CalPERS

Finance and Administration Committee

Agenda Item 7c

September 14, 2021

Item Name: Review of PERF Actuarial Assumptions

Program: Actuarial Office

Item Type: Information

Executive Summary

In accordance with the CalPERS Board of Administration's Actuarial Assumptions Policy, the Actuarial Office (ACTO) has completed its statutorily mandated investigation (experience study) of the actuarial assumptions. The assumptions reviewed include both the economic assumptions and the demographic assumptions. This agenda item contains the preliminary recommendation for new actuarial assumptions as well as a draft copy of the experience study report. The final recommendation for the adoption of new actuarial assumptions by the board is currently scheduled to occur in November 2021.

One primary economic assumption, the rate of return on investments, cannot be determined until the board selects an asset allocation. Depending on the asset allocation selected, costs for the pension plan could be materially different. Aside from the rate of return on investment, all other recommended assumptions are not expected to have a material impact on contribution rates for most plans; contribution rates would vary positively or negatively by a minor amount. However, cost increases are expected for a few groups including the California Highway Patrol. If adopted, these proposed assumptions would become effective with the June 30, 2021 actuarial valuations. Contribution rates for the state and schools plans would be impacted in the 2022-23 fiscal year. Public agencies would be impacted in the 2023-24 fiscal year.

See Attachment 1 for a copy of the draft experience study report.

Strategic Plan

This item is presented as part of the regular ongoing workload of the Actuarial Office and supports the fund sustainability goal of the CalPERS 2017-2022 Strategic Plan.

Background

An experience study is a summarization of actual experience over a defined period and, along with future expectations, is used in setting actuarial assumptions. Experience studies which include reviews of both economic and demographic assumptions are required every four years under the Board's Actuarial Assumptions Policy and Government Code §20133. The previous experience study was completed in 2017. Note that actuarial standards of practice require the actuary to evaluate whether assumptions are reasonable for every valuation, so some change in assumptions could be recommended in the intervening years between mandated experience studies.

Not all demographic assumptions have the same relative impact on the results of the actuarial valuations (and hence on employer contribution rates). In almost all cases, retirement benefits make up most of the liabilities of a retirement system such as CalPERS. Accordingly, assumptions that affect retirement benefits will have more of an impact than assumptions that only affect death, disability, or termination benefits. Since retirement rates, salary increases and post-retirement mortality all affect the valuation of retirement benefits, these assumptions generally have a much greater impact on contribution rates than do other demographic assumptions.

Economic assumptions affect all benefits as well as the expected return on plan assets and tend to have a significant impact on contribution rates.

Analysis

COVID-19 Impacts

The current pandemic has had an impact on the operation of public retirement systems across the nation and the world. Based on the timing of this study, the member data used for our analysis, which runs through June 30, 2019, does not include impacts of COVID-19. Preliminary analysis of system experience since the beginning of the pandemic has shown demographic experience (e.g., retirements, deaths, etc.) did differ from the current actuarial assumptions in some areas. These differences will be more precisely quantified in actuarial valuations dated June 30, 2021 and beyond. At this time, we do not believe that the demographic impacts of COVID-19 will have a material impact on system experience going forward. Therefore, the experience analyzed through June 30, 2019 in this study is the primary driver of recommended assumptions to be used for future valuations.

Review of Economic Assumptions

Actuaries use certain economic assumptions to set a contribution schedule of employee and employer contributions designed to accumulate with interest to an amount sufficient to provide for all benefits expected to be paid to members and their beneficiaries. The economic assumptions used to determine liabilities and set contribution rates are price inflation, wage inflation, payroll growth and the discount rate assumption.

The summary of the result of the review of economic assumptions is as follows:

- **Price Inflation Assumption:** Currently, the Board has approved an annual price inflation assumption of 2.50%. Since the 2012 study, price inflation has consistently been under 2% per year. Going forward, market indicators today point to an expectation that future price inflation may be in the range of 2% to 2.50% per year. We recommend that the inflation assumption be decreased from 2.50% to 2.25% per year. This would place the assumption closer to the levels expected in the financial markets and predicted by economic models.
- **Wage Inflation Assumption:** Currently, the real wage inflation assumption is 0.25%. Historical data shows that national increases in total compensation have generally outpaced price inflation by between 0.50% to 1%. Even though this difference may be somewhat smaller in the public sector, we recommend increasing our assumed real wage inflation assumption to 0.5%. This results in a total wage inflation of 2.75%.
- **Payroll Growth Assumption:** The payroll growth assumption is used as the payment escalation rate when amortizing unfunded liability (of open plans) established before June 30, 2019 in accordance with the current Board policy. The current assumption is that the aggregated payroll of open plans will grow at a rate of 2.75% per year. Since we believe payroll will grow in the future at a rate roughly equal to wage inflation, we recommend keeping this assumption at 2.75%.
- **Discount Rate Assumption:** The primary economic assumption is the discount rate assumption. This is the sum of assumed price inflation and the expected long-term real rate of return. The current discount rate assumption is 7%. As part of the Asset Liability Management process, the board will consider various candidate investment portfolios presented by the CalPERS team. The board is expected to select the new portfolio during the November board meeting. This decision will then determine the discount rate.

Review of Demographic Assumptions

In addition to the economic assumptions, several demographic assumptions are used to set the contribution schedule of employee and employer contributions. These demographic assumptions include mortality rates, retirement rates, disability rates (both work and non-work related), and rates of salary increases due to seniority and promotion.

After performing the review of demographic assumptions, we recommend several changes to these assumptions. We believe the new assumptions will result in an improvement for predicting long-term future experience over the current assumptions.

Life expectancies in the developed world are improving and this is consistent with the data in the experience study. ACTO believes that proper funding of the system requires the continued inclusion of mortality improvements in the mortality assumption. This is consistent with best practices and changing actuarial standards.

The summary of the result of the review of demographic assumptions is as follows:

- **Mortality:** A significant change to the methodology used for projecting future mortality is being recommended in this study. However, the implementation of these changes is not expected to have a significant impact on valuation results. The current approach estimates mortality improvements for 15 years in the future and reflects those improvements in the current mortality rates. A more precise approach is to allow the estimated annual improvements in mortality to impact mortality rates one year at a time in the future. This is referred to as generational mortality improvements. In addition to implementing this change, the study recommends that mortality rates be adjusted for the assumption that members with higher retirement benefits have lower mortality rates than those with smaller benefits. Therefore, a set of benefit weighted mortality rates was created in order to reflect this observation.
- **Retirement Probabilities:** Some groups experienced lower numbers of retirements than expected including State Miscellaneous, Schools Pool and Public Agency Miscellaneous plans. Other groups such as CHP, State Peace Officers and Firefighters and certain public agency safety groups experienced more retirements than expected.
- **Salary scale:** Higher than expected salary increases were observed within certain groups including CHP, State POFF, State Miscellaneous, State Safety, and the Schools Pool. Other groups experienced slightly lower than expected increases including State Industrial and Public Agency County Peace Officers.
- **Disability Retirement:** Our analysis indicated that in general there have been fewer disability retirements for State Miscellaneous Female, State Industrial, State Safety, Schools and public agency members than expected based on the current assumptions. We are recommending slightly reduced non-industrial disability retirement rates for these groups. For all other groups, actual experience was generally close to expected.
- **Other assumptions:** Mixed results for other assumptions that have minimal overall impact on cost. These are described in detail in the experience study report.

See Attachment 1 for the draft Experience Study report detailing the development of all actuarial assumptions.

External Review of Experience Study

As in the prior experience study, an external actuarial audit is underway. The final audit report will be presented in November.

Impact on Employer Contribution Rates

The estimated impact of the recommended assumption changes on the total employer contribution rate and the total normal cost are listed in Attachment 2.

Budget and Fiscal Impacts

The experience study and review of assumptions was prepared internally and will be reviewed externally. Funding was already identified within existing budgetary resources.

Benefits and Risks

Actuarial assumptions determine the expected costs of the plan. The actual long-term costs of the plan will be revealed as the plan's experience is realized. Assumptions that align with future expectations are necessary if costs are to remain stable. Assumptions that are overly optimistic produce artificially low current costs but lead to significantly higher future costs. The opposite is true for assumptions that are overly pessimistic.

By adopting the proposed assumptions, CalPERS ensures that the resulting contribution requirements reflect, to the extent possible, the true cost of the plan under the actuarial methodology and policies adopted by the Board.

Attachments

Attachment 1 – Draft Experience Study Report

Attachment 2 – Impact on Contribution Rates

Attachment 3 – Review of PERF Actuarial Assumptions PowerPoint Presentation

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