

CalPERS Total Plan Investment Risk Analysis

December 10, 2012

Total Fund Projected Risk*

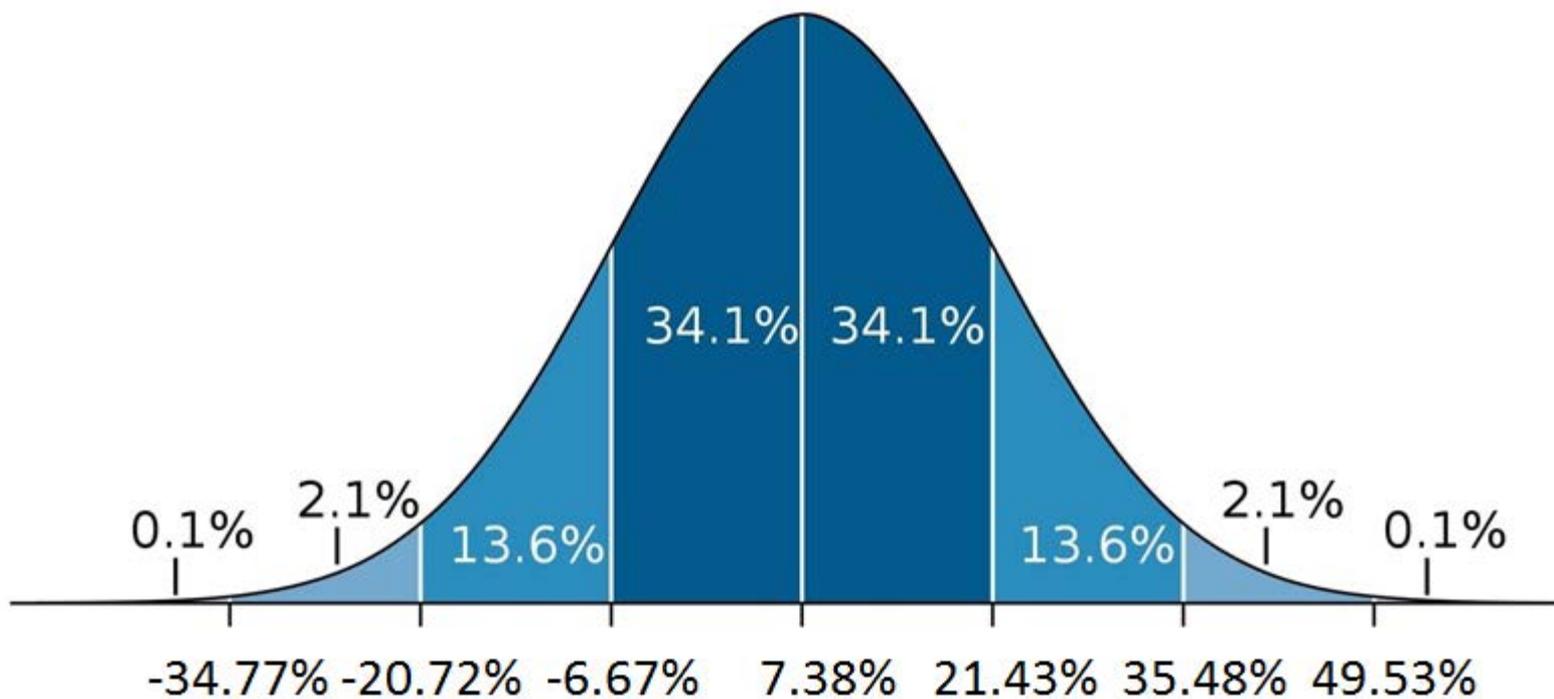
September 30, 2012 - 1 year Forecast



*Risk is annualized predicted volatility (%)

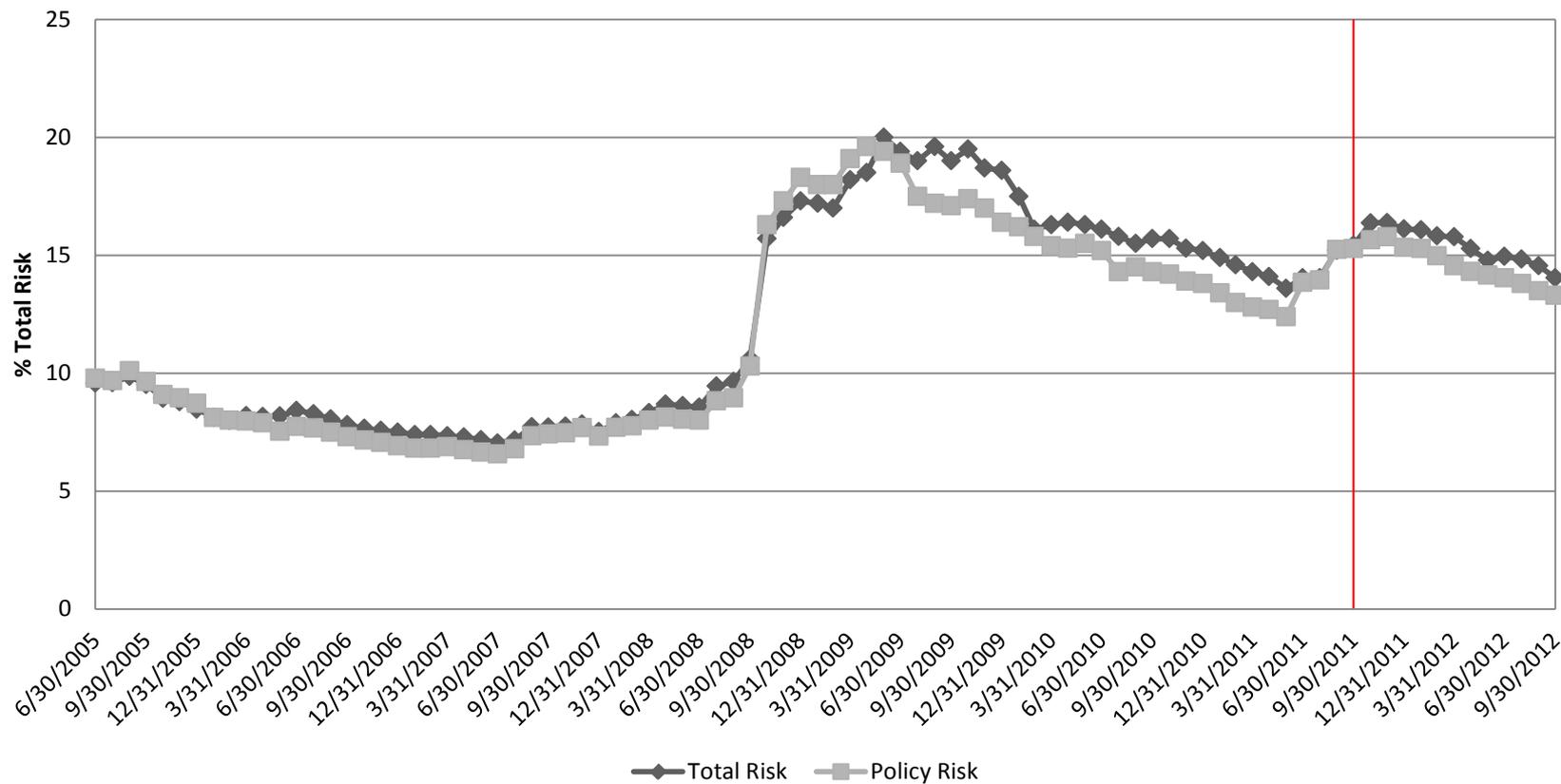
Forecasted Distribution of Expected Return

Expected Return from ALM Workshop = 7.38%
 1 Standard Deviation Forecasted Volatility = 14.05%



Total Risk Time Series (Forecasted)

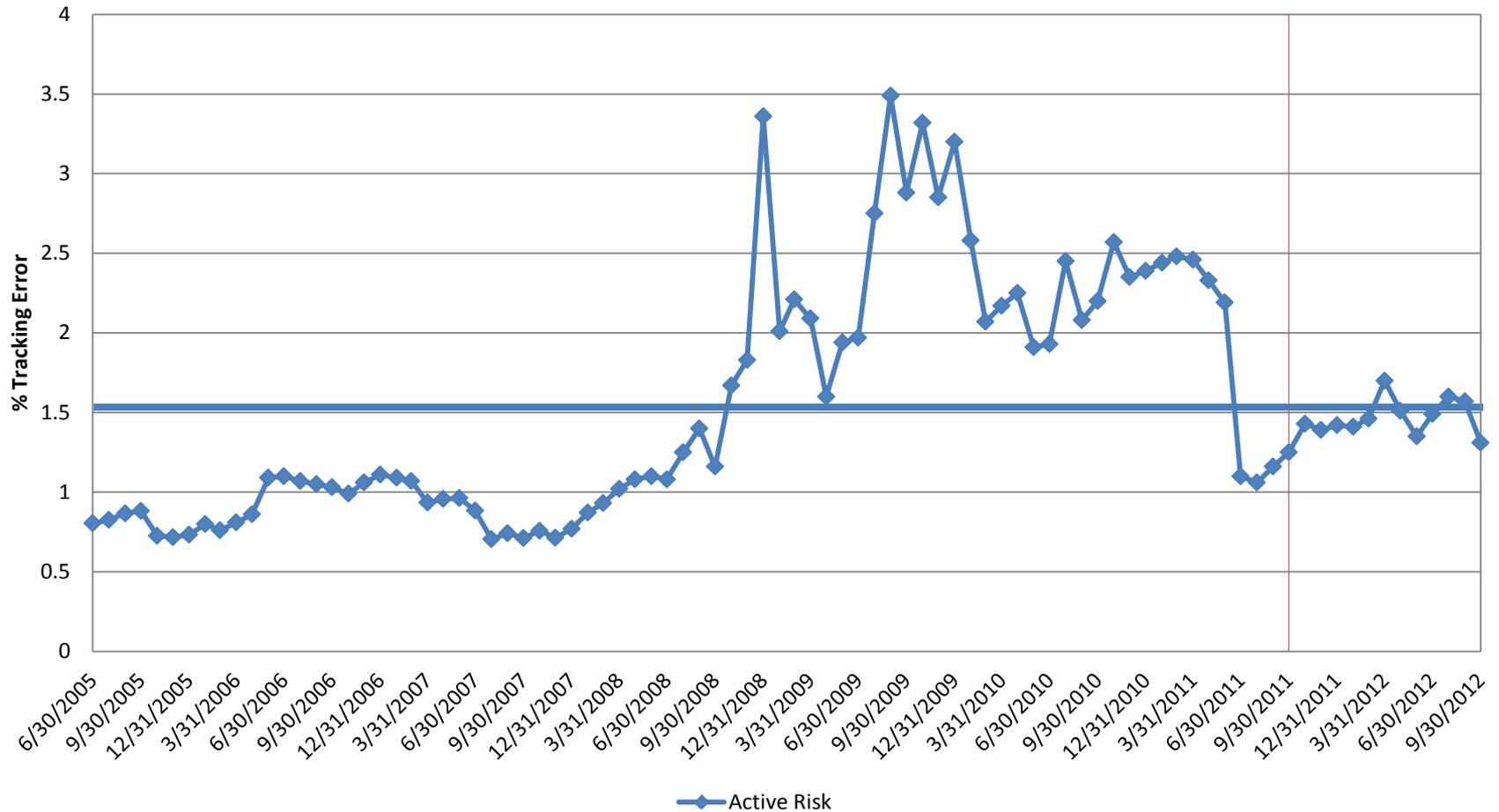
History of 1 Year Forecast Total Risk



* The red line denotes the cutover to BarraOne and the new BIM 301 model for 6/30/12 month end. The BIM 301 model introduced several changes including a new Real Estate model, new currency model, and more frequent observations in building the covariance matrix.

Active Risk Time Series (Forecasted)

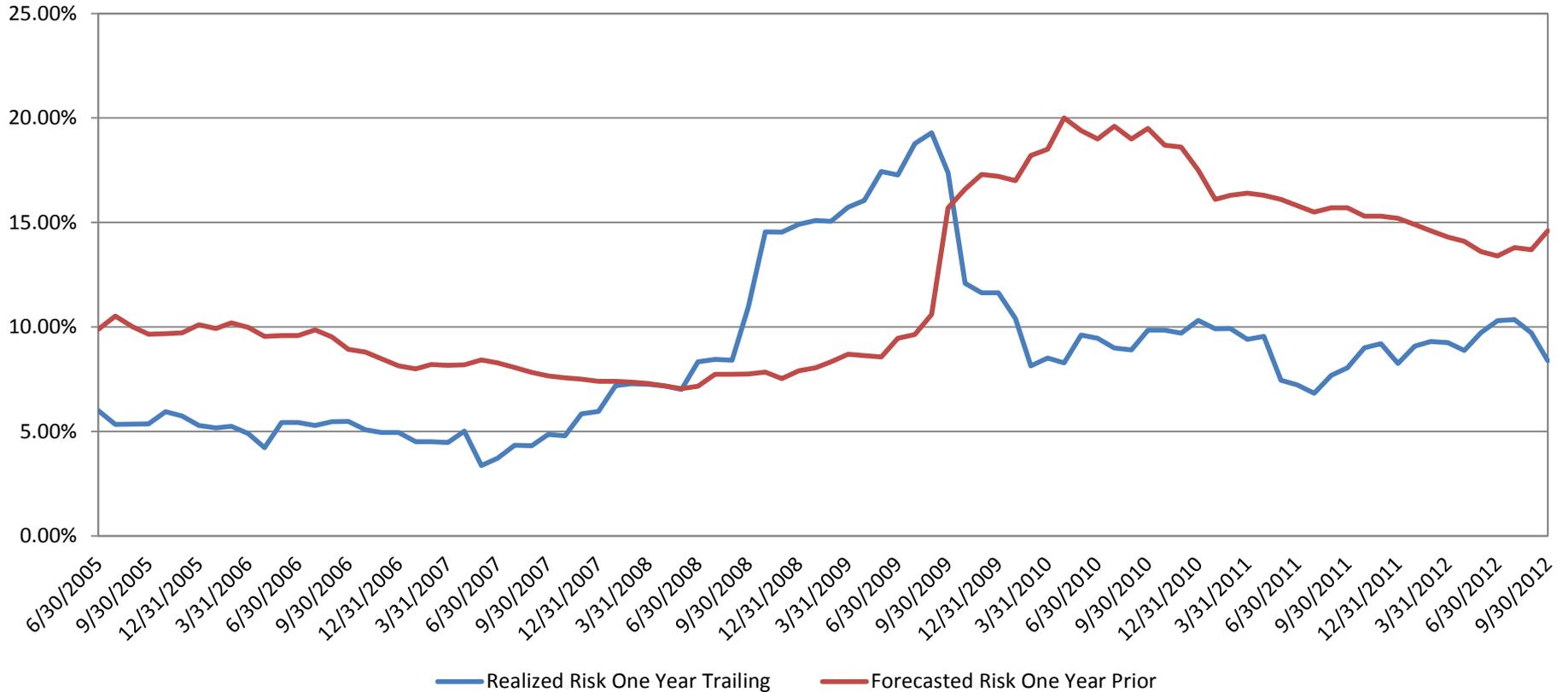
History of 1 Year Forecast Tracking Error



* The red line denotes the cutover to BarraOne and the new BIM 301 model for 6/30/12 month end as well as the change to the new risk based asset allocation framework. Both asset class and policy benchmark changes for the new allocation framework were incorporated for the 6/30/12 reporting period resulting in a recasting of active risk vs. this new information set.

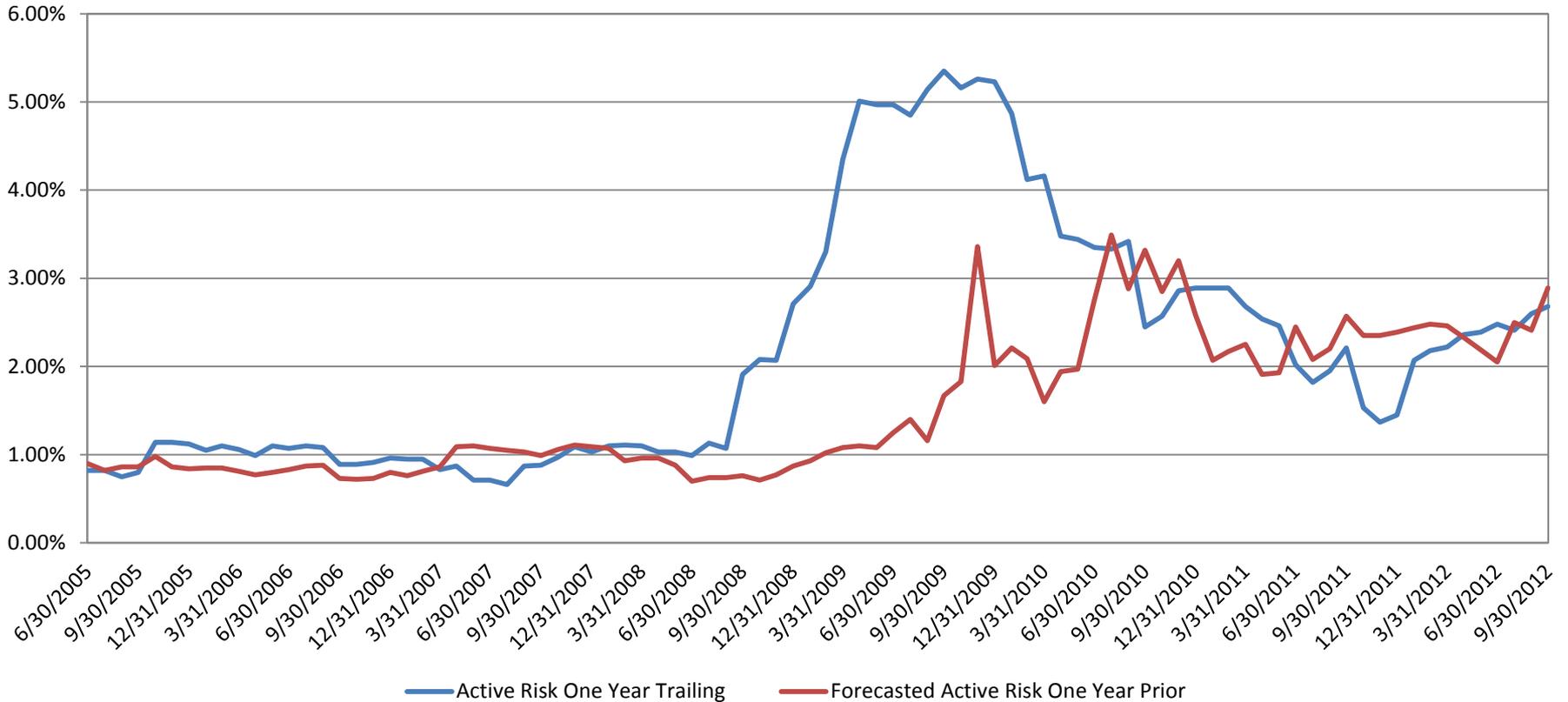
Time Series Analysis

Forecasted vs. Realized Total Risk



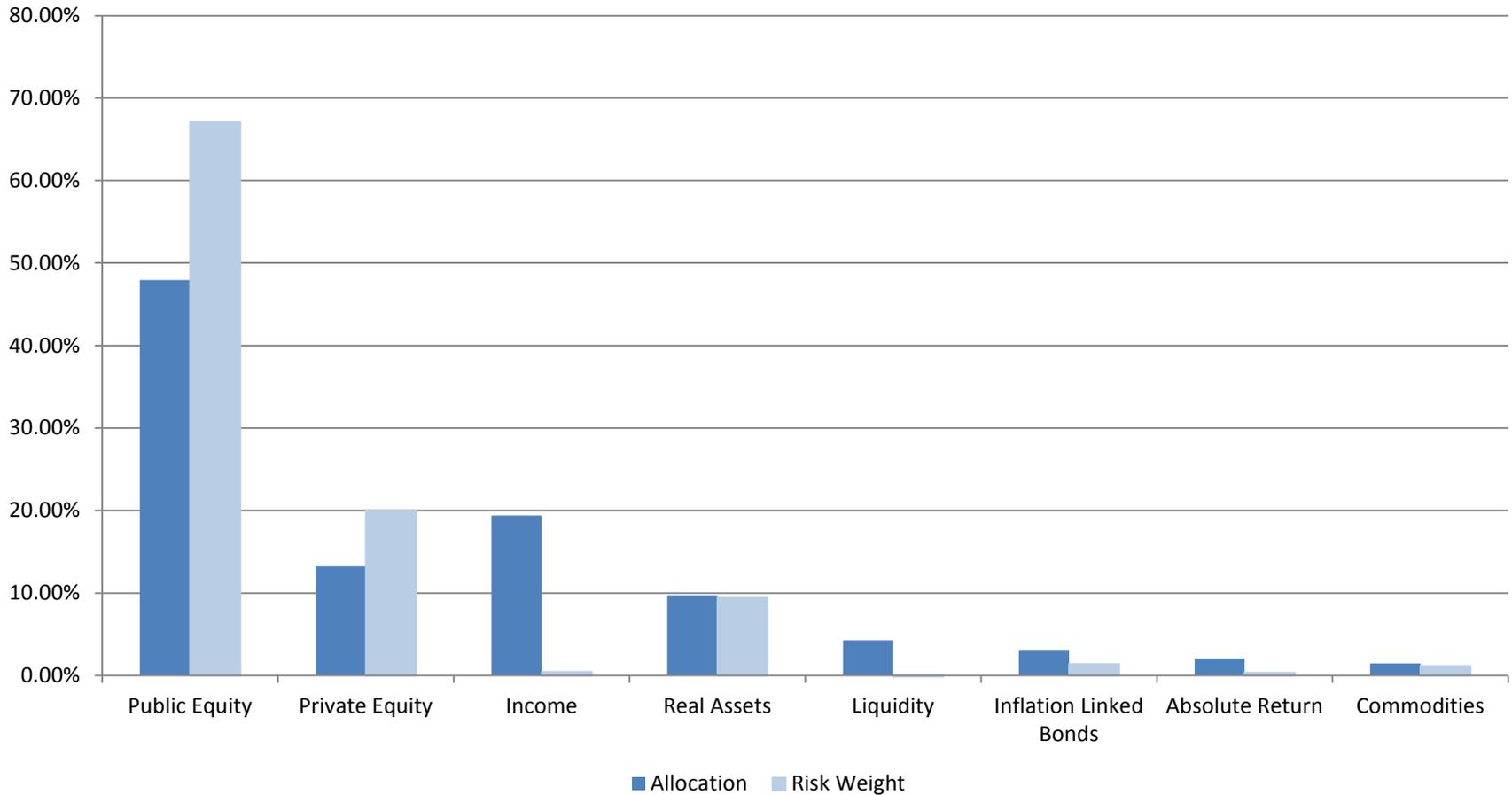
Time Series Analysis

Forecasted vs. Realized Active Risk



Asset Class Contribution to Total Risk

September 28, 2012



Asset Class Risk and Contribution to Total Fund Risk

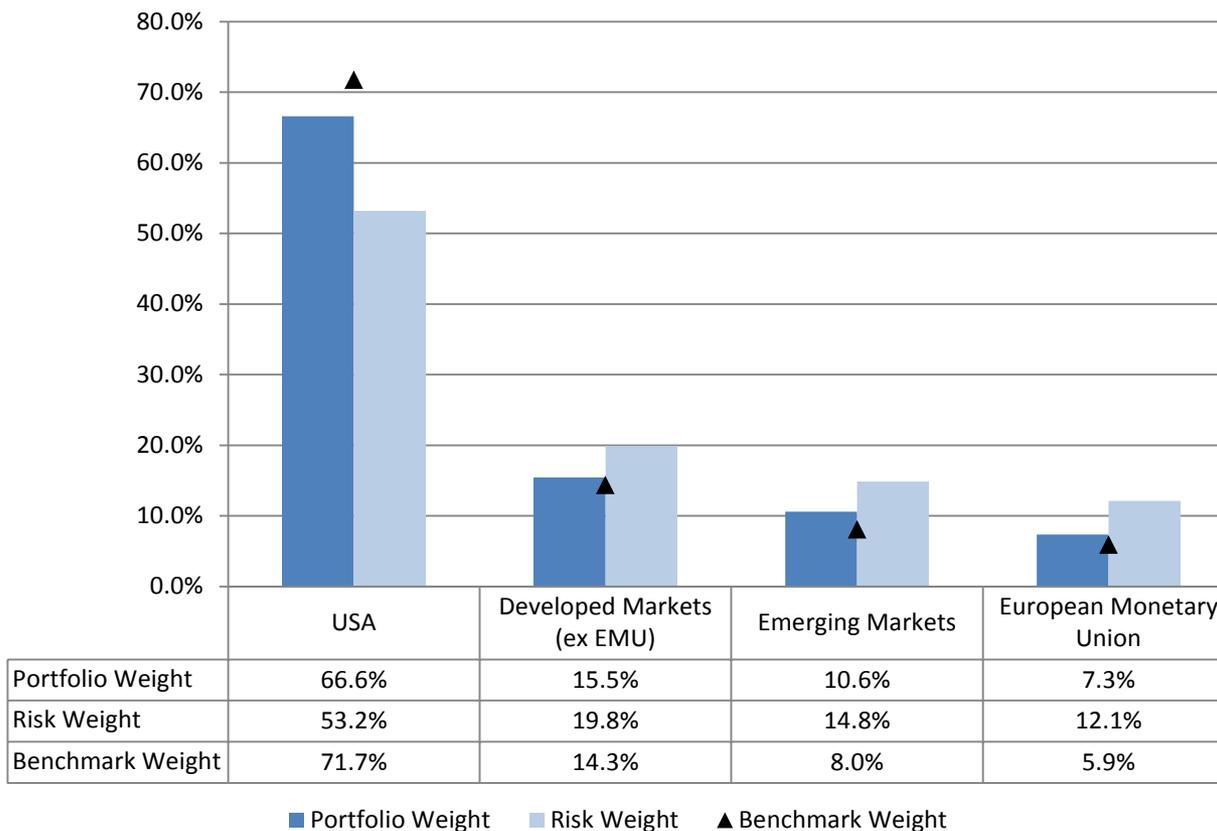
September 28, 2012

Asset Class	Market Value (millions)	Current Portfolio Weight (%)	Effective Weight (%)	Policy Weight (%)	Active Weight (%)	Active Effective Weight (%)	Total Risk	%CR to Total Risk	Correl'n	Active Risk	Value-At-Risk(\$)*
Private Equity	32,693	13.29	13.29	14.00	-0.71	-0.71	21.91	20.03	0.97	6.97	2,347
Public Equity	118,200	48.06	50.64	50.00	-1.94	0.64	19.77	67.06	0.99	0.36	7,656
Income	46,622	18.95	19.04	17.00	1.95	2.04	5.86	0.25	0.05	0.65	895
Inflation Linked Bonds	4,060	1.65	1.65	3.00	-1.35	-1.35	6.09	0.24	0.35	0.59	81
Commodities	3,601	1.46	1.46	1.00	0.46	0.46	23.96	1.32	0.53	1.09	283
Liquidity	10,486	4.26	4.26	4.00	0.26	0.26	1.72	-0.15	-0.28	0.73	59
Real Assets	24,473	9.94	9.94	11.00	-1.06	-1.06	15.37	9.32	0.86	5.42	1,232
Absolute Return	5,085	2.20	2.07	0.00	2.20	2.07	3.24	0.34	0.70	3.37	54
Beta Overlay**	843	0.17	2.44	0.00	0.17	2.44		2.79	0.98		322
Currency Overlay	(112)	0.04	-0.05	0.00	0.00	-0.05		-1.34	0.51		295
CalPERS Perf	245,952	100	104.7	100	0	4.70	14.05	100	1.00	1.31	11,324

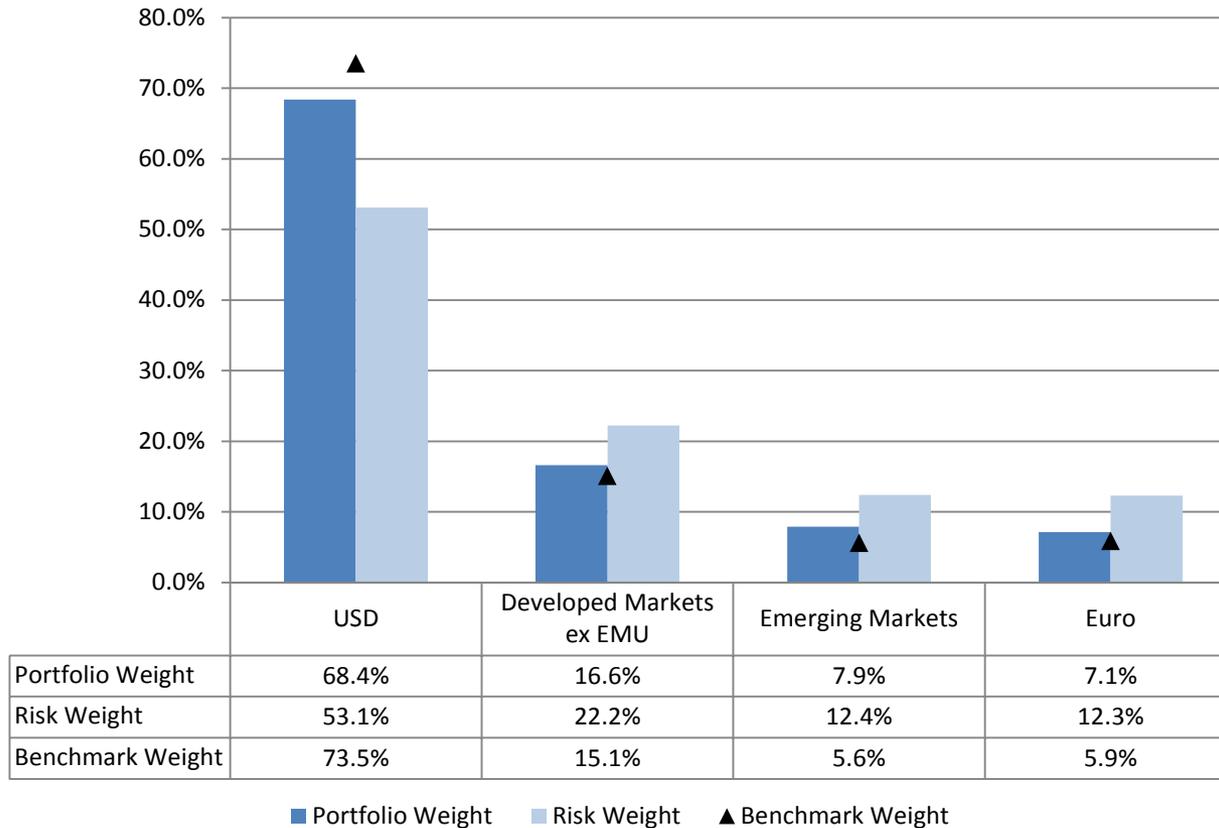
*The maximum loss over 10 days at 95% confidence

** Represents ARS Equity futures

Regional Exposure



Currency Exposure



Top Industry Exposures and Contribution to Risk

September 28, 2012

Industry Group	Fund Mkt Value(MM)	Weight (%)	%CR to Total Risk
Energy	15,734	6.4%	9.5%
Materials	11,321	4.6%	8.3%
Banks	12,329	5.0%	7.3%
Capital Goods	11,284	4.6%	7.0%
Diversified Financials	8,735	3.6%	4.8%
Software & Services	8,914	3.6%	4.8%
Technology Hardware & Equipment	6,265	2.6%	3.8%
Insurance	6,226	2.5%	3.4%
Retailing	5,703	2.3%	3.3%
Pharmaceuticals & Biotechnology	7,948	3.2%	3.1%
Sum	94,458	38.5%	55.3%

Top Corporate Exposures & Contribution to Risk*

September 28, 2012

Issuer	MV (in MM)	Weight (%)	%CR to Total Risk
CITIGROUP INC	2,107	0.9%	0.2%
APPLE INC	1,753	0.7%	0.9%
LYONDELLBASELL INDUSTRIES	1,421	0.6%	1.4%
EXXON MOBIL CORP	1,284	0.5%	0.6%
GENERAL ELECTRIC CO	1,001	0.4%	0.5%
JPMORGAN CHASE & CO	936	0.4%	0.4%
AT&T INC	878	0.4%	0.2%
TVA	800	0.3%	-0.1%
MICROSOFT CORP	758	0.3%	0.4%
WELLS FARGO & CO	727	0.3%	0.3%
SUM	11,664	4.8%	4.8%

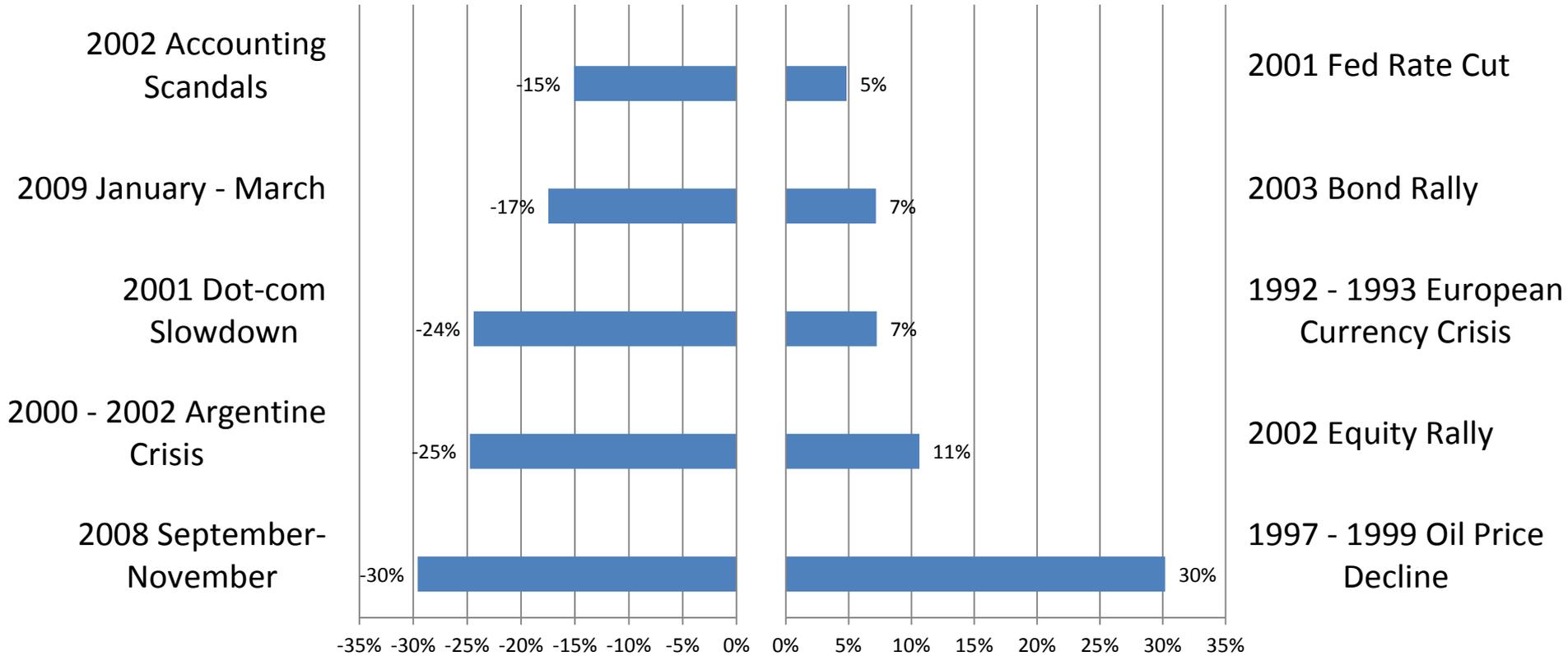
* Excludes: Governments, Private Equity and Real Estate holdings

Includes: Public & Selected Private Equity, Fixed Income, Corporate Bond holdings

Comparison: Best & Worst Scenarios

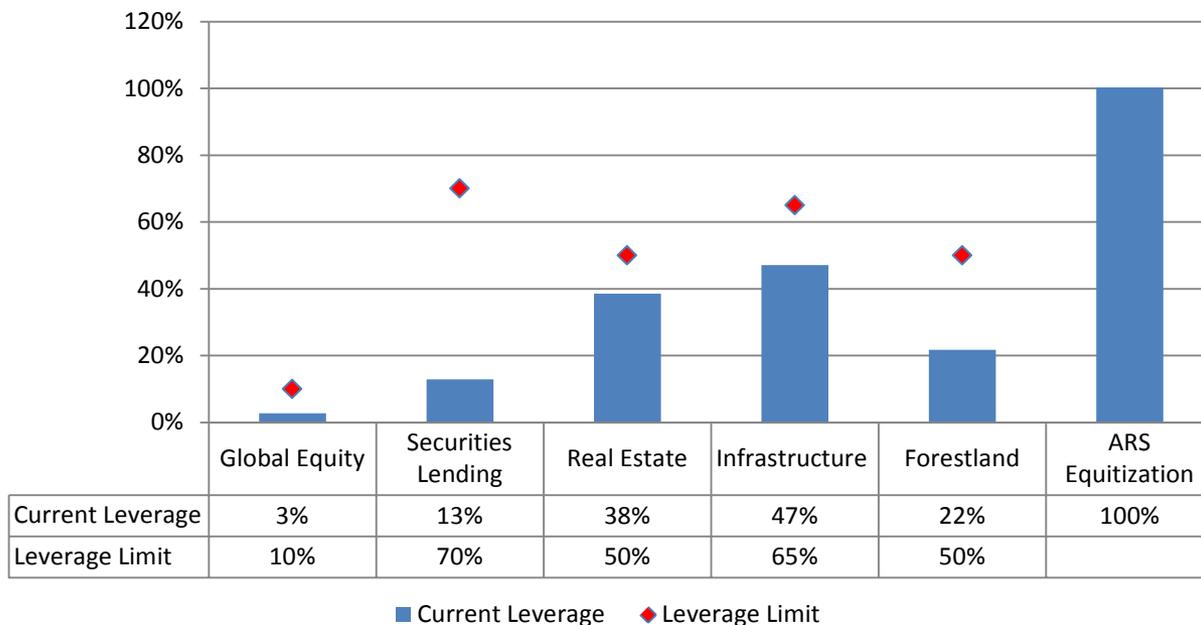
5 Worst Scenarios for Total PERF

5 Best Scenarios for Total PERF



CalPERS Leverage*

September 30, 2012



*Leverage Definitions

Global Equity, Real Estate, Infrastructure, Forestland: $(\text{Market Exposure} / \text{Equity Capital}) - 1$

Securities Lending: $\text{Reinvestment Pool with Maturity} > 90 \text{ Days} / \text{Total Reinvestment Pool}$

ARS: $\text{Equity Beta Futures Overlay Notional Value} / \text{ARS Fair Market Value}$

Derivative Counterparty Exposure Report

October 31, 2012

Counterparty	FORWARD	OPTION	SWAP	CalPERS Exposure	Counter Party Exposure	Total Collateral Posted*	Net Exposure	CDS Spread	Credit Rating	Above Average	
Bank of Montreal	3,379,854			3,379,854		3,379,854	3,379,854	50	AA-	YES	
Bank of America	17,584,800		(36,121)	22,964,097	(5,415,418)	17,548,679	17,548,679	45	A	NO	
BPS	(2,224,082)			4,822,017	(7,046,099)	(2,224,082)	(2,224,082)	38	A+	NO	
Barclays PLC	11,293,403		(28,092,501)	19,736,340	(36,535,438)	(16,799,098)	(12,249,098)	50	A	YES	
Commonwealth Bank of Australia	9,959,819			11,006,836	(1,047,017)	9,959,819	(1,050,000)	8,909,819	50	AA-	YES
Citigroup	598,243		(8,430,576)	1,895,765	(9,728,098)	(7,832,333)	(7,832,333)	44	A	NO	
Credit Suisse	(13,689,458)			1,544,054	(15,233,512)	(13,689,458)	(13,689,458)	21	A	NO	
Credit Suisse International	(7,422,911)		(20,811,329)	20,047,138	(48,281,378)	(28,234,240)	18,100,000	(10,134,240)	21	A	NO
Deutsche Bank	(893,509)		(15,309,010)	43,495,840	(59,698,359)	(16,202,519)	(16,202,519)	14	A+	NO	
Goldman Sachs & Co.			(453,753)	920,465	(1,374,218)	(453,753)	(453,753)	67	A	YES	
Goldman Sachs Intl.	(478,736)	(23,371,564)	(14,287,852)	10,725,205	(48,863,357)	(38,138,152)	17,800,000	(20,338,152)	144	A	YES
HSBC	(634,403)		2,026,023	3,828,365	(2,436,745)	1,391,620	1,391,620	22	AA	NO	
JPMorgan	3,196,713	2,998,542	(19,708,379)	83,614,959	(97,128,083)	(13,513,124)	(13,513,124)	29	A+	NO	
Mellon Bank	(4,758,826)			1,325,568	(6,084,394)	(4,758,826)	(4,758,826)	125	AA-	YES	
Morgan Stanley Capital Service	(301,710)		(6,906,240)	145,938	(7,353,888)	(7,207,950)	(7,207,950)	82	A	YES	
RBS	16,322			2,401,780	(2,385,458)	16,322	16,322	48	A	NO	
Standard Chartered Bank	1,846,040			1,940,313	(94,273)	1,846,040	1,846,040	22	AA-	NO	
Societe Generale	(46,335)			1,888	(48,223)	(46,335)	(46,335)	59	A+	YES	
Toronto Dominion	3,454,495			37,592,465	(34,137,970)	3,454,495	3,454,495	50	AA-	YES	
UBS	(22,752,013)		1,843,541	21,549,517	(42,457,989)	(20,908,472)	(20,908,472)	20	A	NO	
WestPac Bank	(6,288,687)			7,845,463	(14,134,150)	(6,288,687)	(6,288,687)	42	AA-	NO	
Grand Total	(8,160,981)	(20,373,022)	(110,166,197)	300,783,867	(439,484,067)	(138,700,200)	39,400,000	(99,300,200)	50		

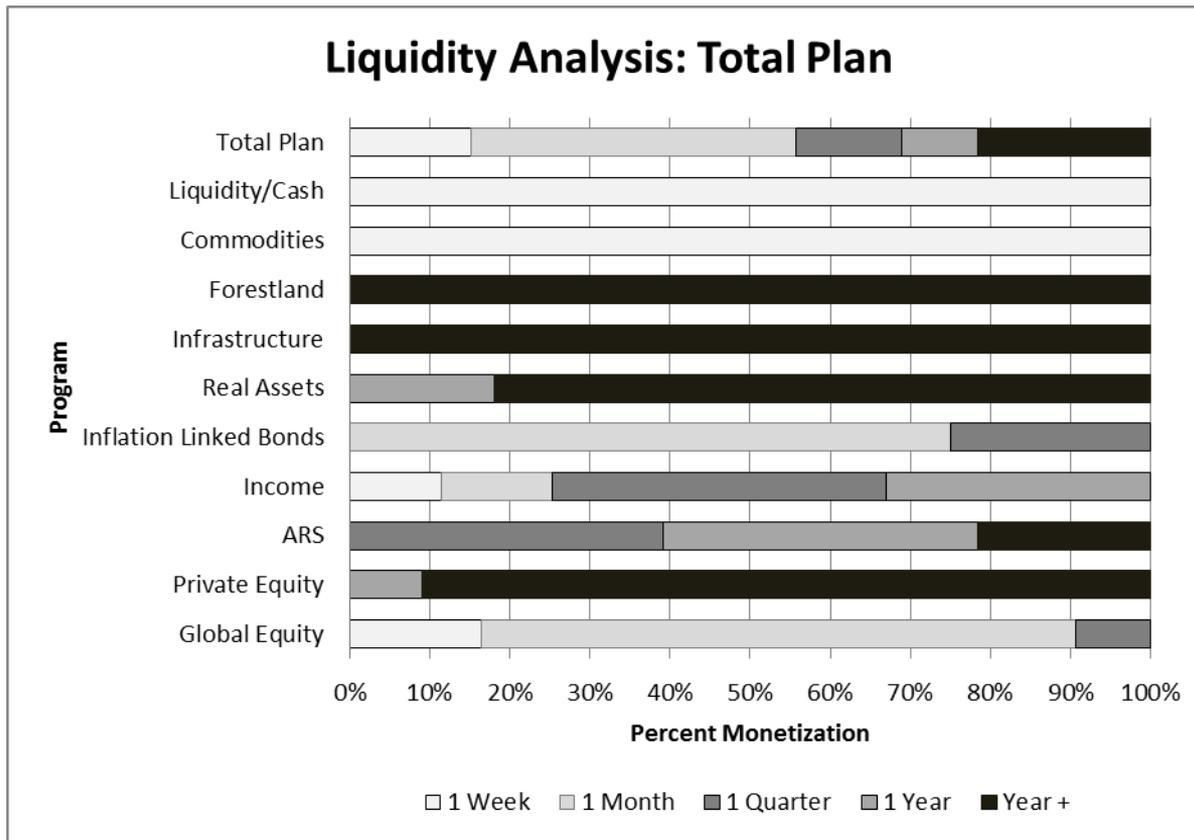
* As of 10/31 the fund posted 39mm to counterparties

As of 10/31 Mortgage TBA Exposure was 8mm in mark to market value, i.e. CalPERS had exposure to counterparties

As of 10/31 CalPERS has 328mm posted to Citigroup FCM and 268mm to Goldman FCM

Liquidity Analysis

September 30, 2012



	1 Week	1 Month	1 Quarter	1 Year	Year +
Total Fund by Time Bucket	15%	40%	13%	10%	22%
Total Fund Cumulative	15%	56%	69%	78%	100%