Valuation Results
June 30, 2019

Arkansas Public Employees Retirement System

Board Summary
November 20, 2019

Introduction

This is the Board Summary of the annual actuarial valuation of the Arkansas Public Employees Retirement System (APERS) prepared as of June 30, 2019. The primary purposes of the annual actuarial valuation are to measure the plan's liabilities; to determine the required employer contribution rate based upon the System's funding policy and to analyze changes in the System's actuarial position.

The Board took preliminary action at the August 2019 meeting to establish the employer contribution rate for the period beginning July 1, 2021.

Key results and a comparison to the previous year appear on pages 2-4.

Pages 5 and 6 provide near term projections of valuation results. The purpose of these projections is to show the impact of future potential investment returns on projected employer contribution rates and funded statuses.

Page 7 makes note of any legislative or Board changes that may have occurred affecting the actuarial valuation results. Page 7 also discusses the District Judges participating in APERS.

Page 8 includes some of the additional disclosures included in the June 30, 2019 annual valuation report. We recommend that Board members review the June 30, 2019 annual valuation report in its entirety.

Board Action Required

Board action will be needed at the meeting to:

1) Approve the APERS employer contribution rate for the fiscal year beginning July 1, 2021; and

2) Approve the employer contribution rates for the District Judges division for the fiscal year beginning July 1, 2019.

Executive Summary
June 30, 2019 Actuarial Valuation
($ in Millions)

Valuation Date:	June 30, 2019	June 30, 2018
Computed Employer Contribution:		
• Percentage of Covered Payroll	15.32%	15.32%
Membership:		
• Number of		
- Active Members	45,965	46,207
- Retirees and Beneficiaries	38,543	37,398
- Inactive Vested Members	14,862	13,856
- Total	99,370	97,461
• Covered Payroll	$1,934	$1,847
• Annualized Benefit Payments at Valuation Date	$609	$575
Assets:		
• Market Value of Assets	$8,803	$8,571
• Funding Value of Assets	$8,739	$8,416
• Return on Market Value of Assets	5.3%	9.9%
• Return on Funding Value of Assets	6.5%	5.8%
• Ratio – Funding Value to Market Value	99%	98%
Actuarial Information:		
• Actuarial Accrued Liability (AAL)	$11,129	$10,694
• Unfunded Actuarial Accrued Liability (UAAL)	$2,390	$2,278
• Funded Ratio	78.52%	78.70%
• UAAL as % of Covered Payroll	124%	123%
• Amortization Period	24 years	26 years
Contribution Rates:		
• Total Normal Cost %	11.39%	11.36%
• Member Contributions %	3.63%	3.47%
• Employer Normal Cost %	7.76%	7.89%
• Unfunded Actuarial Accrued Liability %	7.56%	7.43%
• Total Employer Contribution %	15.32%	15.32%

Note: DROP participant counts are included in the retirees and beneficiaries member counts as well as covered payroll and benefit payment amounts.

Discussion

Financing Objectives

Section 24-2-701 of the Arkansas Code provides as follows:
"6.01. (a) The general financial objective of each Arkansas public employee retirement plan shall be to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Arkansas citizens. More specifically, contributions received each year shall be sufficient both (i) to fully cover the costs of benefit commitments being made to members for their service being rendered in such year and (ii) to make a level payment which if paid annually over a reasonable period of future years will fully cover the unfunded costs of benefit commitments for service previously rendered....."

APERS benefit payments are supported by employer contributions, employee contributions and net earnings on the investments of the fund. The employer contribution is determined by the actuarial valuation. The computed employer contributions are intended to be sufficient to pay the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over a period of 24 years.

Contribution Requirement

The computed employer contribution as of the June 30, 2019 actuarial valuation date is 15.32% of covered payroll. This compares with an employer contribution as of the June 30, 2018 actuarial valuation date of 15.32% of covered payroll.

Funded Status

As of the valuation date, the Unfunded Actuarial Accrued Liability (UAAL) is $2.390 billion, and the funded ratio (the ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability) is 78.5%. At the time of last year's valuation, the UAAL was $2,278 billion, and the funded ratio was 78.7%. See page C-5 of the annual valuation for an analysis of the actuarial gains and losses over the last year and previous years. See page A-7 of the annual valuation for a history of the System's funded ratio.

Change in Amortization Period

If all assumptions were exactly realized a reasonable expectation is that the amortization period would decrease by one year and the contribution rate would be unchanged year over year. The contribution rate was unchanged and the amortization period decreased by two years. These are the reasons: a) while there was a recognized investment loss of more than $50 million, in combination with demographic gains a net gain of about $21 million was experienced, b) the effect of contributory members coming in would normally drive down the employer rate, but if the employer contribution rate is left unchanged this instead drives down the amortization period, and c) total payroll increased by 4.7% rather than the expected 3.25% which would normally drive down the amortization contribution rate as a % of payroll, but if the employer contribution rate is left unchanged this instead drives down the amortization period.

Relationship to Market Value of Assets

If Market Value of Assets had been the basis for the valuation the funded ratio would have been 79.1%. In the absence of other gains and losses the funded ratio using the Market Value of Assets and the Funding Value of Assets will converge.

APERS Status

Based upon the results of the June 30, 2019 actuarial valuation, APERS continues to satisfy the general financial objective of level contribution financing.

Future Contribution Rates

The Funding Value (FV) of Assets is less than the Market Value (MV) of Assets by $64 million as of the valuation date (see page B-10 of the annual valuation). This difference will be gradually recognized over the next three years in the absence of offsetting losses. In order to gain a better understanding of the effect of market volatility, valuation results were projected for four future years based on six scenarios:

A. a market return of 7.15% in the next year and 7.15% in the 2nd, 3rd and 4th years,
B. a market return of 10.0% in the next year and 7.15% in the 2nd, 3rd and 4th years,
C. a market return of 5.0% in the next year and 7.15% in the 2nd, 3rd and 4th years,
D. a market return of 2.0% in the next year and 7.15% in the 2nd, 3rd and 4th years,
E. a market return of 0.0% in the next year and 7.15% in the 2nd, 3rd and 4th years,
F. a market return of (4.0)% (a one standard deviation outcome) in the next year and 7.15% in the 2nd, 3rd and 4th years.

A separate memorandum is being provided to show how assets and funded ratios are affected by leaving the employer contribution rate at 15.32% of payroll.

Valuation Year	Accrued Liability	Valuation Assets	UAAL	MV Return	MV-FV	Employer Rate	Funded Ratio
Scenario A: 7.15% Market Returns							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	9,223	2,321	7.15 %	(17)	15.32%	80%
2021	11,983	9,672	2,312	7.15 %	(35)	15.32%	81%
2022	12,446	10,101	2,346	7.15 %	(2)	15.32%	81%
2023	12,937	10,603	2,333	7.15 %	(2)	15.32%	82%
Scenario B: 10.0% Market Return for Year Ended June 30, 2020; 7.15% Market Returns Thereafter							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	9,284	2,259	10.00 %	169	15.32%	80%
2021	11,983	9,803	2,180	7.15 %	99	15.32%	82%
2022	12,446	10,309	2,137	7.15 %	74	15.32%	83%
2023	12,937	10,895	2,041	7.15 %	10	15.32%	84%
Scenario C: 5.0% Market Return for Year Ended June 30, 2020; 7.15% Market Returns Thereafter							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	9,176	2,368	5.00 %	(157)	15.32%	79%
2021	11,983	9,572	2,411	7.15 %	(135)	15.32%	80%
2022	12,446	9,943	2,503	7.15 %	(58)	15.44%	80%
2023	12,937	10,376	2,561	7.15 %	(11)	15.60%	80%

Future Contribution Rates (continued)

Valuation Year	Accrued Liability	Valuation Assets	UAAL	MV Return	MV-FV	Employer Rate	Funded Ratio
Scenario D: 2.0% Market Return for Year Ended June 30, 2020; 7.15% Market Returns Thereafter							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	9,111	2,433	2.00 %	(353)	15.35%	79%
2021	11,983	9,434	2,550	7.15 %	(277)	15.65%	79%
2022	12,446	9,723	2,723	7.15 %	(138)	16.15%	78%
2023	12,937	10,067	2,870	7.15 %	(24)	16.59%	78%
Scenario E: 0.0% Market Return for Year Ended June 30, 2020; 7.15% Market Returns Thereafter							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	9,067	2,476	0.00 %	(483)	15.49%	79%
2021	11,983	9,341	2,642	7.15 %	(370)	15.95%	78%
2022	12,446	9,577	2,869	7.15 %	(192)	16.62%	77%
2023	12,937	9,862	3,075	7.15 %	(33)	17.25%	76%
Scenario F: (4.0)% Market Return for Year Ended June 30, 2020; 7.15% Market Returns Thereafter							
2019	$ 11,129	$ 8,739	$ 2,390	5.32 %	$ 64	15.32%	79%
2020	11,544	8,980	2,563	(4.00)%	(744)	15.77%	78%
2021	11,983	9,156	2,827	7.15 %	(558)	16.59%	76%
2022	12,446	9,284	3,162	7.15 %	(298)	17.65%	75%
2023	12,937	9,451	3,486	7.15 %	(49)	18.70%	73%

The ratio of assets to payroll is 4.5 to 1 and so a one standard deviation difference in annual returns is about 62% of payroll (please see page A-16 of the annual valuation). In the event of an investment loss of this magnitude (as depicted in Scenario F and if not offset by future gains), the computed contribution rate would remain at about the level shown as of the 2023 Valuation Year for the duration of the amortization period.

Benefit Changes

The June 30, 2019 valuation reflects a benefit change enacted during the 2019 General Assembly session. Specifically, interest credits on member contributions were reduced from 4% to 2%. This is a very small change as it only affects those members who leave employment and withdraw their contributions.

Assumption Changes

There were no assumption changes in the June 30, 2019 valuation.

Method Changes

The amortization period for APERS was updated for the June 30, 2019 valuation to a 24-year period. There have been no other changes in methods since the June 30, 2018 valuation.

Contribution Timing

The employer contribution rate for APERS computed in the June 30, 2019 valuation will be applied for the period beginning July 1, 2021 through June 30, 2022.

District Judges

The formerly independent District Judges Retirement System was merged into APERS and first valued in the annual valuation for APERS beginning with the June 30, 2005 valuation. The benefit plan for these members is administered by APERS and assets are accounted for separately in APERS assets. The APERS Board determines funding policies and assumptions to establish employer contributions to fund the benefits of these members.

Detail on the contribution rate for New Plan members and Paid-Off Old Plan members appear on page D-1 of the annual valuation. Detail, by employer, for still paying Old Plan members is shown on pages D-8 and D-9 of the annual valuation.

Board approval of the employer contribution shown in the June 30, 2019 annual valuation is needed.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the System's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.15% on the actuarial value of assets), it is expected that:

1) The employer normal cost as a percentage of pay will decrease to approximately 7.2% (the employer normal cost for the new contributory plans) as non-contributory members leave employment;
2) The unfunded actuarial accrued liabilities will be fully amortized as of June 30, 2045; and
3) The funded status of the plan will increase gradually towards a 100% funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
2) The measurement is dependent upon the actuarial cost method which, in combination with the amounts of future contributions, will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

The findings in this report are based on data and other information through June 30, 2019. 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

The actuarial methods and assumptions used in the valuation are summarized in Section D of the annual valuation. The assumptions are established by the Retirement Board after consulting with the actuary. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable.