CalPERS

Finance and Administration Committee

Agenda Item 7c

November 16, 2021

Item Name: Review of PERF Actuarial Assumptions

Program: Actuarial Office

Item Type: Action

Recommendation

1) Adopt new actuarial assumptions as presented in the Experience Study report to be effective with the June 30, 2021 actuarial valuations. Contribution rates due to changes in assumptions for the State and Schools will be impacted in FY 2022-23. Contribution rates for Public Agencies will be impacted in FY 2023-24.

2) Use the recommended assumption changes in all affected member calculations effective as follows:

   a) For service credit purchase applications postmarked on or after November 18, 2021.

   b) For retirement applications dated on or after November 18, 2021.

Executive Summary

In accordance with the board'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 economic and demographic assumptions. This agenda item contains recommendations for new actuarial assumptions, as well as a copy of the Experience Study report.

The Experience Study report does not provide analysis or a recommendation regarding the discount rate. This assumption is analyzed separately as part of the Asset Liability Management (ALM) process. The discount rate is set equal to the expected long-term rate of return on investments, which is dependent on the asset allocation adopted by the board. Depending on the asset allocation, costs for the pension plan could be materially different. Aside from the rate of return on investment, all other recommended assumption changes are not expected to have a material impact on contribution rates; contribution rates would vary positively or negatively by a minor amount. 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 FY 2022-23. Public Agencies would be impacted in FY 2023-24.

See Attachment 1 for a copy of the 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 interim 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.

Changes in economic assumptions generally have a greater impact on required contributions than changes in demographic assumptions. This is because these assumptions generally affect all benefits before and after retirement.

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 Other Than the Discount Rate

To perform actuarial valuations, actuaries use certain economic assumptions to set required contributions. The economic assumptions used by ACTO to determine liabilities and set contribution rates are price inflation, wage inflation, payroll growth and the discount rate.

A 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 2.30% 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 2.80%.

- **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 setting this assumption to 2.80%.

- **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 discount rate assumption used for the most recent actuarial valuations of CalPERS plans (as of June 30, 2020) was 7.0%. Since that valuation date, the PERF earned an investment return of 21.3% for the year ending June 30, 2021. This return resulted in a reduction to the discount rate from 7.0% to 6.8% as required by the CalPERS Funding Risk Mitigation Policy. 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

Under a Letter of Engagement, Gabriel, Roeder, Smith & Company (GRS) was retained to perform a comprehensive review of the 2000-2019 Experience Study. The scope of their review included price inflation, wage growth and payroll growth assumptions as well as the assessment of proposed rates for demographic assumptions.

Based on their review of the Experience Study, GRS believes that the proposed assumptions are reasonable, appropriate, and developed in accordance with generally accepted actuarial principles.

GRS suggested some areas in which adjustments should be considered. More detail on these alternatives and recommended technical changes can be found in Attachment 4. ACTO plans to consider these recommended technical changes in the next experience study.

See Attachment 4 for a copy of GRS' review of the Experience Study.

Impact on Employer Contribution Rates

The estimated impact of the recommended assumption changes on the total employer contribution rates and the total normal costs are listed in Attachment 2. Results have been provided under possible discount rates of 6.5%, 6.8%, and 7.0%.

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 – Experience Study Report

Attachment 2 – Impact on Contribution Rates

Attachment 3 – Review of PERF Actuarial Assumptions PowerPoint Presentation

Attachment 4 – Gabriel, Roeder, Smith & Company Review of Experience Study

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