

## APERS: RETIREMENT SYSTEM SOLVENCY ANALYSIS

Prepared by:

Pension Integrity Project at Reason Foundation September 11, 2018

### A History of Volatile Solvency (1995-2017)



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and CAFRs for FY1995-17.



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Source: Pension Integrity Project analysis of APERS actuarial valuation reports and CAFRs for FY1995-17, and GASB reports for FY2014-17 (dotted/striped section). The GASB figures presented reflect market value, fiduciary net position, and total pension liabilities.

### APERS Actuarially Determined Contributions are Growing Faster than Arkansas Revenue



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and data from NASBO Fiscal Survey of States. GASB recently changed the definition of Actuarially Required Contribution (ARC) to Actuarially Determined Employer Contribution (ADEC).

# APERS Unfunded Liabilities are Growing Faster than Arkansas Economy



Source: Pension Integrity Project analysis of APERS actuarial valuation reports, as well as data from the Federal Reserve Bank of St. Louis and BLS.

### Pension Costs as a Share of Expenditures Have Not Returned to Pre-Crisis Levels



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and NASBO Fiscal Survey of States publications.



## CHALLENGES APERS IS CURRENTLY FACING

#### Actuarial Experience of APERS, 2001-2017



Source: Pension Integrity Project analysis of APERS CAFRs. Data represents cumulative unfunded actuarial liability by gain/loss category. "Benefit Changes & Other" category also includes liabilities from new entrants. "Interest on the Debt" category shows the difference between interest accruals and amortization payments. Demographic performance includes retirement, disability, death-in service benefits, withdrawal, and mortality experiences.

### Key Driving Factors Behind APERS Problems



- 1. <u>Underperforming investment returns</u> have been the largest contributor to the unfunded liability, adding \$1.63 billion to the unfunded liability from 2001 to 2017.
  - APERS' assets have consistently returned less than assumed, leading to growth in unfunded liabilities.
- 2. <u>Insufficient prefunding and benefit changes</u> have meant that certain benefit increases and compounding cost-of-living adjustments haven't been fully funded, while retiree health care (OPEB) has been extremely underfunded with its own separate \$1.26 billion in unfunded liabilities by 2017.
- 3. <u>Historic amortization methods, actuarial changes, and liability</u> <u>experience</u> resulted in considerable growth in interest on the unfunded liability, and other components (i.e. "Expected Change in Unfunded Liability"), that added \$2.3 billion to the unfunded liabilities since 2001.
- 4. <u>Undervaluing Debt</u> through discounting methods has likely led to the tacit under calculation of required contributions.



## PROBLEM I: ASSUMED RATE OF RETURN

- Optimistic Expectations: The Assumed Return for APERS plan is exposing taxpayers to significant investment underperformance risk
- Underpricing Contributions: The use of an unrealistic Assumed Return has likely resulted in underpriced Normal Cost and an undercalculated Actuarially Determined Contribution

### APERS Problem: Underperforming Assets Investment Return History, 1996-2017





### APERS Problem: Underperforming Assets

### Investment Returns Have Underperformed

- APERS's assumed rate of return has been reduced by 85 basis points from 8.0% to 7.15% over the past five years.
- However, these investment assumptions still have not been matched by plan's historic investment trends:

Average Market Valued Returns	Average Actuarially Valued Returns
20-Years (1998-2017): 6.44%	20-Years (1998-2017): 4.26%
15-Years (2003-2017): 7.12%	15-Years (2003-2017): 5.72%
10-Years (2008-2017): 5.00%	10-Years (2008-2017): 6.03%
5-Years (2013-2017): 9.29%	5-Years (2013-2017): 9.96%

Note: Past performance is not the best measure of future performance, but it does help provide some context to the problem created by having an excessively high assumed rate of return.

### New Normal: Forecasts for Future Returns are Significantly Lower than Past Returns



Image & Data Source: McKinsey & Company, Diminishing Returns: Why Investors May Need To Lower Their Expectations (May 2016)

### New Normal: Market Trend Towards Risk

Average Portfolio Asset Allocation Necessary for a 7.5% Expected Return Has Required Shifting from 100% Bonds to a Riskier Mix of Asset Classes



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### New Normal: The So-Called Recovery Has Already Happened, the Market Has Changed



The "new normal" for institutional investing suggests that achieving even a 6% average rate of return is optimistic.

- 1. Over the past two decades there has been a steady change in the nature of institutional investment returns.
  - 30-year Treasury yields have fallen from around 8% in the 1990s to consistently less than 3% today.
  - Globally, interest rates are at ultralow historic levels, while market liquidity continues to be restrained by financial regulations.
- 2. McKinsey & Co. forecast the returns to equities will be 20% to 50% lower over the next two decades compared to the previous three decades.
- 3. As APERS waits for the "recovery" its unfunded liabilities continue to grow.

### New Normal: Markets Have Recovered Since the Crisis—APERS Funded Ratio Has Not



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and Yahoo Finance data.

### Probability Analysis: Measuring the Likelihood of APERS Achieving Various Rates of Return



	Probability of APERS Achieving A Given Return Based On:				
Possible Rate of Return	APERS Expectations	BNY Mellon 10-Year Forecasts	JP Morgan 10-15 Year Forecasts	BlackRock Long-Term Forecasts	Research Affiliates 10-Year Forecasts
8.50%	24.2%	15.6%	13.2%	16.9%	6.4%
7.50%	39.1%	27.8%	24.0%	27.5%	12.9%
7.15%	45.3%	32.6%	28.8%	31.5%	16.3%
6.50%	56.7%	42.9%	38.7%	40.2%	23.4%
6.00%	65.0%	50.7%	47.6%	47.1%	30.1%
5.50%	72.8%	58.9%	56.3%	54.4%	37.8%
4.50%	85.2%	73.3%	71.6%	68.2%	53.1%

Source: Pension Integrity Project Monte Carlo model based on APERS asset allocation and reported expected of returns by asset class. Forecasts of returns by asset class generally from BNYM, JPMC, BlackRock, and Research Affiliates were used and matched to the specific asset class of APERS. Probability estimates are approximate as they are based on the aggregated return by asset class. For complete methodology contact Reason Foundation.

### APERS's Investment Returns Are Experiencing Greater Volatility and Underperformance



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and CAFRs. Average returns and volatility measured are geometric.

### APERS Asset Allocation (2001-2017) Expanding Alternatives in Search for Yield



Source: Pension Integrity Project analysis of APERS actuarial valuation reports and CAFRS.

# Change in the Risk Free Rate Compared to APERS Discount Rate (1995-2017)



Source: Federal Reserve average annual 30-year treasury constant maturity rate

### APERS is Taking on More Risk as Market Returns Underperform

- APERS has tried to adjust to the lower returns by reallocating assets towards higher risk but potentially higher yielding investments like hedge funds, private equity, and real estate. APERS has considerably less lower-risk bonds in its portfolio today than 20 years ago.
  - The additional risk taken by APERS is reflected in its "Sharpe Ratio," which is a measure of risk. Any Sharpe Ratio over 1 is considered lower risk, and less than 1 considered risky.
  - APERS' Sharpe Ratio for 10-year returns has fallen from 0.34 in 2005 (already risky) to just 0.18 in 2017.
  - In short, the average market returns greater than risk-free rates of return are decreasing considerably in relation to the rising portfolio volatility/total risk.

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### SENSITIVITY ANALYSIS AND STRESS TESTING

### Baseline: Normal Cost + Amortization Payment

Discount Rate: 7.15%, Assumed Return: 7.15%, Actual Return: 7.15%, Amo. Period: 30-Year, Closed



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that the state continues paying 100% of the actuarially determined contribution each year, hits all of its actuarial assumptions, and keeps the funding policy intact. Years are plan's fiscal years.

#### Employer Contribution 30-Year Forecast (% of Payroll) Underperforming Assets: 6% Average Return

Discount Rate: 7.15%, Assumed Return: 7.15%, Actual Return: 6.0%, Amo. Period: 30-Year, Closed



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that the state continues paying 100% of the actuarially determined contribution each year, hits all of its actuarial assumptions, except for the investment return, and keeps the funding policy intact. Years are plan's fiscal years.



### What if APERS Investments Continue Underperforming? Sensitivity Analysis: Employer Contribution



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that the state pays 100% of the actuarially determined contribution each year, meets all of its actuarial assumptions, except investment returns, and makes steady progress on the scheduled amortization policy.

# What if APERS Investments Underperform in the Short-term?

- Even if a pension plan hits its assumed rate of return on average, the *timing* of investment returns can have a major impact on a plan's actuarially required contributions over the long term.
- Consider the following few examples...



### What if APERS Investments Underperform in the Short-term? Sensitivity Analysis: Employer Contribution



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that the state pays 100% of the actuarially determined contribution each year, meets all of its actuarial assumptions, except investment returns, and makes steady progress on the scheduled amortization policy.

### What if APERS Investments Underperform in the Short-term? Sensitivity Analysis: Employer Contribution



Source: Pension Integrity Project actuarial forecast of APERS plan. Strong early returns (TWRR = 7.15%, MWRR = 8.23%), Even, equal annual returns (Constant Return = 7.15%), Mixed timing of strong and weak returns (TWRR = 7.15%, MWRR = 7.15%), Weak early returns (TWRR = 7.15%, MWRR = 6.32%) Scenario assumes that ATRS pays the actuarially required rate each year. Years are plan's fiscal years.

### What if APERS Achieves the 7.15% Return Assumption? Possible Futures: Employer Contribution



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that APERS continues paying ADEC contributions each year, hits all of the actuarial assumptions, and continues paying off the unfunded liability. Years are plan's fiscal years. The dark blue and light blue lines represent funded ratios with returns around, but not always exactly at, the 75<sup>th</sup> percentile and 25th percentile, respectively.

### What if APERS Achieves a 5.61% Return Instead? Possible Futures: Employer Contribution



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that APERS continues paying ADEC contributions each year, hits all of the actuarial assumptions, except investment return, and continues paying off the unfunded liability. Years are plan's fiscal years. The dark blue and light blue lines represent funded ratios with returns around, but not always exactly at, the 75<sup>th</sup> percentile and 25th percentile, respectively.

### Possible Futures: Funded Ratio



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that APERS continues paying ADEC contributions each year, hits all of the actuarial assumptions, and continues paying off the unfunded liability. Years are plan's fiscal years. The dark blue and light blue lines represent funded ratios with returns around, but not always exactly at, the 75<sup>th</sup> percentile and 25th percentile, respectively.

### What if APERS Achieves a 5.61% Return Instead? Possible Futures: Funded Ratio



Source: Pension Integrity Project actuarial forecast of APERS plan. Scenario assumes that APERS continues paying ADEC contributions each year, hits all of the actuarial assumptions, except investment return, and continues paying off the unfunded liability. Years are plan's fiscal years. The dark blue and light blue lines represent funded ratios with returns around, but not always exactly at, the 75<sup>th</sup> percentile and 25th percentile, respectively.

### What Happens to Pension Debt if We Have Another Market Downturn? Stress Test: Unfunded Liability Forecast



Source: Pension Integrity Project actuarial forecast of Arkansas APERS. Scenario assumes that the state continues to contribute ADC.

### How Long Will it Take to Pay Off the Pension Debt?

### Sensitivity Analysis: Amortization Period



Source: Pension Integrity Project actuarial forecast of Arkansas APERS. Scenario assumes that the state make actuarially determined contributions. The "implied funding period" shown may differ from the ones provided in the plan's CAFRs and valuation reports.

### Sensitivity Analysis: Normal Cost Comparison Under Alternative Assumed Rates of Return

(Amounts to be Paid in 2018-19 Contribution Fiscal Year, % of projected payroll)

	Gross Normal Cost	Employer Normal Cost	Employee Normal Cost
7.15% Assumed Return (Current Baseline)	11.63%	8.16%	3.47%
6.15% Assumed Return	14.49%	11.02%	3.47%
5.15% Assumed Return	18.04%	14.57%	3.47%
<b>4.15%</b> Assumed Return	22.48%	19.01%	3.47%

Note: These alternative gross normal cost figures should be considered approximate guides to how much more normal cost should be under different discount rates. Any policy changes should be based on more precise normal cost forecasts using detailed plan data. Alternative normal cost rates based reported liability sensitivity from the FYE 2017 APERS CAFR.

Source: Pension Integrity Project forecasting analysis based on Arkansas APERS actuarial valuation reports. Normal cost includes a 0.40% administrative expense.

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### PROBLEM 2: DISCOUNT RATE AND UNDERVALUING DEBT

 The discount rate is likely undervaluing the recognized amount of existing pension obligations

### How Actuarially Required Contributions are Calculated for Pension Plans



### APERS Discount Rate Methodology is Undervaluing Liabilities



- 1. The "discount rate" for a public pension plan should reflect the risk inherent in the pension plan's liabilities:
  - Most public sector pension plans including Arkansas PERS use the assumed rate of return and discount rate interchangeably, even though each serve a different purpose.
  - The **Assumed Rate of Return** (ARR) adopted by APERS estimates what the plan will return on average in the long run and is used to calculate contributions needed each year to fund the plans.
  - The Discount Rate (DR), on the other hand, is used to determine the net present value of all of the already promised pension benefits and supposed to reflect the risk of the plan sponsor not being able to pay the promised pensions.

## **APERS Discount Rate**

Methodology is Undervaluing Liabilities

- 2. Setting a discount rate too high will lead to undervaluing the amount of pension benefits actually promised:
  - If a pension plan is choosing to target a high rate of return with its portfolio of assets, and that high assumed return is then used to calculate/discount the value of existing promised benefits, the result will likely be that the actuarially recognized amount of accrued liabilities is undervalued.
- 3. It is reasonable to conclude that there is almost no risk that Arkansas would pay out less than 100% of promised retirement income benefits to members and retirees.
  - Promised benefits for vested members represent a legal contract.
- 4. The discount rate used to account for this minimal risk should be appropriately low.
  - The higher the discount rate used by a pension plan, the higher the implied assumption of risk for the pension obligations.



### **APERS Pension Debt Sensitivity**

FYE 2017 Net Pension Liability Under Varying Discount Rates

	Funded Ratio (Market Value)	Unfunded Liability (Market Value)	Actuarial Accrued Liability
<b>7.15%</b> Discount Rate (Current Baseline)	75.4%	\$2.61 billion	\$10.61 billion
6.15% Discount Rate	70.0%	\$3.97 billion	\$11.96 billion
5.15% Discount Rate	58.8%	\$5.60 billion	\$13.60 billion
4.15% Discount Rate	51.3%	\$7.58 billion	\$15.58 billion

Source: Pension Integrity Project analysis of APERS GASB Statements. Market values shown are fiduciary net position, and unfunded liabilities shown are total pension liabilities. Figures are rounded.

### Comparing Change in Discount Rate to the Change in the Risk Free Rate (2000-2017)



Actual Discount Rate -Arkansas ATRS

—30-Year Treasury Bond Yield Rate

The "Alternative Discount Rate Scenario" imagines that APERS linked the discount rate to changes in the 30-year Treasury yield, starting in the year 2000.

This link would have served to adjust the APERS discount rate based on changes in one measure of a so-called "risk free" rate of return.

Such a link would have meant a consistent 206 basis point spread between the APERS discount rate and the Treasury yield. As the risk free rate rose and fell, so too would the APERS discount rate.

Alternative Discount Rate Scenario -Arkansas ATRS

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### PROBLEM 3: ACTUARIAL ASSUMPTIONS AND METHODS

 The combination of unmet actuarial assumptions and slowpaced changes to those assumptions is likely resulting in an understated size of actuarial liabilities and unfunded liabilities

### Challenges from Aggressive Actuarial Assumptions Actual Experience Different from Actuarial Assumptions



#### (+) Withdrawal Rate Assumptions

 Withdrawal rates before members reached reduced or normal retirement threshold have been higher than anticipated, reducing actuarial liabilities by \$182.6 million between 2001-2017.

#### • (-) Withdrawal Rate Assumptions

 Although the total amount of accrued liabilities decreases whenever a member leaves employment before she starts qualifying for retirement benefits by foregoing the employer match, high overall turnover rates suggest that the state is facing challenges retaining and properly rewarding high-quality employees.

### Challenges from Aggressive Actuarial Assumptions Actual Experience Different from Actuarial Assumptions



#### (-) Benefit Changes

 Raising pension benefits for members in fiscal years 2001, 2007, and 2009 increased unfunded liabilities by \$151.2 million between 2001-2017.

#### (-) Changes from Revised Assumptions & Methods

 Whenever the plan amends its investment return, inflation, payroll and other assumptions and methods it usually effects both asset and liability valuations. These changes has increased unfunded liability by \$819.9 million between 2001-2017.

#### • (-) New Entrants

 Adding more members to the plan resulted in an increase of \$609.2 million to unfunded liabilities over the 2001-2017 period.

### Challenges from Aggressive Actuarial Assumptions Actual Experience Different from Actuarial Assumptions



#### (+) Overestimated Payroll Growth

 APERS employers have not raised salaries as fast as expected, resulting in lower payrolls and thus lower earned pension benefits. This has meant a reduction in actuarial liabilities of \$606.9 million from 2001 to 2017.

#### (-) Overestimated Payroll Growth

- However, overestimating payroll growth is creating a long-term problem for APERS because of its combination with the level-percentage of payroll amortization method used by the plan.
- This method *backloads pension debt payments* by assuming that future payrolls will be larger than today (a reasonable assumption). But when payroll does not grow as fast as expected, employer contributions must rise as a percentage of payroll. This means the amortization method combined with the inaccurate assumption is delaying debt payments.

### Challenges from Aggressive Actuarial Assumptions, 2000-17 Actual Change in Payroll v. Assumption



Source: Pension Integrity Project forecasting based on APERS actuarial valuation reports and CAFRs.

Challenges from Aggressive Actuarial Assumptions, 2000-17 Actual Inflation v. Assumption



Source: Pension Integrity Project forecasting based on APERS actuarial valuation reports and CAFRs, and data from the Bureau of Labor Statistics.

### Challenges from Aggressive Actuarial Assumptions Assumption & Method Changes

#### Discount Rate / Assumed Return

- 2014: Lower from 8.0% to 7.75%
- 2015: Lower from 7.75% to 7.5%
- 2017: Lower from 7.5% to 7.15%

#### Wage Inflation Assumption

• Reduced from 5.0% in 2003, to 4.00% in 2013, and to 3.25% in 2015

#### Salary Growth Assumption

• Gradually reduced from 5% in 2000 to to 3.25% in 2015

#### Amortization Method

- 2013: Adopted a closed, 15-year amortization schedule for new debt and 22-year method for previously accrued unfunded liabilities.
- 2017: In conjunction with the adoption of the 7.15% investment return assumption, the amortization period for APERS was updated to a closed, 30-year period.

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### PROBLEM 4: THE EXISTING BENEFIT DESIGN DOES NOT WORK FOR EVERYONE

 The high turnover rates and back-loaded benefits for members of APERS suggest that the current retirement benefit design undermines retention goals

### Probability of Members Remaining in APERS, Cumulative



Source: Pension Integrity Project analysis of APERS actuarial reports and CAFRs. Illustration is based on plan's 2017 assumptions and a average male employee at the State and Local Government Division hired at the age of 25.

# Does the APERS Retirement Plan Work for All of Today's Employees?

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- 73% of new members leave before 5 years
  - State employees need to work for 5 years before their benefits become vested.
  - Members who leave the plan before then must forfeit contributions the state made on their behalf.
  - Another 9% of new state employees who are still working after 5 years will leave before 10 years of service.
- 9% of all paid service members hired next year will still be working after 25 years, long enough to qualify for a reduced benefit
  - In 2011, nine out of 10 state and local employees in Arkansas were covered by Social Security.

Source: Pension Integrity Project analysis of APERS withdrawal and retirement rate assumptions. Estimated percentages are based on the expectations used by the plan actuaries; if actual experience is differing substantially from the assumptions then these forecasts would need to be adjusted accordingly.



## PROBLEM 5: INSUFFICIENT FUNDING OF HEALTH CARE BENEFITS

 Funding only a fraction of post-employment health care benefits on pay-as-you go basis results in mounting non-pension liabilities

### Pay-As-You-Go OPEB Benefits

Shortcomings of Current Funding Methodology

- Arkansas funds its OPEB ("other post-employment benefits")

   i.e. retiree health care benefits on pay-as-you-go basis, contributing only a fraction of the required cost each year. This is similar to how other states have failed to fund their OPEBs.
- For example, between 2008 and 2017 the Arkansas State Police Medical and Rx Plan (ASP) has, on average, received 49% of the annual required contributions. Meantime, Arkansas State Employee Health Insurance Plan (AEP) was annually appropriated just 27% of the needed funds.
- As a result, by 2017 ASP and AEP have accrued \$40 million and \$1.26 billion in net OPEB obligations, respectively. This trend undermines the solvency of these plans and ability to offer health care benefits in future.

Note: According to CRR at Boston College, OPEB unfunded liabilities nationally are roughly 28% the size of state and local unfunded pension liabilities. Slide Source: APERS and Arkansas State CAFRs.



### Annual Net OPEB Liability: State Employee Health Insurance Plan (AEP)



Source: Pension Integrity Project analysis of APERS actuarial reports and CAFRs.



## FRAMEWORK FOR SOLUTIONS & REFORM

### **Objectives of Good Reform**



- Keeping Promises: Ensure the ability to pay 100% of the benefits earned and accrued by active workers and retirees
- Retirement Security: Provide retirement security for all current and future employees
- Predictability: Stabilize contribution rates for the long-term
- Risk Reduction: Reduce pension system exposure to financial risk and market volatility
- Affordability: Reduce long-term costs for employers/taxpayers and employees
- Attractive Benefits: Ensure the ability to recruit 21st Century employees
- Good Governance: Adopt best practices for board organization, investment management, and financial reporting

### Pension Reform Strategies

#### Problem 1: Assumptions

- *Reform Area 1.1*: Reduce investment risk and align assumed return with a more realistic probability of success
- *Reform Area 1.2*: Review and adjust actuarial assumptions related to withdraw rates, payroll growth, retirement rates, disability claim rates, inflation, and mortality

#### Problems 2 & 3: Contribution Methods & Discount Rate

- *Reform Area 2*: Consider accelerating the current amortization period (to 15-20 years) and improving the method used to determine amortization payments
- *Reform Area 3:* Consider changing discount rate method to better price the estimated value of promised benefits

#### Problem 4: Benefit Design

• *Reform Area 4*: Consider whether a new benefit system design could work for more APERS members and improve retention rates

#### Problem 5: Healthcare Funding

Reform Area 5: Switch from pay-as-you go to actuarially pre-funded arrangements for annual OPEB contributions

### The Landscape of Changes to Pension Systems Over Past 20 Years

- Systems creating choice-based DB or DC plans
  - *Default to DB*: South Carolina State & Local (2012), Arizona Police/Fire (2016), Arizona Corrections (2017)
  - Default to DC: Michigan Teachers (2017)

#### Systems creating choice-based Hybrid or DC plans

Utah (2014), Pennsylvania State & Teachers (2017)

#### Systems creating DC-only plans

 Michigan State (1996), Alaska State (2005), Alaska Teachers (2005), Arizona Elected Officials (2013), Arizona Corrections (2017)

#### Systems creating CB-only plans

 Nebraska State (2002), Nebraska Local (2002), Kansas State (2012), Kentucky State & State Police (2014), Kentucky Local (2014)

#### Systems creating Hybrid-only plans

 Oregon State & Teachers (2003), Georgia State (2008), Rhode Island State & Teachers (2011), Virginia (2012), Tennessee (2013)

#### Policy Reform Scenarios

### Prospective Reform Options



- Risk-Managed Defined Benefit Plans
  - Create a new DB plan for new hires—built from the beginning with very conservative assumptions and contribution rate methods, and explicit cost and risk sharing to secure long-term solvency
- Primary Retirement Income-Focused Defined Contribution Plans
  - Fixed contribution rates; no additional unfunded liabilities
- Choice-Based Retirement Plans (Example):
  - Enroll members in a DC Plan, but offer choice of a 'Risk-Managed DB' Plan
- Hybrid DB/DC Plans *(Example):* 
  - 1% multiplier for the DB, with normal cost split 50/50, and
  - 3% DC employer contribution rate
  - 4% or more DC employee contribution rate
- Cash Balance Plans:
  - Defined benefit system that guarantees a certain rate of return on investment

### Pension Reforms and Addressing the Legacy Unfunded Liability



- Positive Approaches to Addressing Legacy UAL
  - Utah (2014), Oklahoma (2015) included in statute a requirement that employers make amortization payments as a percentage of total payroll; effect has been that unfunded liability amortization payments in dollars have been effective the same as if there had been no changes
  - Arizona Police & Fire (2016), Arizona Corrections (2017), Michigan Teachers (2017) — included in statute a requirement that employers make amortization payments as a percentage of total payroll + required future UAL to be paid off over 10-year, level-dollar layered amortization bases
- Negative Approaches to Addressing Legacy UAL
  - Michigan State Employees (1996), Alaska State & Teachers (2005), Kentucky State and Local (2014), Pennsylvania (2017) — made no change with respect to legacy UAL, then made limited or no changes to the assumed rate of return and amortization method + failed to pay 100% of actuarially determined rate, collectively leading to a growth in the legacy UAL
  - Arizona Elected Officials (2013) created a fixed payment schedule for legacy UAL + no change to assumed return over time; led to insufficient funding deemed unconstitutional by trial court in 2017

### Limits of Recent Pension Reforms

#### Michigan Teachers

- Plan to lower the assumed return requires future action by the MPSERS board, state treasurer, and legislature and that could be politically reversed
- Choice-based approach has a one-time option without ability to change the choice within three to five years once a teacher better understands their own career trajectory

#### Arizona Police/Fire & Probation

- More conservative funding policy is needed and will require future action by the PSPRS board, and there is no guarantee the incentive approach will work
- New defined benefit plan uses the same assumed rate of return as the legacy plan, instead of starting at a lower rate

#### Pennsylvania State and Teachers

- New defined benefit plans (within the DB/DC Hybrid plans) use the same assumed rate of return, amortization method, and other funding policies of the legacy plan instead of starting with better assumptions and methods
- Default for all members is into the max hybrid plan option instead of into the plan option that best aligns with the demographics and participation rates of each group of members within PPSERS and PSERS
- DC Only plan option has just a 2% employer match, which may not be enough to ensure the plan option can provide for retirement security
- No plan for changes to the existing assumed return or amortization policy





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## APPENDIX: REFORM CASE STUDIES



### Michigan Teachers (2017-18)

#### Why?

- Underperforming investment returns
- Back-loaded debt payments escalating (due to use of level-percent amortization method and payroll growth assumption failing to match actual experience)
- Prior reforms (2010, 2012) having limited effect on growth in unfunded liability amortization payments
- History of failing to pay the actuarially determined contribution rate

- Plan to phase-in lower assumed rate of return
- New choice-based retirement system (DC or DB) for new hires
  - Lower assumed return, new amortization method, cost-sharing contribution rate policy for new-hire DB plan
- One-time money added to reduce unfunded liability
- Legislative commitment to future amortization method changes

### Michigan Teachers (2017-18)

#### **Outcomes?**

- Growing bipartisan recognition of need for reform:
  - The plan design aspect of pension reform was contentious in 2017, passing by just 4 votes in each chamber
  - BUT, the funding policy and assumption changes in 2018 were unanimous
- 7/23/18: Standard & Poor's increased the state's credit rating from AAto AA with a "stable outlook," citing pension reform as a key factor
  - Only one of three states receiving an upgrade since 2016



### Arizona Police & Fire (2016)



#### Why?

- Underperforming investment returns
- Permanent benefit increase (PBI) program was skimming investment returns and destabilizing asset growth
- Prior reforms (2011) had negative effect on growth in unfunded liabilities and vesting requirements; reforms making retroactive benefit changes found unconstitutional by AZ Supreme Court

- New choice-based retirement system for new hires (DB or DC)
  - New amortization method, cost-sharing contribution rate policy, and graded multiplier for new-hire DB plan
- Constitutional ballot measure to change the PBI to a pre-paid COLA that adjusts based on funded ratio
- Retroactive benefit improvement for post-2011 employees
- Change board composition to align with risks within the system and incentivize better future funding policy

### Arizona Corrections & Probation (2017)

#### Why?

- Underperforming investment returns
- Permanent benefit increase (PBI) program skimming investment returns and destabilizing asset growth
- Existing benefit not proving to be a recruiting tool for the high turnover prone jobs represented by the plan

- New choice-based retirement system (DB or DC) for new probation & surveillance officers
  - New amortization method, cost-sharing contribution rate policy, and graded multiplier for new hire defined benefit plan
- New DC plan for correctional officers
- Constitutional ballot measure to change the PBI to a pre-paid COLA that adjusts based on funded ratio



### Pennsylvania State & Teachers (2017)

#### Why?

- Underperforming investment returns
- History of failing to pay the actuarially determined contribution rate
- Prior reforms having a limited effect on the growth in unfunded liability amortization payments

- Create new choice-based retirement system (Hybrid or DC) for new hires
  - Cost-sharing contribution rate policy for DB component of new Hybrid plans
- Create commission to target savings by lowering investment fees paid to asset managers
- Require that any savings resulting from these changes be put back into the fund to pay down unfunded liabilities

### Oklahoma State Employees (2014)

#### Why?

- Underperforming investment returns
- History of failing to pay the actuarially determined contribution rate
- Existing benefit structure does not prove itself as an effective recruiting tool leading to higher than desired turnover

- All future COLA increases now required funding by cash before granting the benefit
- New employees (except hazardous duty employees) to participate in a DC plan instead of the previous DB plan

### Utah Retirement System (2010)

#### Why?

- Underperforming investment returns
- After recession, reaching 100% funding through previous amortization schedule became impossible
- History of failing to pay the actuarially determined contribution rate

- Create new choice-based retirement system for new hires
- New employees could choose to participate in a DC plan or a limited DB plan
- Closed loophole allowing "double-dipping" with retirees returning to the workforce and still receiving pension checks