



## Investment Committee

# Agenda Item 8a

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**June 17, 2019**

**Item Name:** Affiliate Trust Asset Allocation Review for the California Employers' Pension Prefunding Trust

**Program:** Trust Level Portfolio Management & Affiliate Investment Programs

**Item Type:** Action

### **Recommendation**

Approve the proposed Strategic Asset Allocation, Benchmarks, Ranges, and Investment Policy for the California Employers' Pension Prefunding Trust.

### **Executive Summary**

The California Employers' Pension Prefunding Trust (CEPPT) is a new trust fund in the State Treasury that allows California public employers that provide a defined benefit pension plan to their employees to prefund their required pension contributions. The trust was established January 1, 2019 by Senate Bill No. 1413 and is intended to meet the requirements of Section 115 of the Internal Revenue Code (IRC).

To establish the investment program for the CEPPT, staff conducted a strategic asset allocation review and recommends two asset allocation portfolios with associated benchmarks, asset class targets and ranges, and a new investment policy. If approved, staff will implement CEPPT Strategy 1 and CEPPT Strategy 2.

The supporting analysis is provided in Attachment 1, the investment policy is Attachment 2, and an opinion letter from Wilshire Associates, Inc. follows as Attachment 3.

### **Strategic Plan**

This agenda item supports CalPERS Strategic Plan goal to strengthen the long-term sustainability of the pension fund. Establishment of the CEPPT provides diversified investment options for employers to prefund their future required payments.

### **Investment Beliefs**

This agenda item is consistent with the following CalPERS Investment Beliefs:

- Investment Belief 1: Liabilities must influence the asset structure. For CEPPT, in lieu of liabilities, plan characteristics are determinants of the recommended portfolios for the CEPPT.

- Investment Belief 7: CalPERS will take risk only where we have a strong belief we will be rewarded for it. Staff has developed two portfolios so that employers can choose their preferred risk level.
- Investment Belief 9: Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error. When developing the proposed portfolios, Staff included plan characteristics, such as the voluntary nature of contributions and distributions, the projected investor pool, and the anticipated investment time horizon.

## **Background**

Periodic review and analysis of strategic asset allocation is required by the Affiliate Funds' respective investment policies. CEPPT is a new program and this is the initial asset allocation recommendation and investment policy.

The CEPPT legislation specifies for the CalPERS Board to offer cost-effective, diversified investment options that do not exceed the risk and return profiles of the investment options available for the California Employers' Retiree Benefit Trust (CERBT). It also authorizes the Board to adopt emergency regulations necessary for implementation and makes an appropriation of \$695,140 to fund CalPERS development and implementation of the CEPPT.

The two recommended portfolios for the CEPPT accommodate differences in time horizons and risk tolerance among the potential participating employers. CEPPT Strategy 1 is intended to be a medium time horizon and moderate risk portfolio while CEPPT Strategy 2 is intended to be for shorter time horizons and lower risk. The CEPPT portfolios are diversified, have a low investment cost, and the risk and return profiles do not exceed the options available to the CERBT.

## **Analysis**

### Program Characteristics

As CEPPT is a new program, historical data is not available to determine program characteristics; however, based on the trust purpose of pension prefunding and information gathered from employers, certain characteristics can be derived.

Contributions are voluntary, and size and timing will be determined by the participating employers. Asset growth in the first year could range from \$100 million up to a few billion, depending on if the State of California participates in the next fiscal year. Distributions are limited to paying pension contributions or to terminate and transfer to another trust with the same prefunding purpose. In the first few years, contributions are expected to exceed distributions, as employers build up their prefunding balances to offset future required pension contribution increases.

The investment time horizon for employers in the CEPPT is estimated to be short-term to medium-term, as employers plan for increasing required pension contributions in future years. The risk tolerance among employers is estimated to be low to medium. Employers currently have options for 1) investing in very low risk, short term options, either through their general fund investments or through an investment fund offered by the State and 2) contributing directly to the PERF as a higher risk, long-term investment. This program will accommodate investment time horizons and risk tolerances of low to medium and offer employers a choice that aligns with their investment goals.

Program characteristics influence the selection of portfolios, illustrated in the table:

Characteristic	Description	If it is...	...Implication
Contributions / Distributions	Voluntary and variable	Uncertain cash in/out, at uncertain times	Requires liquid & less risky portfolios
Investor Time Horizon	Employers may have differing time horizons	Shorter time horizon	Low risk portfolios
		Medium time horizon	Medium risk portfolios
Investor Risk Tolerance	Employers may have differing risk tolerance	Low tolerance	Low risk portfolios
		Medium tolerance	Medium risk portfolios

### Strategic Asset Allocation

The strategic asset allocation process has considered the unique characteristics of the CEPPT program and has included goals such as smoothing employer pension contributions, providing higher expected returns than general short-term reserve funds, and optimizing against extreme losses. The benchmarks, ranges, and investment policy have been modeled from, and align with, other trusts in the Affiliate Investment Program.

The process to obtain candidate portfolios for an Affiliate Fund mirrors, to the extent possible, the process utilized in the PERF Asset Liability Management (ALM) workshop. For the CEPPT, the liabilities of the potential participants are unknown; therefore, staff conducted the analysis with a series of asset-only optimizations.

The first step in the process is to establish the Capital Market Assumptions (CMAs), which determine the risk and return profiles of each asset class and have an impact on the composition of potential portfolio options. CMAs for the CEPPT have been developed for 2019 and utilize the 2017 PERF ALM process with the following exceptions:

- Fixed Income and Treasury Inflation-Protected Securities (TIPS) reflect U.S. domestic securities only
- Fixed Income is U.S. Aggregate Index, unlike that for the PERF which is customized to have a longer duration
- Global Real Estate Investment Trusts (REITs) are estimated using a Dividend-Discount-model

The table shows the CEPPT CMAs, Asset Class Correlations, and Constraints.

2019 Capital Market Assumptions <sup>1</sup>				Correlation				Constraints (%)	
Asset Class	Arithmetic Return	Geometric Return	Volatility (Std. Dev)	Global Equity	Fixed Income	TIPS	REITs	Floor	Cap
Global Equity	8.03%	6.70%	16.90%	1.00	-0.13	0.12	0.78	0%	100%
Fixed Income	3.46%	3.35%	4.75%	-0.13	1.00	0.75	0.15	0%	100%
TIPS <sup>2</sup>	3.17%	3.00%	6.00%	0.12	0.75	1.00	0.30	5%	100%
REITs <sup>3</sup>	7.20%	5.50%	19.00%	0.78	0.15	0.30	1.00	8%	100%
<b>U.S. Inflation Assumption:</b>	<b>2.10%</b>								

Refer to Attachment 1, page 8 for footnotes.

The second step in the process is to utilize mean variance optimization (MVO) techniques to build the efficient frontier (i.e. construct candidate portfolios). The three components of MVO optimization are 1) expected annual returns for each asset class, 2) expected volatility of returns, as measured by the annualized standard deviation of returns and 3) expected correlations among asset classes. This optimization was constrained to include only asset classes in which CalPERS currently invests for other Affiliate Funds (which excludes private real estate and private equity). Additionally, the asset classes of TIPS, and REITs have minimum exposure constraints to increase diversification in the final candidate portfolio options.

The following table displays five candidate portfolios as generated by the MVO process. On the efficient frontier, each candidate portfolio would earn the highest expected return at the specified volatility level.

Asset Class Component		Asset Allocation of Candidate Portfolios				
		P1	P2	P3	P4	P5
Components	Global Equity	3%	14%	26%	40%	56%
	Fixed Income	84%	73%	61%	47%	31%
	TIPS	5%	5%	5%	5%	5%
	REITs	8%	8%	8%	8%	8%
Statistics	Expected Volatility (Standard Deviation)	4.8%	5.2%	6.4%	8.2%	10.7%
	Expected Compound Return (1-10 Years) <sup>1</sup>	3.5%	4.0%	4.5%	5.0%	5.5%
	Expected Tail Risk - Monte Carlo VaR <sup>2</sup>	4.0%	5.3%	7.7%	11.0%	15.3%
Strategy	Recommendation for Plans		CEPPT Strategy 2		CEPPT Strategy 1	

Refer to Attachment 1, page 10 for footnotes.

The third step in the process, evaluation of the candidate portfolios to recommend Policy Portfolios, results in a selection by staff of the following:

- A conservative portfolio is recommended for CEPPT Strategy 2 to accommodate a shorter time horizon and lower risk tolerance of participating employers. Staff proposes P2, which has a 4.0% expected return and 5.2% expected volatility. It is preferred to P1, which has very low expected returns, similar to a bond reserve portfolio.
- A moderate portfolio is recommended for CEPPT Strategy 1 to accommodate a longer time horizon and a medium risk tolerance of participating employers. Staff proposes P4, which has a 5.0% expected return and 8.2% expected volatility. It is preferred to P3, which doesn't provide as much of a difference from P2. It is also preferred to P5, which has higher volatility, which is not advisable for trusts with unpredictable cash flows, low to medium investment horizons and low to medium risk tolerance.

#### Asset Class Benchmarks and Ranges:

The recommended benchmarks and ranges for each asset class are shown in Attachment 1, pages 11 and 12, respectively. The benchmarks are diversified, appropriate for each asset class, and are in use by other Affiliate Funds. The asset class ranges are intended to allow flexibility for cashflows and minimize the costs of frequent rebalancing due to changing market conditions. If approved, the benchmarks will be updated to the Total Fund Policy through the administrative change process and the ranges will be reflected in the new CEPPT investment policy.

#### Investment Policy:

The investment policy for the CEPPT is included as Attachment 2. The policy has been modeled from the CERBT investment policy with the only changes being that the CEPPT has two strategies versus three for the CERBT and the asset allocation target percentages reflect the CEPPT asset allocation.

### **Budget and Fiscal Impacts**

Senate Bill 1413 provided for an appropriation of \$695,140 to fund CalPERS development and implementation of the CEPPT in 2019. The CalPERS Financial Office will work with the Department of Finance on receiving and applying this appropriation. Ongoing costs will be borne by the trust and will be offset by an initial annual fee of .25% (25 basis points) charged to program participants. The fee will be reviewed on an ongoing basis and may be modified in the future, based on actual costs experienced and assets under management.

### **Benefits and Risks**

The benefits of approving the recommended Policy Portfolios include:

1. Providing investment options for employers to meet their future pension obligations.
2. Providing a buffer against contribution rate volatility for employers.
3. Diversifying employer investment options beyond low yielding general fund pools.

The risks of approving the proposed Policy Portfolios include:

1. Actual portfolio returns may deviate from model projections.
2. Employers may sub optimally 'trade' between CEPPT portfolios, worsening results versus a base case where only one portfolio was available.
3. Other risk factors, not captured in our modeling, dominate future outcomes.

## **Attachments**

Attachment 1 – Affiliate Trust Asset Allocation Review: CEPPT

Attachment 2 – Investment Policy: CEPPT

Attachment 3 – Board Investment Consultant Opinion Letter: Wilshire Associates

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### **Daniel Bienvenue**

Managing Investment Director

Global Equity

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### **Eric Baggesen**

Managing Investment Director

Trust Level Portfolio Management

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### **Michael Cohen**

Chief Financial Officer

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### **Ben Meng**

Chief Investment Officer

# Affiliate Trust Asset Allocation Review: California Employers' Pension Prefunding Trust (CEPPT)

Trust Level Portfolio Management  
Global Equity, Affiliate Investment Program  
June 17th, 2019

## **Overview of Program Characteristics**

## **Strategic Asset Allocation and Recommendation**

# CEPPT - Program Overview: Purpose and Establishment

*Required pension contributions are on track to rise over the next several years.*

As one option to address this challenge, the California Legislature established the California Employers' Pension Prefunding Trust (CEPPT) effective 1/1/2019 to allow state and local public agency employers that provide a defined benefit pension plan to their employees to prefund their required pension contributions and invest those contributions within a trust that is intended to meet the requirements of Section 115 of the Internal Revenue Code.

## The CEPPT will be:

- Exempt from taxation
- For a defined governmental purpose (i.e. prefunding pension contributions)
- Irrevocable for contributions and earnings to the trust
- Open to terminations with a transfer to another Section 115 trust with same purpose
- Same trust type used for CERBT

Trust participants do not need to be CalPERS pension participants.

Contributions are voluntary.

# CEPPT - Program Overview: Benefits and Alternatives

## Potential Employer Benefits

- Budget stabilization, smoothing of pension payments
- Diversified investments with strategic asset allocation
- Established relationship with CalPERS
- CalPERS is a low cost provider

## Potential Employer Alternatives to the CEPPT

- Employer self-managed investments
- Local Agency Investment Fund
- Contribute to the PERF
- Other prefunding trust providers
- Reduce services
- Increase taxes

## CEPPT - Program Overview: Projected Characteristics

Characteristic	Description
Eligible participants	State of CA and CA public agency employers offering a defined benefit plan to their employees
Contributions/ distributions	Voluntary, determined by employer Variable in size and timing
Time horizon	Short to medium-term
Risk tolerance	Low to moderate
Use of funds	Paying pension contributions Transferring to Section 115 trust for same purpose

**Overview of Program Characteristics**

**Strategic Asset Allocation and Recommendations**

# CEPPT - Plan Characteristics and Effect on Asset Allocation

Characteristic	Description	If it is...	...Implication
<b>Contributions / Distributions</b>	Voluntary and variable	Uncertain cash in/out, at uncertain times	Requires liquid & less risky portfolios
<b>Investor Time Horizon</b>	Employers may have differing time horizons	Shorter time horizon	Low risk portfolios
		Medium time horizon	Medium risk portfolios
<b>Investor Risk Tolerance</b>	Employers may have differing risk tolerance	Low tolerance	Low risk portfolios
		Medium tolerance	Medium risk portfolios

# CEPPT - 2019 Capital Market Assumptions and Constraints

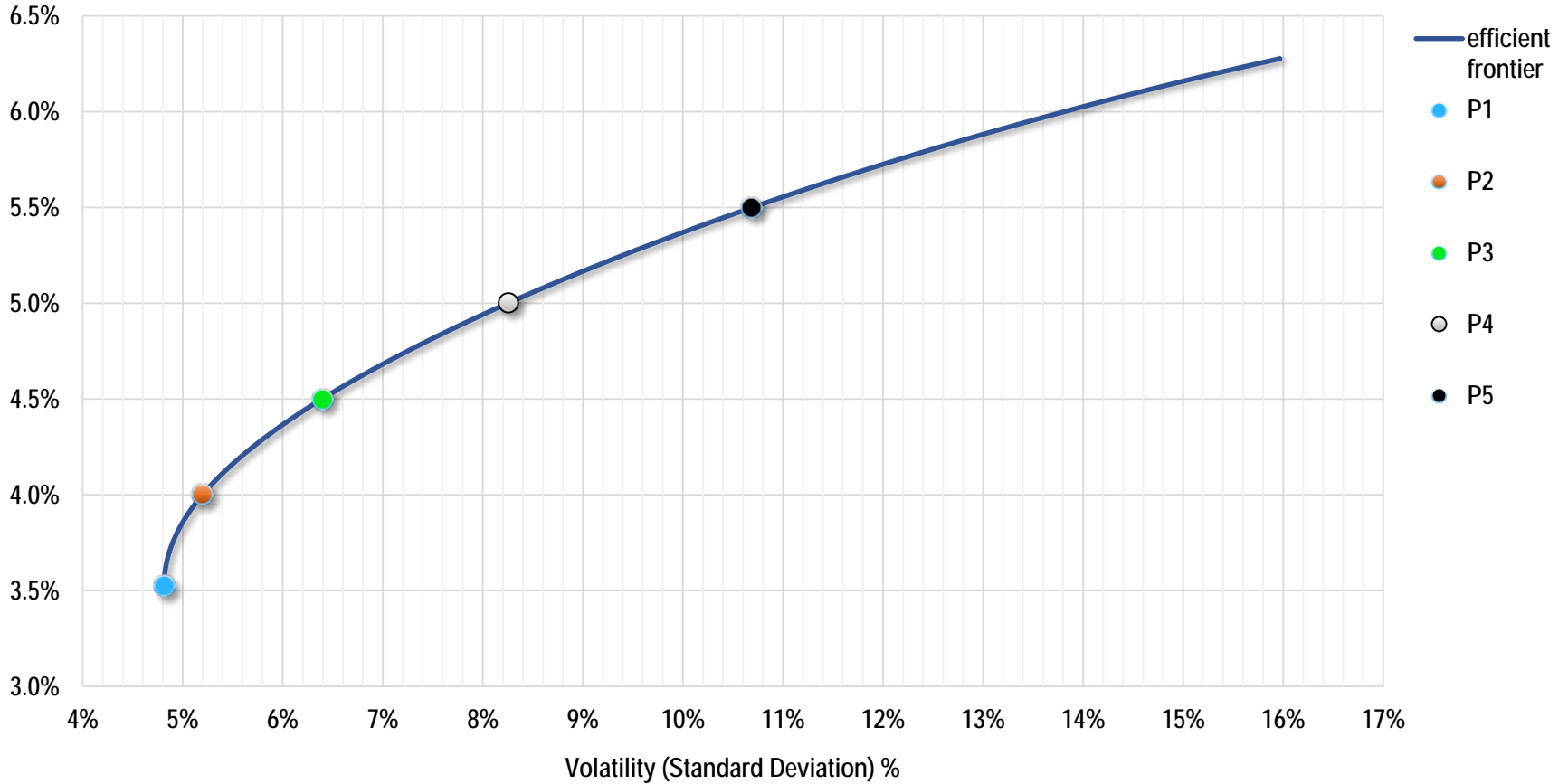
2019 Capital Market Assumptions <sup>1</sup>				Correlation				Constraints (%)	
Asset Class	Arithmetic Return	Geometric Return	Volatility (Std. Dev)	Global Equity	Fixed Income	TIPS	REITs	Floor	Cap
Global Equity	8.03%	6.70%	16.90%	1.00	-0.13	0.12	0.78	0%	100%
Fixed Income	3.46%	3.35%	4.75%	-0.13	1.00	0.75	0.15	0%	100%
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REITs <sup>3</sup>	7.20%	5.50%	19.00%	0.78	0.15	0.30	1.00	8%	100%
<b>U.S. Inflation Assumption: 2.10%</b>									



1. Assumptions of 1-10 year forecasted expected returns.
2. Treasury Inflation-Protected Securities (TIPS)
3. Real Estate Investment Trusts (REITs); REITs expected returns are estimated using a Dividend Discount Model.

# CEPPT - Efficient Frontier

Returns %



Note: Portfolios shown on the efficient frontier are net of fees of 25 basis points.

# CEPPT - Candidate and Recommended Portfolios

Asset Class Component		Asset Allocation of Candidate Portfolios				
		P1	P2	P3	P4	P5
Components	Global Equity	3%	14%	26%	40%	56%
	Fixed Income	84%	73%	61%	47%	31%
	TIPS	5%	5%	5%	5%	5%
	REITs	8%	8%	8%	8%	8%
Statistics	Expected Volatility (Standard Deviation)	4.8%	5.2%	6.4%	8.2%	10.7%
	Expected Compound Return (1-10 Years) <sup>1</sup>	3.5%	4.0%	4.5%	5.0%	5.5%
	Expected Tail Risk - Monte Carlo VaR <sup>2</sup>	4.0%	5.3%	7.7%	11.0%	15.3%
Strategy	Recommendation for Plans		CEPPT Strategy 2		CEPPT Strategy 1	



1. Expected Compound Returns shown are net of fees of 25 basis points.  
 2. Expected Tail Risk - Value at Risk (VaR) calculates the maximum loss expected (or worst case scenario), over a 1 year period given a 95% level of confidence.

## CEPPT - Recommended Benchmarks

<b>Asset Class</b>	<b>Benchmark</b>
<b>Global Equity</b>	MSCI ACWI IMI (Net)
<b>Fixed Income</b>	Bloomberg Barclays U.S. Aggregate Bond Index
<b>TIPS</b>	Bloomberg Barclays U.S. TIPS Index, Series L
<b>REITs</b>	FTSE EPRA/NAREIT Developed Liquid (Net)
<b>Liquidity</b>	91-day Treasury Bill (asset class utilized for operating cash)

## CEPPT - Recommended Asset Class Ranges

Asset Class	Range
Global Equity	+/- 5%
Fixed Income	+/- 5%
TIPS	+/- 3%
REITs	+/- 5%
Liquidity	+ 2%

### Objectives:

- Provide flexibility for changing market conditions between portfolio rebalances
- Reduce rebalancing frequency and costs
- Facilitate contribution & distribution activity

# CEPPT – Recommendation & Next Steps

## Recommendation

- Approve Portfolio P2 for CEPPT Strategy 2 (more conservative)
- Approve Portfolio P4 for CEPPT Strategy 1 (less conservative)
- Approve Recommended Benchmarks and Ranges
- Approve Investment Policy

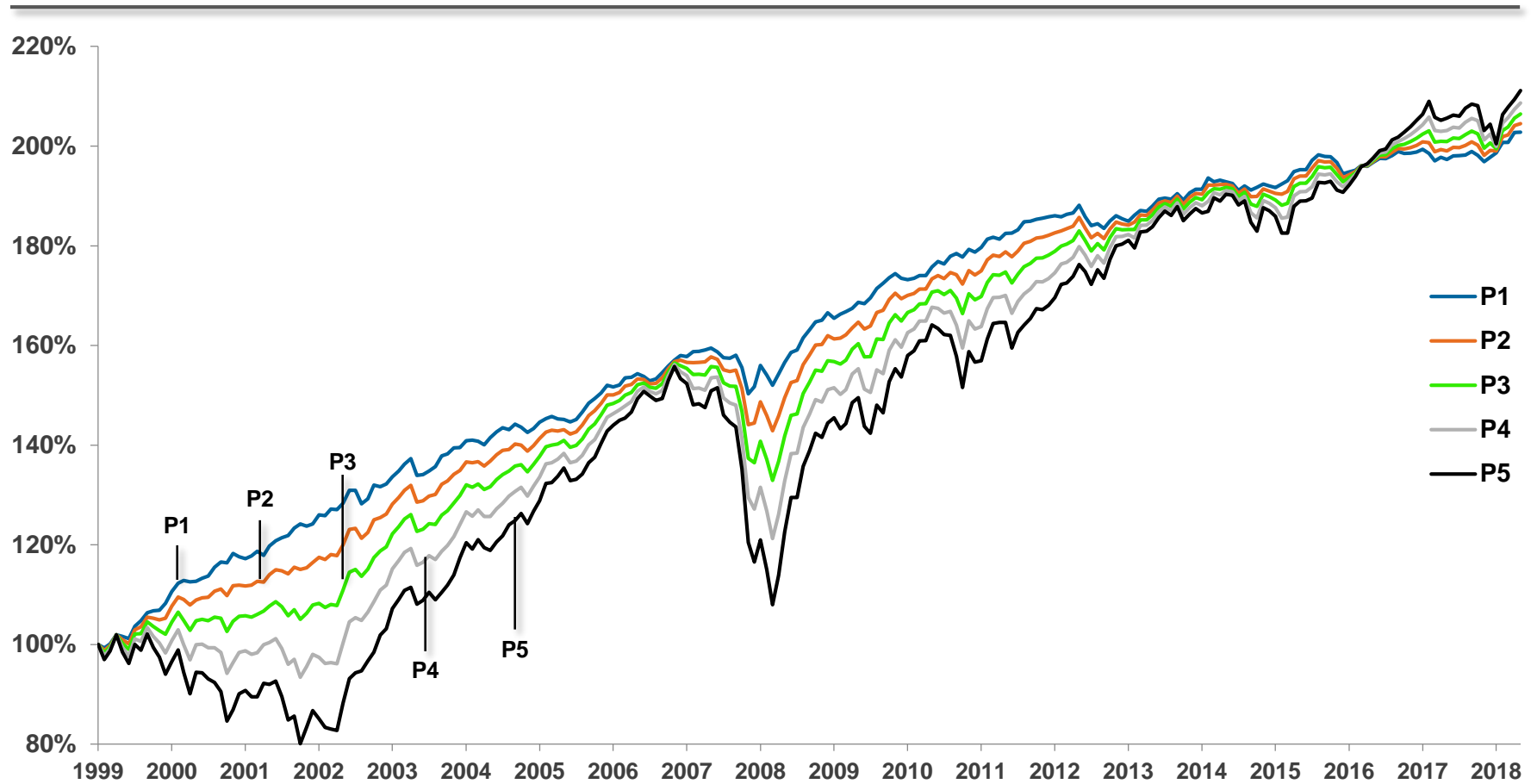
## Next Steps

- Complete setup work for the CEPPT
- Open CEPPT by 7/1/19
- Update Board in future Program reviews

# Appendix

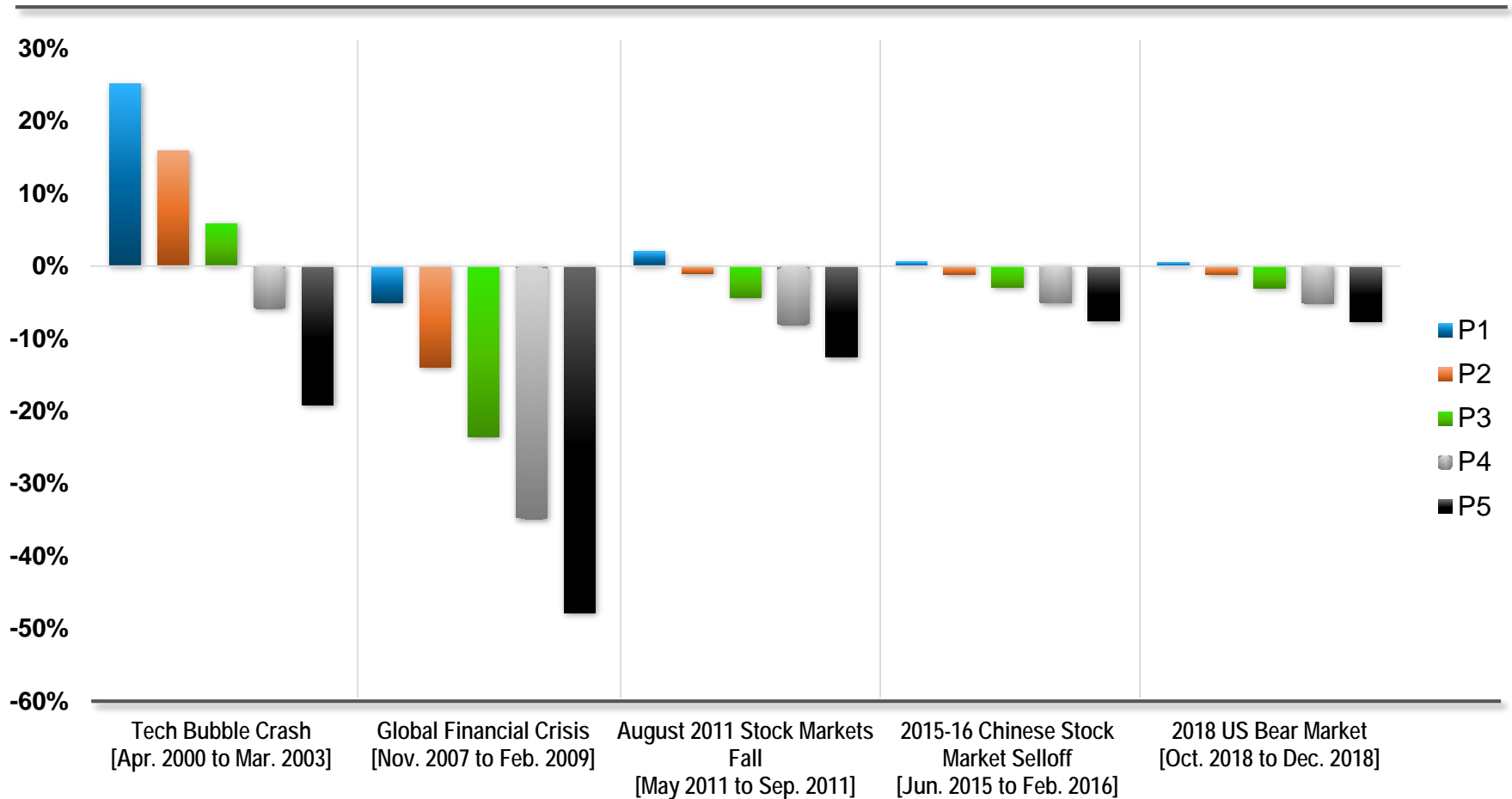
# Cumulative Returns Through Various Economic Conditions

Cumulative Return %



# Cumulative Returns (Drawdown) Under Historic Market Distress

Cumulative Return %



# CalPERS Investment Policy for the California Employers’ Pension Prefunding Trust

## Effective Date

This policy is effective as of June 24, 2019.

## Contents

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## Introduction

The California Public Employees' Retirement System (CalPERS) Total Fund Investment Policy, adopted by the CalPERS Investment Committee (Committee), sets forth CalPERS' overarching investment beliefs, purposes, and objectives with respect to all its investment programs.

This document sets forth the investment policy (Policy) for the policy portfolios (Portfolios) of the California Employers' Pension Prefunding Trust Fund (CEPPT or Fund). The design of this Policy ensures that investors, managers, consultants, and other participants selected by CalPERS take prudent and careful action while managing the Portfolios. Additionally, use of this Policy ensures sufficient flexibility in managing investment risks and returns associated with the Fund.

The Fund was established January 1, 2019 for public employers to prefund their required pension contributions. There are two separate Portfolios (Strategy 1 and Strategy 2) for the Fund, that provide employers a choice of asset allocation strategies.

This Policy should be read in conjunction with and is subject to applicable conditions contained within the CalPERS [Total Fund Investment Policy](#). This Policy shall also be managed to comply with all applicable Investment Office policies.

## Strategic Objective

The Fund seeks to offer to employers distinct investment alternatives given their specific liabilities and cash flow needs.

## Responsibilities

Details regarding various levels of responsibility for this Fund are provided in Appendix 1, Reporting to the Investment Committee, and Appendix 2, Investment Responsibilities.

## Investment Approach & Parameter

### A. Performance Objective and Benchmark

The benchmark for the Portfolios is specified in the CalPERS Total Fund Investment Policy benchmark appendix.

### B. Strategic Asset Allocation Process

A comprehensive Asset Allocation Strategy analysis shall be completed periodically that follows the schedule and process as described in the CalPERS Total Fund Investment Policy, Asset Allocation Strategy Section, and Reporting to the Investment Committee appendix. As further described in the Asset Allocation Strategy Section, the schedule may be altered to accommodate pending Board actions.

C. Restrictions, Prohibitions and Authorized Securities

Restrictions, Prohibitions and Authorized Securities of the Fund are governed by the CalPERS Total Fund Investment Policy for internal funds and defined in each Manager’s contract with CalPERS for external funds.

All transactions involving derivatives are governed by the CalPERS Total Fund Investment Policy, Global Derivatives and Counterparty Risk Section.

**Investment Constraints/ Limitations**

See Appendix 3 for Fund investment constraints/limitations.

**Glossary of CalPERS Specific Terms**

***Bold italicized*** terms appearing in the Policy are CalPERS specific in nature and are defined in the [CalPERS Specific Glossary of Terms](#).

**Policy Document History**

See Appendix 4 for historical details of Investment Committee adoption and revisions of this Policy.

**Appendices**

Appendix 1: Reporting to the Investment Committee

The following tables provide details regarding reporting to the Investment Committee:

1. Investment Office Staff
2. ***General Pension Consultant***

*Table 1: Investment Office Staff Reporting Responsibilities*

Ref #	Report Content	Frequency
1.	Staff shall provide a review that will include, but is not limited to, asset class allocations compared to Policy targets and ranges (as applicable), current market value, performance, and risk metrics.	No less than annually
2.	Staff shall report concerns, problems, material changes, and all violations of the Policy. These reports shall include explanations of any violations and appropriate recommendations for corrective action	At the next Committee meeting, or sooner if deemed necessary

*Table 2: General Pension Consultant Reporting Responsibilities*

Ref #	Report Content	Frequency
1.	The Consultant shall monitor, evaluate, and report on the performance of the Fund relative to the benchmarks and this Policy and other applicable CalPERS Policies.	No less than annually

**Appendix 2: Investment Responsibilities**

The following sections provide details regarding investment related responsibilities for the:

- Investment Committee
- Investment Office Staff
- **General Pension Consultant**
- **External Manager**

*Investment Committee Responsibilities*

1. Approve asset classes for investment and set a policy target allocation, permissible range, and benchmark for each asset class.

*Investment Office Staff Responsibilities*

1. All aspects of portfolio management, including monitoring, trading, analyzing, evaluating performance relative to the appropriate benchmark, and selecting and contracting with managers.
2. Provide individualized asset allocation strategy recommendations to the Committee, including selection of asset class benchmarks, and Policy targets and ranges.
3. Manage the asset class allocations of the Fund within Policy ranges approved by the Committee, in accordance with Policy guidelines.
4. Monitor internal and external managers in the implementation of, and compliance with, the Policy.
5. Develop and maintain investment procedures, program guidelines, and sub-program guidelines.

*General Pension Consultant Responsibilities*

1. Provide independent perspective and counsel to the Committee, to include routine communication with the Investment Office Staff and periodic reviews of processes and procedures.

*External Manager Responsibilities*

1. Manage the Fund in accordance with each manager's contract with CalPERS and the Policy.

2. Communicate and cooperate with Investment Office Staff and authorized third parties regarding the management of the Fund.

### Appendix 3: Investment Constraints/Limitations

#### *Portfolio Asset Class Allocation Targets & Ranges*

The following tables provide details regarding the asset allocation targets and ranges for each CEPPT strategy. Upon adoption of significant policy changes, Staff will implement the changes within a reasonable time period.

*Table 3.1: Allocation Targets and Ranges – Strategy 1, Effective June 24, 2019*

Asset Class	Policy Target	Policy Range Relative to Target
Global Equity	40%	+/- 5%
Fixed Income	47%	+/- 5%
Treasury Inflation-Protected Securities (TIPS)	5%	+/- 3%
Real Estate Investment Trusts (REITs)	8%	+/- 5%
Liquidity*	0%	+ 2%
<b>Total</b>	<b>100%</b>	

\*The Liquidity asset class is constrained to frictional/operational cash flows

*Table 3.2: Allocation Targets and Ranges – Strategy 2, Effective June 24, 2019*

Asset Class	Policy Target	Policy Range Relative to Target
Global Equity	14%	+/- 5%
Fixed Income	73%	+/- 5%
Treasury Inflation-Protected Securities (TIPS)	5%	+/- 3%
Real Estate Investment Trusts (REITs)	8%	+/- 5%
Liquidity*	0%	+ 2%
<b>Total</b>	<b>100%</b>	

\*The Liquidity asset class is constrained to frictional/operational cash flows.

#### *Target Tracking Error*

The Portfolios will be managed in a manner that minimizes any tracking error.

Appendix 4: Policy Document History

*Table 4: CEPPT Fund Policy History*

Date	Detail
YYYY-MM-DD	Approved by the Investment Committee.



**Steven J. Foresti**  
**Chief Investment Officer, Wilshire Consulting**

May 22, 2019

Mr. Rob Feckner  
Chair of the Investment Committee  
California Public Employees' Retirement System  
400 Q Street  
Sacramento, CA 95814

Re: CEPPT Affiliate Trust Asset Allocation Review

Dear Mr. Feckner:

You requested Wilshire's opinion as it relates to Staff's recommended asset allocation for the California Employers' Pension Prefunding Trust (CEPPT). Established by law in 2018, the CEPPT is the newest fund within CalPERS' Affiliate Investment Program (AIP) and provides prefunding flexibility to state and local public agency employers that sponsor a defined benefit pension plan. The Trust was established to provide diversified investment options that benefit from the scale and cost structure of CalPERS' AIP platform.

#### *The Process*

In preparing the CEPPT's asset allocation recommendations, Staff followed the same well-established process that was utilized when updating existing AIP fund asset allocations in 2018. As such, Wilshire believes that the methods, inputs and data used to perform the CEPPT's inaugural asset allocation study are appropriate and reasonable. While updated from a year earlier to reflect the current economic and market environment, the asset class assumptions used in the process (summarized on slide 8 of Staff's deck) are comparable to those developed and currently used by Wilshire in conducting asset-liability studies. The proposed asset class benchmarks/indexes (slide 11) are appropriate and representative of the intended risk characteristics within each investment segment.

Minimum constraints were included for TIPS and REITs to achieve a certain level of diversification in the alternative portfolios that might otherwise be underappreciated in

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a pure optimized framework. Wilshire is comfortable with these constraints given the instability of the underlying optimization assumptions, particularly as they relate to the inherent limitations of correlation estimates. This viewpoint also is consistent with Investment Belief 9 (i.e. Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error).

#### *Selection of Asset Allocation Target Portfolios*

As a result of its intended role, assets invested within the CEPPT are expected to be deployed over a short to intermediate investment horizon. Consistent with the objectives mandated by such a horizon, and as summarized on slide 7 of Staff's presentation deck, Staff has recommended a low and medium risk allocation mix to serve as the CEPPT's two investment options.

Wilshire believes that the recommended asset allocations with expected return/risk of 5.0%/8.2% for the medium risk option (CEPPT Strategy 1) and 4.0%/5.2% for the lower risk option (CEPPT Strategy 2) are appropriate for each fund's general objective. Staff's recommended rebalancing ranges, provided on slide 12, are also reasonable and accommodate an appropriate level of flexibility in managing market volatility while ensuring that asset class allocations remain consistent with strategy targets.

#### *CEPPT Investment Policy*

Wilshire has reviewed the Investment Policy for the CEPPT and believes that it is comprehensive and consistent with the established principles governing other related AIP funds (i.e. CERBT).

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

A handwritten signature in black ink that reads 'Steven J. Foresti'.

Steven J. Foresti