Agenda Item 9

April 16, 2013

ITEM NAME: Amortization Periods and Smoothing Methods for Retirement Trust Funds (Second Reading)

PROGRAM: Actuarial Office

ITEM TYPE: Action

RECOMMENDATION

Amend existing actuarial smoothing and amortization policies to improve the soundness and sustainability of the system by:

Adopting amendments to the following existing actuarial policies as shown in the attachments:

- Board Resolution No. ACT-96-05E (Rev.) regarding amortization and smoothing policies
- Board Resolution No. 05-02-AESD (Rev.) regarding smoothing employer contribution rates
- Board Resolution No. 95-05C (Rev.) regarding the actuarial asset valuation method effective with the June 30, 2013 actuarial valuation

Rescinding the following actuarial policy:

- Board Resolution No. 05-01-AESD (Rev.) regarding the employer rate stabilization policy

In order to ease the impact of this proposal, it is phased in over six or seven years with no impact in the first year on State and School contribution rates and no impact in the first two years on public agency contribution rates.

EXECUTIVE SUMMARY

This item is a key element to improving the long-term pension and health benefit sustainability, which is the first goal in our 2012-2017 Strategic Plan and is also an important initiative in our 2012-2014 Business Plan. The changes proposed in this agenda item would significantly improve the funding and enhance the long term sustainability of the fund.

Concerns about the current actuarial smoothing policies have arisen in a number of different contexts over the last several years. Some of these concerns surfaced as a result of the market failure and resulting investment losses in 2008-09, which led to a significant decrease in funded status. Following the market failure, and in combination with other factors, the overall funded status dropped to 60.8 percent.

In 2009 and 2010, the Board of Administration (Board) adopted modifications to the smoothing methods that addressed, in a temporary or limited fashion, some weaknesses in the smoothing methods previously adopted in 2004.

Additional concerns were raised as a result of the insights gained from the asset liability management framework recently developed by staff. This is a new powerful tool to look at the funding of the system from both the asset and liability sides. It has provided the organization with a unique and insightful look at the funding of the system. In particular, the framework allowed us to identify a significant probability of being at very low funded levels at some point in the future and a disturbingly high probability of large single year increases in employer contribution rates.

As of June 30, 2012, the overall funded status is expected to be about 70 percent. Under the existing actuarial policies, the model indicates that there is between a 26 and 34 percent chance of falling below 40 percent funded at some point in the next 30 years, depending on the plan. In addition, there are relatively high probabilities of plans experiencing significant year to year increases in employer contribution rates. For example, a sample public agency safety plan has more than a 60 percent chance of seeing a 7 percent of pay increase in its rate in a single year at some point in the next 30 years.

The proposed changes would modify the smoothing approach used by CalPERS and would shorten smoothing and amortization periods. Currently, smoothing of employer contribution rates is achieved through the use of an asset smoothing method and an actuarial value of assets along with amortization methods. Going forward, staff proposes using a method known as “Direct Rate Smoothing” combined with amortization methods.

Over time, the proposed methods are designed to improve funding levels and help reduce the overall funding level risk. The proposed methods are expected to result in higher volatility in employer contribution rates in normal years but much less volatility in employer contribution rates in years where extreme events occur. The proposed methods will result in an increased likelihood of higher peak employer contribution levels in the future but not significantly increase average contribution levels. The median employer contribution rate over the next four years is expected to be higher as well. But in the long-term, better funded levels should result in lower employer contributions.

The proposed changes will impact employer contribution rates for the State plans and the Schools pool starting with fiscal year 2014-15 and will impact public agencies starting with fiscal year 2015-16. This delay will allow the impact of the changes to be built into the projection of employer contribution rates and will thus afford employers with an additional year or two to adjust to the change.

As requested during the first reading, staff has analyzed alternatives to further phase-in the impact of this change in method over time. As described in the analysis, the impact of the additional time to phase in the impact on rates was modest and staff is recommending the same approach that was recommended in the first reading.

STRATEGIC PLAN

This review of our actuarial policies is a cornerstone in our plan to accomplish Strategic Plan Goal A: Improve long-term pension and health benefit sustainability. The first objective under that strategic goal is to fund the system through an integrated view of pension assets and liabilities. To implement this goal, the 2012-14 Business Plan provides that CalPERS will update its actuarial amortization and smoothing policies. The changes we are recommending today are the culmination of many months of work with the Board, staff and stakeholders and are designed to implement this commitment to ensure the integrity and soundness of the fund.

BACKGROUND

Over the past 18 months the CalPERS Actuarial Office has engaged in multiple policy reviews to strengthen the sustainability of the Fund. During this time the Board, staff and stakeholders have discussed, reviewed or approved a number of different policies, timelines and rates to enhance the long-term health of the Fund.

In October 2011, the Actuarial Office informed members of the Benefits and Program Administration Committee that staff would review all Board actuarial policies in a revolving three year cycle. The purpose of these reviews is to recommend changes, if necessary, to ensure all actuarial policies are current, that they are consistent with the Board's fiduciary duties and with CalPERS mission and core values.

Staff's review comprised four phases. First, staff reviewed the policies regarding funding methods and assumptions. The review was completed in December 2011. Next, staff reviewed policies related to the risk pooling structure. The review was completed and the Board adopted the changes in June 2012. In the current phase, staff is reviewing and making recommendations regarding existing smoothing and amortization policies. The fourth phase will consist of a review of policies related to plan termination is scheduled for later this year.

The need to review, and possibly change, these smoothing and amortization policies has been part of many public discussions and documents. In early 2012 the Business Plan included the initiative to update these amortization and smoothing policies, just as the Strategic Plan that was adopted in August 2012 included the initiative to manage and asses funding risk through an asset liability management framework to guide actuarial policies.

Additional discussions took place including at the January 2013 Board Offsite meeting, at a Board Workshop in February 2013 and at the first reading of this item in March 2013.

Staff has endeavored to keep our stakeholders and interested parties informed during the development of these recommendations. Concerns with our current funding methods, and the review of the actuarial assumptions, have been addressed in several Pension and Health Benefits Committee agenda items, Board offsite meetings and workshops, as well as in annual reports on funding levels and risks. In addition, staff members have been highlighting the review in various speaking presentations and forums across the state.

ANALYSIS

Concerns with the Current Smoothing Methods

The smoothing and amortization methods adopted by the Board in 2004 were designed to reduce volatility in employer contribution rates. They have accomplished this goal very well in normal years since their adoption.

However, since that time, a number of concerns have developed:

- The use of an actuarial value of assets corridor can lead to significant amount of volatility in extreme years. This was demonstrated by the investment losses in the 2008-2009 fiscal year which necessitated a temporary change in the asset smoothing method to avoid very large increases in employer contribution rates.
- The use of long and rolling smoothing periods and long and rolling amortization periods results in slow (in some cases, very slow) progress toward being fully funded. A low funded status increases the risk that funding levels will deteriorate to very low levels and increases the risk that efforts will be made to reduce benefit levels for current or future members. A low funded status also reduces the flexibility to respond to future financial shocks (either to investment returns or to employer revenues) and hence increases the risk to employers. Allowing a low funded status to continue for a very long period means that members and employers are exposed to these risks for longer.
- The use of an actuarial value of assets inhibits transparency as it results in the disclosure of two different funded statuses and unfunded liabilities in actuarial valuation reports. Having two funded statuses can lead to confusion and misuse even if the report properly explains the difference between the actuarial value of assets and market value of assets.
- The use of rolling smoothing and amortization periods inhibits transparency as it is very difficult for employers to predict when contribution rates will peak and how high they will be at that point. This is true even though our valuation reports provide for a five year projection of employer contribution rates.

- The use of rolling amortization and asset smoothing periods will result in unnecessary additional work as a result of the new accounting standards. If these methods are not changed, the new accounting standard would require a liability calculation based on a very slightly lower discount rate. While this would lead to accounting information that is not materially different than the information used for funding purposes, it could result in significant confusion.
- The use of longer amortization and smoothing periods has increasingly been called into question within actuarial organizations. For example, the California Actuarial Advisory Panel released a report on funding policies which suggests that longer, rolling amortization methods are not recommended.

Staff believes that the current methods have between a 26 and 34 percent chance of falling below 40 percent funded at some point in the next 30 years, depending on the plan. In addition, there are relatively high probabilities of plans experiencing significant year over year increases in employer contribution rates. The sample public agency safety plan has more than a 60 percent chance of seeing a 7 percent of pay increase in their rate in a single year at some point in the next 30 years. This suggests that changes are appropriate. Furthermore, staff believes that keeping the current methods in place will increase the funding risk of the system to a level that the Board has previously considered unacceptable.

Methods Being Considered
At the March Board meeting, , the CalPERS Board approved a first reading in which staff recommended a method that would smooth employer contribution rates over a 5 year period using direct rate smoothing and shorter, fixed amortization periods. However, the Board also directed staff to analyze additional alternatives; ones that would reduce the probability of falling below 50 percent funded and others that would result in a lower impact to employer contribution rates in the short term.

At the first reading, there was concern expressed due to the probability of falling below 50 percent funded at least once over the next 30 years being greater than 50 percent for most of the plans shown. This was true under each of the five methods analyzed for the first reading. The Committee directed staff to analyze what method change would be needed so that there would only be a 20 percent, 30 percent or 40 percent chance that the State Miscellaneous plan would fall below 50 percent funded at any time in the next 30 years. Please refer to Attachment 1 for more information on the changes in methods that would be needed to accomplish these goals. As a result of the significant increase in employer contribution volatility and level that would result from making these changes, staff is not recommending any of the alternative methods shown in Attachment 1.

Another concern that was expressed was that the proposed method might result in too much additional stress being placed on employers. Staff has analyzed two alternative methods that result in smaller increases in contribution rates in the near

term. Below is a table comparing the current and proposed method with these two alternative methods. The proposed method is Method 5 from the March agenda item which was the method the Board adopted as a first reading. Alternative 1 and 2 are methods that would result in a smaller impact in the near term on employer rates but with a higher long term expected employer contribution rate.

	Asset Smoothing Period	Actuarial Value of Assets Corridor	Direct Rate Smoothing Period	Amortization Period of Gains and Losses
Current Method	15 Years (Rolling)	80%-120% of Market Value of Assets	N/A	30 years (Rolling)
Proposed Method[1]	N/A	N/A	5 Years	30 Years (Fixed)
Alternative 1	N/A	N/A	5 or 7 Years[2]	30 Years (Fixed)
Alternative 2	N/A	N/A	5 or 10 Years[3]	30 Years (Fixed)

The remainder of this agenda item will focus on a comparison between the four methods shown in the table above.

Comparison of Smoothing Methods

The criteria used to evaluate each method are the same as those used in the March agenda item with some minor changes. The criteria are:

- The impact on the preservation/advancement of funded status
- The impact on the estimated volatility of the annual change in employer contribution rates
- The impact on the estimated average employer contribution rate
- The likelihood of high levels of employer contribution rates in any given year

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[1] The proposed method is a direct rate smoothing method designed to pay gains and losses over a fixed 30 year period with a 5 year ramp up period at the beginning and a 5 year ramp down at the end of the amortization period. This method is equivalent to a method using a 5 year asset smoothing period with no actuarial value of asset corridor and a 25 year amortization period for gains and losses.

[2] Alternative 1 is a direct rate smoothing method designed to pay gains and losses over a fixed 30 year period with a 7 year ramp up at the beginning and a 7 year ramp down at the end of the amortization period for gains and losses recognized in the June 30, 2013 actuarial valuations. For actuarial valuations beyond that date, the ramp up and ramp down period will be 5 years.

[3] Alternative 2 is a direct rate smoothing method designed to pay gains and losses over a fixed 30 year period with a 10 year ramp up at the beginning and a 10 year ramp down at the end of the amortization period for gains and losses recognized in the June 30, 2013 actuarial valuations. For actuarial valuations beyond that date, the ramp up and ramp down period will be 5 years.

- The likelihood of large changes in employer contributions from year-to-year

To evaluate the four methods, staff selected the same six plans as used for the first reading and performed 1,500 projections for 50 years each based on randomly simulated investment returns. The funded status and expected required employer contributions were estimated for each projection. A summary of the results of these projections and the impact of the four methods being analyzed can be found in attachments to this agenda item.

Attachment 2 compares the four methods and how they impact the funded status over time for each of the six selected plans. The first set of tables in Attachment 2 provides the projected median funded status in 10, 20 and 30 years for six different plans. The second set of tables in Attachment 2 provides the probability of each plan falling below a certain funding level once over the next 30 years. For purposes of comparing the four methods, 30 percent funded, 40 percent funded and 50 percent funded were selected. These tables now also include the probability of the funding status reaching 100 percent and 120 percent at least once over the next 30 years.

As can be seen in Attachment 2, the proposed method as well as alternatives 1 and 2 does much better when looking at the impact on the funded status. The proposed method which also uses the shortest direct rate smoothing period does slightly better than alternative 1 and 2 when it comes to improvements in funded status.

Attachment 3 compares the four methods and how they impact the estimated volatility of the employer contribution rates and the estimated average employer contribution rate for each of the six selected plans. The standard deviation of the expected annual change in employer contribution rate was used as a measure of rate volatility. As can be seen in Attachment 3, the proposed method as well as alternatives 1 and 2 would result in slightly more volatility in rates compared to our current method. The proposed method which performed best when looking at funded status produces the most volatility in contribution rates but not by a material difference.

Attachment 4 compares the four methods by looking at the likelihood of seeing high levels of employer contribution rates over the next 30 years. For purposes of comparing the four methods, contribution levels of 30 percent, 35 percent and 40 percent of payroll were selected for the comparison for miscellaneous plans and 50 percent, 55 percent and 60 percent of payroll were selected for safety plans. As can be seen in Attachment 4, the current method produces the lowest probability of seeing high employer contribution rates. This is expected since the current method used long amortization and smoothing periods as well as relying on rolling rather than fixed periods. Attachment 4 also shows that alternatives 1 and 2 have a slightly higher probability of causing higher employer contribution rates over time. This is due primarily to the fact these methods are designed to pay off the existing unfunded

liabilities over 30 years starting with lower contributions and ultimately reaching a higher level of employer contribution rates than under the proposed method.

Attachment 5 compares the four methods by looking at the likelihood of seeing large year-to-year increases in employer contribution rates over the next 30 years. For purposes of comparing the four methods, the likelihood of annual increases in employer contribution rates of 3 percent of payroll, 5 percent of payroll and 7 percent of payroll were selected for the comparison for miscellaneous plans and 5 percent, 7 percent and 9 percent of payroll were selected for safety plans. As can be seen in Attachment 5, the current method that uses an actuarial value of asset corridor in combination with a longer asset smoothing period has the highest probability of seeing large increases in contribution rates in a single year. The proposed method as well as Alternatives 1 and 2 has lower probabilities of seeing large year-to-year increases in rates because they do not require the use of an actuarial value of assets corridor.

Attachment 6 compares how the four methods would impact the employer contribution requirements over the next 10 years by looking at the median employer contribution rate from the 1,500 projections performed by staff. As can be seen in Attachment 6, the proposed method has the highest median employer contribution rate for the first 5 years. Alternative 1 has a higher median employer rate starting in year 7. In year 10, Alternative 2 has the highest median employer contribution rate of all four methods. This higher contribution rate is expected to continue for many years.

Implementation

This is the second reading for the adoption of the proposed changes to smoothing and amortization methods. If the proposed methods are adopted by the Board, these methods will be used for the first time to set employer contribution rates in the June 30, 2013 actuarial valuations that will be performed in 2014. These valuations will be used to set employer contribution rates for fiscal year 2014-15 for State and School employers and for fiscal year 2015-16 for public agencies. In the June 30, 2012 actuarial valuations that will be prepared this year, staff will use the new methods for the calculation of the projected employer contribution rates that we provide in our valuation reports to help employers budget for the future.

Staff reviewed all existing smoothing and amortization Board policies to determine if any changes would be necessary other than the ones that would be needed if the proposed method is adopted by the Board. Various minor changes were identified to the four existing policies in addition to the significant changes needed to implement the proposed method. No additional changes have been made to the Board policies when compared to the proposed revisions presented in March.

Staff has received an inquiry from a member of the public as to the treatment of the change from using an actuarial value of asset to using the market value of assets. Is this to be treated as an asset loss that will be amortized over 30 years or as a method change and amortized over 20 years? For clarification, it is staff's intention to treat this as an asset loss, not a method change. Therefore, this change in unfunded liability will be subject to the 30 year amortization with the five year ramp up/down applicable to gains and losses as per the proposed changes to Board Resolution No. ACT-96-05E.

The proposed method changes would not impact member calculations, such as optional form conversions and service purchases. The proposed method changes will also not impact the total normal cost of any plan.

Recommendation

Staff recommends that the Board adopt the proposed contribution rate smoothing and amortization method. This includes the use of a five year direct rate smoothing period and amortization periods as follows:

- 30 year amortization period for gains and losses with a fixed rather than rolling period. The amortization would have a 5 year ramp up of rates at the start and a 5 year ramp down at the end.
- 20 year fixed amortization period for assumption and method changes with a 5 year ramp up and 5 year ramp down.

Staff believes that changes to the smoothing and amortization methods are needed. The changes proposed would significantly improve the funding of the system and enhance the long-term sustainability of the system.

To implement the new smoothing policies, staff is recommending amendments to the following existing actuarial policies as shown in the attachments:

- Board Resolution No. ACT-96-05E (Rev.) regarding amortization and smoothing policies (see Attachment 7 for red line version)
- Board Resolution No. 05-02-AESD (Rev.) regarding smoothing employer contribution rates (see Attachment 8 for red line version)
- Board Resolution No. 95-05C (Rev.) regarding actuarial asset valuation method effective with the June 30, 2013 actuarial valuation (see Attachment 9 for red line version)

Staff is also recommending that the Board rescind the following actuarial policy: Board Resolution No. 05-01-AESD (Rev.) regarding employer rate stabilization policy (see Attachment 10)

BENEFITS/RISKS

The adoption of the proposed method will result in better funding of the system over time and will result in a lower probability of large increases in employer contribution

rates. Adopting the proposed method will result in higher peak contribution rates which may put more strain on employers' budgets. Adopting Alternatives 1 or 2 would result in lower expected employer contribution rates short term but would result in higher employer contribution rates starting 7 years from now.

Both alternatives would result in a longer period before employer rates are expected to peak. This could be good if there are no economic shocks in the intervening period as they would have more time to adjust their budgets. However, there is the risk of a shock, either to investment returns or to employer revenues, in the period. If this were to happen, employers would be at a greater disadvantage if they had not yet adjusted their budgets to the necessary level.

Without adopting any method changes there is a higher probability of large increases in employer contribution rates which will put significantly more strain on employers' budgets. When these large increases in contribution rates occur in the future as a result of an extreme event, like the market failure of 2008-09, there will be a temptation to avoid the large increase in contribution rates by putting in place temporary measures to mitigate the impact on employer rates. Analysis performed by staff has shown that if every time an extreme event occurs and necessary rate increases are postponed it will increase the risk to the funding of the system. Therefore, staff believes that keeping the current methods in place will increase the funding risk of the system to a level that the Board has previously considered unacceptable.

ATTACHMENTS

Attachment 1 – Probability of Falling Below 50 Percent Funded
Attachment 2 – Funded Status
Attachment 3 – Impact on Employer Rates
Attachment 4 – Probability of High Levels of Employer Contribution Rates
Attachment 5 – Probability of Large Year-to-Year Changes in Contribution Rates
Attachment 6 – Median Employer Contribution Rates for the Next Ten Years
Attachment 7 – Actuarial Policy on Amortization and Smoothing Methods
Attachment 8 – Actuarial Policy on Smoothing Employer Contribution Rates
Attachment 9 – Actuarial Policy on the Actuarial Asset Valuation Method
Attachment 10 – Actuarial Policy on Employer Rate Stabilization

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