



WILSHIRE ASSOCIATES

Wilshire Consulting



Grand Rapids Police and Fire Retirement

Quarterly Investment Performance Summary

December 31, 2019

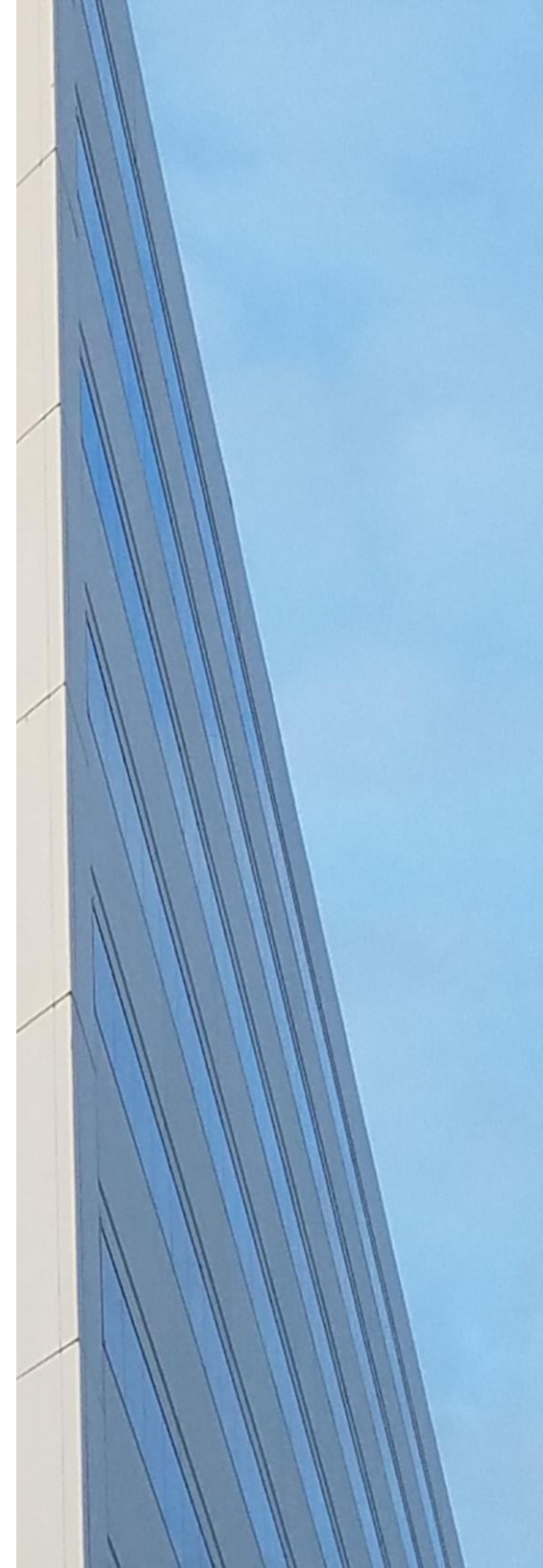
Wilshire Consulting
Contents

Capital Market Review

Tab 1

Investment Performance

Tab 2



38th Annual Client Conference

Sunday, April 5th – Tuesday, April 7th

The Ritz-Carlton
Marina del Rey, California



Designed to review the current market environment, propose thought-leading investment strategies, and provide networking opportunities for our clients.



CAPITAL MARKET REVIEW

ASSET CLASS PERFORMANCE

ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 12/2019
2014	2015	2016	2017	2018	2019 YTD	
REITs 31.8%	REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 11.4%
U.S. Equity 12.7%	U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	REITs 6.9%
Core Bond 6.0%	Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	Developed 6.2%
MLPs 4.8%	T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	High Yield 6.1%
U.S. TIPS 3.6%	Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	Emrg Mrkts 6.0%
High Yield 2.5%	U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	Core Bond 3.1%
T-Bills 0.0%	High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	U.S. TIPS 2.6%
Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	Commodities 7.7%	T-Bills 1.1%
Developed -4.5%	Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -13.4%	MLPs 6.6%	Commodities -3.9%
Commodities -17.0%	MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 2.3%	MLPs -7.0%

Data sources: Wilshire Compass

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

MARKET COMMENTARY

U.S. Equity

The U.S. stock market was up 9.1% for the fourth quarter of 2019 and 31.0% for the full year. This marks the strongest year for U.S. equities since 2013. In December, the U.S. and China agreed to terms on a “Phase One” trade deal that is reported to reduce U.S. tariffs and increase Chinese purchases of some U.S. products.

The year 2019 was a sensational year for investing. U.S. equities were as strong as they have been in six years – while international equities also produced double-digit returns. U.S. core bonds were even more remarkable with returns not seen since 2002. Of course, the important question is what can we expect from here? The curve is no longer inverted so there is some reward for taking duration risk. The equity risk premium is higher than what is typical but the absolute equity forecast is still quite depressed.

Non-U.S. Equity

News out of Britain is mixed with notable economic weakness in the manufacturing and services sectors. However, consumer sentiment surveys are improving after a fourth-quarter election resulted in strong support for a pro-Brexit government. Japan experienced its fourth consecutive quarter of expansion during 2019, while also beating forecasts. China benefitted from good news on the trade front although the country’s economic growth has cooled to near 30-year lows.

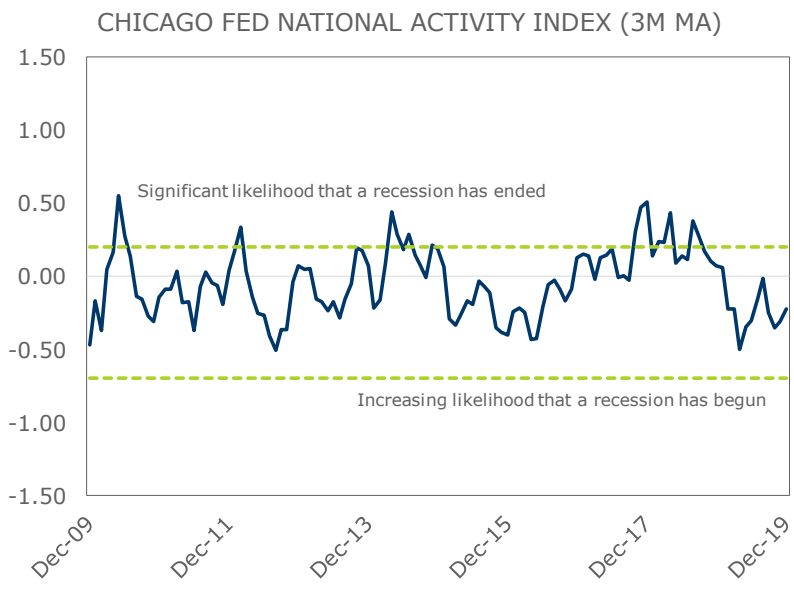
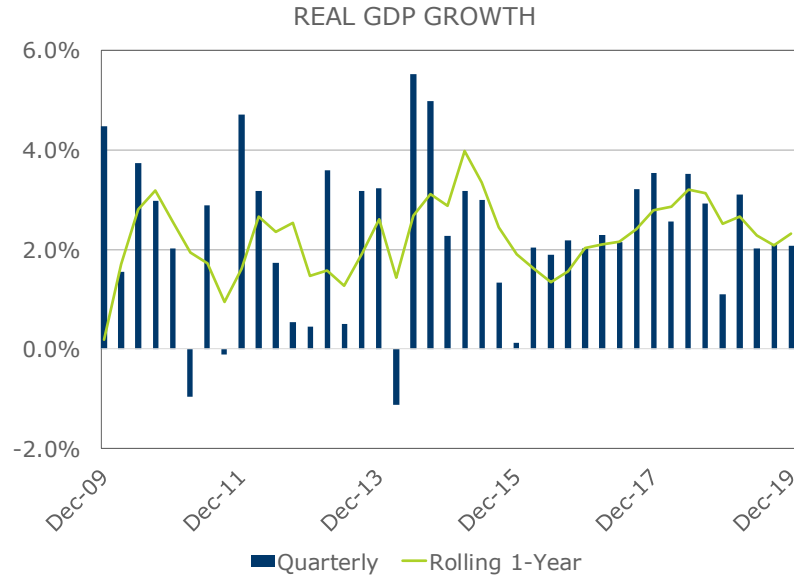
Fixed Income

The U.S. Treasury yield curve fell in the short portion of the curve but rose across intermediate and long-term maturities. The FOMC decreased its overnight rate by 0.25% at the October meeting. The committee members are nearly unanimous about not changing rates at all during 2020.

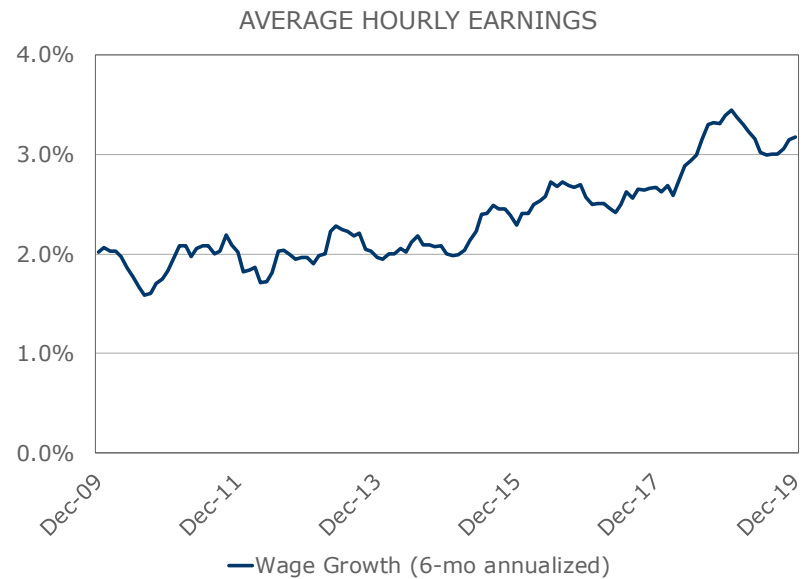
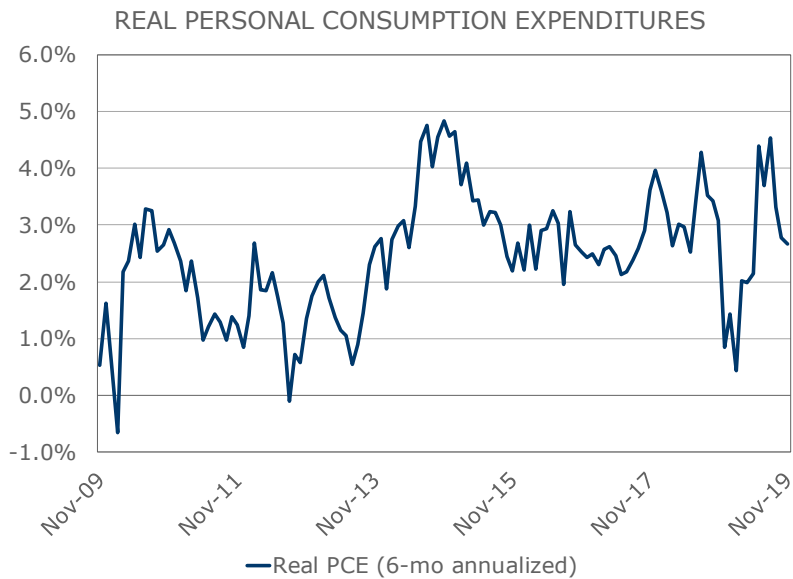
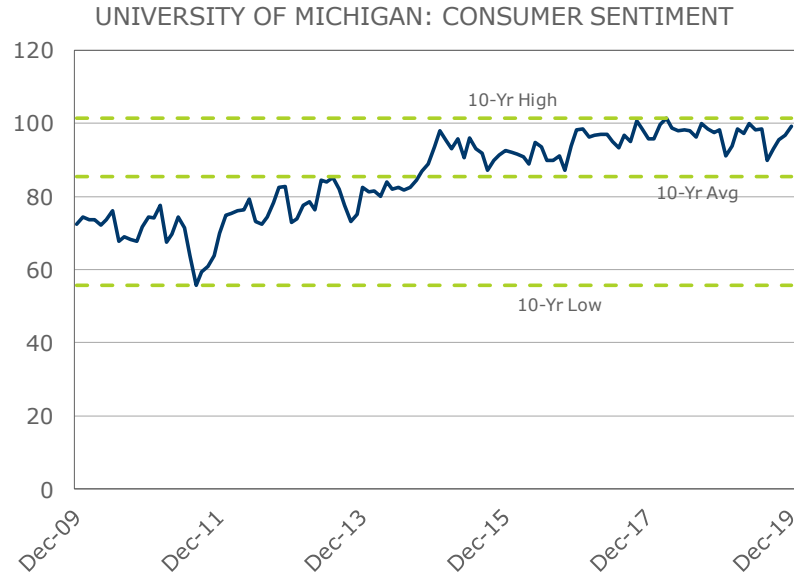
DECEMBER 2019 ASSET CLASS ASSUMPTIONS

	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 (%)	5.75	6.25	6.25	6.50	6.20	7.95	1.85	2.85	3.25	2.15	4.30	1.05	5.00	5.20	6.60	3.60	5.90	1.75
ARITHMETIC RETURN (%)	7.05	7.70	9.20	8.10	7.55	11.30	1.85	3.00	3.70	2.35	4.75	1.10	6.35	6.35	7.50	4.65	6.25	1.75
EXPECTED RISK (%)	17.00	18.00	26.00	18.95	17.10	28.00	1.25	5.15	9.85	6.00	10.00	3.50	17.00	15.80	14.00	15.00	8.75	1.75
CASH YIELD (%)	1.75	3.25	2.50	3.05	2.30	0.00	1.85	3.10	4.30	2.45	7.80	1.70	3.70	3.70	2.55	1.85	2.50	0.00
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

ECONOMIC GROWTH

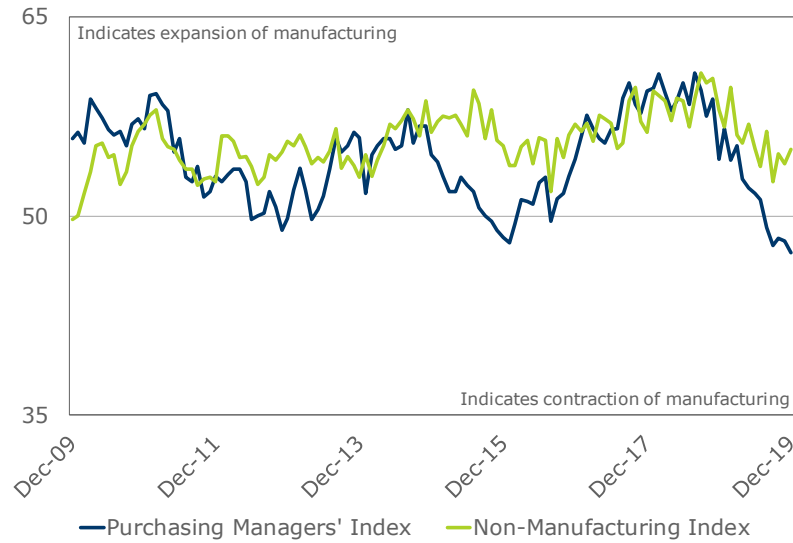


CONSUMER ACTIVITY

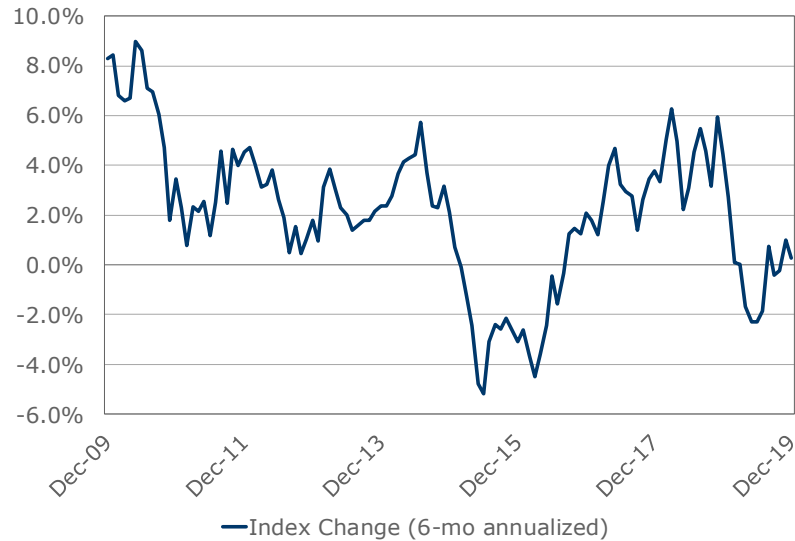


BUSINESS ACTIVITY

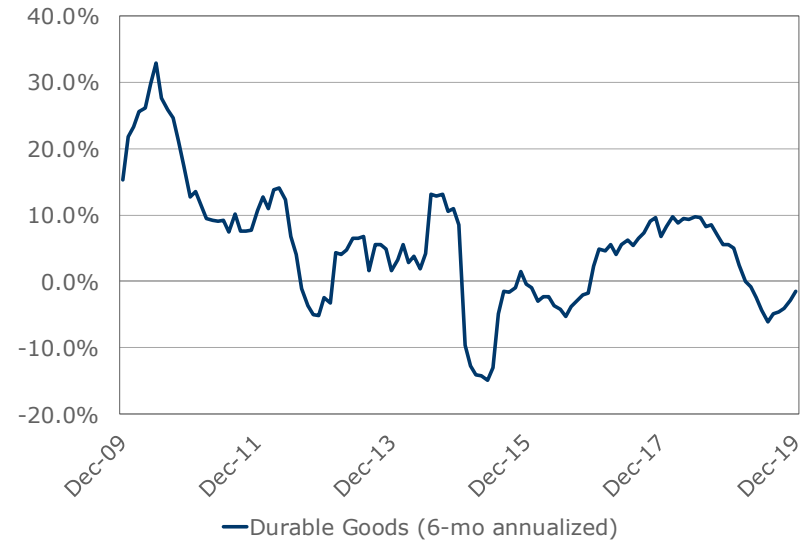
ISM REPORT ON BUSINESS



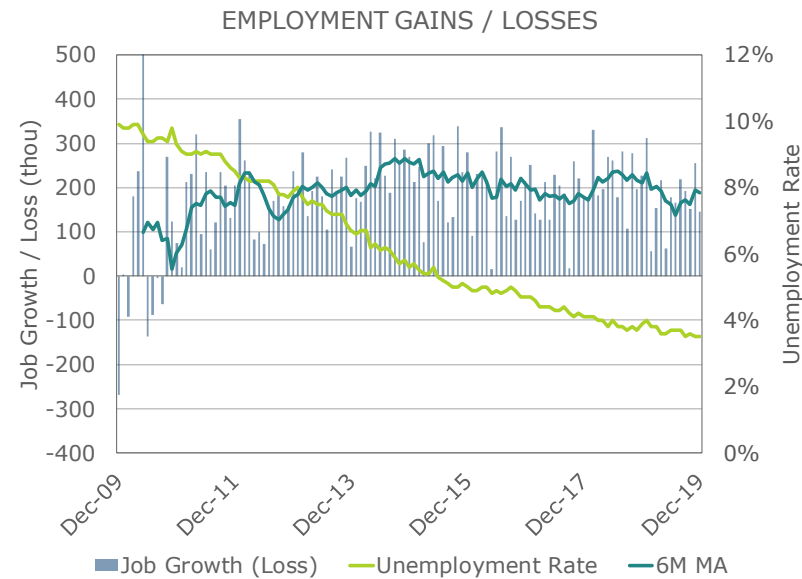
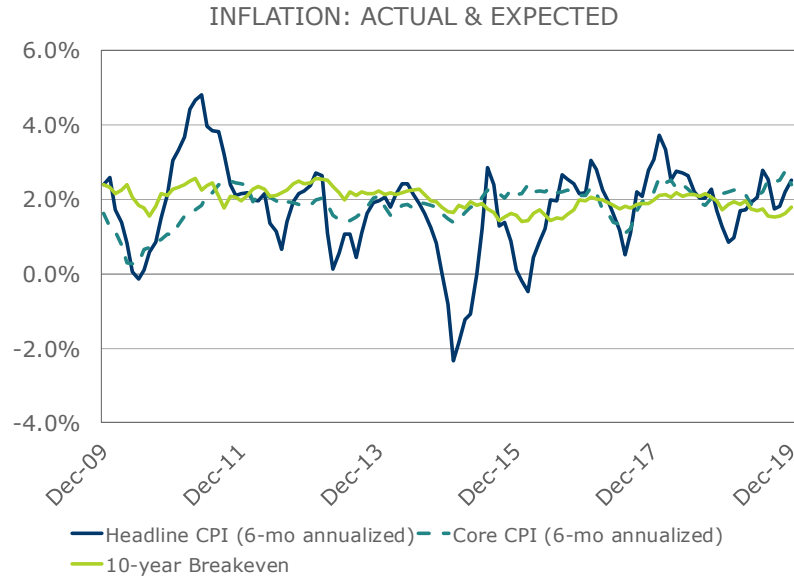
INDUSTRIAL PRODUCTION INDEX



DURABLE GOODS NEW ORDERS



INFLATION AND EMPLOYMENT

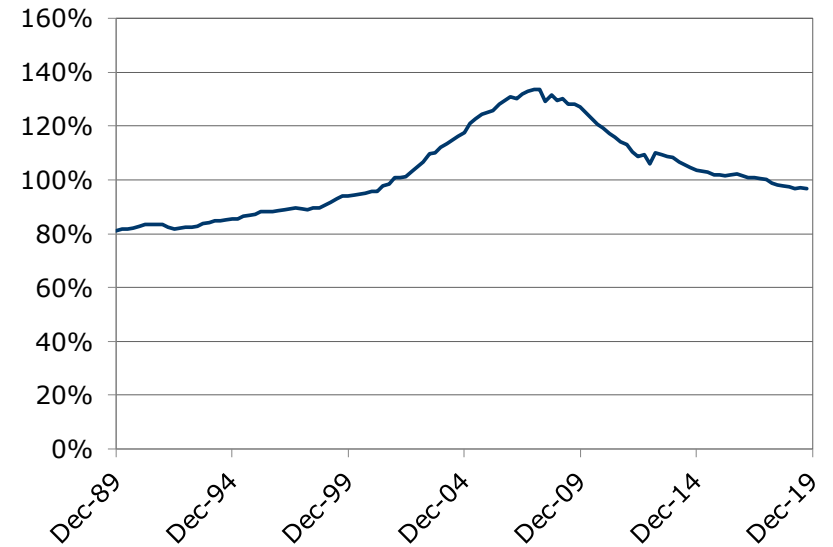


HOUSEHOLD DEBT

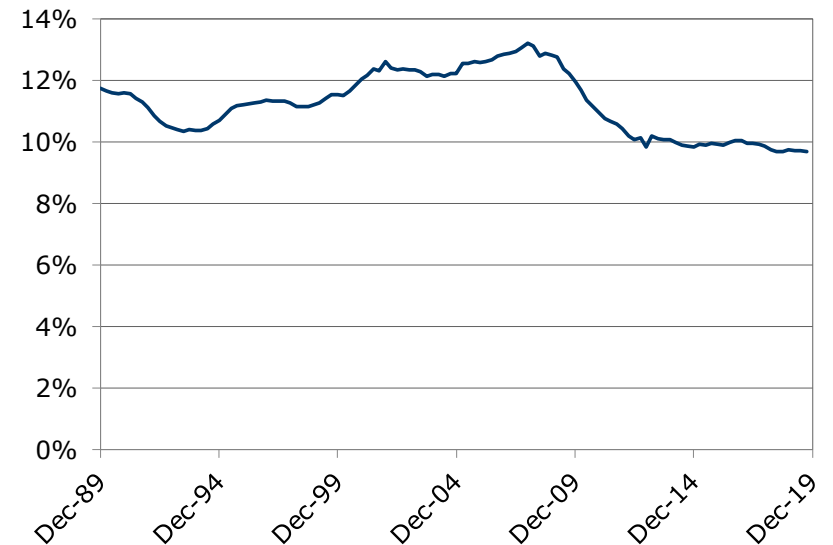
- Consumers continue to improve their outstanding debt conditions, now holding less debt than their disposable personal income

- Service payments – the amount necessary to pay interest and principal on outstanding debt – are as low as they have been in decades, again as a percent of disposable income

HH DEBT / DISPOSABLE INCOME



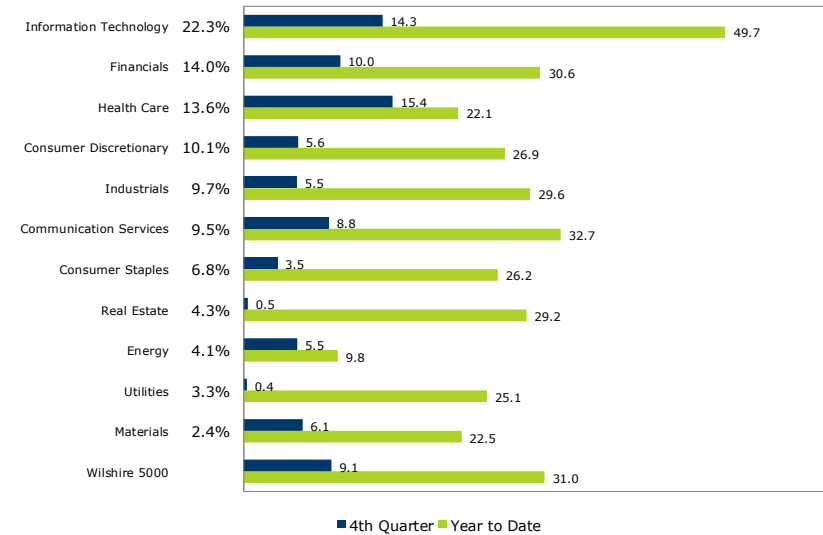
SERVICE PAYMENTS / DISPOSABLE INCOME



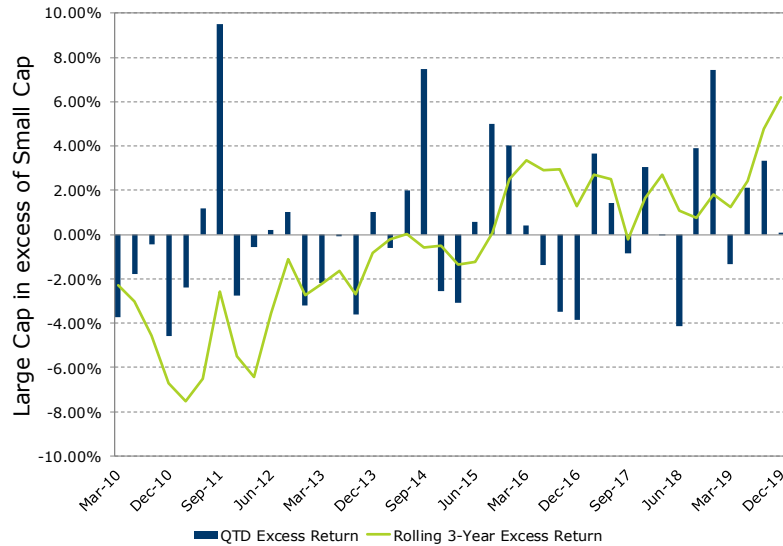
U.S. EQUITY MARKET

AS OF DEC 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	9.1	31.0	31.0	14.5	11.4	13.4
WILSHIRE U.S. LARGE CAP	9.1	31.5	31.5	15.2	11.7	13.5
WILSHIRE U.S. SMALL CAP	9.0	26.2	26.2	8.5	8.3	12.6
WILSHIRE U.S. LARGE GROWTH	11.2	35.8	35.8	18.7	13.5	14.5
WILSHIRE U.S. LARGE VALUE	7.1	27.7	27.7	11.8	9.9	12.6
WILSHIRE U.S. SMALL GROWTH	10.1	29.5	29.5	11.8	9.1	13.3
WILSHIRE U.S. SMALL VALUE	8.0	23.1	23.1	5.2	7.3	11.7
WILSHIRE REIT INDEX	-1.1	25.8	25.8	7.6	6.9	11.9
MSCI USA MIN. VOL. INDEX	2.9	27.1	27.1	14.9	11.8	13.5
FTSE RAFI U.S. 1000 INDEX	8.3	28.0	28.0	11.0	9.4	12.9

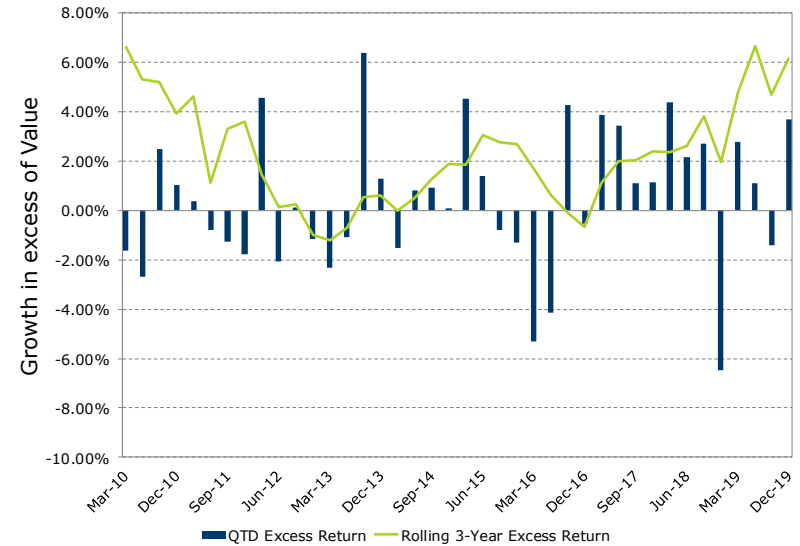
WILSHIRE 5000 SECTOR WEIGHT & RETURN (%)



LARGE CAP VS SMALL CAP



GROWTH VS VALUE



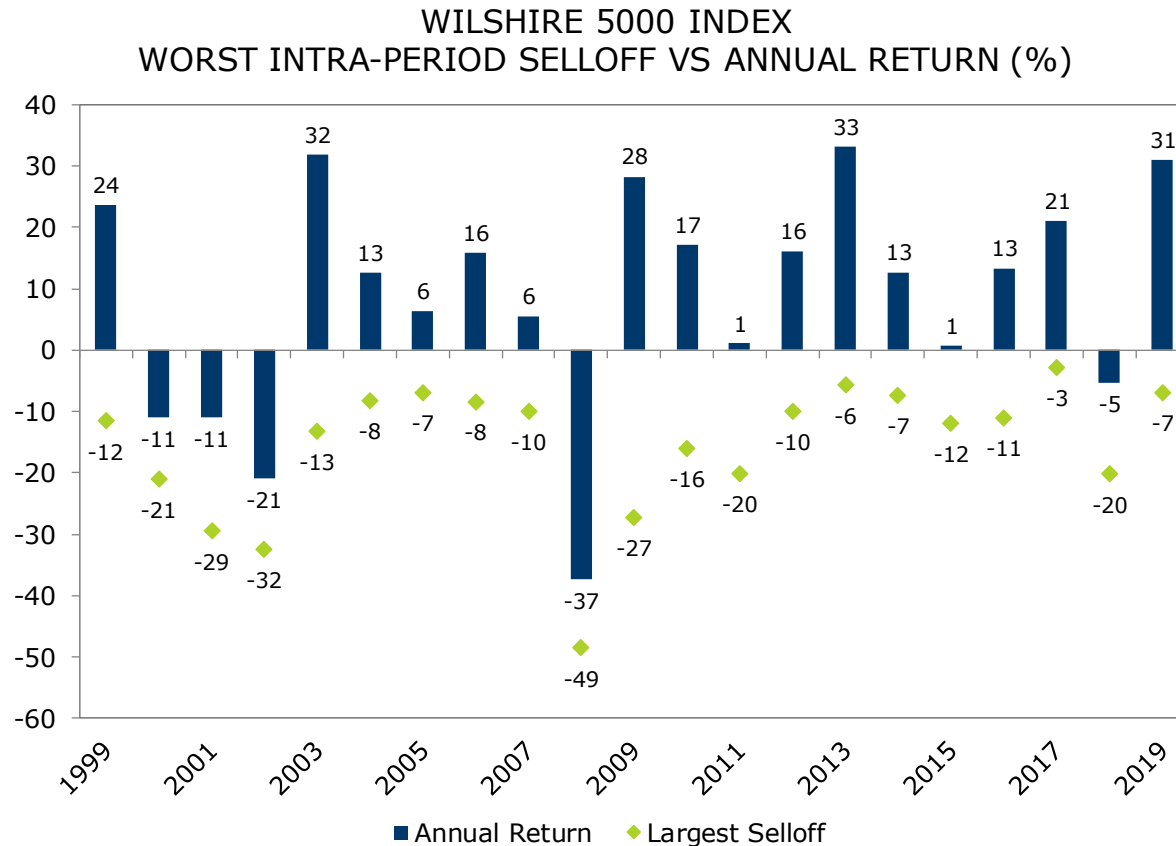
Data sources: Wilshire Compass, Wilshire Atlas

Wilshire Consulting

ANNUAL RETURNS

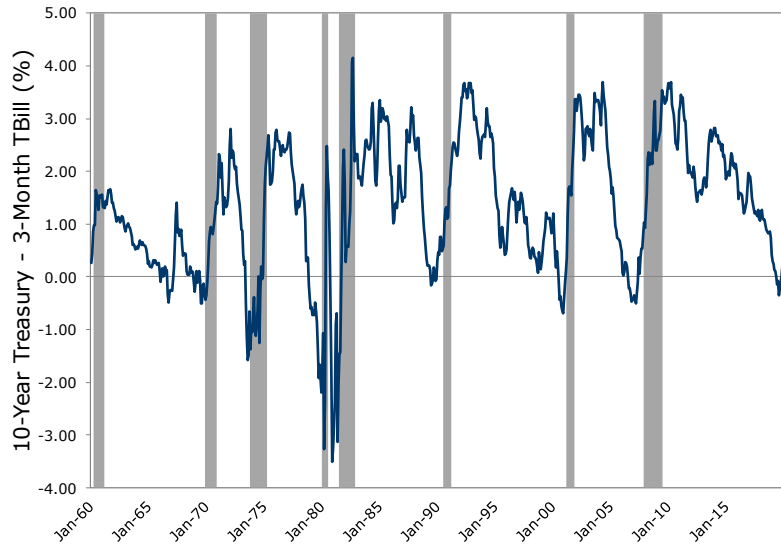


- Last year was the strongest year for equities since 2013
- Worst sell-off last year was relatively mild compared to the past 20 years

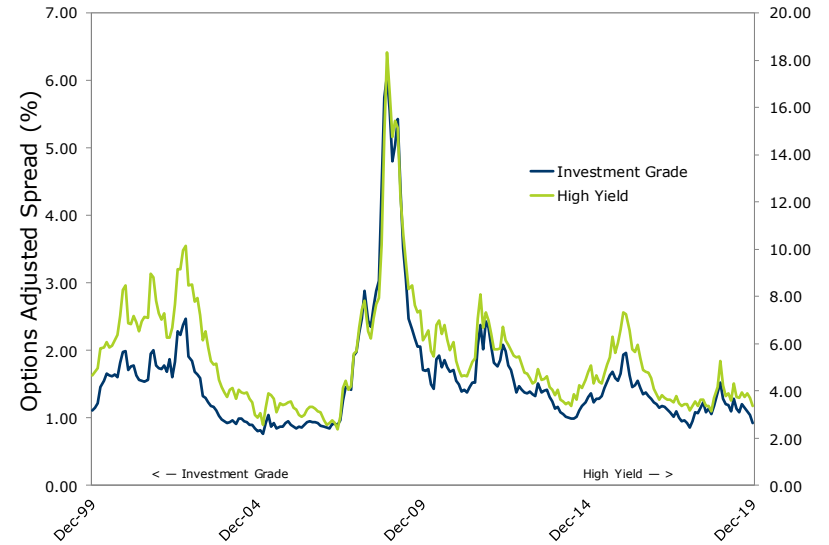


RISK MONITOR

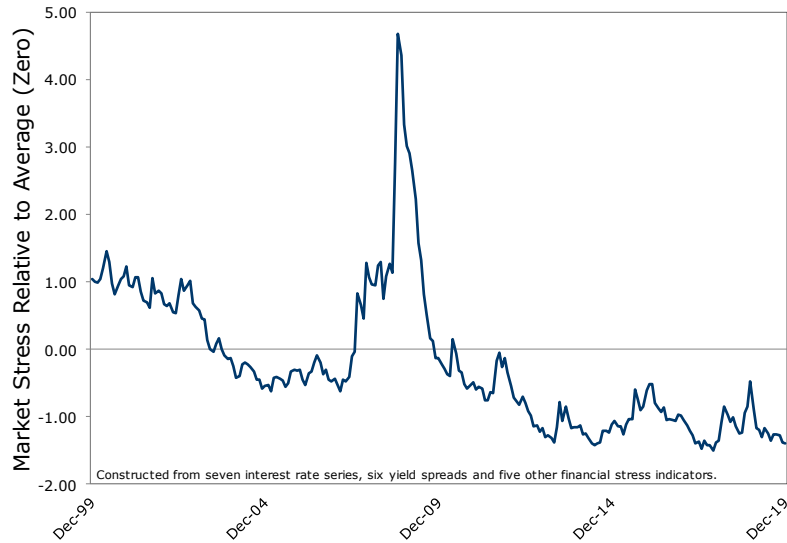
YIELD CURVE SLOPE VS RECESSIONS (IN GRAY)



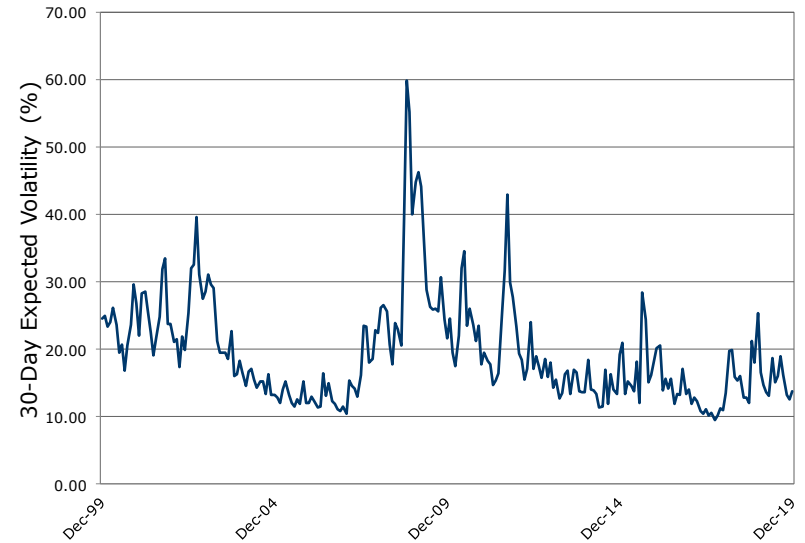
BLOOMBERG BARCLAYS CREDIT INDEXES



ST. LOUIS FED FINANCIAL STRESS INDEX



CBOE VOLATILITY INDEX

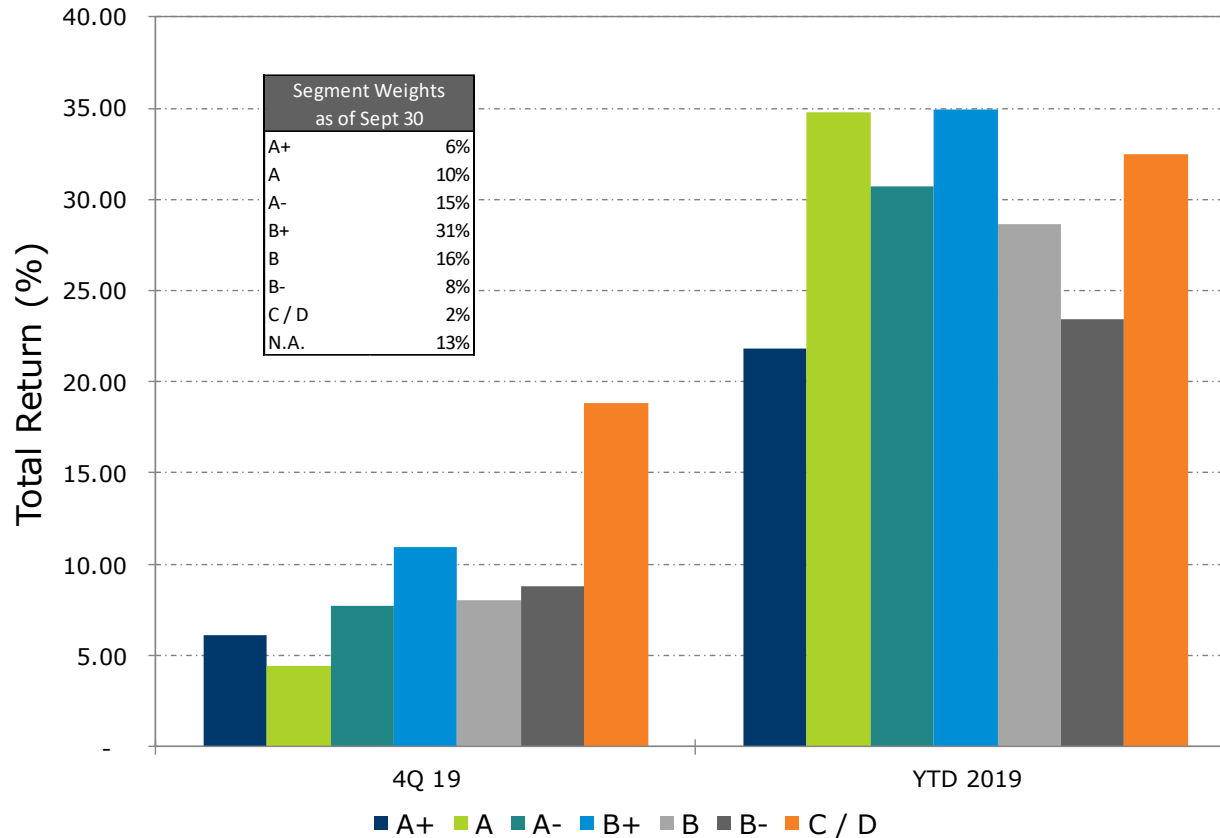


Data sources: Federal Reserve, Bloomberg Barclays

RETURNS BY QUALITY SEGMENT

Higher quality names trailed for the fourth quarter but were strong for the year

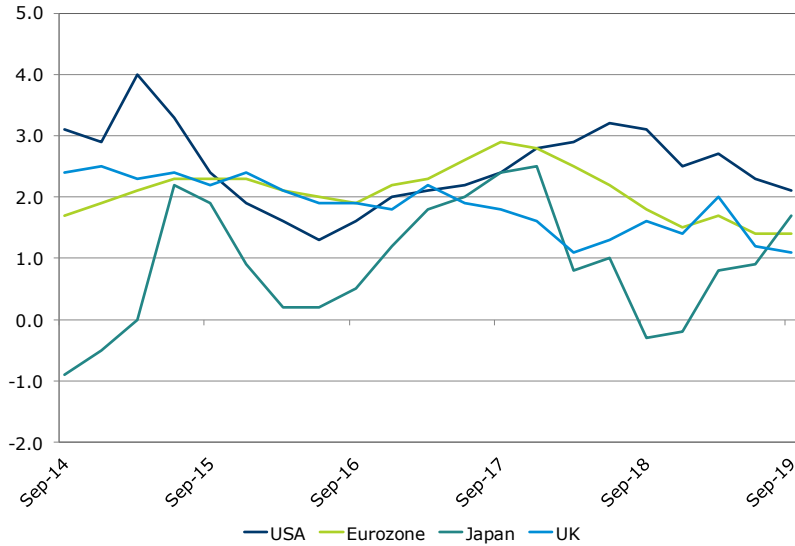
RETURN BY S&P QUALITY RATING



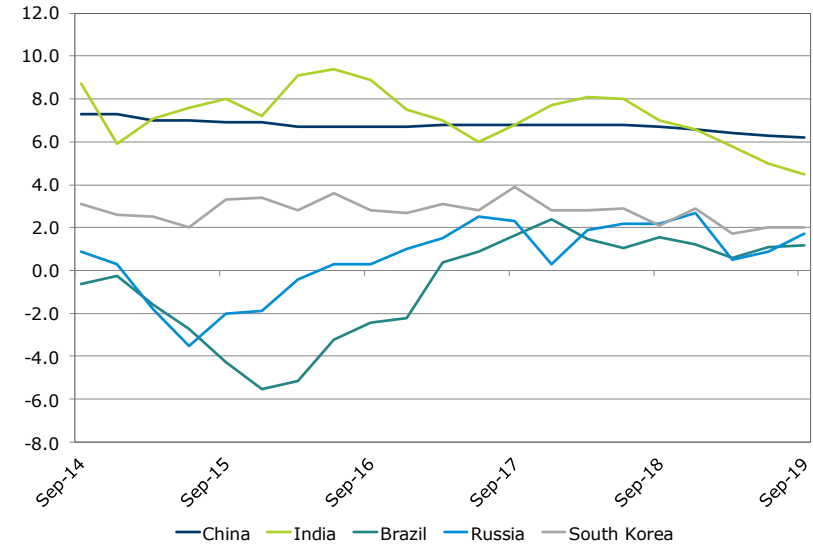
Data sources: Wilshire Atlas

NON-U.S. GROWTH AND INFLATION

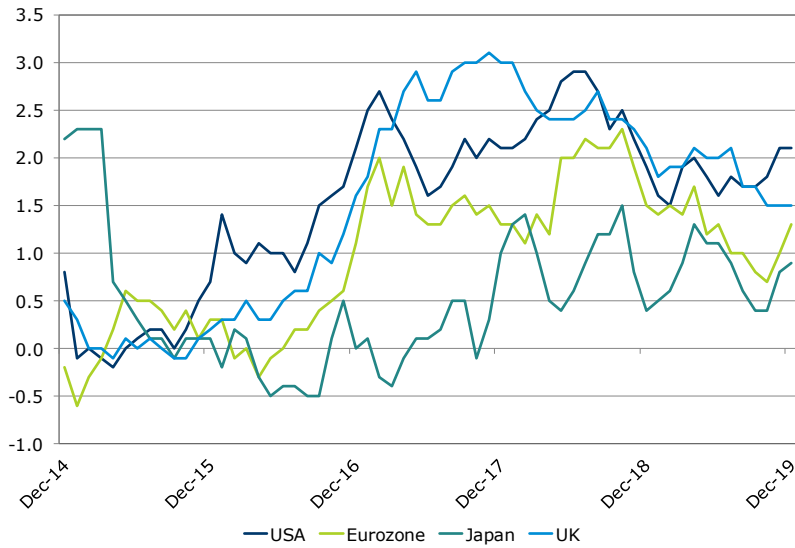
DEVELOPED MARKETS REAL GDP GROWTH YoY (%)



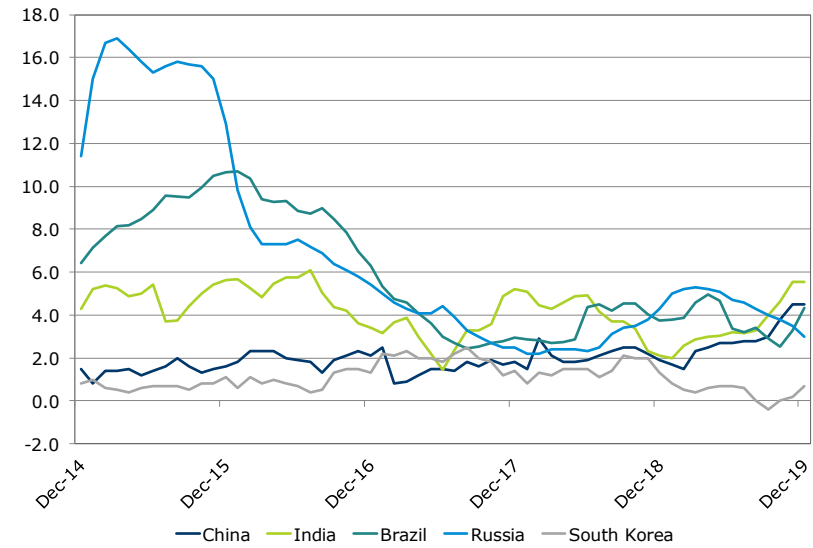
EMERGING MARKETS REAL GDP GROWTH YoY (%)



DEVELOPED MARKETS CPI GROWTH YoY (%)



EMERGING MARKETS CPI GROWTH YoY (%)

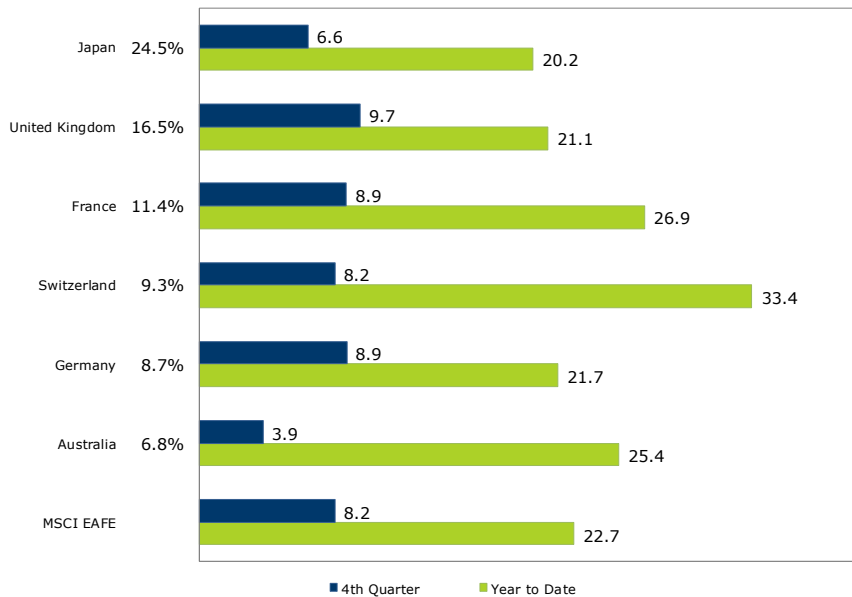


Data sources: Bloomberg

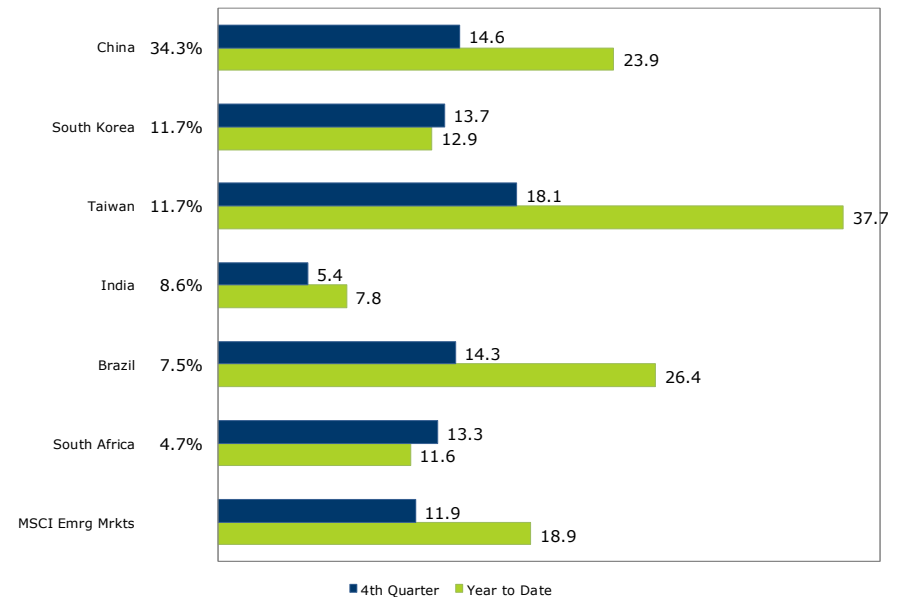
NON-U.S. EQUITY MARKET

AS OF DEC 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US (\$G)	9.0	22.1	22.1	10.4	6.0	5.4
MSCI EAFE (\$G)	8.2	22.7	22.7	10.1	6.2	6.0
MSCI EMERGING MARKETS (\$G)	11.9	18.9	18.9	12.0	6.0	4.0
MSCI FRONTIER MARKETS (\$G)	6.6	18.3	18.3	9.5	3.1	5.7
MSCI ACWI EX-US GROWTH (\$G)	9.6	27.8	27.8	13.3	7.7	6.6
MSCI ACWI EX-US VALUE (\$G)	8.3	16.5	16.5	7.5	4.3	4.2
MSCI ACWI EX-US SMALL (\$G)	11.1	22.9	22.9	10.1	7.5	7.4
MSCI ACWI MINIMUM VOLATILITY	3.1	21.8	21.8	12.7	9.9	10.9
MSCI EAFE MINIMUM VOLATILITY	4.5	17.4	17.4	10.8	7.7	8.1
FTSE RAFI DEVELOPED EX-US	8.2	18.8	18.8	8.5	5.5	5.2
MSCI EAFE LC (G)	5.2	22.3	22.3	8.2	7.2	7.7

MSCI EAFE: LARGEST COUNTRIES & RETURN (USD)



MSCI EM: LARGEST COUNTRIES & RETURN (USD)

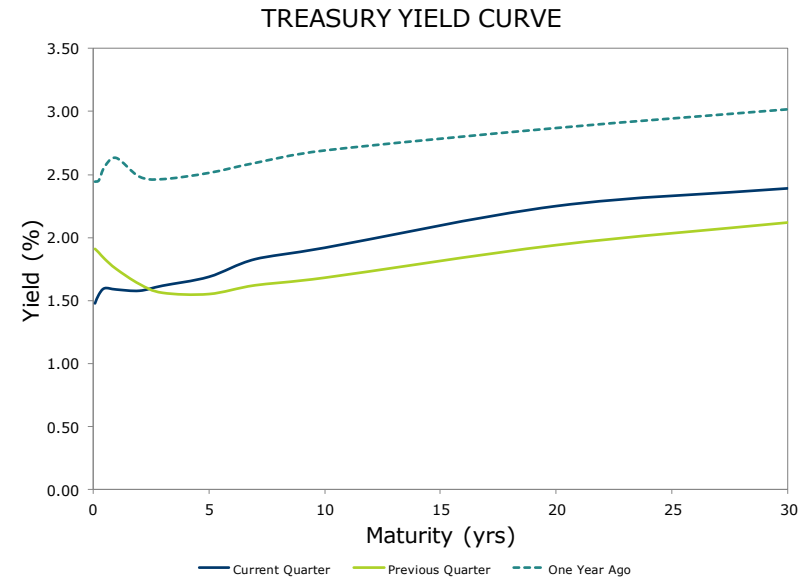
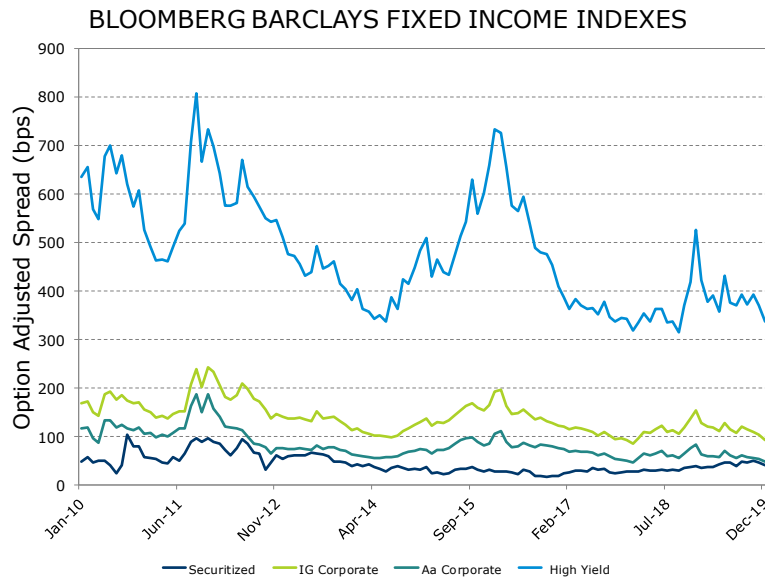


Data sources: Wilshire Compass

U.S. FIXED INCOME

AS OF DEC 31, 2019	YTM	DURATION	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	2.3	5.9	0.2	8.7	8.7	4.0	3.1	3.7
BLOOMBERG BARCLAYS TREASURY	1.8	6.5	-0.8	6.9	6.9	3.3	2.4	3.1
BLOOMBERG BARCLAYS GOV'T-REL.	2.4	5.9	0.2	9.0	9.0	4.4	3.1	3.5
BLOOMBERG BARCLAYS SECURITIZED	2.5	3.3	0.6	6.4	6.4	3.3	2.6	3.3
BLOOMBERG BARCLAYS CORPORATE	2.9	7.9	1.2	14.5	14.5	5.9	4.6	5.5
BLOOMBERG BARCLAYS LT G/C	3.1	15.8	-1.1	19.6	19.6	8.1	5.4	7.6
BLOOMBERG BARCLAYS LT TREASURY	2.3	18.1	-4.1	14.8	14.8	7.0	4.1	7.0
BLOOMBERG BARCLAYS LT GOV'T-REL.	3.6	12.7	-0.1	18.7	18.7	8.8	5.6	7.7
BLOOMBERG BARCLAYS LT CORP.	3.6	14.5	1.3	23.9	23.9	8.8	6.4	8.0
BLOOMBERG BARCLAYS U.S. TIPS *	1.9	7.6	0.8	8.4	8.4	3.3	2.6	3.4
BLOOMBERG BARCLAYS HIGH YIELD	6.0	3.0	2.6	14.3	14.3	6.4	6.1	7.6
TREASURY BILLS	1.6	0.25	0.5	2.3	2.3	1.7	1.1	0.6

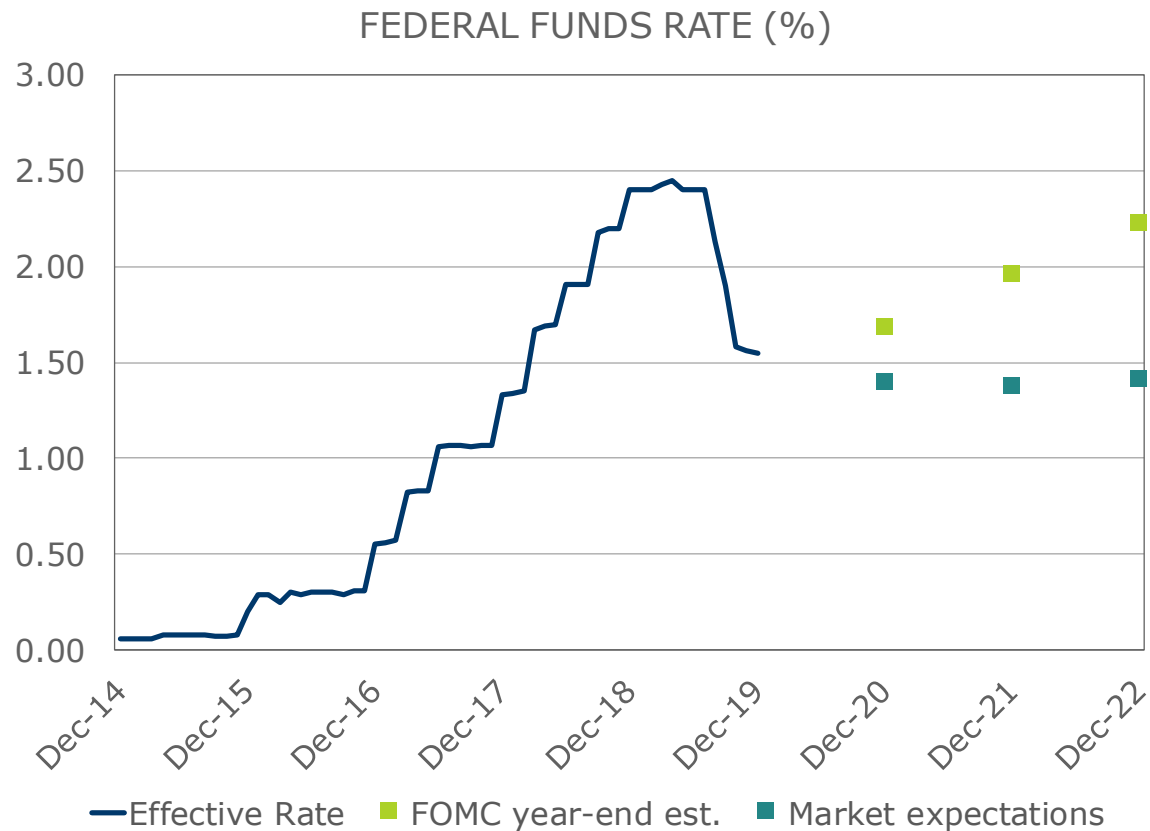
* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index



Data sources: Wilshire Compass, Bloomberg Barclays, U.S. Treasury

SHORT-TERM RATES

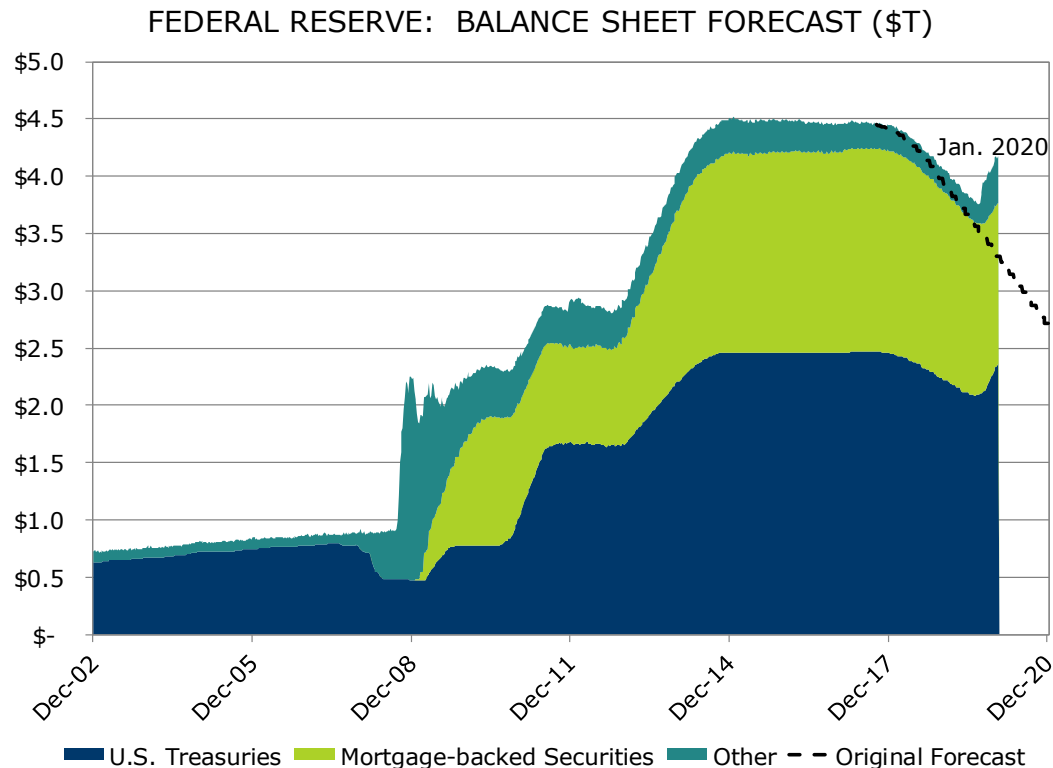
- Federal Reserve decreased their short-term rate 3 times during the second half of 2019
- Markets aren't expecting the overnight rate to move at all during the next few years



Data sources: Federal Reserve, Bloomberg

FED BALANCE SHEET

- Federal Reserve began their balance sheet normalization program during October 2017; targeting \$10B in reductions per month while increasing to \$50B per month in Q4 2018
- Began buying Treasury bills in September to address a liquidity shortage in the repo market
- Fed stated purchases will continue “at least into the second quarter,” potentially reversing their previous balance sheet contraction efforts

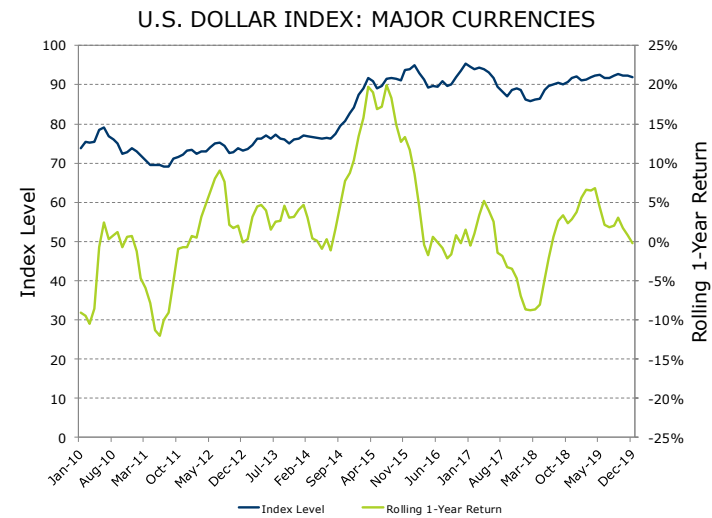
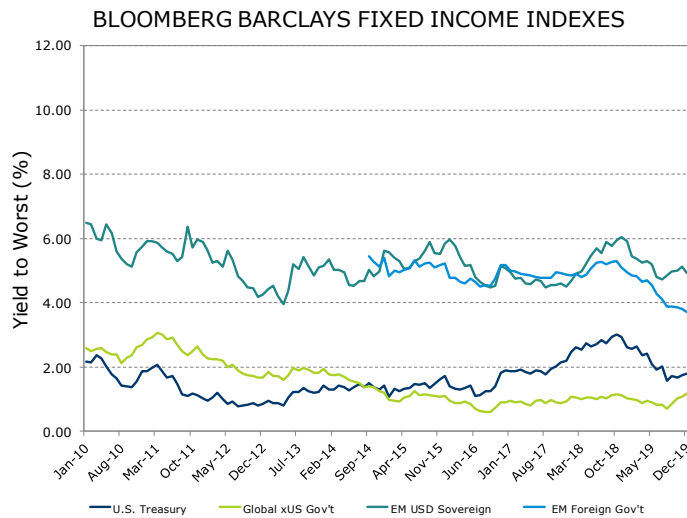


Data sources: Federal Reserve

NON-U.S. FIXED INCOME

AS OF DEC 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DEVELOPED MARKETS						
BLMBRG BRCLYS GLBL AGGREGATE xUS	0.7	5.1	5.1	4.4	1.6	1.5
BLMBRG BRCLYS GLBL AGGREGATE xUS *	-1.1	7.6	7.6	4.4	3.9	4.3
BLMBRG BRCLYS GLOBAL INF LNKD xUS	-0.6	7.8	7.8	4.6	1.8	3.2
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	-5.2	8.0	8.0	4.2	5.3	5.8
EMERGING MARKETS (HARD CURRENCY)						
BLMBRG BRCLYS EM USD AGGREGATE	2.1	13.1	13.1	6.1	5.8	6.6
EMERGING MARKETS (FOREIGN CURRENCY)						
BLMBRG BRCLYS EM LOCAL CURR. GOVT	4.0	9.5	9.5	6.5	2.8	3.4
BLMBRG BRCLYS EM LOCAL CURR. GOVT *	0.5	8.5	8.5	4.9	3.6	3.7
CURRENCY VS. DOLLAR						
EURO vs. DOLLAR	3.0	-1.8	-1.8	2.1	-1.5	-2.4
YEN vs. DOLLAR	-0.6	1.0	1.0	2.4	2.0	-1.5
POUND vs. DOLLAR	7.5	4.0	4.0	2.4	-3.2	-2.0

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

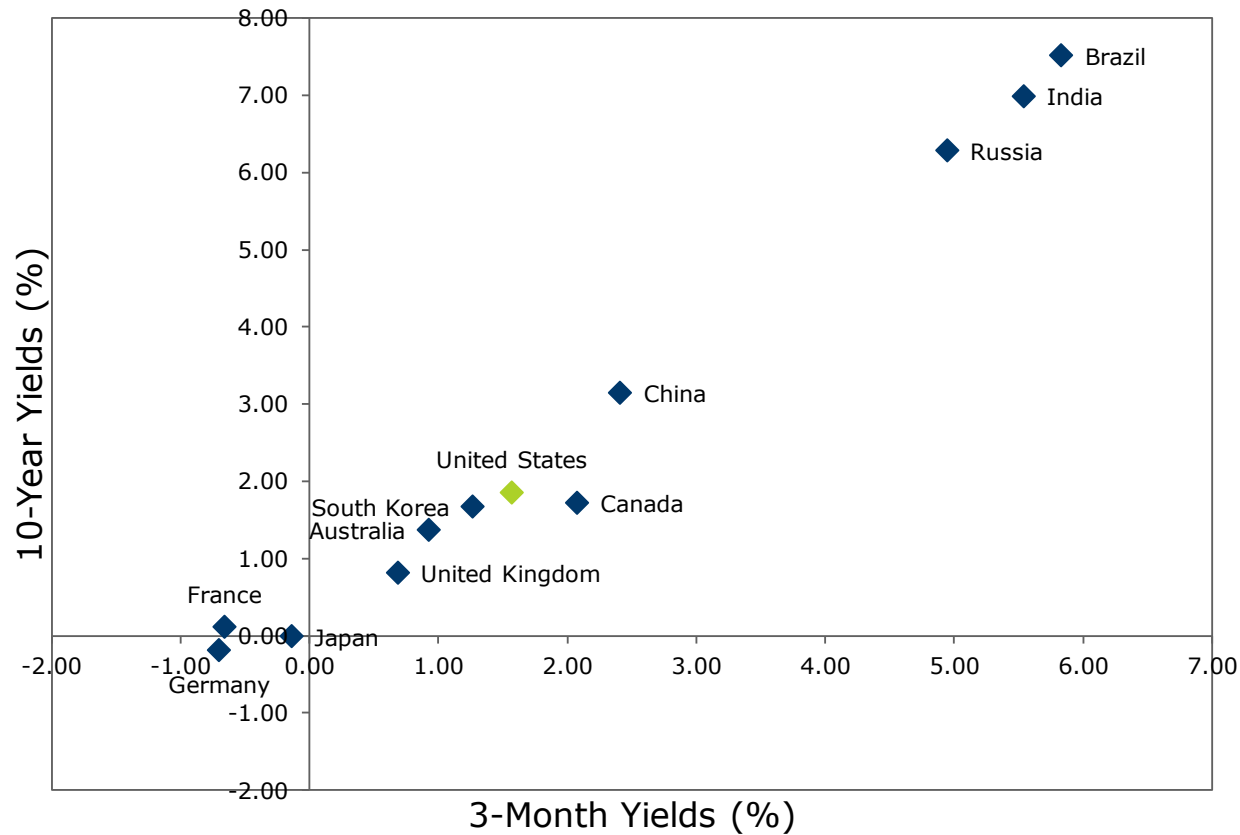


Data sources: Wilshire Compass, Bloomberg Barclays, Federal Reserve Bank of St. Louis

GLOBAL INTEREST RATES

Much of Europe and Japan exhibit negative rates; Long rates are up, however, in those same regions during the past six months

GOVERNMENT BOND YIELDS

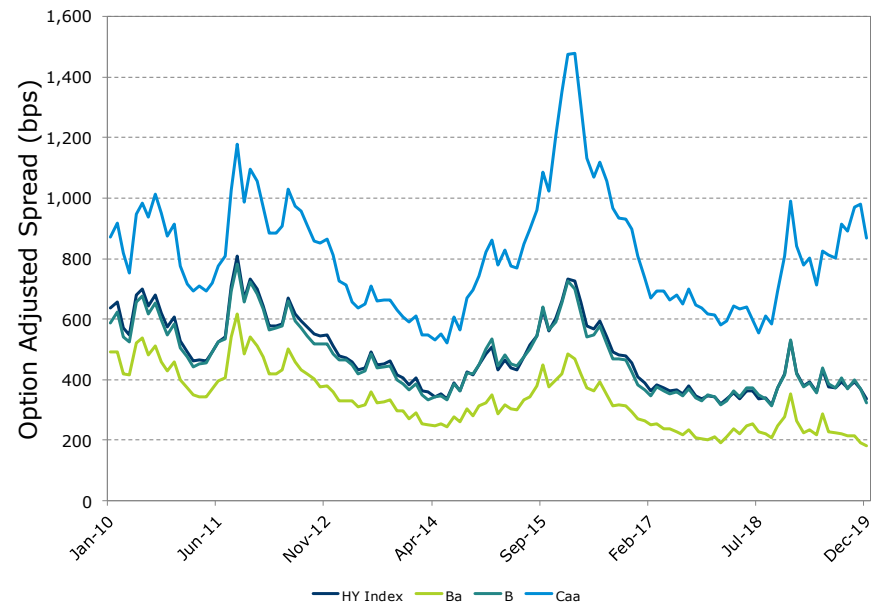


Data sources: Bloomberg

HIGH YIELD BOND MARKET

AS OF DEC 31, 2019		YTW	QTR	YTD	1 YR	3 YR	5 YR
BLOOMBERG BARCLAYS HIGH YIELD		5.2	2.6	14.3	14.3	6.4	6.1
S&P LSTA LEVERAGE LOAN INDEX		0.0	0.0	8.2	8.2	3.6	3.7
HIGH YIELD QUALITY DISTRIBUTION	WEIGHT						
Ba U.S. HIGH YIELD	47.7%	3.6	2.5	15.5	15.5	6.6	6.2
B U.S. HIGH YIELD	38.8%	5.1	2.6	14.8	14.8	6.5	5.9
Caa U.S. HIGH YIELD	12.5%	10.4	3.7	9.5	9.5	5.1	6.1
Ca to D U.S. HIGH YIELD	0.7%	21.0	-7.3	-0.3	-0.3	3.9	-2.1
Non-Rated U.S. HIGH YIELD	0.3%	6.6	1.9	6.3	6.3	5.5	-0.1

BLOOMBERG BARCLAYS HIGH YIELD INDEXES



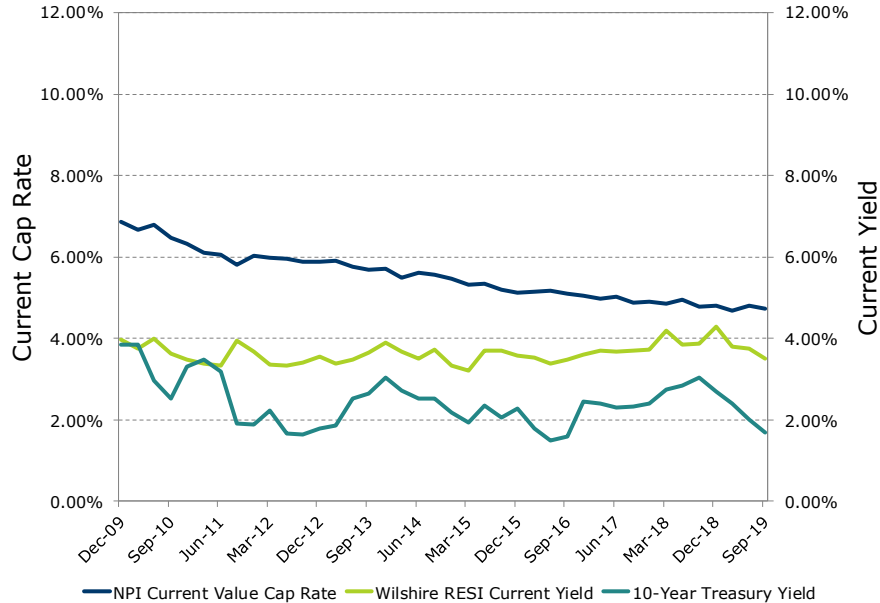
Data sources: Wilshire Compass, Bloomberg Barclays

Wilshire Consulting REAL ASSETS

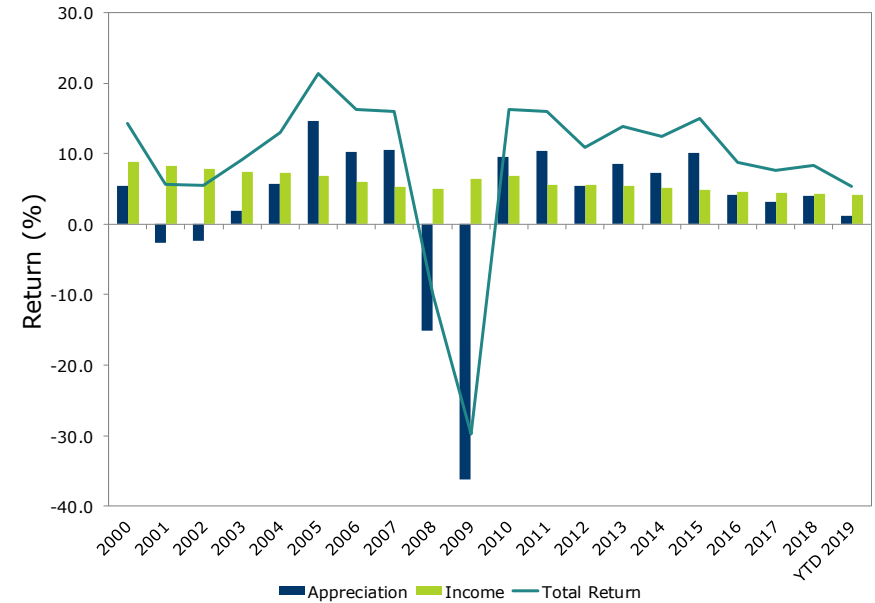


AS OF DEC 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	0.8	8.4	8.4	3.3	2.6	3.4
BLOOMBERG COMMODITY INDEX	4.4	7.7	7.7	-0.9	-3.9	-4.7
WILSHIRE GLOBAL RESI INDEX	1.2	24.2	24.2	9.0	6.8	10.5
NCREIF ODCE FUND INDEX	1.5	5.4	5.4	7.1	9.0	11.4
NCREIF TIMBERLAND INDEX	0.0	1.3	1.3	2.7	3.1	4.4
ALERIAN MLP INDEX (OIL & GAS)	-4.1	6.6	6.6	-4.4	-7.0	4.2

REAL ESTATE VALUATION



NCREIF ODCE FUND INDEX RETURN



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



APPENDIX: PRIVATE MARKETS UPDATE

PRIVATE EQUITY – FUNDRAISING & INVESTMENT ACTIVITY

Global Quarterly Equity Fundraising (Q1 2014 - Q4 2019)



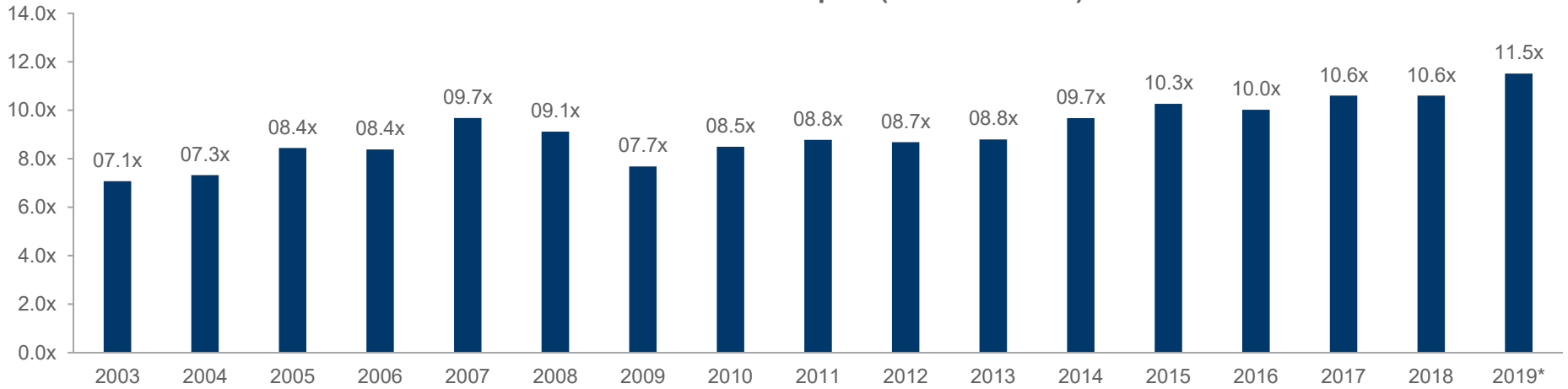
Global Quarterly Private Equity-Backed Buyout Deals (Q1 2014 – Q4 2019)



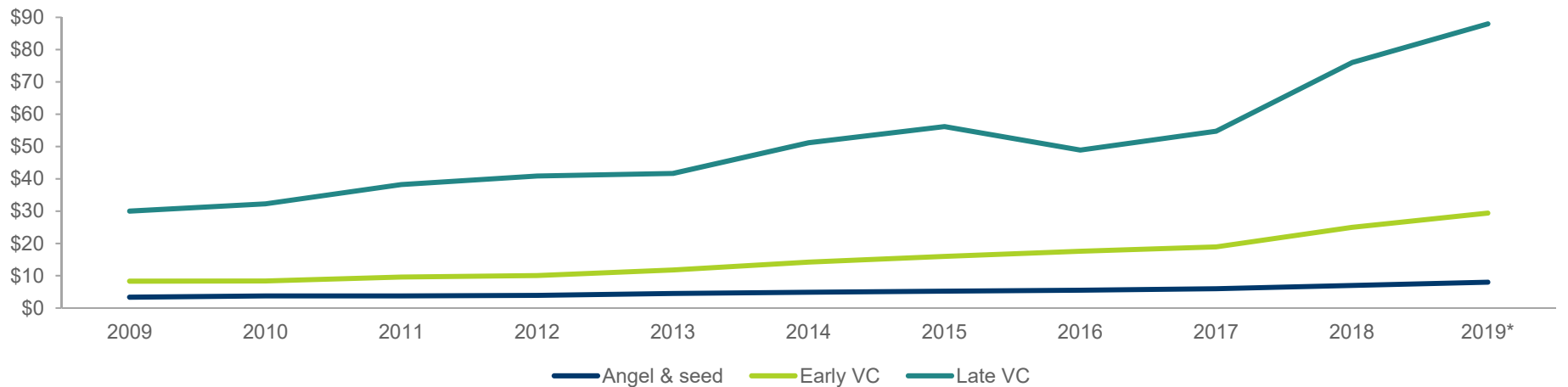
Source: Preqin, as of December 31, 2019.

PRIVATE EQUITY – PRICING & VALUATIONS

LBO Purchase Price Multiples (2003 - Q4 2019)



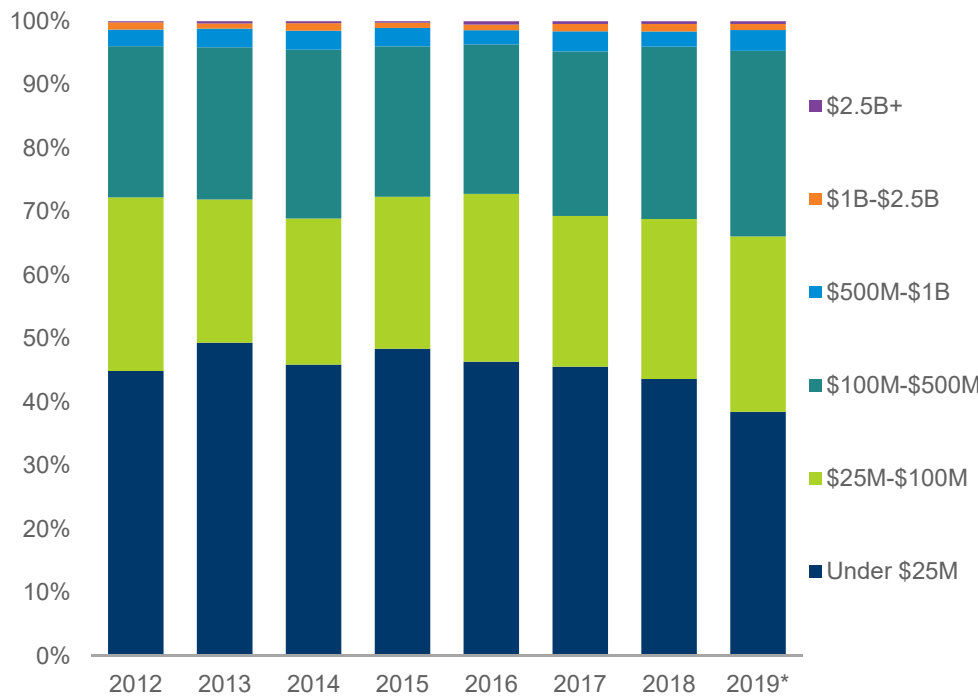
Venture Capital Pre-Money Valuations (\$M) (2009 – Q4 2019)



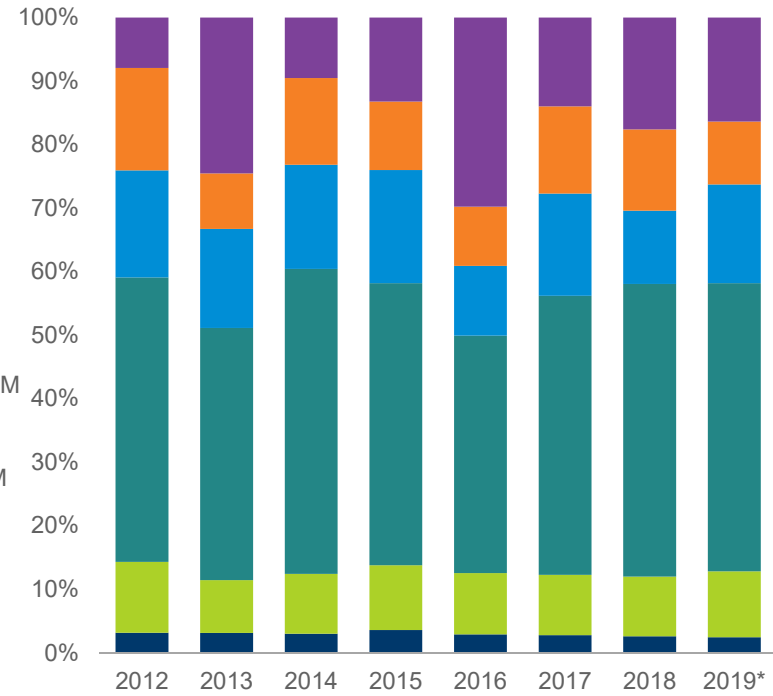
Source: S&P LBO; PitchBook, *as of December 31, 2019.

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)*

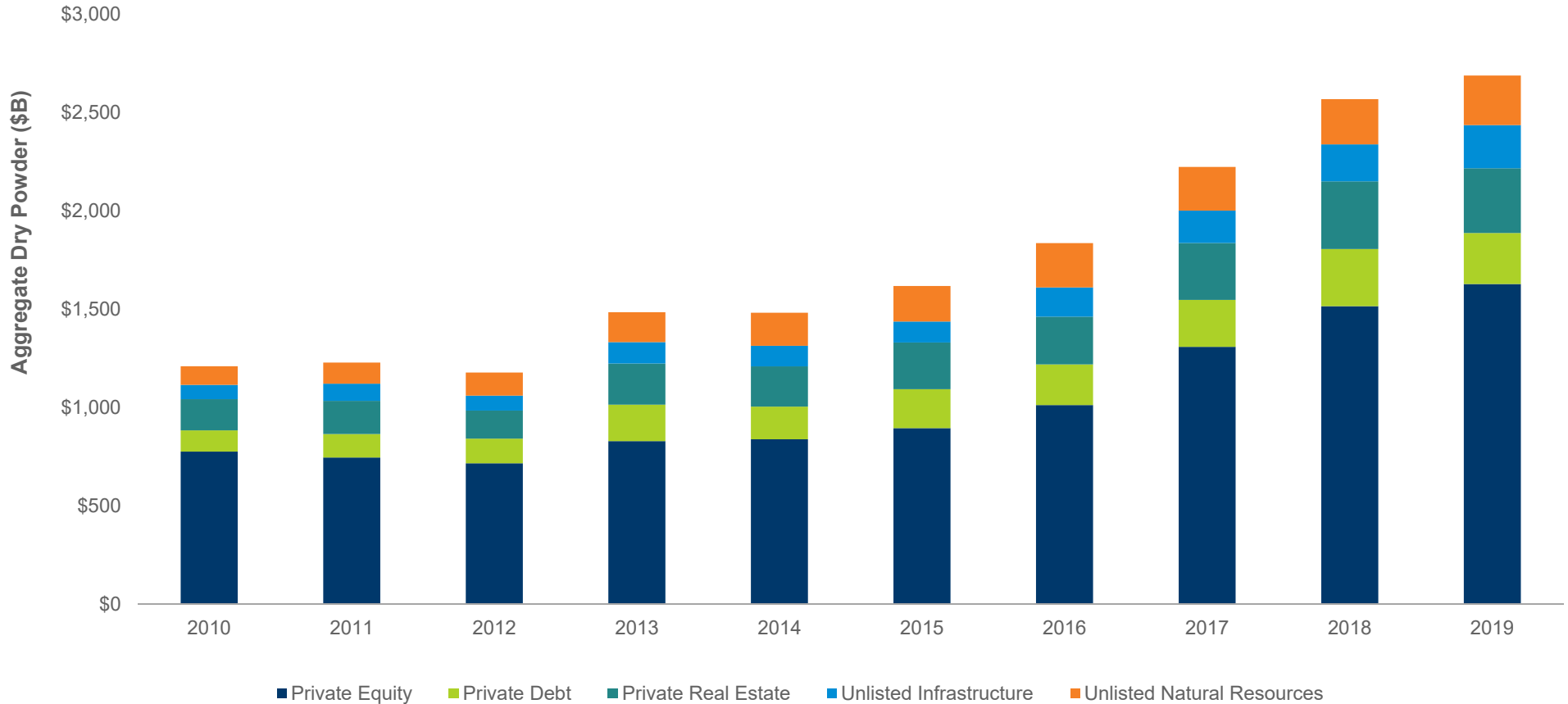


- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the fourth quarter of 2019
- However, deals with below \$100 million check sizes comprised only 12% of all deal volume by amount of capital invested in the fourth quarter of 2019

Source: PitchBook, *as of December 31, 2019.

PRIVATE CAPITAL DRY POWDER

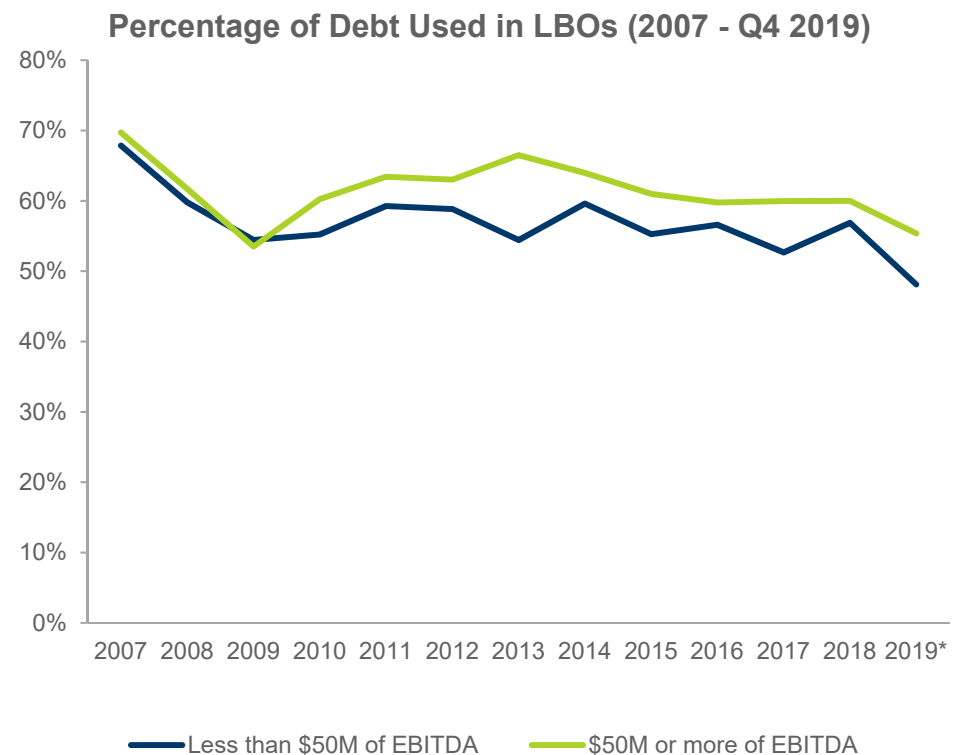
Private Capital Dry Powder by Fund Type (2010 - Q4 2019)



- Global private capital dry powder continues to increase, topping \$2.6 trillion across all fund types
- Private equity comprises just over 60% of total dry powder in the market as of Q4 2019

Source: Preqin, as of December 31, 2019.

PRIVATE EQUITY - U.S. DEBT MARKETS

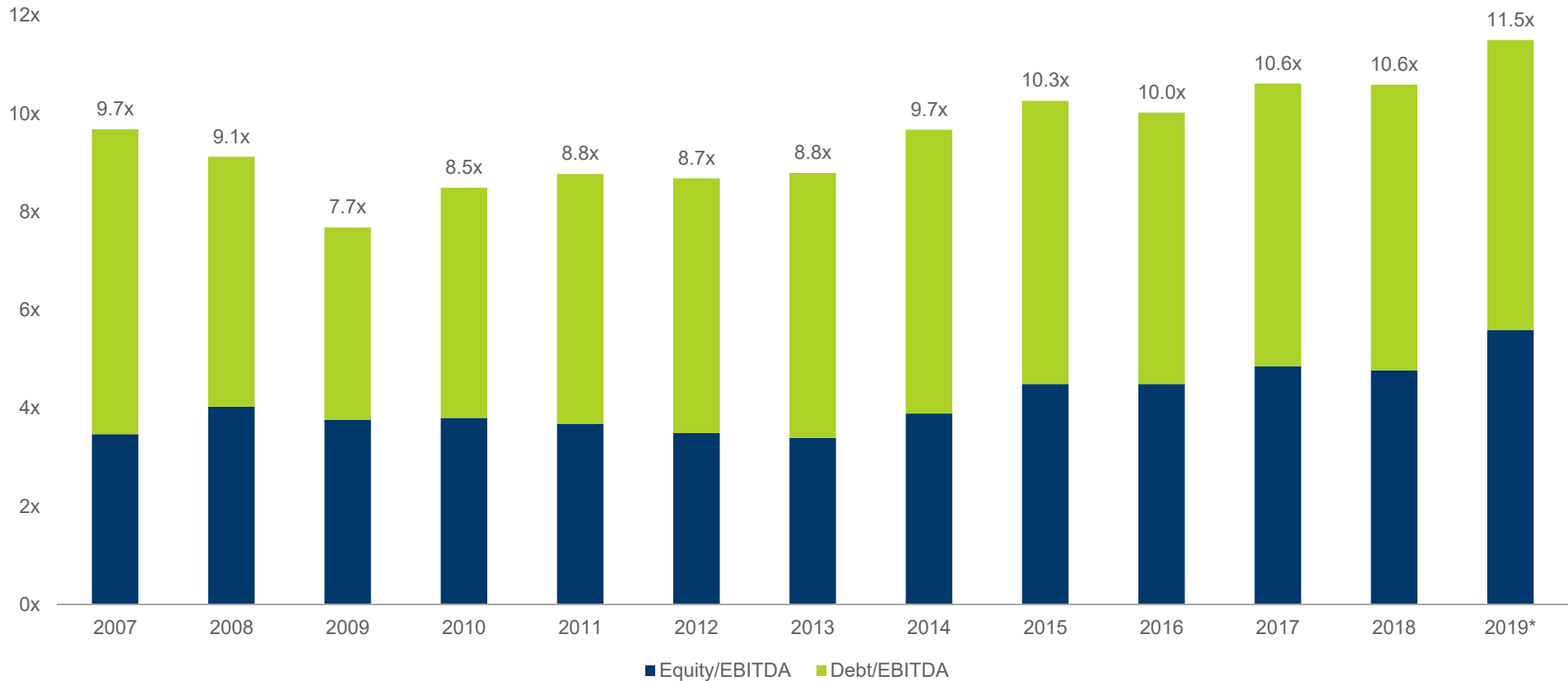


- 2019 has generated approximately \$106 billion in loan volume and for the first time since 2015, LBO's did not see an increase in loan volume from the prior year
- As debt capital becomes less available, the percentage of debt used to finance leveraged buyouts through the fourth quarter of 2019 has dropped from 2018 marks

Source: S&P LBO, *as of December 31, 2019.

PRIVATE EQUITY - U.S. LBO PURCHASE PRICE MULTIPLES

Purchase Price Multiples of U.S. LBO Transactions (2007 - Q4 2019)

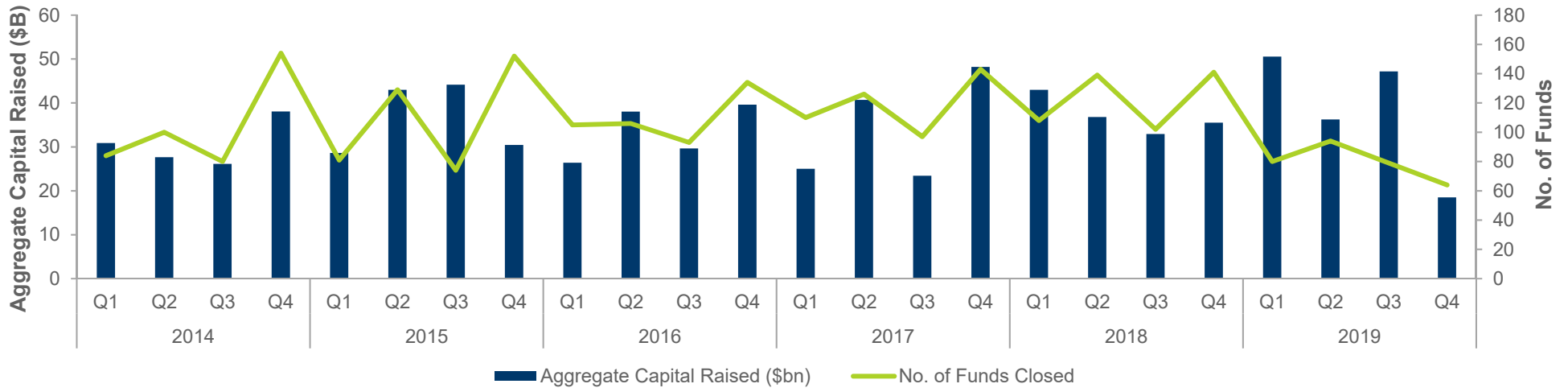


- Due to the amount of equity that is readily available, purchase price multiples for U.S. LBOs have continued to rise through Q4 2019, relative to 2018 levels

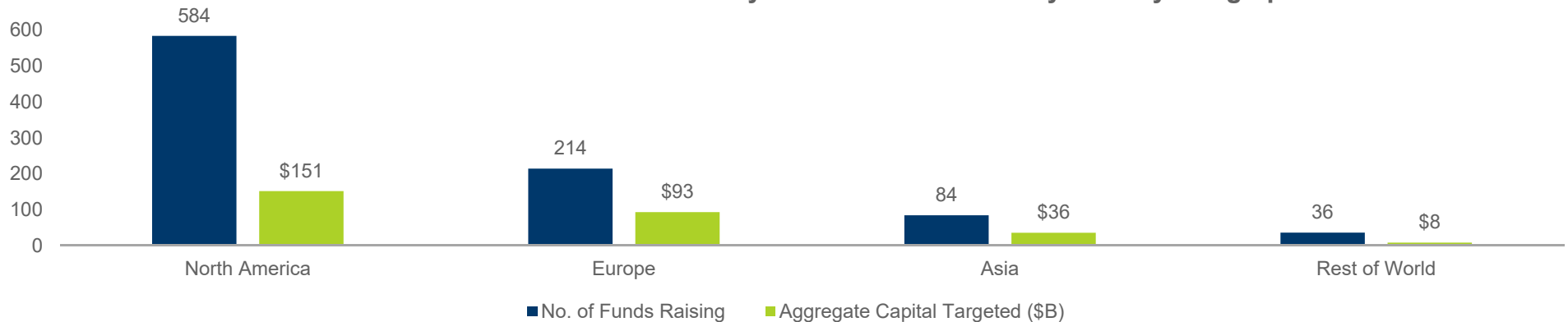
Source: S&P LBO, *as of December 31, 2019.

PRIVATE REAL ESTATE – FUNDRAISING ACTIVITY

Global Quarterly Closed-End Private Real Estate Fundraising (Q1 2014 - Q4 2019)



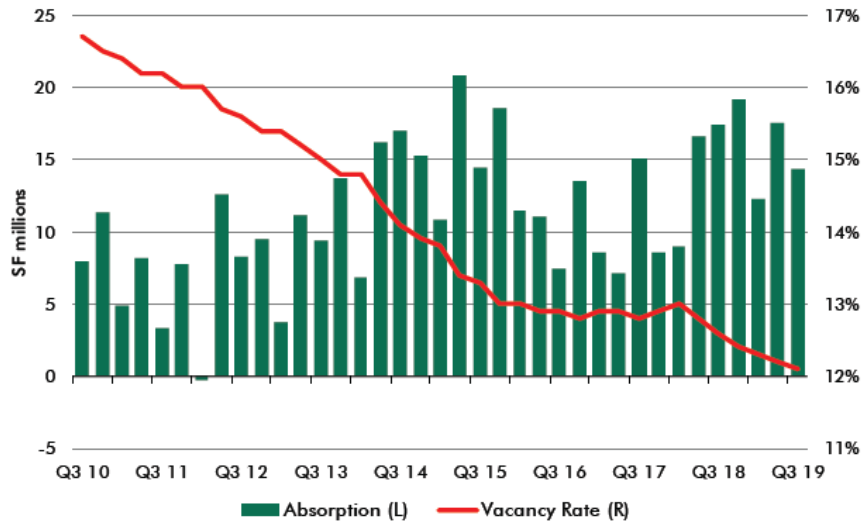
Closed-End Private Real Estate Funds Actively in Market in Q4 2019 by Primary Geographic Focus



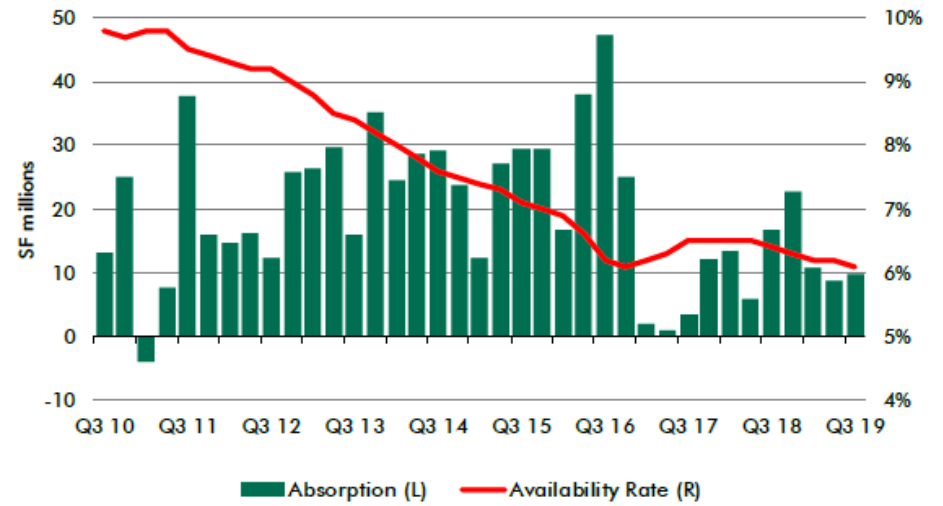
Source: Preqin, as of December 31, 2019.

COMMERCIAL PROPERTY

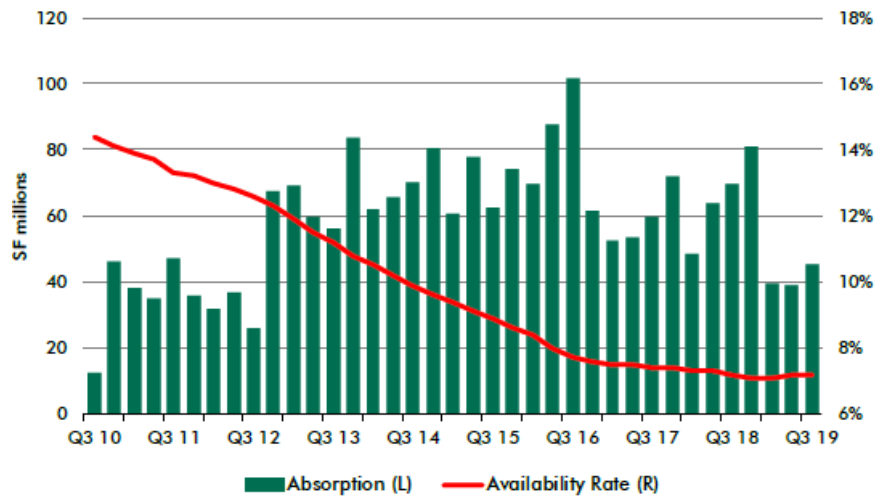
OFFICE



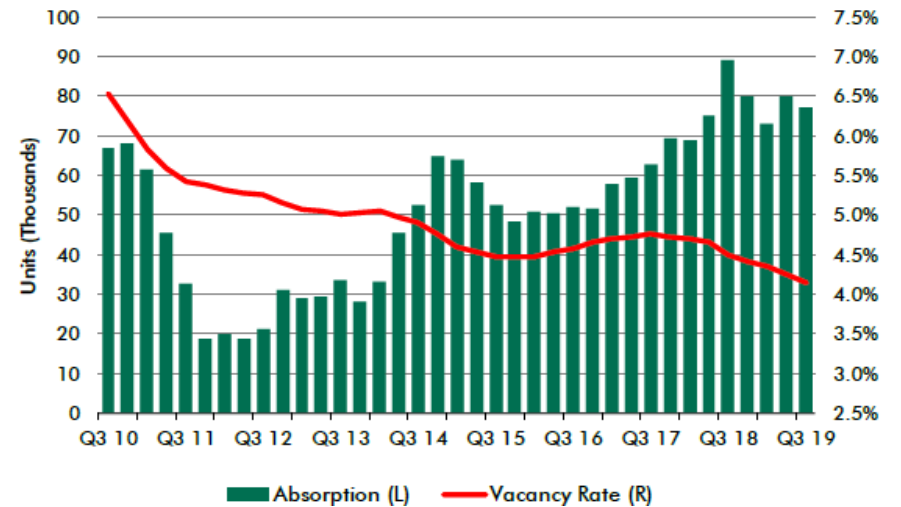
RETAIL



INDUSTRIAL



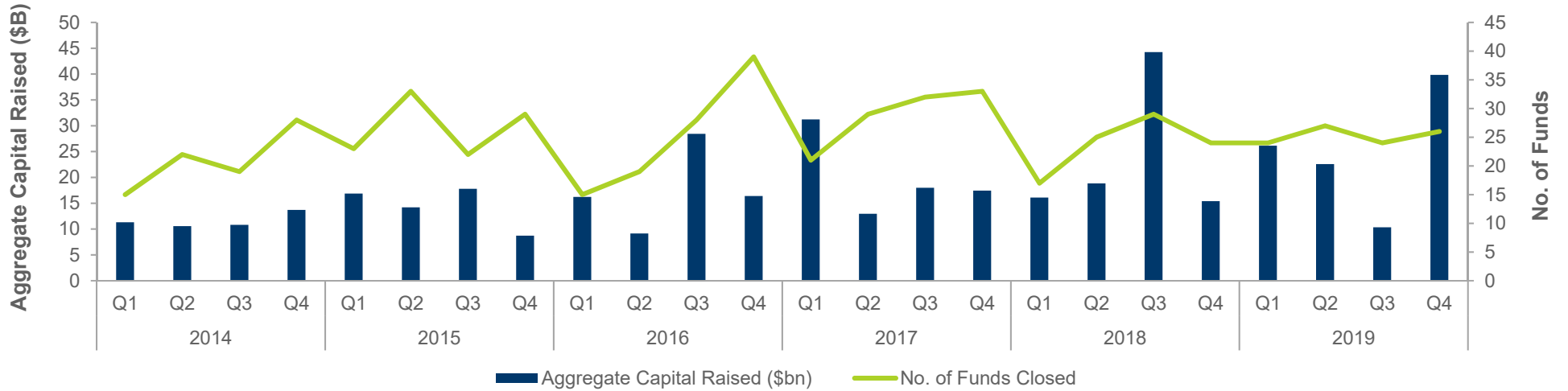
APARTMENTS



Data sources: CB Richard Ellis

UNLISTED INFRASTRUCTURE – FUNDRAISING & INVESTMENT ACTIVITY

Global Quarterly Unlisted Infrastructure Fundraising (Q1 2014 - Q4 2019)

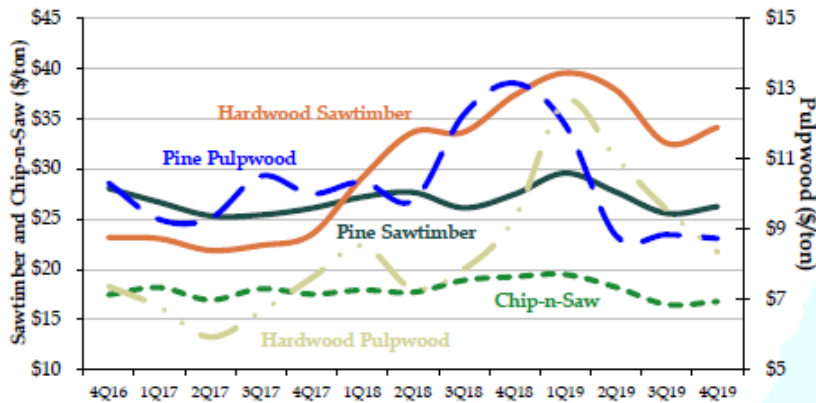


Unlisted Infrastructure Funds in Market over Time (Jan 2015 - Jan 2020)



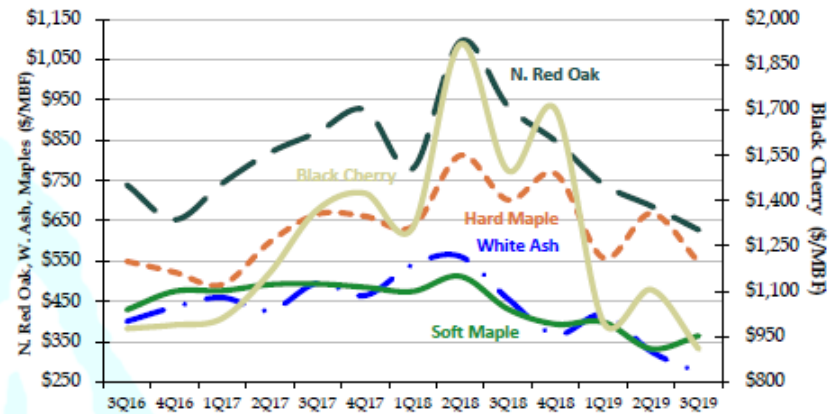
Source: Preqin, as of December 31, 2019.

Southeastern Timber Prices



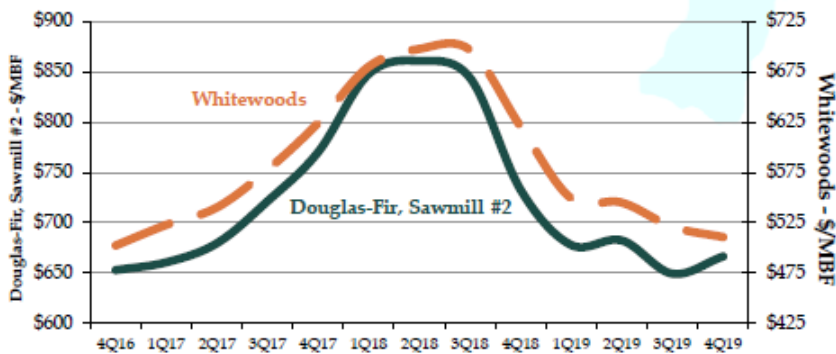
Source: Forest2Market®

Northeastern Hardwood Timber Prices



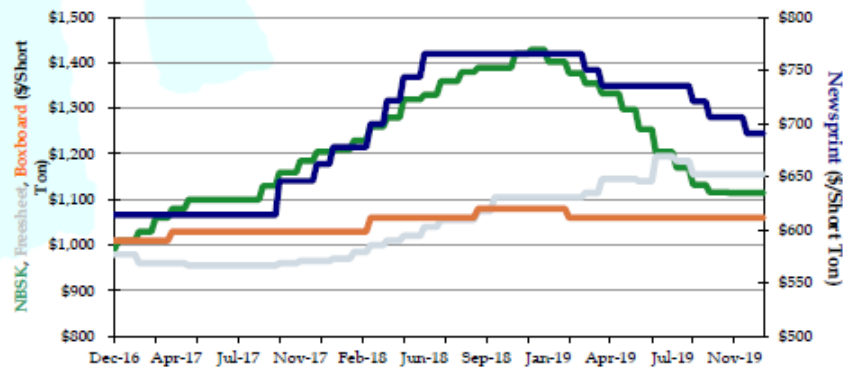
Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

Pacific Northwest Timber Prices



Source: Fastmarkets RISI - Log Lines®

Pulp and Paper



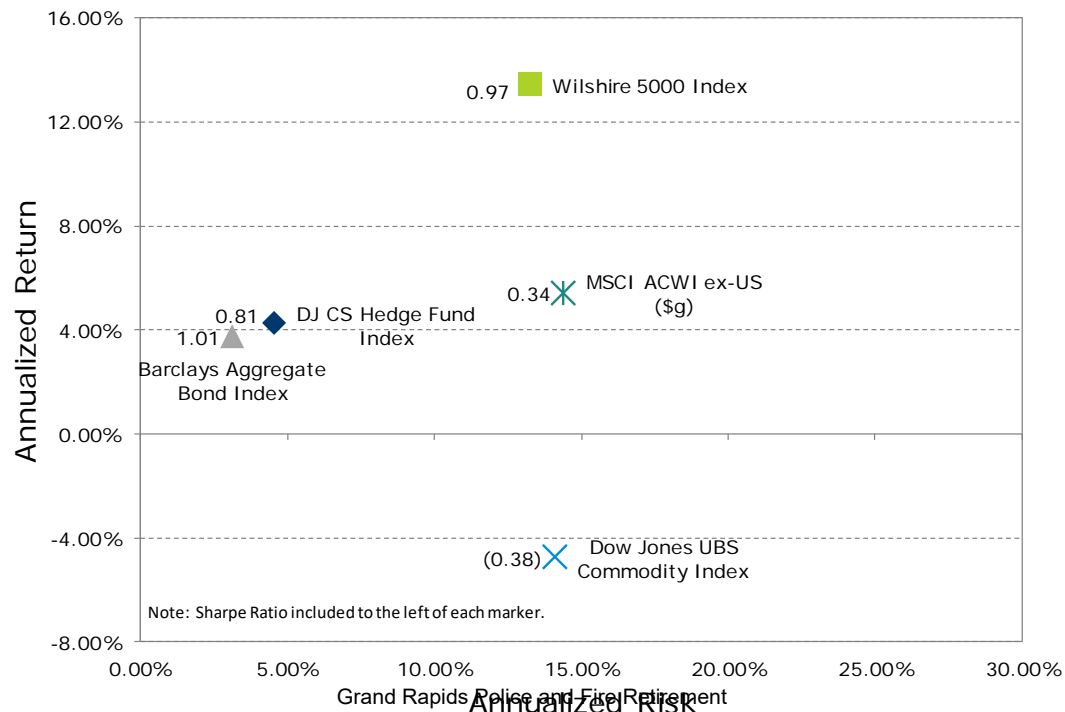
Source: Fastmarkets RISI

Data sources: Forest Investment Associates

HEDGE FUND PERFORMANCE

AS OF DECEMBER 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DJ CS HEDGE FUND INDEX	2.4	9.3	9.3	4.3	2.6	4.3
EVENT DRIVEN	2.2	8.2	8.2	3.4	1.2	3.5
GLOBAL MACRO	0.8	10.4	10.4	4.0	3.2	4.7
LONG/SHORT EQUITY	5.1	12.2	12.2	6.7	3.9	5.2
MULTI-STRATEGY	1.3	7.2	7.2	4.3	4.2	6.0
WILSHIRE 5000	9.1	31.0	31.0	14.5	11.4	13.4
MSCI ACWI EX-US (\$G)	9.0	22.1	22.1	10.4	6.0	5.4
BLOOMBERG BARCLAYS AGGREGATE	0.2	8.7	8.7	4.0	3.1	3.7
DOW JONES UBS COMMODITY	4.4	7.7	7.7	-0.9	-3.9	-4.7

HEDGE FUND 10-YEAR RISK/RETURN



Data sources: Wilshire Compass



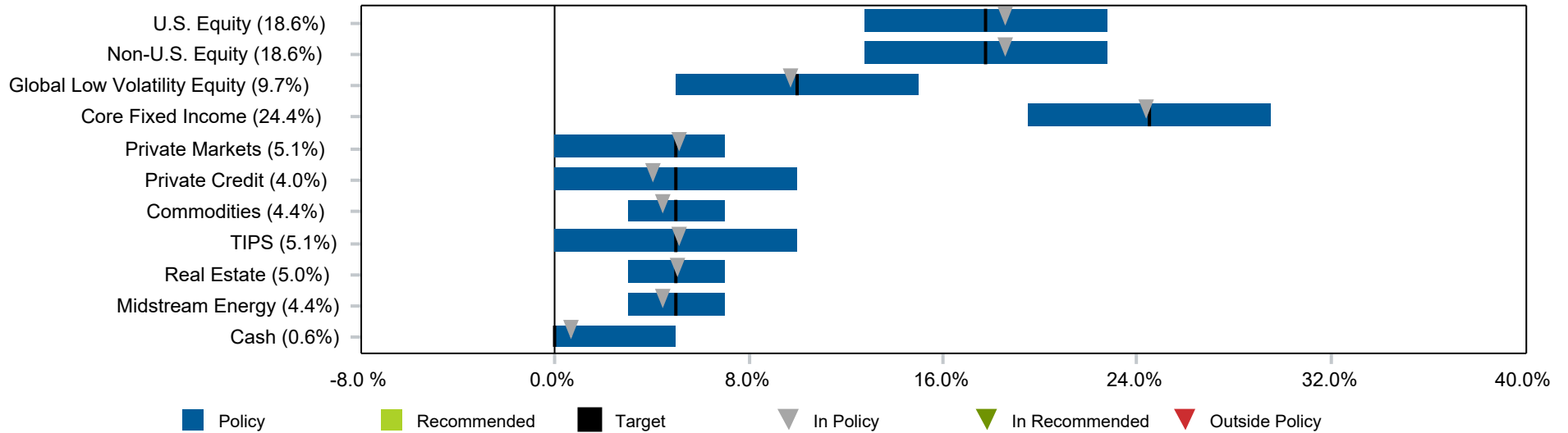
Total Fund

Asset Allocation Compliance

Total Fund

Periods Ended As of December 31, 2019

Executive Summary



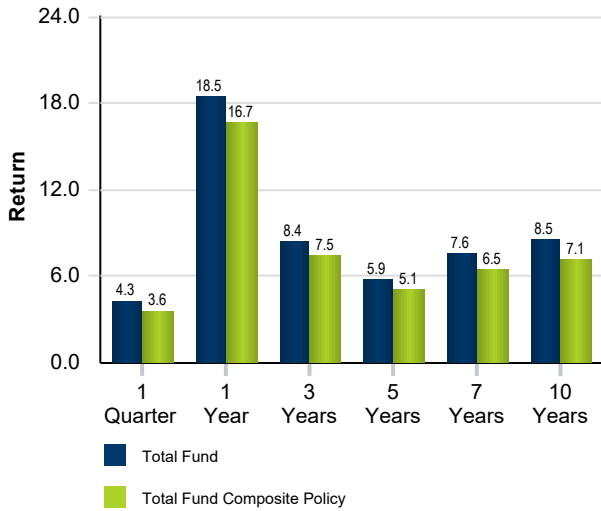
	Asset Allocation \$	Asset Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Allocation (%)	Minimum Rebalance \$	Maximum Rebalance \$
Total Fund	445,310,021	100.0			100.0		
U.S. Equity	82,625,934	18.6	12.8	22.8	17.8	-25,848,906	18,682,096
Non-U.S. Equity	82,785,021	18.6	12.8	22.8	17.8	-26,007,993	18,523,009
Global Low Volatility Equity	43,242,328	9.7	5.0	15.0	10.0	-20,976,827	23,554,175
Core Fixed Income	108,714,750	24.4	19.5	29.5	24.5	-21,879,296	22,651,707
Private Markets	22,777,498	5.1	0.0	7.0	5.0	-22,777,498	8,394,204
Private Credit	17,823,842	4.0	0.0	10.0	5.0	-17,823,842	26,707,160
Commodities	19,739,597	4.4	3.0	7.0	5.0	-6,380,296	11,432,105
TIPS	22,635,870	5.1	0.0	10.0	5.0	-22,635,870	21,895,132
Real Estate	22,402,122	5.0	3.0	7.0	5.0	-9,042,821	8,769,579
Midstream Energy	19,698,949	4.4	3.0	7.0	5.0	-6,339,648	11,472,753
Cash	2,864,111	0.6	0.0	5.0	0.0	-2,864,111	19,401,390

Performance Summary

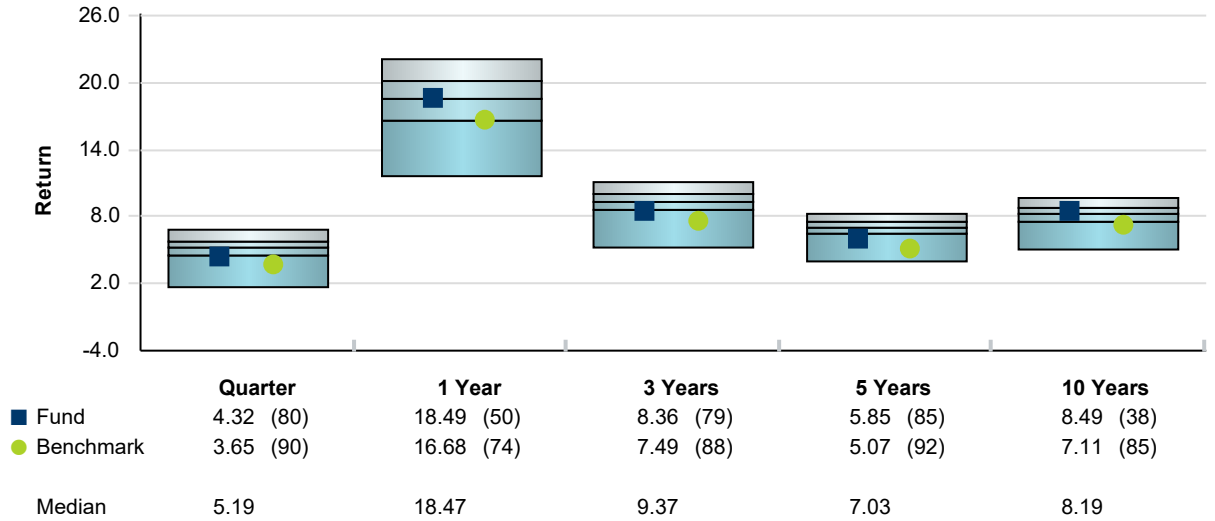
Total Fund

Periods Ended December 31, 2019

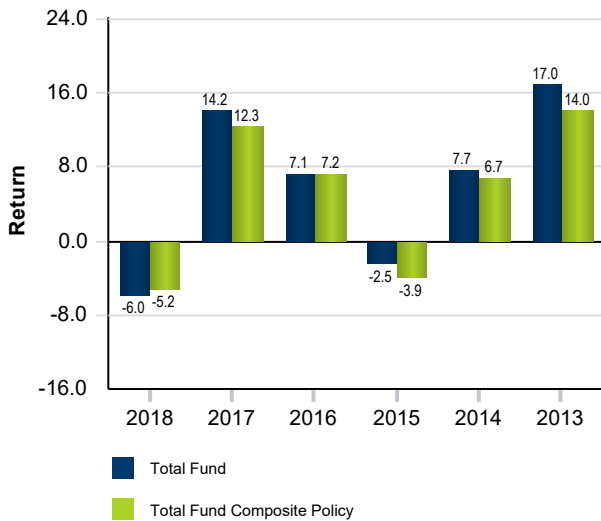
Comparative Performance



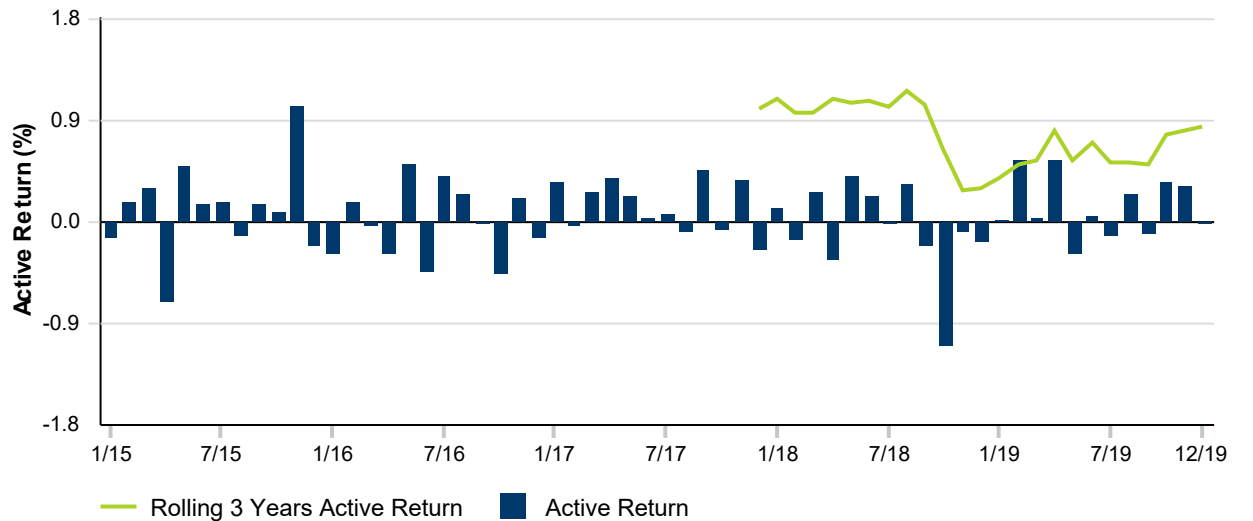
Peer Group Analysis: All Public Plans-Total Fund



Comparative Performance



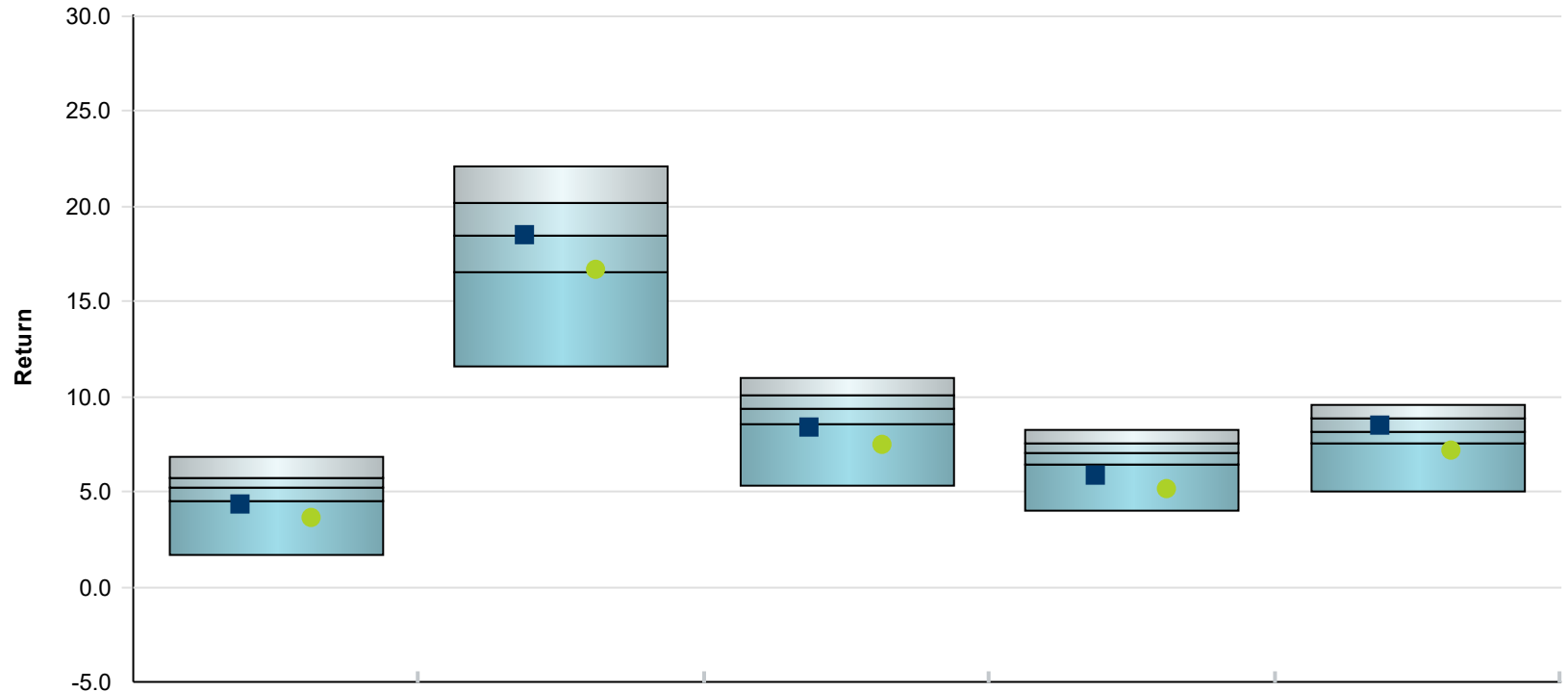
Rolling 3 Years Performance



Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans-Total Fund

Periods Ended December 31, 2019



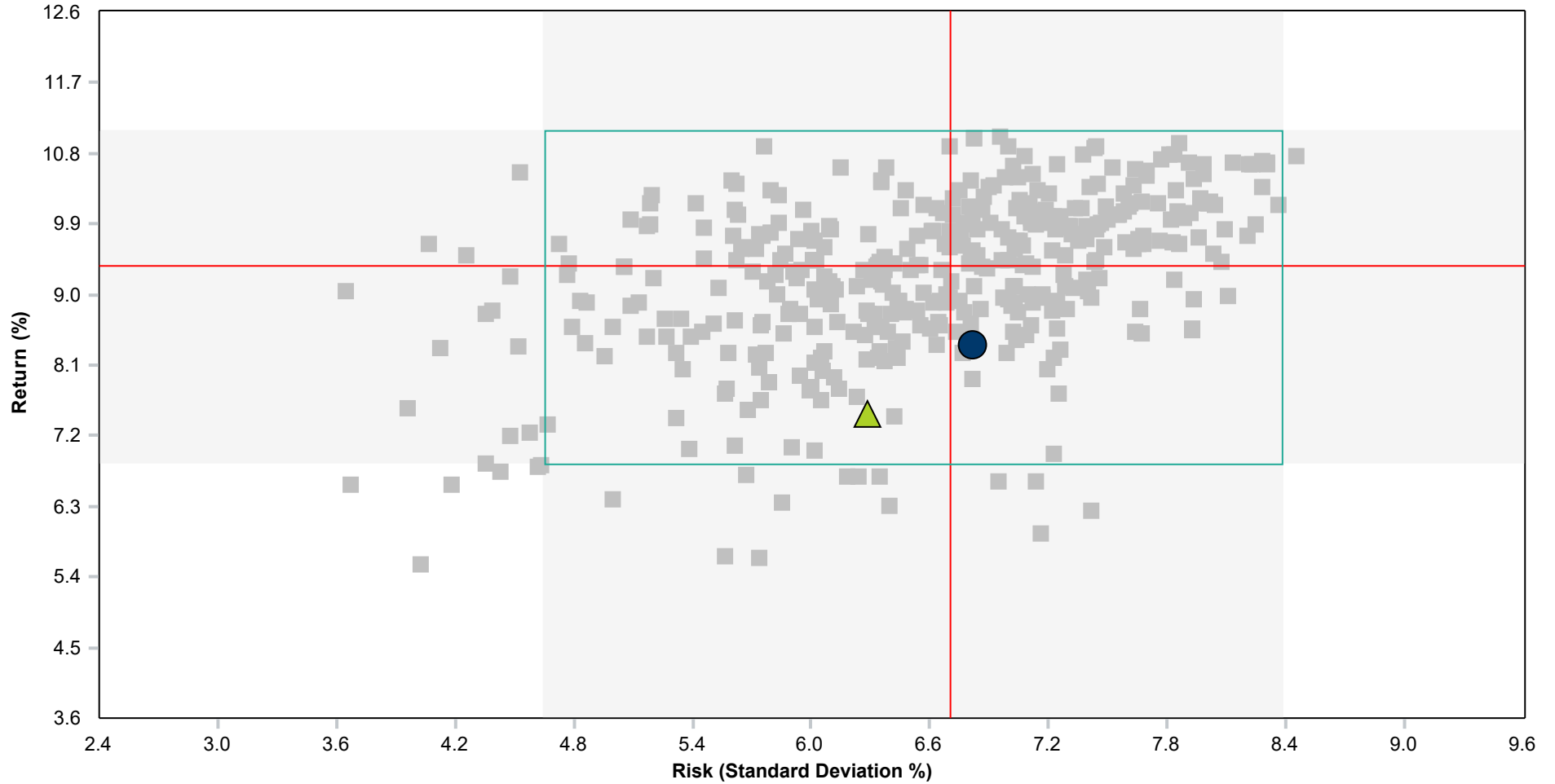
	QTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	4.32 (80)	18.49 (50)	8.36 (79)	5.85 (85)	8.49 (38)
● Total Fund Composite Policy	3.65 (90)	16.68 (74)	7.49 (88)	5.07 (92)	7.11 (85)
5th Percentile	6.84	22.08	11.03	8.21	9.59
1st Quartile	5.75	20.19	10.07	7.56	8.83
Median	5.19	18.47	9.37	7.03	8.19
3rd Quartile	4.51	16.57	8.52	6.43	7.54
95th Percentile	1.66	11.61	5.30	4.04	5.05
Population	509	496	472	458	399

Parenteses contain percentile rankings.
Calculation based on monthly periodicity.

Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended January 1, 2017 To December 31, 2019



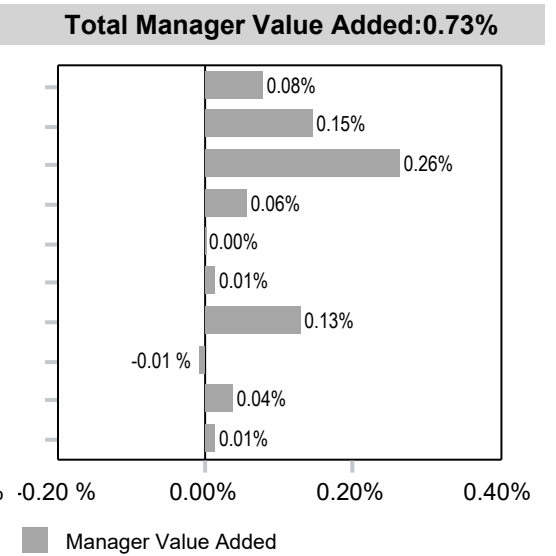
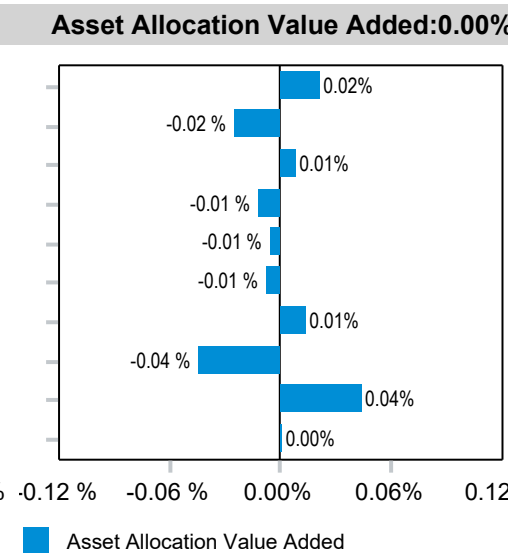
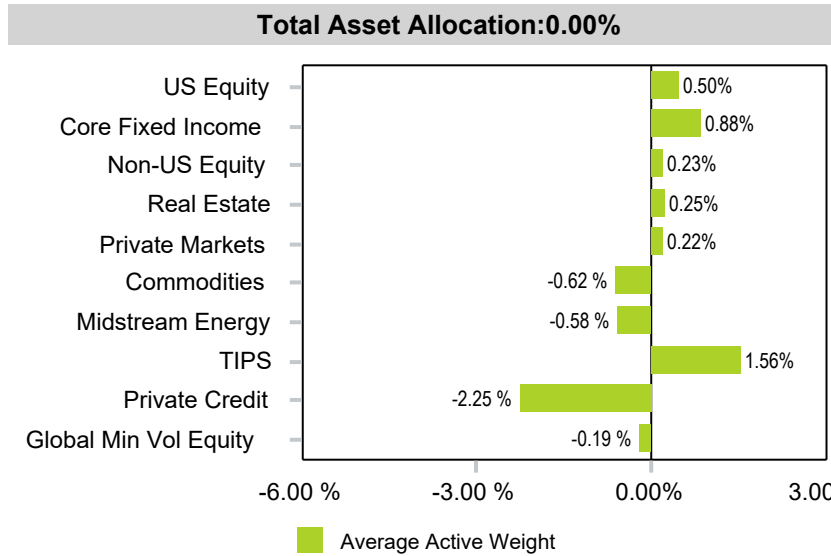
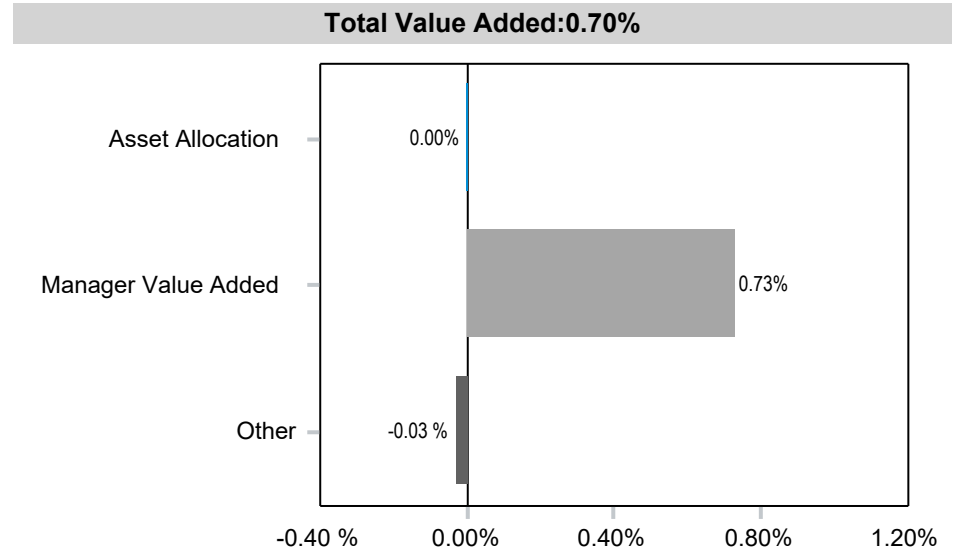
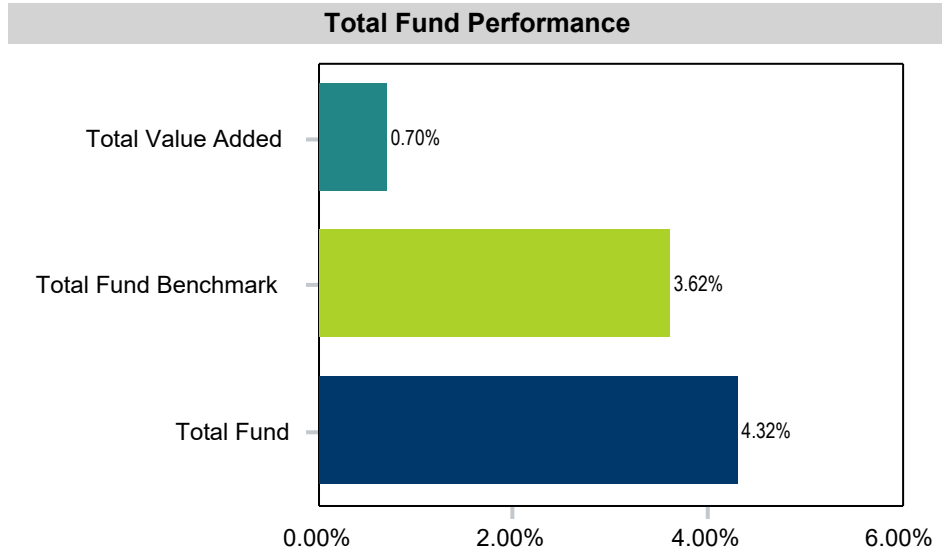
	Return	Standard Deviation
● Total Fund	8.36	6.82
▲ Total Fund Composite Policy	7.49	6.28
— Median	9.37	6.71

Calculation based on monthly periodicity.

Total Fund Attribution

Total Fund

Periods Ended 1 Quarter Ending December 31, 2019



Asset Allocation & Performance

Total Fund

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	445,310,021	100.00	4.32	18.49	18.49	8.36	5.85	8.49	8.11	10/1/1987
Total Fund Composite Policy			3.65	16.68	16.68	7.49	5.07	7.11	7.92	
Value Added			0.67	1.81	1.81	0.87	0.78	1.38	0.19	
U.S. Equity	82,625,934	18.55	9.51	32.09	32.09	14.68	11.54	14.00	9.79	10/1/1987
Wilshire 5000 Total Market TR Index			9.08	31.02	31.02	14.52	11.38	13.42	9.79	
Value Added			0.43	1.07	1.07	0.16	0.16	0.58	0.00	
Non-U.S. Equity	82,785,021	18.59	10.47	26.11	26.11	10.98	6.70	7.00	8.09	1/1/1990
International Equity Composite Policy			8.92	21.51	21.51	9.87	5.51	4.97	4.66	
Value Added			1.55	4.60	4.60	1.11	1.19	2.03	3.43	
Global Low Volatility Equity	43,242,328	9.71	3.10						10.62	6/1/2019
MSCI ACWI Minimum Volatility Index (Net)			2.96						10.33	
Value Added			0.14						0.29	
Core Fixed Income	108,714,750	24.41	0.75	10.67	10.67	5.10	4.05	5.36	6.81	10/1/1987
Blmbg. Barc. U.S. Aggregate			0.18	8.72	8.72	4.03	3.05	3.75	6.37	
Value Added			0.57	1.95	1.95	1.07	1.00	1.61	0.44	
Private Markets	22,777,498	5.11	0.43	11.91	11.91	15.63	13.28		9.37	4/1/2010
Private Markets Policy Index			0.43	11.91	11.91	15.63	13.28		9.37	
Value Added			0.00	0.00	0.00	0.00	0.00		0.00	
Private Credit	17,823,842	4.00	3.19	4.97	4.97				3.30	9/1/2018
S&P/LSTA Leverage Loan Index			1.73	8.64	8.64				4.18	
Value Added			1.46	-3.67	-3.67				-0.88	
Total Real Assets Composite	87,340,649	19.61	0.94	12.72	12.72	2.38			0.45	4/1/2015
Real Assets Composite Policy			0.42	10.81	10.81	2.23			0.44	
Value Added			0.52	1.91	1.91	0.15			0.01	

Asset Allocation & Performance

Total Fund

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
TIPS	22,635,870	5.08	0.68	8.42	8.42	3.12			2.29	5/1/2015
Blmbg. Barc. U.S. TIPS			0.79	8.43	8.43	3.32			2.33	
Value Added			-0.11	-0.01	-0.01	-0.20			-0.04	
Midstream Enegy	19,698,949	4.42	-1.15	12.54	12.54	-2.94			-5.38	4/1/2015
Policy Index			-4.08	6.56	6.56	-7.04			-10.96	
Value Added			2.93	5.98	5.98	4.10			5.58	
Commodities	19,739,597	4.43	4.77	11.60	11.60	2.12	-2.09		-5.94	2/1/2013
Bloomberg Commodity Index Total Return			4.42	7.69	7.69	-0.94	-3.92		-7.11	
Value Added			0.35	3.91	3.91	3.06	1.83		1.17	
Real Estate	22,402,122	5.03	-0.19	20.65	20.65	6.86	3.92	6.93	9.31	6/1/2009
Real Estate Policy Index			-1.23	18.34	18.34	7.21	4.94	8.05		
Value Added			1.04	2.31	2.31	-0.35	-1.02	-1.12		

Historical Hybrid Composition

Grand Rapids General Retirement System

Periods Ended December 31, 2019

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

Policy Index	Weight (%)
Apr-2010	
Wilshire 5000 Total Market TR Index	50.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Jul-2010	
Wilshire 5000 Total Market TR Index	45.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Jan-2013	
Wilshire 5000 Total Market TR Index	40.00
Blmbg. Barc. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
Apr-2015	
Wilshire 5000 Total Market TR Index	22.50
Blmbg. Barc. U.S. Aggregate	25.00
MSCI AC World ex USA (Net)	22.50
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Markets Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
S&P MLP Index	5.00
Blmbg. Barc. U.S. TIPS	10.00

Historical Hybrid Composition

Grand Rapids General Retirement System

Periods Ended December 31, 2019

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

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



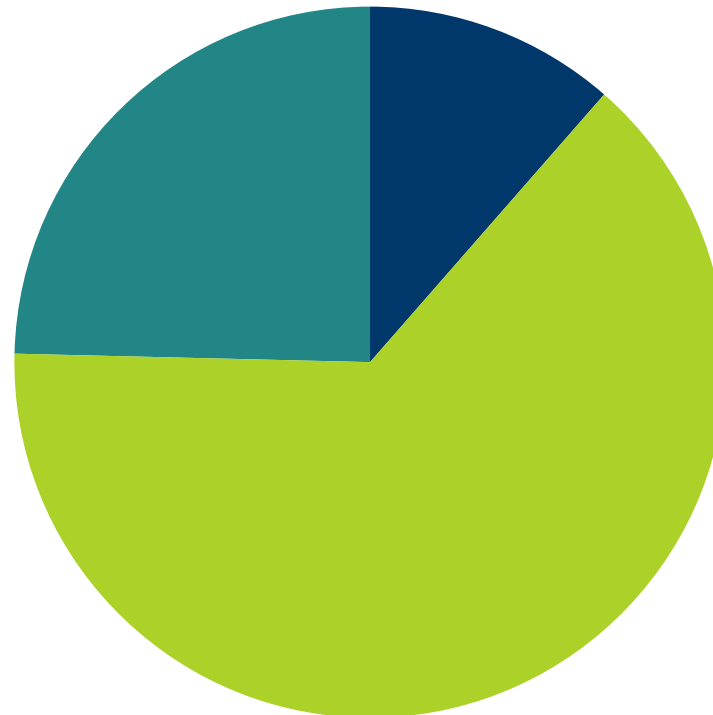
U.S. Equity Composite

Asset Allocation By Manager

U.S. Equity

Periods Ended December 31, 2019

Dec-2019 : 82,625,934



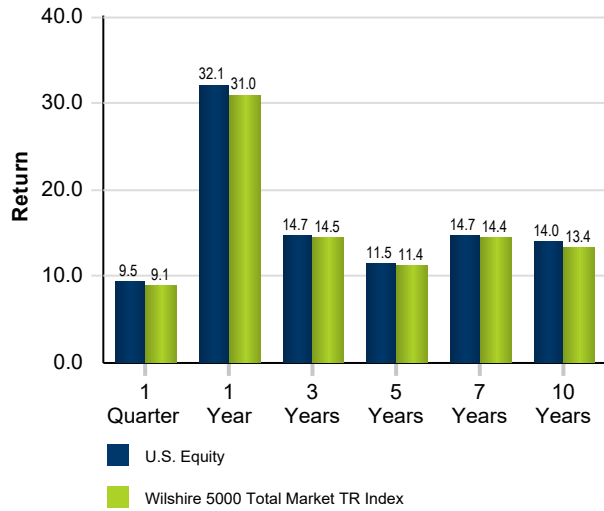
	Market Value \$	Allocation (%)
■ PIMCO Stock Plus	9,447,524	11.4
■ NTAM	52,839,325	64.0
■ Wellington	20,339,085	24.6

Performance Summary

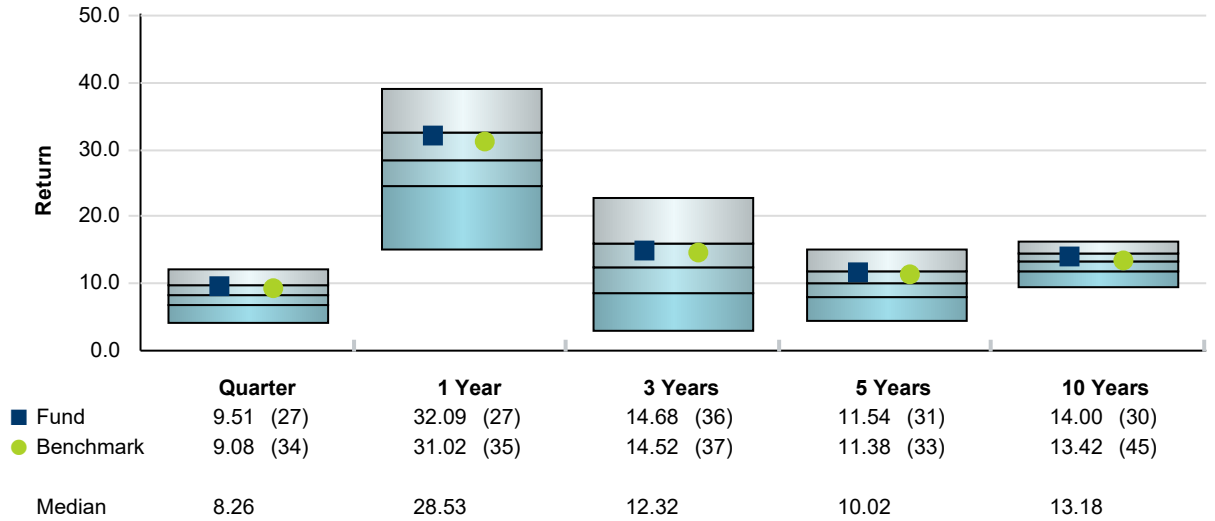
U.S. Equity

Periods Ended December 31, 2019

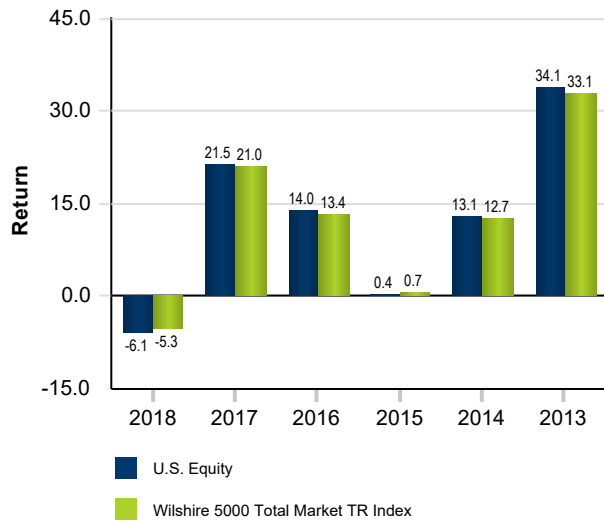
Comparative Performance



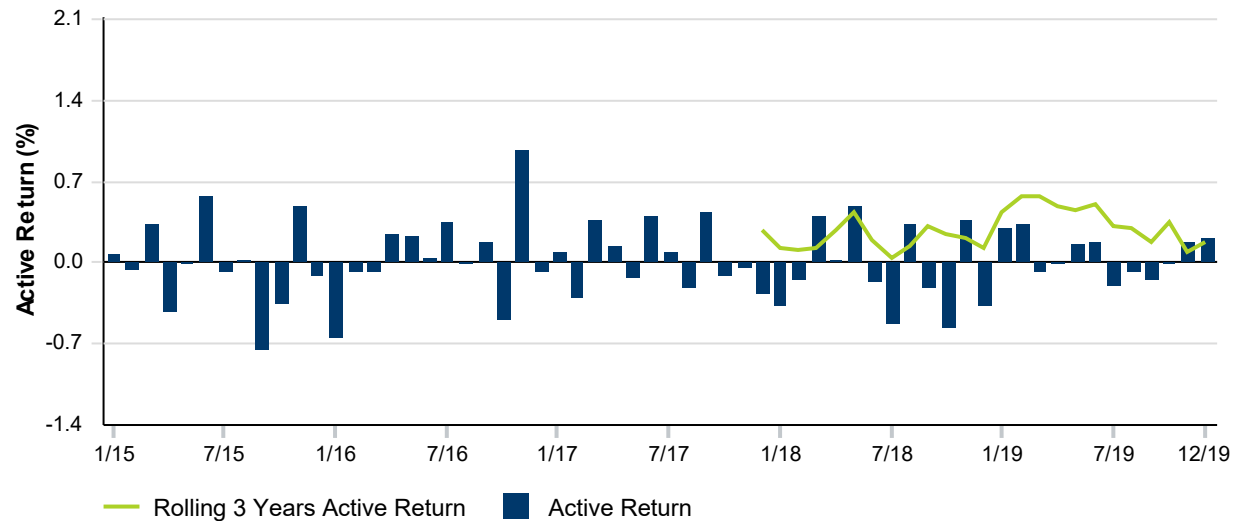
Peer Group Analysis: IM U.S. Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance

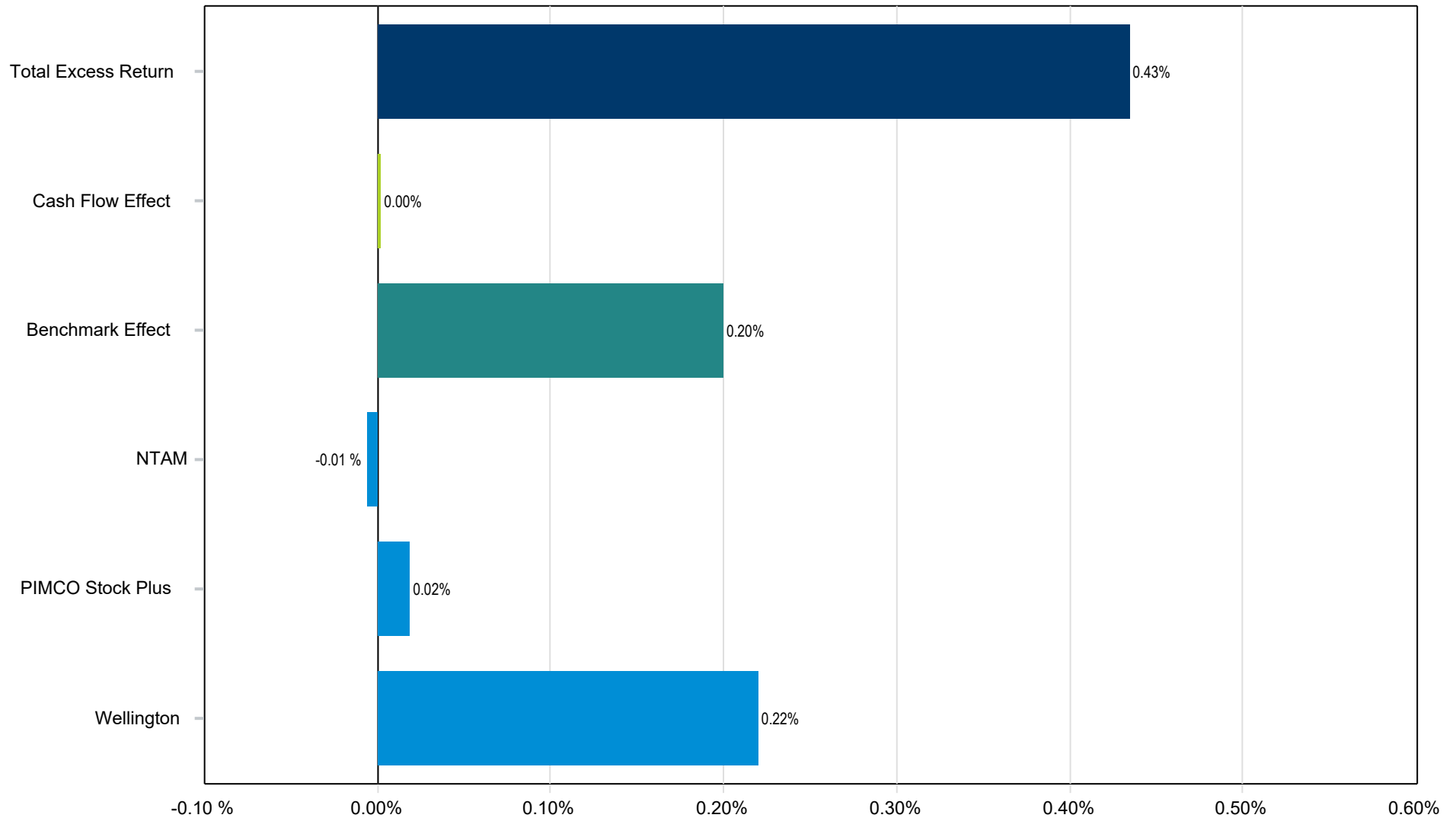


Asset Class Attribution

U.S. Equity

Periods Ended 1 Quarter Ending December 31, 2019

1 Quarter



Asset Allocation & Performance

U.S. Equity

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
U.S. Equity	82,625,934		9.51	32.09	32.09	14.68	11.54	14.00	9.79	10/1/1987
Wilshire 5000 Total Market TR Index			9.08	31.02	31.02	14.52	11.38	13.42	9.79	
Value Added			0.43	1.07	1.07	0.16	0.16	0.58	0.00	
NTAM	52,839,325		9.06	31.51	31.51	15.26	11.71	13.57	8.33	4/1/1998
NTAM Policy			9.07	31.49	31.49	15.27	11.70	13.56	7.24	
Value Added			-0.01	0.02	0.02	-0.01	0.01	0.01	1.09	
PIMCO Stock Plus	9,447,524		9.24	32.77	32.77	15.57	11.64	14.49	6.50	6/1/2000
S&P 500			9.07	31.49	31.49	15.27	11.70	13.56	6.35	
Value Added			0.17	1.28	1.28	0.30	-0.06	0.93	0.15	
Wellington	20,339,085		10.86	33.24	33.24	12.87	10.97	15.32	11.46	9/1/1999
Russell 2000 Index			9.94	25.53	25.53	8.59	8.23	11.83	8.36	
Value Added			0.92	7.71	7.71	4.28	2.74	3.49	3.10	



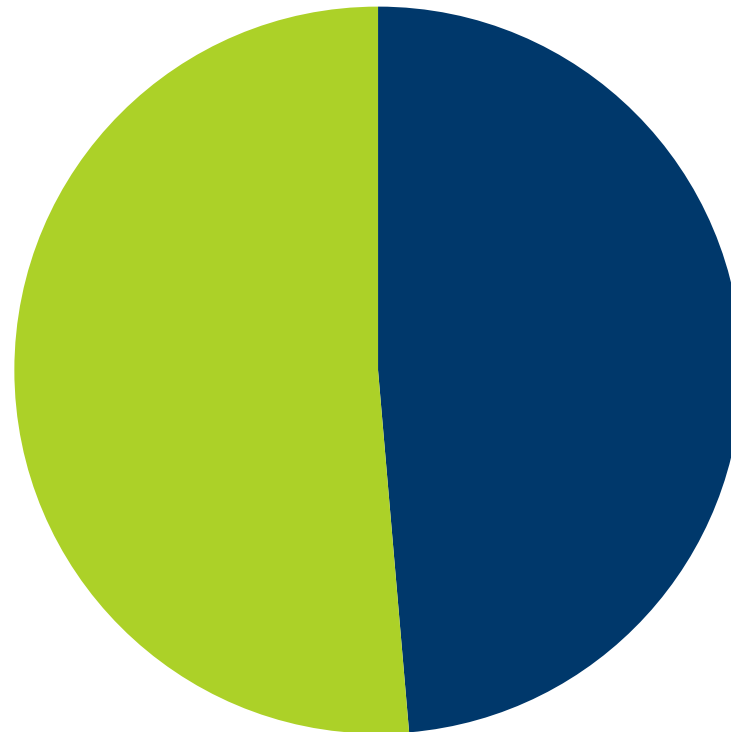
Non-U.S. Equity Composite

Asset Allocation By Manager

Non-U.S. Equity

Periods Ended December 31, 2019

Dec-2019 : 82,785,021



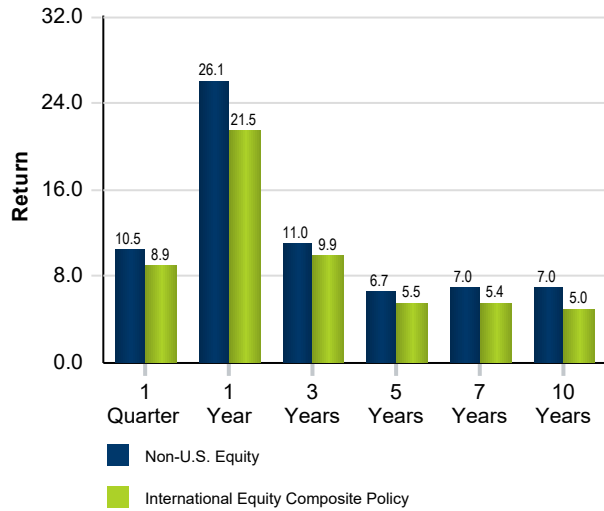
	Market Value \$	Allocation (%)
■ Harding Loevner	40,265,353	48.6
■ Neuberger Berman CIT	42,519,668	51.4

Performance Summary

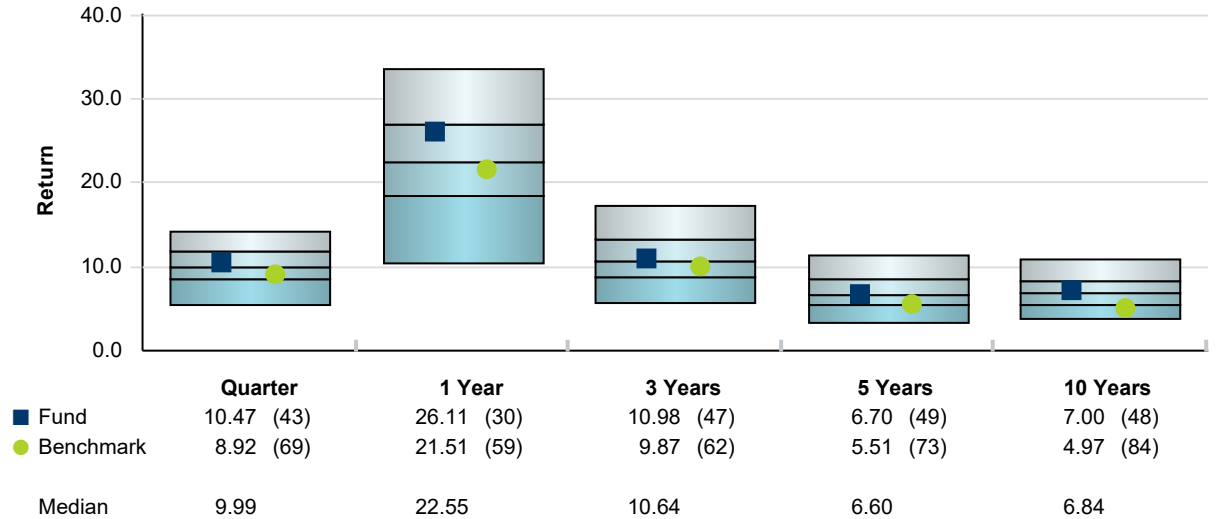
Non-U.S. Equity

Periods Ended December 31, 2019

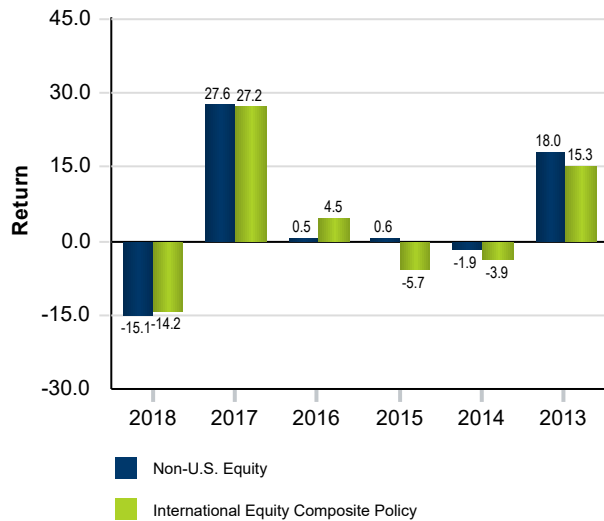
Comparative Performance



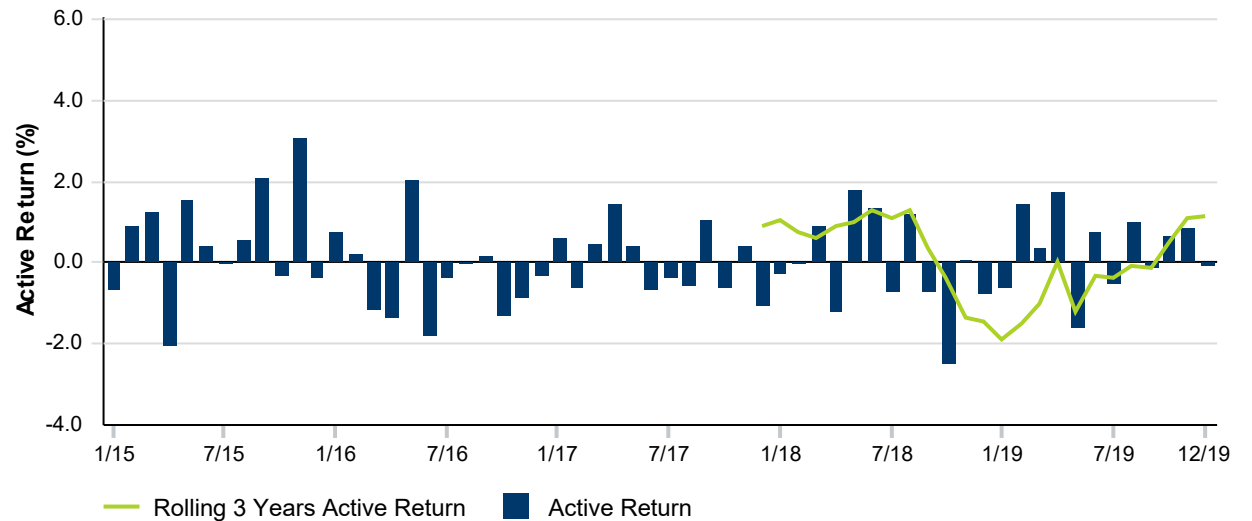
Peer Group Analysis: IM International Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance

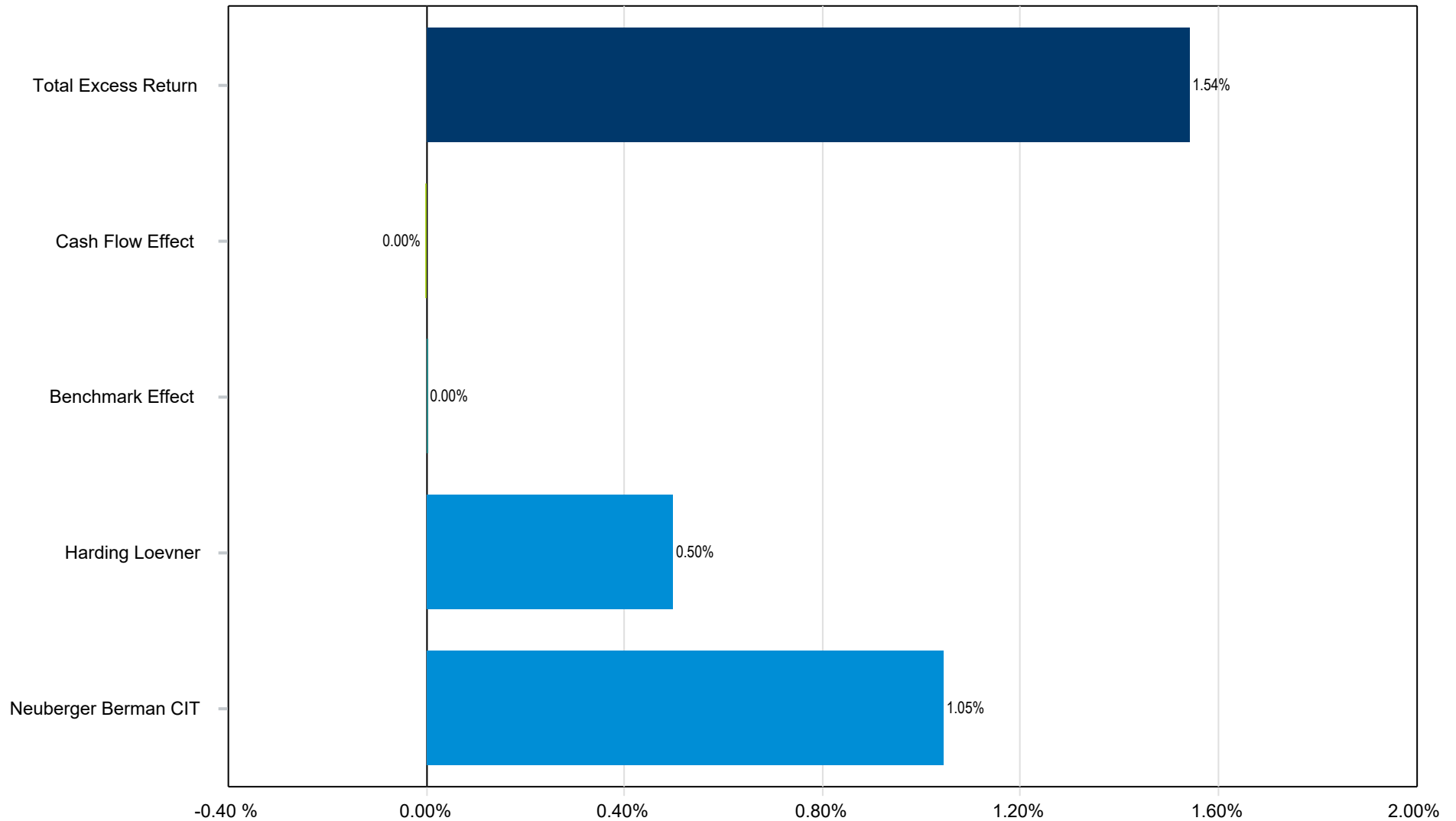


Asset Class Attribution

Non-U.S. Equity

Periods Ended 1 Quarter Ending December 31, 2019

1 Quarter



Asset Allocation & Performance

Non-U.S. Equity

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Non-U.S. Equity	82,785,021		10.47	26.11	26.11	10.98	6.70	7.00	8.09	1/1/1990
International Equity Composite Policy			8.92	21.51	21.51	9.87	5.51	4.97	4.66	
Value Added			1.55	4.60	4.60	1.11	1.19	2.03	3.43	
Harding Loevner	40,265,353		9.94	22.55	22.55	10.73			6.07	4/1/2015
MSCI AC World ex USA (Net)			8.92	21.51	21.51	9.87			5.04	
Value Added			1.02	1.04	1.04	0.86			1.03	
Neuberger Berman Composite	42,519,668		10.97	29.50	29.50	11.55	7.00	7.15	4.12	7/1/2006
MSCI AC World ex USA (Net)			8.92	21.51	21.51	9.87	5.51	4.97	3.94	
Value Added			2.05	7.99	7.99	1.68	1.49	2.18	0.18	
Neuberger Berman CIT	42,519,668		10.97	29.50	29.50				6.77	7/1/2018
MSCI AC World ex USA (Net)			8.92	21.51	21.51				5.49	
Value Added			2.05	7.99	7.99				1.28	



Global Min Vol Equity Composite

Asset Allocation & Performance

Global Low Volatility Equity

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Global Low Volatility Equity	43,242,328		3.10						10.62	6/1/2019
MSCI ACWI Minimum Volatility Index (Net)			2.96						10.33	
Value Added			0.14						0.29	
BlackRock MSCI ACWI Min Vol	43,242,328		3.10						10.62	6/1/2019
MSCI ACWI Minimum Volatility Index (Net)			2.96						10.33	
Value Added			0.14						0.29	



Alternative Investments

Private Equity Composite Overview

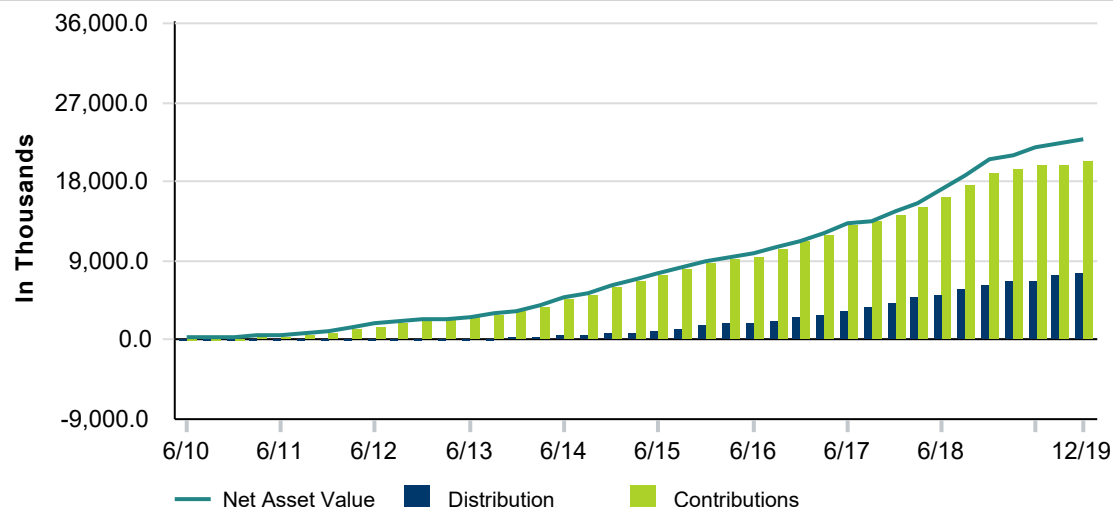
Private Markets

Periods Ended As of December 31, 2019

Cash Flow Summary

Capital Committed:	34,500,000
Capital Invested:	2,411,500
Management Fees:	
Expenses:	
Interest:	
Total Contributions:	20,656,250
Remaining Capital Commitment:	14,212,505
Total Distributions:	7,702,627
Market Value:	22,777,498
Inception Date:	7/1/2010
Inception IRR:	12.6
TVPI:	1.5

Cash Flow Analysis



Private Equity Portfolio

Partnerships	Investment Type	Investment Strategy	Size of Fund \$	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
Adams Street 2010 Direct Fund				500,000	474,500	565,349	267,805	12.3	1.8
Adams Street 2010 EM Fund				500,000	449,000	146,572	593,850	10.5	1.6
Adams Street 2010 Non-US Fund				1,500,000	1,313,250	1,157,427	926,370	11.7	1.6
Adams Street 2010 US Fund				2,500,000	2,202,500	1,823,069	2,037,909	13.5	1.8
Adams Street 2013 Global Fund				5,000,000	4,090,000	1,016,580	4,945,652	10.9	1.5
Adams Street 2015 Global				6,500,000	4,244,500	847,081	5,164,560	20.7	1.4
Adams Street 2017 Global Fund				6,000,000	2,733,000	117,545	2,796,883	6.3	1.1
Aberdeen Global				5,000,000	4,950,000	2,029,004	5,844,969	11.8	1.6
Adams Street 2019 Global				7,000,000	199,500		199,500	0.0	1.0
Private Markets	Total Fund	Hybrid		34,500,000	20,656,250	7,702,627	22,777,498	12.6	1.5

Private Equity Composite Overview

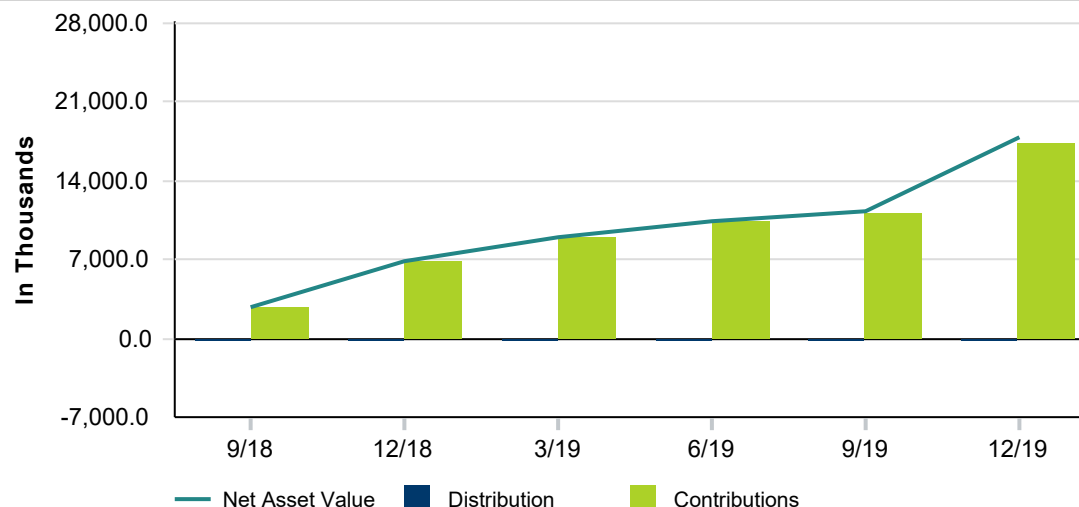
Private Credit

Periods Ended As of December 31, 2019

Cash Flow Summary

Capital Committed:	21,000,000
Capital Invested:	
Management Fees:	
Expenses:	
Interest:	
Total Contributions:	17,318,028
Remaining Capital Commitment:	3,681,972
Total Distributions:	
Market Value:	17,823,842
Inception Date:	9/30/2018
Inception IRR:	4.7
TVPI:	1.0

Cash Flow Analysis



Private Equity Portfolio

Partnerships	Investment Type	Investment Strategy	Size of Fund \$	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
50 South Capital Private Credit				7,000,000	3,318,028		3,301,876	-0.7	1.0
Grosvenor PC				14,000,000	14,000,000		14,521,966	6.2	1.0
Private Credit	Total Fund	Hybrid		21,000,000	17,318,028		17,823,842	4.7	1.0



Core Fixed Composite

Asset Allocation By Manager

Core Fixed Income

Periods Ended December 31, 2019

Dec-2019 : 108,714,750



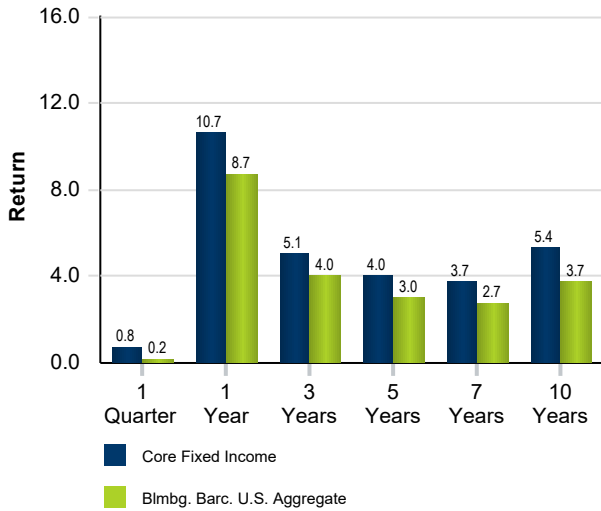
	Market Value \$	Allocation (%)
■ Baird Advisors	53,823,754	49.5
■ Western Asset Management	54,890,996	50.5

Performance Summary

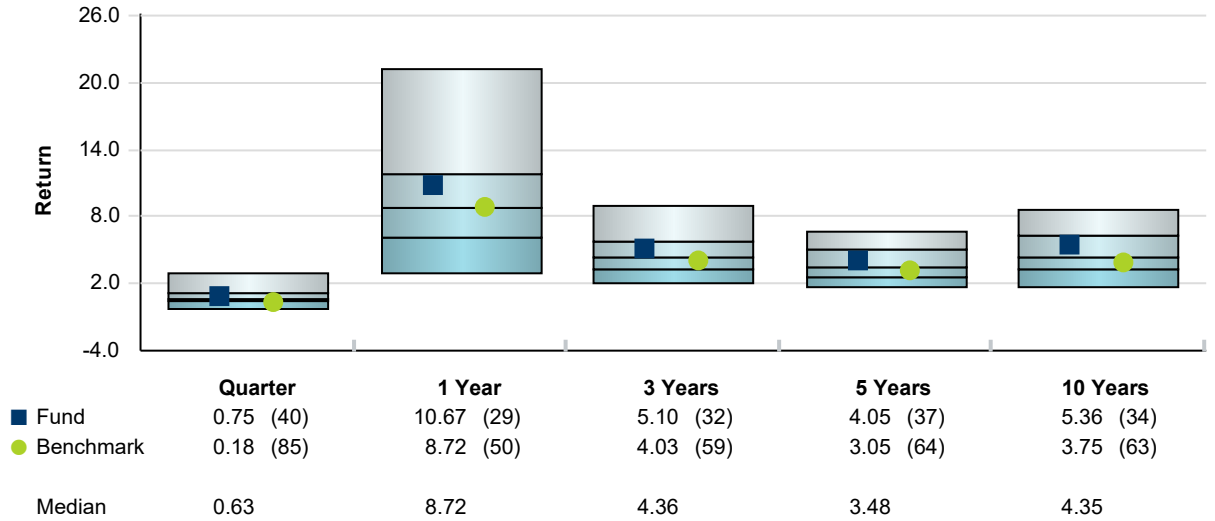
Core Fixed Income

Periods Ended December 31, 2019

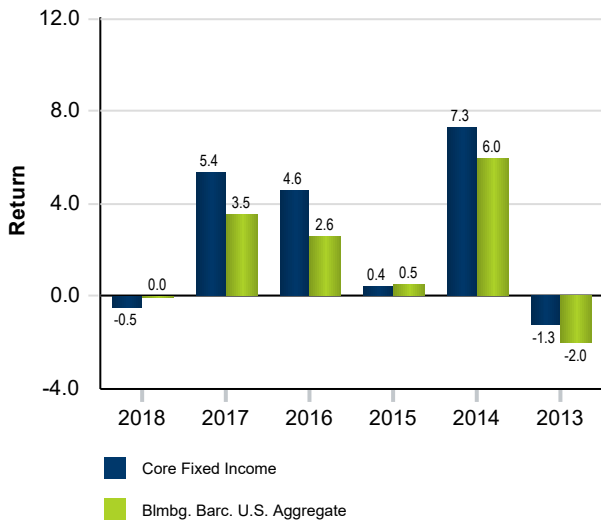
Comparative Performance



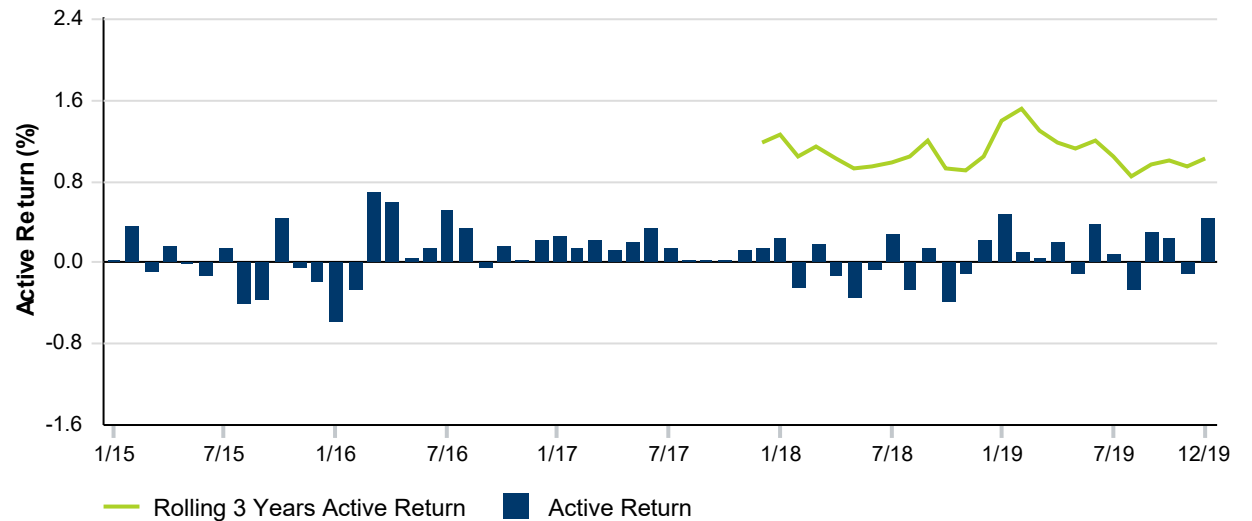
Peer Group Analysis: IM U.S. Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance

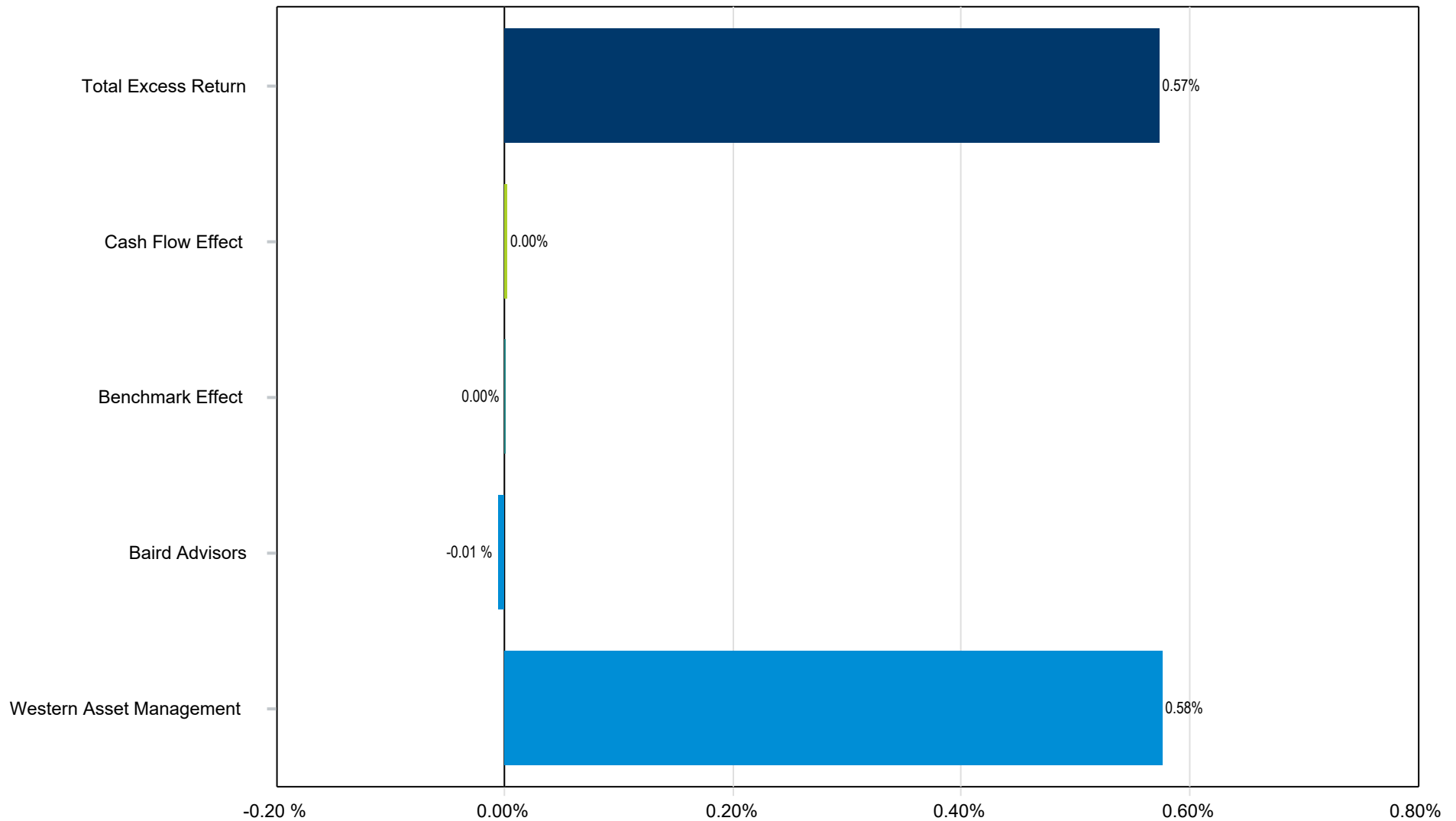


Asset Class Attribution

Core Fixed Income

Periods Ended 1 Quarter Ending December 31, 2019

1 Quarter



Asset Allocation & Performance

Core Fixed Income

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Core Fixed Income	108,714,750		0.75	10.67	10.67	5.10	4.05	5.36	6.81	10/1/1987
Blmbg. Barc. U.S. Aggregate			0.18	8.72	8.72	4.03	3.05	3.75	6.37	
Value Added			0.57	1.95	1.95	1.07	1.00	1.61	0.44	
Baird Advisors	53,823,754		0.17	9.17	9.17	4.47	3.57	4.65	4.47	12/1/2002
Blmbg. Barc. U.S. Aggregate			0.18	8.72	8.72	4.03	3.05	3.75	4.27	
Value Added			-0.01	0.45	0.45	0.44	0.52	0.90	0.20	
Western Asset Management	54,890,996		1.33	12.16	12.16	5.67	4.49	5.99	5.29	1/1/2004
Blmbg. Barc. U.S. Aggregate			0.18	8.72	8.72	4.03	3.05	3.75	4.16	
Value Added			1.15	3.44	3.44	1.64	1.44	2.24	1.13	



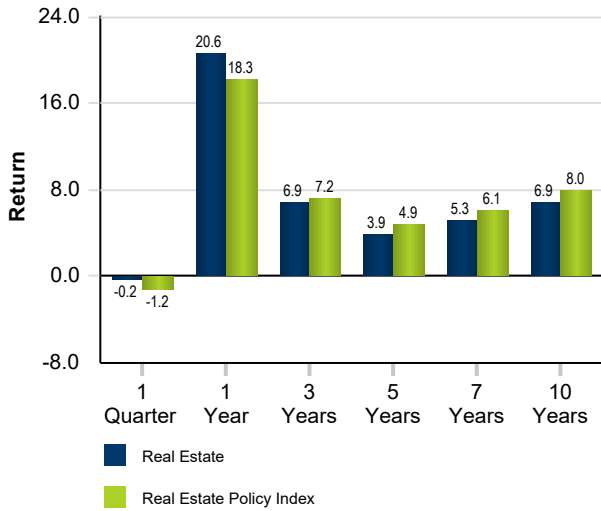
Real Estate

Performance Summary

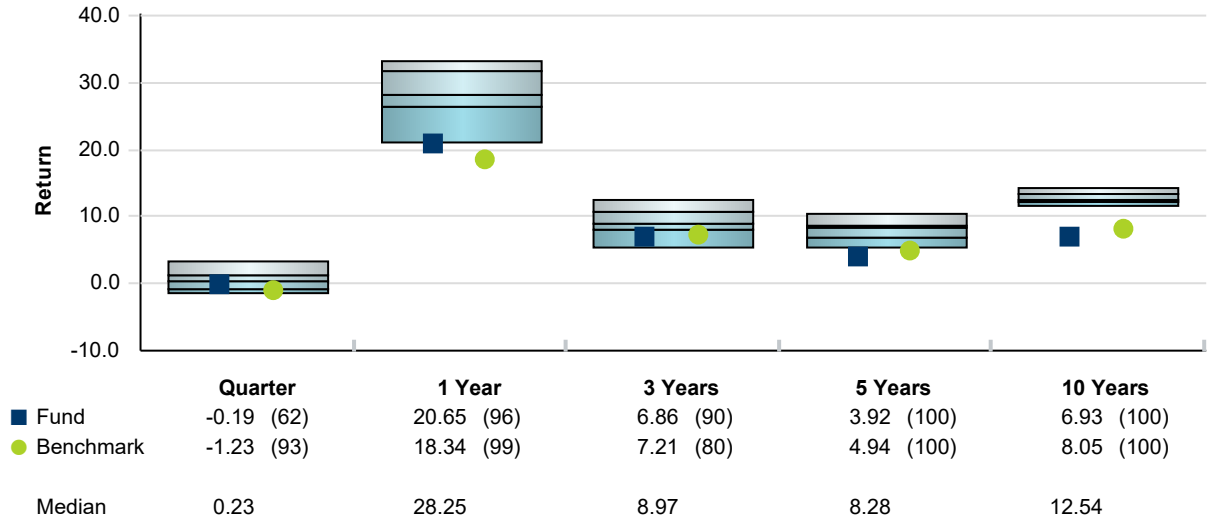
Real Estate

Periods Ended December 31, 2019

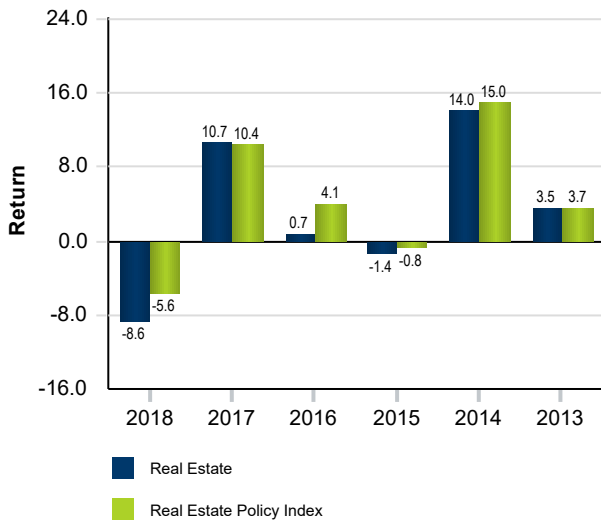
Comparative Performance



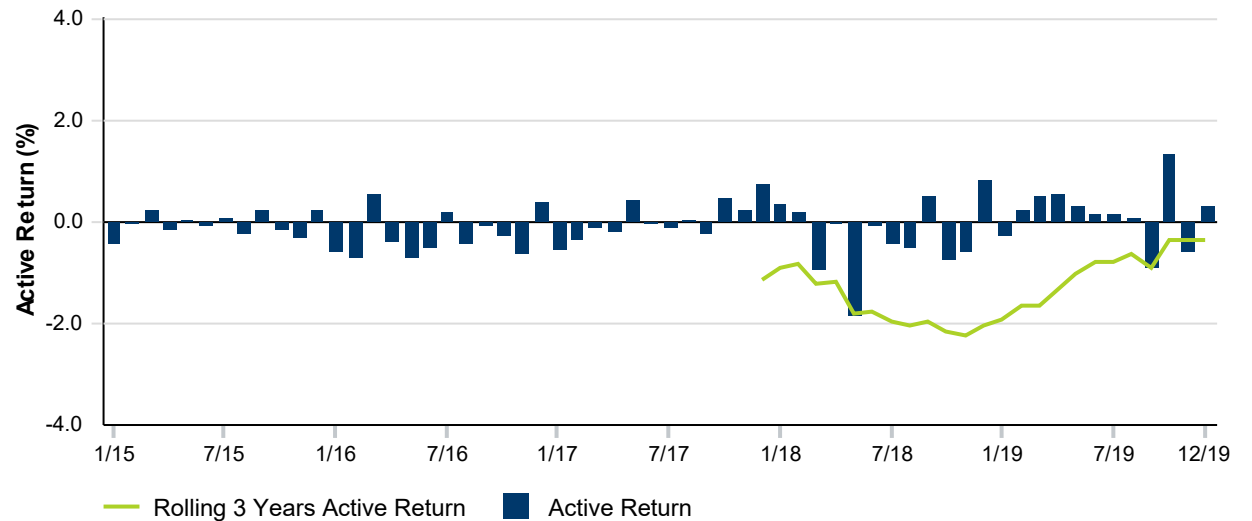
Peer Group Analysis: IM U.S. REIT (SA+CF)



Comparative Performance



Rolling 3 Years Performance



Asset Allocation & Performance

Real Estate

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Real Estate	22,402,122		-0.19	20.65	20.65	6.86	3.92	6.93	9.31	6/1/2009
Real Estate Policy Index			-1.23	18.34	18.34	7.21	4.94	8.05		
Value Added			1.04	2.31	2.31	-0.35	-1.02	-1.12		
Centersquare	22,402,122		-0.02						-0.02	10/1/2019
Dow Jones U.S. Select REIT			-1.23						-1.23	
Value Added			1.21						1.21	



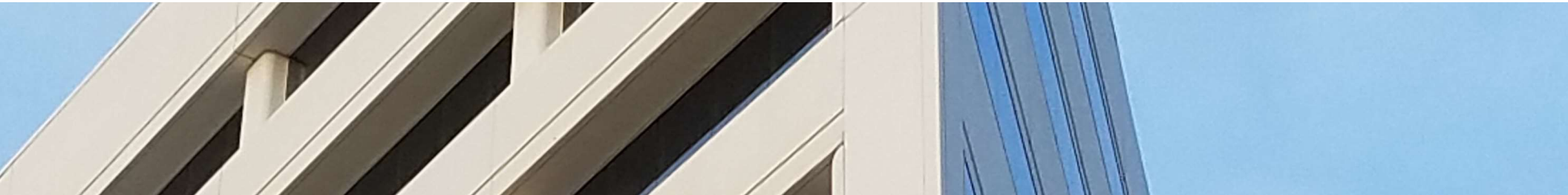
Commodities

Asset Allocation & Performance

Commodities

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Commodities	19,739,597		4.77	11.55	11.55	2.11	-2.09		-5.94	2/1/2013
Bloomberg Commodity Index Total Return			4.42	7.69	7.69	-0.94	-3.92		-7.11	
Value Added			0.35	3.86	3.86	3.05	1.83		1.17	
Wellington Commodities	19,739,597		4.77	11.55	11.55	2.11	-2.09		-5.94	2/1/2013
Bloomberg Commodity Index Total Return			4.42	7.69	7.69	-0.94	-3.92		-7.11	
Value Added			0.35	3.86	3.86	3.05	1.83		1.17	



Midstream Energy

Asset Allocation & Performance

Midstream Energy

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Midstream Energy	19,698,949		-1.15	12.54	12.54	-2.94			-5.38	4/1/2015
Policy Index			-4.08	6.56	6.56	-7.04			-10.96	
Value Added			2.93	5.98	5.98	4.10			5.58	
Harvest MLP	19,698,949		-1.15	12.54	12.54	-2.94			-5.38	4/1/2015
Policy Index			-4.08	6.56	6.56	-7.04			-10.96	
Value Added			2.93	5.98	5.98	4.10			5.58	



TIPS

Asset Allocation & Performance

TIPS

Periods Ended December 31, 2019

	Allocation		Performance (%) net of fees							
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
TIPS	22,635,870		0.68	8.42	8.42	3.12			2.29	5/1/2015
Blmbg. Barc. U.S. TIPS			0.79	8.43	8.43	3.32			2.33	
Value Added			-0.11	-0.01	-0.01	-0.20			-0.04	
Brown Brothers Harriman	22,635,870		0.68	8.42	8.42	3.12			2.29	5/1/2015
Blmbg. Barc. U.S. TIPS			0.79	8.43	8.43	3.32			2.33	
Value Added			-0.11	-0.01	-0.01	-0.20			-0.04	



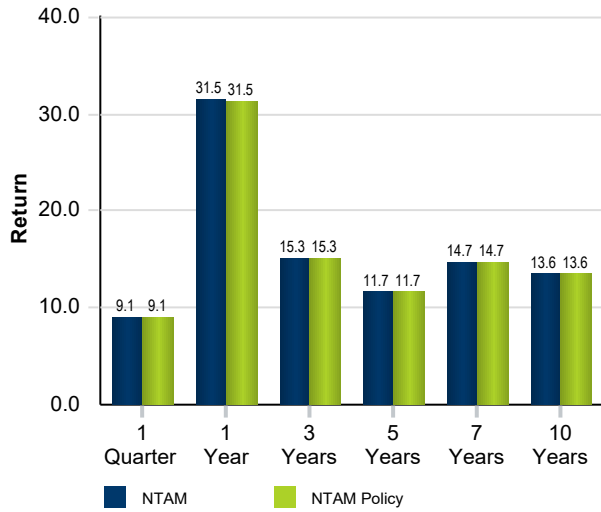
APPENDIX

Performance Summary

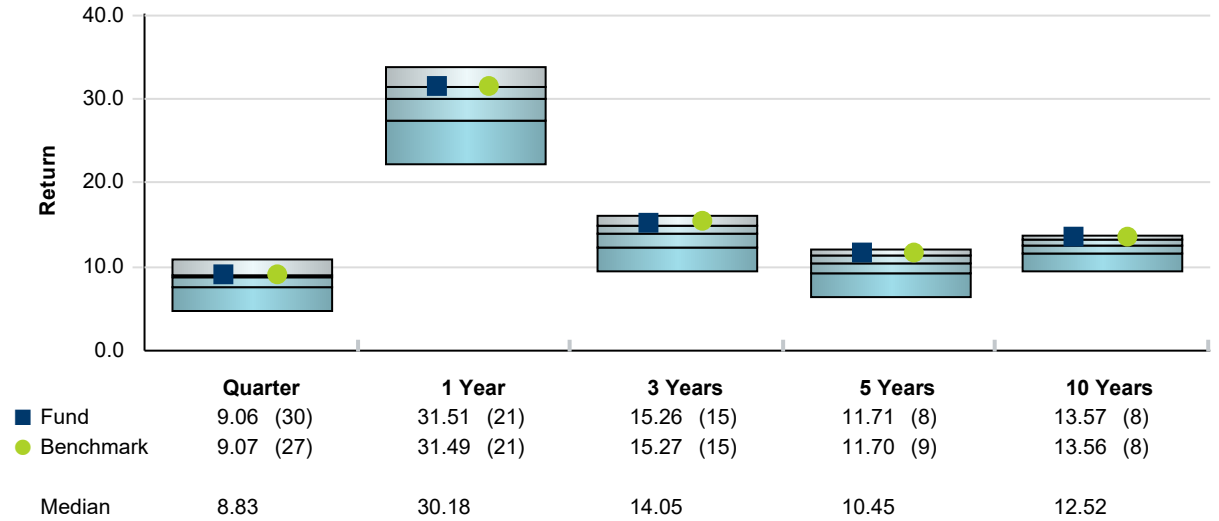
NTAM

Periods Ended December 31, 2019

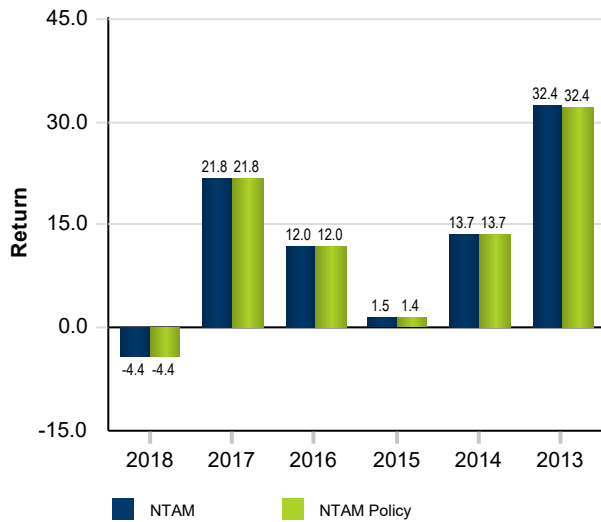
Comparative Performance



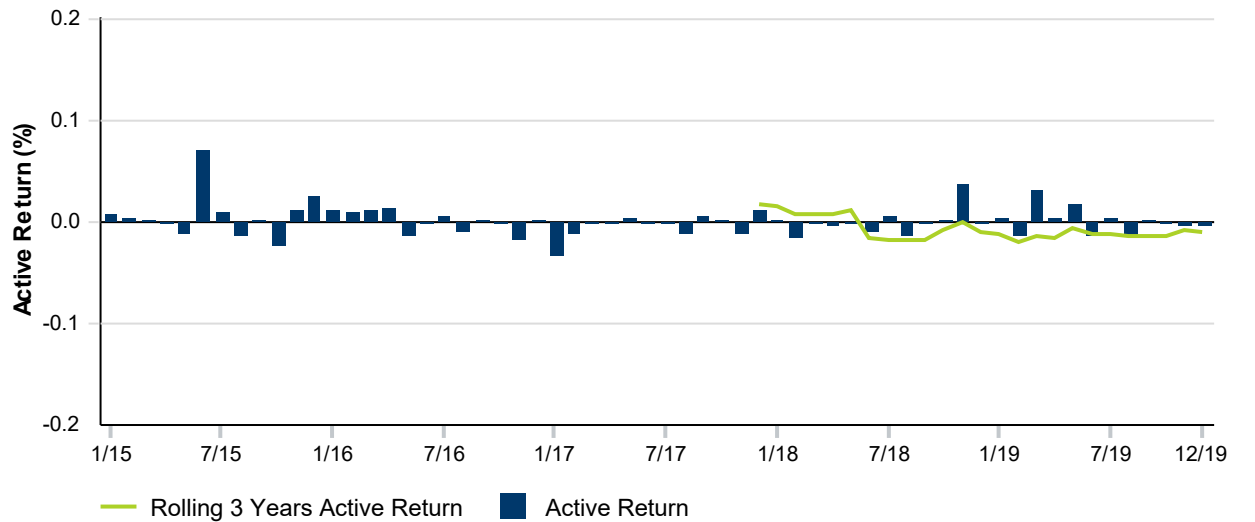
Peer Group Analysis: Large Blend



Comparative Performance



Rolling 3 Years Performance

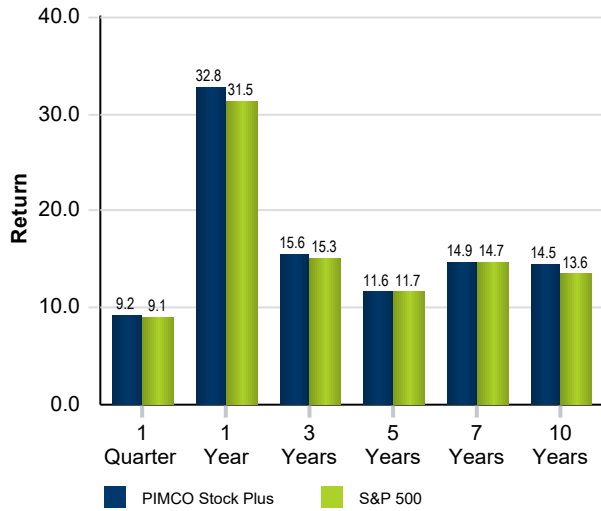


Performance Summary

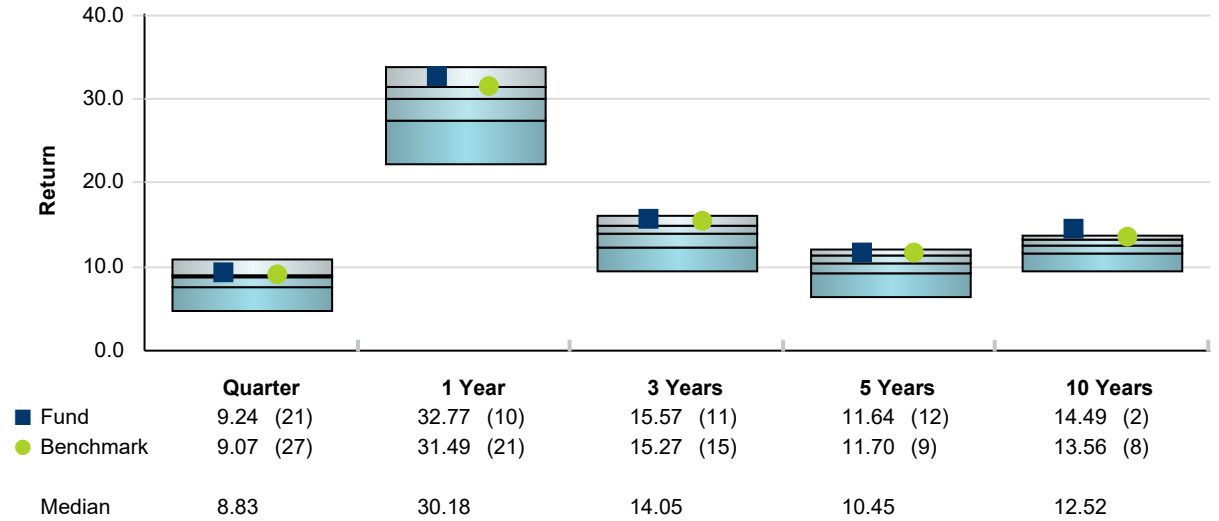
PIMCO Stock Plus

Periods Ended December 31, 2019

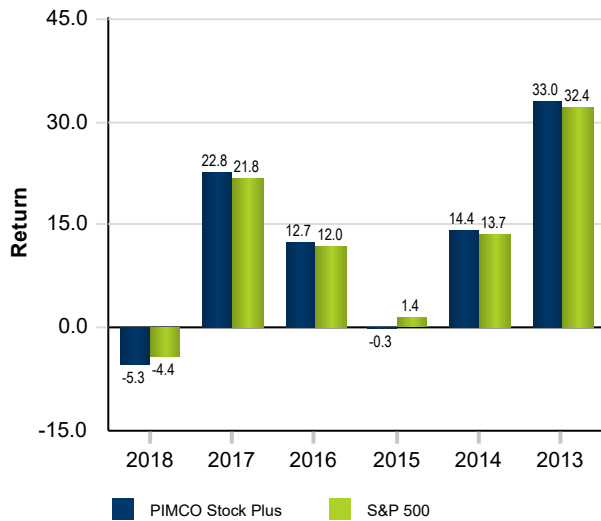
Comparative Performance



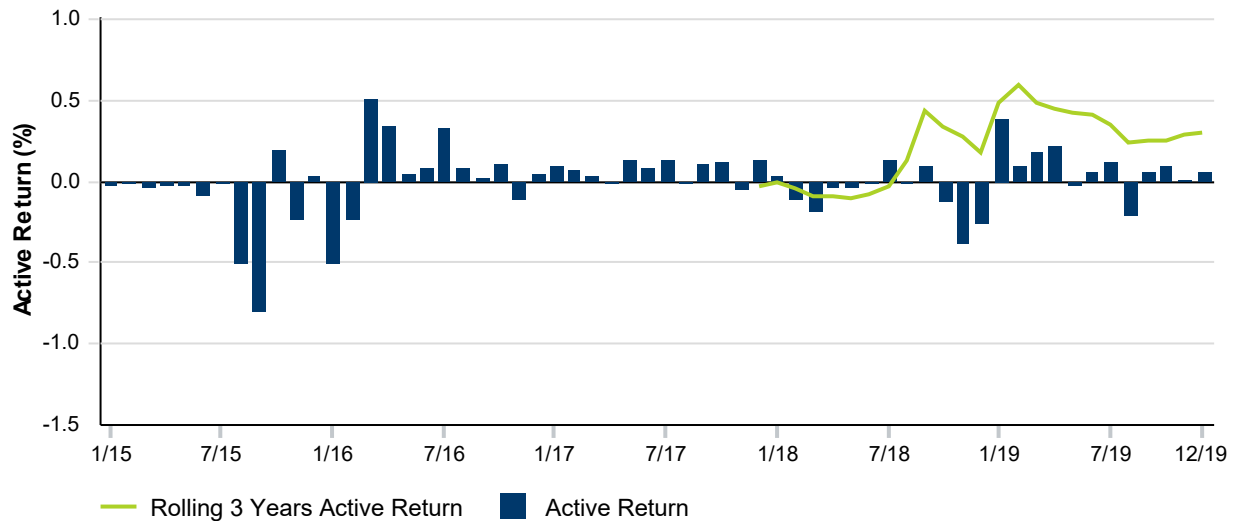
Peer Group Analysis: Large Blend



Comparative Performance



Rolling 3 Years Performance

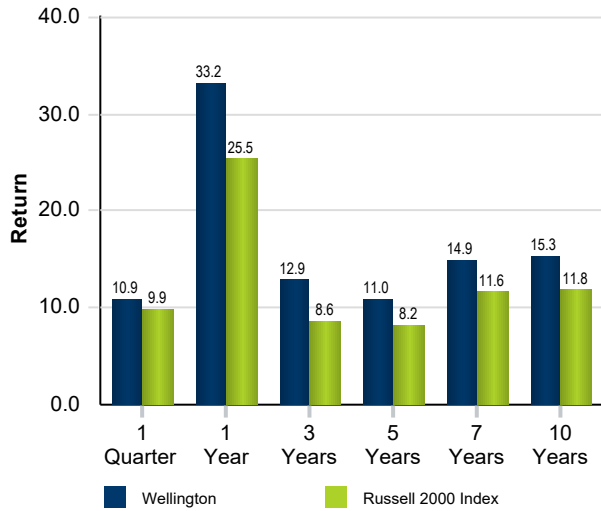


Performance Summary

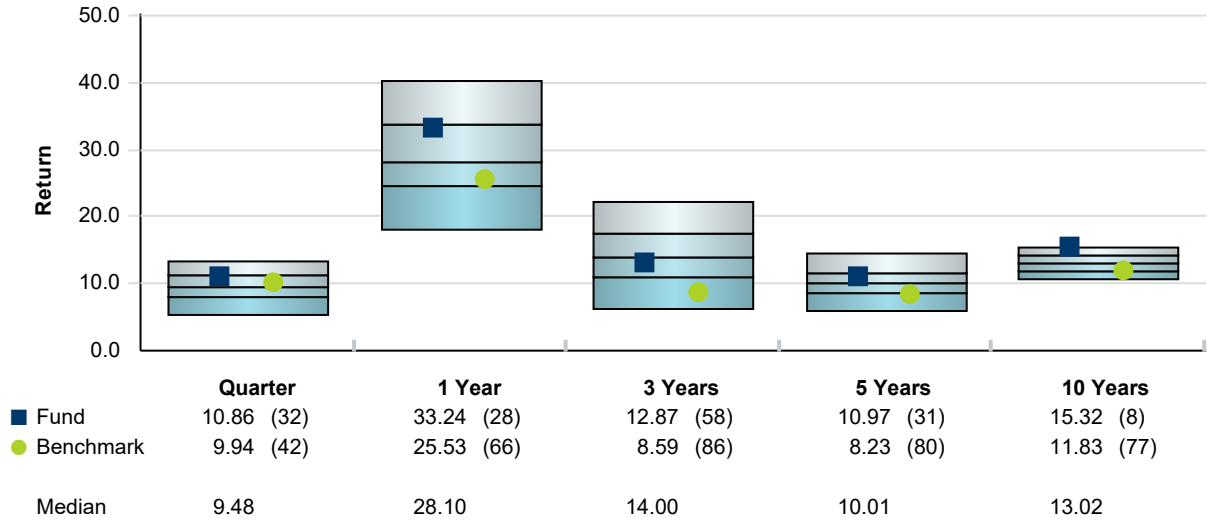
Wellington

Periods Ended December 31, 2019

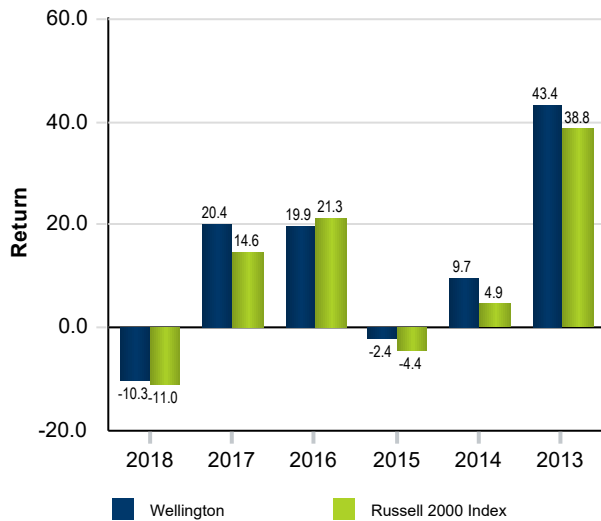
Comparative Performance



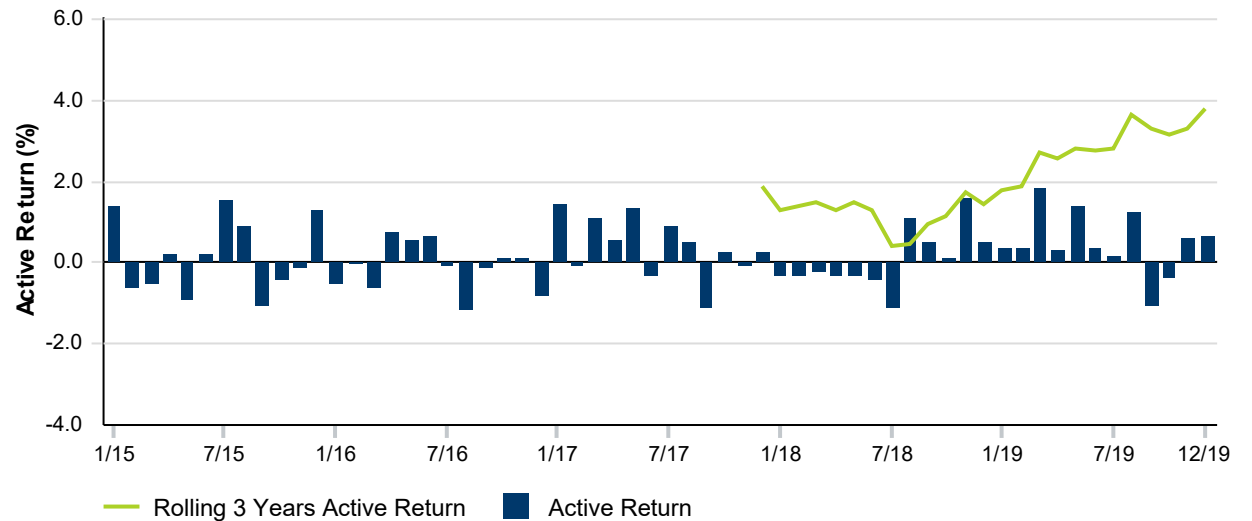
Peer Group Analysis: Small Growth



Comparative Performance



Rolling 3 Years Performance

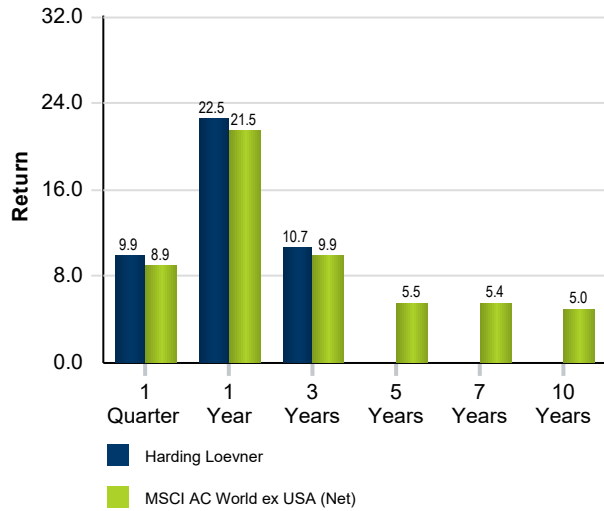


Performance Summary

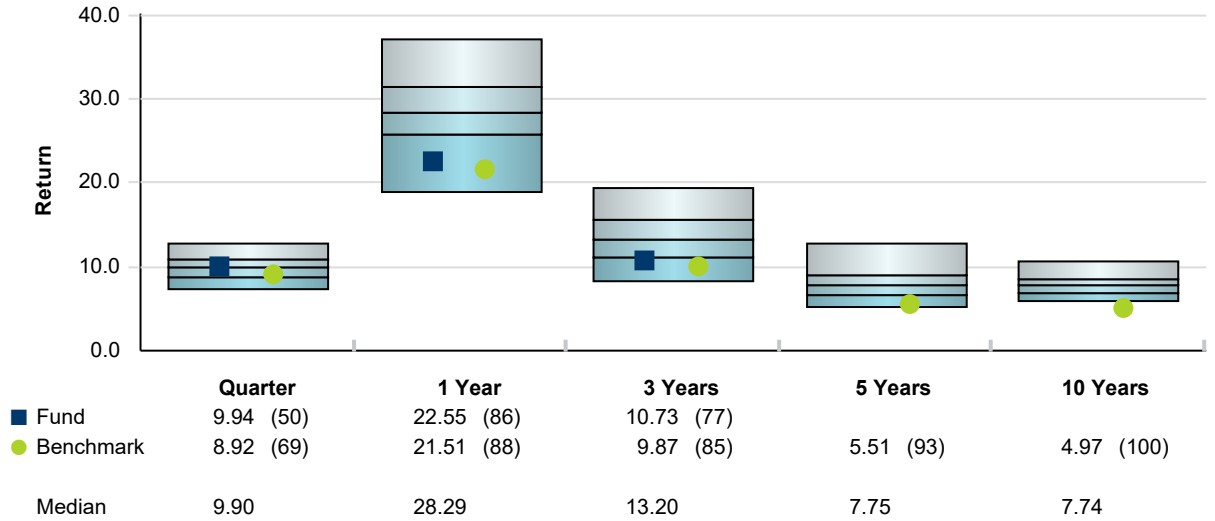
Harding Loevner

Periods Ended December 31, 2019

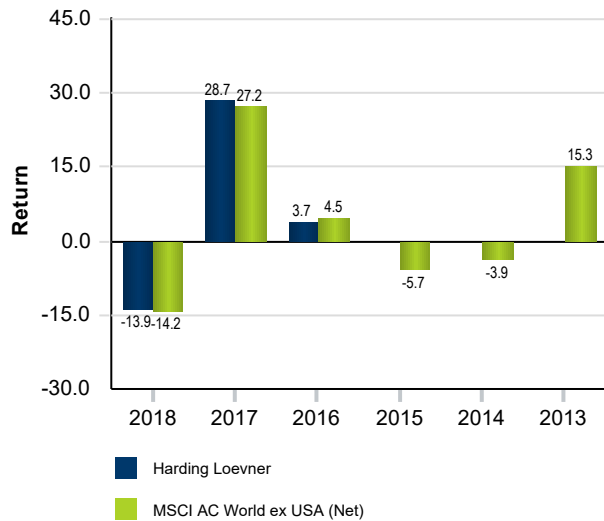
Comparative Performance



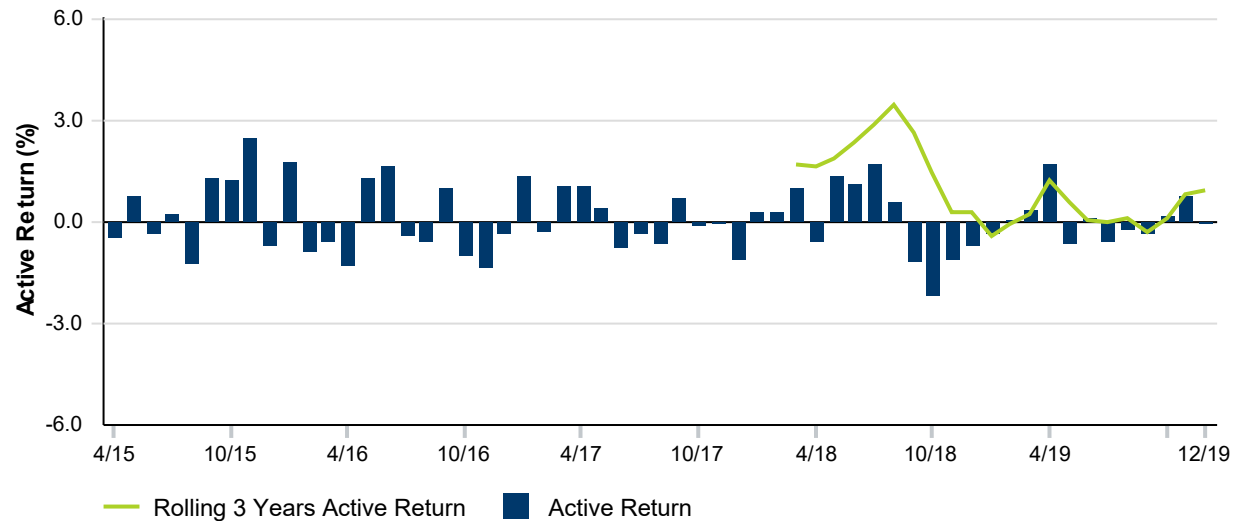
Peer Group Analysis: IM International Large Cap Growth Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance

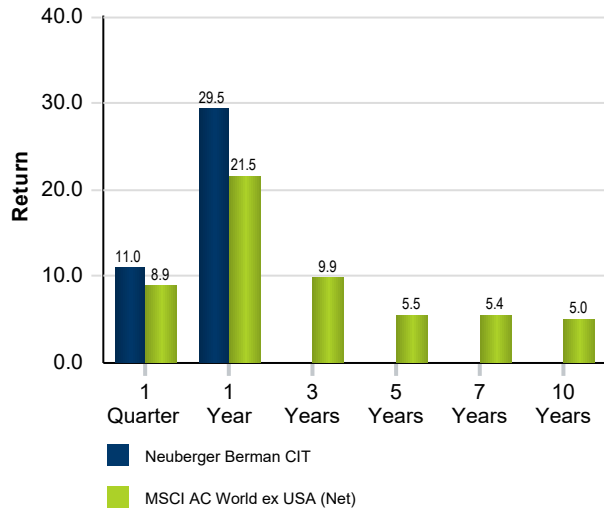


Performance Summary

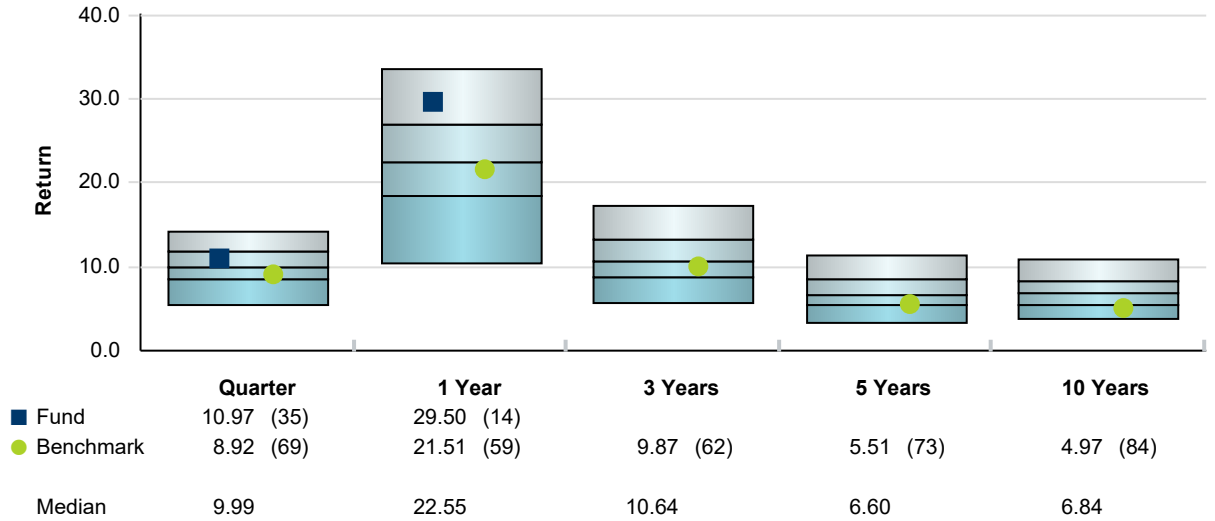
Neuberger Berman CIT

Periods Ended December 31, 2019

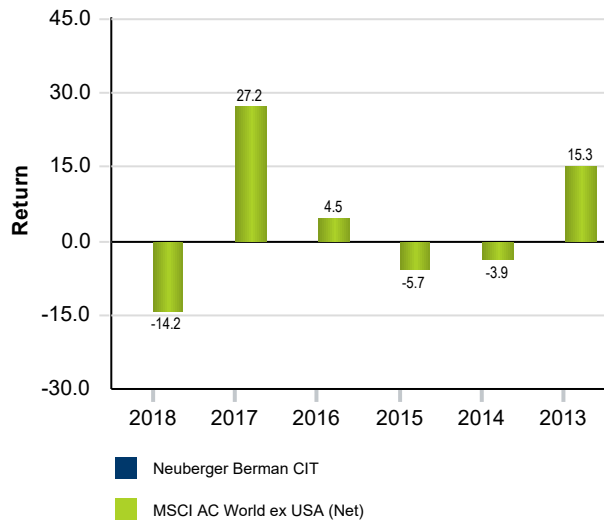
Comparative Performance



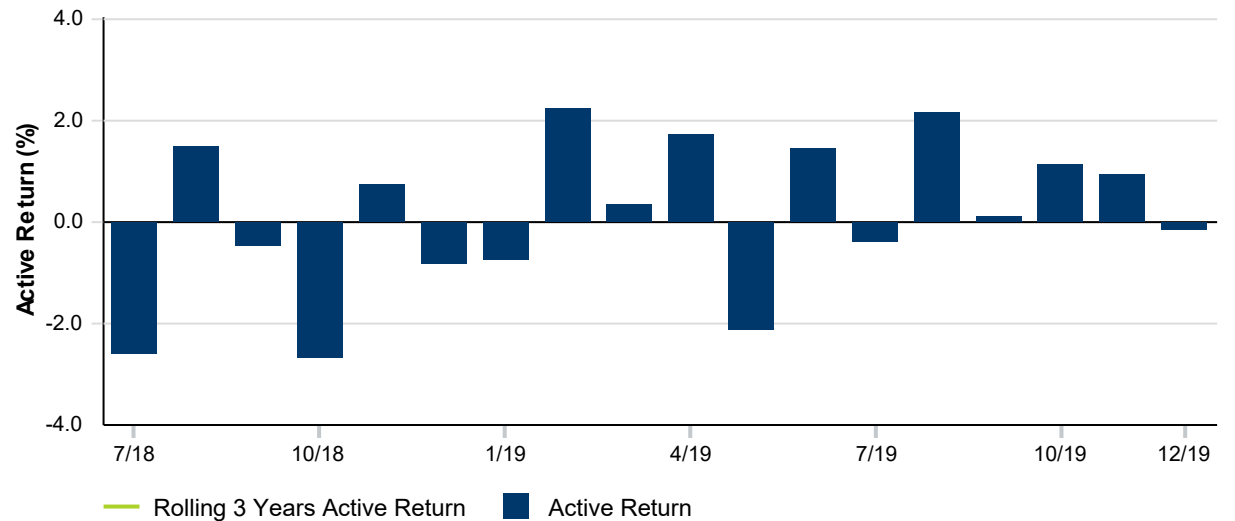
Peer Group Analysis: IM International Equity (SA+CF)



Comparative Performance



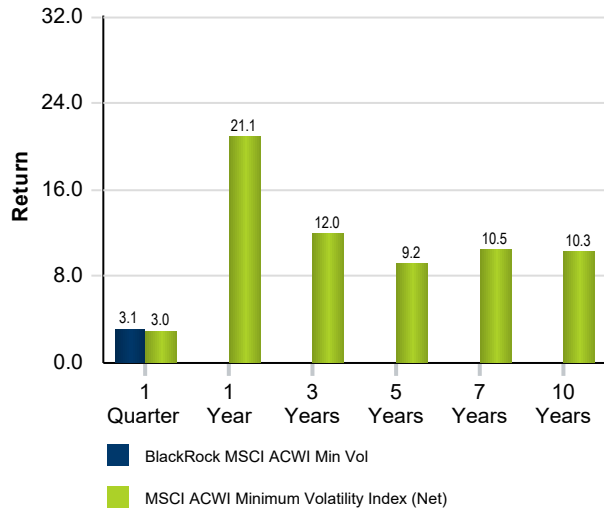
Rolling 3 Years Performance



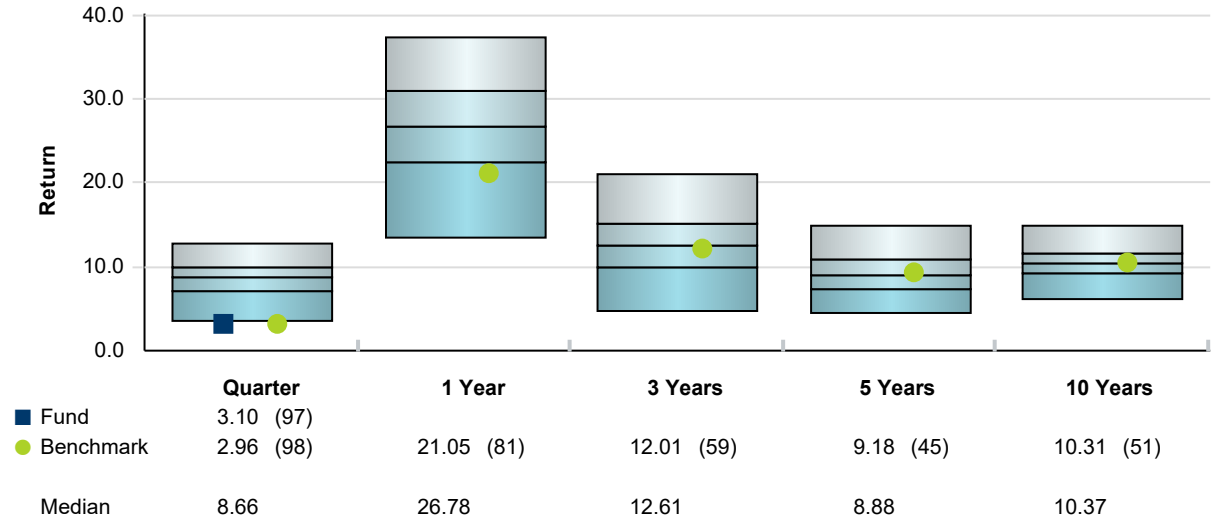
Performance Summary

BlackRock MSCI ACWI Min Vol
Periods Ended December 31, 2019

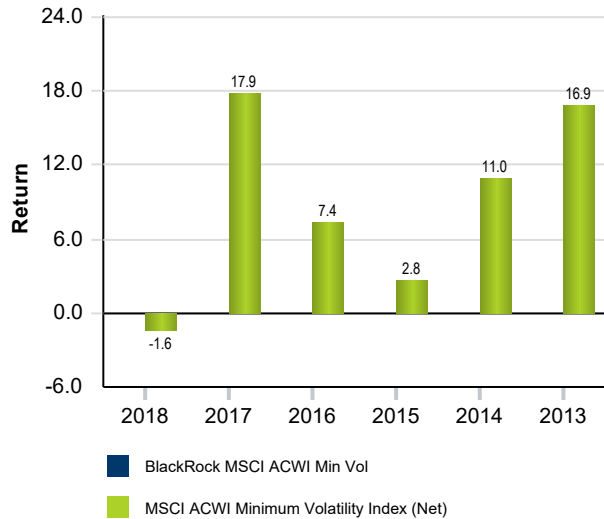
Comparative Performance



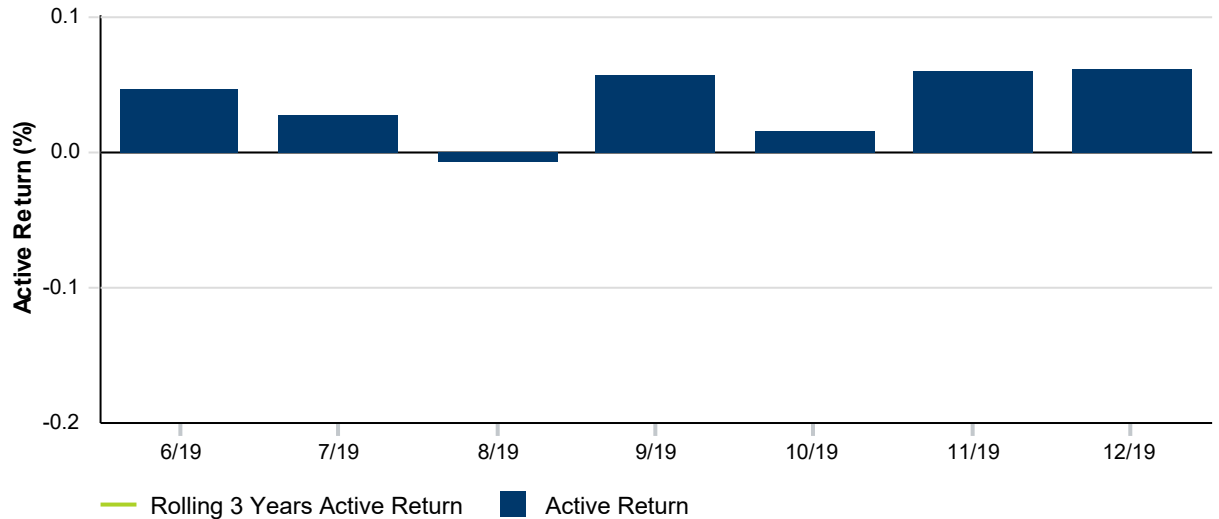
Peer Group Analysis: IM Global Equity (SA+CF)



Comparative Performance



Rolling 3 Years Performance

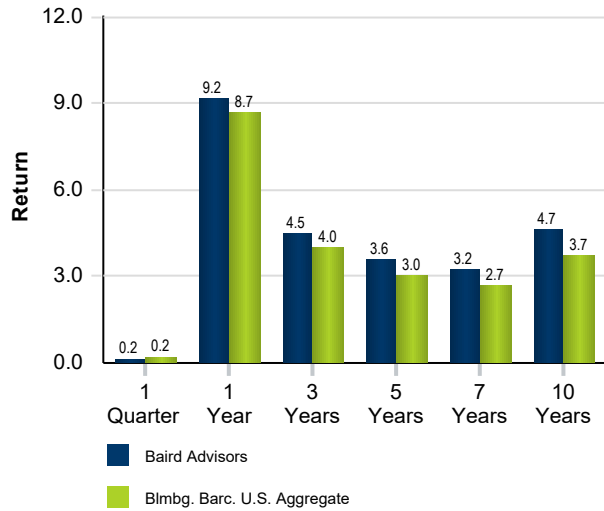


Performance Summary

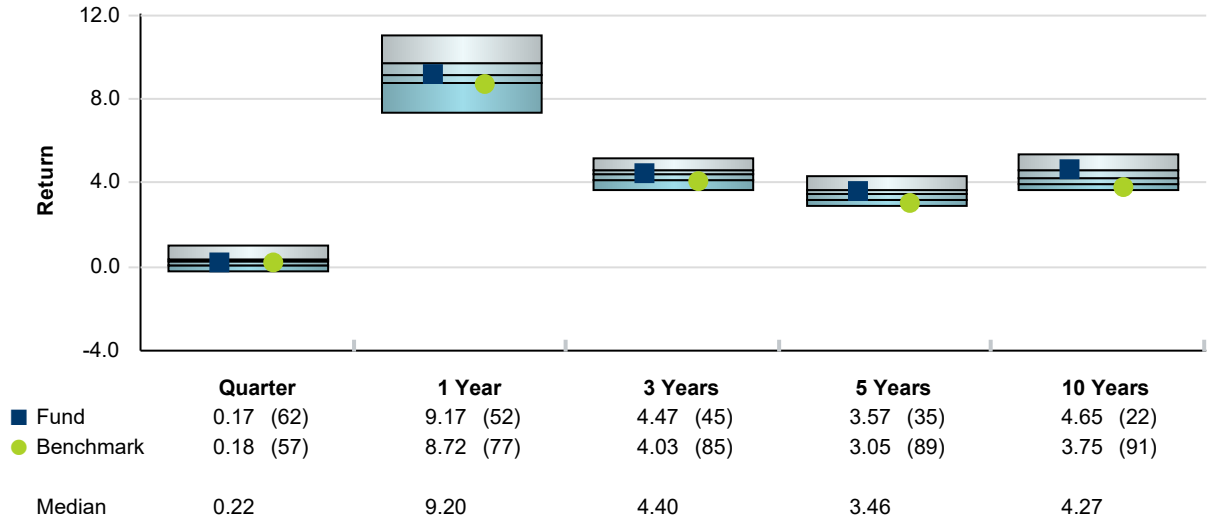
Baird Advisors

Periods Ended December 31, 2019

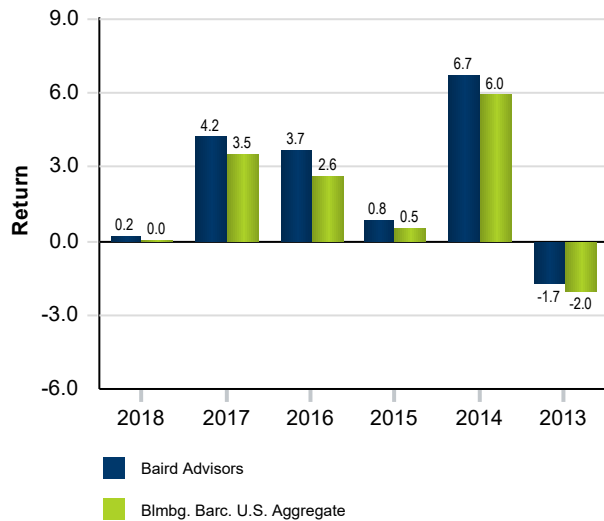
Comparative Performance



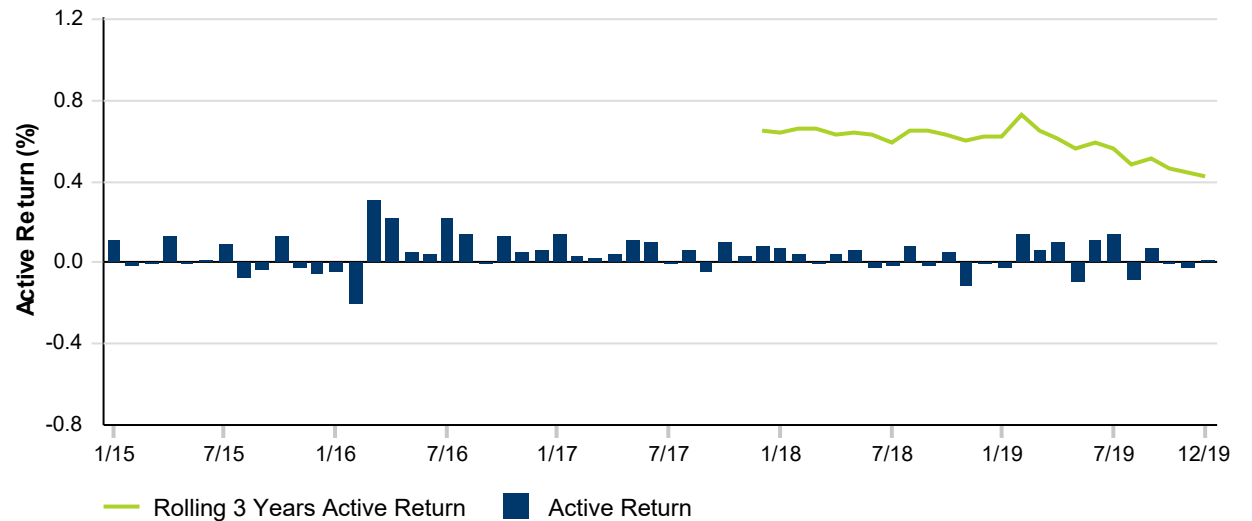
Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance

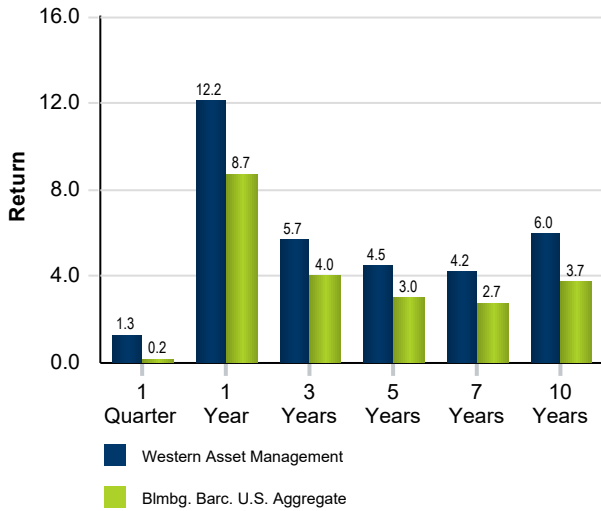


Performance Summary

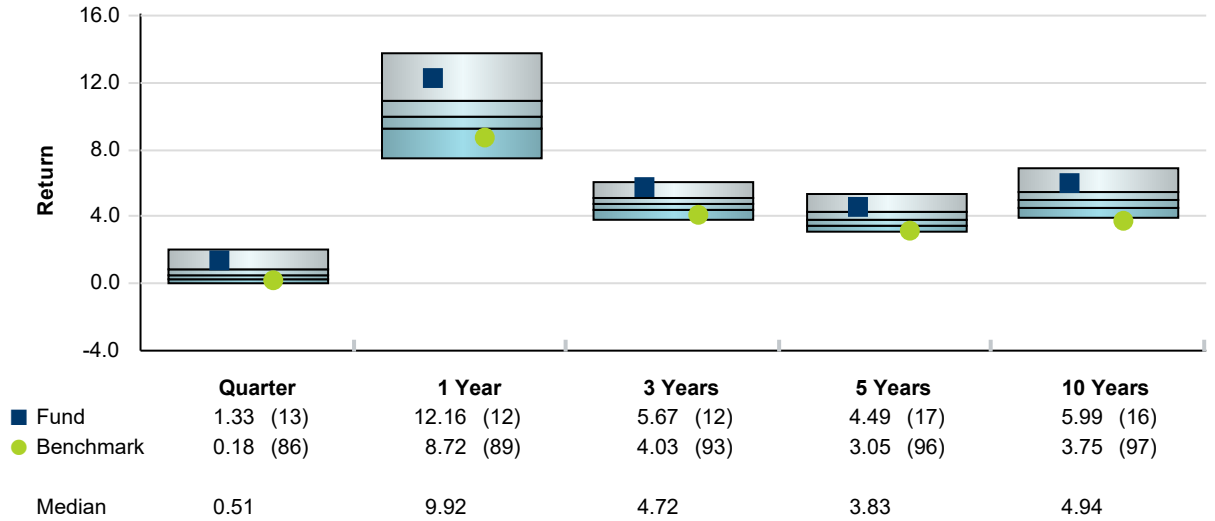
Western Asset Management

Periods Ended December 31, 2019

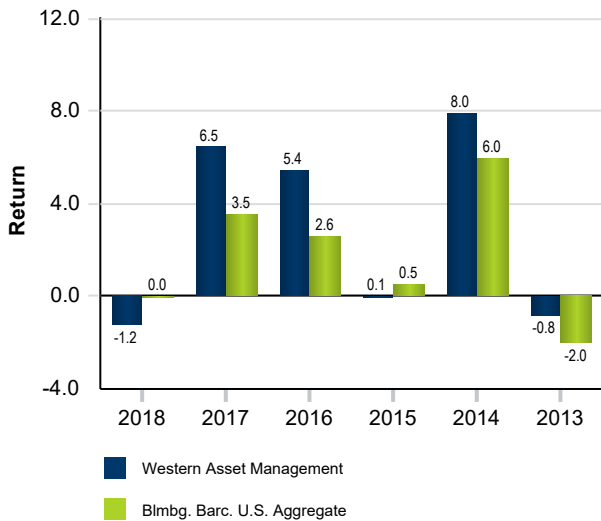
Comparative Performance



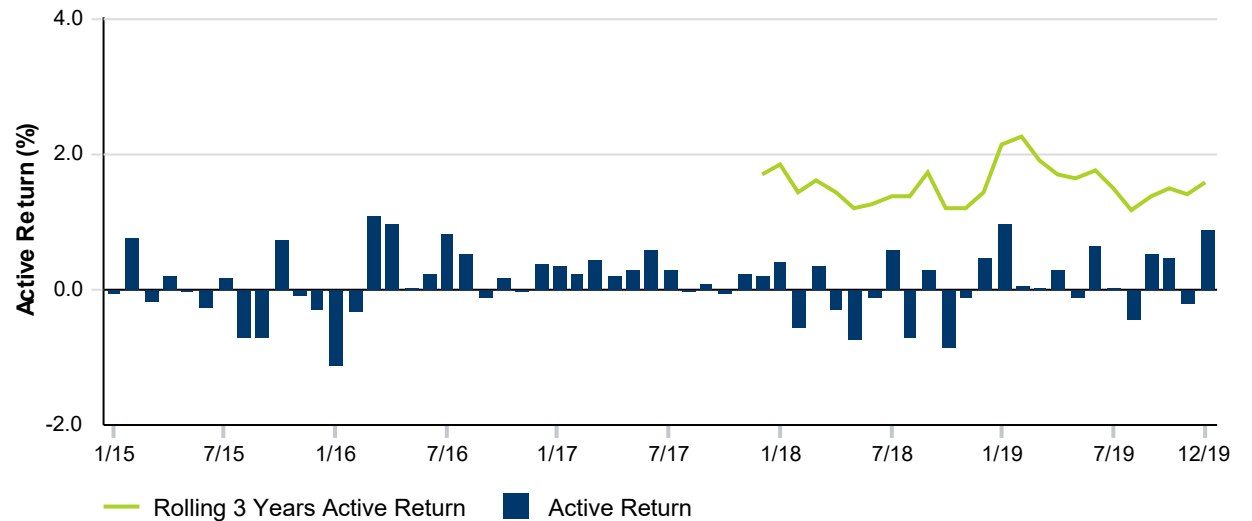
Peer Group Analysis: IM U.S. Broad Market Core+ Fixed Income (SA+CF)



Comparative Performance



Rolling 3 Years Performance

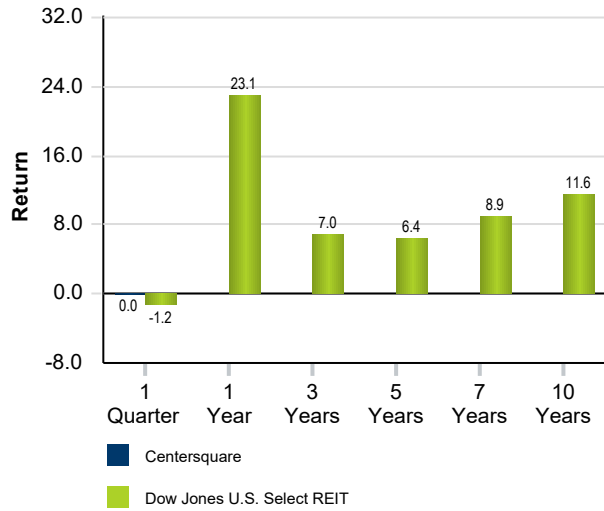


Performance Summary

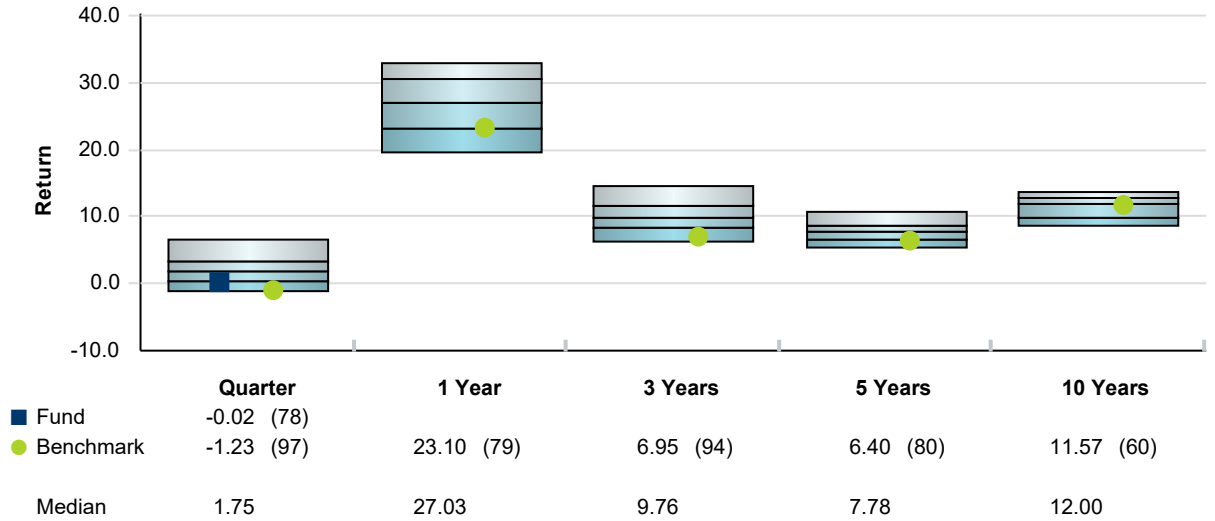
Centersquare

Periods Ended December 31, 2019

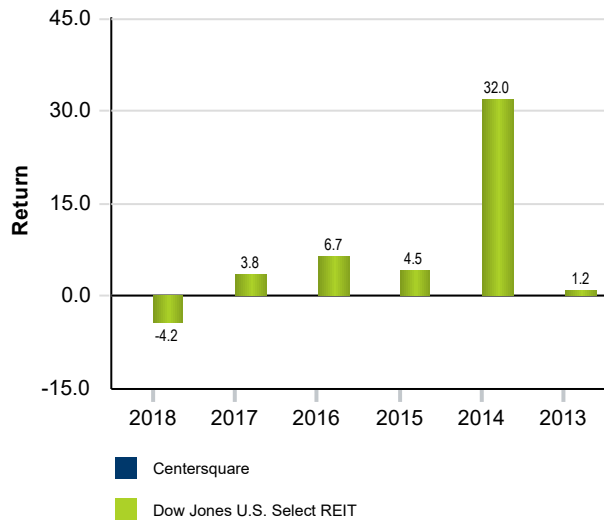
Comparative Performance



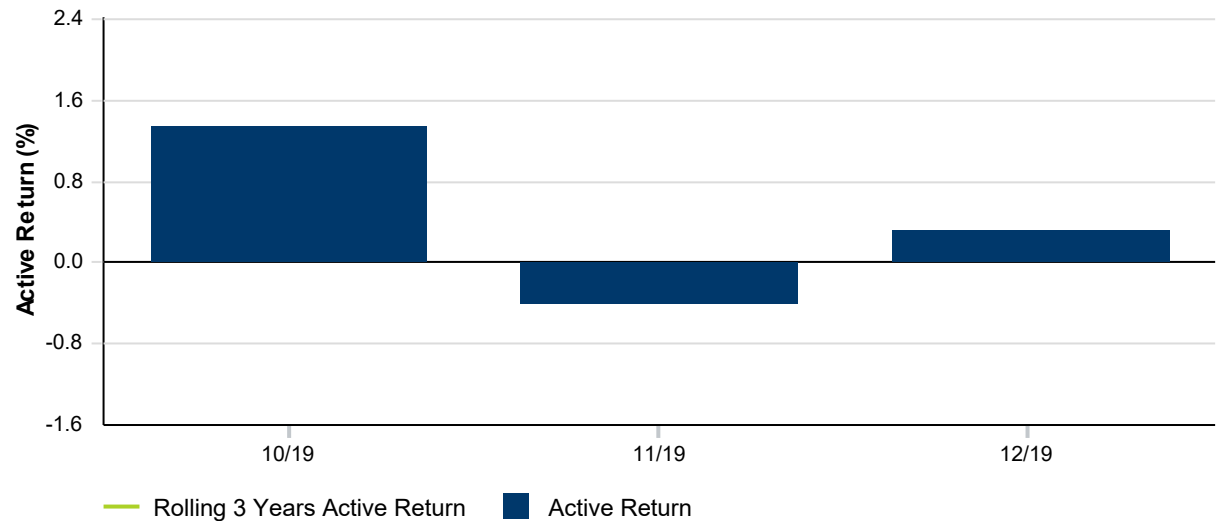
Peer Group Analysis: IM All REITs (SA+CF)



Comparative Performance



Rolling 3 Years Performance

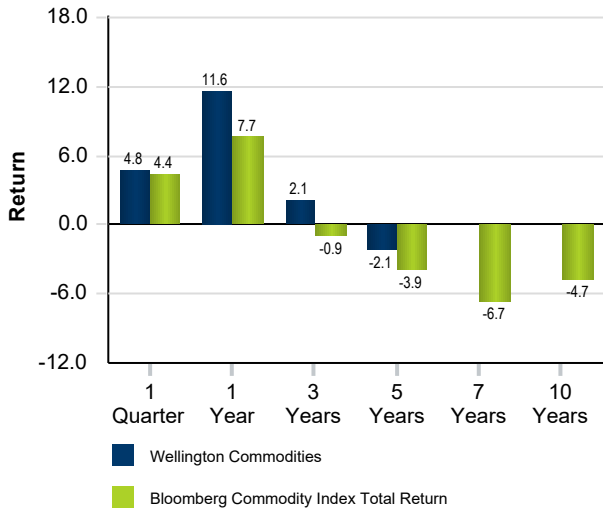


Performance Summary

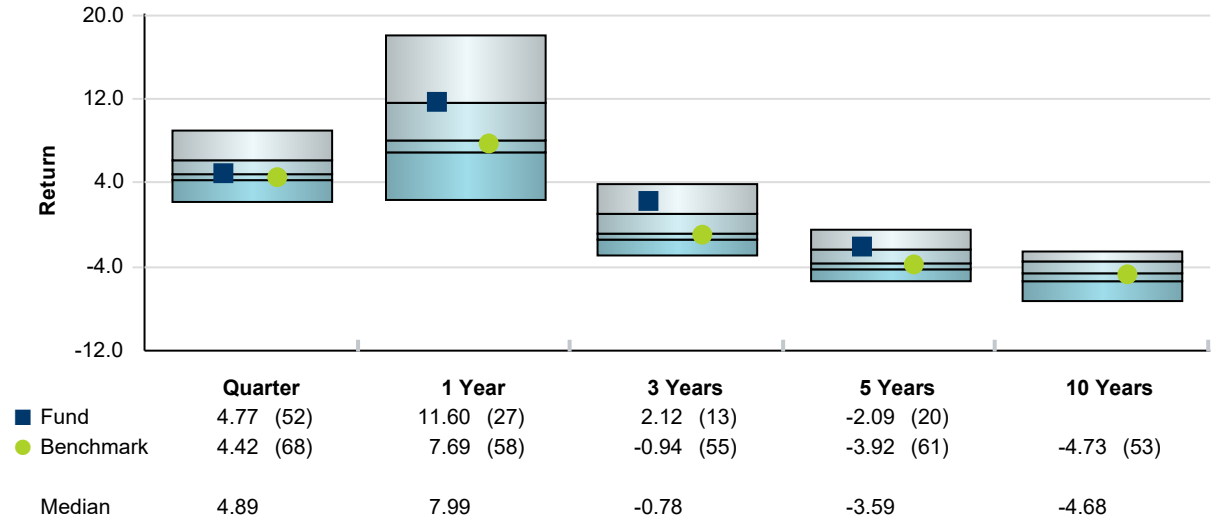
Wellington Commodities

Periods Ended December 31, 2019

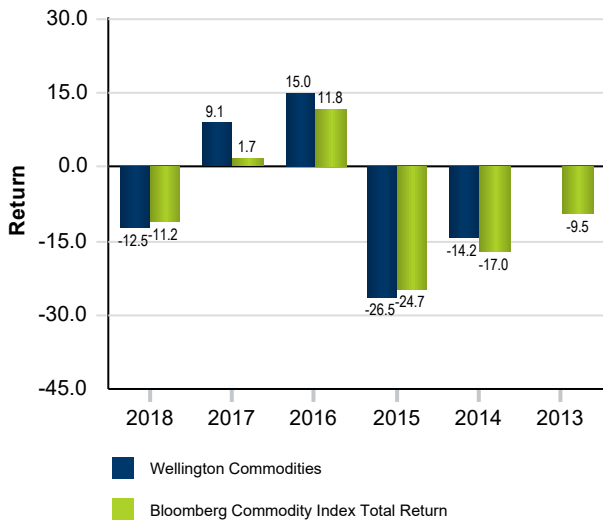
Comparative Performance



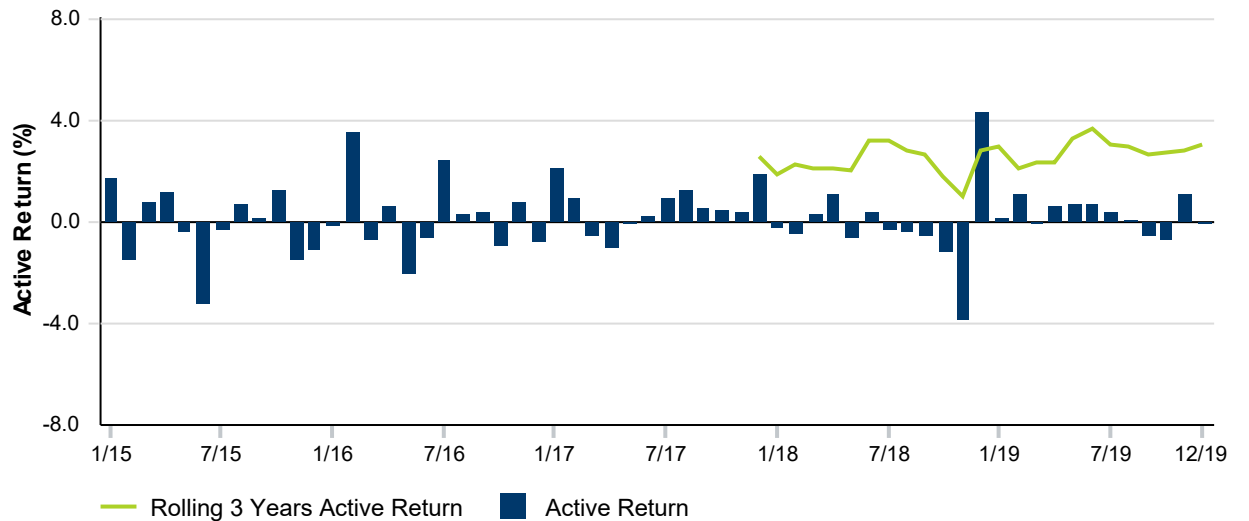
Peer Group Analysis: Commodities Broad Basket



Comparative Performance



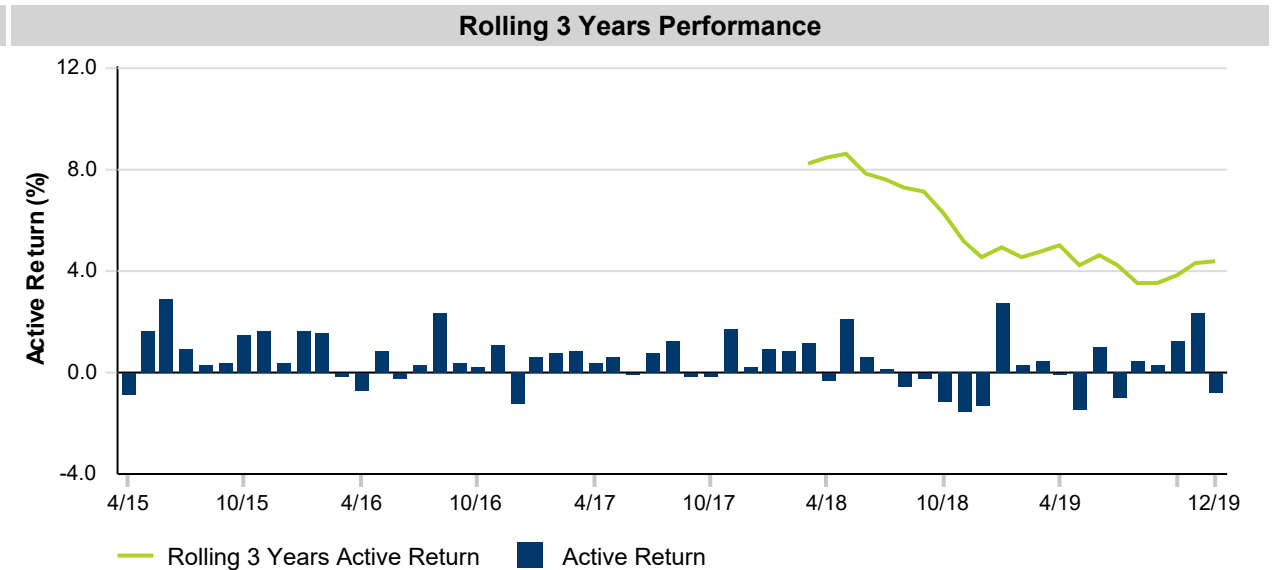
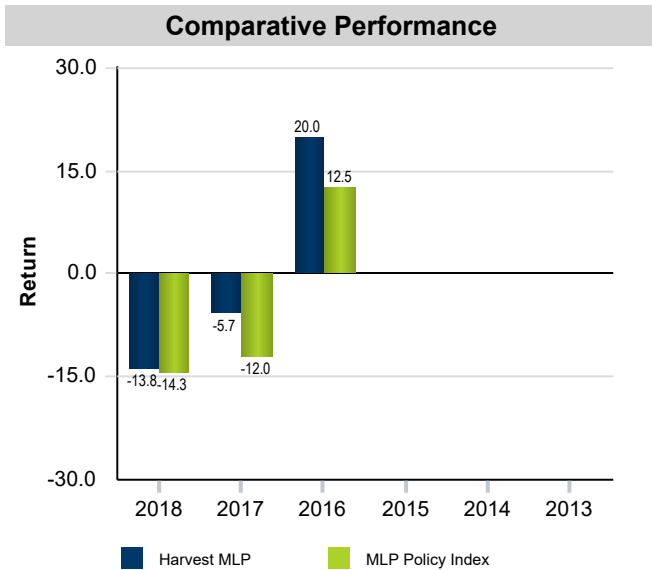
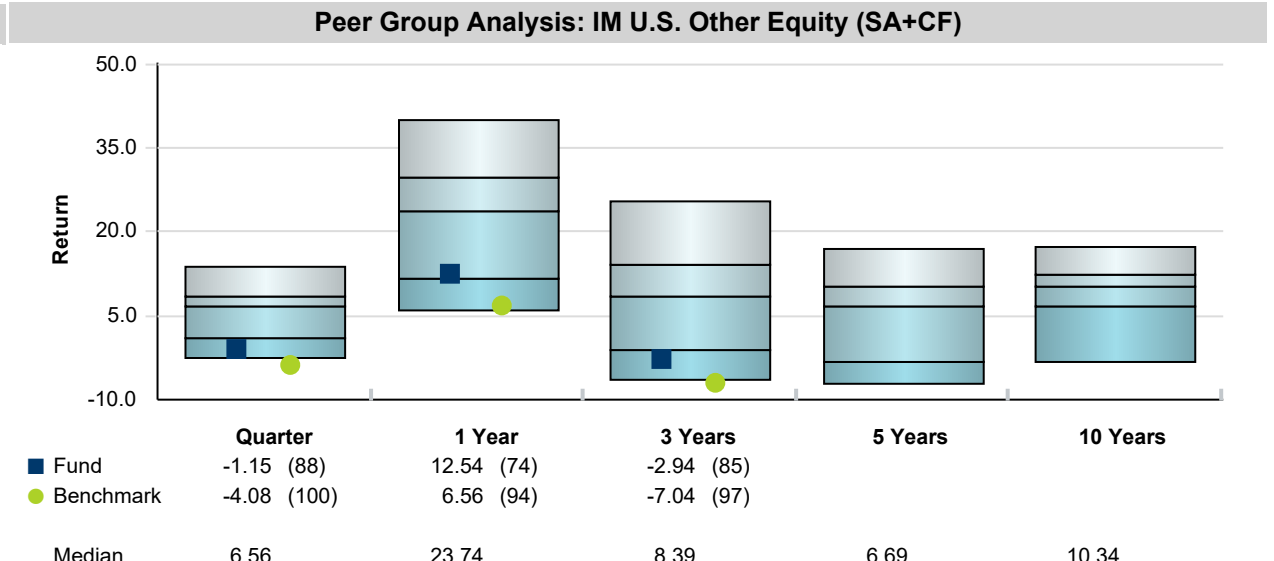
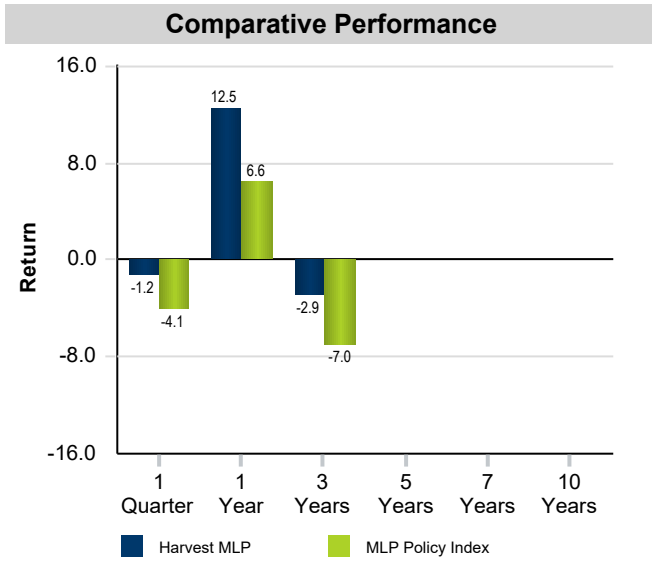
Rolling 3 Years Performance



Performance Summary

Harvest MLP

Periods Ended December 31, 2019

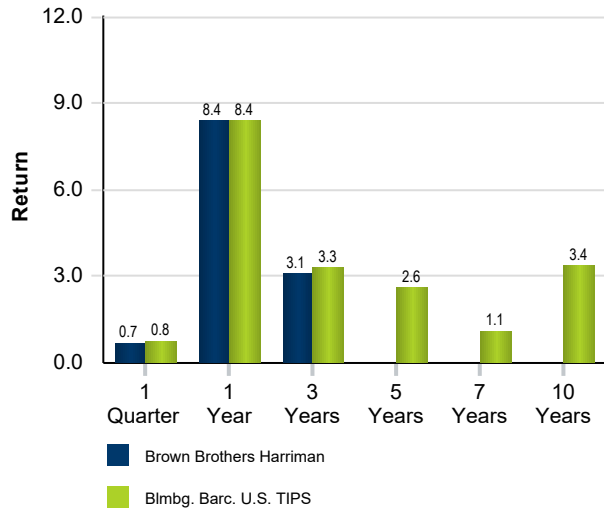


Performance Summary

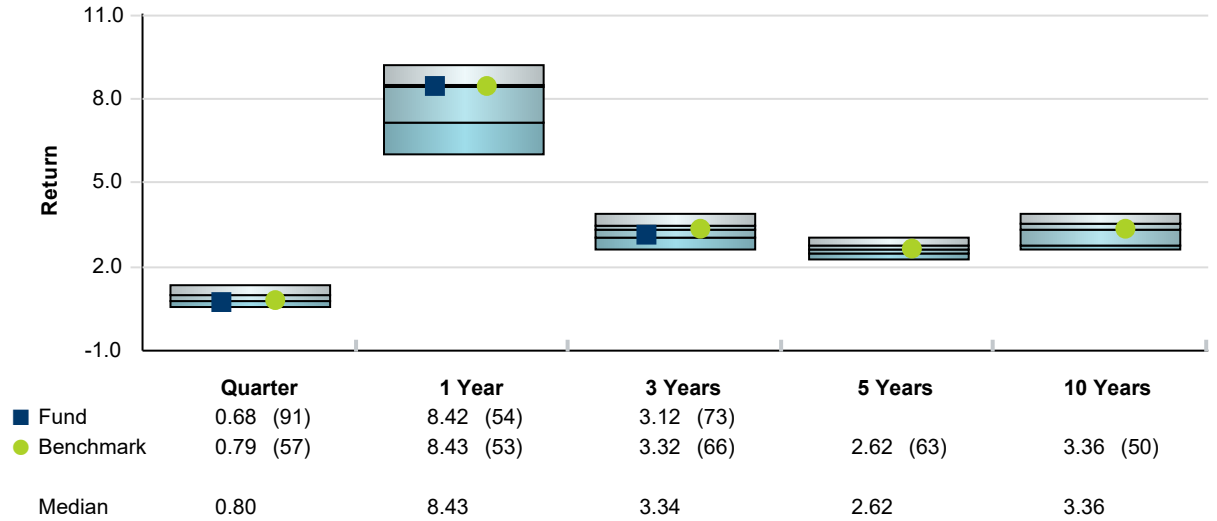
Brown Brothers Harriman

Periods Ended December 31, 2019

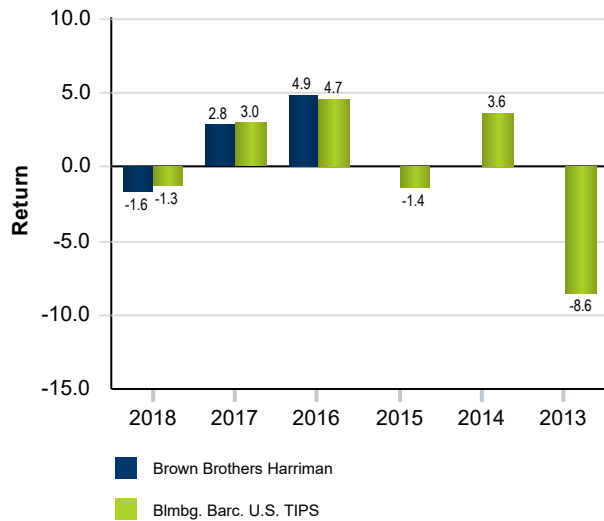
Comparative Performance



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



Comparative Performance



Rolling 3 Years Performance

