



Executive Summary of Performance
Prepared For

California Public Employees' Retirement System
Judges II
Legislators' Fund
Long-Term Care
California Employers' Retiree Benefit Trust
Health Care Fund
Supplemental Income Plans

Fourth Quarter 2016

Wilshire Associates Incorporated
1299 Ocean Avenue, Suite 700
Santa Monica, CA 90401
Phone: 310-451-3051
contactconsulting@wilshire.com



Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market IndexSM, was up for the fourth quarter by 4.54% and by 13.37% for all of 2016. This marks the fifth straight quarterly gain and, more remarkably, eighth straight annual gain for the broad U.S. market. A portion of that “winning streak” is due to a rebound from the global financial crisis sell-off. However, the market has continued to produce strong returns even after the recovery period, with a 14% annualized gain for the past four years. Following a couple of rocky months to begin the year, U.S. equities trended upward during the rest of 2016. The fourth quarter benefitted from strong economic growth and signs of confidence from the Federal Reserve.

Large capitalization stocks underperformed smaller shares with the Wilshire Large-Cap IndexSM up 4.14% versus a gain of 8.30% for the Wilshire US Small-Cap IndexSM. Small cap has performed better, generally, in 2016 with an index return of more than 20%. The Wilshire US Micro-Cap IndexSM was up 8.97% for the quarter and 17.86% year-to-date. Growth stocks trailed value during the fourth quarter in both large- and small-cap spaces and trailed for the calendar year, as well.

Sector performance was varied during the quarter. The best performing sector, by far, was Financials, which was up 21.2%. Industrials (+8.3%) and Energy (+7.6%) also produced big gains. The main laggard was Health Care, which was down -3.6%.

Fixed Income Market

After falling for much of the first half of 2016, U.S. Treasury yields reversed course and moved higher for the remainder of the year. The bellwether 10-year Treasury yield reached a historic low of 1.37% in early July before climbing to end the year at 2.45%, accelerating its rise after the election. The Federal Open Market Committee decided to increase their overnight rate by 0.25% at their December meeting, just their second increase since 2008. Credit spreads tightened during the quarter in both investment grade and high yield bonds. The move was dramatic enough within high yield to result in a net gain for the quarter, despite rising Treasury yields.

After trending downward for nearly three years, the 10-Year Treasury yield pushed higher during the fourth quarter. A similar pattern has been evident in the 10-year breakeven inflation rate. Both shifts this year occurred largely after November 8th. Whether it was the election or the removal of an unknown that spurred the change is uncertain, but the timing is unmistakable. It is worth noting that yields moved higher during the first half of 2015, as well, before retreating on concerns about global economic growth. The Federal Reserve increased the Fed-funds rate in December to a range of 0.5%-0.75%, just the second increase since effectively reaching zero at year-end 2008.

Non-U.S. Markets

Equity markets outside of the U.S. were in mostly positive territory for both the fourth quarter and year-to-date in local currency terms. However, a strong U.S. dollar resulted in losses for U.S. investors. The European Central Bank announced that they would be buying less per month than previously scheduled as part of their current quantitative easing but extended the buying period to December 2017. Japan also is maintaining an accommodative stance, including their negative overnight rate. Despite a strong 2016, emerging market equities

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suffered during the fourth quarter following the U.S. election as investors feared weakening prospects for global trade and exports from emerging market countries. Higher U.S. interest rates and a stronger dollar hurt, as well.

Real Assets Markets

Real estate securities were down during the fourth quarter both in the U.S. and globally. Commodities were up for the quarter as crude oil rose 11.4% to \$53.72 per barrel, completing an already strong 2016. Natural gas prices were up, as well, with a gain of 28.1%, ending the quarter at \$3.72 per million BTUs. MLP returns were positive as the sector benefitted from an agreement by oil producers that is aimed at balancing supply and demand. Finally, gold prices were down and finished at approximately \$1,152 per troy ounce, down -12.6% from last quarter.

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Summary of Index Returns For Periods Ended December 31, 2016

	<u>Quarter</u>	<u>One Year</u>	<u>Three Years</u>	<u>Five Years</u>	<u>Ten Years</u>
Domestic Equity					
Standard & Poor's 500	3.82%	11.96%	8.87%	14.66%	6.95%
Wilshire 5000	4.54	13.37	8.76	14.71	7.17
Wilshire 4500	6.46	18.54	7.60	15.26	8.23
Wilshire Large Cap	4.14	12.49	8.93	14.63	7.05
Wilshire Small Cap	8.30	22.41	7.55	15.48	8.69
Wilshire Micro Cap	8.97	17.86	5.10	15.95	5.75
Domestic Equity					
Wilshire Large Value	4.38%	15.44%	8.98%	14.07%	5.83%
Wilshire Large Growth	3.90	8.97	8.74	15.20	8.21
Wilshire Mid Value	4.55	21.04	10.17	15.89	8.14
Wilshire Mid Growth	5.93	13.54	5.19	13.49	8.86
Wilshire Small Value	9.04	27.68	10.03	16.71	8.51
Wilshire Small Growth	7.62	16.97	4.92	14.14	8.78
International Equity					
MSCI All World ex U.S. (USD)	-1.25%	4.50%	-1.77%	5.00%	0.96%
MSCI All World ex U.S. (local currency)	5.34	8.07	5.84	10.94	3.09
MSCI EAFE	-0.71	1.00	-1.60	6.53	0.75
MSCI Europe	-0.40	-0.40	-3.17	6.25	0.36
MSCI Pacific	-1.03	4.18	1.43	7.15	1.62
MSCI Emerging Markets Index	-4.17	11.18	-2.56	1.28	1.84
Domestic Fixed Income					
Barclays Aggregate Bond	-2.98%	2.65%	3.03%	2.23%	4.35%
Barclays Credit	-2.97	5.63	4.07	3.85	5.31
Barclays Mortgage	-1.97	1.67	3.07	2.06	4.28
Barclays Treasury	-3.84	1.04	2.29	1.21	3.97
Citigroup High Yield Cash Pay	1.87	17.58	4.23	6.89	7.06
Barclays US TIPS	-2.41	4.68	2.26	0.89	4.36
91-Day Treasury Bill	0.08	0.33	0.14	0.12	0.80
International Fixed Income					
Citigroup Non-U.S. Gov. Bond	-10.84%	1.81%	-2.18%	-1.94%	2.54%
Citigroup World Gov. Bond	-8.53	1.60	-0.84	-0.99	2.99
Citigroup Hedged Non-U.S. Gov.	-2.21	5.13	5.43	4.63	4.49
Currency*					
Euro vs. \$	-6.14%	-2.90%	-8.52%	-4.07%	-2.21%
Yen vs. \$	-13.18	3.14	-3.41	-7.98	0.21
Pound vs. \$	-4.88	-16.16	-9.30	-4.48	-4.49
Real Estate					
Wilshire REIT Index	-2.28%	7.24%	13.78%	12.02%	4.80%
Wilshire RESI	-2.20	7.62	14.05	12.24	4.80

*Positive values indicate dollar depreciation.

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Summary Review of Plans Periods Ended 12/31/2016

	<u>Market Value</u>	<u>Qtr</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10-Year</u>
TOTAL FUND for PERF	\$302.8 bil	0.3%	7.7%	4.6%	8.6%	4.4%
<i>Total Fund Policy Benchmark ¹</i>		0.2%	8.5%	4.8%	8.6%	5.6%
<i>Actuarial Rate</i>		1.8%	7.5%	7.5%	7.5%	7.6%
Affiliate Funds						
JudgesI	\$40.7 mil	0.2%	0.6%	0.3%	0.2%	1.0%
<i>91-Day Treasury Bill</i>		0.1%	0.3%	0.1%	0.1%	0.8%
JudgesII	\$1,217.9 mil	-1.2%	7.6%	3.6%	7.9%	4.8%
<i>Weighted Policy Benchmark</i>		-1.3%	7.2%	3.5%	7.6%	4.8%
Legislators' Retirement System	\$115.1 mil	-2.4%	6.5%	3.6%	5.6%	5.2%
<i>Weighted Policy Benchmark</i>		-2.5%	6.0%	3.5%	5.1%	4.9%
Long-Term Care ("LTC")	\$4,226.0 mil	-3.5%	5.2%	3.2%	4.4%	3.7%
<i>Weighted Policy Benchmark</i>		-3.4%	5.4%	3.1%	4.1%	3.6%
CERBT Strategy 1	\$4,866.2 mil	-0.9%	7.6%	3.5%	7.8%	--%
<i>CERBT Strategy 1 Policy Benchmark</i>		-1.1%	6.9%	3.1%	7.5%	--%
CERBT Strategy 2	\$742.8 mil	-1.9%	7.0%	3.4%	6.6%	--%
<i>CERBT Strategy 2 Policy Benchmark</i>		-2.0%	6.3%	3.1%	6.2%	--%
CERBT Strategy 3	\$226.4 mil	-2.5%	6.2%	3.6%	5.3%	--%
<i>CERBT Strategy 3 Policy Benchmark</i>		-2.6%	5.7%	3.3%	4.9%	--%
Health Care Fund	\$434.5 mil	-3.0%	2.6%	3.2%	2.9%	4.6%
<i>Barclays U.S. Aggregate</i>		-3.0%	2.6%	3.0%	2.2%	4.3%
Supplemental Contribution Plan	\$114.6 mil	-0.8%	4.1%	2.2%	5.8%	--%
<i>CalPERS Custom SCP Plan Index</i>		-0.7%	4.5%	2.6%	6.2%	--%
457 Program	\$1,304.3 mil	0.9%	6.7%	3.8%	7.4%	4.1%
<i>CalPERS Custom 457 Plan Index</i>		1.0%	7.0%	4.1%	7.8%	4.6%

¹ The Total Fund Policy Benchmark return equals the return for each asset class benchmark weighted at the current target asset allocation.

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Total Fund Review PERF

Periods Ended 12/31/2016

	Market Value	5-Year Ratios							
		Qtr	1-Year	3-Year	5-Year	10-Year	VaR ¹²	Sharpe ¹³	Info ¹⁴
TOTAL FUND	\$302.8 bil	0.3%	7.7%	4.6%	8.6%	4.4%	\$36.2 bil	1.4	0.0
Total Fund Policy Benchmark ²		0.2%	8.5%	4.8%	8.6%	5.6%		1.4	0.0
Actuarial Rate		1.8%	7.5%	7.5%	7.5%	7.6%			
GROWTH	169.3	2.2%	9.3%	4.7%	10.6%	4.9%	\$34.9 bil	1.1	-0.4
Growth Policy Benchmark ³		2.3%	10.5%	5.0%	11.6%	5.9%		1.2	0.0
PUBLIC EQUITY	143.9	1.9%	9.8%	3.9%	10.6%	4.2%	\$29.0 bil	0.9	0.9
Public Equity Policy Benchmark ⁴		1.6%	9.0%	3.7%	10.3%	4.5%		0.9	0.0
PRIVATE EQUITY	25.4	4.0%	6.6%	8.8%	11.5%	9.8%	\$8.3 bil	3.1	-0.4
Private Equity Policy Benchmark ⁵		6.3%	16.7%	10.2%	16.4%	12.8%		1.4	0.0
INCOME	57.1	-5.3%	5.4%	4.5%	3.4%	6.1%	\$6.1 bil	0.7	1.5
Income Policy Benchmark ⁶		-5.4%	4.2%	4.0%	2.4%	5.4%		0.4	0.0
REAL ASSETS⁷	33.0	1.9%	5.8%	10.8%	11.3%	-0.8%	\$4.8 bil	1.6	0.1
Real Assets Policy Benchmark ⁸		1.7%	8.3%	10.6%	10.7%	7.4%		2.6	0.0
INFLATION	28.7	-1.6%	6.3%	-3.7%	-2.2%	-.%	\$2.0 bil	-0.3	0.2
Inflation Policy Benchmark ⁹		-1.6%	6.3%	-4.5%	-2.5%	-.%		-0.4	0.0
LIQUIDITY	13.2	0.1%	0.5%	0.8%	0.4%	1.5%	\$0.1 bil	0.3	-0.6
Liquidity Policy Benchmark ¹⁰		0.1%	0.3%	1.2%	0.7%	1.7%		0.4	0.0
ABSOLUTE RETURN STRATEGIES¹¹	0.3	-3.5%	-6.5%	0.0%	2.4%	1.8%		0.6	-0.7
Absolute Return Strategies Policy Benchmark ¹¹		1.3%	5.8%	5.4%	5.3%	6.5%		25.7	0.0
MULTI-ASSET CLASS COMPOSITE	1.2	0.7%	2.9%	4.5%	-.%	-.%		N/A	N/A
Absolute 7.5%		1.8%	7.5%	7.5%	-.%	-.%		N/A	N/A
CURRENCY + ASSET ALLOCATION TRANSITION	0.0	-.%	-.%	-.%	-.%	-.%		N/A	N/A
TERMINATED AGENCY POOL	0.1	-4.6%	5.0%	5.2%	-.%	-.%		N/A	N/A
TOTAL FUND PLUSTAP	302.9	0.3%	7.7%	4.6%	8.6%	4.4%		N/A	N/A

² The Total Fund Policy Benchmark return equals the return for each asset class benchmark weighted at the current target asset allocations.

³ Growth Policy Benchmark equals the benchmark returns of public equity and private equity weighted at policy allocation target percentages.

⁴ The Public Equity Policy Benchmark is a custom global benchmark maintained by FTSE.

⁵ The Private Equity Policy Benchmark is currently 1-quarter lagged (67% FTSE US TMI + 33% FTSE AW x-US TMI) with a hurdle of + 3%.

⁶ The Income Policy Benchmark equals the benchmark returns of domestic and international fixed income components weighted at policy allocation target percentages.

⁷ Real Assets include real estate, whose returns are net of investment management fees and all expenses, including property level operations expenses netted from property income. This method differs from GASB 31, which requires all investment expenses be identified for inclusion in the System's general purpose financial statements.

⁸ The Real Assets Policy Benchmark equals the benchmark returns of real estate, timber, and infrastructure weighted at policy allocation target percentages.

⁹ The Inflation Policy Benchmark equals the benchmark returns of commodities and TIPS weighted at policy allocation target percentages.

¹⁰ The Liquidity Policy Benchmark is a custom index maintained by State Street Bank.

¹¹ The Absolute Return Strategies program was excluded from Public Equity on July 1, 2011. Public Equity history does not include Absolute Return Strategies performance. The Absolute Return Strategies Policy Benchmark is currently Merrill Lynch Treasury 1-Year Note + 5%.

¹² VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value ((Expected Return - (1.65 X SD)) X MV).

¹³ The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the total risk taken. The 5-year period was selected to provide sufficient data points for a meaningful calculation, but is still short enough to reflect the changes to the investment programs over the last few years.

¹⁴ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per unit of excess risk ventured.

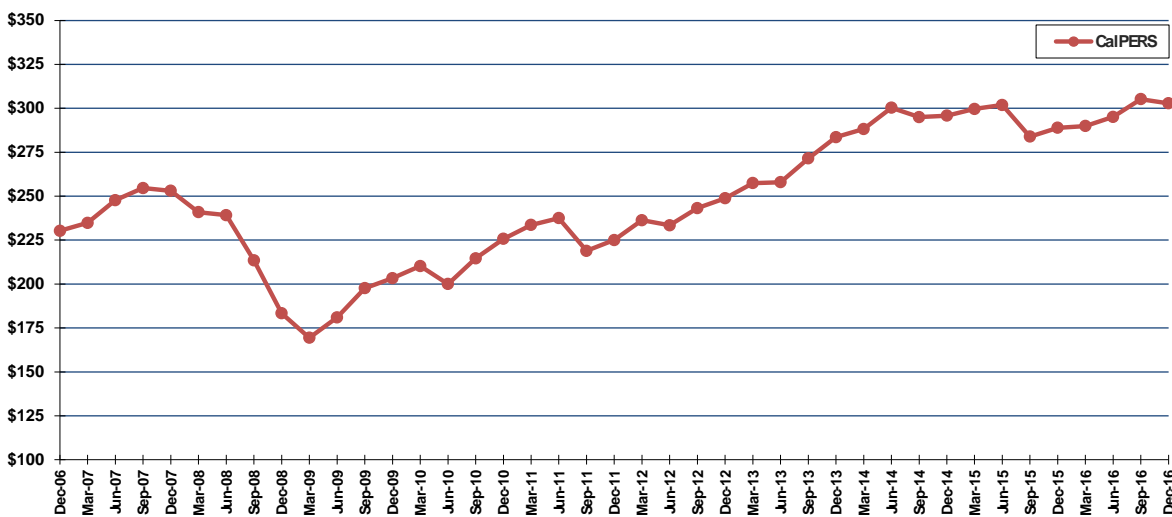


Total Fund Review for PERF (continued)
 Periods Ended 12/31/2016

Total Fund Flow

	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>4Q16</u>
Market Value (\$bil)	182.8	200.6	230.3	253.0	183.3	203.3	225.7	225.0	248.6	283.6	295.8	288.9	302.8

Total Fund Market Value



Asset Allocation

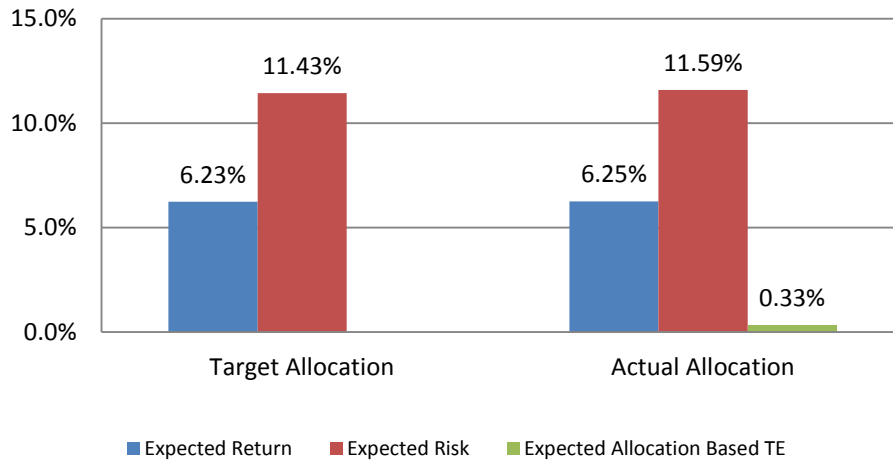
Asset Class	Actual (%)	Policy (%)	Difference (%)
Growth	55.9	54.0	+1.9
Income	18.9	20.0	-1.1
Real Assets	10.9	13.0	-2.1
Inflation	9.5	9.0	+0.5
ARS	0.1	0.0	+0.1
Liquidity	4.4	4.0	+0.4
Multi-Asset	0.4	0.0	+0.4
Total	100.0	100.0	0.0

* Asset allocation targets are in the process of shifting to the new targets adopted by the Investment Committee in September 2016. Transitions accounts are included with their respective asset classes.

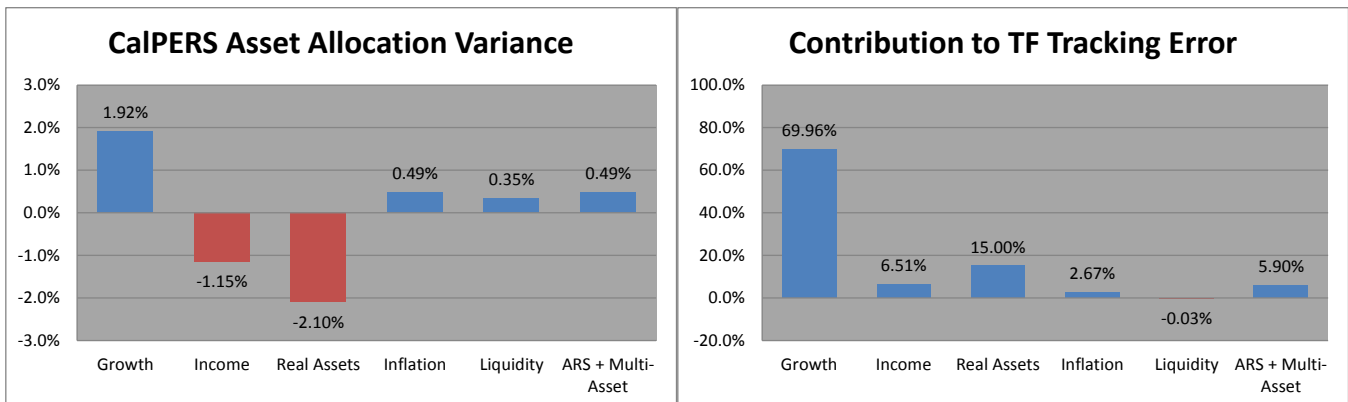
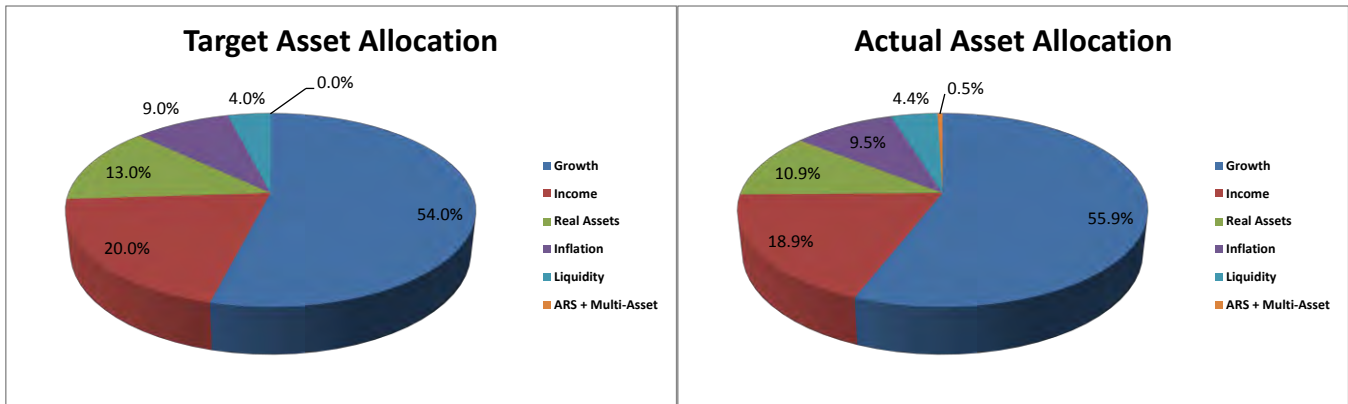


Total Fund Review for PERF (continued)
 Periods Ended 12/31/2016

Expected Return/Risk and Tracking Error based on Wilshire’s Asset Class Assumptions



Total Fund Asset Allocation

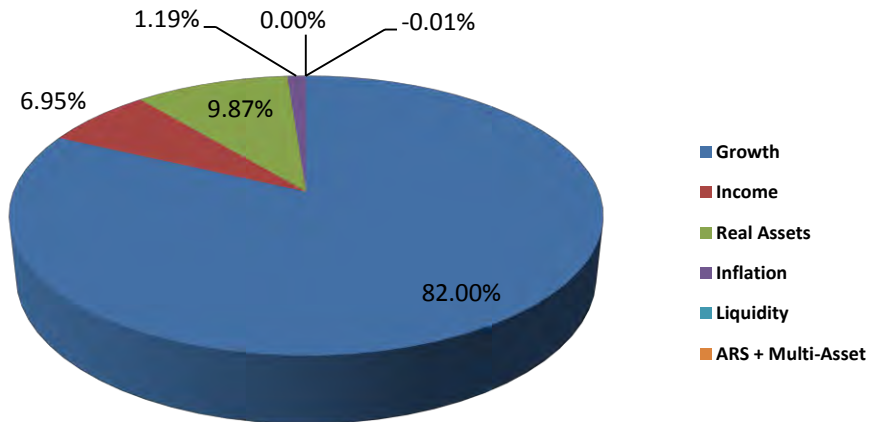




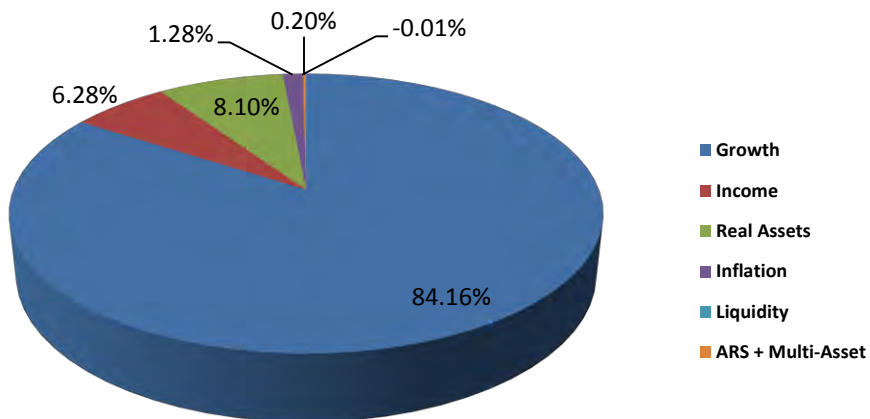
Total Fund Review for PERF (continued)
 Periods Ended 12/31/2016

Contribution to Total Risk based on Wilshire’s Asset Class Assumptions

Contribution to Total Risk - Target Allocation



Contribution to Total Risk - Actual Allocation





**California Public Employees' Retirement System
 Total Fund Attribution - Quarter
 As of 12/31/2016**

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	55.83	2.19	54.00	2.32	1.83	-0.12	0.00	0.00	-0.06	-0.06
Public Equity	47.37	1.87	46.00	1.61	1.37	0.25	-0.02	0.01	0.11	0.10
Private Equity	8.47	4.03	8.00	6.25	0.47	-2.23	0.02	-0.01	-0.18	-0.16
Income	19.87	-5.27	20.00	-5.43	-0.13	0.17	-0.01	0.00	0.03	0.02
Real Assets	10.86	1.88	13.00	1.69	-2.14	0.19	-0.03	0.00	0.02	-0.01
Inflation	7.90	-1.60	9.00	-1.62	-1.10	0.02	0.04	0.00	0.00	0.04
Absolute Return	0.50	-3.54	0.00	1.28	0.50	-4.82	0.01	-0.02	0.00	-0.02
Liquidity	5.04	0.15	4.00	0.09	1.04	0.06	0.00	0.00	0.00	0.00
Monthly Linked Return	100.00	0.19	100.00	0.22		-0.03	0.00	-0.03	0.00	-0.03
Trading/Hedging/Other		0.09		0.00		0.09				0.09
Total		0.28		0.22		0.06				0.06

The Total Fund Attribution displays the return contribution of each asset class to the total fund. This is done by monthly linking each program's allocation at the beginning of the month with each month's returns to determine if tactical allocation and active management within asset classes helped or hurt performance. The interaction effect is a cross-factor, used to help further explain the combined impact of a portfolio's selection and allocation decisions within a segment.



**California Public Employees' Retirement System
 Total Fund Attribution - Calendar Year-to-Date
 As of 12/31/2016**

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	60.13	9.32	59.25	10.50	0.88	-1.19	-0.15	0.06	-0.65	-0.74
Public Equity	51.13	9.77	49.75	9.00	1.38	0.76	-0.12	0.01	0.36	0.26
Private Equity	9.01	6.61	9.50	16.66	-0.49	-10.05	-0.01	0.06	-1.06	-1.01
Income	20.02	5.36	20.00	4.17	0.02	1.19	-0.09	0.01	0.24	0.16
Real Assets	10.74	5.77	12.25	8.31	-1.51	-2.54	-0.03	0.02	-0.29	-0.30
Inflation	6.18	6.32	6.75	6.32	-0.57	0.00	0.02	-0.01	0.00	0.02
Absolute Return	0.54	-6.50	0.00	5.79	0.54	-12.29	-0.01	-0.07	0.00	-0.08
Liquidity	2.39	0.55	1.75	0.33	0.64	0.22	-0.02	0.00	0.00	-0.01
Monthly Linked Return	100.00	7.54	100.00	8.49		-0.95	-0.27	0.01	-0.70	-0.95
Trading/Hedging/Other		0.13		0.00		0.13				0.13
Total		7.67		8.49		-0.82				-0.82

The Total Fund Attribution displays the return contribution of each asset class to the total fund. This is done by monthly linking each program's allocation at the beginning of the month with each month's returns to determine if tactical allocation and active management within asset classes helped or hurt performance. The interaction effect is a cross-factor, used to help further explain the combined impact of a portfolio's selection and allocation decisions within a segment.



California Public Employees' Retirement System
Total Fund Attribution - Fiscal Year-to-Date
As of 12/31/2016

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	58.22	7.44	57.50	7.70	0.72	-0.26	0.04	0.00	-0.18	-0.15
Public Equity	49.63	7.67	48.50	7.53	1.13	0.14	0.00	0.00	0.06	0.06
Private Equity	8.58	5.92	9.00	8.78	-0.42	-2.86	0.04	-0.01	-0.24	-0.21
Income	20.02	-3.95	20.00	-4.58	0.02	0.63	-0.02	0.00	0.13	0.11
Real Assets	10.72	3.49	12.50	3.58	-1.78	-0.08	-0.01	0.00	-0.01	-0.02
Inflation	6.92	-1.70	7.50	-1.07	-0.58	-0.64	0.03	0.00	-0.04	0.00
Absolute Return	0.51	-7.33	0.00	2.58	0.51	-9.91	-0.01	-0.05	0.00	-0.06
Liquidity	3.62	0.30	2.50	0.18	1.12	0.12	-0.03	0.00	0.00	-0.02
Monthly Linked Return	100.00	3.74	100.00	3.87		-0.14	0.00	-0.05	-0.09	-0.14
Trading/Hedging/Other		0.11		0.00		0.11				0.11
Total		3.85		3.87		-0.02				-0.02

The Total Fund Attribution displays the return contribution of each asset class to the total fund. This is done by monthly linking each program's allocation at the beginning of the month with each month's returns to determine if tactical allocation and active management within asset classes helped or hurt performance. The interaction effect is a cross-factor, used to help further explain the combined impact of a portfolio's selection and allocation decisions within a segment.



Total Fund Review for PERF (continued) Periods Ended 12/31/2016

- ◆ The California Public Employees' Retirement System ("CalPERS, the System") generated a total fund return of 0.28%, for the quarter ended December 31, 2016. CalPERS' return can be attributed as follows:

0.22%	Strategic Policy Allocation
0.00%	Actual/Tactical Asset Allocation
0.00%	Active Management
-0.03%	Interaction
<u>0.09%</u>	Trading/Currency Hedging
0.28%	Total Return

- ◆ The total fund attribution table on the previous page displays the return contribution of each asset class to the total fund. This table will allow the Board to see if tactical allocation and active management within asset classes helped or hurt performance during the quarter.
 - Strategic Policy: The contribution to total return from each asset class, calculated as the percentage allocated to each asset class multiplied by the benchmark for that asset class.
 - Actual Allocation: The return contribution during the quarter due to differences in the actual allocation from the policy allocation (i.e. the actual allocation to total equity was higher than the policy allocation). A positive number would indicate an overweight benefited performance and vice versa.
 - Active Management: The return contribution from active management. The number would be positive if the asset class outperformed the designated policy index and vice versa (i.e. the US fixed income segment outperformed its custom benchmark during the quarter and contributed positively to active management).
 - Interaction: Captures the interaction of managers' performance and asset class weighting differences.
 - Actual Return: The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since asset class allocations change during the quarter due to market movement, cash flows, etc.
- ◆ CalPERS investments' 0.28% total fourth quarter return wasn't far off of the pace of its strategic policy benchmark, with neither active management nor asset allocation making any meaningful contribution to drive relative performance. The active management component was flat, as outperformance generated by Income and Real Assets against their respective allocation benchmarks (+17 bps and +19 bps, respectively) helped offset the miss incurred by the larger-sized Growth asset class. Asset allocation variance also made no contribution this quarter, where the System benefited from its underweight in the soft-performing Inflation segment but lost ground through its smaller-than-target exposure to better performing areas (relative to benchmark) including Real Assets and Income. Instead, positive trading and currency hedging effects were the primary reasons that the System finished 6 bps ahead of its strategic policy benchmark in the fourth quarter.



Total Fund Review for PERF (continued) Periods Ended 12/31/2016

Relative to the Total Fund Policy Benchmark:

- ◆ **Growth Exposure:** After opening the year on a cautious tone, performance of the Growth composite gained momentum in the second half of 2016. Following a 5.1% jump in the third quarter, the composite was also able to shrug off a slow October (that largely stemmed from uncertainties surrounding the outcome of the U.S. presidential election) to finish the fourth quarter with a solid 2.2% gain. For the second straight quarter, this performance paced CalPERS' major asset classes and handily outperformed the total fund policy benchmark's 0.2% Q4 return, though it did miss its own policy benchmark of 2.3% by a small margin. Public equity, which usually acts as the main performance driver of this asset class with 85% of the Growth assets, managed a modest 1.9% return as a whole, held back by the above mentioned U.S. election jitters during the early part of the quarter. The smaller private equity component, on the other hand, produced a robust 4.0% return and greatly contributed to the overall Growth composite's results.
- ◆ **Income Exposure:** Interest rate movement had profound, and negative, impact on the Income composite's performance during the fourth quarter. After reaching a historic low of 1.37% in July, the 10-year U.S. Treasury yield steadily rose from that point on as the market began to price in a late-year Fed rate hike. The pace of the rise advanced significantly after the November 8th presidential election, boosted by the strengthening conviction of a stronger U.S. economic outlook. All said, the 10-year UST rate went from 1.60% at the end of September to close the year at 2.45%. This magnitude of jump in yield weighed heavily on most bond prices and drove the Income composite to a Q4 total return of -5.3%. While this performance did fare marginally better than the Income policy benchmark (-5.4%), it nevertheless ended as CalPERS' lowest returning asset class and came in well below the total fund policy benchmark. For Q4, the two main components within Income both posted steep losses, with the U.S. fixed income portfolio losing -4.9% while the international fixed income slid further at -8.4%.
- ◆ **Real Assets Exposure:** Real Assets was among the better performing CalPERS asset classes in Q4, finishing with a moderate gain of 1.9% that bested the total fund policy benchmark by +166 bps while also extending its streak of positive return to twenty five quarters. Real Assets' ability to generate steady rate of positive returns over the past six years has largely been attributed to its main component, private real estate, which represented 84% of RA's total assets. The private real estate portfolio, supported by steady fundamentals across most property types, had a fourth quarter return of 1.8%.
- ◆ **Inflation Exposure:** Relative to the other four major PERS asset classes and the total fund policy benchmark, the Inflation asset class struggled in the fourth quarter. It registered an overall loss of -1.6% that was weighed down by the main inflation-linked bonds component, which fell victim to the sharp rise in interest rates post-election, despite the expectations of rising inflation as the market ushers in a Trump presidency era.
- ◆ **Liquidity:** The Liquidity composite saw a very small but positive gain of 0.1% this quarter, coming in marginally below the total fund policy benchmark but was ahead of its own asset class benchmark. Starting Q3 2015, the composite is solely comprised of short term investment funds.
- ◆ **Absolute Return Strategy:** The Absolute Return Strategy (ARS) program finished the fourth quarter in the red, losing -3.5% and underperformed the total fund policy benchmark.



Growth Review for PERF

Periods Ended 12/31/2016

Growth Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Growth	<u>55.9%</u>	<u>54.0%</u>	<u>+1.9%</u>
Public Equity	47.5%	46.0%	+1.5%
Private Equity	8.4%	8.0%	+0.4%

Growth Segment Performance

	Market Value						VaR ²¹	5-year Sharpe	5-year Info
		Qtr	1-Year	3-Year	5-Year	10-Year		Ratio ²²	Ratio ²³
GROWTH	169.3	2.2%	9.3%	4.7%	10.6%	4.9%	\$34.9 bil	1.1	-0.4
<i>Growth Policy Benchmark</i>		2.3%	10.5%	5.0%	11.6%	5.9%		1.2	0.0
<i>Value Added</i>		-0.1%	-1.2%	-0.3%	-1.0%	-1.0%			
PUBLIC EQUITY¹⁵	143.9	1.9%	9.8%	3.9%	10.6%	4.2%	\$29.0 bil	0.9	0.9
<i>Public Equity Policy Benchmark¹⁶</i>		1.6%	9.0%	3.7%	10.3%	4.5%		0.9	0.0
<i>Value Added</i>		0.3%	0.8%	0.2%	0.3%	-0.3%			
US Equity Composite	77.7	4.5%	13.4%	8.1%	14.7%	7.1%		1.3	0.5
<i>Custom USEquity Benchmark¹⁷</i>		3.9%	12.5%	8.0%	14.5%	7.0%		1.3	0.0
<i>Value Added</i>		0.6%	0.9%	0.1%	0.2%	0.1%			
Total Int'l Equity	66.2	-1.0%	5.8%	-0.5%	6.4%	1.7%		0.5	-0.2
<i>Custom Int'l Equity Benchmark¹⁸</i>		-0.8%	5.4%	-0.6%	6.5%	1.6%		0.5	0.0
<i>Value Added</i>		-0.2%	0.4%	0.1%	-0.1%	0.1%			
PRIVATE EQUITY¹⁹	25.4	4.0%	6.6%	8.8%	11.5%	9.8%	\$8.3 bil	3.1	-0.4
<i>PEPolicy Benchmark²⁰</i>		6.3%	16.7%	10.2%	16.4%	12.8%		1.4	0.0
<i>Value Added</i>		-2.3%	-10.1%	-1.4%	-4.9%	-3.0%			
Private Equity Partnership Investments	25.4	4.1%	6.7%	8.9%	11.6%	9.9%			
Private Equity Distribution Stock	0.0	-19.5%	-37.6%	-35.1%	-31.5%	-13.7%			

¹⁵ Includes domestic equity, international equity, corporate governance, and MDP ventures. It does not include asset allocation transition accounts; those accounts are reflected in total fund but are not included in any composite.

¹⁶ The Public Equity Policy Benchmark is a custom global benchmark maintained by FTSE.

¹⁷ The Custom US Equity Benchmark currently represents the FTSE Total Market Index. It is linked historically to its prior benchmarks.

¹⁸ The Custom Int'l Equity Benchmark currently represents the FTSE All World ex US Index. It is linked historically to its prior benchmarks.

¹⁹ The performance of CalPERS' private equity (AIM) investments is 1-quarter lagged.

²⁰ The AIM Policy Benchmark currently equals 3% + 1-quarter lagged (67% FTSE US TMI + 33% FTSE AW x-US TMI), and is linked historically to its prior benchmarks.

²¹ VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value.

²² The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

²³ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per unit of excess risk ventured.



Growth Review for PERF (continued)

Comments Regarding Growth Segment Performance

Helped Performance:

- ◆ **U.S. Equity Exposure:** The red hot U.S. equity composite, which has previously reported gains for four straight quarters, kept the streak going in the fourth quarter of 2016 by turning in a 4.5% gain. Despite some weaknesses from early quarter that was in part due to uncertainty over the outcome of U.S. presidential election, the U.S. equity composite had little trouble finishing strong the rest of the way, supported by broadly positive economic data (including steady payroll gains and housing market, as well as robust Q3 GDP growth) and president-elect Trump's pro-growth agenda. This quarter's results easily topped the Growth policy benchmark's 2.3% return while also beat the composite's own policy benchmark's 3.9% pace. Performance for the full year 2016, as well as over the 3- and 5-year periods were similar, where the composite has comfortably outpaced both benchmark measures. Most of Q4's gains were driven by the internal U.S. equity component, where it represents a lion's share of the total U.S. equity composite (with 88% of the assets) and saw a 4.4% return. The smaller external U.S. equity component also contributed, rounding out Q4 with a 5.1% gain.

Impeded Performance:

- ◆ **International Equity Exposure:** International equities did not fare as well as their U.S. counterpart during the fourth quarter – PERS' international equity composite reported an overall loss of -1.0%. The strength of the U.S. Dollar played a large role in this quarter's negative results, as most major currencies lost ground against the dollar (i.e. -6.1% by Euro, -13.2% by Yen, -4.9% by Pound) and eroded the returns received by USD-based portfolios. The Dollar's impact was particularly acute in the emerging markets, as when combined with concerns of weakening global trade after Trump's November victory had investors accelerated their capital draw. Q4's performance came in below the Growth policy benchmark's 2.3% pace, and also modestly missed the composite's own policy benchmark return of -0.8%. Within the international equity segment, the larger-sized internally managed composite was down -0.6% while the smaller externally managed composite ended lower with a -1.6% return.
- ◆ **Private Equity Exposure:** Performance of the CalPERS private equity program has been steady in the sense that it only saw three small negative months in 2016, two of which came at the beginning of the year during the market volatility peak. Similar to U.S. equity, performance of this program picked up pace in the second half of the year, and ended the fourth quarter with a very nice 4.0% gain. This output complement the total public equity program's lower 1.9% gain and helped lift Growth's total return. However in relative terms, the private equity program missed its own policy benchmark by a rather large -222 bps margin and therefore is considered a net performance detractor for the quarter
- ◆ **Corporate Governance:** The corporate governance program reported challenging results for Q4, losing -9.2% and underperformed relative to the Growth policy benchmark. The process of reducing/winding down of some of the corporate governance portfolios remains on-going.



Public Equity Review for PERF - U.S. Equity

	<u>Market Value</u>	<u>Qtr</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10-Year</u>	<u>Date</u>
US Equity Composite (ex ARS)	77.7	4.5%	13.4%	8.1%	14.7%	7.1%	12/79
<i>Custom USEquity Benchmark</i> ²⁴		3.9%	12.5%	8.0%	14.5%	7.0%	
<i>Value Added</i>		0.6%	0.9%	0.1%	0.2%	0.1%	
Total Internal USEquity	68.5	4.4%	13.4%	8.2%	14.8%	7.4%	6/88
<i>Custom Internal USEquity Benchmark</i> ²⁵		3.7%	12.4%	8.0%	14.4%	7.0%	
<i>Value Added</i>		0.7%	1.0%	0.2%	0.4%	0.4%	
Total External USEquity	9.2	5.1%	13.3%	6.8%	14.1%	6.0%	12/98
<i>Custom External USEquity Benchmark</i> ²⁶		4.2%	14.1%	7.9%	14.1%	6.9%	
<i>Value Added</i>		0.9%	-0.8%	-1.1%	0.0%	-0.9%	

Public Equity Review for PERF - International Equity

	<u>Market 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 Int'l Equity (ex ARS)	66.2	-1.0%	5.8%	-0.5%	6.4%	1.7%	12/02
<i>Custom Int'l Equity Benchmark</i> ²⁷		-0.8%	5.4%	-0.6%	6.5%	1.6%	
<i>Value Added</i>		-0.2%	0.4%	0.1%	-0.1%	0.1%	
Total Internal Int'l Equity	54.7	-0.6%	5.6%	-0.5%	6.5%	1.7%	3/05
<i>Custom Internal Int'l Equity Benchmark</i> ²⁸		-0.6%	5.1%	-0.7%	6.2%	1.5%	
<i>Value Added</i>		0.0%	0.5%	0.2%	0.3%	0.2%	
Total External Int'l Equity	21.1	-1.6%	6.9%	0.1%	6.4%	2.1%	6/89
<i>Custom External Int'l Equity Benchmark</i> ²⁹		-0.2%	7.0%	0.2%	5.8%	1.7%	
<i>Value Added</i>		-1.4%	-0.1%	-0.1%	0.6%	0.4%	

Public Equity Review for PERF - Corporate Governance/MDP/FoF

	<u>Market 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	0.5	-9.2%	13.0%	6.4%	12.4%	3.5%	12/98
<i>Policy Benchmark</i>		-2.3%	-4.6%	2.1%	9.6%	2.7%	
<i>Value Added</i>		-6.9%	17.6%	4.3%	2.8%	0.8%	

²⁴ The Custom US Equity Benchmark currently represents the FTSE Total Market Index. It is linked historically to its prior benchmarks.

²⁵ The Custom Internal US Equity Benchmark currently represents the FTSE Total Market Index. It is linked historically to its prior benchmarks.

²⁶ The Custom External US Equity Benchmark return equals the return for each manager's benchmark weighted at the current target asset allocation.

²⁷ The Custom Int'l Equity Benchmark currently represents the FTSE All World ex US Index. It is linked historically to its prior benchmarks.

²⁸ The Custom Internal Int'l Equity Benchmark currently represents the FTSE Developed World ex US/Tobacco Index. This benchmark is linked historically to its prior benchmarks.

²⁹ The Custom External Int'l Equity Benchmark return equals the return for each manager's benchmark weighted at the current target asset allocation.



Absolute Return Strategies Review for PERF

Period Ended 12/31/2016

ARS Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
ARS	0.1%	0.0%	+0.1%

ARS Segment Performance

	<u>Market</u>		<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10-Year</u>	<u>5-Year Info Ratio³¹</u>	<u>5-Year Up Capture Ratio</u>	<u>5-Year Sharpe Ratio³²</u>	<u>5-Year Sortino Ratio³³</u>
	<u>Value</u>	<u>Qtr</u>								
Absolute Return Strategies	0.3	-3.5%	-6.5%	0.0%	2.4%	1.8%	-0.7	0.4	0.6	0.8
ARS Policy Benchmark ³⁰		1.3%	5.8%	5.4%	5.3%	6.5%				
Value Added		-4.8%	-12.3%	-5.4%	-2.9%	-4.7%				
Total Direct Investments	0.3	-3.5%	-6.2%	0.0%	2.4%	2.1%				
Total Funds of Funds	0.0	-6.4%	-14.1%	0.5%	2.7%	1.3%				
HFRI Fund of Funds Index		0.6%	-0.4%	3.9%	2.1%	2.3%				

ARS Characteristics

Percentage of positive Months	Beta vs. S&P 500	<u>Rolling Correlations vs. Index</u>			
		<u>Domestic</u>			
		<u>MSCI W5000</u>	<u>AW x-US</u>	<u>Fixed Benchmark</u>	<u>Real Estate Benchmark</u>
62%	0.0	-0.1	-0.1	0.1	0.2

- ◆ Beta vs. S&P 500: This measures the amount of stock market risk in the portfolio. A beta of 1.0 would indicate that the portfolio's performance should closely track the stock market, while a beta higher than 1.0 implies greater-than-market risk and possibly leverage. The portfolio's beta is currently close to 0.0, implying a weak to almost no relationship to stock market return, which is appropriate for this program.
- ◆ Correlation vs. various indices: We have calculated the historical correlation between the ARS and CalPERS' other main asset classes. Over a market cycle, the ARS has shown a weak, negative correlation to the equity markets while also exhibiting very low correlation with fixed income/real estate markets.

³⁰ The ARS Policy Benchmark consists of the Merrill Lynch 1-Year Treasury Note + 5% and is linked historically to its prior benchmark.

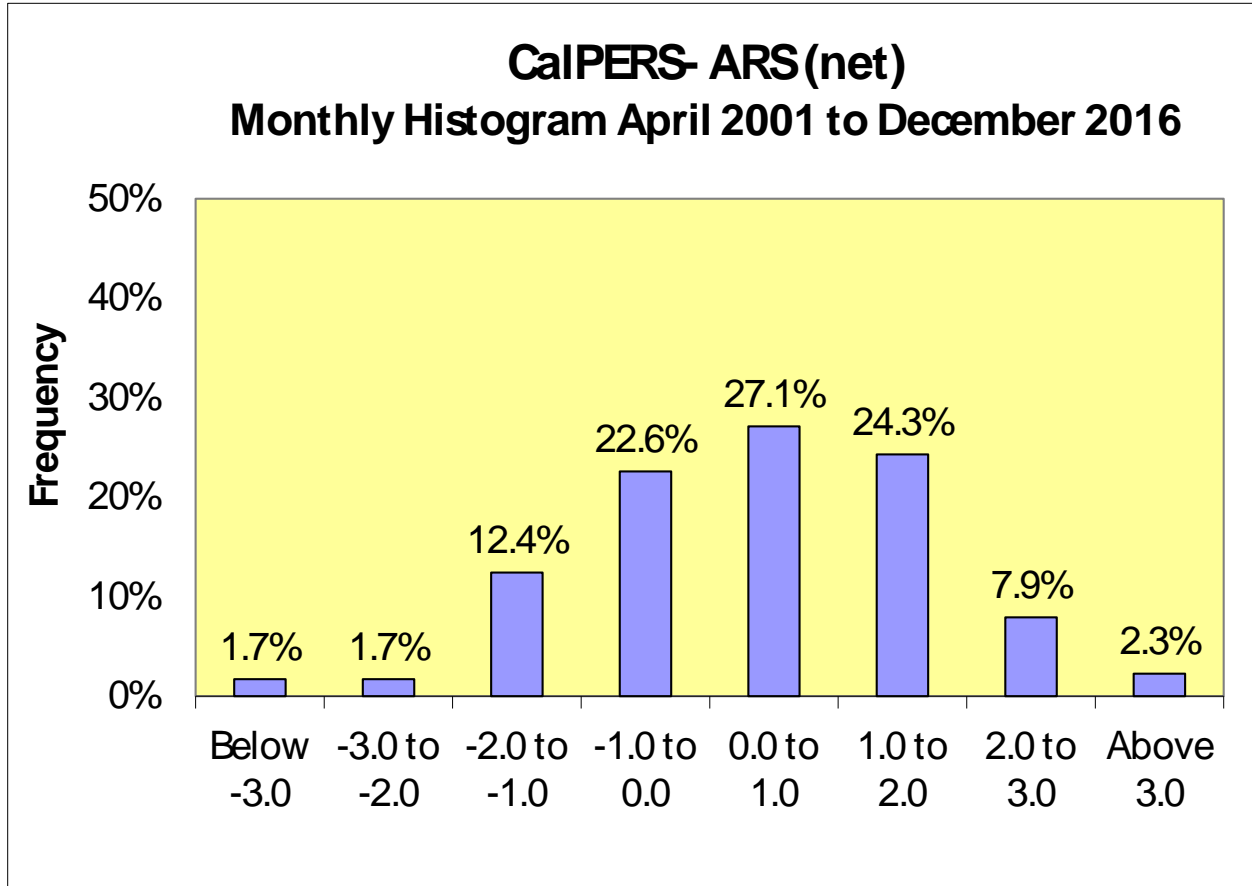
³¹ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per risk ventured.

³² The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

³³ The Sortino Ratio is a measure of a risk-adjusted return of an investment asset. It is an extension of the Sharpe Ratio. While the Sharpe ratio takes into account any volatility, in return of an asset, Sortino ratio differentiates volatility due to up and down movements. The up movements are considered desirable and not accounted in the volatility.



Absolute Return Strategies Review for PERF (Continued)
 Period Ended 12/31/2016



- ◆ Histogram: The ARS is designed to generate small amounts of return on a consistent basis. This chart shows the frequency of monthly performance results. A significant number of outlying monthly performance returns would indicate insufficient risk controls. We believe that the distribution of monthly returns is as expected.



Income Review for PERF Periods Ended 12/31/2016

Income Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Income	18.9%	20.0%	-1.1%

Income Segment Performance

	Market Value						VaR ³⁷	5-year Sharpe	5-year Info
		Qtr	1-Year	3-Year	5-Year	10-Year		Ratio ³⁸	Ratio ³⁹
INCOME	57.1	-5.3%	5.4%	4.5%	3.4%	6.1%	\$6.1 bil	0.7	1.5
<i>Income Policy Benchmark</i> ³⁴		-5.4%	4.2%	4.0%	2.4%	5.4%		0.4	0.0
<i>Value Added</i>		0.1%	1.2%	0.5%	1.0%	0.7%			
U.S. Income	51.4	-4.9%	5.7%	5.4%	4.0%	6.4%		0.8	1.3
<i>U.S. Income Policy Benchmark</i> ³⁵		-5.1%	4.3%	4.9%	3.0%	5.7%		0.5	0.0
<i>Value Added</i>		0.2%	1.4%	0.5%	1.0%	0.7%			
Non-U.S. Income	5.7	-8.4%	2.9%	-3.0%	-2.3%	3.0%		-0.3	0.8
<i>Non-US Income Policy Benchmark</i> ³⁶		-8.6%	2.6%	-3.7%	-2.9%	2.0%		-0.4	0.0
<i>Value Added</i>		0.2%	0.3%	0.7%	0.6%	1.0%			

Comments Regarding Income Segment Performance

Helped Performance:

- ◆ **High Yield Bonds:** High yield was the best performing fixed income type during the fourth quarter, and the only major segment to finish in black. This was largely tied to the same force that drove the equity rally following November's election, where the prospect of more accommodative fiscal policy, faster economic growth, and less regulation helped improve investor risk appetite and overcame a selloff in rates. Both of CalPERS' internal and external high yield portfolios participated in this run-up and closed the quarter well above the Income policy benchmark, with the former gaining 2.4% and the latter up 3.4%.

³⁴ The Income Policy Benchmark return equals the benchmark returns for domestic and international fixed income components weighted at policy allocation target percentages.

³⁵ The US Fixed Income Policy Benchmark consists of the Barclays Long Liability Index and is linked historically to its prior benchmark.

³⁶ The Non-US Fixed Income Policy Benchmark consists of the Barclays International Fixed Income and is linked historically to its prior benchmark.

³⁷ VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value.

³⁸ The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

³⁹ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per risk ventured.



- ◆ **Mortgage Bonds:** Mortgage related bonds were among the few (relatively) better performing fixed income securities during Q4's bond rout, in part due to it being able to dampen some of spread widening after rates jumped. The \$10.2 billion PERS mortgage bonds portfolio's -1.9% return performed better than the Income policy benchmark, while also compared much more favorably to the System's corporate and Treasury bond portfolios.
- ◆ **Corporate Bonds:** The \$10.2 billion internal corporate bonds portfolio fell like most others amid the run-up in interest rates. However, given that this segment is still supported by the higher U.S. corporate yields relative to other markets and generally healthy fundamentals, the PERS portfolio's -3.7% drop this quarter was not as severe as those reported by the sovereign or international bonds portfolios, and certainly was better compared to the Income policy benchmark.

Impeded Performance:

- ◆ **International Fixed Income / Sovereign Bonds:** US Dollar's strong appreciation following the U.S. election had notable negative impacts on international bonds. Neither of CalPERS' international fixed income and sovereign bonds portfolios were immune to this strong headwind; they registered heavy losses that were greater than the Income policy benchmark, slumping -8.4% and -7.9%, respectively.

Wilshire Consulting
Performance Analysis – December 31, 2016
Prepared for CalPERS



Income Review for PERF (Continued)

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	Date
INCOME	57.098	-5.3%	5.4%	4.5%	3.4%	6.1%	6/88
<i>Income Policy Benchmark</i> ⁴⁰		-5.4%	4.2%	4.0%	2.4%	5.4%	
<i>Value Added</i>		0.1%	1.2%	0.5%	1.0%	0.7%	
Internal US Income + Opportunistic	51.4	-4.9%	5.7%	5.4%	4.0%	6.4%	12/95
Mortgage Bonds	10.2	-1.9%	2.4%	4.3%	3.7%	5.2%	12/82
Long Duration Mortgages*	3.9	-2.8%	4.8%	5.2%	3.8%	6.5%	6/05
Corporate Bonds*	10.2	-3.7%	10.8%	6.4%	6.4%	7.4%	3/02
U.S. Government*	19.7	-1.2%	-0.3%	0.6%	5.4%	5.6%	12/99
Sovereign Bonds* ⁴¹	2.0	-7.9%	5.0%	5.4%	3.6%	5.9%	6/96
Long Duration Corporates*	2.3	-6.5%	6.3%	2.7%	6.7%	8.2%	9/05
<i>Custom Benchmark</i> ⁴²		-5.1%	4.3%	4.9%	3.0%	5.7%	
Opportunistic ⁴³	3.0	2.5%	15.6%	6.5%	7.9%	4.5%	6/00
Internal High Yield Bonds*	0.6	2.4%	21.2%	9.4%	9.5%	10.2%	9/99
External High Yield*	1.1	3.4%	17.9%	5.3%	8.3%	5.5%	3/02
High Yield Mortgage*	0.4	2.1%	6.6%	6.4%	12.0%	-.-%	3/08
<i>Citigroup High Yield Cash Pay</i>		2.0%	18.0%	4.3%	6.9%	7.1%	
Special Investments	0.0	2.0%	8.4%	8.3%	9.1%	7.0%	3/91
Total International Fixed Income	5.7	-8.4%	2.9%	-3.0%	-2.3%	3.0%	3/89
<i>Custom Benchmark</i> ⁴⁴		-8.6%	2.6%	-3.7%	-2.9%	2.0%	
<i>Value Added</i>		0.2%	0.3%	0.7%	0.6%	1.0%	
Securities Lending ⁴⁵	10.4	-0.2%	0.2%	0.3%	0.6%	1.0%	8/00
<i>Custom Benchmark</i>		0.1%	0.4%	0.2%	0.2%	0.8%	
<i>Value Added</i>		-0.3%	-0.2%	0.1%	0.4%	0.2%	
Internal Active Short Term**	6.1	0.2%	0.7%	0.4%	0.3%	-.-%	3/11
<i>Custom Benchmark</i>		0.1%	0.5%	0.2%	0.1%	-.-%	
<i>Value Added</i>		0.1%	0.2%	0.2%	0.2%	-.-%	
CalPERSESEC Cash Collateral**	4.3	-0.7%	-0.3%	0.1%	0.1%	-.-%	6/10
<i>Custom Benchmark</i>		0.1%	0.4%	0.2%	0.2%	-.-%	
<i>Value Added</i>		-0.8%	-0.7%	-0.1%	-0.1%	-.-%	

⁴⁰ The Income Policy Benchmark return equals the benchmark returns for domestic and international fixed income components weighted at policy allocation target percentages.

⁴¹ The Internal Sovereign Bond market value is also included in the Internal Treasury Bond market value.

⁴² The custom benchmark consists of the Barclays Long Liability Index. Prior of 3Q 2004 the benchmark was Citigroup LPF.

⁴³ Opportunistic includes internal and external high yield. Internal High Yield's market value is included in both the Total Internal Bonds and the Opportunistic Market Values.

⁴⁴ The custom benchmark consists of the Barclays International Fixed Income Index and is linked historically to its prior benchmark.

⁴⁵ The Securities Lending composite is a non-PERF composite. The composite includes the Structure Investment Vehicles performance.

* These portfolios and/or composites are unitized and are included across multiple plans.

** These portfolios hold the collateral for the security lending program.

Inflation Performance for PERF

Period Ended 12/31/2016

Inflation Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Inflation	9.5%	9.0%	+0.5%

Inflation Performance

	Market Value						VaR ⁴⁸	5-year Sharpe Ratio ⁴⁹	5-year Info Ratio ⁵⁰
		Qtr	1-Year	3-Year	5-Year	10-Year			
INFLATION	28.7	-1.6%	6.3%	-3.7%	-2.2%	-.%	\$2.0 bil	-0.3	0.2
<i>Inflation Policy Benchmark</i> ⁴⁶		-1.6%	6.3%	-4.5%	-2.5%	-.%		-0.4	0.0
<i>Value Added</i>		0.0%	0.0%	0.8%	0.3%	-.%			
Internal Commodities ⁴⁷	5.3	5.8%	10.9%	-20.4%	-13.3%	-.%			
<i>GSCI Total Return Index</i>		5.8%	11.4%	-20.6%	-13.1%	-.%			
<i>Value Added</i>		0.0%	-0.5%	0.2%	-0.2%	-.%			
Core Inflation Linked Bonds	18.9	-4.3%	4.0%	1.2%	1.1%	-.%			
<i>Custom Benchmark</i>		-4.2%	4.2%	0.8%	0.9%	-.%			
<i>Value Added</i>		-0.1%	-0.2%	0.4%	0.2%	-.%			
Tactical Commodities	2.5	7.9%	9.8%	-20.9%	-.%	-.%			
<i>GSCI Total Return Index</i>		5.8%	11.4%	-20.6%	-.%	-.%			
<i>Value Added</i>		2.1%	-1.6%	-0.3%	-.%	-.%			
Tactical TIPS	2.0	-2.4%	4.3%	2.1%	-.%	-.%			
<i>CalPERSTIPS</i>		-2.4%	4.7%	2.3%	-.%	-.%			
<i>Value Added</i>		0.0%	-0.4%	-0.2%	-.%	-.%			

- ◆ CalPERS' Inflation asset class did not find a firm footing for the majority of the quarter and concluded Q4 with an overall loss of -1.6%. This quarter's small negative results can primarily be attributed to the structure of the asset class, where the strong-performing commodities portfolios only represented 27% of this program (with a target of 25%). The rest of Inflation's assets were invested in inflation-linked bonds, which faced stiff headwinds in the form of fast-rising interest rates, thanks to positive economic data from October that reignited hopes of a December Fed rate hike and a shift of market's attention towards the reflationary fiscal policies Trump advocated following his election victory in November. Within this unfavorable backdrop, both of the core and tactical TIPS portfolios logged sizable losses during Q4 and overshadowed the solid mid-to-high single-digit gains reported by the commodities portfolios. In relative terms, Inflation's Q4 results tied the asset class benchmark, as did its full-year 6.3% return. Its 3- and 5-year annualized returns, while still negative, currently remain a few steps ahead of the policy benchmark.

⁴⁶ The Inflation Policy Benchmark equals the benchmark returns of commodities and TIPS weighted at policy allocation target percentages.

⁴⁷ The internal commodities overlay portfolio is a derivatives portfolio which has no market value but a notional value approximately equal to the size of the commodities collateral.

⁴⁸ VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value.

⁴⁹ The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

⁵⁰ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per unit of excess risk ventured.



Real Assets Review for PERF Period Ended 12/31/2016

Real Assets Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Real Assets	10.9%	13.0%	-2.1%

Real Assets Segment Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR ⁵⁵	5-year Sharpe Ratio ⁵⁶	5-year Info Ratio ⁵⁷
REAL ASSETS	33.0	1.9%	5.8%	10.8%	11.3%	-0.8%	\$4.8 bil	1.6	0.1
<i>Real Assets Policy Benchmark</i> ⁵¹		1.7%	8.3%	10.6%	10.7%	7.4%		2.6	0.0
<i>Value Added</i>		0.2%	-2.5%	0.2%	0.6%	-8.2%			
Real Estate ⁵²	27.9	1.8%	6.8%	11.7%	12.5%	-1.2%	\$4.5 bil	1.6	0.1
<i>Real Estate Policy Benchmark</i> ⁵³		1.8%	9.1%	11.4%	11.6%	8.3%		2.5	0.0
<i>Value Added</i>		0.0%	-2.3%	0.3%	0.9%	-9.5%			
Forestland ⁵⁴	2.0	0.4%	-9.4%	-2.1%	-1.8%	--%			
<i>NCREIF Timberland Index</i>		0.7%	3.3%	7.6%	6.9%	--%			
<i>Value Added</i>		-0.3%	-12.7%	-9.7%	-8.7%	--%			
Infrastructure ⁵⁴	3.1	4.0%	8.3%	14.0%	12.0%	--%			
<i>CPI + 400 BPS 1Qtr Lag</i>		1.2%	5.5%	5.1%	5.3%	--%			
<i>Value Added</i>		2.8%	2.8%	8.9%	6.7%	--%			

- ◆ Performance of the Real Assets asset class fared relatively well in the fourth quarter amid a fast-changing investment landscape that was heavily influenced by political and interest rate related headlines in the U.S.. The real estate program, which constituted 84% of RA's total assets, remains the primary performance driver here: it once again generated a small but positive return of 1.8% this quarter as this private real estate investments-only program continued to benefit from steady fundamentals across most property types. As for Real Assets' two smaller components, both the forestland and the infrastructure portfolios finished the quarter on a positive note as well, led by the latter's 4.0% rally. Overall speaking, Real Assets' 1.9% total return this quarter ranked the second highest among the five major CalPERS asset classes, and was 19 bps

⁵¹ The Real Assets Policy Benchmark equals the benchmark returns of real estate, timber, and infrastructure weighted at policy allocation target percentages.

⁵² The Real Estate performance is reported on a 1-quarter lagged basis. The Real Estate total returns are net of investment management fees and all expenses, including property level operations expenses netted from property income. This method differs from GASB 31, which requires all investment expenses be identified for inclusion in the System's general purpose financial statements.

⁵³ The Real Estate Policy Benchmark consists of the NCREIF ODCE Index (1-quarter lagged) and the FTSE EPRA/NAREIT Developed Index weighted at their policy allocation target percentages. It is historically linked to its prior benchmarks.

⁵⁴ These investments are reported on a 1-quarter lagged basis.

⁵⁵ VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value.

⁵⁶ The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

⁵⁷ The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per unit of excess risk ventured.

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Performance Analysis – December 31, 2016
Prepared for CalPERS



ahead of its own asset class benchmark. RA did finish 2016 behind its benchmark by a sizable margin due to weaknesses from the beginning of the year, but has otherwise performed quite well over the past five years.

Liquidity Review for PERF

Period Ended 12/31/2016

Liquidity Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Liquidity	4.4%	4.0%	+0.4%

Liquidity Segment Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR ⁶⁰	5-year Sharpe Ratio ⁶¹	5-year Info Ratio ⁶²
LIQUIDITY	13.2	0.1%	0.5%	0.8%	0.4%	1.5%	\$0.1 bil	N/A	N/A
<i>Liquidity Policy Benchmark</i> ⁵⁸		0.1%	0.3%	1.2%	0.7%	1.7%			
<i>Value Added</i>		0.0%	0.2%	-0.4%	-0.3%	-0.2%			
Cash Composite	13.2	0.1%	0.6%	0.3%	0.2%	1.0%			
<i>Custom STIF</i> ⁵⁹		0.1%	0.5%	0.2%	0.2%	0.9%			
<i>Value Added</i>		0.0%	0.1%	0.1%	0.0%	0.1%			

⁵⁸The Liquidity Policy Benchmark is a custom index maintained by State Street Bank.

⁵⁹The Custom STIF Policy Benchmark is a custom index maintained by State Street Bank.

⁶⁰VaR (Value at Risk) measures how much the portfolio might decrease over a 12 month period in extreme cases. The VAR estimate shows how much the portfolio value might fall in the worst 5% of 12 month periods. VAR is calculated using total risk (standard deviation) and market value.

⁶¹The Sharpe Ratio or reward-to-variability ratio is a measure of the mean excess return per unit of risk in an investment strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken.

⁶²The "Information Ratio" calculates the amount of excess performance earned per unit of excess risk, as measured by tracking error. Higher information ratios imply a greater return per unit of excess risk ventured.

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Affiliate Fund Information

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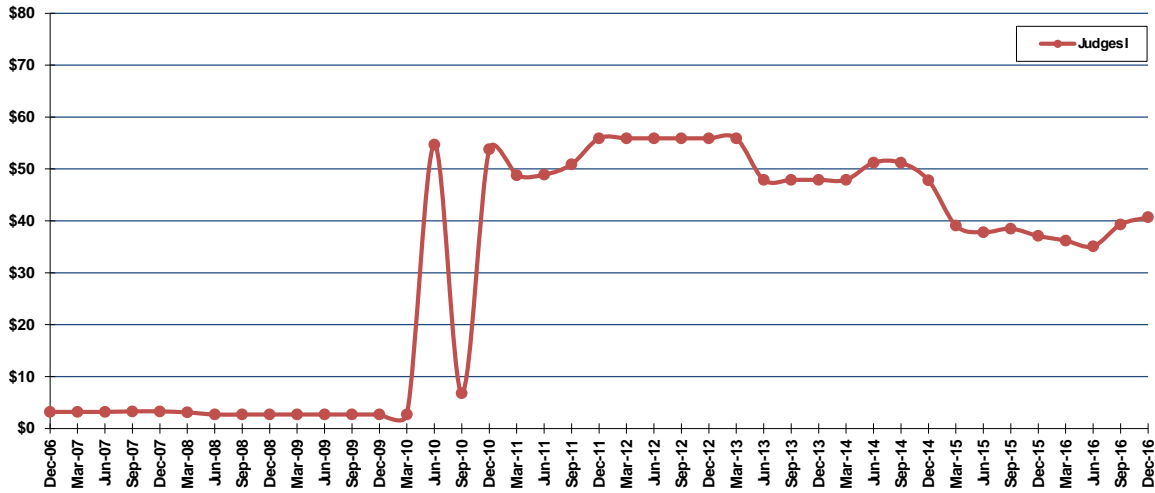


Judges' Retirement System I Fund



Judges I Performance Periods Ended December 31, 2016

Growth in Assets (in \$Millions)



Net of Fee Plan Performance Results – Judges I

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Judges I	\$40.7 mil	0.2%	0.6%	0.3%	0.2%	1.0%
<i>91-Day Treasury Bill</i>		0.1	0.3	0.1	0.1	0.8
Judges I Internal Short-Term	\$40.7 mil	0.2	0.6	0.3	0.2	1.0
<i>91-Day Treasury Bill</i>		0.1	0.3	0.1	0.1	0.8

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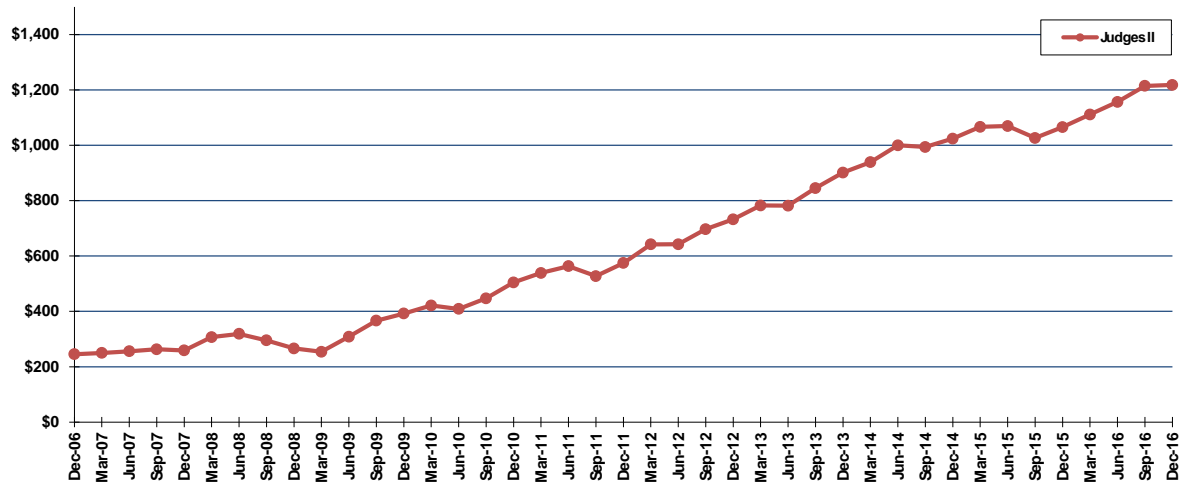


Judges' Retirement System II Fund



Judges II Performance Period Ended December 31, 2016

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	49.5	50.0	-0.5
US Fixed Income	34.3	34.0	+0.3
TIPS	4.9	5.0	-0.1
REITS	8.2	8.0	+0.2
Commodities	3.0	3.0	0.0
Cash/Short-Term	0.0	0.0	0.0
Total Judges II	100.0	100.0	0.0



Commentary – Judges II

- ◆ After recording solid gains for the first three quarters of 2016, Judges II (“JRS II, the Plan”) hit a road bump and finished the last quarter with a small dip of -1.2%. This slowdown in performance was largely influenced by a jump in interest rates following the surprising November presidential election outcome, where the Plan’s core fixed income, TIPS, and REITs portfolios (which combined represent 47.4% of JRS II’s total assets) did not fare well in this sharp rate-rise environment and weighed on the overall Plan return. Similar to Q3 and Q2 though, Q4’s results were slightly ahead of the Plan’s weighted policy benchmark, and allowed JRS II to round out 2016 with a 7.6% gain that was considered solid in both absolute and relative terms. Over longer time horizon, JRS II’s track record has compared well against the policy benchmark as well.
- ◆ At the end of the quarter, Judges II’s asset allocation showed a light bias towards investment grade fixed income and REITs while having small underweight in global equity and TIPS.
- ◆ The global equity fund was among the better performing risk assets for JRS II in the fourth quarter of 2016, as it concluded this period with a mild gain of 1.7%. The positive results here were primarily supported by the developed equity markets, where the post-election rally in the U.S. and stronger economic activities-driven uptick in Europe/Asia helped offset capital outflows from emerging markets. Q4’s gains marked the global equity fund’s fourth straight quarter of advance, where it has returned 9.2% for the full year of 2016; both of these performance figures matched well against the custom benchmark’s pace. Longer-term track record has remained in fine shape as well, where the fund continues to perform in line with expectations beyond the one-year mark.
- ◆ Due to negative development in U.S. interest rate movement, core bonds suffered heavy losses in the fourth quarter. With continued strengthening of U.S. economy firming the Fed rate hike expectations, Treasury yields were already steadily climbing since bottoming in July, and the rise further accelerated after the upset Trump presidential election victory in November. The quick rise of the 10-year Treasury yield to 2.45% presented a huge headwind to Judges II’s fixed income fund, causing it to record a big fourth quarter drop of -4.9%. Although relatively speaking this finish was better than the custom Barclays index’s -5.1% decline, while still allowing the fixed income fund’s long-term track record to maintain its edge over the benchmark.
- ◆ The post-U.S. election selloff in bonds also claimed TIPS as victim, with both the JRS II TIPS portfolio and the Barclays U.S. TIPS Index registering losses in the -2.5% range during Q4 amid a quick rise in yields. But thanks to strong appreciations from the first half of 2016, the TIPS portfolio did conclude the year in the black with a 4.6% total return that mirrored its benchmark.
- ◆ The generally negative correlation between REITs and interest rate held true this quarter, as real estate-related stocks sold off sharply during rates’ run-up in October and November. While this segment did retrace some of those losses in December after investors re-embraced REITs’ positive outlook, the JRS II REIT portfolio still followed its custom benchmark and closed the quarter firmly in the red. The REIT portfolio has done well for JRS II historically with average annualized returns of 6.8% and 10.3% over the past 3- and 5-years; both figures also comfortably tracked the custom REIT benchmark.
- ◆ Commodities were the main bright spot in the fourth quarter given that outside of precious metals, most sub-segments logged sizable appreciations, most notably being crude oil prices’ 11.4% rise. Within this favorable backdrop, the JRS II commodities investments saw a 5.8% advance for the quarter that tied the GSCI Commodity Total Return Index’s pace.



Net of Fee Plan Performance Results – Judges II

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Judges II	\$1,217.9 mil	-1.2%	7.6%	3.6%	7.9%	4.8%
<i>Weighted Policy Benchmark⁶³</i>		-1.3	7.2	3.5	7.6	4.8
JRS II Global Equity	\$603.3 mil	1.7	9.2	3.8	10.4	3.9
<i>Global Equity Benchmark⁶⁴</i>		1.6	9.0	3.7	10.3	3.9
JRS II US Fixed Income	\$418.0 mil	-4.9	5.7	5.4	4.0	6.3
<i>Custom Benchmark⁶⁵</i>		-5.1	4.3	4.9	3.0	5.7
JRS II TIPS	\$59.8 mil	-2.5	4.6	2.1	0.8	-.-
<i>Custom Benchmark⁶⁶</i>		-2.4	4.7	2.3	0.9	-.-
JRS II REITs	\$99.7 mil	-5.3	5.0	6.8	10.3	1.2
<i>Custom Benchmark⁶⁷</i>		-5.4	5.0	6.8	10.3	0.9
JRS II Commodities	\$37.1 mil	5.8	11.8	-20.3	-13.2	-.-
<i>GSCI Total Return Index</i>		5.8	11.4	-20.6	-13.1	-.-
JRS II Cash/Short-Term	\$0.0 mil	0.2	0.6	0.7	0.4	1.1
<i>91-Day Treasury Bill</i>		0.1	0.3	0.1	0.1	0.8

⁶³ The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁶⁴ The JRS II Global Equity Benchmark is a custom global benchmark maintained by FTSE starting on 9/8/2011. Prior of that it is calculated as an asset weighted benchmark of its underlying domestic and international funds.

⁶⁵ The current US Fixed Income Custom Benchmark is the Barclays Long Liability Index. Barclays Long Liability ex TIPS was used as the benchmark between June 2005 and May 2007. Prior of that the benchmark was Citigroup LPF.

⁶⁶ The TIPS benchmark is the Barclays U.S. TIPS Index.

⁶⁷ The REIT Custom Benchmark is the FTSE EPRA/NAREIT Developed Index. Historically, it has been the Wilshire RESI and REIT Indices.

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Performance Analysis – December 31, 2016
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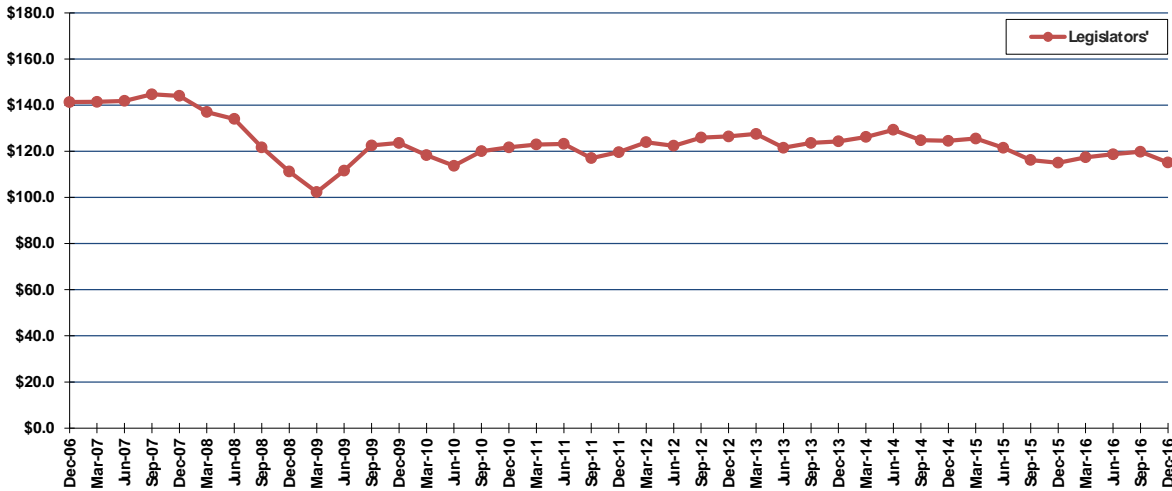


Legislators' Retirement System Fund



LRS Performance
 Period Ended December 31, 2016

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	23.7	24.0	-0.3
US Fixed Income	39.0	39.0	0.0
TIPS	26.1	26.0	+0.1
REITS	8.2	8.0	+0.2
Commodities	3.0	3.0	0.0
Cash/Short-Term	0.0	0.0	0.0
Total LRS	100.0	100.0	0.0



Commentary – LRS

- ◆ The California Legislators' Retirement System ("LRS, the System") saw its performance slip in the last quarter of 2016, finishing the period down -2.4%. The System's global equity and commodities portfolios saw welcoming gains that were partially supported by the post-November election rally. However, the force that drove the stock market rally also sharply accelerated the rise in yields, which presented strong headwind to performance of the rest of the portfolios (core fixed income, TIPS, and REITS, which constituted 73.3% of LRS' total assets). The challenged results from these remaining investments therefore weighed on the System's overall return, although it did still fare slightly better than its weighted policy benchmark's -2.5% decline. While Q4's losses diminished the results for the year, the Legislators' Retirement System still generated a 6.5% gain for the year 2016 that was considered solid in both absolute and relative terms.
- ◆ As of December 31, the System was overweight in TIPS and REITs while underweight in global equity.
- ◆ The global equity fund was among the better performing risk assets for LRS in the fourth quarter of 2016, as it concluded this period with a mild gain of 1.7%. The positive results here were primarily supported by the developed equity markets, where the post-election rally in the U.S. and stronger economic activities-driven uptick in Europe/Asia helped offset capital outflows from emerging markets. Q4's gains marked the global equity fund's fourth straight quarter of advance, where it has returned 9.2% for the full year of 2016; both of these performance figures matched well against the custom benchmark's pace. Longer-term track record has remained in fine shape as well, where the fund continues to perform in line with expectations beyond the one-year mark.
- ◆ Due to negative development in U.S. interest rate movement, core bonds suffered heavy losses in the fourth quarter. With continued strengthening of U.S. economy firming the Fed rate hike expectations, Treasury yields were already steadily climbing since bottoming in July, and the rise further accelerated after the upset Trump presidential election victory in November. The quick rise of the 10-year Treasury yield to 2.45% presented a huge headwind to LRS' fixed income fund, causing it to record a big fourth quarter drop of -4.9%. Although relatively speaking this finish was better than the custom Barclays index's -5.1% decline, while still allowing the fixed income fund's long-term track record to maintain its edge over the benchmark.
- ◆ The post-U.S. election selloff in bonds also claimed TIPS as victim, with both the LRS TIPS portfolio and the Barclays U.S. TIPS Index registering losses in the -2.5% range during Q4 amid a quick rise in yields. But thanks to strong appreciations from the first half of 2016, the TIPS portfolio did conclude the year in the black with a 4.6% total return that mirrored its benchmark.
- ◆ The generally negative correlation between REITs and interest rate held true this quarter, as real estate-related stocks sold off sharply during rates' run-up in October and November. While this segment did retrace some of those losses in December after investors re-embraced REITs' positive outlook, the LRS REIT portfolio still followed its custom benchmark and closed the quarter firmly in the red. The REIT portfolio has done well for the System historically with average annualized returns of 6.8% and 10.3% over the past 3- and 5-years; both figures also comfortably tracked the custom REIT benchmark.
- ◆ Commodities were the main bright spot in the fourth quarter given that outside of precious metals, most sub-segments logged sizable appreciations, most notably being crude oil prices' 11.4% rise. Within this favorable backdrop, the LRS commodities investments saw a 5.8% advance for the quarter that tied the GSCI Commodity Total Return Index's pace.



Net of Fee Plan Performance Results – LRS

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
LRS	\$115.1 mil	-2.4%	6.5%	3.6%	5.6%	5.2%
<i>Weighted Policy Benchmark⁶⁸</i>		-2.5	6.0	3.5	5.1	4.9
LRS Global Equity	\$27.2 mil	1.7	9.2	3.8	10.4	4.0
<i>Global Equity Benchmark⁶⁹</i>		1.6	9.0	3.7	10.3	4.0
LRS US Fixed Income	\$44.9 mil	-4.9	5.7	5.4	4.0	6.3
<i>Custom Benchmark⁷⁰</i>		-5.1	4.3	4.9	3.0	5.7
LRS TIPS	\$30.1 mil	-2.5	4.6	2.1	0.8	4.4
<i>Custom Benchmark⁷¹</i>		-2.4	4.7	2.3	0.9	4.4
LRS REITs	\$9.4 mil	-5.3	5.0	6.8	10.3	-.-
<i>Custom Benchmark⁷²</i>		-5.4	5.0	6.8	10.3	-.-
LRS Commodities	\$3.5 mil	5.8	11.9	-20.3	-13.2	-.-
<i>GSCI Total Return Index</i>		5.8	11.4	-20.6	-13.1	-.-
LRS Cash/Short-Term	\$0.0 mil	0.2	0.7	0.3	0.2	1.0
<i>91-Day Treasury Bill</i>		0.1	0.3	0.1	0.1	0.8

⁶⁸ The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁶⁹ The LRS Global Equity Benchmark is a custom global benchmark maintained by FTSE starting on 9/8/2011. Prior of that it is calculated as an asset weighted benchmark of its underlying domestic and international funds.

⁷⁰ The current benchmark is the Barclays Long Liability Index. Barclays Long Liability ex TIPS was used as the benchmark between June 2005 and May 2007. Prior of that the benchmark was Citigroup LPF.

⁷¹ The current benchmark is the Barclays U.S. TIPS Index. Prior of July 2007 the benchmark was the Barclays Long Liability TIPS Index.

⁷² The REIT Custom Benchmark is the FTSE EPRA/NAREIT Developed Index.

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Performance Analysis – December 31, 2016
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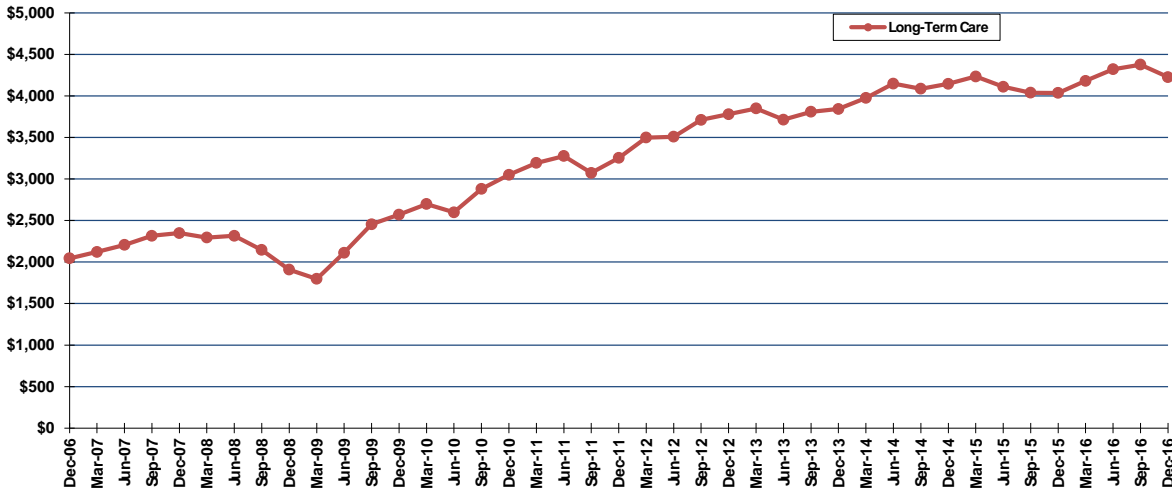


Long-Term Care Fund



LTC Performance
 Period Ended December 31, 2016

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	15.0	15.0	0.0
US Fixed Income	61.2	61.0	+0.2
TIPS	6.0	6.0	0.0
REITS	12.2	12.0	+0.2
Commodities	5.6	6.0	-0.4
Cash/Short-Term	0.0	0.0	0.0
Total LTC	100.0	100.0	0.0



Commentary – LTC

- ◆ With a target of 67% assigned to core fixed income and TIPS (and 67.2% actual weight as of December 31), the Long-Term Care Program's more conservative asset allocation actually had the unintended effect of limiting performance results during Q4's risk run up, as these rate-sensitive investments lost ground once Treasury rates jumped after the November election. LTC's higher fixed income allocation compared to JRS II and LRS also meant that the Program saw steeper overall losses for the quarter, down -3.5%; although this pace was on par with LTC's own policy benchmark. The Program finished the year 2016 with a 5.2% gain that's -21 bps behind its policy benchmark, but has otherwise continued to do well over longer time horizon.
- ◆ The LTC's asset allocation did not show too much deviation from its adopted targets, with small overweight in U.S. fixed income and REITs while underweight in commodities.
- ◆ The global equity fund was among the better performing risk assets for LTC in the fourth quarter of 2016, as it concluded this period with a mild gain of 1.3%. The positive results here were primarily supported by the developed equity markets, where the post-election rally in the U.S. and stronger economic activities-driven uptick in Europe/Asia helped offset capital outflows from emerging markets. Q4's gains marked the global equity fund's fourth straight quarter of advance, where it has returned 8.7% for the full year of 2016; both of these performance figures matched well against the custom benchmark's pace. Longer-term track record has remained in fine shape as well, where the fund continues to perform in line with expectations beyond the one-year mark.
- ◆ Due to negative development in U.S. interest rate movement, core bonds suffered heavy losses in the fourth quarter. With continued strengthening of U.S. economy firming the Fed rate hike expectations, Treasury yields were already steadily climbing since bottoming in July, and the rise further accelerated after the upset Trump presidential election victory in November. The quick rise of the 10-year Treasury yield to 2.45% presented a huge headwind to LTC's fixed income fund, causing it to record a big fourth quarter drop of -5.0%. Relatively speaking, though, this finish was better than the custom Barclays index's -5.1% decline, while still allowing the fixed income fund's long-term track record to maintain its edge over the benchmark.
- ◆ The post-U.S. election selloff in bonds also claimed TIPS as victim, with both the LTC TIPS portfolio and the Barclays U.S. TIPS Index registering losses in the -2.4% range during Q4 amid a quick rise in yields. But thanks to strong appreciations from the first half of 2016, the TIPS portfolio did conclude the year in the black with a 4.7% total return that mirrored its benchmark.
- ◆ The generally negative correlation between REITs and interest rate held true this quarter, as real estate-related stocks sold off sharply during rates' run-up in October and November. While this segment did retrace some of those losses in December after investors re-embraced REITs' positive outlook, the LTC REIT portfolio still followed its custom benchmark and closed the quarter firmly in the red. The REIT portfolio has done well for the Program historically with average annualized returns of 6.1% and 9.6% over the past 3- and 5-years; both figures also comfortably tracked ahead of the custom REIT benchmark.
- ◆ Commodities were the main bright spot in the fourth quarter given that outside of precious metals, most sub-segments logged sizable appreciations, most notably being crude oil prices' 11.4% rise. Within this favorable backdrop, the LTC commodities investments saw a 5.7% advance for the quarter that mirrored the GSCI Commodity Total Return Index's pace.



Net of Fee Plan Performance Results – LTC

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Long-Term Care ("LTC")	\$4,226.0 mil	-3.5%	5.2%	3.2%	4.4%	3.7%
<i>Weighted Policy Benchmark⁷³</i>		-3.4	5.4	3.1	4.1	3.6
LTC Global Equity	\$633.3 mil	1.3	8.7	3.5	10.0	4.0
<i>Custom Benchmark⁷⁴</i>		1.3	8.4	3.2	9.8	3.9
LTC US Fixed Income	\$2,585.8mil	-5.0	4.3	4.9	3.3	5.9
<i>Custom Benchmark⁷⁵</i>		-5.1	4.3	4.9	3.0	5.7
LTC TIPS	\$254.9 mil	-2.4	4.7	2.3	0.9	4.4
<i>Barclays U.S. TIPS Index</i>		-2.4	4.7	2.3	0.9	4.4
LTC REITs	\$516.5 mil	-5.8	3.2	6.1	9.6	0.7
<i>Custom Benchmark⁷⁶</i>		-6.0	2.4	5.4	9.1	0.3
LTC Commodities	\$235.3 mil	5.7	11.7	-20.5	-12.9	-.-
<i>GSCI Total Return Index</i>		5.8	11.4	-20.6	-13.1	-.-
LTC Cash/Short-Term	\$0.1 mil	0.2	0.5	0.1	0.1	0.9
<i>91-Day Treasury Bill</i>		0.1	0.3	0.1	0.1	0.8

⁷³The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁷⁴Effective 12/12/2012 the domestic and international equity asset classes were aggregated into a single global equity asset class, benchmarked against the MSCI ACWI IMI (net).

⁷⁵The LTC US Fixed Income Custom Benchmark is the Barclays Long Liability Index. Barclays Long Liability ex TIPS ex High Yield was the benchmark between June 2007 and July 2005. Prior of that the benchmark was the Barclays Aggregate Bond Index.

⁷⁶Effective 12/12/2012, the REIT Custom Benchmark changed to the FTSE EPRA/NAREIT Developed Liquid (net) Index.

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Performance Analysis – December 31, 2016
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California Employees' Retiree Benefit Trust



Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market IndexSM, was up for the fourth quarter by 4.54% and by 13.37% for all of 2016. This marks the fifth straight quarterly gain and, more remarkably, eighth straight annual gain for the broad U.S. market. A portion of that “winning streak” is due to a rebound from the global financial crisis sell-off. However, the market has continued to produce strong returns even after the recovery period, with a 14% annualized gain for the past four years. Following a couple of rocky months to begin the year, U.S. equities trended upward during the rest of 2016. The fourth quarter benefitted from strong economic growth and signs of confidence from the Federal Reserve.

Large capitalization stocks underperformed smaller shares with the Wilshire Large-Cap IndexSM up 4.14% versus a gain of 8.30% for the Wilshire US Small-Cap IndexSM. Small cap has performed better, generally, in 2016 with an index return of more than 20%. The Wilshire US Micro-Cap IndexSM was up 8.97% for the quarter and 17.86% year-to-date. Growth stocks trailed value during the fourth quarter in both large- and small-cap spaces and trailed for the calendar year, as well.

Sector performance was varied during the quarter. The best performing sector, by far, was Financials, which was up 21.2%. Industrials (+8.3%) and Energy (+7.6%) also produced big gains. The main laggard was Health Care, which was down -3.6%.

Fixed Income Market

After falling for much of the first half of 2016, U.S. Treasury yields reversed course and moved higher for the remainder of the year. The bellwether 10-year Treasury yield reached a historic low of 1.37% in early July before climbing to end the year at 2.45%, accelerating its rise after the election. The Federal Open Market Committee decided to increase their overnight rate by 0.25% at their December meeting, just their second increase since 2008. Credit spreads tightened during the quarter in both investment grade and high yield bonds. The move was dramatic enough within high yield to result in a net gain for the quarter, despite rising Treasury yields.

After trending downward for nearly three years, the 10-Year Treasury yield pushed higher during the fourth quarter. A similar pattern has been evident in the 10-year breakeven inflation rate. Both shifts this year occurred largely after November 8th. Whether it was the election or the removal of an unknown that spurred the change is uncertain, but the timing is unmistakable. It is worth noting that yields moved higher during the first half of 2015, as well, before retreating on concerns about global economic growth. The Federal Reserve increased the Fed-funds rate in December to a range of 0.5%-0.75%, just the second increase since effectively reaching zero at year-end 2008.

Non-U.S. Markets

Equity markets outside of the U.S. were in mostly positive territory for both the fourth quarter and year-to-date in local currency terms. However, a strong U.S. dollar resulted in losses for U.S. investors. The European Central Bank announced that they would be buying less per month than previously scheduled as part of their current quantitative easing but extended the buying period to December 2017. Japan also is maintaining an accommodative stance, including their negative overnight rate. Despite a strong 2016, emerging market equities

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suffered during the fourth quarter following the U.S. election as investors feared weakening prospects for global trade and exports from emerging market countries. Higher U.S. interest rates and a stronger dollar hurt, as well.

Real Assets Markets

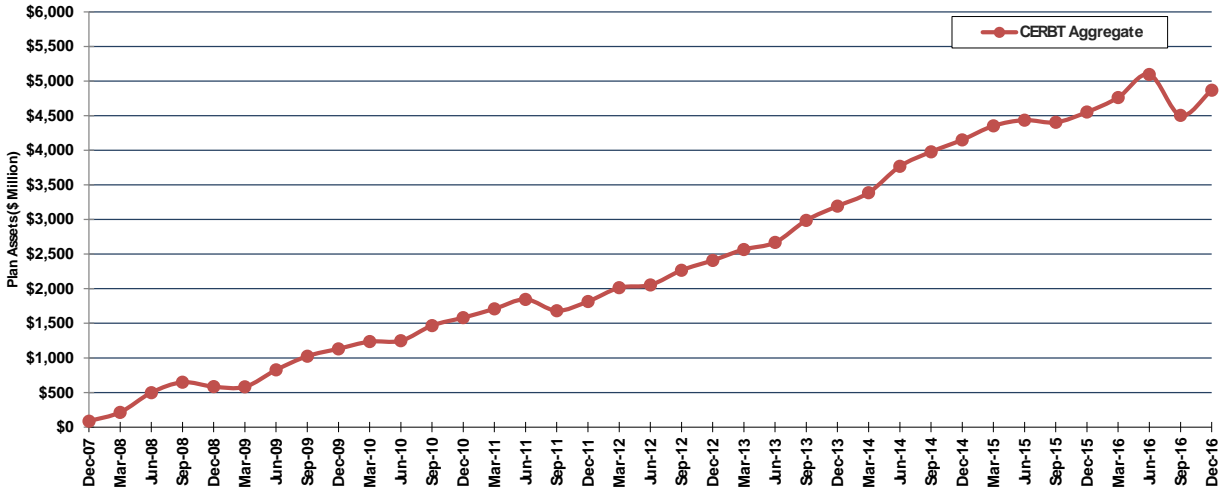
Real estate securities were down during the fourth quarter both in the U.S. and globally. Commodities were up for the quarter as crude oil rose 11.4% to \$53.72 per barrel, completing an already strong 2016. Natural gas prices were up, as well, with a gain of 28.1%, ending the quarter at \$3.72 per million BTUs. MLP returns were positive as the sector benefitted from an agreement by oil producers that is aimed at balancing supply and demand. Finally, gold prices were down and finished at approximately \$1,152 per troy ounce, down -12.6% from last quarter.



California Employers' Retiree Benefit Trust Aggregate

Periods Ended December 31, 2016

Growth in Assets (in \$Millions)



Net of Fee Trust Performance – Aggregate

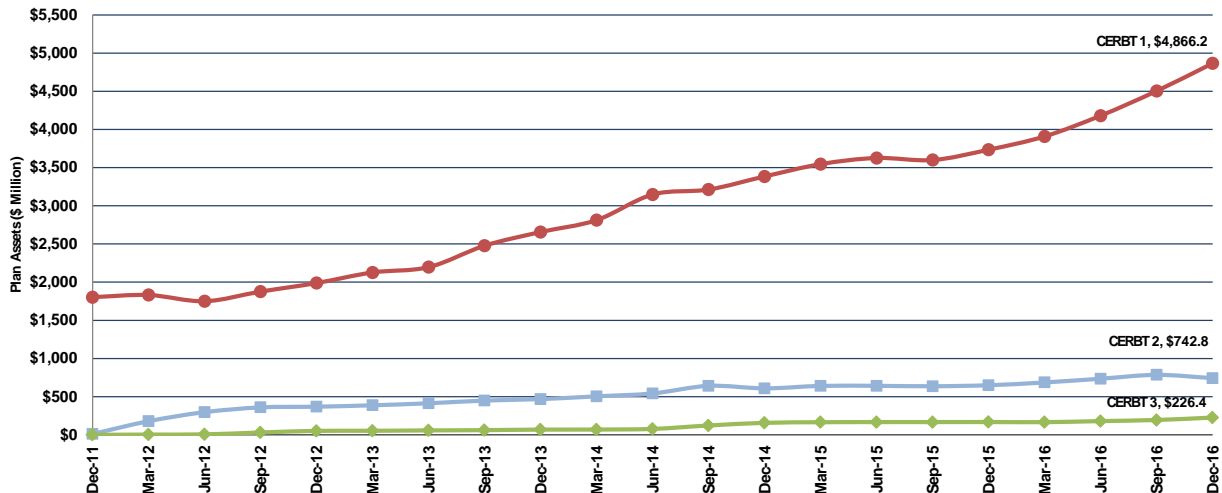
Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Aggregate	\$5,835.3 mil	-1.1%	7.5%	3.5%	7.6%	-.-%
<i>CERBT Trust Aggregate Benchmark</i>		-1.3	6.8	3.1	7.3	-.-

California Employers' Retiree Benefit Trust Strategy 1, 2, 3

Periods Ended December 31, 2016

Growth in Assets (in \$Millions)



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California Employers' Retiree Benefit Trust Strategy 1

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	56.5%	57.0%	-0.5%
US Bonds	27.2	27.0	+0.2
TIPS	4.9	5.0	-0.1
REITS	8.2	8.0	+0.2
Commodities	3.0	3.0	0.0
Cash/Short-Term	0.1	0.0	+0.1
Total CERBT 1	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 1	\$4,866.2 mil	-0.9%	7.6%	3.5%	7.8%	-.-%
<i>Total CERBT Strat. 1 Benchmark</i>		-1.1	6.9	3.1	7.5	-.-
Global Equity	2,750.9 mil	1.4	8.8	3.6	10.0	-.-
<i>CERBT Global Equity Benchmark</i>		1.3	8.4	3.2	9.8	-.-
Domestic Fixed Income	1,325.5 mil	-4.9	5.7	5.4	4.0	-.-
<i>CalPERS Custom Long Liability</i>		-5.1	4.3	4.9	3.0	-.-
TIPS	238.0 mil	-2.5	4.6	2.1	0.8	-.-
<i>CalPERS TIPS</i>		-2.4	4.7	2.3	0.9	-.-
REITs	396.9 mil	-5.8	3.2	6.2	9.6	-.-
<i>PERS FTSE/EPRA NAREIT Dev.</i>		-6.0	2.4	5.4	9.1	-.-
Commodities	147.8 mil	5.8	11.0	-20.6	-13.4	-.-
<i>GSCI Total Return</i>		5.8	11.4	-20.6	-13.1	-.-
Cash/Short-Term[±]	7.1 mil	0.3	0.7	0.3	0.2	-.-
<i>91-Day T-Bill</i>		0.1	0.3	0.1	0.1	-.-

[±] The cash component may contain residual trade balance that has yet to be settled during the periodic rebalancing process as of Dec 31.

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California Employers' Retiree Benefit Trust Strategy 2

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	39.6%	40.0%	-0.4%
US Bonds	39.3	39.0	+0.3
TIPS	9.9	10.0	-0.1
REITS	8.2	8.0	+0.2
Commodities	3.0	3.0	0.0
Cash/Short-Term	0.0	0.0	0.0
Total CERBT 2	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 2	\$742.8 mil	-1.9%	7.0%	3.4%	6.6%	-.-%
<i>Total CERBT Strat. 2 Benchmark</i>		-2.0	6.3	3.1	6.2	-.-
Global Equity	293.9 mil	1.4	8.8	3.6	10.0	-.-
<i>CERBT Global Equity Benchmark</i>		1.3	8.4	3.2	9.8	-.-
Domestic Fixed Income	292.0 mil	-4.9	5.7	5.4	4.0	-.-
<i>CalPERS Custom Long Liability</i>		-5.1	4.3	4.9	3.0	-.-
TIPS	73.4 mil	-2.4	4.6	2.1	0.8	-.-
<i>CalPERS TIPS</i>		-2.4	4.7	2.3	0.9	-.-
REITs	60.6 mil	-5.8	3.2	6.1	9.6	-.-
<i>PERS FTSE/EPRA NAREIT Dev Liquid</i>		-6.0	2.4	5.4	9.1	-.-
Commodities	22.6 mil	5.8	11.2	-20.5	-13.4	-.-
<i>GSCI Total Return</i>		5.8	11.4	-20.6	-13.1	-.-
Cash/Short-Term[±]	0.3 mil	0.2	0.6	0.3	0.2	-.-
<i>91-Day T-Bill</i>		0.1	0.3	0.1	0.1	-.-

[±] The cash component may contain residual trade balance that has yet to be settled during the periodic rebalancing process as of Dec 31.

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California Employers' Retiree Benefit Trust Strategy 3

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	23.7%	24.0%	-0.3%
US Bonds	39.0	39.0	0.0
TIPS	25.9	26.0	-0.1
REITS	8.1	8.0	+0.1
Commodities	3.0	3.0	0.0
Cash/Short-Term	0.3	0.0	+0.3
Total CERBT 3	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 3	\$226.4 mil	-2.5%	6.2%	3.6%	5.3%	-.-%
<i>Total CERBT Strat. 3 Benchmark</i>		-2.6	5.7	3.3	4.9	-.-
Global Equity	53.6 mil	1.3	8.7	3.6	10.0	-.-
<i>CERBT Global Equity Benchmark</i>		1.3	8.4	3.2	9.8	-.-
Domestic Fixed Income	88.4 mil	-5.0	5.6	5.3	3.9	-.-
<i>CalPERS Custom Long Liability</i>		-5.1	4.3	4.9	3.0	-.-
TIPS	58.6 mil	-2.5	4.6	2.1	0.9	-.-
<i>CalPERS TIPS</i>		-2.4	4.7	2.3	0.9	-.-
REITs	18.4 mil	-6.0	2.9	6.1	9.6	-.-
<i>PERS FTSE/EPRA NAREIT Dev.</i>		-6.0	2.4	5.4	9.1	-.-
Commodities	6.8 mil	6.3	11.7	-20.3	-13.2	-.-
<i>GSCI Total Return</i>		5.8	11.4	-20.6	-13.1	-.-
Cash/Short-Term[±]	0.7 mil	0.1	0.5	0.4	0.3	-.-
<i>91-Day T-Bill</i>		0.1	0.3	0.1	0.1	-.-

[±] The cash component may contain residual trade balance that has yet to be settled during the periodic rebalancing process as of Dec 31.

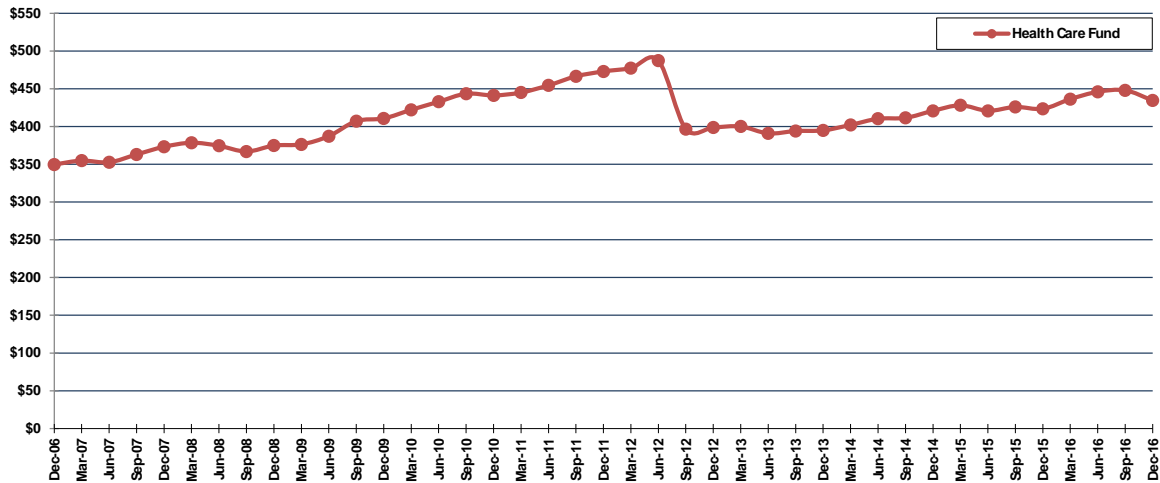


Health Care Fund



Health Care Fund Periods Ended December 31, 2016

Growth in Assets (in \$Millions)⁷⁷



Net of Fee Fund Performance

Fund Performance Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Health Care Fund	\$434.5 mil	-3.0%	2.6%	3.2%	2.9%	4.6%
<i>Barclays US Aggregate Bond Idx</i>		-3.0	2.6	3.0	2.2	4.3

⁷⁷ The decline in assets in the third quarter of 2012 was due to a \$100 million withdrawal from the fund.

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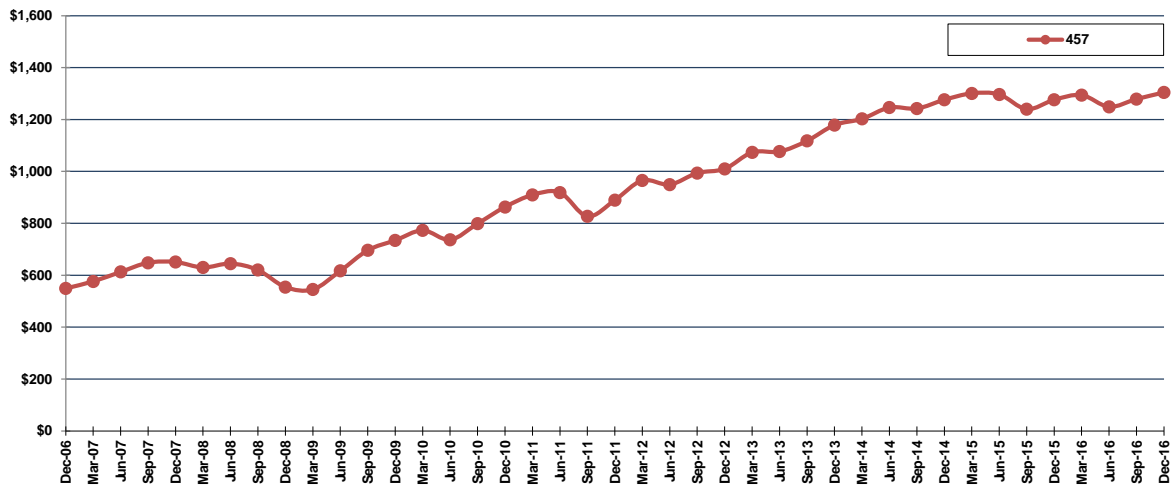
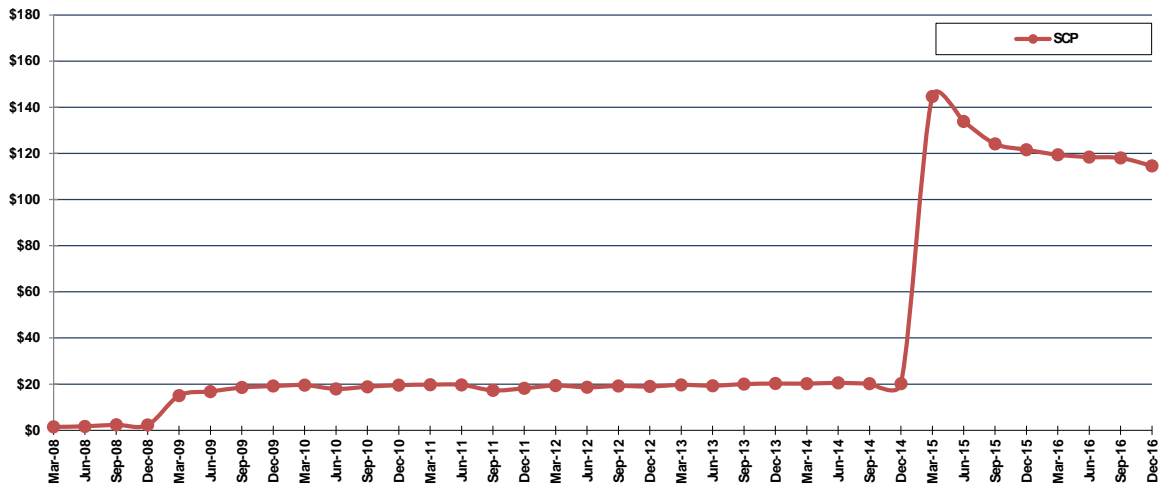


Supplemental Income Plans



Supplemental Income Plan Performance⁷⁸

Growth in Assets (in \$Millions)



⁷⁸ SCP experienced a steep increase in assets during the first quarter of 2015. This was due to the termination of the State Peace Officers’ and Firefighters’ (POFF) Defined Contribution Plan, which took place June 1, 2014. The termination required distributions of participant’s money in the POFF DC Plan in accordance with state and federal law, and SCP was designated as the default plan for participants who did not make an affirmative election to take a distribution.

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Net Fund Performance – Supplemental Contribution Plan

Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CalPERS Target Income Fund	\$19.9 mil	-1.4%	2.7%	1.8%	3.7%	--
<i>SIP Income Policy</i>		-1.3	3.1	2.3	3.9	--
CalPERS Target 2015 Fund	\$18.1 mil	-1.4	2.7	1.9	5.0	--
<i>SIP 2015 Policy</i>		-1.3	3.1	2.3	5.4	--
CalPERS Target 2020 Fund	\$24.5 mil	-1.2	3.4	1.9	5.6	--
<i>SIP 2020 Policy</i>		-1.1	3.8	2.3	6.0	--
CalPERS Target 2025 Fund	\$21.1 mil	-0.8	4.5	2.0	6.4	--
<i>SIP 2025 Policy</i>		-0.7	4.9	2.4	6.9	--
CalPERS Target 2030 Fund	\$14.9 mil	-0.4	5.5	2.1	7.2	--
<i>SIP 2030 Policy</i>		-0.3	5.9	2.5	7.7	--
CalPERS Target 2035 Fund	\$6.7 mil	-0.1	6.5	2.2	--	--
<i>SIP 2035 Policy</i>		0.0	6.8	2.6	--	--
CalPERS Target 2040 Fund	\$3.0 mil	0.2	7.5	2.2	8.2	--
<i>SIP 2040 Policy</i>		0.3	7.8	2.6	8.8	--
CalPERS Target 2045 Fund	\$0.8 mil	0.5	8.1	2.4	--	--
<i>SIP 2045 Policy</i>		0.6	8.4	2.8	--	--
CalPERS Target 2050 Fund	\$0.012 mil	0.5	8.3	2.4	--	--
<i>SIP 2050 Policy</i>		0.6	8.4	2.8	--	--
CalPERS Target 2055 Fund	\$0.004 mil	0.5	8.2	--	--	--
<i>SIP 2055 Policy</i>		0.6	8.4	--	--	--
SSgA Russell All Cap Index SL	\$3.2 mil	4.1	12.2	8.0	--	--
<i>Russell 3000</i>		4.2	12.7	8.4	--	--
SSgA Global All Cap ex-US SL	\$0.2 mil	-1.7	4.7	-1.8	--	--
<i>MSCI ACWI ex-US IMI (N)</i>		-1.6	4.4	-1.4	--	--
SSgA US Bond Index SL	\$0.5 mil	-3.1	2.1	2.6	--	--
<i>Barclays Aggregate Bond Index</i>		-3.0	2.6	3.0	--	--
SSgA US Short Term Bond	\$0.3 mil	-0.5	0.6	0.3	--	--
<i>Barclays US Gov/Credit</i>		-0.4	1.3	0.9	--	--
SSgA Real Asset NL	\$0.2 mil	0.3	13.6	-1.5	--	--
<i>Real Assets Blended Index</i>		0.4	14.6	-0.9	--	--
SSgA STIF	\$1.2 mil	0.0	0.0	--	--	--
<i>BofAML 3 Month US TBill</i>		0.1	0.3	--	--	--
SCP AGGREGATE	\$114.6 mil	-0.8	4.1	2.2	5.8	--
<i>CalPERS CUSTOM SCP PLAN INDEX</i>		-0.7	4.5	2.6	6.2	--

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Net Fund Performance – 457 Program

Periods Ended December 31, 2016

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CalPERS Target Income Fund	\$84.3 mil	-1.3%	2.9%	2.0%	3.7%	--
<i>SIP Income Policy</i>		-1.3	3.1	2.3	3.9	--
CalPERS Target 2015 Fund	\$76.7 mil	-1.3	2.9	2.0	5.0	--
<i>SIP 2015 Policy</i>		-1.3	3.1	2.3	5.4	--
CalPERS Target 2020 Fund	\$113.7 mil	-1.1	3.5	2.0	5.7	--
<i>SIP 2020 Policy</i>		-1.1	3.8	2.3	6.0	--
CalPERS Target 2025 Fund	\$83.8 mil	-0.7	4.6	2.1	6.5	--
<i>SIP 2025 Policy</i>		-0.7	4.9	2.4	6.9	--
CalPERS Target 2030 Fund	\$81.2 mil	-0.4	5.7	2.2	7.3	--
<i>SIP 2030 Policy</i>		-0.3	5.9	2.5	7.7	--
CalPERS Target 2035 Fund	\$46.9 mil	-0.1	6.6	2.3	7.9	--
<i>SIP 2035 Policy</i>		0.0	6.8	2.6	8.4	--
CalPERS Target 2040 Fund	\$41.1 mil	0.3	7.6	2.4	8.3	--
<i>SIP 2040 Policy</i>		0.3	7.8	2.6	8.8	--
CalPERS Target 2045 Fund	\$15.9 mil	0.5	8.3	2.5	8.4	--
<i>SIP 2045 Policy</i>		0.6	8.4	2.8	8.9	--
CalPERS Target 2050 Fund	\$7.1 mil	0.5	8.3	2.5	8.4	--
<i>SIP 2050 Policy</i>		0.6	8.4	2.8	8.9	--
CalPERS Target 2055 Fund	\$3.1 mil	0.5	8.3	2.5	--	--
<i>SIP 2055 Policy</i>		0.6	8.4	2.8	--	--
SSgA Russell All Cap Index SL	\$480.4 mil	4.1	12.3	8.1	--	--
<i>Russell 3000</i>		4.2	12.7	8.4	--	--
SSgA Global All Cap ex-US SL	\$54.9 mil	-1.7	4.8	-1.6	--	--
<i>MSCI ACWI ex-US IMI (N)</i>		-1.6	4.4	-1.4	--	--
SSgA US Bond Index SL	\$62.1 mil	-3.1	2.2	2.7	--	--
<i>Barclays Aggregate Bond Index</i>		-3.0	2.6	3.0	--	--
SSgA US Short Term Bond	\$40.1 mil	-0.5	0.7	0.4	--	--
<i>Barclays US Gov/Credit</i>		-0.4	1.3	0.9	--	--
SSgA Real Asset NL	\$5.0 mil	0.3	13.8	-1.4	--	--
<i>Real Assets Blended Index</i>		0.4	14.6	-0.9	--	--
SSgA STIF	\$108.0 mil	0.1	0.2	--	--	--
<i>BofAML 3 Month US TBill</i>		0.1	0.3	--	--	--
457 AGGREGATE	\$1304.3 mil	0.9	6.7	3.8	7.4	4.1
<i>CalPERS CUSTOM 457 PLAN INDEX</i>		1.0	7.0	4.1	7.8	4.6