Retirement Board of Allegheny County

Executive Summary of Investment Performance

September 30, 2013

Total Fund

Asset Allocation

Wilshire

As of September 30, 2013

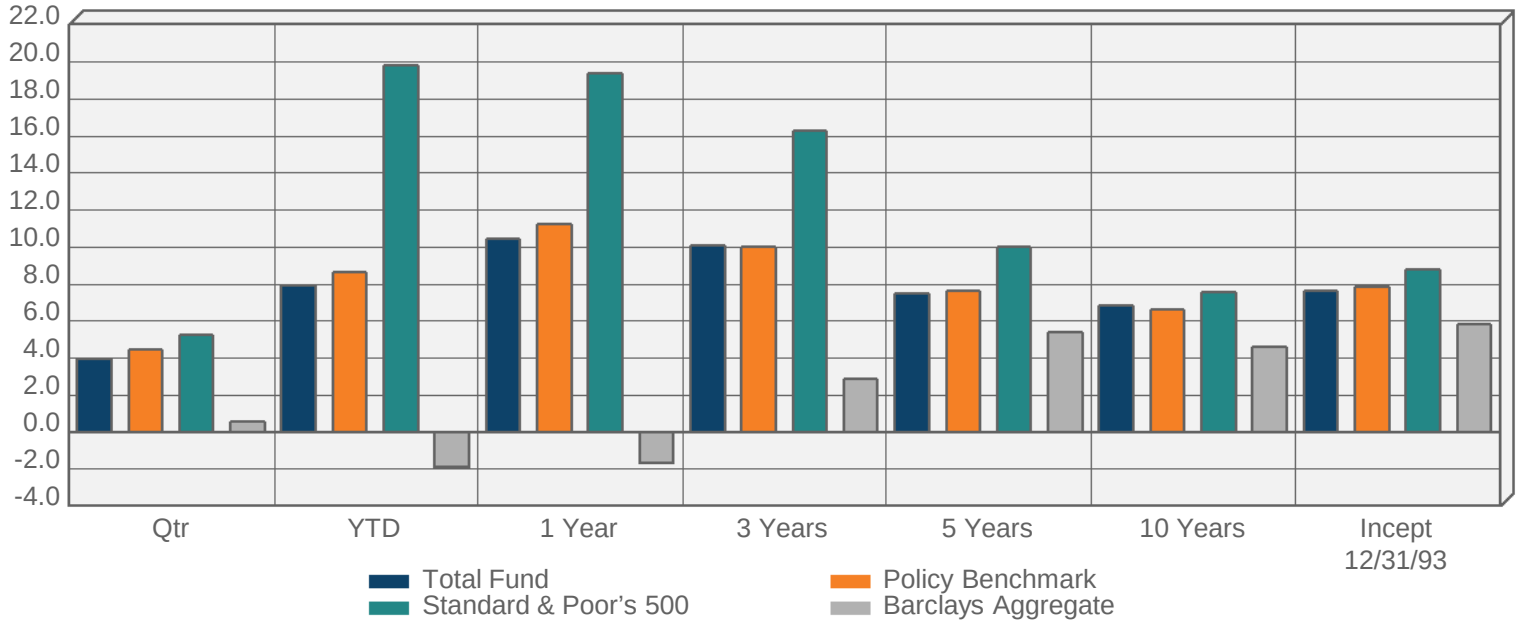
	Market Value ($ MM)	Actual Allocation	Policy Target	Variance *	Range
EQUITY	**326.3**	**41.0%**	**35.0%**	**6.0%**	**30% - 40%**
US Equity	147.4	18.5%	16.1%	2.4%	14% - 18%
Non US Equity	178.9	22.5%	18.9%	3.6%	16% - 22%
FIXED INCOME	**226.4**	**28.4%**	**27.0%**	**1.4%**	**23% - 31%**
Core Fixed Income	67.4	8.5%	10.0%	-1.5%	8% - 12%
High Yield Fixed Income	116.2	14.6%	12.0%	2.6%	10% - 14%
TIPS Fixed Income	42.8	5.4%	5.0%	0.4%	4% - 6%
ALTERNATIVES	**229.4**	**28.8%**	**38.0%**	**-9.2%**	**32% - 44%**
Private Equity	103.6	13.0%	20.0%	-7.0%	15% - 24%
Real Estate ^	65.2	8.2%	10.0%	-1.8%	5% - 12%
Commodities	23.5	3.0%	8.0%	-5.0%	7% - 9%
Life Settlement	34.2	4.3%	0.0%	4.3%	0%
Hedge Funds - In Transition	2.9	0.4%	0.0%	0.4%	0%
CASH & EQUIVALENTS	**14.1**	**1.8%**	**0.0%**	**1.8%**	**0% - 2%**
Cash	7.6	1.0%	0.0%	1.0%	0% - 2%
Israeli Bonds	6.4	0.8%	0.0%	0.8%	0% - 2%
TOTAL	**796.2**	**100.0%**	**100.0%**	**0.0%**	**100%**

* Positive values reflect overweight to asset class
^ Includes ERECT Funds

Investment Performance

Total Fund Composite

Periods Ended September 30, 2013



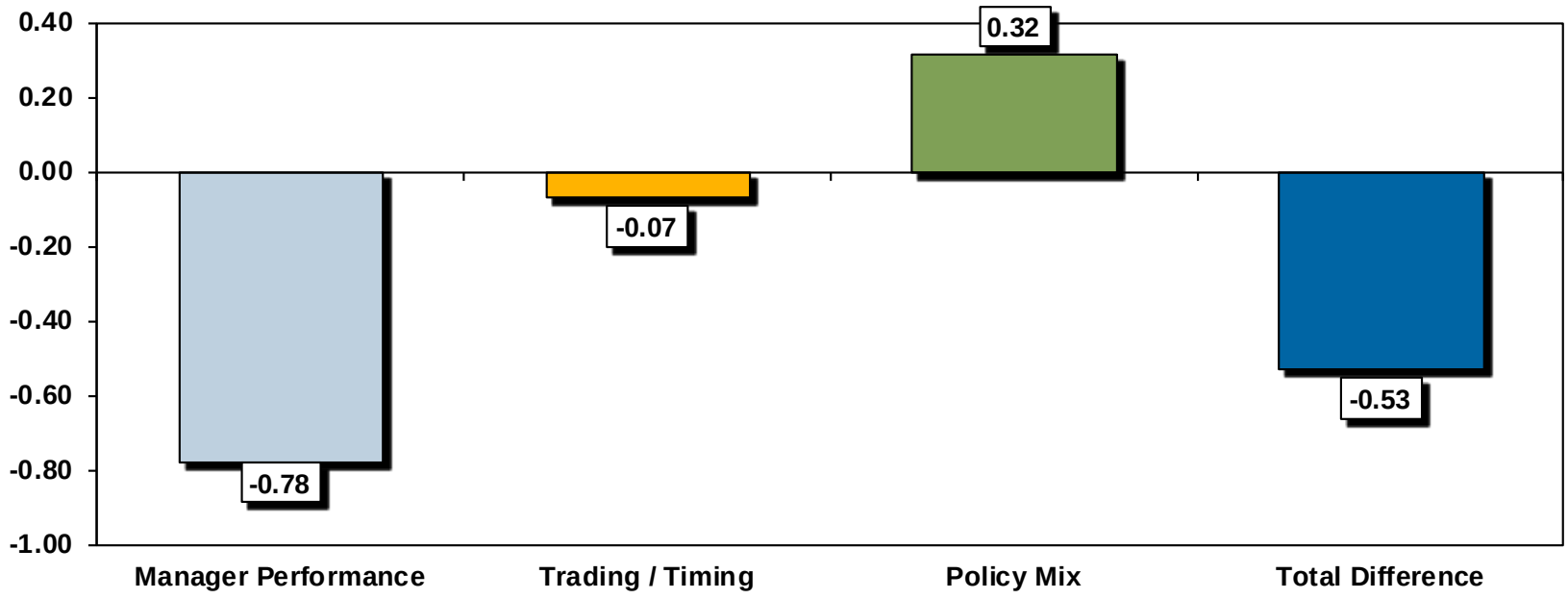
Total Returns	Qtr	YTD	1 Year	3 Years	5 Years	10 Years	Incept 12/31/93
Total Fund	3.94	7.87	10.44	10.07	7.49	6.84	7.64
Policy Benchmark	4.48	8.62	11.24	10.02	7.60	6.60	7.85
Standard & Poor's 500	5.25	19.81	19.35	16.26	10.01	7.56	8.79
Barclays Aggregate	0.57	-1.89	-1.68	2.86	5.41	4.59	5.82

Attribution Analysis

Wilshire

Total Fund *

For Quarter Ending September 30, 2013



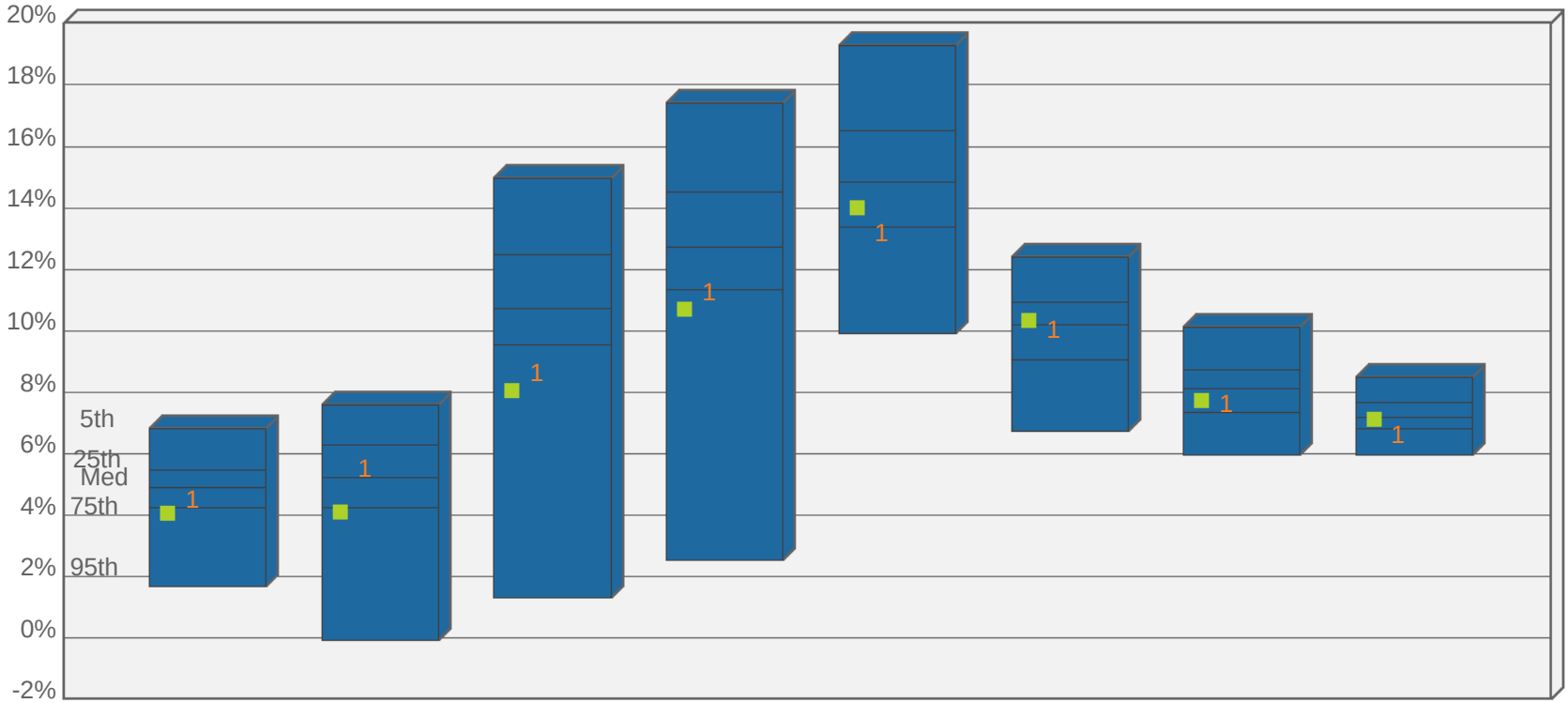
- Manager performance detracted 78 basis points of value from the Total Fund in the third quarter
- Trading costs and the timing of cash flows detracted 7 basis points of value from the Total Fund return over the past quarter
- The actual mix of investments versus the policy mix positively impacted the fund by 32 basis points
- The Total Fund underperformed its benchmark by 53 basis points for the quarter ending September 30, 2013

* Net of investment management fees

Performance Comparison

Total Fund Composite

Periods Ended September 30, 2013



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Total Fund	4.09 (78)	4.13 (77)	8.08 (86)	10.72 (85)	14.03 (64)	10.35 (45)	7.76 (62)	7.16 (52)
1 Policy Benchmark	4.48 (64)	5.49 (42)	8.62 (82)	11.24 (75)	13.16 (78)	10.02 (56)	7.60 (69)	6.60 (85)
5th %tile	6.82	7.61	14.97	17.41	19.29	12.39	10.13	8.48
25th %tile	5.49	6.29	12.47	14.51	16.51	10.92	8.75	7.67
Median	4.92	5.23	10.73	12.73	14.84	10.20	8.11	7.18
75th %tile	4.24	4.23	9.53	11.33	13.38	9.06	7.33	6.81
95th %tile	1.69	-0.08	1.31	2.54	9.92	6.75	5.96	5.97
Number of Funds	167	165	164	164	157	149	125	102

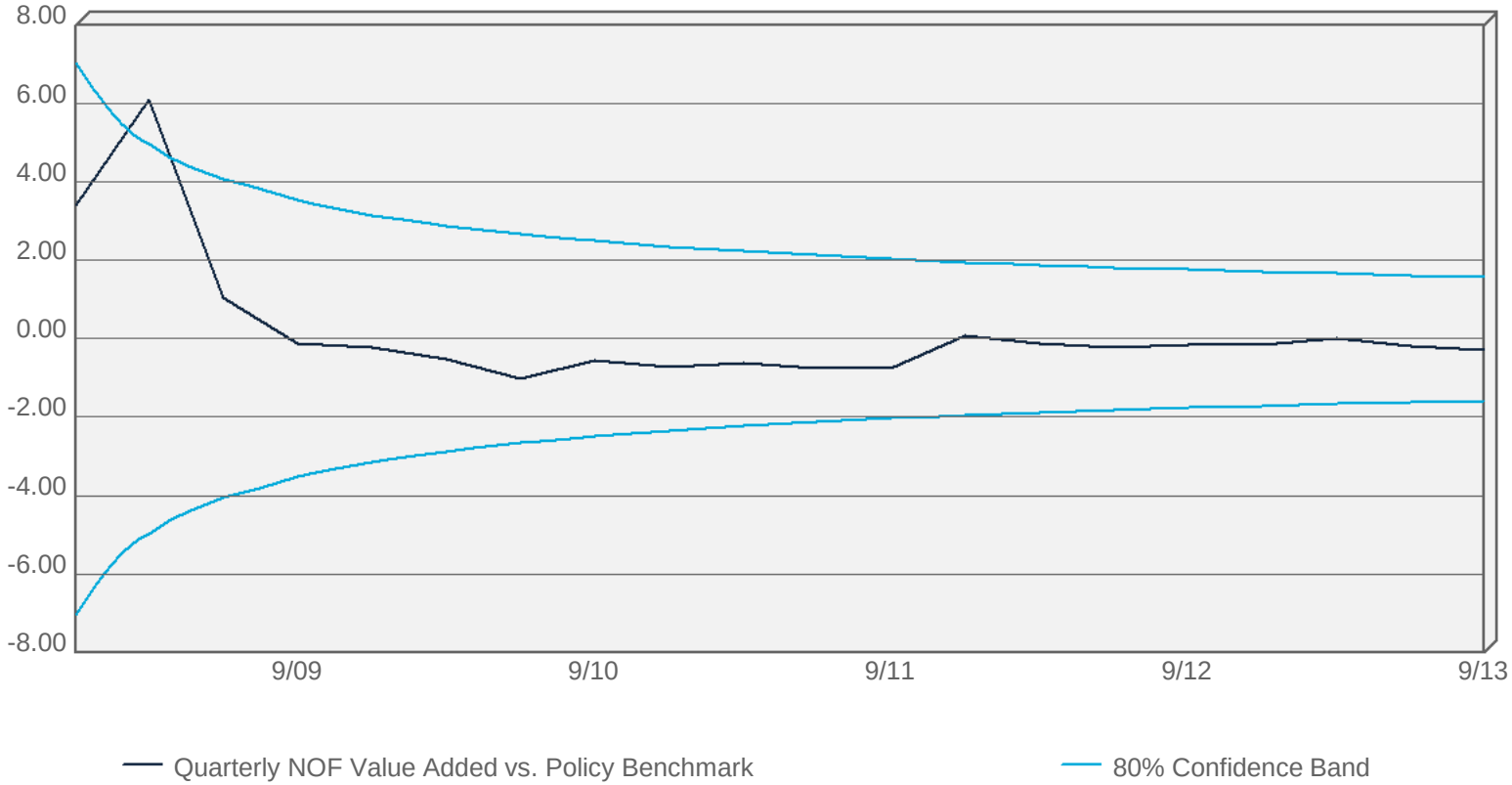
*TUCS Total Ret of Master Trusts - Public Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

Total Fund Composite

Five Years Ending September 30, 2013



Excess Return:	**-0.29**	**Information Ratio:**	**-0.13**
Excess Risk:	**2.14**	**T-Stat:**	**-0.30**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
US Equity Composite									
Net of Fee Return	**6.52**	**9.84**	**21.89**	**22.33**	**16.75**	**10.41**	**7.59**	**12/31/93**	**8.15**
Wilshire 5000	6.03	8.96	20.85	20.96	16.48	10.43	8.19	12/31/93	8.86
Value Added	0.49	0.88	1.05	1.37	0.27	-0.02	-0.60	12/31/93	-0.71
Non US Equity Composite									
Net of Fee Return	**10.19**	**7.94**	**10.25**	**16.86**	**6.41**	**5.89**	**8.30**	**12/31/00**	**5.04**
Policy Benchmark	10.09	6.66	10.04	16.48	5.95	6.26	7.77	12/31/00	4.02
Value Added	0.10	1.28	0.21	0.38	0.47	-0.37	0.53	12/31/00	1.02
Core Fixed Composite									
Net of Fee Return	**0.69**	**-1.81**	**-1.70**	**-1.32**	**3.14**	**5.90**	**4.75**	**9/30/82**	**8.55**
Barclays Aggregate	0.57	-1.77	-1.89	-1.68	2.86	5.41	4.59	9/30/82	8.05
Value Added	0.12	-0.04	0.19	0.36	0.28	0.49	0.15	9/30/82	0.51
High Yield Fixed Composite									
Net of Fee Return	**2.34**	**0.68**	**3.75**	**6.78**	**8.79**	**12.42**		**3/31/08**	**10.39**
Citi High Yield Market Capped	2.14	0.82	3.68	6.78	9.15	12.24		3/31/08	9.95
Value Added	0.19	-0.14	0.07	0.01	-0.35	0.19		3/31/08	0.44
TIPS Fixed Composite									
Net of Fee Return	**1.02**	**-6.73**	**-6.71**	**-5.79**	**3.76**	**6.15**		**3/31/08**	**4.31**
Barclays U.S. TIPS	0.70	-6.40	-6.74	-6.10	4.02	5.31		3/31/08	4.08
Value Added	0.32	-0.33	0.03	0.31	-0.26	0.84		3/31/08	0.23
Private Equity Composite									
Net of Fee Return	**1.11**	**3.63**	**7.05**	**8.68**	**13.53**	**7.24**	**5.18**	**3/31/03**	**4.17**
Wilshire 5000+3% Qtr. Lagged	3.53	15.66	16.64	24.73	22.01	10.42	11.19	3/31/03	12.07
Value Added	-2.42	-12.03	-9.59	-16.06	-8.48	-3.18	-6.01	3/31/03	-7.90

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Real Estate Composite									
Net of Fee Return	**3.65**	**9.32**	**12.08**	**15.08**	**14.87**	**1.90**	**8.18**	**3/31/03**	**8.27**
NCREIF ODCE NOF	3.35	7.07	9.67	11.95	13.17	-0.24	6.08	3/31/03	6.21
Value Added	0.30	2.25	2.41	3.12	1.70	2.14	2.09	3/31/03	2.06
Commodities Composite									
Net of Fee Return	**3.67**	**-5.32**	**-6.61**	**-7.77**	**1.09**	**-3.20**		**3/31/07**	**-1.42**
DJ UBS Commodity Index	2.13	-7.51	-8.56	-14.34	-3.16	-5.29		3/31/07	-3.77
Value Added	1.54	2.19	1.94	6.58	4.25	2.08		3/31/07	2.35
Israel Bonds and Cash									
Net of Fee Return	**0.36**	**0.32**	**1.38**	**-1.64**	**1.70**	**3.16**	**3.91**	**3/31/99**	**3.42**
Total Fund									
Net of Fee Return	**3.94**	**3.98**	**7.87**	**10.44**	**10.07**	**7.49**	**6.84**	**12/31/93**	**7.64**
Policy Benchmark	4.48	5.49	8.62	11.24	10.02	7.60	6.60	12/31/93	7.85
Value Added	-0.53	-1.51	-0.75	-0.80	0.05	-0.11	0.24	12/31/93	-0.20

Custom Benchmark Specification

Wilshire

Total Fund

September 30, 2013

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

Custom Benchmark Specification

Wilshire

Total Fund

September 30, 2013

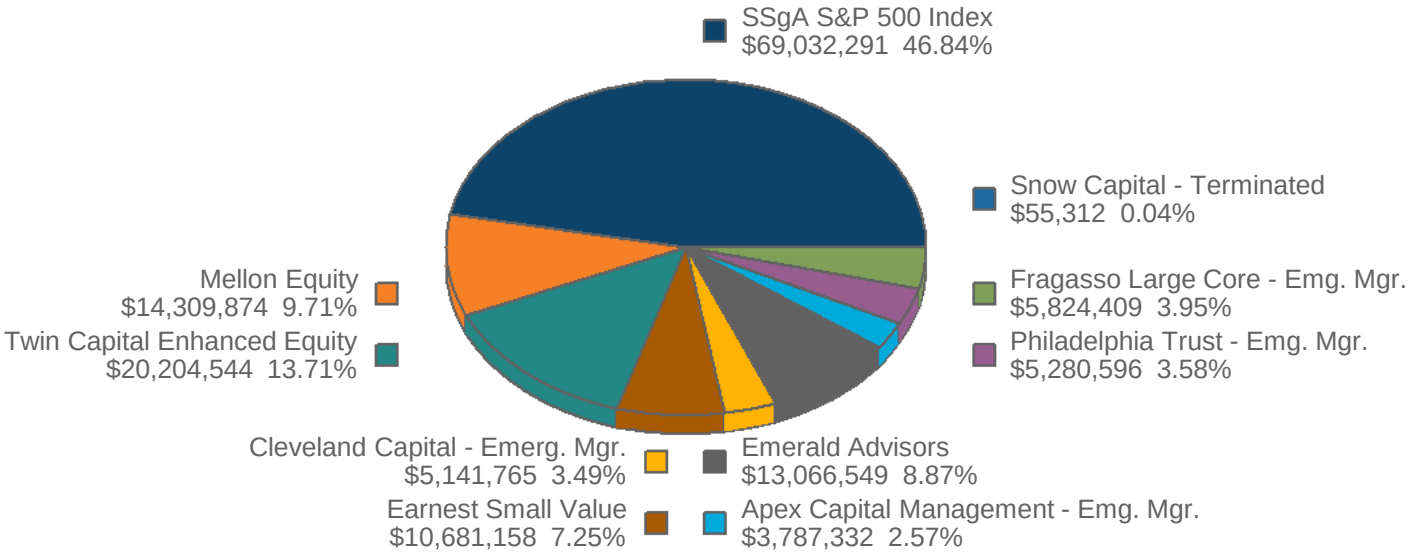
	Quarter Start	Quarter End	Percent	Description
Policy Benchmark (cont.)			10.00	NCREIF ODCE NOF
			7.50	Barclays U.S. TIPS
			5.00	Wilshire 5000+3% Qtr. Lagged
			2.50	DJ UBS Commodity Index
	6/10	12/12	25.00	MSCI ACWI X US (N)
			20.00	Wilshire 5000
			14.00	Barclays Aggregate
			10.00	Citi High Yield Market Capped
			10.00	NCREIF ODCE NOF
			10.00	Wilshire 5000+3% Qtr. Lagged
			6.00	Barclays U.S. TIPS
			5.00	DJ UBS Commodity Index
	3/13	9/13	8.00	DJ UBS Commodity Index
			20.00	Wilshire 5000+3% Qtr. Lagged
			5.00	Barclays U.S. TIPS
			12.00	Citi High Yield Market Capped
			10.00	Barclays Aggregate
			18.90	MSCI ACWI X US (N)
			16.10	Wilshire 5000
			10.00	NCREIF ODCE NOF

Domestic Equity

Manager Allocation

US Equity Composite

As of September 30, 2013

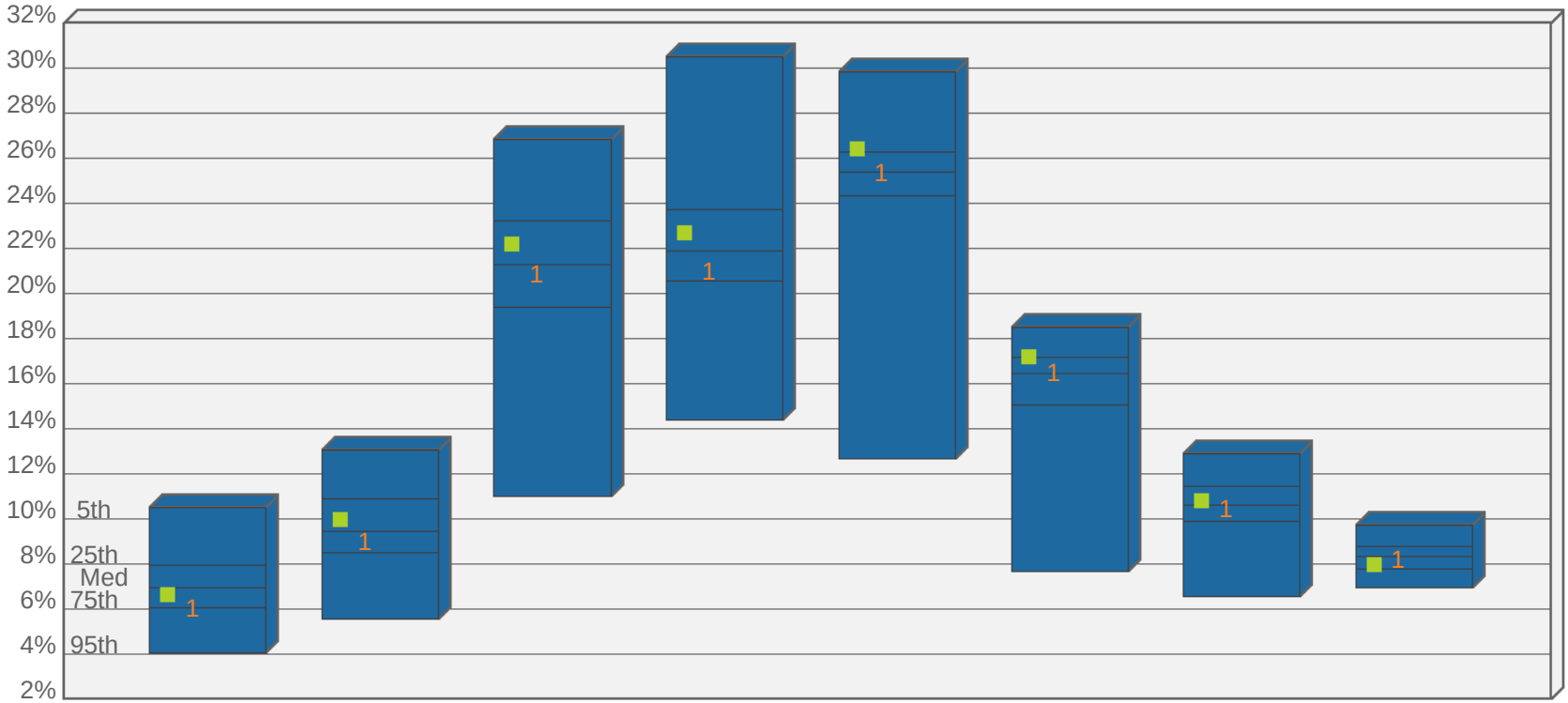


Performance Comparison

Wilshire

US Equity Composite

Periods Ended September 30, 2013



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
US Equity Composite	6.69 (61)	10.01 (37)	22.24 (33)	22.77 (36)	26.49 (21)	17.22 (24)	10.85 (33)	8.02 (65)
1 Wilshire 5000	6.03 (76)	8.96 (66)	20.85 (60)	20.96 (67)	25.35 (51)	16.48 (50)	10.43 (58)	8.19 (54)
5th %tile	10.53	13.06	26.85	30.54	29.88	18.54	12.91	9.73
25th %tile	7.98	10.90	23.27	23.76	26.32	17.21	11.46	8.80
Median	6.98	9.44	21.31	21.89	25.42	16.49	10.61	8.37
75th %tile	6.10	8.50	19.43	20.58	24.35	15.07	9.91	7.82
95th %tile	4.10	5.60	11.01	14.42	12.69	7.68	6.60	6.97
Number of Funds	163	158	156	151	126	115	97	66

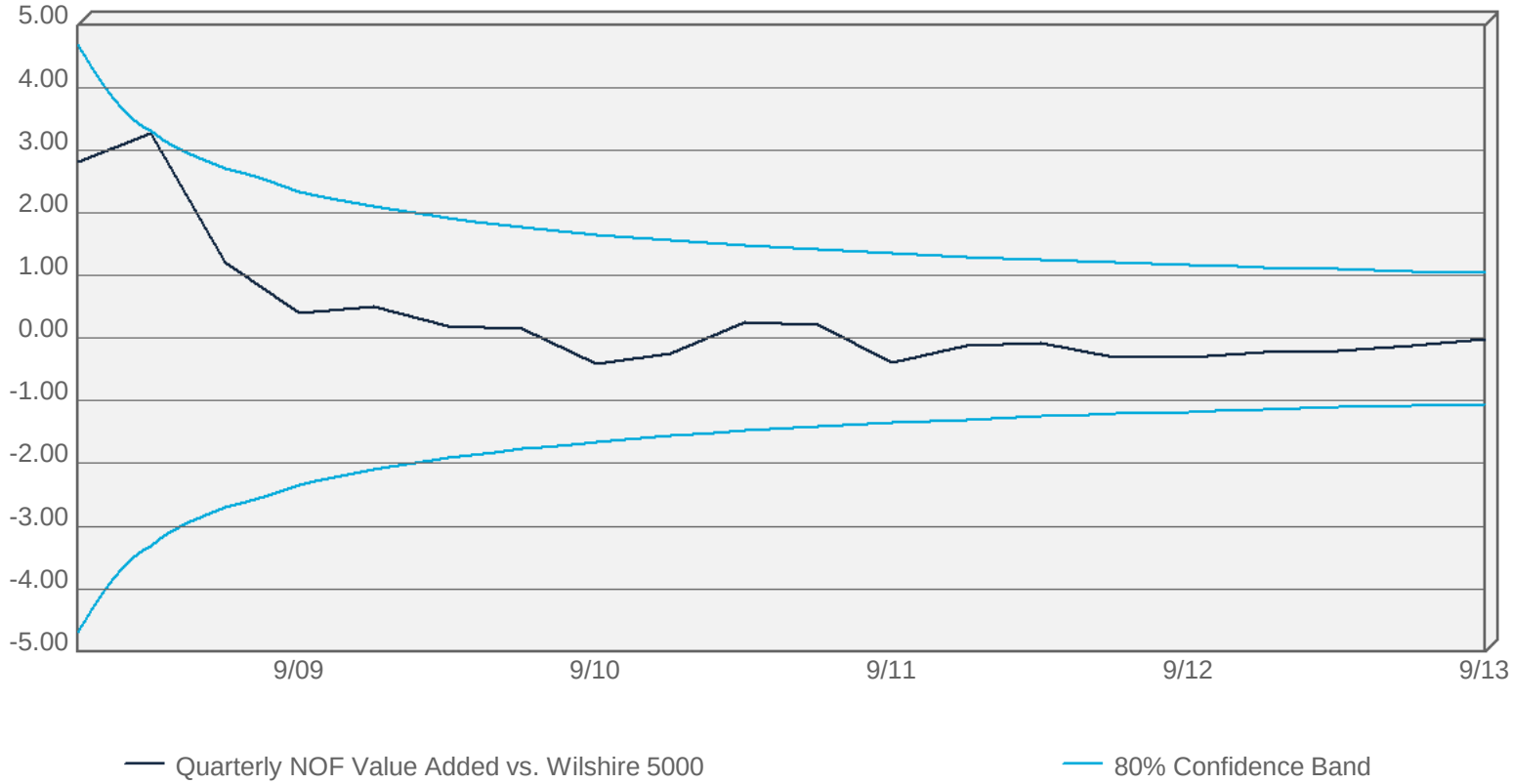
*TUCS Total Ret of Equity Investment Pools Universe - Gross of Fees

Cumulative Skill Analysis

Wilshire

US Equity Composite

Five Years Ending September 30, 2013



Excess Return:	**-0.02**	**Information Ratio:**	**-0.01**
Excess Risk:	**1.42**	**T-Stat:**	**-0.03**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
SSgA S&P 500 Index									
Net of Fee Return	**5.19**	**8.26**	**19.75**	**19.30**	**16.28**	**10.08**		**12/31/07**	**4.74**
Standard & Poor's 500	5.25	8.32	19.81	19.35	16.26	10.01		12/31/07	4.67
Value Added	-0.05	-0.06	-0.05	-0.05	0.01	0.07		12/31/07	0.07
Mellon Equity									
Net of Fee Return	**3.31**	**5.90**	**17.91**	**17.69**	**17.06**	**10.61**	**8.17**	**3/31/94**	**9.19**
Standard & Poor's 500	5.25	8.32	19.81	19.35	16.26	10.01	7.56	3/31/94	9.12
Value Added	-1.94	-2.42	-1.90	-1.66	0.80	0.60	0.60	3/31/94	0.07
Twin Capital Enhanced Equity									
Net of Fee Return	**5.28**	**8.34**	**20.04**	**19.22**	**16.58**	**10.05**		**12/31/05**	**6.41**
Standard & Poor's 500	5.25	8.32	19.81	19.35	16.26	10.01		12/31/05	6.16
Value Added	0.04	0.02	0.23	-0.13	0.32	0.04		12/31/05	0.25
Earnest Small Value									
Net of Fee Return	**8.73**	**12.14**	**25.85**	**32.12**	**18.26**			**6/30/09**	**19.83**
Russell 2000 Value	7.60	10.25	23.07	27.04	16.56			6/30/09	20.04
Value Added	1.13	1.90	2.78	5.08	1.69			6/30/09	-0.21
Cleveland Capital - Emerg. Mgr.									
Net of Fee Return	**6.49**	**14.20**	**13.81**	**16.54**	**17.19**			**6/30/09**	**16.41**
Policy Index	10.09	14.23	27.67	30.18	18.32			6/30/09	20.76
Value Added	-3.60	-0.03	-13.86	-13.64	-1.13			6/30/09	-4.34
Emerald Advisors									
Net of Fee Return	**17.92**	**24.43**	**42.07**	**40.01**	**24.46**	**16.06**		**9/30/04**	**10.91**
Russell 2000 Growth	12.80	17.01	32.46	33.05	19.94	13.16		9/30/04	9.62
Value Added	5.12	7.42	9.61	6.96	4.52	2.90		9/30/04	1.29

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Apex Capital Management - Emg. Mgr.									
Net of Fee Return	**10.27**	**13.78**	**25.71**	**28.76**				**12/31/11**	**27.20**
Russell 2500 Growth	11.94	15.55	29.65	31.95				12/31/11	26.35
Value Added	-1.67	-1.77	-3.94	-3.19				12/31/11	0.85
Philadelphia Trust - Emg. Mgr.									
Net of Fee Return	**6.42**	**8.81**	**18.84**	**18.65**				**12/31/11**	**17.75**
Standard & Poor's 500	5.25	8.32	19.81	19.35				12/31/11	20.68
Value Added	1.17	0.49	-0.97	-0.70				12/31/11	-2.93
Fragasso Large Core - Emg. Mgr.									
Net of Fee Return	**4.31**	**4.38**	**15.53**	**17.06**				**9/30/12**	**17.06**
Standard & Poor's 500	5.25	8.32	19.81	19.35				9/30/12	19.35
Value Added	-0.93	-3.94	-4.28	-2.29				9/30/12	-2.29
US Equity Composite									
Net of Fee Return	**6.52**	**9.84**	**21.89**	**22.33**	**16.75**	**10.41**	**7.59**	**12/31/93**	**8.15**
Wilshire 5000	6.03	8.96	20.85	20.96	16.48	10.43	8.19	12/31/93	8.86
Value Added	0.49	0.88	1.05	1.37	0.27	-0.02	-0.60	12/31/93	-0.71

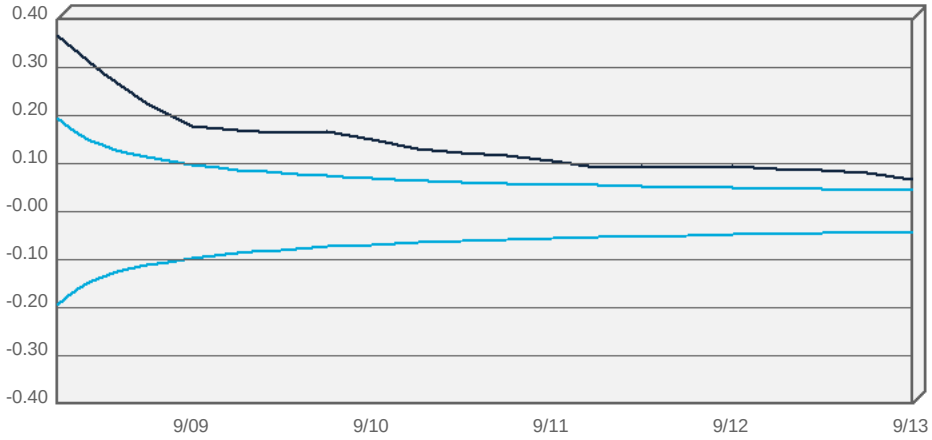
Investment Manager Analysis

Wilshire

SSgA S&P 500 Index

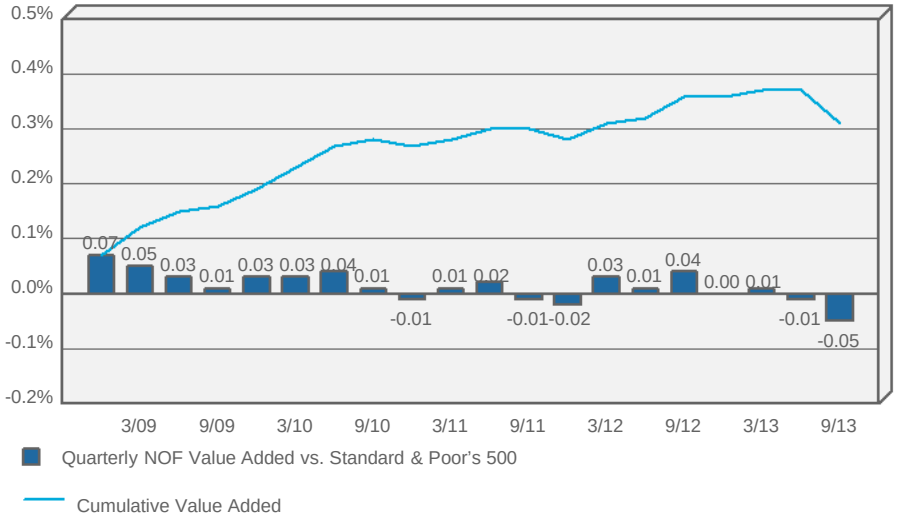
September 30, 2013

Cumulative Skill Analysis vs Benchmark

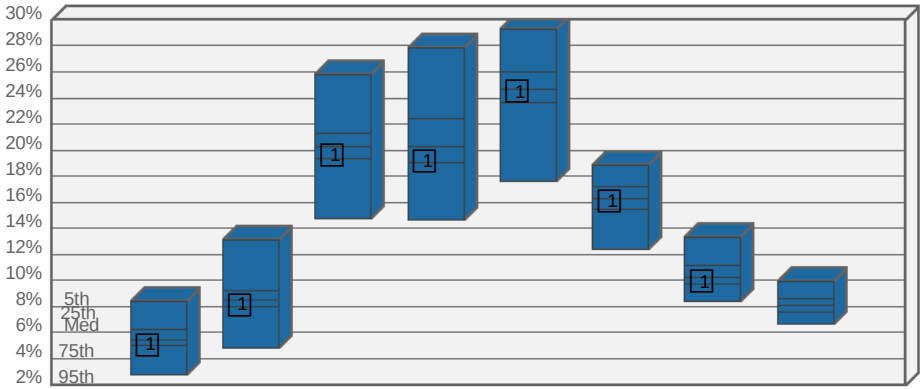


Excess Return:	**0.07**	**Information Ratio:**	**1.12**
Excess Risk:	**0.06**	**T-Stat:**	**2.51**

Value-Added Analysis vs Benchmark

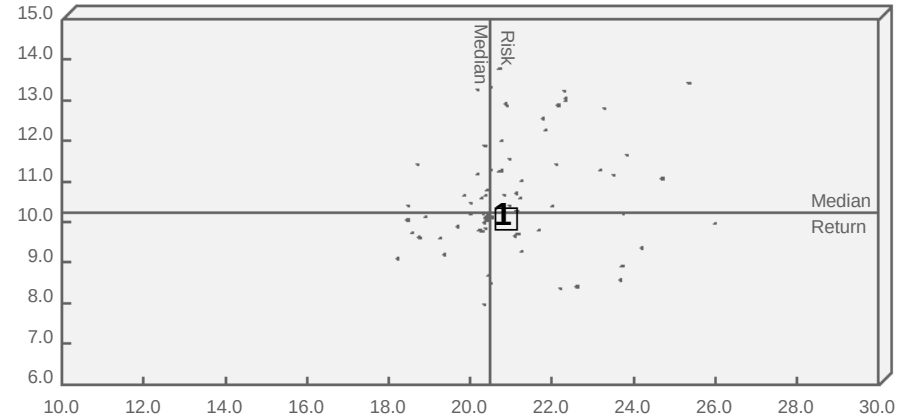


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
SSgA S&P 500 I	5.20 (71)	8.27 (67)	19.76 (68)	19.31 (70)	24.68 (50)	16.29 (52)	10.09 (59)	
1 Standard & Poor'	5.25 (62)	8.32 (57)	19.81 (61)	19.35 (65)	24.65 (55)	16.26 (57)	10.01 (66)	
Median	5.44	8.45	20.23	20.26	24.69	16.32	10.23	8.14
Number of Funds	337	331	327	318	264	239	181	77

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret Value	Gross Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
SSgA S&P 500 Index		10.09	59	20.94	37
Standard & Poor's 500	1	10.01	66	20.96	37
Median		10.23		20.49	

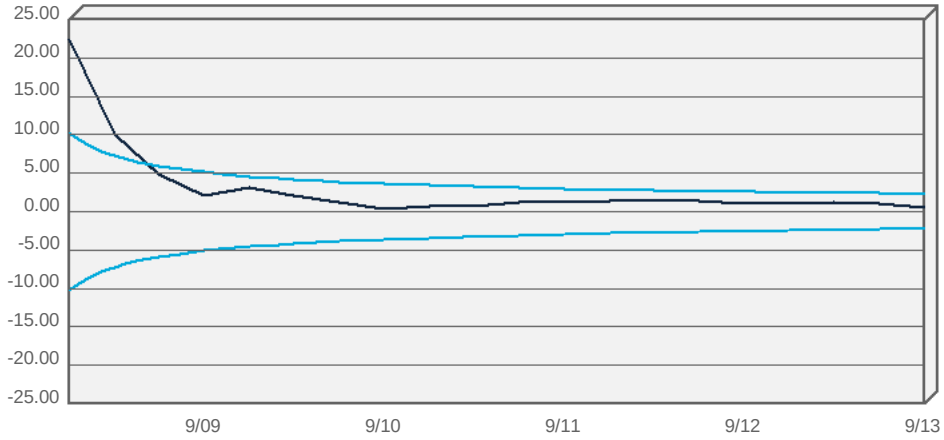
*TUCS Total Returns of Large Neutral Equity Portfolios Universe - Gross of Fees

Wilshire

Mellon Equity

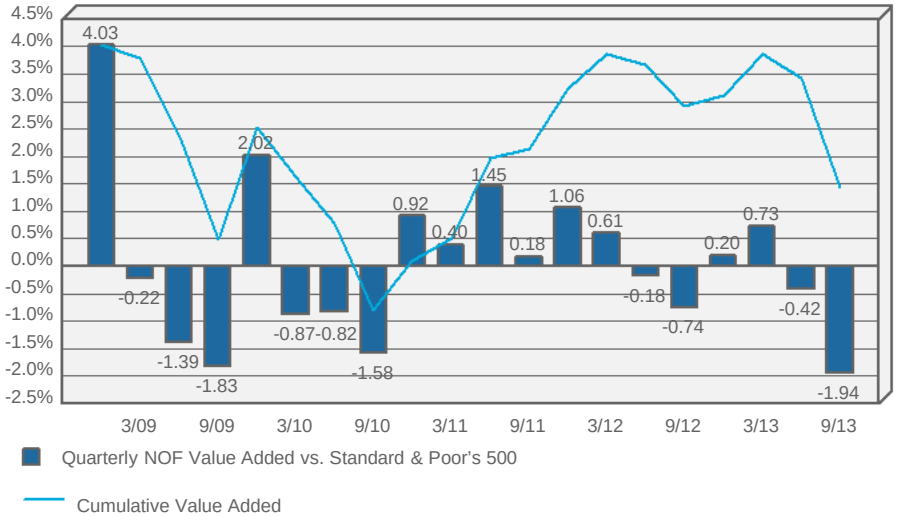
September 30, 2013

Cumulative Skill Analysis vs Benchmark

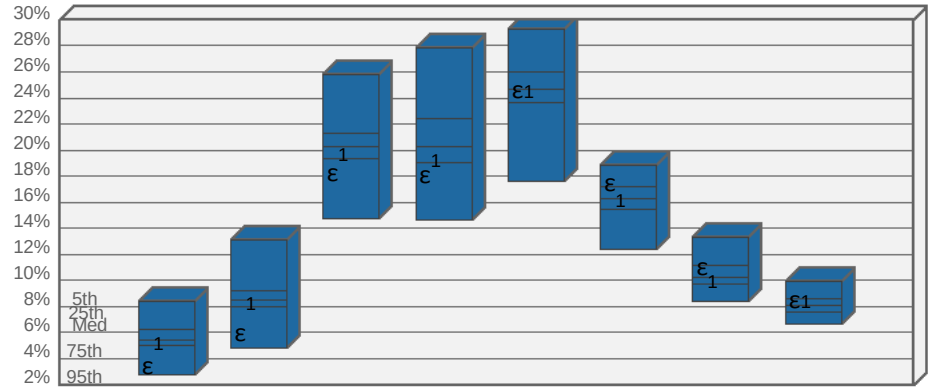


Excess Return:	**0.55**	**Information Ratio:**	**0.18**
Excess Risk:	**3.12**	**T-Stat:**	**0.39**

Value-Added Analysis vs Benchmark

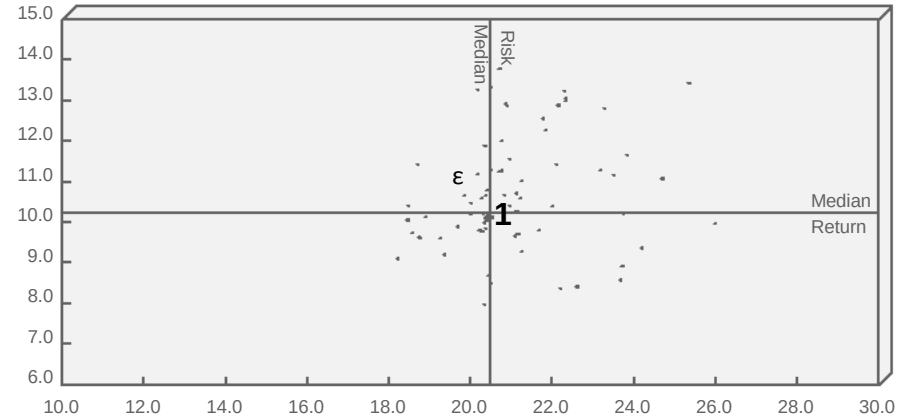


Performance Comparison vs Peer Universe*



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
ε Mellon Equity	3.49 (90)	6.08 (85)	18.36 (79)	18.15 (81)	24.67 (51)	17.57 (18)	11.11 (25)	8.57 (31)
1 Standard & Poor'	5.25 (62)	8.32 (57)	19.81 (61)	19.35 (65)	24.65 (55)	16.26 (57)	10.01 (66)	7.57 (80)
Median	5.44	8.45	20.23	20.26	24.69	16.32	10.23	8.14
Number of Funds	337	331	327	318	264	239	181	77

Five Year Risk/Return Analysis vs Peer Universe*



Description	Legend	Gross Fee Ret Value	Gross Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Mellon Equity	ε	11.11	25	19.93	83
Standard & Poor's 500	1	10.01	66	20.96	37
Median		10.23		20.49	

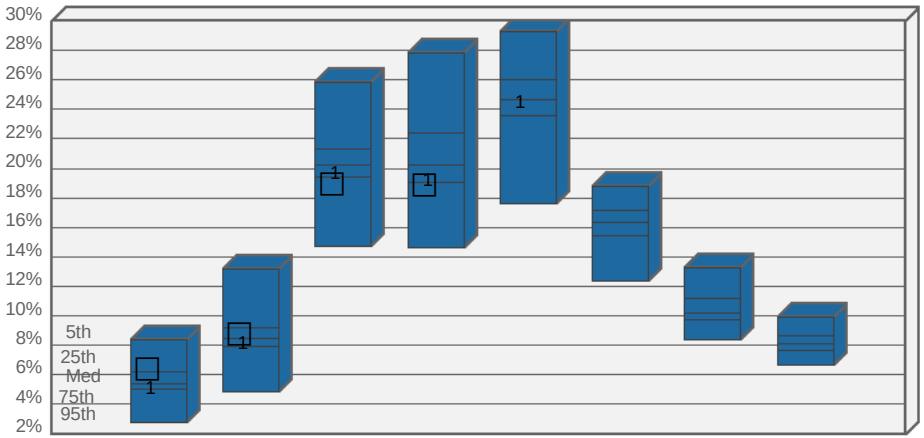
*TUCS Total Returns of Large Neutral Equity Portfolios Universe - Gross of Fees

Investment Manager Analysis

Philadelphia Trust - Emg. Mgr.

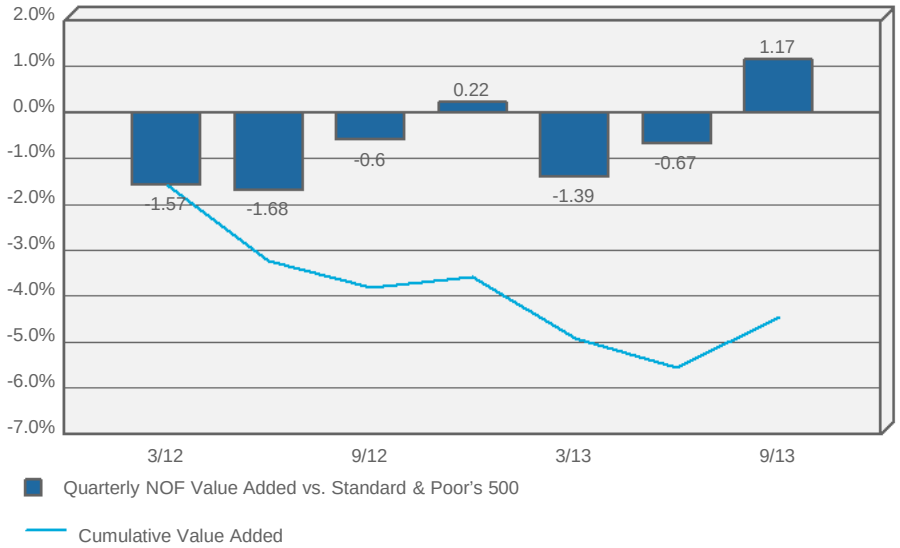
September 30, 2013

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Philadelphia T	6.54 (17)	8.94 (34)	19.12 (78)	19.07 (74)				
1 Standard & Poor'	5.25 (62)	8.32 (57)	19.81 (61)	19.35 (65)	24.65 (55)			
Median	5.44	8.45	20.23	20.26	24.69	16.32	10.23	8.14
Number of Funds	337	331	327	318	264	239	181	77

Value-Added Analysis vs Benchmark



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

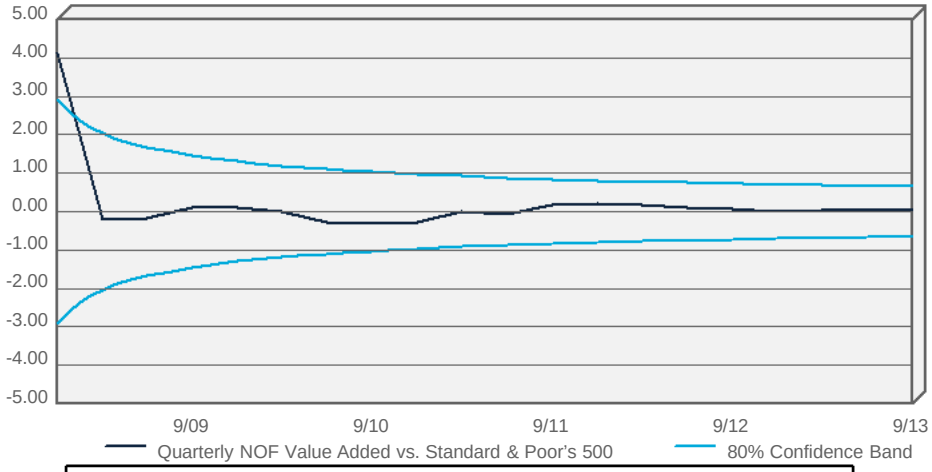
Investment Manager Analysis

Wilshire

Twin Capital Enhanced Equity

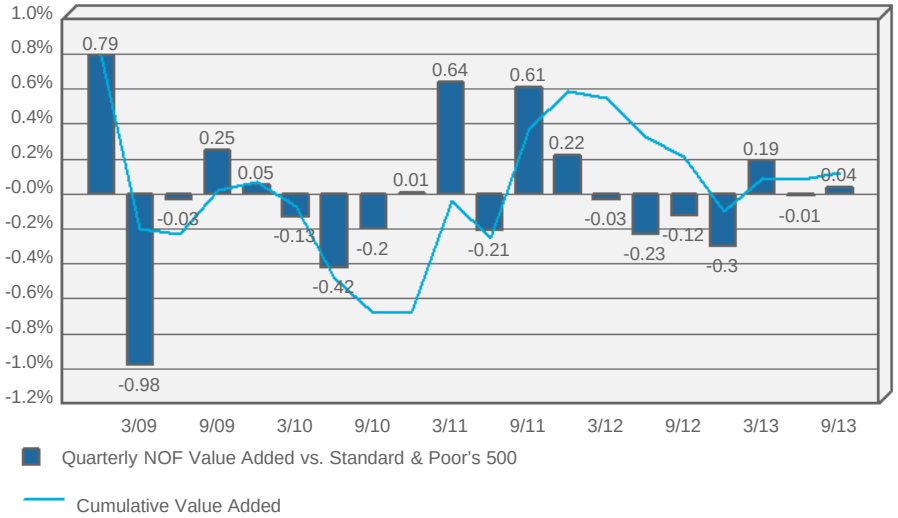
September 30, 2013

Cumulative Skill Analysis vs Benchmark

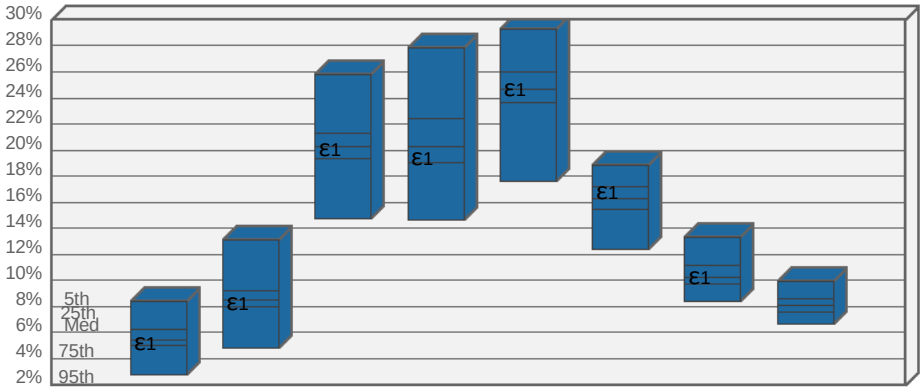


Excess Return:	**0.04**	**Information Ratio:**	**0.04**
Excess Risk:	**0.88**	**T-Stat:**	**0.09**

Value-Added Analysis vs Benchmark

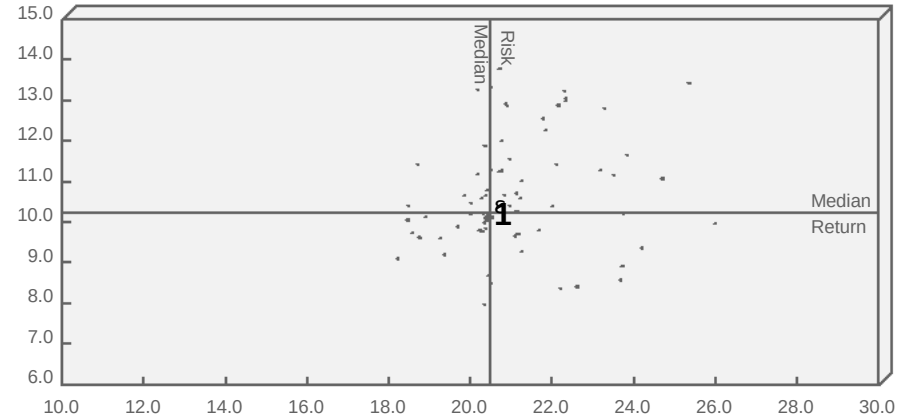


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
ε Twin Capital E	5.37 (52)	8.43 (51)	20.24 (49)	19.52 (58)	24.83 (46)	16.94 (30)	10.40 (45)	
1 Standard & Poor'	5.25 (62)	8.32 (57)	19.81 (61)	19.35 (65)	24.65 (55)	16.26 (57)	10.01 (66)	
Median	5.44	8.45	20.23	20.26	24.69	16.32	10.23	8.14
Number of Funds	337	331	327	318	264	239	181	77

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret Value	Gross Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Twin Capital Enhanced Equity	ε	10.40	45	20.96	37
Standard & Poor's 500	1	10.01	66	20.96	37
Median		10.23		20.49	

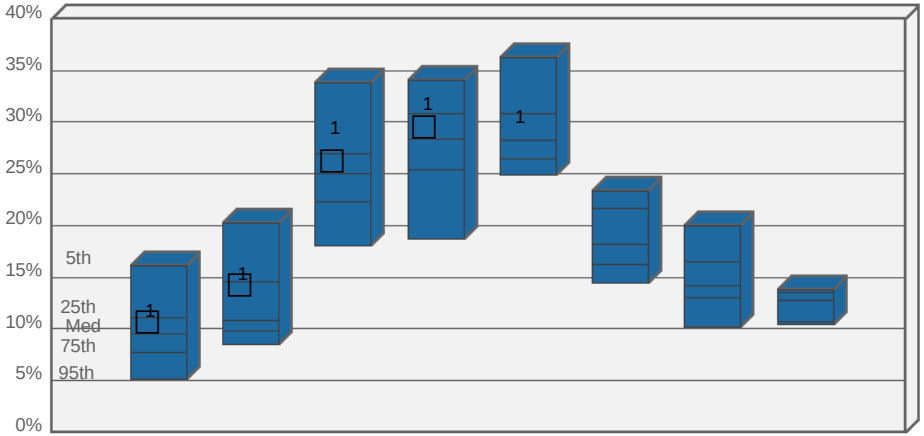
*TUCS Total Returns of Large Neutral Equity Portfolios Universe - Gross of Fees

Investment Manager Analysis

Apex Capital Management - Emg. Mgr.

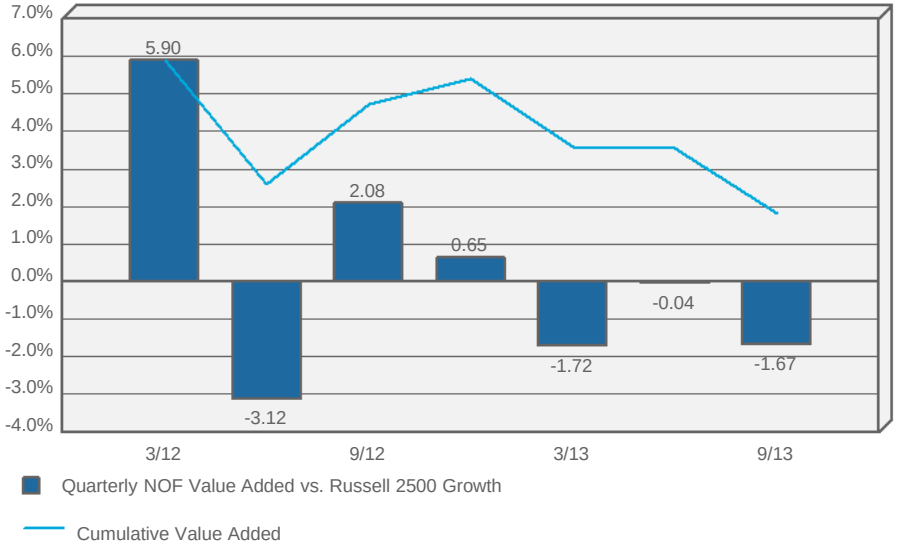
September 30, 2013

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Apex Capital M	10.91 (33)	14.44 (29)	26.44 (36)	29.80 (39)				
1 Russell 2500 Gro	11.94 (16)	15.55 (13)	29.65 (13)	31.95 (16)	30.74 (27)			
Median	9.53	10.82	25.07	28.43	28.28	18.19	14.21	12.73
Number of Funds	102	99	97	95	82	72	56	16

Value-Added Analysis vs Benchmark



*TUCS Total Returns of Mid Cap Growth Equity Portfolios Universe - Gross of Fees

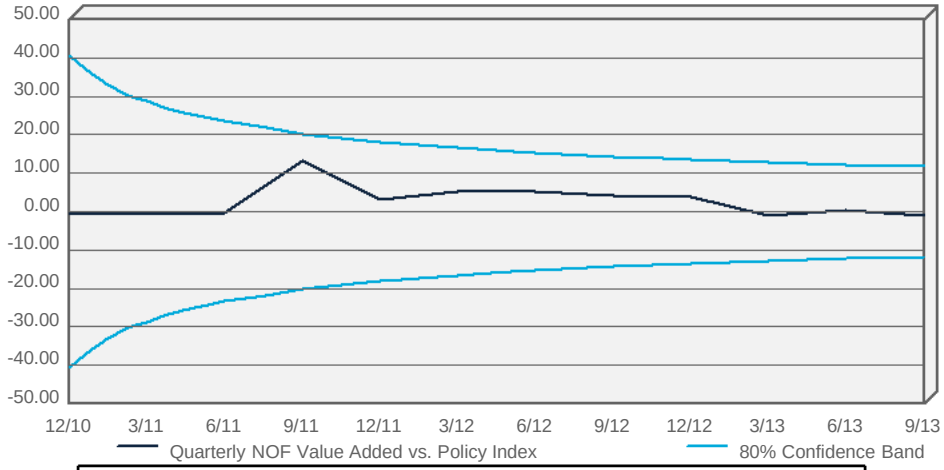
Investment Manager Analysis

Wilshire

Cleveland Capital - Emerg. Mgr.

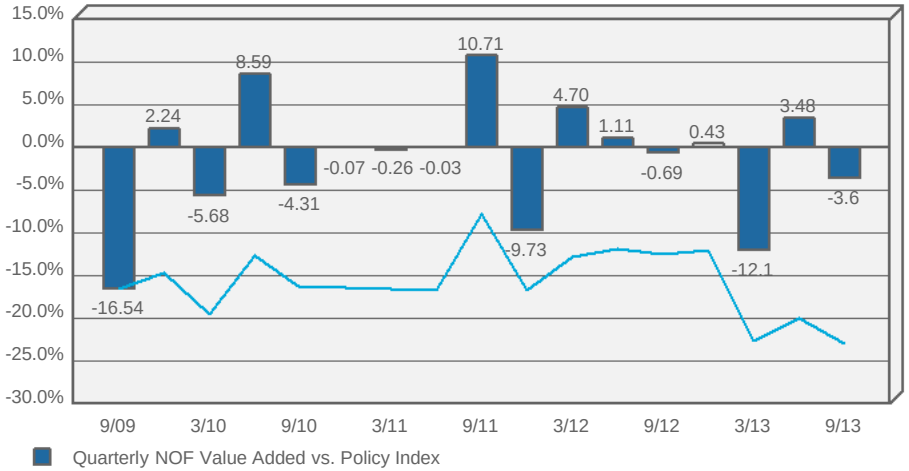
September 30, 2013

Cumulative Skill Analysis vs Benchmark

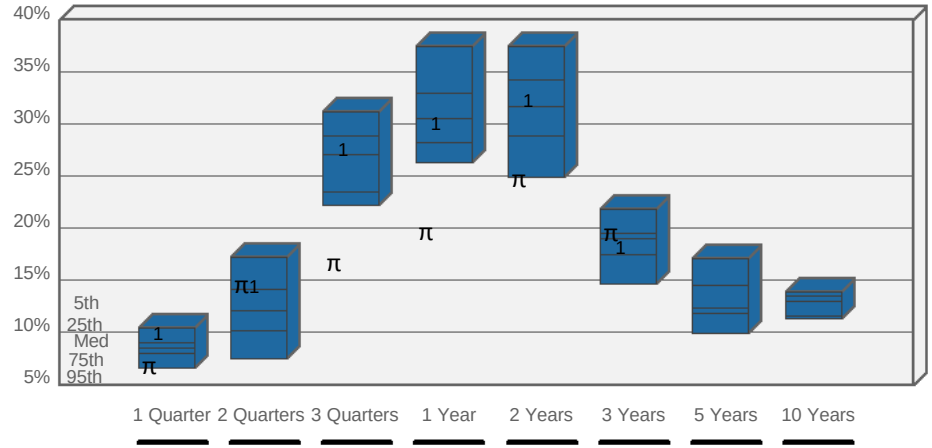


Excess Return:	**-0.96**	**Information Ratio:**	**-0.08**
Excess Risk:	**12.33**	**T-Stat:**	**-0.13**

Value-Added Analysis vs Benchmark

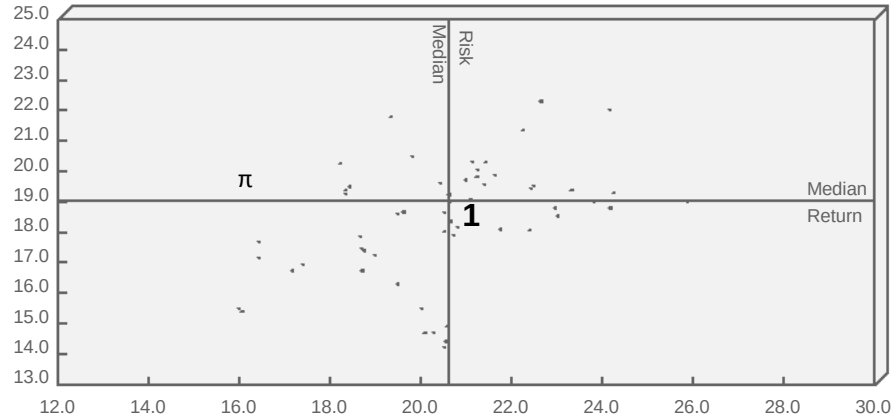


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π Cleveland Capi	6.86 (92)	14.60 (13)	16.75 (99)	19.77 (99)	24.85 (96)	19.71 (20)		
1 Policy Index	10.09 (11)	14.23 (16)	27.67 (38)	30.18 (52)	32.39 (41)	18.32 (61)		
Median	8.50	12.04	27.06	30.48	31.70	19.02	12.34	12.94
Number of Funds	78	77	77	77	69	62	58	13

*Three Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Cleveland Capital - Emerg. Mgr.	π	19.71	20	16.30	95
Policy Index	1	18.32	61	21.25	33
Median		19.02		20.61	

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

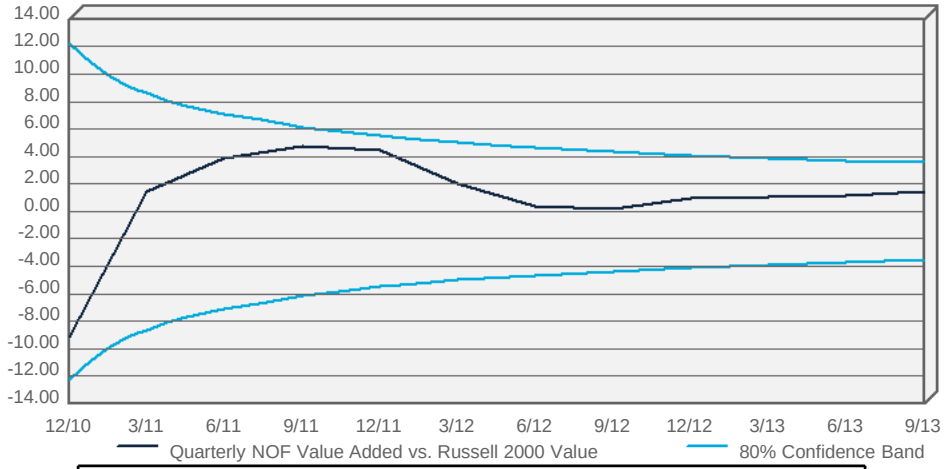
Investment Manager Analysis

Wilshire

Earnest Small Value

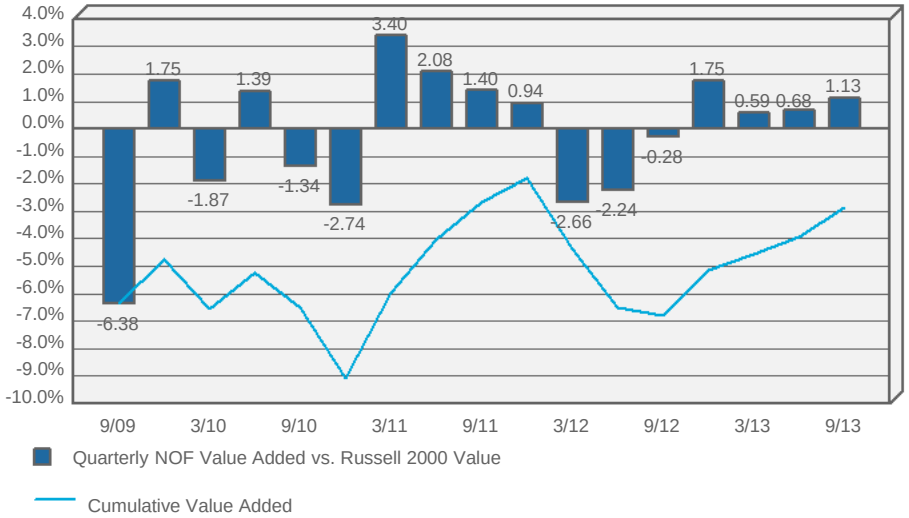
September 30, 2013

Cumulative Skill Analysis vs Benchmark

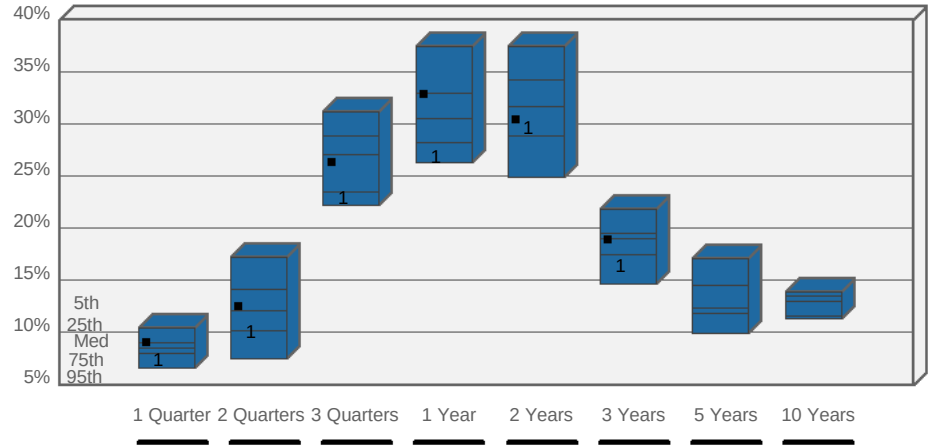


Excess Return:	**1.45**	**Information Ratio:**	**0.39**
Excess Risk:	**3.73**	**T-Stat:**	**0.67**

Value-Added Analysis vs Benchmark

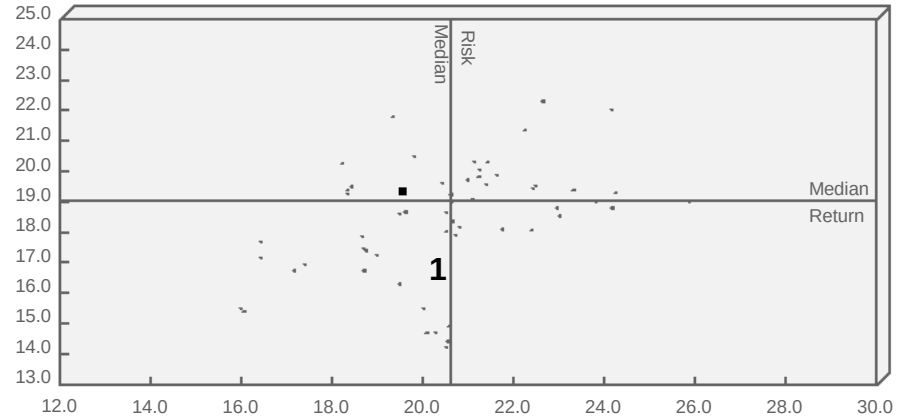


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Earnest Small	9.51 (17)	12.95 (40)	26.75 (55)	33.39 (23)	30.93 (55)	19.42 (33)		
1 Russell 2000 Val	7.60 (83)	10.25 (73)	23.07 (81)	27.04 (87)	29.80 (69)	16.56 (84)		
Median	8.50	12.04	27.06	30.48	31.70	19.02	12.34	12.94
Number of Funds	78	77	77	77	69	62	58	13

*Three Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Earnest Small Value	■	19.42	33	19.78	68
Russell 2000 Value	**1**	16.56	84	20.48	60
Median		19.02		20.61	

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

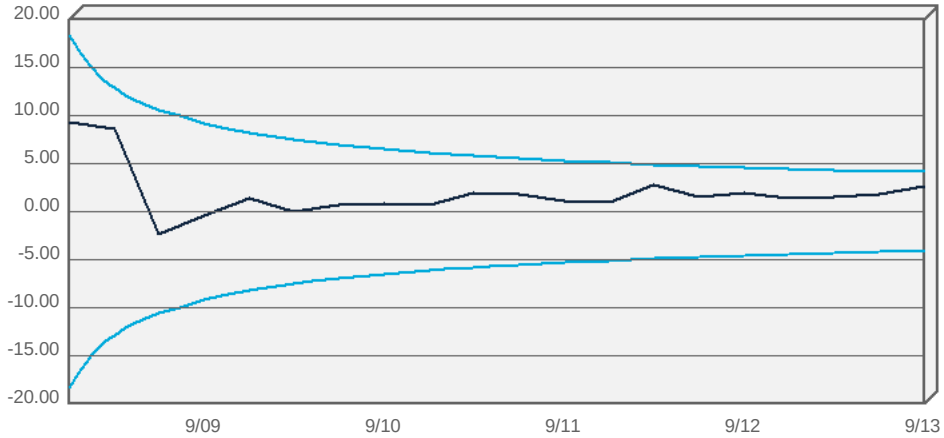
Investment Manager Analysis

Wilshire

Emerald Advisors

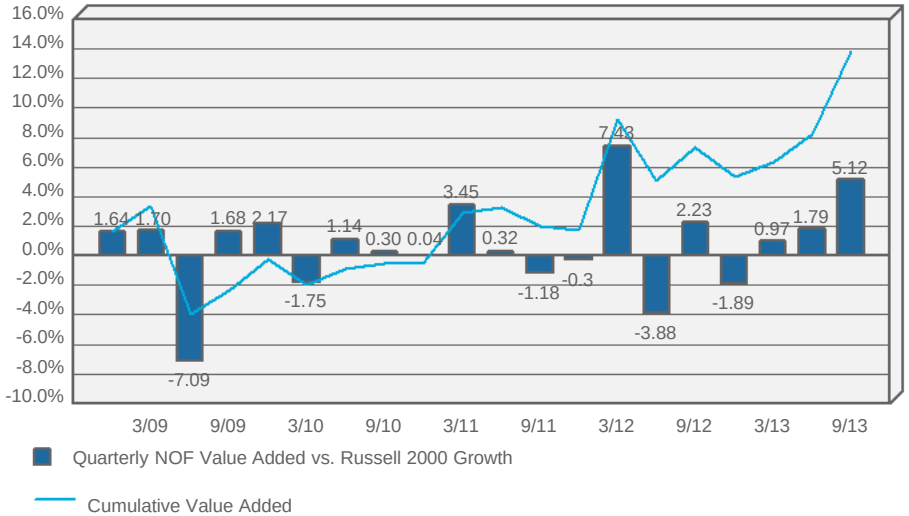
September 30, 2013

Cumulative Skill Analysis vs Benchmark

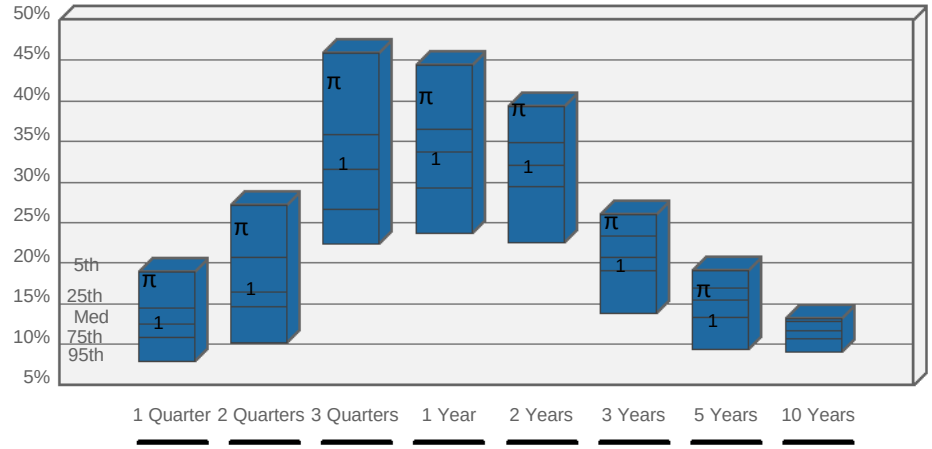


Excess Return:	**2.56**	**Information Ratio:**	**0.46**
Excess Risk:	**5.57**	**T-Stat:**	**1.03**

Value-Added Analysis vs Benchmark

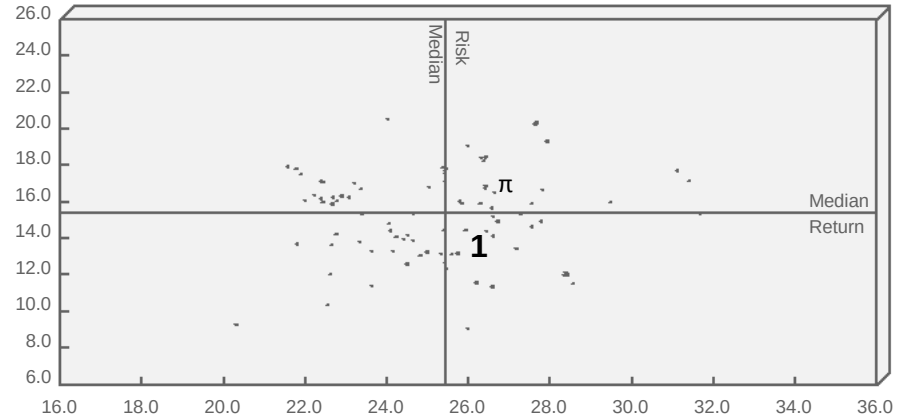


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π Emerald Adviso	18.14 (6)	24.65 (8)	42.58 (8)	40.80 (11)	39.29 (6)	25.35 (6)	16.92 (25)	
1 Russell 2000 Gro	12.80 (45)	17.01 (42)	32.46 (43)	33.05 (53)	32.11 (48)	19.94 (58)	13.16 (78)	
Median	12.50	16.43	31.54	33.68	32.08	20.71	15.40	11.63
Number of Funds	149	144	143	139	132	124	93	35

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Emerald Advisors	π	16.92	25	27.11	21
Russell 2000 Growth	1	13.16	78	26.42	32
Median		15.40		25.43	

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

Custom Benchmark Specification

Wilshire

US Equity Composite

September 30, 2013

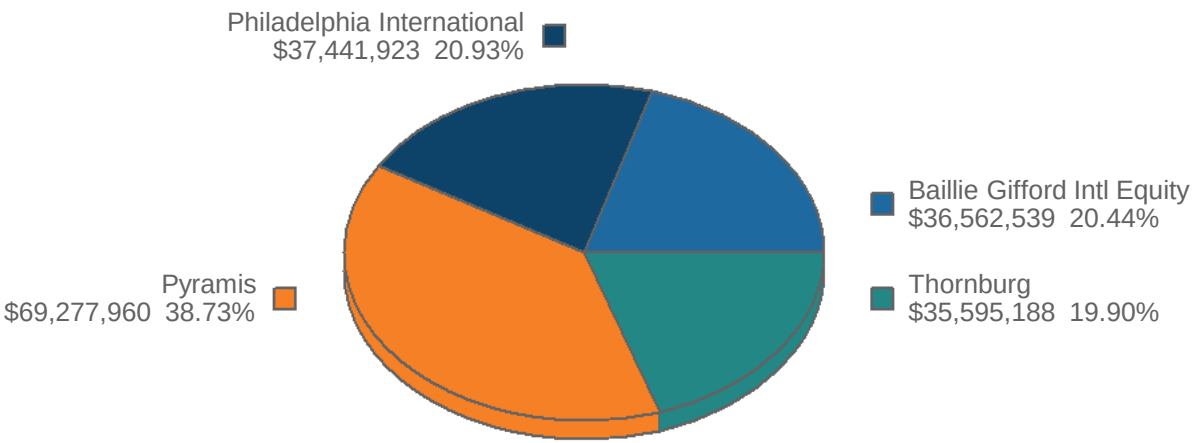
	Quarter Start	Quarter End	Percent	Description
Wilshire 5000	9/93	9/13	100.00	Wilshire 5000

International Equity

Manager Allocation

Non US Equity Composite

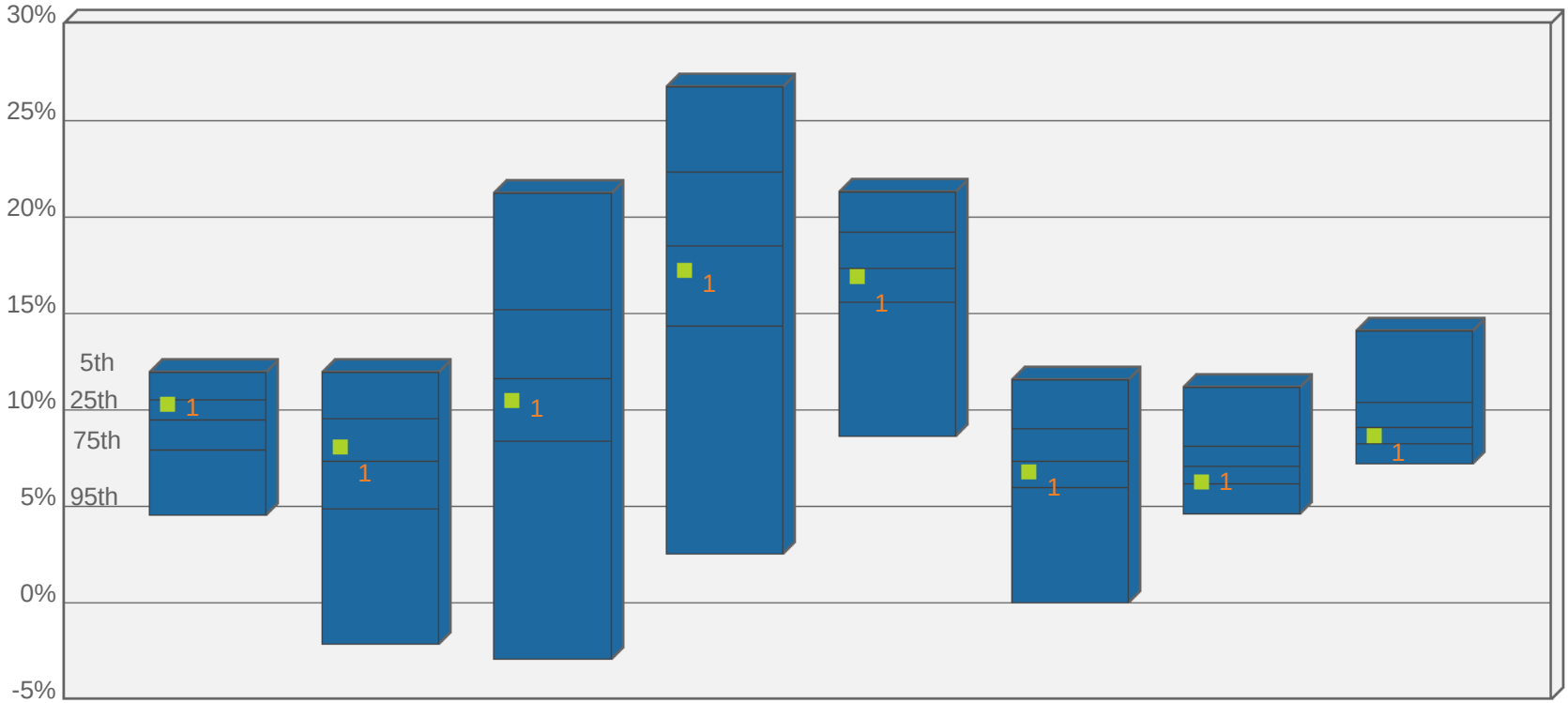
As of September 30, 2013



Performance Comparison

Non US Equity Composite

Periods Ended September 30, 2013



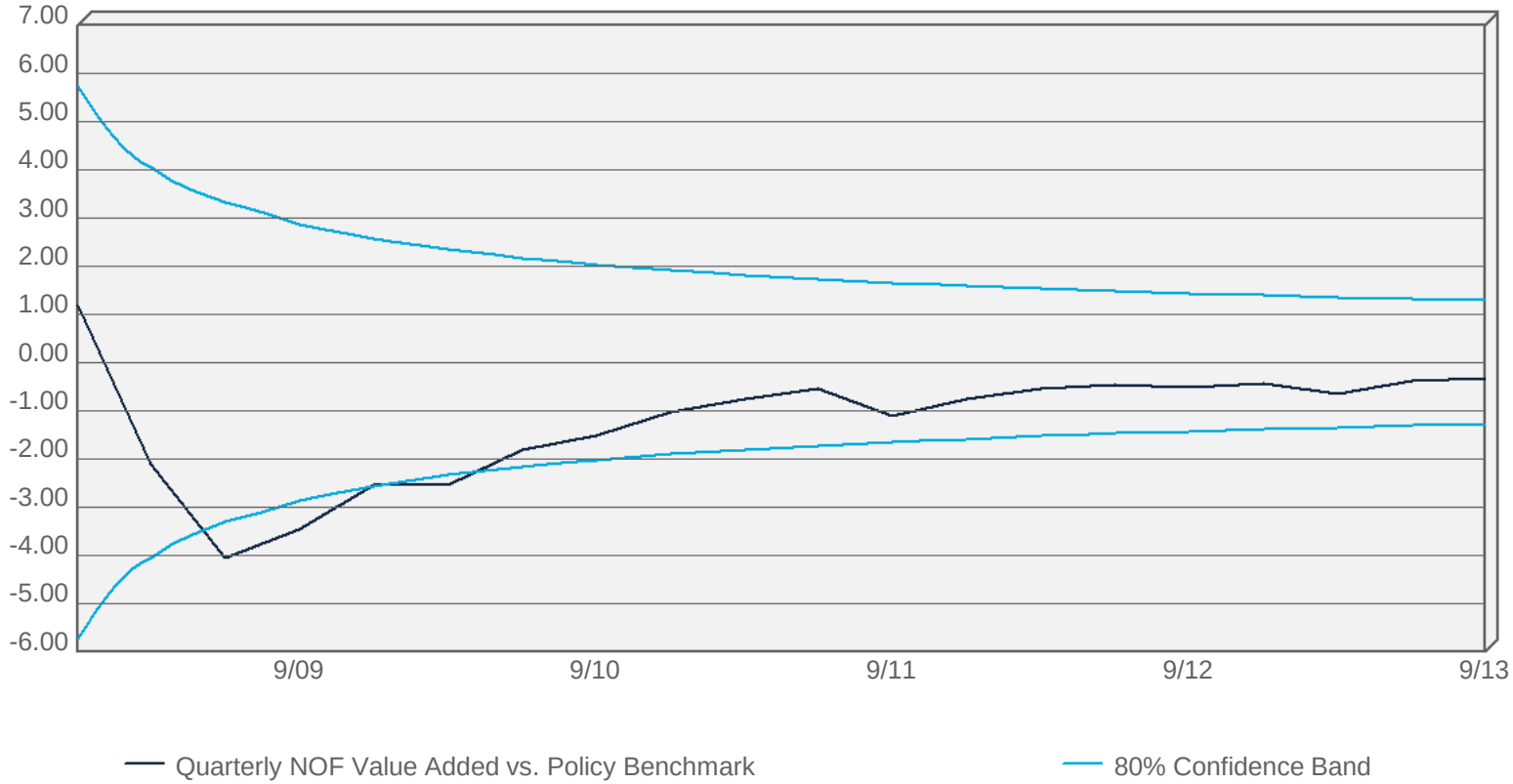
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Non US Equity Composite	10.35 (27)	8.12 (41)	10.49 (61)	17.26 (59)	16.95 (55)	6.83 (58)	6.32 (71)	8.71 (61)
1 Policy Benchmark	10.09 (37)	6.66 (61)	10.04 (65)	16.48 (67)	15.47 (76)	5.95 (75)	6.26 (72)	7.77 (87)
5th %tile	11.94	11.94	21.19	26.71	21.26	11.53	11.14	14.10
25th %tile	10.51	9.57	15.21	22.32	19.20	9.03	8.15	10.36
Median	9.45	7.31	11.60	18.47	17.32	7.35	7.08	9.12
75th %tile	7.95	4.91	8.41	14.37	15.56	5.99	6.16	8.28
95th %tile	4.53	-2.15	-2.88	2.52	8.63	-0.01	4.65	7.21
Number of Funds	245	237	229	227	203	195	163	111

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

Cumulative Skill Analysis

Non US Equity Composite

Five Years Ending September 30, 2013



Excess Return:	**-0.34**	**Information Ratio:**	**-0.20**
Excess Risk:	**1.74**	**T-Stat:**	**-0.44**

Performance Comparison

Wilshire

Trailing Returns

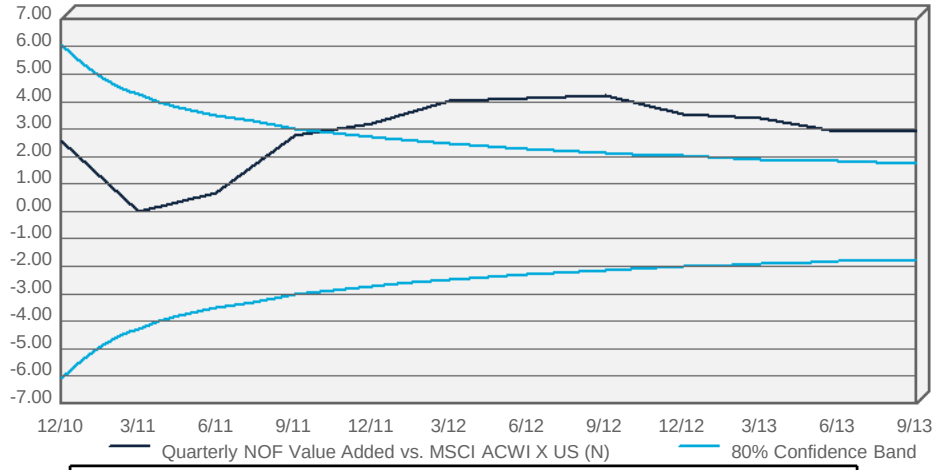
Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Baillie Gifford Intl Equity									
Net of Fee Return	**11.01**	**7.03**	**11.06**	**17.05**	**9.08**			**9/30/09**	**10.01**
MSCI ACWI X US (N)	10.09	6.66	10.04	16.48	5.95			9/30/09	6.35
Value Added	0.92	0.36	1.01	0.57	3.13			9/30/09	3.66
Philadelphia International									
Net of Fee Return	**11.62**	**10.17**	**10.48**	**18.11**	**4.84**			**6/30/09**	**9.27**
MSCI ACWI X US (N)	10.09	6.66	10.04	16.48	5.95			6/30/09	10.54
Value Added	1.53	3.51	0.44	1.63	-1.11			6/30/09	-1.27
Pyramis									
Net of Fee Return	**9.25**	**7.17**	**9.86**	**16.75**	**6.27**	**5.26**	**7.98**	**12/31/00**	**4.79**
Policy Benchmark	10.09	6.66	10.04	16.48	5.95	6.26	7.77	12/31/00	4.02
Value Added	-0.84	0.51	-0.19	0.27	0.32	-1.00	0.21	12/31/00	0.77
Thornburg									
Net of Fee Return	**9.75**	**8.20**	**10.95**	**16.86**	**6.13**	**6.27**		**9/30/08**	**6.27**
MSCI ACWI X US (N)	10.09	6.66	10.04	16.48	5.95	6.26		9/30/08	6.26
Value Added	-0.34	1.53	0.90	0.38	0.18	0.01		9/30/08	0.01
Non US Equity Composite									
Net of Fee Return	**10.19**	**7.94**	**10.25**	**16.86**	**6.41**	**5.89**	**8.30**	**12/31/00**	**5.04**
Policy Benchmark	10.09	6.66	10.04	16.48	5.95	6.26	7.77	12/31/00	4.02
Value Added	0.10	1.28	0.21	0.38	0.47	-0.37	0.53	12/31/00	1.02

Baillie Gifford Intl Equity

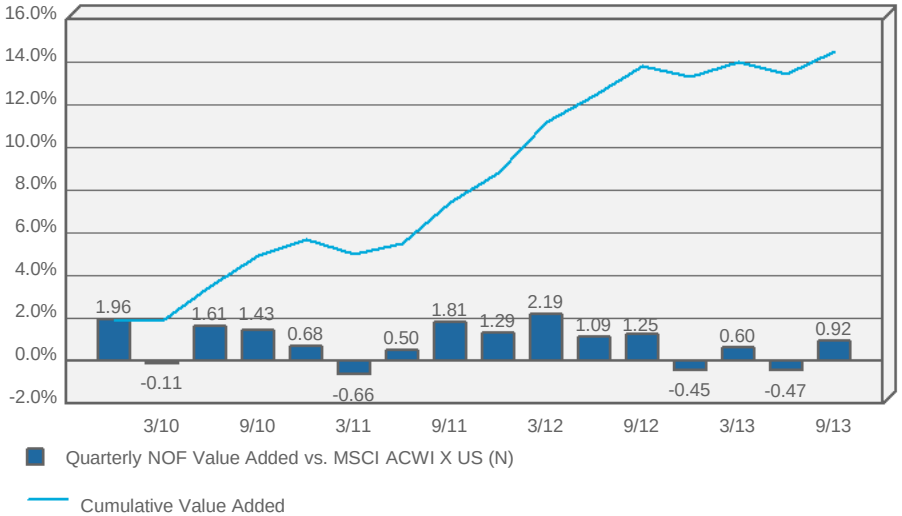
September 30, 2013

Cumulative Skill Analysis vs Benchmark

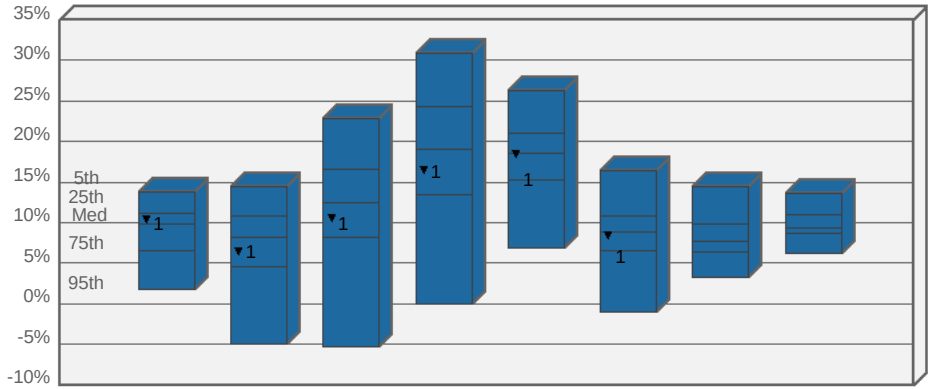


Excess Return:	**2.96**	**Information Ratio:**	**1.61**
Excess Risk:	**1.84**	**T-Stat:**	**2.78**

Value-Added Analysis vs Benchmark

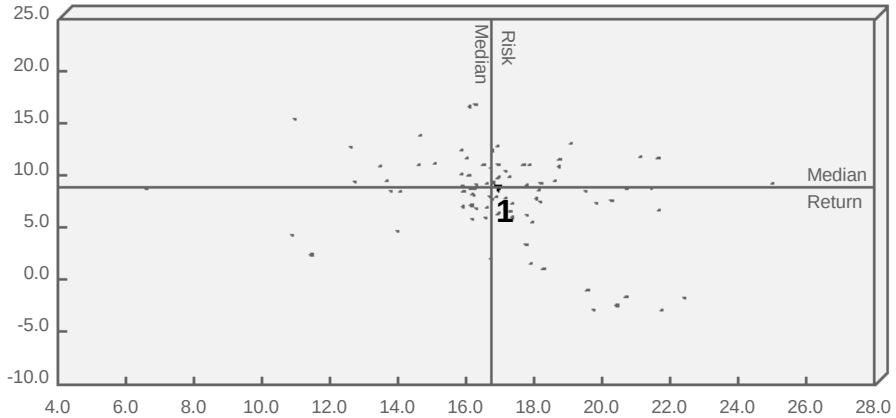


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▼ Baillie Giffor	11.01 (29)	7.03 (57)	11.06 (62)	17.05 (60)	19.00 (46)	9.08 (45)		
1 MSCI ACWI X	10.09 (46)	6.66 (63)	10.04 (66)	16.48 (65)	15.47 (73)	5.95 (80)		
Median	9.87	8.25	12.53	19.06	18.57	8.86	7.75	9.36
Number of Funds	1019	957	911	891	755	618	394	147

*Three Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret Value	Gross Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Baillie Gifford Intl Equity	▼	9.08	45	17.24	38
MSCI ACWI X US (N)	**1**	5.95	80	17.33	36
Median		8.86		16.73	

*TUCS Total Returns of Intl Equity Portfolios - Non-US Equity Universe - Gross of Fees

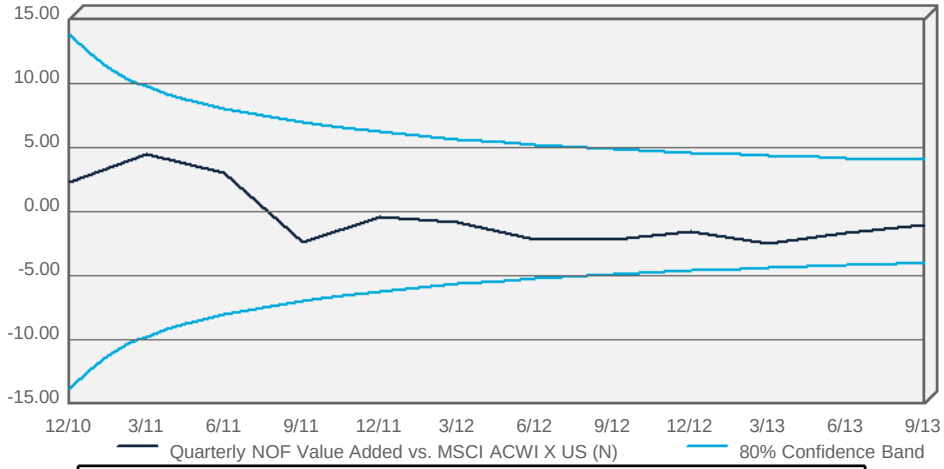
Investment Manager Analysis

Wilshire

Philadelphia International

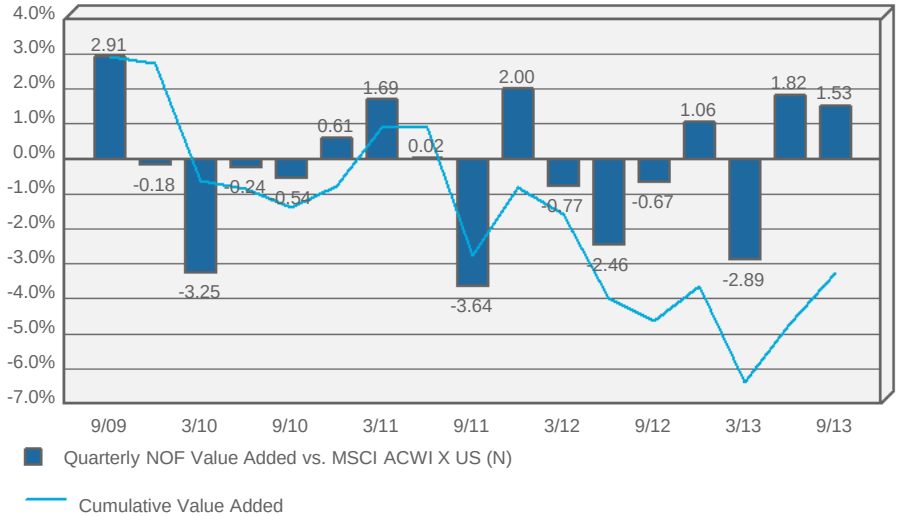
September 30, 2013

Cumulative Skill Analysis vs Benchmark

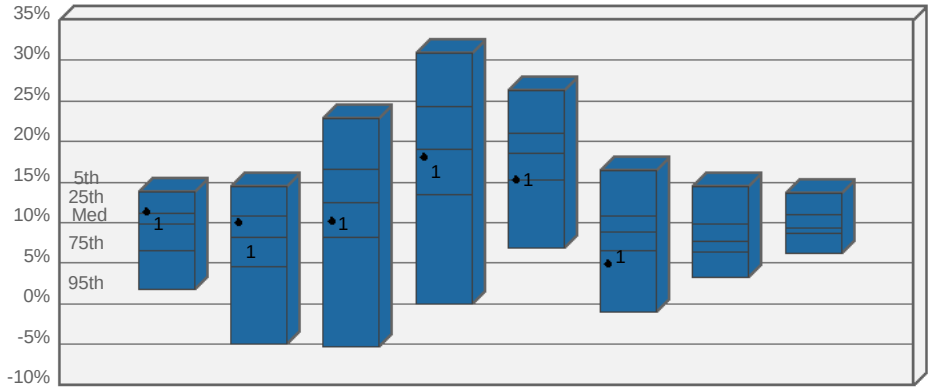


Excess Return:	**-1.04**	**Information Ratio:**	**-0.25**
Excess Risk:	**4.22**	**T-Stat:**	**-0.43**

Value-Added Analysis vs Benchmark

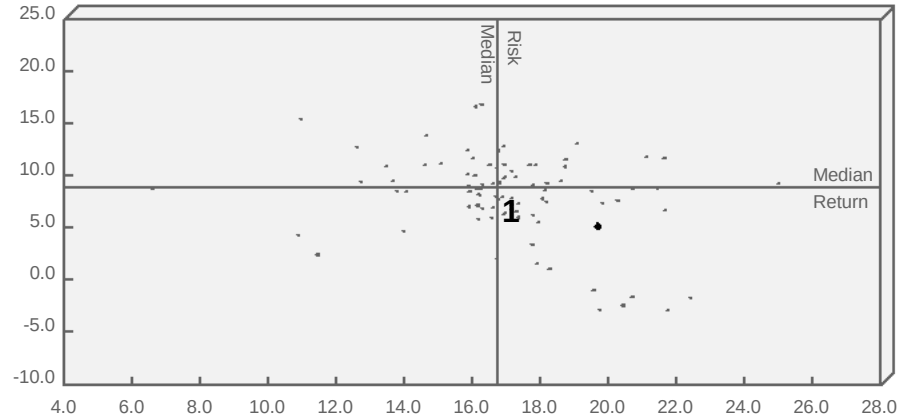


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
♦ Philadelphia I	12.02 (12)	10.57 (28)	10.88 (63)	18.72 (51)	15.85 (71)	5.48 (83)		
1 MSCI ACWI X	10.09 (46)	6.66 (63)	10.04 (66)	16.48 (65)	15.47 (73)	5.95 (80)		
Median	9.87	8.25	12.53	19.06	18.57	8.86	7.75	9.36
Number of Funds	1019	957	911	891	755	618	394	147

*Three Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Philadelphia International	♦	5.48	83	20.01	9
MSCI ACWI X US (N)	**1**	5.95	80	17.33	36
Median		8.86		16.73	

*TUCS Total Returns of Intl Equity Portfolios - Non-US Equity Universe - Gross of Fees

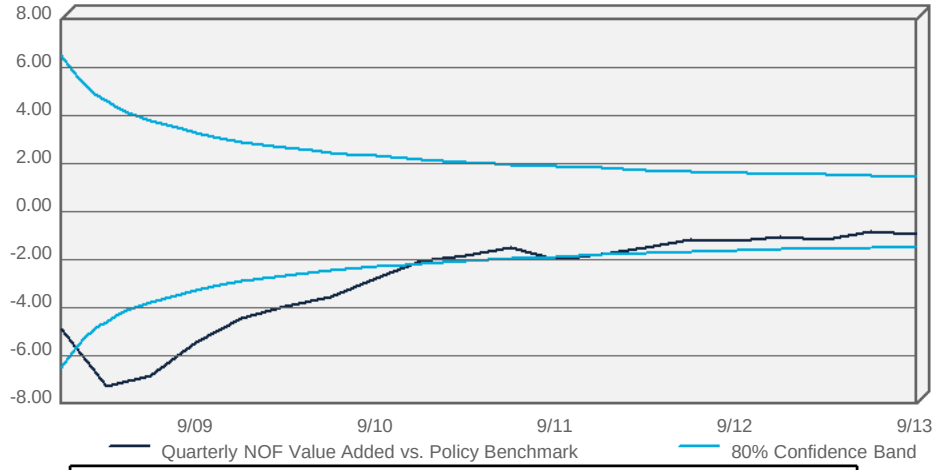
Investment Manager Analysis

Wilshire

Pyramis

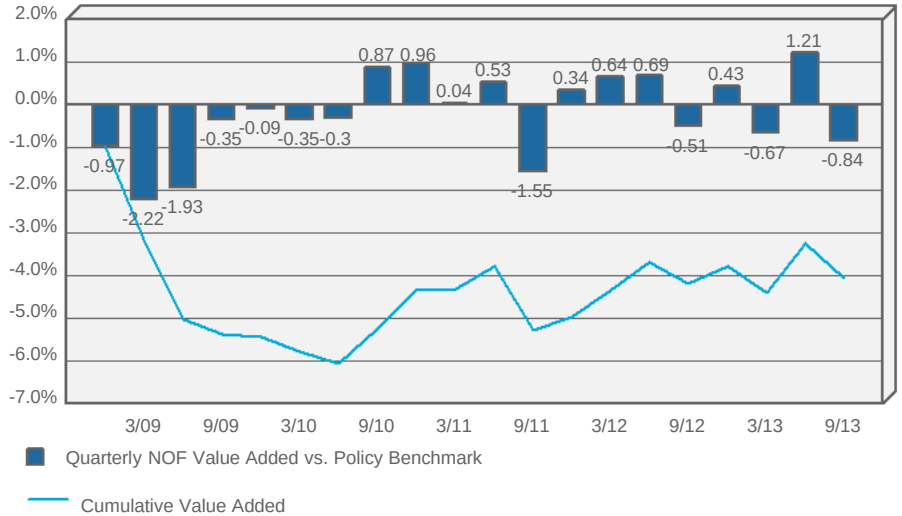
September 30, 2013

Cumulative Skill Analysis vs Benchmark

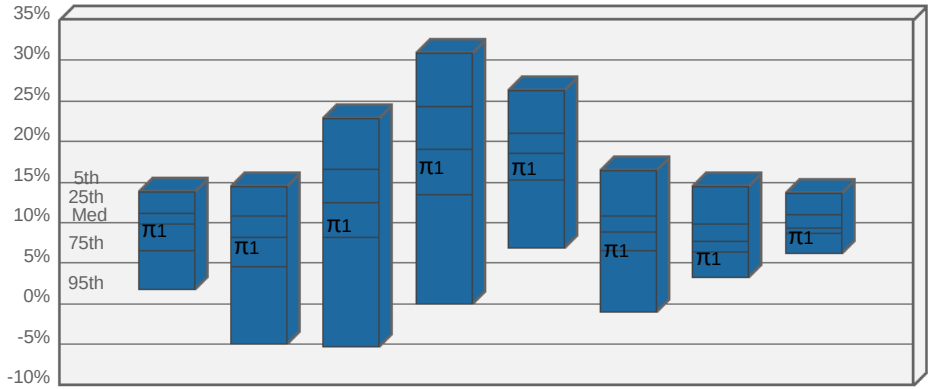


Excess Return:	**-0.94**	**Information Ratio:**	**-0.47**
Excess Risk:	**1.98**	**T-Stat:**	**-1.06**

Value-Added Analysis vs Benchmark

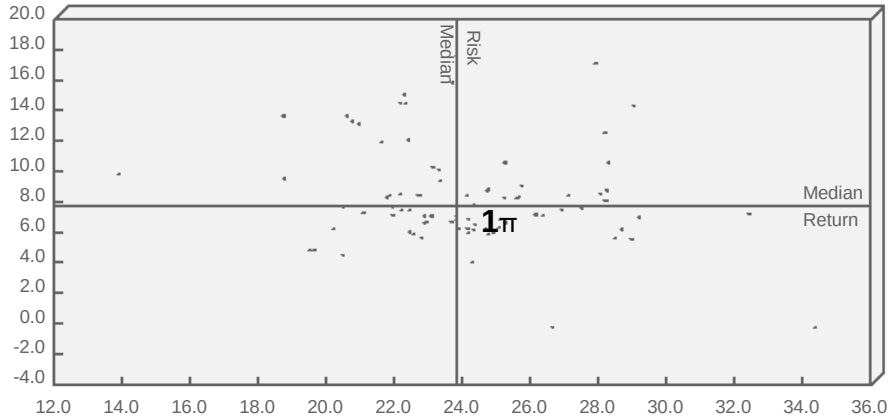


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π Pyramis	9.34 (57)	7.26 (55)	9.95 (68)	17.03 (60)	16.94 (63)	6.83 (71)	5.88 (85)	8.49 (77)
1 Policy Benchmark	10.09 (46)	6.66 (63)	10.04 (66)	16.48 (65)	15.47 (73)	5.95 (80)	6.26 (78)	7.77 (90)
Median	9.87	8.25	12.53	19.06	18.57	8.86	7.75	9.36
Number of Funds	1019	957	911	891	755	618	394	147

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Pyramis	π	5.88	85	25.42	31
Policy Benchmark	1	6.26	78	25.01	35
Median		7.75		23.83	

*TUCS Total Returns of Intl Equity Portfolios - Non-US Equity Universe - Gross of Fees

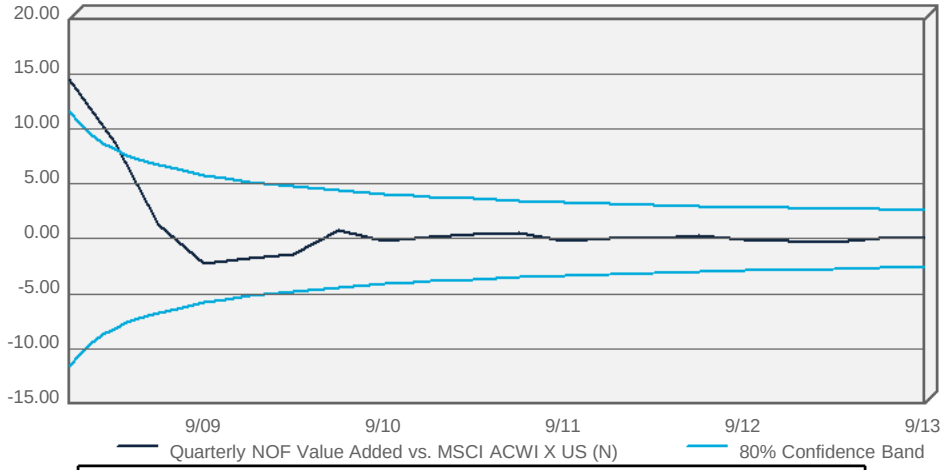
Investment Manager Analysis

Wilshire

Thornburg

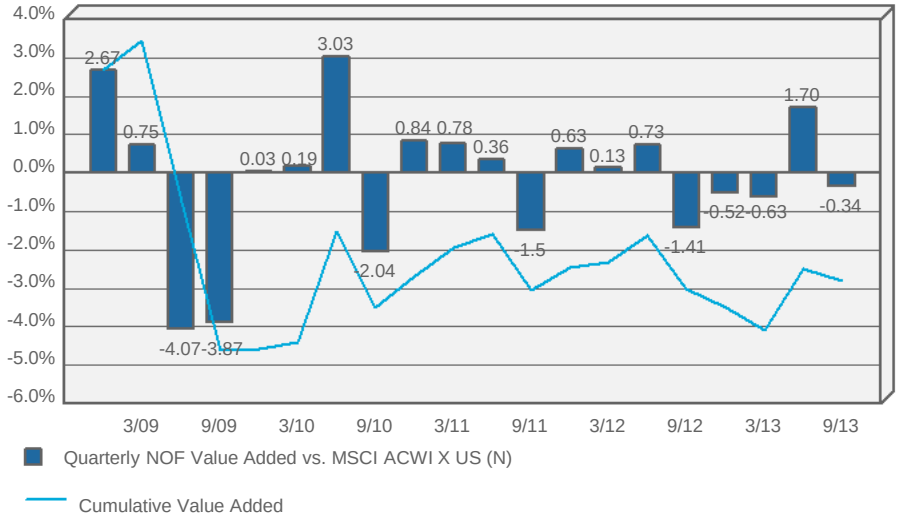
September 30, 2013

Cumulative Skill Analysis vs Benchmark

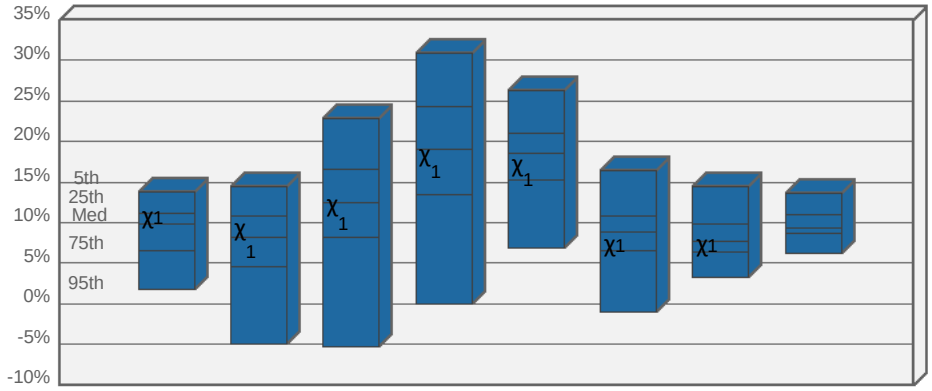


Excess Return:	**0.01**	**Information Ratio:**	**0.00**
Excess Risk:	**3.54**	**T-Stat:**	**0.01**

Value-Added Analysis vs Benchmark

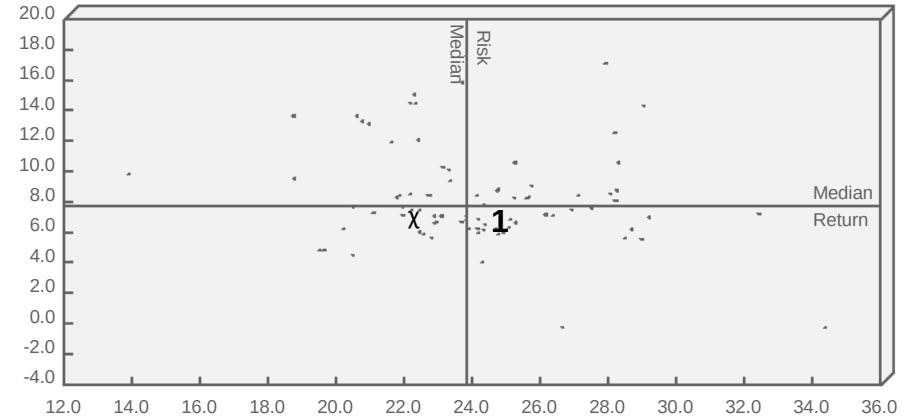


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
χ Thornburg	9.88 (49)	8.46 (48)	11.48 (60)	17.63 (58)	16.34 (67)	6.48 (75)	6.48 (74)	
1 MSCI ACWI X	10.09 (46)	6.66 (63)	10.04 (66)	16.48 (65)	15.47 (73)	5.95 (80)	6.26 (78)	
Median	9.87	8.25	12.53	19.06	18.57	8.86	7.75	9.36
Number of Funds	1019	957	911	891	755	618	394	147

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Thornburg	χ	6.48	74	22.56	66
MSCI ACWI X US (N)	**1**	6.26	78	25.01	35
Median		7.75		23.83	

*TUCS Total Returns of Intl Equity Portfolios - Non-US Equity Universe - Gross of Fees

Custom Benchmark Specification

Non US Equity Composite

September 30, 2013

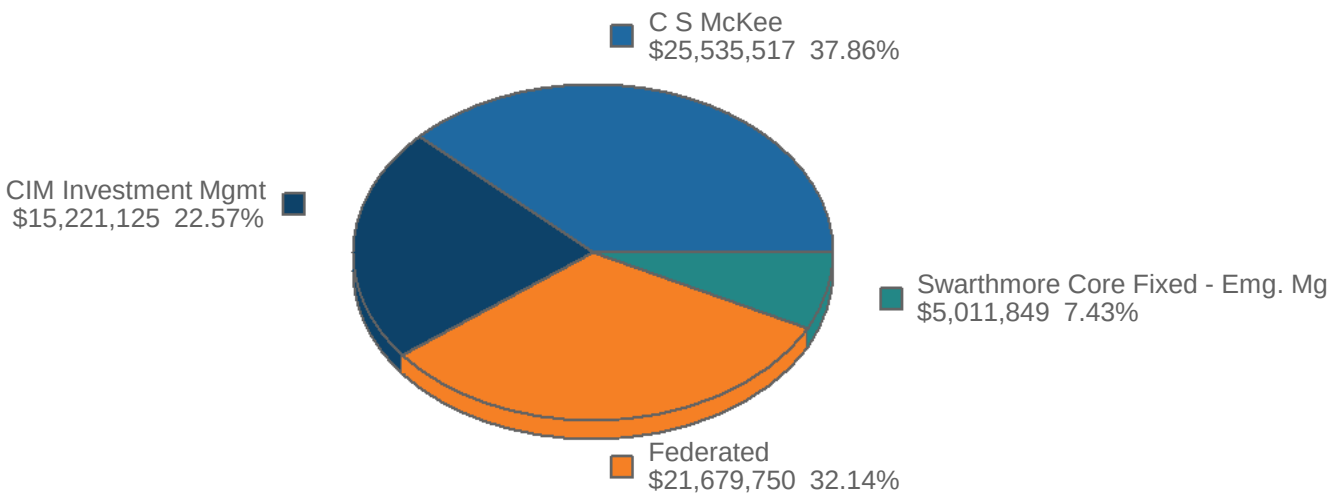
	Quarter Start	Quarter End	Percent	Description
Policy Benchmark	12/00	6/08	100.00	MSCI EAFE Index (N)
	9/08	9/13	100.00	MSCI ACWI X US (N)

Fixed Income

Manager Allocation

Core Fixed Composite

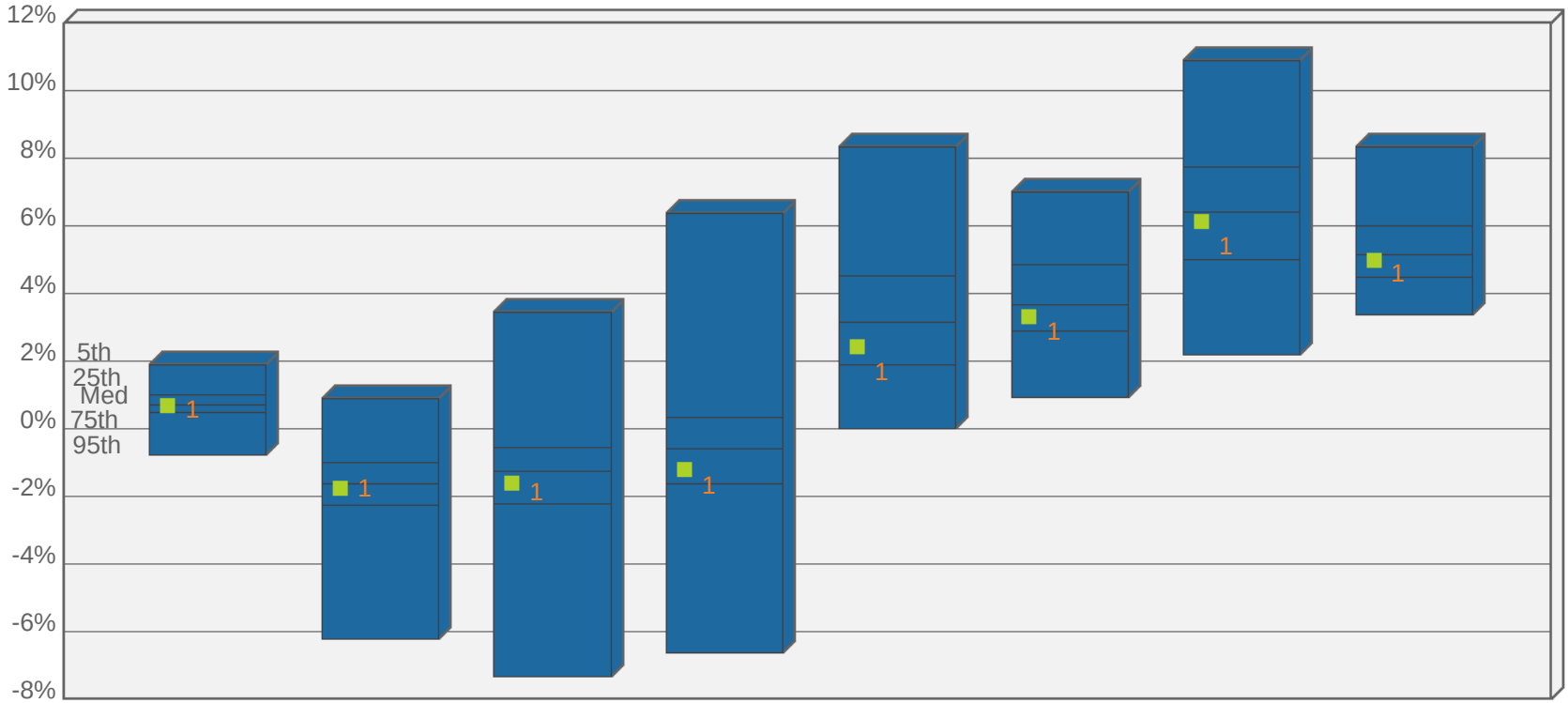
As of September 30, 2013



Performance Comparison

Core Fixed Composite

Periods Ended September 30, 2013



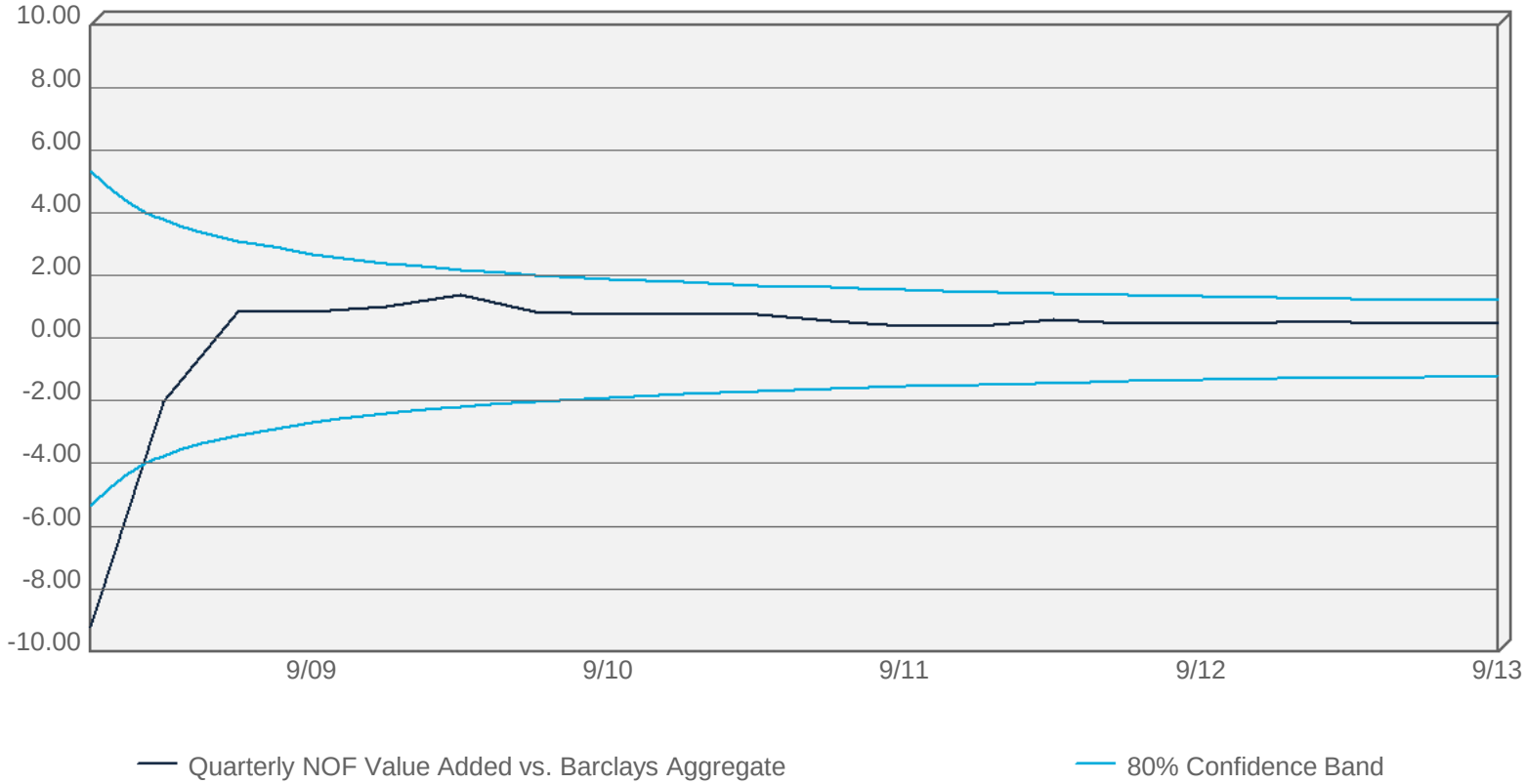
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
Core Fixed Composite	0.73 (48)	-1.74 (53)	-1.58 (59)	-1.17 (68)	2.47 (64)	3.36 (60)	6.15 (55)	5.02 (56)
1 Barclays Aggregate	0.57 (68)	-1.77 (54)	-1.89 (67)	-1.68 (76)	1.68 (83)	2.86 (76)	5.41 (69)	4.59 (72)
5th %tile	1.92	0.92	3.46	6.39	8.36	7.02	10.90	8.34
25th %tile	1.00	-1.00	-0.53	0.33	4.55	4.86	7.77	6.03
Median	0.71	-1.60	-1.24	-0.56	3.16	3.68	6.43	5.18
75th %tile	0.50	-2.25	-2.19	-1.62	1.90	2.91	5.00	4.48
95th %tile	-0.76	-6.22	-7.33	-6.61	0.01	0.95	2.20	3.37
Number of Funds	226	220	214	212	187	178	131	82

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

Cumulative Skill Analysis

Core Fixed Composite

Five Years Ending September 30, 2013



Excess Return:	**0.46**	**Information Ratio:**	**0.28**
Excess Risk:	**1.63**	**T-Stat:**	**0.64**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
CIM Investment Mgmt									
Net of Fee Return	**0.64**	**-1.72**	**-1.60**	**-1.09**	**1.97**	**4.88**		**12/31/05**	**4.32**
Barclays Int Govt/Credit	0.62	-1.10	-0.84	-0.50	2.42	4.95		12/31/05	4.69
Value Added	0.03	-0.62	-0.76	-0.60	-0.44	-0.07		12/31/05	-0.37
C S McKee									
Net of Fee Return	**0.40**	**-1.66**	**-1.61**	**-1.07**	**3.55**	**6.11**	**5.33**	**12/31/82**	**8.21**
Barclays Aggregate	0.57	-1.77	-1.89	-1.68	2.86	5.41	4.59	12/31/82	7.83
Value Added	-0.16	0.11	0.28	0.61	0.69	0.70	0.73	12/31/82	0.38
Federated									
Net of Fee Return	**1.11**	**-2.13**	**-1.69**	**-1.48**	**3.51**	**6.76**		**9/30/06**	**5.99**
Barclays Aggregate	0.57	-1.77	-1.89	-1.68	2.86	5.41		9/30/06	5.12
Value Added	0.54	-0.36	0.20	0.20	0.64	1.35		9/30/06	0.87
Swarthmore Core Fixed - Emg. Mg									
Net of Fee Return	**0.47**	**-1.57**	**-1.49**	**-1.24**				**6/30/12**	**-0.03**
Barclays Int Govt/Credit Index	0.62	-1.10	-0.84	-0.50				6/30/12	0.72
Value Added	-0.15	-0.47	-0.65	-0.75				6/30/12	-0.75
Core Fixed Composite									
Net of Fee Return	**0.69**	**-1.81**	**-1.70**	**-1.32**	**3.14**	**5.90**	**4.75**	**9/30/82**	**8.55**
Barclays Aggregate	0.57	-1.77	-1.89	-1.68	2.86	5.41	4.59	9/30/82	8.05
Value Added	0.12	-0.04	0.19	0.36	0.28	0.49	0.15	9/30/82	0.51

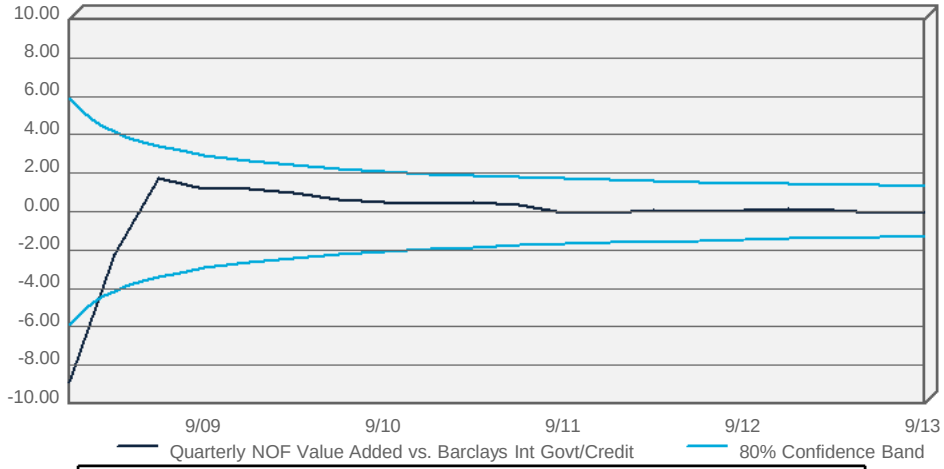
Investment Manager Analysis

Wilshire

CIM Investment Mgmt

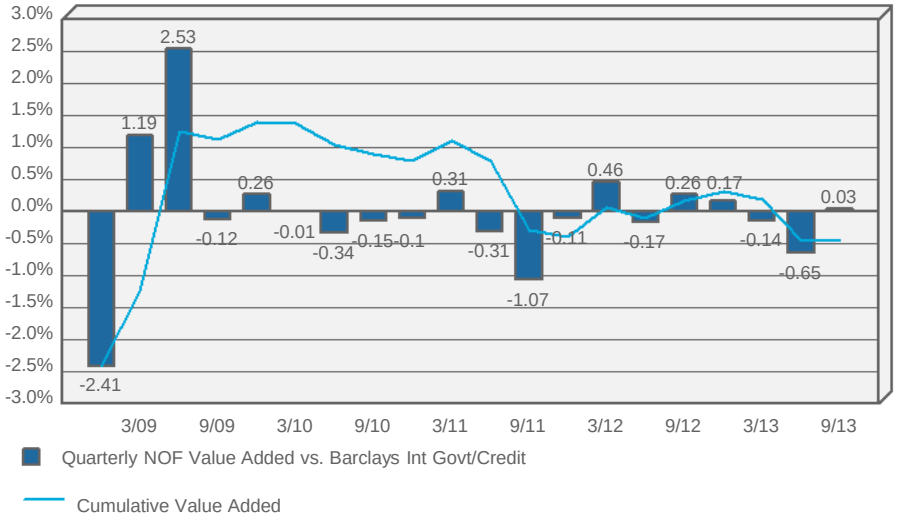
September 30, 2013

Cumulative Skill Analysis vs Benchmark

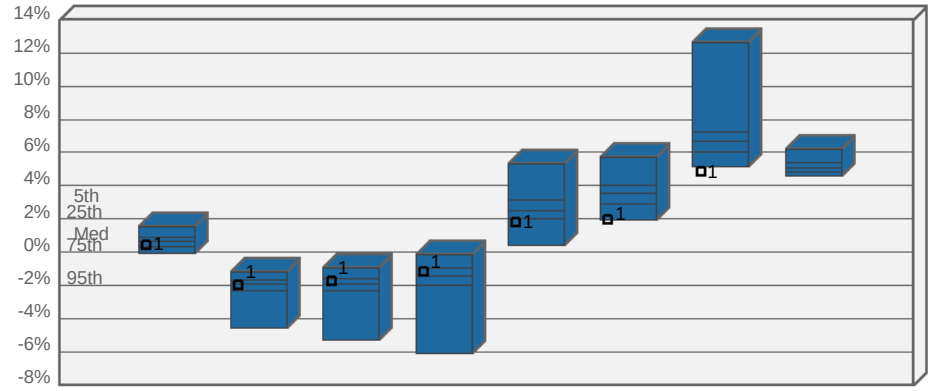


Excess Return:	**-0.07**	**Information Ratio:**	**-0.04**
Excess Risk:	**1.79**	**T-Stat:**	**-0.08**

Value-Added Analysis vs Benchmark

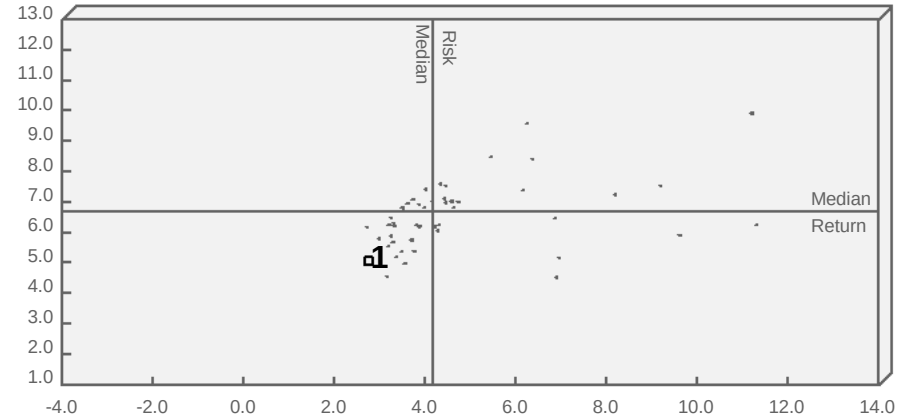


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▫ CIM Investment	0.71 (40)	-1.65 (22)	-1.46 (16)	-0.89 (20)	2.09 (71)	2.23 (93)	5.16 (95)	
1 Barclays Int Gov	0.62 (51)	-1.10 (3)	-0.84 (3)	-0.50 (9)	1.92 (76)	2.42 (91)	4.95 (97)	
Median	0.62	-1.93	-1.95	-1.45	2.51	3.56	6.69	5.10
Number of Funds	101	100	100	96	80	70	52	25

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
CIM Investment Mgmt	▫	5.16	95	2.99	99
Barclays Int Govt/Credit	1	4.95	97	3.14	97
Median		6.69		4.16	

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

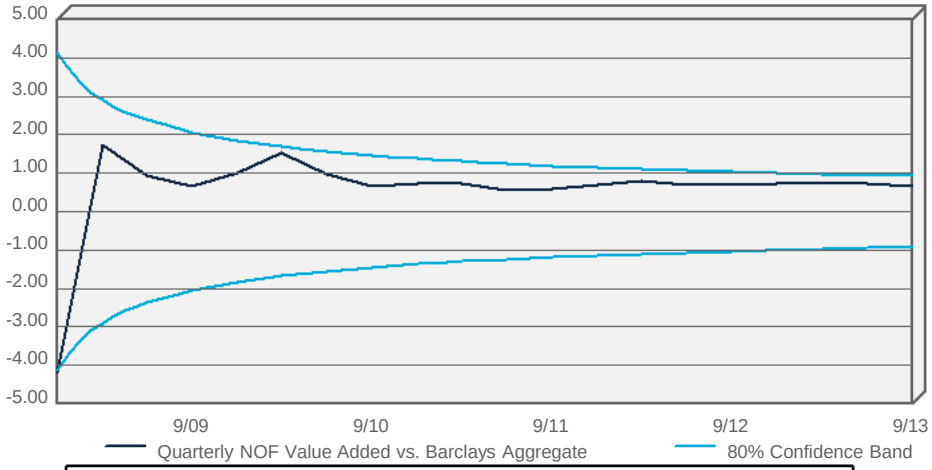
Investment Manager Analysis

Wilshire

C S McKee

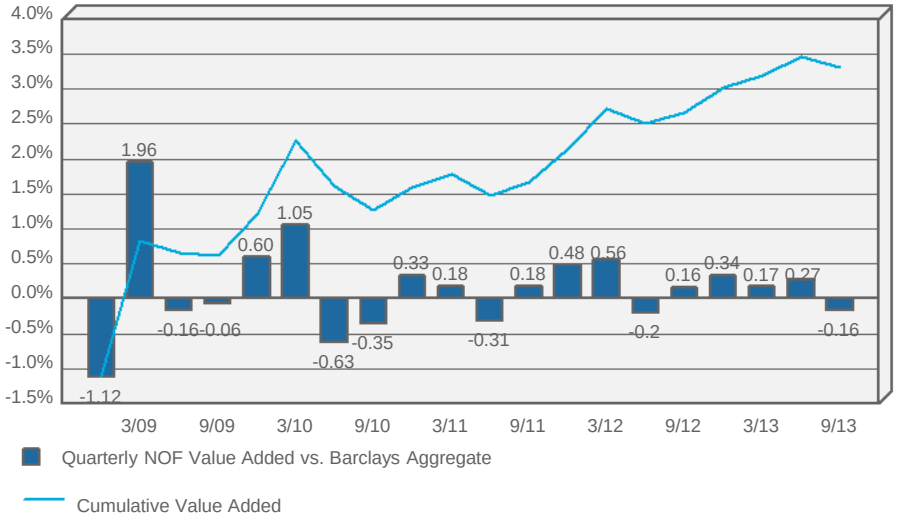
September 30, 2013

Cumulative Skill Analysis vs Benchmark

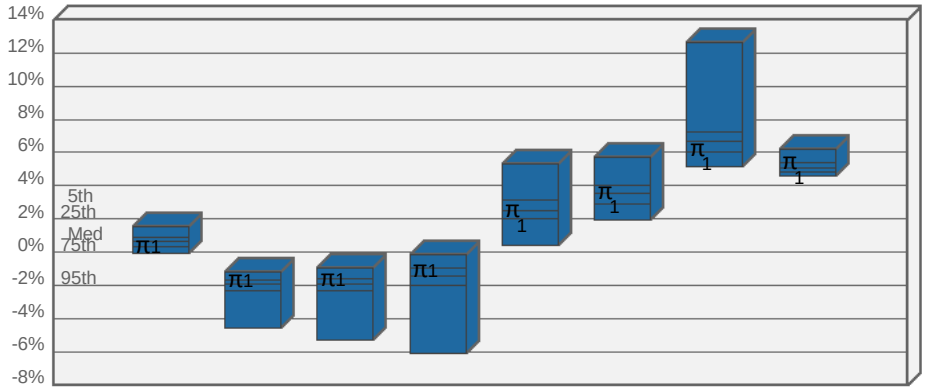


Excess Return:	**0.67**	**Information Ratio:**	**0.53**
Excess Risk:	**1.25**	**T-Stat:**	**1.19**

Value-Added Analysis vs Benchmark

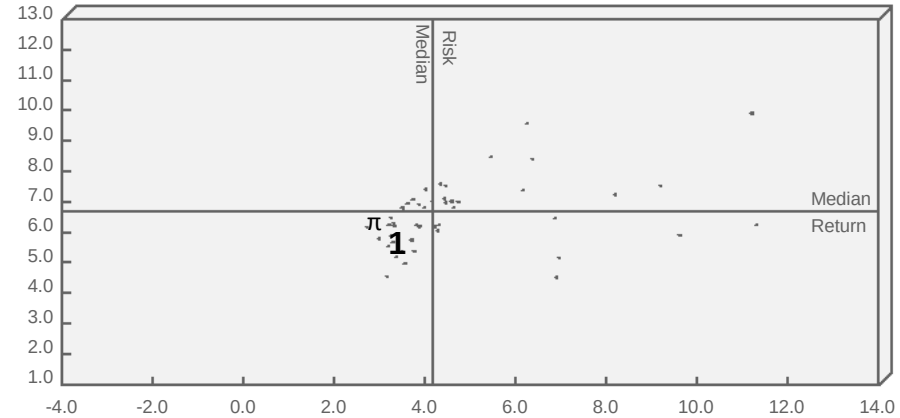


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π C S McKee	0.46 (67)	-1.60 (15)	-1.52 (19)	-0.98 (23)	2.66 (46)	3.73 (38)	6.32 (53)	5.56 (17)
1 Barclays Aggrega	0.57 (55)	-1.77 (35)	-1.89 (44)	-1.68 (56)	1.68 (78)	2.86 (79)	5.41 (87)	4.59 (89)
Median	0.62	-1.93	-1.95	-1.45	2.51	3.56	6.69	5.10
Number of Funds	101	100	100	96	80	70	52	25

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
C S McKee	π	6.32	53	3.07	97
Barclays Aggregate	**1**	5.41	87	3.53	73
Median		6.69		4.16	

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

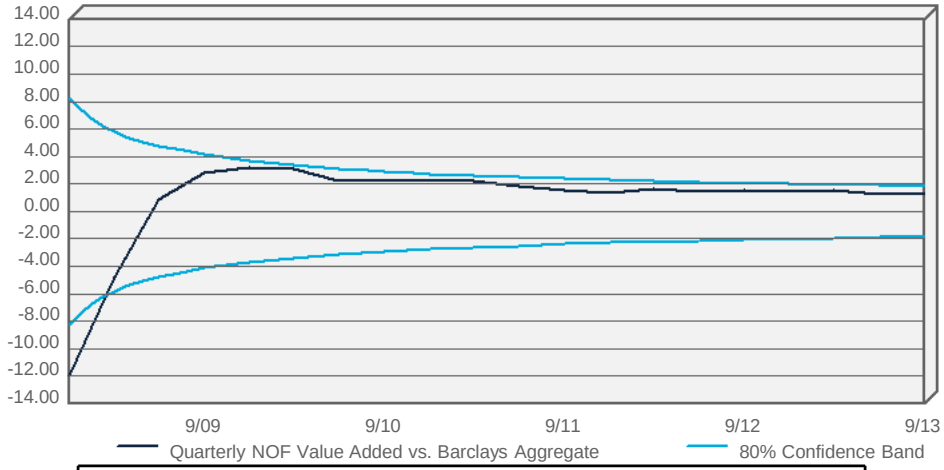
Investment Manager Analysis

Wilshire

Federated

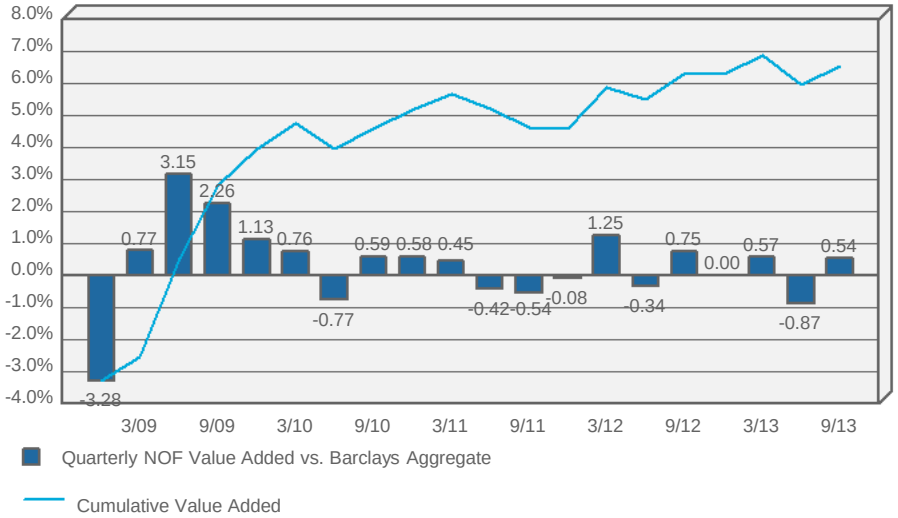
September 30, 2013

Cumulative Skill Analysis vs Benchmark

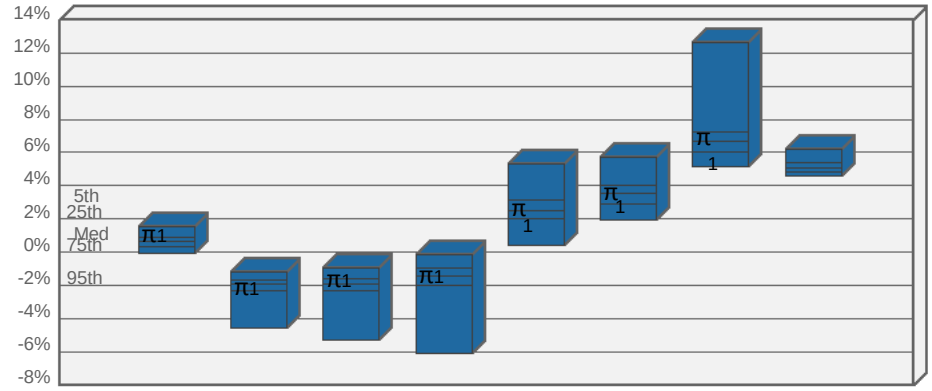


Excess Return:	**1.28**	**Information Ratio:**	**0.51**
Excess Risk:	**2.51**	**T-Stat:**	**1.14**

Value-Added Analysis vs Benchmark

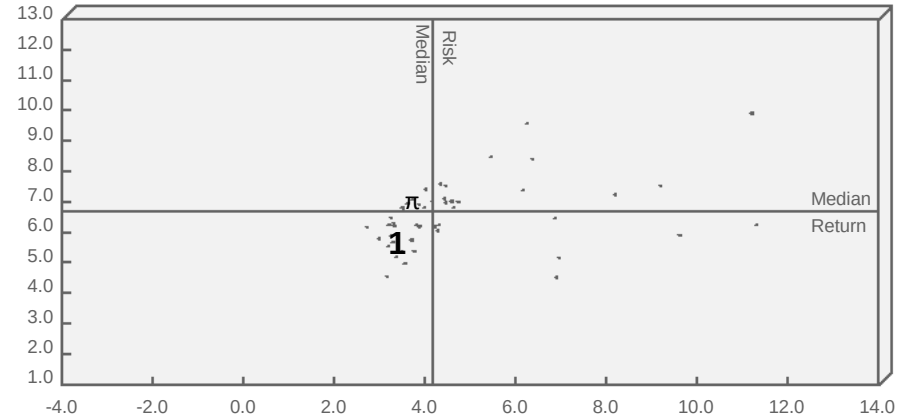


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
π Federated	1.11 (7)	-2.04 (61)	-1.60 (26)	-1.36 (47)	2.75 (42)	3.71 (41)	7.01 (34)	
1 Barclays Aggrega	0.57 (55)	-1.77 (35)	-1.89 (44)	-1.68 (56)	1.68 (78)	2.86 (79)	5.41 (87)	
Median	0.62	-1.93	-1.95	-1.45	2.51	3.56	6.69	5.10
Number of Funds	101	100	100	96	80	70	52	25

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Federated	π	7.01	34	3.90	53
Barclays Aggregate	1	5.41	87	3.53	73
Median		6.69		4.16	

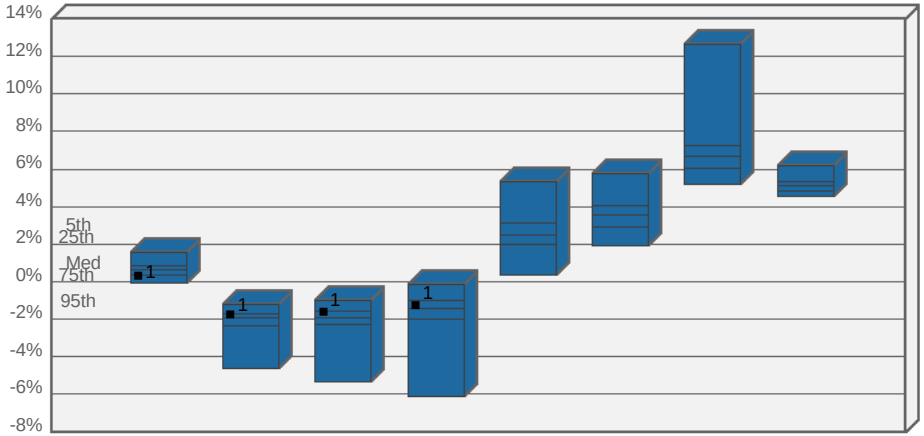
*TUCS Total Returns of Fixed Income Portfolios - Core Universe - Gross of Fees

Investment Manager Analysis

Swarthmore Core Fixed - Emg. Mg

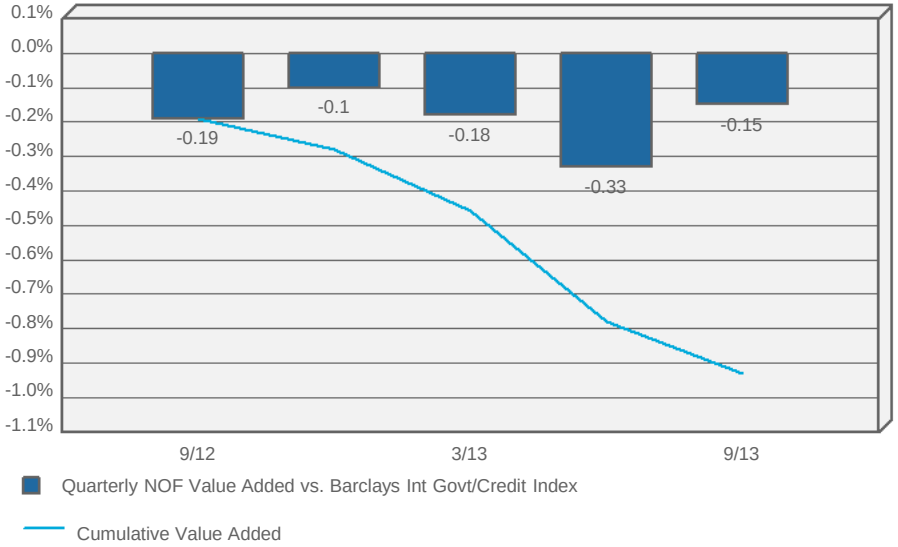
September 30, 2013

*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Swarthmore Cor	0.56 (55)	-1.48 (10)	-1.32 (12)	-0.98 (23)				
1 Barclays Int Gov	0.62 (51)	-1.10 (3)	-0.84 (3)	-0.50 (9)				
Median	0.62	-1.93	-1.95	-1.45	2.51	3.56	6.69	5.10
Number of Funds	101	100	100	96	80	70	52	25

Value-Added Analysis vs Benchmark



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

Custom Benchmark Specification

Core Fixed Composite

September 30, 2013

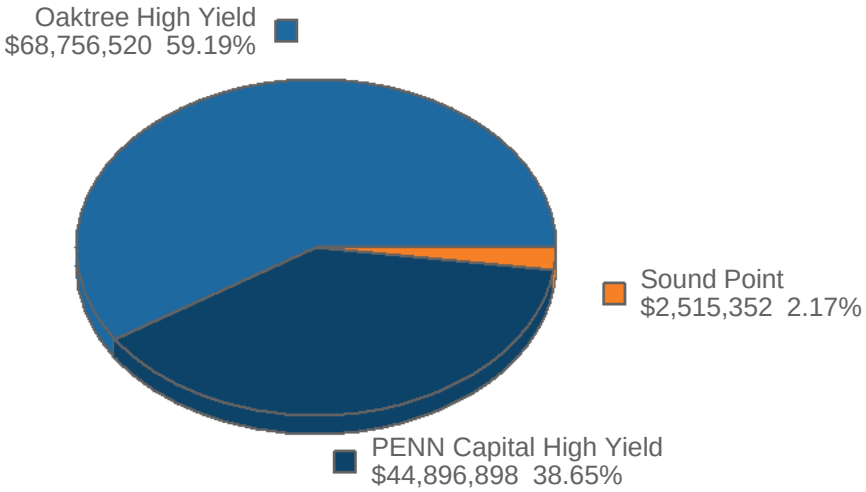
	Quarter Start	Quarter End	Percent	Description
Barclays Aggregate	12/82	9/13	100.00	Barclays Aggregate

High Yield

Manager Allocation

High Yield Fixed Composite

As of September 30, 2013

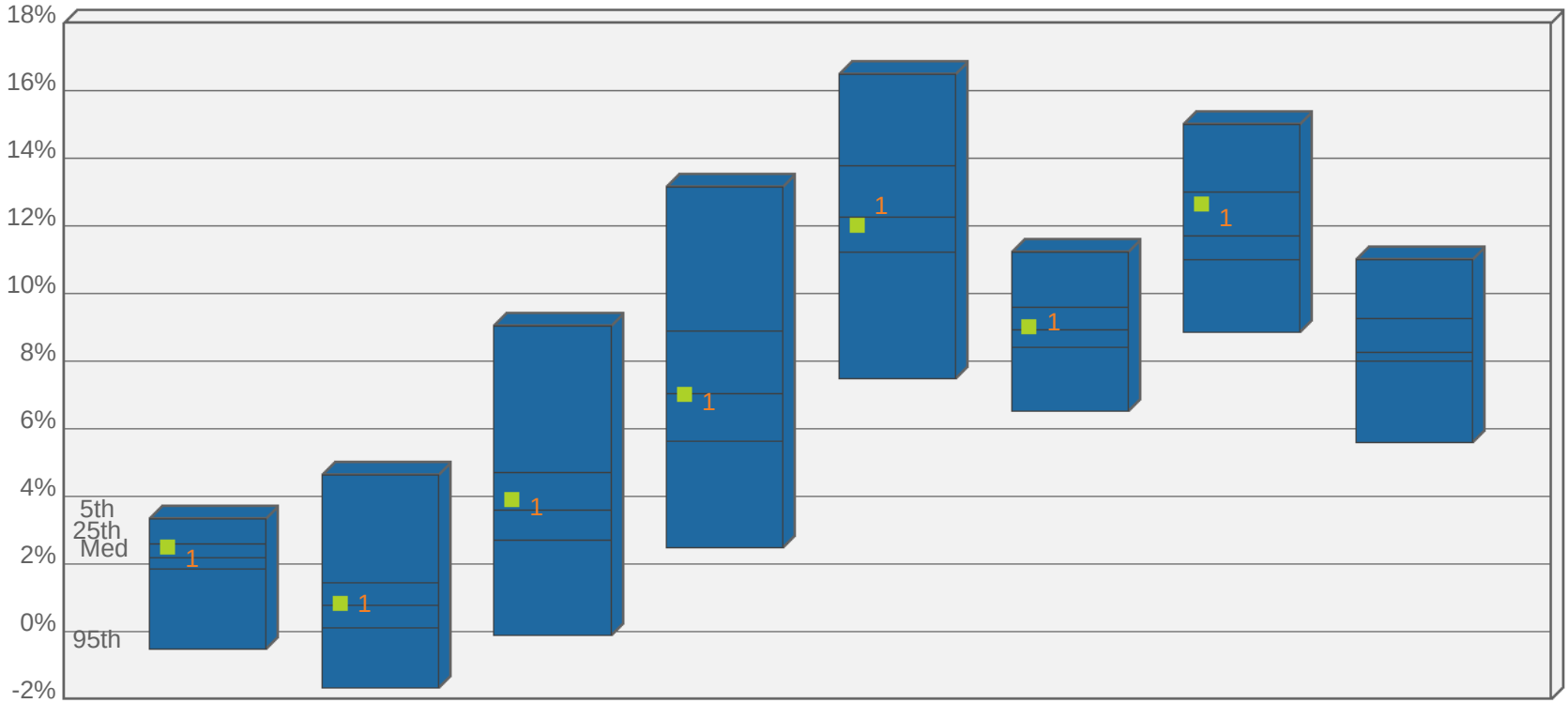


Performance Comparison

Wilshire

High Yield Fixed Composite

Periods Ended September 30, 2013



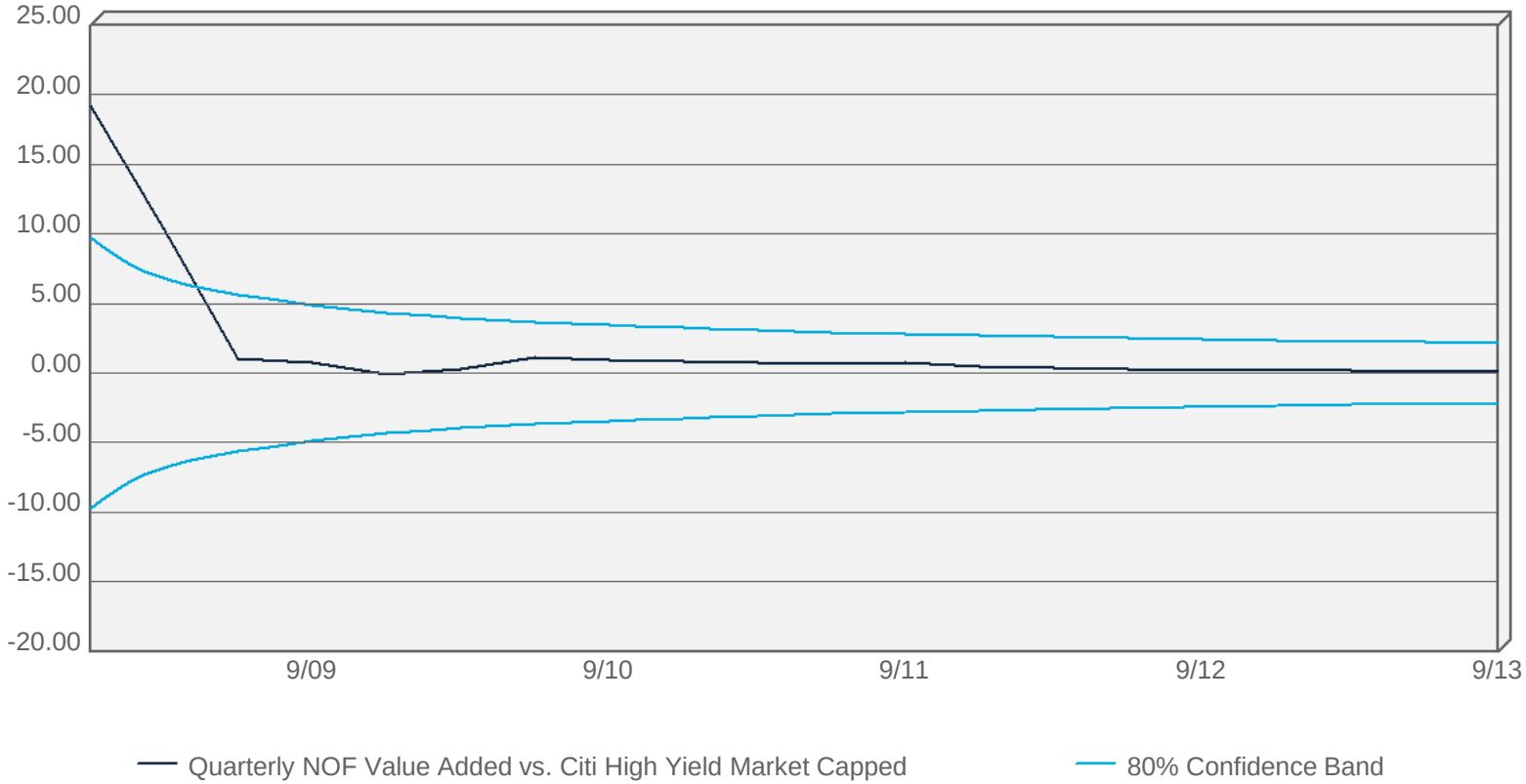
	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
High Yield Fixed Composite	2.53 (28)	0.87 (47)	3.94 (41)	7.05 (50)	12.05 (56)	9.06 (46)	12.69 (30)	
1 Citi High Yield Market Capped	2.14 (53)	0.82 (49)	3.68 (48)	6.78 (57)	12.58 (40)	9.15 (44)	12.24 (35)	
5th %tile	3.36	4.63	9.06	13.18	16.49	11.25	15.03	11.00
25th %tile	2.60	1.46	4.73	8.91	13.78	9.60	13.01	9.26
Median	2.20	0.79	3.60	7.05	12.27	8.93	11.71	8.27
75th %tile	1.88	0.11	2.73	5.63	11.23	8.44	11.03	8.02
95th %tile	-0.51	-1.66	-0.08	2.49	7.51	6.55	8.88	5.60
Number of Funds	125	124	121	115	97	90	62	32

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

Cumulative Skill Analysis

High Yield Fixed Composite

Five Years Ending September 30, 2013



Excess Return:	**0.17**	**Information Ratio:**	**0.06**
Excess Risk:	**2.95**	**T-Stat:**	**0.13**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Oaktree High Yield									
Net of Fee Return	**2.20**	**0.18**	**2.95**	**6.01**	**8.79**	**11.98**		**3/31/08**	**10.23**
Citi High Yield Market Capped	2.14	0.82	3.68	6.78	9.15	12.24		3/31/08	9.95
Value Added	0.06	-0.64	-0.73	-0.76	-0.35	-0.26		3/31/08	0.29
PENN Capital High Yield									
Net of Fee Return	**2.52**	**1.45**	**4.95**	**7.95**	**8.78**	**12.90**		**6/30/08**	**10.68**
ML High Yield Master II	2.25	0.87	3.79	7.09	8.86	13.35		6/30/08	10.56
Value Added	0.27	0.58	1.17	0.86	-0.09	-0.45		6/30/08	0.12
Sound Point									
Net of Fee Return									
CSFB Leveraged Loan									
High Yield Fixed Composite									
Net of Fee Return	**2.34**	**0.68**	**3.75**	**6.78**	**8.79**	**12.42**		**3/31/08**	**10.39**
Citi High Yield Market Capped	2.14	0.82	3.68	6.78	9.15	12.24		3/31/08	9.95
Value Added	0.19	-0.14	0.07	0.01	-0.35	0.19		3/31/08	0.44

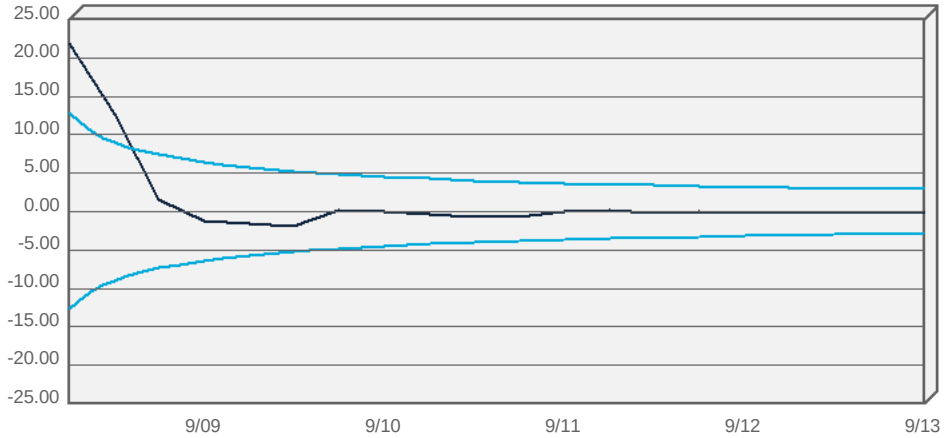
Investment Manager Analysis

Wilshire

Oaktree High Yield

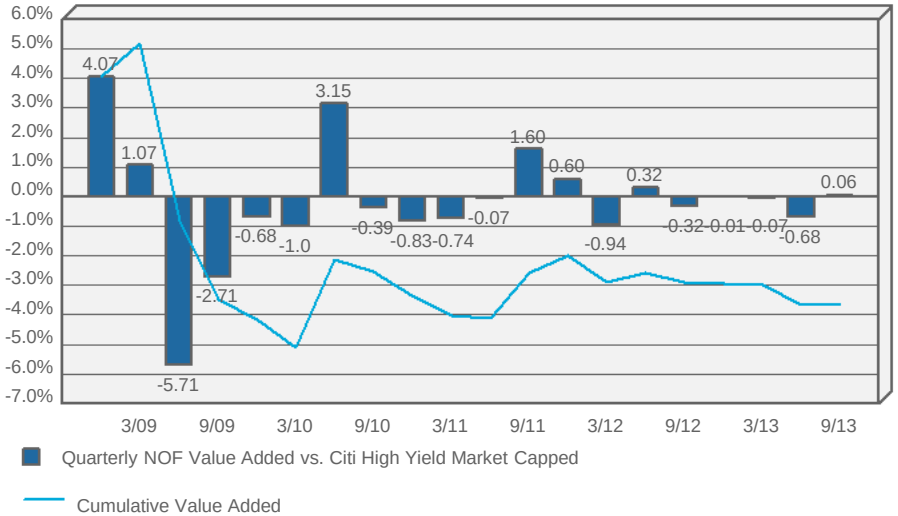
September 30, 2013

Cumulative Skill Analysis vs Benchmark

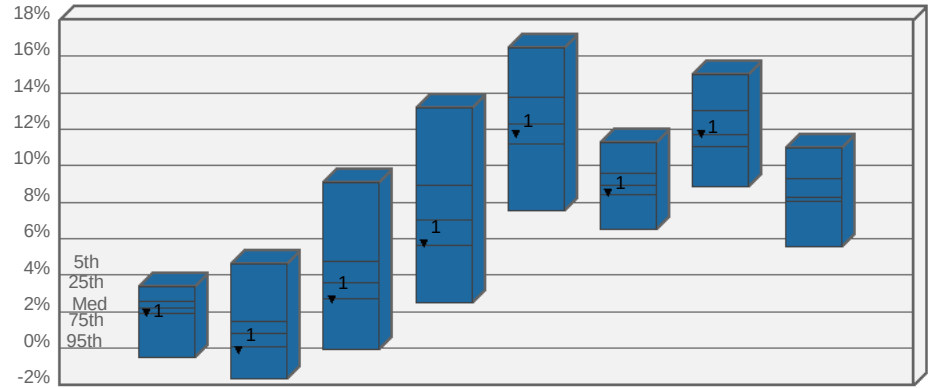


Excess Return:	**-0.23**	**Information Ratio:**	**-0.06**
Excess Risk:	**3.88**	**T-Stat:**	**-0.13**

Value-Added Analysis vs Benchmark

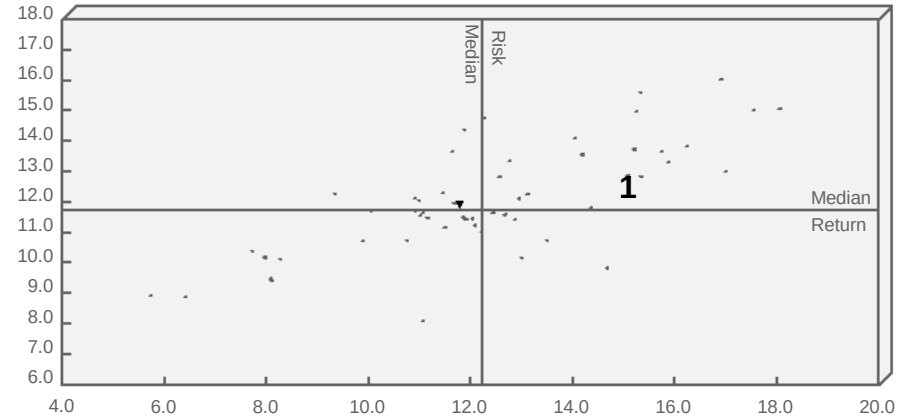


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
▼ Oaktree High Y	2.20 (50)	0.18 (72)	2.95 (72)	6.01 (70)	11.99 (58)	8.79 (56)	11.98 (41)	
1 Citi High Yield	2.14 (53)	0.82 (49)	3.68 (48)	6.77 (57)	12.58 (40)	9.15 (44)	12.24 (35)	
Median	2.20	0.79	3.60	7.05	12.27	8.93	11.71	8.27
Number of Funds	125	124	121	115	97	90	62	32

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret Value	Gross Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Oaktree High Yield	▼	11.98	41	11.99	53
Citi High Yield Market Capped	**1**	12.24	35	15.22	15
Median		11.71		12.22	

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

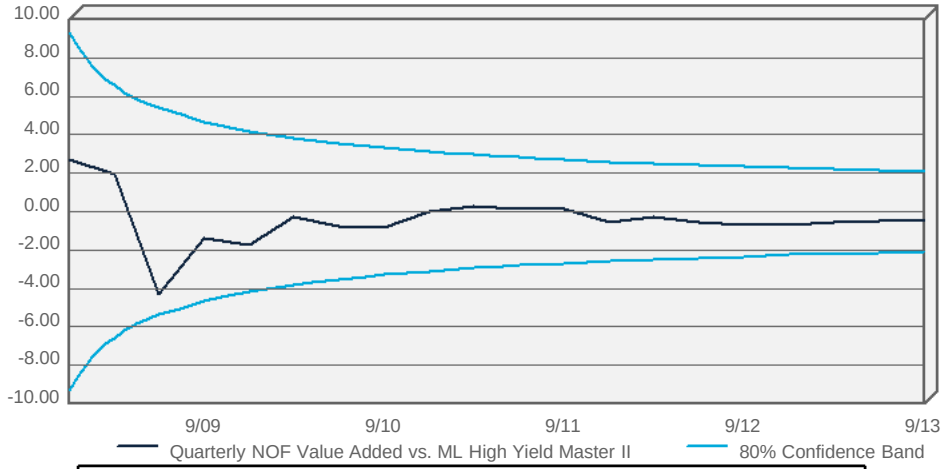
Investment Manager Analysis

Wilshire

PENN Capital High Yield

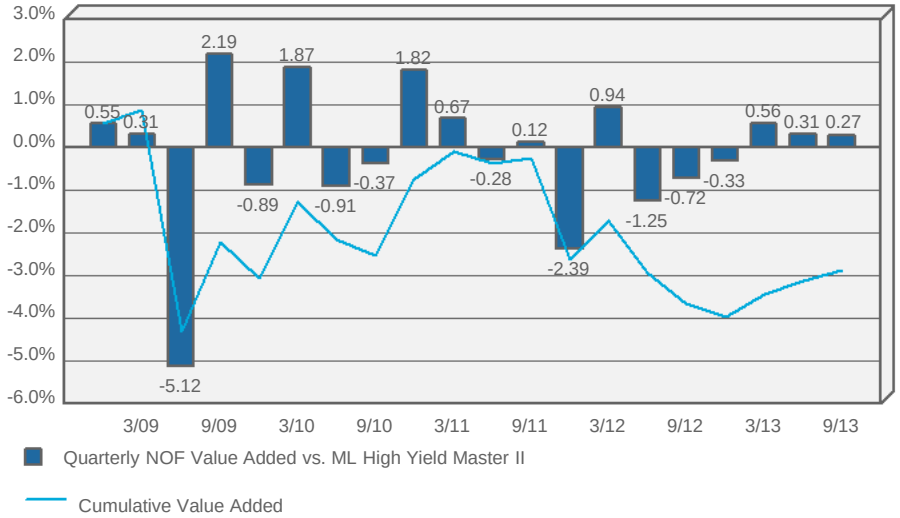
September 30, 2013

Cumulative Skill Analysis vs Benchmark

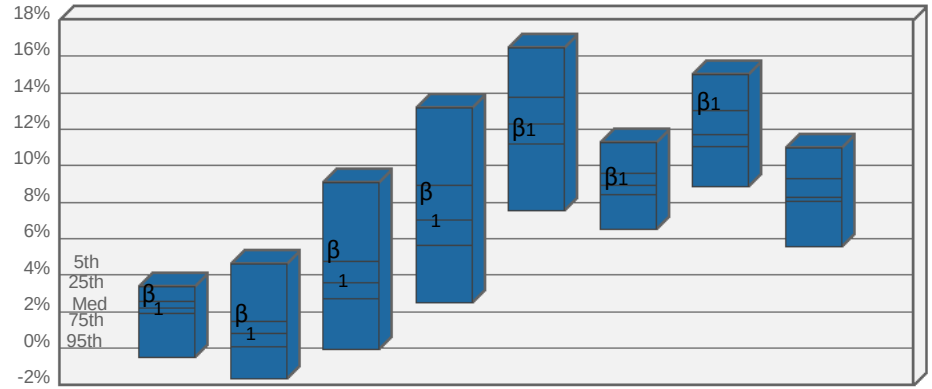


Excess Return:	**-0.40**	**Information Ratio:**	**-0.14**
Excess Risk:	**2.84**	**T-Stat:**	**-0.32**

Value-Added Analysis vs Benchmark

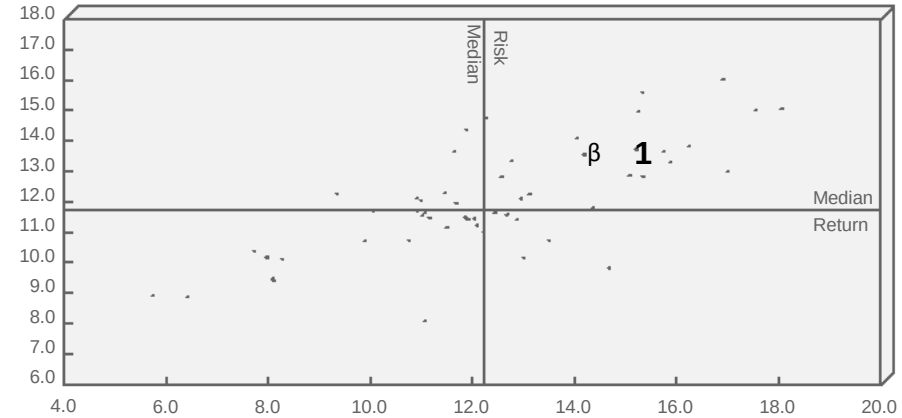


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
β PENN Capital H	3.02 (13)	1.94 (18)	5.46 (18)	8.64 (27)	12.14 (54)	9.44 (28)	13.57 (20)	
1 ML High Yiel	2.25 (45)	0.87 (47)	3.79 (45)	7.09 (49)	12.86 (36)	8.87 (52)	13.35 (21)	
Median	2.20	0.79	3.60	7.05	12.27	8.93	11.71	8.27
Number of Funds	125	124	121	115	97	90	62	32

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
PENN Capital High Yield	β	13.57	20	14.56	20
ML High Yield Master II	1	13.35	21	15.48	10
Median		11.71		12.22	

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

Custom Benchmark Specification

High Yield Fixed Composite

September 30, 2013

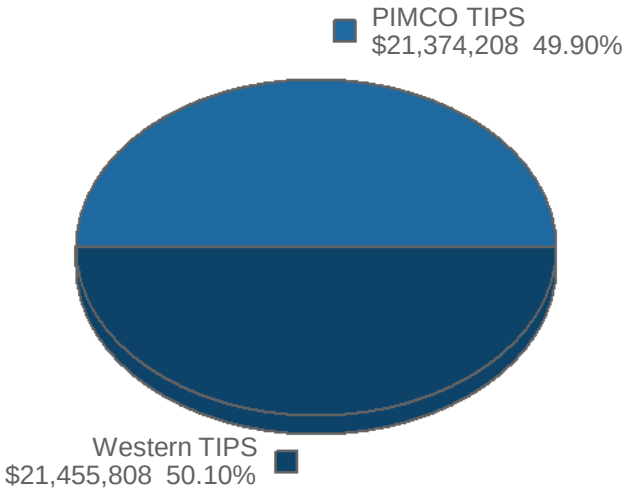
	Quarter Start	Quarter End	Percent	Description
Citi High Yield Market Capped	6/08	9/13	100.00	Citi High Yield Market Capped

TIPS

Manager Allocation

TIPS Fixed Composite

As of September 30, 2013

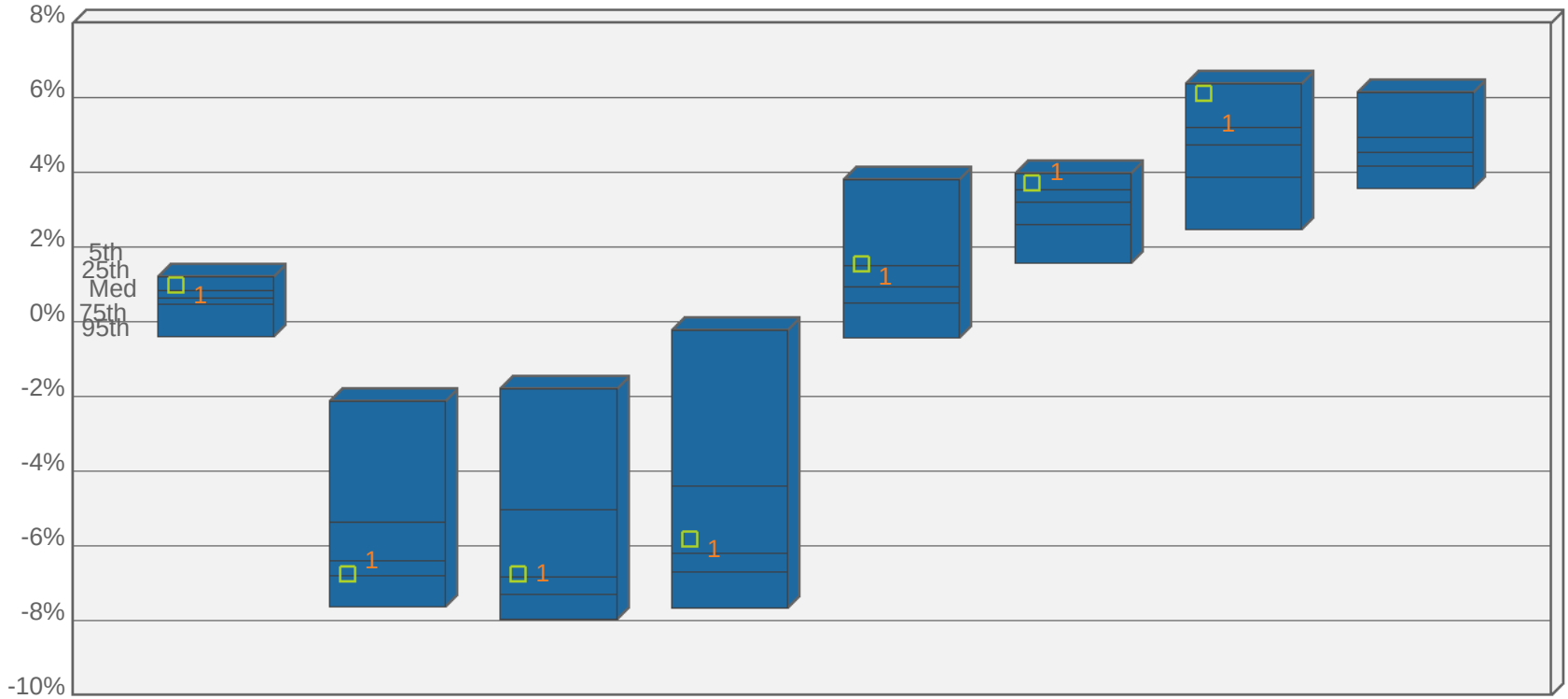


Performance Comparison

Wilshire

TIPS Fixed Composite

Periods Ended September 30, 2013



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
TIPS Fixed Composite	1.02 (12)	-6.73 (72)	-6.71 (42)	-5.79 (35)	1.57 (22)	3.76 (13)	6.15 (8)	
1 Barclays U.S. TIPS	0.70 (44)	-6.40 (52)	-6.74 (43)	-6.10 (43)	1.22 (34)	4.02 (2)	5.31 (22)	
5th %tile	1.23	-2.12	-1.78	-0.22	3.82	3.97	6.39	6.15
25th %tile	0.86	-5.34	-5.03	-4.38	1.53	3.54	5.21	4.94
Median	0.66	-6.38	-6.82	-6.19	0.95	3.21	4.75	4.54
75th %tile	0.49	-6.80	-7.27	-6.70	0.50	2.61	3.87	4.17
95th %tile	-0.40	-7.63	-7.96	-7.64	-0.42	1.58	2.49	3.58
Number of Funds	186	186	186	184	173	160	122	40

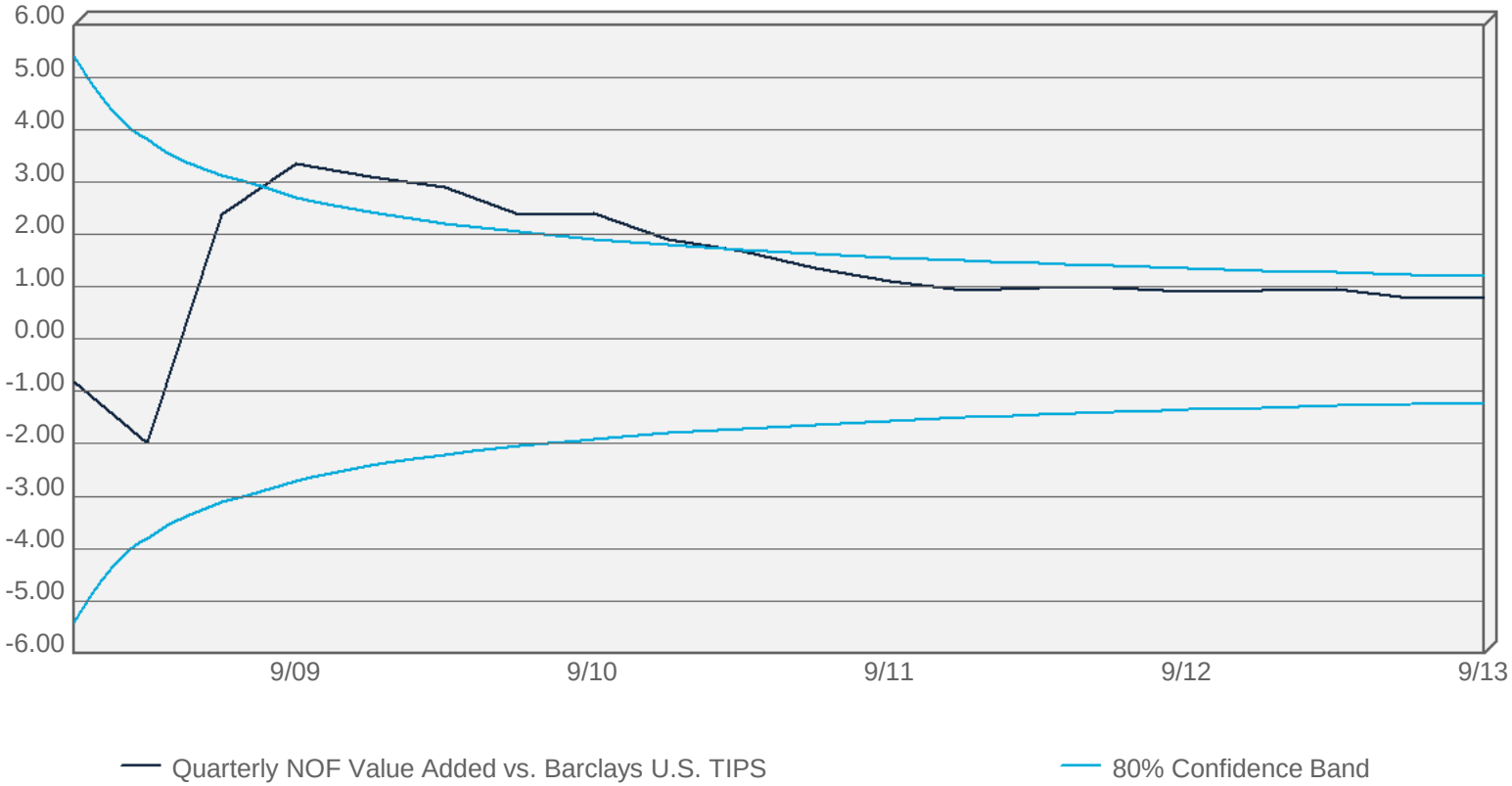
*Total Returns of TIPS Mutual Funds Universe - Net of Fees

Cumulative Skill Analysis

Wilshire

TIPS Fixed Composite

Five Years Ending September 30, 2013



Excess Return:	**0.80**	**Information Ratio:**	**0.49**
Excess Risk:	**1.64**	**T-Stat:**	**1.09**

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
PIMCO TIPS									
Net of Fee Return	**1.18**	**-7.22**	**-7.11**	**-6.18**	**3.89**	**6.63**		**3/31/08**	**4.71**
Barclays U.S. TIPS	0.70	-6.40	-6.74	-6.10	4.02	5.31		3/31/08	4.08
Value Added	0.48	-0.82	-0.37	-0.08	-0.13	1.32		3/31/08	0.63
Western TIPS									
Net of Fee Return	**0.85**	**-6.24**	**-6.31**	**-5.40**	**3.63**	**5.64**		**3/31/08**	**3.89**
Barclays U.S. TIPS	0.70	-6.40	-6.74	-6.10	4.02	5.31		3/31/08	4.08
Value Added	0.15	0.17	0.43	0.70	-0.39	0.33		3/31/08	-0.19
TIPS Fixed Composite									
Net of Fee Return	**1.02**	**-6.73**	**-6.71**	**-5.79**	**3.76**	**6.15**		**3/31/08**	**4.31**
Barclays U.S. TIPS	0.70	-6.40	-6.74	-6.10	4.02	5.31		3/31/08	4.08
Value Added	0.32	-0.33	0.03	0.31	-0.26	0.84		3/31/08	0.23

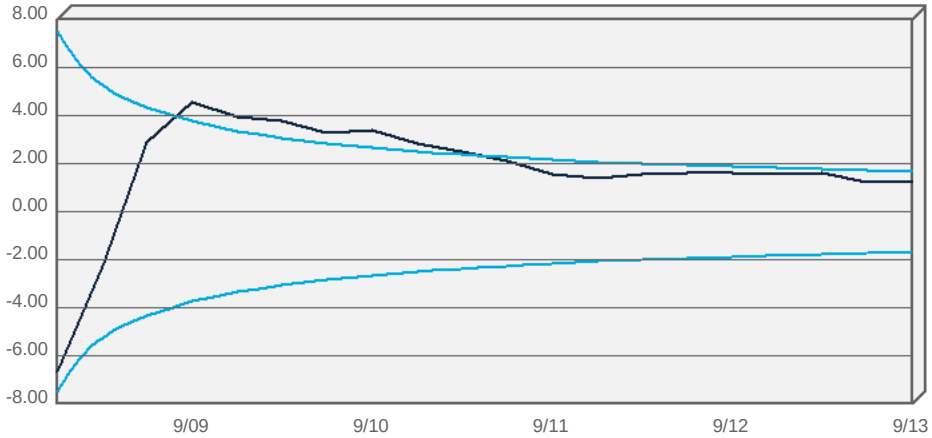
Investment Manager Analysis

Wilshire

PIMCO TIPS

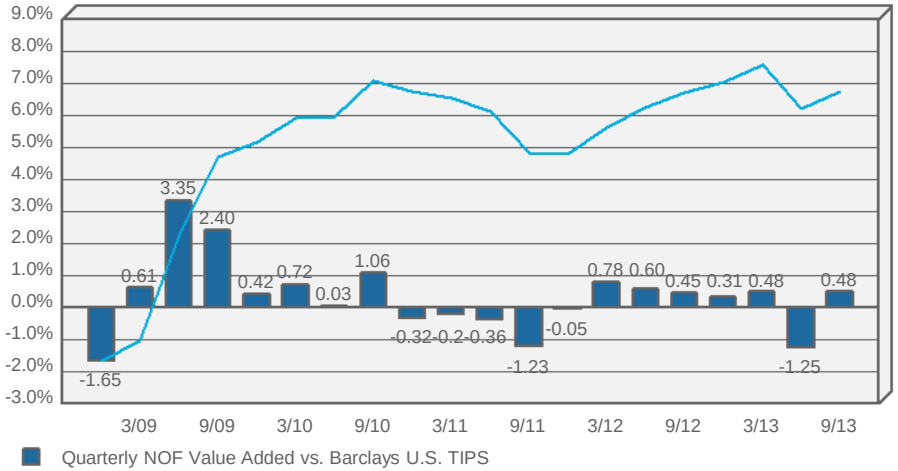
September 30, 2013

Cumulative Skill Analysis vs Benchmark

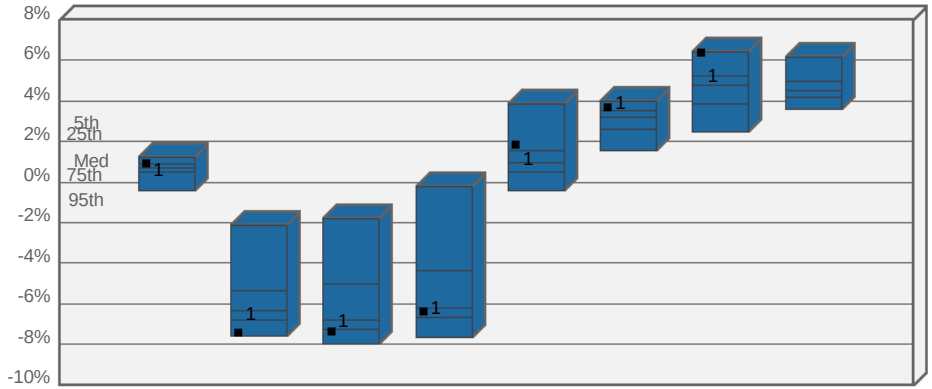


Excess Return:	**1.25**	**Information Ratio:**	**0.55**
Excess Risk:	**2.28**	**T-Stat:**	**1.23**

Value-Added Analysis vs Benchmark

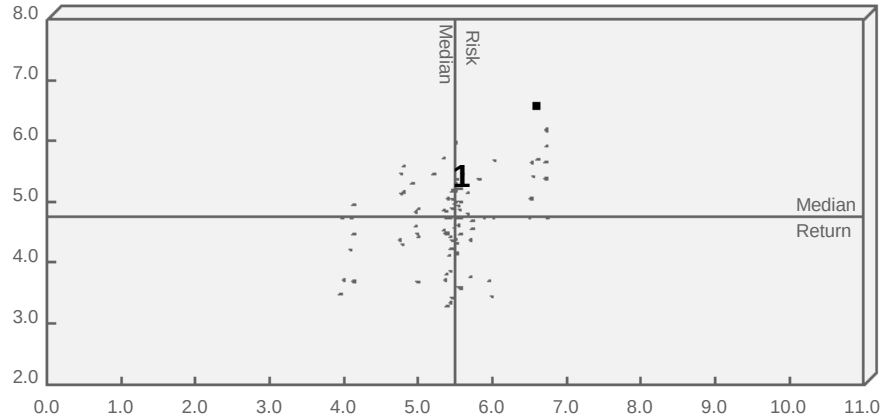


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ PIMCO TIPS	1.18 (5)	-7.22 (86)	-7.11 (67)	-6.18 (49)	2.06 (10)	3.89 (7)	6.63 (2)	
1 Barclays U.S. TI	0.70 (44)	-6.40 (52)	-6.74 (43)	-6.10 (43)	1.22 (34)	4.02 (2)	5.31 (22)	
Median	0.66	-6.38	-6.82	-6.19	0.95	3.21	4.75	4.54
Number of Funds	186	186	186	184	173	160	122	40

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Net Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
PIMCO TIPS	■	6.63	2	6.74	10
Barclays U.S. TIPS	**1**	5.31	22	5.67	34
Median		4.75		5.50	

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

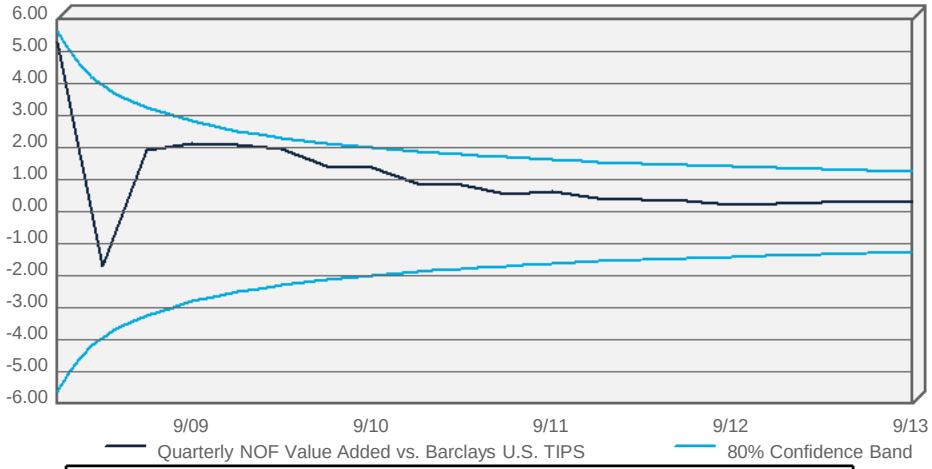
Investment Manager Analysis

Wilshire

Western TIPS

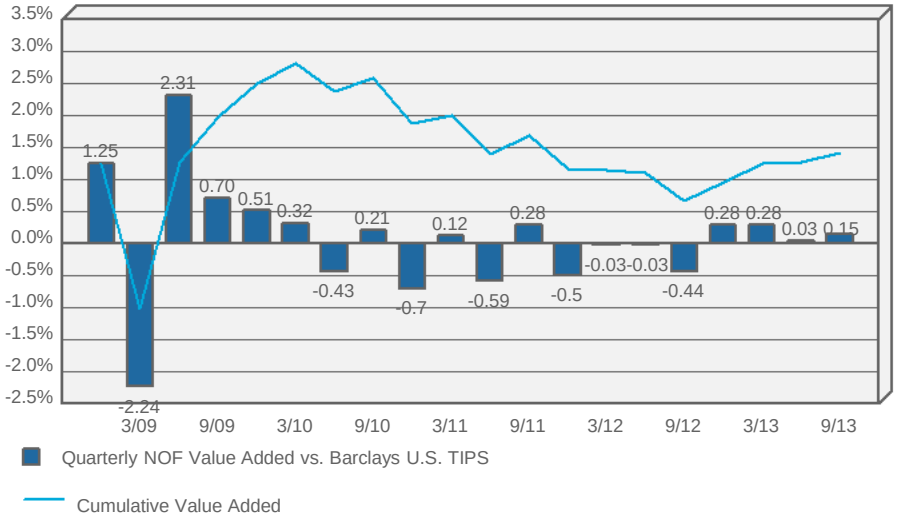
September 30, 2013

Cumulative Skill Analysis vs Benchmark

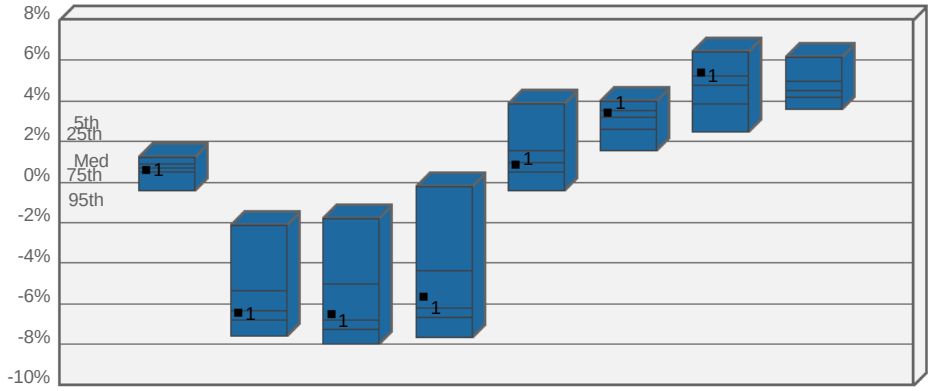


Excess Return:	**0.31**	**Information Ratio:**	**0.18**
Excess Risk:	**1.71**	**T-Stat:**	**0.41**

Value-Added Analysis vs Benchmark

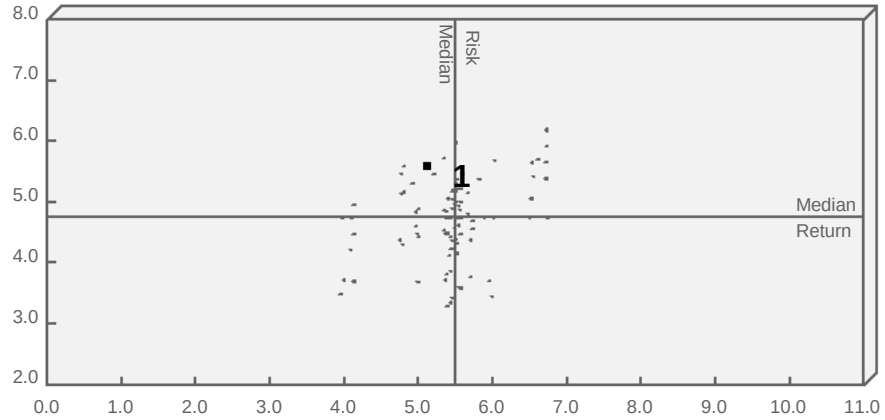


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Western TIPS	0.85 (27)	-6.24 (43)	-6.31 (30)	-5.40 (29)	1.10 (41)	3.63 (19)	5.64 (14)	
1 Barclays U.S. TI	0.70 (44)	-6.40 (52)	-6.74 (43)	-6.10 (43)	1.22 (34)	4.02 (2)	5.31 (22)	
Median	0.66	-6.38	-6.82	-6.19	0.95	3.21	4.75	4.54
Number of Funds	186	186	186	184	173	160	122	40

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Net Fee Ret Value	Net Fee Ret Rank	Standard Deviation Value	Standard Deviation Rank
Western TIPS	■	5.64	14	5.26	79
Barclays U.S. TIPS	**1**	5.31	22	5.67	34
Median		4.75		5.50	

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

Custom Benchmark Specification

TIPS Fixed Composite

September 30, 2013

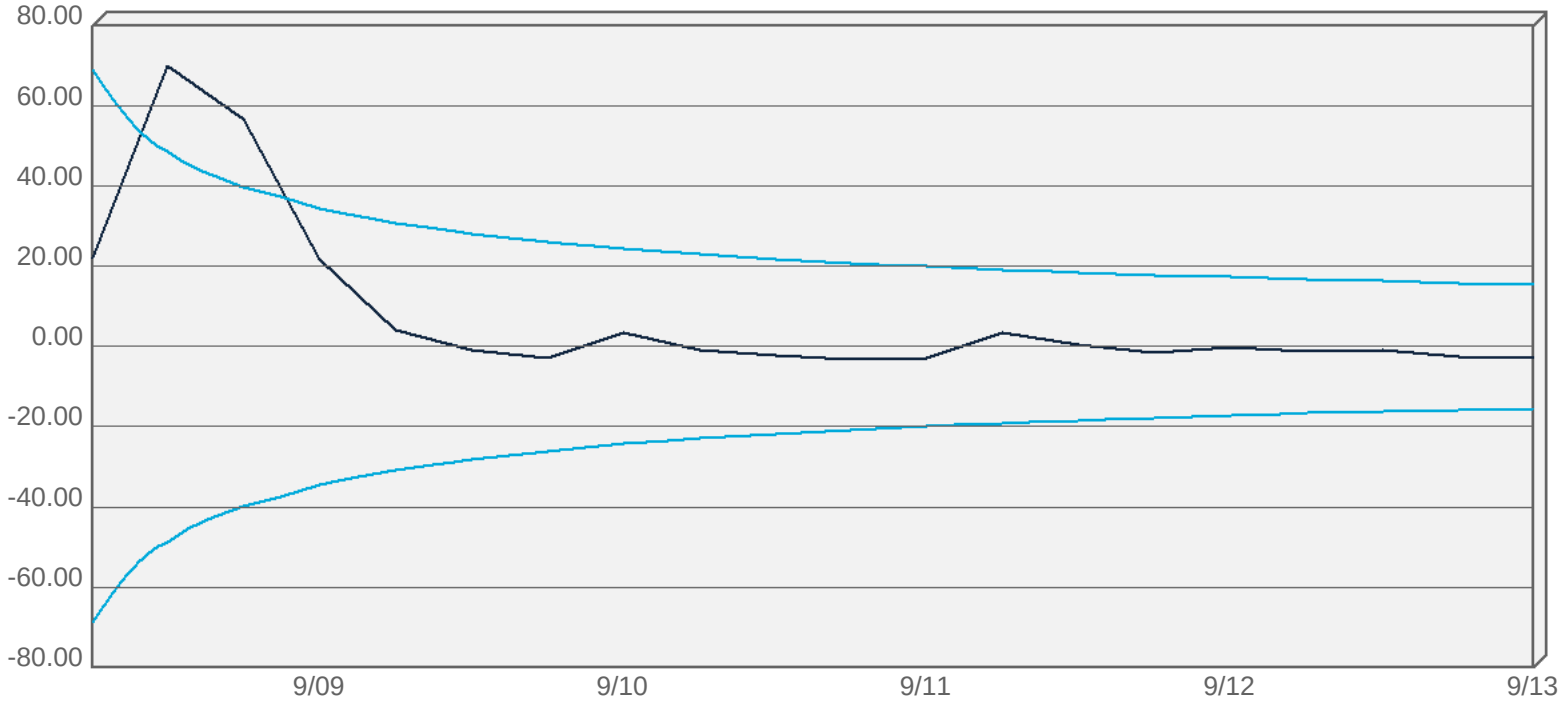
	Quarter Start	Quarter End	Percent	Description
Barclays U.S. TIPS	6/08	9/13	100.00	Barclays U.S. TIPS

Alternative Investments

Cumulative Skill Analysis

Private Equity Composite

Five Years Ending September 30, 2013



Excess Return:	**-2.88**	**Information Ratio:**	**-0.14**
Excess Risk:	**20.94**	**T-Stat:**	**-0.31**

Investment Manager Allocation

Wilshire

RBAC Private Equity and Other

As of September 30, 2013

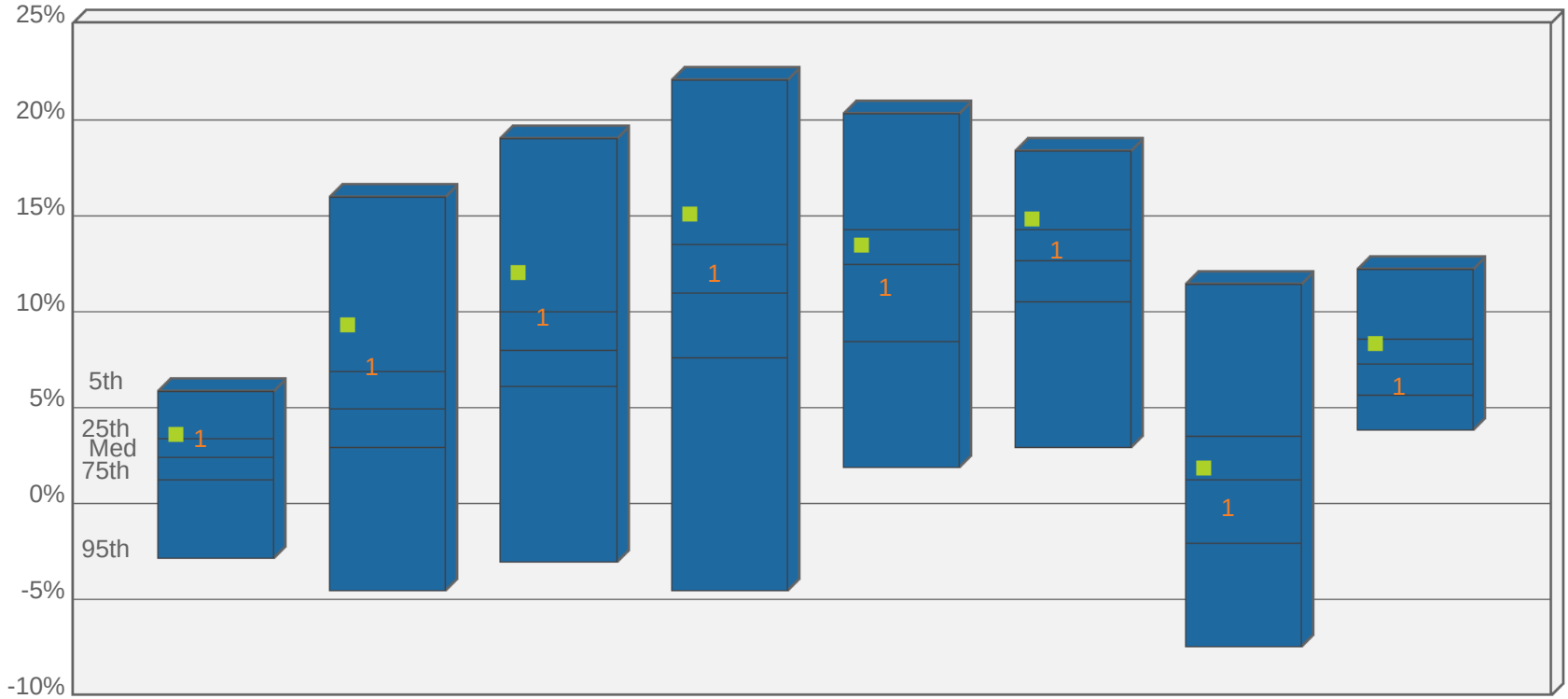
Asset Class	Manager	Style	Allocation ($000)	% of Total
DIVERSIFIED				
	Adams Street 2003	Fund of Funds	8,341	8.1%
	Adams Street 2008	Fund of Funds	5,871	5.7%
	Adams Street 2009	Fund of Funds	2,358	2.3%
	Constitution Capital Partners	Fund of Funds/Buyout	8,962	8.7%
	Mesirow Partners Fund IV	Fund of Funds	12,748	12.3%
	Permal Opportunities IV	Secondary Investments	1,776	1.7%
	Total Diversified	--	**40,056**	**38.7%**
DIRECT				
	Draper Triangle	Venture Capital	12,957	12.5%
	Draper Triangle III	Venture Capital	477	0.5%
	Goldman Sachs	Private Equity	5,986	5.8%
	Mellon PAM Fund V	Venture Capital	8,120	7.8%
	Crestline Recovery II	Special Situations	2,795	2.7%
	PLSG Accellerator Fund	Special Situations	121	0.1%
	ValStone Partners III	Special Situations	20,802	20.1%
	ValStone Partners IV	Special Situations	1,620	1.6%
	ValStone Partners V	Special Situations	5,364	5.2%
	Birchmere Ventures	Venture Capital	231	0.2%
	Charlestown Capital	Special Situations	1,787	1.7%
	Pharos Capital III	Private Equity	128	0.1%
	iNetworks	Private Equity	2,020	2.0%
	Greenspring	Venture Capital	1,112	1.1%
	Total Direct	--	**63,520**	**61.3%**
	TOTAL PRIVATE EQUITY		**103,577**	**100.0%**
LIFE SETTLEMENT				
	CCA Green	Life Settlement	30,766	22.3%
	CCA Blue	Life Settlement	3,402	2.5%
	TOTAL PRIVATE EQUITY AND LIFE SETTLEMENT		**137,745**	**100.0%**

Real Estate

Performance Comparison

Real Estate Composite

Periods Ended September 30, 2013



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Real Estate Composite	3.65 (21)	9.32 (14)	12.08 (13)	15.08 (14)	13.51 (35)	14.87 (21)	1.90 (43)	8.38 (25)
1 NCREIF ODCE NOF	3.35 (26)	7.07 (22)	9.67 (30)	11.95 (37)	11.21 (57)	13.17 (39)	-0.24 (64)	6.08 (72)
5th %tile	5.87	15.93	18.97	22.07	20.32	18.36	11.40	12.22
25th %tile	3.40	6.89	10.02	13.51	14.25	14.28	3.50	8.57
Median	2.41	4.96	8.00	10.94	12.46	12.63	1.23	7.24
75th %tile	1.21	2.90	6.10	7.59	8.42	10.49	-2.05	5.66
95th %tile	-2.85	-4.51	-3.05	-4.56	1.88	2.94	-7.47	3.81
Number of Funds	102	101	98	97	89	88	76	37

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

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Morgan Stanley									
Net of Fee Return	**3.95**	**9.64**	**12.40**	**15.41**	**14.98**	**0.99**	**7.75**	**3/31/03**	**7.82**
NCREIF ODCE NOF	3.35	7.07	9.67	11.95	13.17	-0.24	6.08	3/31/03	6.21
Value Added	0.60	2.57	2.73	3.46	1.81	1.24	1.67	3/31/03	1.61
Real Estate Composite									
Net of Fee Return	**3.65**	**9.32**	**12.08**	**15.08**	**14.87**	**1.90**	**8.18**	**3/31/03**	**8.27**
NCREIF ODCE NOF	3.35	7.07	9.67	11.95	13.17	-0.24	6.08	3/31/03	6.21
Value Added	0.30	2.25	2.41	3.12	1.70	2.14	2.09	3/31/03	2.06
ERECT Fund II									
Net of Fee Return	**2.06**	**2.00**	**8.11**	**10.17**	**11.11**	**6.73**		**6/30/05**	**6.84**
Consumer Price Index	0.28	0.59	1.98	1.18	2.34	1.37		6/30/05	2.27
Value Added	1.79	1.41	6.13	8.99	8.77	5.36		6/30/05	4.56
ERECT Composite									
Net of Fee Return	**2.06**	**1.34**	**4.50**	**5.85**	**6.65**			**9/30/10**	**6.65**

Real Estate Composite's returns do not include ERECT Funds

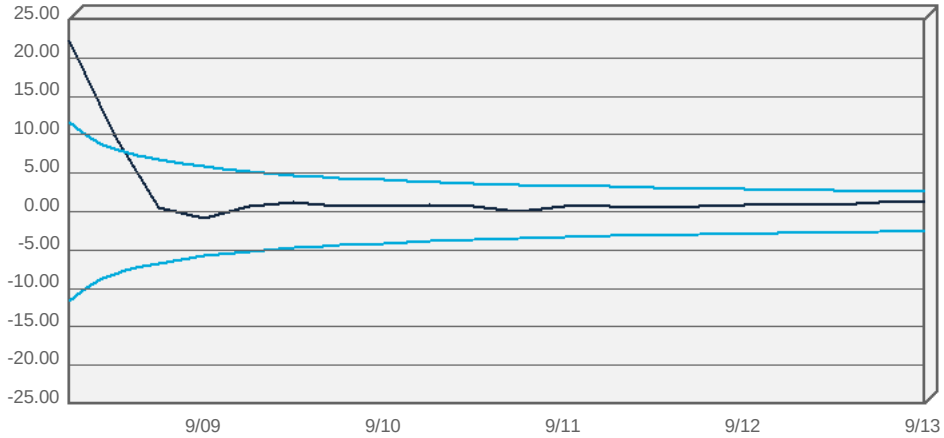
Investment Manager Analysis

Wilshire

Morgan Stanley

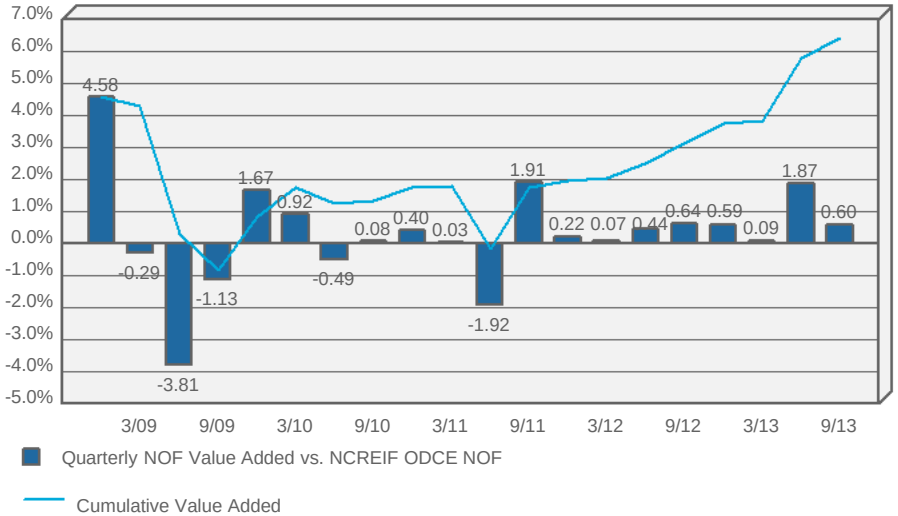
September 30, 2013

Cumulative Skill Analysis vs Benchmark

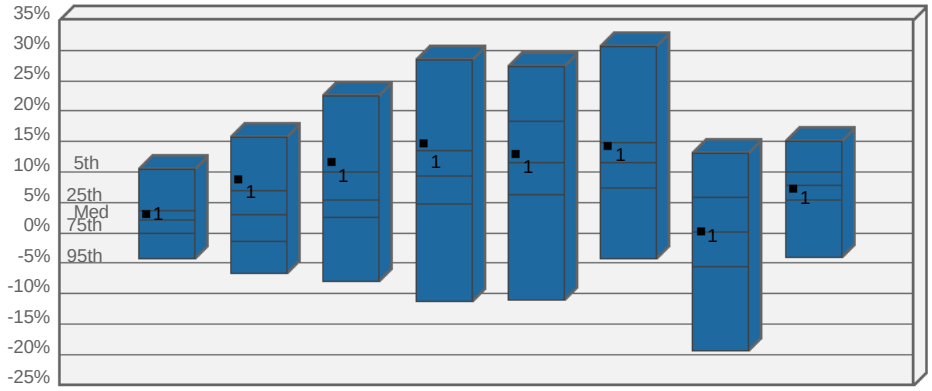


Excess Return:	**1.24**	**Information Ratio:**	**0.35**
Excess Risk:	**3.53**	**T-Stat:**	**0.79**

Value-Added Analysis vs Benchmark

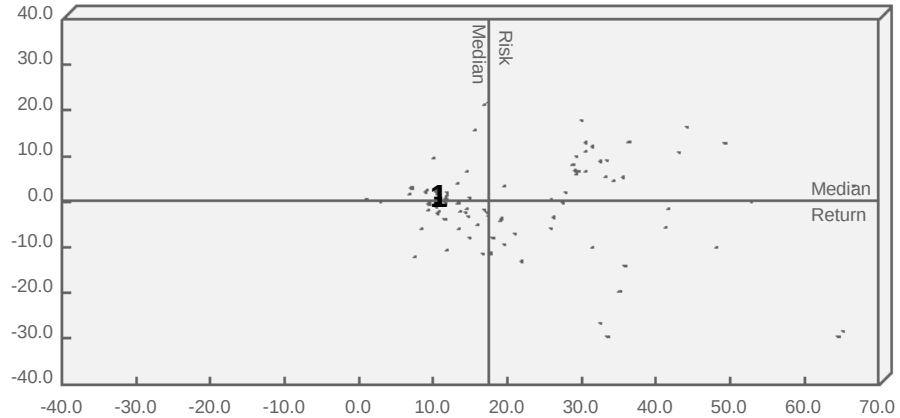


*Performance Comparison vs Peer Universe**



	1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	5 Years	10 Years
■ Morgan Stanley	3.95 (21)	9.64 (12)	12.40 (13)	15.41 (18)	13.67 (37)	14.98 (24)	0.99 (45)	8.05 (39)
1 NCREIF ODCE	3.35 (28)	7.07 (22)	9.67 (28)	11.95 (34)	11.21 (52)	13.17 (35)	-0.24 (53)	6.08 (65)
Median	2.14	3.04	5.42	9.42	11.50	11.46	0.20	7.75
Number of Funds	562	594	593	578	531	499	379	93

*Five Year Risk/Return Analysis vs Peer Universe**



Description	Legend	Gross Fee Ret		Standard Deviation	
		Value	Rank	Value	Rank
Morgan Stanley	■	0.99	45	12.12	68
NCREIF ODCE NOF	**1**	-0.24	53	11.62	74
Median		0.20		17.45	

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

Custom Benchmark Specification

Real Estate Composite

September 30, 2013

	Quarter Start	Quarter End	Percent	Description
NCREIF ODCE NOF	12/01	9/13	100.00	NCREIF ODCE NOF

Commodities

Performance Comparison

Wilshire

Trailing Returns

Periods Ended September 30, 2013

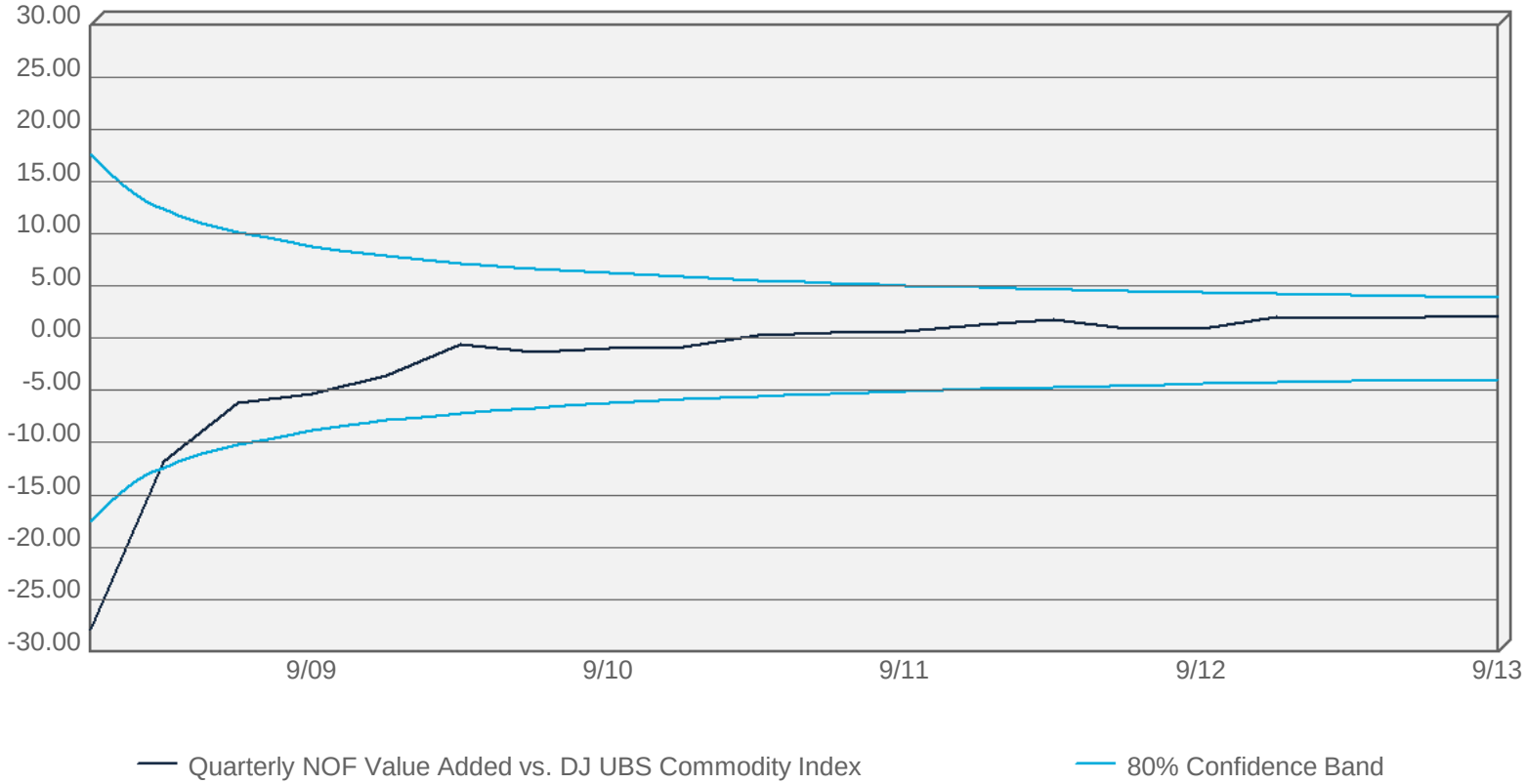
	Quarter	2 Quarters	3 Quarters	1 Year	3 Years	5 Years	10 Years	Incept Date	Incept Ret
Gresham Strategic Commodities									
Net of Fee Return	**3.67**	**-5.32**	**-6.61**	**-7.77**	**1.09**	**-3.20**		**3/31/07**	**-1.42**
DJ UBS Commodity Index	2.13	-7.51	-8.56	-14.34	-3.16	-5.29		3/31/07	-3.77
Value Added	1.54	2.19	1.94	6.58	4.25	2.08		3/31/07	2.35
Commodities Composite									
Net of Fee Return	**3.67**	**-5.32**	**-6.61**	**-7.77**	**1.09**	**-3.20**		**3/31/07**	**-1.42**
DJ UBS Commodity Index	2.13	-7.51	-8.56	-14.34	-3.16	-5.29		3/31/07	-3.77
Value Added	1.54	2.19	1.94	6.58	4.25	2.08		3/31/07	2.35

Cumulative Skill Analysis

Wilshire

Commodities Composite

Five Years Ending September 30, 2013



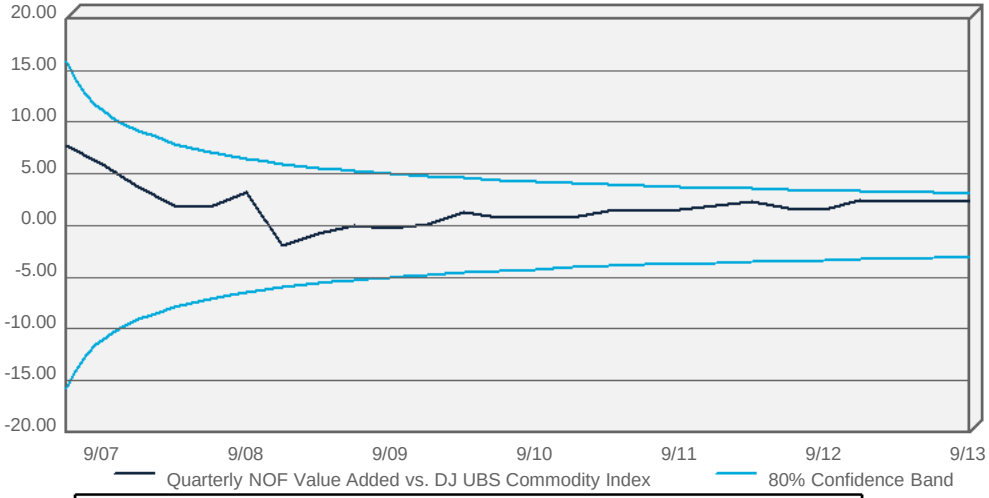
Excess Return:	**2.20**	**Information Ratio:**	**0.41**
Excess Risk:	**5.34**	**T-Stat:**	**0.92**

Investment Manager Analysis

Gresham Strategic Commodities

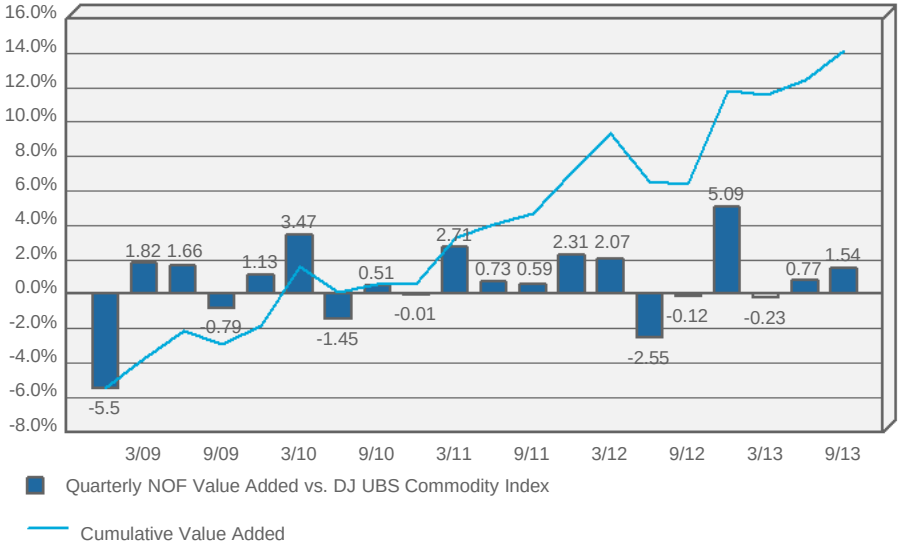
September 30, 2013

Cumulative Skill Analysis vs Benchmark



Excess Return:	**2.44**	**Information Ratio:**	**0.51**
Excess Risk:	**4.81**	**T-Stat:**	**1.24**

Value-Added Analysis vs Benchmark



Appendix:
Capital Market Update

U.S. Equity

The U.S. stock market posted a return of 6.0% during the third quarter, despite pulling back 2.2% from its record high close on September 18. The quarter had an impressive start before concerns about the Federal Reserve's possible tapering of its QE programs caused stocks to fall in August. Markets rallied in September once the Fed committed to continuing its monetary policy, but were hampered by concerns of political brinksmanship in Washington D.C.

Small cap stocks outperformed larger-cap equities, as investors shrugged off economic and political volatility. Additionally, growth-oriented stocks outperformed value-oriented issues. The best-performing economic sectors in the third quarter – Consumer Discretionary, Staples and Energy – reflect stronger consumer sentiment, increased spending and international unrest.

Since turning positive on a year-over-year basis in June 2012, U.S. home prices have continued to appreciate strongly through July 2013. The gains come despite an uptick in mortgage rates earlier this year. Annual growth rates are now above 10% for the first time since May 2006. The positive wealth effect that accrues from these increases in home prices has been supportive of consumer confidence and spending.

Non-U.S. Equity

Global stock markets enjoyed strong performance overall for the third quarter, as tensions stemming from Syria's long civil war that have threatened regional stability abated to some extent. Japan began to recover from recent-period lackluster performance with renewed domestic policy to stimulate its economy, while the rest of the Asia-Pacific region joined Europe and the U.S. in a worldwide stock market rally. Emerging markets stocks were buoyed by improved economic indicators for China, but investors remain nervous in anticipation of the U.S. Fed preparing to wind down its current monetary policy.

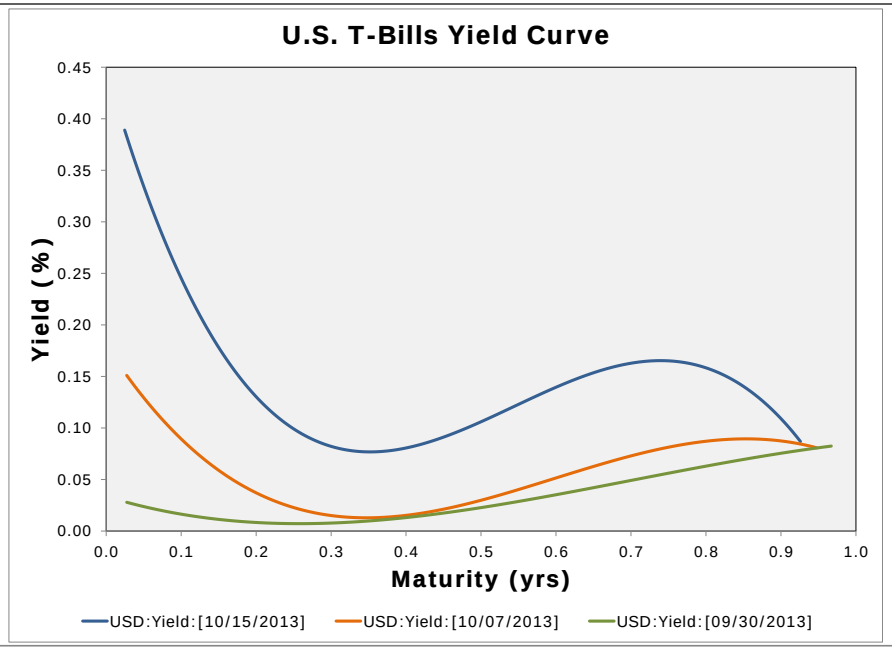
Fixed Income

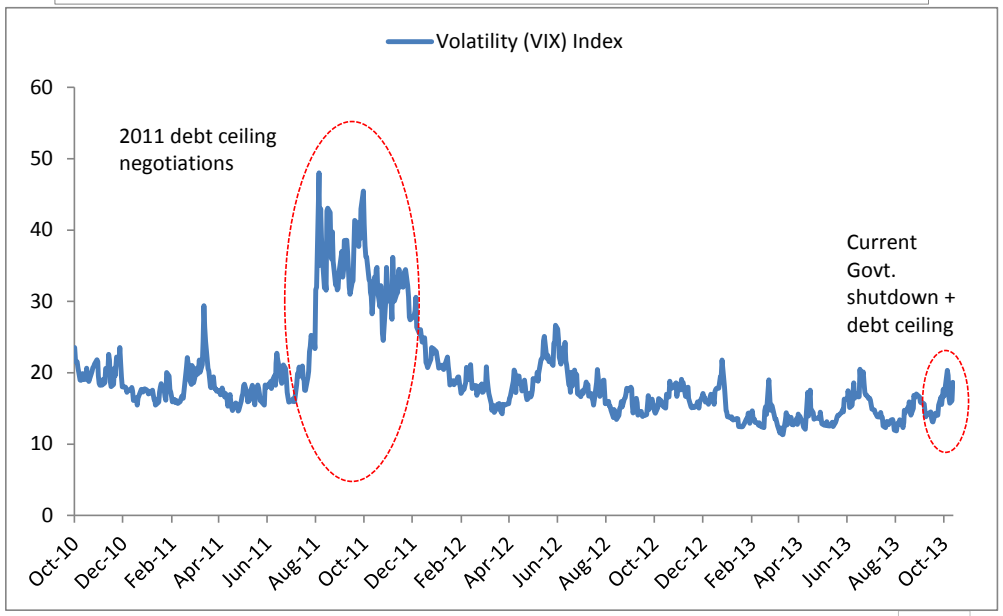
Bond yields moved upward fitfully in July, picking up momentum in August and peaking in early September. Yields then drifted downward, with the 10-year Treasury settling to 2.64% on September 30, twelve basis points higher than on June 28. The yield curve steepened slightly and flattened in intermediate maturities as investors moved down the curve into shorter paper. Investment-grade and high yield corporate spreads tightened slightly during the quarter as well. Developed market bonds were essentially flat for the quarter, while emerging market debt lost ground.

Government Shutdown – 18th in U.S. History

Wilshire

- Concerns about possible default have nudged yields on the shortest term debt higher
- VIX has not moved nearly to the point it did in 2011
- The longer the shutdown, the larger the expected financial impact
  - ~0.3% hit to GDP for 14 days, ~0.8% for 30 days, etc. (Estimates from Macroeconomic Advisors and Bridgewater)
  - More than 800,000 federal workers remain furloughed without pay
- Most recent shutdown (#17) started on Dec. 5, 1995 and lasted for 21 days





Source: Barclays Capital, Yahoo Finance

Asset Class Assumptions Update

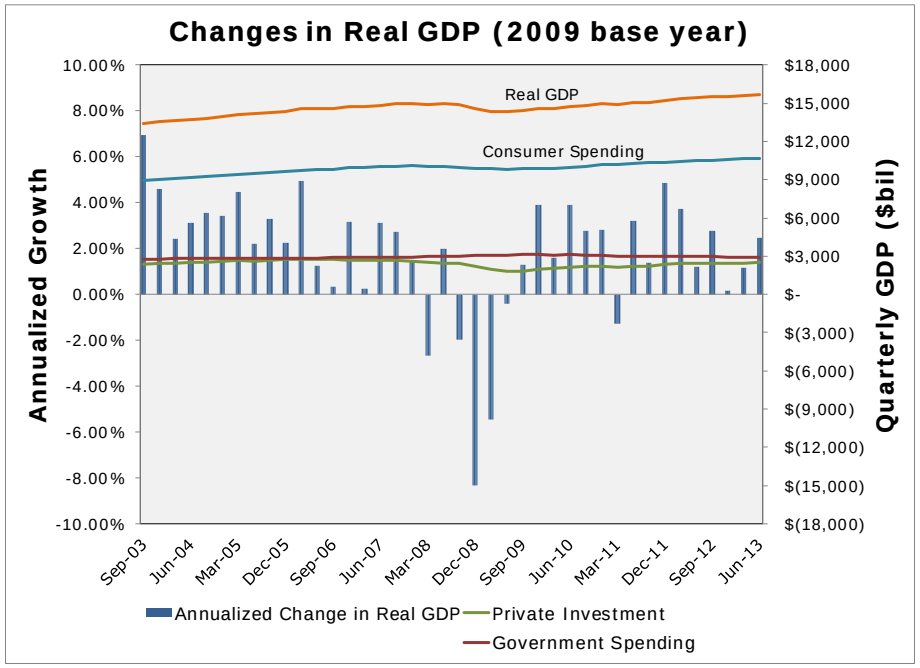
Wilshire

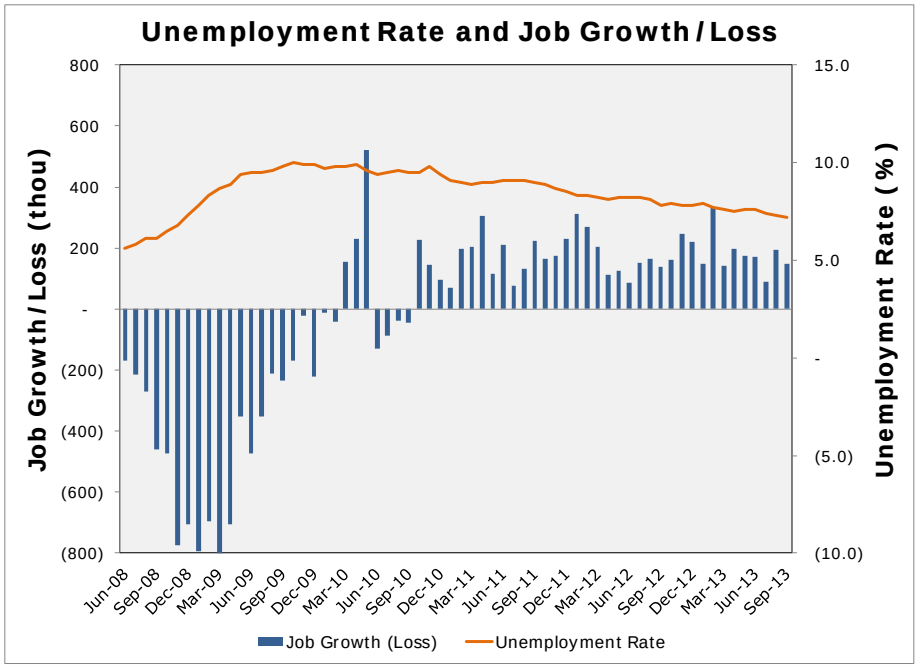
	Total Return (%)			Risk (%)
	2013 ACA	Q3 2013	Change vs YE	2013 ACA
Investment Categories:				
U.S. Stocks	7.75	7.25	(0.50)	17.00
Dev ex-U.S. Stocks	7.75	7.25	(0.50)	18.00
Emerging Mkt Stocks	7.75	7.25	(0.50)	26.00
Global Stocks	8.00	7.50	(0.50)	17.30
Private Markets	10.75	10.35	(0.40)	27.50
Cash Equivalents	1.55	1.45	(0.10)	1.25
Core Bonds	3.25	3.90	0.65	5.00
LT Core Bonds	3.10	4.55	1.45	10.00
TIPS	2.60	3.60	1.00	6.00
High Yield Bonds	5.15	5.25	0.10	10.00
Non-U.S. Bonds (Hdg)	2.90	3.55	0.65	3.50
U.S. RE Securities	5.30	5.10	(0.20)	15.00
Private Real Estate	6.05	5.85	(0.20)	12.25
Commodities	4.55	4.20	(0.35)	13.00
Real Asset Basket	6.35	6.30	(0.05)	7.75
Inflation:	2.55	2.20	(0.35)	1.75
Returns minus Inflation:				
U.S. Stocks	5.20	5.05	(0.15)	
U.S. Bonds	0.70	1.70	1.00	
Cash Equivalents	(1.00)	(0.75)	0.25	
Stocks minus Bonds:	4.50	3.35	(1.15)	
Bonds minus Cash:	1.70	2.45	0.75	

Economic Review

September 30, 2013	Key Economic Indicators			
CPI (all items)	Monthly Change		Cumulative Change	
Seasonally adjusted	Sep-13	0.2	3-Month	0.4
	Aug-13	0.1	12-Month	1.2
	Jul-13	0.2	10-Yr Annual	2.4
Breakeven Inflation	10-Year	2.2		
Consumer Sentiment	Sep-13	77.5		
Unv. of Michigan Survey	Aug-13	82.1		
	1-Yr Ago	78.3	10-Yr Avg	78.5
Manufacturing	Sep-13	56.2	Change in Manufacturing Sector	
Inst. for Supply Mgmt	Aug-13	55.7	>50	Expansion
Purchasing Mngrs' Idx	1-Yr Avg	52.4	<50	Contraction

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



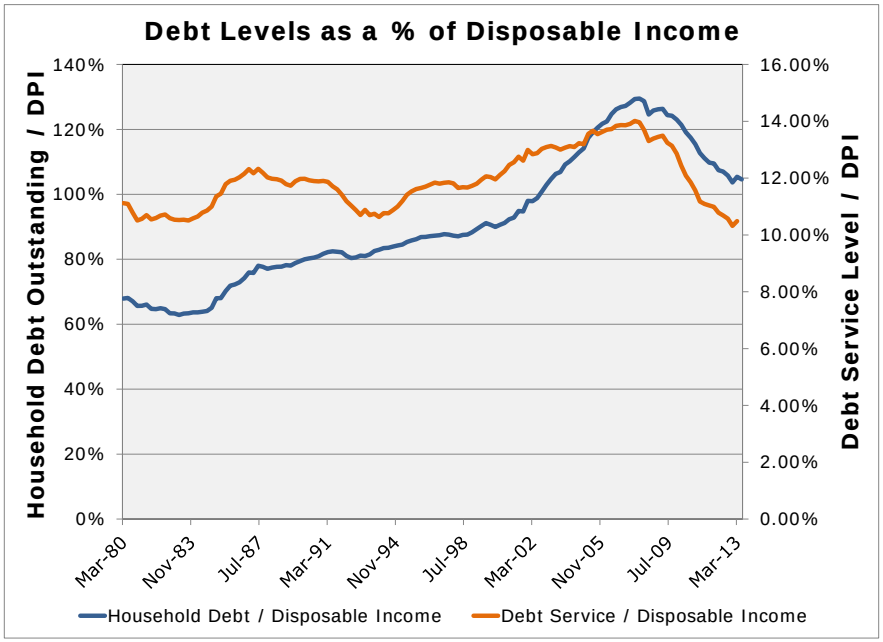


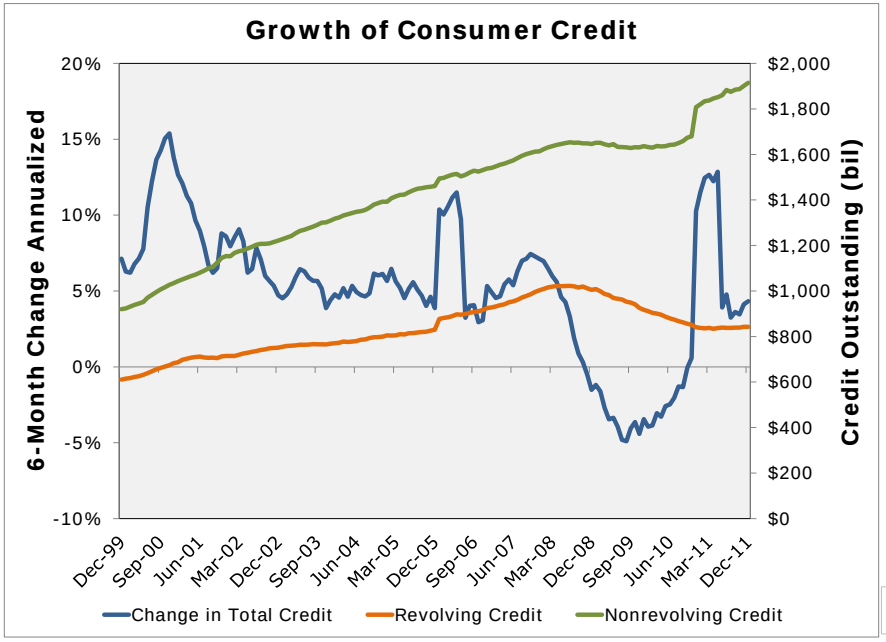
Data sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Bank of St. Louis, Barclays Capital

Debt Outstanding

- While debt outstanding remains elevated, debt service payments have fallen to levels not seen since the 1970s due to re-financing at historically low rates

- Consumer credit continues to expand
  - Revolving credit (i.e. credit cards) has been growing slightly after a large decline
  - Non-revolving credit (i.e. autos, school loans) continues to push higher
  - The Federal Reserve revised the historical data to better reflect student loan debt outstanding

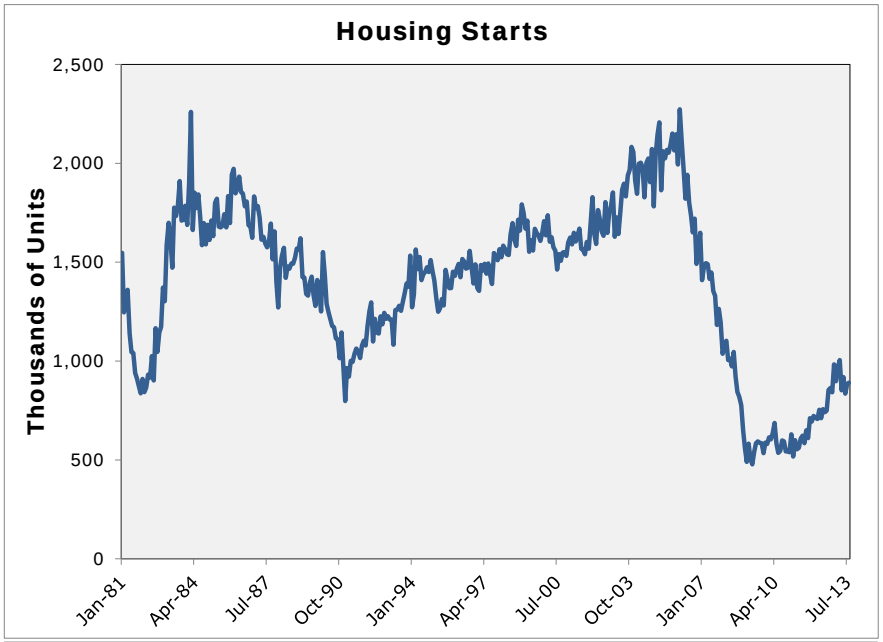


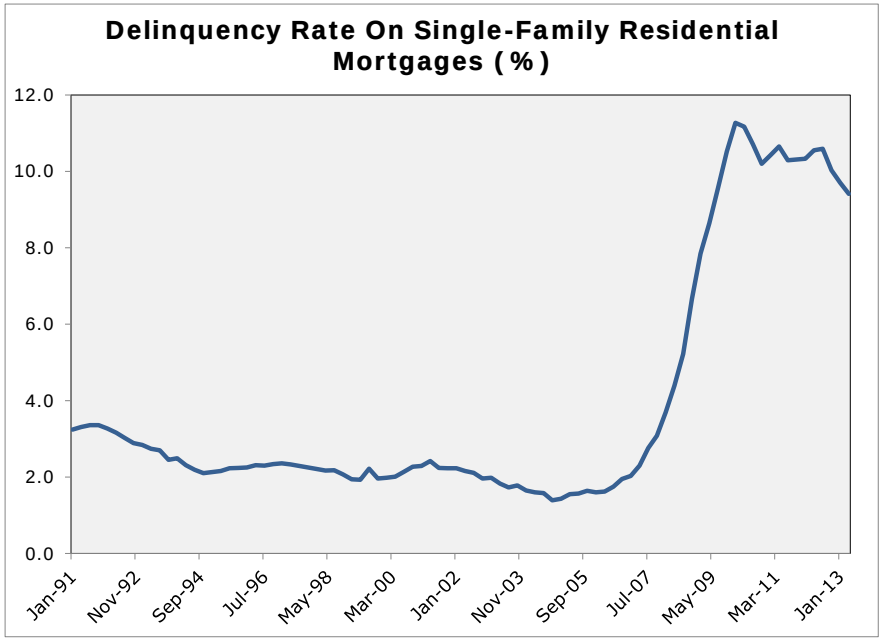


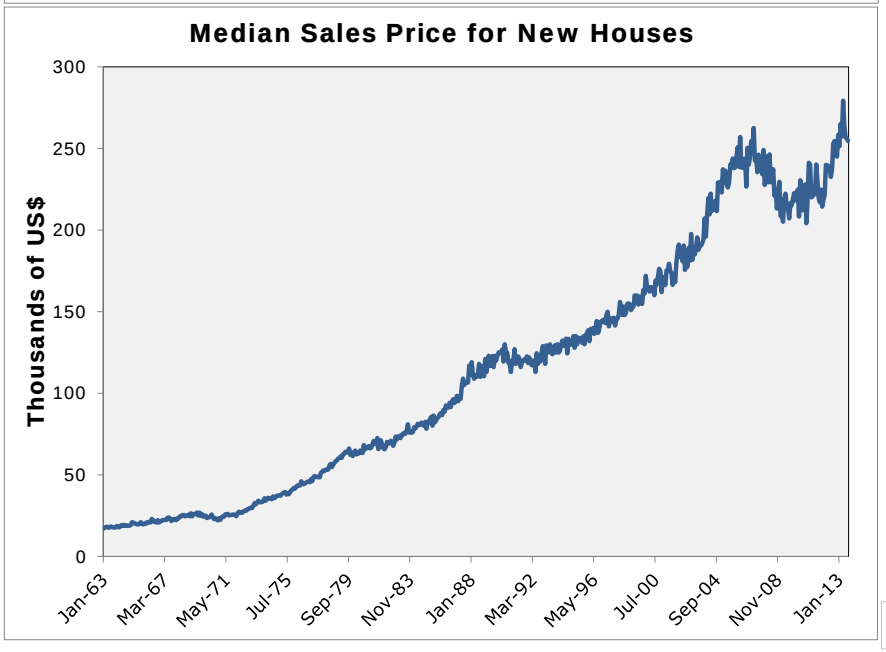
Source: Federal Reserve, Bureau of Economic Analysis

Improvements in Housing

- Improvement in household balance sheets has contributed to the rebound in housing
- Housing starts are nearly double their previous low while median prices are near the previous high
- Delinquency rates, however, remain elevated





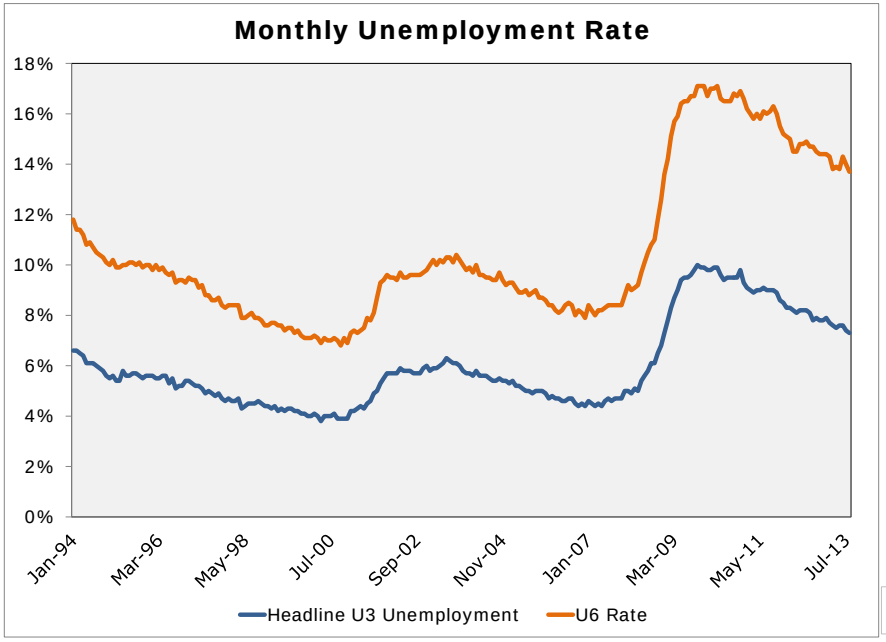


Source: U.S. Census Bureau, Federal Reserve

Employment Conditions

- Employed part-time for economic reasons are those individuals who are unable to find full-time employment
- While this number typically increases during recession (shaded areas), the recent rise was dramatic and it remains stubbornly high

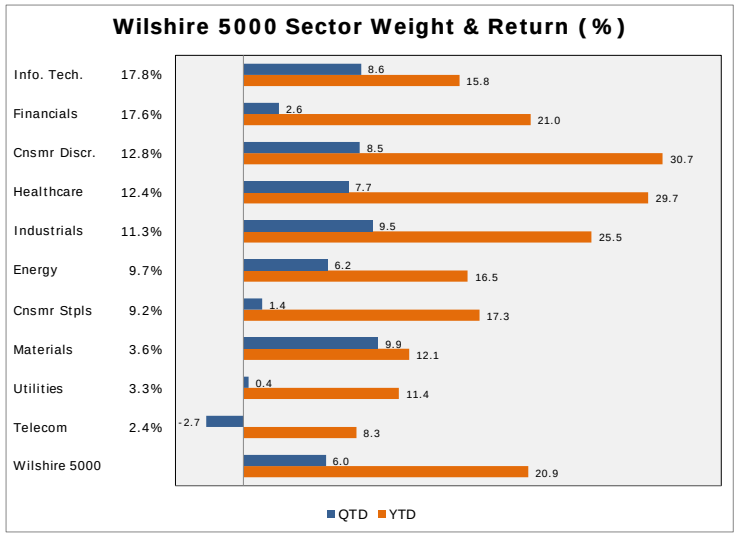
- U6 Unemployment contains the workers mentioned above plus those "marginally attached" – individuals who have looked but cannot find employment
- U6 stands at 13.7% and exhibits an unusually wide spread versus U3

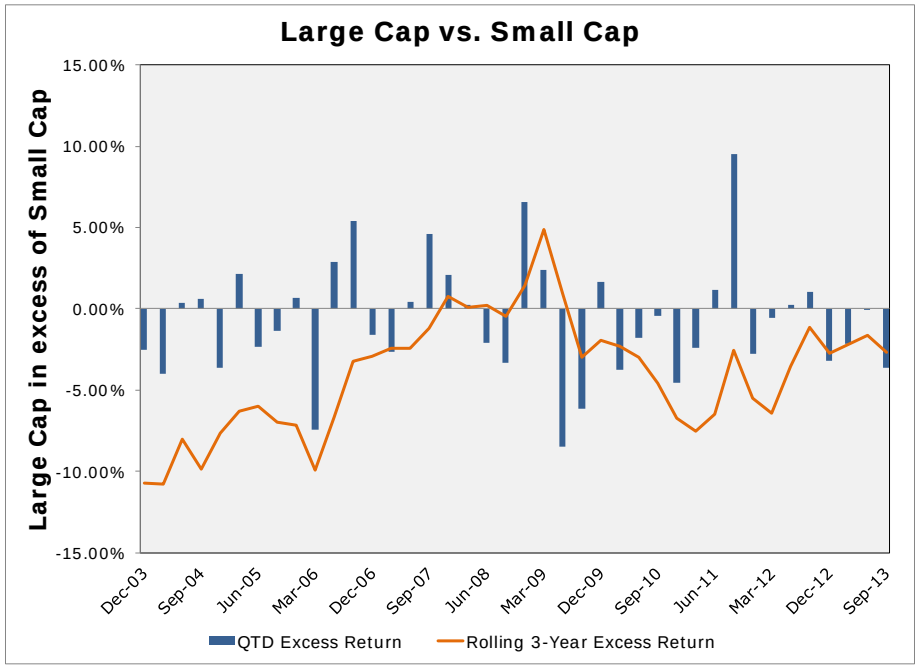


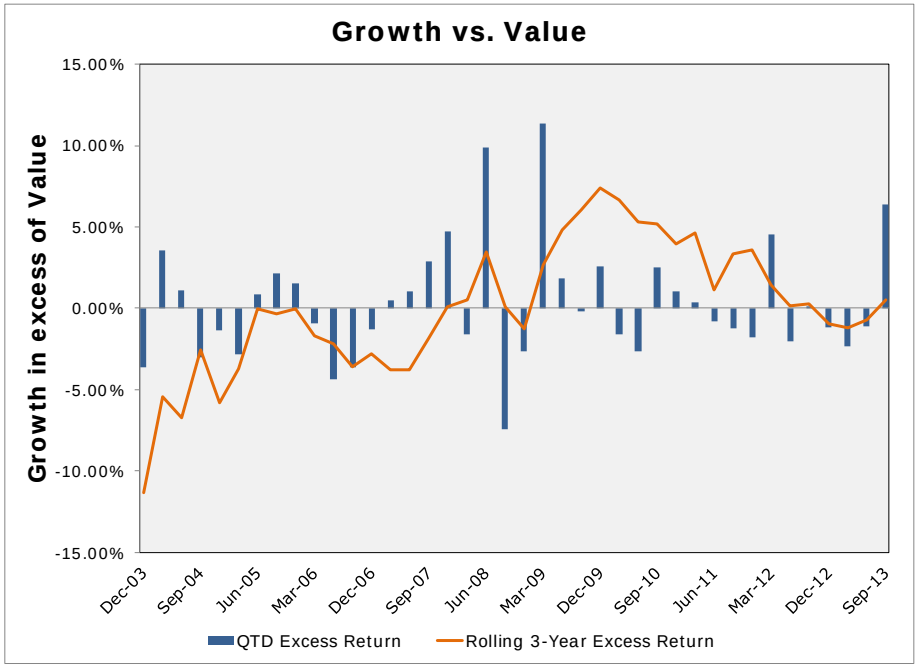
Source: Bureau of Labor Statistics

U.S. Equity Market

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Wilshire 5000	6.0	20.9	21.0	16.5	10.4	8.2
Wilshire U.S. Large Cap	5.6	20.1	19.8	16.2	10.0	7.9
Wilshire U.S. Small Cap	9.6	27.4	31.4	19.4	14.3	11.3
Wilshire U.S. Large Growth	9.3	21.5	20.6	16.3	11.3	8.1
Wilshire U.S. Large Value	2.7	19.0	19.3	16.0	8.7	7.6
Wilshire U.S. Small Growth	12.6	33.5	35.8	21.0	15.8	12.0
Wilshire U.S. Small Value	6.8	22.1	27.4	17.7	12.8	10.6
Wilshire REIT Index	-3.0	2.7	5.3	12.5	5.6	9.4
MSCI USA Minimum Volatility Index	2.7	15.9	13.8	15.3	9.1	7.8
FTSE RAFI U.S. 1000 Index	5.2	22.8	25.5	17.2	13.2	n.a.





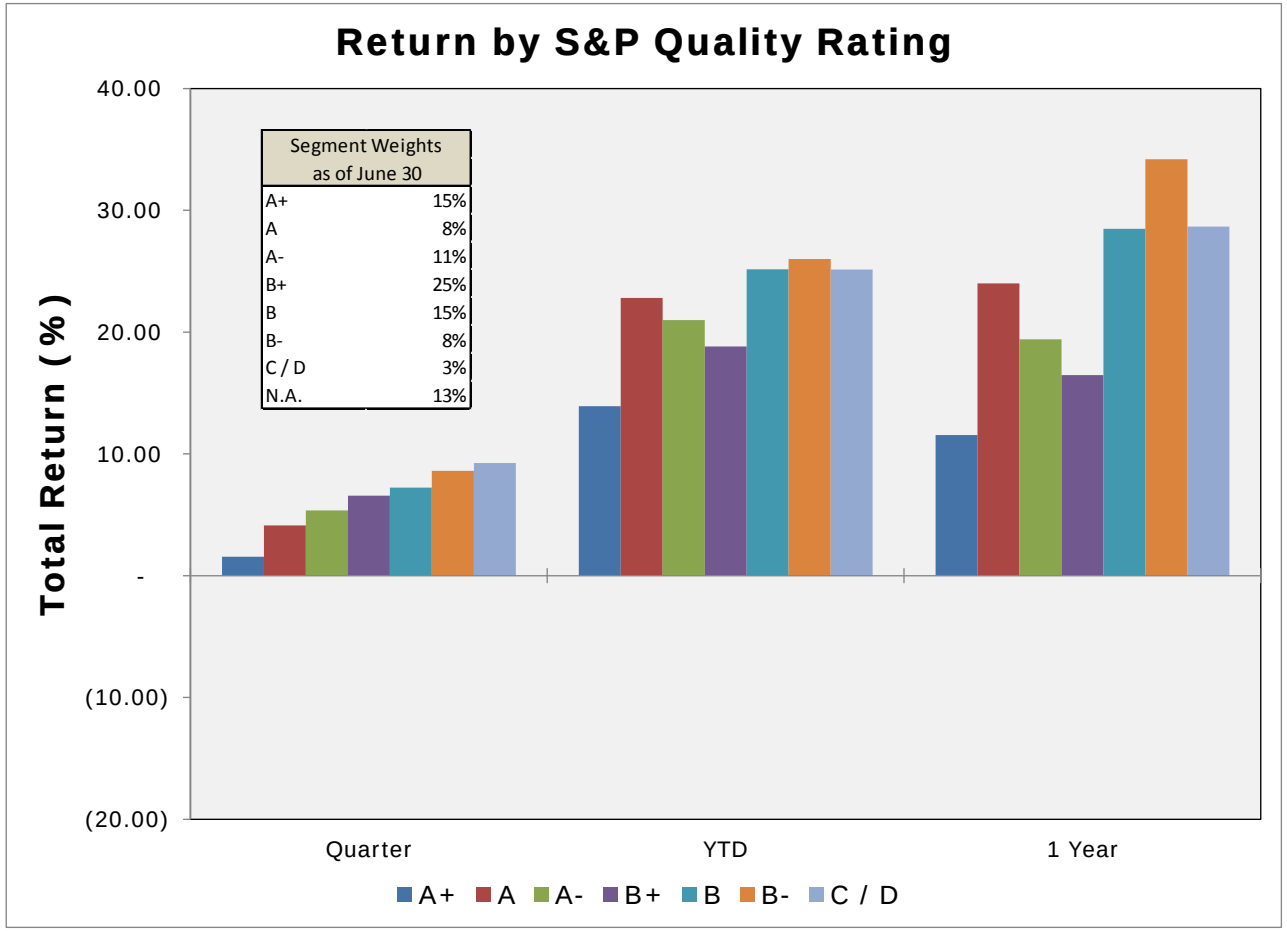


Data sources: Wilshire Compass, Wilshire Atlas

Returns by Quality Segment

Wilshire

Lower quality names have performed well during the past quarter and for the last twelve months

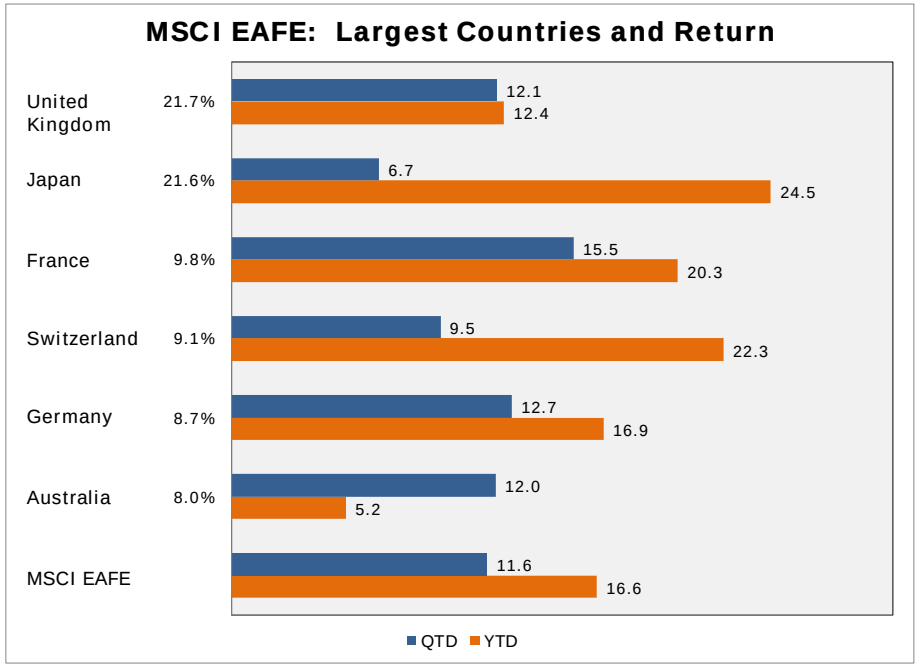


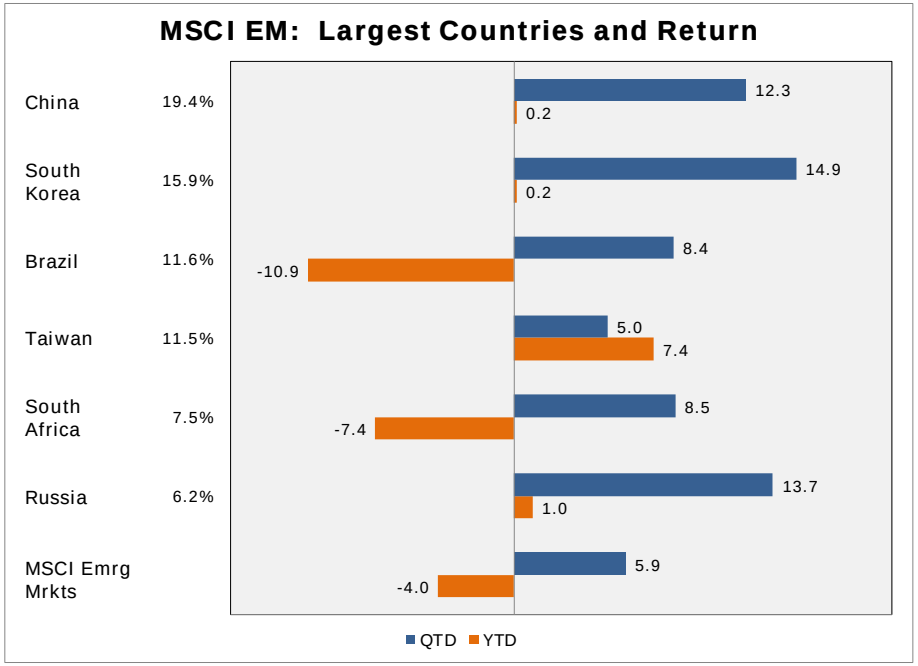
Data sources: Wilshire Atlas

Non-U.S. Equity Market

Wilshire

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
MSCI ACWI ex-US ($g)	10.2	10.5	17.0	6.4	6.7	9.2
MSCI EAFE ($g)	11.6	16.6	24.3	9.0	6.9	8.5
MSCI Emerging Markets ($g)	5.9	-4.0	1.3	0.0	7.6	13.2
MSCI Frontier Markets ($g)	6.3	18.5	22.1	4.5	-2.2	7.7
MSCI ACWI ex-US Growth ($g)	8.9	10.7	16.5	6.5	6.7	8.8
MSCI ACWI ex-US Value ($g)	11.5	10.2	17.4	6.4	6.8	9.7
MSCI ACWI ex-US Small ($g)	12.5	14.8	20.5	7.6	11.8	11.5
MSCI EAFE Minimum Volatility Idx	6.9	14.5	14.8	9.6	8.1	10.9
FTSE RAFI Developed ex-US Index	13.6	17.7	26.5	7.5	7.3	n.a.
MSCI EAFE LC ($g)	7.6	19.8	28.8	9.6	6.0	6.8
MSCI Emerging Markets LC ($g)	5.8	0.8	6.2	3.1	8.5	12.8



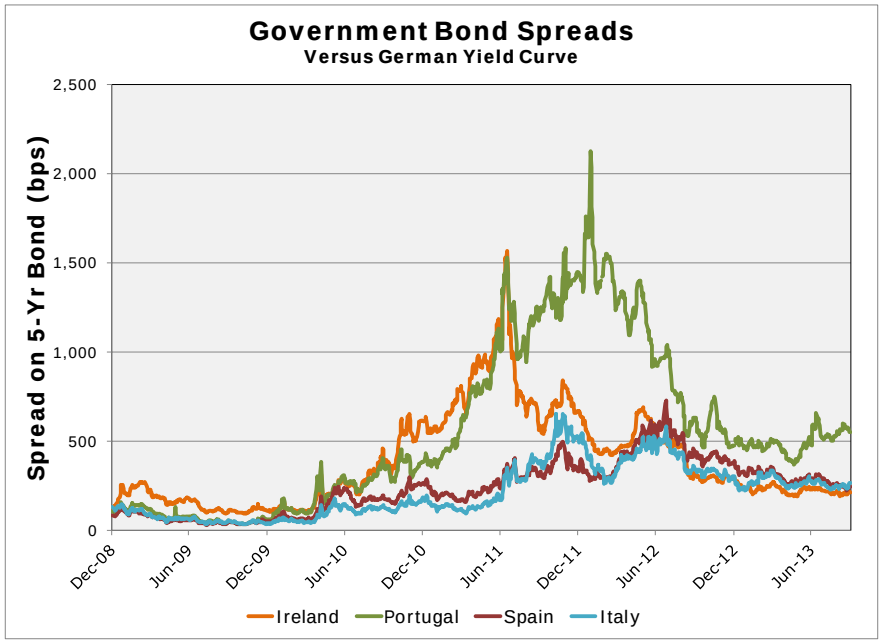


Data sources: Wilshire Compass, MSCI Barra

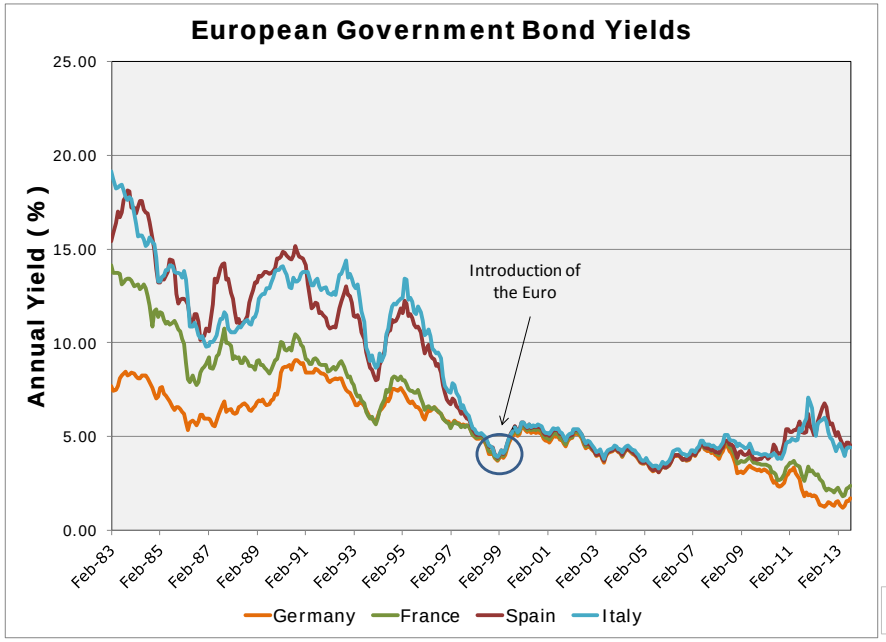
European Debt Issues

Wilshire

- As Portugal's three-year bailout comes to an end and the country continues to struggle with its finances, concerns about what to do next have pushed their government yields higher



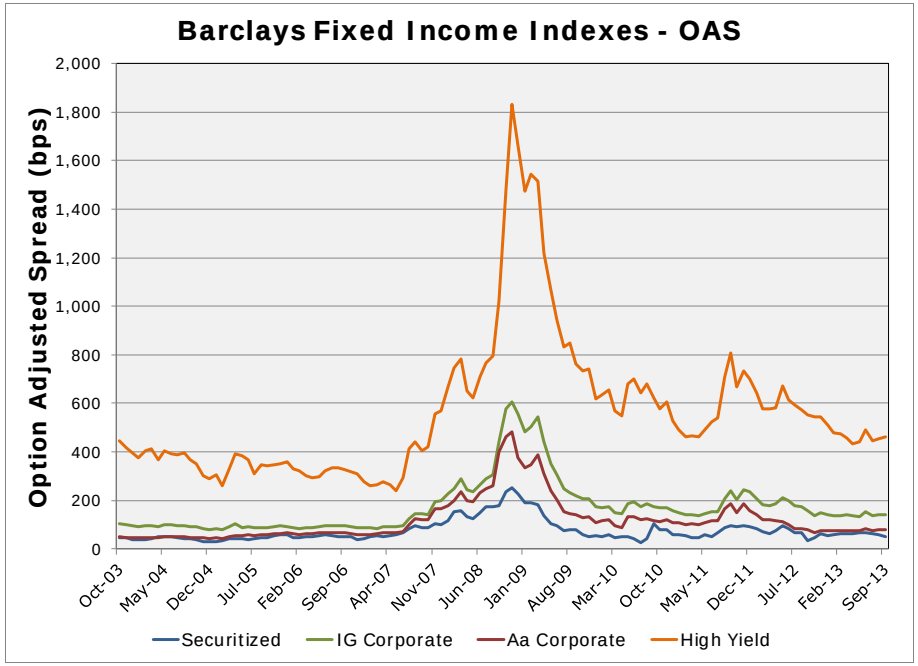
- Yields on government bonds continue their downward trend as some spread has emerged between the relatively stable France and Germany, as both economies are growing however slightly

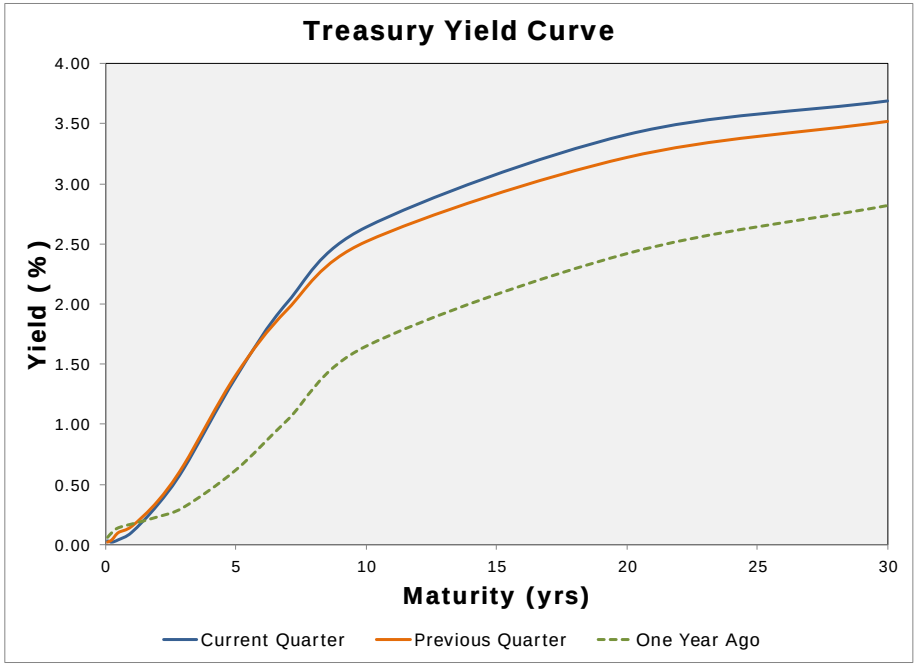


Source: Barclays Capital, International Monetary Fund

U.S. Fixed Income Market

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays Aggregate Bond Index	0.6	-1.9	-1.7	2.9	5.4	4.6
Barclays Treasury Index	0.1	-2.0	-2.1	2.2	4.0	4.3
Barclays Gov't-Related Index	0.3	-2.8	-2.2	2.3	4.4	4.3
Barclays Securitized Index	1.0	-1.0	-1.1	2.8	4.9	4.7
Barclays Corporate IG Index	0.8	-2.6	-1.6	4.4	9.2	5.3
Barclays LT Gov't/Credit Index	-0.8	-8.7	-8.3	4.7	9.1	6.3
Barclays LT Treasury Index	-2.2	-9.9	-10.6	3.6	6.5	6.1
Barclays LT Gov't-Related Index	-0.4	-9.8	-8.3	4.9	7.7	6.7
Barclays LT Corporate IG Index	0.1	-7.4	-6.5	5.4	11.7	6.3
Barclays U.S. TIPS Index	0.7	-6.7	-6.1	4.0	5.3	5.2
Barclays High Yield Index	2.3	3.7	7.1	9.2	13.5	8.9
Treasury Bills	0.0	0.1	0.1	0.1	0.2	1.7





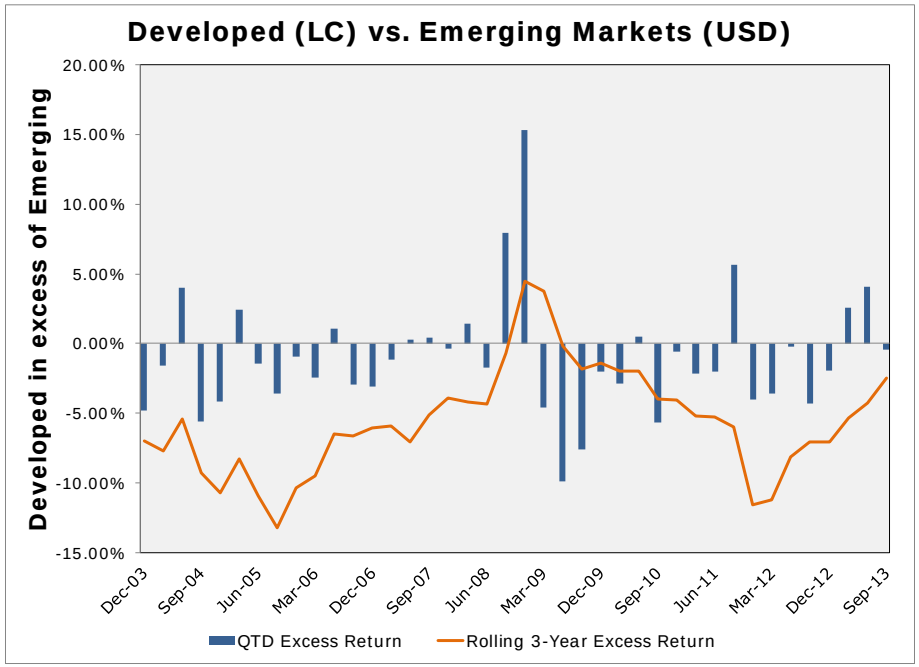
Data sources: Wilshire Compass, Barclays Capital, U.S. Treasury

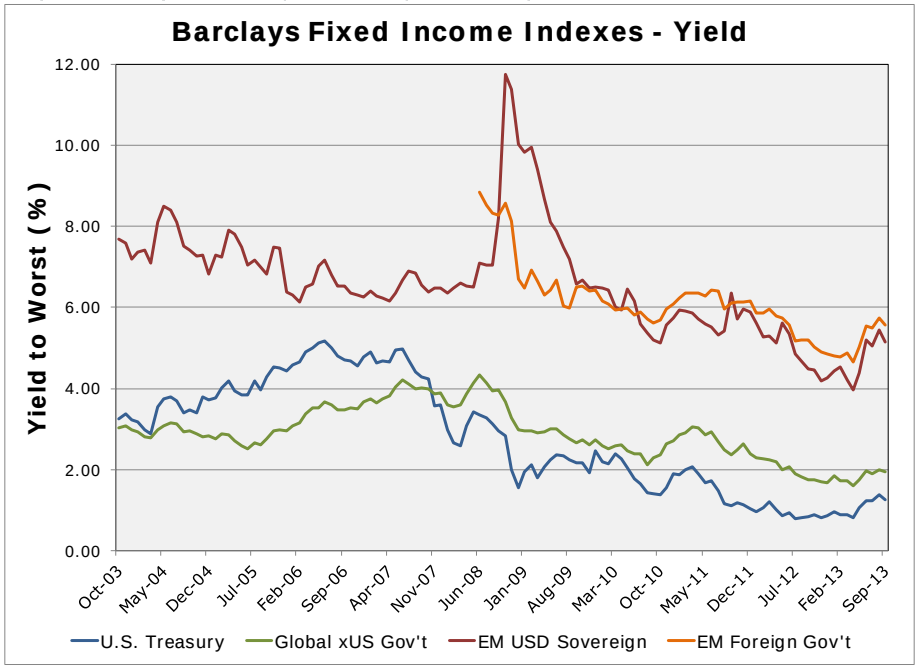
Non-U.S. Fixed Income Market

Wilshire

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Developed Markets						
Barclays Global Aggregate xUS	4.4	-2.4	-3.4	1.5	4.8	5.1
Barclays Global Aggregate xUS *	1.0	0.8	2.1	3.1	4.7	4.3
Barclays Wrld Govt xUS IL Bond	5.9	-1.4	1.9	4.2	4.4	6.4
Barclays Wrld Govt xUS IL Bond *	0.5	-1.1	1.6	4.2	4.9	5.2
Emerging Mrkts (Hard Currency)						
Barclays EM USD Aggregate	1.4	-5.2	-2.1	5.7	10.4	8.9
Emerging Mrkts (Foreign Currency)						
Barclays EM Local Currency Gov't	2.3	-4.0	-0.2	3.5	6.6	n.a.
Barclays EM Local Currency Gov't *	0.0	-2.2	-0.4	2.7	4.7	n.a.
Euro vs. Dollar	4.1	2.7	5.2	-0.3	-0.8	1.5
Yen vs. Dollar	1.2	-11.9	-20.7	-5.2	1.6	1.3
Pound vs. Dollar	6.8	-0.4	0.3	0.9	-1.9	-0.3

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

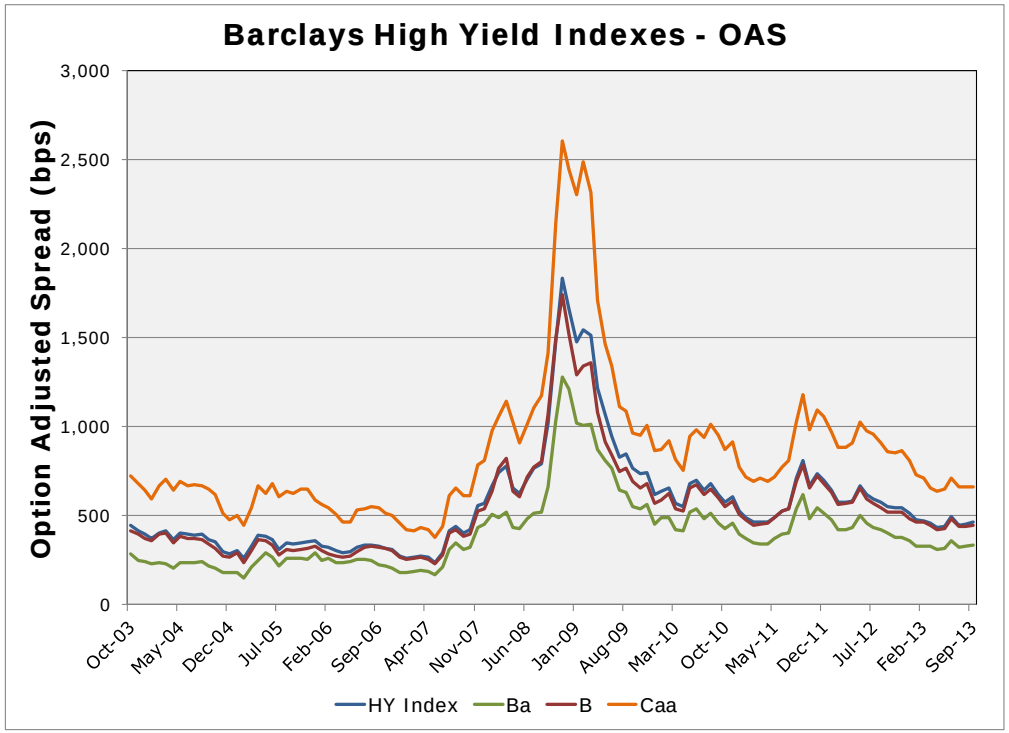




Data sources: Wilshire Compass, Barclays Capital

High Yield Bond Market

September 30, 2013	Weight	Qtr	Ytd	1 Yr	3 Yr
Barclays High Yield Index	100%	2.3	3.7	7.1	9.2
Quality Distribution					
Ba U.S. High Yield	38.6%	1.8	1.8	4.7	8.2
B U.S. High Yield	42.9%	2.3	3.6	7.3	9.2
Caa U.S. High Yield	17.6%	3.7	9.2	12.8	11.4
Ca to D U.S. High Yield	0.7%	-5.2	-4.7	1.9	5.8
Non-Rated U.S. High Yield	0.2%	2.5	4.2	6.1	12.5

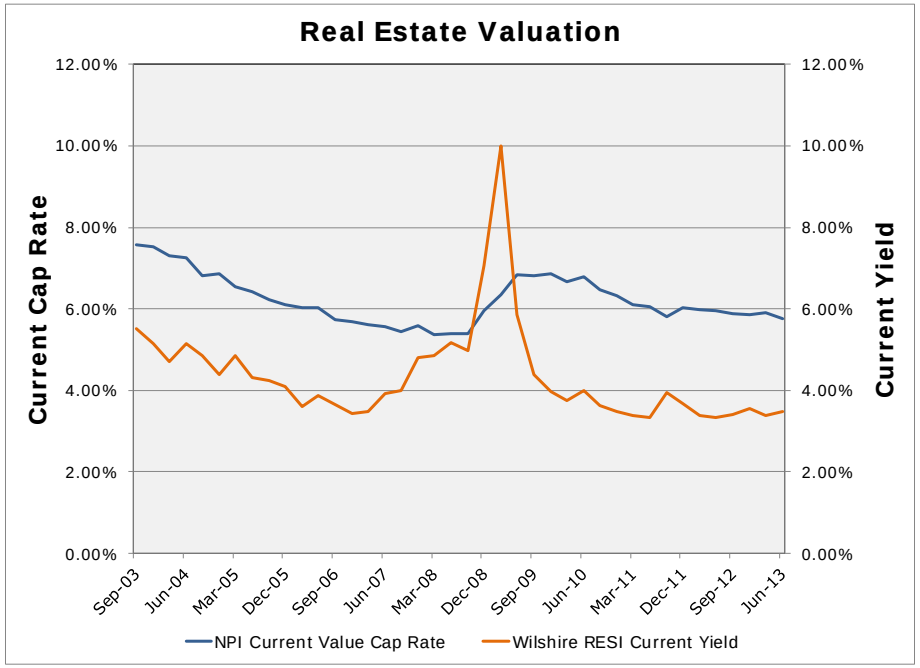


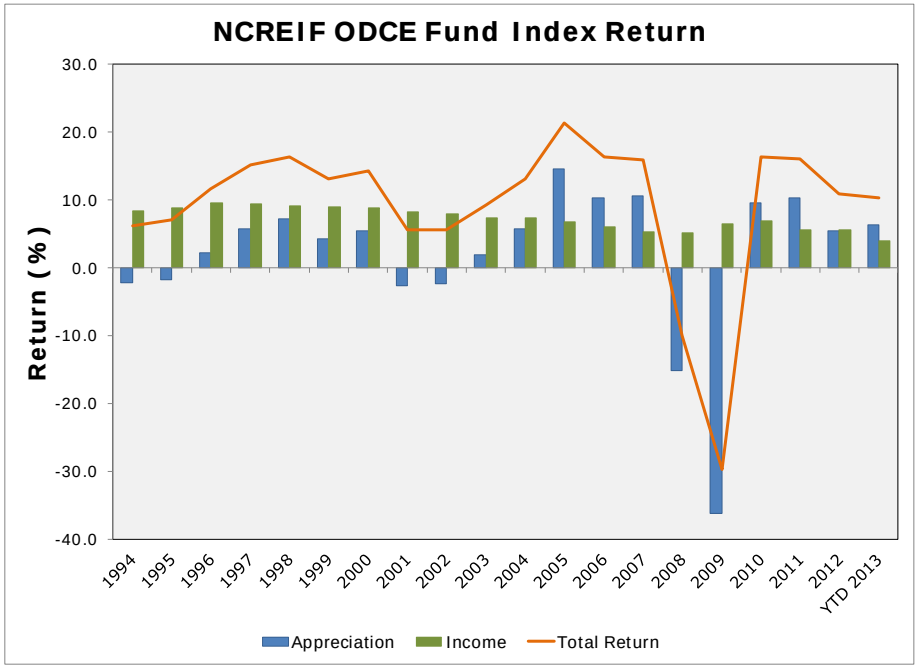
Data sources: Barclays Capital

Real Assets

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays U.S. TIPS Index	0.7	-6.7	-6.1	4.0	5.3	5.2
Dow Jones UBS Commodity Index	2.1	-8.6	-14.3	-3.2	-5.3	2.1
Global Public Real Estate*	-0.1	2.9	6.8	12.2	6.7	10.1
NCREIF ODCE Fund Index	3.5	10.4	13.0	14.2	0.7	7.1
NCREIF Timberland Index	1.1	3.6	9.7	4.0	2.1	8.1
Alerian MLP Index (Oil & Gas)	-0.7	21.2	17.0	16.5	22.5	15.7

* Wilshire Global Real Estate Securities from December 2003 to December 2004. Wilshire Global REITs from 2004 to present.





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

Asset Class Performance

Wilshire

Annual Asset Class Returns - Best to Worst

2008	2009	2010	2011	2012	**YTD 2013**
Core Bond 5.2%	Emrg Mrkts 79.0%	REITs 28.6%	U.S. TIPS 13.6%	Emrg Mrkts 18.6%	U.S. Equity 20.9%
T-Bills 2.0%	High Yield 58.2%	Emrg Mrkts 19.2%	REITs 9.2%	Developed 17.9%	Developed 16.6%
U.S. TIPS -2.3%	Developed 32.5%	U.S. Equity 17.2%	Core Bond 7.8%	REITs 17.6%	High Yield 3.7%
High Yield -26.2%	REITs 28.6%	Commodities 16.8%	High Yield 5.0%	U.S. Equity 16.1%	REITs 2.7%
Commodities -35.6%	U.S. Equity 28.3%	High Yield 15.1%	U.S. Equity 1.0%	High Yield 15.8%	T-Bills 0.1%
U.S. Equity -37.2%	Commodities 18.9%	Developed 8.2%	T-Bills 0.1%	U.S. TIPS 7.0%	Core Bond -1.9%
REITs -39.2%	U.S. TIPS 11.4%	Core Bond 6.5%	Developed -11.7%	Core Bond 4.2%	Emrg Mrkts -4.0%
Developed -43.1%	Core Bond 5.9%	U.S. TIPS 6.3%	Commodities -13.3%	T-Bills 0.1%	U.S. TIPS -6.7%
Emrg Mrkts -53.2%	T-Bills 0.2%	T-Bills 0.1%	Emrg Mrkts -18.2%	Commodities -1.0%	Commodities -8.6%

Annualized 5-Year 2008-2012
High Yield 10.3%
U.S. TIPS 7.0%
Core Bond 5.9%
REITs 5.2%
U.S. Equity 2.0%
T-Bills 0.5%
Emrg Mrkts -0.6%
Developed -3.2%
Commodities -5.2%

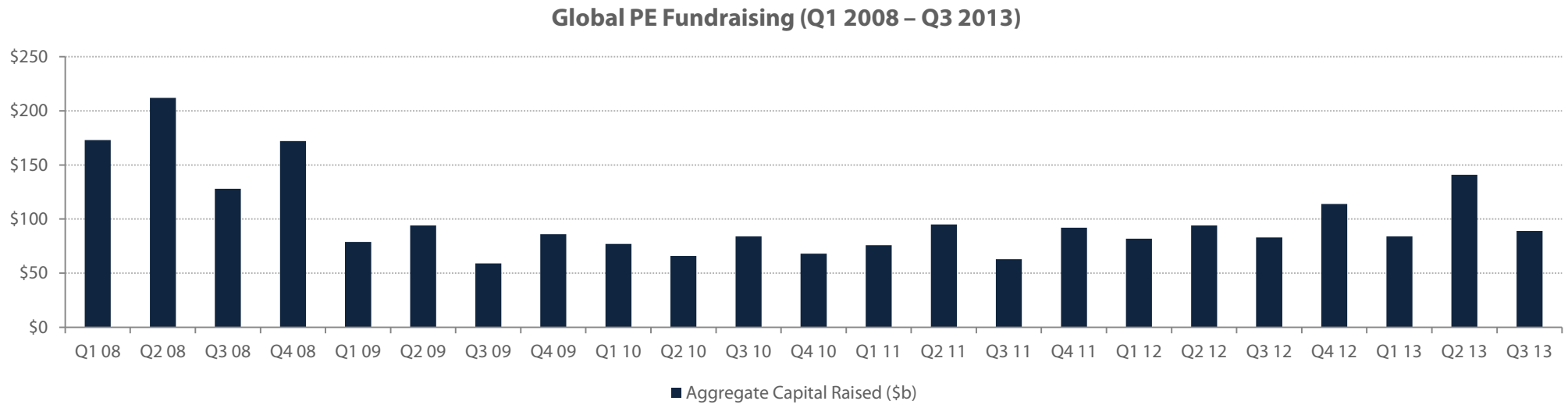
Data sources: Wilshire Compass

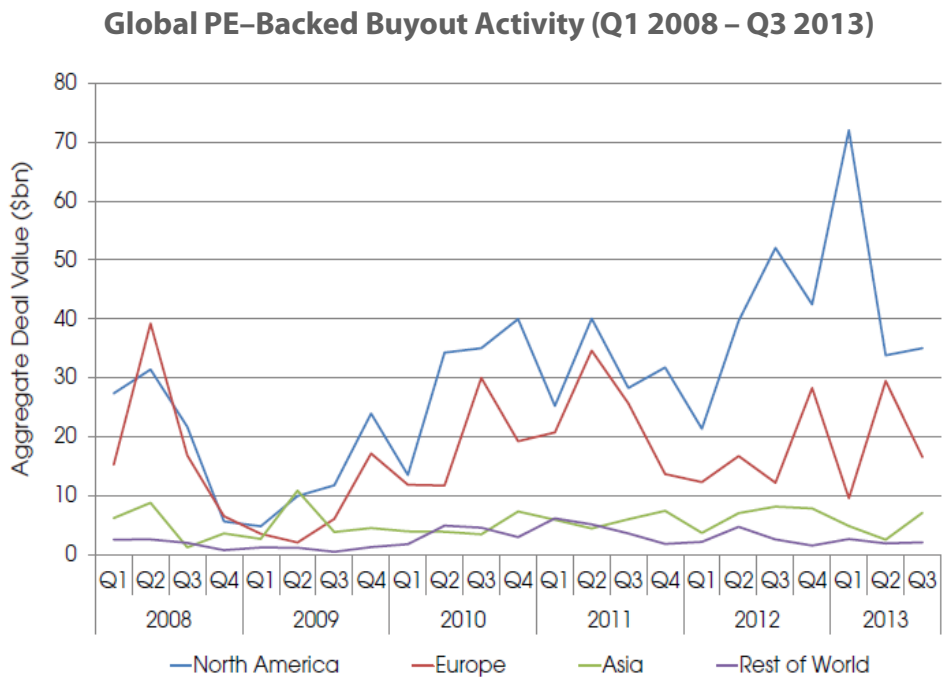
Note: Developed asset class is developed markets ex-U.S., ex-Canada.

Appendix: Private Markets Update

Private Equity Environment – Fundraising & Investment Activity

Wilshire

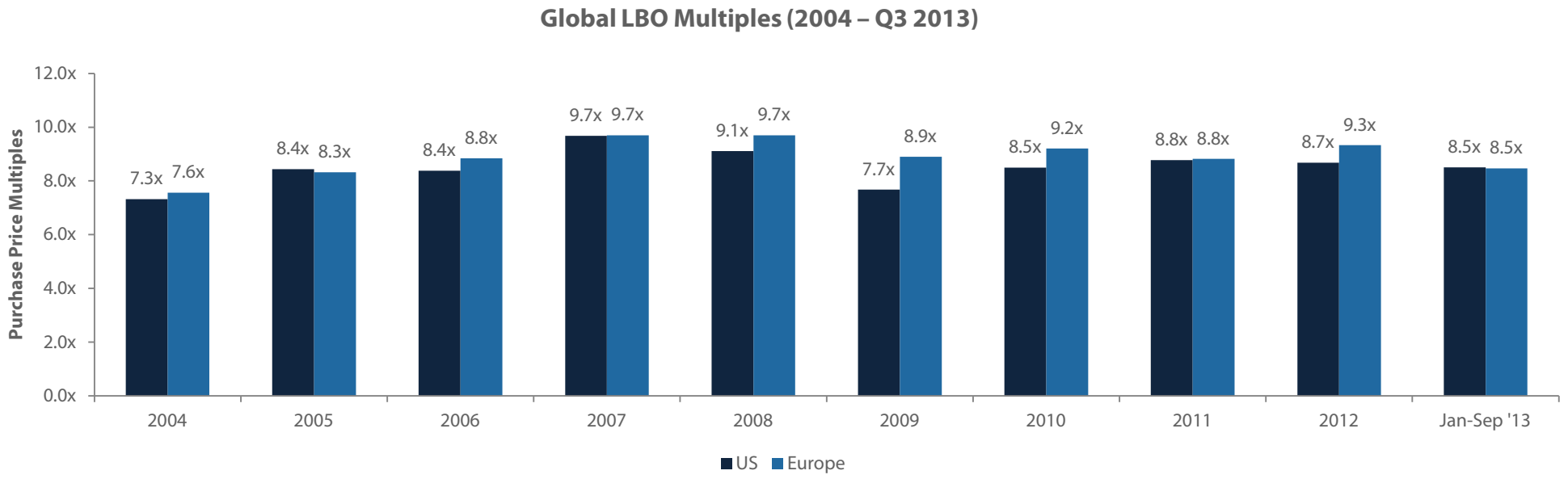


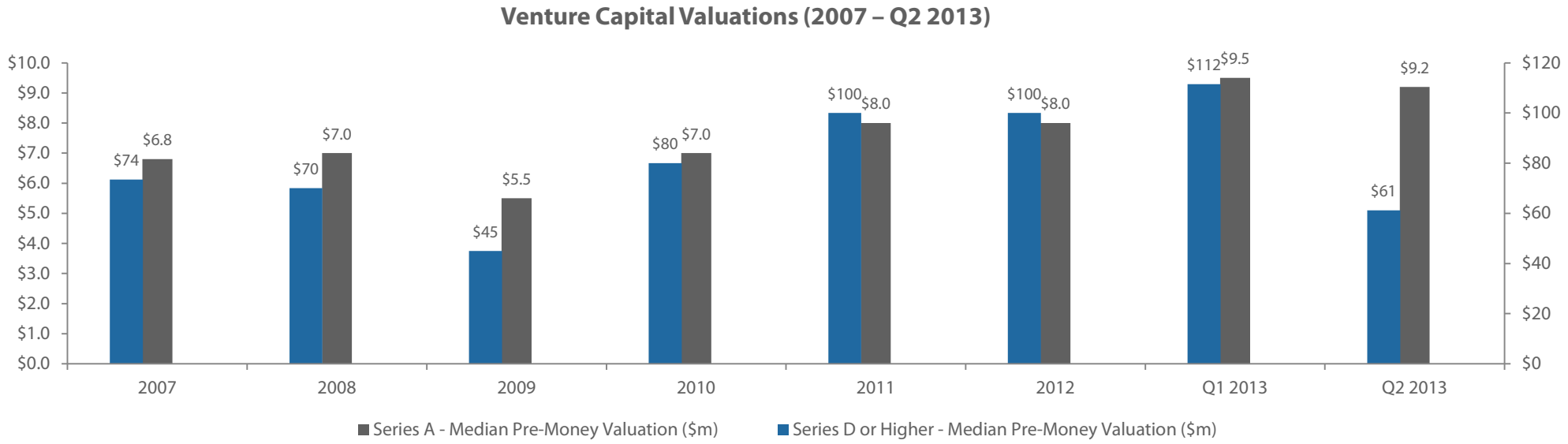


Sources: Preqin.

Private Equity Environment – Pricing

Wilshire

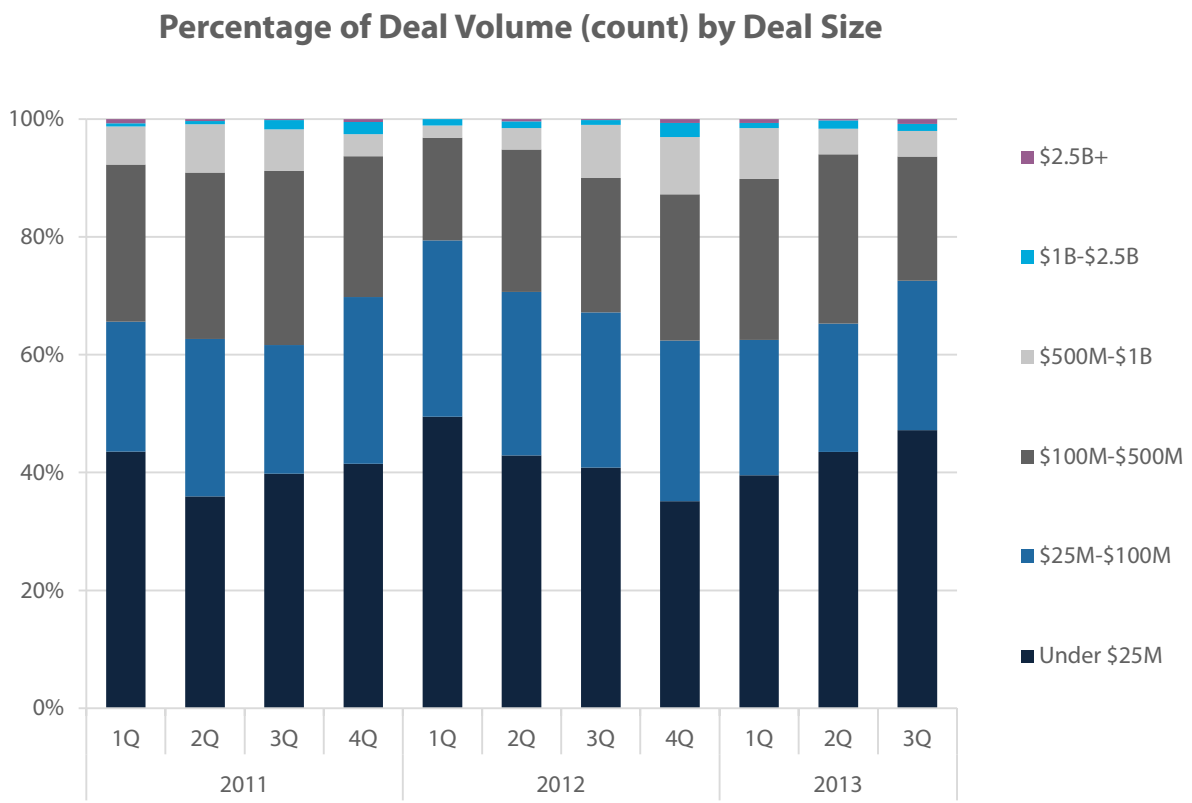




Source: S&P LCD; Cooley Venture Financing Report.

U.S. Investment Activity by Deal Size

Wilshire



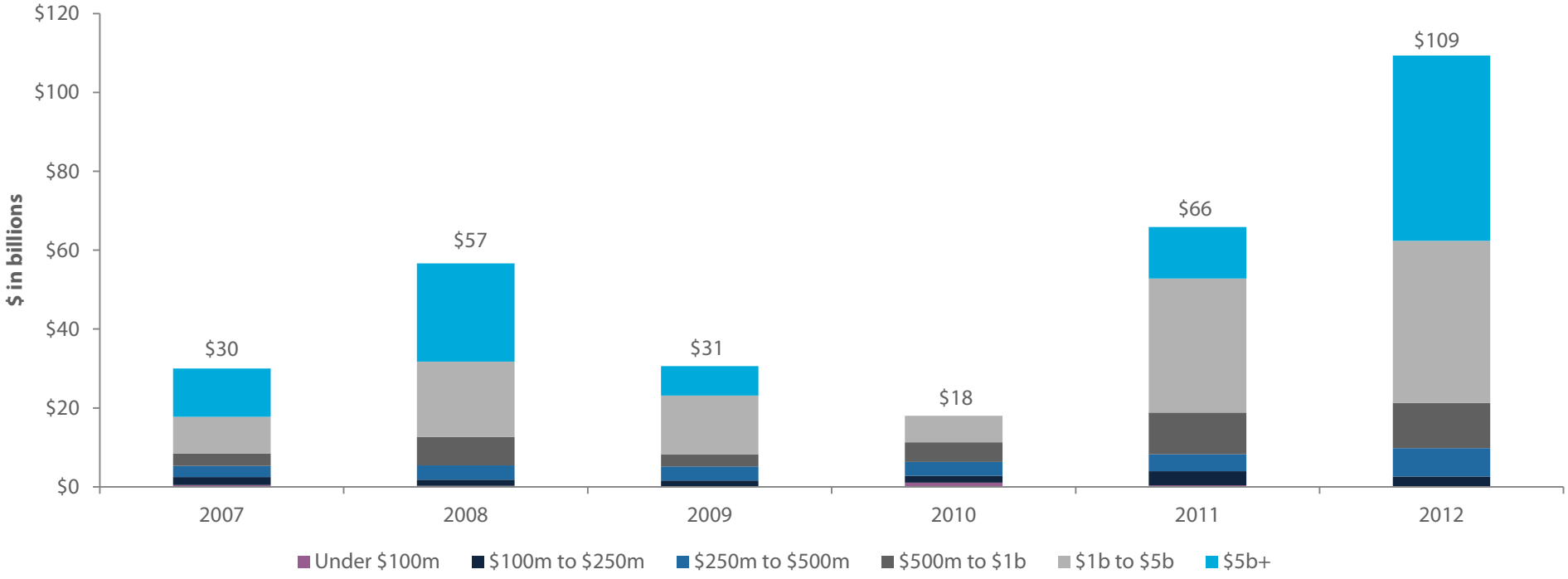
- Smaller deals continue to dominant deal activity by count
- Add-on acquisitions and minority deals have led to an increase in small transactions

Source: Pitchbook.

North American Private Equity Overhang

Wilshire

Vintage Year Overhang



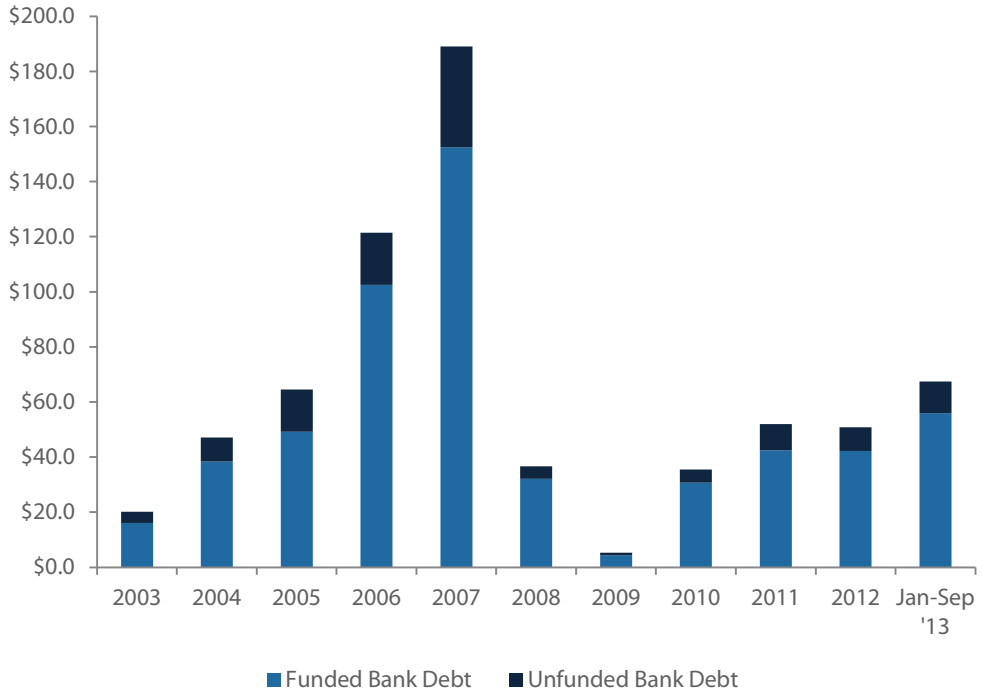
- Total private equity overhang significantly grew to over $500 billion during the run-up to the financial crisis
- While the total private equity overhang has decreased to approximately $328 billion, there still remains a large amount of capital to be deployed

Source: Pitchbook.

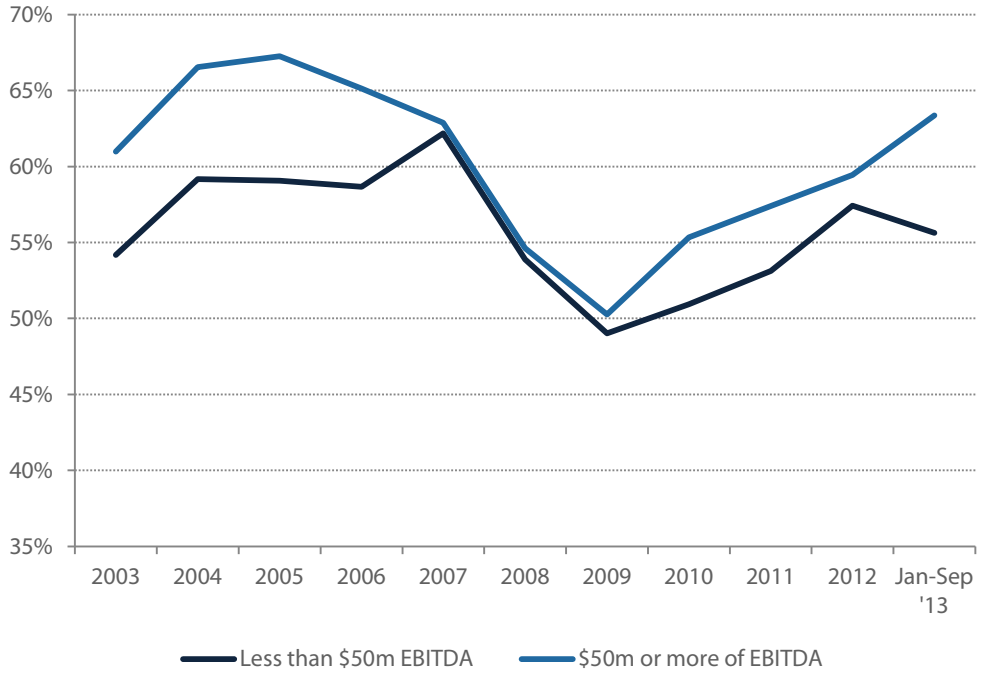
U.S. Debt Markets

Wilshire

Total U.S. Leveraged Buyout Loan Volume ($b)



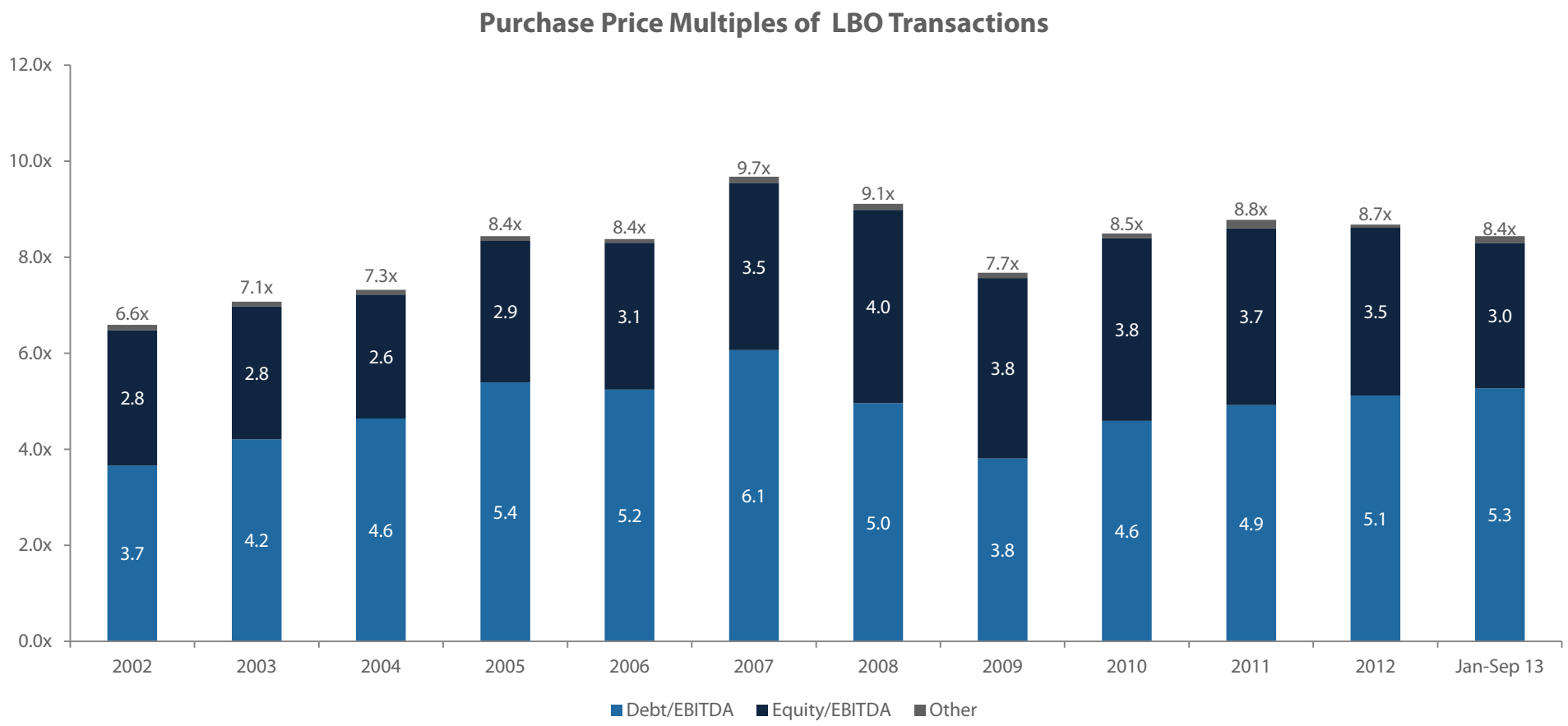
Percentage of Debt Used in Buyouts



- The amount of capital available for leverage has gone down significantly since its peak volume in 2007, but continues to climb from the historically low levels in 2009
- Transactions with less than $50m of EBITDA continue to apply less leverage than those of larger deals by a meaningful percentage

Source: S&P LCD.

U.S. LBO Purchase Price Multiples



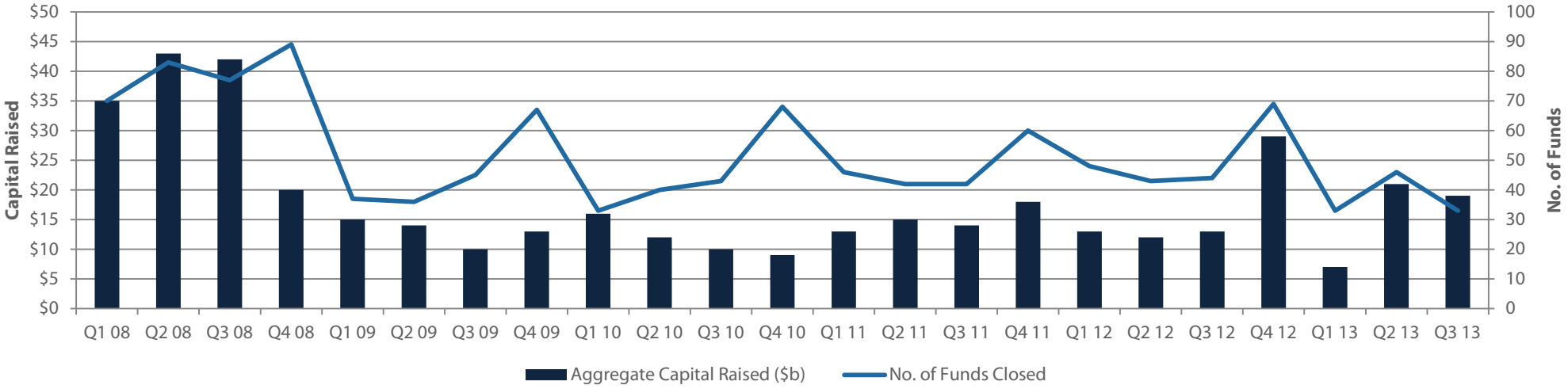
- As the debt markets have come back, purchase price multiples have increased from 2009 and have been stable in the 8.4x to 8.8x range
- In the first three quarters of 2013, multiples seem to have slightly decreased

Source: S&P LCD.

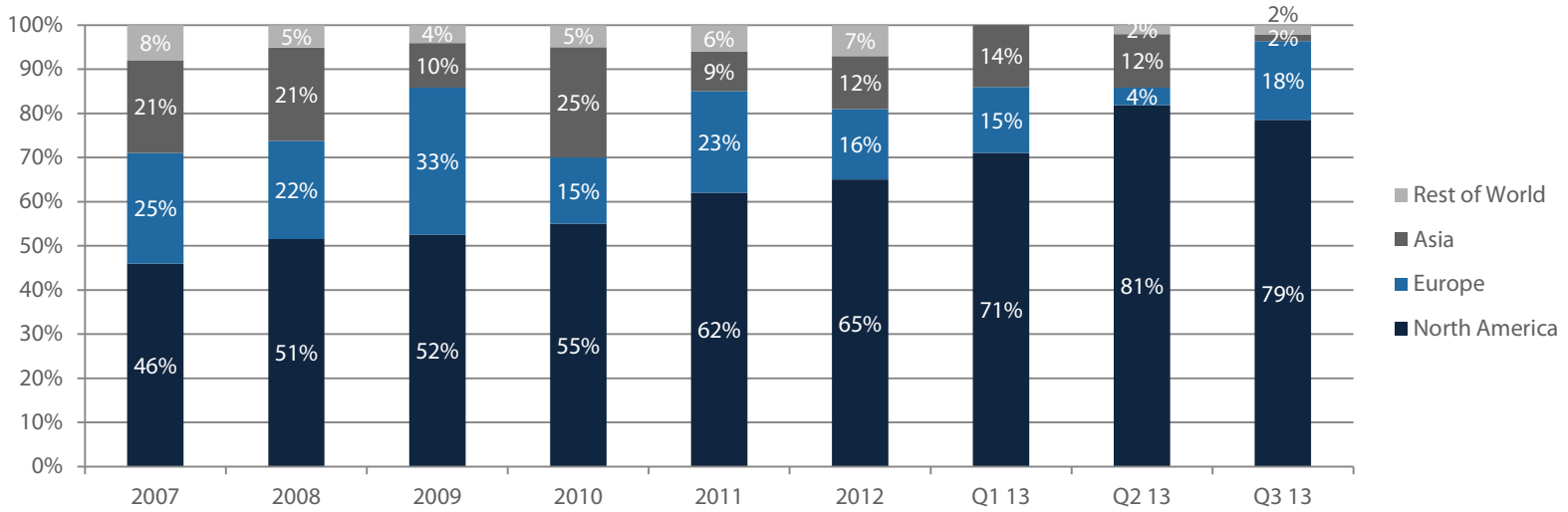
Real Estate Fundraising

Wilshire

Quarterly Closed-End Private Real Estate Fundraising (Q1 2008 – Q3 2013)



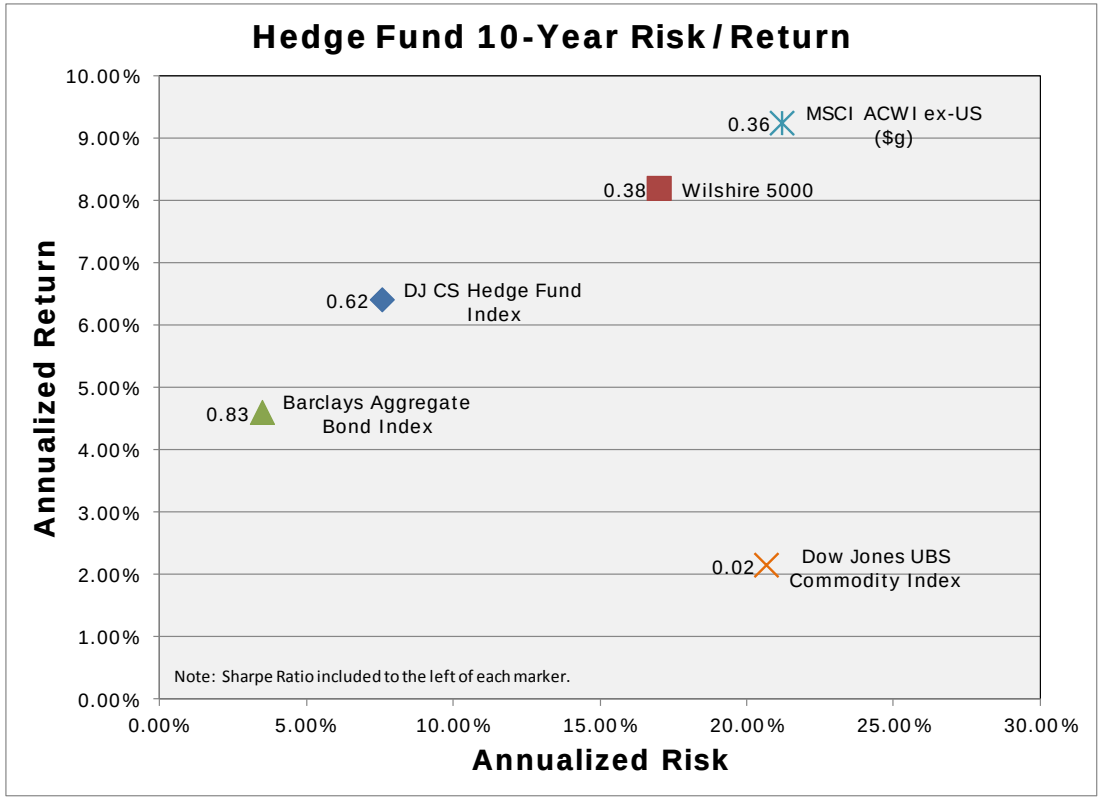
Proportion of Aggregate Capital Raised by Closed-End Private Real Estate Funds by Fund Geographic Focus (2007 – Q3 2013)



Source: Preqin.

Hedge Fund Performance

September 30, 2013	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
DJ CS Hedge Fund Index	1.6	5.4	7.4	5.0	5.5	6.4
Event Driven Index	2.9	10.2	13.7	5.5	6.4	7.7
Global Macro Index	0.2	1.5	2.8	5.4	6.8	8.2
Long/Short Equity Index	3.5	10.7	13.1	5.6	6.0	7.0
Multi-Strategy Index	2.7	6.6	9.5	7.9	7.5	6.7
Wilshire 5000	6.0	20.9	21.0	16.5	10.4	8.2
MSCI ACWI ex-US ($g)	10.2	10.5	17.0	6.4	6.7	9.2
Barclays Aggregate Bond Index	0.6	-1.9	-1.7	2.9	5.4	4.6
Dow Jones UBS Commodity Index	2.1	-8.6	-14.3	-3.2	-5.3	2.1



Data sources: Wilshire Compass