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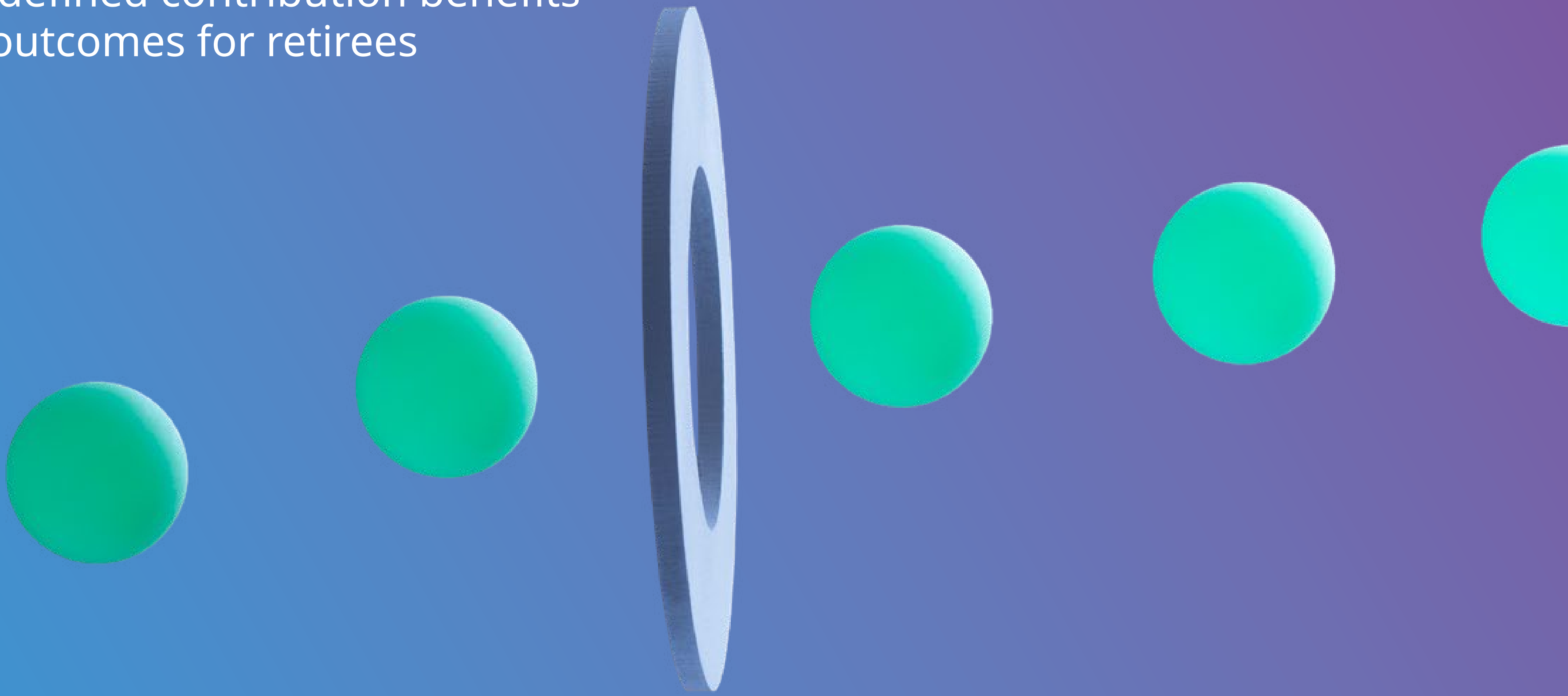
Mercer CFA Institute Global Pension Index 2022

Converting defined contribution benefits into better outcomes for retirees



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Mercer preface

Pension plans are facing challenges not seen in the global economy in decades as they feel the effects of the pandemic, global conflicts, supply chain disruptions and a reversal of the trend toward globalization. These developments have brought higher levels of inflation, rising interest rates and greater uncertainty in economic conditions, while life expectancies continue to rise and populations age. All these pressures are occurring at a time when individuals are taking on more responsibility as the prevalence of defined contribution (DC) arrangements continue to increase around the world.

Whether it is public pension plans with their reliance on government finances or private pension plans invested in the financial markets, questions are being asked about whether the retirement income systems in many countries will be able to meet the expectations of their communities in the decades ahead.

Planning for the long term is therefore more critical than ever.

The Mercer CFA Institute Global Pension Index 2022 compares 44 retirement income systems and compares each system in terms of adequacy, sustainability and integrity. Or to put it another way:

- What benefits are future retirees likely to receive?
- Can the existing systems continue to deliver, notwithstanding the demographic and financial challenges?
- Are the private pensions plans regulated in a manner that encourages long-term community confidence?

Some existing pension arrangements are either providing very limited benefits or may not be sustainable over the longer term. There are lessons to be learned.

The primary objective of this research is to benchmark each retirement income system using more than 50 indicators. An important secondary purpose is to highlight some shortcomings in each system and suggest possible areas of reform that would provide more adequate retirement benefits, increased sustainability and greater community trust in the pension system.

Many of the challenges are similar around the world, irrespective of social, political, historical or economic influences. The policy reforms needed to respond to these challenges are also similar. They relate to:

- Benefit levels and equity across various income levels
- Coverage of private pension plans
- Retirement ages
- The need to encourage people to work a little longer
- Increasing the level of funding set aside for retirement
- Benefit design to reduce leakage before retirement
- The development of appropriate retirement income products, particularly with the growing importance of DC arrangements.

However, these necessary reforms are not always straightforward, and some may require long transition periods.

This year's report tackles one of these reforms in detail; that is, how to convert a DC pension pot into better outcomes for retirees. The answer is not straightforward, as the needs of individual retirees vary considerably with differing social security arrangements and cultural expectations around the world. Neither an indexed lifetime pension nor a lump sum to spend may represent the best solution. The answer is more complicated than that, and I look forward to the discussion responding to our suggested principles in Chapter 4.

I am delighted to recognize the CFA Institute as our major sponsor and sincerely thank the CFA team for their enthusiasm and participation. The Index is a real partnership between two respected global organizations.

I would also like to thank our advisory board, established by the Monash Centre for Financial Studies, for its continued involvement and insights during the thorough review of the Index completed in early 2022. Chapter 3 outlines the results of this review.

Finally, I am very grateful to the Mercer consultants around the world who have been invaluable in providing information about their retirement income systems and checking our interpretation of the data. We also appreciate the support of the Finnish Centre for Pensions and the Icelandic Pension Funds Association.

We hope you enjoy reading this report and that it continues to encourage pension reform to improve the provision of financial security for all retirees.

Dr David Knox
Lead author and Senior Partner, Mercer

CFA Institute preface

CFA Institute is honored to collaborate with Mercer and the Monash Centre for Financial Studies to release this year's edition of the Mercer CFA Institute Global Pension Index.

At CFA Institute, our mission is to lead the investment profession globally by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society. In particular, the closing words – "the ultimate benefit of society" – speak directly to our desire to increase the positive real-world impact of investment management. Retirement systems that meet the adequacy, sustainability, and integrity standards of the index contribute to the health of the financial system.

We at CFA Institute seek to shape the future of the investment industry and the profession, which includes advocating for the structural resilience of capital markets. Pension systems and retirement plans are important building blocks of market resilience across the globe.

Pension plans face extraordinary challenges, and new financial products and strategies will be required to address these concerns and deliver adequate returns for end beneficiaries. We must, as investment professionals, lead the effort for greater retirement security for individuals. We must work together with public authorities to evaluate the status of pension plans in their jurisdictions, challenge the status quo where necessary, and rebuild trust in pensions across the globe through the betterment of these systems.

This year's report includes a special chapter on one of the most important and complex topics surrounding pensions: how to structure retirement income streams that enable financial well-being over a retiree's lifespan. In the last several decades, the shift of pension liabilities from employers to individuals has changed the retirement landscape. Meanwhile, governments are increasingly facing constraints on benefits they can pay. This creates a great responsibility for individuals and households to navigate a complex financial challenge, often with very little financial education. The investment industry will have an important role to play in educating investors and developing new products to help manage longevity risk. At CFA Institute, we believe financial professionals can truly serve as a force for good in society – supporting individuals through this complex time is just one example of this in action.

Analysis and understanding of data and trends, and informed recommendations based upon those findings, will shape how the leaders of each pension system included in the index can improve the effectiveness and sustainability of their individual system. This information will foster important dialogue about how pension systems compare and ways to implement findings from one pension system to improve another.

We extend our thanks to Dr. David Knox of Mercer and the entire Mercer team who have dedicated time and resources to this important research, as well as the Monash Centre for Financial Studies for their oversight, which ensures the integrity of the Index each year. Pension fund reform continues to be a pressing societal challenge, and we are confident that the Mercer CFA Institute Global Pension Index will foster meaningful conversation and action in this area around the world.

Margaret Franklin, CFA
President and CEO, CFA Institute

01. Executive summary

The provision of financial security in retirement is critical for both individuals and societies as most countries now grapple with the social, economic and financial effects of aging populations. As the World Economic Forum (the Forum) notes, “For the first time in human history, people aged 65 and over outnumber children aged five or younger.”[1]

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[1] World Economic Forum, 2022.

Since 2020, many of these issues have been accentuated by the COVID-19 pandemic. But it is not only aging populations and the effects of the coronavirus that represent challenges for pension systems around the world. The current economic environment of reduced wage growth, rising inflation and reduced investment returns in many asset classes is placing additional financial pressures on retirement income systems.

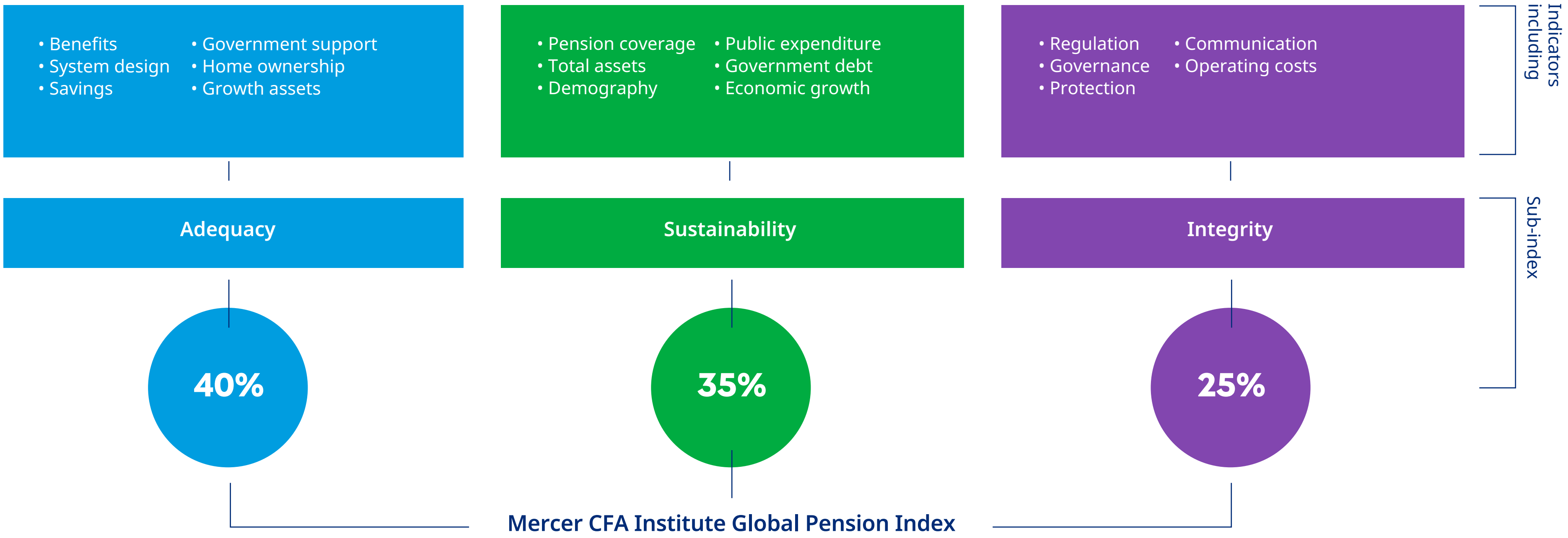
Now more than ever before, we need to understand the features of the leading pension systems. The Forum notes, "Current retirement and pension systems are not prepared for the reality of unprecedented longevity. Governments and the public sector are also falling behind in offering tangible policies and programs that can assist an aging population."[2]

Within this context of uncertainties and long-term challenges, a comparison of the different pension systems around the world can be really valuable for policymakers, governments and the pension industry itself. Yet such a comparison is not straightforward. As the OECD comments, "Retirement-income regimes are diverse and often involve a number of different programs."[3]

Any comparative ranking of systems is likely to be controversial, as each system has evolved from particular economic, social, cultural, political and historical circumstances. This means no single system can be transplanted from one country and applied, without change, to another country. However, certain features and characteristics across the range of systems are likely to lead to improved financial benefits for the older members of society, an increased likelihood of future sustainability of the system, and a greater level of community trust and confidence.

With these desirable outcomes in mind, the Mercer CFA Institute Global Pension Index (the Index) uses three sub-indices — adequacy, sustainability and integrity — to measure each retirement income system against more than 50 indicators. Figure 1 highlights some of the topics covered in each sub-index.

Figure 1. Calculating the Mercer CFA Institute Global Pension Index



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[2] World Economic Forum. *Platform Advisory Process 2022 – 23*, 2022.
[3] OECD. *Pensions at a Glance 2021*: *Methodology*, available at www.oecd.org/publications/oecd-pensions-at-a-glance-19991363.htm

The overall index value for each system represents the weighted average of the three sub-indices. The weightings used are 40% for the adequacy sub-index, 35% for the sustainability sub-index and 25% for the integrity sub-index. These weightings have remained unchanged since the first Index was published in 2009.

The different weightings reflect the primary importance of the adequacy sub-index, which represents the benefits provided, together with some important system design features. The sustainability sub-index has a focus on the future and uses various indicators that will influence the likelihood that the current system will be able to provide benefits in the future. The integrity sub-index includes many legislative requirements that influence the overall governance and operations of the system, which affect the level of confidence the citizens of each country have in their system.

With the addition of Portugal in 2022, this study now includes 44 retirement income systems, representing 65% of the world's population. It demonstrates great diversity between the systems around the world, with index values ranging from 41.7 for Thailand to 84.7 for Iceland.

Figure 2. Summary of the 2022 results

Grade	Index value	Systems		Description
A	>80	Iceland Netherlands Denmark		A first-class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity
B+	75–80	Israel Finland	Australia Norway	A system that has a sound structure, with many good features, but has some areas for improvement that differentiates it from an A-grade system
B	65–75	Sweden Singapore UK Switzerland Uruguay Canada	Ireland New Zealand Chile Belgium Germany	
C+	60–65	Hong Kong SAR US Colombia France	Malaysia Portugal Spain UAE	A system that has some good features, but also has major risks and/or shortcomings that should be addressed; without these improvements, its efficacy and/or long-term sustainability can be questioned
C	50–60	Saudi Arabia Poland Mexico Brazil Peru Italy	Austria South Africa China* Japan Taiwan Korea (South)	
D	35–50	Indonesia Turkey India	Argentina Philippines Thailand	A system that has some desirable features, but also has major weaknesses and/or omissions that need to be addressed; without these improvements, its efficacy and sustainability are in doubt
E	<35	Nil		A poor system that may be in the early stages of development or non-existent

* In this report, "China" refers to the pension system in mainland China. The pension systems in Hong Kong SAR and Taiwan are shown separately, as they have different pension systems.

This study shows that Iceland, the Netherlands and Denmark have the best systems, with each of them receiving an A-grade in 2022.

No system in this year's Index has an E-grade system, which would be represented by an index value below 35. A score between 35 and 50, representing a D-grade system, indicates a system that has some sound features but also major omissions or weaknesses. A D-grade classification may also be conferred in the relatively early stages of the development of a particular retirement income system.

Figure 3 shows the overall index value for each system, together with the index value for each of the three sub-indices. Each index value represents a score between 0 and 100.

Figure 3. Overall index value for each system, including the three sub-indices

		Sub-index values		
System	Overall index value	Adequacy	Sustainability	Integrity
Argentina	43.3	55.6	29.4	42.9
Australia	76.8	70.2	77.2	86.8
Austria	55.0	69.8	22.7	76.5
Belgium	67.9	80.8	39.1	87.5
Brazil	55.8	71.1	27.8	70.5
Canada	70.6	70.8	64.7	78.6
Chile	68.3	60.0	70.3	78.9
China	54.5	64.4	39.3	60.0
Colombia	63.2	65.2	55.3	71.3
Denmark	82.0	81.4	82.5	82.1
Finland	77.2	77.5	65.3	93.3
France	63.2	84.6	40.9	60.1

System	Overall index value	Sub-index values		
		Adequacy	Sustainability	Integrity
Germany	67.9	80.5	44.3	80.9
Hong Kong SAR	64.7	61.5	52.1	87.6
Iceland	84.7	85.8	83.8	84.4
India	44.4	37.6	40.7	60.4
Indonesia	49.2	39.3	44.5	71.5
Ireland	70.0	75.9	53.5	83.7
Israel	79.8	75.7	81.9	83.2
Italy	55.7	72.3	23.1	74.7
Japan	54.5	58.0	44.5	63.0
Korea (South)	51.1	40.1	54.9	63.5
Malaysia	63.1	57.2	60.2	76.9
Mexico	56.1	63.1	57.1	43.6
Netherlands	84.6	84.9	81.9	87.8
New Zealand	68.8	64.0	64.7	82.1
Norway	75.3	79.0	60.4	90.3
Peru	55.8	54.7	51.5	63.7
Philippines	42.0	40.5	52.3	30.0
Poland	57.5	59.5	45.4	71.2
Portugal	62.8	84.9	29.7	73.9
Saudi Arabia	59.2	61.4	54.3	62.5
Singapore	74.1	77.3	65.4	81.0

		Sub-index values		
System	Overall index value	Adequacy	Sustainability	Integrity
South Africa	54.7	44.2	49.7	78.4
Spain	61.8	80.0	28.7	78.9
Sweden	74.6	70.6	75.7	79.5
Switzerland	72.3	68.7	70.5	80.7
Taiwan	52.9	42.0	53.2	69.8
Thailand	41.7	41.3	36.4	50.0
Turkey	45.3	45.6	29.8	66.6
UAE	61.8	63.8	51.9	72.6
UK	73.7	76.5	63.9	83.0
Uruguay	71.5	84.5	50.6	79.8
US	63.9	67.5	61.2	61.7
Average	**63.0**	**65.7**	**53.0**	**72.9**

Each overall index value takes into account more than 50 indicators, some of which are based on data measurements that can be difficult to compare between countries. For this reason, we should not be too definite that one system is better than another when the difference in the overall index value is less than two or three points. On the other hand, when the difference is five or more, we can fairly conclude that the higher index value indicates a better retirement income system.

Figure 4 shows the grade for each system's sub-index values as well as the overall grade. This approach highlights the fact that some systems have a weakness in one area (for example, sustainability) while being much stronger in the other two areas. Such a weakness highlights areas for future reforms.

Figure 4. Overall index grades for each system, including the three sub-indices

		Sub-index grades		
System	Overall index value	Adequacy	Sustainability	Integrity
Argentina	D	C	E	D
Australia	B+	B	B+	A
Austria	C	B	E	B+
Belgium	B	A	D	A
Brazil	C	B	E	B
Canada	B	B	C+	B+
Chile	B	C+	B	B+
China	C	C+	D	C+
Colombia	C+	B	C	B
Denmark	A	A	A	A
Finland	B+	B+	B	A
France	C+	A	D	C+
Germany	B	A	D	A
Hong Kong SAR	C+	C+	C	A
Iceland	A	A	A	A
India	D	D	D	C+

		Sub-index grades		
System	Overall index value	Adequacy	Sustainability	Integrity
Indonesia	D	D	D	B
Ireland	B	B+	C	A
Israel	B+	B+	A	A
Italy	C	B	E	B
Japan	C	C	D	C+
Korea (South)	C	D	C	C+
Malaysia	C+	C	C+	B+
Mexico	C	C+	C	D
Netherlands	A	A	A	A
New Zealand	B	C+	C+	A
Norway	B+	B+	C+	A
Peru	C	C	C	C+
Philippines	D	D	C	E
Poland	C	C	D	B
Portugal	C+	A	E	B
Saudi Arabia	C	C+	C	C+
Singapore	B	B+	B	A
South Africa	C	D	D	B+
Spain	C+	A	E	B+
Sweden	B	B	B+	B+

		Sub-index grades		
System	Overall index value	Adequacy	Sustainability	Integrity
Switzerland	B	B	B	A
Taiwan	C	D	C	B
Thailand	D	D	D	C
Turkey	D	D	E	B
UAE	C+	C+	C	B
UK	B	B+	C+	A
Uruguay	B	A	C	B+
US	C+	B	C+	C+

Overall recommendations

Chapter 5 makes several suggestions to improve each retirement income system. Although each system reflects a unique history, we see some common themes for improvement, as many systems face similar problems in the decades ahead.

Significant pension reform is never easy, but an important starting point is to express the objectives of the overall system. As van Popta and Steenbeek note, "The objective of pension reform must be crystal clear and the perspectives of all stakeholders — consumers, employers, government, industry — must be addressed."[4]

A recent review into Australia's retirement income system commented, "An agreed objective is needed to anchor the direction of policy settings, help ensure the purpose of the system is understood, and provide a framework for assessing the performance of the system."[5]

The 2017 World Economic Forum has highlighted three key areas that will have the biggest impact on the overall level of financial security in retirement. These were to:

- Provide a "safety net" pension for all
- Improve ease of access to well-managed, cost-effective retirement plans
- Support initiatives to increase contribution rates

Each of these factors is critical, and each has been highlighted within the adequacy or sustainability sub-indices.

A range of reforms continues to be implemented to improve long-term outcomes from our retirement income systems, including:

- Increasing the coverage of employees (including non-standard workers) and the self-employed in the private pension system, recognizing that many individuals will not save for the future without an element of compulsion or auto-enrollment.
- Increasing the state pension age and/or retirement age to reflect increasing life expectancy, both now and into the future, thereby reducing the costs of publicly financed pension benefits.[6]
- Promoting higher labor force participation at older ages, which will increase the savings available for retirement and limit the continuing increase in the length of retirement.
- Encouraging higher levels of private saving, both within and beyond the pension system, to reduce the future dependence on the public pension while also adjusting the expectations of many workers.
- Introducing measures to reduce the gender pension gap and those that exist for minority groups in many retirement income systems.
- Reducing leakage from the retirement savings system prior to retirement, thereby ensuring that the funds saved, often with associated taxation support, are used for the provision of retirement income.
- Improving the governance of private pension plans and introducing greater transparency to improve the confidence of plan members.

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[4] van Popta B, Steenbeek O. "Transition to a new pension contract in the Netherlands: Lessons from abroad," *Netspar Occasional Paper 3/21,* 2021.

[5] Australian Government, the Treasury. *Retirement Income Review — Final Report*, 2020.

[6] Several countries have moved in this direction in recent years. Nevertheless, very few are linking the future pension age to the likely ongoing increases in life expectancy.

02. Background to the Index

The structure and characteristics of pension systems around the world exhibit great diversity, with a wide range of features and norms. Comparisons are not straightforward. In addition, the lack of readily available and comparable data for many systems provides additional challenges for such a comparison. Therefore, this report uses a variety of data sources, drawing on publicly available data whenever possible.

These challenges of data and benchmarking should not, however, prevent the comparison of retirement income systems. Within the context of aging populations and current economic conditions, it is too important a consideration to ignore. Furthermore, programs, policies and practices adopted in some retirement income systems provide valuable lessons, experience or ideas for the development or reform of other systems.

This edition of the Index compares 44 retirement income systems, highlighting both the considerable diversity and positive features of many systems. Notwithstanding these highlights, the study also confirms that no pension system is perfect and every system has some shortcomings. In Chapter 5, we make suggestions for improving the efficacy of each retirement income system. We hope this study will act as a stimulus for governments and policymakers around the world to review retirement income systems to improve outcomes for future retirees.

In its influential publication *Averting the old age crisis*,[7] the World Bank recommended a multi-pillar system for the provision of old-age income security, comprising:

- **Pillar 1:** A mandatory, publicly managed tax-financed public pension
- **Pillar 2:** Mandatory, privately managed, fully funded benefits
- **Pillar 3:** Voluntary, privately managed, fully funded personal savings

Subsequently, in the *World Bank Pension Conceptual Framework*,[8] the three-pillar system was extended to the following five-pillar approach:

- **Zero pillar:** A non-contributory basic pension from public finances to deal explicitly with the poverty-alleviation objective
- **First pillar:** A mandated public pension plan with contributions linked to earnings, with the objective of replacing some pre-retirement income
- **Second pillar:** Typically, mandated defined contribution (DC) with individual accounts in occupational or personal pension plans with financial assets
- **Third pillar:** Voluntary and fully funded occupational or personal pension plans with financial assets that can provide some flexibility when compared to mandatory schemes
- **Fourth pillar:** A voluntary system outside the pension system with access to a range of financial and non-financial assets and informal support such as family, healthcare and housing

The World Bank notes that multi-pillar designs provide more flexibility than single pillars in meeting the core objectives of pension systems; namely, protection against the risk of poverty in old age and smoothing some consumption from one's work life into retirement.

[7] World Bank. *Averting the old age crisis*, Washington: World Bank, 1994.
[8] World Bank. *The World Bank Pension Conceptual Framework*, 2008.

Figure 5. The World Bank Pension Conceptual Framework

Pillar 0	Pillar 1	Pillar 2	Pillar 3	Pillar 4
A basic public pension that provides a minimal level of protection	A public, mandatory and contributory system linked to earnings	A private, mandatory and fully funded system	A voluntary and fully funded system	Financial and non-financial support outside formal pension arangements

In effect, the original first pillar was split into the poverty-alleviation zero pillar and a mandatory first pillar. A new fourth pillar was added that includes access to non-pension assets and informal support.

This five-pillar approach provides a good basis for comparing retirement income systems around the world. Hence, the range of indicators used in this report considers features or results associated with each pillar.

The International Labour Organization also supports the concept of a multi-pillar pension system noting, “the possibility of combining a set of social protection instruments, each of which plays one or more functions, to guarantee the whole range of objectives of a national pension system.”[9] Its four pillars are similar to pillars 0–3 of the World Bank’s framework.

In contrast to the World Bank, the OECD adopts a three-tier system,[10] namely:

- **Tier 1:** A universal or targeted pension
- **Tier 2:** A mandatory savings system, provided by either the public or private sector
- **Tier 3:** A voluntary savings system in the private sector

The Centre of Excellence in Population Ageing Research[11] suggests the first tier is primarily a safety net designed for those unable to provide for themselves. On the other hand, the second tier represents some consumption smoothing from one’s working years to the retirement years. The third tier is voluntary and enables some households to save more than required under the mandatory system.

Although this three-tier approach is helpful in understanding the different roles for each type of pension, the Index continues to include non-pension factors such as home ownership, non-pension savings and household debt, which can have a significant impact on financial security during retirement. That is, an individual’s financial wellness in retirement does not depend solely on their government and employment-related pensions.

The “best” system for a particular country at a particular time must also consider that country’s economic, social, cultural, political and historical context. In addition, regulatory philosophies vary over time and between countries. No pension system is perfect for every country at the same time. It is not that simple. However, some characteristics of all pension systems can be tested or compared to provide a better understanding of how each system is tackling the provision of retirement income.

Since its inception, the Index has grouped these desirable characteristics into adequacy, sustainability and integrity.

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[9] International Labour Organization (2018), *The ILO Multi-Pillar pension model: Building equitable and sustainable pension systems*, p3.

[10] OECD. *Pensions at a Glance 2017*.

[11] Centre for Excellence in Population Ageing Research. *Retirement income in Australia: Part I - Overview,* CEPAR Research Brief, November, 2018.

Adequacy

The adequacy of benefits is perhaps the most obvious way to compare different systems. After all, the primary objective of any pension system is to provide adequate retirement income. Therefore, this sub-index considers the base (or safety-net) level of income provided by each system, as well as the net replacement rate at income levels ranging from 50% to 150% of the average wage.

Critical to the delivery of adequate benefits are the design features of the private pension system (that is, the second and third pillars). Although we could assess many features, we have considered the following six broad topics, each of which represents a feature that will improve the likelihood that adequate retirement benefits are provided:

Taxation support

Are **voluntary member contributions** by an average-income earner to a funded pension plan treated more favorably by the tax system than similar savings in a bank account? Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods? The first question assesses whether the government provides any incentives to encourage average-income earners to save for retirement. The taxation treatment of pensions varies greatly around the world, so this question assesses whether or not an incentive exists, not the value of the concession. The second question recognizes that the level of investment earnings is critical, especially for DC plans. A tax on investment income reduces the compounding effect and will therefore reduce the adequacy of future benefits.

Preservation

Is there a **minimum** access age to receive benefits from the private pension plans (except for death, invalidity and/or cases of significant financial hardship)? This question determines whether the private pension system permits the undesirable leakage of accumulated benefits from the system before retirement or whether the regulations focus on the provision of benefits at and during retirement.

Vesting and portability

On **resignation** from a particular employer, are plan members normally entitled to the full vesting of their accrued benefit? After resignation, is the value of the member's accrued benefit normally maintained in real terms (either by inflation-linked indexation or through market-related investment returns)? Can a member's benefit entitlements normally be transferred to another private pension plan on the member's resignation from any employer? These questions focus on what happens to the individual's accrued benefit when they change employment. Traditionally, many private pension plans penalized resigning members, which, in turn, affected the level of benefits available at retirement.

Retirement benefit design

Is it a requirement to take part or all of the retirement benefit as an **annuity or income stream for life?** If so, are lump-sum benefits also available? In lump-sum-based schemes, are there any incentives or rules that encourage the taking of income streams? Many systems require lifetime annuities, whereas others provide lump-sum retirement benefits that are not necessarily converted into an income stream. As discussed in Chapter 4, a flexible hybrid arrangement probably delivers the best outcome for many retirees.

Separation

Upon a couple's **divorce or separation,** are the individuals' accrued pension assets normally taken into account in the overall division of assets? This question recognizes that the financial treatment of accrued pension assets can have a major effect on the future financial security of one or both partners following a divorce or separation.

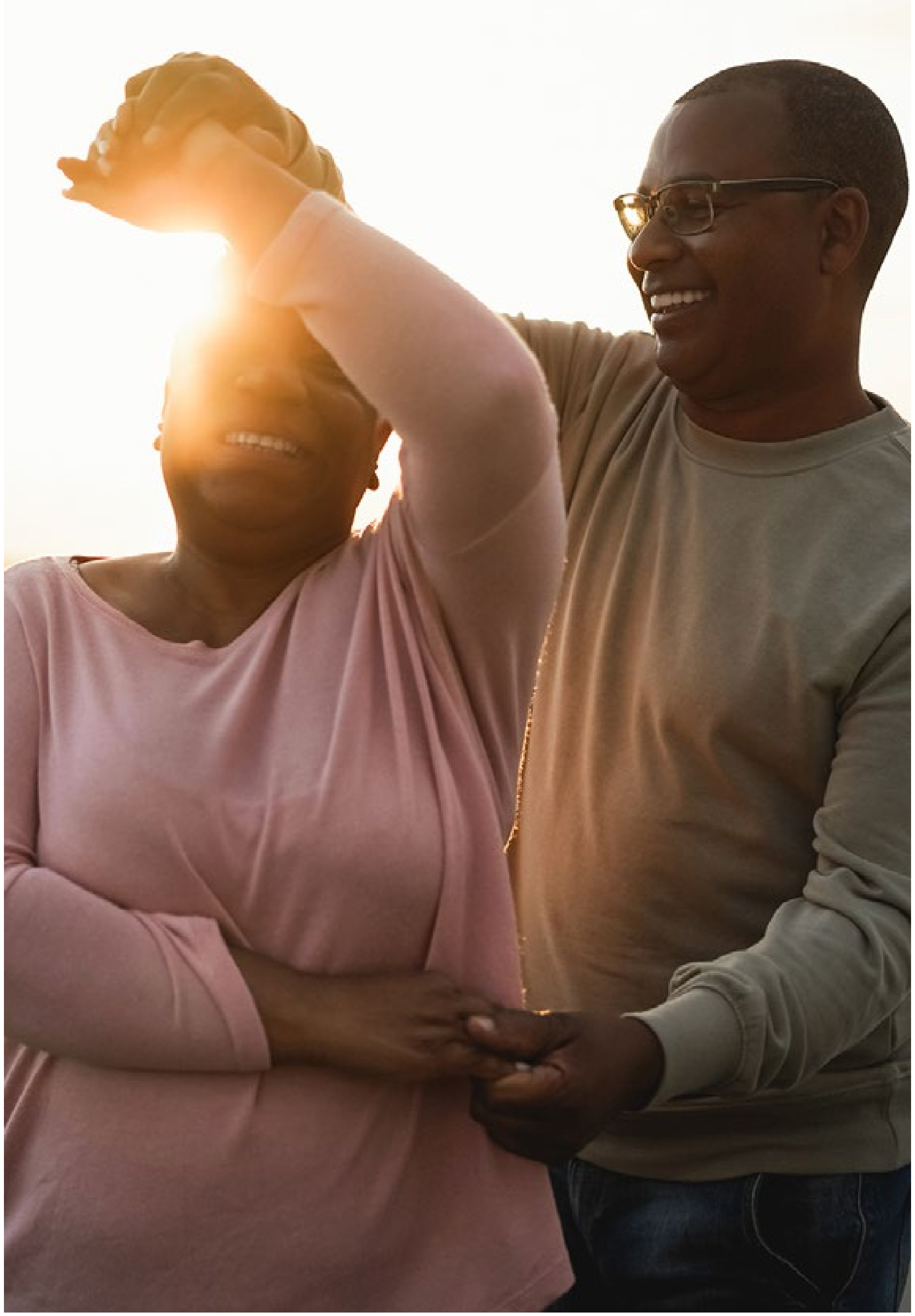
Continued accrual

Are individuals required to **continue** to accrue their retirement benefit when they receive income such as a disability pension or paid parental leave? Does the system provide any additional contributions or benefits for parents who are caring for young children while the parent is not in the paid workforce? These questions recognize that the adequacy of an individual's retirement income will be affected when there is no requirement for benefits to continue to accrue when a worker is temporarily out of the workforce; for example, due to parental leave, ill health, disability or to care for young children.

In addition to these design issues, we consider savings from outside formal pension programs, highlighting the fact that, as the World Bank notes, the fourth pillar can play an important role in providing financial security in retirement. These indicators cover the rate of household savings, the level of household debt and the level of home ownership. This pillar also includes access to informal family support, but the extent of this support is very difficult to measure in an objective manner.

Finally, we recognize that the net investment return over the long term represents a critical factor in determining whether an adequate retirement benefit will be provided. This is particularly true given the increasing importance of DC plans. Although investment and administrative costs are considered as part of the integrity sub-index, the long-term return is likely to be affected by the types and diversity of assets held by the pension fund.

Therefore, the adequacy sub-index includes an indicator representing an assessment of the percentage of investments held in growth assets (including equities and property).



Sustainability

The long-term sustainability of the existing retirement income system is a concern in many countries, particularly in light of the aging population, the increasing old-age dependency ratio, the public expenditure on pensions, substantial government debt and rising inflation. Indeed, the World Bank has noted that "most public pension schemes are not viable financially and cannot keep their promises to younger cohorts that will retire in the future."[12]

This sub-index therefore brings together several measures that affect the sustainability of current programs. Although some demographic measures, such as the old-age dependency ratio (both now and in the future), are difficult to change, others such as the state pension age, the opportunity for phased retirement and the labor force participation rate among older workers can be influenced, either directly or indirectly, by government policy.

An important feature of sustainability is the level of funding in advance, which is particularly important when the ratio of workers to retirees is declining. Therefore, this sub-index considers contribution rates, the level of pension assets and the coverage of the private pension system. In addition, real economic growth over the long term has a significant impact on the sustainability of pensions as it affects employment, saving rates and investment returns.

Given the growing importance and impact of climate change and other global effects on future investment returns, the sub-index also explores the relevance of economic, social and governance (ESG) factors on the investment policies or strategies adopted within each system.

Finally, given the key role that the provision of a public pension plays in most systems, the level of government debt and public pension expenditure represent important factors affecting a system's long-term sustainability and the future level of these pensions.

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[12] World Bank. Pensions Overview, 2019.

Integrity

The third sub-index considers the integrity of the overall pension system, but with a focus on funded schemes, which are normally found in the private sector. As most systems rely on private pensions to play an increasingly important role in the provision of retirement income, it is critical that the community has confidence in the ability of private-sector pension providers to deliver retirement benefits over many years into the future.

This sub-index therefore considers the role of regulation and governance, the protection provided to plan members from a range of risks and the level of communication provided to individuals. In each case, we consider the requirements set out in the relevant legislation and not the best practice delivered by some pension plans.

In addition, we use the Worldwide Governance Indicators published by the World Bank to provide a broader perspective of governance within each country.

An important contributor to the long-term confidence of members is that they receive good value from their pension plan and that costs are kept to a reasonable level. Although an objective comparison of the total costs of operating each system is impractical, this sub-index includes some proxy measures relating to industry structure and scale that should provide a good indication.

The construction of the Index

In the construction of the Index, we have endeavored to be as objective as possible in calculating each system's index value. Of course, we recognize that the Index is artificial, at least to some extent, as it does not calculate the pension that any retired individual will actually receive. Furthermore, it cannot recognize every aspect of a pension system, particularly the more subjective matters, such as community confidence. We also recognize that comparable international data are not available for every desirable feature.

Nevertheless, where international data are available, we have used those data. In other cases, we have used objective questions about each system to obtain a better understanding of each system's operations and outcomes. Some countries have more than one system, or different regulations exist in different parts of the country. Where this occurs, we have concentrated on the most common system or taken an average position.

Each system's overall index value is calculated by taking 40% of the adequacy sub-index, 35% of the sustainability sub-index and 25% of the integrity sub-index. These weightings have remained constant since the first edition of the Index in 2009.

Although each sub-index is not weighted equally, the robustness of the overall results is worth noting; for example, re-weighting each sub-index equally does not provide any significant changes to the overall results. Of course, the weighting of each indicator within each sub-index is subjective, as there is no "correct" answer. Our approach has been to give higher weightings to the more important indicators.[13]

Living standards in retirement are affected by a number of other factors, including the provision and costs of health services and aged care, through both the public and private sectors. However, some of these factors can be difficult to measure within different systems and, in particular, difficult to compare. We therefore decided to concentrate on indicators that directly affect the provision of financial security in retirement, both now and into the future. The Index does not claim to be a comprehensive measure of living standards in retirement; rather, it is focused on the provision of financial security in retirement.

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[13] The appendices provide the scores for all indicators in each sub-index so that readers may calculate the effects of changing the weights used for each sub-index or the sensitivity of changing the weights within each sub-index.

03. An overview of the changes in 2022

During the first quarter of 2022, the Advisory Board conducted a thorough review of the Mercer CFA Institute Global Pension Index to improve the integrity of the Index and remove any unintended biases that may be present. In particular, the board wanted to ensure that the average score of each question within each sub-index was similar and that there were no statistically significant differences, which may have favored some systems over others.

As a result of this review, some scoring calculations, questions and weightings have been modified, as discussed below.

The net effect of these changes to the model was to increase the average Index value by 1.09. Naturally, the impact on individual values varied between systems with most changes between minus one and plus two.

Adequacy sub-index

A1 – Minimum pension

Previously, the scoring calculation for this question used a straight line for minimum pensions that were between 10% and 30% of the average wage. We have replaced this with a quadratic function, as shown below, which highlights that increasing the base pension from 10% to 20% is more important than an increase from 20% to 30%. Hence, a pension equal to 20% of the average wage now scores 7.5 out of 10, instead of the previous score of five out of 10.

We also increased the weighting for this question from 17.5% to 20% of the adequacy sub-index score, or from 7% to 8% of the overall index score, highlighting the importance of the minimum, basic or targeted pension.

A6 – Retirement income

The previous question considered the proportion of the retirement benefit required to be taken as an income stream. However, the financial needs of retirees go beyond regular income, as discussed in Chapter 4. Hence, we have now replaced this single question with a series of less prescriptive and broader questions, which recognize there is not a single solution to the “best” format of a retirement benefit.

A7 – Vesting, preservation and vesting

We decreased the weighting for this question from 7.5% to 5% of the adequacy sub-index score, or from 3% to 2% of the overall index score. This reduction recognizes that these important issues have been increasingly recognized around the world during the last decade, and therefore this question is now less important compared to some other issues.

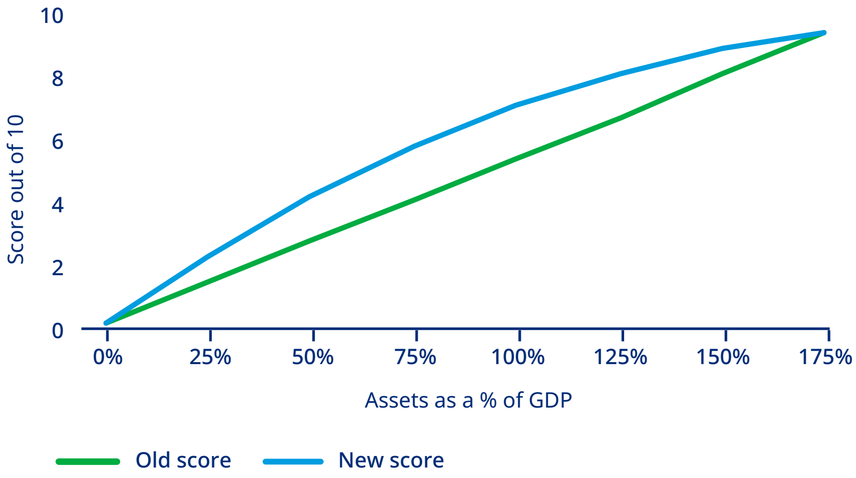
A10 – Importance of growth assets

The previous calculation gave a score of 2.5 out of 10 for a system with no growth assets, increasing to the maximum score of 10 when 45% or more of the pension system’s assets are invested in growth assets. We have now reduced the score for zero-growth assets to zero, with proportionate reductions for systems in which the level of growth assets is between 0% and 45%.

Sustainability sub-index

S2 – Level of pension assets

Previously, the scoring calculation for this question used a straight line for the level of pension assets as a percentage of GDP, increasing from 0% to 175% of GDP. We have replaced this with a quadratic function, as shown below, which highlights that increasing the level of pension assets from 0% to 50% of GDP is more important than say, an increase from 100% to 150%. Therefore, a level of pension assets equal to 100% of GDP now scores 7.5 out of 10, instead of the previous score of 5.7 out of 10.



Integrity sub-index

C1 – Costs

One of the previous questions relating to the costs of the overall system asked about the percentage of all pension assets held by the largest 10 providers or funds. This question highlights that economies of scale matter and that larger funds should lead to a reduction in costs. However, the use of a specific number of funds or providers — namely 10 — favored countries with smaller populations. Hence, we have now adjusted this question so that the specified number takes into account the population of the country; for example, the number used ranges from three for Iceland to 30 for India and China

Additional system

We expanded the Index in 2022 to include one new retirement income system – Portugal. This addition continues our longstanding practice of considering a variety of systems from different economic, historical and political backgrounds. This approach highlights an important purpose of the Index: to enable comparisons of different systems around the world with a range of design features, operating within different contexts and cultures. The Index now includes 44 retirement income systems covering more than 65% of the world's population.

Updated OECD data

Since the publication of the 2021 Index, the OECD has published an updated version of *Pensions at a Glance: OECD and G20 Indicators*. This publication significantly increased the net replacement rates used for Colombia, Iceland and Mexico, when compared to the unpublished data used in the 2021 report.

The OECD has also recently carried out significant post-pandemic work for the Asia-Pacific region. The OECD has been willing to share with us some updated but unpublished data on net replacement rates for this region, which we used within the adequacy sub-index.

Updated UN Population Prospects

In July 2022, the United Nations launched its latest edition of *World Population Prospects*. The sustainability sub-index uses data from this source, as we consider life expectancies, the aged dependency ratio and the total fertility rate. The general findings are that:

- Total fertility rates are continuing to decline around the world.
- Global life expectancy continues to increase, although the increases are leveling off in some developed economies.

Therefore, as a result of these trends, the percentage of the world's population aged 65 or over is expected to increase from 9.7% in 2022 to 16.4% in 2050.[14]

These long-term trends inevitably affect the sustainability of all pension programs. Therefore, the scores for the demography-related questions in the sustainability sub-index have fallen for the majority of systems, with China, Saudi Arabia and Thailand suffering the largest reductions. This has reduced their overall Index scores by about 1.2.

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[14] United Nations. *World Population Prospects 2022, Summary of Results*, 2022.

A comparison from 2021 to 2022

Figure 6 compares the results for 43 systems from 2021 to 2022. The results show that the average score for the overall index increased by 2.0 with increases in each sub-index for a variety of reasons.

Comments on each system are made in Chapter 5.

Figure 6. Comparison index values for each system, including the three sub-indices

	Total		Adequacy		Sustainability		Integrity	
System	2021	2022	2021	2022	2021	2022	2021	2022
Argentina	41.5	43.3	52.7	55.6	27.7	29.4	43.0	42.9
Australia	75.0	76.8	67.4	70.2	75.7	77.2	86.3	86.8
Austria	53.0	55.0	65.3	69.8	23.5	22.7	74.5	76.5
Belgium	64.5	67.9	74.9	80.8	36.3	39.1	87.4	87.5
Brazil	54.7	55.8	71.2	71.1	24.1	27.8	71.2	70.5
Canada	69.8	70.6	69.0	70.8	65.7	64.7	76.7	78.6
Chile	67.0	68.3	57.6	60.0	68.8	70.3	79.3	78.9
China	55.1	54.5	62.6	64.4	43.5	39.3	59.4	60.0
Colombia	58.4	63.2	62.0	65.2	46.2	55.3	69.8	71.3

	Total		Adequacy		Sustainability		Integrity	
System	2021	2022	2021	2022	2021	2022	2021	2022
Denmark	82.0	82.0	81.1	81.4	83.5	82.5	81.4	82.1
Finland	73.3	77.2	71.4	77.5	61.5	65.3	93.1	93.3
France	60.5	63.2	79.1	84.6	41.8	40.9	56.8	60.1
Germany	67.9	67.9	79.3	80.5	45.4	44.3	81.2	80.9
Hong Kong SAR	61.8	64.7	55.1	61.5	51.1	52.1	87.7	87.6
Iceland	84.2	84.7	82.7	85.8	84.6	83.8	86.0	84.4
India	43.3	44.4	33.5	37.6	41.8	40.7	61.0	60.4
Indonesia	50.4	49.2	44.7	39.3	43.6	44.5	69.2	71.5
Ireland	68.3	70.0	78.0	75.9	47.4	53.5	82.1	83.7
Israel	77.1	79.8	73.6	75.7	76.1	81.9	83.9	83.2
Italy	53.4	55.7	68.2	72.3	21.3	23.1	74.9	74.7
Japan	49.8	54.5	52.9	58.0	37.5	44.5	61.9	63.0
Korea (South)	48.3	51.1	43.4	40.1	52.7	54.9	50.0	63.5
Malaysia	59.6	63.1	50.6	57.2	57.5	60.2	76.8	76.9

	Total		Adequacy		Sustainability		Integrity	
System	2021	2022	2021	2022	2021	2022	2021	2022
Mexico	49.0	56.1	47.3	63.1	54.7	57.1	43.8	43.6
Netherlands	83.5	84.6	82.3	84.9	81.6	81.9	87.9	87.8
New Zealand	67.4	68.8	61.8	64.0	62.5	64.7	83.2	82.1
Norway	75.2	75.3	81.2	79.0	57.4	60.4	90.2	90.3
Peru	55.0	55.8	58.8	54.7	44.2	51.5	64.1	63.7
Philippines	42.7	42.0	38.9	40.5	52.5	52.3	35.0	30.0
Poland	55.2	57.5	60.9	59.5	41.3	45.4	65.6	71.2
Saudi Arabia	58.1	59.2	61.7	61.4	50.9	54.3	62.5	62.5
Singapore	70.7	74.1	73.5	77.3	59.8	65.4	81.5	81.0
South Africa	53.6	54.7	44.3	44.2	46.5	49.7	78.5	78.4
Spain	58.6	61.8	72.9	80.0	28.1	28.7	78.3	78.9
Sweden	72.9	74.6	67.8	70.6	73.7	75.7	80.0	79.5
Switzerland	70.0	72.3	65.4	68.7	67.2	70.5	81.3	80.7
Taiwan	51.8	52.9	40.8	42.0	51.9	53.2	69.3	69.8

	Total		Adequacy		Sustainability		Integrity	
System	2021	2022	2021	2022	2021	2022	2021	2022
Thailand	40.6	41.7	35.2	41.3	40.0	36.4	50.0	50.0
Turkey	45.8	45.3	47.7	45.6	28.6	29.8	66.7	66.6
UAE	59.6	61.8	59.7	63.8	50.2	51.9	72.6	72.6
UK	71.6	73.7	73.9	76.5	59.8	63.9	84.4	83.0
Uruguay	60.7	71.5	62.1	84.5	49.2	50.6	74.4	79.8
US	61.4	63.9	60.9	67.5	63.6	61.2	59.2	61.7
Average	**61.0**	**63.0**	**62.2**	**65.2**	**51.7**	**53.5**	**72.1**	**72.8**

04. Converting defined contribution benefits into better outcomes for retirees

The provision of retirement income to individuals and households has changed dramatically in many countries during the past two or three decades. This significant trend toward DC plans is not going to reverse and will continue to affect an increasing number of retirees in years to come.

A challenging DC equation

- **Employers are stepping away from defined benefit (DB) pension plans.**
- **Individuals are now bearing all the risks.**
- **Retirees are receiving lump sums, not pensions.**
- **Many households are not equipped to make financial decisions.**

Historically, most pension arrangements in developed economies (including social security and occupational DB schemes) provided a regular income payment to retirees for life, and often their partner's life, too. In brief, retirees received a regular pension that was often indexed to inflation.

Employer sponsors, who previously supported the DB pensions, have stepped away from accepting any risks or providing any financial guarantee. Though government pensions have continued, the global shift to DC occupational pension plans has significantly changed the equation for retirees. Unlike DB pension plans, DC plans provide the individual with a lump-sum benefit (or pension pot) at retirement. All the risks during the years before and after retirement are transferred to the individual.

Many governments have also reviewed, or are considering reviewing, their level of support of the government pension to ensure its sustainability over the longer term. These reviews need to take into account increasing life expectancies, the impact of the aging population and the increasing level of government debt, and perhaps lead to increases in the "official" retirement age or downward adjustments to the benefit formula used.

The overall result is that many future retirees will no longer be able to rely on significant financial support from their previous employers and/or the government in times of financial stress. Individual responsibility has increased materially.

Yet, most individuals and households are not prepared to make the necessary financial decisions at retirement and to maximize their value from the available DC pension pot. It is a very difficult situation, particularly as the post-retirement years require much more complex decisions than the pre-retirement years when most individuals receive a relatively stable wage or salary and the primary purpose of the pension arrangements is to invest the funds. Of course, it can be even more difficult for those in the informal or "gig" labor force.

William Sharpe, the Nobel Prize winning economist, acknowledges there is no easy answer to all the decisions that are necessary in "knowing how to strike a balance between having enough income to meet your current needs (in retirement) … and having enough to get you through your lifetime." He has called it the "nastiest, hardest problem in finance."[15] Nevertheless, the problem must be tackled so retirees can have a dignified retirement with both confidence and financial security.

This chapter discusses the needs and desires of retirees, the questions they face, the range of products available, various approaches currently in use around the world, and the options for governments, policymakers and the pension industry to consider in achieving the best outcomes for future retirees.

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[15] Max S. "Nobel Prize-Winning Economist on How to Solve the 'Nastiest, Hardest Problem' in Retirement," *Barrons*, 2019, available at www.barrons.com/articles/william-sharpe-how-to-secure-lasting-retirement-income-51573837934.

The needs and desires of retirees

Most retirees wish to maintain their previous living standard in retirement, possibly at a level similar to that experienced in the previous 10 or 20 years. This reflects an important starting point as it means a career-average approach, spanning 40 years or more, is unlikely to reflect the desires of many retirees.

Retirees need to consider the possibility of retirement lasting 30 or more years, which is well beyond the planning horizon for most people. Furthermore, the concept of longevity risk is not well understood or appreciated by most individuals approaching retirement.

What do retirees want?

- Stability
- Sustainability
- Flexibility
- Bequest
- Transparency

Retirees want stability — a regular and reliable income that keeps pace with price inflation. This provides a secure base for their future living standards. There is some debate as to whether full-price inflation is needed, as several studies suggest that retired households actually decrease their consumption over time. Although health-related expenditure may increase with age, some other expenditures, such as travel, decrease, leading to an overall reduction in real expenditure.

However, Chen and Munnell suggest wealthier and healthier households have relatively flat consumption paths, whereas households with less wealth or poorer health at retirement have declining consumption during retirement.[16] In reality, these differences may not reflect the preferred paths of retirees, if additional wealth or better health existed. Therefore, the objective should be to enable retirees to maintain their living standards throughout retirement.

Retirees want sustainability — that is, income that does not run out, whatever the future may hold. Although most retirees will be unaware of their life expectancy (which, after all, is only an average number), they are aware they do not know their date of death. Or, to put it another way, how long does the income need to last? A related risk is that poor decisions, economic conditions or a fall in asset values may reduce the real value of the underlying pension pot faster than expected. The importance of these risks for each retiree is also affected by the size and characteristics of government support available in the future.

Retirees want flexibility – that is, to be able to access some capital or a “rainy day” fund — unexpected costs occur, and retirees want to be able to meet them. The extent of these capital needs, which could relate to significant medical costs or pharmaceuticals, necessary refurbishment of the home to accommodate reducing mobility or the costs associated with aged care, will vary considerably between individuals. It will also depend on the extent to which government assistance is available to meet such costs. When government funding is available, it is also important that retirees fully appreciate its availability.

Some retirees wish to leave a bequest. On the other hand, “The intra-household bequest is important … but not the intended bequest motive. This suggests that people save for unexpected expenses and to financially protect their partner as a surviving spouse but are less concerned about the distant future.”[17]

Nevertheless, the combination of a “rainy day” fund and a mild bequest motive means that many retirees wish to preserve some of their pension pot for the future. That is, they may use some of it (if needed) or leave it to their children or favorite charity.

Finally, retirees want transparency. Retirees need to know the fees, any taxation implications and the possible outcomes of various options. As costs are normally disclosed during the accumulation period of DC pension plans, future costs should also be disclosed in respect of retirement products.

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[16] Chen A, Munnell AH. “Do retirees want to consume more, less, or the same as they age?” Center for Retirement Research at Boston College, 2021, available at https://crr.bc.edu/briefs/do-retirees-want-to-consume-more-less-or-the-same-as-they-age

[17] Alonso-Garcia J, Bateman H, Bonekamp J, et al. “Saving preferences after retirement,” *Journal of Economic Behavior and Organization*, 198 (2022), pp. 409–433.

Impact of moving from DB to DC

The move from DB to DC arrangements allows DC plan members to view their accumulated balance and investments through their regular statement, from the plan's website or through the plan's app. Indeed, some governments even encourage members to consider the DC balance as "their money." This is very different from DB plans, for which members have a promise that, in some cases, can be difficult to understand.

This different approach has also led to the more engaged DC members wanting increased control over their investments, which feeds into their decisions as they approach retirement. For example, if a DC pension plan member is able to select their investment strategy and, in some cases, even select their equity investments before retirement, we can reasonably expect that such freedom will continue when the individual retirees. This is quite different from a lifetime annuity, for which the member is not involved in any investment decisions.

However, although some DC members are more engaged, many DC members remain disengaged and have very limited understanding, both before and after retirement. These members are likely to rely on default arrangements.

Another important outcome of the increasing dominance of DC pension plans is that more plan members have become accustomed to market volatility. During their working years, they have seen the value of their account balance move up and down with financial markets. Therefore, as they move into retirement, they may expect similar outcomes and thereby more readily accept some variability in outcomes. In fact, evidence shows that some retirees will adjust their expenditure in line with the markets. That is, like all demographic groups, during periods of financial uncertainty they will spend less and cut back on some expenditure[18] ; for example, in years of market decline, the retiree may decide to take a local holiday instead of going further afield. In fact, such belt-tightening is consistent with some financial advice when markets are performing poorly.[19]

In summary, the desires of retirees are not all the same and vary considerably. This outcome suggests that a single product does not achieve the most desirable outcome for all retirees. Some flexibility is desirable.

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[18] Probasco J. "A Decade Later: How the Financial Crisis Affected Seniors," Investopedia, 2022

[19] Morgan Stanley. "Retirement Income in Volatile Markets," *On Retirement*, 2019.

Questions that retires need to answer

Retirees (and hence product providers and financial advisors) need to consider many issues when deciding the most appropriate portfolio of retirement products.

- **What is the minimum level of income?**
- **What is the likely period of retirement?**
- **What is the retiree's risk profile?**
- **Does the retiree have any significant debt?**
- **Are there any ongoing decisions?**

As suggested above, the main objective for most individuals and households approaching retirement is to maintain their standard of living. To achieve the best outcome, the following questions need to be asked:

- **What is the minimum level of income required to maintain their standard of living?** This should allow for any partner's income, any government pension, any income from part-time work and any other income from outside the pension plan. In addition, if the retiree is a homeowner, this could include income from an equity release arrangement in the future. This can be important for many households in developed economies when the family home can be worth much more than the pension pot at retirement. Alternatively, if the retiree is renting their home, the future levels of rent can be a very significant cost.

- **What is the likely period of retirement?** Of course, this is unknown; however, it will depend on the actual retirement age, the health and the lifestyle of the individual and any partner. We should also note that mortality rates and therefore life expectancies vary by socioeconomic class. Given the retirement period is unknown, it is wise to consider the life expectancy of their individual and their partner, and add at least five years to any figure that may be used.

- **What is the retiree's risk profile?** That is, the extent to which some level of "guaranteed income" is desirable or, indeed, a requirement. Of course, whenever there is a guarantee, a cost is included in the price of the product, which is often implied rather than explicit. Alternatively, the retiree may be willing to "ride the markets" and live with the consequences. To express that another way, how perturbed would the retiree be if their income or accumulated benefit dropped in value by 5%, 10% or 20%?

- **Does the retiree have any significant debt?** (For example, a mortgage or credit card debt.) Members of DC plans often intend to use part of their pension pot to repay any debts and so begin retirement debt-free. Although this may not have been the original purpose of pensions, such payment removes future repayments and thereby simplifies financial planning for retirement.

- **Are there any ongoing decisions required in the future?** One's cognitive ability declines with age, and it is therefore unreasonable to expect retirees in their 80s and 90s to continue to make key financial decisions. Although a "set and forget" approach for 30 years is not necessarily the best approach, nor is a complex arrangement that includes many components and requires ongoing decisions. Simplicity has a huge advantage.

These questions have no single answers, and they will change during the period of retirement. Nevertheless, consideration of these and similar issues should help pension plans develop the most appropriate set of products for their retirees.

The products available

In many cases, a single product will not deliver the most desirable outcome. Rather, a hybrid arrangement including some of the following products may be the best way forward for using the individual's DC pension pot.

Lump-sum payment

The payment of a lump sum at retirement is relatively simple and provides retirees with the opportunity to pay off debt and set themselves up for retirement, although there may be tax consequences. It also requires the retiree to make investment and spending decisions and provides no longevity protection. As Antolin notes, "Few retirees are really prepared to 'self-annuitize' as they lack appropriate financial skills and discipline."[20]

Programmed withdrawal

These arrangements offer greater flexibility than an annuity and can deliver a higher investment return as no guarantee is present. However, they are subject to the fluctuations of the financial markets and the money can run out. It has also been observed that in the absence of any longevity protection or well-designed minimum drawdown requirements, some retirees withdraw their funds at an overly cautious rate, thereby reducing their standard of living and leaving a larger than intended bequest.[21] These arrangements can also include a bucketing approach with different asset classes in different buckets.

Immediate annuity

An immediate annuity offered by a life insurance company provides regular income for life (which may also include their partner's life) and can provide a good base for the necessities of life. However, the individual forgoes any control and normally locks in the current price (that is, linked to current interest rates) for the rest of their life. Market-linked (or variable) annuities are also available for which the level of income is affected by the financial markets. Whatever the actual design of the annuity, the pooling of longevity risk provides a more efficient outcome than self-annuitization. Yet, in many markets, the annuity puzzle remains and products, which have theoretical appeal, do not receive broad market acceptance.

Collective pooled arrangements

An alternative to an annuity, with a partial or full guarantee, is a collective pooled arrangement whereby the income generated will depend on the investment and mortality experience of the pool of participants. Although such arrangements have the potential to generate higher retirement incomes due to the absence of any guarantee, participants need to be made aware of the inherent uncertainty, as occurs with most variable annuities.

Deferred annuity

A deferred annuity commences at a nominated later age and can also provide longevity protection to the retiree. However, many retirees are reluctant to purchase such a product, as an early death would normally mean limited or no return from the investment. This product may also be less attractive to some insurers as the premium received is reduced, and there is a significant tail risk.

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[20] Antolin P, Pugh C, Stewart F. "Forms of Benefit Payments at Retirement," OECD Working Papers on Insurance and Private Pensions, No 26 (2008), OECD publishing.

[21] For example, the Retirement Income Review in Australia found that retirees are generally reluctant to draw down their savings in retirement due to a number of factors including "reluctance to consume funds that are called 'nest eggs', concerns about possible future health and aged care costs, and concerns about outliving savings."

What is the best balance?

The OECD suggests that:

> **“DC pension plans should provide some level of lifetime income as a default for the pay-out phase, unless other pension arrangements already provide for sufficient lifetime pension payments... Full lump sums should be discouraged in general, except for low account balances or extreme circumstances.”**[22]

Interestingly, the OECD seems to support a hybrid arrangement with some lifetime income together with other products.

Three national actuarial bodies concluded that:

> **“There would be value in developing appropriate defaults that allow individuals to access their pensions through an income stream that offers flexibility in their early years of retirement. However in the latter years, they could provide, at a minimum, a structured lifetime payment with the potential for a lifetime income guarantee to protect against their longevity risk.”**[23]

Again, the conclusion was not a single product, but some combination of flexibility and longevity protection.

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[22] OECD. *Recommendations of the council for the good design of defined contribution pension plans*, 2022.

[23] American Academy of Actuaries, Institute and Faculty of Actuaries and Actuaries Institute Australia. *The challenge of longevity risk: Making retirement income last a lifetime*, 2015.

Another example of this hybrid approach is the three objectives of the Retirement Income Covenant recently introduced into legislation in Australia. The objectives are:

- To maximize expected retirement income over the period of retirement
- To manage expected risks to the sustainability and stability of retirement income
- To have flexible access to expected funds

Three systems (Australia, UK and the US) have considerable flexibility and retirees can spend or invest their benefit as they wish. Yet, within each of these systems, there has been recognition that this “freedom” does not necessarily lead to the best outcome for retirees. These governments have recognized that there is a need to help retirees in their decision-making process in the following ways:

Australia: The Federal Government introduced a Retirement Income Covenant from 1 July 2022 that requires plan trustees to develop a retirement income strategy, which addresses how the trustee will assist beneficiaries to achieve and balance the three objectives stated in the covenant, as described above.

UK: The UK Government introduced new regulations to encourage or nudge more pension plan members to make use of the free guidance provided by Pension Wise. These regulations require trustees and providers to refer the member to Pension Wise guidance, explain its nature and purpose and to offer to book an appointment for the member, whenever the member makes an application to access their pension savings.

US: The *SECURE Act*, which was signed into law in December 2019, increases the flexibility of America’s pension system in several ways, including a new safe-harbor provision that encourages 401(k) plans to offer annuities by removing the fear of legal liability on employers.

Each of these developments recognizes the need for more flexibility and assistance in systems where the importance of DC plans continue to grow.

Suggestions for policymakers to make a difference

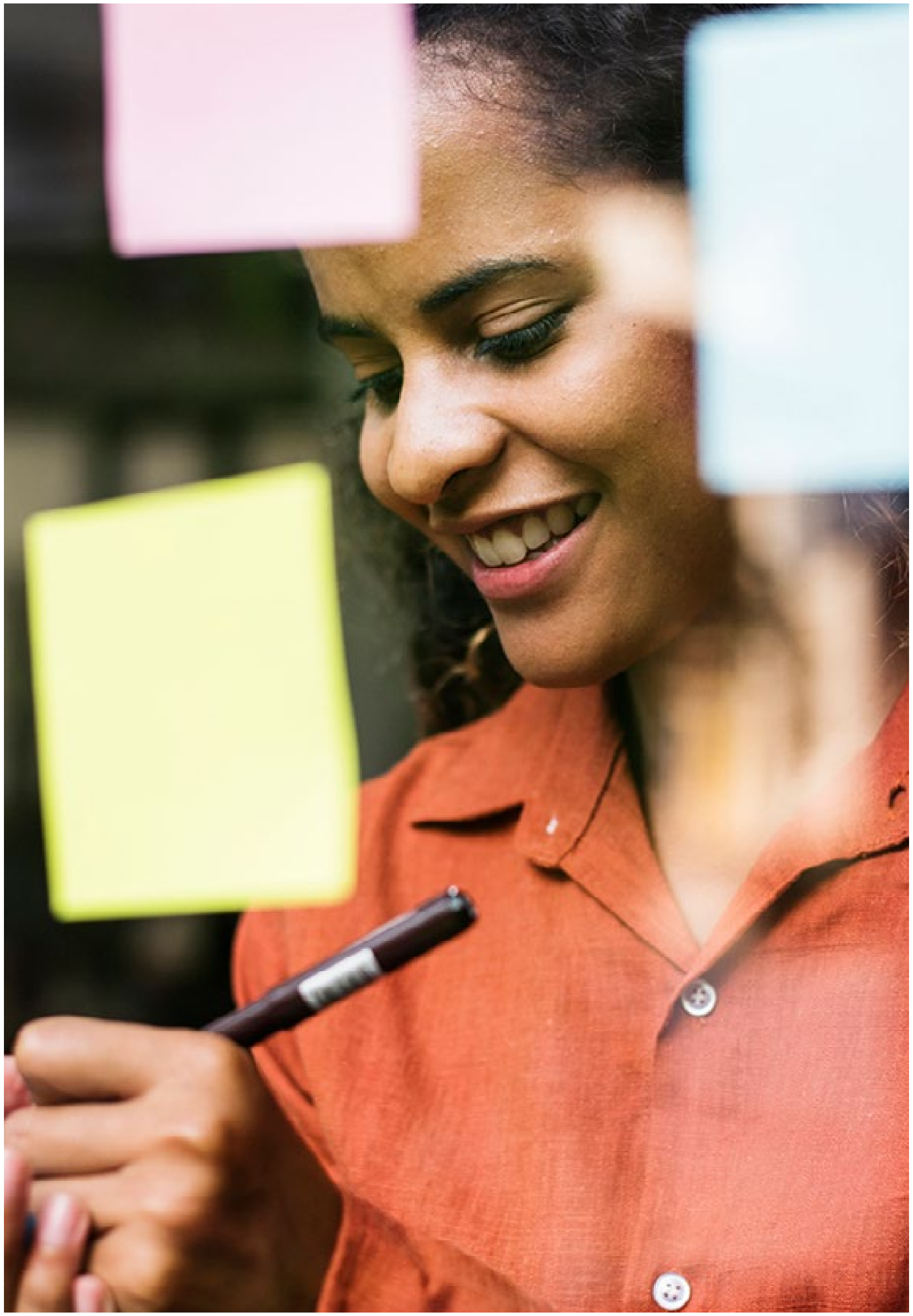
The myriad of risks associated with the provision of private pensions for decades to come is shifting from the employer sponsor to the individual, who now bears all the inflation, investment and longevity risks. These risks can be reduced with some pension products and by means-tested government support available in retirement.

Notwithstanding the different retirement income systems around the world, the significant differences between DB and DC are central to the ongoing communication to plan members, as well as their understanding and decision-making processes in retirement.

DC arrangements need to be more flexible and recognize that the greater heterogeneity between DC pensioners when compared to DB pensioners.

With these differences in mind, we suggest the following principles for the development of retirement products for DC pension plan members who are entitled to receive a lump-sum benefit or pension pot at retirement.

- Members with small pension pots (say, with pots of up to 50% or 75% of the average full-time wage) should be able to take these as a lump-sum benefit. This should not be a requirement, but an option, as it recognizes the relatively significant costs associated with small pensions.
- DC pension plan retirees with pension pots above the minimum should be able to withdraw up to half[24] of their initial pension pot during retirement without significant disincentives. This will provide them with flexibility while also ensuing that at least half of their initial benefit provides regular income.
- At least half[25] of the pension pot should be converted into an income stream that provides regular and relatively stable income, when measured in real terms. The permitted income streams should include an annuity, a pooled arrangement or a programmed withdrawal product, thereby encouraging some flexibility. This income requirement should apply until the total income (including any government pension) reaches the average full-time wage. Once this income threshold is reached, no further requirement is needed because this level of income is sufficient to provide a dignified retirement.



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[24] A lower percentage may be appropriate when no government pension is available.

[25] Some flexibility in this percentage may be appropriate to take into account the pension pot of any partner, the health status of the retiree and whether the retiree is a homeowner.

- The actual design of the income stream should not be prescribed to encourage innovation and competition. However, some form of longevity protection should be required, while also recognizing that equity considerations relating to gender, health and socioeconomic class need to be taken into account with the pooling of longevity risk.
- The development of default retirement products, consistent with the above principles, is strongly recommended, as many pension plan members will not be engaged. A limited range of alternative products (for example, with different investment strategies) is appropriate to recognize the different attitudes toward risk among retirees. Some portability between retirement products is also desirable to retain some competition and choice.
- Financial education, guidance and independent limited financial advice should be available to all pension plan members approaching and during retirement, including the availability of digital tools, which can allow for non-pension assets. The broad availability of education, guidance and advice is particularly necessary given the range of financial literacy within the broader coverage of the population with DC pension plans when compared with many other savings and investment products.
- Reforms relating to the conversion of DC pension pots into retirement products should be introduced gradually. A sudden change does not encourage community confidence as many individuals and households make plans as they approach retirement.

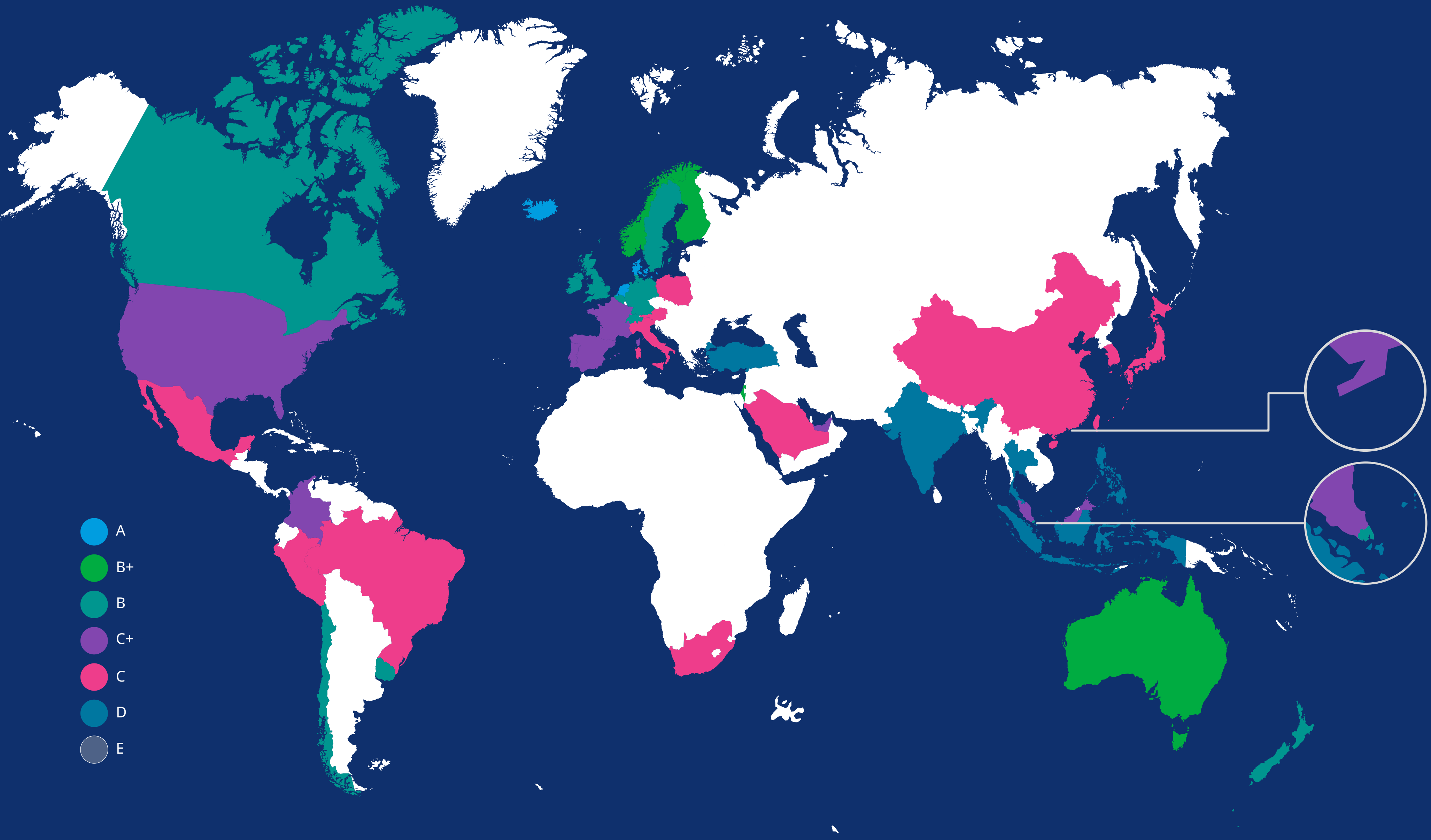
The conversion of DC pension pots into appropriate retirement products is gradually emerging around the world, and there is no single or perfect answer. It is much more complex than the provision of DB pensions for the reasons mentioned above. The global pension industry and policymakers need to recognize these issues and develop a range of flexible products and policies to deliver the best possible outcomes for individuals and households who will enter their retirement years in a wide range of financial situations while also facing significant uncertainties.

05. A brief review of each system

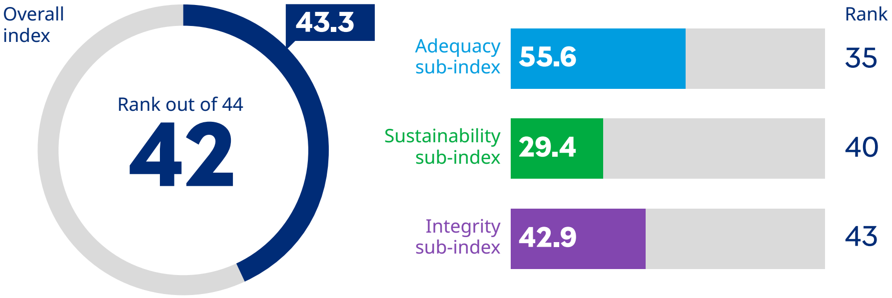
This chapter provides a brief summary of each retirement income system in this study, together with some suggestions that would — if adopted — raise the overall index value for that system. Of course, whether such developments are appropriate in the short term depend on the current social, political and economic situation. When relevant, we also make a brief comment about the change in the system's index value from 2021 to 2022.

As detailed in Chapter 3, many of these changes were due to the review of the Index and updated data from the OECD and the United Nations.

Figure 7. Global grades



Argentina



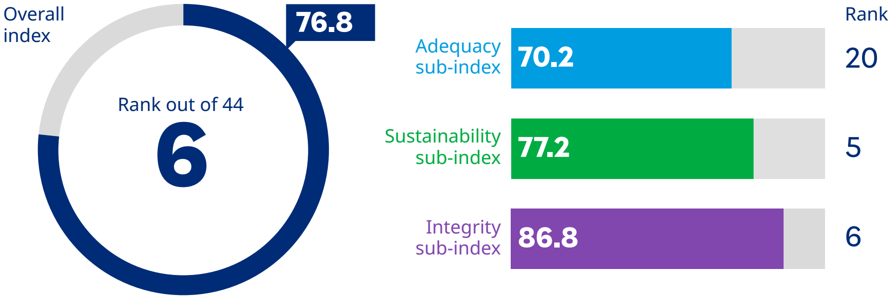
Argentina's retirement income system is composed of a pay-as-you-go social security system (comprising a basic pension and an earnings-related benefit) together with voluntary occupational corporate and individual pension plans that may be offered through employer book reserves, insurance companies or pension trusts.

The overall index value for the Argentinian system could be increased by:

- Increasing coverage of employees in occupational pension schemes through automatic membership or enrollment, thereby increasing the level of contributions and assets
- Introducing a minimum level of mandatory contributions into a retirement savings fund
- Introducing a minimum age to access benefits from private pension plans
- Improving the regulatory requirements for the private pension system

The Argentinian index value increased from 41.5 in 2021 to 43.3 in 2022, primarily due to the revised scoring for the minimum pension and increased private pension coverage.

Australia



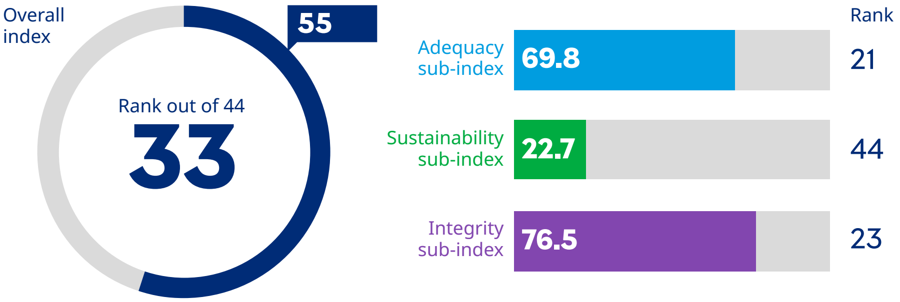
Australia's retirement income system comprises a means-tested age pension (paid from general government revenue); a mandatory employer contribution paid into private-sector arrangements (mainly DC plans); and additional voluntary contributions from employers, employees or the self-employed paid into private-sector plans.

The overall index value for the Australian system could be increased by:

- Moderating the assets test on the means-tested age pension to increase the net replacement rate for average-income earners
- Introducing a requirement that part of the retirement benefit be taken as an income stream in most circumstances
- Introducing a government contribution to all primary carers in the first year of a child's life
- Introducing a requirement to show benefit projections on members' annual statements

The Australian index value increased from 75.0 in 2021 to 76.8 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Austria



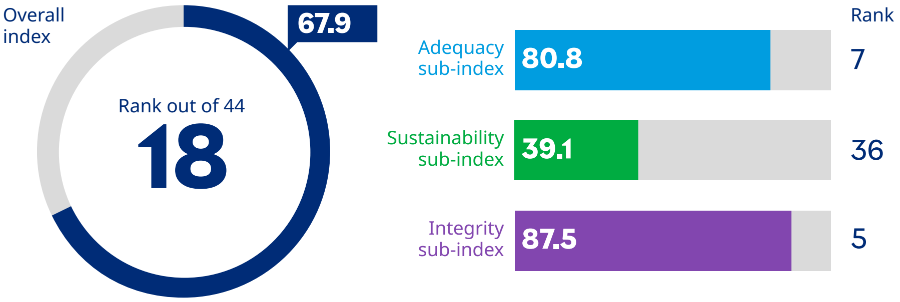
Austria's retirement income system consists of a DB public pension scheme with an income-tested top-up for low-income pensioners and voluntary private pension plans.

The overall index value for the Austrian system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Introducing a minimum access age so the benefits from private pension plans are preserved for retirement purposes
- Increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets (which could be done by collective bargaining agreements or tax-effective regulation)
- Introducing arrangements to protect the pension interests of both parties in a divorce
- Increasing the labor force participation rate at older ages

The Austrian index value increased from 53.0 in 2021 to 55.0 in 2022, primarily due to the revised scoring for the minimum pension.

Belgium



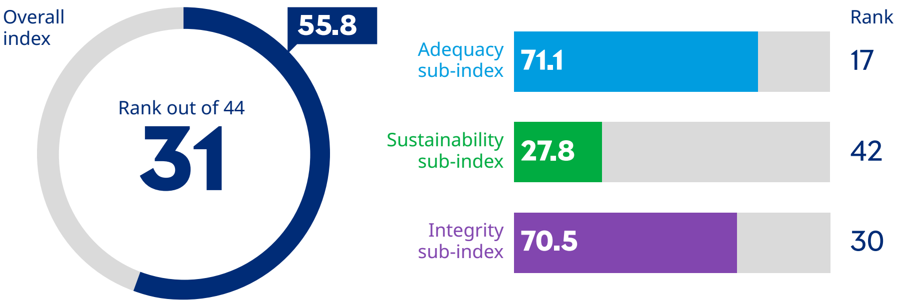
Belgium's retirement income system comprises public, occupational and private pension schemes. The public pension scheme is earnings-related with a means-tested safety net. Voluntary private pension arrangements are typically operated by insurance companies.

The overall index value for the Belgian system could be increased by:

- Introducing a requirement that part of the retirement benefit must be taken as an income stream
- Increasing coverage of private pension arrangements, thereby increasing the level of assets over time
- Introducing a minimum level of mandatory contributions into a retirement savings fund
- Introducing greater flexibility relating to pension design as individuals transition to retirement
- Increasing the labor force participation rate at older ages as life expectancies rise

The Belgian index value increased from 64.5 in 2021 to 67.9 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Brazil



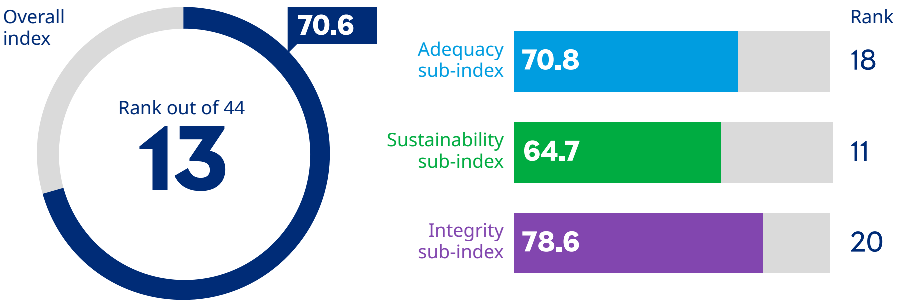
Brazil's retirement income system comprises a pay-as-you-go social security system and voluntary occupational corporate and individual pension plans. These plans may be offered through insurance companies or pension trusts.

The overall index value for the Brazilian system could be increased by:

- Increasing coverage of employees in occupational pension schemes through automatic membership or enrollment, thereby increasing the level of contributions and assets
- Introducing a minimum level of mandatory contributions into a retirement savings fund
- Introducing a minimum access age so the benefits are preserved for retirement purposes, mainly for the pension plans implemented in insurance companies
- Enabling individuals to retire gradually while receiving a part pension

The Brazilian index value increased slightly from 54.7 in 2021 to 55.8 in 2022, primarily due to the revised scoring relating to assets and the updated demographic data.

Canada



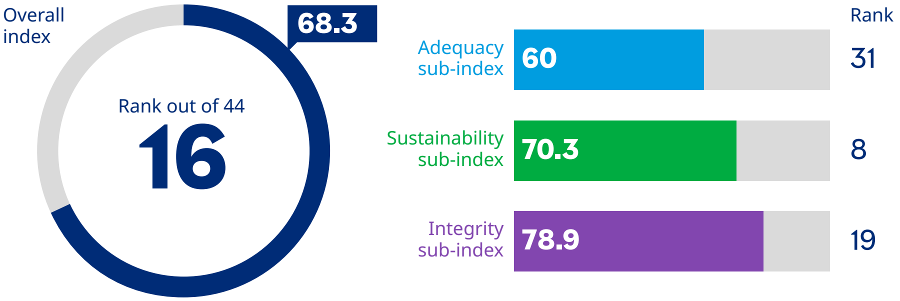
Canada's retirement income system comprises a universal flat-rate pension supported by a means-tested income supplement; an earnings-related pension based on revalued lifetime earnings, provided through a national program; voluntary occupational pension schemes (many of which are DB schemes); and voluntary individual retirement savings plans.

The overall index value for the Canadian system could be increased by:

- Increasing the coverage of employees in occupational pension schemes through the development of an attractive product for those without an employer-sponsored scheme
- Introducing a minimum access age for all pension products
- Increasing the level of household savings and reducing the level of household debt
- Reducing government debt as a percentage of GDP
- Increasing the labor force participation rate at older ages as life expectancies rise
- Increasing flexibility in the retirement benefits provided

The Canadian index value increased slightly from 69.8 in 2020 to 70.6 in 2022 due to several minor changes.

Chile



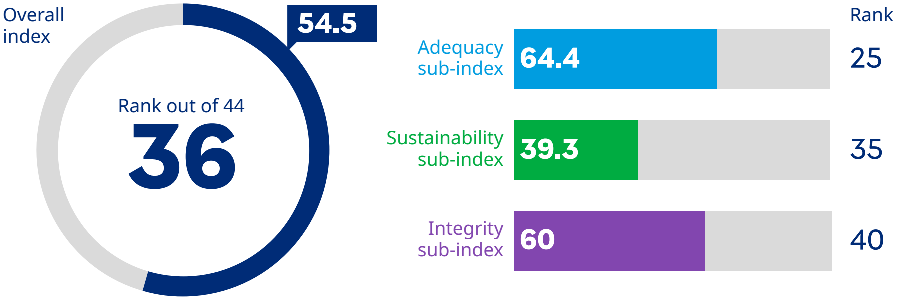
Chile's retirement income system comprises means-tested social assistance; a mandatory privately managed DC system based on employee contributions, with individual accounts managed by a small number of Administradoras de Fondos de Pensiones (AFPs); and a framework for supplementary plans sponsored by employers (the APVC schemes).

The overall index value for the Chilean system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Increasing the retirement age for women
- Introducing a minimum age for access to retirement benefits from private pensions
- Requiring annual reports of pension plans to be made available to all members

The Chilean index value increased from 67.0 in 2021 to 68.3 in 2022, primarily due to the revised scoring discussed in Chapter 3.

China



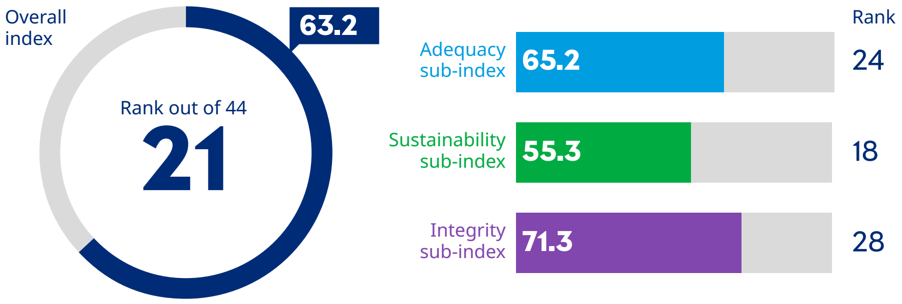
China's retirement income system comprises an urban system and a rural social system, as well as systems for rural migrants and public-sector workers. The urban and rural systems have a pay-as-you-go basic pension consisting of a pooled account (from employer contributions or fiscal expenditure) and funded individual accounts (from employee contributions). Supplementary plans are also provided by some employers, particularly in urban areas. A voluntary pillar three private pension arrangement was unveiled in 2022.

The overall index value for the Chinese system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Continuing to increase the coverage of workers in pension systems
- Introducing a requirement that part of the supplementary retirement benefit must be taken as an income stream
- Increasing the state pension age over time
- Offering more investment options to members and thereby permitting greater exposure to growth assets

The Chinese index value decreased slightly from 55.1 in 2021 to 54.5 in 2022, primarily due to the updated demographic data.

Colombia



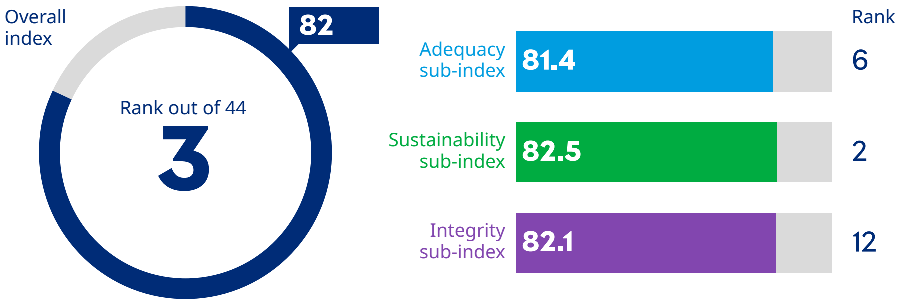
Colombia's retirement income system comprises a means-tested pension paid to the needy and two parallel and mutually exclusive pension systems. The first is a pay-as-you-go DB plan managed by a public-sector entity, and the second is a system of funded individual accounts offered through qualified financial institutions in the private sector. Individuals can make additional voluntary contributions to increase retirement benefits and/or reduce taxes. An employee elects to join one system, although they can opt to change later, within certain restrictions. The employer and employee contribution rates are the same for both systems, but retirement benefits differ between systems (DB versus individual accounts).

The overall index for the Colombian system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Raising the level of household saving
- Increasing coverage of employees in the pension schemes, thereby gradually increasing the level of assets
- Raising the state pension age over time, particularly for females
- Introducing arrangements to protect the pension interests of both parties in a divorce

The Colombian index value increased from 58.4 in 2021 to 63.2 in 2022, primarily due to increased net replacement rates and higher private pension coverage.

Denmark



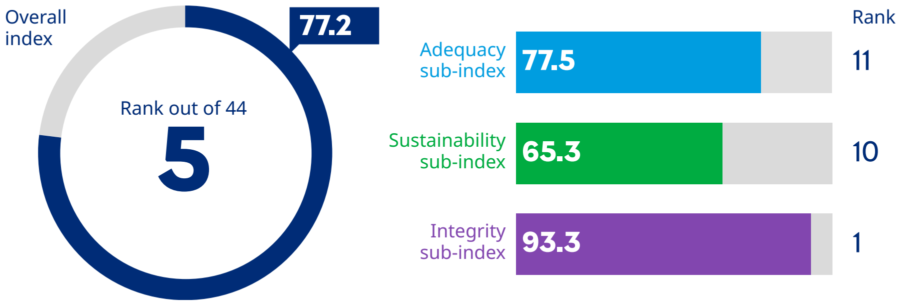
Denmark's retirement income system comprises a public pension scheme that provides a basic pension, a means-tested supplementary pension benefit, a fully funded DC scheme providing lifelong pensions and mandatory occupational DC schemes.

The overall index value for the Danish system could be increased by:

- Raising the level of household saving and reducing the level of household debt
- Introducing arrangements to protect the interests of both parties in a divorce
- Introducing a requirement for all pension plans to produce an annual report available to all members
- Introducing a requirement to show benefit projections on members' annual statements

The Danish index value remained unchanged at 82.0.

Finland



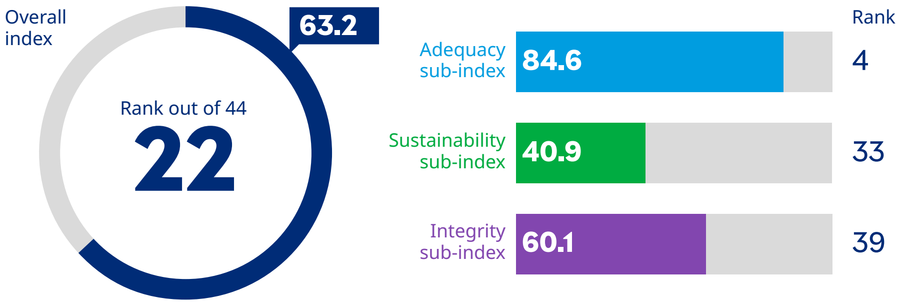
Finland's retirement income system consists of a basic state pension, which is income-tested, and a range of statutory earnings-related schemes.

The overall index value for the Finnish system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Raising the level of household saving and reducing the level of household debt
- Continuing to raise the level of mandatory contributions set aside for the future
- Introducing arrangements to protect the pension interests of both parties in a divorce

The Finnish index value increased from 73.3 in 2021 to 77.2 in 2022, primarily due to an increase in social assistance and the revised scoring discussed in Chapter 3.

France



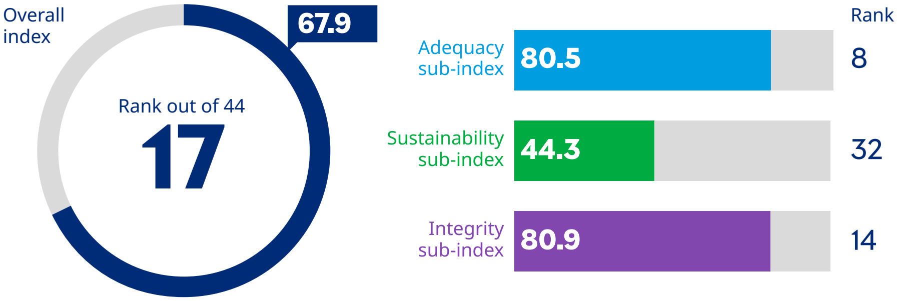
France's retirement income system comprises an earnings-related public pension with a minimum pension and a supplementary retirement pension scheme for private-sector workers (known as AGIRC-ARRCO). France also has voluntary occupational plans.

The overall index value for the French system could be increased by:

- Increasing the level of funded contributions, thereby increasing the level of assets over time
- Increasing the state pension age
- Increasing the labor force participation rate at older ages as life expectancies rise
- Improving the regulatory requirements for the private pension system

The French index value increased from 60.5 in 2021 to 63.2 in 2022, primarily due to the revised scoring as discussed in Chapter 3.

Germany



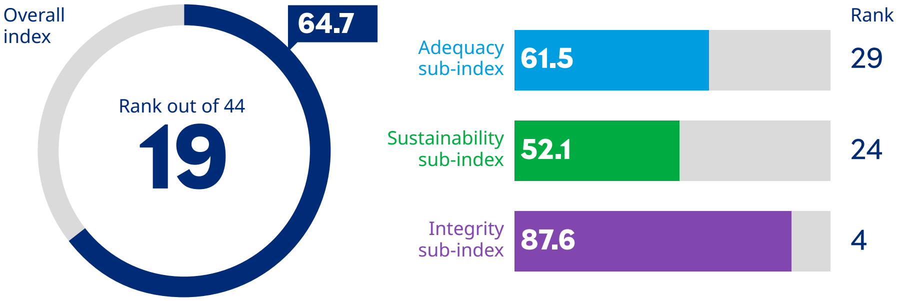
Germany's retirement income system comprises an earnings-related pay-as-you-go system based on the number of pension points earned during an individual's career; a means-tested safety net for low-income pensioners; and supplementary pension plans, which are common among major employers. These plans typically adopt either a book-reserving approach, with or without segregated assets, or an insured pensions approach.

The overall index value for the German system could be increased by:

- Increasing the minimum pension for low-income pensioners
- Increasing the level of funded contributions in private pension plans, thereby increasing the level of assets over time
- Increasing coverage of employees in occupational pension plans

The German index value remained unchanged at 67.9.

Hong Kong SAR, China



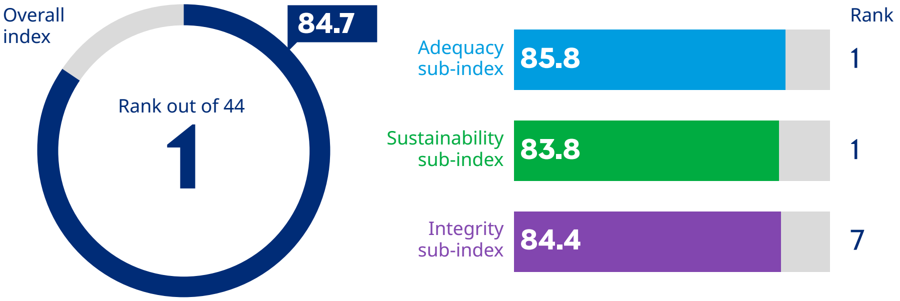
Hong Kong's retirement income system consists of mandatory provident funds (MPFs) into which employers, most employees and the self-employed are each required to make mandatory contributions of 5% of relevant income, subject to minimum and maximum relevant-income levels. Scheme members who have reached the age of 65, or who have reached the age of 60 and have decided to retire early, can choose to either withdraw their MPF benefits as a lump sum or in instalments or retain all their MPF benefits in their accounts for continuous investment.

The overall index value for the Hong Kong SAR system could be increased by:

- Introducing a requirement that part of the retirement benefit must be taken as an income stream
- Increasing the minimum pension for low-income pensioners
- Increasing the level of household savings and reducing the level of household debt
- Increasing the labor force participation rate at older ages as life expectancies rise
- Introducing requirements to protect all the pension interests of both parties in a divorce

The index value for Hong Kong SAR increased from 61.8 in 2021 to 64.7 in 2022, primarily due to the revised scoring discussed in Chapter 3 and increases in the net replacement rates.

Iceland



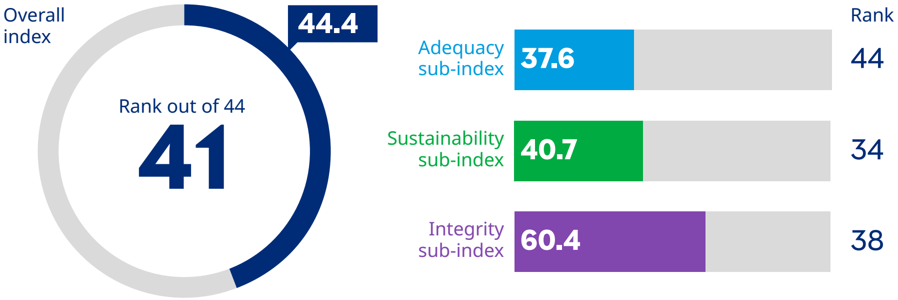
Iceland's retirement income system comprises a basic state pension and a pension supplement (both of which are income-tested according to different rules); mandatory occupational private pension schemes with contributions from both employers and employees; and voluntary personal pensions.

The overall index value for the Icelandic system could be increased by:

- Reducing the level of household debt as a percentage of GDP
- Introducing arrangements to protect all the pension interests of both parties in a divorce
- Reducing government debt as a percentage of GDP

The index value for Iceland increased slightly from 84.2 in 2021 to 84.7 in 2022, primarily due to an increase in the net replacement rates.

India



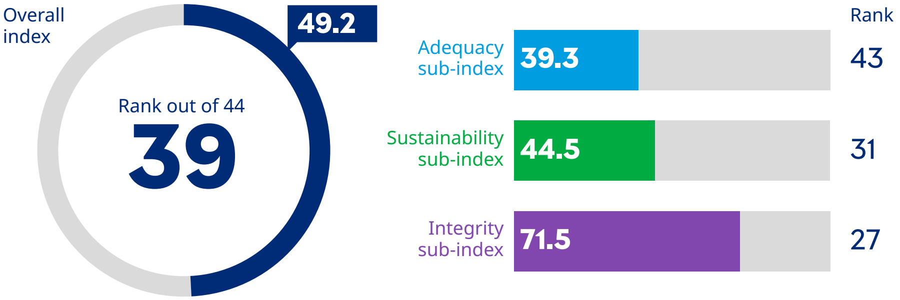
India's retirement income system comprises an earnings-related employee pension scheme, a DC employee provident fund (EPFO) and supplementary employer-managed pension schemes, which are largely DC in nature. Government schemes have been launched as part of the universal social security program aimed at benefiting the unorganized sector.

The overall index value for the Indian system could be increased by:

- Introducing a minimum level of support for the poorest aged individuals
- Increasing coverage of pension arrangements for the unorganized working class
- Introducing a minimum access age so it is clear that benefits are preserved for retirement purposes
- Improving the regulatory requirements for the private pension system

The Indian index value increased from 43.3 in 2021 to 44.4 in 2022, primarily due to an increase in the net replacement rates and the revised scoring discussed in Chapter 3.

Indonesia



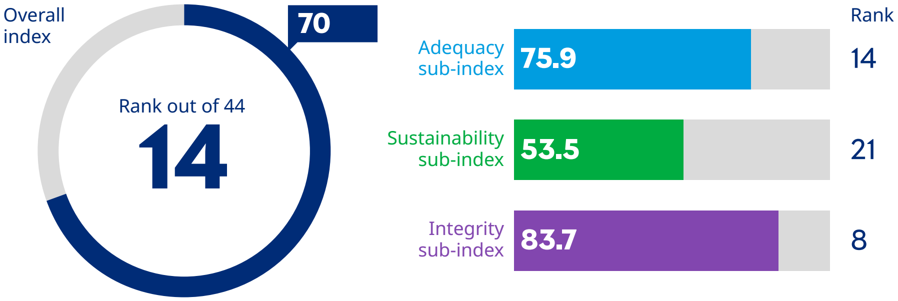
Indonesia's retirement income system comprises earnings-related civil service pensions, mandatory DC plans for private-sector workers and voluntary DC plans for other workers. The national pension scheme is a DB scheme funded through employer and employee contributions.

The overall index value for the Indonesian system could be increased by:

- Introducing a minimum level of support for the poorest aged individuals
- Increasing coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Improving the regulatory requirements for the private pension system
- Improving the required level of communication to members of pension arrangements

The Indonesian index value decreased from 50.4 in 2020 to 49.2 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Ireland



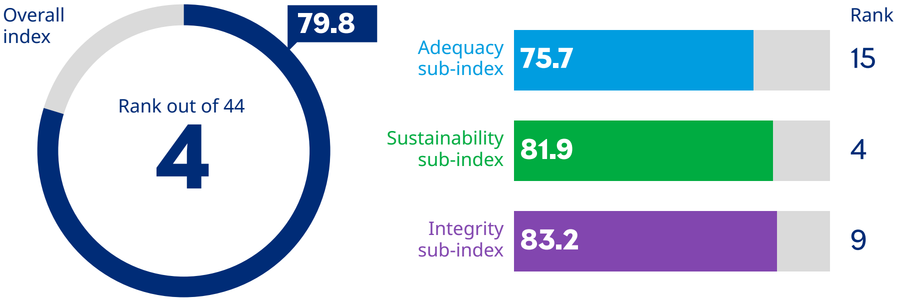
Ireland's retirement income system comprises a flat-rate basic social security pension and a means-tested benefit for those without sufficient social insurance contributions. Voluntary occupational pension schemes and personal pension schemes provide supplementary income in retirement and cover about 66% of the working population.

The overall index value for the Irish system could be increased by:

- Continuing to increase coverage of employees in occupational pension schemes by introducing the new mandatory enrollment arrangements, thereby increasing the level of contributions and assets
- Implementing government plans to introduce a minimum level of mandatory contributions into a retirement savings fund, thereby increasing the level of assets
- Increasing the labor force participation rate at older ages as life expectancies rise
- Providing greater protection of members' accrued benefits

The Irish index value increased from 68.3 in 2021 to 70.0 in 2022, primarily due the revised scoring discussed in Chapter 3 and an increase in the net replacement rates.

Israel



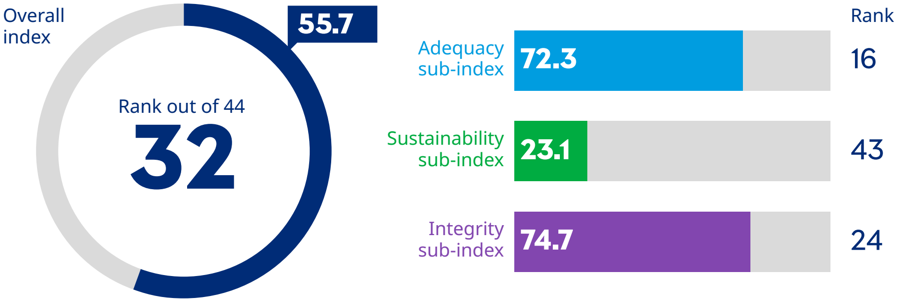
Israel's retirement income system comprises a universal state pension with an income-tested supplement and private pensions with compulsory employer and employee contributions. Since 2008, there has been a requirement to take a minimum annuity.

The overall index value for the Israeli system could be increased by:

- Increasing the level of assets held in funded pension arrangements
- Reducing government debt as a percentage of GDP
- Improving protection for members of private pension plans in the event of mismanagement or fraud
- Introducing a carer's pension credit for those caring for young children

The Israeli index value increased from 77.1 in 2021 to 79.8 in 2022, primarily due to an increase in the level of assets and the revised scoring discussed in Chapter 3.

Italy



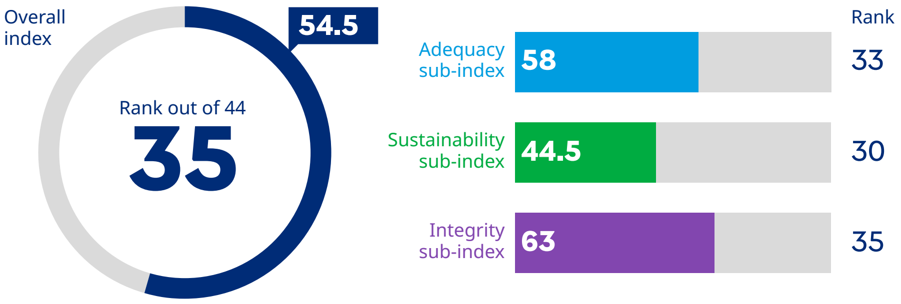
Italy's retirement income system comprises a notional DC scheme for workers and a minimum means-tested social assistance benefit. Voluntary supplementary occupational schemes also exist; coverage is low but gradually increasing.

The overall index value for the Italian system could be increased by:

- Increasing coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Continuing to raise the labor force participation rate at older ages as life expectancies rise
- Restricting the availability of benefits before retirement (other than bridge pensions)
- Reducing government debt and government spending on pensions as a percentage of GDP

The Italian index value increased from 53.4 in 2021 to 55.7 in 2022, primarily due to the revised scoring discussed in Chapter 3 and a higher base pension.

Japan



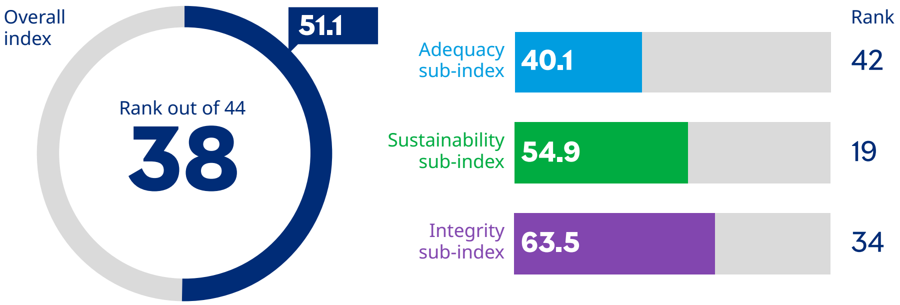
Japan's retirement income system comprises a flat-rate basic pension, an earnings-related public pension and voluntary private pension plans.

The overall index value for the Japanese system could be increased by:

- Continuing to increase the level of private pension coverage and thereby increase the level of contributions and pension plan assets
- Introducing an encouragement that part of the retirement benefit must be taken as an income stream, such as an annuity payment
- Announcing a further increase in the state pension age as life expectancies rise
- Reducing the level of government debt as a percentage of GDP

The Japanese index value increased from 49.8 in 2021 to 54.5 in 2022, primarily due to the revised scoring discussed in Chapter 3 and a revised approach relating to the measurement of pension plan coverage.

Korea (South)



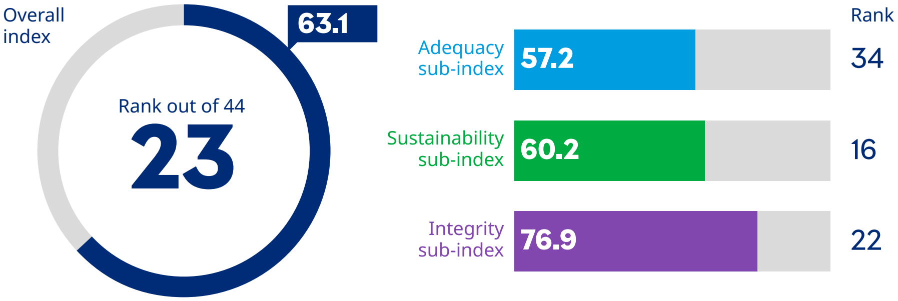
Korea's retirement income system comprises a public earnings-related pension scheme with a progressive formula, based on both individual earnings and the average earnings of the insured as a whole, and statutory private pension plans.

The overall index value for the Korean system could be increased by:

- Improving the adoption of ERSA scheme plans
- Improving the level of support provided to the poorest pensioners
- Introducing a requirement that part of the retirement benefit from private pension arrangements be taken as an income stream
- Increasing the level of funded contributions, thereby increasing the level of assets over time
- Improving the governance and communication requirements for the private pension system

The Korean index value increased from 48.3 in 2021 to 51.1 in 2022, primarily due to a higher integrity sub-index score and the revised scoring discussed in Chapter 3.

Malaysia



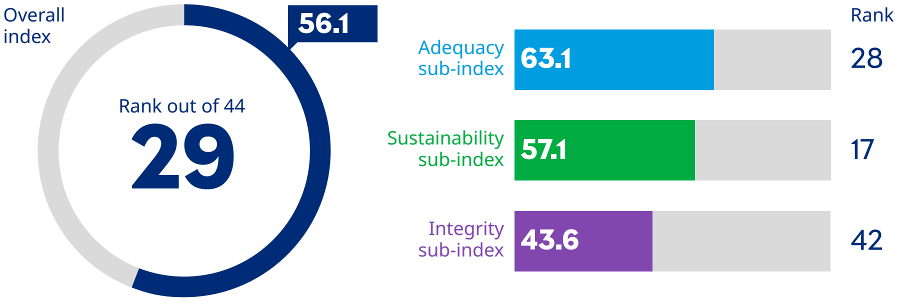
Malaysia's retirement income system is based on the Employee Provident Fund (EPF), which covers all private-sector employees and non-pensionable public-sector employees. Under the EPF, some benefits are available to be withdrawn at any time (under predefined circumstances, including education, home loans or severe ill health), with other benefits preserved for retirement.

The overall index value for the Malaysian system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Raising the level of household saving and lowering the level of household debt
- Introducing a requirement that part of the retirement benefit be taken as an income stream
- Increasing the pension age and the labor force participation rate at older ages as life expectancies rise

The Malaysian index value increased from 59.6 in 2021 to 63.1 in 2022, primarily due to an increase in the net replacement rates and the revised scoring discussed in Chapter 3.

Mexico



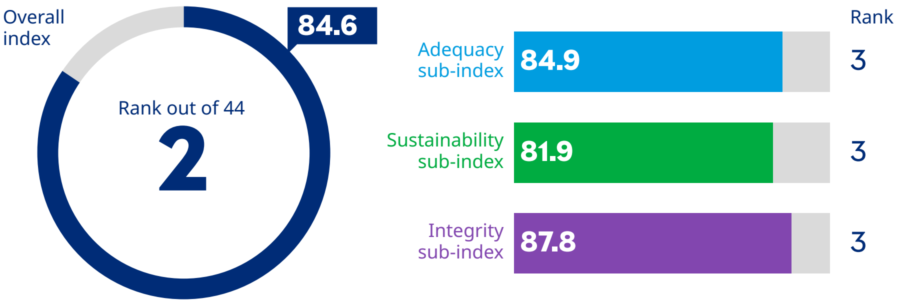
Mexico's retirement income system comprises a social security retirement system with a means-tested age pension and a mandatory and funded DC system that includes a minimum pension and voluntary occupational pension schemes. There is also a universal pension for all Mexicans from age 68.

The overall index value for the Mexican system could be increased by:

- Increasing the level of the pension paid to the poorest aged individuals
- Increasing pension coverage for those in the informal labor market
- Introducing a requirement that part of the retirement benefit from private pension arrangements be taken as an income stream
- Increasing the level of funded contributions, thereby increasing the level of assets over time
- Improving the governance requirements for the private pension system, including the need for minimum levels of funding in DB plans
- Improving the level of communication required to members from pension plans

The Mexican index value increased from 49.0 in 2021 to 56.1 in 2022, primarily due to higher net replacement rates and the revised scoring discussed in Chapter 3.

The Netherlands



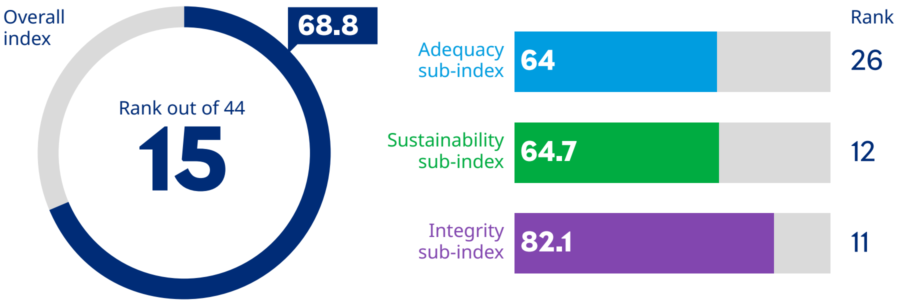
The Netherlands' retirement income system comprises a flat-rate public pension and quasi-mandatory earnings-related occupational pension schemes linked to industrial agreements.

The overall index value for the Dutch system could be increased by:

- Reducing the level of household debt
- Increasing the labor force participation rate at older ages as life expectancies rise
- Introducing a carer's pension credit for those caring for young children

The Dutch index value increased from 83.5 in 2021 to 84.6 in 2022, primarily due to the revised scoring discussed in Chapter 3.

New Zealand



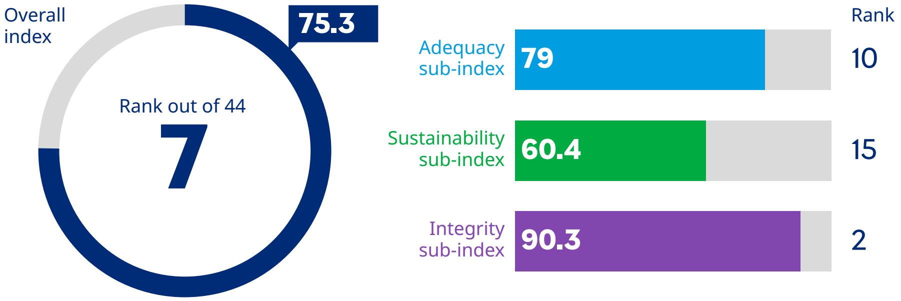
New Zealand's retirement income system comprises a universal public pension, the KiwiSaver DC retirement savings scheme or alternative occupational schemes. KiwiSaver is a voluntary scheme with contributions from the government, employers and members. New employees who are not already members of KiwiSaver are automatically enrolled by their employer and can remain in KiwiSaver unless they elect to opt out within a limited time after joining. KiwiSaver allows all members, once they have been a member for 12 months, to take a break from saving.

The overall index value for the New Zealand system could be increased by:

- Increasing the level of KiwiSaver contributions, thereby increasing the level of assets set aside for the future
- Raising the level of household savings and reducing the level of household debt
- Introducing a carer's pension credit or contribution for those caring for young children

The New Zealand index value increased from 67.4 in 2021 to 68.8 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Norway



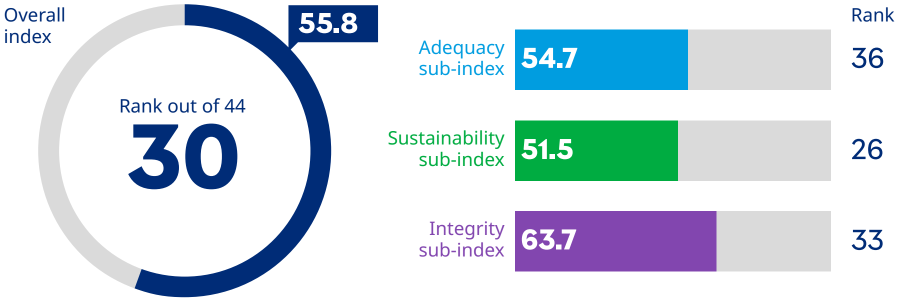
Norway's retirement income system comprises an earnings-related social security pension with a minimum pension level and mandatory occupational pension plans. Many voluntary arrangements also provide additional benefits.

The overall index value for the Norwegian system could be increased by:

- Raising the level of household saving and reducing the level of household debt
- Increasing the level of mandatory contributions to the DC plans, thereby raising the level of pension assets
- Introducing the option for voluntary contributions with tax relief for members of DC plans
- Introducing arrangements to protect all the pension interests of both parties in a divorce

The Norwegian index value increased slightly from 75.2 in 2021 to 75.3 in 2022, primarily due to some minor changes.

Peru



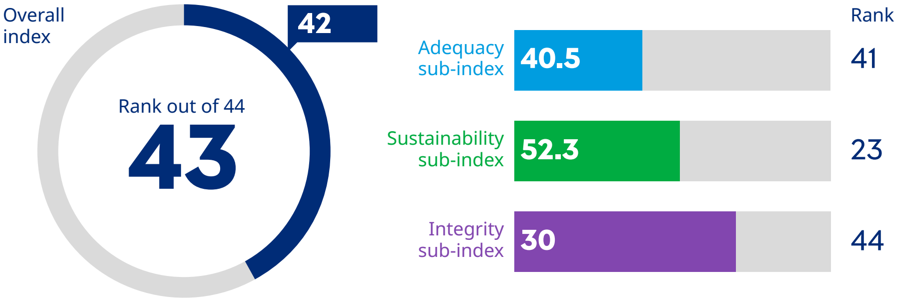
Peru's retirement income system comprises a means-tested pension paid to the needy and two parallel and mutually exclusive pension systems. People are able to choose at the time of enrollment between a pay-as-you-go DB public system and a fully funded DC system managed by the private sector. Individuals under the DB scheme can change; otherwise, it is an irreversible decision. Employers don't contribute to the system — all contributions are made by employees.

The overall index value for the Peruvian system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Increasing coverage of employees in occupational pension schemes (for example, by promoting tax benefits or flexible investment rules), thereby increasing the level of contributions and assets
- Reducing the access to pension assets before retirement
- Introducing required disclosure of management fees
- Enabling individuals to retire gradually while receiving a part pension

The Peruvian index value increased slightly from 55.0 in 2021 to 55.8 in 2022, primarily due to some corrected labor force participation data.

The Philippines



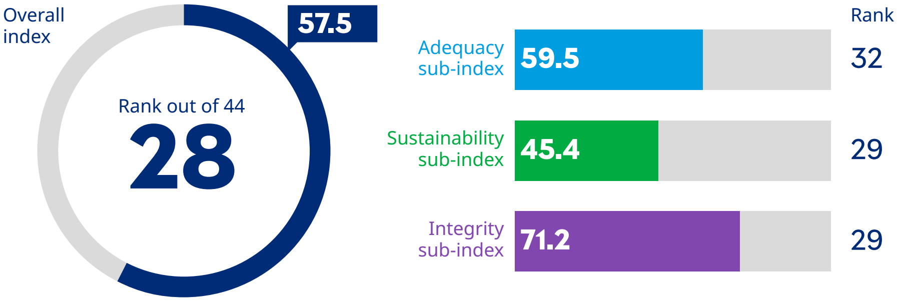
The Philippines retirement income system comprises a small basic pension and an earnings-related social security system. Members can receive a lifetime pension if they have contributed for a minimum of 120 months. If this requirement is not met, the retiree will receive a lump sum upon retirement equal to the member and employer contributions, plus interest.

The overall index value for the Philippines system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Increasing coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Setting aside funds in the public system for the future, thereby reducing reliance on the pay-as-you-go system
- Introducing non-cash-out options for retirement plan proceeds to be preserved for retirement purposes
- Improving the governance requirements for the private pension system

The Philippines index value decreased slightly from 42.7 in 2021 to 42.0 in 2022, primarily due to some minor adjustments.

Poland



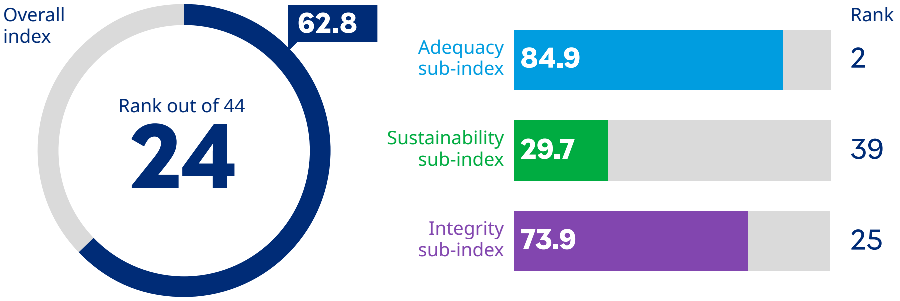
Poland's retirement income system comprises a minimum public pension and an earnings-related system with notional accounts. The overall system is in transition from a pay-as-you-go system to a funded approach. There are also mandatory employer-sponsored pension plans (with voluntary employee contributions) and individual pension accounts.

The overall index value for the Polish system could be increased by:

- Increasing employee participation in the private pension system, thereby increasing the levels contributions and assets over time
- Raising the minimum level of support available to the poorest pensioners
- Raising the level of household saving
- Increasing the labor force participation rate at older ages as life expectancies rise

The Polish index value increased from 55.2 in 2021 to 57.5 in 2022, primarily due to increased pension coverage and a higher integrity sub-index score.

Portugal



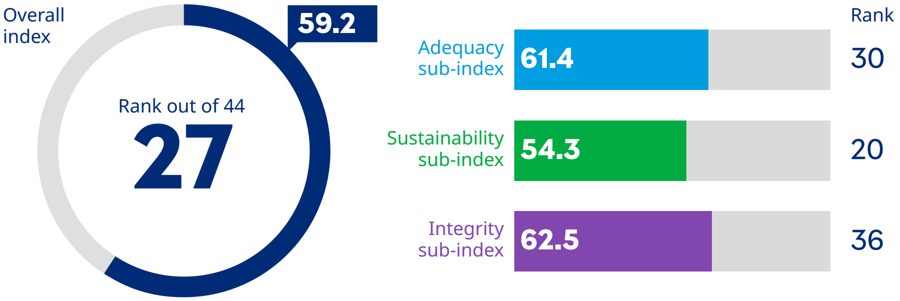
Portugal's retirement income system comprises an earnings-related public pension with an income-tested safety net. There are also voluntary personal and occupational pension schemes, but coverage is low.

The overall index value for the Portuguese system could be increased by:

- Increasing the coverage of private pension plans, thereby increasing the level of contributions and the level of assets set aside for the future
- Reducing the level of government debt
- Increasing the labor force participation rate at older ages as life expectancies rise

The Portuguese index value for 2022 is 62.8.

Saudi Arabia



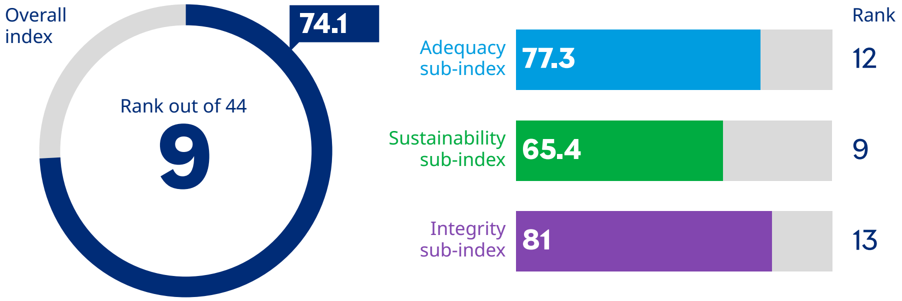
Saudi Arabia's retirement income system comprises an earnings-related pension or an earnings-related lump-sum retirement benefit for individuals who do not fulfil any of the retirement conditions.

The overall index value for the Saudi system could be increased by:

- Increasing the minimum level of support provided to the poorest aged individuals
- Further increasing the state pension age over time
- Increasing the labor force participation rate at older ages as life expectancies rise
- Improving the required level of communication to members from private pension arrangements

The Saudi index value increased from 58.1 in 2021 to 59.2 in 2022, primarily due to increased labor force participation at older ages and the revised scoring discussed in Chapter 3.

Singapore



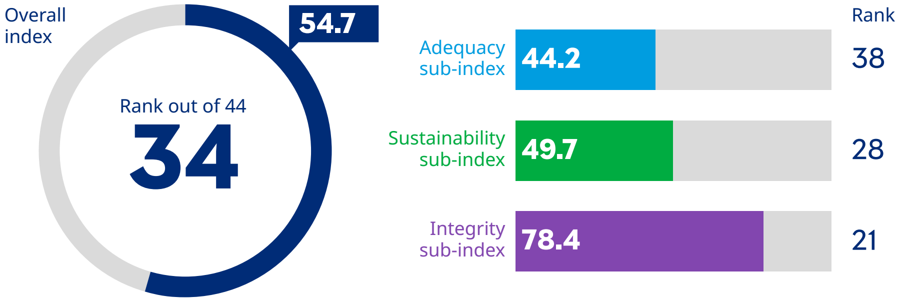
Singapore's retirement income system is based on the Central Provident Fund (CPF), which covers all employed Singaporean residents. Under the CPF, some benefits are available to be withdrawn at any time for specified housing and medical expenses, while other benefits are preserved for retirement. A prescribed minimum amount is required to be drawn down at retirement age in the form of a lifetime income stream (through CPF Life).

The overall index value for the Singaporean system could be increased by:

- Reducing the barriers to establishing tax-approved group corporate retirement plans
- Opening up CPF to non-residents (who make up a significant percentage of the labor force)
- Increasing the age at which CPF members can access their savings set aside for retirement as life expectancies rise
- Improving the level of communication provided to CPF members

The Singaporean index value increased from 70.7 in 2021 to 74.1 in 2022, primarily due to the revised scoring discussed in Chapter 3 and an increase in the net replacement rates.

South Africa



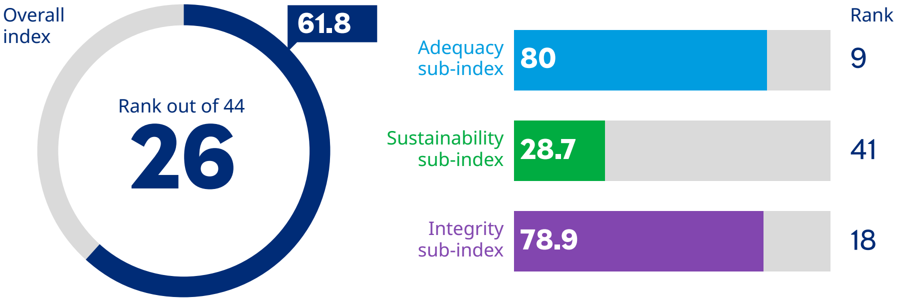
South Africa's retirement income system comprises a means-tested public pension and tax-supported voluntary occupational pension schemes.

The overall index value for the South African system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Increasing the coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Introducing a minimum level of mandatory contributions into a retirement savings fund
- Introducing preservation requirements preventing members from withdrawing funds from occupational pension schemes prior to retirement

The South African index value increased from 53.6 in 2021 to 54.7 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Spain



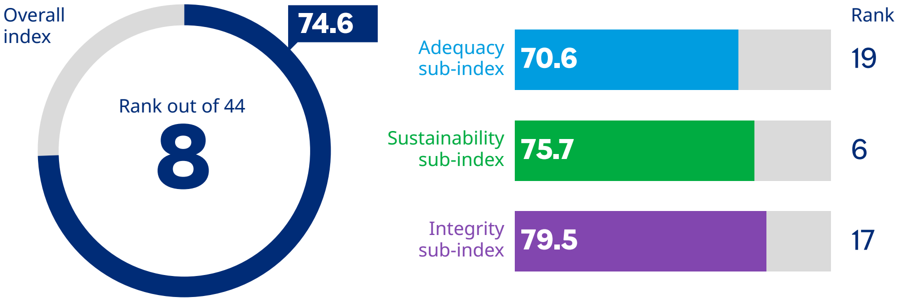
Spain's retirement income system comprises an earnings-related public pension system and a minimum means-tested social assistance benefit. Voluntary personal and occupational pension schemes exist, but coverage is low. New legislation was passed in 2022 with the aim of promoting occupational pension coverage.

The overall index value for the Spanish system could be increased by:

- Increasing the minimum level of support provided to the poorest aged individuals
- Increasing coverage of employees in occupational pension schemes through automatic membership or enrollment, thereby increasing the level of contributions and assets
- Continuing to increase the labor force participation rate at older ages as life expectancies rise

The Spanish index value increased from 58.6 in 2021 to 61.8 in 2022, primarily due to an increase in the base pension and the revised scoring discussed in Chapter 3.

Sweden



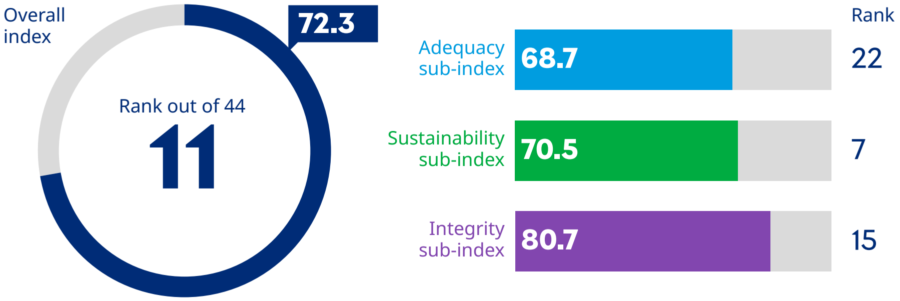
Sweden's national retirement income system comprises a pay-as-you-go, earnings-related system with notional accounts and a mandatory DC pension system. The overall system is in transition from a pay-as-you-go system to a funded approach. There is also an income-tested top-up benefit that provides a minimum guaranteed pension. Occupational pension schemes also have broad coverage.

The overall index value for the Swedish system could be increased by:

- Further increasing the state pension age to better reflect increasing life expectancies
- Ensuring all employees can make contributions into employer-sponsored plans
- Reintroducing tax incentives for individual contributions
- Introducing arrangements to protect all the pension interests of both parties in a divorce

The Swedish index value increased from 72.9 in 2021 to 74.6 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Switzerland



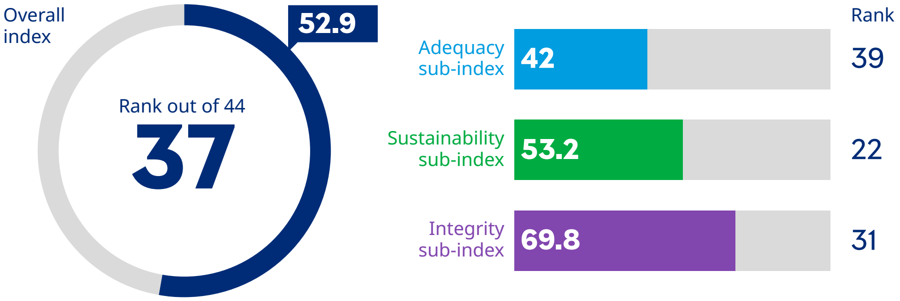
Switzerland's retirement income system comprises an earnings-related public pension with a minimum pension, a mandatory occupational pension system for which the contribution rates increase with age, and voluntary pension plans.

The overall index value for the Swiss system could be increased by:

- Introducing a requirement that part of the retirement benefit must be taken as an income stream
- Increasing the state pension age over time as life expectancies rise
- Increasing the rate of home ownership
- Improving the governance requirements for private pension plans

The Swiss index value increased from 70.0 in 2021 to 72.3 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Taiwan



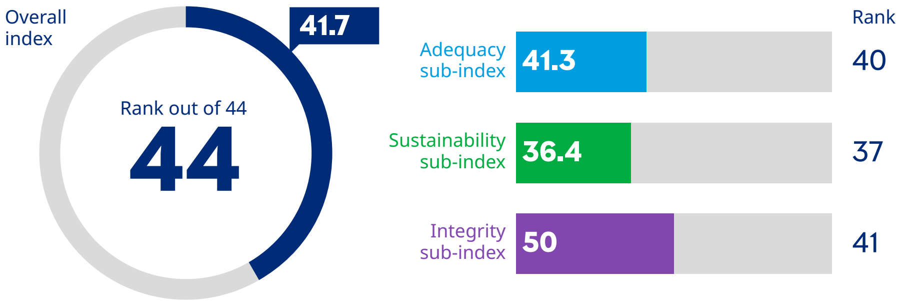
Taiwan's retirement income system consists of a national labor pension scheme whereby the employer contributes 6% or more of a worker's monthly wage into an individual pension account overseen by the Bureau of Labor Insurance. Ownership of this pension account lies with the worker. Upon reaching 60 years of age, a worker may apply directly to the Bureau of Labor Insurance to receive the principal and investment earnings.

The overall index value for the Taiwanese system could be increased by:

- Increasing the minimum level of support for the poorest aged individuals
- Introducing a requirement that part of the retirement benefit must be taken as an income stream
- Introducing a requirement to ensure benefits in all private pension plans are preserved until age 60
- Increasing the labor force participation rate at older ages as life expectancies rise

The Taiwanese index value increased from 51.8 in 2021 to 52.9 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Thailand



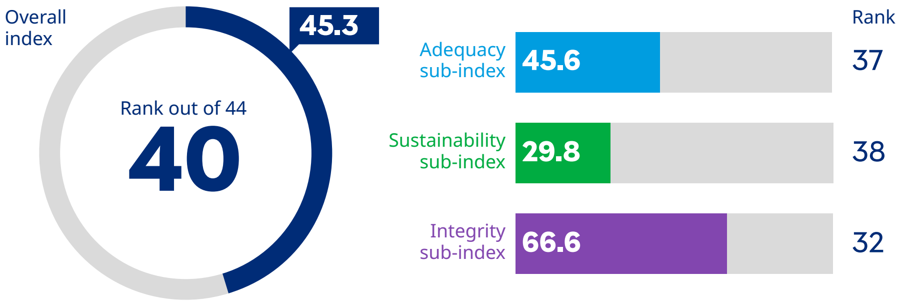
Thailand's retirement income system comprises an old-age pension, a social security fund for private-sector employees in the formal sectors, voluntary employer-sponsored DC plans and individual savings products.

The overall index value for the Thai system could be increased by:

- Increasing the coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Increasing the minimum level of support for the poorest aged individuals
- Introducing a requirement that part of the retirement benefit from private pension arrangements be taken as an income stream
- Improving the governance requirements for the private pension system

The Thai index value increased from 40.6 in 2021 to 41.7 in 2022, primarily due to higher net replacement rates.

Turkey



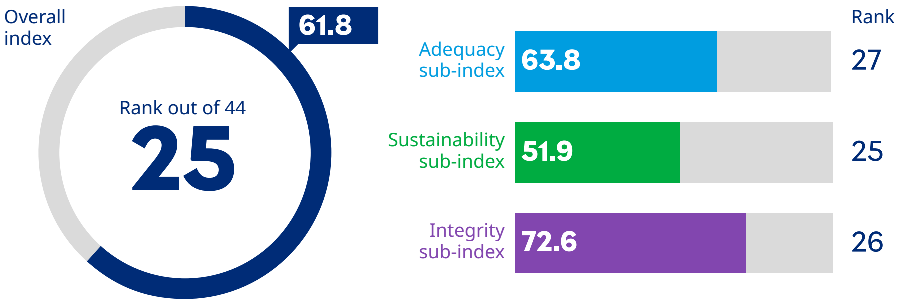
Turkey's retirement income system comprises an income-tested public pension and an earnings-related public scheme. People can join voluntary private pension systems to supplement their income in retirement, but coverage is currently low. There are also auto-enrollment plans for which the employee contribution is mandatory, but with the right to opt out at any time.

The overall index value for the Turkish system could be increased by:

- Increasing the minimum public pension provided to the poorest aged individuals
- Increasing the coverage of employees in occupational pension schemes, thereby increasing the level of contributions and assets
- Introducing a requirement that part of the retirement benefit must be taken as an income stream
- Reducing pre-retirement leakage by limiting the access to private pension funds before retirement
- Increasing the labor force participation rate at older ages as life expectancies rise

The Turkish index value decreased slightly from 45.8 in 2020 to 45.3 in 2022 due to several minor changes.

United Arab Emirates (UAE)



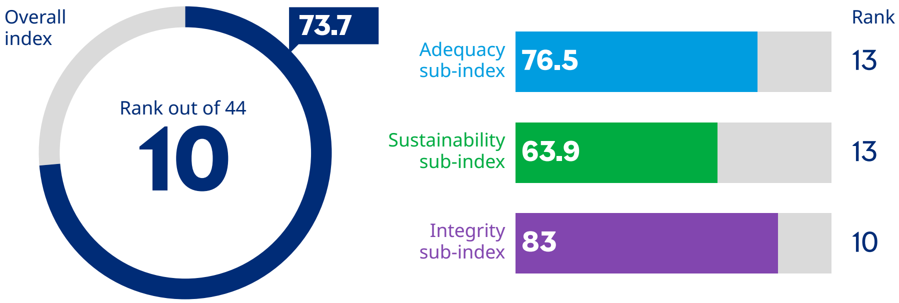
The UAE's retirement income system comprises a minimum state pension and a national employment-based scheme administered by the Abu Dhabi Pension fund for the emirate of Abu Dhabi, the Sharjah Social Security Fund for the emirate of Sharjah, and the General Pensions and Social Security Authority for the rest of the emirates. Employees contribute 5% of their salary, and employers contribute 12.5%–15% of an employee's salary, with benefits guaranteed by the government.

The overall index value for the Emirati system could be increased by:

- Introducing a minimum access age so that the benefits from pension plans are preserved for retirement purposes
- Increasing the level of assets held in private pension arrangements to reduce the reliance on state pensions in the future
- Improving the required level of communication to members from pension arrangements
- Increasing the state pension age as life expectancies rise

The Emirati index value increased from 59.6 in 2021 to 61.8 in 2022, primarily due to the revised scoring discussed in Chapter 3.

United Kingdom (UK)



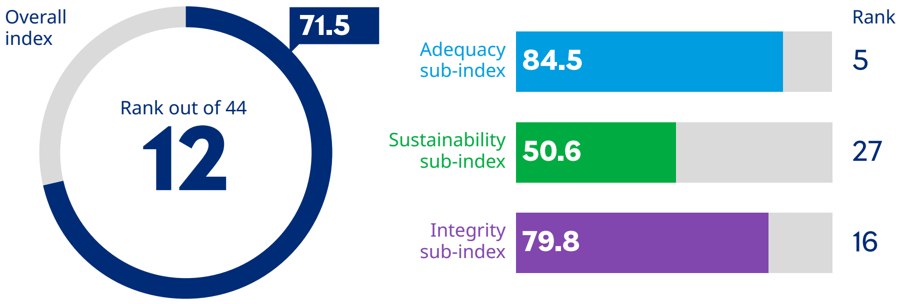
The UK retirement income system comprises a single-tier state pension supported by an income-tested pension credit and supplemented by voluntary occupational and personal pensions. Auto-enrollment now covers all employers, requiring them to enroll eligible employees (who can then choose to opt out) in pension schemes. Minimum contributions are currently 8%.

The overall index value for the UK system could be increased by:

- Restoring the requirement to take part of the retirement benefit as an income stream
- Raising the minimum pension for low-income pensioners
- Further increasing the coverage of employees and the self-employed in private pension schemes
- Increasing contribution levels required under auto-enrollment
- Reducing the level of household debt

The UK index value increased from 71.6 in 2021 to 73.7 in 2022, primarily due to the revised scoring discussed in Chapter 3.

Uruguay



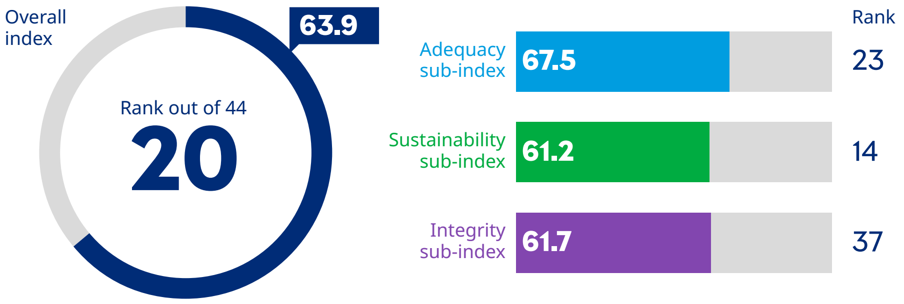
Uruguay's retirement income system comprises a means-tested state pension and mandatory private pension arrangements. Compulsory contributions from employers and employees are paid into both the pay-as-you-go social security system and a private pension fund.

The overall index value for the Uruguayan system could be increased by:

- Increasing the level of individual contributions invested for the future through the private pension arrangements
- Improving the governance requirements for the private pension system
- Increasing the state pension age as life expectancies rise
- Introducing arrangements to protect all the pension interests of both parties in a divorce

The Uruguayan index value increased from 60.7 in 2021 to 71.5 in 2022, primarily due to a correction relating to last year's data.

United States of America (US)



The US retirement income system comprises a social security system with a progressive benefit formula based on lifetime earnings, adjusted to a current-dollar basis, together with a means-tested top-up benefit, and voluntary private pensions, which may be occupational or personal.

The overall index value for the American system could be increased by:

- Raising the minimum pension for low-income pensioners
- Improving the vesting of benefits for all plan members and maintaining the real value of retained benefits through to retirement
- Reducing pre-retirement leakage by further limiting access to funds before retirement
- Introducing a requirement that part of the retirement benefit be taken as an income stream

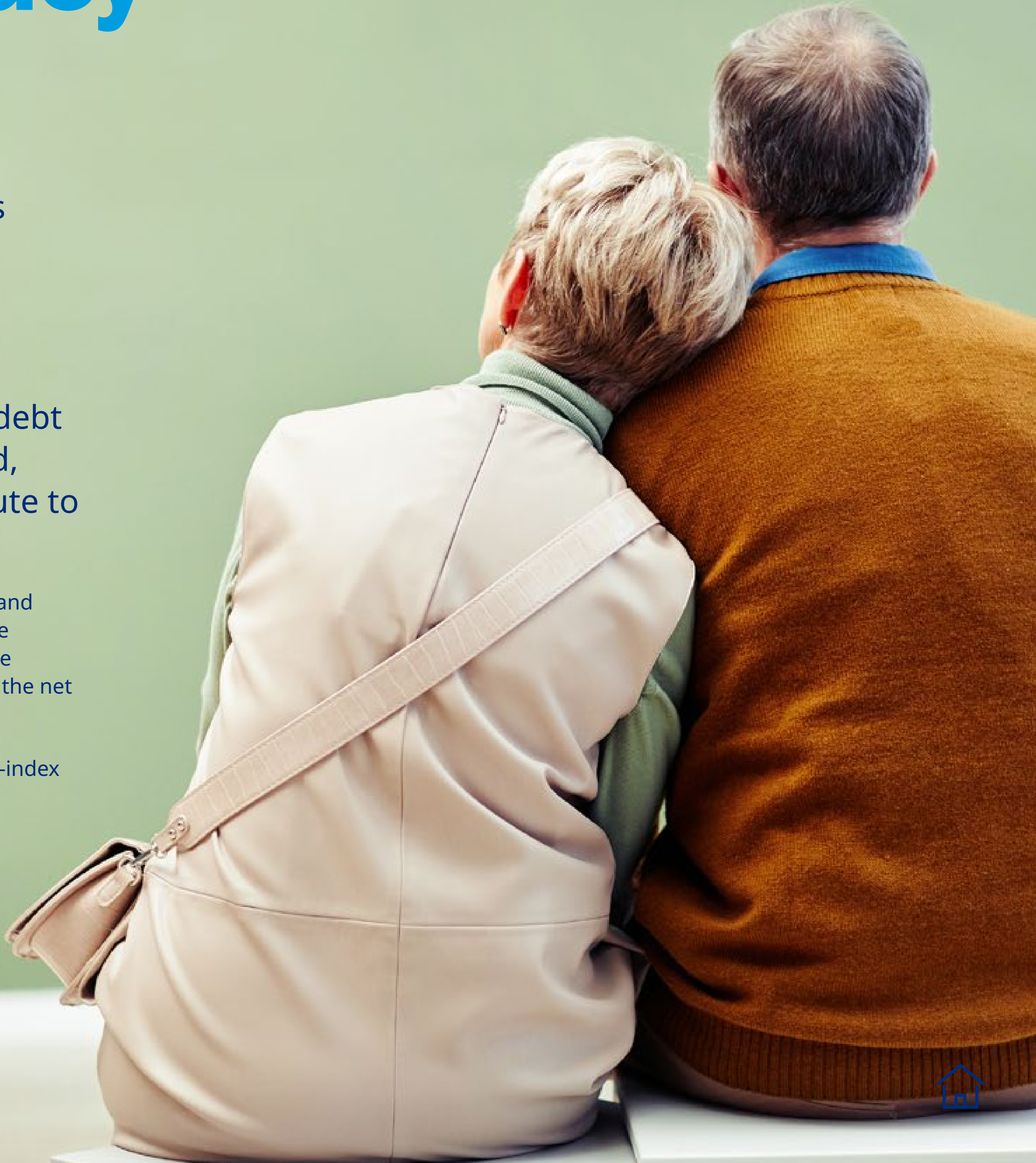
The American index value increased from 61.4 in 2021 to 63.9 in 2022, primarily due to the revised scoring discussed in Chapter 3.

06. The adequacy sub-index

The adequacy sub-index considers the benefits provided to the poor and a range of income earners, as well as several design features and characteristics that enhance the efficacy of the overall retirement income system. The net household saving rate, the level of household debt and the home ownership rate are also included, representing non-pension factors that contribute to financial security during retirement.

The countries with the highest value for the adequacy sub-index are Iceland (85.8) and Portugal (84.9), while Indonesia (39.3) and India (37.6) have the lowest. Although several indicators influence these scores, the level of the minimum pension (expressed as a percentage of the average wage) and the net replacement rate for a range of incomes are the most important.

Full details of the values in respect of each indicator in the adequacy sub-index are shown in Appendix 1.



Question A1: What is the minimum pension as a percentage of the average wage that a single aged person will receive?

How is the minimum state pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?

Objective

An important objective of any retirement income system is to provide a minimum pension to the aged poor. In terms of the World Bank's recommended multi-pillar system, it represents the non-contributory basic pension or zero pillar, which provides a minimum level of income for all aged citizens. Eligibility for this minimum pension requires no period in the paid workforce, but will often require a minimum period of residency. As the World Bank notes, "The elderly in the poorest quintile have benefited most from old-age social pensions, no matter the program design."[26]

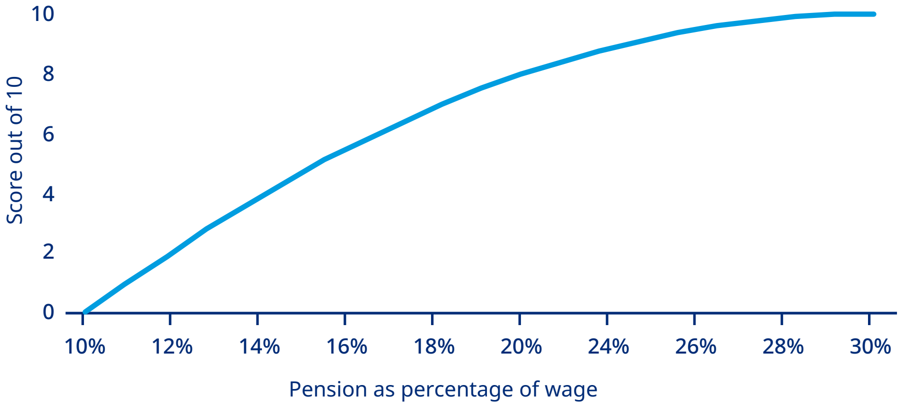
This question also considers how the minimum pension is increased or adjusted over time. The level and frequency of increases or adjustments are critical to ensure the real value of the minimum pension is maintained.

Calculation

There is no single answer as to the correct level of the minimum pension — it depends on a range of socioeconomic factors. However, a minimum pension of about 30% of average earnings is suggested to adequately meet the poverty-alleviation goal.[27] So, for the first part of this question a minimum pension below 30% will score less than the maximum value of 10, with a zero score if the pension is 10% or less of average earnings, as such a pension offers very limited income provision.

However, we haven't used a linear scoring approach between 10% and 30%. Rather, more credit is given for increases at the lower levels of the pension than at the higher levels, as these improvements will provide relatively greater benefits to the poor.

Figure 8. Calculating A1 Question 1: Minimum pension



The second part of this question is assessed on a four-point scale, with the maximum score of 2 for increases granted on a regular basis related to wage growth; 1.5 for increases granted on a regular basis related to price inflation; 1 for increases that occur, but not on a regular basis, related to wage growth or price inflation; and zero when the minimum pension is not increased.

A maximum score is achieved for this question if the minimum pension is 30% or higher of average earnings and if it is increased on a regular basis in line with wages growth.

Commentary

The minimum pension ranges from less than 5% of the average wage in China, India, Malaysia, the Philippines and Thailand to 35% or more in Brazil, Denmark, New Zealand and Uruguay. Indonesia does not provide a minimum pension.

Weighting

The major objective of any nation's retirement income system is to provide income support for its older citizens. The level of actual benefits therefore represents the major measurable outcome from the system. So this measure (which considers the retirement income provided to the poorest in the community), together with the next measure (which considers the retirement income for a range of income earners), represents the two most important components of the adequacy sub-index. Therefore, this indicator has a weighting of 20% in the adequacy sub-index, with 17.5% for the first part of the question and 2.5% for the second part.

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[26] World Bank. *Pensions Overview*, 2019.

[27] This level was chosen in 2009 when it was slightly higher than the OECD average of 27% for first-tier benefits as shown in OECD (2009). The average residence-based basic pension in nine OECD countries is 21.5%, whereas the average targeted pension is 19.9% of average worker earnings. Therefore, a range of 10%–30% remains reasonable.

Question A2: What is the net pension replacement rate for a range of income earners?

Objective

The World Bank has suggested that a target replacement rate for middle-income earners from mandatory systems can be expressed in any of the following ways.[28]

- 78% of the net average lifetime wage
- 60% of the gross average lifetime wage
- 53% of the net final year wage
- 42% of the gross final year wage

It also noted that, "The government should not necessarily mandate the full pension that might be desirable for individual households."[29] That is, these targets could be met through a combination of mandatory and voluntary provisions.

The OECD calculates net pension replacement rates for a single person at a range of income levels (revalued with earnings growth) throughout their working career.

These calculations assume no promotion of the individual throughout their career; in other words, the individual earns a particular percentage of average earnings throughout.

To recognize that a range of income levels exist in practice, we have used the net replacement rates at three income levels — namely 50%, 100% and 150% of average earnings. The net replacement rates at these three income levels are given weightings of 30%, 60% and 10%, respectively, which recognizes that more individuals earn less than the average wage. The use of a range of incomes is more comprehensive than a single point, although the weighted answer will be similar to the net replacement rate for a median income earner in many cases.

The OECD expressed a target replacement rate of 70% of final earnings,[30] which includes mandatory pensions for private-sector workers (publicly and privately funded) and typical voluntary occupational pension plans for those countries where such schemes cover at least 30% of the working population.

This indicator for the adequacy sub-index includes mandatory components of a retirement income system for private-sector workers, as well as an allowance for voluntary plans that cover more than 30% of the working-age population. This allowance takes into account the level of coverage above 30% and the increase in the net replacement rate due to these voluntary schemes.[31]

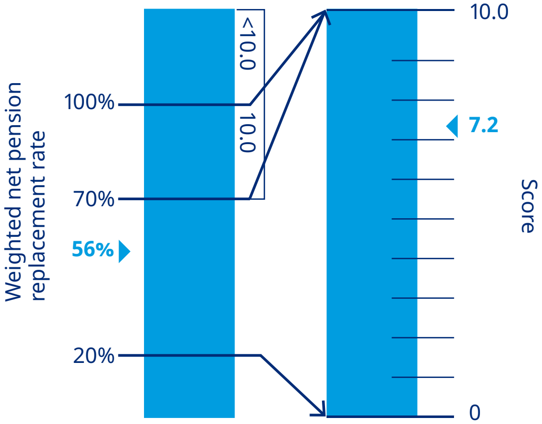
The target benefits should be less than 70% of final earnings to allow for individual circumstances and some flexibility. An objective of between 45% and 65% of final earnings is considered reasonable. Using the ratios between lifetime earnings and final earnings, the target for a net replacement rate (that is, after allowing for personal income taxes and social security contributions) for a median-income earner should be within the range of 70%–100% of average lifetime earnings (revalued with earnings growth).

A net replacement rate below 70% of lifetime earnings suggests a significant reliance on voluntary savings, whereas a figure above 100% does not provide the flexibility for individual circumstances and suggests overprovision.

Calculation

The maximum score for this indicator is obtained for any country with a result between 70% and 100%. Argentina, Austria, Belgium, Brazil, China, Colombia, Denmark, France, Italy, Malaysia, Mexico, the Netherlands, the Philippines, Portugal, Spain and Turkey are within this range. Any score outside this range scores less than the maximum, with a zero score for a result less than 20%.

Figure 9. Calculating A2: Weighted net pension replacement rate



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[28] Work Bank. 'Averting the old age crisis,' 1994, available at https://documents.worldbank.org/en/publication/documents-reports/documentdetail/973571468174557899/averting-the-old-age-crisis-policies-to-protect-the-old-and-promote-growth.

[29] World Bank, 1994.

[30] OECD. *Pensions Outlook 2012*

[31] OECD. *Pensions at a Glance 2017: OECD and G20 Indicators*

Commentary

With the exception of the countries mentioned above that have a result between 70% and 100%, most countries have a result between 20% (South Africa) and 66% (Iceland, Saudi Arabia, US and Uruguay). The Chinese, Indian and Indonesian figures have been adjusted to reflect the varying levels of replacement rates that exist in practice.

Weighting

The net pension replacement rates for a range of income earners represent a major outcome in the assessment of any retirement income system. As this indicator reflects the benefits provided to a broad group of retirees, this indicator is given the highest weighting in the adequacy sub-index, namely 25%.

Question A3: What is the net household saving rate in the country?

What is the level of household debt in the country, expressed as a percentage of GDP?

Objective

The living standards of the aged will depend on the benefits arising from the total pension system (as covered in the previous two questions) and the net level of household savings outside the pension system.

Calculation

For countries where Economist Intelligence Unit (EIU) data were used, we calculated the saving rate in the following way:

$$\text{Household saving rate} = \frac{(\text{PDIN} - \text{PCRD})}{\text{PDIN}}$$

PDIN = Personal disposable income
PCRD = Private consumption

To remove some volatility that may occur in annual figures, we have averaged the 2021 and 2022 measurements.

OECD measures were used for Belgium, Denmark, Ireland and Sweden due to changes in data sources and estimation methods.

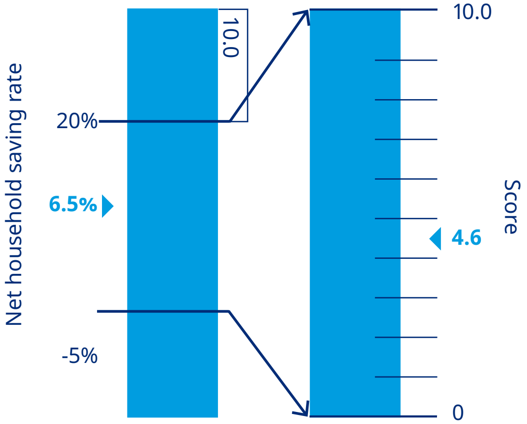
Trading Economics measures were used for Mexico due to changes in data sources and estimation methods.

Mercer colleagues provided responses for Iceland, Taiwan and Uruguay.

The calculated household saving rates ranged from -0.8% in Malaysia to +34.2% in Singapore. A maximum score is obtained for any country with a saving rate of 20% or higher, and a zero score for any country with a saving rate of less than -5%.

The EIU's calculation excludes contributions to pension plans, and the OECD measure also excludes contributions to social security and employer contributions. This is consistent with our approach, as we allow for both pension plan assets and the level of pension contributions as part of the sustainability sub-index.

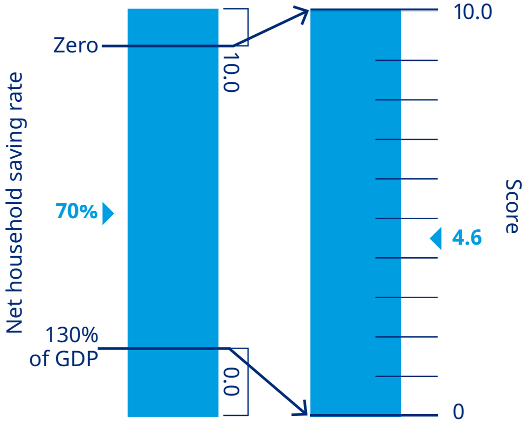
Figure 10. Calculating A3a: Net household saving rate



Although the level of household saving represents the current flow of household saving, the level of household debt represents the financial liabilities that must be paid by households in the future. In many cases, these liabilities will be repaid by accumulated benefits from the pension system, thereby reducing the adequacy of the remaining pension benefits.

The level of household debt ranges from 5% of GDP in Argentina and 10% of GDP in Uruguay to 127% of GDP in Australia and 131% of GDP in Switzerland. A maximum score is obtained for any country with zero household debt, and a zero score for any country with household debt of 130% of GDP or higher.

Figure 11. Calculating A3b: Net household debt



Commentary

The net household saving rate provides some indication of the level of current income that is voluntarily being set aside from current consumption, excluding pension contributions, whereas net household debt provides an indication of the debt levels that will need to be repaid by households in the future.

Weighting

The weighting for these two measures has been set at 5% each of the adequacy sub-index. This indicates the importance of both net household saving and debt, as individuals plan for their future.

Question A4: Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favorably than similar savings in a bank account?

Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods?

Objective

The level of total retirement benefits received by an aged person will depend on both the mandatory level of savings and any voluntary savings, which are likely to be influenced by the presence (or otherwise) of taxation incentives designed to change individual behavior. The investment earnings (and the related compounding effect over decades) are critical in respect of adequacy because the size of an individual's retirement benefits are primarily due to investment earnings and not contributions.

Calculation

This indicator is concerned with any taxation incentives or tax exemptions of investment earnings that make savings through a pension plan more attractive than through a bank account. The benchmark of a bank account was chosen because this saving alternative is readily available in all countries.

Both questions were assessed with a score of 2 for "yes" and 0 for "no". There were some cases for which the response to the first question was neither a clear "yes" or "no", so a score of 1 was given.

Commentary

All countries offer some taxation incentive for voluntary contributions, except for the Philippines and Turkey, and in Saudi Arabia and the UAE where there is no income tax. In Norway and Sweden, additional employee contributions are encouraged in certain circumstances. Twenty-seven systems offer a tax exemption on investment earnings of pension plans in both the pre- and post-retirement periods.

Weighting

Taxation incentives or tax exemptions represent important measures that governments can introduce to encourage pension savings and long-term investments. Such incentives provide a desirable design feature of retirement income systems. We have therefore given this measure a total weighting of 5% in the adequacy sub-index, split into 2% for the first question and 3% for the second question.

Question A5: Is there a minimum access age to receive benefits from private pension plans[32] (except in the cases of death, invalidity or significant financial hardship)? If so, what is the current age?

Objective

The primary objective of a private pension plan should be to provide retirement income; therefore, the availability of these funds at an earlier age reduces the efficacy of such plans as it leads to leakage from the system.

Calculation

The first question was assessed on a three-point scale with a score of 2 for “yes”, 1 if it was applied in some cases and 0 for “no”. The second question was scored on a scale for those who said “yes” to the first question; ranging from a score of 0 for age 55 to a score of 1 for age 60. A maximum score is achieved if a minimum access age exists and this age is at least age 60.

Commentary

Many countries have introduced a minimum access age, whereas others have access provisions described in each plan’s set of rules. In some cases, early access is not prohibited, although the taxation treatment of the benefit discourages such behavior.

Weighting

Ensuring accumulated benefits are preserved until the later years of life represents an important design feature of all pension arrangements. Therefore, this desirable feature has a 10% weighting in the adequacy sub-index.

Question A6: Is it a requirement to take part or all of the retirement benefit as an annuity or income stream for life?

- If it is a requirement to take a lifetime annuity or income stream, are some lump-sum benefits also available?
- If it is not a requirement to take a lifetime annuity or income stream, are there any incentives or rules that encourage the provision of income streams?

Are the annuities or income streams available priced or designed as unisex annuities (that is, the same benefit for males and females)?

Are reverse mortgages (or home equity release schemes) available to your retirees (either from the government or the private sector)?

Objective

The primary objective of a private pension system should be to provide income during retirement. Of course, this does not imply that a lump-sum payment is not a valuable benefit; it often is. Indeed, Rocha and Vittas[33] and the OECD[34] suggest that policymakers should target an adequate level of annuitization, but should be wary of causing excessive annuitization. This indicator therefore focuses on whether the system has any requirements for at least part of the benefit to be taken as an income stream, or if any tax incentives encourage the take-up of income streams. In addition, the availability of some lump-sum benefits can provide additional security and comfort to retirees.

Traditionally, the price of purchased annuities often distinguished between males and females, but this distinction does not appear in government pensions or most DB pension schemes. The better systems provide the same income streams for a given price, irrespective of gender.

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[32] Private pension plans include both DB and DC plans and may pay lump-sum or pension benefits. They also include plans for public-sector and military employees.

[33] Rocha R and Vittas D. “Designing the Payout Phase of Pension Systems,” *Policy Research Working Paper 5289,* The World Bank: Washington DC, 2010.

[34] OECD. “The OECD Roadmap for the Good Design of Defined Contribution Pension Plans,” *OECD Working Party on Private Pensions,* June 2012.

Another potential source of retirement income is the home. Although the need for this income source will vary considerably between individuals, its availability provides greater flexibility and income for retirees who may need it.

Calculation

No single design of retirement income products provides the best outcome for all retirees. The significant heterogeneity between retirees means the situation is more complicated than that. The better systems have some flexibility so retirees have regular income as well as access to some capital for unexpected expenses.

The first set of questions, relating to the balance between income and lump sums, accounts for 80% of this question, and the next two questions are worth 10% each.

Commentary

Systems vary considerably, and variation also exists within some systems with two or more pension arrangements. Twenty-five out of the 44 systems require part or all of the retirement benefit to be taken as an income stream, with 14 of these also permitting some level of lump-sum benefits. Of the 19 systems, which do not require part or all of the retirement benefit to be taken as an income stream, nine provide some level of incentive to encourage the provision of income streams.

Twenty-two systems require annuities to be priced on a unisex basis. Reverse mortgages are available to retirees as a potential source of income in half of the retirement income systems covered by the Index.

Weighting

The benefit format of the retirement benefits is a fundamental feature of any private pension system. Therefore, this indicator has a weighting of 10% in the adequacy sub-index.

Question A7: On resignation from employment, are plan members normally entitled to the full vesting of their accrued benefit?

After resignation, is the value of the member’s accrued benefit normally maintained in real terms (either by inflation-linked indexation or through market investment returns)?

Can a member’s benefit entitlements normally be transferred to another private pension plan on the member’s resignation from an employer?

Objective

Most individuals now have many employers during their career and do not stay with a single employer throughout their working life. It is therefore important that individuals receive the full value of any accrued benefit on leaving an employer’s service and that the real value of this benefit is maintained until retirement, either in the original plan or in another plan. Further, the availability of portability between schemes provides greater flexibility for individuals and should lead to a more efficient outcome.

Calculation

Each question was assessed with a score of 2 for “yes”, 0 for “no” and between 0.5 and 1.5 if it was applied in some cases. The score depended on the actual circumstances.

Commentary

There is considerable diversity to the extent that the real value of a member’s benefit entitlements can be transferred or retain their real value after changing employment. That is, in only 22 of the 44 systems is full vesting present, the real value of the benefits maintained after resignation, and the accrued benefit can be transferred, thereby obtaining the maximum score.

Weighting

Maintaining the real value of a member’s accrued benefit entitlements during a member’s working life represents an important feature of all retirement income systems. This desirable feature has therefore been given a 5% weighting in the adequacy sub-index.

Question A8: Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?

Objective

The adequacy of an individual's retirement income can be disrupted by a divorce or separation. In many cases involving heterosexual couples, the female partner can be adversely affected because most of the accrued benefits may have accrued in the male's name during the marriage or partnership. We consider it desirable that upon a divorce or separation, the pension benefits that have accrued during the marriage be considered as part of the overall division of assets. This outcome is fair and provides greater adequacy in retirement for both individuals, rather than just the main income earner.

Calculation

The question was assessed on a three-point scale with a score of 2 for "yes", 1 if it was applied in some cases and 0 for "no."

Commentary

In 19 of the 44 systems, normal practice is for the accrued pension benefits to be taken into account in the overall division of assets upon a divorce or separation.

Weighting

With relatively high rates of divorce or separation in many countries, the adequacy of retirement income for the lower-income partner is improved if pension assets are considered in the overall division of assets. This desirable feature has a 3% weighting in the adequacy sub-index.

Question A9: What is the level of home ownership in the country?

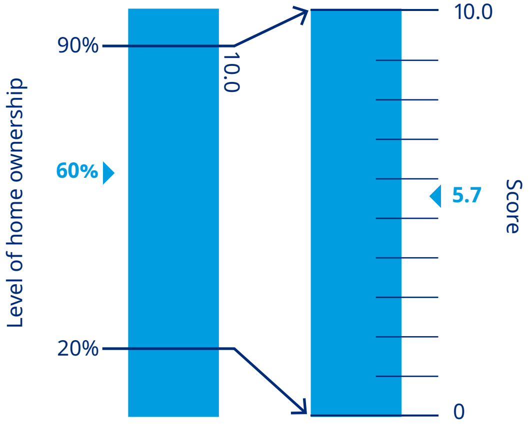
Objective

In addition to regular income, home ownership represents an important factor affecting financial security during retirement. In some countries, taxation support encourages home ownership.

Calculation

A maximum feasible level is considered to be 90%. Hence, a home-ownership level of 90% or more scores maximum results, whereas a level of 20% or less scores 0.

Figure 12. Calculating A9: Home ownership



Commentary

The level of home ownership ranged from 36% in Switzerland to more than 85% in China, India. Singapore and the UAE.

Weighting

Home ownership represents an important feature of financial security in retirement. This indicator has therefore been given a 5% weighting in the adequacy sub-index.

Question A10: What is the proportion of total pension assets invested in growth assets?

Objective

The investment performance of funded pension funds over the long term, after allowing for costs and any taxation, represents a key input into the provision of adequate retirement income. Yet, international comparisons of investment returns might not be totally meaningful.[35] They also note that any benchmarks need to consider a range of factors, including the age of the plan member, the availability of other income (such as social security), the contribution rates, the target replacement rate, the risk tolerance of the member and the types of retirement income products available. No ideal asset allocation is appropriate for all members at all ages. The growing interest in life-cycle funds suggests the best approach may be a changing asset allocation during an individual's lifetime.

We must also recognize that the investment performance of a pension fund needs to focus on the longer term and not on short-term returns. With this in mind, we believe it is appropriate for the investments of pension funds within any country to be diversified across a range of asset classes, thereby providing the opportunity for higher returns with reduced volatility.

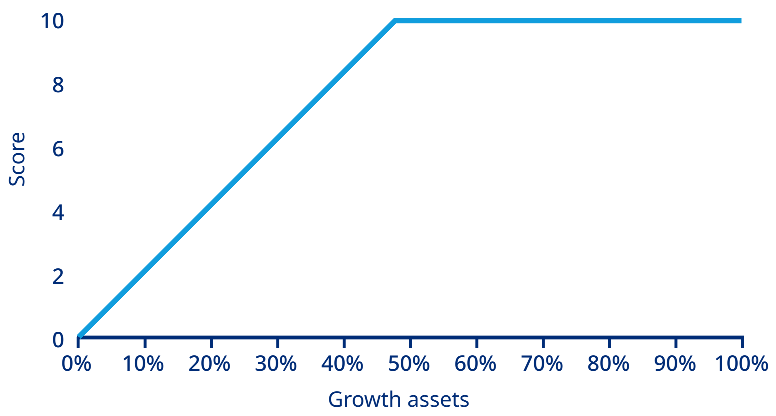
Calculation

Many countries have pension fund assets invested in a range of assets ranging from cash and short-term securities through bonds and equities to alternative assets such as property, venture capital, private equity and infrastructure. As a proxy to this diversified approach, we have used the percentage of growth assets (including equities and property) in the total pension assets in each system.

Although a zero percentage in growth assets may highlight the benefits of security for members, it does so without the benefits of diversification and the associated reduction in risk. No exposure to growth assets scores 0 out of 10. This score increases to the maximum score of 10 as the proportion in growth assets increases to 45% of all assets.

Notwithstanding this approach, we recognize that capital markets are underdeveloped in some emerging markets. We also note that in some private pension systems, restrictions imposed by the government may limit the investment decisions made by the pension plan's trustees or fiduciaries.

Figure 13. Calculating A10: Percentage of growth assets



Commentary

The level of growth assets ranges from 10% in India to approximately 80% in the UAE. Twenty-one of the 44 systems have a percentage above 45%.

Weighting

Asset allocation represents an important feature of all funded retirement systems. This indicator has therefore been given a 5% weighting in the adequacy sub-index.

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[35] Hinz R, Ruldolph HP et al. *Evaluating the Financial Performance of Pension Funds,* The World Bank: Washington DC, 2010.

Question A11: Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income due to invalidity or a disability?

Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income during paid parental leave?

Does the system provide any additional pension contributions, credits or future pension benefits for parents who are caring for young children while the parent is not in the paid workforce? These benefits could be in respect of the public pension or a private-sector pension.

Objective

The adequacy of an individual's retirement income can be affected if there is no requirement for benefits to accrue in (or for contributions to be made to) a pension scheme when a worker is temporarily out of the workforce and may be receiving income support; for example, due to parental leave, ill health or disability. Although these benefit accruals or actual contributions may be for a relatively short period, making pension contributions (or the ongoing benefit accrual) a compulsory component of income support payments is desirable. In addition, to help reduce the gender pension gap that exists in most retirement income systems, parents who are caring for young children should receive some additional retirement benefit.

Calculation

These questions were assessed on a three-point scale with a score of 2 for "yes," 1 if contributions are paid in some cases and 0 for "no."

Commentary

In 18 of the 44 systems, contributions must be paid to a pension scheme if a worker receives income support due to an invalidity, and contributions are required during parental leave in 22 systems.

Nine systems provide additional pension contributions or benefits from the government for parents who are caring for young children.

Weighting

The requirement for contributions to be paid while a worker is receiving income support or a parent is caring for young children is a desirable feature and an important signal in the design of the best retirement income systems. These features have each been given a 1% weighting in the adequacy sub-index.

Sources of data for the adequacy sub-index

Question A1

The answers for the first question were taken from:

- OECD. *Pensions at a Glance Asia/Pacific 2018* for Hong Kong SAR, India, Indonesia, Malaysia, the Philippines and Thailand
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators* – country profiles for Saudi Arabia
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators* – for all other OECD countries
- Mercer calculations for Singapore using government websites
- Mercer calculations for Peru using websites
- Mercer calculations for China, Taiwan, the UAE and Uruguay using data sourced from Mercer consultants

The answers for the second question were sourced from Mercer consultants in each country.

Question A2

- OECD. *Pensions at a Glance: Latin America and the Caribbean,* 2014 for Uruguay
- OECD. *Pensions at a Glance Asia/Pacific 2018,* unpublished data for Peru
- OECD. *Pensions at a Glance Asia/Pacific 2022,* unpublished data for China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam
- Mercer model for Taiwan and the UAE
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators for all other countries.*

Question A3

- Data from the Economist Intelligence Unit used for the first question for all systems except Belgium, Denmark, Iceland, Ireland, Mexico, Sweden, Taiwan and Uruguay
- OECD. "OECD Economic Outlook No 110 (Edition 2021/2)," OECD *Economic Outlook: Statistics and Projections (database),* December 2021 for Belgium, Denmark, Ireland and Sweden
- Trading Economics. "Personal Savings," 2022 for Mexico
- Mercer colleagues for Iceland, Taiwan and Uruguay
- Answers for the second question used an average of data taken from Trading Economics, "Households Debt to GDP," 2022 and CEIC, "Household Debt: % of GDP," 2022.

Questions A4, A5, A6, A7, A8, A9, A10 and A11

The answers were sourced from relevant Mercer consultants.

07. The sustainability sub-index

The sustainability sub-index considers a number of indicators that influence the long-term sustainability of current pension systems. These include the economic importance of the private pension system; its level of funding; the length of expected retirement both now and in the future; the labor force participation rate of the older population; the current levels of public pension expenditure and government debt; and the level of real economic growth.

The systems with the highest values for the sustainability sub-index are Iceland (83.8) and Denmark (82.5), and the lowest values are for Italy (23.1) and Austria (22.7). Although several indicators influence these scores, the level of coverage of private pension plans, the demographic factors and the level of pension assets as a proportion of GDP are the most important.

Full details of the values in respect of each indicator in the sustainability sub-index are shown in Appendix 2.

Question S1: What proportion of the working age population are members of private pension plans?

Objective

Private pension plans (including pension plans for public-sector employees and the military) represent an important pillar within all retirement income systems. A higher proportion of coverage among the workforce therefore increases the likelihood that the overall retirement income system will be sustainable in the future, as funding continues and the level of pension assets increases over time.

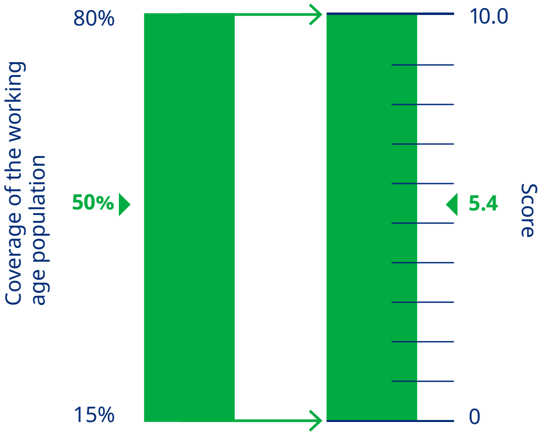
Individuals may participate in an occupation-based pension plan or voluntarily contribute to a pension plan, possibly encouraged by government policies. However, it is also important that this pension coverage goes beyond full-time workers and those in standard or traditional employment arrangements. As the OECD notes, “The sustainability and adequacy of pension systems includes making sure that workers in non-standard forms of work have the opportunity to save for retirement.”[36] This development has become even more important given the changes to work patterns arising from the COVID-19 pandemic.

Calculation

The rates of coverage ranged from about 6% in India to more than 80% of the working-age population in Chile, Denmark, Finland, Iceland, Israel, the Netherlands, Sweden and Taiwan. Each system’s score is related to its level of coverage, with a maximum score for 80% or above and a zero score relating to coverage of 15% or less, as such coverage represents a minimal contribution to the future provision of retirement income.

The coverage figure also allows for public pension arrangements when the public pension reserve exceeds 10% of GDP and these arrangements are available to most of the workforce.

Figure 14. Calculating S1: Coverage



Commentary

Sixteen of the 44 systems have coverage rates over 64% of the working-age population (that is, a score of 7.5 or more), indicating a heavy reliance on the social security system in the future for a substantial proportion of the workforce in many systems.

Weighting

Private pension plans play a critical role in a multi-pillar retirement income system, particularly with the financial pressures associated with aging populations. Therefore, this indicator was given a weighting of 20% in the sustainability sub-index.

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[36] OECD. *Pension Markets in Focus 2020.*

Question S2: What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?

Objective

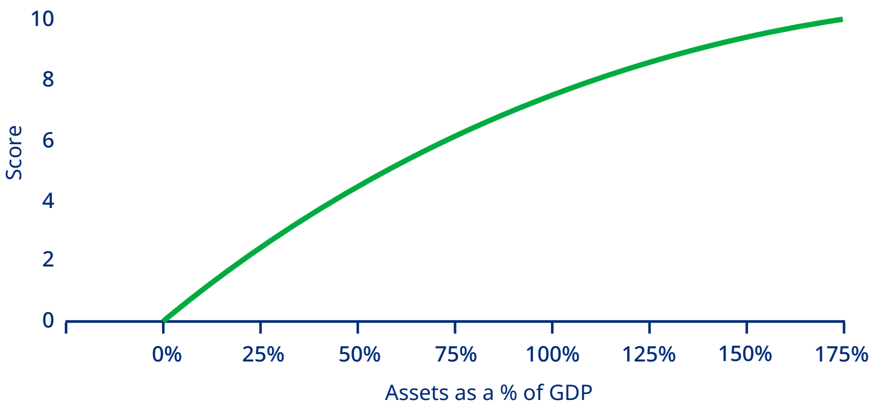
The level of current assets set aside for future pensions, when expressed as a percentage of GDP, represents a good indicator of an economy's ability to meet these payments in the future.

Calculation

We have included assets from many types of funds to calculate the total level of assets held within each system to pay future pensions, irrespective of whether the pensions are paid through public pension provision or from private pension plans. The types of funds that have been included are:

- Assets held in autonomous private pension plans
- Assets held by insured or protected book reserves that are being accounted for to pay future pensions
- Social security reserve funds
- Sovereign reserve funds that have been set aside for future pension payments
- Assets held to support pension insurance contracts

Figure 15. Scoring S2: Level of assets



The level of assets ranged from less than 10% of GDP for Austria, China, Indonesia, Thailand and Turkey to more than 175% for Canada, Denmark, Iceland, the Netherlands and the USA. The maximum score was achieved for 175% of GDP and the minimum score for 0%.

A linear scoring approach between 0% and 175% is no longer used. Rather, more credit is given for increases at the lower levels of assets than at the higher levels as these gains will provide relatively greater improvements in sustainability.

Commentary

The size of assets set aside for future pensions around the world varies considerably, reflecting the relative importance of funded pension arrangements. In addition, many countries are part-way through a reform process that is expected to increase the level of assets over many decades. In these cases, we expect the score for this indicator to increase gradually in the future.

The level of private pension assets goes beyond pension funds and includes book reserves, pension insurance contracts and funds managed by financial institutions, such as individual retirement accounts. These assets have been included because they represent assets set aside to provide future retirement benefits.

Weighting

This indicator shows the level of assets already set aside to fund retirement benefits and represents a key indicator in the ability of each system to pay future benefits. This indicator was therefore given a weighting of 15% in the sustainability sub-index.

Question S3:

a. What is the life expectancy at the current state pension age?

b. What is the projected life expectancy at the expected state pension age in 2052 (that is, in 30 years' time)? This calculation allows for mortality improvement.

c. What is the projected old-age dependency ratio in 2052?

d. What is the estimated total fertility rate (TFR) for 2020–2024?

Objective

A retirement income system is designed to provide benefits to an individual after the person leaves the workforce and prior to their death. The longer the period, the larger the total value of benefits that will be needed and the greater financial strain placed on the overall system. Although individuals retire for many reasons, the state pension age represents a useful proxy that guides many retirement decisions. As life expectancy increases, one way of reducing the strain is to encourage later retirement by increasing this age.

In the second question, we project this life expectancy indicator to 2052 to highlight the fact that many governments have already taken action and increased the state pension age, thereby reducing the forthcoming pension burden. However, it is also clear that some governments have not yet tackled this difficult issue.

The projected old-age dependency ratio question highlights the impact of the aging population between now and 2052 and the likely effects on the funding requirements for pensions, health and aged care.

Consideration of the TFR provides an even longer-term perspective because it provides an indication of the likely balance between workers and retirees in future decades.

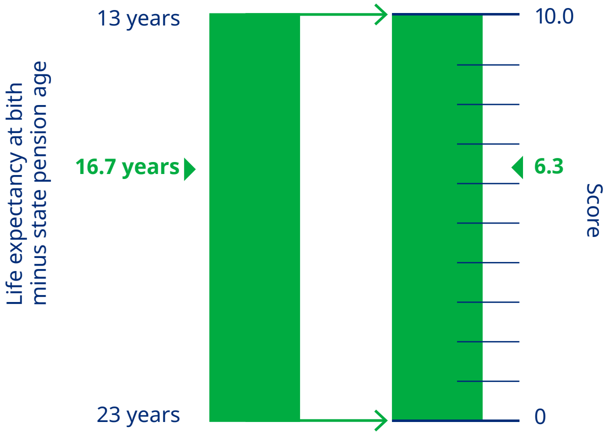
Calculation

a. Life expectancy at the existing state pension age ranges from 17.6 in Mexico to 25.6 in China. A maximum score is achieved with a life expectancy of 18 years or less and a zero score with a life expectancy of 28 years or more.

b. For 2052, the results range from 18.5 in Indonesia to 29.4 in China. The same scoring system is used as for the previous question.

The life expectancies for these two questions are averaged for males and females.

Figure 16. Calculating S3a: Life expectancy at state pension age



c. The old-age dependency ratio is the population aged 65 and over divided by the population aged between 15 and 64. The projected dependency ratios for 2052 vary from 17% in the Philippines to 77% in Korea and 82% in Hong Kong SAR. A maximum score is achieved with a projected dependency ratio of 20% or lower, with a zero score for a ratio of 70% or higher.

d. The TFR ranges from 0.78 in Hong Kong SAR to 2.95 in Israel. In view of these scores and the likely range in the future, a minimum score of 0 is achieved for a TFR of 1.0 or lower with a maximum score for a TFR of 2.5 or higher.

Commentary

All systems have current life expectancies at the state pension age of less than 26 years, although China, France, Hong Kong SAR, Saudi Arabia, Taiwan, Thailand and the UAE are expected to exceed this figure by 2052.

A TFR of less than 1.5 in Austria, Canada, China, Finland, Hong Kong SAR, Italy, Japan, Korea, Poland, Portugal, Singapore, Spain, Switzerland, Taiwan, Thailand, the UAE and Uruguay raises serious issues about their future age structures. Although immigration can assist in the short term, it is unlikely to provide sound long-term solutions.

Weighting

These demographic-related indicators have a total weighting of 20% in the sustainability sub-index with a 5% weighting for each question.

Question S4: What is the level of mandatory contributions that are set aside for future retirement benefits (that is, funded), expressed as a percentage of the wage for a full-time median income earner? These include mandatory employer and/or employee contributions toward funded public benefits (that is, social security) and/or private retirement benefits.[37]

Objective

Mandatory contributions from employers and/or employees represent a feature of every retirement income system. In some cases, these contributions are used to fund social security benefits immediately, whereas in other cases the contributions are invested either through a central fund (such as Singapore's CPF or a social security reserve fund) or through a range of providers in the private sector. In terms of longer-term sustainability, the important issue is whether the contributions are set aside to pay for the future benefits of the contributors, irrespective of the vehicle used for the saving. Regulations set a minimum contribution rate in systems with mandatory contribution or an auto-enrollment arrangement.

Calculation

We see considerable variation in the extent to which the contributions paid are actually invested into a fully funded investment vehicle. This calculation multiplies the level of mandatory contributions by the percentage of these funds that are invested to provide for future retirement benefits; for example, in Australia, Chile, Denmark, Hong Kong SAR, Iceland, Israel, New Zealand and Norway, the mandatory contributions are fully invested for the individuals concerned. On the other hand, Argentina, Austria, Belgium, Brazil, France, Germany, Ireland, Japan, Portugal, South Africa and Spain adopt a pay-as-you-go basis.

In some cases, neither extreme is adopted. For instance, the Canada Pension Plan adopts a 'steady state' funding basis so that contributions will remain constant for 75 years. In this case, we have assumed that 75% of the contributions are invested.

For India and Indonesia, we have used 50% of the required level of contributions due to the limited coverage in these countries. For Sweden, which is transitioning from a pay-as-you-go approach to a fully funded one, we have used the contributions to the DC funded system plus the contributions to the quasi-mandatory occupational schemes.

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[37] This question does not include contributions arising from statutory minimum levels of funding for DB plans because these plans do not represent mandatory arrangements.

Although Italy's mandatory scheme is funded on a pay-as-you-go basis, we have assumed that 25% of the mandatory contributions required to fund termination indemnity benefits are invested.

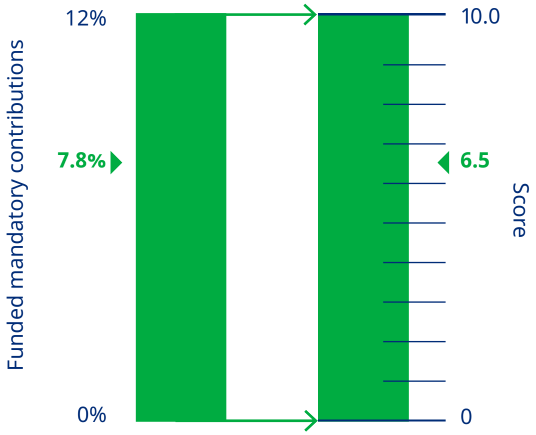
In line with OECD data, we have assumed that 35% of all contributions to Singapore's CPF are invested. For Malaysia, we have assumed that 70% of all contributions to the EPF are invested for retirement. In both these cases, the maximum score is achieved.

Colombia has two systems – a funded system and a pay-as-you-go system, both with contributions of 16%. Assuming that about half of the contributions are in the funded system and allowing for less than full coverage, we have used 6%.

In other cases, social security reserve funds are funded by the difference between contributions and current benefit payments or through top-up contributions from the government. Korea and the US are examples of this approach. In these cases, we have assumed that 50% and 20%, respectively, of the contributions are funded.

The results of the above calculations have meant that the net funded level of mandatory contributions (expressed as a percentage of earnings) range from 0% in several systems to 12% or more in Denmark, Iceland, Israel, Malaysia, the Netherlands, the Philippines, Saudi Arabia and Singapore. In view of this range and likely developments in some systems, a maximum score is achieved with a contribution level of 12% invested into a fund for future payments with a zero score being obtained when there are no funded mandatory contributions.

Figure 17. Calculating S4: Funded mandatory contributions



Commentary

The level of mandatory contributions to a funded arrangement paid by employers and employees around the world varies considerably.

In some cases, they represent taxation for social security purposes and are not used to fund future benefits. On the other hand, funded retirement savings with the associated investment funds provide improved sustainability for the system and greater security for future retirees.

Weighting

This item represents one of several key indicators representing desirable features of a sustainable retirement income system. A weighting of 10% in the sustainability sub-index is used for this indicator.

Question S5: What is the labor force participation rate for those aged 55–64?

What is the labor force participation rate for those aged 65 or over?

Objective

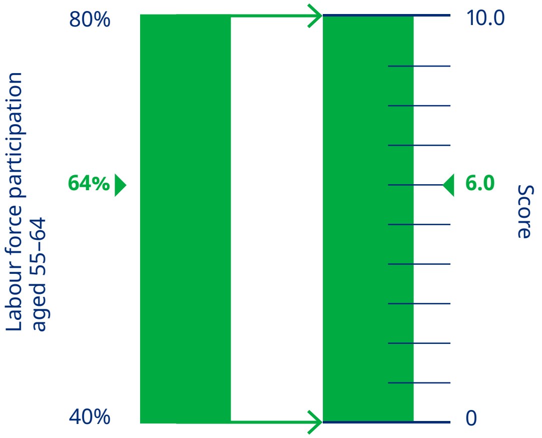
Higher labor force participation at older ages means individuals are retiring later, thereby reducing both the number of years in retirement and the level of retirement benefits needed, as well as accumulating greater savings for retirement during the working years. As noted in an International Monetary Fund staff discussion note, "Financial sector and labor market policies should be considered as part of a pension reform package … Labor market policies should be geared towards encouraging participation by older workers."[38]

Calculation

For those aged 55–64, the percentages range from 33.5% in Turkey to 82.5% in Sweden and 83.4% in Iceland. A maximum feasible score is considered to be 80% in most situations. Therefore, a participation rate of 80% or more scores the maximum, whereas a participation rate of 40% or less scores 0.

For those aged 65 and over, the percentages range from 2.8% in Belgium to 45.1% in Peru. A maximum feasible score is considered to be 30% in most situations. Therefore, a participation rate of 30% or more scores the maximum, whereas a participation rate of nil at these ages scores zero.

Figure 18. Calculating S5: Labor force participation aged 55-64



Commentary

With the increasing awareness of longer life expectancies and the pressures associated with an aging population, governments should continue to encourage higher labor force participation at older ages.

Weighting

This item has a weighting of 10% in the sustainability sub-index, split into 8% for the first question and 2% for the second question.

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[38] Amaglobeli D, et al. "The future of saving: The role of pension system design in an aging world," International Monetary Fund, 2019, available at www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2019/01/09/The-Future-of-Saving-The-Role-of-Pension-System-Design-in-an-Aging-World-45138.

Question S6: What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities[39]), expressed as a percentage of GDP?

What is the level of public expenditure on pensions expressed as a percentage of GDP, averaged over the latest available figure and the projected figure for 2050?

Objective

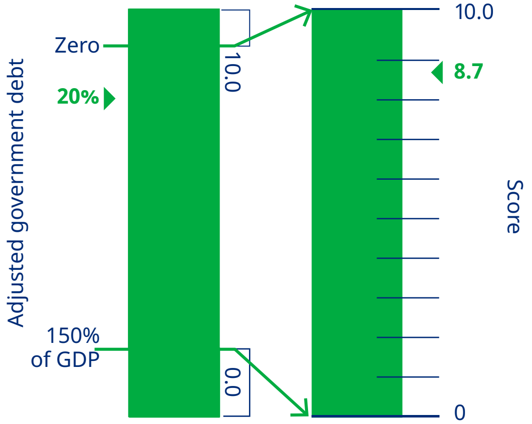
As social security payments represent an important source of income in most retirement income systems, the ability of future governments to pay these pensions and other benefits represents a critical factor in the sustainability of current systems. Due to the fiscal support and health measures adopted during the COVID-19 pandemic, the levels of debt have increased significantly for some governments. The OECD notes "the newly accumulated debt will add pressure on pension finances, already strained by demographic changes."[40]

Similarly, higher pension payments lead to increased financial strains on government budgets.

Calculation

The level of the adjusted government debt ranges from less than zero for Norway and Singapore to 263% of GDP in Japan. A maximum score was achieved for countries with a zero or negative level of adjusted government debt (that is, a surplus), with a zero score for countries with an adjusted government debt of 150% of GDP or higher.

Figure 19. Calculating S6a: Adjusted government debt



The size of government pension payments varies considerably between different systems; for example, the public expenditure on pensions within the OECD over 2018–2019 varied from 1.3% in Korea to 15.4% in Italy.[41] The projected 2050 figures range from 2.3% in Australia to 16.2% in Italy. A maximum score was achieved for systems with public pension costs of 2% of GDP or less (recognizing that some costs are desirable to alleviate poverty among the aged), with a zero score for systems with costs of 16% of GDP or higher.

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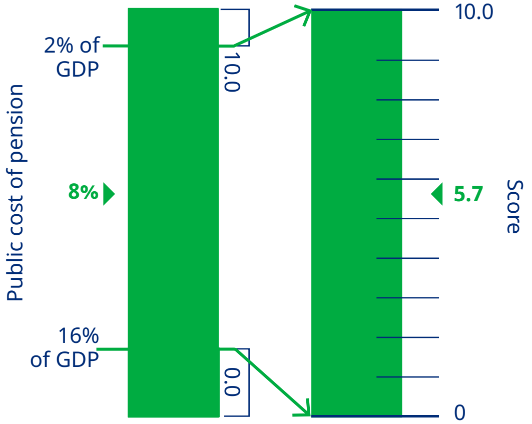
[39] This reduction does not include sovereign wealth funds that have been set aside for future pension payments because these have been included in question S2.
[40] OECD. *Pension Markets in Focus 2020.*
[41] OECD. *Pensions at a Glance 2021: OECD and G20 Indicators.*

Figure 20. Calculating S6b: Public cost of pensions



Commentary

Government debt is likely to restrict the ability of future governments to support their older populations, either through pensions or through the provision of other services such as health and aged care. Increasing interest rates will add to this pressure; therefore, governments with lower levels of debt are in a stronger financial position to be able to sustain their current level of pension and other payments. In addition, the cost of public pension payments represent actual cash flows, which have a direct impact on a government's fiscal position.

Weighting

These two indicators have a total weighting of 10% in the sustainability sub-index, with a 5% weighting for each question.

Question S7: In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension, and continue working (for example, part-time)?

If yes, can employees continue to contribute and accrue benefits at an appropriate rate?

Objective

A desirable feature of any retirement income system, particularly with aging populations, is to permit individuals to phase into retirement gradually by reducing their reliance on earned income, while at the same time enabling them to access part of their accrued retirement benefit. Such individuals should also be able to continue to contribute or accrue pension benefits while working.

Calculation

The first question was assessed with a score of 2 for "yes" and 0 for "no." However, in many cases it may depend on the particular pension fund's rules. In these cases, a score between 0 and 2 was given depending on the circumstances and practice. A maximum score was achieved where the answer was "yes" for the majority of older employees.

If the answer to the first question was "yes," an additional score between 0 and 2 was given to the second question depending on the ability of employees to continue to contribute and accrue benefits during this transition period to retirement.

Commentary

In most systems, employees are able — at least to some extent — to continue working at older ages while also accessing an income stream from their accumulated benefits, continuing to contribute and accruing benefits.

Weighting

This item has a weighting of 5% in the sustainability sub-index because we do not consider it as critical as the previous indicators. The total weighting was split into 4% for the first question and 1% for the second question.

Question S8: What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?

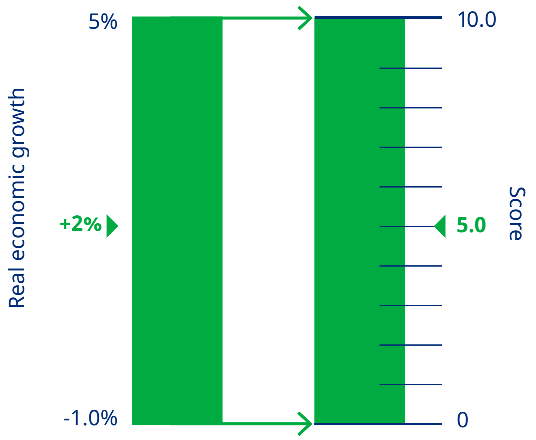
Objective

Adequate pension provision is a long-term issue and significant real growth of the economy will make the system more sustainable through an improvement in the government's financial position, thereby improving the likelihood of social security payments continuing, as well as permitting higher levels of savings in the private sector.

Calculation

The real economic growth rate, averaged over the last four years and the projected rates for the next three years, ranges from less than 0.4% in Japan to 6.8% in Ireland. In virtually every country, these figures have been affected by the COVID-19 pandemic. We consider a maximum feasible score over the long term to be 5% per annum. Therefore, real growth of 5% or more scores the maximum, whereas a rate of minus 1% or lower scores 0.

Figure 21. Calculating S8: Real economic growth



Commentary

Long-term real economic growth means the country's GDP is growing faster than inflation. This result can have several benefits, including higher average incomes, lower unemployment, reduced government borrowing, higher levels of savings and, often, improved investment returns. Most of these outcomes lead to a stronger and more robust retirement income system that, in turn, provides more sustainable pension benefits.

Weighting

This item has a weighting of 8% in the sustainability sub-index.

Question S9: Is it a requirement for the pension plan’s trustees/executives/fiduciaries to consider environmental, social and governance (ESG) issues in developing their investment policies or strategies?

If not a requirement, is it encouraged by the relevant pension regulator?

Objective

It is critical that private pension plans provide sustainable investment returns over many decades. We have seen a growing awareness in many countries of the importance of ESG-related issues, so it is appropriate for plan trustees and fiduciaries to consider ESG factors when framing their investment strategy.

Calculation

This question was assessed on a three-point scale with a score of 2 for “yes” to the first question, 1 if it is to some extent (including encouragement from the regulator) and 0 for “no,” which includes no action from the regulator.

Commentary

In nine of the 44 systems, trustees or fiduciaries are required to consider ESG factors when developing their investment strategy.

In a further 21 systems, there is no requirement but the regulator has encouraged this direction through public announcements or direct communication.

Weighting

This indicator has a 2% weighting in the sustainability sub-index because it represents an important signal in the development of long-term sustainable investment strategies.

Sources of data for the sustainability sub-index

Question S1

- Mercer calculations for France, Saudi Arabia, Taiwan and the UAE
- OECD. *Pensions at a Glance, 2011: Retirement Income Systems in OECD and G20 Countries,* for South Africa
- OECD. *Pensions at a Glance: Latin America and the Caribbean, 2014,* for Argentina, Peru and Uruguay
- OECD. *Pensions at a Glance Asia/Pacific 2018,* for China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, Singapore and Thailand
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators,* for all other countries, although adjustments were needed when data was not available or comprehensive

Question S2

- Mercer calculations for Malaysia, the Philippines, Saudi Arabia, Singapore, Taiwan and the UAE
- OECD. *Pensions at a Glance, 2011: Retirement Income Systems in OECD and G20 Countries,* in relation to pension insurance contracts for Germany
- OECD. *Pensions at a Glance, 2015: Retirement Income Systems in OECD and G20 Countries,* in relation to pension insurance contracts for Norway
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators,* in relation to public pension reserve as a percentage of GDP
- OECD. “StatExtract Database” (Dataset: Funded Pensions Indicators; Book reserve (non-autonomous), Pension funds (autonomous), Pension insurance contracts, Other) 2021, in relation to all retirement vehicles as a percentage of GDP for all countries

Question S3

- Life expectancy (2024 and 2052), aged dependency (2052) and total fertility rate (2020–2024) data from United Nations. “World Population Prospects 2022, Online Edition”
- State pension ages sourced from relevant Mercer consultants

Questions S5

- International Labour Organization, 2016, for China and 65+ age group for Malaysia
- International Labour Organization 2022, for all other systems

Question S6

Government debt as percentage of GDP

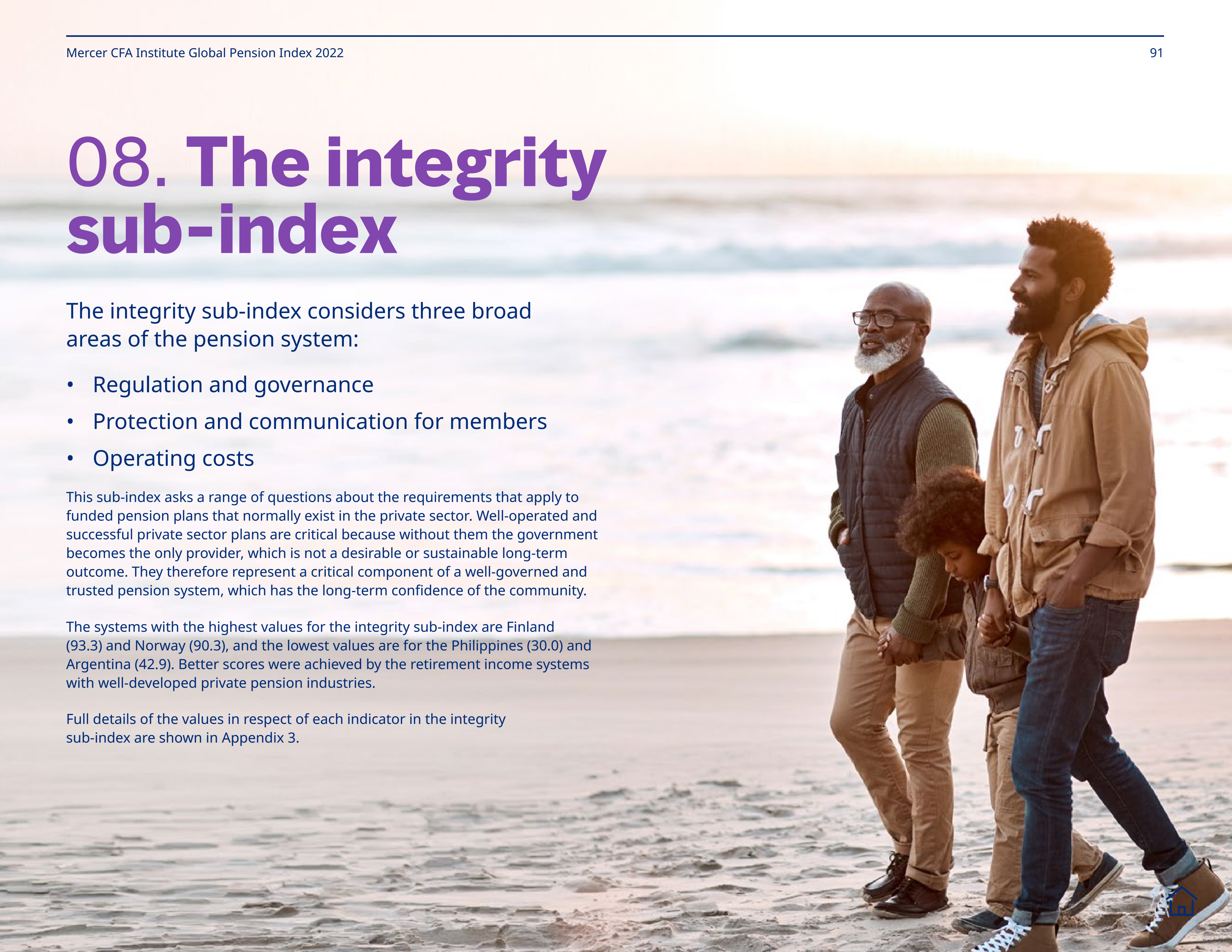
- International Monetary Fund. “World Economic Outlook –– Database,” April 2022
- Sovereign Wealth Fund Institute

Public expenditure on pensions

- Mercer calculations for Taiwan and the UAE
- Standard & Poor’s. *Global Aging 2016: 58 Shades of Gray,* for Colombia, Hong Kong SAR, Malaysia, Peru, the Philippines, Singapore, Thailand and Uruguay
- OECD. *Pensions at a Glance 2021: OECD and G20 Indicators,* for all other systems

Questions S4, S7 and S9

- The answers were sourced from relevant Mercer consultants.



08. The integrity sub-index

The integrity sub-index considers three broad areas of the pension system:

- Regulation and governance
- Protection and communication for members
- Operating costs

This sub-index asks a range of questions about the requirements that apply to funded pension plans that normally exist in the private sector. Well-operated and successful private sector plans are critical because without them the government becomes the only provider, which is not a desirable or sustainable long-term outcome. They therefore represent a critical component of a well-governed and trusted pension system, which has the long-term confidence of the community.

The systems with the highest values for the integrity sub-index are Finland (93.3) and Norway (90.3), and the lowest values are for the Philippines (30.0) and Argentina (42.9). Better scores were achieved by the retirement income systems with well-developed private pension industries.

Full details of the values in respect of each indicator in the integrity sub-index are shown in Appendix 3.

Regulation and governance

Question R1: Do private sector pension plans need regulatory approval or supervision to operate?

Is a private pension plan required to be a separate legal entity from the employer?

Objective

These questions are designed to assess the extent to which a private sector pension plan is required to be a separate entity from any sponsoring employer (which usually entails holding assets separate from the employer) and is subject to some form of regulatory oversight.

Thirty-three of the 44 systems obtained the maximum score indicating the presence of the basic groundwork needed for a sound governance framework.

Calculation

We assessed each question in this section with a score of 2 for “yes” and 0 for “no.” In some cases, the response was neither a clear “yes” nor “no” so that the score is between 0 and 2 depending on the actual circumstances.

Weighting

The first question has a 2.5% weighting and the second question has a 5% weighting, giving a total weighting of 7.5% in the integrity sub-index for these two questions.

Question R2: Are private sector pension plans required to submit a report in a prescribed format to a regulator each year?

Does the regulator make industry data available from the submitted forms on a regular basis?

How actively does the regulator discharge its supervisory responsibilities, on a scale of 1 to 5?

The following table was provided to assist in answering this question.

Figure 22. Supervisory responsibilities scaling system

Scale	Description	Examples of activity by the regulator
1	Inactive	Receives reports from plans but does not follow up
2	Occasionally active	Receives annual reports, follows up with questions but has limited communication with plans on a regular basis
3	Moderately active	Receives annual reports, follows up with questions and has regular communication with plans, including on-site visits
4	Consistently active	Obtains information on a regular basis from plans and has a focus on risk-based regulation; that is, there is a focus on plans with higher risks
5	Very active	Obtains information on a regular basis from plans and has a focus on risk-based regulation; in addition, the regulator often leads the industry with ideas, discussion papers and reacts to immediate issues

Objective

These questions are designed to assess the level of supervision and the involvement of the regulator within the industry.

Calculation

The first two questions in this section were assessed with a score of 2 for “yes” and 0 for “no.” In some cases, the response was neither a clear “yes” nor “no” so that the score is between 0 and 2, depending on the actual circumstances.

The last question was assessed on a five-point scale as shown in Figure 22. Note that this question does not assess the quality of the supervision — rather, it considers the activity of the regulator.

The results highlight that the role of the pension regulator varies greatly around the world. Generally speaking, the pension regulator plays a stronger role where the pension industry has developed over many decades.

Weighting

The first and third questions are each given a 4% weighting, with the second question a 2% weighting, resulting in a total weighting of 10% in the integrity sub-index for these three questions.

Question R3: Where assets exist, are the private pension plan’s trustees/executives/fiduciaries required to prepare an investment policy?

Are the private pension plan’s trustees/executives/fiduciaries required to prepare a risk management policy?

Are the private pension plan’s trustees/executives/fiduciaries required to prepare a conflicts of interest policy?

Are the private pension plan’s trustees/executives/fiduciaries required to have at least one member who is independent from the employer and the employees included in the governing body?

Objective

These questions assess the regulatory requirements regarding certain functions that may be necessary in respect of the fiduciaries who oversee private pension plans.

The third question considers fiduciaries who may have a number of roles in various entities, including the pension plan, the sponsoring employer, a provider (such as an investment house) or, indeed, another pension plan. Good governance practice means pension plans should have a clear policy to handle such situations.

The fourth question reflects the fact that it is no longer appropriate for the governance structure of pension schemes to be restricted or controlled by a particular entity. Good governance practice includes independent trustees or fiduciaries.

Calculation

The questions in this section were assessed with a score of 2 for “yes” and 0 for “no.” In some cases, the response was neither a clear “yes” nor “no” so the score is between 0 and 2, depending on the actual circumstances.

Finland, Malaysia, Norway, Peru, Saudi Arabia, Singapore, Taiwan, the UAE and Uruguay received the maximum score of 10.0 for these questions, while nine systems scored less than 6. This indicates scope to improve governance requirements in many systems.

Weighting

The first and second questions are each given a 4% weighting, with the third question given a 2.5% weighting and the fourth question given a 2% weighting, resulting in a total of 12.5% in the integrity sub-index for these four questions.

Question R4: Do the private pension plan’s trustees/executives/fiduciaries have to satisfy any personal requirements set by the regulator?

Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognized professional?

Objective

These questions assess the regulatory requirements of these two aspects of private sector pension plan governance.

Calculation

Each question in this section was assessed with a score of 2 for “yes” and 0 for “no.” In some cases, the response was neither a clear “yes” nor “no” so the score is between 0 and 2, depending on the actual circumstances.

Twenty-eight of the 44 systems received the maximum score, indicating that several systems could improve their requirements, particularly in respect of the first question.

Weighting

Each question is given a 2.5% weighting in the integrity sub-index, resulting in a total of 5% for these two questions.

Question R5: What is the government's capacity to effectively formulate and implement sound policies and to promote private sector development?

What respect do citizens and the state have for the institutions that govern economic and social interactions among them?

How free are the country's citizens to express their views? What is the likelihood of political instability or politically motivated violence?

Objective

These questions assess the integrity of the government, which plays a critical role in the ongoing governance, legal framework, regulation, policy development and stability of the retirement income system.

Calculation

The World Bank publishes results from the Worldwide Governance Indicators project for 214 economies for the following six dimensions of governance:

- Government effectiveness
- Regulatory quality
- Rule of law
- Control of corruption
- Voice and accountability
- Political stability and absence of violence/terrorism

From this publicly available source, each indicator provided a score for each economy in the standard normal units, ranging from approximately -2.5 to +2.5. These six scores were summed and then increased by three to avoid any negative scores. The scores ranged from 0.20 for Turkey to 13.69 for Norway out of a maximum score of 15.

Weighting

Each question is given a 5% weighting in the integrity sub-index, resulting in a total of 15% for these three questions.

Commentary on the total regulation and governance results

The scores ranged from 11.0 for the Philippines and 15.9 for Mexico to 47.8 for Finland and 47.9 for Norway out of a maximum of 50. Low scores for some systems indicate that the relevant regulators have minimal requirements when compared to the more developed private pension systems.

Protection and communication for members

With the exception of question P1, which deals with funding, each question in this section is assessed with a score of 2 for “yes” and 0 for “no.” In some cases, the response is neither a clear “yes” nor “no” so that the score is between 0 and 2, depending on the actual circumstances.

Question P1:

For DB schemes:

- Are there minimum funding requirements?
- What is the period over which any deficit or shortfall is normally funded?
- Describe the major features of the funding requirements.

For DC schemes, are the assets required to fully meet the members’ accounts?

Objective

These questions are designed to assess the level of funding required in respect of both DB and DC plans. Funding levels are critical to securing members’ future retirement benefits.

Calculation

The calculation considered the requirements for both DB and DC plans (where relevant). For the DB funding assessment, we considered both the extent of the funding requirement and the period over which any deficit must be rectified. The maximum score for DB was given when funding requirements included regular actuarial involvement and the funding of any deficit or shortfall over periods of up to four years.

Commentary

All systems require full funding of DC plans; in fact, many respondents noted that this feature is the essence of such a plan. However, the requirements for funding DB plans vary considerably. There are, in effect, no requirements in some systems, whereas in other cases any deficit requires rectification within a specified period. Australia, Belgium, Chile, Denmark, Finland, Hong Kong SAR, Iceland, Ireland, Israel, Korea, the Netherlands, Norway, Poland, South Africa, Spain, Taiwan and Uruguay received the maximum score.

Weighting

The funding of a member’s retirement benefit in a private sector pension plan represents a basic protection of the member’s accrued benefits and this indicator is therefore given a 10 per cent weighting in the integrity sub-index.

Question P2: Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?

Objective

An essential characteristic of a sound retirement income system is that a member's accrued retirement benefit is not subject to the financial position of the member's employer.

Commentary

Most systems have a restriction on the level of in-house assets held by a pension plan. These restrictions are often set at 5 to 10% of the plan's assets. A maximum score was given where in-house assets are restricted to 5%. There are no restrictions in Argentina, Indonesia, Italy, Japan, the Philippines, Taiwan and Thailand.

Weighting

This requirement represents an important way of protecting the member's accrued benefits and is given a 5% weighting in the integrity sub-index.

Question P3: Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund?

In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?

Objective

Members of pension plans face many risks. These two questions consider what protection, if any, members receive in the case of fraud, mismanagement or employer insolvency. In the latter case, the employer may not be able to pay any outstanding contributions.

Commentary

The answers to these questions vary considerably. In some cases, some restricted arrangements are in place to support members, whereas in the UK (for example) a fraud compensation scheme exists.

Weighting

Although these issues are very important when such incidents occur, experience in most countries suggests that it is not a common event or that its financial effect is relatively minor. Hence, each question is given a weighting of 2.5% in the integrity sub-index, resulting in a total of 5% for these two questions.

Question P4: When joining the pension plan, are new members required to receive information about the pension plan?

Objective

Members should receive information when joining a pension plan, including a description of the benefits and the risks they may face, particularly with the global growth of DC plans.

Commentary

All systems, except Iceland, India (for some DB plans), the Philippines and Thailand, require information to be provided directly to members when they join the plan.

Weighting

The weighting for this question is 5% in the integrity sub-index.

Question P5: Are plan members required to have access to the annual report from the pension plan; for example, on the plan's website?

Is the annual report or other public document required to show:

- The allocation of the plan's assets to major asset classes?
- The major investments of the plan?
- All investments of the plan?

Objective

Annual reports present the opportunity for pension plans to communicate with their members, highlighting plan information and contemporary issues that may need to be considered by members.

As DC arrangements become more prevalent, it is becoming even more important for members to receive information about the investments of the plan.

Commentary

The responses vary considerably, with six of the 44 systems having no requirements in respect of annual reports.

The responses for disclosure of investment allocation and major investments ranged from "no requirement" through to "full disclosure of all investments." A maximum score was given when major investments of the plan's assets are required to be disclosed.

Weighting

The first question relating to annual reports is given a 2.5% weighting in the integrity sub-index, with the same weighting given to the questions relating to assets, resulting in a total of 5%.

Question P6: Are plan members required to receive an annual statement of their accrued benefits from the plan?

Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?

Is this annual statement provided to members of DC plans required to show any costs or fees debited from their individual account?

Objective

Although an annual report about the plan is valuable, most members are more interested in their personal entitlement. The first question therefore ascertains whether the provision of such information is a requirement, while the second question considers whether this requirement includes any projections about the member's future retirement benefit. The third question relates to any requirement concerning the disclosure of costs.

Commentary

The majority of systems have a requirement concerning annual personal statements. Austria, Belgium, Chile, Finland, Germany, Iceland, Ireland, Israel, Italy, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland and the US require some form of benefit projection. As account balances increase and individuals take on greater responsibility for their retirement benefits, the provision of this type of information will become increasingly important to members.

Full disclosure of the fees charged is required in the annual personal statements in 24 countries.

Weighting

The first question is given a 4% weighting in the integrity sub-index, while the second and third questions are given a 2% and 1.5% weighting, respectively. This resulted in a total of 7.5% for these three questions.

Question P7: Do plan members have access to a complaints tribunal, which is independent from the pension plan?

Objective

A common way to provide some protection to individuals who receive benefits from a contract with a financial services organization (such as a bank or insurance company) is to provide them with access to an independent complaints tribunal or ombudsman.

As the provision of retirement benefits can represent an individual's most important financial asset, there is good reason for such a provision to exist in respect of pension plans.

Commentary

Twenty-eight systems have a complaints arrangement that is independent from both the provider and the regulator, while nine other systems have a range of processes that can be used for this purpose.

Weighting

Although this indicator is not as important as funding or communication to members, it represents a desirable feature because it provides all members with access to an independent body, should any disputes arise. It is given a 2.5% weighting in the integrity sub-index.

Commentary on the total protection and communication results

The scores ranged from 10.0 for the Philippines to 38.0 for Finland and 38.3 for Belgium out of a maximum of 40. The very low score for the Philippines is primarily caused by their system having virtually no requirements in terms of communicating with plan members.

Costs

Question: What percentage of total pension assets is held in various types of pension funds?

What percentage of total pension assets is held by the largest pension funds/providers?

Objective

As noted by economist Luis Viceira, costs are one of the most important determinants of the long-run efficiency of a pension system, commenting that, “Unfortunately, there is very little transparency about the overall costs of running most pension systems or the total direct and indirect fees that they charge to participants and sponsors.”[42]

This is generally correct. The huge variety of pension systems around the world — with a great diversity of retail, wholesale and employer-sponsored arrangements — means that some administrative or investment costs are clearly identified, whereas others are borne indirectly or directly by providers, employer sponsors or third parties. Comparisons are therefore very difficult.

Yet, in the final analysis many costs will be borne by members and therefore affect the provision of their retirement income. We have used two proxies for this indicator.

The first question represents an attempt to ascertain the proportions in each pension industry that are employer-sponsored plans, not-for-profit plans or retail funds, which may be employer-based or individual contracts. Each type of plan is likely to have a different cost structure, which, in turn, influences the overall cost structure of the industry.

The second question highlights the fact that economies of scale matter. That is, as funds increase in size, their costs as a proportion of assets will likely reduce and some (or all) of these benefits will be passed onto members. The number of pension funds or providers considered for this question ranged from three to 30 depending on the country’s population.

Calculation

For the first question, each type of plan is given a weight ranging from 1 for individual retail or insurance contracts to 10 for a centralized fund. These scores are then weighted by the actual characteristics of each pension system.

For the second question, we considered the size of the assets held by the largest providers or funds. A score of 1 is given when these assets are less than 10% of all pension assets rising to a maximum score of 5 when these assets represent more than 75% of all pension assets.

Weighting

Each question is given a 5% weighting in the integrity sub-index, resulting in a total of 10% for these two questions.

Commentary on the costs results

The scores for these two indicators ranged from 4.5 for the US and 5.0 in Canada to 10.0 for Malaysia, Singapore and the UAE. The high scores for these three systems are not surprising because each system has a central fund, which should provide administrative savings. In addition, larger funds have the opportunity to add value through a broader range of investment opportunities.

We recognize there is a tension between a system with a single fund (or relatively few funds), which should be able to keep costs down, and a competitive system in which individuals have greater choice and freedom. The ideal system should encourage competition and flexibility to suit members’ needs while at the same time encouraging economies of scale (as illustrated by this question) to minimize costs and improve benefits.

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[42] Hinz R, Ruldolph HP et al. *Evaluating the Financial Performance of Pension Funds,* The World Bank: Washington DC, 2010.

Sources of data for integrity sub-index

As the integrity sub-index is primarily based on the operations of the private-sector pension industry, answers to all but one of the questions were sourced from relevant Mercer consultants in each country. The exception was Question R5, which used Worldwide Governance Indicators from The World Bank.[43]

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[43] World Bank. "Worldwide Governance Indicator 2021 Update," available at www.info.worldbank.org/governance/wgi/index.aspx.

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Appendix 1. Score for each system for each indicator in the adequacy sub-index

	Question	Question weight	Score for each system														
			Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	Iceland
A1	What is the minimum pension, as a percentage of the average wage, that a single aged person will receive? How is the minimum state pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?	20%	7.6	9.8	8.2	9.7	9.7	9.7	5.7	0.9	1.3	10.0	8.3	9.3	7.2	6.1	10.0
A2	What is the net pension replacement rate for a range of income earners?	25%	10.0	5.5	10.0	10.0	10.0	6.4	4.2	10.0	10.0	10.0	8.7	10.0	8.0	5.9	9.2
A3	What is the net household saving rate in the country? What is the level of household debt in the country, expressed as a percentage of GDP?	10%	7.1	3.3	6.0	5.2	6.1	3.2	6.4	6.8	4.6	2.7	3.4	6.5	6.0	3.8	5.1
A4	Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favorably than similar savings in a bank account? Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods?	5%	4.0	7.8	10.0	8.5	10.0	10.0	10.0	10.0	10.0	5.5	7.8	10.0	10.0	10.0	10.0
A5	Is there a minimum access age to receive benefits from private pension plans (except in the cases of death, invalidity or significant financial hardship)? If so, what is the current age?	10%	0.0	9.3	0.0	10.0	0.0	3.3	5.0	8.3	9.7	10.0	10.0	10.0	10.0	10.0	10.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system														
			India	**Indonesia**	**Ireland**	**Israel**	**Italy**	**Japan**	**Korea**	**Malaysia**	**Mexico**	**Netherlands**	**New Zealand**	**Norway**	**Peru**	**Philippines**	**Poland**
A1	What is the minimum pension, as a percentage of the average wage, that a single aged person will receive? How is the minimum state pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?	20%	0.0	0.0	9.1	9.1	7.4	6.5	1.3	0.0	2.5	10.0	10.0	9.7	0.9	0.0	4.0
A2	What is the net pension replacement rate for a range of income earners?	25%	2.4	1.8	7.8	6.0	10.0	5.6	3.6	10.0	10.0	10.0	6.4	8.2	7.4	10.0	2.9
A3	What is the net household saving rate in the country? What is the level of household debt in the country, expressed as a percentage of GDP?	10%	6.7	8.3	6.9	7.1	4.8	4.7	3.5	2.7	9.3	3.6	2.3	3.2	7.3	6.4	4.8
A4	Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favorably than similar savings in a bank account? Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods?	5%	10.0	7.0	10.0	10.0	5.5	10.0	10.0	10.0	7.0	10.0	0.0	8.0	10.0	3.0	10.0
A5	Is there a minimum access age to receive benefits from private pension plans (except in the cases of death, invalidity or significant financial hardship)? If so, what is the current age?	10%	0.0	6.7	6.7	6.7	0.0	5.0	3.3	6.7	6.7	5.0	8.3	10.0	1.7	0.0	10.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
A1	What is the minimum pension, as a percentage of the average wage, that a single aged person will receive? How is the minimum state pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?	20%	9.5	0.0	6.8	4.4	7.7	8.3	8.4	0.0	0.0	1.9	8.5	8.5	10.0	5.2
A2	What is the net pension replacement rate for a range of income earners?	25%	10.0	9.2	7.3	0.0	10.0	8.0	6.2	0.6	5.6	10.0	7.0	8.8	9.3	9.2
A3	What is the net household saving rate in the country? What is the level of household debt in the country, expressed as a percentage of GDP?	10%	5.1	9.4	7.5	4.6	4.7	5.2	3.8	6.3	3.2	6.5	3.0	3.8	8.6	5.5
A4	Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favorably than similar savings in a bank account? Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods?	5%	7.8	8.0	10.0	10.0	10.0	3.5	10.0	7.0	10.0	4.5	8.0	10.0	7.0	10.0
A5	Is there a minimum access age to receive benefits from private pension plans (except in the cases of death, invalidity or significant financial hardship)? If so, what is the current age?	10%	10.0	7.0	6.7	0.0	10.0	6.7	9.3	10.0	6.7	0.0	0.0	6.7	10.0	6.3

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	Iceland
A6	Is it a requirement to take part or all of the retirement benefit as an annuity or income stream for life? If it is a requirement to take a lifetime annuity or income stream, are some lump-sum benefits also available? If yes, please describe. If it is not a requirement to take a lifetime annuity or income stream, are there any incentives or rules that encourage the provision of income streams? Please describe. Are the annuities or income streams available priced or designed as unisex annuities (that is, the same benefit for males and females)? Are reverse mortgages (or home equity release schemes) available to your retirees (either from the government or the private sector)?	10%	1.0	4.0	6.0	2.0	5.5	7.5	6.0	2.0	7.0	8.0	8.0	7.0	10.0	3.0	7.5
A7	On resignation from employment, are plan members normally entitled to the full vesting of their accrued benefit? After resignation, is the value of the member's accrued benefit normally maintained in real terms (either by inflation-linked indexation or through market investment returns)? Can a member's benefit entitlements normally be transferred to another private pension plan on the member's resignation from an employer?	5%	2.0	10.0	7.0	10.0	9.0	8.0	10.0	8.0	8.0	10.0	10.0	10.0	9.0	10.0	8.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system														
			India	Indonesia	Ireland	Israel	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland
A6	Is it a requirement to take part or all of the retirement benefit as an annuity or income stream for life? If it is a requirement to take a lifetime annuity or income stream, are some lump-sum benefits also available? If yes, please describe. If it is not a requirement to take a lifetime annuity or income stream, are there any incentives or rules that encourage the provision of income streams? Please describe. Are the annuities or income streams available priced or designed as unisex annuities (that is, the same benefit for males and females)? Are reverse mortgages (or home equity release schemes) available to your retirees (either from the government or the private sector)?	10%	6.5	5.5	5.0	7.5	8.0	2.0	4.5	2.0	2.5	9.0	2.0	6.0	3.0	1.0	6.5
A7	On resignation from employment, are plan members normally entitled to the full vesting of their accrued benefit? After resignation, is the value of the member's accrued benefit normally maintained in real terms (either by inflation-linked indexation or through market investment returns)? Can a member's benefit entitlements normally be transferred to another private pension plan on the member's resignation from an employer?	5%	10.0	9.0	9.0	10.0	10.0	7.0	8.0	10.0	5.0	10.0	10.0	10.0	9.0	0.0	10.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	Saudi Arabia	Singapore	South Africa	Spain	Sweden	Switzerland	Taiwan	Thailand	Turkey	UAE	UK	Uruguay	USA
A6	Is it a requirement to take part or all of the retirement benefit as an annuity or income stream for life? If it is a requirement to take a lifetime annuity or income stream, are some lump-sum benefits also available? If yes, please describe. If it is not a requirement to take a lifetime annuity or income stream, are there any incentives or rules that encourage the provision of income streams? Please describe. Are the annuities or income streams available priced or designed as unisex annuities (that is, the same benefit for males and females)? Are reverse mortgages (or home equity release schemes) available to your retirees (either from the government or the private sector)?	10%	8.5	7.0	9.0	9.0	3.0	6.0	2.5	3.0	2.0	2.5	7.0	4.0	7.0	3.5
A7	On resignation from employment, are plan members normally entitled to the full vesting of their accrued benefit? After resignation, is the value of the member's accrued benefit normally maintained in real terms (either by inflation-linked indexation or through market investment returns)? Can a member's benefit entitlements normally be transferred to another private pension plan on the member's resignation from an employer?	5%	9.0	4.0	10.0	10.0	9.0	10.0	10.0	10.0	6.0	2.0	9.0	10.0	10.0	5.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	**Australia**	**Austria**	**Belgium**	**Brazil**	**Canada**	**Chile**	**China**	**Colombia**	**Denmark**	**Finland**	**France**	**Germany**	**Hong Kong SAR**	**Iceland**
A8	Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?	3%	0.0	10.0	0.0	10.0	0.0	10.0	10.0	10.0	0.0	0.0	0.0	5.0	10.0	0.0	5.0
A9	What is the level of home ownership in the country?	5%	5.8	6.5	5.0	7.3	7.6	6.7	6.4	10.0	2.9	4.0	6.0	5.4	3.9	4.5	7.6
A10	What is the proportion of total pension assets in the whole industry (i.e., including both the public and private sectors) invested in growth assets?	5%	2.8	10.0	7.9	6.7	3.7	10.0	8.9	3.8	10.0	9.5	10.0	4.4	9.3	10.0	10.0
A11	Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income due to invalidity or a disability? Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income during paid parental leave? Does the system provide any additional pension contributions, credits or future pension benefits for parents who are caring for young children while the parent is not in the paid workforce? If so, please describe. These benefits could be in respect of the public pension or a private sector pension.	2%	0.0	0.0	7.5	0.0	0.0	5.0	0.0	7.5	5.0	6.3	5.0	5.0	5.0	2.5	3.8
	Adequacy sub-index		**55.6**	**70.2**	**69.8**	**80.8**	**71.1**	**70.8**	**60.0**	**64.4**	**65.2**	**81.4**	**77.5**	**84.6**	**80.5**	**61.5**	**85.8**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	India	Indonesia	Ireland	Israel	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland
			Score for each system														
A8	Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?	3%	5.0	0.0	7.5	10.0	10.0	10.0	5.0	4.0	5.0	10.0	10.0	0.0	10.0	0.0	10.0
A9	What is the level of home ownership in the country?	5%	9.5	8.6	6.8	6.7	7.4	5.9	5.4	8.1	5.6	7.1	4.5	8.1	7.9	6.3	9.1
A10	What is the proportion of total pension assets in the whole industry (i.e., including both the public and private sectors) invested in growth assets?	5%	2.2	4.0	9.0	7.8	8.4	10.0	7.2	10.0	7.4	10.0	10.0	10.0	10.0	6.0	10.0
A11	Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income due to invalidity or a disability? Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income during paid parental leave? Does the system provide any additional pension contributions, credits or future pension benefits for parents who are caring for young children while the parent is not in the paid workforce? If so, please describe. These benefits could be in respect of the public pension or a private sector pension.	2%	5.0	0.0	0.0	5.0	5.0	0.0	2.5	2.5	2.5	3.8	0.0	10.0	5.0	2.5	2.5
	Adequacy sub-index		**37.6**	**39.3**	**75.9**	**75.7**	**72.3**	**58.0**	**40.1**	**57.2**	**63.1**	**84.9**	**64.0**	**79.0**	**54.7**	**40.5**	**59.5**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 1. Score for each system for each indicator in the adequacy sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
A8	Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?	3%	0.0	0.0	10.0	10.0	5.0	2.5	10.0	10.0	0.0	0.0	0.0	10.0	0.0	10.0
A9	What is the level of home ownership in the country?	5%	8.2	5.7	9.8	7.1	8.0	6.4	2.3	8.4	7.5	5.4	9.5	6.4	5.6	6.5
A10	What is the proportion of total pension assets in the whole industry (i.e., including both the public and private sectors) invested in growth assets?	5%	9.8	10.0	6.7	10.0	10.0	10.0	10.0	10.0	6.4	3.9	10.0	10.0	5.0	10.0
A11	Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income due to invalidity or a disability? Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income during paid parental leave? Does the system provide any additional pension contributions, credits or future pension benefits for parents who are caring for young children while the parent is not in the paid workforce? If so, please describe. These benefits could be in respect of the public pension or a private sector pension.	2%	0.0	5.0	5.0	1.3	10.0	2.5	7.5	2.5	2.5	0.0	5.0	10.0	10.0	0.0
	Adequacy sub-index		**84.9**	**61.4**	**77.3**	**44.2**	**80.0**	**70.6**	**68.7**	**42.0**	**41.3**	**45.6**	**63.8**	**76.5**	**84.5**	**67.5**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index

	Question	Question weight	Score for each system														
			Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	Iceland
S1	What proportion of the working age population are members of private pension plans?	20%	0.8	9.3	1.4	6.0	0.0	6.8	10.0	3.8	5.8	10.0	10.0	8.1	5.7	5.7	10.0
S2	What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?	15%	1.2	9.2	0.6	3.6	2.6	10.0	7.5	0.3	2.9	10.0	7.4	1.8	2.1	4.7	10.0
S3	What is the life expectancy at the current state pension age? What is the projected life expectancy at the expected state pension age in 2052 (that is, in 30 years' time)? What is the projected old-age dependency ratio in 2052? What is the estimated total fertility rate (TFR) for 2020–2024?	20%	6.5	5.7	4.0	5.4	6.7	4.7	4.1	1.7	4.7	7.1	5.1	3.2	5.2	1.6	6.6
S4	What is the level of mandatory contributions that are set aside for future retirement benefits (that is, funded), expressed as a percentage of the wage for a full-time median income earner? These include mandatory employer and/or employee contributions toward funded public benefits (that is, social security) and/or private retirement benefits.	10%	0.0	8.8	0.0	0.0	0.0	7.1	9.6	4.0	9.4	10.0	3.9	0.0	0.0	8.3	10.0
S5	What is the labor force participation rate for those aged 55–64? What is the labor force participation rate for those aged 65+?	10%	5.8	6.6	4.0	3.6	2.7	6.5	5.3	5.3	5.7	7.7	7.4	4.2	7.3	4.5	9.5

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index - *continued*

	Question	Question weight	Score for each system														
			India	Indonesia	Ireland	Israel	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland
S1	What proportion of the working age population are members of private pension plans?	20%	0.0	0.0	5.1	10.0	1.3	8.2	7.0	2.8	8.8	10.0	9.8	7.1	0.3	0.6	9.1
S2	What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?	15%	1.1	0.2	3.2	6.7	1.7	5.6	6.2	6.0	1.9	10.0	4.2	6.2	2.2	1.0	1.0
S3	What is the life expectancy at the current state pension age? What is the projected life expectancy at the expected state pension age in 2052 (that is, in 30 years' time)? What is the projected old-age dependency ratio in 2052? What is the estimated total fertility rate (TFR) for 2020–2024?	20%	7.1	8.8	6.3	7.4	4.3	2.0	1.9	6.3	7.8	6.4	5.2	5.8	8.5	9.3	4.5
S4	What is the level of mandatory contributions that are set aside for future retirement benefits (that is, funded), expressed as a percentage of the wage for a full-time median income earner? These include mandatory employer and/or employee contributions toward funded public benefits (that is, social security) and/or private retirement benefits.	10%	3.5	3.6	0.0	10.0	1.5	0.0	3.8	10.0	5.2	10.0	4.2	1.7	8.3	10.0	2.4
S5	What is the labor force participation rate for those aged 55–64? What is the labor force participation rate for those aged 65+?	10%	4.0	7.6	6.2	7.4	3.7	9.5	8.0	3.9	4.5	7.4	9.6	8.2	9.1	5.8	3.6

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
S1	What proportion of the working age population are members of private pension plans?	20%	0.0	7.1	5.3	1.3	1.8	10.0	9.6	10.0	2.1	0.8	5.8	5.6	8.6	6.9
S2	What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?	15%	1.9	2.7	6.2	7.1	1.4	9.2	9.7	2.2	0.8	0.3	1.4	8.8	2.8	10.0
S3	What is the life expectancy at the current state pension age? What is the projected life expectancy at the expected state pension age in 2052 (that is, in 30 years' time)? What is the projected old-age dependency ratio in 2052? What is the estimated total fertility rate (TFR) for 2020–2024?	20%	4.8	5.4	2.8	9.2	3.7	5.7	4.0	1.1	1.8	6.9	4.3	6.0	4.3	6.3
S4	What is the level of mandatory contributions that are set aside for future retirement benefits (that is, funded), expressed as a percentage of the wage for a full-time median income earner? These include mandatory employer and/or employee contributions toward funded public benefits (that is, social security) and/or private retirement benefits.	10%	0.0	10.0	10.0	0.0	0.0	5.7	8.3	5.0	5.8	0.0	8.4	6.7	6.3	2.1
S5	What is the labor force participation rate for those aged 55–64? What is the labor force participation rate for those aged 65+?	10%	5.9	3.2	8.1	2.4	5.1	8.9	7.9	2.2	7.3	0.7	8.6	6.4	5.2	6.2

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	**Australia**	**Austria**	**Belgium**	**Brazil**	**Canada**	**Chile**	**China**	**Colombia**	**Denmark**	**Finland**	**France**	**Germany**	**Hong Kong SAR**	**Iceland**
S6	What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities), expressed as a percentage of GDP? What is the level of public expenditure on pensions expressed as a percentage of GDP, averaged over the latest available figure and the projected figure for 2050?	10%	4.8	7.9	2.9	2.2	3.9	4.9	8.0	6.2	7.3	6.5	3.9	1.8	4.4	8.9	7.0
S7	In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (e.g., part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?	5%	0.0	10.0	0.0	0.0	0.0	8.0	6.0	8.0	4.0	10.0	10.0	9.0	8.0	10.0	10.0
S8	What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?	8%	3.0	5.5	4.0	3.9	3.6	4.6	5.0	10.0	6.9	4.5	3.6	3.7	3.3	3.9	4.6
S9	Is it a requirement for the pension plan's trustees/executives/fiduciaries to consider environmental, social and governance (ESG) issues in developing their investment policies or strategies? If not a requirement, is it encouraged by the relevant pension regulator?	2%	0.0	5.0	5.0	10.0	5.0	2.5	5.0	2.5	0.0	2.5	5.0	10.0	5.0	2.5	2.5
	Sustainability sub-index		**29.4**	**77.2**	**22.7**	**39.1**	**27.8**	**64.7**	**70.3**	**39.3**	**55.3**	**82.5**	**65.3**	**40.9**	**44.3**	**52.1**	**83.8**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index - *continued*

	Question	Question weight	Score for each system														
			India	Indonesia	Ireland	Israel	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland
S6	What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities), expressed as a percentage of GDP? What is the level of public expenditure on pensions expressed as a percentage of GDP, averaged over the latest available figure and the projected figure for 2050?	10%	7.1	8.6	6.7	6.4	0.1	2.2	8.1	7.3	7.9	6.0	7.1	6.5	8.5	8.0	5.1
S7	In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (e.g., part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?	5%	5.0	0.0	6.0	10.0	0.0	4.0	6.0	10.0	0.0	10.0	5.0	9.0	0.0	0.0	0.0
S8	What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?	8%	9.9	8.6	10.0	7.8	2.7	2.4	5.6	7.1	2.8	4.6	5.8	5.0	5.8	8.3	7.1
S9	Is it a requirement for the pension plan's trustees/executives/fiduciaries to consider environmental, social and governance (ESG) issues in developing their investment policies or strategies? If not a requirement, is it encouraged by the relevant pension regulator?	2%	0.0	0.0	10.0	10.0	10.0	0.0	2.5	5.0	5.0	10.0	2.5	2.5	0.0	2.5	0.0
	Sustainability sub-index		**40.7**	**44.5**	**53.5**	**81.9**	**23.1**	**44.5**	**54.9**	**60.2**	**57.1**	**81.9**	**64.7**	**60.4**	**51.5**	**52.3**	**45.4**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 2. Score for each system for each indicator in the sustainabilty sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
S6	What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities), expressed as a percentage of GDP? What is the level of public expenditure on pensions expressed as a percentage of GDP, averaged over the latest available figure and the projected figure for 2050?	10%	1.9	7.6	10.0	7.4	2.2	6.9	6.2	9.1	6.4	7.0	8.7	4.7	5.1	4.4
S7	In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (e.g., part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?	5%	10.0	0.0	10.0	8.0	8.0	10.0	6.0	10.0	8.0	0.0	0.0	10.0	0.0	6.0
S8	What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?	8%	4.2	5.5	5.9	2.8	4.0	4.9	4.2	7.3	4.8	7.9	4.7	3.5	3.7	5.2
S9	Is it a requirement for the pension plan's trustees/executives/fiduciaries to consider environmental, social and governance (ESG) issues in developing their investment policies or strategies? If not a requirement, is it encouraged by the relevant pension regulator?	2%	5.0	0.0	10.0	10.0	5.0	0.0	0.0	2.5	0.0	0.0	0.0	10.0	5.0	0.0
	Sustainability sub-index		**29.7**	**54.3**	**65.4**	**49.7**	**28.7**	**75.7**	**70.5**	**53.2**	**36.4**	**29.8**	**51.9**	**63.9**	**50.6**	**61.2**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index

	Question	Question weight	Score for each system														
			Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	Iceland
R1	Do private sector pension plans need regulatory approval or supervision to operate? Is a private pension plan required to be a separate legal entity from the employer?	7.5%	0.0	10.0	8.3	10.0	10.0	10.0	10.0	3.3	10.0	10.0	10.0	6.7	10.0	10.0	10.0
R2	Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year? Does the regulator make industry data available from the submitted forms on a regular basis? How actively does the regulator (or protector) discharge its supervisory responsibilities?	10%	0.8	10.0	4.2	9.2	9.2	9.5	10.0	9.2	9.2	10.0	9.2	8.2	9.0	10.0	10.0
R3	Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a risk management policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a conflicts of interest policy? Are the private pension plan's trustees/executives/fiduciaries required to have at least one member who is independent from the employer and the employees included in the governing body?	12.5%	8.4	8.4	9.2	8.4	8.2	8.4	8.4	7.4	9.0	7.4	10.0	5.2	8.4	8.4	8.4

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			India	**Indonesia**	**Ireland**	**Israel**	**Italy**	**Japan**	**Korea**	**Malaysia**	**Mexico**	**Netherlands**	**New Zealand**	**Norway**	**Peru**	**Philippines**	**Poland**
R1	Do private sector pension plans need regulatory approval or supervision to operate? Is a private pension plan required to be a separate legal entity from the employer?	7.5%	10.0	10.0	10.0	10.0	10.0	6.7	8.3	10.0	1.7	10.0	10.0	10.0	8.3	0.0	6.7
R2	Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year? Does the regulator make industry data available from the submitted forms on a regular basis? How actively does the regulator (or protector) discharge its supervisory responsibilities?	10%	8.2	9.2	9.0	10.0	9.2	8.4	3.6	7.2	7.6	9.2	9.2	9.2	3.2	0.8	9.2
R3	Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a risk management policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a conflicts of interest policy? Are the private pension plan's trustees/executives/fiduciaries required to have at least one member who is independent from the employer and the employees included in the governing body?	12.5%	3.2	7.4	8.8	8.4	9.2	4.0	4.0	10.0	4.2	9.2	4.8	10.0	10.0	3.2	5.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
R1	Do private sector pension plans need regulatory approval or supervision to operate? Is a private pension plan required to be a separate legal entity from the employer?	7.5%	10.0	10.0	10.0	10.0	10.0	8.3	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
R2	Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year? Does the regulator make industry data available from the submitted forms on a regular basis? How actively does the regulator (or protector) discharge its supervisory responsibilities?	10%	10.0	6.2	8.2	9.2	10.0	9.2	8.4	3.2	8.4	10.0	7.2	10.0	10.0	7.6
R3	Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a risk management policy? Are the private pension plan's trustees/executives/fiduciaries required to prepare a conflicts of interest policy? Are the private pension plan's trustees/executives/fiduciaries required to have at least one member who is independent from the employer and the employees included in the governing body?	12.5%	9.2	10.0	10.0	9.2	8.4	7.2	6.0	10.0	0.8	6.4	10.0	9.2	10.0	0.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	**Australia**	**Austria**	**Belgium**	**Brazil**	**Canada**	**Chile**	**China**	**Colombia**	**Denmark**	**Finland**	**France**	**Germany**	**Hong Kong SAR**	**Iceland**
R4	Do the private pension plan's trustees/ executives/fiduciaries have to satisfy any personal requirements set by the regulator? Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognized professional?	5%	10.0	10.0	5.0	10.0	10.0	7.5	7.5	10.0	7.5	10.0	10.0	10.0	7.5	10.0	10.0
R5	What is the government's capacity to effectively formulate and implement sound policies and to promote private sector development? What respect do citizens and the state have for the institutions that govern economic and social interactions among them? How free are the country's citizens to express their views? What is the likelihood of political instability or politically motivated violence?	15%	1.5	7.9	7.8	6.8	1.1	8.1	5.6	1.0	1.4	8.8	9.1	6.2	7.6	6.5	8.2
P1	For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded? Describe the major features of the funding requirements. For defined contribution schemes, are the assets required to fully meet the members' accounts?	10%	5.0	10.0	7.5	10.0	9.0	9.0	10.0	7.5	5.0	10.0	10.0	7.0	8.0	10.0	10.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			India	Indonesia	Ireland	Israel	Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland
R4	Do the private pension plan's trustees/ executives/fiduciaries have to satisfy any personal requirements set by the regulator? Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognized professional?	5%	5.0	10.0	8.8	10.0	10.0	7.5	2.5	10.0	2.5	10.0	10.0	10.0	10.0	10.0	5.0
R5	What is the government's capacity to effectively formulate and implement sound policies and to promote private sector development? What respect do citizens and the state have for the institutions that govern economic and social interactions among them? How free are the country's citizens to express their views? What is the likelihood of political instability or politically motivated violence?	15%	1.5	1.5	7.6	4.5	4.1	7.3	5.8	3.8	0.3	8.5	9.1	9.1	1.6	0.8	4.4
P1	For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded? Describe the major features of the funding requirements. For defined contribution schemes, are the assets required to fully meet the members' accounts?	10%	5.0	9.0	10.0	10.0	9.0	9.0	10.0	5.0	6.0	10.0	8.0	10.0	5.0	5.0	10.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
R4	Do the private pension plan's trustees/ executives/fiduciaries have to satisfy any personal requirements set by the regulator? Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognized professional?	5%	10.0	10.0	7.5	10.0	10.0	7.5	7.5	10.0	10.0	10.0	10.0	7.5	10.0	5.0
R5	What is the government’s capacity to effectively formulate and implement sound policies and to promote private sector development? What respect do citizens and the state have for the institutions that govern economic and social interactions among them? How free are the country’s citizens to express their views? What is the likelihood of political instability or politically motivated violence?	15%	6.1	1.1	8.6	2.6	5.1	8.6	8.8	6.8	1.2	0.1	4.6	7.2	5.9	5.9
P1	For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded? Describe the major features of the funding requirements. For defined contribution schemes, are the assets required to fully meet the members' accounts?	10%	0.0	6.0	5.0	10.0	10.0	8.0	9.0	10.0	5.0	5.0	6.0	9.0	10.0	8.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	**Australia**	**Austria**	**Belgium**	**Brazil**	**Canada**	**Chile**	**China**	**Colombia**	**Denmark**	**Finland**	**France**	**Germany**	**Hong Kong SAR**	**Iceland**
P2	Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?	5%	0.0	10.0	5.0	10.0	7.5	8.8	10.0	7.5	7.5	10.0	10.0	5.0	8.8	7.5	7.5
P3	Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund? In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?	5%	0.0	5.0	5.0	10.0	0.0	2.5	7.5	2.5	10.0	2.5	10.0	2.5	7.5	10.0	10.0
P4	When joining the pension plan, are new members required to receive information about the pension plan?	5%	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	0.0
P5	Are plan members required to have access to the annual report from the pension plan; for example, on the plan's website? Is the annual report required to show: i. The allocation of the plan's assets to major asset classes? ii. The major investments of the plan? iii. All investments of the plan?	5%	2.5	9.0	8.0	8.0	10.0	6.5	0.0	8.0	10.0	0.0	9.0	0.0	7.0	9.0	9.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			India	**Indonesia**	**Ireland**	**Israel**	**Italy**	**Japan**	**Korea**	**Malaysia**	**Mexico**	**Netherlands**	**New Zealand**	**Norway**	**Peru**	**Philippines**	**Poland**
P2	Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?	5%	8.8	0.0	10.0	10.0	0.0	0.0	10.0	10.0	7.5	10.0	10.0	10.0	8.8	0.0	10.0
P3	Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund? In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?	5%	10.0	5.0	0.0	5.0	5.0	2.5	0.0	10.0	0.0	2.5	5.0	5.0	5.0	5.0	7.5
P4	When joining the pension plan, are new members required to receive information about the pension plan?	5%	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	0.0	10.0
P5	Are plan members required to have access to the annual report from the pension plan; for example, on the plan's website? Is the annual report required to show: i. The allocation of the plan's assets to major asset classes? ii. The major investments of the plan? iii. All investments of the plan?	5%	7.0	8.0	10.0	10.0	8.0	8.8	4.5	10.0	0.0	8.0	10.0	5.3	10.0	0.0	9.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
P2	Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?	5%	10.0	10.0	7.5	8.8	10.0	10.0	10.0	0.0	0.0	10.0	10.0	10.0	7.5	5.0
P3	Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund? In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?	5%	0.0	5.0	7.5	5.0	0.0	5.0	7.5	5.0	5.0	5.0	10.0	10.0	2.5	5.0
P4	When joining the pension plan, are new members required to receive information about the pension plan?	5%	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	2.5	10.0	10.0	10.0	10.0	10.0
P5	Are plan members required to have access to the annual report from the pension plan; for example, on the plan's website? Is the annual report required to show: i. The allocation of the plan's assets to major asset classes? ii. The major investments of the plan? iii. All investments of the plan?	5%	7.0	3.3	7.0	8.0	7.0	3.8	7.0	8.0	5.0	8.0	0.0	4.5	5.0	8.0

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	Iceland
P6	Are plan members required to receive an annual statement of their accrued benefits from the plan? Is this annual statement to individual members required to show any projection of the member's possible retirement benefits? Is this annual statement provided to members of DC plans required to show any costs or fees debited from their individual account?	7.5%	2.7	7.3	10.0	9.0	6.7	7.3	10.0	5.3	7.3	7.3	8.0	2.7	10.0	7.3	8.0
P7	Do plan members have access to a complaints tribunal that is independent from the pension plan?	2.5%	10.0	10.0	10.0	10.0	10.0	7.5	7.0	0.0	10.0	10.0	10.0	5.0	5.0	10.0	10.0
C1	What percentage of total pension assets is held in various types of pension funds? What percentage of total pension assets is held by the largest N pension funds/ providers? (Where N is based on the population of the country/system.)	10%	8.6	6.9	8.9	6.9	6.6	5.0	5.9	7.1	5.7	7.8	7.4	7.1	5.4	8.5	7.4
	Adequacy sub-index		**42.9**	**86.8**	**76.5**	**87.5**	**70.5**	**78.6**	**78.9**	**60.0**	**71.3**	**82.1**	**93.3**	**60.1**	**80.9**	**87.6**	**84.4**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system														
			India	**Indonesia**	**Ireland**	**Israel**	**Italy**	**Japan**	**Korea**	**Malaysia**	**Mexico**	**Netherlands**	**New Zealand**	**Norway**	**Peru**	**Philippines**	**Poland**
P6	Are plan members required to receive an annual statement of their accrued benefits from the plan? Is this annual statement to individual members required to show any projection of the member's possible retirement benefits? Is this annual statement provided to members of DC plans required to show any costs or fees debited from their individual account?	7.5%	6.0	7.3	10.0	10.0	10.0	2.7	6.3	5.3	5.3	9.0	10.0	10.0	5.3	0.0	6.3
P7	Do plan members have access to a complaints tribunal that is independent from the pension plan?	2.5%	5.0	10.0	10.0	10.0	5.0	0.0	10.0	0.0	0.0	10.0	10.0	10.0	10.0	10.0	5.0
C1	What percentage of total pension assets is held in various types of pension funds? What percentage of total pension assets is held by the largest N pension funds/ providers? (Where N is based on the population of the country/system.)	10%	9.8	9.7	5.5	6.0	6.1	8.2	9.2	10.0	9.0	7.3	5.3	7.3	6.0	9.0	7.3
	Adequacy sub-index		**60.4**	**71.5**	**83.7**	**83.2**	**74.7**	**63.0**	**63.5**	**76.9**	**43.6**	**87.8**	**82.1**	**90.3**	**63.7**	**30.0**	**71.2**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Appendix 3. Score for each system for each indicator in the integrity sub-index - *continued*

	Question	Question weight	Score for each system													
			Portugal	**Saudi Arabia**	**Singapore**	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**	**Thailand**	**Turkey**	**UAE**	**UK**	**Uruguay**	**USA**
P6	Are plan members required to receive an annual statement of their accrued benefits from the plan? Is this annual statement to individual members required to show any projection of the member's possible retirement benefits? Is this annual statement provided to members of DC plans required to show any costs or fees debited from their individual account?	7.5%	10.0	0.0	5.3	7.3	7.3	10.0	8.0	0.0	5.3	7.3	0.0	7.3	7.3	10.0
P7	Do plan members have access to a complaints tribunal that is independent from the pension plan?	2.5%	10.0	0.0	5.0	10.0	10.0	0.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	5.0
C1	What percentage of total pension assets is held in various types of pension funds? What percentage of total pension assets is held by the largest N pension funds/ providers? (Where N is based on the population of the country/system.)	10%	7.3	9.5	10.0	7.4	6.7	8.6	5.5	9.9	8.6	6.4	10.0	5.2	5.5	4.5
	Adequacy sub-index		**73.9**	**62.5**	**81.0**	**78.4**	**78.9**	**79.5**	**80.7**	**69.8**	**50.0**	**66.6**	**72.6**	**83.0**	**79.8**	**61.7**

Each question is scored for each system with a minimum score of 0 and a maximum score of 10.

Historical performance

System	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Argentina	na	na	na	na	na	na	na	37.7	38.8	39.2	39.5	42.5	41.5	43.3
Australia	74.0	72.9	75.0	75.7	77.8	79.9	79.6	77.9	77.1	72.6	75.3	74.2	75.0	76.8
Austria	na	na	na	na	na	52.8	52.2	51.7	53.1	54.0	53.9	52.1	53.0	55.0
Belgium	na	na	na	na	na	na	na	na	na	na	na	63.4	64.5	67.9
Brazil	na	59.8	58.4	56.7	52.8	52.4	53.2	55.1	54.8	56.5	55.9	54.5	54.7	55.8
Canada	73.2	69.9	69.1	69.2	67.9	69.1	70.0	66.4	66.8	68.0	69.2	69.3	69.8	70.6
Chile	59.6	59.9	64.9	63.3	66.4	68.2	69.1	66.4	67.3	69.3	68.7	67.0	67.0	68.3
China	48.0	40.3	42.5	45.4	47.1	49.0	48.0	45.2	46.5	46.2	48.7	47.3	55.1	54.5
Colombia	na	na	na	na	na	na	na	na	61.7	62.6	58.4	58.5	58.4	63.2
Denmark	na	na	na	82.9	80.2	82.4	81.7	80.5	78.9	80.2	80.3	81.4	82.0	82.0
Finland	na	na	na	na	na	74.3	73.0	72.9	72.3	74.5	73.6	72.9	73.3	77.2
France	na	54.6	54.4	54.7	53.5	57.7	57.4	56.4	59.6	60.7	60.2	60.0	60.5	63.2
Germany	48.2	54.0	54.2	55.3	58.5	62.2	62.0	59.0	63.5	66.8	66.1	67.3	67.9	67.9
Hong Kong SAR	na	na	na	na	na	na	na	na	na	56.0	61.9	61.1	61.8	64.7
Iceland	na	na	na	na	na	na	na	na	na	na	na	na	84.2	84.7
India	na	na	43.4	42.4	43.3	43.5	40.3	43.4	44.9	44.6	45.8	45.7	43.3	44.4
Indonesia	na	na	na	na	42.0	45.3	48.2	48.3	49.9	53.1	52.2	51.4	50.4	49.2
Ireland	na	na	na	na	na	62.2	63.1	62.0	65.8	66.8	67.3	65.0	68.3	70.0
Israel	na	na	na	na	na	na	na	na	na	na	na	74.7	77.1	79.8
Italy	na	na	na	na	na	49.6	50.9	49.5	50.8	52.8	52.2	51.9	53.4	55.7
Japan	41.5	42.9	43.9	44.4	44.4	44.4	44.1	43.2	43.5	48.2	48.3	48.5	49.8	54.5
Korea (South)	na	na	na	44.7	43.8	43.6	43.8	46.0	47.1	47.3	49.8	50.5	48.3	51.1
Malaysia	na	na	na	na	na	na	na	55.7	57.7	58.5	60.6	60.1	59.6	63.1

Historical performance

System	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Mexico	na	na	na	na	50.1	49.4	52.1	44.3	45.1	45.3	45.3	44.7	49.0	56.1
Netherlands	76.1	78.3	77.9	78.9	78.3	79.2	80.5	80.1	78.8	80.3	81.0	82.6	83.5	84.6
New Zealand	na	na	na	na	na	na	na	na	67.9	68.5	70.1	68.3	67.4	68.8
Norway	na	na	na	na	na	na	na	na	74.7	71.5	71.2	71.2	75.2	75.3
Peru	na	na	na	na	na	na	na	na	na	62.4	58.5	57.2	55.0	55.8
Philippines	na	na	na	na	na	na	na	na	na	na	43.7	43.0	42.7	42.0
Poland	na	na	58.6	58.2	57.9	56.4	56.2	54.4	55.1	54.3	57.4	54.7	55.2	57.5
Portugal	na	na	na	na	na	na	na	na	na	na	na	na	na	62.8
Saudi Arabia	na	na	na	na	na	na	na	na	na	58.9	57.1	57.5	58.1	59.2
Singapore	57.0	59.6	56.7	54.8	66.5	65.9	64.7	67.0	69.4	70.4	70.8	71.2	70.7	74.1
South Africa	na	na	na	na	na	54.0	53.4	48.6	48.9	52.7	52.6	53.2	53.6	54.7
Spain	na	na	na	na	na	na	na	na	na	54.4	54.7	57.7	58.6	61.8
Sweden	73.5	74.5	73.4	73.4	72.6	73.4	74.2	71.4	72.0	72.5	72.3	71.2	72.9	74.6
Switzerland	na	75.3	72.7	73.3	73.9	73.9	74.2	68.6	67.6	67.6	66.7	67.0	70.0	72.3
Taiwan	na	na	na	na	na	na	na	na	na	na	na	na	51.8	52.9
Thailand	na	na	na	na	na	na	na	na	na	na	39.4	40.8	40.6	41.7
Turkey	na	na	na	na	na	na	na	na	na	na	42.2	42.7	45.8	45.3
UAE	na	na	na	na	na	na	na	na	na	na	na	na	59.6	61.8
UK	63.9	63.7	66.0	64.8	65.4	67.6	65.0	60.1	61.4	62.5	64.4	64.9	71.6	73.7
Uruguay	na	na	na	na	na	na	na	na	na	na	na	na	60.7	71.5
US	59.8	57.3	58.1	59.0	58.2	57.9	56.3	56.4	57.8	58.8	60.6	60.3	61.4	63.9
Number of systems	**11**	**14**	**16**	**18**	**20**	**25**	**25**	**27**	**30**	**34**	**37**	**39**	**43**	**44**

Melbourne
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Global
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Index

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