



California Public Employees' Retirement System
Performance Review – June 30, 2015

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July 2015

June 2015 Asset Class Assumptions



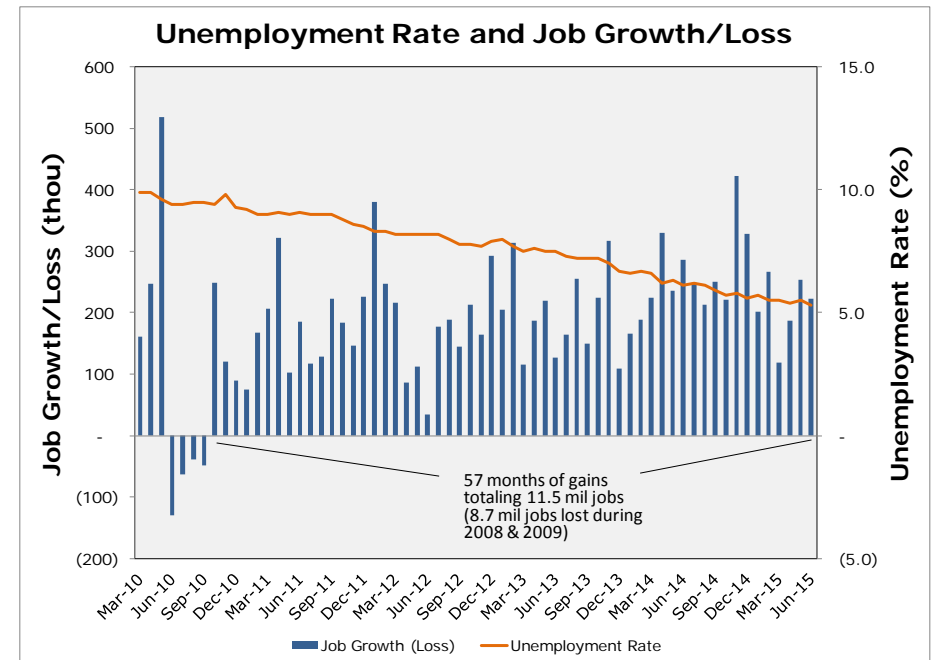
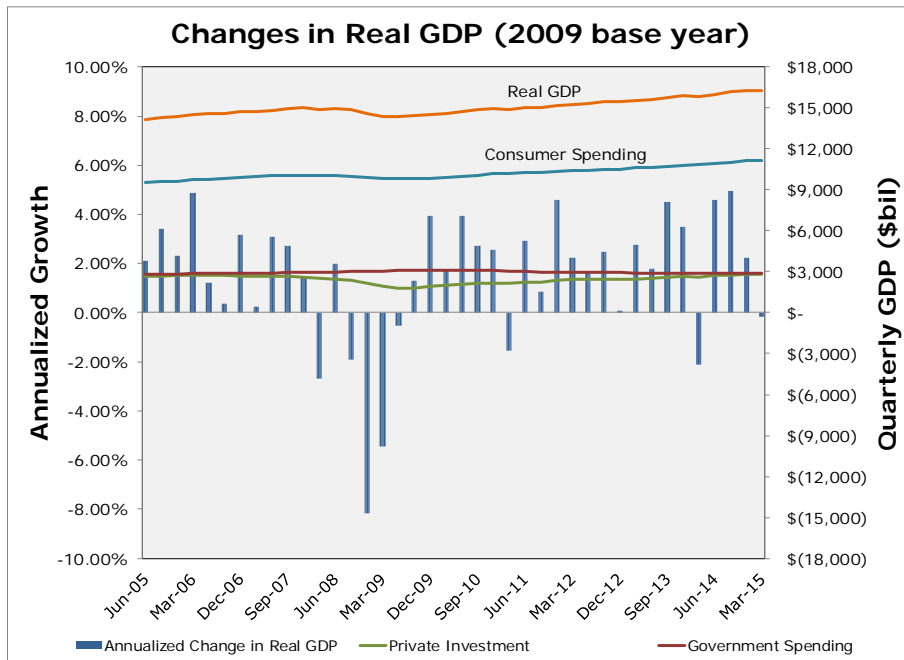
	Total Return (%)			Risk (%)
	Dec. 2014	Q2 2015	Change	Dec. 2014
<u>Investment Categories:</u>				
U.S. Stocks	6.25	6.50	0.25	17.00
Dev ex-U.S. Stocks	6.25	6.50	0.25	18.00
Emerging Mkt Stocks	6.25	6.50	0.25	26.00
Global Stocks	6.45	6.70	0.25	17.15
Private Markets	8.80	9.15	0.35	27.50
Cash Equivalents	1.45	1.60	0.15	1.25
Core Bonds	3.35	3.60	0.25	5.00
LT Core Bonds	3.45	4.05	0.60	10.00
TIPS	2.90	3.15	0.25	6.00
High Yield Bonds	5.15	5.35	0.20	10.00
EMD Local Currency (h)	5.60	5.55	(0.05)	5.00
U.S. RE Securities	4.85	5.35	0.50	17.00
Private Real Estate	5.70	6.15	0.45	14.00
Commodities	3.70	3.95	0.25	15.00
MLPs	8.85	9.45	0.60	17.00
Real Asset Basket	6.15	6.50	0.35	8.35
<u>Inflation:</u>	1.70	1.95	0.25	1.75
<u>Returns minus Inflation:</u>				
U.S. Stocks	4.55	4.55	-	
U.S. Bonds	1.65	1.65	-	
Cash Equivalents	(0.25)	(0.35)	(0.10)	
<u>Stocks minus Bonds:</u>	2.90	2.90	-	
<u>Bonds minus Cash:</u>	1.90	2.00	0.10	

Economic Review



June 30, 2015	Key Economic Indicators			
CPI (all items) Seasonally adjusted	Monthly Change		Cumulative Change	
	Jun-15	0.3	3-Month	0.9
	May-15	0.4	12-Month	0.2
	Apr-15	0.1	10-Yr Annual	2.1
Breakeven Inflation	10-Year		1.9	
Consumer Sentiment Unv. of Michigan Survey	Jun-15	96.1		
	May-15	90.7		
	1-Yr Ago	82.5	10-Yr Avg	77.2
Manufacturing Inst. for Supply Mgmt Purchasing Mngrs' Idx	Jun-15	53.5	Change in Manufacturing Sector	
	May-15	52.8	>50	Expansion
	1-Yr Avg	54.7	<50	Contraction

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



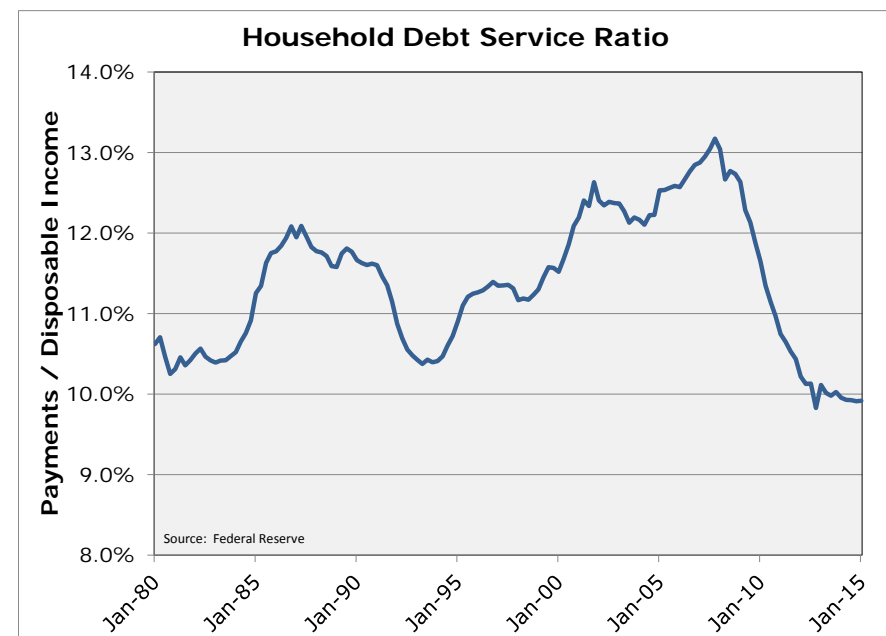
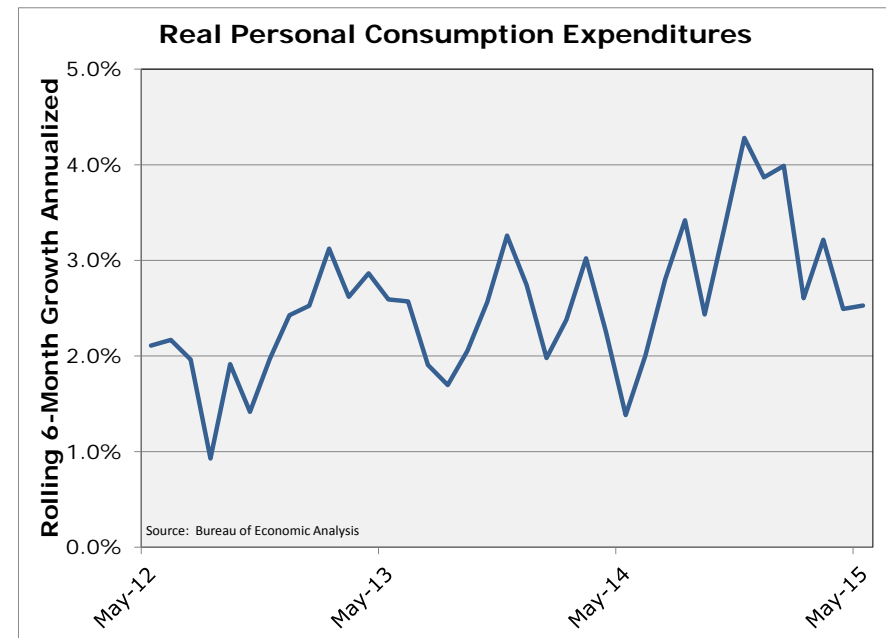
Data sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Bank of St. Louis, Barclays Capital



Economic Growth

- Slight contraction in the U.S. economy in Q1 due to growing deficit in Net Exports and decline in Government Expenditures
- Personal Consumption, which accounts for ~70% of GDP, continues to grow near a long-term average rate
- Debt service payments are outflows necessary to cover repayment of interest and principal
- As a percentage of disposable personal income, service payments are lower than they have been in decades

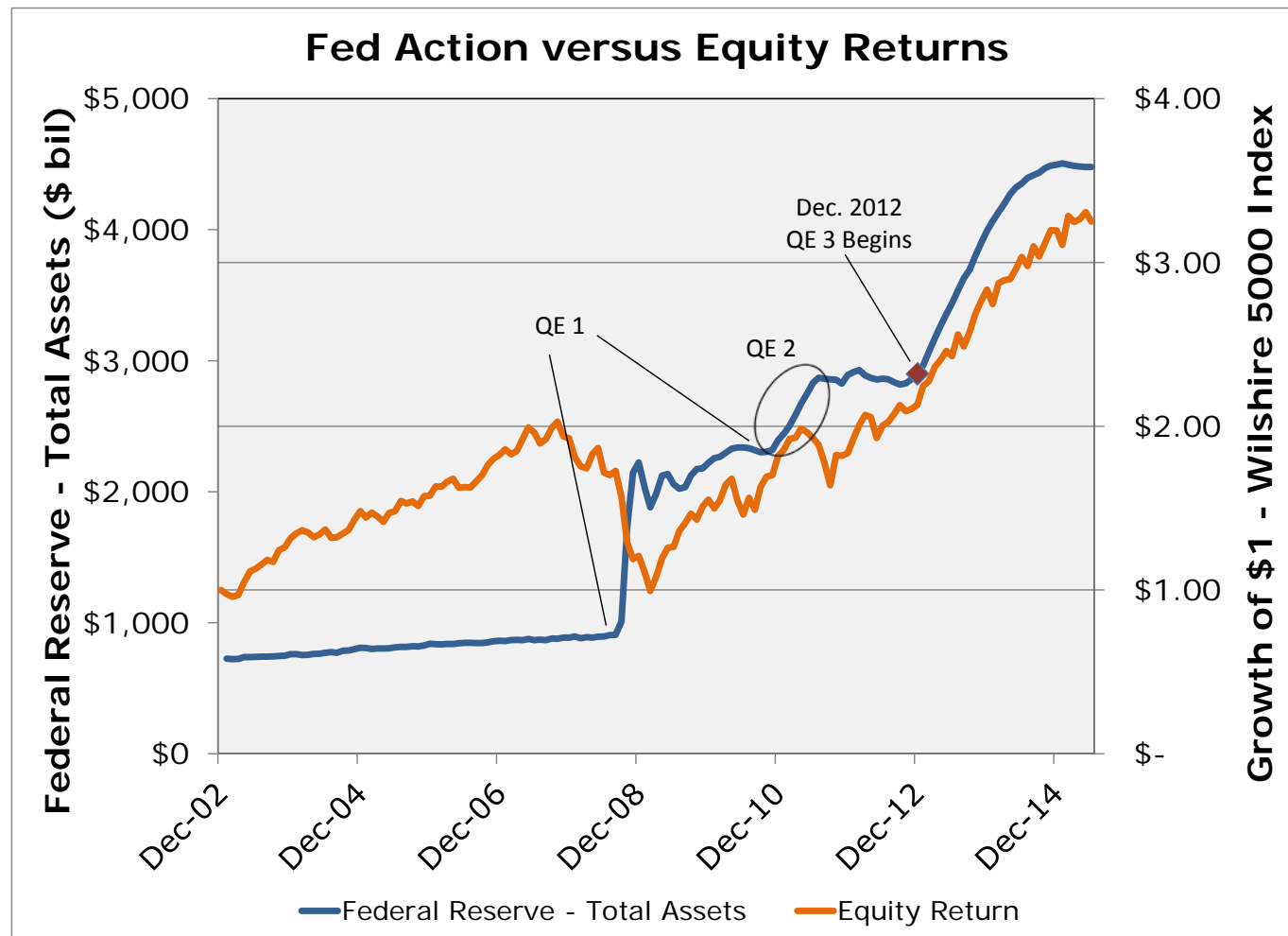
Source: Bureau of Economic Analysis, Federal Reserve



Effects of Quantitative Easing



- As the Fed Funds rate approached zero, the U.S. turned to quantitative easing as a way to stimulate the economy
- Policies have been supportive of equity prices

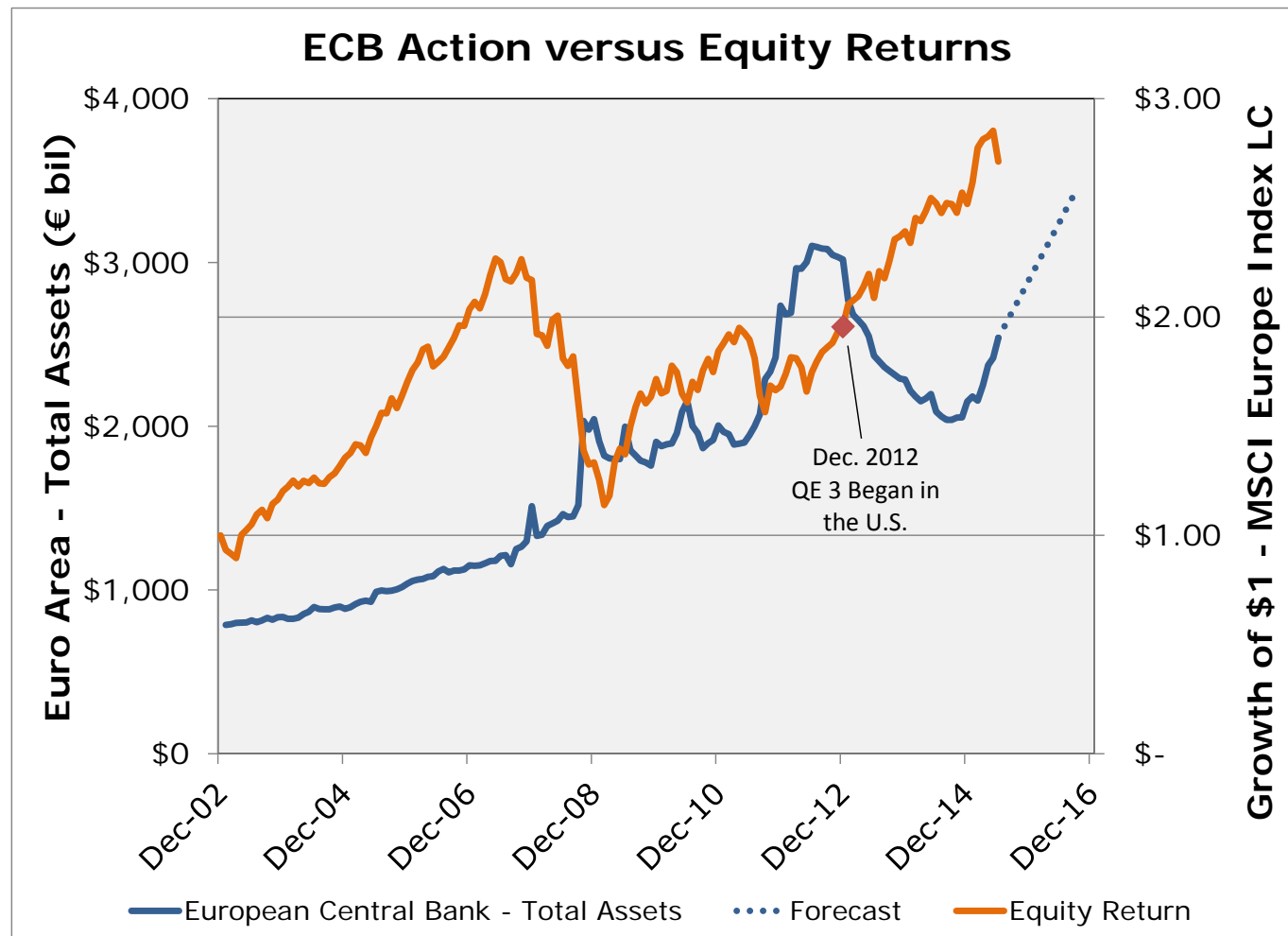


Source: Federal Reserve, Wilshire Compass

Effects of Quantitative Easing

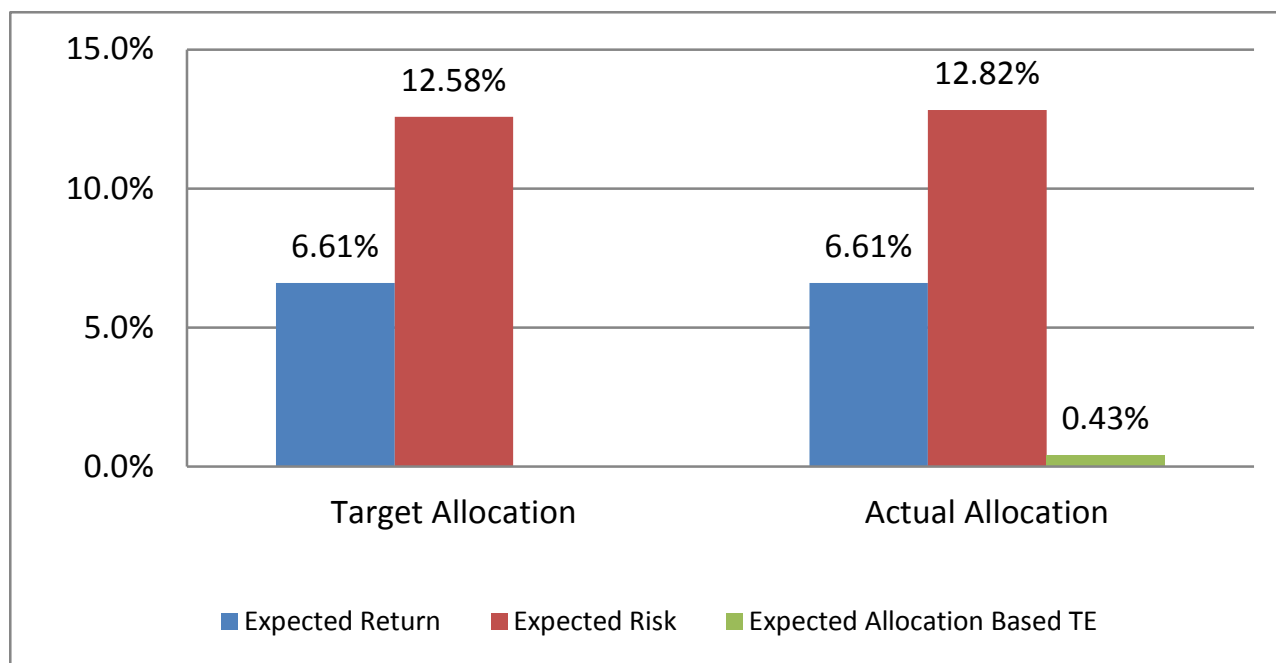


- European Central Bank (ECB) initially stopped easing in December, 2012; however QE 3 in the U.S. was likely a boost for some global equities
- Commenced another round of easing in 2015



Source: European Central Bank, Wilshire Compass

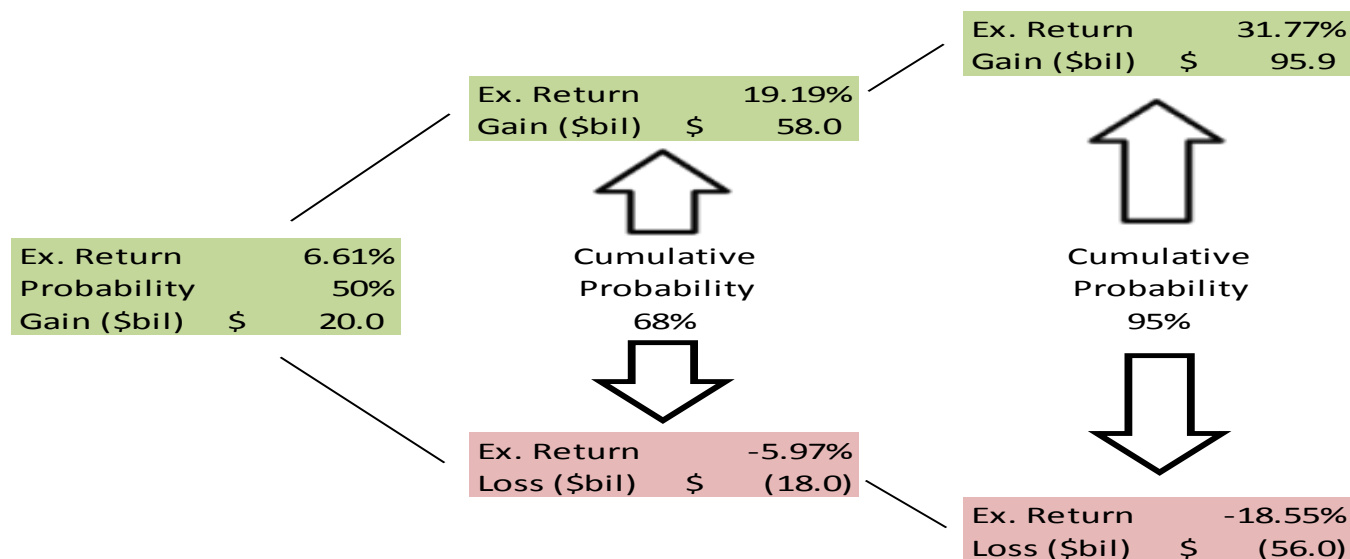
CalPERS Expected Return and Risk Estimates



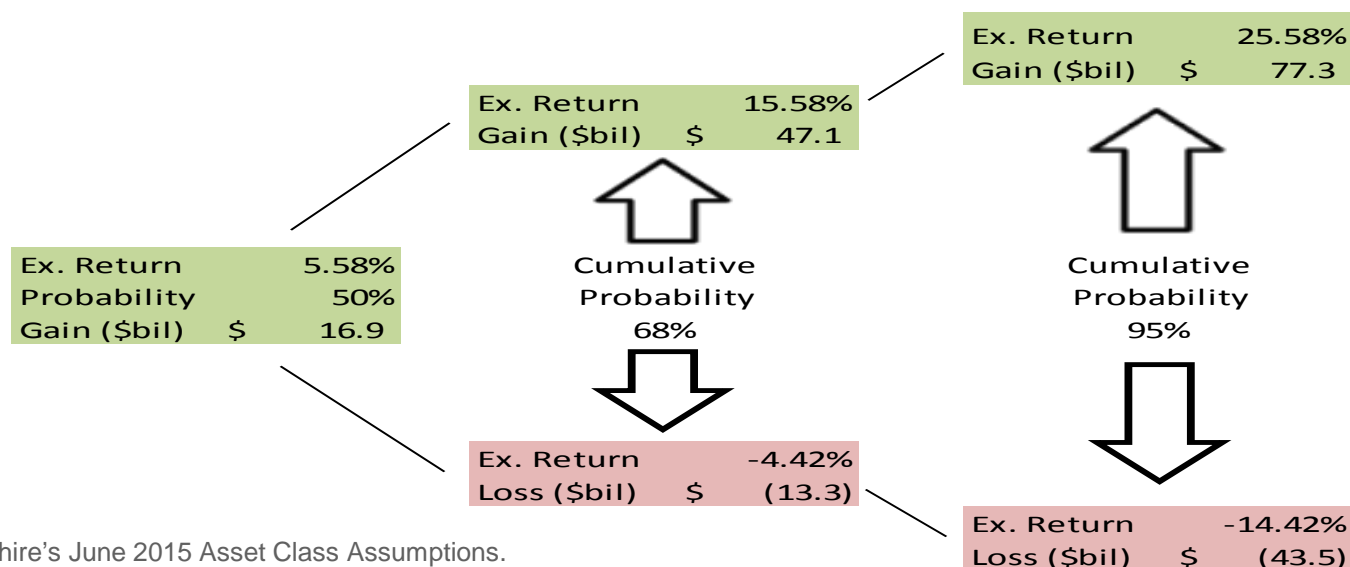


CalPERS Expected Return and Risk Estimates

1 and 2 Standard Deviation Events at Current Expected Return and Risk



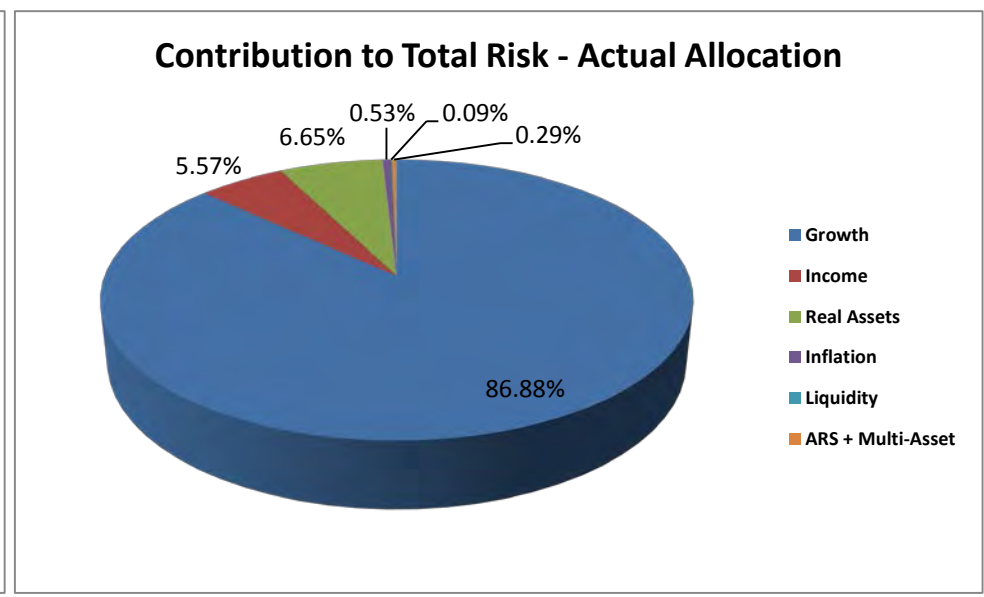
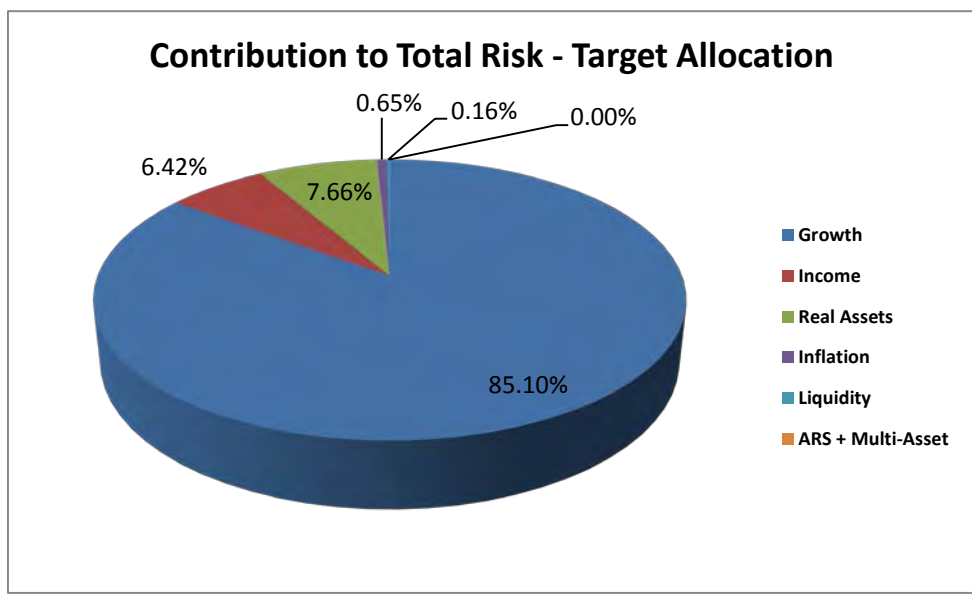
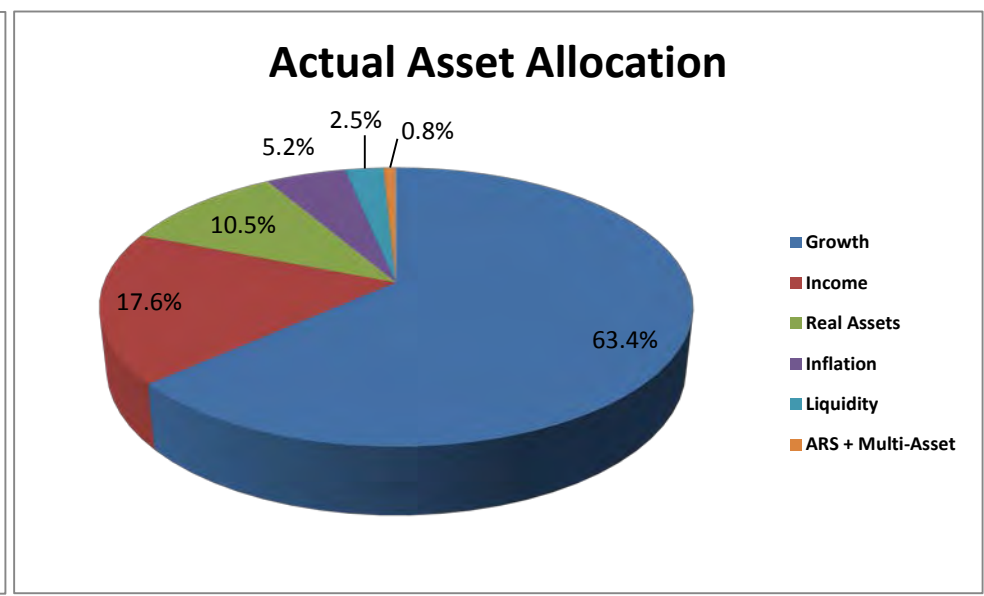
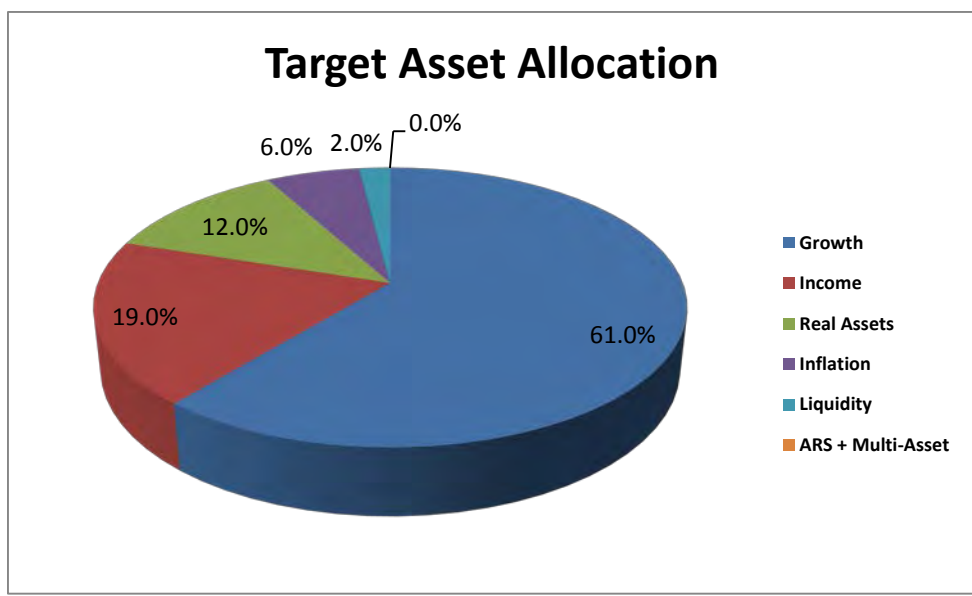
1 and 2 Standard Deviation Events at 10% Risk & Constant Sharpe Ratio



Forecasts using Wilshire's June 2015 Asset Class Assumptions.



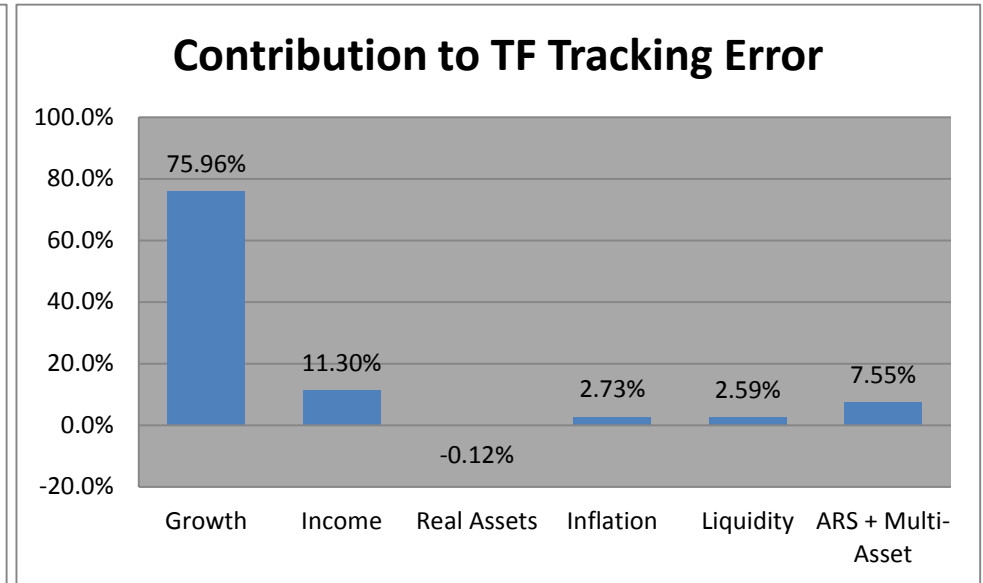
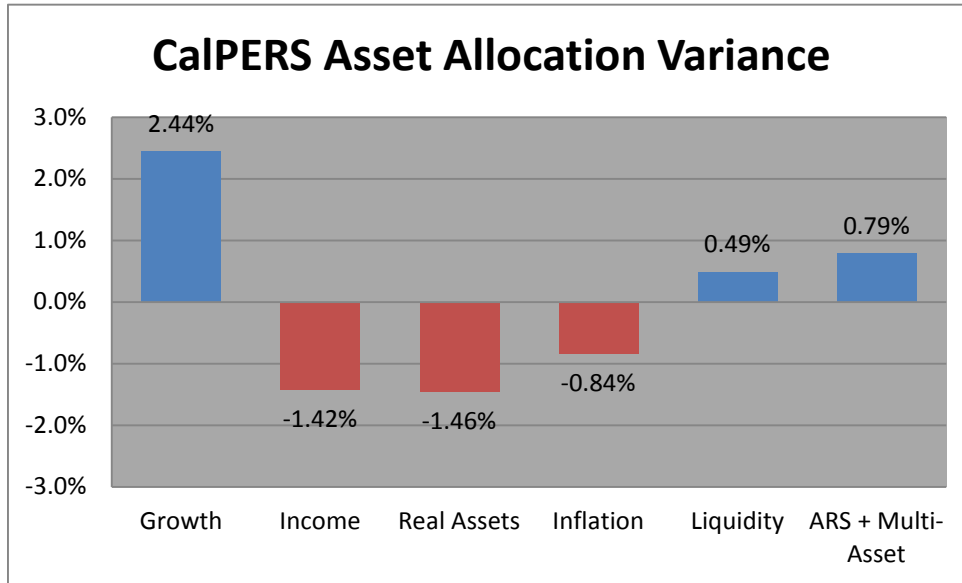
Asset and Risk Allocation



Forecasts using Wilshire's June 2015 Asset Class Assumptions.



Drivers of Expected Excess Risk



- This excess risk forecast is based on asset allocation variance only.
- Other sources of risk (structural within asset classes, manager/program specific source of tracking error, covariance) are not considered here.

Returns in Down Months: 1991 – June, 2015



- During down markets, long government bonds do well while riskier assets suffer
- Although correlation suggests little relationship between equity and Treasuries, return improves as equities do worse

Total Months	294	(24.5 Years)
# of Months Equity -1% or More	92	
Percentage	31.3%	

	Average Return	Correlation
Global Equity	-4.17%	1.00

Diversifying Asset Classes

Long Treasury	1.08%	-0.12
Long Credit	-0.05%	0.32
Commodities	-1.54%	0.38
Gold	0.04%	0.10
REITs	-1.99%	0.55
Cash	0.24%	-0.01

Total Months	294	(24.5 Years)
# of Months Equity -3% or More	45	
Percentage	15.3%	

	Average Return	Correlation
Global Equity	-6.47%	1.00

Diversifying Asset Classes

Long Treasury	1.79%	0.01
Long Credit	-0.07%	0.53
Commodities	-2.09%	0.52
Gold	0.59%	0.27
REITs	-3.95%	0.61
Cash	0.26%	0.11

Total Months	294	(24.5 Years)
# of Months Equity -5% or More	25	
Percentage	8.5%	

	Average Return	Correlation
Global Equity	-8.53%	1.00

Diversifying Asset Classes

Long Treasury	2.03%	0.09
Long Credit	-0.69%	0.60
Commodities	-2.76%	0.66
Gold	0.41%	0.40
REITs	-6.48%	0.58
Cash	0.26%	0.27



Total Fund – Performance

	Market Value	5-Year Ratios							
		Qtr	1-Year	3-Year	5-Year	10-Year	VaR	Sharpe	Info
TOTAL FUND	\$301.9 bil	1.1%	2.4%	10.9%	10.7%	6.2%	\$40.3 bil	1.6	0.2
<i>Total Fund Policy Benchmark</i>		0.4%	2.5%	10.3%	10.4%	7.2%		1.5	0.0
<i>Actuarial Rate</i>		1.8%	7.5%	7.5%	7.6%	7.7%			
GROWTH	191.5	1.1%	2.2%	14.2%	13.1%	7.3%	\$39.7 bil	1.2	0.0
<i>Growth Policy Benchmark</i>		1.0%	2.9%	14.7%	13.2%	8.3%		1.1	0.0
PUBLIC EQUITY	162.6	0.5%	1.0%	14.5%	12.9%	6.6%	\$32.8 bil	0.9	0.8
<i>Public Equity Policy Benchmark</i>		0.6%	1.3%	14.2%	12.5%	6.9%		0.9	0.0
PRIVATE EQUITY	29.0	4.6%	8.9%	14.1%	14.4%	11.9%	\$9.5 bil	3.0	0.0
<i>Private Equity Policy Benchmark</i>		3.2%	11.1%	16.7%	15.0%	14.9%		1.1	0.0
INCOME	53.1	-3.3%	1.3%	2.6%	5.4%	6.1%	\$6.3 bil	1.1	0.9
<i>Income Policy Benchmark</i>		-3.3%	0.4%	1.4%	4.6%	5.3%		0.9	0.0
REAL ASSETS	31.8	8.5%	12.4%	12.3%	11.8%	2.2%	\$4.3 bil	1.6	-0.1
<i>Real Assets Policy Benchmark</i>		2.9%	11.5%	11.0%	12.1%	8.7%		2.7	0.0
INFLATION	15.6	1.3%	-11.5%	-1.3%	3.2%	-.-%	\$1.1 bil	0.4	0.4
<i>Inflation Policy Benchmark</i>		2.0%	-13.0%	-2.3%	1.9%	-.-%		0.3	0.0
LIQUIDITY	7.5	-0.5%	0.9%	0.2%	1.1%	2.1%	\$0.3 bil	0.7	-0.8
<i>Liquidity Policy Benchmark</i>		-0.5%	1.7%	0.8%	1.5%	2.3%		0.8	0.0
ABSOLUTE RETURN STRATEGIES	1.2	2.4%	7.3%	7.2%	5.1%	4.6%		1.6	-0.1
<i>Absolute Return Strategies Policy Benchmark</i>		1.3%	5.3%	5.3%	5.4%	7.0%		36.9	0.0
MULTI-ASSET CLASS COMPOSITE	1.2	-2.1%	6.0%	-.-%	-.-%	-.-%		N/A	N/A
<i>Absolute 7.5%</i>		1.8%	7.5%	-.-%	-.-%	-.-%		N/A	N/A
CURRENCY + ASSET ALLOCATION TRANSITION	0.0	-.-%	-.-%	-.-%	-.-%	-.-%		N/A	N/A
TERMINATED AGENCY POOL	0.1	-4.4%	2.0%	-.-%	-.-%	-.-%		N/A	N/A
TOTAL FUND PLUS TAP	302.0	1.1%	2.4%	10.9%	10.7%	6.2%		N/A	N/A



Total Fund – Attribution (Quarter)

California Public Employees' Retirement System
Total Fund Attribution - Quarter
As of 6/30/2015

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	63.65	1.13	61.00	1.01	2.65	0.12	-0.03	0.00	0.11	0.08
Public Equity	54.12	0.55	51.00	0.56	3.12	-0.01	-0.01	0.00	-0.01	-0.01
Private Equity	9.53	4.59	10.00	3.20	-0.47	1.38	-0.02	0.00	0.12	0.10
Income	18.12	-3.27	19.00	-3.35	-0.88	0.07	0.03	0.00	0.01	0.04
Real Assets	9.88	8.45	12.00	2.90	-2.12	5.55	-0.06	-0.12	0.68	0.50
Inflation	5.18	1.25	6.00	2.03	-0.82	-0.78	-0.02	0.01	-0.05	-0.06
Absolute Return	0.90	2.40	0.00	1.33	0.90	1.07	0.00	0.01	0.00	0.02
Liquidity	2.27	-0.53	2.00	-0.51	0.27	-0.02	0.00	0.00	0.00	0.00
Monthly Linked Return	100.00	1.03	100.00	0.45		0.59	-0.07	-0.10	0.76	0.59
Trading/Hedging/Other		0.03		0.00		0.03				0.03
Total		1.07		0.44		0.62				0.62

Total Fund – Attribution (Calendar YTD)



**California Public Employees' Retirement System
Total Fund Attribution - Calendar Year-to-Date
As of 6/30/2015**

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	63.50	3.23	61.00	3.75	2.50	-0.51	-0.03	-0.02	-0.27	-0.33
Public Equity	53.71	3.06	51.00	3.26	2.71	-0.20	-0.02	0.00	-0.10	-0.12
Private Equity	9.80	4.39	10.00	6.03	-0.20	-1.63	-0.02	-0.01	-0.17	-0.20
Income	18.26	-1.04	19.00	-1.60	-0.74	0.55	0.00	0.00	0.10	0.10
Real Assets	9.93	9.94	12.00	5.98	-2.07	3.96	-0.08	-0.09	0.49	0.32
Inflation	5.08	-0.45	6.00	-0.44	-0.92	-0.01	0.03	0.00	0.00	0.03
Absolute Return	1.06	5.17	0.00	2.69	1.06	2.48	-0.01	0.03	0.00	0.02
Liquidity	2.17	0.39	2.00	0.70	0.17	-0.32	0.00	0.00	-0.01	-0.01
Monthly Linked Return	100.00	2.90	100.00	2.75		0.15	-0.09	-0.09	0.31	0.15
Trading/Hedging/Other		0.06		0.00		0.06				0.06
Total		2.96		2.75		0.21				0.21



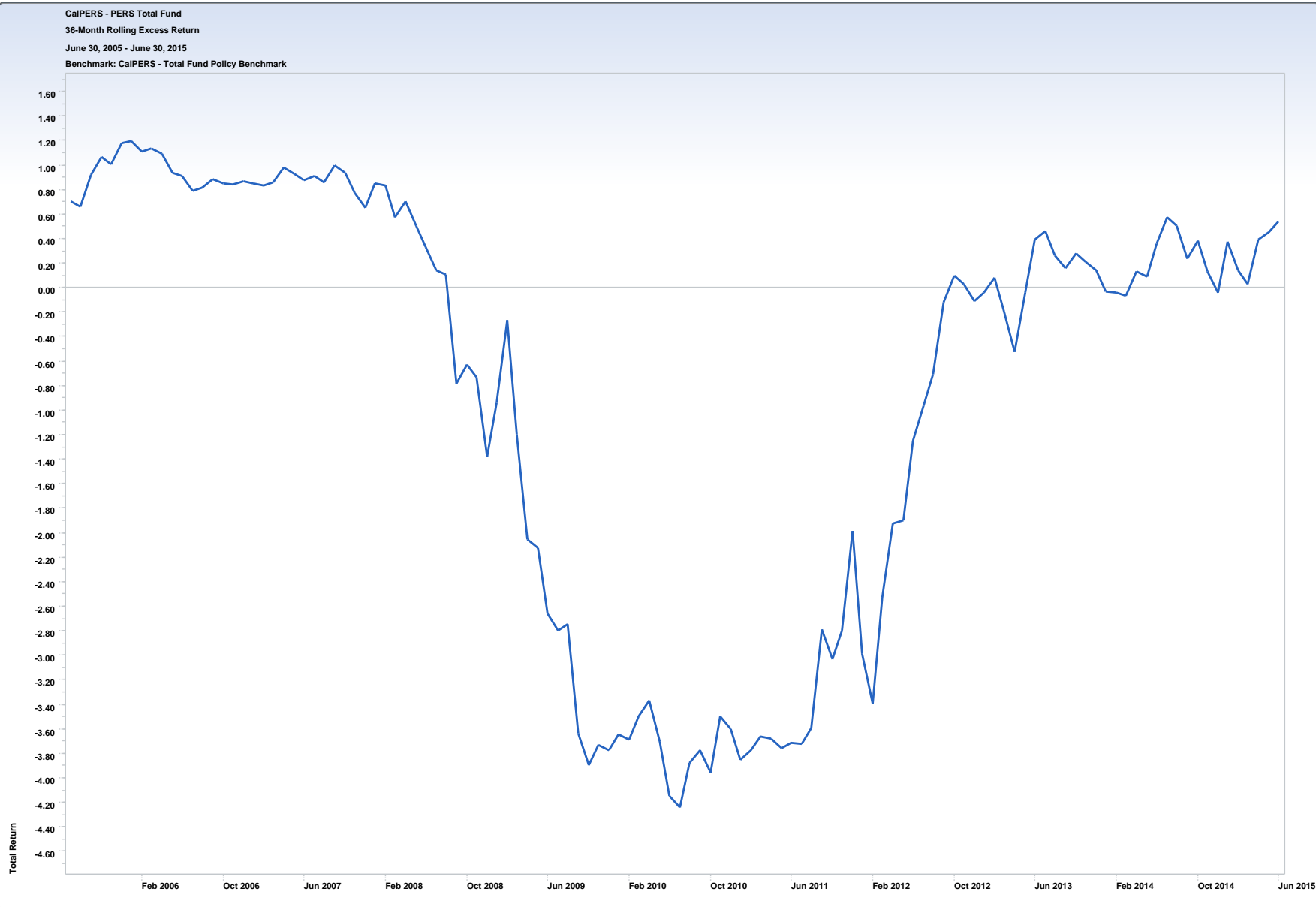
Total Fund – Attribution (Fiscal YTD)

California Public Employees' Retirement System
Total Fund Attribution - Fiscal Year-to-Date
As of 6/30/2015

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	63.51	2.23	61.00	2.92	2.51	-0.68	-0.05	-0.02	-0.39	-0.47
Public Equity	53.38	1.01	51.00	1.32	2.38	-0.31	-0.06	-0.01	-0.16	-0.23
Private Equity	10.13	8.92	10.00	11.14	0.13	-2.21	0.01	-0.02	-0.23	-0.24
Income	18.05	1.32	19.00	0.40	-0.95	0.93	-0.02	-0.01	0.17	0.15
Real Assets	9.99	12.42	12.00	11.52	-2.01	0.90	-0.20	-0.03	0.13	-0.10
Inflation	5.02	-11.49	6.00	-12.96	-0.98	1.47	0.14	-0.01	0.10	0.23
Absolute Return	1.34	7.25	0.00	5.26	1.34	2.00	0.04	0.01	0.00	0.06
Liquidity	2.08	0.91	2.00	1.68	0.08	-0.77	0.00	0.00	-0.02	-0.02
Monthly Linked Return	100.00	2.36	100.00	2.50		-0.14	-0.10	-0.06	-0.01	-0.14
Trading/Hedging/Other		0.05		0.00		0.05				0.05
Total		2.41		2.50		-0.09				-0.09

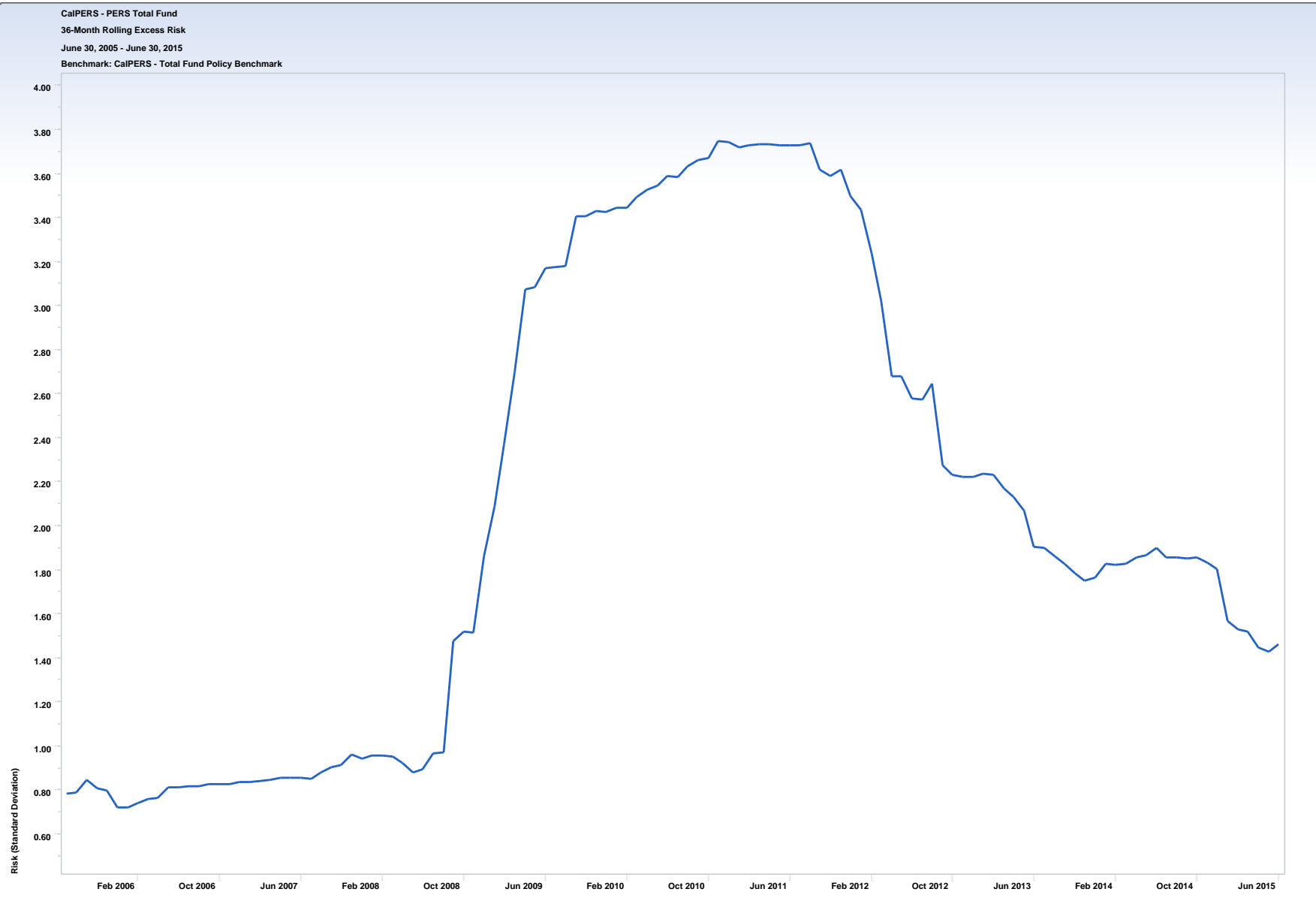


Total Fund – Rolling Excess Returns





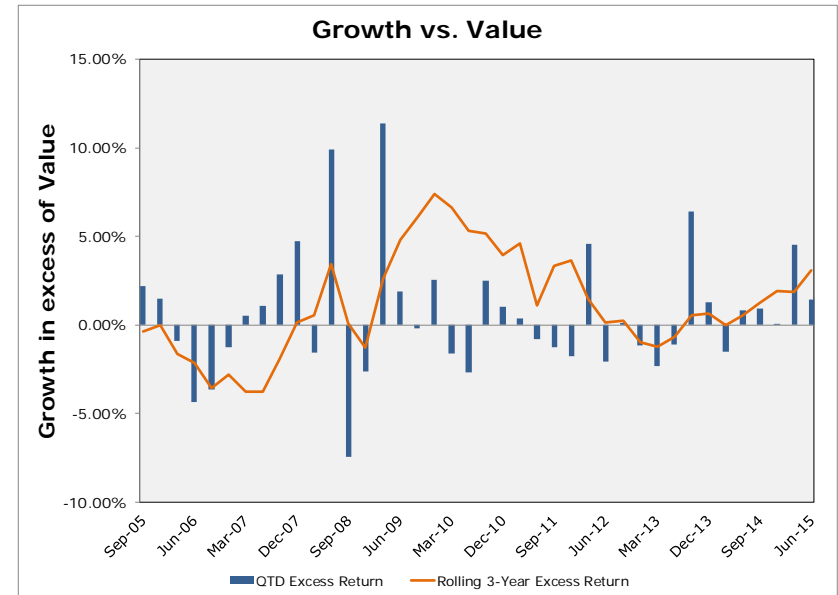
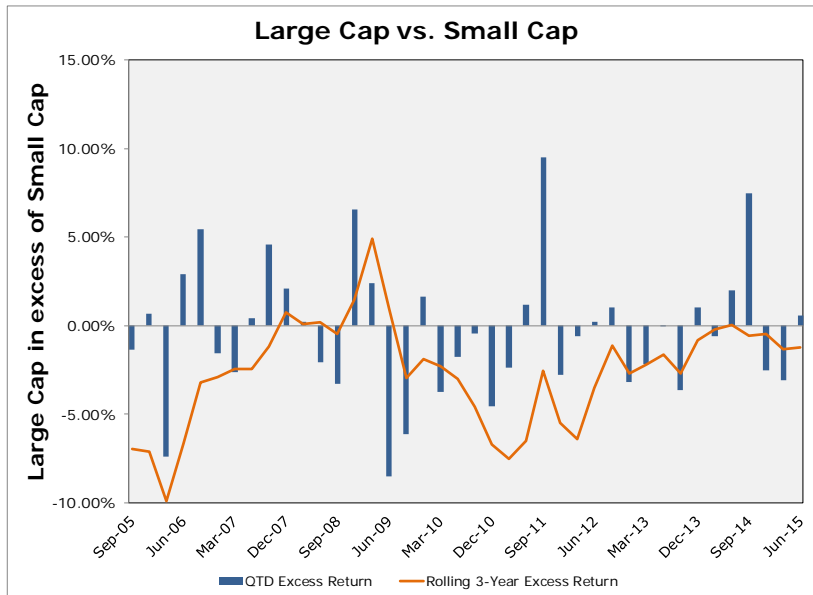
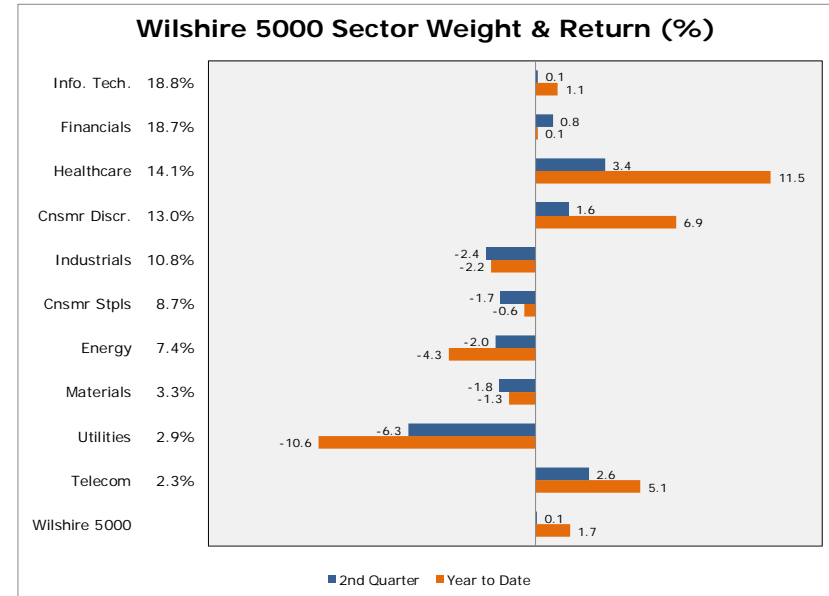
Total Fund – Rolling Tracking Error



U.S. Equity Market



June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Wilshire 5000	0.1	1.7	7.1	17.5	17.3	8.2
Wilshire U.S. Large Cap	0.1	1.4	7.3	17.3	17.2	8.0
Wilshire U.S. Small Cap	-0.5	4.0	5.1	18.7	18.2	9.9
Wilshire U.S. Large Growth	0.7	4.5	11.5	19.3	18.7	9.2
Wilshire U.S. Large Value	-0.5	-1.4	3.7	15.6	16.0	6.8
Wilshire U.S. Small Growth	1.1	6.9	6.5	20.0	19.4	10.7
Wilshire U.S. Small Value	-1.9	1.5	3.8	17.5	16.9	9.1
Wilshire REIT Index	-9.9	-5.7	5.2	9.0	14.7	6.9
MSCI USA Minimum Volatility Index	-1.9	0.3	9.9	13.5	16.1	7.4
FTSE RAFI U.S. 1000 Index	-0.1	0.2	4.8	18.5	17.4	9.0

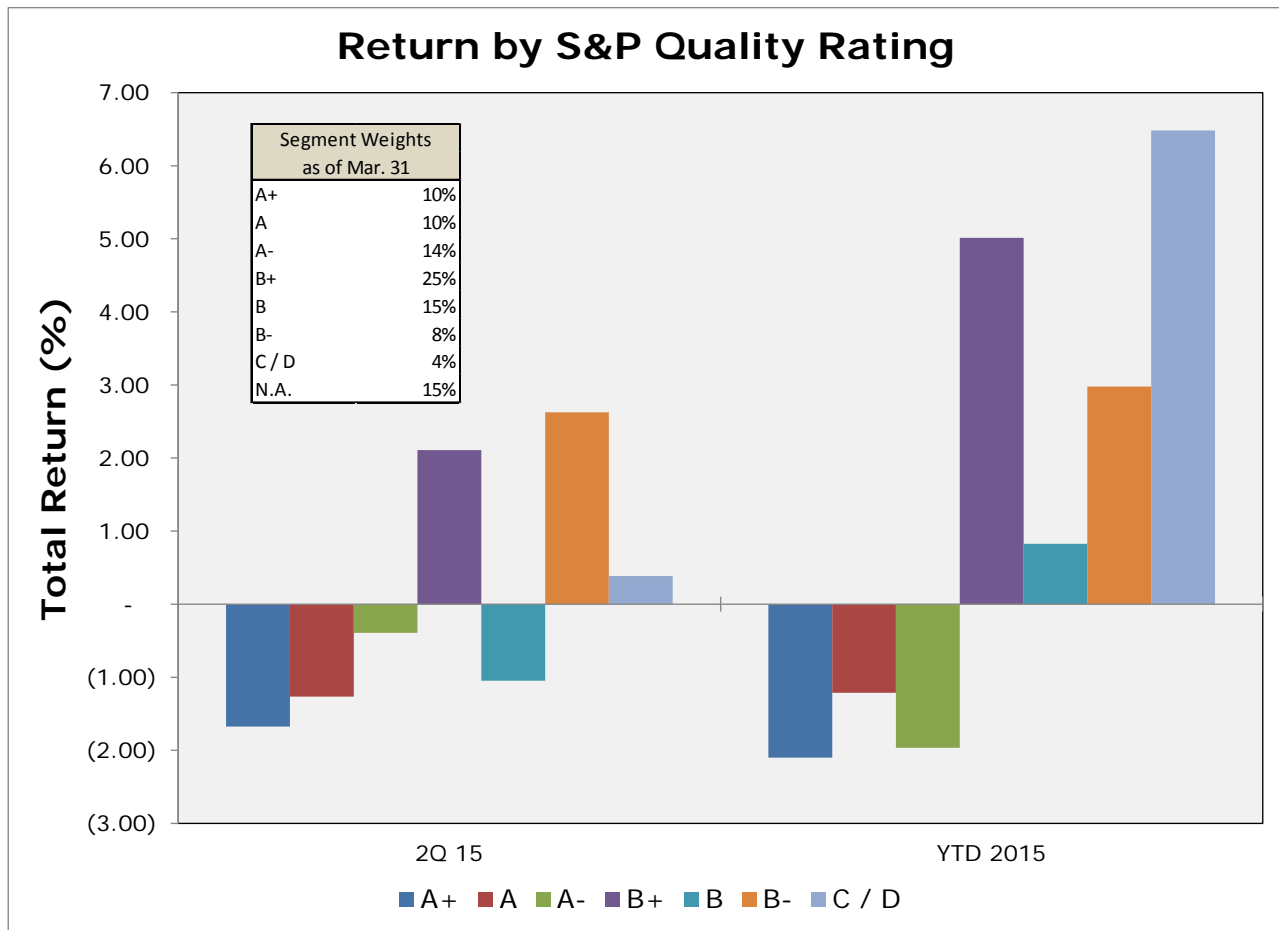


Data sources: Wilshire Compass, Wilshire Atlas



Returns by Quality Segment

Middle and lower rated securities have been carrying the market during 2015

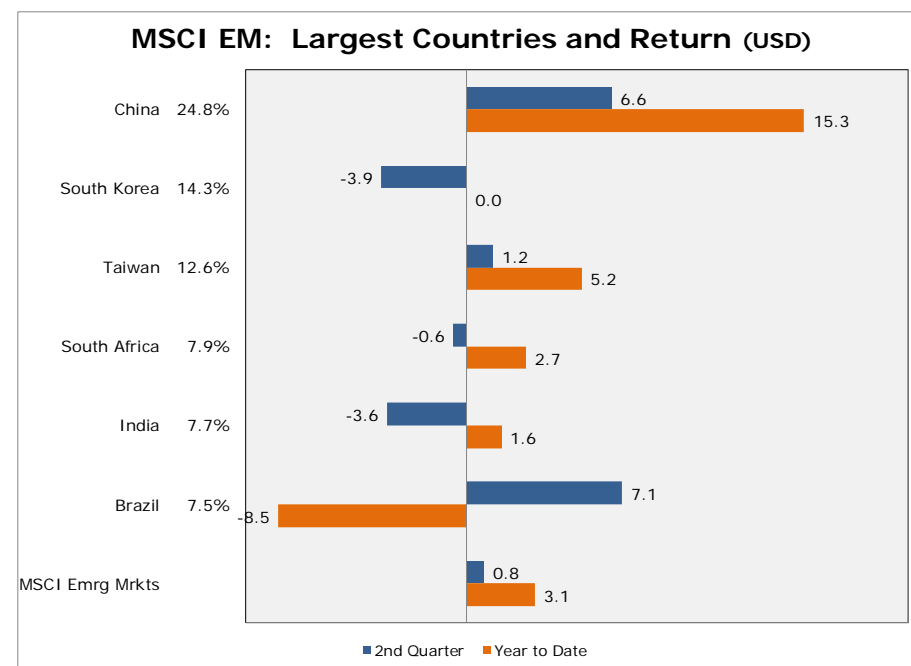
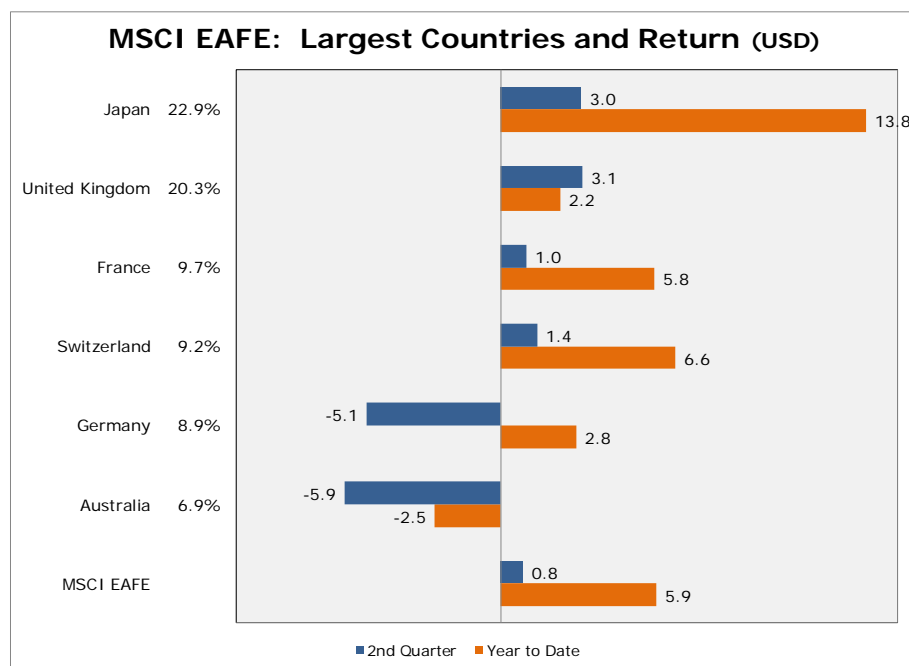


Data sources: Wilshire Atlas



Non-U.S. Equity Market

June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
MSCI ACWI ex-US (\$g)	0.7	4.3	-4.8	9.9	8.2	6.0
MSCI EAFE (\$g)	0.8	5.9	-3.8	12.4	10.0	5.6
MSCI Emerging Markets (\$g)	0.8	3.1	-4.8	4.1	4.0	8.5
MSCI Frontier Markets (\$g)	0.1	-2.8	-13.6	13.4	7.7	0.9
MSCI ACWI ex-US Growth (\$g)	0.7	5.7	-1.7	10.5	8.8	6.4
MSCI ACWI ex-US Value (\$g)	0.7	3.0	-8.0	9.3	7.6	5.6
MSCI ACWI ex-US Small (\$g)	4.4	8.5	-2.7	12.7	10.1	7.8
MSCI EAFE Minimum Volatility Idx	0.7	7.2	3.2	12.4	11.2	8.0
FTSE RAFI Developed ex-US Index	0.9	4.4	-6.9	12.9	9.2	6.2
MSCI EAFE LC (g)	-1.6	9.2	12.2	18.6	11.8	5.9
MSCI Emerging Markets LC (g)	0.8	5.8	6.6	9.0	7.3	10.1

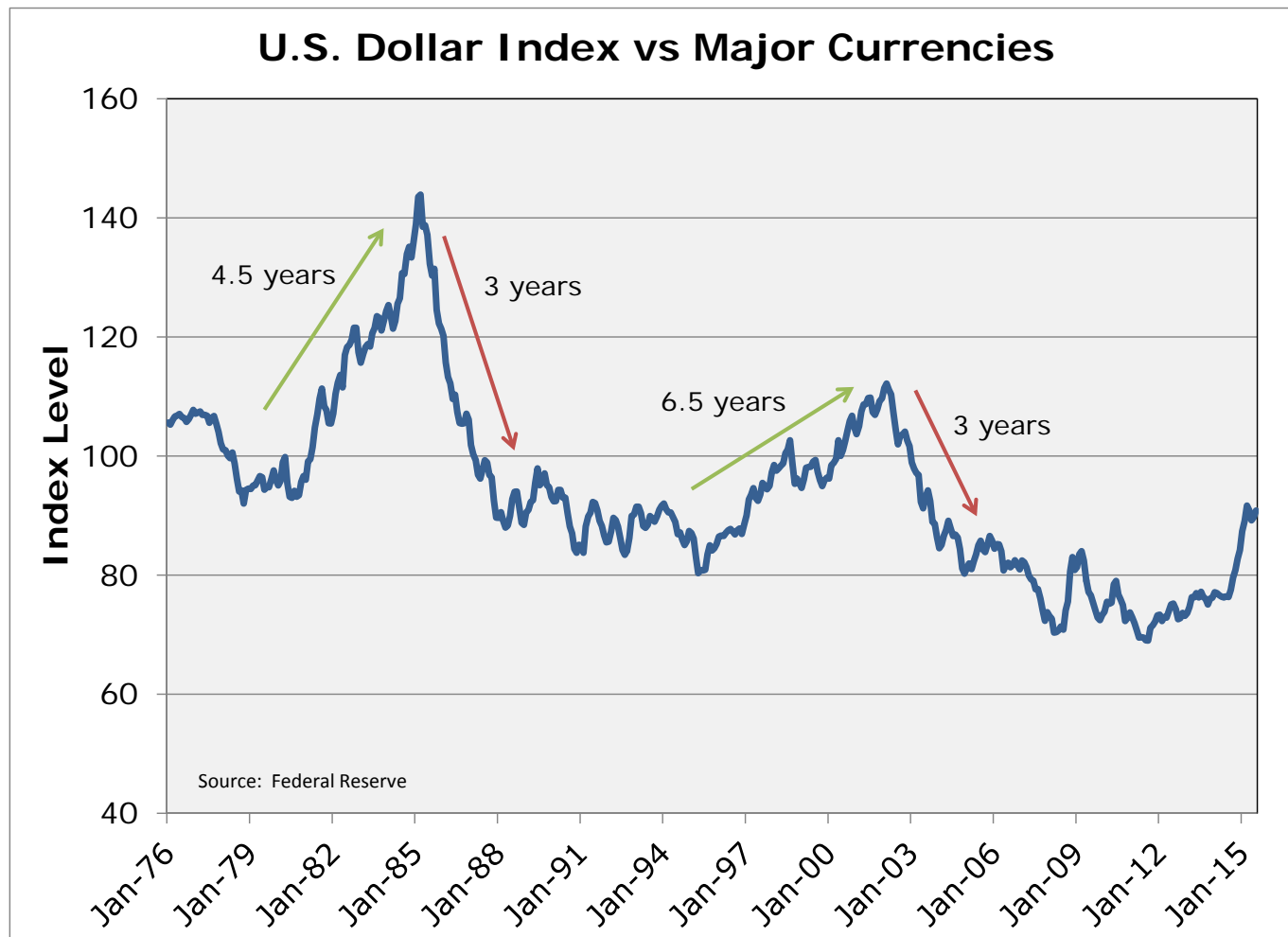


Data sources: Wilshire Compass

U.S. Dollar



- Strengthening dollar moderated during Q2; in fact, developed market equities were aided by currency effects during the quarter
- Note that the dollar is down, in aggregate, during the nearly 40 year period below



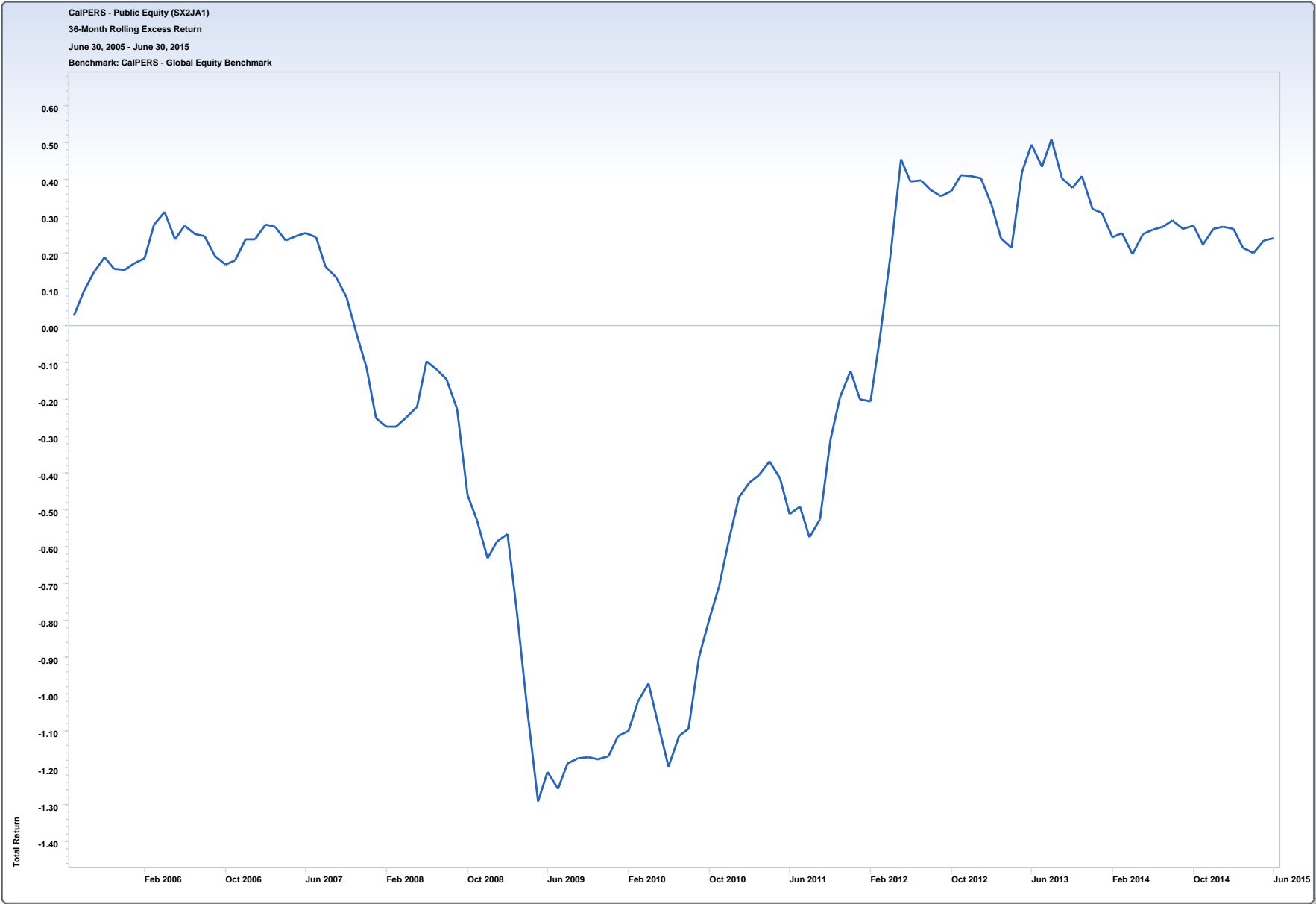
Source: Federal Reserve

Growth: Public Equity – Performance

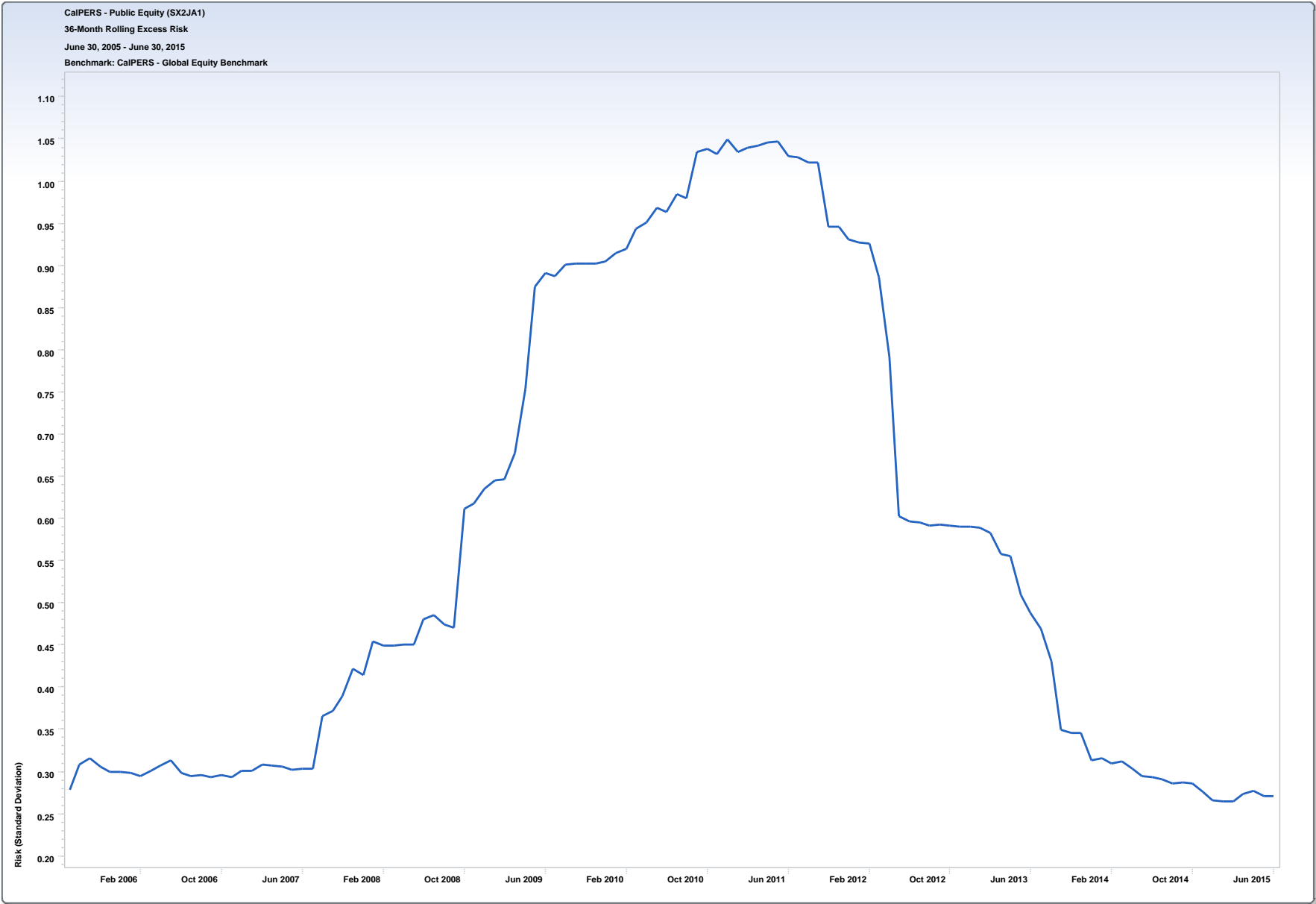


	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
PUBLIC EQUITY	162.6	0.5%	1.0%	14.5%	12.9%	6.6%	\$32.8 bil	0.9	0.8
<i>Public Equity Policy Benchmark</i>		0.6%	1.3%	14.2%	12.5%	6.9%		0.9	0.0
<i>Value Added</i>		-0.1%	-0.3%	0.3%	0.4%	-0.3%			
US Equity Composite	86.5	0.0%	6.4%	18.2%	17.5%	8.1%		1.4	0.1
<i>Custom US Equity Benchmark</i>		0.1%	6.7%	17.8%	17.4%	8.1%		1.4	0.0
<i>Value Added</i>		-0.1%	-0.3%	0.4%	0.1%	0.0%			
Total Int'l Equity	76.0	1.1%	-4.4%	10.9%	8.7%	6.1%		0.6	-0.2
<i>Custom Int'l Equity Benchmark</i>		1.2%	-3.6%	11.3%	9.0%	5.9%		0.6	0.0
<i>Value Added</i>		-0.1%	-0.8%	-0.4%	-0.3%	0.2%			

Growth: Public Equity – Rolling Excess Returns

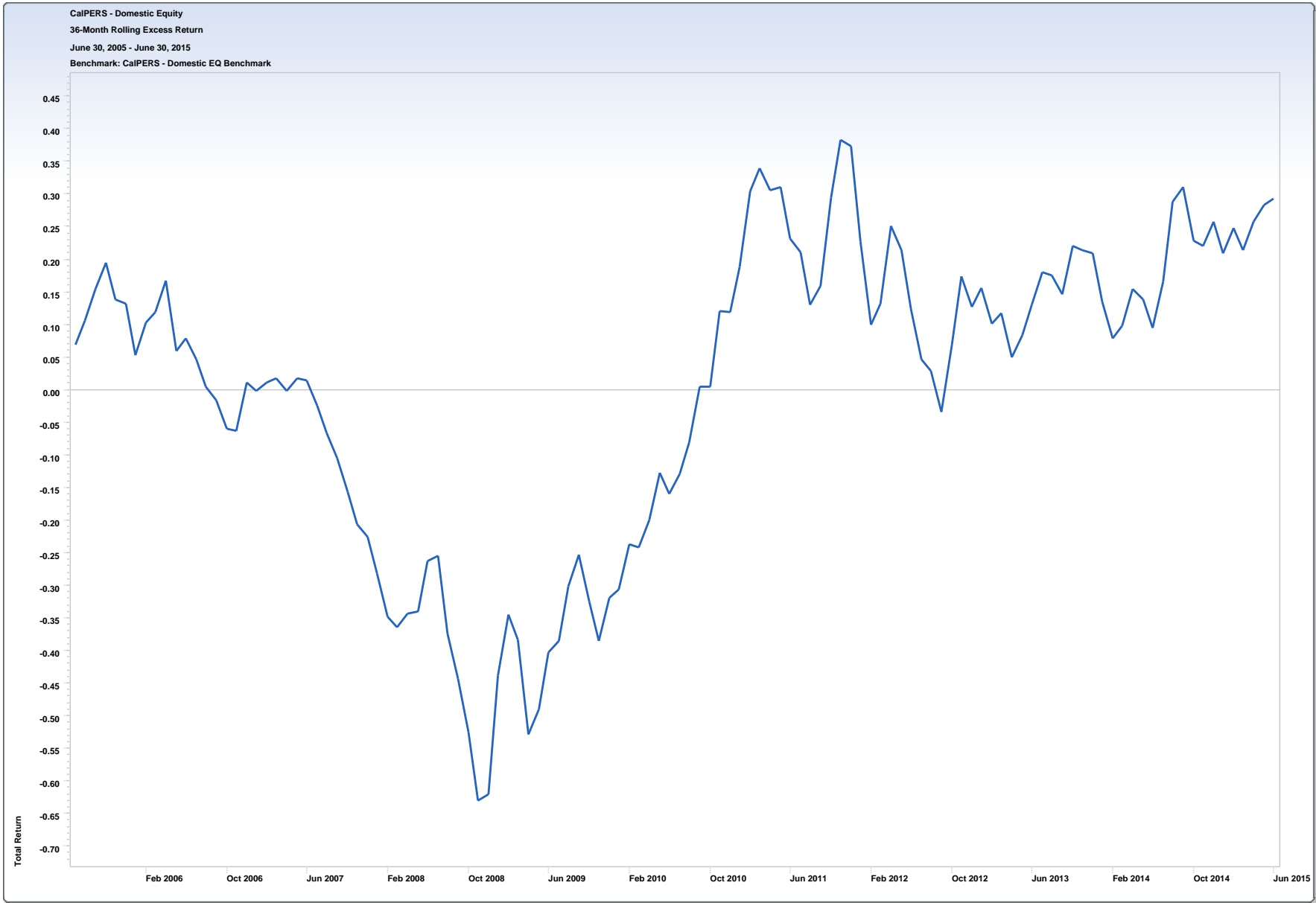


Growth: Public Equity – Rolling Tracking Error



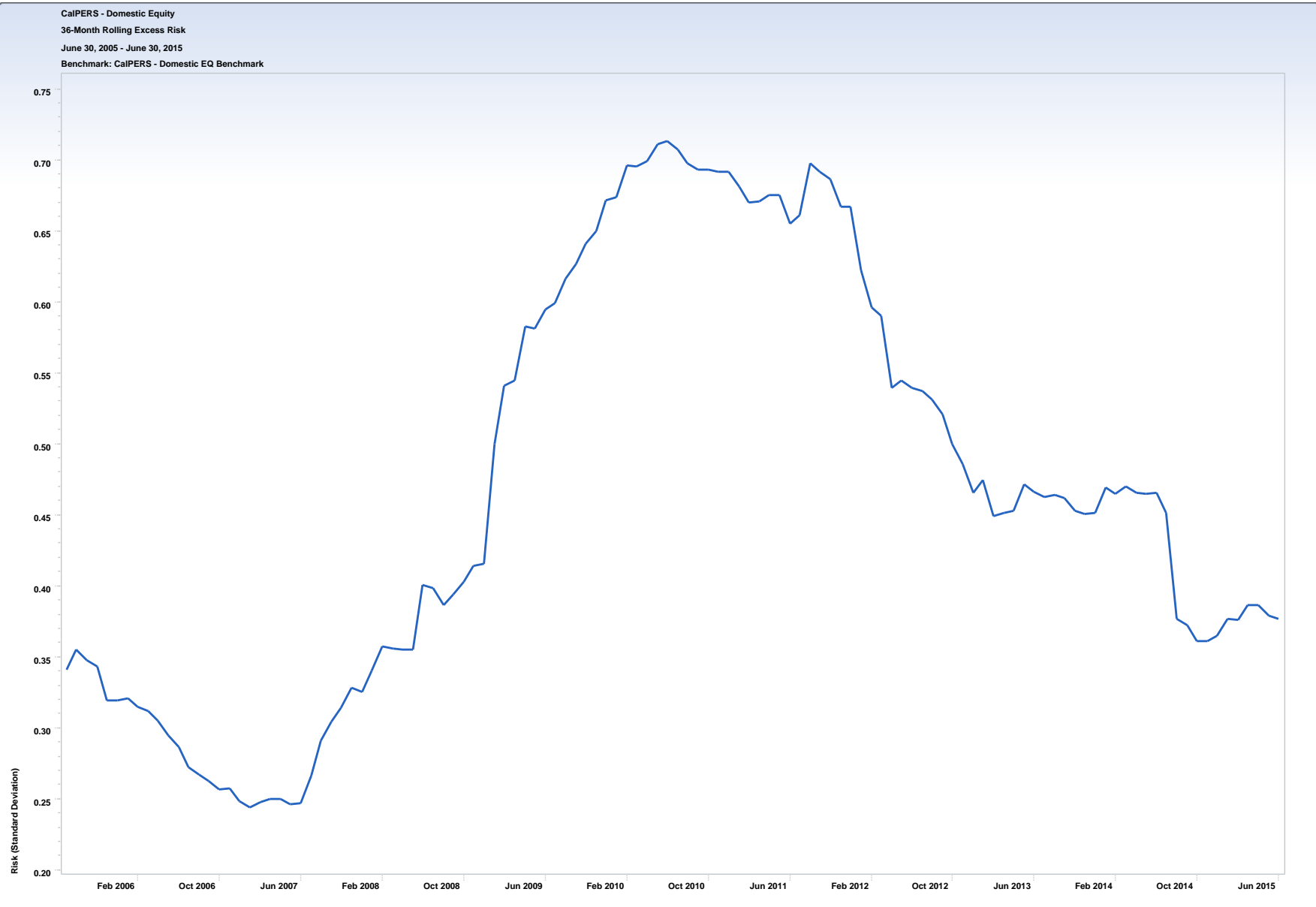


Growth: US Equity – Rolling Excess Returns





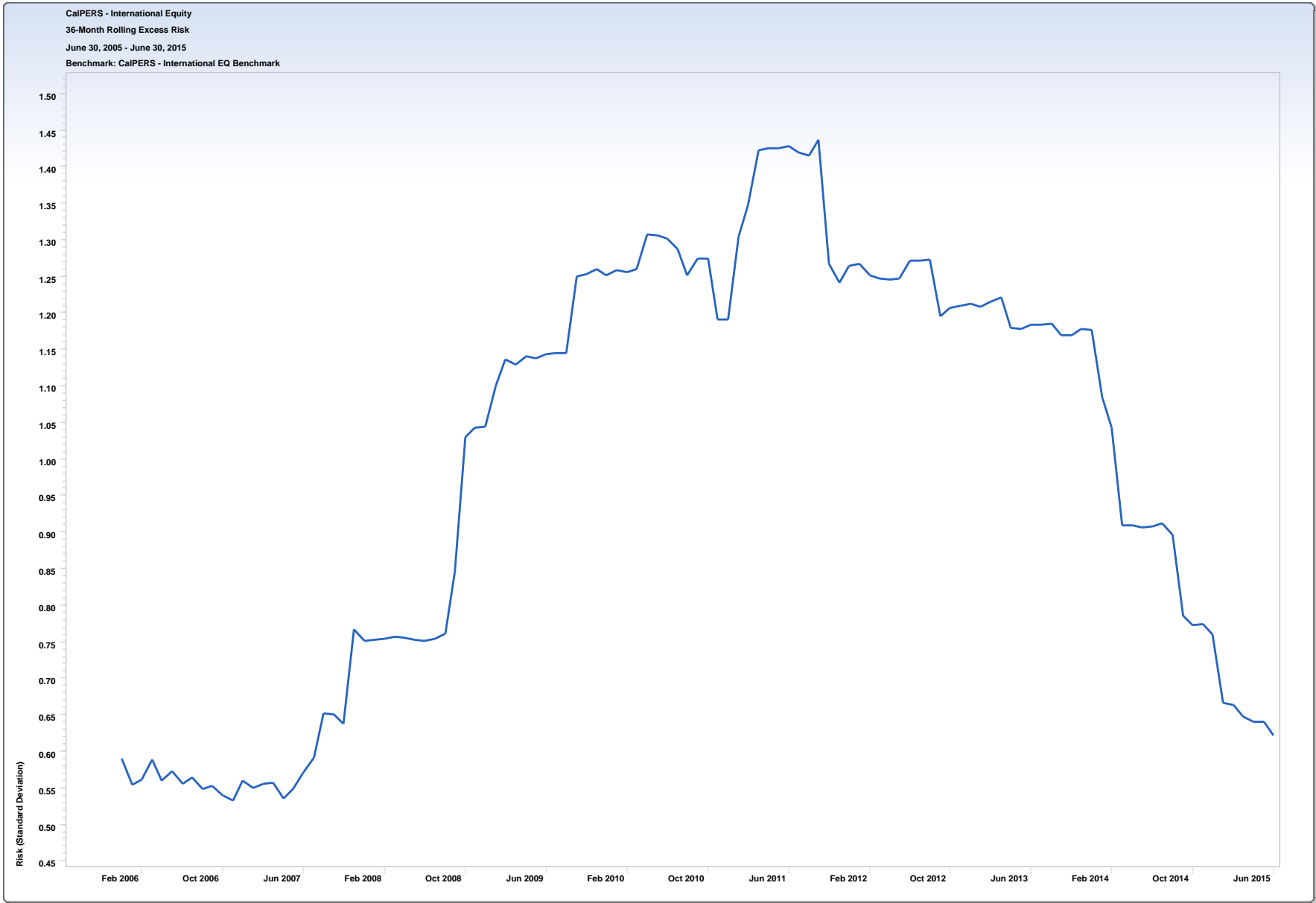
Growth: US Equity – Rolling Tracking Error



Growth: International Equity – Rolling Excess Returns



Growth: International Equity – Rolling Tracking Error



Growth: Corporate Governance/MDP/FoF

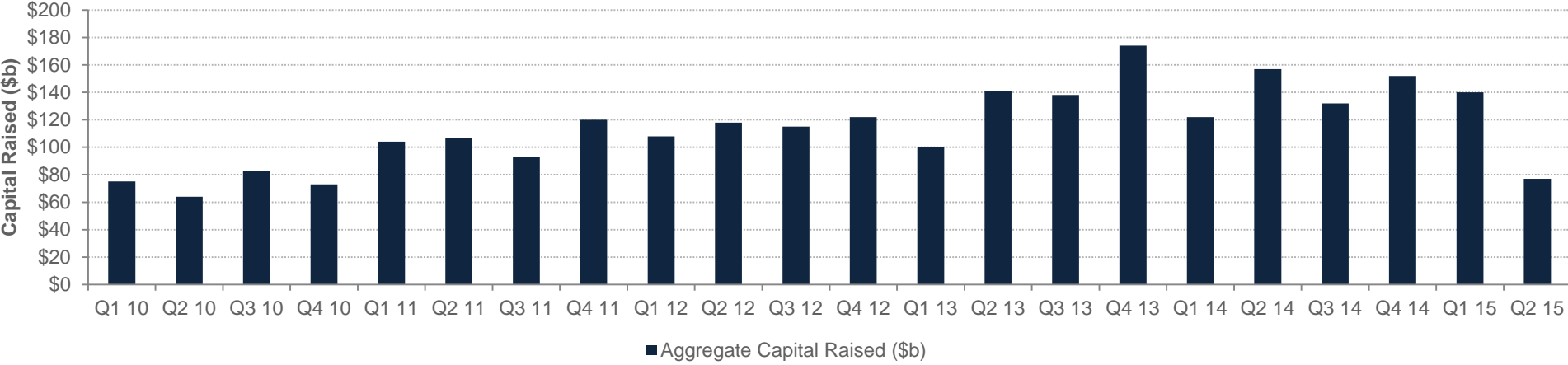


	<u>Market</u> <u>Value</u>	<u>Qtr</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10-Year</u>	<u>Date</u>
Total Corporate Governance	2.7	0.1%	-0.6%	16.6%	12.1%	5.3%	12/98
<i>Policy Benchmark</i>		2.7%	12.7%	18.3%	14.4%	6.9%	
<i>Value Added</i>		-2.6%	-13.3%	-1.7%	-2.3%	-1.6%	
Total MDP	0.5	-0.2%	1.5%	14.8%	13.6%	6.6%	6/00
<i>Policy Benchmark</i>		0.5%	2.7%	15.2%	13.6%	7.6%	
<i>Value Added</i>		-0.7%	-1.2%	-0.4%	0.0%	-1.0%	
Total FoF	0.2	2.8%	3.8%	14.7%	14.4%	-.-%	3/08
<i>Policy Benchmark</i>		1.6%	2.9%	14.4%	14.0%	-.-%	
<i>Value Added</i>		1.2%	0.9%	0.3%	0.4%	-.-%	

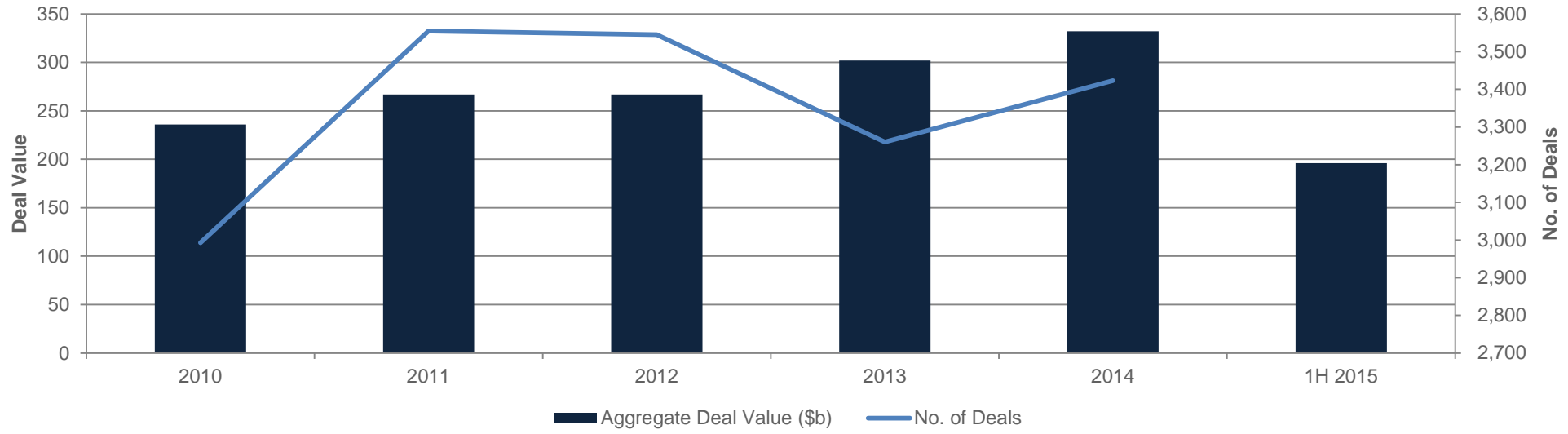
Private Equity – Fundraising & Investment Activity



Global Private Equity Fundraising (Q1 2010 – Q2 2015)



Global Private Equity-Backed Buyout Activity (2010 – Q2 2015)

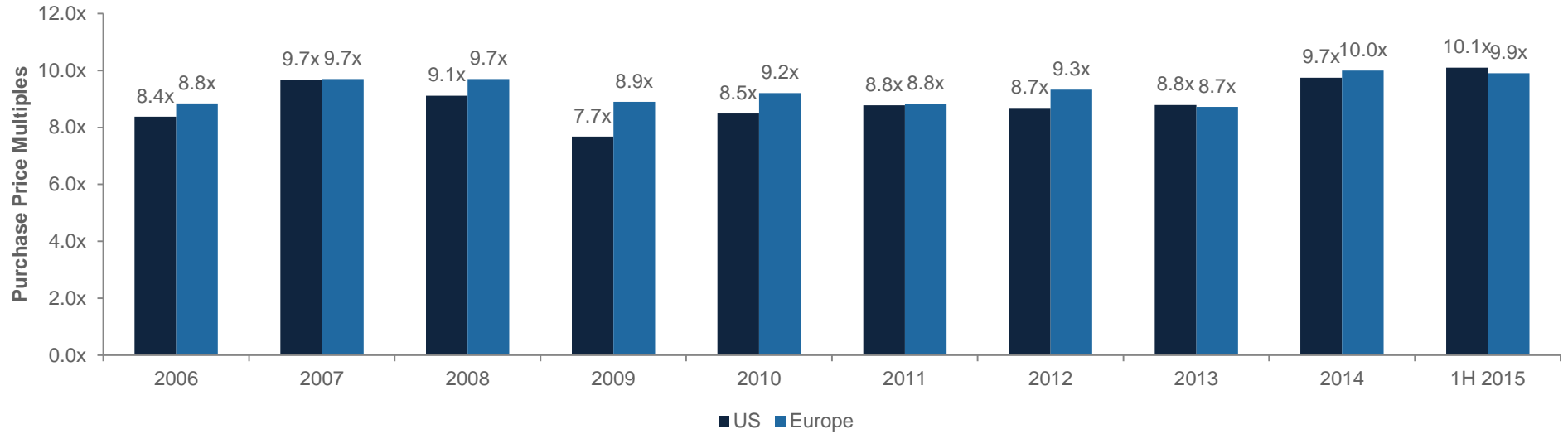


Sources: Preqin.

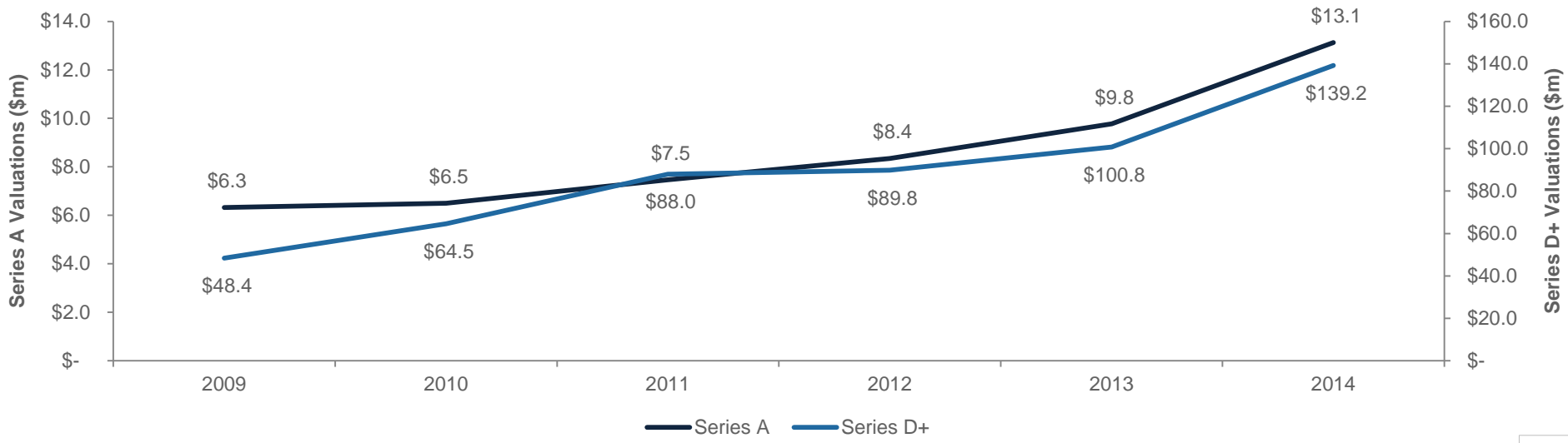


Private Equity – Pricing & Valuations

Global LBO Multiples (2006 – Q2 2015)



U.S. Venture Capital Median Pre-Money Valuations (2009 – 2014)

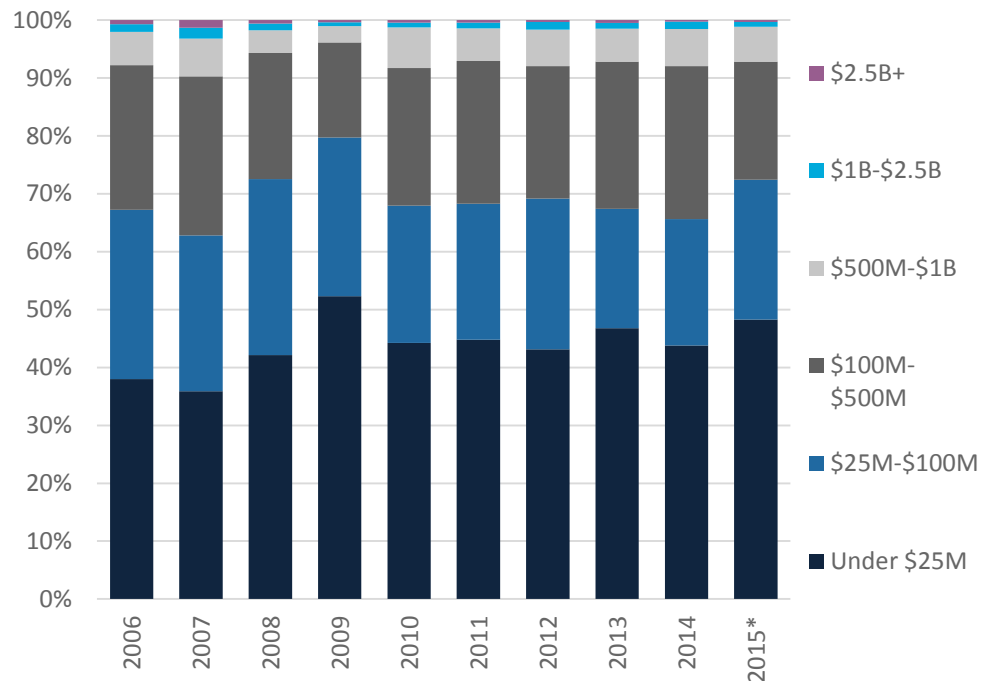


Source: S&P LCD; Pitchbook.

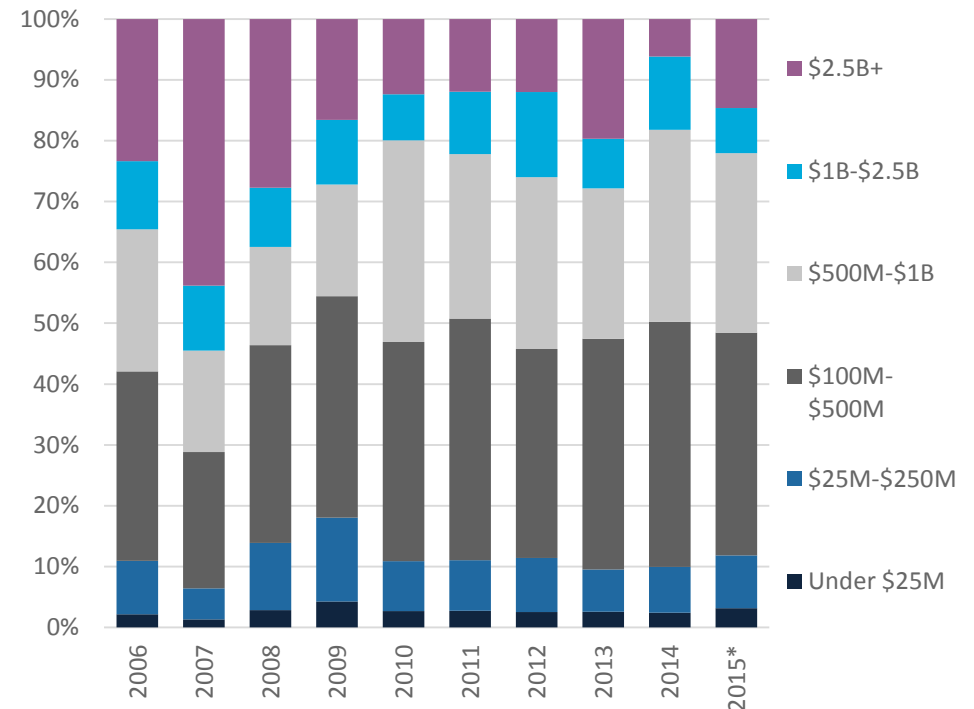
Private Equity – U.S. Investment Activity by Deal Size



Percentage of Deal Volume (count) by Deal Size



Percentage of Deal Volume (dollars) by Deal Size

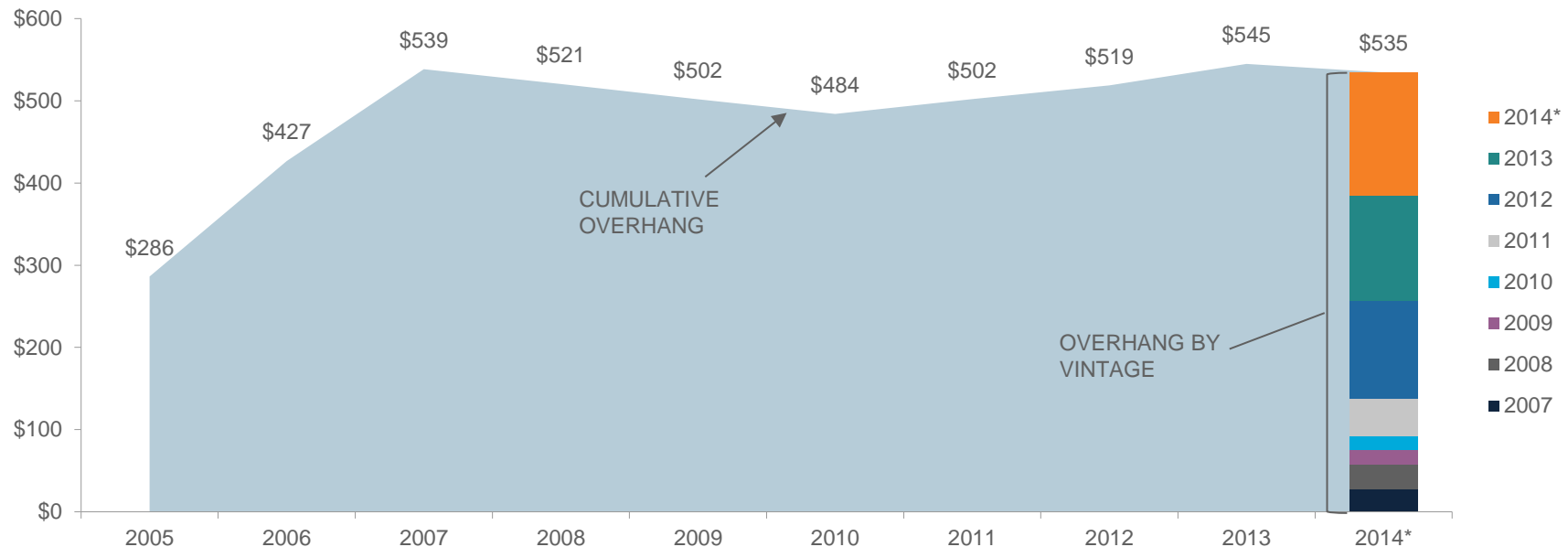


- Smaller deals continue to dominant deal activity by count
- Relatively more mega transaction (\$2.5b+) volume in 1H 2015

Private Equity – Capital Overhang



Cumulative Vintage Year Overhang

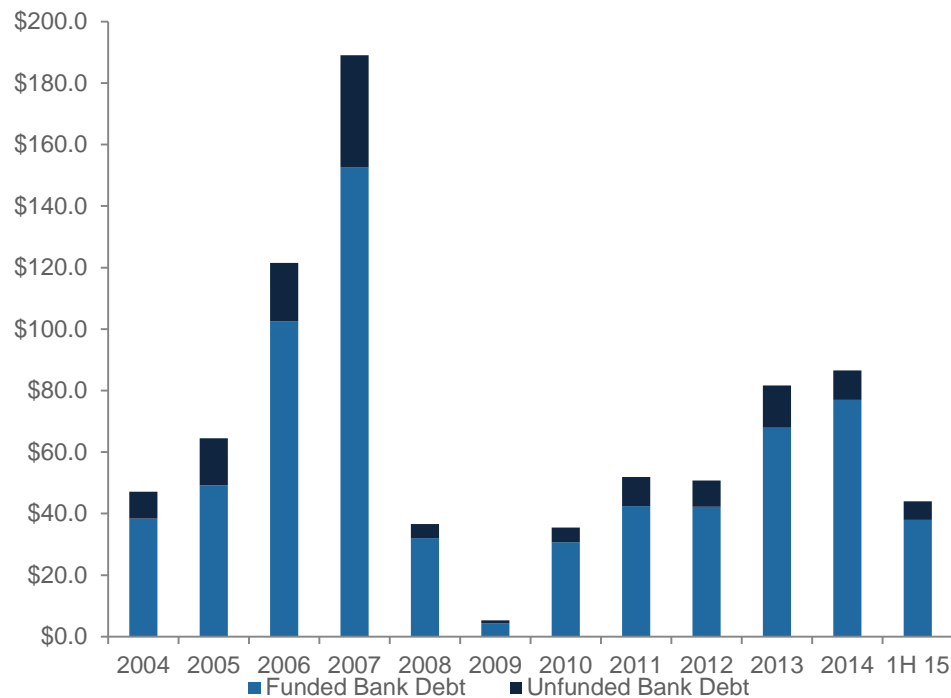


- Total private equity overhang significantly grew to an estimated \$539 billion during the run-up to the financial crisis
- While the overhang slightly decreased across 2007 through 2010, the overhang has steadily increased over the last few years to a near-peak level

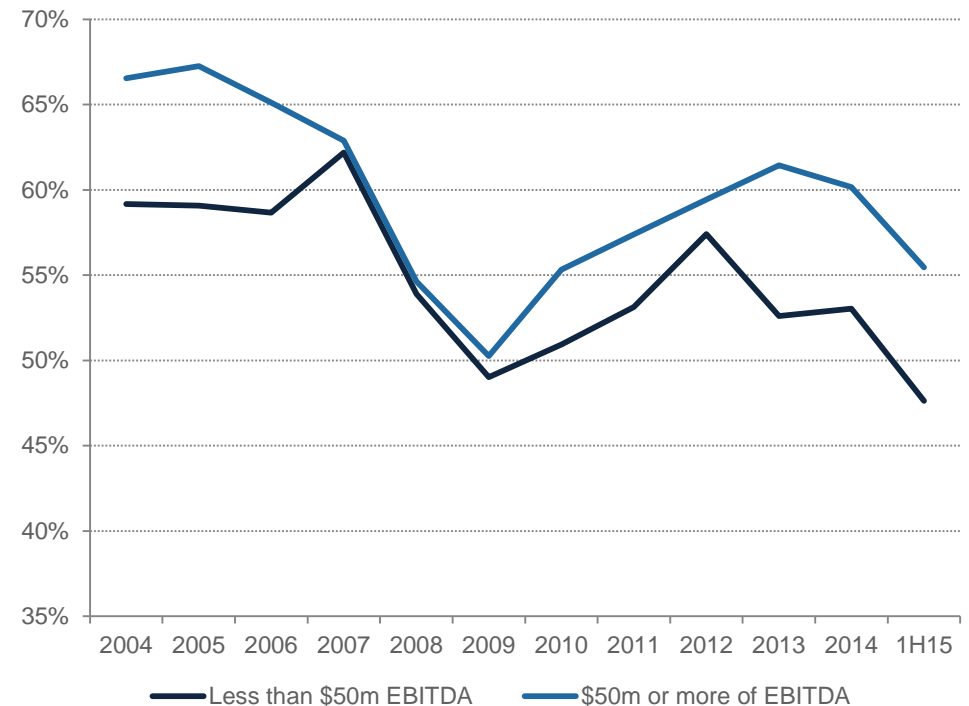
Private Equity – U.S. Debt Markets



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



Percentage of Debt Used in Buyouts

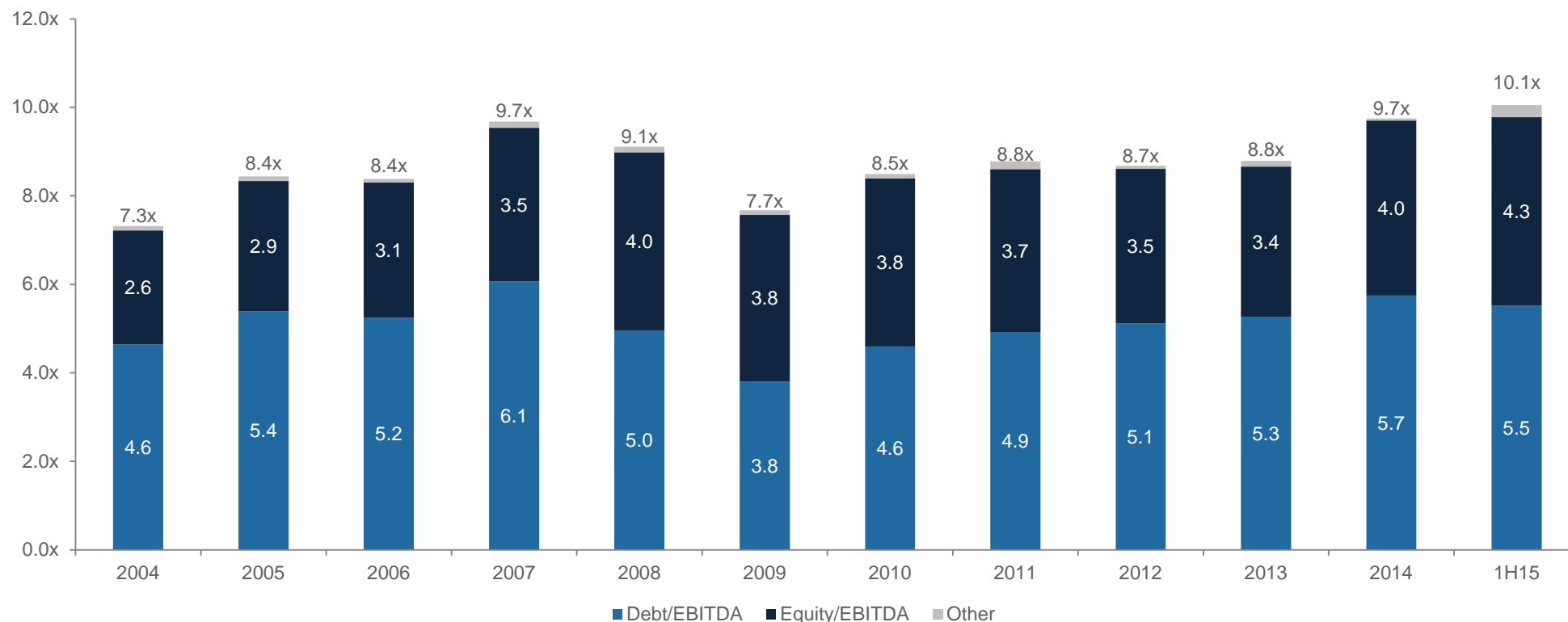


- The amount of capital available for leverage has gone down significantly since its peak volume in 2007, but continues to climb from the historically low levels in 2009
- Historically, middle-market transactions apply less leverage than large cap deals

Private Equity – U.S. LBO Purchase Price Multiples



Purchase Price Multiples of U.S. LBO Transactions



- As the debt markets have come back, purchase price multiples have increased from the low point in 2009
- Pricing in 1H 2015 is above the peak level in 2007

Growth: Private Equity – Performance



	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
PRIVATE EQUITY	29.0	4.6%	8.9%	14.1%	14.4%	11.9%	\$9.5 bil	3.0	0.0
<i>PE Policy Benchmark</i>		3.2%	11.1%	16.7%	15.0%	14.9%		1.1	0.0
<i>Value Added</i>		1.4%	-2.2%	-2.6%	-0.6%	-3.0%			
Private Equity Partnership Investments	28.9	4.6%	8.9%	14.1%	14.5%	12.0%			
Private Equity Distribution Stock	0.0	-3.6%	-19.8%	-19.7%	-15.5%	-4.1%			

Growth: Private Equity – Rolling Excess Returns



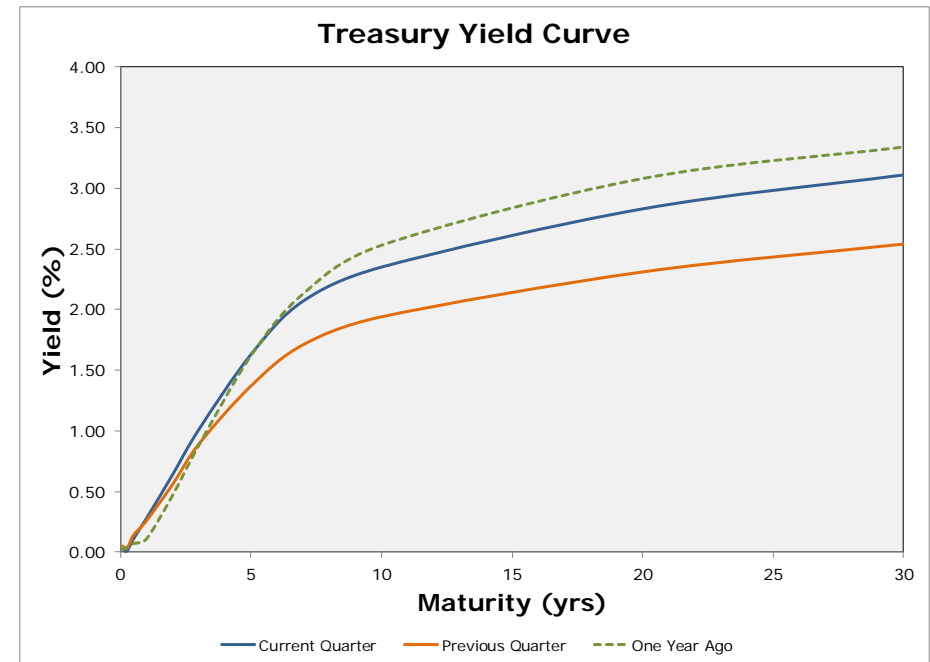
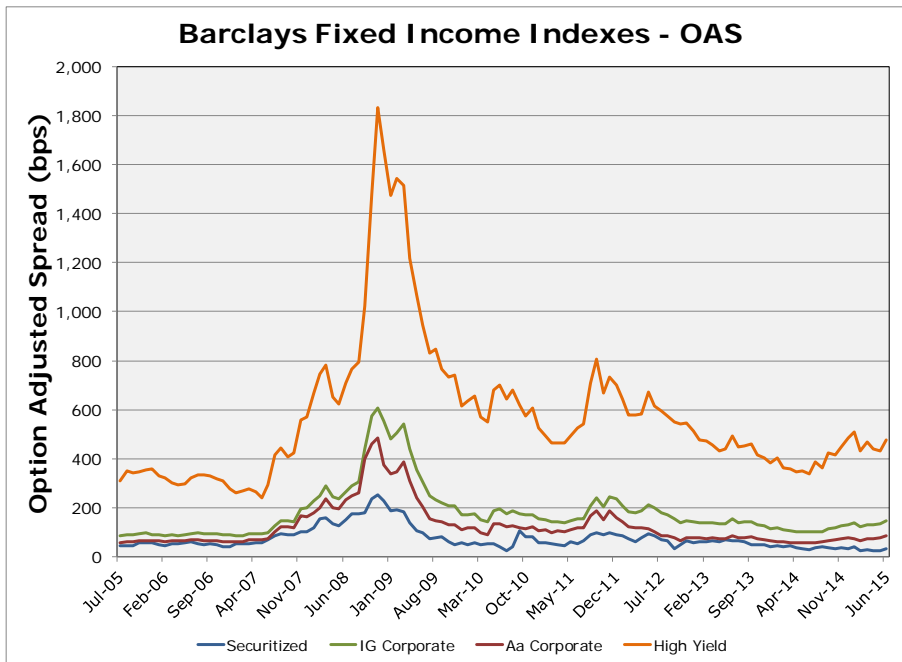
Growth: Private Equity – Rolling Tracking Error





U.S. Fixed Income Market

June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays Aggregate Bond Index	-1.7	-0.1	1.9	1.8	3.3	4.4
Barclays Treasury Index	-1.6	0.0	2.3	0.9	2.7	4.1
Barclays Gov't-Related Index	-1.4	0.0	1.7	1.8	3.1	4.3
Barclays Securitized Index	-0.8	0.3	2.2	2.0	3.1	4.5
Barclays Corporate IG Index	-3.2	-0.9	0.8	3.2	5.1	5.2
Barclays LT Govt/Credit Index	-7.6	-4.5	1.9	2.5	6.7	6.1
Barclays LT Treasury Index	-8.3	-4.7	6.3	1.2	6.2	6.2
Barclays LT Govt-Related Index	-5.2	-3.0	2.1	3.1	7.2	6.4
Barclays LT Corporate IG Index	-7.8	-4.7	-0.9	3.5	6.9	5.9
Barclays U.S. TIPS Index	-1.1	0.3	-1.7	-0.8	3.3	4.1
Barclays High Yield Index	0.0	2.5	-0.4	6.8	8.6	7.9
Treasury Bills	0.0	0.0	0.0	0.1	0.1	1.4

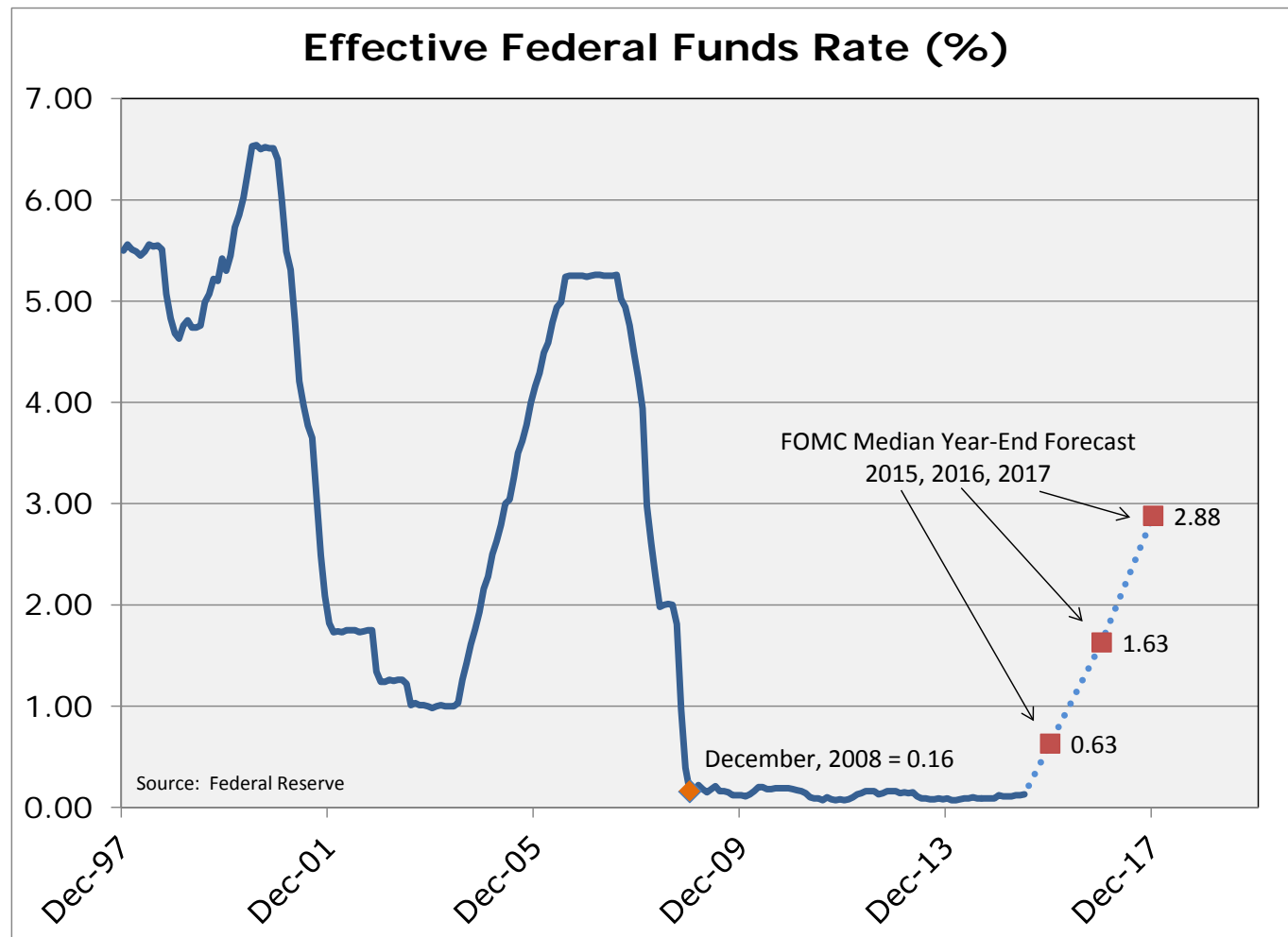


Data sources: Wilshire Compass, Barclays Capital, U.S. Treasury

Federal Reserve



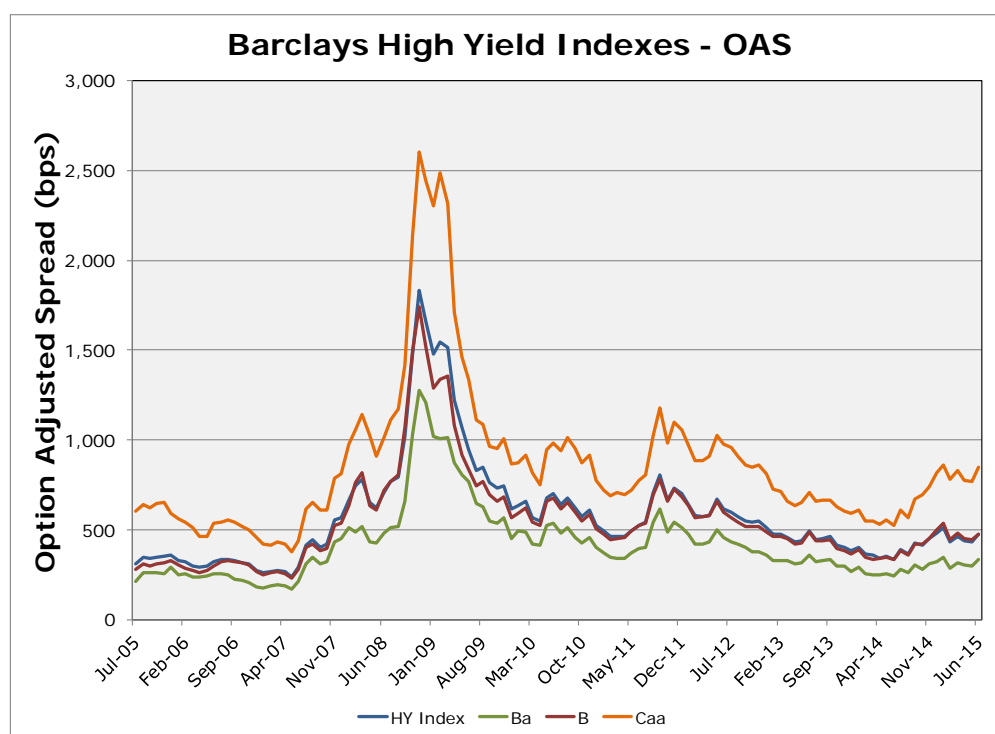
- After 6+ years with the overnight rate near zero, the Federal Open Market Committee (FOMC) seems likely to raise rates
- The pace of future increases depends on a variety of factors



High Yield Bond Market



June 30, 2015	Weight	Qtr	Ytd	1 Yr	3 Yr
Barclays High Yield Index	100%	0.0	2.5	-0.4	6.8
Quality Distribution					
Ba U.S. High Yield	44.1%	-0.4	2.3	1.8	6.7
B U.S. High Yield	40.4%	0.4	3.0	-0.4	6.7
Caa U.S. High Yield	15.1%	0.5	2.5	-4.2	7.7
Ca to D U.S. High Yield	0.3%	-18.8	-21.1	-50.1	-16.0
Non-Rated U.S. High Yield	0.2%	1.9	-2.3	-7.1	6.7



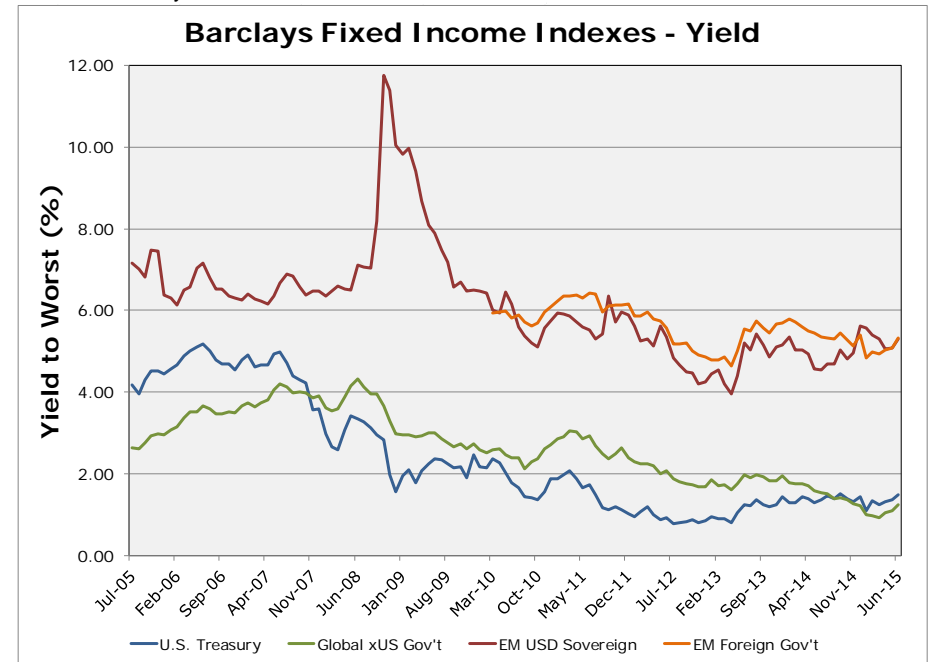
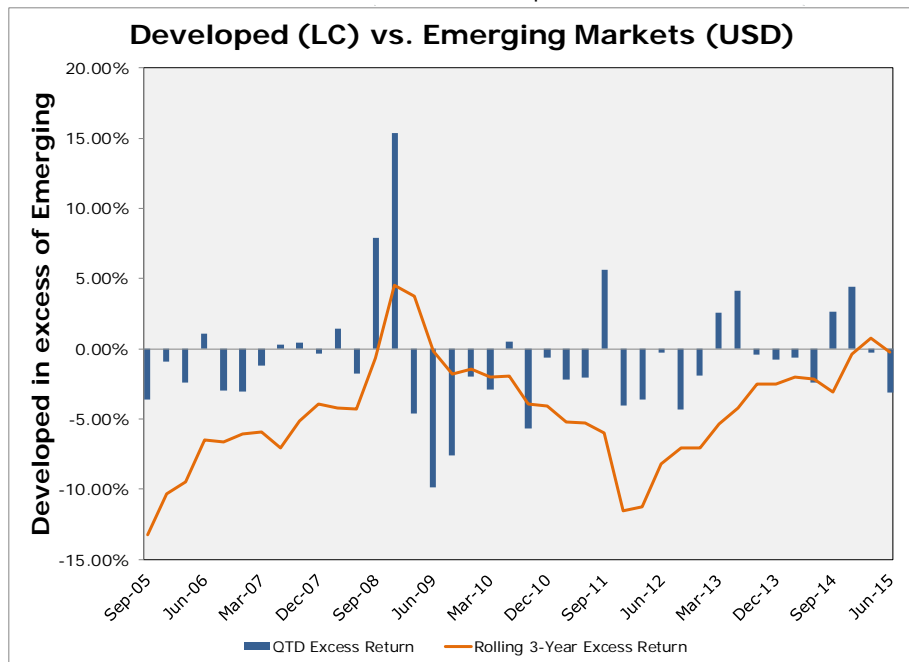
Data sources: Barclays Capital



Non-U.S. Fixed Income Market

June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
<i>Developed Markets</i>						
Barclays Global Aggregate xUS	-0.8	-5.4	-13.2	-2.8	1.1	2.8
Barclays Global Aggregate xUS *	-2.7	-0.7	3.7	4.2	3.9	4.1
Barclays Wrld Govt xUS IL Bond	1.0	-2.4	-4.9	2.0	5.1	4.4
Barclays Wrld Govt xUS IL Bond *	-3.4	0.2	8.5	4.7	5.6	4.8
<i>Emerging Mkts (Hard Currency)</i>						
Barclays EM USD Aggregate	0.5	2.8	0.2	4.4	6.8	7.6
<i>Emerging Mkts (Foreign Currency)</i>						
Barclays EM Local Currency Govt	-0.6	-3.3	-11.4	-0.3	3.1	n.a.
Barclays EM Local Currency Govt *	-1.3	0.1	1.6	2.0	3.0	n.a.
Euro vs. Dollar	3.7	-7.9	-18.6	-4.2	-1.9	-0.9
Yen vs. Dollar	-2.0	-2.0	-17.2	-13.3	-6.3	-1.0
Pound vs. Dollar	5.9	0.9	-8.0	0.1	1.0	-1.3

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

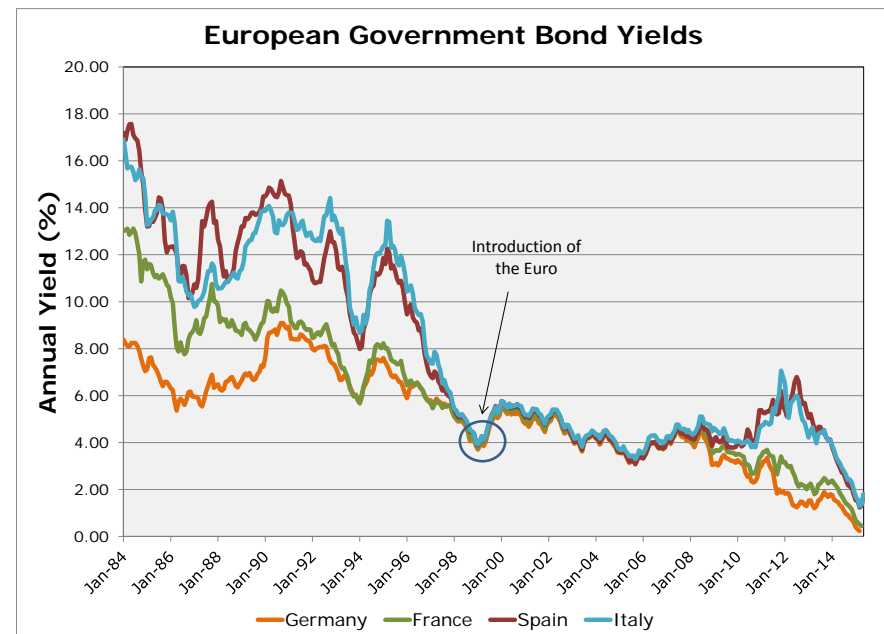
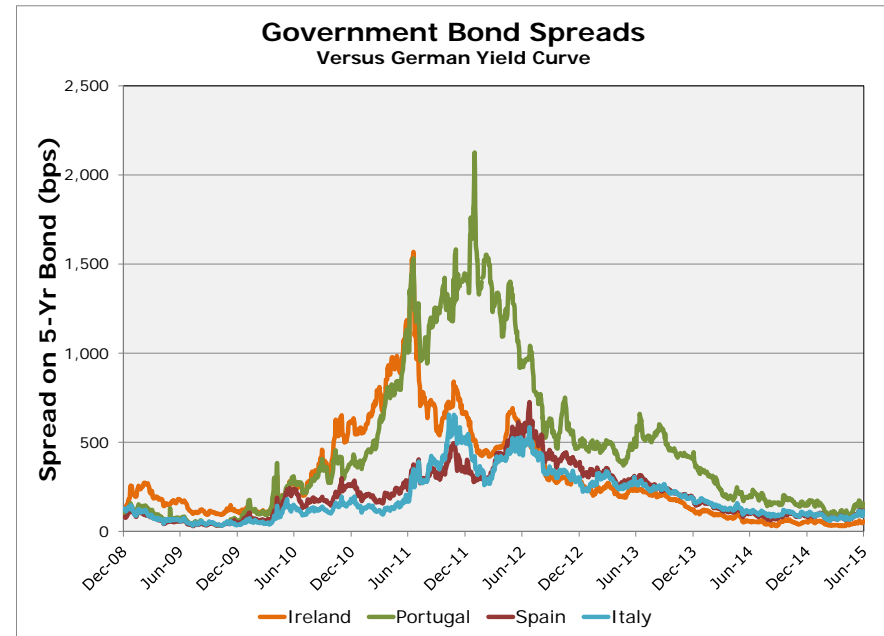


Data sources: Wilshire Compass, Barclays Capital



European Debt Issues

- Events in Greece did not seem to effect bond yields in other European economies to a major degree
- Yields on government bonds in the most dominant European economies, Germany and France, are nearing zero



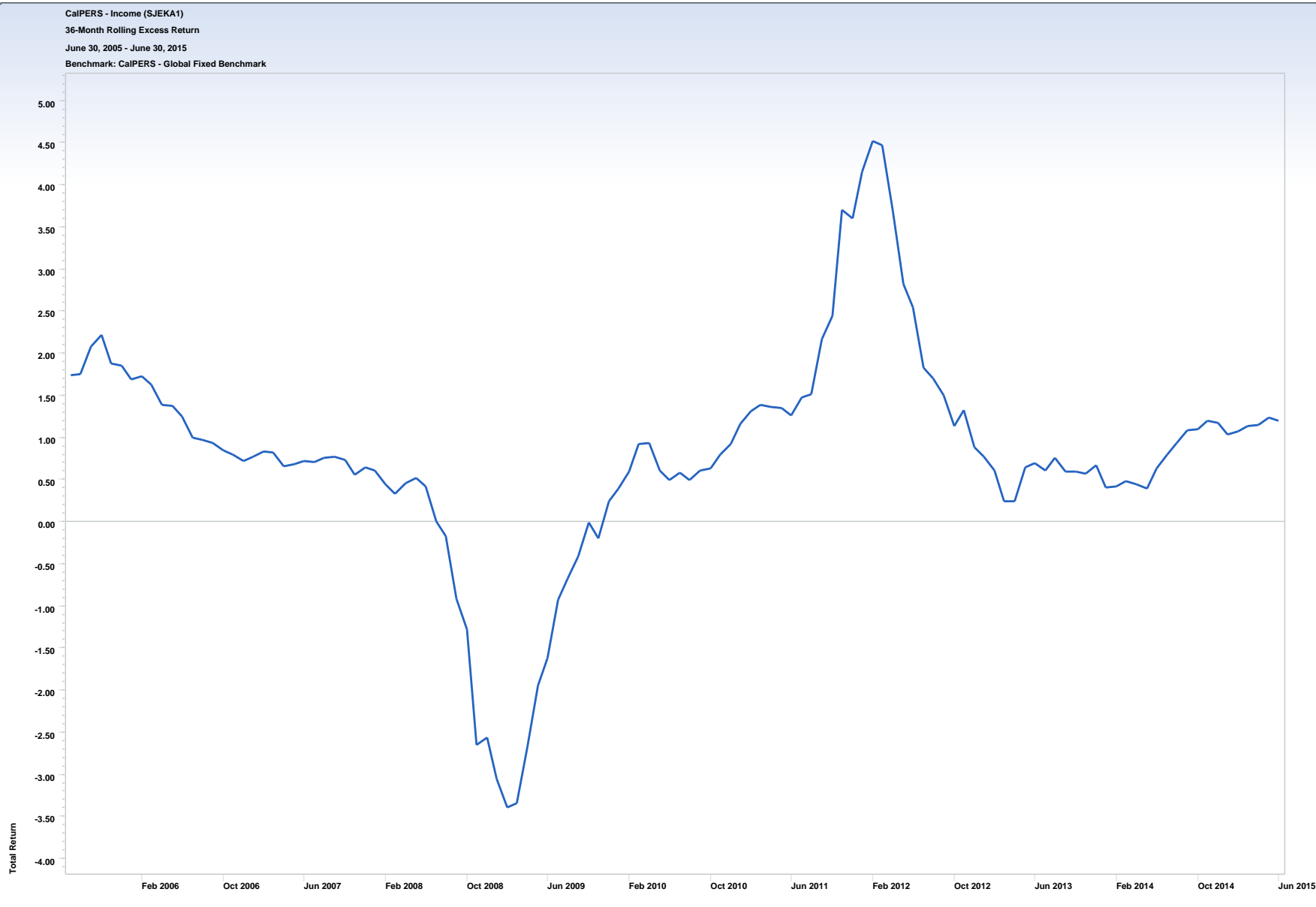


Income – Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
INCOME	53.1	-3.3%	1.3%	2.6%	5.4%	6.1%	\$6.3 bil	1.1	0.9
<i>Income Policy Benchmark</i>		-3.3%	0.4%	1.4%	4.6%	5.3%		0.9	0.0
<i>Value Added</i>		0.0%	0.9%	1.2%	0.8%	0.8%			
U.S. Income	47.9	-3.5%	3.1%	3.3%	5.9%	6.4%		1.2	0.8
<i>U.S. Income Policy Benchmark</i>		-3.7%	2.1%	2.0%	5.1%	5.5%		0.9	0.0
<i>Value Added</i>		0.2%	1.0%	1.3%	0.8%	0.9%			
Non-U.S. Income	5.2	-1.2%	-13.5%	-3.7%	1.2%	3.3%		0.2	1.3
<i>Non-US Income Policy Benchmark</i>		-0.1%	-14.5%	-4.3%	0.1%	2.5%		0.0	0.0
<i>Value Added</i>		-1.1%	1.0%	0.6%	1.1%	0.8%			

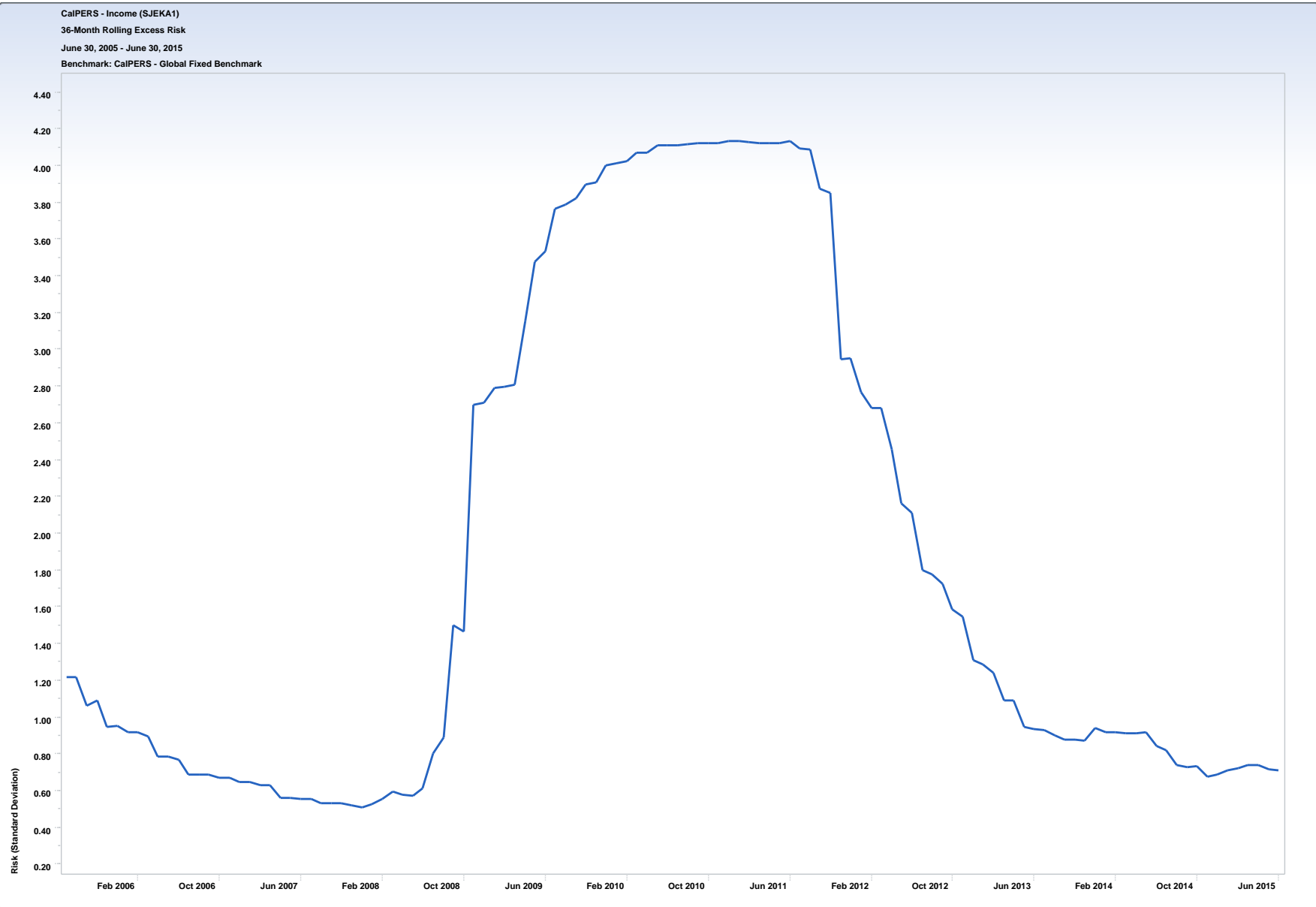


Income – Rolling Excess Returns





Income – Rolling Tracking Error



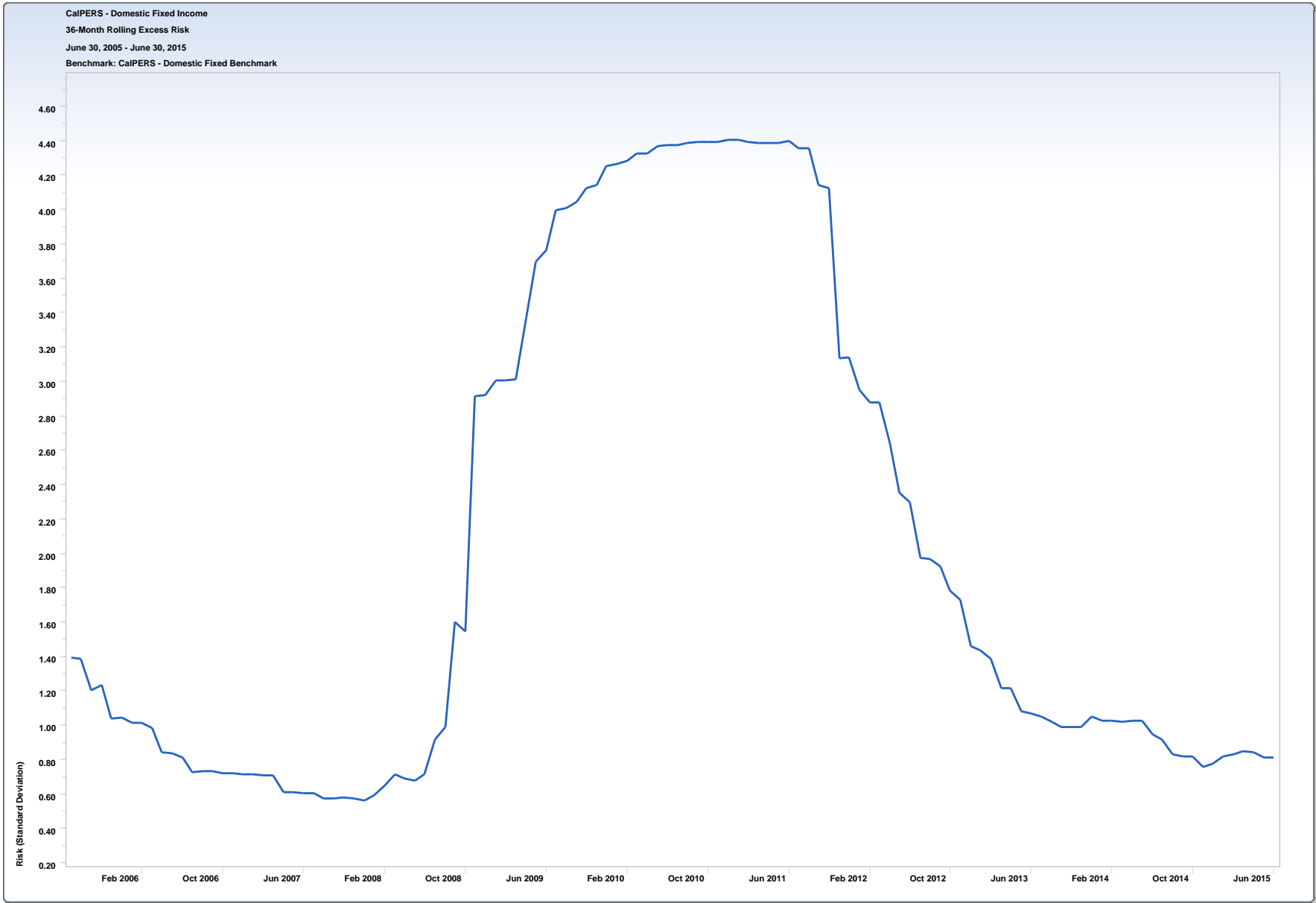


US Income – Rolling Excess Returns

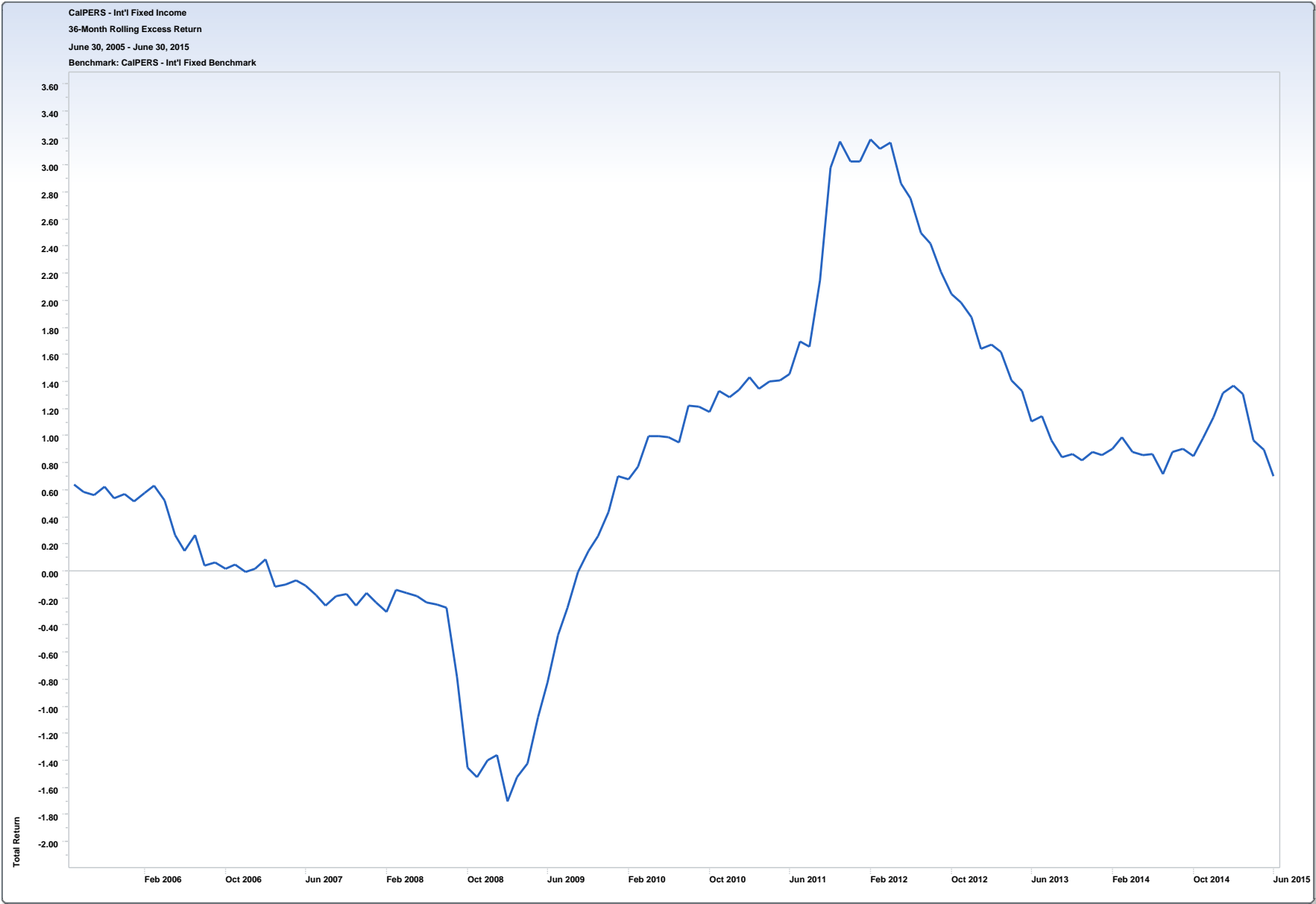




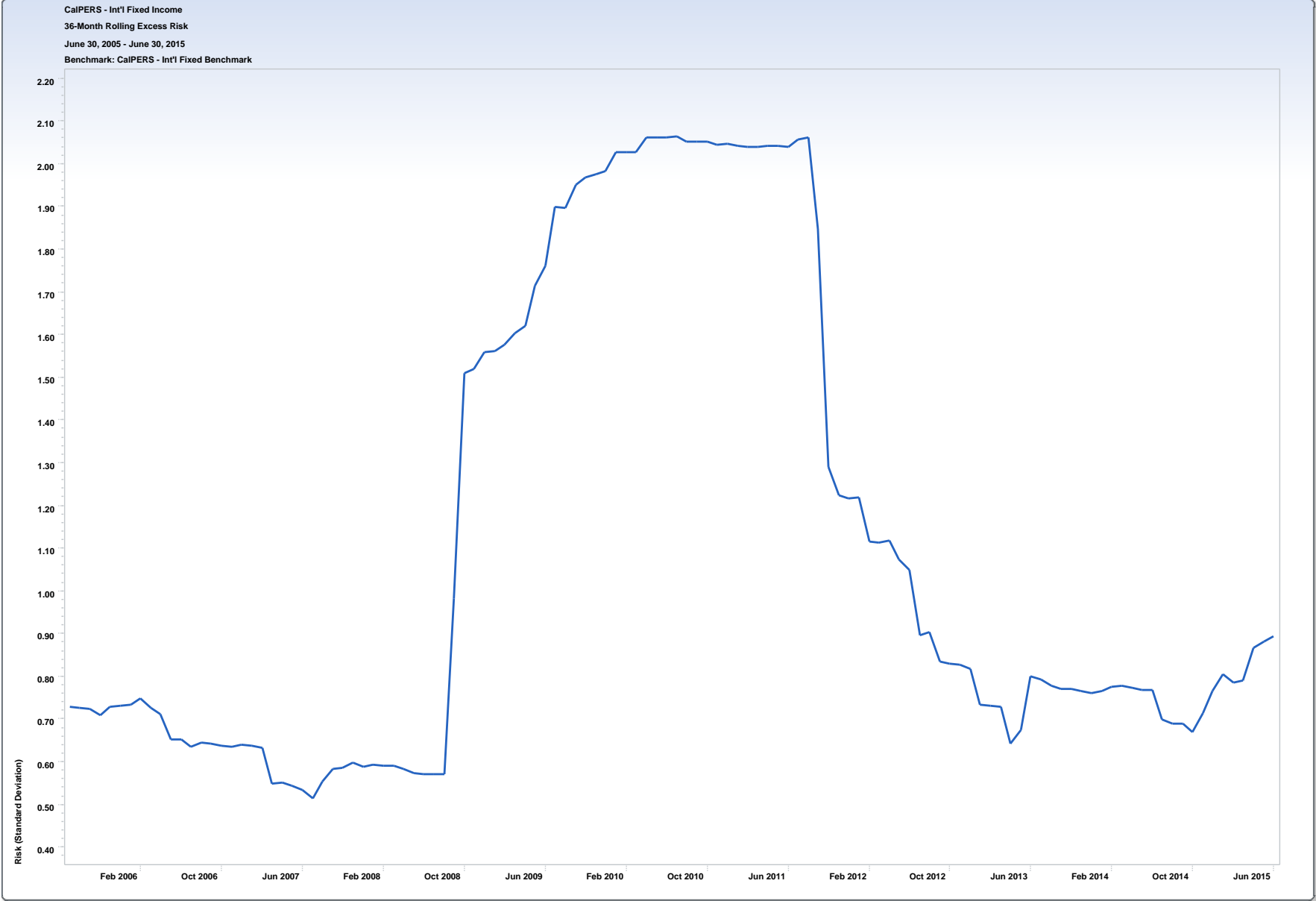
US Income – Rolling Tracking Error



International Income – Rolling Excess Returns



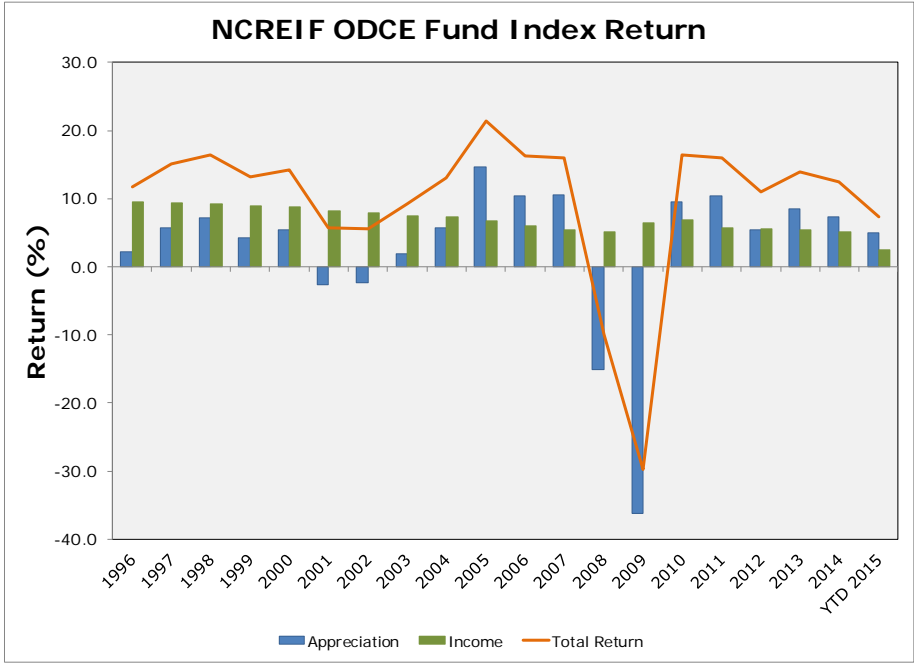
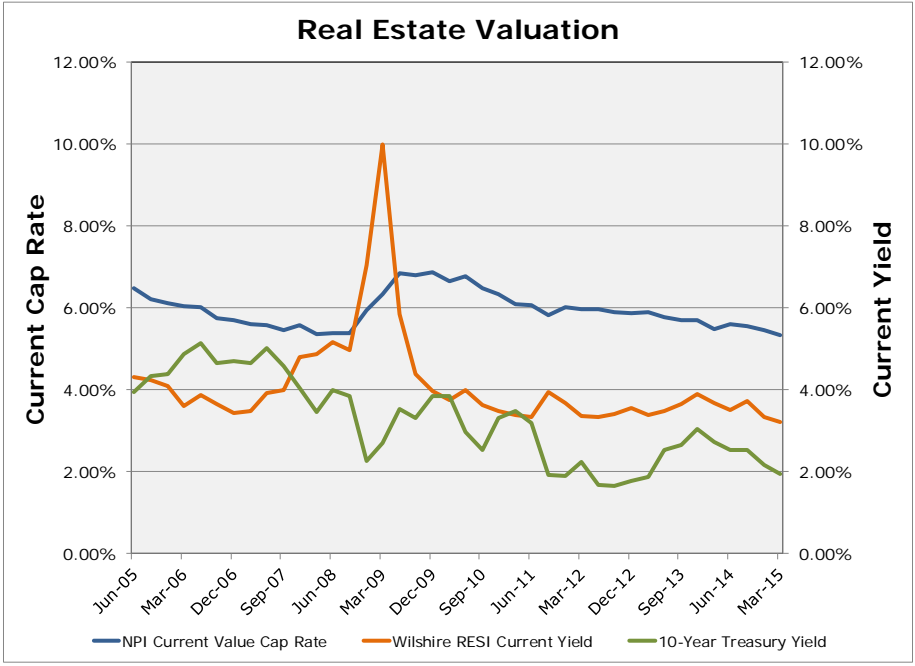
International Income – Rolling Tracking Error





Real Assets

June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
Barclays U.S. TIPS Index	-1.1	0.3	-1.7	-0.8	3.3	4.1
Bloomberg Commodity Index	4.7	-1.6	-23.7	-8.8	-3.9	-2.6
Wilshire Global REIT Index	-7.8	-4.1	2.6	9.5	14.5	6.5
NCREIF ODCE Fund Index	3.8	7.3	14.4	13.1	14.4	6.8
NCREIF Timberland Index	0.5	2.3	10.0	9.8	6.1	8.0
Alerian MLP Index (Oil & Gas)	-6.1	-11.0	-19.8	7.8	11.5	11.4



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

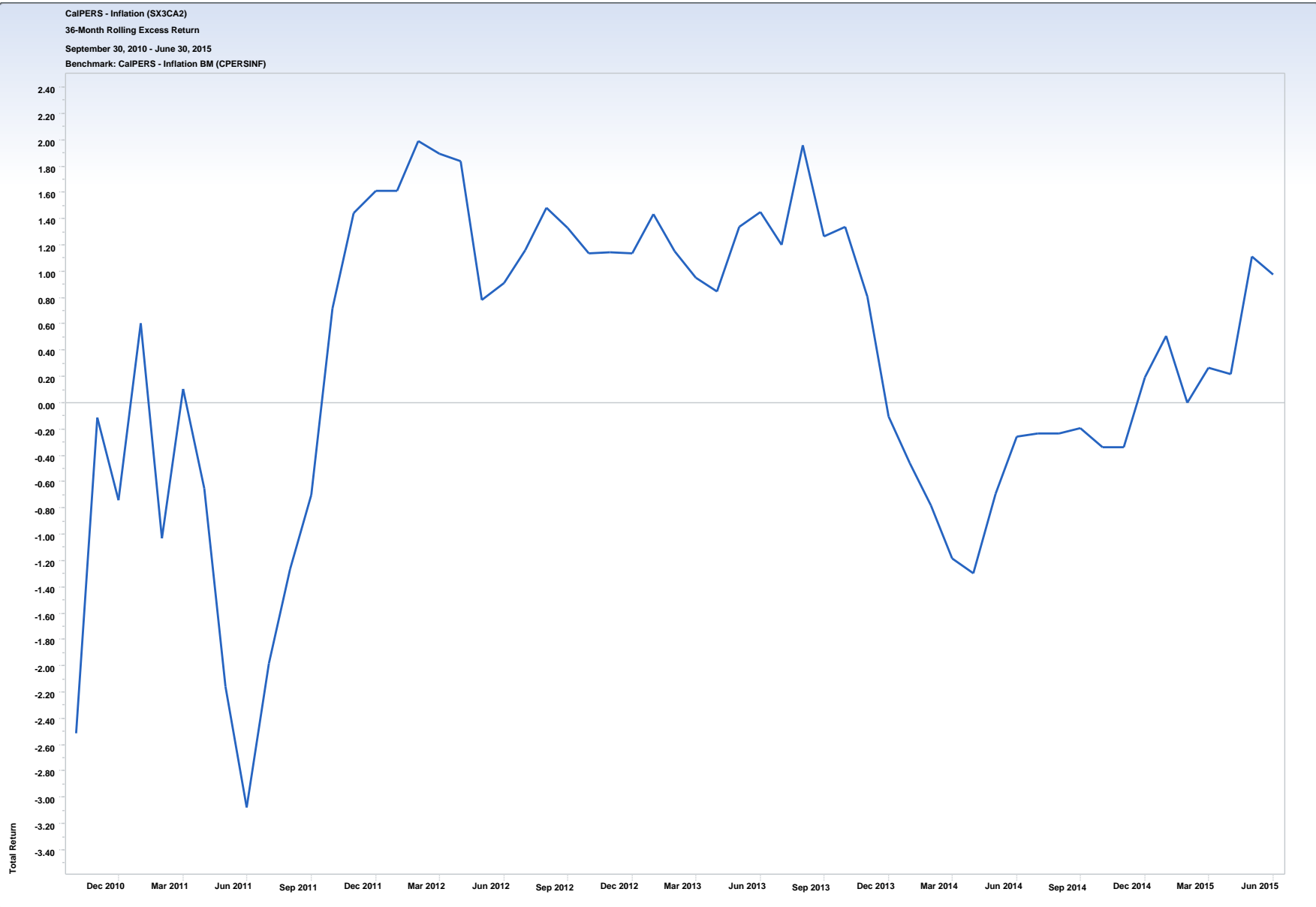


Inflation – Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
INFLATION	15.6	1.3%	-11.5%	-1.3%	3.2%	-.-%	\$1.1 bil	0.4	0.4
<i>Inflation Policy Benchmark</i>		2.0%	-13.0%	-2.3%	1.9%	-.-%		0.3	0.0
<i>Value Added</i>		-0.7%	1.5%	1.0%	1.3%	-.-%			
Internal Commodities	2.8	8.6%	-36.5%	-11.1%	-4.5%	-.-%			
<i>GSCI Total Return Index</i>		8.7%	-36.8%	-10.7%	-4.3%	-.-%			
<i>Value Added</i>		-0.1%	0.3%	-0.4%	-0.2%	-.-%			
Core Inflation Linked Bonds	10.5	-0.8%	-3.5%	0.9%	4.4%	-.-%			
<i>Custom Benchmark</i>		-0.1%	-4.2%	0.4%	4.0%	-.-%			
<i>Value Added</i>		-0.7%	0.7%	0.5%	0.4%	-.-%			
Tactical Commodities	1.1	8.1%	-36.8%	-.-%	-.-%	-.-%			
<i>GSCI Total Return Index</i>		8.7%	-36.8%	-.-%	-.-%	-.-%			
<i>Value Added</i>		-0.6%	0.0%	-.-%	-.-%	-.-%			
Tactical TIPS	1.1	-1.4%	-1.8%	-.-%	-.-%	-.-%			
<i>CalPERS TIPS</i>		-1.1%	-1.7%	-.-%	-.-%	-.-%			
<i>Value Added</i>		-0.3%	-0.1%	-.-%	-.-%	-.-%			

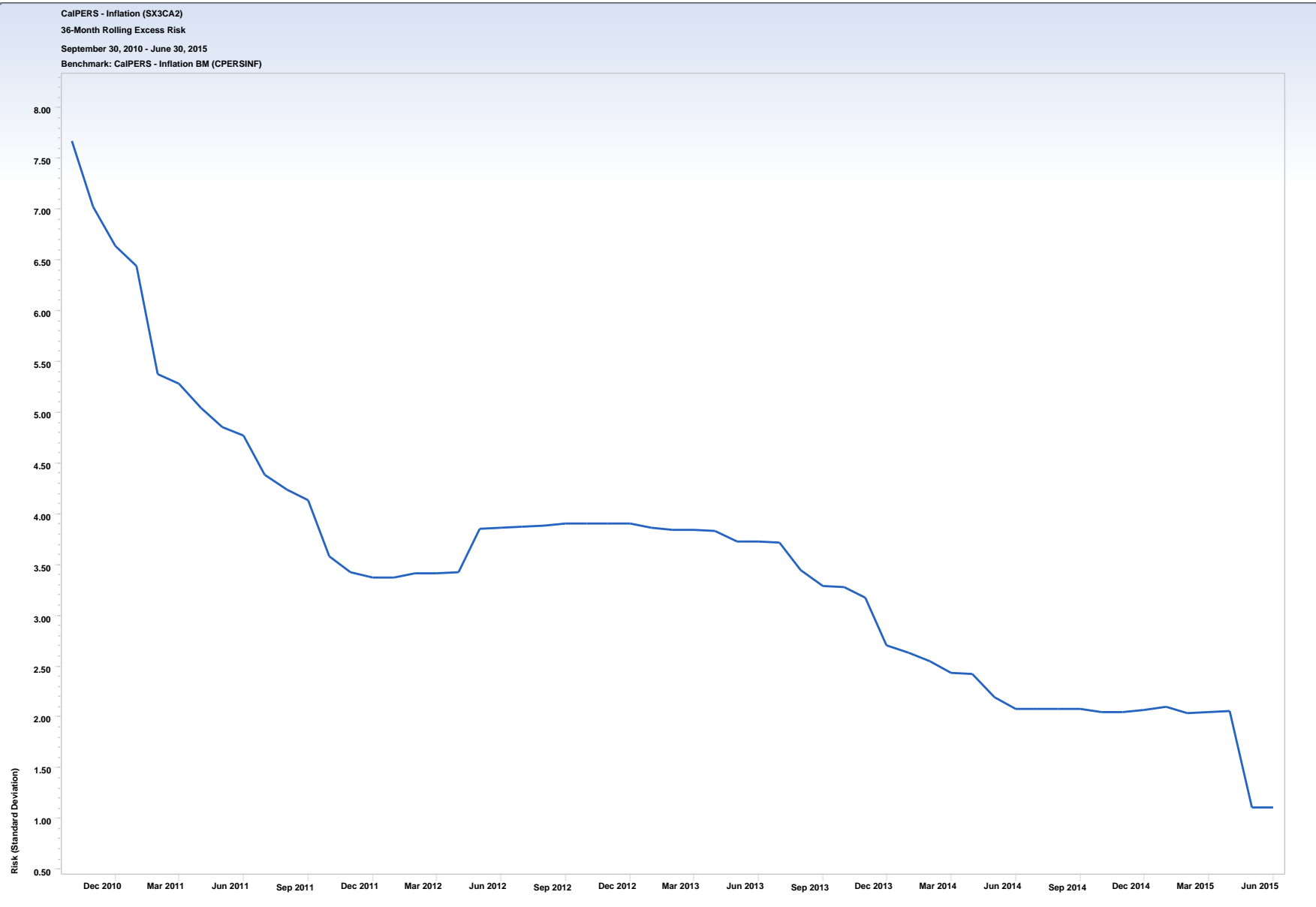


Inflation – Rolling Excess Returns





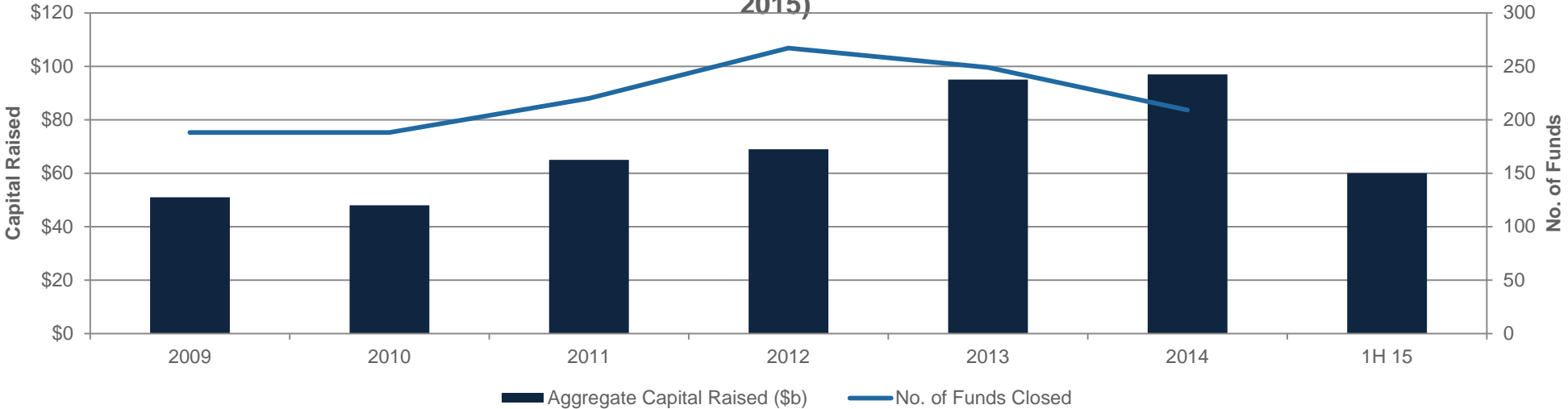
Inflation – Rolling Tracking Error



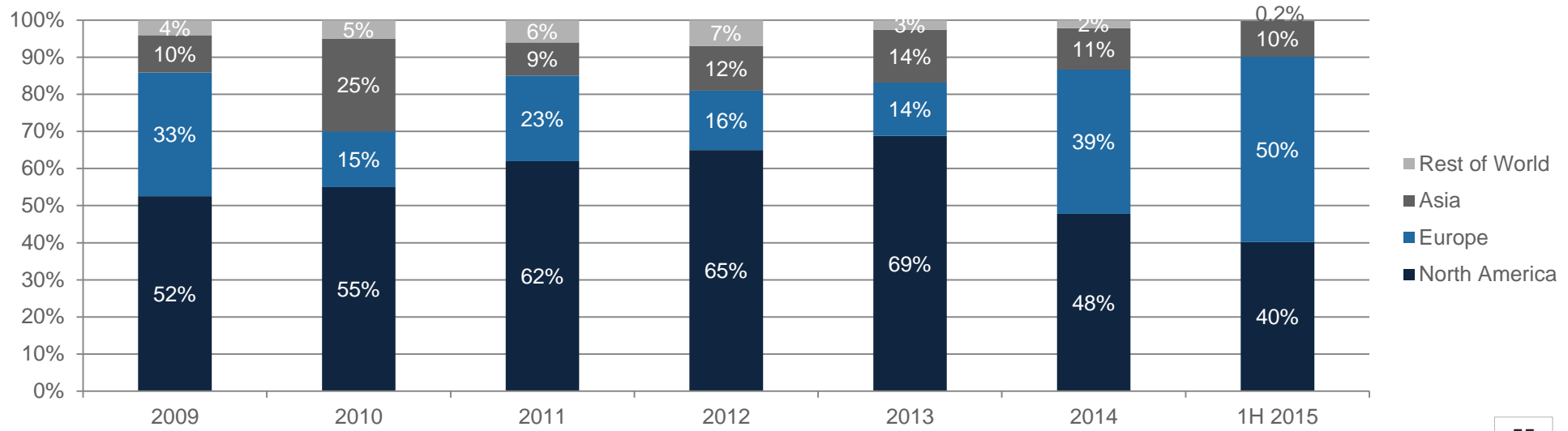
Private Real Estate – Fundraising Activity



Quarterly Closed-End Private Real Estate Fundraising (2009 – Q2 2015)



Proportion of Aggregate Capital Raised by Closed-End Private Real Estate Funds by Fund Geographic Focus (2009 – Q2 2015)

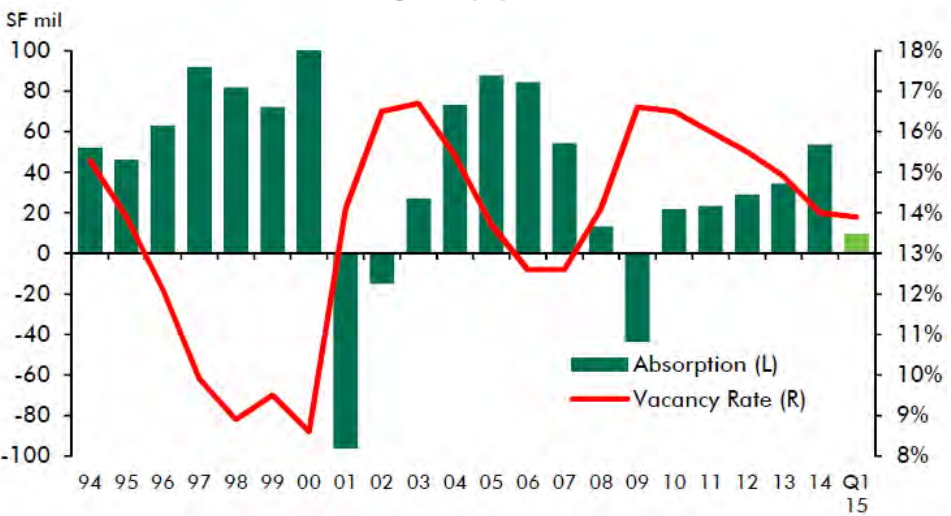


Source: Preqin.

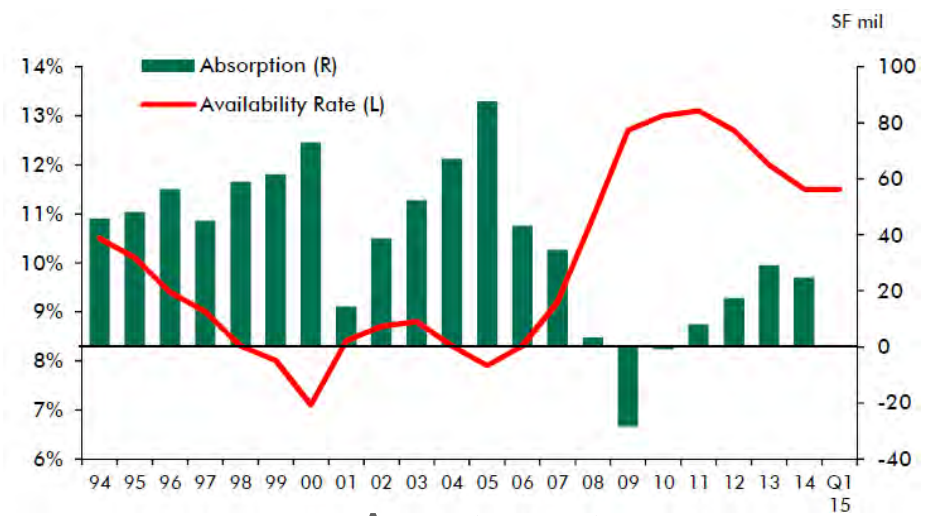


Commercial Property (as of 1Q 2015)

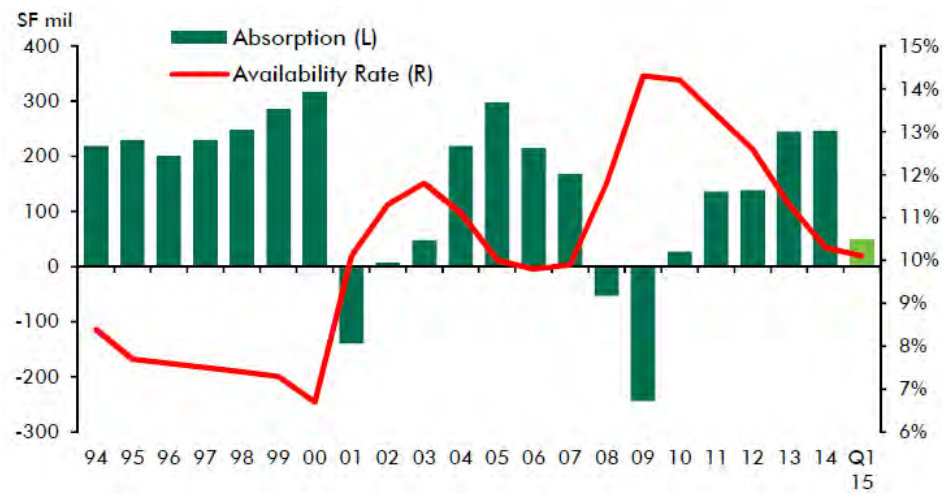
Office



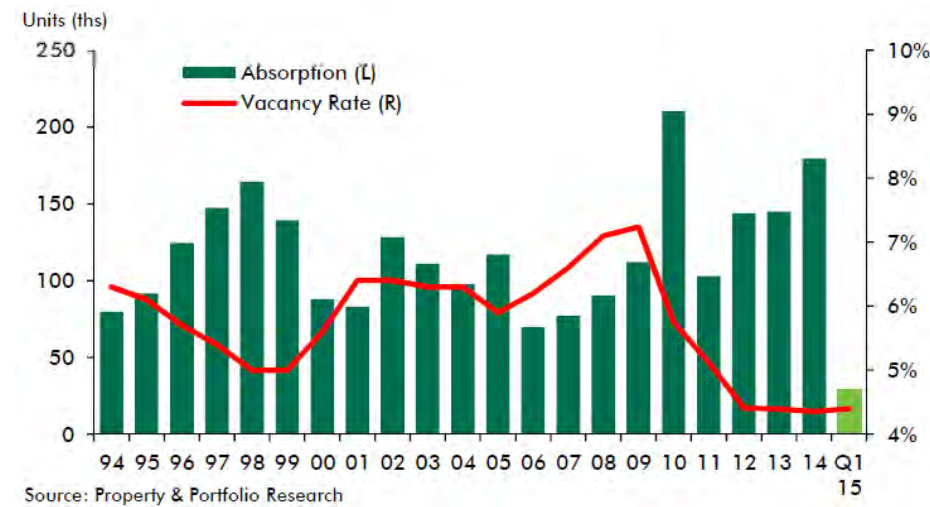
Retail



Industrial



Apartment



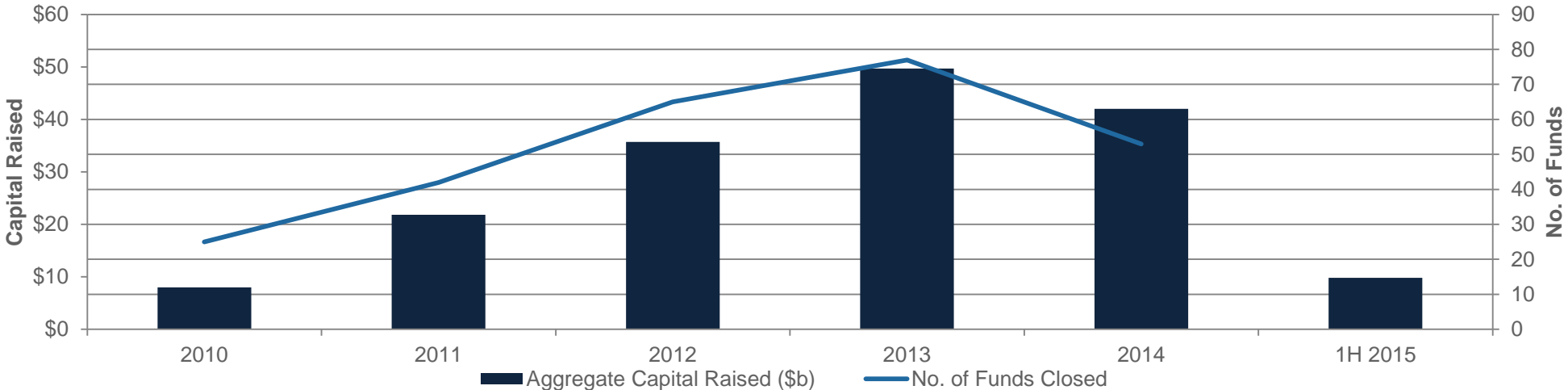
Source: CB Richard Ellis

Source: Property & Portfolio Research

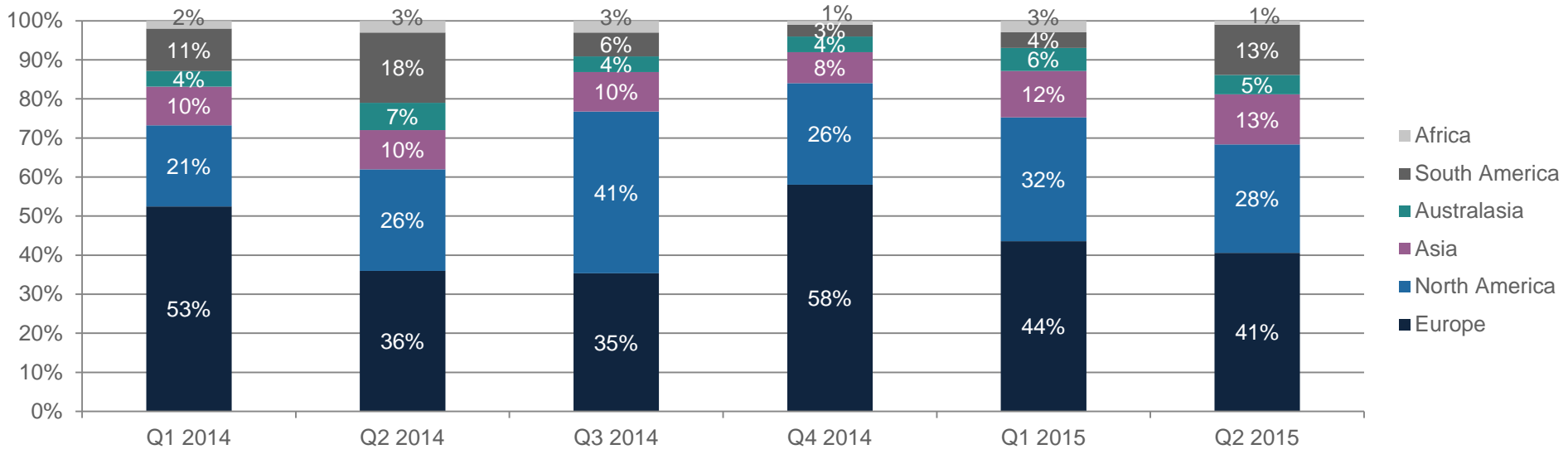


Unlisted Infrastructure – Fundraising Activity

Unlisted Infrastructure Fundraising (2010 – Q2 2015)



Breakdown of Infrastructure Deals by Region (Q1 2014 – Q2 2015)

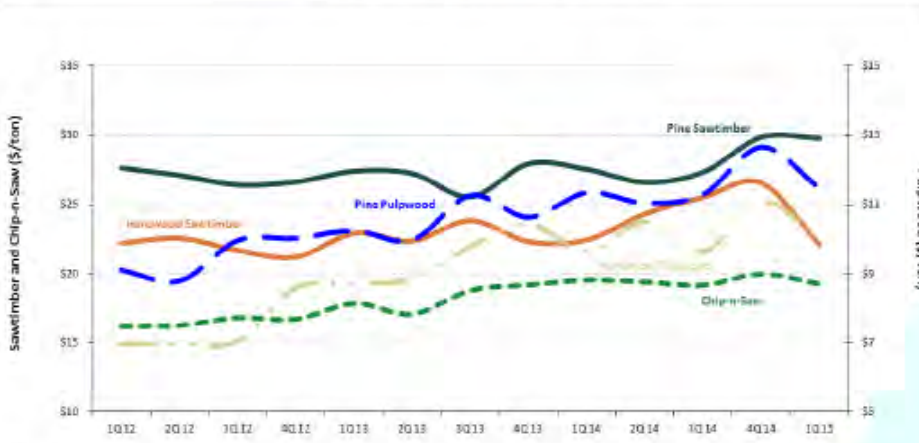


Source: Preqin.



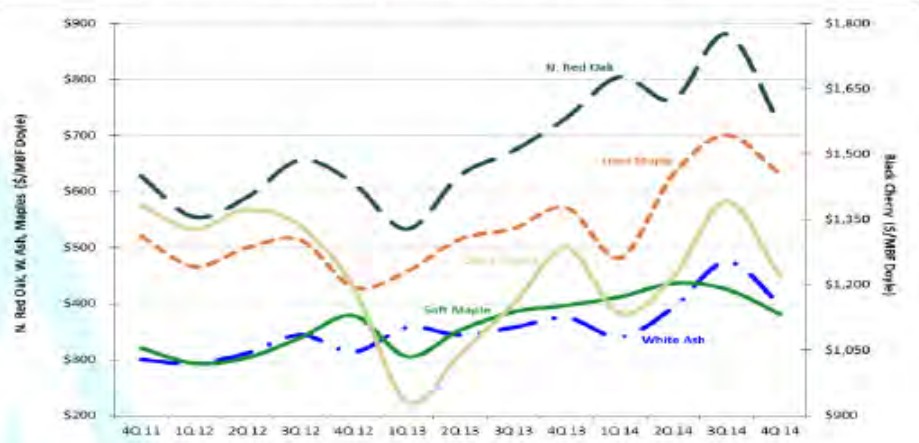
Timber (as of 1Q 2015)

Southeastern Timber Prices



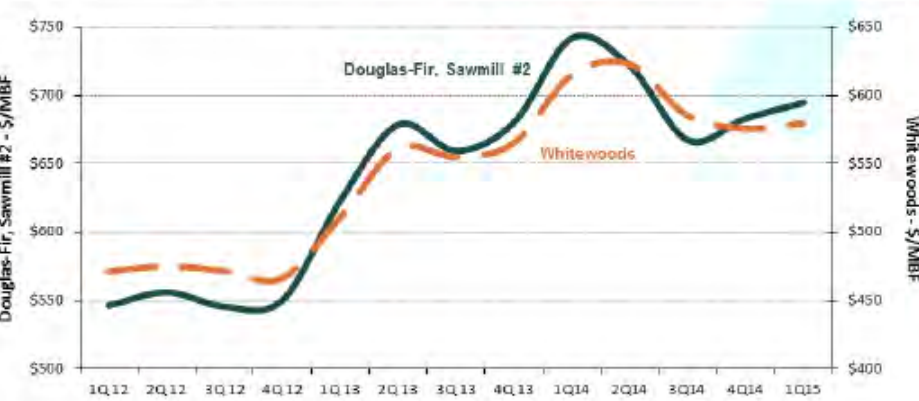
Source: Forest2Market®

Northeastern Hardwood Timber Prices



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

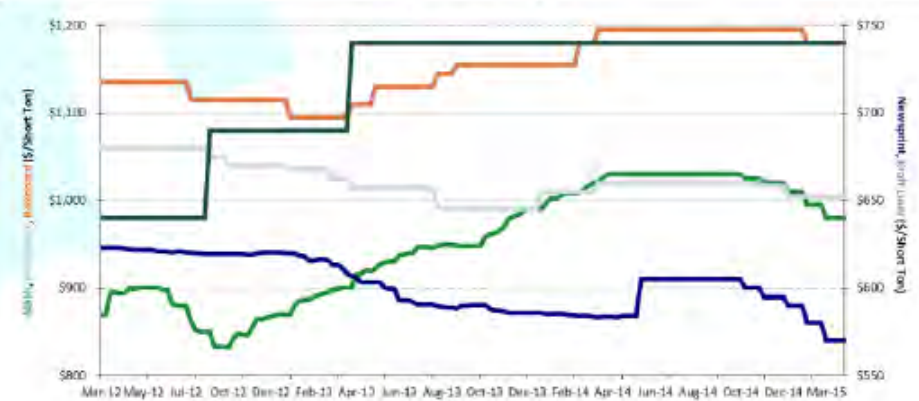
Pacific Northwest Timber Prices



Source: Log Lines®

Source: Forest Investment Associates

Pulp and Paper



Source: FOEX Indexes, Ltd., RISI Pulp & Paper Week



Real Assets – Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
REAL ASSETS	31.8	8.5%	12.4%	12.3%	11.8%	2.2%	\$4.3 bil	1.6	-0.1
<i>Real Assets Policy Benchmark</i>		2.9%	11.5%	11.0%	12.1%	8.7%		2.7	0.0
<i>Value Added</i>		5.6%	0.9%	1.3%	-0.3%	-6.5%			
Real Estate	27.5	9.9%	13.5%	13.1%	13.1%	1.7%	\$4.4 bil	1.6	-0.1
<i>Real Estate Policy Benchmark</i>		3.2%	12.4%	11.8%	13.6%	9.4%		2.7	0.0
<i>Value Added</i>		6.7%	1.1%	1.3%	-0.5%	-7.7%			
Forestland	2.2	-3.3%	-0.3%	2.9%	-1.1%	-.-%			
<i>NCREIF Timberland Index</i>		1.7%	10.6%	9.8%	6.2%	-.-%			
<i>Value Added</i>		-5.0%	-10.9%	-6.9%	-7.3%	-.-%			
Infrastructure	2.2	4.0%	13.2%	13.7%	17.8%	-.-%			
<i>CPI + 400 BPS 1Qtr Lag</i>		1.5%	3.9%	5.0%	6.1%	-.-%			
<i>Value Added</i>		2.5%	9.3%	8.7%	11.7%	-.-%			

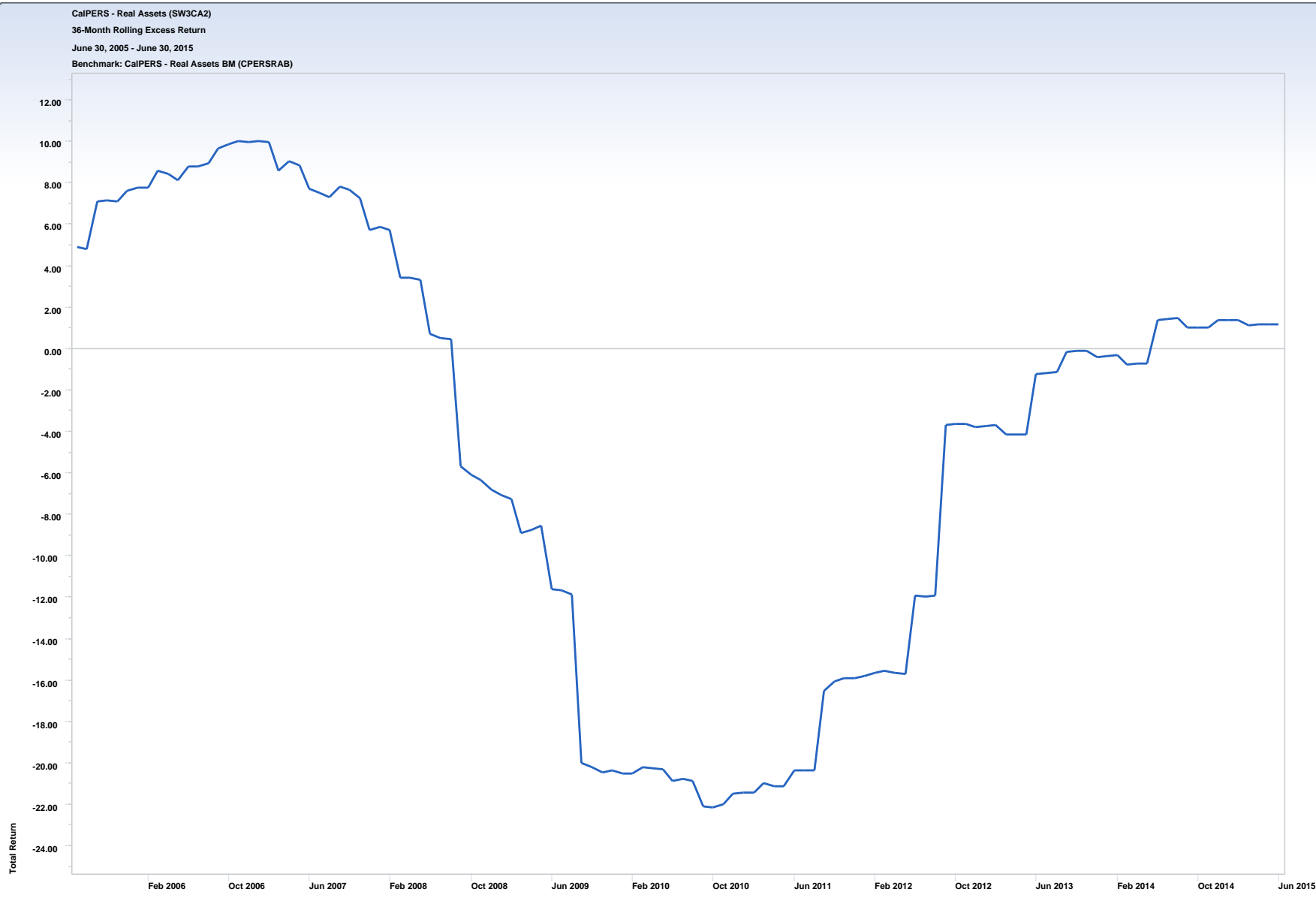


Real Estate – Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR	5-year Sharpe Ratio	5-year Info Ratio
Real Estate	27.5	9.9%	13.5%	13.1%	13.1%	1.7%	\$4.4 bil	1.6	-0.1
<i>Real Estate Policy Benchmark</i>		3.2%	12.4%	11.8%	13.6%	9.4%		2.7	0.0
<i>Value Added</i>		6.7%	1.1%	1.3%	-0.5%	-7.7%			
Strategic Real Estate	22.1	12.1%	15.9%	14.4%	16.3%	14.8%			
<i>Wt. NCREIF ODCE+FTSE EPRA NAREIT</i>		3.2%	12.4%	11.8%	13.6%	9.4%			
<i>Value Added</i>		8.9%	3.5%	2.6%	2.7%	5.4%			
Legacy Real Estate ex Public	5.3	1.9%	5.1%	8.5%	7.7%	-3.6%			
<i>Wt. NCREIF ODCE+FTSE EPRA NAREIT</i>		3.2%	12.4%	11.8%	13.6%	9.4%			
<i>Value Added</i>		-1.3%	-7.3%	-3.3%	-5.9%	-13.0%			



Real Assets – Rolling Excess Returns



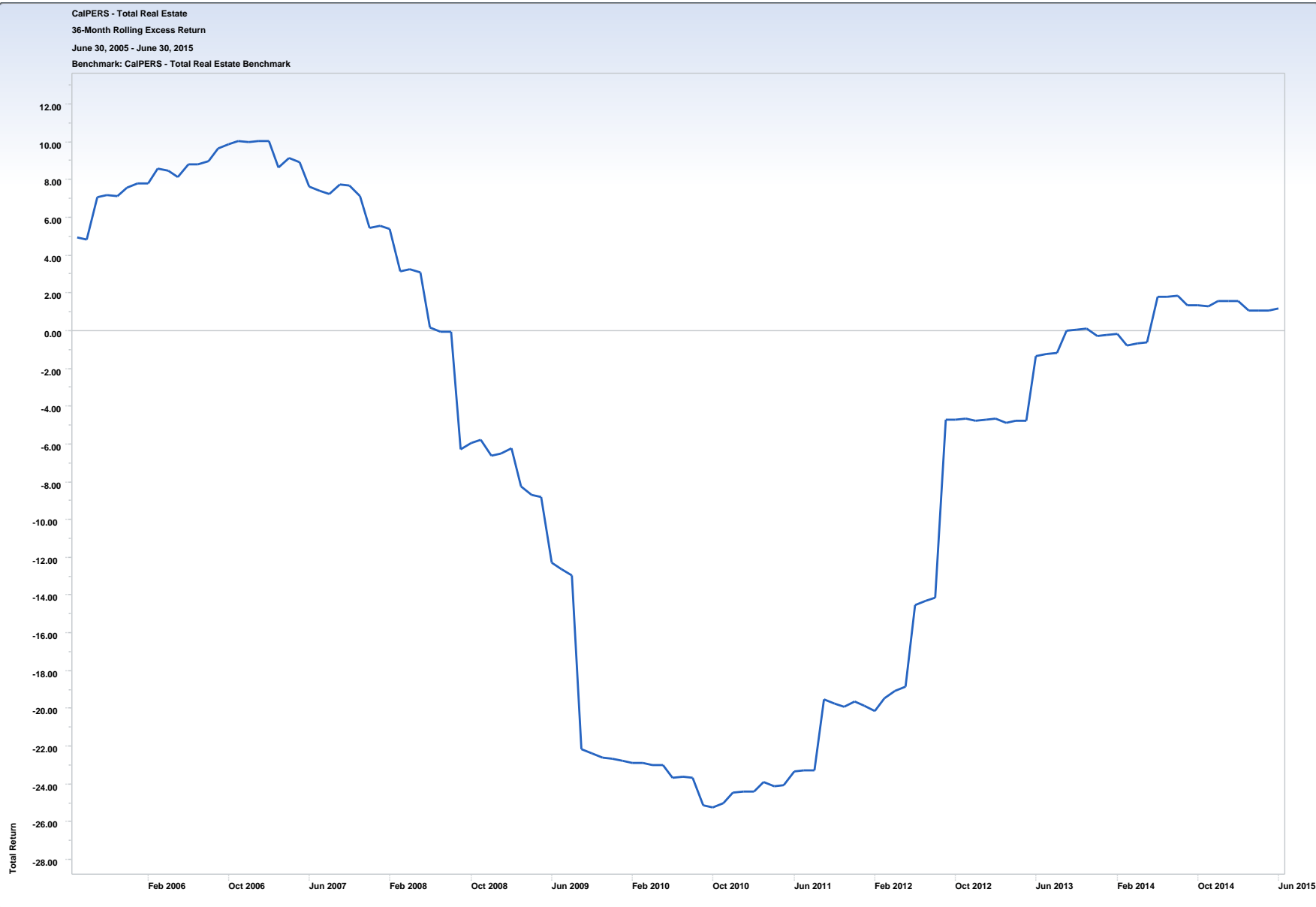


Real Assets – Rolling Tracking Error





Real Estate – Rolling Excess Returns





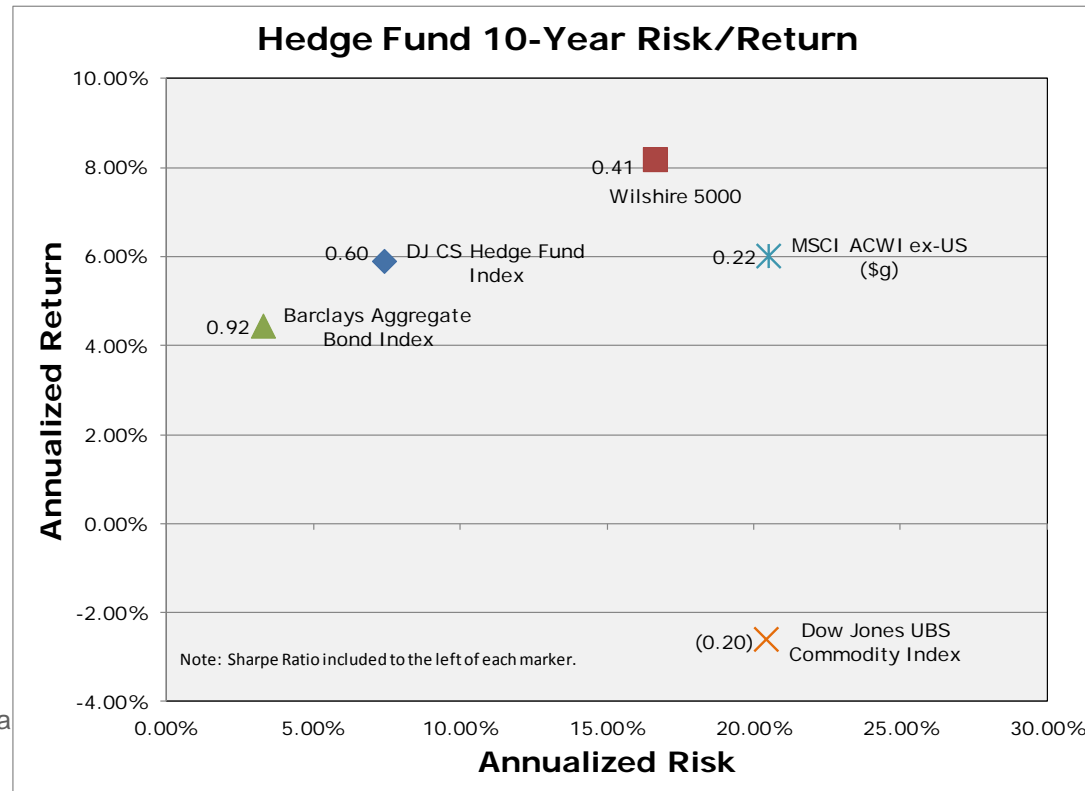
Real Estate – Rolling Tracking Error



Hedge Fund Performance



June 30, 2015	Qtr	Ytd	1 Yr	3 Yr	5 Yr	10 Yr
DJ CS Hedge Fund Index	-0.5	2.0	3.3	7.1	6.2	5.9
Event Driven Index	0.5	2.0	-2.0	8.6	5.9	6.3
Global Macro Index	-1.8	2.6	4.8	4.8	6.0	7.7
Long/Short Equity Index	1.7	3.5	6.0	10.8	7.8	6.7
Multi-Strategy Index	0.2	3.2	6.5	9.0	8.4	6.8
Wilshire 5000	0.1	1.7	7.1	17.5	17.3	8.2
MSCI ACWI ex-US (\$g)	0.7	4.3	-4.8	9.9	8.2	6.0
Barclays Aggregate Bond Index	-1.7	-0.1	1.9	1.8	3.3	4.4
Dow Jones UBS Commodity Index	4.7	-1.6	-23.7	-8.8	-3.9	-2.6



Data sources: Wilshire Compa



ARS – Distribution of Performance

	<u>Market</u>						<u>5-Year</u>	<u>5-Year Up</u>	<u>5-Year</u>	<u>5-Year</u>
	<u>Value</u>	<u>Qtr</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10-Year</u>	<u>Info</u>	<u>Capture</u>	<u>Sharpe</u>	<u>Sortino</u>
							<u>Ratio</u>	<u>Ratio</u>	<u>Ratio</u>	<u>Ratio</u>
Absolute Return Strategies	1.2	2.4%	7.3%	7.2%	5.1%	4.6%	-0.1	1.0	1.6	2.2
<i>ARS Policy Benchmark</i>		1.3%	5.3%	5.3%	5.4%	7.0%				
<i>Value Added</i>		1.1%	2.0%	1.9%	-0.3%	-2.4%				
Total Direct Investments	1.1	1.9%	7.8%	7.2%	5.6%	5.1%				
Total Funds of Funds	0.0	8.5%	5.8%	7.5%	4.1%					
HFRI Fund of Funds Index		0.1%	3.8%	6.2%	4.1%	3.2%				

ARS – Histogram of Monthly Returns

