

CIO Total Fund Performance & Risk Report

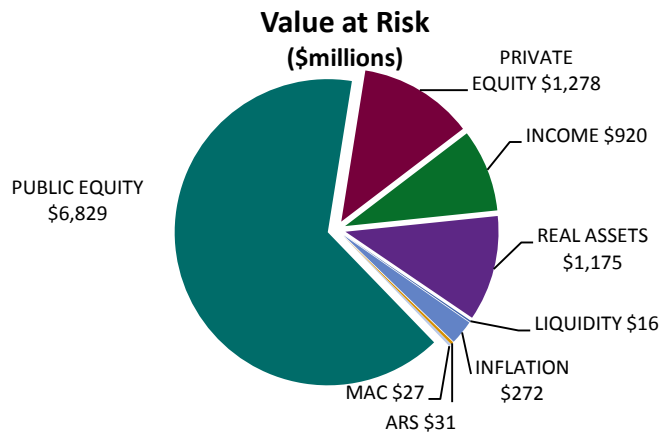
RISK MANAGEMENT SUMMARY



Period Ending November 30, 2014

Investment Belief 9: Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error. CalPERS shall develop a broad set of investment and actuarial risk measures and clear processes for managing risk. The path of returns matters, because highly volatile returns can have unexpected impacts on contribution rates and funding status.

Total Fund Volatility Trends (%)				
	Policy Limit	Current 11/30/2014	Last Qtr 9/30/2014	Last Year 5/31/2013
Total Risk	n/a	9.52	9.34	10.95
Benchmark Risk	n/a	9.19	8.90	10.42
Active Risk	< 1.5%	0.78	0.83	0.96
Allocation Risk	< .75%	0.12	0.05	0.14
Selection Risk	n/a	0.67	0.78	0.81



Comments:

1) After reaching a low in September 2014, forecast Total Risk for the PERF has moved slightly higher due to increased volatility in commodities (primarily oil) and currencies which is impacting aggregate risk levels across asset classes. Active Risk continues to trend lower driven primarily by lower correlations between risk factors.

Asset Class	Market Value (\$millions)	Total Risk (%)	% Contribution to Total Risk	Active Risk (%)	Correlation***	Value-at-Risk (\$millions)*	Conditional VaR(\$millions)**
PUBLIC EQUITY	\$ 160,222	13.3%	73.6%	0.2%	0.99	\$ 6,829	\$ 8,677
PRIVATE EQUITY	\$ 30,855	12.7%	12.6%	5.9%	0.92	\$ 1,278	\$ 1,576
INCOME	\$ 53,600	4.9%	1.5%	1.0%	0.16	\$ 920	\$ 1,154
REAL ASSETS	\$ 29,963	11.9%	10.3%	3.5%	0.83	\$ 1,175	\$ 1,457
LIQUIDITY	\$ 5,339	0.9%	0.0%	0.5%	(0.18)	\$ 16	\$ 20
INFLATION	\$ 15,378	5.6%	1.6%	1.3%	0.55	\$ 272	\$ 343
ARS	\$ 2,875	3.5%	0.3%	3.6%	0.82	\$ 31	\$ 39
MAC	\$ 1,183	7.3%	0.2%	7.3%	0.81	\$ 27	\$ 34
TOTAL FUND**	\$ 299,535	9.52	100.0%	0.78	1.00	\$ 9,260	\$ 11,629

*10 Day, 95% confidence Value at Risk (VaR)

** 10 Day, 95% confidence Value at Risk (VaR) simulation. Conditional VaR measures the mean of the tail distribution beyond the 95% confidence level

*** Correlations are vs. the entire PERF portfolio

Due to reporting constraints, all risk statistics are as of November 30, 2014 unless otherwise stated

Source: BarraOne / CalPERS

RISK MANAGEMENT TIME SERIES

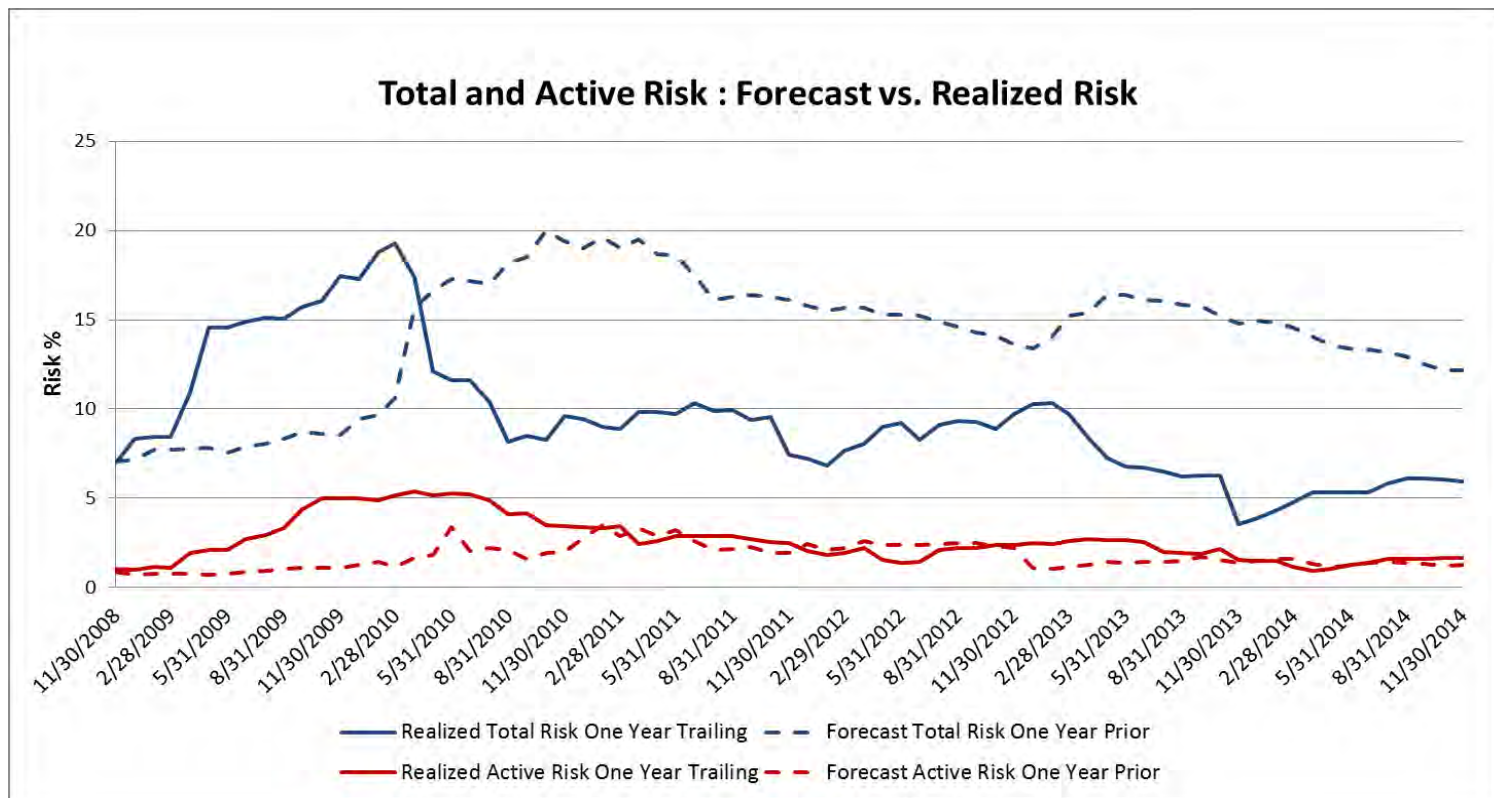
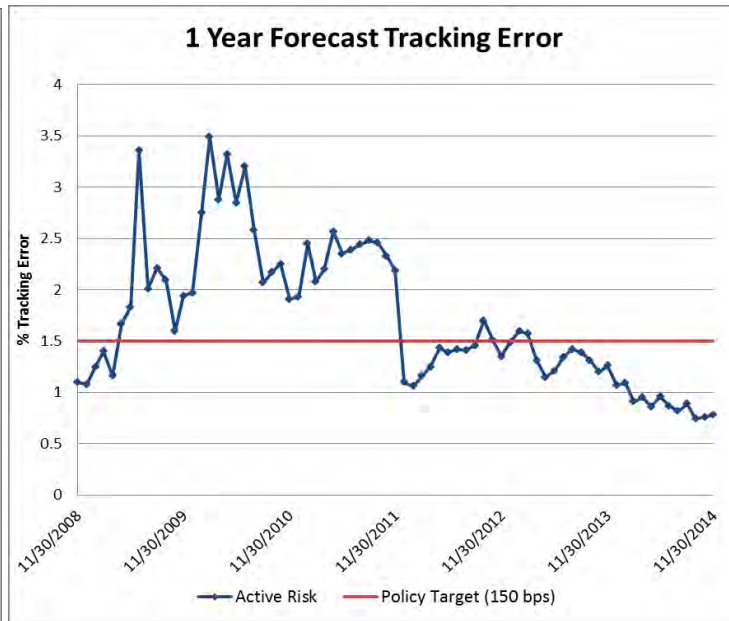
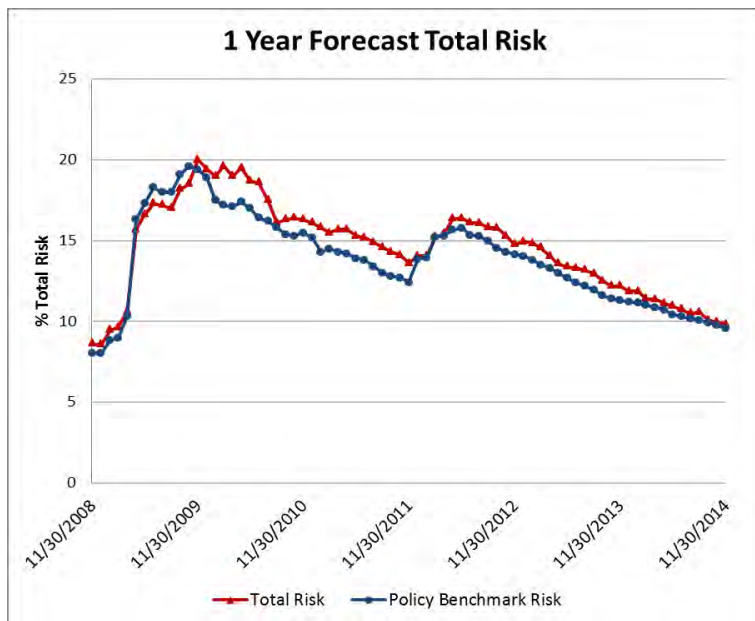
Top Charts:

1 year Forecast Total Risk (Volatility) and Forecast Tracking Error (Active Risk) for the Total Fund are shown. The charts highlight the increased volatility from the 2008-2009 period.

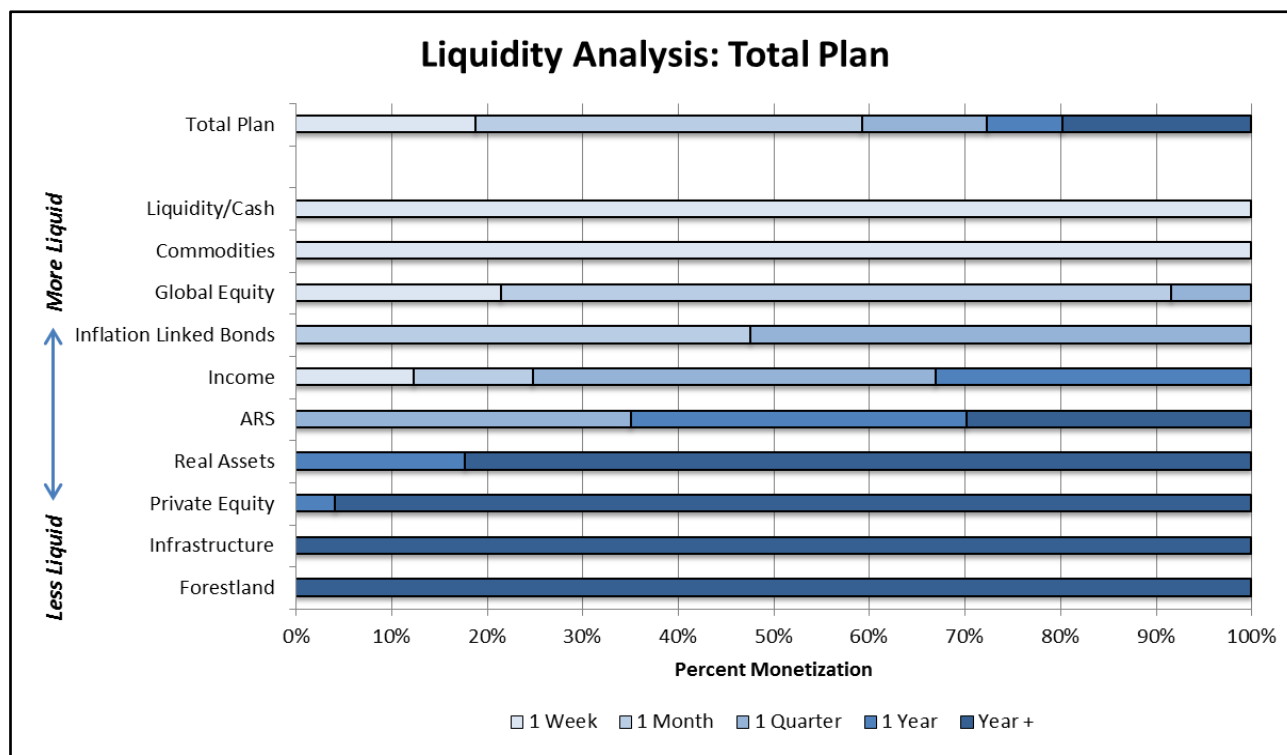
Bottom Chart:

The bottom chart plots the forecast Total and Active Risk for the Total Fund one year prior to each date vs. the Total and Active Risk realized for that date. The graph shows the lagged nature of long term risk models that incorporate a larger backward estimation window which you can see from the realized volatility leading the forecast from the model and highlights the importance of looking at changes in realized risk that may indicate a deviation from capital markets assumptions.

Source: BarraOne, SSB, CalPERS



LIQUIDITY

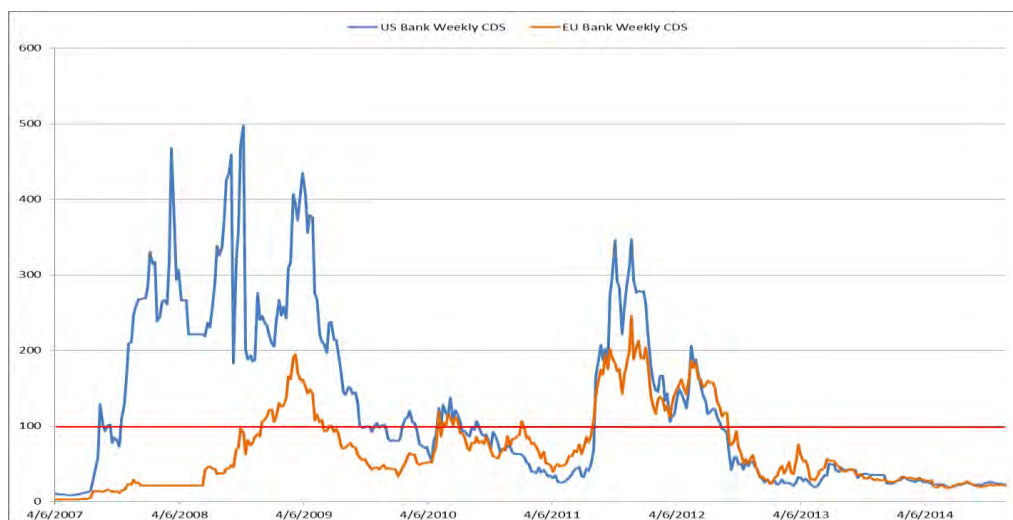


Transactional liquidity is estimated for each asset class /strategy based on the current market environment while also accounting for legal structures or other factors that may impact liquidity. *Source: SSB, CalPERS*

PERF TACTICAL LIQUIDITY SNAPSHOT		
As of December 31, 2014		
	Period Starting:	January 1, 2015
	Period Ending:	January 31, 2015
	Overnight	2 days - EOM
Sources Total (cash flow in)	-	2,565,585,819
Uses Total (cash flow out)	-	(2,367,188,689)
Sources in Excess (Deficit) of Uses		198,397,130
Contingency Use*		(293,971,181)
Total Cash and Cash Equivalents	4,907,018,173	5,105,415,304
Liquidity Coverage Ratio		281%
* Contingency Use is based on a 10 Day, 99% confidence VaR of derivatives positions + contingent exposure estimates		

The Tactical Liquidity snapshot is built from estimates of future cash inflows and outflows over a 1 year horizon. For this report the 1 month forward period is being shown along with a Liquidity Coverage ratio which can be interpreted as how many times (in this case 2.81 times) our available liquid cash /cash equivalents could cover our projected cash needs over a 1 month forward period assuming normal market conditions. *Source: BarraOne, SSB, CalPERS*

COUNTERPARTY RISK



Current CDS spreads are tracked for CalPERS counterparties. If the average of the CDS spreads rises above 100bps an internal meeting is held to discuss the change in trend and potential credit risk mitigating actions that might be taken.

OTC Derivative Counterparty Exposure Report

Counterparty	Net MTM	Net MTM	Net MTM	CalPERS	Counter Party	Net MTM Total	Collateral	Net Credit
	FORWARDS	OPTIONS	SWAPS	Exposure	Exposure		Posted	
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)*	(\$)
Citigroup	10,386,714.00	(84,745.00)	11,735,283.00	27,147,091.00	(5,109,839.00)	22,037,252.00	(6,749,962.00)	15,287,290
Morgan Stanley Capital Service	15,466,507.00	(601,600.00)	(407,051.00)	25,359,086.00	(10,901,230.00)	14,457,856.00		14,457,856
Societe Generale	11,466,071.00	(1,894,267.00)	(350,385.00)	32,929,960.00	(23,708,541.00)	9,221,419.00		9,221,419
BNP Paribas	3,203,244.00		77,211.00	5,690,784.00	(2,410,329.00)	3,280,455.00	640,000.00	3,920,455
HSBC	16,470,831.00		121,164.00	21,363,913.00	(4,771,918.00)	16,591,995.00	(15,250,000.00)	1,341,995
RBC Capital Markets	382,079.00			461,661.00	(79,582.00)	382,079.00		382,079
State Street	(425,416.00)			1,280,752.00	(1,706,168.00)	(425,416.00)	640,000.00	214,584
Bank of Montreal	753,144.00	(1,127,260.00)		1,889,874.00	(2,263,990.00)	(374,116.00)	550,000.00	175,884
Standard Chartered Bank	171,736.00			173,131.00	(1,395.00)	171,736.00		171,736
WestPac Bank	1,661,750.00			1,661,750.00		1,661,750.00	(1,550,000.00)	111,750
Goldman Sachs Bank			17,685,033.00	24,035,706.00	(6,350,673.00)	17,685,033.00	(17,600,000.00)	85,033
Barclays	457,574.00	(453,762.00)		11,519,147.00	(11,515,335.00)	3,812.00		3,812
Credit Suisse	(7,646.00)				(7,646.00)	(7,646.00)		(7,646)
Toronto Dominion	455,208.00			455,208.00		455,208.00	(650,000.00)	(194,792)
Commonwealth Bank of Australia	(2,042,383.00)			799,209.00	(2,841,592.00)	(2,042,383.00)		(2,042,383)
Canadian Imperial Bank of Commerce	2,489,830.00		(3,903,347.00)	3,750,503.00	(5,164,020.00)	(1,413,517.00)	(1,800,000.00)	(3,213,517)
UBS AGG	(11,185,680.00)	(291,881.00)	(9,331.00)	1,262,179.00	(12,749,071.00)	(11,486,892.00)	7,251,000.00	(4,235,892)
Deutsche Bank	(390,859.00)	(12,691.00)	(4,765,288.00)	6,478,564.00	(11,647,402.00)	(5,168,838.00)	840,000.00	(4,328,838)
Bank of America	1,443,722.00	(142,206.00)	10,874,101.00	19,921,219.00	(7,745,602.00)	12,175,617.00	(17,408,690.00)	(5,233,073)
JPMorgan Chase Bank	10,374,069.00	(873,000.00)	(12,844,910.00)	20,731,313.00	(24,075,154.00)	(3,343,841.00)	(5,377,000.00)	(8,720,841)
Macquarie			(11,392,738.00)		(11,392,738.00)	(11,392,738.00)	1,950,000.00	(9,442,738)
Goldman Sachs Intl.	16,082,189.00	(1,563,431.00)	(54,745,762.00)	39,528,981.00	(79,755,985.00)	(40,227,004.00)	27,650,000.00	(12,577,004)
Credit Suisse International	(3,802,798.00)		(27,675,093.00)	1,621,458.00	(33,099,349.00)	(31,477,891.00)	12,944,000.00	(18,533,891)
Grand Total	73,409,886.00	(7,044,843.00)	(75,601,113.00)	248,061,489.00	(257,297,559.00)	(9,236,070.00)	(13,920,652.00)	(23,156,722)

Above: Total market value exposure and net credit exposures are monitored for all of our OTC(over-the-counter) positions. The green check box in the OTC exposure table indicates that the total market value exposure is within our procedural tolerances.

Source: Blackrock, CalPERS

Below: FCM (Futures Commission Merchant) exposures are monitored for how much initial margin we have posted with each FCM in addition to reviewing key metrics that provide some insight on the FCM's risk profile such as Excess Net Capital (amount of additional capital the FCM has to support the business) and customer assets. Large changes in these metrics could be an indicator of potential credit or operational issues with the FCM and would trigger

FUTURES CLEARING MERCHANT EXPOSURE

Futures Commission Merchant	Collateral Posted	Procedure Check	Excess Net Capital	Procedure Check	Customers' Assets	Procedure Check
CITIGROUP GLOBAL MARKETS INC	8,964,584.96	✓	3,981,197,582	✓	5,770,839,537	✓
CREDIT SUISSE SECURITIES (USA) LLC	210,648,119.70	✓	4,792,471,926	✓	9,636,035,729	✓
GOLDMAN SACHS & CO	352,792,517.80	✓	11,303,466,840	✓	19,659,961,582	✓

*As of December 26, 2014

LEVERAGE

Total Fund Leverage Report

as of 11/30/14

Asset Class	Net Market Value (\$Billions)	Leverage Sources						Policy Leverage Calc % ¹⁰	Policy Limit	Leverage embedded in company structure or investment vehicle (\$B)	Total Gross Exposure ⁸ (\$Billions)
		CalPERS controlled leverage deployment (\$Billions)				Contingent Claim	Embedded Leverage Sources ^{4,6}				
		Notional Exposure	Non Recourse Debt	Recourse Debt ⁴							
Public Equity ^{2,3}	\$ 160.2	6.4	-	-	-	4%	10%	52.9	\$ 219.6		
Private Equity ⁵	30.9	-	-	-	-	-	-	12.3	43.2		
Income	53.6	0.8	-	-	-	1%	10%		54.4		
Liquidity	5.3	-	-	-	-	-	-		5.3		
Real Estate	25.6	-	13.1	0.1	-	34%	50%		38.7		
Infrastructure	2.1	-	1.9	-	-	47%	65%		4.0		
Forestland	2.3	-	0.6	-	-	21%	50%		2.9		
Inflation Linked	15.4	-	-	-	-	-	-		15.4		
ARS (incl. MAC) ⁹	2.9	-	-	-	-	-	-		2.9		
Transition + Overlay	1.2	-	-	-	-	-	-		1.2		
Total Fund	\$ 299.5	7.2	15.6	0.1	-	-	-	65.3	\$ 387.5		

Programs	Net Market Value (\$Billions)	Notional Exposure	Non Recourse Debt	Recourse Debt	Contingent Claim	Policy Leverage Calc %	Policy Limit	Embedded Leverage Sources	Total Gross Exposure ⁸ (\$Billions)
Credit Enhancement ⁶	-	-	-	-	1.3	-	-	-	1.3
Asset Based Lending ⁷	-	-	-	-	0.1	-	-	-	0.1
Securities Lending ¹	-	1.0	-	-	-	10%	70%	-	1.0
Total- Unfunded Programs/Overlays		1.0			1.4	-	-	-	\$ 2.4
Total Asset Class + Programs	\$ 299.5	8.2	15.6	0.1	1.4	-	-	65.3	\$ 389.8

1. Securities Lending notional exposure is the dollar amount of reinvested capital with maturity greater than 90 days. Policy Leverage % for Securities Lending is calculated as the notional exposure divided by the total size of the program. The size of the Securities Lending program as of 11-30 was \$9.6 Billion.

2. Public Equity Notional Exposure is the net notional value of derivatives that are not backed by cash like instruments.

3. Embedded leverage represented for Public Equity is non-recourse debt. This amount is estimated using the average LT Debt/Capital ratio (currently at 33.07%) of the underlying holdings.

4. Recourse Debt in Real Estate decreased by \$141 Million from prior quarter

5. Embedded leverage for Private Equity is non-recourse debt exposure at the investment company level or within commingled funds. This is estimated using the average Net Debt/Enterprise Value ratio (currently estimated at 40%) for all PE holdings.

6. Credit Enhancement - exposure is contingent upon default of underlying obligation being insured + estimated recovery ratio on the security.

7. Asset Based Lending - exposure is contingent upon default of underlying obligation + estimated sale of recoverable assets.

8. Total Gross Exposure is the sum of Net Market Value + Leverage Sources (within CalPERS direct control for implementation as well as embedded leverage).

9. For ARS and other strategies where limited transparency is available, net exposure is measured as the estimated global equity beta. The current estimated beta of ARS to global equity is .2

10. Policy Calculations - limits for leverage are typically set on leverage source(s) within an asset class/program where deployment is controlled or influenced by internal staff. The below table summarizes the specific policy limits shown in the table above and which leverage source they are specified against.

Asset Class / Program	Leverage Type	Policy Limit
Public Equity	Notional Leverage	10%
Income	Notional Leverage	10%
Real Estate	Non-Recourse + Recourse	50%
Infrastructure	Non-Recourse + Recourse	65%
Forestland	Non-Recourse + Recourse	50%
Securities Lending	Notional Leverage	70%

HISTORICAL SCENARIOS

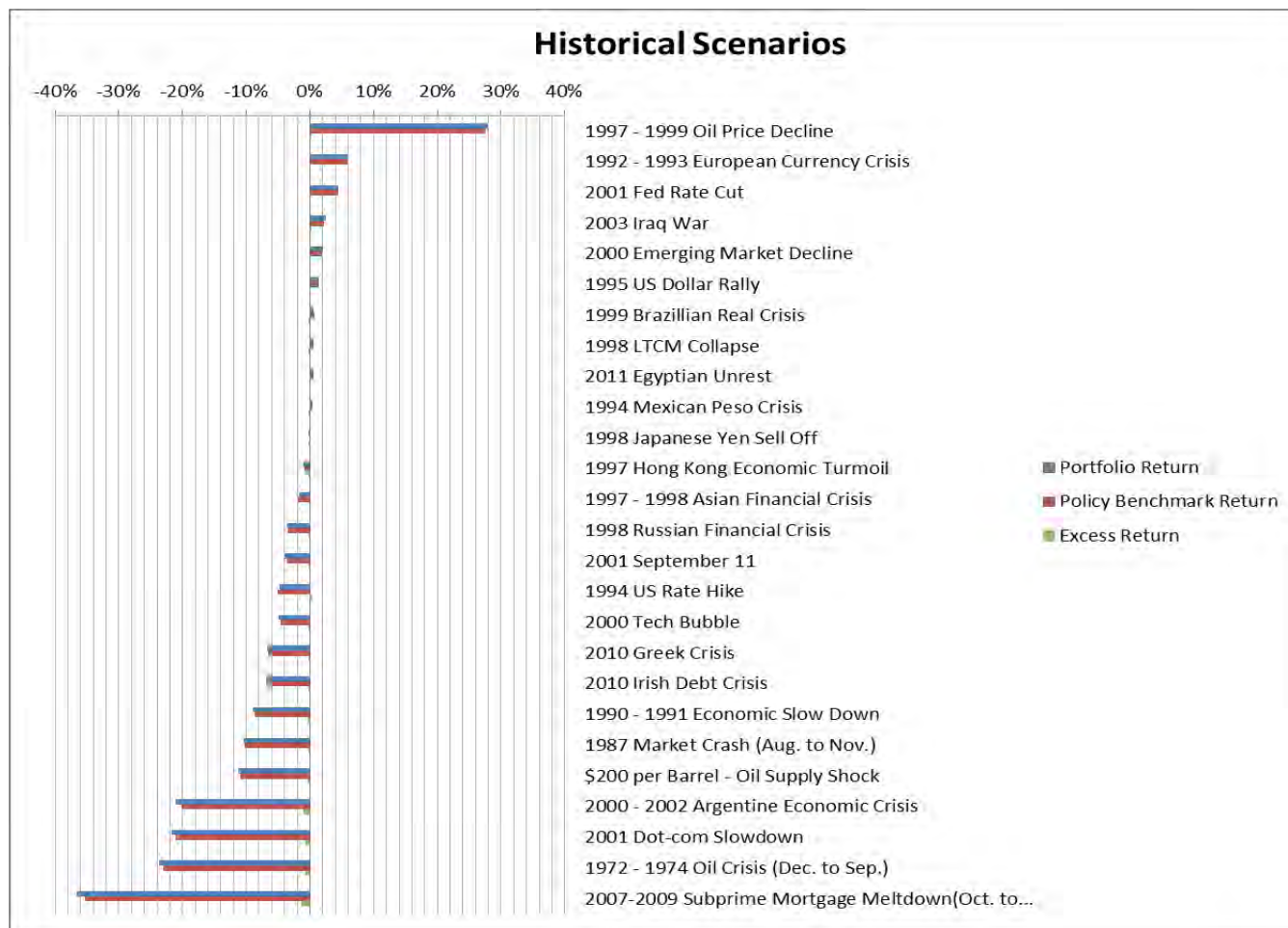
Historical scenarios highlight the sensitivity of the portfolio to past economic regimes or specific events. The scenarios can be used as a "what if" gauge of current portfolio positioning to understand the potential impact if a similar event or regime were to repeat.

Best and Worst Scenarios - Excess Return

Scenario	Portfolio Return	Policy Benchmark Return	Excess Return
1994 US Rate Hike	-4.7%	-5.1%	0.37%
1997 - 1999 Oil Price Decline	28.0%	27.6%	0.31%
2003 Iraq War	2.6%	2.3%	0.30%
2001 Dot-com Slowdown	-21.8%	-21.1%	-0.68%
2000 - 2002 Argentine Economic Crisis	-21.1%	-20.0%	-1.04%
2007-2009 Subprime Mortgage Meltdown(Oct. to Feb.)	-36.7%	-35.4%	-1.31%

Best and Worst Scenarios - Portfolio Return

Scenario	Portfolio Return	Policy Benchmark Return	Excess Return
1997 - 1999 Oil Price Decline	28.0%	27.6%	0.31%
1992 - 1993 European Currency Crisis	6.0%	5.9%	0.11%
2001 Fed Rate Cut	4.5%	4.5%	0.03%
2001 Dot-com Slowdown	-21.8%	-21.1%	-0.68%
1972 - 1974 Oil Crisis (Dec. to Sep.)	-23.7%	-23.0%	-0.67%
2007-2009 Subprime Mortgage Meltdown(Oct. to Feb.)	-36.7%	-35.4%	-1.31%



1. How to interpret the OTC Counterparty Risk Exposure section

OTC Derivative Counterparty Exposure Report								
Counterparty	Net MTM FORWARDS (\$)	Net MTM OPTIONS (\$)	Net MTM SWAPS (\$)	CalPERS Exposure (\$)	Counter Party Exposure (\$)	Net MTM Total (\$)	Collateral Posted (\$)*	Net Credit Exposure (\$)
Counterparty 123	10,386,714	(84,745)	11,735,283	27,147,091	(5,109,839)	22,037,252	(6,749,962)	15,287,290

NET MTM BY PRODUCT TYPE

- Columns reflect the net mark to market (MTM) of all OTC trades by product type with a Counterparty
- + amount = CalPERS has a gain on the positions
- amount = CalPERS has a loss on the positions

DIRECTIONAL EXPOSURE

- The exposure columns reflect an un-net profit or loss (P&L) grouping across product type and is equivalent to the directional unwind exposure at a point in time
- Trades with positive P&L are bucketed together = CalPERS Exposure
- Trades with negative P&L are bucketed together = Counterparty Exposure

NET MTM TOTAL

- The net market to market column reflects the total current net profit or loss position across all open OTC trades with a counterparty
- + amount = CalPERS is owed money
- amount = CalPERS owes money

COLLATERAL POSTED

- The collateral posted column reflects the dollar amount of collateral that is either posted to CalPERS or that CalPERS has posted to a counterparty to offset credit risk
- + amount = CalPERS has posted money out
- amount = Counterparty has posted money to CalPERS

NET CREDIT EXPOSURE

- The net credit exposure column reflects the open uncollateralized credit exposure at risk if a Counterparty were to default with no change in mark to market prices
- + amounts reflect open credit risk where CalPERS is owed money

*Net mark to market (MTM): positions are adjusted to reflect current market values and then summed