California Public Employees Retirement System
Judges' Retirement System

Independent Review of the Actuarial Valuation as of June 30, 2013

Produced by Cheiron

February 2015

Table of Contents

LETTER OF TRANSMITTAL

February 23, 2015

Ms. Young Hamilton, Acting Chief
California Public Employees' Retirement System
Office of Audit Services
P. O. Box 942701
Sacramento, CA 94229-2701

Dear Ms. Hamilton:

The purpose of this report is to provide Independent Review of the Actuarial Valuation for the Judges' Retirement System as of June 30, 2013. This report was prepared exclusively for California Public Employees' Retirement System (CalPERS) for the purpose described herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

In preparing our report, we relied on information supplied by the California Public Employees' Retirement System. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

Robert T. McCrory, FSA, FCA, MAA
Principal Consulting Actuary

Timothy S. Doyle, ASA, MAAA
Associate Actuary

1532 East McGraw Street, Seattle, WA 98112 Tel: 877-CHEIRON (243-4766) Fax: 206.726.0224 www.cheiron.us

Overview

Cheiron has conducted an independent review of the Actuarial Valuation of the Judges' Retirement System (JRS, the System) as of June 30, 2013. Overall, we were able to certify that the liabilities and costs computed in this valuation are reasonable and were computed in accordance with generally accepted actuarial principles and practices. However, Cheiron did discover a problem with the total actuarial liability for active members, terminated members and members entitled to deferred benefits under a Domestic Relations Order (DRO). A discussion of this issue is presented below.

Background

The Judges Retirement System provides pensions and ancillary benefits to California state judges who were elected or appointed before November 9, 1994. Judges elected or appointed on or after that date are covered under Judges Retirement System II (JRS II). JRS and JRS II are separate retirement plans with separate memberships, separate asset pools, and no financial interrelationship.

A judge who has reached age 60 and is credited with 20 or more years of service under the System will be awarded a lifetime pension of 75% of pay in the last judicial office held. Death, disability, and termination benefits are also paid from the System.

The System is financed by employer and employee contributions and the investment return on System assets. Participants contribute 8% of pay. Employer Contributions to the plan are determined using the pay as you go method, with no prefunding of liabilities.

Methodology

Our review and certification involves three steps:

- Review of Methods and Assumptions
  The actuarial assumptions and methods employed in the JRS Valuation were reviewed by Cheiron in order to establish whether they meet acceptable standards of actuarial practice.

- Independent Valuation
  In order to verify the correctness of calculations in the JRS Valuation, Cheiron conducted an independent valuation using its own actuarial model. This independent valuation determines whether actuarial assumptions and methods are applied properly and yield the reported results.

  In preparing our valuations, we relied on member and asset data supplied by CalPERS staff. As is usual in actuarial valuations, this data was neither audited nor independently verified.

- Reconciliation of Results
  In the event that the figures computed by Cheiron fall outside of the established tolerances versus those computed by CalPERS' staff, reconciliation is required.

This reconciliation proceeds in four steps:

1. Establishing that the same member data has been used by Cheiron and by staff;

2. Researching methodological differences between the Cheiron and staff approaches to computing liabilities and costs;

3. Comparing individual test life results to uncover subtle differences in approach that may result in material differences in liabilities and costs; and

4. Discuss with CalPERS Staff the nature and magnitude of the discrepancy and come to agreement on the cause and remedy.

Review of Methods and Assumptions

We have determined that the actuarial methods and assumptions used in the JRS Valuation are within acceptable standards of actuarial practice.

Actuarial assumptions used to compute JRS liabilities and employer costs include:

- A 4.25% annual rate of investment return, net of all expenses;
- Annual salary increases of 3.00%;
- Annual inflation of 2.75%;
- Retirement between the ages of 60 and 80 after 10 years of service;
- Termination rates from 0.3% to 2.5% per year, depending on age and service;
- Active and retired mortality rates developed based on actual CalPERS experience during the period from 1997 to 2011.

More detailed information concerning the valuation assumptions can be found in the 2014 CalPERS Experience Study Report. Cheiron also performed a review of this Experience Study, and evaluated demographic assumptions as part of that review.

The System is nearly unfunded; benefits are paid as they come due, and no significant assets have been accumulated. All new judges now become members in JRS II. Therefore, the active membership in JRS will gradually diminish, and there will be a decreasing payroll over which to fund the cost of benefits. Considering the forgoing, the assumptions listed above are appropriate for this valuation.

Independent Valuation

The JRS Valuation was performed by CalPERS staff using the Actuarial Valuation System (AVS). Cheiron validated the calculations by creating an *independent* actuarial model to develop the valuation results. The only data common to the models was the participant data; the Cheiron model was developed separately, without reference to the one used by staff for the Valuation.

As established in our Proposal of Services, we expect the values of comparable items derived from the two models to differ by less than the percentages shown in the following table.

Table 1: Independent Valuation Tolerances

Calculated Item	Acceptable Tolerance
Number of members - active, retired, inactive	0%
Annual payroll and member contributions	0%
Present value of pay; present value of member contributions	1%
Present value of benefit obligations	5%
Annual normal cost, employer contribution rates	5%

These tolerances are sufficiently stringent to detect material differences between the models. Differences outside of the Acceptable Tolerances listed above would not necessarily cause a failure to certify the valuation, but would result in additional scrutiny and reconciliation to determine the reasons.

Independent Actuarial Valuation of Results

Tables 2 and 3 on page 5, show the principal results of our independent valuations.

As seen in Table 2, there are several areas in which the valuation results were not within the expected tolerance levels. These include the Present Value of Benefits and Actuarial Accrued Liability for active members, the Present Value of Benefits for inactive members with a deferred benefit (including those members with Domestic Relations Orders (DROs)), the Employer Normal Cost, and the Actuarial Required Contribution (ARC).

Through an analysis of test lives and discussion with CalPERS staff we found the following discrepancies:

- A benefit multiplier of 65% is currently being used for all active members. Members that retire after age 60 with at least 20 years of service should have a 75% benefit multiplier.

- For terminated vested members that are eligible for retirement as of the valuation date, the benefit amount being valued for them is the retirement benefit (65% of pay of the last

judicial office held). Their benefit amount should be equal to the termination benefit (3.75% reduced if service is less than 12 years) of pay of last judicial office held multiplied by years of service up to a maximum of 20 years).

- For DROs that have a deferred benefit, the full service of the participant should be used to determine eligibility (start date and deferral period) and the benefit multiplier for the DRO record. Currently the service allocated to the DRO's share of the benefit amount is being used to determine eligibility and the benefit multiplier.

We discussed the issues with CalPERS staff, and our understanding is that the programming errors have been fixed and unlikely to impact future valuations.

In addition, the following discrepancies were found, but have a minimal effect on liabilities:

- Appendix A of the valuation report states that Disability Rates should extend past the point that a member becomes eligible for retirement. CalPERS staff confirmed that this is the intended assumption. However, upon analysis of test lives, the Disability Rates currently being used are set to zero when a member is eligible for retirement.

- In the case where a retiree has elected a form of payment that allows the balance of their accumulated contributions to be paid to a beneficiary at the time of their death, their liabilities should reflect this possible additional lump sum payment. These retirees are currently valued as having a single life annuity with no possibility of a contribution refund at the time of their death.

Table 4 on page 6 shows the revised results CalPERS sent us after fixing their programming errors. The valuation results computed by Cheiron are close to the revised results computed by CalPERS staff, and fall within our valuation tolerances.

Table 2: Independent Valuation Results

	CalPERS JRS Valuation	Cheiron Independent Valuation	Cheiron to PERS Difference	Within Tolerance
1. Present Value of Benefits for Active Members	$ 752,911,105	$ 864,726,241	14.85%	**No**
2. Present Value of Benefits for Inactive Members				
Deferred Vested & DRO	56,824,025	49,334,253	-13.18%	**No**
Receiving Benefits	2,634,501,765	2,675,961,420	1.57%	Yes
Total	$2,691,325,790	$2,725,295,673	1.26%	Yes
3. Total Present Value of Benefits	$3,444,236,895	$3,590,021,914	4.23%	Yes
4. Actuarial Accrued Liability for Active Members	691,984,174	785,210,093	13.47%	**No**
5. Total Actuarial Accrued Liability (4) + (2)	$3,383,309,964	$3,510,505,766	3.76%	Yes
6. Assets	53,819,947	53,819,947	0.00%	Yes
7. Unfunded Actuarial Accrued Liability (UAAL) [(5) – (6)]	$3,329,490,017	$3,456,685,819	3.82%	N/A
8. Amortization of UAAL	$1,856,146,172	1,868,478,821	0.66%	N/A
9. Employer Normal Cost	$ 27,250,393	$ 30,820,772	13.10%	**No**
10. Actuarial Required Contribution (ARC) [(8) + (9)] * 1.0425	$1,884,554,707	$1,980,019,826	5.07%	**No**

Table 3: Demographic Comparison

Number of Members	CalPERS JRS Valuation	Cheiron Independent Valuation	Cheiron to PERS Difference	Within Tolerance
Active	328	328	0.00%	Yes
Retired	1,889	1,889	0.00%	Yes
Inactive	34	34	0.00%	Yes
Salaries and Contributions				
Total Payroll	$ 60,593,543	$ 60,593,543	0.00%	Yes

Table 4: Revised CalPERS Valuation Results

	CalPERS JRS Valuation	Cheiron Independent Valuation	Cheiron to PERS Difference	Within Tolerance
1. Present Value of Benefits for Active Members	$ 856,656,249	$ 864,726,241	0.94%	Yes
2. Present Value of Benefits for Inactive Members				
Deferred Vested & DRO	46,722,001	49,334,253	5.59%	**No**
Receiving Benefits	2,634,501,765	2,675,961,420	1.57%	Yes
Total	$2,681,223,766	$2,725,295,673	1.64%	Yes
3. Total Present Value of Benefits	$3,537,880,015	$3,590,021,914	1.47%	Yes
4. Actuarial Accrued Liability for Active Members	789,256,792	785,210,093	-0.51%	Yes
5. Total Actuarial Accrued Liability (4) + (2)	$3,470,480,558	$3,510,505,766	1.15%	Yes
6. Assets	53,819,947	53,819,947	0.00%	Yes
7. Unfunded Actuarial Accrued Liability (UAAL) [(5) – (6)]	$3,416,660,611	$3,456,685,819	1.17%	N/A
8. Employer Normal Cost	$ 30,074,144	30,820,772	2.48%	Yes