



**Board of Trustees Annual Retreat
Westin Richmond Hotel
6631 West Broad Street Richmond, VA
Wednesday, 12/8/2021
8:00 AM - 12:30 PM ET**

I. 2021 Board of Trustees Retreat - Day 2

2021 Board of Trustees Retreat Presentation Day 2 - Page 2



Virginia Retirement System Board of Trustees Retreat

December 7-8, 2021

Westin Richmond Hotel ♦ Chesapeake Salon: A & B

Wednesday, December 8

- | | |
|---|---|
| <p>8:00 a.m. Buffet Breakfast (Chesapeake Salon Foyer)</p> <p>8:30 a.m. Day 2 Opening Remarks
Ronald Schmitz, Chief Investment Officer, VRS</p> <p>8:35 a.m. Fireside Chat: Fixed Income
Kristin Ceva, Managing Director
Payden & Rygel</p> <p>9:05 a.m. Fireside Chat: Risk Based Investing (RBI)
Paul Britton, Founder & CEO
Capstone Investment Advisors</p> <p>9:35 a.m. Fireside Chat: Public Equity
Thomas Roberts, Jr., MD, Partner
Farallon Capital Management, LLC</p> <p>10:05 a.m. 10-Minute Break</p> | <p>10:15 a.m. Fireside Chat: Credit Strategies
Keith Ashton, Partner & Co-Head of Alternative Credit
Ares Management</p> <p>10:45 a.m. Guest Speakers: Cyber Security
Simon Taylor, CEO
HCYU
Kevin Powers, Adjunct Professor
Boston College Law School</p> <p>11:45 a.m. Guest Speaker: Public Pension Plans & Trends
Keith Brainard, Research Director
NASRA - National Association of State Retirement
Administrators</p> <p>12:30 p.m. Closing Remarks
Ronald Schmitz, Chief Investment Officer, VRS</p> |
|---|---|

This page intentionally left blank

Day 2 – Opening Remarks

Ronald D. Schmitz

Chief Investment Officer, VRS



This page intentionally left blank

Fireside Chat: Fixed Income

Kristin Ceva, Managing Director
Payden & Rygel



Kristin Ceva ● Managing Director

Payden & Rygel



Kristin Ceva, PhD, is a Managing Director at Payden & Rygel. Kristin is a member of the firm's Investment Policy Committee and is a Senior Portfolio Manager directing the firm's emerging market debt strategies. She also is a frequent speaker at industry forums, focusing on topics related to international investing and emerging markets.

Prior to joining Payden & Rygel, Kristin worked as a consultant for Deloitte & Touche, and with a number of international policy institutes including: the Pacific Council on International Policy, the Center for U.S.-Mexican Studies and the North America Forum at Stanford University.

Kristin serves as board member for EMpower, a non-profit organization founded by emerging markets financial professionals to support at-risk youth and is on the California Committee of Human Rights Watch.

Kristin earned a PhD from Stanford University in Political Science with an emphasis on international political economy. She was a Fulbright Scholar based in Mexico City. Kristin has completed extensive economic and political research on emerging markets and is fluent in Spanish. She received a BBA in Finance from Texas A&M University.

Fireside Chat: Fixed Income

Kristin Ceva

Managing Director

Payden & Rygel

*Hosted by Greg Oliff
Program Co-Director*



Virginia
Retirement
System

Notes

Fireside Chat: Risk Based Investing (RBI)

Paul Britton, Founder & CEO
Capstone Investment Advisors



Paul Britton ● Founder & Chief Executive Officer

Capstone Investment Advisors



Paul Britton is Capstone's Founder and Chief Executive Officer. Paul focuses on setting the firm's strategy, developing our culture, attracting key talent and overseeing the execution of investment and business functions. Paul began his career with Saratoga Limited, trading options on the London International Financial Futures and Options Exchange (LIFFE), and co-founded Mako Global Derivatives in 1999. In 2001, Paul moved to New York to establish and manage Mako's U.S. operations, the buyout of which he led to form Capstone in 2004. Paul is immensely proud of the progress made by the team at Capstone over the years, and by the strong relationships we have been fortunate to build with our investors.

Paul currently serves on the Boards of the US Soccer Foundation, The Tate America's Foundation and Friends Seminary School in New York City.

Paul received a B.A. degree in European Business Finance from London Metropolitan University.

Fireside Chat: Risk Based Investing (RBI)

Paul Britton

Founder & Chief Executive Officer

Capstone Investment Advisors

*Hosted by Ross Kasarda
Program Director*



Virginia
Retirement
System

Notes

Fireside Chat: Public Equity

Thomas Roberts, Jr., MD, Partner
Farallon Capital Management, LLC



Thomas Roberts, Jr., MD ● Partner

Farallon Capital Management, LLC



Dr. Roberts joined us in 2005, and is a Partner of the firm in the Arbitrage group. Prior to joining us, Dr. Roberts was an attending oncologist at Massachusetts General Hospital, an Instructor of Medicine at the Harvard Medical School, and a Visiting Scientist at Massachusetts Institute of Technology. He maintains an active medical license. Dr. Roberts obtained two baccalaureate degrees (summa cum laude) from the University of Pennsylvania, including a B.S. from the Wharton School of Business (elected Phi Beta Kappa junior year). He obtained his medical degree from Harvard Medical School. Dr. Roberts performed his internal medicine training at the Massachusetts General Hospital and his medical oncology training through the Dana-Farber/Partners Cancer Care Oncology Fellowship Program.

Fireside Chat: Public Equity

Thomas Roberts, Jr., MD

Partner

Farallon Capital Management, LLC

*Hosted by Dan Whitlock
Program Director*



Virginia
Retirement
System

Notes

Break: 10:05 – 10:15 a.m.

This page intentionally left blank

Fireside Chat: Credit Strategies

Keith Ashton, Partner & Co-Head Alternative Credit
Ares Management



Keith Ashton ● Partner, Portfolio Manager & Co-Head Alternative Credit

Ares Management



Mr. Ashton is a Partner, Portfolio Manager and Co-Head of Alternative Credit in the Ares Credit Group. Mr. Ashton serves as a Vice President and Portfolio Manager for the Ares Dynamic Credit Allocation Fund, Inc. (NYSE:ARDC). Additionally, he serves as a member of the Ares Credit Group's Alternative Credit Executive Committee, Alternative Credit Investment Committee, Ares Dynamic Credit Allocation Fund Investment Committee, the Ares Pathfinder Fund and Pathfinder Core Fund Investment Committees and the Ares Diversity and Inclusion Council. Prior to joining Ares in 2011, Mr. Ashton was a Partner at Indicus Advisors LLP, where he focused on launching the global structured credit business in May 2007. Previously, Mr. Ashton was a Portfolio Manager and Head of Structured Credit at TIAA-CREF, where he focused on managing portfolios of structured credit investments and helped launch TIAA's institutional asset management business. Mr. Ashton's experience as an investor in alternative fixed income products spans virtually all securitized asset classes, including CLOs, consumer and commercial receivables, insurance and legal settlements, small business and trade receivables, whole business securitizations, timeshare and other mortgage-related receivables, and esoteric asset classes such as catastrophe risk and intellectual property. Mr. Ashton holds a B.A. from Brigham Young University in Economics and an M.B.A. from the University of Rochester William E. Simon School of Business in Finance and Accounting.

Fireside Chat: Credit Strategies

Keith Ashton

Partner, Portfolio Manager & Co-Head Alternative Credit
Ares Management

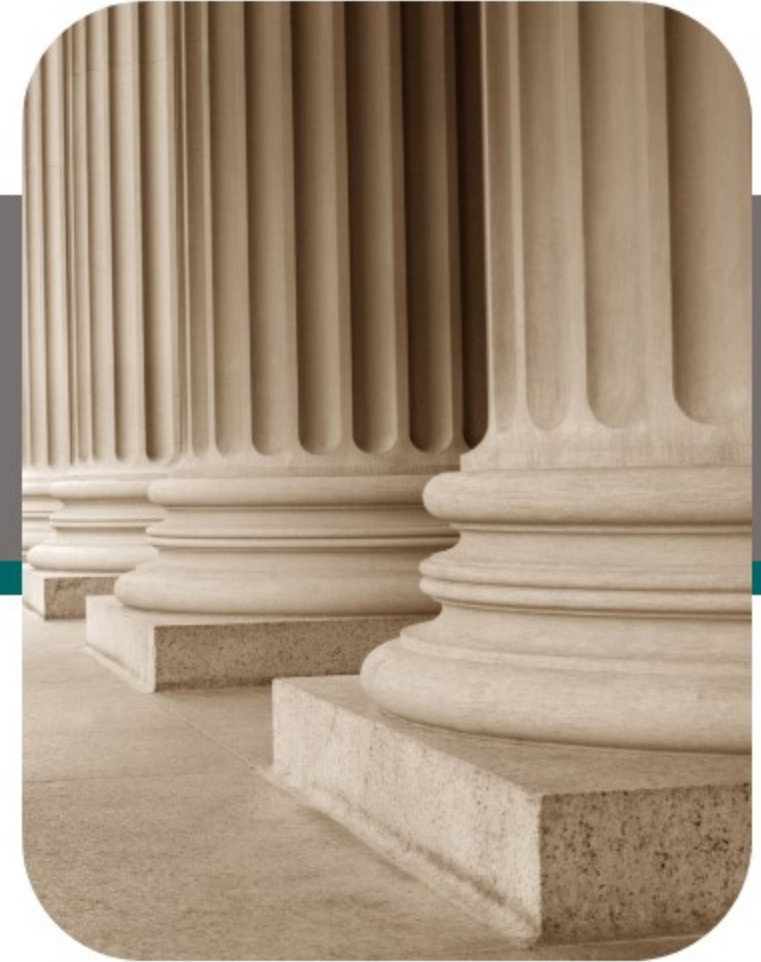
*Hosted by Steve Woodall
Senior Portfolio Manager*

Notes

Guest Speakers: Cybersecurity

Simon Taylor; CEO, HCYU

Kevin Powers; Adjunct Professor, Boston College Law School



Simon Taylor ● CEO

HCYU



Simon Taylor is the Founder and CEO at HCYU, Inc. HCYU is a Boston-based multi-cloud data protection SaaS company and is funded by Bain Capital Ventures and Acrew Capital. As CEO, Simon creates and executes on the vision and strategy of the fast-growing global company. Recently Simon and HCYU were the leads on the ransomware readiness recovery public service initiative, R-Score. R-Score is a quantitative benchmark for assessing an organization's recovery readiness in case of a ransomware attack. Prior to HCYU, Simon held senior executive positions at Comtrade Software including President and CEO as well as Chief Strategy Officer of The Comtrade Group where he evaluated technology development, partner relationships and strategic investments. Simon also held management and leadership positions at Putnam Investments, Omgeo and Forrester Research. Simon sits on the board of directors of Boston Uncornered and is an active member of YPO (Young Presidents Organization) in Boston. He holds an MBA from Instituto de Empresa (Madrid) and an BSc Operations Technology from Northeastern University.

Kevin Powers ● Adjunct Professor

Boston College Law School



Kevin is the founder and Director of the M.S. in Cybersecurity Policy and Governance Program at Boston College, and an Assistant Professor of the Practice at Boston College Law School and in Boston College's Carroll School of Management's Business Law and Society Department. With more than 20 years of combined law enforcement, military, national security, business, higher education, and teaching experience, he has worked as an analyst and an attorney for the U.S. Department of Justice, U.S. Navy, U.S. Department of Defense, law firms in Boston and Washington, D.C., and as the General Counsel for an international software company based in Seattle, Washington. Along with his teaching at Boston College, Kevin is a Research Affiliate at the MIT Sloan School of Management and he has taught courses at the U.S. Naval Academy, where he was also the Deputy General Counsel to the Superintendent. Kevin also is a Senior Cybersecurity Advisor for Manatt, serves as a Trustee for the Board of Boston College High School, and as a Member of the Boston College Law School Business Advisory Council. From 2016-2017, he was the Panel Lead for the Collegiate Working Group for the U.S. Department of Homeland Security's National Initiative for Cybersecurity Education (NICE). Kevin regularly provides expert commentary regarding cybersecurity and national security concerns for varying local, national, and international media outlets.

Guest Speakers: Cybersecurity

Simon Taylor, CEO

HCYU

Kevin Powers, Adjunct Professor

Boston College Law School

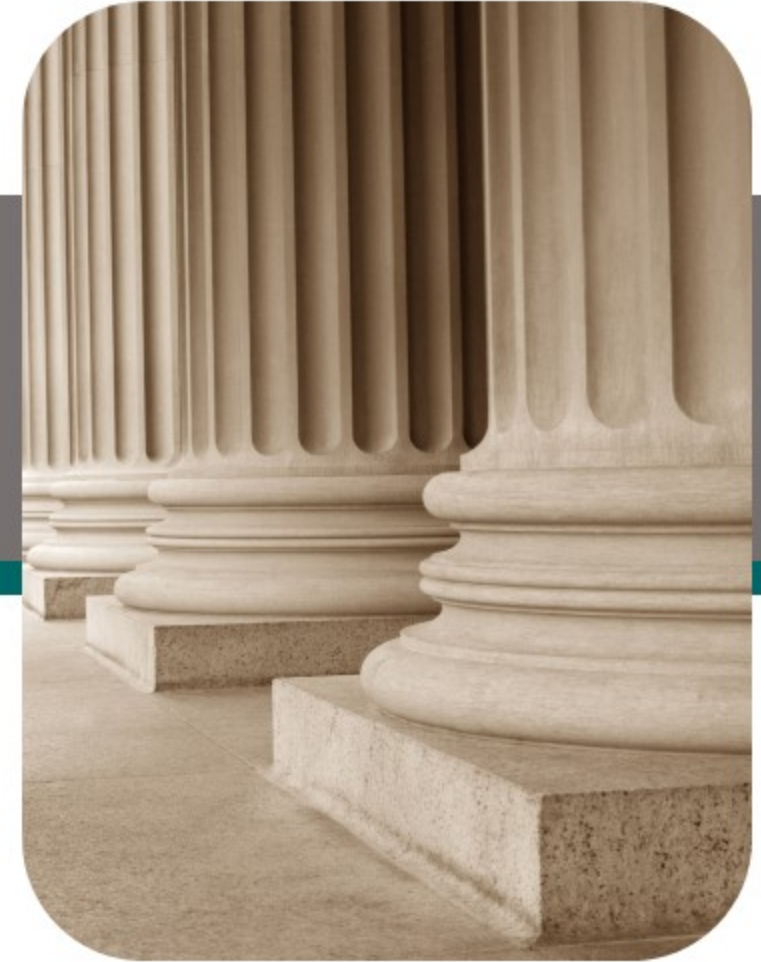
Notes

This page intentionally left blank

Guest Speaker: Keith Brainard

Research Director

National Association of State Retirement Administrators



Keith Brainard ● Research Director

National Association of State Retirement Administrators



As research director for the National Association of State Retirement Administrators, Keith Brainard leads the organization's effort to inform public retirement system directors regarding public pension administration, design, and policy. NASRA members are the directors of more than 90 state and local public retirement systems in the United States. Combined, these systems hold assets of more than \$3.5 trillion to fund pension and other benefits for most of the nation's 25 million working and retired employees of state and local government.

Mr. Brainard is co-author of *The Governmental Plans Answer Book*, and he has discussed public pension issues before Congress, state legislative committees, public pension boards of trustees, and on broadcast television and radio. He created the Public Fund Survey, predecessor to the Public Plan Database and winner of the Government Finance Officers Association's Award for Excellence. He has authored numerous articles and briefs on various facets of public pension plan administration and policy.

Keith currently serves as vice-chairman of the Texas Pension Review Board and previous service includes two terms as a member of the Georgetown, Texas city council. He also served as manager of budget and planning for the Arizona State Retirement System and as a fiscal analyst for the Texas and Arizona legislatures. Mr. Brainard holds a BA and an MPA from the University of Texas at Austin.






Public Pension Issues and Trends

Keith Brainard

Research Director

National Association of State Retirement Administrators

Public pensions in the U.S.

-  Overview of public pensions in the US
-  Trends in funding conditions
-  Reforms
-  Changing actuarial assumptions and methods
-  Employee and employer contributions

Comparison of Retirement Benefits in the U.S.

Private Sector

- ▲ 62% of full-time private sector workers participate in an employer-sponsored retirement plan; 21% of part-time workers participate
- ▲ In total, 51% of all private sector workers participate in an employer-sponsored retirement plan
- ▲ 18 percent participate in a traditional pension (DB) plan
- ▲ Social Security coverage is universal

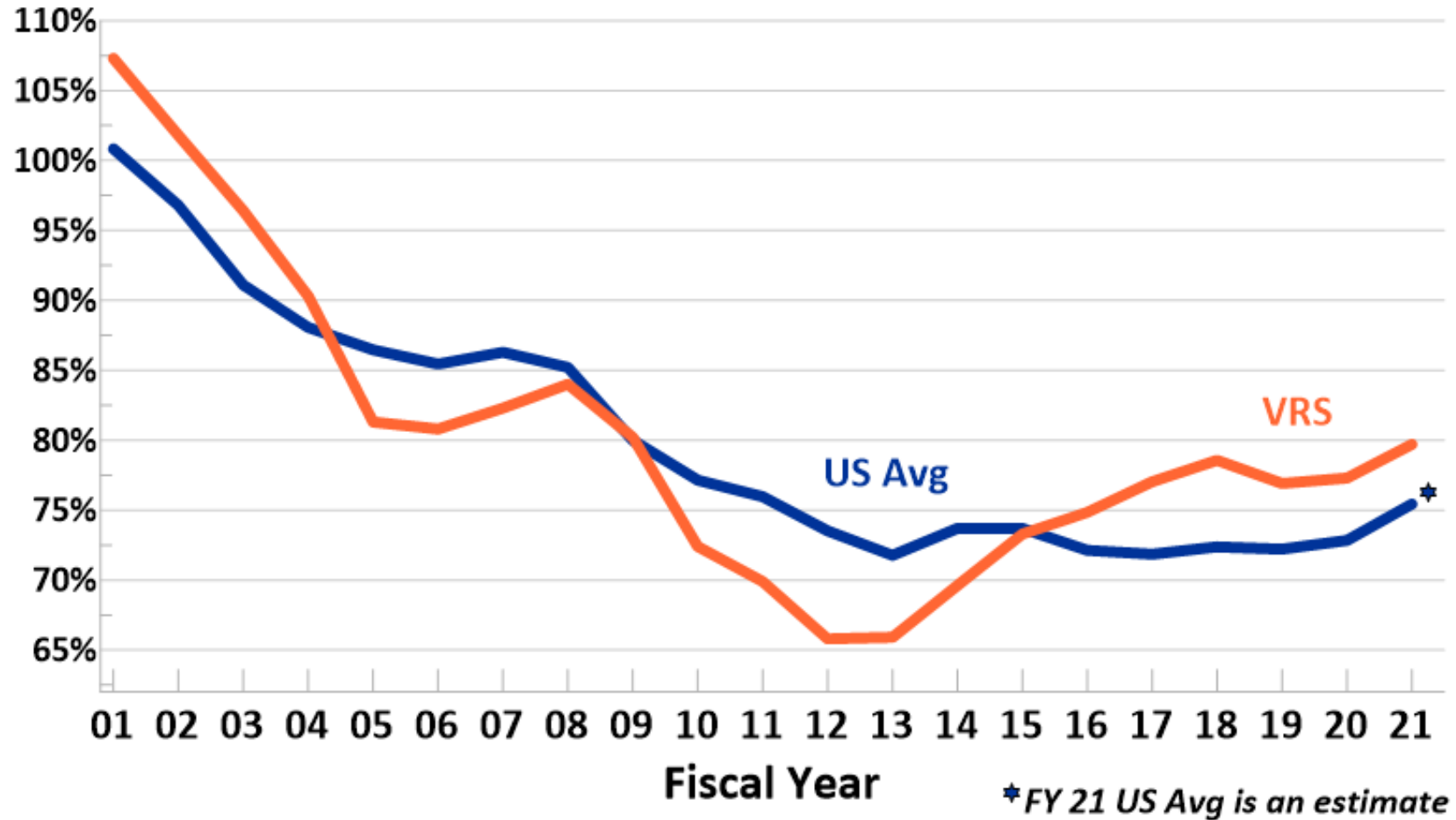
Public Sector

- ▲ Nearly all full-time workers have access to an employer-sponsored retirement benefit; most have access to a traditional pension (DB plan)
- ▲ 81% of full-time employees participate in a pension plan, as do 75% of all, including part-time workers; virtually all others are in a DC plan
- ▲ Three-fourths participate in Social Security

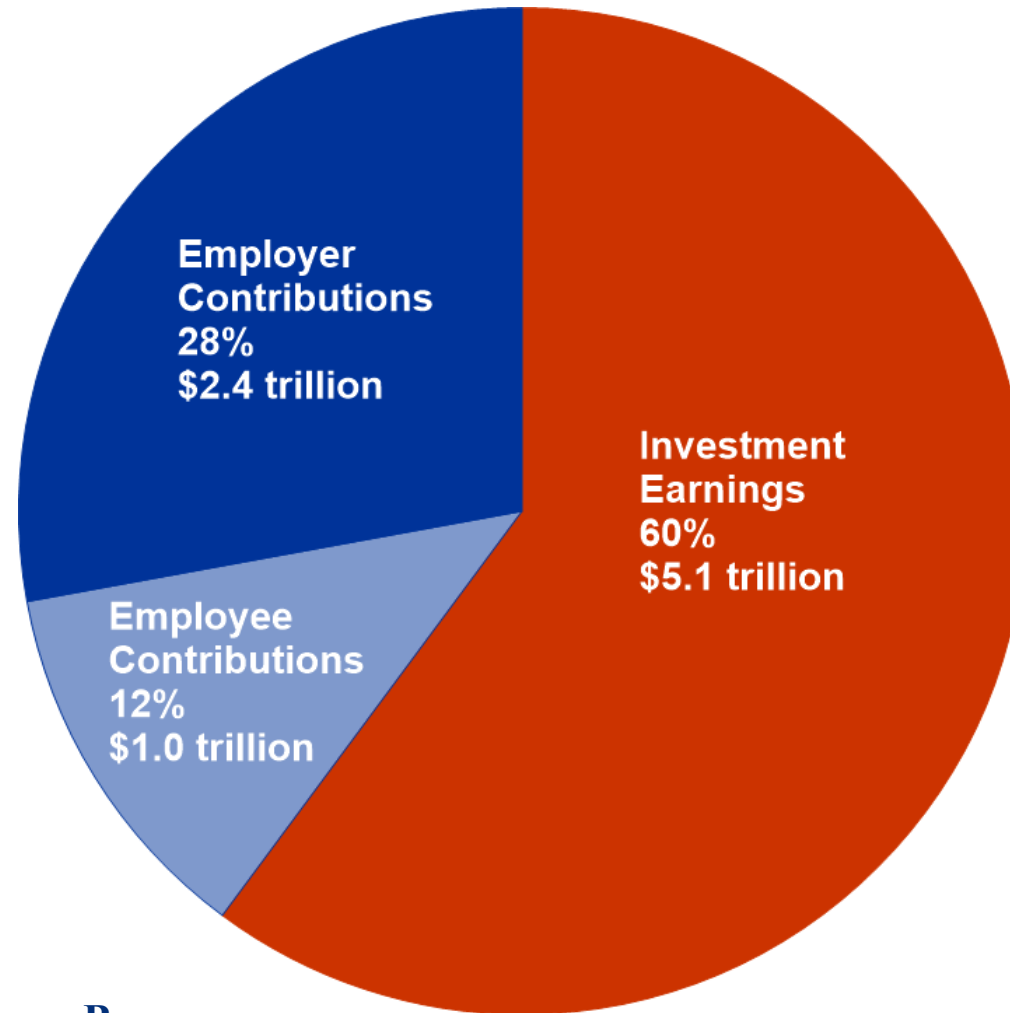
Public pensions in the U.S.

- ▲ \$5.5 trillion in assets
- ▲ 14.6 million active (working) participants
 - ▲ 10 percent of the nation's workforce
- ▲ 11.2 million retirees and their survivors receive \$320+ billion annually in benefits
- ▲ Annual contributions = \$238 billion
 - ▲ \$180 billion from employers
 - ▲ \$58 billion from employees
- ▲ Of 5,000+ public retirement systems, the largest 75 account for 80+ percent of assets and members
- ▲ Aggregate funding level = ~73%

Change in actuarial funding level, VRS vs. US, FY 01 to FY 20

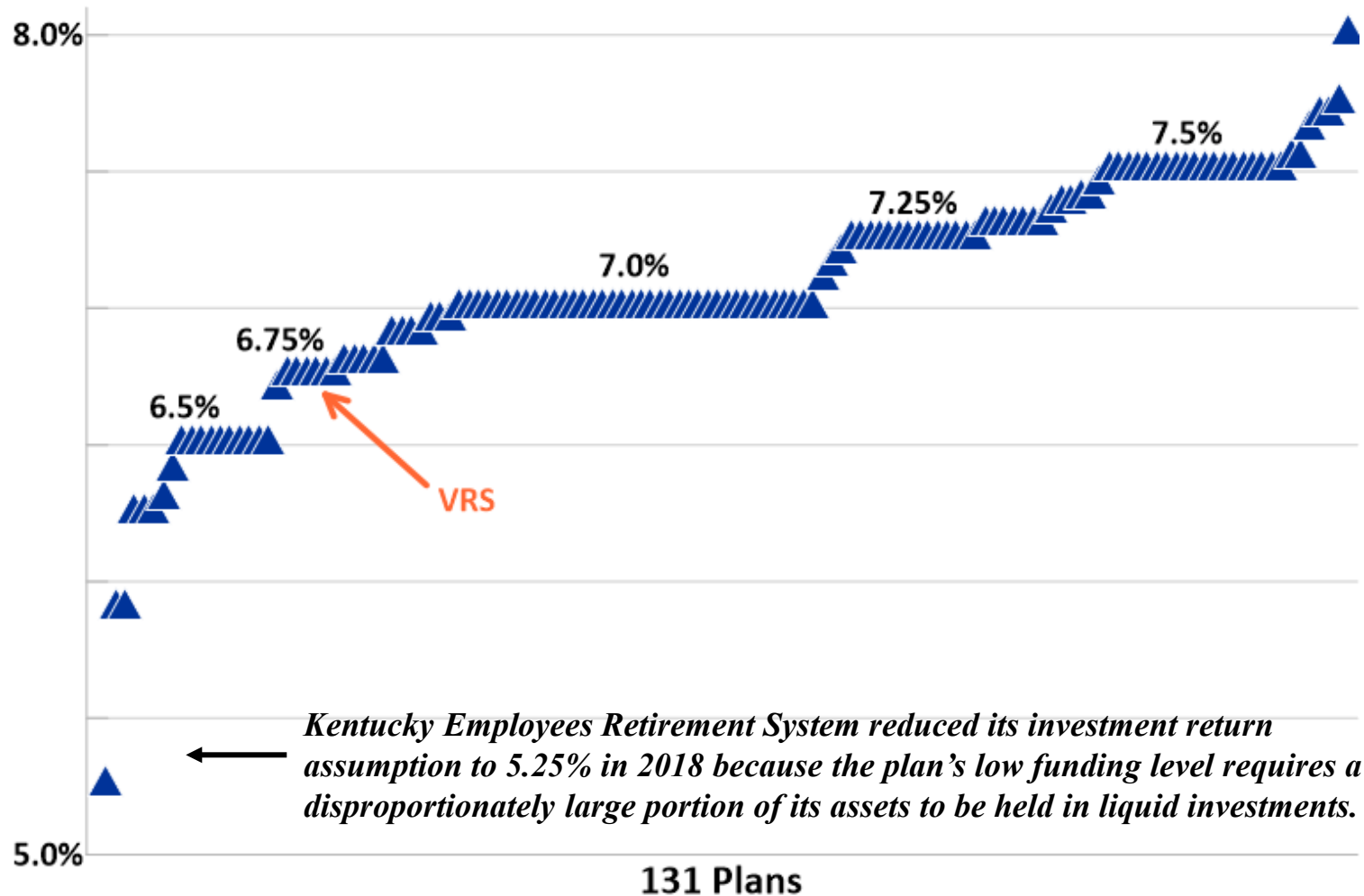


Sources of Public Pension Revenue, FY 91 to FY 20

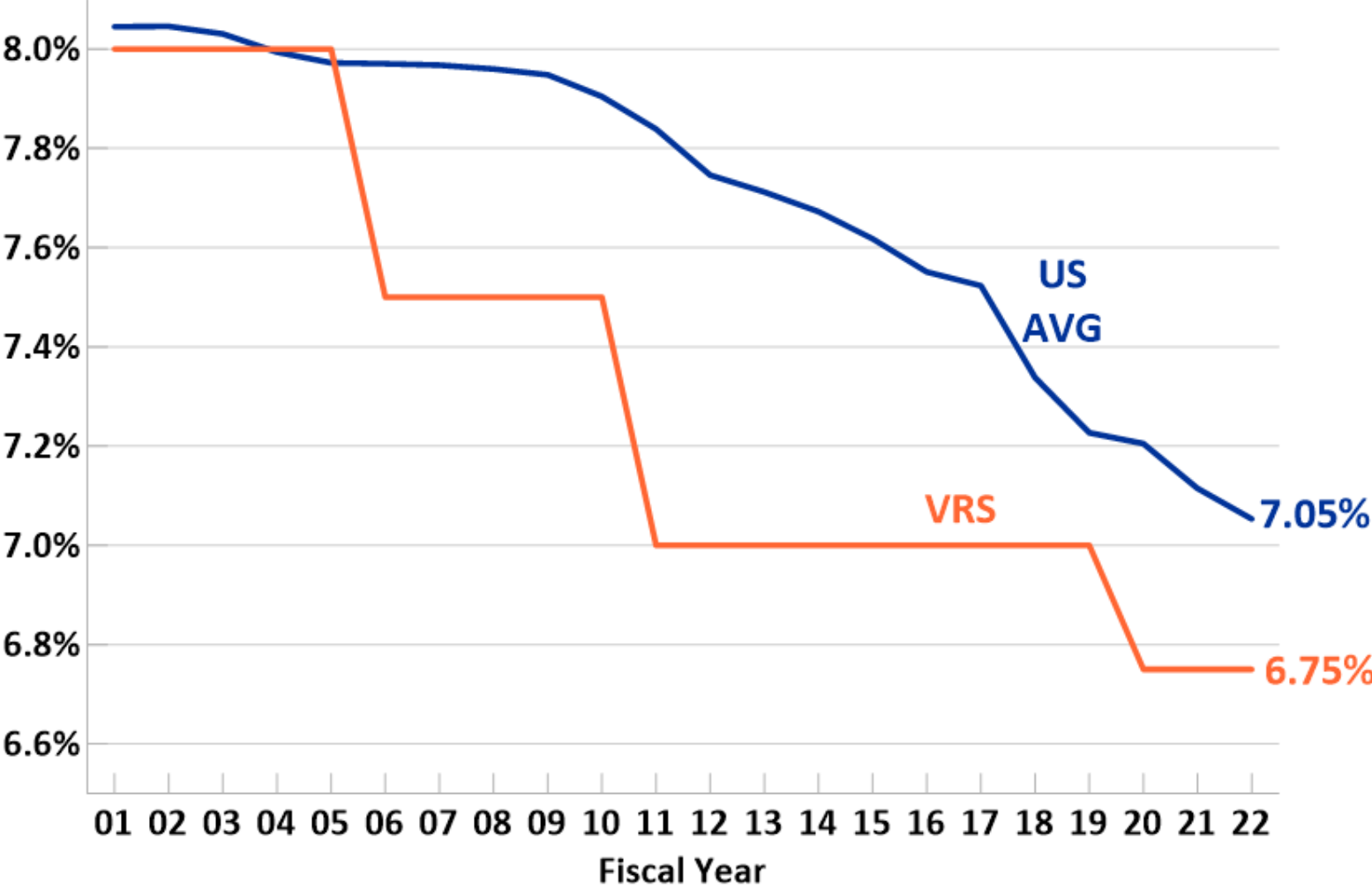


US Census Bureau

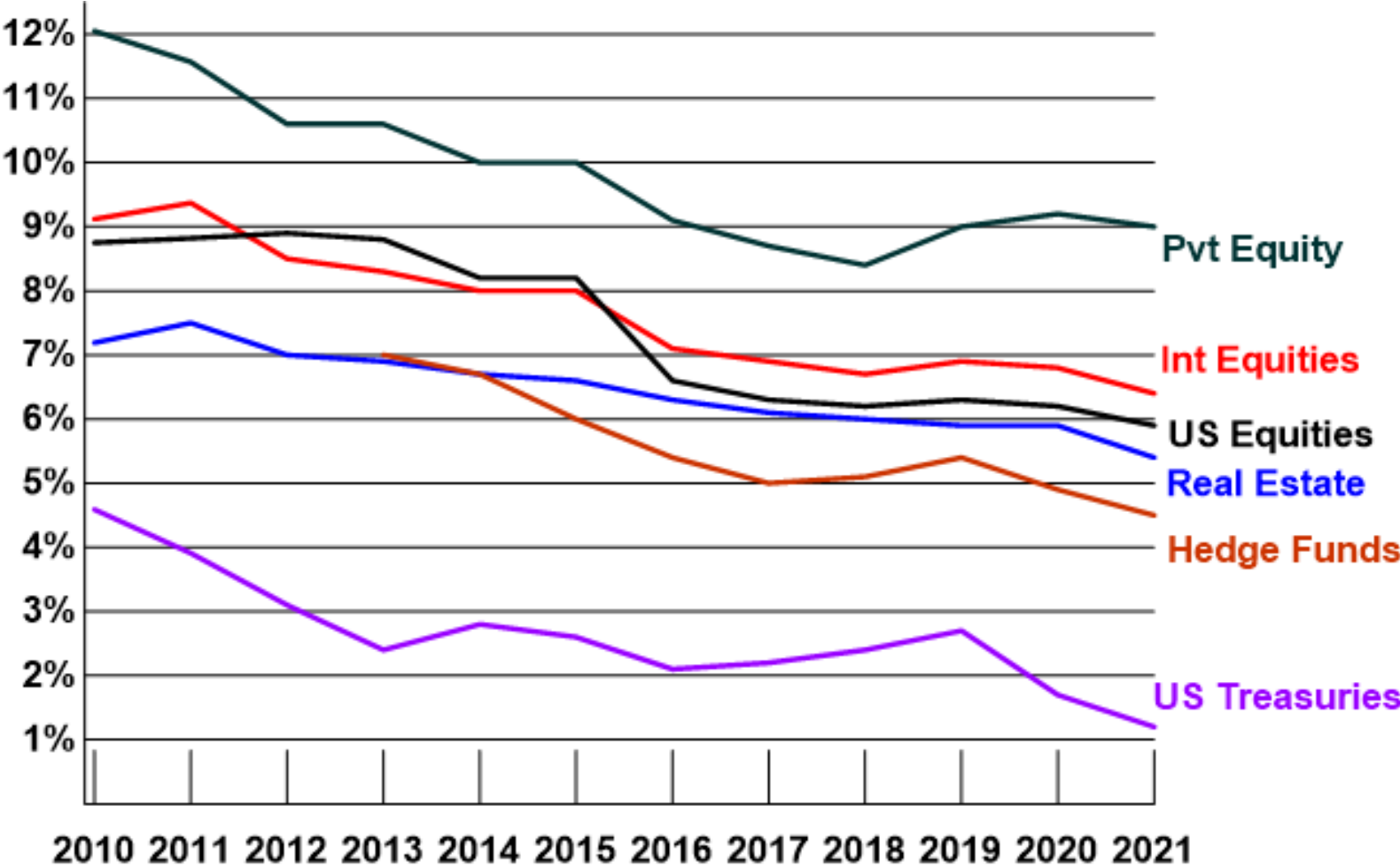
Distribution of Public Pension Investment Return Assumptions, December 2021



Change in investment return assumption, US Avg and VRS, FY 01 to FY 22



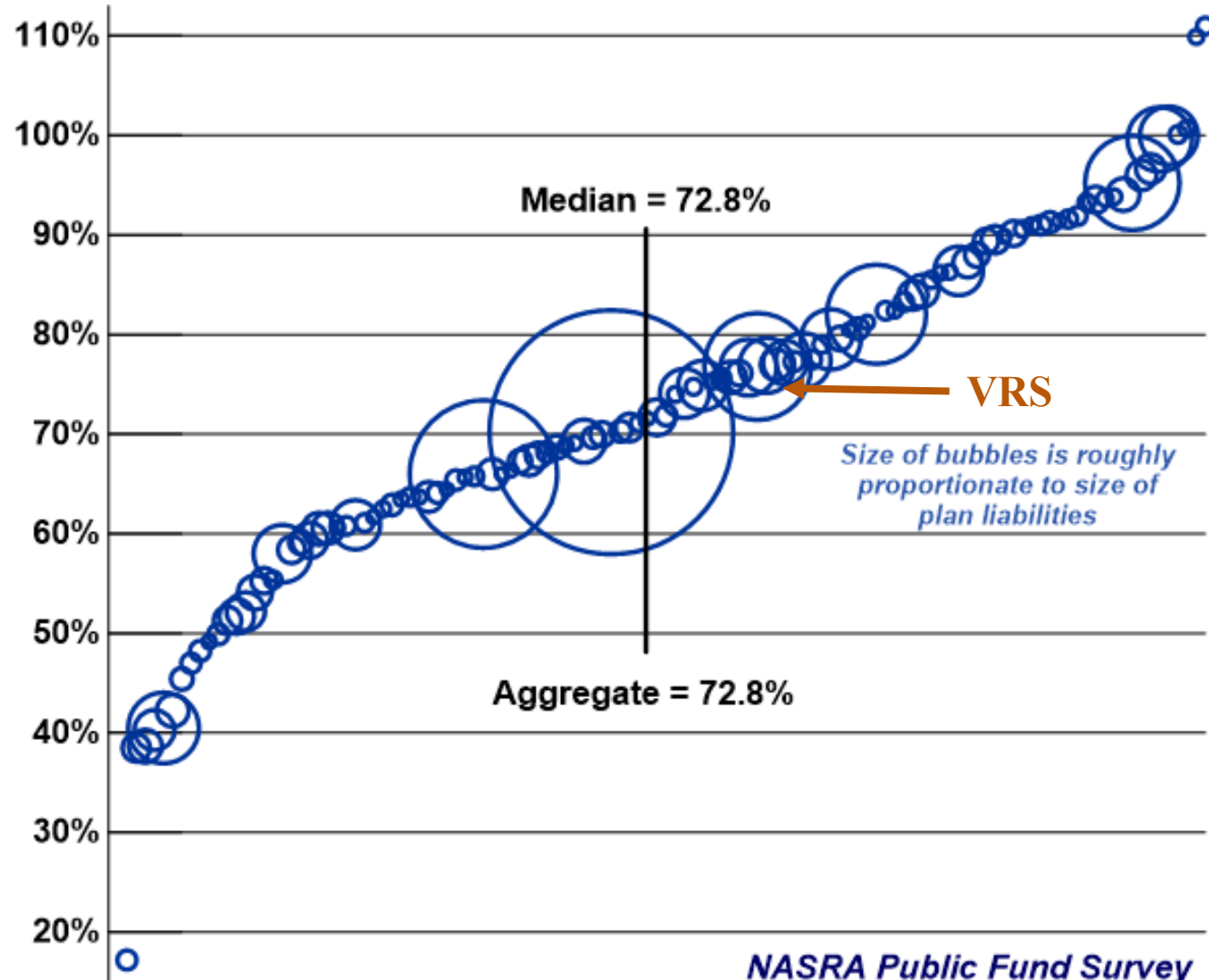
Projected Returns on Individual Asset Classes 10 Years



Horizon Actuarial Services



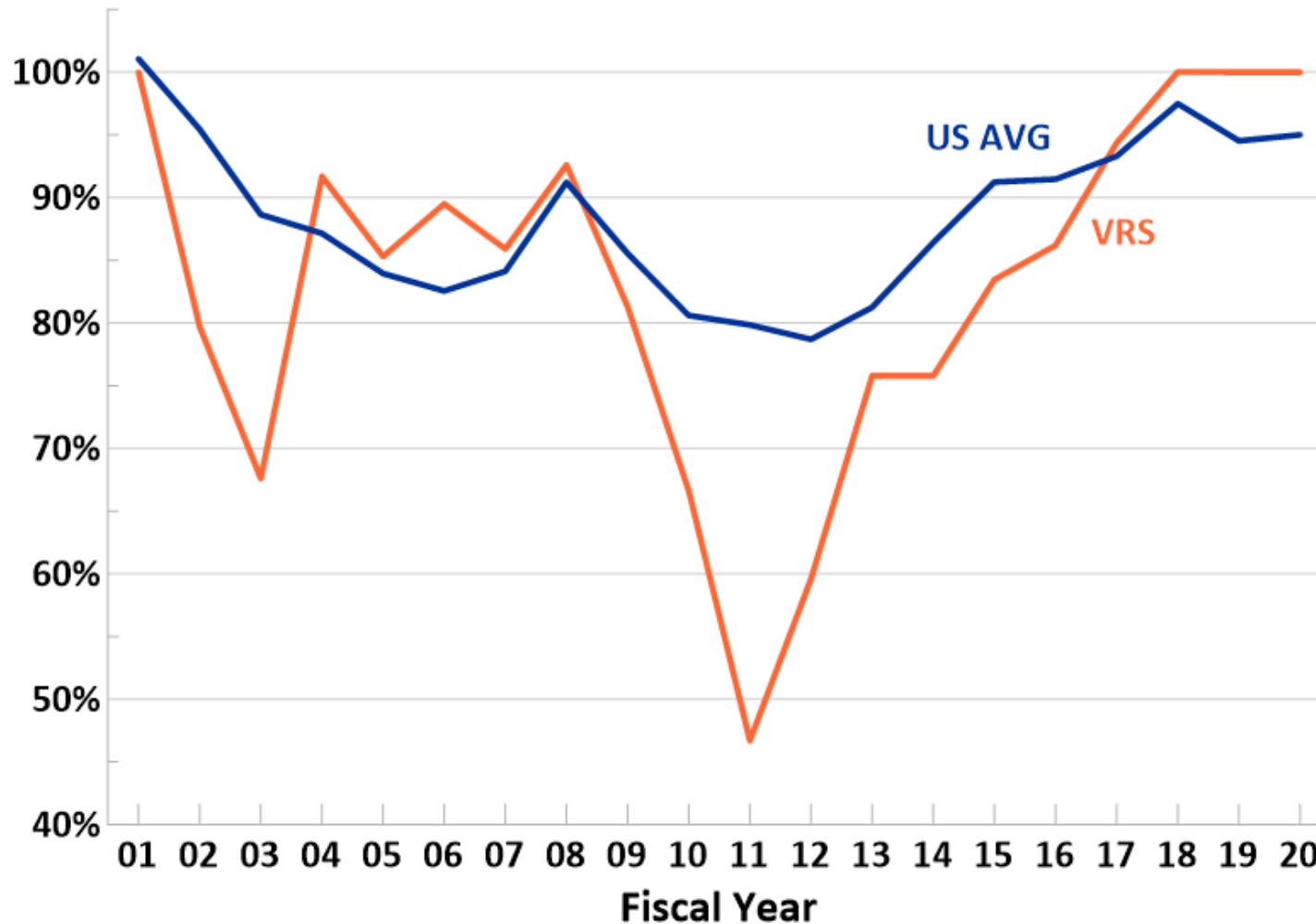
Distribution of Public Pension Actuarial Funding Levels, FY 20



NASRA Public Fund Survey
Nov-21



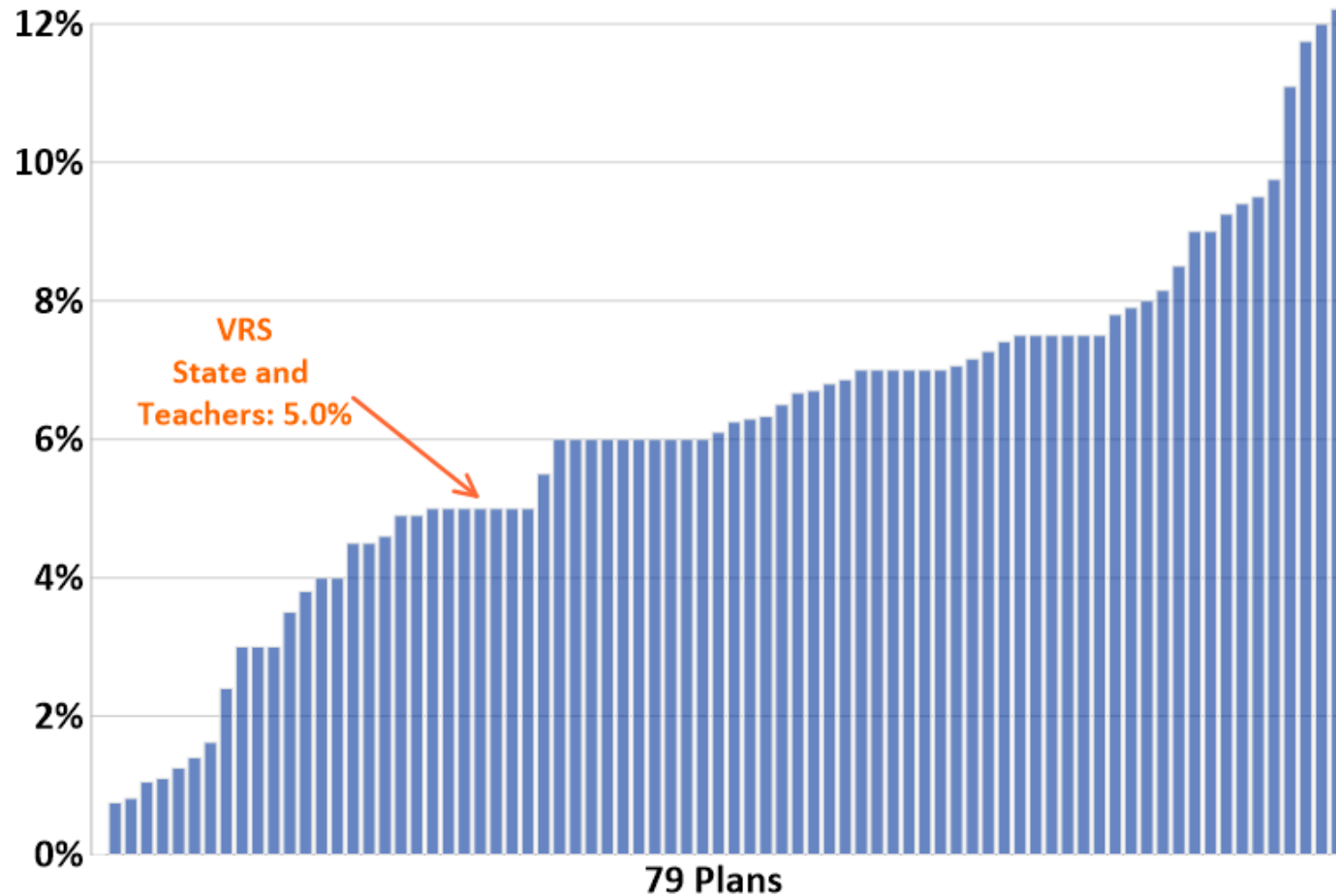
Contributions Paid to Public Pension Plans as a Percentage of Actuarially Recommended Amounts, FY 01 to FY 20



The VA General Assembly approved a plan to repay over a 10-year period the contributions that were deferred from the 2010-12 biennium. These contributions were repaid earlier than the approved schedule.

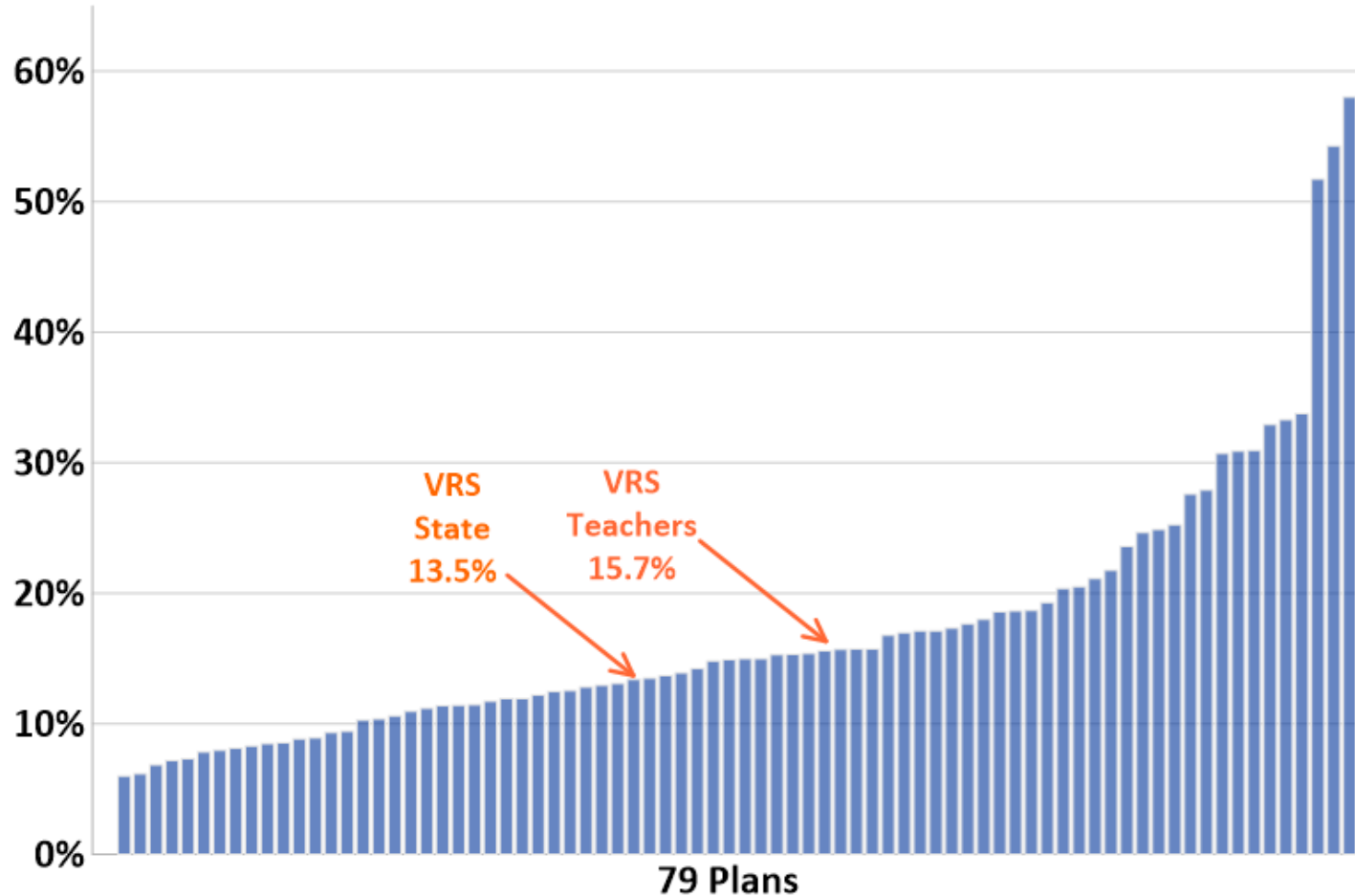
FY 20 US Avg is an estimate

Distribution of Employee Contribution Rates for Social Security-eligible General Employees and Teachers



VRS participants hired since 1/1/13 contribute four percent to the pension plan and one percent to the DC plan

Distribution of Employer Contribution Rates for Social Security-eligible General Employees and Teachers, FY 20



VRS FY 22-23 Employer Rates

- State: 14.13%
- Teacher: 14.76%

Core Elements of a Public Pension Funding Policy

Actuarial cost method

- ▲ Allocates the present value of future benefits to each year

Asset smoothing

- ▲ Phases in investment gains and losses to reduce volatility of funding level and cost

Amortization method

- ▲ Defines the time period and structure of changes to eliminate the unfunded actuarial accrued liability

VRS Funding Policy

Actuarial cost method

- ▲ Entry age normal; the most typical method used by public pension plans

Asset smoothing







- ▲ Five-year phase-in with an 80%/120% corridor

Amortization method

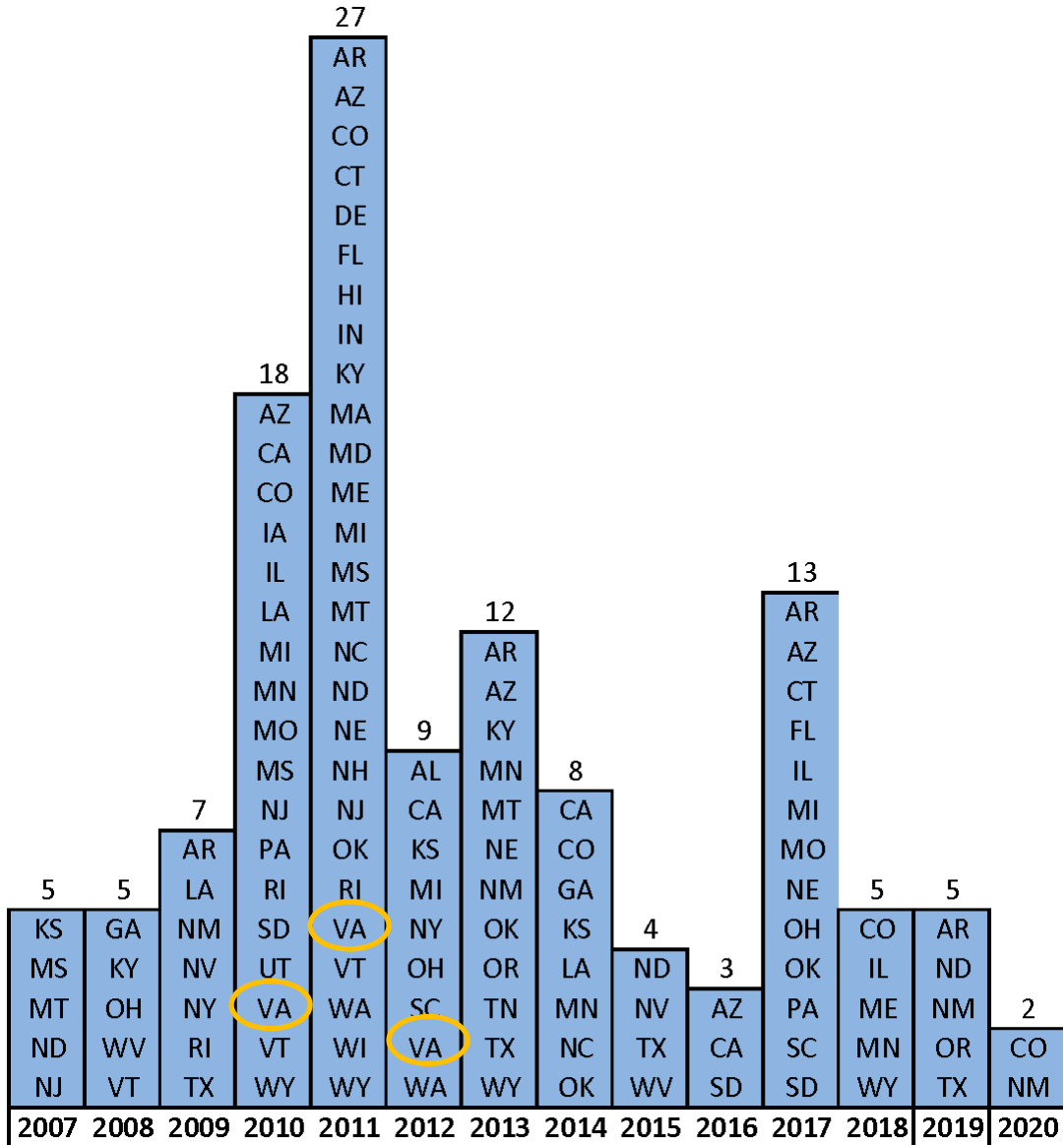
- ▲ Legacy unfunded liability as of 2013 is being amortized over a closed 30-year period. Subsequent unfunded liabilities (surpluses) are amortized over 20-year closed layers

Each of these VRS funding policy practices is considered a “model practice” by the Conference of Consulting Actuaries Public Plans Community

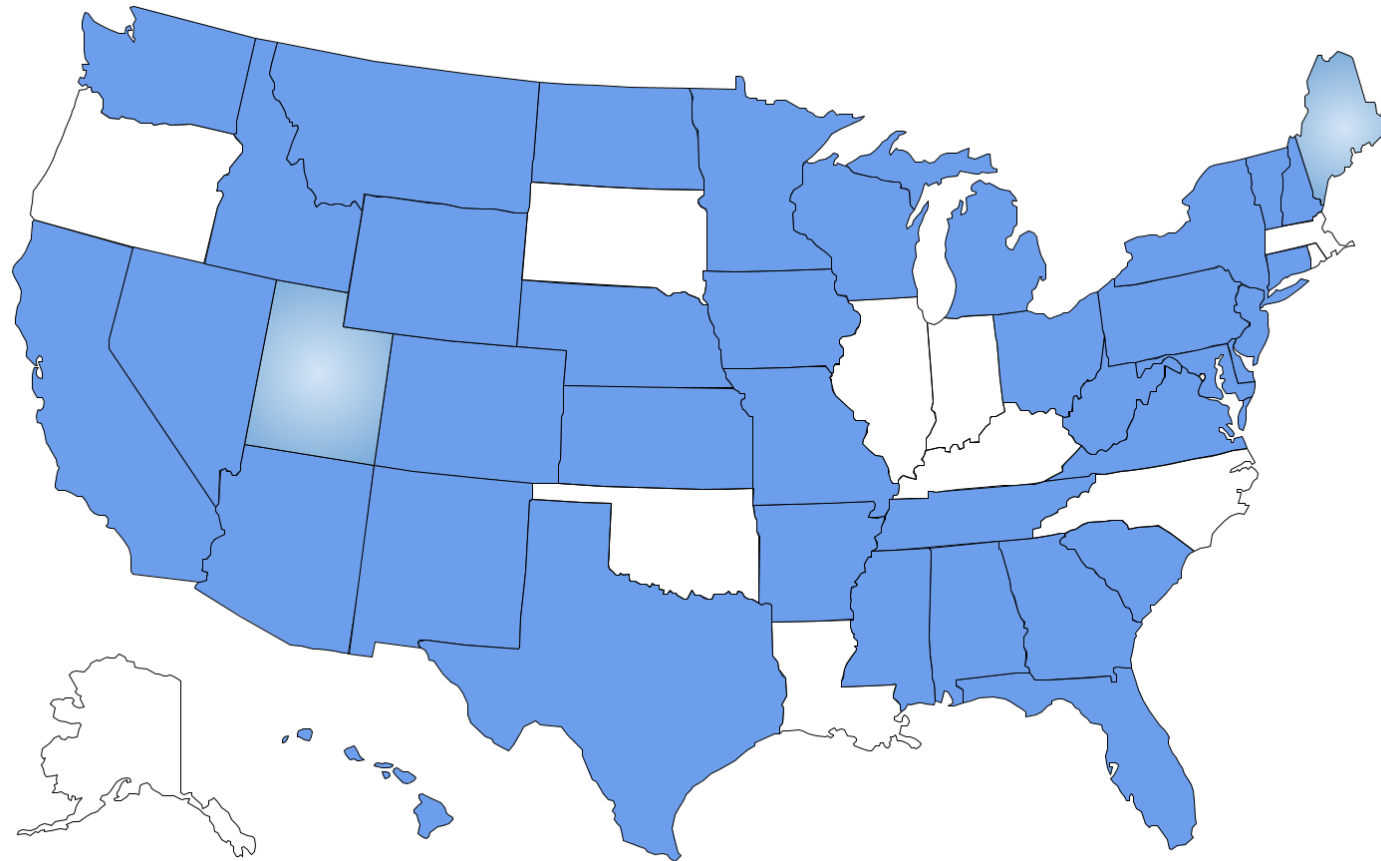
Pension reforms in recent years

-  Nearly every state modified public pension benefits or financing arrangements, or both, since 2009
-  Lower benefits
-  Higher employee contributions
-  General shifting of risk from employers to employees
-  Increased use of hybrid retirement plans
-  Limited increase in defined contribution plans

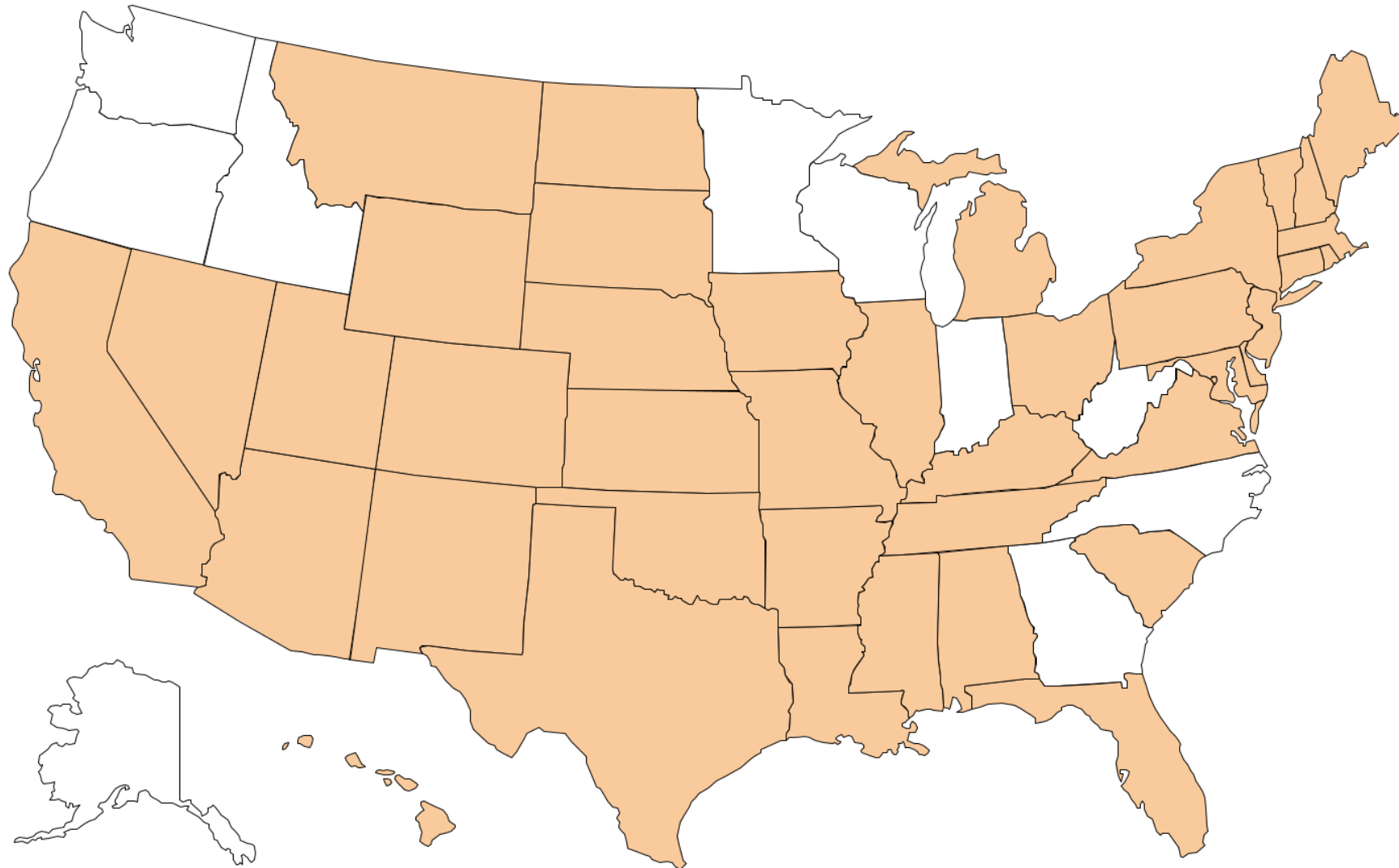
States that reformed pension plans, by year, 2007-2020



States that increased employee contributions

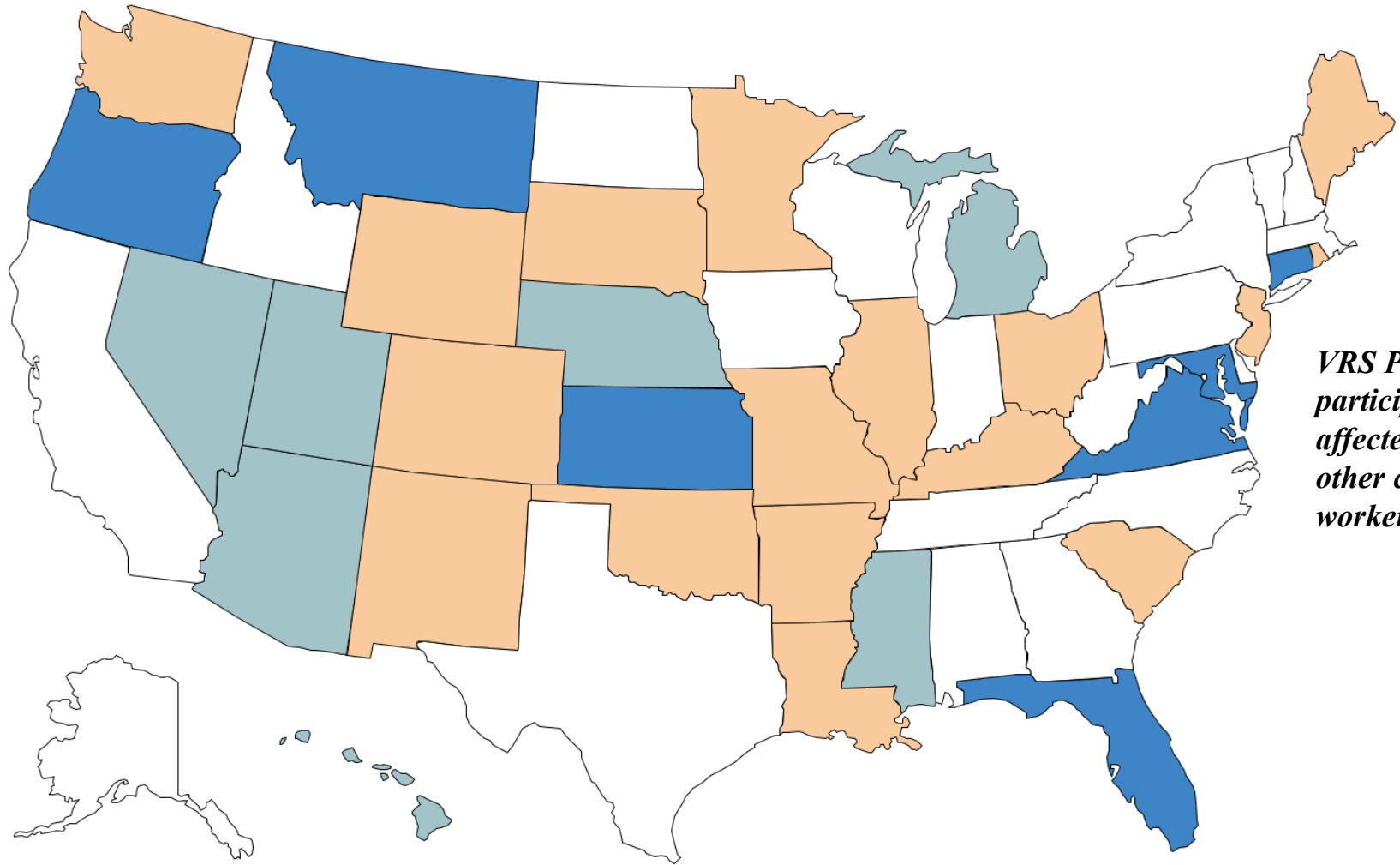


States that reduced pension benefits



NASRA

States that reduced automatic COLAs



VRS Plan 2 participants were affected, but most other current workers were not

Affecting New Hires Only Affecting Current Employees & New Hires Affecting Retirees

Cost-of-Living Adjustments

- ▶ Intended to offset at least part of the effect of inflation on a pension benefit
- ▶ Many public pension plans provide automatic COLAs; some do not
- ▶ COLAs for some plans are ad hoc, requiring an active election by the plan sponsor or governing board
- ▶ Most automatic COLAs are linked to the rate of inflation, with a limit, such as CPI not to exceed 2.0 percent
- ▶ By protecting a retirement benefit from the effects of inflation, an automatic COLA is a key element in an effective retirement plan design

VRS COLA

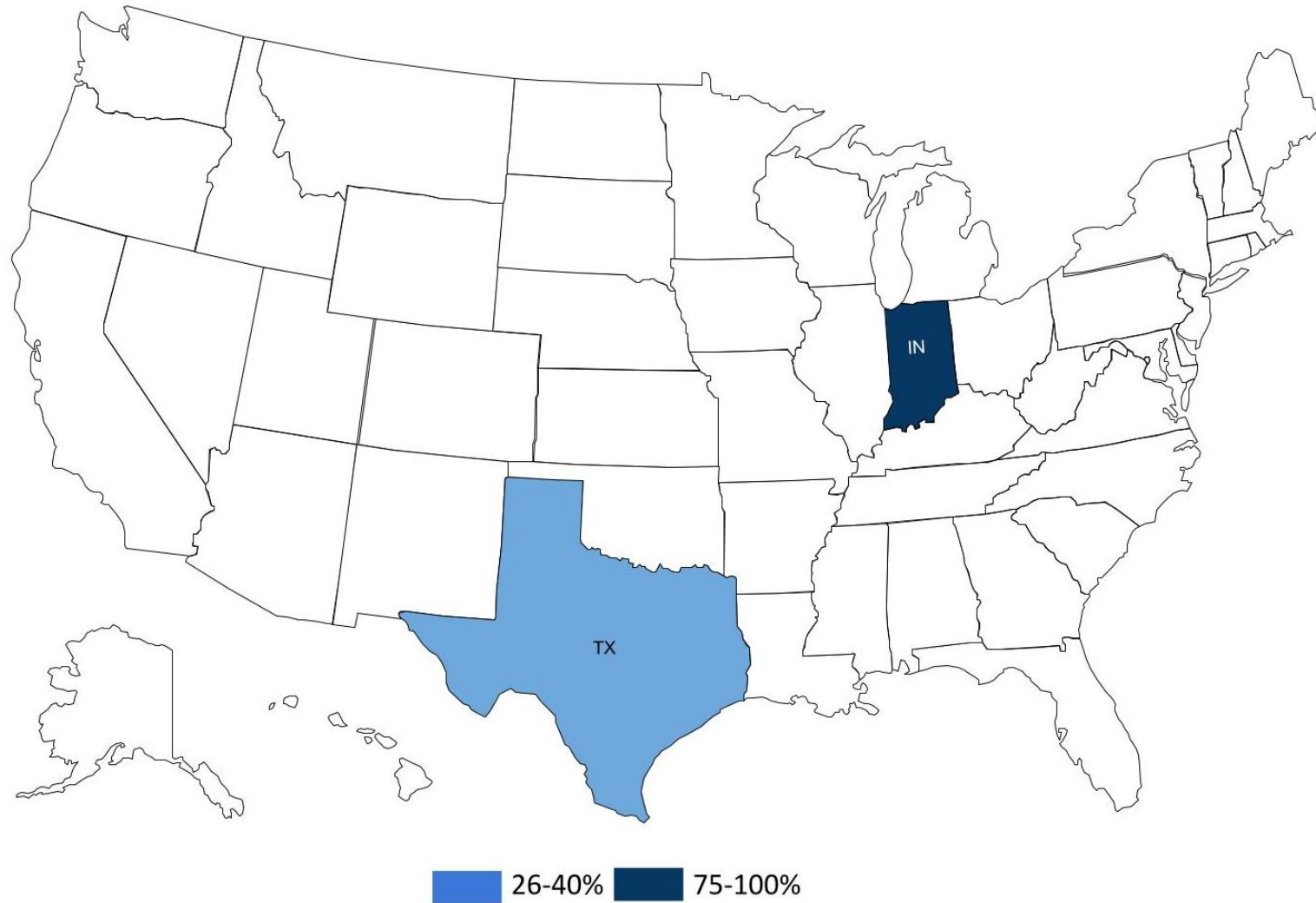
- ▲ For those retired or vested as of 1/1/13
 - ▲ Automatic based the first 3% of CPI, and one-half of the next 4%, with an annual cap of 5%, compounded
- ▲ For those not vested as of 1/1/13
 - ▲ Automatic based on the first 2% of CPI and one-half of the next 1%, with an annual cap of 3%, compounded

By funding the cost in advance, the VRS COLA meets key accounting and actuarial standards of practice.

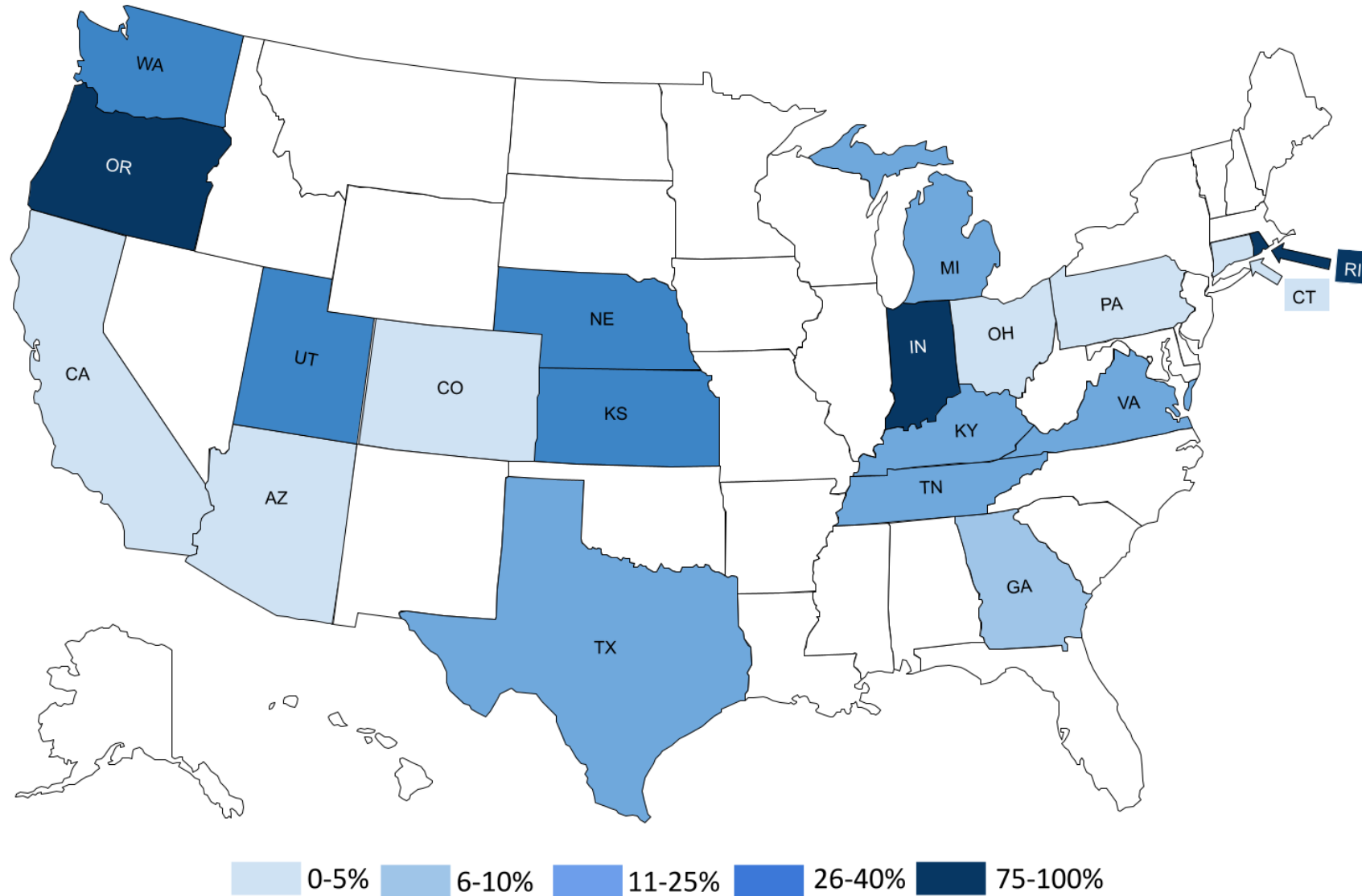
Hybrid Plans

- New hybrid plans are being created by legislatures nearly every year
- Mostly DB-DC, some cash balance plans
- Usually apply to new hires only
- DB-DC plans maintain a DB component, with a lower benefit accrual rate
- Cash balance plans contain key features of DB plans, but transfer some investment risk to workers
- A new hybrid, DB-DC plan was established for most new VRS plan participants effective 1/1/14

Statewide Hybrid Plans, 1995



Statewide Hybrid Plans, 2021



 keith@nasra.org

 202-624-8464

Closing Remarks

Ronald D. Schmitz

Chief Investment Officer, VRS





2021 Board of Trustees Retreat

December 7-8, 2021

*The Westin Richmond
6631 West Broad Street
Richmond, Virginia 23230*