

Shared Risk Hybrid Retirement Program for Public Safety HB 55 – Actuarial Implications

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Credentials



- Highest Actuarial Credentials
 - Fellow of the Society of Actuaries (1986)
 - Enrolled Actuary under ERISA (1984)
 - Member of the American Academy of Actuaries (1983)
 - Elected as Secretary/Treasurer of 35,000 member Society of Actuaries
- Author and Frequent Speaker
 - “Still A Better Bang for the Buck” (with National Institute on Retirement Security), 2014
 - “Are California Teachers Better off with a Pension or 401(k)” University of California Berkeley Labor Center and Journal of Retirement, 2016
 - Frequent Testimony to Legislatures and City Councils
 - Regular Expert Witness (Detroit, Stockton, Puerto Rico)

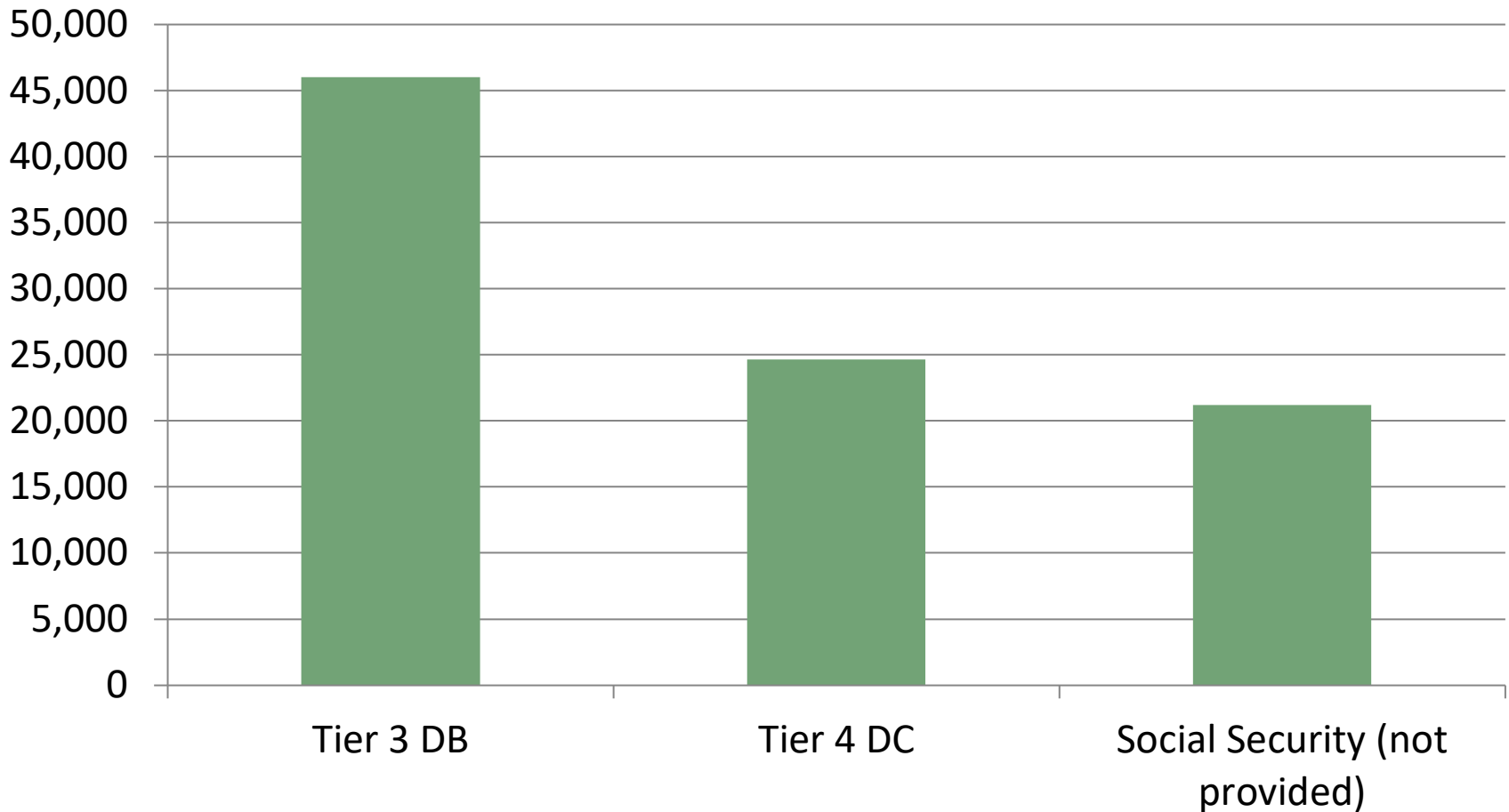
Sample Work History

- Corporate actuary for Boeing 1980-1984
- Founded Pension Trustee Advisors in 2010
- Alaska related experience
 - ARMB first ongoing review actuary 2005-2006
 - Audited Alaska PERS/TRS actuarial valuations 2009
 - Former leader of Buck Consultants' Denver retirement practice
 - Advisors to labor groups since 2011, including testimony
- Consulting services for 23 statewide retirement systems in Alaska, Colorado, Missouri, North Dakota, Oklahoma, Puerto Rico, Utah, Texas, Wyoming and others.
 - Served as system actuary for most of these (including CO, MO, ND, OK, WY)
 - Ongoing consultant to Ohio Retirement Study Council, including reform
- Expert testimony and consulting for pension systems, governments, and labor groups
- Other clients have included the US Department of State, Cities of Baltimore, New York and Philadelphia, IBM, US WEST and Ford

Shared-Risk Hybrid Retirement Program for Public Safety

- Why is change necessary?
- Proposed Structure of Shared-Risk Hybrid Retirement Program
- Illustration of Financial Projections

Illustration of hypothetical police/fire benefits: \$80,000 Final Average Salary



Why is change necessary?

Tier 3 provided adequate benefits; Tier 4 does not

Typical Average Pension Illustration	Police & Fire
Hire Age	31
Retirement Age	56
Years of Service	25
DB Benefit as Percent of Final Average Compensation (based on Tier 3 provisions)	57%
DCR Benefit as Percent of Final Average Compensation (calculated based on reduced return and uncertain longevity)	31%
Reduction of Benefit % due to DCR program	26%

Key Considerations with Shared-Risk Hybrid Retirement Programs

- DB Plans are more cost effective at providing retirement benefits
 - DB pension plans pool “longevity risks”
 - DB pension plans can maintain a better diversified portfolio because, unlike individuals, they do not age
 - DB pension plans achieve better investment returns because of professional asset management and lower fees
- DC Plans are more consistent with individual responsibility
 - Benefit is a clearly defined contribution from the employer and employee to a trust
 - Benefit is more under the control and full ownership of the individual
 - Benefit is much more portable
 - No risk of unfunded liabilities to employer
- Shared-Risk Hybrid Plans have many features of both
 - Cost-effectiveness of DB plans
 - But not all of the actuarial risk is borne by the employer

How does HB 55 strike a compromise?

- Start with 12% fixed employer contribution and manage plan within that target as possible
- Design current target benefit levels
 - Consider benefits provided by DCR and latest DB
- Build in benefit and/or employee contribution adjustment mechanisms
- These provide cushion against adverse experience

Plan Comparison

	Tier 3 Public Safety	Tier 4	Shared-Risk Hybrid
Employee contributions	7.5%	8.0%	Range of 8-10% set by ARM board
Employer contribution	22%	22%	22% with no less than 12% to Shared-Risk Hybrid
Vesting	5	5	5
Retirement age	Any age with 20 years	None	55 with 20 years or 60 without
Benefit Multiplier	2% x first 10 years, 2.5% thereafter	None – based on market returns	2% x first 10 years, 2.5% thereafter
Final Average Pay	Highest 3 years	NA	Highest 5 years
Alaska COLA	Higher or \$50 or 10%	None	None

Plan Comparison (*cont'd*)

	Tier 3 public safety	Tier 4	Shared-Risk Hybrid
Post-Retirement Pension Adjustment (PRPA)	Automatic for disabled, over 60 and 5 years retired	none	Same as Tier 3 but can be withheld if plan funding is below 90% per ARM board
Medical coverage	Provided after 25 years at any age or age 60 with 10 years	HRA 3% average PERS salary plus Medicare supplement	Same as Tier 4 Public safety
Disability	<ul style="list-style-type: none"> • Non-occupational calculated as normal retirement • Occupational is 40% of gross compensation 	<ul style="list-style-type: none"> • Non-Occupational is only service credit • Occupational is 40% of salary. Must be total and permanent disability. 	Same as Tier 3 Public safety

Changes from old DB system

- Removal of full medical coverage
- Funding level built on more conservative 7.00% rate of return vs current 7.38% ARM Board uses
- Employee contribution can adjust upward from 8% to 10%
- Employer payment toward Shared-Risk Hybrid can adjust upward from 12% to 14%
- Alaska COLA benefit is eliminated
- Post Retirement Pension Adjustment is not automatic and can be withheld if funding level is below 90%
- Minimum age of 55
- Final average salary is based on highest 5 years instead of highest 3 years

Current Tier 4 members transferring into plan

- ARM Board will create an actuarially equivalent formula for purchasing time.
- Individual will have 90 days from implementation to join.
- Individual can use their Tier 4 DC account to purchase service credit or start from 0.
- Tier 4 balance may not be enough to cover actual time employed.
- Example:
 - Peace Officer with 6 years and \$100,000 balance in Tier 4.
 - ARM board determines the cost of purchasing 6 years is \$120,000.
 - Officer could elect to just purchase 5 years or pay the difference between the two amounts (\$20,000) and purchase the 6 years.

Benefit Comparison

Tier 3 Public Safety	Shared-Risk Hybrid
Hypothetical final 3 years of salary: \$95,481 \$98,345 \$101,295	Hypothetical final 5 years of salary: \$90,000 \$92,700 \$95,481 \$98,345 \$101,295
High 3-year average salary = \$98,374	High 5-year average salary = \$95,564
25 years at any age $57.5\% \times 98,374 = \$56,565 / 12 = \$4,714$ monthly	25 years at age 55 $57.5\% \times \$95,564 = \$54,949 / 12 = 4,579$ monthly
10% COLA at age 65 = $\$5,656 / 12 = \471	No COLA
Automatic PRPA based on CPI	Same Formula and criteria, but PRPA is withheld whenever fund falls below 90% funded.
Health Care: Retiree and Spouse is $\$1,647 \times 12 = 19,764$ Retiree and family is $1,987 \times 12 = 23,844$	HRA = 3% contribution and market return over career. Defined contribution benefit. Health care only after Medicare eligibility

Benefit Comparison (*cont'd*)

Tier 3 Public Safety	Shared-Risk Hybrid
Final benefit retiree and spouse = \$56,565 pension + \$5,656 COLA + \$19,764 medical = \$81,985	Final Benefit retiree and spouse = \$54,949 pension + fixed HRA amount
Final Benefit Retiree and family = \$56,565 pension + \$5,656 COLA + \$23,844 medical = \$86,065	Same as above

Safeguard #1:

Reduce benefits vis-à-vis Tier 3

- Minimum Age 55 eligibility
- Five-year average salary
- Eliminate Alaska 10% COLA
- Suspend Post-Retirement Pension Adjustment when not well funded
- Increase employee and employer contributions up to 2% each if not well funded

Preliminary Cost Estimates

Plan Provision	Based on 7.38% return	Based on 7% return & 0.38% drop in inflation	Based on 6% return & 1.38% drop in inflation
Baseline Tier 3 Public Safety Plan	18.00%	19.19%	22.84%
Minimum Age 55 Retirement Eligibility	-1.31%	-1.40%	-1.66%
Average Earnings Period to Five Years	-0.76%	-0.75%	-0.71%
Eliminate COLA	-0.63%	-0.69%	-0.84%
Withhold PRPA if Underfunded	Up to 2.28%	Up to 2.04%	Up to 1.55%
Increase Employee/Employee Contributions	Up to 4.00%	Up to 4.00%	Up to 4.00%
Shared-Risk Hybrid Pension Cost	15.30%	16.35%	19.63%
Contributions (net of health)	17.08%	17.08%	17.08%
Contribution Margin	1.78%	0.73%	-2.55%
Additional Margin for Adverse Experience	6.28%	6.04%	5.55%

Safeguard #2: Actuarial Methods

- Build in margin in actuarial assumptions
- Build reserves in good times to provide added funding during bad times
- Compare $12\% + 8\% = 20\%$ contributions with costs above
 - 16.35% cost for pension based on 7.00% returns
 - HRA & Medicare Supplement are another 2.92%
 - This provides cushion of 0.73%
 - Additional 6.04% available through PRPA suspension and additional 2%+2% employee and employer contributions

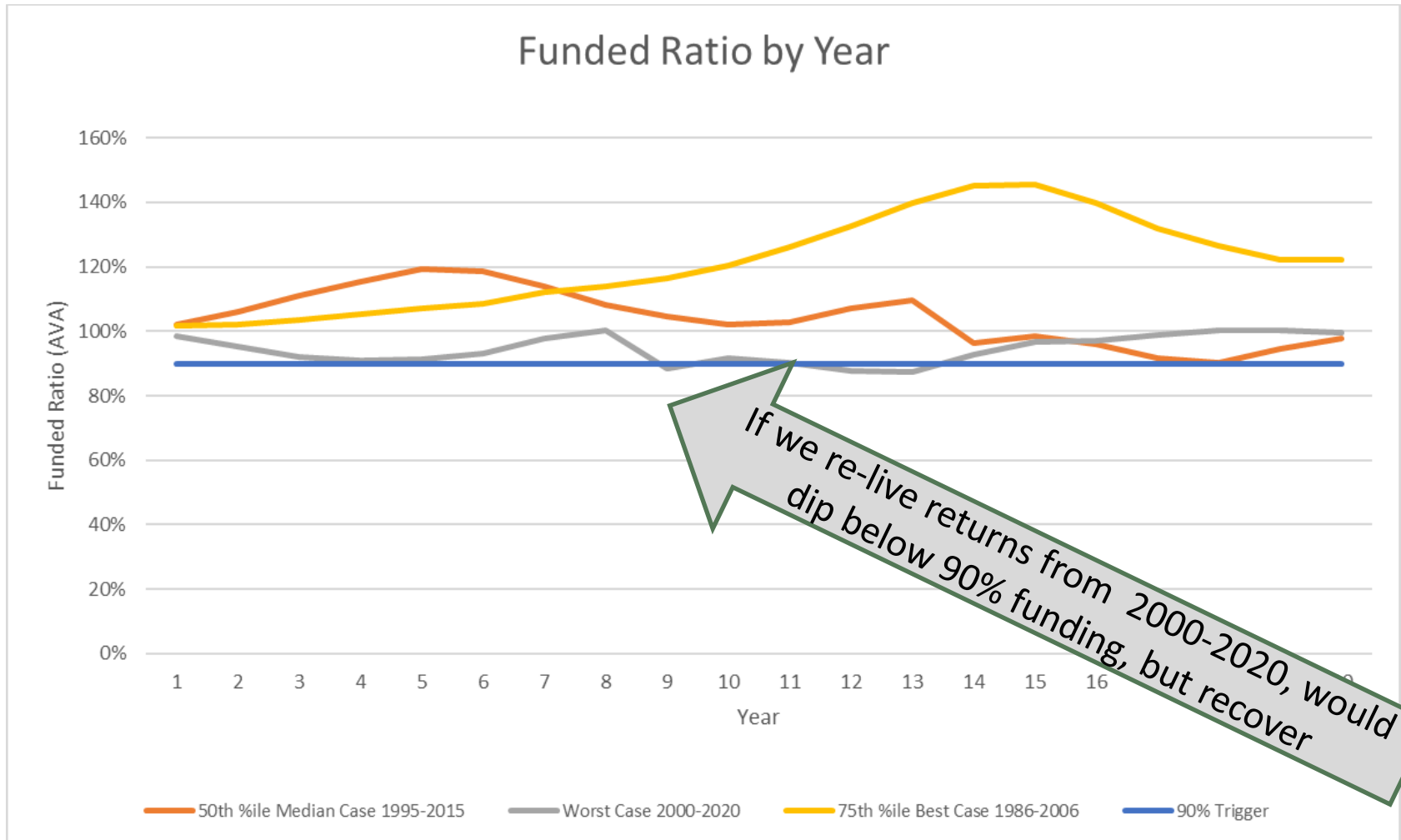
Safeguard #3: Reduced Discount Rate

- Target the pension and health care benefits to be equal to latest tier DB
- Determine the costs based on 7% discount rate rather than 7.38% assumed by PERS actuary
- Seek additional funding for this level, and then commit to this fixed employer contribution rate going forward
 - This is 12% employer contribution for Police and Fire employers
- Monitor experience and adjust benefits and/or contributions as necessary going forward

Benefit Plan Simulations - Historical

- We modelled how plan might have worked under various returns consistent with PERS returns
- Considering each 20-year period from 1980-2000 to 2000-2020
 - Median case was if 1995-2015 was replicated
 - 9.1% average return
 - Never falls below 90%
 - Worst case was if 2000-2020 was replicated
 - 8.6% average return
 - Falls below 90% for 3 of those 20 years, by end would be 99% funded
 - 75%ile best case was if 1986-2006 replicate
 - 10.2% average return
 - Would be 133% funded after 20 years

Benefit Plan Simulations - Historical



If we re-live returns from 2000-2020, would dip below 90% funding, but recover

How have other states operated?



Case Study – Wisconsin



- Cost of Living Adjustment is dependent on fund returns
- At retirement, each member has a fixed benefit
- A variable benefit is added to this, based on fund returns
- The variable benefit itself can go down as well as up, but the fixed benefit does not decrease
- Following 2008, the variable benefit did decrease, but has recovered

Case Study – FPPA



- Colorado Fire and Police Pension Association
 - Formed in 1980, creating new statewide plan
 - Contributions are fixed at 8% employee + 8% employer
 - This level is sufficient for core DB plan
 - Excess contributions went into DC plan during good times
 - Board has discretion over COLA, keeping costs below 16%

Case Study – SDRS



- Historically among best funded state plans
- SDRS is considered a hybrid DB plan with DC features
- History of substantive benefit improvements funded by favorable investment results—included retirees
- Fixed member and employer contributions
- Statutory triggers requiring Board recommendations for corrective actions/no higher employer contributions
- Primary benefit change tied COLA to Funded Ratio and CPI
- Retirees received smaller COLA as a result

Case Study – Ohio



- Employer contributions are fixed for each of five pension systems
- Major pension reform completed in 2012
- Systems were and are required to develop plans to keep funded periods within 30 years
- Systems are now imposing plan reductions in many cases
- Like Alaska, plans include retiree healthcare

Proposed 12% employer contribution is consistent

- Recently modified police and fire plans
 - Utah employer contribution of 12.0%
 - Ohio employer contribution of 14.0% for non-emergency, 19.5% for Police, and 24.0% for Fire
- Major Alaska employers
 - Wells Fargo
 - 6% match on 401(k)
 - Plus 6.2% Social Security for total of **12.2%**
 - Alaska Airlines
 - 7% match on 401(k) plus 1.5% Stock Purchase Plan subsidy
 - Plus 6.2% Social Security for total of **14.7%**

Recap

- Alaska has concern with potential future unfunded liabilities
- DCR provides inadequate benefits
- HB 55 Shared-Risk Hybrid Retirement Program for Public Safety is a potential solution
 - If actuarial experience is as expected, benefits will be paid comparable to Tier 3
 - If actuarial experience is unfavorable, lower benefits will be paid
 - Individuals do not take this risk, the government does not take this risk; pools of individuals do

Questions?

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Appendix

- We recommend that PERS actuary review and refine our estimates
- Estimates based on limited publicly available actuarial information, while PERS actuary has complete information
- Actuarial calculations were made by or under the direction of William Forna, FSA, a Member of the American Academy of Actuaries, who is qualified to render these actuarial opinions

2019 Benefit Plan Simulations- Stochastic

- In 2019, we conducted simulations to see likelihood of this program becoming significantly underfunded
- In the real world, returns will not be stable from year to year.
- ARMB investment advisors estimate a “standard deviation” of 14.71% for the investment return of the current asset mix
 - This roughly means that in one of every three years, return would be more than 14.71% above or below 7.38%.
 - Above 22% in one-sixth of the years and below minus 7.3% in one-sixth of the years
 - Although this standard deviation is higher than we normally see, we modelled future returns consistent with ARMB advisors estimates

Benefit Plan Simulations – 2019

Baseline

- We modelled how plan might have worked under various returns
- If fund earns 6.6% for next ten years, as ARMB investment consultant estimates, then 7.38% (consistent with long-term PERS actuarial consultants) thereafter
 - Plan will grow to 107% funded by 20 years
 - Never below 100% funded
 - Funded ratios based on conservative 7.00%
 - Current actuary uses 7.38%

2019 Benefit Plan Simulations (cont.)

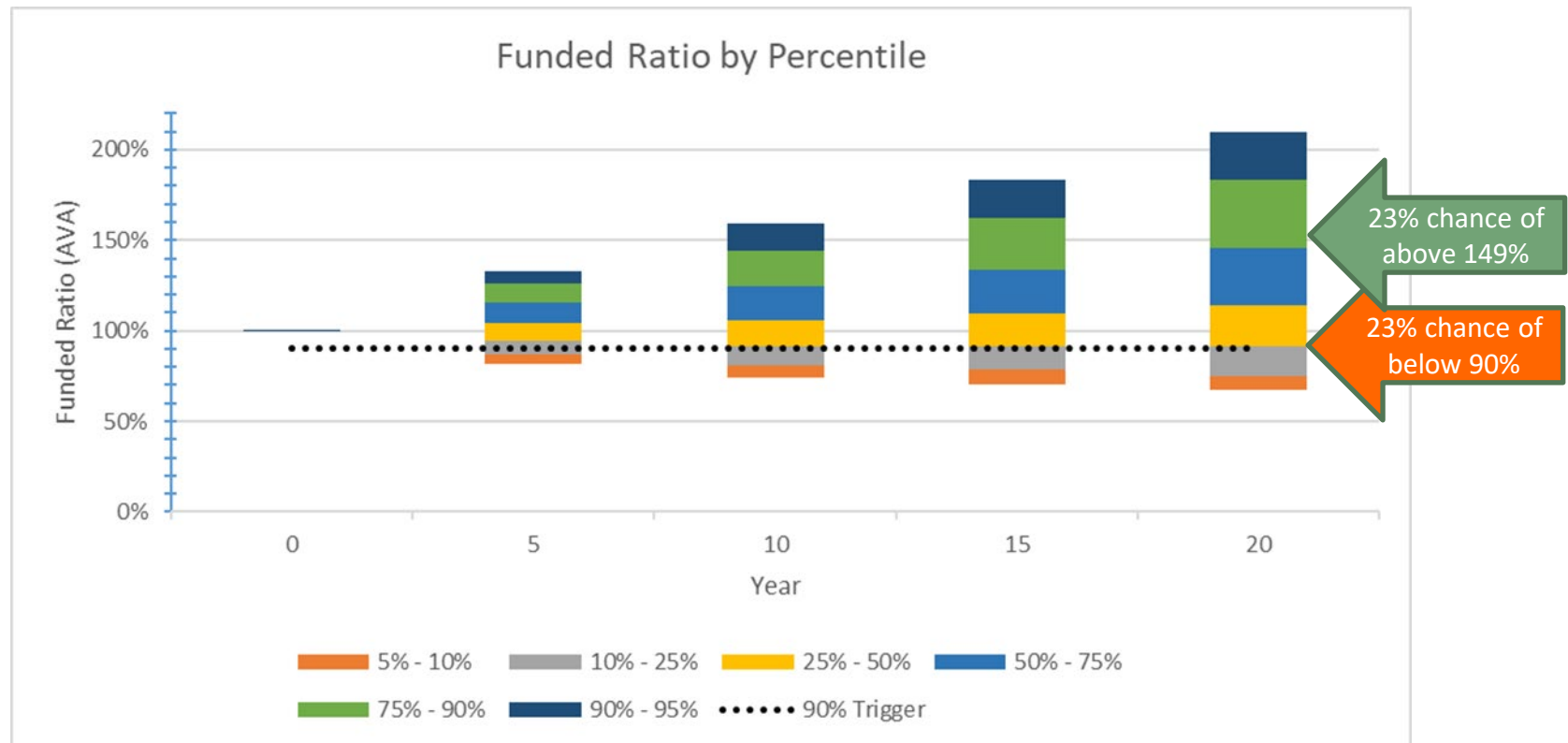
- We modelled 10,000 random simulations based on ARMB investment advisors return assumptions of 6.6% for next ten years, followed by ARMB actuaries assumptions of 7.38% beyond that
- In simulations where the funded ratio fell below 90% threshold, we activated the triggers
 - Boost contributions by 1% (up to 4%)
 - Suspend the Post Retirement Pension Adjustment

2019 Benefit Plan Simulations (cont.)

- High likelihood (68%) that funded ratio will be more than 100% in most years
- Median funded ratio in 20 years is 114%
- But still was about 23% chance that funded ratio will be 90% or below
- Only about 10% chance that funded ratio will be 75% (current PERS level) or below after 20 years
- These simulations have not been updated
- We encourage system actuaries to conduct similar simulations for this program as well as legacy tiers

2019 Benefit Plan Simulations (cont.)

- It was as likely that funded ratio will be above 149% than below 90%

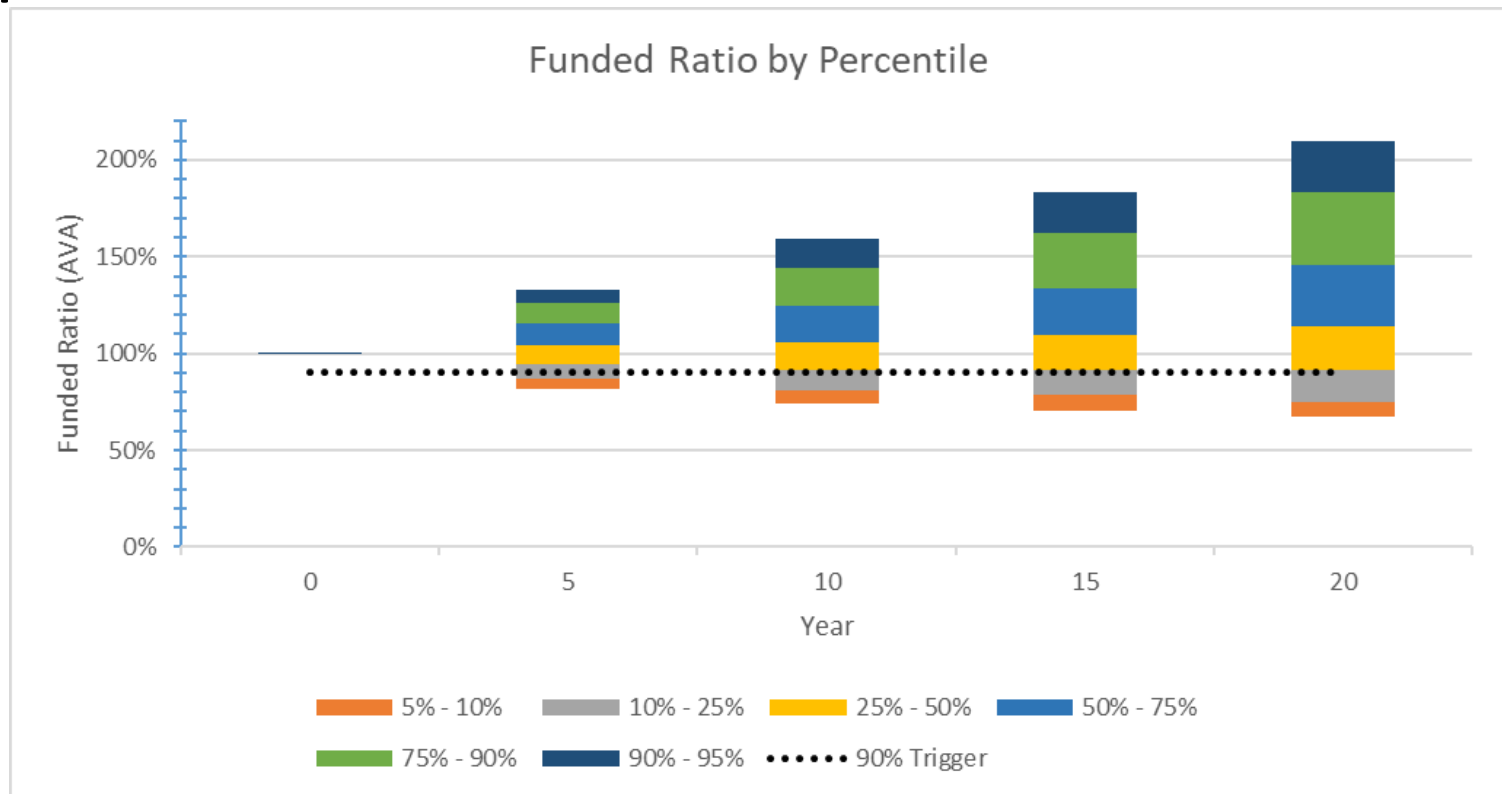


Benefit Plan Simulation Conclusions

- Safeguards have been implemented to protect against downside risk
 - Baseline contributions slightly higher than expected cost
 - Conservative assumed rate of return
 - Triggers if funded ratio fall below 90%
 - Increased contributions by up to 2% each employee and employer
 - Suspension of Post Retirement Pension Adjustment
- High likelihood of being extremely well funded
- But still some risk of being under-funded (2019 analysis)
 - About 23% chance of being below 90% funded in any given year
 - About 10% chance of being below 75% funded in year 20

Benefit Plan Simulations (cont.)

- Our safeguards are what provides downside protection



Benefit Plan Simulations (cont.)

- There's about 23% chance that funded ratio would be below 90% in any given year, triggering safeguards
 - But only about 10% chance of below 75% at year 20

