



Numbers in Context



U.S. Equity

Economic news from the third quarter was mixed, with a focus on employment conditions remaining a key element of the recovery. Temporary job losses continue to fall while permanent losses rise. Both initial jobless claims and continuing claims are falling from highs reported last quarter.

Although the U.S. has experienced an overnight rate near zero before, this year is the first time that the bellwether 10-year Treasury has been below 1%. Interest rates have a natural floor, and as rates approach a bottom, yield (and price) changes can become asymmetrical. Rates either go up (and prices go down) or stay relatively steady. One consequence of this pattern is that fixed income returns tend to become less volatile.

Non-U.S. Equity

The U.K. suffered a contraction of nearly -20% during the quarter. The government's furlough program, supporting employees' wages, has kept the unemployment rate to just 4%. Euro zone manufacturing activity is on the rise, led by particular strength in Germany. The Chinese economy grew during the quarter after more than half of the country was shut down in February.

Fixed Income

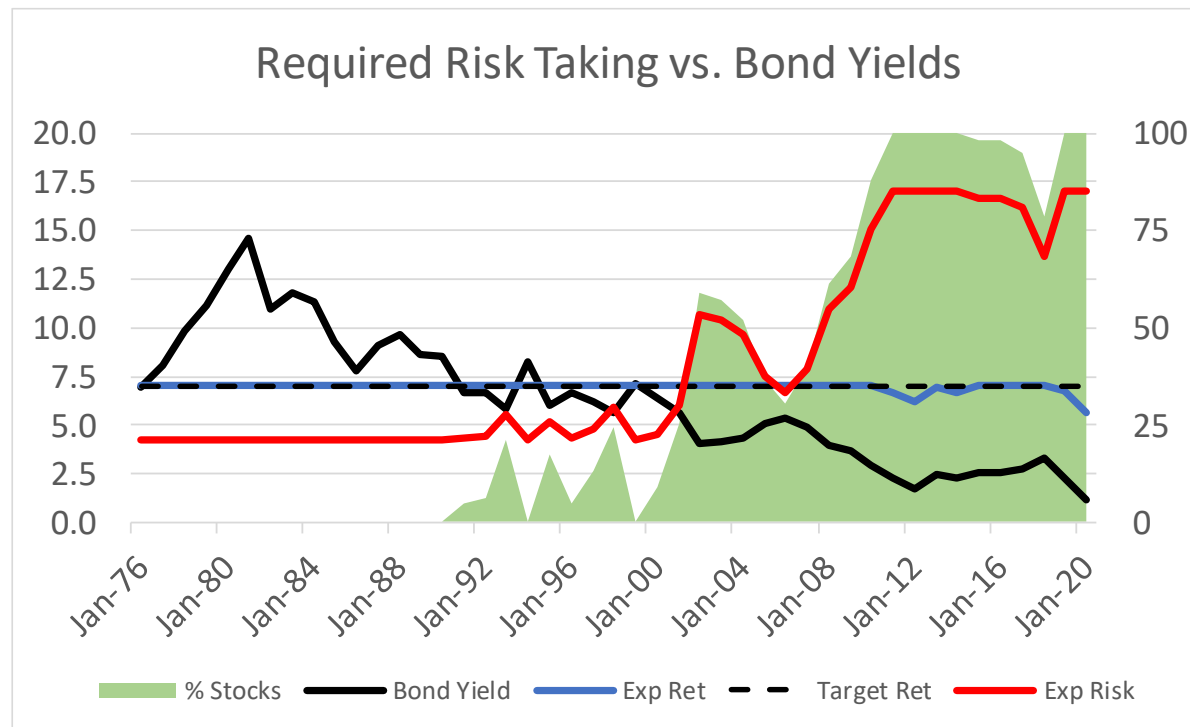
The 10-year Treasury yield ended the quarter at 0.69%, up just 3 basis points from June. The FOMC met three times during the quarter with no change to their overnight rate. In a meaningful step, the Committee addressed a revised policy that allows inflation to move above the 2% target before increasing interest rates.

September 2020 Asset Class Assumptions



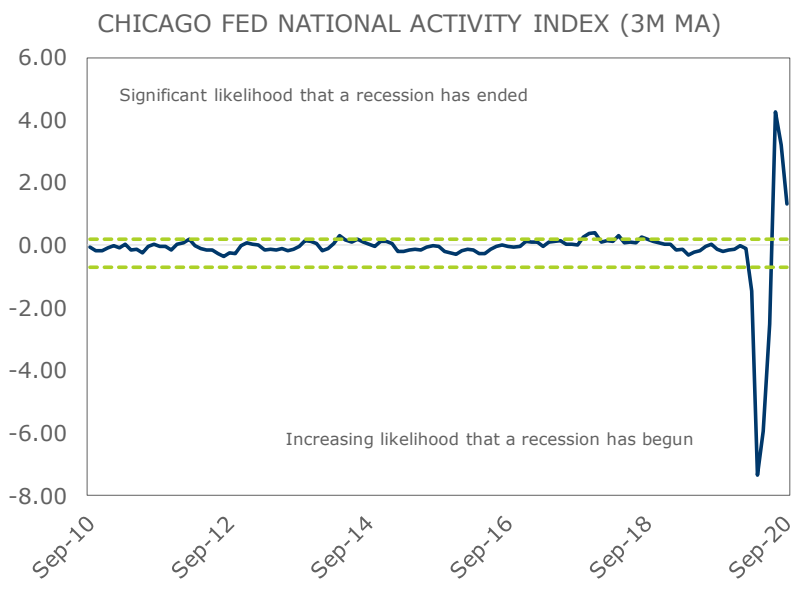
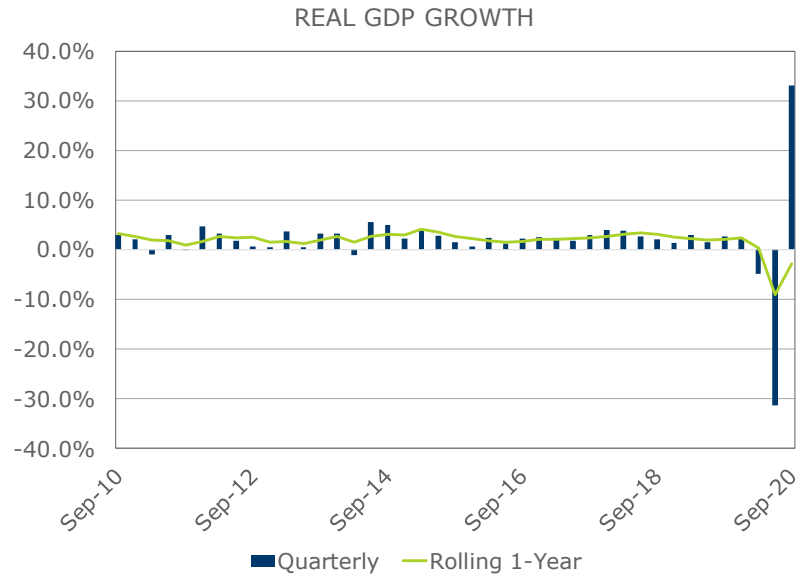
	EQUITY						FIXED INCOME						REAL ASSETS					
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	Real Estate			Cmnty	Real Assets	US CPI
													US RES	Global RES	Private RE			
COMPOUND RETURN (%)	5.50	6.00	6.00	6.25	5.95	7.45	0.55	1.05	1.75	0.40	3.45	0.25	5.20	5.40	6.65	2.35	5.35	1.80
ARITHMETIC RETURN (%)	6.85	7.50	9.00	7.90	7.30	10.85	0.55	1.15	2.15	0.60	3.95	0.35	6.55	6.55	7.55	3.40	5.70	1.80
EXPECTED RISK (%)	17.00	18.00	26.00	18.95	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.00	15.80	14.00	15.00	8.75	1.75
CASH YIELD (%)	1.75	2.50	2.25	2.45	2.05	0.00	0.55	1.85	2.70	1.15	6.80	1.10	3.85	3.85	2.50	0.55	2.05	0.00
GROWTH EXPOSURE	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.90	-2.30	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.60	0.00
INFLATION EXPOSURE	-3.00	0.00	5.00	1.35	-1.10	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	2.00	1.00	12.00	4.40	1.00
CORRELATIONS																		
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

- Current low rate environment imposes significant challenges, through lower expected returns, and related pressure to take on greater levels of risk
- Exhibit below demonstrates how much risk taking is required within a stock/bond portfolio to meet a 7% return target – assuming the U.S. Stock and Core Bond assumptions on the previous slide
- Note that the current equity risk premium (of nearly 4.5%) is larger than the historical average (3.5%) – implying that the expected return line (in blue) would push lower at similar yield levels



QUARTERLY MARKET REVIEW

Economic Growth

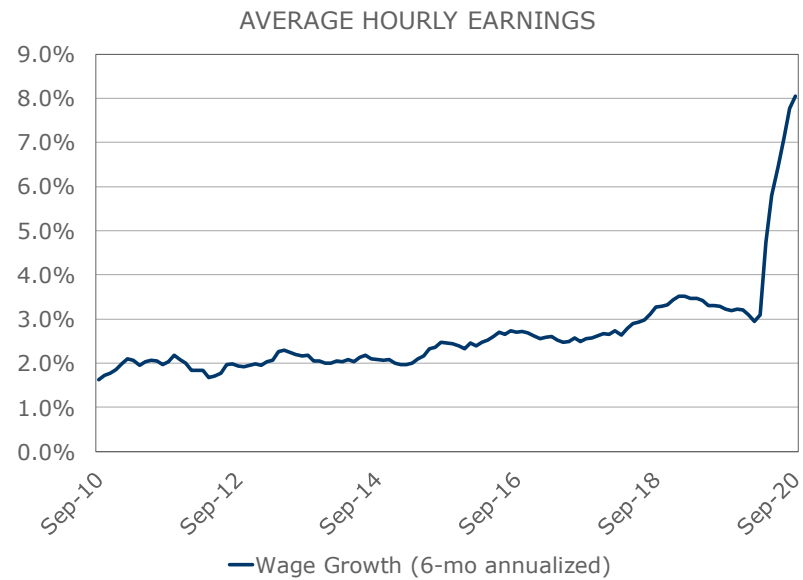
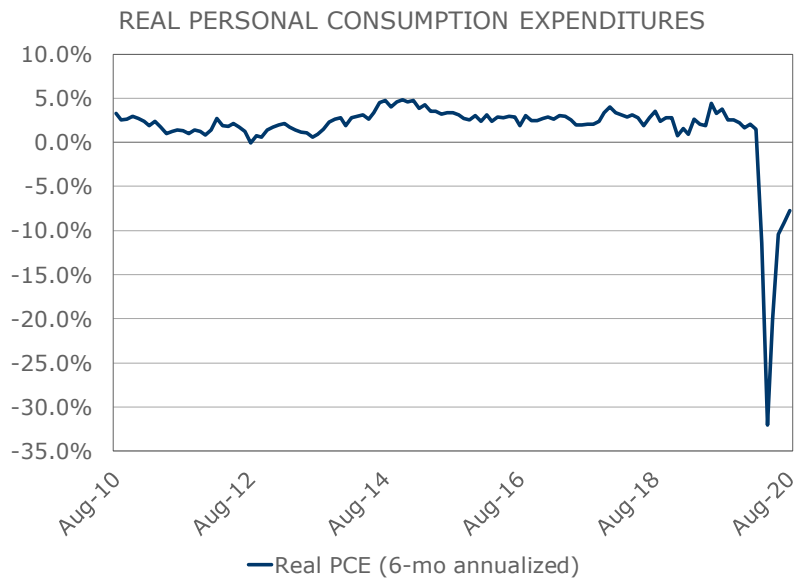
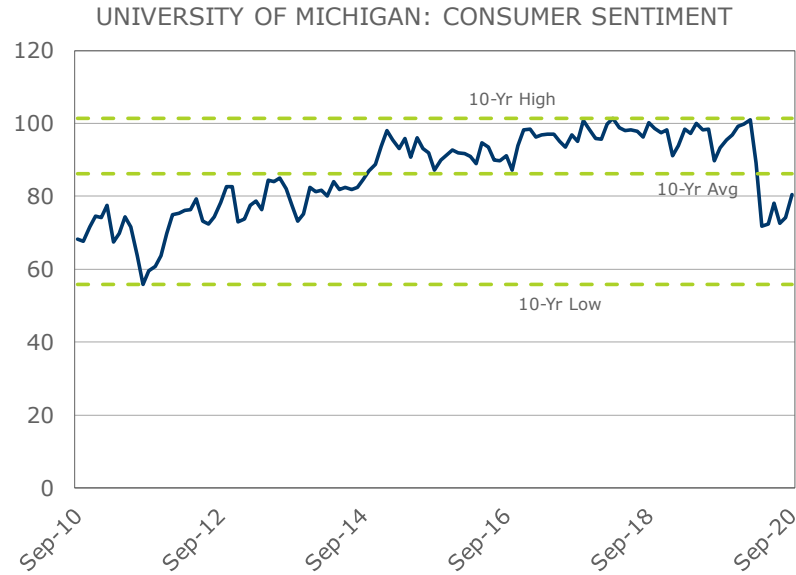


Data Source: Bloomberg

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QUARTERLY MARKET REVIEW

Consumer Activity



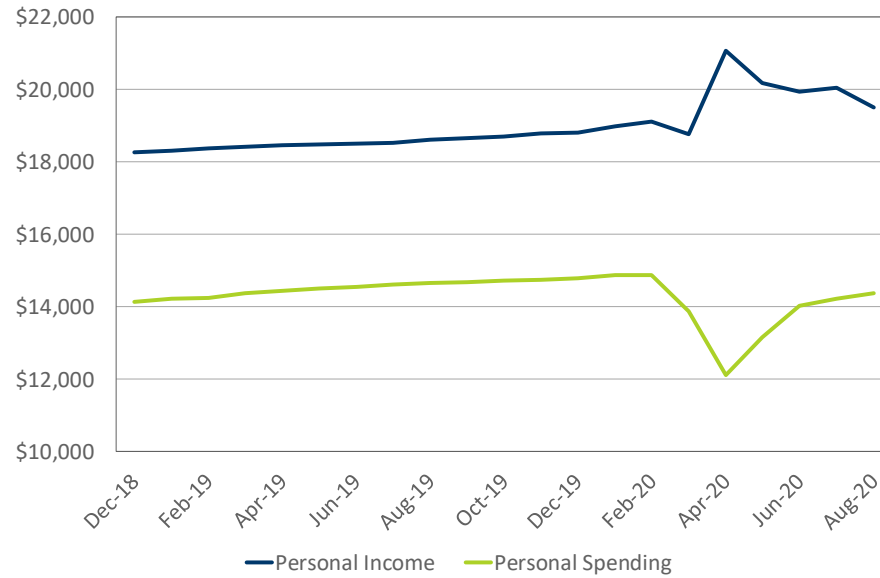
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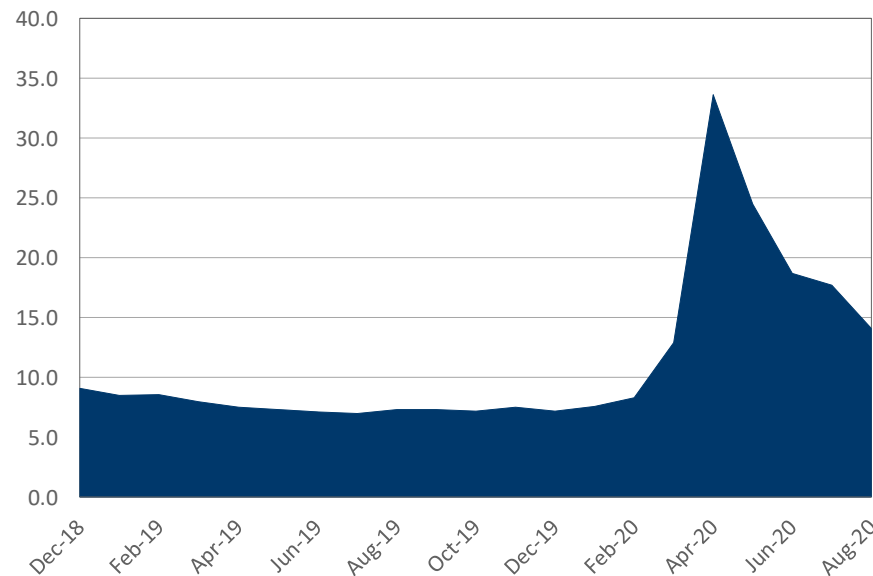
QUARTERLY MARKET REVIEW

Impact of Fiscal Stimulus

INCOME VS. SPENDING (\$BIL)



PERSONAL SAVINGS RATE (%)

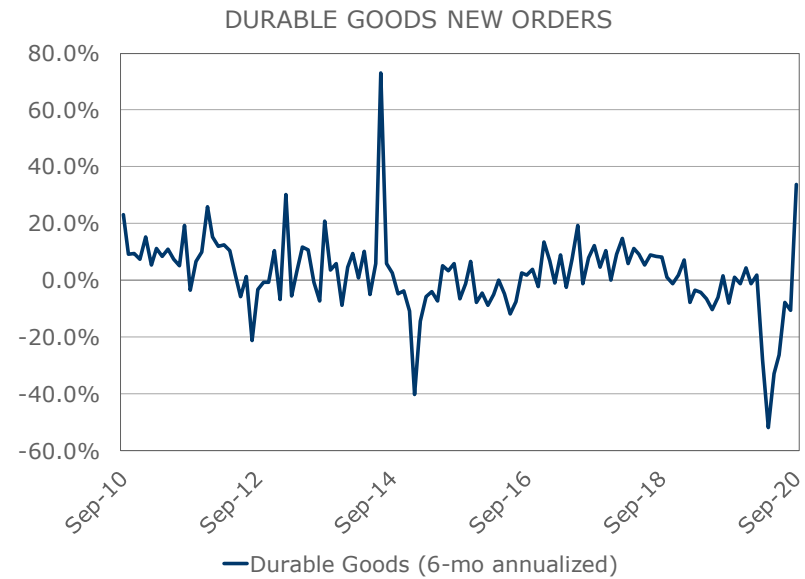
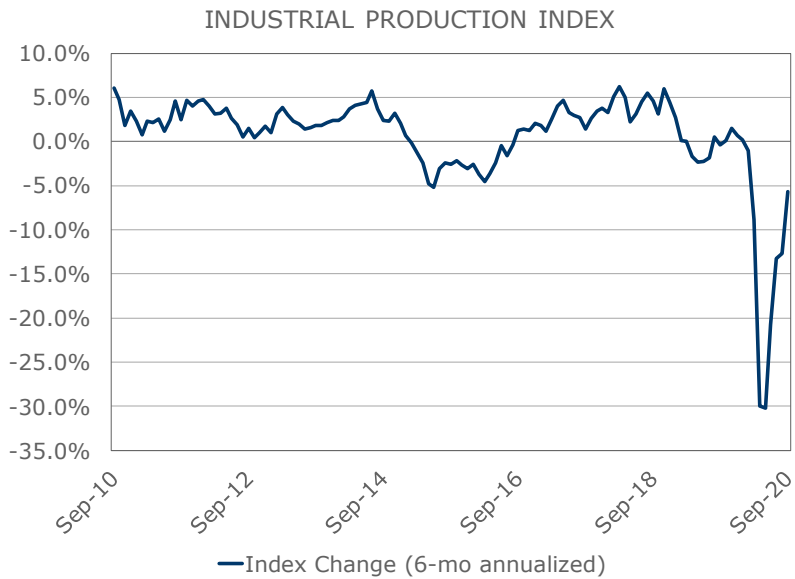
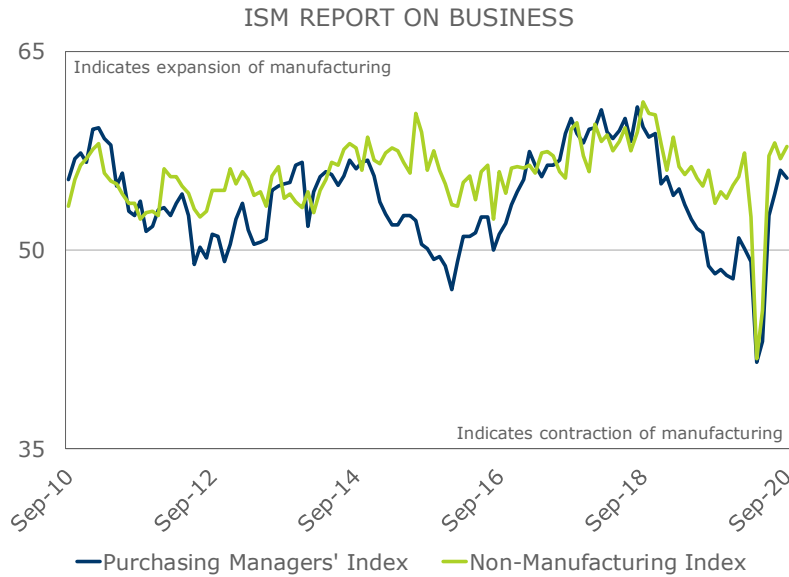


Data Source: Bloomberg

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QUARTERLY MARKET REVIEW

Business Activity

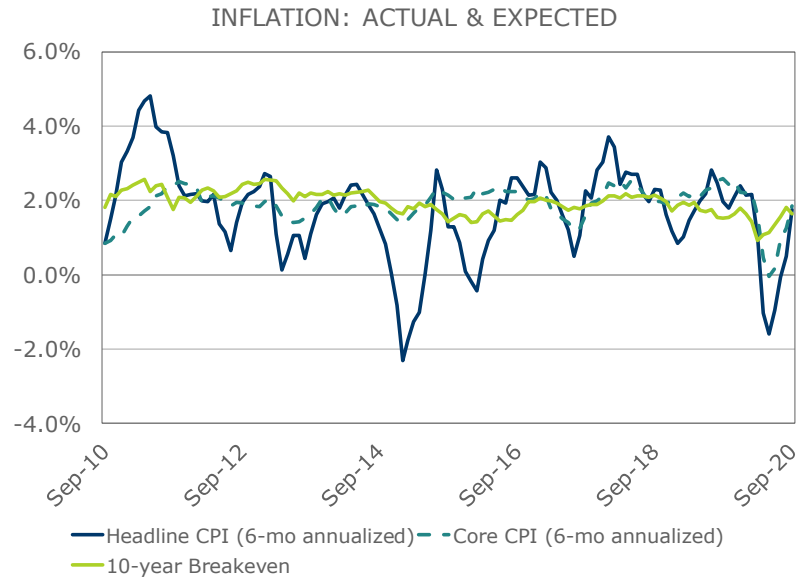


Data Source: Bloomberg

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QUARTERLY MARKET REVIEW

Inflation and Employment



Data Source: Bloomberg

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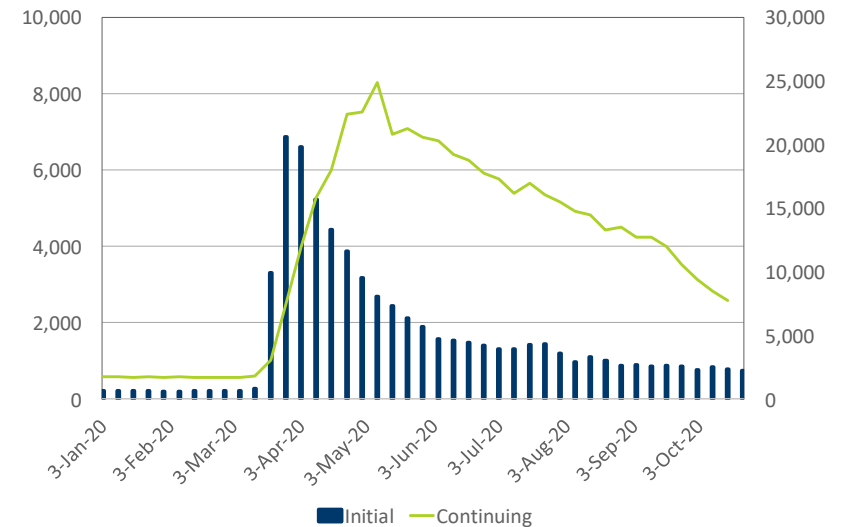
QUARTERLY MARKET REVIEW

U.S. Employment



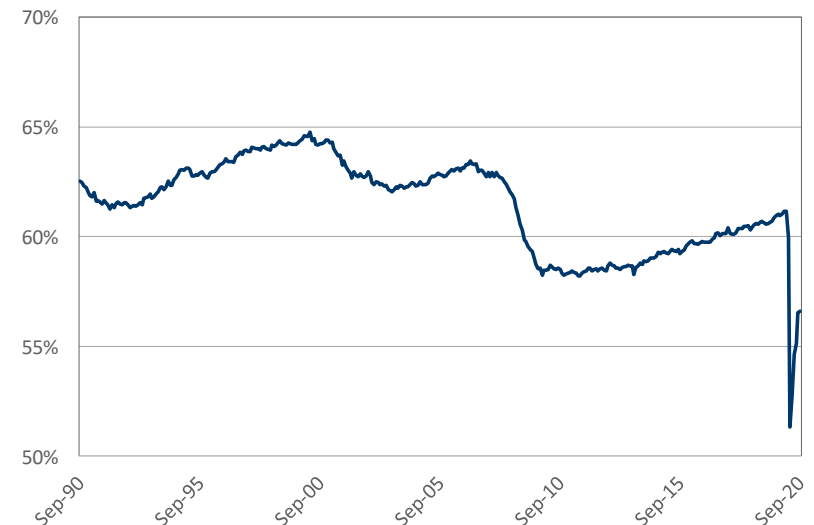
- Employment conditions have been volatile this year with massive gains and losses, as seen on the previous page
- Unemployment claims have been declining with continued claims currently at 8 million

UNEMPLOYMENT CLAIMS (000)



- 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

EMPLOYED PERSONS / CIVILIAN POPULATION



Data Source: Bloomberg

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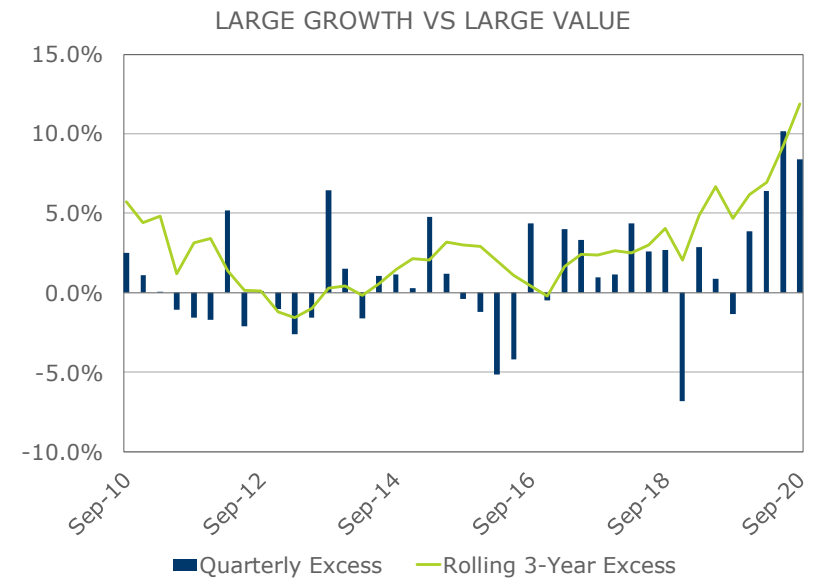
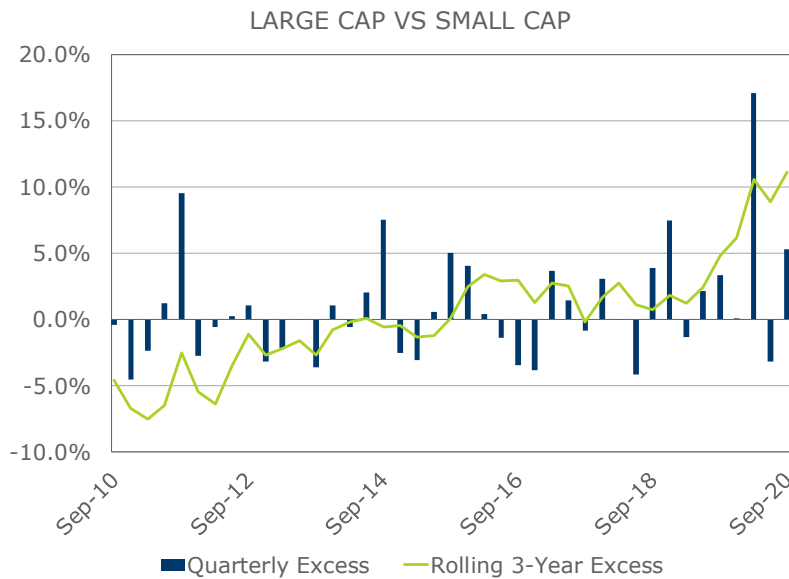
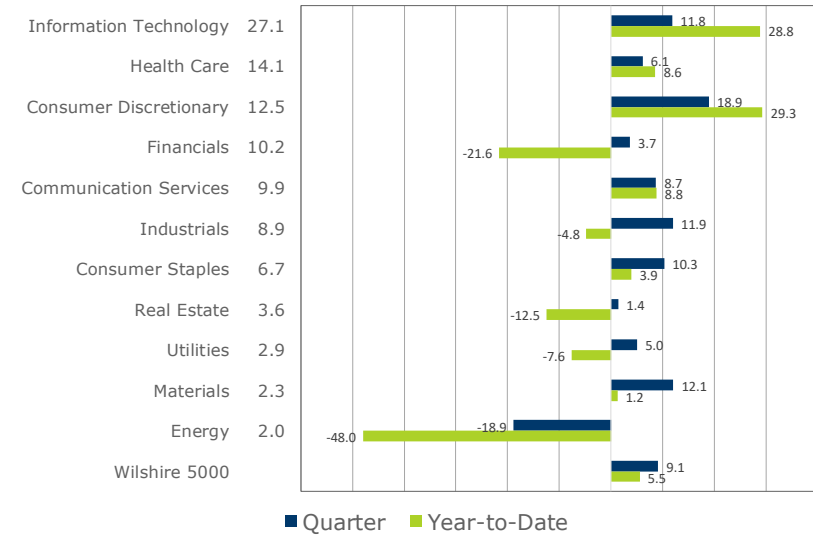
QUARTERLY MARKET REVIEW

U.S. Equity Market



AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	9.1	5.5	15.1	11.7	13.8	13.5
WILSHIRE U.S. LARGE CAP	9.6	7.0	16.8	12.7	14.5	13.8
WILSHIRE U.S. SMALL CAP	4.0	-10.3	-2.3	1.5	7.5	10.2
WILSHIRE U.S. LARGE GROWTH	13.8	20.0	33.5	19.0	18.3	16.3
WILSHIRE U.S. LARGE VALUE	5.0	-5.5	1.2	6.4	10.4	11.3
WILSHIRE U.S. SMALL GROWTH	7.1	-0.1	10.0	6.8	10.7	12.0
WILSHIRE U.S. SMALL VALUE	1.0	-19.7	-13.2	-3.6	4.3	8.3
WILSHIRE REIT INDEX	1.3	-16.7	-17.7	0.4	3.7	8.0
MSCI USA MIN. VOL. INDEX	5.8	-1.1	1.9	10.6	12.5	13.4
FTSE RAFI U.S. 1000 INDEX	5.8	-8.1	-0.4	4.8	9.3	11.2

U.S. SECTOR WEIGHT AND RETURN (%)



Data Source: Bloomberg, Wilshire Atlas

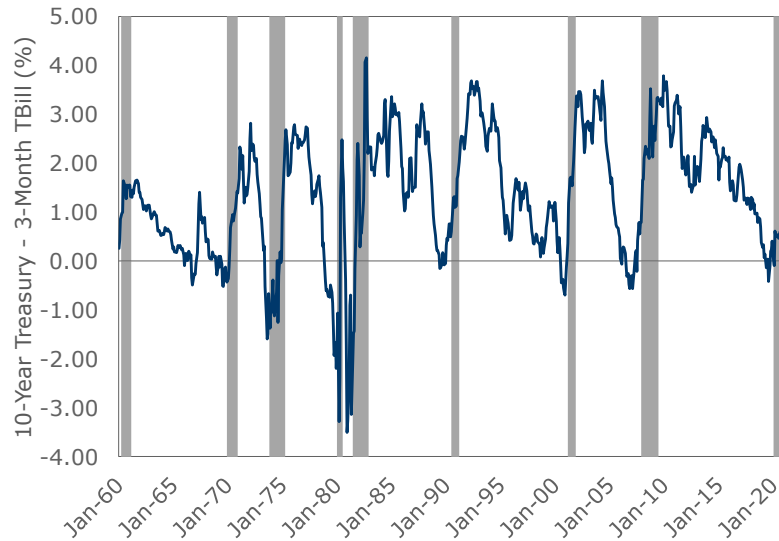
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QUARTERLY MARKET REVIEW

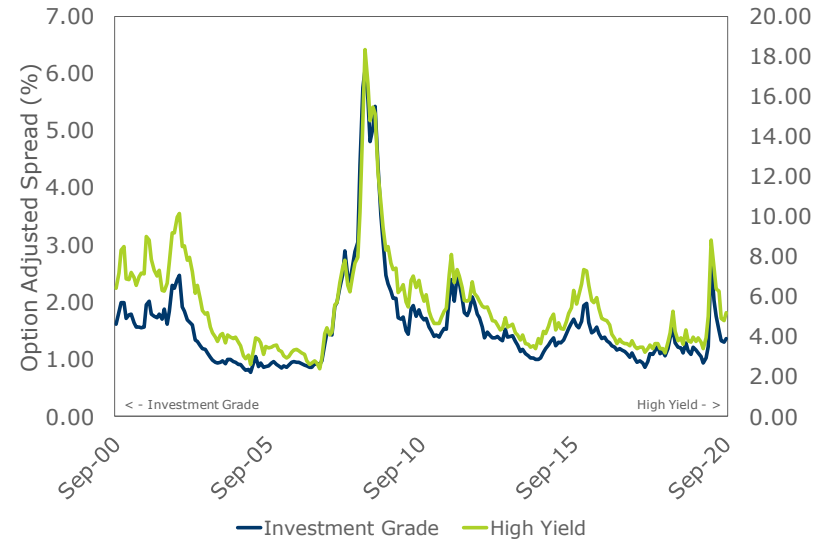
Risk Monitor



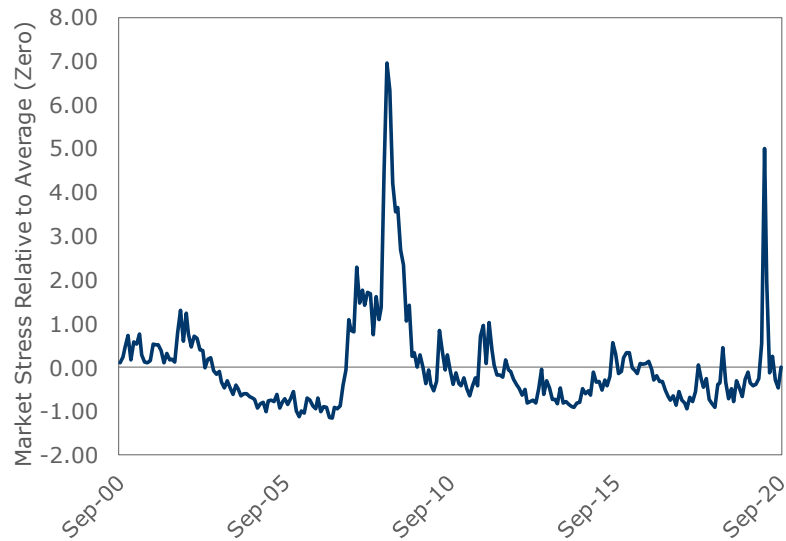
YIELD CURVE SLOPE VS RECESSIONS (IN GRAY)



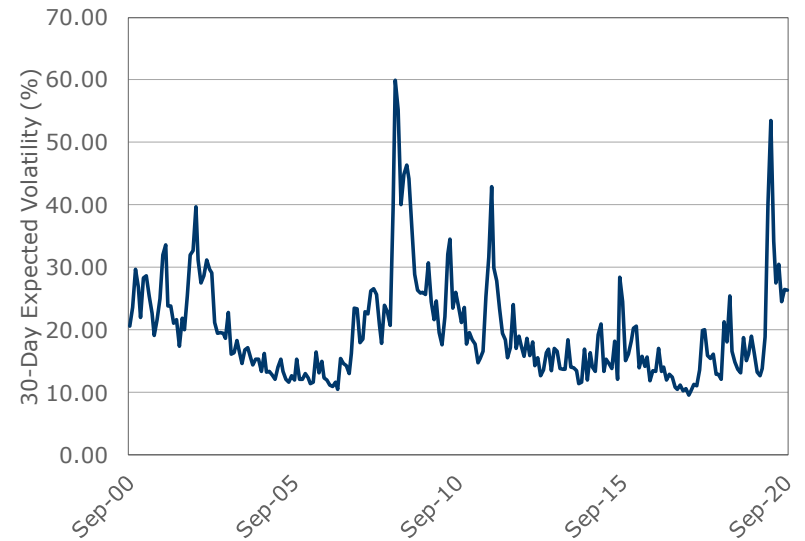
BLOOMBERG BARCLAYS CREDIT INDEXES



ST. LOUIS FED FINANCIAL STRESS INDEX



CBOE VOLATILITY INDEX

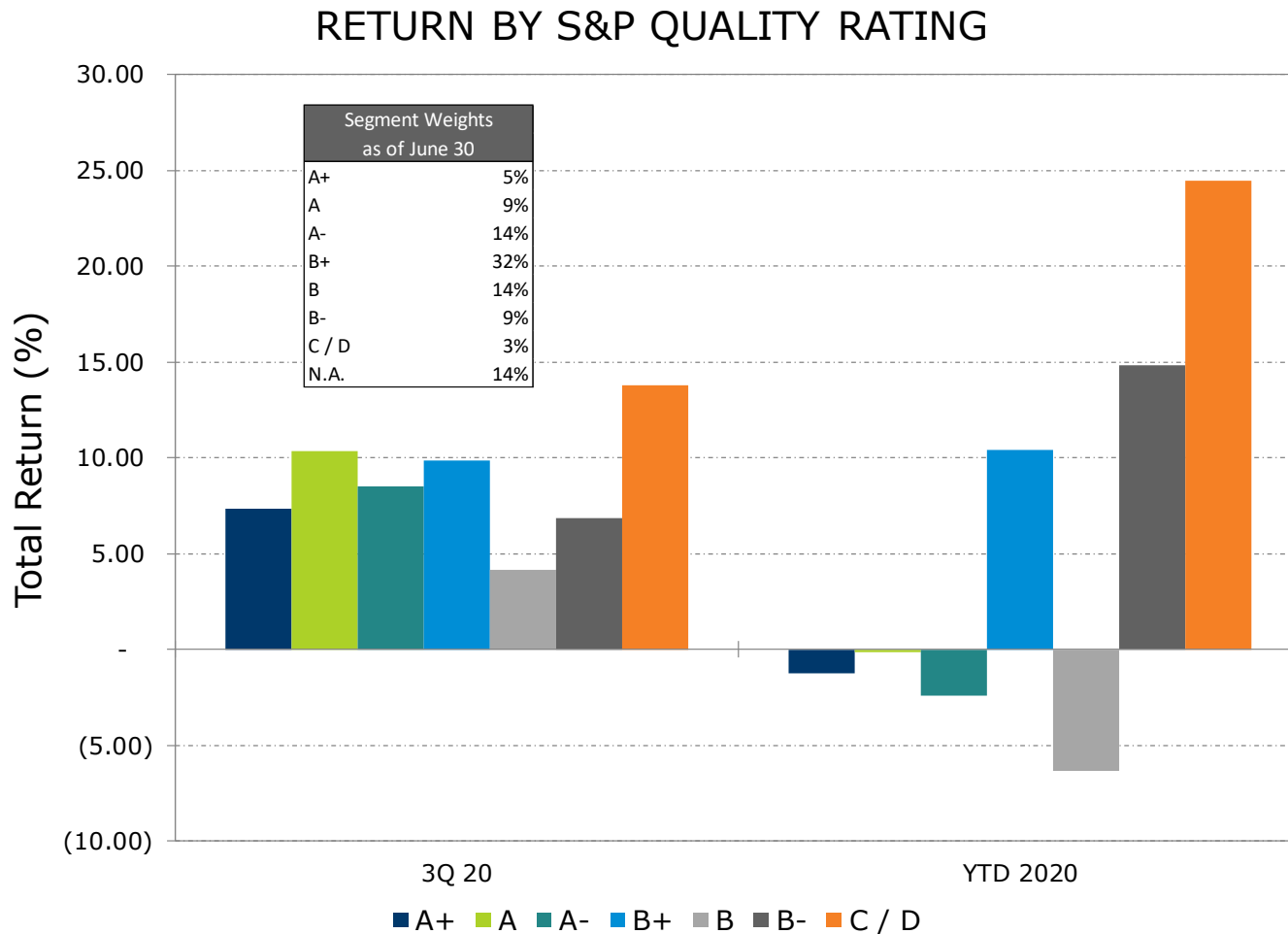


Data Source: Bloomberg

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Returns by Quality Segment

Although gains were broad based for the quarter, lower quality names lead for the year



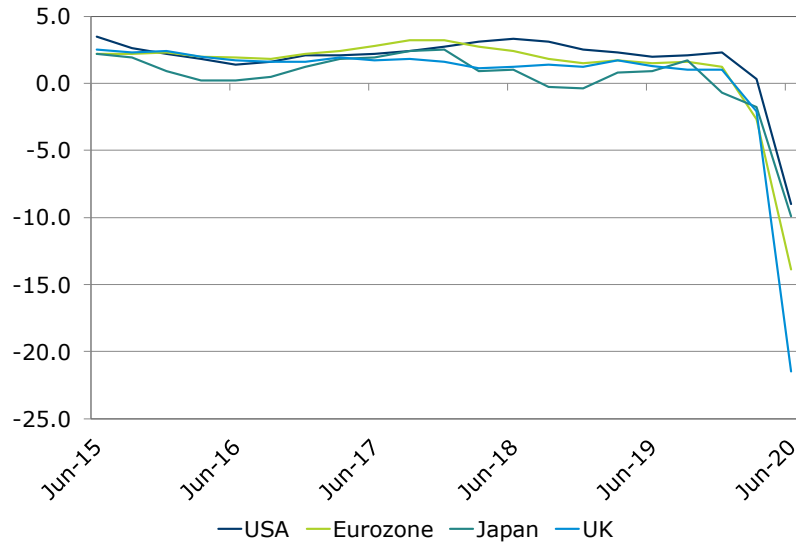
Data Source: Wilshire Atlas

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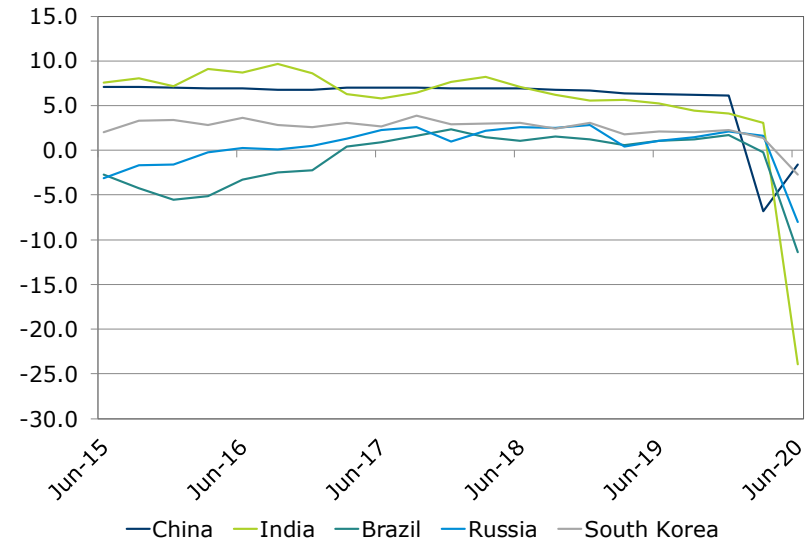
QUARTERLY MARKET REVIEW

Non-U.S. Growth and Inflation

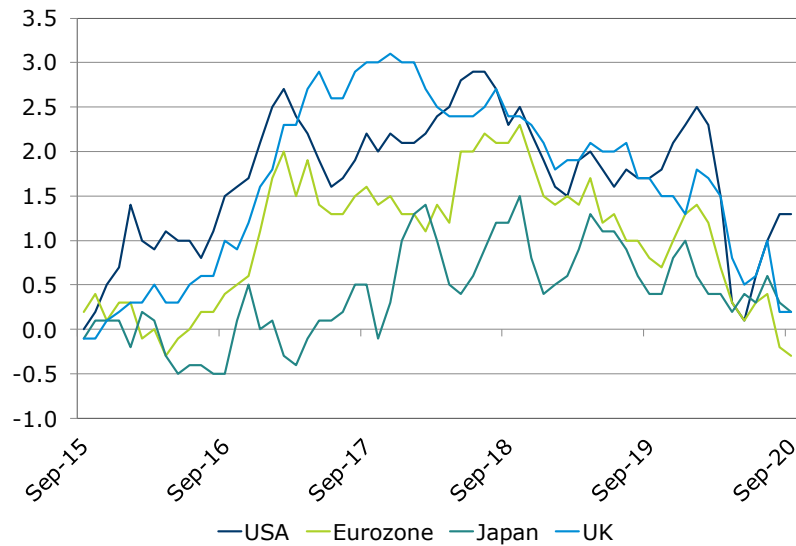
DEVELOPED MARKETS REAL GDP GROWTH YoY (%)



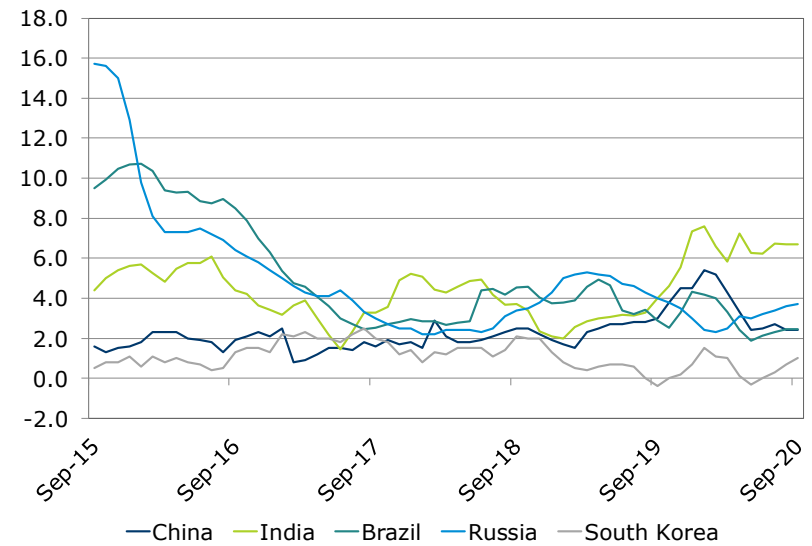
EMERGING MARKETS REAL GDP GROWTH YoY (%)



DEVELOPED MARKETS CPI GROWTH YoY (%)



EMERGING MARKETS CPI GROWTH YoY (%)



Data Source: Bloomberg

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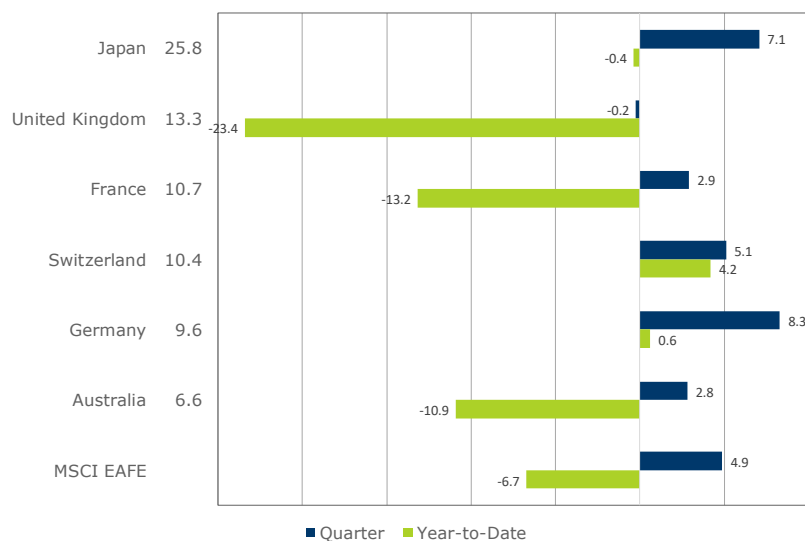
QUARTERLY MARKET REVIEW

Non-U.S. Equity Market

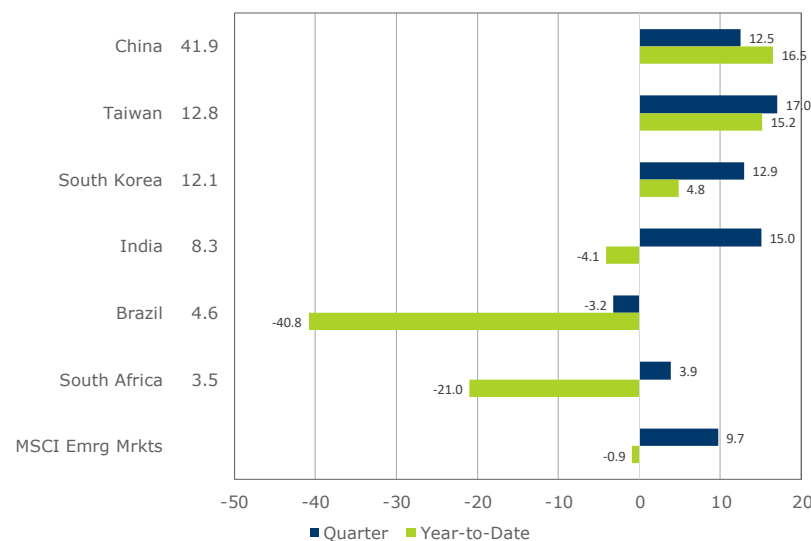


AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US (\$G)	6.4	-5.1	3.4	1.6	6.7	4.5
MSCI EAFE (\$G)	4.9	-6.7	0.9	1.1	5.8	5.1
MSCI EMERGING MARKETS (\$G)	9.7	-0.9	10.9	2.8	9.4	2.9
MSCI FRONTIER MARKETS (\$G)	4.4	-16.9	-11.2	-5.1	1.2	0.7
MSCI ACWI EX-US GROWTH (\$G)	10.2	7.5	17.9	7.7	10.6	6.8
MSCI ACWI EX-US VALUE (\$G)	3.1	-16.7	-9.5	-4.3	3.0	2.4
MSCI ACWI EX-US SMALL (\$G)	10.6	-3.3	7.4	1.3	7.2	5.7
MSCI ACWI MINIMUM VOLATILITY	4.9	-3.0	0.0	7.1	9.6	9.7
MSCI EAFE MINIMUM VOLATILITY	3.5	-6.9	-2.7	2.4	5.8	6.7
FTSE RAFI DEVELOPED EX-US	3.1	-15.0	-8.1	-3.7	3.3	2.9
MSCI EAFE LC (G)	1.3	-9.1	-4.3	1.0	5.3	6.8
MSCI EMERGING MARKETS LC (G)	8.8	2.9	12.8	5.2	10.0	6.0

DEVELOPED MARKETS WEIGHT AND RETURN (%)



EMERGING MARKETS WEIGHT AND RETURN (%)



Data Source: Bloomberg

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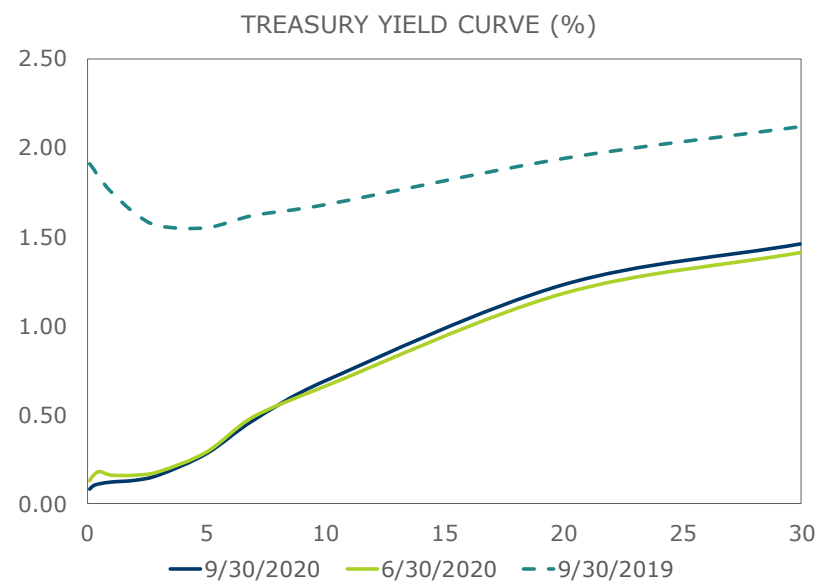
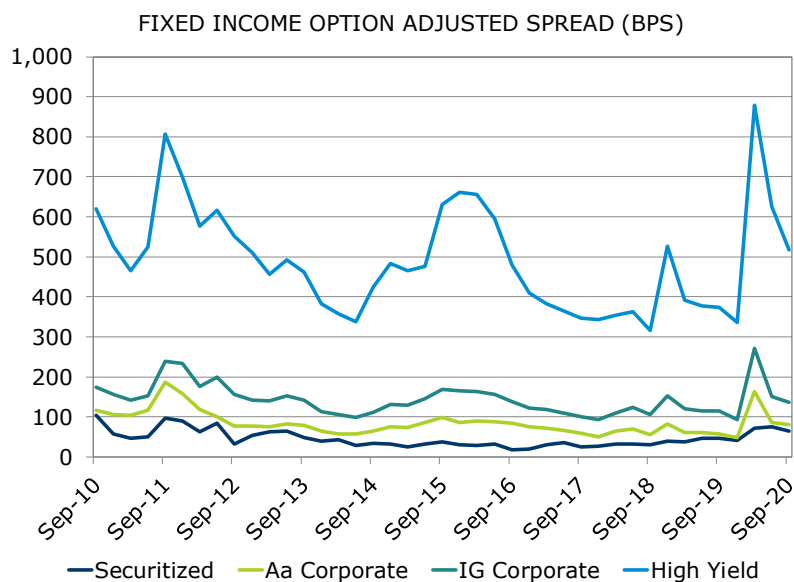
QUARTERLY MARKET REVIEW

U.S. Fixed Income



AS OF 9/30/2020	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	1.2	6.1	0.6	6.8	7.0	5.2	4.2	3.6
BLOOMBERG BARCLAYS TREASURY	0.5	7.2	0.2	8.9	8.0	5.5	3.7	3.1
BLOOMBERG BARCLAYS GOV'T-REL.	1.1	6.0	1.1	5.0	5.2	4.8	4.1	3.3
BLOOMBERG BARCLAYS SECURITIZED	1.3	2.4	0.2	3.9	4.5	3.8	3.1	3.1
BLOOMBERG BARCLAYS CORPORATE	2.0	8.7	1.5	6.6	7.9	6.4	6.0	5.1
BLOOMBERG BARCLAYS LT G/C	2.3	16.8	1.2	14.2	12.9	10.2	8.8	7.4
BLOOMBERG BARCLAYS LT TREASURY	1.3	19.4	0.1	21.3	16.3	11.9	8.2	7.2
BLOOMBERG BARCLAYS LT GOV't-REL.	2.8	13.6	2.3	6.7	6.6	7.8	7.8	6.7
BLOOMBERG BARCLAYS LT CORP.	3.1	15.3	1.9	8.4	9.8	8.8	8.9	7.4
BLOOMBERG BARCLAYS U.S. TIPS *	0.6	7.9	3.0	9.2	10.1	5.8	4.6	3.6
BLOOMBERG BARCLAYS HIGH YIELD	5.8	3.7	4.6	0.6	3.3	4.2	6.8	6.5
TREASURY BILLS	0.1	0.3	0.0	0.7	1.2	1.7	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

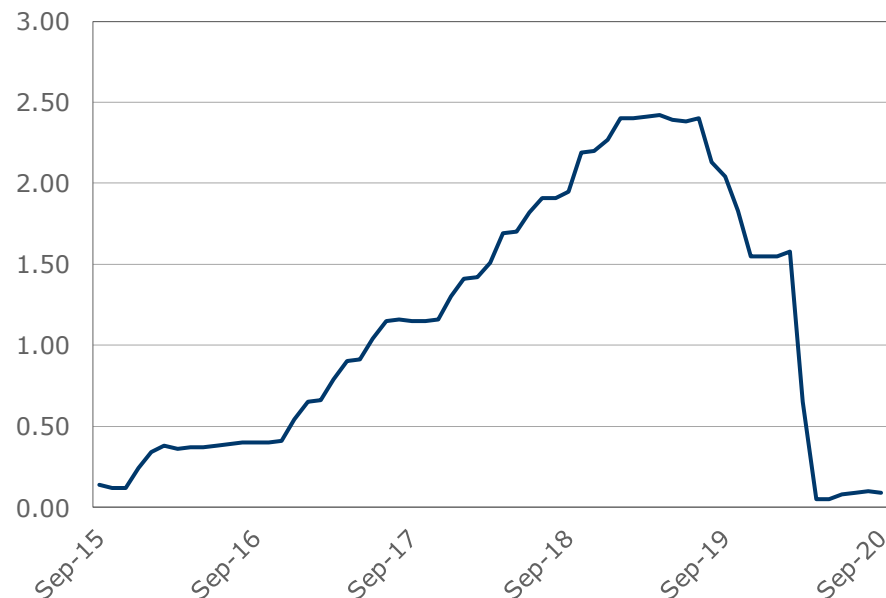


Data Source: Bloomberg

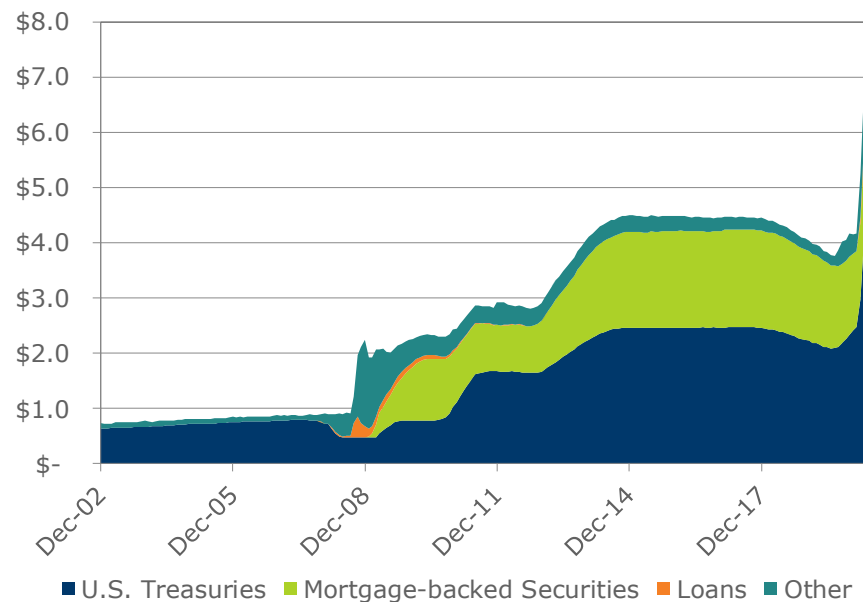
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- Current expectation for the Fed-funds rate is to remain near zero through 2022
- Federal Reserve has added nearly \$3 trillion in assets to their balance sheet just this year
- Unlike after the GFC, the Fed is also buying corporate and municipal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

FEDERAL FUNDS RATE (%)



FEDERAL RESERVE BALANCE SHEET (\$T)



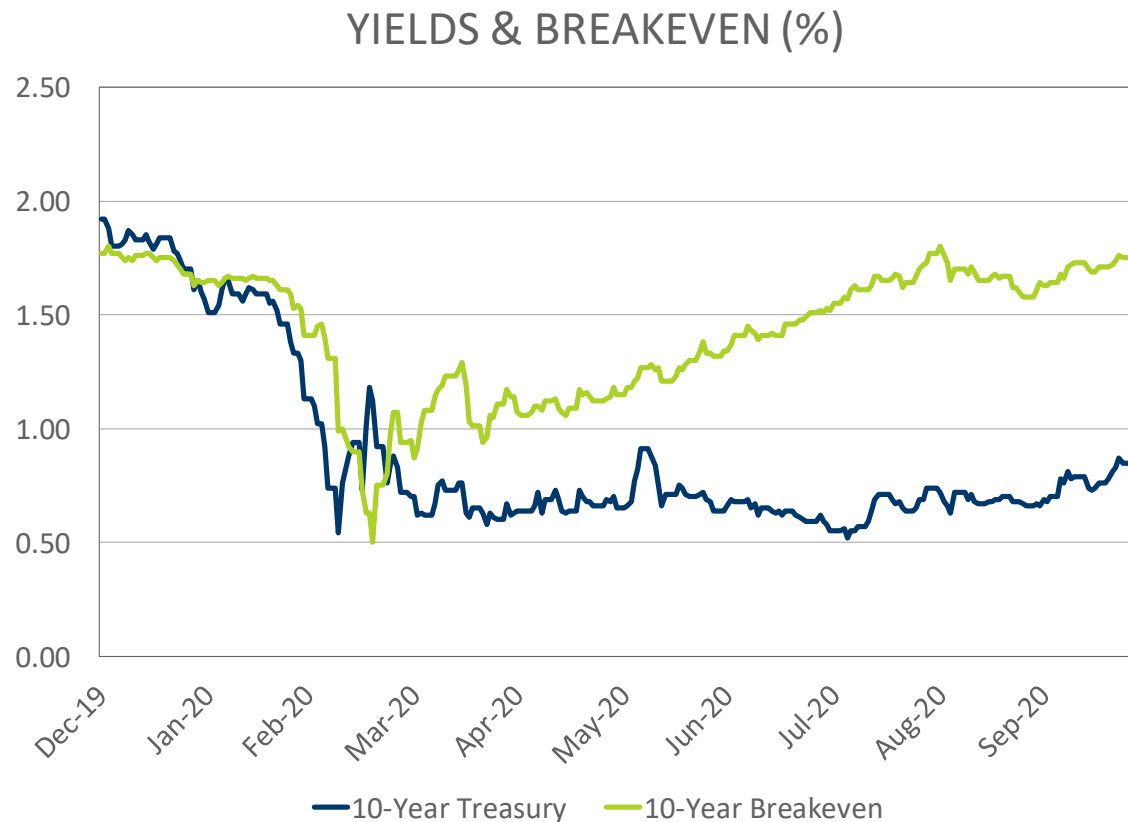
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020		\$2,935

Data Source: Bloomberg

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Treasuries at Low Levels

- Treasury yields and breakeven inflation both dropped as the U.S. entered coronavirus-related lockdowns; breakeven inflation has since increased
- Nearly 100 basis point spread between the two implies that investing in a 10-year Treasury is currently expected to cost an investor, in real terms



Data Source: Bloomberg

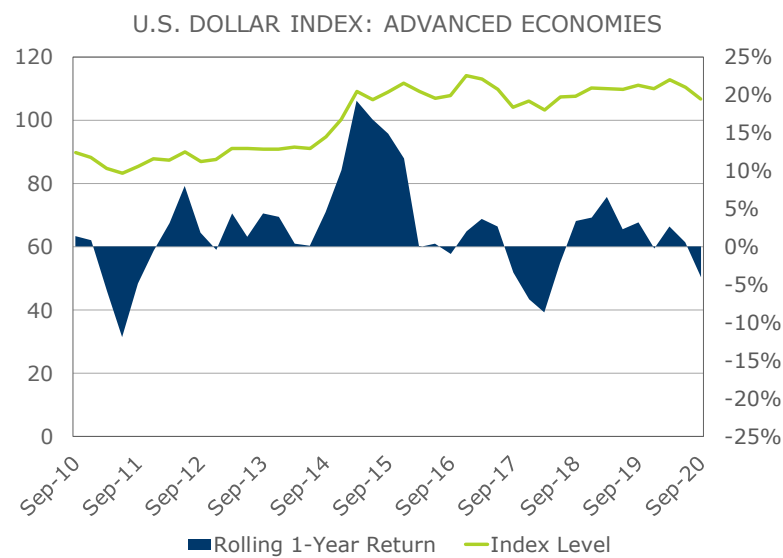
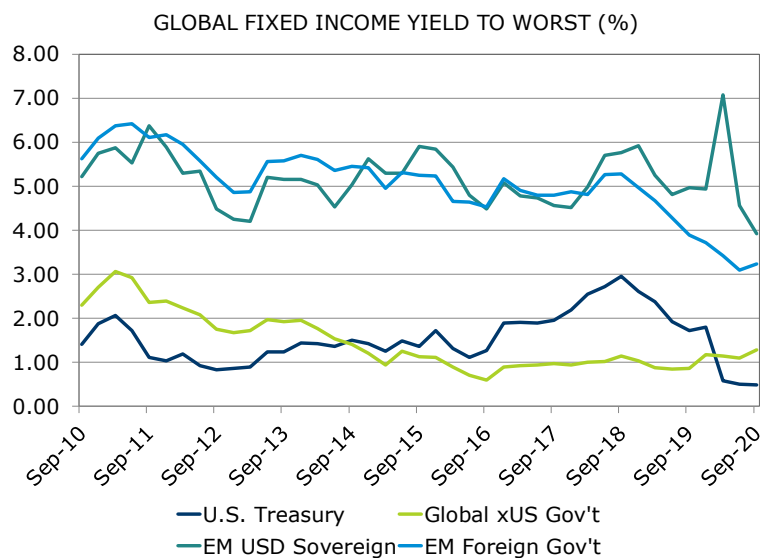
QUARTERLY MARKET REVIEW

Non-U.S. Fixed Income



AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DEVELOPED MARKETS						
BLMBRG BRCLYS GLBL AGGREGATE xUS	4.1	4.8	5.5	3.1	3.6	1.3
BLMBRG BRCLYS GLBL AGGREGATE xUS *	0.7	3.0	1.8	4.9	4.3	4.1
BLMBRG BRCLYS GLOBAL INF LNKD xUS	3.9	6.0	5.4	3.8	3.8	3.5
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	-0.3	6.4	0.9	6.4	6.3	5.9
EMERGING MARKETS (HARD CURRENCY)						
BLMBRG BRCLYS EM USD AGGREGATE	2.4	1.9	4.1	4.2	6.2	5.4
EMERGING MARKETS (FOREIGN CURRENCY)						
BLMBRG BRCLYS EM LOCAL CURR. GOV'T	1.8	-1.6	2.3	2.1	4.9	2.0
BLMBRG BRCLYS EM LOCAL CURR. GOV'T *	-0.6	2.3	2.8	4.5	4.1	3.3
EURO vs. DOLLAR	4.3	4.5	7.5	-0.3	1.0	-1.5
YEN vs. DOLLAR	2.3	3.0	2.5	2.2	2.6	-2.3
POUND vs. DOLLAR	4.2	-2.5	5.1	-1.2	-3.1	-1.9

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

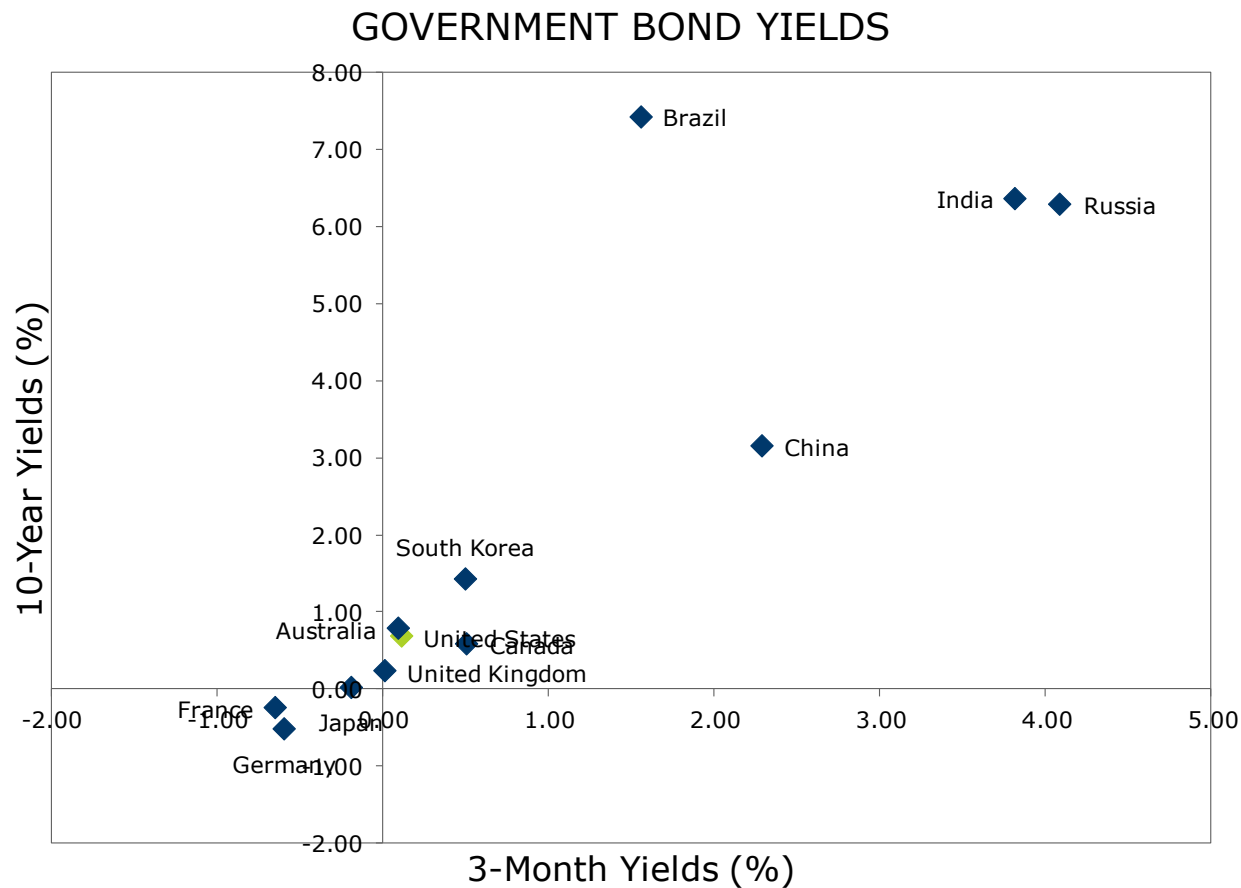


Data Source: Bloomberg

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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



Data Source: Wilshire Atlas

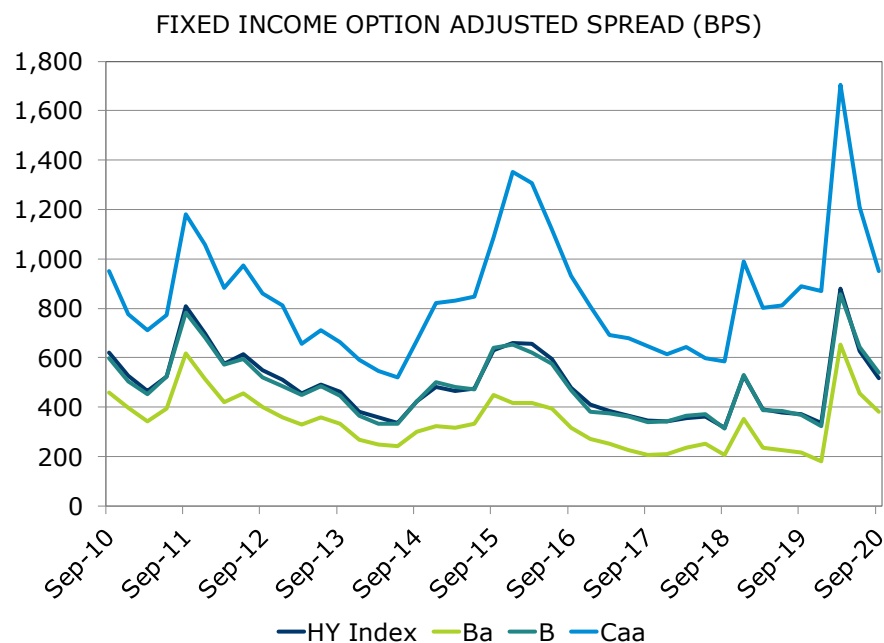
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QUARTERLY MARKET REVIEW

High Yield Bond Market



AS OF 9/30/2020		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		5.8	4.6	0.6	3.3	4.2	6.8	6.5
S&P LSTA LEVERAGE LOAN INDEX		4.9	3.5	-0.5	1.7	3.4	4.1	4.1
HIGH YIELD QUALITY DISTRIBUTION	WEIGHT							
Ba U.S. HIGH YIELD	54.6%	4.4	4.0	4.2	6.8	5.7	7.3	6.9
B U.S. HIGH YIELD	32.7%	6.0	4.5	-1.2	1.4	4.0	6.2	6.1
Caa U.S. HIGH YIELD	11.9%	10.1	7.3	-7.0	-3.5	-0.3	5.6	6.0
Ca to D U.S. HIGH YIELD	0.8%	23.9	6.7	-23.5	-29.1	-8.8	4.1	-5.8
Non-Rated U.S. HIGH YIELD	0.0%	0.0	0.0	-6.5	-4.7	-0.5	0.6	3.7



Data Source: Bloomberg

©2020 Wilshire Associates.

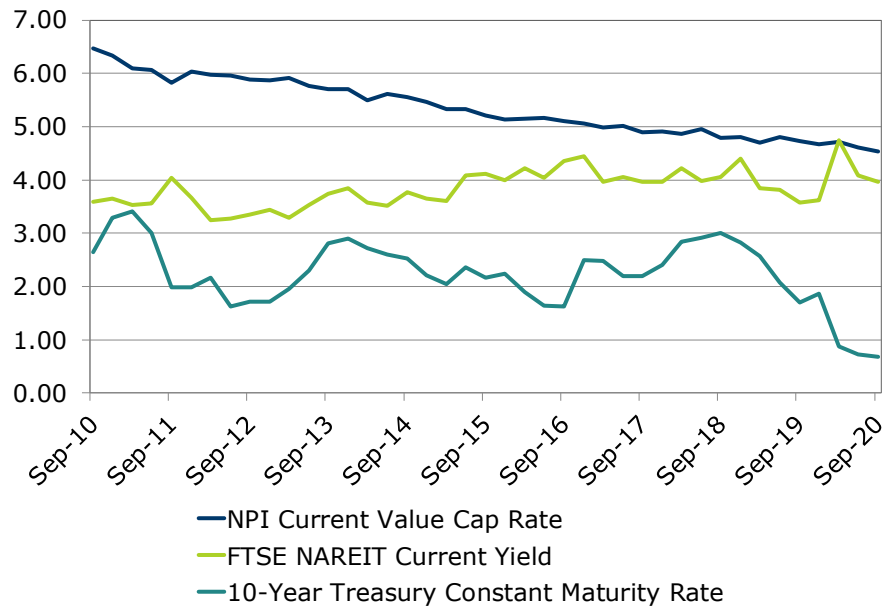
QUARTERLY MARKET REVIEW

Real Assets

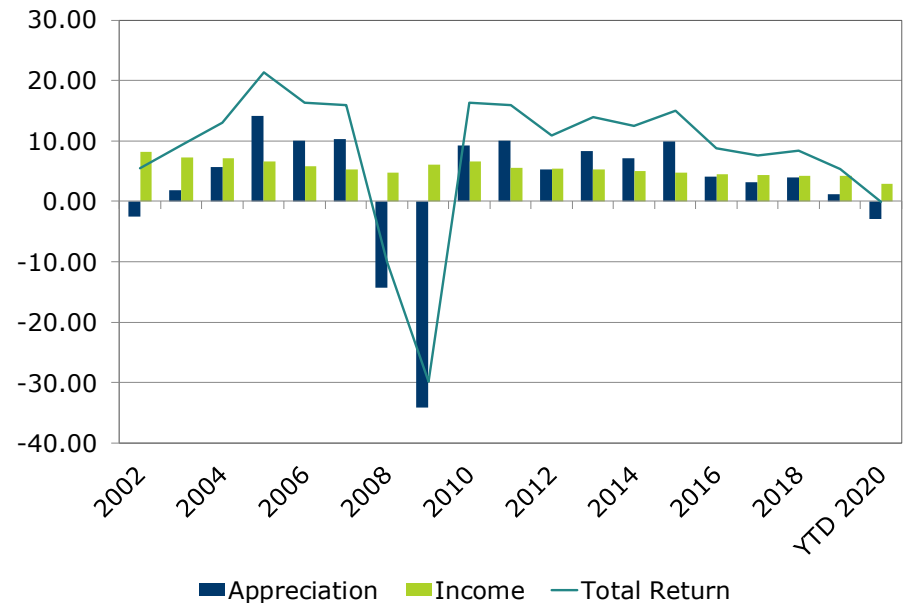


AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	3.0	9.2	10.1	5.8	4.6	3.6
BLOOMBERG COMMODITY INDEX	9.1	-12.1	-8.2	-4.2	-3.1	-6.0
WILSHIRE GLOBAL RESI INDEX	1.3	-19.3	-18.3	-0.7	3.0	6.5
NCREIF ODCE FUND INDEX	0.5	-0.1	1.4	5.2	6.6	10.3
NCREIF TIMBERLAND INDEX	0.0	0.2	0.2	2.2	2.6	4.4
ALERIAN MIDSTREAM ENERGY	-9.4	-36.2	-34.8	-11.9	-4.5	n.a.

REAL ESTATE VALUATION (%)



NCREIF ODCE FUND INDEX RETURN (%)



Data Source: Bloomberg, National Council of Real Estate Investment Fiduciaries

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QUARTERLY MARKET REVIEW

Asset Class Performance



ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 9/20
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%	U.S. TIPS 9.2%	U.S. Equity 13.8%
U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Core Bond 6.8%	Emrg Mrkts 9.4%
Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. Equity 5.5%	High Yield 6.8%
T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	T-Bills 0.7%	Developed 5.8%
Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	High Yield 0.6%	U.S. TIPS 4.6%
U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	Emrg Mrkts -0.9%	Core Bond 4.2%
High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	Developed -6.7%	REITs 3.7%
Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	Commodities 7.7%	Commodities -12.1%	T-Bills 1.2%
Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -13.4%	MLPs 6.6%	REITs -16.7%	Commodities -3.1%
MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 2.3%	Midstream -36.2%	Midstream -4.5%

Data Source: Bloomberg

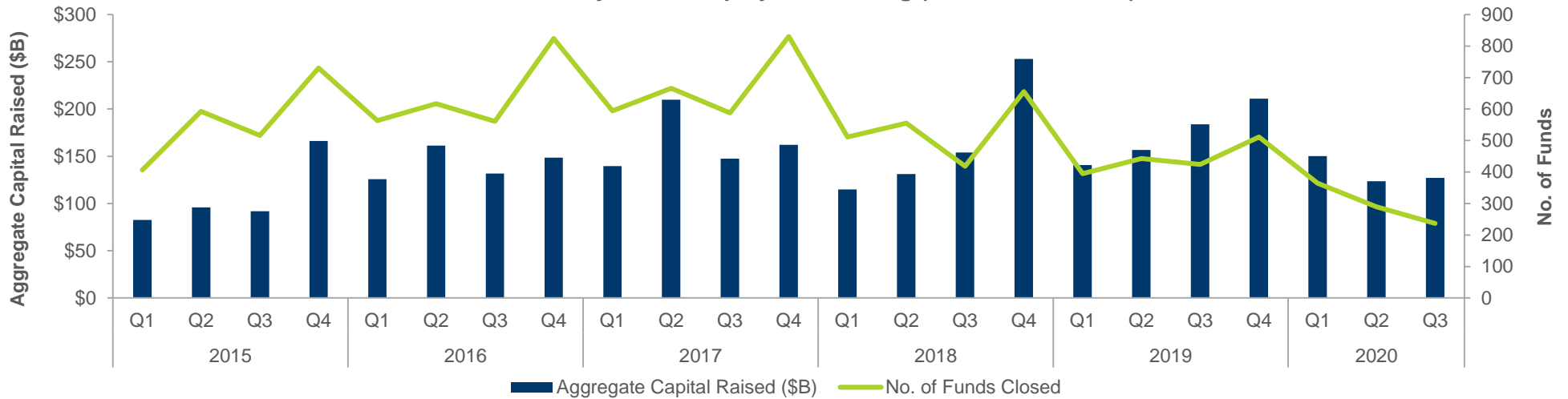
Note: Developed asset class is developed equity markets ex-U.S., ex-Canada



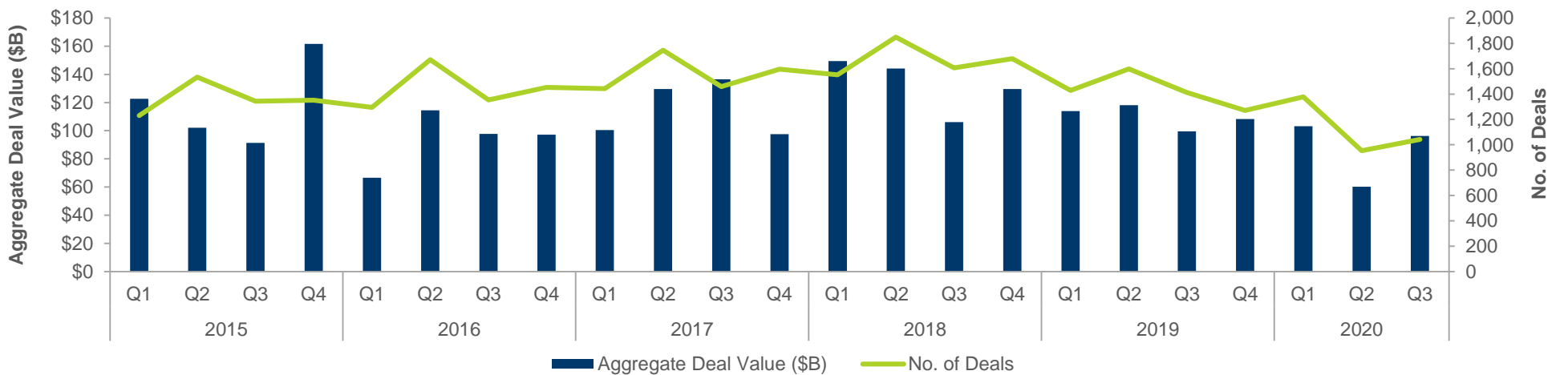
Appendix: Private Market Trends

Private Equity – Fundraising & Investment Activity

Global Quarterly Private Equity Fundraising (Q1 2015 - Q3 2020)



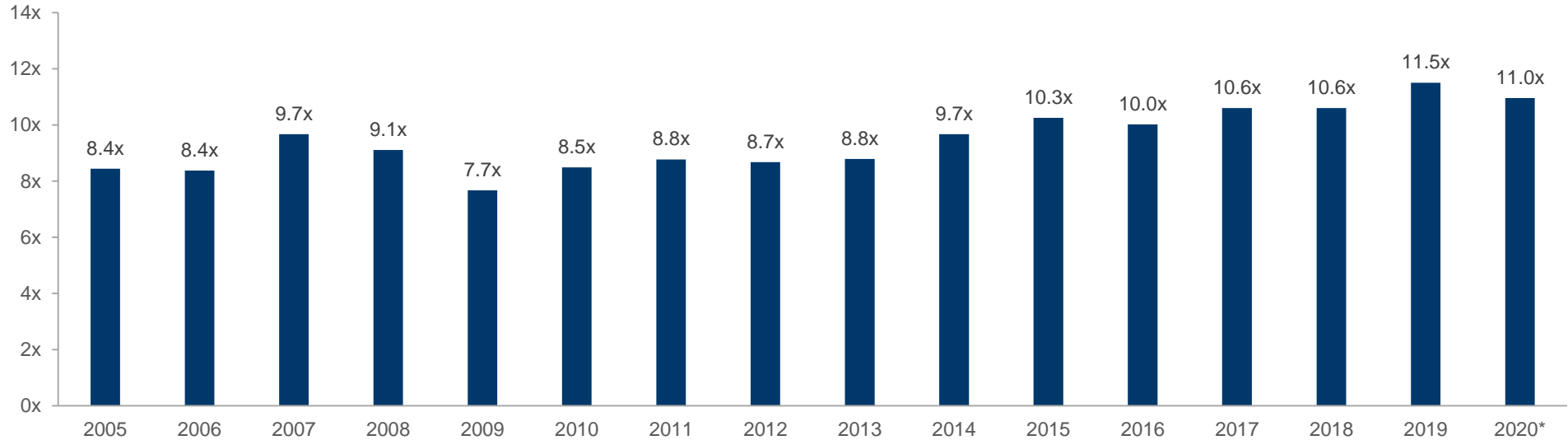
Global Quarterly Private Equity-Backed Buyout Deals (Q1 2015 - Q3 2020)



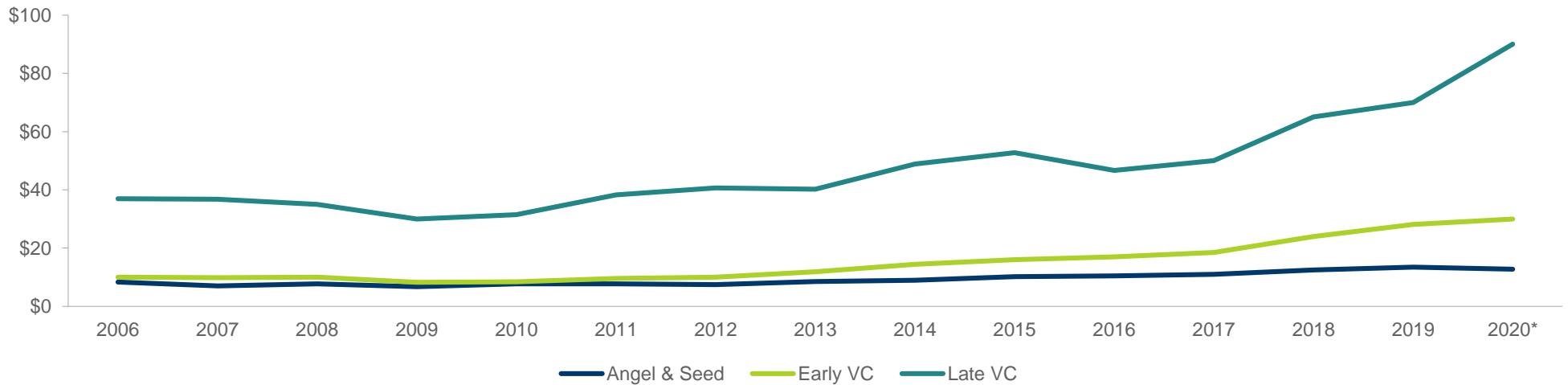
Source: Preqin, as of September 30, 2020.

Private Equity – Pricing & Valuations

LBO Purchase Price Multiples (2005 - Q3 2020)



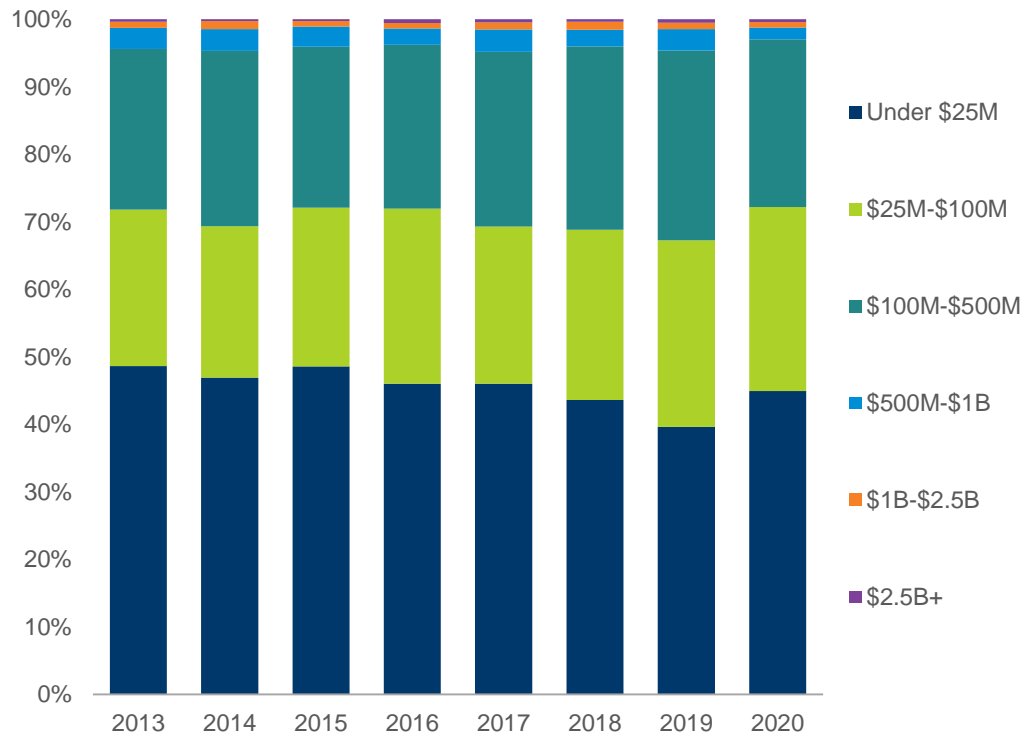
U.S. Median Pre-Value by Stage (\$M) (2006 – Q3 2020)



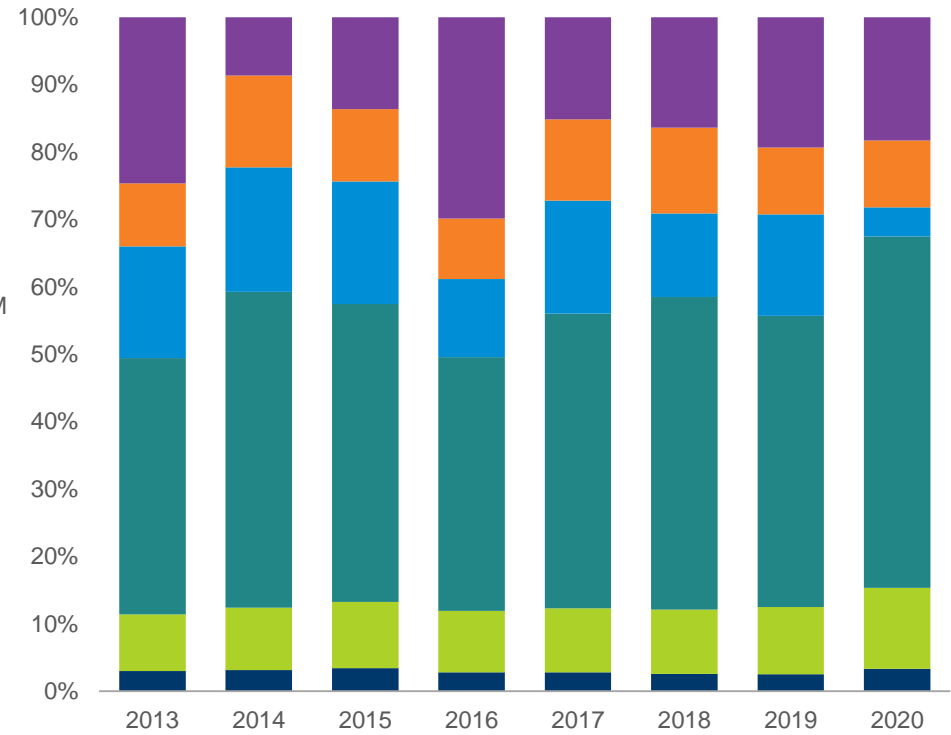
Source: S&P LBO; PitchBook, *as of September 30, 2020.

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)*

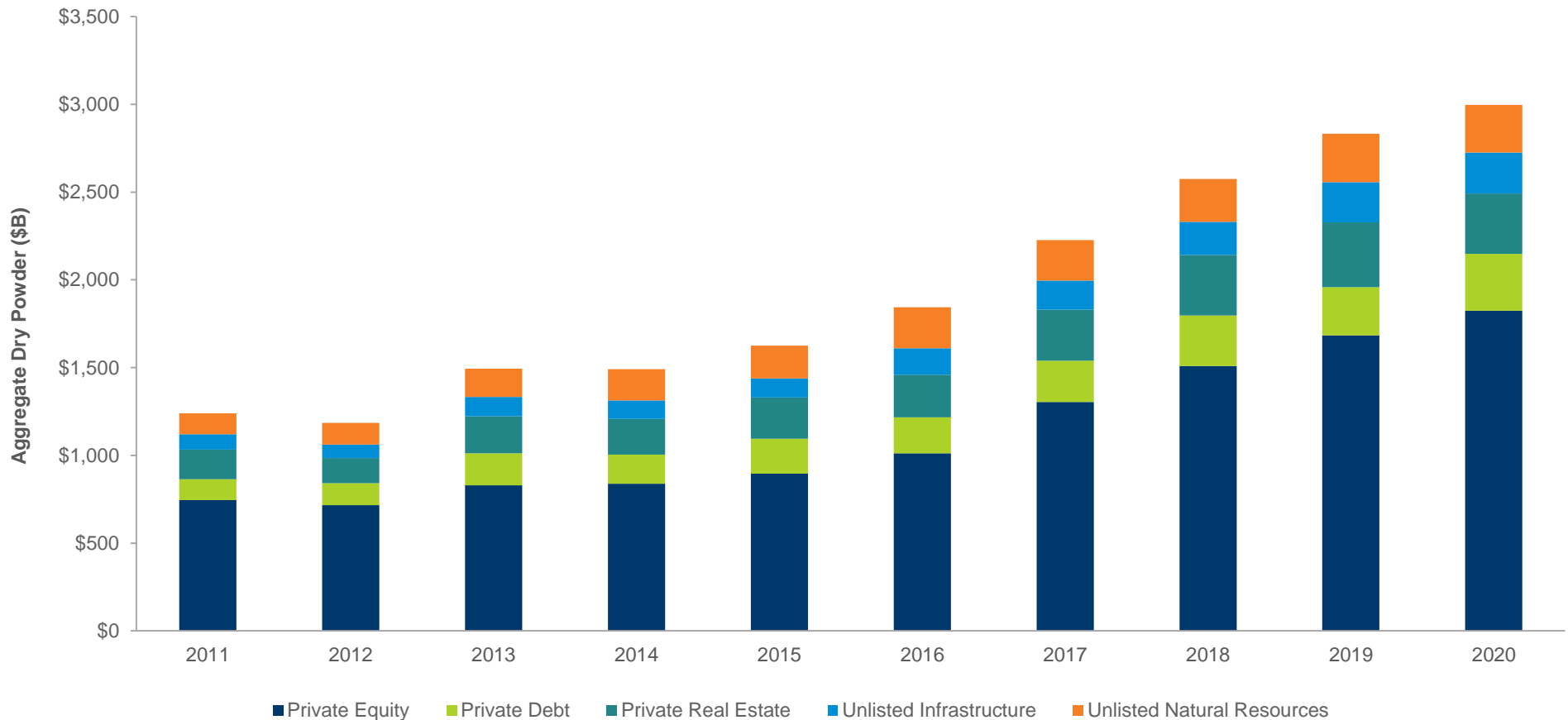


- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the third quarter of 2020
- However, deals with below \$100 million check sizes comprised only 15% of all deal volume by amount of capital invested in the third quarter of 2020

Source: PitchBook, *as of September 30, 2020.

Private Capital Dry Powder

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

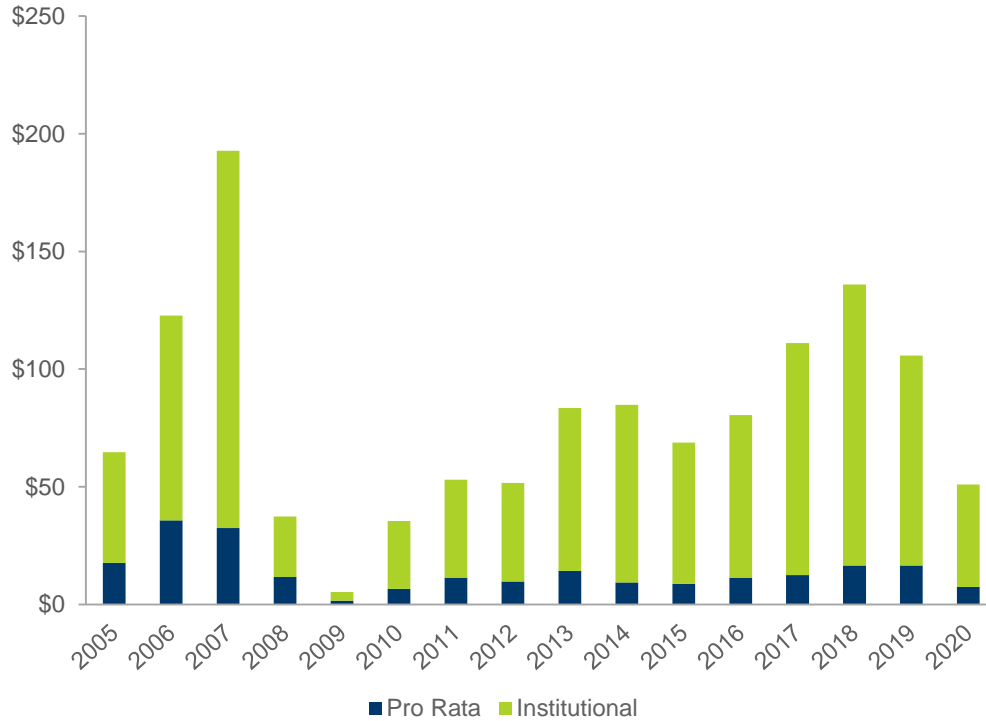


- Global private capital dry powder continues to increase, topping \$2.9 trillion across all fund types
- Private equity comprises just over 60% of total dry power in the market as of October 2020

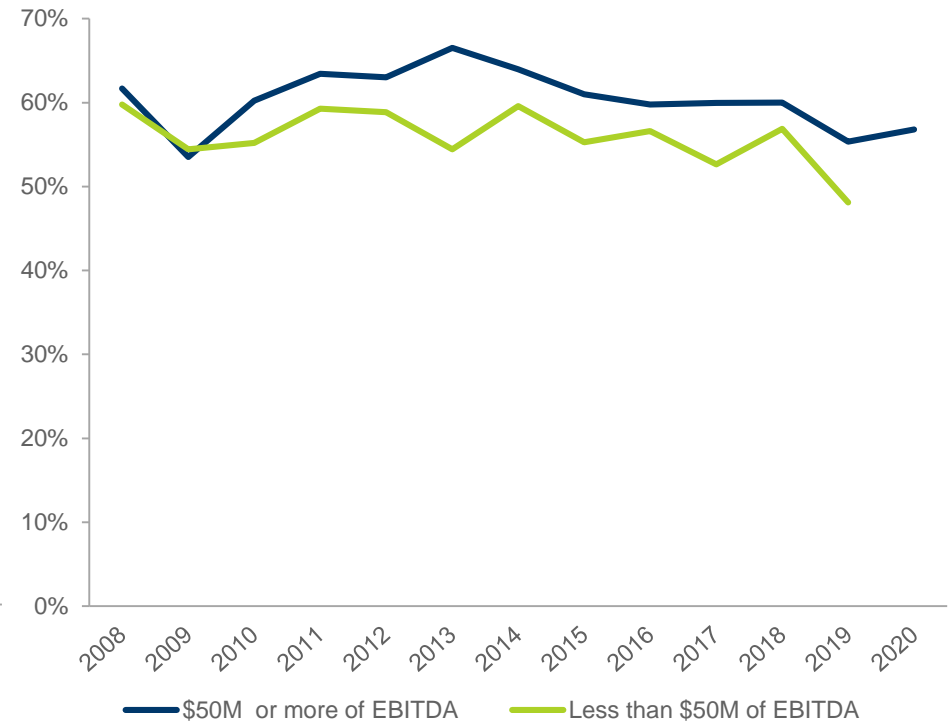
Source: Preqin, as of October 19, 2020.

Private Equity – U.S. Debt Markets

Total U.S. LBO Loan Volume (\$B) (2005 - Q3 2020)*



Percentage of Debt Used in LBOs (2008 - Q3 2020)*

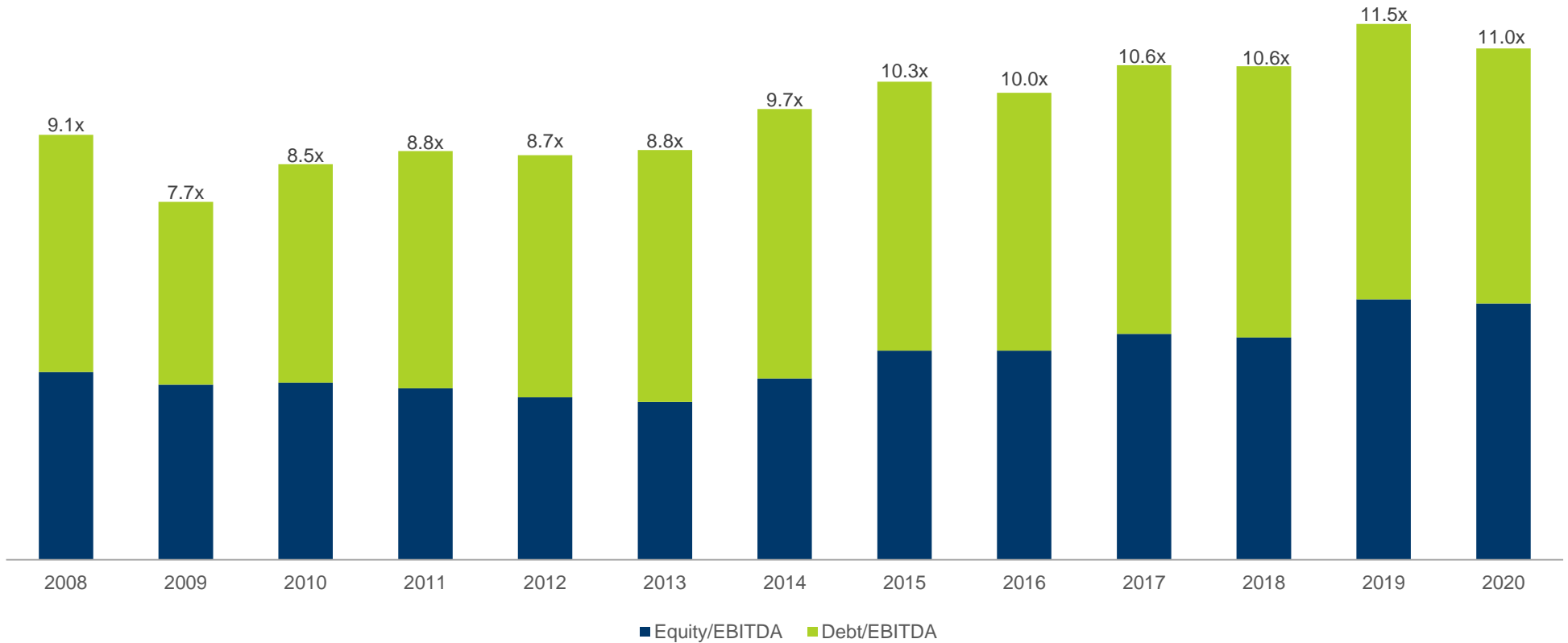


- 2020 has generated approximately \$51 billion in loan volume so far and is on pace to see a slight decrease in loan volume from 2019
- As debt multiples have decreased, the percentage of debt used to finance leveraged buyouts through the third quarter of 2020 has slightly increased from 2019 marks

Source: S&P LBO, *as of September 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 - Q3 2020)*

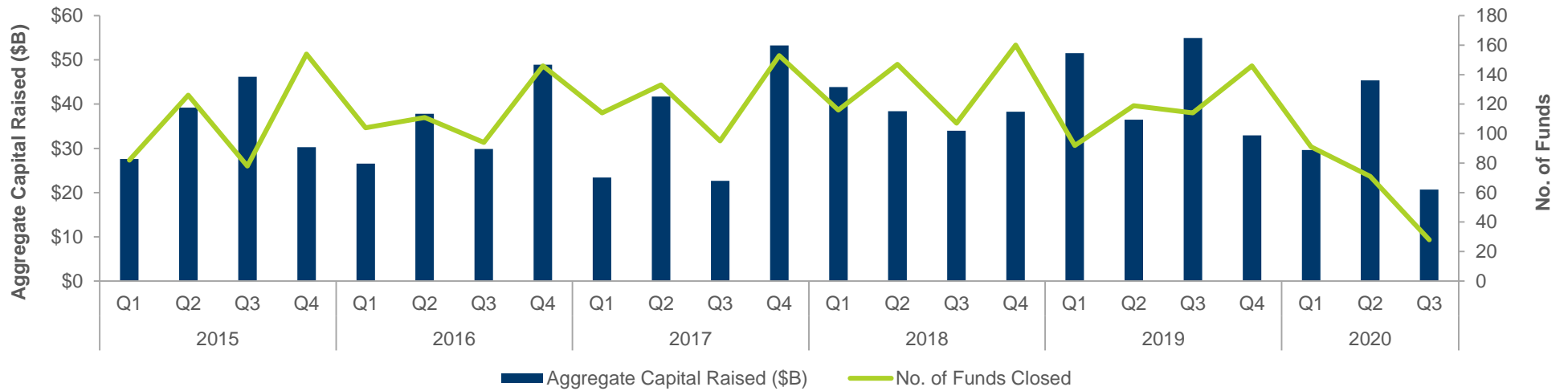


- Purchase price multiples for U.S. LBOs have slightly decreased through Q3 2020, relative to 2019 levels

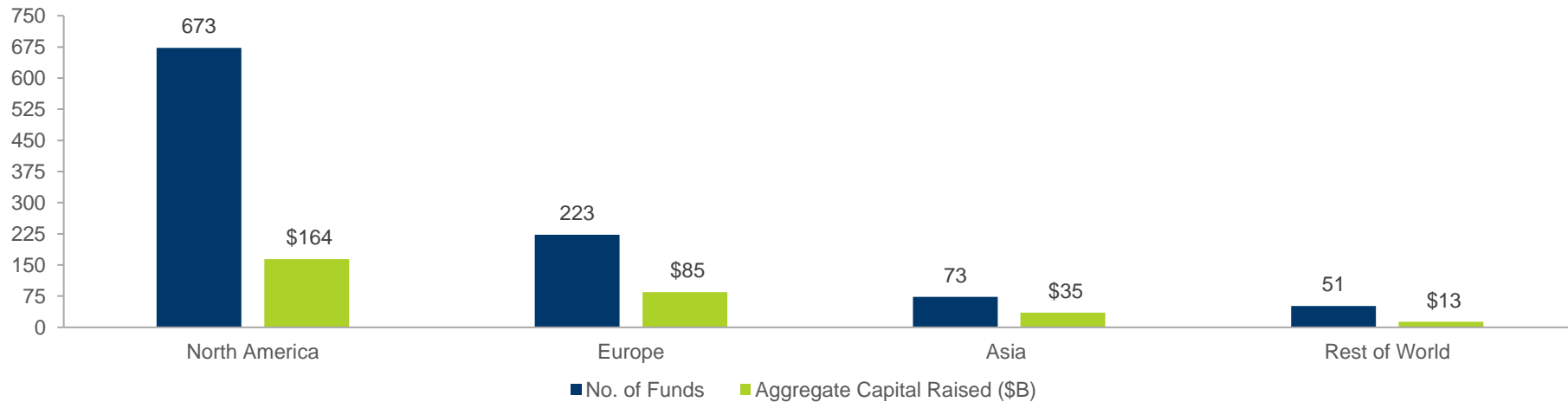
Source: S&P LBO, *as of September 30, 2020.

Private Real Estate – Fundraising Activity

Global Quarterly Closed-End Private Real Estate Fundraising (Q1 2015 - Q3 2020)



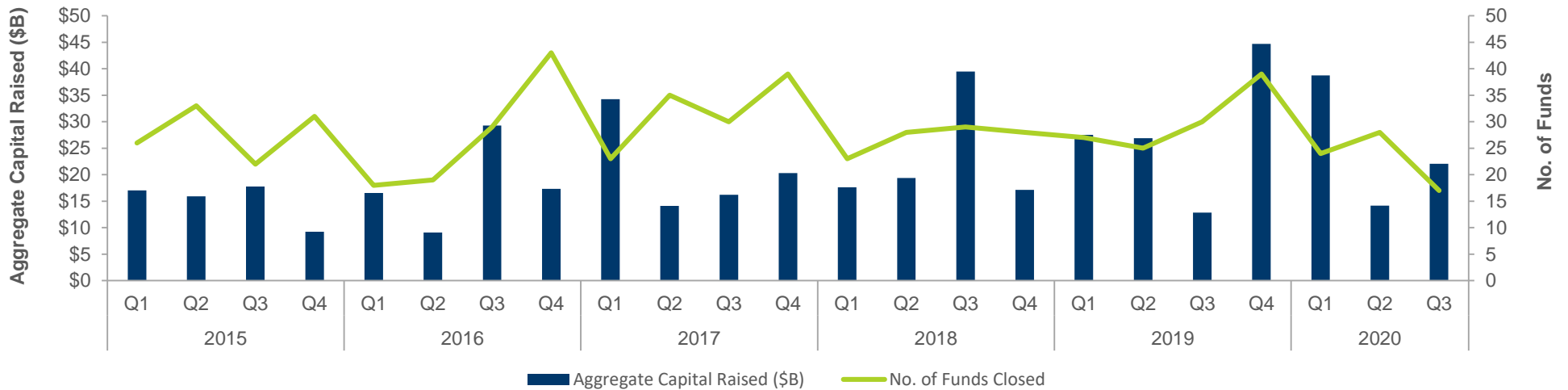
Closed-End Private Real Estate Funds Actively in Market in Q3 2020 by Primary Geographic Focus



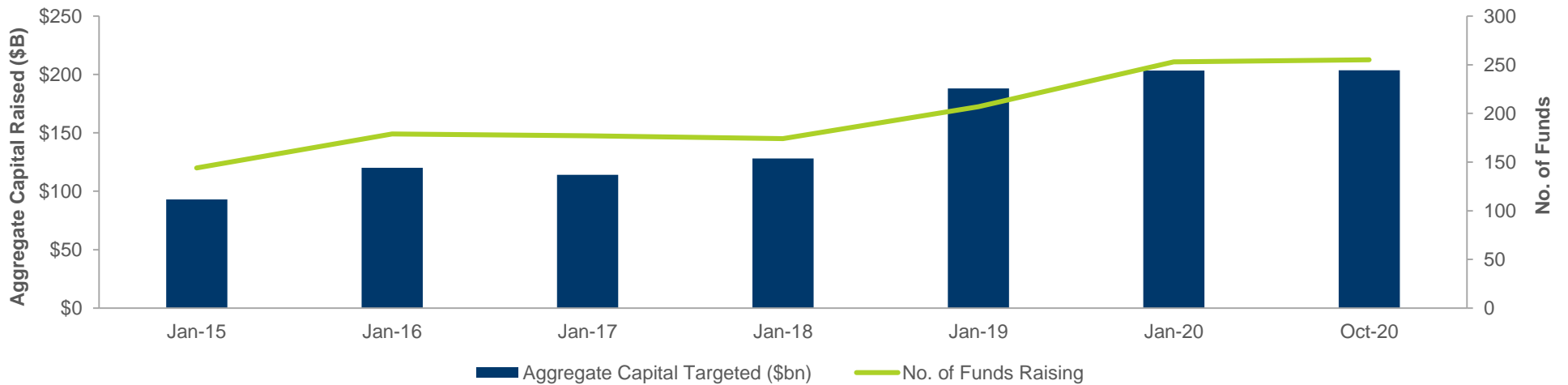
Source: Preqin as of September 30, 2020.

Unlisted Infrastructure – Fundraising & Investment Activity

Global Quarterly Unlisted Infrastructure Fundraising (Q1 2015 – Q3 2020)



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



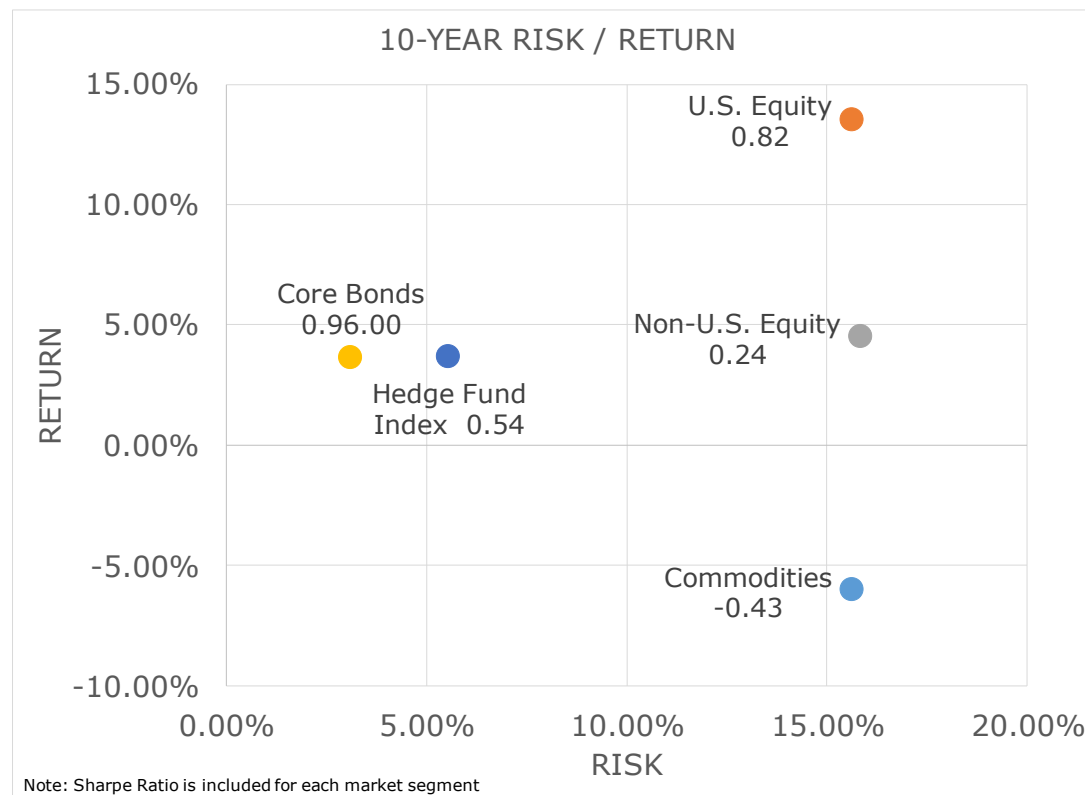
Source: Preqin as of September 30, 2020.

QUARTERLY MARKET REVIEW

Hedge Fund Performance



AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DJ CS HEDGE FUND INDEX	3.4	0.0	2.4	2.7	2.8	3.6
EVENT DRIVEN	4.8	-3.1	-1.0	0.7	1.4	2.6
GLOBAL MACRO	4.6	0.5	1.3	4.1	3.4	3.9
LONG/SHORT EQUITY	2.7	0.2	5.3	3.5	3.6	4.9
MULTI-STRATEGY	3.4	0.5	1.8	2.3	3.6	5.6
WILSHIRE 5000	9.1	5.5	15.1	11.7	13.8	13.5
MSCI ACWI EX-US (\$G)	6.4	-5.1	3.4	1.6	6.7	4.5
BLOOMBERG BARCLAYS AGGREGATE	0.6	6.8	7.0	5.2	4.2	3.6
BLOOMBERG COMMODITY INDEX	9.1	-12.1	-8.2	-4.2	-3.1	-6.0



Data Source: Bloomberg

EXECUTIVE SUMMARY OF PERFORMANCE

Employees' Retirement Fund of the City of Dallas



Third Quarter 2020



Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market Index, was up 9.14% for the third quarter of 2020. By the end of July, equities had fully recovered from their bear market selloff and are now up for the year. Most of the eleven sectors were in positive territory while the best performing sector, for the second straight quarter, was Consumer Discretionary (+18.9%). The Energy sector was down by double-digits (-18.9%) as oil prices are still lower for the year (-30%+) on concerns of an oversupply of crude. Economic news from the quarter was mixed, with a focus on employment conditions remaining a key element of the recovery. An early report suggests that the U.S. added nearly three-fourths of a million jobs in September, which was better than expected. However, some major corporations have recently announced significant layoffs. In August, the temporary job loss statistic fell while permanent losses rose by a half-million.

Large capitalization stocks outperformed small caps by a significant margin for the quarter as the Wilshire Large-Cap Index was up 9.56% versus 4.04% for the Wilshire US Small-Cap Index. Growth stocks led value during the third quarter and have significantly outperformed during the past twelve months.

Fixed Income Market

The U.S. Treasury yield curve was little changed during the second and third quarters after a dramatic drop in Q1. Although the entire curve remains below 1.50% it also is steeper than it has been in two years. The 10-year Treasury yield ended the quarter at 0.69%, up just 3 basis points from June. The Federal Open Market Committee met three times during the quarter, as scheduled, with no change to their overnight rate, which they expect will be near zero until at least 2022. In a meaningful step, the Committee addressed a revised policy that allows inflation to move above the 2% target before increasing interest rates, adopting specific language to emphasize this goal. Credit spreads continued to tighten during the quarter.

Non-U.S. Markets

Equity markets outside of the U.S. also enjoyed a strong quarter, with emerging markets outperforming all developed markets. Economic releases showed that the U.K. suffered a contraction of nearly -20% during the second quarter. The government's furlough program, where they support a majority of employees' wages, has kept the unemployment rate to just 4%. Euro zone manufacturing activity is on the rise, led by particular strength in Germany. However, their service industry accounts for two-thirds of GDP and continues to suffer from COVID-19 related restrictions. The European Central Bank has warned that progress will be slow and uneven and stated that, "we should maintain a significant amount of monetary stimulus until we achieve solid recovery." Emerging markets were led by Taiwan (+15% in local currency terms), India and China (each +12%). The Chinese economy actually grew during the second quarter after more than half of the country was shut down in February. The official Purchasing Manager's Index for China indicates that manufacturing in the country expanded in September for the seventh straight month after a dramatic slowdown.

Real Assets Markets

Real estate securities were up during the third quarter in both the U.S. and abroad. Sector performance was mixed with Industrial assets moving higher and a noticeable lag in Retail holdings. Commodity results were positive for the quarter as crude oil was up 2.4% to \$40.22 per barrel. Natural gas prices jumped 44.3%, ending the quarter at \$2.53 per million BTUs, on a rebound in demand and a tighter outlook for supply in 2021. Midstream energy lagged during the third quarter although the broader infrastructure segment was positive. Finally, gold prices were up 4.8%, the eighth straight positive quarter, and finished at approximately \$1,888 per troy ounce.



Summary of Index Returns

For Periods Ended September 30, 2020

	Quarter	One Year	Three Years	Five Years	Ten Years
Domestic Equity					
Standard & Poor's 500	8.93%	15.15%	12.28%	14.15%	13.74%
Wilshire 5000	9.14	15.12	11.70	13.83	13.50
Wilshire 4500	9.47	11.81	7.69	11.41	12.19
Wilshire Large Cap	9.56	16.78	12.73	14.46	13.83
Wilshire Small Cap	4.04	-2.26	1.48	7.54	10.20
Wilshire Micro Cap	3.59	-4.11	-3.47	4.48	8.17
Domestic Equity					
Wilshire Large Value	4.97%	1.22%	6.39%	10.35%	11.31%
Wilshire Large Growth	13.78	33.53	19.04	18.33	16.27
Wilshire Mid Value	3.01	-16.53	-1.80	4.88	8.85
Wilshire Mid Growth	8.16	15.47	10.26	12.07	12.67
Wilshire Small Value	1.04	-13.24	-3.62	4.29	8.30
Wilshire Small Growth	7.07	10.02	6.77	10.69	12.00
International Equity					
MSCI All World ex U.S. (USD)	6.25%	3.00%	1.16%	6.23%	4.00%
MSCI EAFE	4.80	0.49	0.62	5.26	4.62
MSCI Europe	4.51	-0.79	-0.61	4.24	4.26
MSCI Pacific	5.39	2.63	2.81	7.32	5.39
MSCI Emerging Markets Index	9.56	10.54	2.42	8.97	2.50
Domestic Fixed Income					
Barclays Aggregate Bond	0.62%	6.98%	5.24%	4.18%	3.64%
Barclays Treasury	0.17	8.04	5.50	3.75	3.15
Barclays Mortgage	0.11	4.36	3.68	2.98	3.01
Barclays Credit	1.50	7.50	6.19	5.75	4.92
Barclays US TIPS	3.03	10.08	5.79	4.61	3.57
Citigroup High Yield Cash Pay	4.85	2.64	3.84	6.48	6.12
91-Day Treasury Bill	0.04	1.10	1.69	1.20	0.64
Currency*					
Euro vs. \$	4.41%	7.57%	-0.27%	0.99%	-1.51%
Yen vs. \$	2.24	2.42	2.18	2.56	-2.31
Pound vs. \$	4.63	4.97	-1.23	-3.12	-1.96
Real Estate					
Wilshire REIT Index	1.25%	-17.69%	0.45%	3.65%	8.00%
Wilshire RESI	1.25	-17.75	0.42	3.87	8.12

*Positive values indicate dollar depreciation.



Total Fund Overview

Asset Class Performance

	Assets		Performance (%)					
	(\$Mil)	(%)	QTR	YTD	1-year	3-year	5-year	10-year
U.S. Equity	451.5	13.3	7.33	-2.34	6.69	6.97	10.96	11.89
International Equity	419.2	12.4	8.59	-2.06	8.24	1.30	7.10	5.51
Global Equity	244.2	7.2	6.63	3.59	11.61	6.79	9.79	
Global Low Volatility	412.6	12.2	4.01	-6.76	-3.48	4.72	8.13	
Real Estate	361.4	10.7	0.59	-6.70	-4.56	3.42	4.85	8.75
Global Fixed Income	508.2	15.0	1.37	6.93	7.10	5.34	4.58	4.27
High Yield	353.2	10.4	5.16	0.72	3.47	3.79	5.88	5.98
Credit Opportunities	178.9	5.3	4.44	-0.57	1.77	3.37		
MLPs	102.6	3.0	-10.24	-36.62	-37.41	-14.34	-7.19	
Private Equity	259.6	7.7	-3.21	-4.06	-2.15	8.43	8.87	10.61
Cash Equivalents	97.5	2.9	0.04	0.64	1.10	1.69	1.19	0.64
Total Fund	3,388.8	100.0	3.36	-3.49	0.66	3.77	6.51	7.34
Asset Allocation Policy			3.84	-2.51	1.58	4.29	6.82	7.25
<i>Value Added vs Policy</i>			<i>-0.48</i>	<i>-0.98</i>	<i>-0.92</i>	<i>-0.52</i>	<i>-0.31</i>	<i>0.09</i>
Actuarial Rate			1.77	5.39	7.25	7.46	7.64	7.92
Wilshire 5000 Index			9.14	5.54	15.12	11.70	13.83	13.48
S&P 500 Index			8.93	5.57	15.15	12.28	14.15	13.74
MSCI ACWI x-U.S. IMI Index			6.80	-5.21	3.51	1.13	6.31	4.17
MSCI EAFE Index			4.80	-7.09	0.49	0.62	5.26	4.62
Bloomberg Aggregate Bond Index			0.62	6.79	6.98	5.24	4.18	3.64
Citigroup High Yield Cash Pay			4.85	-0.17	2.64	3.84	6.48	6.12
Wilshire RE Securities Index			1.25	-16.86	-17.75	0.42	3.87	8.12
91-Day Treasury Bill			0.04	0.64	1.10	1.69	1.18	0.62

Total Fund Asset Growth

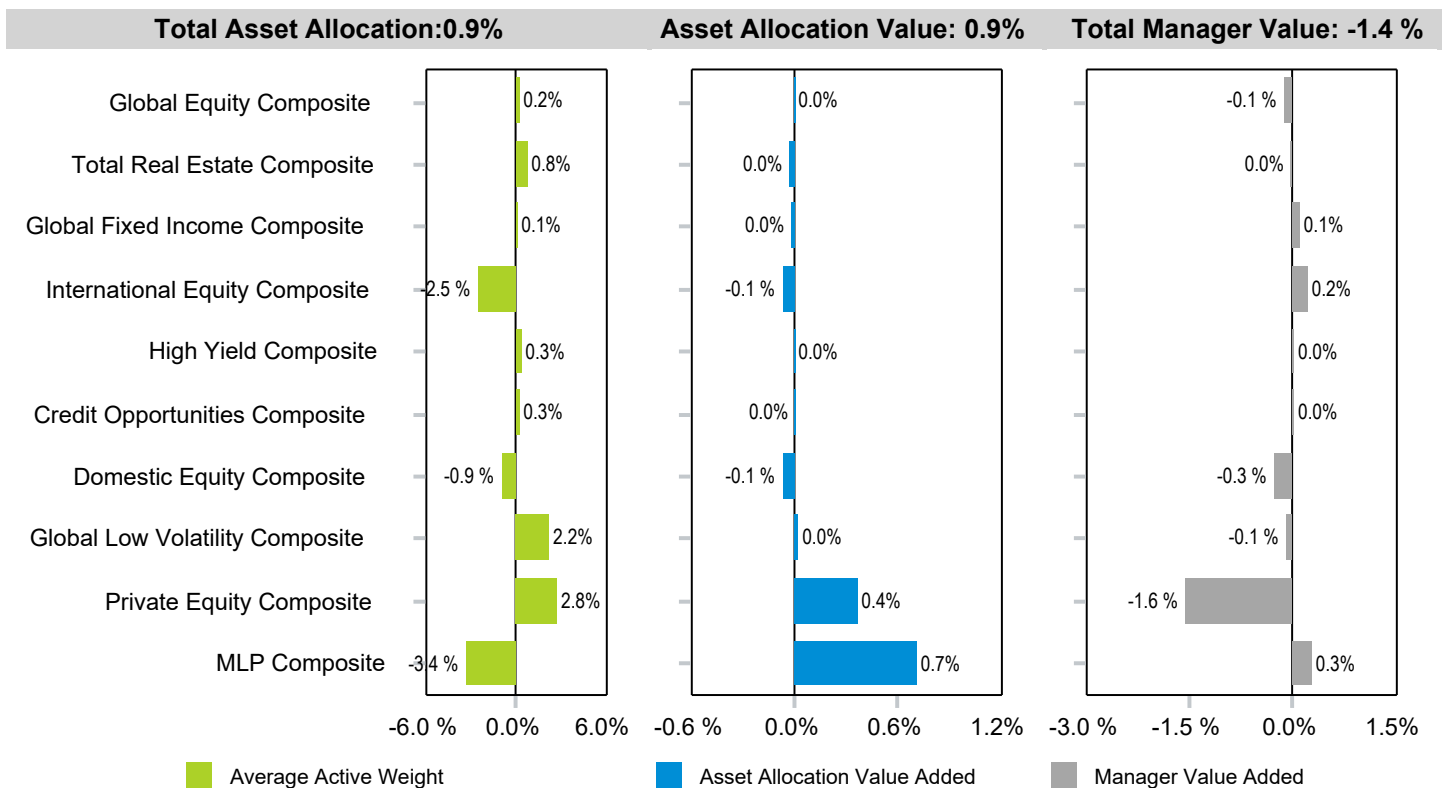
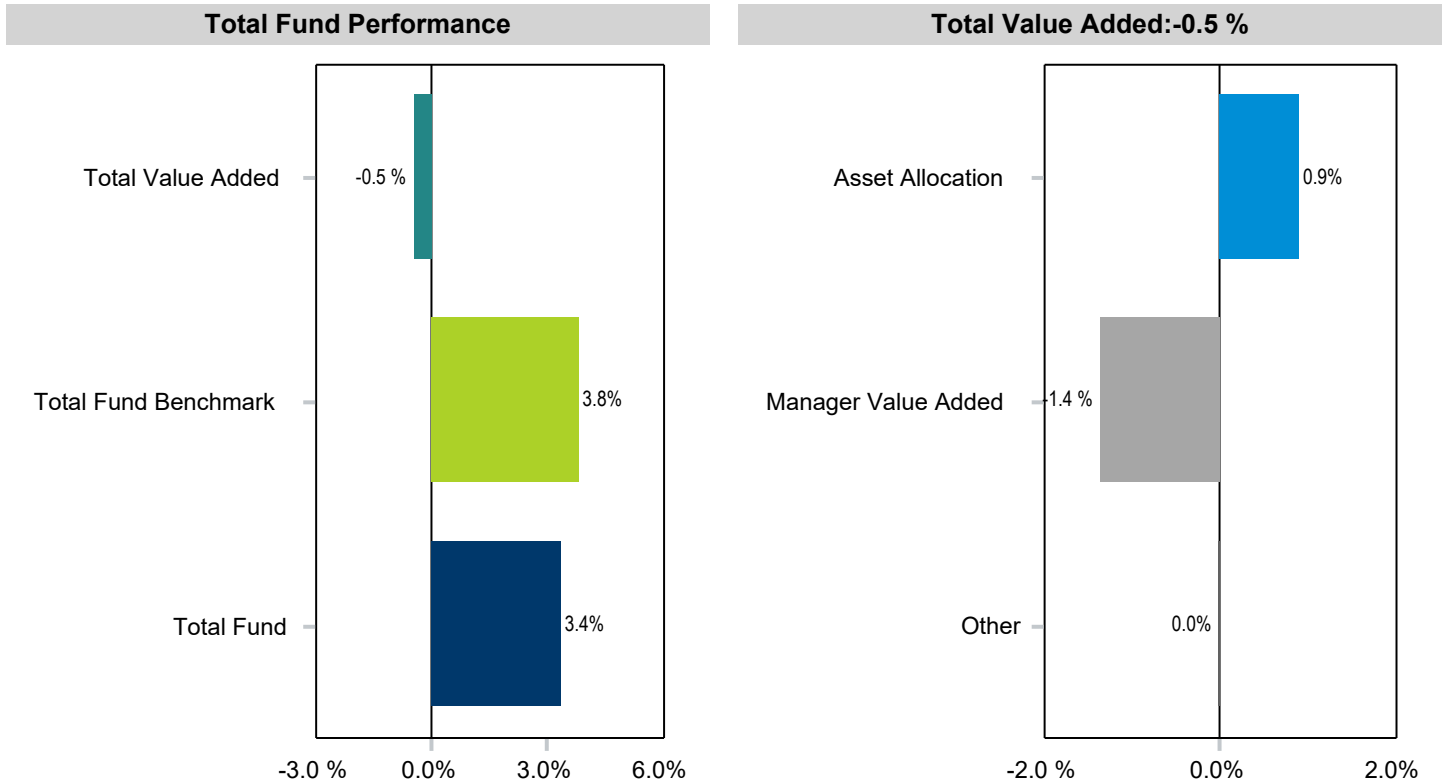
	Beg. Mkt (\$Millions)	Net Contrib.	Net Distrib.	Investment Fees	Investment Gain/Loss	End Mkt Value	Total Return
1Q16	3,199.2	89.0	127.7	3.0	40.9	3,198.3	1.28%
2Q16	3,198.3	70.8	105.2	2.8	116.2	3,277.3	3.54%
3Q16	3,277.3	32.9	67.4	2.9	117.3	3,357.2	3.48%
4Q16	3,357.2	28.1	66.0	3.0	21.4	3,337.8	0.62%
1Q17	3,337.8	36.2	74.6	2.6	140.0	3,436.7	4.15%
2Q17	3,436.7	24.9	68.7	3.2	86.6	3,476.4	2.46%
3Q17	3,476.4	47.8	84.0	3.5	110.0	3,546.6	3.10%
4Q17	3,546.6	31.1	74.1	3.3	107.5	3,607.8	3.02%
1Q18	3,607.8	31.9	74.7	3.1	(37.9)	3,524.0	-1.09%
2Q18	3,524.0	27.2	71.0	3.6	68.0	3,544.4	1.83%
3Q18	3,544.4	31.6	75.1	3.3	101.0	3,598.8	2.74%
4Q18	3,598.8	27.5	73.9	3.5	(274.6)	3,274.3	-7.66%
1Q19	3,274.3	32.4	71.8	3.2	292.5	3,524.2	8.90%
2Q19	3,524.2	27.7	76.6	3.4	108.0	3,579.9	3.04%
3Q19	3,579.9	32.8	76.2	3.2	20.4	3,553.7	0.49%
4Q19	3,553.7	27.7	79.8	3.6	154.3	3,653.6	4.31%
1Q20	3,653.6	32.7	75.8	3.8	(570.4)	3,036.3	-15.91%
2Q20	3,036.3	28.3	76.4	3.2	337.8	3,322.8	11.03%
3Q20	3,322.8	31.5	77.0	3.1	114.5	3,388.8	3.36%

- At the end of the third quarter of 2020, the Fund's market value was \$3,388.8 million, which represented an increase of \$66 million in total net asset value over the previous quarter. The change in the Fund's value was driven by \$31.5 million in net contributions, \$114.5 million investment gain, \$77 million in net distributions and \$3.1 million in investment management fees.

Total Fund Attribution

Dallas Total Fund

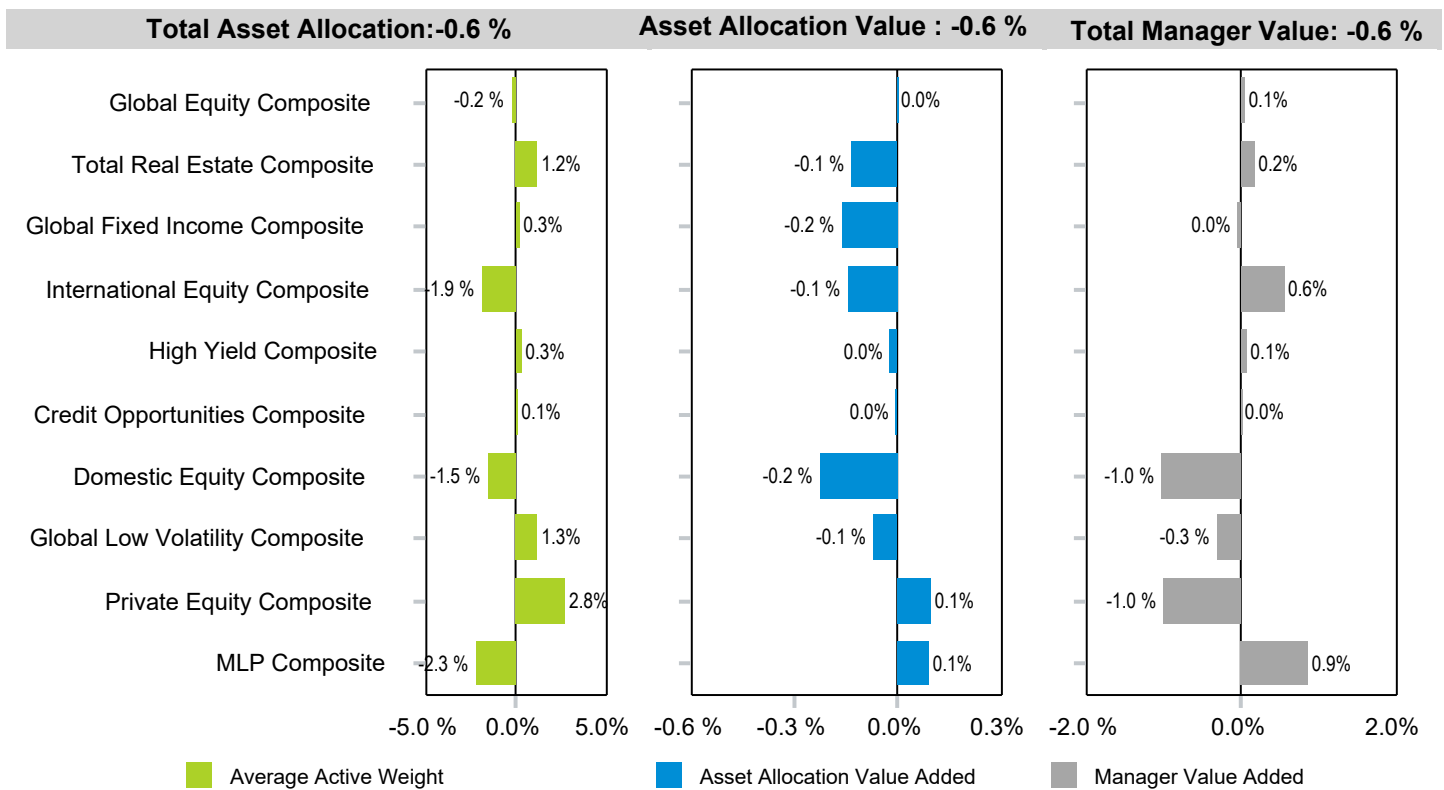
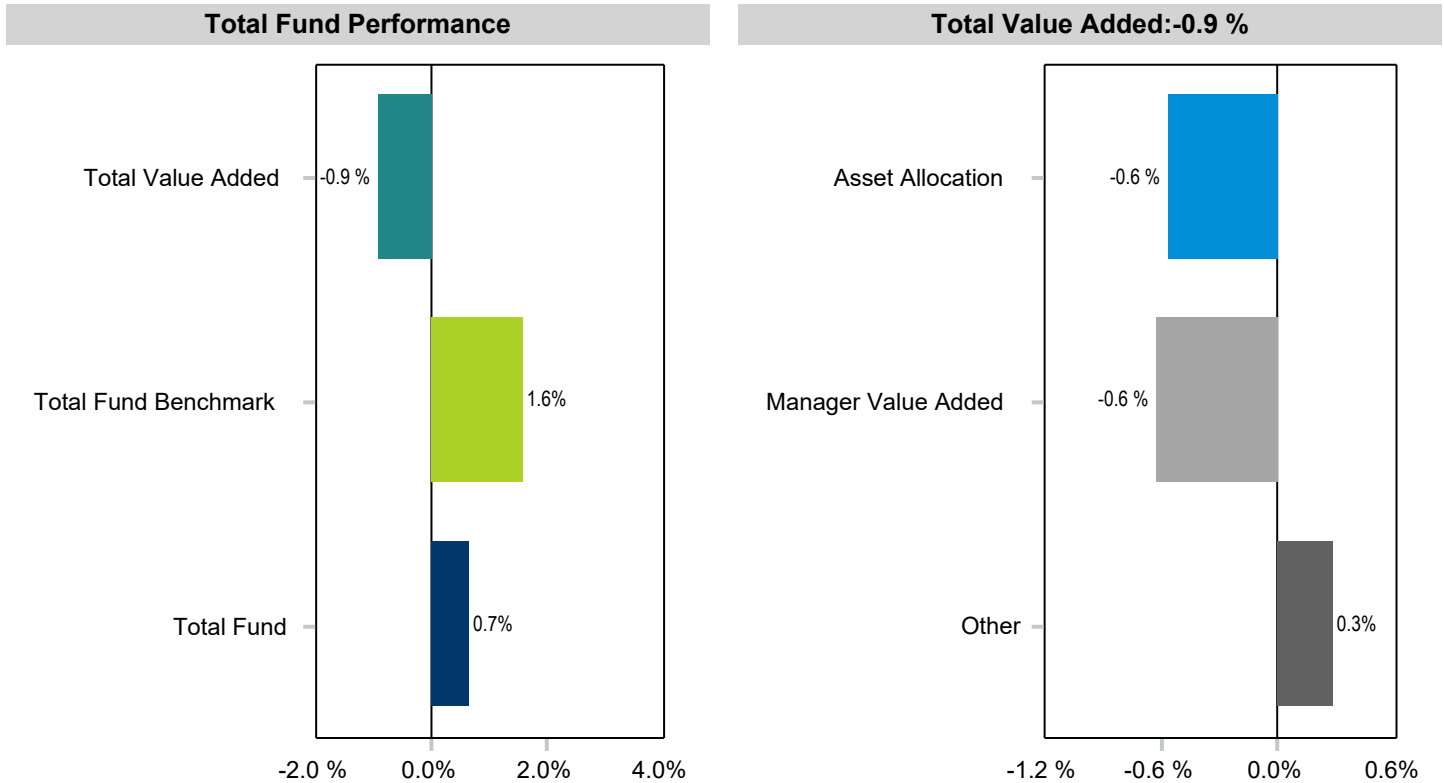
Periods Ended 1 Quarter Ending September 30, 2020



Total Fund Attribution

Dallas Total Fund

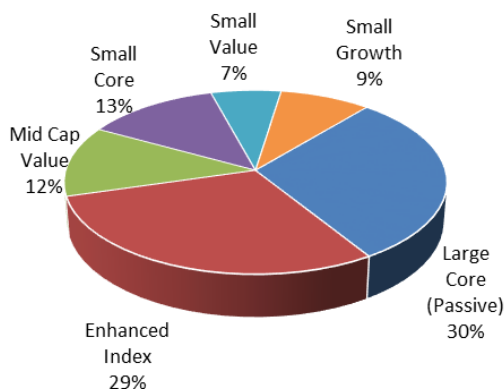
Periods Ended 1 Year Ending September 30, 2020



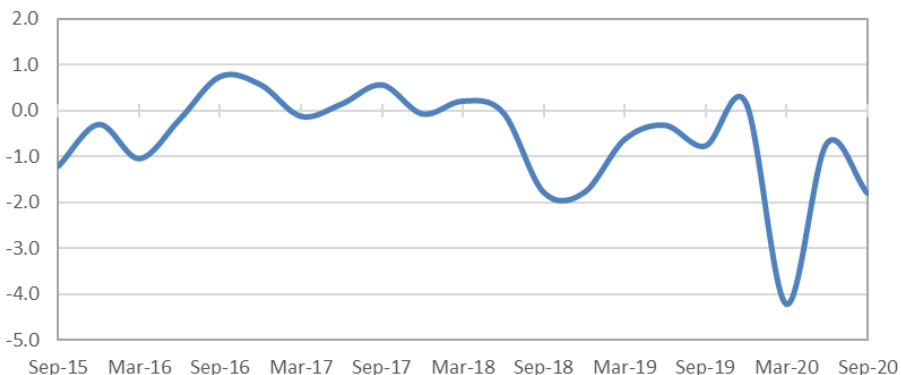


U.S. Equity Overview

U.S. Equity Structure



U.S. Equity Composite
 Quarterly Excess Return



Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total U.S. Equity (Gross)	\$ 451.5	7.43	-2.03	7.14	7.40	11.38	12.29
Total U.S. Equity (Net)		7.33	-2.34	6.69	6.97	10.96	11.89
Custom Benchmark ¹		9.14	5.54	15.12	11.70	13.83	13.48
<i>Net of Fee Value Added vs Benchmark</i>		<i>-1.81</i>	<i>-7.88</i>	<i>-8.43</i>	<i>-4.74</i>	<i>-2.87</i>	<i>-1.59</i>
Small Cap Composite	\$ 127.0	4.22	-9.09	-1.89	-0.09	7.11	9.40
Wilshire 5000 Index		9.14	5.54	15.12	11.70	13.83	13.48
S&P 500 Index		8.93	5.57	15.15	12.28	14.15	13.74
Russell 2000 Index		4.93	-8.69	0.39	1.77	8.00	9.85

U.S. Equity Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
Large Core - Passive								
Northern Trust S&P 500 (Gross)	\$ 135.2	8.76	5.43	14.99	12.25	14.14	10.21	Dec-94
Northern Trust S&P 500 (Net)		8.76	5.43	14.99	12.25	14.14	10.18	Dec-94
S&P 500 Index		8.93	5.57	15.15	12.28	14.15	10.14	Dec-94
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.17</i>	<i>-0.14</i>	<i>-0.16</i>	<i>-0.03</i>	<i>-0.01</i>	<i>0.04</i>	
Enhanced Index								
T. Rowe Price (Gross)	\$ 132.9	9.33	6.05	15.99	13.08	15.08	9.93	Mar-06
T. Rowe Price (Net)		9.26	5.82	15.65	12.74	14.73	9.60	Mar-06
S&P 500 Index		8.93	5.57	15.15	12.28	14.15	9.06	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.33</i>	<i>0.24</i>	<i>0.50</i>	<i>0.46</i>	<i>0.58</i>	<i>0.54</i>	
Information Ratio				0.34	0.40	0.43		
Sharpe Ratio				0.60	0.60	0.88		

¹ Domestic Equity Custom Benchmark: Wilshire 5000 Index (3q99 – Present); S&P 500 Index (1q90 – 2q99).



U.S. Equity Overview (Continued)

U.S. Equity Managers

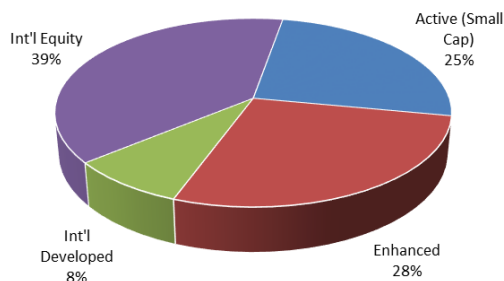
	Assets (Millions)	QTR	Performance (%)				Since Inception	Inception Date
			YTD	1-year	3-year	5-year		
Small Core - Active								
Systematic Financial (Gross)	\$ 57.6	2.30	-18.16	-11.19	-1.89	7.62	9.92	Jun-03
Systematic Financial (Net)		2.09	-18.70	-11.95	-2.72	6.71	9.10	Jun-03
Russell 2000 Index		4.93	-8.69	0.39	1.77	8.00	8.39	Jun-03
<i>Net of Fee Value Added vs Benchmark</i>			-2.84	-10.01	-12.34	-4.49	-1.30	0.71
Information Ratio				-3.01	-0.99	-0.28		
Sharpe Ratio				-0.45	-0.20	0.28		
Small Value - Active								
Channing Capital Management (Gross) *	\$ 30.2	3.56	-13.51	-6.63	-2.33	5.27	3.95	Oct-13
Channing Capital Management (Net) *		3.33	-14.15	-7.53	-3.27	4.27	2.98	Oct-13
Russell 2000 Value Index		2.56	-21.54	-14.88	-5.13	4.11	2.30	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>			0.77	7.40	7.35	1.86	0.16	0.69
Information Ratio				1.29	0.33	0.03		
Sharpe Ratio				-0.26	-0.20	0.14		
Small Growth - Active								
Redwood Investments (Gross) *	\$ 39.1	8.45	17.13	25.94	8.23		9.87	Sep-16
Redwood Investments (Net) *		8.28	16.55	25.09	7.48		9.20	Sep-16
Russell 2000 Growth Index		7.16	3.88	15.71	8.18		11.25	
<i>Net of Fee Value Added vs Benchmark</i>			1.12	12.67	9.37	-0.70		-2.04
Information Ratio				0.56	-0.06	--		
Sharpe Ratio				1.09	0.28	--		
Mid Cap Value - Active								
Smith Graham Mid Cap Value (Gross) *	\$ 56.4	6.01	-20.24	-10.41			-4.27	Dec-17
Smith Graham Mid Cap Value (Net) *		5.82	-20.71	-11.10			-4.95	Dec-17
Russell Midcap Index		7.46	-2.35	4.55			5.52	
<i>Net of Fee Value Added vs Benchmark</i>			-1.64	-18.36	-15.65			-10.47
Information Ratio				-1.24	--	--		
Sharpe Ratio				-0.32	--	--		

- ◆ The Fund's domestic equity composite generated a return of 7.33% (net of fees) during the third quarter of 2020, trailing the Wilshire 5000 Total Market Index, which returned 9.14%. Relative performance was negative during the quarter for Systematic and Smith Graham, while positive for Channing Capital and Redwood Investments. Following this quarter's results, the domestic equity composite is trailing its benchmark over the one-, three-, five- and ten- year periods but still outperforms since inception.

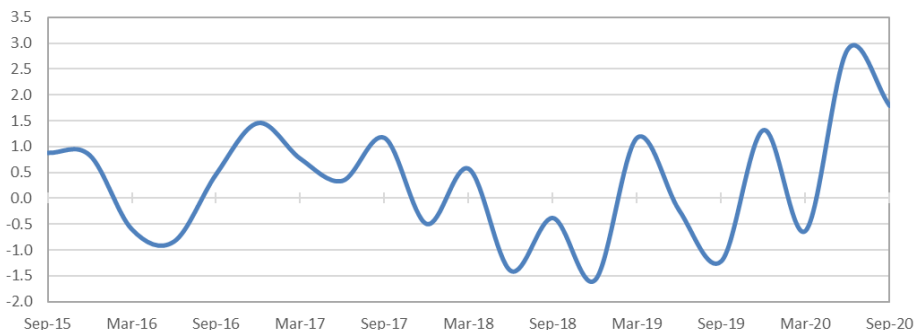


International Equity Overview

International Equity Structure



International Equity Composite
 Quarterly Excess Return



International Equity Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total International Equity (Gross)	\$ 419.2	8.73	-1.62	8.88	1.78	7.60	5.98
Total International Equity (Net)		8.59	-2.06	8.24	1.30	7.10	5.51
Custom Benchmark ¹		6.80	-5.21	3.51	1.13	6.31	4.17
<i>Net of Fee Value Added vs Benchmark</i>		<i>1.79</i>	<i>3.15</i>	<i>4.73</i>	<i>0.17</i>	<i>0.79</i>	<i>1.34</i>
MSCI ACWI x-US IMI (Net)		6.80	-5.21	3.51	1.13	6.31	4.17
MSCI ACWI x-US (Net)		6.25	-5.44	3.00	1.16	6.23	4.00
MSCI EAFE (Net)		4.80	-7.09	0.49	0.62	5.26	4.62
MSCI Emerging Markets		9.56	-1.16	10.54	2.42	8.97	2.51

International Equity Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
Int'l Small Cap - Active								
Acadian International (Gross)	\$ 105.6	10.33	-3.00	8.12	-0.07	8.83	8.52	Mar-89
Acadian International (Net)		10.18	-3.39	7.53	-0.66	8.23	8.06	Mar-89
Custom Benchmark		10.50	-3.64	6.97	0.93	6.80		Mar-89
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.31</i>	<i>0.25</i>	<i>0.56</i>	<i>-1.60</i>	<i>1.43</i>		
Information Ratio				0.11	-0.36	0.33		
Sharpe Ratio				0.24	-0.12	0.41		

² International Equity Custom Benchmark: MSCI ACWI x-US IMI (2q10 – Present); MSCI ACWI x-US (1q99 – 1q10); Wilshire Non-US/Non-SA (2q96 – 4q98); MSCI EAFE (4q89 – 1q96)

³ Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3q09 – Present); MSCI EAFE Small Cap (4q99 – 2q09); S&P/Citigroup Eur/Pac EMI Index (2q96 – 3q99); MSCI EAFE (2q89 – 1q96). Performance Objective: Custom Benchmark +2% (1q05 – Present); +1% (2q89 – 4q04).



International Equity Overview (Continued)

International Equity Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
Int'l Enhanced Index								
AQR Capital Management (Gross)	\$ 116.0	7.50	-1.44	8.89	0.75	6.92	3.70	Mar-06
AQR Capital Management (Net)		7.35	-1.96	8.16	0.18	6.31	3.17	Mar-06
Custom Benchmark		6.25	-5.44	3.00	1.16	6.23	2.65	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>		1.10	3.48	5.16	-0.98	0.08	0.53	
Information Ratio				2.48	-0.35	0.03		
Sharpe Ratio				0.32	-0.09	0.33		
Int'l Developed								
Ativo International Developed (Gross) *	\$ 35.3	7.76	-6.68	0.52			0.38	Dec-17
Ativo International Developed (Net) *		7.62	-7.10	-0.07			-0.21	Dec-17
MSCI EAFE Index		4.80	-7.09	0.49			-0.83	
<i>Net of Fee Value Added vs Benchmark</i>		2.82	0.00	-0.57			0.63	
Information Ratio				-0.08	--	--		
Sharpe Ratio				-0.05	--	--		
Int'l Equity (Active)								
Baillie Gifford (Gross)	\$ 85.9	10.64	10.17	24.08			18.58	Mar-19
Baillie Gifford (Net)		10.51	9.75	23.44			18.14	Mar-19
MSCI ACWI x-US (Net)		6.25	-5.44	3.00			2.76	
<i>Net of Fee Value Added vs Benchmark</i>		4.26	15.19	20.44			15.38	
Information Ratio				--	--	--		
Sharpe Ratio				--	--	--		
Int'l Equity (Active)								
Earnest Partners (Gross) *	\$ 76.4	6.48	-11.24	-2.82			-1.51	Mar-19
Earnest Partners (Net) *		6.34	-11.65	-3.40			-2.03	Mar-19
MSCI ACWI x-US (Net)		6.25	-5.44	3.00			2.76	
<i>Net of Fee Value Added vs Benchmark</i>		0.08	-6.21	-6.41			-4.79	
Information Ratio				--	--	--		
Sharpe Ratio				--	--	--		

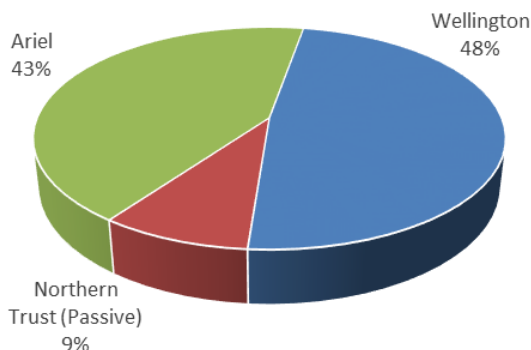
- ◆ The Fund's international equity composite returned 8.59% (net of fees) during the third quarter of 2020, outperforming the MSCI ACWI x-US Investable Market Index (IMI) which returned 6.80%. Active management was consistent for the Fund's international equity program with the majority of managers outperforming their respective benchmarks and only one trailing. The program's long-standing small cap international equity mandate managed by Acadian trailed its benchmark by a modest margin. Performance among the majority of managers was enough to lead to composite outperformance for the quarter. The recently funded Baillie Gifford portfolio outperformed its benchmark during the period, positively impacting relative composite performance. The international equity composite is currently outperforming against its benchmark for all time periods, including since inception.

⁵ AQR Custom Benchmark: MSCI ACWI x-US (2q10 – Present); MSCI EAFE (1q06 – 1q10); Performance Objective: Custom Benchmark + 1.5%.



Global Equity Overview

Global Equity Structure



Global Equity Composite

	Assets	Performance					
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total Global Equity (Gross)	\$ 244.2	6.77	4.02	12.22	7.34	10.28	
Total Global Equity (Net)		6.63	3.59	11.61	6.79	9.79	
MSCI ACWI (Net)		8.13	1.37	10.44	7.12	10.30	
<i>Net of Fee Value Added vs Index</i>		-1.50	2.22	1.17	-0.33	-0.51	
MSCI ACWI IMI (Net)		8.11	0.48	9.57	6.47	9.97	8.47
MSCI ACWI (Net)		8.13	1.37	10.44	7.12	10.30	8.55
MSCI World (Net)		7.93	1.70	10.41	7.74	10.48	9.37

Global Equity Managers

	Assets	Performance (%)					Since	Inception
	(Millions)	QTR	YTD	1-year	3-year	5-year	Inception	Date
Global Equity - Active								
Wellington (Gross)	\$ 118.3	10.87	9.50	19.04	9.08	10.95	12.43	Aug-12
Wellington (Net)		10.72	9.03	18.36	8.45	10.30	11.80	Aug-12
MSCI ACWI (Net)		8.13	1.37	10.44	7.12	10.30	9.35	Aug-12
<i>Net of Fee Value Added vs Benchmark</i>		2.59	7.66	7.92	1.33	0.00	2.45	
Information Ratio				2.46	0.36	0.00		
Sharpe Ratio				0.73	0.36	0.57		
Global Equity - Active								
Ariel (Gross) *	\$ 104.5	1.53	-1.87	4.72			3.69	Dec-17
Ariel (Net) *		1.37	-2.32	4.08			3.09	Dec-17
MSCI ACWI (Net)		8.13	1.37	10.44			5.63	
<i>Net of Fee Value Added vs Benchmark</i>		-6.76	-3.69	-6.37			-2.54	
Information Ratio				-0.52	--	--		
Sharpe Ratio				0.23	--	--		
Global Equity - Passive								
Northern Trust (Gross)	\$ 21.3	8.18	0.94	10.10	7.05	10.54	10.54	Oct-15
Northern Trust (Net)		8.18	0.94	10.10	7.03	10.50	10.50	Oct-15
MSCI ACWI IMI (Net)		8.11	0.48	9.57	6.47	9.97	9.97	Oct-15
<i>Net of Fee Value Added vs Benchmark</i>		0.07	0.46	0.53	0.56	0.52	0.52	



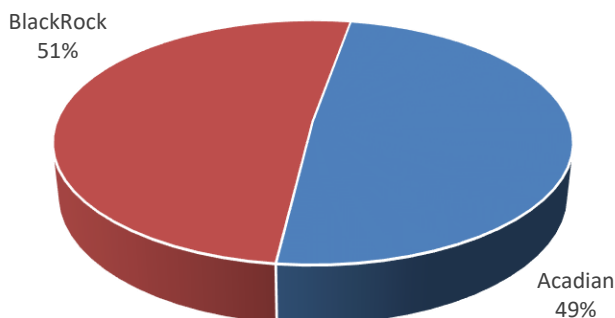
Global Equity Overview (Continued)

- ◆ The global equity composite is comprised of an actively-managed strategy (with a U.S. bias relative to the benchmark) managed by Wellington. This strategy is complemented by a passively-managed strategy provided by Northern Trust. The composite also recently added an exposure to the Ariel Global Product strategy. The new structure favors active management (currently 91% active/9% passive) versus the previous 50%/50% allocation between active and passively managed funds within the composite. During the third quarter, Wellington outperformed its respective benchmark while Ariel trailed theirs. The global equity composite is currently outperforming its benchmark over the YTD and 1- year periods.



Global Low Volatility Equity Overview

Global Low Volatility Structure



Global Low Volatility Composite

	Assets	Performance					
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total Global Low Volatility (Gross)	\$ 412.6	4.06	-6.63	-3.27	4.91	8.33	
Total Global Low Volatility (Net)		4.01	-6.76	-3.48	4.72	8.13	
MSCI ACWI Minimum Volatility (Net)		4.71	-3.50	-0.64	6.40	8.90	
<i>Net of Fee Value Added vs Index</i>			-0.69	-3.26	-2.84	-1.69	-0.77
MSCI ACWI Minimum Volatility (Net)		4.71	-3.50	-0.64	6.40	8.90	9.00
MSCI World x-US Minimum Volatility (Net)		4.06	-6.86	-3.11	2.27	5.72	6.48
MSCI ACWI (Net)		8.13	1.37	10.44	7.12	10.30	8.55

Global Equity Managers

	Assets	Performance (%)					Since	Inception
	(Millions)	QTR	YTD	1-year	3-year	5-year	Inception	Date
Global Low Volatility - Active								
Acadian Global Low Vol (Gross)	\$ 202.7	3.30	-8.91	-5.19	3.35	7.46	6.33	Jun-15
Acadian Global Low Vol (Net)		3.22	-9.14	-5.55	3.01	7.10	5.99	Jun-15
MSCI ACWI (Net)		8.13	1.37	10.44	7.12	10.30	7.73	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI</i>			-4.91	-10.51	-16.00	-4.11	-3.20	-1.74
MSCI ACWI Min Vol (Net)		9.72	-7.83	-2.50	5.75	6.94	6.94	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI Min Vol</i>			-6.50	-1.30	-3.05	-2.74	0.15	-0.95
Information Ratio				-3.26	-0.69	-0.54		
Sharpe Ratio				-0.33	0.09	0.49		
Global Low Volatility - Passive								
BlackRock Global Low Vol (Gross)	\$ 209.9	4.80	-4.30	-1.34	6.47	9.18	7.83	Jun-15
BlackRock Global Low Vol (Net)		4.79	-4.33	-1.37	6.43	9.15	7.80	Jun-15
MSCI ACWI Min Vol (Net)		4.71	-3.50	-0.64	6.40	8.90	7.54	Jun-15
<i>Net of Fee Value Added vs Benchmark</i>			0.08	-0.83	-0.73	0.03	0.25	0.26

*Acadian Info Ratio/Sharpe Ratio statistics based on MSCI ACWI Min Vol benchmark.



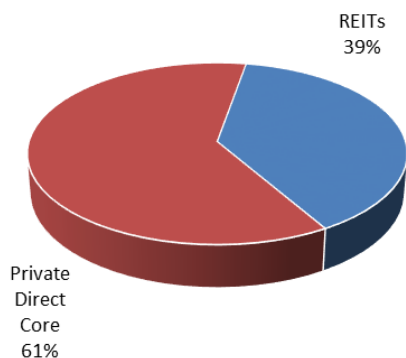
Global Low Volatility Equity Overview (Continued)

- ◆ In 2015, the Board elected to transfer assets from existing strategies elsewhere in the Fund into two new global low volatility equity portfolios. The first portfolio is actively-managed and run by Acadian. Its primary mandate is to provide the Fund with a better risk/return profile relative to the broad MSCI ACWI, its primary benchmark (the Acadian portfolio's performance is also measured against the MSCI ACWI Minimum Volatility as a secondary benchmark). The second portfolio is a passively-managed index fund provided through BlackRock. Taken together, both funds will add diversification benefits to the existing suite of public equity managers. The global low volatility equity composite currently trails the MSCI ACWI Minimum Volatility Index across all time periods.

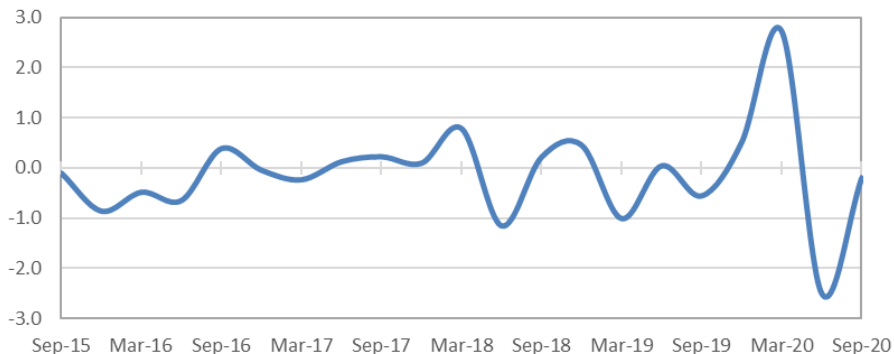


Real Estate Overview

Real Estate Structure



Total Real Estate Composite
 Quarterly Excess Return



Real Estate Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total Real Estate (Gross)	\$ 361.4	0.73	-6.29	-4.00	4.01	5.49	9.49
Total Real Estate (Net)		0.59	-6.70	-4.56	3.42	4.85	8.75
Custom Benchmark ¹		0.90	-7.56	-5.91	3.23	5.04	8.93
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.31</i>	<i>0.86</i>	<i>1.35</i>	<i>0.19</i>	<i>-0.19</i>	<i>-0.18</i>
REIT Strategies	\$ 140.1	1.14	-14.53	-15.42	1.75	3.95	8.02
Private Core Real Estate	\$ 221.3	0.26	-1.09	3.82	4.41	5.31	9.01
Wilshire Real Estate Securities Index		1.25	-16.86	-17.75	0.42	3.87	8.12
NCREIF Open Diversified Core Equity (Net)		0.27	-0.75	0.52	4.25	5.69	

Real Estate Managers

	Assets		Performance (%)				Since Inception	Date
	(Millions)	QTR	YTD	1-year	3-year	5-year		
Real Estate Securities - Public								
Adelante Capital Management (Gross)	\$ 69.8	1.23	-14.10	-14.89	2.29	4.47	9.43	Sep-01
Adelante Capital Management (Net)		1.09	-14.50	-15.39	1.70	3.87	8.85	Sep-01
Wilshire Real Estate Securities		1.25	-16.86	-17.75	0.42	3.87	9.02	Sep-01
<i>Net of Fee Value Added vs Index</i>		<i>-0.16</i>	<i>2.37</i>	<i>2.36</i>	<i>1.27</i>	<i>-0.01</i>	<i>-0.16</i>	
Information Ratio				1.02	0.61	0.00		
Sharpe Ratio				-0.72	0.00	0.17		
CenterSquare (Gross)	\$ 70.3	1.31	-14.24	-15.02			3.18	May-18
CenterSquare (Net)		1.20	-14.57	-15.45			2.72	May-18
Wilshire Real Estate Securities		1.25	-16.86	-17.75			0.99	May-18
<i>Net of Fee Value Added vs Index</i>		<i>-0.05</i>	<i>2.29</i>	<i>2.30</i>			<i>1.73</i>	
Information Ratio				1.39	--	--		
Sharpe Ratio				-0.69	--	--		

⁶ Real Estate Custom Benchmark: 50% Wilshire RESI / 39% NCREIF ODCE NOF/11% Invesco Custom Benchmark (4q13 – Present); Wilshire RESI (4q89 – 4q10).



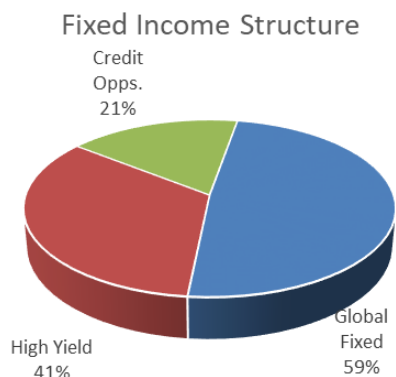
Real Estate Overview (Continued)

Real Estate Managers								
	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
Direct Core Real Estate - Private								
Heitman America Real Estate Trust (Gross)	\$ 81.7	1.17	-2.79	-3.56	2.92	5.46	10.09	Aug-10
Heitman America Real Estate Trust (Net)		0.94	-3.44	-4.42	2.01	4.53	9.07	Aug-10
NCREIF Open-End Diversified Core (Net)		0.27	-0.75	0.52	4.25	5.69	9.42	Aug-10
<i>Net of Fee Value Added vs Index</i>		0.67	-2.70	-4.94	-2.24	-1.16	-0.35	
Invesco Core Real Estate USA (Gross)	\$ 68.7	-0.07	-2.55	-0.09	5.82	7.43	10.77	Aug-10
Invesco Core Real Estate USA (Net)		-0.28	-3.18	-0.95	4.93	6.52	9.81	Aug-10
NCREIF Open-End Diversified Core (Net)		0.27	-0.75	0.52	4.25	5.69	9.42	Aug-10
<i>Net of Fee Value Added vs Index</i>		-0.55	-2.43	-1.46	0.68	0.83	0.39	
Invesco II	\$ 70.9	1.16	6.93	24.68	7.60	4.24	3.06	Oct-13

- ◆ The Fund's total real estate composite is comprised of both public market real estate securities (REITs) and private investment in direct core real estate. The total segment returned 0.59% (net of fees) during the third quarter, trailing its benchmark (split 50% Wilshire Real Estate Securities Index, 39% NCREIF Open-End Diversified Core Index and 11% Invesco II Custom Benchmark) which returned 0.79%. On the public side, both REIT exposures trailed the Wilshire Real Estate Securities Index. On the private side, Heitman outperformed the NCREIF ODCE Index while Invesco trailed. Currently, the Fund's total real estate composite outperforms its benchmark over the YTD-, one- and three- year periods.



Fixed Income Overview



Fixed Income Composites

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Global Fixed Income (Gross)	\$ 508.2	1.43	7.09	7.33	5.56	4.80	4.47
Global Fixed Income (Net)		1.37	6.93	7.10	5.34	4.58	4.27
Bloomberg Aggregate Bond Index		0.62	6.79	6.98	5.24	4.18	3.64
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.75</i>	<i>0.13</i>	<i>0.11</i>	<i>0.09</i>	<i>0.40</i>	<i>0.64</i>
High Yield (Gross)	\$ 353.2	5.28	1.14	4.03	4.31	6.40	6.48
High Yield (Net)		5.16	0.72	3.47	3.79	5.88	5.98
Custom Benchmark ¹		4.85	-0.17	2.64	3.84	6.48	6.12
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.31</i>	<i>0.89</i>	<i>0.83</i>	<i>-0.05</i>	<i>-0.59</i>	<i>-0.15</i>
Bloomberg Aggregate		0.62	6.79	6.98	5.24	4.18	3.64
Citigroup High Yield Cash Pay		4.85	-0.17	2.64	3.84	6.48	6.12
BofA ML High Yield Master II		4.71	-0.30	2.30	3.83	6.61	6.28

Global Fixed Income Managers

	Assets		Performance (%)					Since Inception	Inception Date
	(Millions)	QTR	YTD	1-year	3-year	5-year			
Global Fixed Income									
Securian Asset Mgmt. (Gross)	\$ 219.8	1.45	5.03	5.38	5.05	4.69	5.04	May-07	
Securian Asset Mgmt. (Net)		1.41	4.90	5.19	4.86	4.51	4.86	May-07	
Bloomberg Aggregate		0.62	6.79	6.98	5.24	4.18	4.63	May-07	
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.79</i>	<i>-1.90</i>	<i>-1.79</i>	<i>-0.38</i>	<i>0.33</i>	<i>0.23</i>		
Information Ratio				-0.28	-0.10	0.12			
Sharpe Ratio				0.50	0.60	0.76			
Aberdeen (Gross)	\$ 220.8	1.60	9.17	9.34	6.13	5.04	5.38	Apr-07	
Aberdeen (Net)		1.54	8.98	9.09	5.88	4.80	5.16	Apr-07	
Bloomberg Aggregate		0.62	6.79	6.98	5.24	4.18	4.49	Apr-07	
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.92</i>	<i>2.19</i>	<i>2.10</i>	<i>0.64</i>	<i>0.62</i>	<i>0.67</i>		
Information Ratio				0.66	0.33	0.38			
Sharpe Ratio				1.46	0.99	0.96			

⁷ High Yield Custom Benchmark: Citigroup High Yield Cash Pay (4q99 – Present); Citigroup High Yield Composite Index (1q97 – 3q99).



Fixed Income Overview (Continued)

Global Fixed Income Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
Global Fixed Income								
Garcia Hamilton (Gross)	\$ 67.6	0.78	7.07	7.11	5.37	4.42	4.44	Oct-13
Garcia Hamilton (Net)		0.71	6.87	6.84	5.10	4.15	4.18	Oct-13
Bloomberg Aggregate		0.62	6.79	6.98	5.24	4.18	3.90	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>		0.09	0.07	-0.15	-0.14	-0.03	0.29	
Information Ratio				-0.07	-0.10	-0.02		
Sharpe Ratio				1.46	1.09	1.00		

- ◆ The Fund's global fixed income segment returned 1.37% (net of fees) during the third quarter of 2020, outperforming the Bloomberg Aggregate Bond Index, which returned 0.62%. The segment is comprised of three actively managed strategies: (1) Securian Asset Management (previously Advantus Capital Management), (2) Aberdeen Asset Management, and (3) Garcia Hamilton. During the period, all three actively managed portfolios outperformed the Bloomberg Aggregate Index. Securian and Aberdeen (both with early 2007 inception dates) manage roughly the same level of assets for the Fund while the Garcia Hamilton portfolio has a smaller mandate. Therefore, quarter to quarter performance is largely driven by the results of the Securian and Aberdeen accounts while the Garcia Hamilton account does not have the ability to move the needle as much, so to speak, on account of its smaller size. Following this period's results, the global fixed income composite now outperforms the Bloomberg Aggregate over the YTD, one-, three-, five- and ten- year periods.



Fixed Income Overview (Continued)

High Yield/Credit Opportunities Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
High Yield								
Oaktree Capital Management (Gross)	\$ 177.3	5.33	0.78	3.45	3.60	6.15	7.04	Dec-96
Oaktree Capital Management (Net)		5.21	0.41	2.95	3.09	5.62	6.32	Dec-96
Custom Benchmark		4.85	-0.17	2.64	3.84	6.48	6.68	Dec-96
<i>Net of Fee Value Added vs Benchmark</i>		0.36	0.58	0.31	-0.75	-0.86	-0.36	
Information Ratio				0.17	-0.66	-0.79		
Sharpe Ratio				0.13	0.16	0.57		
BlackRock High Yield (Gross)								
BlackRock High Yield (Gross)	\$ 175.8	5.19	1.47	4.57	5.01	6.65	6.75	Sep-06
BlackRock High Yield (Net)		5.08	1.00	3.97	4.48	6.14	6.26	Sep-06
Citigroup High Yield Cash Pay		5.11	0.58	3.67	4.88	7.54	7.70	Sep-06
<i>Net of Fee Value Added vs Benchmark</i>		-0.03	0.42	0.30	-0.39	-1.40	-1.44	
Information Ratio				0.57	0.46	-0.22		
Sharpe Ratio				0.21	0.33	0.68		
Credit Opportunities								
Neuberger Berman (Gross)	\$ 178.9	4.51	-0.37	2.04	3.70	6.43	6.43	Jan-16
Neuberger Berman (Net)		4.44	-0.57	1.77	3.37	6.16	6.16	Jan-16
Custom Benchmark		3.72	-0.48	1.56	3.50	6.44	6.44	Jan-16
<i>Net of Fee Value Added vs Benchmark</i>		0.71	-0.09	0.21	-0.13	-0.28	-0.28	
Information Ratio				0.08	-0.07	--		
Sharpe Ratio				0.04	0.16	--		

- ◆ The high yield composite returned 5.16% (net of fees) during the third quarter, outperforming the Citigroup High Yield Cash Pay Index, which returned 4.85%. The composite is currently split equally between the two actively-managed strategies. During the period, BlackRock trailed while Oaktree outperformed the benchmark. The high yield composite is currently underperforming its benchmark over extended time periods greater than one-year including since inception (03/97).

⁸ Oaktree Capital Management Performance Objective: Citigroup High Yield Cash Pay + 1% (4q99 – Present); Citigroup High Yield Composite Index + 1% (2q97 – Present).



Private Equity Overview

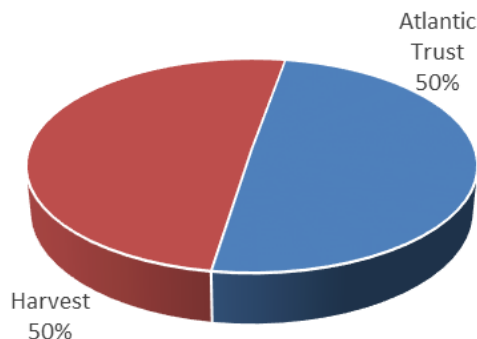
Private Equity Composite							
	Total Commitment	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	25,297,247	84.3%	31,381,864	11,987,407	1.71	9.0%
Hamilton Lane Fund VII LP (Series B)	20,000,000	17,695,467	88.5%	12,699,820	8,817,014	1.22	0.2%
<i>Hamilton Lane Fund VII LP (Total)</i>	<i>50,000,000</i>	<i>42,992,714</i>	<i>86.0%</i>	<i>44,081,684</i>	<i>20,804,421</i>	<i>1.51</i>	<i>5.5%</i>
Hamilton Lane Secondary Fund II LP	25,000,000	22,848,181	91.4%	30,711,620	1,115,361	1.39	8.2%
Hamilton Lane Secondary Fund III LP	30,000,000	17,764,658	59.2%	21,996,355	7,711,787	1.67	15.7%
Hamilton Lane Secondary Fund IV LP	30,000,000	19,880,195	66.3%	7,567,635	22,735,479	1.52	16.4%
Hamilton Lane Secondary Fund V LP	40,000,000	6,019,890	15.0%	-	6,379,572	1.06	6.8%
Hamilton Lane Fund VIII LP (Global)	30,000,000	16,412,837	54.7%	7,526,711	19,119,143	1.62	7.8%
GCM Grosvenor - Partnership, L.P.	75,000,000	83,500,000	111.3%	89,500,000	38,793,465	1.54	13.6%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	65,100,000	108.5%	31,000,000	52,493,453	1.28	10.0%
GCM Grosvenor - Partnership II, L.P. (2015) - 1	20,000,000	20,700,000	103.5%	4,200,000	24,210,010	1.37	11.4%
GCM Grosvenor - Partnership II, L.P. (2015) - 2	10,000,000	9,200,000	92.0%	100,000	10,000,000	1.10	10.3%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	12,000,000	40.0%	500,000	12,069,097	1.05	-6.7%
Fairview Capital - Lone Star Fund I	40,000,000	33,773,848	84.4%	2,032,525	38,294,489	1.19	9.0%
Fairview Capital - Lone Star Fund II	30,000,000	6,717,692	22.4%	-	5,854,067	0.87	-12.2%
Total Private Equity Program	470,000,000	356,910,015	75.9%	239,216,530	259,580,344	1.40	10.9%

- Multiple calculation = (market value + distributions) / capital called
- Internal Rate of Return shown here is calculated by Wilshire based on cumulative cash flows and annualized since inception.



MLP Overview

MLP Structure



MLP Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Total MLPs (Gross)	\$ 102.6	-10.08	-36.25	-36.94	-13.75	-6.57	
Total MLPs (Net)		-10.24	-36.62	-37.41	-14.34	-7.19	
Alerian MLP Index		-16.26	-46.16	-48.35	-20.75	-11.58	
<i>Net of Fee Value Added vs Index</i>		<i>6.02</i>	<i>9.54</i>	<i>10.95</i>	<i>6.42</i>	<i>4.39</i>	
Alerian MLP Index		-16.26	-46.16	-48.35	-20.75	-11.58	-4.17
S&P MLP Index		-16.81	-49.18	-51.83	-25.62	-17.55	-9.61
Bloomberg Commodities Index		9.07	-12.08	-8.20	-4.18	-3.09	-6.03

Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
MLPs								
Harvest Fund Advisors (Gross)	\$ 51.5	-8.19	-35.10	-35.57	-12.72	-6.18	-0.58	
Harvest Fund Advisors (Net)		-8.37	-35.53	-36.11	-13.40	-6.90	-1.29	Dec-11
Alerian MLP Index		-16.26	-46.16	-48.35	-20.75	-11.58	-7.10	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>		<i>7.89</i>	<i>10.63</i>	<i>12.24</i>	<i>7.35</i>	<i>4.68</i>	<i>5.81</i>	
Information Ratio				1.02	0.68	0.49		
Sharpe Ratio				-0.68	-0.42	-0.27		
Atlantic Trust CIBC (Gross)	\$ 51.1	-11.99	-37.45	-38.35	-14.86	-7.01	-0.70	
Atlantic Trust CIBC (Net)		-12.13	-37.76	-38.74	-15.36	-7.55	-1.25	Dec-11
Alerian MLP Index		-16.26	-46.16	-48.35	-20.75	-11.58	-7.10	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>		<i>4.13</i>	<i>8.40</i>	<i>9.61</i>	<i>5.40</i>	<i>4.04</i>	<i>5.85</i>	
Information Ratio				1.27	0.76	0.62		
Sharpe Ratio				-0.63	-0.43	-0.26		



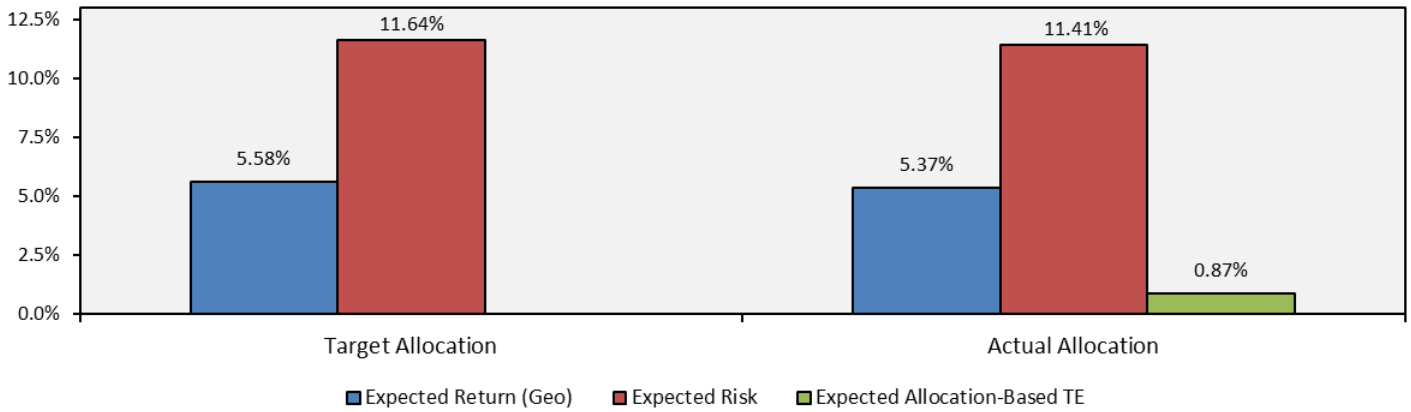
MLP Overview (Continued)

- ◆ The Fund's Master Limited Partnership (MLP) program is comprised of two individual managers, Harvest Fund Advisors and Atlantic Trust (formerly Invesco), with the mandates essentially split evenly between the two. Commodity results were positive for the quarter as crude oil was up 2.4% to \$40.22 per barrel. Natural gas prices jumped 44.3%, ending the quarter at \$2.53 per million BTUs. Midstream energy lagged during the third quarter although the broader infrastructure segment was positive. The MLP composite is outperforming across all time periods, including since inception.

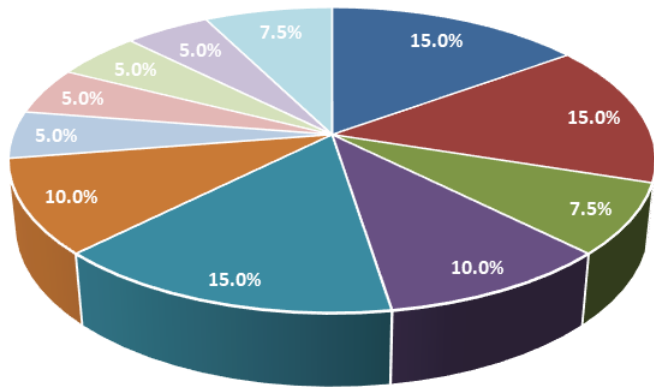
Appendix: Risk Analysis & Performance Objectives



Expected Return and Risk

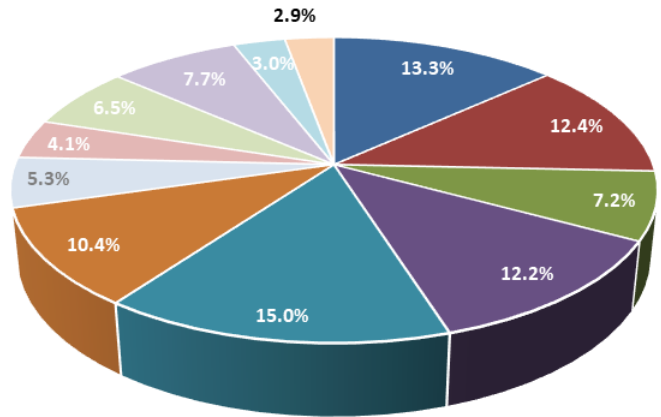


Target Asset Allocation



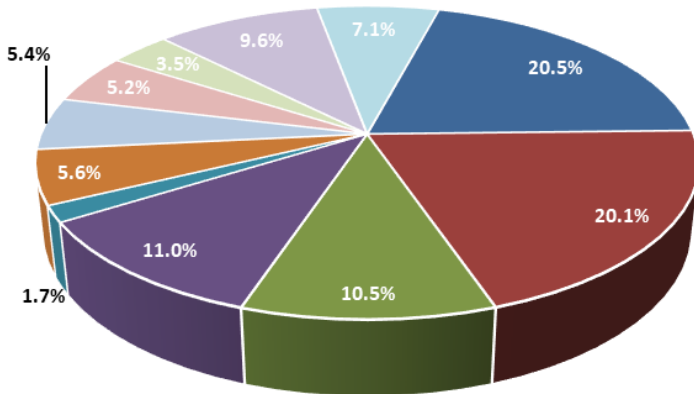
- Domestic Equity
- Int'l Equity
- Global Equity
- Global Low Vol
- Global Fixed Income
- High Yield
- Opp Credit
- Public REITs
- Private Real Est.
- Private Equity
- MLPs
- Cash

Actual Asset Allocation



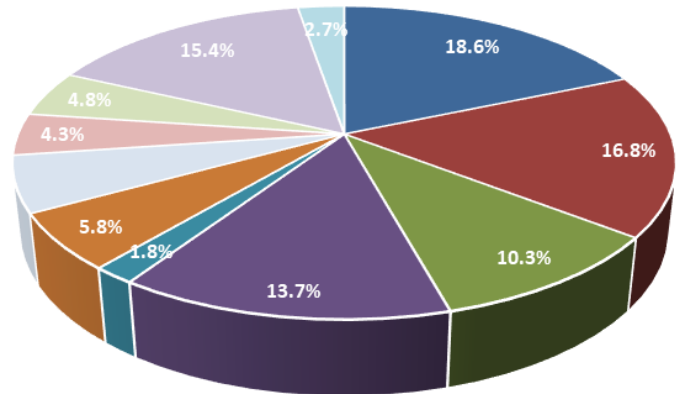
- Global Low Vol
- Global Fixed Income
- High Yield
- Private Equity
- MLPs
- Cash

Contribution to Total Risk - Target Allocation



- Domestic Equity
- Int'l Equity
- Global Equity
- Global Low Vol
- Global Fixed Income
- High Yield
- Opp Credit
- Public REITs
- Private Real Est.
- Private Equity
- MLPs
- Cash

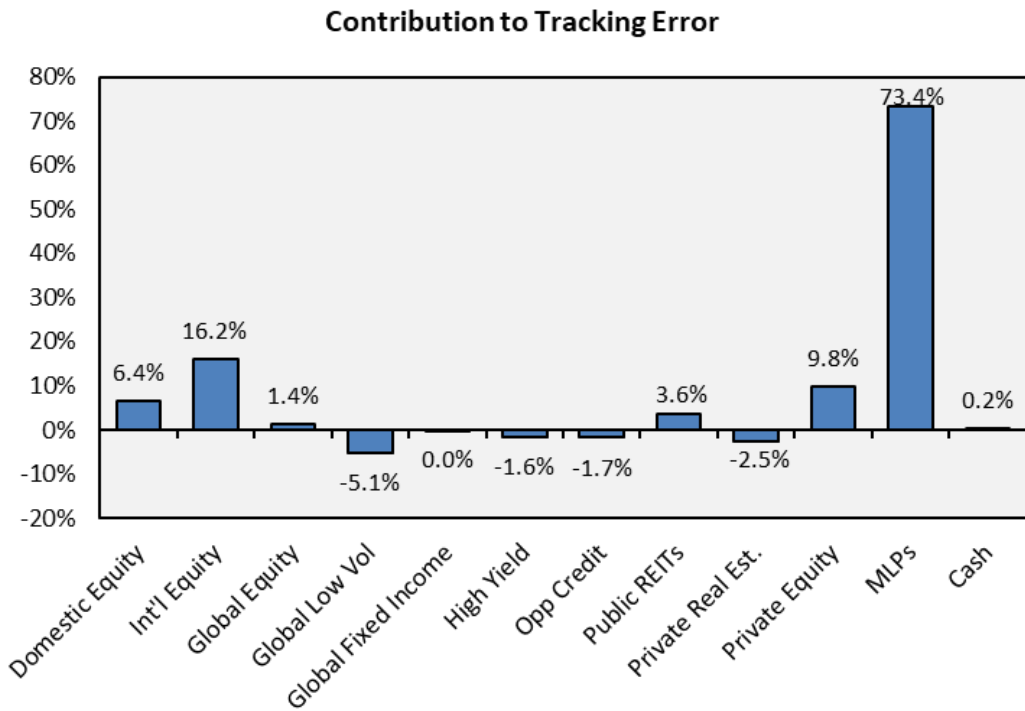
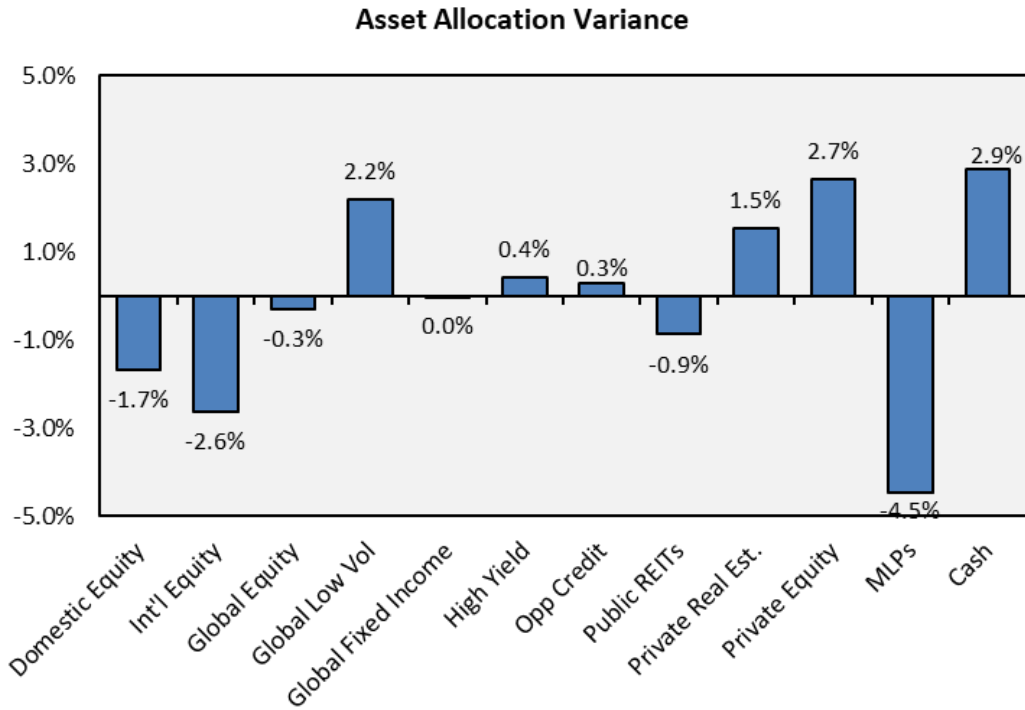
Contribution to Total Risk - Actual Allocation



- Global Low Vol
- Global Fixed Income
- High Yield
- Private Equity
- MLPs
- Cash



Expected Return and Tracking Error based on Wilshire's Asset Assumptions



- ◆ The variance between the Fund's actual asset allocation and the target allocation is a source of tracking error for the Fund. This "asset allocation tracking error" is currently forecasted to be 0.87% (for the one-year period) at quarter-end. MLP's and international equity provided the largest contributions to tracking error at the total fund level.



Manager Risk Statistics

U.S. Equity					Non-U.S. Equity				
T. Rowe Price (Enhanced Index)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>					
Standard Deviation	24.14	18.06	15.19	13.51					
Standard Deviation (Index)	23.65	17.74	14.88	13.25					
Sharpe Ratio	0.60	0.60	0.88	0.99					
Sharpe Ratio (Index)	0.59	0.59	0.86	0.98					
Excess Risk	1.29	1.03	1.20	1.03					
Information Ratio	0.34	0.40	0.43	0.33					
					Acadian (Int'l Small Cap)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	26.85	19.41	16.90	16.30
					Standard Deviation (Index)	28.90	19.40	16.74	15.99
					Sharpe Ratio	0.24	-0.12	0.41	0.42
					Sharpe Ratio (Index)	0.20	-0.04	0.33	0.29
					Excess Risk	4.90	4.37	4.04	3.65
					Information Ratio	0.11	-0.36	0.33	0.59
Systematic (Small Core)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>					
Standard Deviation	28.91	22.05	19.23	17.70					
Standard Deviation (Index)	30.94	23.00	20.08	18.06					
Sharpe Ratio	-0.45	-0.20	0.28	0.51					
Sharpe Ratio (Index)	-0.02	0.00	0.33	0.51					
Excess Risk	4.08	4.47	4.33	3.86					
Information Ratio	-3.01	-0.99	-0.28	-0.03					
					AQR (Int'l Equity)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	22.19	17.32	15.11	15.51
					Standard Deviation (Index)	21.95	16.23	14.49	14.76
					Sharpe Ratio	0.32	-0.09	0.33	0.29
					Sharpe Ratio (Index)	0.09	-0.03	0.34	0.23
					Excess Risk	2.02	2.78	2.54	2.51
					Information Ratio	2.48	-0.35	0.03	0.44
Channing Capital (Small Value)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>					
Standard Deviation	32.39	24.71	21.75	n/a					
Standard Deviation (Index)	32.53	23.56	20.74	n/a					
Sharpe Ratio	-0.26	-0.20	0.14	n/a					
Sharpe Ratio (Index)	-0.49	-0.28	0.14	n/a					
Excess Risk	6.71	5.93	5.20	n/a					
Information Ratio	1.29	0.33	0.03	n/a					
					Ativo (Int'l Developed)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	24.38	n/a	n/a	n/a
					Standard Deviation (Index)	20.87	n/a	n/a	n/a
					Sharpe Ratio	-0.05	n/a	n/a	n/a
					Sharpe Ratio (Index)	-0.03	n/a	n/a	n/a
					Excess Risk	6.57	n/a	n/a	n/a
					Information Ratio	-0.08	n/a	n/a	n/a
					Global Equity				
					Wellington (Global Equity)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	23.34	18.26	15.7	n/a
					Standard Deviation (Index)	22.92	16.88	14.42	n/a
					Sharpe Ratio	0.73	0.36	0.57	n/a
					Sharpe Ratio (Index)	0.40	0.32	0.62	n/a
					Excess Risk	2.91	3.45	3.27	n/a
					Information Ratio	2.46	0.36	0.00	n/a
Smith Graham (Mid-Cap)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>					
Standard Deviation	37.25	n/a	n/a	n/a					
Standard Deviation (Index)	29.14	n/a	n/a	n/a					
Sharpe Ratio	-0.32	n/a	n/a	n/a					
Sharpe Ratio (Index)	0.12	n/a	n/a	n/a					
Excess Risk	12.04	n/a	n/a	n/a					
Information Ratio	-1.24	n/a	n/a	n/a					
					Ariel (Global Equity)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	15.69	n/a	n/a	n/a
					Standard Deviation (Index)	22.92	n/a	n/a	n/a
					Sharpe Ratio	0.23	n/a	n/a	n/a
					Sharpe Ratio (Index)	0.40	n/a	n/a	n/a
					Excess Risk	9.98	n/a	n/a	n/a
					Information Ratio	-0.52	n/a	n/a	n/a
					Real Estate Investment Trusts				
					Adelante (REIT)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	22.65	17.25	15.36	15.19
					Standard Deviation (Index)	24.52	18.39	16.29	16.09
					Sharpe Ratio	-0.72	0.00	0.17	0.50
					Sharpe Ratio (Index)	-0.76	-0.07	0.16	0.46
					Excess Risk	2.81	2.08	2.04	1.88
					Information Ratio	1.02	0.61	0.00	0.10
					Global Low Volatility				
					Acadian (Global Low Volatility)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	19.75	13.89	12	n/a
					Standard Deviation (Index)	22.92	16.88	14.42	n/a
					Sharpe Ratio	-0.33	0.09	0.49	n/a
					Sharpe Ratio (Index)	0.40	0.32	0.62	n/a
					Excess Risk	4.44	5.53	5.42	n/a
					Information Ratio	-3.26	-0.69	-0.54	n/a
					Fixed Income (Core)				
					Securian (Core Fixed Income)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	8.06	5.16	4.29	3.61
					Standard Deviation (Index)	3.33	3.37	3.15	2.96
					Sharpe Ratio	0.50	0.60	0.76	1.04
					Sharpe Ratio (Index)	1.75	1.04	0.93	1.01
					Excess Risk	6.10	3.47	2.71	1.97
					Information Ratio	-0.28	-0.10	0.12	0.38
					Real Estate Investment Trusts				
					Centersquare (REIT)	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	23.86	n/a	n/a	n/a
					Standard Deviation (Index)	24.52	n/a	n/a	n/a
					Sharpe Ratio	-0.69	n/a	n/a	n/a
					Sharpe Ratio (Index)	-0.76	n/a	n/a	n/a
					Excess Risk	2.02	n/a	n/a	n/a
					Information Ratio	1.39	n/a	n/a	n/a



Manager Risk Statistics

High Yield Fixed Income					Fixed Income (Core)				
<u>BlackRock (High Yield)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Aberdeen (Core Fixed Income)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	13.43	8.44	7.18	6.41	Standard Deviation	5.43	4.17	3.70	3.35
Standard Deviation (Index)	14.92	9.24	8.10	7.09	Standard Deviation (Index)	3.33	3.37	3.15	2.96
Sharpe Ratio	0.21	0.33	0.68	0.85	Sharpe Ratio	1.46	0.99	0.96	1.04
Sharpe Ratio (Index)	0.10	0.23	0.64	0.77	Sharpe Ratio (Index)	1.75	1.04	0.93	1.01
Excess Risk	2.27	1.34	1.43	1.46	Excess Risk	2.99	1.88	1.56	1.37
Information Ratio	0.57	0.46	-0.22	0.01	Information Ratio	0.66	0.33	0.38	0.36
<u>Oaktree (High Yield)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Garcia Hamilton (Core Fixed Income)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	13.80	8.71	7.62	6.71	Standard Deviation	3.9	3.09	2.92	n/a
Standard Deviation (Index)	14.92	9.24	8.10	7.09	Standard Deviation (Index)	3.33	3.37	3.15	n/a
Sharpe Ratio	0.13	0.16	0.57	0.73	Sharpe Ratio	1.46	1.09	1.00	n/a
Sharpe Ratio (Index)	0.10	0.23	0.64	0.77	Sharpe Ratio (Index)	1.75	1.04	0.93	n/a
Excess Risk	1.80	1.09	1.01	1.06	Excess Risk	1.94	1.39	1.26	n/a
Information Ratio	0.17	-0.66	-0.79	-0.50	Information Ratio	-0.07	-0.10	-0.02	n/a
<u>Neuberger Berman (Credit Opps)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Master Limited Partnerships</u>				
Standard Deviation	17.76	10.49	n/a	n/a	<u>Harvest (MLP)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation (Index)	15.42	9.20	n/a	n/a	Standard Deviation	54.32	35.31	29.69	n/a
Sharpe Ratio	0.04	0.16	n/a	n/a	Standard Deviation (Index)	76.02	45.71	37.09	n/a
Sharpe Ratio (Index)	0.03	0.19	n/a	n/a	Sharpe Ratio	-0.68	-0.42	-0.27	n/a
Excess Risk	2.67	1.76	n/a	n/a	Sharpe Ratio (Index)	-0.64	-0.48	-0.34	n/a
Information Ratio	0.08	-0.07	n/a	n/a	Excess Risk	23.21	13.64	10.76	n/a
					Information Ratio	1.02	0.68	0.49	n/a
					<u>Atlantic Trust CIBC (MLP)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	62.41	39.00	32.67	26.43
					Standard Deviation (Index)	76.02	45.71	37.09	28.47
					Sharpe Ratio	-0.63	-0.43	-0.26	-0.03
					Sharpe Ratio (Index)	-0.64	-0.48	-0.34	-0.17
					Excess Risk	14.65	8.98	7.40	8.13
					Information Ratio	1.27	0.76	0.62	0.52



Manager Performance Objectives

Domestic Equity	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>Enhanced Index</u>				
T. Rowe Price (Net)	12.74	14.73	9.60	Mar-06
S&P 500 Index + 1%	13.40	15.28	10.19	Mar-06
<i>Net of Fee Value Added vs Objective</i>	-0.66	-0.55	-0.59	
S&P 500 Index	12.28	14.15	9.06	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>	0.46	0.58	0.54	
<u>Small Core - Active</u>				
Systematic Financial (Net)	-2.72	6.71	9.10	Jun-03
Russell 2000 Index + 1.25%	3.05	9.35	9.74	Jun-03
<i>Net of Fee Value Added vs Objective</i>	-5.77	-2.64	-0.64	
Russell 2000 Index	1.77	8.00	8.39	Jun-03
<i>Net of Fee Value Added vs Benchmark</i>	-4.49	-1.30	0.71	
<u>Small Value - Active</u>				
Channing Capital Management (Net) *	-3.27	4.27	2.98	Oct-13
Russell 2000 Value Index + 1.25%	-3.93	5.41	3.58	Oct-13
<i>Net of Fee Value Added vs Objective</i>	0.66	-1.14	-0.60	
Russell 2000 Value Index	-5.13	4.11	2.30	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>	1.86	0.16	0.69	
<u>Small Growth - Active</u>				
Redwood Investments (Net) *	7.48		9.20	Sep-16
Russell 2000 Growth Index + 1.50%	9.80		13.06	Sep-16
<i>Net of Fee Value Added vs Objective</i>	-2.32		-3.86	
Russell 2000 Growth Index	8.18		11.25	
<i>Net of Fee Value Added vs Benchmark</i>	-0.70		-2.04	
<u>Mid Cap Value - Active</u>				
Smith Graham Mid Cap Value (Net) *	--	--	-4.95	Dec-17
Russell Midcap Index + 2%	--	--	7.65	Dec-17
<i>Net of Fee Value Added vs Objective</i>			-12.60	
Russell Midcap Index	--	--	5.52	
<i>Net of Fee Value Added vs Benchmark</i>			-10.47	



Manager Performance Objectives

International Equity	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	
<u>Int'l Small Cap - Active</u>				
Acadian International (Net)	-0.66	8.23	8.06	Mar-89
Custom Benchmark + 2%	2.97	8.95	7.85	Mar-89
<i>Net of Fee Value Added vs Objective</i>	<i>-3.63</i>	<i>-0.72</i>	<i>0.21</i>	
Custom Benchmark	0.93	6.80		Mar-89
<i>Net of Fee Value Added vs Benchmark</i>	<i>-1.60</i>	<i>1.43</i>		
<u>Int'l Enhanced Index</u>				
AQR Capital Management (Net)	0.18	6.31	3.17	Mar-06
Custom Benchmark + 1.5%	2.68	7.83	4.19	Mar-06
<i>Net of Fee Value Added vs Objective</i>	<i>-2.50</i>	<i>-1.52</i>	<i>-1.02</i>	
Custom Benchmark	1.16	6.23	2.65	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.98</i>	<i>0.08</i>	<i>0.53</i>	
<u>Int'l Developed</u>				
Ativo International Developed (Net) *	--	--	-0.21	Dec-17
MSCI EAFE Index + 2%	--	--	1.77	
<i>Net of Fee Value Added vs Objective</i>			<i>-1.98</i>	
MSCI EAFE Index	--	--	-0.83	
<i>Net of Fee Value Added vs Benchmark</i>			<i>0.63</i>	
<u>Int'l Equity (Active)</u>				
Baillie Gifford (Net)	--	--	18.14	Mar-19
MSCI ACWI x-US (Net) + 2%	--	--	5.07	
<i>Net of Fee Value Added vs Objective</i>			<i>13.07</i>	
MSCI ACWI x-US (Net)	--	--	2.76	
<i>Net of Fee Value Added vs Benchmark</i>			<i>15.38</i>	
<u>Int'l Equity (Active)</u>				
Earnest Partners (Net) *	--	--	-2.03	Mar-19
MSCI ACWI x-US (Net) + 2%	--	--	5.07	
<i>Net of Fee Value Added vs Objective</i>			<i>-7.10</i>	
MSCI ACWI x-US (Net)	--	--	2.76	
<i>Net of Fee Value Added vs Benchmark</i>			<i>-4.79</i>	



Manager Performance Objectives

Global Equity	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>Global Equity - Active</u>				
Wellington (Net)	8.45	10.30	11.80	Aug-12
MSCI ACWI (Net) + 2%	9.27	12.51	11.55	Aug-12
<i>Net of Fee Value Added vs Objective</i>	<i>-0.82</i>	<i>-2.21</i>	<i>0.25</i>	
MSCI ACWI (Net)	7.12	10.30	9.35	Aug-12
<i>Net of Fee Value Added vs Benchmark</i>	<i>1.33</i>	<i>0.00</i>	<i>2.45</i>	
<u>Global Equity - Active</u>				
Ariel (Net) *	--	--	3.09	Dec-17
MSCI ACWI (Net) + 1.5%	--	--	7.22	
<i>Net of Fee Value Added vs Objective</i>			<i>-4.13</i>	
MSCI ACWI (Net)	--	--	5.63	
<i>Net of Fee Value Added vs Benchmark</i>			<i>-2.54</i>	
	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>Global Low Volatility - Active</u>				
Acadian Global Low Vol (Net)	3.01	7.10	5.99	Jun-15
MSCI ACWI (Net) + 2%	9.27	12.51	9.28	Jun-15
<i>Net of Fee Value Added vs Objective</i>	<i>-6.26</i>	<i>-5.41</i>	<i>-3.29</i>	
MSCI ACWI (Net)	7.12	10.30	7.73	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI</i>	<i>-4.11</i>	<i>-3.20</i>	<i>-1.74</i>	
MSCI ACWI Min Vol (Net)	5.75	6.94	6.94	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI Min Vol</i>	<i>-2.74</i>	<i>0.15</i>	<i>-0.95</i>	



Manager Performance Objectives

Real Estate	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>Real Estate Securities - Public</u>				
Adelante Capital Management (Net)	1.70	3.87	8.85	Sep-01
Wilshire Real Estate Securities + 1%	1.43	4.91	10.11	Sep-01
<i>Net of Fee Value Added vs Objective</i>	<i>0.27</i>	<i>-1.04</i>	<i>-1.26</i>	
Wilshire Real Estate Securities	0.42	3.87	9.02	Sep-01
<i>Net of Fee Value Added vs Index</i>	<i>1.27</i>	<i>-0.01</i>	<i>-0.16</i>	
<hr/>				
CenterSquare (Net)	--	--	2.72	May-18
Wilshire Real Estate Securities + 1%	--	--	2.00	May-18
<i>Net of Fee Value Added vs Objective</i>			<i>0.72</i>	
Wilshire Real Estate Securities	--	--	0.99	May-18
<i>Net of Fee Value Added vs Index</i>			<i>1.73</i>	



Manager Performance Objectives

Fixed Income	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>Global Fixed Income</u>				
Securian Asset Mgmt. (Net)	4.86	4.51	4.86	May-07
Bloomberg Aggregate + 0.5%	5.77	4.70	5.10	May-07
<i>Net of Fee Value Added vs Objective</i>	-0.91	-0.19	-0.24	
Bloomberg Aggregate	5.24	4.18	4.63	May-07
<i>Net of Fee Value Added vs Benchmark</i>	-0.38	0.33	0.23	
<hr/>				
Aberdeen (Net)	5.88	4.80	5.16	Apr-07
Bloomberg Aggregate + 0.5%	5.77	4.70	5.01	Apr-07
<i>Net of Fee Value Added vs Objective</i>	0.11	0.10	0.15	
Bloomberg Aggregate	5.24	4.18	4.49	Apr-07
<i>Net of Fee Value Added vs Benchmark</i>	0.64	0.62	0.67	
<hr/>				
Garcia Hamilton (Net)	5.10	4.15	4.18	Oct-13
Bloomberg Aggregate + 0.5%	5.77	4.70	4.42	Oct-13
<i>Net of Fee Value Added vs Objective</i>	-0.67	-0.55	-0.23	
Bloomberg Aggregate	5.24	4.18	3.90	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>	-0.14	-0.03	0.29	
<hr/>				
	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>High Yield</u>				
Oaktree Capital Management (Net)	3.09	5.62	6.32	Dec-96
Performance Objective	4.88	7.54	7.86	Dec-96
<i>Net of Fee Value Added vs Objective</i>	-1.79	-1.92	-1.54	
Custom Benchmark	3.84	6.48	6.68	Dec-96
<i>Net of Fee Value Added vs Benchmark</i>	-0.75	-0.86	-0.36	
<hr/>				
BlackRock High Yield (Net)	4.48	6.14	6.26	Sep-06
Citigroup High Yield Cash Pay + 1%	4.88	7.54	7.70	Sep-06
<i>Net of Fee Value Added vs Objective</i>	-0.40	-1.40	-1.44	
Citigroup High Yield Cash Pay	4.88	7.54	7.70	Sep-06
<i>Net of Fee Value Added vs Benchmark</i>	-0.39	-1.40	-1.44	
<hr/>				
<u>Credit Opportunities</u>				
Neuberger Berman (Net)	3.37		6.16	Jan-16
Custom Benchmark + 1%	4.54		7.50	Jan-16
<i>Net of Fee Value Added vs Objective</i>	-1.17		-1.34	
Custom Benchmark	3.50		6.44	Jan-16
<i>Net of Fee Value Added vs Benchmark</i>	-0.13		-0.28	



Manager Performance Objectives

MLP's	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<u>MLPs</u>				
Harvest Fund Advisors (Net)	-13.40	-6.90	-1.29	Dec-11
Alerian MLP Index + 1.5%	-19.52	-10.22	-5.02	Dec-11
<i>Net of Fee Value Added vs Objective</i>	6.12	3.32	3.73	
Alerian MLP Index	-20.75	-11.58	-7.10	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>	7.35	4.68	5.81	
<hr/>				
Atlantic Trust CIBC (Net)	-15.36	-7.55	-1.25	Dec-11
Alerian MLP Index + 1.5%	-19.52	-10.22	-5.02	Dec-11
<i>Net of Fee Value Added vs Objective</i>	4.16	2.67	3.77	
Alerian MLP Index	-20.75	-11.58	-7.10	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>	5.40	4.04	5.85	

DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

November 10, 2020

Issue: Redwood Investments

Attachments: None

Discussion: Redwood investment returns had underperformed their benchmark (the Russell 2000 Growth Index) for the 3-year period ending September 30, 2019. Our recommendation at that time was to place Redwood on watch for six months and then re-evaluate their performance. At the August 2020 Board meeting, staff requested a six-month extension of the watch period, as Redwood's performance had improved, but since inception returns were lagging.

We recommend keeping Redwood on watch until year-end 2020 and then re-evaluating their performance with the full year to observe.

Recommendation: Board update, no motion.

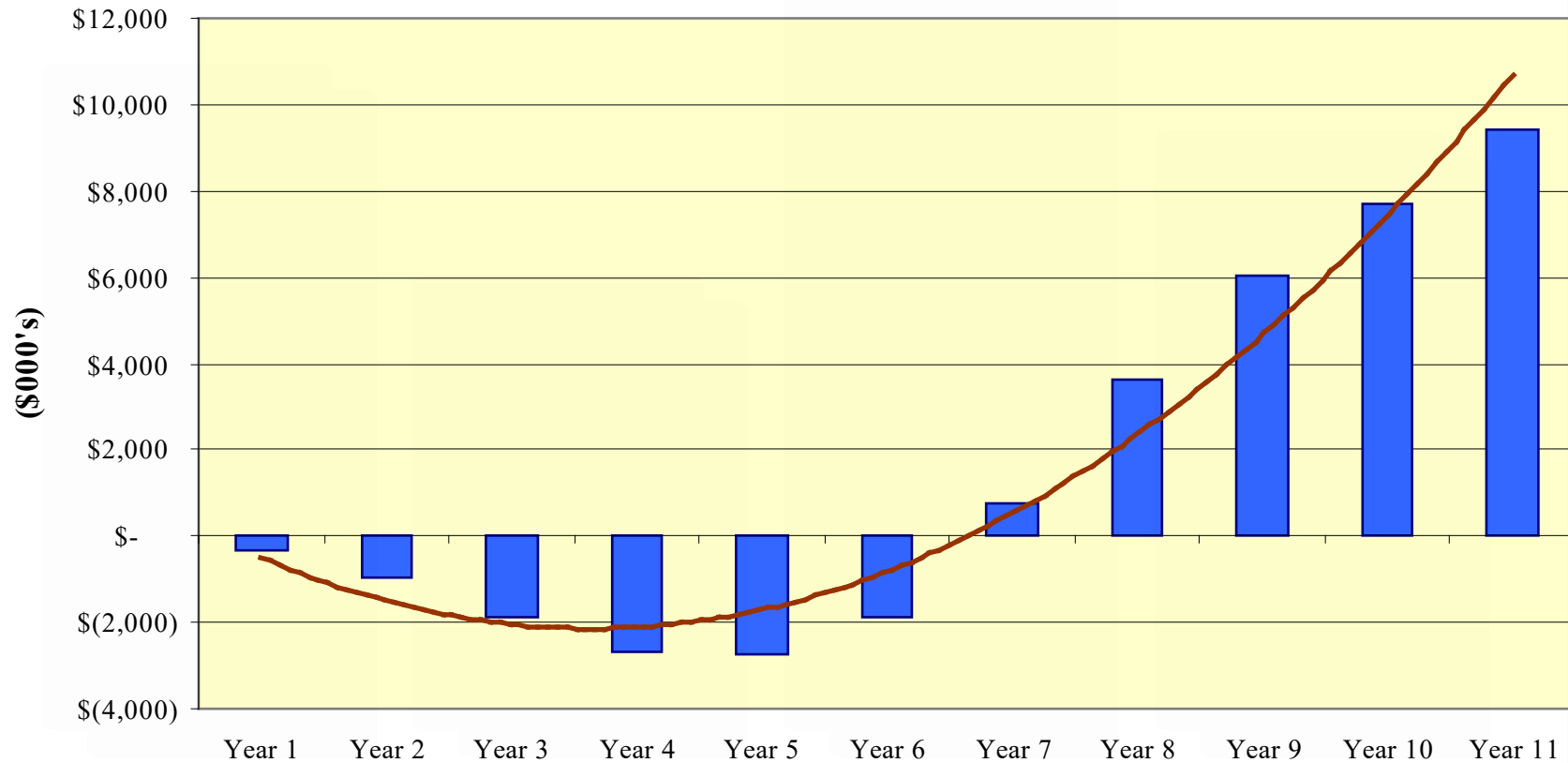
DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

November 10, 2020

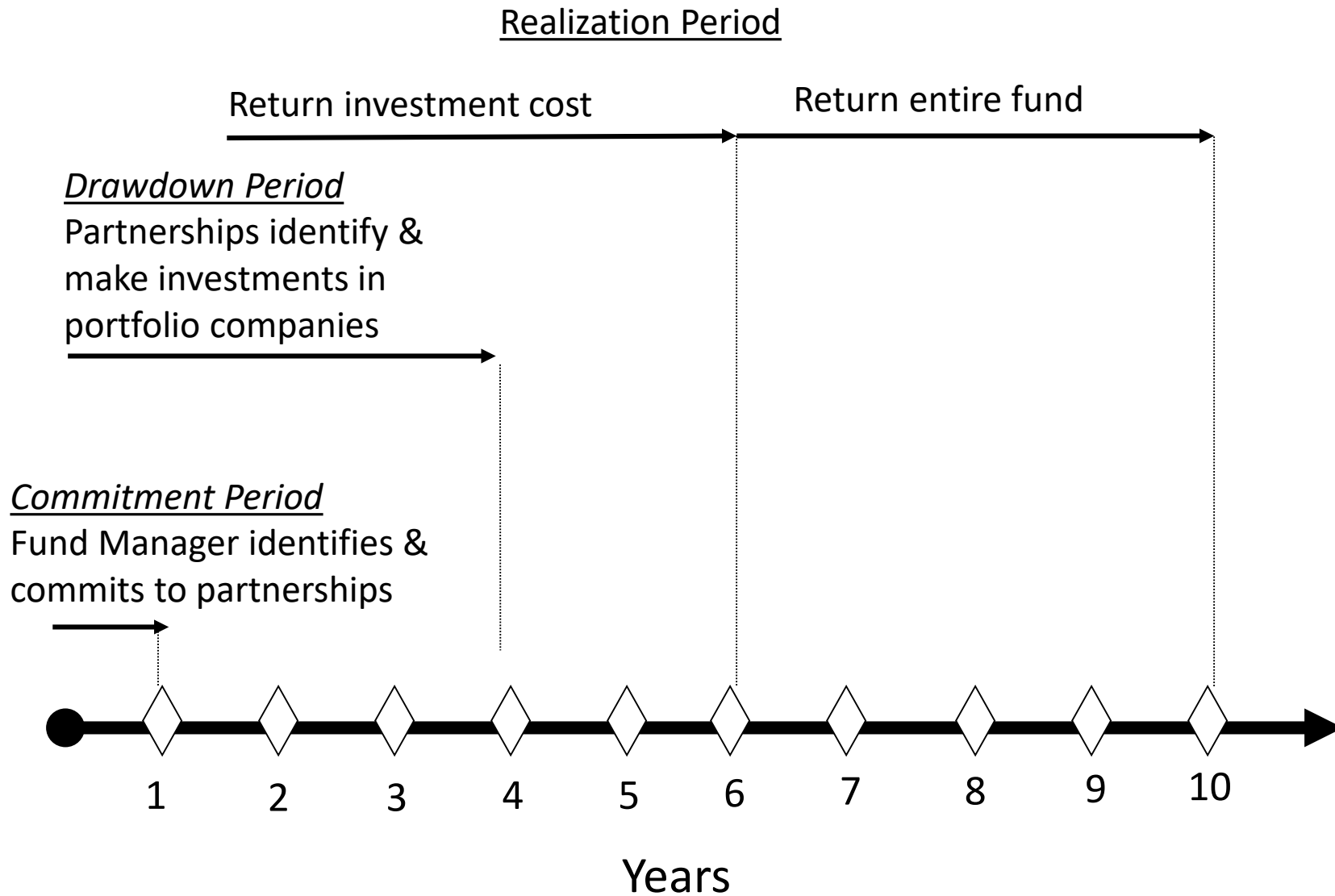
- Issue:** Private Equity Allocation
- Attachment:** Private Equity Pacing Analysis
- Discussion:** Each year ERF makes an allocation to private equity in order to maintain our 7.5% allocation to the asset class. Staff recommends a \$75 million allocation for 2020 to be equally split among our three private equity managers: Hamilton Lane; Grosvenor Capital Management; and Fairview Capital.
- Recommendation:** Approve the proposed investment manager allocation. Suggested motion for the approval is as follows:
Move to approve the private equity investment manager allocations as noted.

Expected Cumulative Value of a \$5 million commitment



- The investment cycle of a private equity investment is very long and exhibits a patten that is referred to as the 'J-Curve'

Illustrative Cash Flow Cycle



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Private Equity Overview

Private Equity Composite

	Total Commitment	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	25,297,247	84.3%	31,381,864	11,987,407	1.71	9.0%
Hamilton Lane Fund VII LP (Series B)	20,000,000	17,695,467	88.5%	12,699,820	8,817,014	1.22	0.2%
<i>Hamilton Lane Fund VII LP (Total)</i>	<i>50,000,000</i>	<i>42,992,714</i>	<i>86.0%</i>	<i>44,081,684</i>	<i>20,804,421</i>	<i>1.51</i>	<i>5.5%</i>
Hamilton Lane Secondary Fund II LP	25,000,000	22,848,181	91.4%	30,711,620	1,115,361	1.39	8.2%
Hamilton Lane Secondary Fund III LP	30,000,000	17,764,658	59.2%	21,996,355	7,711,787	1.67	15.7%
Hamilton Lane Secondary Fund IV LP	30,000,000	19,880,195	66.3%	7,567,635	22,735,479	1.52	16.4%
Hamilton Lane Secondary Fund V LP	40,000,000	6,019,890	15.0%	-	6,379,572	1.06	6.8%
Hamilton Lane Fund VIII LP (Global)	30,000,000	16,412,837	54.7%	7,526,711	19,119,143	1.62	7.8%
GCM Grosvenor - Partnership, L.P.	75,000,000	83,500,000	111.3%	89,500,000	38,793,465	1.54	13.6%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	65,100,000	108.5%	31,000,000	52,493,453	1.28	10.0%
GCM Grosvenor - Partnership II, L.P. (2015) - 1	20,000,000	20,700,000	103.5%	4,200,000	24,210,010	1.37	11.4%
GCM Grosvenor - Partnership II, L.P. (2015) - 2	10,000,000	9,200,000	92.0%	100,000	10,000,000	1.10	10.3%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	12,000,000	40.0%	500,000	12,069,097	1.05	-6.7%
Fairview Capital - Lone Star Fund I	40,000,000	33,773,848	84.4%	2,032,525	38,294,489	1.19	9.0%
Fairview Capital - Lone Star Fund II	30,000,000	6,717,692	22.4%	-	5,854,067	0.87	-12.2%
Total Private Equity Program	470,000,000	356,910,015	75.9%	239,216,530	259,580,344	1.40	10.9%

- Multiple calculation = (market value + distributions) / capital called
- Internal Rate of Return shown here is calculated by Wilshire based on cumulative cash flows and annualized since inception.

- \$25M to secondaries, \$25M to FoF, \$25M to CI in Q1 2021
- \$70M split evenly between secondaries and FoF in 2022 through 2025

Horizon Model Summary – Dallas ERF

	As of Q2 2020	2020 (Q3 & Q4)	2021	2022	2023	2024	2025
Annual Commitments (USD in millions)							
Private Equity Total	470	-	75	70	70	70	70
Annual Cash Flow (USD in millions)							
Capital Calls		8	33	44	42	52	58
Distributions		22	65	70	73	76	81
Cumulative Cash Flows (USD in millions)							
Capital Calls	372	380	413	457	500	551	610
Distributions	244	266	330	401	473	549	630
Private Equity Exposure (USD in millions)							
PE Market Value	256	257	249	252	252	258	265
Overall Plan Value*	3,428	3,513	3,689	3,873	4,067	4,271	4,484
PE as % of Plan Value	7.5%	7.3%	6.7%	6.5%	6.2%	6.0%	5.9%

As of June 30, 2020

*Assumes 5% annual growth rate

DISCUSSION SHEET

Employees' Retirement Fund Board of Trustees Meeting

November 10, 2020

Issue: Marketable Alternatives Manager Search Update

Attachment: None

Discussion: At the November 2019 Board meeting, ERF Trustees approved a 2.5% allocation to Marketable Alternatives.

Recently, ERF staff met with Wilshire to review both the updated asset class assumptions, and any impact these assumptions might have on the overall portfolio. After an extensive review, staff recommends moving forward with the fulfillment of the Marketable Alternatives allocation.

With Board approval, staff would issue the Marketable Alternatives Request for Proposal (RFP), review responses, and have managers selected for either on-site or virtual due diligence during the first quarter of 2021. Investment manager due diligence would be completed, and managers invited back for final presentations to the Board and selection during the second quarter, 2021.

Recommendation: Approve the issuance of the Marketable Alternatives RFP. Suggested motion for the approval is as follows:
Move to approve the issuance of the ERF Marketable Alternatives RFP.

2021 Dallas ERF Board Meeting Calendar

	January	February	March	April	May	June	July	August	September	October	November	December
2021 Board Calendar	NO BOARD MTG	9	NO BOARD MTG	13	11	8	NO BOARD MTG	NO BOARD MTG	14	NO BOARD MTG	NO BOARD MTG	14
Legal Counsel RFP (Locke Lord/Foster Pepper expires 3/17/22)									Legal Counsel RFP Issued			Due Diligence list
Master Custodian RFP (Northern Trust expires 5/31/22 Opt 1-year amendment)									Master Custodian RFP Issued			Due Diligence list
Quarterly Report - Wilshire		Wilshire 4th Quarter 2020 / Asset Allocation Assumptions			Wilshire 1st Quarter 2021				Wilshire 2nd Quarter 2021			Wilshire 3rd Quarter 2021 / Asset Allocation Education
2020 Actuarial Presentation				Preliminary Actuarial Presentation	Actuarial Presentation							
2019/2020 Financial (Grant Thornton Presentation)						Financial Presentation						Letter Agreement
2020 Comprehensive Annual Financial Report						2020 CAFR Presentation						
Cash Requirements and Rebalancing				Second Quarter					Third Quarter			Fourth Quarter
Strategic Plan/Budget						2021/2022 Budget						2022 Strategic Plan
Investment Manager Presentations (TBD)												
Contract Extensions/Addendums/Renewals												HUB Ins Renewal
Other		Board Election										Exec Director Performance Review
COLA												COLA

March - Council usually attends National League of Cities 2nd week/Council

July - Council Recess

August - Council Budget Workshop

October - Council usually attends Texas Municipal League of Cities

2022 DALLAS ERF BOARD MEETING CALENDAR

	January	February	March	April	May	June	July	August	September	October	November	December
2022 Board Calendar	NO BOARD MTG	8	NO BOARD MTG	12	10	14	NO BOARD MTG	NO BOARD MTG	13	NO BOARD MTG	NO BOARD MTG	13
Investment Manager RFP												
Master Custodian RFP (Northern Trust expires 5/31/22 Opt 1-year amendment)									Master Custodian RFP Issued			Due Diligence list
Outside Accountant Firm (STP expires 9/30/22)				Account Firm RFP Issued					Due Diligence list			Finals Presentation / Selection
Quarterly Report - Wilshire		Wilshire 4th Quarter 2021 / Asset Allocation Assumptions			Wilshire 1st Quarter 2022				Wilshire 2nd Quarter 2022			Wilshire 3rd Quarter 2022 / Asset Allocation Education
2021 Actuarial Presentation				Preliminary Actuarial Presentation	Actuarial Presentation							
2020/2021 Financial (Grant Thornton Presentation)						Financial Presentation						
2021 Comprehensive Annual Financial Report						2021 CAFR Presentation						
Cash Requirements and Rebalancing				Second Quarter					Third Quarter			Fourth Quarter
Strategic Plan/Budget						2022/2023 Budget						2023 Strategic Plan
Investment Manager Presentations (TBD)												
Contract Extensions/Addendums/Renewals												HUB Ins Renewal
Other		Board Election										Exec Director Performance Review
COLA												COLA

March - Council usually attends National League of Cities 2nd week/Council
 July - Council Recess
 August - Council Budget Workshop
 October - Council usually attends Texas Municipal League of Cities

ASSET ALLOCATION COMPARISON

October 31, 2020

	Market Value	% of Total Fund	Allocation Policy	% Difference from Allocation	Prior Period Market Value	Prior Period % of Total Fund
EQUITY						
CHANNING CAPITAL	31,482,000.39	0.94			30,235,742.11	0.89
REDWOOD- SL	33,783,402.94	1.01			39,125,147.38	1.15
SYSTEMATIC	59,825,011.96	1.79			57,620,979.73	1.70
<i>Total Small Cap</i>	125,090,415.29	3.74			126,981,869.22	3.75
SMITH GRAHAM	59,307,204.05	1.77			56,377,818.32	1.66
T. ROWE PRICE	129,673,532.38	3.88			132,904,047.56	3.92
<i>Total Domestic/Enhanced equity</i>	188,980,736.43	5.65			189,281,865.88	5.58
NTGI S&P 500 EQUITY INDEX	131,631,978.49	3.94			135,225,569.49	3.99
<i>Total Index</i>	131,631,978.49	3.94			135,225,569.49	3.99
<i>Total Domestic</i>	445,703,130.21	13.34	12.50	0.84	451,489,304.59	13.32
ADELANTE CAPITAL	68,287,279.11	2.04			69,843,898.16	2.06
CENTERSQUARE-SL	68,379,471.69	2.05			70,255,894.67	2.07
<i>Total REITS</i>	136,666,750.80	4.09	2.50	1.59	140,099,792.83	4.13
HEITMAN	81,721,117.36	2.45			81,900,000.03	2.42
INVESCO	70,819,354.00	2.12			70,892,342.00	2.09
INVESCO - SL	68,702,236.35	2.06			69,457,827.62	2.05
VALUE ADD REAL ESTATE	-	0.00			-	0.00
<i>Total Real Estate</i>	221,242,707.71	6.62	7.50	-0.88	222,250,169.65	6.56
FAIRVIEW CAPITAL	44,148,556.00	1.32			44,148,556.00	1.30
GROSVENOR GCM - CFGI	135,740,587.00	4.06			137,566,025.00	4.06
HAMILTON LANE	78,218,776.00	2.34			77,865,763.00	2.30
<i>Total Private Equity</i>	258,107,919.00	7.72	7.50	0.22	259,580,344.00	7.66
ACADIAN	99,348,813.41	2.97			105,593,088.36	3.12
AQR CAPITAL	113,036,148.04	3.38			116,096,590.09	3.42
ATIVO	33,585,572.11	1.00			35,292,303.99	1.04
BAILLIE GIFFORD	84,402,298.84	2.53			85,878,830.10	2.53
BLACKROCK ACW-EXUS-SL	0.62	0.00			0.62	0.00
EARNEST PARTNERS	75,552,198.01	2.26			76,383,992.97	2.25
GLOBAL TRANSITION ACCOUNT	940.39	0.00			940.39	0.00
<i>Total International</i>	405,925,971.42	12.15	12.50	-0.35	419,245,746.52	12.37
ARIEL	100,719,317.64	3.01			104,541,310.06	3.08
NORTHERN TRUST INTL EQ ACWI INDEX	20,883,425.23	0.62			21,336,085.65	0.63
WELLINGTON MGMT	116,058,681.78	3.47			118,284,205.59	3.49
<i>Total Global Equity</i>	237,661,424.65	7.11	7.50	-0.39	244,161,601.30	7.20
ACADIAN-LVG	197,276,124.21	5.90			202,716,762.16	5.98
BLACKROCK	204,437,007.70	6.12			209,931,765.85	6.19
<i>Total Global Low Volatility Equity</i>	401,713,131.91	12.02	12.50	-0.48	412,648,528.01	12.17
ATLANTIC TRUST	52,471,626.93	1.57			51,100,705.06	1.51
HARVEST FUND	52,722,640.20	1.58			51,539,758.04	1.52
COHEN & STEERS	55,945,068.09	1.67			-	0.00
<i>Total Global Listed Infrastructure</i>	161,139,335.22	4.82	5.00	-0.18	102,640,463.10	3.03
<i>Total Marketable Alternatives</i>	-	0.00	2.50	-2.50	-	0.00
TOTAL EQUITY	2,268,160,370.92	67.87	70.00	-2.13	2,252,115,950.00	66.44
FIXED INCOME						
ABERDEEN ASSET MGMT	219,738,830.12	6.57			220,818,951.98	6.51
GARCIA HAMILTON	67,334,488.01	2.01			67,557,479.67	1.99
SECURIAN ASSET MANAGEMENT	218,750,010.56	6.55			219,804,591.37	6.48
<i>Total Investment Grade</i>	505,823,328.69	15.13	15.00	0.13	508,181,023.02	14.99
NEUBERGER BERMAN	170,419,251.09	5.10			178,880,811.91	5.28
<i>Total Opportunistic Credit</i>	170,419,251.09	5.10	5.00	0.10	178,880,811.91	5.28
BLACKROCK-HY	170,340,548.24	5.10			175,814,787.94	5.19
OAKTREE	171,024,644.58	5.12			177,342,049.63	5.23
<i>Total High Yield</i>	341,365,192.82	10.21	10.00	0.21	353,156,837.57	10.42
CASH ACCOUNT	56,391,762.37	1.69			97,488,654.96	2.88
<i>Total Short Term</i>	56,391,762.37	1.69	0.00	1.69	97,488,654.96	2.88
TOTAL FIXED INCOME	1,073,999,534.97	32.13	30.00	2.13	1,137,707,327.46	33.56

TOTAL FUND \$ 3,342,159,905.89

\$ 3,389,823,277.46

Market Value YE 2019 \$ 3,650,917,064.60

Market Value Variance

Change from YE 2019: \$ (308,757,158.71)

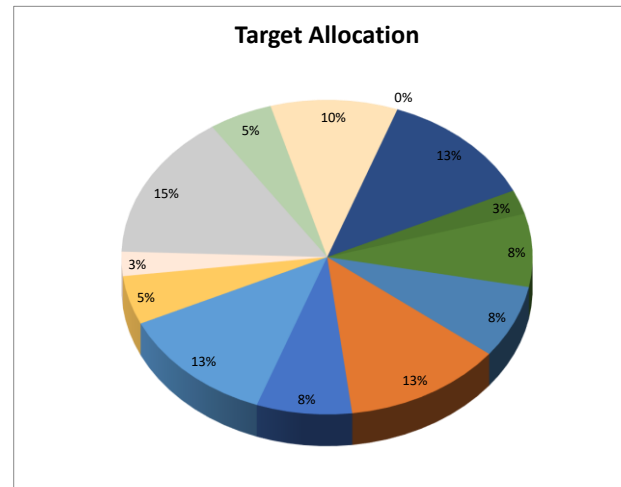
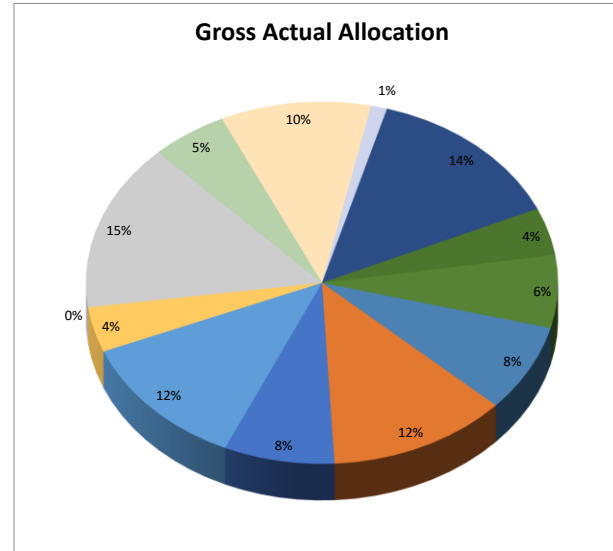
Change from prior month: \$ (47,663,371.57)

Asset Allocation: Actual vs. Target

October 31, 2020

	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
EQUITY				
CHANNING CAPITAL	31,482,000.39	0.94		
REDWOOD- SL	33,783,402.94	1.01		
SYSTEMATIC	59,825,011.96	1.79		
<i>Total Small Cap</i>	125,090,415.29	3.74		
SMITH GRAHAM	59,307,204.05	1.77		
T. ROWE PRICE	129,673,532.38	3.88		
<i>Total Domestic/Enhanced equity</i>	188,980,736.43	5.65		
NTGI S&P 500 EQUITY INDEX	131,631,978.49	3.94		
<i>Total Index</i>	131,631,978.49	3.94		
<i>Total Domestic</i>	445,703,130.21	13.34	12.50	0.84
ADELANTE CAPITAL	68,287,279.11	2.04		
CENTERSQUARE-SL	68,379,471.69	2.05		
<i>Total REITS</i>	136,666,750.80	4.09	2.50	1.59
HEITMAN	81,721,117.36	2.45		
INVESCO	70,819,354.00	2.12		
INVESCO - SA	68,702,236.35	2.06		
VALUE ADD REAL ESTATE				
<i>Total Real Estate</i>	221,242,707.71	6.62	7.50	-0.88
FAIRVIEW CAPITAL	44,148,556.00	1.32		
GROSVENOR GCM - CFG	135,740,587.00	4.06		
HAMILTON LANE	78,218,776.00	2.34		
<i>Total Private Equity</i>	258,107,919.00	7.72	7.50	0.22
ACADIAN	99,348,813.41	2.97		
AQR CAPITAL	113,036,148.04	3.38		
ATIVO	33,585,572.11	1.00		
BAILLIE GIFFORD	84,402,298.84	2.53		
BLACKROCK ACW-EXUS-SL	0.62	0.00		
EARNEST PARTNERS	75,552,198.01	2.26		
GLOBAL TRANSITION ACCOUNT	940.39	0.00		
<i>Total International</i>	405,925,971.42	12.15	12.50	-0.35
ARIEL	100,719,317.64	3.01		
NORTHERN TRUST INTL EQ ACWI INDEX	20,883,425.23	0.62		
WELLINGTON MGMT	116,058,681.78	3.47		
<i>Total Global Equity</i>	237,661,424.65	7.11	7.50	-0.39
ACADIAN-LVG	197,276,124.21	5.90		
BLACKROCK	204,437,007.70	6.12		
<i>Total Global Low Volatility Equity</i>	401,713,131.91	12.02	12.50	-0.48
ATLANTIC TRUST	52,471,626.93	1.57		
HARVEST FUND	52,722,640.20	1.58		
COHEN & STEERS	55,945,068.09	1.67		
<i>Total Global Listed Infrastructure</i>	161,139,335.22	4.82	5.00	-0.18
<i>Total Marketable Alternatives</i>	-	0.00	2.50	-2.50
TOTAL EQUITY	2,268,160,370.92	67.87	70.00	-2.13
FIXED INCOME				
ABERDEEN ASSET MGMT	219,738,830.12	6.57		
GARCIA HAMILTON	67,334,488.01	2.01		
SECURIAN ASSET MANAGEMENT	218,750,010.56	6.55		
<i>Total Investment Grade</i>	505,823,328.69	15.13	15.00	0.13
NEUBERGER BERMAN	170,419,251.09	5.10		
<i>Total Opportunistic Credit</i>	170,419,251.09	5.10	5.00	0.10
BLACKROCK-HY	170,340,548.24	5.10		
OAKTREE	171,024,644.58	5.12		
<i>Total High Yield</i>	341,365,192.82	10.21	10.00	0.21
CASH ACCOUNT	56,391,762.37	1.69		
<i>Total Short Term</i>	56,391,762.37	1.69	0.00	1.69
TOTAL FIXED INCOME	1,073,999,534.97	32.13	30.00	2.13

TOTAL FUND \$ 3,342,159,905.89



DISCUSSION SHEET

Employees' Retirement Fund
Board of Trustees Meeting

November 10th, 2020

- Issue:** Fourth Quarter & First Quarter Cash Rebalance
- Attachment:** None, informational purposes only
- Discussion:** During the month of May, ERF Staff rebalanced fund managers taking \$67 million in cash to pay benefits for the months of October, November, December, January, and February.
- Redemptions were as follows: \$20 million from Wellington; \$15 million from Baillie Gifford; \$9 million from Neuberger Berman; \$7 million from Oaktree; \$6 million from BlackRock; \$6 million from Redwood; and \$4 million from Acadian.



WILSHIRE ASSOCIATES

Wilshire Consulting



Employees' Retirement Fund of the City of Dallas

Monthly Investment Summary

October 31, 2020

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Global Equity Composite	-2.66	-0.54	0.84	6.76	4.97	7.58	8.41	9/1/2012	237,661,425	7.11
Global Low Volatility Composite	-2.65	-2.52	-9.23	-6.86	3.36	6.35	6.25	7/1/2015	401,713,132	12.02
Domestic Equity Composite	0.02	1.89	-2.31	4.29	6.15	9.42	9.82	1/1/1990	445,703,130	13.33
International Equity Composite	-2.20	0.66	-4.21	1.92	-0.12	5.17	5.29	1/1/1990	405,925,971	12.14
Global Fixed Income Composite	-0.46	-0.93	6.43	6.37	5.11	4.46	5.15	10/1/1995	505,823,329	15.13
High Yield Composite	-1.36	-1.12	-0.65	1.80	3.18	4.99	6.28	1/1/1997	341,365,193	10.21
Credit Opportunities Composite	0.31	0.65	-0.26	2.17	3.22		6.11	2/1/2016	170,419,251	5.10
Total Real Estate Composite	-1.16	-1.73	-7.59	-6.01	3.20	4.22	6.27	1/1/1990	356,928,695	10.68
MLP Composite	2.49	-6.78	-35.04	-32.23	-12.32	-8.32	-0.82	1/1/2012	105,194,267	3.15
Private Equity Composite	0.09	-2.25	-3.97	-1.84	8.30	8.62	12.04	6/1/2009	258,107,919	7.72
Managed Short Term Composite	0.01	0.03	0.65	0.92	1.66	1.20	2.87	1/1/1990	56,391,762	1.69
Global Public Infrastructure composite								11/1/2020	58,000,000	1.73
Dallas Total Fund	-1.02	-0.84	-4.46	-1.13	3.20	5.37	8.74	1/1/1985	3,343,234,074	100.00
Policy Index	-0.78	-0.63	-3.26	-0.11	3.82	5.57	9.35			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Systematic Financial	3.83	2.79	-15.58	-10.88	-2.33	6.47	9.29	8/1/2003	59,825,012	13.42
Russell 2000 Index	2.09	4.24	-6.77	-0.14	2.19	7.27	8.47			
Redwood Investments *	1.76	2.02	18.60	23.79	7.73		9.47	10/1/2016	33,783,403	7.58
Russell 2000 Growth Index	0.76	4.39	4.67	13.37	7.90		11.21			
Channing Capital *	4.12	3.02	-10.61	-4.52	-2.30	3.63	3.55	12/1/2013	31,482,000	7.06
Russell 2000 Value Index	3.58	4.08	-18.74	-13.92	-4.05	3.71	2.79			
Domestic Equity Small Cap Composite	3.28	2.63	-6.10	-0.85	0.37	6.60	8.57	6/1/2003	125,090,415	28.07

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Smith Graham * Russell Midcap Index	5.01 0.64	7.78 2.15	-16.74 -1.72	-9.31 4.12			-3.15 5.59	1/1/2018	59,307,204	13.31
T. Rowe Price S&P 500	-2.43 -2.66	0.21 0.37	3.25 2.77	10.28 9.71	10.78 10.42	12.27 11.71	9.36 8.80	4/1/2006	129,673,532	29.09
Northern Trust S&P 500 (Lending) S&P 500	-2.66 -2.66	0.22 0.37	2.63 2.77	9.56 9.71	10.39 10.42	11.70 11.71	10.03 9.99	1/1/1995	131,631,978	29.53
Domestic Equity Composite Custom Benchmark	0.02 -2.20	1.89 1.02	-2.31 3.22	4.29 10.18	6.15 10.09	9.42 11.59	9.82 10.11	1/1/1990	445,703,130	100.00

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Adelante Capital Management	-2.23	-5.41	-16.40	-18.08	1.05	2.37	8.68	10/1/2001	68,287,279	19.13
Wilshire U.S. Real Estate Securities Index	-2.47	-5.36	-18.91	-20.59	-0.12	2.16	8.83			
CenterSquare	-2.67	-5.26	-16.86	-18.96			1.48	6/1/2018	68,379,472	19.16
Wilshire U.S. Real Estate Securities Index	-2.47	-5.36	-18.91	-20.59			-0.08			
REIT Composite	-2.45	-5.33	-16.63	-18.53	1.18	2.32	8.78	10/1/2001	136,666,751	38.29
Wilshire U.S. Real Estate Securities Index	-2.47	-5.36	-18.91	-20.59	-0.12	2.16	8.83			
Heitman America Real Estate Trust, LP	0.00	0.94	-3.44	-4.42	2.01	4.53	8.99	12/1/2010	81,155,154	22.74
NCREIF ODCE NOF	0.00	0.27	-0.74	0.52	4.25	5.69	9.34			
Invesco Core Real Estate USA, LLC	0.00	-0.28	-3.18	-0.95	4.93	6.52	9.73	12/1/2010	68,287,436	19.13
NCREIF ODCE NOF	0.00	0.27	-0.74	0.52	4.25	5.69	9.34			
Private Core Real Estate Composite	-0.35	0.63	-1.09	3.82	4.41	5.31	8.93	10/1/2010	220,261,944	61.71
Custom Benchmark	-0.24	0.47	0.91	5.60	5.07	5.46	8.53			
Total Real Estate Composite	-1.16	-1.73	-7.59	-6.01	3.20	4.22	6.27	1/1/1990	356,928,695	100.00
Custom Benchmark	-1.35	-2.46	-8.70	-7.54	2.95	4.17	8.16			

Employees' Retirement Fund of the City of Dallas
Private Equity & Direct Private Real Estate Monthly Performance and Market Value Summary



Periods Ended 10/31/20

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple ³
Invesco II	70,819,354	65,188,333	65,188,333	7,276,276	Jan-14	4.5%	1.2
Total Direct Private Real Estate	70,819,354	65,188,333	65,188,333	7,276,276	Jan-14	4.5%	1.2

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple ³
Hamilton Lane Secondary Fund II	1,115,361	25,000,000	22,848,181	30,711,620	Jul-09	8.2%	1.4
Hamilton Lane Secondary Fund III	7,711,787	30,000,000	17,764,658	21,996,355	Nov-12	15.6%	1.7
Hamilton Lane Secondary Fund IV	22,735,479	30,000,000	19,880,195	7,567,635	Mar-17	15.7%	1.5
Hamilton Lane Secondary Fund V	6,379,572	40,000,000	6,019,890	-	Mar-20	6.6%	1.1
Hamilton Lane Fund VII Composite	20,804,421	50,000,000	42,992,714	44,081,684	Jan-10	5.5%	1.5
Hamilton Lane Fund VIII (Global)	19,472,156	30,000,000	16,412,837	7,526,711	Nov-12	8.0%	1.6
GCM Grosvenor - Partnership, L.P.	38,793,465	75,000,000	83,500,000	93,868,373	Jun-11	13.6%	1.6
GCM Grosvenor - Partnership II, L.P. (2014)	52,016,136	60,000,000	65,100,000	31,477,186	Jul-14	10.0%	1.3
GCM Grosvenor - Partnership II, L.P. (2015) - 1	22,903,660	20,000,000	20,766,221	5,440,363	Dec-15	11.4%	1.4
GCM Grosvenor - Partnership II, L.P. (2015) - 2	10,000,000	10,000,000	9,200,000	100,000	Dec-15	10.3%	1.1
GCM Grosvenor - Partnership II, L.P. (2017)	12,027,326	30,000,000	12,000,000	541,771	Jan-18	-6.7%	1.0
Fairview Capital - Lone Star Fund I	38,294,489	40,000,000	33,773,848	2,032,525	Aug-15	8.7%	1.2
Fairview Capital - Lone Star Fund II	5,854,067	30,000,000	6,717,692	-	Dec-18	-11.1%	0.9
Total Private Equity Composite	258,107,919	470,000,000	356,976,236	245,344,222	Jul-09	10.7%	1.4

Public Market Equivalent (PME) ²

366,311,686

16.0%

* Next Generation Manager

¹ Total Value to Paid-in Capital ("TVPI") multiple calculation = $(\text{market value} + \text{distributions}) / \text{capital called}$

² The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

³ Private Equity cash account

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees							Allocation		
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Acadian International Custom Benchmark	-2.15 -2.66	1.92 2.44	-5.47 -6.20	1.77 0.07	-2.01 -0.58	6.44 5.01	7.96 5.62	4/1/1989	99,348,813	24.47
Ativo International * MSCI EAFE Index (Net)	-4.83 -3.99	-2.69 -1.68	-11.58 -10.80	-7.65 -6.86			-1.93 -2.22	1/1/2018	33,585,572	8.27
AQR Capital Management Custom Benchmark	-2.53 -2.15	0.23 -0.47	-4.44 -7.47	1.20 -2.61	-1.37 -0.19	4.40 4.26	2.97 2.48	4/1/2006	113,036,148	27.85
Baillie Gifford MSCI AC World ex USA (Net)	-1.72 -2.15	1.68 -0.47	7.87 -7.47	15.55 -2.61			15.84 1.21	4/1/2019	84,402,299	20.79
Earnest Partners MSCI AC World ex USA (Net)	-1.09 -2.15	-0.11 -0.47	-12.61 -7.47	-7.20 -2.61			-2.60 1.21	4/1/2019	75,552,198	18.61
BlackRock ACWI Ex U.S.									1	0.00
International Equity Composite Custom Benchmark	-2.20 -2.22	0.66 -0.10	-4.21 -7.31	1.92 -2.26	-0.12 -0.25	5.17 4.36	5.29 4.30	1/1/1990	405,925,971	100.00

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Ariel Global *	-3.66	-2.93	-5.89	-0.59			1.65	1/1/2018	100,719,318	42.38
MSCI AC World Index (Net)	-2.43	0.20	-1.09	4.89			4.55			
Wellington	-1.88	1.22	6.98	13.44	6.75	8.20	11.42	9/1/2012	116,058,682	48.83
MSCI AC World Index (Net)	-2.43	0.20	-1.09	4.89	5.52	8.11	8.93			
Northern Trust Global Equity	-2.12	0.79	-1.20	4.84	5.56	8.43	9.85	10/1/2015	20,883,425	8.79
MSCI AC World IMI (Net)	-2.17	0.54	-1.70	4.32	4.99	7.91	9.33			
Global Equity Composite	-2.66	-0.54	0.84	6.76	4.97	7.58	8.41	9/1/2012	237,661,425	100.00
MSCI AC World Index (Net)	-2.43	0.20	-1.09	4.89	5.52	8.11	8.93			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Acadian Global Low Vol.	-2.68	-3.30	-11.58	-8.71	1.79	5.35	5.36	7/1/2015	197,276,124	49.11
MSCI AC World Index (Net)	-2.43	0.20	-1.09	4.89	5.52	8.11	7.11			
MSCI ACWI Minimum Volatility Index (Net)	-2.62	-1.86	-6.02	-4.25	4.91	7.09	6.88			
BlackRock Global Low Vol.	-2.63	-1.76	-6.84	-4.99	4.92	7.33	7.14	7/1/2015	204,437,008	50.89
MSCI ACWI Minimum Volatility Index (Net)	-2.62	-1.86	-6.02	-4.25	4.91	7.09	6.88			
Global Low Volatility Composite	-2.65	-2.52	-9.23	-6.86	3.36	6.35	6.25	7/1/2015	401,713,132	100.00
MSCI ACWI Minimum Volatility Index (Net)	-2.62	-1.86	-6.02	-4.25	4.91	7.09	6.88			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Atlantic Trust CIBC	2.68	-7.81	-36.09	-33.32	-13.26	-8.57	-0.95	1/1/2012	52,471,627	49.88
Alerian MLP Index	4.38	-9.37	-43.80	-42.52	-18.47	-12.46	-6.58			
Harvest Fund Advisors MLP	2.30	-5.78	-34.05	-31.19	-11.47	-8.13	-1.03	1/1/2012	52,722,640	50.12
Alerian MLP Index	4.38	-9.37	-43.80	-42.52	-18.47	-12.46	-6.58			
MLP Composite	2.49	-6.78	-35.04	-32.23	-12.32	-8.32	-0.82	1/1/2012	105,194,267	100.00
Alerian MLP Index	4.38	-9.37	-43.80	-42.52	-18.47	-12.46	-6.58			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Securian Asset Management	-0.48	-1.05	4.39	4.35	4.62	4.40	4.79	7/1/2007	218,750,011	43.25
Blmbg. Barc. U.S. Aggregate	-0.45	-1.30	6.32	6.19	5.07	4.08	4.57			
Aberdeen Global Fixed Income	-0.49	-0.85	8.45	8.38	5.64	4.63	5.09	5/1/2007	219,738,830	43.44
Blmbg. Barc. U.S. Aggregate	-0.45	-1.30	6.32	6.19	5.07	4.08	4.43			
Garcia Hamilton *	-0.33	-0.80	6.51	6.42	4.96	4.10	4.08	11/1/2013	67,334,488	13.31
Blmbg. Barc. U.S. Aggregate	-0.45	-1.30	6.32	6.19	5.07	4.08	3.78			
Global Fixed Income Composite	-0.46	-0.93	6.43	6.37	5.11	4.46	5.15	10/1/1995	505,823,329	100.00
Blmbg. Barc. U.S. Aggregate	-0.45	-1.30	6.32	6.19	5.07	4.08	5.27			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Neuberger Berman	0.31	0.65	-0.26	2.17	3.22		6.11	2/1/2016	170,419,251	
Custom Benchmark	0.21	0.45	-0.27	1.75	3.42		6.37			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees							Allocation		
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Oaktree Capital Management	0.39	0.83	0.80	3.12	3.12	5.09	6.52	2/1/1997	171,024,645	50.10
FTSE High Yield Cash Pay	0.45	0.32	0.28	2.87	3.86	5.95	6.67			
BlackRock	-3.11	-3.10	-2.15	0.45	3.22	4.87	5.99	10/1/2006	170,340,548	49.90
FTSE High Yield Cash Pay	0.45	0.32	0.28	2.87	3.86	5.95	6.63			
High Yield Composite	-1.36	-1.12	-0.65	1.80	3.18	4.99	6.28	1/1/1997	341,365,193	100.00
FTSE High Yield Cash Pay	0.45	0.32	0.28	2.87	3.86	5.95	6.68			

Asset Allocation & Performance

Dallas Total Fund

Periods Ended October 31, 2020

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
C&S Global Listed Infrastructure FTSE Global Core Infrastructure 50/50 (Net)								10/1/2020	58,000,000	

At A Glance

For period ended October 31, 2020

	2019		2020	
	This Month	YTD	This Month	YTD
Retirements				
Age	19	210	20	161
Service	0	20	1	20
Rule of 78	4	96	3	81
QDRO	0	6	0	6
Total	23	332	24	268
Disability Retirements				
Service	0	2	0	0
Non-service	0	1	0	3
Total	0	3	0	3
Benefits Paid	\$ 23,956,990.06	\$ 230,607,071.39	\$ 24,346,858.81	\$ 239,046,996.44
Refunds	\$ 1,102,468.30	\$ 8,882,284.07	\$ 540,790.02	\$ 5,551,974.65
Number of refunds	72	622	38	369
*Contributions	\$ 9,187,444.35	\$ 101,172,510.68	\$ 9,058,752.16	\$ 100,562,763.35

Members on record at month end			
	Retirees & beneficiaries		
	Retirees & beneficiaries	Disabilities	Actives
Jan	7,400	161	7,438
Feb	7,414	161	7,441
Mar	7,445	156	7,461
April	7,446	156	7,495
May	7,446	156	7,541
June	7,469	156	7,508
July	7,473	155	7,461
Aug	7,499	152	7,424
Sep	7,509	153	7,341
Oct	7,522	153	7,295
Nov			
Dec			