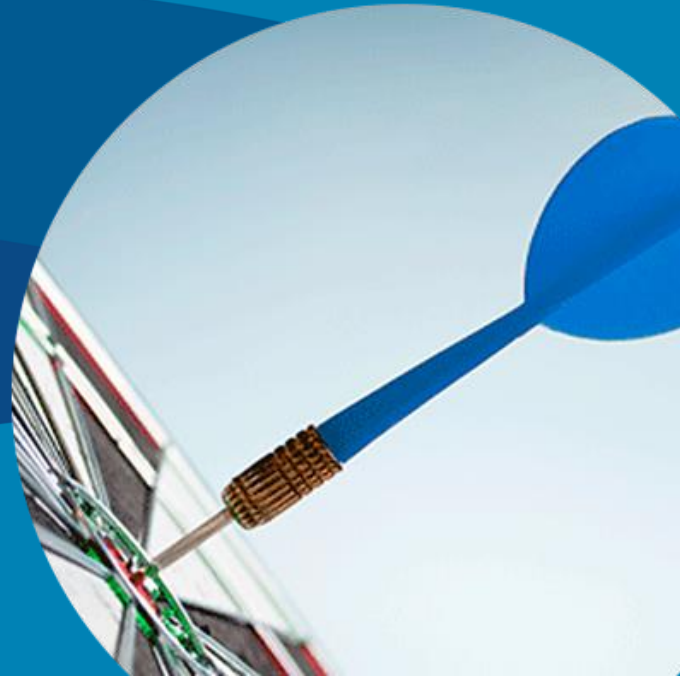


Judges' Retirement System of Illinois

Valuation Results as of
June 30, 2018

October 26, 2018



Agenda

- Valuation Results
 - Change in actuarial assumptions
 - Funded status
 - Change in funded ratio
 - Cash flow comparison
 - Contribution requirements
 - Contribution shortfalls
- Summary
- Appendix A: Projection Results: Phase-in of investment losses in the Actuarial Value of Assets (AVA) and contribution rate variances due to smoothing of changes in assumptions
- Appendix B: Membership Data

Valuation Results: Change in Actuarial Assumptions

- The JRS Board approved the following assumptions for use in the current valuation:
 - **Price inflation:** The rate of price inflation was reduced from 2.75 percent to 2.50 percent.
 - **Wage inflation assumption:** The wage inflation assumption was reduced from 3.00 percent to 2.75 percent, which reflects an underlying general price inflation assumption of 2.50 percent.
- The change in actuarial assumptions decreased the actuarial accrued liability as of June 30, 2018, by \$9.6 million.

Valuation Results: Funded Status

(\$ in millions)

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
Actuarial Accrued Liability	\$2,721.9	\$2,649.3
Market Value of Assets (MVA)	\$1,012.3	\$941.8
Unfunded Actuarial Accrued Liability - MVA Basis	\$1,709.6	\$1,707.5
Funded Ratio - MVA Basis	37.19%	35.55%
Actuarial Value of Assets (AVA)	\$1,012.7	\$943.0
Unfunded Actuarial Accrued Liability - AVA Basis	\$1,709.2	\$1,706.3
Funded Ratio - AVA Basis	37.21%	35.59%

Valuation Results: Change in Funded Ratio

Funded Ratio 6/30/2017	35.59%
Expected ¹	1.90%
Contribution Shortfall	-0.59%
Liability Experience	-0.02%
Assumption Changes	0.13%
Asset Experience (7.31% Return on AVA)	<u>0.20%</u>
Funded Ratio 6/30/2018	37.21%

¹ *Assumes total contributions equal to normal cost plus interest*

Valuation Results:

Cash Flow Comparison (\$ in millions)

	<u>FYE 2018</u>	<u>Projected FYE 2019</u>	<u>Projected FYE 2020</u>	<u>Projected FYE 2021</u>	<u>Projected FYE 2022</u>
Employer Contribution	\$136.0	\$140.5	\$144.2	\$147.8	\$151.1
Employee Contribution	\$14.3	\$13.6	\$13.6	\$13.6	\$13.5
Benefits	(\$148.6)	(\$159.7)	(\$167.8)	(\$176.2)	(\$184.3)
Expenses	(\$0.9)	(\$0.9)	(\$0.9)	(\$0.9)	(\$0.9)
Net Cash Flow	\$0.8	(\$6.5)	(\$10.9)	(\$15.7)	(\$20.6)

- After 2018, benefits are projected to exceed State and employee contributions.
- From 2019 to 2033, the percentage of investment income needed to pay ongoing benefits is projected to increase from approximately 9.6 percent to 78.5 percent.
 - This implies that a lower level of investment income is projected to be available for potential asset growth.

Valuation Results:

Contribution Requirements (\$ in millions)

FY 2020 State contribution

	<u>Amount</u>	<u>Rate</u>
Basic Funding	\$ 144.2	91.853%

Compares to FY 2019 contribution

	<u>Amount</u>	<u>Rate</u>
Basic Funding	\$ 140.5	88.128%

Valuation Results:

Contribution Shortfalls (\$ in millions)

<u>FY 2020</u>	<u>Amount</u>	<u>Rate</u>
Annual Determined Contribution	\$ 173.7	110.676%
Basic funding	<u>144.2</u>	<u>91.853%</u>
Difference	\$ 29.5	18.823%
<u>FY 2019</u>	<u>Amount</u>	<u>Rate</u>
Annual Determined Contribution	\$ 169.6	106.425%
Basic funding	<u>140.5</u>	<u>88.128%</u>
Difference	\$ 29.1	18.297%

- The Actuarially Determined Contribution (ADC), is equal to the Normal Cost plus a 25-year level percent of capped payroll closed-period amortization of the Unfunded Actuarial Accrued Liability. As of June 30, 2018, the remaining amortization period is 22 years.

Experience Study

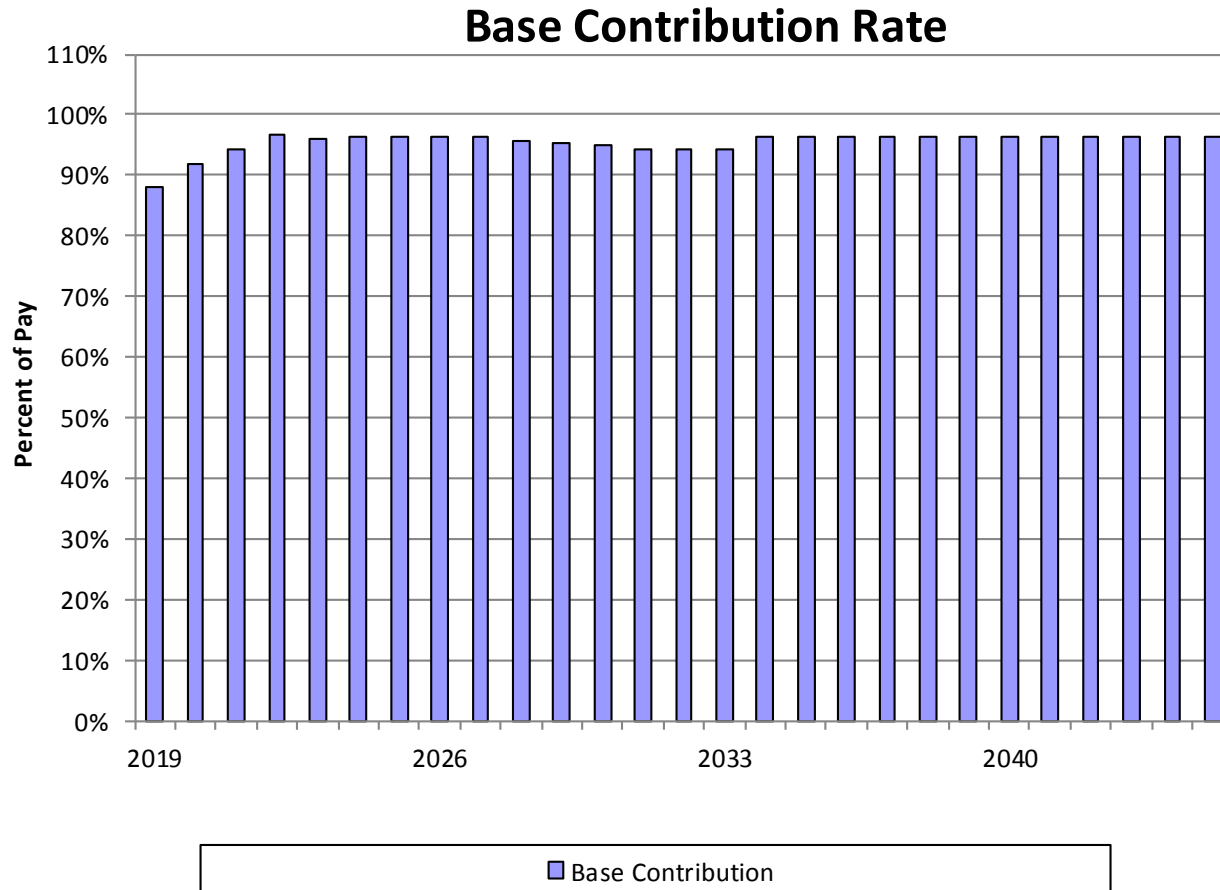
- Pursuant to Public Act 99-0232, JRS is required to conduct an actuarial experience review once every three years. Under this schedule, an experience review for the period from July 1, 2015 through June 30, 2018, will be performed after completion of the June 30, 2018, actuarial valuation with expected implementation of the recommended assumptions beginning with the June 30, 2019, actuarial valuation.

Summary

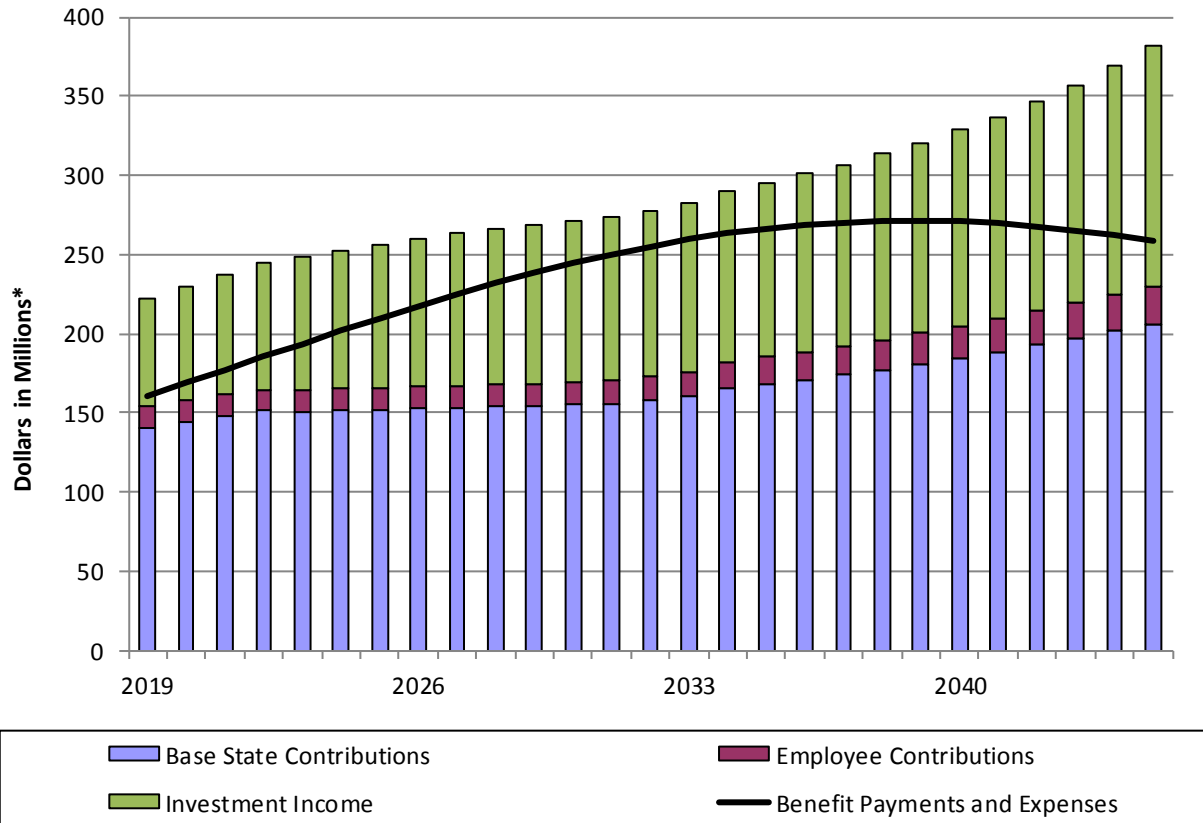
- The gain loss analysis for plan year end 2018 showed that contribution shortfalls were partially offset by favorable asset returns and changes to the economic assumptions. The resulting decrease in funded ratio increased the State's required contribution.
- Funded ratio is projected to increase slowly from 37.2% in 2018 to 53.0% in 2033, and then increases rapidly to 90% by 2045.

Appendix A: Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions

Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Contributions – Rate

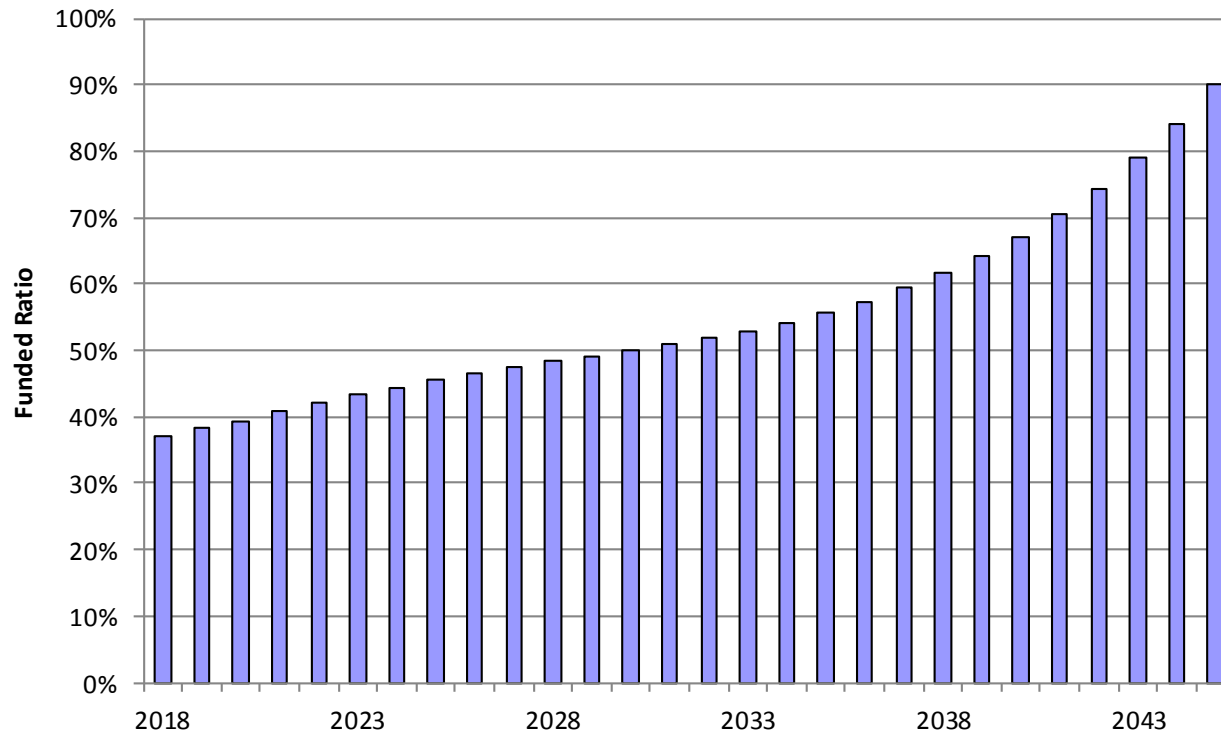


Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Cash Flow Comparison



**Future dollar amounts are based on assumed inflationary increases.*

Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Funded Ratio



Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Unfunded Actuarial Accrued Liability



Appendix B: Membership Data

Active Members

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
Number as of Valuation Date	936	953
Covered Uncapped Payroll for Fiscal Year	\$182.78 Million	\$182.24 Million
Average Annual Earnings	\$195,274	\$191,223

Current Benefit Recipients

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
Retirees	871	852
Disabled	0	1
Survivors	322	322
Total	1,193	1,175
Total Benefits	\$149.928M	\$143.326M
Average Benefits	\$125,673	\$121,980

Questions

Disclosures

- Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- The actuary submitting this presentation (Alex Rivera, FSA, EA, MAAA) is a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.
- The primary purpose of the actuarial valuation is to measure the financial position of JRS.

Disclosures

- The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The major actuarial assumptions used in this analysis were provided by and are the responsibility of JRS. We are unable to judge the reasonableness of some of these assumptions without performing a substantial amount of additional work beyond the scope of the assignment.
- Future actuarial measurements may differ significantly from the current measurements presented in this report 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.
- This is one of multiple documents comprising the actuarial report for the JRS actuarial valuation. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the full actuarial valuation report as of June 30, 2018.
- If you need additional information to make an informed decision about the contents of this presentation, or if anything appears to be missing or incomplete, please contact us before relying on this presentation.