Wilshire

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Wilshire Consulting

Kentucky Retirement Systems Insurance

Executive Summary of Investment Performance

March 31, 2019

MARKET ENVIRONMENT

Wilshire Consulting

ASSET CLASS PERFORMANCE

ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 3/2019
2014	2015	2016	2017	2018	2019 YTD	
REITs 31.8%	REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	T-Bills 1.9%	MLPs 16.8%	U.S. Equity 10.5%
U.S. Equity 12.7%	U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 16.0%	REITs 9.0%
Core Bond 6.0%	Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	U.S. Equity 14.1%	High Yield 4.7%
MLPs 4.8%	T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Developed 10.1%	Emrg Mrkts 4.1%
U.S. TIPS 3.6%	Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	Emrg Mrkts 10.0%	Developed 2.8%
High Yield 2.5%	U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	High Yield 7.3%	Core Bond 2.7%
T-Bills 0.0%	High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	Commodities 6.3%	U.S. TIPS 1.9%
Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	U.S. TIPS 3.2%	T-Bills 0.7%
Developed -4.5%	Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -13.4%	Core Bond 2.9%	MLPs -4.7%
Commodities -17.0%	MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 0.6%	Commodities -8.9%

Data sources: Wilshire Compass

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

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MARKET COMMENTARY

U.S. Equity

The U.S. stock market was up 14.1% for the first quarter of 2019. This marks the strongest quarter for U.S. equities since 2009. Concerns about global growth were dwarfed by the Fed's updated forecast for no rate increases in 2019 and a looser stance on unwinding quantitative easing enacted during the recovery.

Several developments led to a yield curve with two key characteristics – an inverted portion from short-term to 3-year yields and almost no difference between short-term and 10-year yields. The Fed's move towards a more dovish stance on monetary policy, a weak report on the European economy and a drop in U.S. retail sales contributed to yields moving lower.

Consumer price increases have slowed recently with very little growth during the past six months. CPI was up 0.1% for the three months ending February and 1.5% for the one-year period.

Non-U.S. Equity

Equity markets outside of the U.S. enjoyed a strong start to 2019. While there are signs of an economic slowdown in Europe, by far the biggest unknown is the result of the U.K.'s Brexit. The latest draft proposal to exit the European Union (EU), agreed upon by Prime Minister Theresa May and EU officials, was again rejected by the U.K. Parliament. While the final exit date has been delayed, a failure to reach an agreement on a transition period would mean significant uncertainty for markets.

Fixed Income

The U.S. Treasury yield curve fell across most maturities during the quarter with the biggest decreases occurring in the 5 to 10-year portion of the curve. The bellwether 10-year Treasury yield ended the quarter at 2.41%, down 28 basis points from December. Credit spreads tightened during the quarter.

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MARCH 2019 ASSET CLASS ASSUMPTIONS

	EQUITY						FIXED INCOME						REAL ASSETS					
													REAL ESTATE					
	US STOCK	DEV EX-US STOCK	EMG MRKT STOCK	GLOBAL EX-US STOCK	GLOBAL STOCK	PRIVATE EQUITY	CASH	CORE BOND	LT CORE BOND	US TIPS	HIGH YIELD	NON-US BOND (HDG)	US RES	GLOBAL RES	PRIVATE RE	CMDTY	REAL ASSETS	US CPI
EXPECTED COMPOUND RETURN (%)	6.25	6.75	6.75	7.00	6.70	8.95	2.45	3.40	3.85	2.70	4.80	1.05	5.15	5.35	6.70	4.35	6.10	1.90
EXPECTED ARITHMETIC RETURN (%)	7.55	8.20	9.70	8.60	8.00	12.30	2.45	3.55	4.30	2.85	5.25	1.10	6.50	6.50	7.60	5.40	6.45	1.90
EXPECTED RISK (%)	17.00	18.00	26.00	18.80	17.05	28.00	1.25	5.15	9.85	6.00	10.00	3.50	17.00	15.80	14.00	15.00	8.75	1.75
CASH YIELD (%)	2.00	3.50	2.50	3.25	2.55	0.00	2.45	3.55	4.75	3.10	8.00	1.65	3.75	3.75	2.60	2.45	2.65	0.00
CORRELATIONS																		
US STOCK	1.00																	
DEV EX-US STOCK (USD)	0.81	1.00																
EMERGING MARKET STOCK	0.74	0.74	1.00															
GLOBAL EX-US STOCK	0.83	0.96	0.86	1.00														
GLOBAL STOCK	0.94	0.92	0.82	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									
US 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							
NON-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	0.77	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 ASSET BASKET	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

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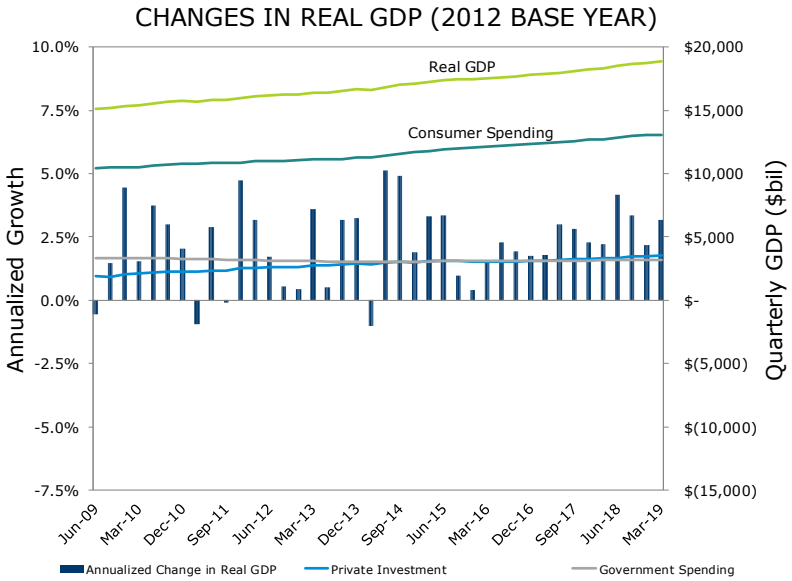
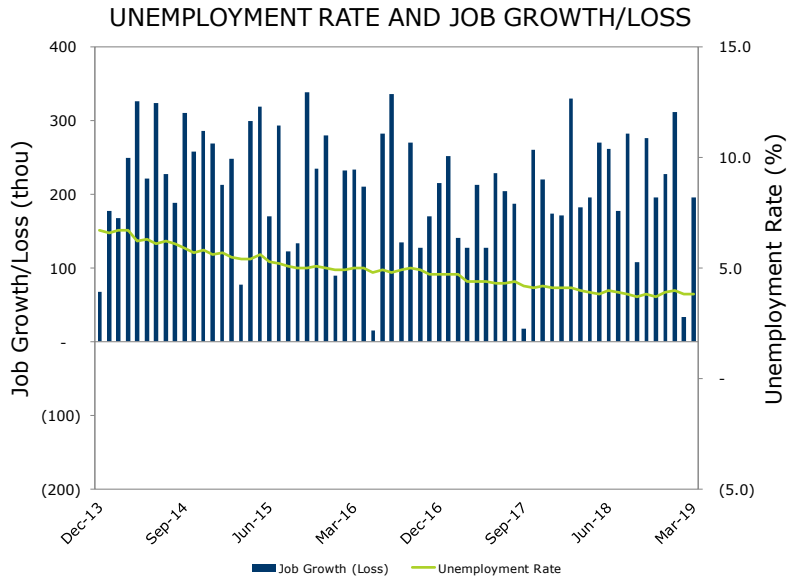
ECONOMIC REVIEW

AS OF MAR. 31, 2019	KEY ECONOMIC INDICATORS			
CPI (ALL ITEMS)	MONTHLY CHANGE		CUMULATIVE CHANGE	
SEASONALLY ADJUSTED	Mar-19	0.4	3-Mo.	0.6
	Feb-19	0.2	12-Mo.	1.9
	Jan-19	0.0	10-Yr. (Annual)	1.8
BREAKEVEN INFLATION	10-Yr.	1.9		
CONSUMER SENTIMENT	Mar-19	98.4		
U. OF MICHIGAN SURVEY	Feb-19	93.8		
	1-Yr. Ago	101.4	10-Yr. Avg	83.4
MANUFACTURING	Mar-19	55.3	CHANGE IN SECTOR	
INST. FOR SUPPLY MGMT	Feb-19	54.2	>50	Expansion
PURCHASING MNGRS' IDX	1-Yr. Avg.	57.7	<50	Contraction

Note: Seasonally adjusted CPI data is utilized to better reflect short-term pricing activity.





Data sources: Bureau of Labor Statistics, U.S. Treasury, University of Michigan, Institute for Supply Management, Bureau of Economic Analysis

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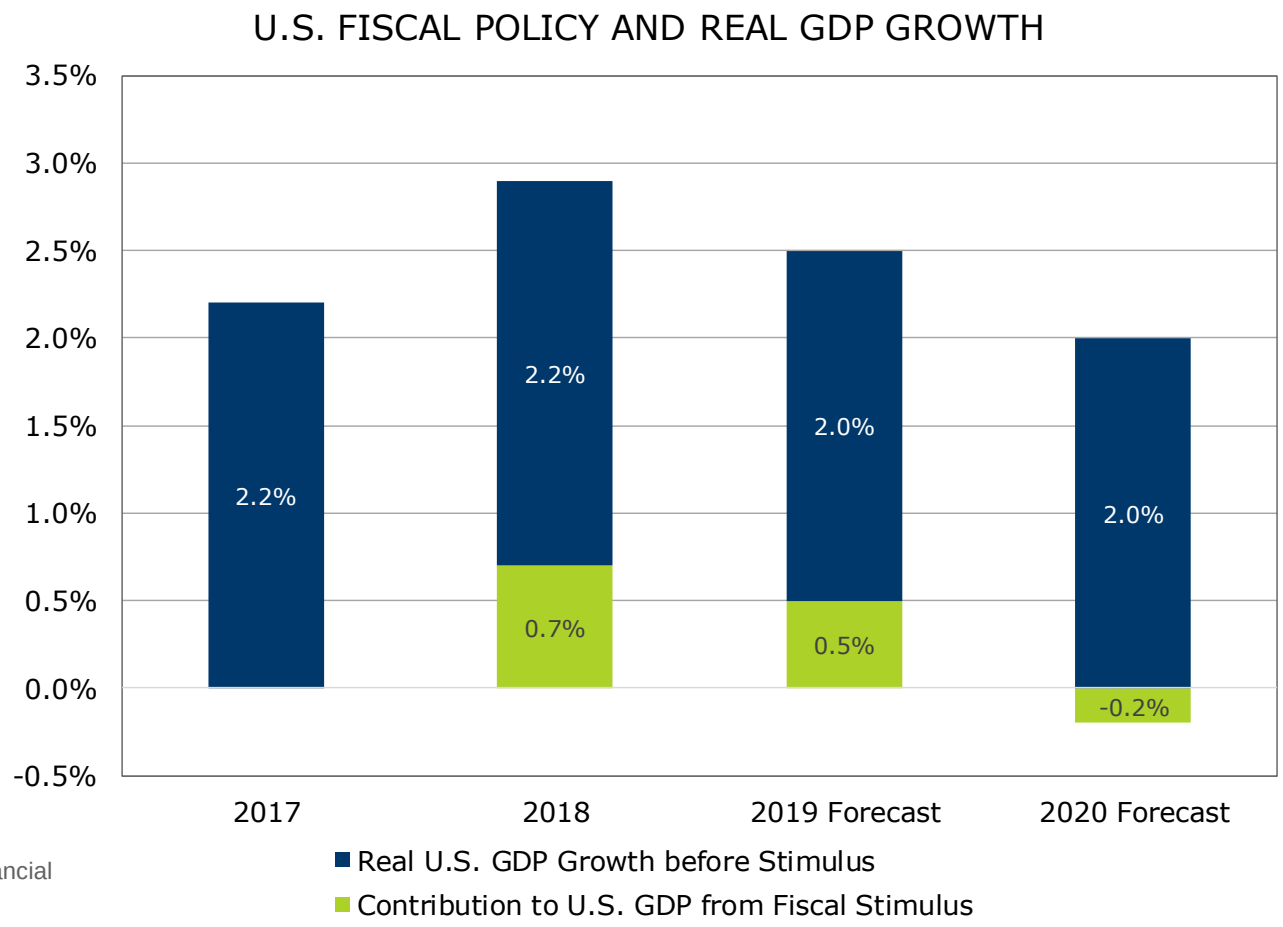
FISCAL POLICY BOOST

- Estimates show that U.S. fiscal policy added nearly three-quarters of a percent to real GDP growth in 2018
- Slight detraction from growth forecasted as fiscal support fades



Data source: Prudential Financial

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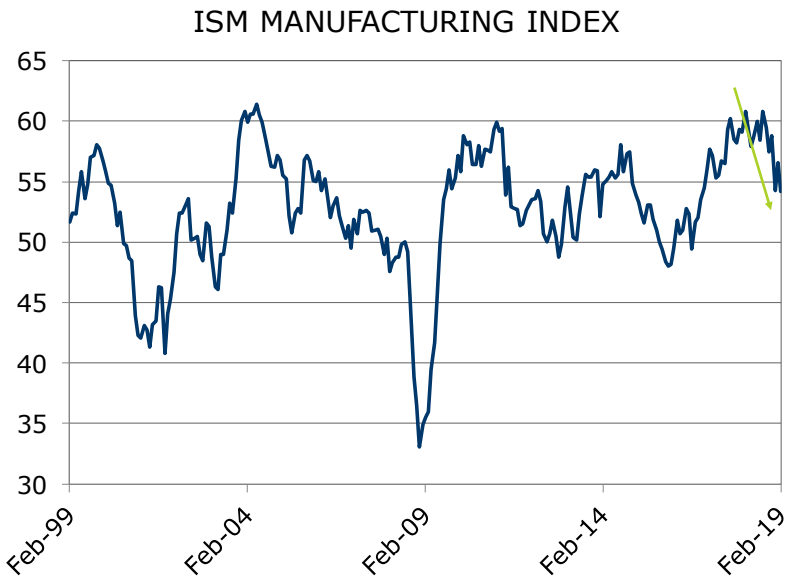
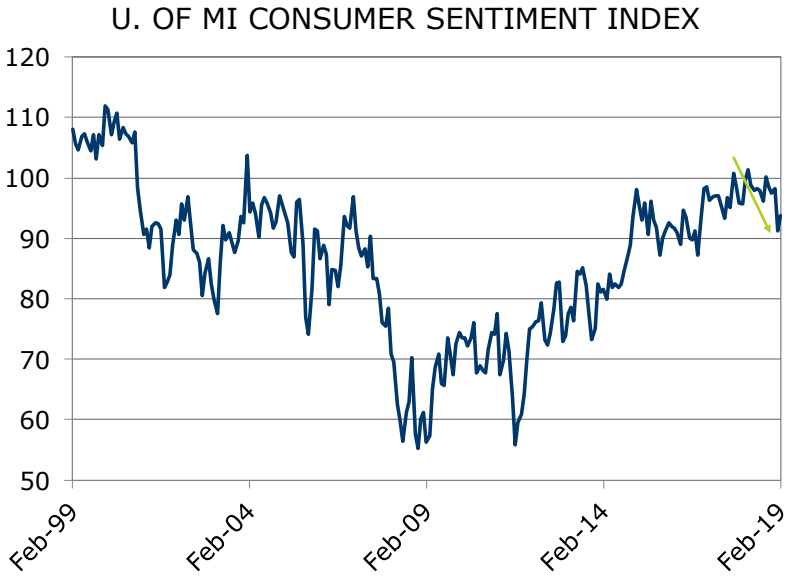
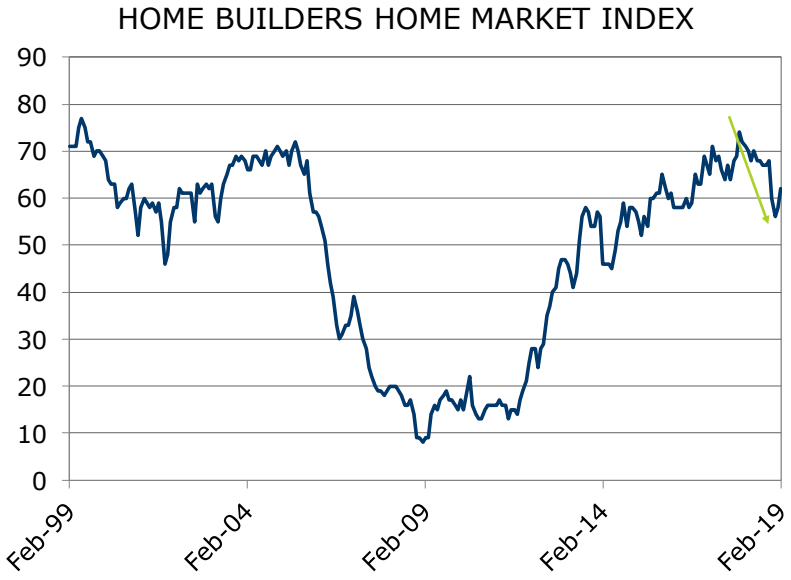
SIGNS OF SLOWING

- Surveys provide up-to-date proxy for economic activity
- Business activity continues to grow but has slowed; Consumer confidence proxies future demand
- Rate-sensitive sectors are slowing







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Data sources: Institute for Supply Management, University of Michigan, National Association of Home Builders

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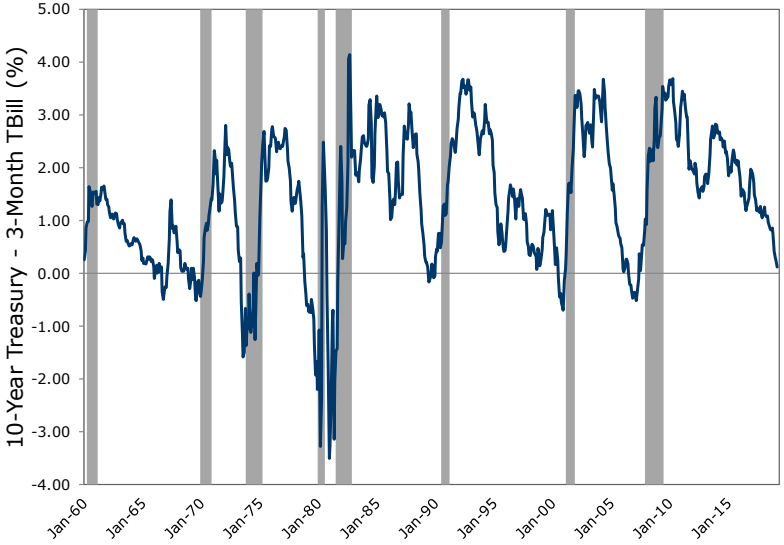
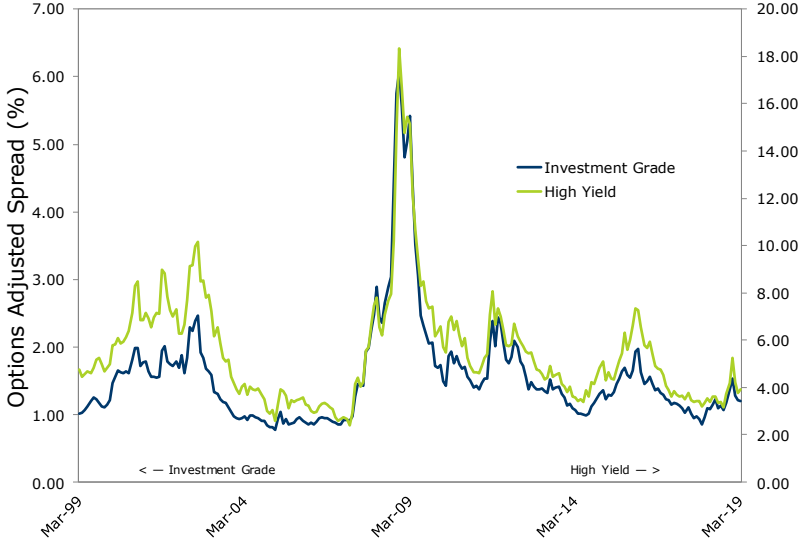
RISK MONITOR

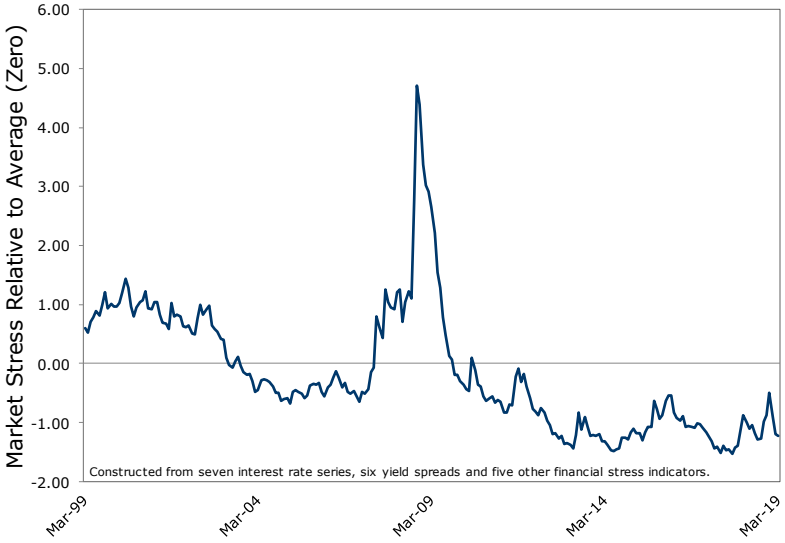
YIELD CURVE SLOPE VS RECESSIONS (IN GRAY)



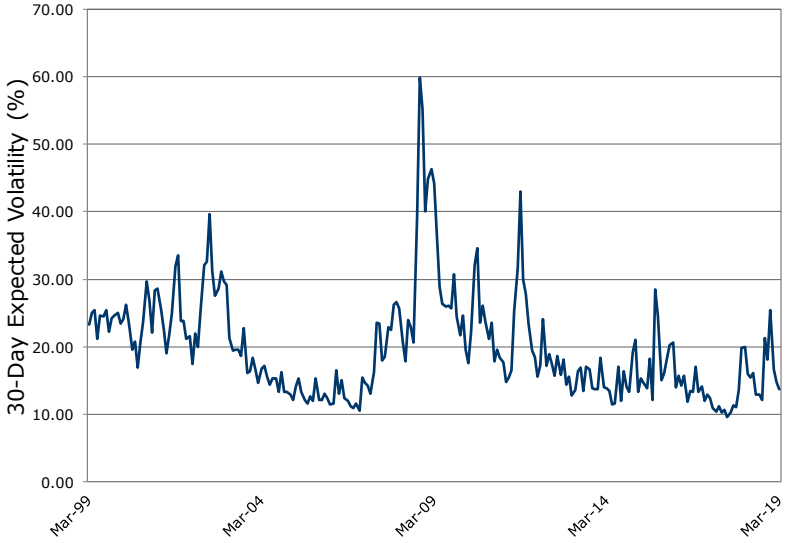
BLOOMBERG BARCLAYS CREDIT INDEXES



ST. LOUIS FED FINANCIAL STRESS INDEX



CBOE VOLATILITY INDEX



Data sources: Federal Reserve, Bloomberg Barclays

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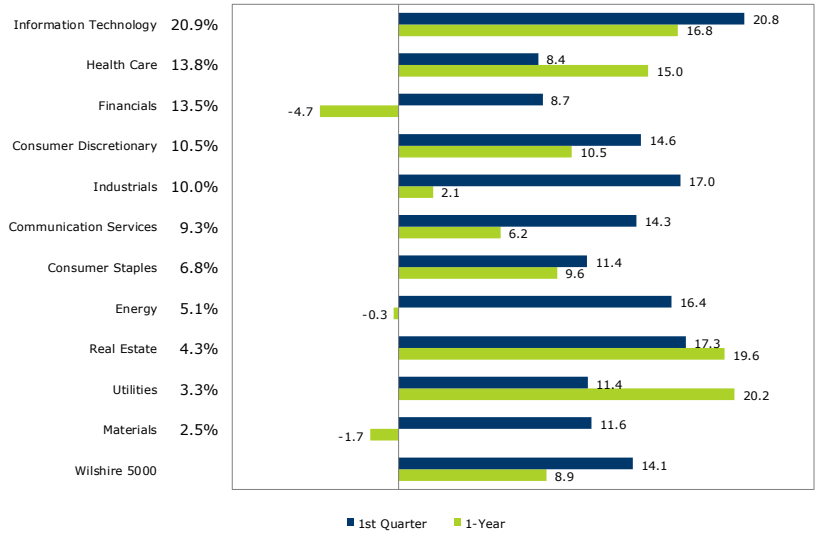
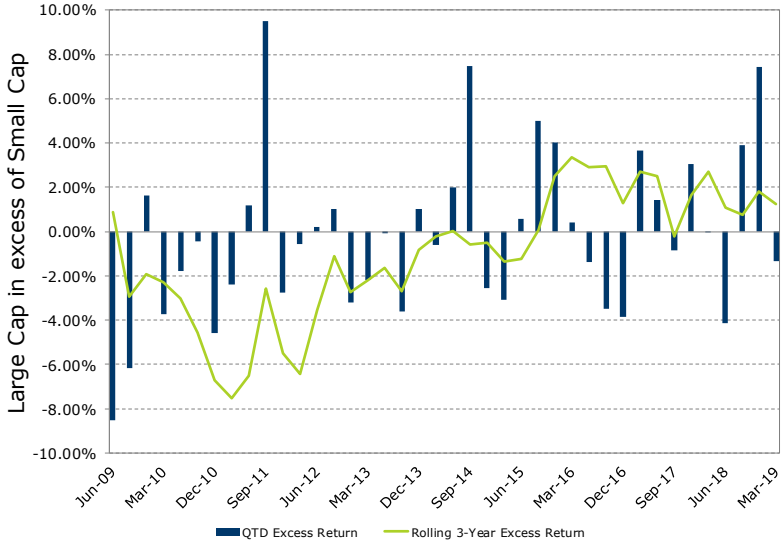
U.S. EQUITY MARKET

AS OF MARCH 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	14.1	14.1	8.9	13.6	10.5	16.0
WILSHIRE U.S. LARGE CAP	14.0	14.0	9.5	13.7	10.9	15.9
WILSHIRE U.S. SMALL CAP	15.5	15.5	3.7	12.4	7.2	17.1
WILSHIRE U.S. LARGE GROWTH	15.7	15.7	10.1	16.4	12.6	16.9
WILSHIRE U.S. LARGE VALUE	12.4	12.4	9.0	11.0	9.2	14.8
WILSHIRE U.S. SMALL GROWTH	16.4	16.4	3.6	14.7	7.3	17.6
WILSHIRE U.S. SMALL VALUE	14.6	14.6	3.9	9.9	7.0	16.5
WILSHIRE REIT INDEX	16.0	16.0	19.3	5.4	9.0	18.7
MSCI USA MIN. VOL. INDEX	12.5	12.5	14.9	11.9	12.0	15.4
FTSE RAFI U.S. 1000 INDEX	12.2	12.2	5.5	11.4	8.6	19.4

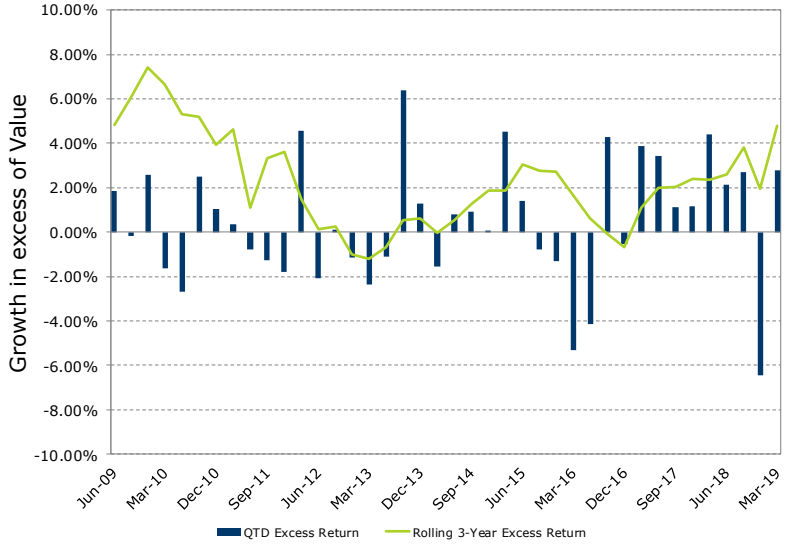
WILSHIRE 5000 SECTOR WEIGHT & RETURN (%)



LARGE CAP VS SMALL CAP



GROWTH VS VALUE



Data sources: Wilshire Compass, Wilshire Atlas

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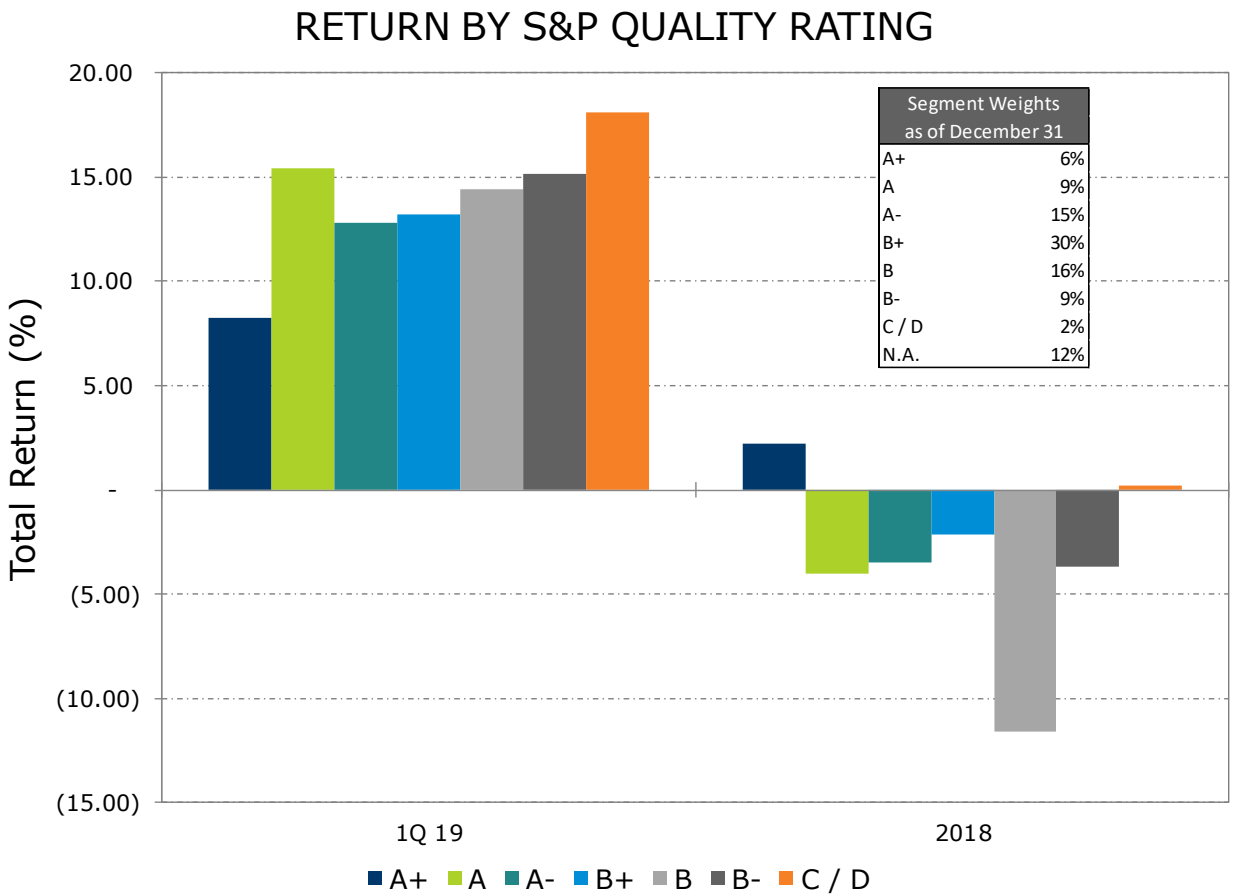
RETURNS BY QUALITY SEGMENT

Lower quality names led the market during the first quarter



Data sources: Wilshire Atlas

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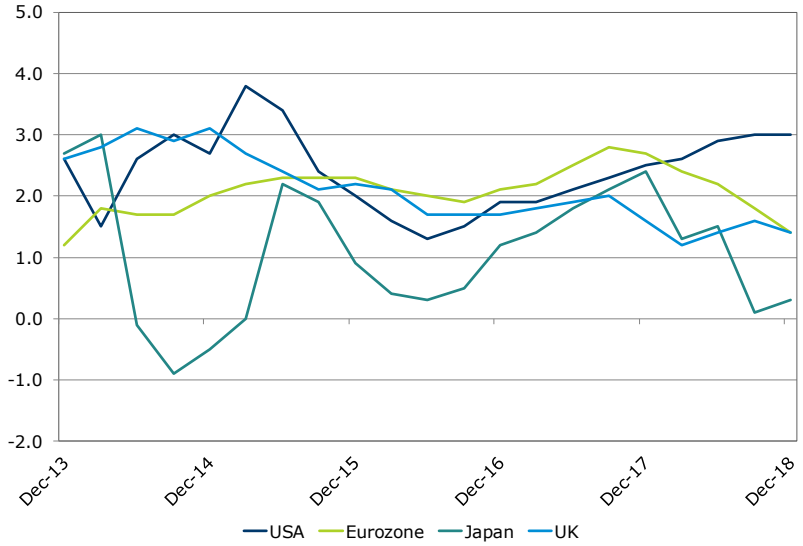
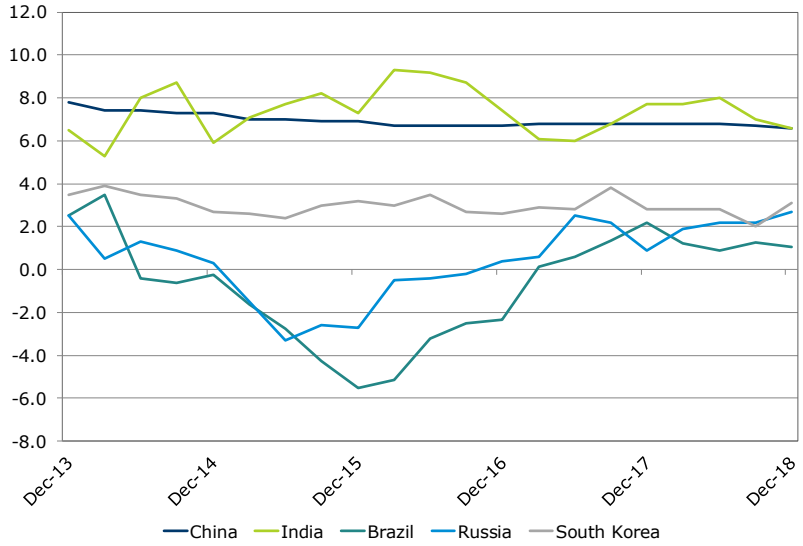
NON-U.S. GROWTH AND INFLATION

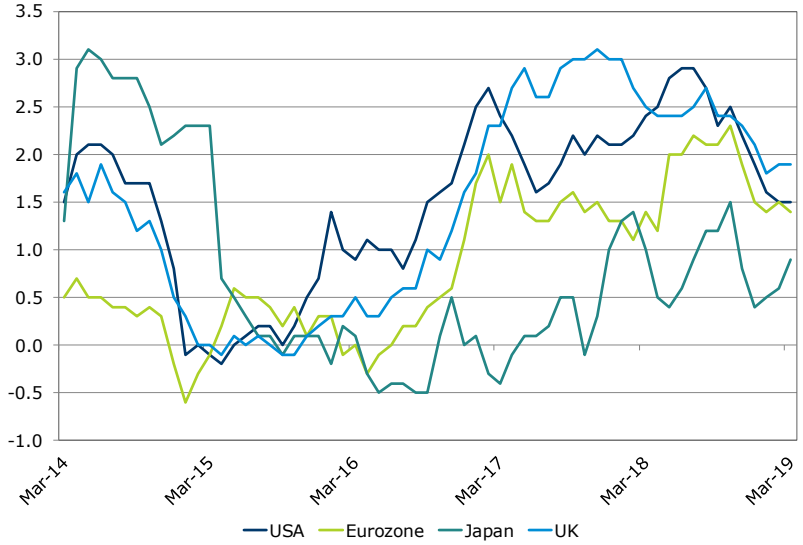
DEVELOPED MARKETS REAL GDP GROWTH YoY (%)



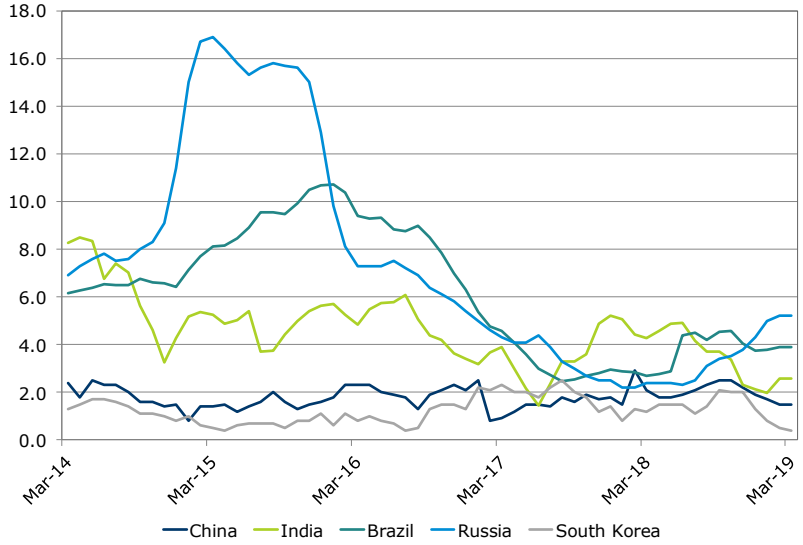
EMERGING MARKETS REAL GDP GROWTH YoY (%)



DEVELOPED MARKETS CPI GROWTH YoY (%)



EMERGING MARKETS CPI GROWTH YoY (%)



Data sources: Bloomberg

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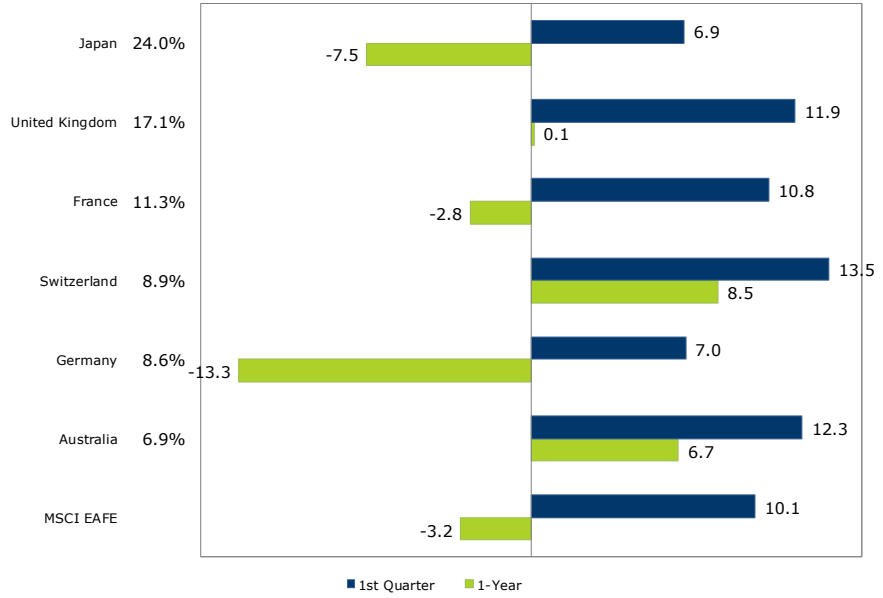
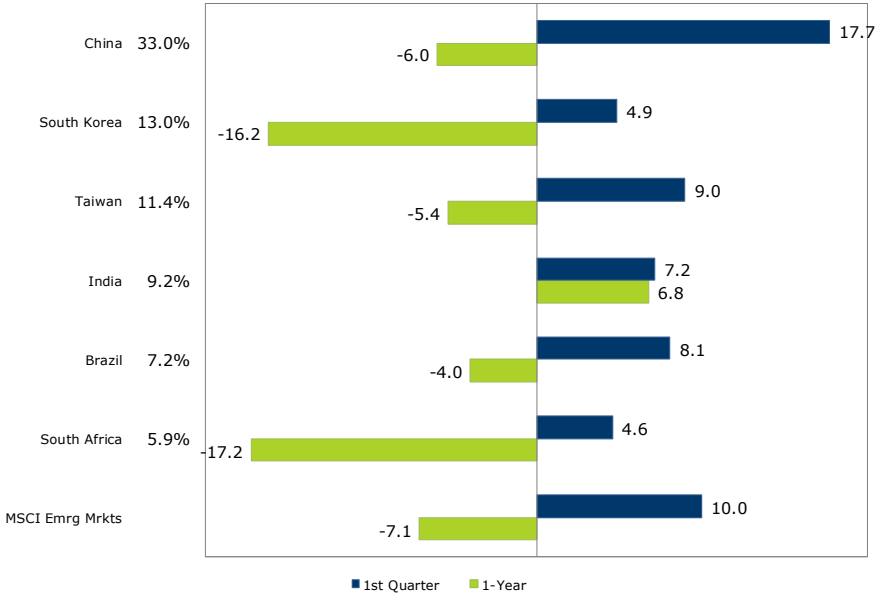
NON-U.S. EQUITY MARKET

AS OF MARCH 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US ($G)	10.4	10.4	-3.7	8.6	3.0	9.3
MSCI EAFE ($G)	10.1	10.1	-3.2	7.8	2.8	9.5
MSCI EMERGING MARKETS ($G)	10.0	10.0	-7.1	11.1	4.1	9.3
MSCI FRONTIER MARKETS ($G)	6.9	6.9	-14.8	7.2	0.9	8.2
MSCI ACWI EX-US GROWTH ($G)	12.4	12.4	-2.7	8.8	4.4	9.9
MSCI ACWI EX-US VALUE ($G)	8.5	8.5	-4.8	8.4	1.7	8.8
MSCI ACWI EX-US SMALL ($G)	10.4	10.4	-9.1	7.6	3.7	12.3
MSCI ACWI MINIMUM VOLATILITY	10.1	10.1	9.7	9.7	9.7	13.0
MSCI EAFE MINIMUM VOLATILITY	8.0	8.0	1.8	6.5	6.5	10.8
FTSE RAFI DEVELOPED EX-US	8.7	8.7	-5.2	8.7	2.2	9.9
MSCI EAFE LC (G)	10.7	10.7	3.4	9.1	6.5	10.3

MSCI EAFE: LARGEST COUNTRIES & RETURN (USD)



MSCI EM: LARGEST COUNTRIES & RETURN (USD)



Data sources: Wilshire Compass

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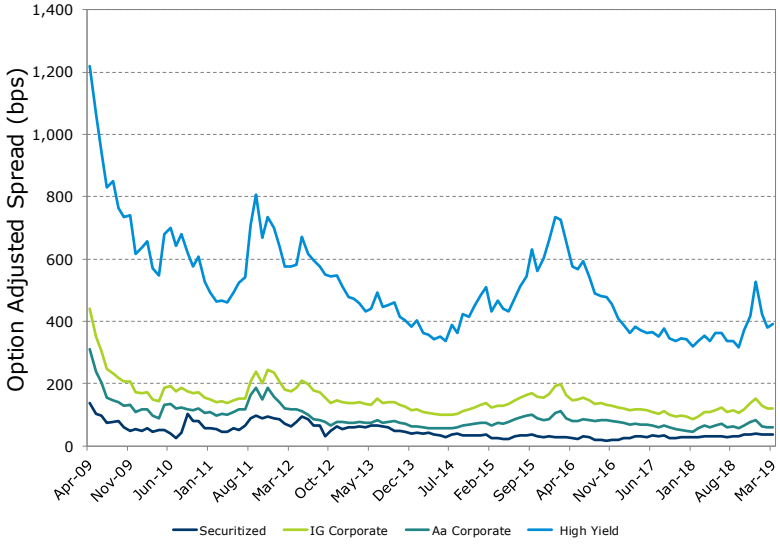
U.S. FIXED INCOME

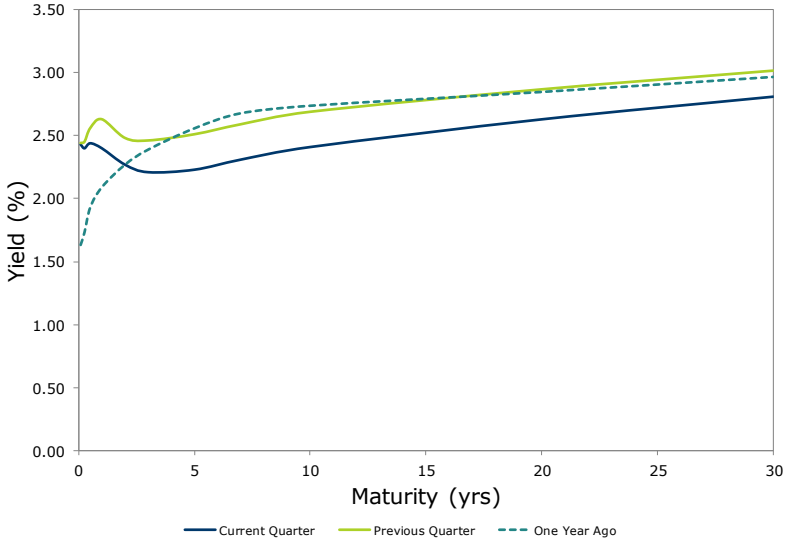
AS OF MARCH 31, 2019	YTM	DURATION	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	2.9	5.8	2.9	2.9	4.5	2.0	2.7	3.8
BLOOMBERG BARCLAYS TREASURY	2.4	6.2	2.1	2.1	4.2	1.0	2.2	2.4
BLOOMBERG BARCLAYS GOV'T-REL.	3.0	5.5	3.1	3.1	4.5	2.4	2.8	3.2
BLOOMBERG BARCLAYS SECURITIZED	3.1	4.1	2.2	2.2	4.5	1.8	2.6	3.5
BLOOMBERG BARCLAYS CORPORATE	3.6	7.4	5.1	5.1	4.9	3.6	3.7	6.7
BLOOMBERG BARCLAYS LT G/C	3.7	15.3	6.5	6.5	5.2	3.8	5.3	7.2
BLOOMBERG BARCLAYS LT TREASURY	2.8	17.7	4.7	4.7	6.2	1.5	5.4	5.1
BLOOMBERG BARCLAYS LT GOV't-REL.	4.1	12.1	6.6	6.6	5.7	4.7	5.6	7.0
BLOOMBERG BARCLAYS LT CORP.	4.4	13.9	8.0	8.0	4.4	5.3	5.3	9.2
BLOOMBERG BARCLAYS U.S. TIPS *	2.4	7.6	3.2	3.2	2.7	1.7	1.9	3.4
BLOOMBERG BARCLAYS HIGH YIELD	6.7	3.4	7.3	7.3	5.9	8.6	4.7	11.3
TREASURY BILLS	2.4	0.25	0.6	0.6	2.1	1.2	0.7	0.4

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

BLOOMBERG BARCLAYS FIXED INCOME INDEXES



TREASURY YIELD CURVE



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

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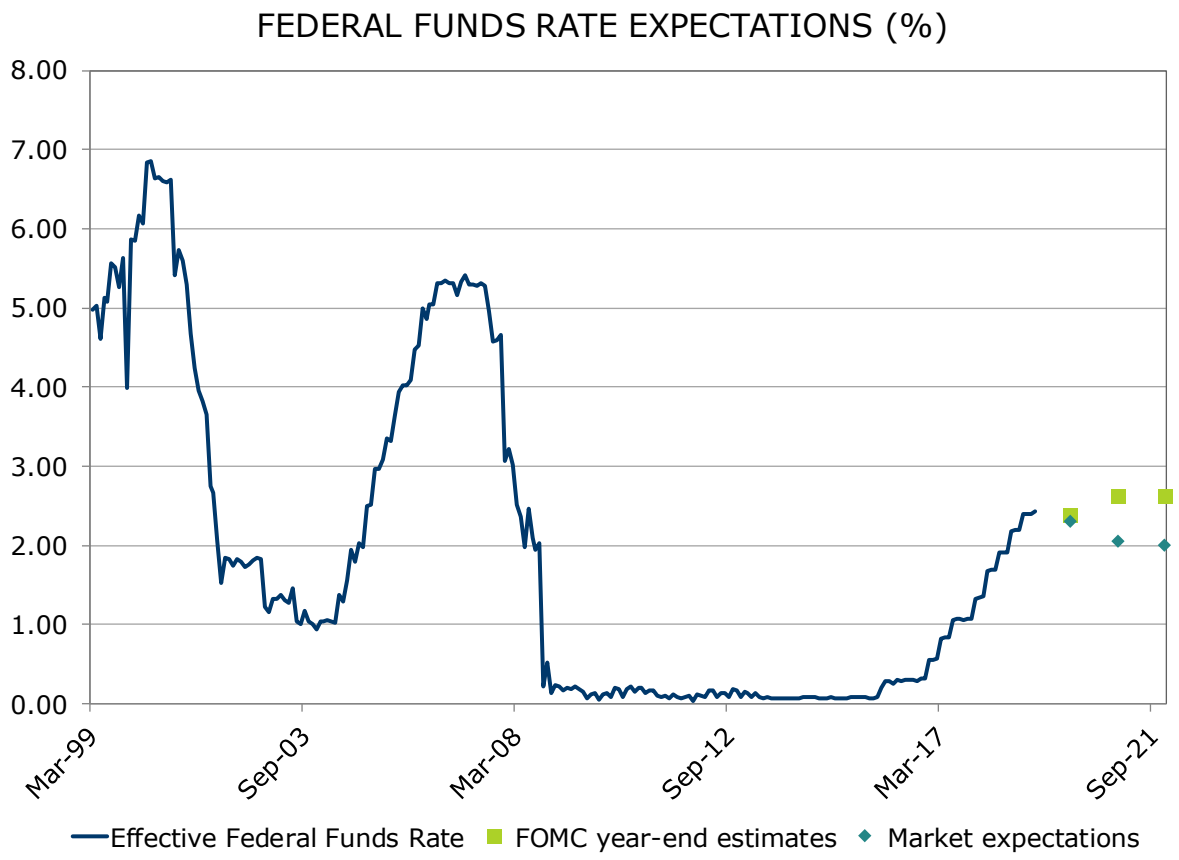
SHORT-TERM RATES

- Federal Reserve changed their forecast for rate increases for 2019 to zero
- Longer term, the market expects the short-term rate to fall during the next couple years



Data sources: U.S. Treasury, J.P. Morgan

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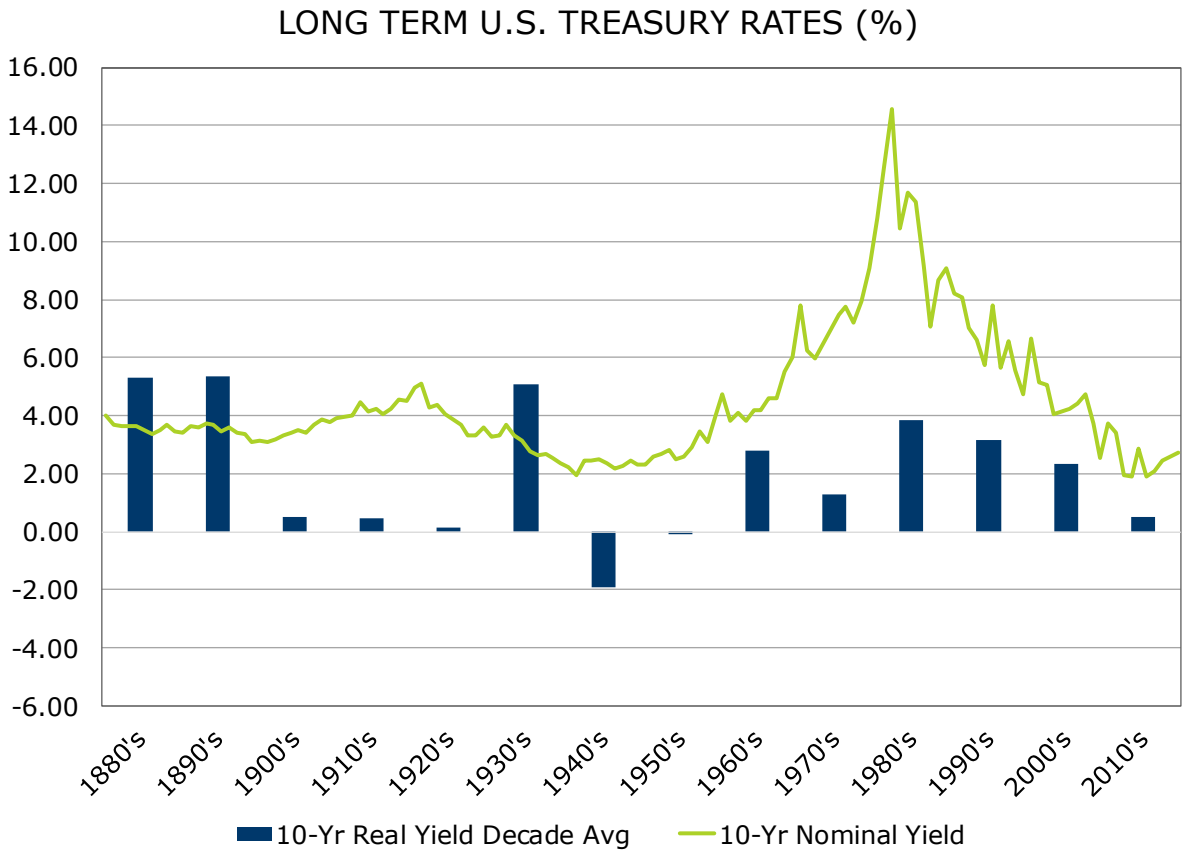
LONG-TERM RATES

- Historically, long-term rates have been in the low to mid-single digits
- Average for the entire period is 4.50% with an average real yield of 2.05%



Note: Pre-TIPS Real Yield = 10-year nominal minus 5-year trailing average annual inflation

Data sources: Robert Shiller - Yale, U.S. Treasury

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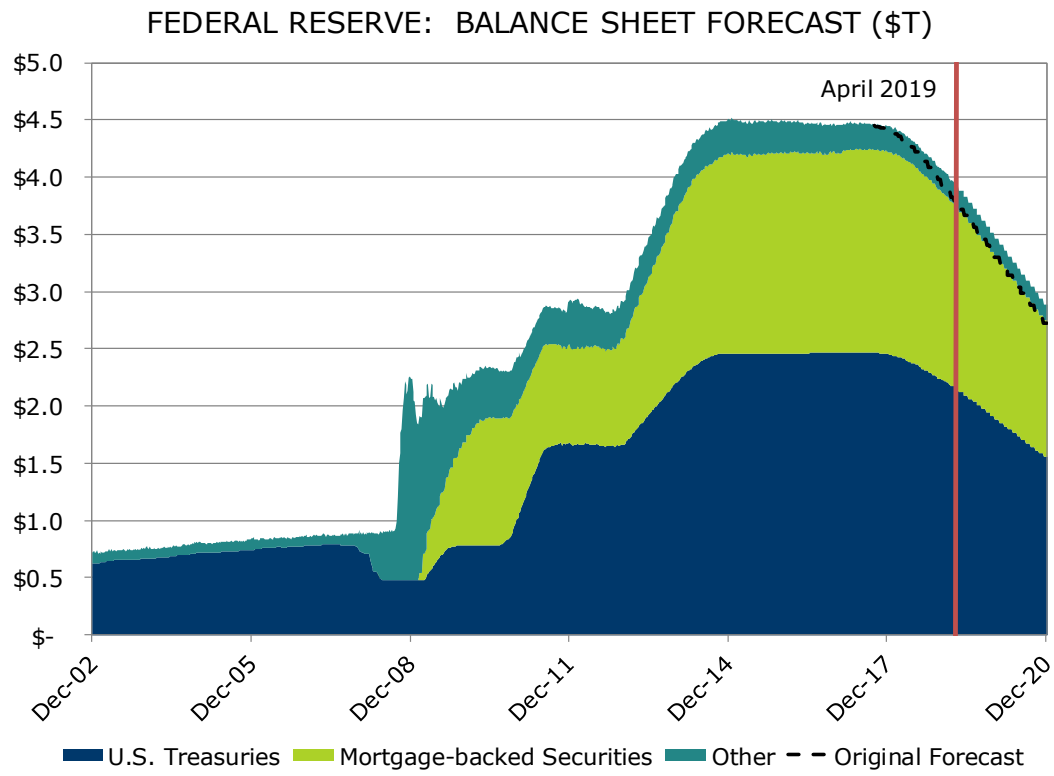
FED BALANCE SHEET

- 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

- Fed stated in early January that future reductions will be data dependent; total reductions so far equal $500 billion



Data sources: Federal Reserve

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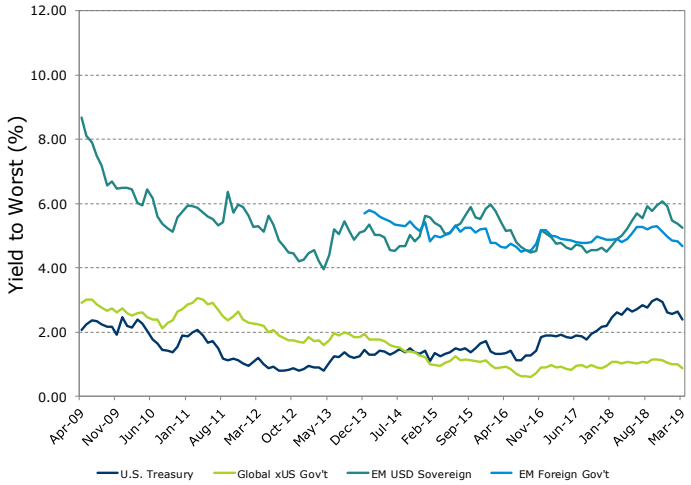
NON-U.S. FIXED INCOME

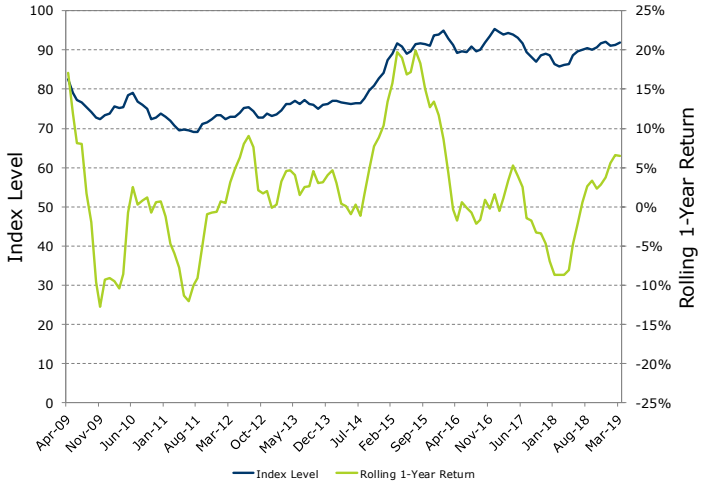
AS OF MARCH 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DEVELOPED MARKETS						
BLMBRG BRCLYS GLBL AGGREGATE xUS	1.5	1.5	-4.1	1.0	-0.3	2.5
BLMBRG BRCLYS GLBL AGGREGATE xUS *	3.0	3.0	5.2	3.3	4.3	4.3
BLMBRG BRCLYS GLOBAL INF LNKD xUS	4.4	4.4	-4.8	3.0	1.2	4.7
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	4.4	4.4	5.0	6.5	6.6	6.2
EMERGING MARKETS (HARD CURRENCY)						
BLMBRG BRCLYS EM USD AGGREGATE	5.4	5.4	4.4	5.3	4.8	8.5
EMERGING MARKETS (FOREIGN CURRENCY)						
BLMBRG BRCLYS EM LOCAL CURR. GOV'T	2.4	2.4	-3.9	3.3	0.7	5.1
BLMBRG BRCLYS EM LOCAL CURR. GOV'T *	2.2	2.2	3.9	2.9	3.2	3.5
EURO vs. DOLLAR	-1.8	-1.8	-8.7	-0.5	-4.0	-1.7
YEN vs. DOLLAR	-0.9	-0.9	-3.9	0.5	-1.4	-1.1
POUND vs. DOLLAR	2.3	2.3	-7.1	-3.2	-4.8	-0.9

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

BLOOMBERG BARCLAYS FIXED INCOME INDEXES



U.S. DOLLAR INDEX: MAJOR CURRENCIES



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

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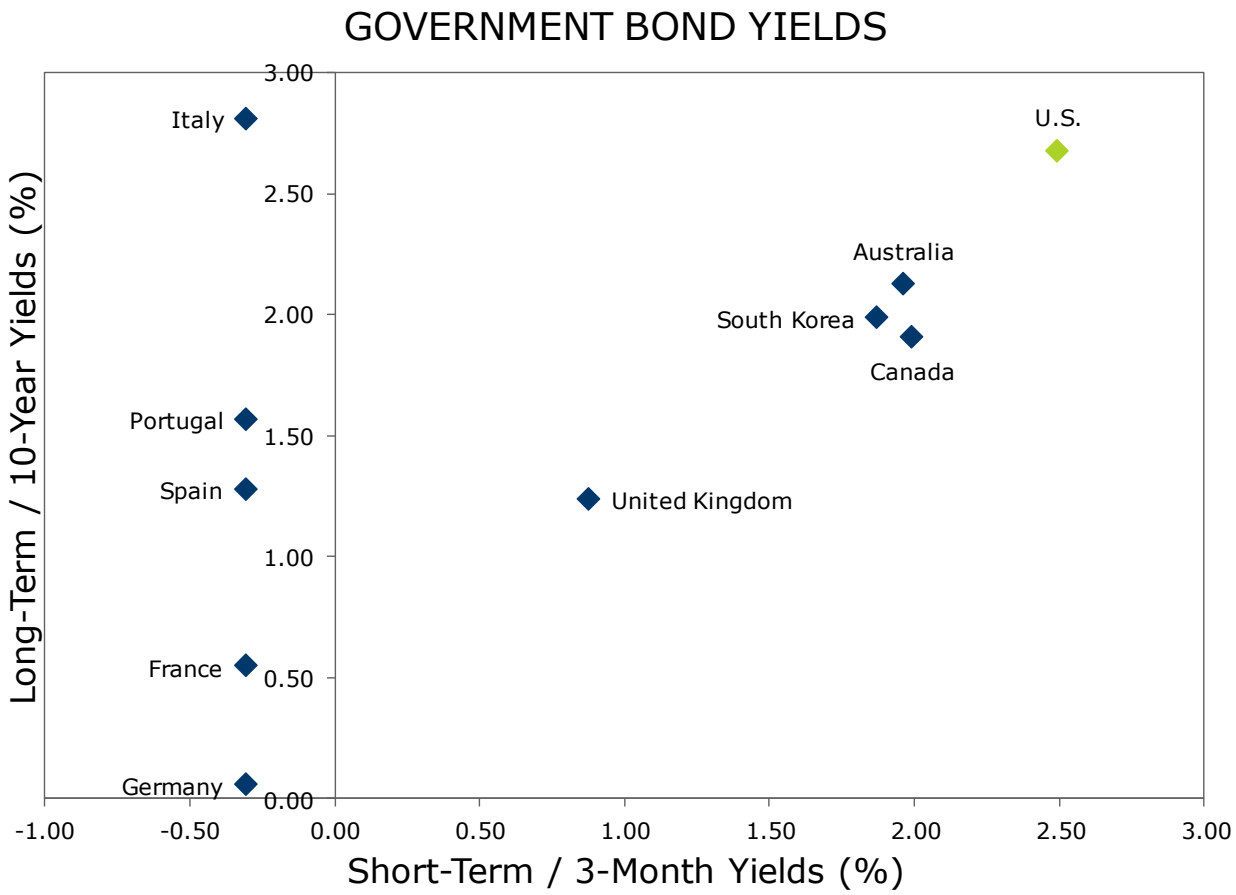
GLOBAL INTEREST RATES

Negative short-term rates remain in Europe; Long rates are down globally during the past three months



Data sources: Organization for Economic Co-operation and Development

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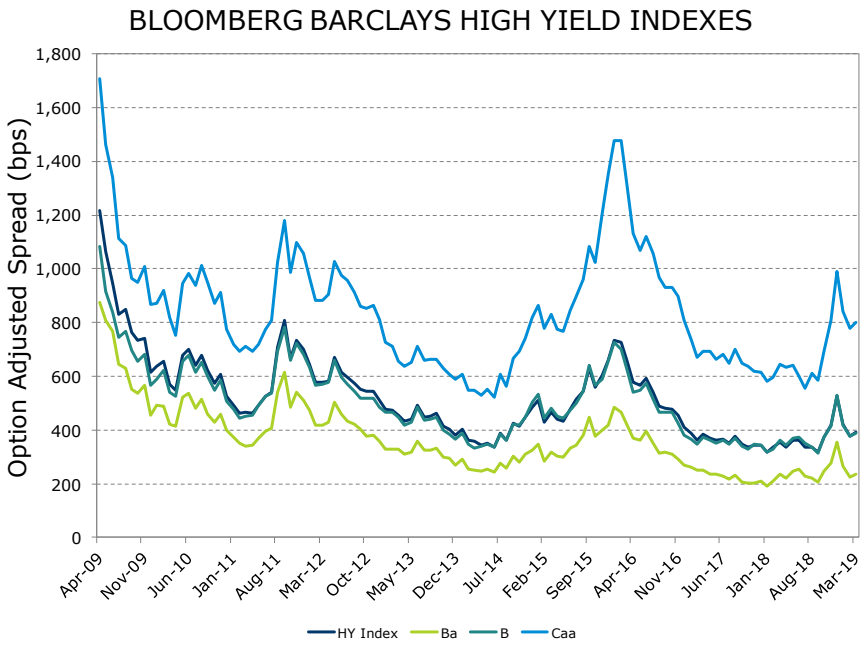
HIGH YIELD BOND MARKET

AS OF MARCH 31, 2019		QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		7.3	7.3	5.9	8.6	4.7	11.3
CREDIT SUISSE LEVERAGED LOAN		3.8	3.8	3.3	5.9	3.8	8.0
HIGH YIELD QUALITY DISTRIBUTION	WEIGHT						
Ba U.S. HIGH YIELD	45.7%	7.2	7.2	6.3	6.8	5.1	10.1
B U.S. HIGH YIELD	40.0%	7.2	7.2	6.4	8.4	4.2	10.0
Caa U.S. HIGH YIELD	13.2%	7.2	7.2	2.7	12.9	4.7	14.1
Ca to D U.S. HIGH YIELD	0.8%	17.5	17.5	13.5	32.2	-8.0	9.3
Non-Rated U.S. HIGH YIELD	0.3%	3.6	3.6	4.6	7.9	-1.0	7.7



Data sources: Wilshire Compass, Bloomberg Barclays

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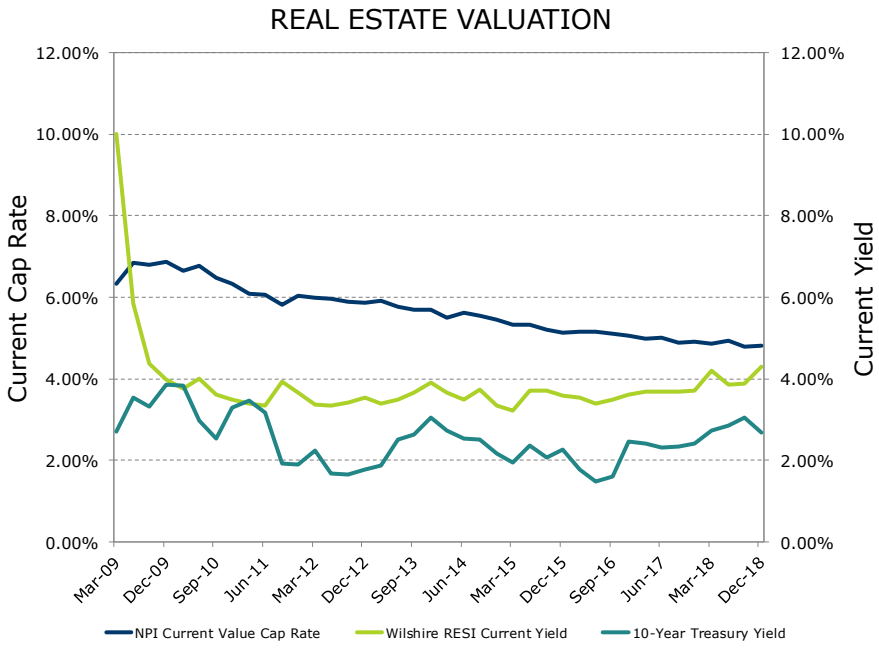
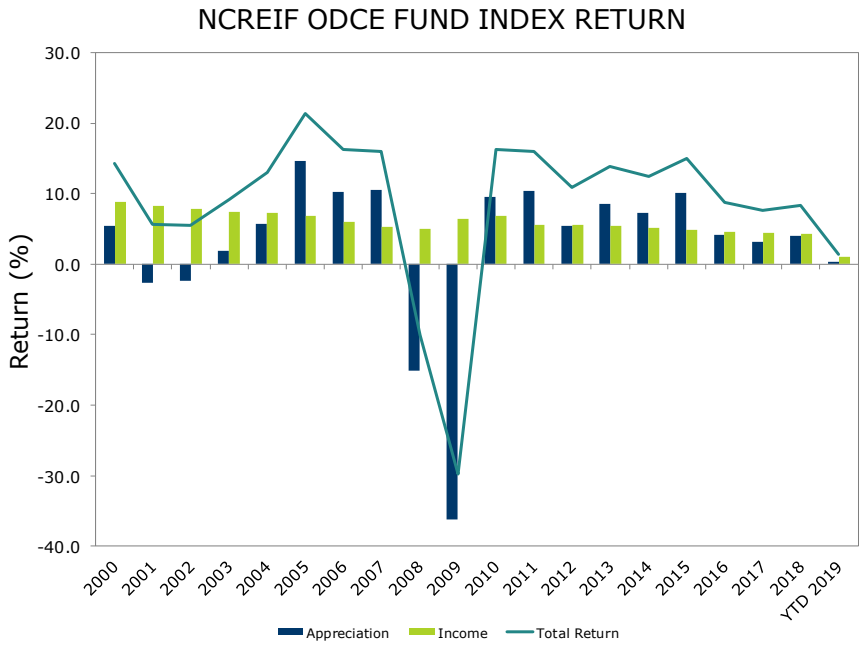
REAL ASSETS

AS OF MARCH 31, 2019	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	3.2	3.2	2.7	1.7	1.9	3.4
BLOOMBERG COMMODITY INDEX	6.3	6.3	-5.3	2.2	-8.9	-2.6
WILSHIRE GLOBAL RESI INDEX	15.0	15.0	14.8	6.3	7.9	16.4
NCREIF ODCE FUND INDEX	1.4	1.4	7.5	8.0	10.2	8.7
NCREIF TIMBERLAND INDEX	0.1	0.1	2.4	3.3	4.6	3.7
ALERIAN MLP INDEX (OIL & GAS)	16.8	16.8	15.1	5.7	-4.7	10.1





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

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TOTAL FUND

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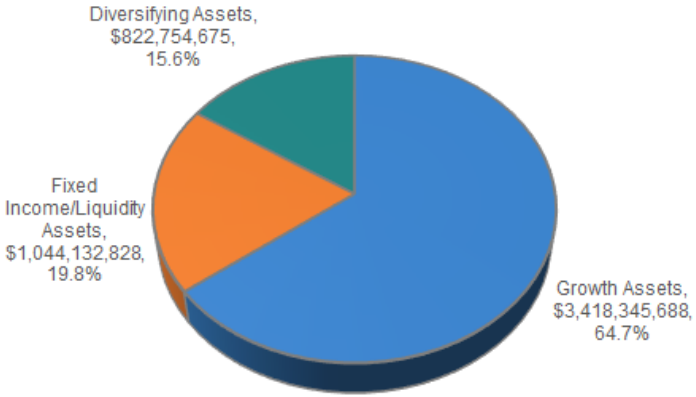
ACTUAL ALLOCATION VS POLICY ALLOCATION

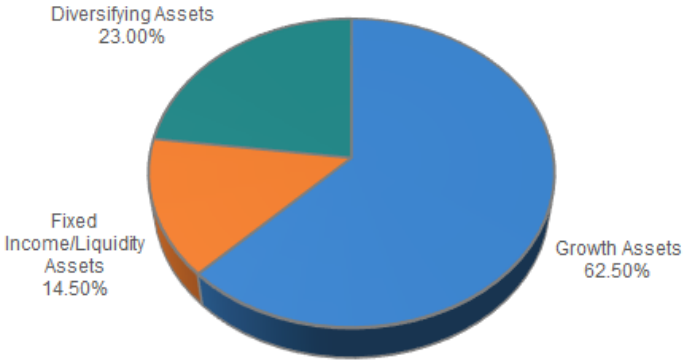
KRS Insurance Plan Composite
Asset Class Bucketing

As of March 31, 2019

Total Fund



Policy Index



$5,285,233,191

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ACTUAL ALLOCATION VS POLICY ALLOCATION

KRS Insurance Plan Composite

Asset Cass Bucketing

As of March 31, 2019

Asset Class / Bucket	Total Insurance Allocation ($)	Total Insurance Allocation (%)	Policy Index	Relative (+/-)
U.S. Equity	$979,743,432	18.5%	18.8%	-0.2%
Non-U.S. Equity	$1,097,626,761	20.8%	18.8%	2.0%
Private Equity	$553,547,714	10.5%	10.0%	0.5%
Credit / High Yield	$787,427,781	14.9%	15.0%	-0.1%
Growth Assets	**$3,418,345,688**	**64.7%**	**62.5%**	**2.2%**
Core Fixed Income	$824,249,380	15.6%	13.5%	2.1%
Cash	$219,883,448	4.2%	1.0%	3.2%
Fixed Income/Liquidity Assets	**$1,044,132,828**	**19.8%**	**14.5%**	**5.3%**
Real Estate	$273,649,692	5.2%	5.0%	0.2%
Real Return	$454,096,354	8.6%	15.0%	-6.4%
Absolute Return	$95,008,629	1.8%	3.0%	-1.2%
Diversifying Assets	**$822,754,675**	**15.6%**	**23.0%**	**-7.4%**
Total Fund	**$5,285,233,191**	**100.0%**	**100.0%**	**0.0%**

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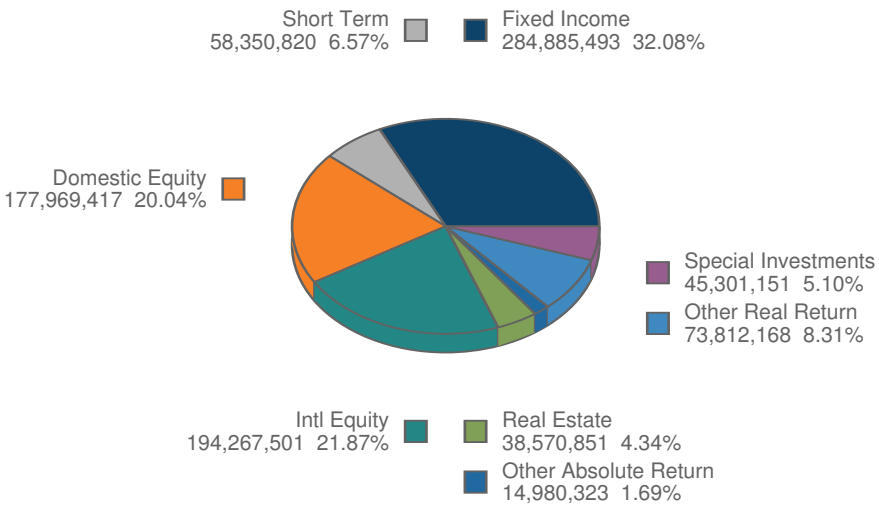
ACTUAL ALLOCATION VS POLICY ALLOCATION

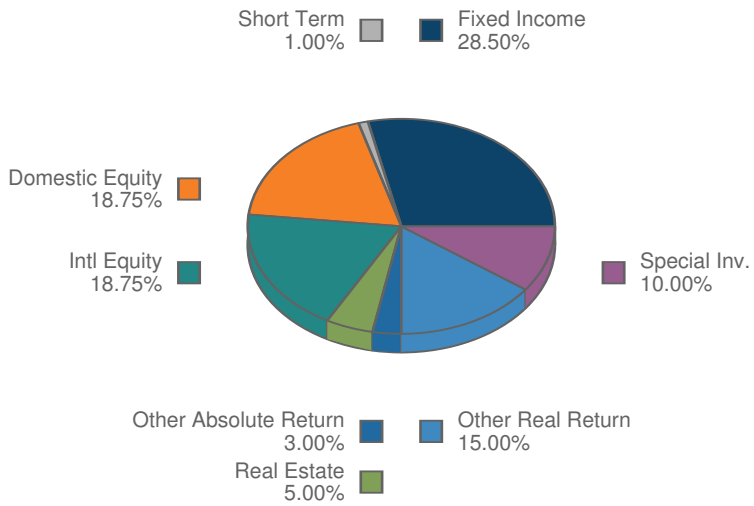
KERS Insurance Plan Composite

As of March 31, 2019

Total Fund



Policy Index



$888,137,724

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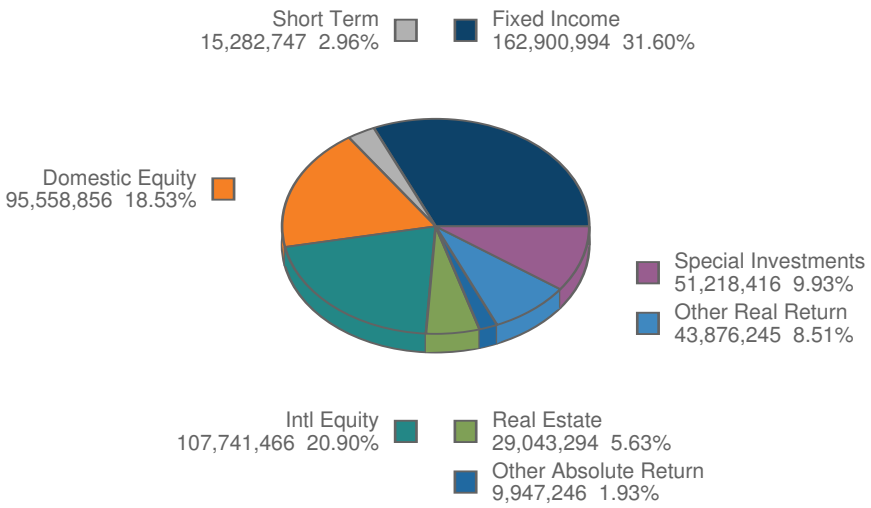
ACTUAL ALLOCATION VS POLICY ALLOCATION

KERS (H) Insurance Plan Composite

As of March 31, 2019

Total Fund



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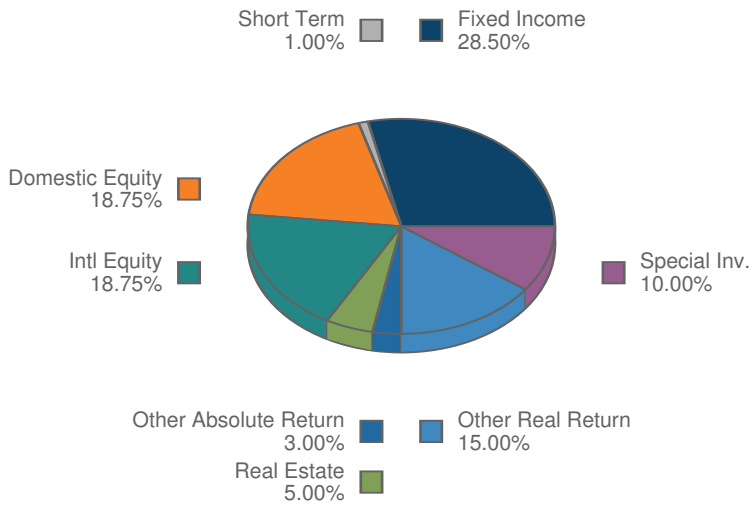

$515,569,265

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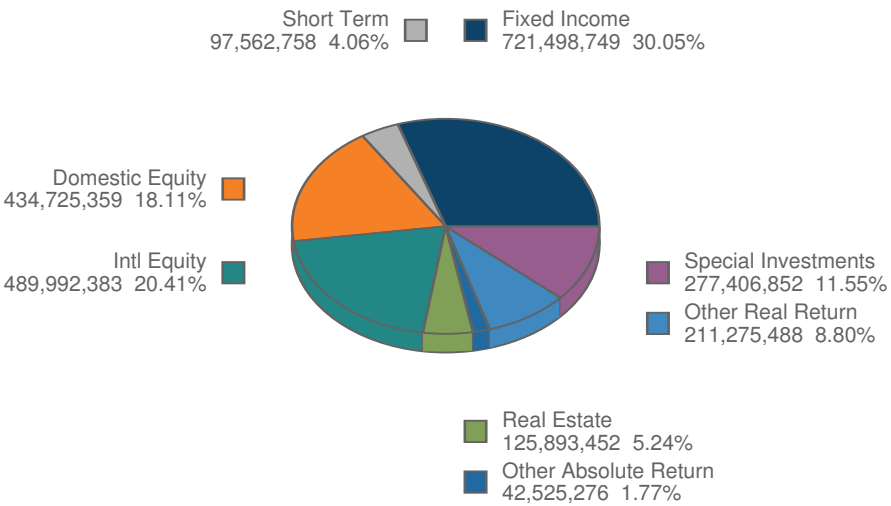
ACTUAL ALLOCATION VS POLICY ALLOCATION

CERS Insurance Plan Composite

As of March 31, 2019

Total Fund



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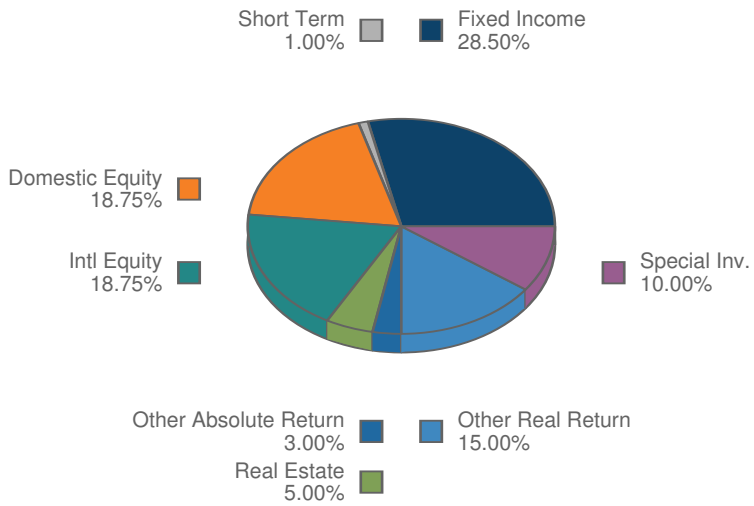

$2,400,880,317

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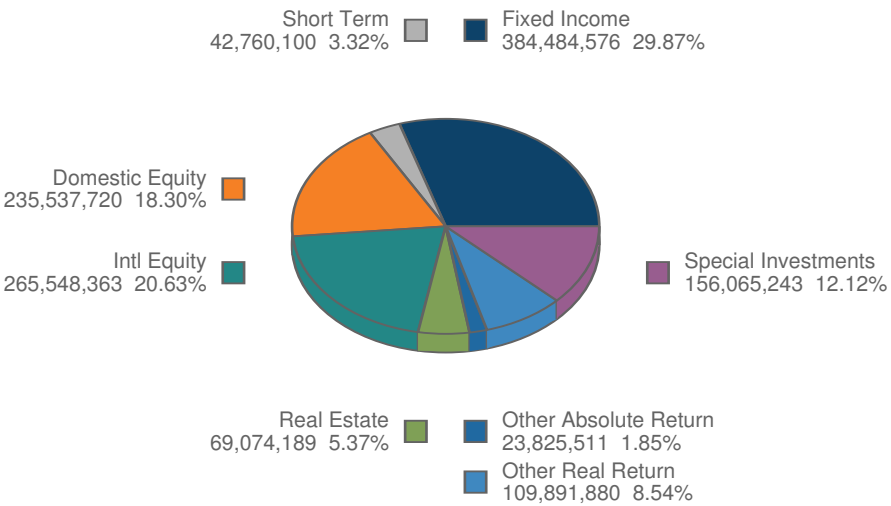
ACTUAL ALLOCATION VS POLICY ALLOCATION

CERS (H) Insurance Plan Composite

As of March 31, 2019

Total Fund



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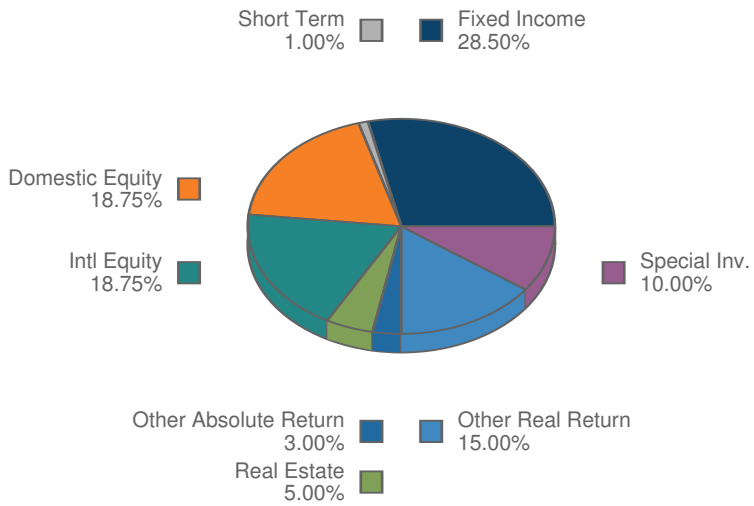

$1,287,187,580

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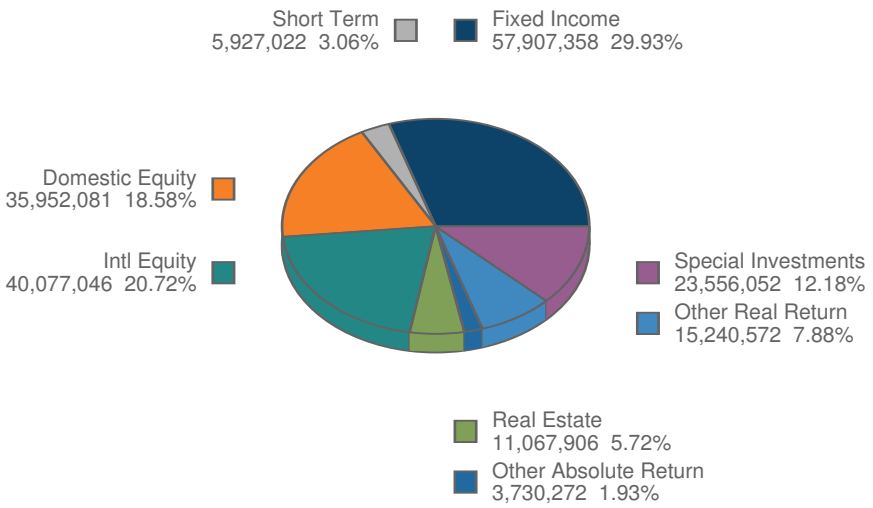
ACTUAL ALLOCATION VS POLICY ALLOCATION

SPRS Insurance Plan Composite

As of March 31, 2019

Total Fund



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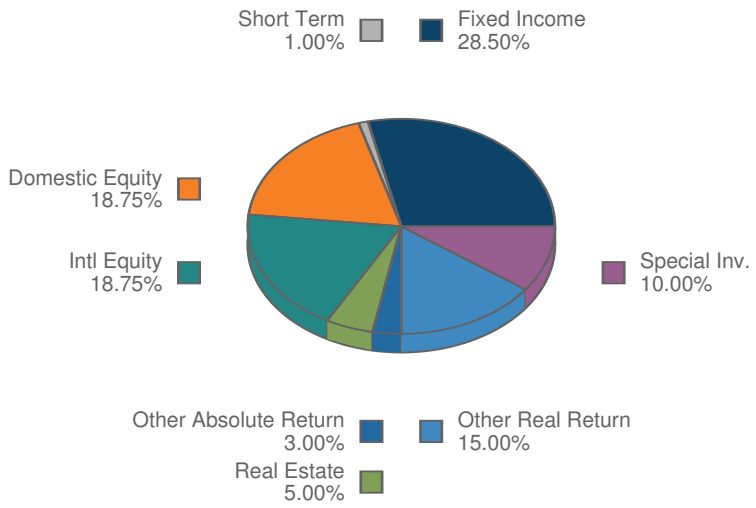

$193,458,309

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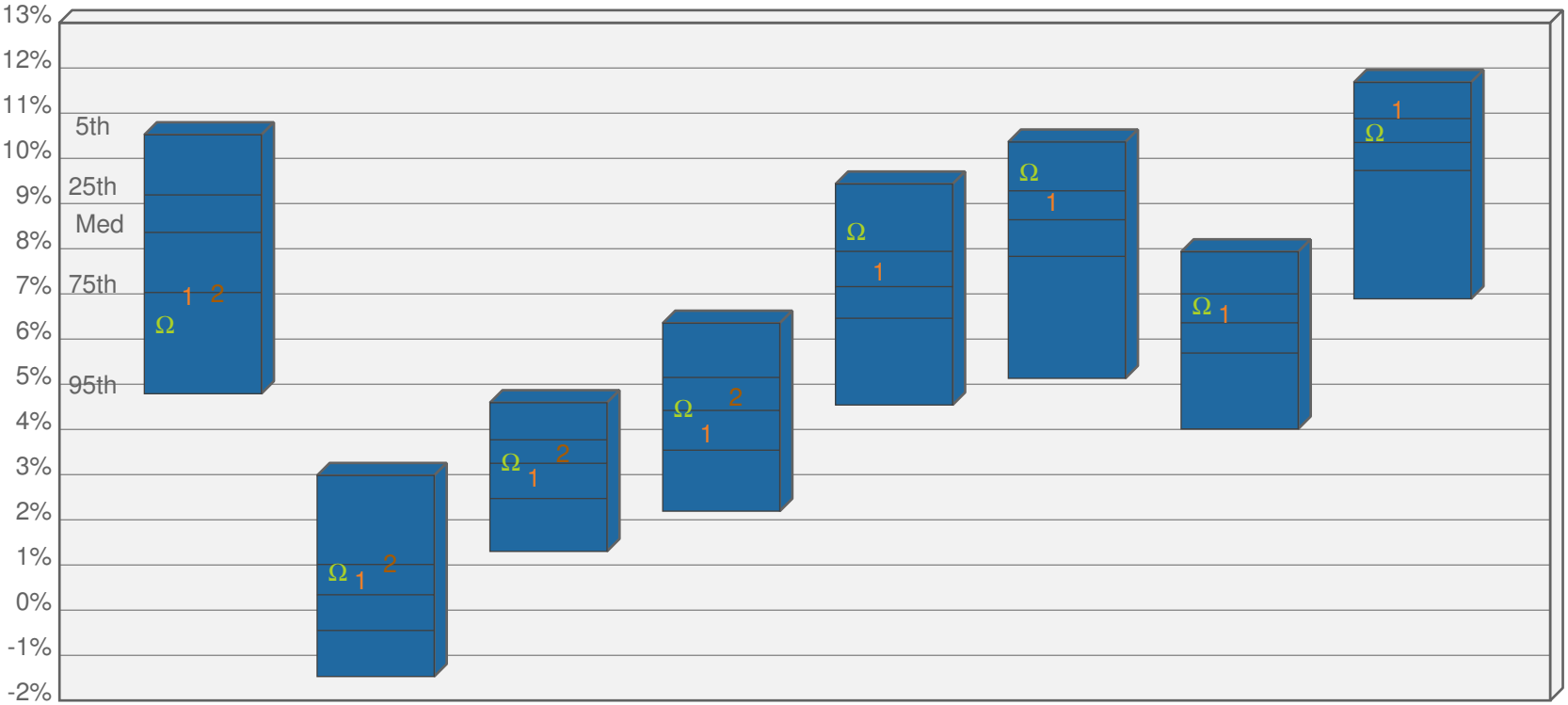
PERFORMANCE COMPARISON

KRS Insurance Plan Composite

Periods Ended March 31, 2019



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Ω KRS Insurance Plan	6.33 (83)	0.85 (32)	3.29 (47)	4.46 (48)	8.38 (16)	9.69 (14)	6.74 (32)	10.58 (42)
1 KRS Allocation I	6.95 (78)	0.66 (42)	2.93 (62)	3.90 (65)	7.50 (43)	9.03 (35)	6.55 (42)	11.08 (15)
2 KRS IPS Benchmar	7.02 (75)	1.03 (23)	3.46 (36)	4.72 (40)				
5th %tile	10.52	2.98	4.59	6.35	9.43	10.36	7.93	11.68
25th %tile	9.19	1.01	3.77	5.15	7.94	9.28	7.00	10.88
Median	8.36	0.34	3.25	4.42	7.16	8.64	6.36	10.35
75th %tile	7.03	-0.45	2.47	3.54	6.46	7.83	5.69	9.73
95th %tile	4.79	-1.47	1.30	2.19	4.54	5.13	4.01	6.89
Number of Funds	174	173	173	173	165	164	155	137

*TUCS Total Ret of Master Trusts - Public Universe - Gross of Fees

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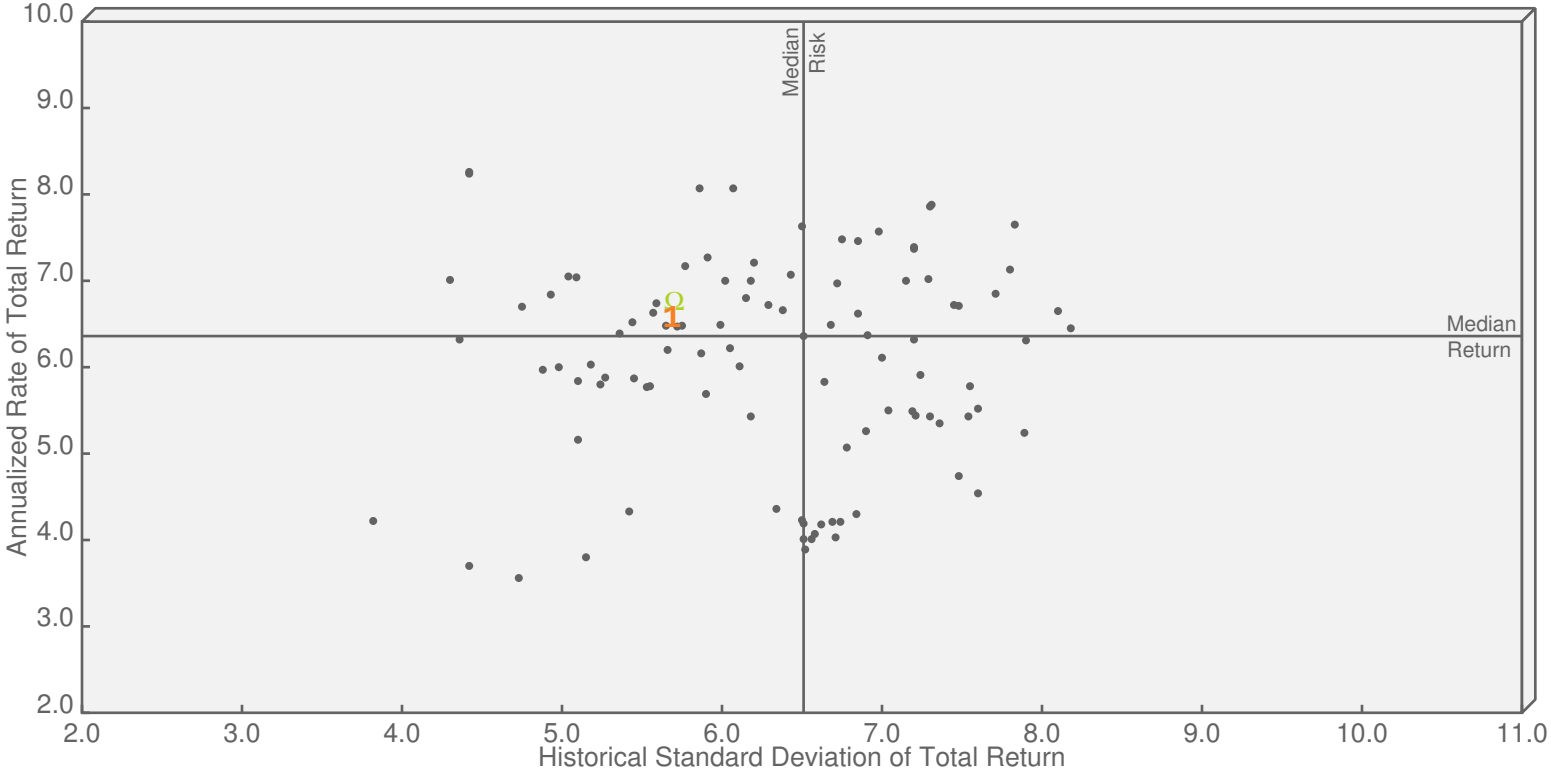
RISK / RETURN ANALYSIS

KRS Insurance Plan

Five Years Ending March 31, 2019



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
KRS Insurance Plan	Ω	6.74	32	5.73	72
KRS Allocation Index	1	6.55	42	5.72	73
Median		6.36		6.51	

*TUCS Total Returns of Master Trusts - Public Universe - Gross of Fees

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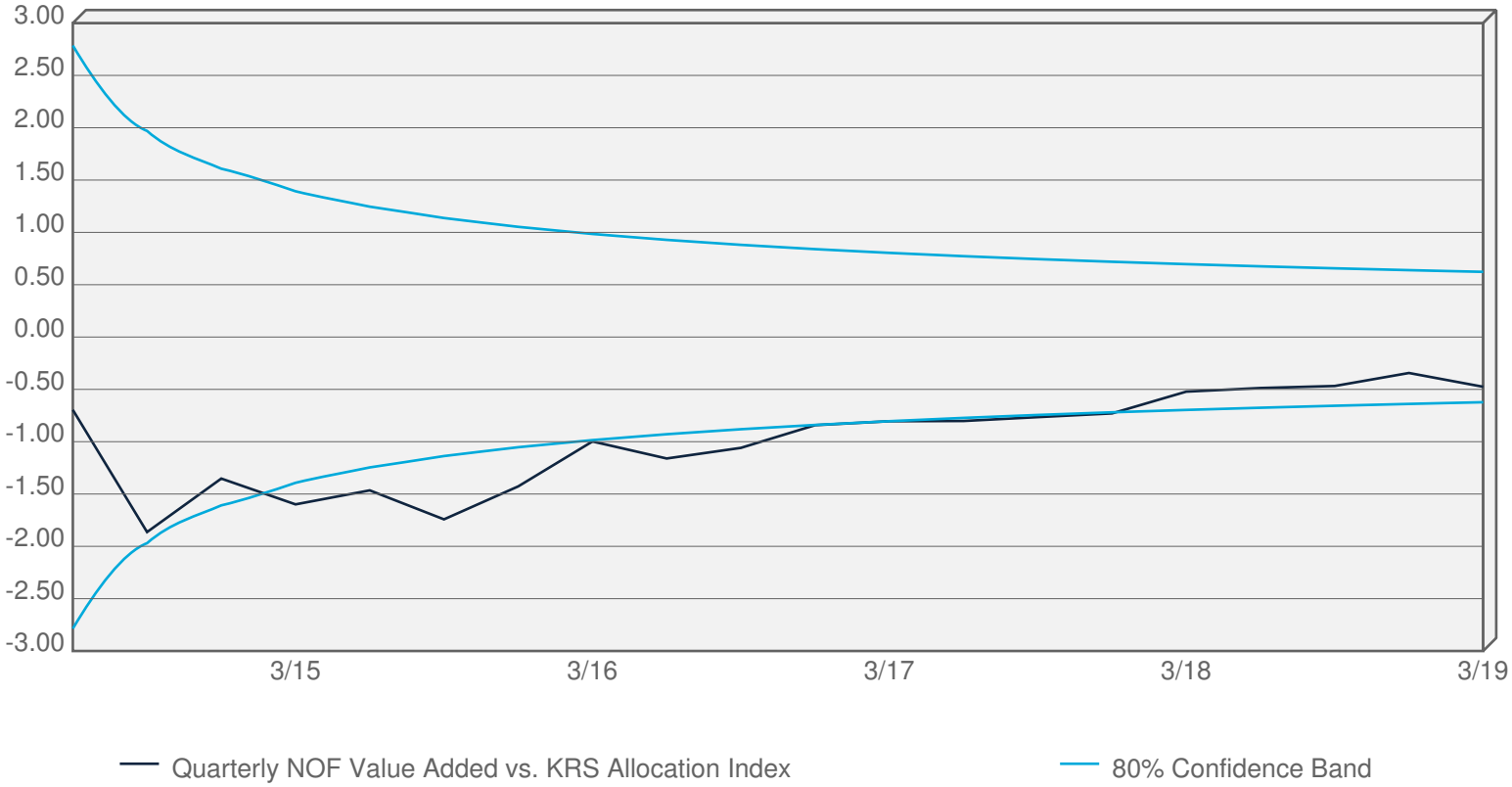
CUMULATIVE SKILL ANALYSIS

KRS Insurance Plan Composite

Five Years Ending March 31, 2019



Excess Return:	-0.48	Information Ratio:	-0.56
Excess Risk:	0.85	T-Stat:	-1.26

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
KRS Insurance Plan									
Net of Fee Return	**6.20**	**0.51**	**2.75**	**3.73**	**8.93**	**6.06**	**10.17**	**3/31/87**	**7.38**
KRS Allocation Index	6.95	0.66	2.93	3.90	9.03	6.55	11.08	3/31/87	7.78
Value Added	-0.75	-0.15	-0.18	-0.18	-0.11	-0.49	-0.90	3/31/87	-0.40
KRS IPS Benchmark	7.02	1.03	3.46	4.72					
KERS Insurance Plan									
Net of Fee Return	**6.52**	**0.05**	**2.19**	**2.88**	**8.37**	**5.57**	**9.87**	**3/31/87**	**7.28**
KERS Allocation Index	7.19	0.33	2.56	3.29	8.75	6.21	10.93	3/31/87	7.73
Value Added	-0.67	-0.28	-0.37	-0.42	-0.38	-0.64	-1.06	3/31/87	-0.45
KERS IPS Benchmark	6.73	0.77	3.18	4.26					
Assumed Rate 6.25%	1.53	3.08	4.65	6.25					
KERS (H) Insurance Plan									
Net of Fee Return	**6.17**	**0.52**	**2.72**	**3.64**	**8.87**	**5.99**	**10.16**	**3/31/87**	**7.37**
KERS (H) Allocation Index	6.80	0.67	2.94	3.93	9.03	6.37	11.02	3/31/87	7.76
Value Added	-0.63	-0.15	-0.22	-0.29	-0.16	-0.38	-0.86	3/31/87	-0.39
KERS (H) IPS Benchmark	6.98	0.99	3.42	4.66					
Assumed Rate 6.25%	1.53	3.08	4.65	6.25					
CERS Insurance Plan									
Net of Fee Return	**6.11**	**0.58**	**2.84**	**3.85**	**9.00**	**6.14**	**10.22**	**3/31/87**	**7.39**
CERS Allocation Index	6.88	0.74	3.01	4.03	9.09	6.40	11.03	3/31/87	7.77
Value Added	-0.77	-0.15	-0.18	-0.18	-0.08	-0.27	-0.81	3/31/87	-0.37
CERS IPS Benchmark	7.05	1.06	3.49	4.76					
Assumed Rate 6.25%	1.53	3.08	4.65	6.25					

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
CERS (H) Insurance Plan									
Net of Fee Return	**6.11**	**0.60**	**2.87**	**3.93**	**9.06**	**6.20**	**10.25**	**3/31/87**	**7.40**
CERS (H) Allocation Index	6.88	0.74	3.02	4.04	9.09	6.41	11.04	3/31/87	7.77
Value Added	-0.77	-0.14	-0.15	-0.11	-0.03	-0.20	-0.78	3/31/87	-0.36
CERS (H) IPS Benchmark	7.06	1.06	3.50	4.77					
Assumed Rate 6.25%	1.53	3.08	4.65	6.25					
SPRS Insurance Plan									
Net of Fee Return	**6.09**	**0.55**	**2.84**	**3.86**	**9.04**	**6.16**	**10.24**	**3/31/87**	**7.40**
SPRS Allocation Index	6.85	0.71	2.98	3.97	9.06	6.39	11.03	3/31/87	7.76
Value Added	-0.76	-0.16	-0.14	-0.11	-0.02	-0.23	-0.79	3/31/87	-0.37
SPRS IPS Benchmark	7.02	1.03	3.46	4.70					
Assumed Rate 6.25%	1.53	3.08	4.65	6.25					

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
US Equity Composite									
Net of Fee Return	**14.20**	**-2.60**	**3.36**	**7.66**	**12.69**	**9.64**	**15.12**	**6/30/92**	**9.59**
Russell 3000	14.04	-2.27	4.70	8.77	13.49	10.36	16.00	6/30/92	9.78
Value Added	0.16	-0.33	-1.34	-1.11	-0.79	-0.72	-0.87	6/30/92	-0.19
Non-US Equity Composite									
Net of Fee Return	**11.04**	**-2.83**	**-2.19**	**-4.06**	**8.64**	**3.51**	**7.15**	**3/31/00**	**2.21**
Policy Index	10.31	-2.80	-2.42	-4.96	8.21	2.85	9.03	3/31/00	2.45
Value Added	0.73	-0.03	0.23	0.90	0.43	0.66	-1.87	3/31/00	-0.24
Core Fixed Composite									
Net of Fee Return	**2.83**	**3.79**						**9/30/18**	**3.79**
Bloomberg Universal	3.32	4.53						9/30/18	4.53
Value Added	-0.49	-0.74						9/30/18	-0.74
Opportunistic Fixed Composite									
Net of Fee Return	**3.66**	**2.64**						**9/30/18**	**2.64**
Bloomberg High Yield	7.26	2.39						9/30/18	2.39
Value Added	-3.60	0.24						9/30/18	0.24
Fixed Income Composite									
Net of Fee Return	**3.28**	**3.04**	**4.32**	**4.16**	**4.64**	**3.74**	**4.96**	**6/30/92**	**6.29**
Policy Index	5.29	3.49	4.87	5.27	5.59	4.79	5.18	6/30/92	6.31
Value Added	-2.01	-0.45	-0.56	-1.12	-0.95	-1.05	-0.22	6/30/92	-0.01
Bloomberg Global Aggregate	2.20	3.43	2.47	-0.38	1.49	1.04	3.05	6/30/92	4.98
Real Return Composite									
Net of Fee Return	**6.14**	**2.29**	**2.76**	**2.85**	**5.54**	**2.65**		**6/30/11**	**3.45**
Real Return Index (I)	5.51	2.60	2.95	4.38	3.78	2.15		6/30/11	2.74
Value Added	0.63	-0.31	-0.19	-1.53	1.76	0.50		6/30/11	0.71

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Real Estate Composite									
Net of Fee Return	**1.45**	**3.30**	**6.06**	**8.20**	**9.31**	**9.15**		**6/30/09**	**9.13**
NCREIF ODCE NOF 1 Quarter Lag	1.52	3.42	5.29	7.36	7.27	9.41		6/30/09	7.81
Value Added	-0.07	-0.12	0.77	0.84	2.04	-0.26		6/30/09	1.32
Absolute Return Composite									
Net of Fee Return	**1.00**	**-0.13**	**0.03**	**0.58**	**3.76**	**2.11**		**3/31/10**	**3.74**
HFRI FOF Div (1 Month Lag)	1.96	-1.22	-0.87	-0.44	3.49	1.88		3/31/10	2.70
Value Added	-0.96	1.09	0.89	1.02	0.27	0.22		3/31/10	1.05
Private Equity Composite									
Net of Fee Return	**-0.73**	**2.88**	**7.38**	**12.33**	**13.77**	**13.64**	**15.04**	**6/30/02**	**10.25**
KRS Short Term PE Index	-0.73	2.88	7.38	12.33	13.77	13.64	15.04	6/30/02	10.25
Value Added	0.00	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	6/30/02	-0.00
Russell 3000 +3% Qtr Lag	-13.62	-6.79	-2.45	-2.35	13.22	11.85	17.60	6/30/02	10.27
Cash Composite									
Net of Fee Return	**0.67**	**1.27**	**1.78**	**2.27**	**1.51**	**0.99**	**0.64**	**6/30/92**	**2.65**
91-Day Treasury Bill	0.60	1.17	1.67	2.13	1.19	0.74	0.43	6/30/92	2.61
Value Added	0.07	0.10	0.11	0.15	0.32	0.25	0.21	6/30/92	0.04

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CUSTOM BENCHMARK SPECIFICATION

KRS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KRS Allocation Index	6/87	6/17	100.00	KRS Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			2.00	91-Day Treasury Bill
			10.00	KRS Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			8.00	Real Return Index (I)
			6.00	Bloomberg High Yield
			6.00	Bloomberg Universal
			26.50	Russell 3000
			26.50	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/18	10.00	HFRI Diversified Index
			8.00	Bloomberg High Yield
			8.00	Bloomberg Universal
			2.00	91-Day Treasury Bill
			8.00	Real Return Index (I)
			24.50	MSCI ACWI Ex USA IMI ($N)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	KRS Short Term PE Benchmark
			24.50	Russell 3000
	6/18	3/19	17.90	Russell 3000
			21.90	MSCI ACWI Ex USA IMI ($N)
			10.00	HFRI Diversified Index
			10.00	Real Return Index (I)
			11.00	Bloomberg High Yield
			13.00	Bloomberg Universal
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			9.20	KRS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
KRS IPS Benchmark	9/17	9/17	2.00	91-Day Treasury Bill

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CUSTOM BENCHMARK SPECIFICATION

KRS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KRS IPS Benchmark (cont.)			10.00	KRS Short Term PE Benchmark
			10.00	HFRI FOF Div (1 Month Lag)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	Real Return Index (I)
			4.00	Bloomberg Universal
			24.00	Bloomberg High Yield
			17.50	MSCI ACWI Ex USA IMI Index ($G)
			17.50	Russell 3000
	12/17	6/18	2.00	91-Day Treasury Bill
			10.00	KRS Short Term PE Benchmark
			10.00	HFRI FOF Div (1 Month Lag)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	Real Return Index (I)
			4.00	Bloomberg Universal
			24.00	Bloomberg High Yield
			17.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
	9/18	3/19	1.00	91-Day Treasury Bill
			10.00	KRS Short Term PE Benchmark
			15.00	Real Return Index (I)
			3.00	HFRI Diversified Index
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			15.00	Bloomberg High Yield
			13.50	Bloomberg Universal
			18.75	MSCI ACWI Ex USA IMI ($N)
			18.75	Russell 3000

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CUSTOM BENCHMARK SPECIFICATION

KERS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KERS Allocation Index	6/87	6/17	100.00	KERS Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			26.50	MSCI ACWI Ex USA IMI Index ($G)
			26.50	Russell 3000
			6.00	Bloomberg Universal
			6.00	Bloomberg High Yield
			8.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	KERS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	12/17	3/18	10.00	HFRI Diversified Index
			8.00	Bloomberg High Yield
			8.00	Bloomberg Universal
			2.00	91-Day Treasury Bill
			8.00	Real Return Index (I)
			24.50	MSCI ACWI Ex USA IMI ($N)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	KERS Short Term PE Benchmark
			24.50	Russell 3000
	6/18	3/19	19.50	Russell 3000
			23.50	MSCI ACWI Ex USA IMI ($N)
			10.00	HFRI Diversified Index
			10.00	Real Return Index (I)
			11.00	Bloomberg High Yield
			13.00	Bloomberg Universal
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			6.00	KERS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
KERS IPS Benchmark	9/17	9/17	2.00	91-Day Treasury Bill

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CUSTOM BENCHMARK SPECIFICATION

KERS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KERS IPS Benchmark (cont.)			10.00	KERS Short Term PE Benchmark
			10.00	HFRI FOF Div (1 Month Lag)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	Real Return Index (I)
			4.00	Bloomberg Universal
			24.00	Bloomberg High Yield
			17.50	MSCI ACWI Ex USA IMI Index ($G)
			17.50	Russell 3000
	12/17	6/18	2.00	91-Day Treasury Bill
			10.00	KERS Short Term PE Benchmark
			10.00	HFRI FOF Div (1 Month Lag)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	Real Return Index (I)
			4.00	Bloomberg Universal
			24.00	Bloomberg High Yield
			17.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
	9/18	3/19	18.75	Russell 3000
			18.75	MSCI ACWI Ex USA IMI ($N)
			13.50	Bloomberg Universal
			15.00	Bloomberg High Yield
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			3.00	HFRI Diversified Index
			15.00	Real Return Index (I)
			10.00	KERS Short Term PE Benchmark
			1.00	91-Day Treasury Bill
Assumed Rate 6.25%	9/17	3/19	100.00	Assumed Rate 6.25%

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CUSTOM BENCHMARK SPECIFICATION

KERS (H) Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KERS (H) Allocation Index	6/87	6/17	100.00	KERS (H) Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			2.00	91-Day Treasury Bill
			10.00	KERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			8.00	Real Return Index (I)
			6.00	Bloomberg High Yield
			6.00	Bloomberg Universal
			26.50	Russell 3000
			26.50	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/18	10.00	HFRI Diversified Index
			24.50	Russell 3000
			10.00	KERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			24.50	MSCI ACWI Ex USA IMI ($N)
			8.00	Real Return Index (I)
			2.00	91-Day Treasury Bill
			8.00	Bloomberg Universal
			8.00	Bloomberg High Yield
	6/18	3/19	2.00	91-Day Treasury Bill
			10.00	KERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			13.00	Bloomberg Universal
			11.00	Bloomberg High Yield
			10.00	Real Return Index (I)
			10.00	HFRI Diversified Index
			21.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
KERS (H) IPS Benchmark	9/17	9/17	17.50	Russell 3000

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CUSTOM BENCHMARK SPECIFICATION

KERS (H) Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
KERS (H) IPS Benchmark (cont.)			17.50	MSCI ACWI Ex USA IMI Index ($G)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	KERS (H) Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	12/17	6/18	17.50	Russell 3000
			17.50	MSCI ACWI Ex USA IMI ($N)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	KERS (H) Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	9/18	3/19	18.75	Russell 3000
			18.75	MSCI ACWI Ex USA IMI ($N)
			15.00	Bloomberg High Yield
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			3.00	HFRI Diversified Index
			15.00	Real Return Index (I)
			10.00	KERS (H) Short Term PE Benchmark
			1.00	91-Day Treasury Bill
			13.50	Bloomberg Universal
Assumed Rate 6.25%	9/17	3/19	100.00	Assumed Rate 6.25%

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CUSTOM BENCHMARK SPECIFICATION

CERS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
CERS Allocation Index	6/87	6/17	100.00	CERS Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			2.00	91-Day Treasury Bill
			10.00	CERS Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			8.00	Real Return Index (I)
			6.00	Bloomberg High Yield
			6.00	Bloomberg Universal
			26.50	Russell 3000
			26.50	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/18	10.00	HFRI Diversified Index
			8.00	Bloomberg High Yield
			8.00	Bloomberg Universal
			2.00	91-Day Treasury Bill
			8.00	Real Return Index (I)
			24.50	MSCI ACWI Ex USA IMI ($N)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	CERS Short Term PE Benchmark
			24.50	Russell 3000
	6/18	3/19	2.00	91-Day Treasury Bill
			10.00	CERS Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			13.00	Bloomberg Universal
			11.00	Bloomberg High Yield
			10.00	Real Return Index (I)
			10.00	HFRI Diversified Index
			21.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
CERS IPS Benchmark	9/17	9/17	17.50	Russell 3000

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CUSTOM BENCHMARK SPECIFICATION

CERS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
CERS IPS Benchmark (cont.)			17.50	MSCI ACWI Ex USA IMI Index ($G)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	CERS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	12/17	6/18	2.00	91-Day Treasury Bill
			10.00	CERS Short Term PE Benchmark
			10.00	HFRI FOF Div (1 Month Lag)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	Real Return Index (I)
			4.00	Bloomberg Universal
			24.00	Bloomberg High Yield
			17.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
	9/18	3/19	18.75	Russell 3000
			18.75	MSCI ACWI Ex USA IMI ($N)
			13.50	Bloomberg Universal
			15.00	Bloomberg High Yield
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			3.00	HFRI Diversified Index
			15.00	Real Return Index (I)
			10.00	CERS Short Term PE Benchmark
			1.00	91-Day Treasury Bill
Assumed Rate 6.25%	9/17	3/19	100.00	Assumed Rate 6.25%

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CUSTOM BENCHMARK SPECIFICATION

CERS (H) Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
CERS (H) Allocation Index	6/87	6/17	100.00	CERS (H) Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			2.00	91-Day Treasury Bill
			10.00	CERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			8.00	Real Return Index (I)
			6.00	Bloomberg High Yield
			6.00	Bloomberg Universal
			26.50	Russell 3000
			26.50	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/18	10.00	HFRI Diversified Index
			24.50	Russell 3000
			10.00	CERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			24.50	MSCI ACWI Ex USA IMI ($N)
			8.00	Real Return Index (I)
			2.00	91-Day Treasury Bill
			8.00	Bloomberg Universal
			8.00	Bloomberg High Yield
	6/18	3/19	2.00	91-Day Treasury Bill
			10.00	CERS (H) Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			13.00	Bloomberg Universal
			11.00	Bloomberg High Yield
			10.00	Real Return Index (I)
			10.00	HFRI Diversified Index
			21.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
CERS (H) IPS Benchmark	9/17	9/17	17.50	Russell 3000

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CUSTOM BENCHMARK SPECIFICATION

CERS (H) Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
CERS (H) IPS Benchmark (cont.)			17.50	MSCI ACWI Ex USA IMI Index ($G)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	CERS (H) Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	12/17	6/18	17.50	Russell 3000
			17.50	MSCI ACWI Ex USA IMI ($N)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	CERS (H) Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	9/18	3/19	18.75	Russell 3000
			18.75	MSCI ACWI Ex USA IMI ($N)
			13.50	Bloomberg Universal
			15.00	Bloomberg High Yield
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			3.00	HFRI Diversified Index
			15.00	Real Return Index (I)
			10.00	CERS (H) Short Term PE Benchmark
			1.00	91-Day Treasury Bill
Assumed Rate 6.25%	9/17	3/19	100.00	Assumed Rate 6.25%

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CUSTOM BENCHMARK SPECIFICATION

SPRS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
SPRS Allocation Index	6/87	6/17	100.00	SPRS Allocation Index
	9/17	9/17	10.00	HFRI Diversified Index
			26.50	Russell 3000
			6.00	Bloomberg Universal
			6.00	Bloomberg High Yield
			8.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	SPRS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
			26.50	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/18	10.00	HFRI Diversified Index
			24.50	Russell 3000
			10.00	SPRS Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			24.50	MSCI ACWI Ex USA IMI ($N)
			8.00	Real Return Index (I)
			2.00	91-Day Treasury Bill
			8.00	Bloomberg Universal
			8.00	Bloomberg High Yield
	6/18	3/19	2.00	91-Day Treasury Bill
			10.00	SPRS Short Term PE Benchmark
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			13.00	Bloomberg Universal
			11.00	Bloomberg High Yield
			10.00	Real Return Index (I)
			10.00	HFRI Diversified Index
			21.50	MSCI ACWI Ex USA IMI ($N)
			17.50	Russell 3000
SPRS IPS Benchmark	9/17	9/17	17.50	Russell 3000

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CUSTOM BENCHMARK SPECIFICATION

SPRS Insurance Plan

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
SPRS IPS Benchmark (cont.)			17.50	MSCI ACWI Ex USA IMI Index ($G)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	SPRS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	12/17	6/18	17.50	Russell 3000
			17.50	MSCI ACWI Ex USA IMI ($N)
			24.00	Bloomberg High Yield
			4.00	Bloomberg Universal
			10.00	Real Return Index (I)
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			10.00	HFRI FOF Div (1 Month Lag)
			10.00	SPRS Short Term PE Benchmark
			2.00	91-Day Treasury Bill
	9/18	3/19	18.75	Russell 3000
			18.75	MSCI ACWI Ex USA IMI ($N)
			13.50	Bloomberg Universal
			15.00	Bloomberg High Yield
			5.00	NCREIF ODCE NOF 1 Quarter Lag
			3.00	HFRI Diversified Index
			15.00	Real Return Index (I)
			10.00	SPRS Short Term PE Benchmark
			1.00	91-Day Treasury Bill
Assumed Rate 6.25%	9/17	3/19	100.00	Assumed Rate 6.25%

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US EQUITY

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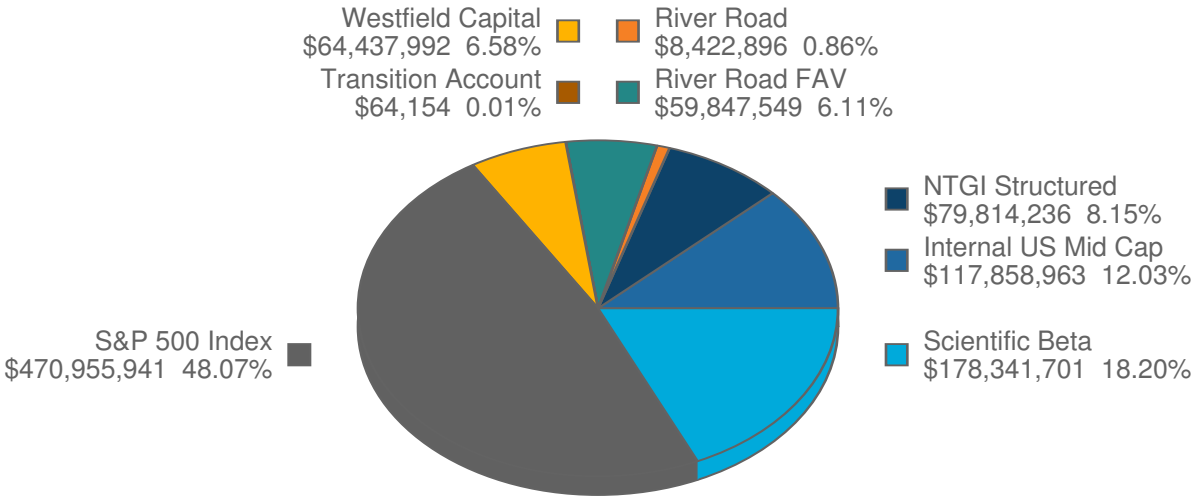
MANAGER ALLOCATION

US Equity Composite

As of March 31, 2019



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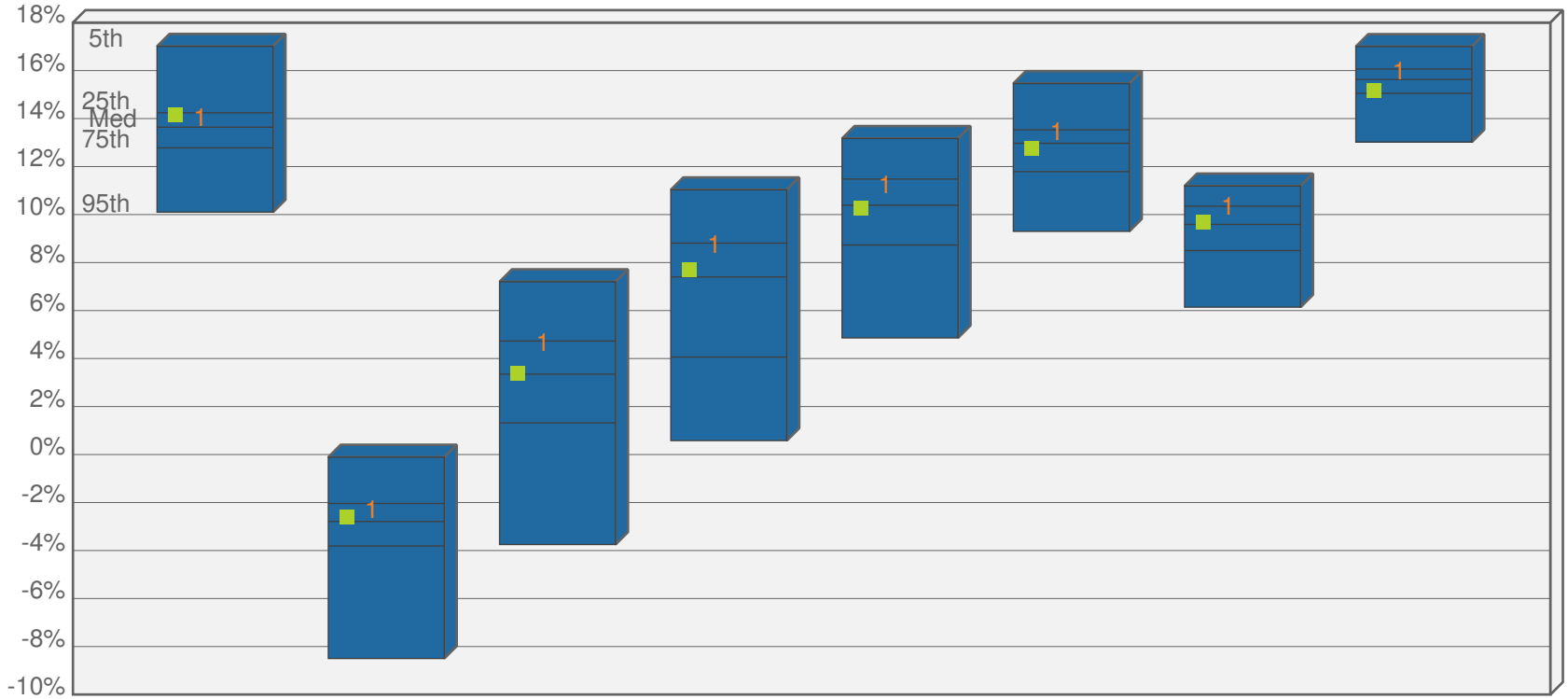
PERFORMANCE COMPARISON

US Equity Composite

Periods Ended March 31, 2019



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
US Equity Composite	14.22 (26)	-2.55 (41)	3.42 (48)	7.76 (43)	10.31 (55)	12.80 (60)	9.74 (47)	15.22 (71)
1 Russell 3000	14.04 (30)	-2.27 (30)	4.70 (26)	8.77 (26)	11.26 (33)	13.49 (29)	10.36 (24)	16.00 (29)
5th %tile	17.01	-0.11	7.20	11.03	13.17	15.46	11.19	17.00
25th %tile	14.24	-2.04	4.73	8.81	11.48	13.53	10.35	16.06
Median	13.64	-2.79	3.35	7.40	10.39	12.97	9.59	15.63
75th %tile	12.78	-3.81	1.32	4.06	8.73	11.79	8.50	15.05
95th %tile	10.10	-8.50	-3.75	0.58	4.86	9.30	6.14	13.02
Number of Funds	147	147	145	142	123	116	105	84

*TUCS Total Ret of US Equity Investment Pools Universe - Gross of Fees

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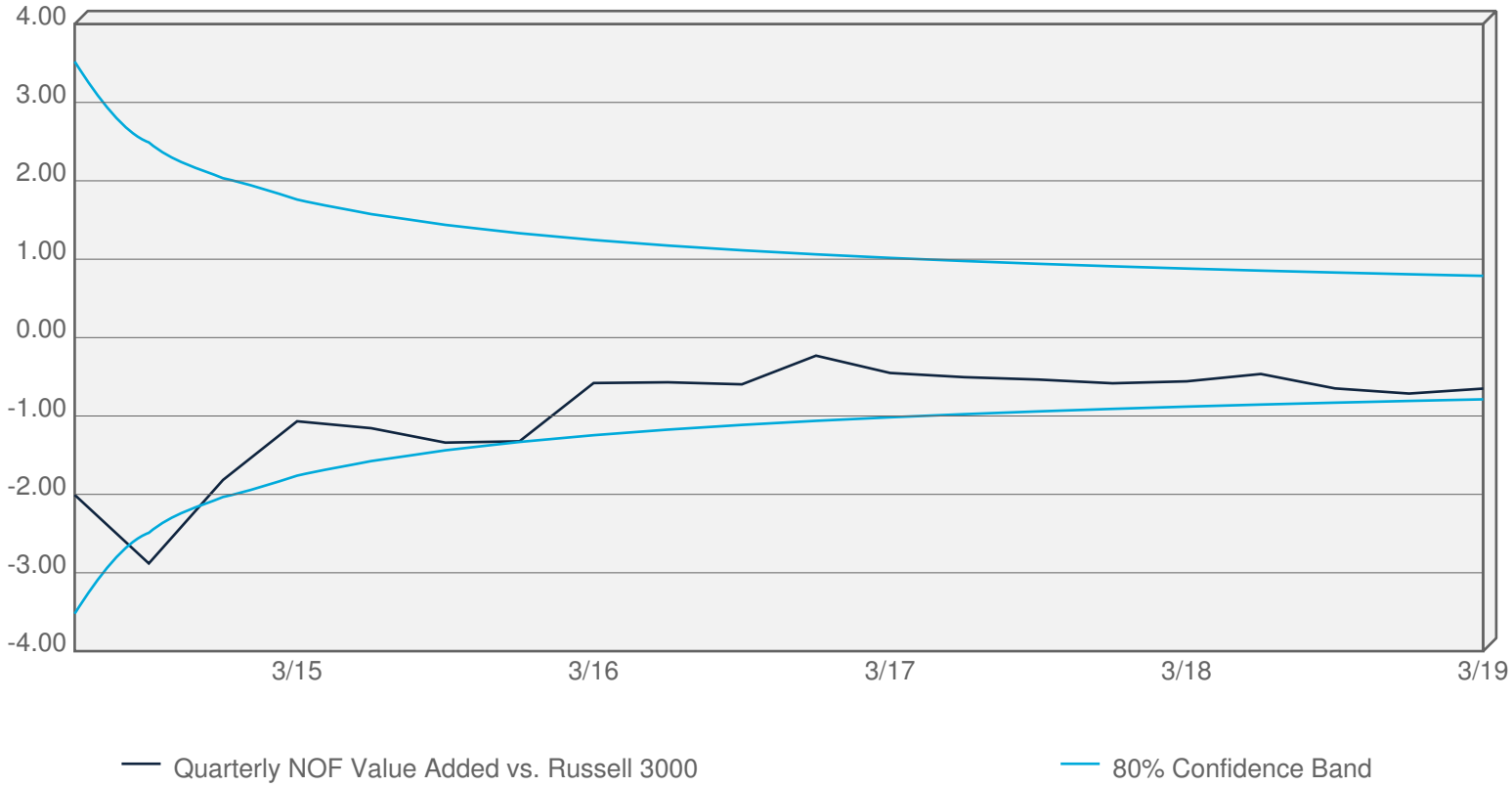
CUMULATIVE SKILL ANALYSIS

US Equity Composite

Five Years Ending March 31, 2019



Excess Return:	-0.65	Information Ratio:	-0.61
Excess Risk:	1.07	T-Stat:	-1.36

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
S&P 500 Index									
Net of Fee Return	**13.66**	**-1.55**	**5.85**	**9.80**	**13.64**	**10.98**	**16.02**	**6/30/01**	**7.42**
Standard & Poor's 500	13.65	-1.72	5.86	9.50	13.51	10.91	15.92	6/30/01	6.96
Value Added	0.01	0.17	-0.01	0.30	0.13	0.07	0.10	6/30/01	0.46
Scientific Beta									
Net of Fee Return	**13.60**	**-0.82**	**4.56**	**6.94**				**6/30/16**	**10.89**
Standard & Poor's 500	13.65	-1.72	5.86	9.50				6/30/16	13.82
Value Added	-0.04	0.90	-1.30	-2.56				6/30/16	-2.93
River Road									
Net of Fee Return								**6/30/11**	
Russell 3000 Value								6/30/11	
Value Added								6/30/11	
River Road FAV									
Net of Fee Return	**15.71**	**1.18**	**7.73**	**12.30**				**6/30/16**	**15.48**
Russell 3000 Value	11.93	-1.76	3.53	5.30				6/30/16	9.71
Value Added	3.78	2.94	4.20	7.00				6/30/16	5.77
Westfield Capital									
Net of Fee Return	**18.85**	**-0.97**	**6.99**	**11.77**	**15.79**	**10.45**		**6/30/11**	**12.77**
Russell 3000 Growth	16.18	-2.80	5.84	12.06	16.40	13.10		6/30/11	14.01
Value Added	2.67	1.83	1.15	-0.28	-0.61	-2.65		6/30/11	-1.24
Internal US Mid Cap									
Net of Fee Return	**14.54**	**-4.91**	**-1.09**	**3.97**	**11.81**			**9/30/14**	**9.63**
S&P 400 Mid Cap	14.49	-5.29	-1.63	2.59	11.24			9/30/14	9.21
Value Added	0.05	0.39	0.54	1.38	0.57			9/30/14	0.43

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
NTGI Structured									
Net of Fee Return	**13.46**	**-7.37**	**-3.79**	**3.62**	**12.73**	**7.76**		**6/30/11**	**10.82**
Russell 2000	14.58	-8.56	-5.29	2.05	12.92	7.05		6/30/11	9.86
Value Added	-1.13	1.20	1.50	1.57	-0.19	0.71		6/30/11	0.96
US Equity Composite									
Net of Fee Return	**14.20**	**-2.60**	**3.36**	**7.66**	**12.69**	**9.64**	**15.12**	**6/30/92**	**9.59**
Russell 3000	14.04	-2.27	4.70	8.77	13.49	10.36	16.00	6/30/92	9.78
Value Added	0.16	-0.33	-1.34	-1.11	-0.79	-0.72	-0.87	6/30/92	-0.19

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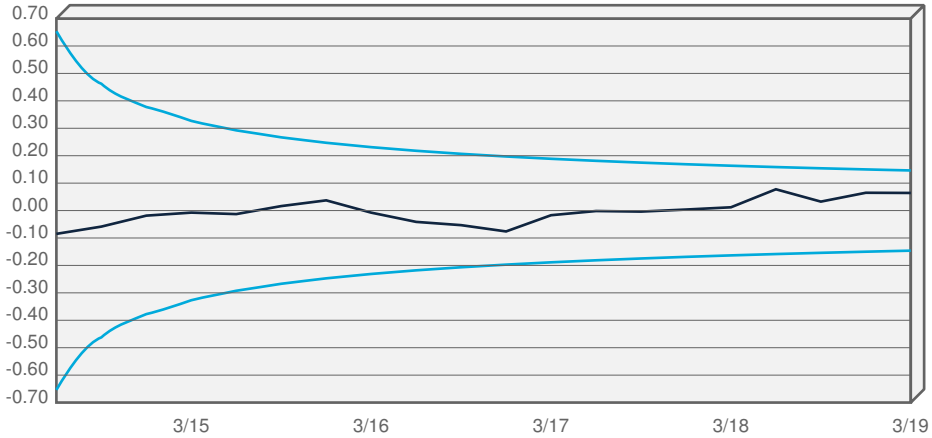
INVESTMENT MANAGER ANALYSIS

S&P 500 Index

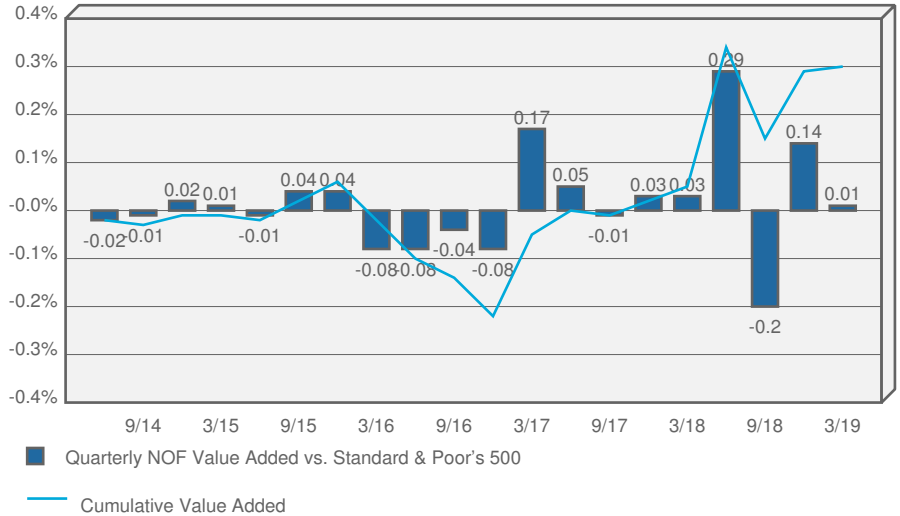
March 31, 2019

Cumulative Skill Analysis vs Benchmark

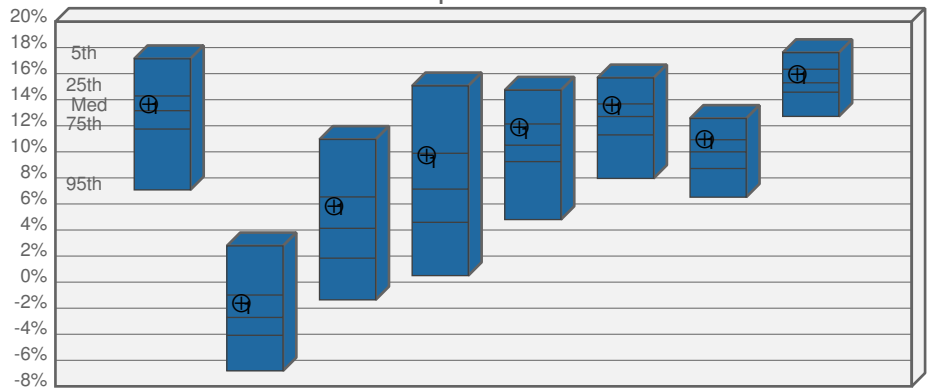


Excess Return:	0.06	Information Ratio:	0.32
Excess Risk:	0.20	T-Stat:	0.72

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊕S&P 500 Index	13.66 (35)	-1.55 (35)	5.85 (31)	9.80 (25)	11.93 (29)	13.64 (25)	10.98 (22)	16.02 (33)
1 Standard & Poo	13.65 (35)	-1.72 (35)	5.86 (31)	9.50 (27)	11.72 (30)	13.51 (32)	10.91 (25)	15.92 (34)
Median	13.16	-2.71	4.13	7.14	10.51	12.71	10.00	15.30
Number of Funds	157	156	155	155	154	152	146	121

*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

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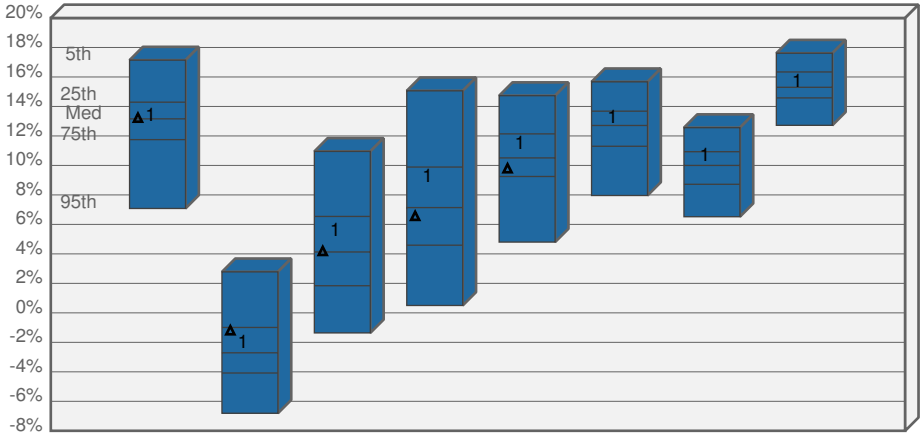
INVESTMENT MANAGER ANALYSIS

Scientific Beta

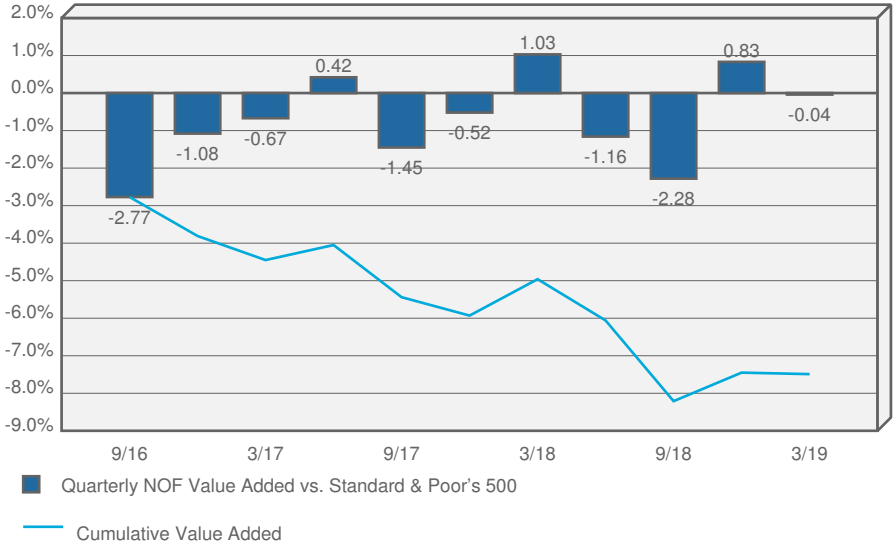
March 31, 2019

Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▲ Scientific Bet	13.60 (37)	-0.82 (22)	4.56 (43)	6.94 (50)	10.17 (56)			
1 Standard & Poo	13.65 (35)	-1.72 (35)	5.86 (31)	9.50 (27)	11.72 (30)	13.51 (32)	10.91 (25)	15.92 (34)
Median	13.16	-2.71	4.13	7.14	10.51	12.71	10.00	15.30
Number of Funds	157	156	155	155	154	152	146	121

Value-Added Analysis vs Benchmark



*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

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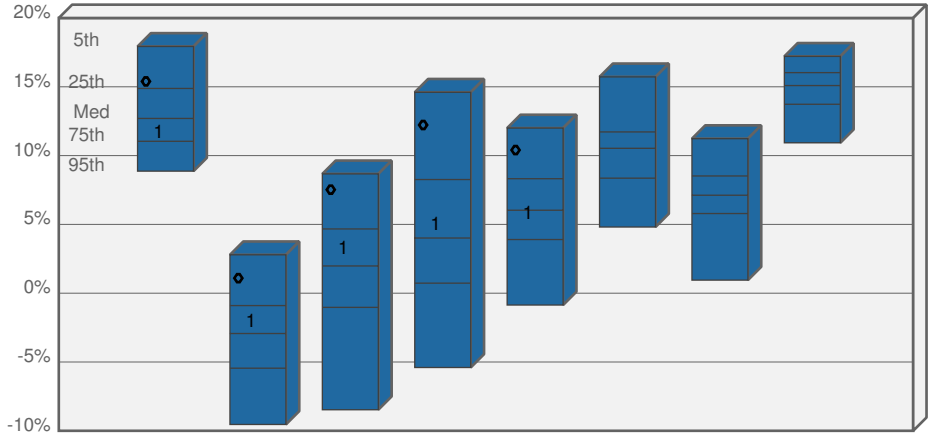
INVESTMENT MANAGER ANALYSIS

River Road FAV

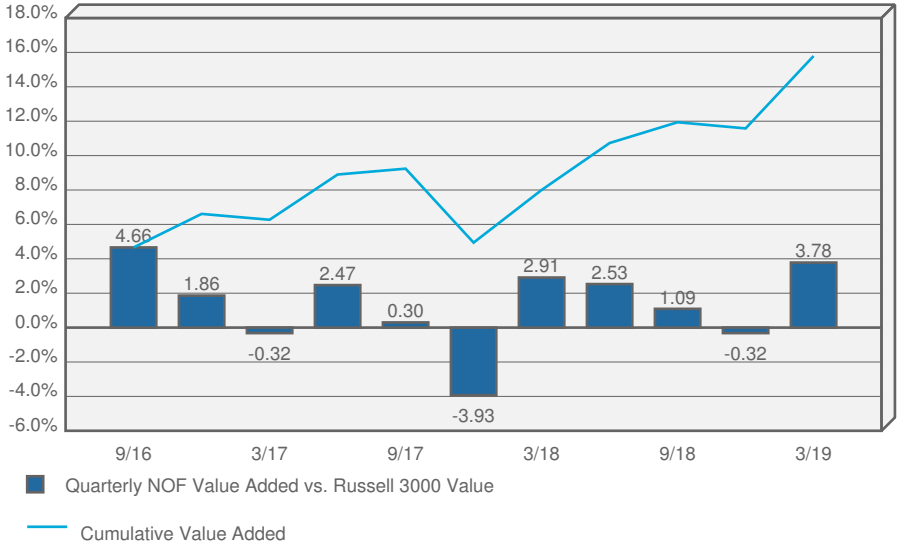
March 31, 2019

Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◇ River Road FAV	15.78 (12)	1.48 (10)	7.91 (7)	12.61 (6)	10.79 (8)			
1 Russell 3000 V	11.93 (67)	-1.76 (42)	3.53 (34)	5.30 (44)	6.05 (49)			
Median	12.70	-2.93	1.98	4.01	6.03	10.53	7.12	15.09
Number of Funds	79	78	78	78	78	77	70	62

Value-Added Analysis vs Benchmark



*Compass Total Returns of Active Combination Value Equity Portfolios Universe - Gross of Fees

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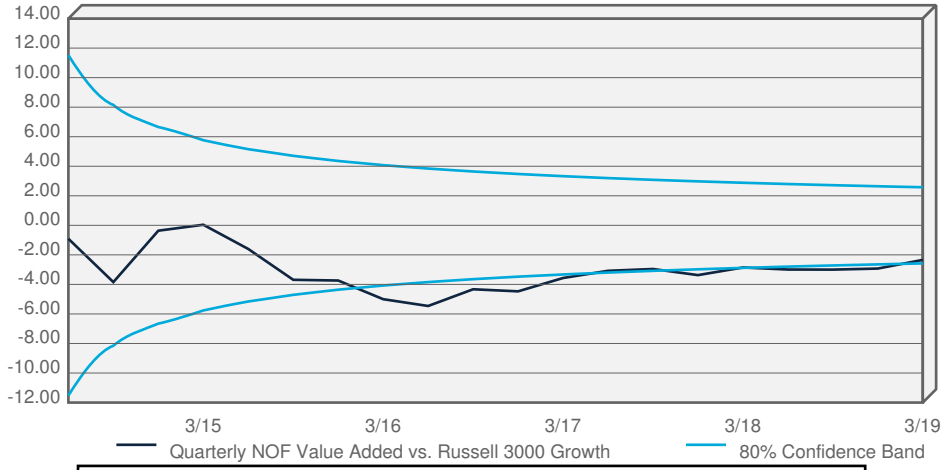
INVESTMENT MANAGER ANALYSIS

Westfield Capital

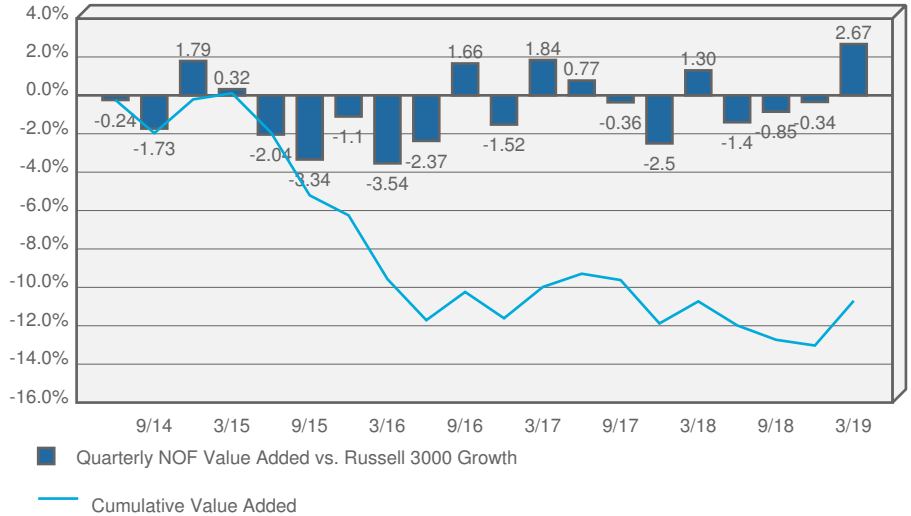
March 31, 2019

Cumulative Skill Analysis vs Benchmark

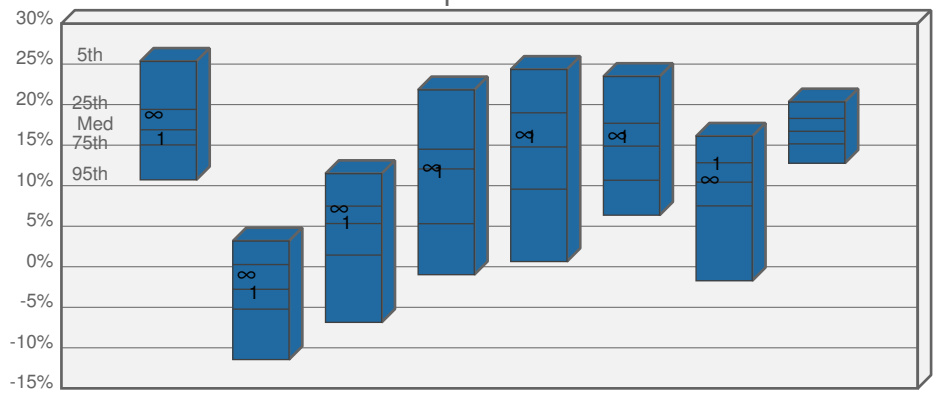


Excess Return:	-2.34	Information Ratio:	-0.67
Excess Risk:	3.50	T-Stat:	-1.49

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ Westfield Capi	19.00 (29)	-0.68 (27)	7.43 (26)	12.41 (45)	16.58 (34)	16.42 (33)	11.05 (44)	
1 Russell 3000 G	16.18 (55)	-2.80 (52)	5.84 (44)	12.06 (50)	16.47 (36)	16.40 (36)	13.10 (20)	
Median	16.90	-2.78	5.33	12.07	14.78	14.88	10.43	16.71
Number of Funds	61	61	61	61	61	60	59	49

*Compass Total Returns of Active Combination Growth Equity Portfolios Universe - Gross of Fees

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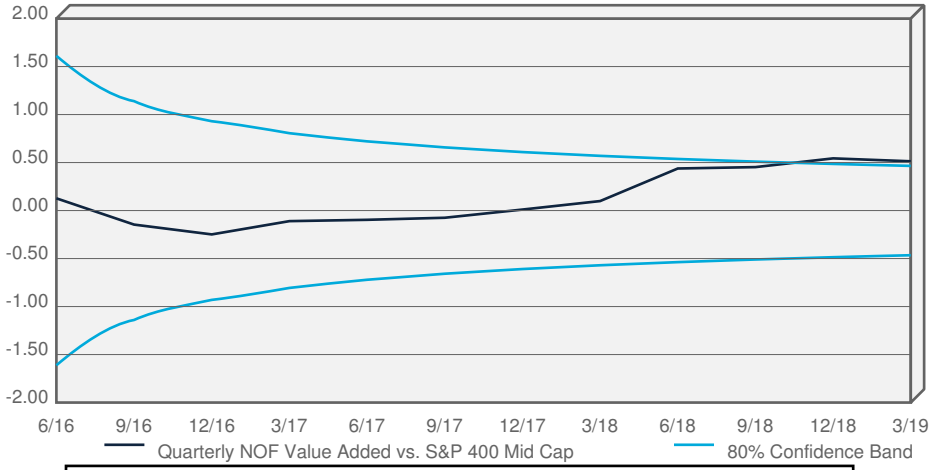
INVESTMENT MANAGER ANALYSIS

Internal US Mid Cap

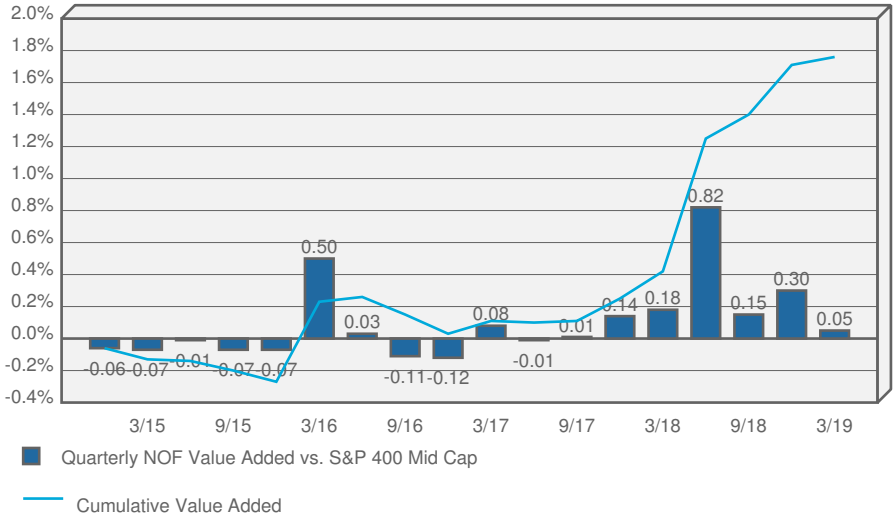
March 31, 2019

Cumulative Skill Analysis vs Benchmark

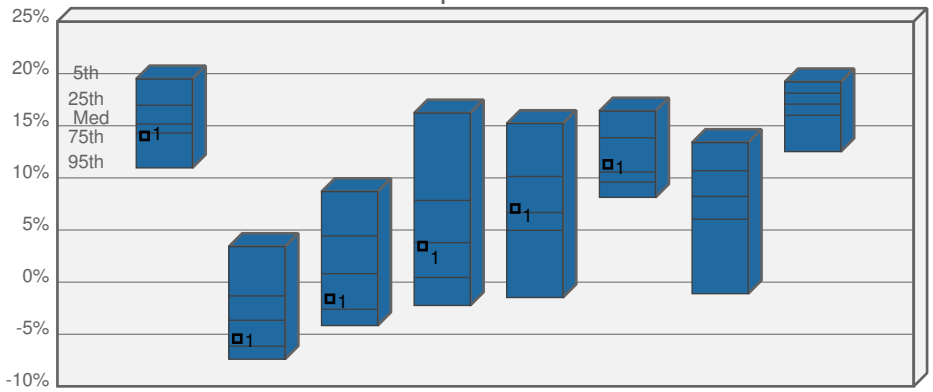


Excess Return:	0.51	Information Ratio:	1.05
Excess Risk:	0.49	T-Stat:	1.81

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◻ Internal US Mi	14.54 (61)	-4.91 (66)	-1.09 (66)	3.97 (45)	7.58 (45)	11.81 (39)		
1 S&P 400 Mid Ca	14.49 (65)	-5.29 (70)	-1.63 (70)	2.59 (62)	6.70 (49)	11.24 (45)		
Median	15.16	-3.66	0.81	3.79	6.68	10.57	8.22	17.08
Number of Funds	50	48	48	48	48	48	46	37

*Compass Total Returns of Active Midcap Core Equity Portfolios Universe - Gross of Fees

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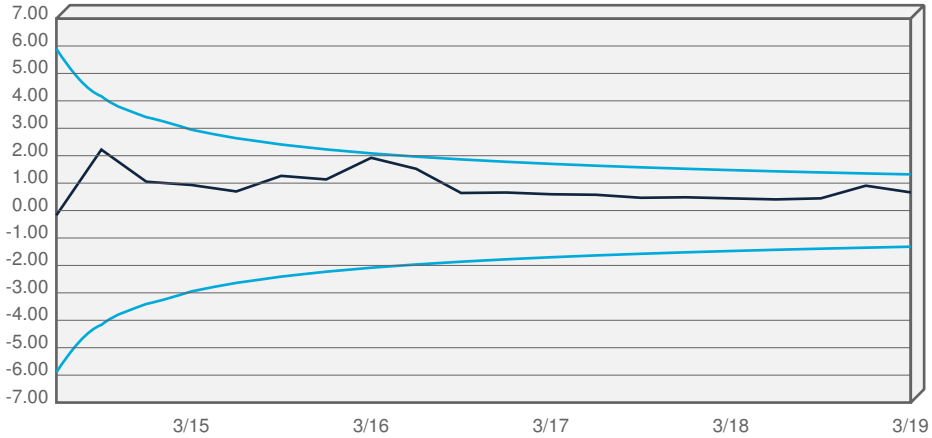
INVESTMENT MANAGER ANALYSIS

NTGI Structured

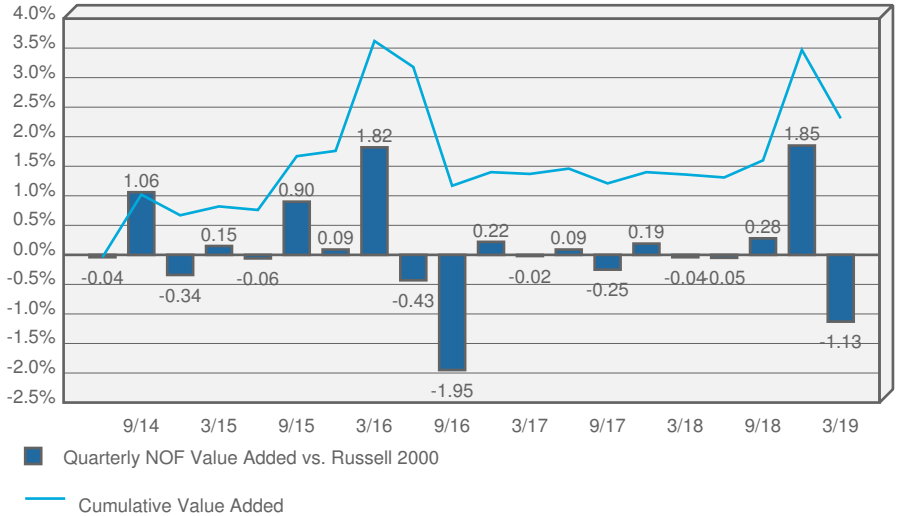
March 31, 2019

Cumulative Skill Analysis vs Benchmark

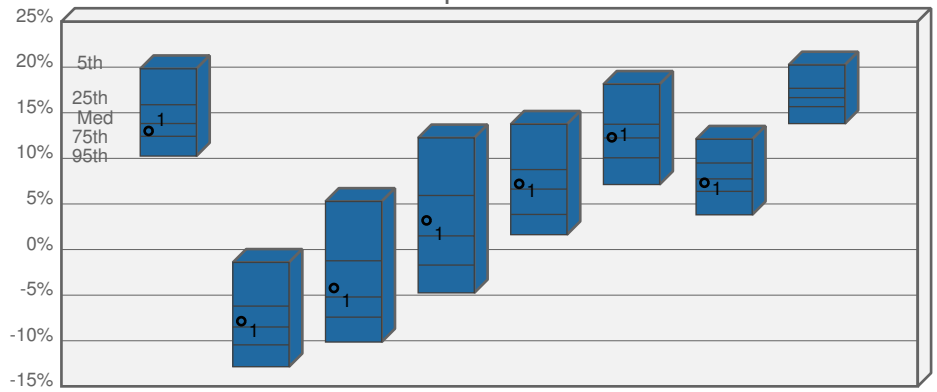


Excess Return:	0.66	Information Ratio:	0.37
Excess Risk:	1.79	T-Stat:	0.83

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
o NTGI Structure	13.59 (58)	-7.27 (35)	-3.63 (34)	3.78 (35)	7.79 (34)	12.89 (36)	7.91 (44)	
1 Russell 2000	14.58 (43)	-8.56 (50)	-5.29 (52)	2.05 (47)	6.81 (46)	12.92 (35)	7.05 (68)	
Median	13.82	-8.49	-5.20	1.50	6.63	12.24	7.75	16.66
Number of Funds	117	116	115	114	113	113	111	97

*Compass Total Returns of Active Small Cap Core Equity Portfolios Universe - Gross of Fees

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CUSTOM BENCHMARK SPECIFICATION

US Equity Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
Russell 3000	6/84	3/19	100.00	Russell 3000

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NON-US EQUITY

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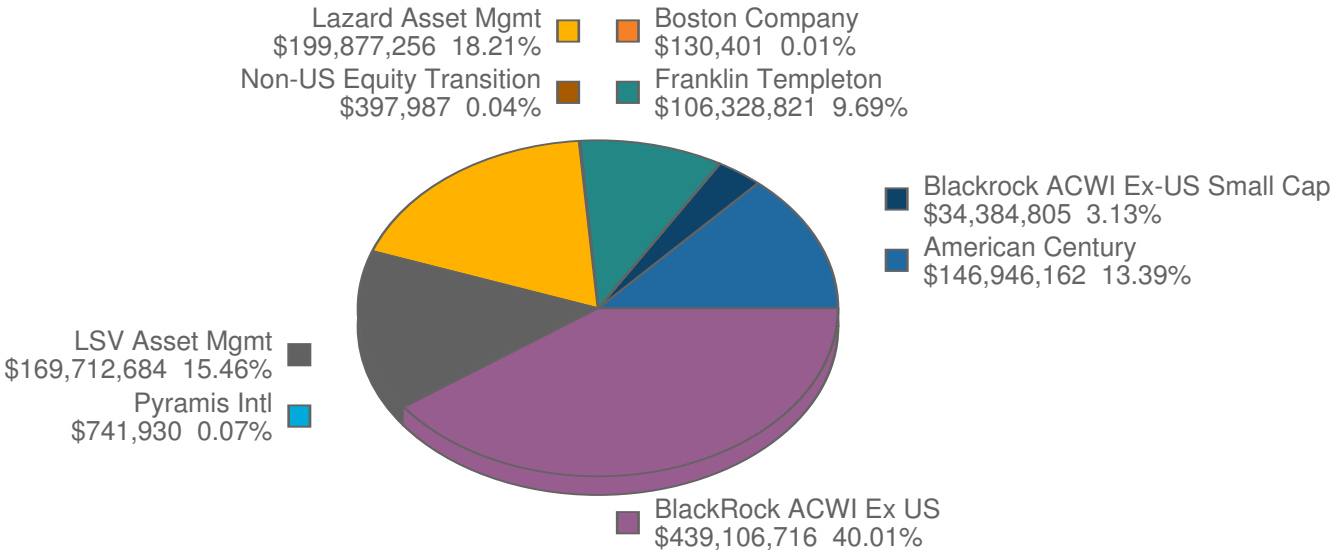
MANAGER ALLOCATION

Non-US Equity Composite

As of March 31, 2019



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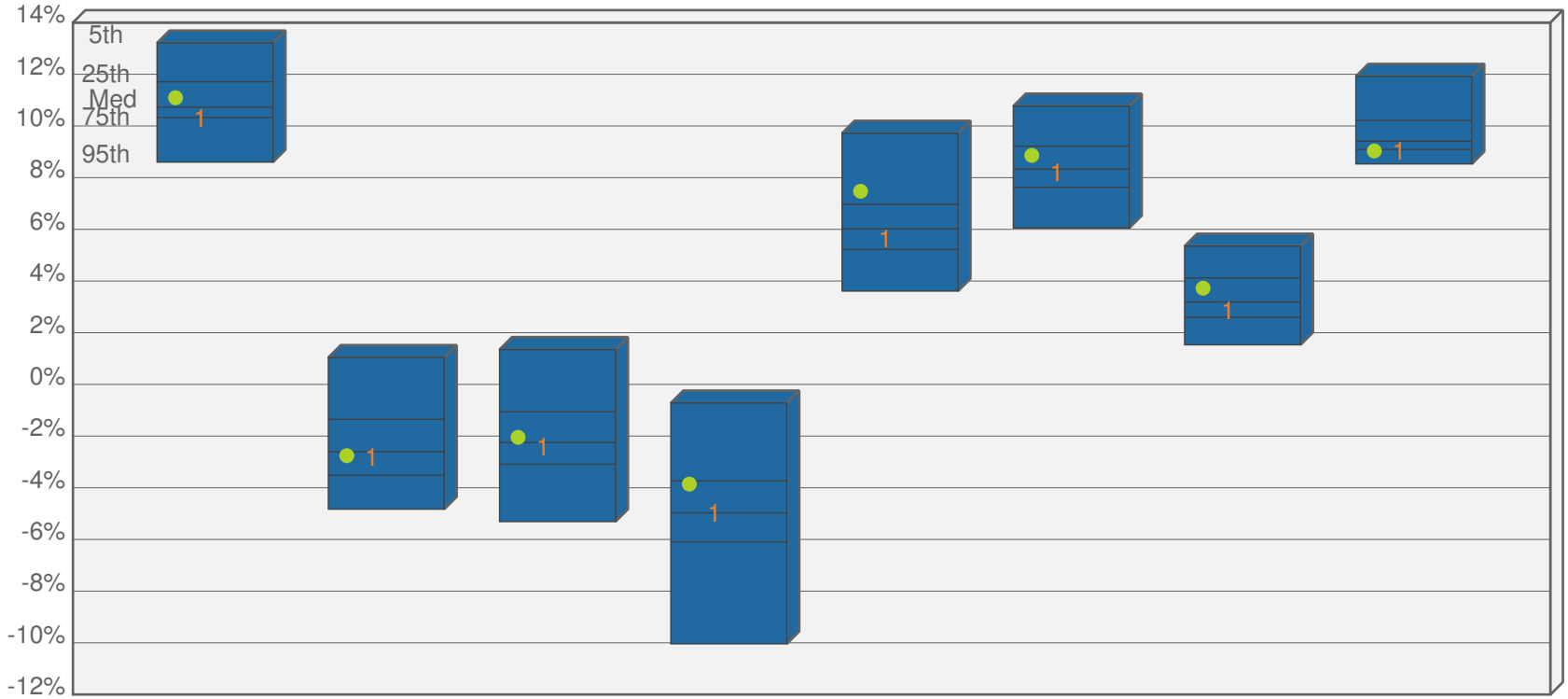
PERFORMANCE COMPARISON

Non-US Equity Composite

Periods Ended March 31, 2019



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
● Non-US Equity Composite	11.14 (38)	-2.71 (55)	-2.00 (44)	-3.81 (27)	7.52 (15)	8.91 (31)	3.77 (37)	9.08 (75)
1 Policy Index	10.31 (76)	-2.80 (57)	-2.42 (55)	-4.96 (48)	5.64 (65)	8.21 (54)	2.85 (60)	9.03 (75)
5th %tile	13.21	1.04	1.35	-0.72	9.72	10.77	5.35	11.92
25th %tile	11.71	-1.35	-1.06	-3.73	6.97	9.22	4.12	10.21
Median	10.73	-2.61	-2.25	-4.97	6.02	8.33	3.19	9.41
75th %tile	10.33	-3.52	-3.09	-6.10	5.22	7.63	2.60	9.09
95th %tile	8.60	-4.83	-5.31	-10.04	3.61	6.05	1.53	8.53
Number of Funds	87	87	85	83	75	72	66	52

*TUCS Total Ret of Non-US Equity Investment Pools Universe - Gross of Fees

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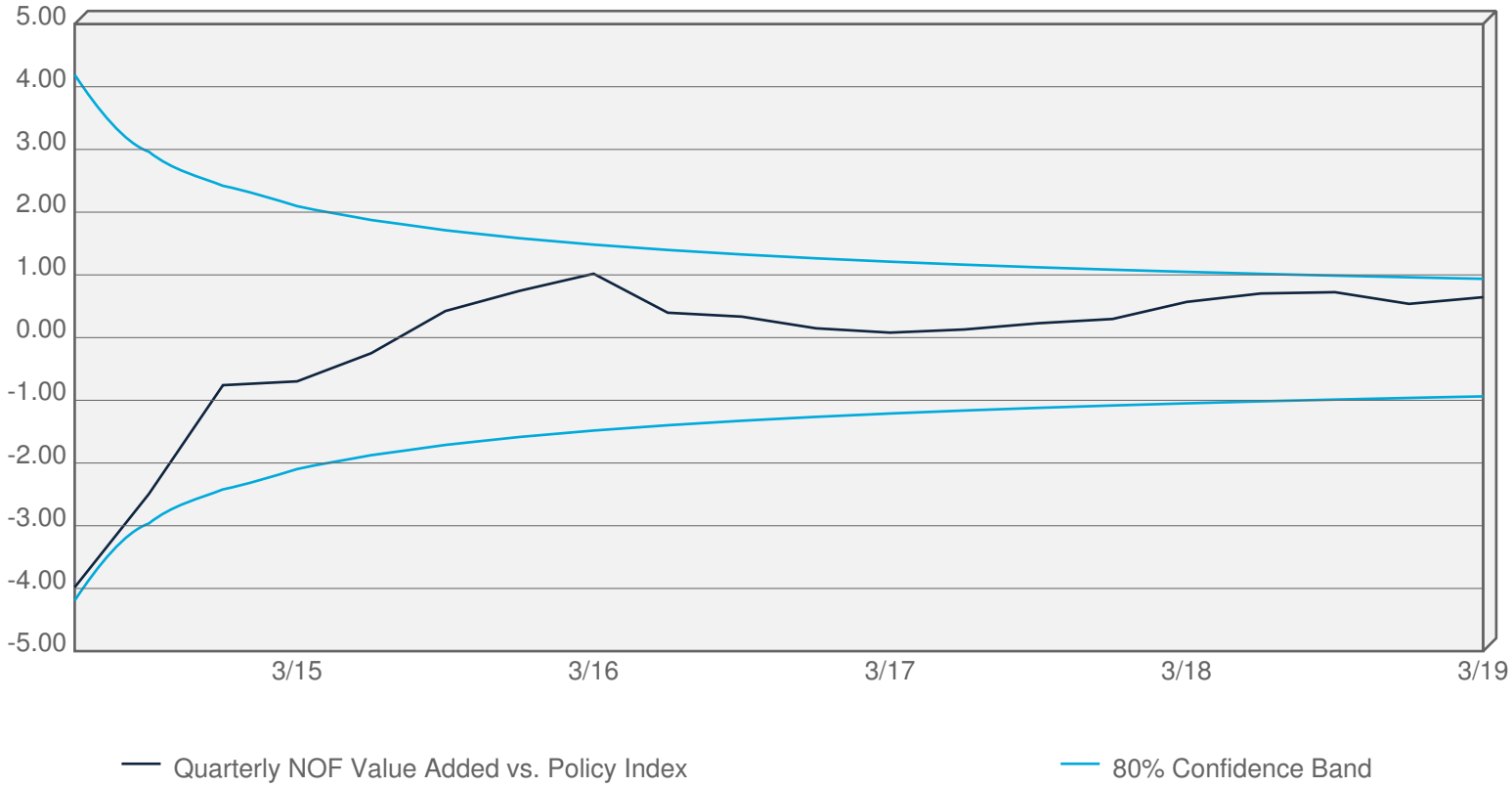
CUMULATIVE SKILL ANALYSIS

Non-US Equity Composite

Five Years Ending March 31, 2019



Excess Return:	0.64	Information Ratio:	0.51
Excess Risk:	1.27	T-Stat:	1.13

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
BlackRock ACWI Ex US									
Net of Fee Return	**10.25**	**-2.38**	**-1.70**	**-4.06**	**8.12**	**2.78**		**6/30/12**	**6.22**
MSCI ACWI X US (N)	10.31	-2.33	-1.64	-4.22	8.09	2.57		6/30/12	6.14
Value Added	-0.06	-0.05	-0.05	0.16	0.03	0.21		6/30/12	0.08
American Century									
Net of Fee Return	**13.96**	**-3.72**	**-4.14**	**-3.37**	**9.79**			**6/30/14**	**3.81**
Policy Index	10.31	-2.80	-2.42	-4.96	8.20			6/30/14	1.86
Value Added	3.65	-0.93	-1.72	1.60	1.59			6/30/14	1.94
Franklin Templeton									
Net of Fee Return	**15.91**	**-4.55**	**-6.65**	**-3.15**	**11.38**			**6/30/14**	**5.57**
Policy Index	10.31	-2.80	-2.42	-4.96	8.20			6/30/14	1.86
Value Added	5.60	-1.76	-4.23	1.82	3.18			6/30/14	3.71
Lazard Asset Mgmt									
Net of Fee Return	**10.90**	**-0.95**	**-0.27**	**-3.86**	**7.86**			**6/30/14**	**3.23**
Policy Index	10.31	-2.80	-2.42	-4.96	8.20			6/30/14	1.86
Value Added	0.60	1.84	2.14	1.10	-0.34			6/30/14	1.37
LSV Asset Mgmt									
Net of Fee Return	**8.07**	**-3.92**	**-0.37**	**-5.00**	**8.21**			**6/30/14**	**1.76**
Policy Index	10.31	-2.80	-2.42	-4.96	8.20			6/30/14	1.86
Value Added	-2.23	-1.12	2.05	-0.04	0.01			6/30/14	-0.10
Blackrock ACWI Ex-US Small Cap									
Net of Fee Return	**10.26**	**-5.70**	**-6.79**	**-9.22**	**7.15**	**3.38**		**6/30/13**	**6.89**
MSCI ACWI X US Small Cap (N)	10.26	-5.65	-7.07	-9.49	7.01	3.26		6/30/13	6.40
Value Added	-0.00	-0.06	0.29	0.26	0.14	0.12		6/30/13	0.49

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Non-US Equity Composite									
Net of Fee Return	**11.04**	**-2.83**	**-2.19**	**-4.06**	**8.64**	**3.51**	**7.15**	**3/31/00**	**2.21**
Policy Index	10.31	-2.80	-2.42	-4.96	8.21	2.85	9.03	3/31/00	2.45
Value Added	0.73	-0.03	0.23	0.90	0.43	0.66	-1.87	3/31/00	-0.24

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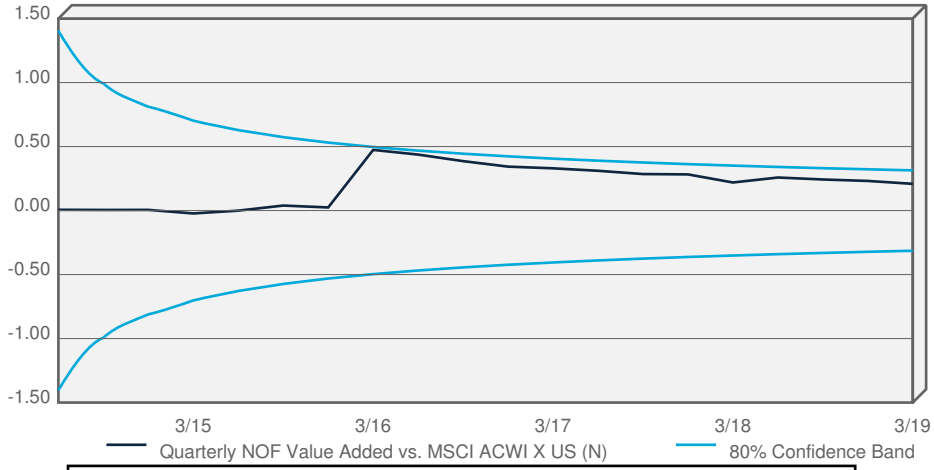
INVESTMENT MANAGER ANALYSIS

BlackRock ACWI Ex US

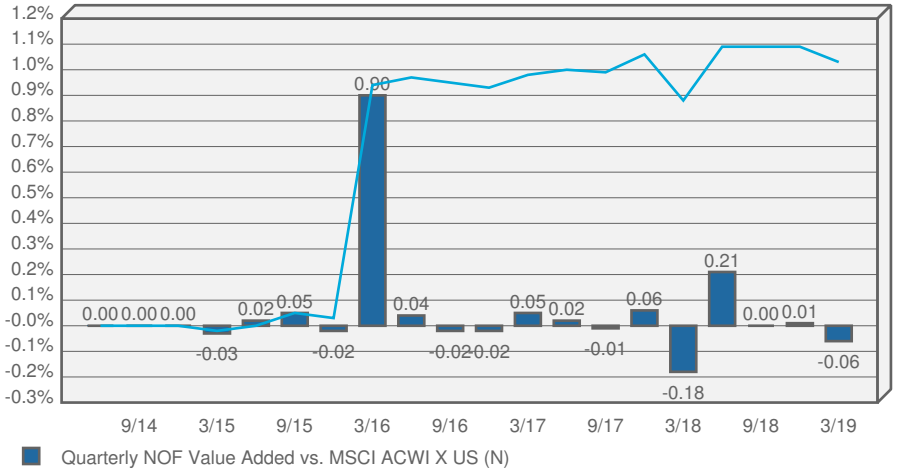
March 31, 2019

Cumulative Skill Analysis vs Benchmark

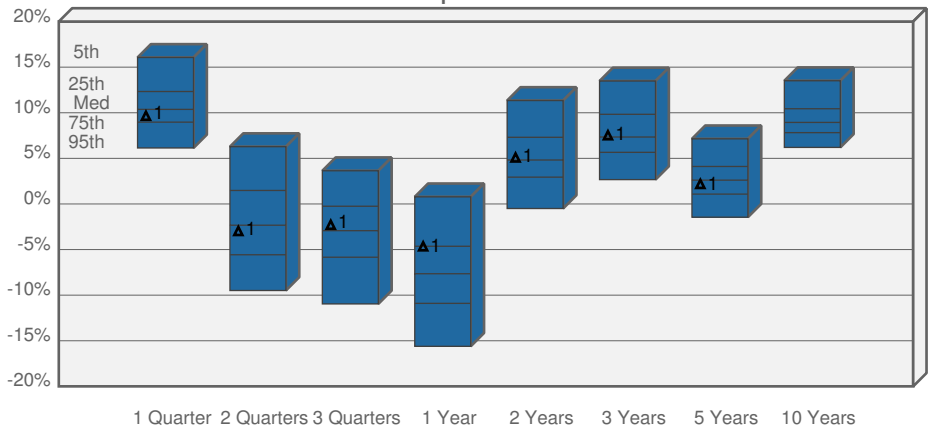


Excess Return:	0.21	Information Ratio:	0.49
Excess Risk:	0.43	T-Stat:	1.09

Value-Added Analysis vs Benchmark

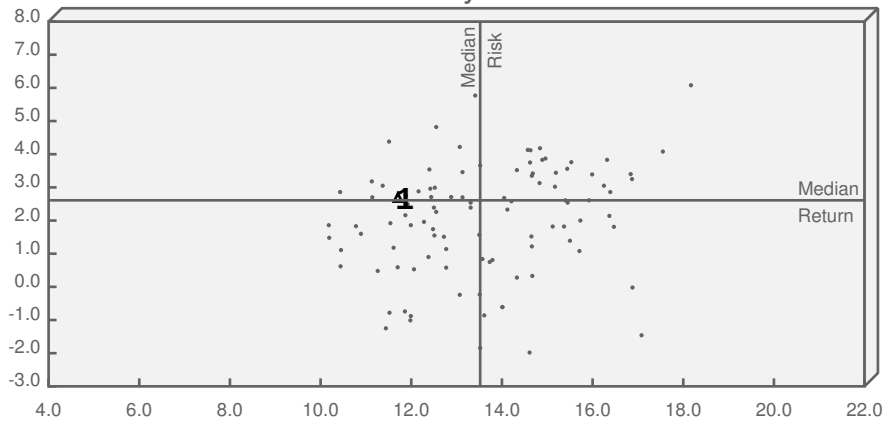


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▲ BlackRock ACWI	10.25 (53)	-2.38 (50)	-1.70 (36)	-4.06 (20)	5.68 (37)	8.12 (40)	2.78 (46)	
1 MSCI ACWI X USI	0.31 (51)	-2.33 (50)	-1.64 (36)	-4.22 (21)	5.65 (37)	8.09 (41)	2.57 (50)	
Median	10.37	-2.33	-2.93	-7.65	4.82	7.34	2.61	8.94
Number of Funds	2566	2510	2463	2426	2245	2077	1628	965

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Net Fee Ret Value	Net Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
BlackRock ACWI Ex US	▲	2.78	46	11.94	83
MSCI ACWI X US (N)	1	2.57	50	11.97	82
Median		2.61		13.52	

*Lipper Total Returns of International Equity Mutual Funds Universe - Net of Fees

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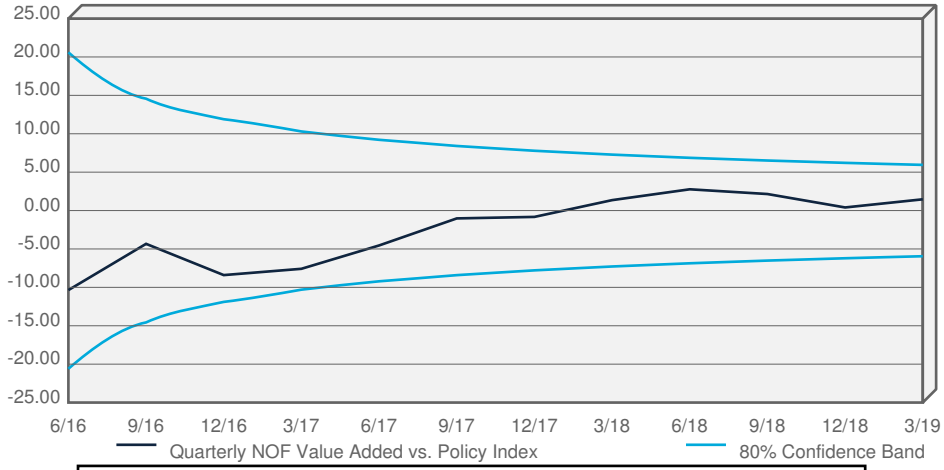
INVESTMENT MANAGER ANALYSIS

American Century

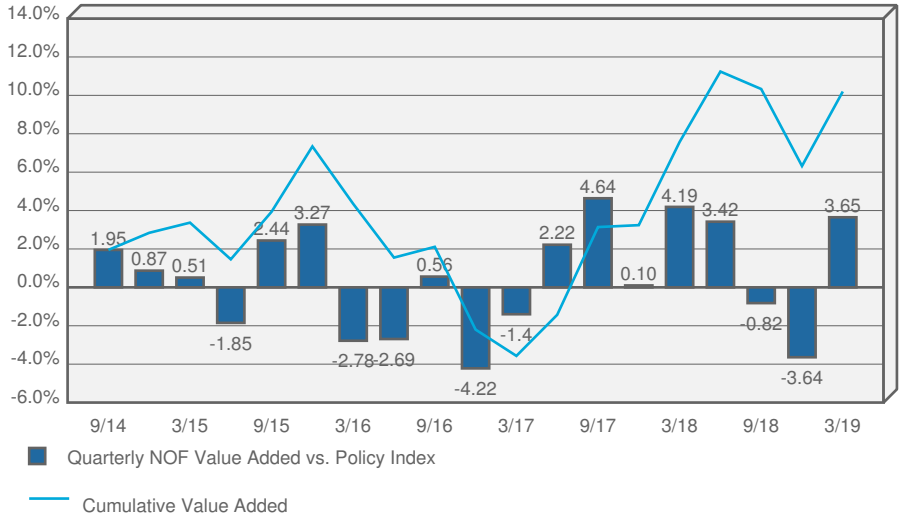
March 31, 2019

Cumulative Skill Analysis vs Benchmark

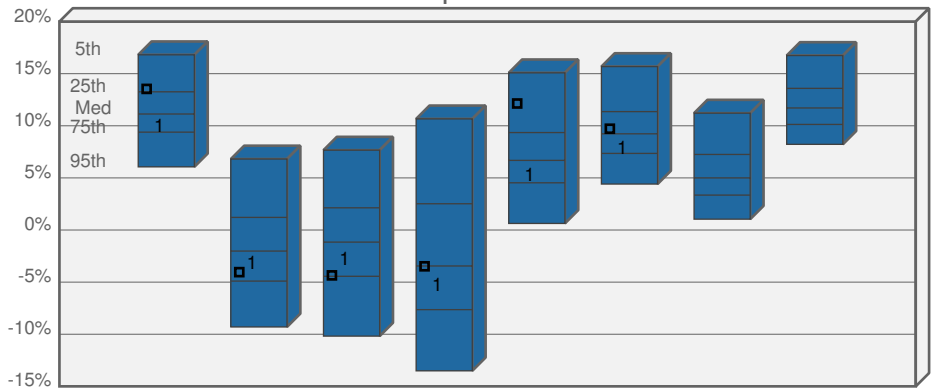


Excess Return:	1.47	Information Ratio:	0.23
Excess Risk:	6.26	T-Stat:	0.41

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◻ American Centu	14.05 (18)	-3.53 (63)	-3.84 (70)	-2.97 (46)	12.65 (9)	10.23 (36)		
1 Policy Index	10.31 (62)	-2.80 (56)	-2.42 (61)	-4.96 (59)	5.56 (61)	8.20 (63)		
Median	11.13	-2.02	-1.16	-3.45	6.68	9.23	5.00	11.71
Number of Funds	1522	1518	1497	1487	1454	1416	1264	860

*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

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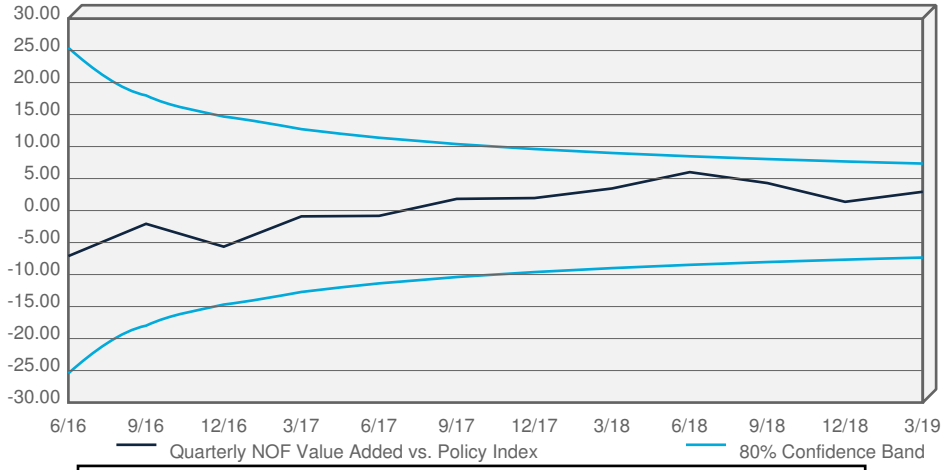
INVESTMENT MANAGER ANALYSIS

Franklin Templeton

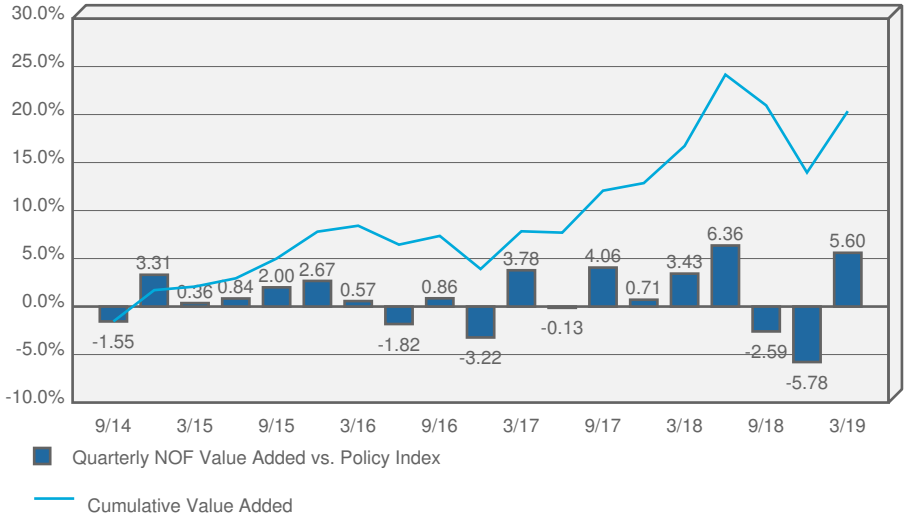
March 31, 2019

Cumulative Skill Analysis vs Benchmark

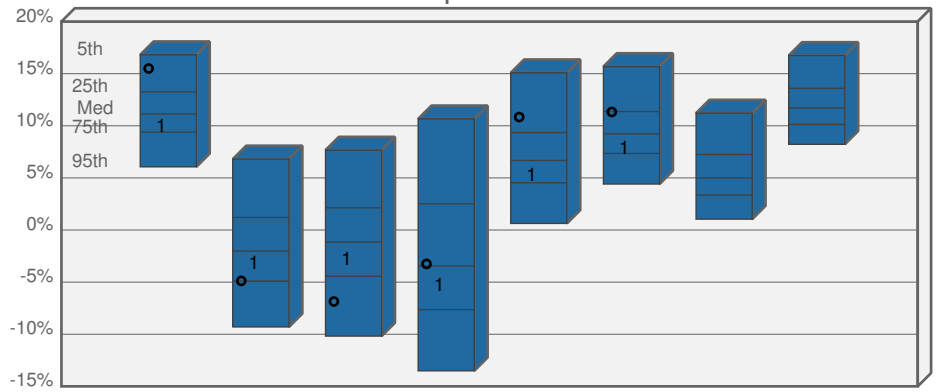


Excess Return:	2.94	Information Ratio:	0.38
Excess Risk:	7.73	T-Stat:	0.66

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
o Franklin Templ	16.01 (6)	-4.37 (71)	-6.35 (83)	-2.74 (46)	11.35 (13)	11.84 (21)		
1 Policy Index	10.31 (62)	-2.80 (56)	-2.42 (61)	-4.96 (59)	5.56 (61)	8.20 (63)		
Median	11.13	-2.02	-1.16	-3.45	6.68	9.23	5.00	11.71
Number of Funds	1522	1518	1497	1487	1454	1416	1264	860

*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

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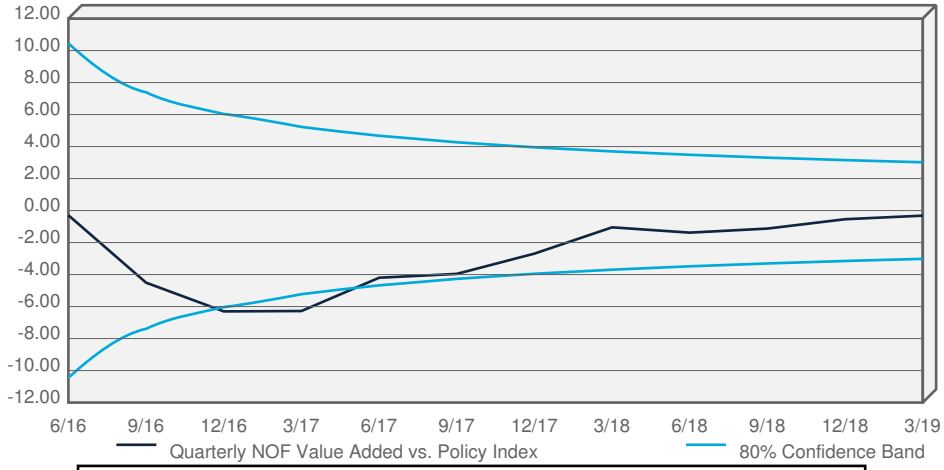
INVESTMENT MANAGER ANALYSIS

Lazard Asset Mgmt

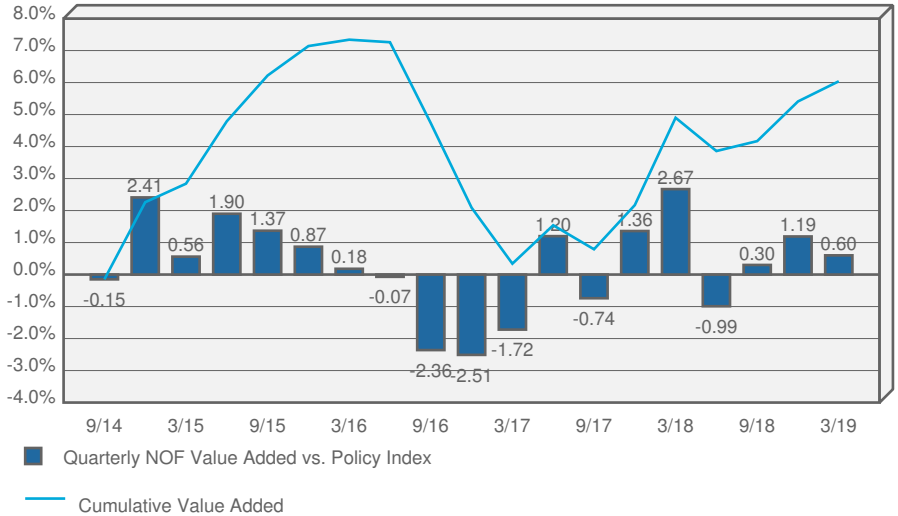
March 31, 2019

Cumulative Skill Analysis vs Benchmark

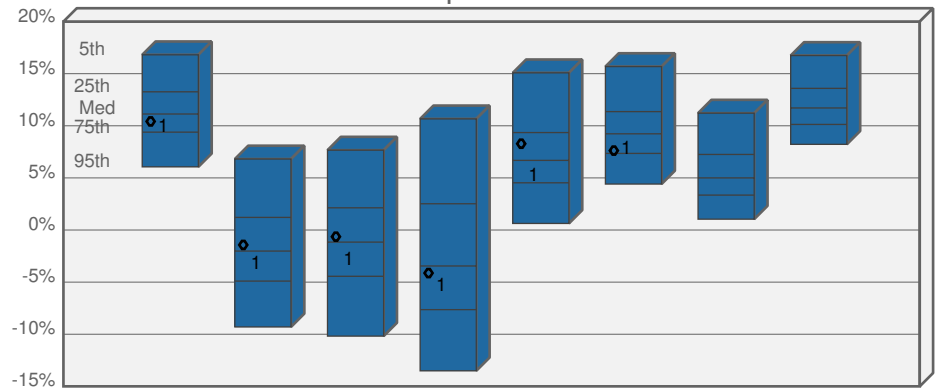


Excess Return:	-0.32	Information Ratio:	-0.10
Excess Risk:	3.18	T-Stat:	-0.17

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◊ Lazard Asset M	10.93 (52)	-0.92 (41)	-0.13 (40)	-3.62 (51)	8.79 (29)	8.13 (64)		
1 Policy Index	10.31 (62)	-2.80 (56)	-2.42 (61)	-4.96 (59)	5.56 (61)	8.20 (63)		
Median	11.13	-2.02	-1.16	-3.45	6.68	9.23	5.00	11.71
Number of Funds	1522	1518	1497	1487	1454	1416	1264	860

*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

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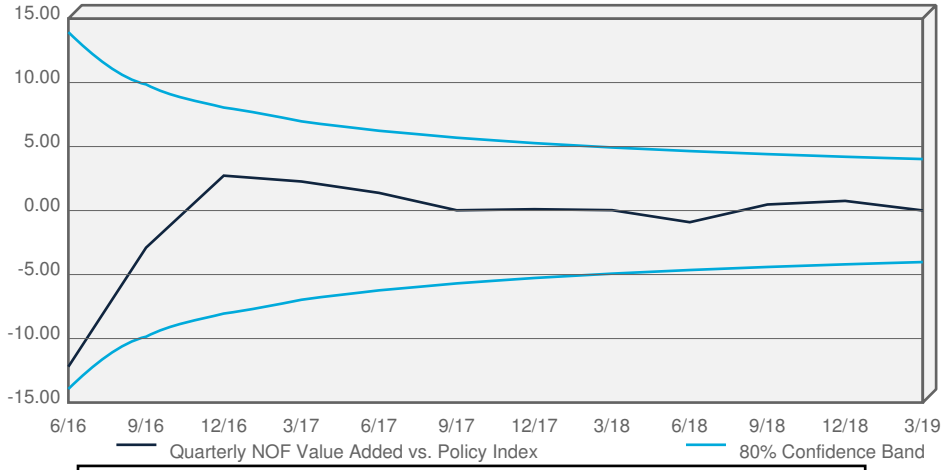
INVESTMENT MANAGER ANALYSIS

LSV Asset Mgmt

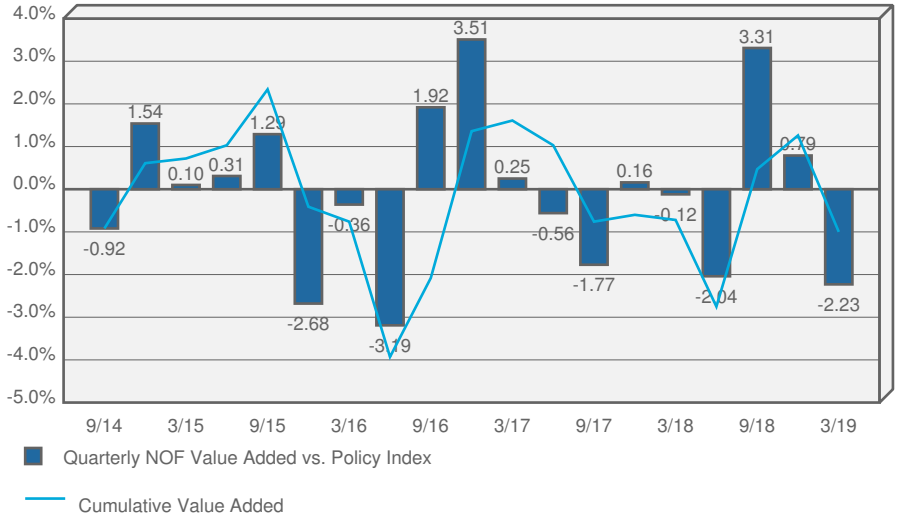
March 31, 2019

Cumulative Skill Analysis vs Benchmark

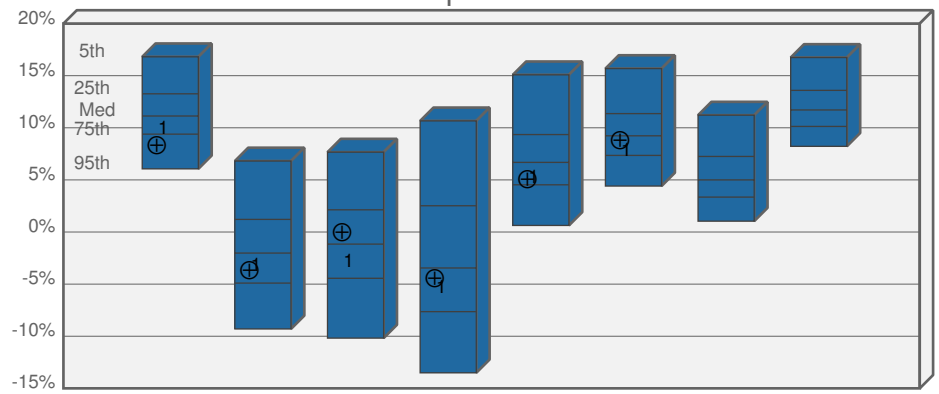


Excess Return:	0.01	Information Ratio:	0.00
Excess Risk:	4.24	T-Stat:	0.00

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊕LSV Asset Mgmt	8.41 (83)	-3.60 (63)	0.08 (39)	-4.40 (56)	5.09 (68)	8.86 (55)		
1 Policy Index	10.31 (62)	-2.80 (56)	-2.42 (61)	-4.96 (59)	5.56 (61)	8.20 (63)		
Median	11.13	-2.02	-1.16	-3.45	6.68	9.23	5.00	11.71
Number of Funds	1522	1518	1497	1487	1454	1416	1264	860

*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

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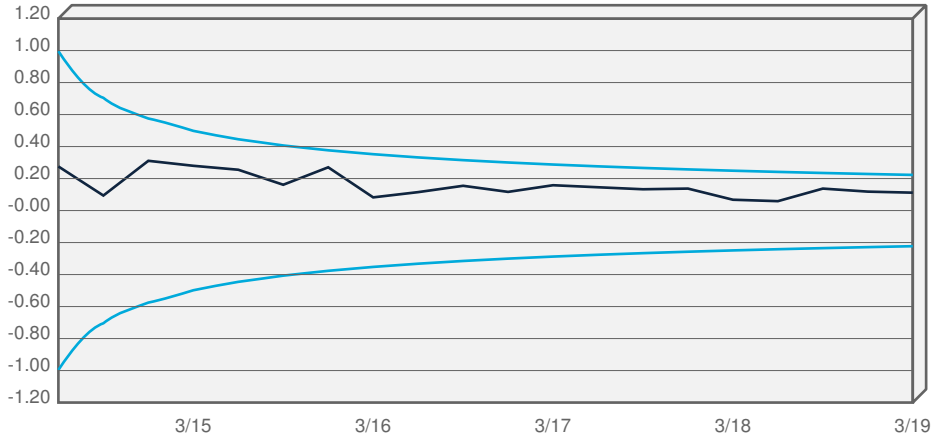
INVESTMENT MANAGER ANALYSIS

Blackrock ACWI Ex-US Small Cap

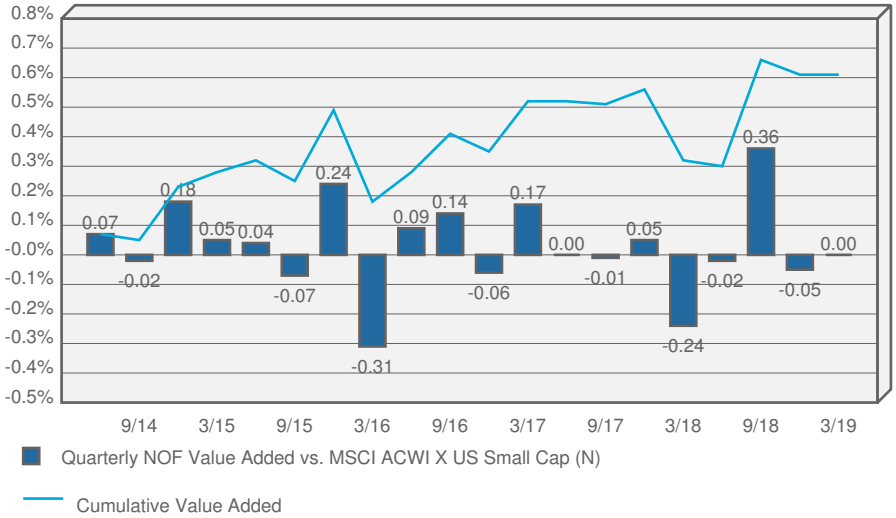
March 31, 2019

Cumulative Skill Analysis vs Benchmark

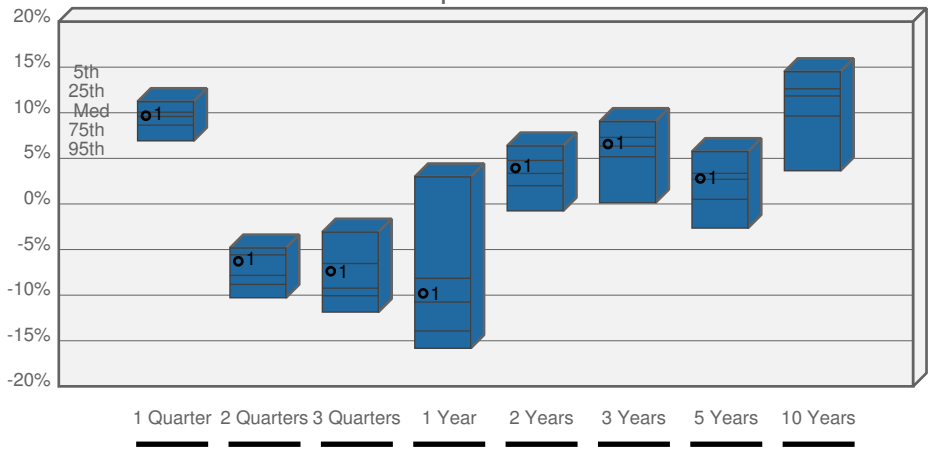


Excess Return:	0.11	Information Ratio:	0.37
Excess Risk:	0.30	T-Stat:	0.83

Value-Added Analysis vs Benchmark

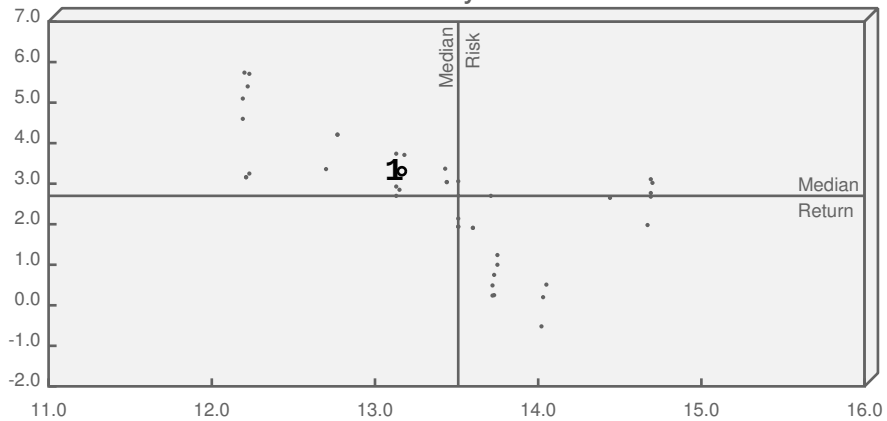


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
o Blackrock ACWI	10.26 (21)	-5.70 (26)	-6.79 (26)	-9.22 (32)	4.52 (26)	7.15 (31)	3.38 (20)	
1 MSCI ACWI X US	10.26 (21)	-5.65 (25)	-7.07 (28)	-9.49 (35)	4.48 (26)	7.01 (35)	3.26 (25)	
Median	9.59	-7.83	-9.23	-10.76	3.35	6.34	2.70	11.84
Number of Funds	61	59	58	57	55	47	41	25

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Net Fee Ret Value	Net Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Blackrock ACWI Ex-US Small Cap	o	3.38	20	13.23	55
MSCI ACWI X US Small Cap (N)	1	3.26	25	13.15	60
Median		2.70		13.51	

*Lipper Total Returns of Intl Equity Small/Mid Core Mutual Funds Universe - Net of Fees

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CUSTOM BENCHMARK SPECIFICATION

Non-US Equity Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
Policy Index	6/00	6/17	100.00	Blended Non-US Benchmark
	9/17	9/17	100.00	MSCI ACWI Ex USA IMI Index ($G)
	12/17	3/19	100.00	MSCI ACWI Ex USA IMI ($N)

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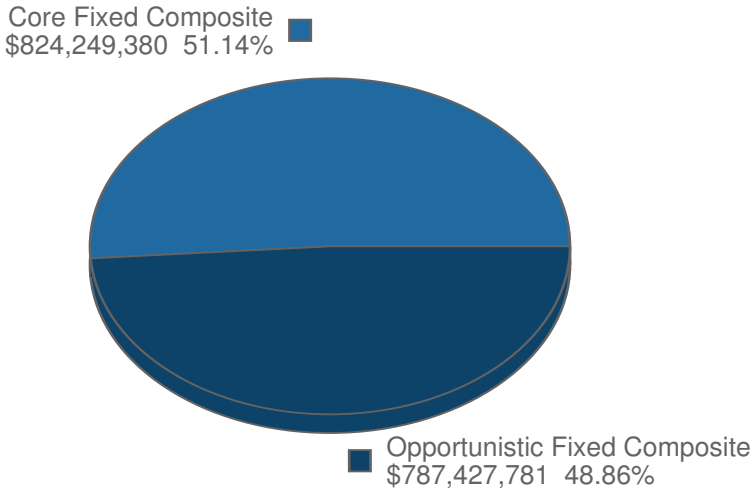
FIXED INCOME

Wilshire Consulting

MANAGER ALLOCATION

Fixed Income Composite

As of March 31, 2019



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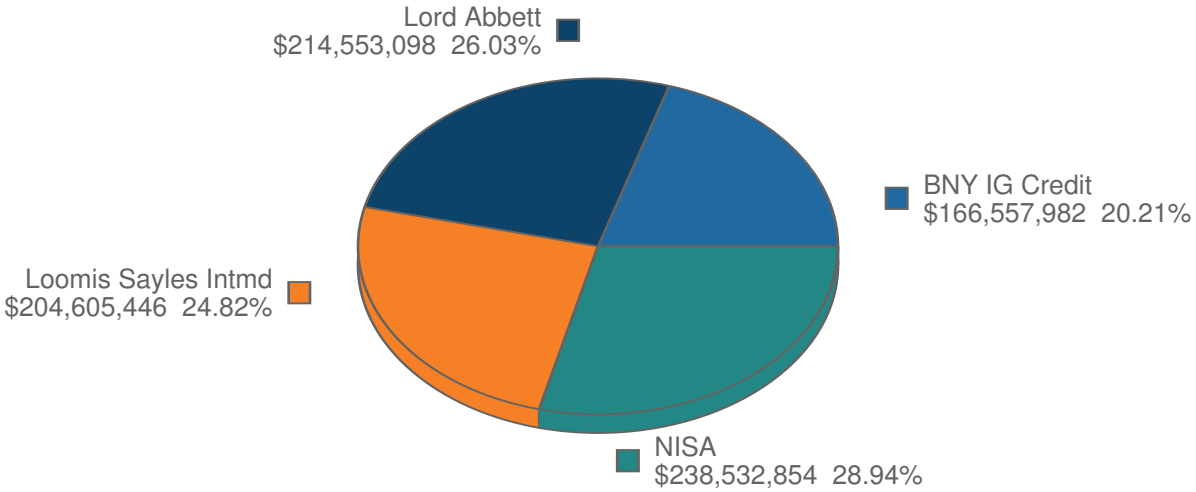
MANAGER ALLOCATION

Core Fixed Composite

As of March 31, 2019



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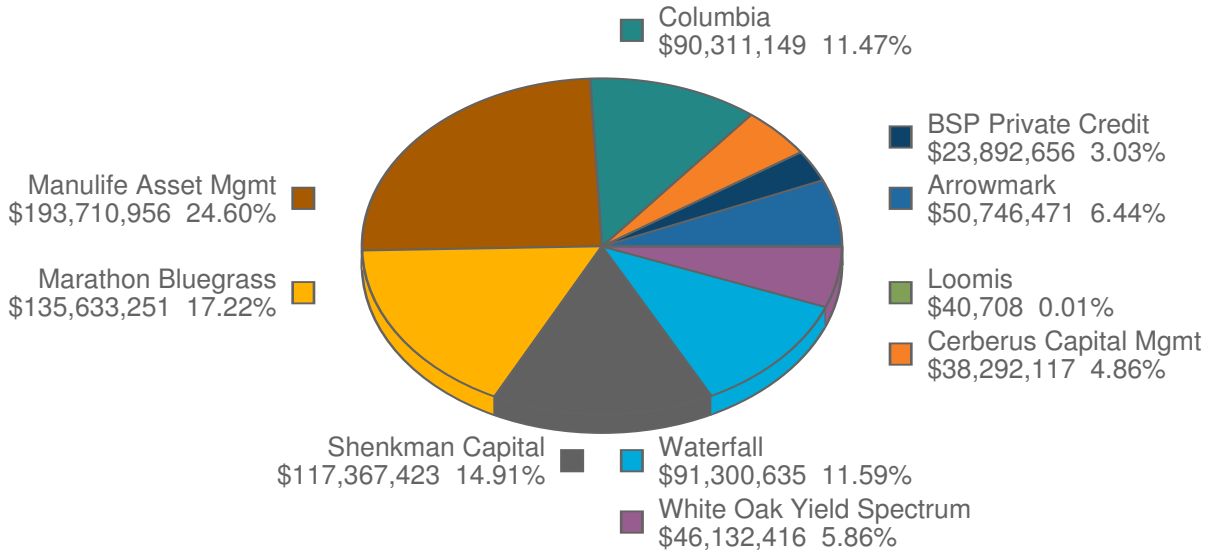
MANAGER ALLOCATION

Opportunistic Fixed Composite

As of March 31, 2019



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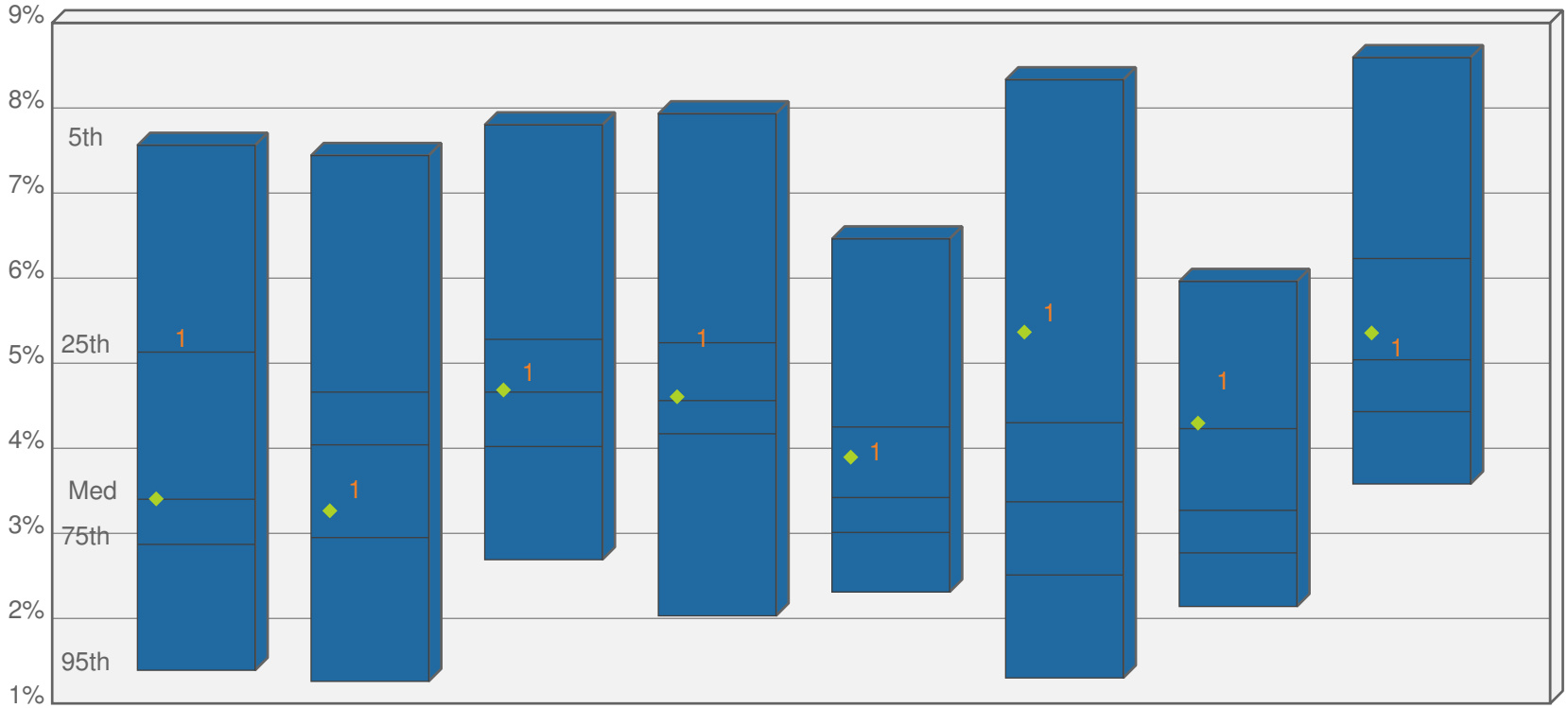
PERFORMANCE COMPARISON

Fixed Income Composite

Periods Ended March 31, 2019



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ Fixed Income Composite	3.42 (49)	3.28 (69)	4.70 (48)	4.62 (46)	3.91 (39)	5.38 (14)	4.31 (22)	5.37 (38)
1 Policy Index	5.29 (23)	3.52 (64)	4.90 (37)	5.30 (18)	3.96 (37)	5.60 (10)	4.80 (13)	5.18 (46)
5th %tile	7.56	7.44	7.80	7.93	6.46	8.33	5.96	8.59
25th %tile	5.13	4.66	5.28	5.24	4.25	4.30	4.23	6.23
Median	3.40	4.04	4.66	4.56	3.42	3.37	3.27	5.04
75th %tile	2.87	2.95	4.02	4.17	3.01	2.51	2.77	4.43
95th %tile	1.39	1.26	2.69	2.03	2.31	1.30	2.14	3.58
Number of Funds	148	144	135	132	102	90	80	59

*TUCS Total Ret of Fixed Income Investment Pools Universe - Gross of Fees

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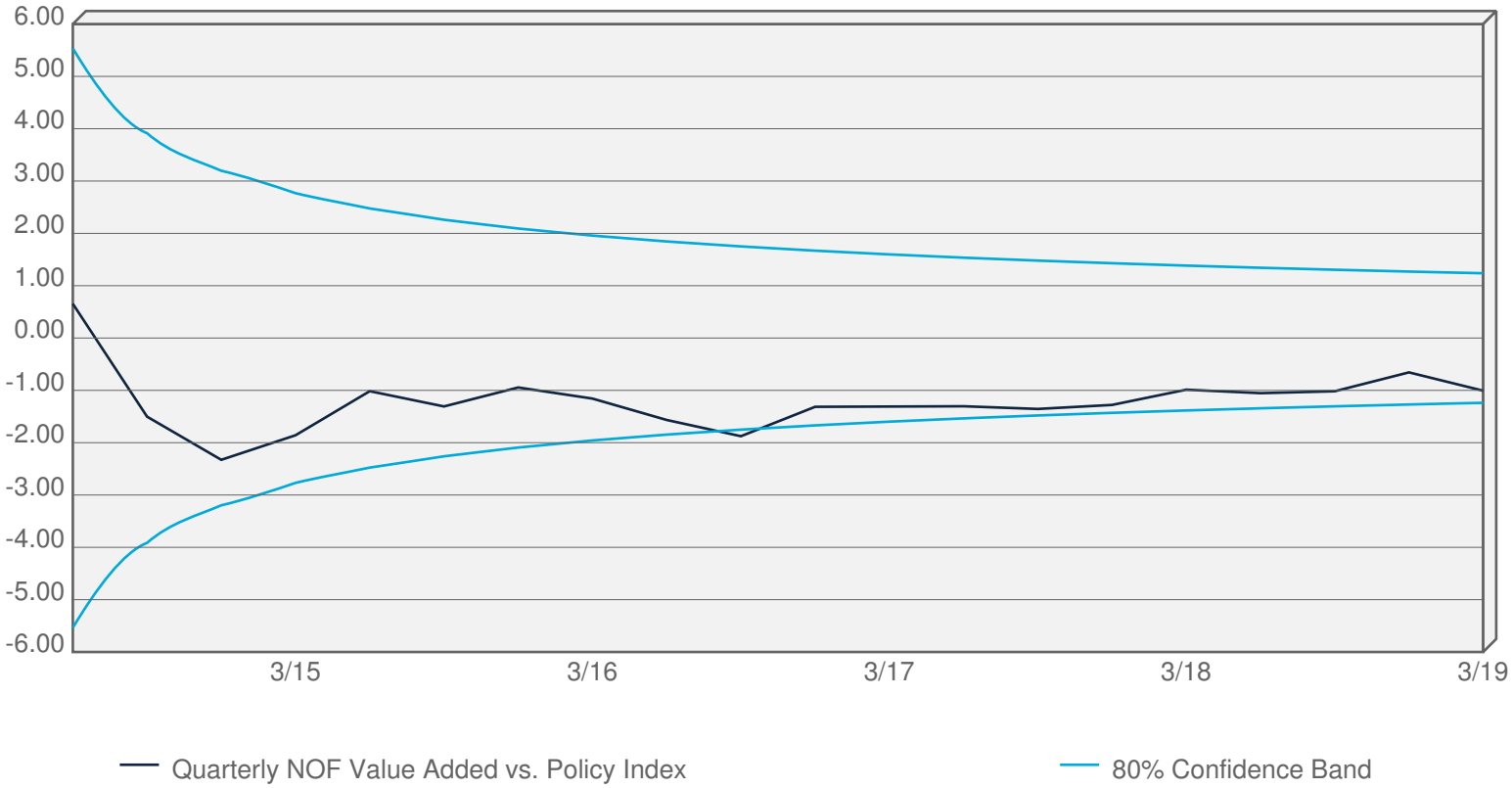
CUMULATIVE SKILL ANALYSIS

Fixed Income Composite

Five Years Ending March 31, 2019



Excess Return:	-1.01	Information Ratio:	-0.60
Excess Risk:	1.68	T-Stat:	-1.34

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
BNY IG Credit									
Net of Fee Return	**3.59**	**4.36**	**5.13**	**5.12**				**12/31/17**	**2.90**
Bloomberg Int Credit	3.55	4.33	5.08	5.00				12/31/17	2.84
Value Added	0.04	0.03	0.05	0.12				12/31/17	0.05
Lord Abbett									
Net of Fee Return	**2.11**	**2.67**						**9/30/18**	**2.67**
Bloomberg Aggregate	2.94	4.63						9/30/18	4.63
Value Added	-0.83	-1.96						9/30/18	-1.96
NISA									
Net of Fee Return	**3.01**	**4.63**	**4.59**	**4.39**	**2.11**	**2.92**		**6/30/11**	**3.06**
Bloomberg Aggregate	2.94	4.63	4.65	4.48	2.03	2.74		6/30/11	2.92
Value Added	0.07	0.00	-0.05	-0.09	0.08	0.18		6/30/11	0.14
Core Fixed Composite									
Net of Fee Return	**2.83**	**3.79**						**9/30/18**	**3.79**
Bloomberg Universal	3.32	4.53						9/30/18	4.53
Value Added	-0.49	-0.74						9/30/18	-0.74
Arrowmark									
Net of Fee Return	**3.27**	**5.52**	**8.24**					**6/30/18**	**8.24**
S&P LSTA Leverage Loan Index	4.00	0.41	2.26					6/30/18	2.26
Value Added	-0.73	5.11	5.99					6/30/18	5.99
BSP Private Credit									
Net of Fee Return	**-1.56**	**0.82**	**1.19**	**0.89**				**3/31/18**	**0.89**
S&P LSTA Leverage Loan Index	4.00	0.41	2.26	2.97				3/31/18	2.97
Value Added	-5.56	0.41	-1.07	-2.08				3/31/18	-2.08

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Cerberus Capital Mgmt									
Net of Fee Return	**2.15**	**4.95**	**7.76**	**9.53**	**8.53**			**9/30/14**	**8.56**
S&P LSTA Leverage Loan	4.00	0.41	2.26	2.97	5.67			9/30/14	3.82
Value Added	-1.86	4.54	5.51	6.56	2.86			9/30/14	4.74
Columbia									
Net of Fee Return	**8.27**	**3.23**	**6.29**	**6.64**	**6.90**	**4.96**		**12/31/11**	**6.85**
Bloomberg High Yield	7.26	2.39	4.86	5.93	8.56	4.68		12/31/11	6.79
Value Added	1.01	0.83	1.43	0.71	-1.67	0.28		12/31/11	0.06
Manulife Asset Mgmt									
Net of Fee Return	**4.21**	**2.89**	**3.74**	**2.06**	**2.56**	**2.44**		**12/31/11**	**3.85**
Policy Index	3.32	4.53	4.81	4.53	2.65	1.12		12/31/11	1.46
Value Added	0.89	-1.64	-1.07	-2.47	-0.09	1.31		12/31/11	2.39
Marathon Bluegrass									
Net of Fee Return	**2.37**	**2.46**	**5.85**	**6.06**	**8.24**			**12/31/15**	**7.58**
Bloomberg High Yield	7.26	2.39	4.86	5.93	8.56			12/31/15	8.98
Value Added	-4.89	0.07	1.00	0.12	-0.33			12/31/15	-1.40
Shenkman Capital									
Net of Fee Return	**4.22**	**1.01**	**3.03**	**3.28**	**5.00**	**2.65**		**6/30/11**	**3.98**
S&P LSTA Leverage Loan	4.00	0.41	2.26	2.97	5.67	3.73		6/30/11	5.04
Value Added	0.22	0.60	0.77	0.31	-0.67	-1.08		6/30/11	-1.05
Waterfall									
Net of Fee Return	**2.75**	**3.62**	**5.45**	**7.01**	**10.85**	**8.05**		**6/30/11**	**9.98**
Policy Index	4.69	1.90	3.67	4.62	6.56	3.71		6/30/11	4.54
Value Added	-1.94	1.72	1.78	2.39	4.30	4.34		6/30/11	5.44

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
White Oak Yield Spectrum									
Net of Fee Return	**0.61**	**1.79**	**3.04**	**3.39**				**3/31/18**	**3.39**
S&P LSTA Leverage Loan Index	4.00	0.41	2.26	2.97				3/31/18	2.97
Value Added	-3.39	1.38	0.78	0.42				3/31/18	0.42
Opportunistic Fixed Composite									
Net of Fee Return	**3.66**	**2.64**						**9/30/18**	**2.64**
Bloomberg High Yield	7.26	2.39						9/30/18	2.39
Value Added	-3.60	0.24						9/30/18	0.24
Fixed Income Composite									
Net of Fee Return	**3.28**	**3.04**	**4.32**	**4.16**	**4.64**	**3.74**	**4.96**	**6/30/92**	**6.29**
Policy Index	5.29	3.49	4.87	5.27	5.59	4.79	5.18	6/30/92	6.31
Value Added	-2.01	-0.45	-0.56	-1.12	-0.95	-1.05	-0.22	6/30/92	-0.01
Bloomberg Global Aggregate	2.20	3.43	2.47	-0.38	1.49	1.04	3.05	6/30/92	4.98

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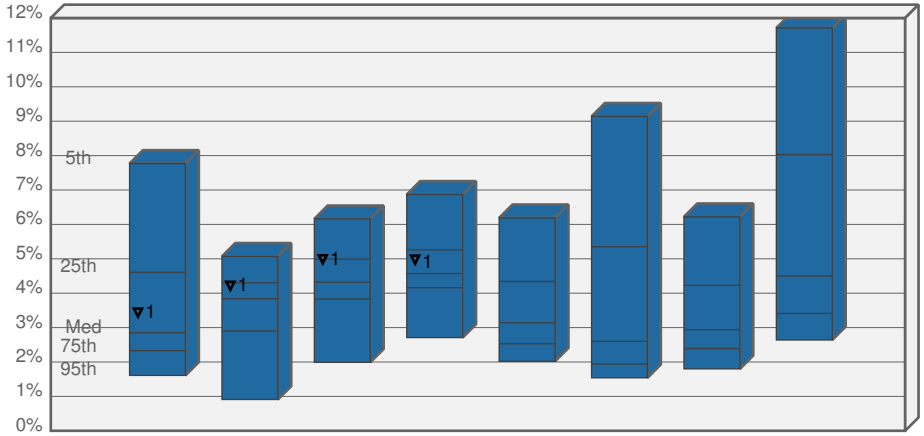
INVESTMENT MANAGER ANALYSIS

BNY IG Credit

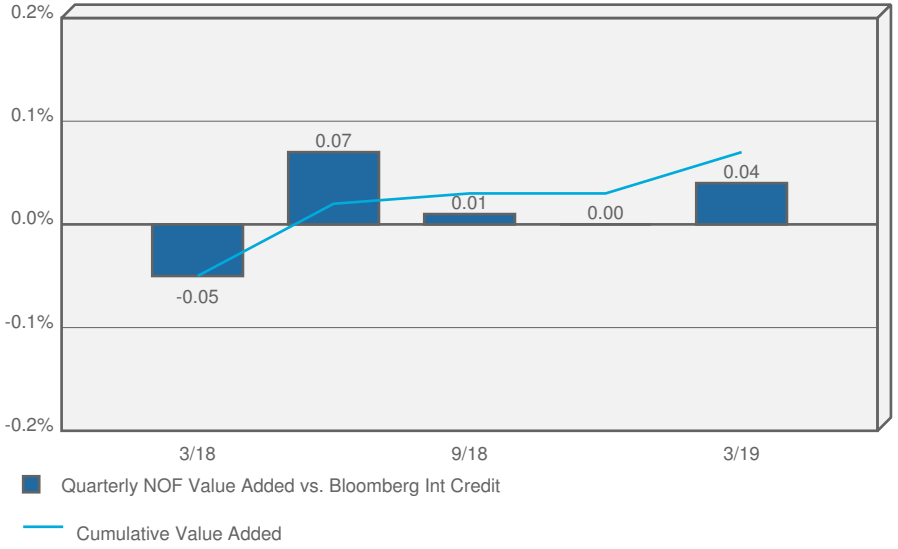
March 31, 2019

Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▼ BNY IG Credit	3.59 (36)	4.37 (22)	5.14 (20)	5.13 (28)				
1 Bloomberg Int	3.55 (37)	4.33 (24)	5.08 (23)	5.00 (33)				
Median	2.85	3.84	4.32	4.57	3.14	2.60	2.94	4.50
Number of Funds	434	433	430	427	423	421	402	347

Value-Added Analysis vs Benchmark



*Compass Total Returns of Active Intermediate Fixed Income Portfolios Universe - Gross of Fees

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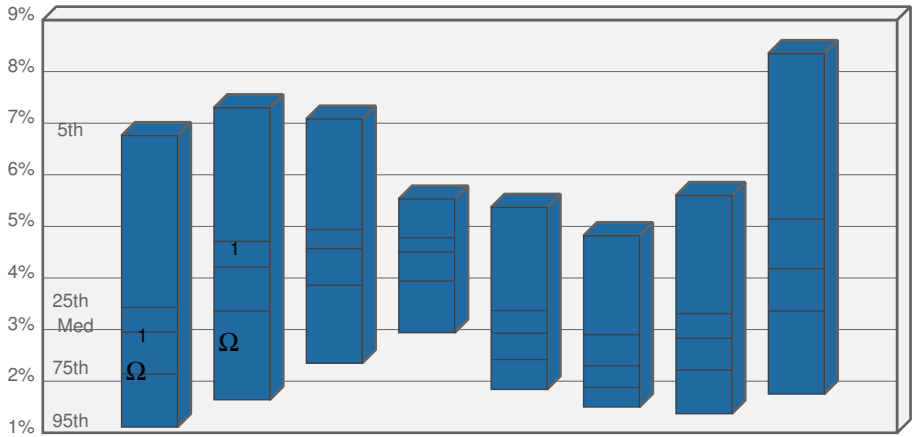
INVESTMENT MANAGER ANALYSIS

Lord Abbett

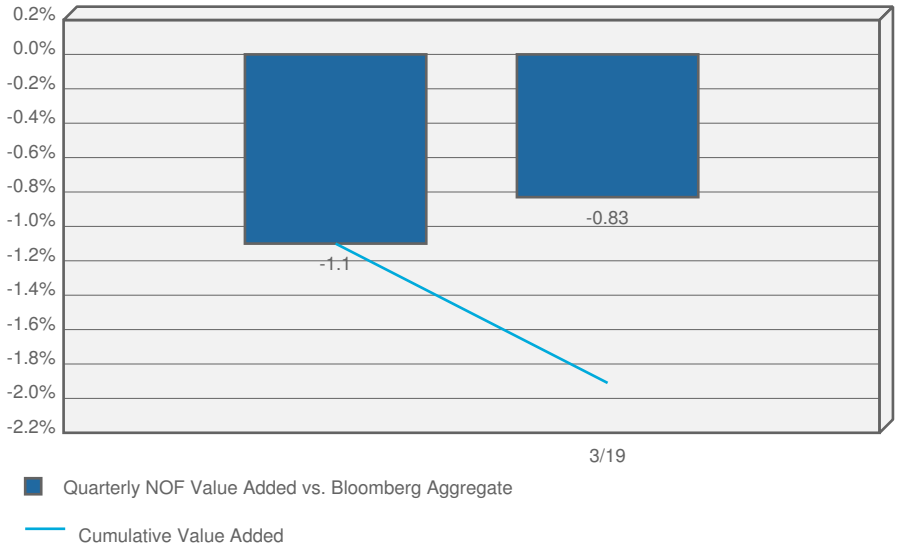
March 31, 2019

Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Ω Lord Abbett	2.20 (74)	2.76 (80)						
1 Bloomberg Aggr	2.94 (50)	4.63 (30)						
Median	2.95	4.21	4.57	4.50	2.93	2.30	2.83	4.18
Number of Funds	413	411	410	407	403	398	383	335

Value-Added Analysis vs Benchmark



*Compass Total Returns of Active Core Fixed Income Portfolios Universe - Gross of Fees

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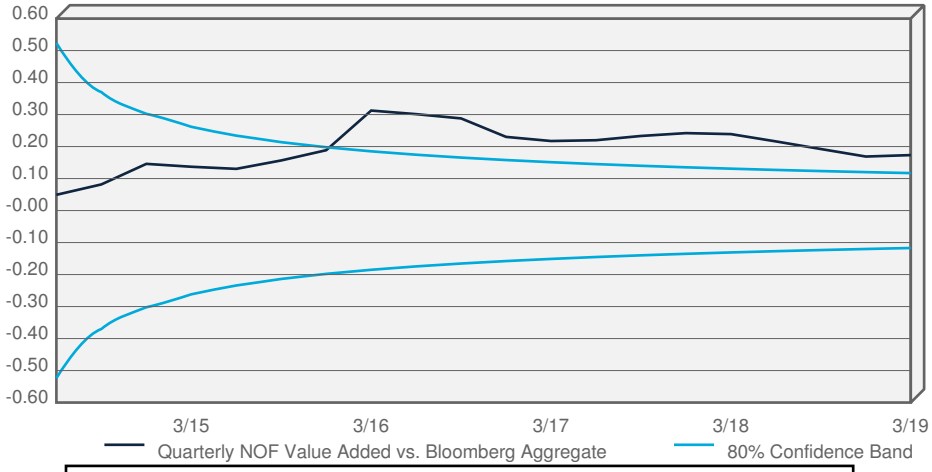
INVESTMENT MANAGER ANALYSIS

NISA

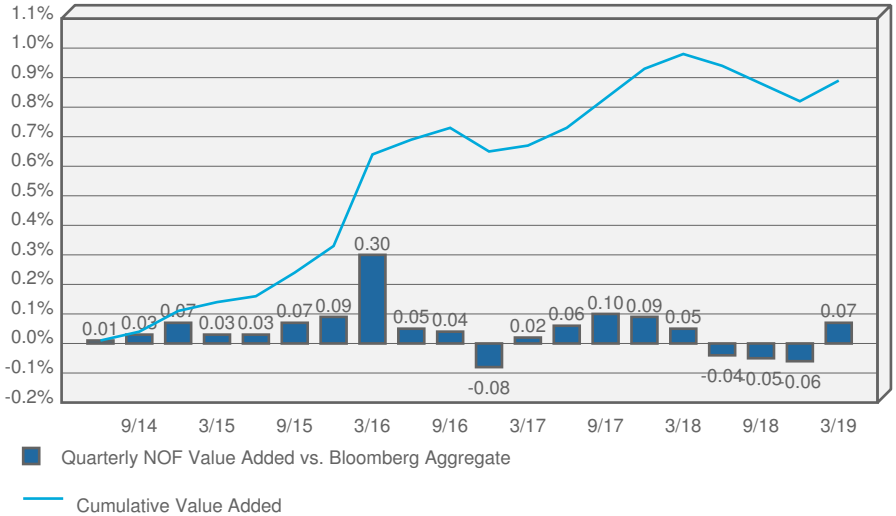
March 31, 2019

Cumulative Skill Analysis vs Benchmark

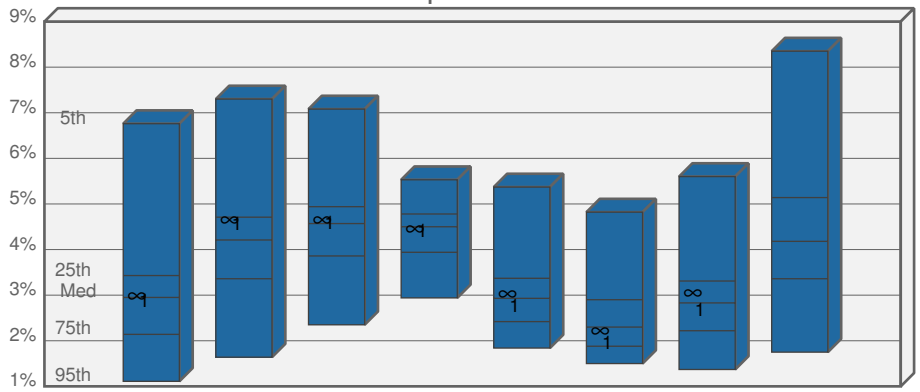


Excess Return:	0.17	Information Ratio:	1.09
Excess Risk:	0.16	T-Stat:	2.44

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ NISA	3.04 (44)	4.70 (27)	4.70 (42)	4.51 (49)	3.08 (39)	2.26 (52)	3.09 (35)	
1 Bloomberg Aggr	2.94 (50)	4.63 (30)	4.65 (46)	4.48 (52)	2.83 (56)	2.03 (67)	2.74 (54)	
Median	2.95	4.21	4.57	4.50	2.93	2.30	2.83	4.18
Number of Funds	413	411	410	407	403	398	383	335

*Compass Total Returns of Active Core Fixed Income Portfolios Universe - Gross of Fees

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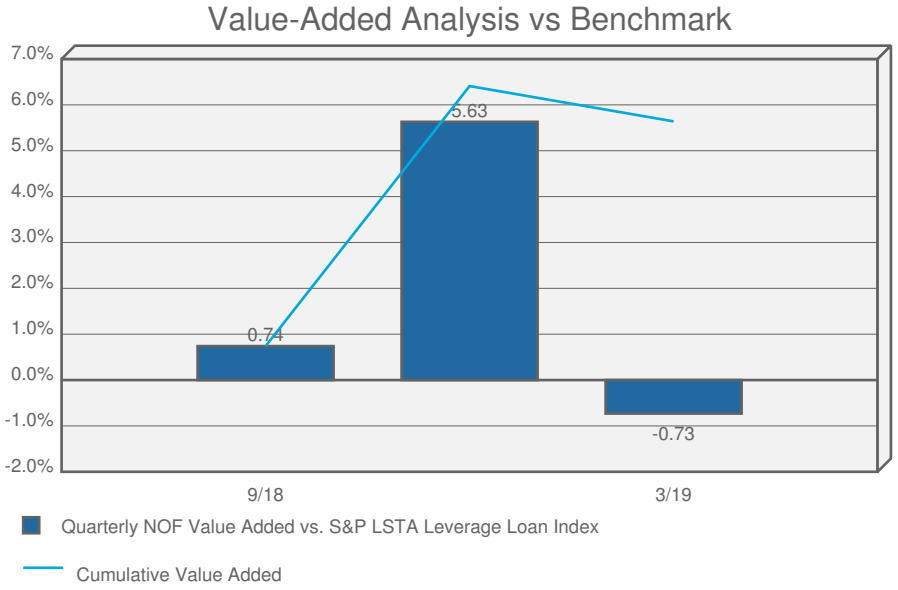
INVESTMENT MANAGER ANALYSIS

Arrowmark

March 31, 2019



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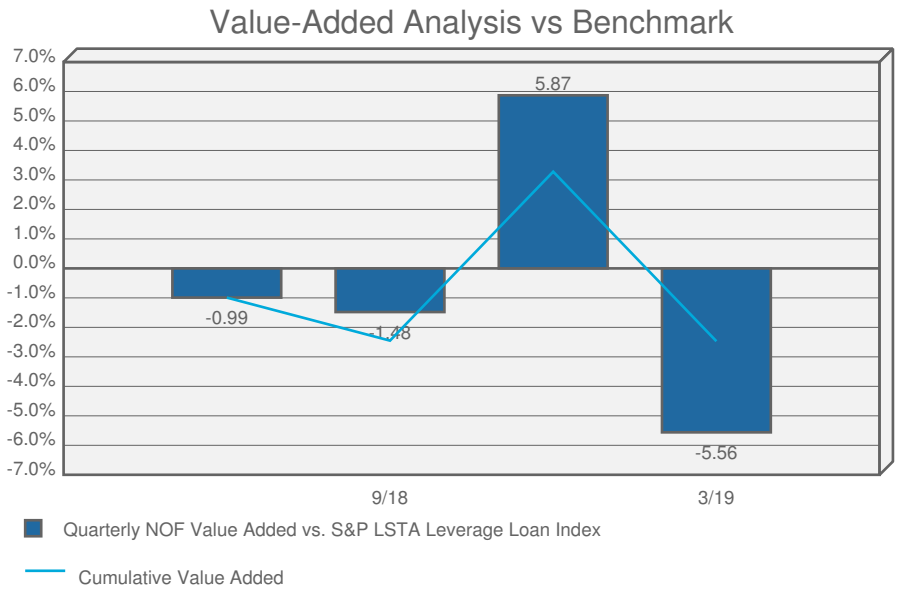
INVESTMENT MANAGER ANALYSIS

BSP Private Credit

March 31, 2019



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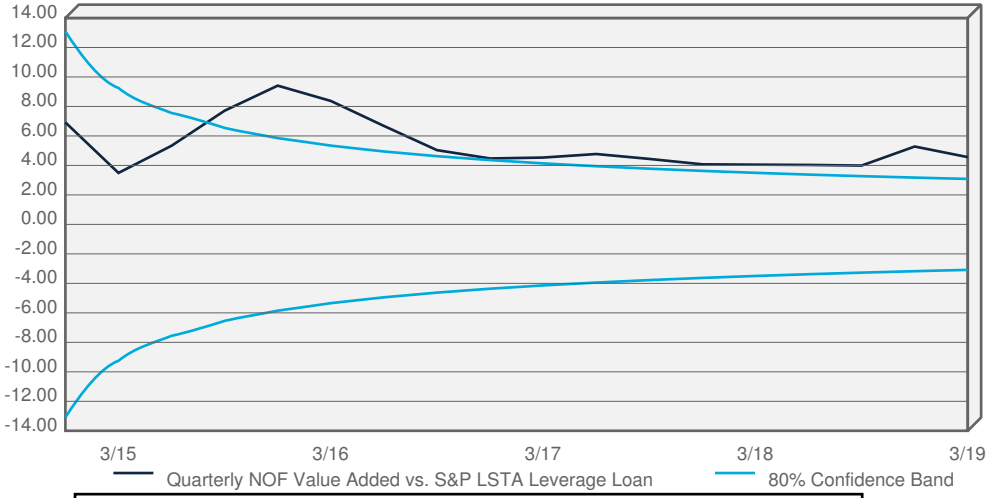
INVESTMENT MANAGER ANALYSIS

Cerberus Capital Mgmt

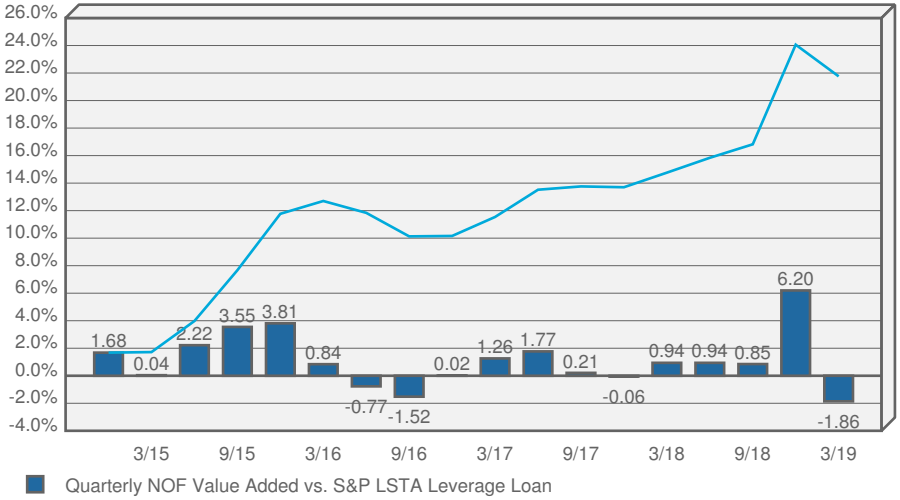
March 31, 2019

Cumulative Skill Analysis vs Benchmark



Excess Return:	4.56	Information Ratio:	1.15
Excess Risk:	3.98	T-Stat:	2.29

Value-Added Analysis vs Benchmark



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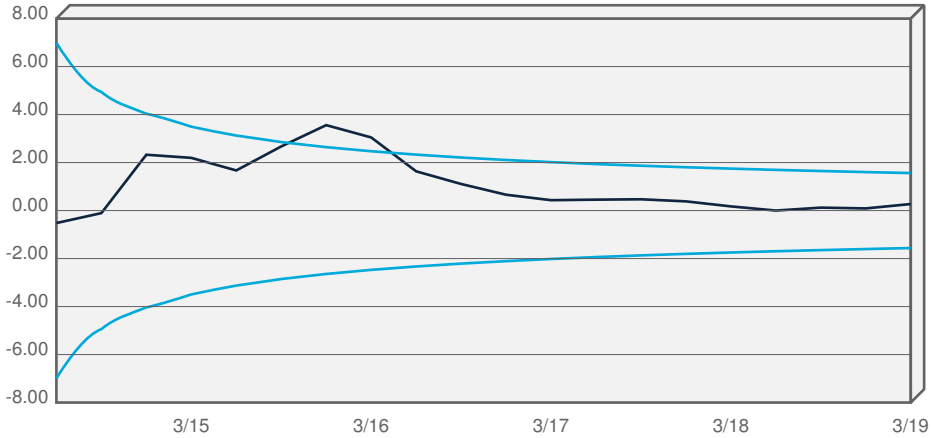
INVESTMENT MANAGER ANALYSIS

Columbia

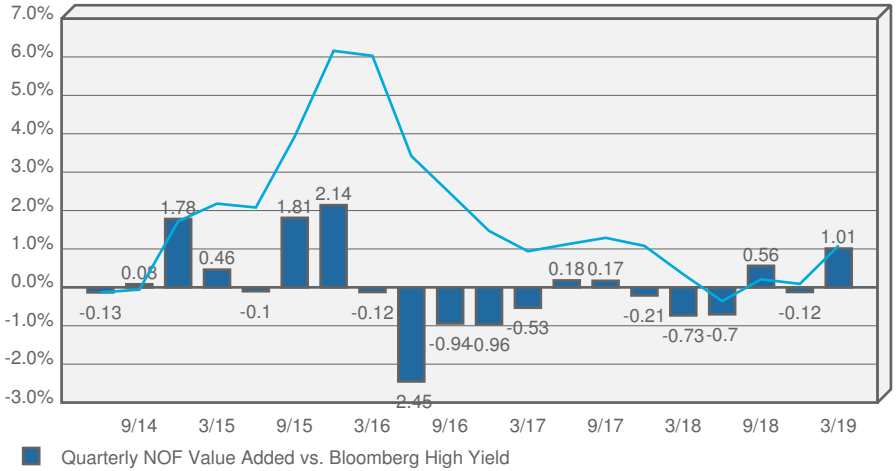
March 31, 2019

Cumulative Skill Analysis vs Benchmark

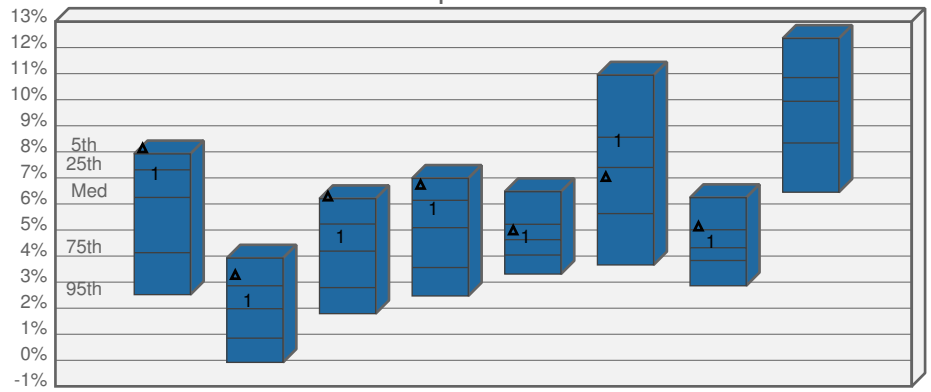


Excess Return:	0.27	Information Ratio:	0.13
Excess Risk:	2.12	T-Stat:	0.29

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▲ Columbia	8.35 (2)	3.49 (9)	6.50 (1)	6.95 (5)	5.20 (26)	7.25 (50)	5.35 (13)	
1 Bloomberg High	7.26 (26)	2.39 (40)	4.86 (34)	5.93 (31)	4.85 (40)	8.56 (25)	4.68 (34)	
Median	6.25	1.98	4.19	5.09	4.63	7.40	4.32	9.94
Number of Funds	221	220	218	218	215	211	198	127

*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

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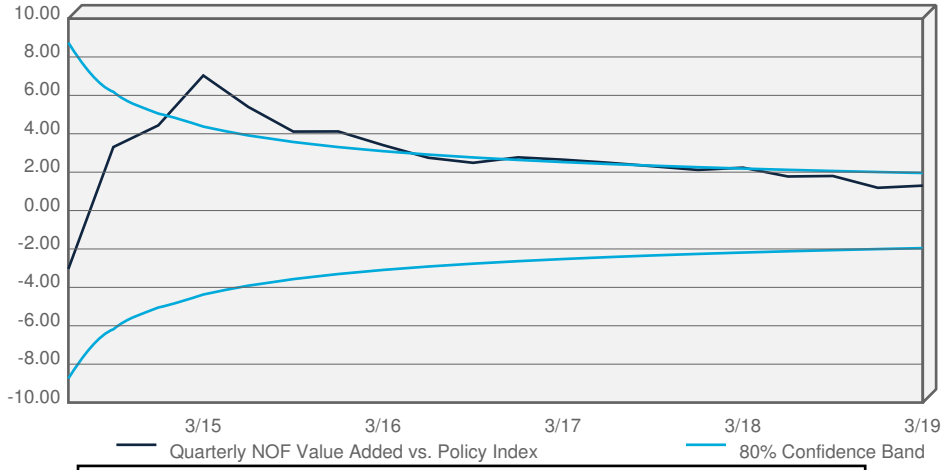
INVESTMENT MANAGER ANALYSIS

Manulife Asset Mgmt

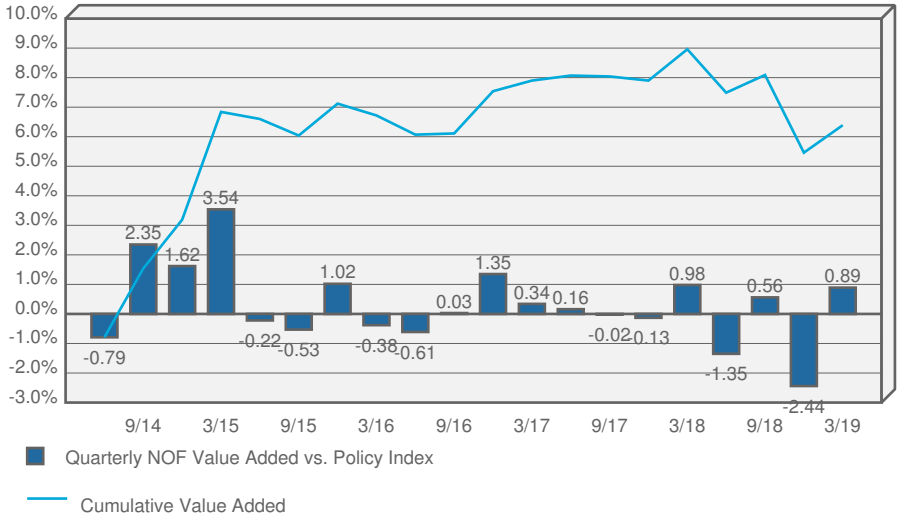
March 31, 2019

Cumulative Skill Analysis vs Benchmark

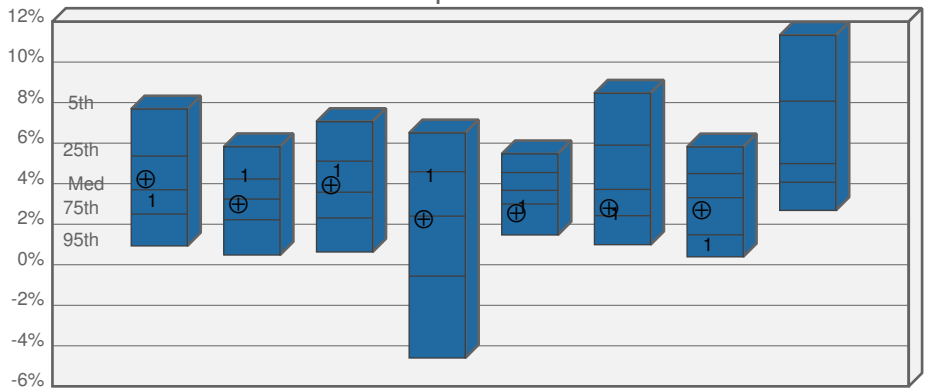


Excess Return:	1.30	Information Ratio:	0.49
Excess Risk:	2.66	T-Stat:	1.09

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊕ Manulife Asset	4.27 (40)	2.99 (59)	3.93 (45)	2.29 (51)	2.57 (83)	2.83 (66)	2.72 (57)	
1 Policy Index	3.32 (58)	4.53 (19)	4.81 (29)	4.53 (25)	3.01 (74)	2.65 (69)	1.12 (86)	
Median	3.70	3.24	3.58	2.40	3.67	3.72	3.31	4.99
Number of Funds	259	259	257	255	250	243	228	128

*Compass Total Returns of Active Global Intl Fixed Portfolios Universe - Gross of Fees

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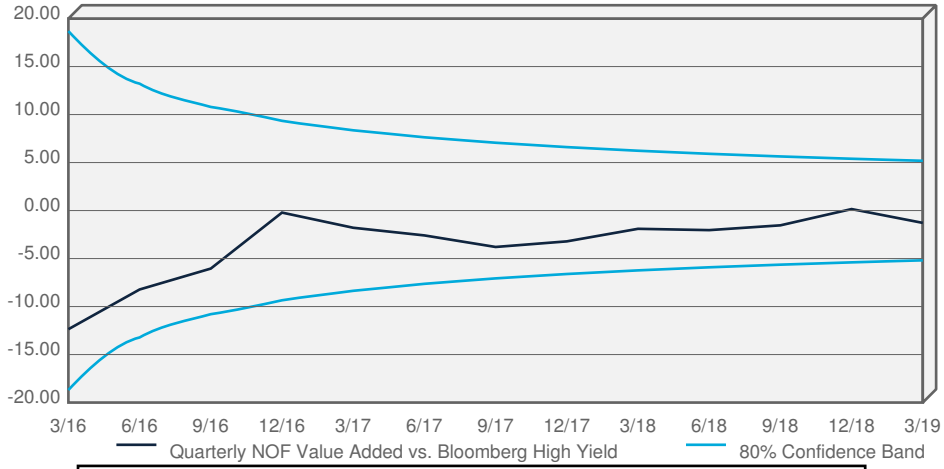
INVESTMENT MANAGER ANALYSIS

Marathon Bluegrass

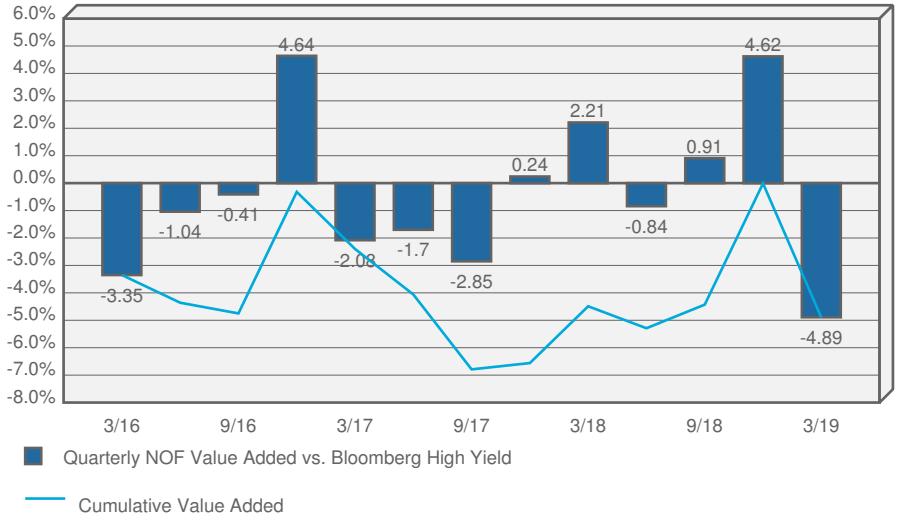
March 31, 2019

Cumulative Skill Analysis vs Benchmark

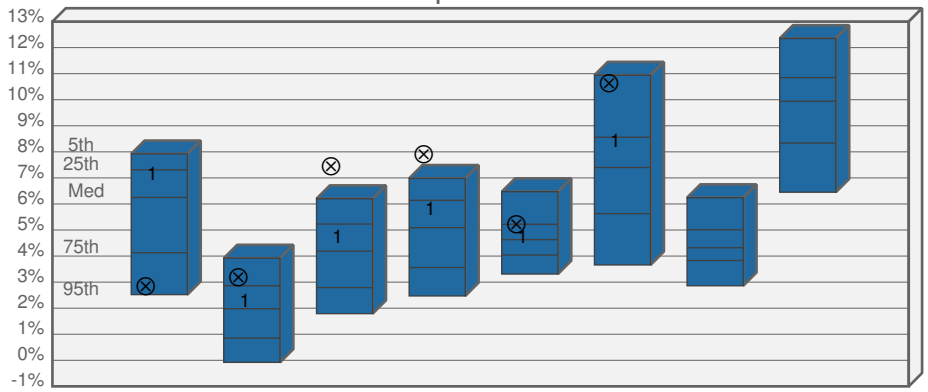


Excess Return:	-1.28	Information Ratio:	-0.23
Excess Risk:	5.68	T-Stat:	-0.39

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗Marathon Blueg	2.87 (93)	3.20 (13)	7.47 (1)	7.93 (1)	5.23 (24)	10.65 (6)		
1 Bloomberg High	7.26 (26)	2.39 (40)	4.86 (34)	5.93 (31)	4.85 (40)	8.56 (25)		
Median	6.25	1.98	4.19	5.09	4.63	7.40	4.32	9.94
Number of Funds	221	220	218	218	215	211	198	127

*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

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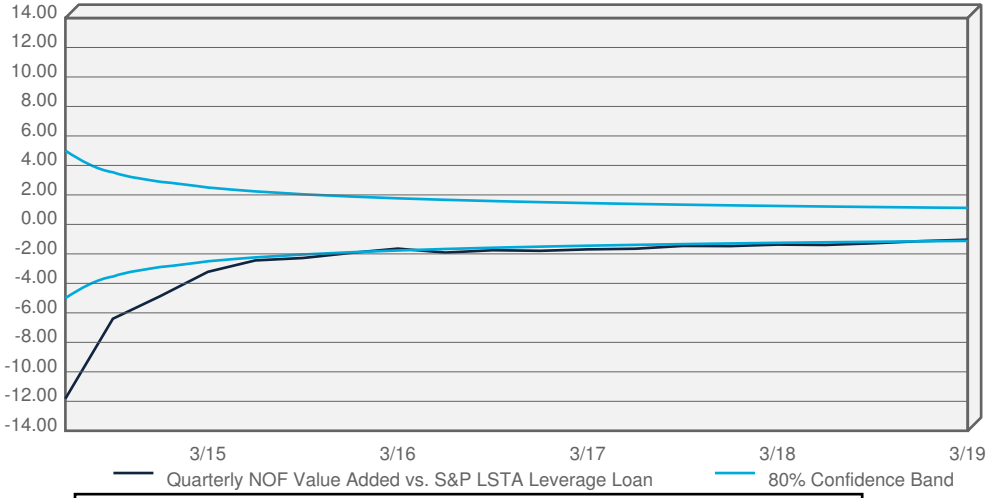
INVESTMENT MANAGER ANALYSIS

Shenkman Capital

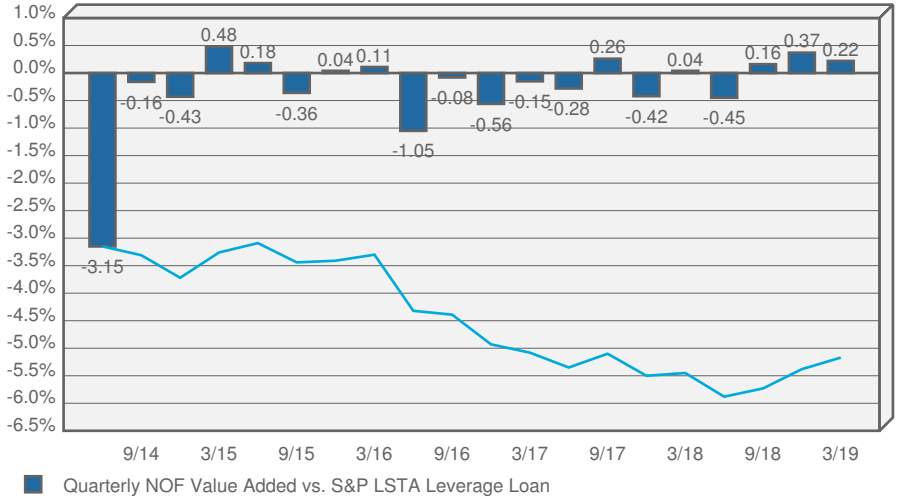
March 31, 2019

Cumulative Skill Analysis vs Benchmark



Excess Return:	-1.04	Information Ratio:	-0.68
Excess Risk:	1.52	T-Stat:	-1.52

Value-Added Analysis vs Benchmark



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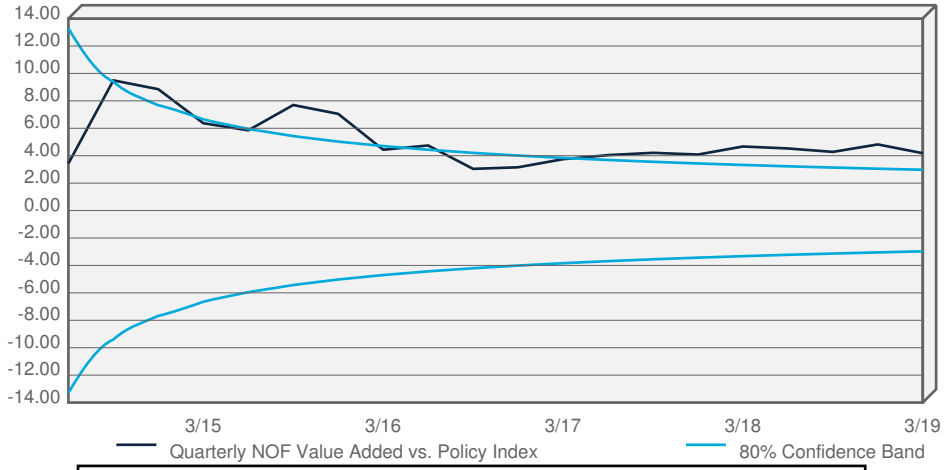
INVESTMENT MANAGER ANALYSIS

Waterfall

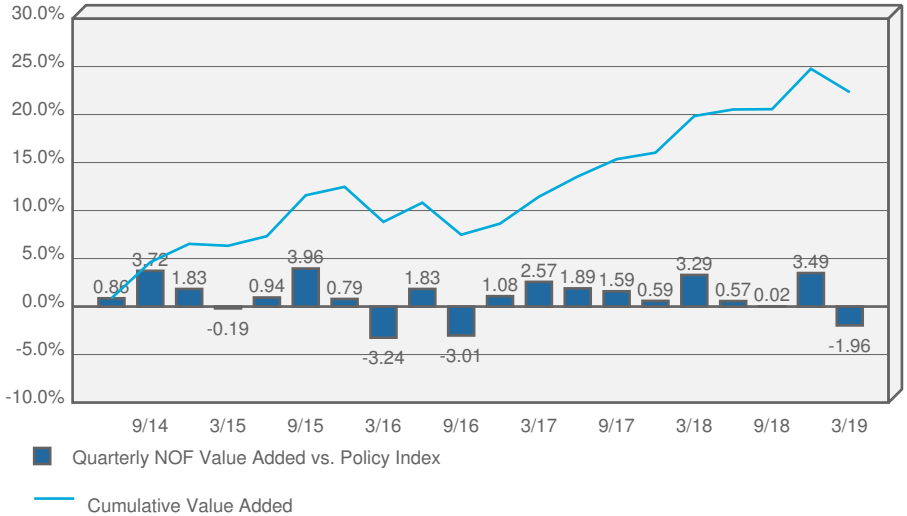
March 31, 2019

Cumulative Skill Analysis vs Benchmark

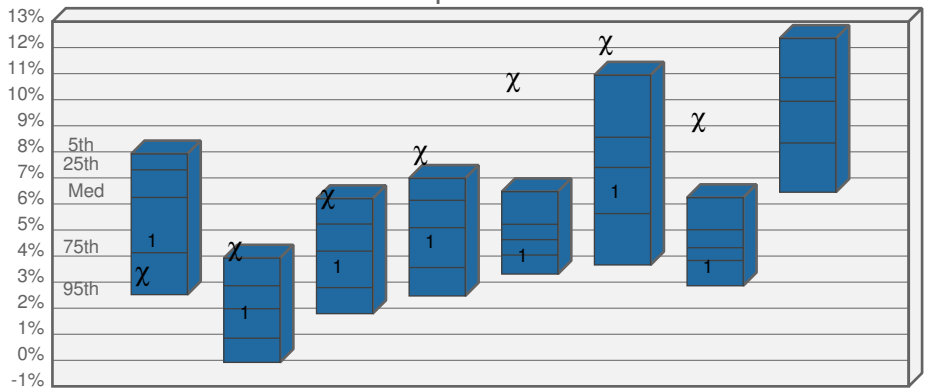


Excess Return:	4.18	Information Ratio:	1.03
Excess Risk:	4.04	T-Stat:	2.31

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
χ Waterfall	3.15 (92)	4.11 (4)	6.07 (5)	7.77 (1)	10.56 (1)	11.99 (3)	9.05 (1)	
1 Policy Index	4.71 (61)	1.94 (51)	3.72 (58)	4.66 (57)	4.13 (72)	6.58 (61)	3.71 (79)	
Median	6.25	1.98	4.19	5.09	4.63	7.40	4.32	9.94
Number of Funds	221	220	218	218	215	211	198	127

*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

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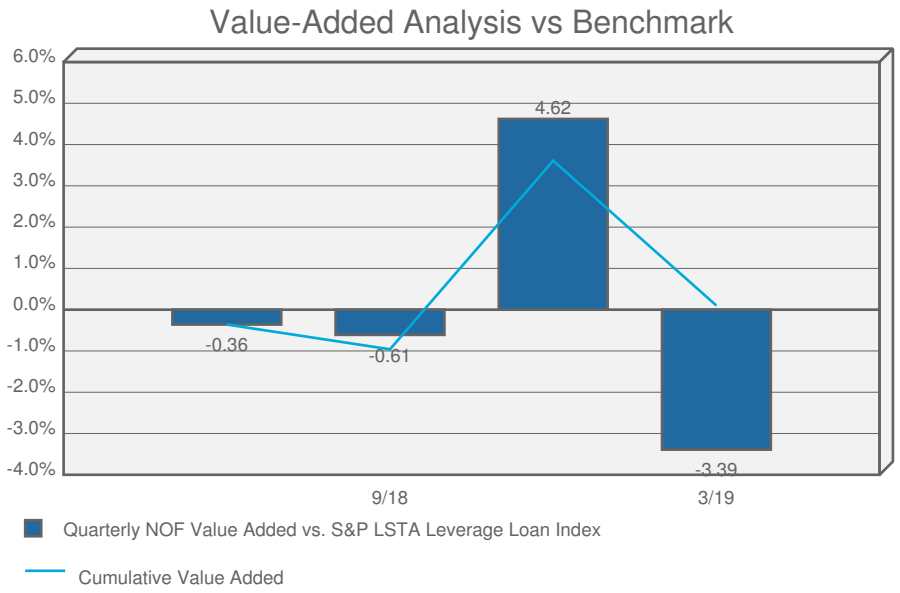
INVESTMENT MANAGER ANALYSIS

White Oak Yield Spectrum

March 31, 2019



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CUSTOM BENCHMARK SPECIFICATION

Fixed Income Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
Policy Index	9/92	6/17	100.00	Blended Fixed Benchmark
	9/17	3/19	50.00 50.00	Bloomberg Universal Bloomberg High Yield
Bloomberg Global Aggregate	9/92	3/19	100.00	Bloomberg Global Aggregate

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REAL RETURN

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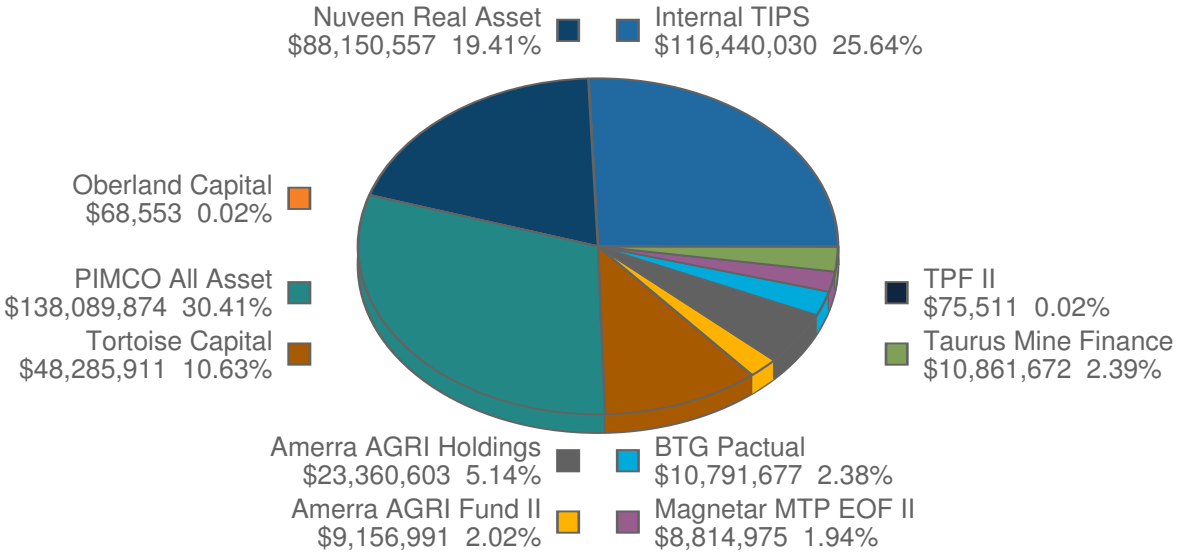
MANAGER ALLOCATION

Real Return Composite

As of March 31, 2019



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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Internal TIPS									
Net of Fee Return	**1.99**	**1.96**	**1.79**	**2.35**	**1.42**	**1.84**	**3.43**	**9/30/03**	**4.15**
Bloomberg 1-10 Yrs TIPS	2.57	2.51	2.09	2.72	1.53	1.66	3.27	9/30/03	3.89
Value Added	-0.58	-0.55	-0.30	-0.37	-0.11	0.18	0.16	9/30/03	0.25
PIMCO All Asset									
Net of Fee Return	**5.39**	**1.91**	**2.26**	**-0.16**	**7.07**	**3.04**		**12/31/11**	**5.13**
Bloomberg 1-10 Yrs TIPS	2.57	2.51	2.09	2.72	1.53	1.50		12/31/11	1.06
Value Added	2.82	-0.60	0.17	-2.88	5.54	1.54		12/31/11	4.07
Tortoise Capital									
Net of Fee Return	**18.45**	**-0.75**	**2.13**	**13.21**	**6.78**	**-2.31**		**9/30/09**	**10.95**
Alerian MLP	16.82	-3.38	2.96	15.11	5.69	-4.73		9/30/09	7.15
Value Added	1.63	2.63	-0.84	-1.90	1.08	2.42		9/30/09	3.80
Nuveen Real Asset									
Net of Fee Return	**10.87**	**5.12**	**6.57**	**8.53**	**7.63**			**3/31/15**	**5.58**
Policy Index	12.23	6.32	6.09	9.42	7.02			3/31/15	5.56
Value Added	-1.36	-1.20	0.48	-0.89	0.61			3/31/15	0.02
Amerra AGRI Fund II									
Net of Fee Return	**0.61**	**2.06**	**0.62**	**-1.70**	**0.84**	**4.20**		**12/31/12**	**3.66**
Amerra AGRI Holdings									
Net of Fee Return	**-0.94**	**-1.46**	**-3.25**	**-3.77**	**-2.10**			**9/30/15**	**-1.90**
BTG Pactual									
Net of Fee Return	**3.61**	**8.76**	**1.16**	**0.85**	**3.87**			**12/31/14**	**-7.86**

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Magnetar MTP EOF II									
Net of Fee Return	**-0.93**	**1.87**	**5.28**	**4.94**	**9.45**			**9/30/15**	**2.81**
Oberland Capital									
Net of Fee Return	**-6.90**	**14.89**						**9/30/18**	**14.89**
Taurus Mine Finance									
Net of Fee Return	**4.66**	**6.97**	**14.61**	**14.98**	**18.73**			**3/31/15**	**14.45**
TPF II									
Net of Fee Return	**0.00**	**-0.29**	**-0.62**	**-0.91**	**-7.83**	**-1.83**	**-2.12**	**9/30/08**	**-3.41**
Real Return Composite									
Net of Fee Return	**6.14**	**2.29**	**2.76**	**2.85**	**5.54**	**2.65**		**6/30/11**	**3.45**
Real Return Index (I)	5.51	2.60	2.95	4.38	3.78	2.15		6/30/11	2.74
Value Added	0.63	-0.31	-0.19	-1.53	1.76	0.50		6/30/11	0.71

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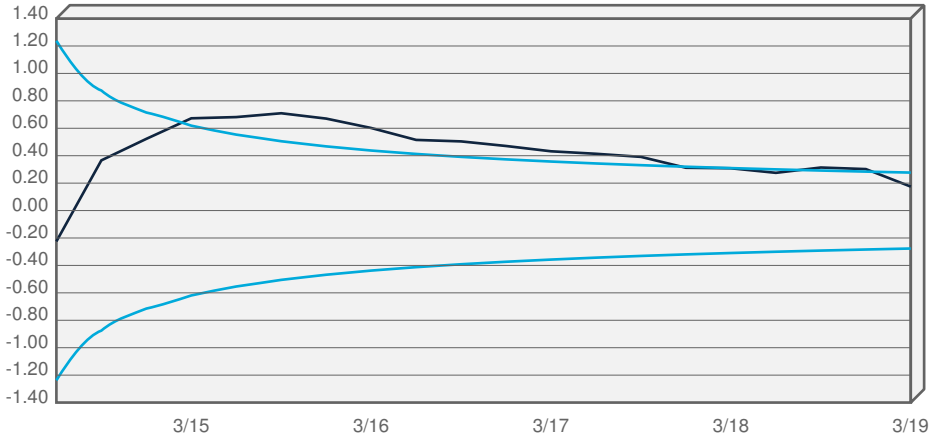
INVESTMENT MANAGER ANALYSIS

Internal TIPS

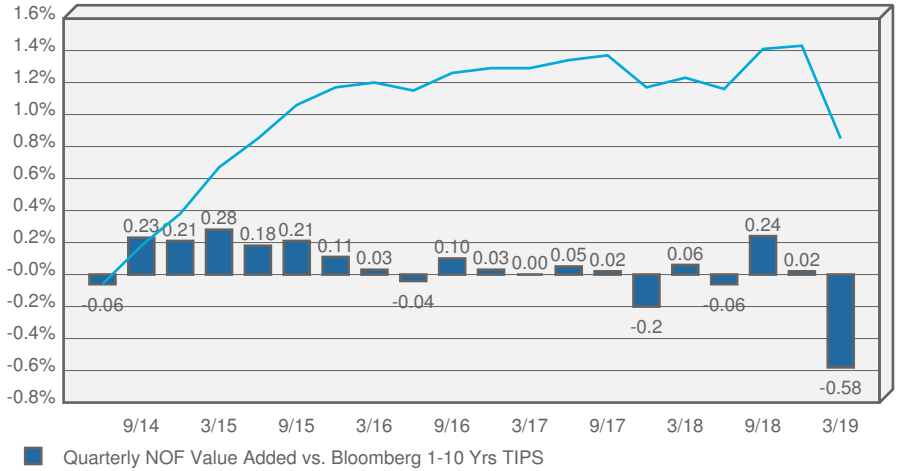
March 31, 2019

Cumulative Skill Analysis vs Benchmark

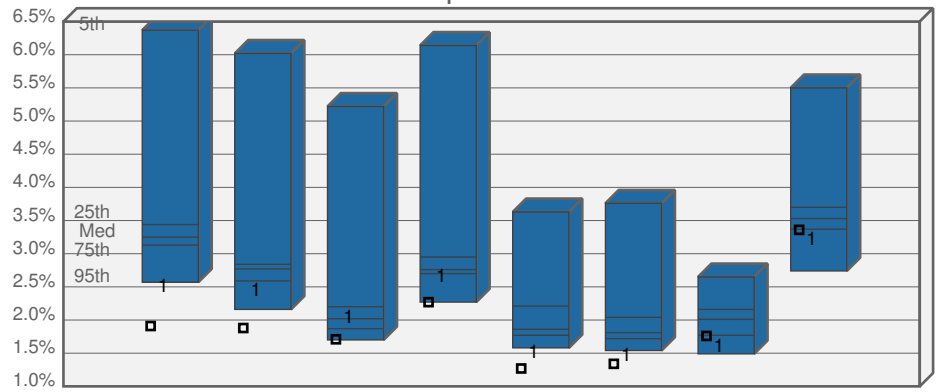


Excess Return:	0.17	Information Ratio:	0.46
Excess Risk:	0.38	T-Stat:	1.04

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◘ Internal TIPS	1.99 (100)	1.96 (97)	1.79 (89)	2.35 (94)	1.35 (100)	1.42 (100)	1.84 (68)	3.44 (62)
1 Bloomberg 1-10	2.57 (97)	2.51 (84)	2.09 (45)	2.72 (67)	1.57 (97)	1.53 (97)	1.66 (77)	3.27 (77)
Median	3.25	2.77	2.02	2.76	1.86	1.81	2.01	3.53
Number of Funds	38	38	37	37	36	35	35	27

*Compass Total Returns of Active TIPS Portfolios Universe - Gross of Fees

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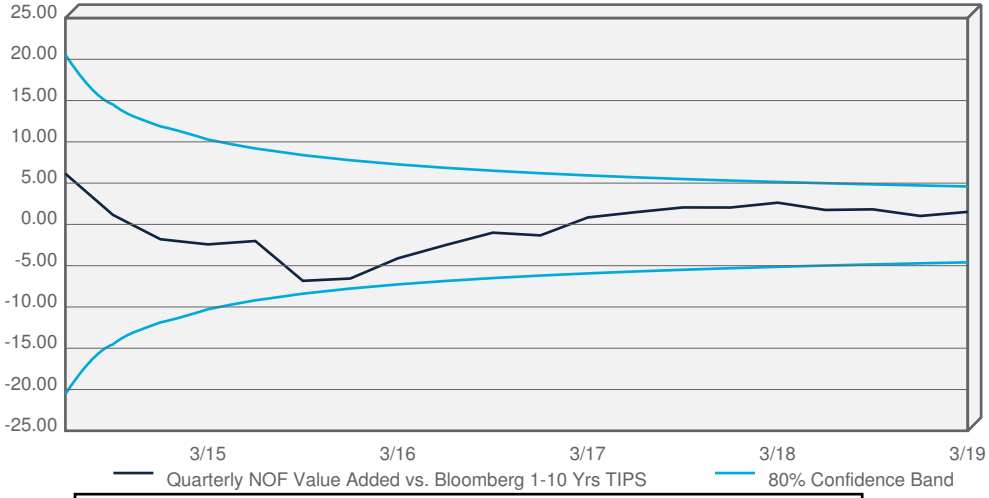
INVESTMENT MANAGER ANALYSIS

PIMCO All Asset

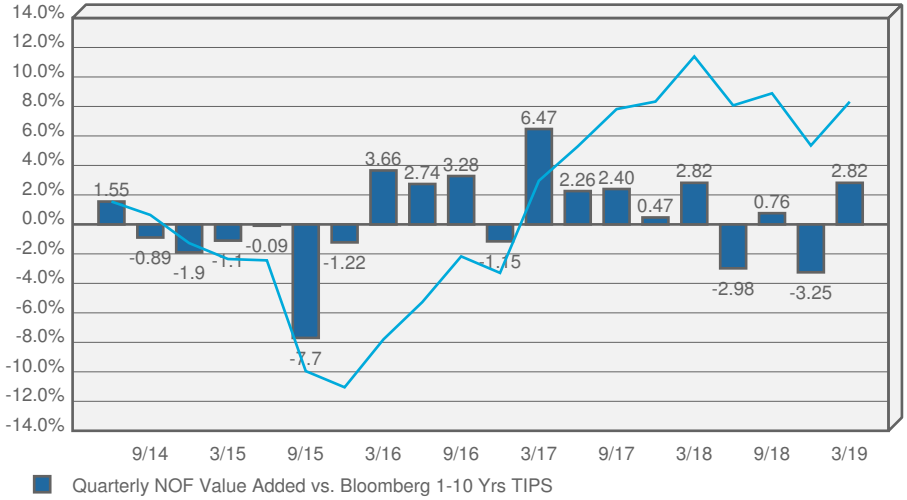
March 31, 2019

Cumulative Skill Analysis vs Benchmark



Excess Return:	1.52	Information Ratio:	0.24
Excess Risk:	6.25	T-Stat:	0.54

Value-Added Analysis vs Benchmark



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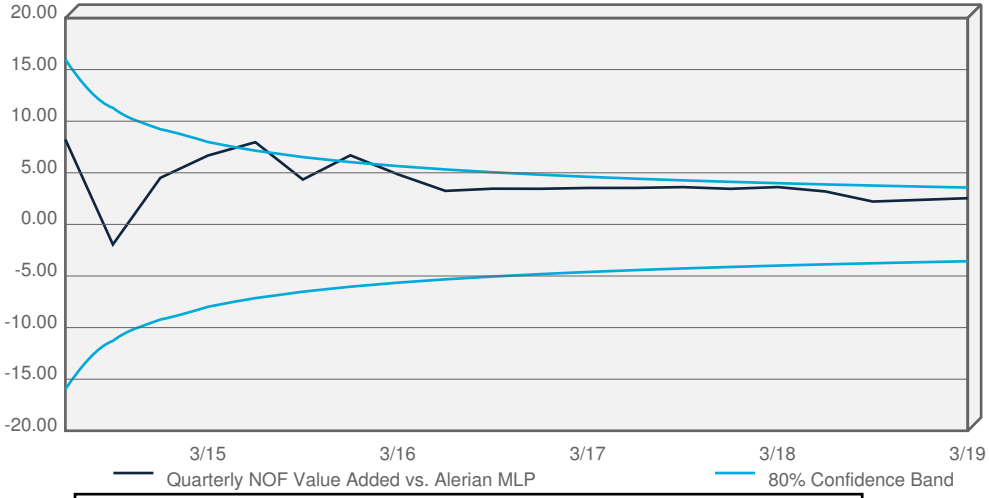
INVESTMENT MANAGER ANALYSIS

Tortoise Capital

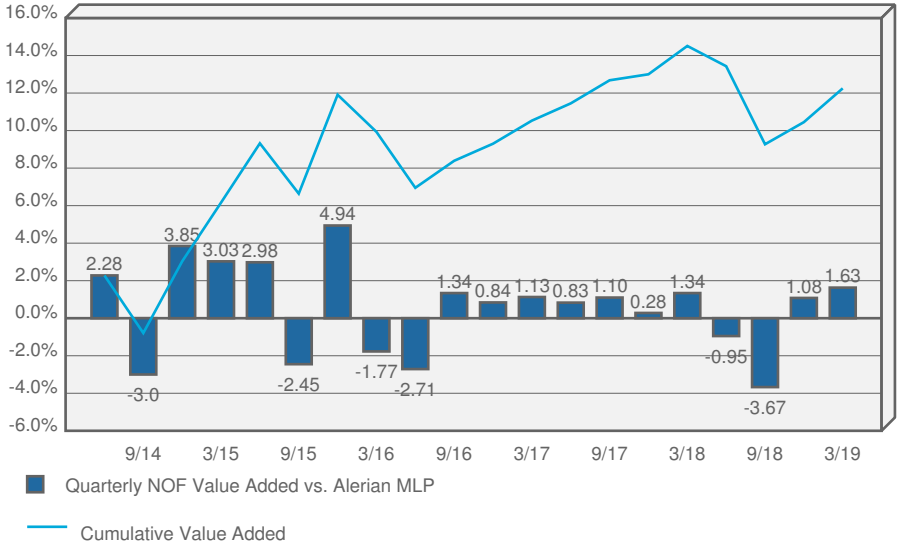
March 31, 2019

Cumulative Skill Analysis vs Benchmark



Excess Return:	2.54	Information Ratio:	0.52
Excess Risk:	4.85	T-Stat:	1.17

Value-Added Analysis vs Benchmark



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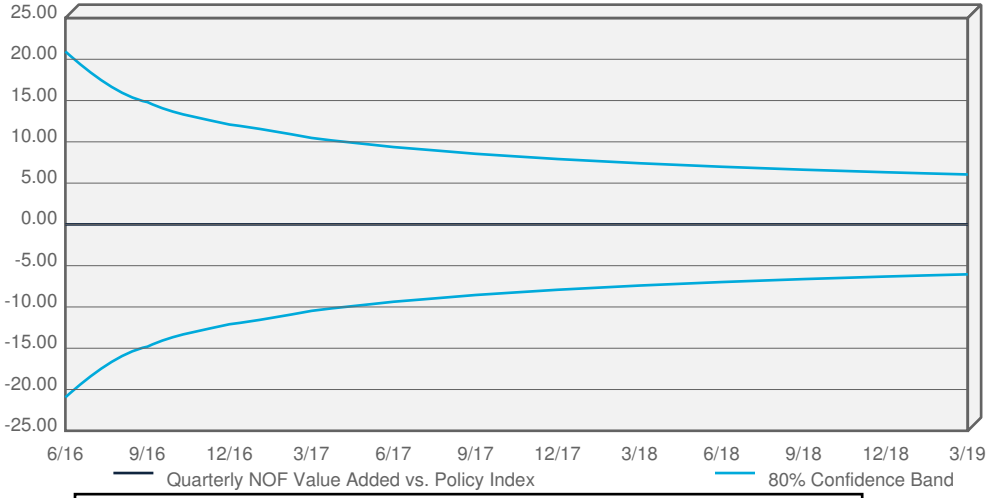
INVESTMENT MANAGER ANALYSIS

Nuveen Real Asset

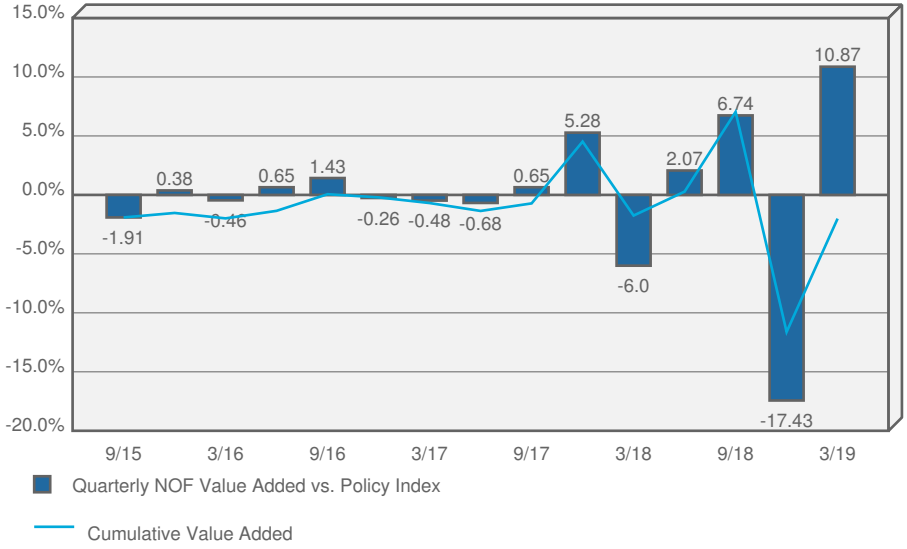
March 31, 2019

Cumulative Skill Analysis vs Benchmark



Excess Return:	-0.78	Information Ratio:	-0.12
Excess Risk:	6.37	T-Stat:	-0.21

Value-Added Analysis vs Benchmark



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CUSTOM BENCHMARK SPECIFICATION

Real Return Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
Real Return Index (I)	9/11	3/19	100.00	Real Return Index (I)

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REAL ESTATE

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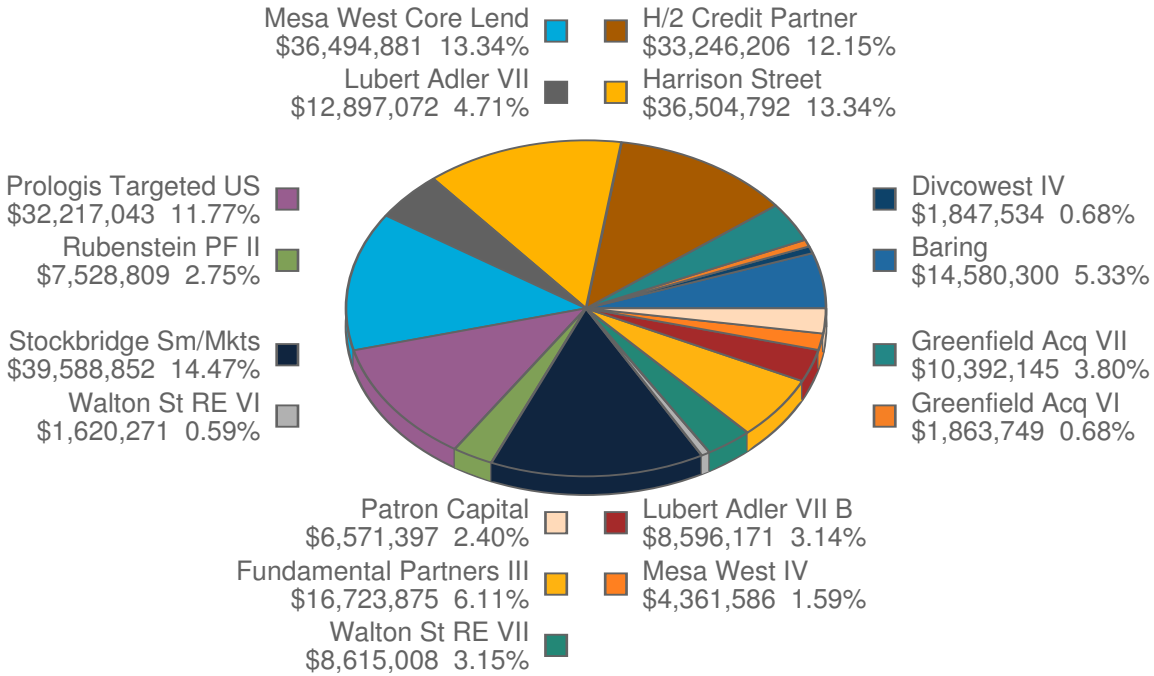
MANAGER ALLOCATION

Real Estate Composite

As of March 31, 2019



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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Baring									
Net of Fee Return	**-1.78**							**12/31/18**	**-1.78**
Divcowest IV									
Net of Fee Return	**-0.30**	**2.37**	**9.96**	**15.35**	**24.09**	**22.68**		**3/31/14**	**22.68**
Greenfield Acq VI									
Net of Fee Return	**-17.08**	**-17.40**	**-26.62**	**-24.12**	**-10.42**	**-0.93**		**12/31/12**	**2.19**
Greenfield Acq VII									
Net of Fee Return	**4.69**	**5.16**	**10.64**	**11.39**	**12.72**			**6/30/14**	**12.20**
H/2 Credit Partner									
Net of Fee Return	**-0.28**	**-0.98**	**0.19**	**1.09**	**5.90**	**4.65**		**6/30/11**	**5.53**
Harrison Street									
Net of Fee Return	**0.00**	**1.78**	**5.32**	**7.36**	**9.29**	**9.26**		**6/30/12**	**8.41**
Lubert Adler VII									
Net of Fee Return	**8.51**	**8.76**	**11.97**	**15.80**	**10.16**			**6/30/14**	**0.43**
Mesa West Core Lend									
Net of Fee Return	**0.00**	**1.88**	**5.19**	**6.90**	**7.06**	**6.82**		**6/30/13**	**6.62**
Prologis Targeted US									
Net of Fee Return	**3.41**	**6.88**	**12.29**	**18.02**	**17.34**			**9/30/14**	**15.58**
Rubenstein PF II									
Net of Fee Return	**2.46**	**6.47**	**11.64**	**15.38**	**11.77**	**16.00**		**6/30/13**	**13.99**

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Stockbridge Sm/Mkts									
Net of Fee Return	**1.89**	**5.42**	**7.13**	**8.95**	**8.64**			**6/30/14**	**9.62**
Walton St RE VI									
Net of Fee Return	**-3.51**	**-1.39**	**0.81**	**3.15**	**1.41**	**6.47**		**6/30/09**	**-17.15**
Walton St RE VII									
Net of Fee Return	**-1.49**	**-1.57**	**-1.31**	**0.45**	**7.48**	**11.06**		**6/30/13**	**11.12**
Fundamental Partners III									
Net of Fee Return	**2.78**	**6.21**	**8.03**	**8.04**				**6/30/17**	**6.57**
Lubert Adler VII B									
Net of Fee Return	**5.63**	**6.02**	**8.27**	**9.97**				**6/30/17**	**2.76**
Mesa West IV									
Net of Fee Return	**1.42**	**4.07**	**6.54**	**8.18**				**3/31/17**	**5.41**
Patron Capital									
Net of Fee Return	**4.67**	**7.59**	**10.06**	**9.36**				**9/30/16**	**3.14**
Real Estate Composite									
Net of Fee Return	**1.45**	**3.30**	**6.06**	**8.20**	**9.31**	**9.15**		**6/30/09**	**9.13**
NCREIF ODCE NOF 1 Quarter Lag	1.52	3.42	5.29	7.36	7.27	9.41		6/30/09	7.81
Value Added	-0.07	-0.12	0.77	0.84	2.04	-0.26		6/30/09	1.32

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CUSTOM BENCHMARK SPECIFICATION

Real Estate Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
NCREIF ODCE NOF 1 Quarter Lag	9/84	3/19	100.00	NCREIF ODCE NOF 1 Quarter Lag

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ABSOLUTE RETURN

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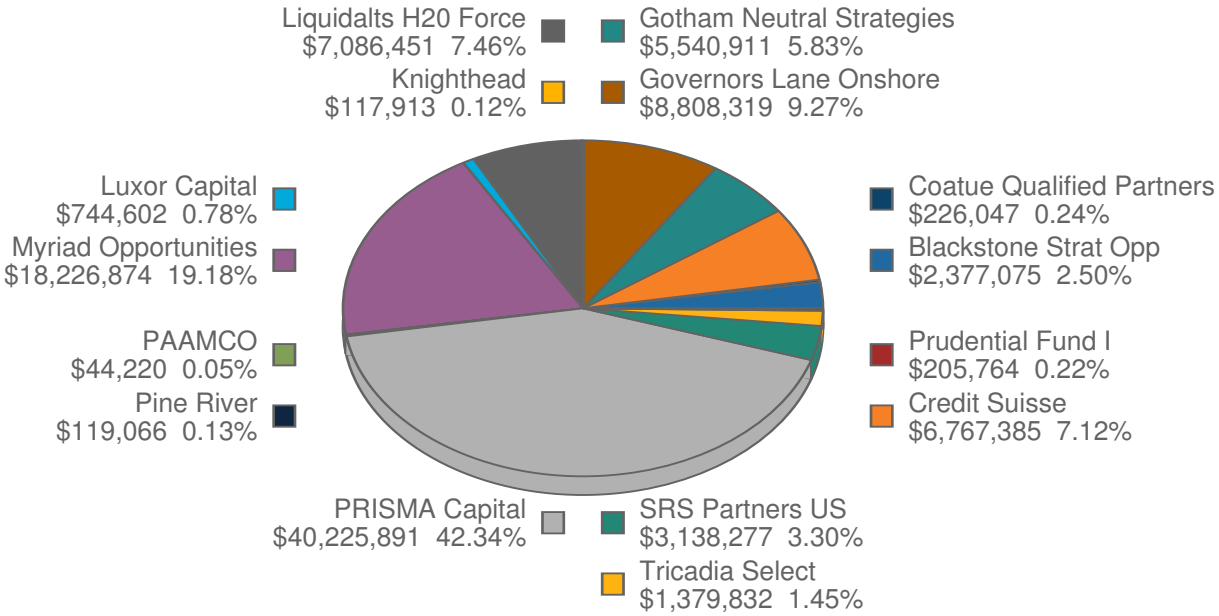
MANAGER ALLOCATION

Absolute Return Composite

As of March 31, 2019



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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Blackstone Strat Opp									
Net of Fee Return	**-1.82**	**-1.48**	**0.02**	**2.35**				**9/30/17**	**4.01**
Coatue Qualified Partners									
Net of Fee Return	**0.00**	**0.00**	**0.00**	**2.63**	**12.48**			**6/30/15**	**11.55**
Credit Suisse									
Net of Fee Return	**1.53**	**3.53**	**5.13**	**7.10**				**6/30/17**	**7.01**
Gotham Neutral Strategies									
Net of Fee Return	**0.23**	**0.48**	**-0.69**	**-0.98**				**3/31/17**	**-1.54**
Governors Lane Onshore									
Net of Fee Return	**1.54**	**-3.85**	**-2.04**	**-3.46**				**3/31/17**	**-0.62**
Knighthead									
Net of Fee Return	**0.00**	**0.00**	**-0.08**	**0.17**	**6.53**	**0.91**		**12/31/13**	**1.93**
Liquidalts H20 Force									
Net of Fee Return	**0.09**	**3.17**	**4.93**	**1.74**				**9/30/16**	**5.84**
Luxor Capital									
Net of Fee Return	**-0.05**	**9.42**	**9.70**	**10.64**	**18.93**	**3.24**		**3/31/14**	**3.24**
Myriad Opportunities									
Net of Fee Return	**-0.46**	**-2.69**	**-6.47**	**-6.97**				**6/30/16**	**4.26**
PAAMCO									
Net of Fee Return								**9/30/11**	

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PERFORMANCE COMPARISON

Trailing Returns

Periods Ended March 31, 2019

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Pine River									
Net of Fee Return								**6/30/14**	
PRISMA Capital									
Net of Fee Return	**1.44**	**0.25**	**1.10**	**1.89**	**4.08**	**2.22**		**9/30/11**	**3.70**
SRS Partners US									
Net of Fee Return	**-0.70**	**6.89**	**-1.67**	**1.34**				**9/30/17**	**3.18**
Tricadia Select									
Net of Fee Return	**0.38**	**-2.83**	**-8.28**	**-21.28**				**9/30/17**	**-16.54**
Absolute Return Composite									
Net of Fee Return	**1.00**	**-0.13**	**0.03**	**0.58**	**3.76**	**2.11**		**3/31/10**	**3.74**
HFRI FOF Div (1 Month Lag)	1.96	-1.22	-0.87	-0.44	3.49	1.88		3/31/10	2.70
Value Added	-0.96	1.09	0.89	1.02	0.27	0.22		3/31/10	1.05

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CUSTOM BENCHMARK SPECIFICATION

Absolute Return Composite

March 31, 2019

	Quarter Start	Quarter End	Percent	Description
HFRI FOF Div (1 Month Lag)	6/10	3/19	100.00	HFRI FOF Div (1 Month Lag)

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