



*The City of Grand Rapids – Police and Fire Retirement System
Executive Summary of Investment Performance*

June 30, 2016

Investment Performance	Tab 1
Capital Market Review	Tab 2
Appendix	

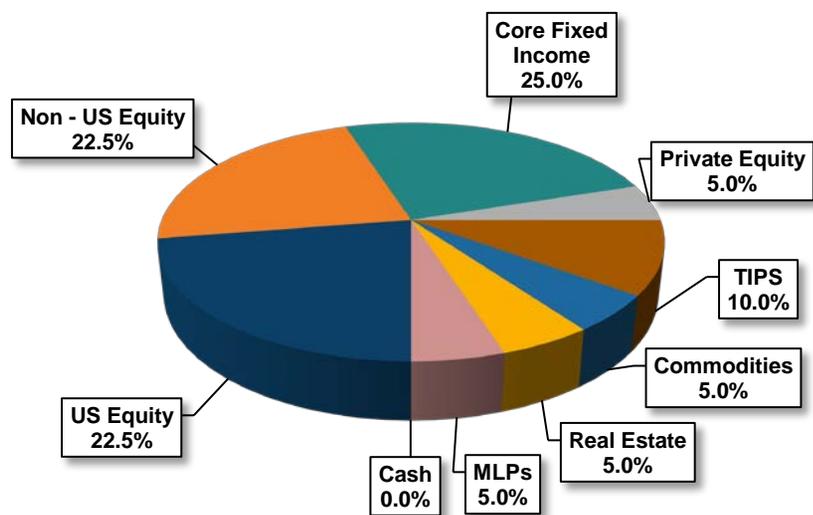
Total Fund

Policy Allocation vs Actual Allocation

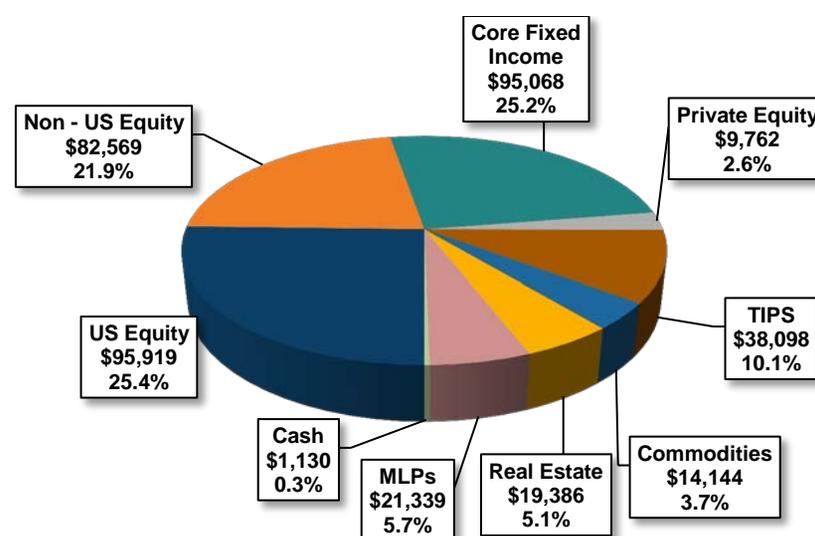
Total Fund Composite

As of June 30, 2016

Policy Allocation¹



Actual Allocation (in \$'000s)



Total Assets: \$377,414,000

¹ Effective date: April 1, 2015

Policy Allocation vs Actual Allocation



Total Fund Composite

As of June 30, 2016

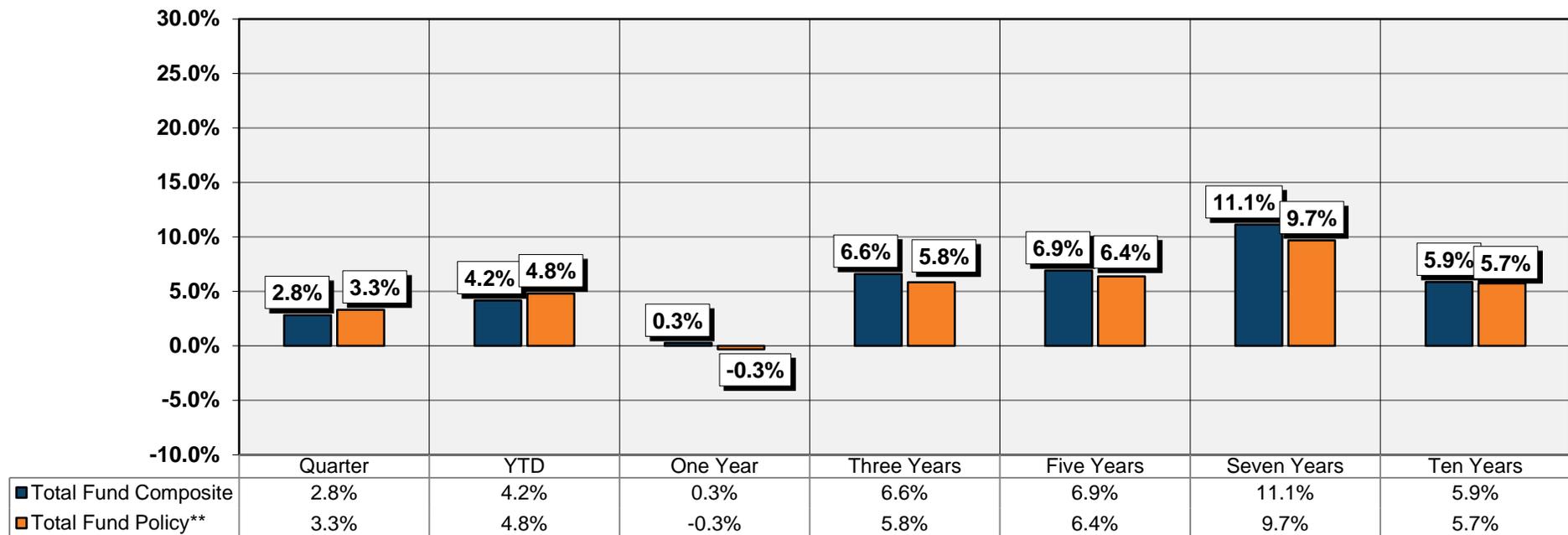
	Market Value (in \$'000)	Asset Allocation	
		Actual	Policy
US Equity	\$95,919	25.41%	22.50%
Non - US Equity	\$82,569	21.88%	22.50%
Core Fixed Income	\$95,068	25.19%	25.00%
Private Equity	\$9,762	2.59%	5.00%
TIPS	\$38,098	10.09%	10.00%
Commodities	\$14,144	3.75%	5.00%
Real Estate	\$19,386	5.14%	5.00%
MLPs	\$21,339	5.65%	5.00%
Cash	\$1,130	0.30%	0.00%
Total Fund Composite	\$377,414	100.00%	100.00%

Investment Performance



Total Fund Composite*

Periods Ended June 30, 2016



*Returns are net of fees

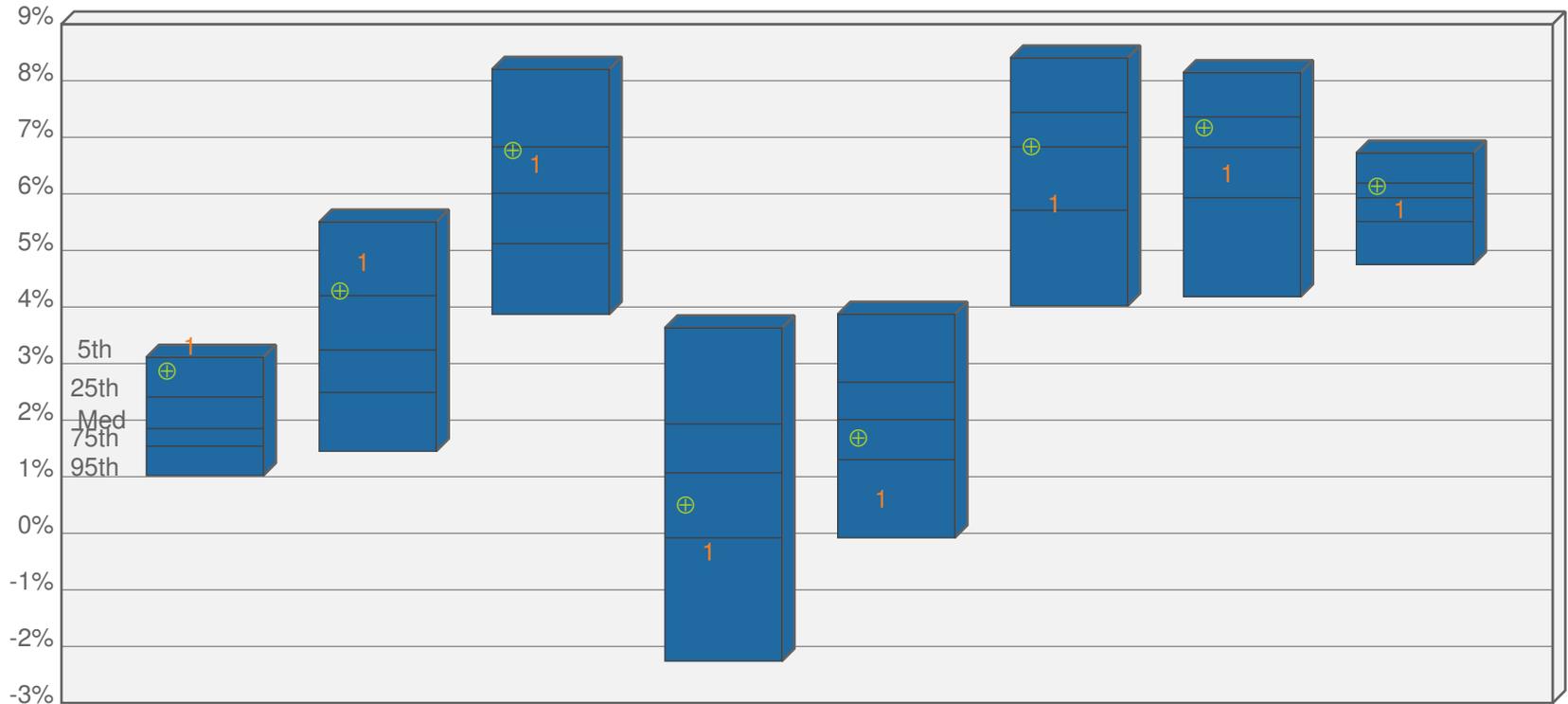
** Policy index = Wilshire 5000 (22.50%), MSCI ACWI ex U.S. (22.50%), Barclays Aggregate (25.00%), Barclays U.S. TIPS (10.00%), FTSE EPRA NAREIT Dev RE (5.00%), Wilshire 5000 +2.5% (5.00%), DJ UBS Commodity Index (5.00%), S&P MLP Index (5.00%)

Performance Comparison



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	2.87 (9)	4.29 (21)	6.78 (28)	0.51 (66)	1.70 (61)	6.85 (49)	7.17 (31)	6.15 (32)
1 Policy Index	3.31 (2)	4.80 (11)	6.53 (34)	-0.32 (79)	0.61 (88)	5.83 (72)	6.36 (69)	5.72 (58)
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



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
U.S. Equity Composite									
Net of Fee Return	3.31	3.66	1.84	11.27	11.82	15.83	7.70	9/30/87	9.15
Wilshire 5000	2.78	3.98	2.96	11.26	11.64	14.92	7.46	9/30/87	9.16
Value Added	0.53	-0.32	-1.12	0.00	0.18	0.91	0.24	9/30/87	-0.01
Core Fixed Composite									
Net of Fee Return	3.02	5.99	6.22	4.81	4.87	7.42	5.80	9/30/87	7.16
Barclays Aggregate	2.21	5.31	6.00	4.06	3.76	4.58	5.13	9/30/87	6.82
Value Added	0.80	0.68	0.22	0.75	1.11	2.84	0.67	9/30/87	0.33
Non-U.S. Equity Composite									
Net of Fee Return	-1.72	-2.16	-6.69	3.79	2.30	8.06	1.95	12/31/89	7.82
Policy Benchmark	-0.64	-1.02	-10.24	1.17	0.10	5.35	1.87	12/31/89	3.96
Value Added	-1.08	-1.15	3.56	2.62	2.19	2.71	0.08	12/31/89	3.86
Real Estate Composite									
Net of Fee Return	1.84	6.29	8.76	7.02	6.57	12.06		6/30/09	12.06
FTSE EPRA/NAREIT Dev (N)	3.46	8.87	11.58	8.08	7.80	13.30		6/30/09	13.30
Value Added	-1.62	-2.58	-2.83	-1.05	-1.23	-1.25		6/30/09	-1.25
Commodities Composite									
Net of Fee Return	10.43	13.96	-13.64	-10.12				3/31/13	-12.66
Bloomberg Commodity Index	12.78	13.25	-13.32	-10.55				3/31/13	-12.49
Value Added	-2.35	0.71	-0.32	0.44				3/31/13	-0.17
MLP Composite									
Net of Fee Return	20.06	13.41	-18.33					3/31/15	-16.77
S&P MLP Index	22.44	14.68	-18.93					3/31/15	-18.97
Value Added	-2.37	-1.27	0.60					3/31/15	2.20

Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
TIPS Composite									
Net of Fee Return	1.66	6.28	4.38					6/30/15	4.38
Barclays U.S. TIPS	1.71	6.24	4.35					6/30/15	4.35
Value Added	-0.05	0.04	0.03					6/30/15	0.03
Total Real Assets Composite									
Net of Fee Return	6.74	9.13	-2.19					3/31/15	-3.58
Policy Index	8.42	10.20	-2.08					3/31/15	-3.17
Value Added	-1.68	-1.07	-0.11					3/31/15	-0.42
Alternative Investments Composite									
Net of Fee Return	0.22	2.57	9.69	9.99	6.81			6/30/10	6.57
Wilshire 5000 +2.5%	3.40	5.23	5.46	13.76	14.14			6/30/10	17.30
Value Added	-3.18	-2.66	4.23	-3.78	-7.33			6/30/10	-10.73
Total Fund									
Net of Fee Return	2.81	4.16	0.25	6.59	6.90	11.11	5.85	9/30/87	8.20
Policy Index	3.31	4.80	-0.32	5.83	6.36	9.67	5.72	9/30/87	8.24
Value Added	-0.50	-0.64	0.57	0.75	0.54	1.44	0.13	9/30/87	-0.04

Custom Benchmark Specification



Total Fund
June 30, 2016

	Quarter Start	Quarter End	Percent	Description
Policy Index	12/79	6/98	55.00	Wilshire 5000
			40.00	Barclays Aggregate
			5.00	MSCI EAFE Index (N)
	9/98	9/02	50.00	Wilshire 5000
			40.00	Barclays Aggregate
			10.00	MSCI EAFE Index (N)
	12/02	3/06	50.00	Wilshire 5000
			35.00	Barclays Aggregate
			15.00	MSCI EAFE Index (N)
	6/06	6/06	55.00	Wilshire 5000
30.00			Barclays Aggregate	
15.00			MSCI EAFE Index (N)	
9/06	6/09	55.00	Wilshire 5000	
		30.00	Barclays Aggregate	
		15.00	MSCI ACWI X US (N)	
9/09	3/10	5.00	FTSE EPRA/NAREIT Dev (N)	
		15.00	MSCI ACWI X US (N)	
		30.00	Barclays Aggregate	
		50.00	Wilshire 5000	
6/10	12/12	5.00	FTSE EPRA/NAREIT Dev (N)	
		5.00	Wilshire 5000 + 2.5%	
		30.00	Barclays Aggregate	
		15.00	MSCI ACWI X US (N)	
		45.00	Wilshire 5000	
3/13	3/15	5.00	FTSE EPRA/NAREIT Dev (N)	
		40.00	Wilshire 5000	
		15.00	MSCI ACWI X US (N)	
		30.00	Barclays Aggregate	
		5.00	Wilshire 5000 + 2.5%	

Custom Benchmark Specification



Total Fund
June 30, 2016

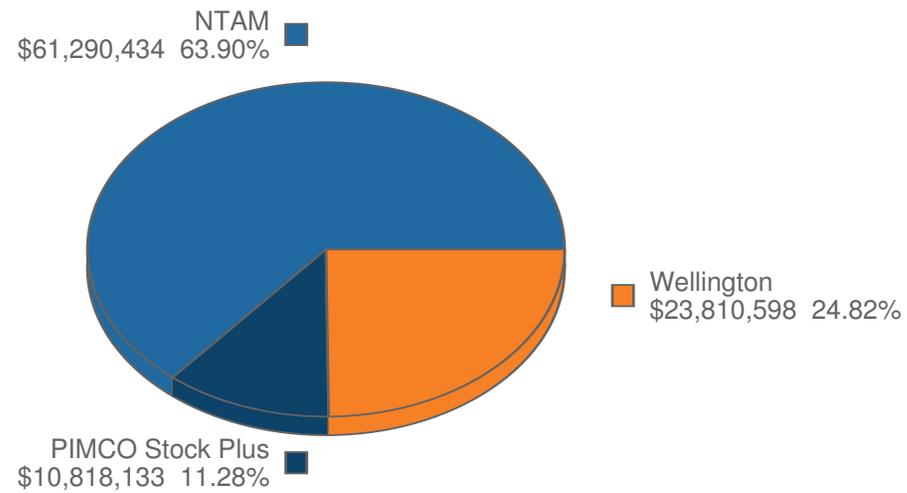
	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)			5.00	Bloomberg Commodity Index
	6/15	6/16	22.50	Wilshire 5000
			5.00	Wilshire 5000 + 2.5%
			22.50	MSCI ACWI X US (N)
			25.00	Barclays Aggregate
			5.00	FTSE EPRA/NAREIT Dev (N)
			5.00	Bloomberg Commodity Index
			10.00	Barclays U.S. TIPS
5.00	S&P MLP Index			

U.S. Equity

Manager Allocation

U.S. Equity Composite

As of June 30, 2016

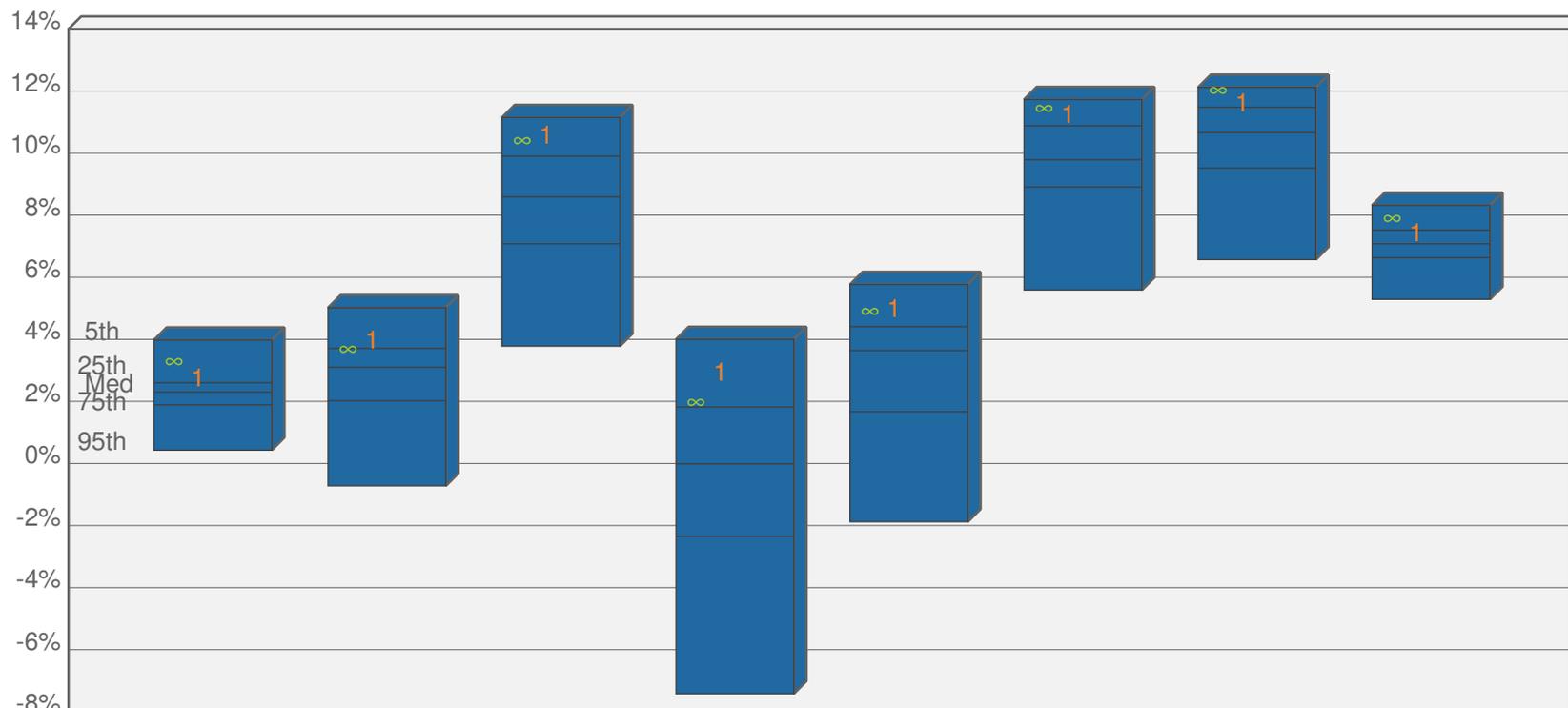


Performance Comparison



U.S. Equity Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ U.S. Equity Composite	3.35 (8)	3.76 (23)	10.48 (13)	2.03 (20)	4.97 (10)	11.52 (11)	12.09 (9)	7.98 (6)
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

Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
NTAM									
Net of Fee Return	2.46	3.87	4.04	11.70	12.14	14.95	7.37	9/30/98	6.41
Policy Benchmark	2.46	3.84	3.99	11.66	12.10	14.92	7.41	9/30/98	6.40
Value Added	0.00	0.03	0.05	0.04	0.04	0.03	-0.03	9/30/98	0.01
PIMCO Stock Plus									
Net of Fee Return	2.93	4.00	2.69	11.58	12.95	16.67	8.23	9/30/00	5.02
Standard & Poor's 500	2.46	3.84	3.99	11.66	12.10	14.92	7.43	9/30/00	4.47
Value Added	0.47	0.16	-1.30	-0.08	0.85	1.75	0.80	9/30/00	0.56
Wellington									
Net of Fee Return	5.80	3.02	-3.87	10.19	11.18	18.33	9.16	9/30/99	10.76
Russell 2000	3.79	2.22	-6.73	7.08	8.35	13.94	6.20	9/30/99	7.52
Value Added	2.01	0.80	2.86	3.10	2.82	4.39	2.96	9/30/99	3.25
U.S. Equity Composite									
Net of Fee Return	3.31	3.66	1.84	11.27	11.82	15.83	7.70	9/30/87	9.15
Wilshire 5000	2.78	3.98	2.96	11.26	11.64	14.92	7.46	9/30/87	9.16
Value Added	0.53	-0.32	-1.12	0.00	0.18	0.91	0.24	9/30/87	-0.01

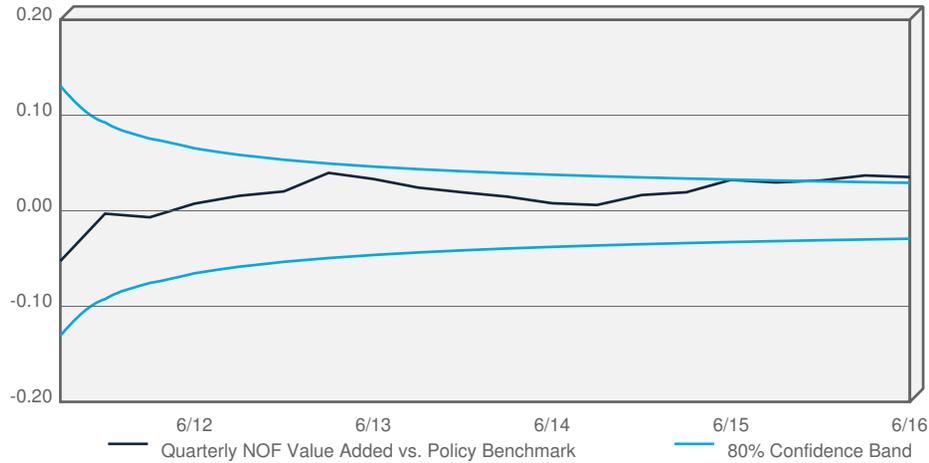
Investment Manager Analysis



NTAM

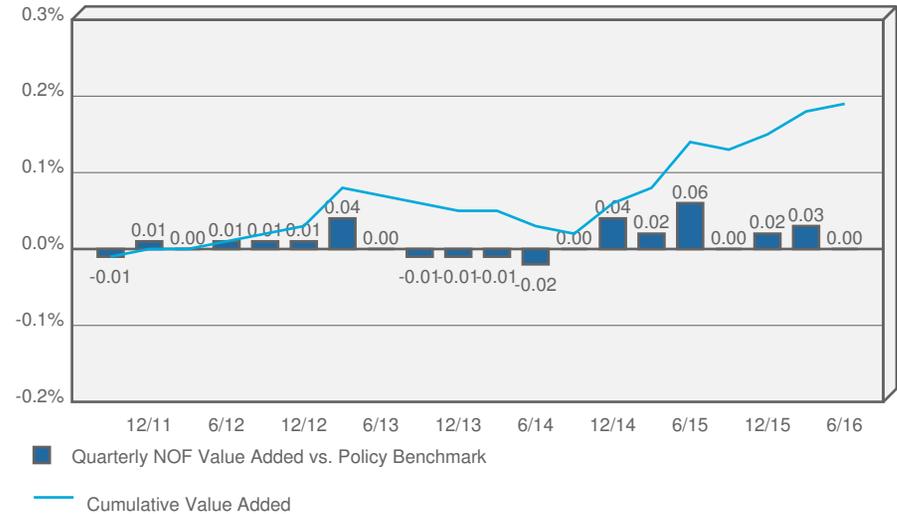
June 30, 2016

Cumulative Skill Analysis vs Benchmark

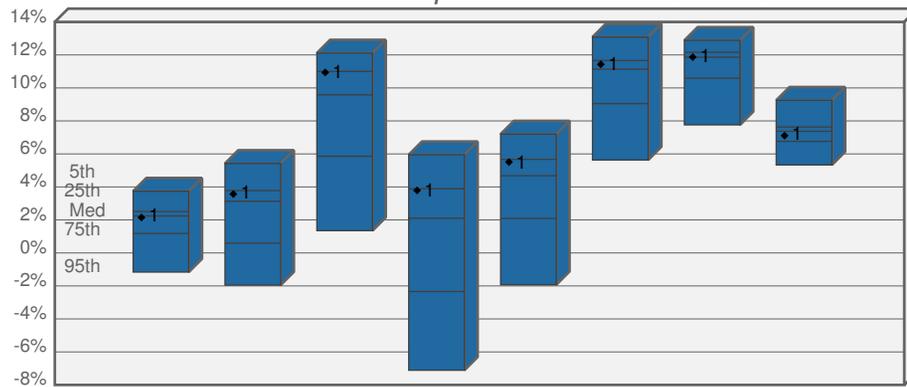


Excess Return:	0.04	Information Ratio:	0.89
Excess Risk:	0.04	T-Stat:	1.99

Value-Added Analysis vs Benchmark

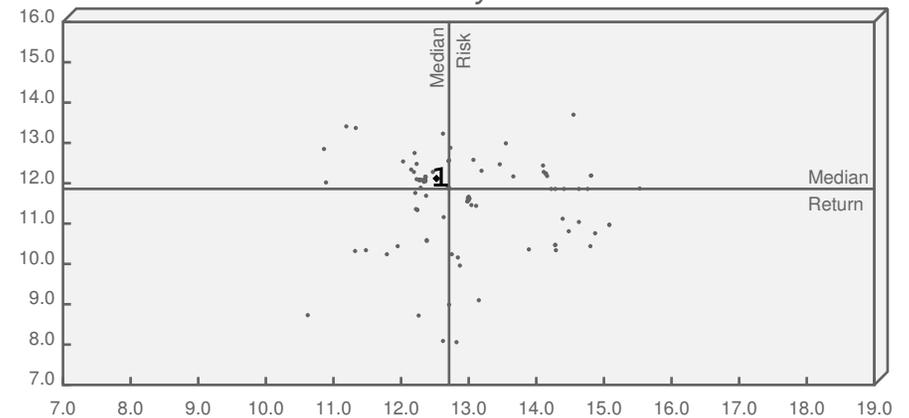


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ NTAM	2.47 (28)	3.89 (11)	11.26 (8)	4.11 (10)	5.83 (13)	11.75 (15)	12.19 (22)	7.43 (47)
■ Policy Benchmark	2.46 (30)	3.84 (16)	11.15 (14)	3.99 (20)	5.69 (23)	11.66 (25)	12.10 (34)	7.41 (47)
Median	2.24	3.13	9.58	2.10	4.68	11.14	11.86	7.37
Number of Funds	241	239	239	239	233	223	168	80

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
NTAM	◆	12.19	22	12.68	55
Policy Benchmark	■	12.10	34	12.67	55
Median		11.86		12.71	

*TUCS Total Returns of Large Neutral Equity Portfolios Universe - Gross of Fees
Police & Fire

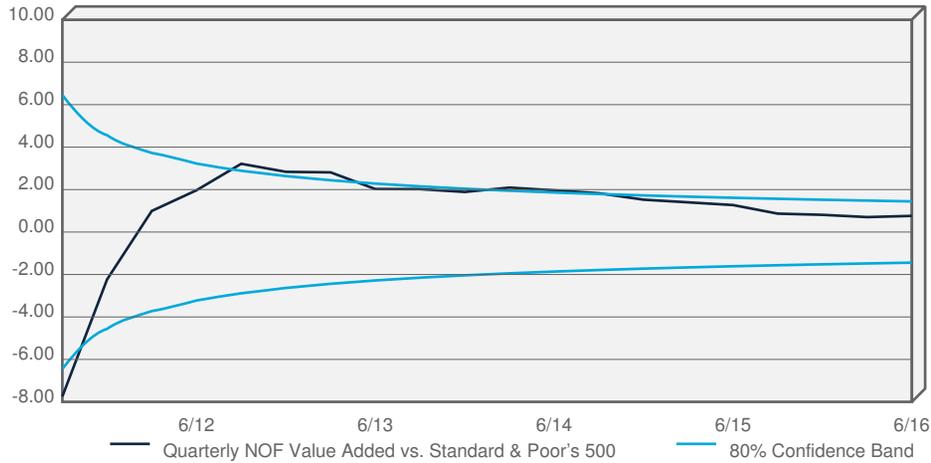
Investment Manager Analysis



PIMCO Stock Plus

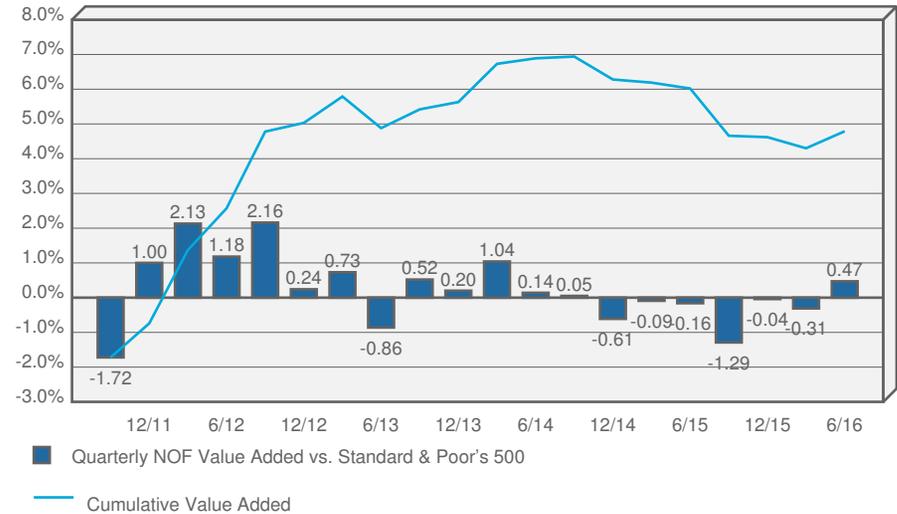
June 30, 2016

Cumulative Skill Analysis vs Benchmark

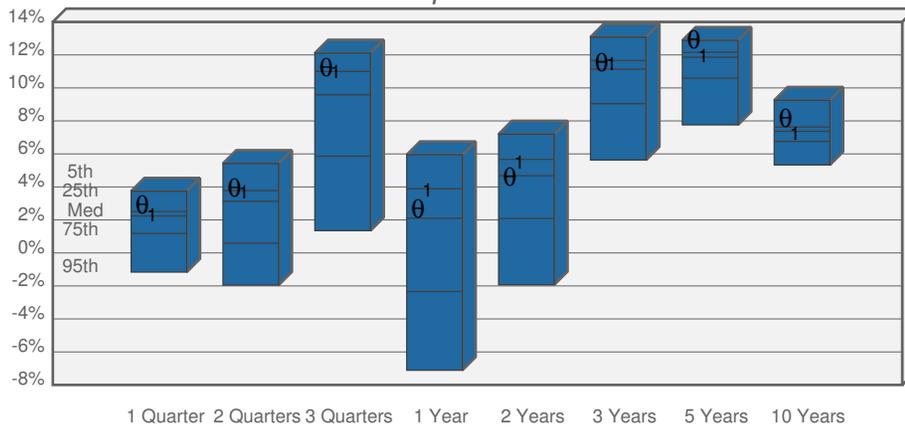


Excess Return:	0.76	Information Ratio:	0.39
Excess Risk:	1.96	T-Stat:	0.87

Value-Added Analysis vs Benchmark

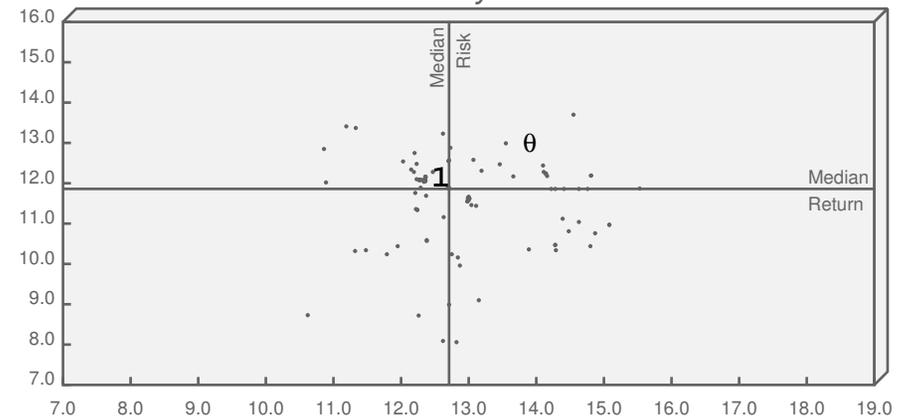


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
θ PIMCO Stock Plus	2.93 (10)	4.00 (10)	11.28 (8)	2.69 (43)	4.62 (53)	11.58 (33)	12.95 (4)	8.23 (8)
$\mathbf{1}$ Standard & Poo	2.46 (30)	3.84 (16)	11.15 (14)	3.99 (20)	5.69 (23)	11.66 (25)	12.10 (34)	7.43 (47)
Median	2.24	3.13	9.58	2.10	4.68	11.14	11.86	7.37
Number of Funds	241	239	239	239	233	223	168	80

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
PIMCO Stock Plus	θ	12.95	4	14.02	21
Standard & Poor's 500	$\mathbf{1}$	12.10	34	12.67	55
Median		11.86		12.71	

*TUCS Total Returns of Large Neutral Equity Portfolios Universe - Gross of Fees
Police & Fire

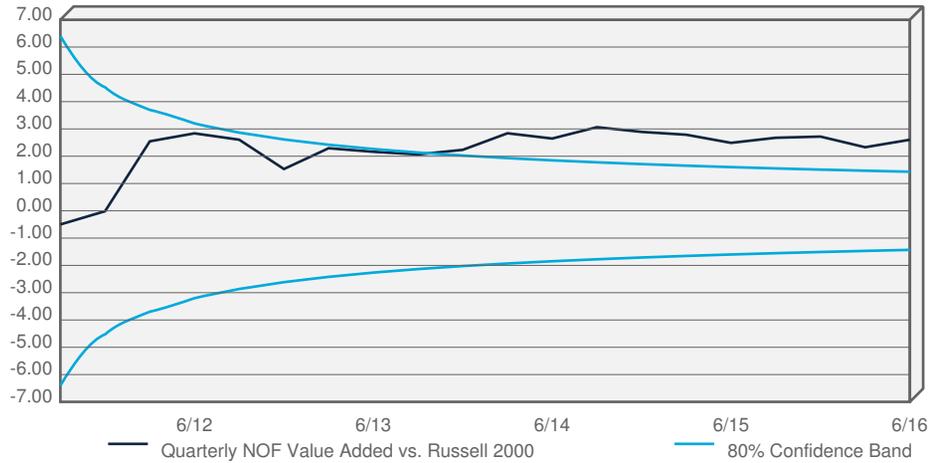
Investment Manager Analysis



Wellington

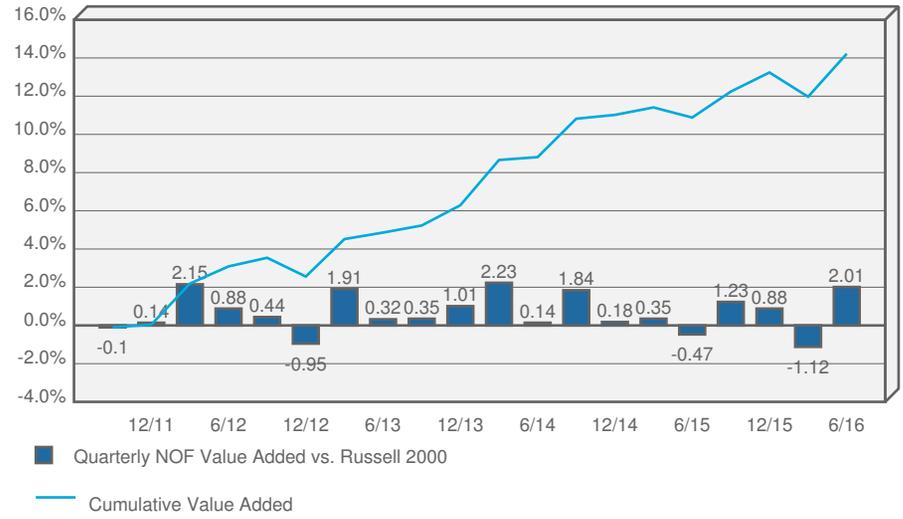
June 30, 2016

Cumulative Skill Analysis vs Benchmark

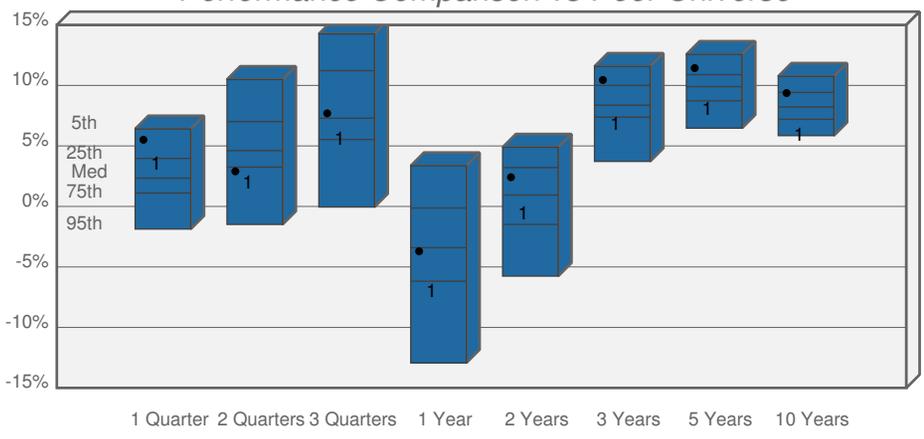


Excess Return:	2.60	Information Ratio:	1.34
Excess Risk:	1.95	T-Stat:	2.99

Value-Added Analysis vs Benchmark

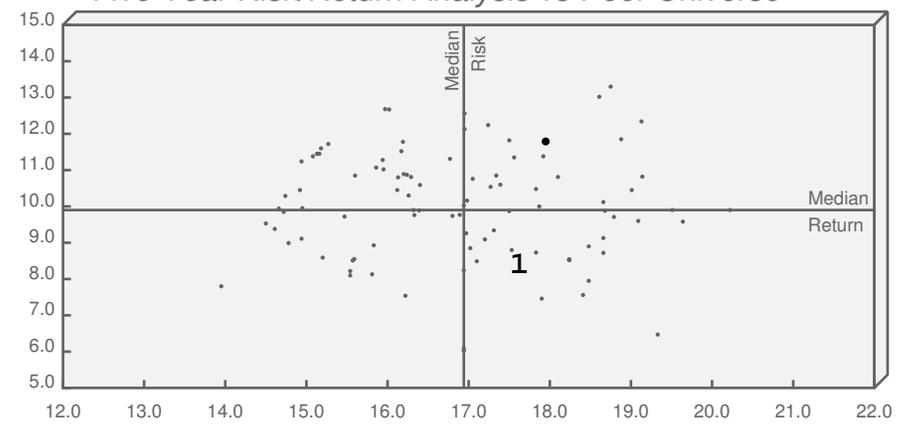


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
● Wellington	5.95 (9)	3.34 (70)	8.13 (44)	-3.27 (48)	2.85 (30)	10.89 (12)	11.87 (8)	9.81 (14)
1 Russell 2000	3.79 (28)	2.22 (82)	5.89 (72)	-6.73 (79)	-0.34 (68)	7.08 (78)	8.35 (84)	6.20 (94)
Median	2.34	4.61	7.29	-3.41	0.94	8.37	9.90	8.22
Number of Funds	135	132	131	131	131	120	97	49

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Wellington	●	11.87	8	18.08	26
Russell 2000	1	8.35	84	17.69	31
Median		9.90		16.94	

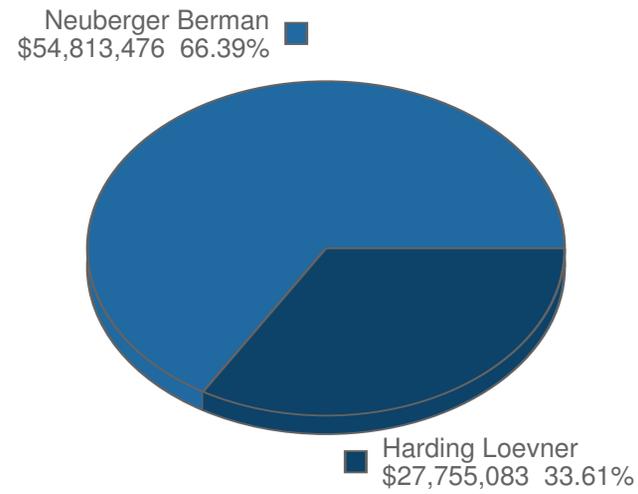
*TUCS Total Returns of Small Neutral Equity Portfolios Universe - Gross of Fees
Police & Fire

Non - U.S. Equity

Manager Allocation

Non-U.S. Equity Composite

As of June 30, 2016

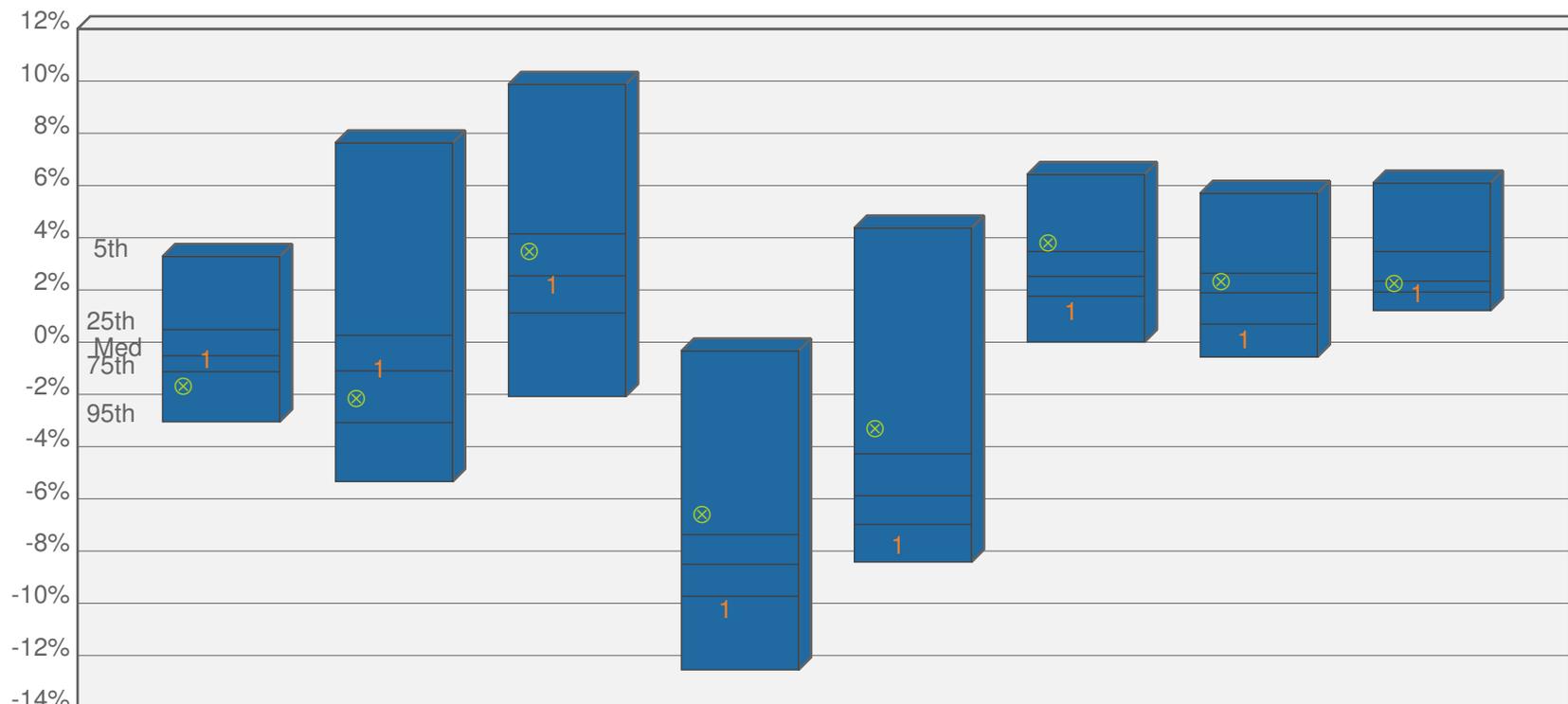


Performance Comparison



Non-U.S. Equity Composite

Periods Ended June 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗ Non-U.S. Equity Composite	-1.68 (85)	-2.12 (63)	3.50 (33)	-6.56 (17)	-3.28 (15)	3.84 (18)	2.33 (32)	2.27 (53)
1 Policy Benchmark	-0.64 (54)	-1.02 (49)	2.20 (58)	-10.24 (84)	-7.78 (90)	1.17 (86)	0.10 (88)	1.87 (75)
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
Police & Fire

Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Neuberger Berman									
Net of Fee Return	-3.05	-3.76	-7.36	3.73	2.26	8.03	1.93	6/30/06	1.93
MSCI ACWI X US (N)	-0.64	-1.02	-10.24	1.17	0.10	5.35	1.87	6/30/06	1.87
Value Added	-2.41	-2.74	2.88	2.56	2.16	2.69	0.06	6/30/06	0.06
Harding Loevner									
Net of Fee Return	1.00	1.02	-5.49					3/31/15	-4.06
MSCI ACWI X US (N)	-0.64	-1.02	-10.24					3/31/15	-7.89
Value Added	1.65	2.04	4.75					3/31/15	3.84
Non-U.S. Equity Composite									
Net of Fee Return	-1.72	-2.16	-6.69	3.79	2.30	8.06	1.95	12/31/89	7.82
Policy Benchmark	-0.64	-1.02	-10.24	1.17	0.10	5.35	1.87	12/31/89	3.96
Value Added	-1.08	-1.15	3.56	2.62	2.19	2.71	0.08	12/31/89	3.86

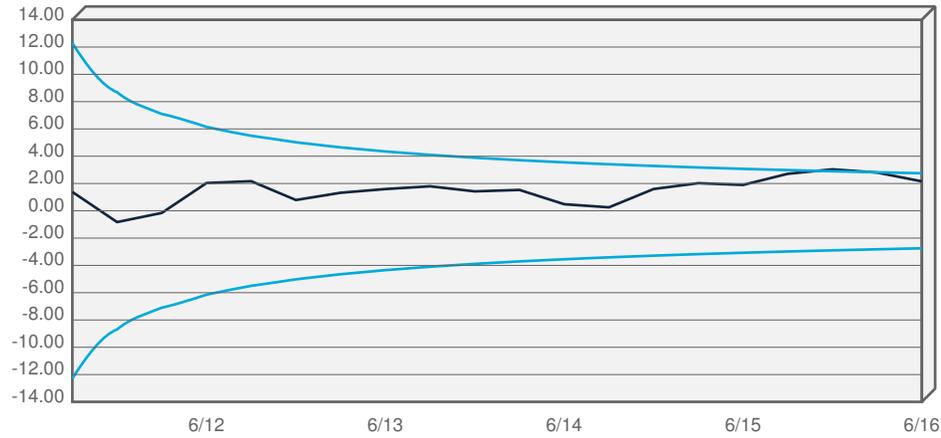
Investment Manager Analysis



Neuberger Berman

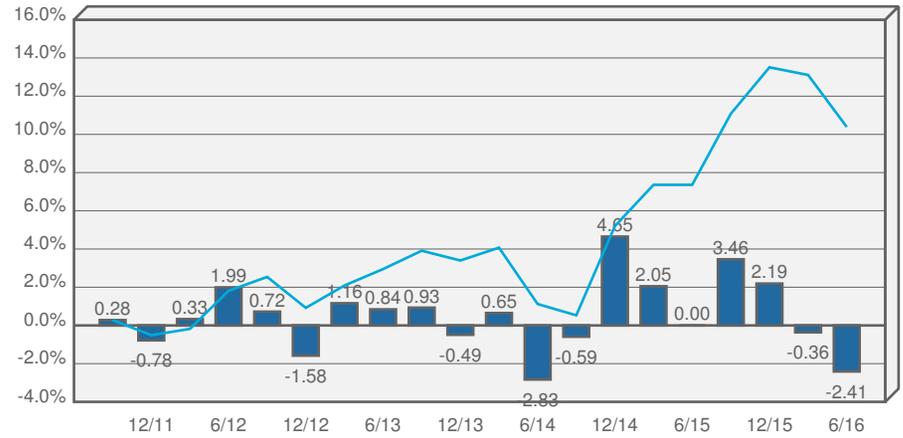
June 30, 2016

Cumulative Skill Analysis vs Benchmark



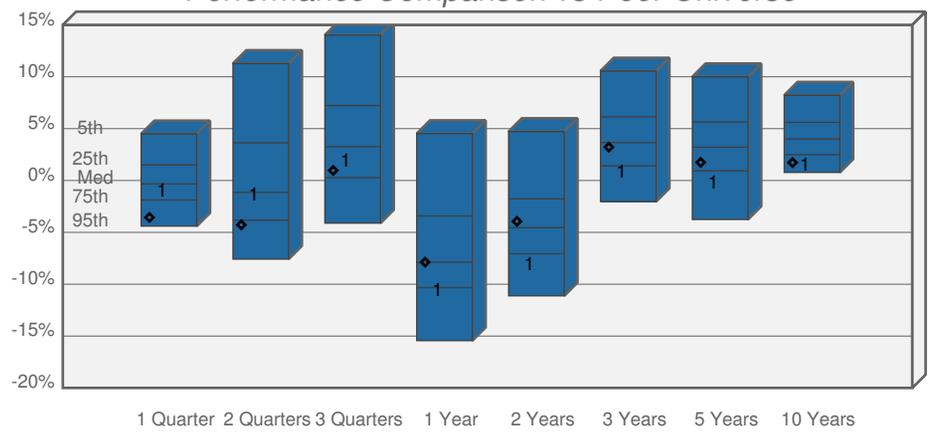
Excess Return:	2.16	Information Ratio:	0.58
Excess Risk:	3.74	T-Stat:	1.29

Value-Added Analysis vs Benchmark



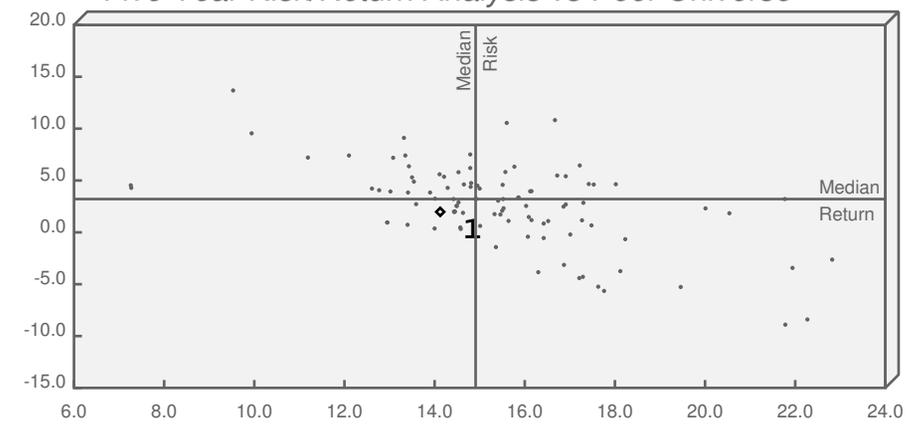
■ Quarterly NOF Value Added vs. MSCI ACWI X US (N)
 — Cumulative Value Added

Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ Neuberger Berm	-3.05 (88)	-3.76 (74)	1.48 (66)	-7.36 (46)	-3.43 (37)	3.73 (49)	2.26 (61)	2.24 (81)
1 MSCI ACWI X US	0.64 (56)	-1.02 (48)	2.20 (59)	-10.24 (74)	-7.78 (81)	1.17 (77)	0.10 (83)	1.87 (86)
Median	-0.32	-1.14	3.25	-7.87	-4.55	3.66	3.21	4.00
Number of Funds	1644	1631	1611	1597	1505	1414	1218	590

Five Year Risk/Return Analysis vs Peer Universe*



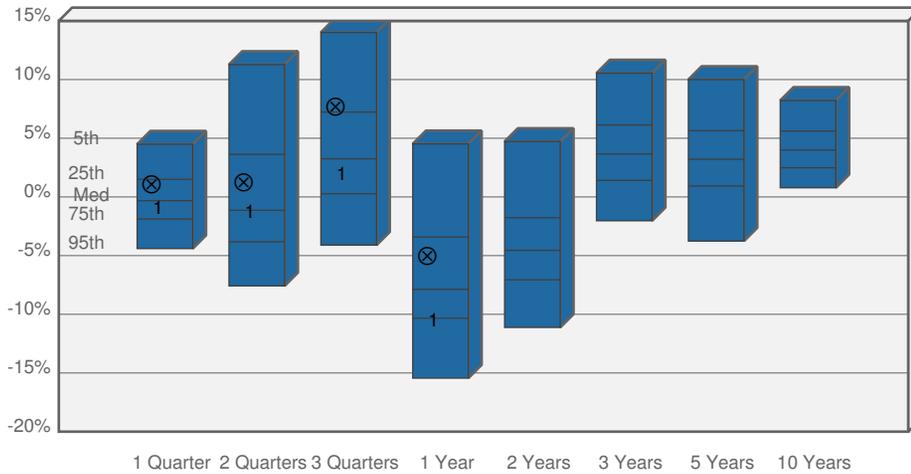
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Neuberger Berman	◆	2.26	61	14.36	66
MSCI ACWI X US (N)	1	0.10	83	14.96	48
Median		3.21		14.91	

*TUCS Total Returns of International Equity Portfolios Universe - Gross of Fees
 Police & Fire

Harding Loevner

June 30, 2016

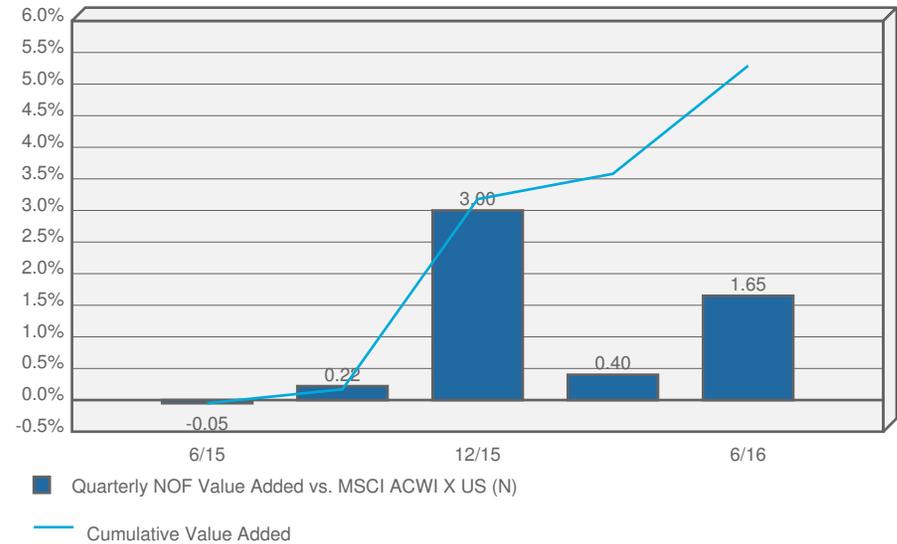
Performance Comparison vs Peer Universe*



⊗ Harding Loevne 1.14 (29) 1.30 (33) 7.77 (22) -4.97 (32)
 1 MSCI ACWI X US -0.64 (56) -1.02 (48) 2.20 (59) -10.24 (74)

Median	-0.32	-1.14	3.25	-7.87	-4.55	3.66	3.21	4.00
Number of Funds	1644	1631	1611	1597	1505	1414	1218	590

Value-Added Analysis vs Benchmark

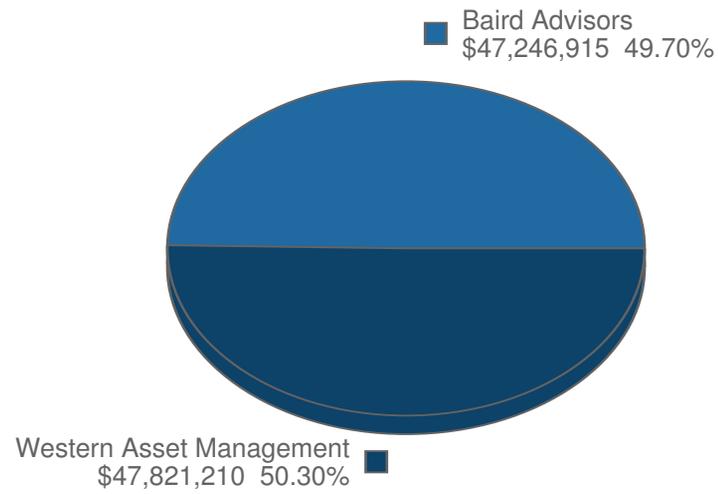


Core Fixed Income

Manager Allocation

Core Fixed Composite

As of June 30, 2016

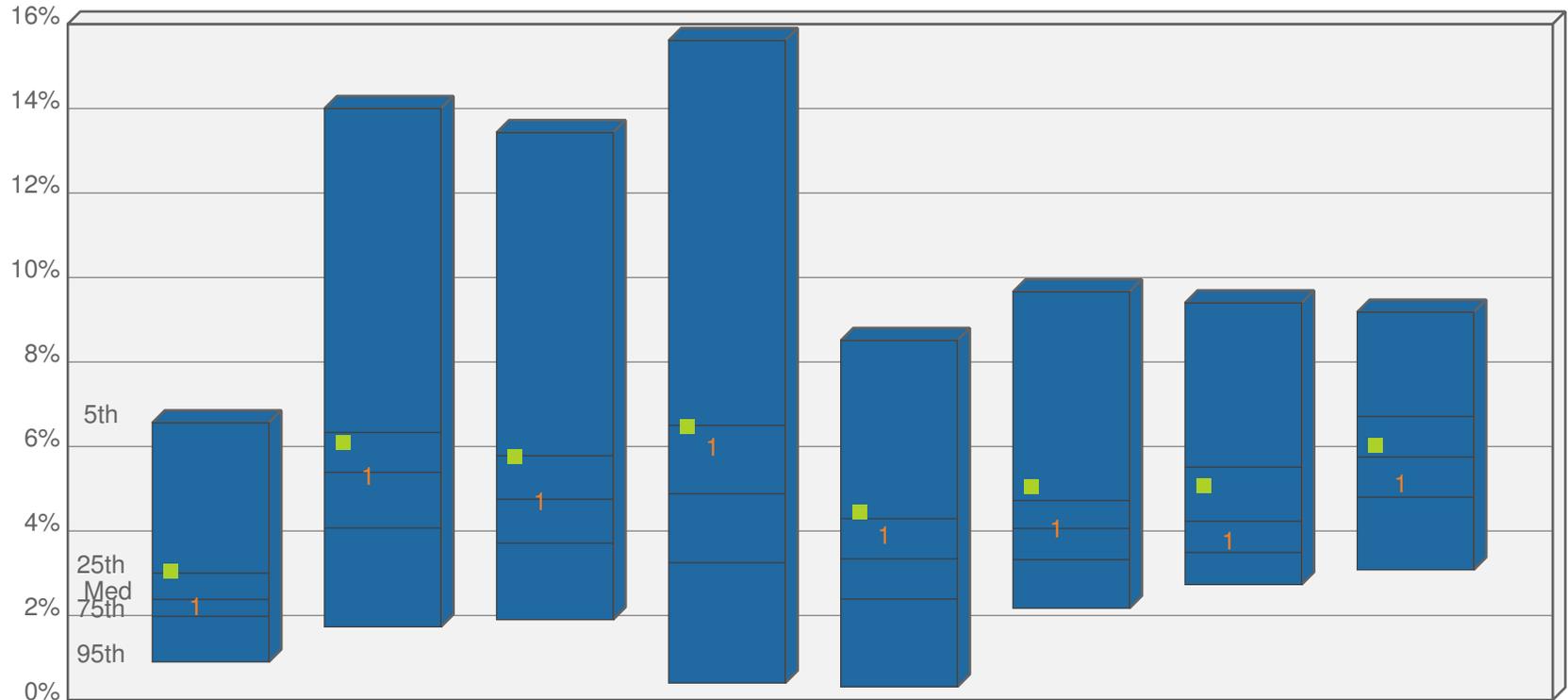


Performance Comparison



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	3.08 (23)	6.13 (29)	5.80 (24)	6.50 (25)	4.47 (19)	5.08 (21)	5.11 (28)	6.05 (39)
┆ 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
Police & Fire

Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Baird Advisors									
Net of Fee Return	2.53	5.71	6.44	4.55	4.55	6.15	5.42	3/31/03	4.85
Barclays Aggregate	2.21	5.31	6.00	4.06	3.76	4.58	5.13	3/31/03	4.52
Value Added	0.32	0.40	0.44	0.49	0.79	1.57	0.28	3/31/03	0.32
Western Asset Management									
Net of Fee Return	3.50	6.26	5.99	5.06	5.12	8.58	6.06	3/31/04	5.38
Barclays Aggregate	2.21	5.31	6.00	4.06	3.76	4.58	5.13	3/31/04	4.45
Value Added	1.29	0.95	-0.01	1.00	1.36	4.00	0.93	3/31/04	0.93
Core Fixed Composite									
Net of Fee Return	3.02	5.99	6.22	4.81	4.87	7.42	5.80	9/30/87	7.16
Barclays Aggregate	2.21	5.31	6.00	4.06	3.76	4.58	5.13	9/30/87	6.82
Value Added	0.80	0.68	0.22	0.75	1.11	2.84	0.67	9/30/87	0.33

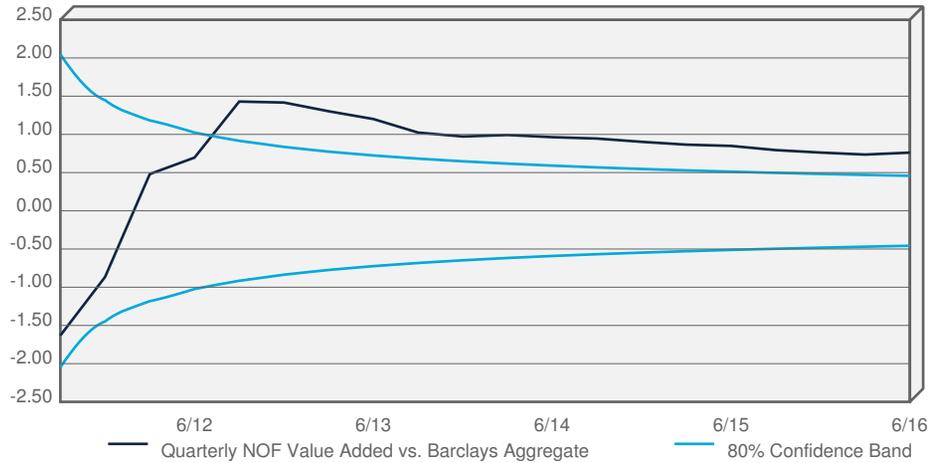
Investment Manager Analysis



Baird Advisors

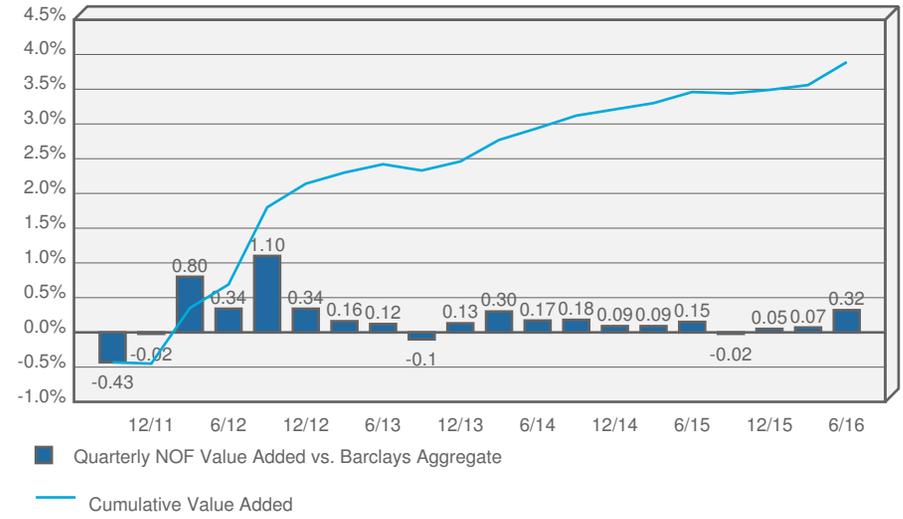
June 30, 2016

Cumulative Skill Analysis vs Benchmark

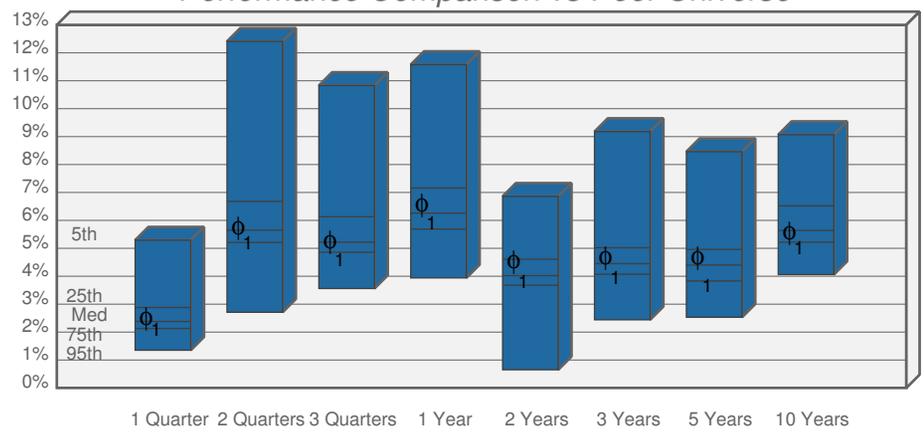


Excess Return:	0.76	Information Ratio:	1.22
Excess Risk:	0.62	T-Stat:	2.74

Value-Added Analysis vs Benchmark

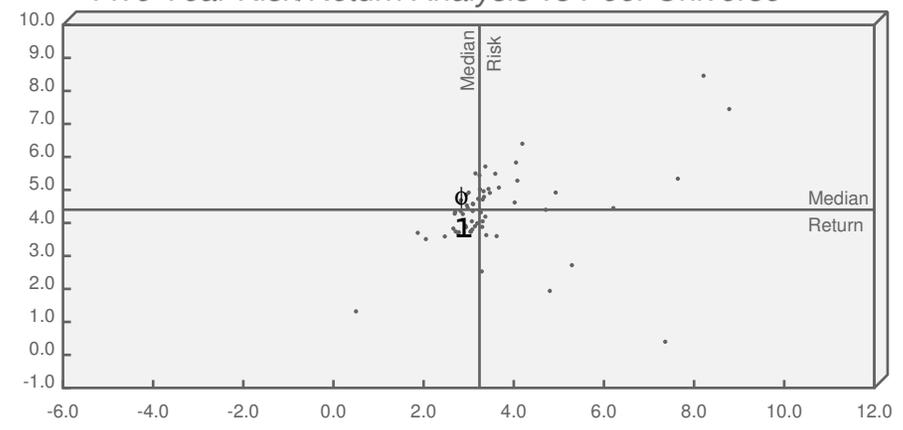


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Φ Baird Advisors	2.59 (38)	5.82 (44)	5.33 (45)	6.67 (31)	4.61 (25)	4.77 (33)	4.77 (32)	5.64 (50)
1 Barclays Aggre	2.21 (68)	5.31 (70)	4.71 (84)	6.00 (67)	3.91 (63)	4.06 (75)	3.76 (76)	5.13 (75)
Median	2.38	5.65	5.22	6.26	4.02	4.45	4.40	5.64
Number of Funds	92	91	90	89	86	79	66	28

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Baird Advisors	Φ	4.77	32	3.01	68
Barclays Aggregate	1	3.76	76	3.01	68
Median		4.40		3.24	

*TUCS Total Returns of Fixed Income Portfolios - Core Universe - Gross of Fees
Police & Fire

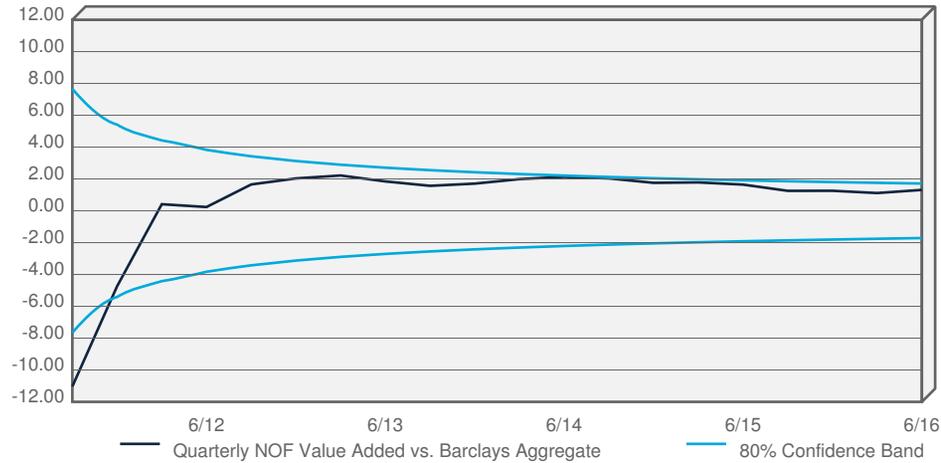
Investment Manager Analysis



Western Asset Management

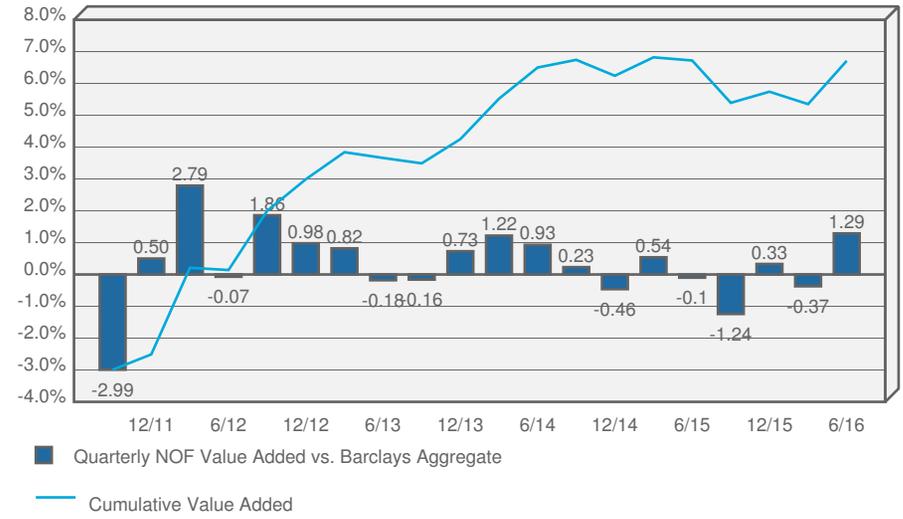
June 30, 2016

Cumulative Skill Analysis vs Benchmark

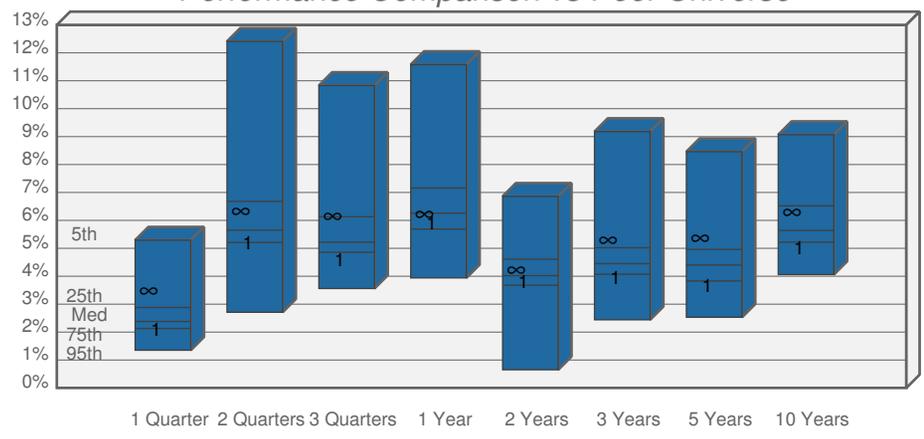


Excess Return:	1.31	Information Ratio:	0.56
Excess Risk:	2.33	T-Stat:	1.26

Value-Added Analysis vs Benchmark

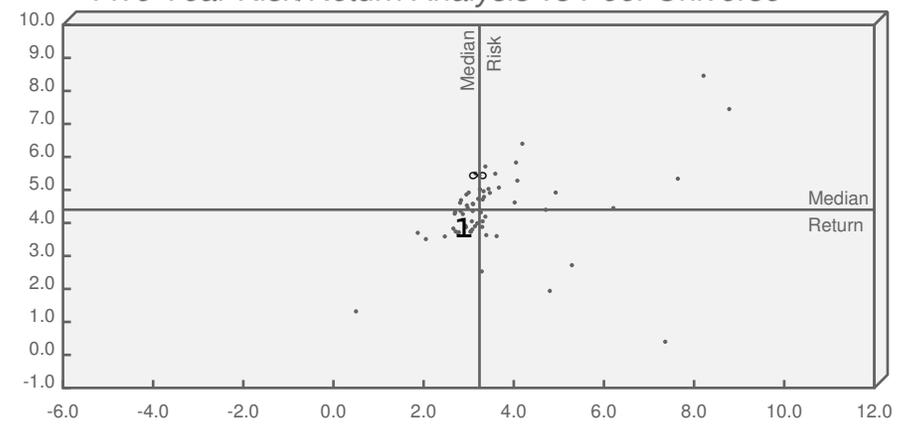


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ Western Asset	3.57 (13)	6.42 (30)	6.24 (23)	6.31 (44)	4.31 (34)	5.37 (16)	5.43 (16)	6.38 (25)
1 Barclays Aggre	2.21 (68)	5.31 (70)	4.71 (84)	6.00 (67)	3.91 (63)	4.06 (75)	3.76 (76)	5.13 (75)
Median	2.38	5.65	5.22	6.26	4.02	4.45	4.40	5.64
Number of Funds	92	91	90	89	86	79	66	28

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Western Asset Management	∞	5.43	16	3.32	39
Barclays Aggregate	1	3.76	76	3.01	68
Median		4.40		3.24	

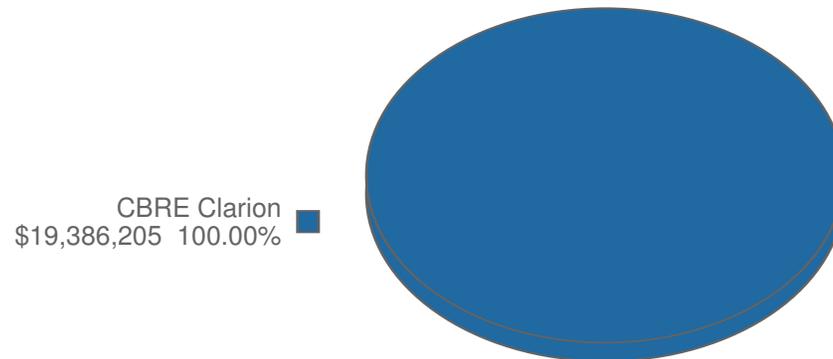
*TUCS Total Returns of Fixed Income Portfolios - Core Universe - Gross of Fees
Police & Fire

Real Estate

Manager Allocation

Real Estate Composite

As of June 30, 2016

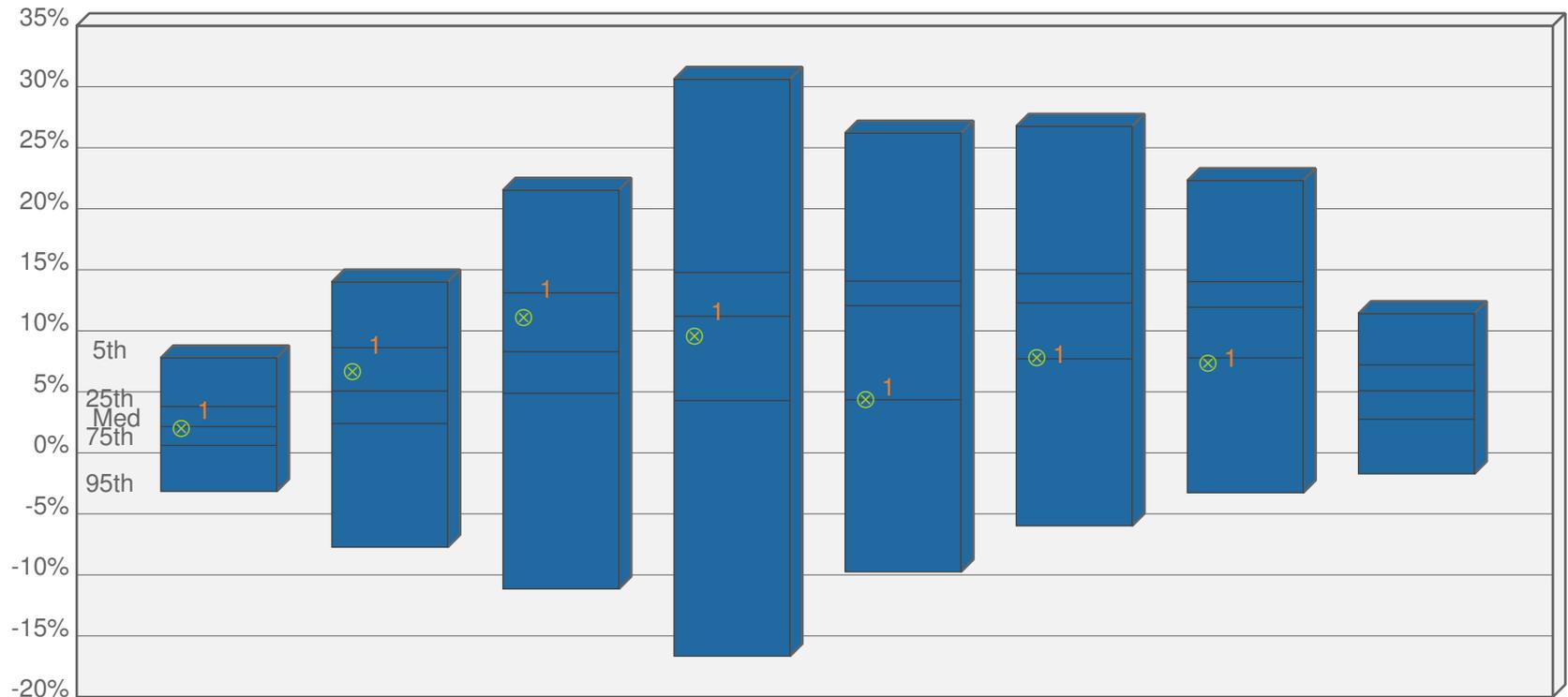


Performance Comparison



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	2.02 (54)	6.69 (33)	11.11 (33)	9.59 (62)	4.40 (74)	7.83 (74)	7.41 (76)	
1 FTSE EPRA/NAREIT	3.46 (28)	8.87 (23)	13.43 (24)	11.58 (46)	5.44 (72)	8.08 (73)	7.80 (74)	
5th %tile	7.78	14.00	21.52	30.61	26.20	26.76	22.31	11.41
25th %tile	3.80	8.62	13.11	14.78	14.07	14.69	14.03	7.21
Median	2.15	5.06	8.29	11.19	12.06	12.29	11.93	5.08
75th %tile	0.61	2.40	4.88	4.28	4.35	7.70	7.78	2.75
95th %tile	-3.16	-7.73	-11.15	-16.66	-9.75	-5.98	-3.27	-1.72
Number of Funds	320	337	333	326	312	298	257	118

*TUCS Total Ret of Real Estate Portfolios Universe - Gross of Fees

Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
CBRE Clarion									
Net of Fee Return	1.84	6.29	8.76	7.02	6.57	12.06		6/30/09	12.06
FTSE EPRA/NAREIT Dev (N)	3.46	8.87	11.58	8.08	7.80	13.30		6/30/09	13.30
Value Added	-1.62	-2.58	-2.83	-1.05	-1.23	-1.25		6/30/09	-1.25
Real Estate Composite									
Net of Fee Return	1.84	6.29	8.76	7.02	6.57	12.06		6/30/09	12.06
FTSE EPRA/NAREIT Dev (N)	3.46	8.87	11.58	8.08	7.80	13.30		6/30/09	13.30
Value Added	-1.62	-2.58	-2.83	-1.05	-1.23	-1.25		6/30/09	-1.25

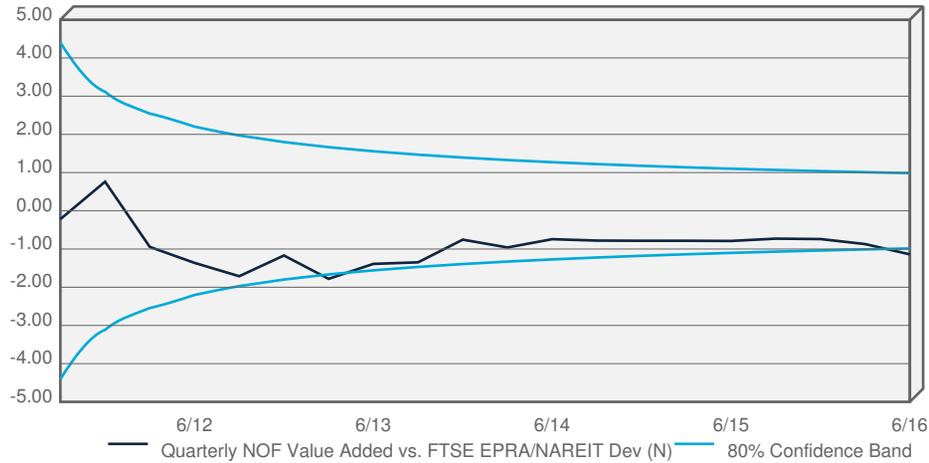
Investment Manager Analysis



CBRE Clarion

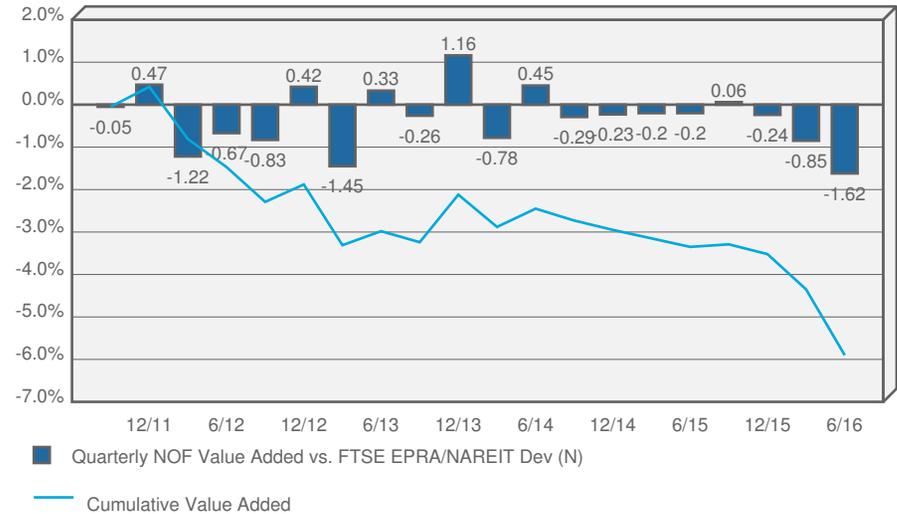
June 30, 2016

Cumulative Skill Analysis vs Benchmark

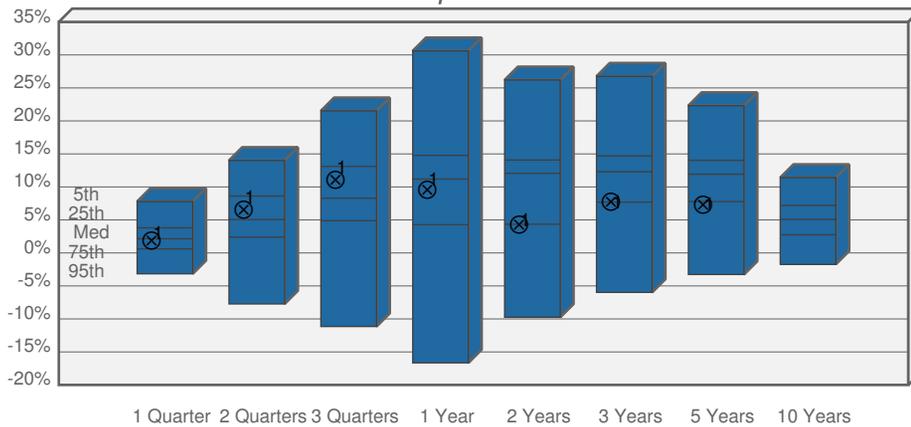


Excess Return:	-1.14	Information Ratio:	-0.85
Excess Risk:	1.34	T-Stat:	-1.90

Value-Added Analysis vs Benchmark

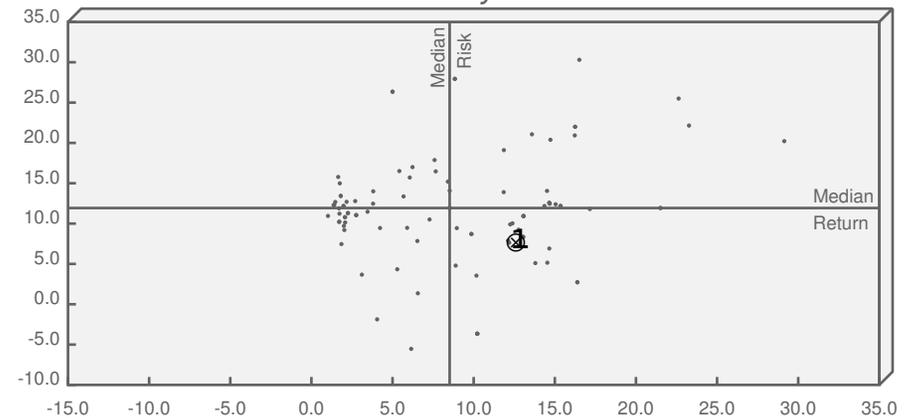


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗ CBRE Clarion	2.02 (54)	6.69 (33)	11.11 (33)	9.59 (62)	4.40 (74)	7.83 (74)	7.41 (76)	
1 FTSE EPRA/NAREIT Dev (N)	4.46 (28)	8.87 (23)	13.43 (24)	11.58 (46)	5.44 (72)	8.08 (73)	7.80 (74)	
Median	2.15	5.06	8.29	11.19	12.06	12.29	11.93	5.08
Number of Funds	320	337	333	326	312	298	257	118

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
CBRE Clarion	⊗	7.41	76	12.87	33
FTSE EPRA/NAREIT Dev (N)	1	7.80	74	13.20	31
Median		11.93		8.52	

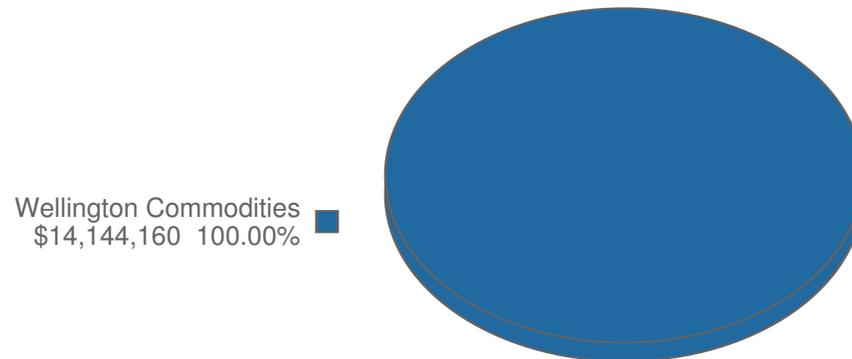
*TUCS Total Returns of Real Estate Portfolios Universe - Gross of Fees

Commodities

Manager Allocation

Commodities Composite

As of June 30, 2016



Performance Comparison



Trailing Returns

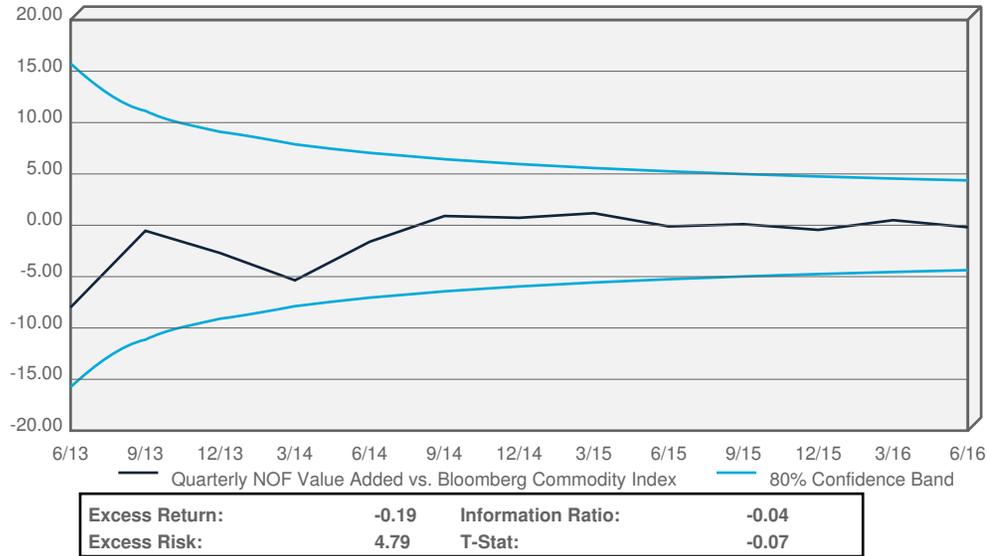
Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Wellington Commodities									
Net of Fee Return	10.43	13.96	-13.64	-10.12				3/31/13	-12.66
Bloomberg Commodity Index	12.78	13.25	-13.32	-10.55				3/31/13	-12.49
Value Added	-2.35	0.71	-0.32	0.44				3/31/13	-0.17
Commodities Composite									
Net of Fee Return	10.43	13.96	-13.64	-10.12				3/31/13	-12.66
Bloomberg Commodity Index	12.78	13.25	-13.32	-10.55				3/31/13	-12.49
Value Added	-2.35	0.71	-0.32	0.44				3/31/13	-0.17

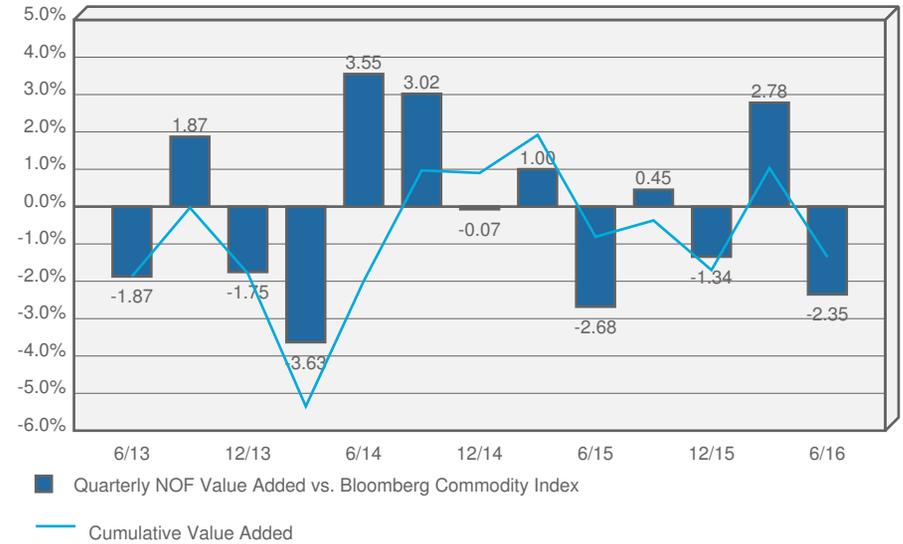
Wellington Commodities

June 30, 2016

Cumulative Skill Analysis vs Benchmark



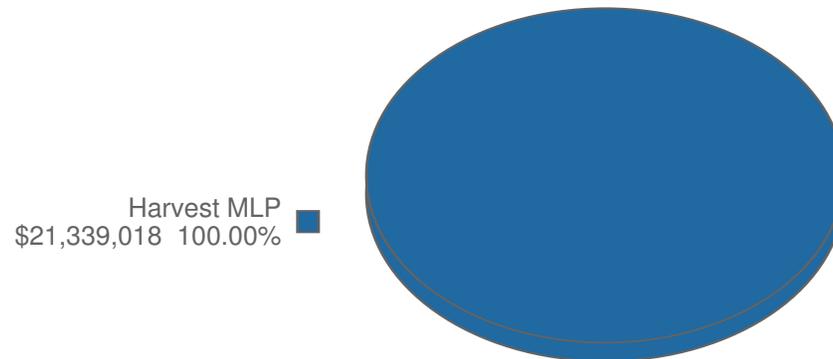
Value-Added Analysis vs Benchmark



MLP

Manager Allocation

MLP Composite
As of June 30, 2016



Performance Comparison



Trailing Returns

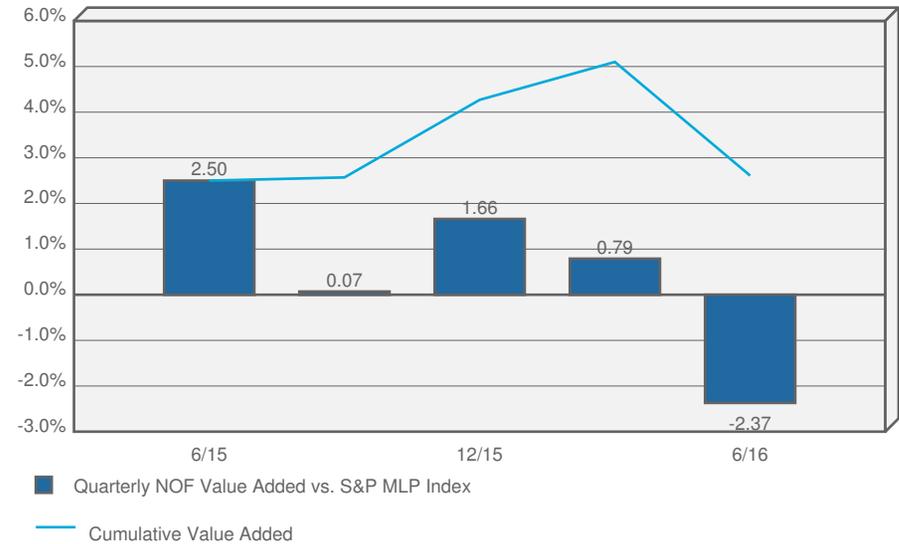
Periods Ended June 30, 2016

	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Harvest MLP									
Net of Fee Return	20.06	13.41	-18.33					3/31/15	-16.77
S&P MLP Index	22.44	14.68	-18.93					3/31/15	-18.97
Value Added	-2.37	-1.27	0.60					3/31/15	2.20
MLP Composite									
Net of Fee Return	20.06	13.41	-18.33					3/31/15	-16.77
S&P MLP Index	22.44	14.68	-18.93					3/31/15	-18.97
Value Added	-2.37	-1.27	0.60					3/31/15	2.20

Harvest MLP

June 30, 2016

Value-Added Analysis vs Benchmark

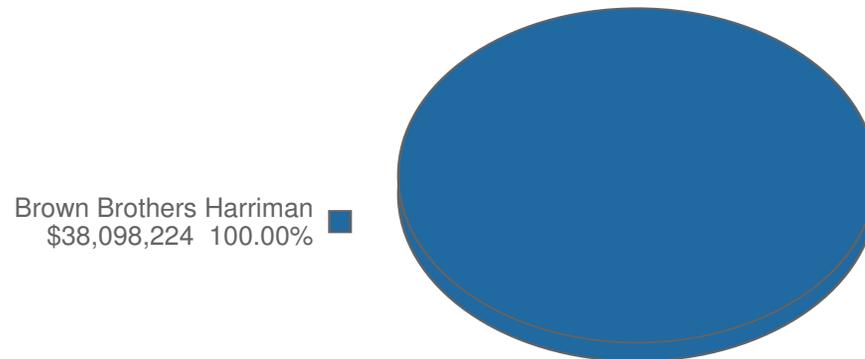


TIPS

Manager Allocation

TIPS Composite

As of June 30, 2016



Performance Comparison



Trailing Returns

Periods Ended June 30, 2016

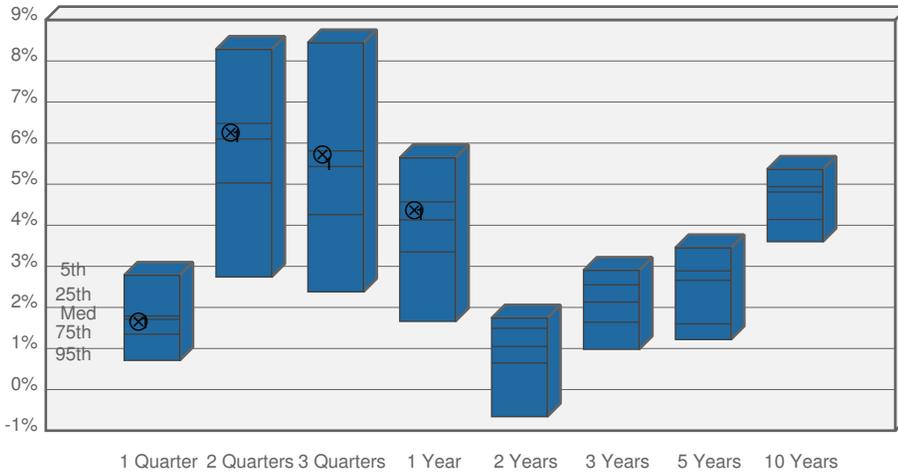
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Brown Brothers Harriman									
Net of Fee Return	1.66	6.28	4.38					6/30/15	4.38
Barclays U.S. TIPS	1.71	6.24	4.35					6/30/15	4.35
Value Added	-0.05	0.04	0.03					6/30/15	0.03
TIPS Composite									
Net of Fee Return	1.66	6.28	4.38					6/30/15	4.38
Barclays U.S. TIPS	1.71	6.24	4.35					6/30/15	4.35
Value Added	-0.05	0.04	0.03					6/30/15	0.03

Investment Manager Analysis

Brown Brothers Harriman

June 30, 2016

Performance Comparison vs Peer Universe*

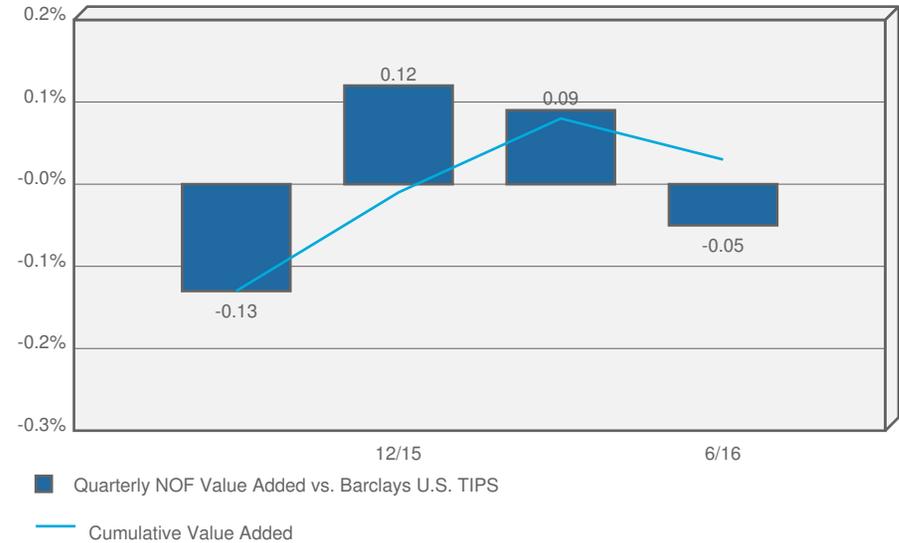


⊗ Brown Brothers
 1 Barclays U.S.

	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Brown Brothers	1.66 (57)	6.28 (42)	5.73 (31)	4.38 (36)				
Barclays U.S.	1.71 (55)	6.24 (42)	5.56 (44)	4.35 (39)				

	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Median	1.71	6.10	5.43	4.13	1.05	2.13	2.66	4.81
Number of Funds	38	38	38	38	38	38	36	23

Value-Added Analysis vs Benchmark



■ Quarterly NOF Value Added vs. Barclays U.S. TIPS
 — Cumulative Value Added

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

Private Equity

Investment Manager Performance



Private Partnerships

As of June 30, 2016

Partnership	Commitment Value	Inception Date	Capital Called		Capital Distributed		Fair Value	Total Value / Paid-In Capital ¹	Annualized IRR
			Amount	%	Amount	%			
Adams Street Direct 2010 Fund	\$500,000	April 27, 2010	\$458,736	92%	\$236,980	47%	\$452,590	1.50	12.31%
Adams Street Non-US Dev. 2010 Fund	\$1,500,000	April 27, 2010	\$805,879	54%	\$88,573	6%	\$902,515	1.23	6.67%
Adams Street Non-US EM 2010 Fund	\$500,000	January 3, 2011	\$341,170	68%	\$0	0%	\$432,544	1.27	9.06%
Adams Street US 2010 Fund	\$2,500,000	April 27, 2010	\$1,222,912	49%	\$104,933	4%	\$1,833,782	1.59	12.96%
Adams Street 2013 Global Fund	\$5,000,000	July 3, 2013	\$2,245,813	45%	\$0	0%	\$2,307,242	1.03	1.77%
Aberdeen Global Partners	\$5,000,000	January 17, 2012	\$3,400,000	68%	\$417,490	8%	\$3,479,396	1.15	6.80%
Adams Street 2015 Global	\$6,500,000	September 30, 2015	\$299,000	5%	\$0	0%	\$353,998	1.18	33.72%
Alternative Investments Composite	\$21,500,000	April 27, 2010	\$8,773,510	41%	\$847,976	4%	\$9,762,067	1.21	8.39%

¹ TVPI = Fair Value + Capital Distributed / Capital Called

Capital Market Review

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.

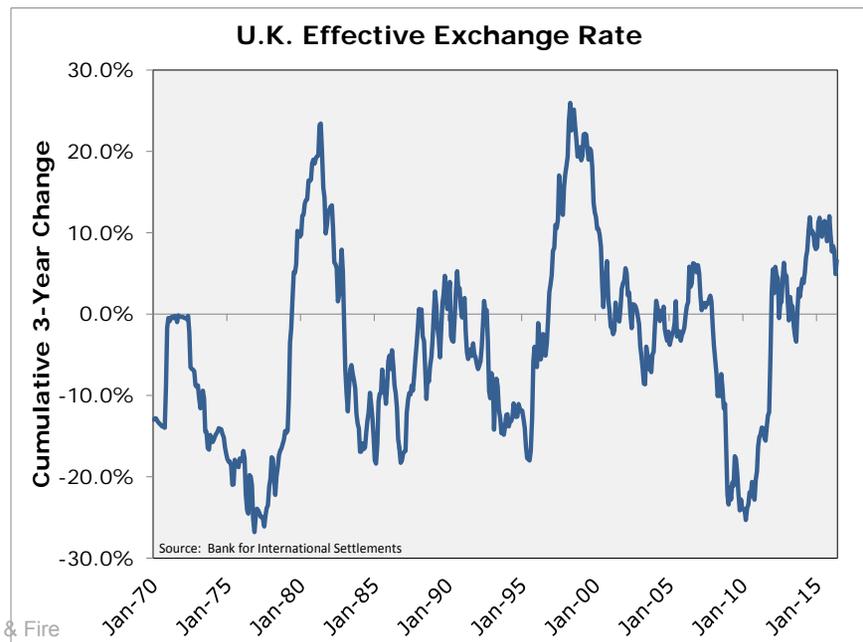
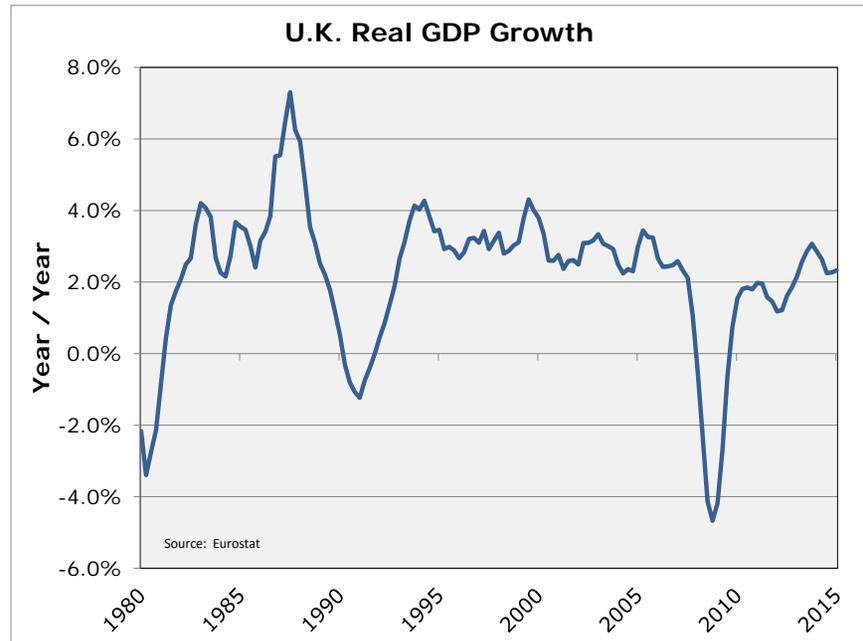
Non-U.S. Equity

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.

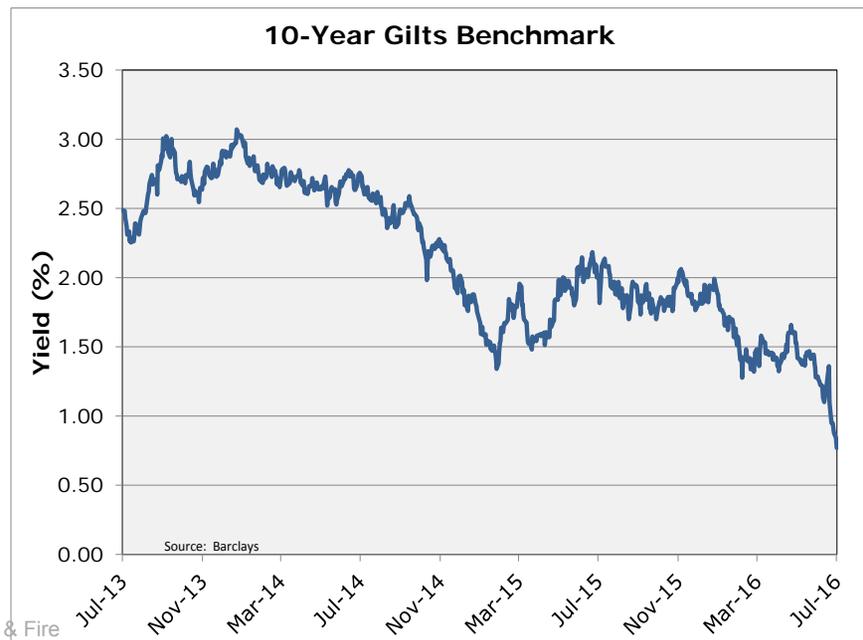
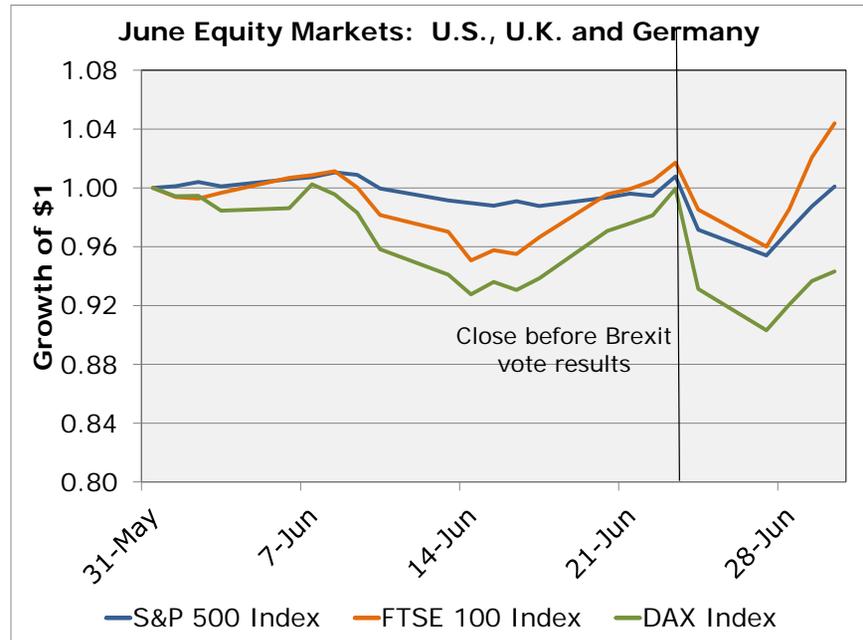
- Following global financial crisis, U.K. rebounded strongly
- More recently, growth has slowed; inflation remains low
- Post-crisis rebound along with high relative rates led to significant currency appreciation
- However, this eventually led to depressed global competitiveness and domestic growth
- Sterling pound is now under pressure



- 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 cited 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

- 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



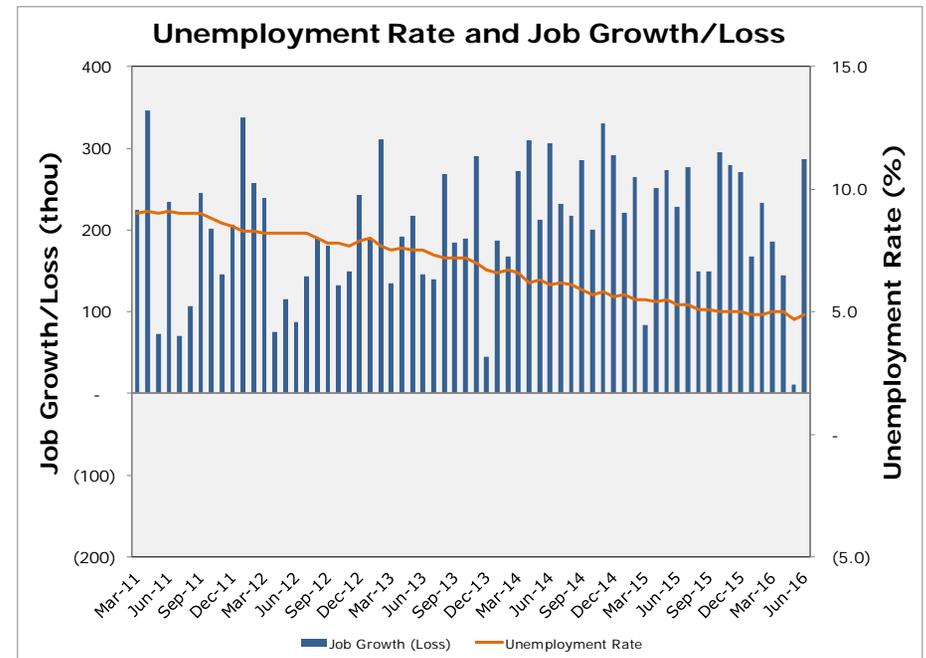
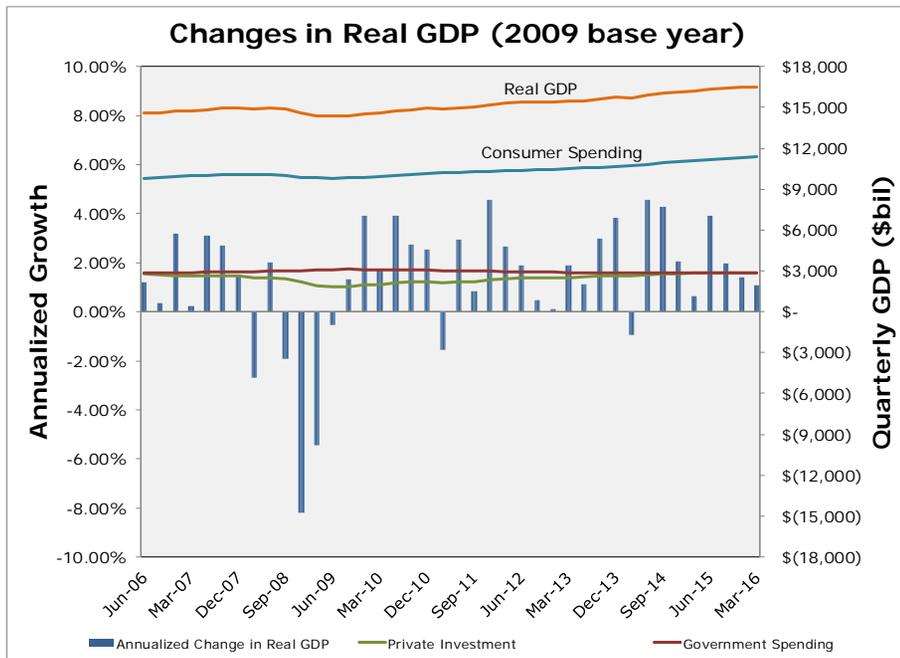
	Total Return (%)			Risk (%)
	Dec. 2015	Q2 2016	Change vs YE	Dec. 2015
<u>Investment Categories:</u>				
U.S. Stocks	6.50	6.25	(0.25)	17.00
Dev ex-U.S. Stocks	6.50	6.25	(0.25)	18.00
Emerging Mkt Stocks	6.50	6.25	(0.25)	26.00
Global Stocks	6.70	6.45	(0.25)	17.10
Private Markets	9.50	8.95	(0.55)	27.50
Cash 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
<u>Returns minus Inflation:</u>				
U.S. Stocks	4.95	4.80	(0.15)	
U.S. Bonds	1.95	1.30	(0.65)	
Cash Equivalents	(0.30)	(0.30)	-	
<u>Stocks minus Bonds:</u>	3.00	3.50	0.50	
<u>Bonds minus Cash:</u>	2.25	1.60	(0.65)	

Economic Review



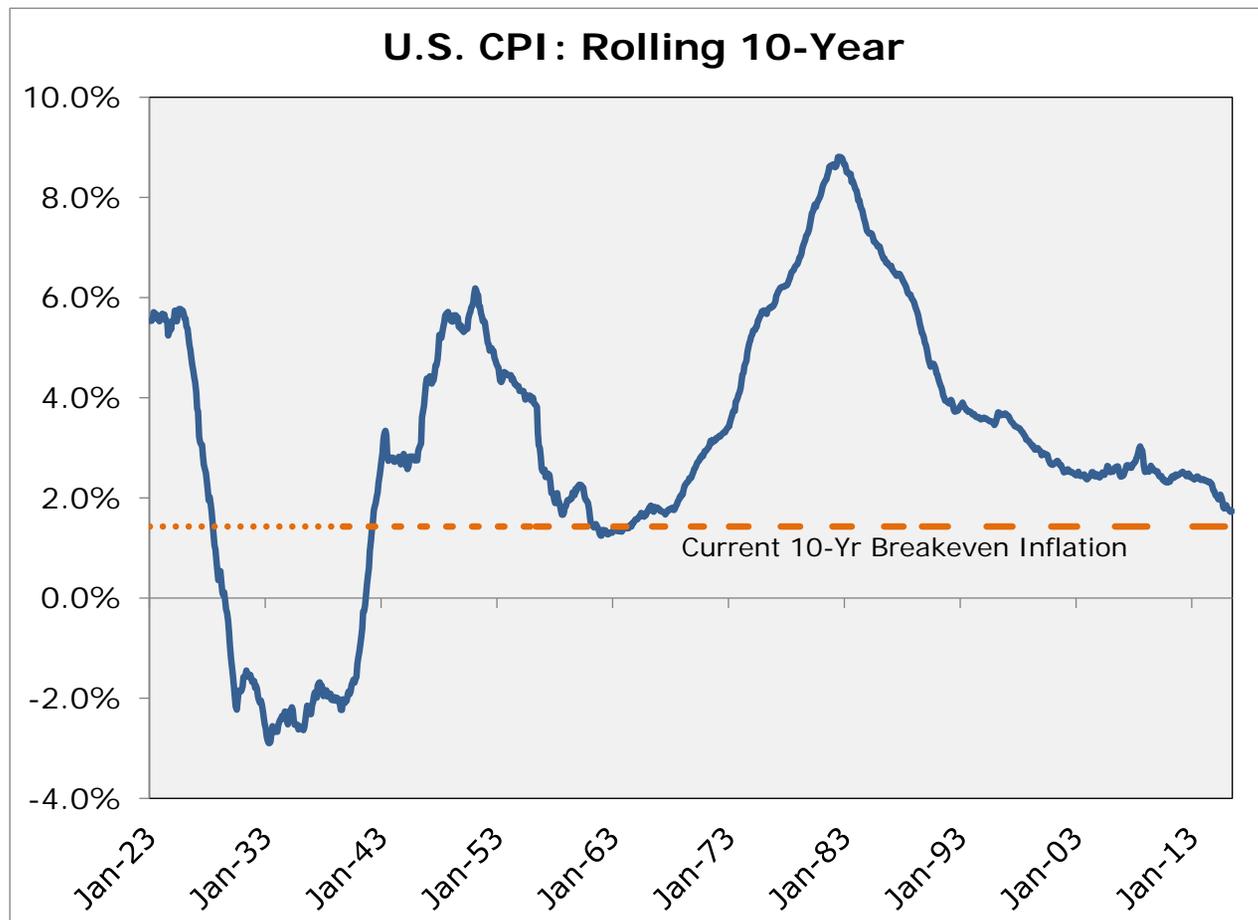
June 30, 2016		Key Economic Indicators			
CPI (all items) Seasonally adjusted	Monthly Change	Cumulative Change			
	Jun-16	0.2	3-Month	0.8	
	May-16	0.2	12-Month	1.1	
	Apr-16	0.4	10-Yr Annual	1.7	
Breakeven Inflation	10-Year	1.5			
Consumer Sentiment Unv. of Michigan Survey	Jun-16	93.5			
	May-16	94.7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

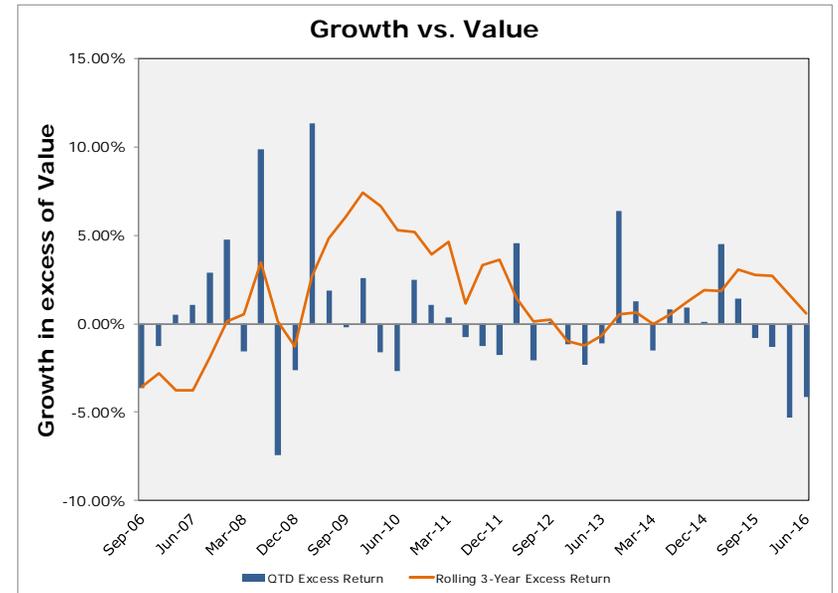
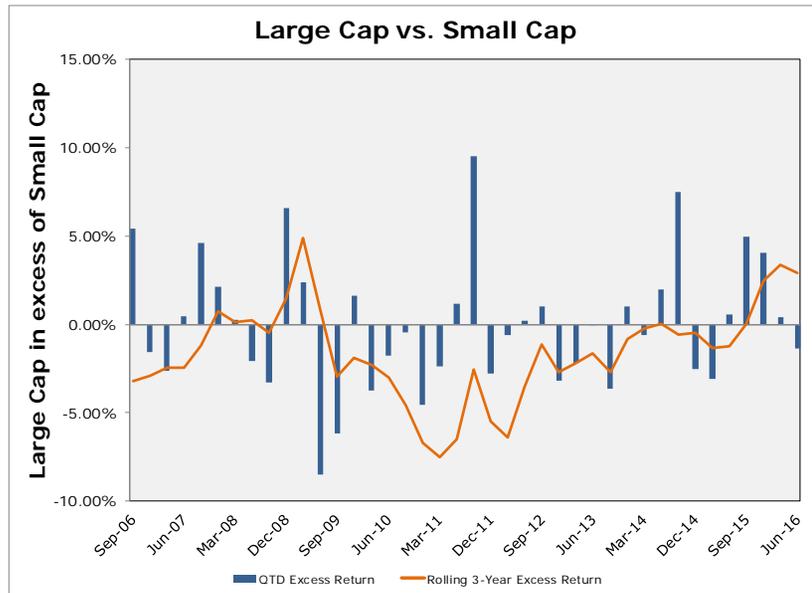
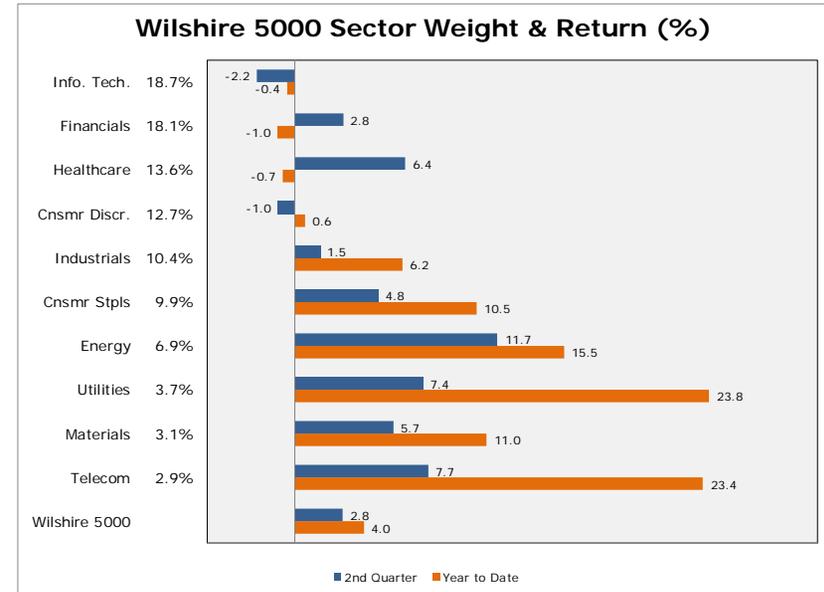
- CPI moved higher during Q2, although the 1-year gain is still modest
- Inflation expectation close to lowest actual reading since Great Depression
- Expectation also lower than most recent 10-year of 1.7%



U.S. Equity Market



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

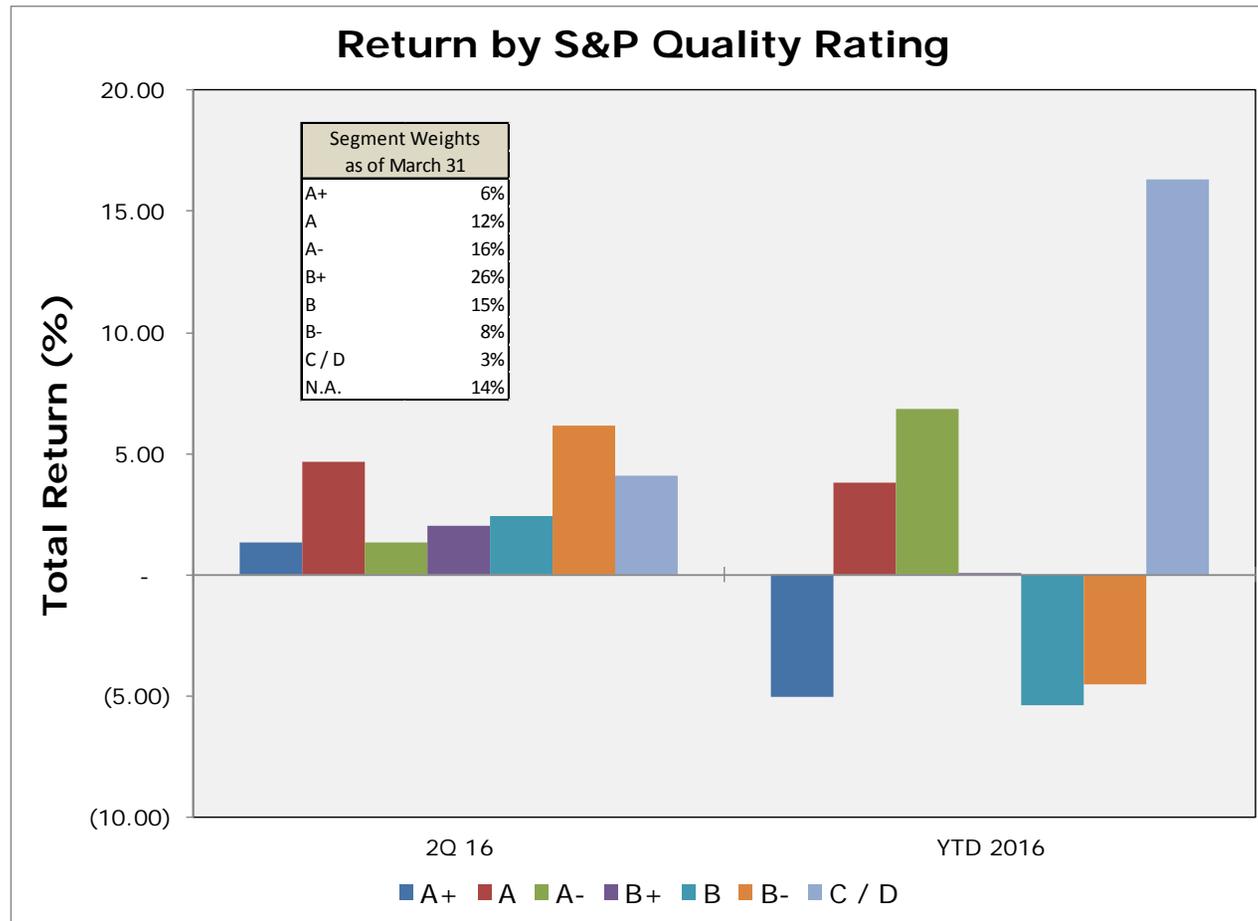


Data sources: Wilshire Compass, Wilshire Atlas

Returns by Quality Segment



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

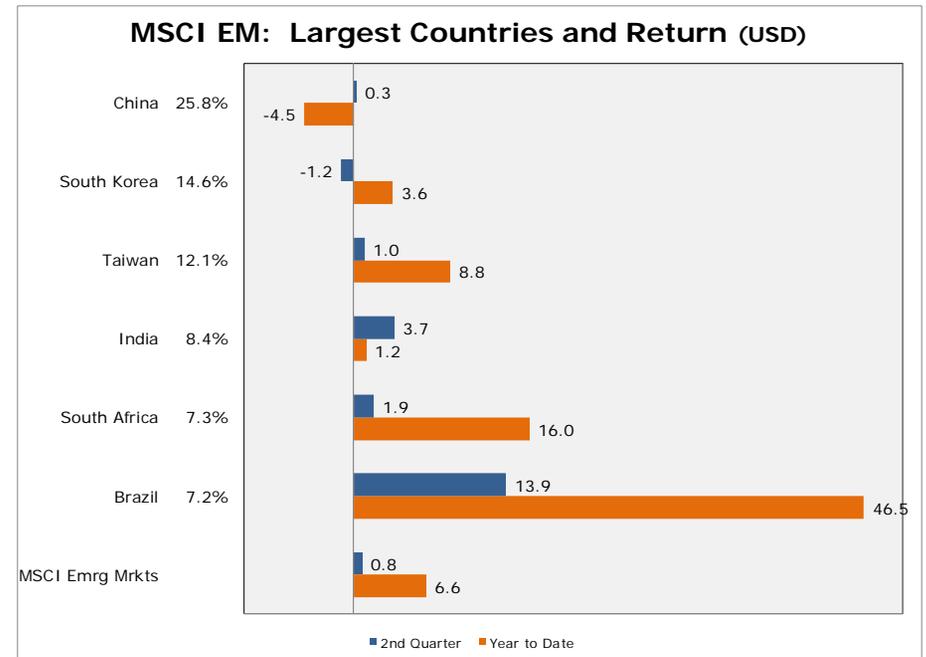
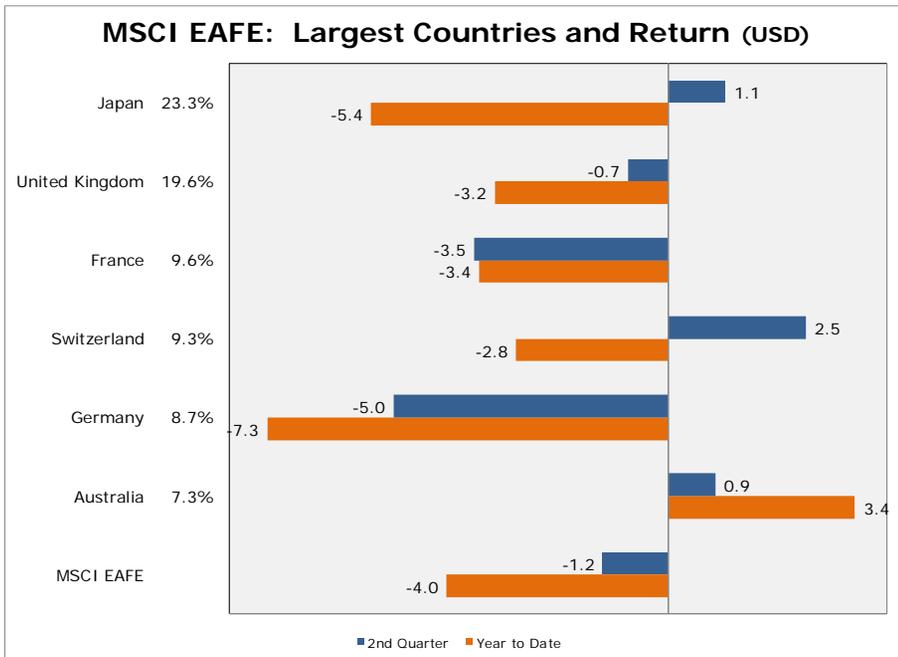


Data sources: Wilshire Atlas

Non-U.S. Equity Market



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

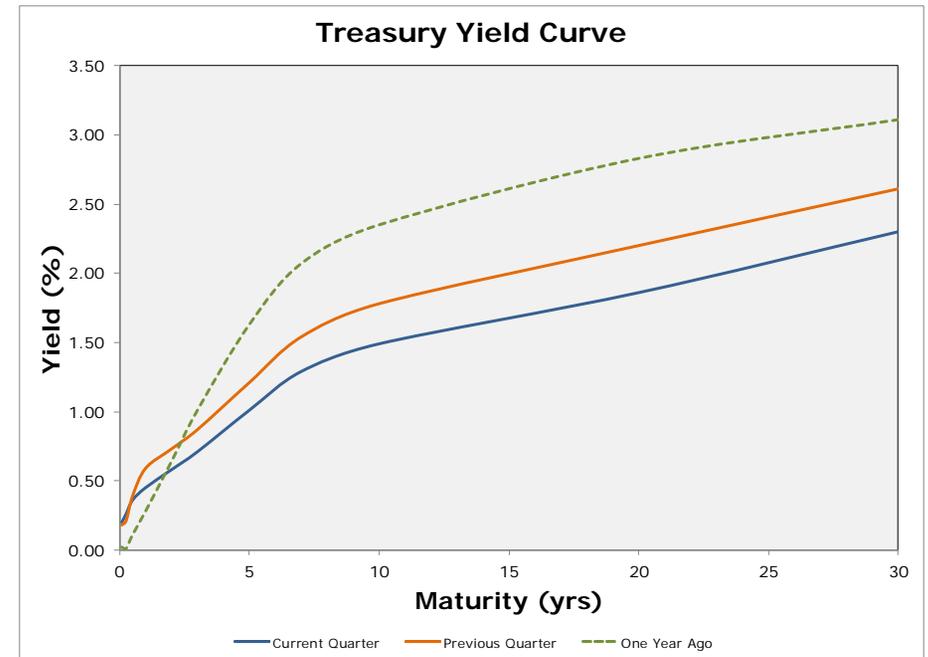
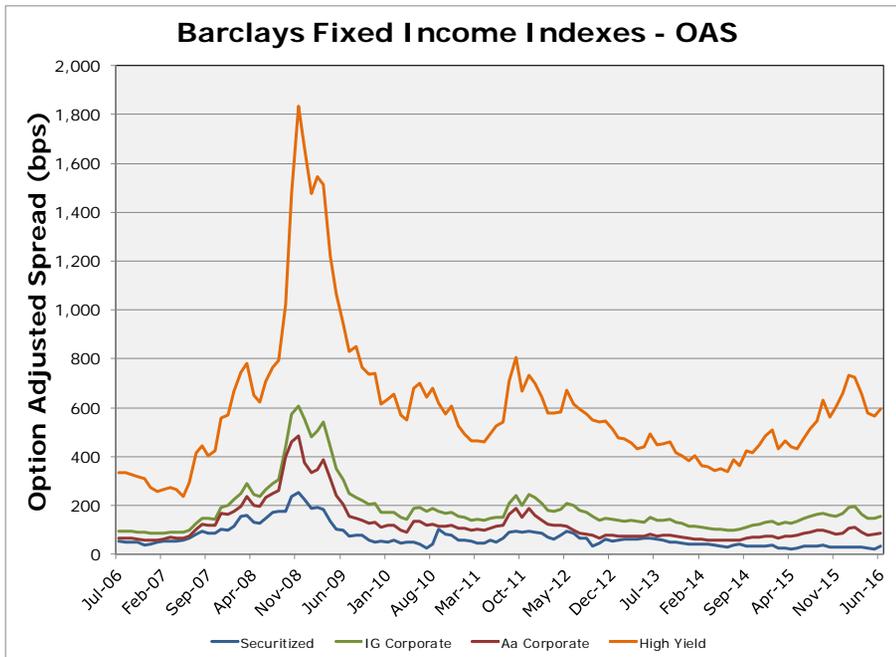


Data sources: Wilshire Compass

U.S. Fixed Income Market

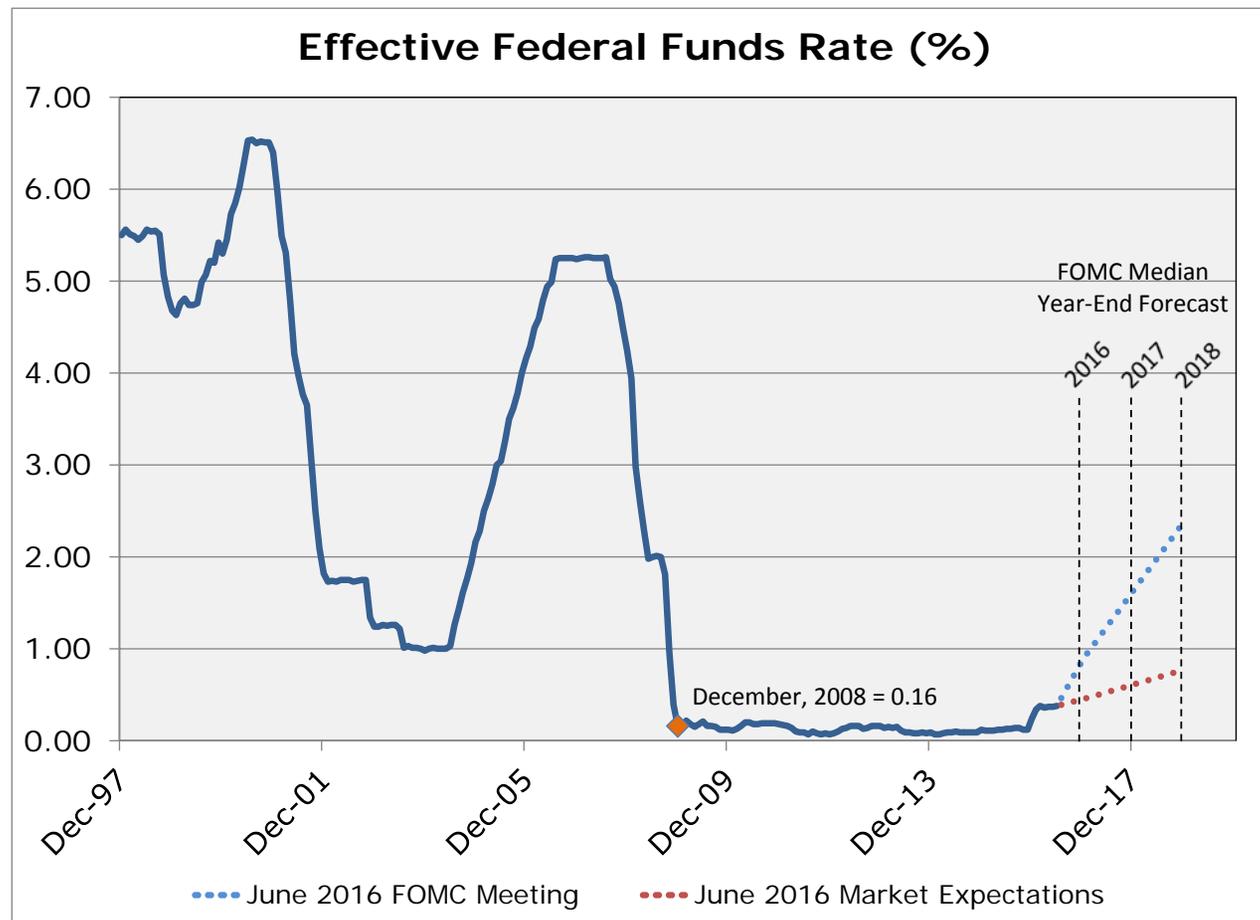


June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays Aggregate Bond Index	2.2	5.3	6.0	4.1	3.8	5.1
Barclays Treasury Index	2.1	5.4	6.2	3.5	3.5	4.9
Barclays Gov't-Related Index	2.5	5.7	5.2	3.9	3.4	4.8
Barclays Securitized Index	1.2	3.3	4.4	3.7	3.1	4.9
Barclays Corporate IG Index	3.6	7.7	7.9	5.4	5.4	6.2
Barclays LT Govt/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 Govt-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

- 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

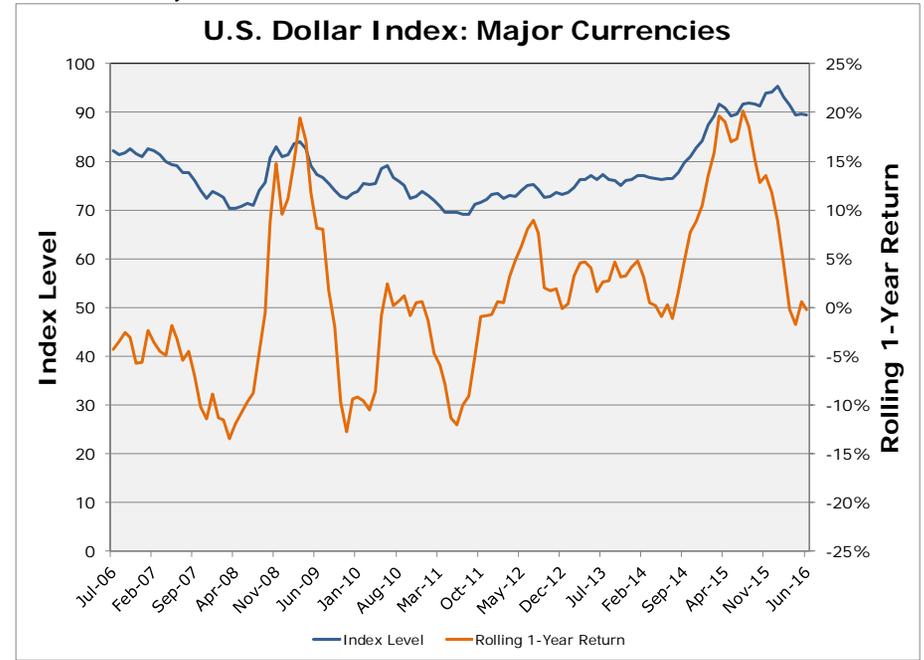
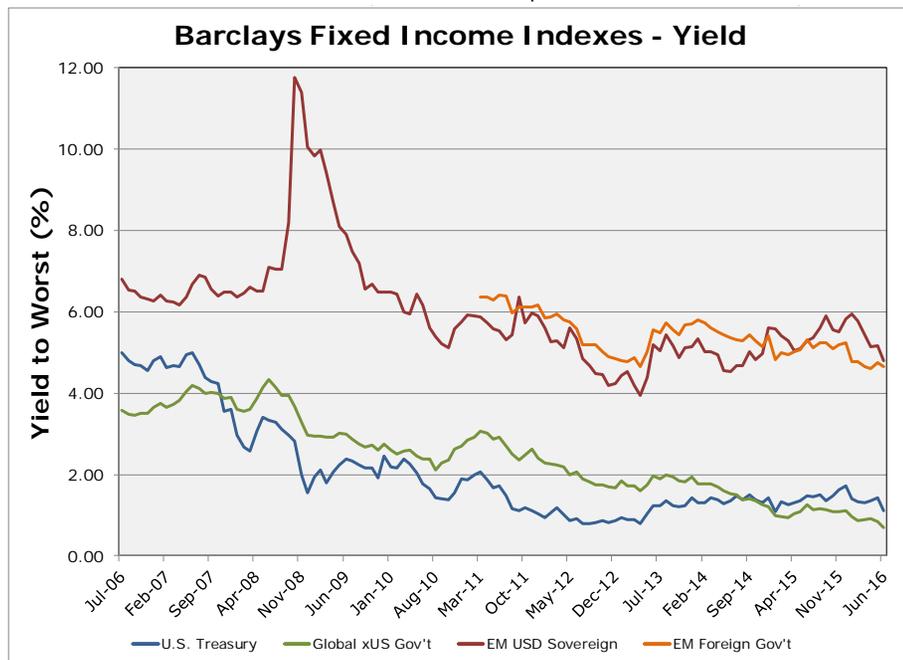


Non-U.S. Fixed Income Market



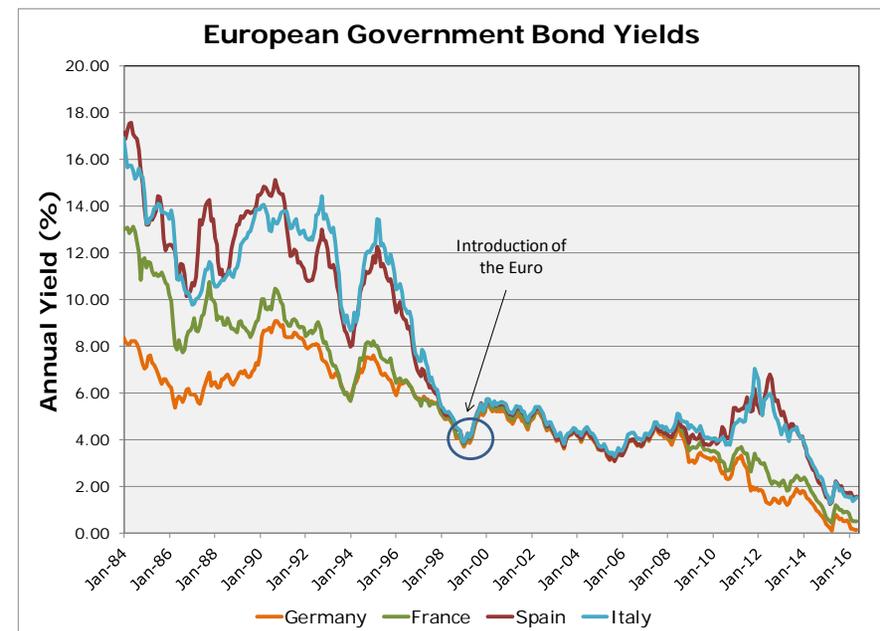
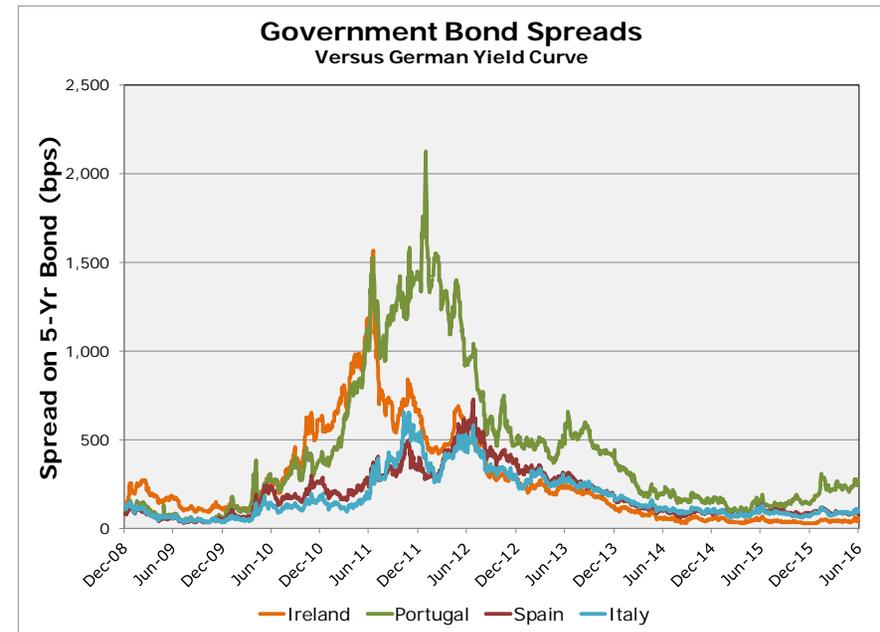
June 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
<i>Developed Markets</i>						
Barclays Global Aggregate xUS	3.4	11.9	11.2	1.9	0.3	3.8
Barclays Global Aggregate xUS *	2.7	6.3	8.5	5.9	5.5	5.0
Barclays Wrld Govt xUS IL Bond	1.6	6.6	1.3	3.0	1.6	4.0
Barclays Wrld Govt xUS IL Bond *	6.3	10.1	9.8	7.6	6.3	5.8
<i>Emerging Mkts (Hard Currency)</i>						
Barclays EM USD Aggregate	4.7	9.4	7.8	6.0	6.0	7.7
<i>Emerging Mkts (Foreign Currency)</i>						
Barclays EM Local Currency Govt	2.2	11.0	2.9	-0.2	0.0	n.a.
Barclays EM Local Currency Govt *	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

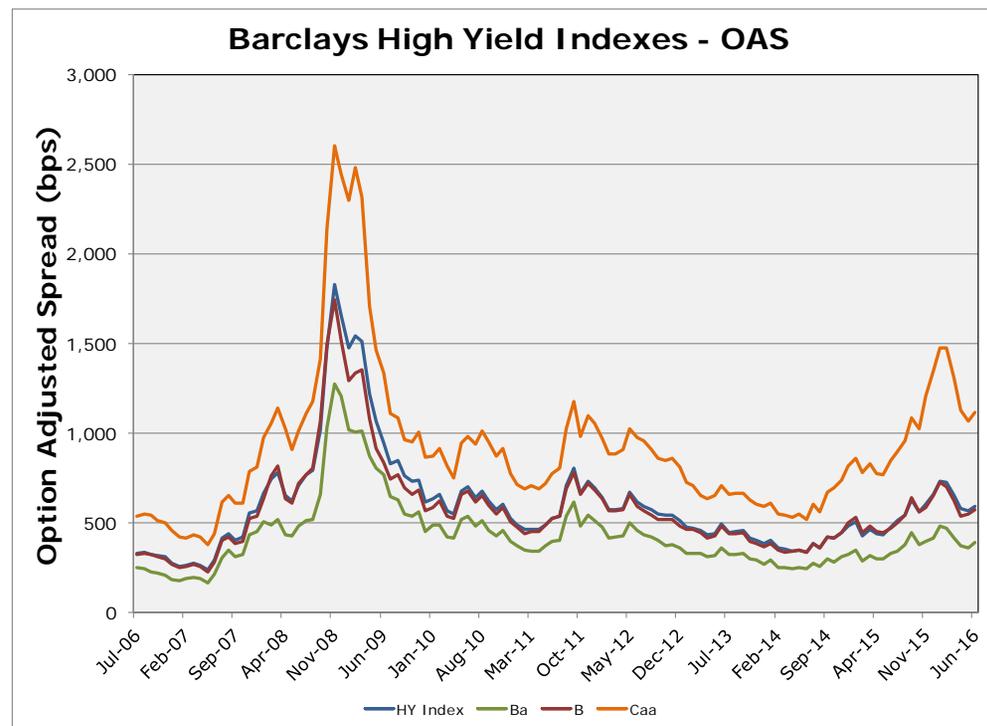
- Spreads on Portugal's government debt are on the rise as the country faces a banking crisis and the prospect of a downgrade
- Yields on government bonds are again falling after a brief uptick; Germany actually sold 10-year debt at a negative yield in July



High Yield Bond Market

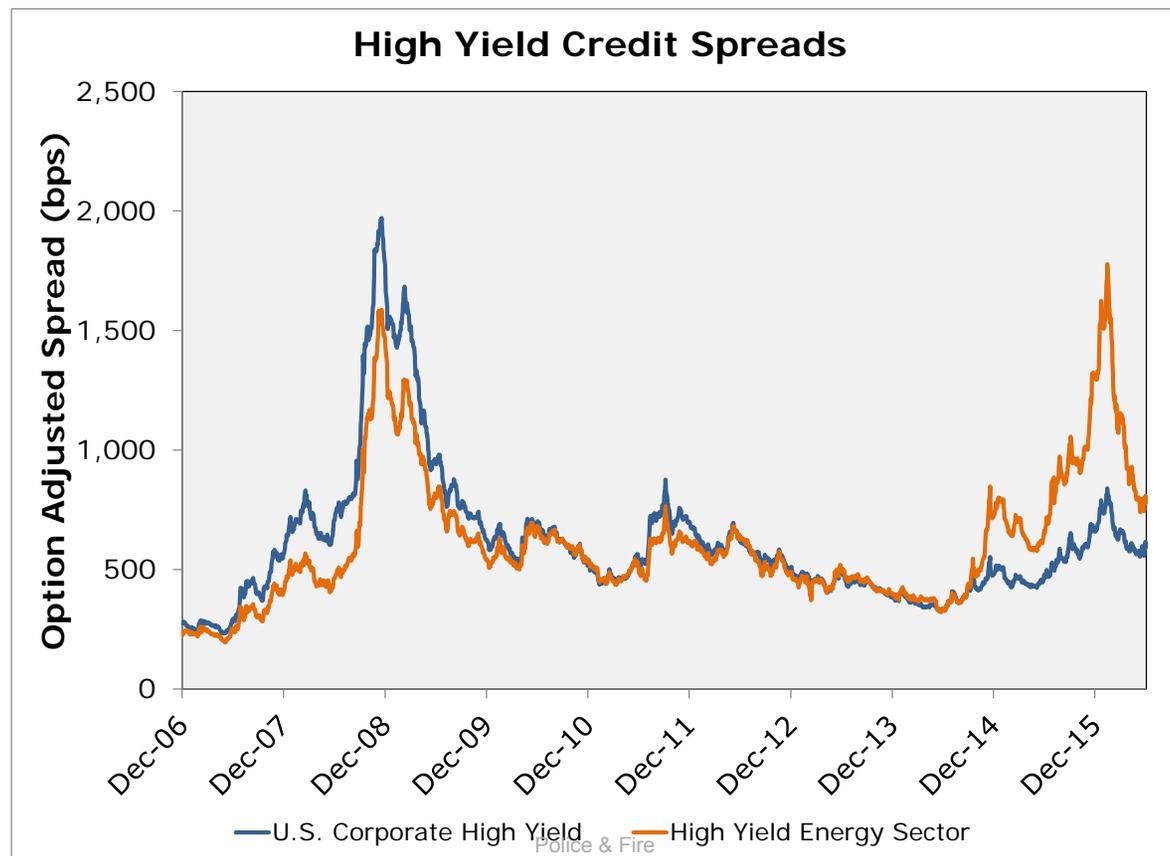


June 30, 2016	Weight	Qtr	Ytd	1 Yr	3 Yr
Barclays High Yield Index	100%	5.5	9.1	1.6	4.2
Quality Distribution					
Ba U.S. High Yield	45.5%	3.6	7.6	4.1	5.6
B U.S. High Yield	38.8%	4.8	7.4	-0.6	3.3
Caa U.S. High Yield	14.5%	11.8	16.0	-0.5	2.9
Ca to D U.S. High Yield	1.1%	33.2	39.4	-22.5	-26.9
Non-Rated U.S.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

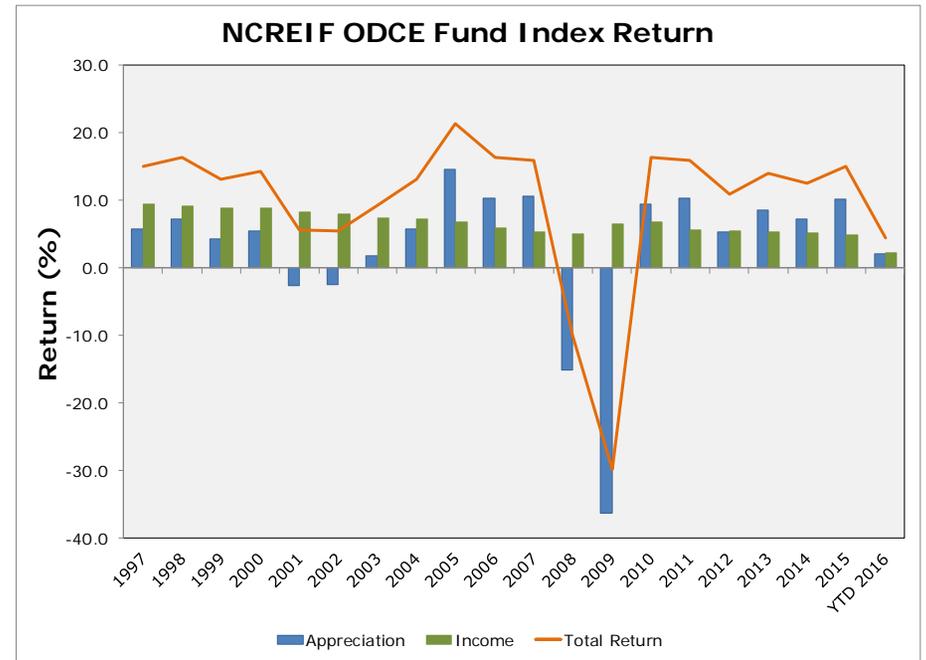
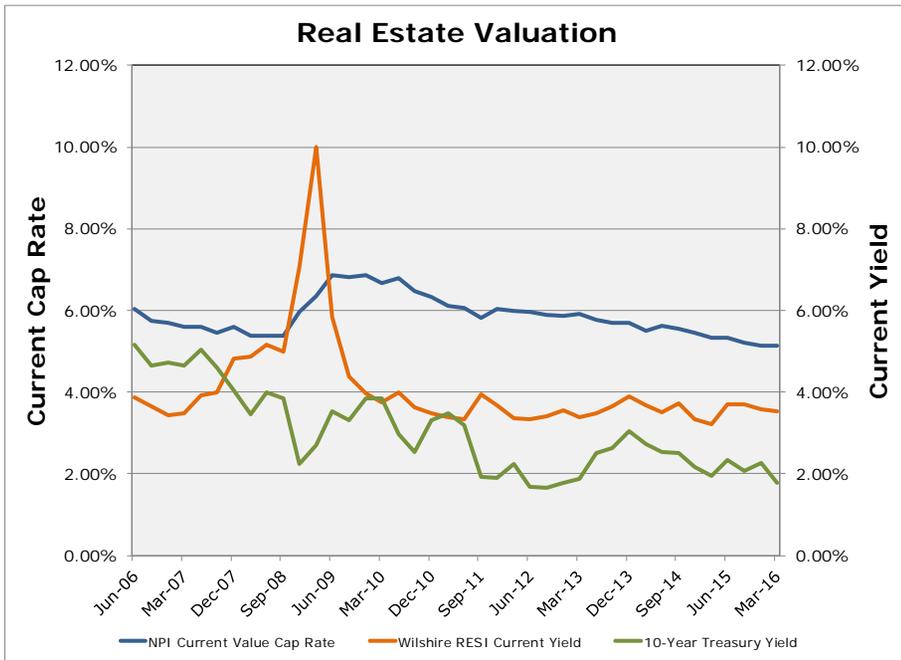


Data sources: Barclays Capital

- 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



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

Asset Class Performance



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%

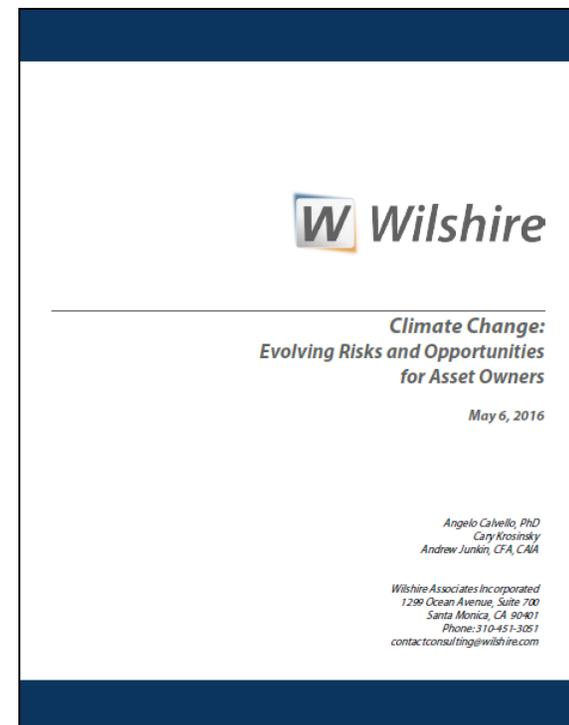
Annualized
5-Year

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.

- Regardless of one's own belief on the subject, climate change deserves consideration by investors, in keeping with their mandates, investment horizons, and ultimate goals...Investors may want to consider climate change as part of their investment calculus of risk, return, and governance.
- *ClimateLens* is a four-part program intended to provide our clients with the context-relevant knowledge needed to understand and, if appropriate, make informed decisions about the risks and opportunities associated with climate change.
- Education
- Assessment
- Planning
- Implementation

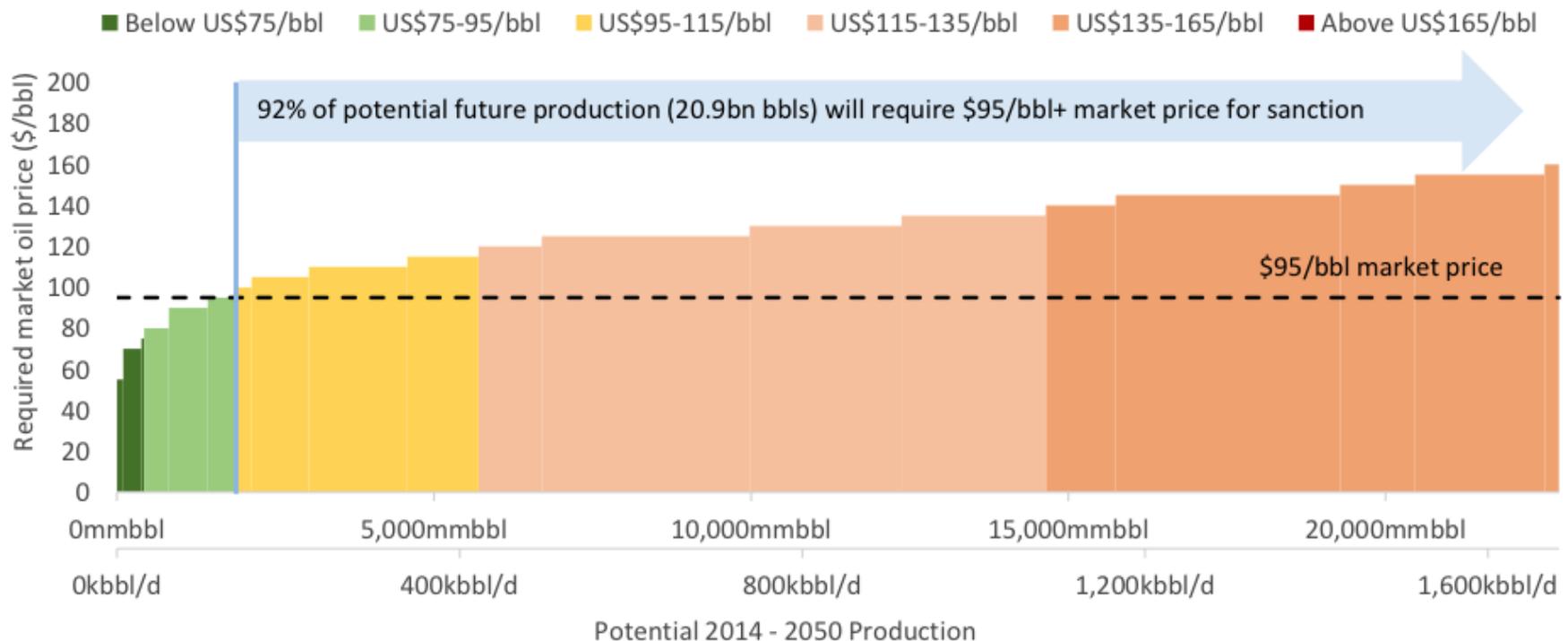


- **Education**
- Provides a structured program explaining the fundamental factors related to the intersection of climate change and investing, including a review of climate science, possible resulting economic consequences and the risk-return considerations associated with policy and regulatory responses.
- Topics to be covered include:
 - A baseline understanding of climate change and environmental investing
 - The relationship between science, economics, and policy and associated systemic natural, human, and financial risks under varying scenarios
 - The measurement and management of climate risks
 - A taxonomy of environmental investment
 - Climate change investing “best practices”
 - The potential benefits and downsides to divestment

Potential for Stranded Assets

- 50-80% of reserves may well become Stranded Assets
- Understanding oil price sensitivity across different companies is important for investors as there is over \$2T in Capex which may be at risk of being unprofitable
- Capital Expenditure is at risk

2014-2050 potential future oil production by required market price (discovery stage only)



Source: The Carbon Tracker Initiative (CTI and ETA 2014)

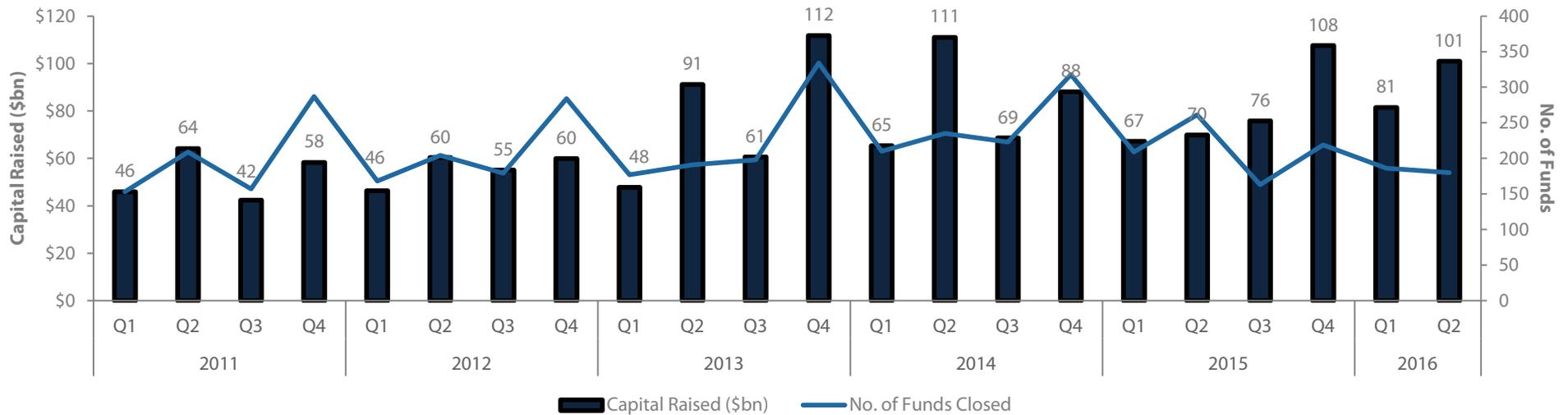
- Specific Investor Strategies
 - **Stewardship of Capital:** Engaging w/Corporates & Outsourced fund managers, shifting fiduciary duty definitions
 - **Evolving Investment Strategy:** Responding to Client Awareness & Concerns
 - Building the **Capacity to Execute:** through Education & Research - Investors also starting to **Engage with Policymakers**
- State of the **marketplace**
 - \$21 Trillion of Assets using ESG
 - Over \$60 Trillion of PRI signatories
 - \$500B of Primary ESG
 - \$100B new in past year
 - \$1T net new Fixed Income/Infrastructure per year expected going forward
- **Divestment:** Negative screening usually a bad idea for returns

Appendix: Private Markets Update

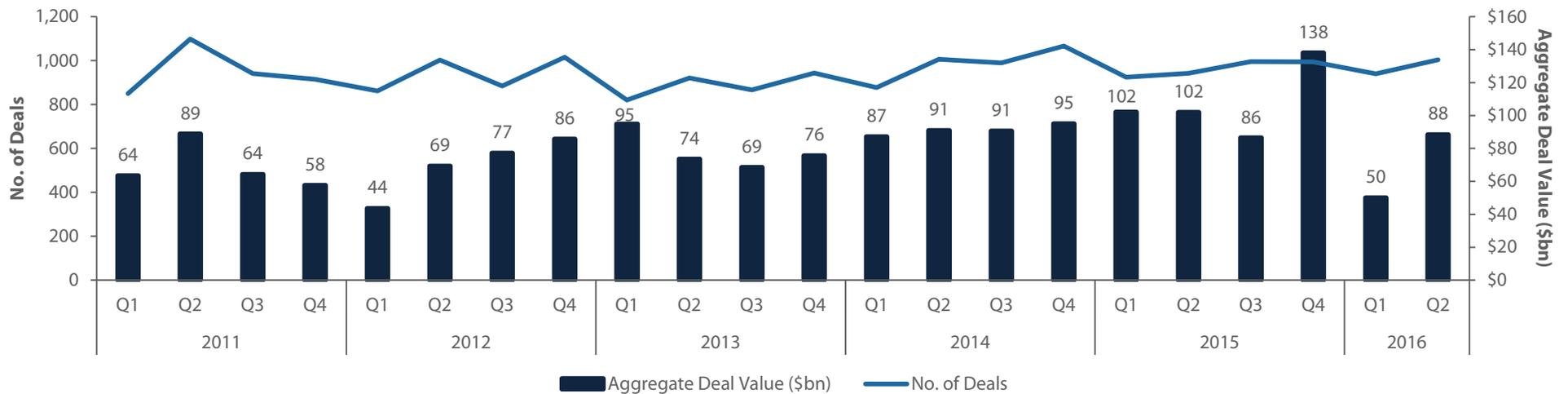
Private Equity – Fundraising & Investment Activity



Global Private Equity Fundraising (Q1 2011 – Q2 2016)



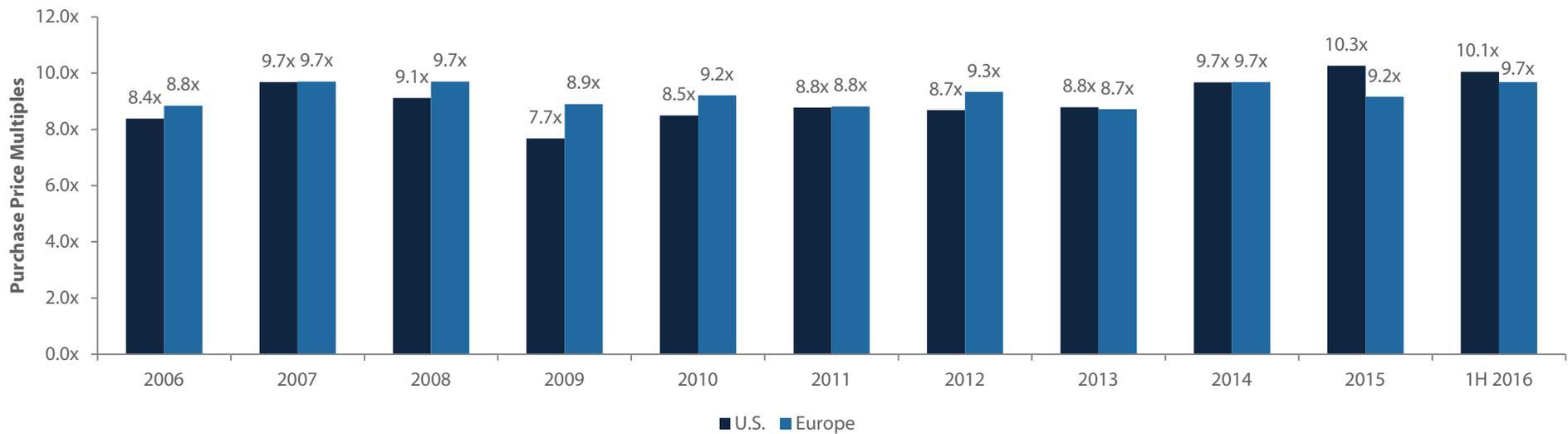
Global Private Equity-Backed Buyout Activity (Q1 2011 – Q2 2016)



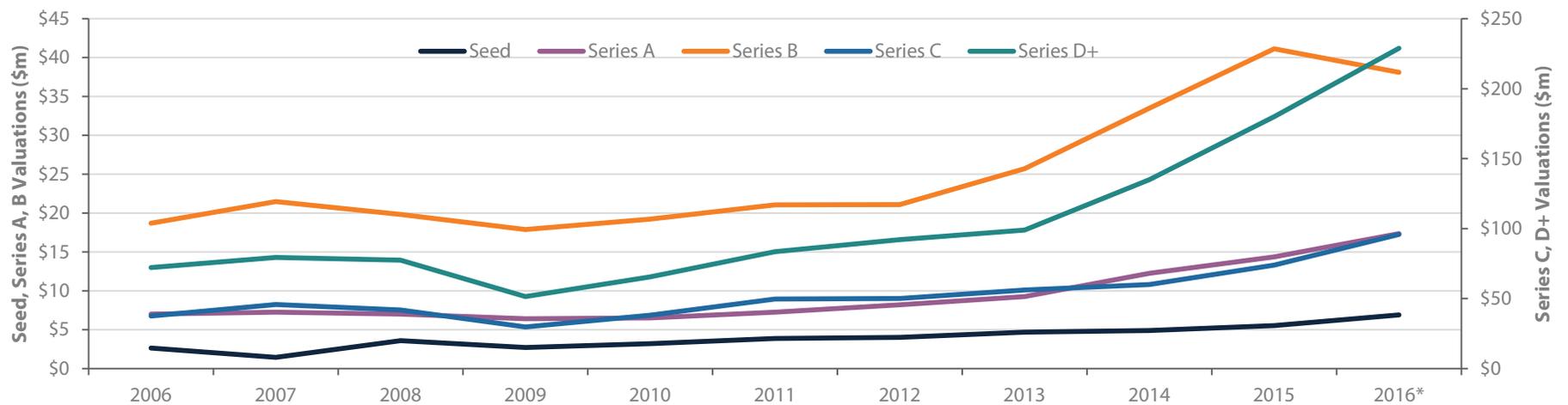
Private Equity – Pricing & Valuations



Global LBO Multiples (2006 – 1H 2016)



U.S. Venture Capital Median Pre-Money Valuations (2006 – Feb. 2016)

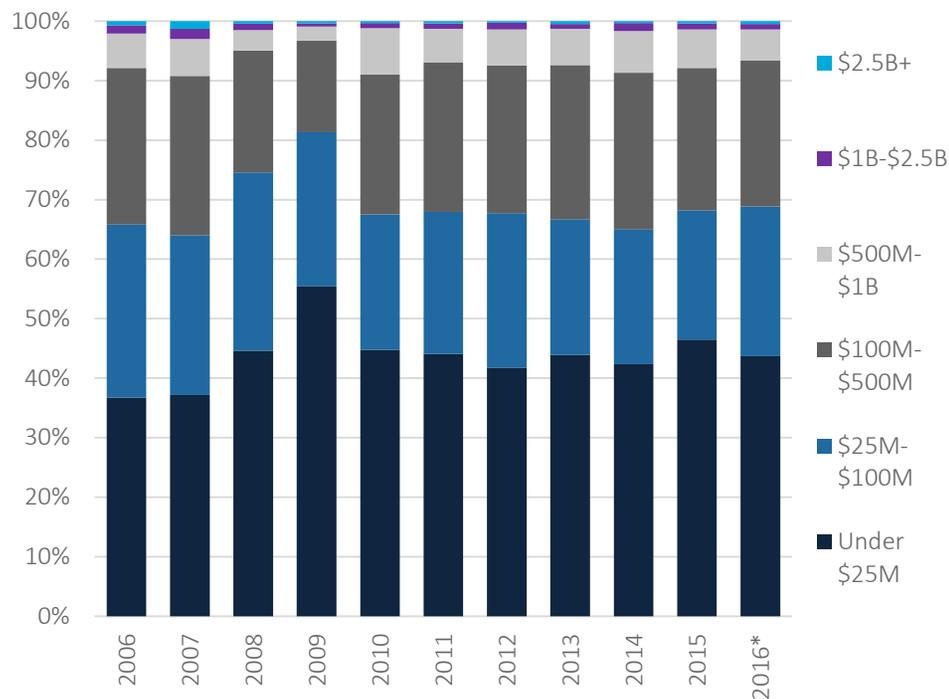


Source: S&P LCD, through 6/30/2016; Pitchbook, 2016 through 2/29/16.

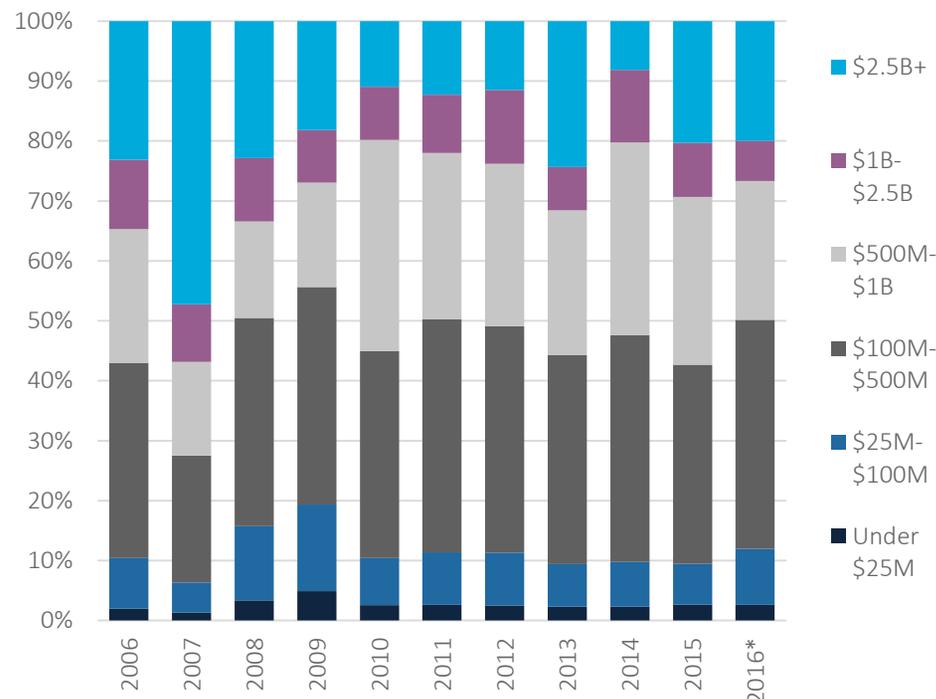
Private Equity – U.S. Investment Activity by Deal Size



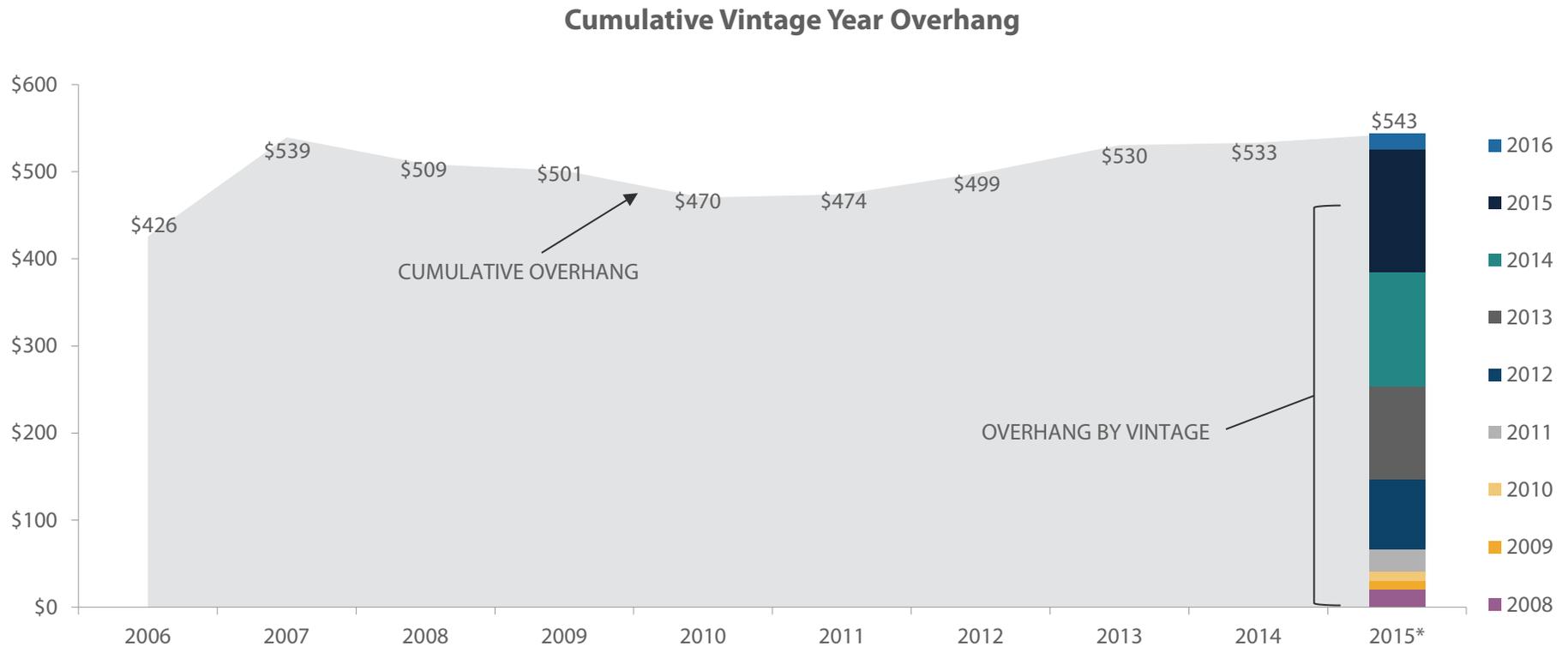
Percentage of Deal Volume (count) by Deal Size



Percentage of Deal Volume (dollars) by Deal Size

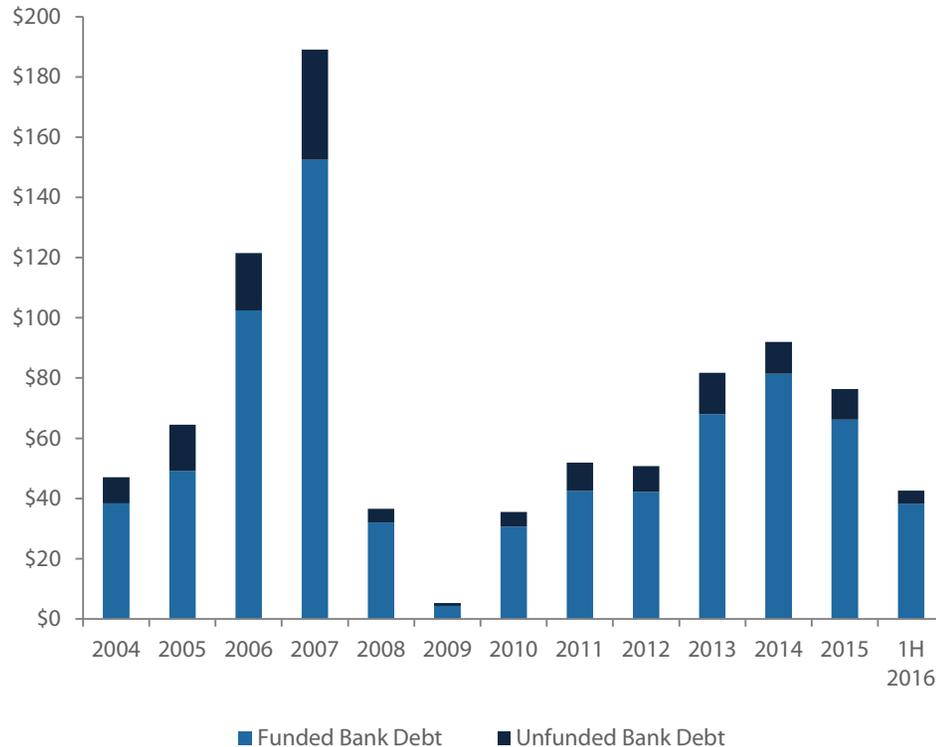


- Smaller deals continue to dominant deal activity by count
- Mega transaction (\$2.5B+) volume remains significant in the first half of 2016

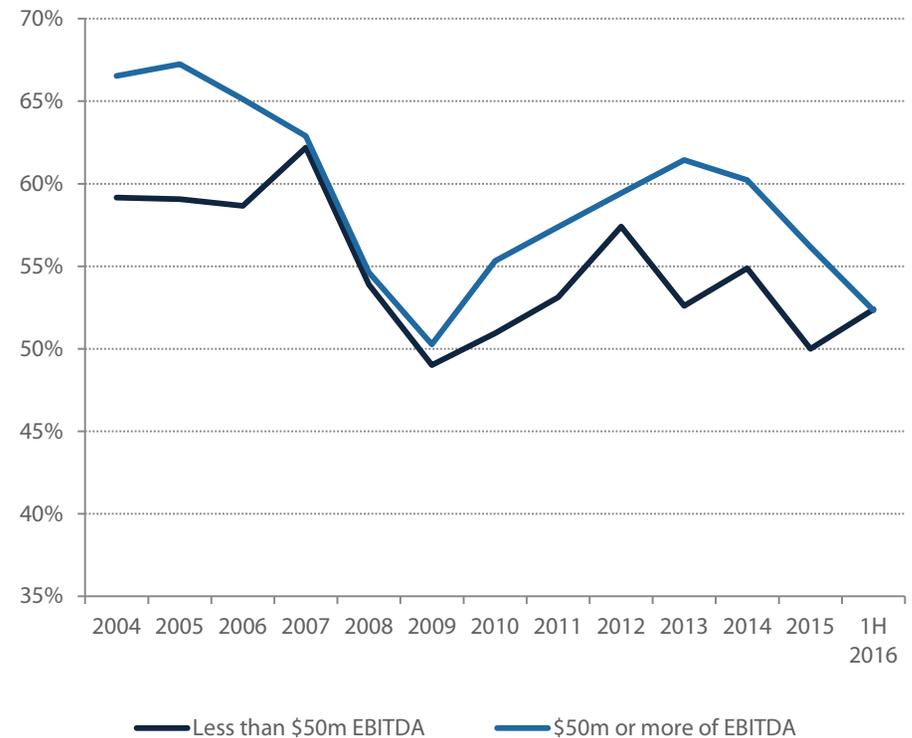


- Total private equity overhang significantly grew to an estimated \$539 billion during the run-up to the financial crisis
- While the overhang slightly decreased across 2007 to 2010, the overhang has increased back to 2007 peak levels

**Total U.S. Leveraged Buyout Loan Volume (\$bn)
(2004 – 1H 2016)**



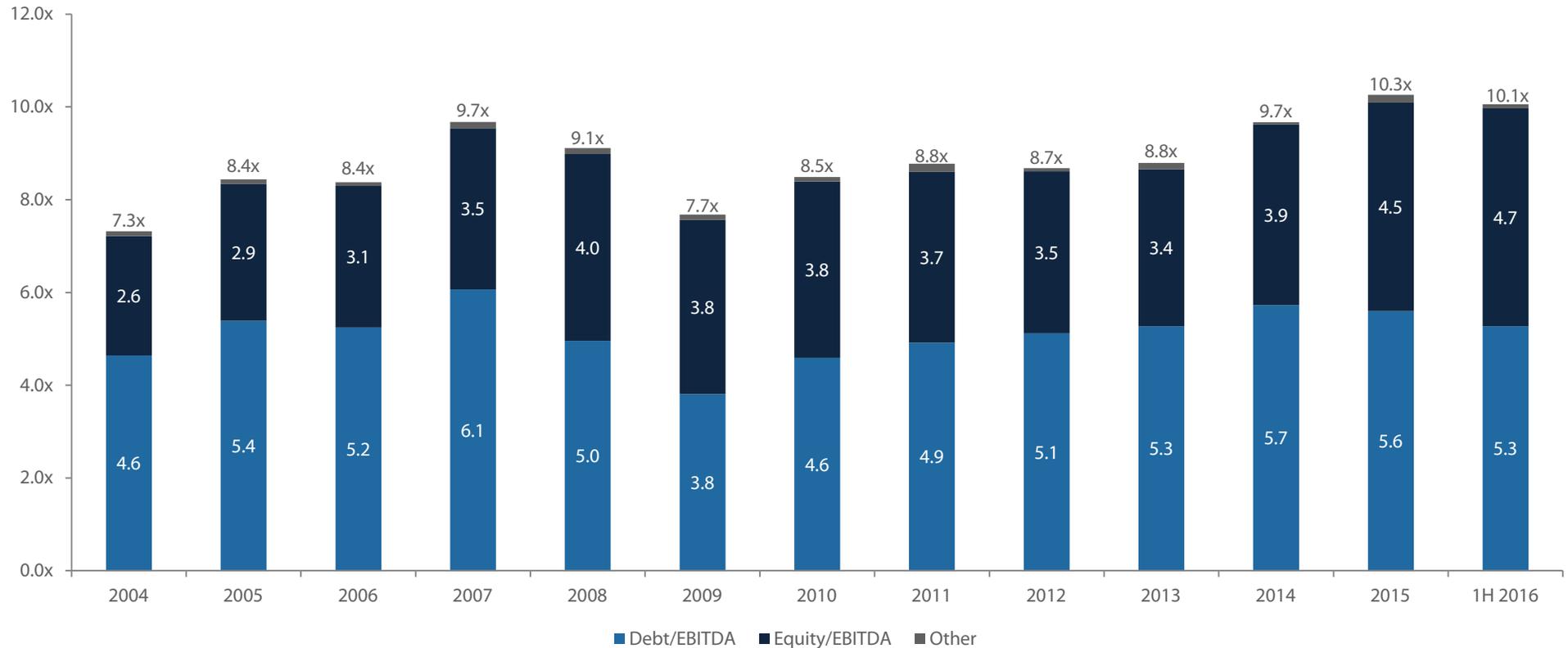
**Percentage of Debt Used in Buyouts
(2004 – 1H 2016)**



- The amount of capital available for leverage has decreased considerably since its peak volume in 2007; loan volume seems consistent in last few years
- Historically, middle-market transactions apply less leverage than large-cap deals

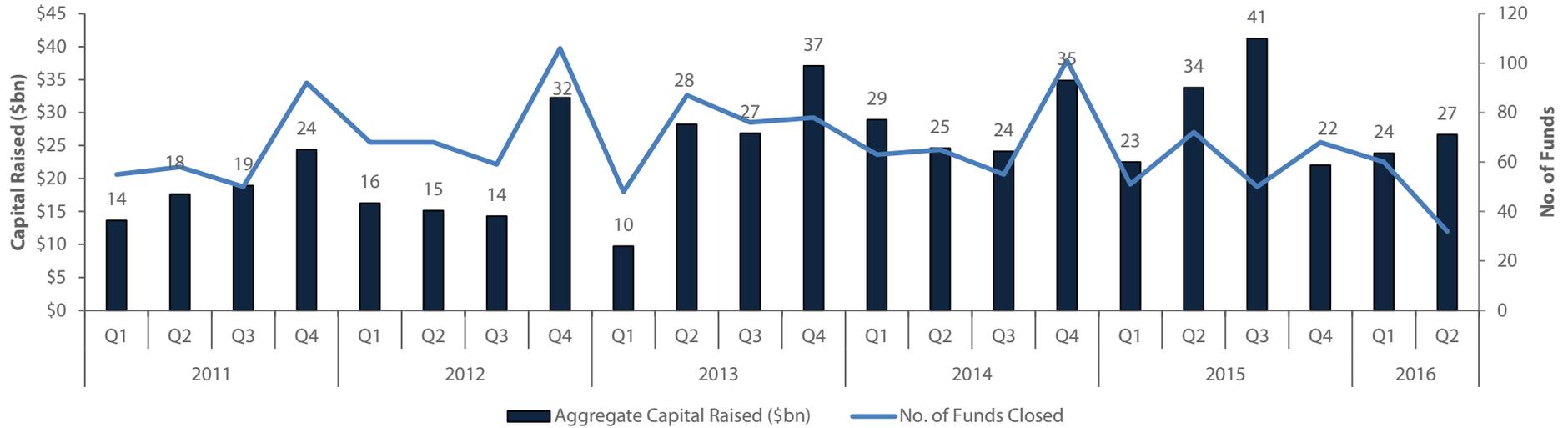
Private Equity – U.S. LBO Purchase Price Multiples

Purchase Price Multiples of U.S. LBO Transactions (2004 – 1H 2016)

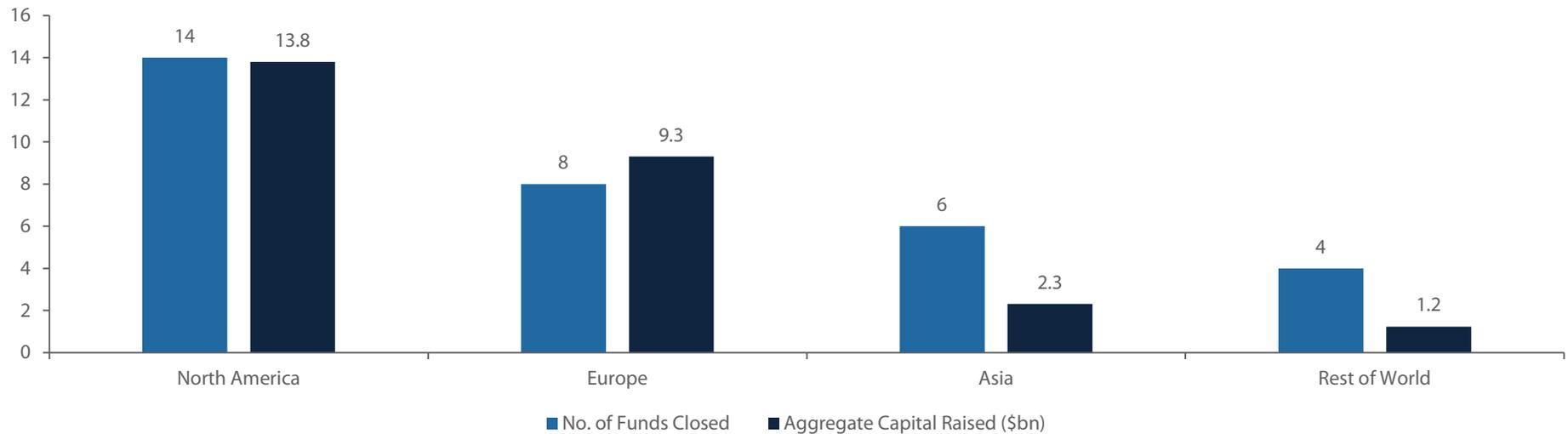


- As debt has become more readily available, purchase price multiples have increased from the low point in 2009
- Pricing in 1H 2016 has slightly decreased from the recent high in 2015

Global Quarterly Closed-End Private Real Estate Fundraising (Q1 2011 – Q2 2016)



Closed-End Private Real Estate Fundraising by Primary Geographic Focus (Q2 2016)



Appendix

Cumulative Skill Graph

- Graphical representation of the statistical significance of excess returns over a specified benchmark for the cumulative time period being analyzed.
- Positive cumulative excess performance is shown when the dark blue line is above the “0.00” line measured on the left Y axis.
- The light blue lines that form a channel, or the shape of a trumpet horn, represent the boundaries of the statistical significance test.
- The width of the channel is calculated based on the amount of “Excess Risk” that the manager takes over the benchmark.

