The Future of Retirement Security

An international comparison through the lens of adequacy, sustainability, equity and plan design

Surya Kolluri, TIAA Institute

Catherine Reilly, TIAA Institute Fellow

David Richardson, TIAA Institute

TIAA Institute

Contents

Executive summary

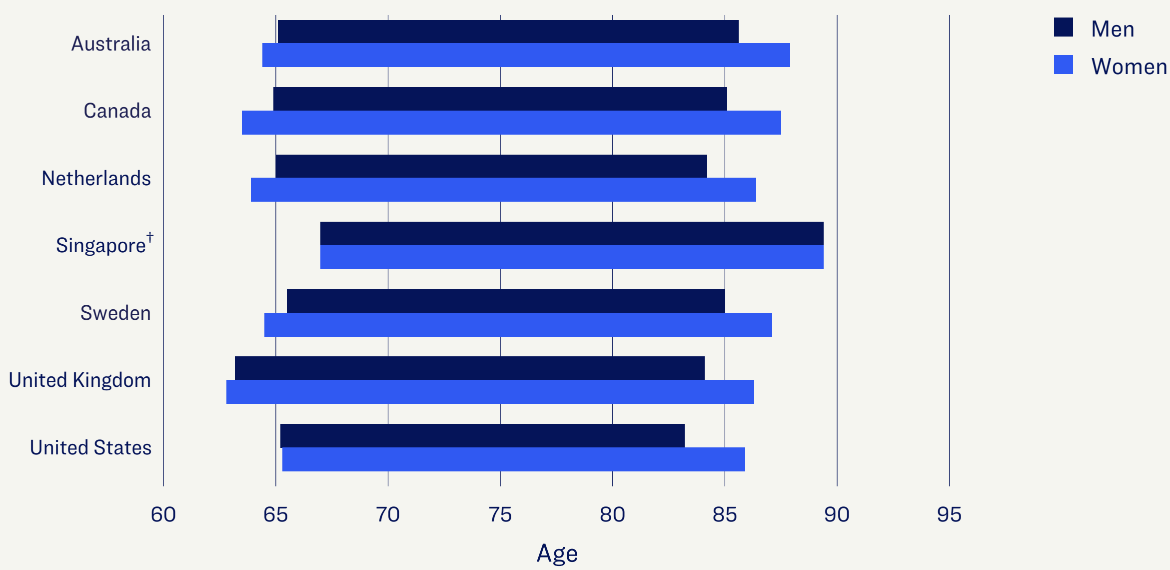
Global retirement systems: the imperative for reform

Countries around the world are considering and implementing reforms to their retirement systems for a variety of reasons, including increasing demographic and economic pressures. A key demographic driver is human longevity. For example, the average retiree can expect to spend about two decades in retirement. This has almost doubled from fifty years ago. In the United States, life expectancy has risen by 17 years since the Social Security program debuted nearly 90 years ago. This comes with tremendous opportunities, but it also comes with headwinds. Combined with lower birth rates, immigration challenges and lower productivity growth, countries are grappling with the conundrum of how to fund this expanded retirement period with a declining worker-to-retiree ratio.

Along with this demographic megatrend, ever fewer workers have access to Defined Benefit (DB) plans that promise workers a guaranteed income in retirement. Instead, many save for their own retirement through Defined Contribution (DC) plans, which do not automatically convert into income. Many of the reforms that we observe around the world revolve around the reaction to this change; that is, the retirement systems have moved from DB to DC and the countries are reevaluating these changes.

In this report, we study the experience of seven different countries and develop a standard framework for understanding how various factors impact their retirement systems. To be able to study the retirement systems in depth and understand their nuances, we limited our analysis to these seven countries. In future reports, we aim to include greater representation. Our goal is to identify the best ideas from the different countries and use these to develop an actionable template for the well-designed retirement system of the future. All countries have strengths and weaknesses, and while no retirement system is ideal, many countries have developed interesting solutions to the challenges posed by increasing lifespans, changing working patterns and the decline of traditional DB plans.

CHART 1. EXPECTED DURATION OF RETIREMENT, MEN AND WOMEN



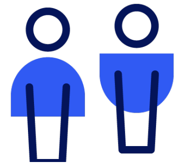
†Note: Separate data for men and women not available. Age based on re-employment age in 2021 to 2022. https://www.mom.gov.sg/employment-practices/re-employment#eligibility.

Source for Singapore: OECD (2022), *Pensions at a Glance Asia/Pacific 2022*, OECD Publishing, Paris, https://doi.org/10.1787/2c555ff8-en.

Source for all countries except Singapore: OECD (2023), *Pensions at a Glance 2023: OECD and G20 Indicators*, OECD Publishing, Paris, Figure 6.15, https://doi.org/10.1787/678055dd-en. Other references to this report will be abbreviated to “PAAG 2023.”

Seven countries representing two different approaches to retirement systems

The seven countries selected for this report offer a range of approaches to their retirement systems, but they all fall within two main groups which we have labeled "Individual Choice" and "Collective Choice" systems. The Individual Choice (IC) countries—Australia, Canada, United Kingdom, and United States—place substantial emphasis on individual responsibility and choice; and the Collective Choice (CC) countries—The Netherlands, Singapore, and Sweden—place more emphasis on collective risk sharing and limit individual choice.



The average retiree can expect to spend about two decades in retirement.

This has almost doubled from fifty years ago.

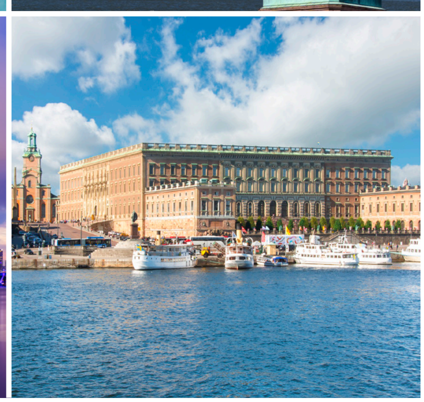
TWO APPROACHES TO RETIREMENT SYSTEMS

Individual Choice (IC)
Substantial emphasis on individual responsibility and choice. Participants manage their own investment and longevity risk.

Countries: Australia, Canada, United Kingdom and the United States

Collective Choice (CC)
More emphasis on collective risk sharing and limited individual choice. Most investment and longevity risk managed collectively.

Countries:
The Netherlands, Singapore and Sweden



To learn from these countries, we developed a framework describing the *four key attributes* of a successful retirement system:

Adequacy: the ability of the system to provide enough income for retirees to maintain their standard of living throughout retirement

Equity: the ability of the system to provide good (but not necessarily equal) outcomes for participants across different age and income groups

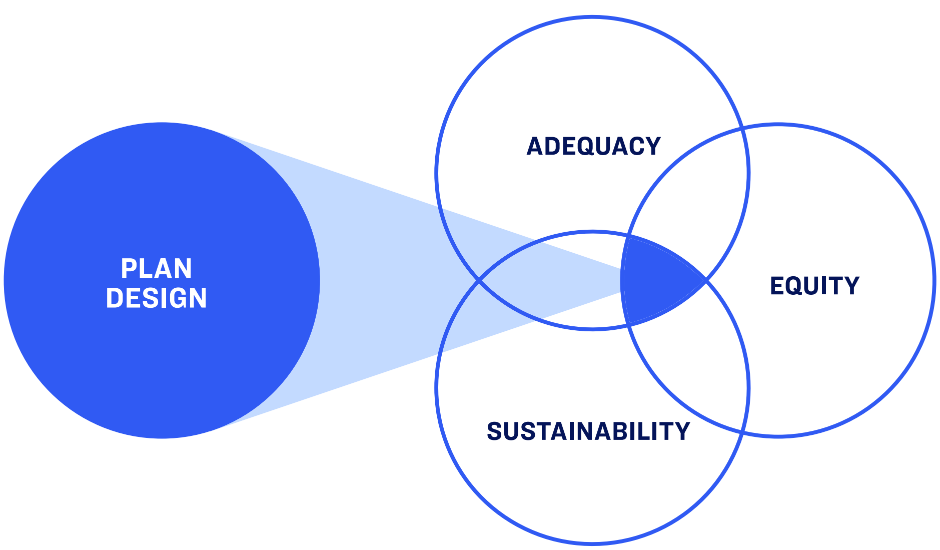
Sustainability: the long-run ability of the system to maintain sufficient assets (through contributions and returns) to support retirement incomes

Plan design: the effectiveness of the system's design architecture in guiding and incentivizing workers and retirees to achieve good outcomes

A successful system must strike a balance between the first three elements, as it is not possible to maximize all of them simultaneously. Adequate retirement income—i.e., income at a high replacement rate—may not be sustainable in the long run. High replacement rates may also not be equitable if older people receive high payouts at the expense of younger generations. Comparatively, measures to increase sustainability typically come at the cost of adequacy and perhaps equity, if lower-income people are unable to remain out of poverty in retirement.

Plan design incorporates elements that make the system as effective as possible at delivering good outcomes for retirees. It should include provisions for adequacy of contributions, a diversified investment portfolio and the possibility of lifetime retirement income. In addition to providing multiple channels for education, guidance and advice, it should also have measures that ensure good governance and transparency and make it easy for participants to take their savings with them throughout their careers.

We first review the high-level takeaways for the group of countries. We then describe and evaluate each country separately, after which we present key takeaways for the policymakers, plan sponsors and the retirement industry in the United States.

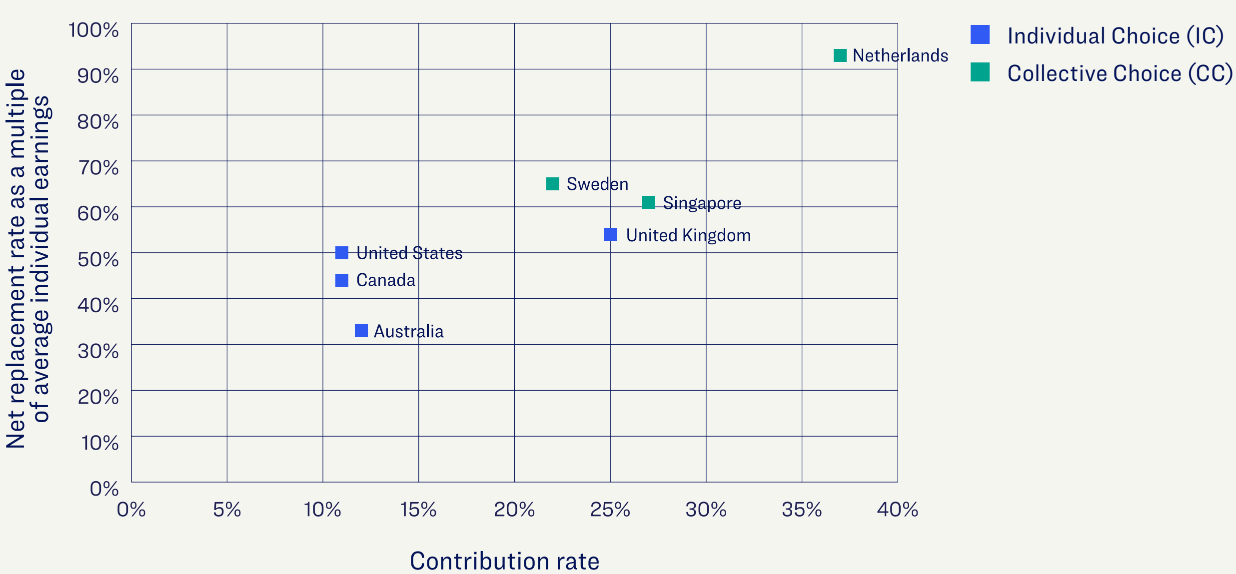


Measures of a healthy system

Adequacy: you get what you save for

There are no shortcuts: The countries in our study with the highest replacement rates in retirement also have the highest contribution rates during the working career (Chart 2). The Netherlands, which typically achieves high scores on global comparisons of retirement systems, does this by having a mandatory total pension contribution rate (employer plus employee) of 37% of average salary. Overall, the "individual choice" countries tend to have lower mandatory contribution rates and corresponding lower replacement rates in retirement.

CHART 2. PROJECTED NET REPLACEMENT RATE FOR FULL-CAREER AVERAGE INCOME EARNER FROM CURRENT MANDATORY SYSTEM†



†Note: This includes the government system and the workplace system when it is mandatory. For the U.S. and Canada, where workplace savings are voluntary, the replacement rate only includes Social Security (U.S.) or CPP/QPP (Canada).

Source for contribution rates: OECD PAAG 2023, table 8.1, except:

Australia: Superannuation rate starting 2025, https://www.superguide.com.au/how-super-works/superannuation-guarantee-sg-contributions-rate#:~:text=changes%20over%20time.-,What%20is%20the%20current%20Superannuation%20Guarantee%20rate%3F,it%20is%20scheduled%20to%20stay.

Singapore: average of contribution rates to ordinary and special accounts up to age 55, https://www.cpf.gov.sg/content/dam/web/employer/employer-obligations/documents/CPFAllocationRatesfrom_1_January_2024.pdf.

United Kingdom: author calculations based on national insurance and auto-enrollment contribution rates for average income earner, https://www.gov.uk/national-insurance/how-much-you-pay.

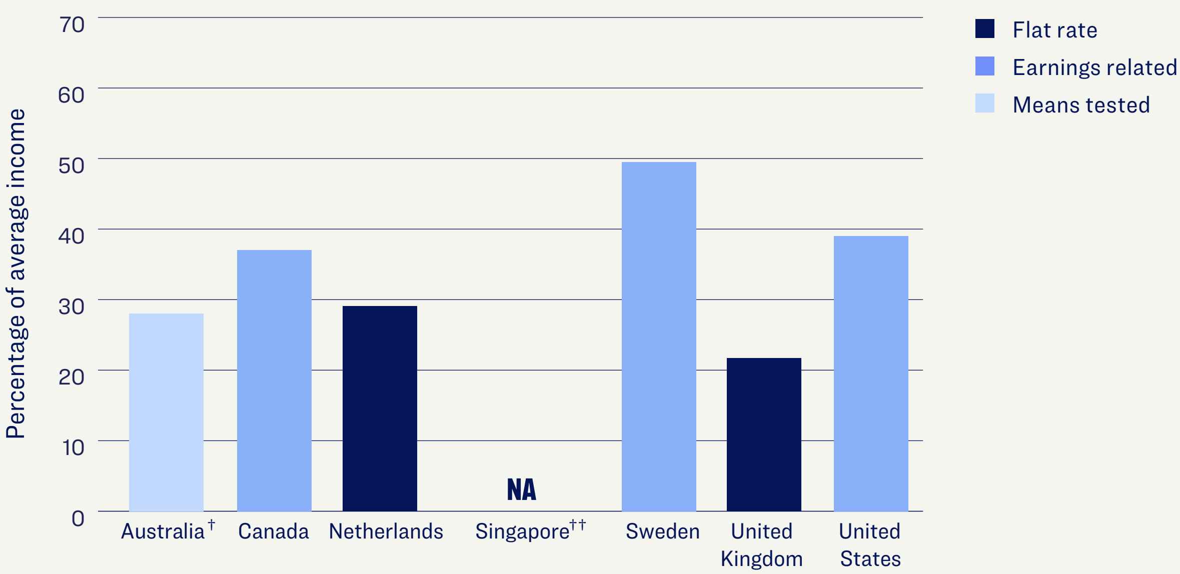
Source for replacement rates: PAAG 2023, table 4.5, projected net replacement rate for an individual entering the labor market at age 22 in 2022 based on current tax and contribution rules except for Singapore: OECD country profile.

Most of the countries in our study have a mandatory, pay-as-you-go (PAYG) government pension as the foundation of their retirement system. This may be a flat rate or related to contributions and earnings history. The replacement rate from the government pension for an average income earner varies from about 20% in the United Kingdom to just under 50% in Sweden (Chart 3). In addition to the government pension, most countries also have a workplace retirement plan. Singapore is the only country without any government pension. Instead, it mandates private savings and offers additional support to low-income earners.

Uniquely, in the Australian system retirees can only access the Age Pension once they have drawn down their assets to a certain level. While 67% of retirees receive the Age Pension,[1] they may start payments at different ages. Because of this discontinuity—and because the Age Pension is financed through general revenue instead of direct contributions—the system is difficult to model. Thus, both the replacement and contribution rates in Chart 3 are probably understated. According to the Australian Treasury, the actual replacement rate is closer to 60% to 70%.[2] Based on our calculations, this would be equivalent to a contribution rate of about 21% once the cost of the Age Pension is considered.[3]

In addition to the state retirement plan, all seven countries in our study also have a workplace retirement system. This may be voluntary, mandatory, or mandatory with an employee opt-out. Again, we see that this is mandatory in the Collective Choice countries, but may be voluntary or opt-out in the Individual Choice countries. All the countries in this report have accumulated substantial levels of workplace retirement assets; however, these assets are only included in the replacement rate calculations for the countries where these are part of the mandatory system and available to all workers. In countries such as the United States and Canada where workers have accumulated substantial workplace assets through voluntary plans, the actual replacement rate for many retirees will be higher (Chart 4).

CHART 3. GROSS REPLACEMENT RATE FROM STATE PENSION AS A PERCENT OF AVERAGE INCOME (SINGLE PERSON)



We use gross replacement rates (before the impact of taxes) as net data is not available.

†Only received once DC assets have been depleted. ††Singapore does not have a separate state pension.

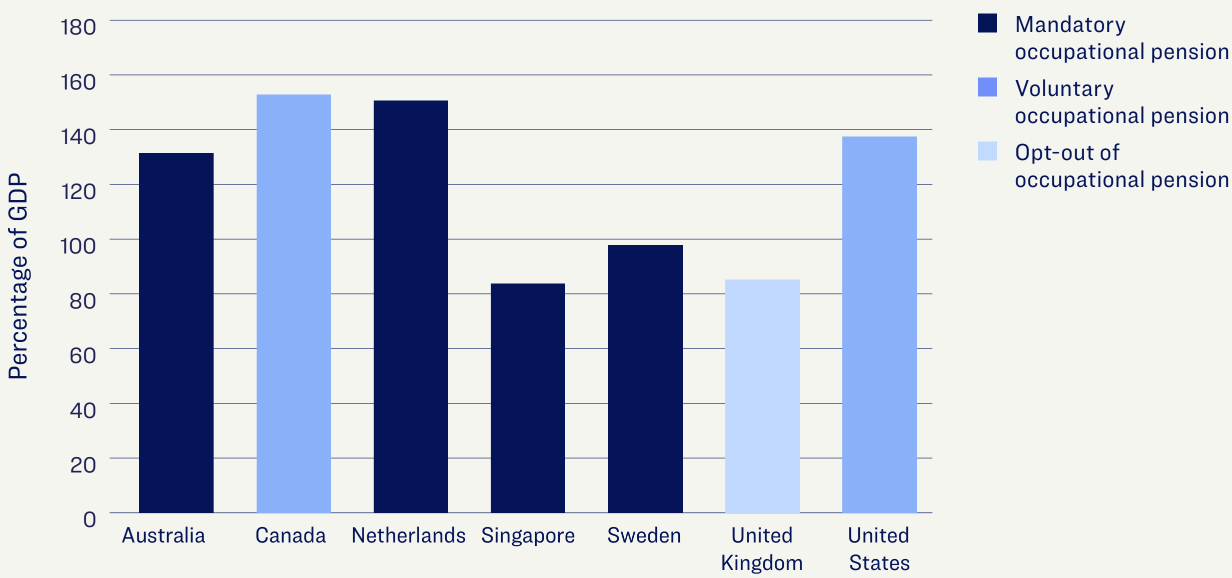
Source: PAAG 2023, table 4.2, except Australia. Author calculations based on maximum age pension/average worker earnings, source data from OECD PAAG Australia country profile 2022.

1 https://nationalseniors.com.au/news/finance/is-the-age-pension-enough-to-live-on#:~:text=As%20the%20major%20source%20of,extensive%20form%20of%20retirement%20funding.

2 Retirement Income Review Final Report, https://treasury.gov.au/sites/default/files/2021-02/p2020-100554-ud00b_key_obs.pdf.

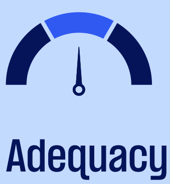
3 Author calculation based on 12% super contribution plus age pension cost of 4.2% of GDP (OECD PAAG table 8.2, income tax intake 11.5% of GDP, https://australiainstitute.org.au/post/new-research-australias-income-tax-obsession-debunked/), average income tax rate of 24.9%, (https://www.abc.net.au/news/2024-04-26/australia-income-tax-rate-changes-oecd-taxing-wages/103769612).

CHART 4. TOTAL FUNDED RETIREMENT ASSETS†/GDP, 2021



†Includes DB and DC assets.

Source: OECD Pension Markets in Focus 2023, table B3, https://www.oecd.org/en/publications/2023/12/pension-markets-in-focus-2023_c23a01c9.html.



KEY TAKEAWAYS

- High replacement rates require high contribution rates—there is no free lunch.
- Achieving an adequate replacement rate without a pay-as-you-go (PAYG) state pension underpinning the workplace system requires a substantially higher contribution rate.

Sustainability: sharing the risks to keep the system afloat

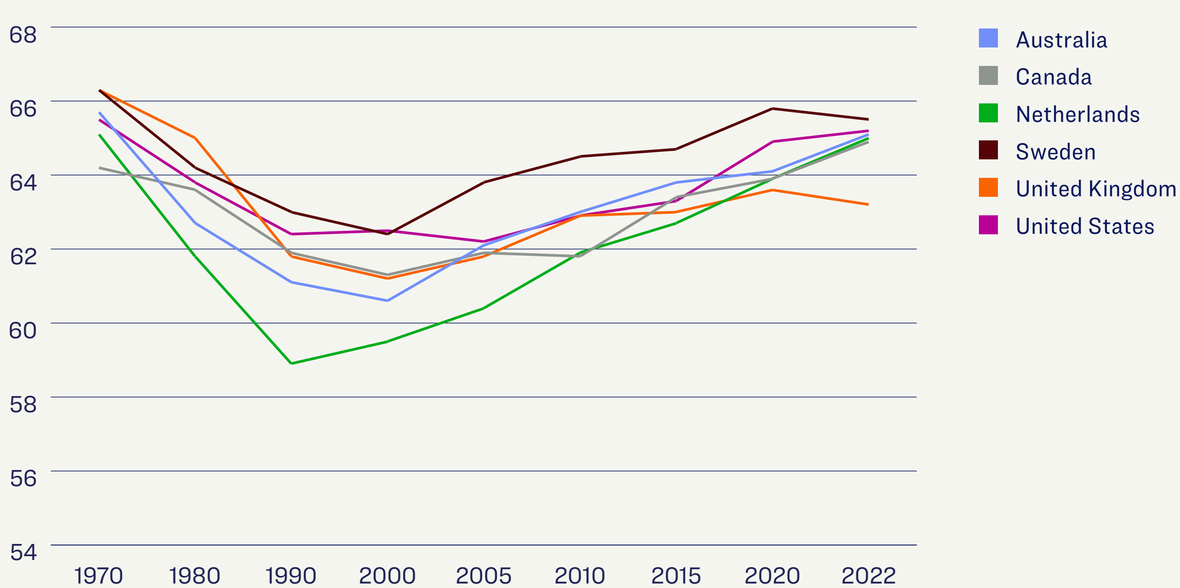
Sustainability can become a challenge when the system contains one-sided guarantees. This is particularly the case with traditional DB plans, where the retiree is guaranteed an income, often based on salary, and the provider bears all the risk for honoring this promise. If contributions and returns are not sufficient to fund the cost of the guarantees, the system is unsustainable.

Government pension systems and private sector DB plans in all countries are grappling with sustainability problems. By contrast, DC plans do not technically have sustainability problems because there is no guarantee to provide a certain level of income. However, they are more prone to inadequacy, because retirees bear these risks individually when they could benefit from sharing diversifiable risks such as longevity risk.

Interestingly, the Individual Choice and Collective Choice countries have taken different approaches to tackling the challenges related to sustainability. The IC countries have tended to close private sector DB plans and shift to DC plans. By contrast, the CC countries continue to convert savings into a lifetime income at retirement but have incorporated mechanisms, such as temporary benefit reductions, that require retirees to share some of the risks if the system becomes unsustainable.

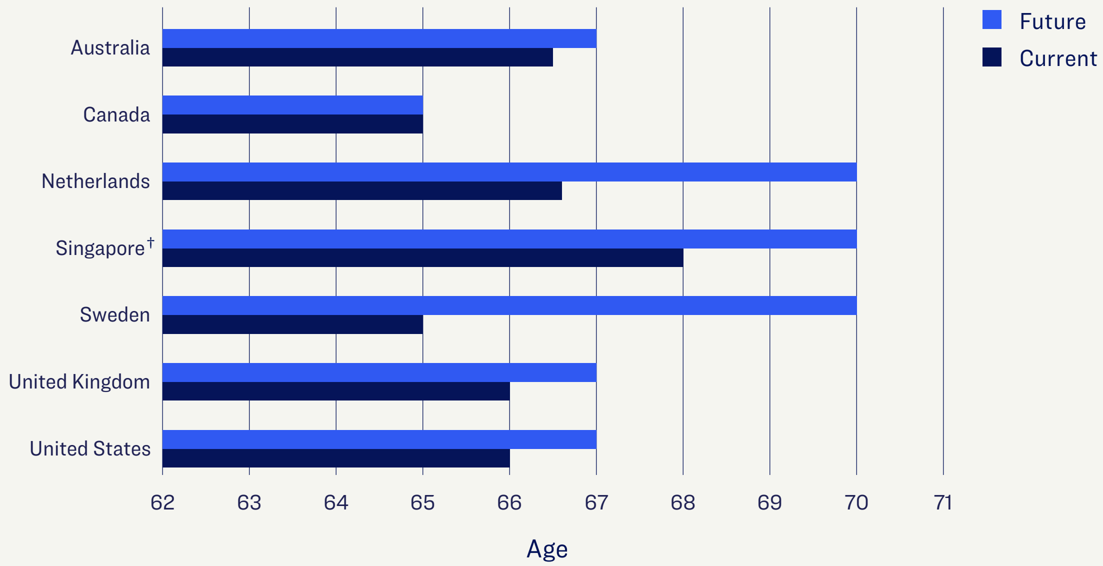
One of the main drivers of the sustainability crisis is the fact that increase in life expectancy has not been adequately reflected in retirement ages or benefits formulas. Actual retirement ages have already risen steadily since 2000 (Chart 5), and these will continue to rise in the future as governments raise official retirement ages. It is noteworthy that the Collective Choice countries have been much more aggressive in raising future retirement ages compared with the Individual Choice countries (Chart 6).

CHART 5. AVERAGE EFFECTIVE† RETIREMENT AGE, MEN



†Effective retirement age = the average age of exit from the labor force for workers aged 40 and over.
Source: PAAG 2023, figures 6.13 and 6.14.
Singapore is not included because the data is not available.

CHART 6. CURRENT NORMAL RETIREMENT AGE AND FUTURE RETIREMENT AGE FOR A 22-YEAR-OLD NOW ENTERING THE WORKFORCE



†Re-employment age. https://www.mom.gov.sg/employment-practices/re-employment.
Source: PAAG 2023, figure 3.8.

In addition to raising retirement ages, the CC countries have introduced many other mechanisms to make their guarantees more flexible (Table 1). Savers in these countries often accumulate "notional" account balances based on contributions and asset returns, rather than on measures of final or lifetime salary commonly seen in DB schemes. The accumulated account balance is converted into income using an annuity conversion coefficient based on market rates and longevity expectations at the time of annuitization, rather than an administrative formula that is only updated occasionally. Additionally, Sweden and the Netherlands have introduced rules-based mechanisms to automatically cut benefits on a temporary basis in the case of severe market downturns. Both countries implemented these cuts following the 2008 financial crisis, raising benefits a few years later.

Once retirees have become familiar with the idea that their benefits can vary, making rules-based adjustments to keep the system sustainable should become easier. However, the political process for introducing these changes can be very contentious. For example, trade unions in the Netherlands staged widespread strikes in reaction to the reform plans.[4] The process of negotiating the reforms between the social partners—unions, employers and the government—was a multiyear process, and the benefit cuts and prolonged uncertainty led to a decline in public confidence in the system.[5,6] The disproportionate influence of older voters also complicates efforts to rein in the costs related to an aging population.[7] Nonetheless, as financing challenges rise globally, we can expect to see other countries undergo a similar process.

4 *Financial Times,* "Dutch government tries to avoid cuts to pension payouts," Nov. 19, 2019.

5 IPE, "Tens of thousands on strike on second day of pensions protests in Netherlands," May 30, 2019.

6 Pensioen Federatie, "The Dutch pension system: highlights and characteristics" https://www.pensioenfederatie.nl/website/the-dutch-pension-system-highlights-and-characteristics#:~:text=The%20fact%20that%20pensions%20were,of%20pensions%20and%20pension%20accrual.

7 *Wall Street Journal,* "The other age issue: old voters are gaining power around world," Jul. 2, 2024.

TABLE 1. SUSTAINABILITY MECHANISMS IN GUARANTEED SYSTEMS

	Australia	Canada	Netherlands	Singapore	Sweden	United Kingdom	United States
Raise retirement age	+	-	+	+	+	+	+
Life expectancy–based annuity formula	-	+	+	+	+	-	-
Notional accounts for accumulation	-	+	+	+	+	-	-
Automatic balancing mechanisms	-	-	+	-	+	Exploring CDC†	-

Note: + means has implemented; - means has not implemented
†Collective Defined Contribution is a retirement plan that pays lifelong income in retirement but the level of income can vary depending on plan solvency.

Apart from the fiscal burden of providing income in retirement, an aging population will also require more spending on health care, placing an additional strain on government finances. The countries in our study spend between 9.1% to 11.3% of GDP annually on health care (with the United States as an outlier at 16.6%), with most of this funded by the government.[8] The last years of life are particularly expensive. According to some estimates, the last three years of life account for 17% to 25% of annual healthcare spending, with half of this coming in the last 12 months.[9] In addition to lifetime income, this underlines the importance of insurance against unexpected healthcare costs in the last years of life, particularly if governments struggling with fiscal sustainability rein in public provision of services.

Sustainability

KEY TAKEAWAYS

- The countries that offer the most guarantees have also introduced the most adjustment mechanisms so participants also share longevity and market risk with the sponsor.
- Automatic balancing mechanisms make it possible to offer guarantees while still having a process for recalibrating if these prove unsustainable.
- Reforms to bring the system onto a sustainable basis are usually very difficult politically, as witnessed recently in France.[10]

8 OECD Health at a Glance 2023, Chart 7.4.

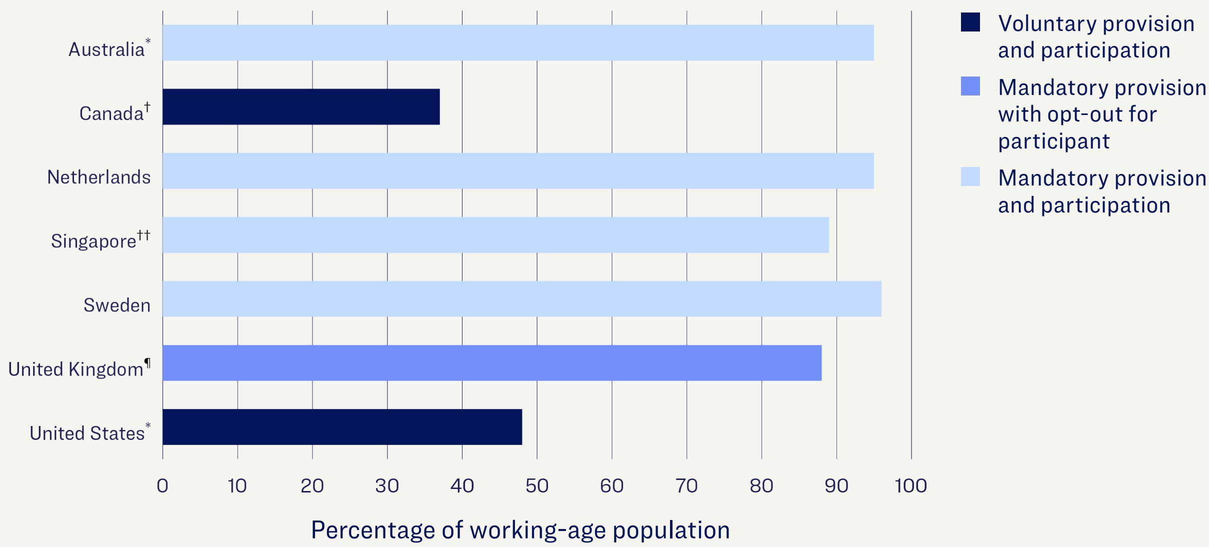
9 French et al., "End-of-Life Medical Spending in the Last 12 Months of Life Is Lower than Previously Reported," *Health Affairs 36*, No. 7 (2017), 1211–1217.

10 Bloomberg, "French Anger over Pension Law Tops Worldwide Protests in 2023," Jun. 3, 2023, https://www.bloomberg.com/news/articles/2023-06-03/french-anger-over-pension-law-tops-worldwide-protests-in-2023?embedded-checkout=true.

Equity: the trade-off between freedom of choice and equity

An equitable retirement system provides individuals of all income levels with a secure retirement. The first requirement for this is being able to participate in the retirement system. While government plans are usually mandatory, the provision of workplace plans varies. It's no surprise to find that workplace participation rates are far lower in the countries where workplace plans are voluntary for both employers and employees (Chart 7).[11] The Individual Choice countries are far more reluctant to impose mandates on employers and/or employees than the Collective Choice countries. The United Kingdom has successfully pioneered an interesting model whereby employers are required to offer a plan, but employees have the right to opt out. This has doubled coverage rates among private sector employees without imposing a heavy burden on employers.[12] Some states such as Oregon or California in the United States and the province of Quebec in Canada have adopted this same model.

CHART 7. EMPLOYEE PARTICIPATION RATE IN WORKPLACE RETIREMENT PLANS



Source: PAAG 2023, table 9.1.

*Coverage number divided by labor force participation rate.

†Canada data from OECD PAAG 2022 country profile.

††Author calculations based on CPF active membership of 2.16 million in 2023 (https://www.cpf.gov.sg/employer/infohub/reports-and-statistics/cpf-statistics/membership-statistics) and total labor force of 2.436 million in 2023 (https://stats.mom.gov.sg/Pages/Labour-Force-Summary-Table.aspx).

¶United Kingdom data from DWP Workplace pension participation rates and savings trends 2009 to 2021.

11 There are usually some exclusions for domestic employees or the self-employed, which explains why even mandatory systems do not reach 100% coverage.

12 Catherine Reilly, "Smart Strongly Supports Auto IRA/Plan Legislation to Enhance Retirement Security," Sept. 7, 2021, https://uploads-ssl.webflow.com/5fb4d701fb9bb01e8ff2a817/613771a7e0395772abb664a1_smart-usa-response-1.pdf.

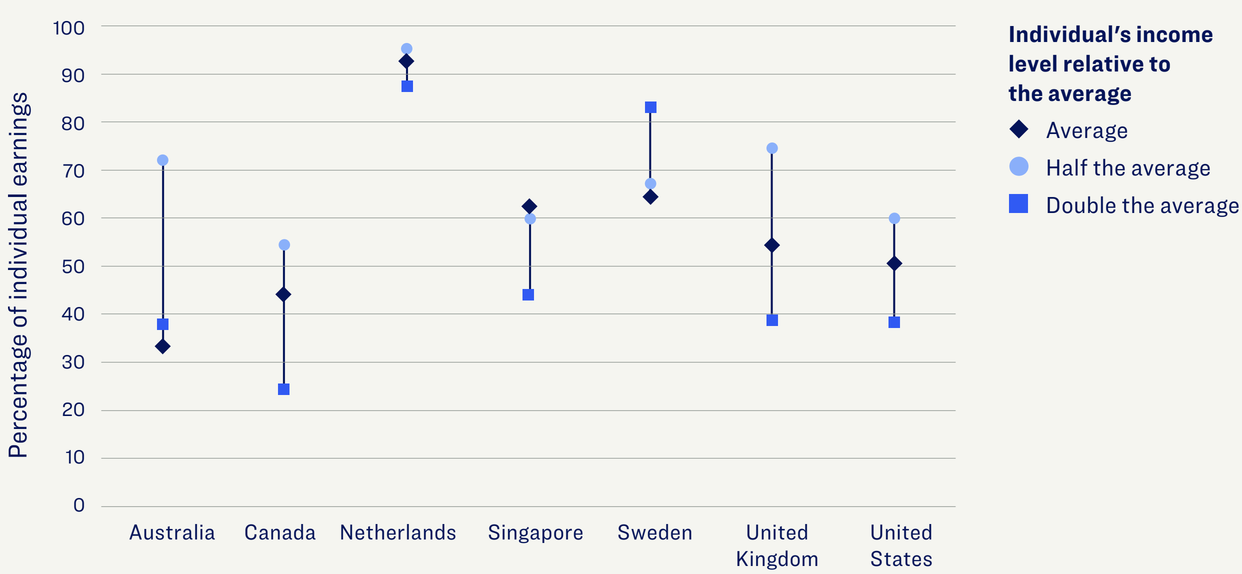
Beyond access to a retirement plan, an additional consideration is whether all employees have access to plans of the same quality. In countries like the United States or Canada, where the plan is provided by the employer on a voluntary basis, employees who work for small employers are significantly less likely to have access to an employer-provided plan. Plans provided by small employers also tend to have higher costs and may have less rigorous governance. By contrast, in systems that rely on government or industry-level plans, such as Sweden, Singapore and the Netherlands, or independent plans for multiple employers, such as the United Kingdom or Australia, all employees tend to have access to very similar plans (Table 2).

TABLE 2. PROVISION OF WORKPLACE RETIREMENT PLANS BY COUNTRY

	Employer contribution	Employee contribution	Who chooses provider	Who is typical provider
Australia	**Mandatory**	**Voluntary**	Employee	Superannuation fund
Canada	**Voluntary**	**Voluntary**	Employer	Employer
Netherlands	**Mandatory**	**Mandatory**	Employer	Industry or commercial pension fund
Singapore	**Mandatory**	**Mandatory**	Central Provident Fund for all	Central Provident Fund for all
Sweden	**Mandatory**	**Mandatory**	Collective agreement/employer	Industry/ government plan
United Kingdom	**Mandatory** (unless employee opts out)	**Voluntary**, but lose employer contribution if opt out	Employer	Master Trust Can also have single employer trusts
United States	**Voluntary**	**Voluntary**	Employer	Employer (Possibly more use of pooled employer plans in future)

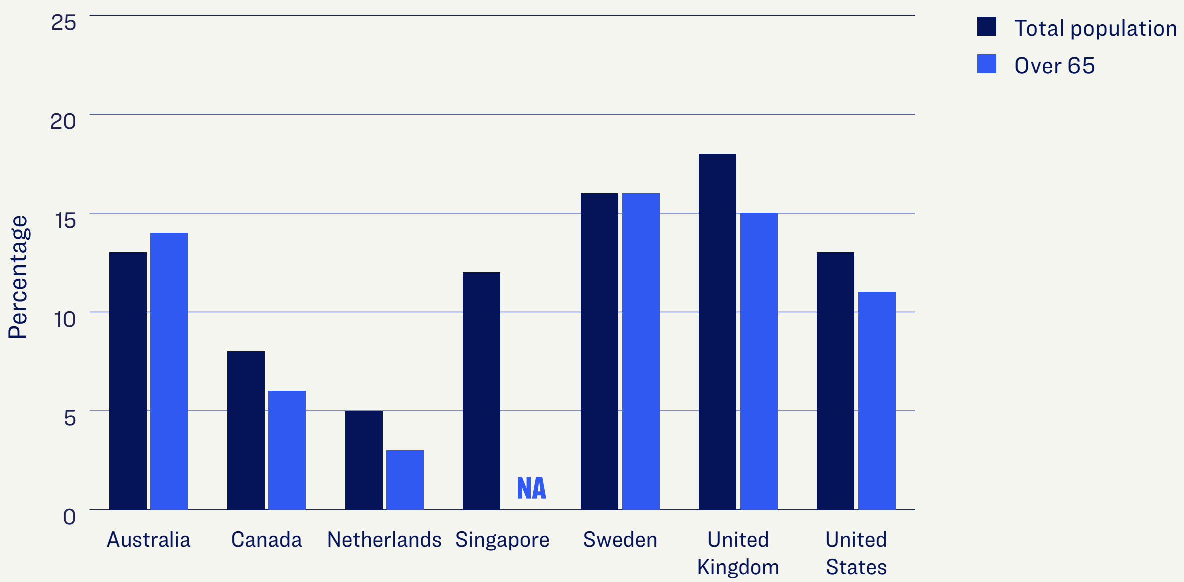
Government retirement systems in all the countries examined here contain redistributive elements to support those at the lower end of the income or wealth scale either through the benefits formula itself, progressive taxation, or a combination of the two. In almost all the countries, the lowest income earners have the highest replacement rate, indicating the government pension also plays a safety net role (Chart 8). Indeed, in almost all the countries, the elderly have a lower poverty rate than the population overall (Chart 9). This indicates that targeted systems to alleviate poverty among the elderly appear to be working.

CHART 8. NET REPLACEMENT RATE FOR DIFFERENT INCOME LEVELS†



†All data from PAAG 2023, table 4.5, except Singapore from OECD country profile. The calculations are for an individual entering the labor market at age 22 in 2022 retiring at age 65. Replacement rate data includes workplace plans when these are mandatory. For the U.S. and Canada, this only includes Social Security/CPP or QPP.

CHART 9. POVERTY RATE (LOCAL DEFINITIONS)



Sources:

Australia: https://povertyandinequality.acoss.org.au/poverty-in-australia-2023-who-is-affected/#:~:text=Poverty%20was%20highest%20among%20younger,and%2014%25%20among%20older%20people

Canada: https://search.open.canada.ca/qpnotes/record/esdc-edsc,Seniors_June2023_011.

Netherlands: https://www.statista.com/statistics/1358661/netherlands-at-risk-of-poverty-rate-by-age/#:~:text=Those%2065%20years%20or%20older,being%20at%20risk%20of%20poverty.

Singapore: https://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=1115&context=lien_research.

Sweden: https://www.eapn.eu/wp-content/uploads/2020/04/EAPN-PW2019-Sweden-EN-EAPN-4306.pdf.

United Kingsdom: https://www.gov.uk/government/statistics/households-below-average-income-for-financial-years-ending-1995-to-2023/households-below-average-income-an-analysis-of-the-uk-income-distribution-fye-1995-to-fye-2023#pensioners-in-low-income-households.

United States: https://www.census.gov/library/stories/2023/12/poverty-rate-varies-by-age-groups.html.

Equity

KEY TAKEAWAYS

- There is a trade-off between freedom of choice and equity. Allowing employers a lot of choice in whether to offer a plan and what type of plan to offer means that some workers will have access to better retirement plans than others.
- Mandatory retirement systems are also part of the social safety net for low income earners.
- The elderly have a lower poverty rate than the general population.

Plan design: good design to help participants make good choices

The only choice that participants in traditional DB plans or fully mandatory government plans can usually make is when to retire—everything else, from investments to income options, is typically determined by the plan provider. However, as the Collective Choice countries introduce mechanisms to shift some risks onto participants to keep the systems sustainable, they are also allowing participants to make more choices. For example, following the Dutch pension reforms, participants can choose their own investment risk level. The experience of the Individual Choice countries of deploying these choice elements can offer many useful lessons.

A large and growing body of research from all countries shows that most participants tend to be passive and will stay in the default option even when they are offered the opportunity to make their own choices. The choice of the default solution for participation, contribution and retirement income distributions is extremely important, because the psychological endorsement effect of the default determines what most people will choose to do. Extensive experience from the IC countries shows that participants who are automatically enrolled into a plan, even if they can opt out, are far more likely to save for retirement than if they must proactively choose to save. Most participants will save at the default contribution rate and invest in the default investment solution, typically either a target date, life cycle or balanced fund.[13] It is also important to offer a well-designed investment menu for those who prefer not to use the default.

While the IC countries effectively use defaults to guide participants during the saving period, the CC countries are ahead when it comes to offering simple pathways for income after retirement (Chart 11). For example, when participants in Singapore, the Netherlands or Sweden reach retirement age, they can choose from a range of guaranteed income options offered by their plan. By contrast, according to one large U.S. recordkeeper,[14] only 12% of all DC plans on its platform in 2020 offered an annuity distribution option for retirees. Likewise, the Australian Treasury recently issued a consultation seeking input on how to expand the role of the Superannuation funds in providing income after retirement.[15]

Increasing the uptake of guaranteed income in the Individual Choice countries will require developing frictionless or default pathways that include an allocation to lifetime income. For most U.S. retirees, the de facto default is the required minimum distribution (RMD), currently starting at age 73.[16] Those who purchase an annuity from their plan menu tend to annuitize only part of their assets, indicating that products offering a combination of guaranteed income and liquid assets are more likely to be successful than income alone. Interest in guaranteed income has steadily increased, and some providers have launched new products, such as target date funds, that allow the participant to convert part of the balance into an annuity at retirement.[17,18] Some of the Australian Superannuation

13 Brent J. Davis and David P. Richardson, "Trends in retirement plan contributions and allocations by participants: 2012–2018", TIAA Institute *Research Dialogue* 168, Sept. 2020.

14 Vanguard, "How America Saves 2021."

15 Australian Government, The Treasury "Retirement Phase of Superannuation," Discussion Paper, Dec. 2023.

16 Jeffrey Brown, James Poterba and David P. Richardson, "Trends in retirement and retirement income choices by TIAA participants: 2008–2018, TIAA Institute *Research Dialogue* 182, Sept. 2021.

17 https://www.tiaa.org/public/retire/financial-products/target-date-funds.

18 https://www.blackrock.com/institutions/en-us/strategies/multi-asset/target-date/lifepath-paycheck.

funds have also launched new guaranteed income options.[19] Adoption of these novel products is still low, as they have only been available for a short time and participants and plan sponsors may not yet be familiar with them.[20]

TABLE 3. DEFAULT INVESTMENT AND INCOME OPTIONS IN DC PLANS IN DIFFERENT COUNTRIES

	Default accumulation	Default decumulation
Australia	Multi-asset class fund Static or dynamic allocation with age	Minimum drawdown rates apply Income product must be purchased separately
Canada	Target date fund Target risk fund	Minimum withdrawal schedule Income product must be purchased separately
Netherlands	Risk-based lifecycle fund	Choose from variable or fixed annuity provided by plan (10% can be taken out as a lump sum)
Singapore	Central Provident Fund	Choose from variable or fixed annuity provided by plan
Sweden	Multi-asset class fund with a risk profile that evolves with age (AP7 Såfa)	Choose from variable or fixed annuity provided by plan Periodic lump sum options also available
United Kingdom	Lifecycle fund	Drawdown, 25% tax-free cash Income product must be purchased separately
United States	Target date fund	Required minimum distributions Income product must be purchased separately New TDFs with embedded annuity option increasingly available

It is important to strike the right balance between freedom of choice and protection against poor choices. For example, U.S. 401(k) plans have a well-established fiduciary system, where the plan sponsor—usually the employer—is responsible for selecting and approving the investment products offered. By contrast, Singapore and Sweden initially adopted an open marketplace approach where savers could choose funds from an open architecture platform with very little oversight of the offered funds. This led to expensive or even fraudulent investments being offered, as savers were not able to adequately vet the providers themselves.[21,22] Likewise, U.S. 403(b) plans which allowed “any willing provider” to offer products had significantly higher fees than those where plan sponsors approved providers through a competitive bidding process.[23] As the Collective Choice countries introduce more optionality into their retirement plans, it is important to make sure the offered choices are expected to lead to good outcomes even if participants do not engage actively.

19 https://www.australianretirementtrust.com.au/retirement/in-retirement/lifetime-pension.

20 https://www.planadviser.com/fidelity-goes-national-401k-income-annuity-offering/.

21 Kim Wiesener, “The battle against fraudulent fund managers may be won in Tumba,” *AMWatch*, Jun. 14, 2023, https://amwatch.com/article16014031.ece.

22 Joelle H. Fong, Olivia Mitchell, Benedict S. K. Koh and Toto Tanuwidjaja, “Investment Patterns in Singapore’s Central Provident Fund System,” *Journal of Pension Economics and Finance 7*, Mar. 2008, pp. 37–65.

23 Robert Clark and David P. Richardson, “Who’s watching the door? How improving 403(b) administrative oversight can improve educators’ retirement outcomes,” TIAA-CREF Institute, 2010.

With the introduction of choice, plan design should also incorporate features that provide good outcomes for situations where the individual does not want to use the default option. These include a substantial role for education, guidance and advice to help individuals make sound decisions. The expansion of choice options also places more demands on the infrastructure for account portability when participants change employers or plan providers, as different plans will offer different investment products. One approach is to make it easy for participants to consolidate their savings with one provider, as Australia has done with the Taxation Office's super consolidation tool.[24] Another option is to help participants keep track of their multiple accounts as the United Kingdom is planning with its Pensions Dashboards[25] project or the United States with the Retirement Savings Lost and Found.[26]

Plan design

KEY TAKEAWAYS

- Defaults are critical because they determine the path that most people will take. Even if people must actively select something, the options they can choose from will have an important impact on the result.
- The Individual Choice countries need better pathways for retirement income within the plan. Providers have launched new solutions offering a combination of guaranteed income and liquid assets. Adoption rates are currently low, as the market is still in the early stages.
- With the expansion of choice, there is also more need for education, advice and infrastructure for account portability. Good governance is also critical to ensure the available choices are sound.

24 https://www.ato.gov.au/individuals-and-families/super-for-individuals-and-families/super/growing-and-keeping-track-of-your-super/keeping-track-of-your-super/transferring-or-consolidating-your-super.

25 https://www.pensionsdashboardsprogramme.org.uk/.

26 https://www.dol.gov/newsroom/releases/ebsa/ebsa20240415.

Conclusion

We're already in a hybrid world

In the debate on the future of retirement, it is easy to succumb to unwarranted nostalgia for the "good old days" of DB when everybody received a guaranteed lifetime income based on their final salary. The reality is that traditional DB plans were not quite as good as fond memory would have. Apart from the fact that they were financially unsustainable, in many cases they were also only available to part of the population, inflexible and poorly suited to a mobile workforce with increasing divergence in working and retirement patterns. We can and should aim for better.

Legislators and retirement plan providers globally have already embarked on a new era of hybrid retirement plans that combine the best features of both DB and DC plans. These hybrid systems require a rebalancing of responsibilities and risk burdens between employers, workers and the government. Countries are approaching this challenge in different ways, depending on their existing model. The Collective Choice countries, from a starting point close to DB, continue to convert assets into a guaranteed income stream at retirement, but they have shifted increasing risk to retirees through mechanisms such as market-based annuitization formulas or adjustment mechanisms to cut benefits if funding limits are breached. The IC countries, on the other hand, coming from a starting point of DC, are trying to introduce more longevity risk sharing and guaranteed income. Legislators have introduced initiatives promoting annuitization—such as the retirement income covenant in Australia, or the SECURE 1.0 and 2.0 Acts in the United States—and product providers have developed innovative solutions embedding automated ways to convert savings into income using target date funds.

Because of their different starting points, the countries also face different challenges. The Individual Choice countries come from a world of individual DC without risk sharing between participants and/or providers. In most cases, individual choice extends even to the decision on whether to save for retirement. For these countries, a hybrid system would require expanding equitable access to retirement plans and greater consideration of "back-solving" retirement outcomes by setting contribution rates at a level that provides a sufficient replacement rate and expanding access to lifetime income options in retirement. Improving account portability to make it simpler for participants to consolidate their savings would make these income options easier to implement and could boost participant adoption of these products.

Another challenge as DC plans seek to embrace hybrid solutions is the need to expand the investment universe to include illiquid asset classes, such as private equity, direct real estate or infrastructure, that many DB plans invest in. Australia provides a successful model for incorporating alternative investments into the Superannuation funds. The United Kingdom is currently also exploring how to expand the availability of illiquid investments in DC plans.[27]

"All countries included in this report have strengths and weaknesses in their retirement systems. While no retirement system is ideal, many countries have developed interesting solutions to the challenges posed by increasing lifespans and changing working patterns. A successful system needs to leverage the best elements of DB and DC plans to find a balance between the goals of adequacy, sustainability and equity."

Brendan McCarthy, Head of Nuveen Retirement Investing

27 https://www.gov.uk/government/consultations/broadening-the-investment-opportunities-of-defined-contribution-pension-schemes/consultation-broadening-the-investment-opportunities-of-defined-contribution-pension-schemes.

The Collective Choice countries, on the other hand, have moved to reform their DB plans by introducing DC-like market-driven mechanisms for accumulation and income payments. These reforms have rebalanced risk burdens between employers and workers and improved retirement plan sustainability. These hybrid solutions, combining some of the flexible and sustainable elements of DC with the lifetime income and longevity risk sharing of DB, are moves in the right direction for providing adequate and sustainable retirement plans that provide an equitable model for risk-sharing between providers and retirees.

As part of these reforms, the Collective Choice countries are allowing participants more flexibility and choice. In turn, however, these changes introduce a new set of challenges. The experience of numerous countries shows that, as savers, most people accept the default and relatively few want to choose their own investments. When allowing greater choice, it is critical to have stringent oversight and governance to protect savers against potential bad actors, combined with clear and regular communications so savers and retirees understand the choices available to them. Providing choice may also place heavier demands on the infrastructure for account portability and advice delivery.

While no system is perfect, the countries in our study have developed many innovative solutions to the challenge of financing retirement. To provide a sustainable, secure retirement in an environment with longer lifespans and divergent working patterns, we need a hybrid system that combines the best elements of both DB and DC plans:

1. Universal participation in a high-quality retirement plan that can also provide income in retirement
2. A contribution rate that is high enough to finance a secure retirement
3. Risk sharing between participants, employers and governments to keep the system sustainable and equitable
4. Flexibility and portability to align with evolving working patterns
5. Strong fiduciary oversight, plan design and advice to help individuals make good choices

MOST IMPORTANT THINGS COUNTRIES CAN LEARN FROM EACH OTHER

AUSTRALIA
Portability and consolidation hub provided by tax office

CANADA
Longevity pooling in private plans

THE NETHERLANDS
Lifetime income guarantee with some variation in level

SINGAPORE
Single account hub for health and retirement savings

SWEDEN
Flexible retirement age, automatic adjustment mechanisms

UNITED KINGDOM
The success of automatic enrollment and master trusts

UNITED STATES
Strong fiduciary oversight and choice architecture

Implications for the United States

ERISA at 50

When the Employee Retirement Income Security Act (ERISA), the most important legislation covering retirement plans in the United States, was passed 50 years ago, the world of retirement looked very different. Nearly half of private sector workers[28] had a DB plan, compared with only 15% in 2022,[29] and 401(k) plans had not yet been invented. The average male worker retired at age 68.5 and could expect to spend 9.6 years in retirement, whereas now the average worker retires at age 65.2 and can expect to spend 18 years—almost twice as long—in retirement.[30]

One of the biggest differences is that now DC plans have almost completely replaced DB plans in the private sector. Because DC plans do not automatically convert retirement savings into a guaranteed income stream, and most participants do not voluntarily purchase annuities, the only source of guaranteed lifetime income for most retirees is now Social Security. Nonetheless, the nostalgia for DB plans is misplaced. The truth is that old-style DB plans were financially unsustainable, were also only available to part of the working population, and often had long vesting periods that made them unsuitable for modern working patterns where people change jobs frequently. We can and should aspire to do better.

Rather than harking back to the past, we need a new, better retirement model for the next 50 years. The seven different countries covered in this report have already found many innovative ways to improve sustainability, adequacy, equity and plan design, and they can all learn from each other. Instead of settling for one extreme or the other, we can combine the risk-sharing and guaranteed income of DB plans with the flexibility, personal ownership of assets and market-based mechanisms of DC to create a new hybrid retirement model for the future. The path that each country will take will depend on their starting point. In the United States, where DC is highly individualized and voluntary, this means introducing more collective risk sharing and ensuring that all workers can save in a plan.

The first step to a secure retirement is ensuring that all workers, regardless of the size or type of their employer, are automatically enrolled into a high-quality, cost-effective retirement plan. The plan should default participants into a professionally managed investment solution that can easily transform into a guaranteed income stream at retirement. The system would offer participants an easy way to consolidate all their workplace retirement savings, either by enabling the account to frictionlessly follow the employee when they change employers, or through an integrated dashboard that allows participants to view and easily consolidate their accounts. This should also include health, emergency and any other savings accounts provided through the employer.

"In our vision for the future, all U.S. workers are automatically enrolled into a robust, cost-efficient retirement plan. Workers who don't choose their own investments would be defaulted into a well-designed investment solution that can easily be converted into a guaranteed income stream or other payout option at retirement."

Bret Hester, EVP, General Counsel and Head of Government Relations, TIAA

28 https://www.ssa.gov/policy/docs/ssb/v35n4/v35n4p10.pdf.

29 https://www.bls.gov/opub/ted/2023/characteristics-of-defined-benefit-retirement-plans-in-2022.htm.

30 OECD, UN Population Projections, author calculations.

The system would continue to operate as a public-private partnership, with sustainably financed Social Security as the underpinning and workplace plans provided through the private sector. Social Security offers features such as cost-effective inflation protection that are difficult to offer in a private context. The private sector, on the other hand, can deliver cost-effective, innovative, and customizable investment and technology solutions for workplace retirement plans. Regulators have an important role to play in drafting and overseeing fiduciary regulation and safe harbors, and promoting competition, standardization and transparency to improve market functioning.

Introducing more risk sharing to both the public and private systems through flexible retirement transitions, longevity risk pooling and automatic mechanisms to adjust guarantees would improve sustainability and adequacy. Requiring all employers to offer a plan with automatic enrollment and increasing the use of pooled employer plans (PEPs), particularly for small employers, would improve equity by making high quality, cost-effective plans available to all workers. PEPs could also make it easier to provide income, both by removing the fiduciary responsibility from individual employers and by creating asset pools for longevity risk sharing.

Building the retirement plan of the future will require policymakers, employers and the retirement industry to act in concert. Our key findings are:

Key findings
Policymakers
Require employers to automatically enroll all employees in a retirement plan and encourage broader inclusion of lifetime income in QDIAs
Provide for guidance that creates for a frictionless rollover process from one workplace plan to another (time, digital implementation, standardized process etc.) and offer safe harbor for retirement plans receiving rollover assets from a previous employer's plan
Standardize the fiduciary outsourcing model for pooled employer plans (PEPs) so the employer is relieved of all fiduciary responsibility except the selection of the pooled plan provider (PPP)
Explore using automatic rules-based mechanisms that could temporarily adjust benefits if solvency limits are breached to ensure Social Security is sustainable and viable for the long term
Retirement industry
Work with policymakers to create an integrated digital dashboard and connectivity[31] between different retirement plan providers and account types to allow for frictionless consolidation for accounts of all sizes
Update recordkeeping platforms and interfaces to allow offering lifetime income as the first option at retirement
Develop the infrastructure for easy implementation and connectivity of lifetime income solutions on 401(k) recordkeeping platforms
Employers
Introduce flexible career paths, allowing workers to transition gradually into retirement
Offer workers matching contributions to their retirement plans
Update plan documents to enable easy transfers into the plan and offer income after retirement
Utilize automatic enrollment and escalation features within plan design
Start automatic default contribution rates at a level that will help employees save enough during their career (e.g., 6%)

31 Some recordkeepers have already started to build the infrastructure for connectivity through the Portability Services Network.

COUNTRY PROFILE

Australia

Background

For more than 30 years, the Australian Superannuation system has required employers to make contributions on behalf of their employees into a Superannuation ("super") fund. These are typically large independent retirement plans used by many different employers, although some companies have their own corporate superannuation fund and individuals can also opt for a self-managed super fund. Self-employed and domestic workers are exempt from the mandate. The assets, which employees cannot access before the age of 60, are invested in individual accounts with no risk sharing between participants either before or after retirement. The super funds typically offer a selection of multi-asset class investment solutions with different risk profiles from which participants can choose. Some super funds also allow participants to directly select individual securities or asset classes.[32]

In addition to the private, fully funded superannuation system, Australia also provides the general revenue–funded Age Pension for individuals below certain income and asset thresholds. Eligibility for this benefit is reassessed annually, so depending on their circumstances, individuals will start receiving it at different ages. The complicated asset and income tests for the Age Pension may lead to perverse incentives to spend down assets.[33] Australia also offers other benefits to lower-income seniors, such as healthcare concession cards and rental assistance.

KEY TAKEAWAYS

- Policymakers can play a helpful role in improving the functioning of the private retirement system.
- Allowing members to choose their own provider helps with equity and portability, but may increase costs.
- Despite efforts from policymakers to promote lifetime income products on a voluntary basis, uptake remains very low.

Raising contributions and promoting lifetime income to improve adequacy

Through the Superannuation mandate, Australia has accumulated an impressive level of pre-funded retirement assets, ranking it seventh in the OECD.[34] However, the means-tested Australian state pension is considerably less generous than in many other countries. While this helps keep the burden on public finances sustainable, it also means that the private assets cover a larger share of spending than in other countries. Another implication is that Australians have less guaranteed income in retirement than in many other countries. To address concerns regarding adequacy, the mandatory contribution rate is rising to 12% by July 2025.

32 https://moneysmart.gov.au/grow-your-super/super-investment-options.

33 https://www.firstlinks.com.au/distortions-retirement-system.

34 PAAG 2023, table 9.2.

COUNTRY PROFILE: AUSTRALIA

As in most countries where retirement savings do not automatically convert into a lifetime income stream, Australians are reluctant to voluntarily purchase annuities, despite the fact that retirees are typically worried about outliving their savings and subsequently tend to underspend in retirement. Since July 2022, under the retirement income covenant[35] super fund trustees are required to develop a retirement income strategy. In its recent discussion paper on the retirement phase of superannuation,[36] the Australian treasury found that seven out of 15 surveyed trustees offered longevity protection products and six were in the process of developing them. Although these products can offer longevity protection, some flexibility and advantages for the Age Pension,[37] so far the uptake has been very low.

Member choice and government support for transparent information

An interesting feature of the Australian system is that the member can choose which super fund the employer should direct the superannuation contributions to (the employer also has a default fund in case the member does not express a preference). Although some funds are restricted by industry, this means all members have access to high-quality, professionally managed funds, rather than being restricted to the fund their employer has selected. This increases equity compared with some systems where lower-income employees tend to only have access to less sophisticated or higher-cost plans. A potential downside is the lack of an institutional counterpart to negotiate costs, and the costs that the funds incur to market to individuals.[38]

Members choose where their funds are directed, not employers

POSITIVE	NEGATIVE
Universal access to high-quality, professionally managed funds	Fund fees may be higher than in an institutional market

To support members in their choices, the Australian government has embraced several initiatives to improve transparency and make it easier for members to understand their options and manage their retirement savings. The Australian Tax Office offers a consolidation hub that members can use to track down and consolidate their super accounts.[39] As a result, the share of savers in Australia with only one retirement account has risen steadily, from 67% in 2019 to 75% in 2022.[40] Likewise, the recent Treasury discussion paper on how to promote the uptake of lifetime income products considers whether developing a standardized disclosure format or a comparison tool for retirement income products (similar to the YourSuper[41] tool the Tax office provides for comparing superannuation funds) would make it easier for members to understand and compare products and drive adoption.

Another option that the Treasury is considering is a standardized retirement income product design that all funds would have to provide as a “first offer” to members. It also floats the possibility of facilitating longevity pooling by allowing smaller super funds to pool mortality risk with each other, or by issuing government backed longevity bonds to make it easier for insurers to manage the risk.

35 PAAG 2023, table 9.2.

36 Retirement Phase of Superannuation, Australian Treasury discussion paper December 2023.

37 https://qsuper.qld.gov.au/news-hub/articles/2021/01/27/01/28/new-retirement-product-offers-income-for-life.

38 https://www.afr.com/policy/tax-and-super/big-super-spends-lots-of-your-money-on-promotion-here-s-where-it-goes-20231226-p5etp0.

39 https://www.ato.gov.au/individuals-and-families/super-for-individuals-and-families/super/growing-and-keeping-track-of-your-super/keeping-track-of-your-super.

40 Association of Superannuation Funds of Australia (AFSA), Developments in the Number and Cost of Multiple Superannuation Accounts, 2021.

41 https://www.ato.gov.au/calculators-and-tools/super-yoursuper-comparison-tool#ato-AccesstheYourSupercomparisontool.

COUNTRY PROFILE: AUSTRALIA

Key metrics: Australia

Adequacy	Sustainability	Equity	Plan design
Contribution rate Public pension benefits paid from general revenue Mandatory contribution rate for workplace plan: Employee: 0%, Employer: 11.5% (rising to 12% by Jul. 1, 2025)[42]	**Government spending on retirement benefits** 2020-23: 2.3% of GDP (12.8% of total government spending) 2040: 2.2%[43]	**Retirement coverage** 78.5% coverage through Superannuation mandate[44] (% of total working age population) Self-employed and domestic employees exempt from mandate[45]	**Asset allocation of funded retirement system** Equities: 44.5% Bonds: 13.2% Cash: 11.2% Other: 30.2% Abroad: 47.9%[46] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 33% for average income earner (Superannuation)[47]	**Retirement age and duration** 65.1 (men), 64.4 (women) Expected years in retirement: 20.5 (men), 23.5 (women)[48]	**Net income replacement rate for low earner** 72.2% net replacement rate for individual earning half of average income level[49]	**Choice of investment allocation** Superannuation funds typically offer their own prepackaged investment solutions

42 https://www.superguide.com.au/how-super-works/superannuation-guarantee-sg-contributions-rate#:~:text=changes%20over%20time.-,What%20is%20the%20current%20Superannuation%20Guarantee%20rate%3F,it%20is%20scheduled%20to%20stay.

43 PAAG 2023, table 8.3.

44 PAAG 2023, table 9.1.

45 PAAG 2023, table 9.1.

46 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.

47 PAAG 2023 Australia country profile.

48 PAAG 2023, figure 6.1.

49 PAAG 2023, figure 4.5.

COUNTRY PROFILE: AUSTRALIA

Key metrics: Australia (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 28% (Age Pension)[50]	**Old age to working population** 2022: 28, 2052: 34.7[51]	**How access to workplace plan is determined** Employees can direct their employer's payments to the super of their choice or use their employer's default super.	**Access to retirement savings** Savers can usually only access their super after age 65/ preservation age. After age 65, required minimum annual withdrawal amounts that rise over time.
Funded retirement assets/ GDP 131.4%/$2,089,041 mil. private 7.6%/$132,873 mil. public[52]	**Indexation of pensions formula** Age pension indexed to higher of general or pensioner CPI, minimum level relative to average wage. No sustainability adjustment mechanism.	**Uptake of guaranteed income beyond state pension** 3.5% of pension assets held in annuities[53]	**Availability of guaranteed income in workplace plans** Superannuation funds can be industry funds, commercial funds (banks) or self-directed. Many superannuation funds are developing their own retirement income products.

50 Author calculations based on maximum age pension/average worker earnings, source data from OECD Australia country profile 2023.
51 PAAG 2023, table 6.2.
52 PAAG 2023, table 9.2.
53 Retirement Phase of Superannuation, Treasury Consultation Paper, Dec. 2023.

COUNTRY PROFILE

Canada

Background

On a high level, the structure of the Canadian retirement saving system is very similar to that of the United States. Employers and employees make mandatory contributions to the Canada or Quebec pension plans. These are the Canadian equivalent of Social Security, i.e., PAYG retirement plans that provide lifetime, inflation-indexed benefits. Beyond this, there is no federal requirement for employers to provide a workplace plan. The exception is the province of Quebec, which requires employers with more than 10 employees to make a voluntary retirement plan (VRSP) available.[54] There is no federal requirement for employees to participate in a retirement plan when it is offered; however, employers that offer a plan can mandate participation.[55]

There is a sharp divide between the public and private sectors. Most public sector employees (88%) have a retirement plan, and most of these are in DB plans. The participation rate among private sector employees is clearly lower. According to the official statistics, only 23% of private sector workers participate in a DC plan and this has been on a downward trend recent years.[56] However, these numbers understate the true participation rate, as many employers, particular the smallest ones, offer a registered retirement savings plan (RRSP) rather than a DC plan.[57] RRSPs are technically voluntary individual plans, but unlike IRAs in the United States, employers can make matching contributions to these. Nonetheless, the voluntary nature of the system means that the overall participation rate is similar to the United States and clearly lower than in the countries that require retirement plan provision and/or participation.

One noteworthy difference between the United States and Canada is that the latter has universal health care through the government-run national health insurance program (NHI). While Americans typically cite paying for healthcare costs as one of the biggest concerns in retirement,[58] Canadians are more worried about their financial health in general.[59] The difference in healthcare costs may also be one of the factors explaining why the poverty rate among the elderly in Canada (6%) is lower than in the United States (11%).[60]

KEY TAKEAWAYS

- Hybrid plans offer a way to bring DB plans onto a sustainable basis while still retaining the advantages of longevity pooling and lifetime income.
- A voluntary system leads to a lower participation rate.

54 https://www.rrq.gouv.qc.ca/en/planification/5-etapes/sources_revenu_retraite/Pages/regimes_prives_retraite.aspx.
55 Sun Life, "Designed for Savings 2023."
56 https://www150.statcan.gc.ca/n1/daily-quotidien/230623/t002b-eng.htm.
57 Sun Life, "Designed for Savings 2023."
58 National Institute on Retirement Security, "Retirement Insecurity 2024: Americans' Views on Retirement," Feb. 2024.
59 Healthcare of Ontario Pension Plan, "Canadian Retirement Survey 2023."
60 For source data, see chart 9.

COUNTRY PROFILE: CANADA

Target benefit plans already provide lifetime income with adjustment mechanisms

Canadian target benefit plans (TBPs) are conceptually similar to the Dutch Collective Defined Contribution plans.[61] In a target benefit plan, employers and employees are only responsible for the initial contribution rate to the plan. At retirement, the accrued balance is converted into an income stream using a predetermined formula. Unlike DB plans, this target benefit would not be linked to the employee's salary, only to the accrued contributions and the annuitization formula at the time of retirement. Furthermore, TBPs allow pension benefits and contribution rates to be dependent on the plan's financial situation. A key advantage of the target benefit structure is that participants pool their longevity risk. This should lead to higher income payments and remove the risk of outliving their assets compared with DC plans. Target benefit plans have been available within multiple employer plans for over a decade, and some provinces have also passed legislation allowing single employer target benefit plans.[62,63] In many cases, these have been used to bring DB plans onto a more sustainable basis.[64]

Voluntary uptake of lifetime income products remains low

At retirement, DC plan participants can choose freely whether to annuitize their assets, and as in most countries where annuitization is voluntary, Canadians are reluctant to do so. Currently only about 1% of assets in decumulation are used to purchase annuities.[65] There have been several initiatives in Canada to introduce hybrid models that would be funded like DC plans but provide lifetime income like a DB plan.

Dynamic pension pools: a new initiative

Retirees could convert savings into income streams even if employer does not have DB or target benefit plan

Dynamic pension pools, also known as variable premium lifetime annuities (VPLAs), are a new initiative that could enable retirees to convert all or part of their savings into an income stream even if their employer has not offered a DB or target benefit plan. As with a traditional annuity, participants would pool their longevity risk and limit liquidity for the assets that they commit to the pool. Unlike an income annuity, the money would stay invested and there would be no third-party insurer to provide guarantees. The income would be guaranteed to last for a lifetime, but the level would fluctuate depending on market performance.[66] Under current legislation, these are still only available to participants in specific DC or pooled registered pension plans, even though the University of British Columbia has offered a VPLA to its members since the 1960s.[67]

61 https://www.canada.ca/en/department-finance/corporate/contact-us/frequently-asked-questions/proposed-target-benefit-plan-framework.html.

62 https://www.osler.com/osler/media/Osler/reports/pensions-benefits/Target-Benefit-Plans-in-Canada.pdf.

63 Willis Towers Watson, "Pension reform in British Columbia: New defined benefit funding rules and introduction of single employer target benefit plans," Dec. 19, 2019.

64 https://www.ontariocanada.com/registry/showAttachment.do?postingId=44107&attachmentId=57516.

65 Sun Life, "Designed for Savings 2023."

66 National Institute on Aging, "Affordable Lifetime Pension Income for a Better Tomorrow."

67 https://www.sunlife.ca/workplace/en/group-retirement-services/news/decumulation/dynamic-pensions-hold-the-promise-to-provide-retirement-security/#:~:text=Dynamic%20pensions%20offer%20the%20benefit,retirement%20income%20fund%20(RRIF).

COUNTRY PROFILE: CANADA

Key metrics: Canada

Adequacy	Sustainability	Equity	Plan design
Contribution rate Mandatory contributions to Canada/Quebec pension plan:[68] Employee: 5.7%, Employer: 5.7% Employer and employee contribution rates in voluntary workplace plans vary.	**Government spending on retirement benefits** 2020–23: 6.5% of GDP (11.1% of total government spending)[69] 2040: 8.1%[70]	**Retirement coverage** The Canada and Quebec pension plans cover all workers. Workplace plans are voluntary; overall, 39% of workers have access to a plan through their employer.[71]	**Asset allocation of funded retirement system** Equities: 37.7% Bonds: 25.1% Cash: 4.5% Other: 32.7% Abroad: 47.9%[72] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 20.2% (voluntary plans that only cover about half the population, figure includes DB and DC)[73]	**Retirement age and duration** Effective retirement age:[74] 64.9 (men), 63.5 (women) Expected years in retirement:[75] 20.2 (men), 24.0 (women)	**Net income replacement rate for low earner** 54.5% net replacement rate for individual earning half of average income level[76]	**Choice of investment allocation** TDFs

68 PAAG 2023, table 8.1.
69 PAAG 2023, table 8.3.
70 PAAG 2023, table 8.4.
71 Source: Statistics Canada, https://www150.statcan.gc.ca/n1/daily-quotidien/220718/dq220718a-eng.htm.
72 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.
73 PAAG 2023, table 8.4.
74 PAAG 2023, table 6.13.
75 PAAG 2023, table 6.15.
76 PAAG 2023, table 4.5.

COUNTRY PROFILE: CANADA

Key metrics: Canada (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 44% net replacement rate for average income earner[77] from CPP/QPP	**Old age to working population** 2022: 31.7, 2052: 46.3[78]	**How access to workplace plan is determined** Most retirement plans are sponsored by the employer. This may also be a registered retirement plan (RRP) which is technically an individual plan.	**Access to retirement savings** After age 71 participants are required to withdraw a minimum amount which rises each year with age.[79]
Funded retirement assets/ GDP 152%/$3,126,435 mil. private, 23.1%/$472,376 mil. public[80]	**Indexation of pensions formula** CPP payments indexed to the CPI all item index. No sustainability correction.	**Uptake of guaranteed income beyond state pension** Only about 1% of assets in decumulation are used to purchase annuities[81]	**Availability of guaranteed income in workplace plans** Post-retirement income not usually integrated in DC plans, income based on drawdown and minimum withdrawal requirements

77 OECD Canada Country profile.

78 PAAG 2023, table 6.2.

79 https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/completing-slips-summaries/t4rsp-t4rif-information-returns/payments/chart-prescribed-factors.html.

80 PAAG 2023, table 9.1.

81 Sun Life, “Designed for Savings 2023.”

COUNTRY PROFILE

The Netherlands

Background

With its high asset levels, generous replacement rates and virtually universal coverage, the Dutch pension system typically scores very high on any international comparison of pension systems. In addition to the flat rate, PAYG government pension, both employers and employees make mandatory contributions to industry pension funds as part of the occupational retirement system. These are independent of the employer and regulated based on solvency requirements.

Historically, about 90% of employees have been in DB plans, with mandatory risk sharing pre- and post retirement and no individual accounts. As these became increasingly unsustainable, the Netherlands pioneered Collective Defined Contribution (CDC) plans. These are otherwise similar to DB plans, but allow for an adjustment to benefits if the fund's solvency falls below a certain level. CDC came in for criticism when funds were forced to make small cuts to benefits following the 2008 financial crisis, as the possibility of benefit cuts had not been clearly communicated to participants.[82]

KEY TAKEAWAYS

- It is hard to share risks equitably between different generations.
- It is possible to offer a workplace pension without the employer managing the plan or having any residual responsibility beyond the initial contribution.
- Even when it is mandatory to convert accumulated assets into an income stream, it is possible to offer options with different degrees of flexibility.

Reforms to convert occupational system to DC

The Netherlands is currently in the process of converting the occupational retirement system to DC. By 2027, all existing DB plans will have been converted into DC.

The Dutch version of DC is very different than the one employed in Anglophone countries. It will be DC in the sense that the pension benefit will be based on accrued contributions and investment returns, rather than a promise related to final or lifetime salary levels. However, participants will still have to convert their savings into a lifetime income stream at retirement, and will have limited or no freedom to manage their own investments during accumulation.

82 https://www.im.natixis.com/en-institutional/insights/nim-cdc-1018.

COUNTRY PROFILE: THE NETHERLANDS

New types of savings plans with different degrees of risk sharing

Under the new system, there will be two main options for occupational plans. In solidarity premium schemes, the fund employs a collective investment policy to smooth returns between different age cohorts. In flexible premium schemes, participants accumulate individual investment capital and can choose from among several options for the level of investment risk in their portfolios during the accumulation period.[83]

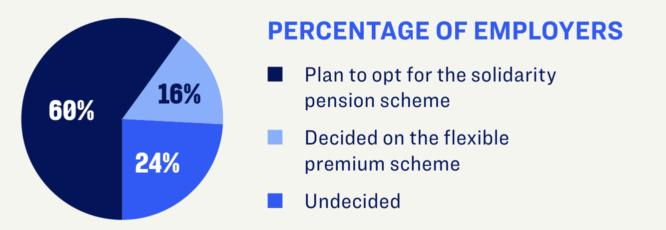
At retirement, participants will be able to take out up to 10% of their accrued pension capital as a lump sum. The rest of the capital will have to be annuitized in one of two ways:[84]

- A fixed pension benefit, which is essentially a traditional income annuity with no investment risk. The participant can choose from different payment profiles (e.g., stable, increasing over time, higher first then decreasing)
- A variable pension benefit, in which part of the money stays invested in the market. Depending on the provider, the participant may also be able to choose the risk level. This guarantees a lifetime income stream, but the level will fluctuate depending on investment performance and interest rates. Again, participants can choose from different payment profiles.

Participants can purchase the pension benefit from the same provider with which they have accrued the benefit or use a different provider. If they have accrued capital with multiple providers, they can combine these pots to purchase just one income stream. In addition to the payment profile, participants can also choose whether to include a survivor's benefit for a partner.

Will the reforms achieve their goals?

The participant cannot choose which pension plan to participate in, as the fund is selected by the employer. So far, 60% of employers plan to opt for the solidarity pension scheme and only 16% have decided on the flexible premium scheme (the rest were undecided).[85] This means most participants will still be in plans that share investment risk between age cohorts even after the reforms. It remains to be seen how equitable the risk-smoothing mechanisms will be and whether these reforms will be sufficient to bring the system onto a sustainable basis.



Participants will have more visibility into their individual account balances than ever before, and will also have more power to manage their investments and their retirement income choices. At the same time, they will also have to bear risks that previously were borne by the funds. This places higher demands on participant communications than before. Participants will need far more comprehensive and transparent communications to make sure that they feel confident and empowered within the new system.[86] It will also be important to monitor closely how allowing participants to see fluctuations in their balance, combined with a new ability to adjust their own risk level, will impact decision-making and retirement outcomes.

83 Dentons, "New Dutch Pension Act on 1 July 2023: major reform of pension system—act now," Jun. 2, 2023, https://www.dentons.com/en/insights/articles/2023/june/2/new-dutch-pension-act-on-1-july-2023-major-reform-of-pension-system-act-now.

84 https://www.nn.nl/EN-Particulier/Your-pension-benefit-choices.htm.

85 https://securities.cib.bnpparibas/pension-partnerships-dutch-pension-funds-in-a-post-pensions-act-world/.

86 https://www.bnymellon.com/us/en/insights/aerial-view-magazine/the-changing-face-of-dutch-pensions.html/1000.

COUNTRY PROFILE: THE NETHERLANDS

Key metrics: The Netherlands

Adequacy	Sustainability	Equity	Plan design
Contribution rate Public: 18% Employee Workplace: 7.4% Employee, 11.2% Employer[87]	**Government spending on retirement benefits** 2020–23: 6.8% (10.9% of total government spending) 2040: 9.1%[88]	**Retirement coverage** 94.5% coverage[89] No coverage mandate for the self-employed	**Asset allocation of funded retirement system** Equities: 25.4% Bonds: 34.8% Cash: 3.4% Other: 36.5% Abroad: 85.0%[90] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 57% replacement rate from funded workplace pension[91]	**Retirement age and duration** 65 (men), 63.9 (women) Expected years in retirement: 19.2 (men), 22.5 (women) Average 20.8[92]	**Net income replacement rate for low earner** 94.6% total net replacement rate for individual earning half of average income level[93]	**Choice of investment allocation** TDFs may be used in some of the flexible pension schemes. The majority of plans appear to be opting for solidarity schemes, which will not use TDFs.

87 PAAG 2023, table 8.1.
88 PAAG 2023, table 8.2.
89 PAAG 2023, table 9.1.
90 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.
91 Based on author calculation using data from PAAG 2023, tables 4.4 and 4.2.
92 PAAG 2023, figure 6.15.
93 OECD PAAG Netherlands country profile 2023.

COUNTRY PROFILE: THE NETHERLANDS

Key metrics: The Netherlands (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 28% for average income earner (flat-rate benefit)[94]	**Old age to working population** 2022: 34.7, 2052: 51.0[95]	**How access to workplace plan is determined** All employers have to provide a plan and make mandatory contributions. The employer decides which plan to offer.	**Access to retirement savings** It is possible to withdraw the 10% lump sum before retirement age, but it is taxed more heavily.[96] Otherwise individuals have no access to saved money before retirement.
Funded retirement assets/ GDP 150% $1,541,194 mil.[97]	**Indexation of pensions formula** AOW: indexed to legal net minimum wage Workplace: Variable benefit payments will adjust depending on market returns	**Uptake of guaranteed income beyond state pension** All retirement savings must be converted into retirement income (10% lump sum allowed)	**Availability of guaranteed income in workplace plans** Apart from a 10% lump sum, savings have to be annuitized, either as an income annuity or a variable annuity. The pension platforms provide these annuities—many are also insurers.

94 PAAG 2023, table 4.2.

95 PAAG 2023, table 6.3.

96 https://www.zwitserleven.nl/en/personal/pension/about-to-retire/lump-sum-payment/#:~:text=You%20may%20withdraw%20up%20to,that%2C%20for%20example%205%25.&text=You%20cannot%20combine%20the%20lump,benefits%20in%20the%20years%20thereafter.

97 PAAG 2023, table 9.2.

COUNTRY PROFILE

Singapore

Background

Singapore has an interesting consolidated system for mandatory saving for health care, retirement, and housing purchase. The Central Provident Fund (CPF), to which both employers and employees make contributions, consists of three different accounts: the Ordinary account, the Special account and the MediSave account. Contributions to the MediSave account are used to pay for medical expenses. Housing plays an important role in the Singaporean social safety system, and so the funds in the Ordinary account can be used to fund a home purchase. The remaining funds in the Ordinary account, and the funds in the Special account, can be used for retirement savings or to fund education. If the home purchased using funds from the Ordinary account is sold, the proceeds must be returned to the account with interest.

Both employers and employees make mandatory contributions to the CPF. The total contribution rate decreases as participants age, from a starting level of 37% to 12.5% for those 65 and older. The composition of the contributions also varies by age; initially more than half of the contribution goes to the Ordinary account, with the rest divided more or less equally between the Special and MediSave accounts. For participants over 60, almost all the contributions go to the MediSave account. Contributions to the Special account peak between the ages of 50 and 55 and then fall.

On the face of it, Singapore has a fully funded DC system with mandatory annuitization of private assets to provide minimum guaranteed income in retirement. The reality appears a little more nuanced. For participants who stay in the default CPF investment vehicle, the CPF invests its assets in nontradeable Singapore government securities. Rather than separating the retirement assets, the government commingles the proceeds from the sale of these securities with other government funds, such as surpluses, and gives them to the Government of Singapore Investment Corporation (GIC)[98] to invest for long-term returns, rather in the style of a sovereign wealth fund.[99] Singapore's retirement assets, which are equivalent to 84% of GDP, are rather low when compared with countries such as Australia or the Netherlands with highly funded DC systems. Therefore, it appears that, in practice, the system may be a hybrid of funded DC and PAYG government funding.

KEY TAKEAWAYS

- Integrating housing, retirement and healthcare savings into a single hub can make it easier for participants and policymakers to form a full financial picture.
- The literacy test is an interesting way of making sure participants are sufficiently knowledgeable before self-directing their investments. It may also be acting as an effective nudge to dissuade participants from doing so—even before it was introduced, most participants were happy to stay in the default.

98 https://www.gic.com.sg/who-we-are/.

99 https://www.cpf.gov.sg/member/infohub/cpf-clarifies/policy-faqs/how-are-cpf-monies-invested.

COUNTRY PROFILE: SINGAPORE

Single integrated hub for retirement, health and housing savings

Unlike most countries, Singapore does not have a separate state pension that provides lifetime income. Rather, through the CPF, it mandates employees to save to fund their own retirement and healthcare expenses. For low-income seniors it provides a Silver Support Scheme and other targeted benefits, such as healthcare subsidies.[100]

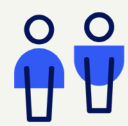
Singapore requires savers to accumulate the full retirement sum (FRS) in their Ordinary and Special accounts before they can access their savings. The FRS is converted into a lifetime annuity, provided by the CPF, at age 65. If the saver has accumulated assets in excess of the FRS, they can withdraw these after the age of 55, either as a lump sum or an income stream, or leave them invested in the CPF. Savers who own their own home can apply to annuitize the basic retirement sum (BRS), which is half of the FRS. On the other hand, savers who wish for a higher level of guaranteed income can top their retirement account up to the enhanced retirement sum (ERS).[101] Some researchers have questioned whether the model of integrating housing and retirement saving may have led to an over-concentration of household assets in housing wealth.[102]

Participant inertia keeps most assets in the default

The CPF pays interest on the funds in each account. The CPF rates reset quarterly and are based on market interest rates. The Ordinary account, which is more liquid than the other accounts, receives a lower interest rate. Savers over 55 also receive a slightly higher interest rate than younger participants. When converting assets into lifetime income, the accumulated account balance is annuitized using the market-based rate at the time of annuitization. From this perspective, it is a self-sustaining system based on market rates.

Participants can choose to self-direct their investments rather than leaving them in the CPF default account. Initially, many self-directed investors suffered suboptimal risk-adjusted returns. One reason for this was the high fees and sales commissions charged for the funds, which were marketed through the retail channel.[103] Subsequently, in 2018 the Ministry of Manpower announced the removal of sales charges and the reduction of wrap fees for funds offered within the CPF Investment Scheme.[104] The CPF also introduced a financial literacy test and minimum asset and age thresholds for self-directing investments.[105] In practice, the majority of participants keep their assets in the default CPF account. Even before the financial literacy test was introduced, only 16% of participants chose to invest some of their savings outside the default CPF fund, confirming the general global phenomenon of passive acceptance of defaults.[106]

Only 16% of participants chose to invest some of their savings outside the default CPF fund.



100 https://www.cpf.gov.sg/member/cpf-overview.

101 https://www.cpf.gov.sg/member/faq/retirement-income/general-information-on-retirement/what-are-the-retirement-sums-brs-frs-ers-.

102 https://www.nomurafoundation.or.jp/en/wordpress/wp-content/uploads/2019/03/NJACM3-2SP19-06.pdf.

103 Joelle H. Fong, Olivia Mitchell, Benedict S. K. Koh and Toto Tanuwidjaja, “Investment Patterns in Singapore’s Central Provident Fund System,” *Journal of Pension Economics and Finance 7*, Mar. 2008, pp. 37–65.

104 https://www.cpf.gov.sg/member/infohub/news/news-releases/reduction-of-cpf-investment-scheme-fees-deferred-to-1-october-2020.

105 https://www.cpf.gov.sg/eSvc/Web/Schemes/CPFISSelfAwarenessQuestionnaire/Declaration.

106 Joelle H. Fong, “Taking control: active choice in Singapore’s national defined contribution scheme,” *Journal of the Economics of Aging 17*, Oct. 2020.

COUNTRY PROFILE: SINGAPORE

Key metrics: Singapore

Adequacy	Sustainability	Equity	Plan design
Contribution rate Mandatory contributions to central provident fund:[107] Employee: 20%, Employer: 17% (Varies by age)	**Government spending on retirement benefits** Pension benefits funded through worker contributions to the CPF	**Retirement coverage** All employees earning more than $50 a month must be enrolled, except domestic workers, some students and foreigners.	**Asset allocation of funded retirement system** Equities: 0.1% Bonds: NA Cash: 2.4% Other: 97.5% Abroad: NA[108] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 61.1% net replacement rate for average income earner[109]	**Retirement age and duration** Effective retirement age:[110] 67 based on re-retirement age in 2021/2022; separate data for men and women not available.) Expected years in retirement: 22.4.[111] Life expectancy at 65: 20.4	**Net income replacement rate for low earner** 60.1% net replacement rate for individual earning half of average income level.[112] The government provides Silver Support income supplement equivalent to 5.4% of the average wage to low-income retirees.	**Choice of investment allocation** As a default, contributions are invested in the Central Provident Fund, which pays interest linked to either three-month or 10-year rates, depending on the account.[113] Participants can also choose their own investment funds, providing they meet the age and asset-level eligibility conditions and pass a financial literacy test.[114]

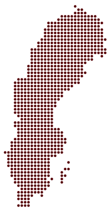
107 PAAG 2023, table 8.1.
108 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.
109 OECD Singapore country profile/Pensions at a Glance Asia Pacific 2022.
110 https://tradingeconomics.com/singapore/retirement-age-men.
111 OECD Pensions at a Glance Asia Pacific 2022. Life expectancy in retirement calculated based on life expectancy at 65 (20.4) + 2 to reflect re-retirement age of 67.
112 OECD Singapore country profile.
113 https://www.cpf.gov.sg/member/growing-your-savings/earning-higher-returns/earning-attractive-interest.
114 https://www.cpf.gov.sg/eSvc/Web/Schemes/CPFISSelfAwarenessQuestionnaire/Declaration.

COUNTRY PROFILE: SINGAPORE

Key metrics: Singapore (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan Singapore does not have a PAYG government pension	**Old age to working population** NA	**How access to workplace plan is determined** Mandatory participation in CPF for all covered workers	**Access to retirement savings** The fund consists of three accounts: the Ordinary account, the retirement account and the MediSave account. Funds in the ordinary account can also be used for property purchase. Starting age 55, assets are moved into the Retirement account to set aside the FRS.
Funded retirement assets/ GDP 83.7%/$400,747 mil. private[115]	**Indexation of pensions formula** Interest rate paid on contributions is reviewed quarterly, depending on market rates. At retirement the accumulated balance for annuitization is converted into an income stream.	**Uptake of guaranteed income beyond state pension** NA	**Availability of guaranteed income in workplace plans** The FRS must be annuitized. Savers can take lump-sum withdrawals from assets in excess of the FRS.[116]

115 PAAG 2023, table 9.2.
116 https://www.cpf.gov.sg/member/retirement-income/monthly-payouts/non-cpf-life.



COUNTRY PROFILE

Sweden

Background

Sweden's mandatory retirement system is a hybrid, consisting of employer and employee contributions to a PAYG state benefit and a DC plan. The PAYG system also includes the AP buffer funds that it can draw on when disbursements exceed contributions.[117] For the Swedish state benefit, workers accumulate pension entitlements in notional defined accounts (NDC) based on their contributions, and have interest credited to these balances based on the rate of average wage growth. At retirement, this balance is converted into an annuity. In addition to the state pension, Swedish workers make a 2.5% contribution to the DC system (Premiepension).

KEY TAKEAWAYS

- Notional accounts combined with automatic balancing mechanisms are an interesting way of keeping the PAYG state retirement system on a sustainable basis.
- Making the retirement process more flexible and removing the upper limit on the retirement age seems to be helpful for encouraging people to retire later.
- It is important to have a rigorous fiduciary process for vetting funds that are offered to individuals through the system.

Automatic adjustment mechanisms and flexible retirement transition improve sustainability

Sweden is one of the forerunners in the use of automatic adjustment mechanisms (AAM) to keep the system on a sustainable basis over the long run. Firstly, the formula for converting the accumulated notional balance into an income varies based on cohort life expectancy, so it will automatically adjust for changes in longevity. Additionally, Sweden employs an automatic balancing mechanism that can cut both the crediting rate for accumulation and the indexation for pensions in payment if the "assets" of the state system (the value of the buffer fund plus the estimated value of contributions) fall below the level of liabilities. Following the 2008 financial crisis, pension payments were cut in both nominal and real terms from 2010.[118] This balancing period ended in 2018, when payments were restored to the wage index level, and normal indexing rules were applied from 2019.[119] The value of the DC savings pot will obviously fluctuate automatically based on market conditions.

Another interesting element of the Swedish system is the flexibility around the retirement age and how to convert savings into income. The minimum retirement age is currently 63, but there is no maximum age. Participants also have a lot of flexibility around how to receive their retirement income. They can choose to start the state pension and the DC pension at different

117 https://www.ap3.se/en/om-ap3/ett-starkt-pensionssystem.

118 OECD Pensions at a Glance 2021, "Automatic adjustment mechanisms in pension systems."

119 https://economy-finance.ec.europa.eu/system/files/2021-05/se_-_ar_2021_final_pension_fiche.pdf.

COUNTRY PROFILE: SWEDEN

ages. They can choose to initially take only a partial benefit and leave the rest of their account invested so they will receive a higher benefit when they take the full benefit. They can also pause payments if they return to work and continue to accrue interest on their account balance.[120] As a result, Sweden has the highest age of labor market exit (65.5 for men, 64.5 for women) of all the Nordic countries except Iceland, and the fourth highest in Europe.[121] This obviously also helps improve the sustainability of the system.

Inertia, governance and annuitization on the DC platform

The DC portion of the Swedish system is like Individual Choice DC systems for the accumulation phase. The default fund, AP7 Såfa, is a multi-asset class portfolio managed by the state pension fund. This automatically adjusts the risk level of the portfolio as the worker approaches retirement, such as target date funds. Workers who want to self-direct the DC portion of their investments can choose from the wide range of investment funds offered on the platform.[122] Initially, about two thirds of participants made active choices, but since then interest in self-directed investments has plummeted and only 2% to 3% of savers make an active choice in the first year. Also, 40% of those who made an active choice at the beginning have not made any changes since.[123] This confirms the findings regarding investor inertia that we also observe in numerous other countries.

Flexibility in the Swedish retirement transition → Highest age of labor market exit of most Nordic countries

Participants can choose to convert the DC savings into an income annuity provided by the platform, or to leave them invested. If they leave the money invested, the value of their monthly payment will fluctuate depending on the value of the underlying investments.

The DC system suffered a string of scandals in the 2010s when it was found that some of the funds being offered on the platform were fraudulent. As a result, in 2022 Sweden established a fund selection agency, Fondtorgsnämden, to procure, monitor and quality assure the funds that can be offered on the government platform.[124] The agency is currently going through the procurement process for different categories of funds, e.g., it's currently accepting proposals for European and global index funds.[125] This is a good illustration of the importance of having a strong fiduciary responsible for making sure that the choices being offered to participants are good ones.

120 https://www.pensionsmyndigheten.se/forsta-din-pension/sa-fungerar-pensionen/premiepensionen-nar-du-gar-i-pension.

121 PAAG 2023, table 6.13.

122 https://www.ap7.se/english/ap7-safa/.

123 Jasmine Michelsson and Josefin Klarin, "Investor activity and returns in the Swedish Premium Pension," MSc thesis in Finance at the Stockholm School of Economics, May 14, 2018.

124 Kim Wiesener, "The battle against fraudulent fund managers may be won in Tumba," *AMWatch*, Jun. 14, 2023, https://amwatch.com/article16014031.ece.

125 https://www.ftn.se/nyheter/fondtorgsnamndenforlangeranbudstidenforupphandlingenaveuropeiskaochglobalaindexfonder.5.79547f9918ecba44e3b3be6.html.

COUNTRY PROFILE: SWEDEN

Key metrics: Sweden

Adequacy	Sustainability	Equity	Plan design
Contribution rate Mandatory contributions to pension system:[126] Employee: 7.8%, Employer: 15.3% 2.5% of contributions go toward DC system	**Government spending on retirement benefits** 2020–23: 7.6% of GDP (14.2% of total government spending)[127] 2040: 7.0%[128]	**Retirement coverage** 94.6% overall coverage[129]	**Asset allocation of funded retirement system** Equities: 14.6% Bonds: 12.8% Cash: 0.9% Other: 4.6% Abroad: 14.9%[130] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 65.3% total replacement rate for average income earner[131]	**Retirement age and duration** Effective retirement age:[132] 65.5 (men), 64.5 (women) Expected years in retirement:[133] 19.5 (men), 22.6 (women)	**Net income replacement rate for low earner** 66.5% net replacement rate for individual earning half of average income level[134]	**Choice of investment allocation** AP7 default fund professionally managed with risk profile that adjusts over time. For the 2.5% required contribution to a DC plan, employees can choose from the menu of funds if they want.

126 PAAG 2023, table 8.1.
127 PAAG 2023, table 8.3.
128 PAAG 2023, table 8.4.
129 PAAG 2023, table 9.1.
130 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.
131 OECD Sweden Country profile.
132 PAAG 2023, table 6.13.
133 PAAG 2023, table 6.15.
134 PAAG 2023, table 4.5.

COUNTRY PROFILE: SWEDEN

Key metrics: Sweden (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 49%[135]	**Old age to working population** 2022: 35.9, 2052: 46.0[136]	**How access to workplace plan is determined** Mandatory participation for all covered workers	**Access to retirement savings** The earliest you can claim the pension is 63, no upper age limit on when to claim the pension. No early access to savings.
Funded retirement assets/ GDP 97.9%/$561,147 mil. private, 30.5%/$179,056 mil. public[137]	**Indexation of pensions formula** Notional accounts for the state pension are annuitized at retirement. Benefits can be adjusted in retirement if buffers are too low and raised again once they recover.	**Uptake of guaranteed income beyond state pension** NA	**Availability of guaranteed income in workplace plans** All savings must be converted into an income stream provided by the savings platform. For the DC portion, participants can choose between an income annuity and a variable annuity.

135 PAAG 2023, table 4.2.
136 PAAG 2023, table 6.2.
137 PAAG 2023, table 9.2.

COUNTRY PROFILE

United Kingdom

Background

Prior to 2012, workplace savings in the United Kingdom were voluntary. As a result, fewer than half of the private sector workforce had access to a workplace retirement plan, and their only source of income in retirement was the flat-rate state pension. Young workers and those on low incomes or working for small employers were particularly unlikely to have a workplace plan.

The auto-enrollment mandate was rolled out starting in 2012.[138] Under the mandate, all employers are required to automatically enroll their employees in a qualified workplace plan, and if the employee remains within the plan, they must make an employer contribution. Employees have the right to opt out of the plan, but if they do so they also forfeit the employer contributions. The mandate was introduced over time, starting with the largest employers and extending to the smallest employers in 2016. Likewise, the required contribution rate started at 1% for employer and employee, rising eventually to its current level of 5% for the employee and 3% for the employer. While this has improved the adequacy problem, for many workers the combined 8% mandatory contribution level is still likely to be too low.

The mandate has been extremely successful at expanding coverage; 86% of private sector employees are now saving in a workplace retirement plan, and the gaps between the different groups have significantly diminished.[139] Opt-out rates among employees have been very low in all categories, and surveys have shown that even the smallest employers have found the mandate easy to comply with.[140]

Initially, participants were required to annuitize part of their accumulated savings by purchasing an annuity from an insurance company. Since the pension freedoms were introduced in 2015 there is no longer a requirement to annuitize, and drawdown is the most common option selected by retirees. Despite the fact that the government's Pension Wise service offers free guidance for people approaching retirement, many people are still uncertain about their options at retirement and lack confidence in their ability to manage their retirement income themselves.[141]

KEY TAKEAWAYS

- When systematically enforced and implemented, automatic enrollment can be extremely successful at expanding retirement plan coverage.
- Systems where multiple employers use the same retirement plan (United Kingdom master trust, Australian super, Dutch industry funds) can be very effective at reducing the burden on the employer and making high-quality plans available to all employees, regardless of income level.
- Participants continue to struggle with how to use their funds in retirement as individual choice systems do not offer automatic pathways for retirement income.

138 Department for Work and Pensions, "Automatic enrolment into a workplace pension—key facts" https://assets.publishing.service.gov.uk/media/5a82bfa7e5274a2e87dc2c88/auto-key-facts-enrolment-booklet.pdf#:~:text=Starting%20from%20October%202012%2C%20up%20to%2011,for%20retirement%20arranged%20by%20an%20individual's%20employer.

139 Department for Work and Pensions, "Official statistics on workplace pension participation and saving trends of eligible employees: 2009–2021," https://www.gov.uk/government/statistics/workplace-pension-participation-and-savings-trends-2009-to-2022/workplace-pension-participation-and-savings-trends-of-eligible-employees-2009-to-2022.

140 Catherine Reilly, "Smart Strongly Supports Auto IRA/Plan Legislation to Enhance Retirement Security," Sept. 7, 2021, https://www.smartretire.com/news-and-media/smart-announces-support-of-auto-ira-plan-legislation-shares-smart-survey-results-of-over-800-small-businesses.

141 Nick Reeve, "Pension freedoms 10 years on: A progress report," Pensions Expert, Mar. 20, 2024, https://www.pensions-expert.com/Law-Regulation/Pension-freedoms-10-years-on-A-progress-report?ct=true.

COUNTRY PROFILE: UNITED KINGDOM

Plans consolidating as master trusts continue strong growth

The success of auto-enrollment in the United Kingdom has gone hand in hand with the expansion of master trusts. Master trusts are the United Kingdom equivalent of pooled employer plans (PEPs), where multiple unaffiliated employers can use the same retirement plan. This offers employers fiduciary outsourcing and economies of scale.

The United Kingdom established the National Employment Savings Trust (NEST) to ensure that even the smallest employers would be able to access an affordable, high-quality plan for their employees. In addition to NEST, which with more than 12 million members and £36.8 billion assets under management is the largest master trust,[142] there are also a wide range of privately funded trusts catering to different employer segments. Some, like the People's Pension or Smart Pension, cater to the small, relatively unsophisticated employers similar to the clientele of NEST. Others, such as the AON or LifeSight master trusts, offer more customized solutions for employers with higher-earning employees. Employers can still continue to offer their own plans, but increasingly even the largest employers are embracing the convenience of master trusts and their share of the market is expected to continue to grow at the same time as the master trusts themselves consolidate and become bigger.[143] As the master trusts have become the fastest-growing sector of the retirement market, regulators have also strengthened the regulatory and oversight regime for them, starting with an authorization process and a value-for-money framework.[144]

Pensions dashboard project

Users will view all retirement plan information through a single, secure online portal

Public sector plays active role in developing framework for retirement savings provision

The public sector continues to seek to improve the retirement savings framework. As in the United States, the employer chooses which retirement plan provider to use. As a result, employees who change jobs frequently may end up with multiple small savings pots with different providers. The government has various initiatives under way to address the problems related to small "stranded" pots. The "pensions dashboard" will enable users to view all their retirement plan information online through a single secure portal.[145] All providers and retirement plans have to connect to the dashboard hub by October 2026. Another initiative is exploring how to automate pot consolidation, either by using a default consolidator model where some providers could act as consolidators for pots under £1,000,[146] or by implementing a pot follows member model whereby pots under a certain level would automatically follow employees to their new plan when they change jobs.[147]

In addition to addressing the problems related to small pots, the government has recently solicited input from industry stakeholders on the feasibility of introducing Collective Defined Contribution plans, which would introduce risk-sharing arrangements into DC plans.[148]

The Mansion House[149] reform proposals also seek to increase the allocation of retirement plans to unlisted investments and to U.K.-based companies. While these initiatives contain exciting elements, it will be important to ensure balance and alignment with the overall reform agenda, including impact assessment of previous initiatives.

142 https://www.nestpensions.org.uk/schemeweb/nest/employers/why-choose-nest/award-winning-investments.html.

143 https://www.gov.uk/government/publications/trends-in-the-defined-contribution-trust-based-pensions-market.

144 Department for Work and Pensions, "Evolving the regulatory approach to master trusts," Nov. 22, 2023, https://www.gov.uk/government/publications/evolving-the-regulatory-approach-to-master-trusts.

145 https://www.pensionsdashboardsprogramme.org.uk/.

146 https://www.pensionsage.com/pa/DWP-proposes-default-consolidator-model-to-tackle-small-pots-issue.php.

147 https://www.gov.uk/government/consultations/ending-the-proliferation-of-deferred-small-pension-pots.

148 https://www.gov.uk/government/consultations/extending-opportunities-for-collective-defined-contribution-pension-schemes.

149 https://www.gov.uk/government/collections/mansion-house-2023.

COUNTRY PROFILE: UNITED KINGDOM

Key metrics: United Kingdom

Adequacy	Sustainability	Equity	Plan design
Contribution rate Mandatory national Insurance contribution:[150] Employee: 5.7%, Employer: 11% (varies, calculation based on average earnings) Workplace plan: Employee: 5%, Employer: 3%	**Government spending on retirement benefits** 2020–23: 7.2% of GDP (11.5% of total government spending)[151] 2040: 7.5%[152]	**Retirement coverage** 88% overall coverage (86% private, 93% public)[153] Mandate does not apply to workers under 22 or who earn under £10,000 per year. Self-employed also exempt.[154]	**Asset allocation of funded retirement system** Equities: 28.5% Bonds: 35.1% Cash: 2.6% Other: 33.7% Abroad: 28.0%[155] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 26% replacement rate for average income earner[156]	**Retirement age and duration** Effective retirement age:[157] 63.2 (men), 62.6 (women) Expected years in retirement:[158] 20.9 (men), 23.5 (women)	**Net income replacement rate for low earner** 74.9% net replacement rate for individual earning half of average income level[159]	**Choice of investment allocation** Most platforms use life cycle funds, i.e., portfolios of underlying funds that change their asset allocation over time.

150 https://www.gov.uk/national-insurance-rates-letters, author calculations. National insurance contributions also used to finance NHS.

151 PAAG 2023, table 8.3.

152 PAAG 2023, table 8.4.

153 Department for Work and Pensions, Official Statistics on workplace pension participation and saving trends of eligible employees: 2009–2021.

154 https://www.gov.uk/workplace-pensions/joining-a-workplace-pension#:~:text=Your%20employer%20must%20automatically%20enrol,least%20%C2%A310%2C000%20per%20year.

155 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.

156 OECD UK Country Profile.

157 PAAG 2023, table 6.13.

158 PAAG 2023, table 6.15.

159 PAAG 2023, table 4.5.

COUNTRY PROFILE: UNITED KINGDOM

Key metrics: United Kingdom (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 21.7% replacement rate from guaranteed income for average earner (State Pension)[160]	**Old age to working population** 2022: 33.2, 2052: 49.1[161]	**How access to workplace plan is determined** Employer must automatically enroll all eligible employees, who can opt out if they wish. The employer chooses which savings platform to use. Master Trusts steadily increasing their market share at the expense of single employer trusts.	**Access to retirement savings** Savers can only access their savings after age 55 except under very limited circumstances (e.g., terminal illness). 25% tax-free cash allowance. No required annual minimum withdrawal amounts.
Funded retirement assets/ GDP 85.2%/$2,561,509 mil. private, 2.9%/$99,220 mil. public[162]	**Indexation of pensions formula** State pension currently increases by whichever is the higher of the CPI, average earnings growth or 2.5% (the triple lock).[163]	**Uptake of guaranteed income beyond state pension** 8% of pots accessed were used to buy an annuity[164]	**Availability of guaranteed income in workplace plans** Since the pension freedoms were introduced there is no longer a requirement to purchase an annuity.[165] Annuities mostly provided by external insurance companies.

160 PAAG 2023, table 4.2.

161 PAAG 2023, table 6.2.

162 PAAG 2023, table 9.2.

163 https://www.profilepensions.co.uk/guides/what-is-the-state-pension-a-future-users-guide#:~:text=The%20state%20pension%20is%20index%2Dlinked,-Many%20of%20us&text=This%20means%20that%2C%20if%20the,known%20as%20a%20Triple%20Lock.

164 https://www.deloitte.com/uk/en/Industries/financial-services/blogs/developing-a-dc-pensions-growth-strategy-for-life-insurers-designing.html.

165 https://www.abi.org.uk/news/news-articles/2024/2/2023-sets-new-post-pension-freedoms-record-for-annuity-sales.

COUNTRY PROFILE

United States

Background

The United States retirement system consists of the mandatory Social Security retirement plan, and voluntary workplace plans and individual retirement accounts. Social Security is financed on a PAYG basis through employer and employee contributions. Both contributions and benefits are capped.[166] Benefits are paid as an inflation-protected lifetime income stream using a progressive formula that provides low-income earners with a higher replacement rate, although in reality workers who also have a workplace plan will have a higher replacement rate.

Workplace plan provision is voluntary for employers, although an increasing number of states have introduced their own mandates for employers without a retirement plan to automatically enroll employees in an individual retirement account.[167] Employees always have the right to opt out. Virtually all private sector workplace plans are now DC, but the public sector still often provides DB plans. Despite the fact that only about half of private sector workers have access to a retirement plan through their employer, U.S. participants have accumulated substantial retirement assets through workplace or individual retirement savings. Because these assets are not evenly spread across participants they are not included in the replacement rate calculations at the beginning of this report. As a result, the overall replacement rate in the United States appears to be at the lower end of the countries in this study.

KEY TAKEAWAYS

- Defaults are critical for an effective retirement saving system: a voluntary system leads to low coverage and sub-optimal annuitization.
- The provision of plans by individual employers leads to a patchwork system. Large employers typically offer very low-cost plans with professional oversight. The situation among smaller employers is far more heterogeneous, and small employer plans are typically more expensive.
- The United States has very clear rules governing the fiduciary oversight of investment options.

Voluntary system offers flexibility and choices at some cost of equity

The U.S. workplace retirement system offers a high degree of flexibility and choice. In most cases, employers can choose whether to offer a plan and can also choose the amount of a matching contribution—if any. Employees can choose whether to participate, how much to contribute and what to invest their contributions. Participants in the United States also have more flexibility to access their savings before retirement through plan loans or hardship withdrawals. This ability to access the money can be particularly

166 https://www.ssa.gov/oact/cola/cbb.html.

167 https://cri.georgetown.edu/a-conversation-on-state-based-retirement-programs/.

COUNTRY PROFILE: UNITED STATES

helpful if it gives lower-income participants the confidence to save and allows them to avoid more punitive sources of emergency funds, such as credit card debt or payday loans.[168] However, it also allows leakage from the system. Legislators have recently promoted emergency savings accounts to help prevent the need for participants to access their retirement savings to pay for unforeseen expenses.

The voluntary, employer-centric nature of the workplace system also leads to variation in the quality of workplace retirement plans. Most large employers automatically enroll employees in a retirement plan with a matching employer contribution as part of the standard benefits package. These plans typically have very low costs and stringent professional oversight. However, small employers are far less likely to offer a plan, and when they do offer one, these tend to be more expensive than the large employer plans.[169] Recent legislative initiatives—such as requiring all new plans to automatically enroll employees, the availability of pooled employer plans to allow multiple employers to use the same plan, and efforts to introduce a requirement for all employers to offer a plan—will help to increase equity in retirement plan access.

Transparency and ownership

The United States has a clear system for fiduciary oversight and individual ownership of DC retirement assets. The plan sponsor is responsible for selecting and monitoring the investment options in the plan menu. Most plans have clear choice architecture, with a default option if the participant does not make an active choice, an additional range of core funds that participants can choose from if they wish, and sometimes a brokerage window allowing a wider range of external funds. Participants control their own assets, and unless they deliberately purchase insurance products, there is no risk sharing between them. On the positive side, this means that the system is very transparent, and plan sponsors cannot subsidize one set of participants at the expense of others. On the downside, the low rate of annuitization at retirement implies that many participants are missing out on risk sharing that could potentially boost their income in retirement.

The next stage is defaults for decumulation

Policymakers have already made efforts to expand retirement plan coverage, although a federal mandate for employers to offer a plan has yet to gain approval. They have also tried to remove the barriers to annuitization by reducing the fiduciary burden on plan sponsors for selecting an annuity product. Several asset managers have developed default investment products that can convert all or part of the accumulated balance into guaranteed income at retirement.

So far, the uptake of these products has been low, reflecting the universal reluctance of participants to voluntarily annuitize their assets. For low-income earners who already receive substantial annuitized income through Social Security, this is probably rational. To increase annuitization rates among other groups who would probably benefit from annuitization, it will be important to present income as the primary option at retirement, while allowing participants the ability to opt out if they so wish. To make this choice more valuable to participants, it will also be important to make it easier for participants to consolidate their retirement savings into a single account so the income is meaningful.

Increasing annuitization rates

Present income as the primary option at retirement

Allow participants to opt out

168 John Beshears, James J. Choi, David Laibson and Brigitte C. Madrian, “The Impact of 401(k) Loans on Saving”, NBER, Sept. 29, 2010.

169 Olivia Mitchell, Catherine Reilly and John A. Turner, “The pros and cons of remaining in a 401(k) plan after retirement” *Financial Services Review* 31:1 (2023), 1–21.

COUNTRY PROFILE: UNITED STATES

Key metrics: United States

Adequacy	Sustainability	Equity	Plan design
Contribution rate Mandatory contributions to Social Security:[170] Employee: 5.3%, Employer: 5.3% Workplace plans: Default contribution rates and employer matching contributions vary widely.	**Government spending on retirement benefits** 2020–23: 5.2% of GDP (18.6% of total government spending)[171] 2040: 6.0%[172]	**Retirement coverage** Social Security covers most workers. Workplace plans are voluntary; overall, 54% of workers have access to a plan through their employer.[173]	**Asset allocation of funded retirement system** Equities: 33.6% Bonds: 21.8% Cash: 2.2% Other: 12.9% Abroad: NA[174] (May not add up to 100% due to overlap and/or missing categories.)
Net replacement rate from workplace plan 37.2% (voluntary plans only available to part of the population: this figure also includes DB income)[175]	**Retirement age and duration** Effective retirement age:[176] 65.2 (men), 65.3 (women) Expected years in retirement:[177] 18.0 (men), 20.6 (women)	**Net income replacement rate for low earner** 60.6% net replacement rate for individual earning half of average income level[178]	**Choice of investment allocation** TDFs widely used as default in DC plans

170 PAAG 2023, table 8.1.
171 PAAG 2023, table 8.3.
172 PAAG 2023, table 8.4.
173 CRI Georgetown, Benefits of Universal Access, Figure ES1.
174 OECD Pension Markets in Focus 2023, tables B8, B9, B10, B11, B12.
175 PAAG 2023, table 4.5.
176 PAAG 2023, table 6.13.
177 PAAG 2023, table 6.15.
178 PAAG 2023, table 4.5.

COUNTRY PROFILE: UNITED STATES

Key metrics: United States (continued)

Adequacy	Sustainability	Equity	Plan design
Gross replacement rate from government plan 39.1% replacement rate from Social Security[179]	**Old age to working population** 2022: 29.4, 2052: 43.4[180]	**How access to workplace plan is determined** The retirement plan is sponsored by the employer, which selects the available range of funds. Small employer plans tend to be more expensive than larger ones.	**Access to retirement savings** Workers of any age have access to hardship withdrawals and plan loans (depending on their plan features). After age 73 participants are required to withdraw a minimum amount each year.
Funded retirement assets/ GDP 137.5%/$35,016,907 mil. private, 10.7%/$2,711,899 mil. public[181]	**Indexation of pensions formula** Social Security payments are indexed to the CPI-W (CPI for urban workers and wage earners).	**Uptake of guaranteed income beyond state pension** 2.4% of retirement assets held in annuities[182]	**Availability of guaranteed income in workplace plans** Some 401(k) plans offer the ability to purchase an annuity as part of the plan menu, either as a standalone or integrated into a TDF. 403(b) plans commonly offer annuities as a decumulation option.

179 PAAG 2023, table 4.2.
180 PAAG 2023, table 6.2.
181 PAAG 2023, table 9.2.
182 https://www.statista.com/statistics/940498/assets-retirement-plans-by-type-usa/.

Topics for further investigation

In this report, we lay out a vision for the retirement plan of the future in the United States context. We have also uncovered several interesting topics that require further investigation:

- The countries that provide high levels of lifetime income in retirement offer payouts that include some automatic adjustment mechanisms based on life expectancy or the financial performance of the system. What could flexible income guarantees look like in the United States, for DC, DB or Social Security? What would be the process for implementing these?
- The United States is unlikely to follow the path of requiring DC participants to take guaranteed income, but offering participants income as the first choice could significantly increase uptake. What would an “opt out” income solution for 401(k) plans look like, and how could this be implemented?
- We have highlighted the fragmented nature of the U.S. retirement industry and the difficulty of consolidating retirement accounts within a 401(k) plan. What would be the most efficient way to fix this, and who should take the lead on it? Should the Department of Labor expand the new “Lost and Found” capability into a consolidation hub that all providers could integrate into, or should regulators set standards and let the industry sort out the implementation, as they have started to do with the Portability Services Network?[183]

We also have more questions about global best practices to investigate in future studies:

- What can systems with very low levels of funded retirement assets, such as France, Germany, Spain, or Italy, do to improve adequacy, sustainability and promote risk sharing?
- What challenges are faced by developing countries, such as China or India, and in what way are these similar or different to developed countries? Have they been able to leapfrog directly to new technologies or distribution models? Are there helpful lessons for developed countries, particularly for how to reach lower-income or uncovered segments of the working population?
- Japan and Korea have recently introduced reforms promoting DC workplace savings. How does their approach differ to the Individual Choice countries, and are there lessons we could learn from them?
- Some countries, e.g., Chile, were initially hailed as trailblazers in the retirement space but have since encountered problems that have eroded trust in the system.[184] What worked, what went wrong, and what can other countries learn from this?
- Even in countries with mandates, the self-employed are often not covered. What are effective ways of delivering retirement plans to the self-employed, and which countries have done this successfully?

183 https://psn1.com/.
184 https://www.ft.com/content/3ba24520-a7a7-4771-a90c-a459df0f1958.

About the authors

Surya Kolluri leads the TIAA Institute and focuses his research efforts on retirement and healthy aging. The Institute, now celebrating its 25th anniversary, conducts cutting-edge research in the areas of financial and longevity literacy, lifetime income, retirement plan design and behavioral finance for higher education and the broader nonprofit sector.

Surya sits on the board of the Wharton Pension Research Council, the advisory councils of Georgetown Center for Retirement Initiatives, the Retirement Research Center of the Defined Contribution Institutional Investment Association (DCIIA) and the U.S. Alzheimer's Association (MA/NH Chapter). In 2021, Surya received The President's Volunteer Service Award via AmeriCorps for his commitment to strengthening communities.

Surya holds an MBA from The Wharton School at the University of Pennsylvania and a master's in mechanical engineering from Drexel University. He lives with his family in Brookline, Massachusetts.

Catherine Reilly is an investment and retirement expert, with a focus on retirement income, global retirement systems, and emerging financial technologies. She has served as global head of research for the Defined Contribution team at State Street Global Advisors; chief economist for Pohjola Asset Management in Finland; and management consultant at McKinsey & Company. Most recently, Catherine was employed at Smart, a leading provider of global retirement technology.

She is now principal of CM Reilly Associates, LLC, a strategy advisory firm. She earned a master's in public administration from Harvard University and an MSc in economics from Aalto University in Finland. She is also a CFA charterholder.

David Richardson is managing director and head of research at the TIAA Institute. Before joining TIAA, he served as senior economist for public finance at the White House Council of Economic Advisers and held the New York Life Chair in Risk Management and Insurance at Georgia State University. Previously, he worked as a financial economist in the Office of Tax Policy at the U.S. Treasury and was an assistant professor in the Department of Economics at Davidson College.

David's research interests include public pensions, employer retirement benefit plans and household financial security. He has served as a research fellow for the China Center for Insurance and Social Security Research at Peking University, a research fellow for the Center for Risk Management Research and a research associate at the Andrew Young School of Policy Studies at Georgia State University. He also is a member of the Pension Research Council Advisory Board, the American Economic Association, the American Risk and Insurance Association and the National Tax Association.

He earned an MA and a PhD in economics from Boston College, and a BBA from the University of Georgia.

About the TIAA Institute

The TIAA Institute helps advance the ways individuals and institutions plan for financial security and organizational effectiveness. The Institute conducts in-depth research, provides access to a network of thought leaders, and enables those it serves to anticipate trends, plan future strategies, and maximize opportunities for success.

To learn more, visit tiaainstitute.org.

Join the conversation online:
@TIAAInstitute

GRE-3810568PR-E0824WX

TIAA Institute

(08/24)