



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

September 30, 2016

Investment Performance

Tab 1

Capital Market Review

Tab 2

Appendix

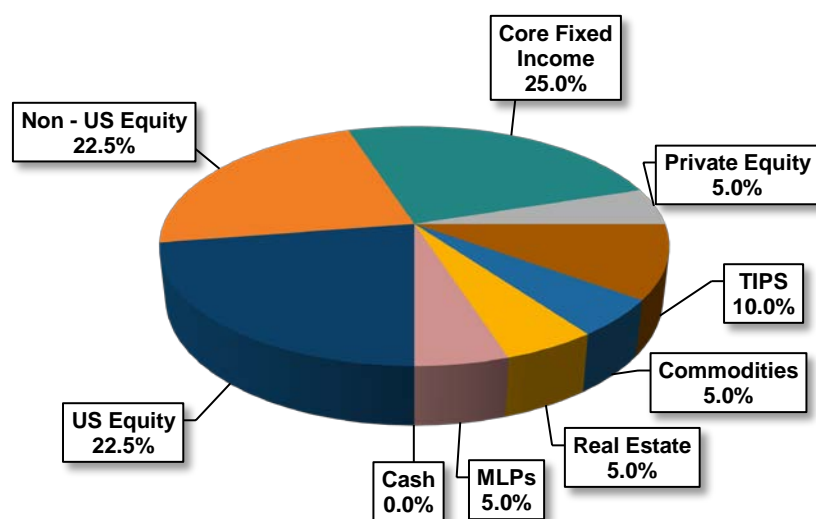
Total Fund

Policy Allocation vs Actual Allocation

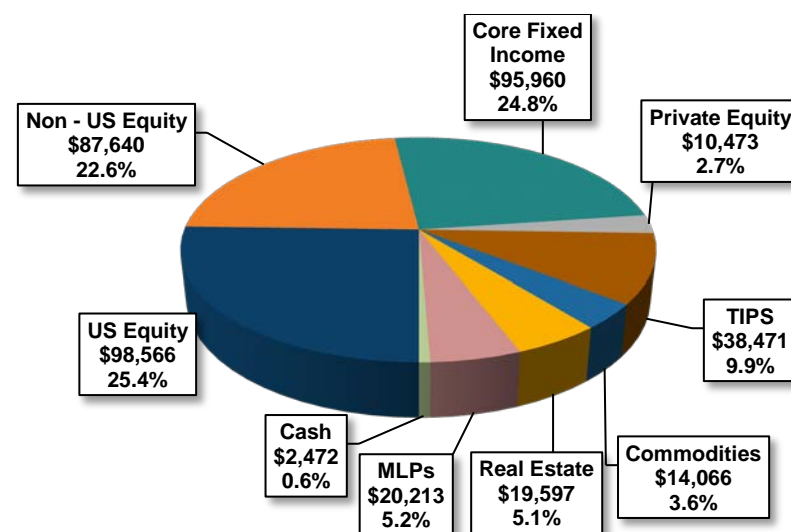
Total Fund Composite

As of September 30, 2016

Policy Allocation¹



Actual Allocation (in \$'000s)



Total Assets: \$387,457,044

¹ Effective date: April 1, 2015

Policy Allocation vs Actual Allocation



Total Fund Composite

As of September 30, 2016

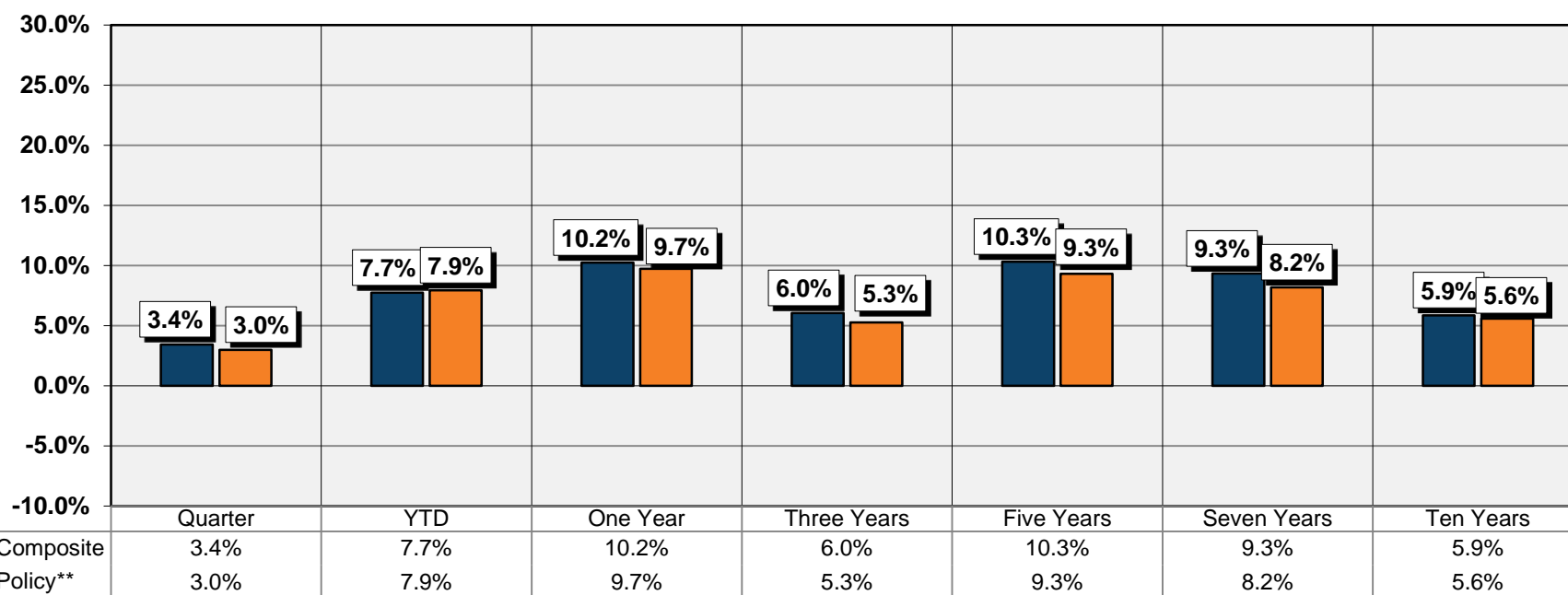
	Market Value (in \$'000)	Asset Allocation	
		Actual	Policy
US Equity	\$98,566	25.44%	22.50%
Non - US Equity	\$87,640	22.62%	22.50%
Core Fixed Income	\$95,960	24.77%	25.00%
Private Equity	\$10,473	2.70%	5.00%
TIPS	\$38,471	9.93%	10.00%
Commodities	\$14,066	3.63%	5.00%
Real Estate	\$19,597	5.06%	5.00%
MLPs	\$20,213	5.22%	5.00%
Cash	\$2,472	0.64%	0.00%
Total Fund Composite	\$387,457	100.00%	100.00%

Investment Performance



Total Fund Composite*

Periods Ended September 30, 2016



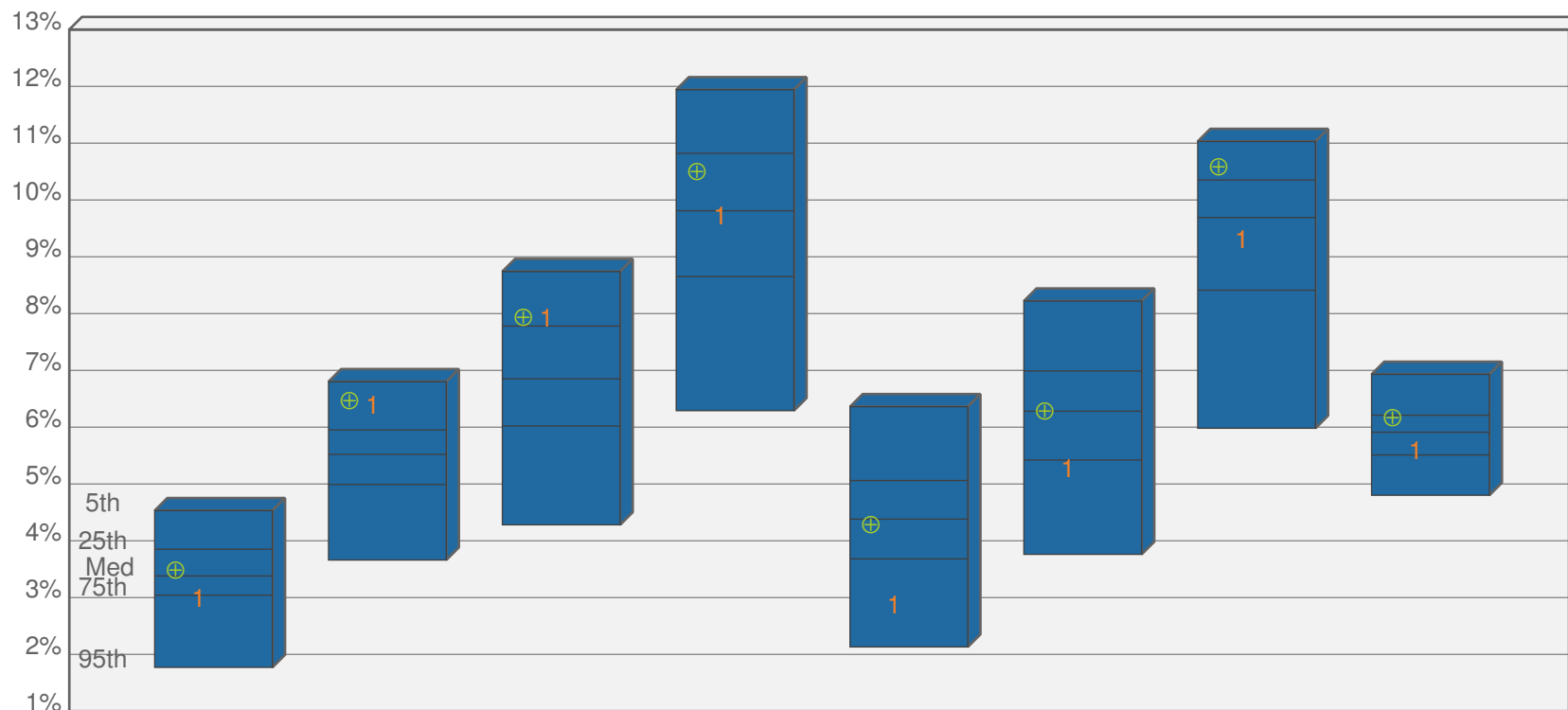
*Returns are net of fees

** 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 September 30, 2016



⊕ Total Fund
1 Policy Index

	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
5th %tile	4.53	6.80	8.74	11.94	6.36	8.22	11.03	6.93
25th %tile	3.85	5.95	7.78	10.82	5.06	6.99	10.35	6.21
Median	3.38	5.52	6.85	9.81	4.38	6.28	9.69	5.91
75th %tile	3.04	4.99	6.02	8.65	3.68	5.42	8.41	5.51
95th %tile	1.77	3.66	4.28	6.29	2.13	3.76	5.98	4.80
Number of Funds	154	154	148	148	143	141	139	105

Performance Comparison



Trailing Returns

Periods Ended September 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	4.84	8.68	15.66	10.68	16.94	13.80	7.83	9/30/87	9.25
Wilshire 5000	4.29	8.44	15.35	10.65	16.31	13.17	7.44	9/30/87	9.24
Value Added	0.55	0.23	0.31	0.03	0.63	0.63	0.39	9/30/87	0.01
Core Fixed Composite									
Net of Fee Return	1.27	7.34	6.93	5.10	4.71	6.26	5.52	9/30/87	7.14
Barclays Aggregate	0.46	5.80	5.19	4.03	3.08	4.10	4.79	9/30/87	6.78
Value Added	0.81	1.54	1.74	1.07	1.63	2.16	0.73	9/30/87	0.36
Non-U.S. Equity Composite									
Net of Fee Return	6.74	4.43	10.38	2.44	8.26	6.54	2.50	12/31/89	8.01
Policy Benchmark	6.91	5.82	9.26	0.18	6.04	3.66	2.16	12/31/89	4.18
Value Added	-0.17	-1.39	1.12	2.26	2.22	2.88	0.34	12/31/89	3.82
Real Estate Composite									
Net of Fee Return	0.91	7.26	11.49	6.63	10.95	8.66		6/30/09	11.76
FTSE EPRA/NAREIT Dev (N)	1.25	10.23	14.85	7.71	12.29	9.96		6/30/09	13.01
Value Added	-0.34	-2.97	-3.36	-1.08	-1.34	-1.30		6/30/09	-1.25
Commodities Composite									
Net of Fee Return	-0.74	13.11	-0.30	-11.51				3/31/13	-12.00
Bloomberg Commodity Index	-3.86	8.87	-2.58	-12.34				3/31/13	-12.65
Value Added	3.12	4.24	2.28	0.83				3/31/13	0.64
MLP Composite									
Net of Fee Return	4.20	18.18	12.22					3/31/15	-11.80
S&P MLP Index	2.92	18.03	10.12					3/31/15	-14.45
Value Added	1.28	0.15	2.10					3/31/15	2.65

Performance Comparison



Trailing Returns

Periods Ended September 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	0.98	7.32	6.77					6/30/15	4.30
Barclays U.S. TIPS	0.96	7.27	6.58					6/30/15	4.27
Value Added	0.01	0.06	0.19					6/30/15	0.04
Total Real Assets Composite									
Net of Fee Return	1.39	10.65	8.10					3/31/15	-2.10
Policy Index	0.45	10.70	7.53					3/31/15	-2.36
Value Added	0.94	-0.04	0.57					3/31/15	0.26
Alternative Investments Composite									
Net of Fee Return	2.82	5.46	9.46	11.06	7.21			6/30/10	6.77
Wilshire 5000 +2.5%	4.91	10.31	17.85	13.15	18.81			6/30/10	17.44
Value Added	-2.09	-4.85	-8.39	-2.09	-11.60			6/30/10	-10.67
Total Fund									
Net of Fee Return	3.43	7.73	10.23	6.04	10.31	9.32	5.86	9/30/87	8.25
Policy Index	2.99	7.93	9.72	5.27	9.31	8.18	5.59	9/30/87	8.28
Value Added	0.44	-0.20	0.51	0.77	1.00	1.14	0.27	9/30/87	-0.03

Custom Benchmark Specification



Total Fund

September 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

September 30, 2016

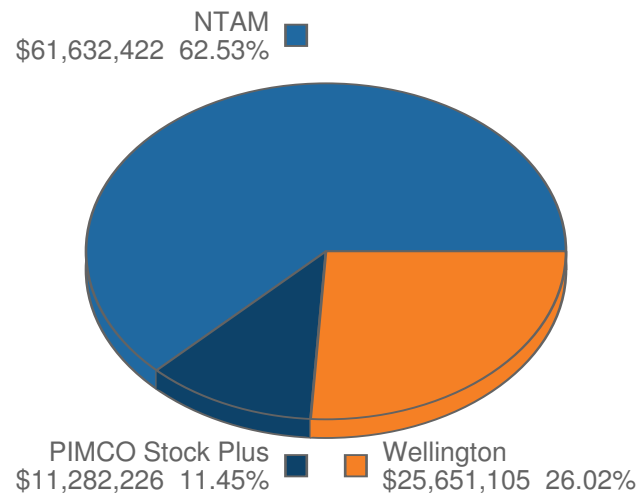
	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)			5.00	Bloomberg Commodity Index
	6/15	9/16	22.50	Wilshire 5000
			5.00	Wilshire 5000 + 2.5%
			22.50	MSCI ACWI X US (N)
			25.00	Barclays Aggregate
			5.00	FTSE EPRA/NAREIT Dev (N)
			5.00	Bloomberg Commodity Index
			10.00	Barclays U.S. TIPS
			5.00	S&P MLP Index

U.S. Equity

Manager Allocation

U.S. Equity Composite

As of September 30, 2016

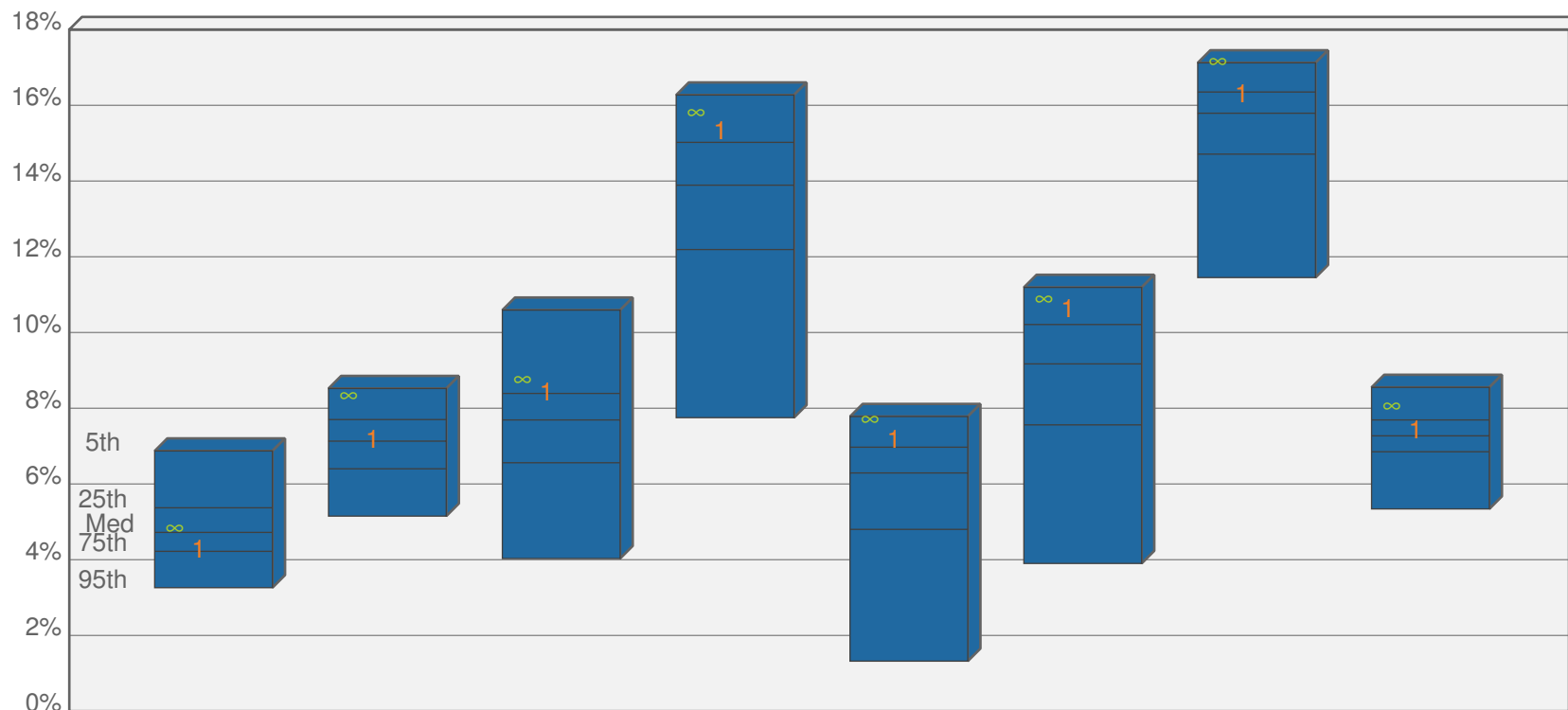


Performance Comparison



U.S. Equity Composite

Periods Ended September 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
∞ U.S. Equity Composite	4.88 (45)	8.40 (7)	8.82 (15)	15.87 (5)	7.77 (5)	10.93 (11)	17.22 (3)	8.11 (10)
1 Wilshire 5000	4.29 (71)	7.19 (45)	8.44 (23)	15.35 (12)	7.19 (12)	10.65 (13)	16.31 (28)	7.44 (41)
5th %tile	6.87	8.52	10.59	16.27	7.78	11.19	17.12	8.55
25th %tile	5.37	7.70	8.39	15.02	6.97	10.21	16.35	7.69
Median	4.72	7.13	7.69	13.89	6.29	9.17	15.79	7.27
75th %tile	4.22	6.40	6.56	12.19	4.80	7.56	14.71	6.85
95th %tile	3.26	5.15	4.03	7.75	1.32	3.90	11.45	5.34
Number of Funds	104	102	100	95	94	86	75	55

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

Police and Fire

Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

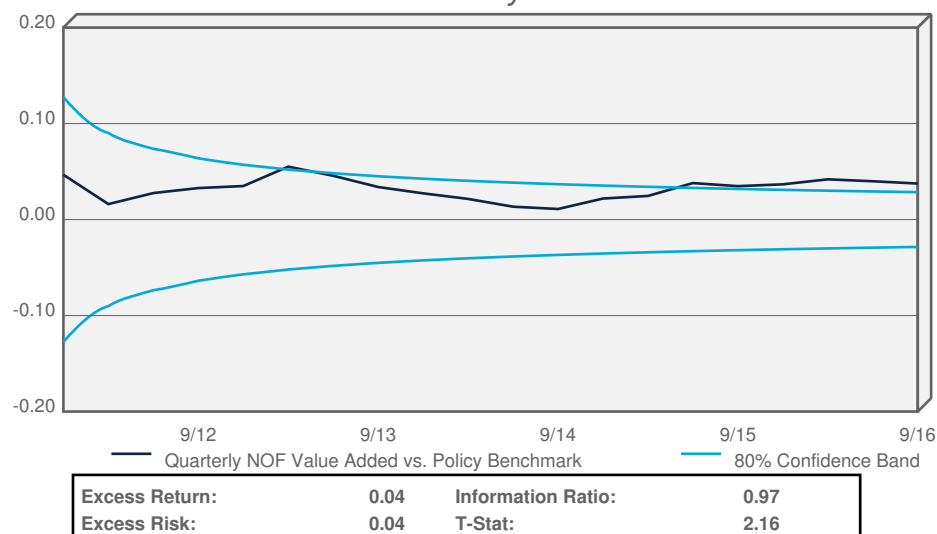
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
NTAM									
Net of Fee Return	3.85	7.87	15.49	11.21	16.42	13.20	7.25	9/30/98	6.54
Policy Benchmark	3.85	7.84	15.43	11.16	16.37	13.17	7.28	9/30/98	6.53
Value Added	0.00	0.03	0.06	0.04	0.04	0.03	-0.04	9/30/98	0.01
PIMCO Stock Plus									
Net of Fee Return	4.29	8.46	16.06	11.06	17.83	14.53	8.04	9/30/00	5.22
Standard & Poor's 500	3.85	7.84	15.43	11.16	16.37	13.17	7.24	9/30/00	4.64
Value Added	0.44	0.62	0.63	-0.11	1.46	1.36	0.80	9/30/00	0.58
Wellington									
Net of Fee Return	7.58	10.82	15.79	9.19	18.55	15.85	10.02	9/30/99	11.07
Russell 2000	9.05	11.46	15.47	6.71	15.82	12.49	7.07	9/30/99	7.95
Value Added	-1.47	-0.64	0.32	2.48	2.72	3.36	2.94	9/30/99	3.13
U.S. Equity Composite									
Net of Fee Return	4.84	8.68	15.66	10.68	16.94	13.80	7.83	9/30/87	9.25
Wilshire 5000	4.29	8.44	15.35	10.65	16.31	13.17	7.44	9/30/87	9.24
Value Added	0.55	0.23	0.31	0.03	0.63	0.63	0.39	9/30/87	0.01

Investment Manager Analysis

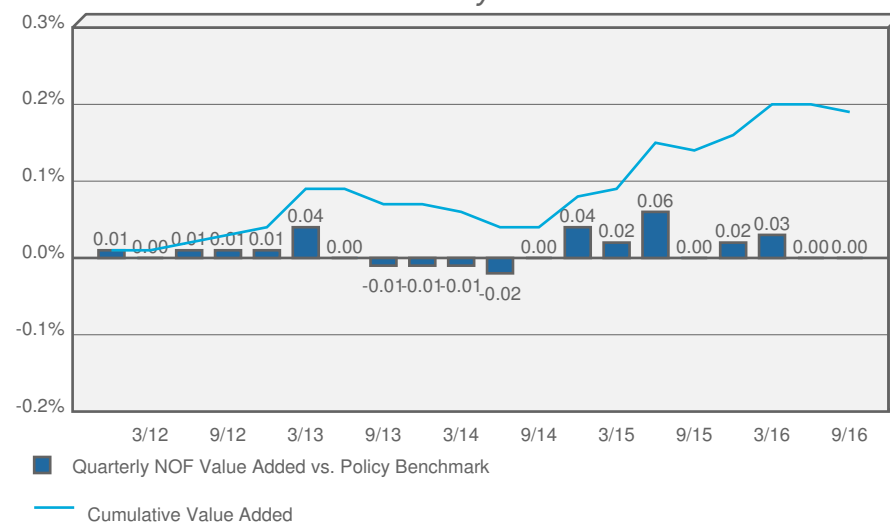
NTAM

September 30, 2016

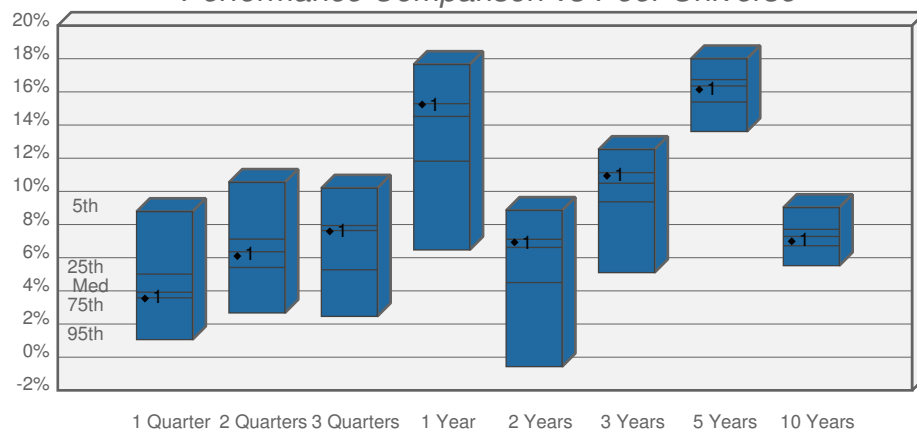
Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark

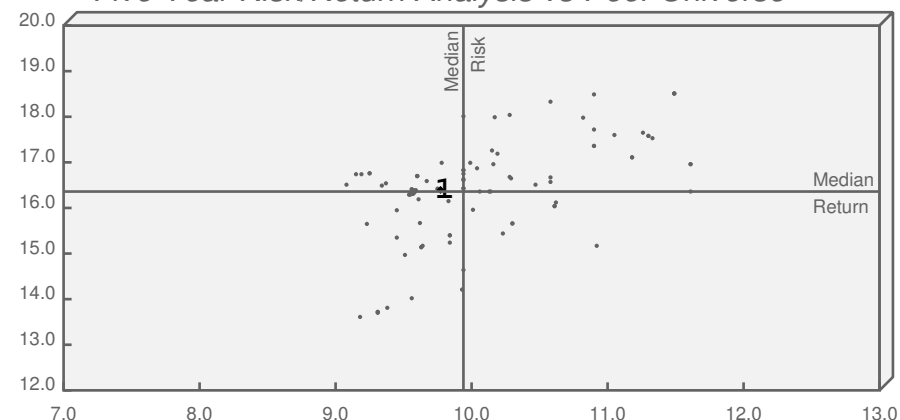


Performance Comparison vs Peer Universe*



◆ NTAM	3.86 (57)	6.42 (40)	7.91 (26)	15.56 (10)	7.25 (15)	11.26 (16)	16.46 (37)	7.31 (42)
1 Policy Benchmark	3.85 (60)	6.40 (42)	7.84 (32)	15.43 (15)	7.11 (25)	11.16 (23)	16.37 (49)	7.28 (50)
Median	3.92	6.36	7.64	14.52	6.62	10.49	16.36	7.28
Number of Funds	183	183	182	182	181	175	145	75

Five Year Risk/Return Analysis vs Peer Universe*



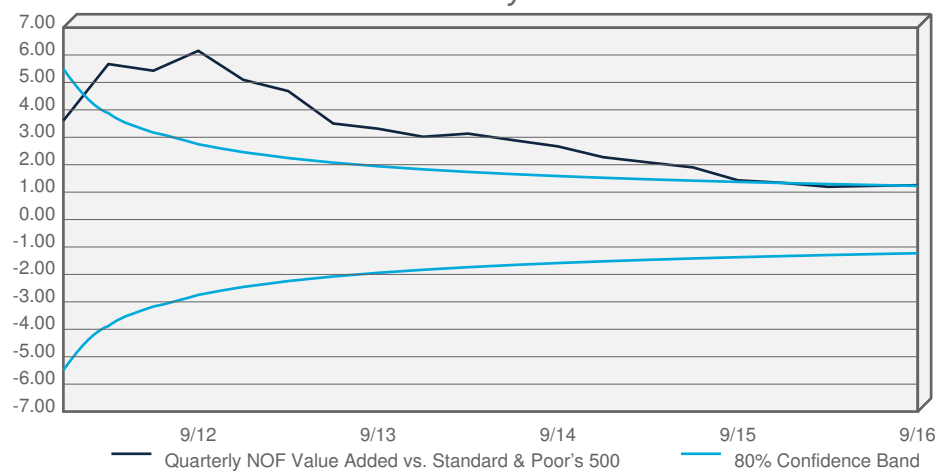
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
NTAM	◆	16.46	37	9.85	54
Policy Benchmark	1	16.37	49	9.84	55
Median		16.36		9.94	

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

PIMCO Stock Plus

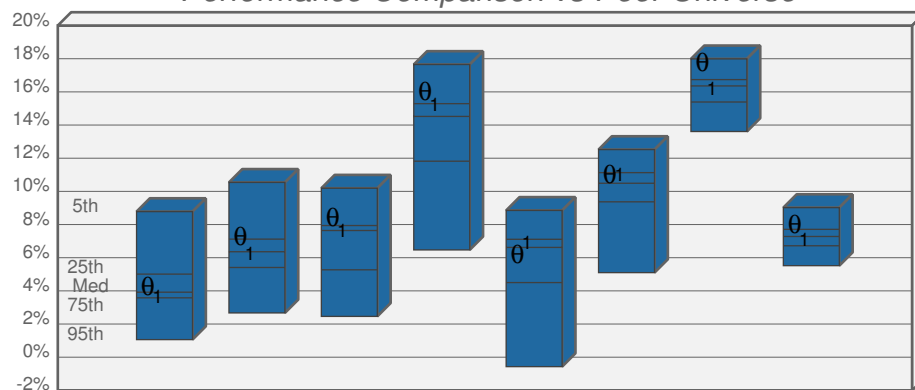
September 30, 2016

Cumulative Skill Analysis vs Benchmark



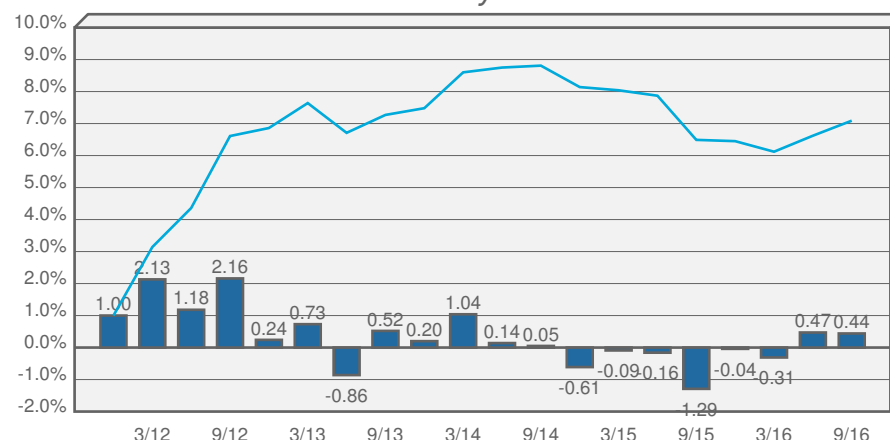
Excess Return:	1.25	Information Ratio:	0.75
Excess Risk:	1.67	T-Stat:	1.68

Performance Comparison vs Peer Universe*



0 PIMCO Stock Pl	4.29 (41)	7.34 (18)	8.46 (15)	16.06 (8)	6.22 (57)	11.06 (33)	17.83 (5)	8.04 (15)
1 Standard & Poo	3.85 (60)	6.40 (42)	7.84 (32)	15.43 (15)	7.11 (25)	11.16 (23)	16.37 (49)	7.24 (52)
Median	3.92	6.36	7.64	14.52	6.62	10.49	16.36	7.28
Number of Funds	183	183	182	182	181	175	145	75

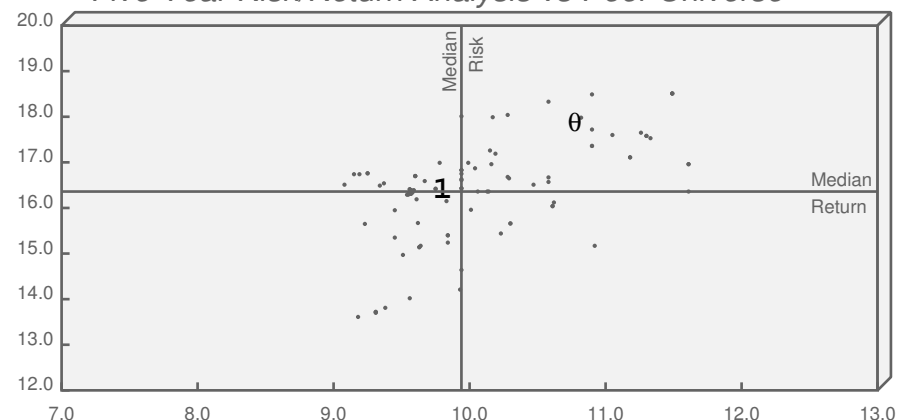
Value-Added Analysis vs Benchmark



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

— Cumulative Value Added

Five Year Risk/Return Analysis vs Peer Universe*



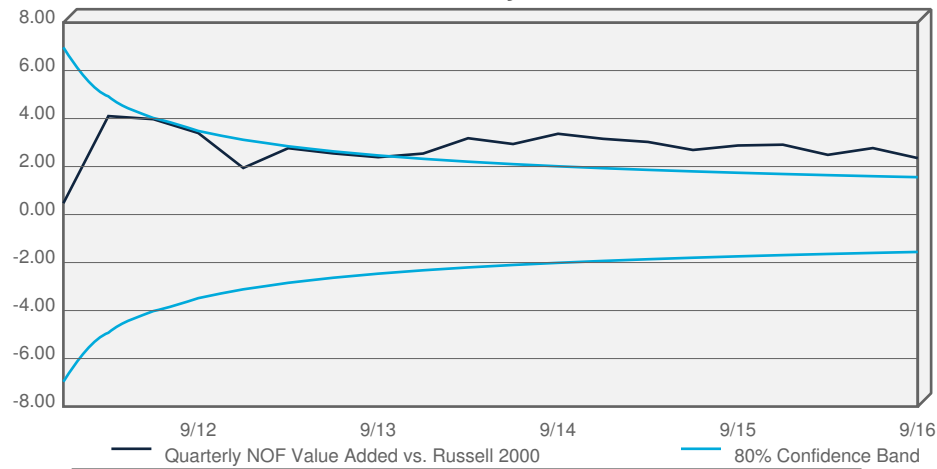
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
PIMCO Stock Plus	0	17.83	5	10.83	22
Standard & Poor's 500	1	16.37	49	9.84	55
Median		16.36		9.94	

Investment Manager Analysis

Wellington

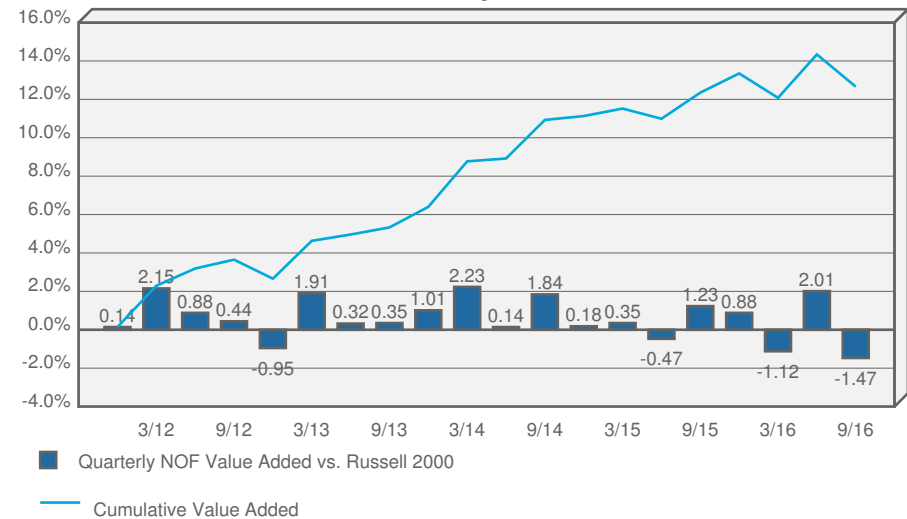
September 30, 2016

Cumulative Skill Analysis vs Benchmark

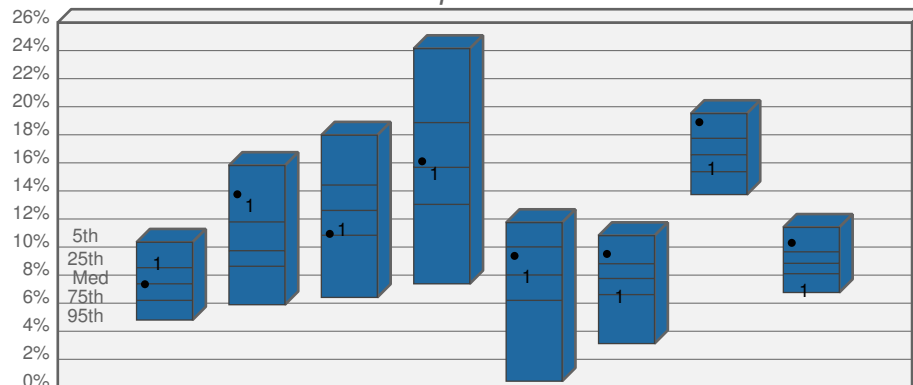


Excess Return:	2.35	Information Ratio:	1.11
Excess Risk:	2.12	T-Stat:	2.48

Value-Added Analysis vs Benchmark

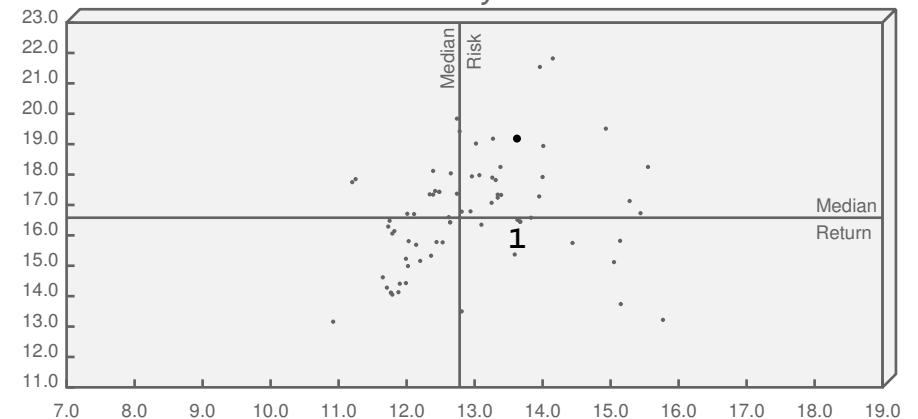


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
● Wellington	7.73 (41)	14.14 (16)	11.32 (70)	16.49 (43)	9.75 (30)	9.89 (10)	19.28 (6)	10.68 (8)
1 Russell 2000	9.05 (15)	13.18 (16)	11.46 (68)	15.47 (53)	8.12 (48)	6.71 (72)	15.82 (66)	7.07 (87)
Median	7.38	9.74	12.61	15.68	8.01	7.76	16.58	8.84
Number of Funds	103	103	102	101	101	93	75	35

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Wellington	●	19.28	6	13.78	21
Russell 2000	1	15.82	66	13.71	21
Median		16.58		12.78	

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

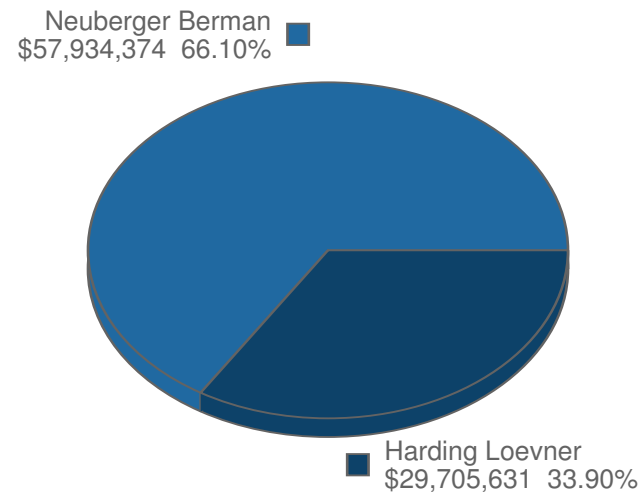
Police and Fire

Non - U.S. Equity

Manager Allocation

Non-U.S. Equity Composite

As of September 30, 2016

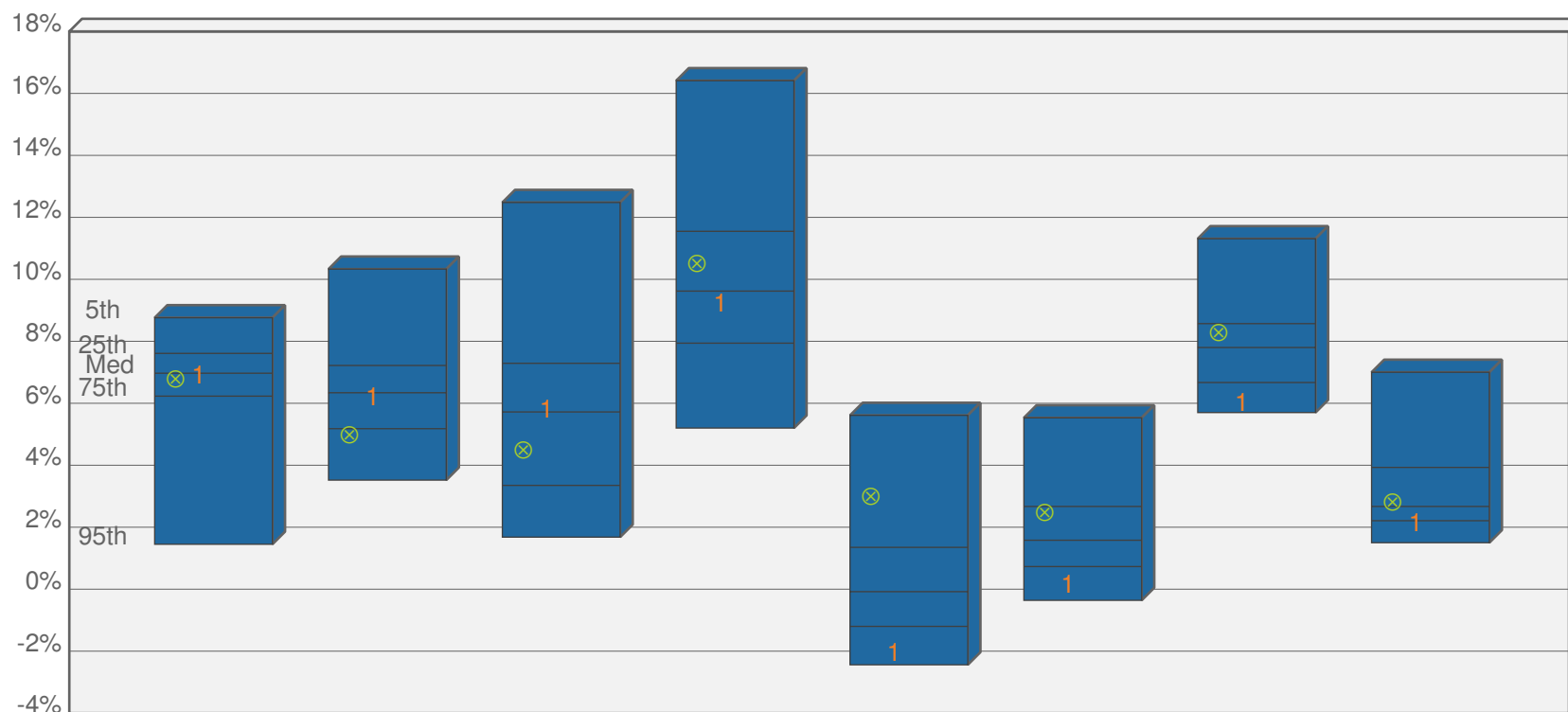


Performance Comparison



Non-U.S. Equity Composite

Periods Ended September 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗ Non-U.S. Equity Composite	6.79 (53)	4.99 (76)	4.52 (65)	10.52 (33)	3.01 (11)	2.50 (29)	8.30 (32)	2.83 (43)
1 Policy Benchmark	6.91 (52)	6.22 (52)	5.82 (49)	9.26 (60)	-2.04 (91)	0.18 (87)	6.04 (89)	2.16 (76)
5th %tile	8.76	10.33	12.48	16.41	5.61	5.53	11.31	7.00
25th %tile	7.61	7.22	7.29	11.55	1.35	2.67	8.57	3.93
Median	6.97	6.34	5.72	9.62	-0.08	1.58	7.80	2.67
75th %tile	6.23	5.18	3.35	7.94	-1.20	0.73	6.67	2.21
95th %tile	1.45	3.52	1.68	5.20	-2.44	-0.36	5.70	1.50
Number of Funds	118	115	115	110	104	99	85	62

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

Police and Fire

Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

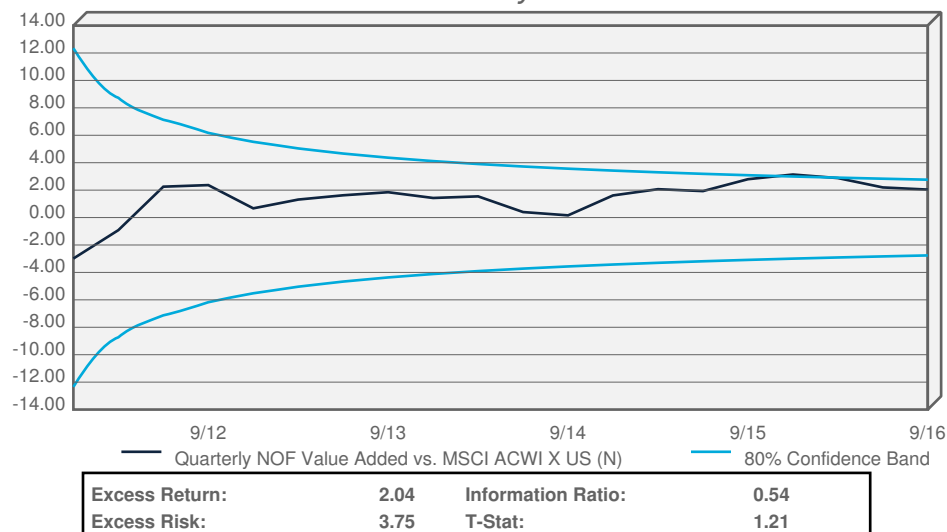
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Neuberger Berman									
Net of Fee Return	6.67	2.66	8.24	2.35	8.20	6.50	2.48	6/30/06	2.53
MSCI ACWI X US (N)	6.91	5.82	9.26	0.18	6.04	3.66	2.16	6/30/06	2.49
Value Added	-0.25	-3.17	-1.02	2.17	2.16	2.84	0.31	6/30/06	0.03
Harding Loevner									
Net of Fee Return	6.89	7.99	14.73					3/31/15	1.00
MSCI ACWI X US (N)	6.91	5.82	9.26					3/31/15	-2.37
Value Added	-0.02	2.16	5.48					3/31/15	3.37
Non-U.S. Equity Composite									
Net of Fee Return	6.74	4.43	10.38	2.44	8.26	6.54	2.50	12/31/89	8.01
Policy Benchmark	6.91	5.82	9.26	0.18	6.04	3.66	2.16	12/31/89	4.18
Value Added	-0.17	-1.39	1.12	2.26	2.22	2.88	0.34	12/31/89	3.82

Investment Manager Analysis

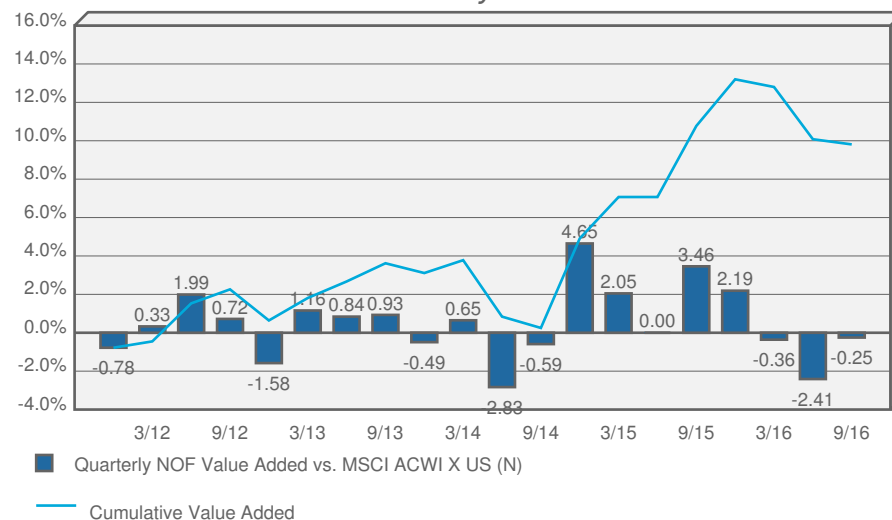
Neuberger Berman

September 30, 2016

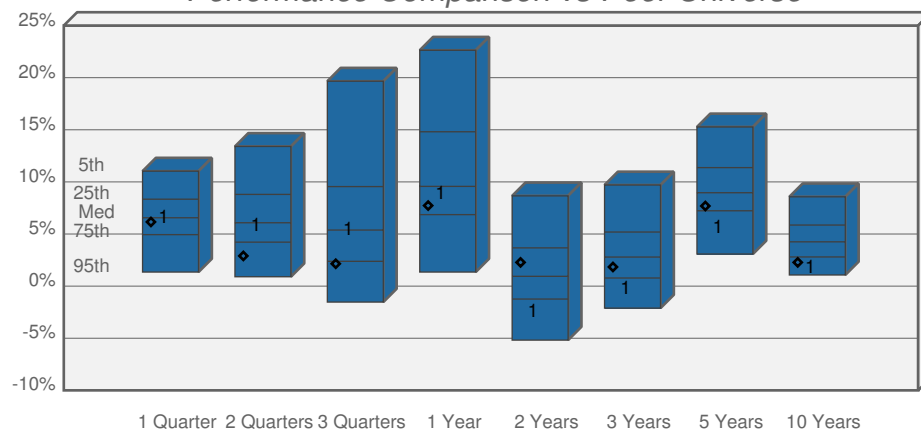
Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark

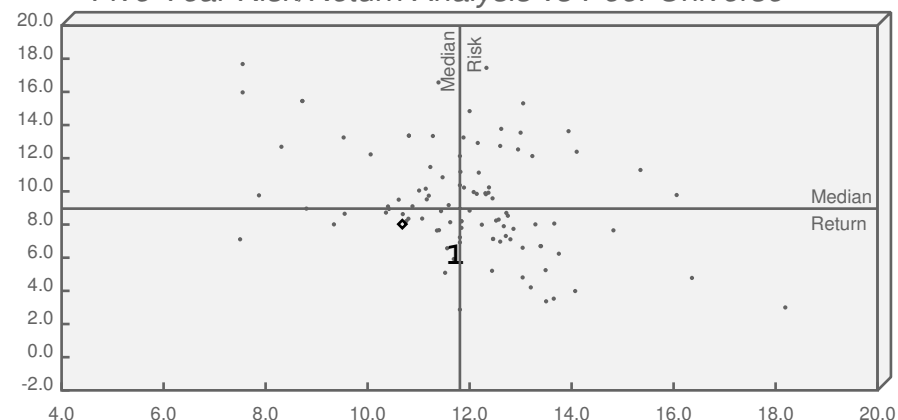


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
◆ Neuberger Berm	6.67 (48)	3.41 (81)	2.66 (71)	8.24 (62)	2.79 (31)	2.35 (55)	8.20 (61)	2.79 (75)
1 MSCI ACWI X US	6.91 (44)	6.22 (47)	5.82 (46)	9.26 (52)	-2.04 (82)	0.18 (81)	6.04 (84)	2.16 (85)
Median	6.56	6.08	5.38	9.57	0.94	2.79	8.96	4.25
Number of Funds	1466	1455	1445	1427	1380	1327	1163	603

Five Year Risk/Return Analysis vs Peer Universe*



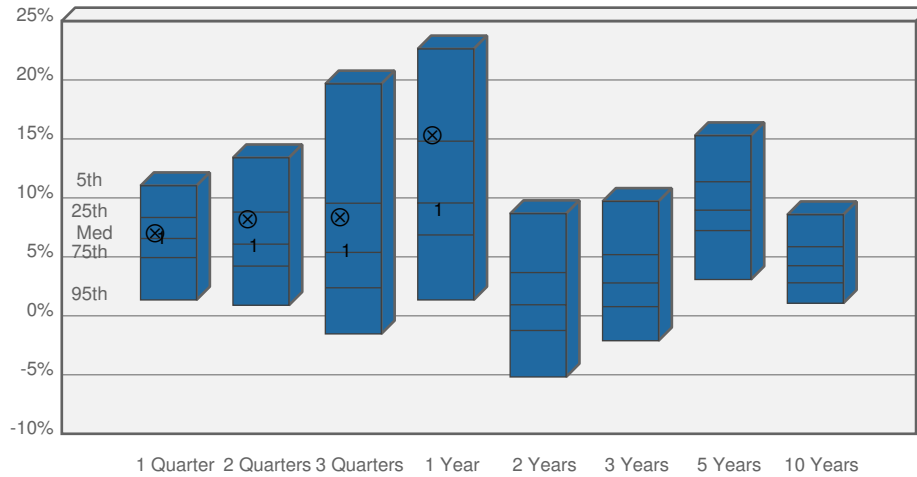
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Neuberger Berman	◆	8.20	61	10.89	71
MSCI ACWI X US (N)	1	6.04	84	11.83	49
Median		8.96		11.81	

Investment Manager Analysis

Harding Loevner

September 30, 2016

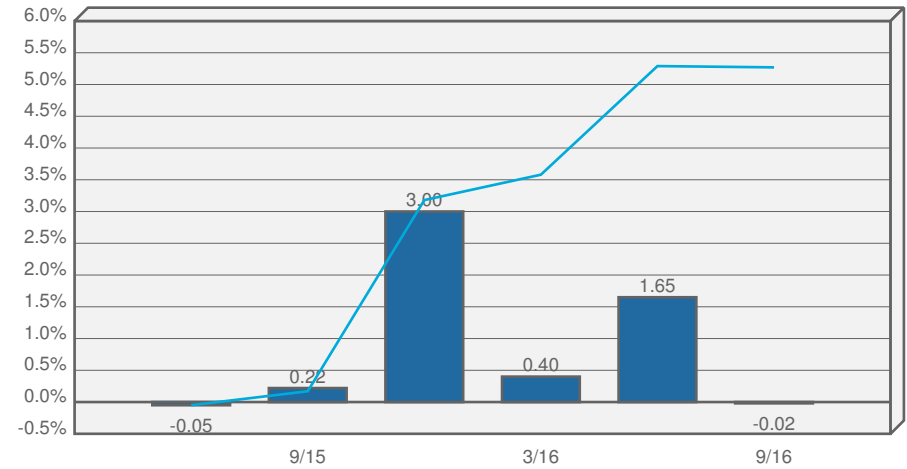
Performance Comparison vs Peer Universe*



⊗ Harding Loevner
 1 MSCI ACWI X US

Median
 Number of Funds

Value-Added Analysis vs Benchmark



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

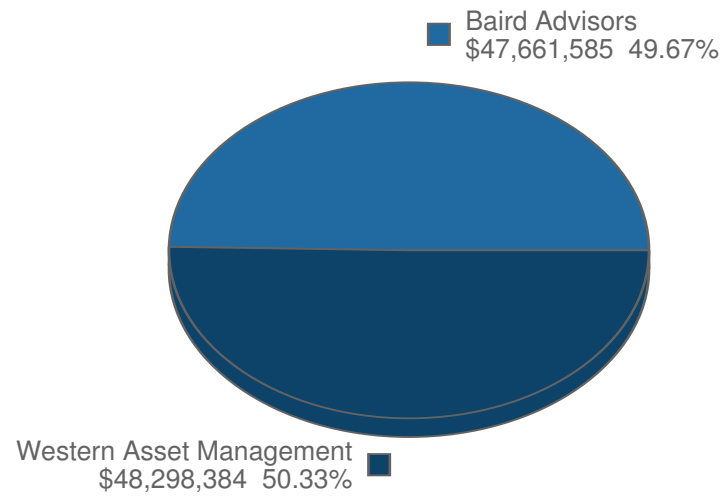
— Cumulative Value Added

Core Fixed Income

Manager Allocation

Core Fixed Composite

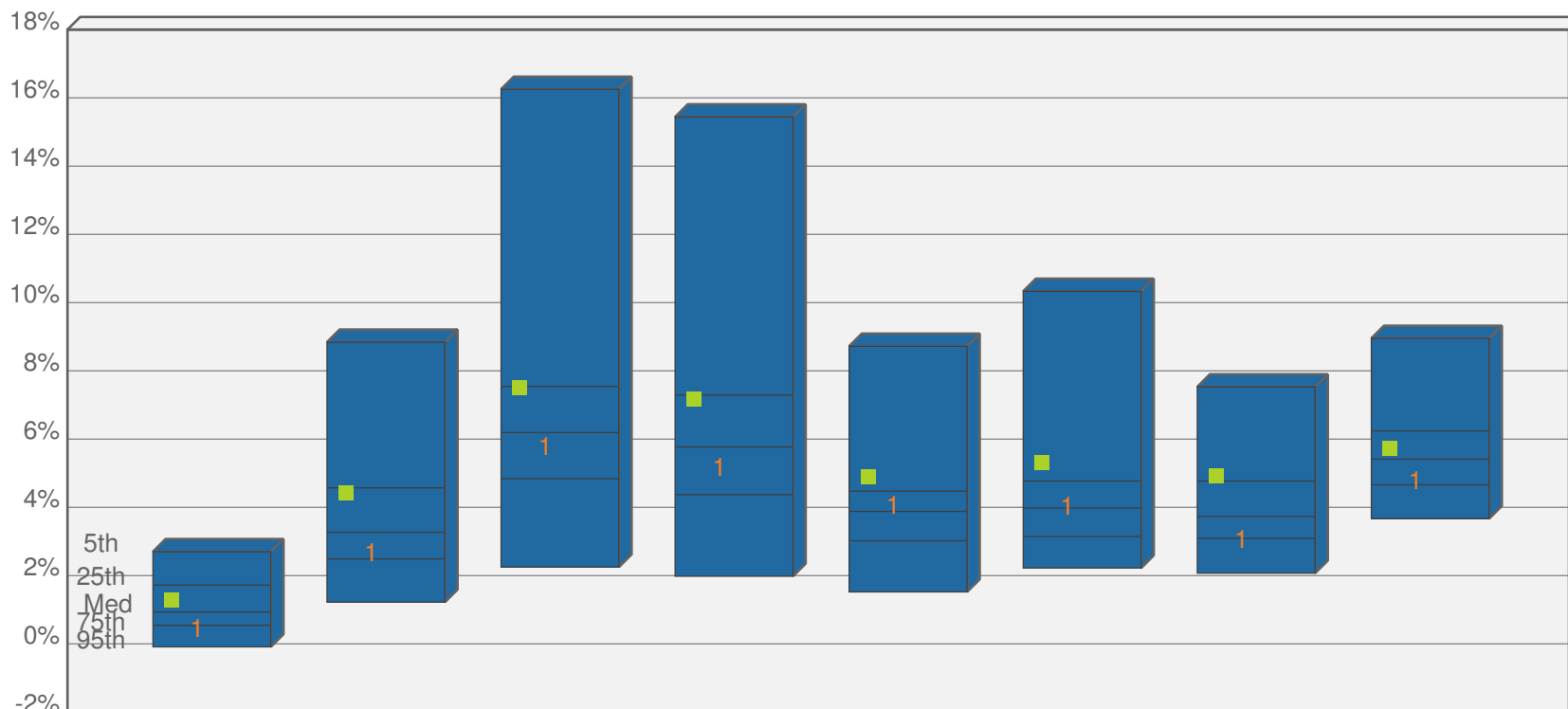
As of September 30, 2016



Performance Comparison

Core Fixed Composite

Periods Ended September 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Core Fixed Composite	1.33 (35)	4.46 (28)	7.55 (24)	7.21 (26)	4.94 (18)	5.36 (17)	4.95 (20)	5.77 (33)
Barclays Aggregate	0.46 (80)	2.68 (70)	5.80 (56)	5.19 (64)	4.06 (42)	4.03 (46)	3.08 (76)	4.79 (71)
5th %tile	2.70	8.84	16.25	15.44	8.72	10.33	7.53	8.95
25th %tile	1.72	4.57	7.54	7.29	4.47	4.77	4.77	6.24
Median	0.93	3.27	6.19	5.77	3.88	3.98	3.73	5.41
75th %tile	0.54	2.49	4.84	4.37	3.02	3.14	3.09	4.66
95th %tile	-0.09	1.22	2.25	1.98	1.52	2.22	2.07	3.67
Number of Funds	132	131	129	128	125	121	101	61

Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

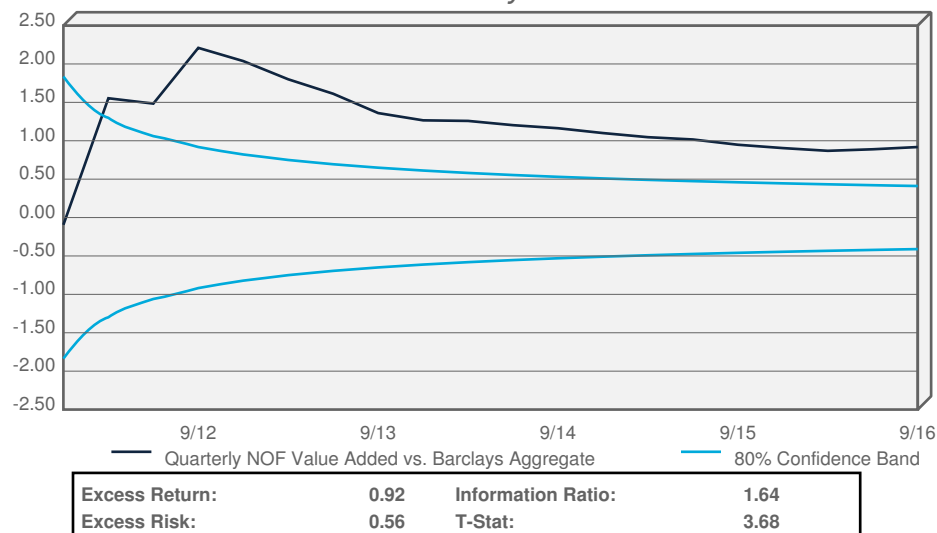
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Baird Advisors									
Net of Fee Return	0.83	6.58	6.03	4.68	4.03	5.30	5.11	3/31/03	4.82
Barclays Aggregate	0.46	5.80	5.19	4.03	3.08	4.10	4.79	3/31/03	4.47
Value Added	0.37	0.79	0.84	0.65	0.95	1.19	0.32	3/31/03	0.35
Western Asset Management									
Net of Fee Return	1.71	8.07	7.81	5.51	5.31	7.13	5.80	3/31/04	5.41
Barclays Aggregate	0.46	5.80	5.19	4.03	3.08	4.10	4.79	3/31/04	4.40
Value Added	1.25	2.28	2.62	1.48	2.22	3.02	1.01	3/31/04	1.01
Core Fixed Composite									
Net of Fee Return	1.27	7.34	6.93	5.10	4.71	6.26	5.52	9/30/87	7.14
Barclays Aggregate	0.46	5.80	5.19	4.03	3.08	4.10	4.79	9/30/87	6.78
Value Added	0.81	1.54	1.74	1.07	1.63	2.16	0.73	9/30/87	0.36

Investment Manager Analysis

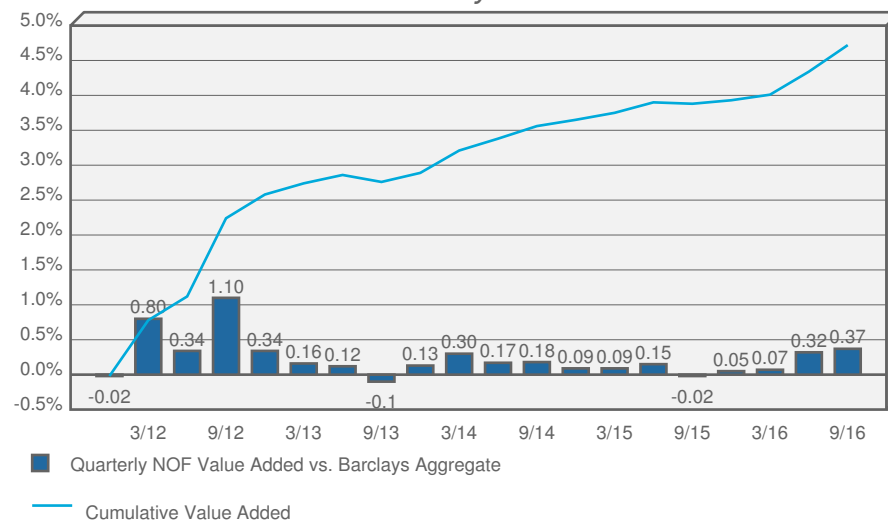
Baird Advisors

September 30, 2016

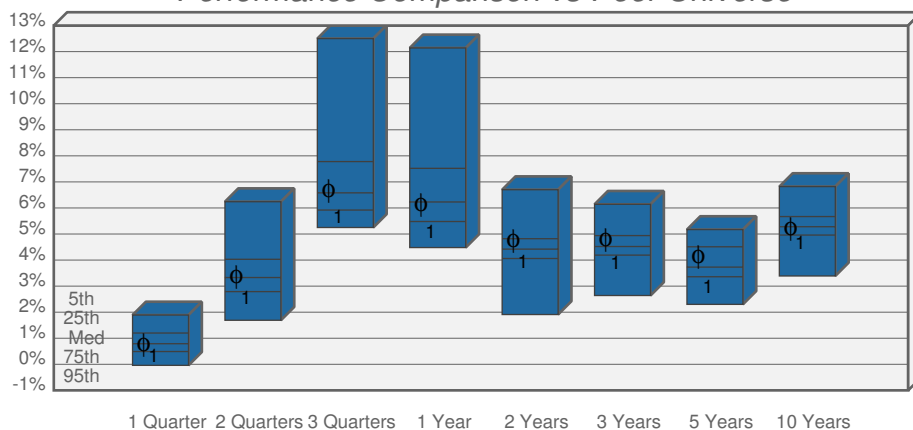
Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark

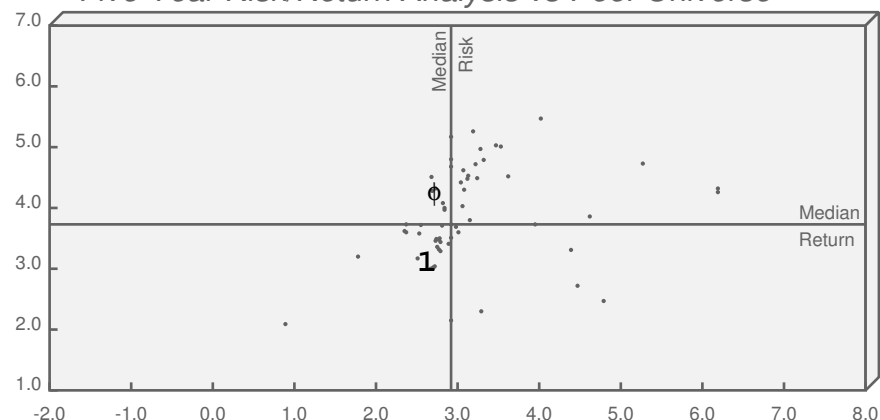


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Φ Baird Advisors	0.88 (45)	3.49 (38)	6.76 (46)	6.26 (45)	4.86 (22)	4.90 (26)	4.25 (38)	5.33 (41)
1 Barclays Aggre	0.46 (75)	2.68 (83)	5.80 (82)	5.19 (88)	4.06 (75)	4.03 (80)	3.08 (83)	4.79 (75)
Median	0.79	3.33	6.58	6.23	4.42	4.52	3.73	5.28
Number of Funds	79	79	79	79	78	74	62	26

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Baird Advisors	Φ	4.25	38	2.81	60
Barclays Aggregate	1	3.08	83	2.69	83
Median		3.73		2.92	

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

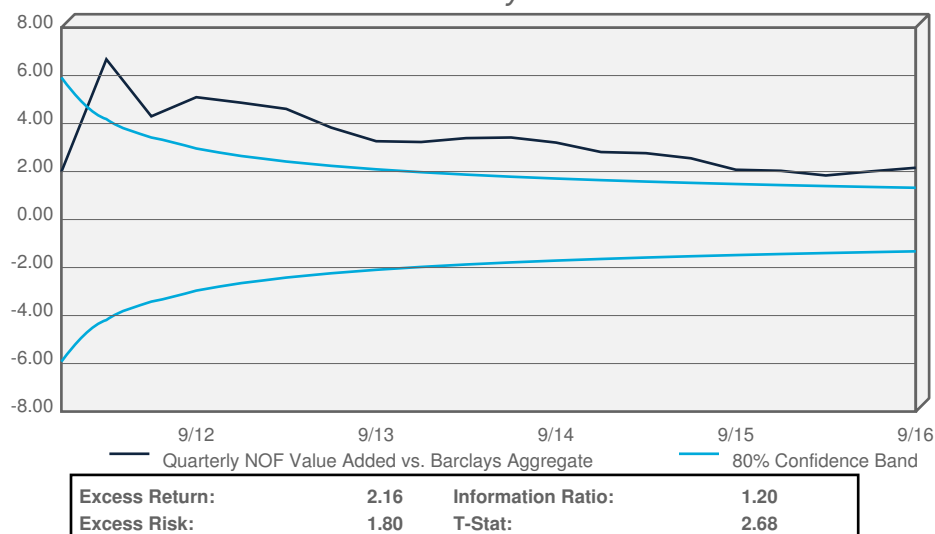
Police and Fire

Investment Manager Analysis

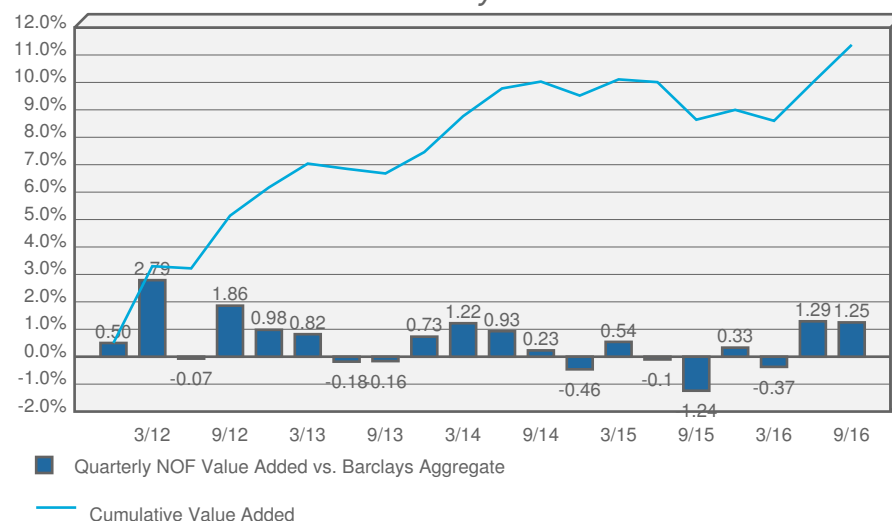
Western Asset Management

September 30, 2016

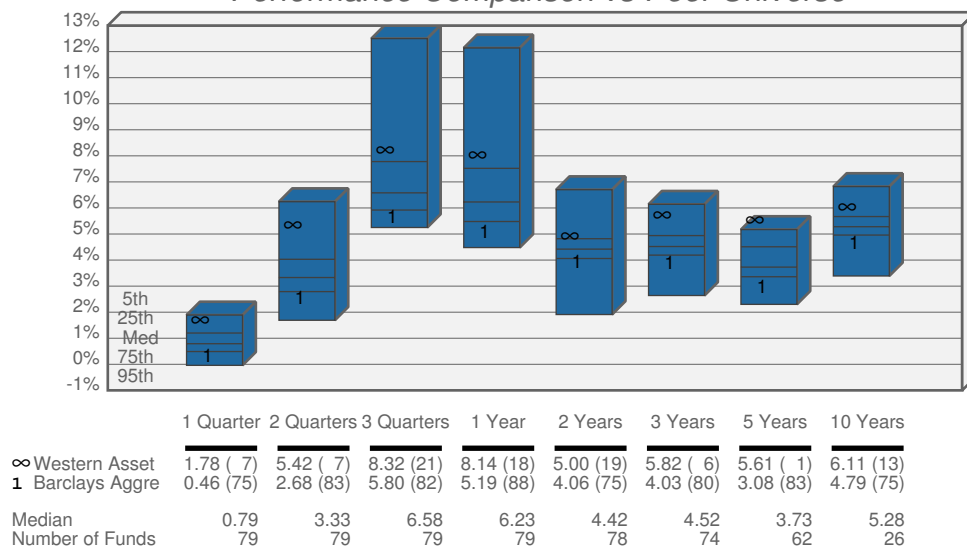
Cumulative Skill Analysis vs Benchmark



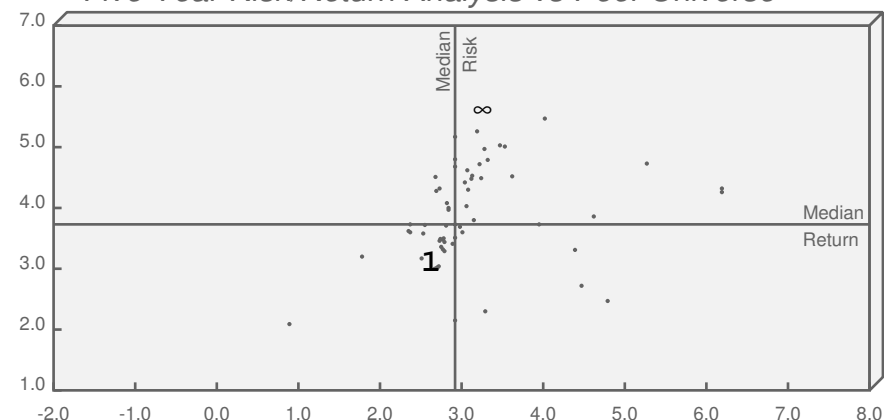
Value-Added Analysis vs Benchmark



Performance Comparison vs Peer Universe*



Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Western Asset Management	∞	5.61	1	3.32	25
Barclays Aggregate	1	3.08	83	2.69	83
Median		3.73		2.92	

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

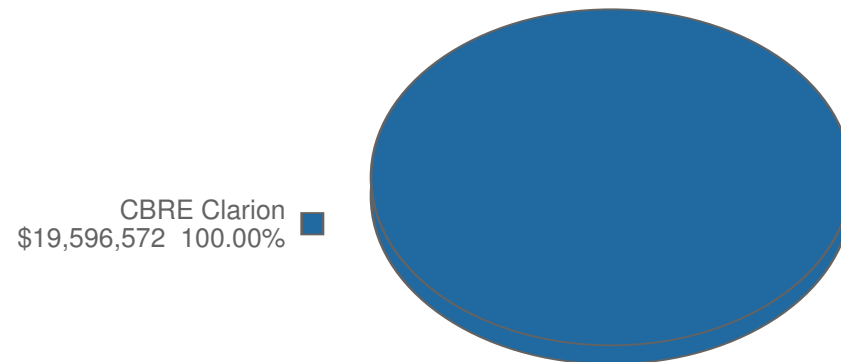
Police and Fire

Real Estate

Manager Allocation

Real Estate Composite

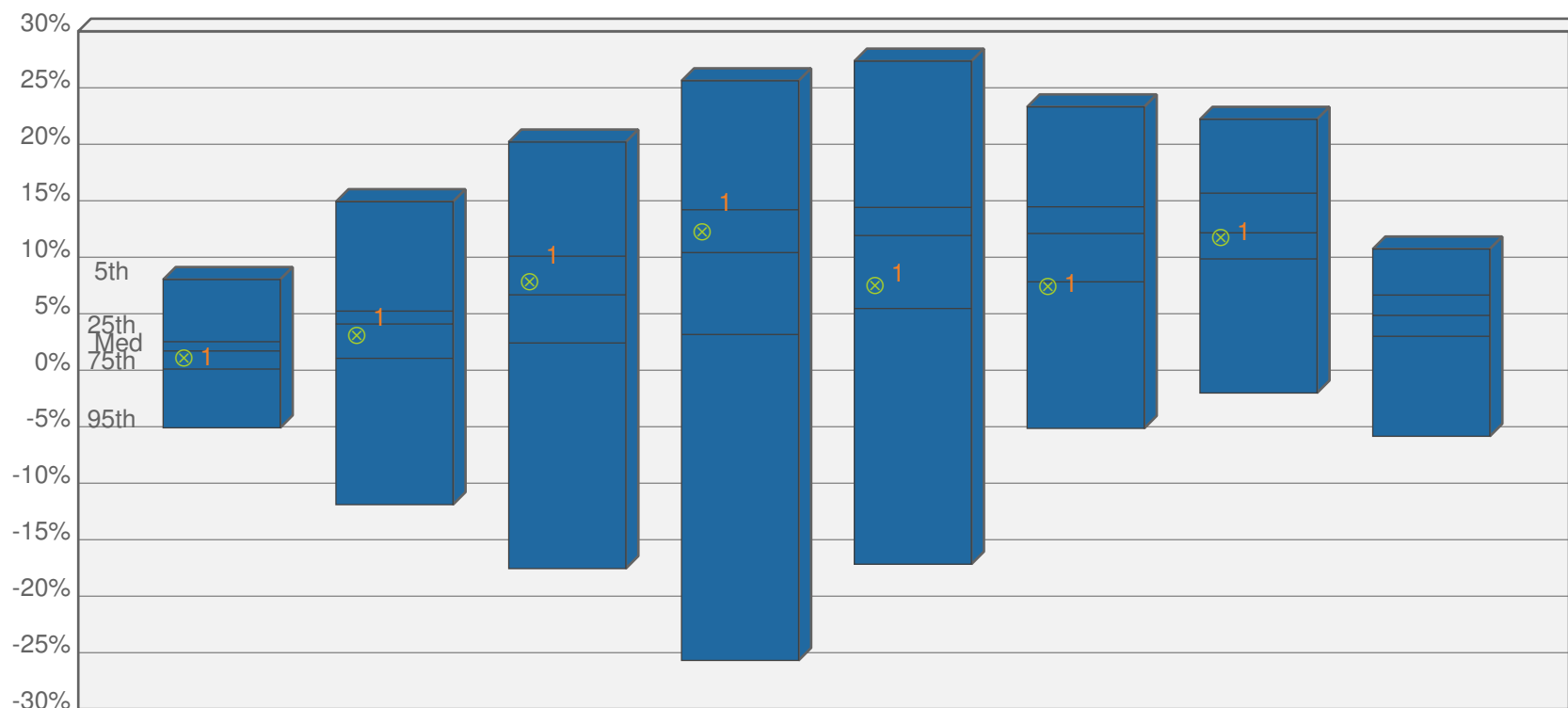
As of September 30, 2016



Performance Comparison

Real Estate Composite

Periods Ended September 30, 2016



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
⊗ Real Estate Composite	1.09 (61)	3.12 (64)	7.85 (38)	12.31 (35)	7.53 (71)	7.43 (75)	11.77 (56)	
1 FTSE EPRA/NAREIT	1.25 (59)	4.75 (34)	10.23 (23)	14.85 (23)	8.62 (66)	7.71 (75)	12.29 (49)	
5th %tile	8.02	14.91	20.19	25.61	27.35	23.30	22.20	10.72
25th %tile	2.52	5.23	10.09	14.20	14.41	14.46	15.67	6.65
Median	1.70	4.09	6.67	10.41	11.92	12.10	12.16	4.85
75th %tile	0.10	1.05	2.41	3.16	5.46	7.82	9.85	3.00
95th %tile	-5.10	-11.90	-17.56	-25.69	-17.17	-5.15	-2.02	-5.85
Number of Funds	339	353	353	350	340	263	206	96

Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

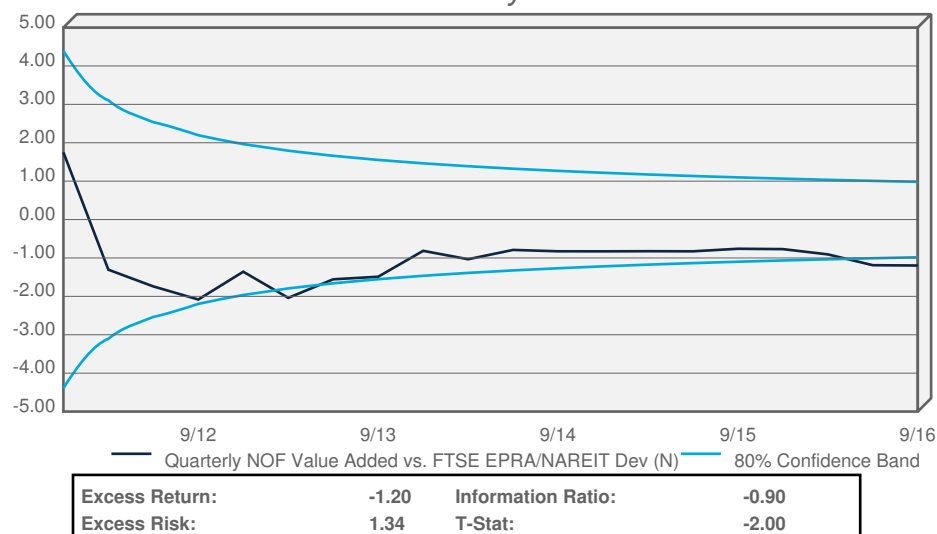
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
CBRE Clarion									
Net of Fee Return	0.91	7.26	11.49	6.63	10.95	8.66		6/30/09	11.76
FTSE EPRA/NAREIT Dev (N)	1.25	10.23	14.85	7.71	12.29	9.96		6/30/09	13.01
Value Added	-0.34	-2.97	-3.36	-1.08	-1.34	-1.30		6/30/09	-1.25
Real Estate Composite									
Net of Fee Return	0.91	7.26	11.49	6.63	10.95	8.66		6/30/09	11.76
FTSE EPRA/NAREIT Dev (N)	1.25	10.23	14.85	7.71	12.29	9.96		6/30/09	13.01
Value Added	-0.34	-2.97	-3.36	-1.08	-1.34	-1.30		6/30/09	-1.25

Investment Manager Analysis

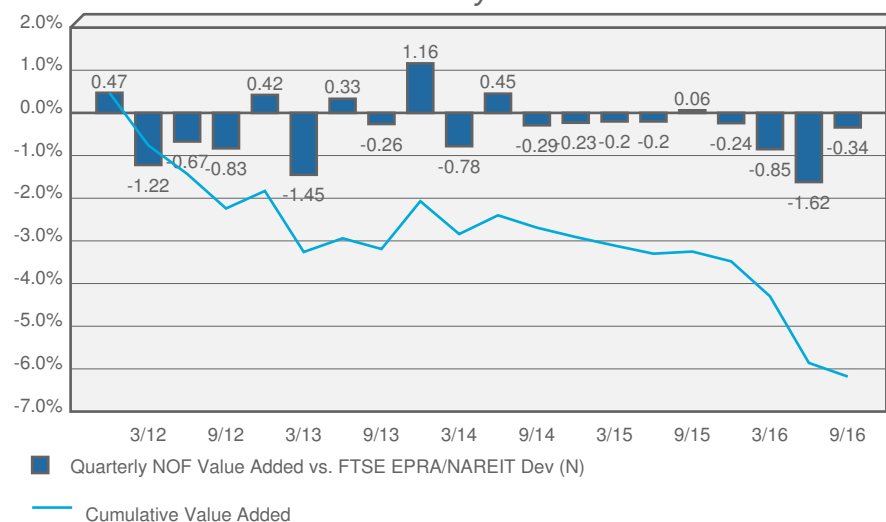
CBRE Clarion

September 30, 2016

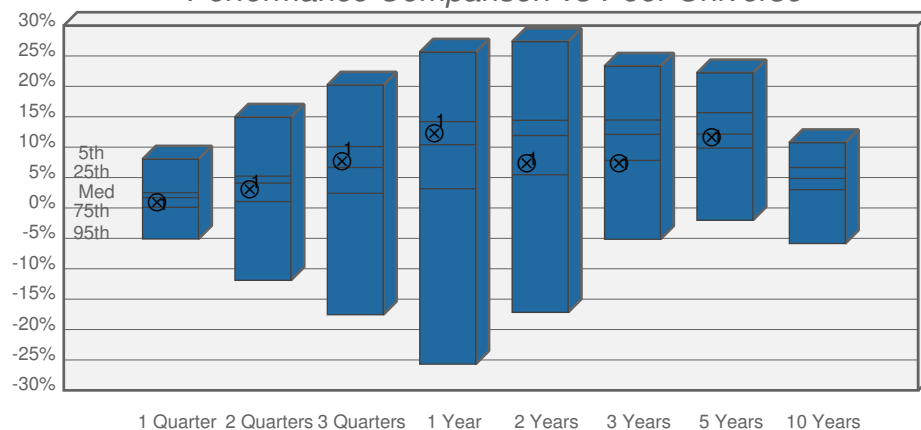
Cumulative Skill Analysis vs Benchmark



Value-Added Analysis vs Benchmark

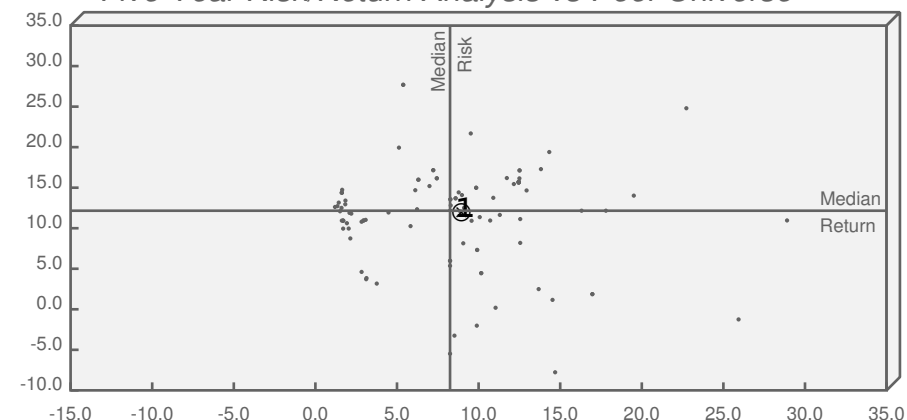


Performance Comparison vs Peer Universe*



⊗ CBRE Clarion	1.09 (61)	3.12 (64)	7.85 (38)	12.31 (35)	7.53 (71)	7.43 (75)	11.77 (56)	
1 FTSE EPRA/NAREIT	2.25 (59)	4.75 (34)	10.23 (23)	14.85 (23)	8.62 (66)	7.71 (75)	12.29 (49)	
Median	1.70	4.09	6.67	10.41	11.92	12.10	12.16	4.85
Number of Funds	339	353	353	350	340	263	206	96

Five Year Risk/Return Analysis vs Peer Universe*



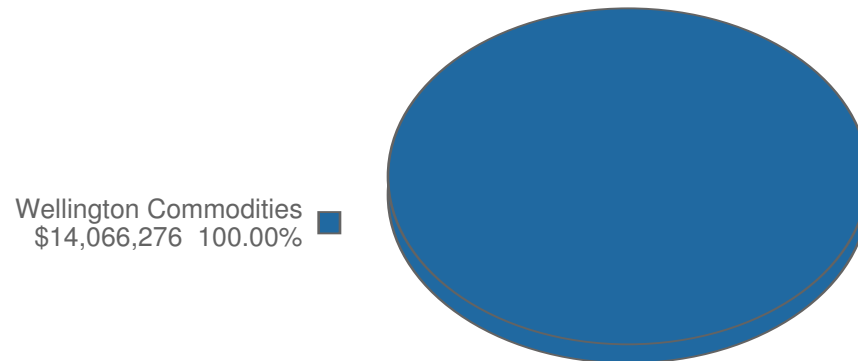
Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
CBRE Clarion	⊗	11.77	56	9.22	39
FTSE EPRA/NAREIT Dev (N)	1	12.29	49	9.51	38
Median		12.16		8.25	

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

Commodities

Commodities Composite

As of September 30, 2016



Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

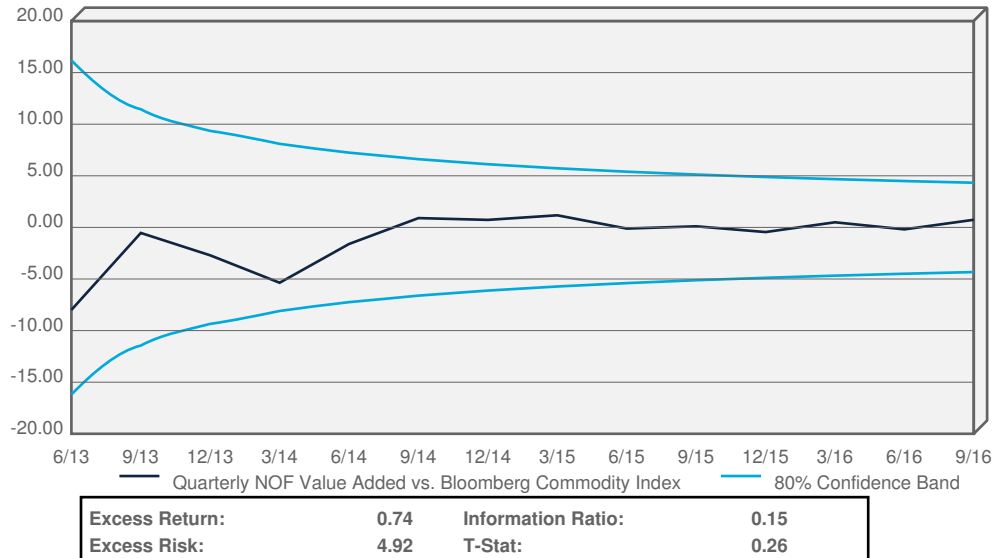
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Wellington Commodities									
Net of Fee Return	-0.74	13.11	-0.30	-11.51				3/31/13	-12.00
Bloomberg Commodity Index	-3.86	8.87	-2.58	-12.34				3/31/13	-12.65
Value Added	3.12	4.24	2.28	0.83				3/31/13	0.64
Commodities Composite									
Net of Fee Return	-0.74	13.11	-0.30	-11.51				3/31/13	-12.00
Bloomberg Commodity Index	-3.86	8.87	-2.58	-12.34				3/31/13	-12.65
Value Added	3.12	4.24	2.28	0.83				3/31/13	0.64

Investment Manager Analysis

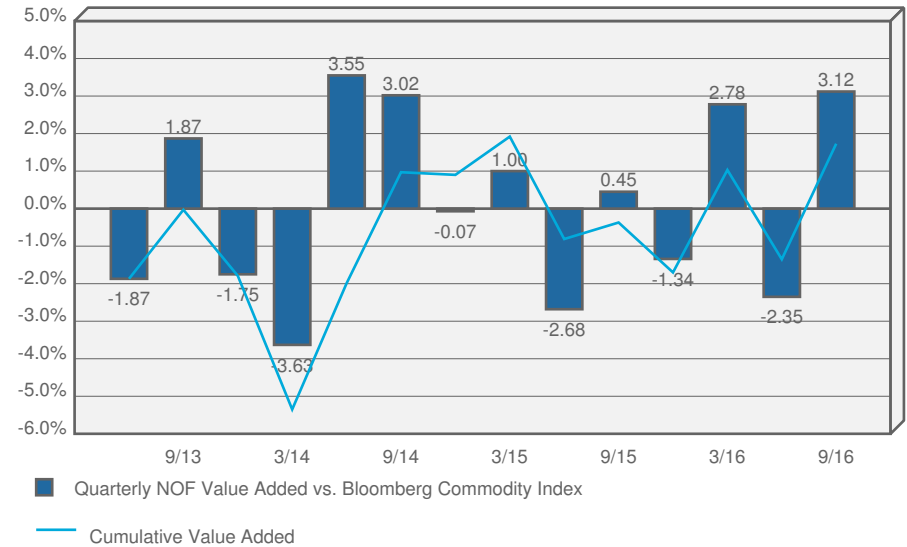
Wellington Commodities

September 30, 2016

Cumulative Skill Analysis vs Benchmark



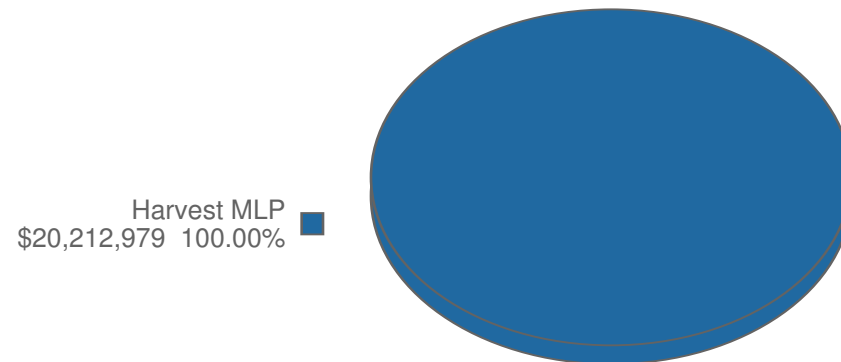
Value-Added Analysis vs Benchmark



MLP

MLP Composite

As of September 30, 2016



Performance Comparison



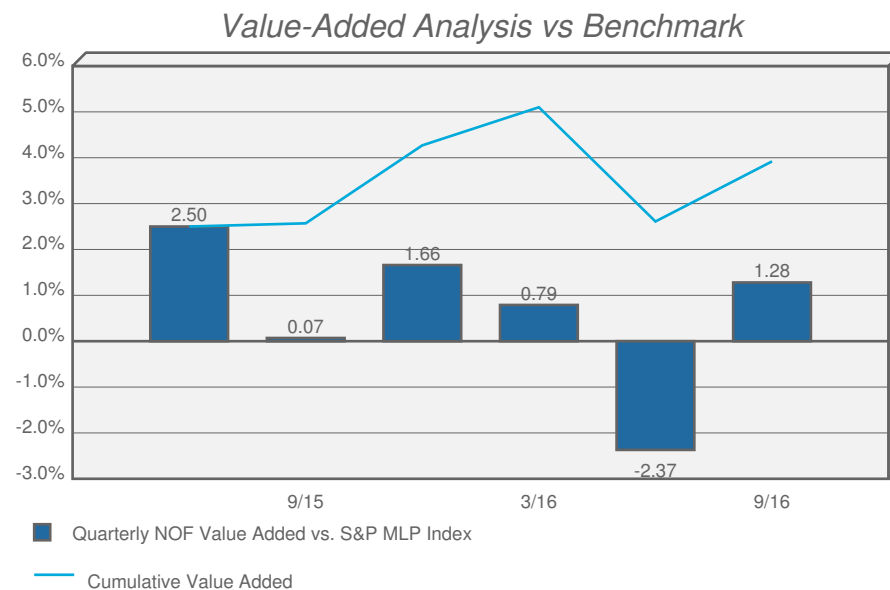
Trailing Returns

Periods Ended September 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	4.20	18.18	12.22					3/31/15	-11.80
S&P MLP Index	2.92	18.03	10.12					3/31/15	-14.45
Value Added	1.28	0.15	2.10					3/31/15	2.65
MLP Composite									
Net of Fee Return	4.20	18.18	12.22					3/31/15	-11.80
S&P MLP Index	2.92	18.03	10.12					3/31/15	-14.45
Value Added	1.28	0.15	2.10					3/31/15	2.65

Harvest MLP

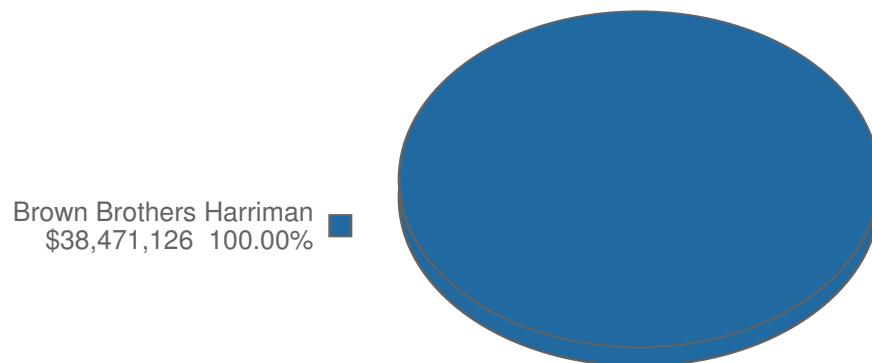
September 30, 2016



TIPS

TIPS Composite

As of September 30, 2016



Performance Comparison



Trailing Returns

Periods Ended September 30, 2016

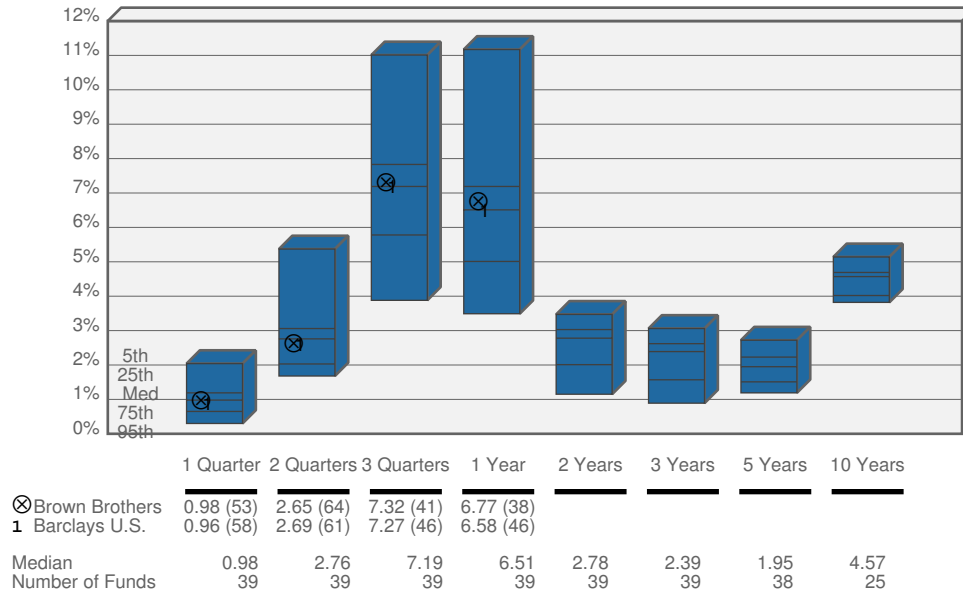
	1 Qtr	YTD	1 Year	3 Yrs	5 Yrs	7 Yrs	10 Yrs	Incept Date	Incept Ret
Brown Brothers Harriman									
Net of Fee Return	0.98	7.32	6.77					6/30/15	4.30
Barclays U.S. TIPS	0.96	7.27	6.58					6/30/15	4.27
Value Added	0.01	0.06	0.19					6/30/15	0.04
TIPS Composite									
Net of Fee Return	0.98	7.32	6.77					6/30/15	4.30
Barclays U.S. TIPS	0.96	7.27	6.58					6/30/15	4.27
Value Added	0.01	0.06	0.19					6/30/15	0.04

Investment Manager Analysis

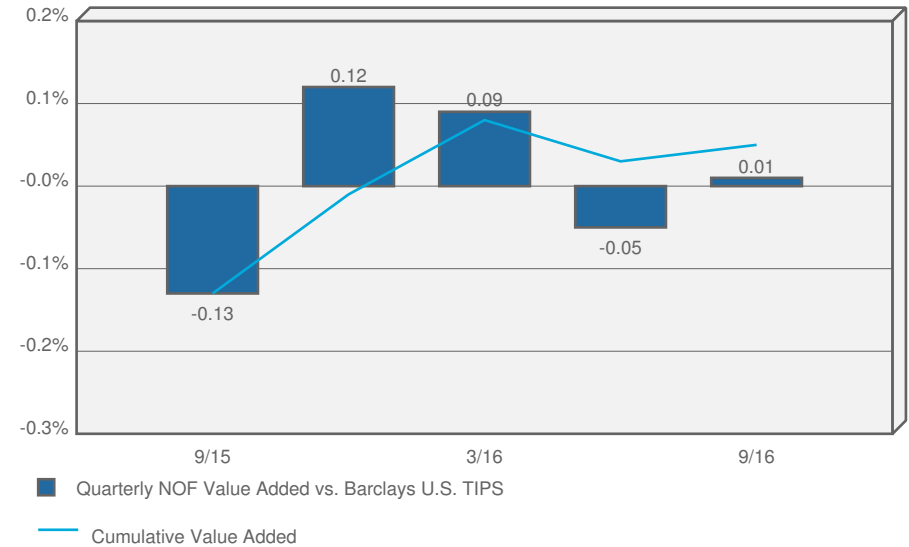
Brown Brothers Harriman

September 30, 2016

*Performance Comparison vs Peer Universe**



Value-Added Analysis vs Benchmark



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

Private Equity

Investment Manager Performance



Private Partnerships As of September 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	\$461,236	92%	\$281,709	56%	\$416,557	1.51	12.03%
Adams Street Non-US Dev. 2010 Fund	\$1,500,000	April 27, 2010	\$805,879	54%	\$102,111	7%	\$909,008	1.25	6.82%
Adams Street Non-US EM 2010 Fund	\$500,000	January 3, 2011	\$341,170	68%	\$0	0%	\$438,681	1.29	8.78%
Adams Street US 2010 Fund	\$2,500,000	April 27, 2010	\$1,222,912	49%	\$104,933	4%	\$1,949,944	1.68	13.74%
Adams Street 2013 Global Fund	\$5,000,000	July 3, 2013	\$2,415,813	48%	\$0	0%	\$2,511,811	1.04	2.34%
Aberdeen Global Partners	\$5,000,000	January 17, 2012	\$3,550,000	71%	\$487,375	10%	\$3,636,519	1.16	6.99%
Adams Street 2015 Global	\$6,500,000	September 30, 2015	\$532,614	8%	\$0	0%	\$610,193	1.15	31.63%
Alternative Investments Composite	\$21,500,000	April 27, 2010	\$9,329,624	43%	\$976,128	5%	\$10,472,713	1.23	8.68%

¹ TVPI = Fair Value + Capital Distributed / Capital Called

Capital Market Review

U.S. Equity

The U.S. stock market was up for the quarter by 4.3%. Most of the pricing activity occurred during roughly the first dozen trading days of the quarter. The post-Bexit rebound resulted in a 3.7% gain in the U.S., with a modest net gain thereafter. Strong equity returns this year have coincided with a drop in corporate earnings, although the Energy sector has been particularly weak. However, earnings are historical in nature while equity prices are forward looking, so that earnings growth is not necessary for positive returns, at least in the short term.

Large capitalization stocks underperformed smaller shares while growth stocks led value. Sector performance was varied during the quarter. The best performing sector was Information Technology (+12.6%) while the main laggard was Utilities (-5.7%).

Real GDP growth during the first half of the year equaled 1.1% at an annualized rate. Solid jobs growth and a slow but upward trend in hourly earnings provided a boost as consumer spending contributed 2% to overall real growth. Private investment, despite accounting for less than 20% of GDP, detracted -1%. Investments are down from a year ago while inventories shrank during the second quarter for the first time in five years.

Non-U.S. Equity

Equity markets outside of the U.S. were in positive territory during the quarter, particularly within emerging countries. The European Central Bank maintained their accommodative policies while the Bank of England cut their bank rate to 0.25% and extended their existing quantitative easing. In Japan where the overnight rate is negative, the central bank announced a plan to target the 10-year bond yield near 0%. Emerging market equities have benefitted from strong economic growth, asset inflows and economic resilience in China.

Fixed Income

U.S. Treasury yields were on a slow and steady rise for most of the third quarter. The bellwether 10-year Treasury yield reached a historic low of 1.37% in early July before reversing course and climbing to end the quarter at 1.60%. The Federal Open Market Committee decided to leave the overnight rate unchanged at their September meeting, the sixth consecutive meeting with no interest rate increase. Credit spreads tightened during the quarter in both investment grade and high yield bonds. Sovereign bond yields fell across much of Europe but ticked higher in Japan.

September 2016 Asset Class Assumptions



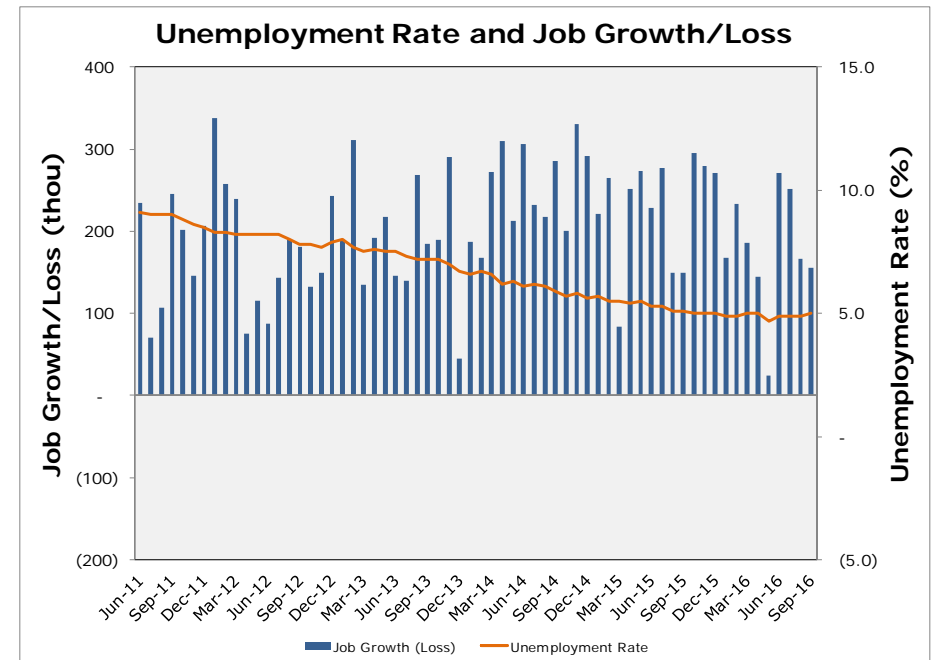
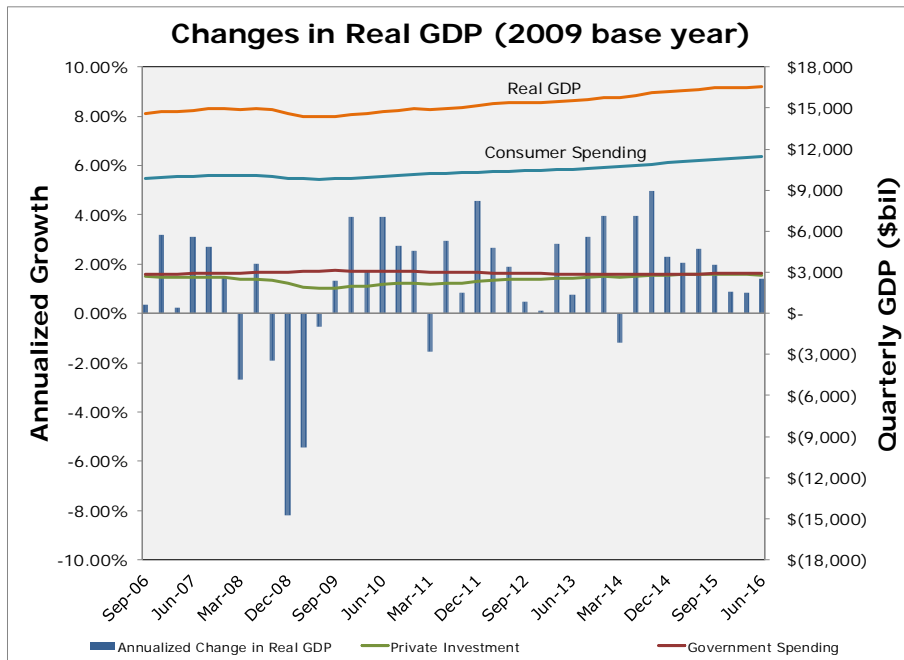
	Total Return (%)			Risk (%)
	Dec. 2015	Q3 2016	Change vs YE	Dec. 2015
<u>Investment Categories:</u>				
U.S. Stocks	6.50	6.25	(0.25)	17.00
Dev ex-U.S. Stocks	6.50	6.25	(0.25)	18.00
Emerging Mkt Stocks	6.50	6.25	(0.25)	26.00
Global Stocks	6.70	6.45	(0.25)	17.10
Private Markets	9.50	8.85	(0.65)	27.50
Cash Equivalents	1.25	1.25	-	1.25
Core Bonds	3.50	2.85	(0.65)	5.00
LT Core Bonds	4.30	3.20	(1.10)	10.00
TIPS	3.25	2.40	(0.85)	6.00
High Yield Bonds	6.35	5.15	(1.20)	10.00
EMD Local Currency (h)	5.60	3.85	(1.75)	5.00
U.S. RE Securities	5.00	4.90	(0.10)	17.00
Private Real Estate	5.80	6.10	0.30	14.00
Commodities	3.55	3.60	0.05	15.00
MLPs	9.65	8.45	(1.20)	17.00
Real Asset Basket	6.40	5.95	(0.45)	8.40
Inflation:	1.55	1.60	0.05	1.75
<u>Returns minus Inflation:</u>				
U.S. Stocks	4.95	4.65	(0.30)	
U.S. Bonds	1.95	1.25	(0.70)	
Cash Equivalents	(0.30)	(0.35)	(0.05)	
<u>Stocks minus Bonds:</u>	3.00	3.40	0.40	
<u>Bonds minus Cash:</u>	2.25	1.60	(0.65)	

Economic Review



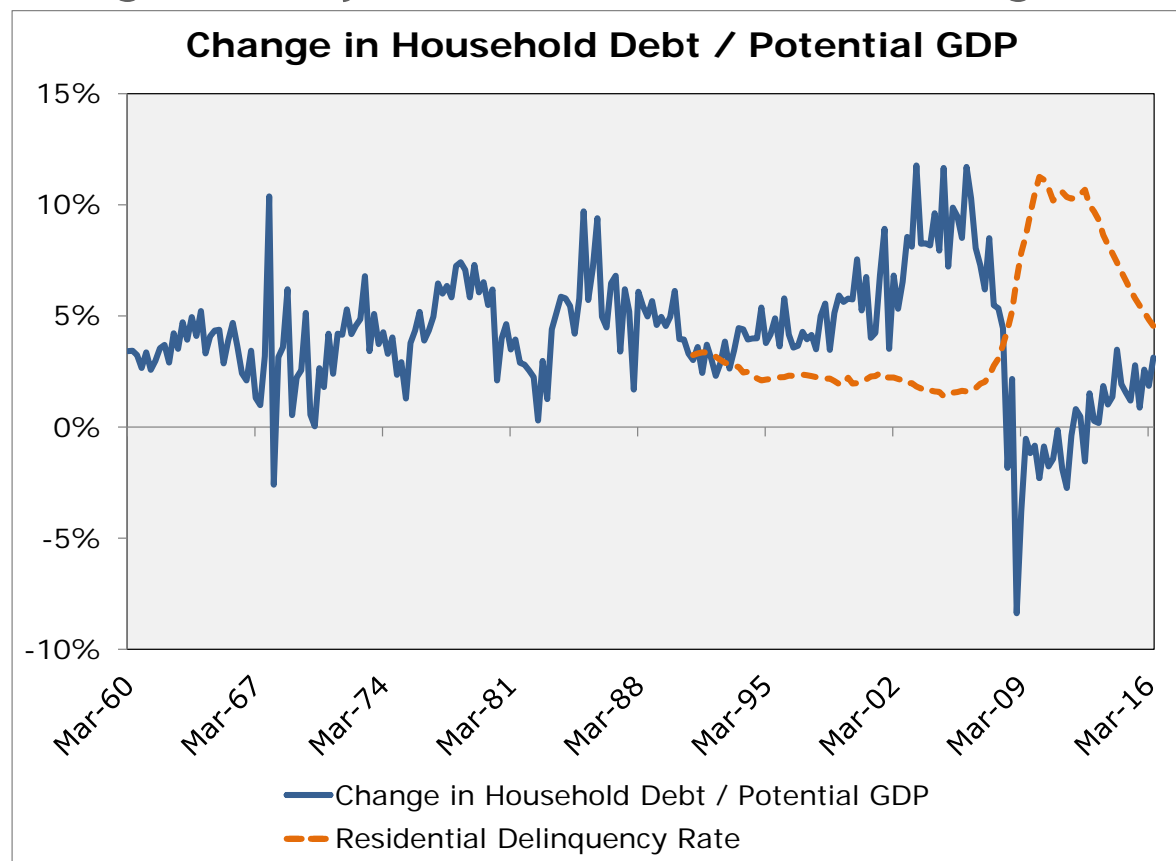
September 30, 2016		Key Economic Indicators			
CPI (all items)		Monthly Change		Cumulative Change	
Seasonally adjusted	Sep-16	0.3		3-Month	0.5
	Aug-16	0.2		12-Month	1.5
	Jul-16	0.0		10-Yr Annual	1.7
Breakeven Inflation		10-Year	1.6		
Consumer Sentiment		Sep-16	91.2		
Unv. of Michigan Survey	Aug-16	89.8			
	1-Yr Ago	87.2		10-Yr Avg	77.9
Manufacturing		Sep-16	51.5	Change in Manufacturing Sector	
Inst. for Supply Mgmt	Aug-16	49.4		>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

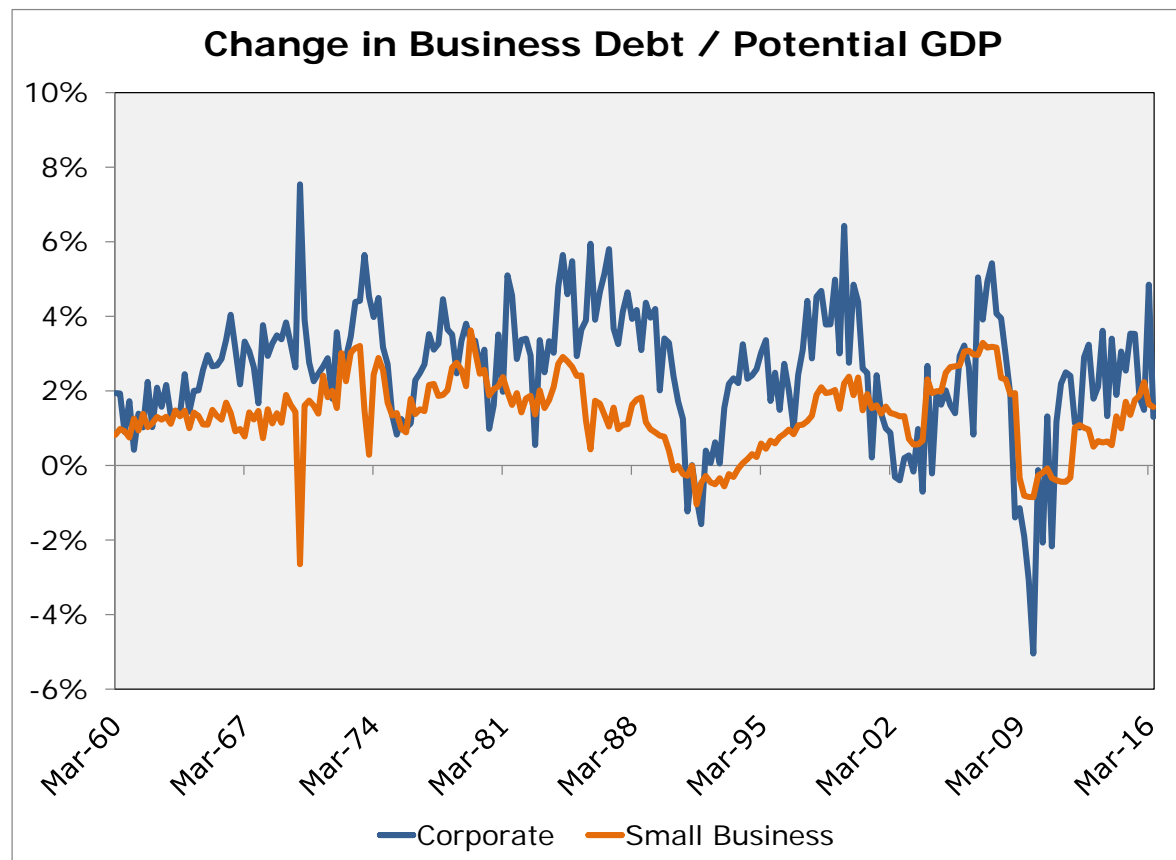
- Eight years since the debt crisis hit in full
- After a period where mortgage defaults dominated net borrowing, consumer credit is beginning to trend just below the historical average



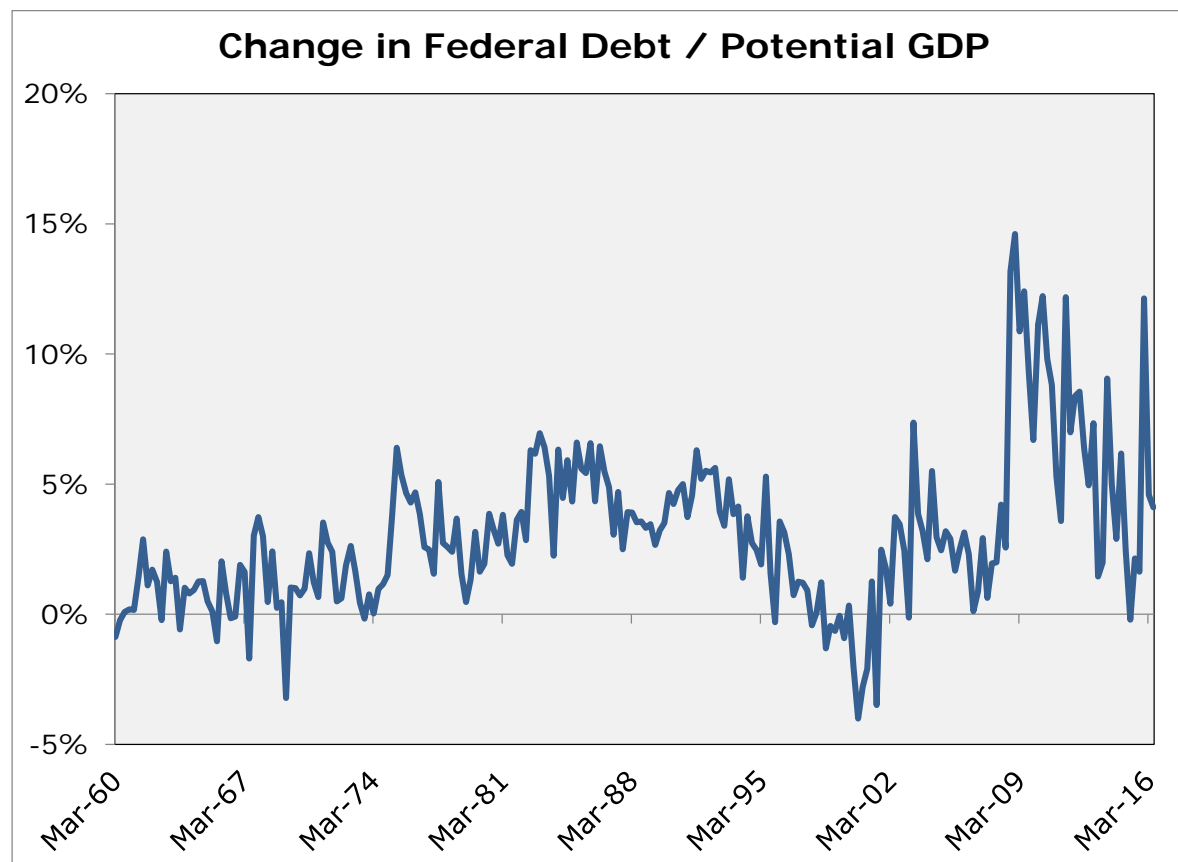
- Note: Potential GDP (estimated GDP at full employment) is utilized as it is more stable than actual GDP, therefore changes are being driven by the debt figure (the numerator)

Debt: Where are we now?

- Debt growth in the private sector has normalized, as well
- Borrowing in small businesses, which are more reliant on U.S. demand, is moving towards the historical average



- Federal government drove new debt creation after the crisis
- Growth trending downward but with occasional spikes
- Total public debt / GDP has gone from 63% for year-end 2007 to 105% mid-year 2016

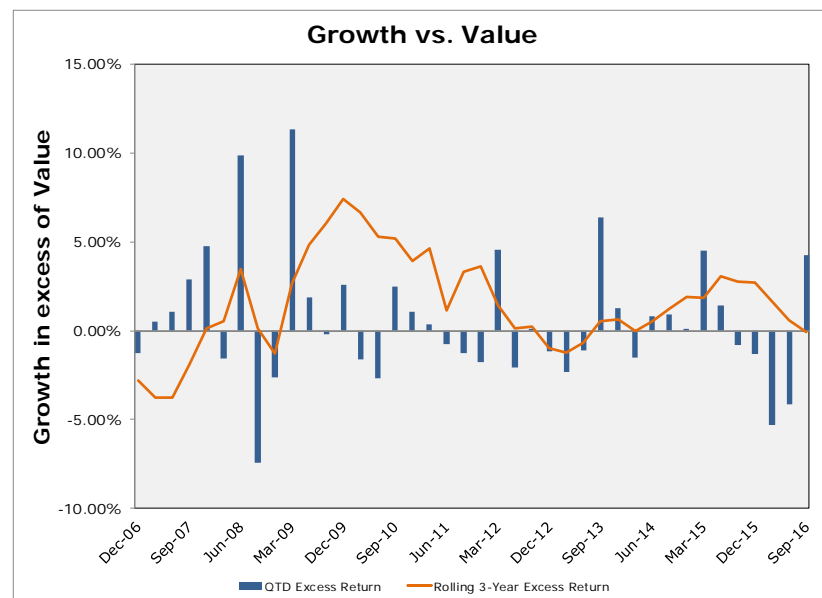
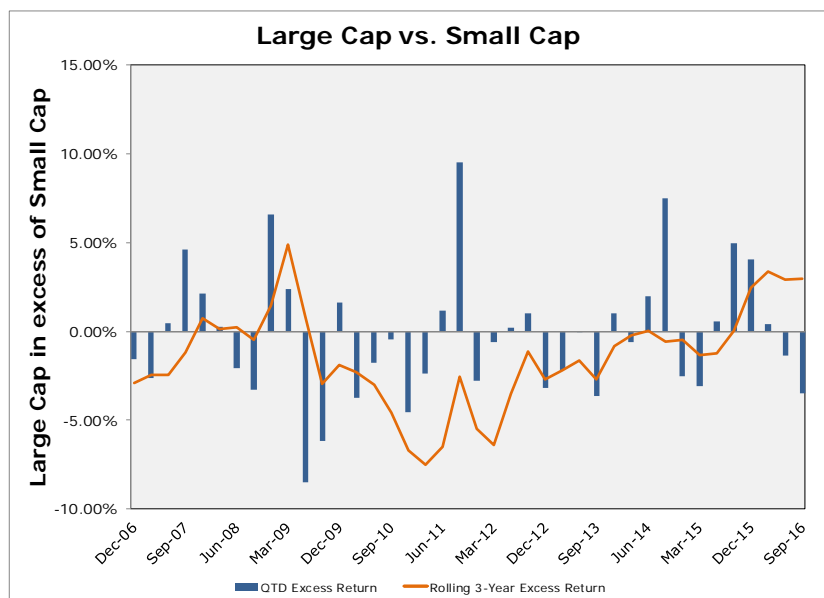
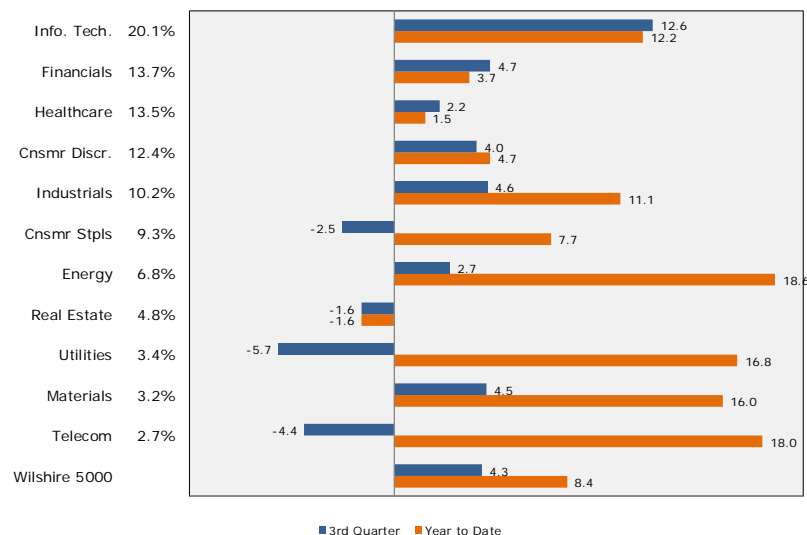


U.S. Equity Market



September 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Wilshire 5000	4.3	8.4	15.3	10.7	16.3	7.4
Wilshire U.S. Large Cap	3.9	8.0	15.3	11.0	16.3	7.3
Wilshire U.S. Small Cap	7.7	13.0	16.0	7.8	16.9	8.7
Wilshire U.S. Large Growth	6.2	4.9	11.2	11.2	16.7	8.4
Wilshire U.S. Large Value	1.8	10.6	18.8	10.7	15.8	6.2
Wilshire U.S. Small Growth	9.4	8.7	10.5	5.2	15.4	8.9
Wilshire U.S. Small Value	6.1	17.1	21.2	10.2	18.2	8.5
Wilshire REIT Index	-1.2	9.7	17.9	14.3	15.8	5.9
MSCI USA Minimum Volatility Index	-1.3	9.9	16.6	12.7	15.1	8.0
FTSE RAFI U.S. 1000 Index	4.1	9.6	15.8	10.0	16.6	8.0

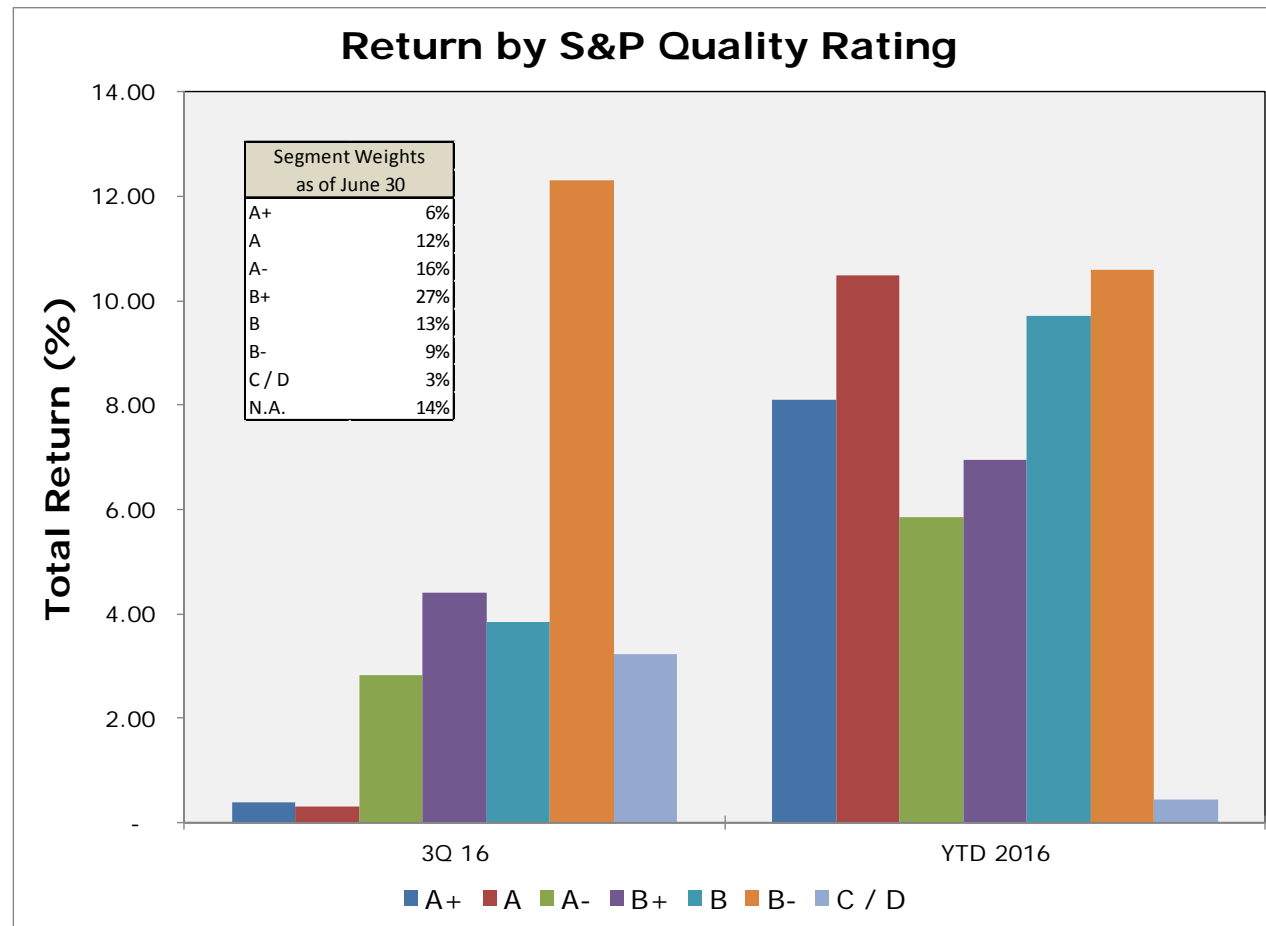
Wilshire 5000 Sector Weight & Return (%)



Data sources: Wilshire Compass, Wilshire Atlas

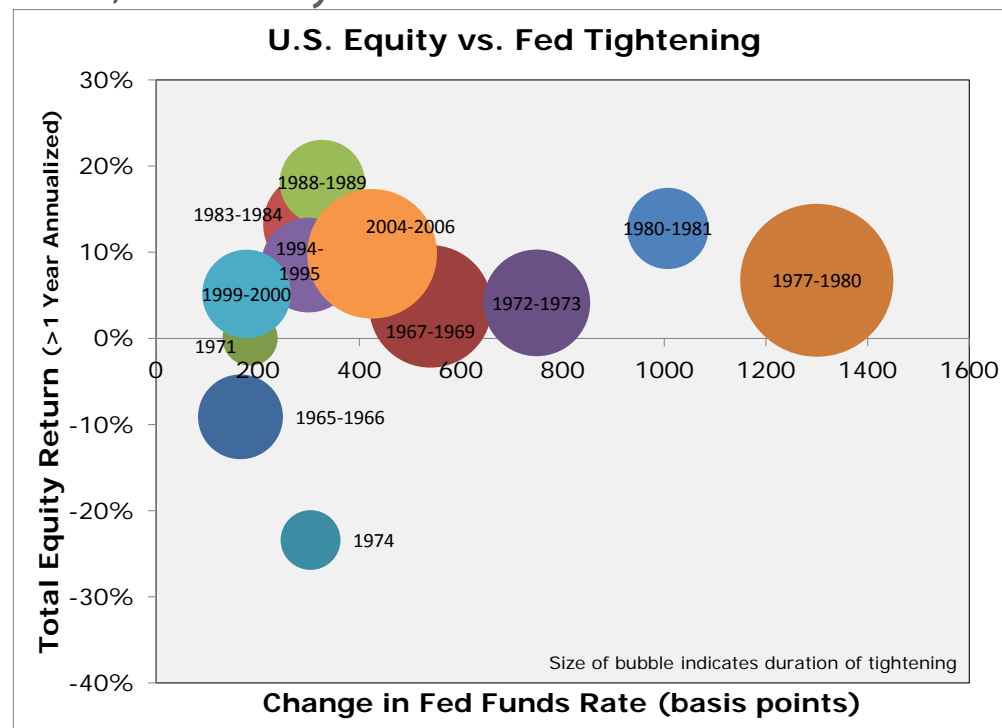
Returns by Quality Segment

Relatively strong returns across most quality ratings for 2016



Data sources: Wilshire Atlas

- In 12 tightening cycles of the past 50 years, equity prices have typically fared well
- What might be different today?
 - While in the past corporate earnings were improving before and through the average cycle, EPS is currently on the decline
 - Current cycle may have already started with quantitative easing discontinued
- Except for 2004-2006, recent cycles have been shorter than average

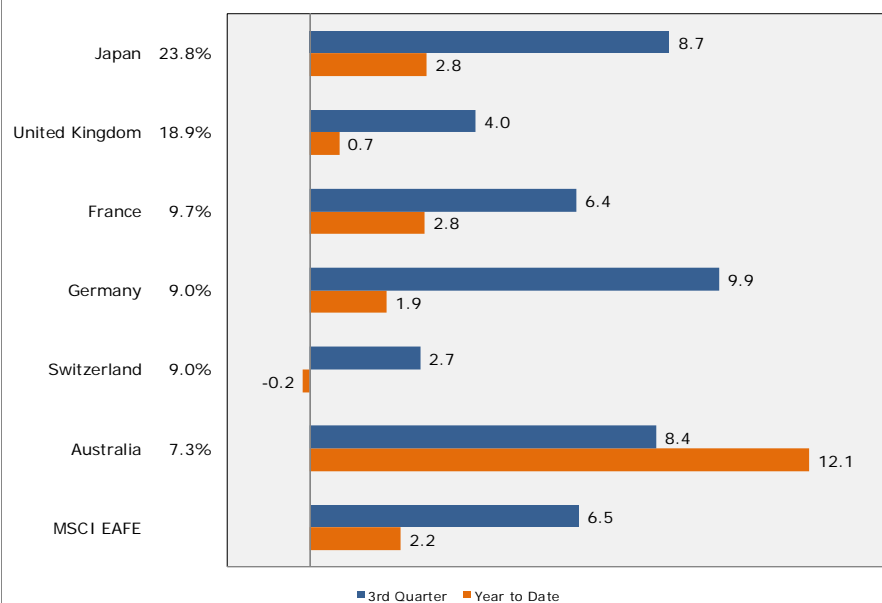


Non-U.S. Equity Market

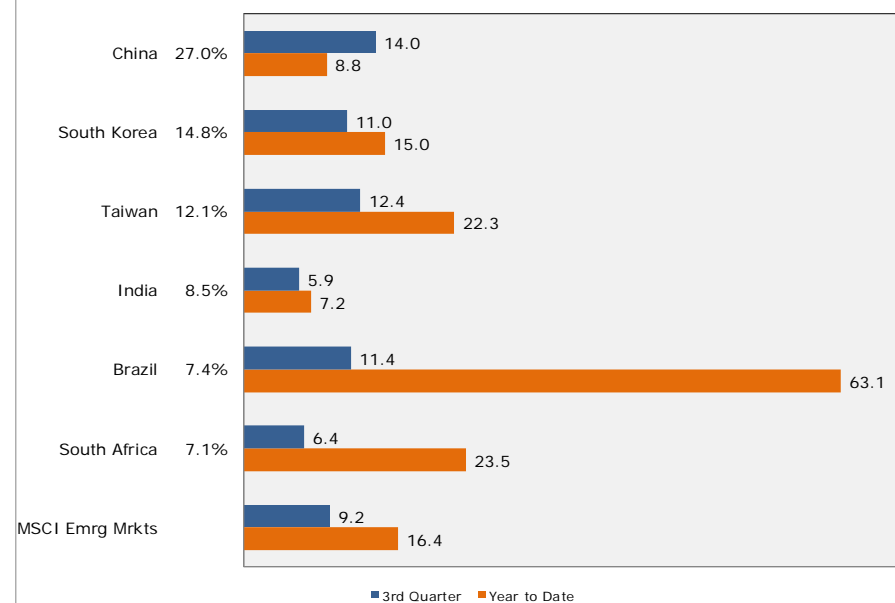


September 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
MSCI ACWI ex-US (\$g)	7.0	6.3	9.8	0.6	6.5	2.6
MSCI EAFE (\$g)	6.5	2.2	7.1	0.9	7.9	2.3
MSCI Emerging Markets (\$g)	9.2	16.4	17.2	-0.2	3.4	4.3
MSCI Frontier Markets (\$g)	2.7	2.6	1.4	0.2	5.0	0.3
MSCI ACWI ex-US Growth (\$g)	6.1	6.5	11.9	2.6	7.8	3.5
MSCI ACWI ex-US Value (\$g)	7.9	6.0	7.6	-1.4	5.2	1.7
MSCI ACWI ex-US Small (\$g)	8.5	8.5	14.3	4.0	9.1	5.0
MSCI EAFE Minimum Volatility Idx	2.2	5.4	11.9	7.1	9.9	6.0
FTSE RAFI Developed ex-US Index	7.8	3.4	7.0	0.0	7.0	2.6
MSCI EAFE LC (g)	6.1	-1.2	5.1	5.8	11.7	2.7
MSCI Emerging Markets LC (g)	7.7	11.6	13.4	4.7	7.3	6.3

MSCI EAFE: Largest Countries and Return (USD)



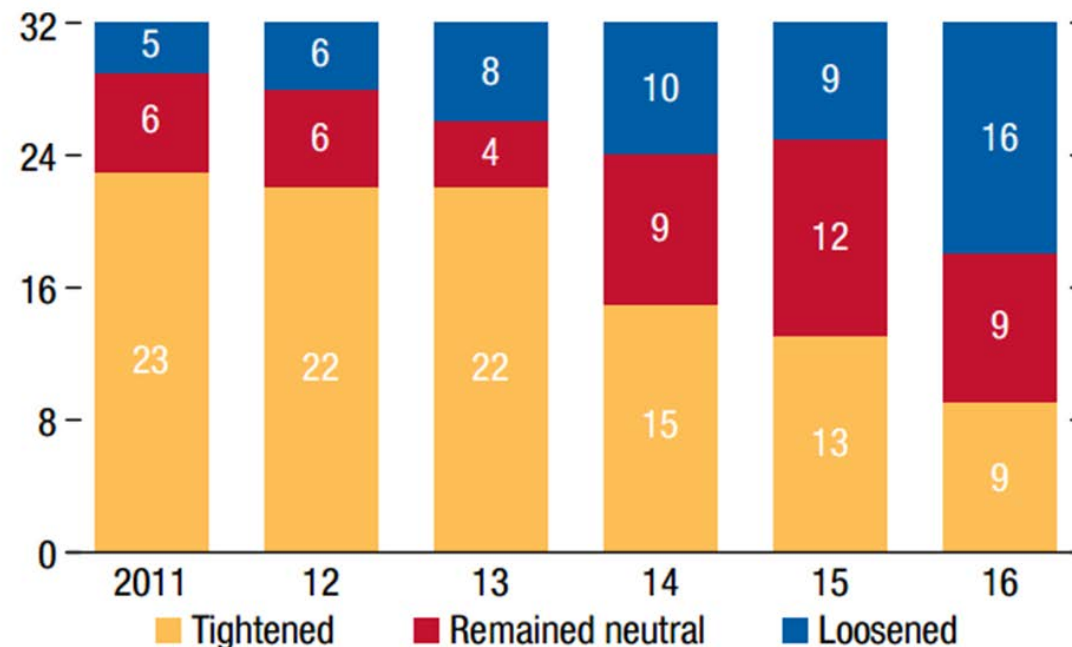
MSCI EM: Largest Countries and Return (USD)



Data sources: Wilshire Compass

- Governments in many countries are now leaning towards fiscal policy to stimulate growth
- China, Japan and Canada have been among the most aggressive so far
- Fiscal stimulus is a challenge within the Eurozone given their collective rules, such as overly indebted countries cannot run significant fiscal deficits

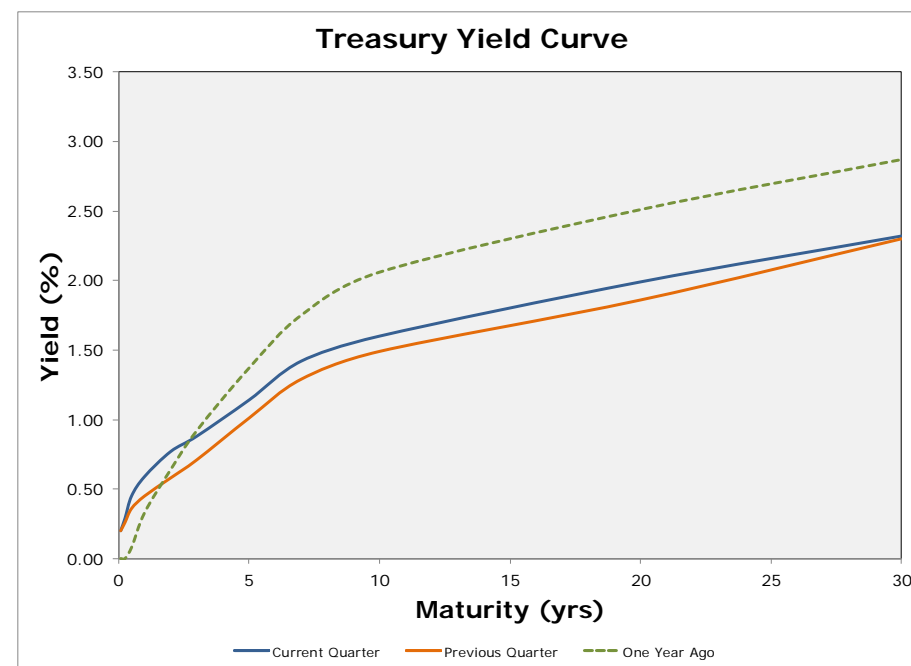
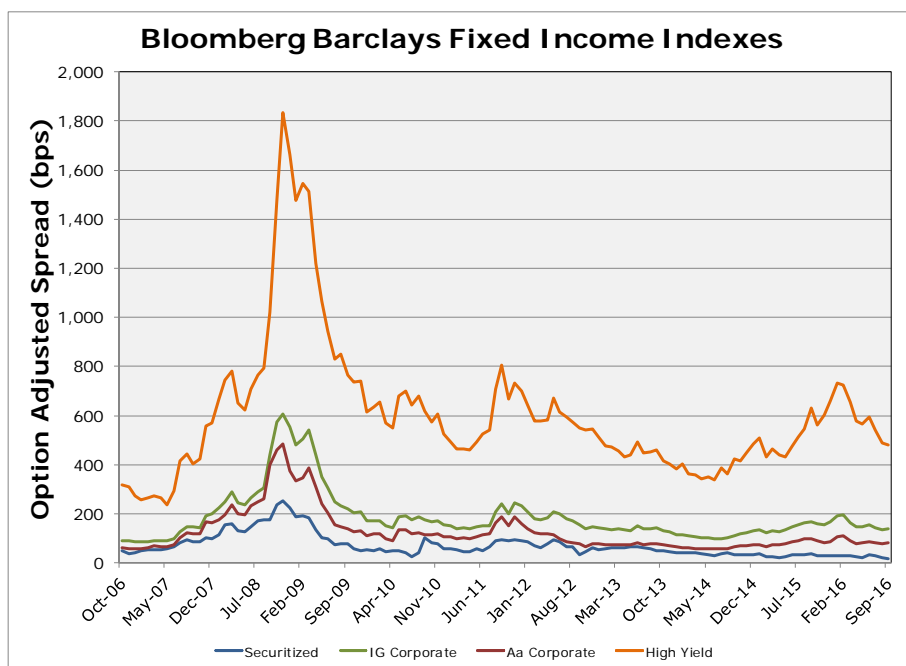
Number of developed countries in which the fiscal stance was tightened, loosened, or remained neutral



U.S. Fixed Income Market



September 30, 2016	YTM	Duration	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Bloomberg Barclays Aggregate	2.0	5.5	0.5	5.8	5.2	4.0	3.1	4.8
Bloomberg Barclays Treasury	1.3	6.4	-0.3	5.1	4.1	3.4	2.2	4.5
Bloomberg Barclays Govt-Related	2.0	5.6	0.3	6.0	5.6	3.9	2.9	4.5
Bloomberg Barclays Securitized	2.1	2.7	0.6	3.9	3.7	3.6	2.8	4.6
Bloomberg Barclays Corporate IG	2.8	7.5	1.4	9.2	8.6	5.6	5.1	5.9
Bloomberg Barclays LT Govt/Credit	3.3	15.6	1.2	15.7	14.7	10.1	6.3	7.8
Bloomberg Barclays LT Treasury	2.2	18.2	-0.4	14.7	13.1	11.2	5.5	8.1
Bloomberg Barclays LT Govt-Rel.	3.8	12.7	0.9	14.6	14.9	9.4	6.3	7.7
Bloomberg Barclays LT Corp. IG	4.1	14.3	2.6	16.8	15.7	9.5	7.2	7.6
Bloomberg Barclays U.S. TIPS	0.2	8.6	1.0	7.3	6.6	2.4	1.9	4.5
Bloomberg Barclays High Yield	6.6	4.0	5.6	15.1	12.7	5.3	8.3	7.7
Treasury Bills	0.3	0.25	0.1	0.2	0.3	0.1	0.1	0.9



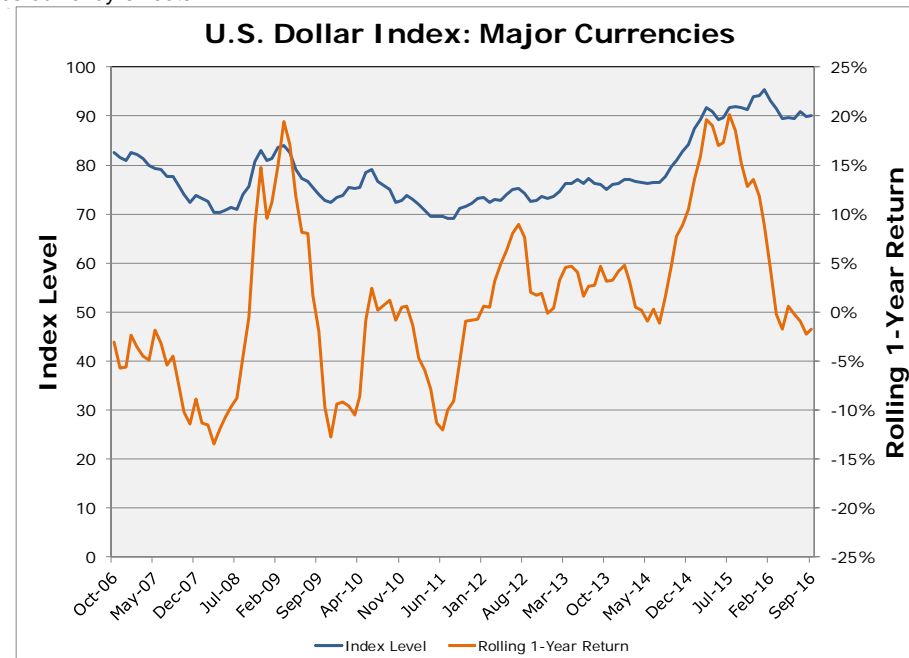
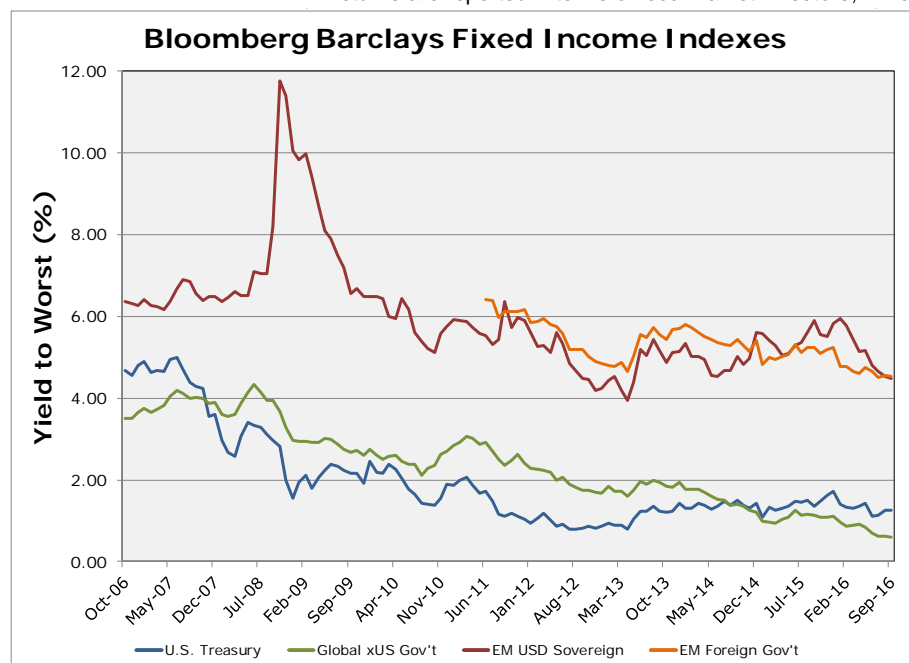
Data sources: Wilshire Compass, Bloomberg Barclays, U.S. Treasury

Non-U.S. Fixed Income Market



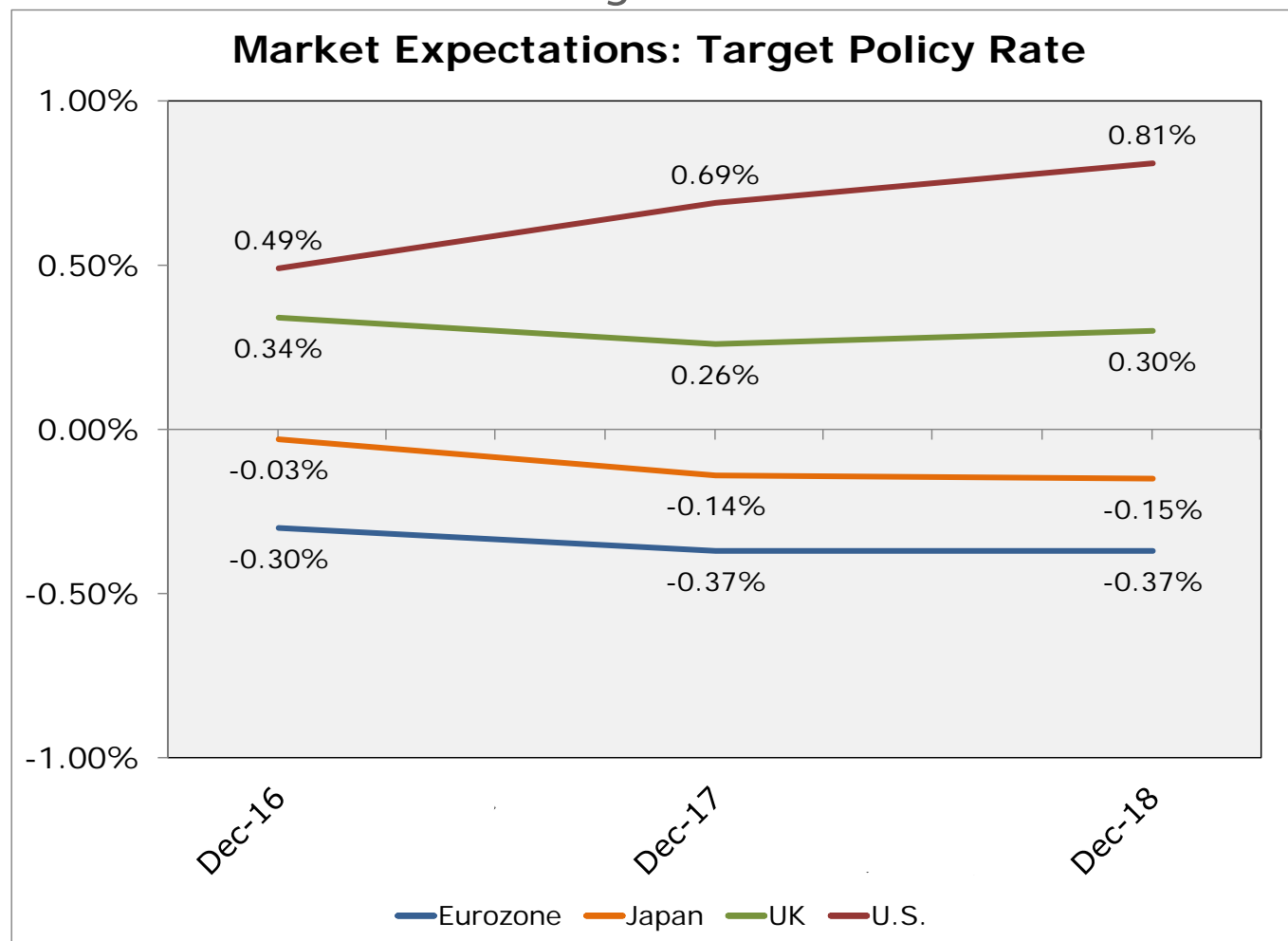
September 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
<i>Developed Markets</i>						
Bloomberg Barclays Global Aggregate xUS	1.0	13.1	11.7	0.8	0.7	3.8
Bloomberg Barclays Global Aggregate xUS *	0.5	6.9	7.5	5.8	5.0	4.7
Bloomberg Barclays Wrld Govt xUS IL Bond	4.7	11.5	7.5	2.6	3.2	4.2
Bloomberg Barclays Wrld Govt xUS IL Bond *	5.7	16.5	15.0	9.4	7.0	6.0
<i>Emerging Mkts (Hard Currency)</i>						
Bloomberg Barclays EM USD Aggregate	3.1	12.8	13.9	6.6	7.3	7.4
<i>Emerging Mkts (Foreign Currency)</i>						
Bloomberg Barclays EM Local Currency Govt	3.1	14.5	15.7	0.1	2.4	n.a.
Bloomberg Barclays EM Local Currency Govt *	1.0	6.2	6.7	3.5	3.2	n.a.
Euro vs. Dollar	1.2	3.5	0.7	-6.0	-3.5	-1.2
Yen vs. Dollar	1.3	18.8	18.3	-1.0	-5.3	1.5
Pound vs. Dollar	-2.8	-11.9	-14.2	-7.1	-3.6	-3.6

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

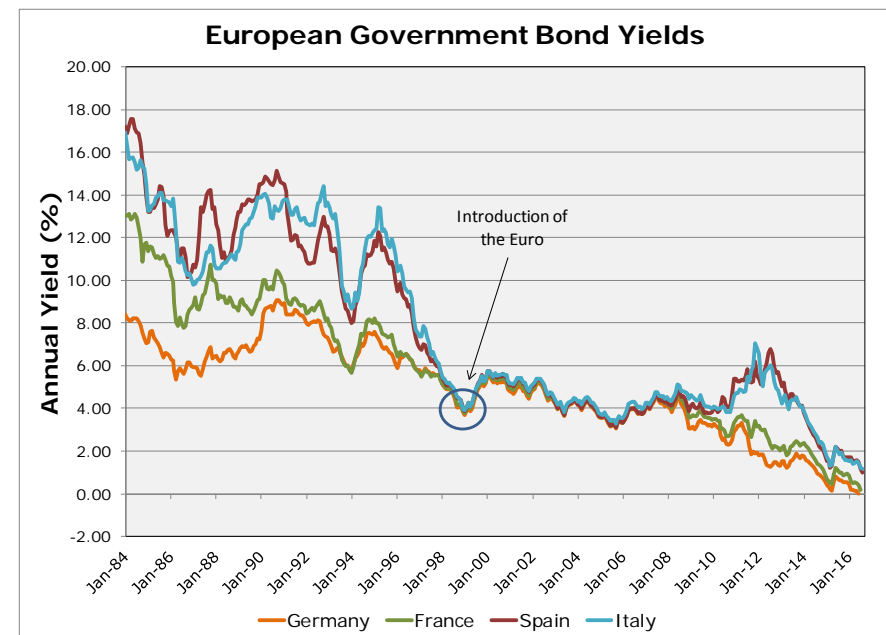
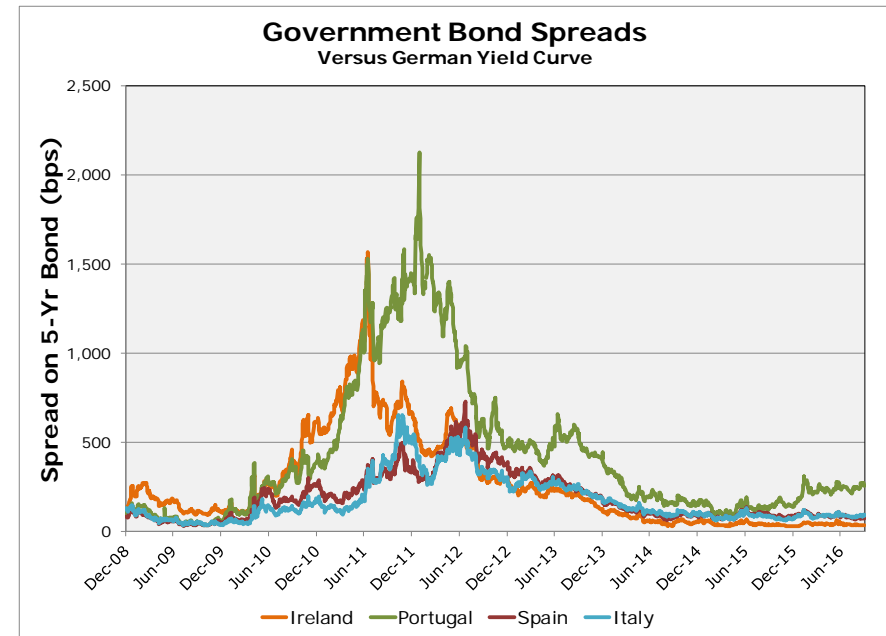


Data sources: Wilshire Compass, Bloomberg Barclays

- Market expectations for central bank activity are muted across the globe
- U.S. Federal Open Market Committee median expectation for year-end 2018 was 1.875% at their last meeting



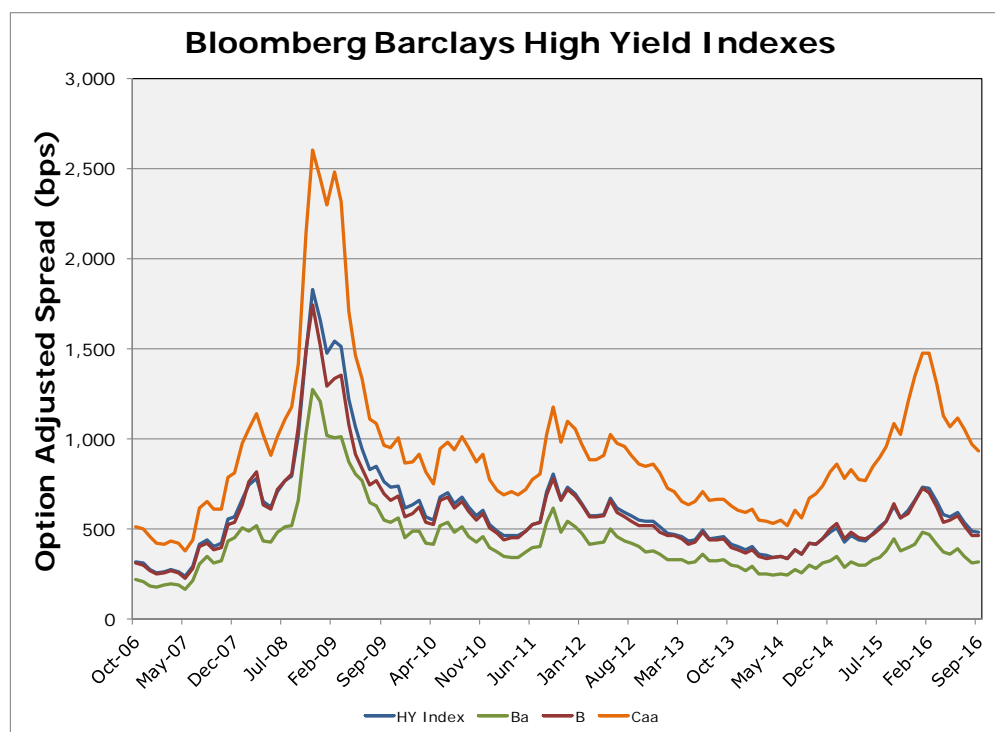
- Spreads on Portugal's government debt have risen as the country faces the possibility of a downgrade, which would disqualify them from the European Central Bank's bond purchase program
- Yields on government bonds are again falling after a brief uptick; Germany actually sold 10-year debt at a negative yield in July



High Yield Bond Market



September 30, 2016	Weight	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Bloomberg Barclays High Yield Idx	100%	5.6	15.1	12.7	5.3	8.3	7.7
Quality Distribution							
Ba U.S. High Yield	46.4%	4.4	12.3	12.1	6.5	8.3	8.2
B U.S. High Yield	38.3%	5.7	13.5	11.3	4.4	7.7	6.4
Caa U.S. High Yield	14.4%	8.2	25.5	16.1	4.4	9.8	6.9
Ca to D U.S. High Yield	0.8%	17.1	63.3	27.2	-21.6	-8.0	-2.4
Non-Rated U.S. High Yield	0.1%	-1.9	4.4	-7.5	-3.3	4.7	0.6

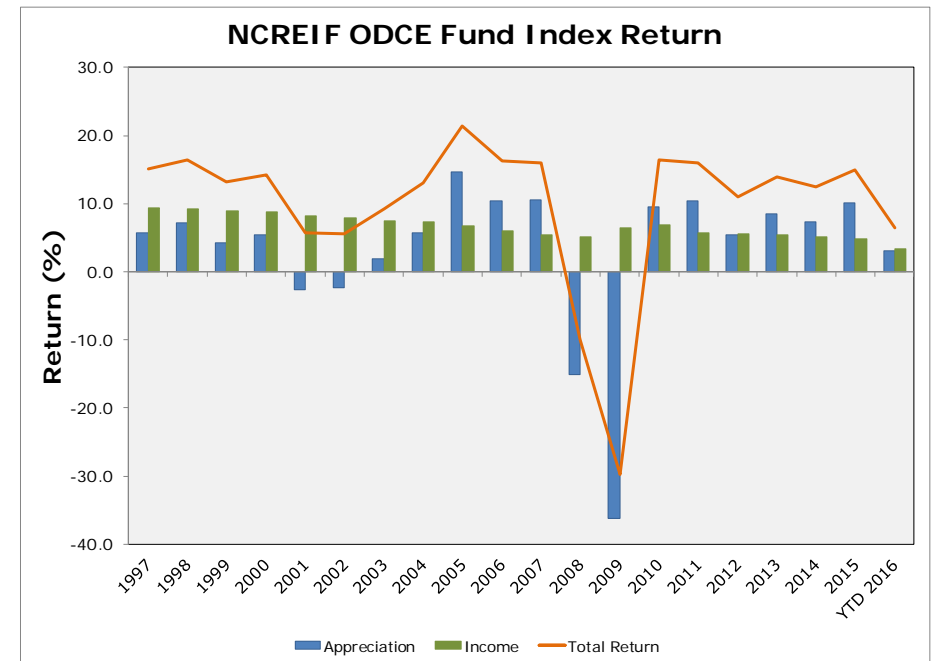
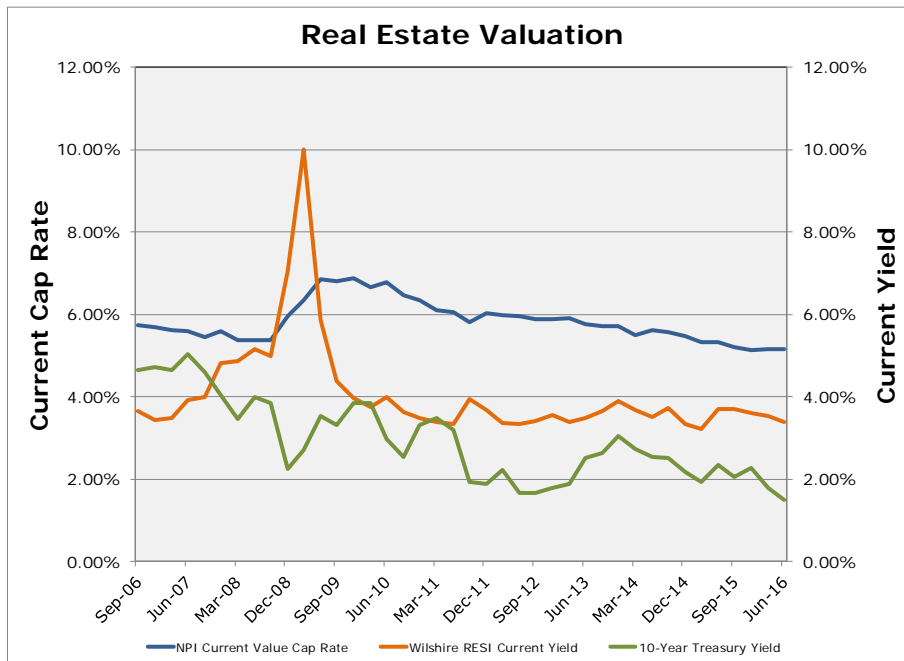


Data sources: Bloomberg Barclays

Real Assets



September 30, 2016	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays U.S. TIPS Index	1.0	7.3	6.6	2.4	1.9	4.5
Bloomberg Commodity Index	-3.9	8.9	-2.6	-12.3	-9.4	-5.3
Wilshire Global RESI Index	0.0	10.1	15.5	10.1	13.8	4.9
NCREIF ODCE Fund Index	2.1	6.5	10.1	12.4	12.4	6.0
NCREIF Timberland Index	0.7	1.4	3.3	7.6	6.9	6.4
Alerian MLP Index (Oil & Gas)	1.1	15.9	12.7	-4.8	5.0	9.0



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%	Emrg Mrkts 16.4%
U.S. TIPS 13.6%	Developed 17.9%	MLPs 27.6%	U.S. Equity 12.7%	U.S. Equity 0.7%	MLPs 15.9%
REITs 9.2%	REITs 17.6%	Developed 23.3%	Core Bond 6.0%	Core Bond 0.6%	High Yield 15.1%
Core Bond 7.8%	U.S. Equity 16.1%	High Yield 7.4%	MLPs 4.8%	T-Bills 0.1%	REITs 9.7%
High Yield 5.0%	High Yield 15.8%	REITs 1.9%	U.S. TIPS 3.6%	Developed -0.4%	Commodities 8.9%
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. Equity 8.4%
T-Bills 0.1%	MLPs 4.8%	Core Bond -2.0%	T-Bills 0.0%	High Yield -4.5%	U.S. TIPS 7.3%
Developed -11.7%	Core Bond 4.2%	Emrg Mrkts -2.3%	Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	Core Bond 5.8%
Commodities -13.3%	T-Bills 0.1%	U.S. TIPS -8.6%	Developed -4.5%	Commodities -24.7%	Developed 2.2%
Emrg Mrkts -18.2%	Commodities -1.0%	Commodities -9.5%	Commodities -17.0%	MLPs -32.6%	T-Bills 0.2%

Annualized
5-Year
as of Sept '16

U.S. Equity 16.3%
REITs 15.8%
High Yield 8.3%
Developed 7.9%
MLPs 5.0%
Emrg Mrkts 3.4%
Core Bond 3.1%
U.S. TIPS 1.9%
T-Bills 0.1%
Commodities -9.4%

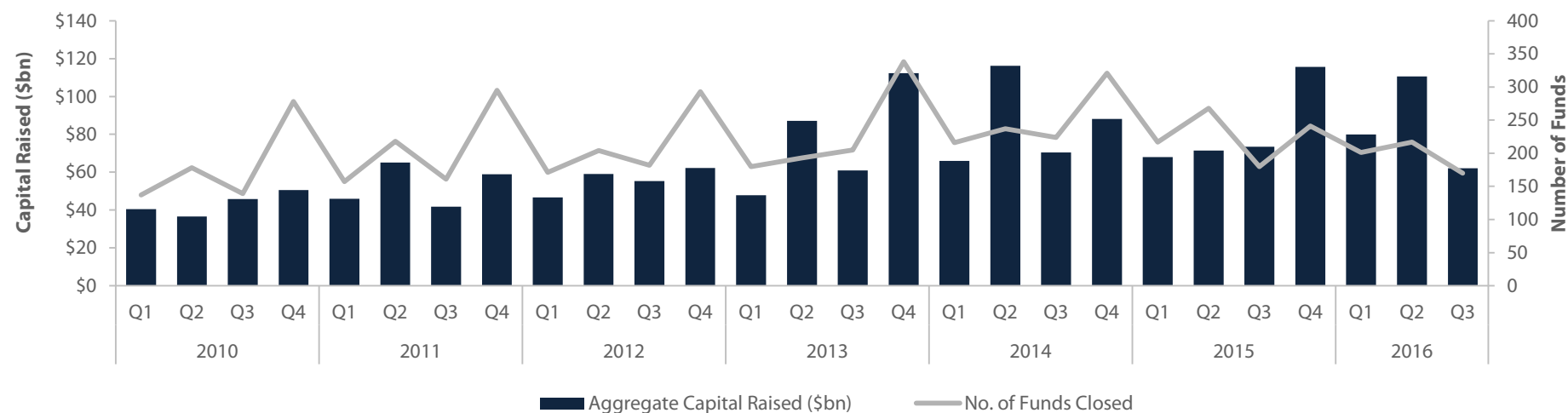
Data sources: Wilshire Compass

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

Appendix: Private Markets Update

Private Equity – Fundraising & Investment Activity

Global Quarterly Private Equity Fundraising (Q1 2010 - Q3 2016)



Global Private Equity-Backed Buyout Activity (Q1 2010 - Q3 2016)

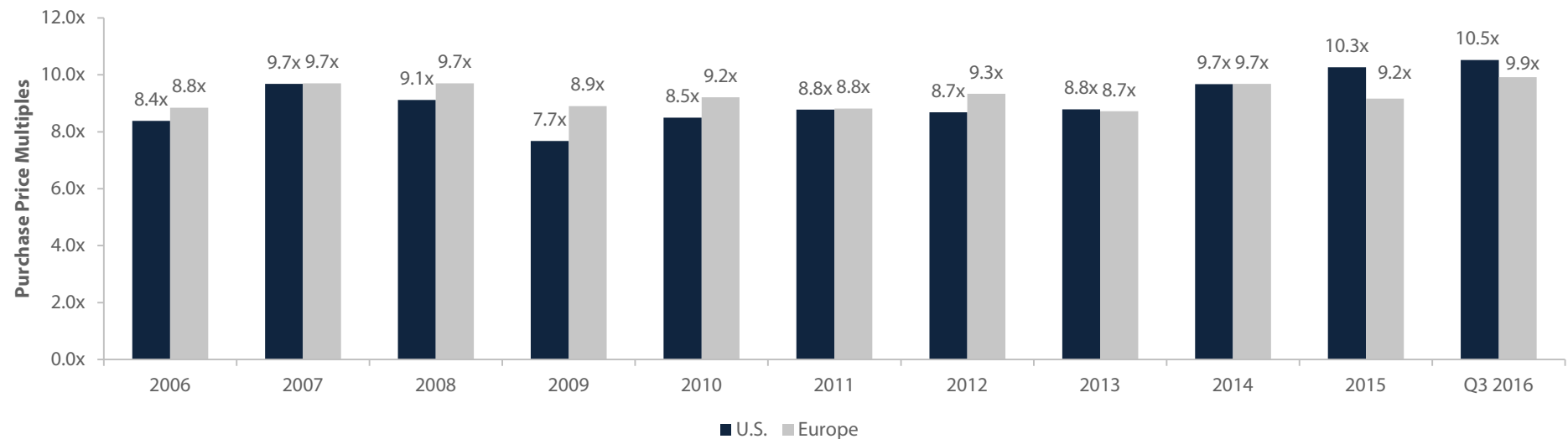


Source: Preqin, as of September 30, 2016.

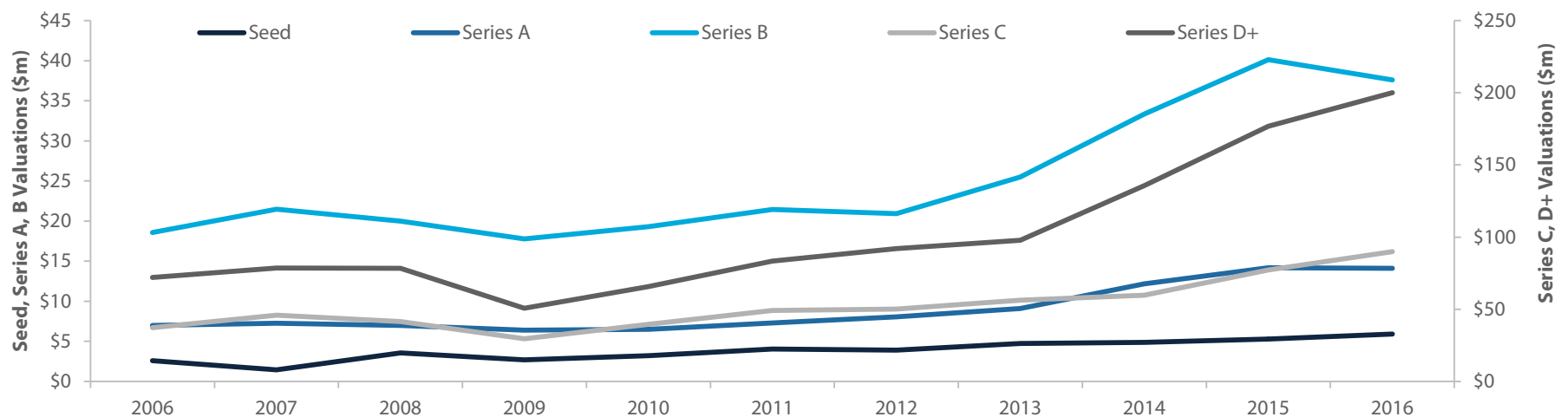
Private Equity – Pricing & Valuations



Global LBO Multiples (2006 – Q3 2016)



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



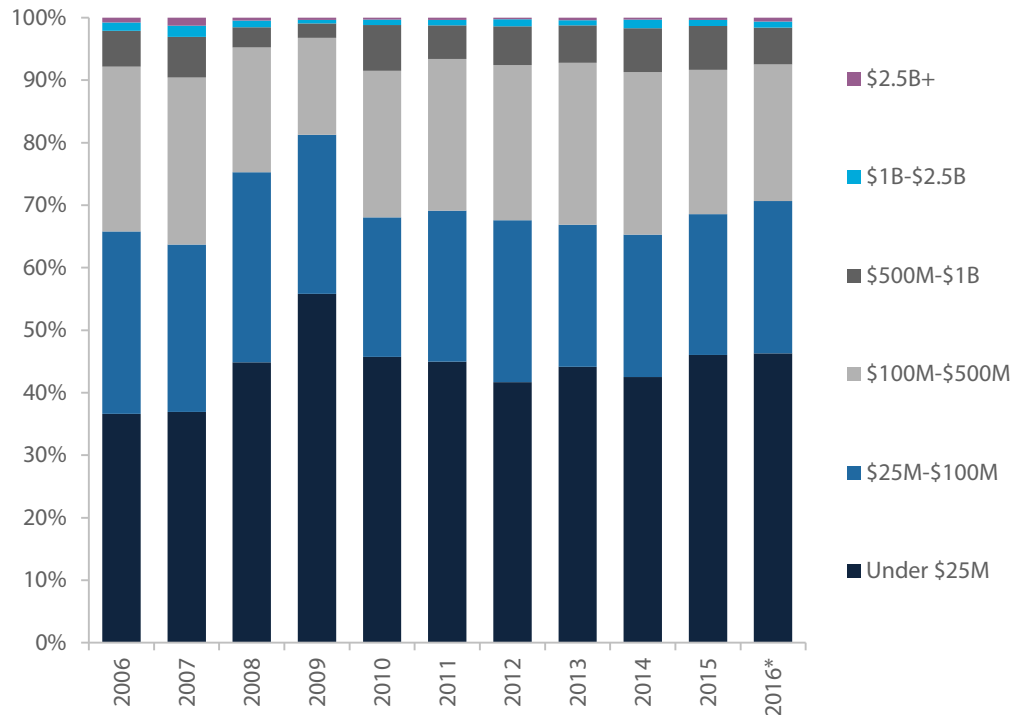
Sources: S&P LCD, through September 30, 2016; PitchBook, as of August 1, 2016.

Police and Fire

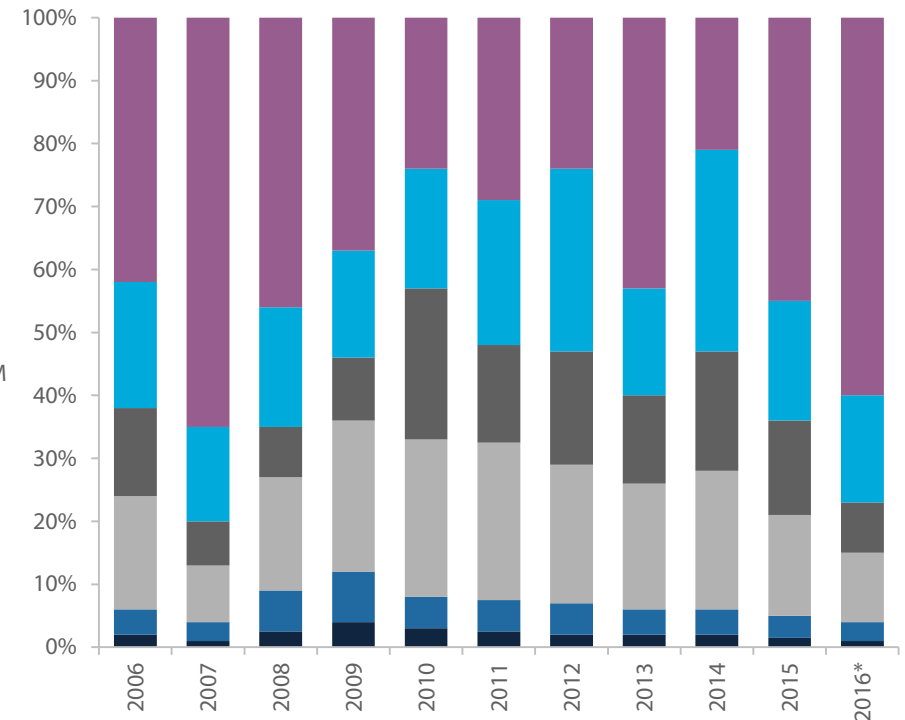
Private Equity – U.S. Investment Activity by Deal Size



Percentage of Deal Volume (count) by Deal Size

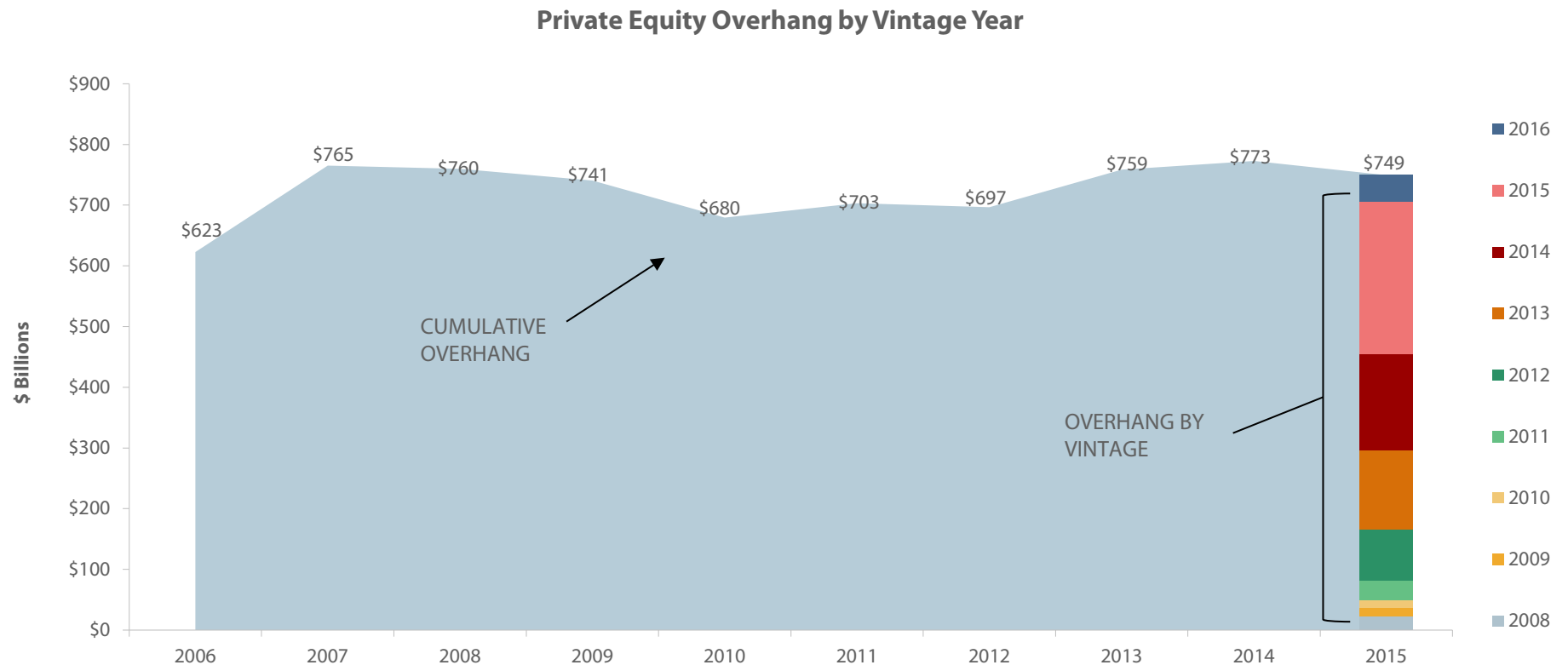


Percentage of Deal Volume (dollars) by Deal Size



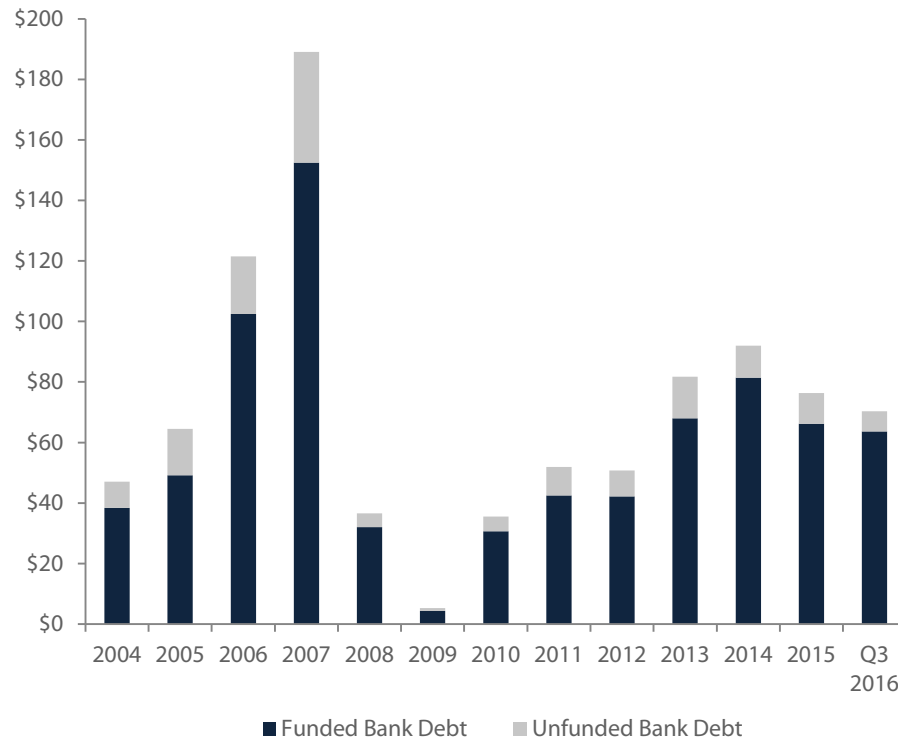
- Smaller deals continue to dominant deal activity by count
- Deals over \$2.5 billion make up the majority of deal value in 2016

Private Equity – Capital Overhang

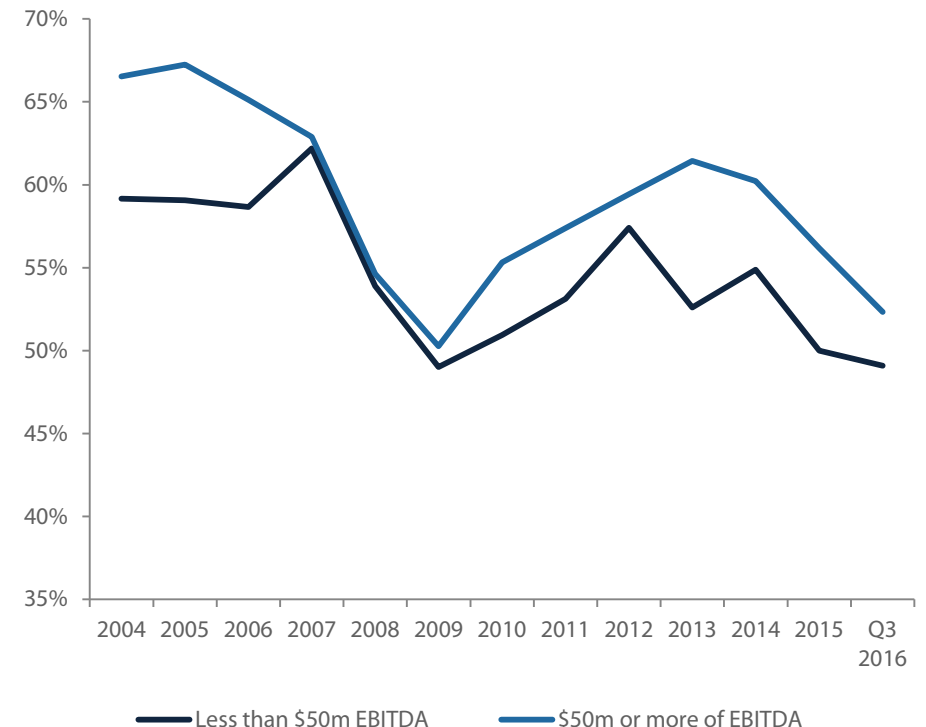


- As of December 31, 2015, aggregate private equity dry powder across North America and Europe remains elevated at \$749 billion, a 3% decline from the end of 2014
- While the overhang slightly decreased across 2007 to 2010, the overhang has increased back to 2007-2008 peak levels

**Total U.S. Leveraged Buyout Loan Volume (\$bn)
(2004 – Q3 2016)**



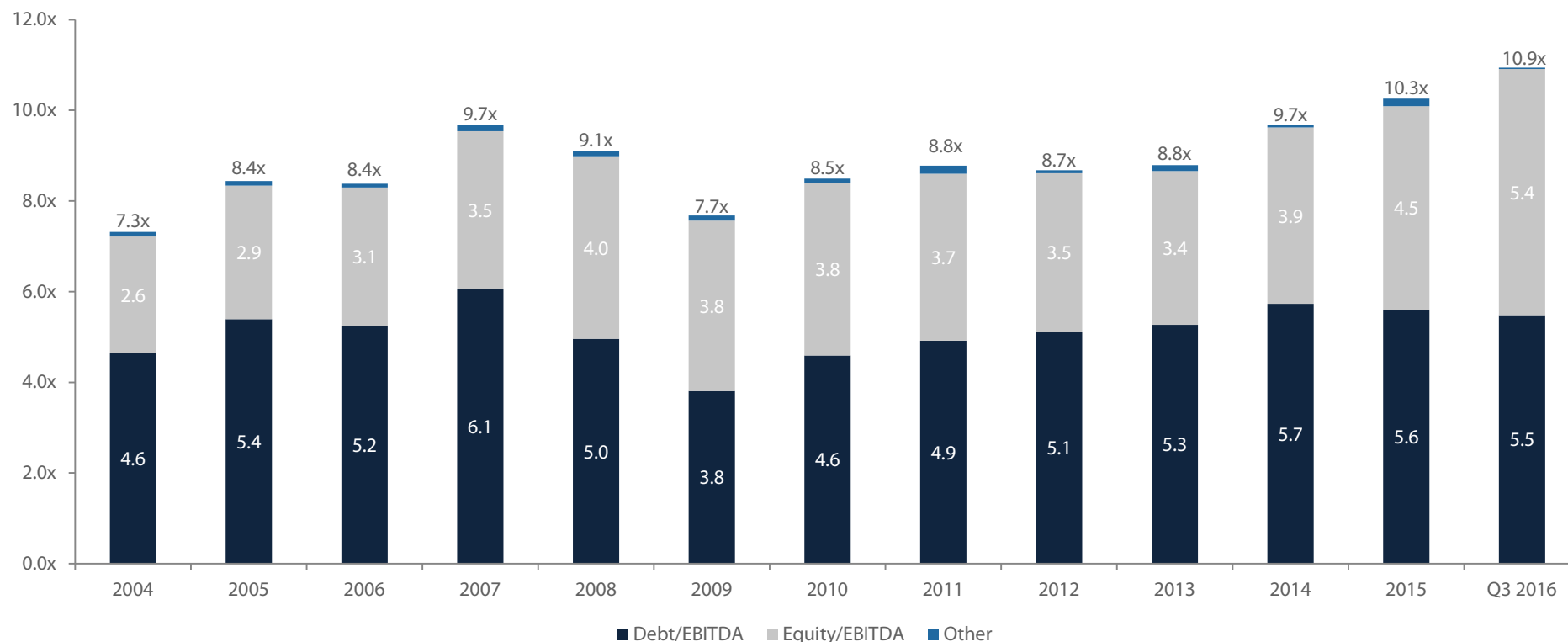
**Percentage of Debt Used in Buyouts
(2004 – Q3 2016)**



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

Private Equity – U.S. LBO Purchase Price Multiples

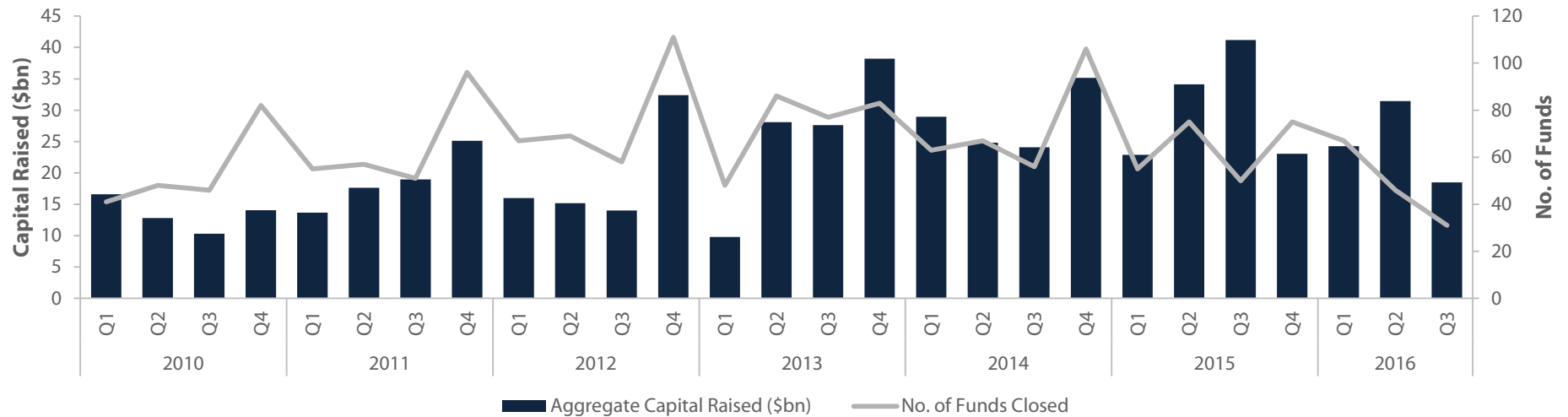
Purchase Price Multiples of U.S. LBO Transactions (2004 – Q3 2016)



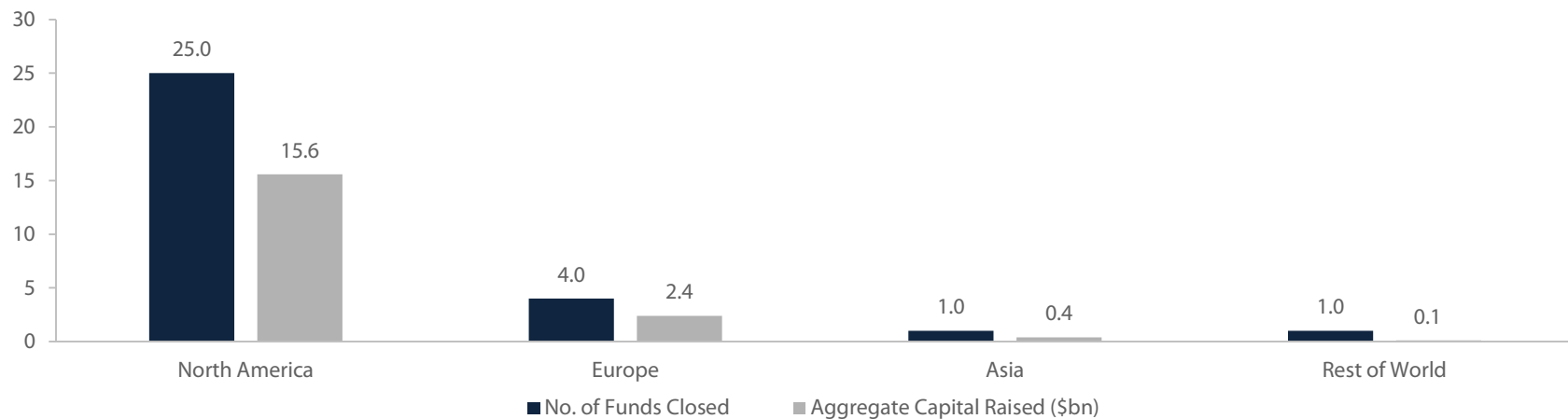
- As debt has become more readily available, purchase price multiples have increased from the low point in 2009
- Pricing in 2016 to date has increased by 0.6x from the recent high in 2015

Private Real Estate – Fundraising Activity

Global Quarterly Closed-End Private Real Estate Fundraising (Q1 2010 - Q3 2016)



Closed-End Private Real Estate Fundraising by Primary Geographic Focus (Q3 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.

