Agenda Item 3a

February 18, 2014

ITEM NAME: Asset Liability Management including Actuarial Assumptions and Strategic Asset Allocation

PROGRAM: Actuarial, Investment and Financial Offices

ITEM TYPE: Action

RECOMMENDATION

Adopt the following:

1) Asset allocation Portfolio "A" for the Public Employees' Retirement Fund (PERF) assets (see table in Attachment 1). This is consistent with Staff's recommendation on the strategic asset allocation in Investment Committee agenda item number eleven.
2) New actuarial assumptions (including no change to the discount rate and 20 year mortality projection), as outlined in the experience study report (Attachment 2), to apply for actuarial valuations with an effective date on or after June 30, 2015 for the State plans and the Schools pool and for actuarial valuations dated on or after June 30, 2014 for Public Agencies. This will result in contribution rate changes first impacting the 2016-17 employer contributions.
3) Amortize the increase in actuarial liability as a result of the assumption changes in accordance with current Board policy, i.e. twenty year amortization with a five year phase in and ramp down.
4) Use the recommended assumption changes in all affected member calculations effective as follows:
   i) For service credit purchases under the present value method the new recommended assumptions will apply to all requests received by CalPERS on or after February 19, 2014.
   ii) For retirement applications, any application with a retirement date on or after February 19, 2014, will be subject to the new recommended assumptions.

EXECUTIVE SUMMARY

This agenda item represents the culmination of nearly two years of work on Asset Liability Management (ALM). This process included an examination of the risk/return characteristics of possible asset allocations as well as modeling the impact that these would have on the funding of the system. This process was conducted by the Investment Office, Actuarial Office, and Financial Office, and embodied an integrated view of assets and liabilities. It contains the final recommendation for the strategic asset allocation (which will also be considered by the Investment Committee) and actuarial assumptions, as well as recommendations on financing and implementation in benefits administration. Throughout the entire process, and particularly over the last two to three months, staff has engaged extensively with stakeholders to educate them on the process and the recommendations, and to obtain their input.

The recommendations include:

- relatively modest changes to the current asset allocation that will reduce the expected volatility of investment returns,
- more significant changes to the actuarial assumptions, and
- most importantly, inclusion of future mortality improvements in the actuarial assumptions.

The recommended assumptions are expected to increase contribution rates for most employers at a time when many of their budgets are already strained. In order to assist employers in preparing and planning for these changes, the agenda item recommends building the impact of the changes into the projected rates one year prior to implementing them in the rates. This means that the contribution increases would not take effect until FY 2016-17.

This agenda item also looks at alternative amortization schedules that could be adopted.

The independent actuary contracted to review the experience study (Cheiron) and the Board's fiduciary counsel (Reed Smith) will be available at the meeting to answer questions or provide input as requested by the Board.

STRATEGIC PLAN

This agenda item supports the Strategic Objective of funding the system through an integrated view of pension assets and liabilities which addresses Strategic Plan Goal A – to improve long-term pension and health benefit sustainability. This item further supports the Strategic Plan by providing employers and other stakeholders with thorough, risk-based information about the expected course and variability of future contribution rates. In alignment with these goals, this agenda item provides this transparency well in advance of the expected impact of the assumption changes on the contribution rates.

BACKGROUND

This agenda item represents the culmination of nearly two years of work on ALM that included extensive staff and Board discussions about various investment issues, including liquidity, Absolute Return Strategies, Global Equity market segments and currency. It also included the development of Capital Market Assumptions and an ALM model to permit an examination of how different asset allocations would impact the funding of the system including the level and volatility of contributions. Staff has also been working on an experience study to ensure that the assumptions used in our actuarial valuations and the funding of the system accurately reflect expected future experience.

This agenda item covers both the asset allocation and actuarial assumptions because there is a linkage between the asset allocation and the discount rate. The asset allocation is a key determinant in the expected long-term rate of return which in turn is a key element in determining the discount rate. However, the ALM process over the last two years has gone beyond the simple linkage described above. In the ALM process, we have examined the impact of the full range of possible investment results on the funding of the system, not just the expected return.

ANALYSIS

Asset Allocation and Discount Rate

During 2013, the Investment Committee provided feedback and direction on an array of parameters associated with the ALM process. As part of the February 2014 Investment Committee meeting, staff from the investment office will present three possible asset allocations. Details on the three asset allocation alternatives are included in Attachment 1

All three asset allocation alternatives have an expected long term blended return that support a discount rate assumption of 7.5%. Previous analysis performed by staff has shown that lower expected investment volatility results in better risk characteristics than an equivalent margin for adverse deviation. As a result and consistent with staff’s recommendation on the strategic asset allocation in Investment Committee agenda item number eleven, staff recommends the adoption of Portfolio “A”.

Experience Study and Review of Actuarial Assumptions

To perform actuarial valuations, actuaries use assumptions to set a contribution schedule of employee and employer contributions. These contributions are designed to fund each member’s benefits. Actuaries use economic and demographic assumptions to set the contribution schedule. Economic assumptions are price inflation, wage inflation, payroll growth and the discount rate. Demographic assumptions include for example mortality rates, retirement rates, disability rates (both work and non-work related), and rates of salary increases due to seniority and promotion.

The key results of the review of assumptions can be found in the experience study report in Attachment 2.

Economic Assumptions

As discussed above and outlined in the experience study report, staff is not recommending changes to economic assumptions. In the event the Board adopts an asset allocation that differs from the three alternatives provided in Attachment 1, staff would have to perform further analysis to determine whether or not the discount rate would need to be adjusted.

Demographic Assumptions

Staff is recommending several changes to the demographic assumptions. The proposed demographic assumptions would have predicted retirement, disability and salary experience much closer to the actual experience than the current assumptions. Staff feels that these new assumptions will be substantially better at predicting long-term future experience than the current assumptions.

Mortality Assumptions

Life expectancies in the developed world are continuously improving and this is consistent with the data observed in the experience study. Staff believes that proper funding of the system requires the inclusion of mortality improvements in the mortality assumption. This is consistent with best practices and changing actuarial standards. Not responding to these changes could lead to a requirement to qualify the valuation report with implications for our financial statements and the financial statements of participating employers.

While the data in the experience study shows even greater improvement in mortality than Scale BB, staff is recommending using a 20 year mortality improvement projection using Scale BB. This recommendation is composed of a 7 year static improvement projection to bring mortality data to the current valuation cycle and another 13 years to account for future improvements. Scale BB is the most current national standard mortality projection scale and is based on Social Security data. Given the data requirements needed to build a mortality improvement scale, staff feels that the use of a national standard table is preferable to developing a CalPERS specific table. .

Possible Alternative Assumption for Mortality Improvement

At the Board workshop on projecting mortality improvement held in October, there was considerable discussion about the level of future improvement to assume. As was discussed at that time, there is at least one consideration – the lower level of smoking in California – which could indicate that future improvements in mortality will be less in the future in California relative to the rest of the nation. In effect, smoking rates do not have as much room to fall so mortality improvements may be less.

As a result of two other issues discussed at the mortality projection workshop – an indication that mortality is improving faster amongst groups with higher levels of educational attainment and better access to health care and the higher rates of improvement experienced by the CalPERS covered population in recent years – the Actuarial Office is recommending a 20 year static projection using Scale BB.

However, if the Board believes that the recommended mortality improvement will overstate the amount of actual improvement achieved in the future, it could select a lower level of improvement than recommended. If the Board were to do so, the Actuarial Office would suggest using a 15 year mortality improvement projection using Scale BB.

Impact on Contribution Rates

Employer Rates

The estimated impact of the recommended assumption changes on the total employer contribution rate and the total normal cost are listed in Attachment 3. Note that the increase in unfunded liability resulting from the proposed assumption changes has been amortized in accordance with existing Board policy. The current Board policy states that the impact of changes in actuarial assumptions be amortized over 20 years with a 5 year phase-in at the beginning and a 5 year ramp down at the end of the 20 year amortization period. The demographics of each plan will dictate the actual impact to each plan. The ranges provided for public agencies in Attachment 3 are expected to capture about 90% of the public agency plans. The change in total normal cost would be one time impacts and are included in the change in total contribution rate.

The assumption causing the biggest impact on employer rates is the assumption for post-retirement mortality. Since the life expectancy of male members continues to increase at a faster pace than female members, safety plans, which tend to have a much higher proportion of male members, are affected more by this change than miscellaneous plans. The impact from the proposed change in post-retirement mortality is causing employer rates (after the end of the five year phase in) for most miscellaneous groups to increase by about 2.5% to 5.0% of payroll, while causing the employer rates for safety plans to increase by about 2.8% to 6.4% of payroll. Safety groups are also being impacted by the proposed changes to the salary scale assumptions. Other groups such as CHP and POFF are also impacted by the proposed changes to service retirement rates.

The estimated impact on employer rates from the recommended assumption changes, but based on 15 years of mortality improvements instead of 20 years are listed in Attachment 5.

The rates illustrated in the attachments represent impacts based on data and valuation methods and procedures as of June 30th, 2012 for State and Schools plans and as of June 30th, 2011 for Public Agencies. Note that the final impact on contribution rates for the State plans and Schools pool will be known when the Board approves the 2016-17 contribution rates in early 2016. The final impact on 2016-17 contribution rates for public agencies will be known when the Actuarial Office has completed the June 30, 2014 actuarial valuations for all employers in the summer/fall of 2015.

Member Rates

With the enactment of the Public Employees' Pension Reform Act of 2013 (PEPRA) new benefits were put in place for new public employees in California hired after January 1st, 2013. PEPRA requires that all new public employees in California be covered by one of the four benefit formulas created by PEPRA. In addition, PEPRA requires all new PEPRA members to contribute at least 50 percent of the total annual normal cost of their pension benefit as determined by the actuary. Last year, staff determined the required contribution rate for PEPRA members based on the actuarial assumptions in place at the time. PEPRA contains a provision that states when the total normal cost has changed by more than 1% of payroll the member contribution rate must be adjusted.

Under the proposed assumptions, the total normal cost for miscellaneous employees is expected to increase by less than 0.5% of payroll and should not result in an increase in member rate for miscellaneous employees. The total normal cost for most safety plans is expected to increase between 0.1% and 1.6% of payroll. As a result, the proposed assumption changes are expected to result in an increase in contribution rates for safety PEPRA members ranging in most cases from 0% to 0.75% of salary. Refer to Attachment 4 for details on the impact of the proposed assumption change on normal cost for the PEPRA members.

The proposed assumptions will also result in an increase in total normal cost for classic members. Even though these increases in normal cost will not trigger an automatic adjustment in member contribution rates, staff expects that over time, member contribution rates may increase through the bargaining process or as a result of employer imposing higher member contribution rates as allowed under Government Code Section 20516.5.

Possible Alternative Amortization Schedules

The recommended changes to the actuarial assumptions will have a significant impact on participating employers at a time when their budgets are already strained. Concern has been raised that the contribution increases may be too much for some employers to bear. To address this concern and the impact it could have on the long-term sustainability of the system, staff has looked at two alternative amortization schedules that could be adopted. These are shown for the recommended assumptions. Staff has also included the alternative financing options for the alternative mortality assumption (i.e., 15 years of mortality projections).

The first alternative is to smooth the impact over seven years instead of the five years prescribed by current Board policy. Under this alternative the increase in actuarial liabilities is amortized over 20 years. While it results in a more gradual increase than current policy, it has the disadvantage of resulting in a higher peak rate due to the delay in increasing contributions.

The second alternative is to amortize the increase in liability over 30 years rather than 20 years provided by current Board policy. Under this alternative the contribution increases are phased in over 5 years. While this alternative results in a more gradual increase and a lower peak rate, it extends the period over which the increase will have to be paid resulting in much higher overall contributions.

Attachment 6 shows the impact on employer rates with the two alternative amortization schedules

New Assumptions Impact on Funding Risk Measures

Staff examined three funding risk measures in relation to these changes: the probability that, at any point over the next thirty years, a plan's funded status will fall below a certain percentage, the contribution rate will increase above a certain percentage, and the contribution volatility will exceed a level specified.

For all plans analyzed, the risk of low funded status and the risk of high contribution levels increased. For example, for the State Miscellaneous plan, the probability of falling below 50% funded at any point over the next thirty years is about 44%, whereas previously it was believed to be about 41%. For contribution rate levels, the probability of employer rates going above 35% of payroll any point over the next thirty years is about 60%, significantly higher than previously calculated.

While the risk measures seem to show that risk has increased by changing the assumptions, it is important to understand that this risk is already in the system. The ALM model used to measure funding risk does not model losses caused when demographic experience does not match the assumptions. This experience study provides the opportunity to better calibrate the ALM model to better reflect expected future experience.

Implementation of New Assumptions

If approved, staff recommends that the new actuarial assumptions be used to set the 2016-17 contribution rates for all employers. The rates would be used for the first time in the June 30, 2015 actuarial valuations for the State plans and the Schools pool and in the June 30, 2014 actuarial valuations for the public agencies.

The new actuarial assumptions will affect certain member calculations. These include the cost of any service purchased under the present value method (for example military service purchase) and any optional form of benefit elected by a member. Assuming the Board adopts the new actuarial assumptions at the February Board meeting, members retiring on or after February 19, 2014, would be subject to new optional settlement factors based on the new assumptions.

The implementation of the new assumptions will generally benefit members upon retirement because in most cases members will see a smaller reduction in benefit when selecting an optional form of retirement. Note that the assumption changes will result in an increase in cost for members to purchase service.

For service credit purchases under the present value method, any request faxed or delivered to CalPERS on or after February 19, 2014, would be based upon the new assumptions.

External Review of Experience Study

As was done for the last experience study, staff retained the services of an actuarial firm, in this case Cheiron Inc., to perform a comprehensive review of this experience study.

Based on their review, Cheiron believes that the proposed assumptions are reasonable, appropriate and were developed in accordance with generally accepted actuarial principles. As part of their review, Cheiron suggested some technical changes in calculating the various demographic rates as well as alternatives to mortality projections. However staff did not believe that these changes or alternatives would make a material difference on the impact of the proposed assumptions. The Actuarial Office plans to implement some of the recommended technical changes in the next experience study. With respect to mortality projections Cheiron believes using generational mortality improvements to project future mortality levels would be preferable. However, given that the CalPERS valuation systems do not currently have the ability to accommodate a generational mortality table, the recommended 20 year mortality projection is reasonable.

The principal author of the review will be present at the Board meeting to answer any questions Board members have regarding the review of the experience study or the recommended assumptions. See Attachment 7 for a copy of the external review of the experience study.

Flexibility for Employers

Staff has received feedback from employers that indicates that some of them need some additional flexibility with respect to their future contributions. While some employers focused on the ability to accelerate the payments and reduce the unfunded liability, others requested either a longer smoothing period or a longer amortization period be permitted on an optional basis. Staff received this feedback both in the form of informal conversations with employers, as well as in a formal communication from the League of Cities. (See Attachment 8)

In addition, on February 5th, the Governor of California wrote to the Board president requesting that the assumption changes be reflected immediately and the additional cost be fully phased-in within three years. (See Attachment 9)

Under current Board policy, employers may pay more in contributions than the minimum contribution rate set each year. If an employer wanted to pay down the unfunded liability faster than required by the Board-established rate, staff would provide to the employer the impact on the employer rate to pay down the cost faster. We note that the State has already done this. In both the 2012-13 and current fiscal years, the State has elected to make contributions in excess of the required minimum. Many public agencies have also made additional contributions. No formal action by the Board is necessary to enable this option.

Staff has looked at the option of giving employers some choice with respect to the phase-in period. Alternative phase-in periods could be accommodated but would be a variance from current Board policy and would require Board approval. (For example the board could adopt a five year phase in, but allow the option for a seven year phase in, or for a seven and a three year phase in.) If the Board wished to give employers the option to elect a longer phase-in period, staff would support the League's suggestion that a governing body resolution be required.

The ability to implement the assumption changes earlier is more complex. The earliest it would be possible to implement the recommended assumption changes would be for the June 30, 2013 valuations, setting the 2014-15 contribution rate for the State plans and schools pool and the 2015-16 contribution rates for public agencies. It would also be possible to implement the assumption change earlier for just the State plans. Due to system limitations, the assumptions will have to be implemented at the same for all public agencies.

BUDGET AND FISCAL IMPACTS

The experience study and review of assumptions was prepared internally and was reviewed externally. Funding was already identified within existing budgetary resources. If adopted by the Board, the recommended assumption changes would result in increased contributions to the system.

BENEFITS AND RISKS

This agenda item proposes relatively modest changes to the current asset allocation and more significant changes to the actuarial assumptions. If adopted, these changes will result in a modest reduction in the expected volatility of the investment returns and generally higher employer contribution rates. This will help to stabilize the funding of the system and reduce the volatility of employer contributions. While the changes will result in a reduction in the reported funded status, they will make it less likely that actuarial losses will occur in the future and hence protect the funded status in the long run.

The contribution increases that will result, should the proposed changes be adopted, will put additional strain on employers' financial situations. However, by reducing the likelihood of future actuarial losses, the proposed changes will reduce the chance of unexpected, and larger, future contribution increases that could result in a significantly greater strain on employer budgets. By providing significant advance notice of the contribution rate increases and by phasing the increases in gradually, the recommendations attempt to give employers sufficient time to adjust their budgets and hence minimize the strain on employers.

There is a risk that the assumption changes recommended will prove to be either insufficient or excessive and that future experience will show that they need further modification. However, that risk is minimized by ensuring that the assumptions are reviewed in a regular and disciplined manner – as is required by current Board policy. Other benefits and risks associated with this agenda item are discussed in the analysis section of this agenda item.

ATTACHMENTS

Attachment 1 – Strategic Asset Allocation Alternatives
Attachment 2 – Experience Study Report
Attachment 3 – Contribution Rate Impacts of Recommended Assumptions using Current Board Amortization Policy
Attachment 4 – Impact on PEPRA Normal Cost
Attachment 5 – Contribution Rate Impacts of Recommended Assumptions with Alternative Mortality Assumption using Current Board Amortization Policy
Attachment 6 – Contribution Rate Impacts under Other Financing Options
Attachment 7 – Independent Review of Experience Study by Cheiron Inc.
Attachment 8 – Letter from the League of Cities
Attachment 9 – Letter from the Governor of California

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