Wilshire

Retirement Board of Allegheny County

Executive Summary of Investment Performance

David Lindberg, CFA – Managing Director
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Quarter Ending June 30, 2016

Capital Markets Review

Asset Class Performance

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Annual Asset Class Returns - Best to Worst

2011	2012	2013	2014	2015	**YTD 2016**
MLPs 13.9%	Emrg Mrkts 18.6%	U.S. Equity 33.1%	REITs 31.8%	REITs 4.2%	MLPs 14.7%
U.S. TIPS 13.6%	Developed 17.9%	MLPs 27.6%	U.S. Equity 12.7%	U.S. Equity 0.7%	Commodities 13.3%
REITs 9.2%	REITs 17.6%	Developed 23.3%	Core Bond 6.0%	Core Bond 0.6%	REITs 11.1%
Core Bond 7.8%	U.S. Equity 16.1%	High Yield 7.4%	MLPs 4.8%	T-Bills 0.1%	High Yield 9.1%
High Yield 5.0%	High Yield 15.8%	REITs 1.9%	U.S. TIPS 3.6%	Developed -0.4%	Emrg Mrkts 6.6%
U.S. Equity 1.0%	U.S. TIPS 7.0%	T-Bills 0.1%	High Yield 2.5%	U.S. TIPS -1.4%	U.S. TIPS 6.2%
T-Bills 0.1%	MLPs 4.8%	Core Bond -2.0%	T-Bills 0.0%	High Yield -4.5%	Core Bond 5.3%
Developed -11.7%	Core Bond 4.2%	Emrg Mrkts -2.3%	Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	U.S. Equity 4.0%
Commodities -13.3%	T-Bills 0.1%	U.S. TIPS -8.6%	Developed -4.5%	Commodities -24.7%	T-Bills 0.1%
Emrg Mrkts -18.2%	Commodities -1.0%	Commodities -9.5%	Commodities -17.0%	MLPs -32.6%	Developed -4.0%

Annualized 5-Year as of June '16
REITs 12.5%
U.S. Equity 11.6%
High Yield 5.8%
Core Bond 3.8%
MLPs 3.2%
U.S. TIPS 2.6%
Developed 2.1%
T-Bills 0.1%
Emrg Mrkts -3.4%
Commodities -10.8%

Data sources: Wilshire Compass

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

U.S. Equity

The U.S. stock market was up for the second quarter of 2016 by 2.8%. Price swings during the quarter were not nearly as extreme as what investors experienced during the first quarter, except for the last week of trading. The market was up in both April and May and rebounded from the U.K.-driven sell-off to post three strong days to end the quarter. The Federal Open Market Committee decided in June to maintain the current Fed Funds rate although they cut their forecast for economic growth in the U.S., the second downward revision this year.

Large capitalization stocks underperformed smaller shares during the quarter while growth stocks trailed value. Sector performance was mostly positive with Energy, Telecom Services and Utilities leading with returns of 11.7%, 7.7% and 7.4, respectively.

The big news during the quarter, and perhaps since the Global Financial Crisis (GFC), was the 'Brexit' vote with the United Kingdom deciding to withdraw from the European Union. The initial reaction from the markets was not surprising; equity prices fell while bond prices rose. However, investors are quickly learning how to manage a post-Brexit world due, in part, to the fact that the entirety of the fallout will not be known for possibly years.

Non-U.S. Equity

The financial news cycle in the second quarter was dominated by the Brexit vote, overshadowing striking downturns in Asia/Pacific regional markets. The economic slowdown in China, combined with a generally weaker forecast of corporate earnings throughout the region, put investors in a selling mood overall. Despite the Brexit turmoil, however, European stocks managed modest gains. Emerging market stocks presented a mixed picture with Asian shares underperforming other world region equities.

Fixed Income

U.S. Treasury securities extended their rally in the second quarter thanks to broad investor uncertainty, initially over the outcome of the Brexit vote, then over the details and timetable of the withdrawal of the U.K. from the European Union. Most of the rally unsurprisingly occurred as the Brexit referendum results were followed by broad flight-to-safety purchases in the two trading days after the vote. The bellwether 10-year U.S. Treasury yield fell from 1.78% as of March 31 to 1.49% as of June 30. Credit yields tightened somewhat over the quarter as well, as investors continued to seek incremental yield wherever they could find it.

U.K. Current Headwinds

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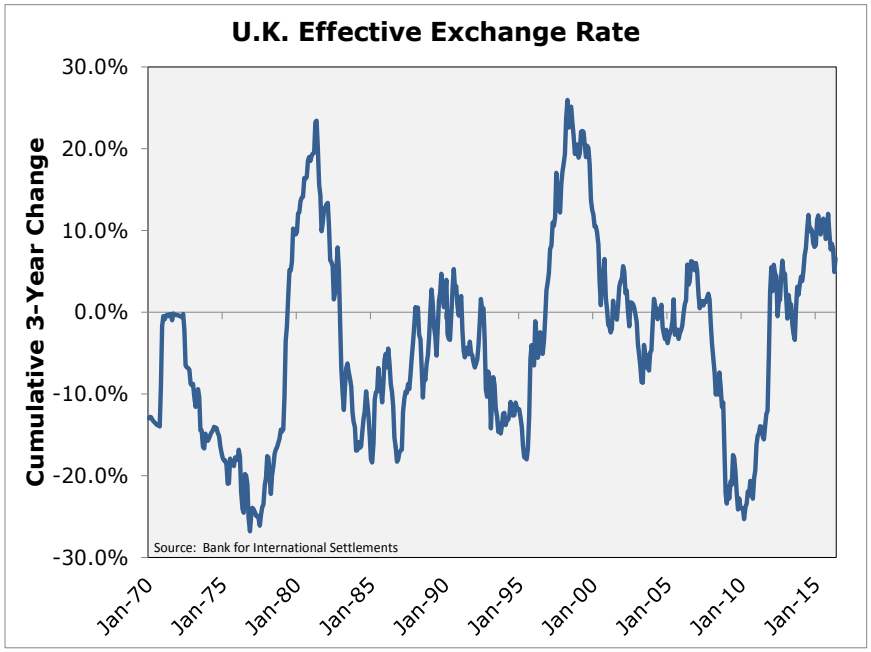
- Following global financial crisis, U.K. rebounded strongly
- More recently, growth has slowed; inflation remains low

- Post-crisis rebound along with high relative rates led to significant currency appreciation
- However, this eventually led to depressed global competitiveness and domestic growth
- Sterling pound is now under pressure



Risks of U.K. Exiting the EU

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- Vote held on June 23rd resulted in a collective decision for Britain to leave the European Union

- Economic impact of an exit depends greatly on the outcome of renegotiated trade deals

- Expert opinions on the economic impact vary greatly, and negative outcomes could be spread over a long time period
  - Currency depreciation is the first concern citied by many, particularly considering that currency is the most liquid asset
  - Additional pressure on a softening economy
  - Foreign investment in the U.K. could slow
  - Hit to bond prices; widening credit spreads

Market Reaction to Brexit

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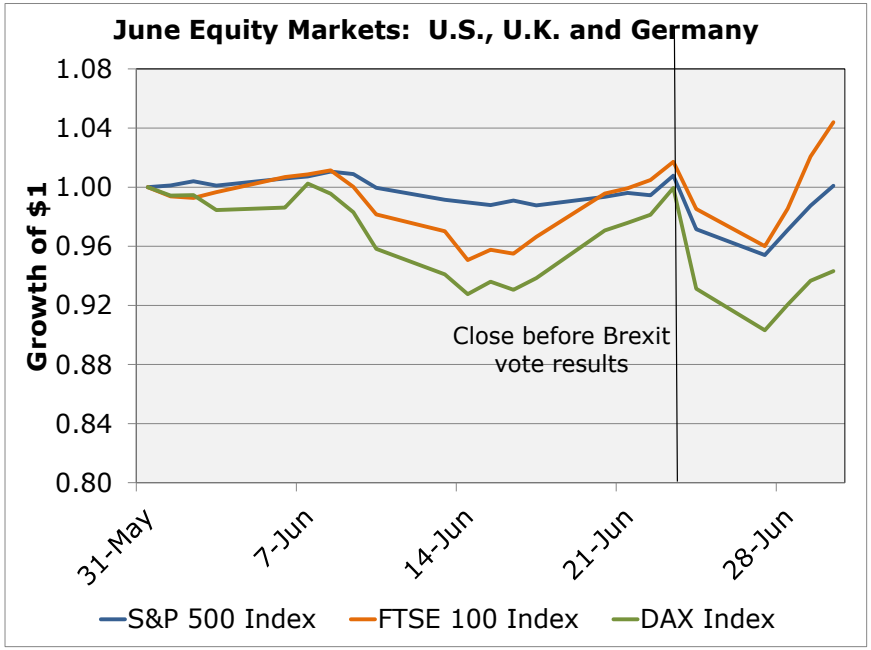
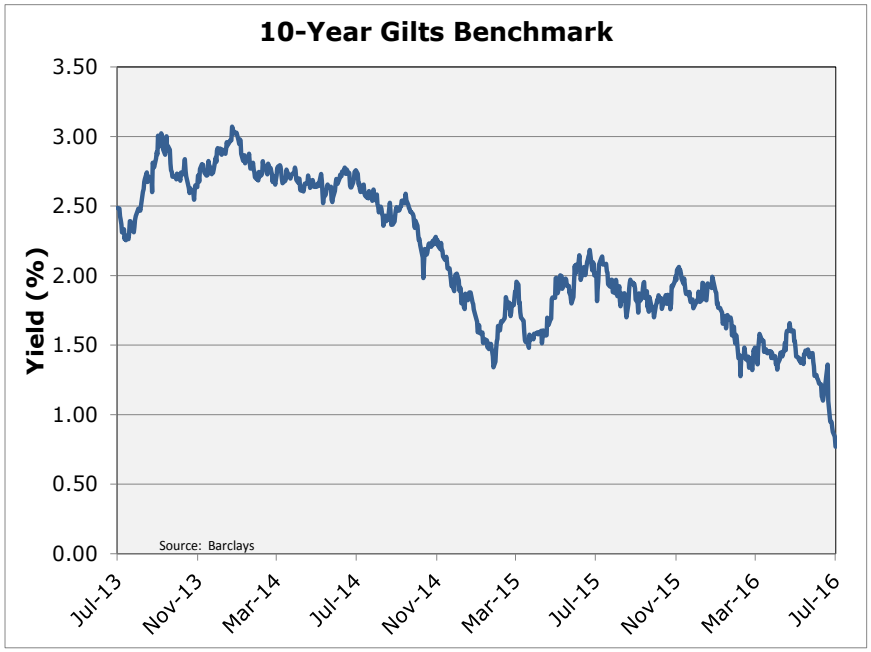
- Pound sterling is down -12% from the pre-vote high versus the U.S. dollar (as of July 4th)
- Equity prices dropped in reaction to the announcement but then recovered in the U.K. and U.S.
  - S&P 500 Index -0.7%
  - FTSE 100 Index +2.6%
  - DAX Index -5.6%
- Gilt yields remain depressed
- Flight to quality pushed Treasury yields lower, as well





June 2016 Asset Class Assumptions

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	Total Return (%)			Risk (%)
	Dec. 2015	Q2 2016	Change vs YE	Dec. 2015
Investment Categories:				
U.S. Stocks	6.50	6.25	(0.25)	17.00
Dev ex-U.S. Stocks	6.50	6.25	(0.25)	18.00
Emerging Mkt Stocks	6.50	6.25	(0.25)	26.00
Global Stocks	6.70	6.45	(0.25)	17.10
Private Markets	9.50	8.95	(0.55)	27.50
Cash Equivalents	1.25	1.15	(0.10)	1.25
Core Bonds	3.50	2.75	(0.75)	5.00
LT Core Bonds	4.30	3.15	(1.15)	10.00
TIPS	3.25	2.35	(0.90)	6.00
High Yield Bonds	6.35	5.65	(0.70)	10.00
EMD Local Currency (h)	5.60	4.70	(0.90)	5.00
U.S. RE Securities	5.00	4.70	(0.30)	17.00
Private Real Estate	5.80	5.85	0.05	14.00
Commodities	3.55	3.45	(0.10)	15.00
MLPs	9.65	8.35	(1.30)	17.00
Real Asset Basket	6.40	5.85	(0.55)	8.40
Inflation:	1.55	1.45	(0.10)	1.75
Returns minus Inflation:				
U.S. Stocks	4.95	4.80	(0.15)	
U.S. Bonds	1.95	1.30	(0.65)	
Cash Equivalents	(0.30)	(0.30)	-	
Stocks minus Bonds:	3.00	3.50	0.50	
Bonds minus Cash:	2.25	1.60	(0.65)	

Economic Review

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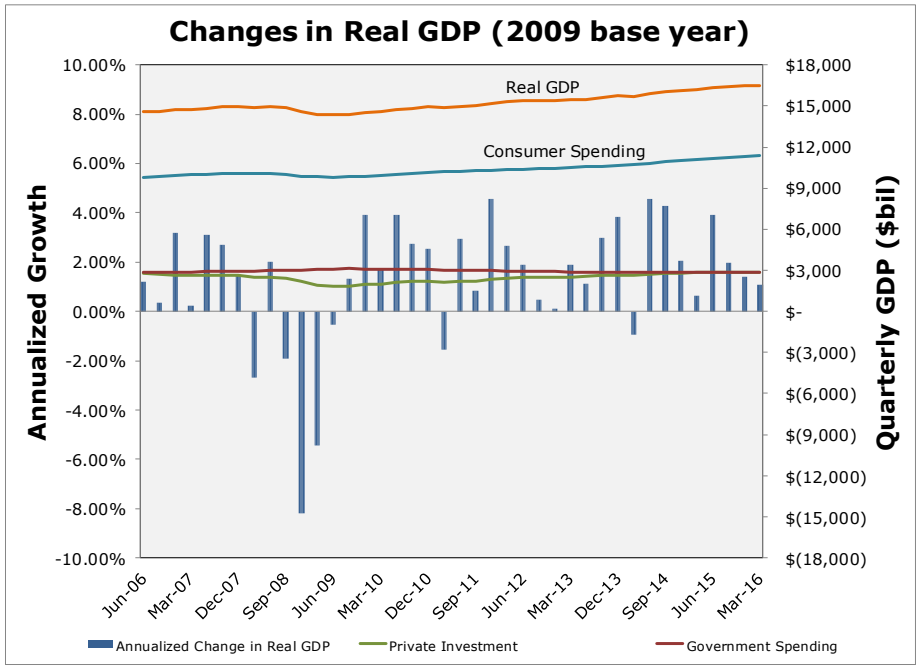
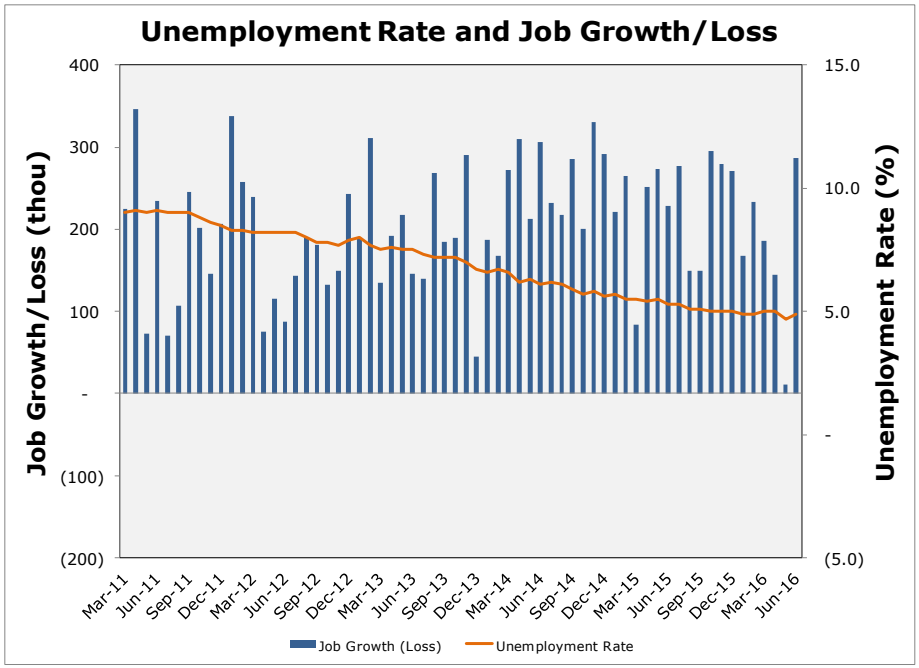
June 30, 2016	Key Economic Indicators			
CPI (all items)	Monthly Change		Cumulative Change	
Seasonally adjusted	Jun-16	0.2	3-Month	0.8
	May-16	0.2	12-Month	1.1
	Apr-16	0.4	10-Yr Annual	1.7
Breakeven Inflation	10-Year	1.5		
Consumer Sentiment	Jun-16	93.5		
Unv. of Michigan Survey	May-16	94.7		
	1-Yr Ago	96.1	10-Yr Avg	77.8
Manufacturing	Jun-16	53.2	Change in Manufacturing Sector	
Inst. for Supply Mgmt	May-16	51.3	>50	Expansion
Purchasing Mngrs' Idx	1-Yr Avg	50.3	<50	Contraction

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





Data sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Bank of St. Louis, Barclays Capital

Inflation

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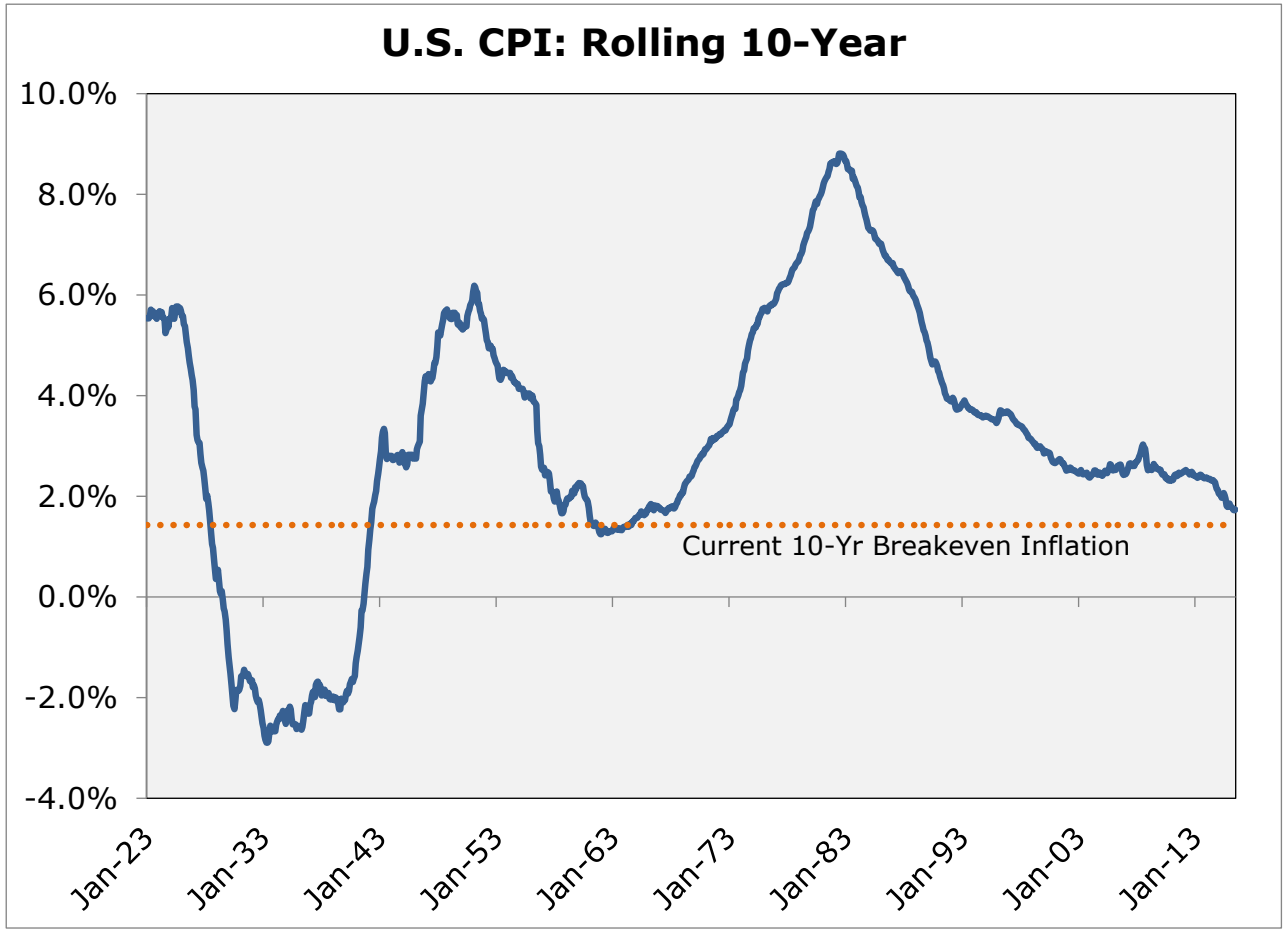
- CPI moved higher during Q2, although the 1-year gain is still modest
- Inflation expectation close to lowest actual reading since Great Depression
- Expectation also lower than most recent 10-year of 1.7%



Source: Bureau of Labor Statsitics

U.S. Equity Market

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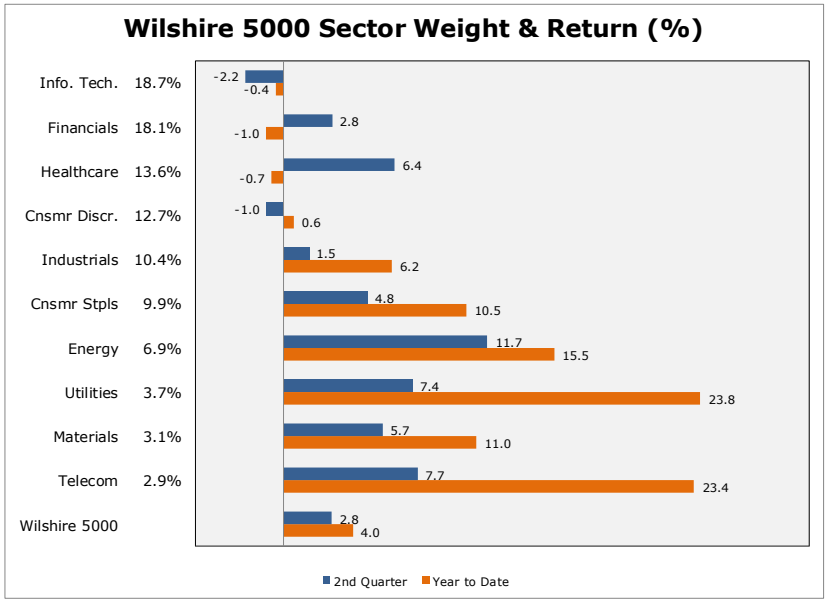
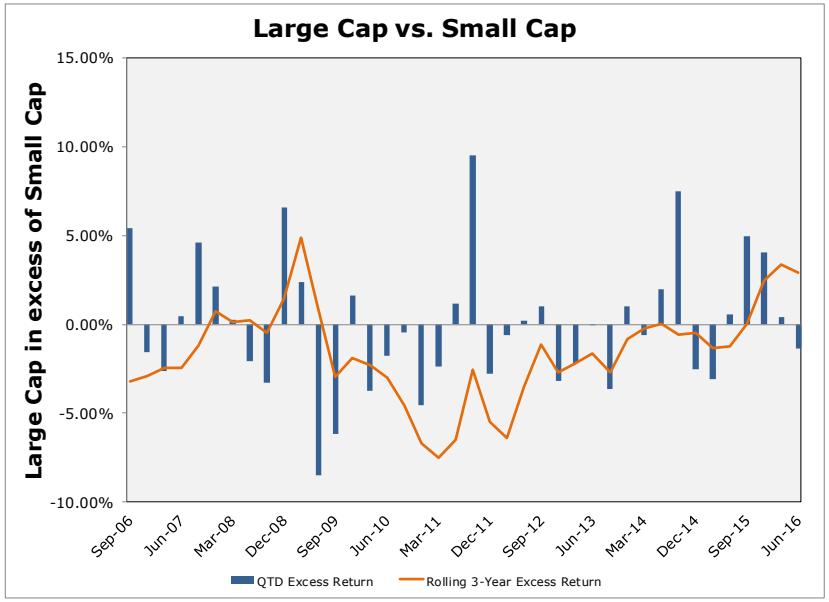
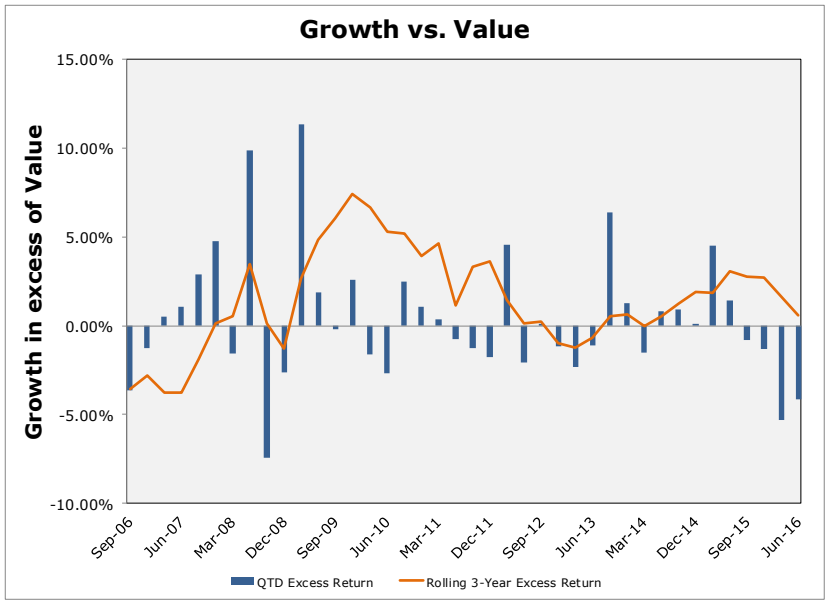
June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Wilshire 5000	2.8	4.0	3.0	11.3	11.6	7.5
Wilshire U.S. Large Cap	2.7	3.9	3.8	11.6	11.9	7.5
Wilshire U.S. Small Cap	4.1	5.0	-4.0	8.4	9.7	7.9
Wilshire U.S. Large Growth	0.4	-1.3	-2.2	12.3	11.6	8.1
Wilshire U.S. Large Value	4.8	8.6	9.4	11.0	12.1	6.7
Wilshire U.S. Small Growth	2.2	-0.6	-11.9	6.3	8.1	7.7
Wilshire U.S. Small Value	6.0	10.4	4.0	10.5	11.1	8.0
Wilshire REIT Index	5.6	11.1	22.8	13.6	12.5	7.0
MSCI USA Minimum Volatility Index	5.6	11.4	16.5	14.2	13.9	8.7
FTSE RAFI U.S. 1000 Index	3.3	5.3	2.5	10.4	11.7	8.2





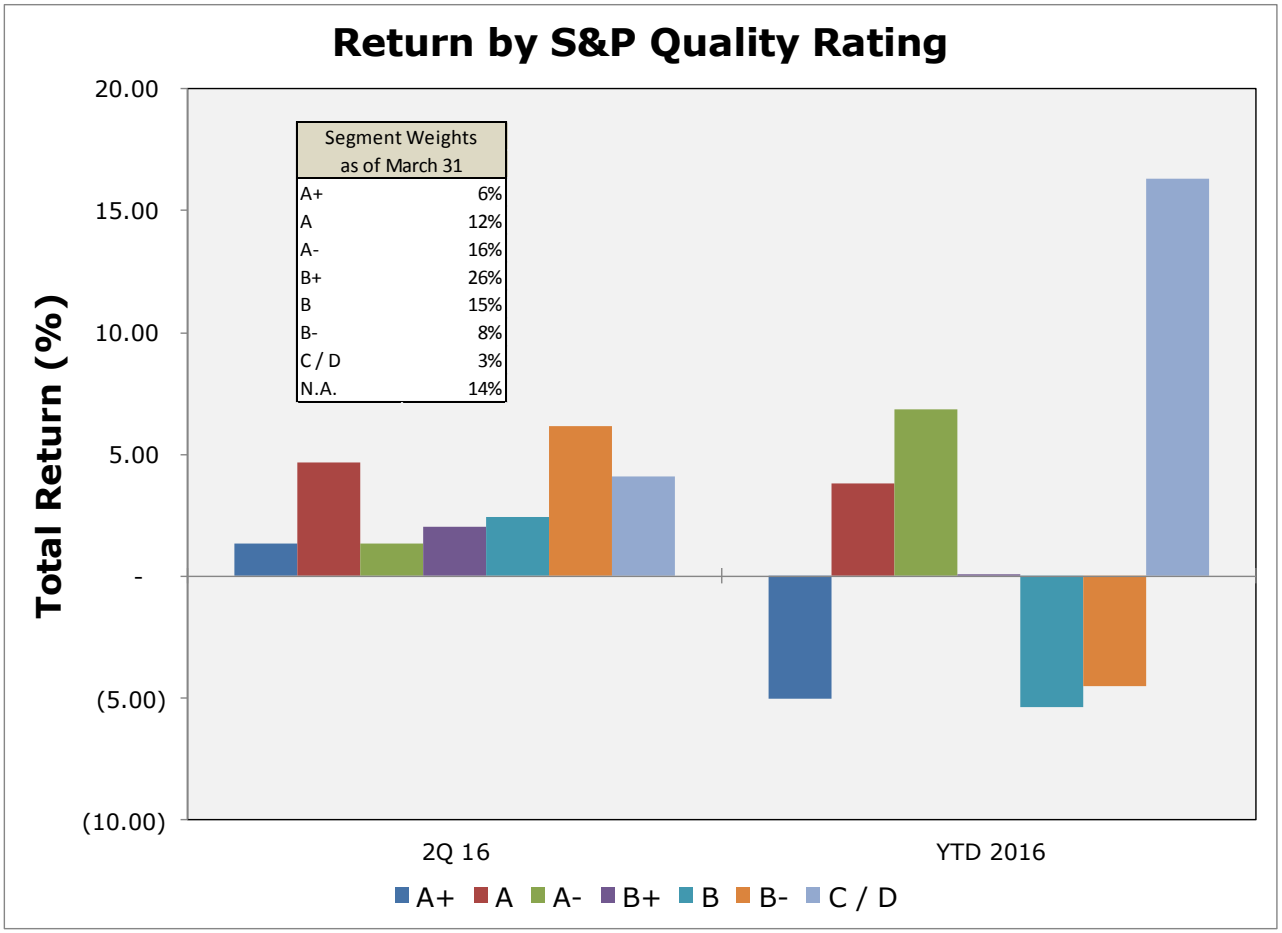


Data sources: Wilshire Compass, Wilshire Atlas

Returns by Quality Segment

Wilshire

Lower quality names outperformed during Q2 (the A segment excluded) while results are mixed for the year



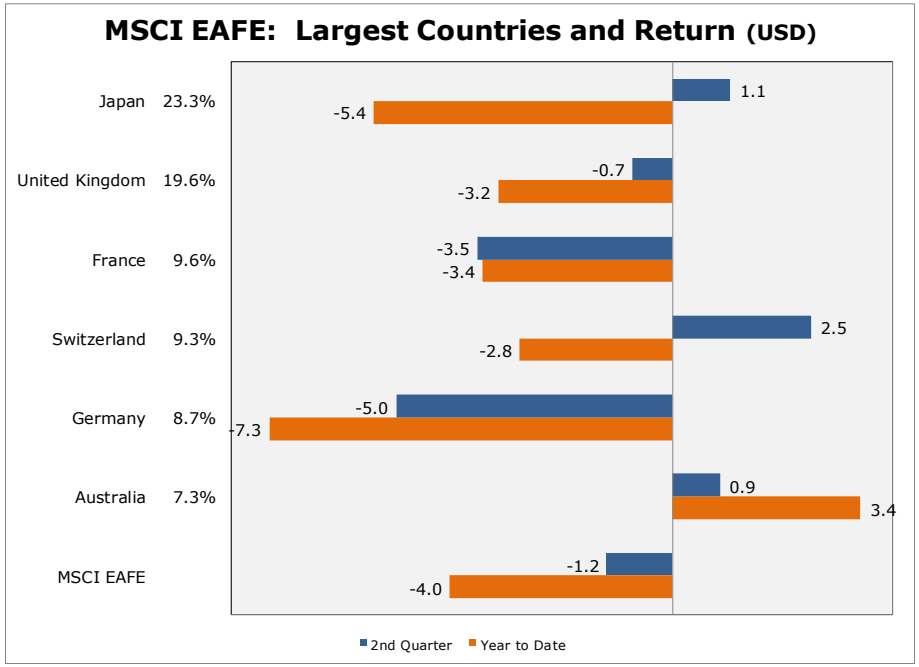
Segment Weights as of March 31	
A+	6%
A	12%
A-	16%
B+	26%
B	15%
B-	8%
C / D	3%
N.A.	14%

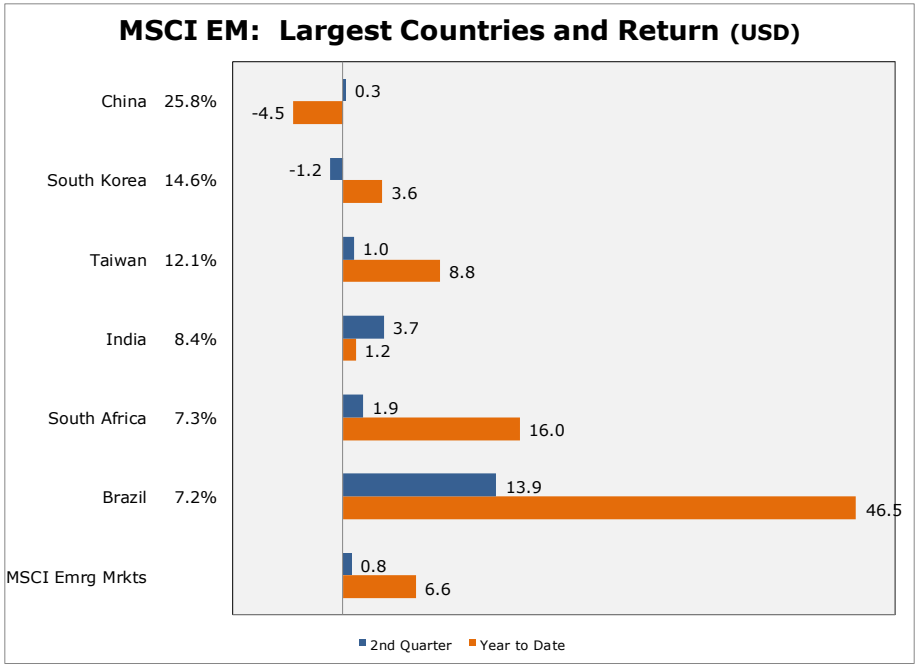
Data sources: Wilshire Atlas

Non-U.S. Equity Market

Wilshire

June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
MSCI ACWI ex-US ($g)	-0.4	-0.7	-9.8	1.6	0.6	2.3
MSCI EAFE ($g)	-1.2	-4.0	-9.7	2.5	2.1	2.1
MSCI Emerging Markets ($g)	0.8	6.6	-11.7	-1.2	-3.4	3.9
MSCI Frontier Markets ($g)	0.6	-0.1	-11.7	1.4	1.8	0.8
MSCI ACWI ex-US Growth ($g)	0.6	0.4	-5.9	3.5	1.9	3.2
MSCI ACWI ex-US Value ($g)	-1.5	-1.7	-13.7	-0.3	-0.8	1.4
MSCI ACWI ex-US Small ($g)	-0.7	0.0	-5.1	5.3	2.7	4.5
MSCI EAFE Minimum Volatility Idx	1.0	3.1	4.3	8.7	7.6	6.4
FTSE RAFI Developed ex-US Index	-1.6	-4.0	-12.5	1.7	0.4	2.3
MSCI EAFE LC (g)	-0.5	-6.8	-9.7	6.3	6.7	2.6
MSCI Emerging Markets LC (g)	0.8	3.6	-7.3	4.1	2.4	6.1

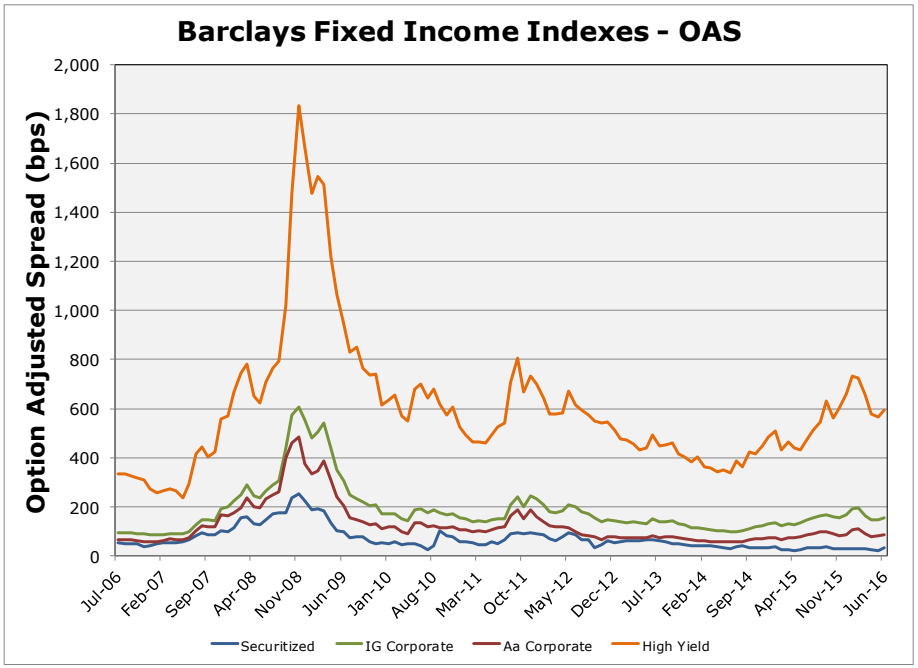


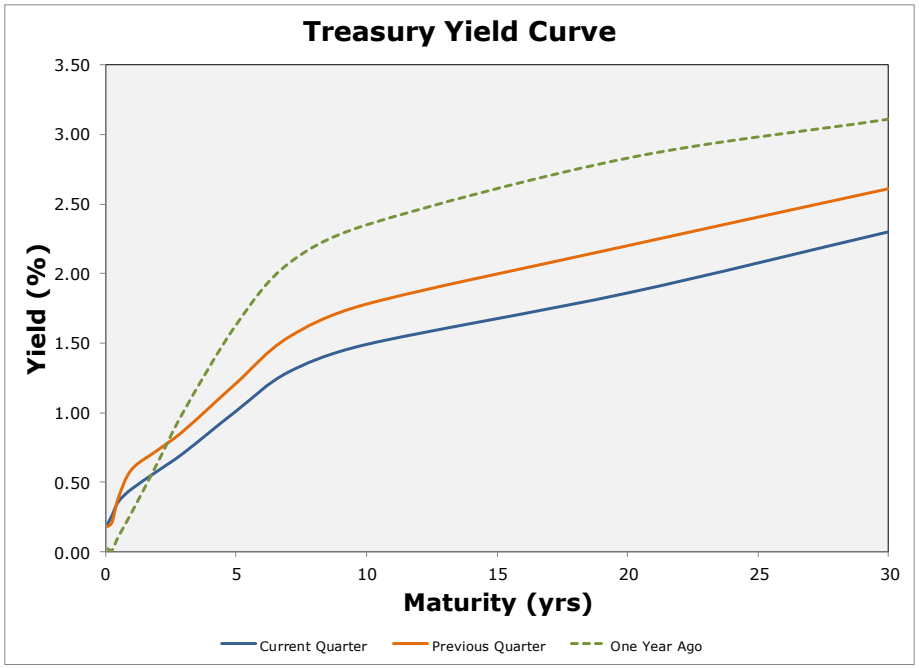


Data sources: Wilshire Compass

U.S. Fixed Income Market

June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays Aggregate Bond Index	2.2	5.3	6.0	4.1	3.8	5.1
Barclays Treasury Index	2.1	5.4	6.2	3.5	3.5	4.9
Barclays Gov't-Related Index	2.5	5.7	5.2	3.9	3.4	4.8
Barclays Securitized Index	1.2	3.3	4.4	3.7	3.1	4.9
Barclays Corporate IG Index	3.6	7.7	7.9	5.4	5.4	6.2
Barclays LT Gov't/Credit Index	6.6	14.3	15.7	9.3	9.2	8.4
Barclays LT Treasury Index	6.4	15.1	19.3	10.5	10.3	8.8
Barclays LT Gov't-Related Index	6.4	13.5	12.7	9.0	8.4	8.3
Barclays LT Corporate IG Index	6.6	13.9	14.1	8.6	8.5	8.1
Barclays U.S. TIPS Index	1.7	6.2	4.4	2.3	2.6	4.7
Barclays High Yield Index	5.5	9.1	1.6	4.2	5.8	7.6
Treasury Bills	0.1	0.1	0.2	0.1	0.1	1.0





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

Federal Reserve

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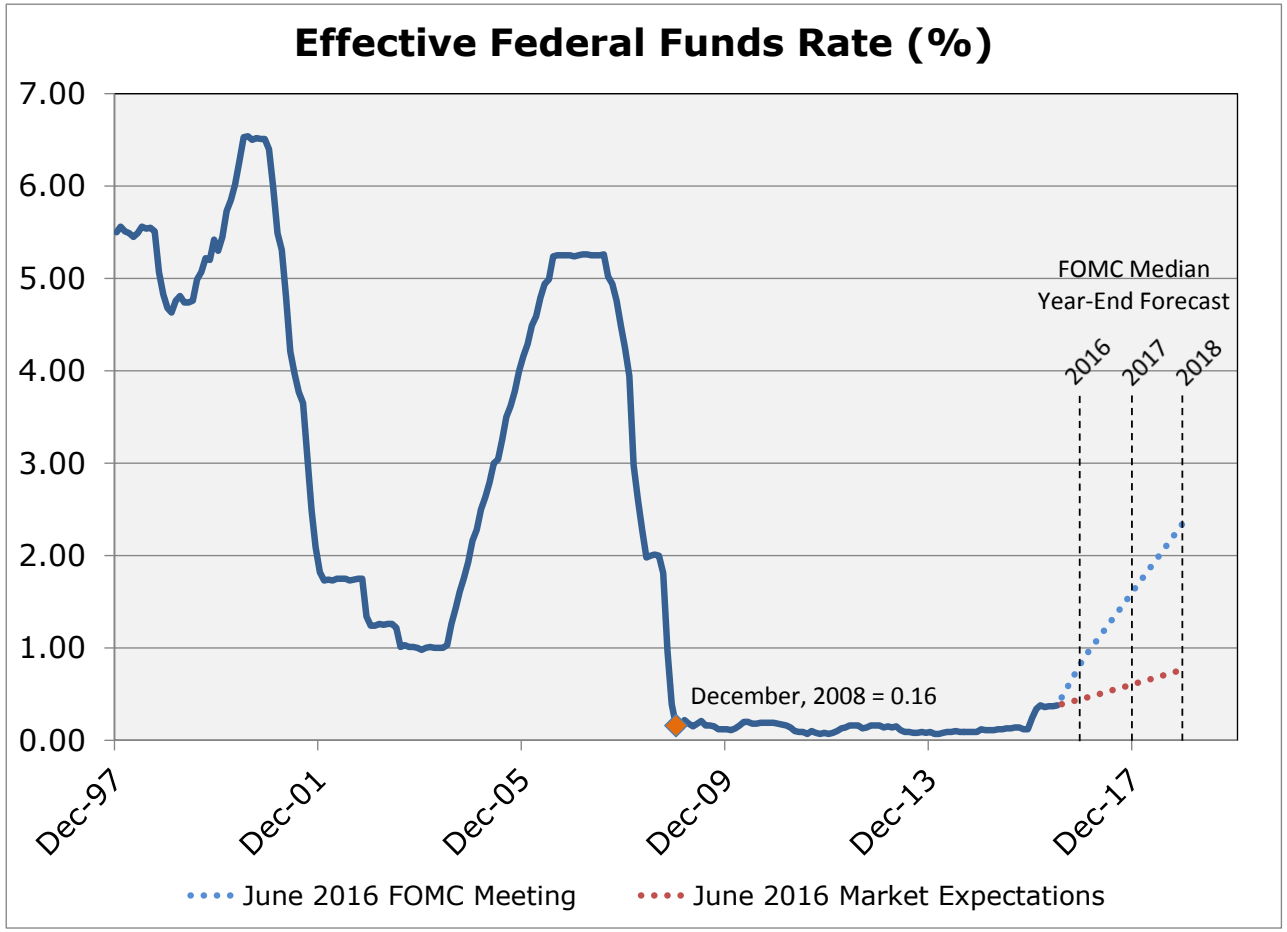
- Median forecast by Open Market Committee equals 0.88% for year-end 2016, which implies two 0.25% increases during second half of 2016
- Market forecast based on futures pricing is only 10 basis points higher than current



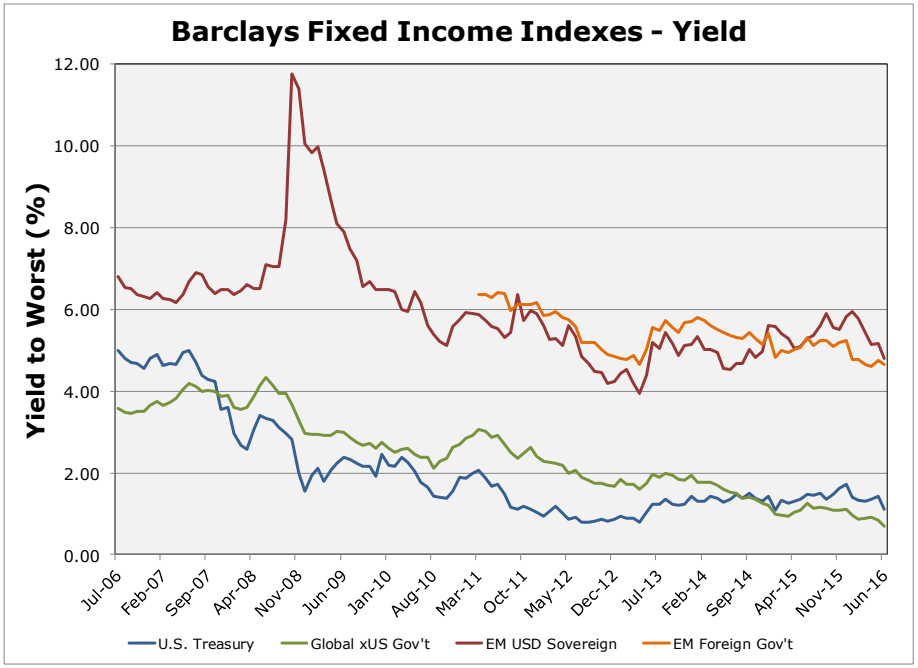
Source: Federal Reserve, J.P. Morgan Asset Management

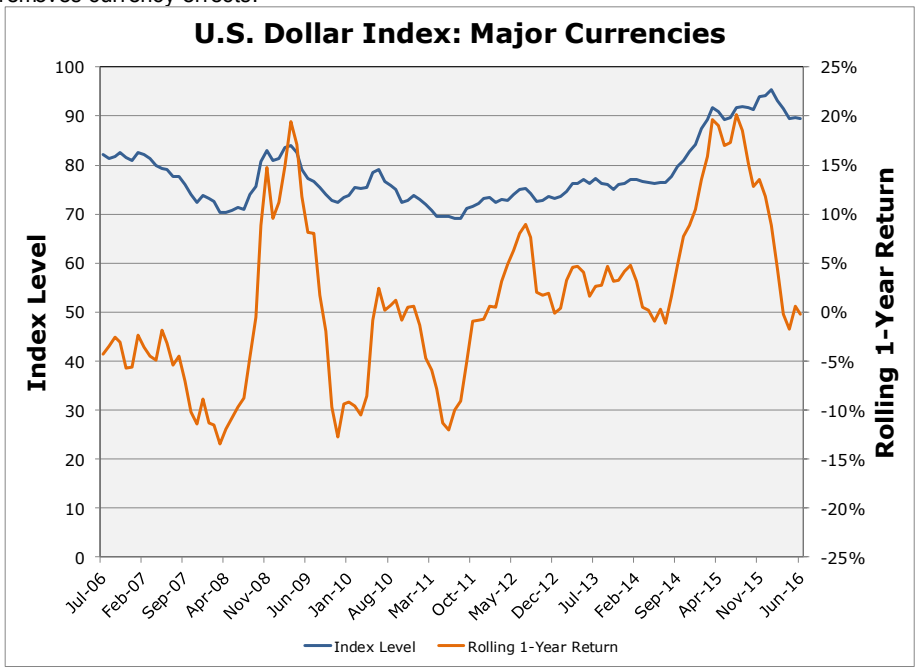
Non-U.S. Fixed Income Market

Wilshire

June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Developed Markets						
Barclays Global Aggregate xUS	3.4	11.9	11.2	1.9	0.3	3.8
Barclays Global Aggregate xUS *	2.7	6.3	8.5	5.9	5.5	5.0
Barclays Wrld Govt xUS IL Bond	1.6	6.6	1.3	3.0	1.6	4.0
Barclays Wrld Govt xUS IL Bond *	6.3	10.1	9.8	7.6	6.3	5.8
Emerging Mrkts (Hard Currency)						
Barclays EM USD Aggregate	4.7	9.4	7.8	6.0	6.0	7.7
Emerging Mrkts (Foreign Currency)						
Barclays EM Local Currency Gov't	2.2	11.0	2.9	-0.2	0.0	n.a.
Barclays EM Local Currency Gov't *	1.9	5.2	5.3	3.2	3.5	n.a.
Euro vs. Dollar	-2.5	2.3	-0.3	-5.1	-5.2	-1.4
Yen vs. Dollar	9.6	17.3	19.3	-1.1	-4.7	1.1
Pound vs. Dollar	-7.0	-9.3	-15.0	-4.1	-3.6	-3.2

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





Data sources: Wilshire Compass, Barclays Capital

European Debt

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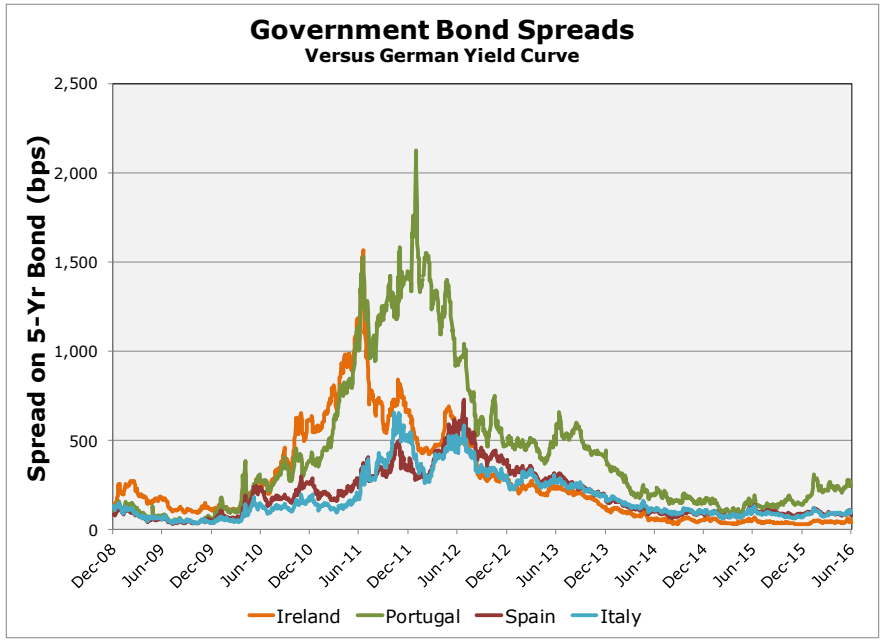
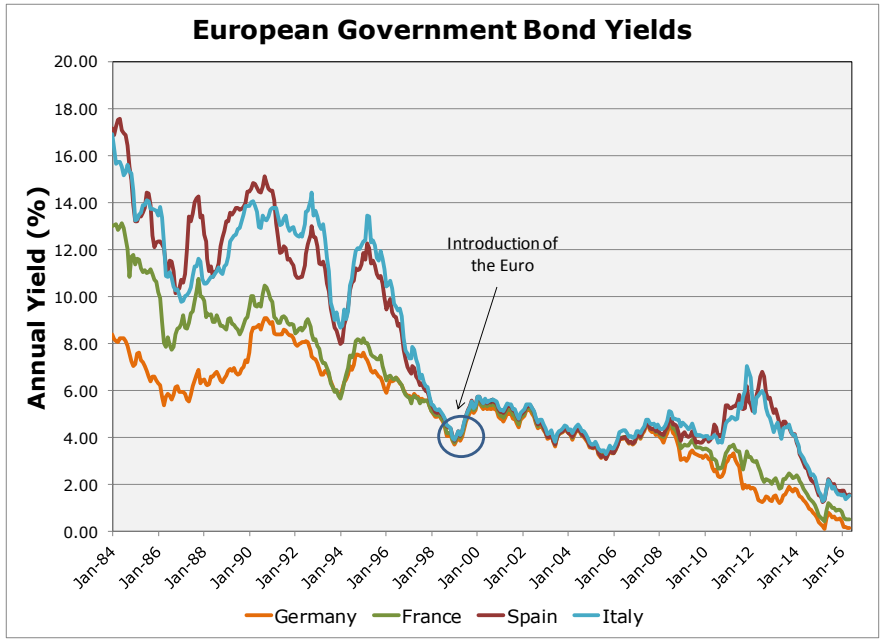
- Spreads on Portugal's government debt are on the rise as the country faces a banking crisis and the prospect of a downgrade



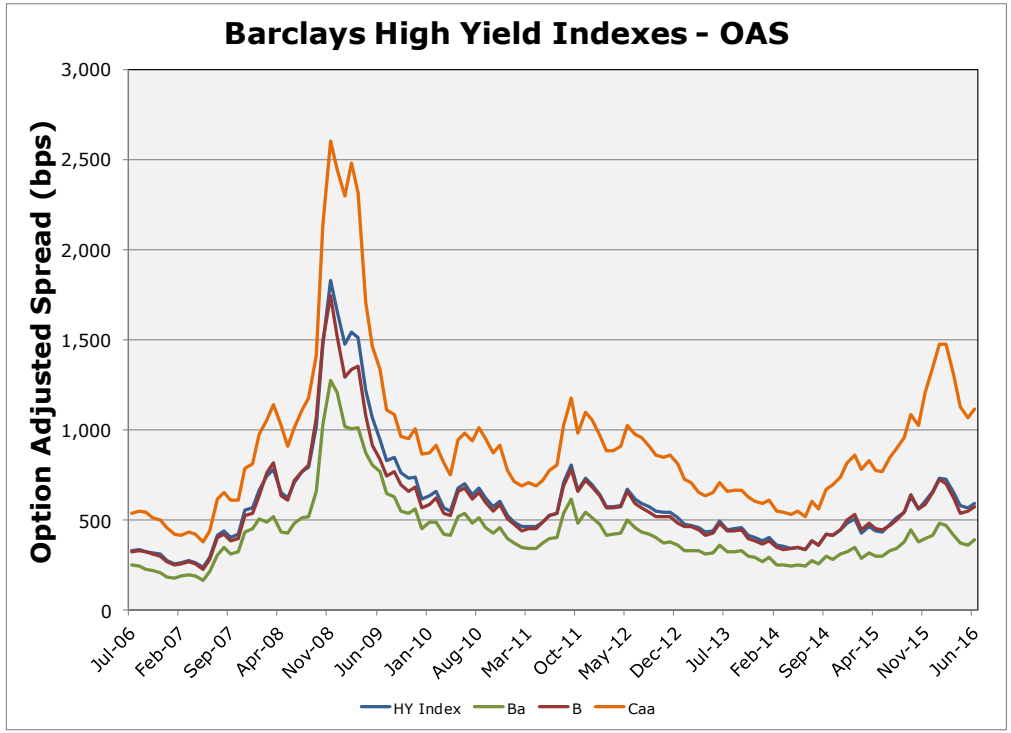
- Yields on government bonds are again falling after a brief uptick; Germany actually sold 10-year debt at a negative yield in July



Source: Barclays Capital, International Monetary Fund

High Yield Bond Market

June 30, 2016	Weight	Qtr	Ytd	1 Yr	3 Yr
Barclays High Yield Index	100%	5.5	9.1	1.6	4.2
Quality Distribution					
Ba U.S. High Yield	45.5%	3.6	7.6	4.1	5.6
B U.S. High Yield	38.8%	4.8	7.4	-0.6	3.3
Caa U.S. High Yield	14.5%	11.8	16.0	-0.5	2.9
Ca to D U.S. High Yield	1.1%	33.2	39.4	-22.5	-26.9
Non-Rated U.S. High Yield	0.1%	10.4	6.4	-12.6	-1.8



Data sources: Barclays Capital

Energy Sector Credit Conditions

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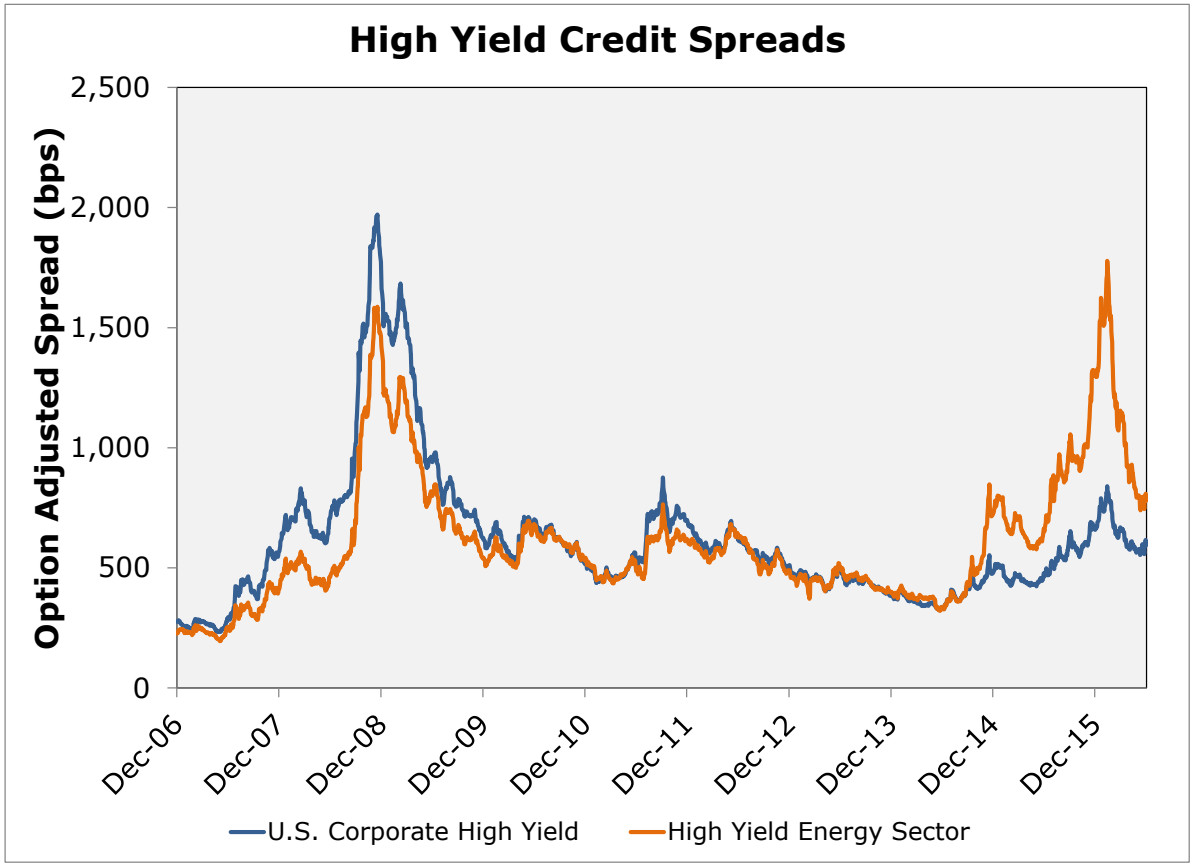
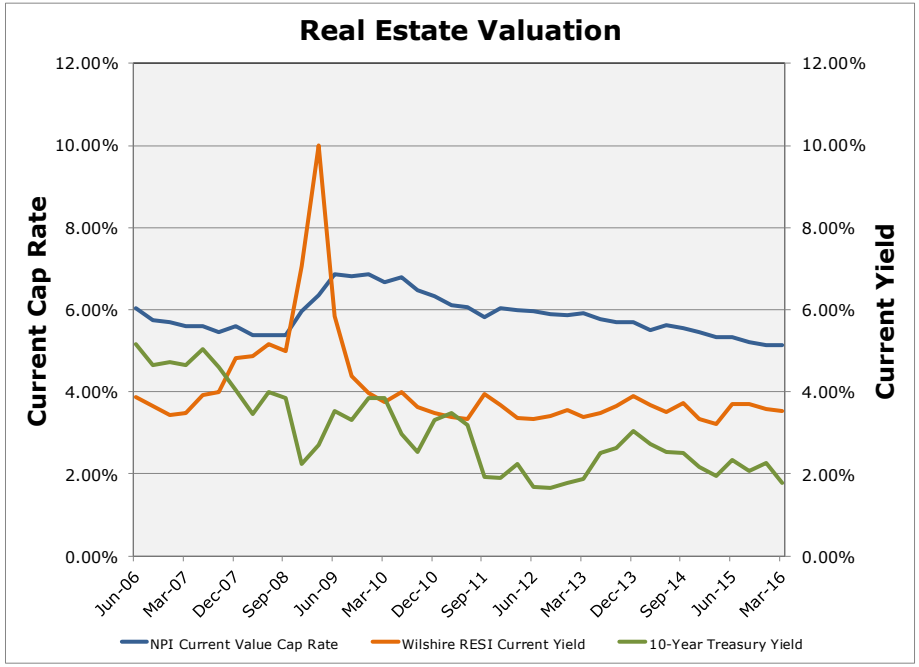
- Heavy borrowing within the Energy sector resulted in a debt squeeze when revenues fell
- Producers responded by slashing capital expenditures
- Although improving, energy spreads are still a bit wide due to meaningful debt and lower commodity prices

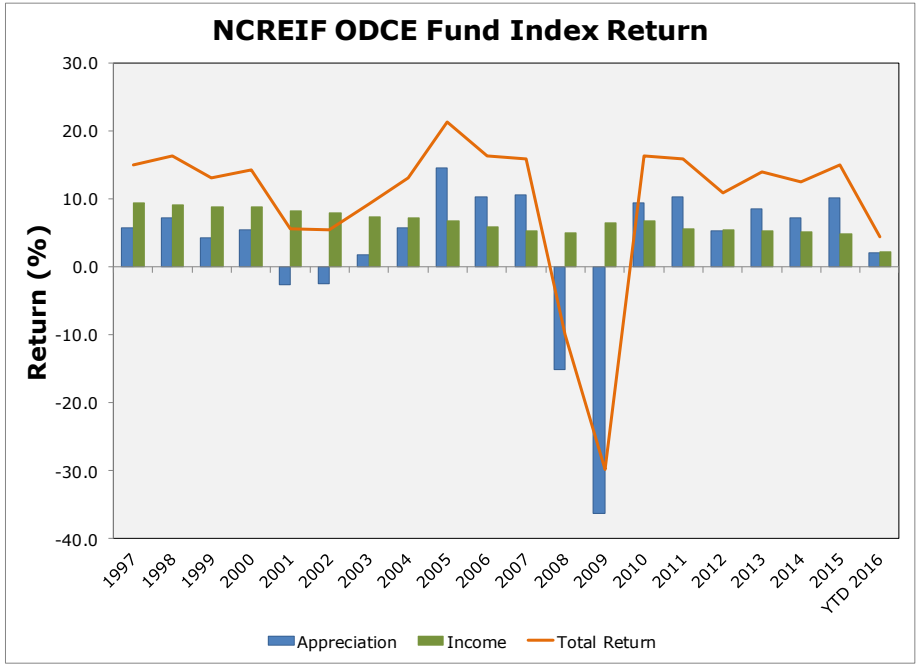


Source: Barclays

Real Assets

June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays U.S. TIPS Index	1.7	6.2	4.4	2.3	2.6	4.7
Bloomberg Commodity Index	12.8	13.3	-13.3	-10.6	-10.8	-5.6
Wilshire Global RESI Index	4.4	10.0	14.7	10.6	9.9	5.9
NCREIF ODCE Fund Index	2.1	4.4	11.8	13.0	12.7	6.2
NCREIF Timberland Index	1.1	0.8	3.5	7.8	6.7	6.4
Alerian MLP Index (Oil & Gas)	19.7	14.7	-13.1	-5.4	3.2	9.5





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

Total Fund

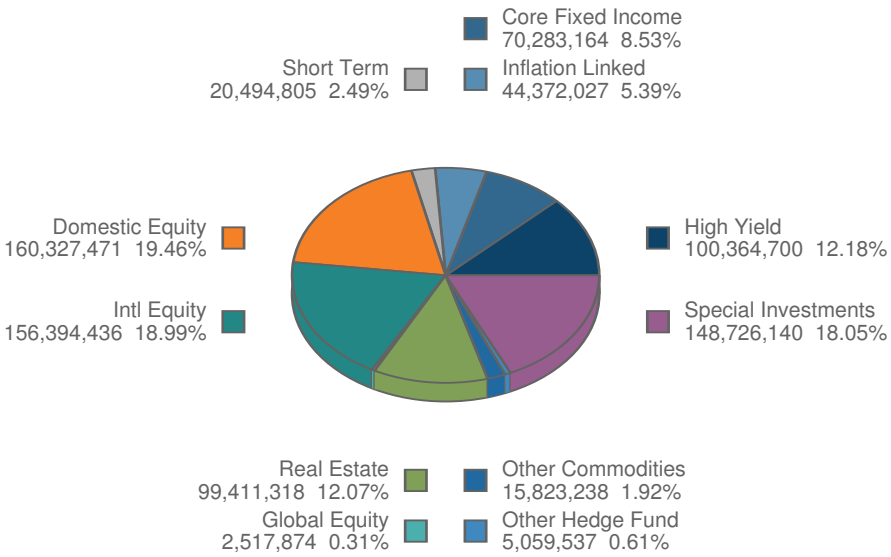
Actual Allocation vs Policy Allocation

Wilshire

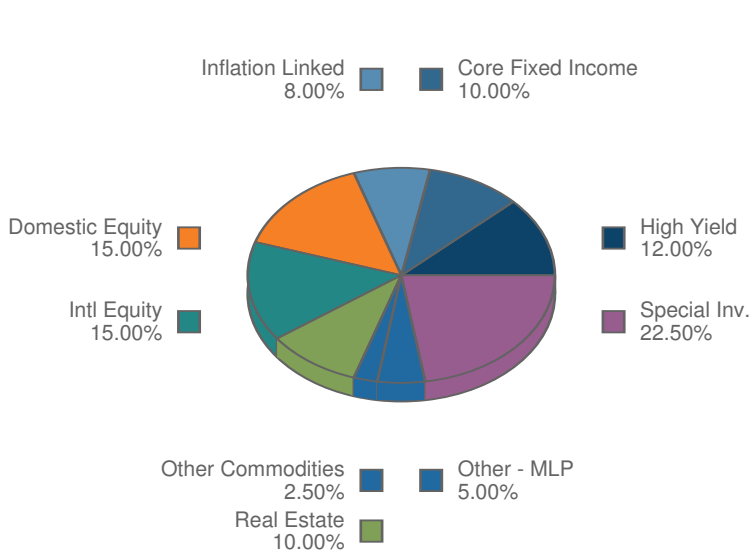
Total Fund Composite

As of June 30, 2016

Total Fund



Policy Index

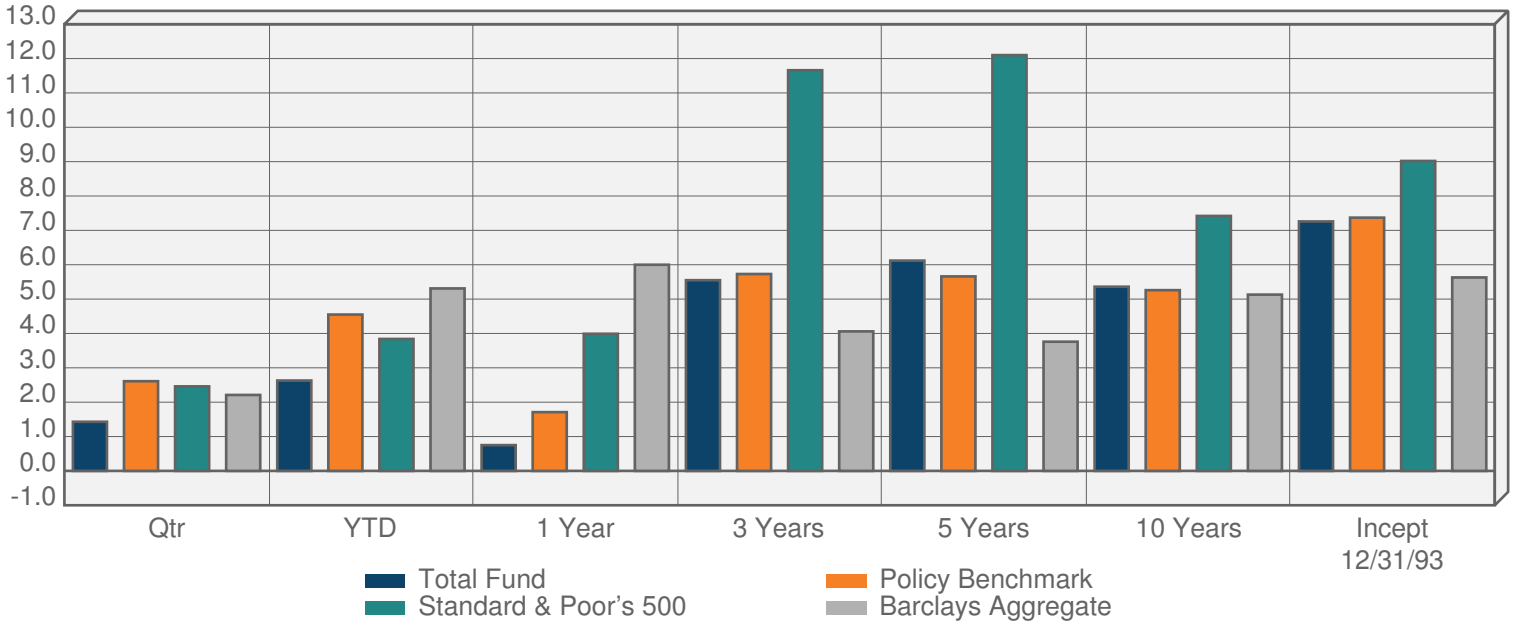


$823,774,711

Wilshire

Total Fund Composite

Periods Ended June 30, 2016



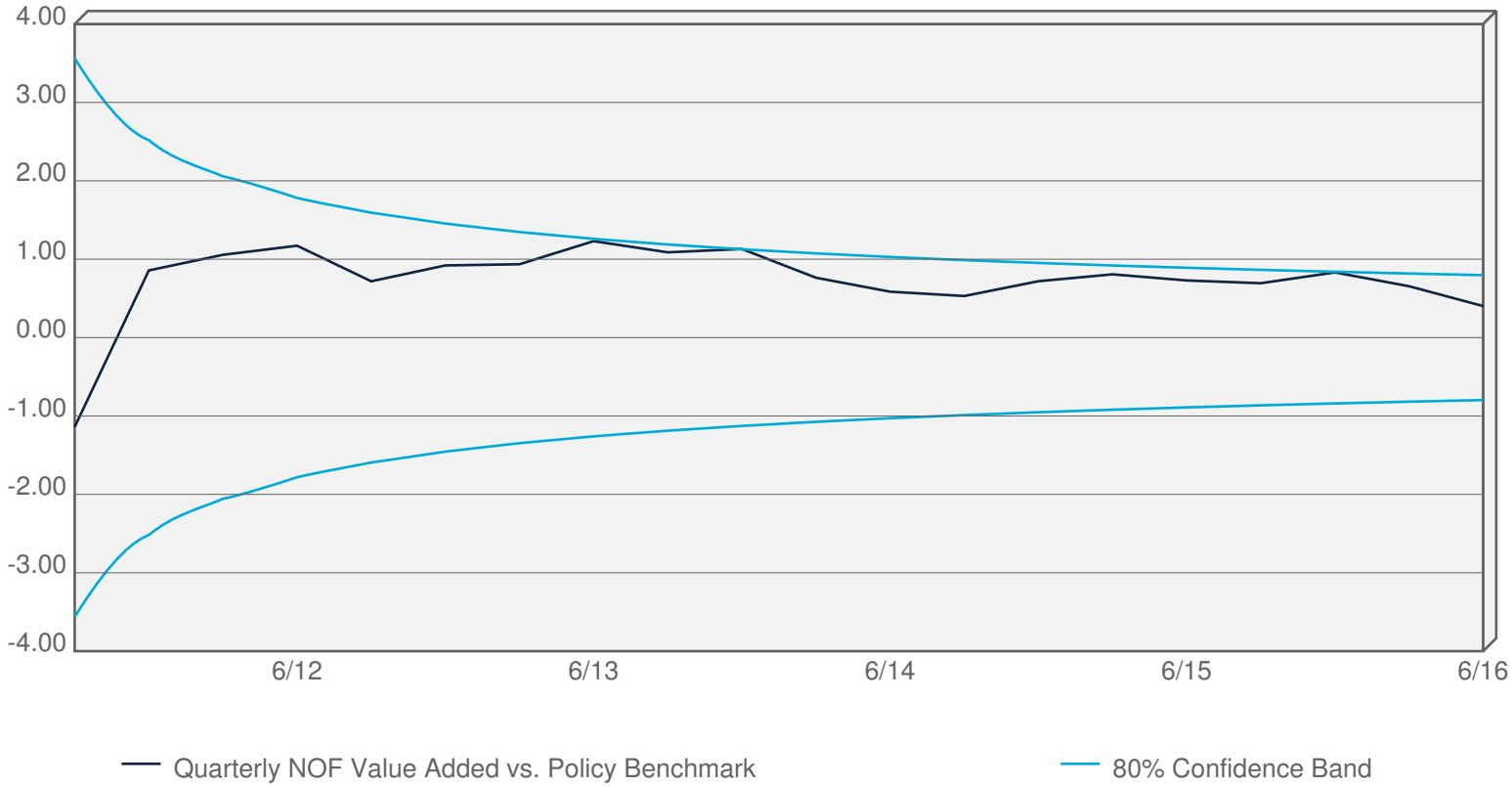
Total Returns	Qtr	YTD	1 Year	3 Years	5 Years	10 Years	Incept 12/31/93
Total Fund	1.43	2.63	0.75	5.55	6.12	5.36	7.26
Policy Benchmark	2.61	4.55	1.71	5.73	5.66	5.26	7.37
Standard & Poor's 500	2.46	3.84	3.99	11.66	12.10	7.42	9.02
Barclays Aggregate	2.21	5.31	6.00	4.06	3.76	5.13	5.63

Cumulative Skill Analysis

Wilshire

Total Fund Composite

Five Years Ending June 30, 2016



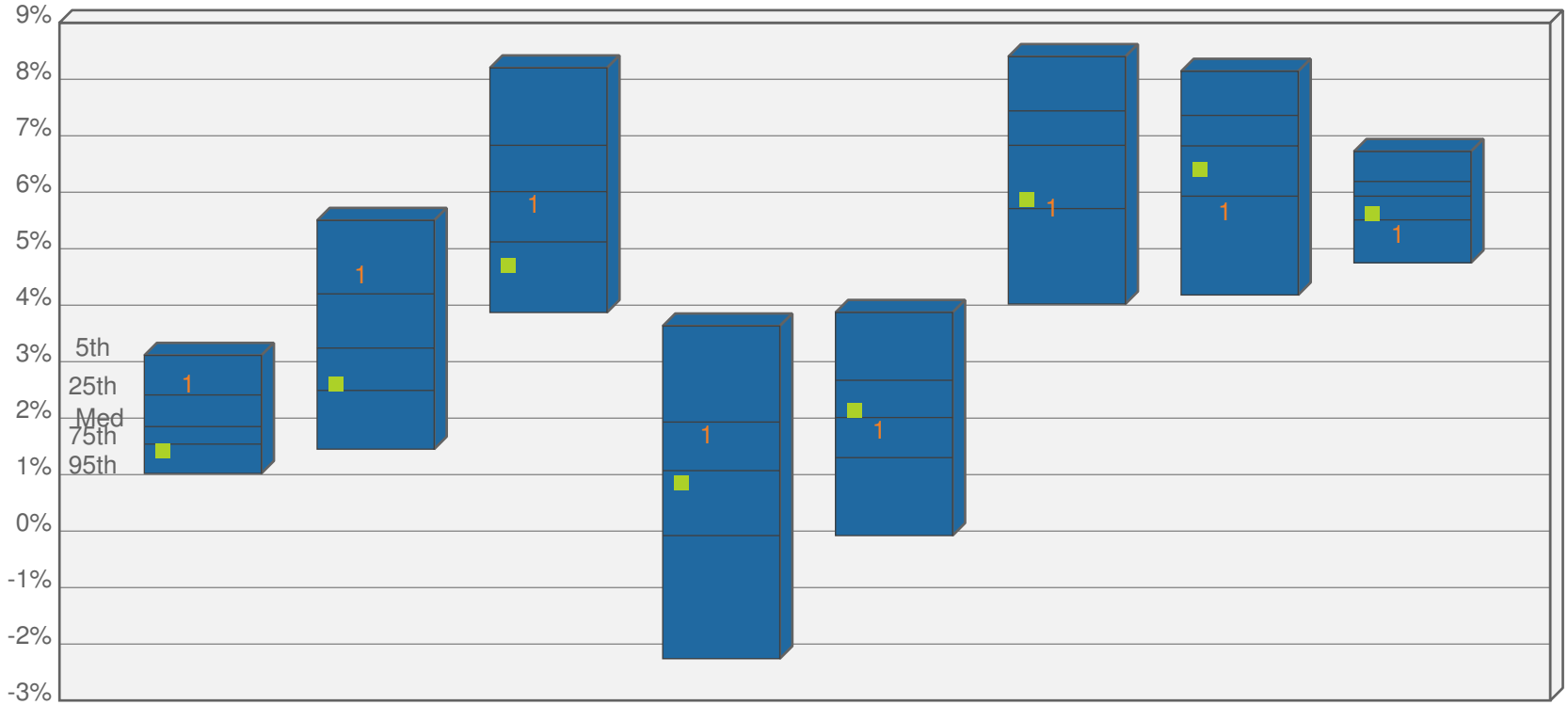
Excess Return:	**0.40**	**Information Ratio:**	**0.37**
Excess Risk:	**1.08**	**T-Stat:**	**0.83**

Performance Comparison

Wilshire

Total Fund Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Total Fund	1.44 (83)	2.63 (69)	4.73 (81)	0.88 (55)	2.16 (42)	5.90 (71)	6.42 (66)	5.65 (63)
1 Policy Benchmark	2.61 (17)	4.55 (13)	5.80 (55)	1.71 (30)	1.79 (58)	5.73 (74)	5.66 (78)	5.26 (82)
5th %tile	3.11	5.50	8.20	3.63	3.87	8.40	8.14	6.72
25th %tile	2.41	4.20	6.83	1.93	2.67	7.44	7.36	6.19
Median	1.85	3.24	6.01	1.07	2.01	6.83	6.82	5.93
75th %tile	1.54	2.49	5.12	-0.08	1.30	5.71	5.93	5.51
95th %tile	1.02	1.45	3.87	-2.26	-0.08	4.02	4.18	4.75
Number of Funds	167	161	160	160	156	154	153	119

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

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
US Equity Composite									
Net of Fee Return	**2.06**	**2.36**	**7.93**	**-0.32**	**10.34**	**10.83**	**6.85**	**12/31/93**	**8.23**
Wilshire 5000	2.78	3.98	10.60	2.96	11.26	11.64	7.46	12/31/93	9.00
Value Added	-0.72	-1.62	-2.67	-3.28	-0.92	-0.81	-0.61	12/31/93	-0.77
Non US Equity Composite									
Net of Fee Return	**-1.11**	**-1.72**	**3.06**	**-7.80**	**2.60**	**0.89**	**2.14**	**12/31/00**	**3.99**
Policy Index	-0.68	-0.91	2.58	-9.61	1.58	0.35	1.35	12/31/00	2.97
Value Added	-0.43	-0.81	0.48	1.81	1.01	0.54	0.79	12/31/00	1.02
Global Equity									
Net of Fee Return	**2.11**	**3.45**	**5.73**	**-5.62**				**12/31/14**	**-1.18**
MSCI ACWI (N)	0.99	1.23	6.32	-3.73				12/31/14	-0.78
Value Added	1.12	2.22	-0.59	-1.89				12/31/14	-0.41
Core Fixed Composite									
Net of Fee Return	**2.09**	**4.84**	**4.52**	**5.25**	**3.71**	**3.68**	**5.06**	**9/30/82**	**8.16**
Barclays Aggregate	2.21	5.31	4.71	6.00	4.06	3.76	5.13	9/30/82	7.73
Value Added	-0.12	-0.47	-0.19	-0.75	-0.35	-0.08	-0.07	9/30/82	0.43
High Yield Fixed Composite									
Net of Fee Return	**4.81**	**7.29**	**3.45**	**-2.31**	**1.86**	**4.22**		**3/31/08**	**7.23**
Citi High Yield Market Capped	5.98	9.46	6.71	0.82	3.62	5.51		3/31/08	7.64
Value Added	-1.17	-2.17	-3.26	-3.12	-1.76	-1.29		3/31/08	-0.41
TIPS Fixed Composite									
Net of Fee Return	**1.61**	**5.33**	**4.37**	**2.64**	**1.53**	**2.15**		**3/31/08**	**3.29**
Barclays U.S. TIPS	1.71	6.24	5.56	4.35	2.31	2.63		3/31/08	3.47
Value Added	-0.10	-0.91	-1.19	-1.71	-0.78	-0.48		3/31/08	-0.18

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
ERECT Composite									
Net of Fee Return	**4.24**	**8.36**	**11.67**	**13.15**	**8.11**	**9.02**		**9/30/10**	**7.33**
Real Estate Composite									
Net of Fee Return	**1.42**	**2.77**	**5.50**	**8.92**	**11.04**	**12.36**	**6.25**	**3/31/03**	**8.76**
NCREIF ODCE NOF	1.91	3.90	7.13	10.80	11.97	11.66	5.19	3/31/03	7.34
Value Added	-0.49	-1.13	-1.62	-1.88	-0.93	0.70	1.06	3/31/03	1.42
Hedge Fund Composite									
Net of Fee Return	**13.25**	**10.57**	**-4.51**	**-7.26**	**-1.09**			**9/30/11**	**1.03**
91 Day T-Bill Index + 3%	0.81	1.63	2.42	3.19	3.09			9/30/11	3.09
Value Added	12.43	8.93	-6.93	-10.45	-4.18			9/30/11	-2.06
Commodities Composite									
Net of Fee Return	**11.57**	**11.26**	**-1.02**	**-15.78**	**-11.03**	**-9.66**		**3/31/07**	**-5.06**
Bloomberg Commodity Index	12.78	13.25	1.34	-13.32	-10.55	-10.82		3/31/07	-6.33
Value Added	-1.21	-1.99	-2.36	-2.46	-0.48	1.16		3/31/07	1.28
Life Settlement Composite									
Net of Fee Return	**-3.30**	**-6.39**	**-6.37**	**-9.60**	**-6.22**	**11.82**		**9/30/09**	**14.18**
Israel Bonds and Cash									
Net of Fee Return	**0.42**	**0.89**	**1.51**	**1.88**	**2.41**	**1.82**	**3.70**	**3/31/99**	**3.27**
Private Equity Composite									
Net of Fee Return	**0.31**	**3.04**	**5.45**	**11.00**	**11.52**	**11.87**	**8.39**	**3/31/03**	**5.79**
RBAC Custom Private Equity Bench	0.31	3.04	5.45	11.00	11.52	11.87	8.39	3/31/03	5.79
Value Added	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3/31/03	0.00

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Total Fund									
Net of Fee Return	**1.43**	**2.63**	**4.67**	**0.75**	**5.55**	**6.12**	**5.36**	**12/31/93**	**7.26**
Policy Benchmark	2.61	4.55	5.80	1.71	5.73	5.66	5.26	12/31/93	7.37
Value Added	-1.18	-1.92	-1.13	-0.96	-0.18	0.46	0.09	12/31/93	-0.10

Custom Benchmark Specification

Wilshire

Total Fund

June 30, 2016

	Quarter Start	Quarter End	Percent	Description
Policy Benchmark	12/93	12/06	65.00	Russell 3000
			35.00	Barclays Aggregate
	3/07	6/08	5.00	RBAC Custom Private Equity Benchmark
			45.00	Wilshire 5000
			25.00	Barclays Aggregate
			10.00	MSCI EAFE Index (N)
			5.00	Bloomberg Commodity Index
			5.00	91-Day T-Bill + 3.0% Ann (Monthly)
			5.00	NCREIF ODCE NOF
	9/08	9/08	5.00	RBAC Custom Private Equity Benchmark
			5.00	NCREIF ODCE NOF
			5.00	91-Day T-Bill + 3.0% Ann (Monthly)
			5.00	Bloomberg Commodity Index
			10.00	MSCI ACWI X US (N)
			25.00	Barclays Aggregate
			45.00	Wilshire 5000
	12/08	6/09	5.00	RBAC Custom Private Equity Benchmark
			2.50	91-Day T-Bill + 3.0% Ann (Monthly)
			5.00	Citi High Yield Market Capped
			5.00	Barclays U.S. TIPS
			5.00	Bloomberg Commodity Index
			7.50	NCREIF ODCE NOF
			15.00	MSCI ACWI X US (N)
			20.00	Barclays Aggregate
			35.00	Wilshire 5000
	9/09	3/10	5.00	RBAC Custom Private Equity Benchmark
			30.00	Wilshire 5000
			20.00	MSCI ACWI X US (N)
			15.00	Barclays Aggregate

Custom Benchmark Specification

Wilshire

Total Fund

June 30, 2016

	Quarter Start	Quarter End	Percent	Description
Policy Benchmark (cont.)			10.00	Citi High Yield Market Capped
			10.00	NCREIF ODCE NOF
			7.50	Barclays U.S. TIPS
			2.50	Bloomberg Commodity Index
	6/10	12/12	10.00	RBAC Custom Private Equity Benchmark
			5.00	Bloomberg Commodity Index
			6.00	Barclays U.S. TIPS
			10.00	NCREIF ODCE NOF
			10.00	Citi High Yield Market Capped
			14.00	Barclays Aggregate
			20.00	Wilshire 5000
			25.00	MSCI ACWI X US (N)
	3/13	6/16	20.00	RBAC Custom Private Equity Benchmark
			18.90	MSCI ACWI X US (N)
			16.10	Wilshire 5000
			12.00	Citi High Yield Market Capped
			10.00	Barclays Aggregate
			10.00	NCREIF ODCE NOF
			8.00	Bloomberg Commodity Index
			5.00	Barclays U.S. TIPS

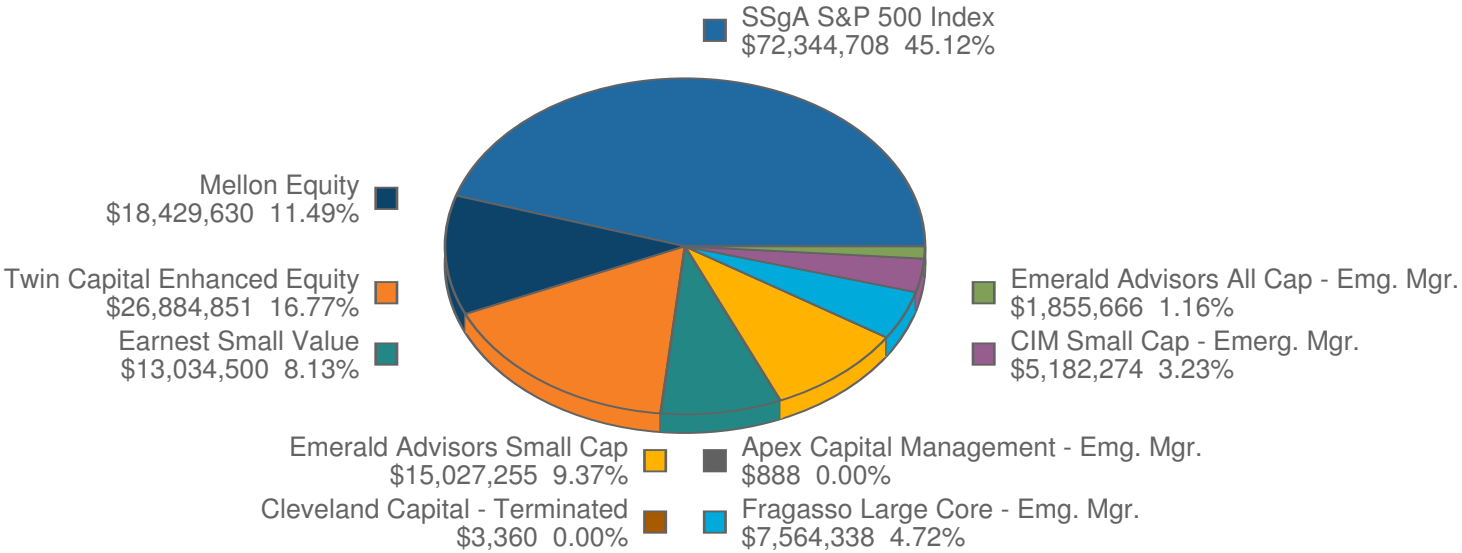
US Equity

Manager Allocation

Wilshire

US Equity Composite

As of June 30, 2016

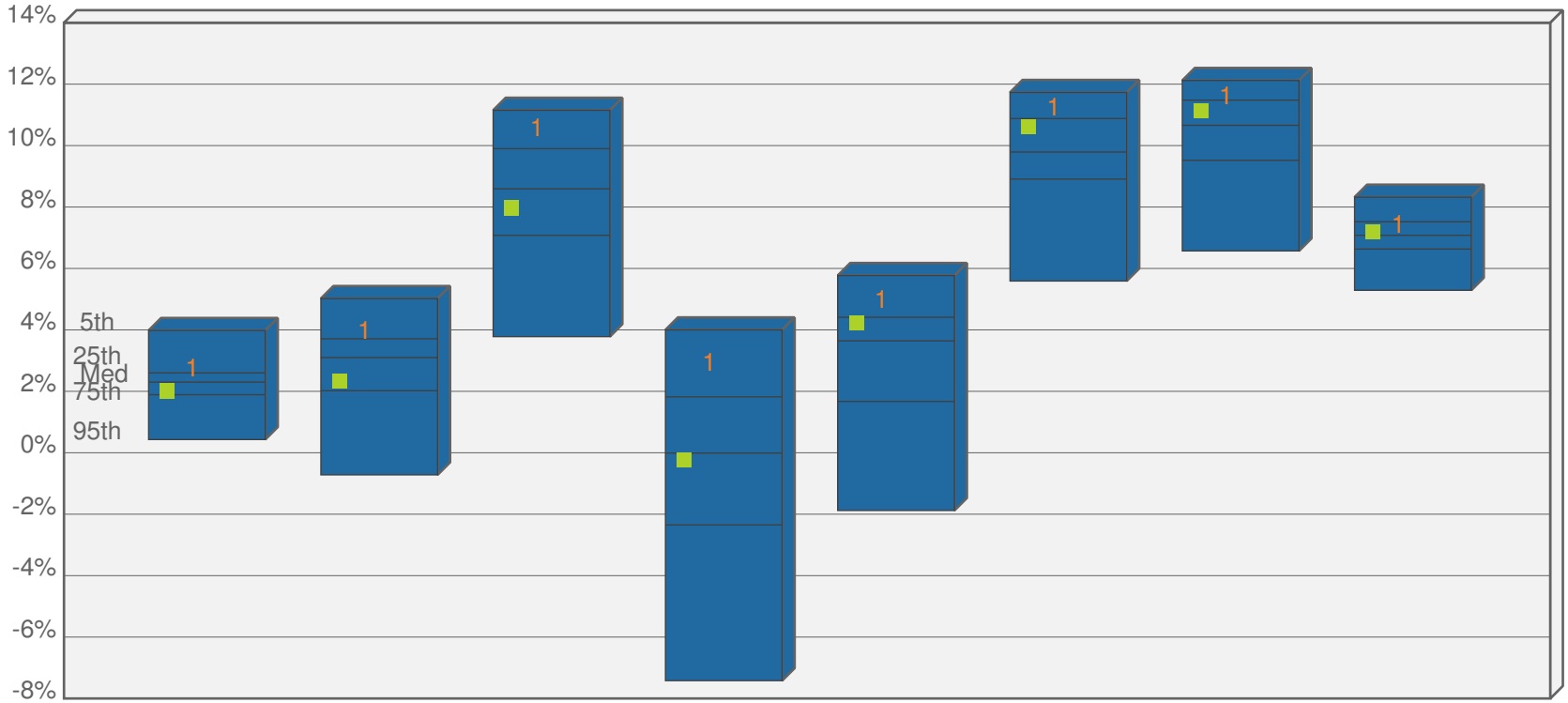


Performance Comparison

Wilshire

US Equity Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
US Equity Composite	2.06 (66)	2.36 (68)	8.00 (61)	-0.19 (54)	4.27 (28)	10.65 (32)	11.18 (34)	7.23 (38)
1 Wilshire 5000	2.78 (13)	3.98 (14)	10.60 (12)	2.96 (10)	5.01 (10)	11.26 (14)	11.64 (17)	7.46 (26)
5th %tile	3.98	5.02	11.15	4.00	5.77	11.73	12.12	8.32
25th %tile	2.60	3.71	9.90	1.82	4.41	10.88	11.48	7.52
Median	2.30	3.10	8.59	-0.01	3.64	9.79	10.66	7.08
75th %tile	1.89	2.02	7.08	-2.35	1.67	8.91	9.52	6.63
95th %tile	0.43	-0.72	3.78	-7.42	-1.88	5.59	6.57	5.29
Number of Funds	118	112	99	99	92	85	73	54

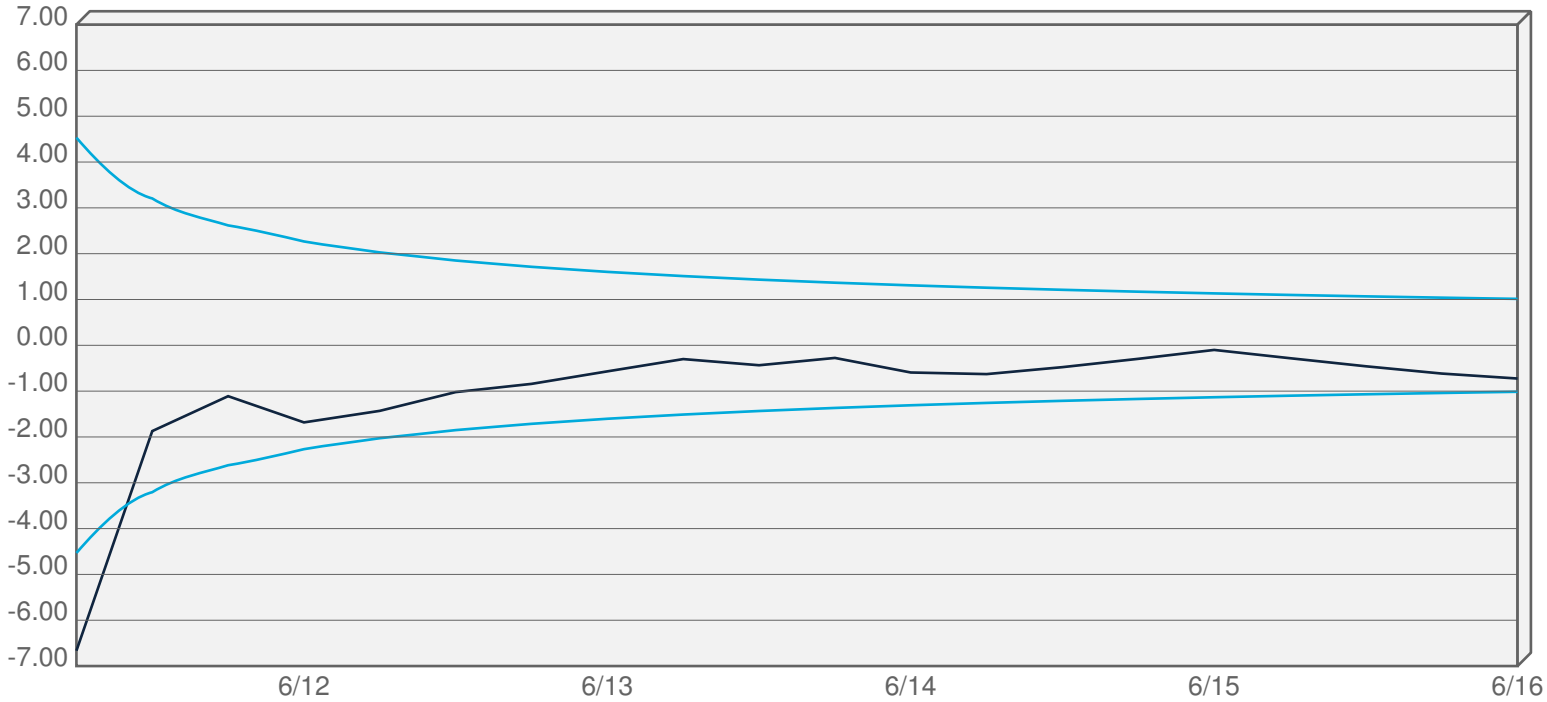
*TUCS Total Ret of US Equity Investment Pools Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

US Equity Composite

Five Years Ending June 30, 2016



Excess Return:	**-0.72**	**Information Ratio:**	**-0.53**
Excess Risk:	**1.38**	**T-Stat:**	**-1.18**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
SSgA S&P 500 Index									
Net of Fee Return	**2.44**	**3.84**	**11.18**	**4.07**	**11.64**	**12.10**		**12/31/07**	**6.64**
Standard & Poor's 500	2.46	3.84	11.15	3.99	11.66	12.10		12/31/07	6.59
Value Added	-0.01	0.01	0.03	0.08	-0.02	0.00		12/31/07	0.05
Mellon Equity									
Net of Fee Return	**0.43**	**1.53**	**6.71**	**-1.17**	**9.74**	**11.22**	**7.60**	**3/31/94**	**9.21**
Standard & Poor's 500	2.46	3.84	11.15	3.99	11.66	12.10	7.42	3/31/94	9.32
Value Added	-2.02	-2.30	-4.44	-5.16	-1.91	-0.88	0.18	3/31/94	-0.10
Twin Capital Enhanced Equity									
Net of Fee Return	**1.56**	**2.70**	**9.95**	**3.07**	**11.61**	**12.16**	**7.58**	**12/31/05**	**7.50**
Standard & Poor's 500	2.46	3.84	11.15	3.99	11.66	12.10	7.42	12/31/05	7.33
Value Added	-0.90	-1.14	-1.20	-0.92	-0.05	0.06	0.16	12/31/05	0.17
Earnest Small Value									
Net of Fee Return	**3.40**	**6.40**	**12.21**	**-0.38**	**9.11**	**9.92**		**6/30/09**	**14.48**
Russell 2000 Value	4.31	6.08	9.13	-2.58	6.35	8.15		6/30/09	13.52
Value Added	-0.91	0.32	3.08	2.20	2.76	1.77		6/30/09	0.96
Emerald Advisors Small Cap									
Net of Fee Return	**2.45**	**-3.86**	**-4.94**	**-14.40**	**10.13**	**10.66**	**7.83**	**9/30/04**	**9.41**
Russell 2000 Growth	3.24	-1.59	2.66	-10.75	7.74	8.51	7.14	9/30/04	8.23
Value Added	-0.79	-2.27	-7.60	-3.65	2.39	2.15	0.69	9/30/04	1.18
Fragasso Large Core - Emg. Mgr.									
Net of Fee Return	**2.33**	**5.11**	**9.04**	**0.72**	**10.21**			**9/30/12**	**11.46**
Standard & Poor's 500	2.46	3.84	11.15	3.99	11.66			9/30/12	12.95
Value Added	-0.12	1.27	-2.11	-3.27	-1.45			9/30/12	-1.49

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

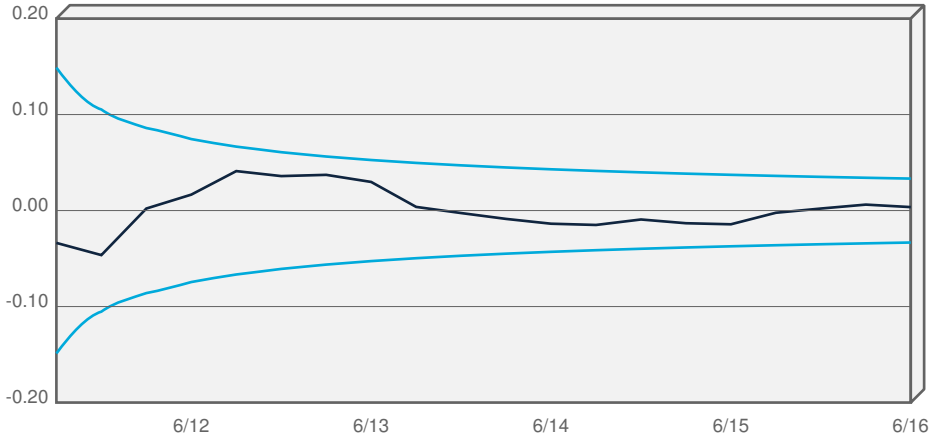
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
CIM Small Cap - Emerg. Mgr.									
Net of Fee Return	**1.50**	**0.29**	**2.40**	**-10.87**				**12/31/13**	**-0.27**
Russell 2000	3.79	2.22	5.89	-6.73				12/31/13	0.99
Value Added	-2.29	-1.93	-3.49	-4.14				12/31/13	-1.26
Emerald Advisors All Cap - Emg. Mgr.									
Net of Fee Return	**-0.77**	**-7.29**	**-7.21**					**9/30/15**	**-7.21**
Russell 3000 Growth	0.80	1.14	8.31					9/30/15	8.31
Value Added	-1.57	-8.43	-15.52					9/30/15	-15.52
US Equity Composite									
Net of Fee Return	**2.06**	**2.36**	**7.93**	**-0.32**	**10.34**	**10.83**	**6.85**	**12/31/93**	**8.23**
Wilshire 5000	2.78	3.98	10.60	2.96	11.26	11.64	7.46	12/31/93	9.00
Value Added	-0.72	-1.62	-2.67	-3.28	-0.92	-0.81	-0.61	12/31/93	-0.77

Wilshire

SSgA S&P 500 Index

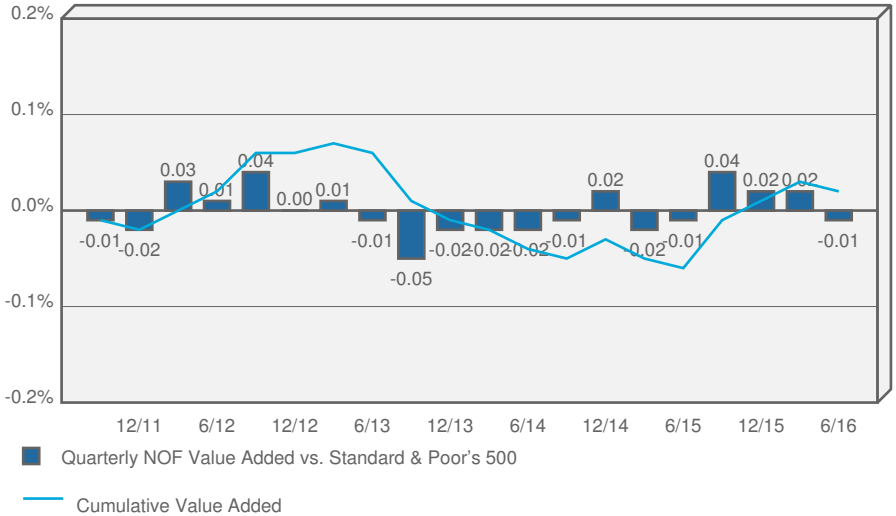
June 30, 2016

Cumulative Skill Analysis vs Benchmark

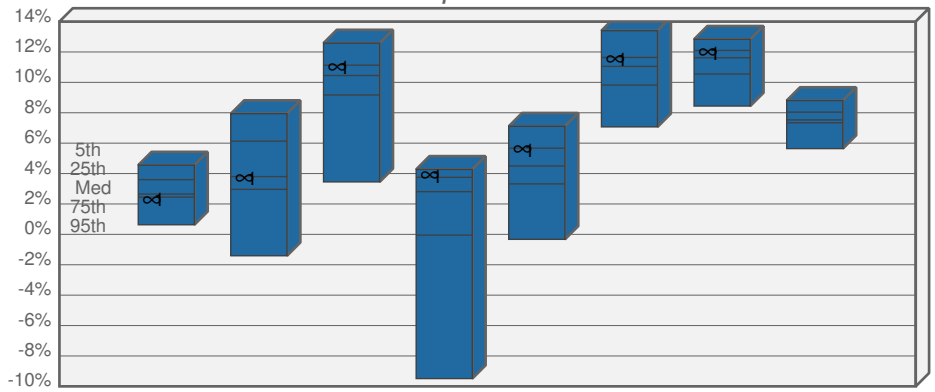


Excess Return:	**0.00**	**Information Ratio:**	**0.08**
Excess Risk:	**0.05**	**T-Stat:**	**0.18**

Value-Added Analysis vs Benchmark



*Performance Comparison vs Peer Universe**



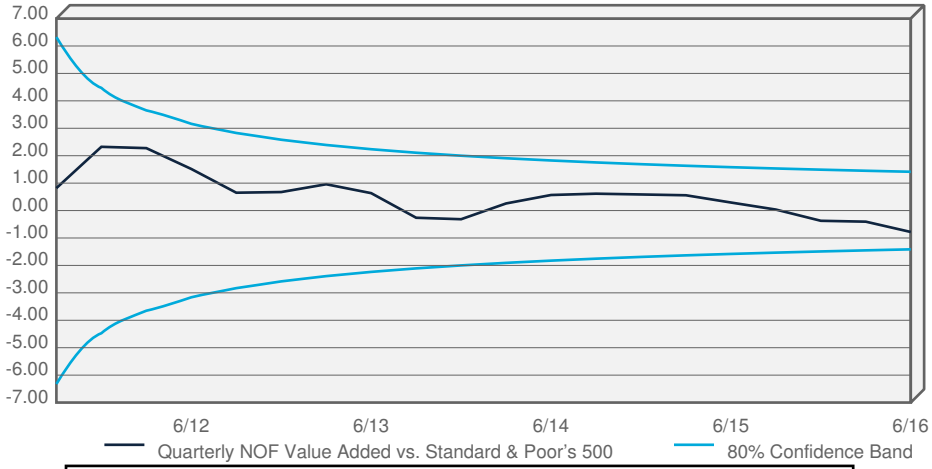
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ SSgA S&P 500 I	2.44 (84)	3.84 (42)	11.19 (16)	4.09 (6)	5.75 (13)	11.67 (14)	12.13 (17)	
1 Standard & Poo	2.46 (74)	3.84 (42)	11.15 (23)	3.99 (18)	5.69 (23)	11.66 (18)	12.10 (25)	
Median	2.65	3.80	10.45	2.81	4.50	11.05	11.62	7.53
Number of Funds	120	120	120	120	119	115	110	91

*Compass Total Returns of Passive U.S. Equity Portfolios Universe - Gross of Fees

Mellon Equity

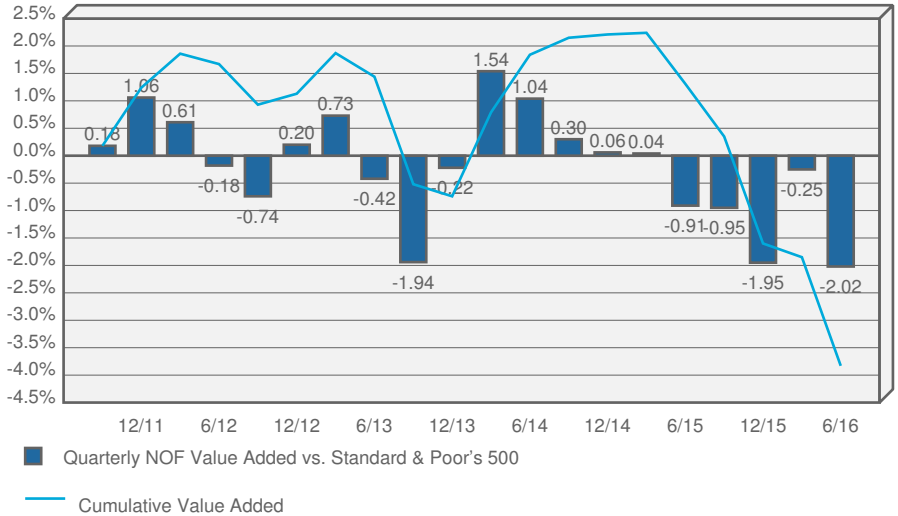
June 30, 2016

Cumulative Skill Analysis vs Benchmark

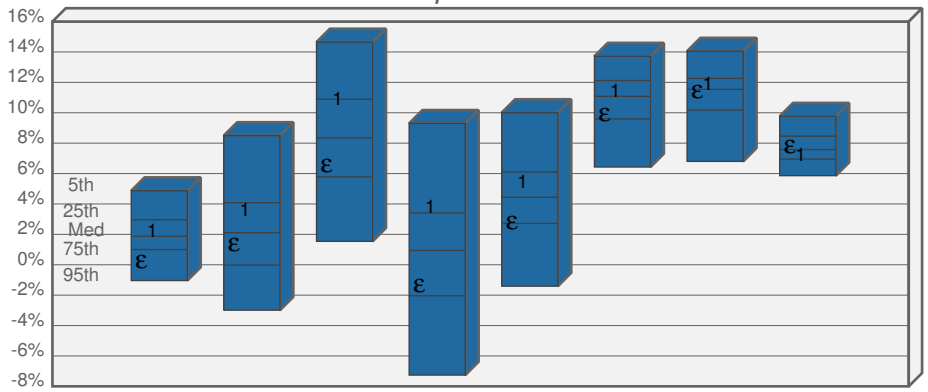


Excess Return:	**-0.78**	**Information Ratio:**	**-0.41**
Excess Risk:	**1.92**	**T-Stat:**	**-0.91**

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
ε Mellon Equity	0.43 (83)	1.53 (58)	6.71 (67)	-1.17 (71)	2.98 (71)	10.05 (70)	11.59 (49)	7.99 (39)
1 Standard & Poo	2.46 (38)	3.84 (26)	11.15 (20)	3.99 (21)	5.69 (30)	11.66 (33)	12.10 (33)	7.43 (58)
Median	1.88	2.11	8.35	0.94	4.44	11.08	11.54	7.58
Number of Funds	181	179	178	178	175	174	168	138

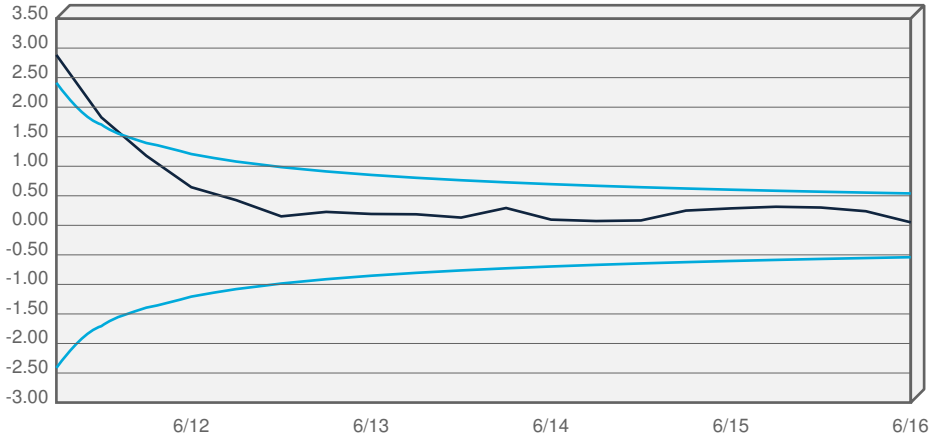
*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

Wilshire

Twin Capital Enhanced Equity

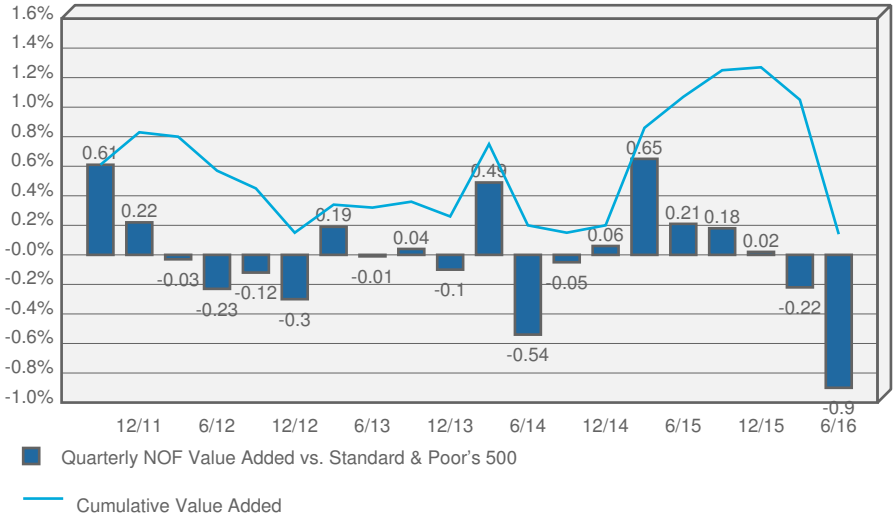
June 30, 2016

Cumulative Skill Analysis vs Benchmark

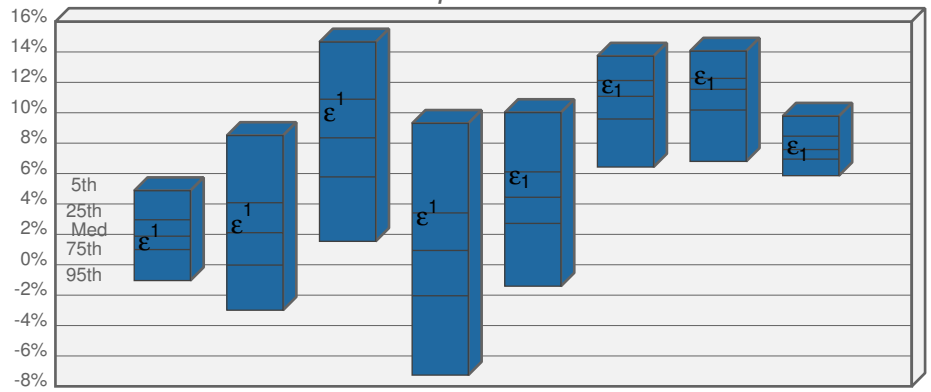


Excess Return:	**0.05**	**Information Ratio:**	**0.07**
Excess Risk:	**0.73**	**T-Stat:**	**0.15**

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
ε Twin Capital E	1.56 (60)	2.70 (39)	10.05 (32)	3.25 (26)	5.90 (28)	11.93 (28)	12.48 (22)	7.92 (41)
1 Standard & Poo	2.46 (38)	3.84 (26)	11.15 (20)	3.99 (21)	5.69 (30)	11.66 (33)	12.10 (33)	7.43 (58)
Median	1.88	2.11	8.35	0.94	4.44	11.08	11.54	7.58
Number of Funds	181	179	178	178	175	174	168	138

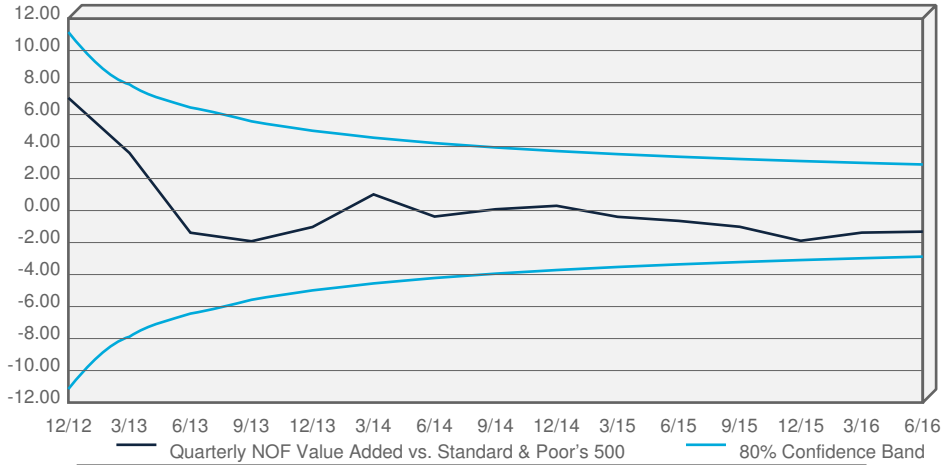
*Compass Total Returns of Active Large Core Equity Portfolios Universe - Gross of Fees

Wilshire

Fragasso Large Core - Emg. Mgr.

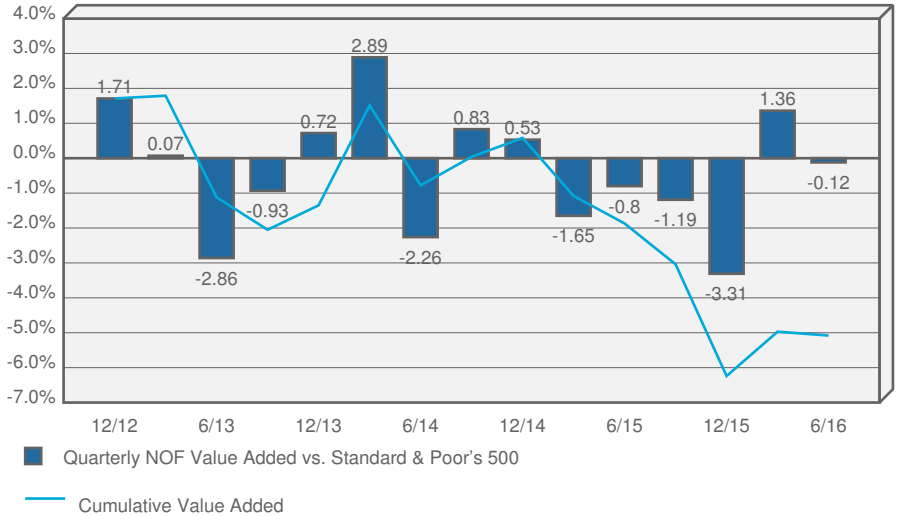
June 30, 2016

Cumulative Skill Analysis vs Benchmark

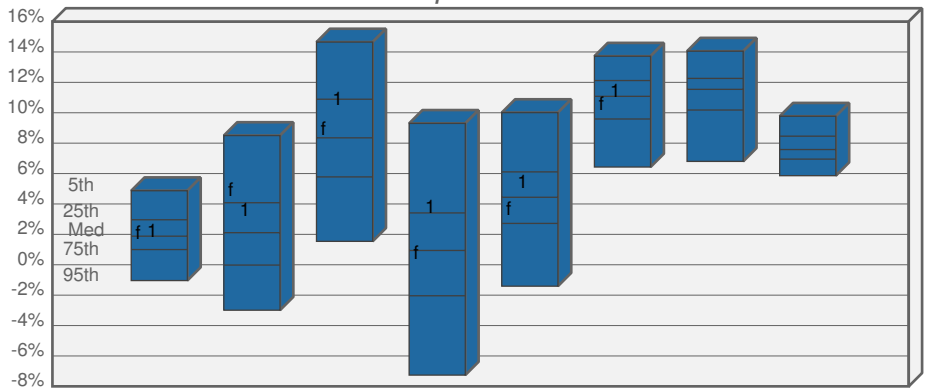


Excess Return:	**-1.32**	**Information Ratio:**	**-0.39**
Excess Risk:	**3.39**	**T-Stat:**	**-0.67**

Value-Added Analysis vs Benchmark



*Performance Comparison vs Peer Universe**



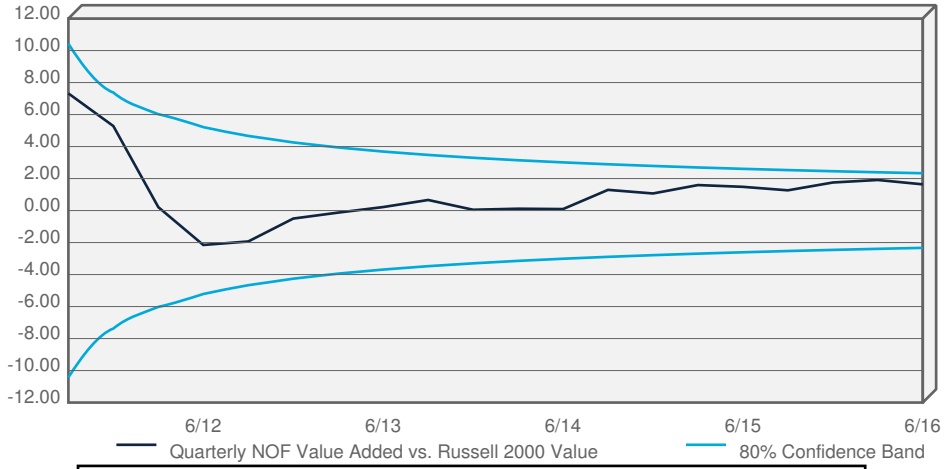
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
f Fragasso Large	2.33 (39)	5.11 (20)	9.18 (39)	1.00 (49)	3.92 (59)	10.82 (56)		
1 Standard & Poo	2.46 (38)	3.84 (26)	11.15 (20)	3.99 (21)	5.69 (30)	11.66 (33)		
Median	1.88	2.11	8.35	0.94	4.44	11.08	11.54	7.58
Number of Funds	181	179	178	178	175	174	168	138

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

Earnest Small Value

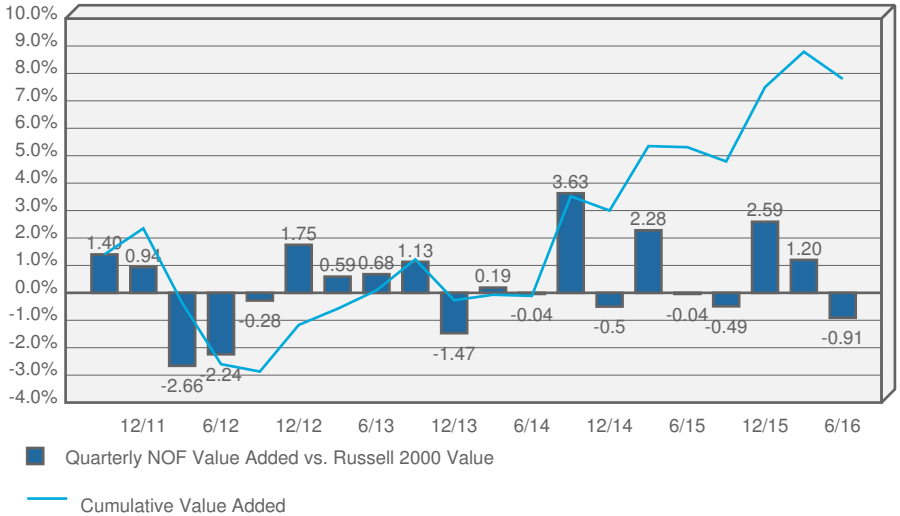
June 30, 2016

Cumulative Skill Analysis vs Benchmark

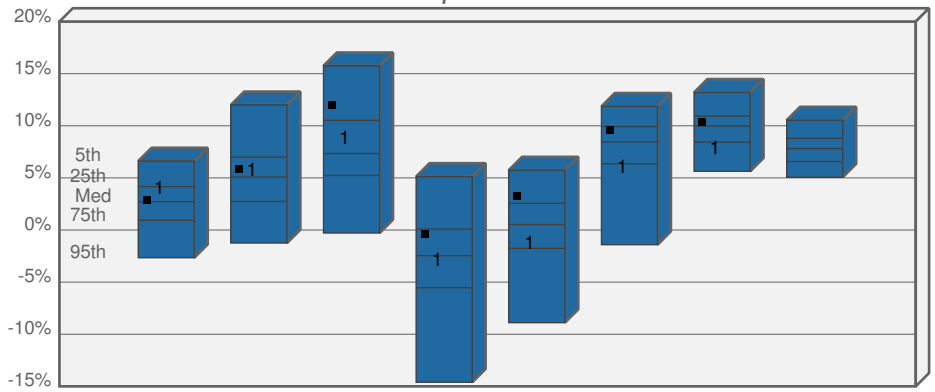


Excess Return:	**1.64**	**Information Ratio:**	**0.52**
Excess Risk:	**3.17**	**T-Stat:**	**1.15**

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
■ Earnest Small	3.40 (39)	6.40 (30)	12.47 (12)	0.10 (24)	3.77 (15)	10.15 (22)	10.89 (26)	
1 Russell 2000 V	4.31 (23)	6.08 (34)	9.13 (42)	-2.58 (51)	-0.92 (67)	6.35 (75)	8.15 (79)	
Median	2.72	5.08	7.34	-2.46	0.52	8.45	9.97	7.82
Number of Funds	188	188	188	188	183	179	173	140

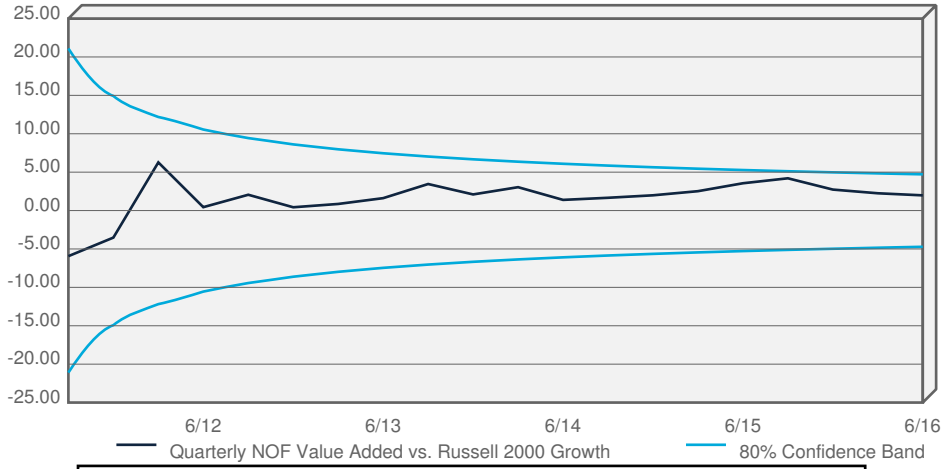
*Compass Total Returns of Active Small Cap Value Equity Portfolios Universe - Gross of Fees

Wilshire

Emerald Advisors Small Cap

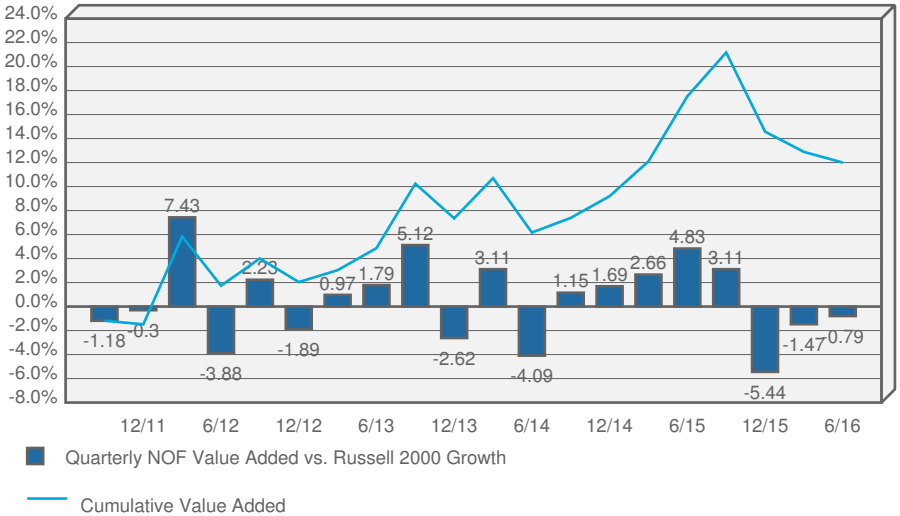
June 30, 2016

Cumulative Skill Analysis vs Benchmark

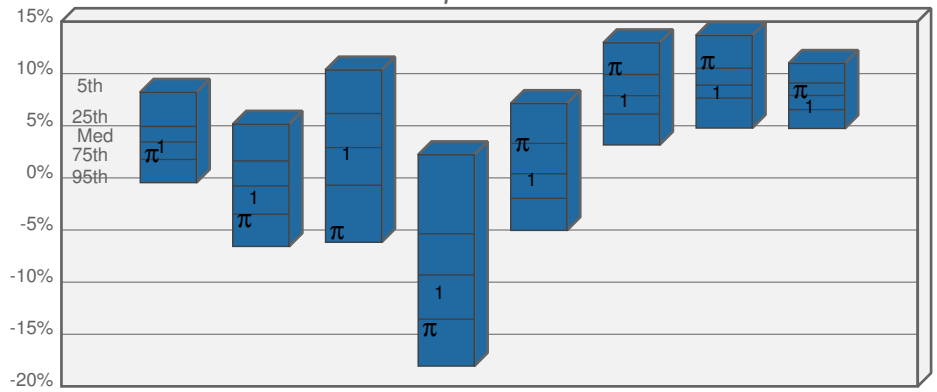


Excess Return:	**1.98**	**Information Ratio:**	**0.31**
Excess Risk:	**6.41**	**T-Stat:**	**0.69**

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
π Emerald Adviso	2.45 (69)	-3.86 (77)	-4.94 (91)	-14.24 (81)	3.47 (24)	10.76 (20)	11.35 (15)	8.55 (32)
1 Russell 2000 G	3.24 (55)	-1.59 (58)	2.66 (51)	-10.75 (60)	0.13 (53)	7.74 (53)	8.51 (57)	7.14 (67)
Median	3.45	-0.77	2.91	-9.31	0.40	7.89	8.90	7.91
Number of Funds	153	153	153	153	149	149	146	126

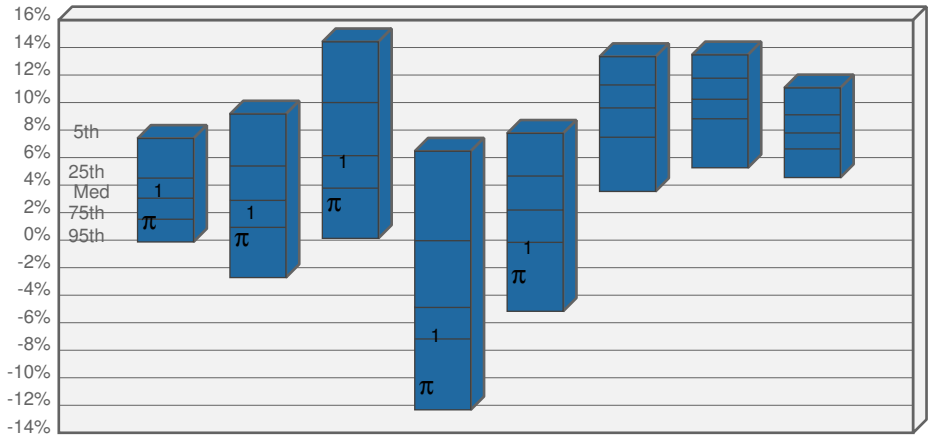
*Compass Total Returns of Active Small Cap Growth Equity Portfolios Universe - Gross of Fees

Wilshire

CIM Small Cap - Emerg. Mgr.

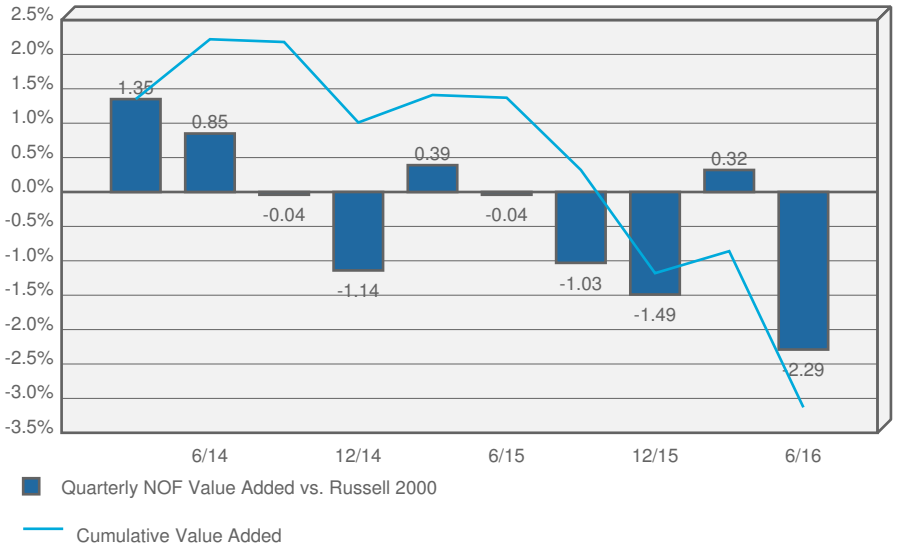
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π CIM Small Cap	1.50 (75)	0.29 (80)	2.79 (81)	-10.53 (92)	-2.47 (89)			
1 Russell 2000	3.79 (38)	2.22 (59)	5.89 (51)	-6.73 (68)	-0.34 (77)			
Median	3.05	2.89	6.14	-4.89	2.19	9.61	10.24	7.79
Number of Funds	127	127	127	127	123	122	120	92

Value-Added Analysis vs Benchmark



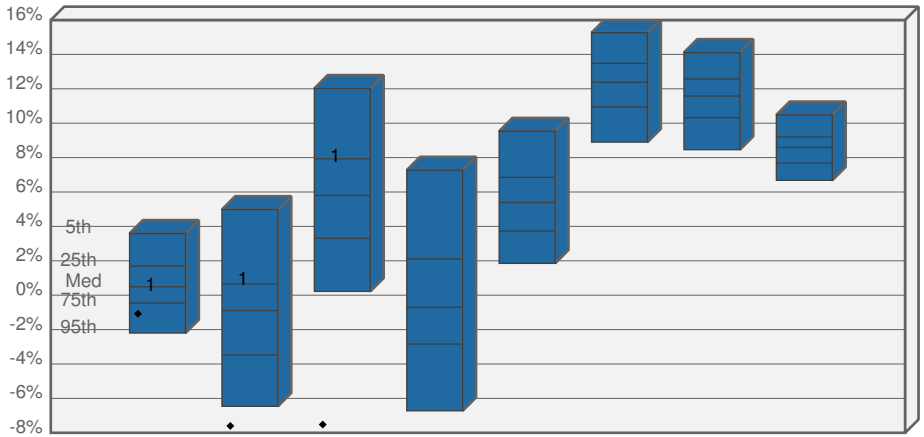
*Compass Total Returns of Active Small Cap Core Equity Portfolios Universe - Gross of Fees

Wilshire

Emerald Advisors All Cap - Emg. Mgr.

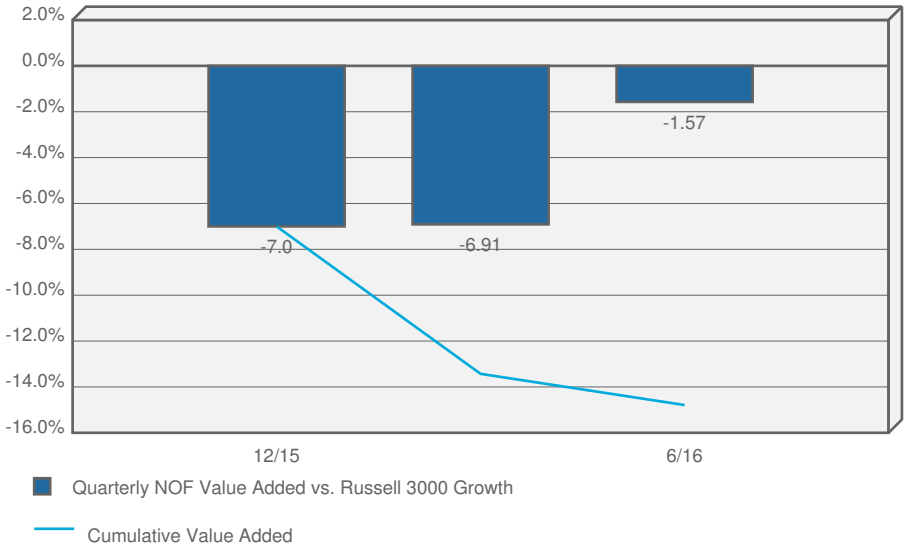
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ Emerald Adviso	-0.77 (80)	-7.29 (98)	-7.21 (100)					
1 Russell 3000 G	0.80 (45)	1.14 (20)	8.31 (19)					
Median	0.49	-0.89	5.80	-0.70	5.39	12.38	11.58	8.59
Number of Funds	208	208	208	208	201	200	195	167

Value-Added Analysis vs Benchmark



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

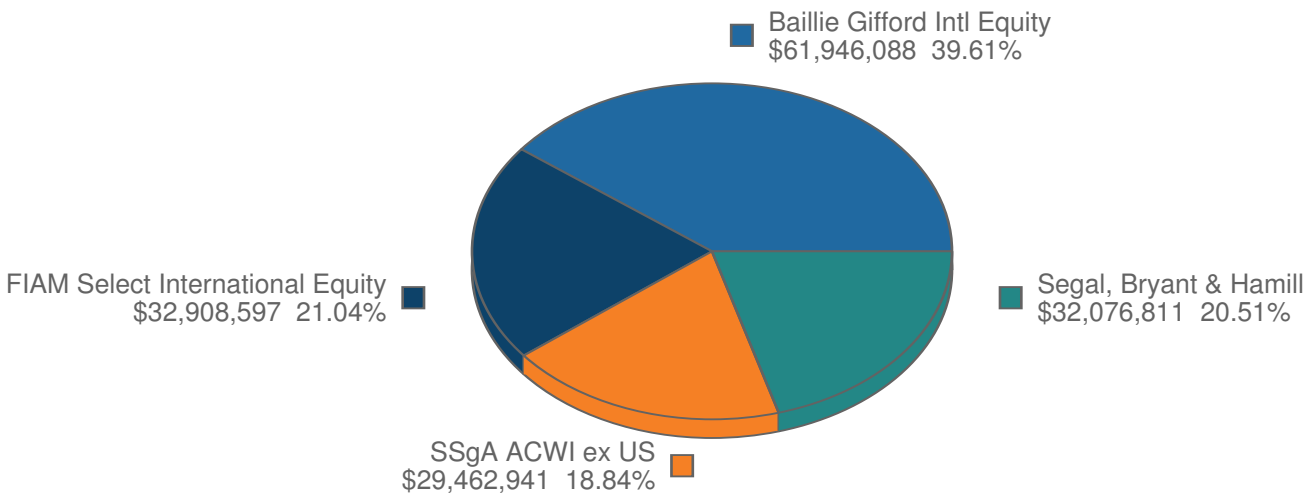
Non-US Equity

Manager Allocation

Wilshire

Non US Equity Composite

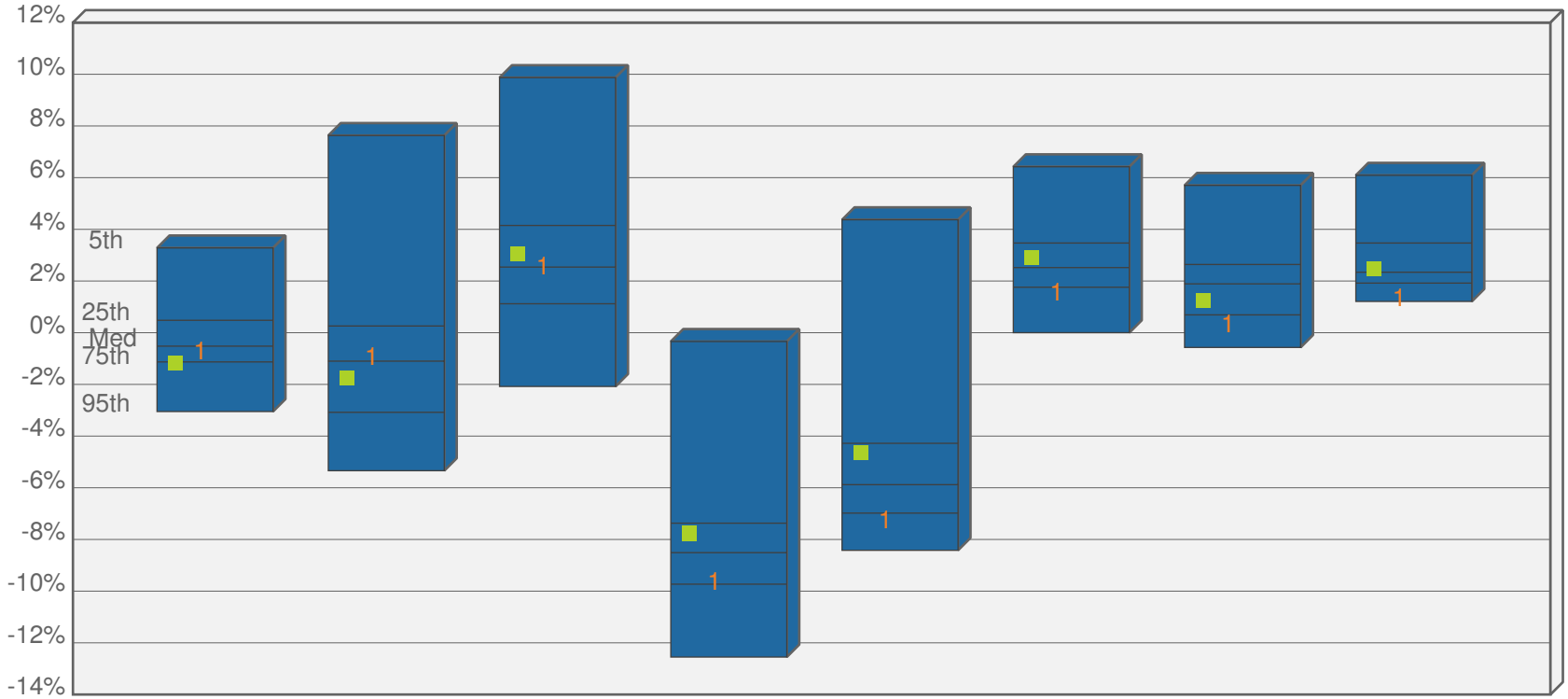
As of June 30, 2016



Wilshire

Non US Equity Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Non US Equity Composite	-1.11 (72)	-1.72 (58)	3.10 (37)	-7.72 (32)	-4.60 (30)	2.96 (37)	1.28 (64)	2.53 (45)
1 Policy Index	-0.68 (54)	-0.91 (45)	2.58 (49)	-9.61 (74)	-7.21 (81)	1.58 (77)	0.35 (87)	1.35 (91)
5th %tile	3.28	7.63	9.87	-0.34	4.37	6.42	5.70	6.09
25th %tile	0.48	0.26	4.15	-7.37	-4.28	3.47	2.64	3.47
Median	-0.52	-1.10	2.54	-8.51	-5.88	2.52	1.89	2.34
75th %tile	-1.13	-3.08	1.12	-9.73	-6.98	1.76	0.69	1.92
95th %tile	-3.05	-5.34	-2.08	-12.55	-8.42	-0.00	-0.57	1.21
Number of Funds	131	125	117	116	108	100	89	65

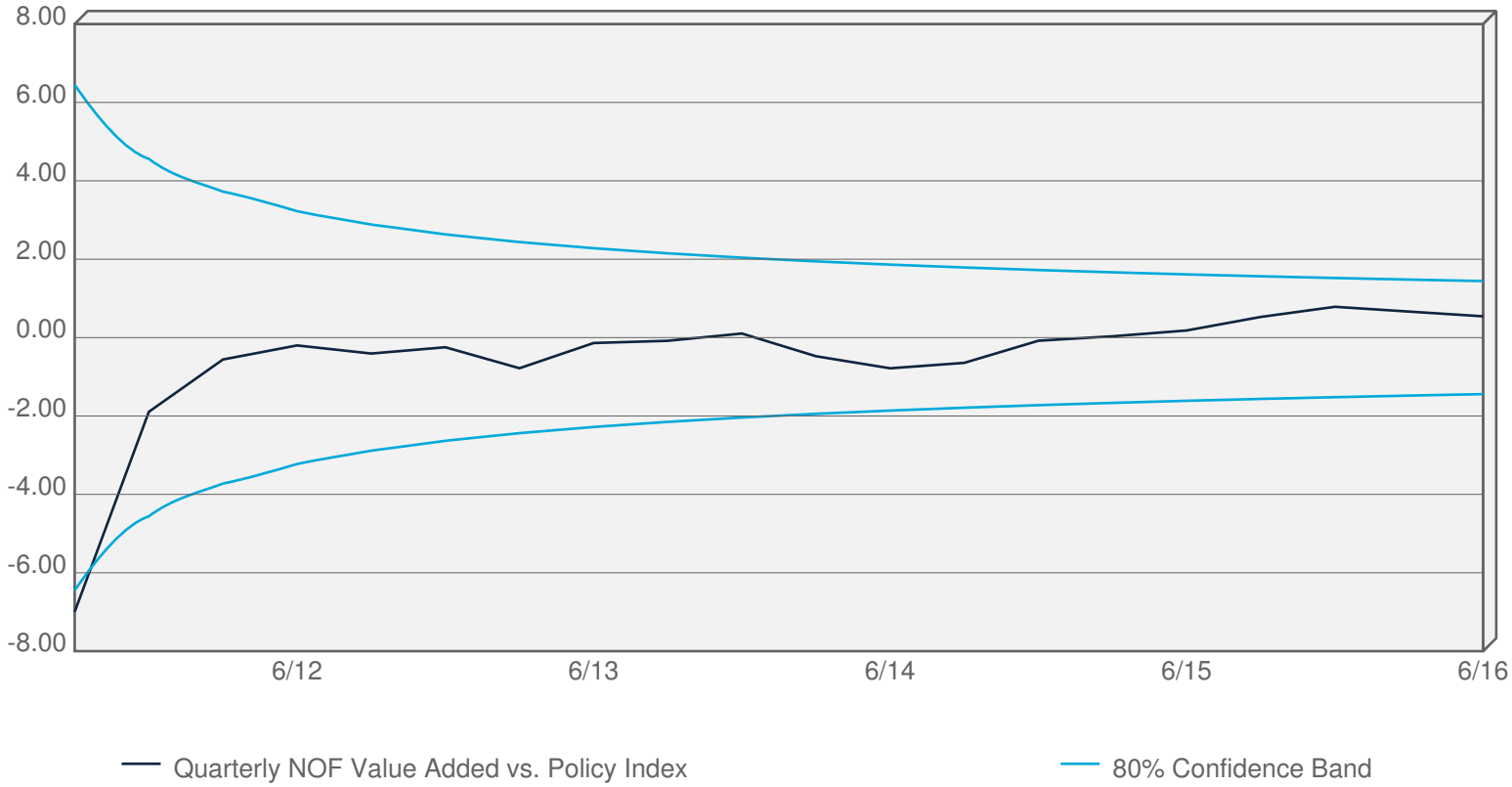
*TUCS Total Ret of Non-US Equity Investment Pools Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

Non US Equity Composite

Five Years Ending June 30, 2016



Excess Return:	**0.54**	**Information Ratio:**	**0.28**
Excess Risk:	**1.96**	**T-Stat:**	**0.62**

Performance Comparison

Wilshire

Trailing Returns

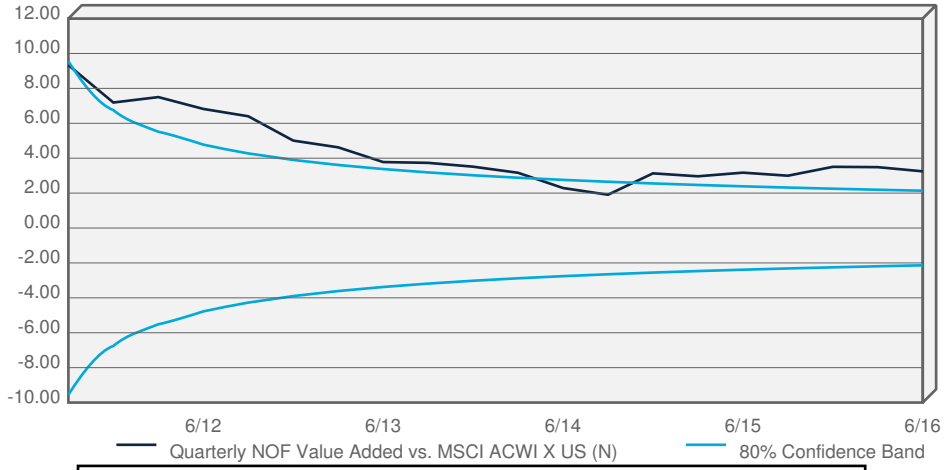
Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Baillie Gifford Intl Equity									
Net of Fee Return	**-0.95**	**-0.55**	**5.76**	**-7.06**	**4.09**	**3.35**		**9/30/09**	**6.07**
MSCI ACWI X US (N)	-0.64	-1.02	2.20	-10.24	1.17	0.10		9/30/09	2.78
Value Added	-0.30	0.47	3.56	3.18	2.93	3.25		9/30/09	3.29
FIAM Select International Equity									
Net of Fee Return	**0.08**	**-1.52**	**0.98**	**-10.64**	**1.36**	**0.26**	**1.55**	**12/31/00**	**3.60**
Policy Benchmark	-0.64	-1.02	2.20	-10.24	1.17	0.10	1.22	12/31/00	2.88
Value Added	0.72	-0.50	-1.21	-0.40	0.19	0.16	0.33	12/31/00	0.72
SSgA ACWI ex US									
Net of Fee Return	**-0.86**	**-2.69**	**1.10**	**-9.57**				**6/30/15**	**-9.57**
MSCI World X-US (N)	-1.05	-2.98	0.82	-9.84				6/30/15	-9.84
Value Added	0.19	0.29	0.28	0.27				6/30/15	0.27
Segal, Bryant & Hamill									
Net of Fee Return	**-2.94**	**-3.37**	**1.72**	**-4.86**				**6/30/15**	**-4.86**
MSCI EAFE Small Cap (N)	-2.60	-3.18	3.39	-3.67				6/30/15	-3.67
Value Added	-0.34	-0.20	-1.67	-1.19				6/30/15	-1.19
Non US Equity Composite									
Net of Fee Return	**-1.11**	**-1.72**	**3.06**	**-7.80**	**2.60**	**0.89**	**2.14**	**12/31/00**	**3.99**
Policy Index	-0.68	-0.91	2.58	-9.61	1.58	0.35	1.35	12/31/00	2.97
Value Added	-0.43	-0.81	0.48	1.81	1.01	0.54	0.79	12/31/00	1.02

Baillie Gifford Intl Equity

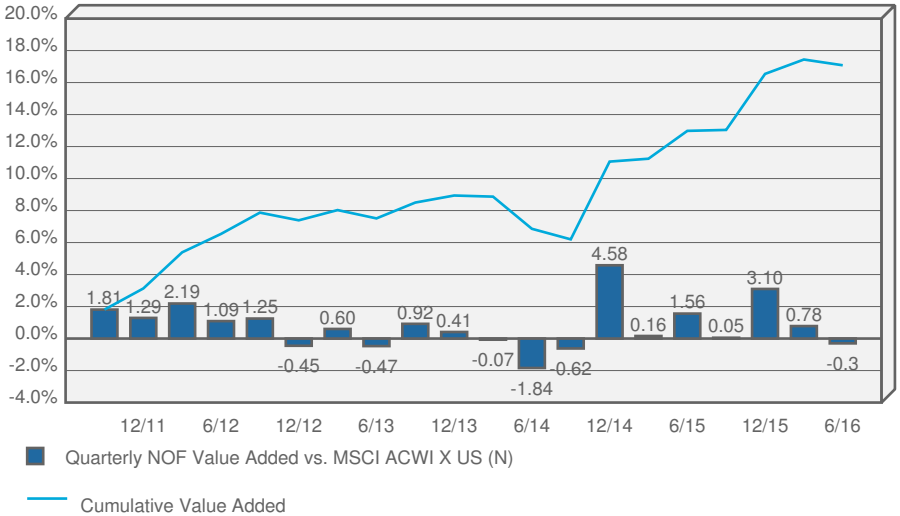
June 30, 2016

Cumulative Skill Analysis vs Benchmark

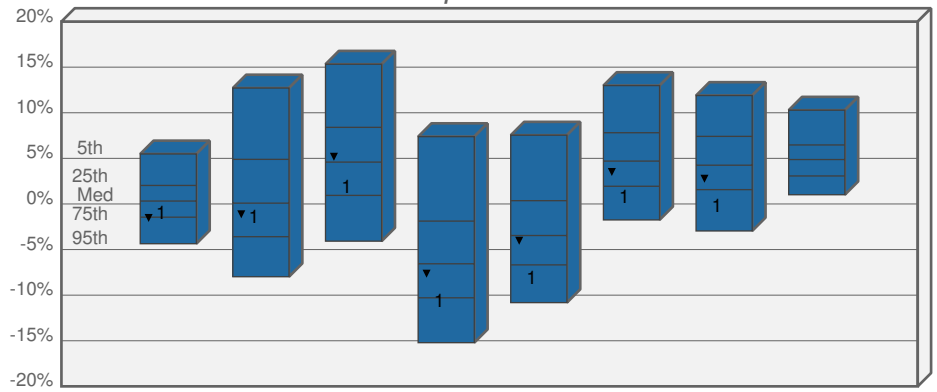


Excess Return:	**3.25**	**Information Ratio:**	**1.12**
Excess Risk:	**2.90**	**T-Stat:**	**2.50**

Value-Added Analysis vs Benchmark



*Performance Comparison vs Peer Universe**



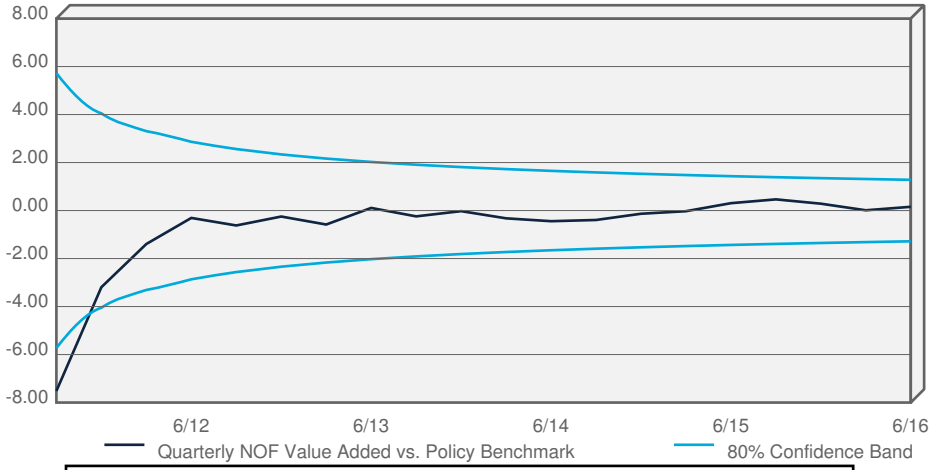
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▼ Baillie Giffor	-0.95 (67)	-0.55 (53)	5.76 (42)	-7.06 (53)	-3.45 (49)	4.09 (55)	3.35 (57)	
1 MSCI ACWI X US	-0.64 (64)	-1.02 (56)	2.20 (67)	-10.24 (74)	-7.78 (83)	1.17 (80)	0.10 (84)	
Median	0.32	0.09	4.59	-6.56	-3.46	4.70	4.25	4.87
Number of Funds	1495	1484	1477	1466	1411	1347	1151	730

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

FIAM Select International Equity

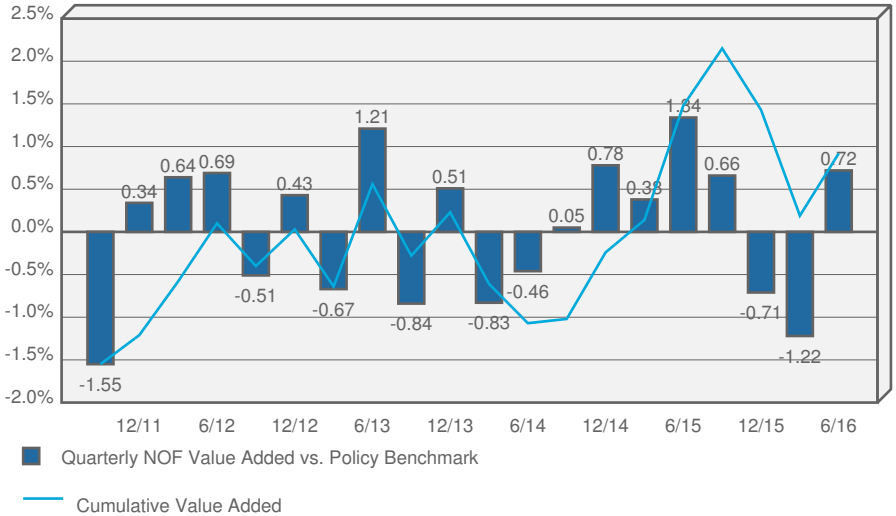
June 30, 2016

Cumulative Skill Analysis vs Benchmark

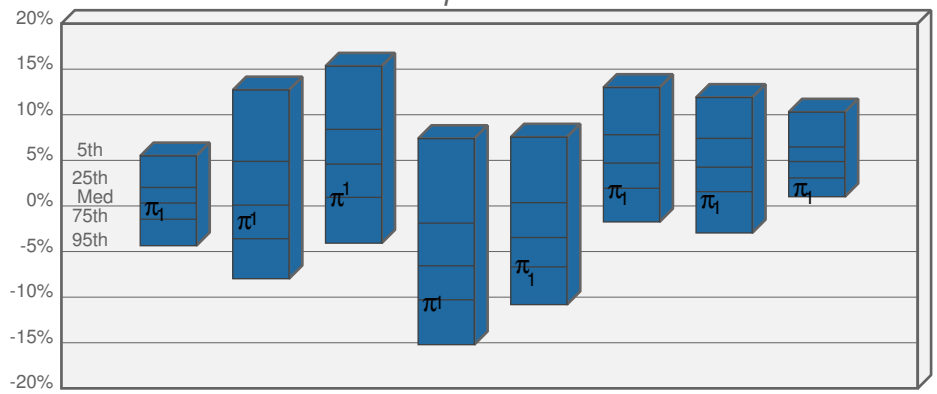


Excess Return:	**0.16**	**Information Ratio:**	**0.09**
Excess Risk:	**1.74**	**T-Stat:**	**0.20**

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
π FIAM Select In	0.08 (53)	-1.52 (59)	0.98 (74)	-10.44 (76)	-6.34 (72)	1.92 (75)	0.83 (80)	2.10 (88)
1 Policy Benchma	-0.64 (64)	-1.02 (56)	2.20 (67)	-10.24 (74)	-7.78 (83)	1.17 (80)	0.10 (84)	1.22 (94)
Median	0.32	0.09	4.59	-6.56	-3.46	4.70	4.25	4.87
Number of Funds	1495	1484	1477	1466	1411	1347	1151	730

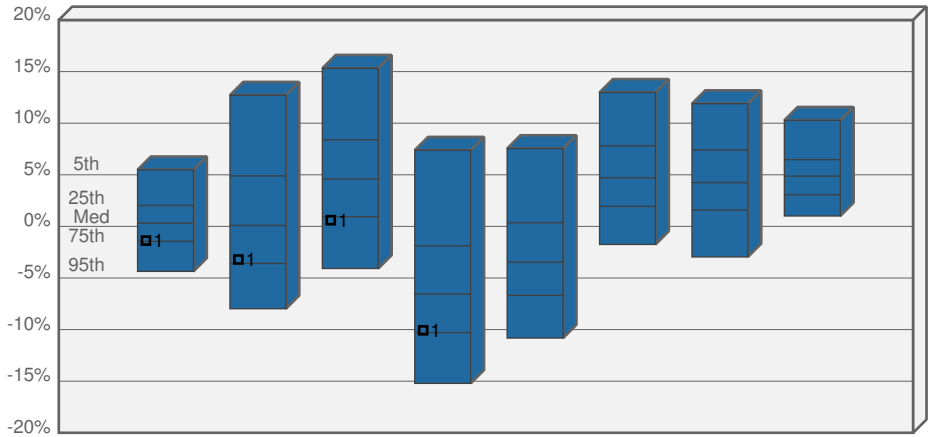
*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

Wilshire

SSgA ACWI ex US

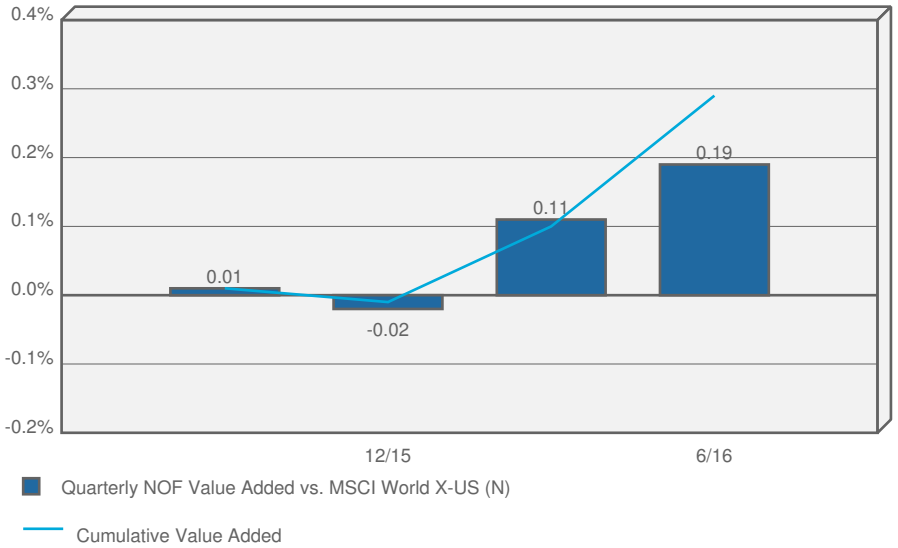
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◘ SSgA ACWI ex U	-0.86 (66)	-2.69 (68)	1.12 (74)	-9.55 (69)				
1 MSCI World X-U	-1.05 (68)	-2.98 (69)	0.82 (76)	-9.84 (71)				
Median	0.32	0.09	4.59	-6.56	-3.46	4.70	4.25	4.87
Number of Funds	1495	1484	1477	1466	1411	1347	1151	730

Value-Added Analysis vs Benchmark



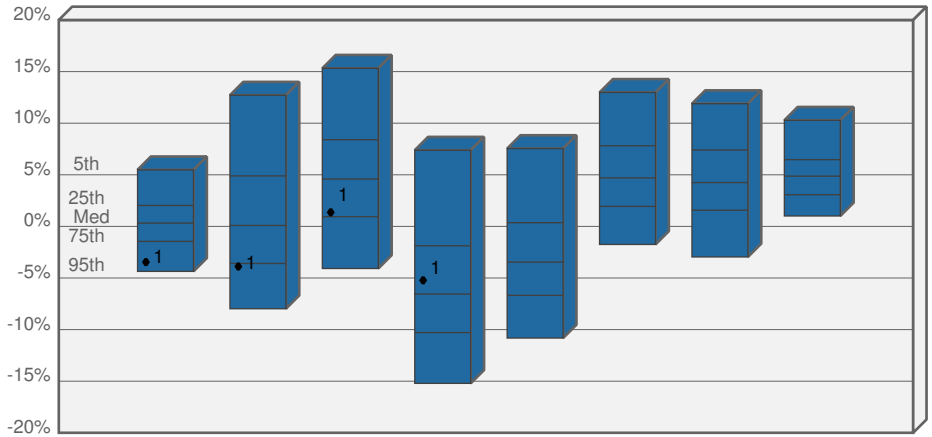
*Compass Total Returns of International Equity Portfolios Universe - Gross of Fees

Wilshire

Segal, Bryant & Hamill

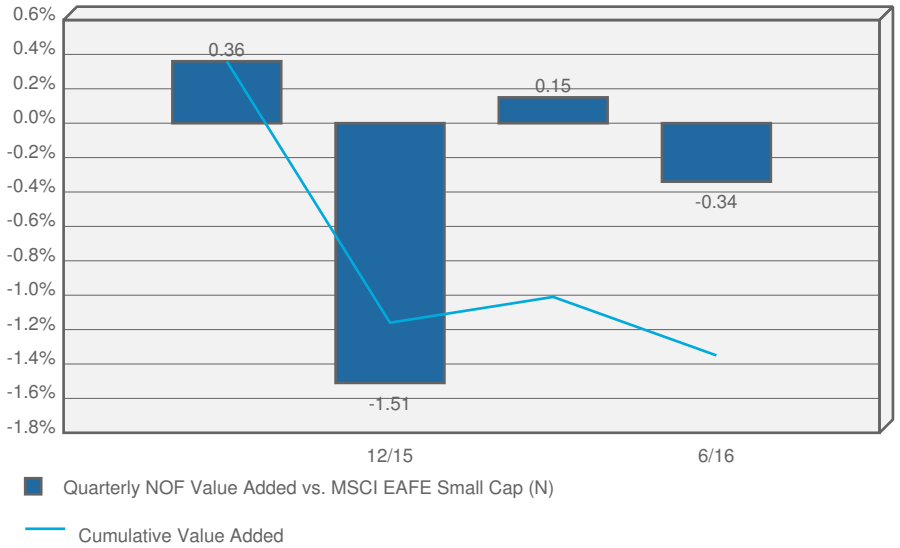
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
♦ Segal, Bryant	-2.94 (88)	-3.37 (73)	1.88 (69)	-4.71 (39)				
1 MSCI EAFE Sm	-2.60 (86)	-3.18 (71)	3.39 (58)	-3.67 (33)				
Median	0.32	0.09	4.59	-6.56	-3.46	4.70	4.25	4.87
Number of Funds	1495	1484	1477	1466	1411	1347	1151	730

Value-Added Analysis vs Benchmark



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

Custom Benchmark Specification

Wilshire

Non US Equity Composite

June 30, 2016

	Quarter Start	Quarter End	Percent	Description
Policy Index	12/00	6/08	100.00	MSCI EAFE Index (N)
	9/08	12/14	100.00	MSCI ACWI X US (N)
	3/15	6/16	100.00	MSCI ACWI X US IMI Index (N)

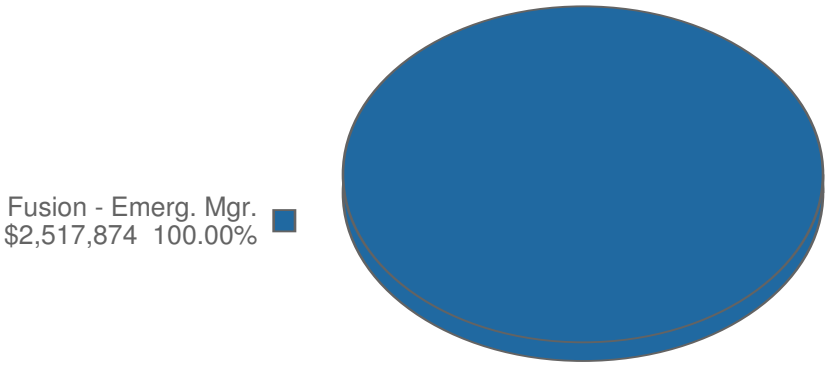
Global Equity

Manager Allocation

Wilshire

Global Equity Composite

As of June 30, 2016

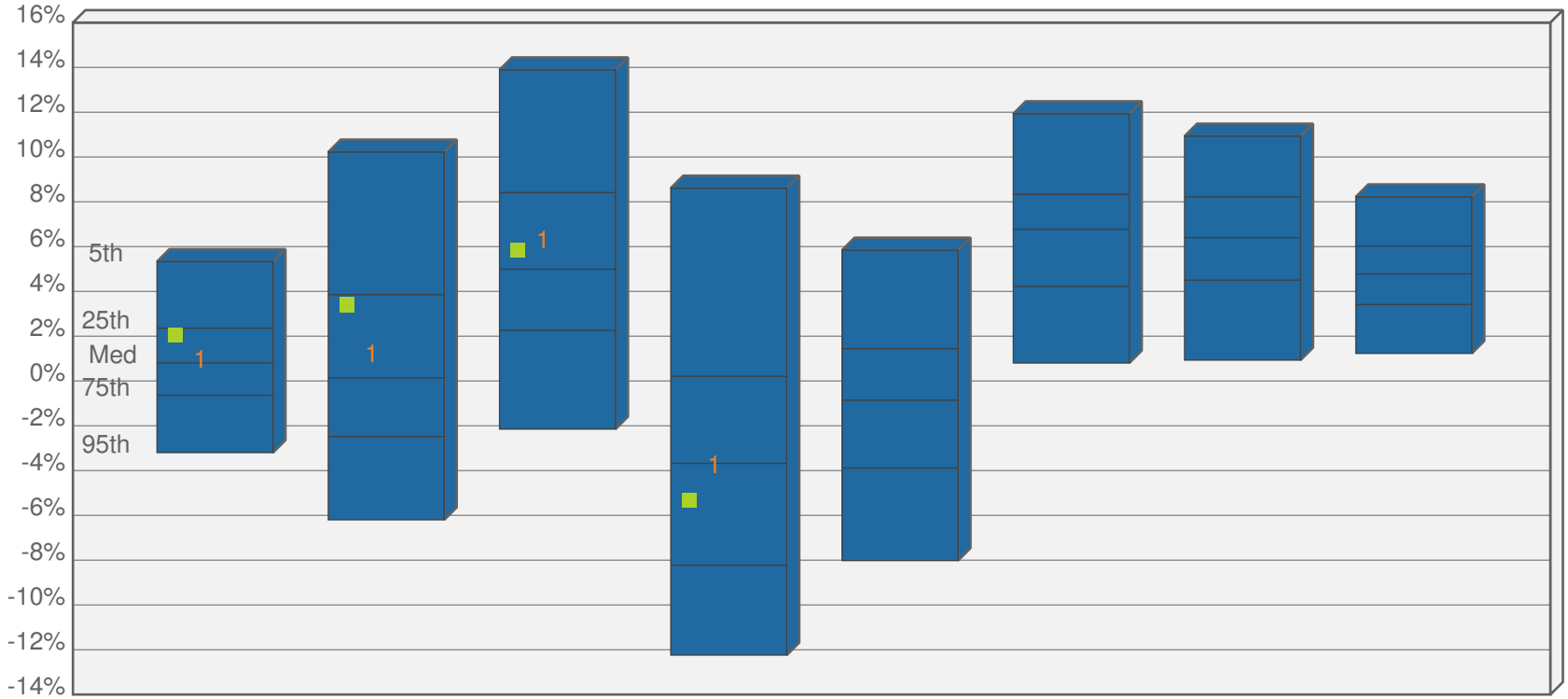


Performance Comparison

Wilshire

Global Equity Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Global Equity	2.11 (28)	3.45 (29)	5.91 (45)	-5.28 (60)				
1 MSCI ACWI (N)	0.99 (46)	1.23 (42)	6.32 (42)	-3.73 (50)				
5th %tile	5.33	10.22	13.89	8.61	5.84	11.93	10.93	8.22
25th %tile	2.36	3.85	8.41	0.21	1.44	8.33	8.22	6.02
Median	0.80	0.14	4.99	-3.68	-0.86	6.77	6.40	4.78
75th %tile	-0.64	-2.48	2.26	-8.23	-3.89	4.22	4.50	3.41
95th %tile	-3.20	-6.20	-2.15	-12.24	-8.02	0.80	0.93	1.23
Number of Funds	347	343	340	337	310	282	249	109

*TUCS Total Ret of Global Equity Portfolios Universe - Gross of Fees

Wilshire

Trailing Returns

Periods Ended June 30, 2016

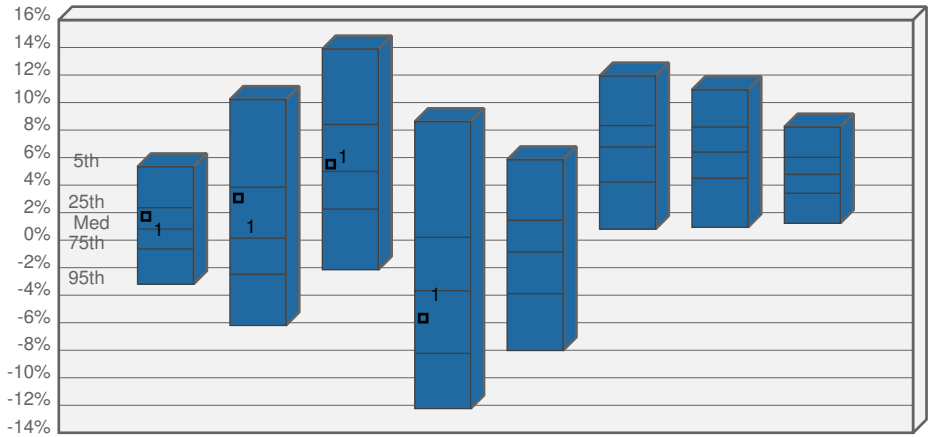
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Fusion - Emerg. Mgr.									
Net of Fee Return	**2.11**	**3.45**	**5.73**	**-5.62**				**12/31/14**	**-1.18**
MSCI ACWI (N)	0.99	1.23	6.32	-3.73				12/31/14	-0.78
Value Added	1.12	2.22	-0.59	-1.89				12/31/14	-0.41
Global Equity									
Net of Fee Return	**2.11**	**3.45**	**5.73**	**-5.62**				**12/31/14**	**-1.18**
MSCI ACWI (N)	0.99	1.23	6.32	-3.73				12/31/14	-0.78
Value Added	1.12	2.22	-0.59	-1.89				12/31/14	-0.41

Wilshire

Fusion - Emerg. Mgr.

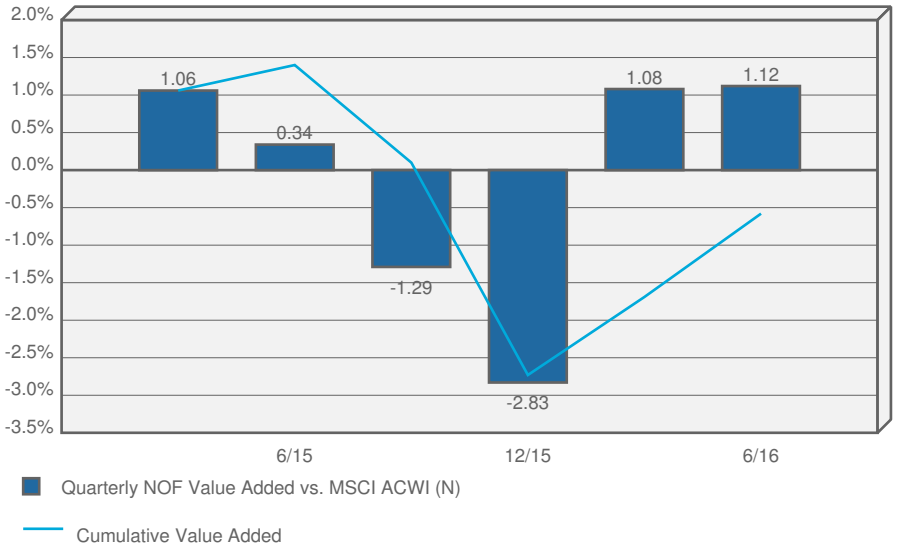
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◻ Fusion - Emerg	2.11 (28)	3.45 (29)	5.91 (45)	-5.28 (60)				
1 MSCI ACWI (N)	0.99 (46)	1.23 (42)	6.32 (42)	-3.73 (50)				
Median	0.80	0.14	4.99	-3.68	-0.86	6.77	6.40	4.78
Number of Funds	347	343	340	337	310	282	249	109

Value-Added Analysis vs Benchmark



*TUCS Total Returns of Global Equity Portfolios Universe - Gross of Fees

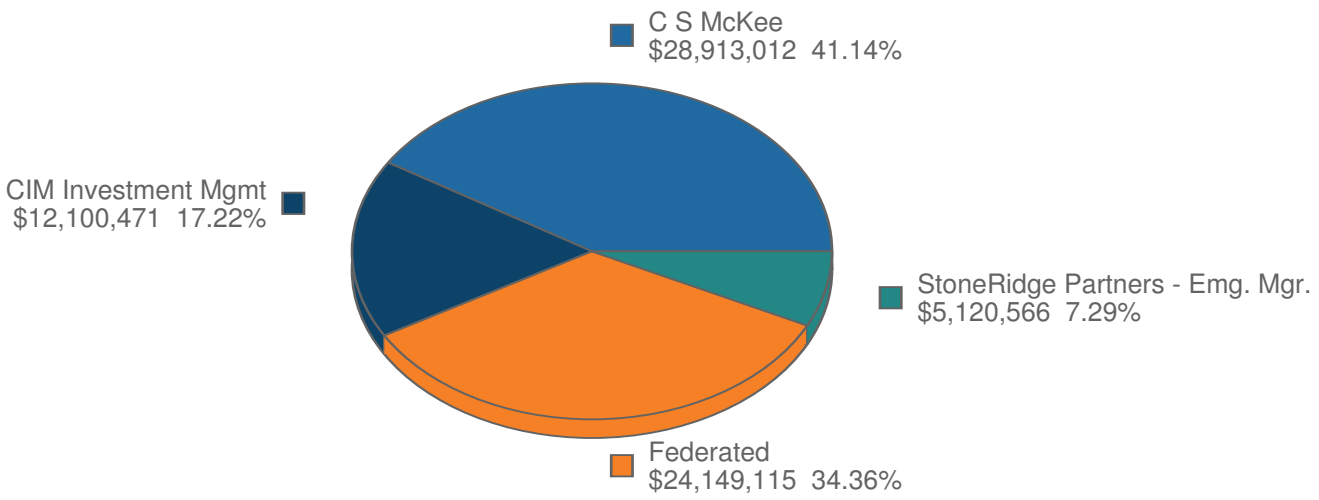
Core Fixed Income

Manager Allocation

Wilshire

Core Fixed Composite

As of June 30, 2016

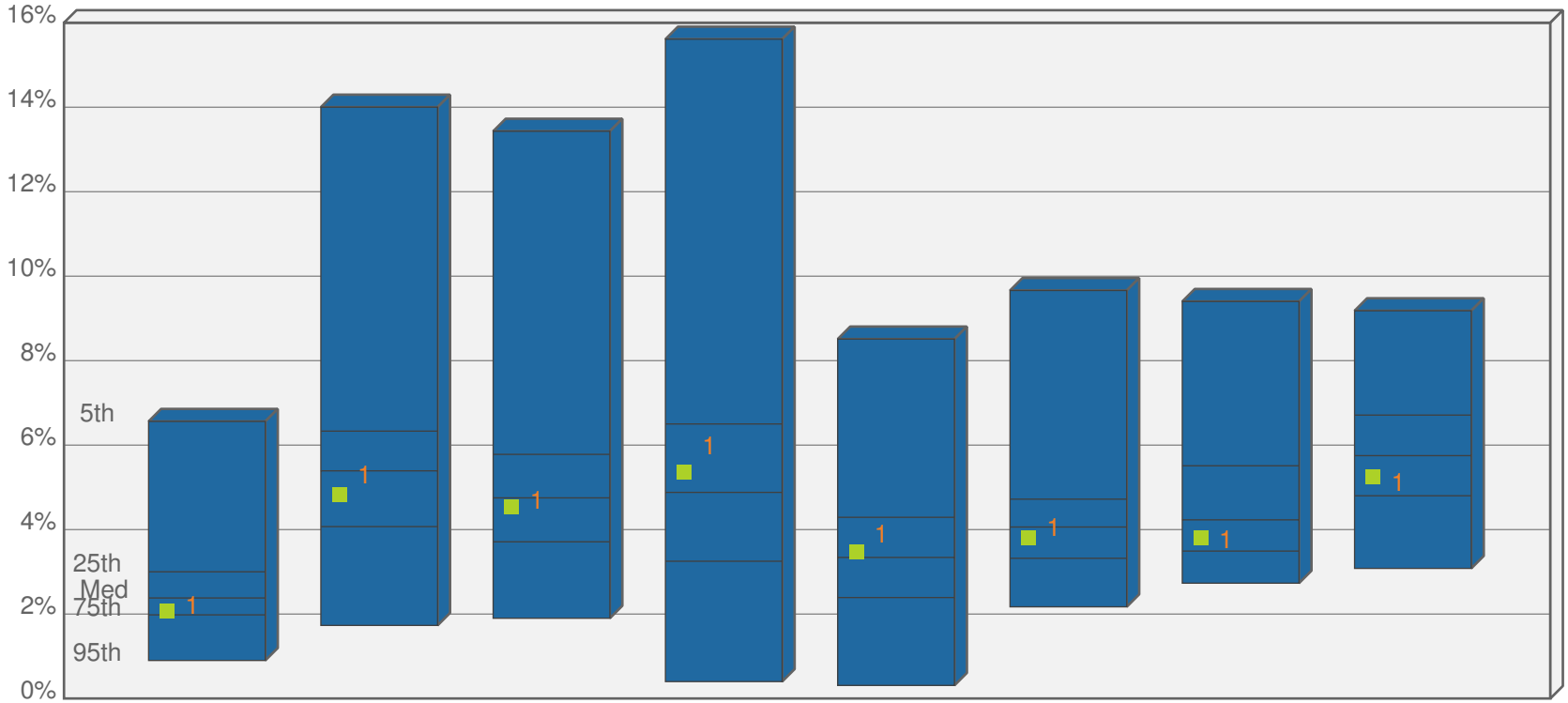


Performance Comparison

Wilshire

Core Fixed Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Core Fixed Composite	2.10 (67)	4.85 (61)	4.56 (57)	5.38 (40)	3.49 (45)	3.84 (57)	3.84 (68)	5.28 (65)
1 Barclays Aggrega	2.21 (60)	5.31 (51)	4.71 (51)	6.00 (33)	3.91 (35)	4.06 (50)	3.76 (69)	5.13 (67)
5th %tile	6.56	14.00	13.43	15.61	8.51	9.66	9.40	9.18
25th %tile	3.00	6.33	5.78	6.50	4.29	4.72	5.51	6.71
Median	2.38	5.39	4.75	4.88	3.34	4.06	4.23	5.75
75th %tile	1.98	4.07	3.71	3.25	2.39	3.32	3.49	4.80
95th %tile	0.90	1.73	1.90	0.40	0.31	2.17	2.73	3.08
Number of Funds	157	153	146	146	134	122	103	66

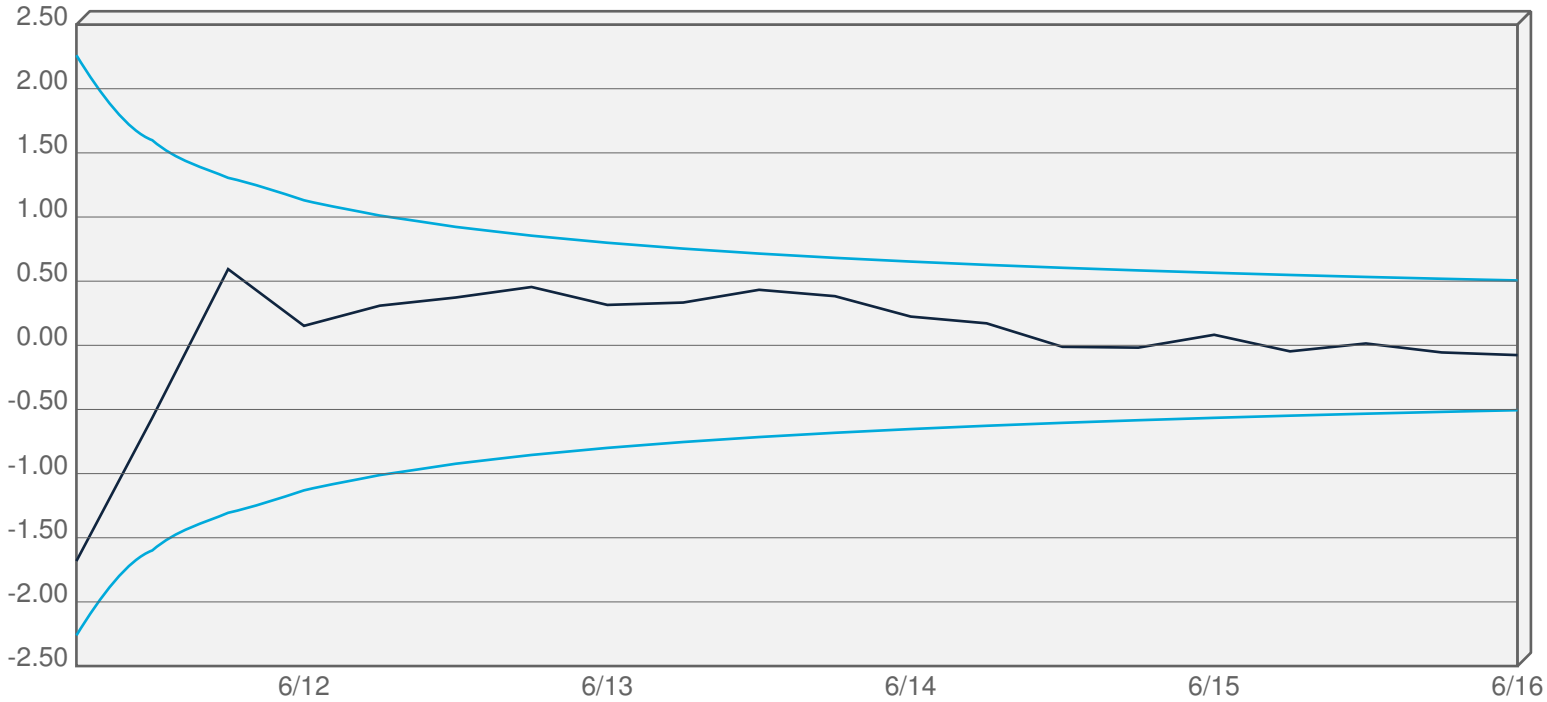
*TUCS Total Ret of Fixed Income Investment Pools Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

Core Fixed Composite

Five Years Ending June 30, 2016



Quarterly NOF Value Added vs. Barclays Aggregate

80% Confidence Band

Excess Return:	**-0.08**	**Information Ratio:**	**-0.11**
Excess Risk:	**0.69**	**T-Stat:**	**-0.25**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
C S McKee									
Net of Fee Return	**1.92**	**5.36**	**5.17**	**6.38**	**4.35**	**4.34**	**5.75**	**12/31/82**	**7.91**
Barclays Aggregate	2.21	5.31	4.71	6.00	4.06	3.76	5.13	12/31/82	7.53
Value Added	-0.30	0.05	0.46	0.38	0.29	0.58	0.62	12/31/82	0.38
CIM Investment Mgmt									
Net of Fee Return	**1.16**	**2.80**	**2.41**	**2.84**	**2.38**	**2.31**	**4.07**	**12/31/05**	**3.81**
Barclays Int Govt/Credit	1.59	4.07	3.35	4.33	2.95	2.90	4.48	12/31/05	4.24
Value Added	-0.43	-1.27	-0.94	-1.49	-0.57	-0.59	-0.41	12/31/05	-0.44
Federated									
Net of Fee Return	**2.94**	**5.59**	**5.07**	**5.40**	**3.89**	**3.81**		**9/30/06**	**5.38**
Barclays Aggregate	2.21	5.31	4.71	6.00	4.06	3.76		9/30/06	4.87
Value Added	0.72	0.28	0.36	-0.60	-0.17	0.04		9/30/06	0.51
StoneRidge Partners - Emg. Mgr.									
Net of Fee Return	**1.30**	**2.90**	**3.01**					**9/30/15**	**3.01**
Policy Index	1.77	4.35	3.72					9/30/15	3.72
Value Added	-0.47	-1.45	-0.71					9/30/15	-0.71
Core Fixed Composite									
Net of Fee Return	**2.09**	**4.84**	**4.52**	**5.25**	**3.71**	**3.68**	**5.06**	**9/30/82**	**8.16**
Barclays Aggregate	2.21	5.31	4.71	6.00	4.06	3.76	5.13	9/30/82	7.73
Value Added	-0.12	-0.47	-0.19	-0.75	-0.35	-0.08	-0.07	9/30/82	0.43

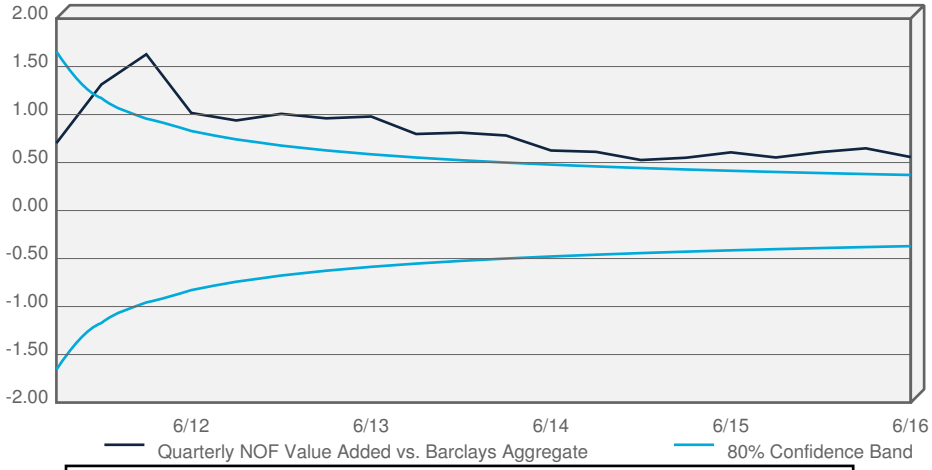
Investment Manager Analysis

Wilshire

C S McKee

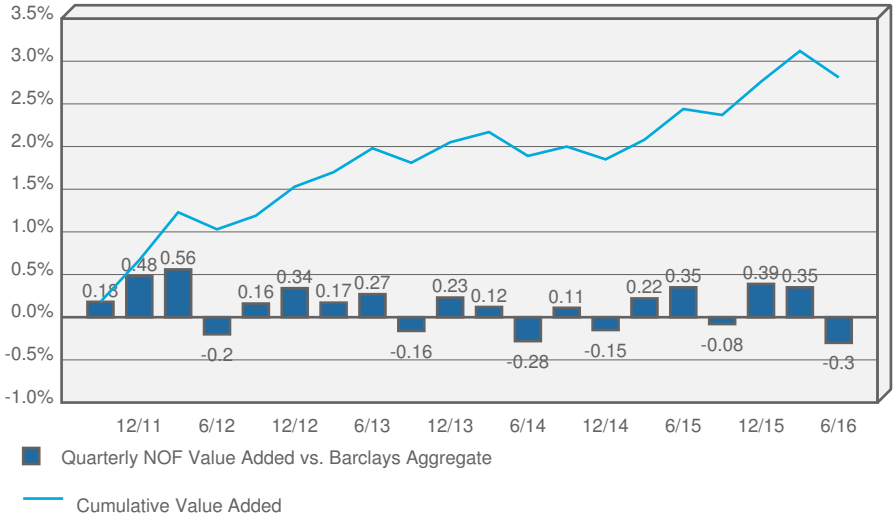
June 30, 2016

Cumulative Skill Analysis vs Benchmark

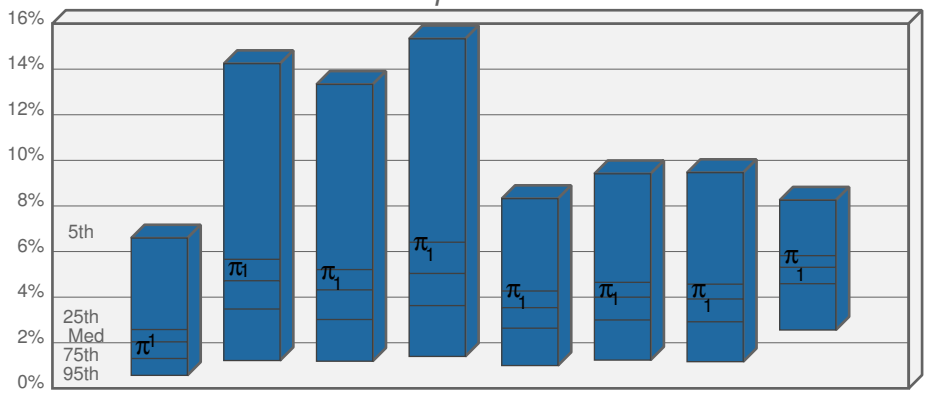


Excess Return:	**0.56**	**Information Ratio:**	**1.11**
Excess Risk:	**0.50**	**T-Stat:**	**2.47**

Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



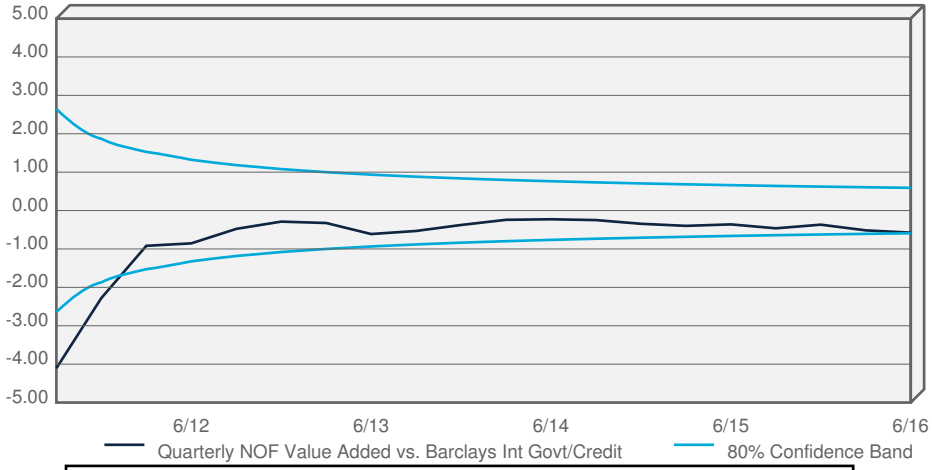
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π C S McKee	1.92 (53)	5.36 (35)	5.19 (25)	6.47 (23)	4.42 (20)	4.40 (33)	4.43 (30)	5.92 (22)
1 Barclays Aggre	2.21 (43)	5.31 (37)	4.71 (41)	6.00 (36)	3.91 (40)	4.06 (48)	3.76 (54)	5.13 (57)
Median	2.04	4.72	4.32	5.04	3.54	4.00	3.92	5.31
Number of Funds	439	437	437	437	429	421	408	348

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

CIM Investment Mgmt

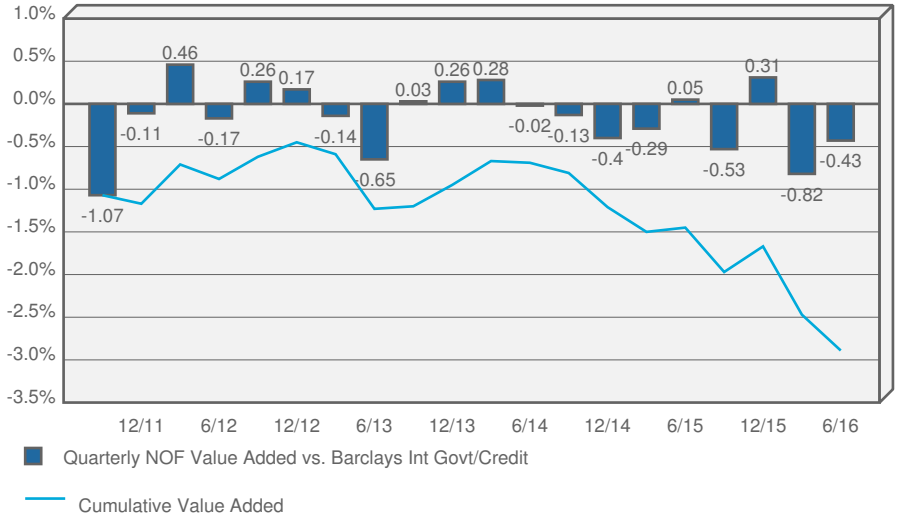
June 30, 2016

Cumulative Skill Analysis vs Benchmark

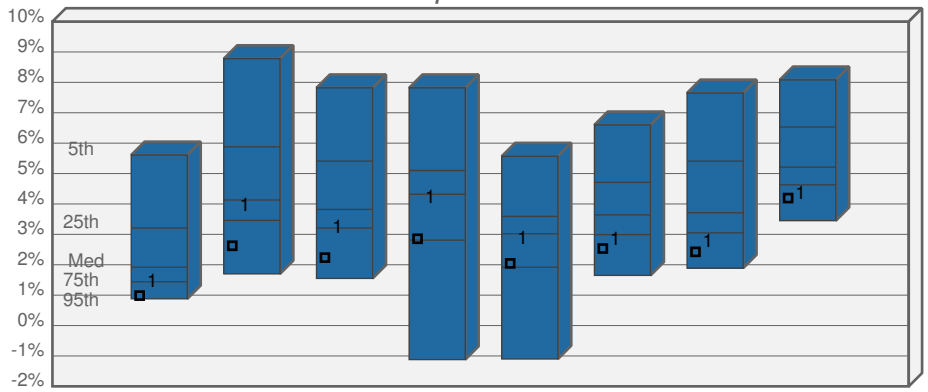


Excess Return:	**-0.57**	**Information Ratio:**	**-0.71**
Excess Risk:	**0.80**	**T-Stat:**	**-1.60**

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
◻ CIM Investment	1.16 (89)	2.80 (84)	2.41 (88)	3.03 (71)	2.22 (67)	2.71 (80)	2.60 (86)	4.37 (81)
1 Barclays Int G	1.59 (65)	4.07 (52)	3.35 (71)	4.33 (49)	3.00 (51)	2.95 (75)	2.90 (80)	4.48 (80)
Median	1.92	4.13	3.82	4.32	3.02	3.64	3.71	5.21
Number of Funds	448	445	444	442	434	426	410	341

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

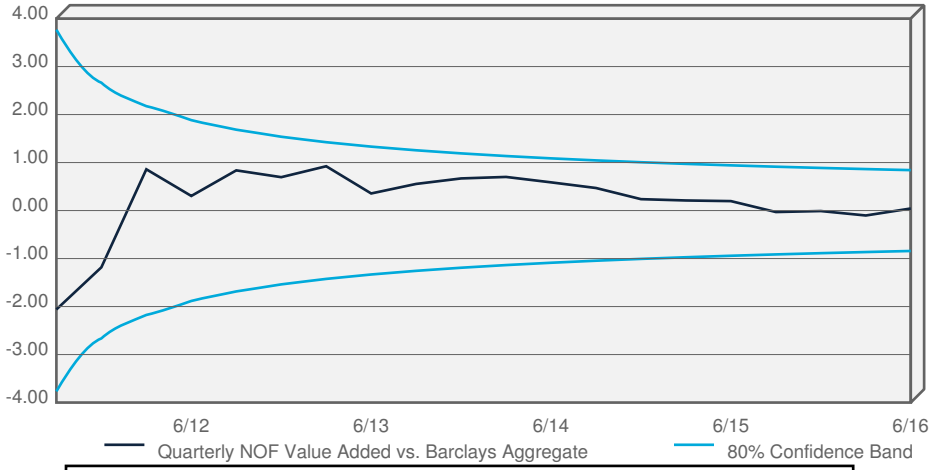
Investment Manager Analysis

Wilshire

Federated

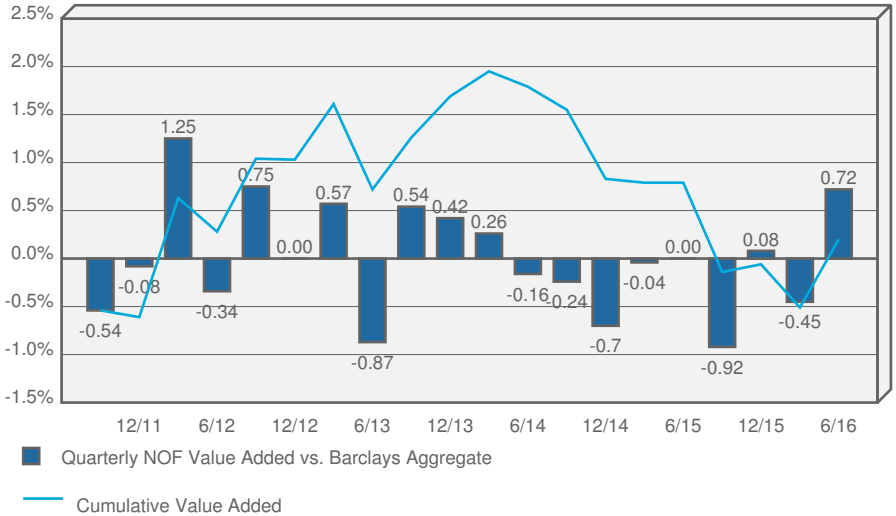
June 30, 2016

Cumulative Skill Analysis vs Benchmark

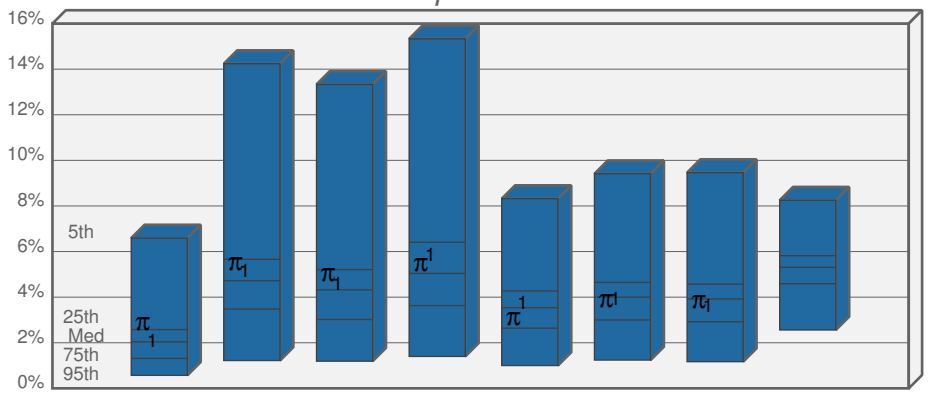


Excess Return:	**0.04**	**Information Ratio:**	**0.04**
Excess Risk:	**1.15**	**T-Stat:**	**0.08**

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
π Federated	2.96 (15)	5.61 (25)	5.14 (27)	5.54 (43)	3.18 (62)	3.98 (50)	3.94 (48)	
1 Barclays Aggre	2.21 (43)	5.31 (37)	4.71 (41)	6.00 (36)	3.91 (40)	4.06 (48)	3.76 (54)	
Median	2.04	4.72	4.32	5.04	3.54	4.00	3.92	5.31
Number of Funds	439	437	437	437	429	421	408	348

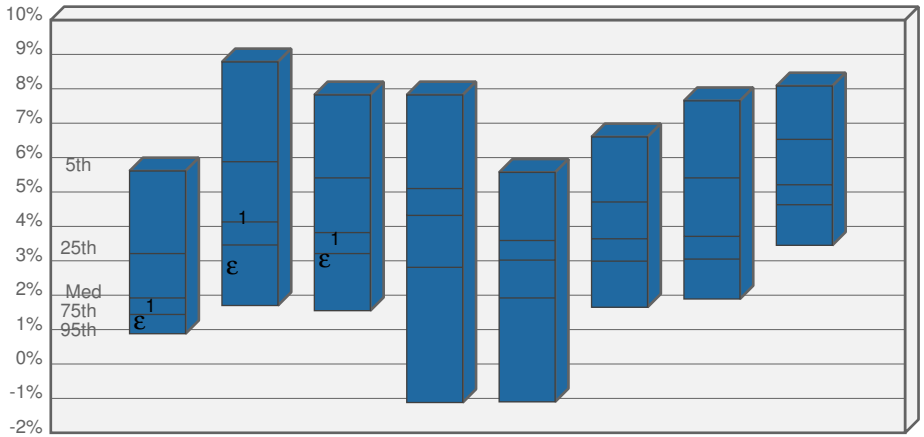
*Compass Total Returns of Active Core Fixed Income Portfolios Universe - Gross of Fees

Wilshire

StoneRidge Partners - Emg. Mgr.

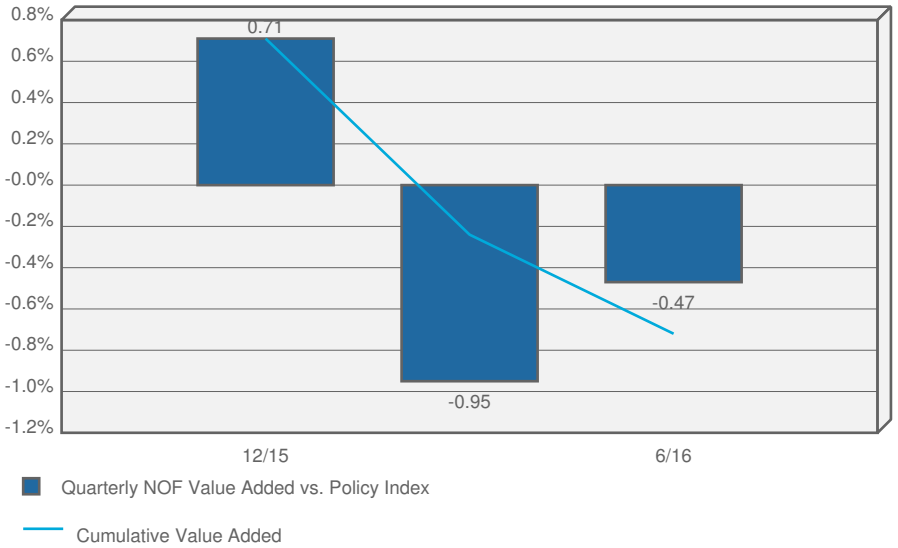
June 30, 2016

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
ε StoneRidge Par	1.30 (85)	2.90 (82)	3.09 (78)					
1 Policy Index	1.77 (57)	4.35 (44)	3.72 (53)					
Median	1.92	4.13	3.82	4.32	3.02	3.64	3.71	5.21
Number of Funds	448	445	444	442	434	426	410	341

Value-Added Analysis vs Benchmark



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

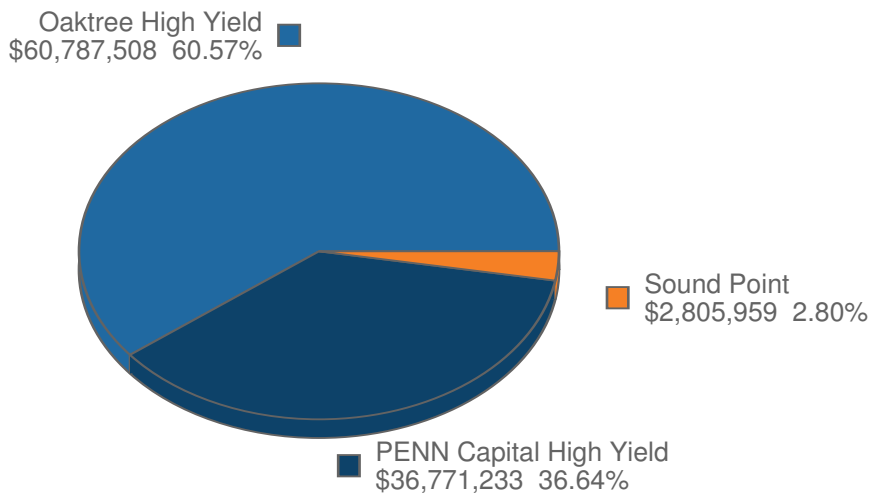
High Yield

Manager Allocation

Wilshire

High Yield Fixed Composite

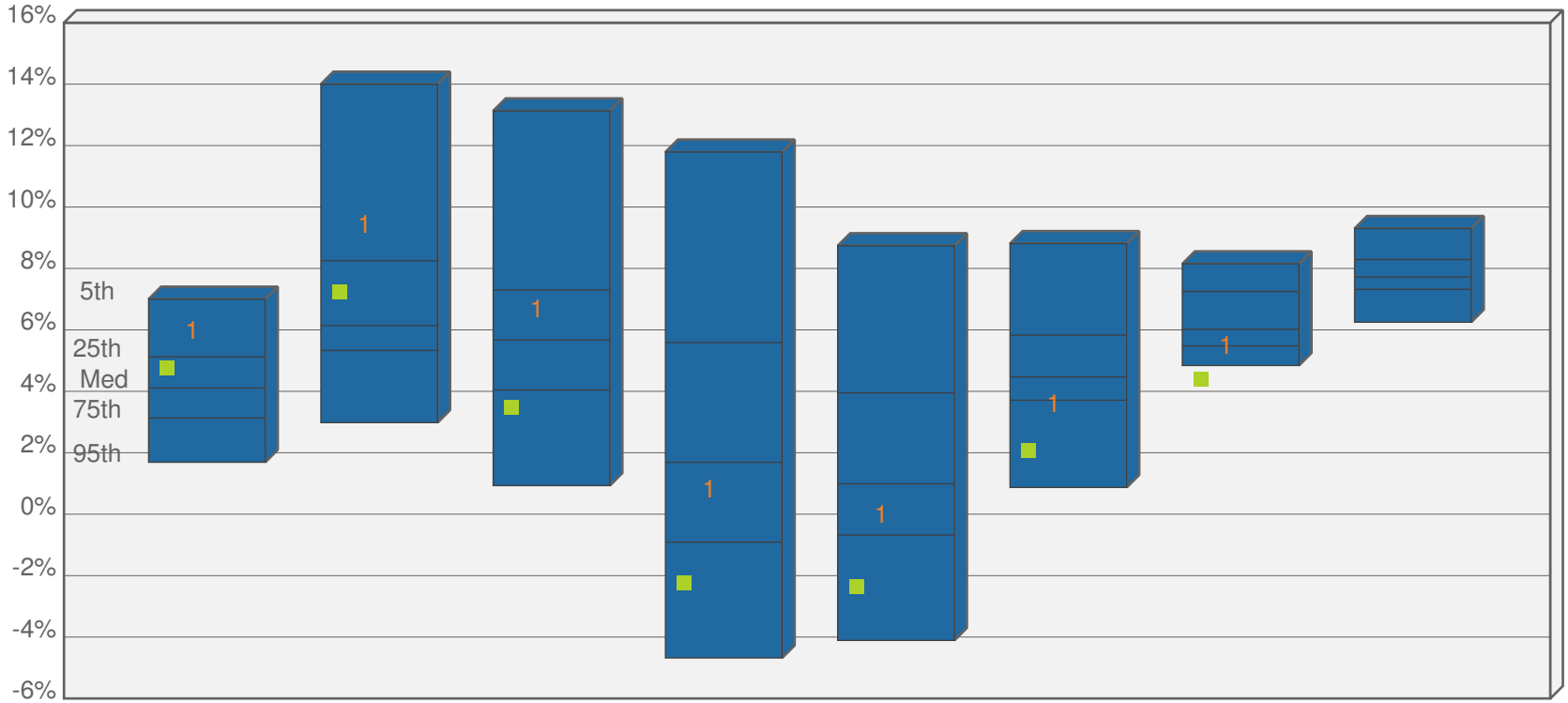
As of June 30, 2016



Wilshire

High Yield Fixed Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
High Yield Fixed Composi	4.81 (29)	7.29 (38)	3.51 (80)	-2.18 (88)	-2.33 (86)	2.12 (91)	4.45 (95)	
1 Citi High Yield	5.98 (15)	9.46 (15)	6.71 (34)	0.82 (60)	0.01 (62)	3.62 (78)	5.51 (73)	
5th %tile	7.00	14.00	13.13	11.79	8.74	8.81	8.15	9.30
25th %tile	5.12	8.25	7.30	5.59	3.95	5.83	7.25	8.29
Median	4.11	6.14	5.67	1.69	0.99	4.47	6.02	7.72
75th %tile	3.13	5.33	4.04	-0.91	-0.68	3.71	5.48	7.32
95th %tile	1.69	2.98	0.93	-4.68	-4.11	0.87	4.84	6.25
Number of Funds	129	128	126	122	114	94	75	23

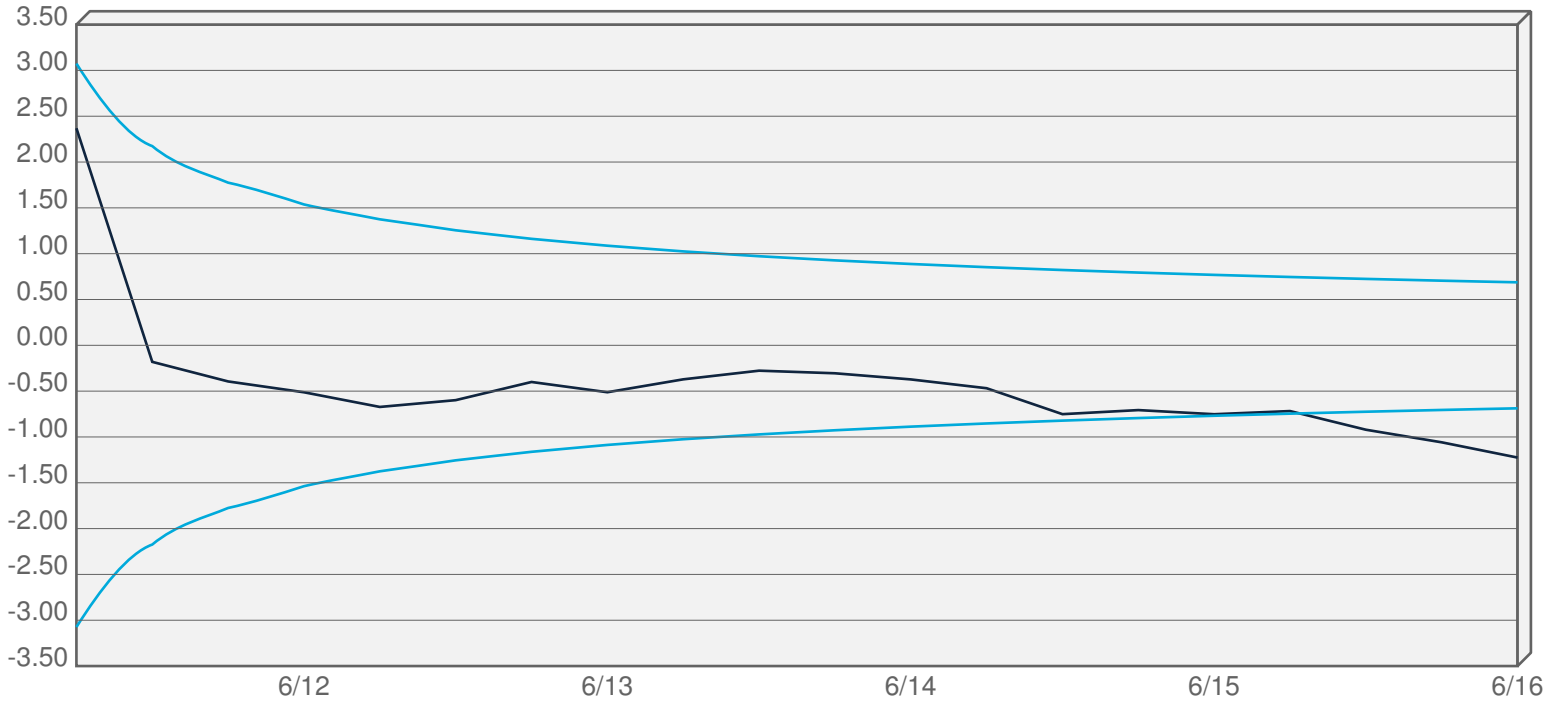
*TUCS Total Ret of Fixed Income Portfolios - High Yield Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

High Yield Fixed Composite

Five Years Ending June 30, 2016



Excess Return:	**-1.23**	**Information Ratio:**	**-1.31**
Excess Risk:	**0.93**	**T-Stat:**	**-2.93**

Wilshire

Trailing Returns

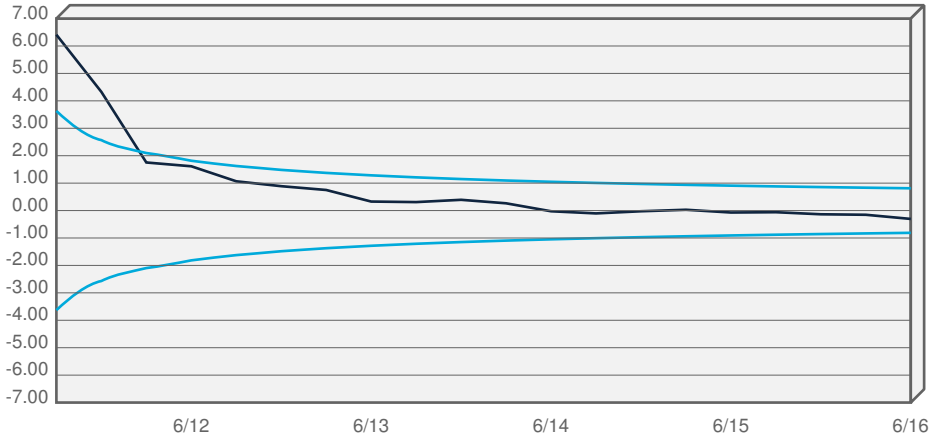
Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Oaktree High Yield									
Net of Fee Return	**5.07**	**8.32**	**5.36**	**-0.37**	**2.87**	**5.17**		**3/31/08**	**7.53**
Citigroup HY Cash Pay Capped	5.92	9.32	6.71	0.88	3.62	5.49		3/31/08	7.58
Value Added	-0.84	-1.00	-1.35	-1.25	-0.75	-0.32		3/31/08	-0.04
PENN Capital High Yield									
Net of Fee Return	**4.58**	**5.98**	**0.58**	**-5.55**	**0.12**	**2.67**		**6/30/08**	**6.60**
ML High Yield Master II	5.88	9.32	6.95	1.71	4.18	5.71		6/30/08	8.16
Value Added	-1.31	-3.34	-6.37	-7.26	-4.06	-3.04		6/30/08	-1.56
Sound Point									
Net of Fee Return	**2.23**	**2.93**	**1.40**	**1.37**				**9/30/13**	**4.06**
CSFB Leveraged Loan	2.86	4.23	2.18	0.93				9/30/13	2.80
Value Added	-0.63	-1.30	-0.78	0.44				9/30/13	1.25
High Yield Fixed Composite									
Net of Fee Return	**4.81**	**7.29**	**3.45**	**-2.31**	**1.86**	**4.22**		**3/31/08**	**7.23**
Citi High Yield Market Capped	5.98	9.46	6.71	0.82	3.62	5.51		3/31/08	7.64
Value Added	-1.17	-2.17	-3.26	-3.12	-1.76	-1.29		3/31/08	-0.41

Oaktree High Yield

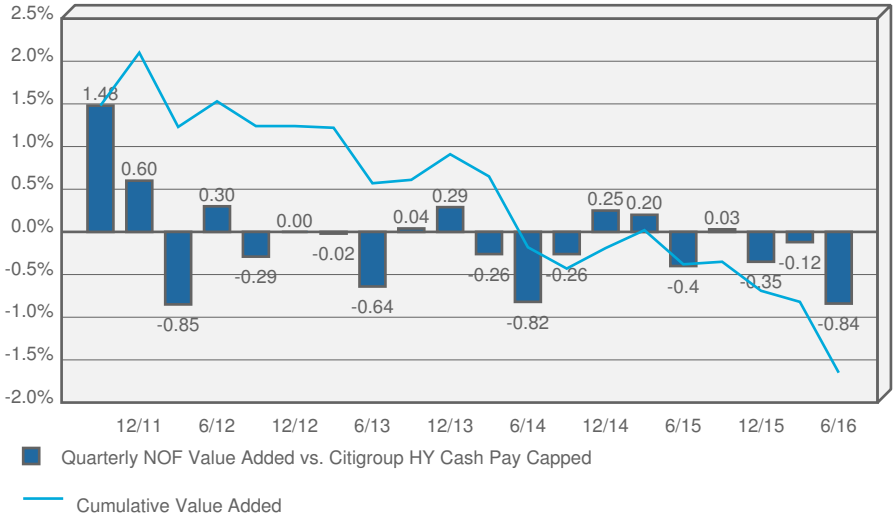
June 30, 2016

Cumulative Skill Analysis vs Benchmark

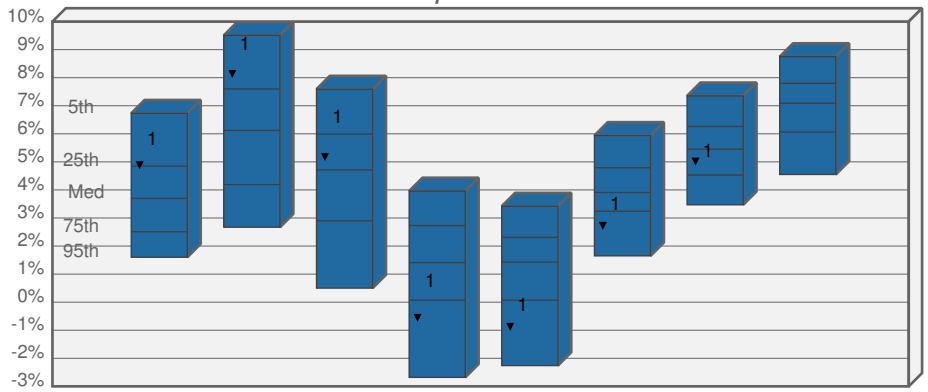


Excess Return:	**-0.31**	**Information Ratio:**	**-0.28**
Excess Risk:	**1.10**	**T-Stat:**	**-0.62**

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
▼ Oaktree High Y	5.07 (21)	8.32 (15)	5.36 (39)	-0.37 (79)	-0.69 (84)	2.91 (84)	5.20 (59)	
1 Citigroup HY C	5.92 (9)	9.32 (7)	6.71 (10)	0.88 (66)	0.03 (75)	3.62 (62)	5.49 (49)	
Median	3.70	6.12	4.71	1.41	1.43	3.91	5.45	7.09
Number of Funds	220	220	220	219	213	208	181	129

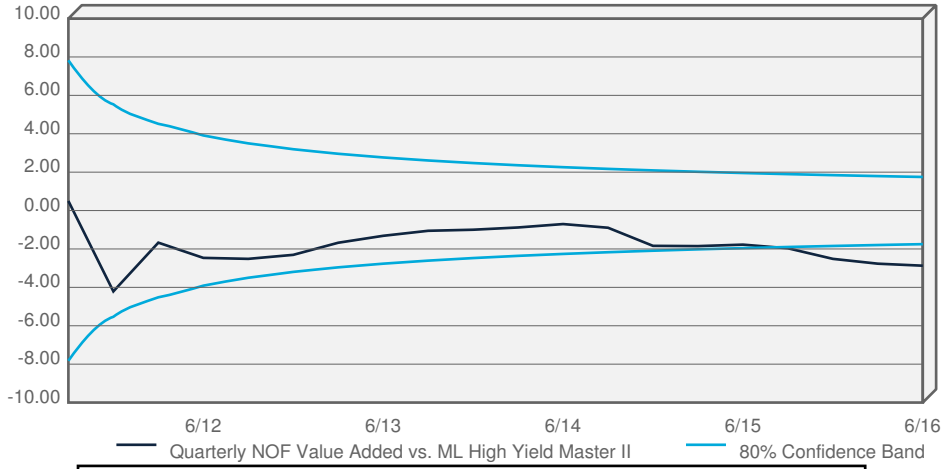
*Compass Total Returns of Active High Yield Fixed Income Portfolios Universe - Gross of Fees

Wilshire

PENN Capital High Yield

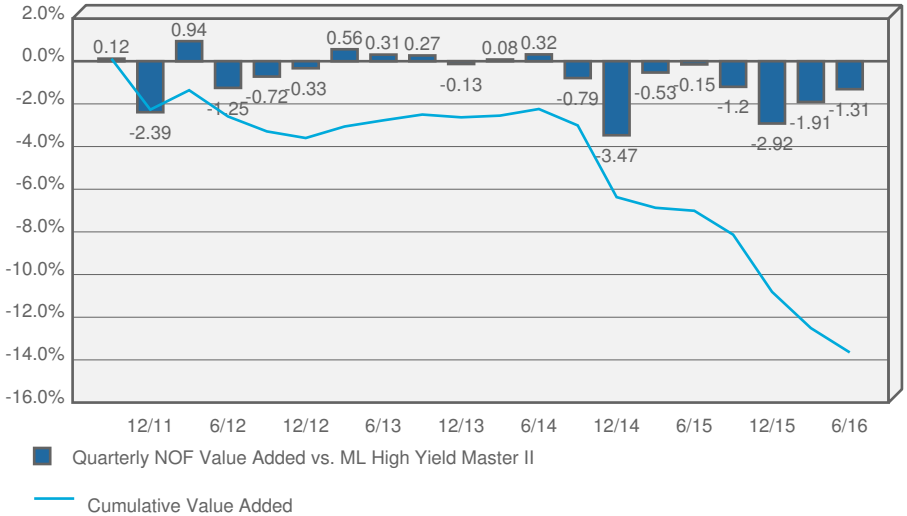
June 30, 2016

Cumulative Skill Analysis vs Benchmark

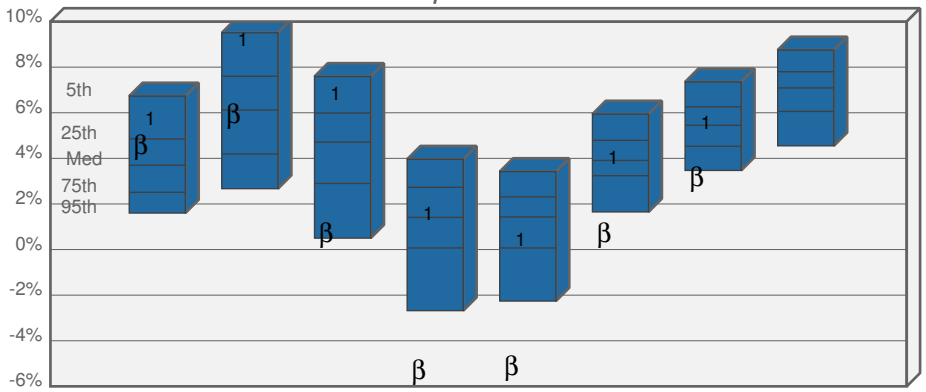


Excess Return:	**-2.87**	**Information Ratio:**	**-1.21**
Excess Risk:	**2.38**	**T-Stat:**	**-2.70**

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
β PENN Capital H	4.58 (29)	5.98 (50)	0.75 (94)	-5.25 (98)	-5.11 (98)	0.72 (97)	3.21 (95)	
1 ML High Yield	5.88 (10)	9.32 (7)	6.95 (8)	1.71 (45)	0.57 (63)	4.18 (43)	5.71 (41)	
Median	3.70	6.12	4.71	1.41	1.43	3.91	5.45	7.09
Number of Funds	220	220	220	219	213	208	181	129

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

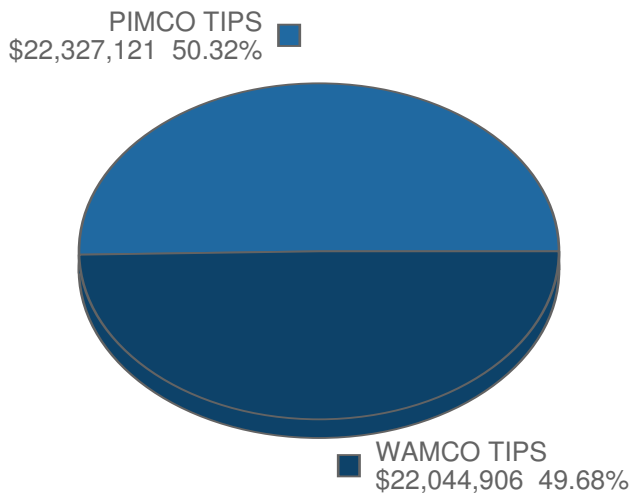
TIPS

Manager Allocation

Wilshire

TIPS Fixed Composite

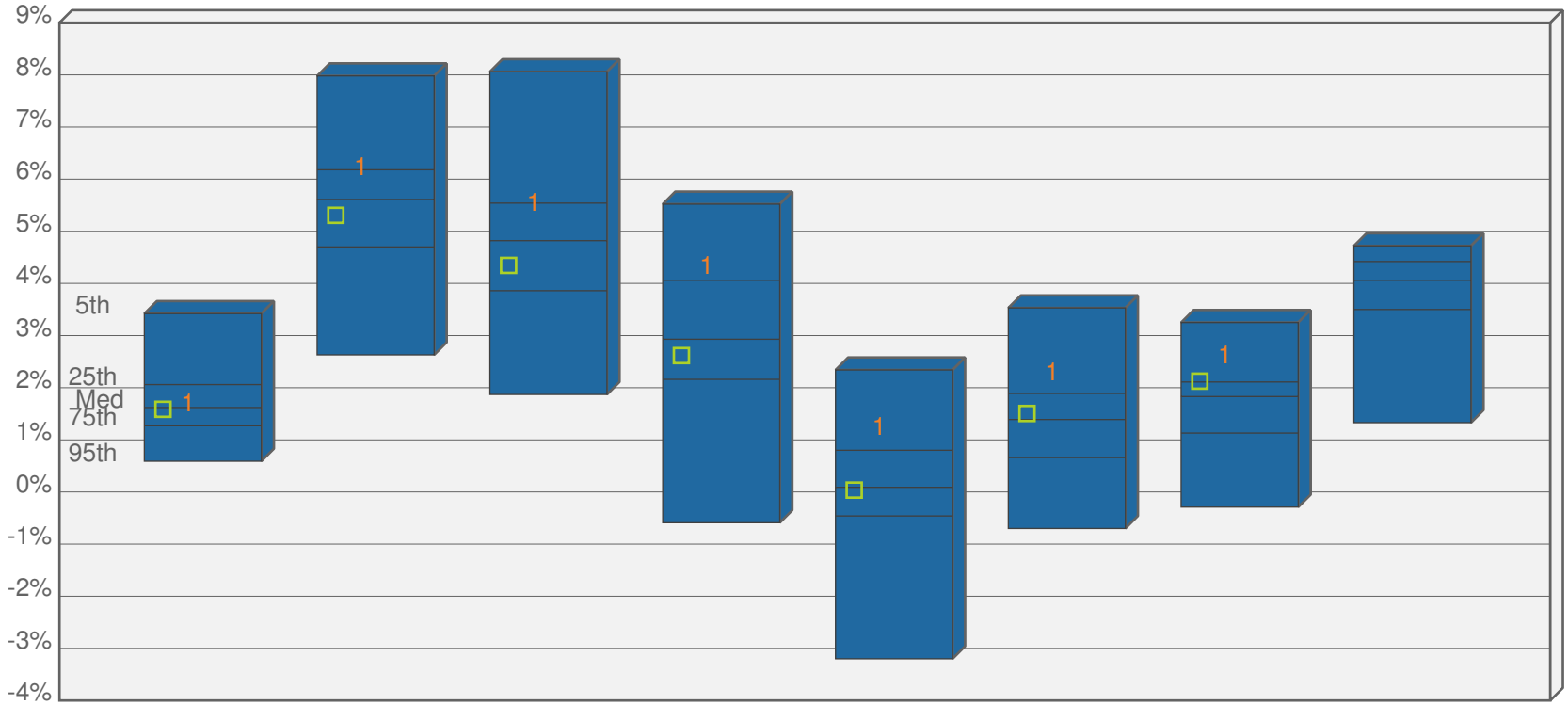
As of June 30, 2016



Wilshire

TIPS Fixed Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
□ TIPS Fixed Composite	1.61 (52)	5.33 (57)	4.37 (62)	2.64 (62)	0.06 (52)	1.53 (40)	2.15 (23)	
1 Barclays U.S. TI	1.71 (43)	6.24 (21)	5.56 (22)	4.35 (17)	1.27 (11)	2.31 (13)	2.63 (10)	
5th %tile	3.42	7.98	8.06	5.52	2.34	3.53	3.25	4.72
25th %tile	2.06	6.18	5.54	4.06	0.80	1.89	2.11	4.42
Median	1.62	5.61	4.82	2.93	0.09	1.39	1.83	4.06
75th %tile	1.27	4.70	3.86	2.16	-0.46	0.66	1.13	3.50
95th %tile	0.59	2.63	1.87	-0.59	-3.20	-0.70	-0.29	1.33
Number of Funds	189	189	177	176	172	168	154	92

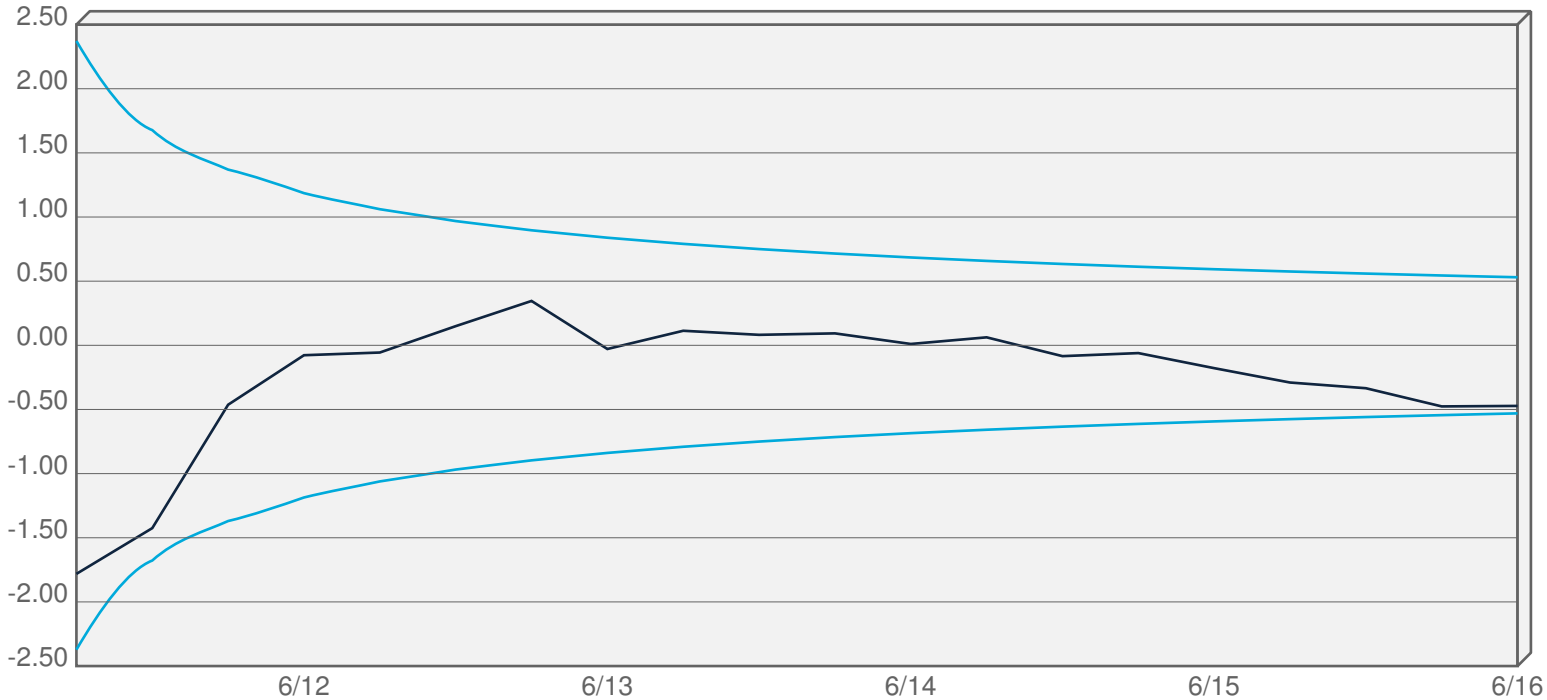
*Total Returns of TIPS Mutual Funds Universe - Net of Fees

Cumulative Skill Analysis

Wilshire

TIPS Fixed Composite

Five Years Ending June 30, 2016



Excess Return:	**-0.47**	**Information Ratio:**	**-0.66**
Excess Risk:	**0.72**	**T-Stat:**	**-1.47**

Wilshire

Trailing Returns

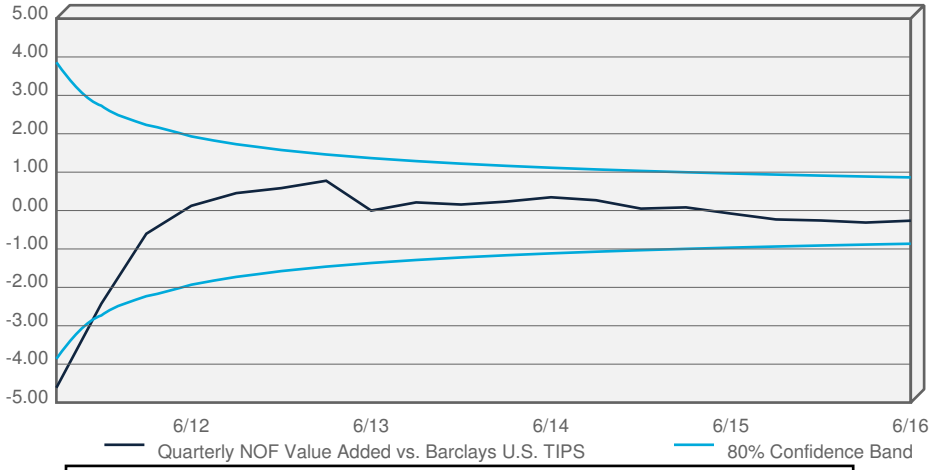
Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
PIMCO TIPS									
Net of Fee Return	**1.88**	**6.08**	**5.21**	**3.31**	**1.86**	**2.36**		**3/31/08**	**3.66**
Barclays U.S. TIPS	1.71	6.24	5.56	4.35	2.31	2.63		3/31/08	3.47
Value Added	0.17	-0.17	-0.36	-1.05	-0.45	-0.27		3/31/08	0.19
WAMCO TIPS									
Net of Fee Return	**1.33**	**4.59**	**3.54**	**1.97**	**1.19**	**1.93**		**3/31/08**	**2.91**
Barclays U.S. TIPS	1.71	6.24	5.56	4.35	2.31	2.63		3/31/08	3.47
Value Added	-0.37	-1.65	-2.02	-2.38	-1.12	-0.70		3/31/08	-0.56
TIPS Fixed Composite									
Net of Fee Return	**1.61**	**5.33**	**4.37**	**2.64**	**1.53**	**2.15**		**3/31/08**	**3.29**
Barclays U.S. TIPS	1.71	6.24	5.56	4.35	2.31	2.63		3/31/08	3.47
Value Added	-0.10	-0.91	-1.19	-1.71	-0.78	-0.48		3/31/08	-0.18

PIMCO TIPS

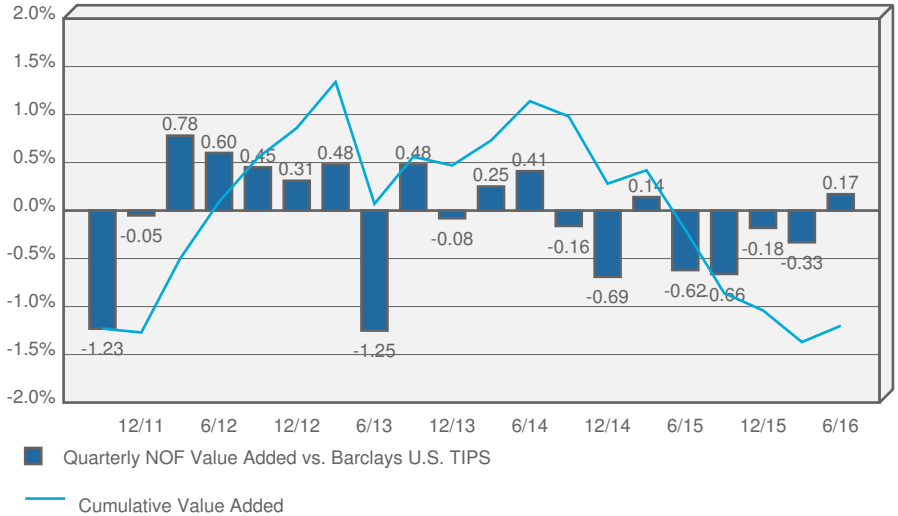
June 30, 2016

Cumulative Skill Analysis vs Benchmark

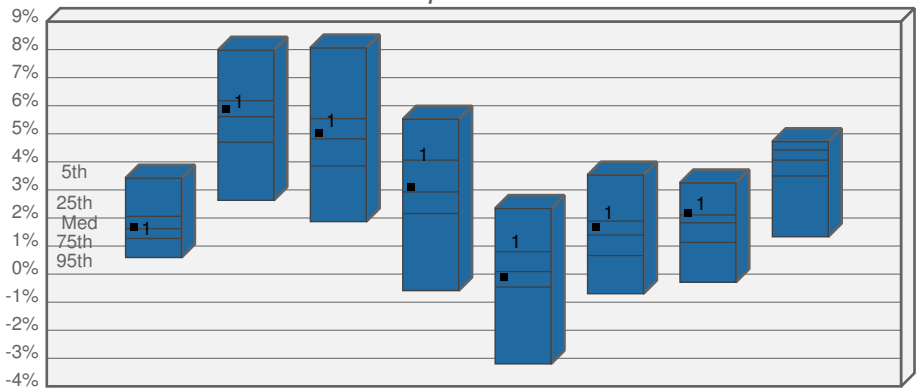


Excess Return:	**-0.26**	**Information Ratio:**	**-0.22**
Excess Risk:	**1.17**	**T-Stat:**	**-0.50**

Value-Added Analysis vs Benchmark

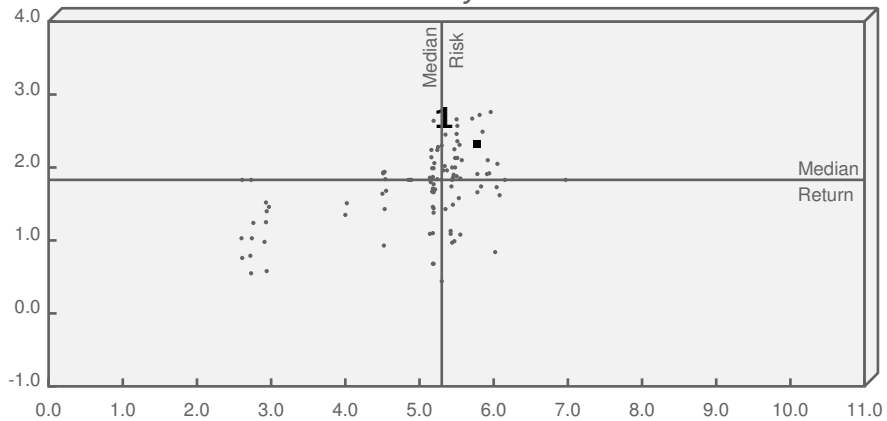


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ PIMCO TIPS	1.88 (27)	6.08 (31)	5.21 (35)	3.31 (41)	0.08 (50)	1.86 (27)	2.36 (14)	
1 Barclays U.S.	1.71 (43)	6.24 (21)	5.56 (22)	4.35 (17)	1.27 (11)	2.31 (13)	2.63 (10)	
Median	1.62	5.61	4.82	2.93	0.09	1.39	1.83	4.06
Number of Funds	189	189	177	176	172	168	154	92

Five Year Risk/Return Analysis vs Peer Universe*



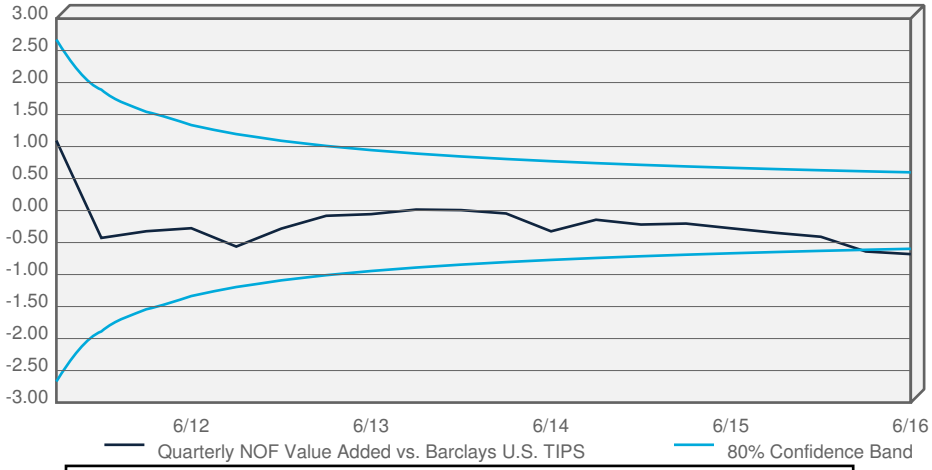
Description	Legend	Net Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
PIMCO TIPS	■	2.36	14	5.92	17
Barclays U.S. TIPS	1	2.63	10	5.40	44
Median		1.83		5.30	

*Lipper Total Returns of TIPS Mutual Funds Universe - Net of Fees

WAMCO TIPS

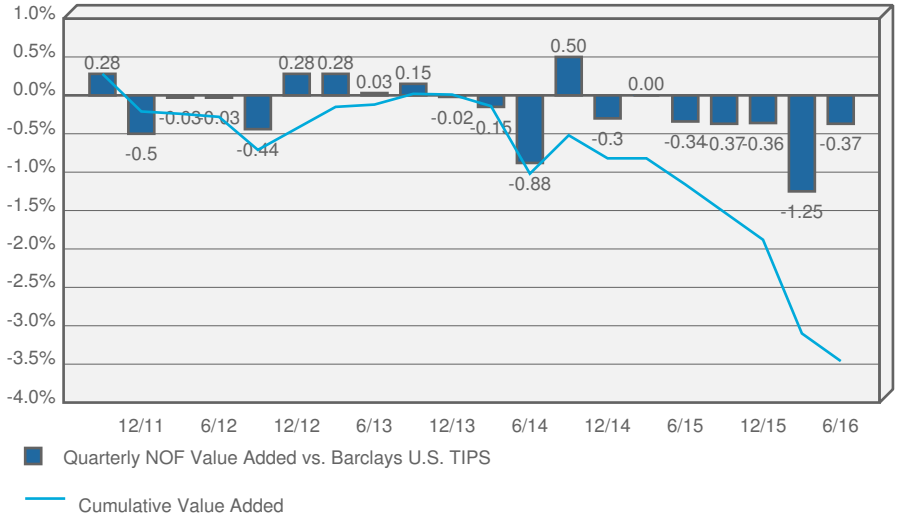
June 30, 2016

Cumulative Skill Analysis vs Benchmark

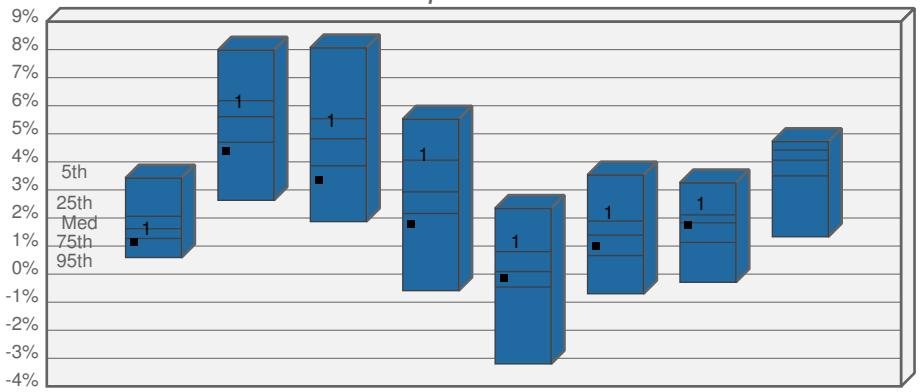


Excess Return:	**-0.68**	**Information Ratio:**	**-0.84**
Excess Risk:	**0.81**	**T-Stat:**	**-1.88**

Value-Added Analysis vs Benchmark

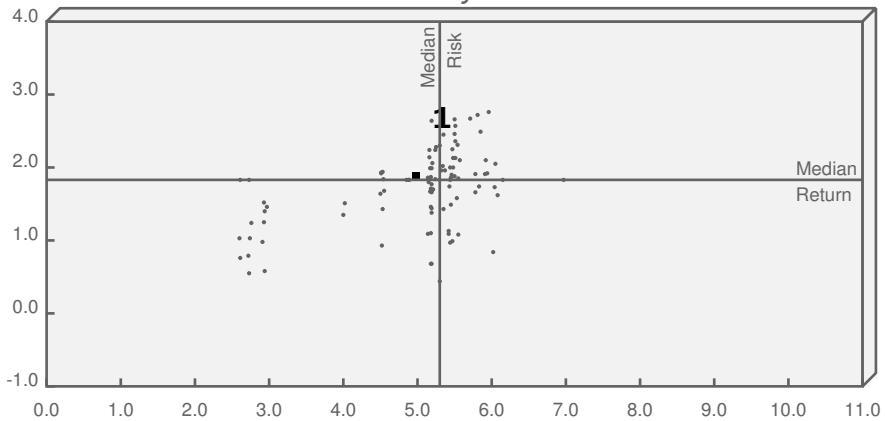


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ WAMCO TIPS	1.33 (72)	4.59 (78)	3.54 (80)	1.97 (78)	0.04 (53)	1.19 (58)	1.93 (39)	
1 Barclays U.S.	1.71 (43)	6.24 (21)	5.56 (22)	4.35 (17)	1.27 (11)	2.31 (13)	2.63 (10)	
Median	1.62	5.61	4.82	2.93	0.09	1.39	1.83	4.06
Number of Funds	189	189	177	176	172	168	154	92

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Net Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
WAMCO TIPS	■	1.93	39	5.12	74
Barclays U.S. TIPS	1	2.63	10	5.40	44
Median		1.83		5.30	

*Lipper Total Returns of TIPS Mutual Funds Universe - Net of Fees

Commodities

Wilshire

Trailing Returns

Periods Ended June 30, 2016

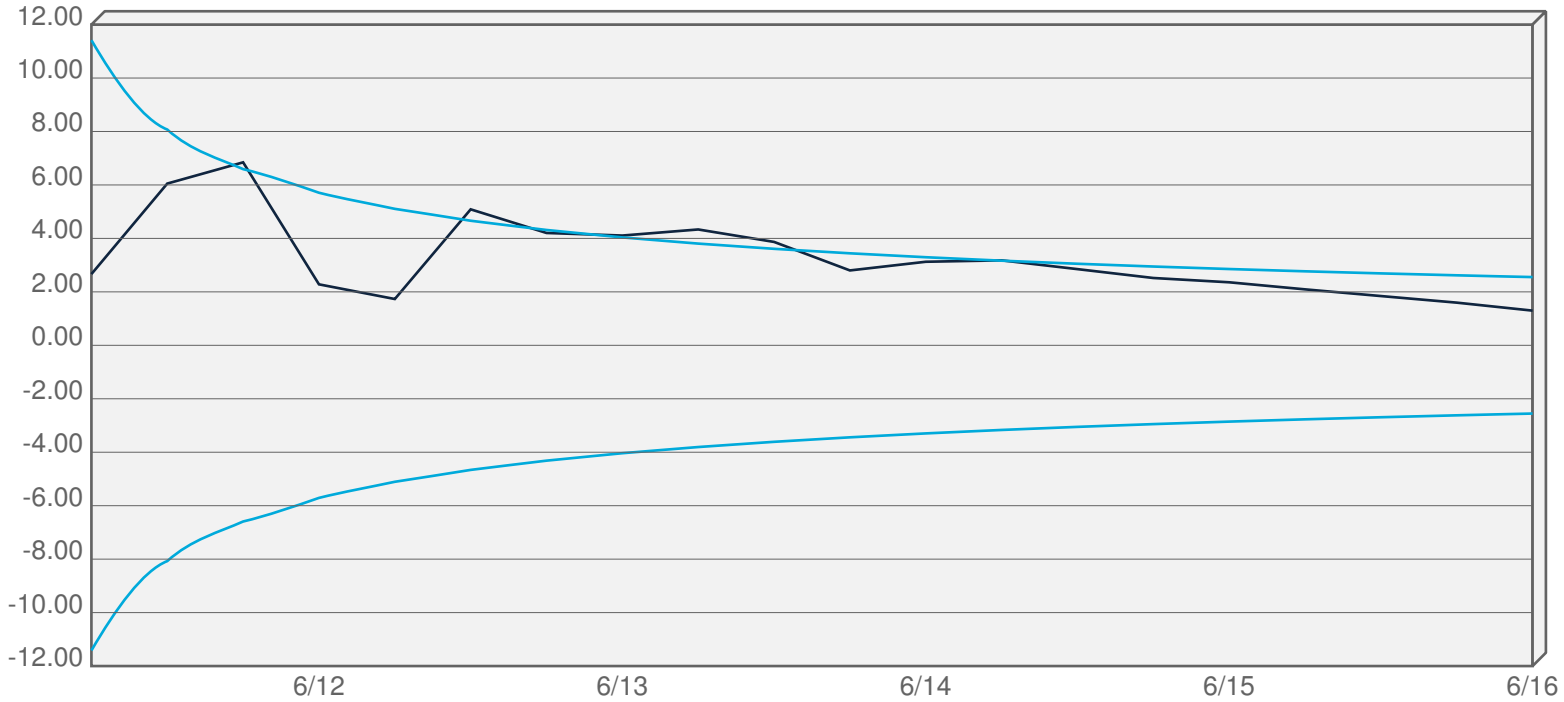
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Gresham Strategic Commodities									
Net of Fee Return	**11.57**	**11.26**	**-1.02**	**-15.78**	**-11.25**	**-10.49**		**3/31/07**	**-5.53**
Bloomberg Commodity Index	12.78	13.25	1.34	-13.32	-10.55	-10.82		3/31/07	-6.33
Value Added	-1.21	-1.99	-2.36	-2.46	-0.69	0.32		3/31/07	0.81
Commodities Composite									
Net of Fee Return	**11.57**	**11.26**	**-1.02**	**-15.78**	**-11.03**	**-9.66**		**3/31/07**	**-5.06**
Bloomberg Commodity Index	12.78	13.25	1.34	-13.32	-10.55	-10.82		3/31/07	-6.33
Value Added	-1.21	-1.99	-2.36	-2.46	-0.48	1.16		3/31/07	1.28

Cumulative Skill Analysis

Wilshire

Commodities Composite

Five Years Ending June 30, 2016



Quarterly NOF Value Added vs. Bloomberg Commodity Index

80% Confidence Band

Excess Return:	**1.30**	**Information Ratio:**	**0.37**
Excess Risk:	**3.47**	**T-Stat:**	**0.84**

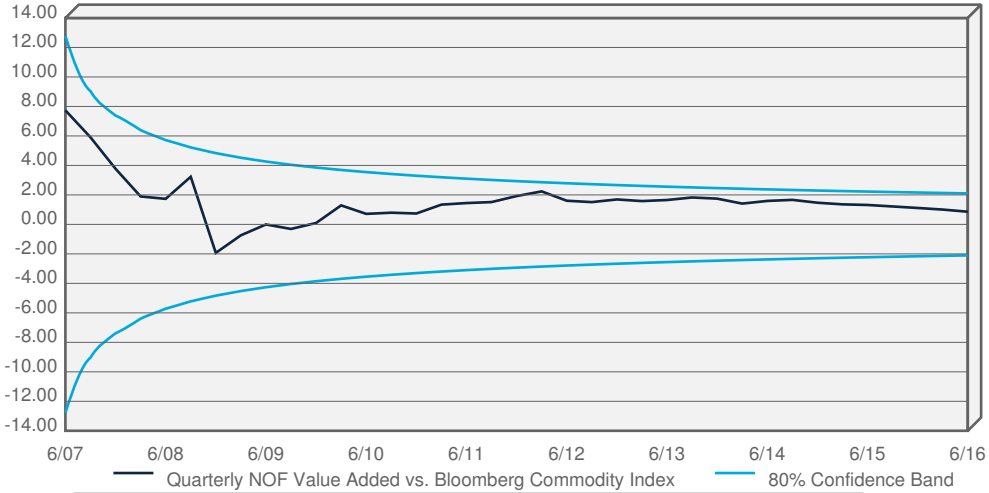
Investment Manager Analysis

Wilshire

Gresham Strategic Commodities

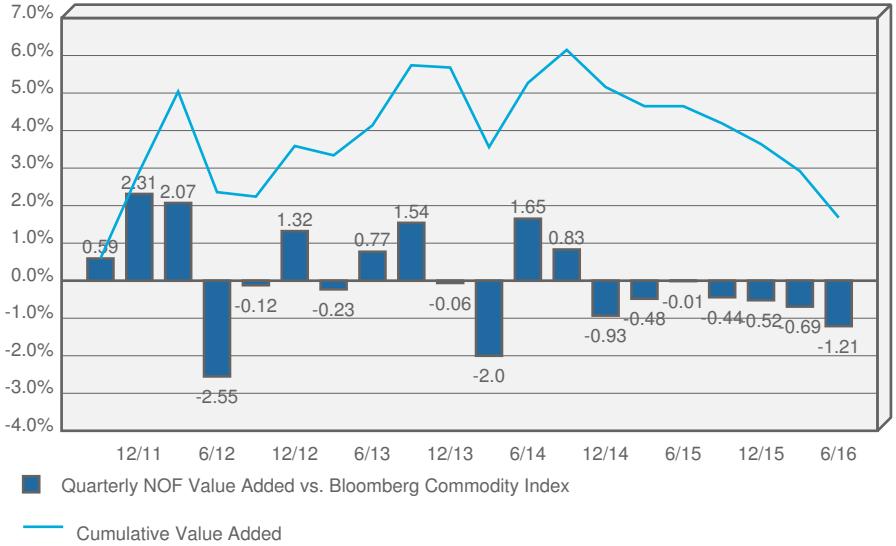
June 30, 2016

Cumulative Skill Analysis vs Benchmark



Excess Return:	**0.86**	**Information Ratio:**	**0.22**
Excess Risk:	**3.89**	**T-Stat:**	**0.66**

Value-Added Analysis vs Benchmark



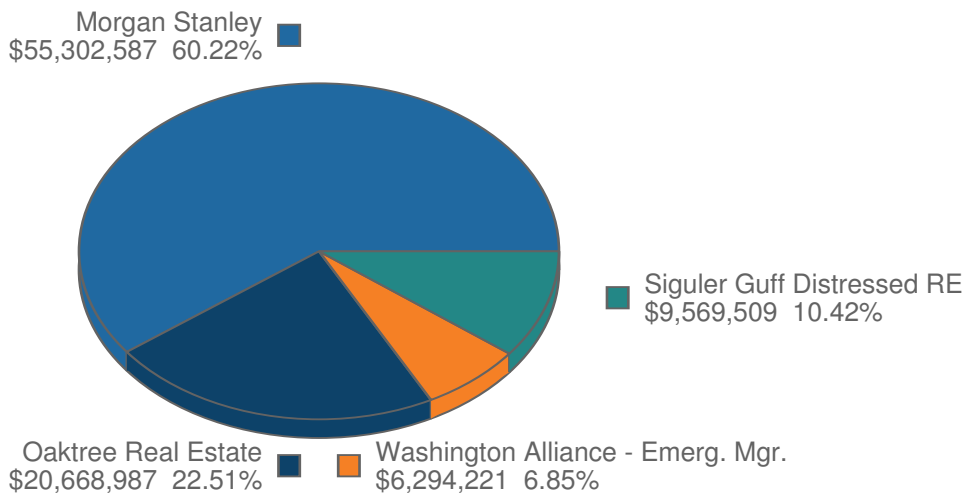
Real Estate

Manager Allocation

Wilshire

Real Estate Composite

As of June 30, 2016

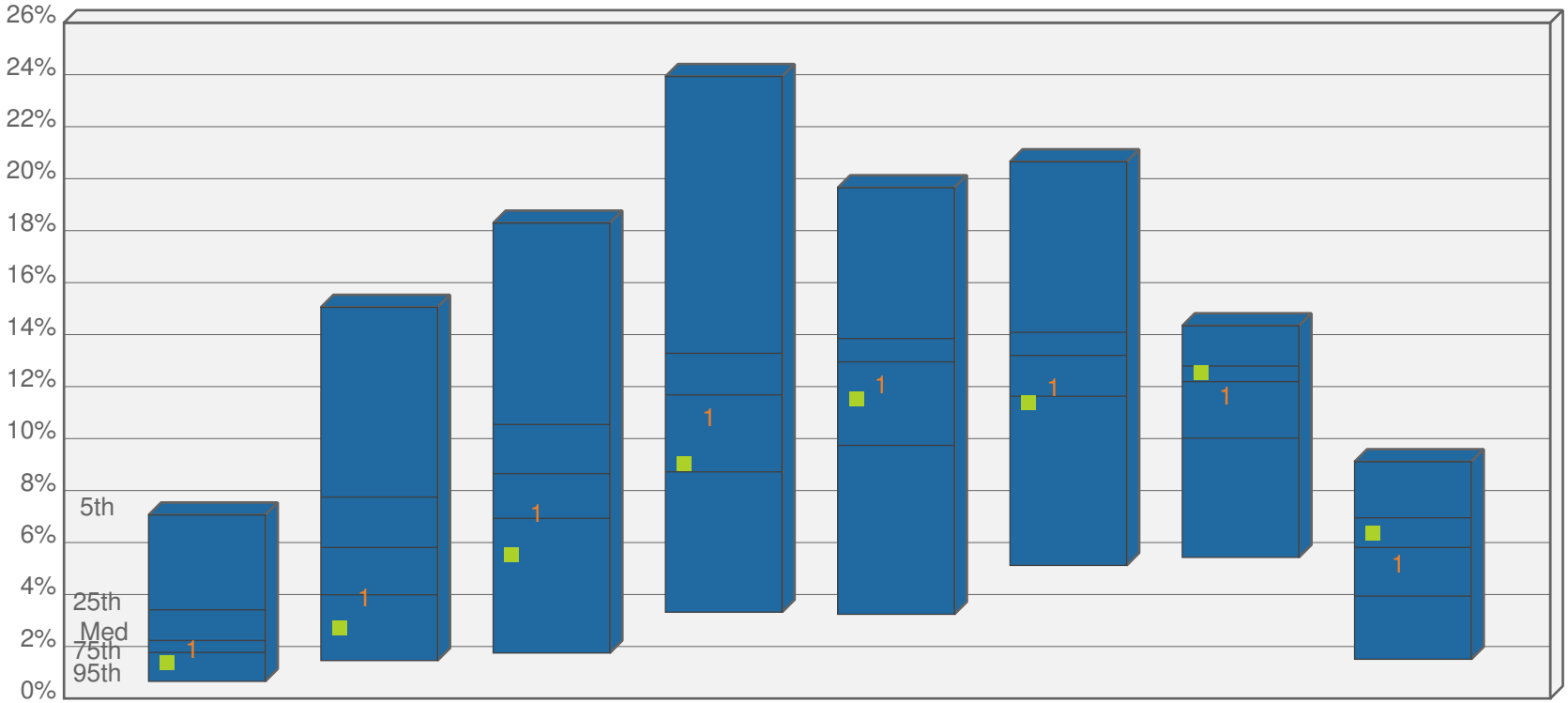


Performance Comparison

Wilshire

Real Estate Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Real Estate Composite	1.42 (83)	2.77 (90)	5.58 (84)	9.08 (70)	11.59 (62)	11.43 (76)	12.60 (32)	6.40 (30)
1 NCREIF ODCE NOF	1.91 (70)	3.90 (75)	7.13 (72)	10.80 (58)	12.08 (59)	11.97 (70)	11.66 (57)	5.19 (58)
5th %tile	7.06	15.05	18.29	23.93	19.65	20.65	14.34	9.11
25th %tile	3.41	7.75	10.54	13.28	13.85	14.09	12.79	6.95
Median	2.23	5.81	8.65	11.68	12.95	13.20	12.19	5.81
75th %tile	1.77	3.99	6.93	8.72	9.74	11.63	10.02	3.94
95th %tile	0.66	1.46	1.75	3.32	3.24	5.12	5.43	1.51
Number of Funds	71	71	68	68	64	60	54	36

*TUCS Total Ret of Real Estate Investment Pools Universe - Gross of Fees

Performance Comparison

Wilshire

Trailing Returns

Periods Ended June 30, 2016

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Morgan Stanley									
Net of Fee Return	**2.38**	**4.31**	**7.53**	**11.38**	**13.60**	**13.91**	**6.61**	**3/31/03**	**8.94**
NCREIF ODCE NOF	1.91	3.90	7.13	10.80	11.97	11.66	5.19	3/31/03	7.34
Value Added	0.47	0.41	0.40	0.58	1.63	2.25	1.42	3/31/03	1.59
Oaktree Real Estate									
Net of Fee Return								**9/30/13**	
Siguler Guff Distressed RE									
Net of Fee Return								**3/31/14**	
Washington Alliance - Emerg. Mgr.									
Net of Fee Return								**9/30/13**	
Real Estate Composite									
Net of Fee Return	**1.42**	**2.77**	**5.50**	**8.92**	**11.04**	**12.36**	**6.25**	**3/31/03**	**8.76**
NCREIF ODCE NOF	1.91	3.90	7.13	10.80	11.97	11.66	5.19	3/31/03	7.34
Value Added	-0.49	-1.13	-1.62	-1.88	-0.93	0.70	1.06	3/31/03	1.42
ERECT Composite									
Net of Fee Return	**4.24**	**8.36**	**11.67**	**13.15**	**8.11**	**9.02**		**9/30/10**	**7.33**
ERECT Fund II									
Net of Fee Return	**4.24**	**8.36**	**11.67**	**13.15**	**8.11**	**12.21**	**6.24**	**6/30/05**	**7.15**
Consumer Price Index	1.22	1.91	1.30	1.01	1.06	1.32	1.74	6/30/05	1.97
Value Added	3.02	6.45	10.37	12.15	7.04	10.89	4.50	6/30/05	5.18

Real Estate Composites returns do not include ERECT Funds

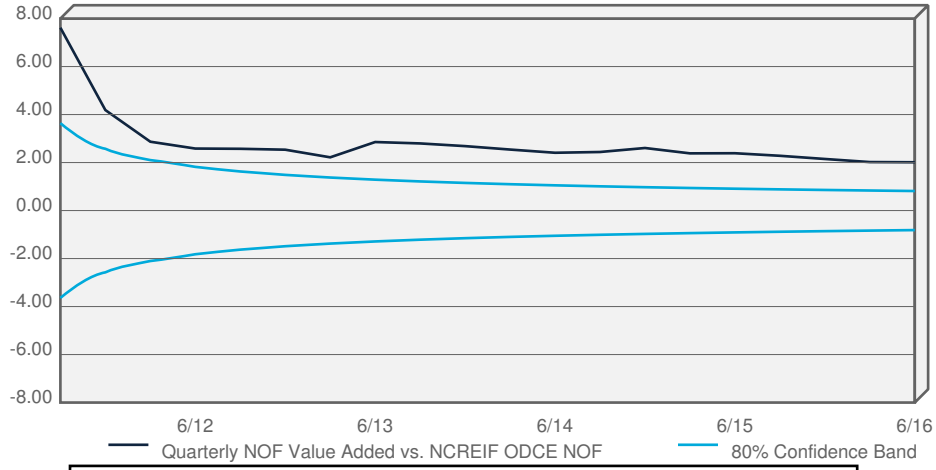
Investment Manager Analysis

Wilshire

Morgan Stanley

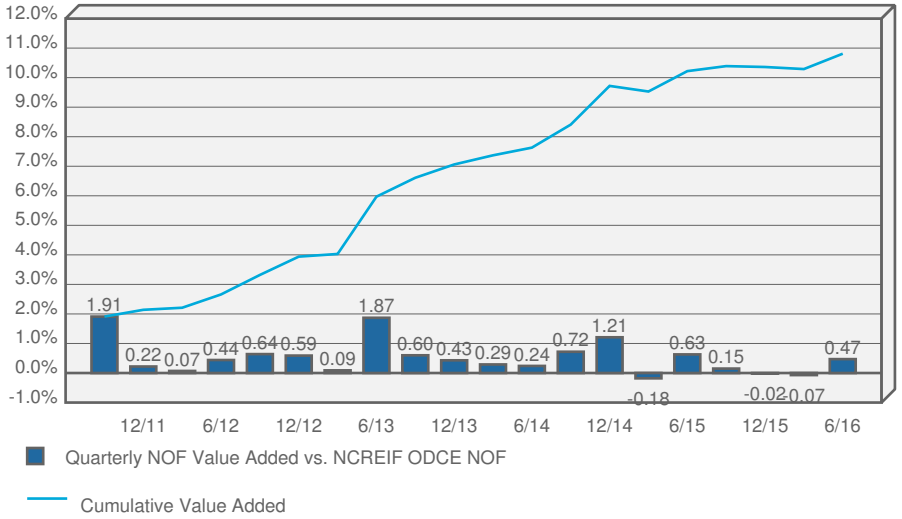
June 30, 2016

Cumulative Skill Analysis vs Benchmark

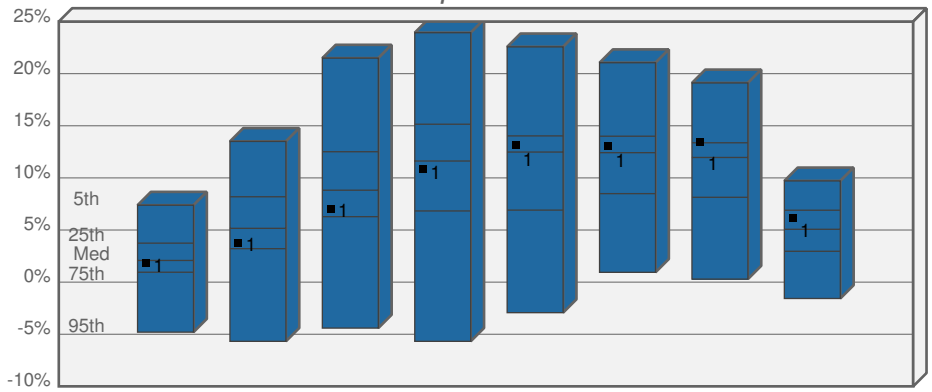


Excess Return:	**2.01**	**Information Ratio:**	**1.82**
Excess Risk:	**1.11**	**T-Stat:**	**4.07**

Value-Added Analysis vs Benchmark

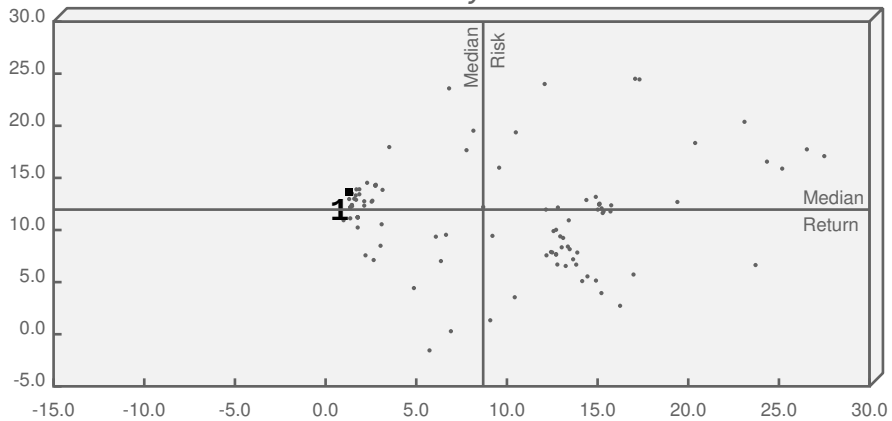


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Morgan Stanley	2.38 (40)	4.31 (60)	7.53 (60)	11.38 (52)	13.67 (31)	13.60 (30)	13.91 (20)	6.66 (27)
1 NCREIF ODCE NO	0.91 (58)	3.90 (69)	7.13 (66)	10.80 (58)	12.08 (55)	11.97 (56)	11.66 (53)	5.20 (46)
Median	2.08	5.16	8.82	11.62	12.48	12.42	11.96	5.07
Number of Funds	666	624	590	566	516	390	320	121

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Morgan Stanley	■	13.91	20	1.86	83
NCREIF ODCE NOF	1	11.66	53	1.06	99
Median		11.96		8.69	

*Wilcop Total Returns of Real Estate Portfolios Universe - Gross of Fees

Portfolio Rate of Return

Wilshire

Oaktree Real Estate*

As of June 30, 2016

Quarter	Commitment Value $	Beginning Capital Account	Contribution	Distribution	Appreciation	Expenses	Investment Fees	Ending Capital Account	Internal Rate of Return	Annualized IRR
09/13	20,000	0	9,400	0	0	0	0	9,400	0.00	NA
12/13		9,400	309	1,410	-19	0	309	7,971	-3.76	NA
03/14		7,971	4,000	0	-64	0	0	11,907	-4.16	NA
06/14		11,907	2,074	0	316	0	74	14,223	-1.39	NA
09/14		14,223	74	0	552	0	74	14,775	2.81	2.72
12/14		14,775	1,275	0	925	0	75	16,900	9.56	7.36
03/15		16,900	1,875	0	944	0	75	19,643	15.85	10.08
06/15		19,643	1,075	0	946	0	75	21,590	21.58	11.60
09/15		21,590	2,075	0	771	0	75	24,361	25.63	11.88
12/15		24,361	75	2,490	493	0	75	22,364	27.44	11.20
03/16		22,364	0	600	105	0	0	21,869	27.53	10.07
06/16		21,869	0	913	0	287	0	20,669	27.15	9.01
Total	**20,000**		**22,231**	**5,412**	**4,969**	**287**	**831**	**20,669**	**27.15**	**9.01**

*Dollar values are shown in thousands

Portfolio Rate of Return

Wilshire

Washington Alliance - Emerg. Mgr.*

As of June 30, 2016

Quarter	Commitment Value $	Beginning Capital Account	Contribution	Distribution	Appreciation	Expenses	Investment Fees	Ending Capital Account	Internal Rate of Return	Annualized IRR
09/13	5,000	0	1,376	0	0	0	0	1,376	0.00	NA
12/13		1,376	203	0	0	0	0	1,579	0.00	NA
03/14		1,579	819	0	0	0	0	2,397	0.00	NA
06/14		2,397	7	27	-124	0	7	2,246	-6.89	NA
09/14		2,246	1,810	90	200	0	0	4,166	3.25	3.21
12/14		4,166	0	152	95	0	0	4,109	6.55	5.14
03/15		4,109	0	0	0	0	0	4,109	6.00	3.93
06/15		4,109	803	0	462	0	11	5,363	20.84	11.34
09/15		5,363	0	200	355	0	0	5,519	31.06	14.38
12/15		5,519	0	214	160	0	0	5,465	34.65	14.03
03/16		5,465	0	0	0	0	0	5,465	33.58	12.20
06/16		5,465	829	0	0	0	0	6,294	32.68	10.77
Total	**5,000**		**5,847**	**684**	**1,148**	**0**	**18**	**6,294**	**32.68**	**10.77**

*Dollar values are shown in thousands

Portfolio Rate of Return

Wilshire

Siguler Guff Distressed RE*

As of June 30, 2016

Quarter	Commitment Value $	Beginning Capital Account	Contribution	Distribution	Appreciation	Expenses	Investment Fees	Ending Capital Account	Internal Rate of Return	Annualized IRR
03/14	15,000	0	4,200	0	0	0	0	4,200	0.00	NA
06/14		4,200	0	900	0	0	0	3,300	0.00	NA
09/14		3,300	900	0	141	0	0	4,341	3.60	NA
12/14		4,341	900	0	-8	0	0	5,233	3.28	NA
03/15		5,233	0	462	0	0	0	4,771	3.13	2.83
06/15		4,771	690	2	-61	0	0	5,398	1.67	1.23
09/15		5,398	2,250	2	-182	0	0	7,465	-2.36	-1.48
12/15		7,465	375	2	108	0	0	7,946	-0.03	-0.02
03/16		7,946	465	2	0	0	0	8,409	-0.03	-0.01
06/16		8,409	1,163	2	0	0	0	9,570	-0.03	-0.01
Total	**15,000**		**10,942**	**1,371**	**-1**	**0**	**0**	**9,570**	**-0.03**	**-0.01**

*Dollar values are shown in thousands

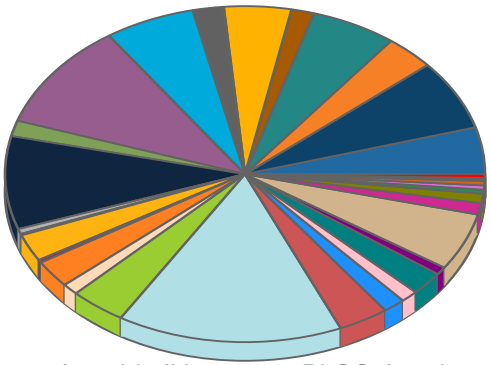
Alternative Investments

Manager Allocation

Wilshire

Private Equity Composite

As of June 30, 2016



Draper Triangle $5,174,584 4.53%
Adams Street 2009 Global $3,812,176 3.34%
Crestline Recovery II $1,749,429 1.53%
Constitution $6,591,430 5.77%
Goldman Sachs $2,374,997 2.08%
Adams Street 2008 Global $7,706,573 6.75%
Mellon PAM Fund V $6,965,235 6.10%
Adams Street 2003 $5,140,753 4.50%
Mesirow Partners Fund IV $11,707,690 10.25%
iNetworks $3,018,749 2.64%
Permal Capital Mgmt $1,719,446 1.51%
Birchmere Ventures $318,009 0.28%
Pharos Capital $1,261,741 1.10%
Ironside IV $452,610 0.40%
PLSG Accelerator Fund $164,106 0.14%
DCM Fund IV $483,775 0.42%
ValStone Partners III $556,995 0.49%
Greenspring IV $180,000 0.16%
Charlestown Capital - Emg. $2,978,253 2.61%
Greenspring Sec II $120,000 0.11%
ValStone Partners IV $10,221,315 8.95%
Accolade V $466,809 0.41%
Draper Triangle III $4,323,537 3.78%
Blackstone Tac Op II $1,016,311 0.89%
Greenspring $3,889,751 3.41%
Ironside III $6,301,492 5.52%
INOF II $1,329,566 1.16%
Greenspring III $2,565,918 2.25%
Greenspring Sec I $870,956 0.76%
Blackstone $1,718,478 1.50%
Entrust $1,266,319 1.11%
ValStone Partners V $17,346,044 15.18%
North Haven Capital Partners V $441,514 0.39%