

Living Longer, Risking More: The Future of Retirement Security Across the Globe

Wednesday, September 23, 2026

10:00 – 11:15am Eastern Time

Moderator: Michael S. Clark – Gallagher

Presenters: Richard Jackson– Global Aging Institute
Lee D. Gold – Marsh People and Investments
Abraham Hernández – Vitalis

All presentations of the Conference of Consulting Actuaries (CCA) and International Association of Consulting Actuaries (IACA) are conducted in compliance with Federal and State antitrust laws and any discussion of anticompetitive activities is strictly prohibited. The views expressed here are those of the presenter(s), and not necessarily those of the CCA or IACA. Nothing in this presentation is intended to be an interpretation of Actuarial Standards of Practice by the sponsoring organizations.

Copyright © 2026 CCA and IACA. CCA and IACA retain copyright of this presentation. **Content remains property of contributors.**

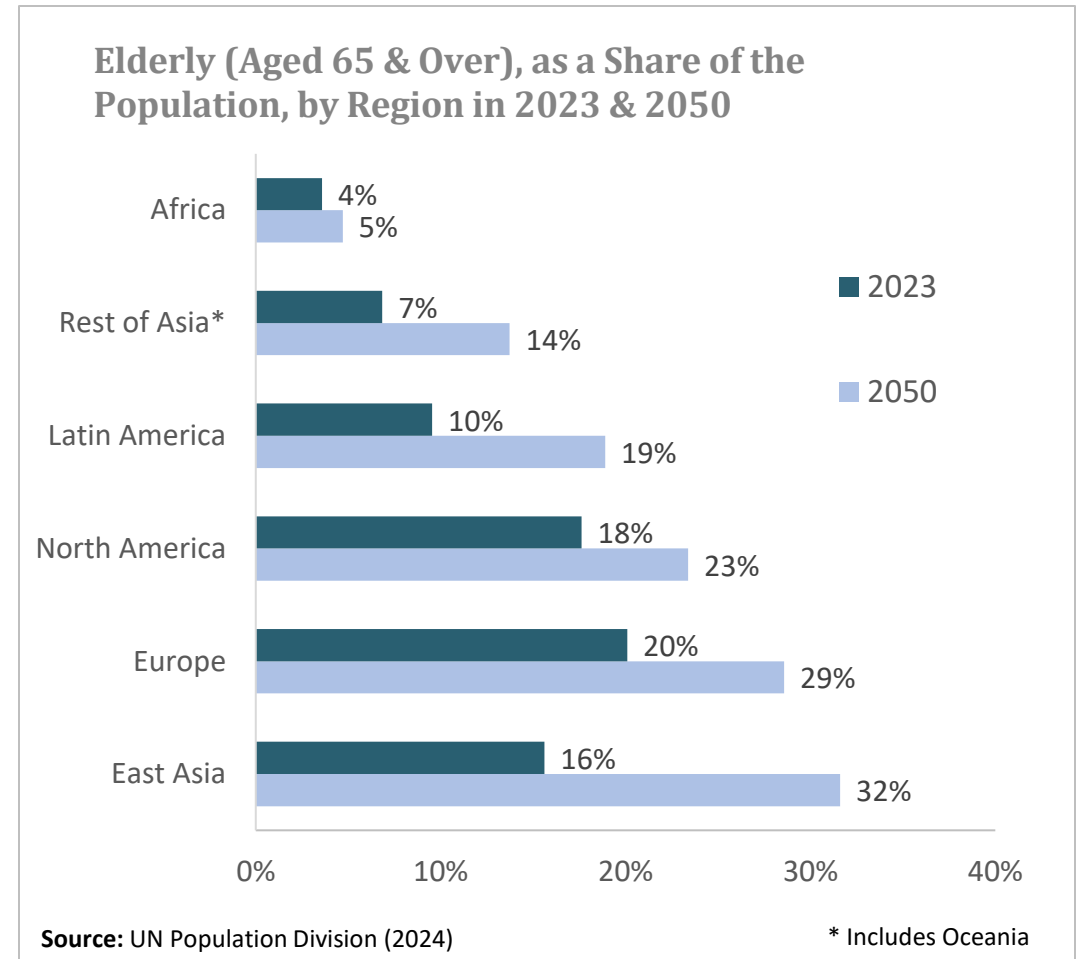
Introductions and Overview

Social Security Reform around the World

Richard Jackson, Ph.D.
Global Aging Institute

A Stunning Demographic Transformation

- Falling fertility and rising life expectancy are leading to a dramatic aging of populations worldwide.
- The aging trend began in the rich world, but it has now overtaken much of the emerging world as well.
- Population aging is challenging the ability of governments everywhere to ensure the adequacy and sustainability of their retirement systems. The nature of the challenge, however, differs greatly in developed countries and emerging markets.



Two Very Different Retirement Challenges

DEVELOPED COUNTRIES

How to maintain a high standard of living for the old without imposing a crushing burden on the young

EMERGING MARKETS

How to provide a modicum of income security for the old when most now have none at all

Developed Country Overview

The Postwar Retirement Revolution

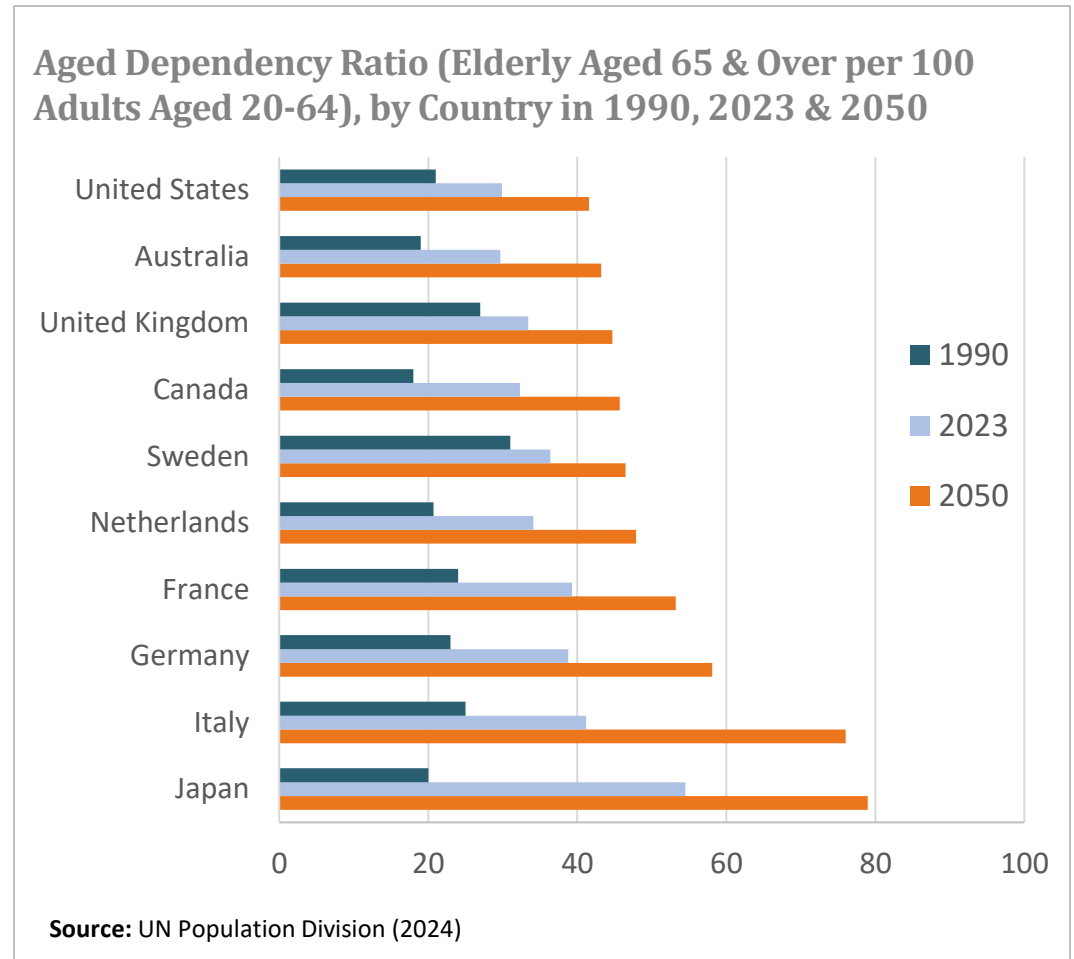
- In the early postwar decades, most developed countries greatly expanded the generosity of government retirement systems, boosting elderly living standards and triggering a mass exodus of older workers from the labor force.
- Although the design of these systems differed significantly from country to country, most were financed on a mainly PAYGO basis.
- Favorable demographics, combined with rapid economic growth, made generous government retirement benefits seem easily affordable.
- Given the high poverty rates, comparatively low educational attainment, and modest life expectancy of the elderly, heavily subsidizing retirement also seemed like enlightened social policy.

“The beauty about social insurance is that it is *actuarially* unsound...Always there are more youths than old folks in a growing population. More important, with real incomes growing at 3 percent per year, the taxable base upon which benefits rest in any period is much greater than the taxes paid historically by the generation now retired... A growing nation is the greatest Ponzi game ever contrived.”

-- Paul A. Samuelson, *Newsweek* (February 13, 1967)

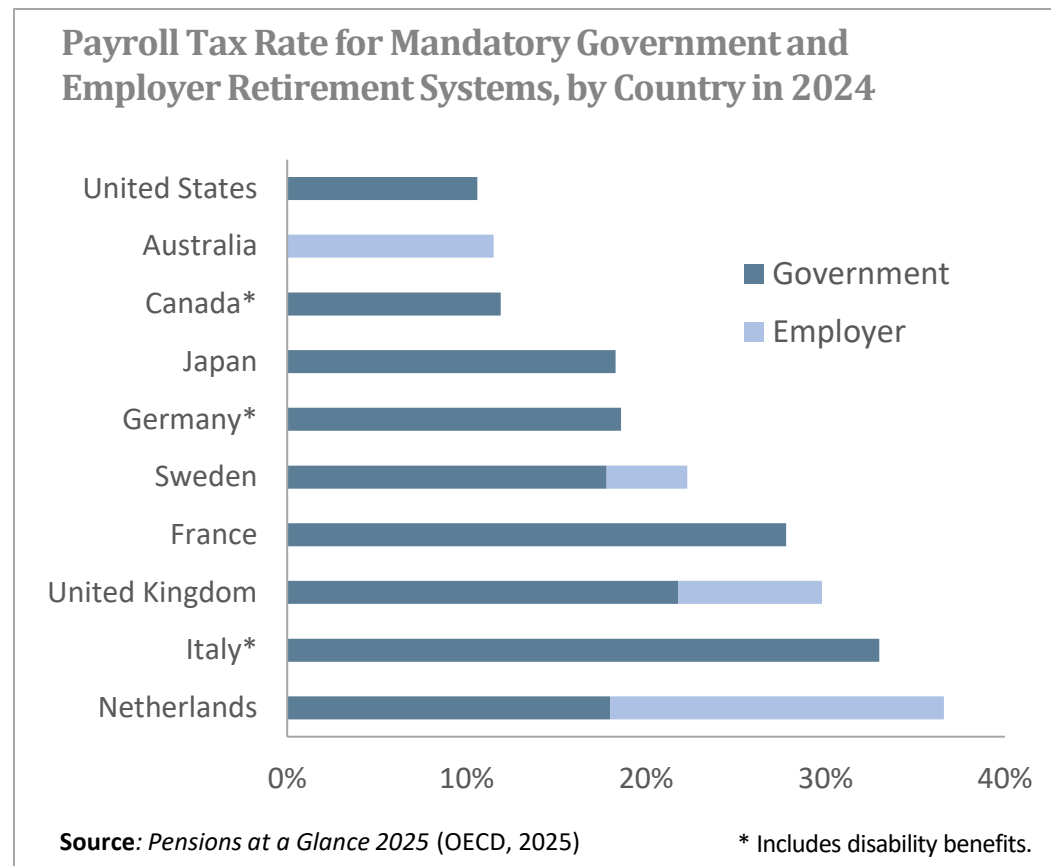
The End of Samuelson's Chain Letter

- By the 1970s and 1980s, falling birthrates and slowing economic growth began to throw into question the sustainability of government retirement systems.
- At the same time, the rising income, educational attainment, and life expectancy of the elderly rendered the social justification for heavily subsidizing retirement less compelling.
- By the 1990s, most developed countries had shifted their focus from expanding the generosity of government retirement systems to enacting reforms aimed at controlling their mounting cost.



Types of Social Security Systems

- **Earnings-Related Government Systems.** Most developed countries have a contributory, earnings-related government pension system financed mainly on a PAYGO basis. Exceptions: Australia, New Zealand, the Netherlands, and the UK.
- **Government Flat Benefits.** In addition to (or sometimes instead of) an earnings-related government pension system, many developed countries have a universal or means-tested flat benefit, usually paid for out of general revenues.
- **Mandatory Employer Systems.** A few developed countries have mandatory or quasi-mandatory employer pension systems that substitute for government earnings-related systems. Examples: Australia, the Netherlands, and Switzerland.



Policy Imperative: Raise Retirement Ages

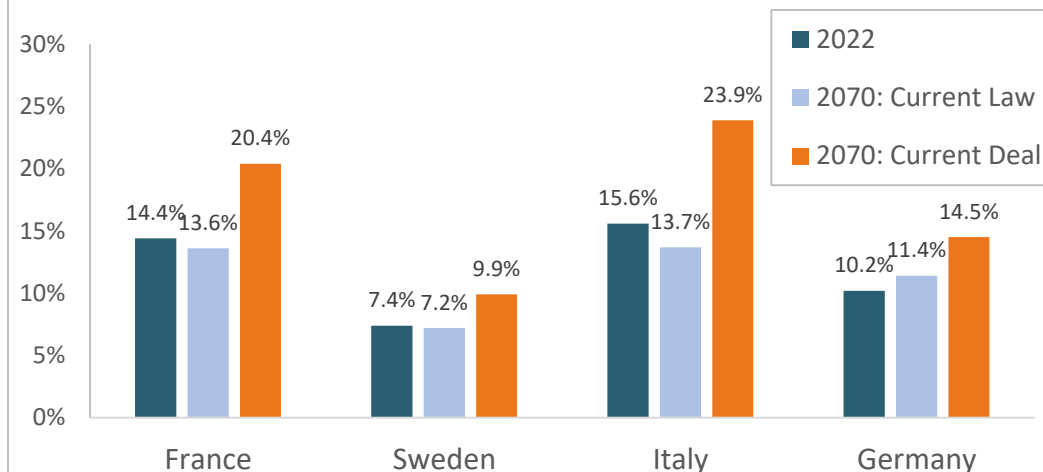
- By now most developed countries have raised or are in the process of raising their full-benefit retirement ages. Many have also raised their early retirement ages.
- The shift toward higher retirement ages has been especially dramatic in Europe, where until recently some countries allowed early retirement in the late fifties or early sixties with no actuarial reduction in benefits.
- After bottoming out in the mid-1990s to early 2000s, labor-force participation rates at older ages have risen substantially in most developed countries. In many of them, so has the age of first pension receipt.

Labor-Force Participation Rate of Older Men, by Age and Country, in 1970, 1995 & 2024						
	Age 60-64			Age 65 & Over		
	1970*	1995	2024	1970*	1995	2024
Australia	77%	47%	68%	22%	9%	20%
Canada	67%	43%	65%	15%	10%	19%
France	53%	11%	46%	13%	3%	5%
Germany	72%	28%	73%	17%	4%	12%
Italy	48%	31%	59%	n.a.	6%	8%
Japan	81%	75%	87%	49%	37%	35%
Netherlands	74%	21%	79%	11%	5%	19%
Sweden	80%	57%	76%	29%	14%	27%
United Kingdom	n.a.	50%	64%	na	8%	15%
United States	75%	53%	64%	27%	17%	23%
Source: OECD Data Explorer (2025) *Netherlands = 1971, France = 1975, Canada =1976						

Policy Imperative: Stabilize Benefit Costs

- In addition to raising retirement ages, many developed countries have reduced initial benefit formulas and/or the indexation of benefits in current payment status.
- Some have gone further and added automatic stabilizers to their government pension systems:
 - Ten countries in the EU have indexed their full-benefit retirement ages to life expectancy.
 - A few countries, including Italy and Sweden, are transitioning to NDC systems in which benefits are indexed to both life expectancy and the growth in taxable payroll.
 - Germany and Japan have added stabilizers to their traditional DB systems that have much the same effect.
- In some countries, reforms have entirely offset the impact of population aging on government pension costs.

Government Pension Spending, as a Percent of GDP, by Country in 2022 and EC Projections for 2070



Source: 2024 Ageing Report (EC, 2024)

* The “Current Deal” projection assumes no change in relative benefit levels, retirement ages, or labor-force participation rates.

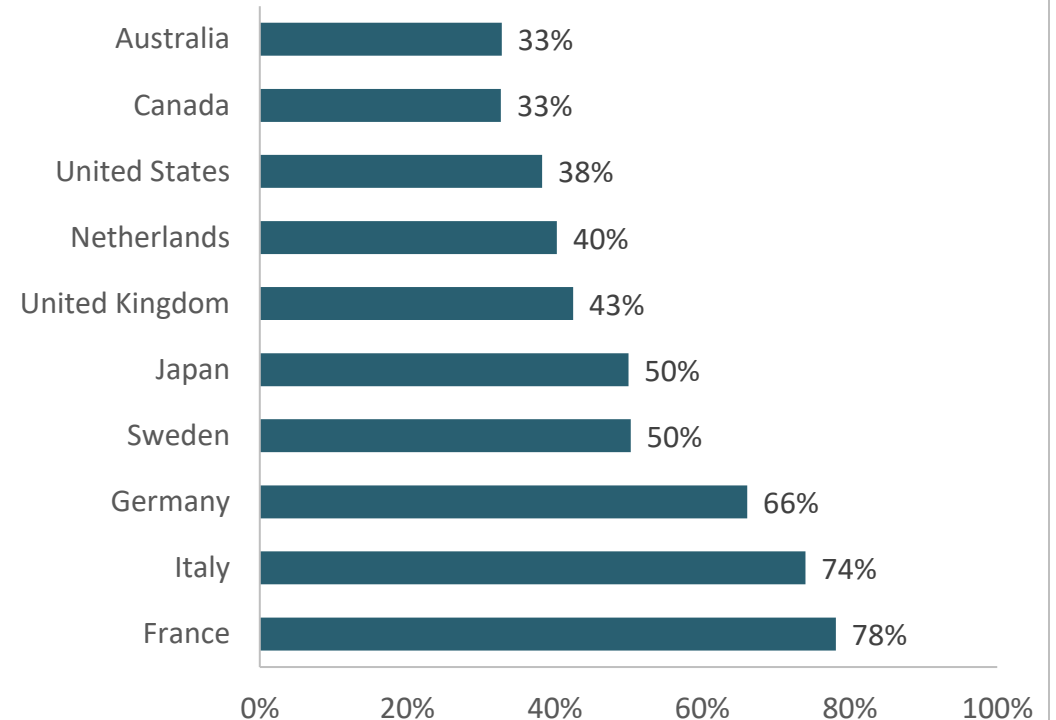
Automatic Stabilizers in the Swedish System

- The notional return on account balances equals average wage growth.
- Annuities are calculated based on cohort life expectancy at retirement.
- An “automatic balancing mechanism” adjusts indexation of annuities if the system drifts out of long-term actuarial balance.

Policy Imperative: Maintain Adequacy

- Given the high level of elderly dependence on government benefits in many developed countries, scheduled pension reforms could result in deep reductions in the relative living standard of the elderly.
- To forestall this, some countries that have relied almost exclusively on PAYGO pension systems are jump-starting new supplemental funded systems (e.g., Germany and Italy), while others with well-established funded systems are expanding them (e.g., Australia, New Zealand, Sweden, and the UK).
- Ensuring a decent standard of living for the elderly is not just a matter of good social policy. In the end, reforms that achieve fiscal sustainability at the expense of income adequacy will face push back from aging electorates and are unlikely to prove lasting.

Government Benefits, as a Percent of the Income of the Elderly (Aged 65 & Over), in 2022 or Most Recent Available Year

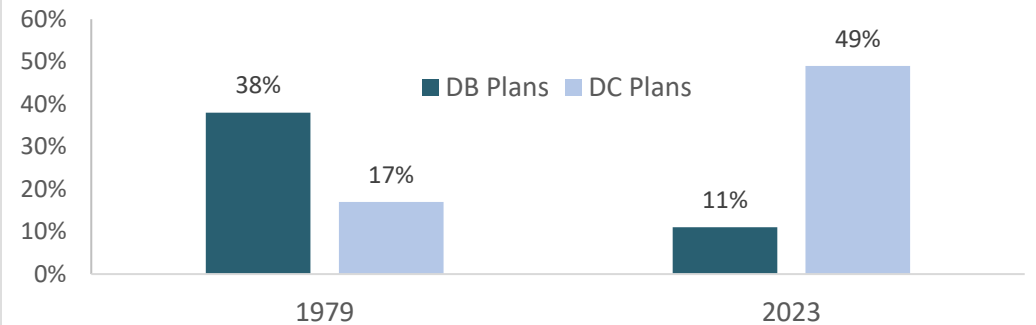


Source: *Pensions at a Glance 2025* (OECD, 2025)

The Importance of Lifetime Income

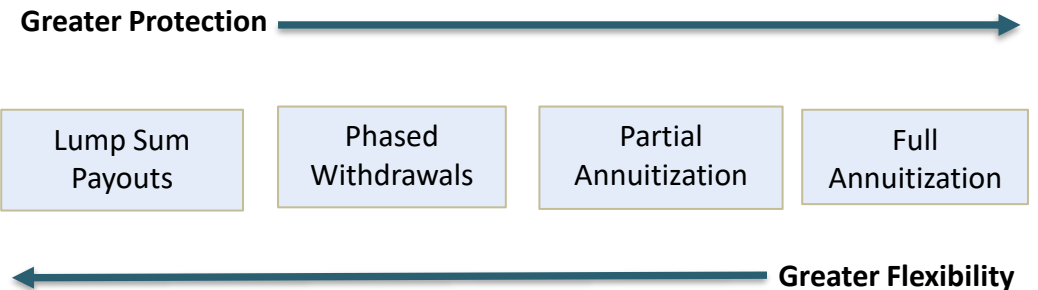
- Ongoing reductions in government retirement benefits, the shift from DB pensions to DC retirement savings plans, and rising life expectancy are together conspiring to leave a growing share of retirees without sufficient guaranteed lifetime income.
- As these developments continue to unfold, even retirees who have saved throughout their working lives may find themselves at risk of outliving their savings—or else, to avoid that outcome, underspending in old age.
- Although in principle all DC systems could provide lifetime income, in practice relatively few require even partial annuitization of retirement assets, while many make no provision for lifetime income at all.
- Addressing the challenge will require reforms that balance the spending flexibility retirees desire with the protection against longevity risk that they need.

Participation of U.S. Private-Sector Workers in Employer Retirement Plans, by Type, in 1979 and 2023



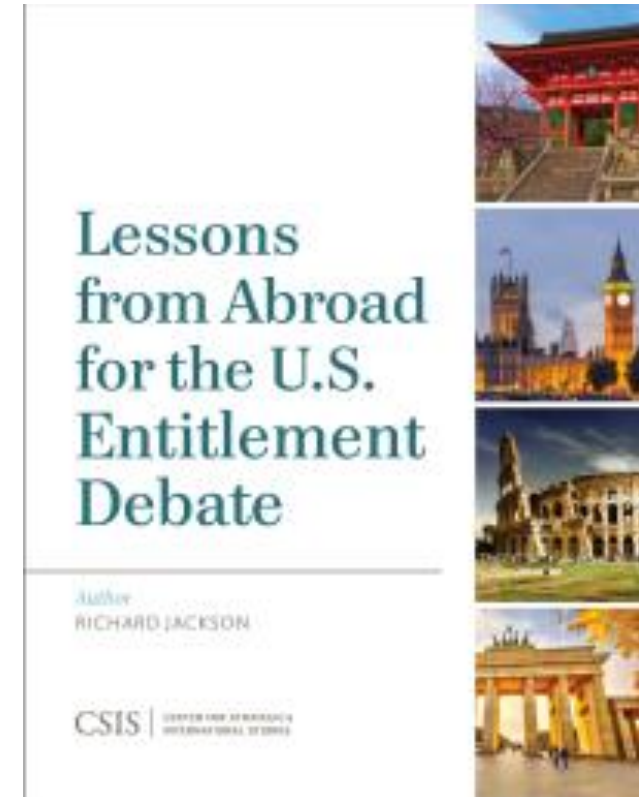
Source: EBRI (June 2019) and U.S. Bureau of Labor Statistics (April 19, 2024)

Balancing Protection and Flexibility



Lessons for the Developed Countries

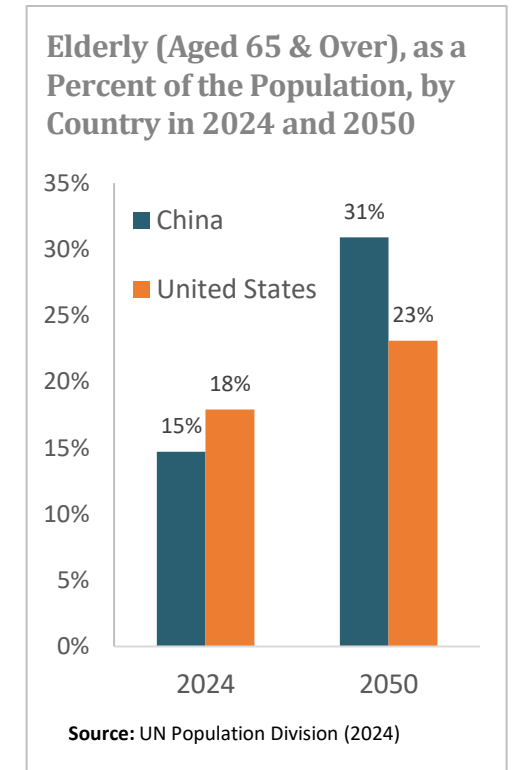
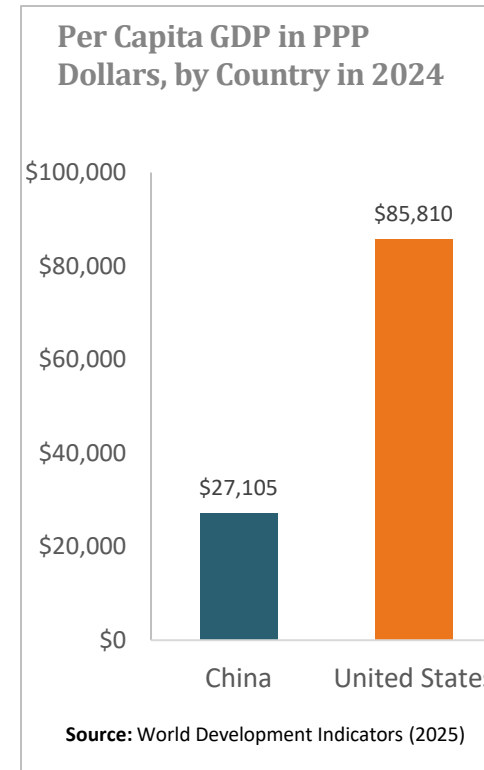
- Retirement reforms that ensure fiscal sustainability at the expense of income adequacy may well be reversed by aging electorates. (Example: The UK)
- Higher retirement ages have multiple advantages for aging societies. Depending on how reforms are structured, they can not only reduce benefit costs without undermining adequacy, but can also increase revenues, employment, and economic growth.
- Increasing funded retirement savings is necessary but not sufficient. Reforms also need to ensure that DC participants have adequate lifetime income.
- There is no single right approach to retirement reform. Radically different models can succeed in ensuring both fiscal sustainability and income adequacy. (Example: Australia vs. Sweden)



Emerging Market Overview

Growing Old before Growing Rich

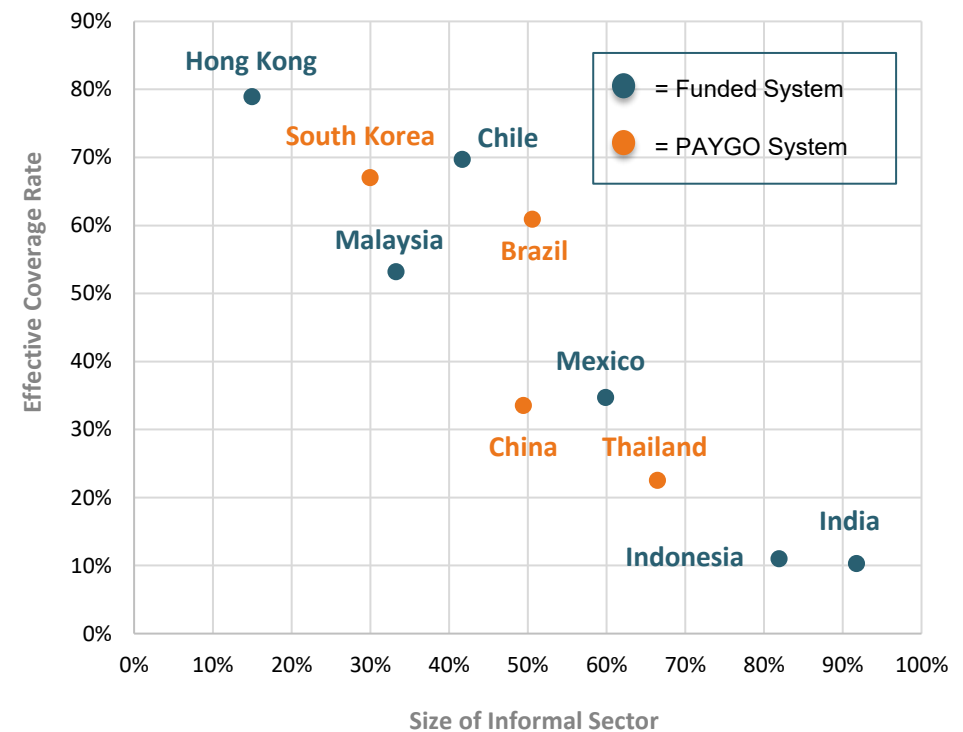
- While today's developed countries became affluent societies before they became aging societies, many emerging markets are growing old while they are still in the midst of development and before they have put in place the full protections of a modern welfare state.
- This premature aging vastly complicates the challenge of building adequate and sustainable retirement systems.



Large Gaps in Pension Coverage

- The design of government pensions varies greatly across emerging markets, from traditional DB systems (e.g., Brazil and China) to personal accounts systems (e.g., Chile and Mexico) and government provident funds (e.g., India, Indonesia, and Malaysia).
- Yet all emerging markets face a common retirement security challenge. A significant share of workers, and in some countries the great majority of workers, fail to participate in the government retirement system.
- The higher the rate of labor-market informality, the lower the effective coverage rate, regardless of the design of the government retirement system.

Effective Coverage Rate of Mandatory Government Retirement System(s) vs. Size of the Informal Sector

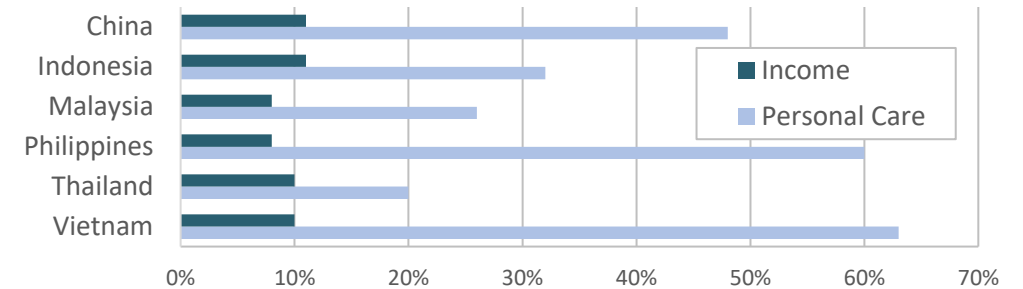


Source: *Voluntary Pensions in Emerging Markets* (GAI, 2017)

Weakening Family Support Networks

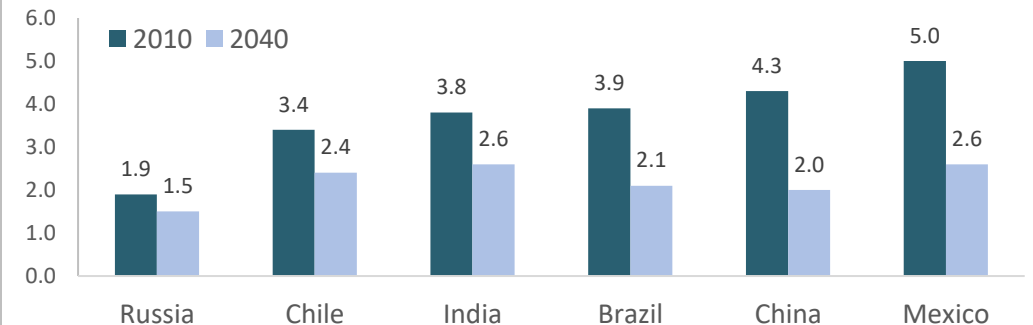
- Until recently, governments in emerging markets could count on the extended family to step in and provide for workers who reached old-age without a pension.
- Traditional family support networks, however, are already under stress from the forces of modernization and will soon come under intense new demographic pressure from declining family size.
- The failure to build more inclusive and adequate retirement systems could result in a humanitarian aging crisis of immense proportions.

Share of Respondents Saying That Grown Children or Other Family Members Should, Ideally, Be Mostly Responsible for Providing Income/Personal Care to Retired People.



Source: East Asia Retirement Survey: Wave 2 (GAI, 2015)

Average Number of Surviving Children of the Elderly (Aged 60 & Over), by Country in 2010 and 2040



Source: Global Aging Preparedness Index: 2nd Edition (CSIS, 2013)

Social Pensions vs. Voluntary Pensions

- Over the past few decades, most emerging markets have tried to address the coverage problem by putting in place some sort of noncontributory “social pension.”
- While social pensions are a near-term necessity, they have two drawbacks: First, they threaten to become prohibitively expensive as societies age. Second, they encourage the very informality that makes them necessary.
- More recently some emerging markets, most notably China and India, have begun to experiment with a promising alternative: voluntary contributory pensions with flexible contribution and withdrawal rules tailored to the needs of informal-sector workers.
- In the long run, the only lasting solution will be to extend the reach of the formal sector itself—and along with it, the reach of mandatory pension systems.

What's happening in the U.S.?

Lee D. Gold, FCA, ASA, EA, MAAA
Marsh People and Investments

A brief history

The impact after 50+ years of ERISA

- Dramatic shift away from defined benefit plans towards defined contribution plans
- “Matching” contributions are a popular design feature
 - Ability to save is a big factor in optimizing employer-funded retirement benefits
- Investment management fees and record keeping fees have decreased significantly while lawsuits have increased
 - Many lawsuits are based on an accusation of unreasonable fees
- Automatic features are prevalent
 - Automatic enrollment (required for new plans after 2022)
 - Automatic escalation (required for new plans after 2022)
 - Automatic allocation, through use of target date funds (TDF)
- What’s missing?

Where challenges remain

Current challenges

- Ability to maximize contributions from employer
- Temptations at termination
 - To roll or not to roll?
- Reversions at rehire
 - Auto-enrollment at lower level at new employer
- The biggest unknown: How long will I live?
 - Will my money last?
 - How much can I spend each month?
- Cognitive decline

Where we see activity

Market-based DB plans

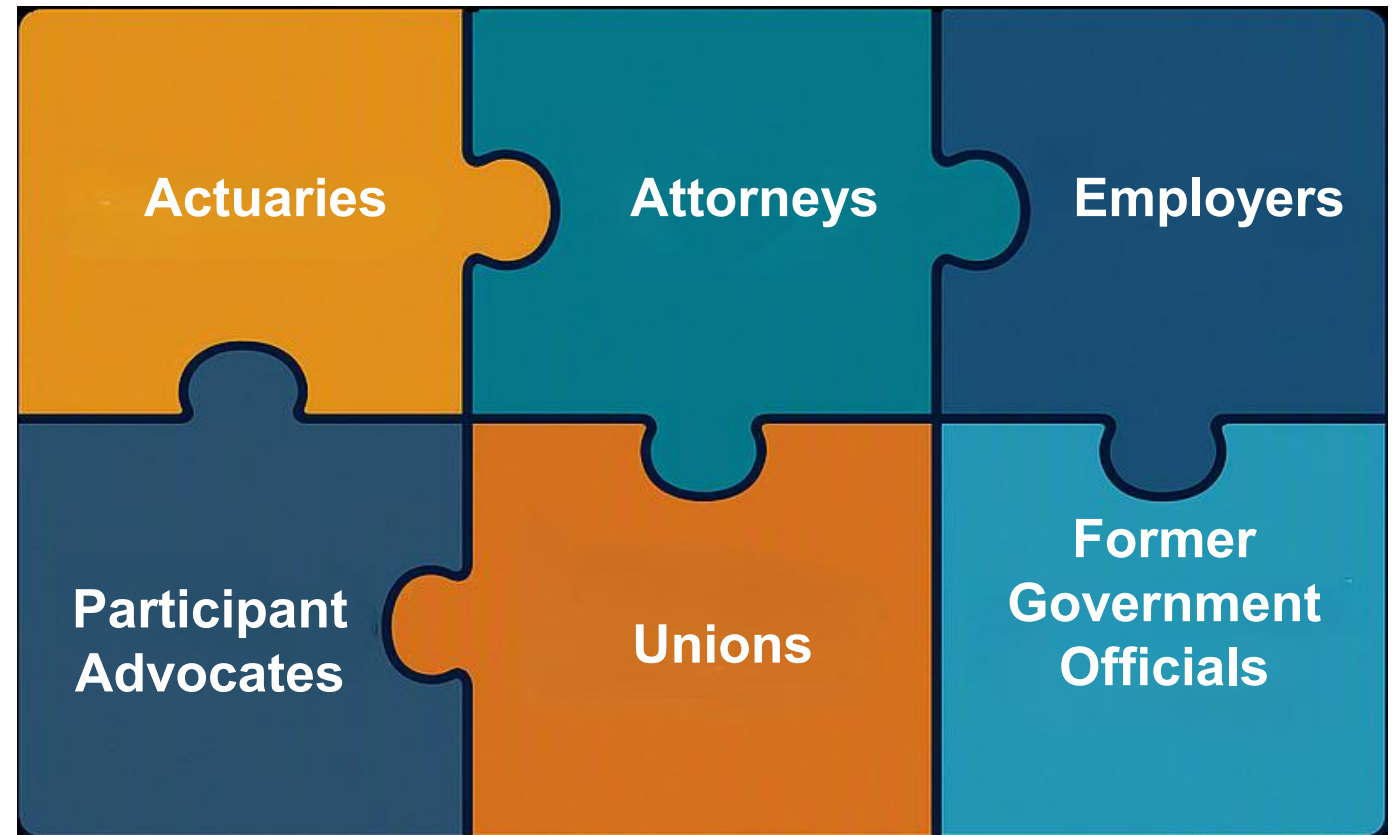
Despite dramatic decline in DB plans, there is activity in certain areas

- Cash balance plans, particularly market-based cash balance plans
 - Primarily among smaller employers, where owners are looking for large tax deductions
 - Notional account balances credited with the actual return of plan assets
 - Limits development of unfunded liabilities
 - Stable annual costs
- Variable annuity plans (more limited attention)
 - Primarily with larger employers seeking sustainable lifetime income
 - Benefits defined as lifetime income amount
 - Benefits Adjusted periodically to reflect actual asset performance
 - Increased sustainability due to limited development of unfunded liabilities
 - Stable annual costs

The Retirement Security Innovation Initiative

A shared mission: build a retirement framework that combines the best of both worlds (DB, DC) without forcing a choice.

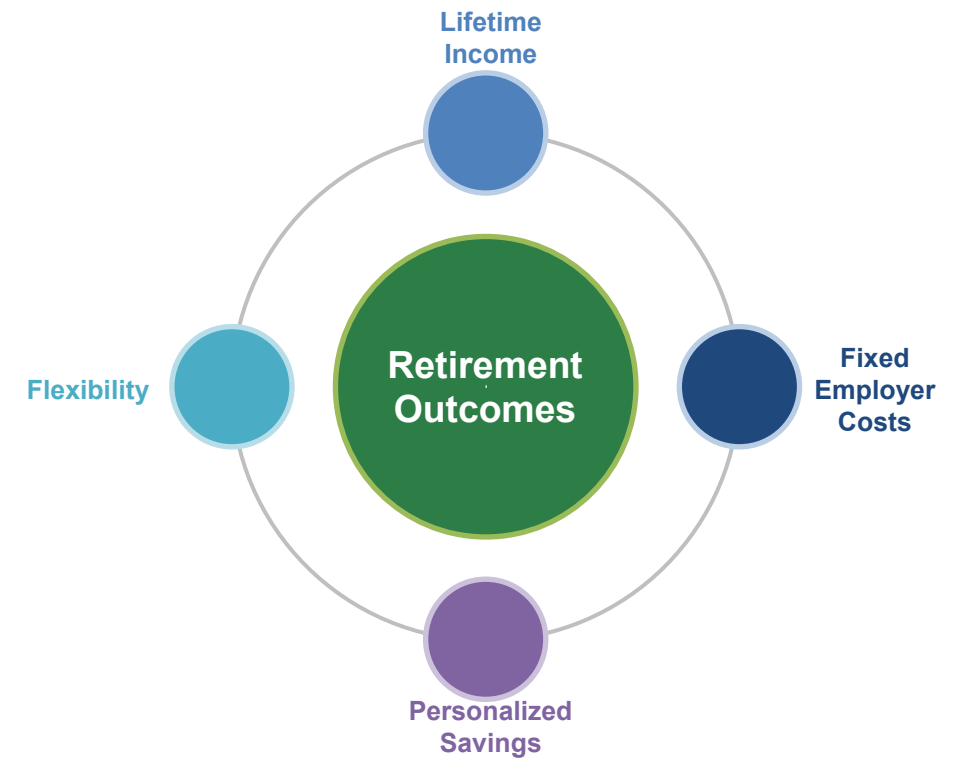
A Group of retirement professionals focused on meeting today's retirement challenges



The RSII Design

A holistic approach to retirement focused on OUTCOMES, not account balances

The RSII design strengthens the traditional retirement framework by combining employer-funded lifetime income with personalized savings guidance — helping employees achieve their retirement objectives.



Employer-Funded Lifetime Income

Fixed contributions grow in a collective trust, then convert to lifetime monthly income at retirement.



Personalized Savings Guidance

Smart Defaults set each participant's contribution rate. Fully flexible — access, legacy, or more income.

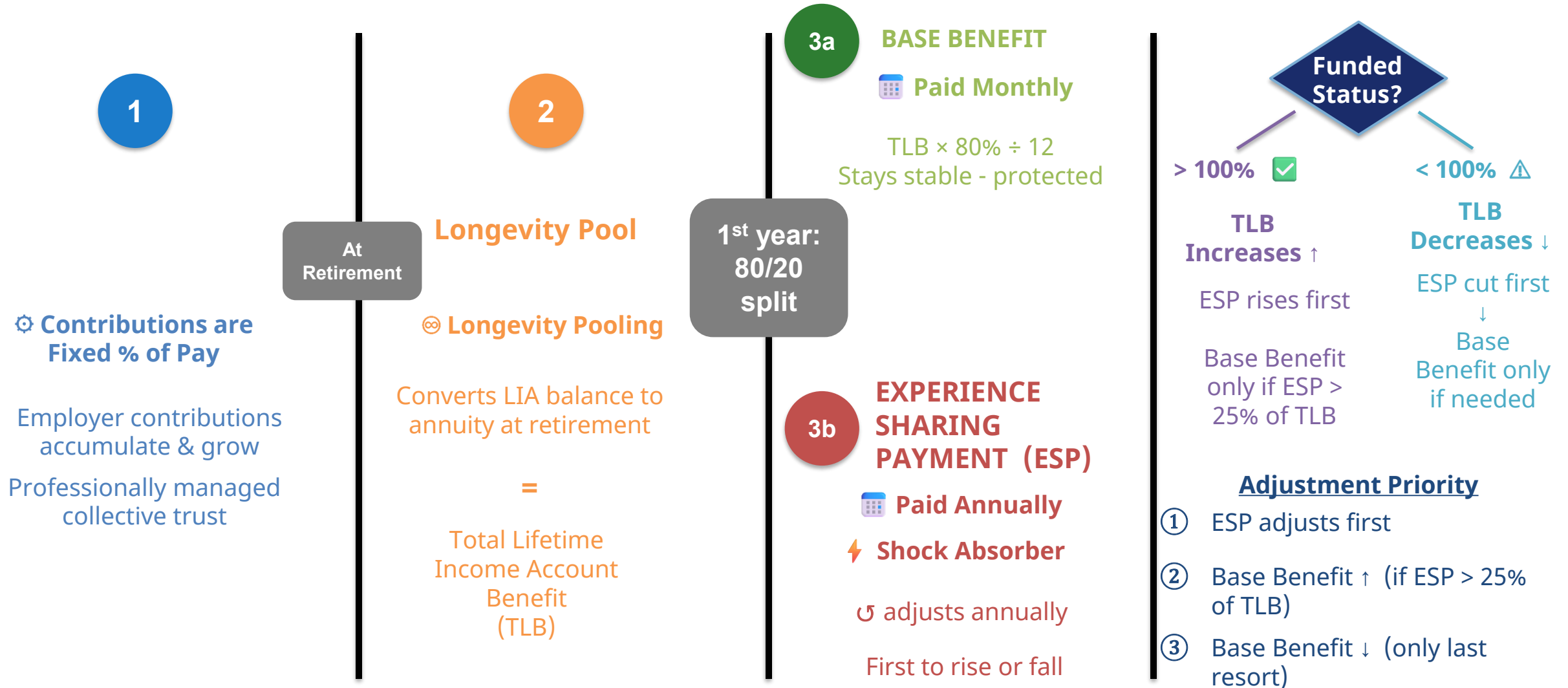


Outcomes-Driven Retirement Security

Not a replacement for DB or DC — a new integrated model combining predictable monthly income with flexibility, and no funding risk for employers

From Contributions to Lifetime Income

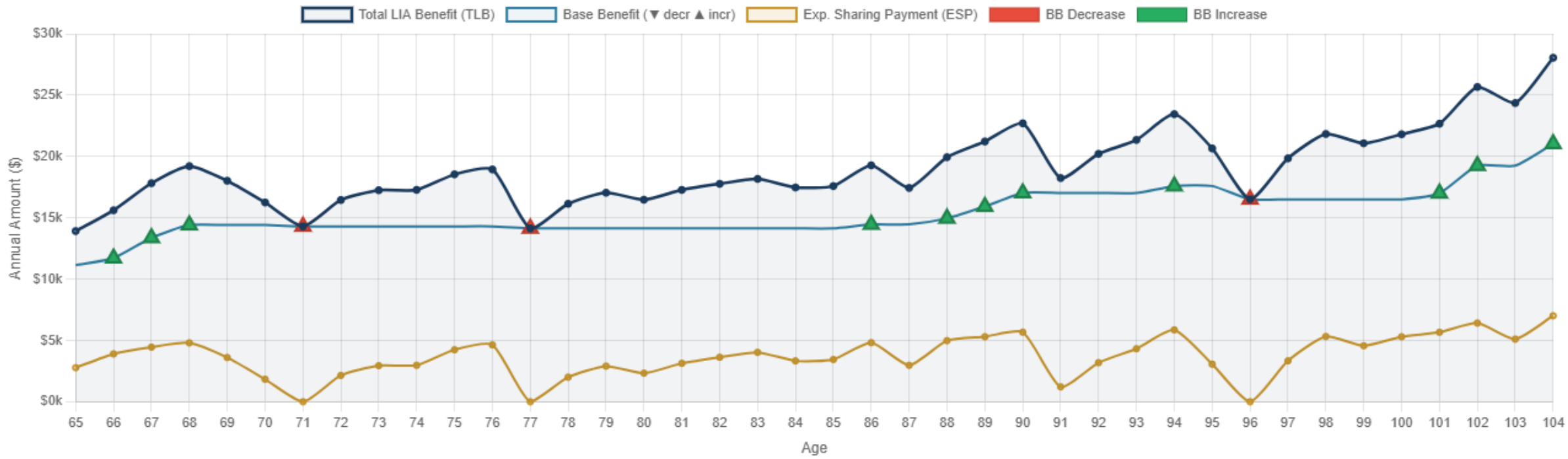
How the Lifetime Income Account Benefit is built and adjusted



LIA Payout: Illustration (investment experience from 1996-2025, then 1973-1983)

TLB, Base Benefit & ESP Response

CSV



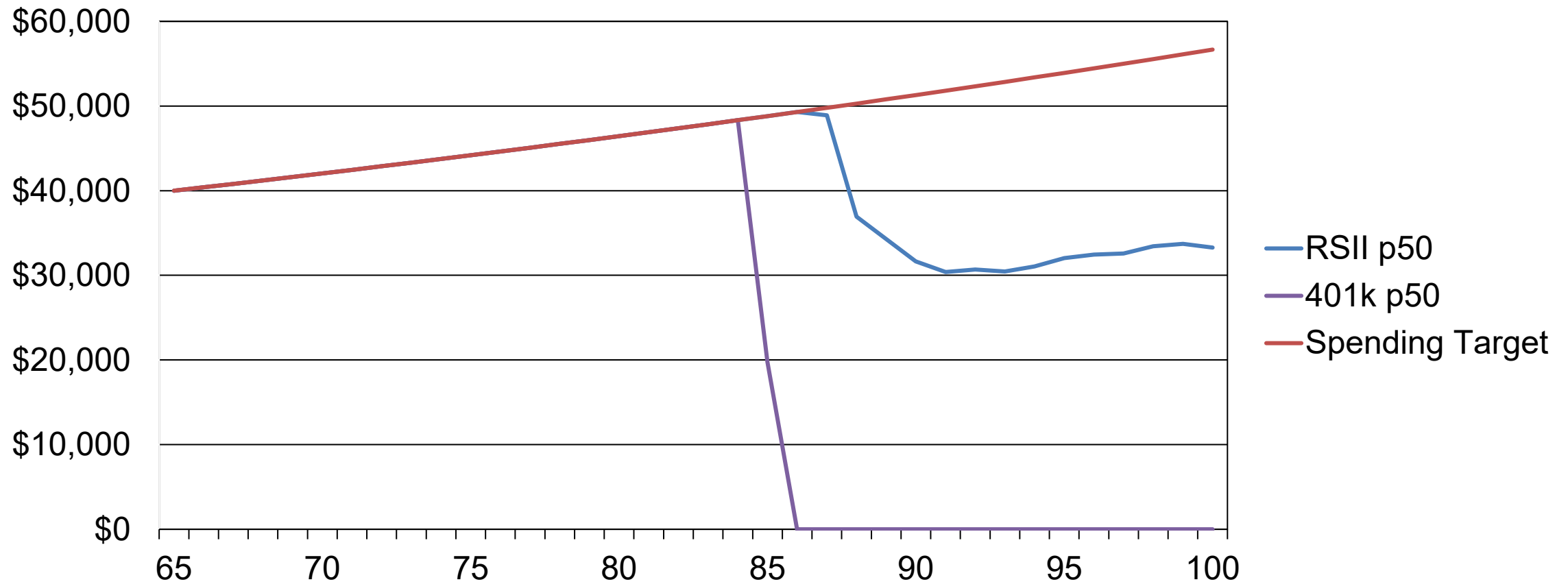
The Total LIA Benefit (TLB) is driven by investment returns net of the hurdle rate. ESP absorbs gains and losses first; Base Benefit only changes when ESP is exhausted (down) or capped (up).

▼ Base Benefit Decreases	▲ Base Benefit Increases
3 decreases	11 increases
Avg change: -2.7%	Avg change: +6.8%
age 71, age 77, age 96	age 66, age 67, age 68, age 86, age 88, age 89, age 90, age 94, age 101, age 102, age 104

Key Observation: Base Benefit is unlikely to decrease, providing stable income that retirees can plan and budget around.

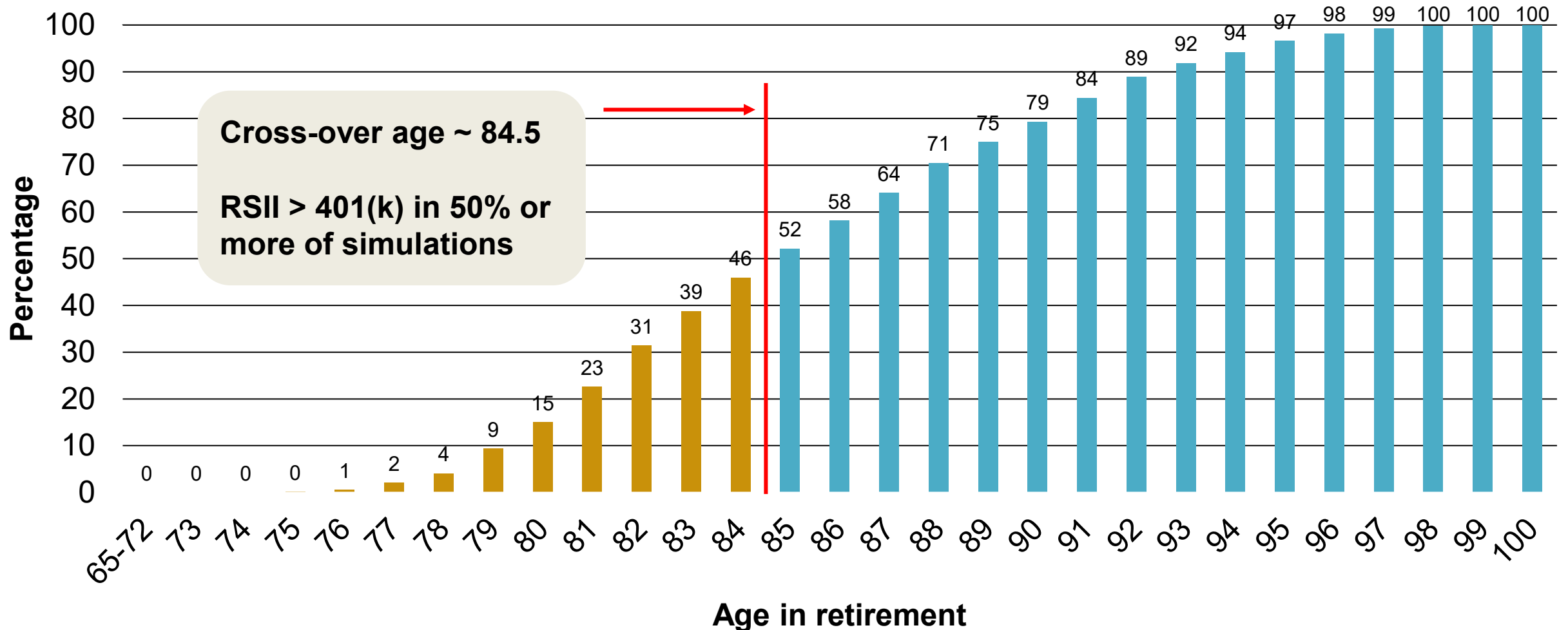
Annual Income: RSII Plan vs. 401(k) — 1,000 Monte Carlo Simulations

Post-retirement | \$175K LIA + \$325K PSA vs. \$500K 401(k) | \$40K spending target | No SS | RMDs enforced



Annual Income: RSII Plan vs. 401(k) — 1,000 Monte Carlo Simulations

Post-retirement | \$175K LIA + \$325K PSA vs. \$500K 401(k) | \$40K spending target | No SS | RMDs enforced



Addressing current challenges

Current challenges

- Ability to maximize contributions from employer
- Temptations at termination
 - To roll or not to roll?
- Reverting at rehire
 - Auto-enrollment at lower level at new employer
- The biggest unknown: How long will I live?
 - Will my money last?
 - How much can I spend each month?
- Cognitive decline

How RSII plan addresses these challenges

- LIA funded with non-matching employer contributions
- LIA can only be rolled to another RSII plan
- Smart Defaults customize initial and ongoing contribution rates
- Employer-funded portion of a person's retirement benefit is paid as lifetime income, and requires no cognitive management during retirement

Worldwide Ideas to Improve Pension Systems

A Compilation of Actuarial Ideas from Around the Globe

**Abraham Hernández, President
Vitalis**

Overview



Scale of the global challenge
in pension funding



Causes and the role of
changing demographics



Actuarial and creative ideas
to address the challenge

The Pension Crisis: A Global Issue

Headlines:

How Britain's state pension is now meaner than Mexico's (and it's getting worse)

'Making us poorer won't save Greece': how pension crisis is hurting its people

Pension reform is a major sticking point in Greece's bailout talks. But with 45% of retirees under the poverty line, many wonder how much more they can take.

Tahiti general strike looms over pension reform

Investing for retirement: a long-term game many workers aren't even playing

Retirement readiness isn't even on the radar for a high number of Americans

The Pension Crisis: A Global Issue

Headlines:

N.J. pension fund loses billions in coronavirus market chaos

Estonia's statutory funded pension scheme on the way to being made voluntary

Estonia pension reform putting system at risk?

Dismantling the Estonian Pension System is not the Answer

Estonia's low pension replacement rate could fall further in future

Restructuring of the second pillar of the funded pension

Pension funds could implode

Trying to Quantify the Global Pension Challenge

A wide range of indices and reports attempt to benchmark retirement systems worldwide:

- CFA Institute Global Pension Index 2025, Mercer
- Time to walk the talk, Allianz Global Pension Report 2025, Allianz Research
- 35th Annual Global Retirement Index 2026, International Living
- OECD Pensions at a Glance 2025, OECD and G20 Indicators
- World Social Protection Report 2024-26, ILC (International Labour Organization)
Universal social protection for climate action and a just transition

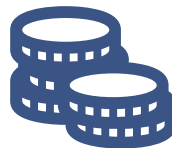
ADEQUACY

Benefits provided, system design,
savings and asset allocation



SUSTAINABILITY

Level of funding, demography, labor
force participation, government debt



INTEGRITY

Regulation, governance,
communication, costs, protection



Causes



**INCREASING
LONGEVITY**



**DECLINING
BIRTHRATE**



**PUBLIC FINANCE
PRESSURES**



**MARKET & INTEREST
RATES
VOLATILITY**

Additional challenges in developing nations



**MIGRANTS, GIG
ECONOMY**



LABOR INFORMALITY



**LOW
PARTICIPATION**



**LACK OF KNOWLEDGE
& INTEREST**

Social security, notwithstanding its deficiencies and challenges, is a privilege of a lucky few.

Sources: The Economist; MediKeeper; SQ Leadership; Winner-mind.

Easy solution?

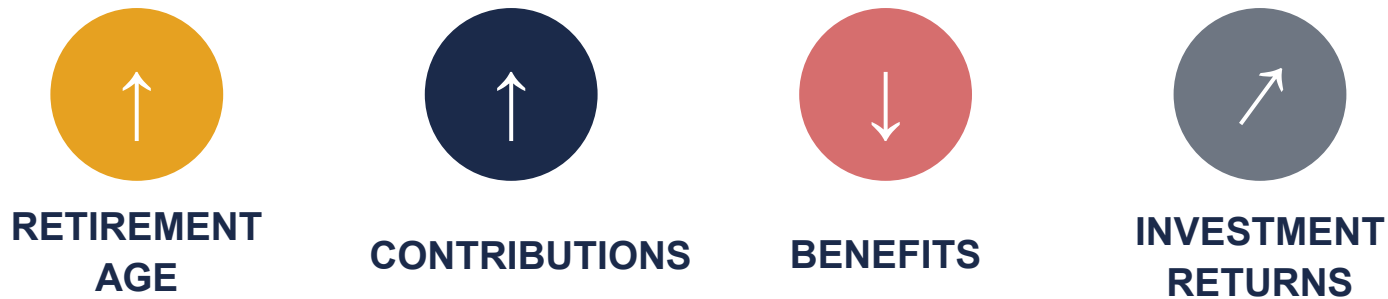
IDEAS TO HANDLE WITH CARE

Logan's Run (1976)

A sci-fi film where anyone older than 30 offered themselves up in a semi-religious ceremony when the “elderly” disappeared or were hunted down if they refused.

A vivid reminder: solving demographic pressure by simply designing away the older population is not a policy idea, it is a cautionary tale.

A little progress in most countries via standard levers



But:

- Still woefully insufficient vs. the scale of the challenge
- Strong public, and hence legislative, resistance to any changes
- We need better ideas that are easier to understand and implement

In France:

The 2023 reform raised the minimum retirement age from 62 to 64, after mass protests and use of Article 49.3 to bypass a parliamentary vote.

In November 2025, parliament voted to **suspend** the increase, freezing the age at 62y9m, a live example of how strong public resistance can reopen even an enacted reform.

Countries' proposals at a glance

Australia	Political-inertia challenges; SuperSuper consumption-linked saving	Germany	Sustainability factor offsets dependency-ratio shifts
Canada	Modest, fully-funded DB second-pillar enhancement	Greece	Cross-party NTS reform proposal after 2010 crisis
Chile	Mandatory contributions for independent workers	Japan	Vertical combination: DC first, delayed Social Security
China	Panchumo — consumption-linked pension savings	Kenya	Mbao voluntary savings; mobile-based pensions
Denmark	Retirement age indexed to life expectancy, to 73 by 2060	Mexico	Miles for Retirement — saving through consumption
Ecuador	Pension funds invested in reforestation & forestry	Sweden	Notional defined contribution (NDC) since 1994
El Salvador	Public longevity insurance, funded from contributions	United Kingdom	Combined reform: higher flat-rate pension, later retirement
Finland	Life-expectancy coefficient auto-adjusts pensions		

Canada – helping the middle class save for retirement

IDEAS FROM AROUND THE WORLD



Addressing pension undersaving for the middle class

- Issue: 60% of employees are not covered by occupational pension plans
- In 2016, it was estimated that 1.1 million families would face a significant reduction in income at retirement
- Solution: a modest, fully-funded enhancement of the employment-related DB public second pillar
- Additional contributions are invested in the financial market; benefits accrue over 40 years

Denmark – gradual reforms

IDEAS FROM AROUND THE WORLD



Gradual increase in retirement age and labor opportunities

- Retirement age is expected to reach 73 by 2060, indexed to life expectancy
- Pensioners are entitled to extra economic benefits if they decide to keep working after starting to receive their pension
- The measure is designed as a way to ease the ongoing labor shortage

Ecuador – investing pension funds sustainably

IDEAS FROM AROUND THE WORLD

Reforestation and forestry



- Considering current social security funding problems, the IESS Pension Fund explored mitigating them through reforestation and forestry investment programs
- The project is based on financing plantations of teak, bamboo and pine radiata
- This prevents governments from diverting liquid IESS funds for unrelated purposes
- Jobs would be generated not only in plantation and reforestation, but across industries: timber export, furniture, handicrafts, and more



El Salvador – a public system of longevity insurance

IDEAS FROM AROUND THE WORLD

Longevity insurance



- Created in 2017 through law — an insurance covering the risk that people live longer than expected at the moment their pension is calculated
- Funded with money from pension contributions
- Designed as a complement to the national defined-contribution system

Finland – automatic balancing mechanism

IDEAS FROM AROUND THE WORLD

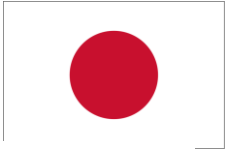


Life expectancy coefficient and automatic adjustments

- A “life expectancy coefficient” was introduced in the 2005 reform to combat increasing pension expenditure
- If life expectancy increases, monthly pensions are decreased; if it decreases, monthly pensions increase
- A 2017 reform went further: it raised the effective retirement age and lengthened working careers by linking the general retirement age to life expectancy as well

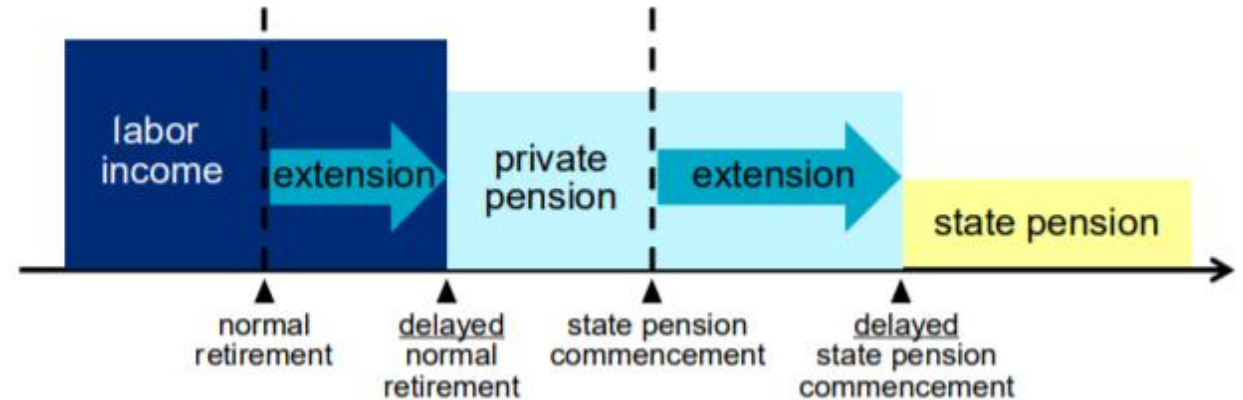
Japan – sequencing DC and Social Security

IDEAS FROM AROUND THE WORLD



Vertical combination

- Require that the first “X” years of retirement be funded from JIDC/JCDC (akin to a US IRA/401(k))
- Delay the start of Social Security benefits to year $t+1$
- Some retirees will die first and all will receive “X” years of fewer benefits — so the Social Security benefit level can be sustained even as longevity and the dependency ratio increase



Germany – Frühstart-Rente ("Early-Start Pension")

IDEAS FROM AROUND THE WORLD



120€ per annum for all children between 6 and 18 years of age

- **Individual accounts**
Each child receives their own portable pension account, held in their name from age six.
- **Possibility of Voluntary top-ups**
Families and relatives may add extra contributions on top of the state's €120 payment.
- **Promotion of financial literacy**
The scheme is paired with education on saving and investing, building habits early.

Greece – overcoming political inertia

IDEAS FROM AROUND THE WORLD



Raising consensus in Greece

- For decades, governments won elections by promising “the best indexation on pensions”; politicians proposing cuts were unpopular
- After 2010 and the Greek debt crisis, voters still favored the only party promising pension increases, in 2015
- As the system is DB and PAYG, three academics proposed the NTS reform (Nektarios, Tinios, Symeonidis)
- The proposal built consensus across the main political parties, stakeholders, the Hellenic Actuarial Association, press and media, and the London School of Economics

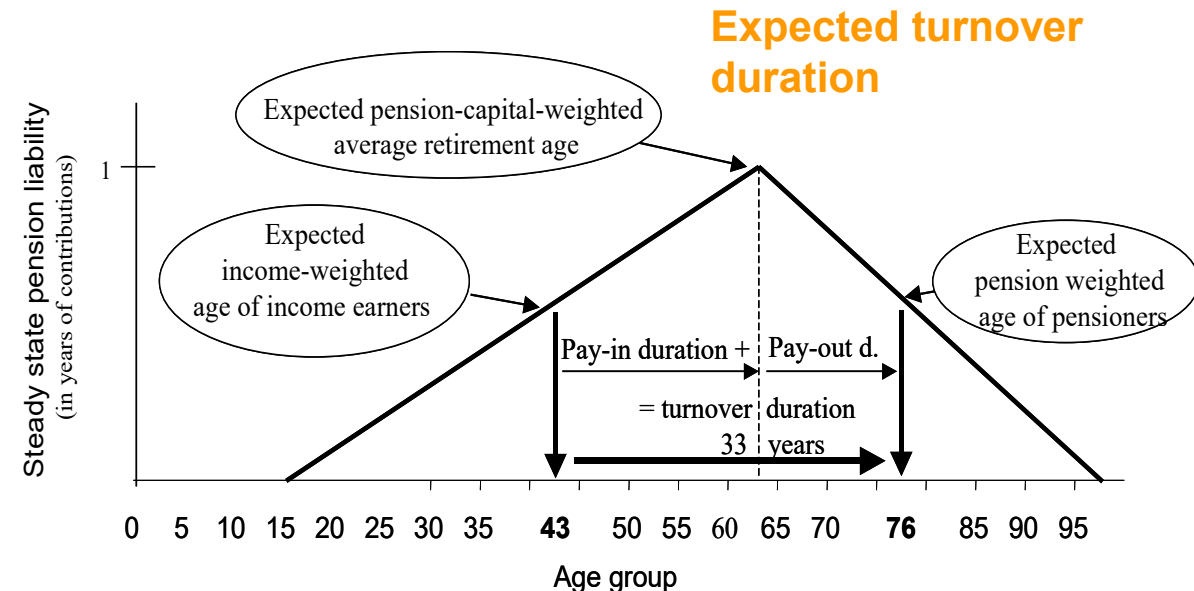
Sweden – notional defined contribution

IDEAS FROM AROUND THE WORLD



The Swedish reform of 1994

- The previous DB scheme was replaced by an NDC (notional defined contribution) system: contributions go into individual accounts, but are not invested
- Notional account balances are revalued each year by average wage growth
- At retirement, the accumulated notional amount is converted into a pension via an annuity factor based on current mortality
- An automatic balancing mechanism protects the system if liabilities outgrow assets



Source: Swedish Pensions Agency.

Kenya – voluntary, tax-free & digital savings

IDEAS FROM AROUND THE WORLD



Mbao Pension Scheme and mobile-phone saving systems

- Mbao is a voluntary savings plan that matures at retirement whether the member worked formally or informally
- If a member continues saving until age 65, funds remain earmarked for retirement
- Kenya is exploring mobile-based pension schemes to boost retirement coverage
- Digital pension schemes would allow mobile payments to make monthly contributions toward retirement

Mexico – saving through consumption

IDEAS FROM AROUND THE WORLD

Miles for Retirement



- The general idea: “flip behavioral challenges into behavioral solutions”
- Needs nothing extra beyond the existing financial network that connects providers of financial services, retailers and consumers
- Saves for retirement automatically through everyday consumption — no new habit required

Chile – more contributions, less informality

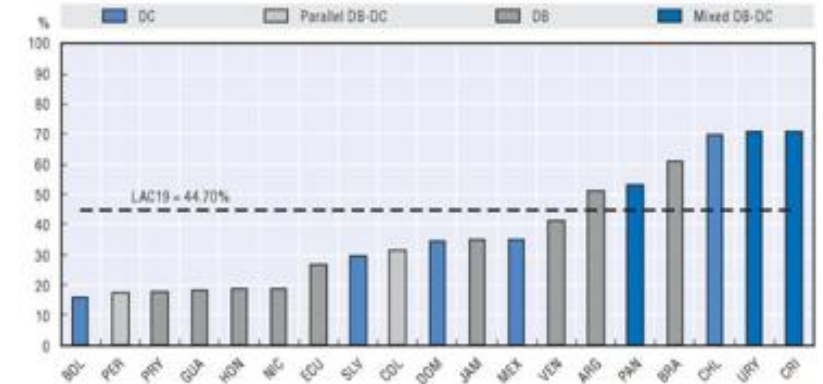
IDEAS FROM AROUND THE WORLD



Increasing pension system income

- A reform starting in July 2008 required independent workers to gradually begin contributing to the pension system, moving from voluntary to mandatory
- Contributions were estimated and withheld based on tax information, easing the transition into the formal system
- Contribution compliance rose from roughly 40% to close to 100% between 2012 and 2014
- The reform was published as law of the Republic on February 2, 2019

Figure 1.1. Contributors or affiliates as a percentage of total workers (aged 15-64 years), around 2010



DB = Defined benefit; DC = Defined contribution.

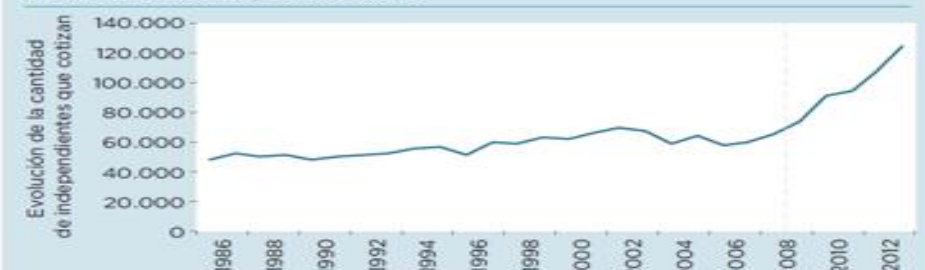
Source: Bosch, M., A. Melgalo and C. Pagés (2013), "Better Pensions, Better Jobs: Towards Universal Coverage in Latin America and the Caribbean", Inter-American Development Bank, Washington, DC.

StatLink <http://dx.doi.org/10.1787/888933161314>

Recuadro 4.3 Cotización obligatoria para los independientes: el caso chileno (continuación)

Gráfico 4.3.1:

Evolución de la cantidad de trabajadores independientes que cotizan en Chile, 1986-2012



Fuente: Elaboración propia a partir de los datos de la Superintendencia de Pensiones de Chile.

Tonuity: a novel individual-oriented retirement plan

Annuity

- Strong longevity protection
- Solvency II makes annuity products more expensive (more risk capital needed)
- The insurer bears the systematic mortality risk
- High cost of risk-capital provision

Tontine

- Popular in the 17th century (FR, GB); survives today as “Le Conservateur” (FR)
- Weaker longevity protection; low risk capital required
- Leads to a volatile payoff at old ages

Tonuity: the best of both

- Better risk-sharing between the insurer and policyholders
- Retains longevity protection
- Requires low risk capital
- Volatile tontine-style payoff at old ages is replaced by a secure annuity-style payoff

A tonuity with switching time $\tau=0$ is an annuity; with $\tau=\infty$, it is a tontine.

Brazil – SeLFIES

IDEAS FROM AROUND THE WORLD



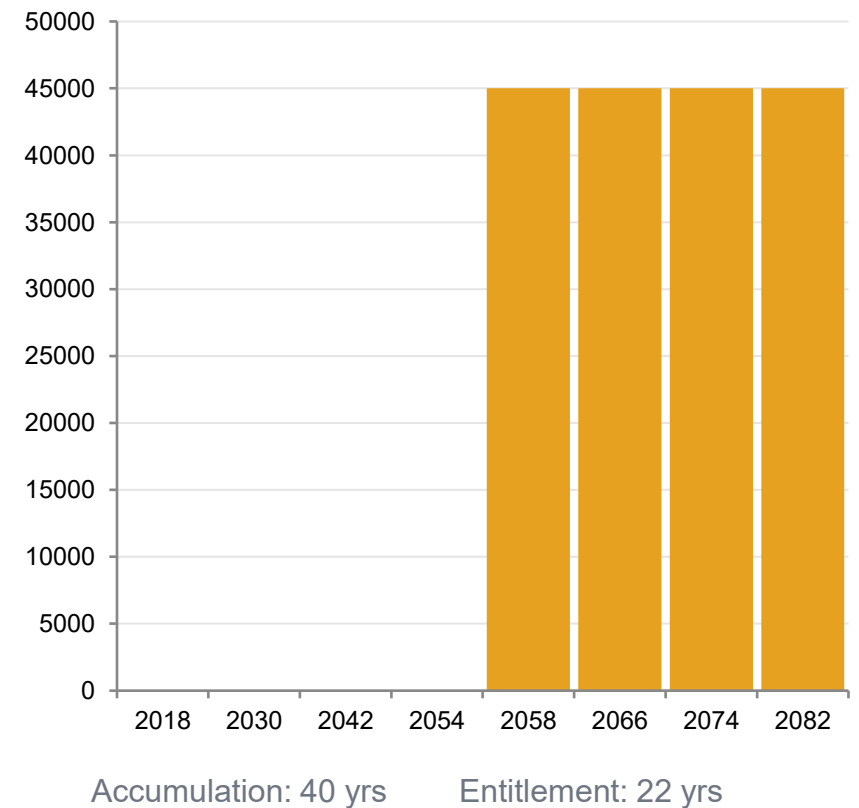
SeLFIES = Standard-of-Living, Forward-starting, Income-only Securities.

Robert Merton, Arun Muralidhar and Alexandre Vitorino

A retirement-bond concept

Mechanism

- SeLFIES are a series of government-issued bonds, designed to mimic pension payments, that can be purchased directly by individuals
- They start paying investors upon retirement, with real coupons-only (e.g. \$5), indexed to aggregate per-capita consumption, for a period linked to average life expectancy at retirement (e.g. 22 years)
- They cover both inflation risk and standard-of-living improvements



Portugal – A Multi-Pillar Reform

IDEAS FROM AROUND THE WORLD



Proposals from the 2026 Working Group for Social Security Reform

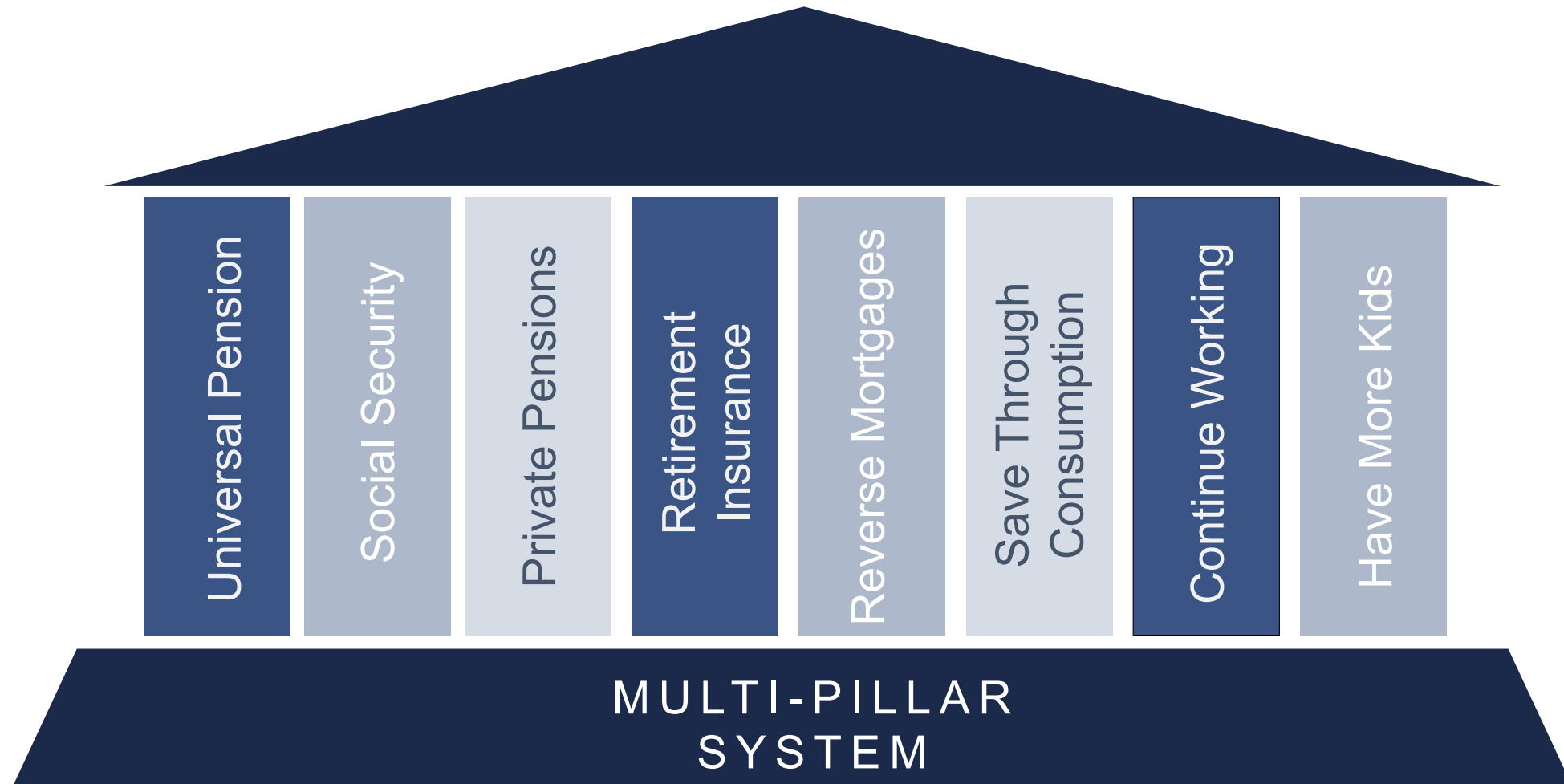
Reforming the public pillar

- NDC accounts for the public pillar — individual notional accounts, still fully pay-as-you-go
- Career-averaging base widened from 10 to 40 years, tightening the contribution–benefit link
- Actuarially neutral early/deferred retirement, backed by an automatic sustainability factor

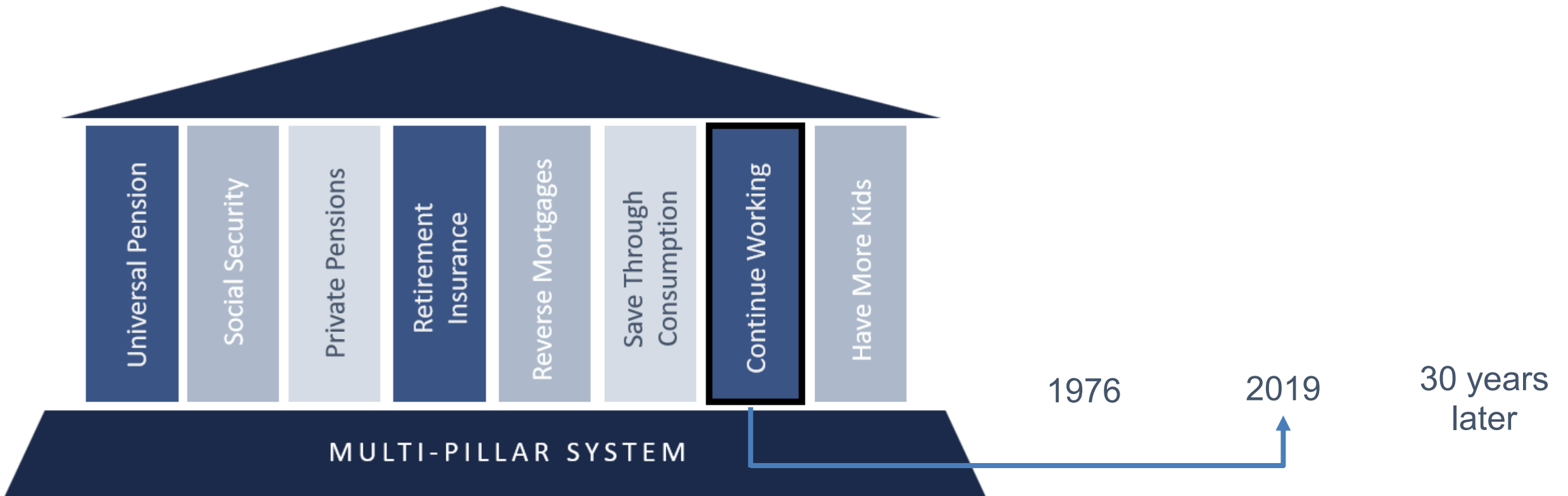
Building the savings pillar

- Auto-enrolment occupational pension plans, with employer and State matching contributions
- “Grão a Grão”: a State-seeded youth savings account, compounding from childhood
- New retirement tools for everyday savers: retail bonds (SeLFIES-style), Save-as-You-Buy, and home-equity release

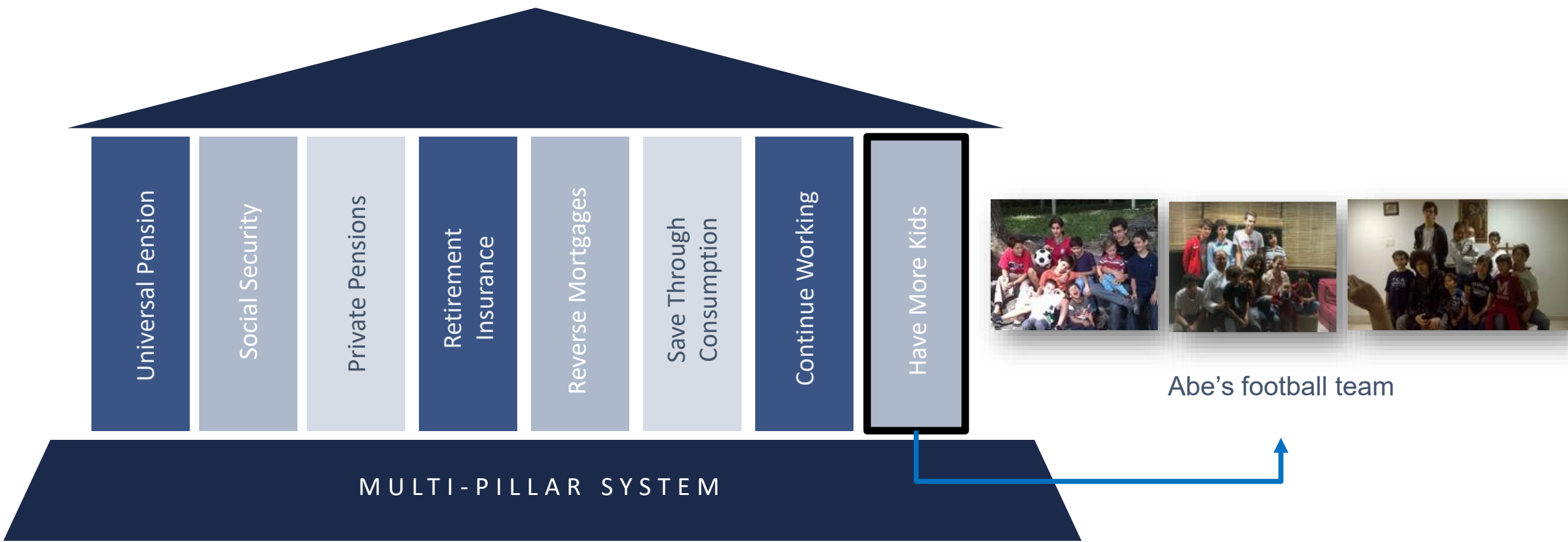
From a 3-Pillar to a Multi-Pillar System



From a 3-Pillar to a Multi-Pillar System



From a 3-Pillar to a Multi-Pillar System



Thank You!

Questions?

Submit your opinion at: <https://www.surveymonkey.com/r/cca2026sep23>

Not a member?

Join the Conference of Consulting Actuaries at
<http://www.ccactuaries.org/membership/member-benefits>.

Join the International Association of Consulting Actuaries Section of the IAA at
<https://actuaries.org/join-a-section/>.

Where to learn more

IACA — The International Association of Consulting Actuaries

- **Global Network:** Connect with international consulting actuaries to share cross-border insights.
- **Professional Growth:** Access specialized global colloquia, webinars and actuarial forums.
- **Industry Influence:** Shape international standards and advance consulting actuarial research.
- **Knowledge Exchange:** Stay ahead of diverse regulatory changes and global market trends.
- **Public Profile:** Promote the value of the consulting actuarial profession on a global stage.

Join the IACA section

www.actuaries.org/sections/iaca/



Evaluation

Your opinions help shape the content of future webinars.

Please click the link to evaluate this seminar.

<https://www.surveymonkey.com/r/cca2026sep23>

Upcoming CCA Webinars (Full Schedule at <https://www.ccactuaries.org/news-detail/2025/10/17/2026-webinar-schedule>)

- Medicare Advantage and Part D – Consulting for Challenges – Healthcare – November 11, 2026
- Safeguarding Pension Data: Cybersecurity and Privacy in Retirement Systems – Retirement – November 18, 2026
- Upholding Professionalism in Actuarial Practice – included w/ CCA Professionalism Forum – Cross Discipline – December 2
- The Oasis of ASOPs in the Retirement Desert Landscape – Retirement – December 9

Upcoming IACA Webinars (Full Calendar at <https://actuaries.org/sections/iaca/>)

- Asset-Intensive Reinsurance: Evolving Perspectives in Life Insurance Risk Management - October 6
- IACA Webinar: AI — Opportunities & Challenges for Smaller Actuarial Consultancies: A Global Scan - October 14
- IACA Webinar: Behavioural Communication in Pensions - October 28