Investment Strategic Measures
Measures 1-3

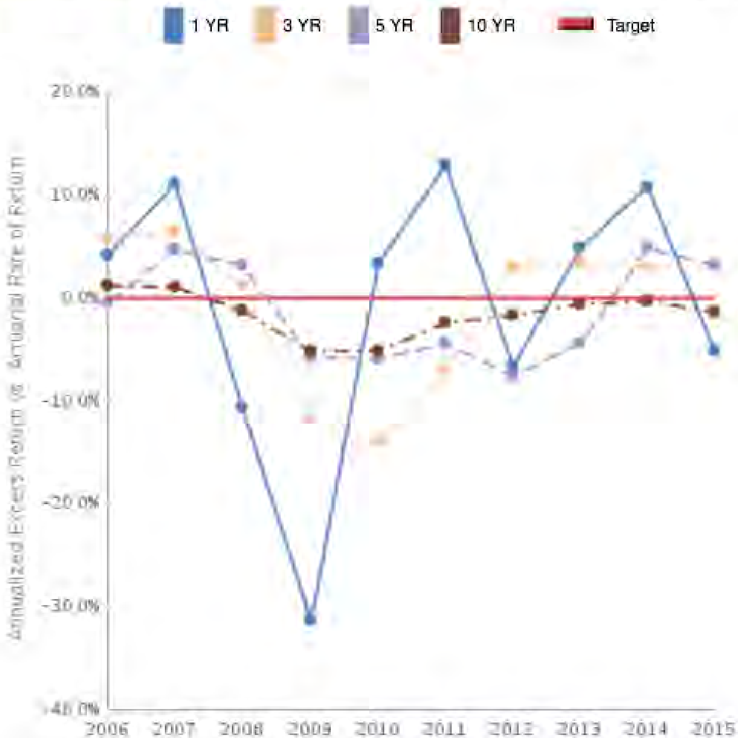
Wylie Tollette
Chief Operating Investment Officer
Investment Office

CalPERS | Investment Office

Annualized Excess Investment Returns

Fiscal Year Annualized Excess Return vs. Actuarial Rate of Return

Type of Return	Return Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Excess Return (above / below 7.5%)	1 YR	4.2%	11.1%	-10.6%	-31.3%	3.4%	13.0%	-6.7%	5.0%	10.9%	-5.1%
	3 YR	5.8%	6.5%	1.2%	-11.8%	-14.0%	-6.9%	2.9%	3.6%	2.9%	3.4%
	5 YR	-0.4%	4.8%	3.3%	-5.7%	-5.9%	-4.3%	-7.6%	-4.4%	5.0%	3.2%
	10 YR	1.3%	1.1%	-1.1%	-5.1%	-5.1%	-2.4%	-1.6%	-0.5%	-0.3%	-1.3%



Measure

Annualized excess investment returns relative to Actuarial Rate of Return Assumptions, currently at 7.5%

Definition & Purpose

Annualized 1, 3, 5, and 10-Year Excess Return relative to Actuarial Rate of Return of 7.5% Note: Measures utilize Time Weighted Returns Net of Investment Management Expenses

This measure provides a method to evaluate the ability to achieve superior investment performance relative to relevant targets.

- Over the longer term, this measure specifically targets the organizations ability to achieve the Actuarial Rate of Return Assumption over a full business cycle, thus capturing long-term capital market assumptions. This measure is the most important in terms of overall organizational health and has a direct impact on employer contribution rates and the ability to sustain beneficiary payments.

Glossary

Details & Analysis

Where We Are

The 1-Year return for the Total Fund is underperforming by 510 bps relative to the actuarial rate of return (AROR). Shorter term volatility can be expected given the asset allocation of the Fund.

The annualized 3-Year return outperformed by 342 bps relative to AROR, due to the elimination of the 2012 reporting year.

The annualized 5-Year return outperformed by 323 bps relative to AROR, which is slightly lower performance than the previous 5-Year reporting period due to the addition of current year underperformance, and elimination of the 2010 reporting year, which delivered outperformance relative to the AROR.

The annualized 10-Year return underperformed by 129 bps relative to AROR due primarily to the poor 2008/2009 market environment and resulting returns.

Data Frequency

Annually

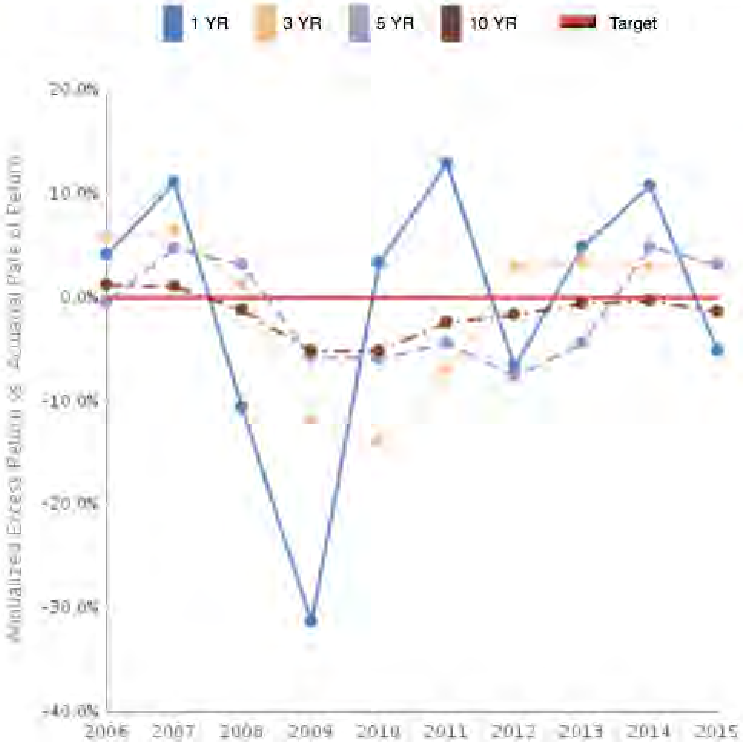
Baseline, Thresholds and Targets

Challenges & Mitigations

Annualized Excess Investment Returns

Fiscal Year Annualized Excess Return vs. Actuarial Rate of Return

Type of Return	Return Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Excess Return (above / below 7.5%)	1 YR	4.2%	11.1%	-10.6%	-31.3%	3.4%	13.0%	-6.7%	5.0%	10.9%	-5.1%
	3 YR	5.8%	6.5%	1.2%	-11.8%	-14.0%	-6.9%	2.9%	3.6%	2.9%	3.4%
	5 YR	-0.4%	4.8%	3.3%	-5.7%	-5.9%	-4.3%	-7.6%	-4.4%	5.0%	3.2%
	10 YR	1.3%	1.1%	-1.1%	-5.1%	-5.1%	-2.4%	-1.6%	-0.5%	-0.3%	-1.3%



Glossary

Details & Analysis

Where We Are

Data Frequency

Baseline, Thresholds and Targets

Measures will be judged based on the ability to meet or exceed relevant target rates of return over the specified time period

Target: Current Actuarial Rate of Return is 7.5%

Challenges & Mitigations

Challenges :

The Board of Administration determines the Actuarial Rate of Return based on information and analysis provided through the Asset Liability Management Workshops, delivered by the Financial, Investment and Actuarial offices. These workshops assist the Board in understanding the anticipated Rate of Return metrics attached to the market opportunity set that CalPERS can invest in while considering Actuarial assumptions and resulting affect to the contribution levels for employees and employers.

Current challenges lay in the actual market opportunity set and CalPERS' ability to meet or exceed the Actuarial Rate of Return. Extraordinarily low-interest rates, which are designed to help global economic activity recover from the 2009 market crash, have resulted in reduced expected returns for Global Fixed Income assets, in particular.

Mitigations :

A potential mitigation to the above challenges is for the Board of Administration to approve moving to a lower discount rate in a slow, planned manner to provide the opportunity to reduce expected investment risk and volatility.

Additional mitigations currently being explored by Investment staff is the use of Risk factors to construct the Asset mix of the Portfolio in a way that provides greater understanding and ability to measure risks that are relevant for CalPERS.

Additionally, through the Portfolio Priorities Initiative, Investment staff are reviewing asset class roles and benchmarks to better understand underlying characteristics to align those characteristics with CalPERS priorities

References & Sources

Annualized Excess Investment Returns

Fiscal Year Annualized Excess Return vs. Actuarial Rate of Return

Type of Return	Return Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Excess Return (above / below 7.5%)	1 YR	4.2%	11.1%	-10.6%	-31.3%	3.4%	13.0%	-6.7%	5.0%	10.9%	-5.1%
	3 YR	5.8%	6.5%	1.2%	-11.8%	-14.0%	-6.9%	2.9%	3.6%	2.9%	3.4%
	5 YR	-0.4%	4.8%	3.3%	-5.7%	-5.9%	-4.3%	-7.6%	-4.4%	5.0%	3.2%
	10 YR	1.3%	1.1%	-1.1%	-5.1%	-5.1%	-2.4%	-1.6%	-0.5%	-0.3%	-1.3%

Glossary

bps

A basis point, or bp, is a common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01% (0.0001), and is used to denote the percentage change in a financial instrument.

Close

Measure

Annualized excess investment returns relative to Actuarial Rate of Return Assumptions, currently at 7.5%

Definition & Purpose

Annualized 1, 3, 5, and 10-Year Excess Return relative to Actuarial Rate of Return of 7.5% Note: Measures utilize Time Weighted Returns Net of Investment Management Expenses

This measure provides a method to evaluate the ability to achieve superior investment performance relative to relevant targets.

- Over the longer term, this measure specifically targets the organizations ability to achieve the Actuarial Rate of Return Assumption over a full business cycle, thus capturing long-term capital market assumptions. This measure is the most important in terms of overall organizational health and has a direct impact on employer contribution rates and the ability to sustain beneficiary payments.

Glossary

Details & Analysis

Where We Are

The 1-Year return for the Total Fund is underperforming by 510 bps relative to the actuarial rate of return (AROR). Shorter term volatility can be expected given the asset allocation of the Fund.

The annualized 3-Year return outperformed by 342 bps relative to AROR, due to the elimination of the 2012 reporting year.

The annualized 5-Year return outperformed by 323 bps relative to AROR, which is slightly lower performance than the previous 5-Year reporting period due to the addition of current year underperformance, and elimination of the 2010 reporting year, which delivered outperformance relative to the AROR.

The annualized 10-Year return underperformed by 129 bps relative to AROR due primarily to the poor 2008/2009 market environment and resulting returns.

Data Frequency

Annually

Baseline, Thresholds and Targets

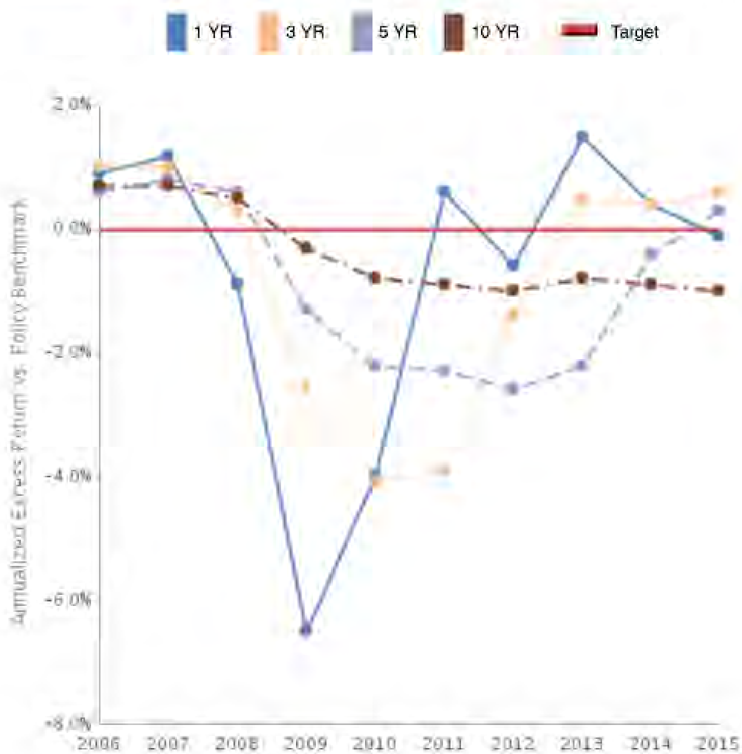
Measures will be judged based on the ability to meet or exceed relevant target rates of return over the specified time period

Measure 2: Annualized Excess Investment Returns Relative to Policy Benchmark

Annualized Excess Investment Returns

Fiscal Year Annualized Excess Return vs. Policy Benchmark

Type of Return	Return Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Excess Return (above/below the benchmark)	1 YR	0.9%	1.2%	-0.9%	-6.5%	-4.0%	0.6%	-0.6%	1.5%	0.4%	-0.1%
	3 YR	1.0%	1.0%	0.3%	-2.6%	-4.1%	-3.9%	-1.4%	0.5%	0.4%	0.6%
	5 YR	0.6%	0.8%	0.6%	-1.3%	-2.2%	-2.3%	-2.6%	-2.2%	-0.4%	0.3%
	10 YR	0.7%	0.7%	0.5%	-0.3%	-0.8%	-0.9%	-1.0%	-0.8%	-0.9%	-1.0%



Measure

Annualized excess investment returns relative to Policy Benchmark

Definition & Purpose

Annualized 3-Year Excess Return relative to Policy Benchmark Note: Measure utilizes Time Weighted Returns Net of Investment Management Expenses

This measure provides a method to evaluate the ability to achieve superior investment performance relative to relevant targets.

- This measure targets the effectiveness of the Investment Office in meeting the objective of achieving superior investment returns when compared against the Policy benchmark.

Glossary

Details & Analysis

Where We Are

The 1-Year return for the Total Fund is underperforming by 9 bps relative to the policy benchmark.

The annualized 3-Year return outperformed by 60 bps relative to the policy benchmark, which is higher performance than the prior 3-Year period due to the elimination of the 2012 reporting year.

The annualized 5-Year return outperformed by 34 bps relative to the policy benchmark, which is higher performance than the prior 5-Year reporting period due to the elimination of the 2010 reporting year. This is the first time the 5-Year performance has outperformed the policy benchmark in over seven years.

The 10-year return underperformed by 99 bps relative to the policy benchmark. This is primarily due to underperformance of the Real Estate portfolio during the financial crisis from 2008-2010.

Data Frequency

Annually

Baseline, Thresholds and Targets

Challenges & Mitigations

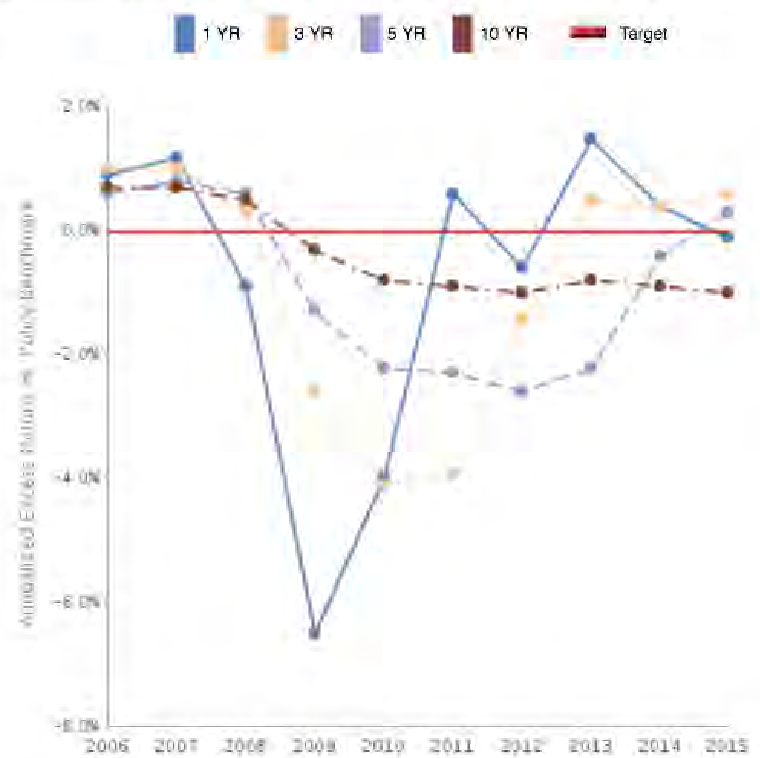
References & Sources

Measure 2: Annualized Excess Investment Returns Relative to Policy Benchmark

Annualized Excess Investment Returns

Fiscal Year Annualized Excess Return vs. Policy Benchmark

Type of Return	Return Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Excess Return (above/below the benchmark)	1 YR	0.9%	1.2%	-0.9%	-6.5%	-4.0%	0.6%	-0.6%	1.5%	0.4%	-0.1%
	3 YR	1.0%	1.0%	0.3%	-2.6%	-4.1%	-3.9%	-1.4%	0.5%	0.4%	0.6%
	5 YR	0.6%	0.8%	0.6%	-1.3%	-2.2%	-2.3%	-2.6%	-2.2%	-0.4%	0.3%
	10 YR	0.7%	0.7%	0.5%	-0.3%	-0.8%	-0.9%	-1.0%	-0.8%	-0.9%	-1.0%



Baseline, Thresholds and Targets

Target: The Total Fund policy benchmark is a composite established by the Investment Committee assigned asset class benchmarks and the target weights derived from the ALM process. The policy benchmark weights are fixed and do not vary except by Investment Committee action such as the approval of interim target weights.

The actual performance generated by the portfolio is affected by both the active under- or over-weighting of the asset classes within their policy ranges, as well as the performance of the individual asset classes vs. their specified policy benchmark.

Challenges & Mitigations

Challenges :

Today's investment environment presents many challenges, including an increasing focus on liquidity and income due to the cash flow requirements of CalPERS, reduced return expectations across many asset classes due to the aforementioned extraordinary monetary policies across many economies, and the increasing risk and complexity of interrelated global financial markets.

Additionally, the Investment Office operates under a complex business model that includes over 212 managers and more than 700 individual portfolios, resulting in increased complexity, cost, and attendant risks. The ability to identify and retain external and internal managers with the skillset to outperform the policy benchmark also presents a challenge.

Mitigations :

Over the last year, the Investment Office executive staff developed the INVO 2020 Vision, which is a 5-Year strategic plan that defines long-term direction and support of the CalPERS Strategic Plan while addressing management of the CalPERS Investment portfolio in a cost-effective, transparent, and risk-aware manner.

The INVO 2020 Vision focuses on reducing management fees and complexity, enhancing governance and manager expectations, and moving to fewer but more strategic partnerships identified through a transparent, robust, fair and competitive ongoing evaluation process.

The INVO 2015-17 Roadmap is a 2-year business plan, currently expressed through five strategic objectives with underlying projects and initiatives designed to create forward progress on long-term INVO 2020 Vision objectives. The initiatives are designed to improve internal asset management and investment risk management capabilities, and reduce operational risk. Among the initiatives is the Investment Strategy Group (ISG) Restructure which is intended to elevate the ISG's understanding of Trust-level investment risk and performance, as well as the risk and performance impact of rebalancing or tactical asset class shifts.

Measure 3: Net Value Added Relative to a Comparable Peer Group Median

Net Value Added

Measure
Net value added relative to an appropriate peer universe median return adjusted for composition of asset allocation and after expenses.

Definition & Purpose
5-Year, 3-year, 1-year Average Excess Return net of investment expenses, relative to comparable Peer Group Median. Note: Measure utilizes Net Time Weighted Return versus comparable peer universe median after adjusting for asset allocation mix as prepared through the CEM Benchmarking survey.

This measure evaluates the ability of the Investment Office to outperform relevant peers after adjusting returns and costs for asset allocation mix so they can be accurately compared. The measure provides an alternative perspective on the ability of the Investment Office to achieve target investment returns in a cost effective manner through active management of the portfolio.

Details & Analysis

Where We Are

While the 5-year number is still impacted by 2009 returns, our 3-year and 1-year results show progress and trending towards the positive value added, low-cost quadrant.

Data Frequency

Annually

Baseline, Thresholds and Targets

Measure will be judged based on the ability to meet or exceed Peer Universe Median rate of return over the specified time period.

Interpretation of Results

On a 5-year average, CalPERS has a negative net value add of -1.9%, compared to a 0.4% for our peers. Although our number is on the lower end of the range compared to our peers, we are cost advantaged by 7.7 bps. However, due to the weak investment performance primarily of the real assets portfolio during the 2009-2011 periods, our cost advantage was largely overshadowed. The desired outcome is to appear in the upper left quadrant, indicating we are low cost and high value add relative to our peer universe. Importantly, progress has been made in the 3-year and 1-year results showing CalPERS tranding towards the upper left quadrant.

References & Sources

CEM Benchmark Cost Analysis

Measure 3: Net Value Added Relative to a Comparable Peer Group Median

Net Value Added

Measure

Net value added relative to an appropriate peer universe median return adjusted for composition of asset allocation and after expenses.

Definition & Purpose

5-Year, 3-year, 1-year Average Excess Return net of investment expenses, relative to comparable Peer Group Median. Note: Measure utilizes Net Time Weighted Return versus comparable peer universe median after adjusting for asset allocation mix as prepared through the CEM Benchmarking survey.

This measure evaluates the ability of the Investment Office to outperform relevant peers after adjusting returns and costs for asset allocation mix so they can be accurately compared. The measure provides an alternative perspective on the ability of the Investment Office to achieve target investment returns in a cost effective manner through active management of the portfolio.

Details & Analysis

Where We Are

While the 5-year number is still impacted by 2009 returns, our 3-year and 1-year results show progress and trending towards the positive value added, low-cost quadrant.

Data Frequency

Annually

Baseline, Thresholds and Targets

Measure will be judged based on the ability to meet or exceed Peer Universe Median rate of return over the specified time period.

Interpretation of Results

On a 5-year average, CalPERS has a negative net value add of -1.9%, compared to a 0.4% for our peers. Although our number is on the lower end of the range compared to our peers, we are cost advantaged by 7.7 bps. However, due to the weak investment performance primarily of the real assets portfolio during the 2009-2011 periods, our cost advantage was largely overshadowed. The desired outcome is to appear in the upper left quadrant, indicating we are low cost and high value add relative to our peer universe. Importantly, progress has been made in the 3-year and 1-year results showing CalPERS tranding towards the upper left quadrant.

References & Sources

CEM Benchmark Cost Analysis

Measure 3: Net Value Added Relative to a Comparable Peer Group Median

Net Value Added

Measure
Net value added relative to an appropriate peer universe median return adjusted for composition of asset allocation and after expenses.

Definition & Purpose
5-Year, 3-year, 1-year Average Excess Return net of investment expenses, relative to comparable Peer Group Median. Note: Measure utilizes Net Time Weighted Return versus comparable peer universe median after adjusting for asset allocation mix as prepared through the CEM Benchmarking survey.

This measure evaluates the ability of the Investment Office to outperform relevant peers after adjusting returns and costs for asset allocation mix so they can be accurately compared. The measure provides an alternative perspective on the ability of the Investment Office to achieve target investment returns in a cost effective manne through active management of the portfolio.

Details & Analysis

Where We Are

While the 5-year number is still impacted by 2009 returns, our 3-year and 1-year results show progress and trending towards the positive value added, low-cost quadrant.

Data Frequency

Annually

Baseline, Thresholds and Targets

Measure will be judged based on the ability to meet or exceed Peer Universe Median rate of return over the specified time period.

Interpretation of Results

On a 5-year average, CalPERS has a negative net value add of -1.9%, compared to a 0.4% for our peers. Although our number is on the lower end of the range compared t our peers, we are cost advantaged by 7.7 bps. However, due to the weak investment performance primarily of the real assets portfolio during the 2009-2011 periods, our cost advantage was largely overshadowed. The desired outcome is to appear in the upper left quadrant, indicating we are low cost and high value add relative to our peer universe. Importantly, progress has been made in the 3-year and 1-year results showing CalPERS tranding towards the upper left quadrant.

References & Sources

CEM Benchmark Cost Analysis