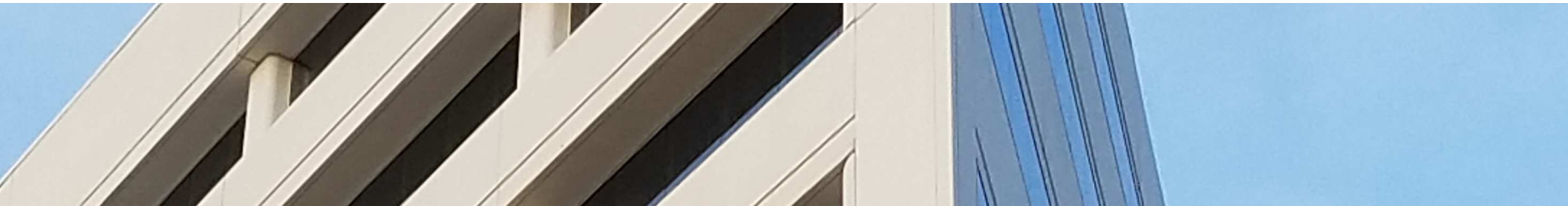




# WILSHIRE ASSOCIATES

Wilshire Consulting



## Kentucky Retirement Systems Insurance

Executive Summary of Investment Performance

*March 31, 2018*



# MARKET ENVIRONMENT

# ASSET CLASS PERFORMANCE

ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 3/2018
2013	2014	2015	2016	2017	2018 YTD	
U.S. Equity 33.1%	REITs 31.8%	REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	Emrg Mrkts 1.5%	U.S. Equity 13.1%
MLPs 27.6%	U.S. Equity 12.7%	U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	T-Bills 0.4%	Developed 7.0%
Developed 23.3%	Core Bond 6.0%	Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	Commodities -0.4%	REITs 6.1%
High Yield 7.4%	MLPs 4.8%	T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	U.S. Equity -0.8%	Emrg Mrkts 5.4%
REITs 1.9%	U.S. TIPS 3.6%	Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	U.S. TIPS -0.8%	High Yield 5.0%
T-Bills 0.1%	High Yield 2.5%	U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	High Yield -0.9%	Core Bond 1.8%
Core Bond -2.0%	T-Bills 0.0%	High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Developed -1.4%	T-Bills 0.3%
Emrg Mrkts -2.3%	Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	Core Bond -1.5%	U.S. TIPS 0.0%
U.S. TIPS -8.6%	Developed -4.5%	Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	REITs -7.5%	MLPs -5.8%
Commodities -9.5%	Commodities -17.0%	MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	MLPs -11.1%	Commodities -8.3%

Data sources: Wilshire Compass

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

# MARKET COMMENTARY

## U.S. Equity

The U.S. stock market was down -0.76% for the first quarter of 2018. Volatility returned after a tranquil 2017. While the market never experienced a daily loss of 2% or more last year, there were five such down days during the first quarter. Strong jobs reports and wage growth had investors rethinking their inflation expectations and led to concerns that the Federal Reserve might accelerate increases in their short-term rate.

Consumer spending, the main driver of economic growth, will be a key issue to watch in 2018. Consumers are highly interest rate sensitive but the increases in short-term rates that the Federal Reserve has been applying have so far had a muted affect. Fortunately, there are signs of consumer strength. Low unemployment, rising wage growth and borrowing by households are all positive signals.

## Non-U.S. Equity

Equity markets outside of the U.S. produced mixed results during the quarter with emerging markets up but developed markets in negative territory. Concerns about global trade conflicts dominated headlines. However, it is yet to be seen whether the future holds a series of escalating tariffs or trade deals like the one announced between the U.S. and South Korea.

## Fixed Income

The U.S. Treasury yield curve rose in a parallel fashion during the quarter with most maturities up 35 basis points, on average. The bellwether 10-year Treasury yield ended the quarter at 2.74%. The Federal Open Market Committee decided to increase its overnight rate by 25 basis points in March to a range of 1.50% to 1.75%. Credit spreads widened during the quarter but remain narrow relative to historical observations.

# MARCH 2018 ASSET CLASS ASSUMPTIONS

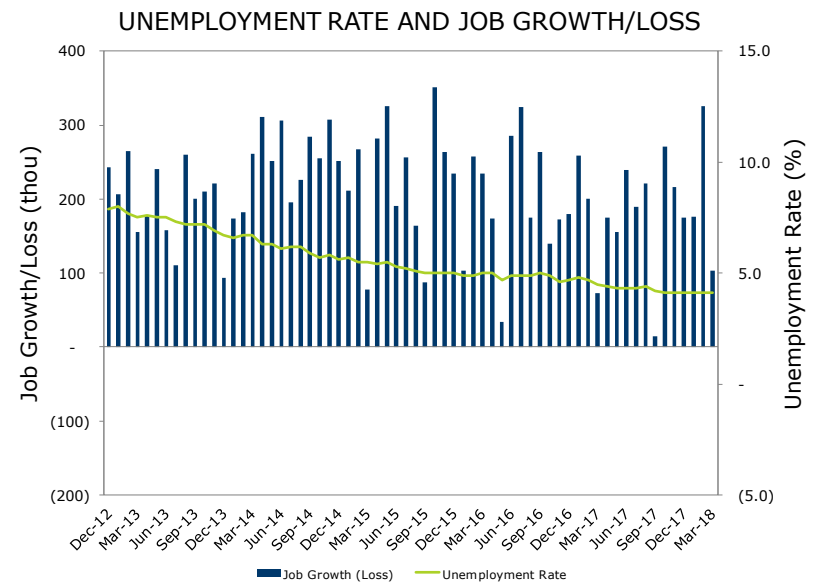
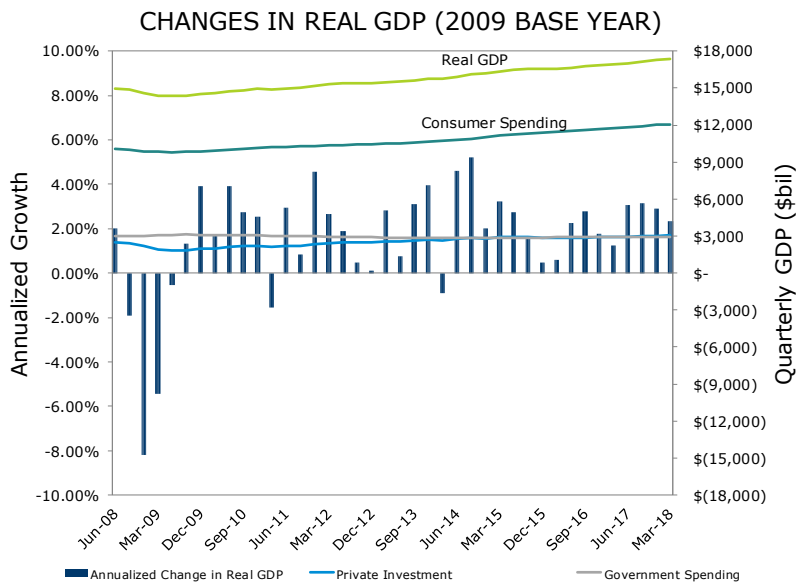
	EQUITY						FIXED INCOME						REAL ASSETS					
	US STOCK	DEV	EMG	GLOBAL		PRIVATE EQUITY	CASH	CORE BOND	LT	US TIPS	HIGH YIELD	NON-US BOND (HDG)	REAL ESTATE			CMDTY	REAL ASSETS	US CPI
		EX-US STOCK	MRKT STOCK	EX-US STOCK	GLOBAL STOCK				CORE BOND				US RES	GLOBAL RES	PRIVATE RE			
EXPECTED COMPOUND RETURN (%)	6.25	6.25	6.25	6.50	6.50	8.80	2.15	3.80	3.95	3.10	5.05	1.20	5.80	6.00	7.15	4.20	6.75	2.05
EXPECTED ARITHMETIC RETURN (%)	7.55	7.70	9.20	8.10	7.85	12.15	2.15	3.95	4.40	3.25	5.50	1.25	7.10	7.15	8.05	5.25	7.10	2.05
EXPECTED RISK (%)	17.00	18.00	26.00	18.75	17.15	28.00	1.25	5.15	9.85	6.00	10.00	3.50	17.00	15.80	14.00	15.00	8.50	1.75
CASH YIELD (%)	2.00	3.00	2.75	2.95	2.45	0.00	2.15	3.75	4.90	3.25	8.35	1.50	4.25	4.25	2.75	2.15	3.15	0.00
<b>CORRELATIONS</b>																		
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	0.64	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

# ECONOMIC REVIEW

AS OF MARCH 31, 2018 KEY ECONOMIC INDICATORS

CPI (ALL ITEMS)	MONTHLY CHANGE		CUMULATIVE CHANGE	
SEASONALLY ADJUSTED	Mar-18	-0.1	3-Mo.	0.6
	Feb-18	0.2	12-Mo.	2.4
	Jan-18	0.5	10-Yr. (Annual)	1.6
	10-Yr.	2.1		
BREAKEVEN INFLATION				
CONSUMER SENTIMENT U. OF MICHIGAN SURVEY	Mar-18	101.4		
	Feb-18	99.7		
	1-Yr. Ago	96.9	10-Yr. Avg	79.7
MANUFACTURING INST. FOR SUPPLY MGMT PURCHASING MNGRS' IDX	Mar-18	59.3	CHANGE IN SECTOR	
	Feb-18	60.8	>50	Expansion
	1-Yr. Avg.	58.2	<50	Contraction

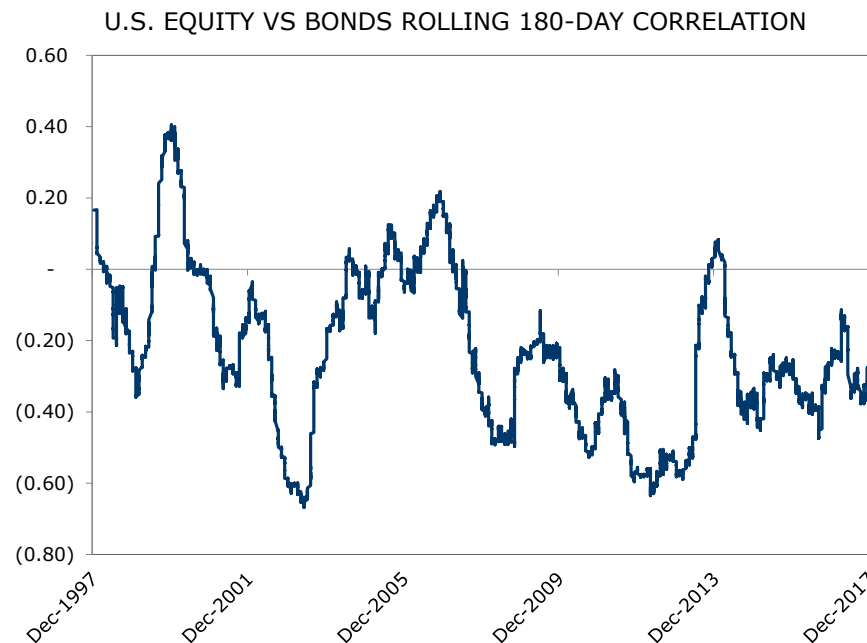
Note: Seasonally adjusted CPI data is utilized to better reflect short-term pricing activity.



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

# LATE CYCLE CONDITIONS

- U.S. economy entering the “late cycle,” characterized by:
  - Continued economic growth after a lengthy expansion
  - Tightening monetary policy to combat rising inflation
- Common for volatility and correlations to rise during such conditions; rising discount rates lower the present value of all future cash flows

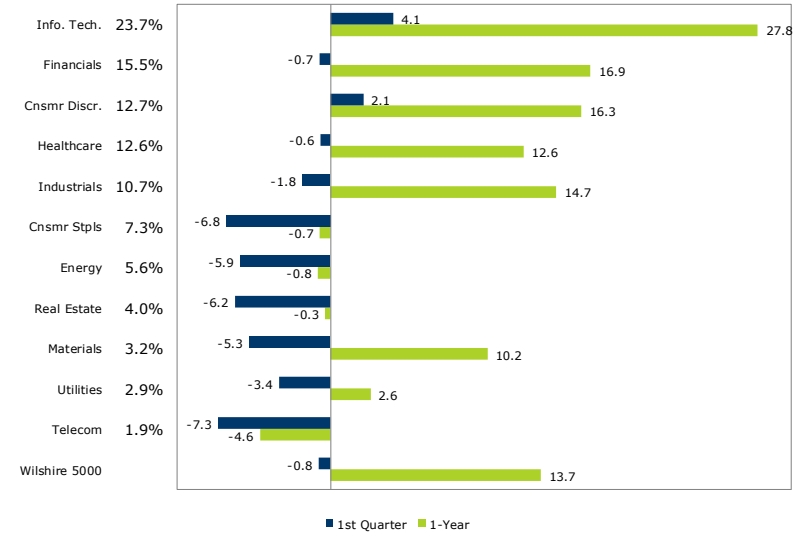


Data source: Wilshire Associates, Bloomberg Barclays

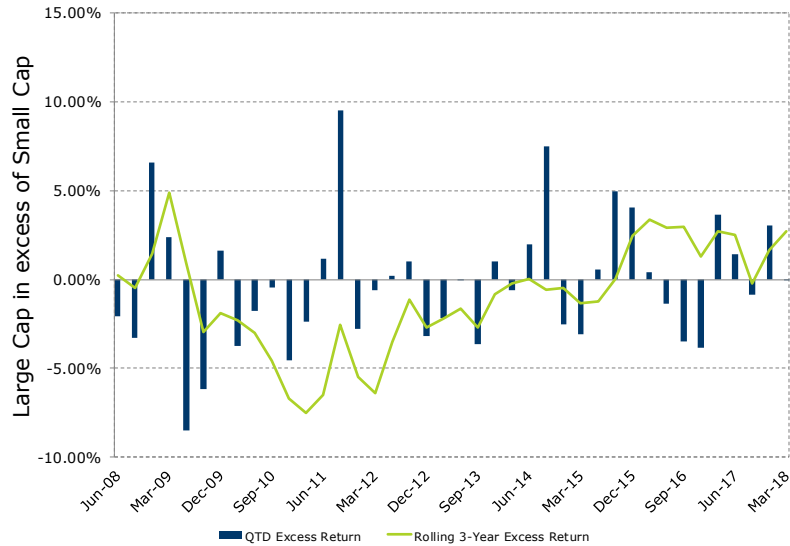
# U.S. EQUITY MARKET

AS OF MARCH 31, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	-0.8	-0.8	13.7	10.5	13.1	9.6
WILSHIRE U.S. LARGE CAP	-0.8	-0.8	14.1	10.8	13.3	9.5
WILSHIRE U.S. SMALL CAP	-0.7	-0.7	10.1	7.9	11.5	10.9
WILSHIRE U.S. LARGE GROWTH	1.3	1.3	19.6	12.0	15.5	11.0
WILSHIRE U.S. LARGE VALUE	-3.0	-3.0	8.6	9.3	11.2	7.9
WILSHIRE U.S. SMALL GROWTH	1.4	1.4	17.0	8.3	12.4	11.5
WILSHIRE U.S. SMALL VALUE	-2.9	-2.9	3.4	7.2	10.5	10.2
WILSHIRE REIT INDEX	-7.5	-7.5	-3.6	1.0	6.1	6.2
MSCI USA MIN. VOL. INDEX	-1.2	-1.2	10.4	9.6	11.4	9.9
FTSE RAFI U.S. 1000 INDEX	-2.4	-2.4	9.9	9.1	12.0	10.2

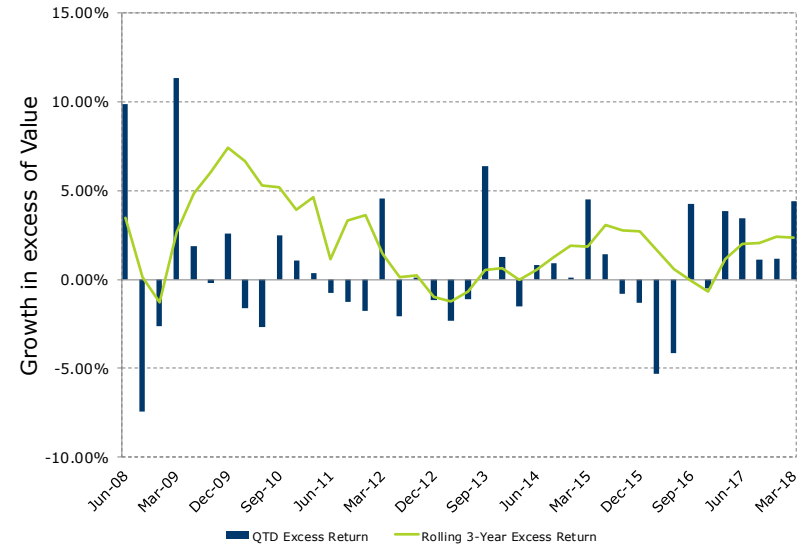
WILSHIRE 5000 SECTOR WEIGHT & RETURN (%)



LARGE CAP VS SMALL CAP



GROWTH VS VALUE



Data sources: Wilshire Compass, Wilshire Atlas



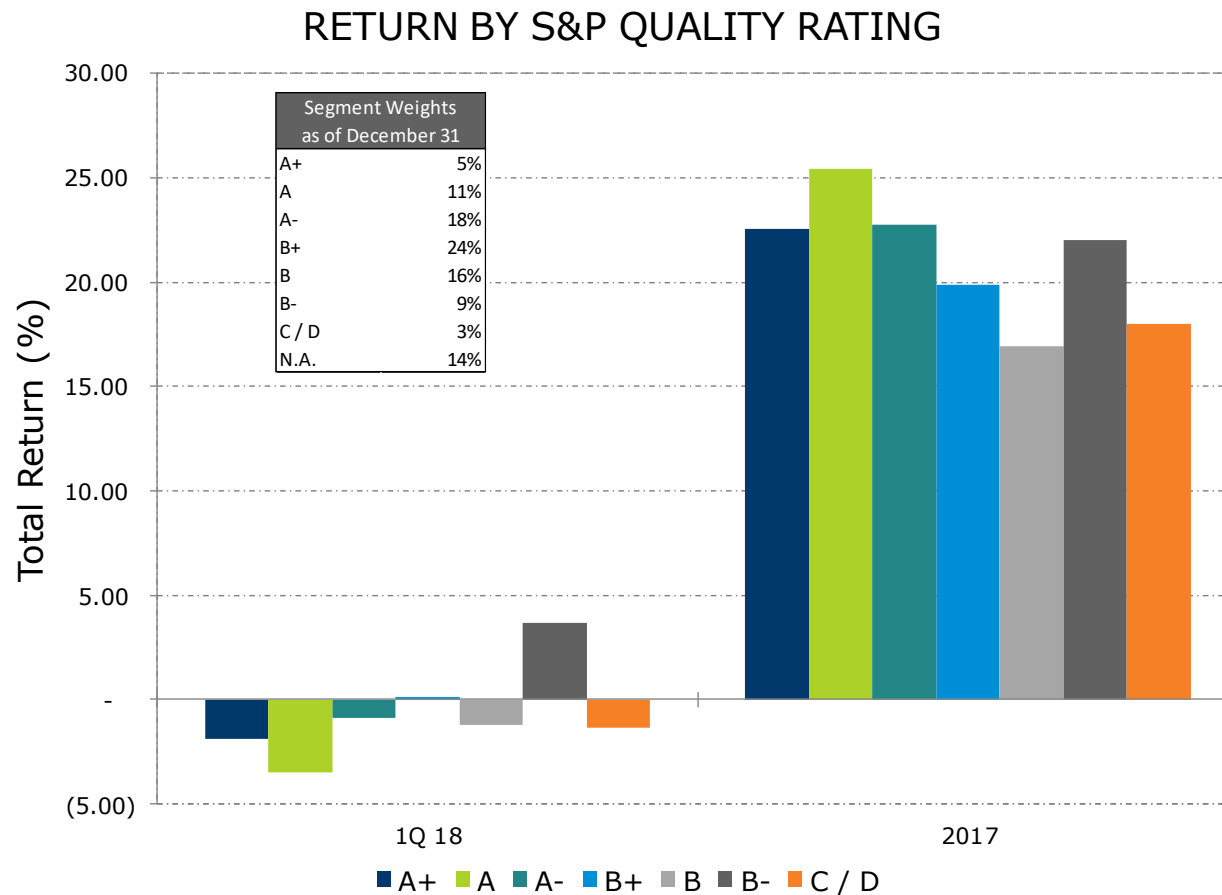
# RETURN OF VOLATILITY

- 2017 was one of the least volatile years in nearly four decades
  - Largest drawdown for the year was -2.75%
  - Only 4 trading days where the market was down 1% or more
- Volatility returned during the first quarter of 2018
  - Annualized volatility for the quarter above the historical median
  - “Number of Days Down” statistics are meaningful considering that they are for only one-quarter of the year

	Since 1980	Year	Annual Volatility	Largest Drawdown	Number of Days Down:				Worst Down Day
					1%	2%	3%	4%	
Universe Statistics	Max Risk		40.56%	-48.54%	71	42	24	17	-17.23%
	Avg		15.45%	-13.81%	28.1	7.6	2.3	1.0	-4.00%
	Med		13.21%	-9.94%	22.5	4.0	1.0	0.0	-3.29%
	Min Risk		6.96%	-2.74%	3	0	0	0	-1.36%
2017	Level		<b>6.96%</b>	<b>-2.75%</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-1.85%</b>
	Rank		<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>7</b>
<b>Q1 2018</b>	Level		19.39%	-9.92%	11	5	2	1	-4.02%

# RETURNS BY QUALITY SEGMENT

Higher quality names had a poor quarter after leading the market in 2017

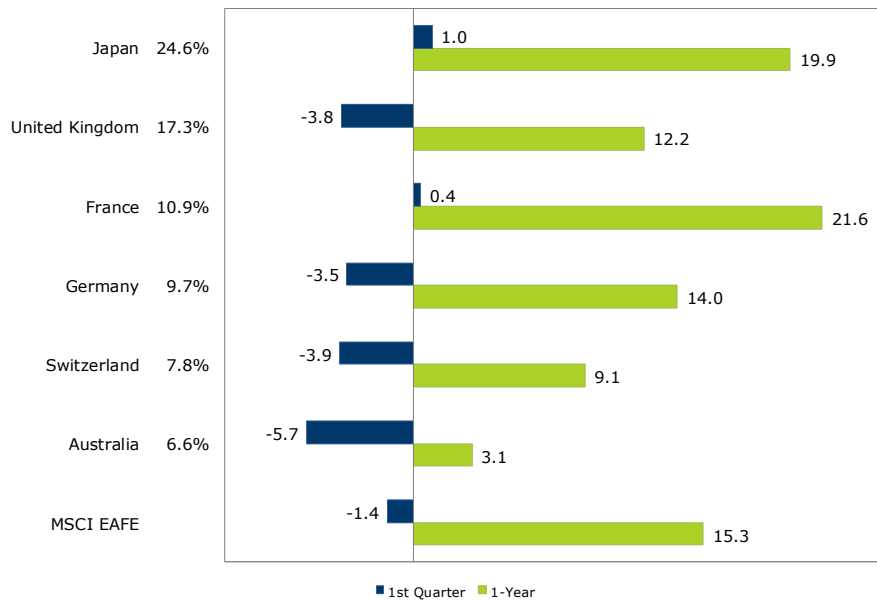


Data sources: Wilshire Atlas

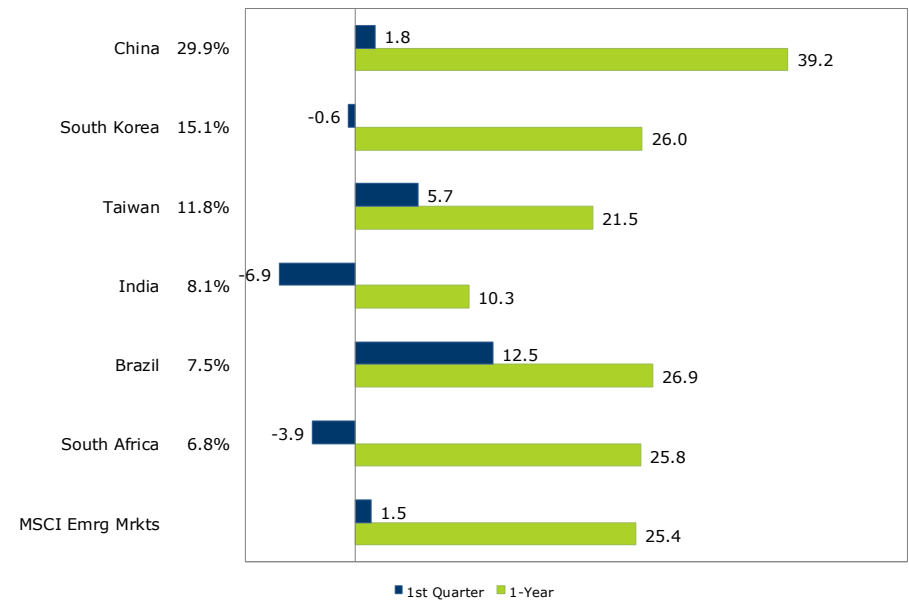
# NON-U.S. EQUITY MARKET

AS OF MARCH 31, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US (\$G)	-1.1	-1.1	17.0	6.7	6.4	3.2
MSCI EAFE (\$G)	-1.4	-1.4	15.3	6.0	7.0	3.2
MSCI EMERGING MARKETS (\$G)	1.5	1.5	25.4	9.2	5.4	3.4
MSCI FRONTIER MARKETS (\$G)	5.2	5.2	27.6	8.3	9.1	-0.1
MSCI ACWI EX-US GROWTH (\$G)	-0.8	-0.8	20.3	7.7	7.2	3.6
MSCI ACWI EX-US VALUE (\$G)	-1.4	-1.4	13.9	5.7	5.5	2.7
MSCI ACWI EX-US SMALL (\$G)	-0.3	-0.3	21.0	11.0	9.1	6.0
MSCI EAFE MINIMUM VOLATILITY	0.6	0.6	14.8	7.2	7.9	5.9
FTSE RAFI DEVELOPED EX-US	-2.0	-2.0	15.4	6.8	7.9	3.6
MSCI EAFE LC (G)	-4.2	-4.2	5.8	3.8	8.9	5.0
MSCI EMERGING MARKETS LC (G)	0.8	0.8	22.4	9.4	8.6	5.8

MSCI EAFE: LARGEST COUNTRIES & RETURN (USD)



MSCI EM: LARGEST COUNTRIES & RETURN (USD)



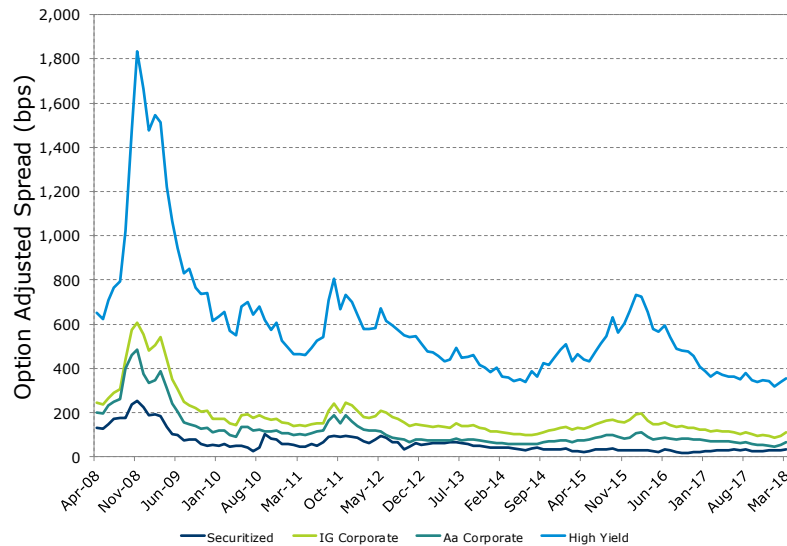
Data sources: Wilshire Compass

# U.S. FIXED INCOME

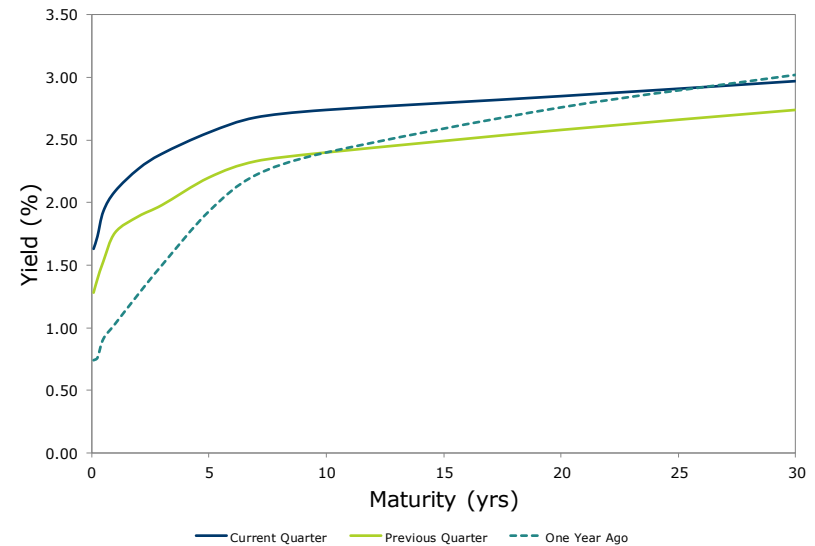
AS OF MARCH 31, 2018	YTM	DURATION	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	3.1	6.1	-1.5	-1.5	1.2	1.2	1.8	3.6
BLOOMBERG BARCLAYS TREASURY	2.5	6.1	-1.2	-1.2	0.4	0.4	1.1	2.7
BLOOMBERG BARCLAYS GOV'T-REL.	3.1	5.4	-1.0	-1.0	1.7	1.3	1.8	3.3
BLOOMBERG BARCLAYS SECURITIZED	3.3	5.0	-1.2	-1.2	0.8	1.1	1.8	3.5
BLOOMBERG BARCLAYS CORPORATE	3.8	7.5	-2.3	-2.3	2.7	2.3	3.0	5.4
BLOOMBERG BARCLAYS LT G/C	3.8	15.2	-3.6	-3.6	5.1	2.1	4.1	6.8
BLOOMBERG BARCLAYS LT TREASURY	2.9	17.3	-3.3	-3.3	3.5	0.4	3.3	5.8
BLOOMBERG BARCLAYS LT GOV't-REL.	4.2	12.3	-2.3	-2.3	6.0	2.9	3.9	6.5
BLOOMBERG BARCLAYS LT CORP.	4.4	14.0	-4.1	-4.1	6.1	3.3	4.8	7.7
BLOOMBERG BARCLAYS U.S. TIPS *	2.7	7.6	-0.8	-0.8	0.9	1.3	0.0	2.9
BLOOMBERG BARCLAYS HIGH YIELD	6.5	4.1	-0.9	-0.9	3.8	5.2	5.0	8.3
TREASURY BILLS	1.7	0.25	0.4	0.4	1.1	0.5	0.3	0.3

\* 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



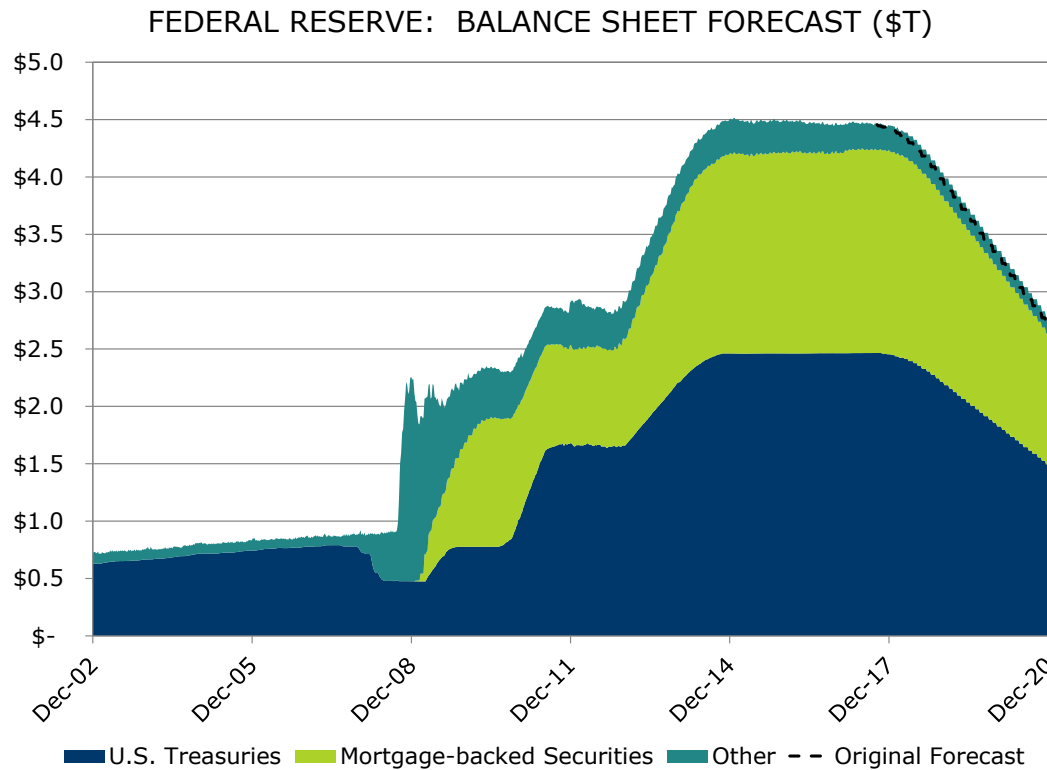
TREASURY YIELD CURVE



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

# FEDERAL RESERVE

- 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
- Actual pace of reductions has been a bit slower, equaling \$70B total through early-April 2018

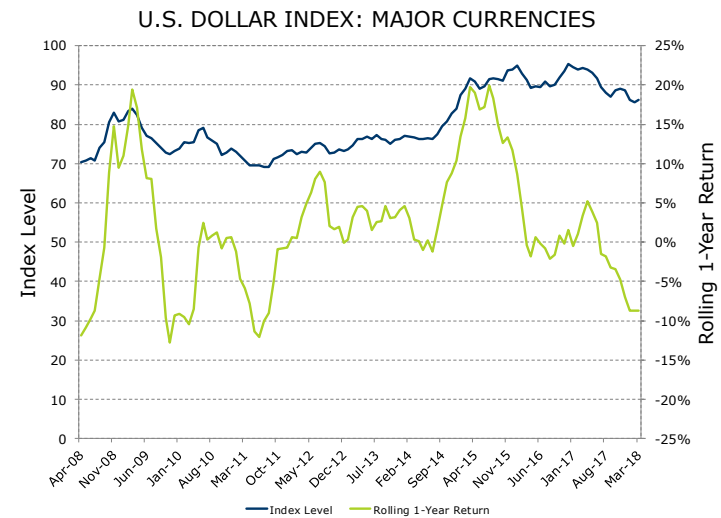
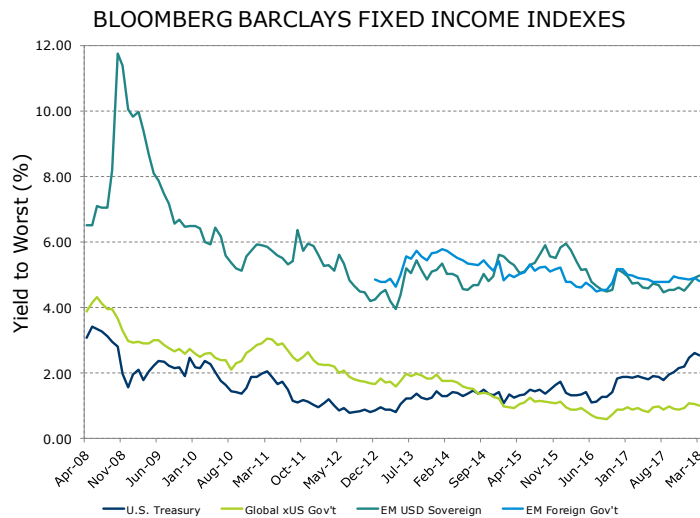


Data sources: Federal Reserve

# NON-U.S. FIXED INCOME

AS OF MARCH 31, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
<b>DEVELOPED MARKETS</b>						
BLMBRG BRCLYS GBL AGGREGATE xUS	3.6	3.6	11.8	4.6	1.2	1.8
BLMBRG BRCLYS GBL AGGREGATE xUS *	0.9	0.9	3.4	2.5	3.7	4.2
BLMBRG BRCLYS GLOBAL INF LNKD xUS	3.2	3.2	14.9	4.9	3.2	2.8
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	0.7	0.7	3.9	4.7	5.3	5.6
<b>EMERGING MARKETS (HARD CURRENCY)</b>						
BLMBRG BRCLYS EM USD AGGREGATE	-1.5	-1.5	3.2	5.1	3.9	6.8
<b>EMERGING MARKETS (FOREIGN CURRENCY)</b>						
BLMBRG BRCLYS EM LOCAL CURR. GOVT	2.9	2.9	10.0	4.7	0.9	n.a.
BLMBRG BRCLYS EM LOCAL CURR. GOVT *	1.0	1.0	3.1	2.2	1.8	n.a.
EURO vs. DOLLAR	2.4	2.4	15.0	4.6	-0.9	-2.5
YEN vs. DOLLAR	5.9	5.9	4.8	4.1	-2.4	-0.7
POUND vs. DOLLAR	3.7	3.7	12.2	-1.9	-1.6	-3.4

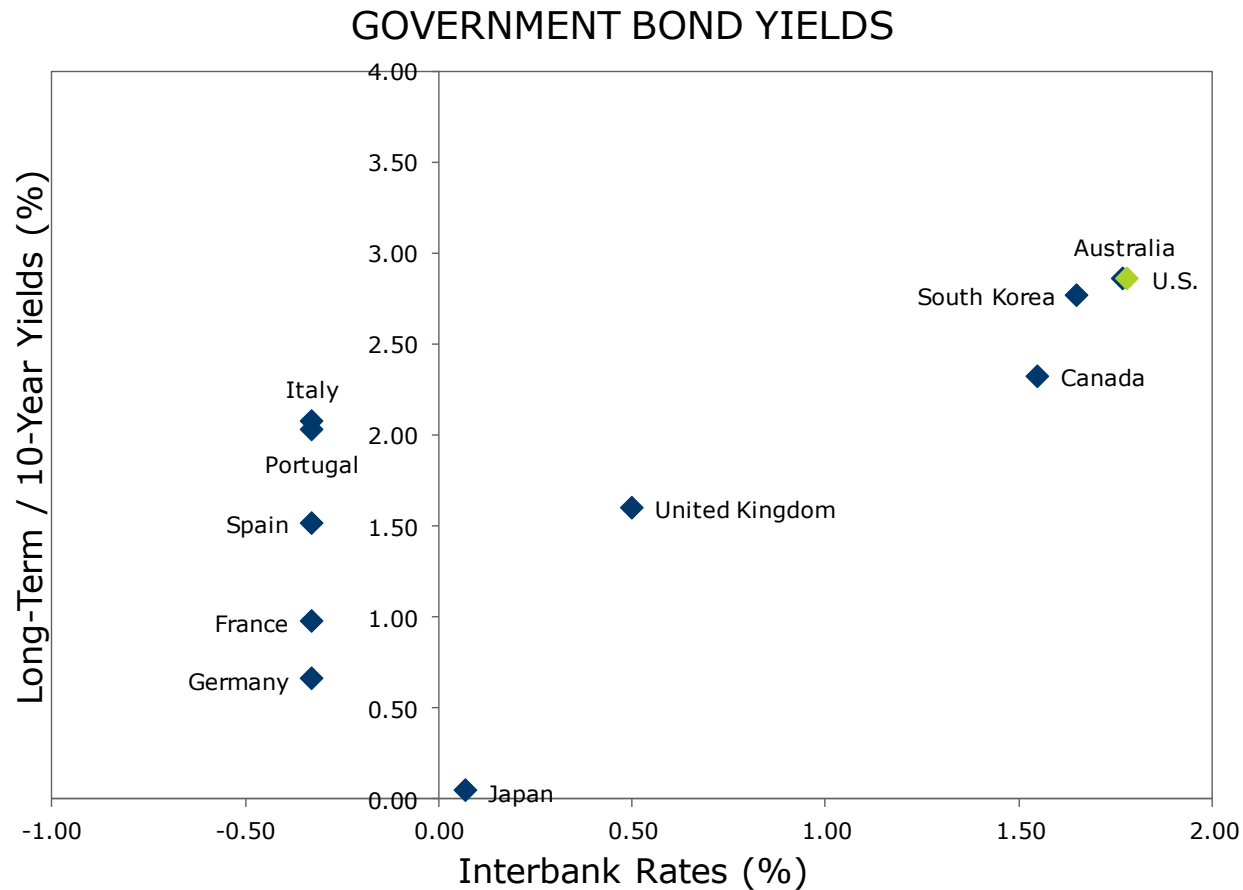
\* Returns are reported in terms of local market investors, which removes currency effects.



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

# GLOBAL INTEREST RATES

Rates remain depressed in Europe including negative short-term rates in the major economies of France and Germany

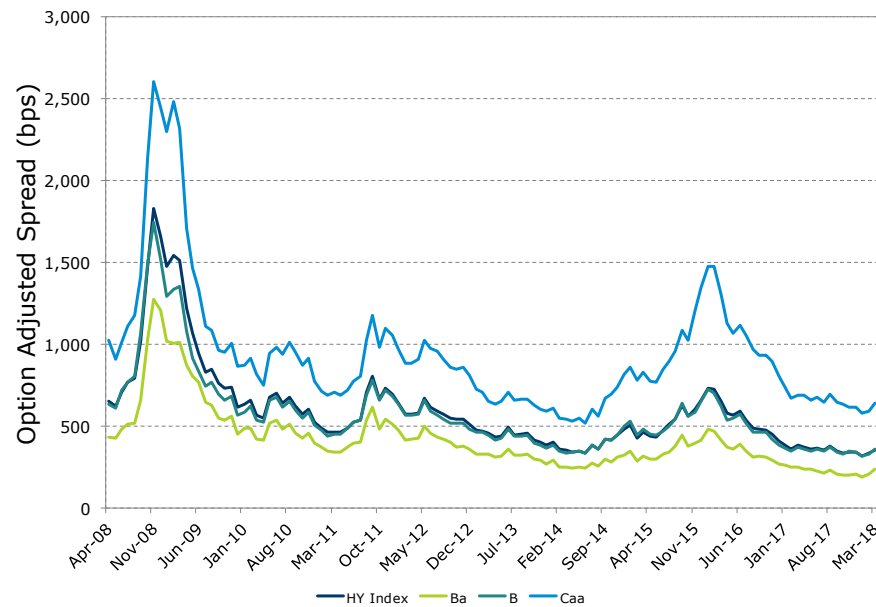


Data sources: Organization for Economic Co-operation and Development

# HIGH YIELD BOND MARKET

AS OF MARCH 31, 2018		QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		-0.9	-0.9	3.8	5.2	5.0	8.3
CREDIT SUISSE LEVERAGED LOAN		1.6	1.6	4.6	4.3	4.2	5.4
<b>HIGH YIELD QUALITY DISTRIBUTION</b>	<b>WEIGHT</b>						
Ba U.S. HIGH YIELD	43.5%	-1.6	-1.6	3.5	4.7	5.1	8.4
B U.S. HIGH YIELD	42.4%	-0.6	-0.6	3.3	4.4	4.4	6.8
Caa U.S. HIGH YIELD	13.2%	0.3	0.3	5.8	7.8	6.4	8.5
Ca to D U.S. HIGH YIELD	0.6%	2.2	2.2	6.8	-1.3	-9.5	2.1
Non-Rated U.S. HIGH YIELD	0.2%	0.2	0.2	3.7	-1.1	0.1	2.1

BLOOMBERG BARCLAYS HIGH YIELD INDEXES



Data sources: Wilshire Compass, Bloomberg Barclays

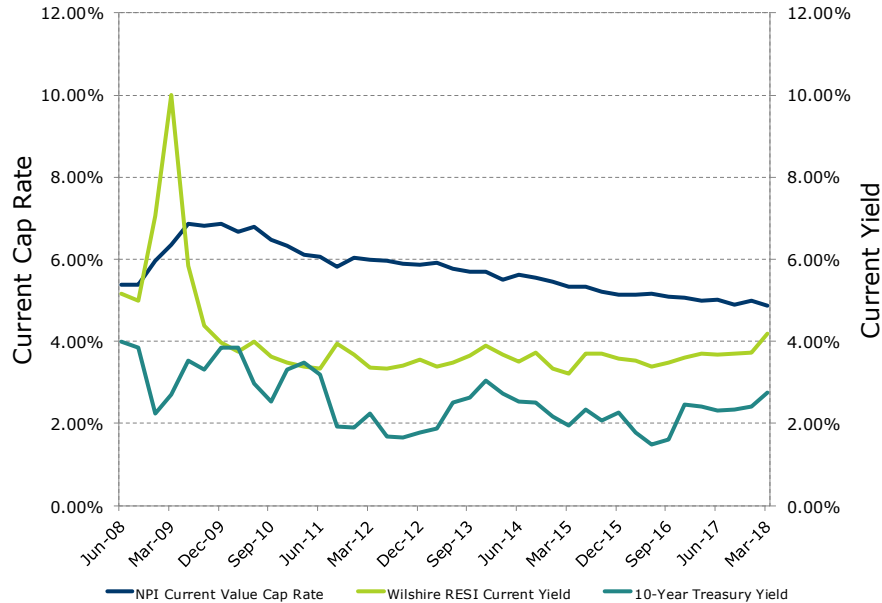


# Wilshire Consulting REAL ASSETS

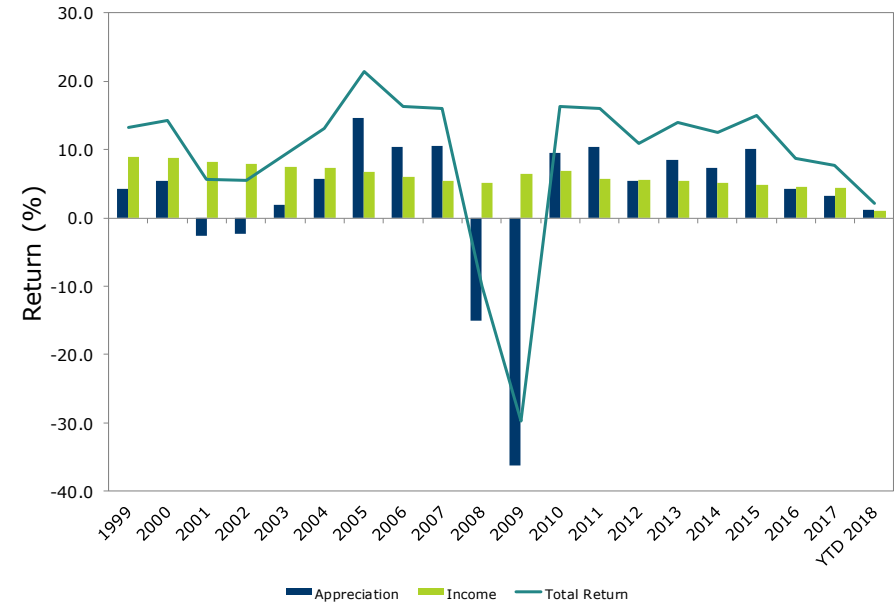


AS OF MARCH 31, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	-0.8	-0.8	0.9	1.3	0.0	2.9
BLOOMBERG COMMODITY INDEX	-0.4	-0.4	3.7	-3.2	-8.3	-7.7
WILSHIRE GLOBAL RESI INDEX	-5.2	-5.2	2.1	2.3	5.5	5.1
NCREIF ODCE FUND INDEX	2.2	2.2	8.1	10.0	11.4	5.1
NCREIF TIMBERLAND INDEX	0.9	0.9	3.8	3.4	6.1	4.1
ALERIAN MLP INDEX (OIL & GAS)	-11.1	-11.1	-20.1	-11.2	-5.8	5.6

REAL ESTATE VALUATION



NCREIF ODCE FUND INDEX RETURN



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



# TOTAL FUND

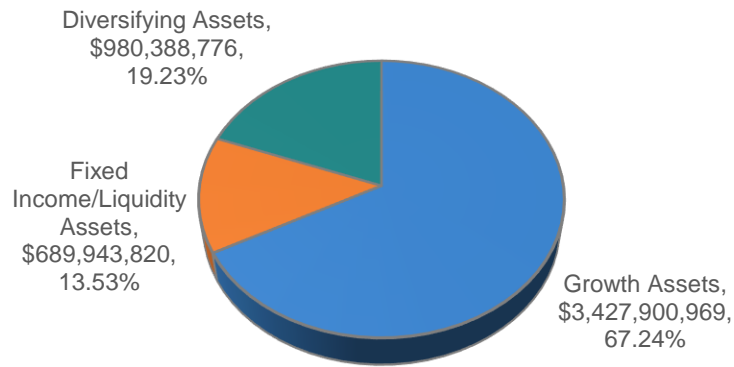
# ACTUAL ALLOCATION VS POLICY ALLOCATION

KRS Insurance Plan Composite

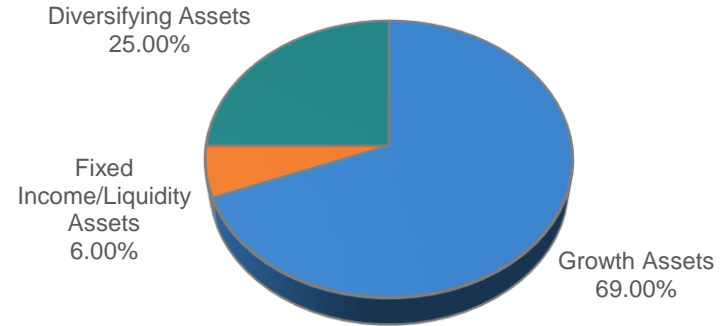
Asset Class Bucketing

As of March 31, 2018

**Total Fund**



**Policy Index**



**\$5,098,233,565**

# ACTUAL ALLOCATION VS POLICY ALLOCATION

KRS Insurance Plan Composite

Asset Class Bucketing

As of March 31, 2018

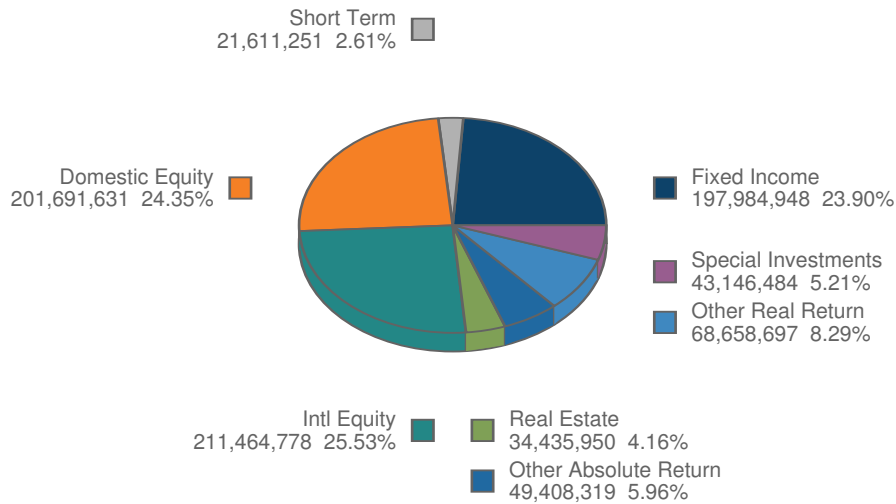
Asset Class / Bucket	Total Insurance Allocation		Policy Index	Relative (+/-)
	(\$)	(%)		
U.S. Equity	\$1,094,842,459	21.5%	17.5%	4.0%
Non-U.S. Equity	\$1,303,874,675	25.6%	17.5%	8.1%
Private Equity	\$513,181,133	10.1%	10.0%	0.1%
Credit / High Yield	\$516,002,702	10.1%	24.0%	-13.9%
<b>Growth Assets</b>	<b>\$3,427,900,969</b>	<b>67.2%</b>	<b>69.0%</b>	<b>-1.8%</b>
Core Fixed Income	\$564,549,068	11.1%	4.0%	7.1%
Cash	\$125,394,752	2.5%	2.0%	0.5%
<b>Fixed Income/Liquidity Assets</b>	<b>\$689,943,820</b>	<b>13.5%</b>	<b>6.0%</b>	<b>7.5%</b>
Real Estate	\$244,496,085	4.8%	5.0%	-0.2%
Real Return	\$422,617,228	8.3%	10.0%	-1.7%
Absolute Return	\$313,275,463	6.1%	10.0%	-3.9%
<b>Diversifying Assets</b>	<b>\$980,388,776</b>	<b>19.2%</b>	<b>25.0%</b>	<b>-5.8%</b>
<b>Total Fund</b>	<b>\$5,098,233,565</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

# ACTUAL ALLOCATION VS POLICY ALLOCATION

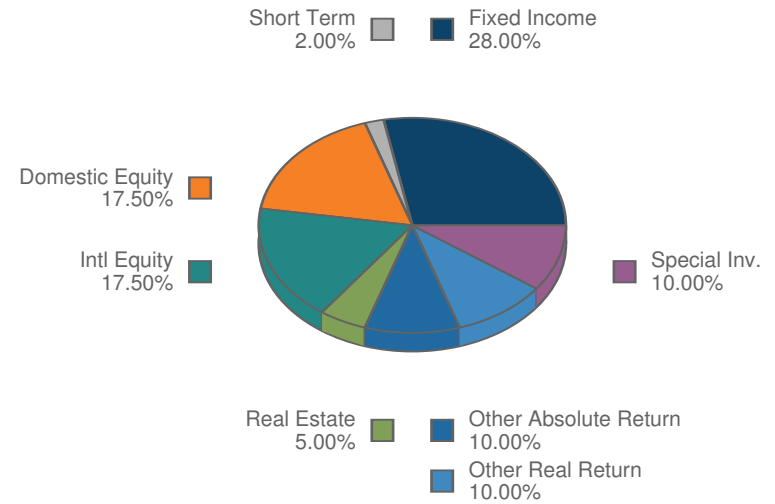
KERS Insurance Plan Composite

As of March 31, 2018

**Total Fund**



**Policy Index**

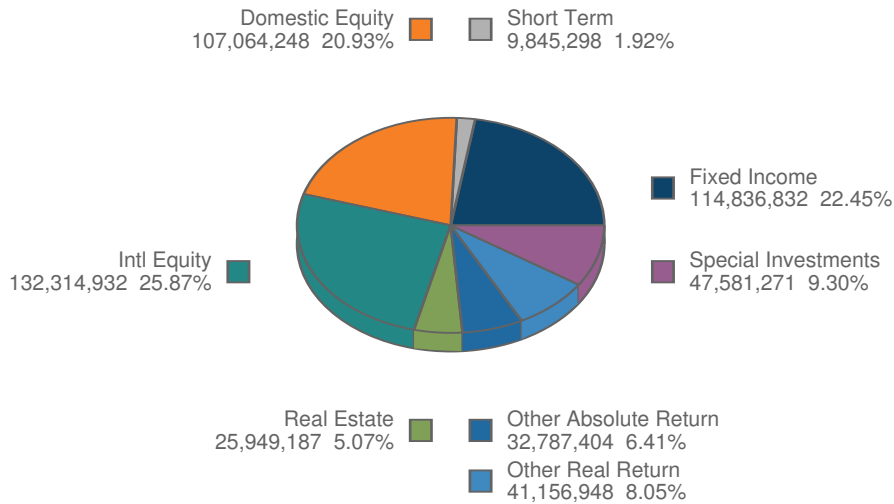


**\$828,402,057**

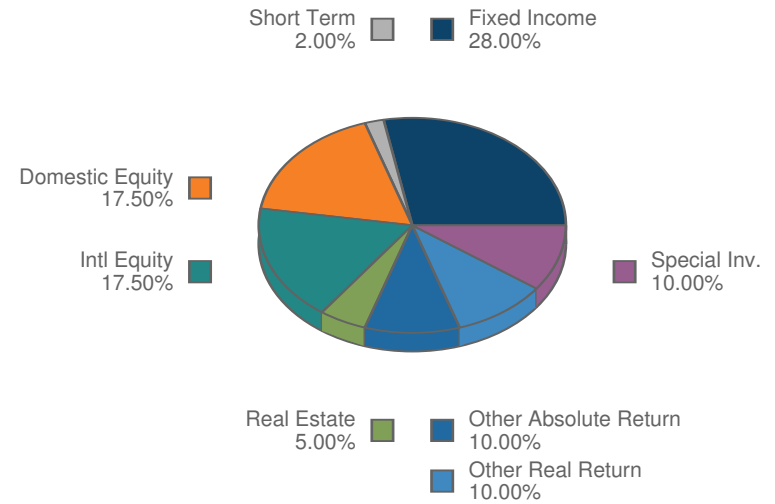
# ACTUAL ALLOCATION VS POLICY ALLOCATION

KERS (H) Insurance Plan Composite  
As of March 31, 2018

**Total Fund**



**Policy Index**



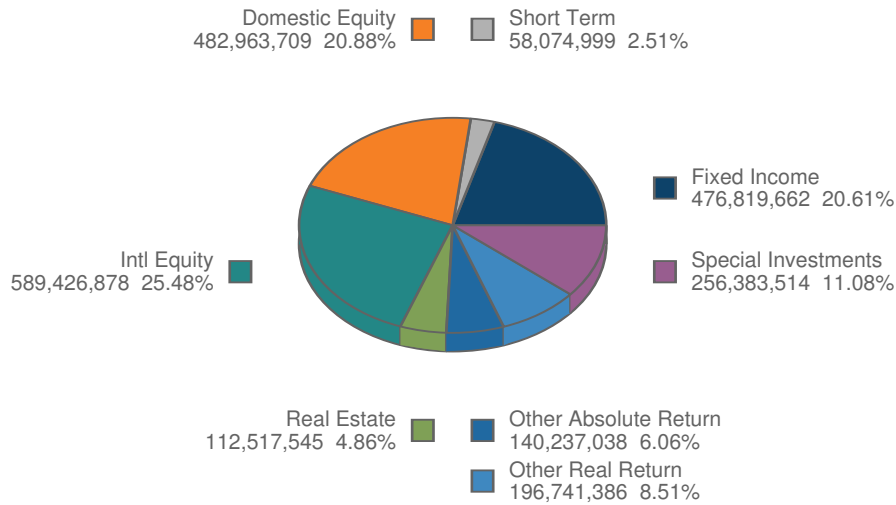
**\$511,536,121**

# ACTUAL ALLOCATION VS POLICY ALLOCATION

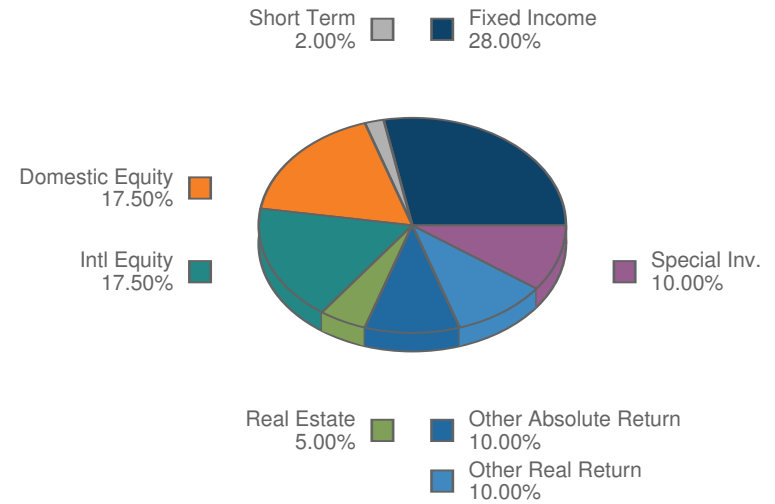
CERS Insurance Plan Composite

As of March 31, 2018

**Total Fund**



**Policy Index**



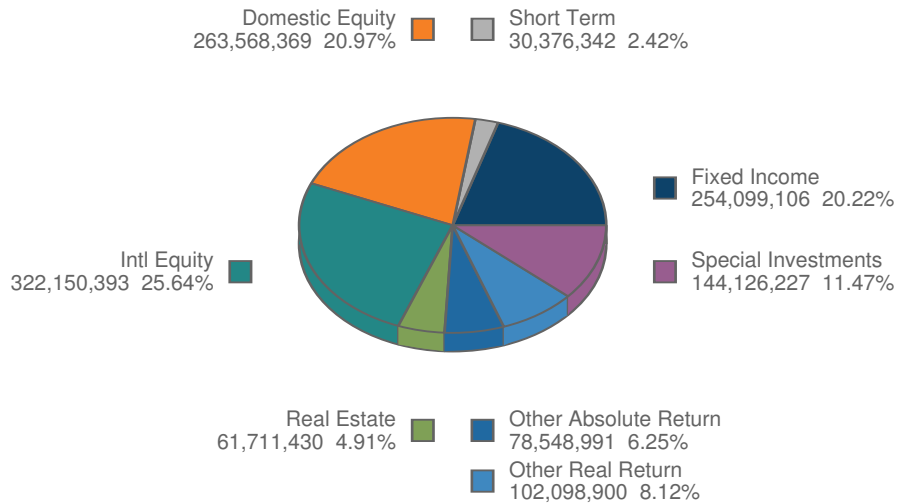
**\$2,313,164,730**

# ACTUAL ALLOCATION VS POLICY ALLOCATION

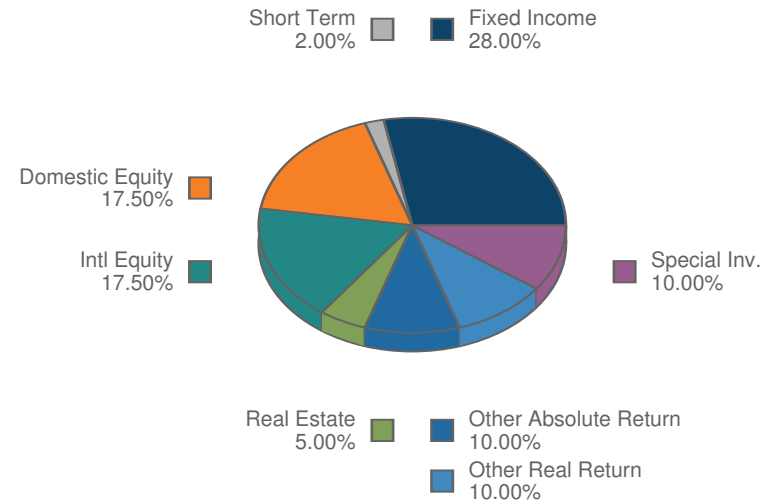
CERS (H) Insurance Plan Composite

As of March 31, 2018

**Total Fund**



**Policy Index**



**\$1,256,679,757**

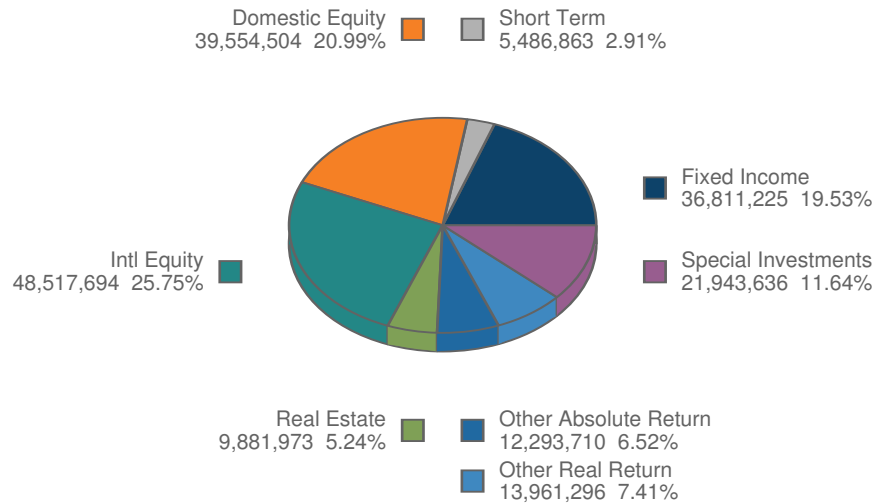


# ACTUAL ALLOCATION VS POLICY ALLOCATION

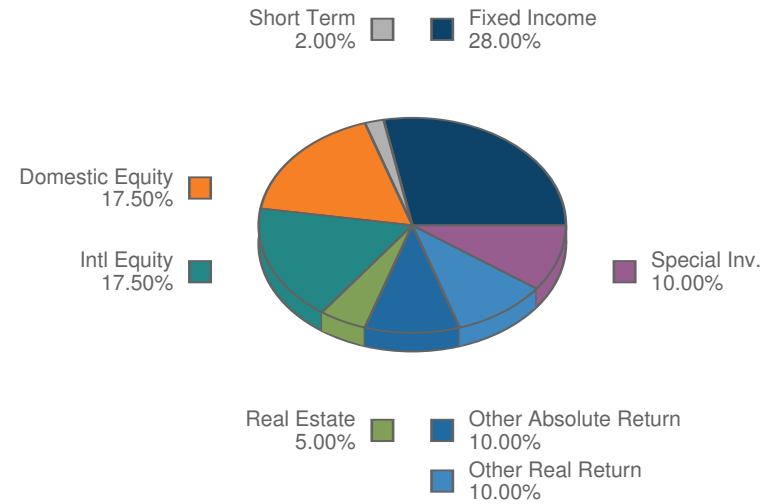
SPRS Insurance Plan Composite

As of March 31, 2018

**Total Fund**



**Policy Index**

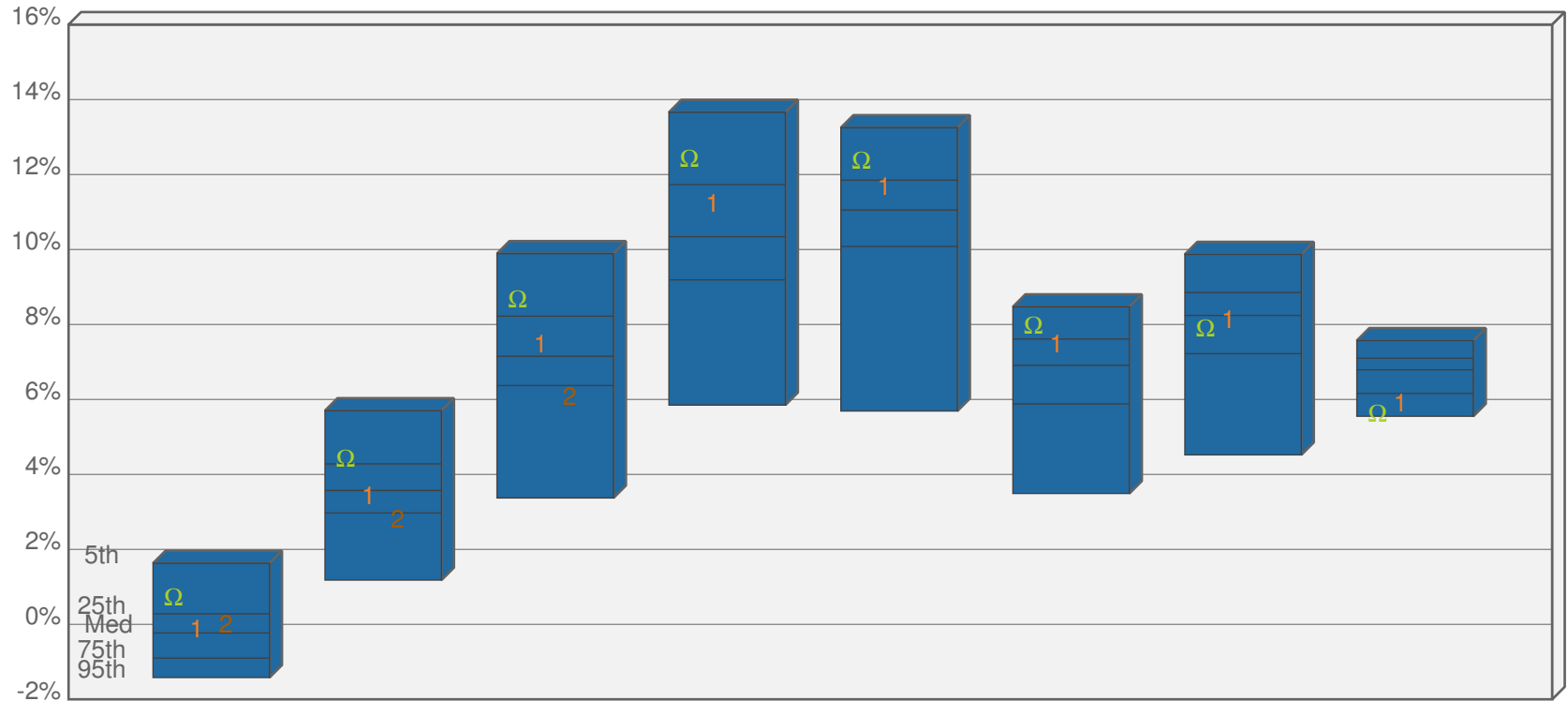


**\$188,450,901**

# PERFORMANCE COMPARISON

## KRS Insurance Plan Composite

Periods Ended March 31, 2018



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
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Ω KRS Insurance Plan  
1 KRS Allocation I  
2 KRS IPS Benchmark

	0.73 (11)	4.44 (20)	8.69 (15)	12.45 (15)	12.40 (13)	8.00 (12)	7.92 (61)	5.64 (88)
	-0.12 (47)	3.45 (55)	7.50 (43)	11.23 (33)	11.69 (28)	7.48 (27)	8.15 (53)	5.92 (84)
	0.02 (38)	2.82 (77)	6.10 (79)					

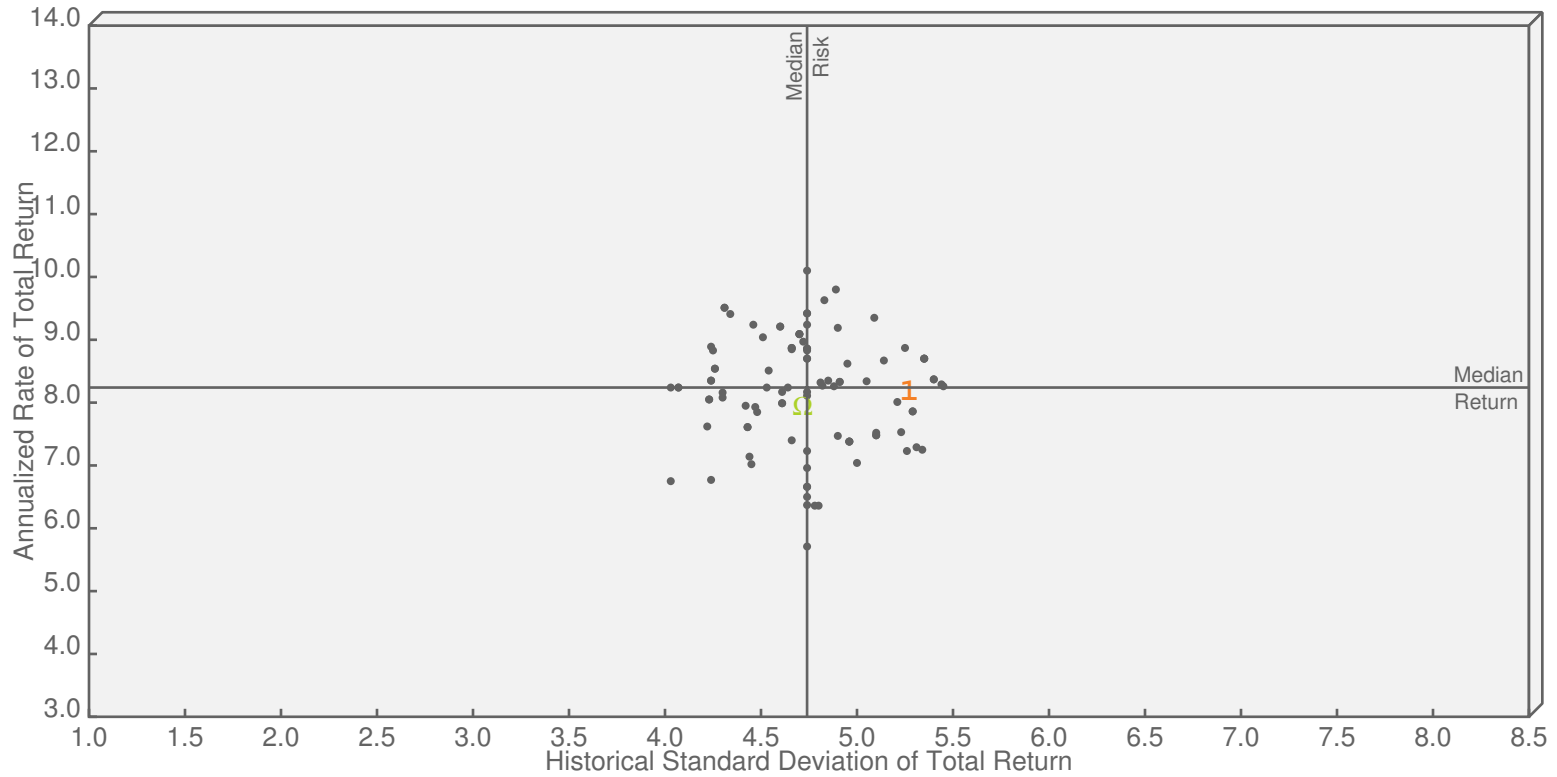
5th %tile	1.63	5.70	9.89	13.66	13.25	8.47	9.87	7.57
25th %tile	0.28	4.28	8.22	11.73	11.85	7.61	8.85	7.10
Median	-0.23	3.57	7.15	10.34	11.05	6.91	8.24	6.79
75th %tile	-0.90	2.97	6.37	9.19	10.08	5.88	7.22	6.16
95th %tile	-1.42	1.18	3.37	5.85	5.69	3.49	4.52	5.55
Number of Funds	137	137	135	135	135	135	133	112

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

# RISK / RETURN ANALYSIS

## KRS Insurance Plan

Five Years Ending March 31, 2018



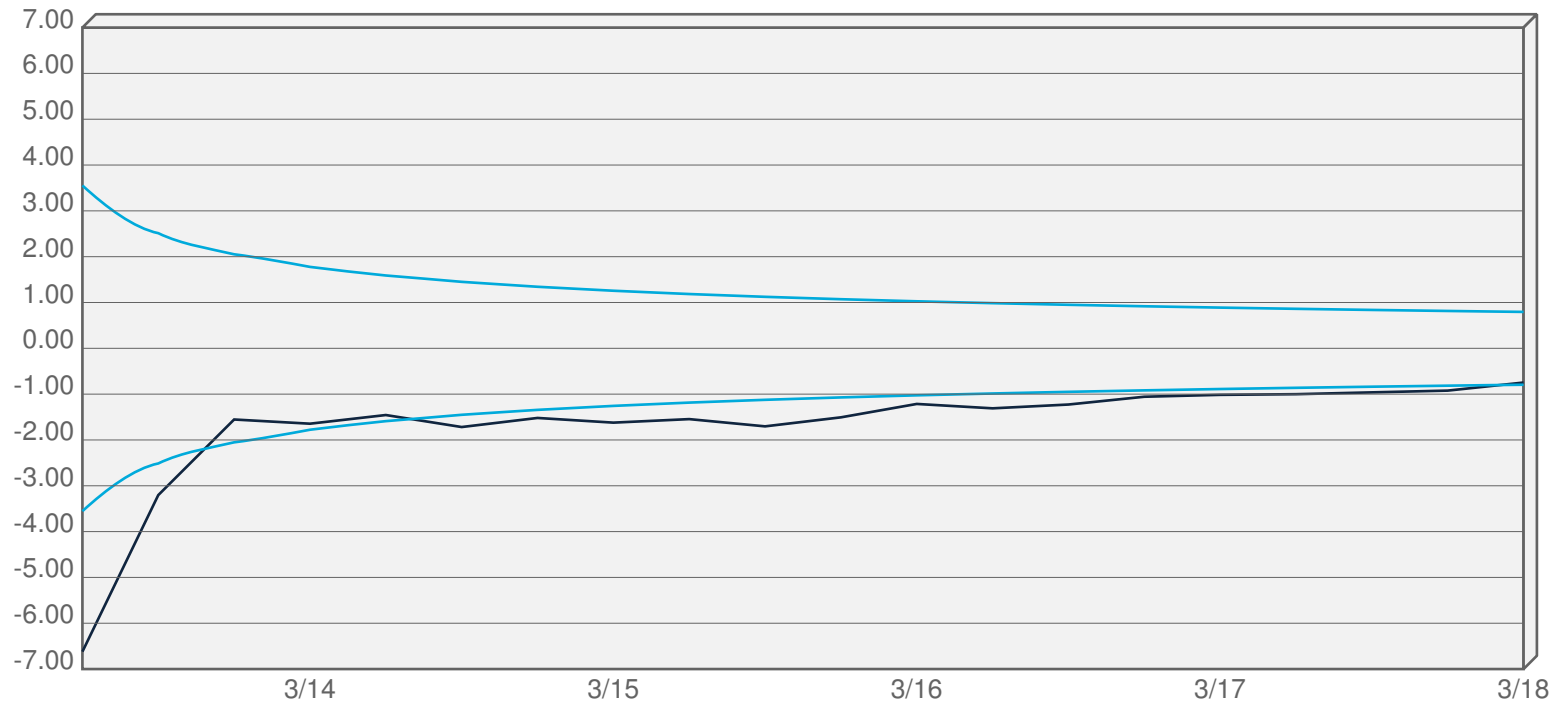
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
KRS Insurance Plan	Ω	7.92	61	4.74	51
KRS Allocation Index	1	8.15	53	5.30	18
Median		8.24		4.74	

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

# CUMULATIVE SKILL ANALYSIS

KRS Insurance Plan Composite

Five Years Ending March 31, 2018



— Quarterly NOF Value Added vs. KRS Allocation Index

— 80% Confidence Band

Excess Return:	-0.75	Information Ratio:	-0.69
Excess Risk:	1.08	T-Stat:	-1.55

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>KRS Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.48</b>	<b>4.02</b>	<b>8.02</b>	<b>11.56</b>	<b>7.29</b>	<b>7.33</b>	<b>5.32</b>	<b>3/31/87</b>	<b>7.50</b>
KRS Allocation Index	-0.12	3.45	7.50	11.23	7.48	8.15	5.92	3/31/87	7.91
Value Added	0.60	0.57	0.52	0.32	-0.19	-0.82	-0.60	3/31/87	-0.41
KRS IPS Benchmark	0.02	2.82	6.10						
<b>KERS Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.12</b>	<b>3.45</b>	<b>7.24</b>	<b>10.64</b>	<b>6.86</b>	<b>6.91</b>	<b>5.12</b>	<b>3/31/87</b>	<b>7.43</b>
KERS Allocation Index	-0.27	3.24	7.29	11.02	7.31	7.99	5.84	3/31/87	7.88
Value Added	0.39	0.21	-0.05	-0.38	-0.45	-1.08	-0.73	3/31/87	-0.45
KERS IPS Benchmark	-0.13	2.61	5.90						
Assumed Rate 6.25%	1.53	3.08	4.65						
<b>KERS (H) Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.43</b>	<b>3.95</b>	<b>7.90</b>	<b>11.41</b>	<b>7.20</b>	<b>7.32</b>	<b>5.32</b>	<b>3/31/87</b>	<b>7.50</b>
KERS (H) Allocation Index	-0.15	3.41	7.46	11.19	7.37	8.03	5.86	3/31/87	7.89
Value Added	0.58	0.53	0.44	0.22	-0.17	-0.71	-0.54	3/31/87	-0.39
KERS (H) IPS Benchmark	-0.01	2.78	6.06						
Assumed Rate 6.25%	1.53	3.08	4.65						
<b>CERS Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.54</b>	<b>4.12</b>	<b>8.15</b>	<b>11.70</b>	<b>7.35</b>	<b>7.40</b>	<b>5.36</b>	<b>3/31/87</b>	<b>7.51</b>
CERS Allocation Index	-0.12	3.46	7.52	11.25	7.39	8.04	5.87	3/31/87	7.89
Value Added	0.65	0.66	0.63	0.45	-0.04	-0.64	-0.51	3/31/87	-0.38
CERS IPS Benchmark	0.02	2.83	6.12						
Assumed Rate 6.25%	1.53	3.08	4.65						

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>CERS (H) Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.58</b>	<b>4.18</b>	<b>8.21</b>	<b>11.80</b>	<b>7.43</b>	<b>7.45</b>	<b>5.38</b>	<b>3/31/87</b>	<b>7.52</b>
CERS (H) Allocation Index	-0.11	3.47	7.52	11.26	7.39	8.04	5.87	3/31/87	7.89
Value Added	0.69	0.71	0.69	0.54	0.04	-0.59	-0.49	3/31/87	-0.37
CERS (H) IPS Benchmark	0.03	2.84	6.13						
Assumed Rate 6.25%	1.53	3.08	4.65						
<b>SPRS Insurance Plan</b>									
<b>Net of Fee Return</b>	<b>0.60</b>	<b>4.20</b>	<b>8.25</b>	<b>11.85</b>	<b>7.42</b>	<b>7.43</b>	<b>5.37</b>	<b>3/31/87</b>	<b>7.51</b>
SPRS Allocation Index	-0.12	3.46	7.51	11.25	7.39	8.04	5.87	3/31/87	7.89
Value Added	0.72	0.75	0.74	0.61	0.03	-0.61	-0.49	3/31/87	-0.37
SPRS IPS Benchmark	0.02	2.82	6.12						
Assumed Rate 6.25%	1.53	3.08	4.65						

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>US Equity Composite</b>									
<b>Net of Fee Return</b>	<b>-0.69</b>	<b>5.27</b>	<b>9.83</b>	<b>12.82</b>	<b>9.80</b>	<b>12.42</b>	<b>9.23</b>	<b>6/30/92</b>	<b>9.67</b>
Russell 3000	-0.64	5.65	10.48	13.81	10.22	13.03	9.62	6/30/92	9.82
Value Added	-0.05	-0.38	-0.65	-1.00	-0.43	-0.62	-0.39	6/30/92	-0.16
<b>Non-US Equity Composite</b>									
<b>Net of Fee Return</b>	<b>0.09</b>	<b>5.65</b>	<b>12.79</b>	<b>19.83</b>	<b>7.86</b>	<b>7.22</b>	<b>1.84</b>	<b>3/31/00</b>	<b>2.57</b>
Policy Index	-1.06	4.11	10.72	17.42	6.79	6.44	2.97	3/31/00	2.87
Value Added	1.15	1.54	2.07	2.41	1.06	0.79	-1.13	3/31/00	-0.30
<b>Fixed Income Composite</b>									
<b>Net of Fee Return</b>	<b>-0.28</b>	<b>0.11</b>	<b>1.08</b>	<b>2.63</b>	<b>3.73</b>	<b>3.15</b>	<b>4.38</b>	<b>6/30/92</b>	<b>6.38</b>
Policy Index	-1.13	-0.69	0.79	2.65	4.46	3.83	4.42	6/30/92	6.35
Value Added	0.85	0.80	0.29	-0.02	-0.73	-0.68	-0.04	6/30/92	0.03
Bloomberg Global Aggregate	1.36	2.45	4.26	6.97	3.14	1.49	2.57	6/30/92	5.20
<b>Real Return Composite</b>									
<b>Net of Fee Return</b>	<b>-0.32</b>	<b>0.42</b>	<b>1.81</b>	<b>2.48</b>	<b>3.10</b>	<b>1.57</b>		<b>6/30/11</b>	<b>3.54</b>
Real Return Index (I)	-1.60	-1.08	-0.56	-0.48	1.42	1.78		6/30/11	2.50
Value Added	1.29	1.50	2.37	2.96	1.68	-0.21		6/30/11	1.04
<b>Real Estate Composite</b>									
<b>Net of Fee Return</b>	<b>2.27</b>	<b>4.59</b>	<b>7.23</b>	<b>9.60</b>	<b>9.60</b>	<b>9.01</b>		<b>6/30/09</b>	<b>9.24</b>
NCREIF ODCE NOF 1 Quarter Lag	1.85	3.52	5.04	6.66	9.42	10.52		6/30/09	7.86
Value Added	0.42	1.07	2.19	2.94	0.18	-1.51		6/30/09	1.38
<b>Absolute Return Composite</b>									
<b>Net of Fee Return</b>	<b>1.61</b>	<b>2.94</b>	<b>5.01</b>	<b>5.46</b>	<b>2.14</b>	<b>4.14</b>		<b>3/31/10</b>	<b>4.15</b>
HFRI FOF Div (1 Month Lag)	1.43	3.13	4.78	5.73	1.84	3.50		3/31/10	3.09
Value Added	0.17	-0.20	0.23	-0.27	0.30	0.64		3/31/10	1.06

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Private Equity Composite</b>									
<b>Net of Fee Return</b>	<b>4.45</b>	<b>8.11</b>	<b>13.28</b>	<b>19.90</b>	<b>14.18</b>	<b>15.26</b>	<b>10.63</b>	<b>6/30/02</b>	<b>10.12</b>
KRS Short Term PE Index	4.45	8.11	13.28	19.90	14.18	15.26	10.63	6/30/02	10.12
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	7.12	12.85	17.34	25.09	15.44	19.78	13.01	6/30/02	11.13
<b>Cash Composite</b>									
<b>Net of Fee Return</b>	<b>0.50</b>	<b>1.13</b>	<b>1.52</b>	<b>1.75</b>	<b>0.83</b>	<b>0.59</b>	<b>0.55</b>	<b>6/30/92</b>	<b>2.67</b>
91-Day Treasury Bill	0.35	0.63	0.90	1.10	0.53	0.34	0.34	6/30/92	2.63
Value Added	0.15	0.50	0.62	0.65	0.31	0.25	0.21	6/30/92	0.03



# CUSTOM BENCHMARK SPECIFICATION

KRS Insurance Plan

March 31, 2018

	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			
KRS IPS Benchmark	9/17	9/17	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 Index (\$G)
17.50	Russell 3000			

# CUSTOM BENCHMARK SPECIFICATION

KRS Insurance Plan

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
KRS IPS Benchmark (cont.)	12/17	3/18	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

# CUSTOM BENCHMARK SPECIFICATION

KERS Insurance Plan

March 31, 2018

	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	24.50	Russell 3000
			10.00	KERS 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	
10.00	HFRI Diversified Index			
KERS IPS Benchmark	9/17	9/17	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 Index (\$G)
17.50	Russell 3000			

# CUSTOM BENCHMARK SPECIFICATION

KERS Insurance Plan

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
KERS IPS Benchmark (cont.)	12/17	3/18	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 Short Term PE Benchmark
			2.00	91-Day Treasury Bill
Assumed Rate 6.25%	9/17	3/18	100.00	Assumed Rate 6.25%

# CUSTOM BENCHMARK SPECIFICATION

KERS (H) Insurance Plan

March 31, 2018

	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
	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	
KERS (H) IPS Benchmark	9/17	9/17	17.50	Russell 3000
			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	

# CUSTOM BENCHMARK SPECIFICATION

KERS (H) Insurance Plan

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
KERS (H) IPS Benchmark (cont.)	12/17	3/18	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
Assumed Rate 6.25%	9/17	3/18	100.00	Assumed Rate 6.25%

# CUSTOM BENCHMARK SPECIFICATION

CERS Insurance Plan

March 31, 2018

	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			
CERS IPS Benchmark	9/17	9/17	17.50	Russell 3000
			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

# CUSTOM BENCHMARK SPECIFICATION

CERS Insurance Plan

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
CERS IPS Benchmark (cont.)	12/17	3/18	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
Assumed Rate 6.25%	9/17	3/18	100.00	Assumed Rate 6.25%



# CUSTOM BENCHMARK SPECIFICATION

## CERS (H) Insurance Plan

March 31, 2018

	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			
CERS (H) IPS Benchmark	9/17	9/17	17.50	Russell 3000
			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			

# CUSTOM BENCHMARK SPECIFICATION

CERS (H) Insurance Plan

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
CERS (H) IPS Benchmark (cont.)	12/17	3/18	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
Assumed Rate 6.25%	9/17	3/18	100.00	Assumed Rate 6.25%

# CUSTOM BENCHMARK SPECIFICATION

SPRS Insurance Plan

March 31, 2018

	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			
SPRS IPS Benchmark	9/17	9/17	17.50	Russell 3000
			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			

# CUSTOM BENCHMARK SPECIFICATION

SPRS Insurance Plan

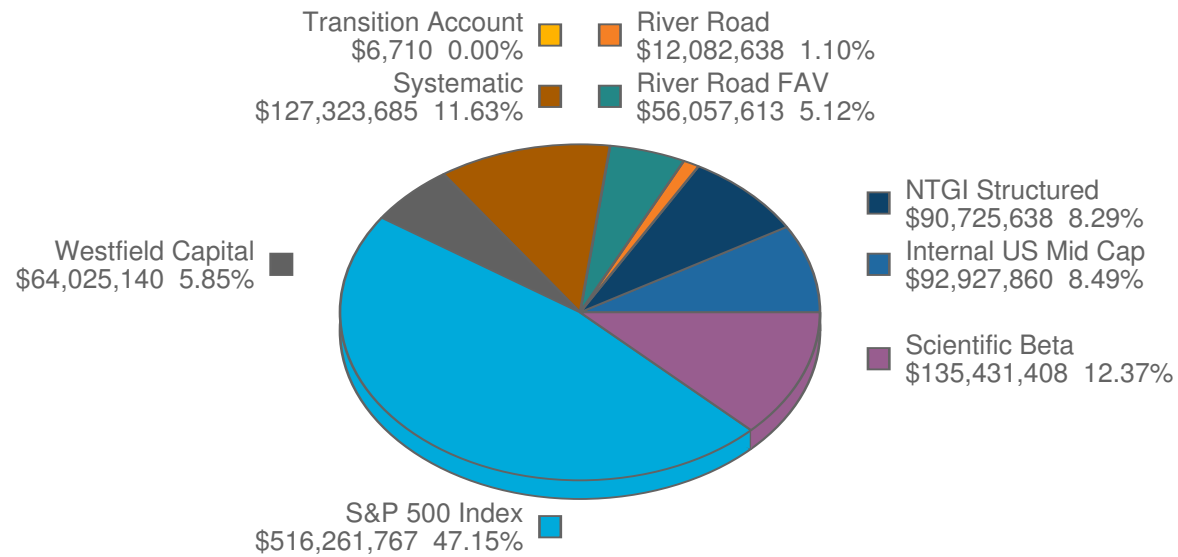
March 31, 2018

	Quarter Start	Quarter End	Percent	Description
SPRS IPS Benchmark (cont.)	12/17	3/18	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
Assumed Rate 6.25%	9/17	3/18	100.00	Assumed Rate 6.25%



# US EQUITY

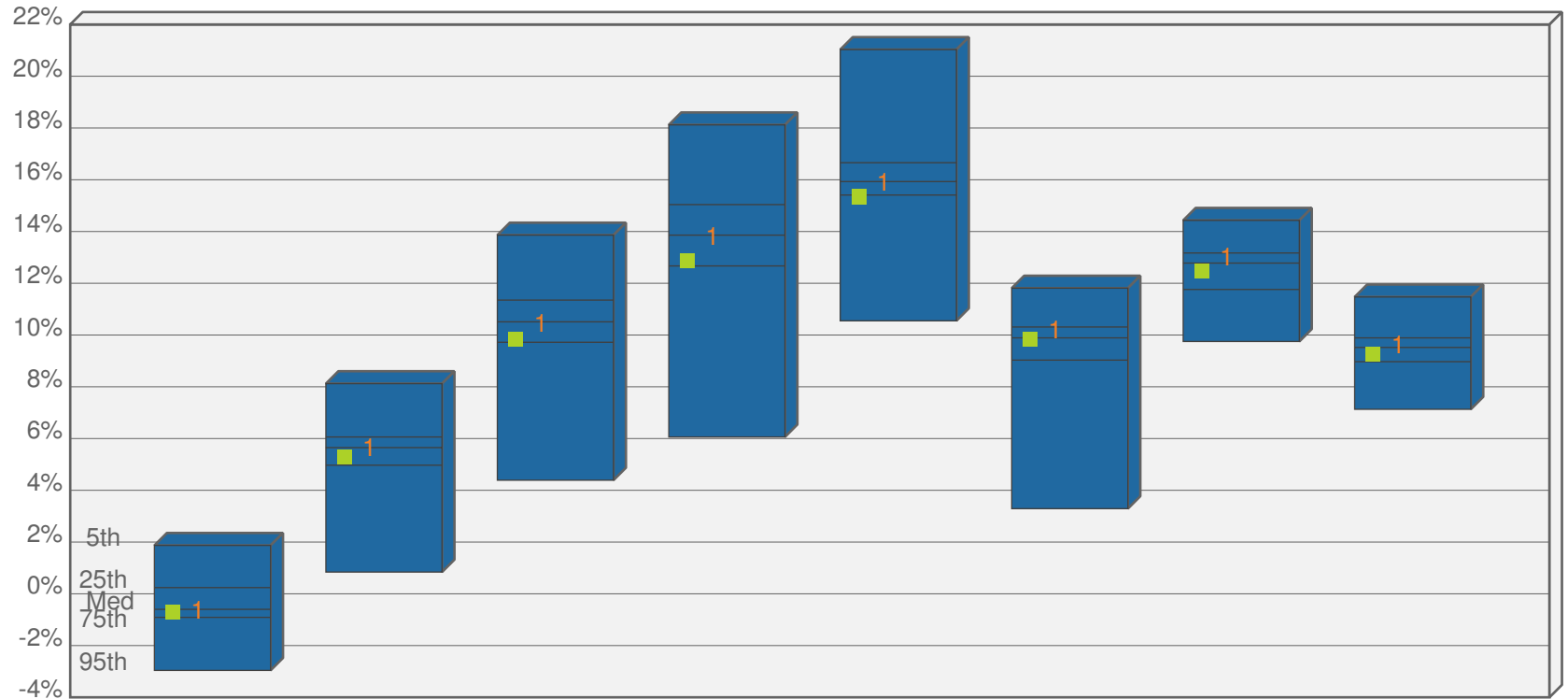
Wilshire Consulting  
**MANAGER ALLOCATION**  
 US Equity Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

## US Equity Composite

Periods Ended March 31, 2018



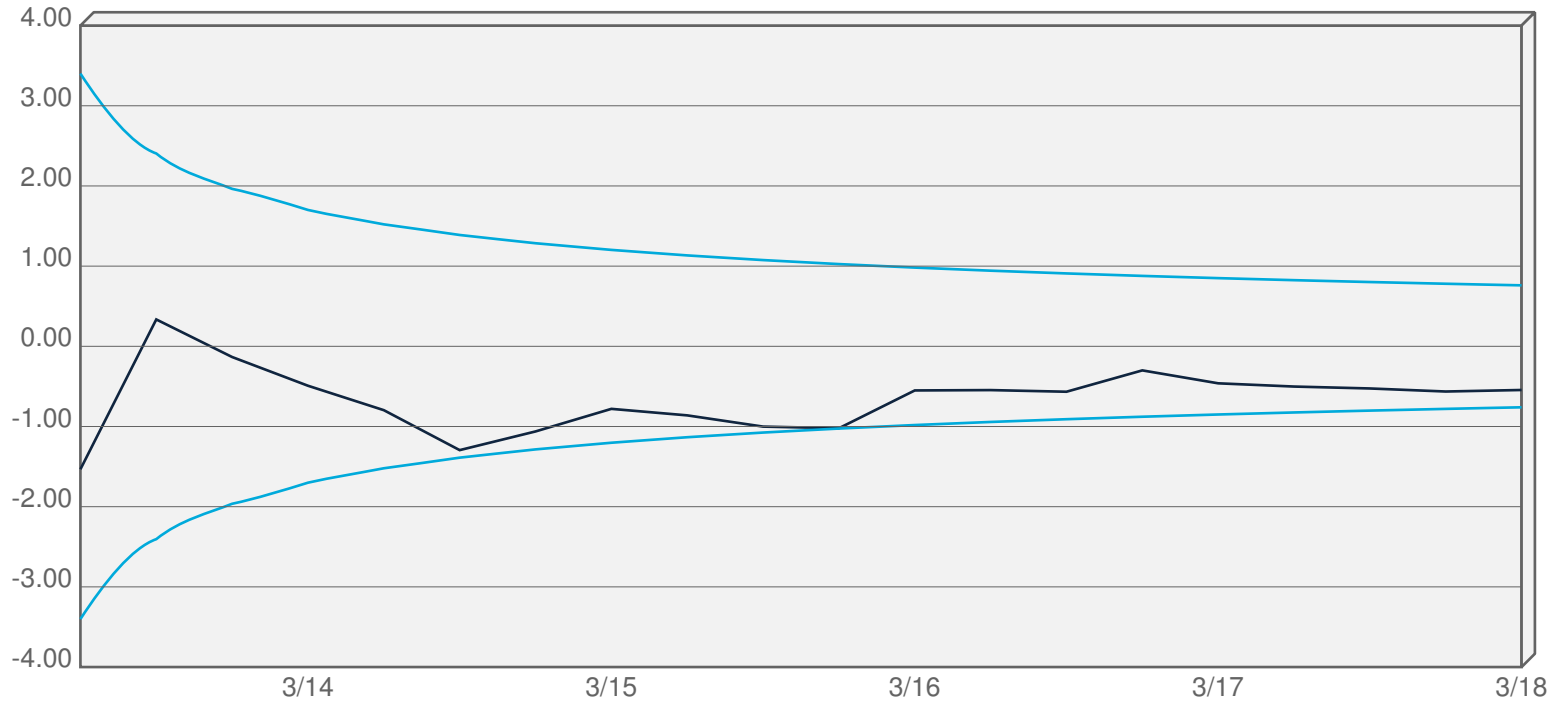
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ US Equity Composite	-0.66 (54)	5.32 (64)	9.90 (69)	12.93 (69)	15.41 (75)	9.89 (51)	12.54 (60)	9.31 (65)
┆ Russell 3000	-0.64 (51)	5.65 (50)	10.48 (52)	13.81 (55)	15.92 (50)	10.22 (30)	13.03 (38)	9.62 (43)
5th %tile	1.87	8.12	13.86	18.12	21.03	11.81	14.43	11.47
25th %tile	0.24	6.06	11.35	15.04	16.66	10.31	13.17	9.89
Median	-0.60	5.65	10.51	13.86	15.93	9.89	12.78	9.52
75th %tile	-0.91	4.97	9.72	12.67	15.41	9.03	11.76	8.97
95th %tile	-2.96	0.84	4.39	6.06	10.55	3.29	9.75	7.13
Number of Funds	109	108	105	104	100	93	78	66

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

# CUMULATIVE SKILL ANALYSIS

US Equity Composite

Five Years Ending March 31, 2018



— Quarterly NOF Value Added vs. Russell 3000

— 80% Confidence Band

Excess Return:	-0.54	Information Ratio:	-0.53
Excess Risk:	1.03	T-Stat:	-1.18



# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>S&amp;P 500 Index</b>									
<b>Net of Fee Return</b>	<b>-0.72</b>	<b>5.90</b>	<b>10.64</b>	<b>14.11</b>	<b>10.80</b>	<b>13.29</b>	<b>9.87</b>	<b>6/30/01</b>	<b>7.28</b>
Standard & Poor's 500	-0.76	5.84	10.58	13.99	10.78	13.31	9.49	6/30/01	6.81
Value Added	0.03	0.06	0.06	0.11	0.02	-0.02	0.38	6/30/01	0.47
<b>Scientific Beta</b>									
<b>Net of Fee Return</b>	<b>0.27</b>	<b>6.41</b>	<b>9.64</b>	<b>13.49</b>				<b>6/30/16</b>	<b>13.21</b>
Standard & Poor's 500	-0.76	5.84	10.58	13.99				6/30/16	16.36
Value Added	1.03	0.58	-0.94	-0.50				6/30/16	-3.16
<b>River Road</b>									
<b>Net of Fee Return</b>	<b>-3.33</b>	<b>0.65</b>	<b>2.90</b>	<b>3.07</b>	<b>7.00</b>	<b>9.57</b>		<b>6/30/11</b>	<b>10.63</b>
Russell 3000 Value	-2.82	2.11	5.45	6.81	7.87	10.71		6/30/11	11.41
Value Added	-0.51	-1.47	-2.55	-3.74	-0.87	-1.14		6/30/11	-0.78
<b>River Road FAV</b>									
<b>Net of Fee Return</b>	<b>0.09</b>	<b>1.24</b>	<b>4.85</b>	<b>8.80</b>				<b>6/30/16</b>	<b>17.34</b>
Russell 3000 Value	-2.82	2.11	5.45	6.81				6/30/16	12.32
Value Added	2.91	-0.87	-0.59	1.99				6/30/16	5.02
<b>Westfield Capital</b>									
<b>Net of Fee Return</b>	<b>2.79</b>	<b>8.03</b>	<b>14.04</b>	<b>20.23</b>	<b>8.29</b>	<b>13.34</b>		<b>6/30/11</b>	<b>12.91</b>
Russell 3000 Growth	1.48	9.20	15.68	21.06	12.57	15.32		6/30/11	14.30
Value Added	1.30	-1.17	-1.63	-0.83	-4.28	-1.99		6/30/11	-1.39
<b>Systematic</b>									
<b>Net of Fee Return</b>	<b>-3.27</b>	<b>4.59</b>	<b>10.68</b>	<b>10.41</b>	<b>7.34</b>	<b>9.72</b>		<b>6/30/12</b>	<b>12.47</b>
Russell Mid Cap Value	-2.50	2.86	5.07	6.50	7.23	11.10		6/30/12	14.01
Value Added	-0.76	1.73	5.61	3.91	0.11	-1.39		6/30/12	-1.54

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

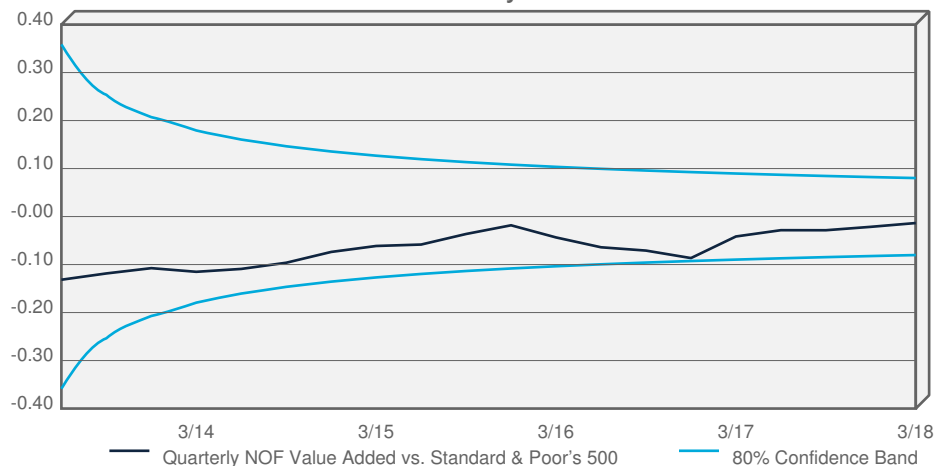
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Internal US Mid Cap</b>									
<b>Net of Fee Return</b>	<b>-0.59</b>	<b>5.76</b>	<b>9.18</b>	<b>11.32</b>	<b>9.15</b>			<b>9/30/14</b>	<b>11.31</b>
S&P 400 Mid Cap	-0.77	5.43	8.83	10.97	8.96			9/30/14	11.18
Value Added	0.18	0.33	0.35	0.34	0.19			9/30/14	0.13
<b>NTGI Structured</b>									
<b>Net of Fee Return</b>	<b>-0.12</b>	<b>3.40</b>	<b>9.00</b>	<b>11.78</b>	<b>8.69</b>	<b>11.95</b>		<b>6/30/11</b>	<b>11.92</b>
Russell 2000	-0.08	3.25	9.11	11.79	8.39	11.47		6/30/11	11.06
Value Added	<b>-0.04</b>	0.15	<b>-0.10</b>	<b>-0.01</b>	0.30	0.48		6/30/11	0.86
<b>Transition Account</b>									
<b>Net of Fee Return</b>								<b>6/30/11</b>	
<b>US Equity Composite</b>									
<b>Net of Fee Return</b>	<b>-0.69</b>	<b>5.27</b>	<b>9.83</b>	<b>12.82</b>	<b>9.80</b>	<b>12.42</b>	<b>9.23</b>	<b>6/30/92</b>	<b>9.67</b>
Russell 3000	-0.64	5.65	10.48	13.81	10.22	13.03	9.62	6/30/92	9.82
Value Added	<b>-0.05</b>	<b>-0.38</b>	<b>-0.65</b>	<b>-1.00</b>	<b>-0.43</b>	<b>-0.62</b>	<b>-0.39</b>	6/30/92	<b>-0.16</b>

# INVESTMENT MANAGER ANALYSIS

S&P 500 Index

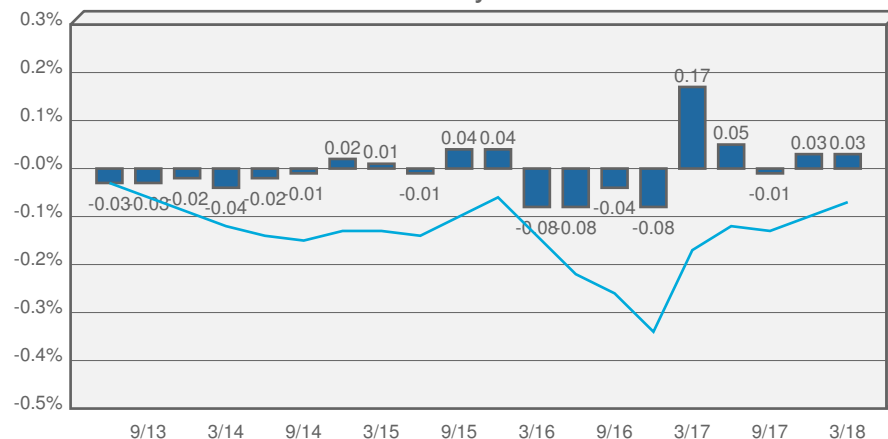
March 31, 2018

Cumulative Skill Analysis vs Benchmark



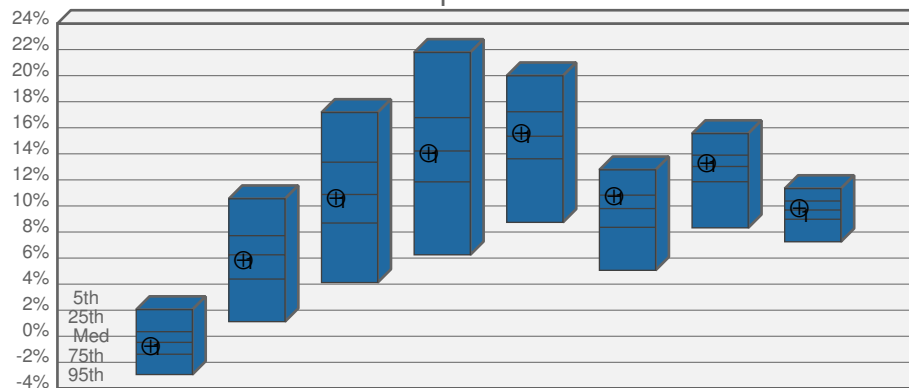
Excess Return:	-0.01	Information Ratio:	-0.12
Excess Risk:	0.11	T-Stat:	-0.28

Value-Added Analysis vs Benchmark



Quarterly NOF Value Added vs. Standard & Poor's 500  
Cumulative Value Added

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	-0.72 (58)	5.90 (54)	10.64 (53)	14.11 (50)	15.61 (44)	10.80 (25)	13.30 (44)	9.87 (43)
1 Standard & Poo	-0.76 (60)	5.84 (55)	10.58 (53)	13.99 (51)	15.57 (44)	10.78 (25)	13.31 (42)	9.49 (56)
Median	-0.47	6.25	10.88	14.22	15.35	9.80	13.03	9.69
Number of Funds	174	174	174	174	172	170	164	139

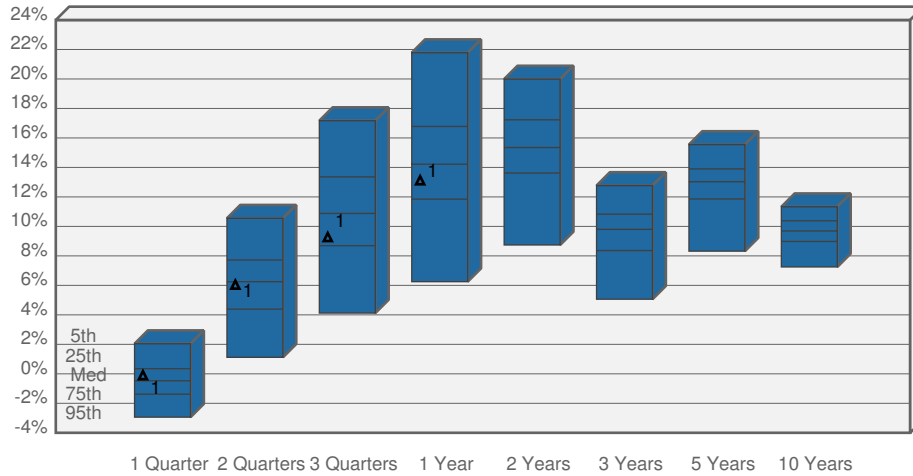
\*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Scientific Beta

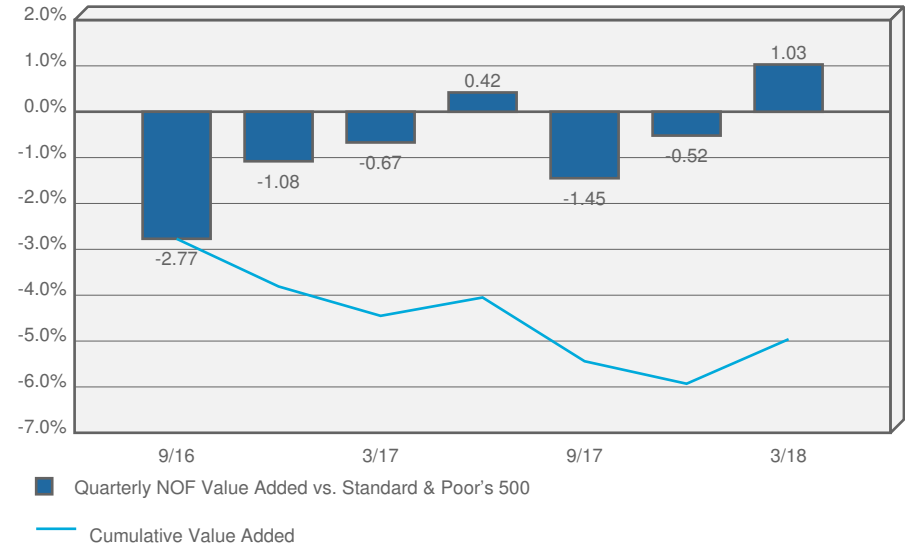
March 31, 2018

Performance Comparison vs Peer Universe\*



▲ Scientific Bet	0.27 (27)	6.41 (48)	9.64 (64)	13.49 (56)				
1 Standard & Poo	-0.76 (60)	5.84 (55)	10.58 (53)	13.99 (51)				
Median	-0.47	6.25	10.88	14.22	15.35	9.80	13.03	9.69
Number of Funds	174	174	174	174	172	170	164	139

Value-Added Analysis vs Benchmark



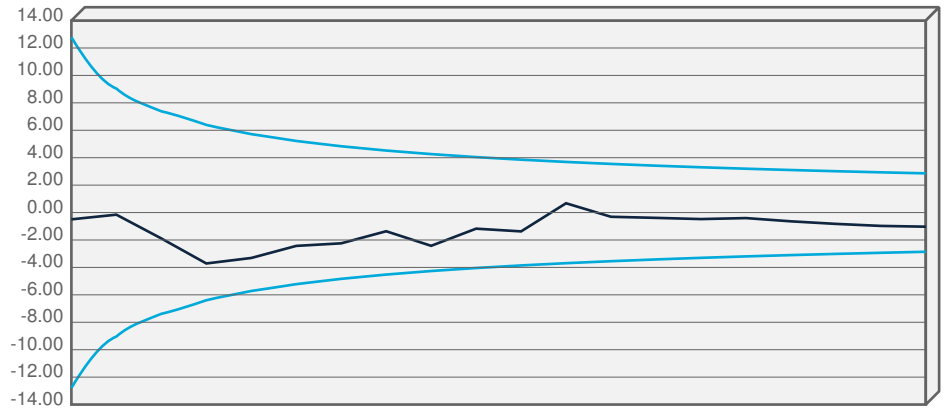
\*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

River Road

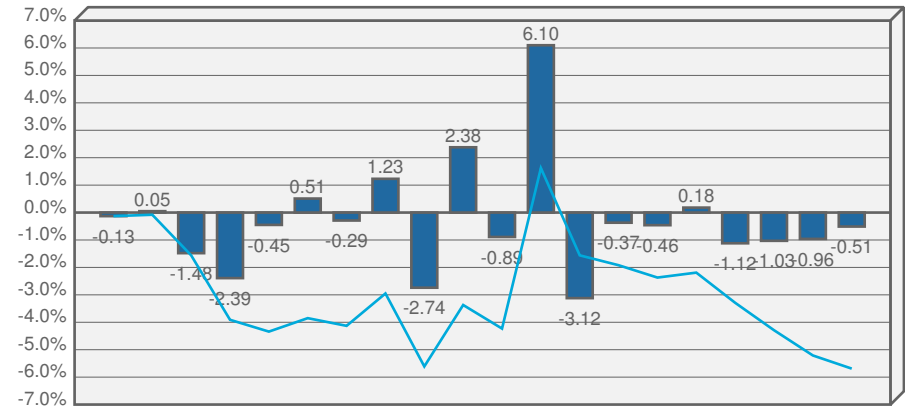
March 31, 2018

Cumulative Skill Analysis vs Benchmark



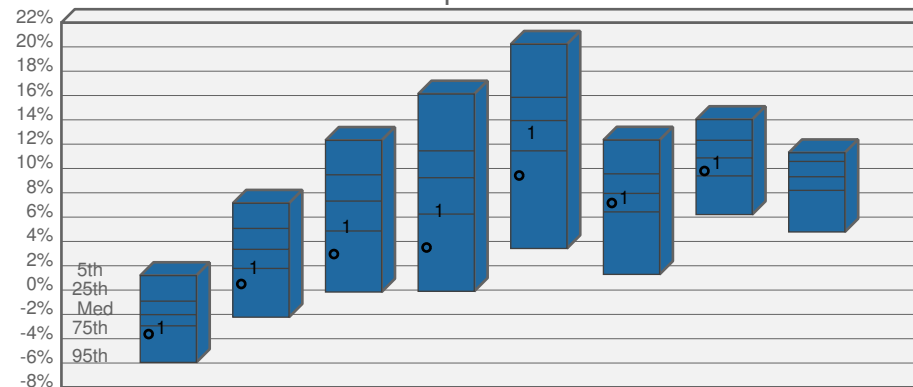
Excess Return:	-1.03	Information Ratio:	-0.27
Excess Risk:	3.89	T-Stat:	-0.59

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Russell 3000 Value  
 — Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
○ River Road	-3.18 (81)	0.94 (82)	3.40 (81)	3.94 (85)	9.86 (82)	7.60 (57)	10.23 (63)	
■ Russell 3000 V	-2.82 (71)	2.11 (67)	5.45 (70)	6.81 (68)	13.20 (55)	7.87 (53)	10.71 (53)	
Median	-2.02	3.35	7.32	9.24	13.94	7.95	10.87	9.32
Number of Funds	85	85	85	85	85	83	77	63

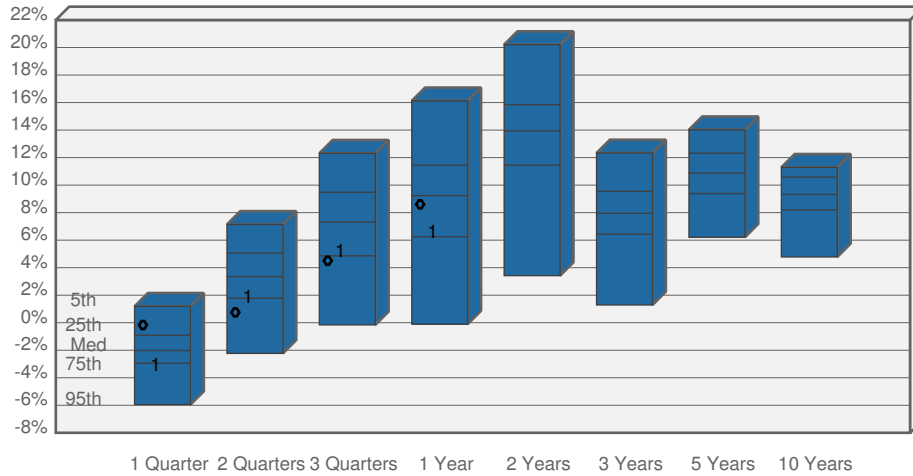
\*Compass Total Returns of Active Combination Value Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

River Road FAV

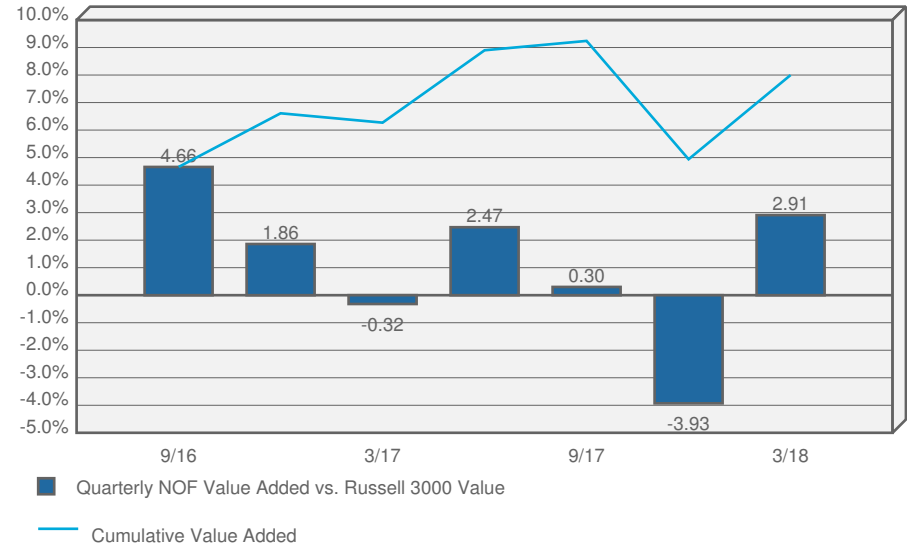
March 31, 2018

Performance Comparison vs Peer Universe\*



○ River Road FAV	0.22 (10)	1.14 (78)	4.89 (74)	8.99 (50)				
■ Russell 3000 V	-2.82 (71)	2.11 (67)	5.45 (70)	6.81 (68)				
Median	-2.02	3.35	7.32	9.24	13.94	7.95	10.87	9.32
Number of Funds	85	85	85	85	85	83	77	63

Value-Added Analysis vs Benchmark



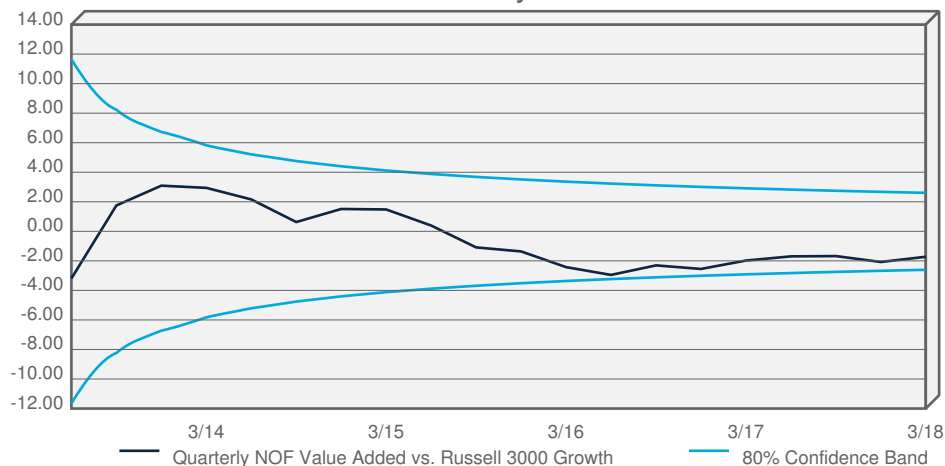
\*Compass Total Returns of Active Combination Value Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Westfield Capital

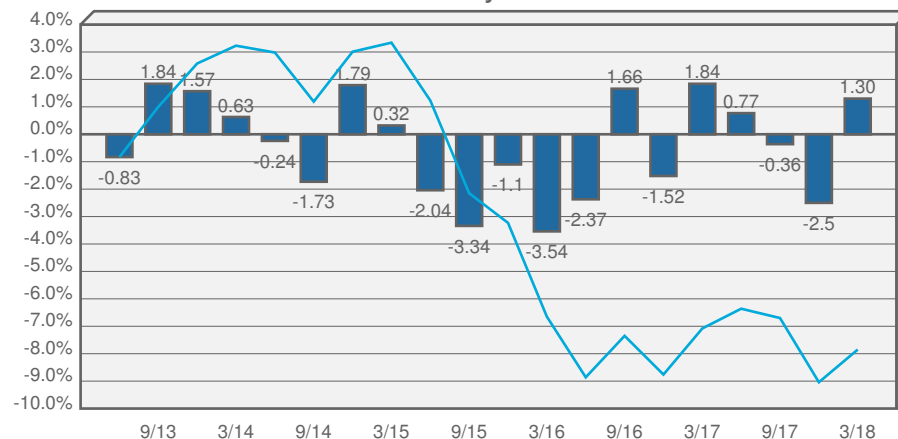
March 31, 2018

Cumulative Skill Analysis vs Benchmark



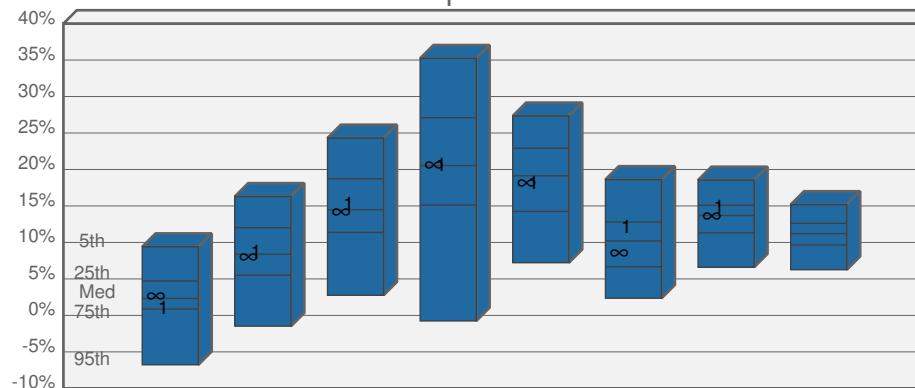
Excess Return:	-1.72	Information Ratio:	-0.49
Excess Risk:	3.54	T-Stat:	-1.09

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Russell 3000 Growth  
 — Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ Westfield Capi	2.95 (42)	8.34 (51)	14.52 (49)	20.90 (46)	18.48 (53)	8.83 (63)	13.98 (38)	
1 Russell 3000 G	1.48 (67)	9.20 (45)	15.68 (42)	21.06 (46)	18.64 (53)	12.57 (25)	15.32 (24)	
Median	2.32	8.39	14.48	20.54	19.13	10.21	13.69	11.21
Number of Funds	64	64	64	64	63	63	62	47

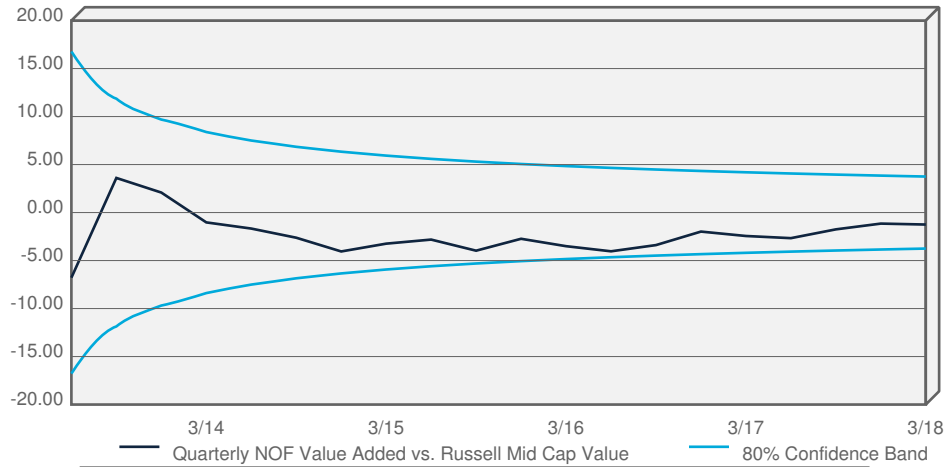
\*Compass Total Returns of Active Combination Growth Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

## Systematic

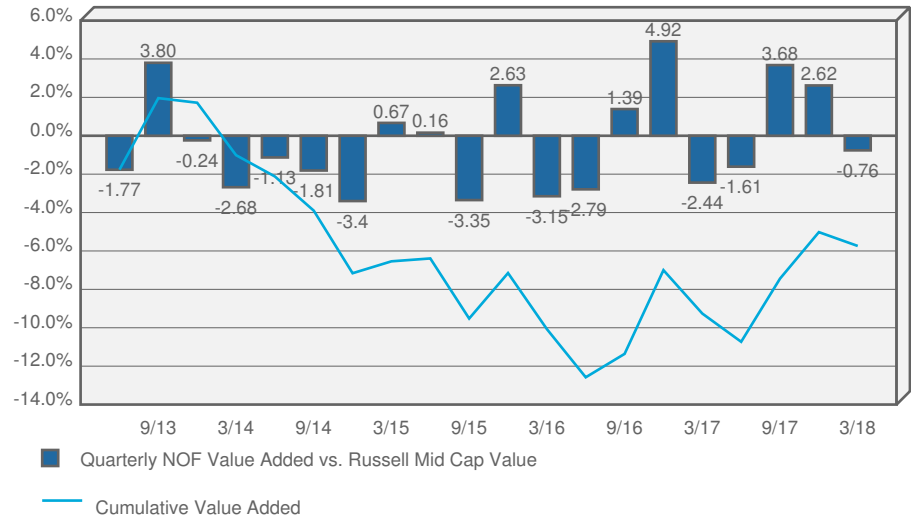
March 31, 2018

Cumulative Skill Analysis vs Benchmark

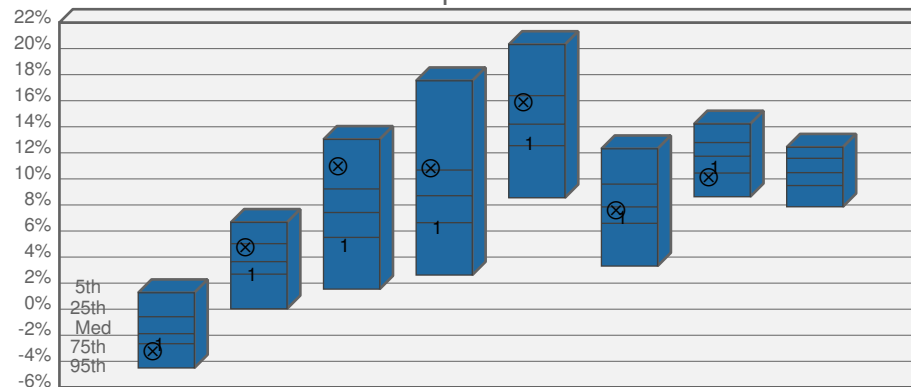


Excess Return:	-1.25	Information Ratio:	-0.24
Excess Risk:	5.10	T-Stat:	-0.55

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
⊗ Systematic	-3.18 (82)	4.78 (32)	11.00 ( 6)	10.84 (22)	15.89 (29)	7.65 (58)	10.14 (77)	
1 Russell Mid Ca	-2.50 (73)	2.86 (67)	5.07 (80)	6.50 (79)	12.96 (67)	7.23 (66)	11.10 (66)	
Median	-1.88	3.65	7.42	8.71	14.20	7.85	11.74	10.48
Number of Funds	86	86	86	86	86	86	84	75

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

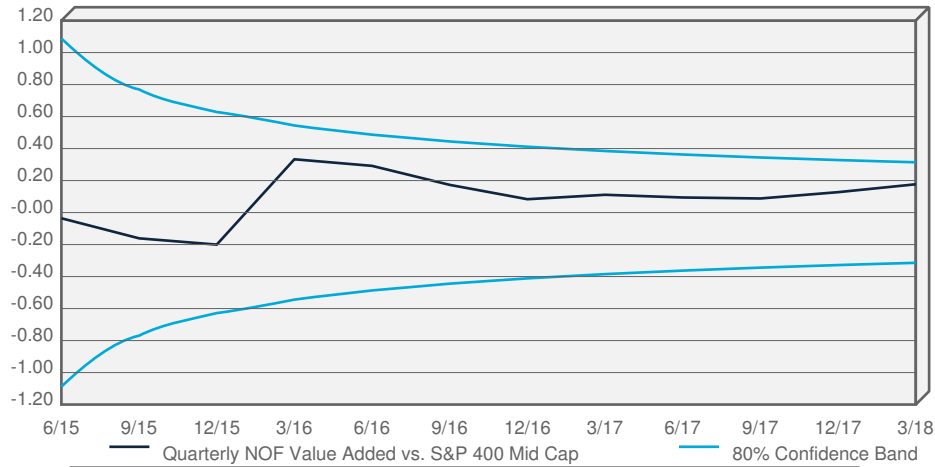


# INVESTMENT MANAGER ANALYSIS

Internal US Mid Cap

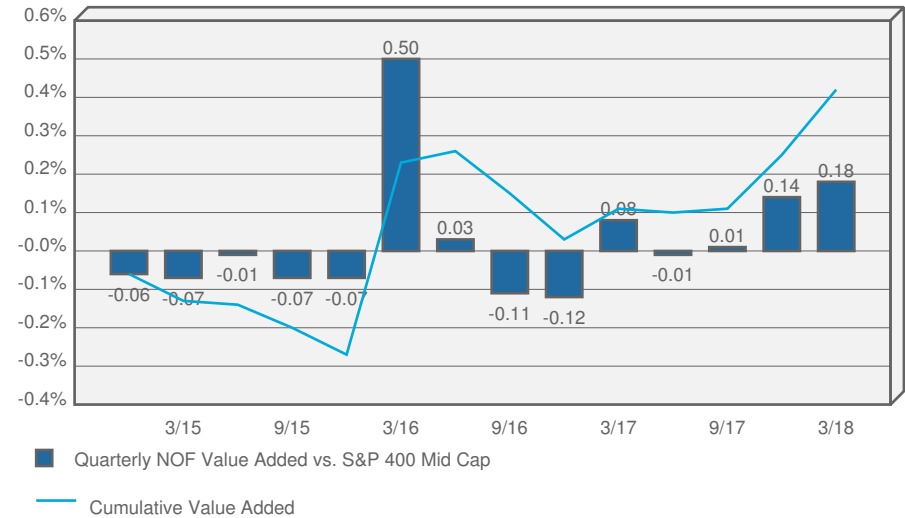
March 31, 2018

Cumulative Skill Analysis vs Benchmark

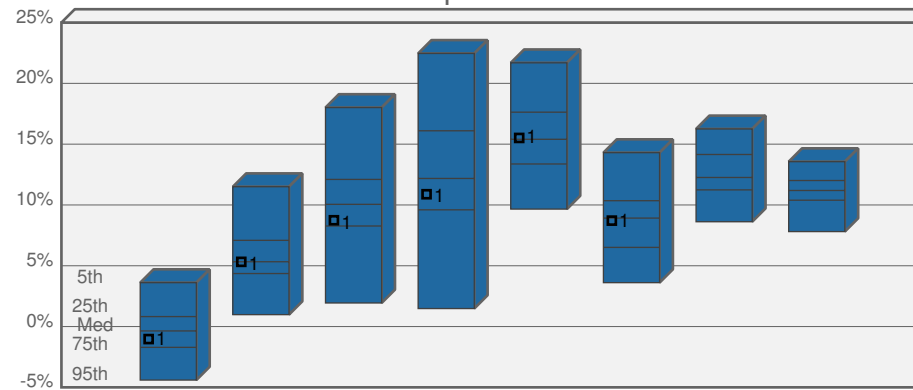


Excess Return:	0.18	Information Ratio:	0.53
Excess Risk:	0.33	T-Stat:	0.93

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	-0.59 (57)	5.76 (46)	9.18 (62)	11.32 (60)	15.95 (42)	9.15 (48)		
S&P 400 Mid Ca	-0.77 (57)	5.43 (48)	8.83 (64)	10.97 (64)	15.84 (44)	8.96 (49)		
Median	-0.36	5.33	10.05	12.18	15.40	8.92	12.26	11.19
Number of Funds	56	56	56	56	56	56	55	45

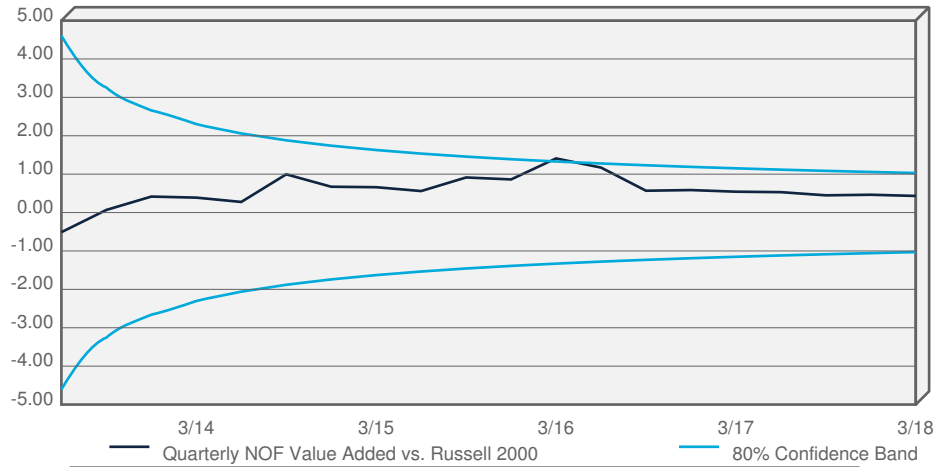
\*Compass Total Returns of Active Midcap Core Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

NTGI Structured

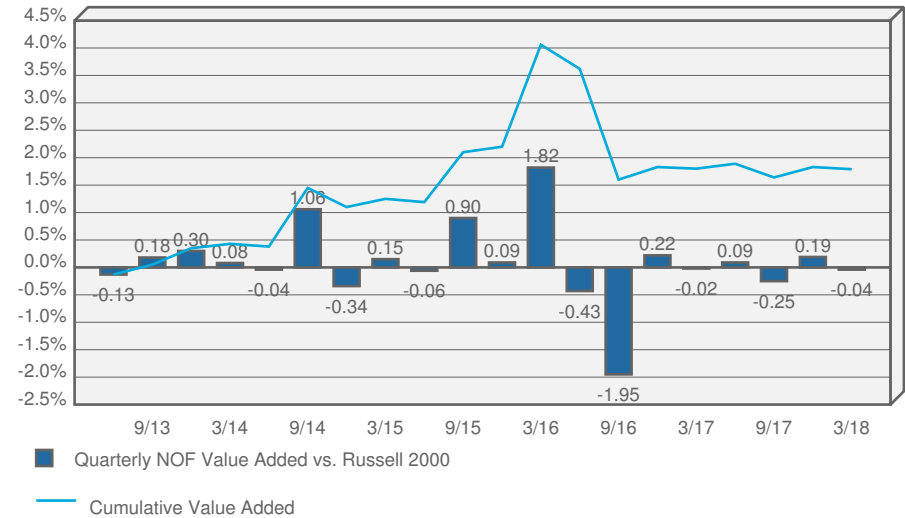
March 31, 2018

Cumulative Skill Analysis vs Benchmark

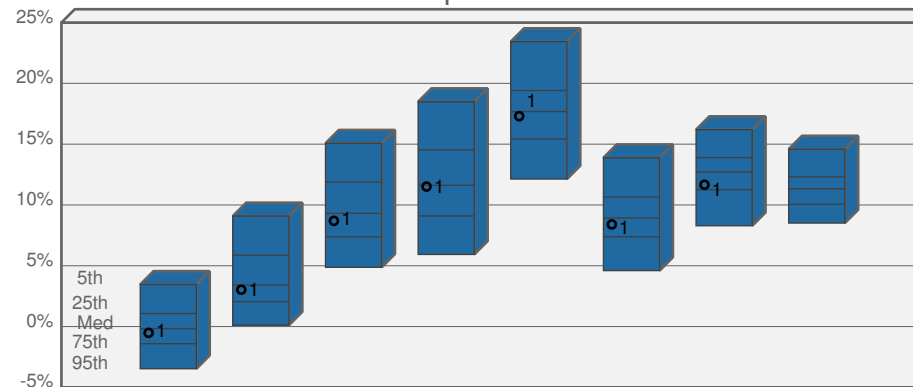


Excess Return:	0.43	Information Ratio:	0.31
Excess Risk:	1.40	T-Stat:	0.69

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
○ NTGI Structure	-0.08 (48)	3.47 (48)	9.13 (54)	11.95 (46)	17.74 (49)	8.84 (51)	12.10 (59)	
■ Russell 2000	-0.08 (48)	3.25 (51)	9.11 (55)	11.79 (46)	18.79 (33)	8.39 (62)	11.47 (71)	
Median	-0.17	3.42	9.31	11.62	17.68	8.93	12.72	11.33
Number of Funds	131	131	130	130	129	128	125	101

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

# CUSTOM BENCHMARK SPECIFICATION

US Equity Composite

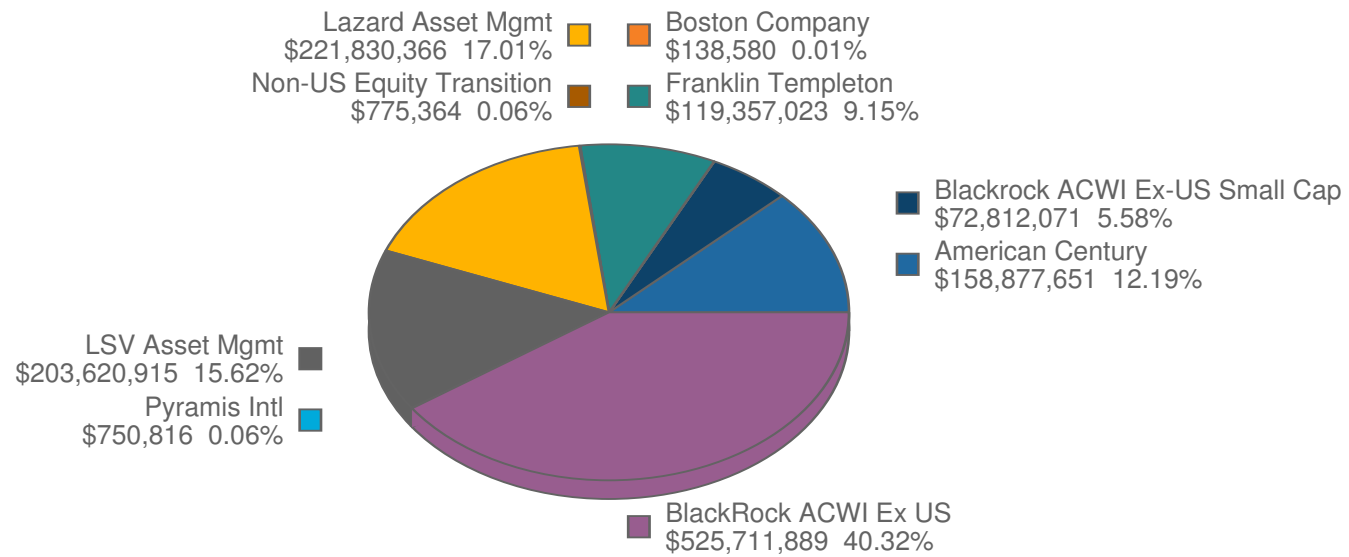
March 31, 2018

	Quarter Start	Quarter End	Percent	Description
Russell 3000	6/84	3/18	100.00	Russell 3000



# NON-US EQUITY

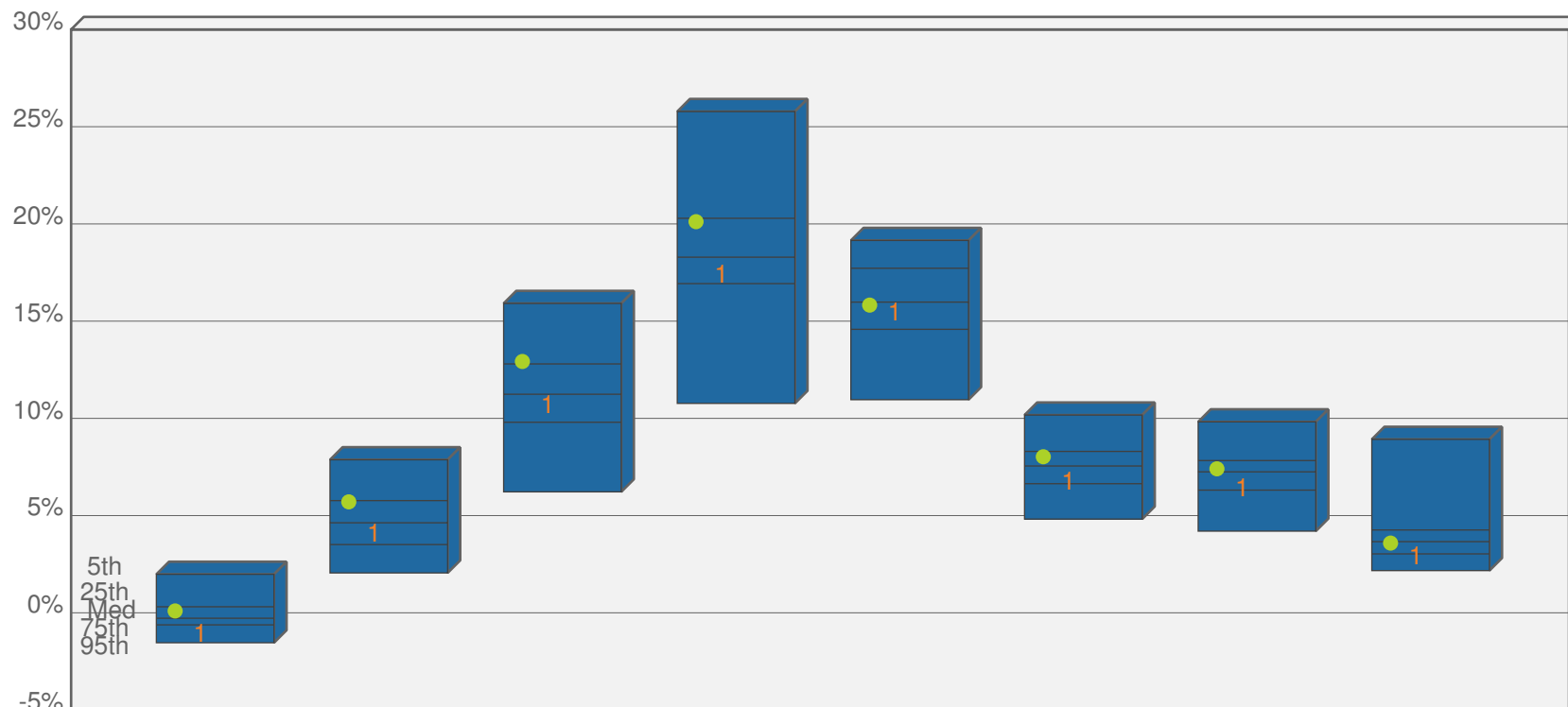
Wilshire Consulting  
**MANAGER ALLOCATION**  
 Non-US Equity Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

## Non-US Equity Composite

Periods Ended March 31, 2018

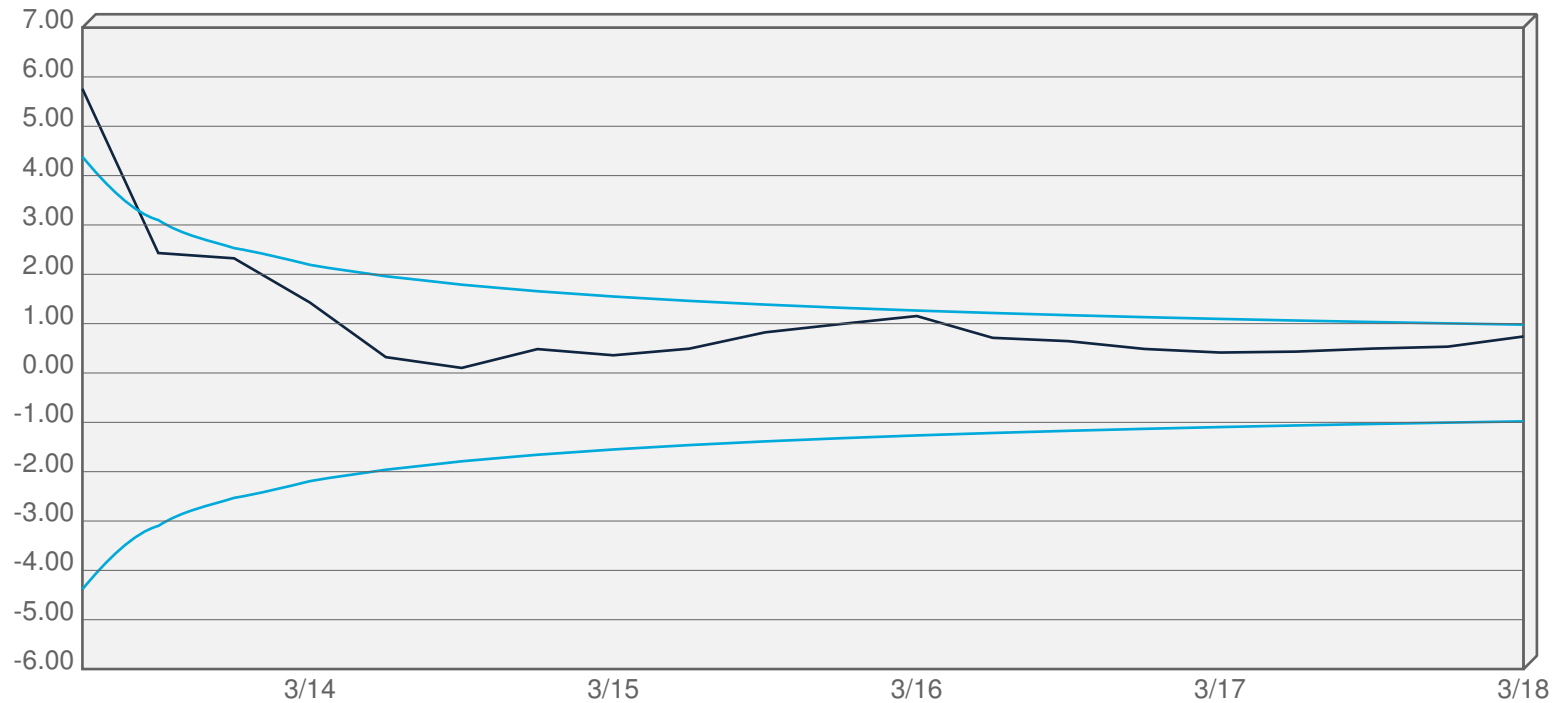


	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
● Non-US Equity Composite	0.16 (34)	5.77 (25)	12.99 (20)	20.18 (26)	15.89 (56)	8.09 (32)	7.47 (42)	3.65 (50)
1 Policy Index	-1.06 (84)	4.11 (64)	10.72 (60)	17.42 (68)	15.47 (61)	6.79 (71)	6.44 (67)	2.97 (75)
5th %tile	1.98	7.87	15.91	25.78	19.15	10.17	9.82	8.92
25th %tile	0.31	5.77	12.80	20.29	17.72	8.30	7.83	4.26
Median	-0.28	4.63	11.24	18.29	15.98	7.55	7.25	3.66
75th %tile	-0.62	3.51	9.80	16.93	14.58	6.64	6.31	3.03
95th %tile	-1.54	2.05	6.22	10.77	10.96	4.82	4.20	2.17
Number of Funds	64	64	63	63	61	58	54	39

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

# CUMULATIVE SKILL ANALYSIS

Non-US Equity Composite  
 Five Years Ending March 31, 2018



— Quarterly NOF Value Added vs. Policy Index

— 80% Confidence Band

Excess Return:	0.74	Information Ratio:	0.56
Excess Risk:	1.33	T-Stat:	1.24

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>BlackRock ACWI Ex US</b>									
<b>Net of Fee Return</b>	<b>-1.36</b>	<b>3.64</b>	<b>10.01</b>	<b>16.39</b>	<b>6.50</b>	<b>5.96</b>		<b>6/30/12</b>	<b>8.11</b>
MSCI ACWI X US (N)	-1.18	3.76	10.16	16.53	6.18	5.89		6/30/12	8.05
Value Added	-0.18	-0.13	-0.15	-0.13	0.32	0.07		6/30/12	0.06
<b>American Century</b>									
<b>Net of Fee Return</b>	<b>3.13</b>	<b>8.61</b>	<b>20.44</b>	<b>30.33</b>	<b>8.12</b>			<b>6/30/14</b>	<b>5.81</b>
Policy Index	-1.06	4.11	10.61	17.24	6.73			6/30/14	3.77
Value Added	4.19	4.51	9.82	13.09	1.39			6/30/14	2.04
<b>Franklin Templeton</b>									
<b>Net of Fee Return</b>	<b>2.36</b>	<b>8.44</b>	<b>19.62</b>	<b>26.63</b>	<b>11.46</b>			<b>6/30/14</b>	<b>8.03</b>
Policy Index	-1.06	4.11	10.61	17.24	6.73			6/30/14	3.77
Value Added	3.43	4.33	9.01	9.39	4.73			6/30/14	4.26
<b>Lazard Asset Mgmt</b>									
<b>Net of Fee Return</b>	<b>1.61</b>	<b>8.30</b>	<b>14.27</b>	<b>22.49</b>	<b>7.56</b>			<b>6/30/14</b>	<b>5.21</b>
Policy Index	-1.06	4.11	10.61	17.24	6.73			6/30/14	3.77
Value Added	2.67	4.19	3.66	5.25	0.83			6/30/14	1.45
<b>LSV Asset Mgmt</b>									
<b>Net of Fee Return</b>	<b>-1.19</b>	<b>4.14</b>	<b>8.80</b>	<b>14.71</b>	<b>6.32</b>			<b>6/30/14</b>	<b>3.65</b>
Policy Index	-1.06	4.11	10.61	17.24	6.73			6/30/14	3.77
Value Added	-0.12	0.03	-1.81	-2.53	-0.41			6/30/14	-0.12
<b>Blackrock ACWI Ex-US Small Cap</b>									
<b>Net of Fee Return</b>	<b>-0.60</b>	<b>5.98</b>	<b>13.28</b>	<b>20.34</b>	<b>10.40</b>			<b>6/30/13</b>	<b>10.63</b>
MSCI ACWI X US Small Cap (N)	-0.35	6.19	13.51	20.59	10.40			6/30/13	10.08
Value Added	-0.24	-0.21	-0.23	-0.25	-0.00			6/30/13	0.55



# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

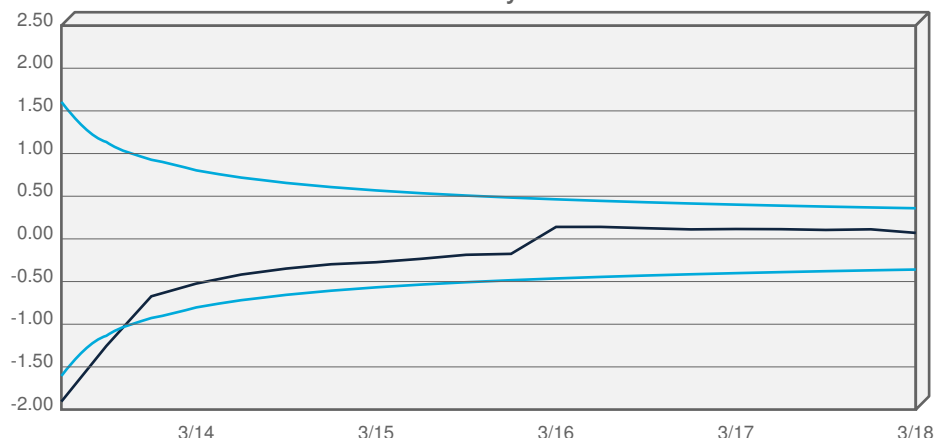
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Non-US Equity Transition Net of Fee Return</b>								<b>6/30/14</b>	
<b>Non-US Equity Composite Net of Fee Return</b>	<b>0.09</b>	<b>5.65</b>	<b>12.79</b>	<b>19.83</b>	<b>7.86</b>	<b>7.22</b>	<b>1.84</b>	<b>3/31/00</b>	<b>2.57</b>
Policy Index	-1.06	4.11	10.72	17.42	6.79	6.44	2.97	3/31/00	2.87
Value Added	1.15	1.54	2.07	2.41	1.06	0.79	-1.13	3/31/00	-0.30

# INVESTMENT MANAGER ANALYSIS

BlackRock ACWI Ex US

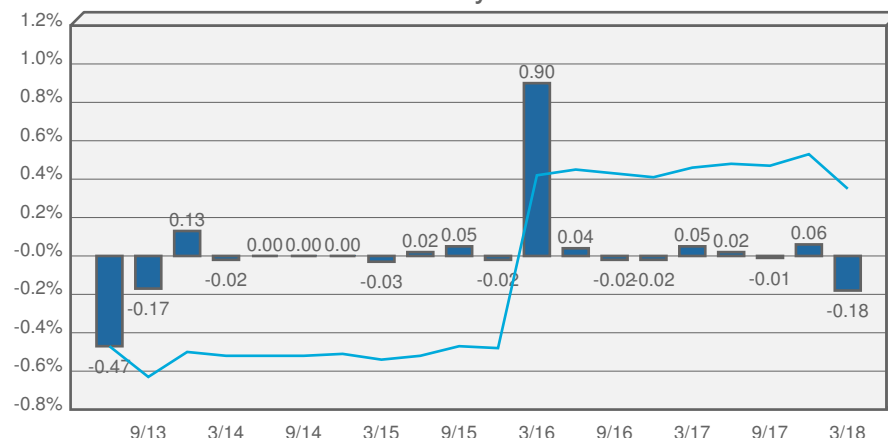
March 31, 2018

Cumulative Skill Analysis vs Benchmark



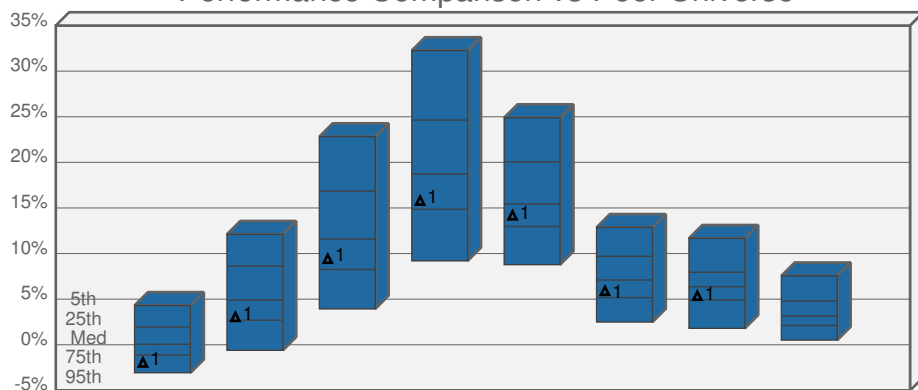
Excess Return:	0.07	Information Ratio:	0.14
Excess Risk:	0.49	T-Stat:	0.32

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. MSCI ACWI X US (N)  
 — Cumulative Value Added

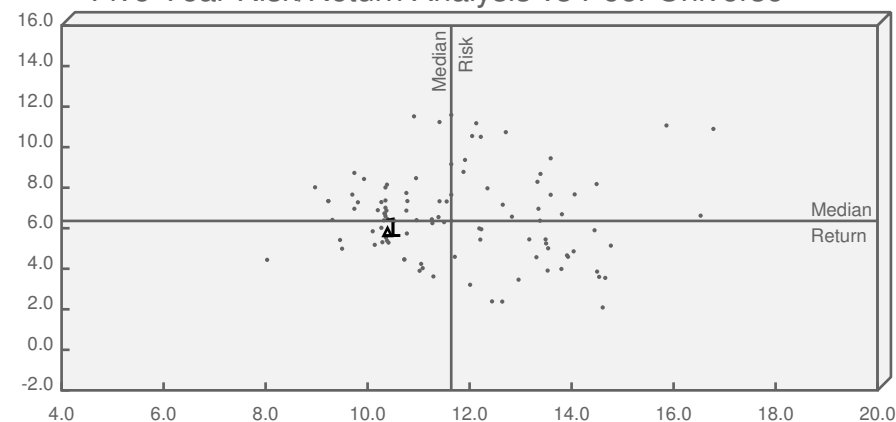
Performance Comparison vs Peer Universe\*



▲ BlackRock ACWI	-1.36 (80)	3.64 (62)	10.01 (61)	16.39 (63)	14.78 (56)	6.50 (57)	5.96 (58)
■ MSCI ACWI X US	-1.18 (76)	3.76 (60)	10.16 (60)	16.53 (63)	14.82 (56)	6.18 (61)	5.89 (60)

Median	0.05	4.90	11.60	18.72	15.45	7.10	6.36	3.17
Number of Funds	2546	2480	2441	2385	2197	1921	1522	889

Five Year Risk/Return Analysis vs Peer Universe\*



Description	Legend	Net Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
BlackRock ACWI Ex US	▲	5.96	58	10.60	71
MSCI ACWI X US (N)	■	5.89	60	10.60	71
Median		6.36		11.64	

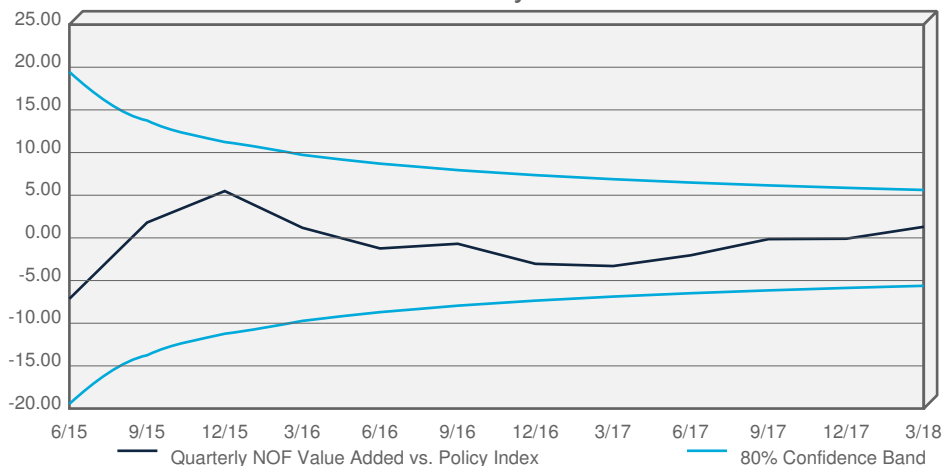
\*Lipper Total Returns of International Equity Mutual Funds Universe - Net of Fees

# INVESTMENT MANAGER ANALYSIS

American Century

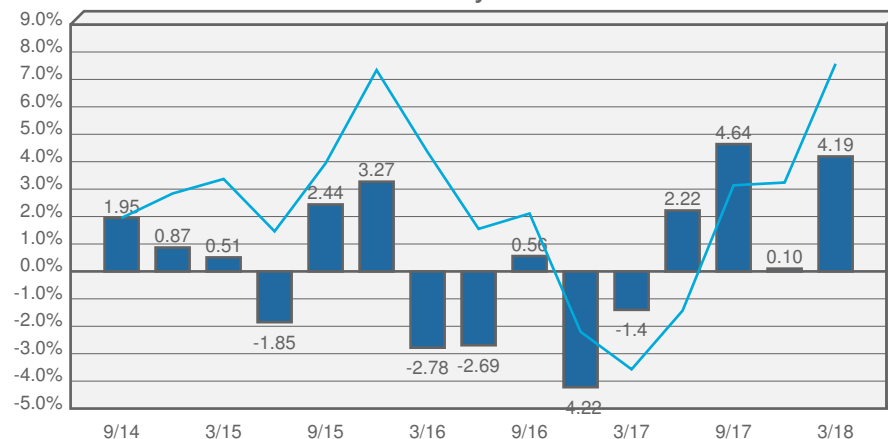
March 31, 2018

Cumulative Skill Analysis vs Benchmark



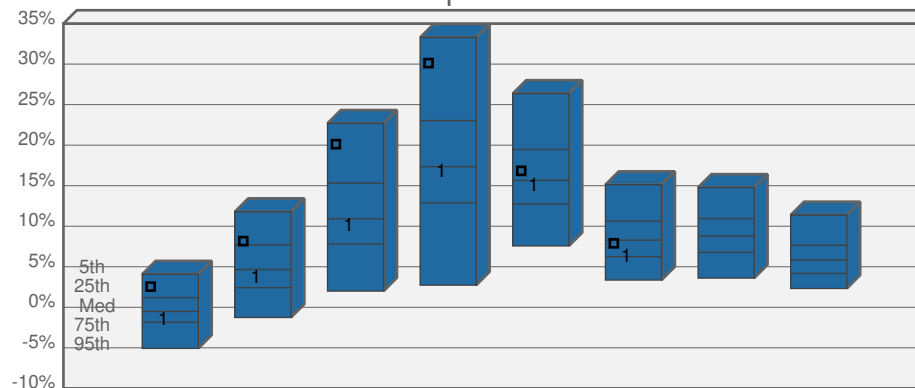
Excess Return:	1.30	Information Ratio:	0.22
Excess Risk:	5.91	T-Stat:	0.38

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Policy Index  
— Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
□ American Centu	3.21 ( 7)	8.82 (18)	20.78 ( 7)	30.78 ( 7)	17.49 (36)	8.55 (46)		
1 Policy Index	-1.06 (61)	4.11 (56)	10.61 (52)	17.24 (50)	15.46 (51)	6.74 (70)		
Median	-0.52	4.66	10.92	17.35	15.65	8.29	8.77	5.83
Number of Funds	1642	1635	1621	1617	1587	1517	1355	894

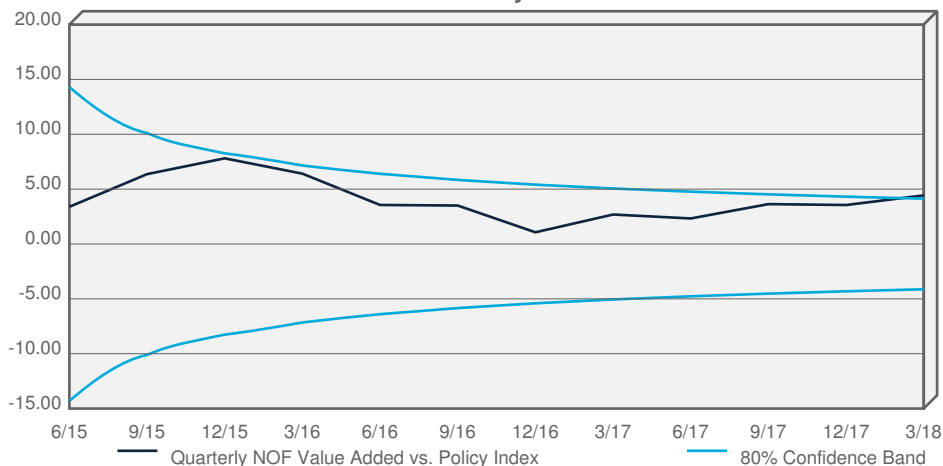
\*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Franklin Templeton

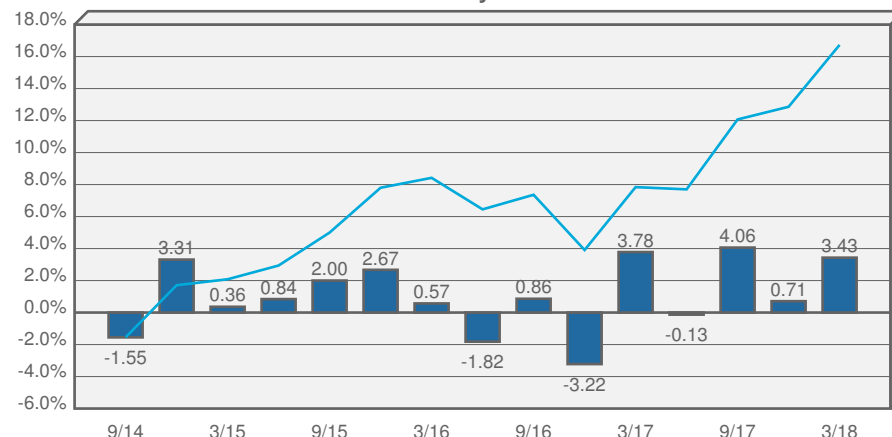
March 31, 2018

Cumulative Skill Analysis vs Benchmark



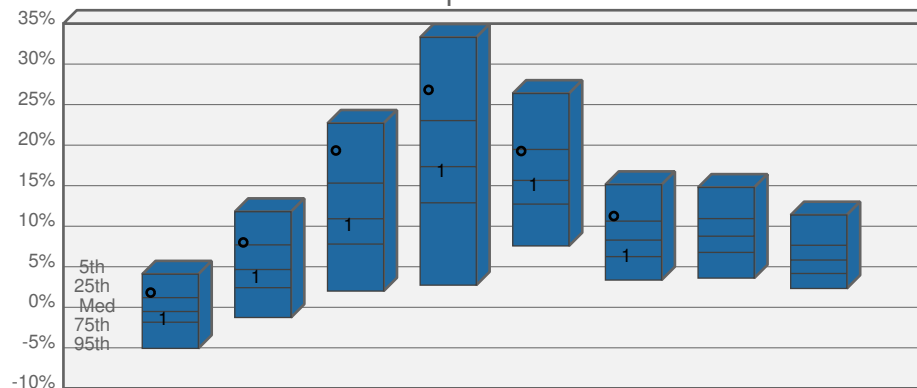
Excess Return:	4.43	Information Ratio:	1.02
Excess Risk:	4.35	T-Stat:	1.76

Value-Added Analysis vs Benchmark



Quarterly NOF Value Added vs. Policy Index  
Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
○ Franklin Templ	2.47 (12)	8.66 (19)	20.00 ( 9)	27.48 (12)	19.93 (22)	11.91 (16)		
1 Policy Index	-1.06 (61)	4.11 (56)	10.61 (52)	17.24 (50)	15.46 (51)	6.74 (70)		
Median	-0.52	4.66	10.92	17.35	15.65	8.29	8.77	5.83
Number of Funds	1642	1635	1621	1617	1587	1517	1355	894

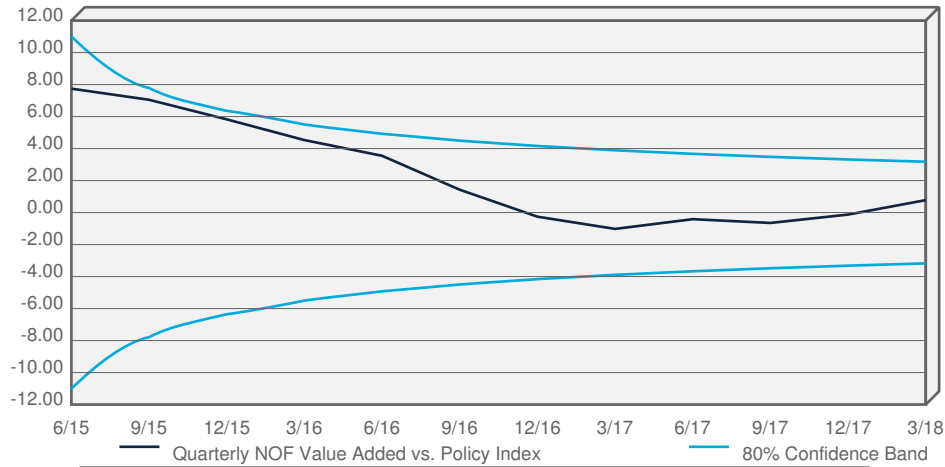
\*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Lazard Asset Mgmt

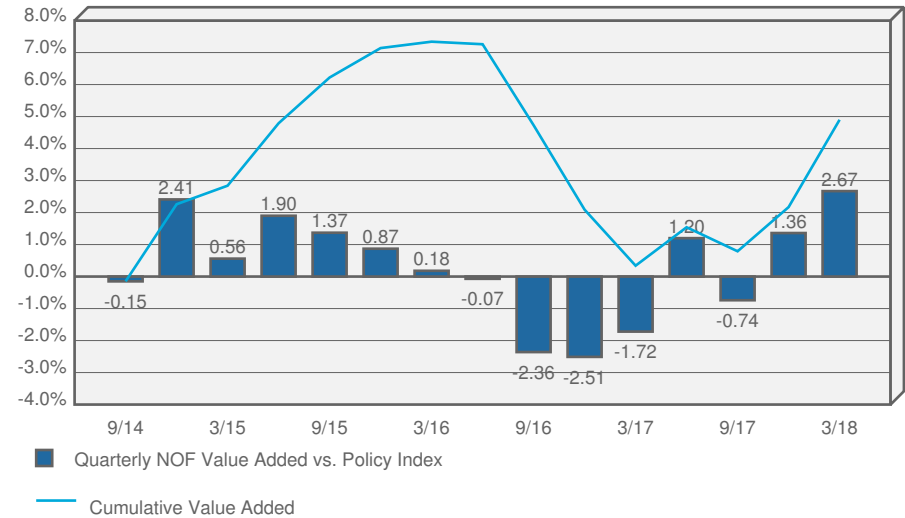
March 31, 2018

Cumulative Skill Analysis vs Benchmark

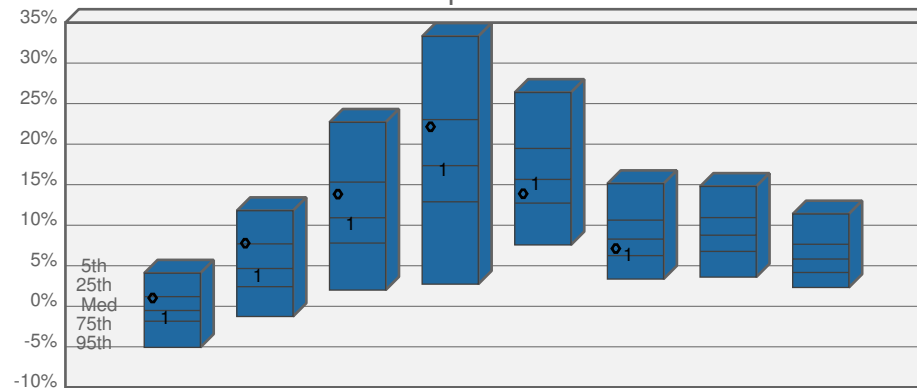


Excess Return:	0.78	Information Ratio:	0.23
Excess Risk:	3.35	T-Stat:	0.40

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 Mgmt	1.68 (19)	8.44 (20)	14.49 (28)	22.80 (25)	14.54 (59)	7.78 (56)		
■ Policy Index	-1.06 (61)	4.11 (56)	10.61 (52)	17.24 (50)	15.46 (51)	6.74 (70)		
Median	-0.52	4.66	10.92	17.35	15.65	8.29	8.77	5.83
Number of Funds	1642	1635	1621	1617	1587	1517	1355	894

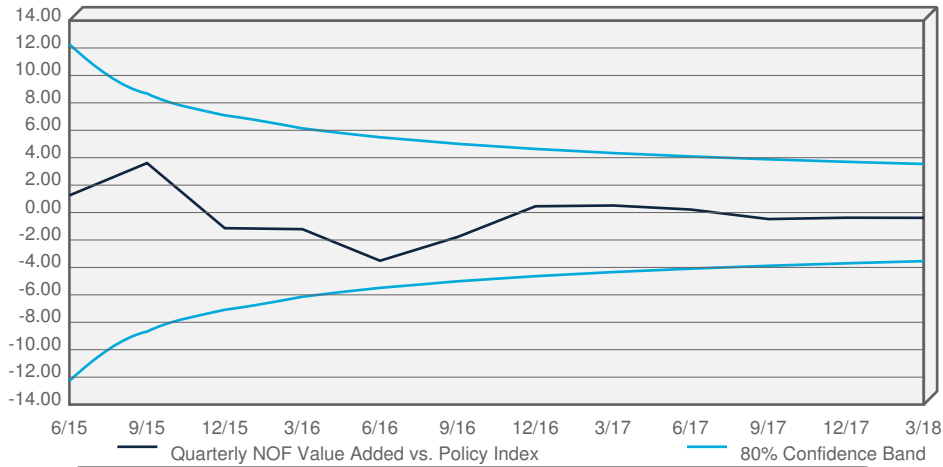
\*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

LSV Asset Mgmt

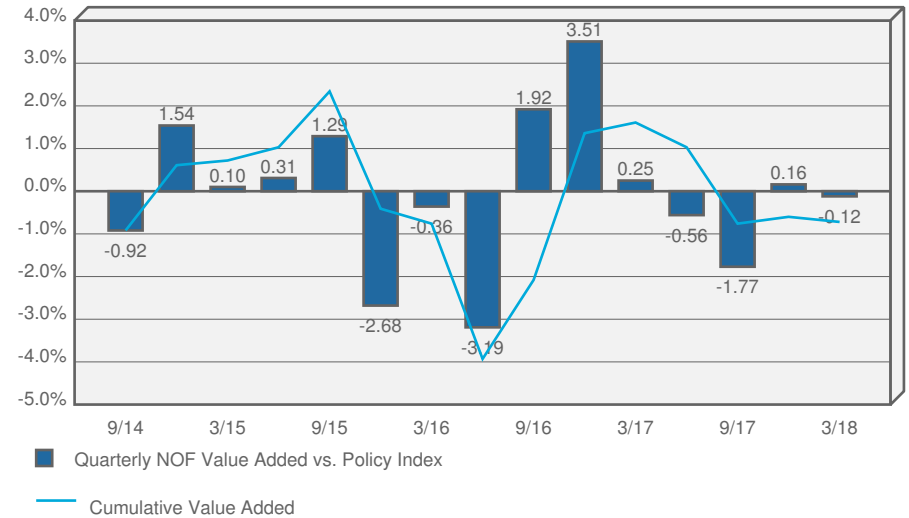
March 31, 2018

Cumulative Skill Analysis vs Benchmark

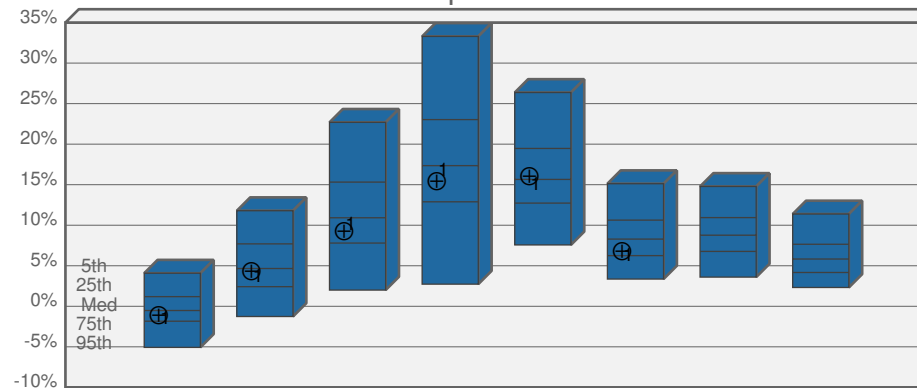


Excess Return:	-0.39	Information Ratio:	-0.10
Excess Risk:	3.73	T-Stat:	-0.18

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	-1.04 (60)	4.44 (52)	9.31 (63)	15.53 (61)	16.17 (46)	6.88 (69)		
⊠ Policy Index	-1.06 (61)	4.11 (56)	10.61 (52)	17.24 (50)	15.46 (51)	6.74 (70)		
Median	-0.52	4.66	10.92	17.35	15.65	8.29	8.77	5.83
Number of Funds	1642	1635	1621	1617	1587	1517	1355	894

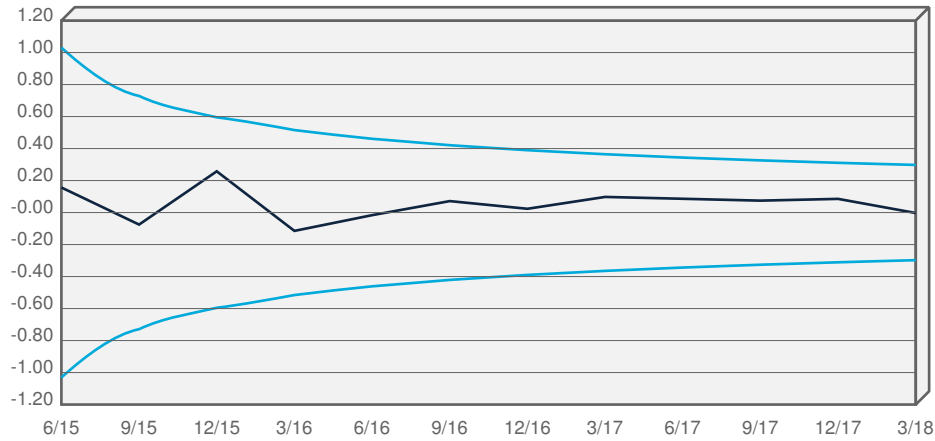
\*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

## Blackrock ACWI Ex-US Small Cap

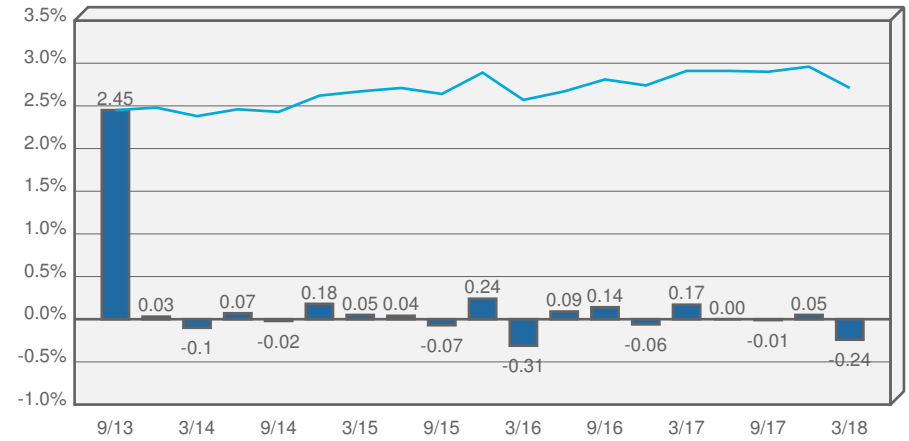
March 31, 2018

Cumulative Skill Analysis vs Benchmark

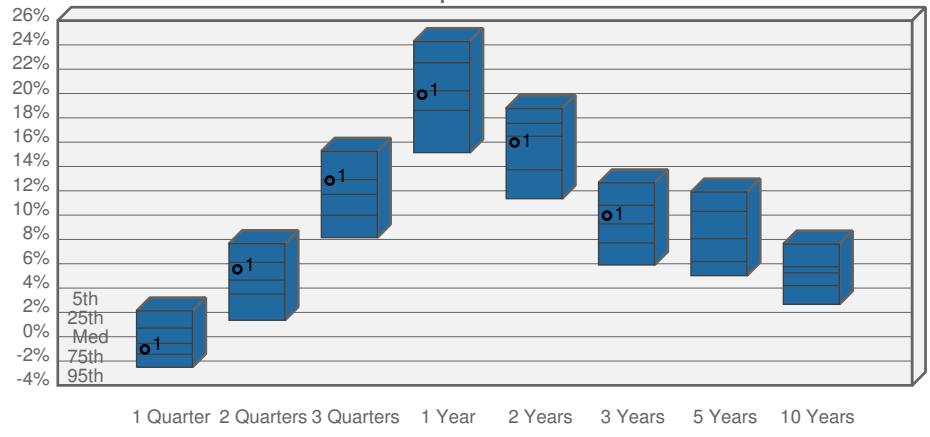


Excess Return:	-0.00	Information Ratio:	-0.01
Excess Risk:	0.31	T-Stat:	-0.02

Value-Added Analysis vs Benchmark

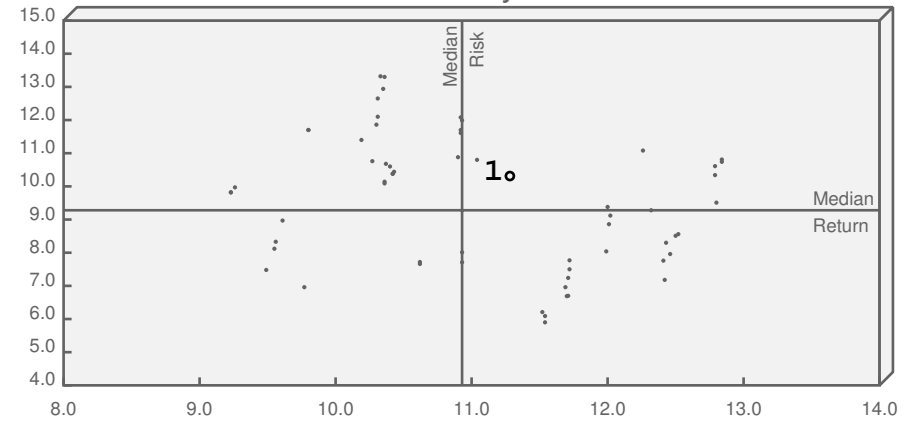


Performance Comparison vs Peer Universe\*



○ Blackrock ACWI	-0.60 (52)	5.98 (26)	13.28 (21)	20.34 (47)	16.41 (51)	10.40 (35)		
1 MSCI ACWI X US	-0.35 (40)	6.19 (23)	13.51 (21)	20.59 (43)	16.35 (51)	10.40 (35)		
Median	-0.55	4.65	11.71	20.22	16.48	9.28	8.07	5.25
Number of Funds	80	78	77	77	68	61	52	33

Three Year Risk/Return Analysis vs Peer Universe\*



Description	Legend	Net Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Blackrock ACWI Ex-US Small Cap	○	10.40	35	11.36	46
MSCI ACWI X US Small Cap (N)	1	10.40	35	11.20	46
Median		9.28		10.93	

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

# CUSTOM BENCHMARK SPECIFICATION

Non-US Equity Composite

March 31, 2018

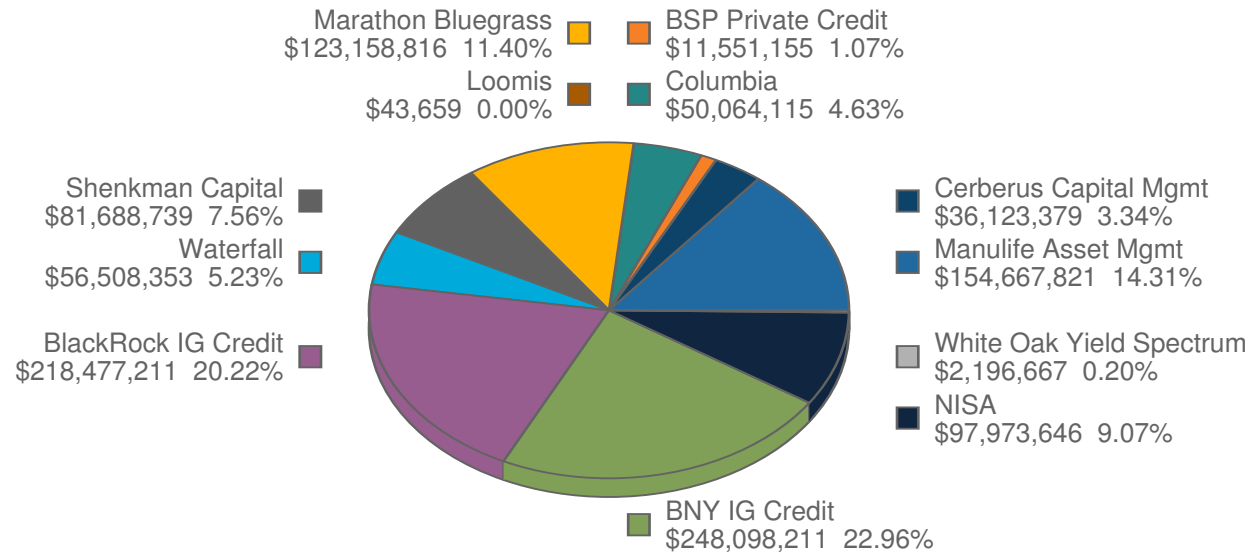
	Quarter Start	Quarter End	Percent	Description
Policy Index	6/00	6/17	100.00	Blended Non-US Benchmark
	9/17	9/17	100.00	MSCI ACWI Ex USA IMI Index (\$G)
	12/17	3/18	100.00	MSCI ACWI Ex USA IMI (\$N)





# FIXED INCOME

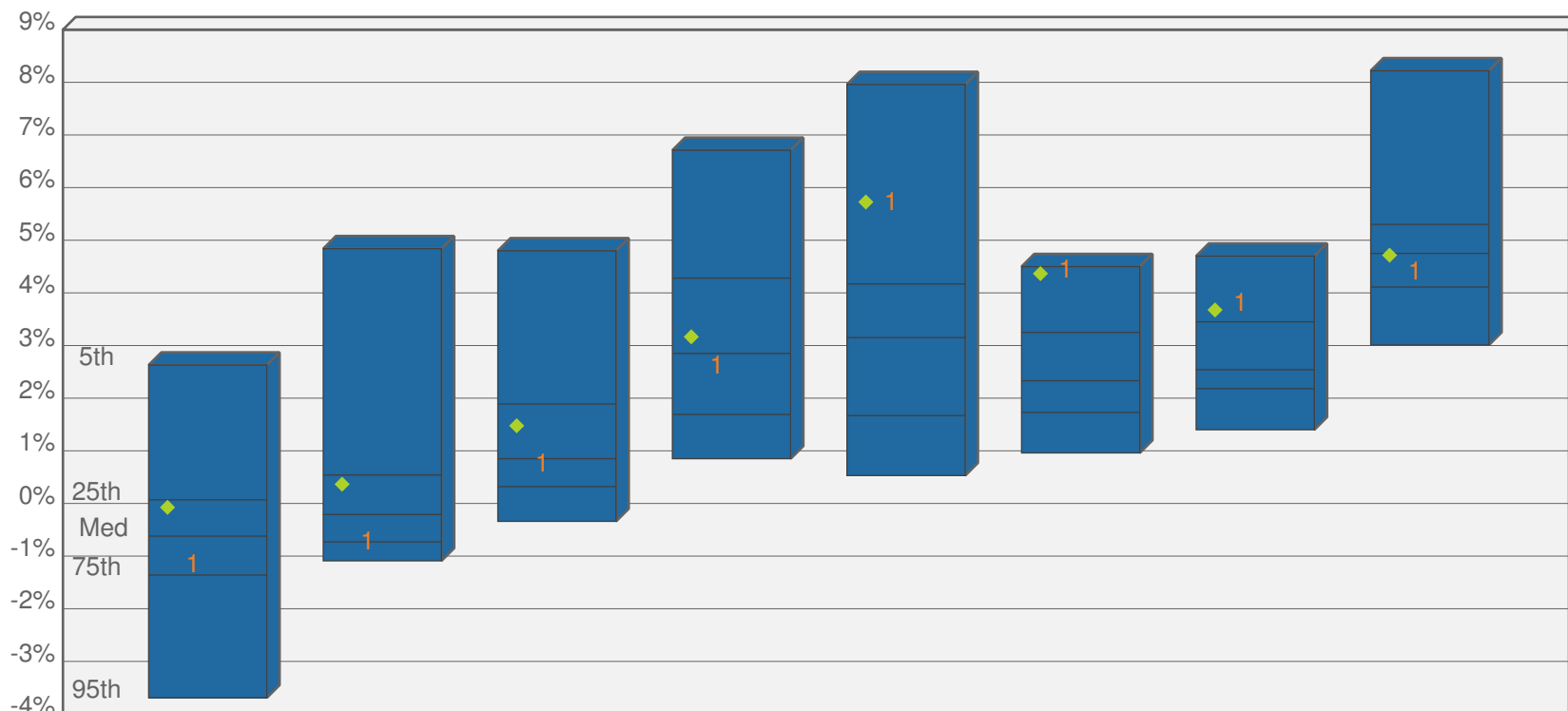
Wilshire Consulting  
**MANAGER ALLOCATION**  
 Fixed Income Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

Fixed Income Composite

Periods Ended March 31, 2018



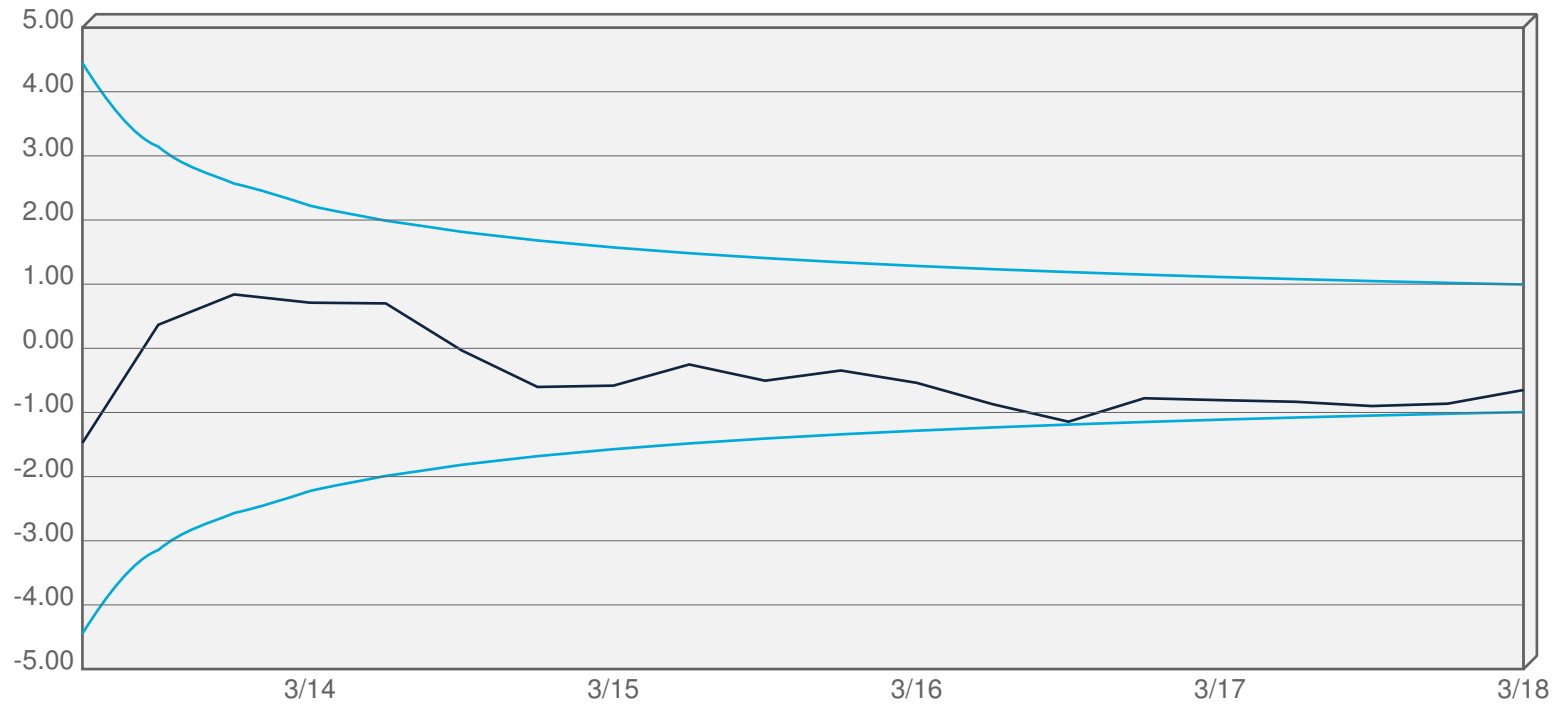
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ Fixed Income Composite	-0.05 (29)	0.39 (31)	1.50 (32)	3.19 (46)	5.75 (13)	4.39 ( 6)	3.70 (17)	4.74 (52)
┆ Policy Index	-1.13 (69)	-0.70 (72)	0.78 (51)	2.64 (50)	5.75 (13)	4.46 ( 5)	3.83 (13)	4.42 (64)
5th %tile	2.63	4.84	4.80	6.71	7.96	4.50	4.70	8.22
25th %tile	0.07	0.54	1.89	4.28	4.17	3.25	3.45	5.30
Median	-0.62	-0.21	0.85	2.85	3.15	2.33	2.54	4.75
75th %tile	-1.36	-0.73	0.32	1.69	1.67	1.73	2.18	4.11
95th %tile	-3.69	-1.09	-0.34	0.85	0.53	0.96	1.40	3.01
Number of Funds	109	104	95	94	82	78	69	48

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

# CUMULATIVE SKILL ANALYSIS

Fixed Income Composite

Five Years Ending March 31, 2018



— Quarterly NOF Value Added vs. Policy Index

— 80% Confidence Band

Excess Return:	-0.65	Information Ratio:	-0.48
Excess Risk:	1.35	T-Stat:	-1.07

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>NISA</b>									
<b>Net of Fee Return</b>	<b>-1.41</b>	<b>-0.94</b>	<b>0.00</b>	<b>1.51</b>	<b>1.48</b>	<b>2.02</b>		<b>6/30/11</b>	<b>2.87</b>
Bloomberg Aggregate	-1.46	-1.08	-0.24	1.20	1.20	1.82		6/30/11	2.69
Value Added	0.05	0.14	0.24	0.31	0.28	0.19		6/30/11	0.18
<b>Manulife Asset Mgmt</b>									
<b>Net of Fee Return</b>	<b>-0.42</b>	<b>-0.15</b>	<b>0.84</b>	<b>2.53</b>	<b>2.37</b>	<b>2.59</b>		<b>12/31/11</b>	<b>4.14</b>
Policy Index	-1.41	-1.00	-0.00	1.52	1.68	0.67		12/31/11	0.98
Value Added	0.98	0.86	0.84	1.01	0.70	1.93		12/31/11	3.17
<b>BlackRock IG Credit</b>									
<b>Net of Fee Return</b>	<b>-1.42</b>	<b>-1.31</b>	<b>-0.32</b>	<b>0.84</b>				<b>3/31/17</b>	<b>0.84</b>
Bloomberg Int Credit	-1.36	-1.26	-0.28	1.10				3/31/17	1.10
Value Added	-0.05	-0.05	-0.05	-0.26				3/31/17	-0.26
<b>BNY IG Credit</b>									
<b>Net of Fee Return</b>	<b>-1.41</b>							<b>12/31/17</b>	<b>-1.41</b>
Bloomberg Int Credit	-1.36							12/31/17	-1.36
Value Added	-0.05							12/31/17	-0.05
<b>Columbia</b>									
<b>Net of Fee Return</b>	<b>-1.59</b>	<b>-1.33</b>	<b>0.78</b>	<b>3.16</b>	<b>4.65</b>	<b>5.00</b>		<b>12/31/11</b>	<b>6.88</b>
Bloomberg High Yield	-0.86	-0.39	1.57	3.78	5.17	4.99		12/31/11	6.93
Value Added	-0.73	-0.94	-0.79	-0.62	-0.52	0.00		12/31/11	-0.05
<b>Marathon Bluegrass</b>									
<b>Net of Fee Return</b>	<b>1.36</b>	<b>2.08</b>	<b>1.19</b>	<b>1.67</b>				<b>12/31/15</b>	<b>8.27</b>
Bloomberg High Yield	-0.86	-0.39	1.57	3.78				12/31/15	10.36
Value Added	2.21	2.47	-0.39	-2.11				12/31/15	-2.10

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

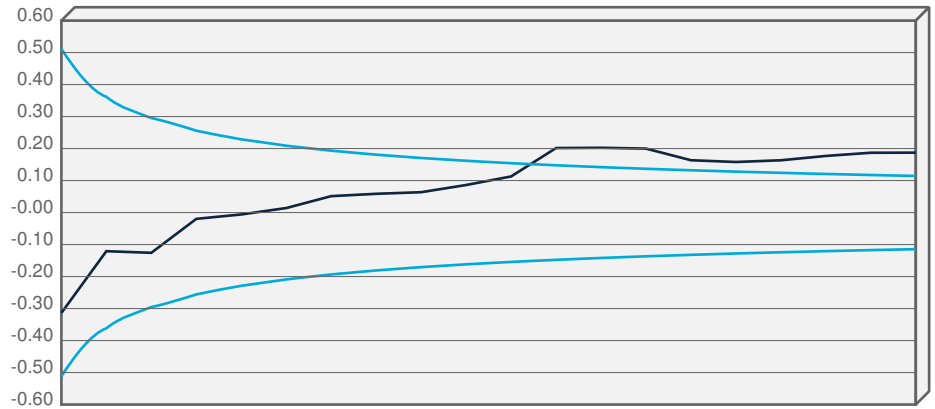
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Waterfall</b>									
<b>Net of Fee Return</b>	<b>3.06</b>	<b>4.35</b>	<b>7.59</b>	<b>11.37</b>	<b>8.31</b>	<b>9.12</b>		<b>6/30/11</b>	<b>10.43</b>
Policy Index	-0.24	0.43	1.95	3.61	4.03	3.76		6/30/11	4.53
Value Added	3.29	3.92	5.64	7.77	4.28	5.36		6/30/11	5.90
<b>Cerberus Capital Mgmt</b>									
<b>Net of Fee Return</b>	<b>2.39</b>	<b>3.48</b>	<b>4.77</b>	<b>7.42</b>	<b>8.53</b>			<b>9/30/14</b>	<b>8.28</b>
S&P LSTA Leverage Loan	1.45	2.58	3.65	4.44	4.21			9/30/14	4.07
Value Added	0.94	0.89	1.12	2.99	4.32			9/30/14	4.22
<b>Shenkman Capital</b>									
<b>Net of Fee Return</b>	<b>1.49</b>	<b>2.20</b>	<b>3.53</b>	<b>4.03</b>	<b>3.43</b>	<b>3.03</b>		<b>6/30/11</b>	<b>4.09</b>
S&P LSTA Leverage Loan	1.45	2.58	3.65	4.44	4.21	4.31		6/30/11	5.35
Value Added	0.04	-0.38	-0.11	-0.41	-0.78	-1.28		6/30/11	-1.26
<b>Fixed Income Composite</b>									
<b>Net of Fee Return</b>	<b>-0.28</b>	<b>0.11</b>	<b>1.08</b>	<b>2.63</b>	<b>3.73</b>	<b>3.15</b>	<b>4.38</b>	<b>6/30/92</b>	<b>6.38</b>
Policy Index	-1.13	-0.69	0.79	2.65	4.46	3.83	4.42	6/30/92	6.35
Value Added	0.85	0.80	0.29	-0.02	-0.73	-0.68	-0.04	6/30/92	0.03
Bloomberg Global Aggregate	1.36	2.45	4.26	6.97	3.14	1.49	2.57	6/30/92	5.20

# INVESTMENT MANAGER ANALYSIS

NISA

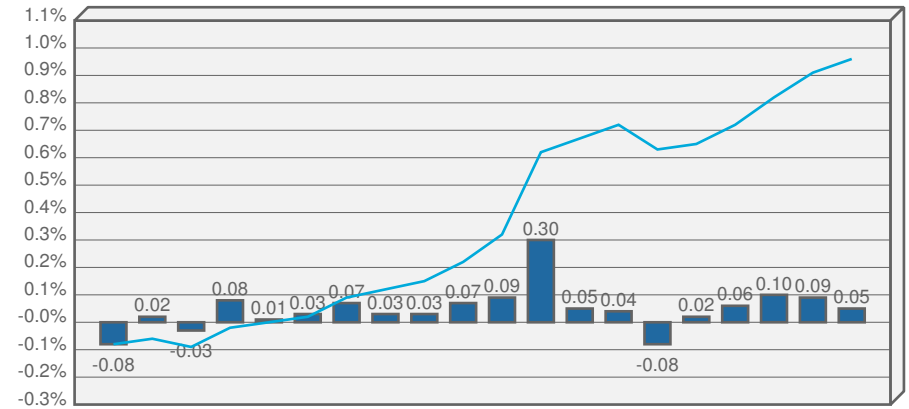
March 31, 2018

Cumulative Skill Analysis vs Benchmark



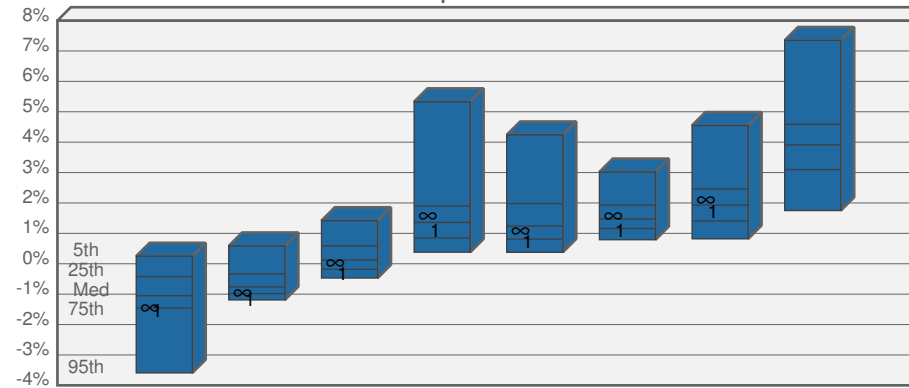
Excess Return:	0.19	Information Ratio:	1.20
Excess Risk:	0.16	T-Stat:	2.69

Value-Added Analysis vs Benchmark



Quarterly NOF Value Added vs. Bloomberg Aggregate  
Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ NISA	-1.38 (69)	-0.87 (61)	0.11 (51)	1.66 (35)	1.15 (53)	1.66 (36)	2.19 (36)	
1 Bloomberg Aggr	-1.46 (75)	-1.08 (84)	-0.24 (81)	1.20 (57)	0.82 (74)	1.20 (71)	1.82 (56)	
Median	-1.05	-0.76	0.12	1.36	1.24	1.47	1.93	3.91
Number of Funds	454	454	451	448	440	429	415	362

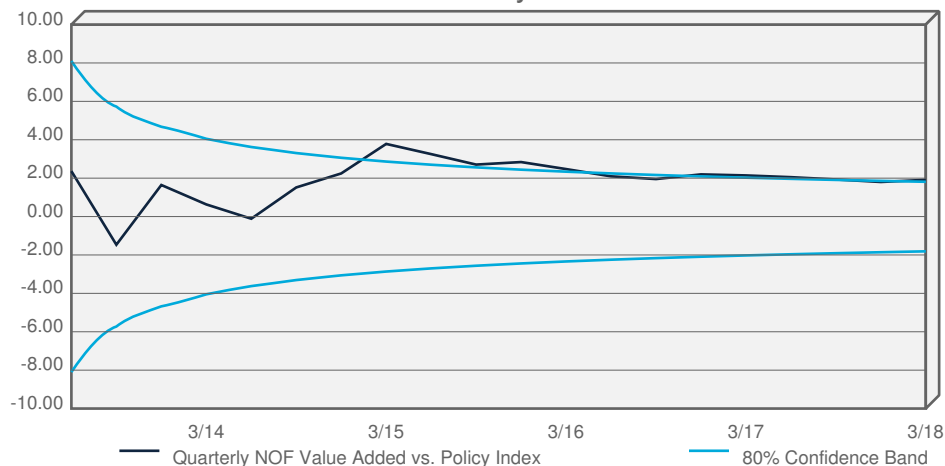
\*Compass Total Returns of Active Core Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Manulife Asset Mgmt

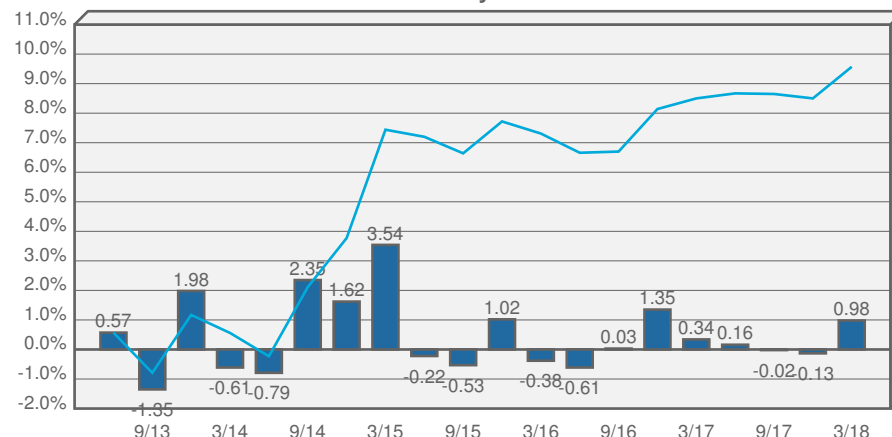
March 31, 2018

Cumulative Skill Analysis vs Benchmark



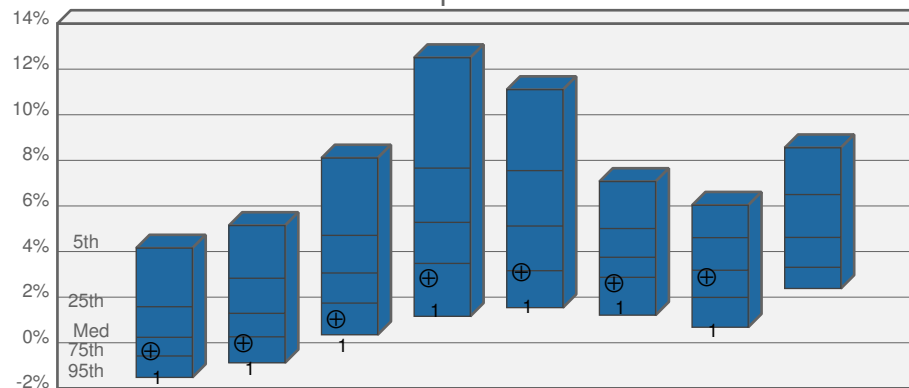
Excess Return:	1.91	Information Ratio:	0.78
Excess Risk:	2.46	T-Stat:	1.74

Value-Added Analysis vs Benchmark



Quarterly NOF Value Added vs. Policy Index  
Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊕ Manulife Asset	-0.35 (67)	-0.01 (80)	1.04 (87)	2.85 (83)	3.10 (77)	2.64 (79)	2.89 (56)	
1 Policy Index	-1.41 (92)	-1.00 (96)	-0.00 (97)	1.52 (93)	1.72 (93)	1.68 (91)	0.67 (95)	
Median	0.24	1.29	3.06	5.28	5.12	3.75	3.18	4.62
Number of Funds	277	276	275	275	268	263	223	126

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

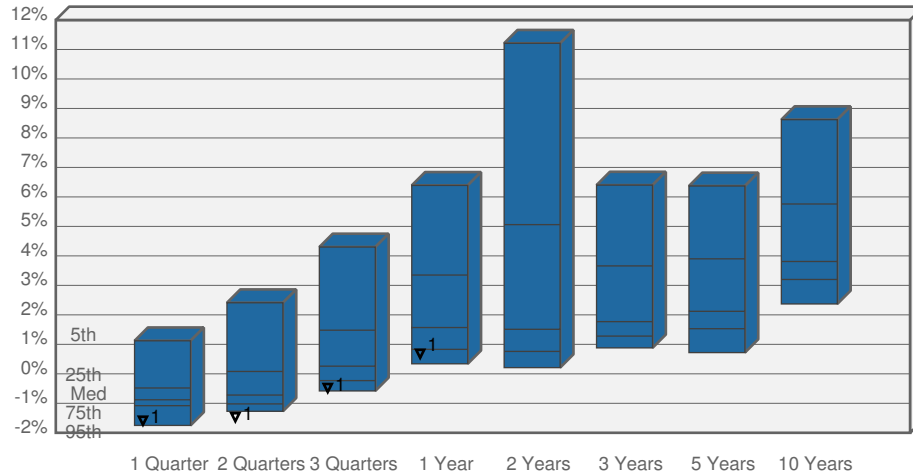


# INVESTMENT MANAGER ANALYSIS

BlackRock IG Credit

March 31, 2018

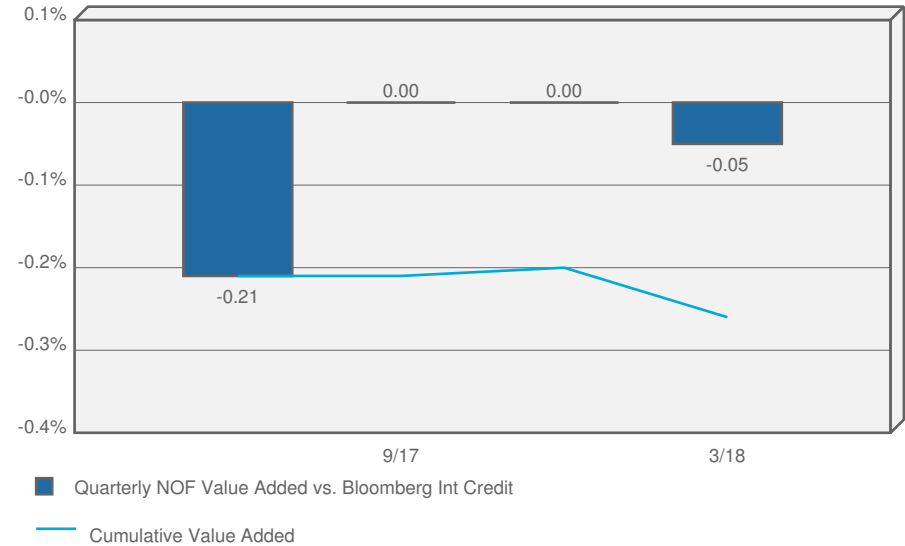
Performance Comparison vs Peer Universe\*



▼ BlackRock IG C  
 1 Bloomberg Int

	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
BlackRock IG C	-1.41 (89)	-1.29 (95)	-0.30 (79)	0.86 (73)				
Bloomberg Int	-1.36 (88)	-1.26 (94)	-0.28 (78)	1.10 (62)				
Median	-0.88	-0.72	0.26	1.57	1.51	1.77	2.12	3.81
Number of Funds	465	465	461	460	458	443	419	356

Value-Added Analysis vs Benchmark



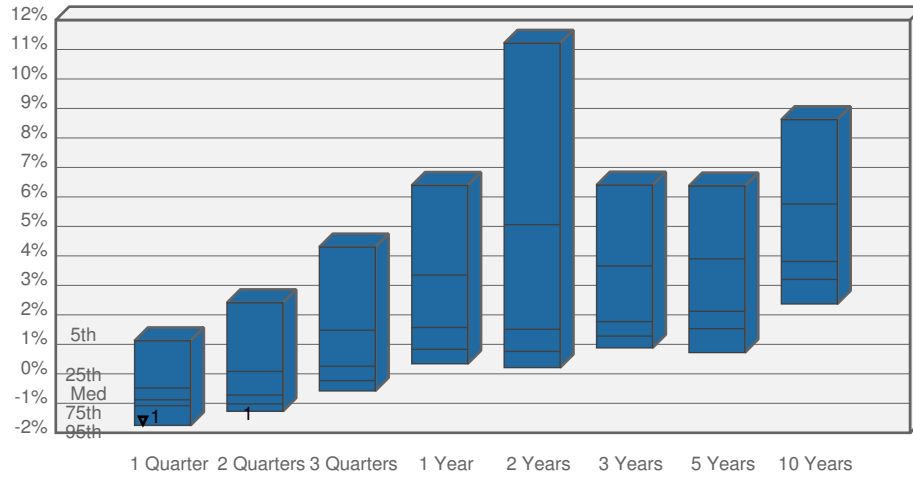
\*Compass Total Returns of Active Intermediate Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

BNY IG Credit

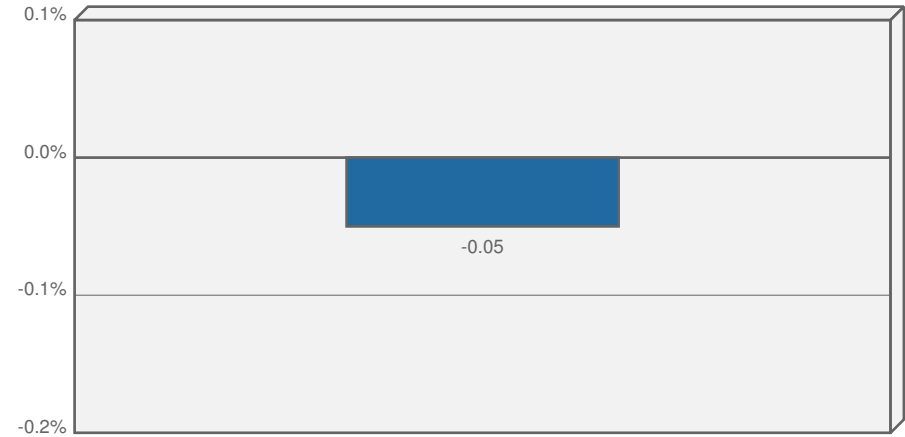
March 31, 2018

Performance Comparison vs Peer Universe\*



▼ BNY IG Credit	-1.41 (89)							
▬ Bloomberg Int	-1.36 (88)	-1.26 (94)						
Median	-0.88	-0.72	0.26	1.57	1.51	1.77	2.12	3.81
Number of Funds	465	465	461	460	458	443	419	356

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Bloomberg Int Credit  
 — Cumulative Value Added

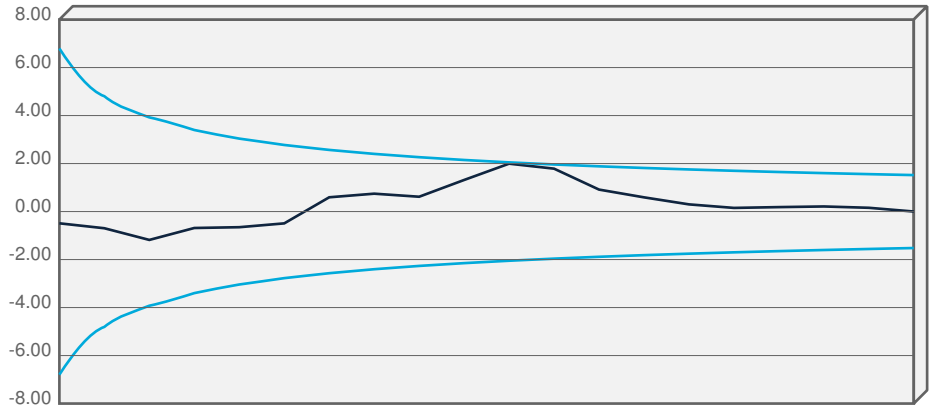
\*Compass Total Returns of Active Intermediate Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Columbia

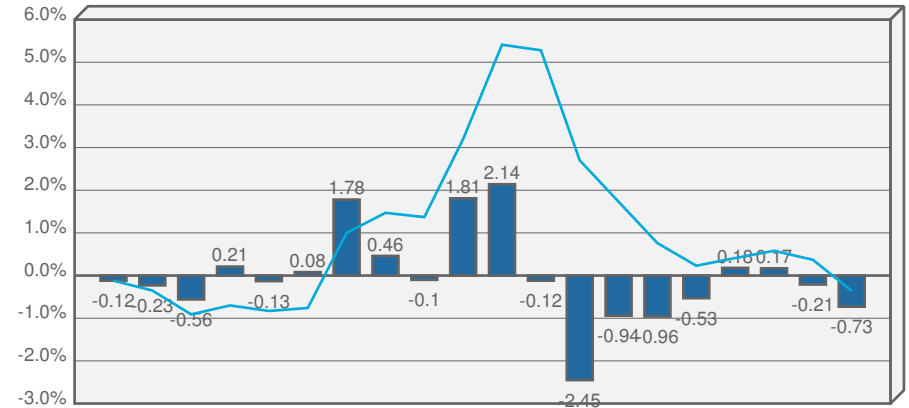
March 31, 2018

Cumulative Skill Analysis vs Benchmark



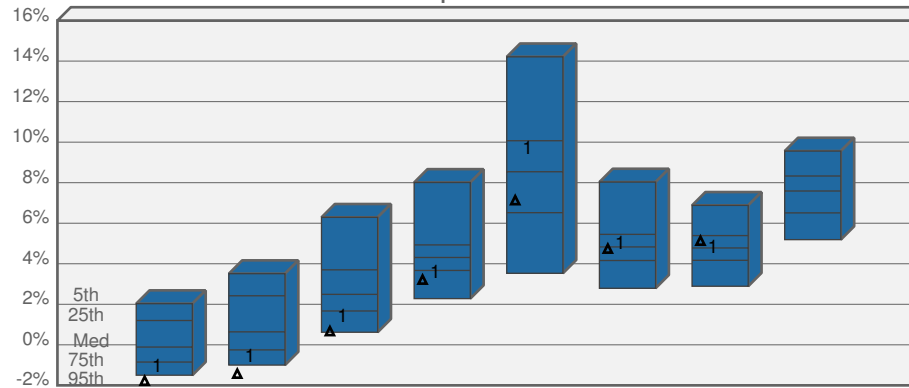
Excess Return:	0.00	Information Ratio:	0.00
Excess Risk:	2.07	T-Stat:	0.00

Value-Added Analysis vs Benchmark



Quarterly NOF Value Added vs. Bloomberg High Yield  
Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▲ Columbia	-1.51 (95)	-1.16 (95)	0.94 (89)	3.48 (80)	7.40 (63)	5.01 (42)	5.40 (24)	
■ Bloomberg High	-0.86 (75)	-0.39 (82)	1.57 (78)	3.78 (70)	9.90 (28)	5.17 (36)	4.99 (42)	
Median	-0.11	0.64	2.49	4.31	8.54	4.83	4.78	7.59
Number of Funds	228	228	228	226	222	219	196	129

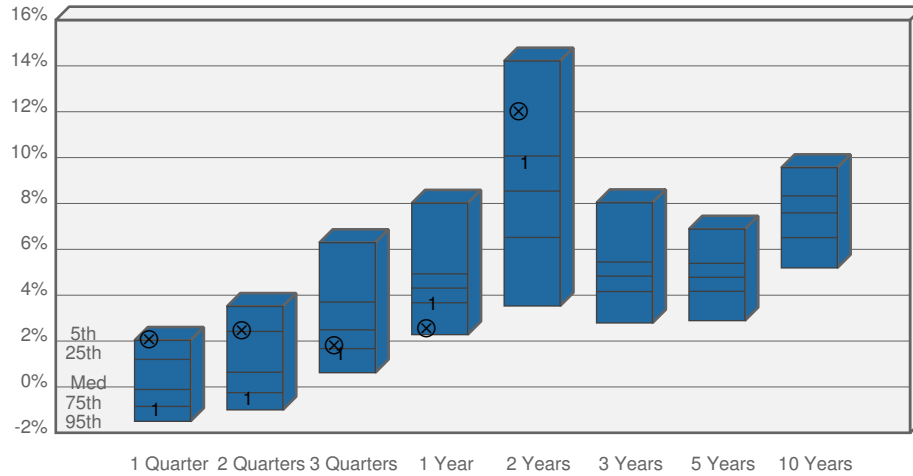
\*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

## Marathon Bluegrass

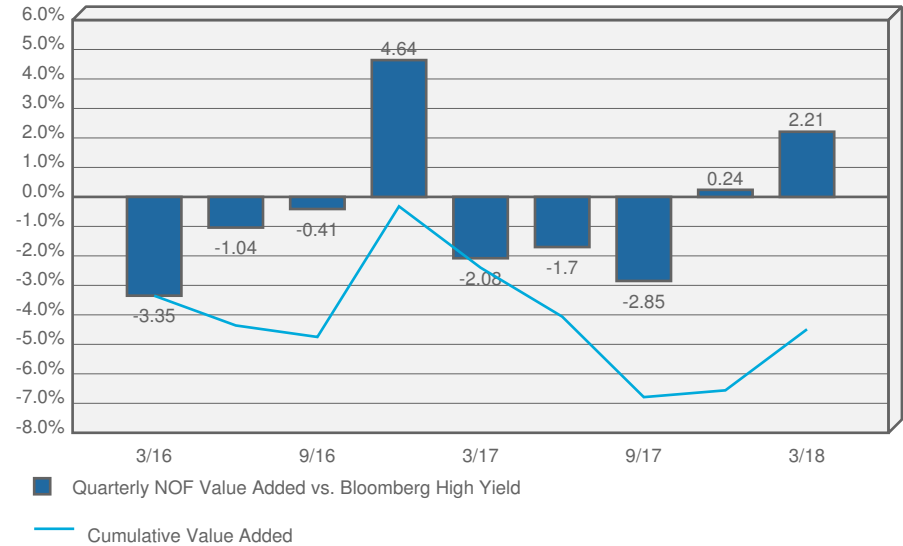
March 31, 2018

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗ Marathon Blueg	2.10 ( 4)	2.49 (23)	1.86 (66)	2.59 (91)	12.04 (10)			
1 Bloomberg High	-0.86 (75)	-0.39 (82)	1.57 (78)	3.78 (70)	9.90 (28)			
Median	-0.11	0.64	2.49	4.31	8.54	4.83	4.78	7.59
Number of Funds	228	228	228	226	222	219	196	129

Value-Added Analysis vs Benchmark



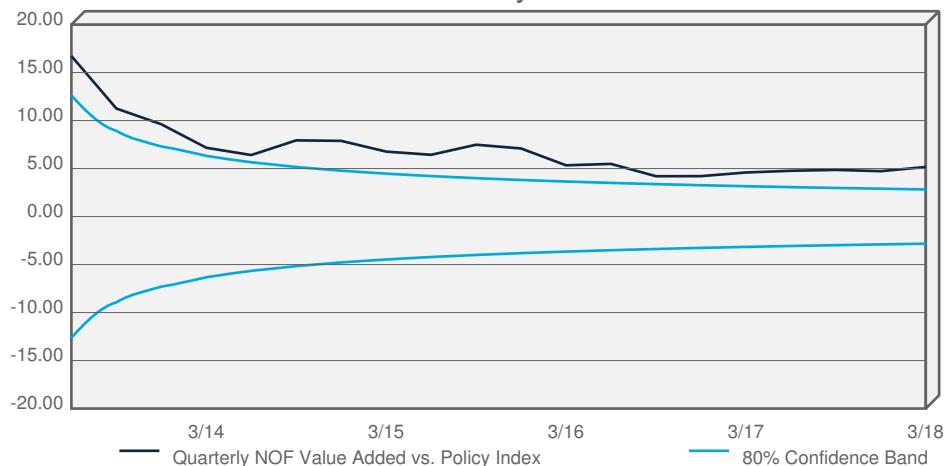
\*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

## Waterfall

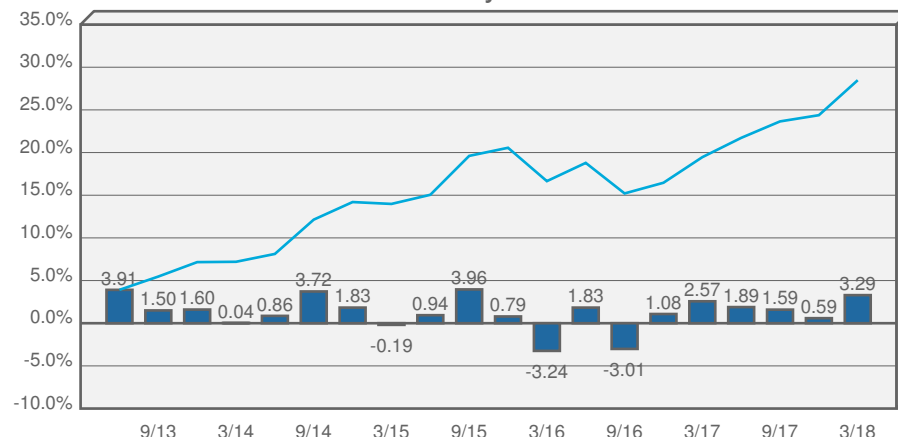
March 31, 2018

Cumulative Skill Analysis vs Benchmark



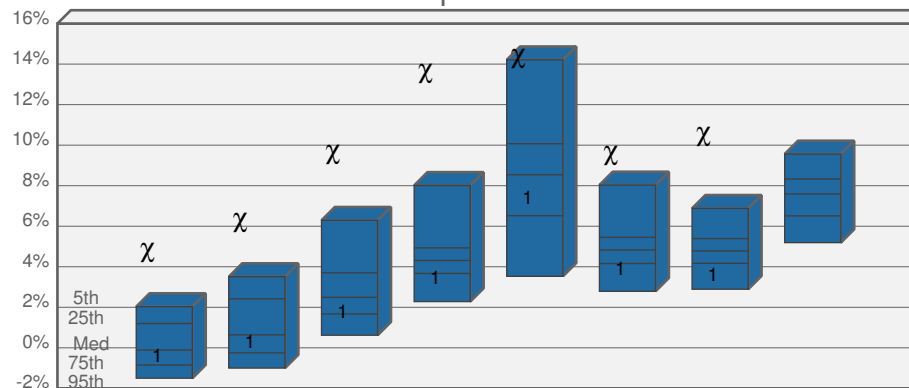
Excess Return:	5.17	Information Ratio:	1.34
Excess Risk:	3.84	T-Stat:	3.01

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Policy Index  
 — Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
χ Waterfall	4.62 ( 1)	6.07 ( 1)	9.43 ( 1)	13.42 ( 1)	14.17 ( 5)	9.36 ( 1)	10.33 ( 1)	
1 Policy Index	-0.24 (54)	0.43 (54)	1.95 (63)	3.61 (77)	7.55 (62)	4.03 (79)	3.76 (84)	
Median	-0.11	0.64	2.49	4.31	8.54	4.83	4.78	7.59
Number of Funds	228	228	228	226	222	219	196	129

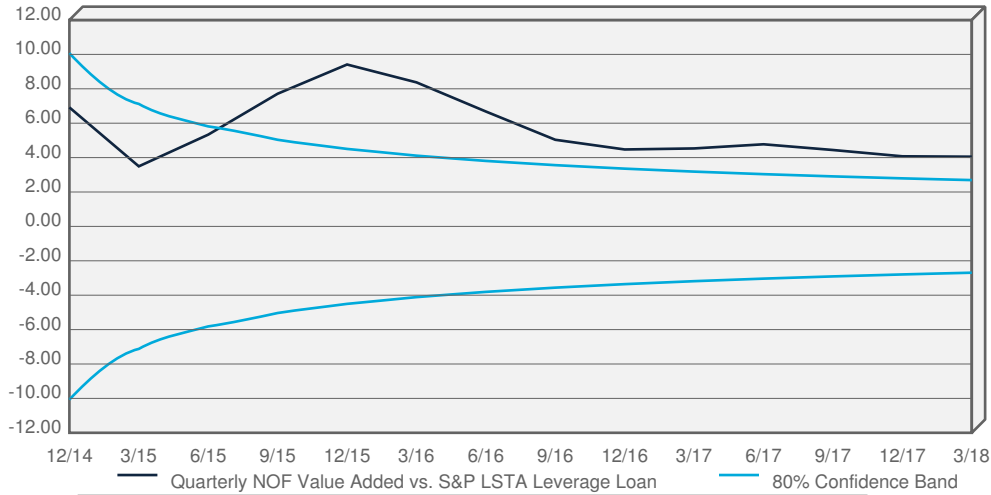
\*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

Cerberus Capital Mgmt

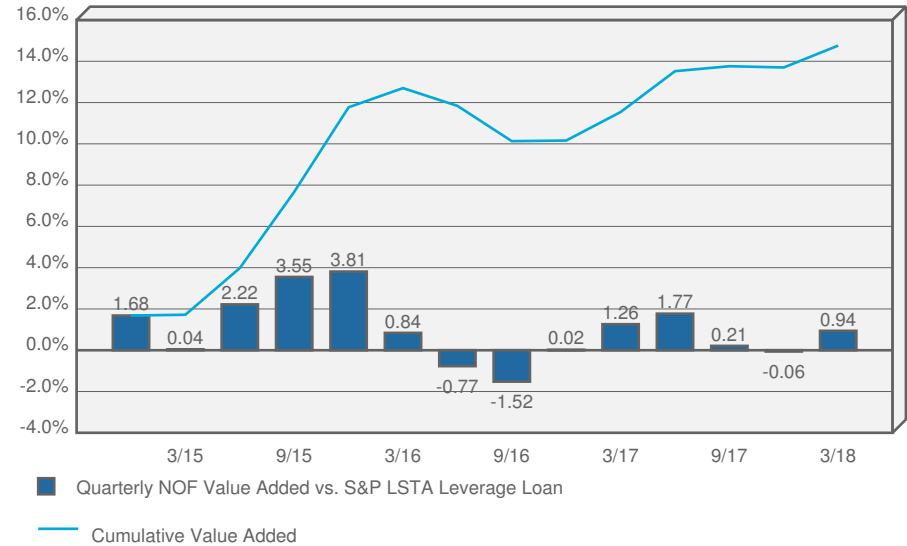
March 31, 2018

Cumulative Skill Analysis vs Benchmark



Excess Return:	4.05	Information Ratio:	1.32
Excess Risk:	3.06	T-Stat:	2.29

Value-Added Analysis vs Benchmark

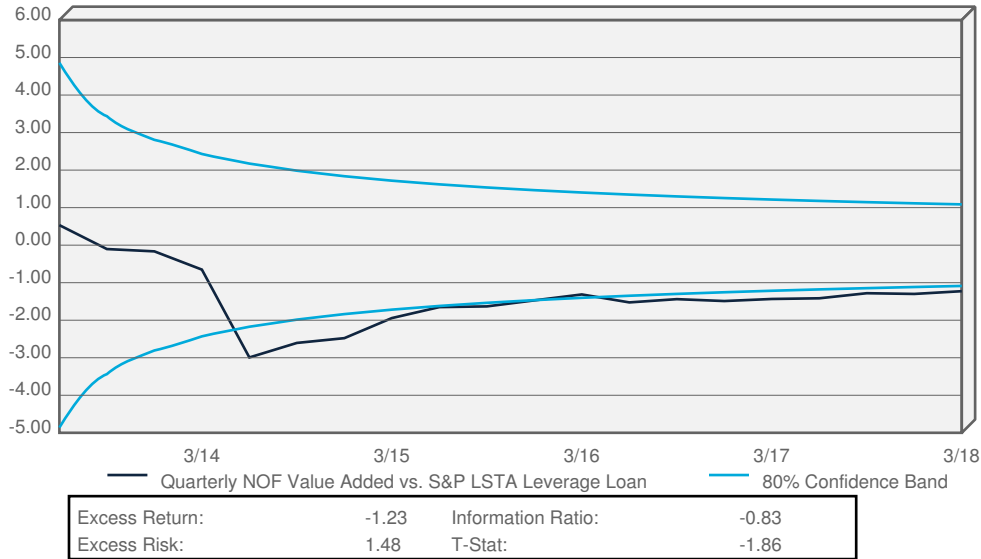


# INVESTMENT MANAGER ANALYSIS

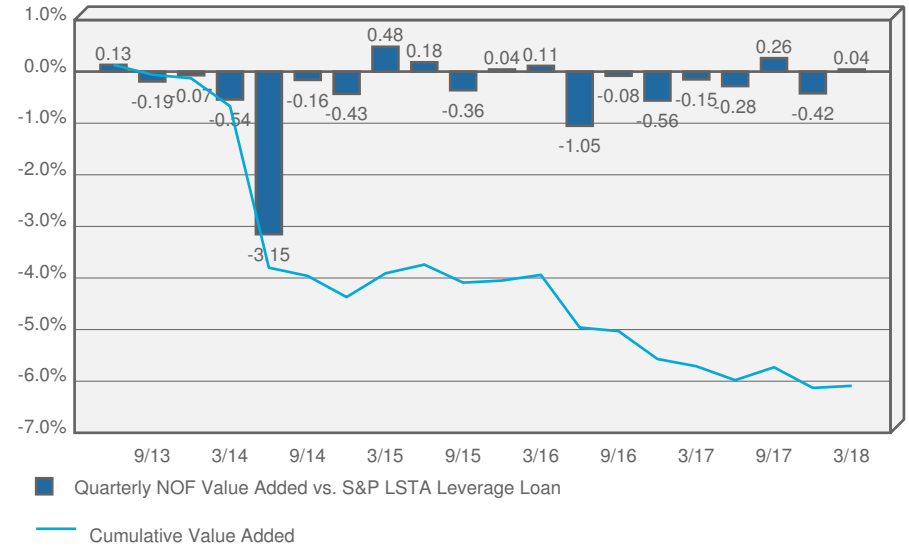
Shenkman Capital

March 31, 2018

Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark



# CUSTOM BENCHMARK SPECIFICATION

Fixed Income Composite

March 31, 2018

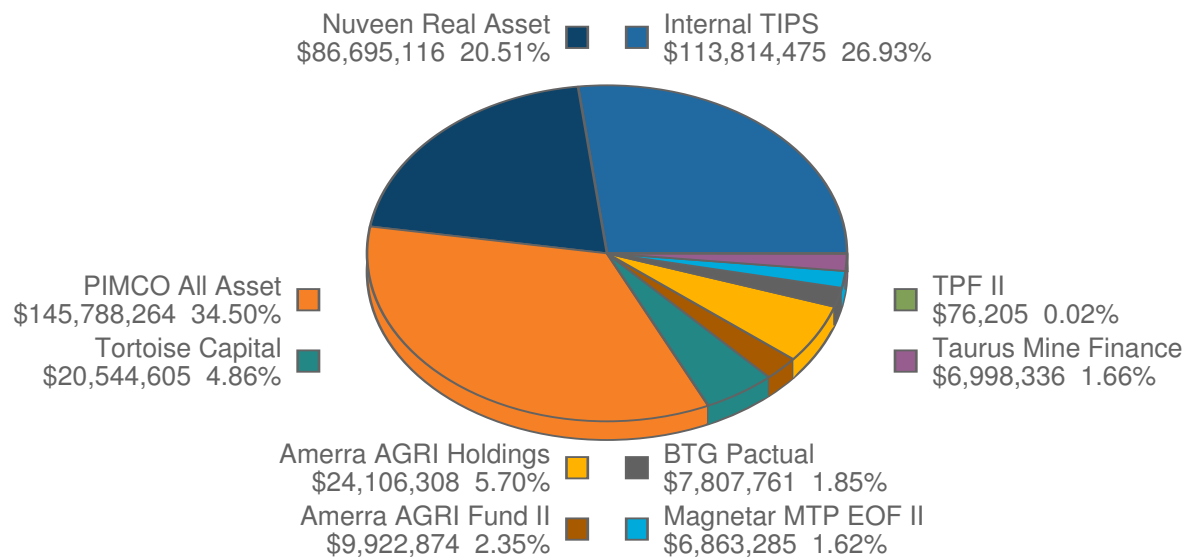
	Quarter Start	Quarter End	Percent	Description
Policy Index	9/92	6/17	100.00	Blended Fixed Benchmark
	9/17	3/18	50.00 50.00	Bloomberg Universal Bloomberg High Yield
Bloomberg Global Aggregate	9/92	3/18	100.00	Bloomberg Global Aggregate





# REAL RETURN

Wilshire Consulting  
**MANAGER ALLOCATION**  
 Real Return Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Internal TIPS</b>									
<b>Net of Fee Return</b>	<b>-0.33</b>	<b>-0.01</b>	<b>0.72</b>	<b>0.37</b>	<b>1.43</b>	<b>0.22</b>	<b>3.01</b>	<b>9/30/03</b>	<b>4.27</b>
Bloomberg 1-10 Yrs TIPS	-0.40	0.13	0.83	0.43	1.24	-0.23	2.78	9/30/03	3.97
Value Added	0.06	-0.14	-0.11	-0.06	0.19	0.45	0.23	9/30/03	0.30
<b>PIMCO All Asset</b>									
<b>Net of Fee Return</b>	<b>2.43</b>	<b>3.45</b>	<b>6.67</b>	<b>8.65</b>	<b>5.66</b>	<b>3.54</b>		<b>12/31/11</b>	<b>6.00</b>
Bloomberg 1-10 Yrs TIPS	-0.40	0.13	0.83	0.43	1.24	-0.06		12/31/11	0.80
Value Added	2.82	3.32	5.83	8.22	4.42	3.59		12/31/11	5.20
<b>Tortoise Capital</b>									
<b>Net of Fee Return</b>	<b>-9.78</b>	<b>-10.38</b>	<b>-12.13</b>	<b>-16.98</b>	<b>-8.92</b>	<b>-0.76</b>		<b>9/30/09</b>	<b>10.69</b>
Alerian MLP	-11.12	-11.96	-14.65	-20.07	-11.24	-5.85		9/30/09	6.26
Value Added	1.34	1.59	2.52	3.09	2.32	5.08		9/30/09	4.43
<b>Nuveen Real Asset</b>									
<b>Net of Fee Return</b>	<b>-2.87</b>	<b>-1.52</b>	<b>1.03</b>	<b>4.17</b>	<b>4.61</b>			<b>3/31/15</b>	<b>4.61</b>
Policy Index	-3.82	-2.78	-0.87	2.88	4.30			3/31/15	4.30
Value Added	0.94	1.26	1.90	1.28	0.31			3/31/15	0.31
<b>Amerra AGRI Fund II</b>									
<b>Net of Fee Return</b>	<b>-0.79</b>	<b>-2.79</b>	<b>-2.44</b>	<b>-1.39</b>	<b>4.66</b>	<b>5.86</b>		<b>12/31/12</b>	<b>4.72</b>
<b>Amerra AGRI Holdings</b>									
<b>Net of Fee Return</b>	<b>-1.15</b>	<b>-2.37</b>	<b>-3.85</b>	<b>-5.58</b>				<b>9/30/15</b>	<b>-1.14</b>
<b>BTG Pactual</b>									
<b>Net of Fee Return</b>	<b>-4.21</b>	<b>-1.39</b>	<b>-3.85</b>	<b>0.20</b>	<b>-7.78</b>			<b>12/31/14</b>	<b>-10.39</b>

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

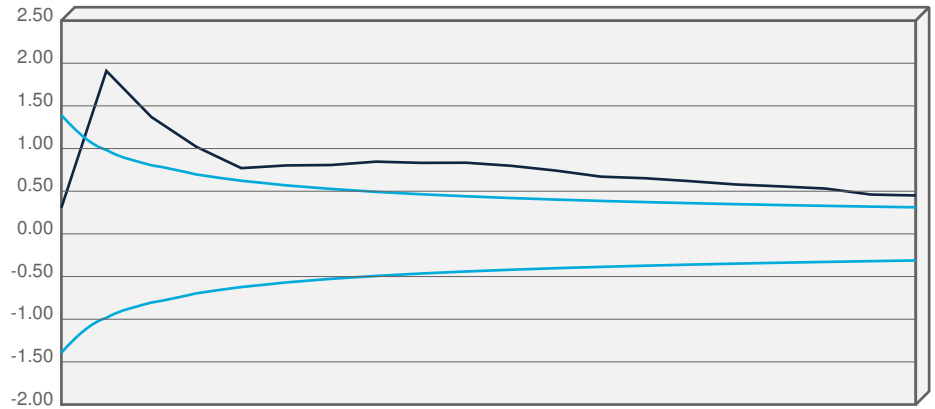
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Magnetar MTP EOF II Net of Fee Return</b>	<b>3.45</b>	<b>8.65</b>	<b>4.34</b>	<b>8.29</b>				<b>9/30/15</b>	<b>1.97</b>
<b>Taurus Mine Finance Net of Fee Return</b>	<b>3.99</b>	<b>2.40</b>	<b>4.24</b>	<b>6.64</b>	<b>14.28</b>			<b>3/31/15</b>	<b>14.28</b>
<b>TPF II Net of Fee Return</b>								<b>9/30/08</b>	
<b>Real Return Composite Net of Fee Return</b>	<b>-0.32</b>	<b>0.42</b>	<b>1.81</b>	<b>2.48</b>	<b>3.10</b>	<b>1.57</b>		<b>6/30/11</b>	<b>3.54</b>
Real Return Index (I)	-1.60	-1.08	-0.56	-0.48	1.42	1.78		6/30/11	2.50
Value Added	1.29	1.50	2.37	2.96	1.68	-0.21		6/30/11	1.04

# INVESTMENT MANAGER ANALYSIS

Internal TIPS

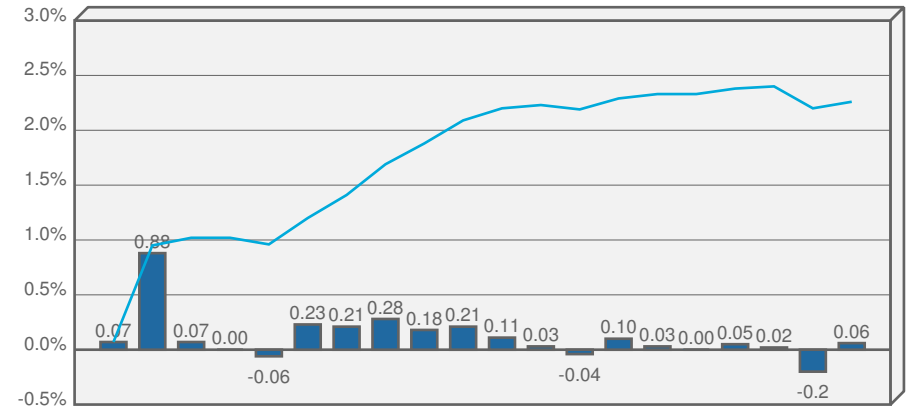
March 31, 2018

Cumulative Skill Analysis vs Benchmark



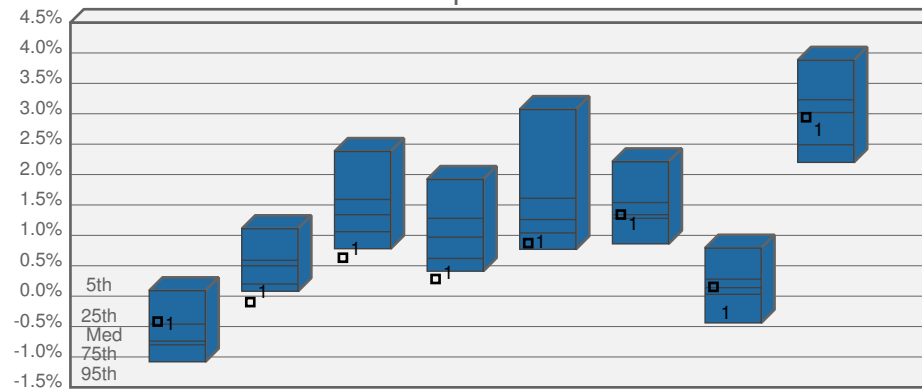
Excess Return:	0.45	Information Ratio:	1.06
Excess Risk:	0.42	T-Stat:	2.38

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Bloomberg 1-10 Yrs TIPS  
 — Cumulative Value Added

Performance Comparison vs Peer Universe\*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Internal TIPS	-0.33 (12)	-0.01 (97)	0.72 (97)	0.37 (95)	0.96 (92)	1.43 (37)	0.24 (29)	3.03 (48)
Bloomberg 1-10	-0.40 (19)	0.13 (85)	0.83 (92)	0.43 (92)	0.94 (92)	1.24 (84)	-0.23 (92)	2.78 (67)
Median	-0.74	0.50	1.34	0.97	1.26	1.34	0.14	3.02
Number of Funds	41	41	41	41	40	40	40	31

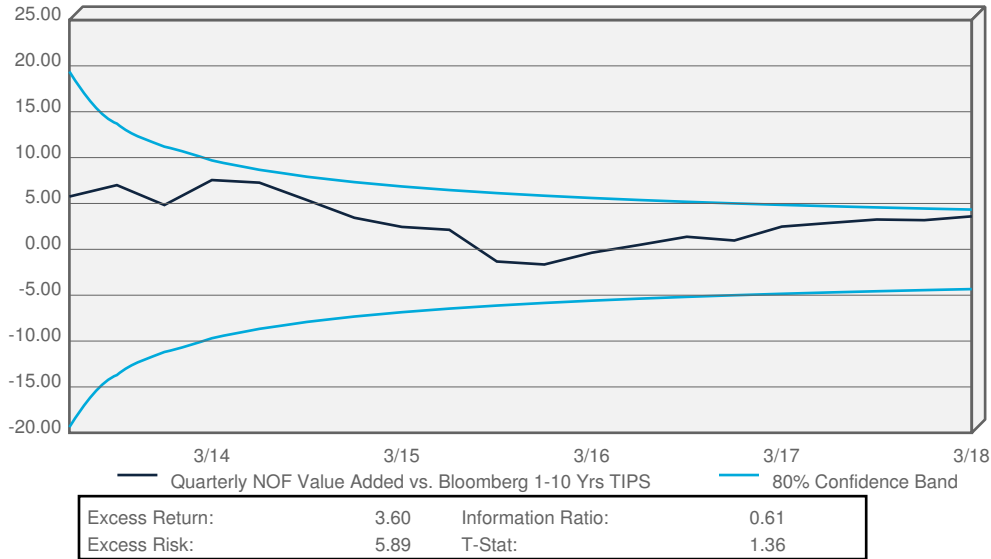
\*Compass Total Returns of Active TIPS Portfolios Universe - Gross of Fees

# INVESTMENT MANAGER ANALYSIS

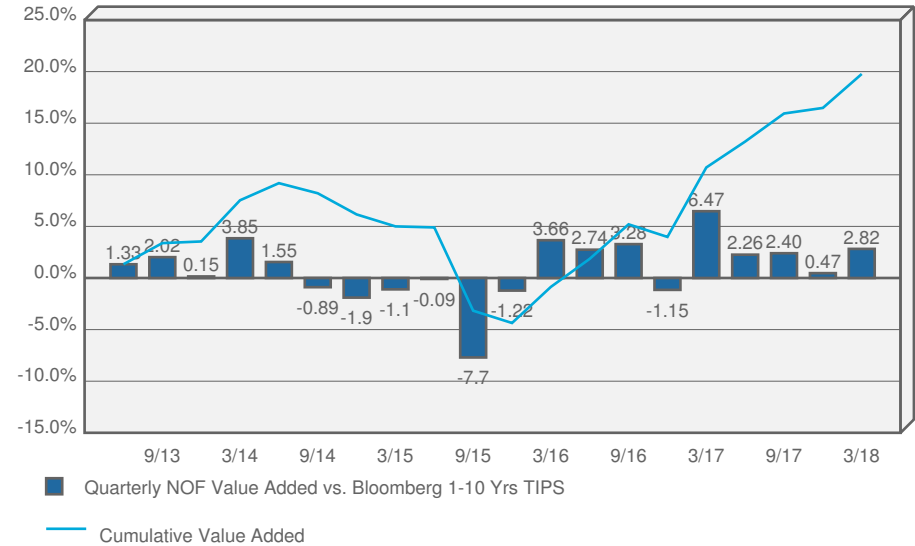
PIMCO All Asset

March 31, 2018

Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark

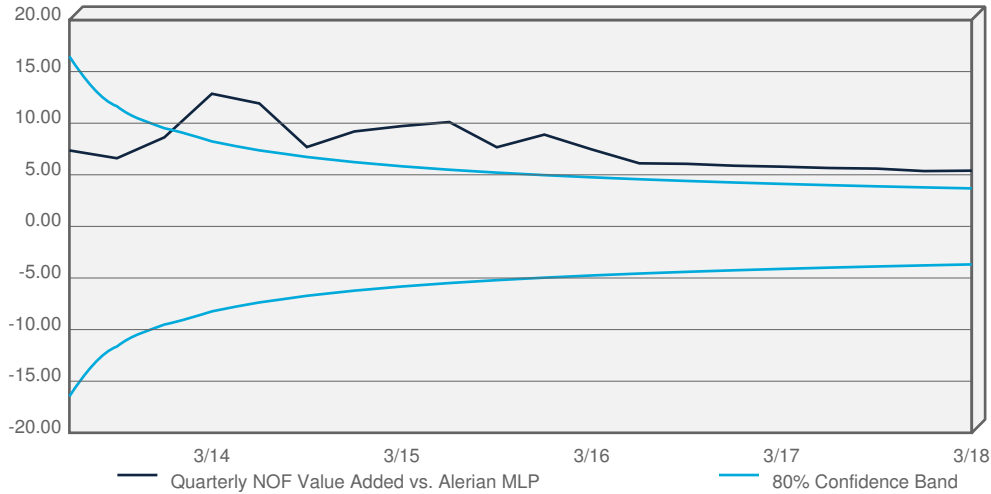


# INVESTMENT MANAGER ANALYSIS

Tortoise Capital

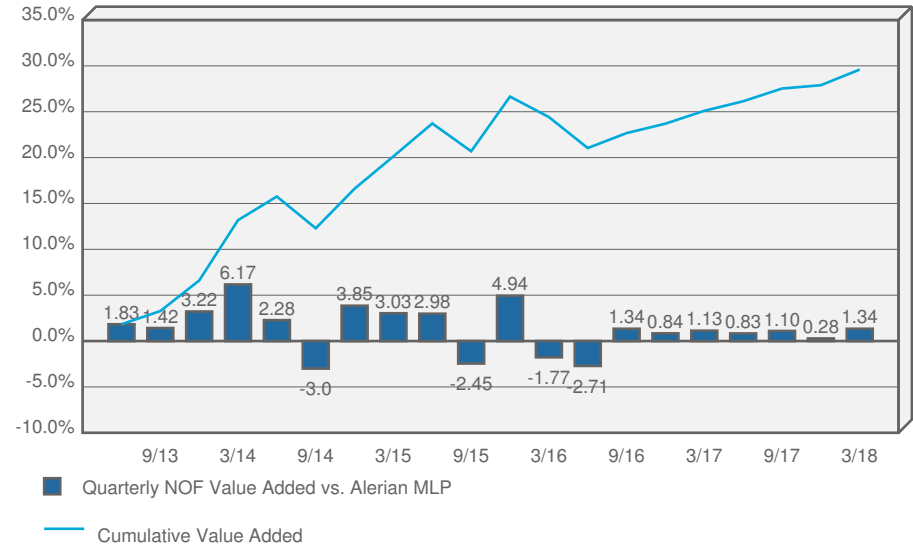
March 31, 2018

Cumulative Skill Analysis vs Benchmark



Excess Return:	5.40	Information Ratio:	1.08
Excess Risk:	5.01	T-Stat:	2.41

Value-Added Analysis vs Benchmark



# CUSTOM BENCHMARK SPECIFICATION

Real Return Composite

March 31, 2018

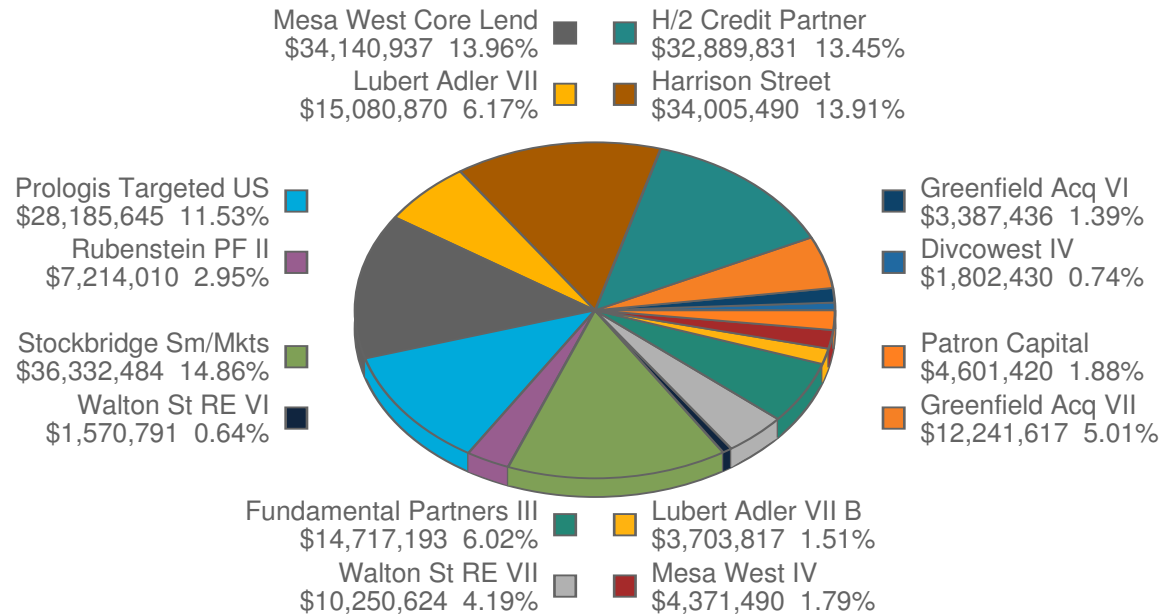
	Quarter Start	Quarter End	Percent	Description
Real Return Index (I)	9/11	3/18	100.00	Real Return Index (I)





# REAL ESTATE

Wilshire Consulting  
**MANAGER ALLOCATION**  
 Real Estate Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

## Trailing Returns

*Periods Ended March 31, 2018*

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Divcowest IV</b>									
<b>Net of Fee Return</b>	<b>11.40</b>	<b>11.62</b>	<b>10.71</b>	<b>21.83</b>	<b>30.58</b>			<b>3/31/14</b>	<b>24.58</b>
<b>Greenfield Acq VI</b>									
<b>Net of Fee Return</b>	<b>-12.45</b>	<b>-11.35</b>	<b>-7.51</b>	<b>-7.56</b>	<b>2.65</b>	<b>9.26</b>		<b>12/31/12</b>	<b>8.15</b>
<b>Greenfield Acq VII</b>									
<b>Net of Fee Return</b>	<b>6.14</b>	<b>7.00</b>	<b>15.12</b>	<b>15.75</b>	<b>15.12</b>			<b>6/30/14</b>	<b>12.42</b>
<b>H/2 Credit Partner</b>									
<b>Net of Fee Return</b>	<b>0.06</b>	<b>0.20</b>	<b>2.81</b>	<b>4.88</b>	<b>6.07</b>	<b>5.38</b>		<b>6/30/11</b>	<b>6.20</b>
<b>Harrison Street</b>									
<b>Net of Fee Return</b>	<b>2.38</b>	<b>5.27</b>	<b>7.76</b>	<b>10.41</b>	<b>9.05</b>	<b>9.47</b>		<b>6/30/12</b>	<b>8.59</b>
<b>Lubert Adler VII</b>									
<b>Net of Fee Return</b>	<b>1.47</b>	<b>5.84</b>	<b>7.63</b>	<b>8.96</b>	<b>4.35</b>			<b>6/30/14</b>	<b>-3.31</b>
<b>Mesa West Core Lend</b>									
<b>Net of Fee Return</b>	<b>1.72</b>	<b>3.31</b>	<b>4.80</b>	<b>6.65</b>	<b>7.28</b>			<b>6/30/13</b>	<b>6.56</b>
<b>Prologis Targeted US</b>									
<b>Net of Fee Return</b>	<b>3.81</b>	<b>10.28</b>	<b>14.04</b>	<b>18.63</b>	<b>15.17</b>			<b>9/30/14</b>	<b>14.90</b>
<b>Rubenstein PF II</b>									
<b>Net of Fee Return</b>	<b>3.11</b>	<b>8.72</b>	<b>11.71</b>	<b>15.82</b>	<b>6.69</b>			<b>6/30/13</b>	<b>13.70</b>
<b>Stockbridge Sm/Mkts</b>									
<b>Net of Fee Return</b>	<b>1.88</b>	<b>3.57</b>	<b>5.74</b>	<b>7.56</b>	<b>9.83</b>			<b>6/30/14</b>	<b>9.79</b>

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Walton St RE VI</b>									
<b>Net of Fee Return</b>	<b>2.34</b>	<b>4.97</b>	<b>7.07</b>	<b>8.59</b>	<b>4.93</b>	<b>8.65</b>		<b>6/30/09</b>	<b>-19.20</b>
<b>Walton St RE VII</b>									
<b>Net of Fee Return</b>	<b>2.50</b>	<b>4.67</b>	<b>8.80</b>	<b>11.37</b>	<b>12.49</b>			<b>6/30/13</b>	<b>13.51</b>
<b>Fundamental Partners III</b>									
<b>Net of Fee Return</b>	<b>1.56</b>	<b>3.50</b>	<b>3.45</b>					<b>6/30/17</b>	<b>3.45</b>
<b>Lubert Adler VII B</b>									
<b>Net of Fee Return</b>	<b>-0.54</b>	<b>-4.63</b>	<b>-4.63</b>					<b>6/30/17</b>	<b>-4.63</b>
<b>Mesa West IV</b>									
<b>Net of Fee Return</b>	<b>2.22</b>	<b>3.52</b>	<b>5.39</b>	<b>2.70</b>				<b>3/31/17</b>	<b>2.70</b>
<b>Patron Capital</b>									
<b>Net of Fee Return</b>	<b>20.51</b>	<b>19.42</b>	<b>28.95</b>	<b>35.07</b>				<b>9/30/16</b>	<b>-0.81</b>
<b>Real Estate Composite</b>									
<b>Net of Fee Return</b>	<b>2.27</b>	<b>4.59</b>	<b>7.23</b>	<b>9.60</b>	<b>9.60</b>	<b>9.01</b>		<b>6/30/09</b>	<b>9.24</b>
NCREIF ODCE NOF 1 Quarter Lag	1.85	3.52	5.04	6.66	9.42	10.52		6/30/09	7.86
Value Added	0.42	1.07	2.19	2.94	0.18	-1.51		6/30/09	1.38

# CUSTOM BENCHMARK SPECIFICATION

Real Return Composite

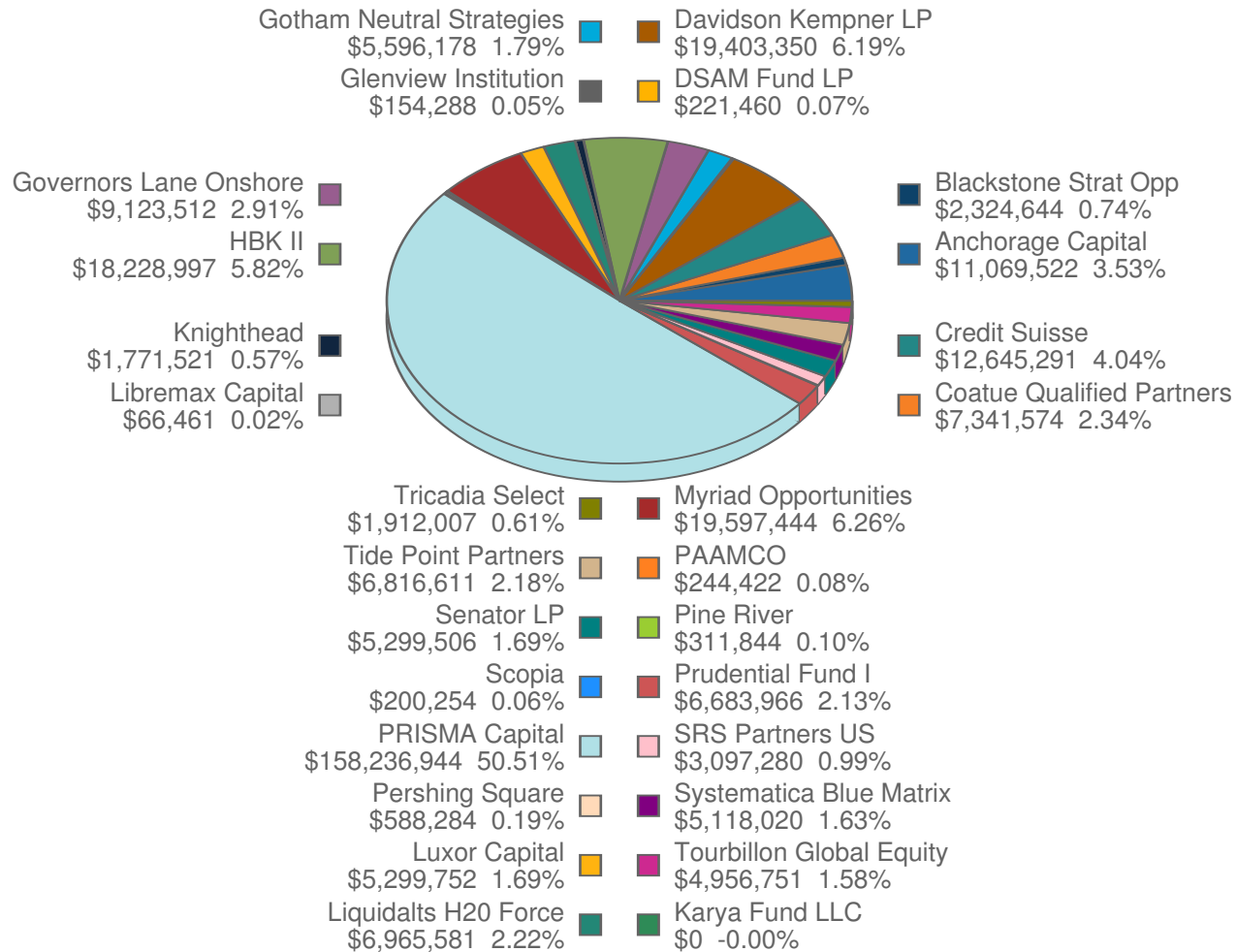
March 31, 2018

	Quarter Start	Quarter End	Percent	Description
Real Return Index (I)	9/11	3/18	100.00	Real Return Index (I)



# ABSOLUTE RETURN

Wilshire Consulting  
**MANAGER ALLOCATION**  
 Absolute Return Composite  
*As of March 31, 2018*



# PERFORMANCE COMPARISON

## Trailing Returns

*Periods Ended March 31, 2018*

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Anchorage Capital Net of Fee Return</b>	<b>0.63</b>	<b>3.80</b>	<b>5.41</b>	<b>4.65</b>				<b>9/30/16</b>	<b>6.46</b>
<b>Blackstone Strat Opp Net of Fee Return</b>	<b>2.30</b>	<b>3.65</b>						<b>9/30/17</b>	<b>3.65</b>
<b>Coatue Qualified Partners Net of Fee Return</b>	<b>5.79</b>	<b>6.46</b>	<b>13.28</b>	<b>21.79</b>				<b>6/30/15</b>	<b>14.99</b>
<b>Credit Suisse Net of Fee Return</b>	<b>1.53</b>	<b>3.09</b>	<b>5.12</b>					<b>6/30/17</b>	<b>5.12</b>
<b>Davidson Kempner LP Net of Fee Return</b>	<b>2.05</b>	<b>2.85</b>	<b>4.34</b>	<b>6.44</b>				<b>3/31/16</b>	<b>7.95</b>
<b>DSAM Fund LP Net of Fee Return</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.45</b>				<b>6/30/16</b>	<b>1.51</b>
<b>Glenview Institution Net of Fee Return</b>								<b>12/31/15</b>	
<b>Gotham Neutral Strategies Net of Fee Return</b>	<b>2.63</b>	<b>2.53</b>	<b>2.04</b>	<b>-2.10</b>				<b>3/31/17</b>	<b>-2.10</b>
<b>Governors Lane Onshore Net of Fee Return</b>	<b>-0.13</b>	<b>-1.83</b>	<b>-0.42</b>	<b>2.30</b>				<b>3/31/17</b>	<b>2.30</b>
<b>HBK II Net of Fee Return</b>	<b>0.77</b>	<b>2.87</b>	<b>3.33</b>	<b>4.44</b>	<b>3.19</b>			<b>12/31/13</b>	<b>3.23</b>



# PERFORMANCE COMPARISON

## Trailing Returns

*Periods Ended March 31, 2018*

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Knighthead Net of Fee Return</b>	<b>1.46</b>	<b>2.54</b>	<b>3.95</b>	<b>4.73</b>	<b>1.94</b>			<b>12/31/13</b>	<b>2.35</b>
<b>Libremax Capital Net of Fee Return</b>								<b>9/30/14</b>	
<b>Liquidalts H20 Force Net of Fee Return</b>	<b>3.23</b>	<b>1.38</b>	<b>3.75</b>	<b>6.87</b>				<b>9/30/16</b>	<b>8.67</b>
<b>Luxor Capital Net of Fee Return</b>	<b>6.84</b>	<b>10.40</b>	<b>17.70</b>	<b>21.02</b>	<b>6.15</b>			<b>3/31/14</b>	<b>1.46</b>
<b>Myriad Opportunities Net of Fee Return</b>	<b>1.32</b>	<b>4.89</b>	<b>10.10</b>	<b>15.25</b>				<b>6/30/16</b>	<b>11.27</b>
<b>PAAMCO Net of Fee Return</b>								<b>9/30/11</b>	
<b>Pershing Square Net of Fee Return</b>	<b>-5.47</b>	<b>-4.17</b>						<b>9/30/17</b>	<b>-4.17</b>
<b>Pine River Net of Fee Return</b>								<b>6/30/14</b>	
<b>PRISMA Capital Net of Fee Return</b>	<b>2.37</b>	<b>3.60</b>	<b>5.39</b>	<b>5.60</b>	<b>1.74</b>	<b>3.42</b>		<b>9/30/11</b>	<b>3.99</b>
<b>Prudential Fund I Net of Fee Return</b>	<b>0.70</b>	<b>0.67</b>	<b>1.70</b>	<b>5.00</b>				<b>3/31/17</b>	<b>5.00</b>

# PERFORMANCE COMPARISON

## Trailing Returns

Periods Ended March 31, 2018

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
<b>Scopia</b>									
<b>Net of Fee Return</b>								<b>12/31/14</b>	
<b>Senator LP</b>									
<b>Net of Fee Return</b>	<b>-2.77</b>	<b>-0.22</b>	<b>3.45</b>	<b>6.88</b>				<b>9/30/16</b>	<b>6.78</b>
<b>SRS Partners US</b>									
<b>Net of Fee Return</b>	<b>0.41</b>	<b>3.42</b>						<b>9/30/17</b>	<b>3.42</b>
<b>Systematica Blue Matrix</b>									
<b>Net of Fee Return</b>	<b>-1.00</b>	<b>-0.25</b>	<b>5.40</b>	<b>4.22</b>				<b>3/31/17</b>	<b>4.22</b>
<b>Tide Point Partners</b>									
<b>Net of Fee Return</b>	<b>-4.89</b>	<b>2.40</b>	<b>4.76</b>	<b>-3.80</b>				<b>3/31/17</b>	<b>-3.80</b>
<b>Tourbillon Global Equity</b>									
<b>Net of Fee Return</b>	<b>-5.67</b>	<b>-14.26</b>	<b>-15.30</b>	<b>-16.73</b>				<b>12/31/15</b>	<b>-12.29</b>
<b>Tricadia Select</b>									
<b>Net of Fee Return</b>	<b>0.90</b>	<b>-3.13</b>						<b>9/30/17</b>	<b>-3.13</b>
<b>Absolute Return Composite</b>									
<b>Net of Fee Return</b>	<b>1.61</b>	<b>2.94</b>	<b>5.01</b>	<b>5.46</b>	<b>2.14</b>	<b>4.14</b>		<b>3/31/10</b>	<b>4.15</b>
HFRI FOF Div (1 Month Lag)	1.43	3.13	4.78	5.73	1.84	3.50		3/31/10	3.09
Value Added	0.17	-0.20	0.23	-0.27	0.30	0.64		3/31/10	1.06

# CUSTOM BENCHMARK SPECIFICATION

Absolute Return Composite

March 31, 2018

	Quarter Start	Quarter End	Percent	Description
HFRI FOF Div (1 Month Lag)	6/10	3/18	100.00	HFRI FOF Div (1 Month Lag)