California Public Employees' Retirement System
Actuarial Office
P.O. Box 942701
Sacramento, CA 94229-2701
TTY: (916) 795-3240
(888) CalPERS (225-7377) · (916) 795-2744 fax
www.calpers.ca.gov

Agenda Item 7a

March 15, 2011

TO: MEMBERS OF THE BENEFITS AND PROGRAM ADMINISTRATION COMMITTEE

I. SUBJECT: Establishment of Discount Rate Assumption for the PERF

II. PROGRAM: Retirement Program

III. RECOMMENDATION:

That the Committee accept and recommend to the full Board the following:

(a) Lower the discount rate assumption from 7.75% to 7.50% for all plans that participate in the PERF for actuarial valuations dated June 30, 2010 and later.
(b) To the extent the discount rate is changed, the new discount rate assumption will be used in all affected member calculations effective as follows:
  (i) For service credit purchases under the "present value" method, the use of the new discount rate will apply to all applications postmarked on or after March 17, 2011.
  (ii) For retirement applications, any application with a retirement date on or after March 17, 2011 will be subject to the new discount rate.

IV. ANALYSIS:

Actuarial valuations are performed annually to determine plan liabilities and the contribution rates necessary to adequately fund them. To perform actuarial valuations, actuaries use various demographic and economic assumptions to set a contribution schedule of employee and employer contributions designed to accumulate with interest to equal the total present value of benefits by the time every member has left employment.

The primary economic assumption is the discount rate assumption. The current assumption is 7.75%. The discount rate assumption used for actuarial valuations is comprised of a real return assumption and an inflation assumption. The current inflation assumption is 3.0% per year. This rate of inflation was adopted by the Board in April 2004. The current real return assumption is 4.75%.

Contrary to what some might believe, the current 7.75% assumption is not an arbitrary investment return target. There is a direct relationship between the asset allocation adopted by the Board and the discount rate assumption.

Following the Asset/Liability workshop in November, the CalPERS Board adopted a new Asset Allocation Policy Mix in December. The table below shows the new asset allocation mix adopted last December and the previous mix.

ASSET ALLOCATION POLICY MIX

ASSET CLASSIFICATION	NEW ASSET ALLOCATION MIX	PREVIOUS ASSET ALLOCATION MIX
INCOME - Fixed Income	**16.0%**	20.0%
GROWTH - Public Equity	**49.0%**	49.0%
GROWTH - Private Equity	**14.0%**	14.0%
REAL - Real Estate	**10.0%**	10.0%
REAL - Infrastructure & Forestland	**3.0%**	2.5%
INFLATION - Inflation Linked Bonds	**3.0%**	1.0%
INFLATION - Commodities	**1.0%**	1.5%
LIQUIDITY - Treasuries	**4.0%**	2.0%

Because of the direct relationship between the asset allocation and the discount rate assumption, a review of the discount rate assumption was necessary. This review is also necessary to ensure the assumption reflects both short term and long term expected investment returns for the various asset classifications and for the portfolio as a whole.

Discussion

The approach used in determining the appropriate discount rate assumption was based on guidance set forth by the Pension Practice Council of American Academy of Actuaries in the Actuarial Standard of Practice, *Selection of Economic Assumptions for Measuring Pension Obligations* (ASOP No. 27), adopted September 2007. As explained below, ASOP No. 27 provides some flexibility when it comes down to the selection of the discount rate but ultimately the selection of a discount rate assumption must ensure that the fund remains actuarially sound over time.

Recognizing that there is not one “right answer”, the ASOP calls for the actuary to develop a “*best-estimate range*” for the discount rate assumption, and then recommend a specific point within that range. The practice council recommends the use of the 25th to 75th percentile range unless it is inappropriate.

When estimating the 25th and 75th percentiles, it is important to realize that the time horizon for actuarial valuations usually covers a period of more than 50 years. When a member is hired at age 25, actuaries have to make assumptions about the investment return we can expect from the asset allocation until the last benefit payment for that member is paid, which could be up to 80 years.

At the November Asset/Liability workshop and at the December Investment Committee meeting, expected investment returns were presented for each of the portfolios under considerations. It is important to realize that these expected returns were for the next 10 years only. They were for the purpose of the Asset/Liability workshop and were derived over many months with the inputs of CalPERS investment staff and various investment consultants.

There appears to be a consensus that returns are expected to be lower than historical returns over the next 10 years and the expected returns that were presented to the Board reflected that. The asset allocation mix adopted by the Board has an expected compounded return over the next 10 years of 7.38% (gross of administrative expenses). Back in 2007 when the previous Asset/Liability workshop was held, a similar portfolio would have expected to earn above 8%.

In order to determine the discount rate assumption to be used in the actuarial valuations, the approach used took into account both short and long term expectations as well as reflecting the expected cash flows for the pension fund. For more details please refer to Attachment 1.

Using the approach described in Attachment 1, simulated returns were used together with the asset allocation mix adopted by the CalPERS Board to determine the 25th to 75th percentile range of the geometric expected return over a period of 19 years.

An important aspect of determining an acceptable range for a discount rate assumption is expected administrative expenses. The discount rate assumption used in the actuarial valuation is a representation of the expected investment return net of administrative expenses. Over the last 10 years, the administrative expenses at CalPERS have represented on average about 0.15% (15 basis points) of the assets.

Below are the percentiles of the expected investment returns using a 19 year horizon both before and after reflecting the 0.15% in expected plan administrative expenses.

Expected Geometric Investment Returns Over the Next 19 Years

	25th Percentile	**50th Percentile (Median)**	**75th Percentile**
Expected Return (Before Administrative Expenses)	6.11%	7.95%	9.82%
Expected Administrative Expenses	(0.15%)	(0.15%)	(0.15%)
Expected Net Investment Return	5.96%	7.80%	9.67%

Based on the ASOP No. 27 guidelines, a reasonable range for the discount rate assumption is from 5.96% to 9.67%. Even though actuarial standards of practice allow a wide range for the discount rate assumption, it is generally recommended to select an assumption between the 25th and 50th percentile in order for the fund to have at least a 50% chance of earning an investment return equal to or higher than the discount rate assumption

Before making a recommendation on the discount rate assumption, an important part of the decision process is to decide on a margin for adverse deviation. We believe a margin is preferable for the long term security of benefits of our members while keeping in mind that such margin should not be excessive in order to preserve generational equity.

When the Board last looked at the assumed investment return, the median net return over the time horizon selected was 8.04%. By retaining the 7.75% assumption, the Board implicitly elected to have a margin for adverse deviation of about 30 basis points.

Given that the median investment return net of administrative expenses is 7.80%, we recommend that the discount rate assumption be lowered to 7.50% per year to have a margin for adverse deviation similar to that currently used. Given that the state of the economy has put severe pressure on employers' budgets, we recognize that it may be appropriate to reconsider the level of margin for adverse deviation.

The balancing of the level of risk taken on the funding of the plan with the impact on employers, stakeholders and the public in general is fundamentally a task of the Board. This fundamental decision is a fiduciary one that should be in the best interests of the members and beneficiaries and be reasonably prudent, given the circumstances. The primary interest of the members is an actuarially sound pension plan. The discount rate adopted by the Board, whatever it ends up being, should be a reasonably prudent assumption designed to achieve this goal over the long term. We believe that either using a lower margin for adverse deviation and choosing a discount rate assumption of 7.75% or lowering this assumption to 7.50% would be a reasonably prudent assumption. Both assumptions would be able to provide for an actuarially sound system over time with a 7.50% assumption providing slightly more security than remaining at 7.75%.

To help display the risk to employers and stakeholders, below is a table providing an estimate of the potential increase in employer contribution rate if the discount rate assumption is lowered to 7.50%. The tables show the impact for each State plan, the Schools pool and a range of the impact for public agency miscellaneous plans and public agency safety plans.

Estimated Impact on Employer Contribution Rates

Group	Estimated Increase in Rate (% of Payroll)
State Miscellaneous	2.3%
State Industrial	2.0%
State Safety	1.7%
POFF	3.3%
CHP	3.8%
Schools	1.9%
Public Agency Miscellaneous	1.5% to 3%
Public Agency Safety	3% to 5%

These estimated increases would take place in fiscal year 2011-2012 for the State and the Schools employers while it would be effective a year later in fiscal year 2012-2013 for public agencies.

Note that in an effort to keep employers as well as stakeholders informed about the possible change in discount rate and the impact such a change would have on employer's budget, several venues were used over the last few months to communicate this information. Please refer to Attachment 2 for a list of such venues. Additional venues such as circular letters and eBulletin will be used to communicate the Board's decision on the discount as soon as feasible following the Board's decision.

Finally, as you well know, the Stanford Institute for Economic Policy Research published a policy brief in 2010 entitled "Going For Broke: Reforming California's Public Employee Pension Systems". The study implied that it would be more appropriate to use a lower discount rate in funding the system than both the one currently in use and the recommended discount rate. Attachment 3 provides information on why we believe it is more appropriate to use a discount rate assumption consistent with expected returns on the portfolio.

Affiliate Funds

This agenda item addresses only the discount rate assumption to be used for plans invested in the PERF.

The investment office is currently in the process of bringing to the Board recommendations for new asset allocation mixes for each of the various affiliate funds, including asset allocations for the Judges Retirement Fund (JRF), the Judges Retirement Fund (JRF II), the Legislators Retirement Fund (LRF) as well as the California Employers' Retiree Benefit Trust Fund (CERBT).

Once the Board has decided upon an asset allocation for each of these funds, the Actuarial Office will bring an agenda item to establish an appropriate discount rate for each of these funds. Any recommendations for a discount rate assumption for these funds will be done in a manner consistent with the approach used for the PERF and consistent with the Board's decision on the PERF whether to use a margin or not.

Impact on Member Calculations

If the discount rate assumption is lowered to 7.50%, the recommendation is for the discount rate used in all member calculations to be consistent.

In order to implement a new discount rate assumption for all member calculations and to minimize the impact on PSR, member calculations will not be updated in our systems until PSR goes live. We will take steps to minimize the impact on members retiring prior to all systems being updated.

Member retiring on or after March 17, 2011 but prior to our systems being updated will still be able to retire. However, their retirement benefits if they elect an optional settlement at retirement will be based upon the factors in place prior to the Board taking action. When our systems are updated, these members will see a retro-active adjustment to their retirement benefit. Unfortunately, we expect that this adjustment will result in a modest decrease in the retirement benefit in most cases. We expect these adjustments will result in reduction in benefits of less than 0.5% in most cases.

For service credit purchases under the present value method, any request postmarked on or after March 17, 2011 will be placed on hold and processed in the order received once our systems are up and running after PSR goes live. As was done last year when the demographic assumptions used in member calculations were revised, we will have to ability to manually process service credit purchases that are identified as being emergencies. Note that lowering the discount rate to 7.5% will result in an increase in cost for members to purchase service. The cost for service credit purchases under the present value method is expected to increase between 2% and 5%.

If a change to the discount rate is adopted, part of the effort will be communications to members and employers. Staff has developed a communications plan to educate and inform CalPERS employees, members, employers and stakeholders about the changes similar to what was done last September when a change in assumption took place. To meet these goals, an initial set of communications will be delivered to members and employers through a variety of potential sources including the CalPERS Circular Letters, CalPERS On-Line and FAQs, CEC Education Modules, Social Media (Facebook, Twitter), and eBulletin Broadcast Emails.

Recommendation

If the Board wishes to maintain similar margins for adverse for deviation as currently used, then we recommend that the discount rate assumption be lowered to 7.50% per year. If the Board wishes to lower the margin for adverse deviation then we recommend that the current discount rate assumption of 7.75% continue to be used.

Since all member calculations should use a discount rate assumption consistent with the one used in actuarial valuations, if the Board elects to lower the discount rate to 7.50%, we recommend that this new discount rate assumption be used in all affected member calculations effective as follows:

- For service credit purchases under the “present value” method, the use of the new discount rate will apply to all applications postmarked on or after March 17, 2011.

- For retirement applications, any application with a retirement date on or after March 17, 2011 will be subject to the new discount rate.

V. STRATEGIC PLAN:

This item is consistent with the 2010 CalPERS Strategic Plan objectives V and VIII which state:

V - Provide sustainable pension benefit products and services responsive to and valued by members, employers, and stakeholders.

VIII - Manage the risk and volatility of assets and liabilities to ensure sufficient funds are available, first, to pay benefits and second, to minimize and stabilize contributions.

VI. RESULTS/COSTS:

See above.

DAVID LAMOUREUX
Deputy Chief Actuary
Actuarial Office

ALAN MILLIGAN
Chief Actuary

Attachments