



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 2017

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Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market IndexSM, was up 6.39% for the fourth quarter of 2017. This marks the ninth consecutive year of positive gains for the broad U.S. equity market. What made the past year particularly impressive was the relative lack of volatility. The largest drawdown for the year was -2.75% and there were only 4 trading days where the market was down 1% or more, making 2017 one of the least volatile years in nearly four decades. Several factors contributed to this success including a rebound in global economic growth and continued strength domestically. Investors also responded positively to the largest overhaul of the U.S. tax system in 30 years.

Large capitalization stocks outperformed small caps with the Wilshire Large-Cap IndexSM up 6.70% versus a gain of 3.56% for the Wilshire US Small-Cap IndexSM. The large-cap segment of the market far outpaced small-caps for the full year, as well. The Wilshire US Micro-Cap IndexSM was up 2.34% for the quarter and 15.66% for the one-year. Growth stocks led value during the fourth quarter in both large- and small-cap spaces and lead for the past twelve months.

Each of the eleven major sectors produced positive gains during the quarter. The best performing sectors were Consumer Discretionary (+9.1%), IT (+8.6%) and Financials (+8.0%). Utilities were the laggard but were up slightly (0.7%).

The third quarter of 2017 was the second consecutive quarter of real GDP growth in excess of 3%, annualized, since mid-2014. Personal consumption, the largest component of GDP, has been relatively steady since recovering from the 2008 recession while private fixed investment (nonresidential) has been on the rise more recently. Businesses seem to be gaining confidence in the global economy and have been increasing spending on equipment while growing inventories during the quarter, contributing more than three-quarters of a percent to real GDP growth. Strong retail sales during the fourth quarter have helped raise expectations for economic growth during the final quarter of 2017.

Fixed Income Market

The U.S. Treasury yield curve continued to flatten during the quarter with short to intermediate term rates rising and long-term yields falling. The bellwether 10-year Treasury yield ended the quarter at 2.40%, up slightly but approximately equal to year-end 2016. The Federal Open Market Committee decided to increase its overnight rate by 25 basis points in December to a range of 1.25% to 1.50% and began their balance sheet reduction program. Credit spreads continued to tighten during the quarter, most noticeably with investment grade credit. High yield spreads, which have averaged 6% during the past decade, were below 4% during the quarter and stood at 3.4% as-of December 31.



Non-U.S. Markets

Equity markets outside of the U.S. produced strong returns during the fourth quarter of 2017, in both developed and emerging markets. The U.S. dollar continued to weaken, providing an additional boost for U.S. investors holding foreign currencies. Japan was one of the strongest developed markets during the quarter due to stimulative policies by both the Bank of Japan and the national government. Japan is now experiencing its strongest economy in more than a decade. Emerging Markets led all global equities during 2017 and produced their second consecutive positive annual gain. In fact, their nearly 40% return was the strongest year for broad emerging markets equity since they recovered from the global financial crisis in 2009.

Real Assets Markets

Real estate securities were up in the U.S. during the fourth quarter with a stronger return globally, due in part to a weakening dollar. Commodities were up for the quarter as crude oil rose 16.9% to \$60.42 per barrel. Oil prices finished the year up, increasing 12.5% broadly. Natural gas prices were down for the quarter with a loss of -1.8%, ending the quarter at \$2.95 per million BTUs. MLP returns were negative for the quarter and for the past 12 months. Finally, gold prices were up and finished at approximately \$1,309 per troy ounce, up 1.9% from last quarter.



Summary of Index Returns

For Periods Ended December 31, 2017

	<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	6.64%	21.83%	11.41%	15.79%	8.49%
Wilshire 5000	6.39	20.99	11.36	15.67	8.64
Wilshire 4500	4.78	17.84	10.79	15.23	9.45
Wilshire Large Cap	6.70	21.84	11.55	15.82	8.51
Wilshire Small Cap	3.56	13.45	9.73	14.43	9.86
Wilshire Micro Cap	2.34	15.66	9.33	14.86	8.26
Domestic Equity					
Wilshire Large Value	6.09%	16.31%	10.03%	14.41%	7.25%
Wilshire Large Growth	7.33	27.71	12.95	17.25	9.74
Wilshire Mid Value	5.55	12.61	10.50	14.50	9.57
Wilshire Mid Growth	6.69	22.56	10.19	15.26	9.92
Wilshire Small Value	2.97	7.42	9.46	13.87	9.75
Wilshire Small Growth	4.15	19.55	9.82	14.89	9.89
International Equity					
MSCI All World ex U.S. (USD)	5.00%	27.19%	7.83%	6.80%	1.84%
MSCI All World ex U.S. (local currency)	4.58	18.88	9.60	11.19	4.03
MSCI EAFE	4.23	25.03	7.79	7.90	1.94
MSCI Europe	2.21	25.50	6.69	7.37	1.34
MSCI Pacific	7.99	24.63	10.16	8.99	3.34
MSCI Emerging Markets Index	7.43	37.28	9.10	4.35	1.68
Domestic Fixed Income					
Barclays Aggregate Bond	0.39%	3.54%	2.24%	2.10%	4.01%
Barclays Credit	1.05	6.18	3.63	3.24	5.42
Barclays Mortgage	0.15	2.47	1.88	2.04	3.84
Barclays Treasury	0.05	2.31	1.40	1.27	3.31
Citigroup High Yield Cash Pay	0.51	7.01	5.97	5.35	7.58
Barclays US TIPS	1.26	3.01	2.05	0.13	3.53
91-Day Treasury Bill	0.28	0.85	0.41	0.27	0.39
International Fixed Income					
Citigroup Non-U.S. Gov. Bond	1.57%	10.33%	1.99%	-0.29%	2.44%
Citigroup World Gov. Bond	1.04	7.49	1.74	0.12	2.67
Citigroup Hedged Non-U.S. Gov.	1.10	2.06	2.90	3.94	4.20
Currency*					
Euro vs. \$	1.57%	13.85%	-0.26%	-1.85%	-1.95%
Yen vs. \$	-0.08	3.54	2.10	-5.15	-0.08
Pound vs. \$	0.83	9.48	-4.63	-3.61	-3.79
Real Estate					
Wilshire REIT Index	1.70%	4.18%	5.21%	9.35%	7.28%
Wilshire RESI	1.72	4.84	5.75	9.70	7.36

*Positive values indicate dollar depreciation.

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Summary Review of Plans

Periods Ended 12/31/2017

	<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	\$350.0 bil	4.0%	15.7%	7.6%	9.0%	4.9%
<i>Total Fund Policy Benchmark ¹</i>		4.0%	15.5%	7.6%	8.8%	6.1%
<i>Actuarial Rate</i>		1.8%	7.5%	7.5%	7.5%	7.6%
Affiliate Funds						
JudgesI	\$42.9 mil	0.3%	1.0%	0.6%	0.4%	0.5%
<i>91-Day Treasury Bill</i>		0.3%	0.9%	0.4%	0.3%	0.4%
JudgesII	\$1,484.3 mil	4.1%	15.5%	6.7%	8.0%	5.7%
<i>Weighted Policy Benchmark</i>		4.0%	15.2%	6.5%	7.7%	5.7%
Legislators' Retirement System	\$118.1 mil	2.9%	10.2%	4.7%	5.1%	5.4%
<i>Weighted Policy Benchmark</i>		2.8%	9.8%	4.5%	4.8%	5.1%
Long-Term Care ("LTC")	\$4,578.8 mil	2.8%	9.1%	3.8%	3.7%	3.9%
<i>Weighted Policy Benchmark</i>		2.8%	8.9%	3.7%	3.5%	3.8%
CERBT Strategy 1	\$6,511.6 mil	4.4%	16.7%	7.1%	8.1%	5.3%
<i>CERBT Strategy 1 Policy Benchmark</i>		4.3%	16.1%	6.6%	7.6%	5.0%
CERBT Strategy 2	\$1,013.7 mil	3.6%	13.4%	5.9%	6.5%	--%
<i>CERBT Strategy 2 Policy Benchmark</i>		3.5%	12.9%	5.5%	6.1%	--%
CERBT Strategy 3	\$342.8 mil	2.9%	10.1%	4.6%	4.9%	--%
<i>CERBT Strategy 3 Policy Benchmark</i>		2.8%	9.6%	4.3%	4.5%	--%
Health Care Fund	\$450.1 mil	0.4%	3.6%	2.3%	2.5%	4.2%
<i>Barclays U.S. Aggregate</i>		0.4%	3.5%	2.2%	2.1%	4.0%
Supplemental Contribution Plan	\$115.3 mil	2.3%	10.0%	4.2%	5.6%	4.2%
<i>CalPERS Custom SCP Plan Index</i>		2.3%	10.0%	4.4%	5.8%	5.0%
457 Program	\$1,503.9 mil	3.8%	14.0%	6.5%	8.1%	4.9%
<i>CalPERS Custom 457 Plan Index</i>		3.8%	14.0%	6.7%	8.3%	5.3%

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 12/31/2017

	Market Value	5-Year Ratios							
		Qtr	1-Year	3-Year	5-Year	10-Year	VaR ¹²	Sharpe ¹³	Info ¹⁴
TOTAL FUND	\$350.0 bil	4.0%	15.7%	7.6%	9.0%	4.9%	\$42.6 bil	1.6	0.2
Total Fund Policy Benchmark ²		4.0%	15.5%	7.6%	8.8%	6.1%		1.6	0.0
Actuarial Rate		1.8%	7.5%	7.5%	7.5%	7.6%			
GROWTH	203.2	5.6%	23.2%	10.0%	11.9%	6.0%	\$42.7 bil	1.4	-0.2
Growth Policy Benchmark ³		5.9%	24.2%	10.4%	12.4%	7.1%		1.5	0.0
PUBLIC EQUITY	176.4	5.8%	24.0%	10.0%	11.8%	5.5%	\$36.0 bil	1.2	0.6
Public Equity Policy Benchmark ⁴		5.8%	24.4%	9.9%	11.6%	5.8%		1.1	0.0
PRIVATE EQUITY	26.7	4.2%	18.0%	9.9%	12.6%	9.1%	\$9.1 bil	3.6	-0.3
Private Equity Policy Benchmark ⁵		6.1%	22.9%	12.0%	15.4%	13.2%		1.5	0.0
INCOME	65.6	1.3%	7.2%	3.7%	3.3%	6.0%	\$7.3 bil	0.6	1.3
Income Policy Benchmark ⁶		1.3%	6.6%	3.0%	2.5%	5.3%		0.4	0.0
REAL ASSETS⁷	36.8	2.0%	8.5%	9.4%	10.4%	-0.9%	\$5.1 bil	1.7	0.1
Real Assets Policy Benchmark ⁸		1.6%	6.4%	9.1%	9.9%	6.4%		2.4	0.0
INFLATION	27.4	4.0%	6.3%	0.1%	-2.0%	0.1%	\$2.0 bil	-0.4	0.7
Inflation Policy Benchmark ⁹		3.9%	6.2%	-0.2%	-2.5%	0.1%		-0.4	0.0
LIQUIDITY	14.7	0.3%	1.2%	0.7%	0.4%	1.1%	\$0.0 bil	0.2	-0.3
Liquidity Policy Benchmark ¹⁰		0.3%	0.9%	0.6%	0.6%	1.2%		0.2	0.0
ABSOLUTE RETURN STRATEGIES¹¹	0.3	1.8%	6.4%	0.6%	3.0%	1.5%		0.6	-0.5
Absolute Return Strategies Policy Benchmark ¹¹		1.2%	5.6%	5.5%	5.4%	5.9%		23.5	0.0
EXTERNAL MULTI-ASSET CLASS COMPOSITE	1.4	4.8%	13.9%	5.8%	7.1%	--%		N/A	N/A
Absolute 7.5%		1.8%	7.5%	7.5%	7.5%	--%		N/A	N/A
TRUST LEVEL PORTFOLIO MANAGEMENT / OTHER	0.7	--%	--%	--%	--%	--%		N/A	N/A
TERMINATED AGENCY POOL	0.1	1.8%	5.0%	2.6%	--%	--%		N/A	N/A
TOTAL FUND PLUSTAP	350.1	4.0%	15.7%	7.6%	9.0%	4.9%		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 12/31/2017

Total Fund Flow

	<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>2016</u>	<u>1Q17</u>	<u>2Q17</u>	<u>3Q17</u>	<u>4Q17</u>
Market Value (\$bil)	183.3	203.3	225.7	225.0	248.6	283.6	295.8	288.9	302.8	314.7	323.5	335.1	350.0

Total Fund Market Value



Asset Allocation

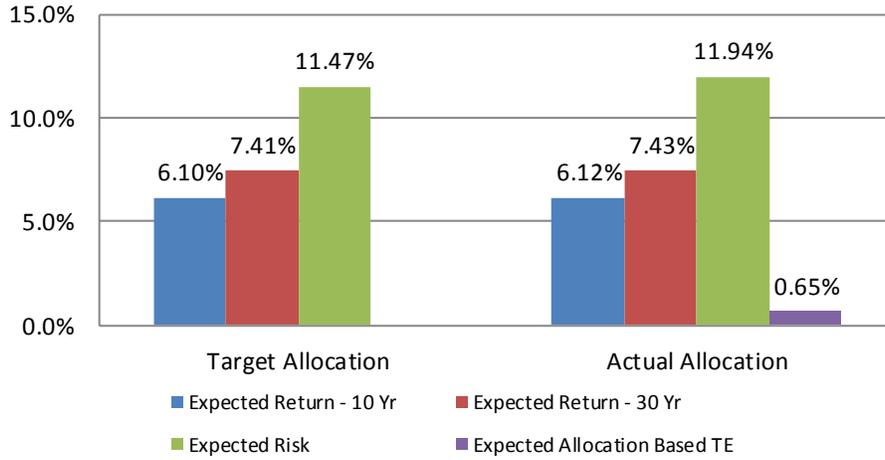
Asset Class	Actual (%)	Policy (%)	Difference (%)
Growth	58.0	54.0	+4.0
Income	18.7	20.0	-1.3
Real Assets	10.5	13.0	-2.5
Inflation	7.8	9.0	-1.2
Liquidity	4.2	4.0	+0.2
Multi-Asset/TLPM	0.6	0.0	+0.6
ARS/Other PERF	0.1	0.0	+0.1
Total	100.0	100.0	0.0

* 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.

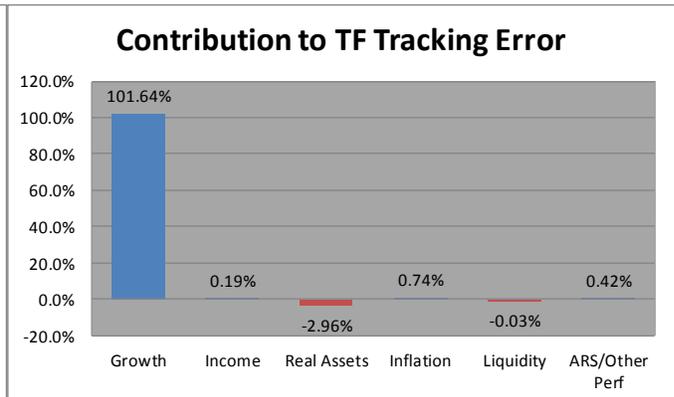
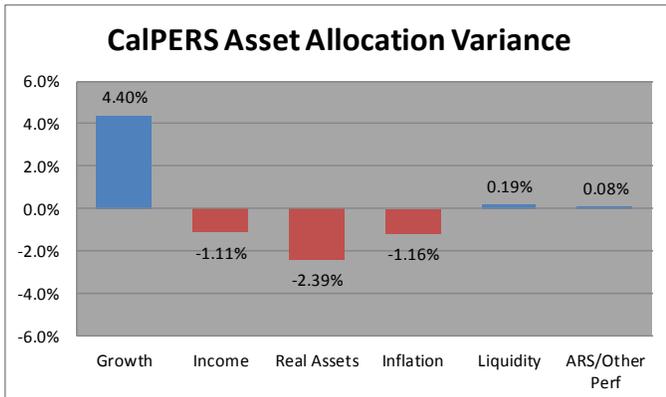
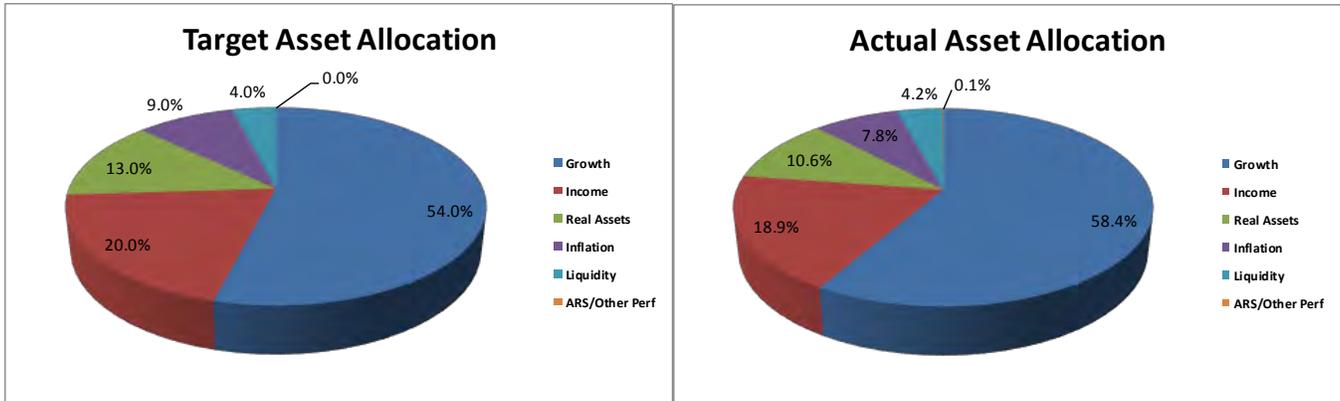


Total Fund Review for PERF (continued)
 Periods Ended 12/31/2017

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



Total Fund Asset Allocation

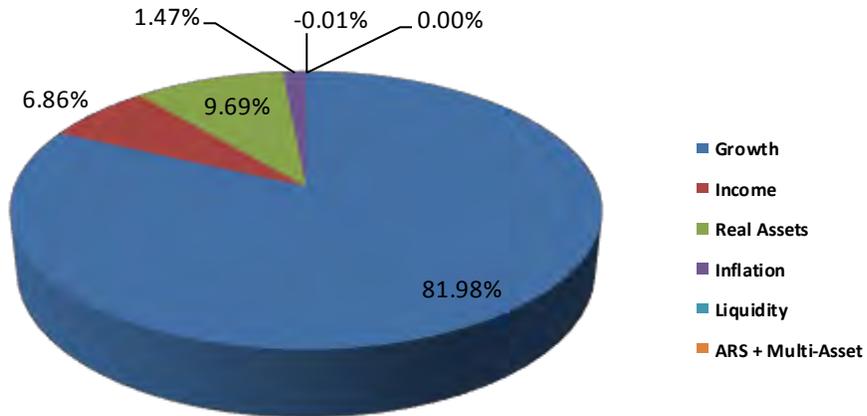




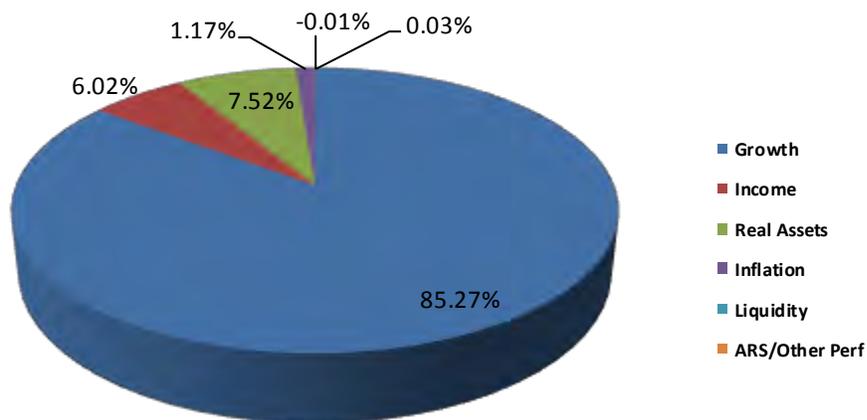
Total Fund Review for PERF (continued)
 Periods Ended 12/31/2017

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

Contribution to Total Risk - Target Allocation



Contribution to Total Risk - Actual Allocation



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California Public Employees' Retirement System
Total Fund Attribution - Quarter
As of 12/31/2017

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	57.88	5.61	54.00	5.86	3.88	-0.26	0.07	0.00	-0.15	-0.08
Public Equity	49.96	5.82	46.00	5.82	3.96	0.00	0.07	0.00	0.00	0.07
Private Equity	7.91	4.23	8.00	6.08	-0.09	-1.85	0.00	0.00	-0.15	-0.15
Income	19.02	1.34	20.00	1.28	-0.98	0.06	0.02	0.00	0.01	0.04
Real Assets	10.60	2.05	13.00	1.57	-2.40	0.48	0.06	-0.01	0.06	0.11
Inflation	7.82	4.03	9.00	3.93	-1.18	0.09	0.00	0.00	0.01	0.01
Ext. MAC/ARS/TLPM/Other	0.57	4.83	0.00	1.82	0.57	3.01	-0.01	0.02	0.00	0.00
Liquidity	4.11	0.35	4.00	0.28	0.11	0.06	0.00	0.00	0.00	0.00
Monthly Linked Return	100.00	4.06	100.00	3.98		0.08	0.14	0.00	-0.06	0.08
Trading/Hedging/Other		-0.02		0.00		-0.02				-0.02
Total		4.04		3.98		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.

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**California Public Employees' Retirement System
 Total Fund Attribution - Calendar Year-to-Date
 As of 12/31/2017**

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	56.67	23.15	54.00	24.19	2.67	-1.04	0.21	-0.02	-0.52	-0.33
Public Equity	48.56	24.03	46.00	24.38	2.56	-0.35	0.21	-0.01	-0.15	0.06
Private Equity	8.10	18.04	8.00	22.90	0.10	-4.86	0.00	-0.01	-0.38	-0.38
Income	19.00	7.22	20.00	6.57	-1.00	0.65	0.08	-0.01	0.14	0.21
Real Assets	10.88	8.49	13.00	6.41	-2.12	2.09	0.19	-0.05	0.29	0.43
Inflation	8.44	6.33	9.00	6.16	-0.56	0.17	0.01	0.00	0.02	0.02
Ext. MAC/ARS/TLPM/Other	0.51	13.88	0.00	7.50	0.51	6.38	-0.04	0.04	0.00	-0.01
Liquidity	4.50	1.15	4.00	0.86	0.50	0.30	-0.07	0.00	0.01	-0.05
Monthly Linked Return	100.00	15.75	100.00	15.48		0.27	0.38	-0.05	-0.06	0.27
Trading/Hedging/Other		-0.02		0.00		-0.02				-0.02
Total		15.73		15.48		0.25				0.25

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.

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**California Public Employees' Retirement System
 Total Fund Attribution - Fiscal Year-to-Date
 As of 12/31/2017**

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
Growth	57.27	11.35	54.00	11.55	3.27	-0.19	0.12	0.00	-0.11	0.01
Public Equity	49.32	11.62	46.00	11.62	3.32	0.00	0.12	0.00	0.00	0.12
Private Equity	7.95	9.73	8.00	11.11	-0.05	-1.38	0.00	0.00	-0.11	-0.11
Income	19.22	2.71	20.00	2.60	-0.78	0.12	0.03	0.00	0.02	0.06
Real Assets	10.76	4.52	13.00	3.00	-2.24	1.51	0.10	-0.04	0.20	0.27
Inflation	7.83	7.38	9.00	6.99	-1.17	0.39	0.01	0.00	0.04	0.04
Ext. MAC/ARS/TLPM/Other	0.54	9.06	0.00	3.68	0.54	5.38	-0.02	0.03	0.00	0.01
Liquidity	4.38	0.68	4.00	0.55	0.38	0.13	-0.02	0.00	0.01	-0.02
Monthly Linked Return	100.00	8.10	100.00	7.74		0.36	0.22	-0.02	0.16	0.36
Trading/Hedging/Other		-0.01		0.00		-0.01				-0.01
Total		8.09		7.74		0.35				0.35

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 12/31/2017

- ◆ The California Public Employees' Retirement System ("CalPERS, the System") generated a total fund return of 4.04%, for the quarter ended December 31, 2017. CalPERS' return can be attributed as follows:

3.98%	Strategic Policy Allocation
0.14%	Actual/Tactical Asset Allocation
-0.06%	Active Management
0.00%	Interaction
<u>-0.02%</u>	Trading/Currency Hedging
4.04%	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.
- ◆ "Steady advance" were the key words best suited to describe CalPERS investment performance for 2017, where the System registered consistent rate of positive returns throughout the year and did not see a single month of decline. This theme continued through the fourth quarter, with CalPERS' continued low single-digit monthly gains netting up to a +4.0% finish for the period. Compared to CalPERS' strategic policy benchmark, this represented a small beat of +6 bps. But in a break from recent trend, Q4's attribution breakdown showed that active management was a small negative and detracted while positive asset allocation was the main performance driver. The active management's negative finish was solely driven by the private equity portfolio from the Growth segment, where its Q4 return, while positive, badly lagged that of its policy benchmark by a margin of -185 bps. On the other hand, asset allocation variance contributed positively in a large part thanks to the System's overweight in public equity, the highest returning segment, as well as due to its below-target allocation in the softer performing areas such as Income and Real Assets.



Total Fund Review for PERF (continued)

Periods Ended 12/31/2017

Relative to the Total Fund Policy Benchmark:

- ◆ **Growth Exposure:** Spurred by continued accommodative global monetary policies, solid corporate earnings and strengthening economic outlook from most key developed and emerging world markets, the Growth composite had little trouble pushing for higher ground in the second half of 2017, posting back-to-back quarterly gains in excess of 5%. For Q4, the Growth composite finished up 5.6% to pace all major CalPERS asset classes while also easily surpassing the total fund policy benchmark by +163 bps, although it did miss the composite's own policy benchmark return of 5.9% by a small margin. Within Growth, results from both the public and private equity components remained healthy, as they have been all year, although the former continued to lead with a 5.8% of advance for Q4, given that global stocks generally responded well to favorable corporate revenue and earnings announcements. The private equity program also recorded a steady gain of 4.2% for the quarter, but missed its assigned policy benchmark by a sizable margin of -185 bps and in turn contributed to the Growth composite's relative underperformance.
- ◆ **Income Exposure:** After a robust performance in the first half of the year with a cumulative gain of 4.4%, the Income composite saw its pace moderated somewhat during the last six months of the year, but remains on a steady path. Despite the Fed following through with its previously channeled rate hike expectations by raising short-term borrowing costs for the third time this year at the December meeting, the gradual pace of the withdrawal of monetary stimulus and the overall stable economic fundamentals has allowed bond markets to weather this slow rise in interest rates. Within this still accommodative backdrop, the Income composite registered a total Q4 return of 1.3%. While this performance was one of the mildest showing among the major CalPERS asset classes this quarter and did not match the total fund policy's 4.0% pace, it was perfectly on par with the Income policy benchmark (1.3%). For the quarter, results of the two main components within Income were similar, with the U.S. fixed income portfolio coming in at 1.4% and the international fixed income portfolio at 1.2%.
- ◆ **Real Assets Exposure:** Performance of the Real Assets asset class has been consistent over the years due to the generally slow-but-steady nature of the underlying investment portfolios, which include private real estate, forestland, and infrastructure. Quarterly returns of Real Assets has averaged in the high 1% range over the past two years, and this trend continued into Q4 of 2017 where CalPERS' real assets investments generated an overall gain of 2.0%. This performance came in below total fund policy benchmark's 4.0% return, but at the asset class level did compare favorably to Real Assets' own benchmark return of 1.6%.
- ◆ **Inflation Exposure:** After lagging most other CalPERS asset classes for a good portion of 2016 and 2017, the Inflation program performed well in the fourth quarter. With welcoming gains from both of the underlying TIPS and commodities portfolios, Inflation closed out Q4 with a 4.0% advance, tying the total fund policy while also beating the inflation asset class benchmark by a small margin as well.
- ◆ **Liquidity:** The Liquidity composite saw a very small but positive gain of 0.3% this quarter, coming in below the total fund policy benchmark but was marginally ahead of its own asset class benchmark. Starting Q3 2015, the composite is solely comprised of short term investment funds.
- ◆ **External Multi-Asset Class Composite:** Results of the System's Multi-Asset Class program (MAC) were quite encouraging for Q4, as it rallied 4.8% that was its strongest output in nearly three years. This rate of return

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compared favorably to both the total fund policy benchmark as well as the program's own absolute 7.5% annual objective.

Growth Review for PERF

Periods Ended 12/31/2017

Growth Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Growth	<u>58.0%</u>	<u>54.0%</u>	<u>+4.0%</u>
Public Equity	50.4%	46.0%	+4.4%
Private Equity	7.6%	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	203.2	5.6%	23.2%	10.0%	11.9%	6.0%	\$42.7 bil	1.4	-0.2
<i>Growth Policy Benchmark Value Added</i>		5.9%	24.2%	10.4%	12.4%	7.1%		1.5	0.0
		-0.3%	-1.0%	-0.4%	-0.5%	-1.1%			
PUBLIC EQUITY¹⁵	176.4	5.8%	24.0%	10.0%	11.8%	5.5%	\$36.0 bil	1.2	0.6
<i>Public Equity Policy Benchmark¹⁶ Value Added</i>		5.8%	24.4%	9.9%	11.6%	5.8%		1.1	0.0
		0.0%	-0.4%	0.1%	0.2%	-0.3%			
US Equity Composite	88.9	6.4%	21.2%	10.9%	15.7%	8.5%		1.5	0.3
<i>Custom USEquity Benchmark¹⁷ Value Added</i>		6.3%	21.7%	10.9%	15.5%	8.5%		1.5	0.0
		0.1%	-0.5%	0.0%	0.2%	0.0%			
Total Int'l Equity	87.5	5.2%	27.5%	9.0%	8.1%	2.7%		0.7	-0.2
<i>Custom Int'l Equity Benchmark¹⁸ Value Added</i>		5.4%	27.2%	8.8%	8.2%	2.6%		0.7	0.0
		-0.2%	0.3%	0.2%	-0.1%	0.1%			
PRIVATE EQUITY¹⁹	26.7	4.2%	18.0%	9.9%	12.6%	9.1%	\$9.1 bil	3.6	-0.3
<i>PEPolicy Benchmark²⁰ Value Added</i>		6.1%	22.9%	12.0%	15.4%	13.2%		1.5	0.0
		-1.9%	-4.9%	-2.1%	-2.8%	-4.1%			
Private Equity Partnership Investments	26.5	4.2%	18.0%	10.0%	12.7%	9.3%			
Private Equity Distribution Stock	0.2	8.7%	53.8%	-18.8%	-13.2%	-9.3%			

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 U.S. equity market finished the last quarter of 2017 on a high note. Despite valuations already reaching levels many consider rich relative to historical standards, the lack of market volatility, strong corporate earnings/economic data, and the advancing of tax legislation all worked to support investor's appetite in domestic stocks throughout the quarter. The U.S. equity composite did not disappoint, riding these positive momentum to close up 6.4% for Q4 that was also its highest quarterly gain in four years. In relative terms, this strong finish easily topped both the Growth policy benchmark (by +53 bps) and the composite's own policy measure (by +10 bps). Within the composite, the internal U.S. equity component continues to be the stronger performing unit, finishing the quarter up 6.5%. The smaller external U.S. equity component was squarely in the positive territory as well, but came in a couple steps behind at 5.9%.
- ◆ **Corporate Governance:** Also benefiting from the buoyant sentiment in publicly traded equities, the corporate governance program saw its performance jump 29.5% in the fourth quarter and added value relative to the Growth policy benchmark. The process of reducing/winding down of some of the corporate governance portfolios remains on-going.

Impeded Performance:

- ◆ **International Equity Exposure:** Thanks to on-going stimulative monetary policies and subdued inflation pressure, growth in developed and emerging markets has steadily strengthened over this past year. Coupled with a weakening U.S. dollar, which provided additional tailwind for U.S.-based investors, this has allowed international equities to continue its remarkable run – PERS' international equity composite has now posted four straight quarters of above-5% return in 2017. The composite's pace of gains did moderate during Q4, however, and its 5.2% return, while still robust on its own, came in modestly behind the Growth policy benchmark's 5.9%. Results within the international equity segment were fairly even, with the larger-sized internally managed composite netting a 5.3% gain while the smaller externally managed composite was up 5.1%.
- ◆ **Private Equity Exposure:** Similar to public equity, private equity has enjoyed a sustained run-up since the end of 2016, steadily registering solid appreciations. This trend carried through into the fourth quarter, with CalPERS' private equity investments netting a 4.2% total return. While this level of gains compared well to the program's historical quarterly performance over the past 3+ years and was a nice complement to the total public equity program's 5.8% return, it came up short of private equity's own policy benchmark by -185 bps this quarter and served as a net performance detractor to the Growth composite.



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)	88.9	6.4%	21.2%	10.9%	15.7%	8.5%	12/79
<i>Custom USEquity Benchmark</i> ²⁴		6.3%	21.7%	10.9%	15.5%	8.5%	
<i>Value Added</i>		0.1%	-0.5%	0.0%	0.2%	0.0%	
Total Internal USEquity	78.7	6.5%	21.4%	11.1%	15.7%	8.8%	6/88
<i>Custom Internal USEquity Benchmark</i> ²⁵		6.4%	21.9%	10.9%	15.5%	8.5%	
<i>Value Added</i>		0.1%	-0.5%	0.2%	0.2%	0.3%	
Total External USEquity	10.2	5.9%	19.2%	9.3%	15.0%	7.6%	12/98
<i>Custom External USEquity Benchmark</i> ²⁶		6.2%	20.6%	10.3%	15.0%	8.3%	
<i>Value Added</i>		-0.3%	-1.4%	-1.0%	0.0%	-0.7%	

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)	87.5	5.2%	27.5%	9.0%	8.1%	2.7%	12/02
<i>Custom Int'l Equity Benchmark</i> ²⁷		5.4%	27.2%	8.8%	8.2%	2.6%	
<i>Value Added</i>		-0.2%	0.3%	0.2%	-0.1%	0.1%	
Total Internal Int'l Equity	63.2	5.3%	27.6%	9.0%	8.1%	2.8%	3/05
<i>Custom Internal Int'l Equity Benchmark</i> ²⁸		5.4%	27.0%	8.8%	7.8%	2.7%	
<i>Value Added</i>		-0.1%	0.6%	0.2%	0.3%	0.1%	
Total External Int'l Equity	24.4	5.1%	27.3%	9.0%	7.8%	3.0%	6/89
<i>Custom External Int'l Equity Benchmark</i> ²⁹		5.5%	26.7%	8.7%	7.4%	2.3%	
<i>Value Added</i>		-0.4%	0.6%	0.3%	0.4%	0.7%	

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	0.1	29.5%	102.2%	33.4%	26.5%	11.5%	12/98
<i>Policy Benchmark</i>		2.1%	25.6%	6.8%	11.3%	4.7%	
<i>Value Added</i>		27.4%	76.6%	26.6%	15.2%	6.8%	

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 12/31/2017

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	1.8%	6.4%	0.6%	3.0%	1.5%	-0.5	0.5	0.6	0.9
ARS Policy Benchmark ³⁰		1.2%	5.6%	5.5%	5.4%	5.9%				
Value Added		0.6%	0.8%	-4.9%	-2.4%	-4.4%				
Total Direct Investments	0.3	1.8%	6.1%	0.4%	2.9%	1.7%				
Total Funds of Funds	0.0	0.0%	30.6%	9.3%	7.7%	3.3%				
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	Rolling Correlations vs. Index			
		W5000	MSCI AW x-US	Domestic Fixed Benchmark	Real Estate Benchmark
62%	0.0	-0.1	0.0	0.1	0.1

- ◆ 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 that there are no relationship between the portfolio's expected return and the 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.

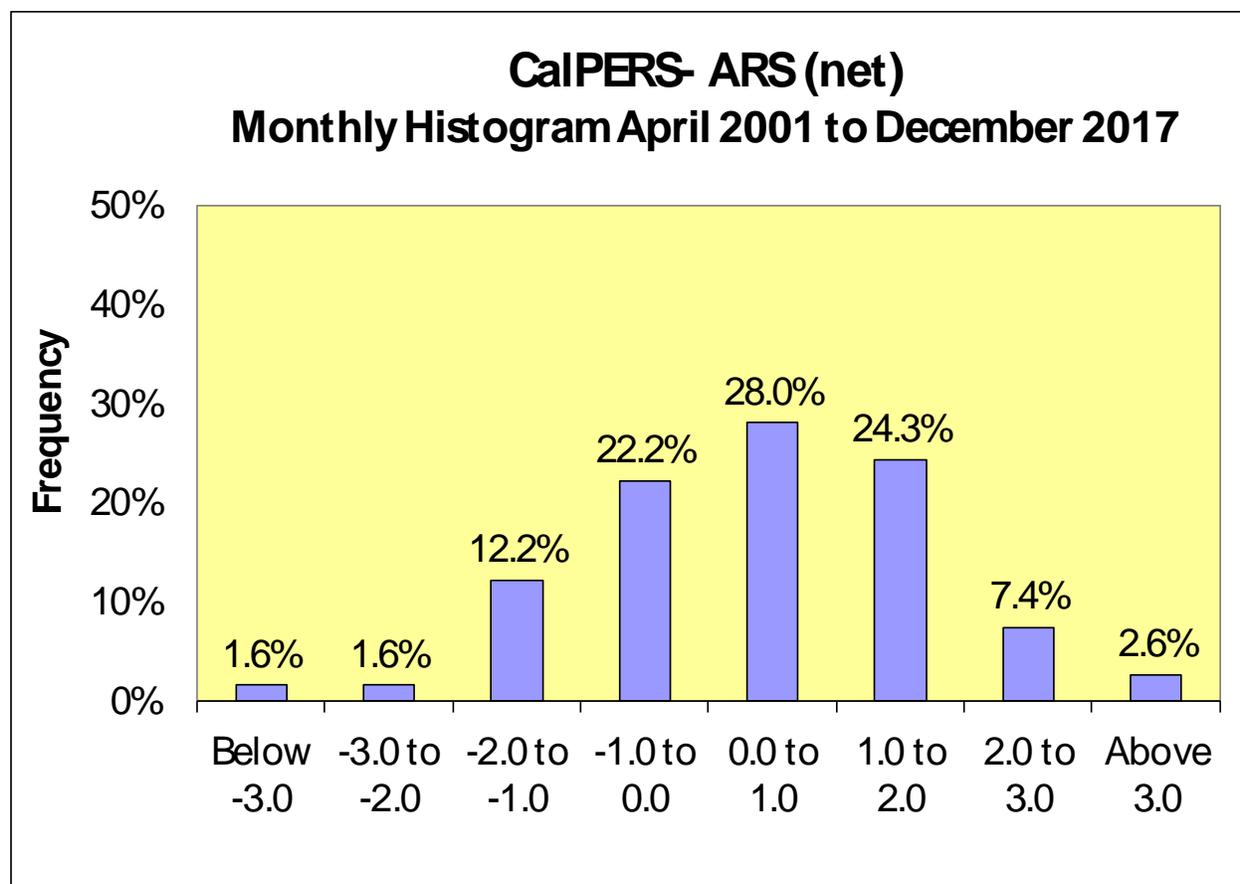
³⁰ The ARS Policy Benchmark consists of the Merrill Lynch 1-Year Treasury Note + 5% and is linked historically to its prior benchmark.

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 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 12/31/2017



- ◆ 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 12/31/2017

Income Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Income	18.7%	20.0%	-1.3%

Income Segment Performance

	Market Value						VaR ³⁷	5-year Sharpe Ratio ³⁸	5-year Info Ratio ³⁹
		Qtr	1-Year	3-Year	5-Year	10-Year			
INCOME	65.6	1.3%	7.2%	3.7%	3.3%	6.0%	\$7.3 bil	0.6	1.3
<i>Income Policy Benchmark</i> ³⁴		1.3%	6.6%	3.0%	2.5%	5.3%		0.4	0.0
<i>Value Added</i>		0.0%	0.6%	0.7%	0.8%	0.7%			
U.S. Income	59.8	1.4%	6.7%	3.9%	3.7%	6.3%		0.8	1.4
<i>U.S. Income Policy Benchmark</i> ³⁵		1.3%	6.0%	3.2%	2.9%	5.6%		0.5	0.0
<i>Value Added</i>		0.1%	0.7%	0.7%	0.8%	0.7%			
Non-U.S. Income	5.7	1.2%	12.6%	2.0%	-0.5%	3.1%		-0.2	0.8
<i>Non-US Income Policy Benchmark</i> ³⁶		1.3%	11.6%	1.8%	-1.0%	2.1%		-0.2	0.0
<i>Value Added</i>		-0.1%	1.0%	0.2%	0.5%	1.0%			

Comments Regarding Income Segment Performance

Helped Performance:

- ◆ **Corporate Bonds:** The investment grade corporate bond sector remained a bright spot in the fourth quarter, benefiting from several favorable market dynamics that included the Fed's gradual adjustments in monetary policy, the continued flattening of the U.S. Treasury yield curve, and the further tightening of credit spreads. CalPERS' \$12.1 billion corporate bond portfolio and \$3.0 billion long duration corporate bond portfolio both recorded strong gains (+2.4% and +3.1%, respectively) amid this supportive backdrop, and outperformed relative to the Income policy benchmark.

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.



Impeded Performance:

- ◆ **Mortgage Bonds:** Despite longer-term interest rates largely remaining range bound and investors' general desire for yield continued to provide support for mortgage bonds, performance of this segment has not been as strong as the broad fixed income market. Some attributed part of the relative weakness in this space to impact from the Fed's balance sheet roll-off, as the shrinking begins for the reinvestment of MBS principal paydowns (and Treasuries maturities), but nevertheless, the System's mortgage bonds and long duration mortgage bonds portfolios produced below-Income policy benchmark-level gains in Q4 (at +0.4% and +0.9%, respectively).
- ◆ **International Fixed Income / Sovereign Bonds:** Following very strong showings from the first three quarters of the year, where CalPERS' international fixed income and sovereign bonds portfolios have averaged returns above 3%, they were unable to repeat that level of performance and saw the pace of gains tick down. For the last quarter of 2017, both of these portfolios still nudged gains by rising 1.2% apiece, but they finished marginally shy of the Income policy benchmark.

Neutral Impact:

- ◆ **Government Bonds:** The fourth quarter of 2017 saw positive development on the long end of the Treasury yield curve (-12 bps drop on the 30-year UST yield, and just a +7 bps rise on the 10-year UST yield) mixed with sizable shocks coming from the short end (+40 bps jump on 2-year UST yield). As spread between long- and short-term Treasury bonds once again compress, the overall internal Treasuries and government-sponsored bonds portfolio netted a respectable positive return of 1.3% for the quarter, and matched the pace of the Income policy benchmark.
- ◆ **High Yield Bonds:** Similar to investment grade corporate bonds, high yield credit drew continued support from yield-hunting investors. In terms of performance, though, this space actually experienced credit spreads widening during the fourth quarter and as a result did not keep up with gains of IG corporate bonds. Relative to the asset class benchmark, CalPERS saw its internal and external high yield portfolios split the policy measure for Q4, with the former coming in at +1.6% while the latter at +1.1%.

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Prepared for CalPERS



Income Review for PERF (Continued)

Income Portfolios Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	Date
INCOME	65.6	1.3%	7.2%	3.7%	3.3%	6.0%	6/88
<i>Income Policy Benchmark</i> ⁴⁰		1.3%	6.6%	3.0%	2.5%	5.3%	
<i>Value Added</i>		0.0%	0.6%	0.7%	0.8%	0.7%	
U.S. Income	59.8	1.4%	6.7%	3.9%	3.7%	6.3%	12/95
Mortgage Bonds*	11.7	0.4%	3.5%	2.8%	3.5%	4.9%	12/82
Long Duration Mortgages*	1.8	0.9%	4.4%	3.9%	3.0%	6.3%	6/05
Corporate Bonds*	12.1	2.4%	10.9%	5.7%	5.5%	7.9%	3/02
U.S. Government*	29.9	1.3%	5.8%	2.9%	2.1%	5.1%	1/00
Sovereign Bonds*	2.1	1.2%	11.1%	4.0%	3.2%	--%	7/09
Long Duration Corporates*	3.0	3.1%	9.8%	3.4%	4.5%	8.6%	9/05
Internal High Yield Bonds*	0.7	1.6%	10.7%	8.3%	8.8%	10.7%	9/99
External High Yield*	1.1	1.1%	6.0%	6.2%	6.5%	5.8%	3/02
Non-U.S. Income	5.7	1.2%	12.6%	2.0%	-0.5%	3.1%	3/89
<i>Custom Benchmark</i> ⁴¹		1.3%	11.6%	1.8%	-1.0%	2.1%	
<i>Value Added</i>		-0.1%	1.0%	0.2%	0.5%	1.0%	

Securities Lending Performance

Internal Active Short Term**	1.7	0.4%	1.2%	0.7%	0.5%	--%	3/11
<i>Custom Benchmark</i>		0.3%	1.0%	0.5%	0.3%	--%	
<i>Value Added</i>		0.1%	0.2%	0.2%	0.2%	--%	
CalPERSESECash Collateral**	4.2	0.3%	0.9%	0.6%	0.4%	--%	6/10
<i>Custom Benchmark</i>		0.3%	1.0%	0.5%	0.3%	--%	
<i>Value Added</i>		0.0%	-0.1%	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 custom benchmark consists of the Barclays International Fixed Income Index and is linked historically to its prior benchmark.

* These portfolios and/or composites are unitized and represent ownership of both the PERF and other Affiliates Investment Programs.

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

Inflation Performance for PERF

Period Ended 12/31/2017

Inflation Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Inflation	7.8%	9.0%	-1.2%

Inflation Performance

	Market Value						VaR ⁴⁴	5-year Sharpe	5-year Info
		Qtr	1-Year	3-Year	5-Year	10-Year		Ratio ⁴⁵	Ratio ⁴⁶
INFLATION	27.4	4.0%	6.3%	0.1%	-2.0%	0.1%	\$2.0 bil	-0.4	0.7
<i>Inflation Policy Benchmark</i> ⁴²		3.9%	6.2%	-0.2%	-2.5%	0.1%		-0.4	0.0
<i>Value Added</i>		0.1%	0.1%	0.3%	0.5%	--%			
Internal Commodities ⁴³	4.8	9.9%	5.9%	-7.5%	-12.3%	--%			
<i>GSCI Total Return Index</i>		9.9%	5.8%	-7.5%	-12.2%	--%			
<i>Value Added</i>		0.0%	0.1%	0.0%	-0.1%	--%			
Core Inflation Linked Bonds	18.4	1.9%	6.7%	1.8%	0.8%	--%			
<i>Custom Benchmark</i>		2.1%	6.6%	1.8%	0.6%	--%			
<i>Value Added</i>		-0.2%	0.1%	0.0%	0.2%	--%			
Tactical Commodities	2.1	11.3%	7.0%	-7.7%	--%	--%			
<i>GSCI Total Return Index</i>		9.9%	5.8%	-7.5%	--%	--%			
<i>Value Added</i>		1.4%	1.2%	-0.2%	--%	--%			
Tactical TIPS	2.1	1.2%	2.9%	1.8%	--%	--%			
<i>CalPERSTIPS</i>		1.3%	3.0%	2.1%	--%	--%			
<i>Value Added</i>		-0.1%	-0.1%	-0.3%	--%	--%			

- ◆ The Inflation asset class saw a sizable shift in momentum at the half-year mark, going from the lowest returning major CalPERS asset class through the first six months to one of the highest gainers in the back half of 2017, where its cumulative gains for this period (7.4%) only trailed behind that of Growth (11.4%). For Q4, Inflation's return totaled 4.0%, modestly outpacing its asset class benchmark by +10 bps. Most of the strong gains were driven by appreciations from the commodities investments, whose run-up coincided with the continued slide of U.S. dollar (which is the benchmark pricing mechanism for most commodities), a pickup in Chinese economic activities (and the demand for raw materials), and the rebound in crude oil prices. PERS' internal and tactical commodities portfolios fully reflected this renewed momentum, rallying 9.9% and 11.3% respectively in Q4. The rest of Inflation's assets, which are invested in inflation-linked bonds, also fared reasonably well, with the core TIPS portfolio, currently representing 67% of Inflation's total assets, earning a 1.9% total return amid a gradual rebound in inflation expectations.

⁴² The Inflation Policy Benchmark equals the benchmark returns of commodities and TIPS weighted at policy allocation target percentages.

⁴³ 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.

⁴⁴ 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.

⁴⁵ 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.

⁴⁶ 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 12/31/2017

Real Assets Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Real Assets	10.5%	13.0%	-2.5%

Real Assets Segment Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR ⁵¹	5-year Sharpe Ratio ⁵²	5-year Info Ratio ⁵³
REAL ASSETS	36.8	2.0%	8.5%	9.4%	10.4%	-0.9%	\$5.1 bil	1.7	0.1
<i>Real Assets Policy Benchmark</i> ⁴⁷		1.6%	6.4%	9.1%	9.9%	6.4%		2.4	0.0
<i>Value Added</i>		0.4%	2.1%	0.3%	0.5%	-7.3%			
Real Estate ⁴⁸	30.7	1.4%	7.8%	10.0%	10.9%	-1.3%	\$4.7 bil	1.6	0.1
<i>Real Estate Policy Benchmark</i> ⁴⁹		1.6%	6.7%	9.8%	10.6%	7.2%		2.3	0.0
<i>Value Added</i>		-0.2%	1.1%	0.2%	0.3%	-8.5%			
Forestland ⁵⁰	2.0	-0.1%	0.8%	-3.0%	-0.1%	-0.4%			
<i>NCREIF Timberland Index</i>		0.6%	3.3%	5.2%	7.1%	5.2%			
<i>Value Added</i>		-0.7%	-2.5%	-8.2%	-7.2%	-5.6%			
Infrastructure ⁵⁰	4.2	8.2%	18.2%	12.4%	14.3%	13.3%			
<i>CPI + 400 BPS 1Qtr Lag</i>		1.8%	6.3%	5.3%	5.3%	6.2%			
<i>Value Added</i>		6.4%	11.9%	7.1%	9.0%	7.1%			

- ◆ Among the System's major asset classes, Real Assets is considered the lone constant, having consistently churned out steady-paced returns since the turn of this decade. This distinct trait is primarily supported by the RA's largest component, private real estate (with over 83% of total RA assets), as the investments in this portfolio continue to enjoy stable industry fundamentals (relatively benign interest rate levels, robust labor market, strong demand for higher yield and long-term diversification) supporting the steady rise in valuations. This portfolio was up 1.4% in the fourth quarter, and has delivered nearly 8% for CalPERS in the year of 2017. Real Estate's modest performance was complemented by one of Real Assets' two smaller components, Infrastructure, which capped off an already impressive year (+9.3% through September 30) with

⁴⁷ The Real Assets Policy Benchmark equals the benchmark returns of real estate, timber, and infrastructure weighted at policy allocation target percentages.

⁴⁸ 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.

⁴⁹ 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.

⁵⁰ These investments are reported on a 1-quarter lagged basis.

⁵¹ 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.

⁵² 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.

⁵³ 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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a 8.2% jump in Q4. All told, Real Assets' 2.0% total return this quarter was in line with recent averages, and modestly outpaced its own asset class benchmark by +48 bps.

Liquidity Review for PERF

Period Ended 12/31/2017

Liquidity Allocation

Asset Allocation: Actual versus Target Weights

Asset Class	Actual Asset Allocation	Target Asset Allocation	Difference
Liquidity	4.2%	4.0%	+0.2%

Liquidity Segment Performance

	Market Value	Qtr	1-Year	3-Year	5-Year	10-Year	VaR ⁵⁶	5-year Sharpe Ratio ⁵⁷	5-year Info Ratio ⁵⁸
LIQUIDITY	14.7	0.3%	1.2%	0.7%	0.4%	1.1%	\$0.0 bil	N/A	N/A
<i>Liquidity Policy Benchmark</i> ⁵⁴		0.3%	0.9%	0.6%	0.6%	1.2%			
<i>Value Added</i>		0.0%	0.3%	0.1%	-0.2%	-0.1%			
Cash Composite	14.7	0.3%	1.2%	0.6%	0.4%	0.6%			
<i>Custom STIF</i> ⁵⁵		0.3%	1.0%	0.5%	0.3%	0.5%			
<i>Value Added</i>		0.0%	0.2%	0.1%	0.1%	0.1%			

⁵⁴The Liquidity Policy Benchmark is a custom index maintained by State Street Bank.

⁵⁵The Custom STIF Policy Benchmark is a custom index maintained by State Street Bank.

⁵⁶VaR (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.

⁵⁷The 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.

⁵⁸The "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, 2017

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	\$42.9 mil	0.3%	1.0%	0.6%	0.4%	0.5%
<i>91-Day Treasury Bill</i>		0.3	0.9	0.4	0.3	0.4
Judges I Internal Short-Term	\$42.9 mil	0.3	1.0	0.6	0.4	0.5
<i>91-Day Treasury Bill</i>		0.3	0.9	0.4	0.3	0.4

* JRS I maintains a reserve balance of approximately two months of benefit payments. Prior to 2009-2010 fiscal year, the fund held approximately one month of benefit reserve with the majority of funds held at the State Treasurer’s Office. The cash balance experienced spikes in 2010 due to delayed passage of the 2010-2011 fiscal year budget by the Legislature, which the Governor signed on October 8, 2010.

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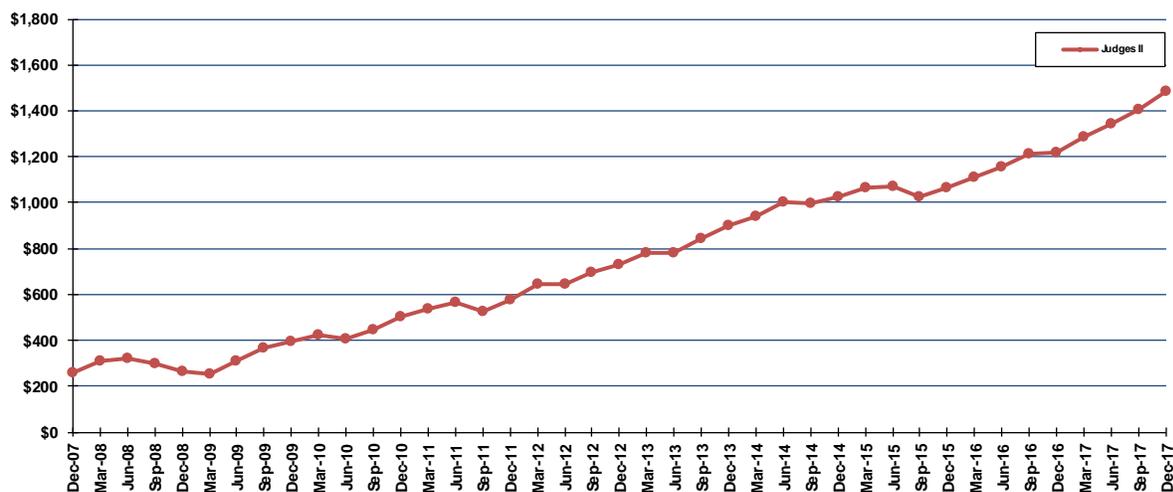


Judges' Retirement System II Fund



Judges II Performance Period Ended December 31, 2017

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	50.2	50.0	+0.2
US Fixed Income	33.7	34.0	-0.3
TIPS	5.0	5.0	0.0
REITS	8.0	8.0	0.0
Commodities	3.1	3.0	+0.1
Cash/Short-Term	0.0	0.0	0.0
Total Judges II	100.0	100.0	0.0

Commentary – Judges II

- ◆ Investment landscape during the fourth quarter of 2017 remained largely benign, highlighted by a steady economic backdrop. Strengthening world economies, robust corporate earnings, accommodative monetary policies, and low inflation all helped global investors look past geopolitical jitters from late summer and push most risk assets towards new highs. Judges II (“JRS II, the Plan”), with a 61% combined allocation to publicly traded equities, real estate securities, and commodities, benefited from this continuation of bull market and finished Q4 with a solid total return of 4.1%. This rate of return also capped a successful 2017 where JRS II returned 15.5% for the full year; both of these figures edged out the Plan’s weighted policy benchmark as well. There are no concerns with the Plan’s performance over longer-term horizon, where it has averaged returns in the mid-single digit range that compares well against the policy benchmark.
- ◆ At the end of Q4, Judges II’s asset allocation showed minor overweight in global equity and commodities while having small underweight in U.S. fixed income; it was on target in TIPS, REITs and short-term cash.
- ◆ Riding on a wave of rallies from most key global markets as economic activities/corporate earnings strengthened and supportive policies from the world’s central banks remained largely unchanged, the global equity fund once again took flight and was one of JRS II’s best performing investments in Q4. The fund rose 5.8% in the final three months of the year, essentially carrying forward its Q3 results (of 5.5%), and matched the custom benchmark’s pace. Longer-term track record remains in great shape as well, as the global equity fund has accumulated market-like gains beyond the 1-year mark and continues to perform in line with expectations.
- ◆ In an effort to prevent disrupting the current domestic economic expansion, the Fed has taken a cautious and transparent approach during the early stages of its tightening cycle. Coupled with still-low inflation pressure, this combination has thus far maintained stability in the bond market, as the yield curve once again flattened and credit spreads on investment grade bonds continued to tighten during Q4. The Judges II fixed income fund also continued to fare well in this environment, finishing with a 1.4% total return this quarter that came in slightly better than the fund’s custom Bloomberg Barclays benchmark, while maintaining its relative edge over the long-term.
- ◆ Performance in the TIPS segment appears to be in good form. A pickup in consumer price increases and rebound in commodity prices (particularly crude oil) during the second half of 2017 have started gradually lifting inflation expectations, providing a steady backdrop for the JRS II TIPS portfolio: it netted a small but positive 1.3% gain for Q4 that was on par with the Bloomberg Barclays U.S. TIPS Index.
- ◆ Similar to the broader domestic equity market, U.S. REITs enjoyed lower-than-usual volatility and closed out the year on a solid note. The JRS II REIT portfolio was no exception, as it closely followed the pace of the REIT custom benchmark to rise 3.8% in Q4. This helped extend its impressive full-year run to 11.4% and added to the portfolio’s already solid longer-term track record.
- ◆ After dropping more than 10% in the first six months of 2017, the commodities portfolio staged a furious comeback in the second half of the year, thanks to a broad rebound in commodity prices as well as the continued slide in U.S. dollar versus most major currencies. The portfolio followed up Q3’s 7.3% pop by rallying another 9.9% in Q4 that also mirrored the results of the GSCI Commodity Total Return Index. The back-to-back strong quarters allowed the commodities portfolio to finish 2017 in the black, although the

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previously challenged track record from 2015 and 2014 meant the portfolio's 3- and 5-year annualized track record currently remains squarely in the red.

Net of Fee Plan Performance Results – Judges II

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Judges II	\$1,484.3 mil	4.1%	15.5%	6.7%	8.0%	5.7%
<i>Weighted Policy Benchmark⁵⁹</i>		4.0	15.2	6.5	7.7	5.7
JRS II Global Equity	\$745.8 mil	5.8	24.5	10.0	11.7	5.4
<i>Global Equity Benchmark⁶⁰</i>		5.8	24.4	9.9	11.6	5.3
JRS II US Fixed Income	\$499.5 mil	1.4	6.7	3.9	3.7	6.2
<i>Custom Benchmark⁶¹</i>		1.3	6.0	3.2	2.9	5.6
JRS II TIPS	\$73.8 mil	1.3	3.1	2.0	0.1	-.-
<i>Custom Benchmark⁶²</i>		1.3	3.0	2.1	0.1	-.-
JRS II REITs	\$118.5 mil	3.8	11.4	5.4	7.2	4.4
<i>Custom Benchmark⁶³</i>		3.8	11.4	5.4	7.2	4.0
JRS II Commodities	\$46.6 mil	9.9	5.9	-7.2	-12.2	-.-
<i>GSCI Total Return Index</i>		9.9	5.8	-7.5	-12.2	-.-
JRS II Cash/Short-Term	\$0.04 mil	0.3	2.6	1.1	0.9	0.8
<i>91-Day Treasury Bill</i>		0.3	0.9	0.4	0.3	0.4

⁵⁹ The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁶⁰ 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.

⁶¹ The current US Fixed Income Custom Benchmark is the Bloomberg 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.

⁶² The TIPS benchmark is the Bloomberg Barclays U.S. TIPS Index.

⁶³ 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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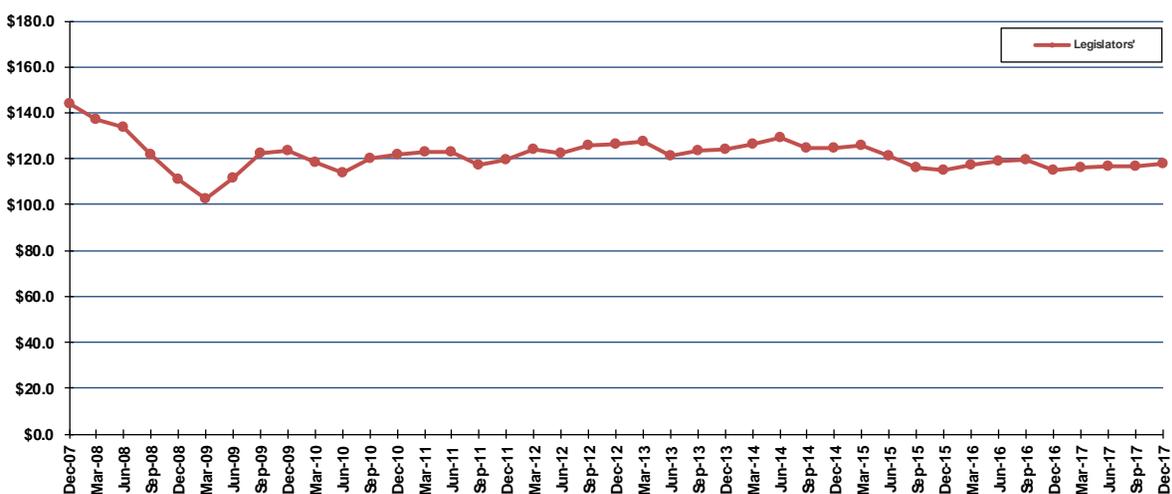


Legislators' Retirement System Fund

LRS Performance

Period Ended December 31, 2017

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	24.1	24.0	+0.1
US Fixed Income	38.7	39.0	-0.3
TIPS	25.9	26.0	-0.1
REITS	8.1	8.0	+0.1
Commodities	3.1	3.0	+0.1
Cash/Short-Term	0.0	0.0	0.0
Total LRS	100.0	100.0	0.0

Commentary – LRS

- ◆ The California Legislators' Retirement System's ("LRS, the System") higher allocation to fixed income (39% to U.S. fixed income and 26% to TIPS) means that its performance generally does not share too much of the upside swings, but its 2.9% Q4 total return was still strong enough that it easily mimicked the output of the weighted policy benchmark. Given LRS's conservative asset allocation and its utilization of investment grade fixed income, the long-term track record exhibits a relatively consistent pace. This is readily observed as the System's 3-, 5-, and 10-year returns have all averaged at or near the 5% range, while also modestly outpacing the weighted policy benchmark.
- ◆ As of December 31, the System was overweight in global equity, REITs and commodities while underweight in U.S. fixed income and TIPS.
- ◆ Riding on a wave of rallies from most key global markets as economic activities/corporate earnings strengthened and supportive policies from the world's central banks remained largely unchanged, the global equity fund once again took flight and was one of LRS' best performing investments in Q4. The fund rose 5.8% in the final three months of the year, essentially carrying forward its Q3 results (of 5.5%), and matched the custom benchmark's pace. Longer-term track record remains in great shape as well, as the global equity fund has accumulated market-like gains beyond the 1-year mark and continues to perform in line with expectations.
- ◆ In an effort to prevent disrupting the current domestic economic expansion, the Fed has taken a cautious and transparent approach during the early stages of its tightening cycle. Coupled with still-low inflation pressure, this combination has thus far maintained stability in the bond market, as the yield curve once again flattened and credit spreads on investment grade bonds continued to tighten during Q4. The LRS fixed income fund also continued to fare well in this environment, finishing with a 1.4% total return this quarter that came in slightly better than the fund's custom Bloomberg Barclays benchmark, while maintaining its relative edge over the long-term.
- ◆ Performance in the TIPS segment appears to be in good form. A pickup in consumer price increases and rebound in commodity prices (particularly crude oil) during the second half of 2017 have started gradually lifting inflation expectations, providing a steady backdrop for the LRS TIPS portfolio: it netted a small but positive 1.3% gain for Q4 that was on par with the Bloomberg Barclays U.S. TIPS Index.
- ◆ Similar to the broader domestic equity market, U.S. REITs enjoyed lower-than-usual volatility and closed out the year on a solid note. The LRS REIT portfolio was no exception, as it closely followed the pace of the REIT custom benchmark to rise 3.8% in Q4. This helped extend its impressive full-year run to 11.4% and added to the portfolio's already solid longer-term track record.
- ◆ After dropping more than 10% in the first six months of 2017, the commodities portfolio staged a furious comeback in the second half of the year, thanks to a broad rebound in commodity prices as well as the continued slide in U.S. dollar versus most major currencies. The portfolio followed up Q3's 7.3% pop by rallying another 9.9% in Q4 that also mirrored the results of the GSCI Commodity Total Return Index. The back-to-back strong quarters allowed the commodities portfolio to finish 2017 in the black, although the previously challenged track record from 2015 and 2014 meant the portfolio's 3- and 5-year annualized track record currently remains squarely in the red.



Net of Fee Plan Performance Results – LRS

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
LRS	\$118.1 mil	2.9%	10.2%	4.7%	5.1%	5.4%
<i>Weighted Policy Benchmark⁶⁴</i>		2.8	9.8	4.5	4.8	5.1
LRS Global Equity	\$28.4 mil	5.8	24.5	10.0	11.7	5.6
<i>Global Equity Benchmark⁶⁵</i>		5.8	24.4	9.9	11.6	5.5
LRS US Fixed Income	\$45.7 mil	1.4	6.7	3.9	3.7	6.2
<i>Custom Benchmark⁶⁶</i>		1.3	6.0	3.2	2.9	5.6
LRS TIPS	\$30.6 mil	1.3	3.1	2.0	0.1	3.6
<i>Custom Benchmark⁶⁷</i>		1.3	3.0	2.1	0.1	3.5
LRS REITs	\$9.6 mil	3.8	11.4	5.4	7.2	--
<i>Custom Benchmark⁶⁸</i>		3.8	11.4	5.4	7.2	--
LRS Commodities	\$3.7 mil	9.9	5.9	-7.2	-12.2	--
<i>GSCI Total Return Index</i>		9.9	5.8	-7.5	-12.2	--
LRS Cash/Short-Term	\$0.0 mil	6.4	7.5	2.7	1.7	1.2
<i>91-Day Treasury Bill</i>		0.3	0.9	0.4	0.3	0.4

⁶⁴ The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁶⁵ 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.

⁶⁶ The current benchmark is the Bloomberg 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.

⁶⁷ The current benchmark is the Bloomberg Barclays U.S. TIPS Index. Prior of July 2007 the benchmark was the Barclays Long Liability TIPS Index.

⁶⁸ The REIT Custom Benchmark is the FTSE EPRA/NAREIT Developed Index.

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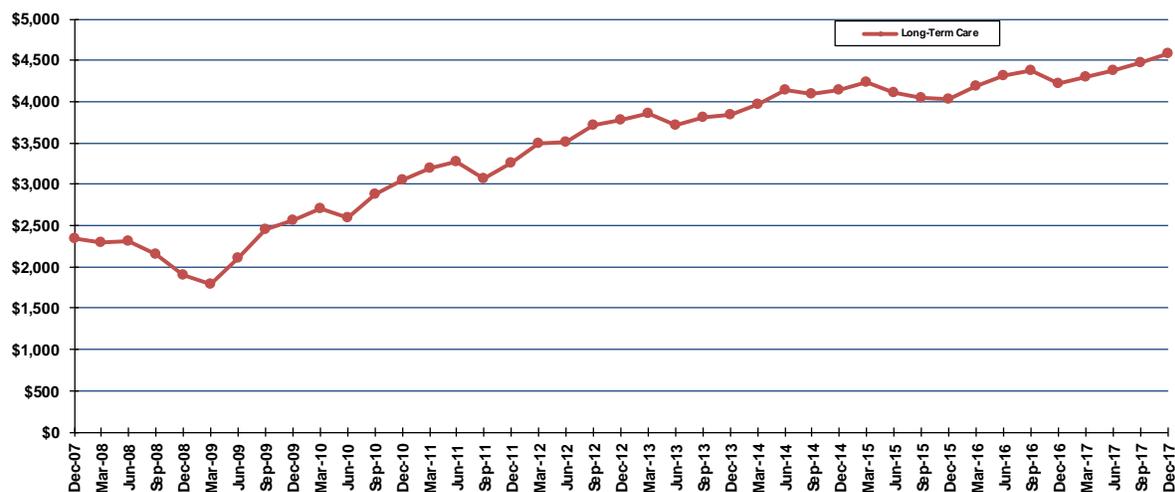


Long-Term Care Fund



LTC Performance Period Ended December 31, 2017

Growth in Assets (in \$Millions)



Total Plan Asset Allocation

Asset Class	Actual (%)	Policy (%)	Difference (%)
Global Equity	16.9	15.0	+1.9
US Fixed Income	59.5	61.0	-1.5
TIPS	5.7	6.0	-0.3
REITS	12.4	12.0	+0.4
Commodities	5.5	6.0	-0.5
Cash/Short-Term	0.0	0.0	0.0
Total LTC	100.0	100.0	0.0

Commentary – LTC

- ◆ With 61% of asset target assigned to U.S. fixed income, the Long-Term Care Program's 2.8% Q4 return was on the modest side among the Affiliates funds. However, LTC's results this quarter was able to come in close to that of LRS' 2.9% return thanks to a higher target to the stronger performing REITs and a much more limited exposure to the muted TIPS. Relative to the Program's own policy benchmark, LTC's Q4 performance was right on par; over longer time horizon the Program has also done well as it is currently beating the policy benchmark in all measured periods 1-year and beyond.
- ◆ The LTC's asset allocation showed that it was overweight in global equity and REITs, while underweight in U.S. fixed income, TIPS and commodities.
- ◆ Riding on a wave of rallies from most key global markets as economic activities/corporate earnings strengthened and supportive policies from the world's central banks remained largely unchanged, the global equity fund once again took flight and was one of LTC's best performing investments in Q4. The fund rose 5.8% in the final three months of the year, essentially carrying forward its Q3 results (of 5.4%), and matched the custom benchmark's pace. Longer-term track record remains in great shape as well, as the global equity fund has accumulated market-like gains beyond the 1-year mark and continues to perform in line with expectations.
- ◆ In an effort to prevent disrupting the current domestic economic expansion, the Fed has taken a cautious and transparent approach during the early stages of its tightening cycle. Coupled with still-low inflation pressure, this combination has thus far maintained stability in the bond market, as the yield curve once again flattened and credit spreads on investment grade bonds continued to tighten during Q4. The LTC fixed income fund also continued to fare well in this environment, finishing with a 1.2% total return this quarter that nearly matched the fund's custom Bloomberg Barclays benchmark, while maintaining a small relative edge over the long-term.
- ◆ Performance in the TIPS segment appears to be in good form. A pickup in consumer price increases and rebound in commodity prices (particularly crude oil) during the second half of 2017 have started gradually lifting inflation expectations, providing a steady backdrop for the LTC TIPS portfolio: it netted a small but positive 1.3% gain for Q4 that was on par with the Bloomberg Barclays U.S. TIPS Index.
- ◆ Similar to the broader domestic equity market, U.S. REITs enjoyed lower-than-usual volatility and closed out the year on a solid note. The LTC REIT portfolio was no exception, as it closely followed the pace of the REIT custom benchmark to rise 4.0% in Q4. This helped extend its impressive full-year run to 11.1% and added to the portfolio's already solid longer-term track record.
- ◆ After dropping more than 10% in the first six months of 2017, the commodities portfolio staged a furious comeback in the second half of the year, thanks to a broad rebound in commodity prices as well as the continued slide in U.S. dollar versus most major currencies. The portfolio followed up Q3's 7.2% pop by rallying another 9.8% in Q4 that also mirrored the results of the GSCI Commodity Total Return Index. The back-to-back strong quarters allowed the commodities portfolio to finish 2017 in the black, although the previously challenged track record from 2015 and 2014 meant the portfolio's 3- and 5-year annualized track record currently remains squarely in the red.



Net of Fee Plan Performance Results – LTC

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Long-Term Care ("LTC")	\$4,578.8 mil	2.8%	9.1%	3.8%	3.7%	3.9%
<i>Weighted Policy Benchmark⁶⁹</i>		2.8	8.9	3.7	3.5	3.8
LTC Global Equity	\$775.8 mil	5.8	24.3	9.9	11.3	5.4
<i>Custom Benchmark⁷⁰</i>		5.7	23.9	9.5	11.0	5.3
LTC US Fixed Income	\$2,723.8mil	1.2	5.9	3.1	2.9	5.8
<i>Custom Benchmark⁷¹</i>		1.3	6.0	3.2	2.9	5.6
LTC TIPS	\$259.5 mil	1.3	3.0	2.0	0.1	3.6
<i>Bloomberg Barclays U.S. TIPS Index</i>		1.3	3.0	2.1	0.1	3.5
LTC REITs	\$569.5 mil	4.0	11.1	4.7	6.5	3.8
<i>Custom Benchmark⁷²</i>		3.9	10.3	3.9	5.8	3.3
LTC Commodities	\$250.1 mil	9.8	5.5	-7.5	-12.2	-.
<i>GSCI Total Return Index</i>		9.9	5.8	-7.5	-12.2	-.
LTC Cash/Short-Term	\$0.1 mil	0.3	7.8	2.6	1.6	1.1
<i>91-Day Treasury Bill</i>		0.3	0.9	0.4	0.3	0.4

⁶⁹ The weighted policy benchmark returns are calculated based on asset class index returns weighted by asset class policy targets.

⁷⁰ Effective 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).

⁷¹ The LTC US Fixed Income Custom Benchmark is the Bloomberg 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.

⁷² Effective 12/12/2012, the REIT Custom Benchmark changed to the FTSE EPRA/NAREIT Developed Liquid (net) Index.

*Wilshire Consulting
Performance Analysis – December 31, 2017
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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 6.39% for the fourth quarter of 2017. This marks the ninth consecutive year of positive gains for the broad U.S. equity market. What made the past year particularly impressive was the relative lack of volatility. The largest drawdown for the year was -2.75% and there were only 4 trading days where the market was down 1% or more, making 2017 one of the least volatile years in nearly four decades. Several factors contributed to this success including a rebound in global economic growth and continued strength domestically. Investors also responded positively to the largest overhaul of the U.S. tax system in 30 years.

Large capitalization stocks outperformed small caps with the Wilshire Large-Cap IndexSM up 6.70% versus a gain of 3.56% for the Wilshire US Small-Cap IndexSM. The large-cap segment of the market far outpaced small-caps for the full year, as well. The Wilshire US Micro-Cap IndexSM was up 2.34% for the quarter and 15.66% for the one-year. Growth stocks led value during the fourth quarter in both large- and small-cap spaces and lead for the past twelve months.

Each of the eleven major sectors produced positive gains during the quarter. The best performing sectors were Consumer Discretionary (+9.1%), IT (+8.6%) and Financials (+8.0%). Utilities were the laggard but were up slightly (0.7%).

The third quarter of 2017 was the second consecutive quarter of real GDP growth in excess of 3%, annualized, since mid-2014. Personal consumption, the largest component of GDP, has been relatively steady since recovering from the 2008 recession while private fixed investment (nonresidential) has been on the rise more recently. Businesses seem to be gaining confidence in the global economy and have been increasing spending on equipment while growing inventories during the quarter, contributing more than three-quarters of a percent to real GDP growth. Strong retail sales during the fourth quarter have helped raise expectations for economic growth during the final quarter of 2017.

Fixed Income Market

The U.S. Treasury yield curve continued to flatten during the quarter with short to intermediate term rates rising and long-term yields falling. The bellwether 10-year Treasury yield ended the quarter at 2.40%, up slightly but approximately equal to year-end 2016. The Federal Open Market Committee decided to increase its overnight rate by 25 basis points in December to a range of 1.25% to 1.50% and began their balance sheet reduction program. Credit spreads continued to tighten during the quarter, most noticeably with investment grade credit. High yield spreads, which have averaged 6% during the past decade, were below 4% during the quarter and stood at 3.4% as-of December 31.



Non-U.S. Markets

Equity markets outside of the U.S. produced strong returns during the fourth quarter of 2017, in both developed and emerging markets. The U.S. dollar continued to weaken, providing an additional boost for U.S. investors holding foreign currencies. Japan was one of the strongest developed markets during the quarter due to stimulative policies by both the Bank of Japan and the national government. Japan is now experiencing its strongest economy in more than a decade. Emerging Markets led all global equities during 2017 and produced their second consecutive positive annual gain. In fact, their nearly 40% return was the strongest year for broad emerging markets equity since they recovered from the global financial crisis in 2009.

Real Assets Markets

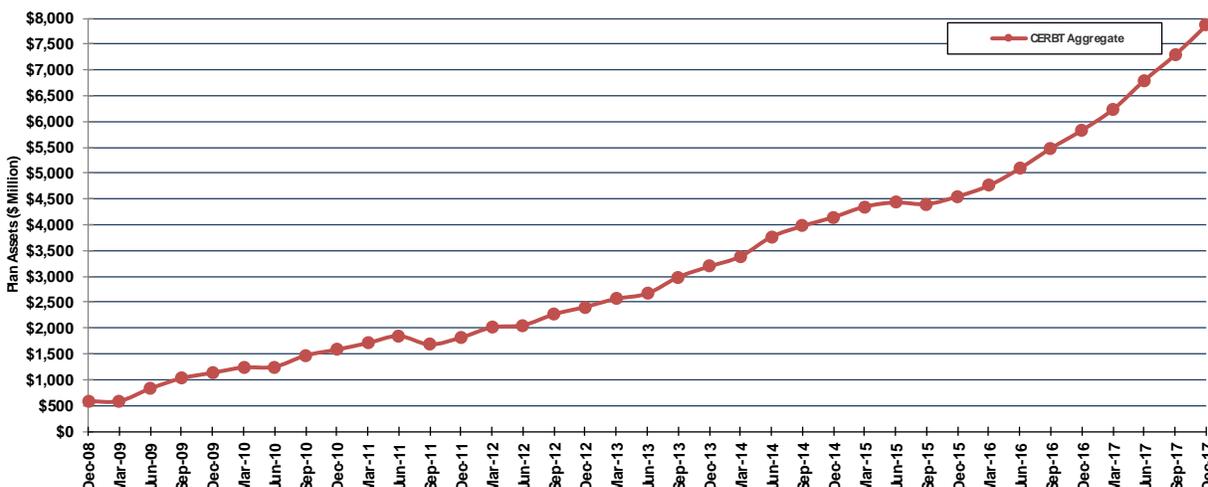
Real estate securities were up in the U.S. during the fourth quarter with a stronger return globally, due in part to a weakening dollar. Commodities were up for the quarter as crude oil rose 16.9% to \$60.42 per barrel. Oil prices finished the year up, increasing 12.5% broadly. Natural gas prices were down for the quarter with a loss of -1.8%, ending the quarter at \$2.95 per million BTUs. MLP returns were negative for the quarter and for the past 12 months. Finally, gold prices were up and finished at approximately \$1,309 per troy ounce, up 1.9% from last quarter.



California Employers' Retiree Benefit Trust Aggregate

Periods Ended December 31, 2017

Growth in Assets (in \$Millions)



Net of Fee Trust Performance – Aggregate

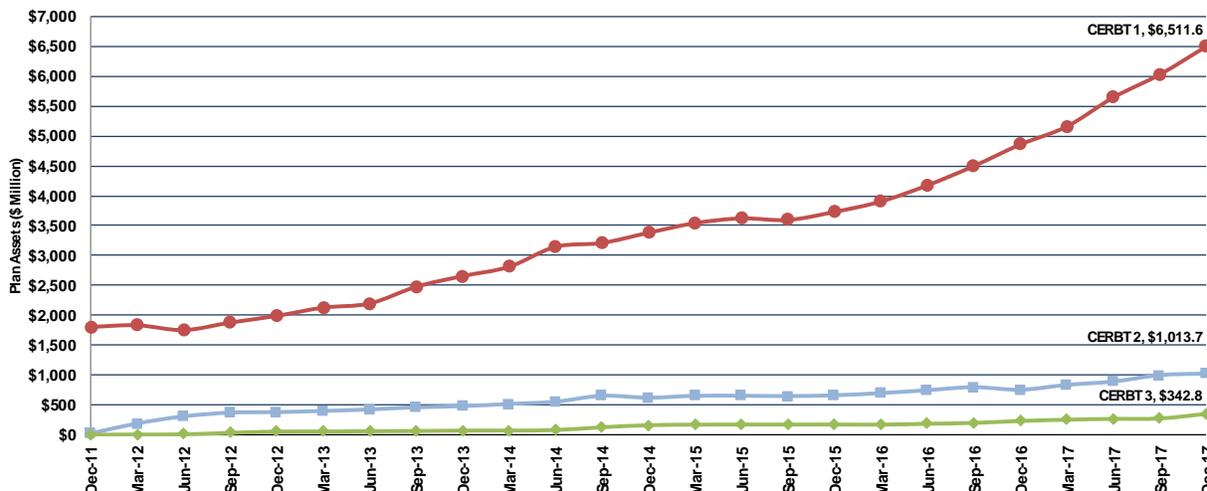
Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Aggregate	\$7,868.0 mil	4.2%	16.0%	6.8%	7.8%	5.2%
<i>CERBT Trust Aggregate Benchmark</i>		4.1	15.5	6.4	7.3	4.9

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

Periods Ended December 31, 2017

Growth in Assets (in \$Millions)





California Employers' Retiree Benefit Trust Strategy 1

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	56.8%	57.0%	-0.2%
US Bonds	27.0	27.0	0.0
TIPS	5.0	5.0	0.0
REITS	8.1	8.0	+0.1
Commodities	3.1	3.0	+0.1
Cash/Short-Term [±]	0.0	0.0	0.0
Total CERBT 1	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 1	\$6,511.6 mil	4.4%	16.7%	7.1%	8.1%	5.3%
<i>Total CERBT Strat. 1 Benchmark</i>		4.3	16.1	6.6	7.6	5.0
Global Equity	3,698.6 mil	5.8	24.4	9.9	11.4	5.3
<i>CERBT Global Equity Benchmark</i>		5.7	23.9	9.5	11.0	5.1
Domestic Fixed Income	1,759.9 mil	1.4	6.7	3.9	3.7	6.2
<i>CalPERS Custom Long Liability</i>		1.3	6.0	3.2	2.9	5.6
TIPS	325.7 mil	1.3	3.1	2.0	0.1	-.
<i>CalPERS TIPS</i>		1.3	3.0	2.1	0.1	-.
REITs	525.0 mil	4.0	11.1	4.8	6.5	4.1
<i>PERS FTSE/EPRA NAREIT Dev.</i>		3.9	10.3	3.9	5.8	3.3
Commodities	199.9 mil	9.9	5.9	-7.6	-12.4	-.
<i>GSCI Total Return</i>		9.9	5.8	-7.5	-12.2	-.
Cash/Short-Term[±]	2.5 mil	1.2	2.1	1.0	0.6	0.6
<i>91-Day T-Bill</i>		0.3	0.9	0.4	0.3	0.4

[±] Cash balances are inclusive of employer fund contributions that are in the process of being invested into asset classes. These contributions occur daily, but tend to be higher at the end of each quarter.



California Employers' Retiree Benefit Trust Strategy 2

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	39.8%	40.0%	-0.2%
US Bonds	38.9	39.0	-0.1
TIPS	10.0	10.0	0.0
REITS	8.0	8.0	0.0
Commodities	3.1	3.0	+0.1
Cash/Short-Term [±]	0.2	0.0	+0.2
Total CERBT 2	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 2	\$1,013.7 mil	3.6%	13.4%	5.9%	6.5%	-.-%
<i>Total CERBT Strat. 2 Benchmark</i>		3.5	12.9	5.5	6.1	-.-
Global Equity	403.0 mil	5.8	24.4	9.9	11.4	-.-
<i>CERBT Global Equity Benchmark</i>		5.7	23.9	9.5	11.0	-.-
Domestic Fixed Income	394.7 mil	1.4	6.7	3.9	3.7	-.-
<i>CalPERS Custom Long Liability</i>		1.3	6.0	3.2	2.9	-.-
TIPS	101.2 mil	1.3	3.1	2.0	0.1	-.-
<i>CalPERS TIPS</i>		1.3	3.0	2.1	0.1	-.-
REITs	81.5 mil	4.0	11.1	4.8	6.5	-.-
<i>PERS FTSE/EPRA NAREIT Dev Liquid</i>		3.9	10.3	3.9	5.8	-.-
Commodities	31.0 mil	10.0	5.9	-7.5	-12.3	-.-
<i>GSCI Total Return</i>		9.9	5.8	-7.5	-12.2	-.-
Cash/Short-Term[±]	2.4 mil	0.5	2.5	1.1	0.7	-.-
<i>91-Day T-Bill</i>		0.3	0.9	0.4	0.3	-.-

[±] Cash balances are inclusive of employer fund contributions that are in the process of being invested into asset classes. These contributions occur daily, but tend to be higher at the end of each quarter.



California Employers' Retiree Benefit Trust Strategy 3

Asset Allocation

Asset Class	Actual	Policy	Difference
Global Equity	23.9%	24.0%	-0.1%
US Bonds	39.0	39.0	0.0
TIPS	26.0	26.0	0.0
REITS	8.0	8.0	0.0
Commodities	3.1	3.0	+0.1
Cash/Short-Term [±]	0.1	0.0	+0.1
Total CERBT 3	100.0	100.0	0.0

Net of Fee Trust Performance Results

Trust Performance Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CERBT Strategy 3	\$342.8 mil	2.9%	10.1%	4.6%	4.9%	-.-%
<i>Total CERBT Strat. 3 Benchmark</i>		2.8	9.6	4.3	4.5	-.-
Global Equity	81.8 mil	5.8	24.4	9.9	11.3	-.-
<i>CERBT Global Equity Benchmark</i>		5.7	23.9	9.5	11.0	-.-
Domestic Fixed Income	133.5 mil	1.4	6.7	3.8	3.7	-.-
<i>CalPERS Custom Long Liability</i>		1.3	6.0	3.2	2.9	-.-
TIPS	89.0 mil	1.3	3.1	2.0	0.1	-.-
<i>CalPERS TIPS</i>		1.3	3.0	2.1	0.1	-.-
REITs	27.6 mil	4.0	11.1	4.7	6.4	-.-
<i>PERS FTSE/EPRA NAREIT Dev.</i>		3.9	10.3	3.9	5.8	-.-
Commodities	10.5 mil	10.0	5.8	-7.4	-12.2	-.-
<i>GSCI Total Return</i>		9.9	5.8	-7.5	-12.2	-.-
Cash/Short-Term[±]	0.4 mil	0.5	1.8	0.9	0.6	-.-
<i>91-Day T-Bill</i>		0.3	0.9	0.4	0.3	-.-

[±] Cash balances are inclusive of employer fund contributions that are in the process of being invested into asset classes. These contributions occur daily, but tend to be higher at the end of each quarter.

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Prepared for CalPERS

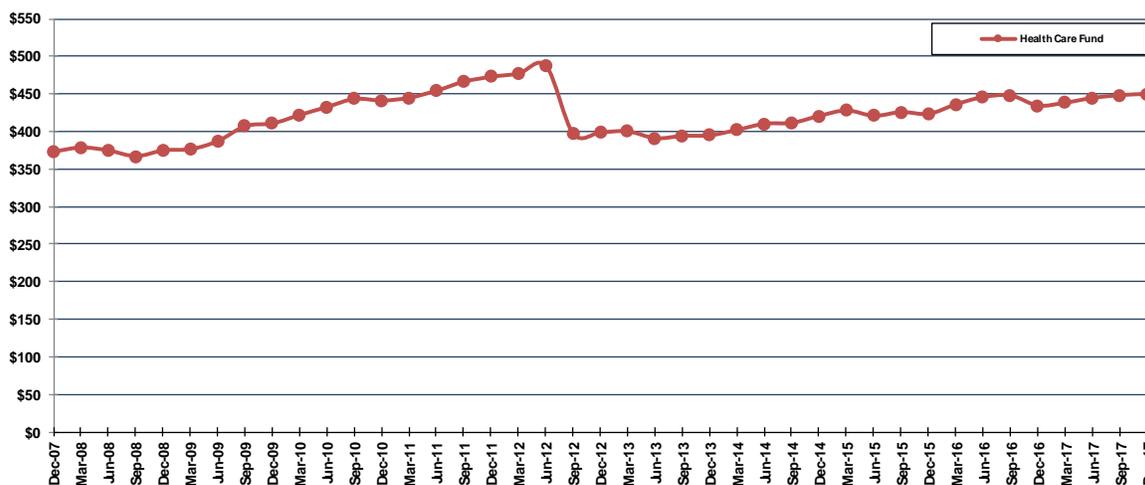


Health Care Fund



Health Care Fund Periods Ended December 31, 2017

Growth in Assets (in \$Millions)⁷³



Net of Fee Fund Performance

Fund Performance Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
Health Care Fund	\$450.1 mil	0.4%	3.6%	2.3%	2.5%	4.2%
<i>Barclays US Aggregate Bond Idx</i>		0.4	3.5	2.2	2.1	4.0

⁷³ The decline in assets in the third quarter of 2012 was due to a \$100 million withdrawal from the fund.

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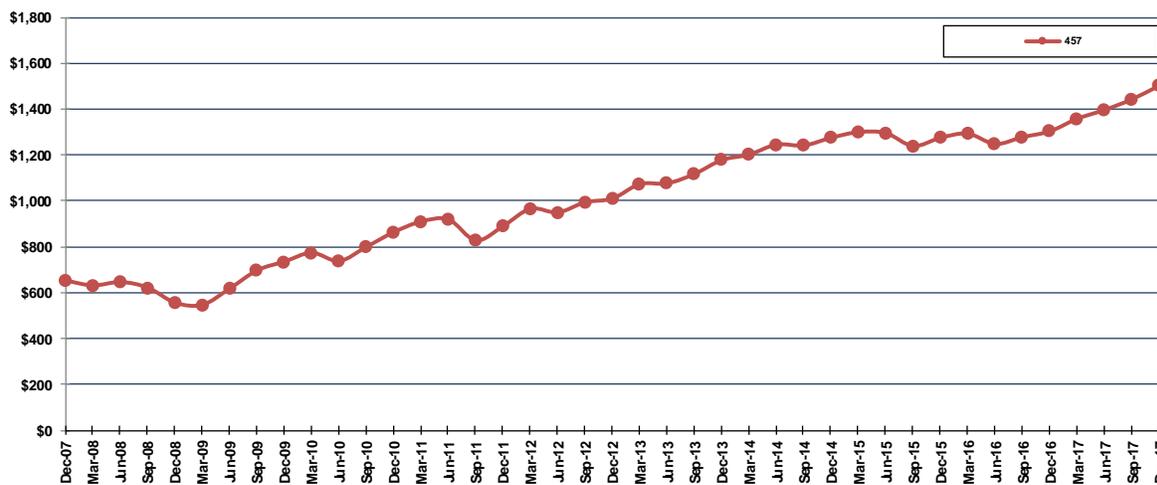
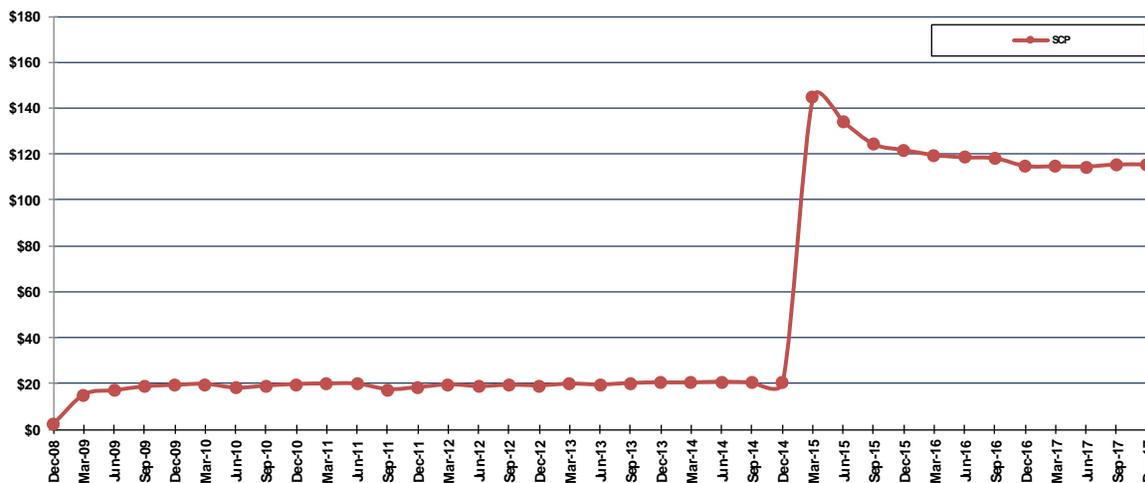


Supplemental Income Plans



Supplemental Income Plan Performance⁷⁴

Growth in Assets (in \$Millions)



⁷⁴ 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, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CalPERS Target Income Fund	\$18.7 mil	1.4%	6.8%	3.4%	4.0%	--
<i>SIP Income Policy</i>		1.4	6.7	3.2	3.8	--
CalPERS Target 2015 Fund	\$17.0 mil	1.4	6.8	3.4	4.7	--
<i>SIP 2015 Policy</i>		1.4	6.7	3.2	4.6	--
CalPERS Target 2020 Fund	\$24.1 mil	1.6	8.0	3.8	5.5	--
<i>SIP 2020 Policy</i>		1.6	7.9	3.6	5.3	--
CalPERS Target 2025 Fund	\$21.2 mil	2.5	11.2	5.0	6.7	--
<i>SIP 2025 Policy</i>		2.5	11.0	4.8	6.5	--
CalPERS Target 2030 Fund	\$15.7 mil	3.1	13.6	5.8	7.7	--
<i>SIP 2030 Policy</i>		3.1	13.4	5.7	7.5	--
CalPERS Target 2035 Fund	\$7.3 mil	3.7	16.1	6.8	--	--
<i>SIP 2035 Policy</i>		3.7	16.0	6.6	--	--
CalPERS Target 2040 Fund	\$3.7 mil	4.4	18.8	7.7	9.5	--
<i>SIP 2040 Policy</i>		4.3	18.6	7.5	9.3	--
CalPERS Target 2045 Fund	\$0.9 mil	5.0	20.9	8.5	--	--
<i>SIP 2045 Policy</i>		5.0	20.8	8.3	--	--
CalPERS Target 2050 Fund	\$0.02 mil	5.0	20.9	8.4	--	--
<i>SIP 2050 Policy</i>		5.0	20.8	8.3	--	--
CalPERS Target 2055 Fund	\$0.08 mil	5.0	21.0	--	--	--
<i>SIP 2055 Policy</i>		5.0	20.8	--	--	--
SSgA Russell All Cap Index SL	\$4.0 mil	6.3	21.1	11.2	--	--
<i>Russell 3000</i>		6.3	21.1	11.1	--	--
SSgA Global All Cap ex-US SL	\$0.5 mil	5.2	28.1	8.8	--	--
<i>MSCI ACWI ex-US IMI (N)</i>		5.2	27.8	8.4	--	--
SSgA US Bond Index SL	\$0.3 mil	0.4	3.6	2.3	--	--
<i>Barclays Aggregate Bond Index</i>		0.4	3.5	2.2	--	--
SSgA US Short Term Bond	\$0.3 mil	-0.2	0.7	0.8	--	--
<i>Barclays US Gov/Credit</i>		-0.2	0.8	0.9	--	--
SSgA Real Asset NL	\$0.2 mil	3.8	8.6	2.1	--	--
<i>Real Assets Blended Index</i>		3.8	8.7	2.2	--	--
SSgA STIF	\$1.4 mil	0.3	1.0	0.6	--	--
<i>BofAML 3 Month US TBill</i>		0.3	0.9	0.4	--	--
SCP AGGREGATE	\$115.3 mil					
<i>CalPERS CUSTOM SCP PLAN INDEX</i>						

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 Prepared for CalPERS



Net Fund Performance – 457 Program

Periods Ended December 31, 2017

	Market Value	Qtr	One Year	Three Year	Five Year	Ten Year
CalPERS Target Income Fund	\$86.3 mil	1.4%	6.8%	3.4%	4.0%	--
<i>SIP Income Policy</i>		1.4	6.7	3.2	3.8	--
CalPERS Target 2015 Fund	\$74.8 mil	1.4	6.8	3.4	4.7	--
<i>SIP 2015 Policy</i>		1.4	6.7	3.2	4.6	--
CalPERS Target 2020 Fund	\$126.3 mil	1.6	8.0	3.8	5.5	--
<i>SIP 2020 Policy</i>		1.6	7.9	3.6	5.3	--
CalPERS Target 2025 Fund	\$104.5 mil	2.5	11.2	5.0	6.7	--
<i>SIP 2025 Policy</i>		2.5	11.0	4.8	6.5	--
CalPERS Target 2030 Fund	\$101.9 mil	3.1	13.6	5.8	7.7	--
<i>SIP 2030 Policy</i>		3.1	13.4	5.7	7.5	--
CalPERS Target 2035 Fund	\$61.8 mil	3.7	16.1	6.8	8.7	--
<i>SIP 2035 Policy</i>		3.7	16.0	6.6	8.5	--
CalPERS Target 2040 Fund	\$56.7 mil	4.4	18.8	7.7	9.5	--
<i>SIP 2040 Policy</i>		4.3	18.6	7.5	9.3	--
CalPERS Target 2045 Fund	\$27.4 mil	5.0	20.9	8.5	10.0	--
<i>SIP 2045 Policy</i>		5.0	20.8	8.3	9.8	--
CalPERS Target 2050 Fund	\$12.7 mil	5.0	20.9	8.4	10.0	--
<i>SIP 2050 Policy</i>		5.0	20.8	8.3	9.8	--
CalPERS Target 2055 Fund	\$6.7 mil	5.0	21.0	8.5	--	--
<i>SIP 2055 Policy</i>		5.0	20.8	8.3	--	--
SSgA Russell All Cap Index SL	\$565.8 mil	6.3	21.1	11.2	--	--
<i>Russell 3000</i>		6.3	21.1	11.1	--	--
SSgA Global All Cap ex-US SL	\$75.3 mil	5.2	28.1	8.8	--	--
<i>MSCI ACWI ex-US IMI (N)</i>		5.2	27.8	8.4	--	--
SSgA US Bond Index SL	\$58.8 mil	0.4	3.6	2.3	--	--
<i>Barclays Aggregate Bond Index</i>		0.4	3.5	2.2	--	--
SSgA US Short Term Bond	\$35.3 mil	-0.2	0.7	0.8	--	--
<i>Barclays US Gov/Credit</i>		-0.2	0.8	0.9	--	--
SSgA Real Asset NL	\$5.6 mil	3.8	8.6	2.1	--	--
<i>Real Assets Blended Index</i>		3.8	8.7	2.2	--	--
SSgA STIF	\$104.1 mil	0.3	1.0	0.6	--	--
<i>BofAML 3 Month US TBill</i>		0.3	0.9	0.4	--	--
457 AGGREGATE	\$1503.9 mil					
<i>CalPERS CUSTOM 457 PLAN INDEX</i>						