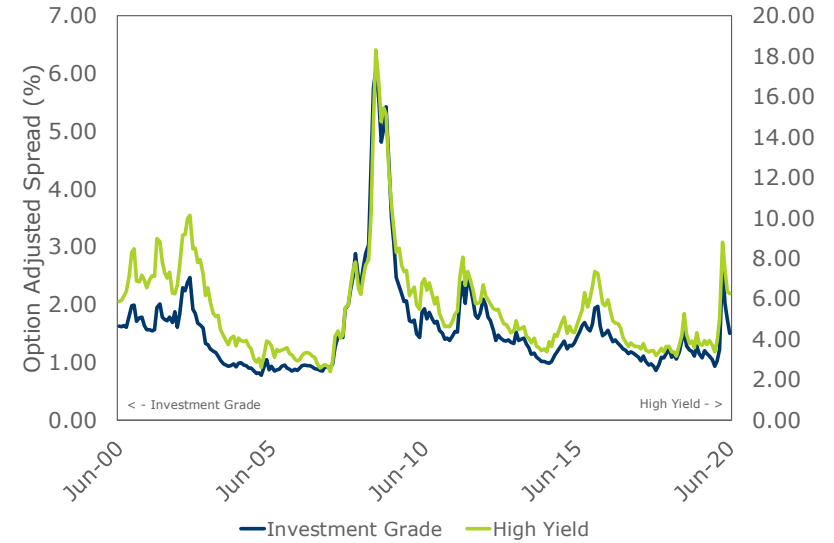


# RISK MONITOR

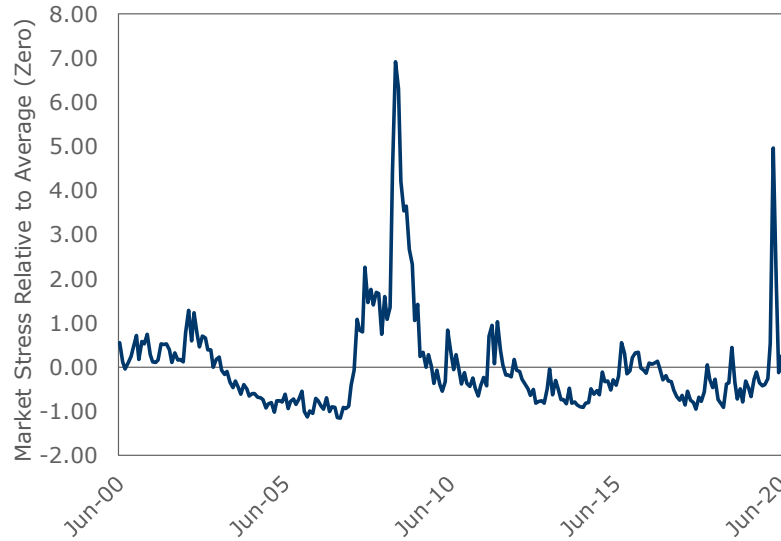
YIELD CURVE SLOPE VS RECESSIONS (IN GRAY)



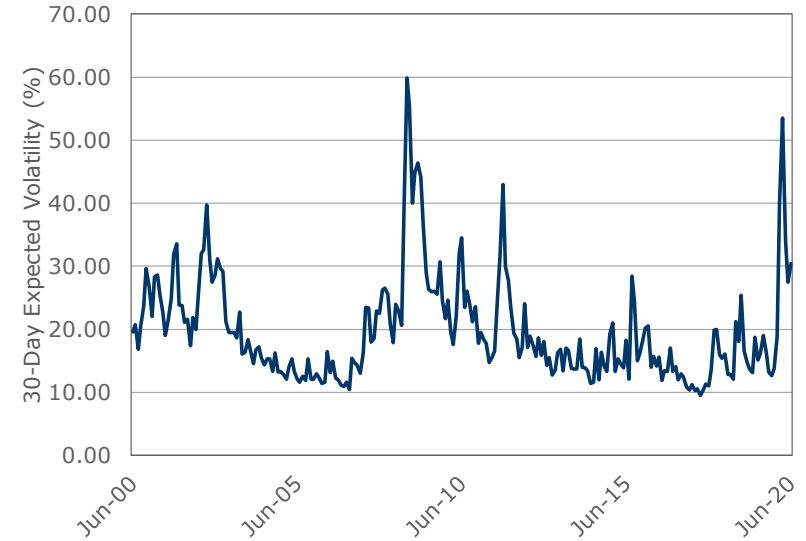
BLOOMBERG BARCLAYS CREDIT INDEXES



ST. LOUIS FED FINANCIAL STRESS INDEX



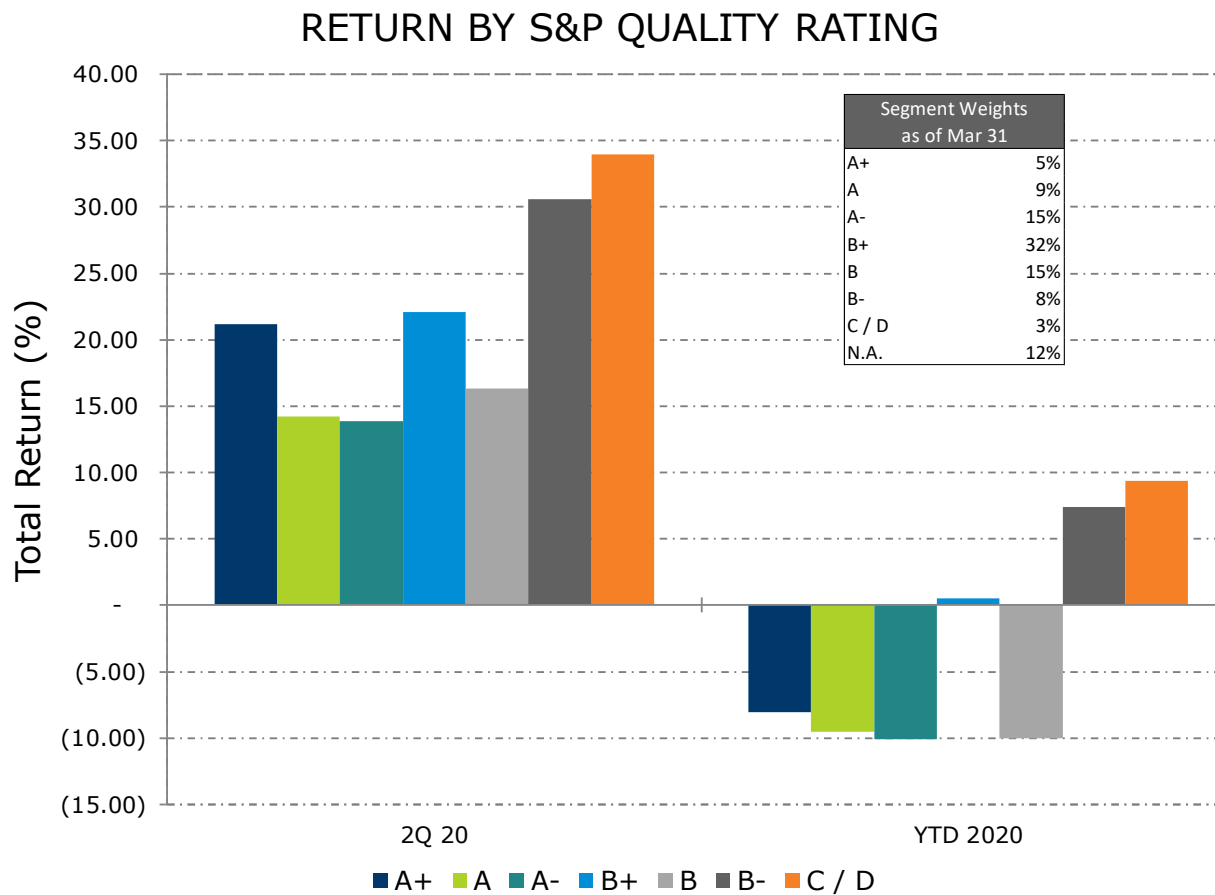
CBOE VOLATILITY INDEX



Data sources: Bloomberg

# RETURNS BY QUALITY SEGMENT

Lower quality names led the rebound and are up for the year

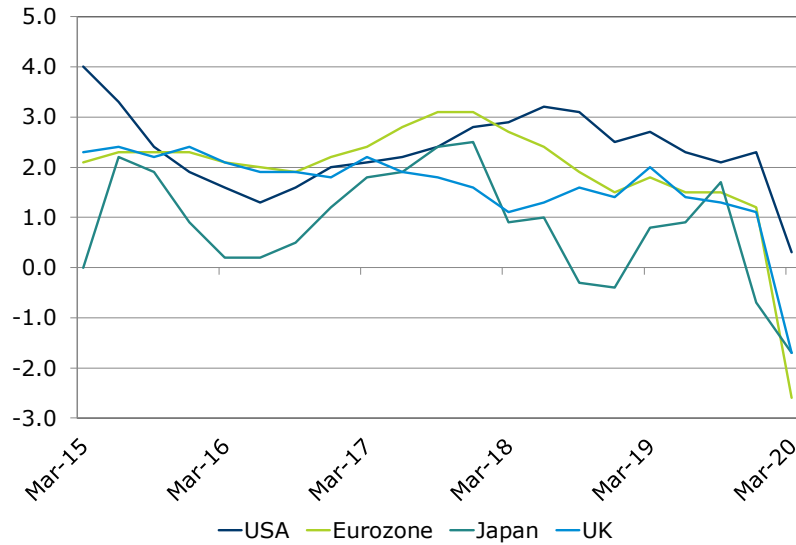


Data sources: Wilshire Atlas

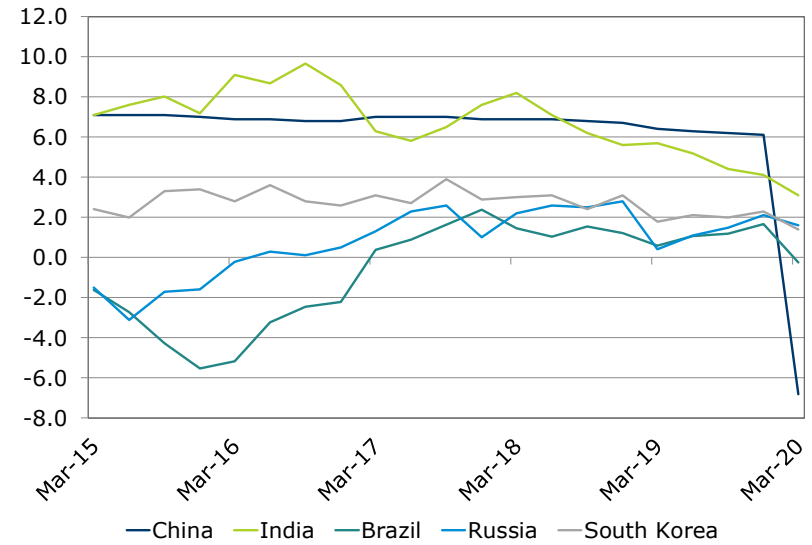


# NON-U.S. GROWTH AND INFLATION

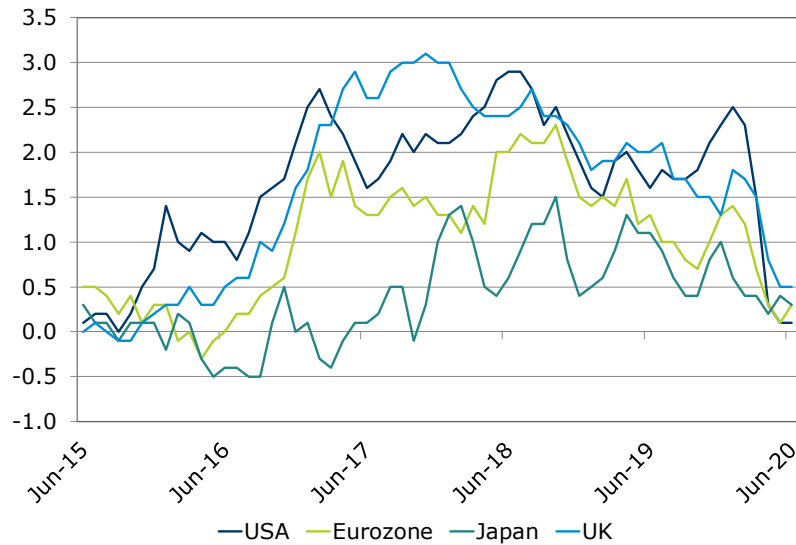
DEVELOPED MARKETS REAL GDP GROWTH YoY (%)



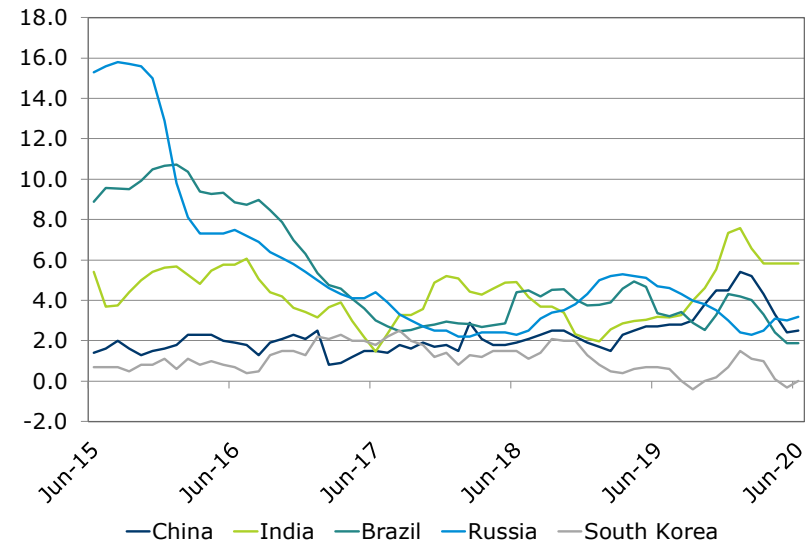
EMERGING MARKETS REAL GDP GROWTH YoY (%)



DEVELOPED MARKETS CPI GROWTH YoY (%)



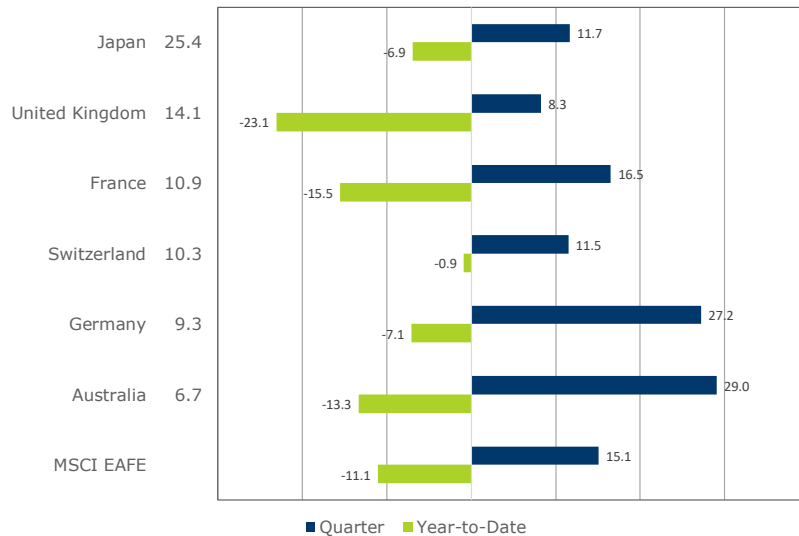
EMERGING MARKETS CPI GROWTH YoY (%)



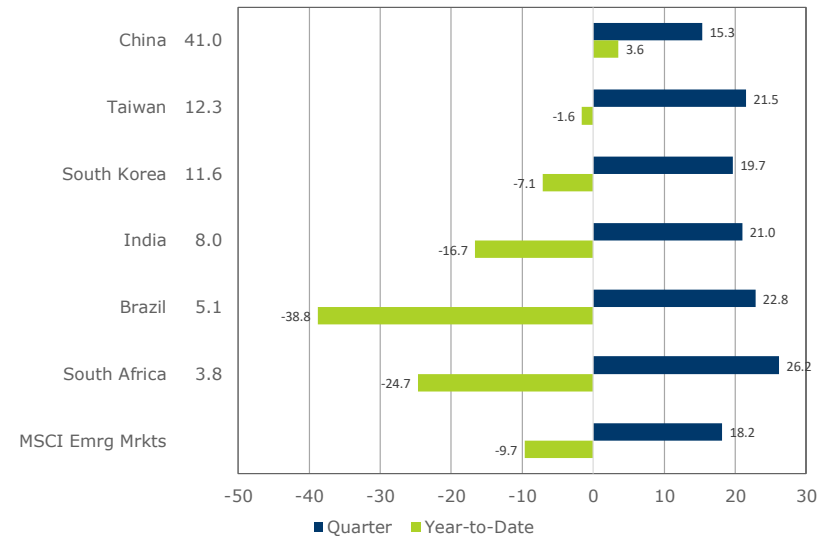
# NON-U.S. EQUITY MARKET

AS OF 6/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US (\$G)	16.3	-10.8	-4.4	1.6	2.7	5.5
MSCI EAFE (\$G)	15.1	-11.1	-4.7	1.3	2.5	6.2
MSCI EMERGING MARKETS (\$G)	18.2	-9.7	-3.0	2.3	3.2	3.6
MSCI FRONTIER MARKETS (\$G)	16.2	-20.4	-20.7	-4.5	-2.4	1.9
MSCI ACWI EX-US GROWTH (\$G)	19.2	-2.4	6.1	6.4	6.0	7.4
MSCI ACWI EX-US VALUE (\$G)	13.7	-19.2	-14.4	-3.4	-0.4	3.6
MSCI ACWI EX-US SMALL (\$G)	23.0	-12.6	-4.0	0.2	2.9	6.4
MSCI ACWI MINIMUM VOLATILITY	9.9	-7.5	-1.9	6.4	7.6	10.4
MSCI EAFE MINIMUM VOLATILITY	7.5	-10.0	-5.1	2.2	4.0	7.6
FTSE RAFI DEVELOPED EX-US	13.8	-17.6	-12.1	-2.7	0.1	4.2
MSCI EAFE LC (G)	12.8	-10.3	-3.8	1.7	3.1	7.4
MSCI EMERGING MARKETS LC (G)	16.8	-5.4	1.7	4.9	5.5	6.4

DEVELOPED MARKETS WEIGHT AND RETURN (%)



EMERGING MARKETS WEIGHT AND RETURN (%)

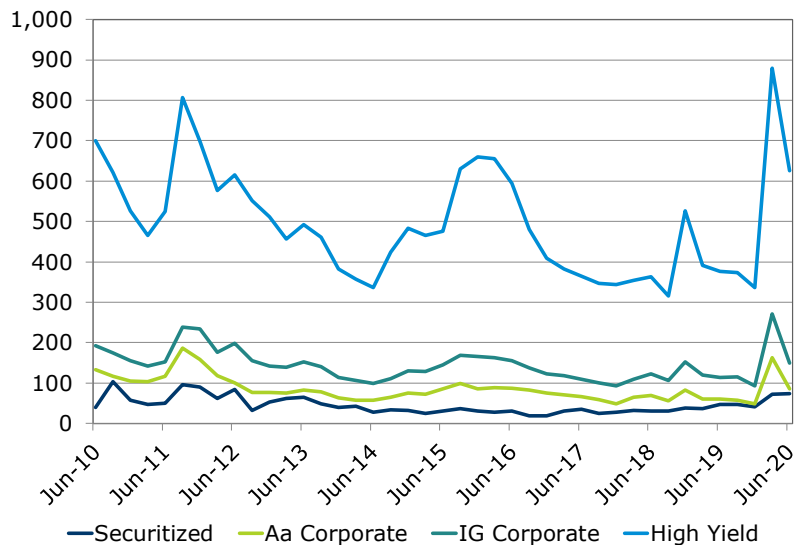


# U.S. FIXED INCOME

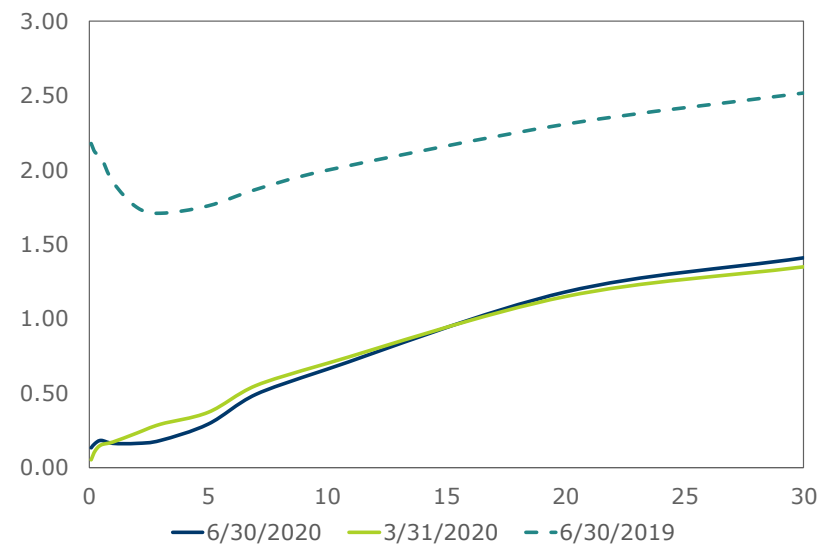
AS OF 6/30/2020	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	1.3	6.0	2.9	6.1	8.7	5.3	4.3	3.8
BLOOMBERG BARCLAYS TREASURY	0.5	7.2	0.5	8.7	10.4	5.6	4.1	3.4
BLOOMBERG BARCLAYS GOV'T-REL.	1.3	6.0	3.4	3.9	6.6	4.8	3.9	3.5
BLOOMBERG BARCLAYS SECURITIZED	1.4	2.3	0.9	3.6	5.7	4.0	3.3	3.2
BLOOMBERG BARCLAYS CORPORATE	2.1	8.5	9.0	5.0	9.5	6.3	5.8	5.5
BLOOMBERG BARCLAYS LT G/C	2.4	16.8	6.2	12.8	18.9	10.3	9.0	7.8
BLOOMBERG BARCLAYS LT TREASURY	1.3	19.4	0.2	21.2	25.4	12.0	9.3	7.7
BLOOMBERG BARCLAYS LT GOV't-REL.	2.9	13.5	8.2	4.3	10.0	8.0	7.1	7.2
BLOOMBERG BARCLAYS LT CORP.	3.2	15.2	11.4	6.3	13.8	8.8	8.8	7.8
BLOOMBERG BARCLAYS U.S. TIPS *	0.6	7.8	4.2	6.0	8.3	5.0	3.7	3.5
BLOOMBERG BARCLAYS HIGH YIELD	6.9	3.9	10.2	-3.8	0.0	3.3	4.8	6.7
TREASURY BILLS	0.1	0.3	0.0	0.7	1.7	1.8	1.2	0.7

\* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

FIXED INCOME OPTION ADJUSTED SPREAD (BPS)



TREASURY YIELD CURVE (%)

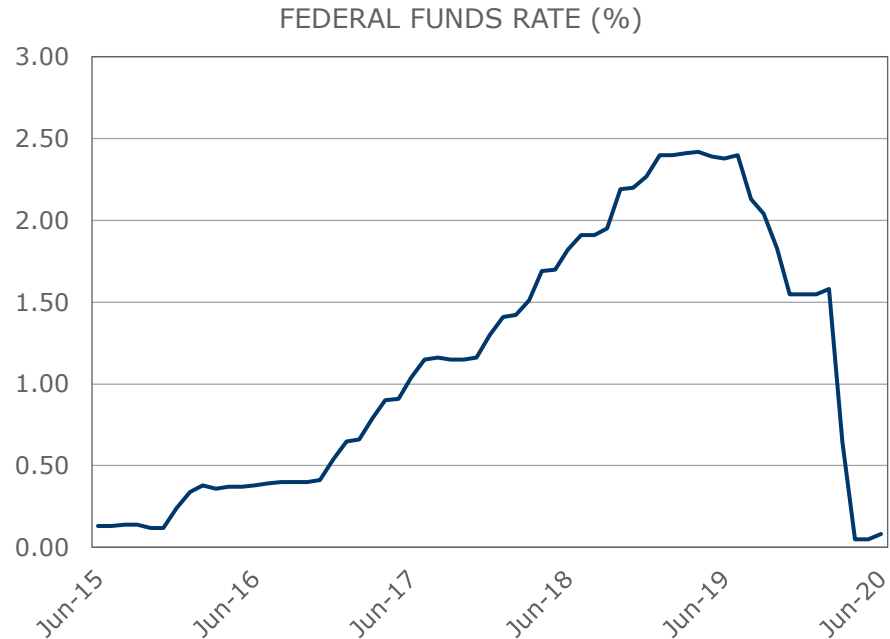


Data sources: Bloomberg

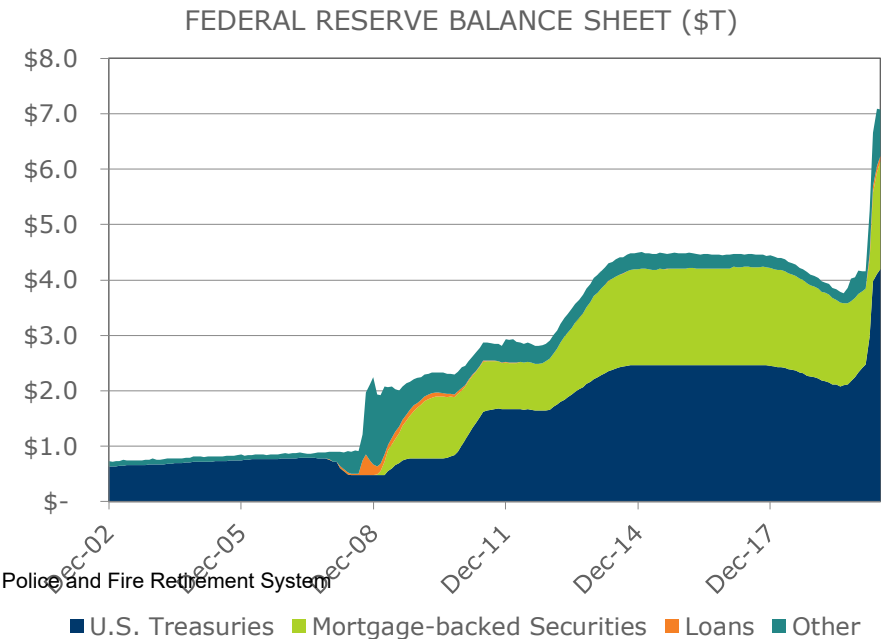
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## FEDERAL RESERVE

- Current expectation for the Fed-funds rate is to remain near zero through 2022
- Federal Reserve has added nearly \$3 trillion in assets to their balance sheet just this year
- Unlike after the GFC, the Fed is also buying corporate and municipal bonds in addition to Treasuries and MBS



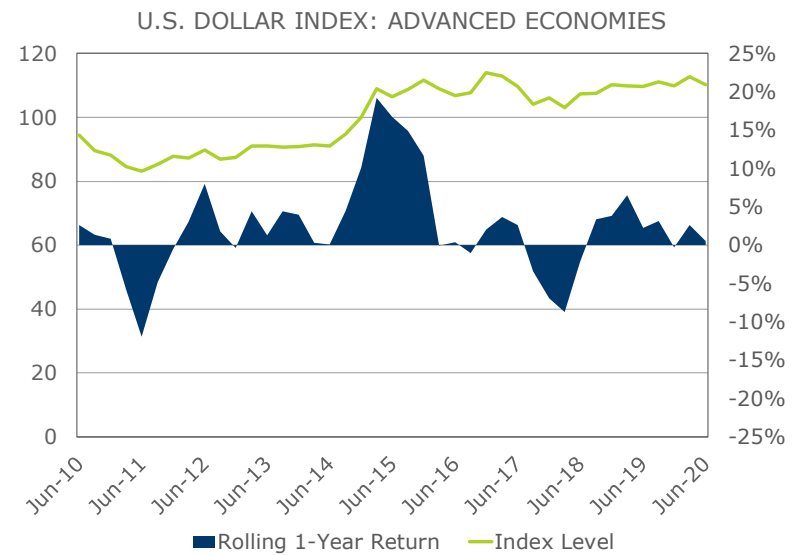
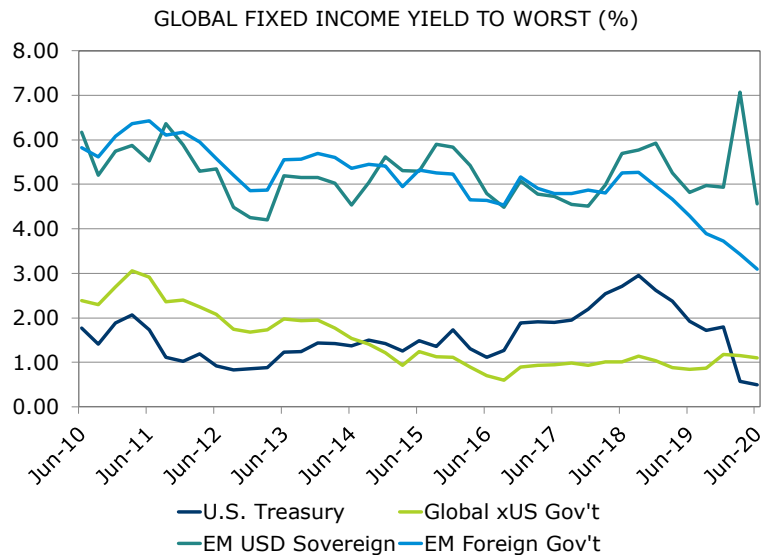
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020		\$2,924



# NON-U.S. FIXED INCOME

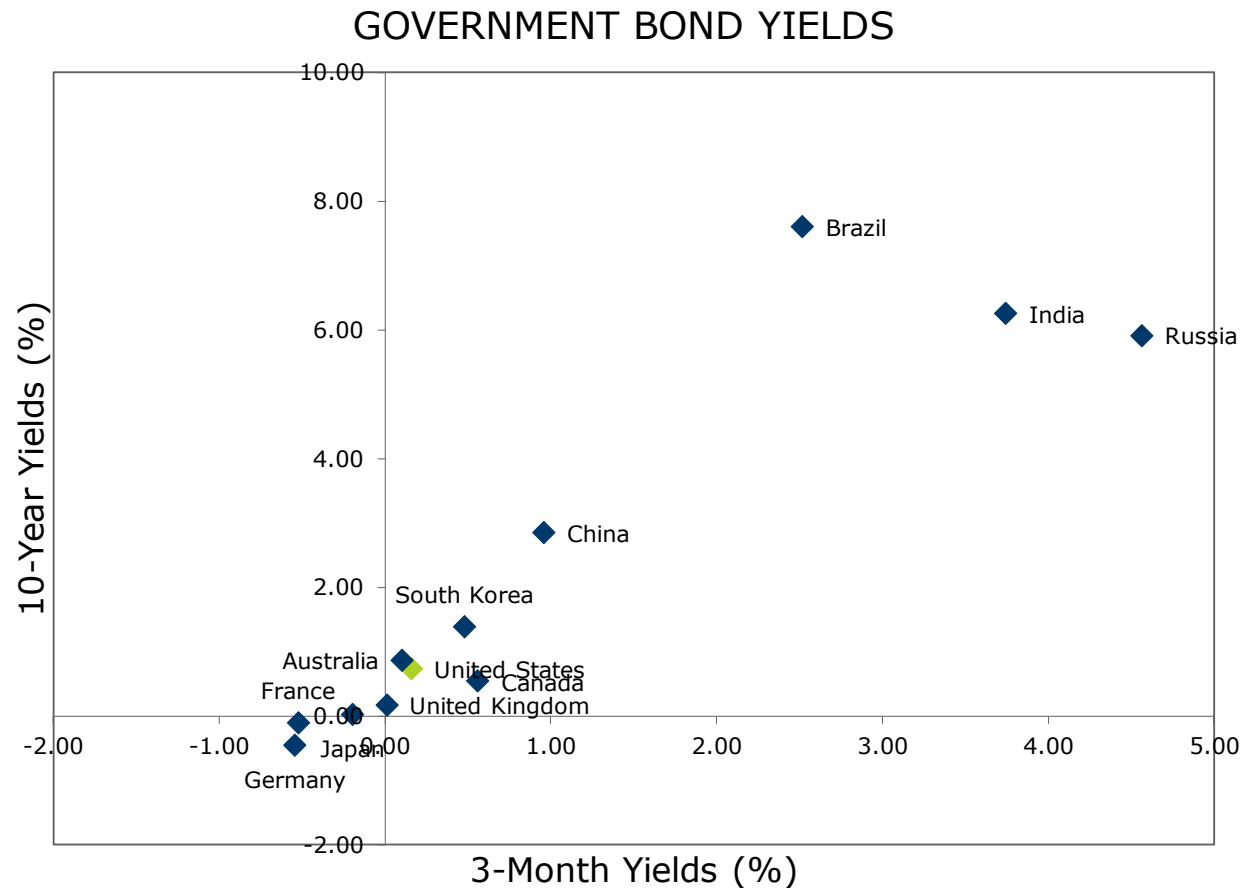
AS OF 6/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
<b>DEVELOPED MARKETS</b>						
BLMBRG BRCLYS GLBL AGGREGATE xUS	3.4	0.6	0.7	2.5	2.9	2.0
BLMBRG BRCLYS GLBL AGGREGATE xUS *	1.8	2.3	4.0	4.9	4.5	4.2
BLMBRG BRCLYS GLOBAL INF LNKD xUS	8.3	2.0	3.4	3.5	2.8	4.2
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	7.4	6.7	7.3	6.5	6.6	6.3
<b>EMERGING MARKETS (HARD CURRENCY)</b>						
BLMBRG BRCLYS EM USD AGGREGATE	10.0	-0.4	3.0	4.2	5.2	6.0
<b>EMERGING MARKETS (FOREIGN CURRENCY)</b>						
BLMBRG BRCLYS EM LOCAL CURR. GOV'T	4.5	-3.4	-0.1	2.4	2.8	2.9
BLMBRG BRCLYS EM LOCAL CURR. GOV'T *	2.2	2.9	6.3	5.0	4.2	3.6
EURO vs. DOLLAR	1.8	0.2	-1.2	-0.6	0.2	-0.9
YEN vs. DOLLAR	-0.4	0.6	-0.1	1.4	2.6	-2.0
POUND vs. DOLLAR	-0.2	-6.5	-2.3	-1.6	-4.6	-1.8

\* Returns are reported in terms of local market investors, which removes currency effects.



# GLOBAL INTEREST RATES

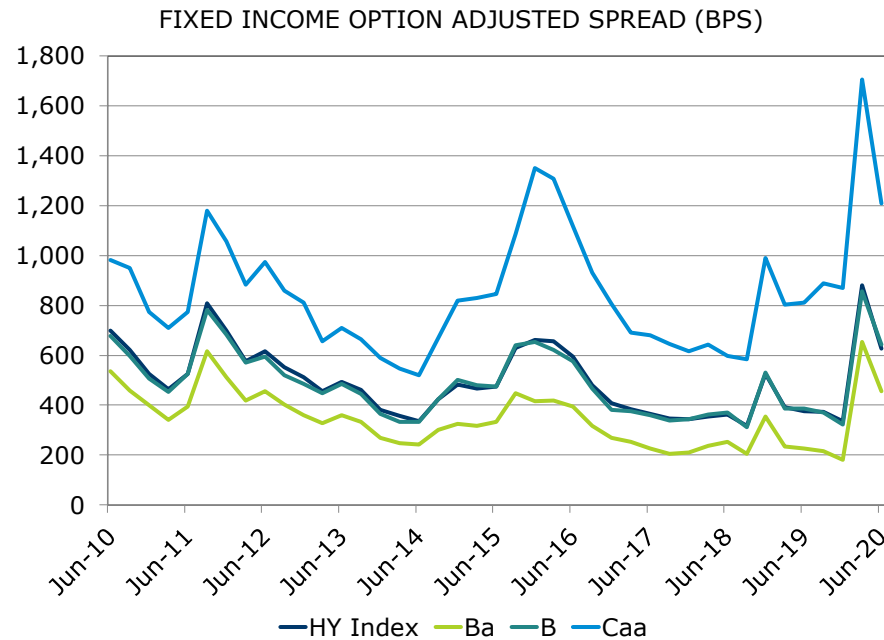
Negative rates found in Germany and France; low but positive rates, and at similar levels, in the U.S. and Australia while the U.K. approaches zero in both the short and long-term



Data sources: Bloomberg

# HIGH YIELD BOND MARKET

AS OF 6/30/2020		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		6.9	10.2	-3.8	0.0	3.3	4.8	6.7
S&P LSTA LEVERAGE LOAN INDEX		6.1	6.6	-3.9	-0.5	2.5	3.0	4.1
<b>HIGH YIELD QUALITY DISTRIBUTION</b>	<b>WEIGHT</b>							
Ba U.S. HIGH YIELD	55.2%	5.2	11.5	0.2	4.7	5.0	5.8	7.2
B U.S. HIGH YIELD	31.9%	7.1	8.6	-5.5	-1.4	3.0	4.1	6.3
Caa U.S. HIGH YIELD	12.2%	12.6	9.1	-13.3	-11.7	-1.9	2.6	5.8
Ca to D U.S. HIGH YIELD	0.7%	29.6	2.1	-28.3	-38.0	-10.3	-3.9	-5.7
Non-Rated U.S. HIGH YIELD	0.0%	0.0	6.1	-6.5	-5.2	0.4	-1.0	4.3



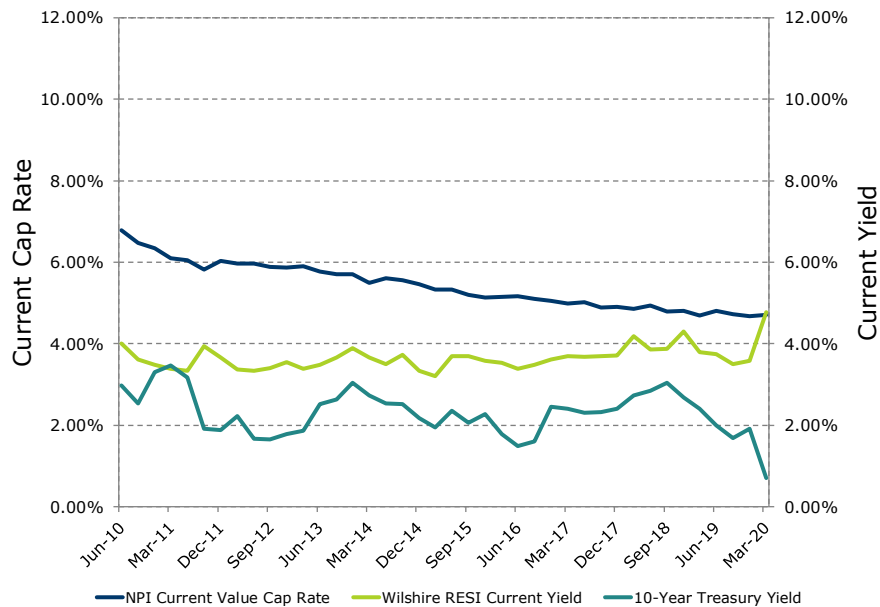
Data sources: Bloomberg

# Wilshire Consulting

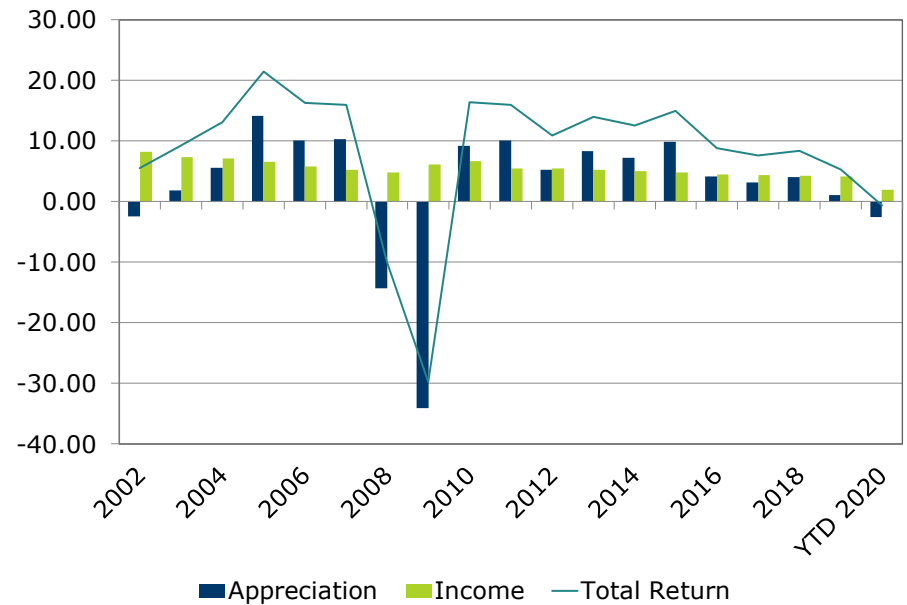
## REAL ASSETS

AS OF 6/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	4.2	6.0	8.3	5.0	3.7	3.5
BLOOMBERG COMMODITY INDEX	5.1	-19.4	-17.4	-6.1	-7.7	-5.8
WILSHIRE GLOBAL RESI INDEX	9.5	-20.3	-15.2	-0.7	2.6	8.3
NCREIF ODCE FUND INDEX	-1.6	-0.6	2.2	5.7	7.3	10.8
NCREIF TIMBERLAND INDEX	0.1	0.2	0.3	2.3	2.8	4.4
ALERIAN MIDSTREAM ENERGY	32.6	-29.6	-29.4	-8.9	-8.0	n.a.

REAL ESTATE VALUATION



NCREIF ODCE FUND INDEX RETURN (%)



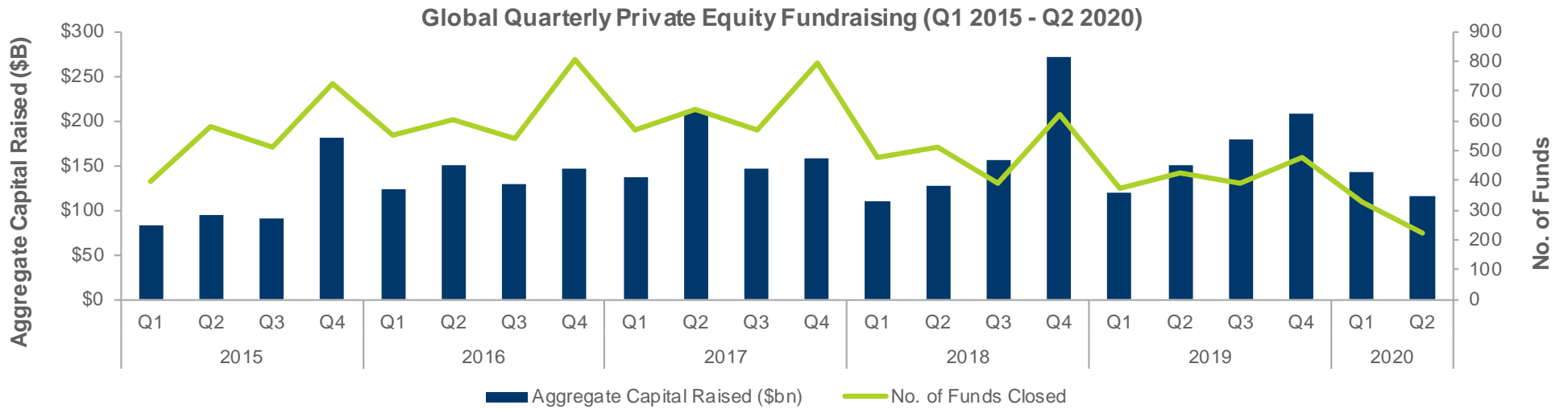
Data sources: Wilshire Compass, National Council of Real Estate Investment Fiduciaries





# APPENDIX: PRIVATE MARKETS UPDATE

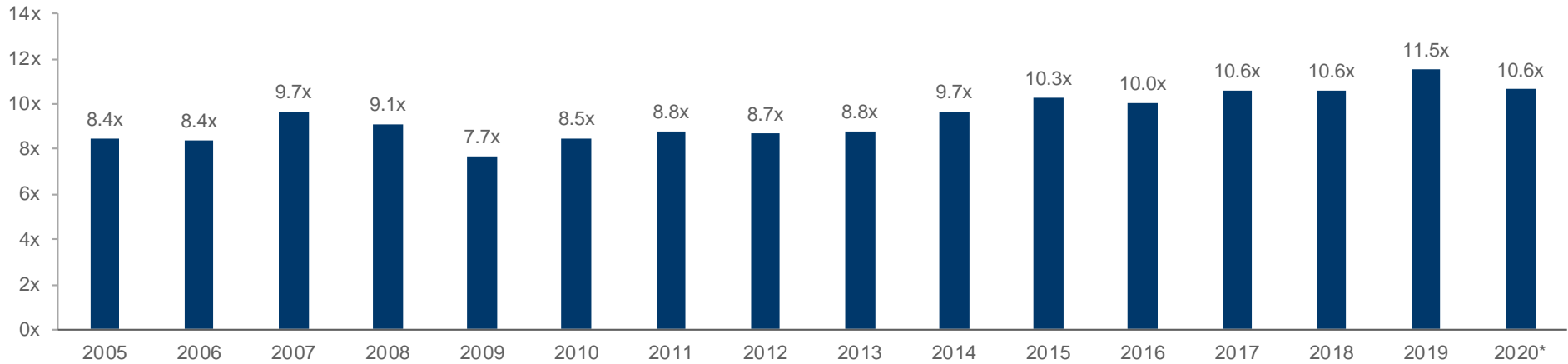
# PRIVATE EQUITY – FUNDRAISING & INVESTMENT ACTIVITY



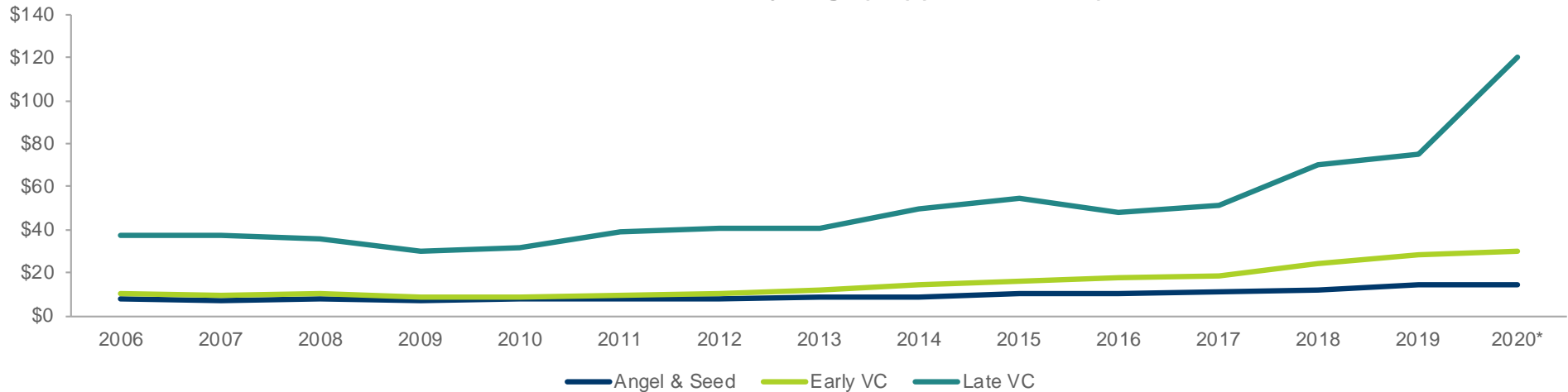
Source: Preqin, as of June 30, 2020.

# PRIVATE EQUITY – PRICING & VALUATIONS

LBO Purchase Price Multiples (2005 - Q2 2020)



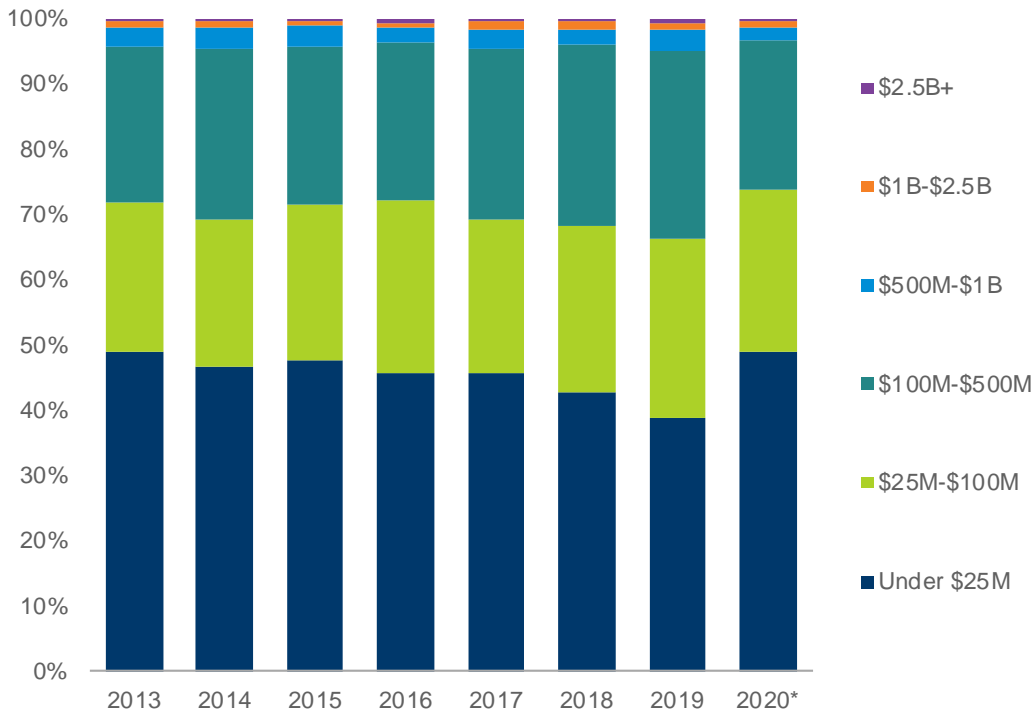
U.S. Median Pre-Value by Stage (\$M) (2006 - Q2 2020)



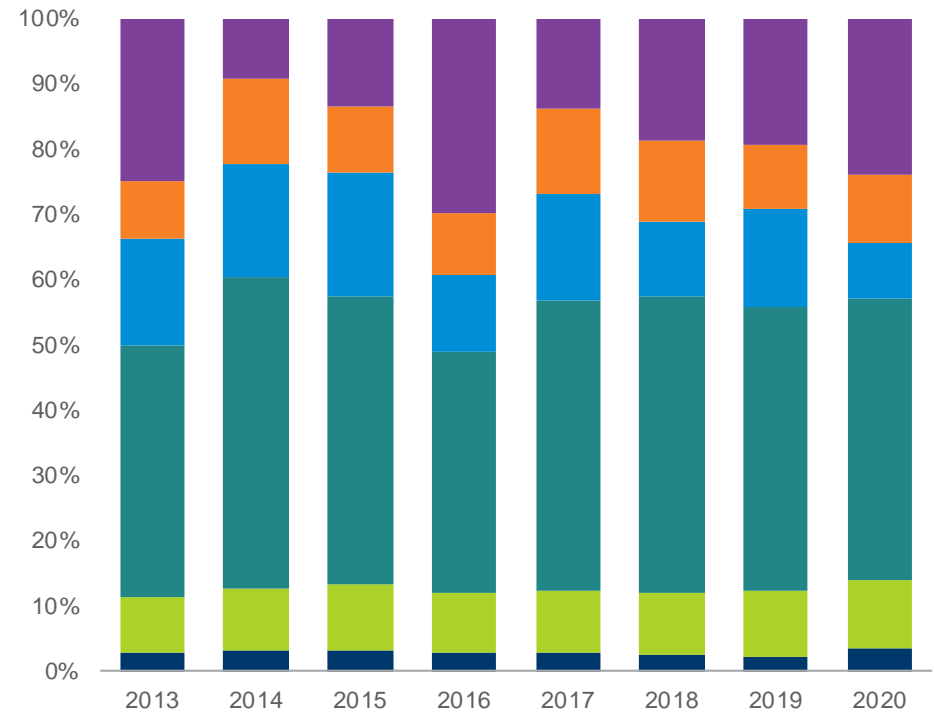
Source: S&P LBO; PitchBook, \*as of June 30, 2020.

# U.S. INVESTMENT ACTIVITY BY DEAL SIZE

Percentage of Deal Volume by Deal Size (by Count)\*



Percentage of Deal Volume by Deal Size (by Dollars)\*

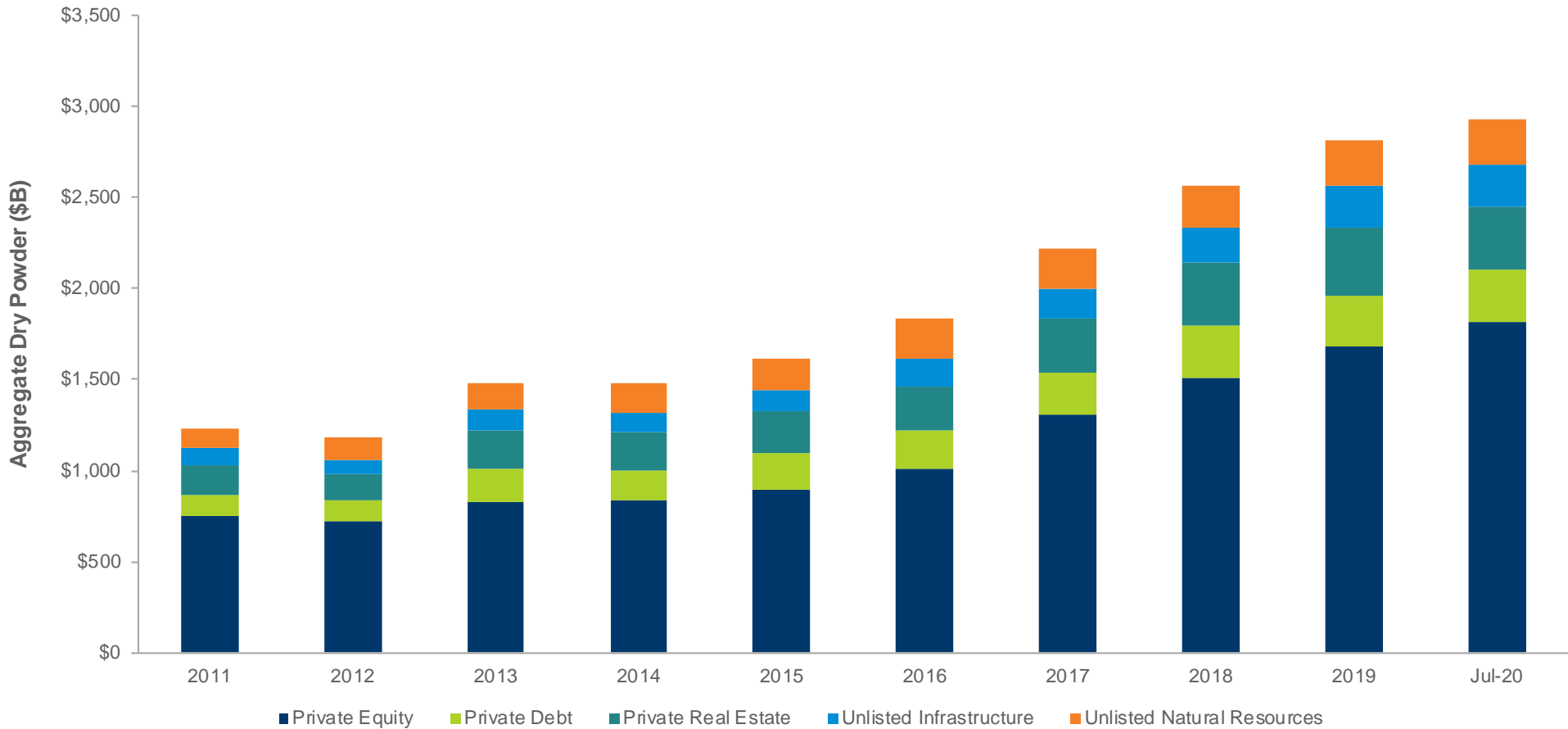


- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the second quarter of 2020
- However, deals with below \$100 million check sizes comprised only 14% of all deal volume by amount of capital invested in the second quarter of 2020

Source: PitchBook, \*as of June 30, 2020.

# PRIVATE CAPITAL DRY POWDER

Private Capital Dry Powder by Fund Type (2011 - July 2020)



- Global private capital dry powder continues to increase, topping \$2.9 trillion across all fund types
- Private equity comprises just over 60% of total dry powder in the market as of July 2020

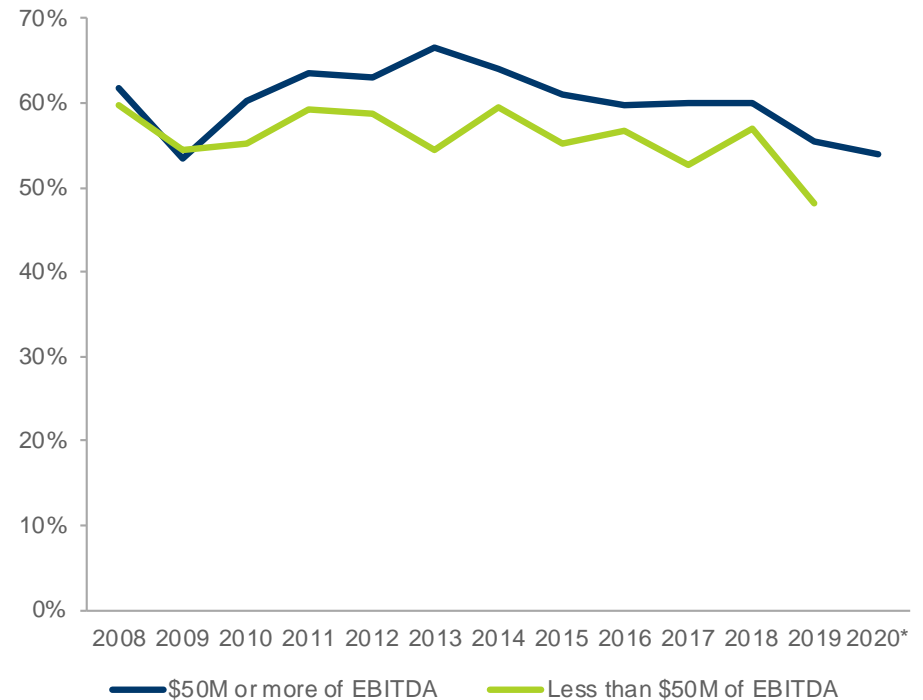
Source: Preqin, as of July 27, 2020.

# PRIVATE EQUITY - U.S. DEBT MARKETS

Total U.S. LBO Loan Volume (\$B) (2005 - Q2 2020)



Percentage of Debt Used in LBOs (2008 - Q2 2020)

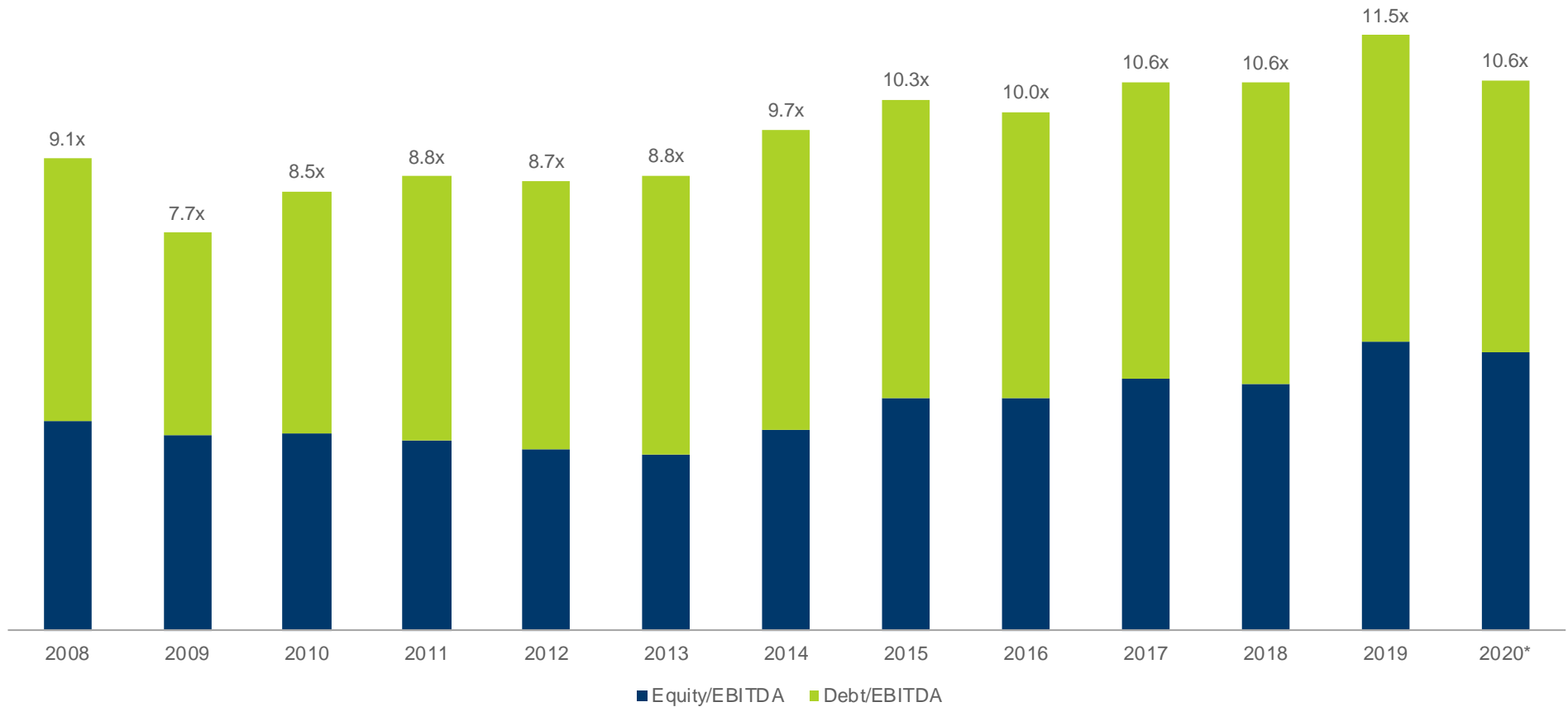


- 2020 has generated approximately \$38 billion in loan volume so far and is on pace to see a slight decrease in loan volume from 2019
- As debt multiples continue to increase, the percentage of debt used to finance leveraged buyouts through the second quarter of 2020 has dropped from 2019 marks

Source: S&P LBO, \*as of June 30, 2020. "Less than \$50M of EBITDA" data for 2020 not yet available

# PRIVATE EQUITY - U.S. LBO PURCHASE PRICE MULTIPLES

Purchase Price Multiples of U.S. LBO Transactions (2008 - Q2 2020)

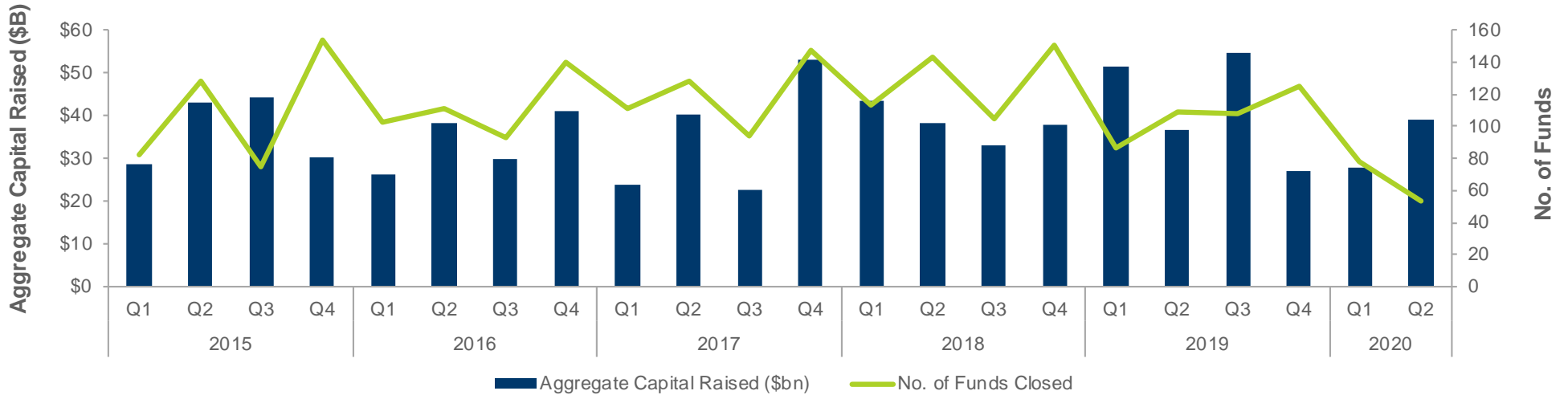


- Purchase price multiples for U.S. LBOs have slightly decreased through Q2 2020, relative to 2019 levels

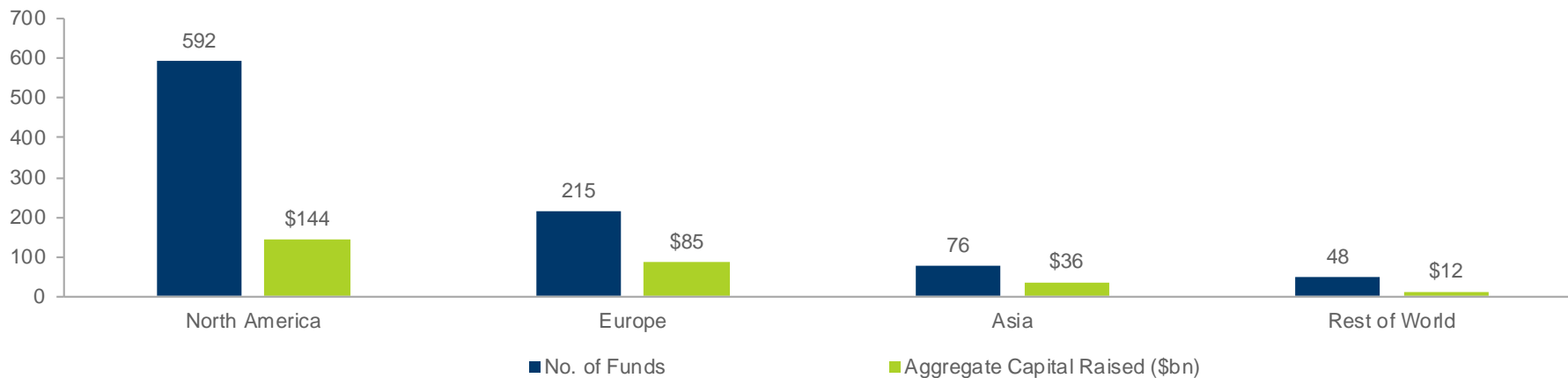
Source: S&P LBO, \*as of June 30, 2020.

# PRIVATE REAL ESTATE – FUNDRAISING ACTIVITY

Global Quarterly Closed-End Private Real Estate Fundraising (Q1 2015 - Q2 2020)



Closed-End Private Real Estate Funds Actively in Market in Q2 2020 by Primary Geographic Focus

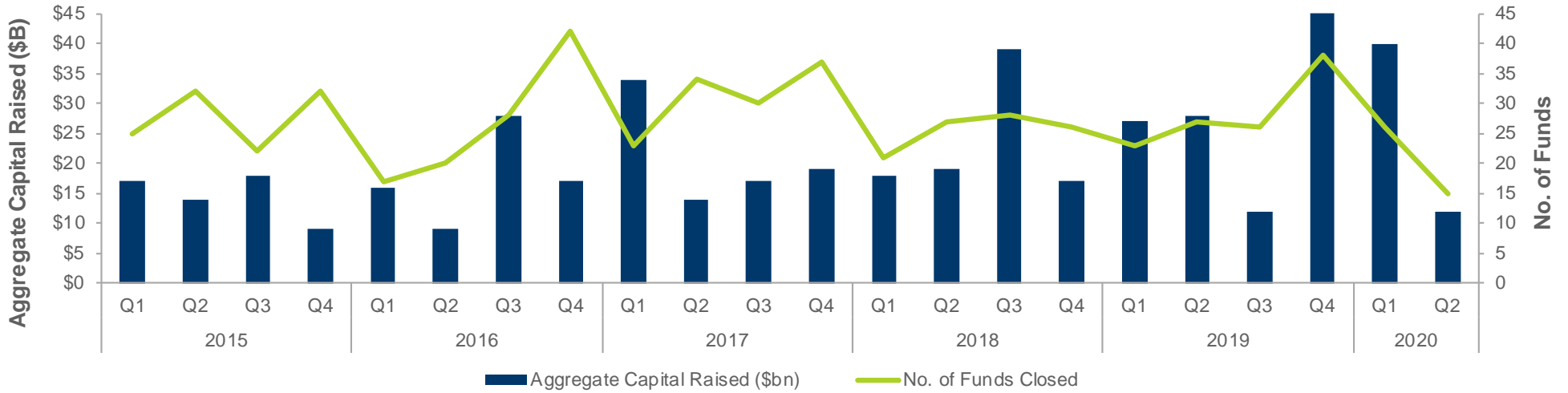


Source: Preqin, as of June 30, 2020.

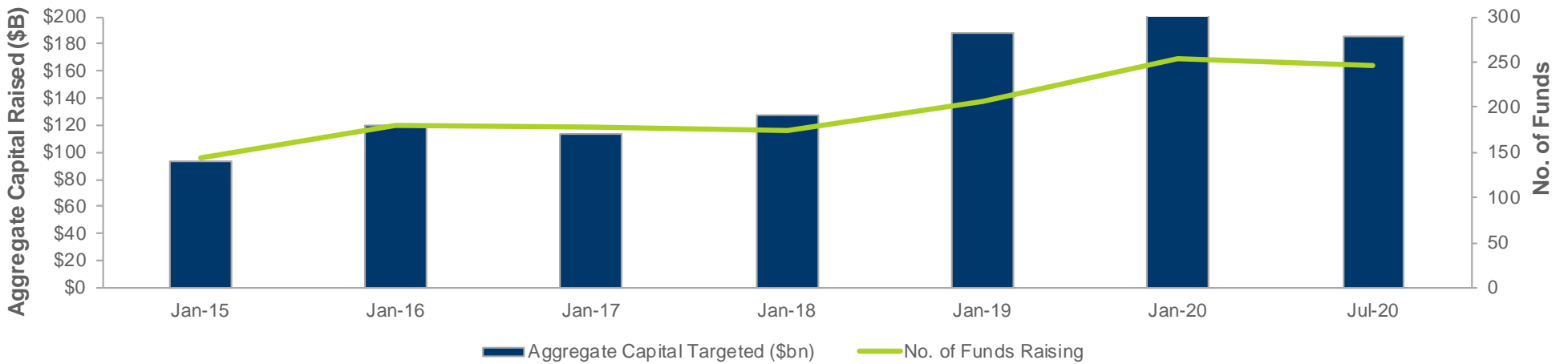


# UNLISTED INFRASTRUCTURE – FUNDRAISING & INVESTMENT ACTIVITY

Global Quarterly Unlisted Infrastructure Fundraising (Q1 2015 - Q2 2020)

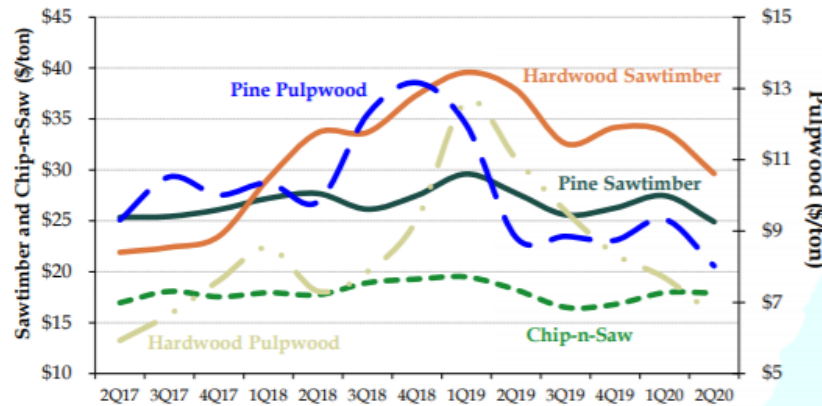


Unlisted Infrastructure Funds in Market over Time (2015 - July 2020)



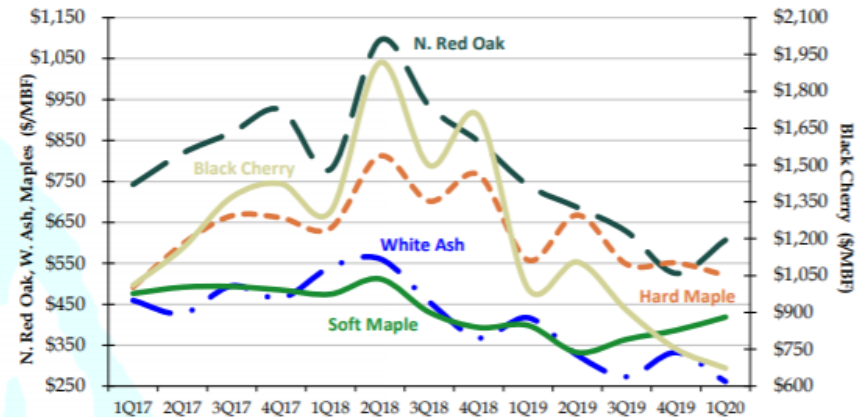
Source: Preqin, as of June 30, 2020.

**Southeastern Timber Prices**



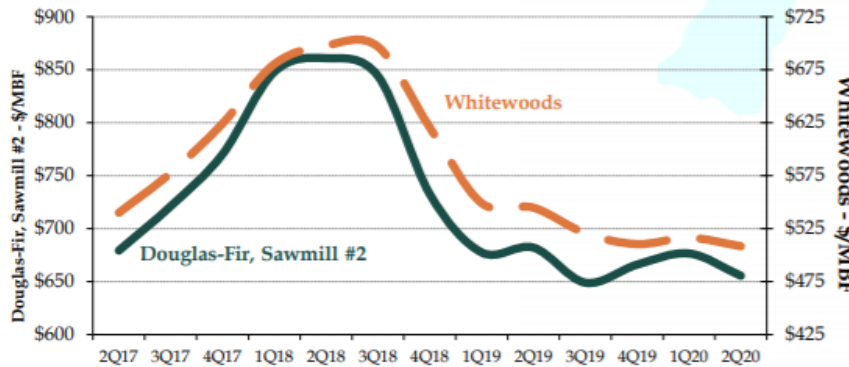
Source: Forest2Market®

**Northeastern Hardwood Timber Prices**



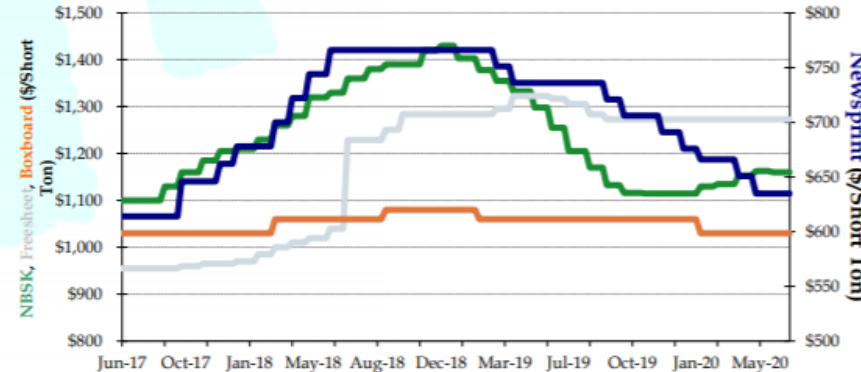
Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

**Pacific Northwest Timber Prices**



Source: Fastmarkets RISI - Log Lines®

**Pulp and Paper**

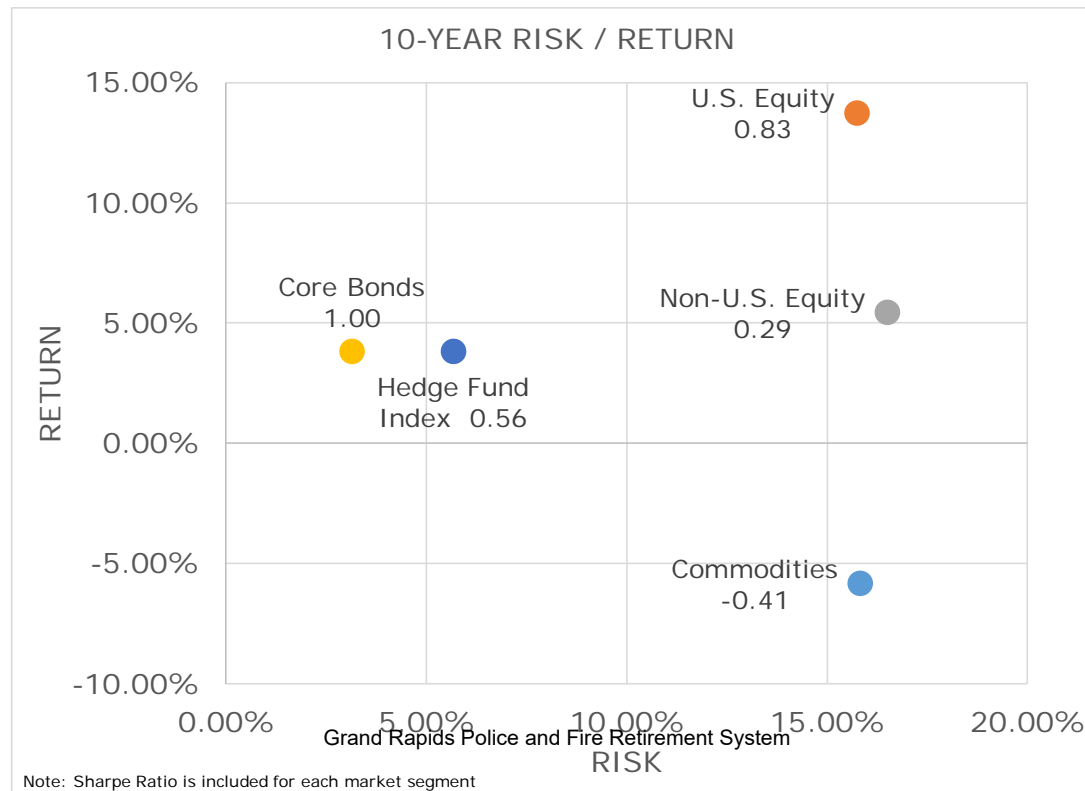


Source: Fastmarkets RISI

Data sources: Forest Investment Associates

# HEDGE FUND PERFORMANCE

AS OF 6/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DJ CS HEDGE FUND INDEX	6.2	-3.3	-0.7	2.1	1.6	3.8
EVENT DRIVEN	9.8	-7.6	-6.9	-0.5	-0.7	2.5
GLOBAL MACRO	4.6	-3.9	-1.1	3.2	1.8	3.9
LONG/SHORT EQUITY	9.8	-2.5	2.6	3.5	2.7	5.2
MULTI-STRATEGY	3.9	-2.8	-0.9	1.6	3.0	5.7
WILSHIRE 5000	21.9	-3.3	6.8	10.1	10.3	13.7
MSCI ACWI EX-US (\$G)	16.3	-10.8	-4.4	1.6	2.7	5.5
BLOOMBERG BARCLAYS AGGREGATE	2.9	6.1	8.7	5.3	4.3	3.8
BLOOMBERG COMMODITY INDEX	5.1	-19.4	-17.4	-6.1	-7.7	-5.8



Data sources: Bloomberg

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# Total Fund

# Asset Allocation Compliance

Total Fund

Periods Ended As of June 30, 2020

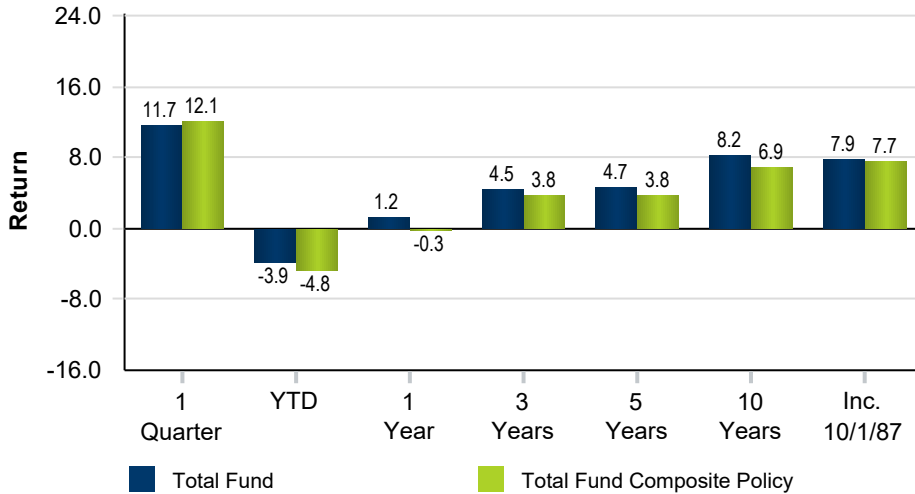
Asset Class	Current Allocation		Policy (%)	Difference to Target	
	(\$000)	(%)		(\$000)	(%)
Domestic Equity	76,215	18.2	17.8	1,843	0.4
International Equity	77,041	18.4	17.8	2,669	0.6
Global Low Volatility Equity	39,951	9.5	10.0	(1,949)	(0.5)
Private Equity	23,219	5.5	5.0	2,269	0.5
Private Credit	17,700	4.2	5.0	(3,250)	(0.8)
<b>Total Growth Assets</b>	<b>234,126</b>	<b>55.9</b>	<b>55.5</b>	<b>1,581</b>	<b>0.4</b>
Core Fixed Income	110,678	26.4	24.5	8,023	1.9
Cash & Equivalents	1,434	0.3	0.0	1,434	0.3
<b>Total Safety Oriented Assets</b>	<b>112,112</b>	<b>26.8</b>	<b>24.5</b>	<b>9,457</b>	<b>2.3</b>
U.S. TIPS	22,636	5.4	5.0	1,686	0.4
U.S. REITs	18,986	4.5	5.0	(1,964)	(0.5)
Midstream Energy Infrastructure	13,356	3.2	5.0	(7,594)	(1.8)
Commodities	17,785	4.2	5.0	(3,165)	(0.8)
<b>Total Inflation Oriented Assets</b>	<b>72,763</b>	<b>17.4</b>	<b>20.0</b>	<b>(11,037)</b>	<b>(2.6)</b>
<b>Total Fund Assets</b>	<b>419,000</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>0.0</b>

# Composite Performance Summary

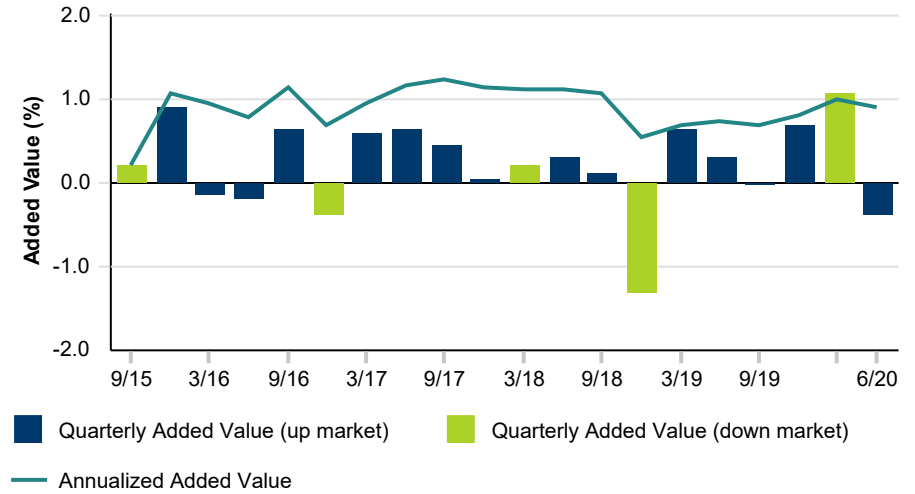
Total Fund

Periods Ended June 30, 2020

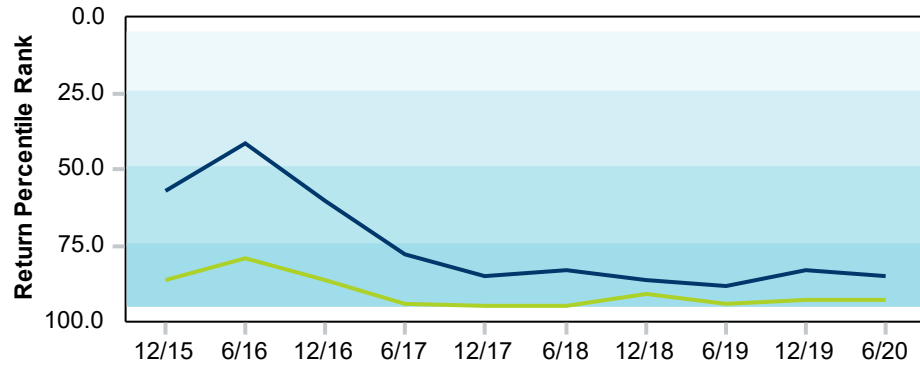
**Comparative Performance**



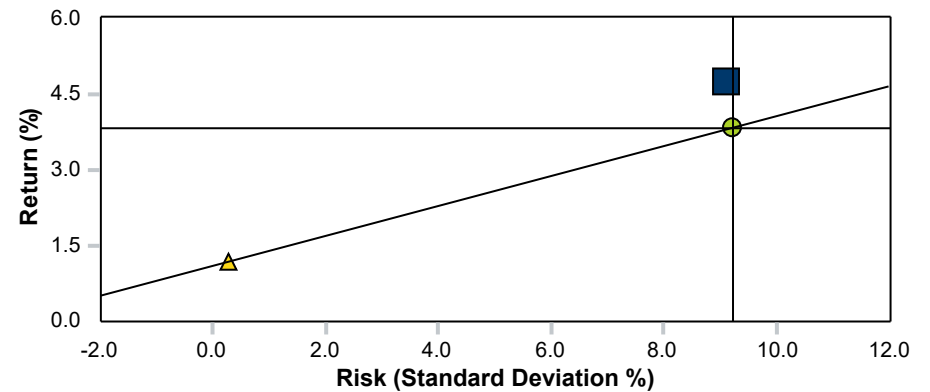
**Added Value History**



**Rolling Percentile Rank: All Public Plans-Total Fund**



**Risk and Return 07/1/15 - 06/30/20**



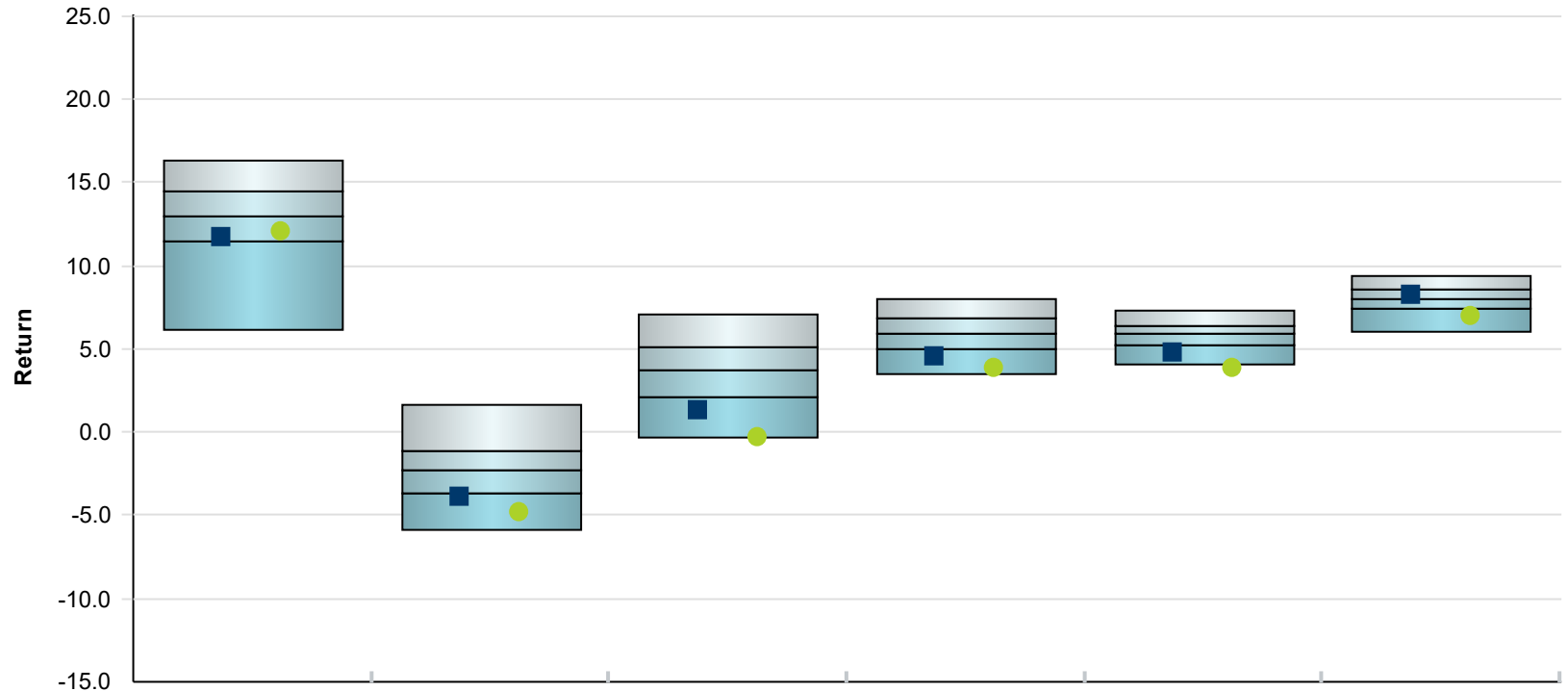
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Fund	10	0 (0%)	1 (10%)	2 (20%)	7 (70%)
Benchmark	10	0 (0%)	0 (0%)	0 (0%)	10 (100%)

■ Total Fund  
● Total Fund Composite Policy  
▲ 90 Day US Treasury Bill

# Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans-Total Fund

Periods Ended June 30, 2020



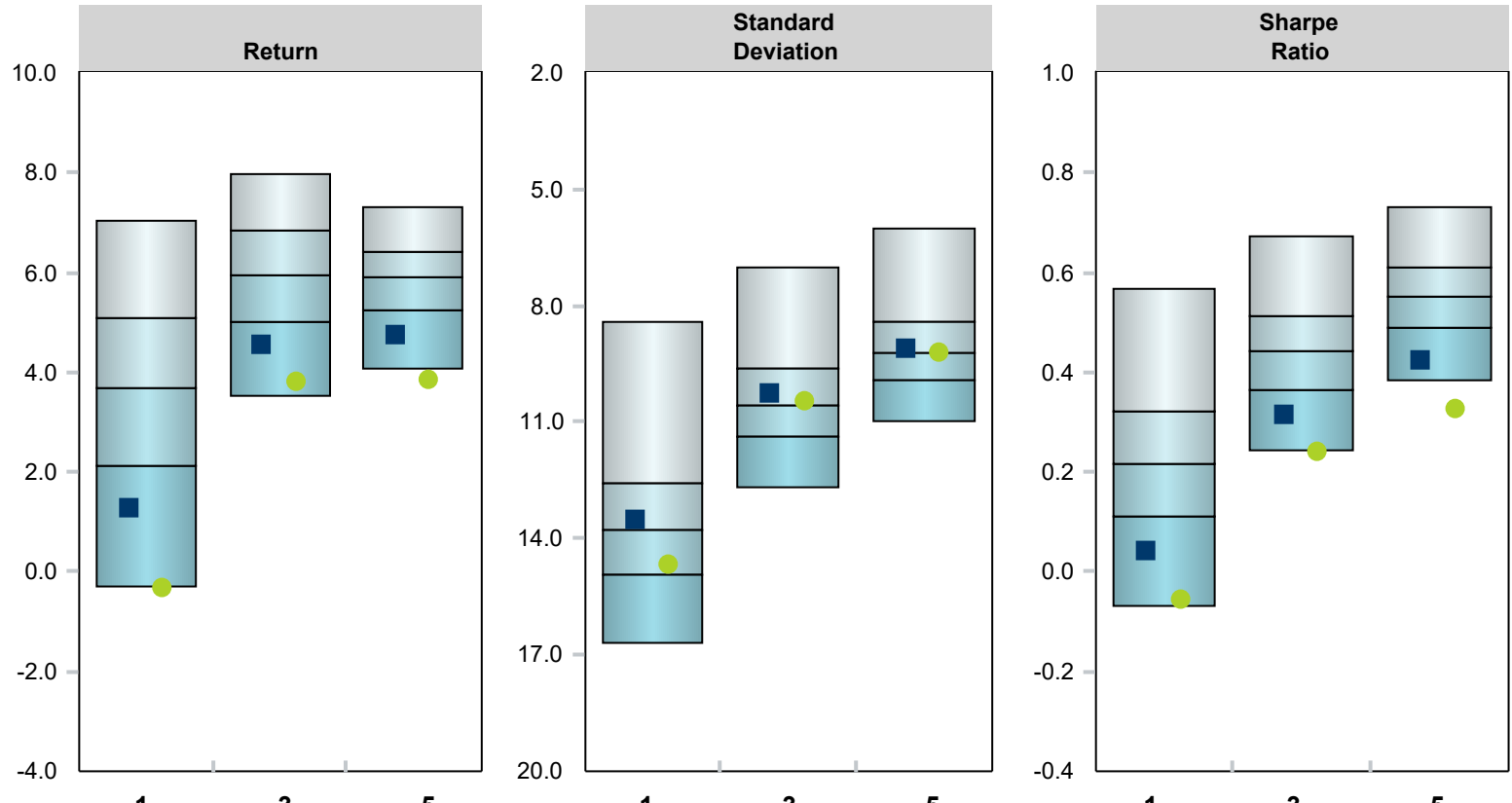
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	11.71 (73)	-3.94 (81)	1.25 (86)	4.55 (85)	4.74 (89)	8.21 (42)
● Total Fund Composite Policy	12.09 (67)	-4.81 (90)	-0.34 (96)	3.80 (93)	3.83 (97)	6.92 (88)
5th Percentile	16.34	1.64	7.03	7.99	7.32	9.39
1st Quartile	14.48	-1.14	5.08	6.83	6.42	8.60
Median	12.93	-2.26	3.69	5.95	5.92	8.02
3rd Quartile	11.45	-3.63	2.13	5.01	5.22	7.40
95th Percentile	6.11	-5.92	-0.30	3.52	4.08	6.10
Population	565	564	559	532	493	402

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.

# Plan Sponsor Peer Group Analysis - Multi Statistics

Total Fund

Periods Ended June 30, 2020



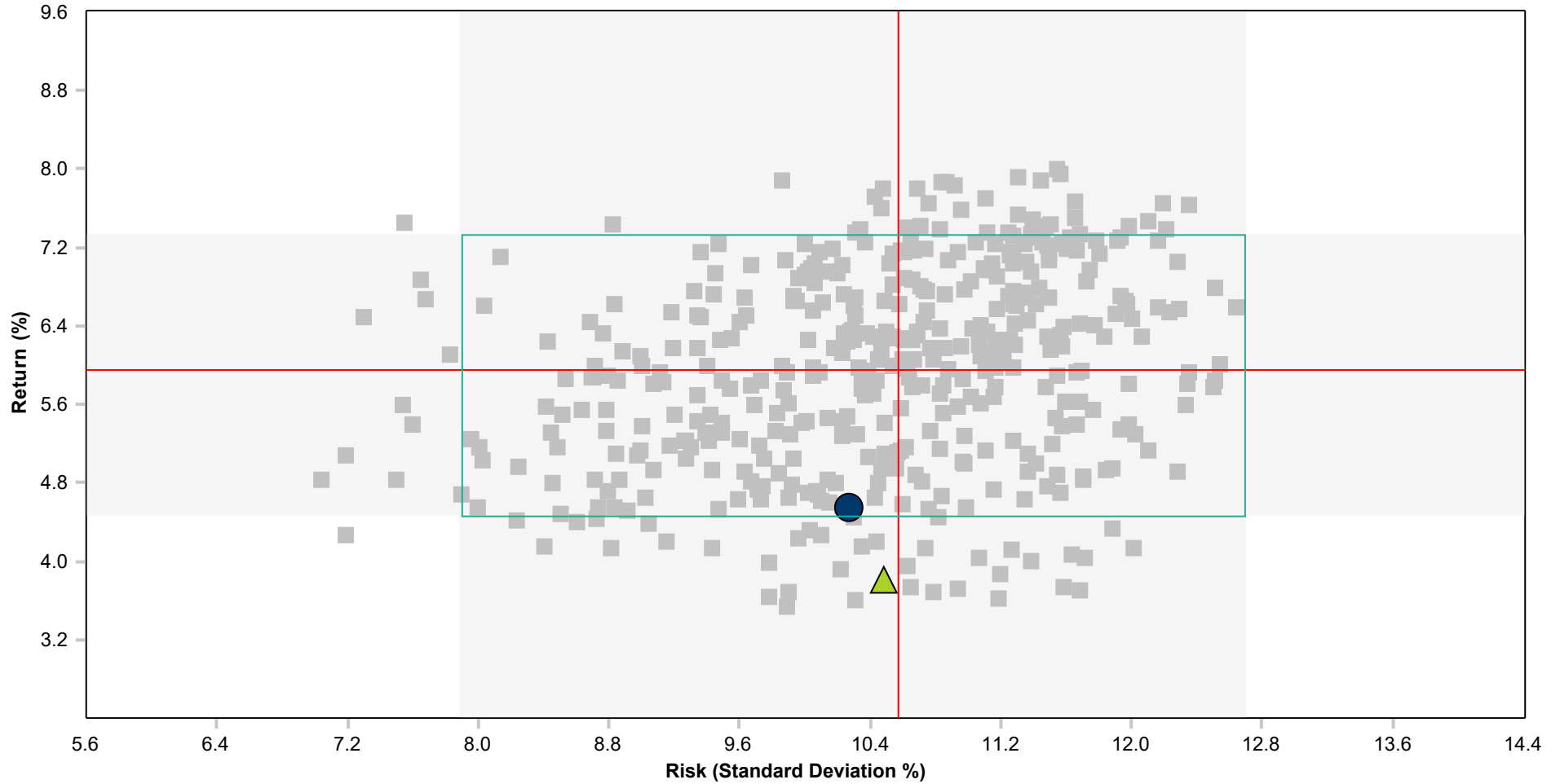
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ Total Fund	1.25 (86)	4.55 (85)	4.74 (89)	13.55 (43)	10.28 (40)	9.14 (44)	0.04 (86)	0.31 (89)	0.42 (90)
● Total Fund Composite Policy	-0.34 (96)	3.80 (93)	3.83 (97)	14.70 (70)	10.48 (47)	9.24 (49)	-0.06 (95)	0.24 (96)	0.33 (99)
5th Percentile	7.03	7.99	7.32	8.42	7.02	6.02	0.57	0.67	0.73
1st Quartile	5.08	6.83	6.42	12.55	9.60	8.42	0.32	0.51	0.61
Median	3.69	5.95	5.92	13.80	10.58	9.24	0.22	0.44	0.55
3rd Quartile	2.13	5.01	5.22	14.94	11.38	9.90	0.11	0.36	0.49
95th Percentile	-0.30	3.52	4.08	16.69	12.66	10.98	-0.07	0.24	0.38

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.



# Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund  
 Periods Ended July 1, 2017 To June 30, 2020



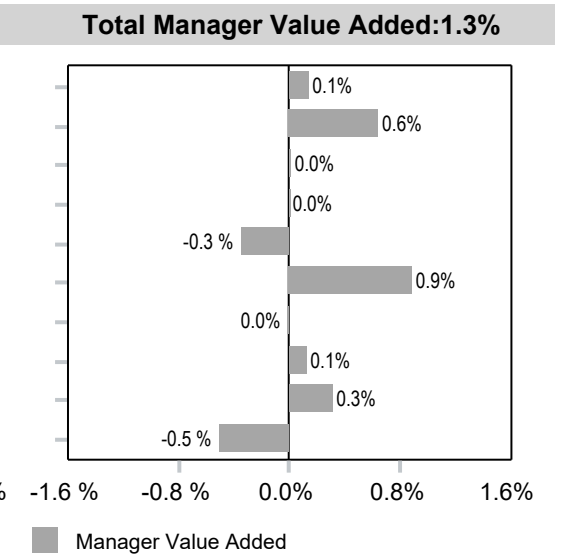
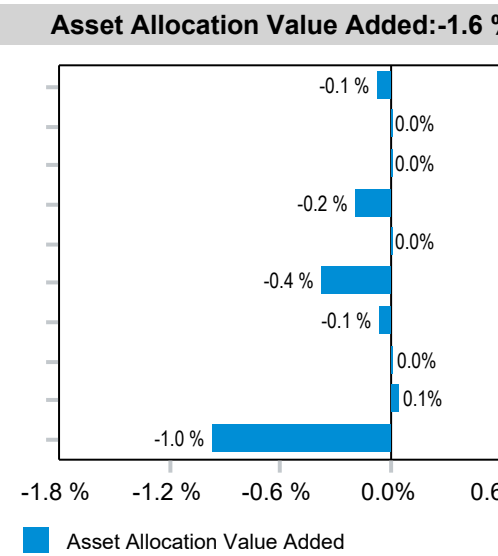
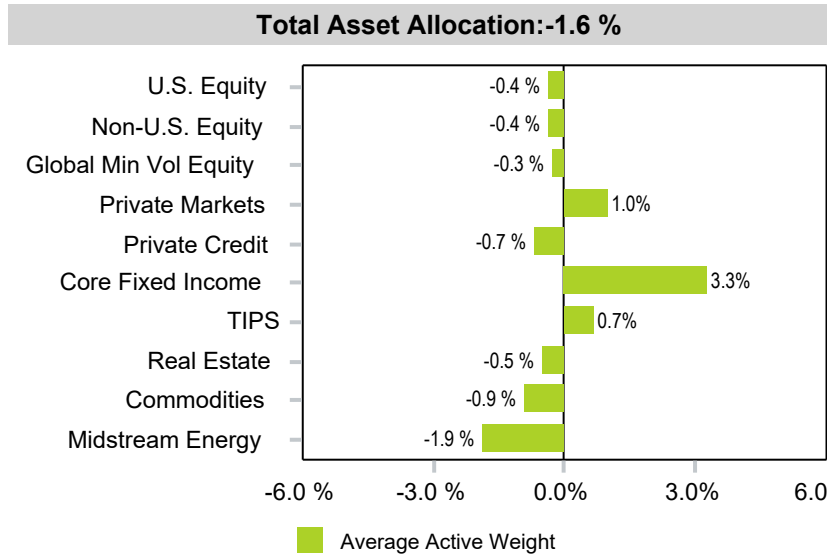
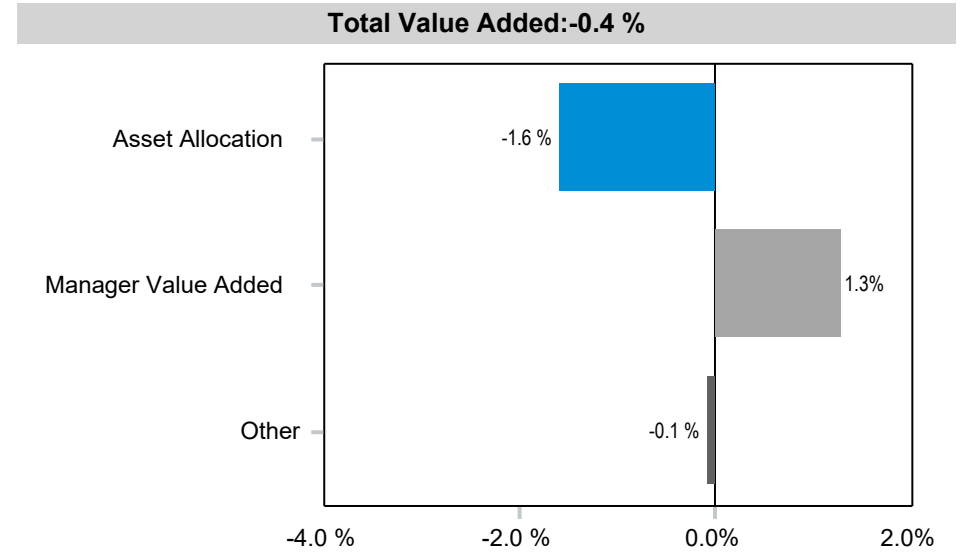
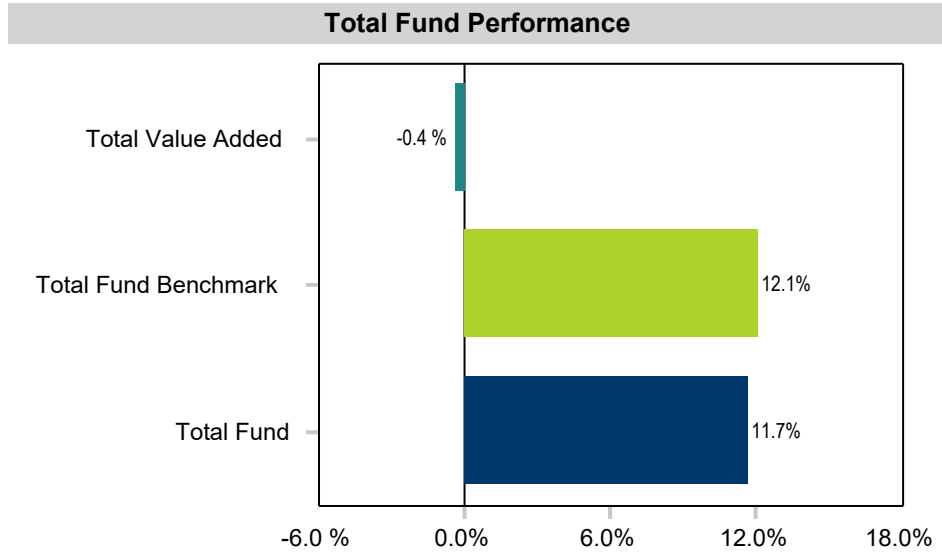
	Return	Standard Deviation
● Total Fund	4.55	10.28
▲ Total Fund Composite Policy	3.80	10.48
— Median	5.95	10.58

Calculation based on monthly periodicity.

# Total Fund Attribution

Total Fund

Periods Ended 1 Quarter Ending June 30, 2020

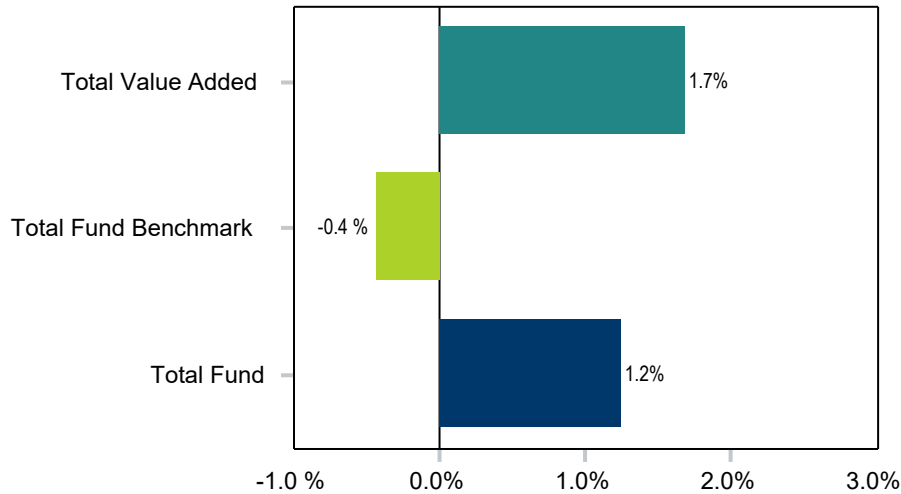


# Total Fund Attribution

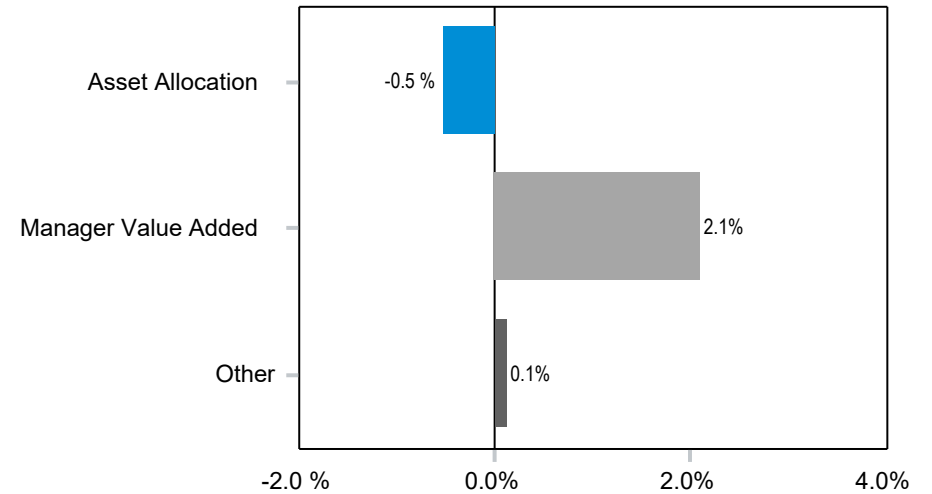
Total Fund

Periods Ended 1 Year Ending June 30, 2020

**Total Fund Performance**



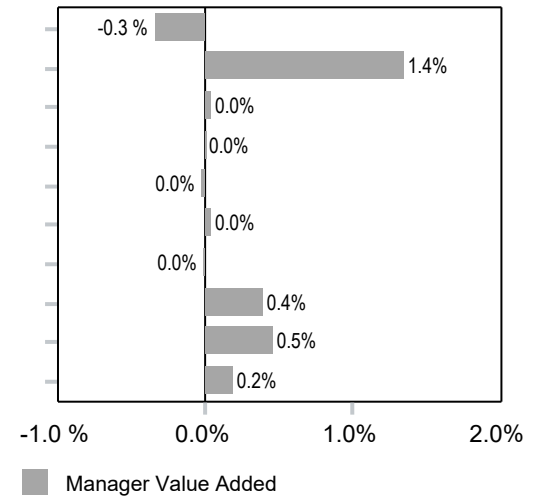
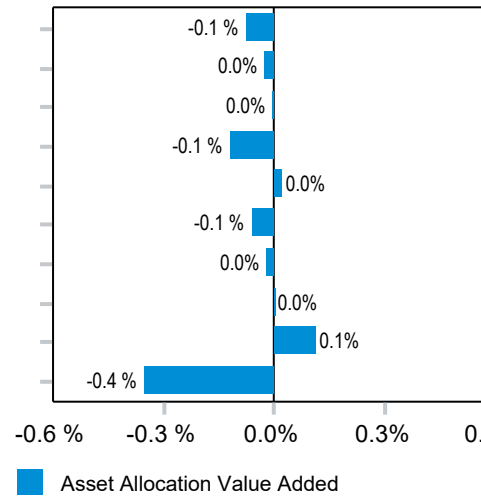
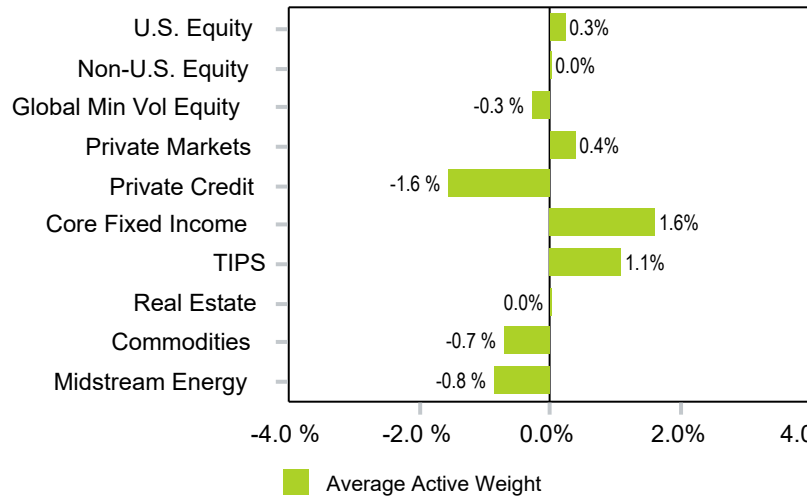
**Total Value Added: 1.7%**



**Total Asset Allocation: -0.5 %**

**Asset Allocation Value Added: -0.5 %**

**Total Manager Value Added: 2.1%**



■ Average Active Weight

■ Asset Allocation Value Added

■ Manager Value Added

# Asset Allocation & Performance

Total Fund

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>418,999,938</b>	<b>100.00</b>	<b>11.71</b>	<b>-3.94</b>	<b>1.25</b>	<b>1.25</b>	<b>4.55</b>	<b>4.74</b>	<b>6.19</b>	<b>8.21</b>	<b>7.85</b>	<b>10/1/1987</b>
Total Fund Composite Policy			12.09	-4.81	-0.34	-0.34	3.80	3.83	5.14	6.92	7.65	
Value Added			-0.38	0.87	1.59	1.59	0.75	0.91	1.05	1.29	0.20	
<b>U.S. Equity</b>	<b>76,215,049</b>	<b>18.19</b>	<b>22.81</b>	<b>-5.15</b>	<b>4.69</b>	<b>4.69</b>	<b>9.36</b>	<b>9.88</b>	<b>11.68</b>	<b>13.91</b>	<b>9.46</b>	<b>10/1/1987</b>
Wilshire 5000 Total Market TR Index			21.94	-3.30	6.78	6.78	10.13	10.27	11.78	13.72	9.52	
Value Added			0.87	-1.85	-2.09	-2.09	-0.77	-0.39	-0.10	0.19	-0.06	
<b>Non-U.S. Equity</b>	<b>77,041,061</b>	<b>18.39</b>	<b>19.93</b>	<b>-5.67</b>	<b>2.74</b>	<b>2.74</b>	<b>3.64</b>	<b>4.33</b>	<b>5.77</b>	<b>7.21</b>	<b>7.75</b>	<b>1/1/1990</b>
International Equity Composite Policy			16.12	-11.00	-4.80	-4.80	1.13	2.26	3.71	4.97	4.18	
Value Added			3.81	5.33	7.54	7.54	2.51	2.07	2.06	2.24	3.57	
<b>Global Low Volatility Equity</b>	<b>39,950,535</b>	<b>9.53</b>	<b>9.91</b>	<b>-7.65</b>	<b>-2.09</b>	<b>-2.09</b>					<b>1.99</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			9.72	-7.83	-2.50	-2.50					1.55	
Value Added			0.19	0.18	0.41	0.41					0.44	
<b>Private Markets</b>	<b>23,218,460</b>	<b>5.54</b>	<b>-4.98</b>	<b>-0.98</b>	<b>4.72</b>	<b>4.72</b>	<b>12.78</b>	<b>12.17</b>	<b>11.58</b>	<b>9.02</b>	<b>8.86</b>	<b>5/1/2010</b>
Private Markets Policy Index			-4.98	-0.98	4.72	4.72	12.78	12.17	11.58	9.02	8.86	
Value Added			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Private Credit</b>	<b>17,700,364</b>	<b>4.22</b>	<b>2.23</b>	<b>-5.57</b>	<b>-2.24</b>	<b>-2.24</b>					<b>-0.76</b>	<b>9/1/2018</b>
S&P/LSTA Leverage Loan Index			9.70	-4.61	-1.99	-1.99					0.40	
Value Added			-7.47	-0.96	-0.25	-0.25					-1.16	
<b>Core Fixed Income</b>	<b>110,678,143</b>	<b>26.41</b>	<b>5.94</b>	<b>5.81</b>	<b>9.17</b>	<b>9.17</b>	<b>5.84</b>	<b>5.18</b>	<b>4.87</b>	<b>5.15</b>	<b>6.89</b>	<b>10/1/1987</b>
Blmbg. Barc. U.S. Aggregate			2.90	6.14	8.74	8.74	5.32	4.30	3.96	3.82	6.46	
Value Added			3.04	-0.33	0.43	0.43	0.52	0.88	0.91	1.33	0.43	
<b>Total Real Assets Composite</b>	<b>72,762,509</b>	<b>17.37</b>	<b>12.62</b>	<b>-12.58</b>	<b>-12.13</b>	<b>-12.13</b>	<b>-2.14</b>	<b>-1.80</b>			<b>-2.17</b>	<b>4/1/2015</b>
Real Assets Composite Policy			14.02	-11.34	-10.70	-10.70	-1.68	-1.60			-1.88	
Value Added			-1.40	-1.24	-1.43	-1.43	-0.46	-0.20			-0.29	

# Asset Allocation & Performance

Total Fund

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>TIPS</b>	<b>22,636,172</b>	<b>5.40</b>	<b>4.00</b>	<b>5.75</b>	<b>7.95</b>	<b>7.95</b>	<b>4.80</b>	<b>3.62</b>			<b>3.18</b>	<b>5/1/2015</b>
Blmbg. Barc. U.S. TIPS			4.24	6.01	8.28	8.28	5.05	3.75			3.26	
Value Added			-0.24	-0.26	-0.33	-0.33	-0.25	-0.13			-0.08	
<b>Real Estate</b>	<b>18,985,696</b>	<b>4.53</b>	<b>12.04</b>	<b>-15.48</b>	<b>-12.26</b>	<b>-12.26</b>	<b>-0.29</b>	<b>1.22</b>	<b>2.61</b>	<b>5.94</b>	<b>7.23</b>	<b>6/1/2009</b>
Real Estate Policy Index			9.11	-22.01	-19.40	-19.40	-2.85	0.50	2.14	5.89	7.37	
Value Added			2.93	6.53	7.14	7.14	2.56	0.72	0.47	0.05	-0.14	
<b>Commodities</b>	<b>17,784,817</b>	<b>4.24</b>	<b>12.65</b>	<b>-10.26</b>	<b>-7.70</b>	<b>-7.70</b>	<b>-0.25</b>	<b>-3.59</b>	<b>-4.96</b>		<b>-6.92</b>	<b>2/1/2013</b>
Bloomberg Commodity Index Total Return			5.08	-19.40	-17.38	-17.38	-6.14	-7.69	-8.11		-9.33	
Value Added			7.57	9.14	9.68	9.68	5.89	4.10	3.15		2.41	
<b>Midstream Energy Composite</b>	<b>13,355,825</b>	<b>3.19</b>	<b>32.51</b>	<b>-32.48</b>	<b>-36.74</b>	<b>-36.74</b>	<b>-13.98</b>	<b>-11.81</b>			<b>-11.73</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			50.18	-35.71	-41.43	-41.43	-18.07	-16.91			-17.59	
Value Added			-17.67	3.23	4.69	4.69	4.09	5.10			5.86	

# Historical Hybrid Composition

Grand Rapids General Retirement System

Periods Ended June 30, 2020

Policy Index	Weight (%)
<b>Jan-1976</b>	
Wilshire 5000 Total Market TR Index	55.00
Blmbg. Barc. U.S. Aggregate	40.00
MSCI EAFE Index (Net)	5.00
<b>Jul-1998</b>	
Wilshire 5000 Total Market TR Index	50.00
Blmbg. Barc. U.S. Aggregate	40.00
MSCI EAFE Index (Net)	10.00
<b>Oct-2002</b>	
Wilshire 5000 Total Market TR Index	50.00
Blmbg. Barc. U.S. Aggregate	35.00
MSCI EAFE Index (Net)	15.00
<b>Apr-2006</b>	
Wilshire 5000 Total Market TR Index	55.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI EAFE Index (Net)	15.00
<b>Jul-2006</b>	
Wilshire 5000 Total Market TR Index	55.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
<b>Jul-2009</b>	
Wilshire 5000 Total Market TR Index	50.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00

Policy Index	Weight (%)
<b>Apr-2010</b>	
Wilshire 5000 Total Market TR Index	50.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
<b>May-2010</b>	
Wilshire 5000 Total Market TR Index	45.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets	5.00
<b>Jul-2010</b>	
Wilshire 5000 Total Market TR Index	45.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
<b>Jan-2013</b>	
Wilshire 5000 Total Market TR Index	40.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00

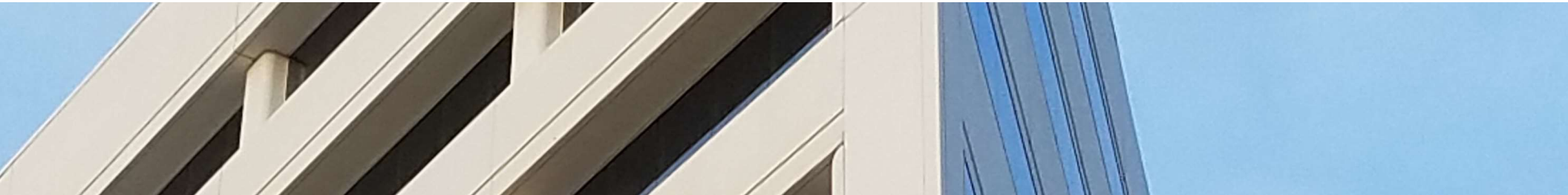
# Historical Hybrid Composition

Grand Rapids General Retirement System

Periods Ended June 30, 2020

Policy Index	Weight (%)
<b>Apr-2015</b>	
Wilshire 5000 Total Market TR Index	22.50
Blmbg. Barc. U.S. Aggregate	25.00
MSCI AC World ex USA (Net)	22.50
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
S&P MLP Index	5.00
Blmbg. Barc. U.S. TIPS	10.00
<b>Dec-2018</b>	
Wilshire 5000 Total Market TR Index	22.50
Blmbg. Barc. U.S. Aggregate	25.00
MSCI AC World ex USA (Net)	22.50
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
S&P MLP Index	5.00
Blmbg. Barc. U.S. TIPS	10.00
<b>Jul-2019</b>	
Wilshire 5000 Total Market TR Index	17.75
Blmbg. Barc. U.S. Aggregate	24.50
MSCI AC World ex USA (Net)	17.75
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
Alerian MLP Index	5.00
Blmbg. Barc. U.S. TIPS	5.00
S&P LSTA Leverage Loan Index	5.00
MSCI ACWI Minimum Volatility Index (Net)	10.00

Policy Index	Weight (%)
<b>Oct-2019</b>	
Wilshire 5000 Total Market TR Index	17.75
MSCI AC World ex USA (Net)	17.75
MSCI ACWI Minimum Volatility Index (Net)	10.00
Private Markets Policy Index	5.00
S&P LSTA Leverage Loan Index	5.00
Blmbg. Barc. U.S. Aggregate	24.50
Blmbg. Barc. U.S. TIPS	5.00
Dow Jones U.S. Select REIT	5.00
Bloomberg Commodity Index Total Return	5.00
Alerian MLP Index	5.00



# U.S. Equity Composite

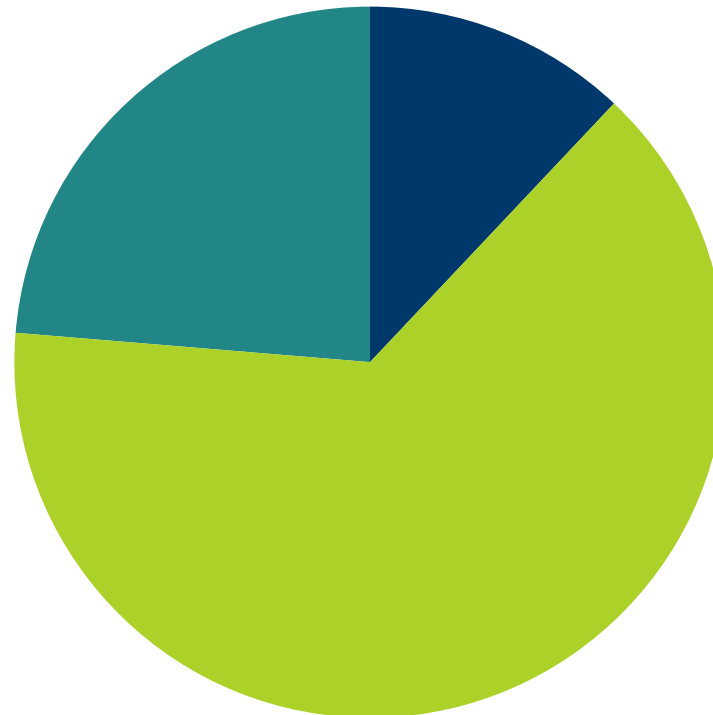


# Asset Allocation By Manager

U.S. Equity

Periods Ended June 30, 2020

Jun-2020 : 76,215,049



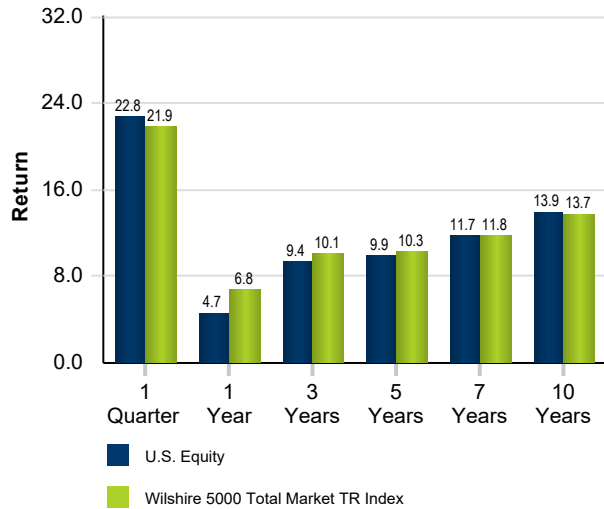
	Market Value \$	Allocation (%)
■ PIMCO Stock Plus	9,171,052	12.0
■ NTAM S&P 500	48,993,164	64.3
■ Wellington Small Cap	18,050,833	23.7

# Performance Summary

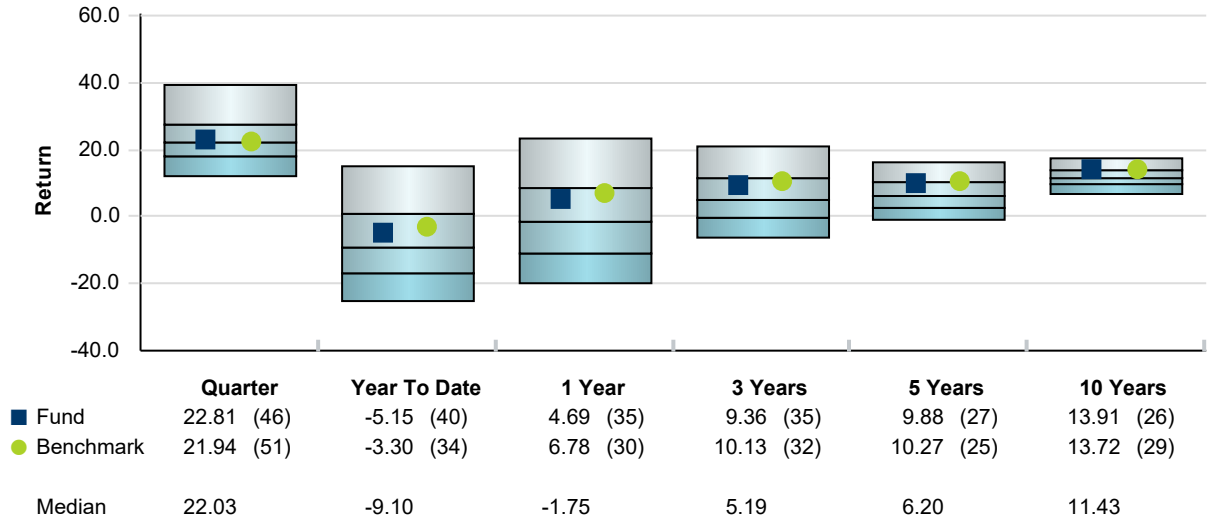
U.S. Equity

Periods Ended June 30, 2020

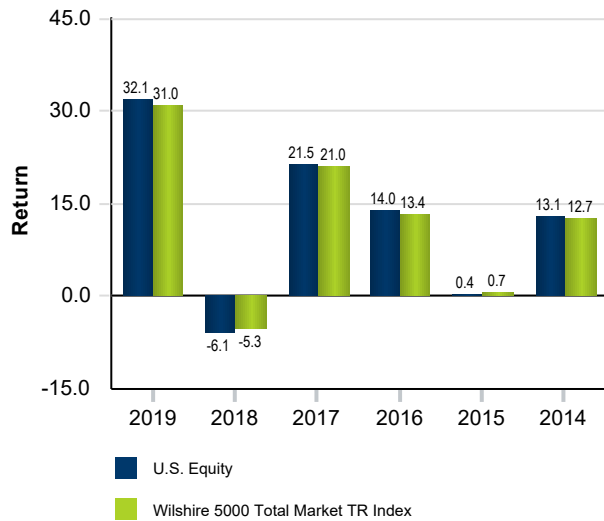
## Comparative Performance



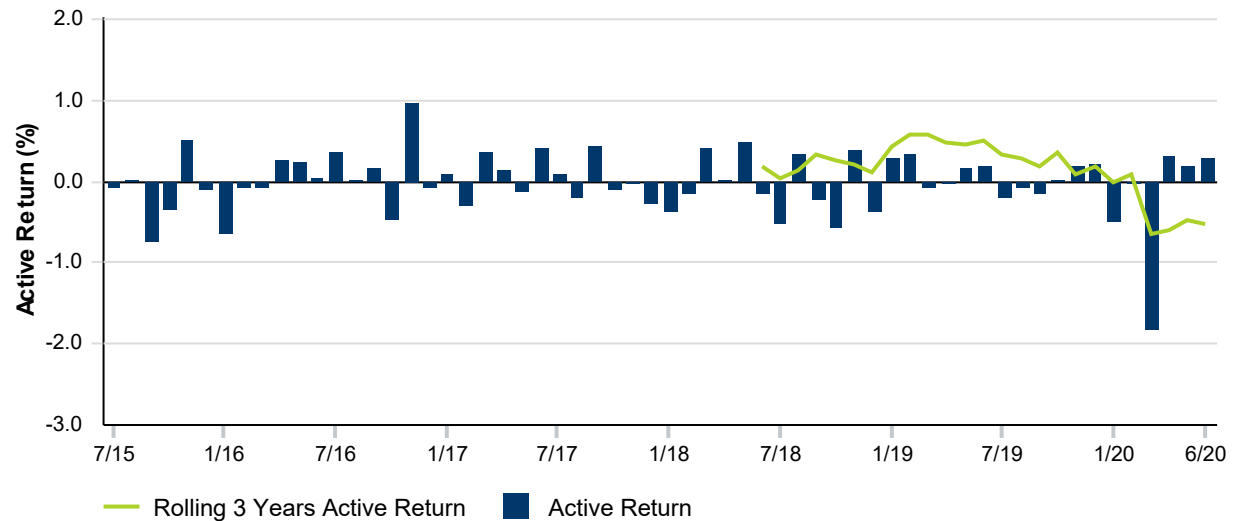
## Peer Group Analysis: IM U.S. Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

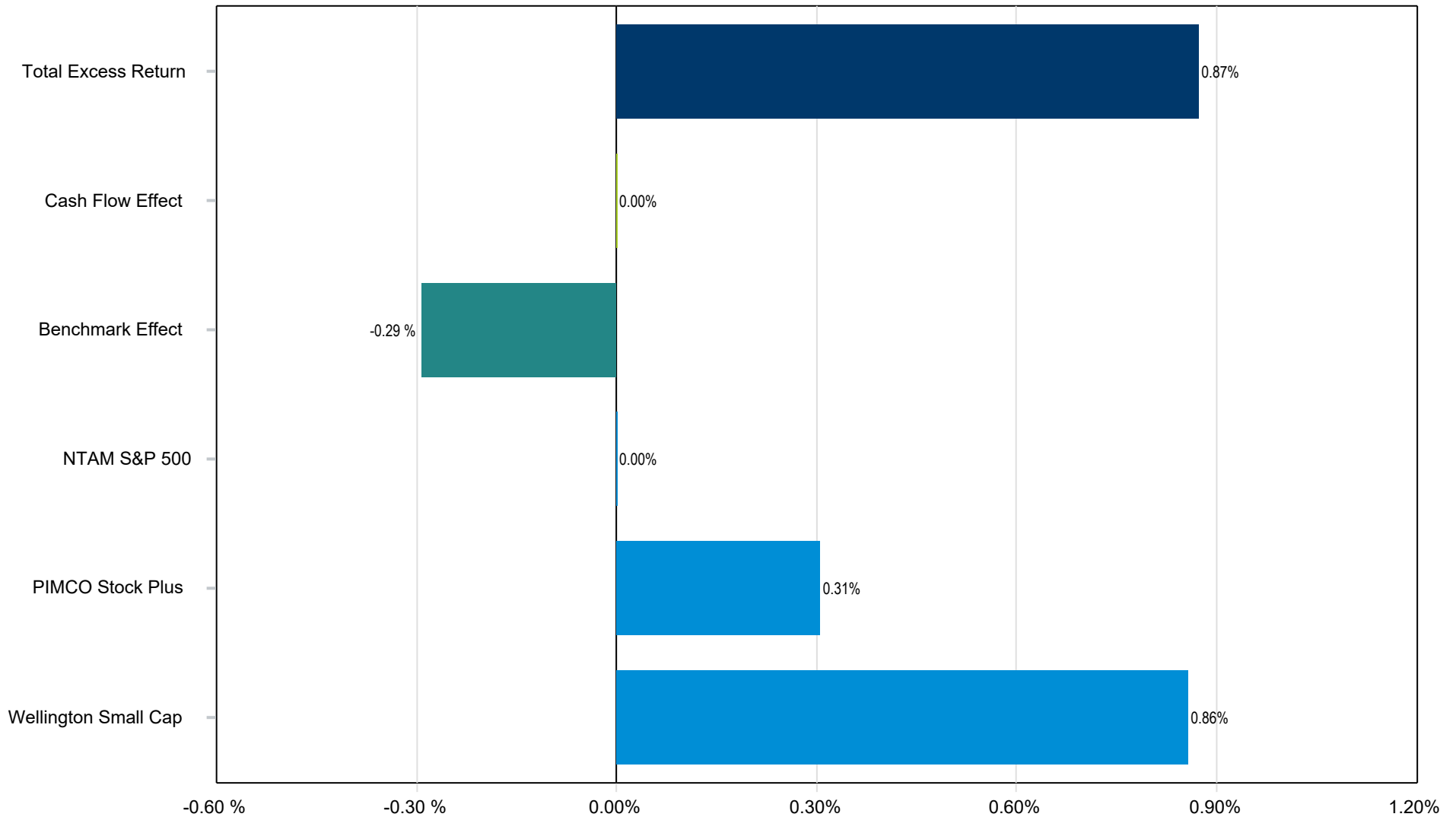


# Asset Class Attribution

U.S. Equity

Periods Ended 1 Quarter Ending June 30, 2020

1 Quarter



# Asset Allocation & Performance

U.S. Equity

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>U.S. Equity</b>	<b>76,215,049</b>	<b>100.00</b>	<b>22.81</b>	<b>-5.15</b>	<b>4.69</b>	<b>4.69</b>	<b>9.36</b>	<b>9.88</b>	<b>11.68</b>	<b>13.91</b>	<b>9.46</b>	<b>10/1/1987</b>
Wilshire 5000 Total Market TR Index			21.94	-3.30	6.78	6.78	10.13	10.27	11.78	13.72	9.52	
Value Added			0.87	-1.85	-2.09	-2.09	-0.77	-0.39	-0.10	0.19	-0.06	
<b>NTAM S&amp;P 500</b>	<b>48,993,164</b>	<b>64.28</b>	<b>20.54</b>	<b>-3.03</b>	<b>7.54</b>	<b>7.54</b>	<b>10.75</b>	<b>10.74</b>	<b>12.15</b>	<b>14.00</b>	<b>7.98</b>	<b>4/1/1998</b>
NTAM Policy			20.54	-3.08	7.51	7.51	10.73	10.73	12.13	13.99	6.92	
Value Added			0.00	0.05	0.03	0.03	0.02	0.01	0.02	0.01	1.06	
<b>PIMCO Stock Plus</b>	<b>9,171,052</b>	<b>12.03</b>	<b>23.08</b>	<b>-2.93</b>	<b>7.80</b>	<b>7.80</b>	<b>10.93</b>	<b>10.76</b>	<b>12.32</b>	<b>14.78</b>	<b>6.17</b>	<b>6/1/2000</b>
S&P 500			20.54	-3.08	7.51	7.51	10.73	10.73	12.13	13.99	6.02	
Value Added			2.54	0.15	0.29	0.29	0.20	0.03	0.19	0.79	0.15	
<b>Wellington Small Cap</b>	<b>18,050,833</b>	<b>23.68</b>	<b>29.29</b>	<b>-11.53</b>	<b>-3.86</b>	<b>-3.86</b>	<b>5.19</b>	<b>7.32</b>	<b>10.26</b>	<b>13.52</b>	<b>10.52</b>	<b>9/1/1999</b>
Russell 2000 Index			25.42	-12.98	-6.63	-6.63	2.01	4.29	7.17	10.50	7.43	
Value Added			3.87	1.45	2.77	2.77	3.18	3.03	3.09	3.02	3.09	



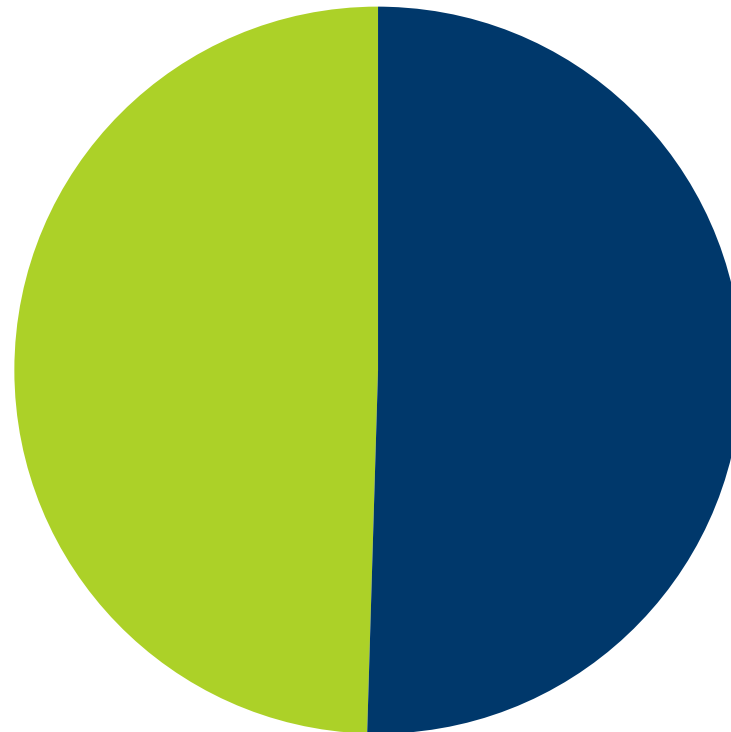
# Non-U.S. Equity Composite

# Asset Allocation By Manager

Non-U.S. Equity

Periods Ended June 30, 2020

Jun-2020 : 77,041,061



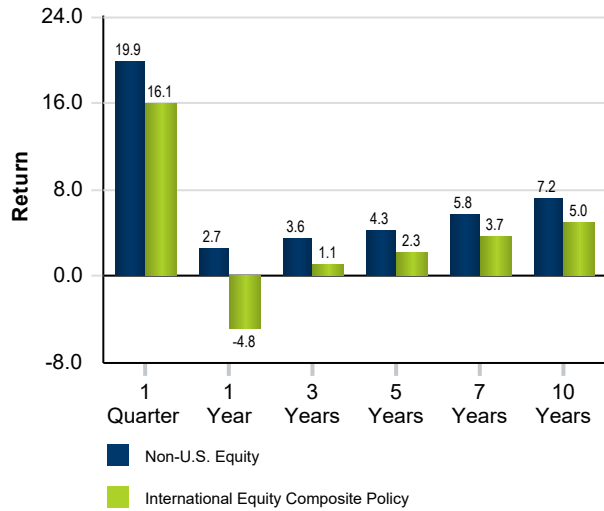
	Market Value \$	Allocation (%)
■ Harding Loevner	38,888,403	50.5
■ Neuberger Berman CIT	38,152,659	49.5

# Performance Summary

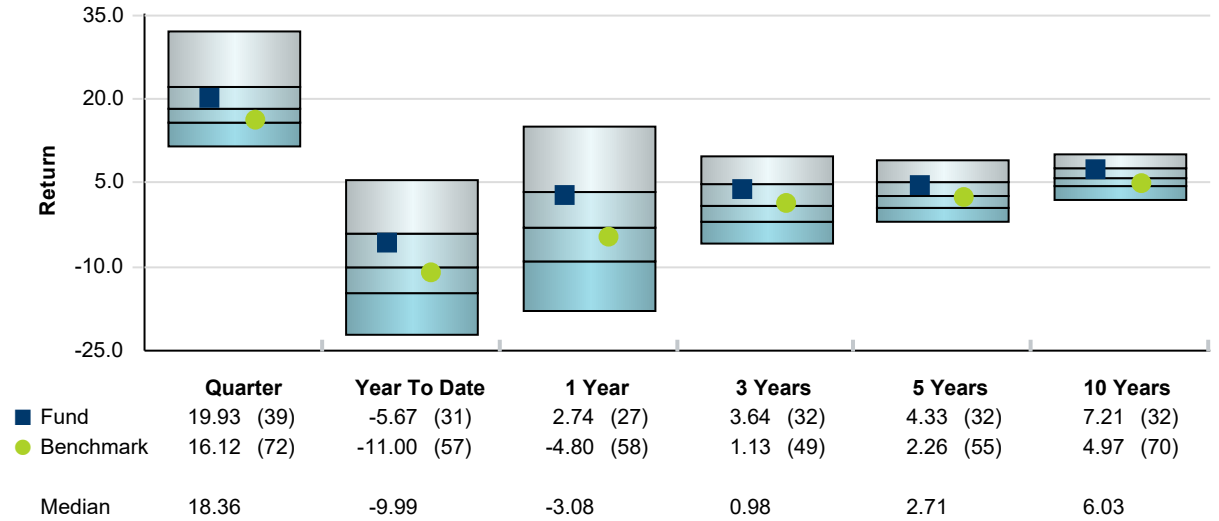
Non-U.S. Equity

Periods Ended June 30, 2020

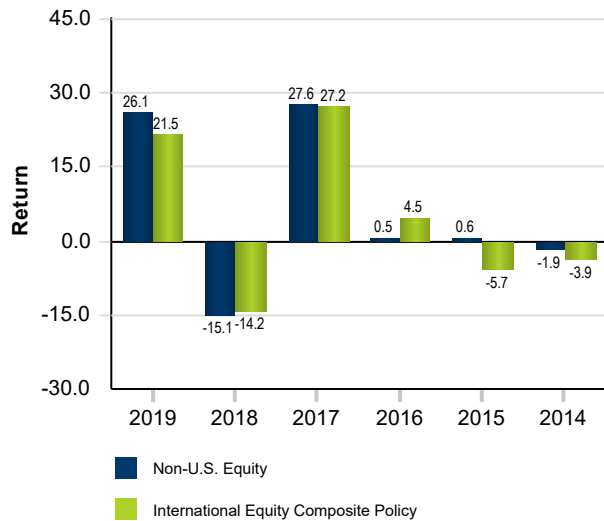
## Comparative Performance



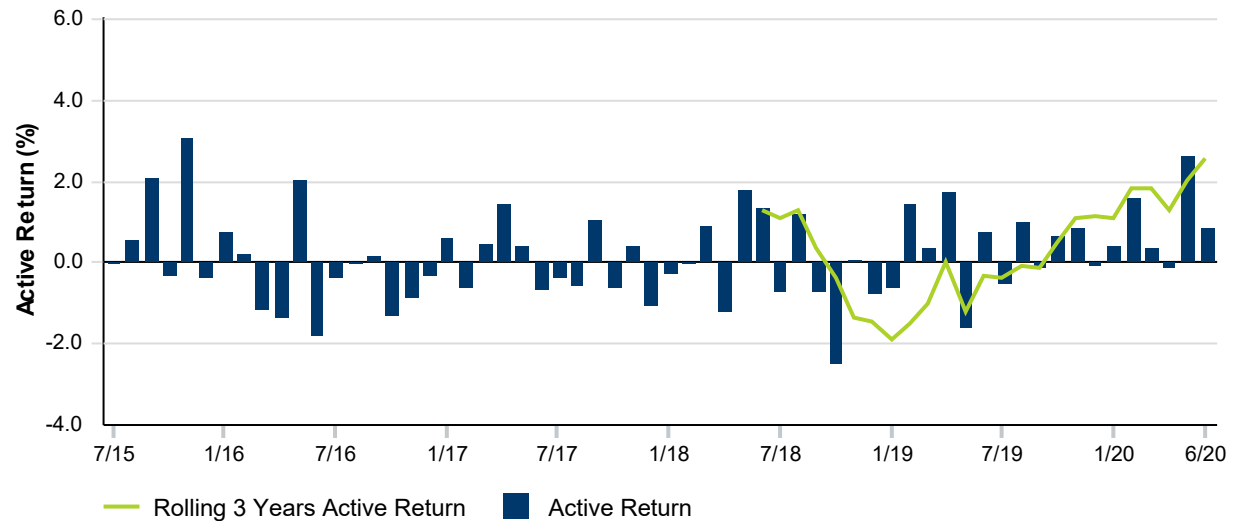
## Peer Group Analysis: IM International Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

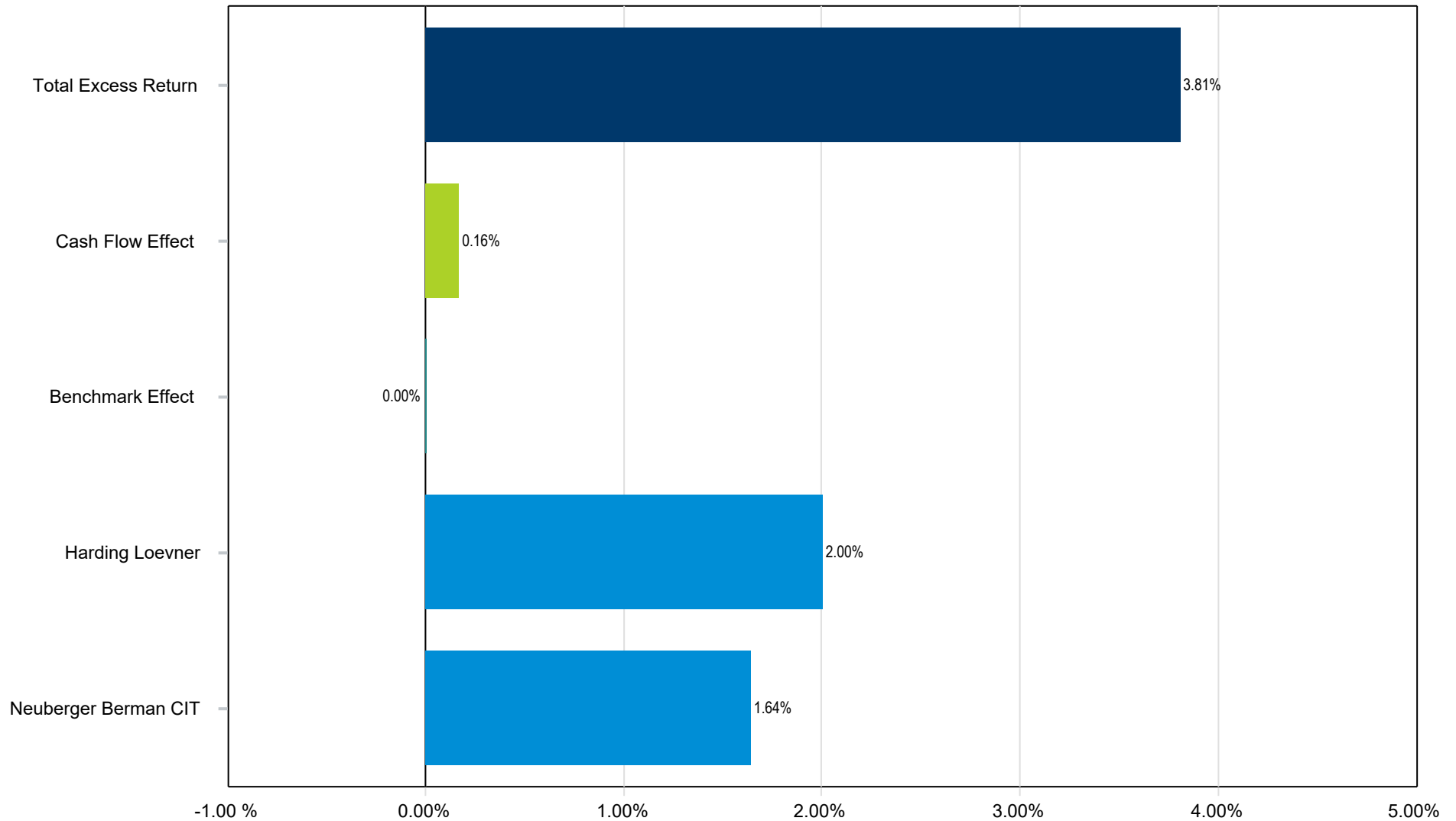


# Asset Class Attribution

Non-U.S. Equity

Periods Ended 1 Quarter Ending June 30, 2020

1 Quarter





# Asset Allocation & Performance

Non-U.S. Equity

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Non-U.S. Equity</b>	<b>77,041,061</b>	<b>100.00</b>	<b>19.93</b>	<b>-5.67</b>	<b>2.74</b>	<b>2.74</b>	<b>3.64</b>	<b>4.33</b>	<b>5.77</b>	<b>7.21</b>	<b>7.75</b>	<b>1/1/1990</b>
International Equity Composite Policy			16.12	-11.00	-4.80	-4.80	1.13	2.26	3.71	4.97	4.18	
Value Added			3.81	5.33	7.54	7.54	2.51	2.07	2.06	2.24	3.57	
<b>Harding Loevner</b>	<b>38,888,403</b>	<b>50.48</b>	<b>20.14</b>	<b>-3.66</b>	<b>2.81</b>	<b>2.81</b>	<b>3.71</b>	<b>4.87</b>			<b>4.73</b>	<b>4/1/2015</b>
MSCI AC World ex USA (Net)			16.12	-11.00	-4.80	-4.80	1.13	2.26			2.26	
Value Added			4.02	7.34	7.61	7.61	2.58	2.61			2.47	
<b>Neuberger Berman CIT</b>	<b>38,152,659</b>	<b>49.52</b>	<b>19.39</b>	<b>-7.88</b>	<b>2.32</b>	<b>2.32</b>					<b>0.81</b>	<b>7/1/2018</b>
MSCI AC World ex USA (Net)			16.12	-11.00	-4.80	-4.80					-1.80	
Value Added			3.27	3.12	7.12	7.12					2.61	

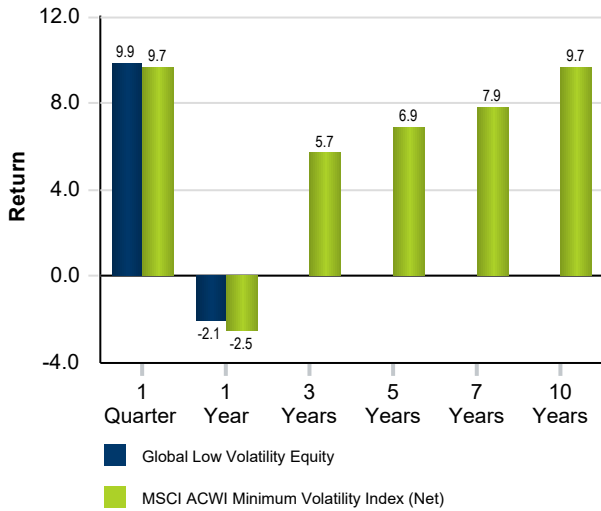


# Global Equity Min Vol Composite

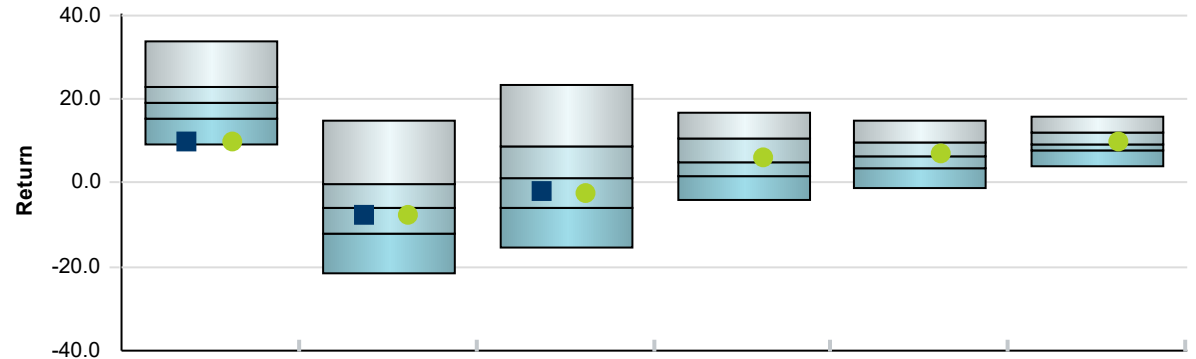
# Performance Summary

Global Low Volatility Equity  
 Periods Ended June 30, 2020

## Comparative Performance

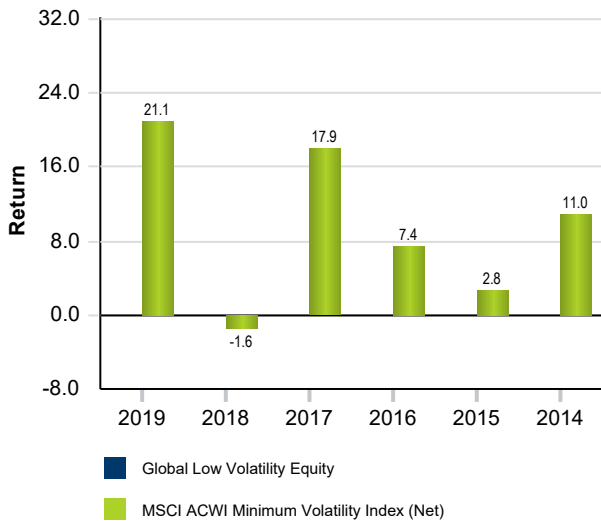


## Peer Group Analysis: IM Global Equity (SA+CF)

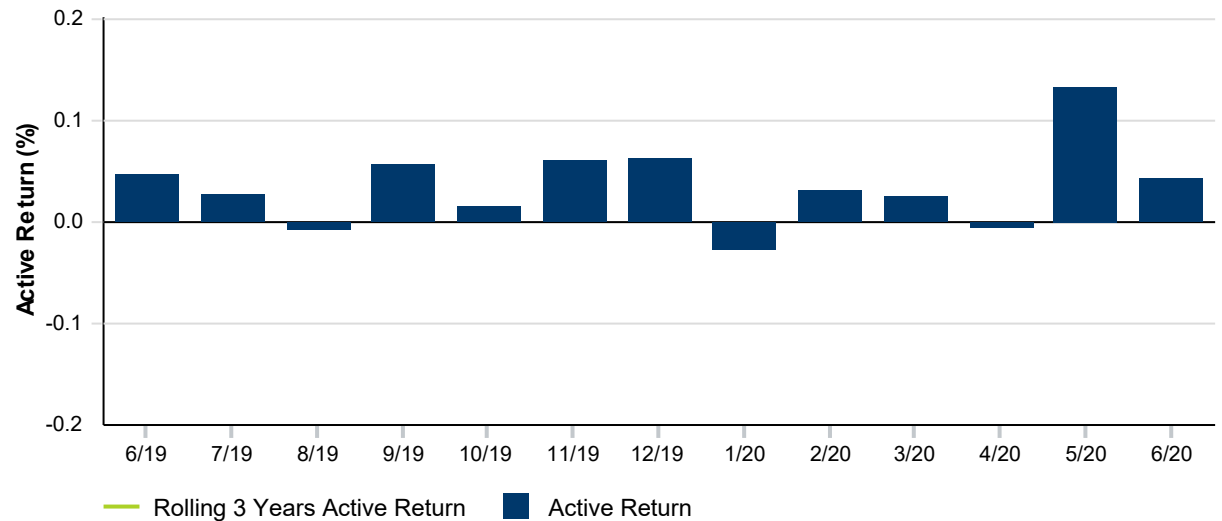


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
<b>Fund</b>	9.91 (94)	-7.65 (59)	-2.09 (64)			
<b>Benchmark</b>	9.72 (94)	-7.83 (59)	-2.50 (66)	5.75 (47)	6.94 (41)	9.67 (49)
<b>Median</b>	19.19	-6.06	1.00	5.21	6.43	9.43

## Comparative Performance



## Rolling 3 Years Performance



# Asset Allocation & Performance

Global Low Volatility Equity  
 Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Global Low Volatility Equity</b>	<b>39,950,535</b>	<b>100.00</b>	<b>9.91</b>	<b>-7.65</b>	<b>-2.09</b>	<b>-2.09</b>					<b>1.99</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			9.72	-7.83	-2.50	-2.50					1.55	
Value Added			0.19	0.18	0.41	0.41					0.44	
<b>BlackRock MSCI ACWI Min Vol</b>	<b>39,950,535</b>	<b>100.00</b>	<b>9.91</b>	<b>-7.65</b>	<b>-2.09</b>	<b>-2.09</b>					<b>1.99</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			9.72	-7.83	-2.50	-2.50					1.55	
Value Added			0.19	0.18	0.41	0.41					0.44	



# Alternative Investments

# Private Equity Composite Overview

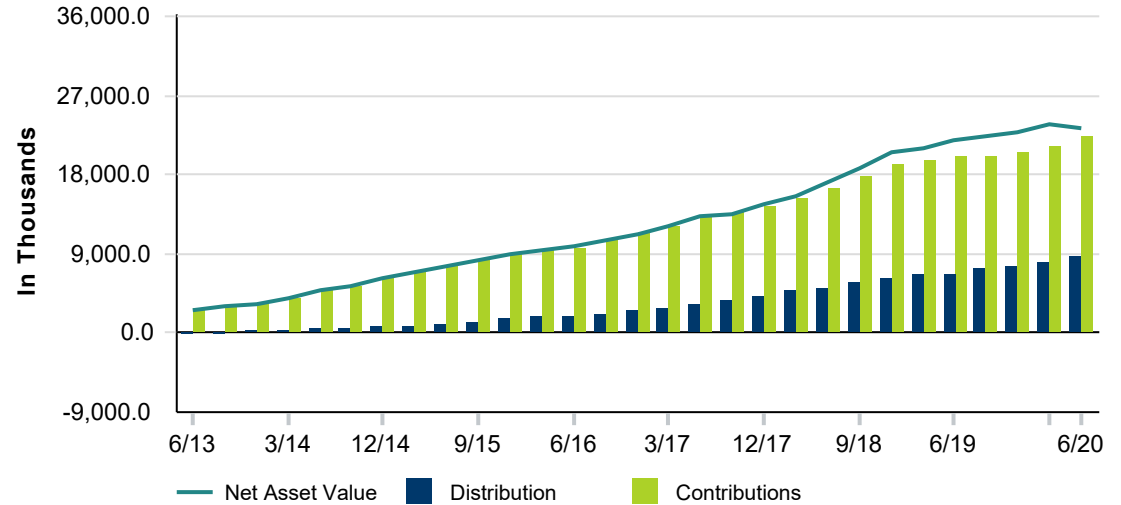
## Private Markets

Periods Ended As of June 30, 2020

### Cash Flow Summary

Capital Committed:	34,500,000
Capital Invested:	4,052,500
Total Contributions:	22,297,250
Remaining Capital Commitment:	12,571,505
Total Distributions:	8,654,053
Market Value:	23,218,460
Inception Date:	5/1/2010
Inception IRR:	11.2
TVPI:	1.4

### Cash Flow Analysis



### Private Equity Portfolio

Partnerships	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
Adams Street 2010 Direct Fund	500,000	480,500	588,281	218,978	11.3	1.7
Adams Street 2010 EM Fund	500,000	449,000	184,987	543,670	9.5	1.6
Adams Street 2010 Non-US Fund	1,500,000	1,313,250	1,281,105	763,472	10.8	1.6
Adams Street 2010 US Fund	2,500,000	2,202,500	2,170,972	1,634,448	12.5	1.7
Adams Street 2013 Global Fund	5,000,000	4,090,000	1,204,312	4,662,988	9.4	1.4
Adams Street 2015 Global	6,500,000	4,732,000	847,081	5,566,783	15.9	1.4
Adams Street 2017 Global Fund	6,000,000	3,513,000	117,545	3,498,803	2.4	1.0
Aberdeen Global	5,000,000	4,950,000	2,259,770	5,743,585	11.3	1.6
Adams Street 2019 Global	7,000,000	567,000		585,733	9.3	1.0
<b>Private Markets</b>	<b>34,500,000</b>	<b>22,297,250</b>	<b>8,654,053</b>	<b>23,218,460</b>	<b>11.2</b>	<b>1.4</b>

# Private Equity Composite Overview

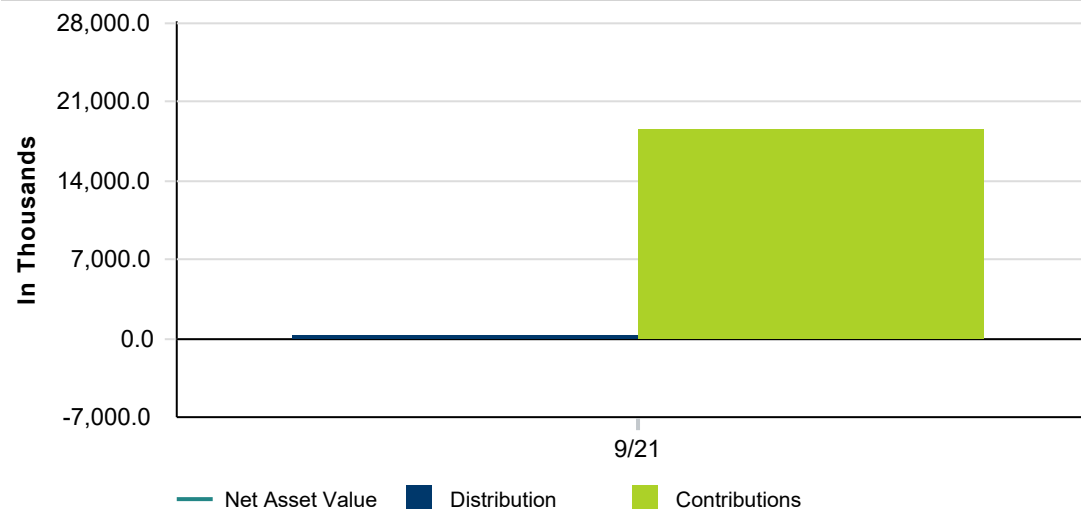
## Private Credit

Periods Ended As of June 30, 2020

### Cash Flow Summary

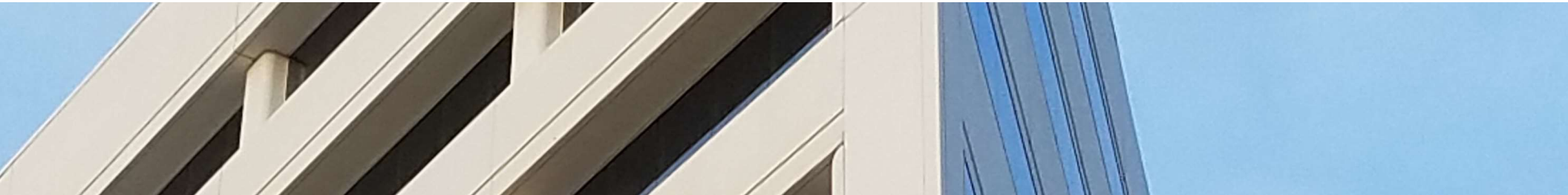
Capital Committed:	21,000,000
Capital Invested:	1,276,817
Total Contributions:	18,594,845
Remaining Capital Commitment:	2,405,155
Total Distributions:	364,000
Market Value:	17,700,364
Inception Date:	9/30/2018
Inception IRR:	-2.7
TVPI:	1.0

### Cash Flow Analysis



### Private Equity Portfolio

Partnerships	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
50 South Capital Private Credit	7,000,000	4,594,845	364,000	4,306,931	1.8	1.0
Grosvenor PC	14,000,000	14,000,000		13,393,433	-4.0	1.0
Private Credit	21,000,000	18,594,845	364,000	17,700,364	-2.7	1.0



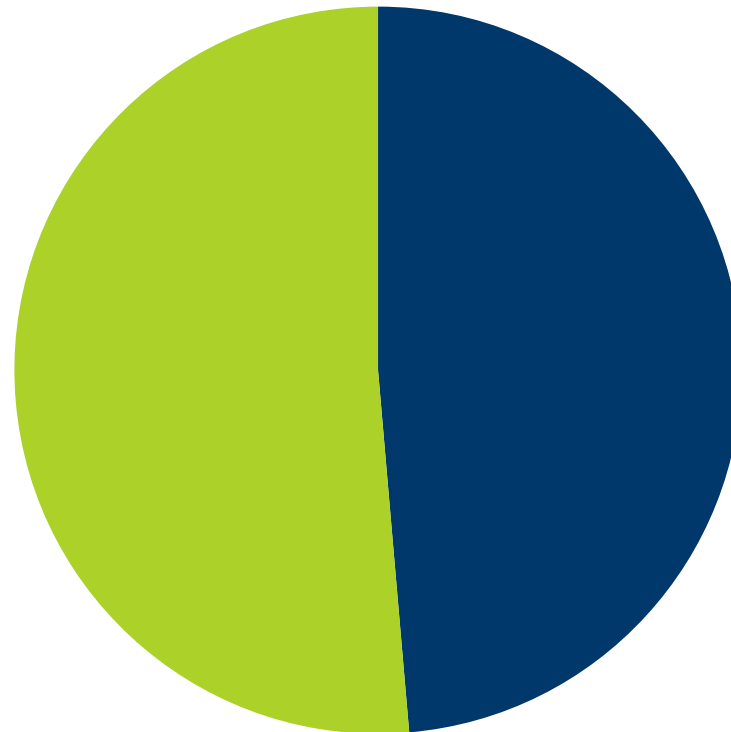
# Core Fixed Composite



# Asset Allocation By Manager

Core Fixed Income  
Periods Ended June 30, 2020

Jun-2020 : 110,678,143

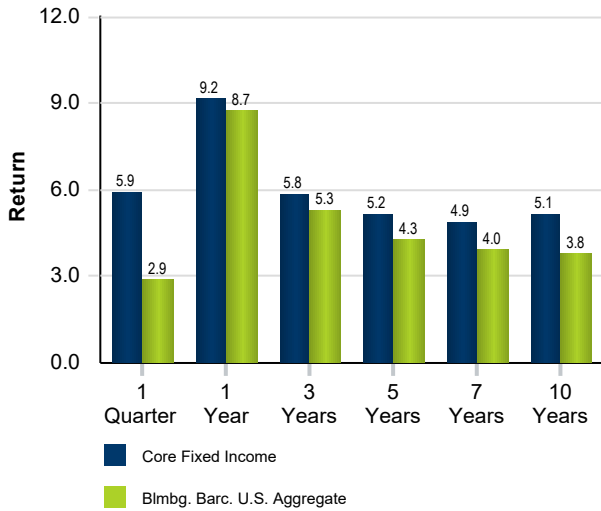


	Market Value \$	Allocation (%)
■ Baird Advisors	53,828,582	48.6
■ Western Asset Management	56,849,562	51.4

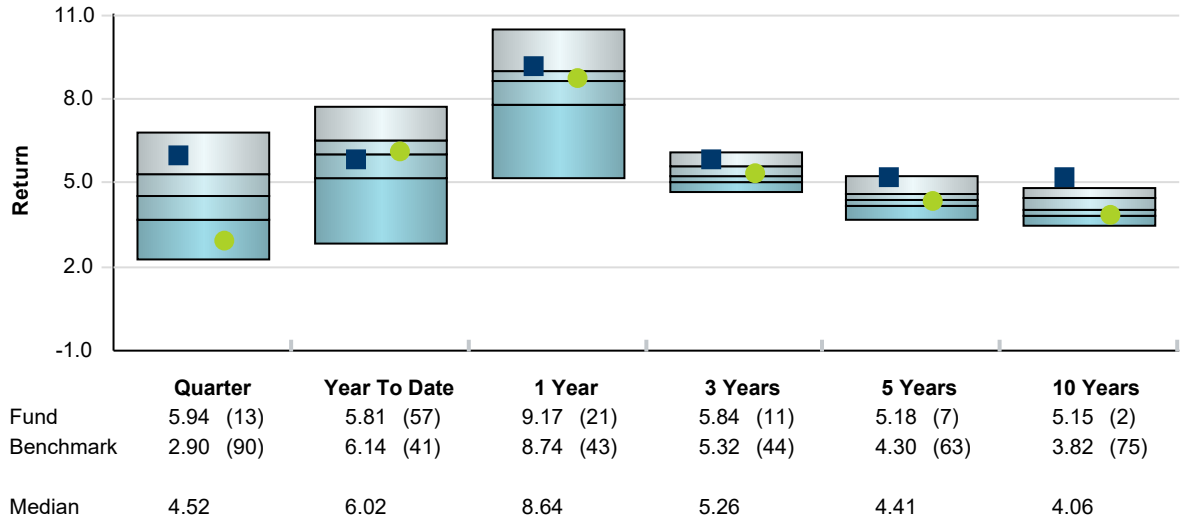
# Performance Summary

Core Fixed Income  
Periods Ended June 30, 2020

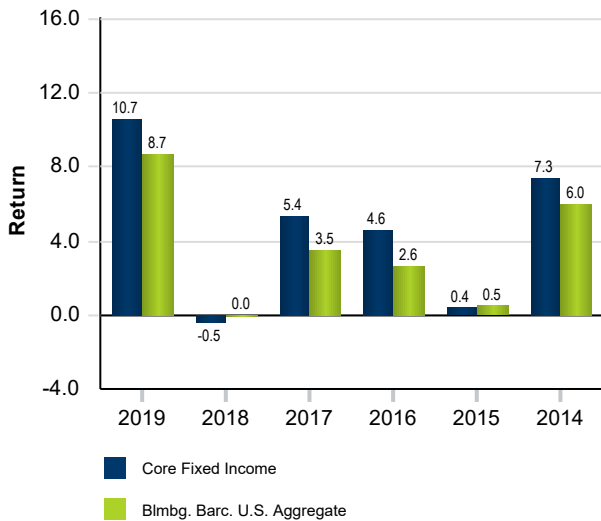
## Comparative Performance



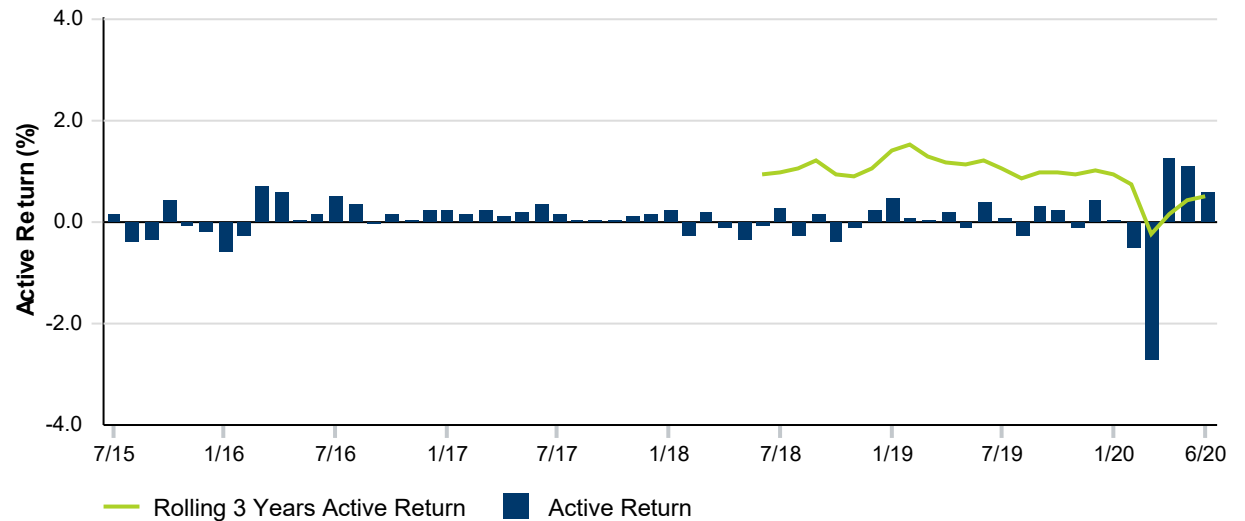
## Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

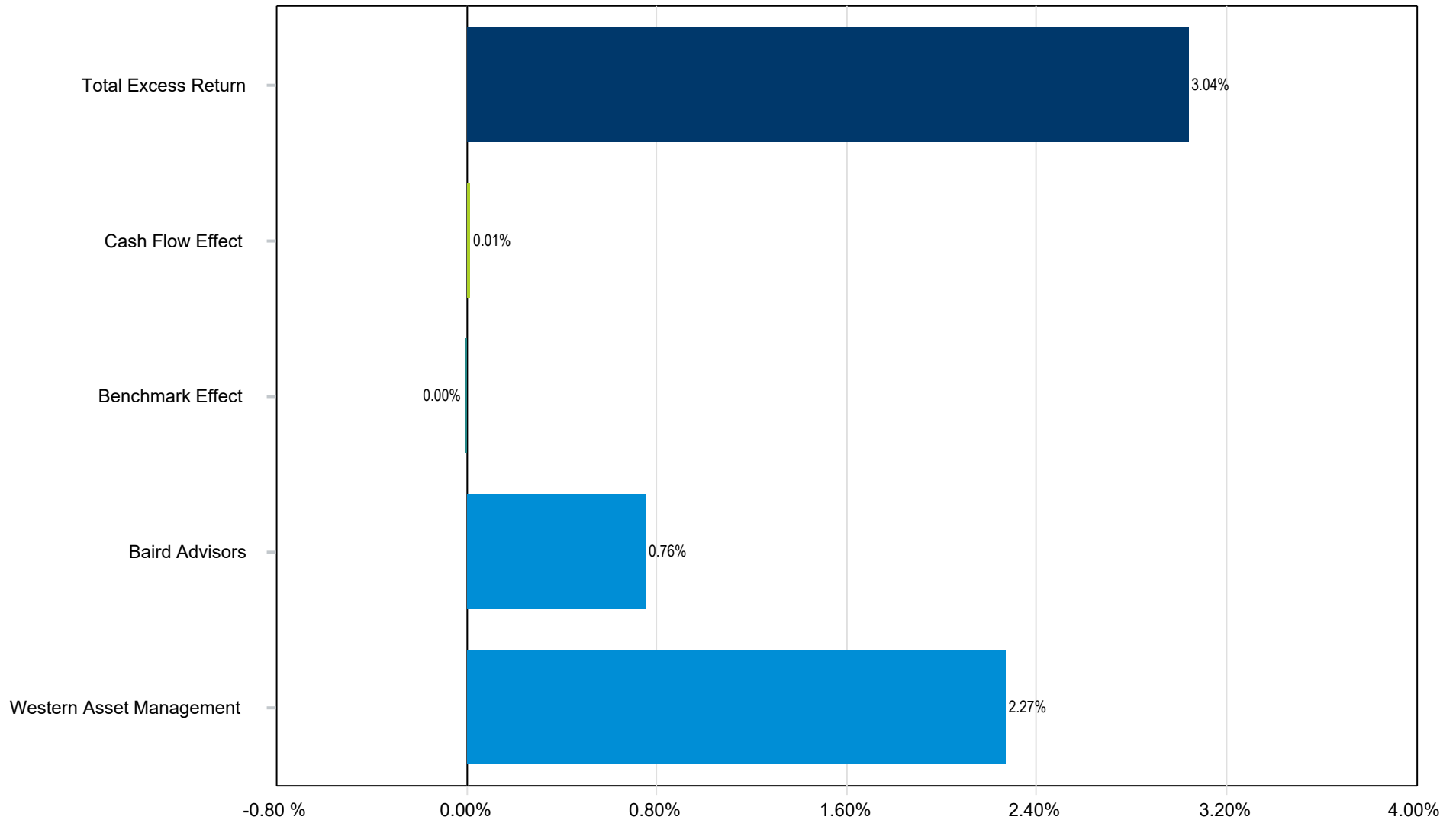


# Asset Class Attribution

Core Fixed Income

Periods Ended 1 Quarter Ending June 30, 2020

1 Quarter



# Asset Allocation & Performance

Core Fixed Income  
 Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Core Fixed Income</b>	<b>110,678,143</b>	<b>100.00</b>	<b>5.94</b>	<b>5.81</b>	<b>9.17</b>	<b>9.17</b>	<b>5.84</b>	<b>5.18</b>	<b>4.87</b>	<b>5.15</b>	<b>6.89</b>	<b>10/1/1987</b>
Blmbg. Barc. U.S. Aggregate			2.90	6.14	8.74	8.74	5.32	4.30	3.96	3.82	6.46	
Value Added			3.04	-0.33	0.43	0.43	0.52	0.88	0.91	1.33	0.43	
<b>Baird Advisors</b>	<b>53,828,582</b>	<b>48.64</b>	<b>4.40</b>	<b>6.56</b>	<b>9.31</b>	<b>9.31</b>	<b>5.75</b>	<b>4.87</b>	<b>4.51</b>	<b>4.61</b>	<b>4.72</b>	<b>12/1/2002</b>
Blmbg. Barc. U.S. Aggregate			2.90	6.14	8.74	8.74	5.32	4.30	3.96	3.82	4.49	
Value Added			1.50	0.42	0.57	0.57	0.43	0.57	0.55	0.79	0.23	
<b>Western Asset Management</b>	<b>56,849,562</b>	<b>51.36</b>	<b>7.46</b>	<b>5.02</b>	<b>8.97</b>	<b>8.97</b>	<b>5.87</b>	<b>5.44</b>	<b>5.20</b>	<b>5.61</b>	<b>5.44</b>	<b>1/1/2004</b>
Blmbg. Barc. U.S. Aggregate			2.90	6.14	8.74	8.74	5.32	4.30	3.96	3.82	4.41	
Value Added			4.56	-1.12	0.23	0.23	0.55	1.14	1.24	1.79	1.03	



# Real Estate

# Asset Allocation & Performance

Real Estate

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Real Estate</b>	<b>18,985,696</b>	<b>100.00</b>	<b>12.04</b>	<b>-15.48</b>	<b>-12.26</b>	<b>-12.26</b>	<b>-0.29</b>	<b>1.22</b>	<b>2.61</b>	<b>5.94</b>	<b>7.23</b>	<b>6/1/2009</b>
Real Estate Policy Index			9.11	-22.01	-19.40	-19.40	-2.85	0.50	2.14	5.89	7.37	
Value Added			2.93	6.53	7.14	7.14	2.56	0.72	0.47	0.05	-0.14	
<b>Centersquare</b>	<b>18,985,696</b>	<b>100.00</b>	<b>12.04</b>	<b>-15.48</b>							<b>-15.50</b>	<b>10/1/2019</b>
Dow Jones U.S. Select REIT			9.11	-22.01							-22.97	
Value Added			2.93	6.53							7.47	



# Commodities

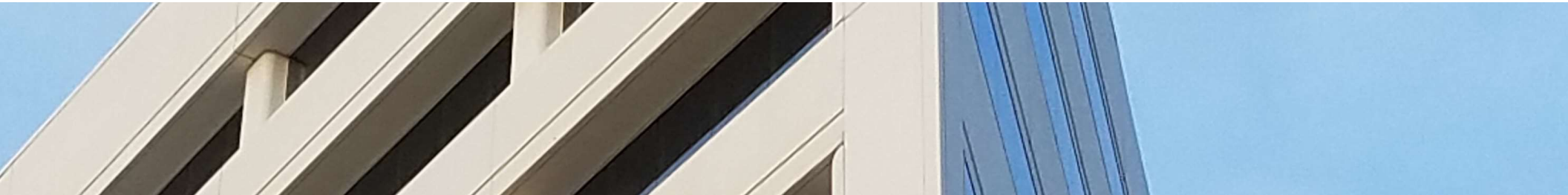
# Asset Allocation & Performance

## Commodities

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Commodities</b>	<b>17,784,817</b>	<b>100.00</b>	<b>12.65</b>	<b>-10.26</b>	<b>-7.70</b>	<b>-7.70</b>	<b>-0.25</b>	<b>-3.59</b>	<b>-4.96</b>		<b>-6.92</b>	<b>2/1/2013</b>
Bloomberg Commodity Index Total Return			5.08	-19.40	-17.38	-17.38	-6.14	-7.69	-8.11		-9.33	
Value Added			7.57	9.14	9.68	9.68	5.89	4.10	3.15		2.41	
<b>Wellington Commodities</b>	<b>17,784,817</b>	<b>100.00</b>	<b>12.65</b>	<b>-10.26</b>	<b>-7.70</b>	<b>-7.70</b>	<b>-0.25</b>	<b>-3.59</b>	<b>-4.96</b>		<b>-6.92</b>	<b>2/1/2013</b>
Bloomberg Commodity Index Total Return			5.08	-19.40	-17.38	-17.38	-6.14	-7.69	-8.11		-9.33	
Value Added			7.57	9.14	9.68	9.68	5.89	4.10	3.15		2.41	





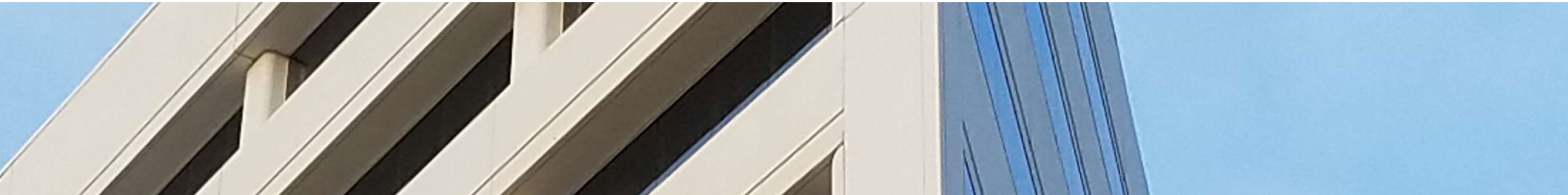
# Midstream Energy

# Asset Allocation & Performance

Midstream Energy Composite

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Midstream Energy Composite</b>	<b>13,355,825</b>	<b>100.00</b>	<b>32.51</b>	<b>-32.48</b>	<b>-36.74</b>	<b>-36.74</b>	<b>-13.98</b>	<b>-11.81</b>			<b>-11.73</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			50.18	-35.71	-41.43	-41.43	-18.07	-16.91			-17.59	
Value Added			-17.67	3.23	4.69	4.69	4.09	5.10			5.86	
<b>Harvest MLP</b>	<b>13,355,825</b>	<b>100.00</b>	<b>32.51</b>	<b>-32.48</b>	<b>-36.74</b>	<b>-36.74</b>	<b>-13.98</b>	<b>-11.81</b>			<b>-11.73</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			50.18	-35.71	-41.43	-41.43	-18.07	-16.91			-17.59	
Value Added			-17.67	3.23	4.69	4.69	4.09	5.10			5.86	



# TIPS

# Asset Allocation & Performance

## TIPS

Periods Ended June 30, 2020

	Allocation		Performance (%) net of fees									
	Market Value \$	%	1 Quarter	YTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>TIPS</b>	<b>22,636,172</b>	<b>100.00</b>	<b>4.00</b>	<b>5.75</b>	<b>7.95</b>	<b>7.95</b>	<b>4.80</b>	<b>3.62</b>			<b>3.18</b>	<b>5/1/2015</b>
Blmbg. Barc. U.S. TIPS			4.24	6.01	8.28	8.28	5.05	3.75			3.26	
Value Added			-0.24	-0.26	-0.33	-0.33	-0.25	-0.13			-0.08	
<b>Brown Brothers Harriman</b>	<b>22,636,172</b>	<b>100.00</b>	<b>4.00</b>	<b>5.75</b>	<b>7.95</b>	<b>7.95</b>	<b>4.80</b>	<b>3.62</b>			<b>3.18</b>	<b>5/1/2015</b>
Blmbg. Barc. U.S. TIPS			4.24	6.01	8.28	8.28	5.05	3.75			3.26	
Value Added			-0.24	-0.26	-0.33	-0.33	-0.25	-0.13			-0.08	



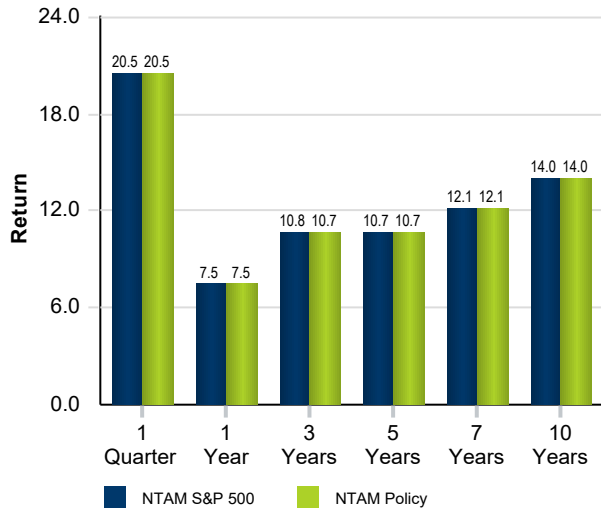
# Appendix

# Performance Summary

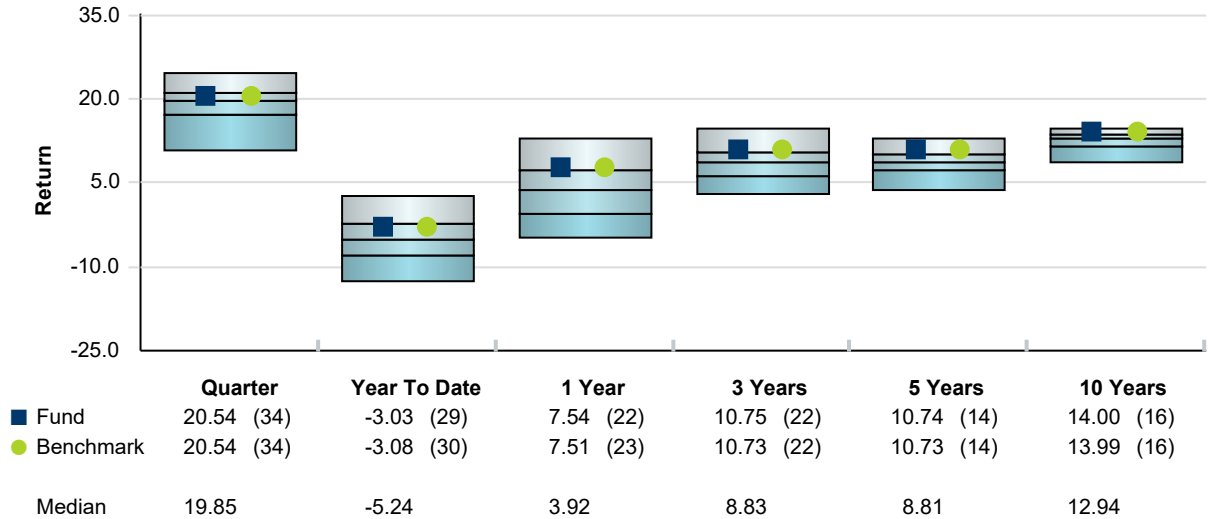
NTAM S&P 500

Periods Ended June 30, 2020

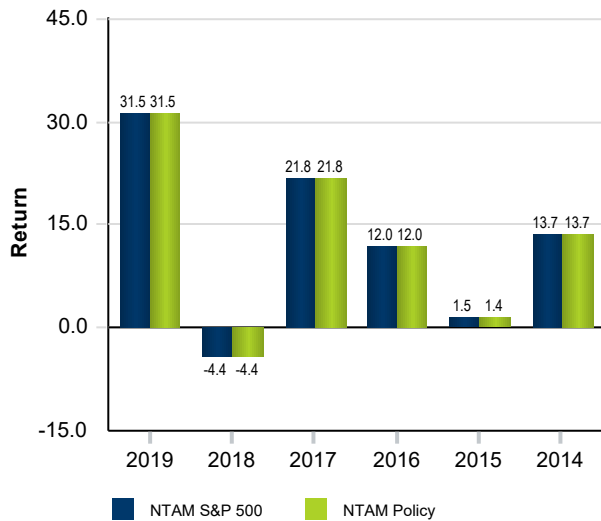
## Comparative Performance



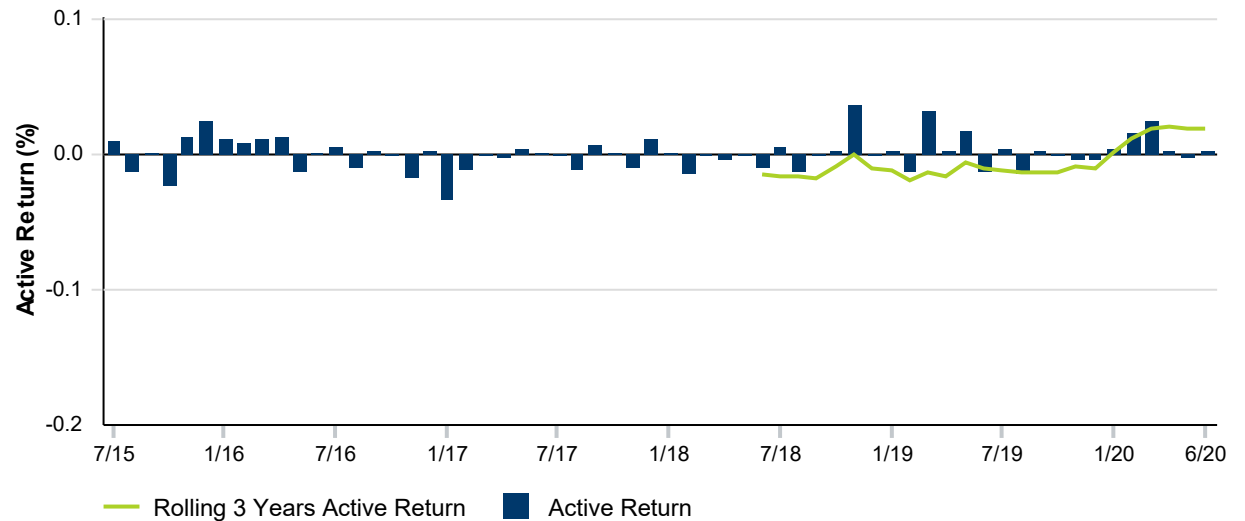
## Peer Group Analysis: IM U.S. Large Cap Core Equity (SA+CF)



## Comparative Performance



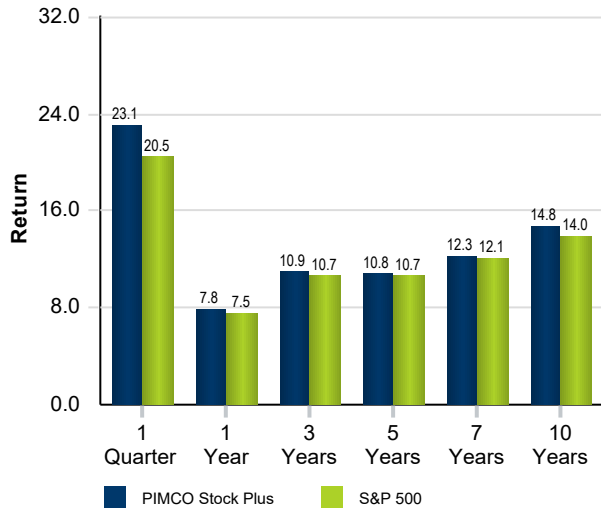
## Rolling 3 Years Performance



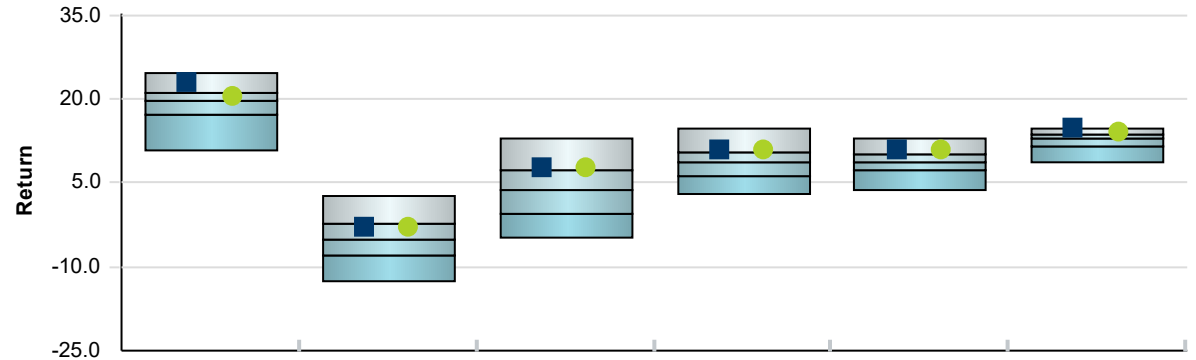
# Performance Summary

PIMCO Stock Plus  
Periods Ended June 30, 2020

## Comparative Performance

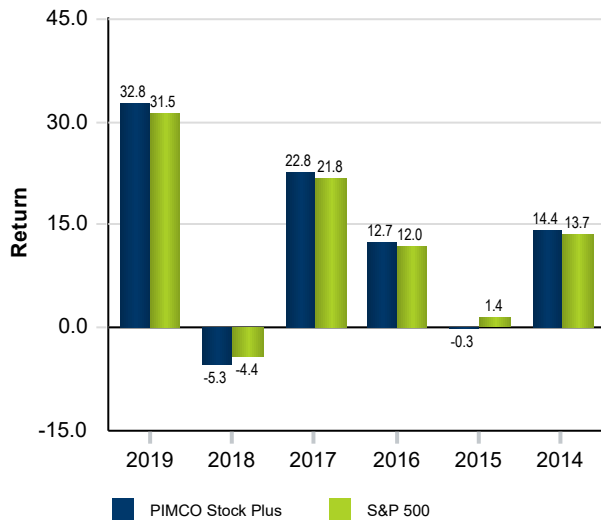


## Peer Group Analysis: IM U.S. Large Cap Core Equity (SA+CF)

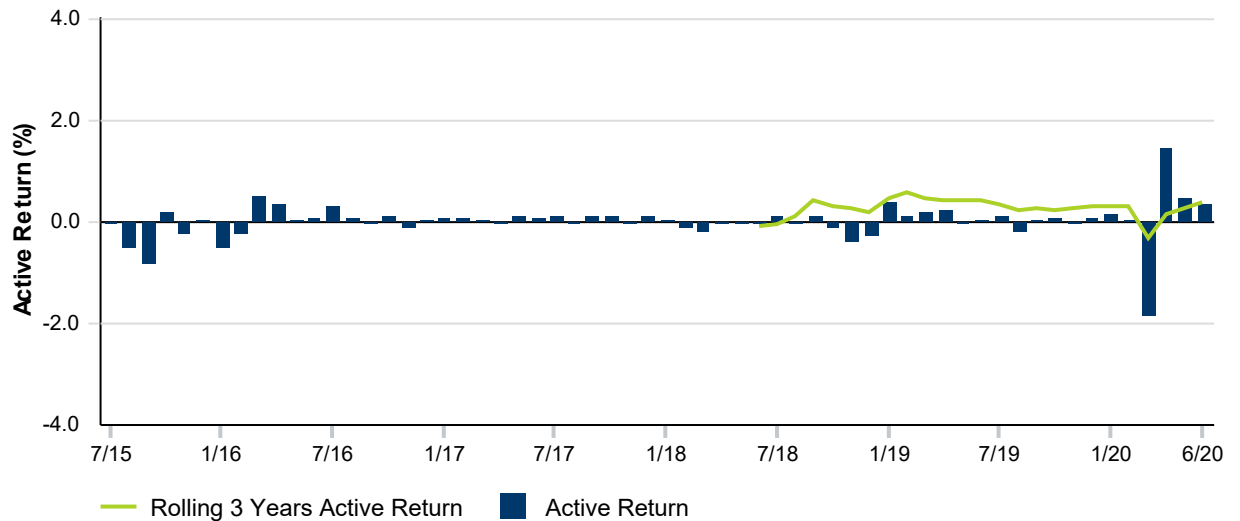


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
■ Fund	23.08 (12)	-2.93 (29)	7.80 (22)	10.93 (21)	10.76 (14)	14.78 (5)
● Benchmark	20.54 (34)	-3.08 (30)	7.51 (23)	10.73 (22)	10.73 (14)	13.99 (16)
Median	19.85	-5.24	3.92	8.83	8.81	12.94

## Comparative Performance



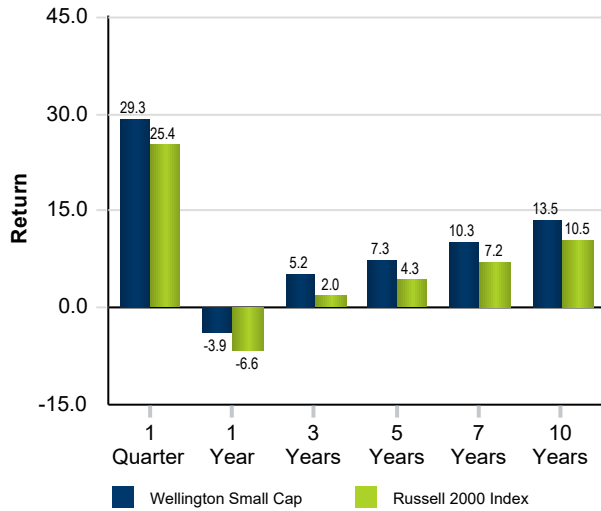
## Rolling 3 Years Performance



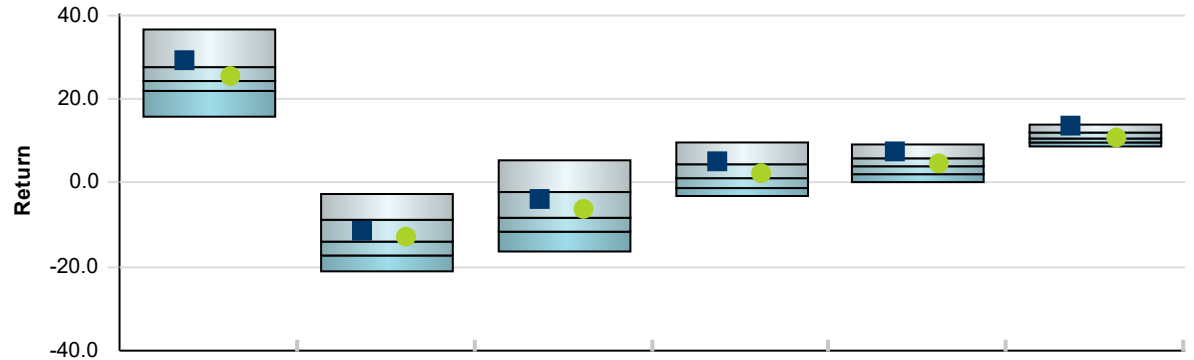
# Performance Summary

Wellington Small Cap  
Periods Ended June 30, 2020

## Comparative Performance

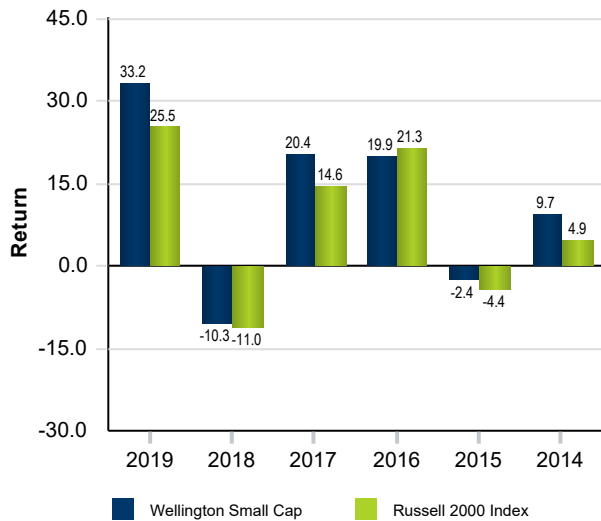


## Peer Group Analysis: IM U.S. Small Cap Core Equity (SA+CF)

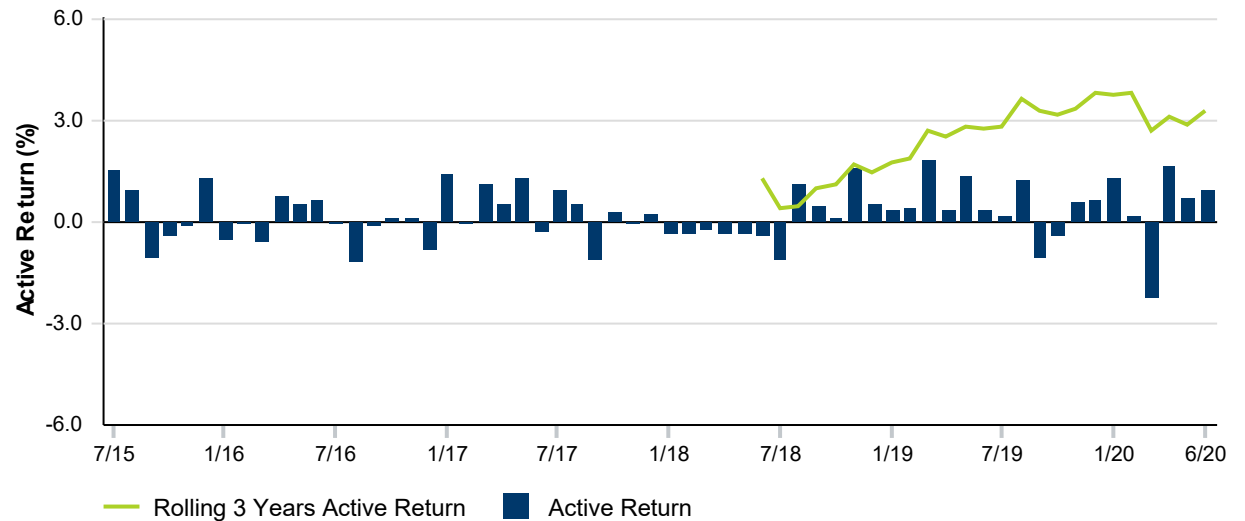


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
■ Fund	29.29 (18)	-11.53 (40)	-3.86 (33)	5.19 (20)	7.32 (16)	13.52 (11)
● Benchmark	25.42 (39)	-12.98 (48)	-6.63 (46)	2.01 (42)	4.29 (49)	10.50 (58)
Median	24.45	-13.99	-8.26	1.36	4.15	10.85

## Comparative Performance



## Rolling 3 Years Performance



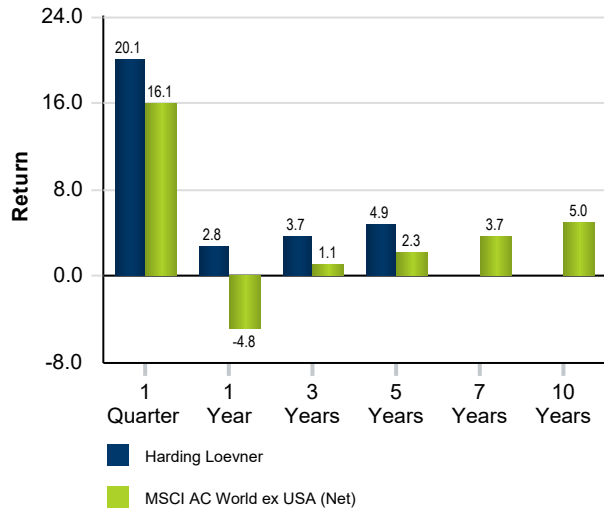


# Performance Summary

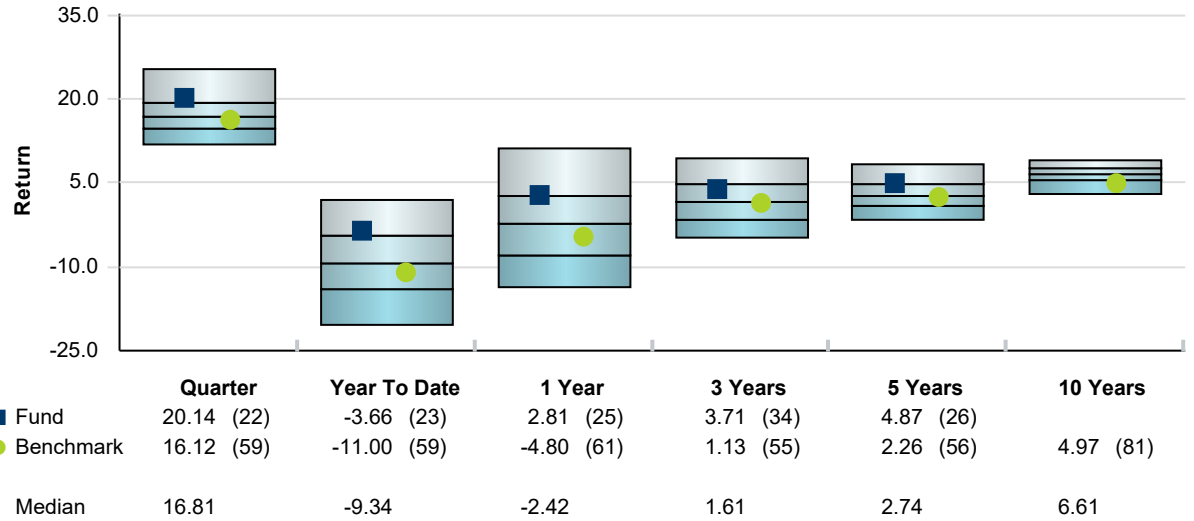
Harding Loevner

Periods Ended June 30, 2020

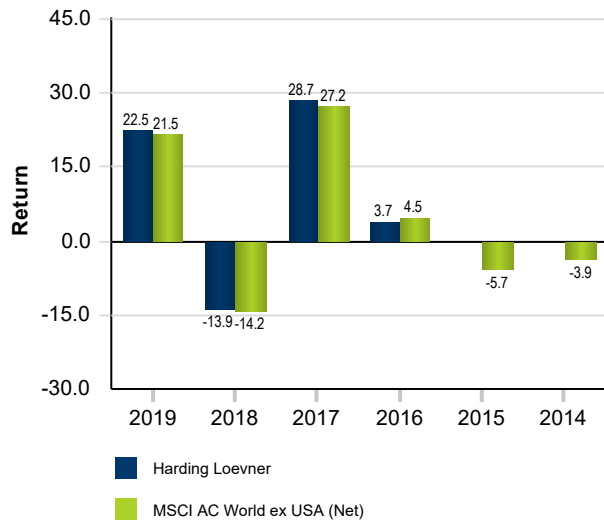
## Comparative Performance



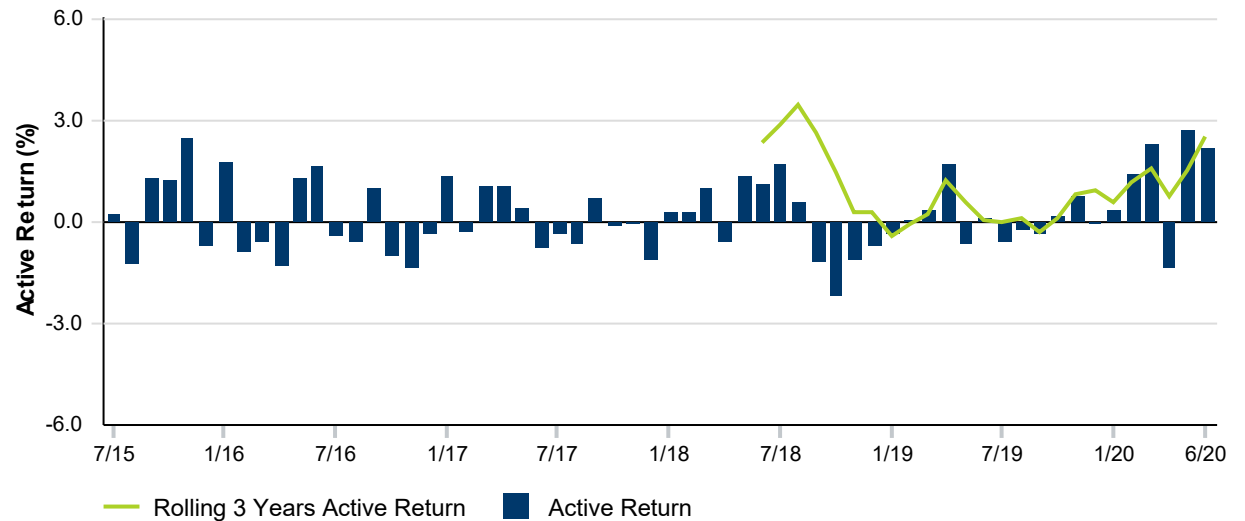
## Peer Group Analysis: IM International Large Cap Equity (SA+CF)



## Comparative Performance



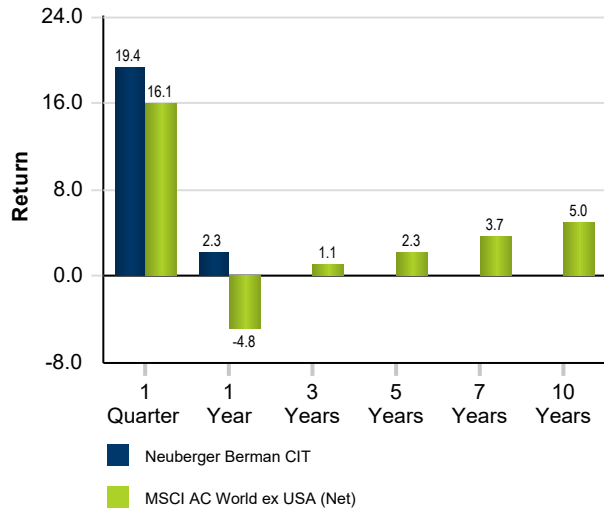
## Rolling 3 Years Performance



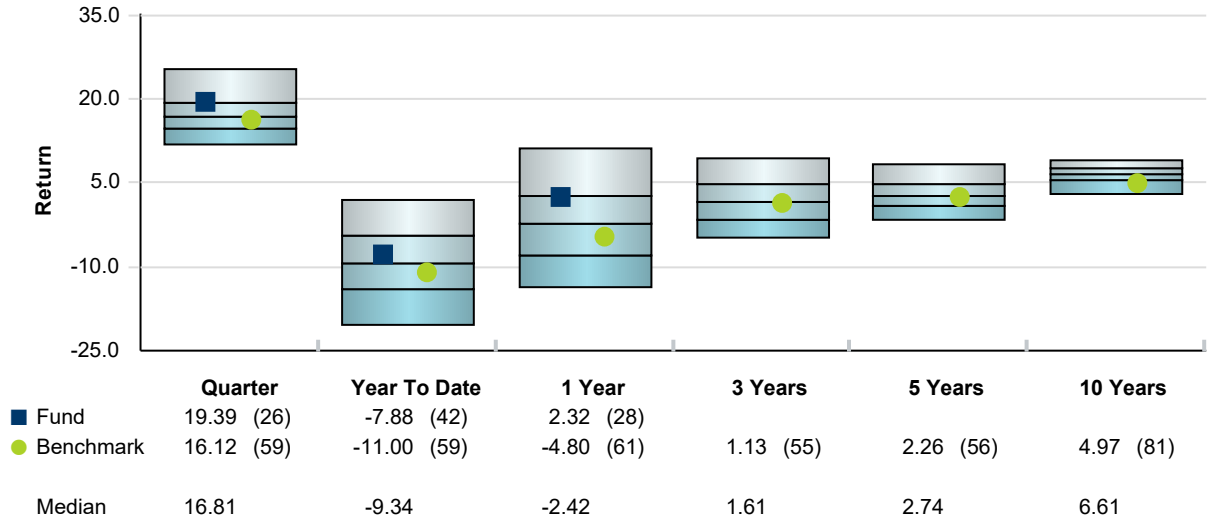
# Performance Summary

Neuberger Berman CIT  
 Periods Ended June 30, 2020

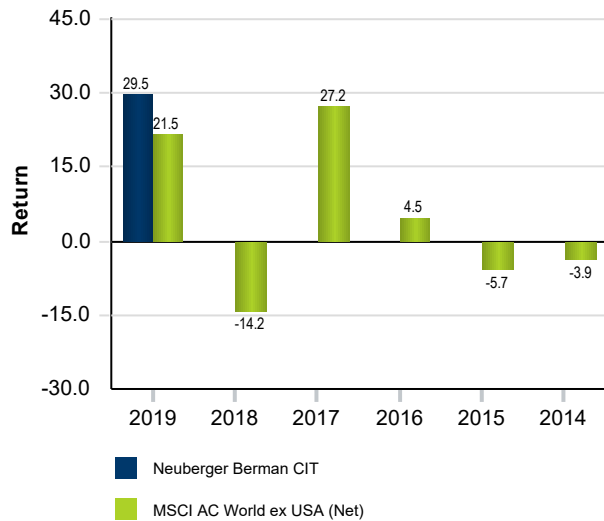
## Comparative Performance



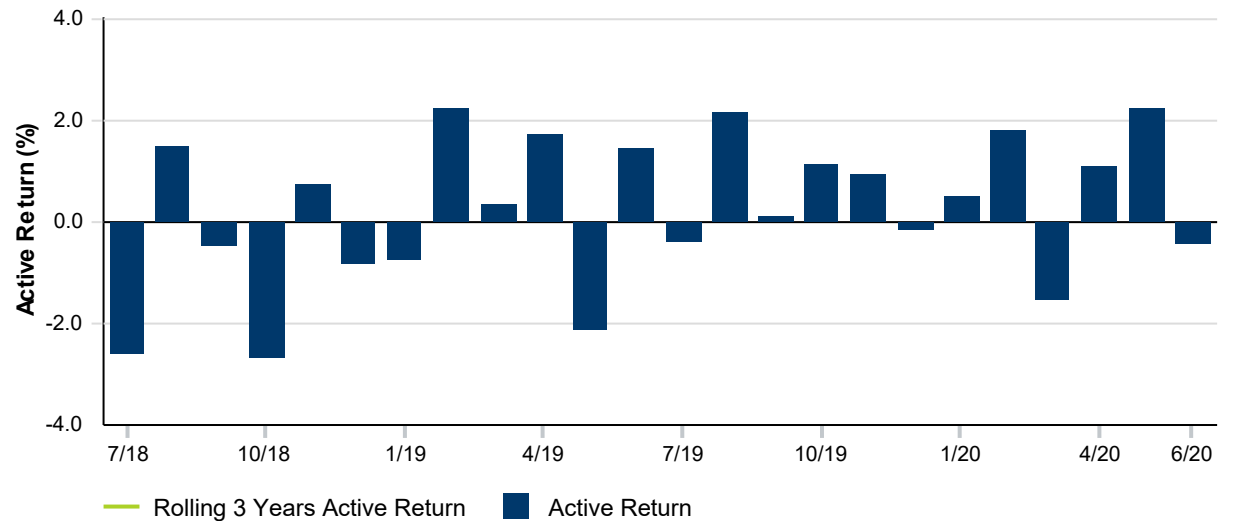
## Peer Group Analysis: IM International Large Cap Equity (SA+CF)



## Comparative Performance



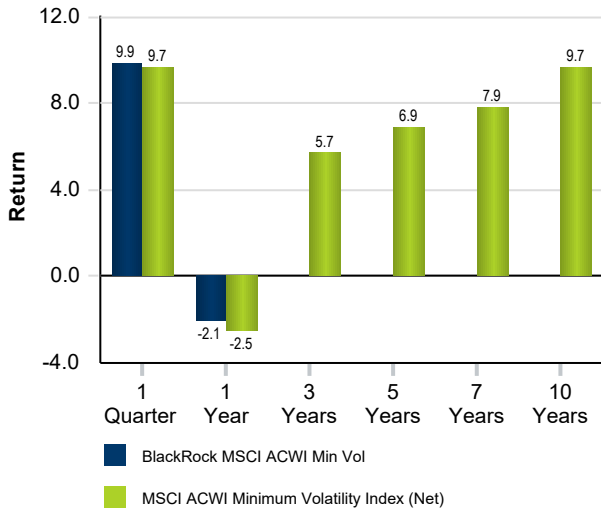
## Rolling 3 Years Performance



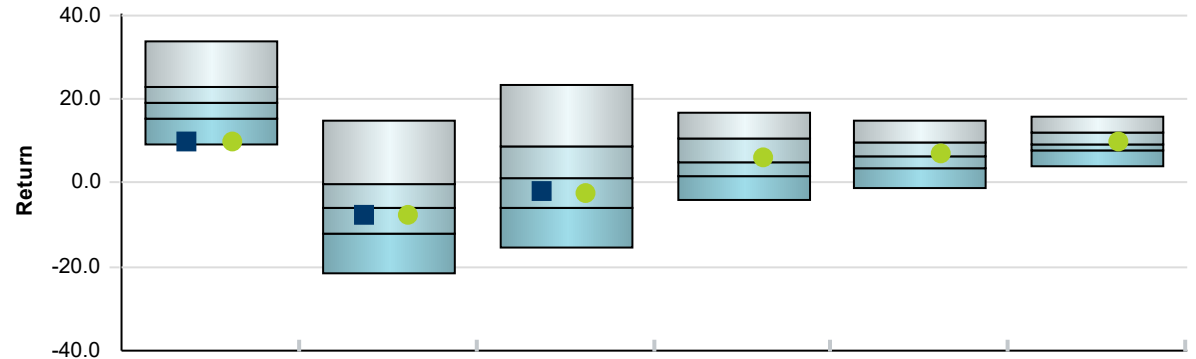
# Performance Summary

BlackRock MSCI ACWI Min Vol  
 Periods Ended June 30, 2020

## Comparative Performance

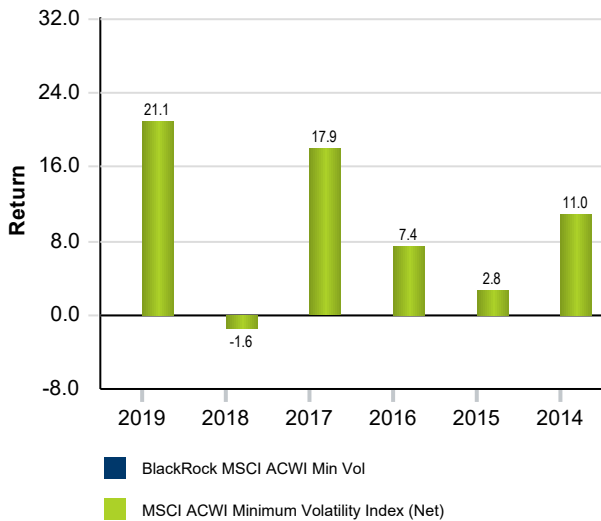


## Peer Group Analysis: IM Global Equity (SA+CF)

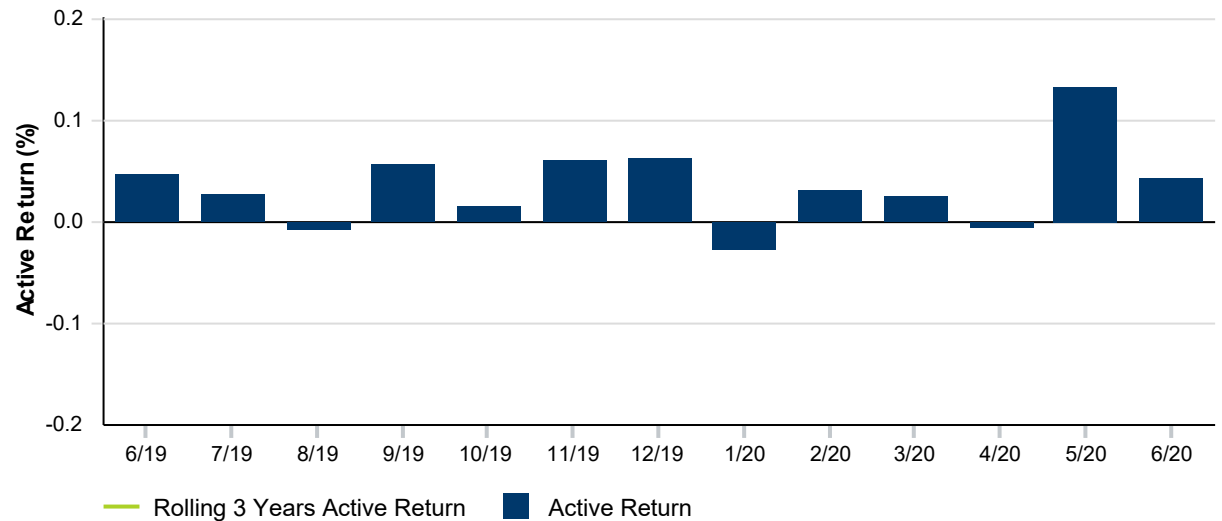


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
<b>Fund</b>	9.91 (94)	-7.65 (59)	-2.09 (64)			
<b>Benchmark</b>	9.72 (94)	-7.83 (59)	-2.50 (66)	5.75 (47)	6.94 (41)	9.67 (49)
<b>Median</b>	19.19	-6.06	1.00	5.21	6.43	9.43

## Comparative Performance



## Rolling 3 Years Performance

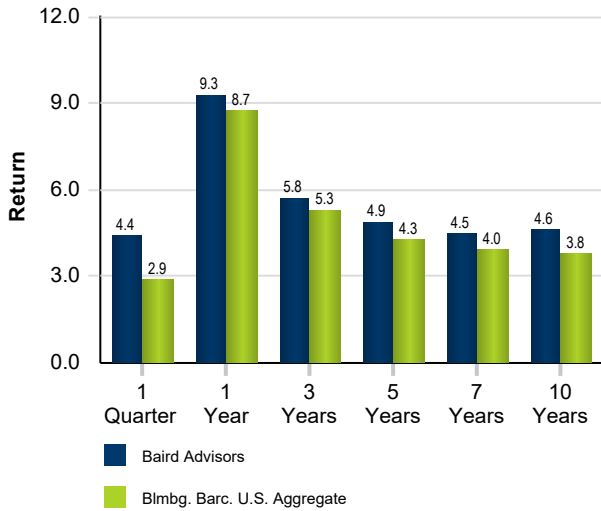


# Performance Summary

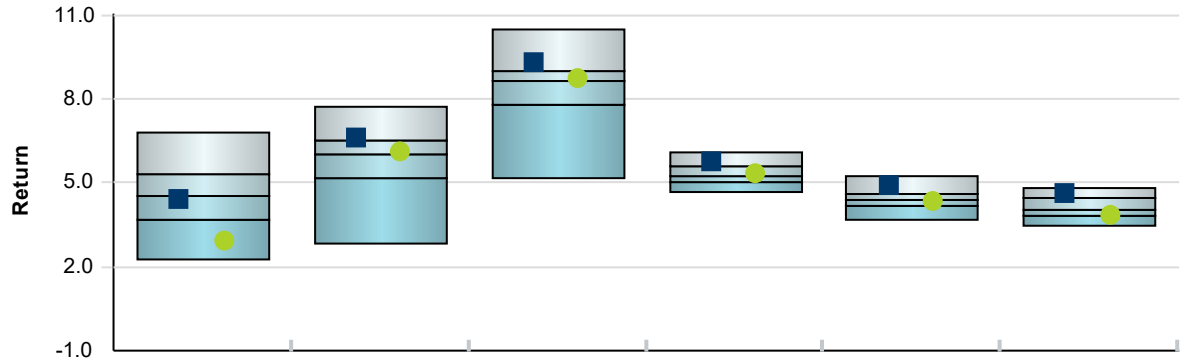
Baird Advisors

Periods Ended June 30, 2020

## Comparative Performance

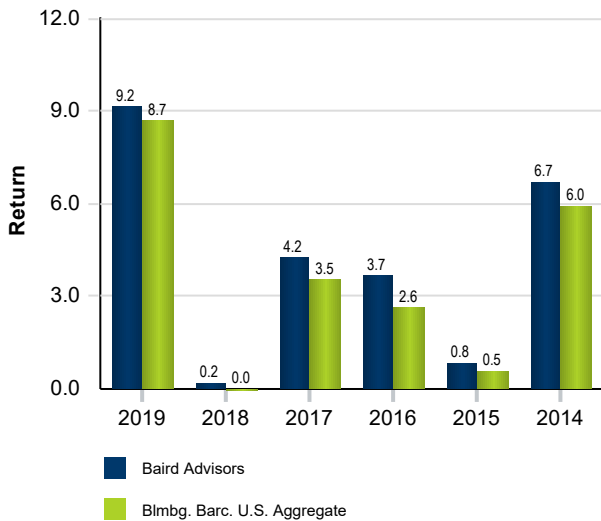


## Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)

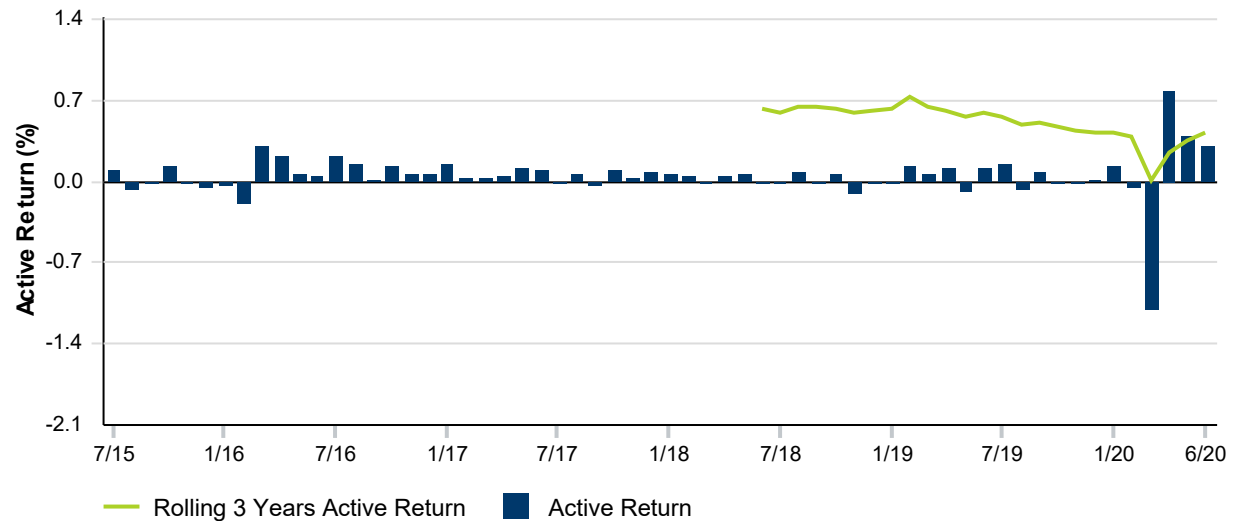


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
<b>Fund</b>	4.40 (53)	6.56 (23)	9.31 (18)	5.75 (17)	4.87 (13)	4.61 (21)
<b>Benchmark</b>	2.90 (90)	6.14 (41)	8.74 (43)	5.32 (44)	4.30 (63)	3.82 (75)
<b>Median</b>	4.52	6.02	8.64	5.26	4.41	4.06

## Comparative Performance



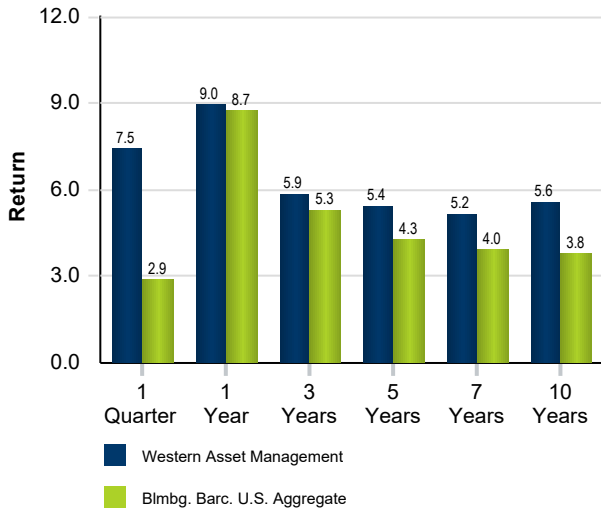
## Rolling 3 Years Performance



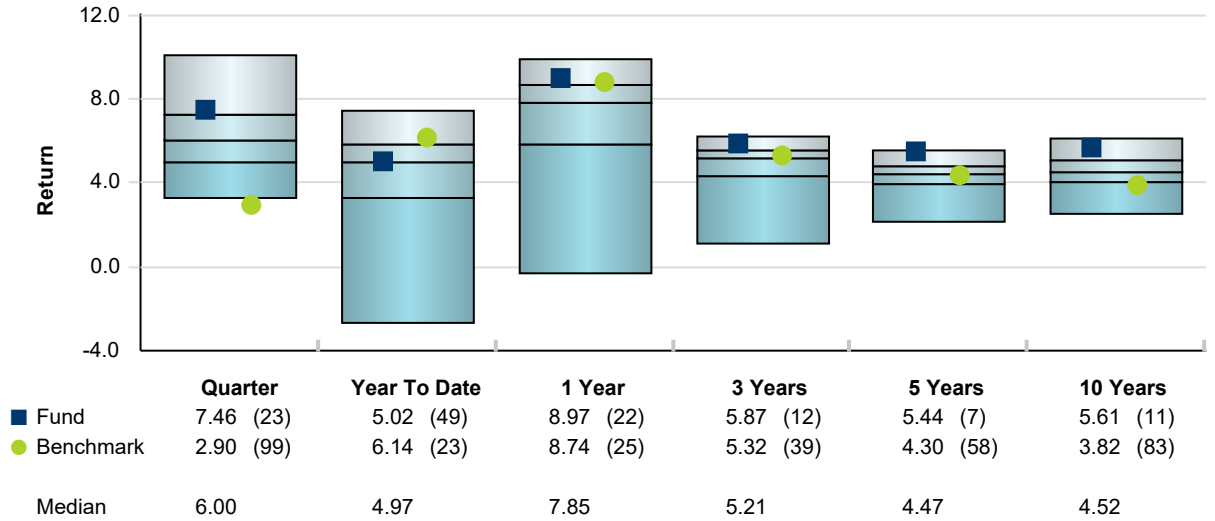
# Performance Summary

Western Asset Management  
 Periods Ended June 30, 2020

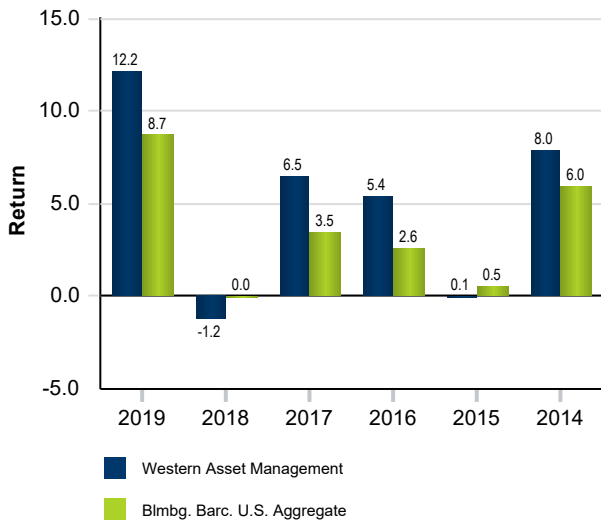
## Comparative Performance



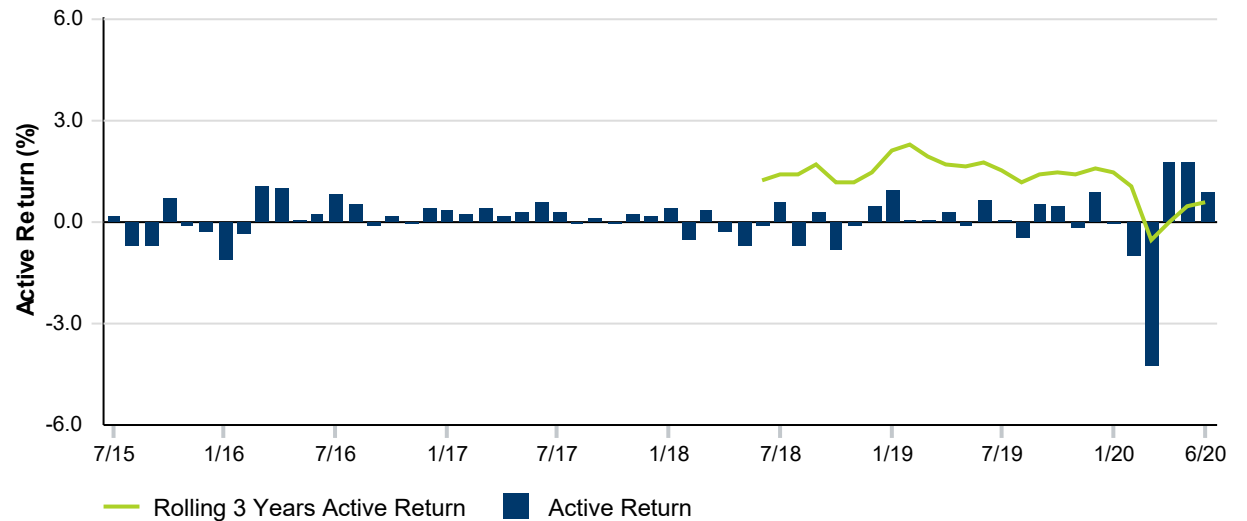
## Peer Group Analysis: IM U.S. Broad Market Core+ Fixed Income (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

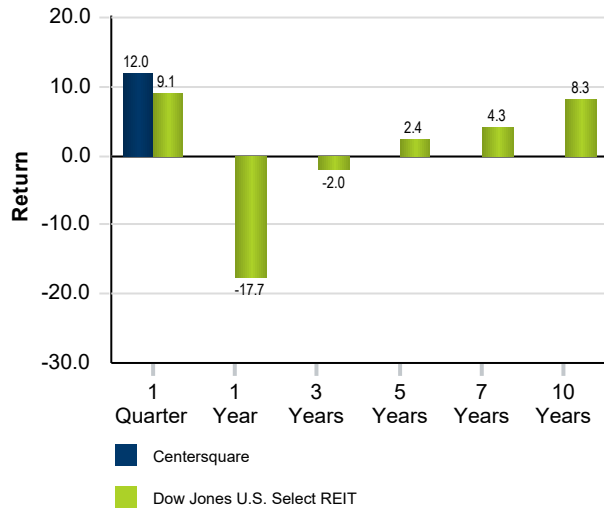


# Performance Summary

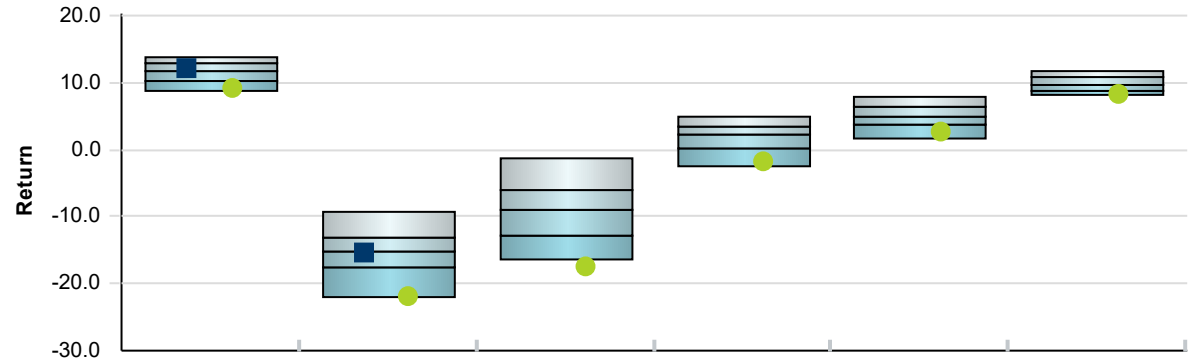
Centersquare

Periods Ended June 30, 2020

## Comparative Performance

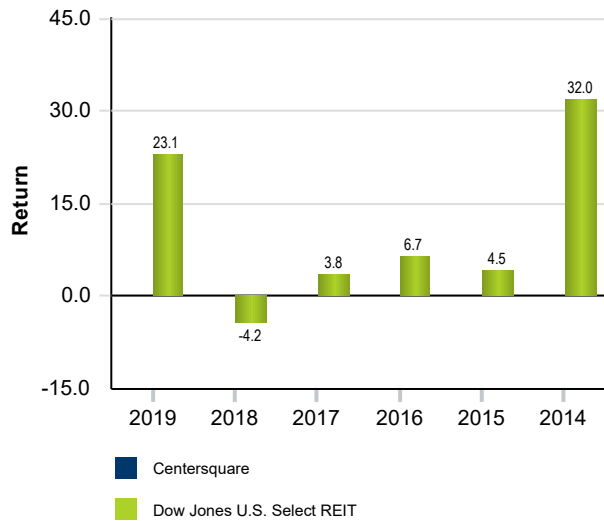


## Peer Group Analysis: IM U.S. REIT (SA+CF)

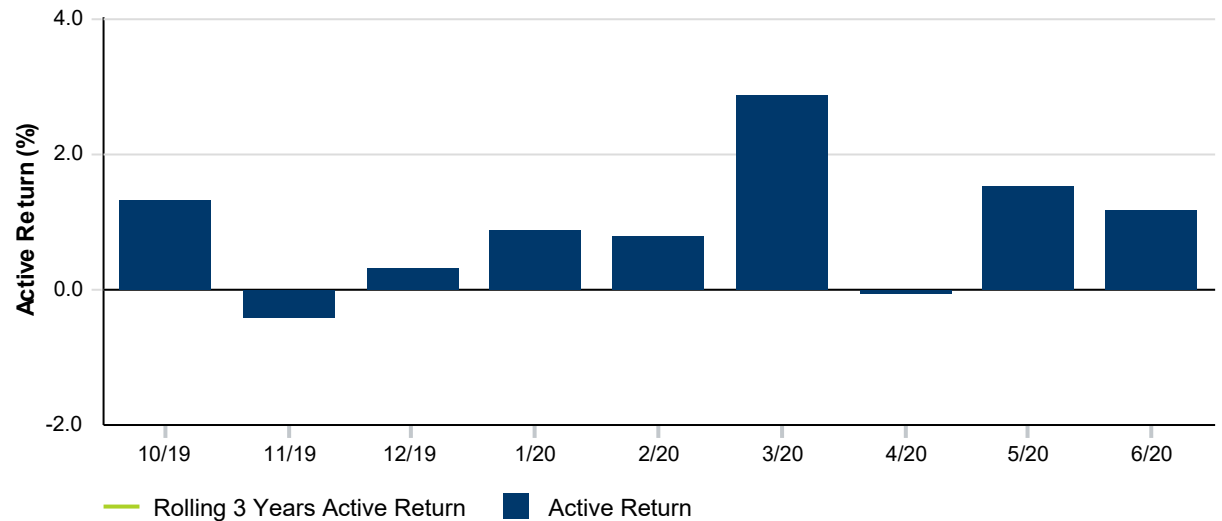


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
<b>Fund</b>	12.04 (41)	-15.48 (53)	-17.71 (97)	-1.99 (93)	2.45 (88)	8.27 (85)
<b>Benchmark</b>	9.11 (87)	-22.01 (96)	-17.71 (97)	-1.99 (93)	2.45 (88)	8.27 (85)
<b>Median</b>	11.82	-15.14	-9.10	2.12	5.02	9.60

## Comparative Performance



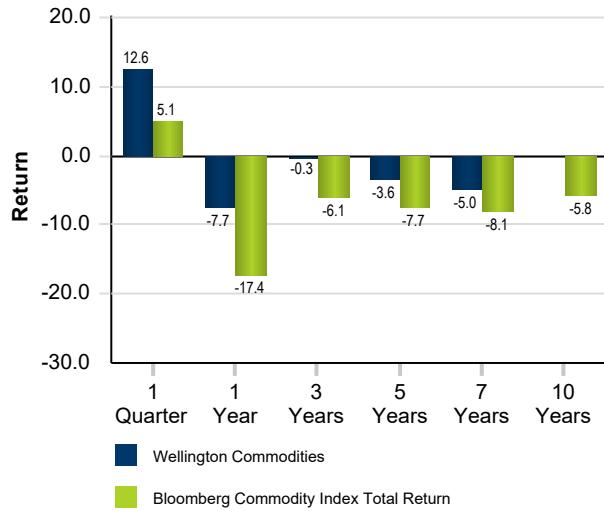
## Rolling 3 Years Performance



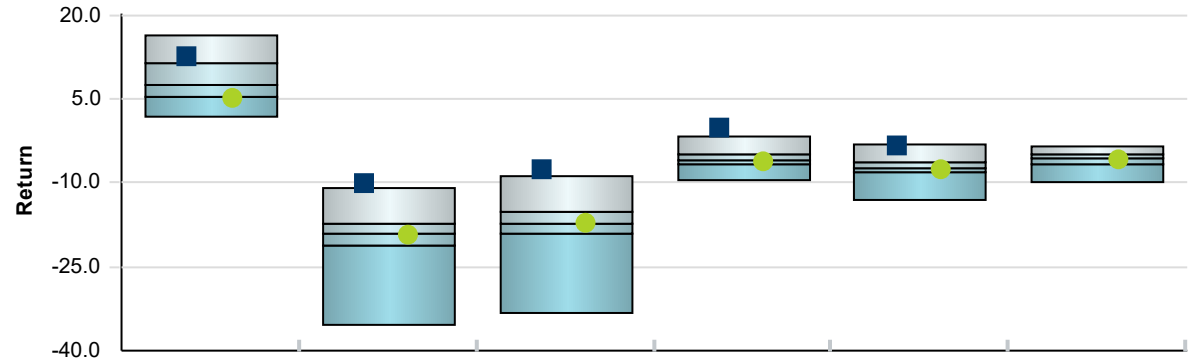
# Performance Summary

Wellington Commodities  
Periods Ended June 30, 2020

## Comparative Performance

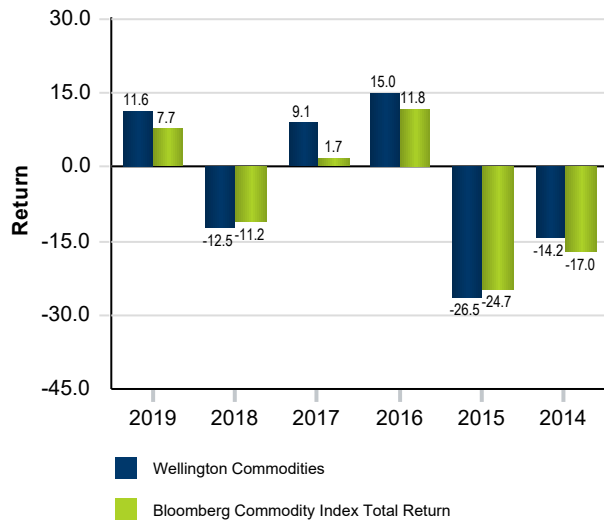


## Peer Group Analysis: Commodities Broad Basket

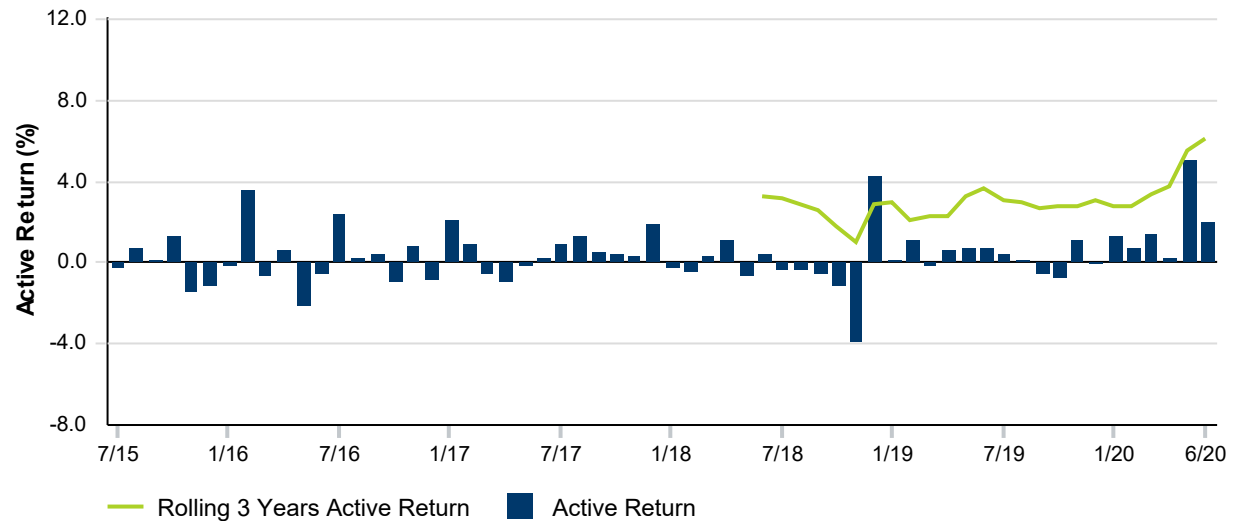


	Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years
<b>Fund</b>	12.65 (18)	-10.26 (4)	-7.70 (4)	-0.25 (2)	-3.59 (7)	-
<b>Benchmark</b>	5.08 (88)	-19.40 (57)	-17.38 (56)	-6.14 (59)	-7.69 (65)	-5.82 (57)
<b>Median</b>	7.54	-19.20	-17.11	-5.92	-7.30	-5.51

## Comparative Performance



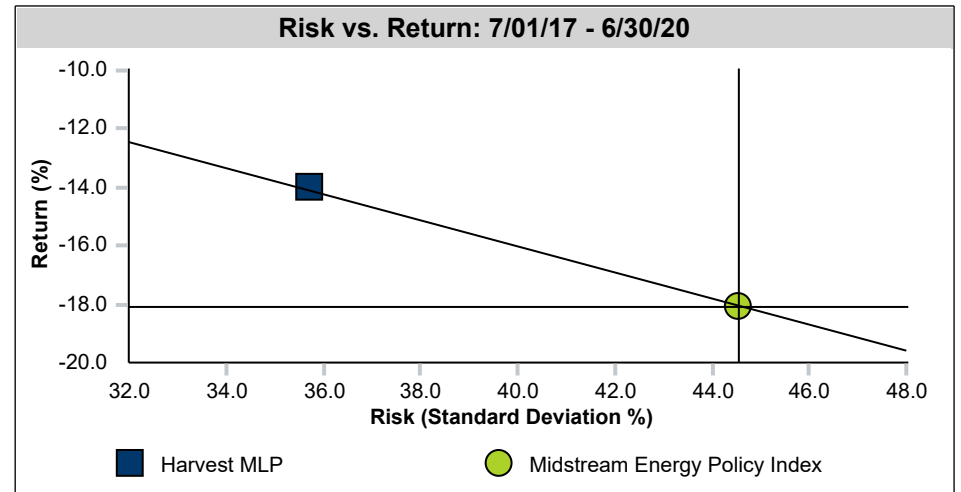
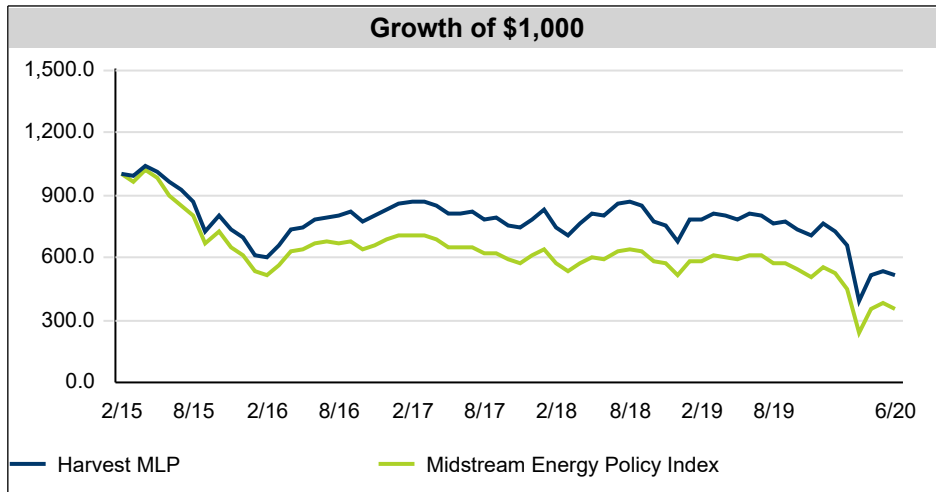
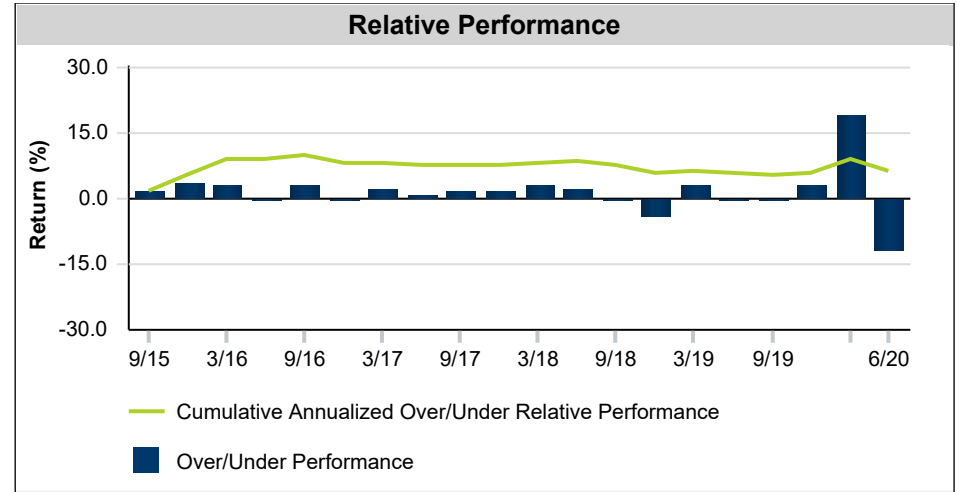
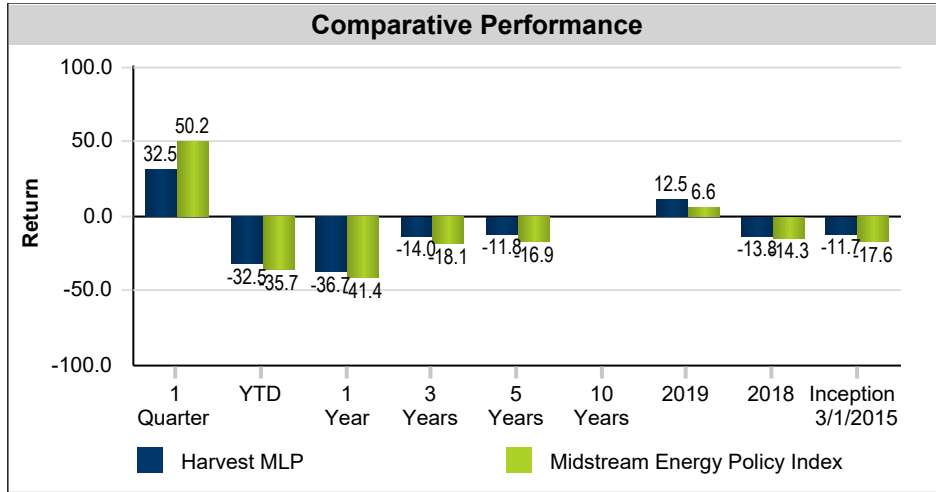
## Rolling 3 Years Performance



# Manager Summary

Harvest MLP

Periods Ended June 30, 2020



### Historical Statistics: 7/01/17 - 6/30/20

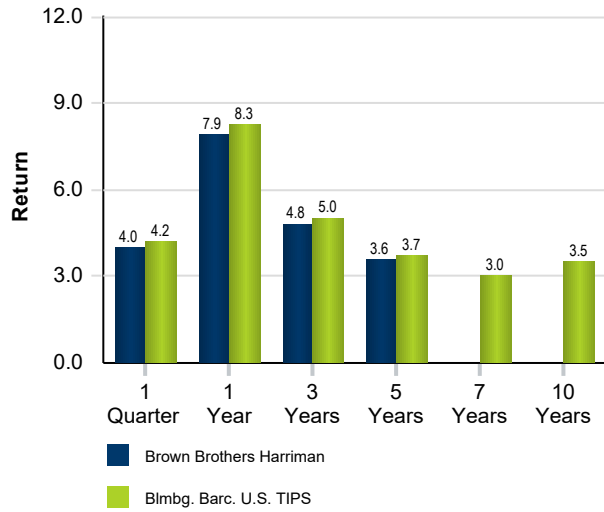
	Alpha	Tracking Error	Information Ratio	Beta	Standard Deviation	Sharpe Ratio	Maximum Drawdown	Up Capture	Down Capture
Fund	-0.64	12.05	0.04	0.81	39.36	-0.18	-54.57	85.46	86.63
Benchmark	0.00	0.00		1.00	47.34	-0.16	-63.38	100.00	100.00



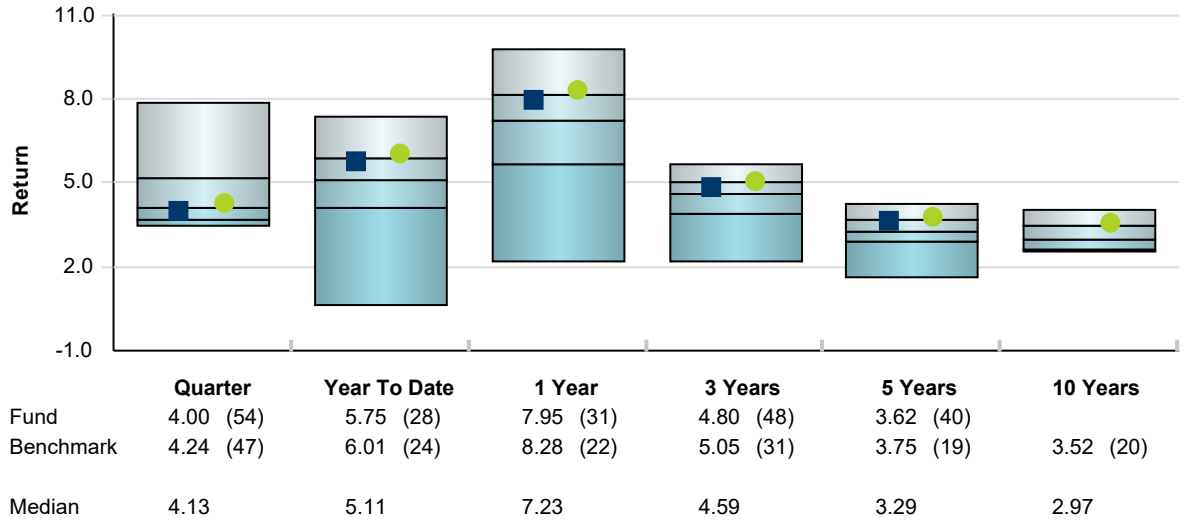
# Performance Summary

Brown Brothers Harriman  
 Periods Ended June 30, 2020

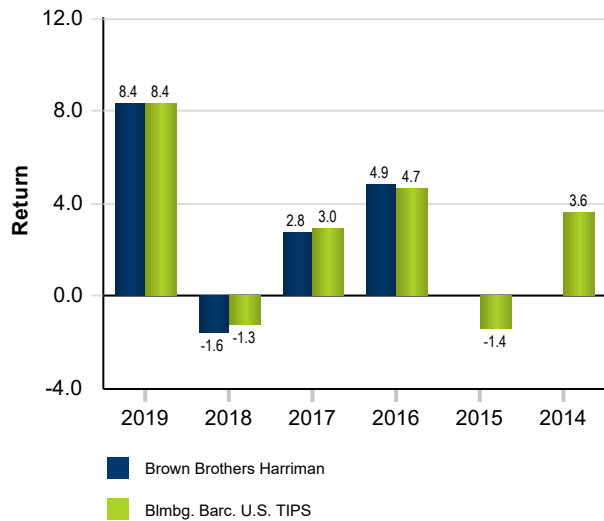
## Comparative Performance



## Peer Group Analysis: IM U.S. TIPS (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

