



# MELBOURNE MERCER GLOBAL PENSION INDEX

2019





# A MESSAGE FROM THE MINISTER FOR JOBS, INNOVATION AND TRADE



The Victorian Government is proud to once again support the Melbourne Mercer Global Pension Index – a collaborative effort between the Victorian Government, industry and academia.

Pension funds are a key source of retirement income and play a significant role in

financial markets, prompting a growing need for accurate information and comparisons between countries' developments and experiences.

The comprehensive and current information provided by this Index will be invaluable to many around the world; policymakers and market participants alike.

As an internationally regarded report, the Index is testament to Melbourne's reputation as a global centre of industry research, innovation and financial expertise.

Financial services play a vital role in the Victorian economy accounting for 11.7 per cent of Victoria's Gross Added Value and supporting more than 122,000 local jobs.

Victoria is home to six of the eight largest industry super funds in Australia and has 45 per cent of Funds Under Management in the top 20 Australian super funds.

The financial services sector in Melbourne is growing significantly and is ranked at number 15 on the 2019 Global Financial Centres Index.

I commend the Monash Centre for Financial Studies at the Monash Business School and Mercer on the 2019 Melbourne Mercer Global Pension Index, and for the continued success of this report in fuelling constructive international discussion and best practice reforms.

**THE HON. MARTIN PAKULA**

Minister for Jobs, Innovation and Trade



# LETTER FROM MCFS



The Monash Centre for Financial Studies (MCFS) is delighted to present the 2019 Melbourne Mercer Global Pension Index (the Index). Since its inception in 2009, the number of systems assessed by the Index has increased from 11 to 37 in 2019, including several systems in the Asia Pacific region. After a decade, the

Index has become a global benchmark for measurement of pension system performance amongst policymakers, industry practitioners and academics. It provides a basis to ask questions about the sustainability of current pension planning - both in economies that enjoy demographic dividends, as well as those with rapidly ageing populations.

Increase in human longevity is welcome and to be celebrated. Moreover, advances in medical science may lead to unexpected survival beyond assumptions embedded in retirement financing analysis. Ensuring that the retirees are living in good health and can afford the cost of living is a complex but essential issue. Unless carefully managed, both private and public sector balance sheets could struggle to cope, especially in the current economic environment of extraordinarily low real interest rates and muted long-term economic growth expectations.

To ensure the objectivity of our findings, an expert reference group oversees the development of the Index and ensures it represents an independent and unbiased view. We want to thank the members of this group:

- Syd Bone, Chair, Executive Director of CP2
- Professor Keith Ambachtsheer, Director, Rotman International Centre for Pension Management, Rotman School of Management, University of Toronto
- Professor Hazel Bateman, Head, School of Risk and Actuarial, University of NSW Business School and Deputy Director, Centre of Excellence in Population Ageing Research (CEPAR)
- Professor Joseph Cherian, Practice Professor of Finance, National University of Singapore
- Professor Gordon Clark, Director of the Smith School of Enterprise and the Environment, University of Oxford and Visiting Professor Faculty of Business and Economics, Monash University
- Professor Kevin Davis, Professor of Finance, University of Melbourne
- Dr Vince FitzGerald AO, Chairman, ACIL Allen Consulting
- Dr Nga Pham, CFA., Research Fellow, MCFS, Monash Business School
- Professor Deborah Ralston, Chair, SMSF Association, member of Fintech Hub Advisory Board (YBF Ventures), member of Payments System Board (Reserve Bank of Australia)
- Paul Schroder, Group Executive, Product Brand & Reputation, AustralianSuper
- Ian Silk, Chief Executive Officer, AustralianSuper (from 2009 to 2018)
- Professor Susan Thorp, Professor of Finance, University of Sydney Business School, University of Sydney

I want to congratulate the lead author, Dr David Knox, and his team at Mercer, including the in-country experts, for having delivered an outstanding set of findings for which we are most grateful.

Special thanks also to the Victorian Government's Department of Economic Development, Jobs, Transport and Resources for its long-term support of this study, and its staff for their assistance and guidance.

## **PROFESSOR DEEP KAPUR**

Director  
Monash Centre for Financial Studies

# PREFACE



Pension systems around the world, including social security systems and private sector arrangements, are now under more pressure than ever before. Significant ageing of the population in many countries is a fact of life. Yet this is not the only pressure point on our pension systems. Others include:

- the low-growth/low-interest economic environment which reduces the long-term benefit of compound interest, particularly affecting defined contribution arrangements
- the increasing prevalence of defined contribution schemes and the related increased responsibility on individuals to understand the new arrangements
- the lack of easy access to pension plans for some workers in both developed and developing economies, whether it be due to informal labour markets or the growing importance of “gig employment”
- government debt in some countries which affects the ability to pay benefits in pay-as-you-go systems while high household debt in other countries will affect the long term adequacy of the benefits provided
- the need to develop sustainable and robust retirement income products as retirees seek more control and flexibility over their financial affairs

As significant pension reform is being considered or implemented in many countries, it is important that we learn together to understand what best practice may look like, both now and into the future. This 11th edition of the Melbourne Mercer Global Pension Index presents such research and compares 37 retirement income systems which encompass a diversity of pension policies and practices.

The primary objective of this research is to benchmark each retirement income system using more than 40 indicators. An important secondary purpose is to highlight some shortcomings in each system and to suggest possible areas of reform that would provide more adequate retirement benefits, increased sustainability over the longer term and/or a greater trust in the private pension system.

Many of the challenges relating to ageing populations are similar around the world, irrespective of social, political, historical or economic influences. Further, the policy reforms needed to alleviate these challenges are also similar and relate to pension ages, encouraging people to work longer, the level of funding set aside for retirement, and some benefit design issues that reduce leakage of benefits before retirement. However, it should be noted that these desirable reforms are often not easy and may require long transition periods.

The preparation of this international report requires input, hard work and cooperation from many individuals and groups. I would like to thank them all.

First, we are delighted that the Victorian Government continues to be the major sponsor of this project.

Second, the Monash Centre for Financial Studies within Monash University has played an important role in this project, particularly in establishing an expert reference group of senior and experienced individuals who have provided helpful comments throughout the project.

Third, Mercer consultants around the world have been invaluable in providing information in respect of their retirement income systems, checking our interpretation of the data, and providing insightful comments. In this respect, we also appreciate the support of the Finnish Centre for Pensions.

I hope that 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**

Senior Partner  
Mercer

# CHAPTER 1

## EXECUTIVE SUMMARY

The provision of financial security in retirement is critical for both individuals and societies as most countries are now grappling with the social, economic and financial effects of ageing populations. The major causes of this demographic shift are declining birth rates and increasing longevity. But it is not only the ageing populations that represent challenges for pension systems around the world. The current economic environment with historically low interest rates in many countries and reduced financial returns are placing additional financial pressures on existing retirement income systems.

Now, more than ever before, it is important to understand the features of the better pension systems. Yet, a comparison of the different pension systems around the world is not straightforward. As the OECD (2017a) comments: “Retirement-income regimes are diverse and often involve a number of different programmes. Classifying pension systems and different retirement-income schemes is consequentially difficult.”<sup>1</sup>

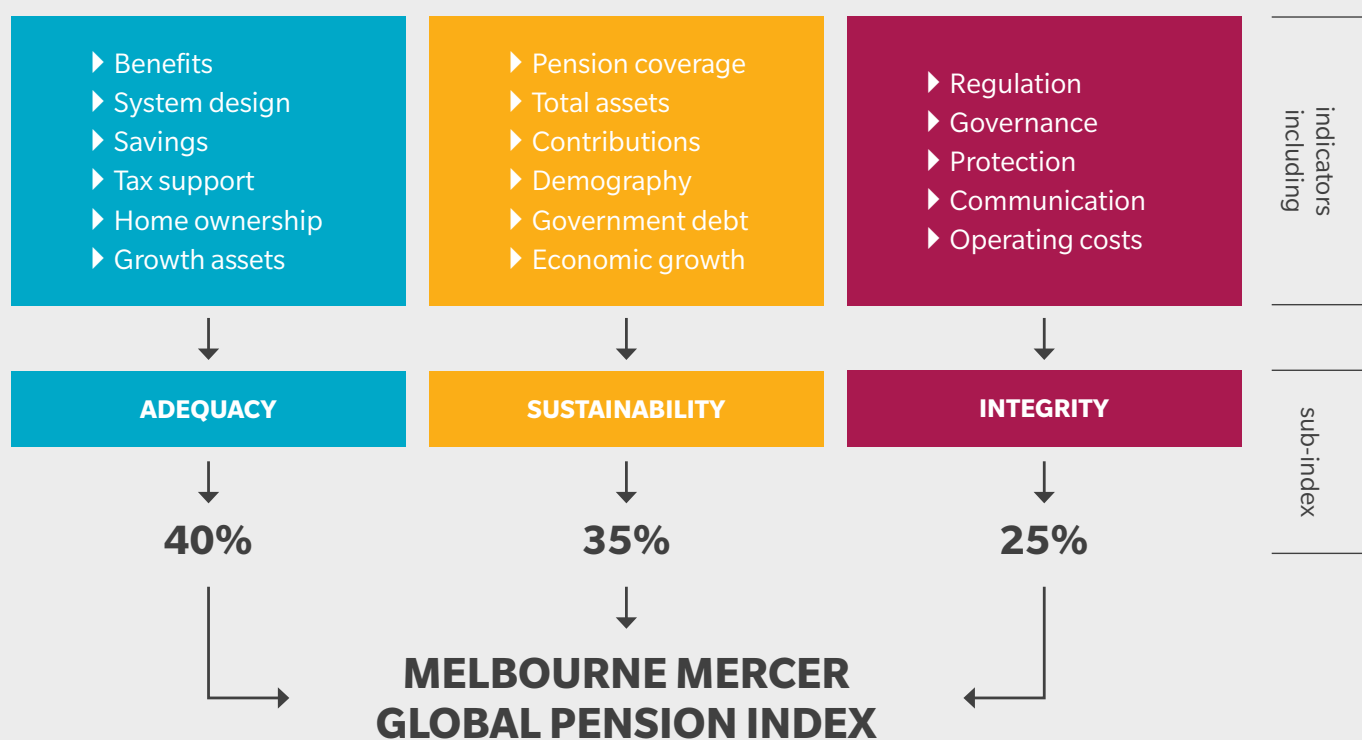
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<sup>1</sup> OECD (2017a), p86.

Furthermore, any comparison of systems is likely to be controversial as each system has evolved from that country's particular economic, social, cultural, political and historical circumstances. This means there is no single system that can be transplanted from one country and applied, without change, to another country. However, there are certain features and characteristics across the range of systems that 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 Melbourne Mercer Global Pension Index uses three sub-indices – adequacy, sustainability and integrity – to measure each retirement income system against more than 40 indicators. The following diagram highlights some of the topics covered in each sub-index.

### Calculating the Melbourne Mercer Global Pension Index



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

The different weightings are used to reflect the primary importance of the adequacy sub-index which represents the benefits that are currently being provided together with some important system design features. The sustainability sub-index has a focus on the future and measures various indicators which will influence the likelihood that the

current system will be able to provide benefits into the future. The integrity sub-index includes several items that influence the overall governance and operations of the system which affects the level of confidence that the citizens of each country have in their system.

This study of 37 retirement income systems, representing more than 63 per cent of the world's population, shows there is great diversity between the systems around the world with scores ranging from 39.4 for Thailand to 81.0 for the Netherlands.

## This year's results

This study confirms that the Netherlands and Denmark have the best systems with both receiving an A-grade in 2019.

Table 1: Summary of the 2019 results

Grade	Index Value	Systems	Description
A	>80	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	Australia	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	Finland Sweden Norway Singapore New Zealand Canada Chile Ireland Switzerland Germany	
C+	60–65	UK Hong Kong SAR USA Malaysia France	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	Peru Colombia Poland Saudi Arabia Brazil Spain Austria South Africa Italy Indonesia	
D	35–50	Korea China Japan India Mexico Philippines Turkey Argentina 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.

None of these systems 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 there also exist major omissions or weaknesses. A D-grade classification may also occur in the relatively early stages of the development of a particular retirement income system.



Table 2 shows the overall index value for each system, together with the index value for each of the three sub-indices: adequacy, sustainability and integrity. Each index value represents a score between zero and 100.

Table 2: Overall index value for each system, including the three sub-indices

System	Overall Index Value	Sub-Index Values		
		Adequacy	Sustainability	Integrity
Argentina	39.5	43.1	31.9	44.4
Australia	75.3	70.3	73.5	85.7
Austria	53.9	68.2	22.9	74.4
Brazil	55.9	71.8	27.7	69.8
Canada	69.2	70.0	61.8	78.2
Chile	68.7	59.4	71.7	79.2
China	48.7	60.5	36.7	46.5
Colombia	58.4	61.4	46.0	70.8
Denmark	80.3	77.5	82.0	82.2
Finland	73.6	73.2	60.7	92.3
France	60.2	79.1	41.0	56.8
Germany	66.1	78.3	44.9	76.4
Hong Kong SAR	61.9	54.5	52.5	86.9
India	45.8	39.9	44.9	56.3
Indonesia	52.2	46.7	47.6	67.5
Ireland	67.3	81.5	44.6	76.3
Italy	52.2	67.4	19.0	74.5
Japan	48.3	54.6	32.2	60.8
Korea	49.8	47.5	52.6	49.6
Malaysia	60.6	50.5	60.5	76.9
Mexico	45.3	37.5	57.1	41.3
Netherlands	81.0	78.5	78.3	88.9
New Zealand	70.1	70.9	61.5	80.7
Norway	71.2	71.6	56.8	90.6
Peru	58.5	60.0	52.4	64.7
Philippines	43.7	39.0	55.5	34.7
Poland	57.4	62.5	45.3	66.0
Saudi Arabia	57.1	59.6	50.5	62.2
Singapore	70.8	73.8	59.7	81.4
South Africa	52.6	42.3	46.0	78.4
Spain	54.7	70.0	26.9	69.1
Sweden	72.3	67.5	72.0	80.2
Switzerland	66.7	57.6	65.4	83.0
Thailand	39.4	35.8	38.8	46.1
Turkey	42.2	42.6	27.1	62.8
UK	64.4	60.0	55.3	84.0
USA	60.6	58.8	62.9	60.4
<b>Average</b>	<b>59.3</b>	<b>60.6</b>	<b>50.4</b>	<b>69.7</b>

As noted earlier, each index value takes into account more than 40 indicators, some of which are based on data measurements which can be difficult to compare between systems. For this reason, one 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, it can be fairly concluded that the higher index value indicates a better retirement income system.

Table 3 shows the grade for each system's sub-index values as well as the overall grade. This approach highlights the fact that some systems may have a weakness in one area (e.g. sustainability) whilst being much stronger in the other two areas. Such a weakness highlights areas for future reforms.

Table 3: Overall index grades for each system, including the three sub-indices

System	Overall Index Grade	Sub-Index Grades		
		Adequacy	Sustainability	Integrity
Argentina	D	D	E	D
Australia	B+	B	B	A
Austria	C	B	E	B
Brazil	C	B	E	B
Canada	B	B	C+	B+
Chile	B	C	B	B+
China	D	C+	D	D
Colombia	C	C+	D	B
Denmark	A	B+	A	A
Finland	B	B	C+	A
France	C+	B+	D	C
Germany	B	B+	D	B+
Hong Kong SAR	C+	C	C	A
India	D	D	D	C
Indonesia	C	D	D	B
Ireland	B	A	D	B+
Italy	C	B	E	B
Japan	D	C	E	C+
Korea	D	D	C	D
Malaysia	C+	C	C+	B+
Mexico	D	D	C	D
Netherlands	A	B+	B+	A
New Zealand	B	B	C+	A
Norway	B	B	C	A
Peru	C	C+	C	C+
Philippines	D	D	C	E
Poland	C	C+	D	B
Saudi Arabia	C	C	C	C+
Singapore	B	B	C	A
South Africa	C	D	D	B+
Spain	C	B	E	B
Sweden	B	B	B	A
Switzerland	B	C	B	A
Thailand	D	D	D	D
Turkey	D	D	E	C+
UK	C+	C+	C	A
USA	C+	C	C+	C+

## Overall recommendations

Chapter 4 makes several suggestions to improve each retirement income system. Although each system reflects a unique history, there are some common themes for improvement as many countries face similar problems in the decades ahead. As the OECD (2017a) notes: “OECD countries should not wait until the next crisis to implement the needed reforms to deal with increasing longevity, increasing risk of old-age inequality and changing work patterns.”<sup>2</sup> Of course, such issues are not just relevant for OECD countries.

There continues to be a range of reforms that can be implemented to improve the long term outcomes from our retirement income systems. These include:

- increase 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<sup>3</sup>
- promote higher labour force participation at older ages which will increase the savings available for retirement and limit the continuing increase in the length of retirement
- encourage or require 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
- increase the coverage of employees and/or the self-employed in the private pension system, recognising that many individuals will not save for the future without an element of compulsion or automatic enrolment
- reduce the 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
- review the level of public pension indexation as the method and frequency of increases are critical to ensure that the real value of the pension is maintained, balanced by its long-term sustainability
- improve the governance of private pension plans and introduce greater transparency to improve the confidence of plan members

The World Economic Forum (2017) 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 actions are critical and all have been highlighted within the adequacy or sustainability sub-indexes.

As the World Economic Forum report highlighted: “Healthy pension systems contribute positively towards creating a stable and prosperous economy.”<sup>4</sup>

2 OECD (2017a), p29

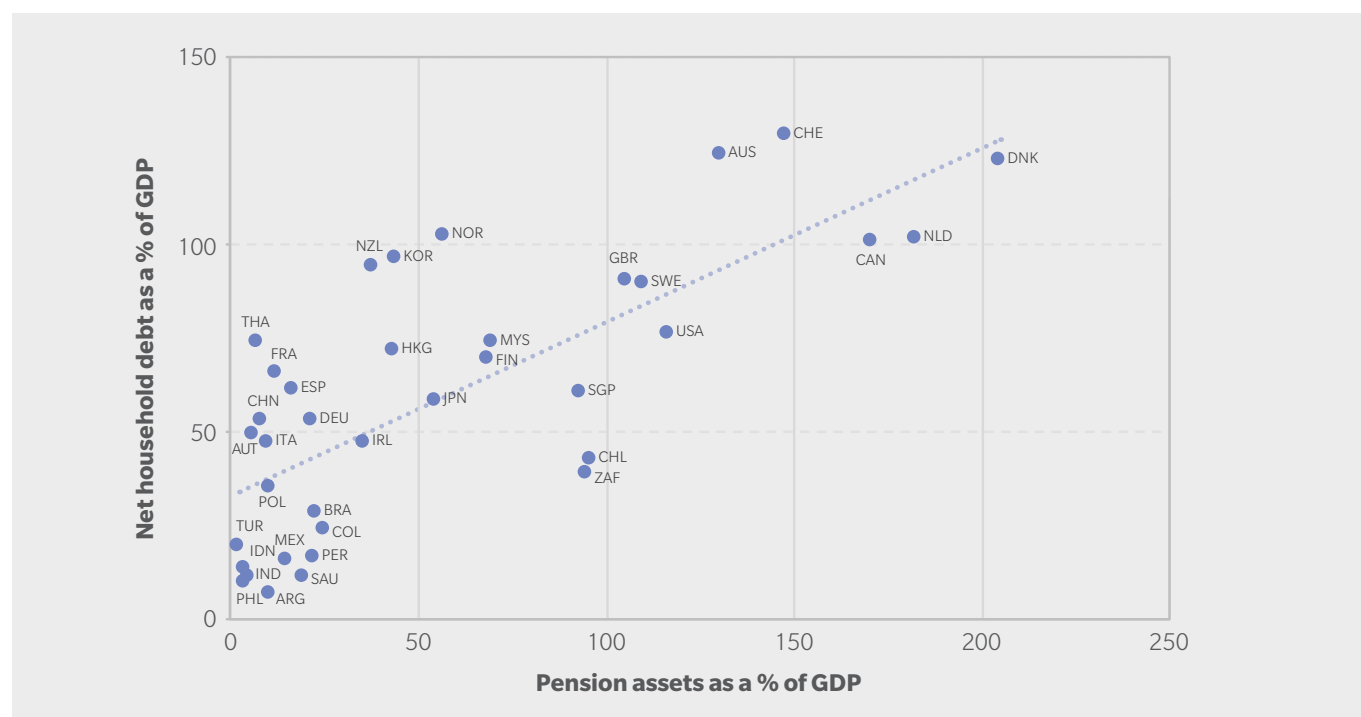
3 It should be noted that several countries have moved in this direction in recent years. Nevertheless, very few are linking the future pension age to the likely ongoing increases in life expectancy.

4 World Economic Forum (2017), p9.

## An interesting relationship between pension assets and household debt

One of the advantages of the Index is that relationships between certain variables related to savings and pension schemes can be explored. Figure 1 shows the relationship between the levels of pension assets and net household debt for each system, both expressed as a percentage of GDP. The relationship is strong, with a correlation of 74.4 per cent.

Figure 1: The relationship between net household debt and pension assets



There are likely to be several causes of this strong relationship but the well-known wealth effect is probably a major factor in many economies. That is, consumers feel more financially secure and confident as the wealth of their homes, investment portfolios or accrued pension benefits rise. In short, if your wealth increases, you are more willing to spend and/or enter into debt.

As the OECD notes, one needs to look at the assets available to pay down debt. In particular, “where future pension liabilities are already funded, this will increase households’ assets.”<sup>5</sup> Interestingly, they noted that both the Netherlands and Australia have well developed funded pension schemes and high household debt-to-assets ratios whereas Belgium with predominantly a pay-as-you-go pension system has much lower household debt.

Recent research by Yan (2019) confirmed the relationship in China between household debt and basic pension insurance. That is, there is a positive correlation between basic pension insurance and the household debt ratio in both rural households and high-income families. Lusardi et al (2017) have also shown that recent cohorts of older individuals (i.e. those aged 56-61) in the US have taken on more debt and face more financial insecurity, mostly due to having purchased more expensive homes.

5 OECD (2017b), *What does household debt say about financial resilience*, Statistical Insights, September.

The growth in household debt in many developed and emerging economies during the last two decades may have been caused by a number of factors including financial liberalisation and deregulation, financial innovation, the reduction in borrowing costs and an increase in house prices.

Notwithstanding these developments, the growth in assets held by pension funds is also likely to be a major contributor. That is, households feel more financially secure in the knowledge that increasing funds have been set aside for the future thereby enabling them to borrow additional funds prior to retirement. Such an outcome is not a bad thing. The assurance of future income from existing pension fund assets enables households to improve both their current and future living standards. This situation stands in contrast to those who are relying on pay-as-you-go social security benefits which can be adjusted by governments thereby reducing long term confidence in the system.

The trend line in Figure 1 has a slope of 0.466 which suggests that for every extra dollar in pension assets, net household debt increases by less than half that amount on average. Multivariate regression analysis also confirms the very strong relationship, even after allowing for the level of economic development in each country.

# CHAPTER 2

## BACKGROUND TO THE APPROACH USED

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 in respect of many systems provides additional challenges for such a comparison. Therefore, this report uses a wide variety of data sources drawing on publicly available data, wherever possible.

These challenges of data and benchmarking should not, however, prevent the comparison of retirement income systems. Within the context of our ageing populations, it is too important to ignore. Furthermore, there is no doubt that policies and practices adopted in some countries provide valuable lessons, experience or ideas for the development or reform of pension systems in other countries.

This edition of the Index compares 37 retirement income systems, highlighting both the considerable diversity and the positive features present in many systems. Notwithstanding these highlights, the study also confirms that no pension system is perfect and that every system has some shortcomings. In Chapter 4, suggestions are made for improving the efficacy of each retirement income system. In that respect it is hoped this study will act as a stimulus for each country (and indeed, other countries as well) to review their retirement income system and to consider making improvements so that future retirement incomes for their citizens can be improved.

In its influential report *Averting the Old Age Crisis*, the World Bank (1994) 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, the World Bank (2008), as part of its Pension Conceptual Framework, extended this three-pillar system to the following five-pillar approach:

Zero Pillar:

A non-contributory basic pension from public finances that may be universal or means-tested

First Pillar:

A mandated public pension plan that is publicly managed with contributions linked to earnings

Second Pillar:

Mandated defined contribution, occupational or personal pension plans with financial assets

Third Pillar:

Voluntary and fully funded occupational or personal pension plans with financial assets

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, health care and housing.

## The multi-pillar approach

### PILLAR 0

A basic public pension that provides a minimal level of protection

### PILLAR 1

A public, mandatory and contributory system linked to earnings

### PILLAR 2

A private, mandatory and fully funded system

### PILLAR 3

A voluntary and fully funded system

### PILLAR 4

Financial and non-financial support outside formal pension arrangements

In effect, the original first pillar was split into a Zero Pillar and a mandatory First Pillar. A new Fourth Pillar was also added that includes access to informal support and formal social programs. The addition of the new Pillar 4 recognises the important role that non-pension assets play in providing financial support to individuals or households during retirement.

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.

In contrast to the World Bank, OECD (2017a) adopts a three tier system, 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 (2018) suggests that 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.

Whilst 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 influence on financial security during retirement.

The 'best' system for a particular country at a particular time must also take into account that country's economic, social, cultural, political and historical context. In addition, regulatory philosophies vary over time and between countries. There is no pension system that is perfect for every country at the same time. It is not that simple. There are, however, some characteristics of all pension systems that can be tested or compared to give us a better understanding of how each country is tackling the provision of retirement income.

Since its inception, the Index has grouped these desirable characteristics into adequacy, sustainability and integrity. However, the questions used in each sub-index are reviewed every year.



## 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. Hence, this sub-index considers the base (or safety-net) level of income provided as well as the net replacement rate at income levels ranging from 50 per cent to 150 per cent of the average wage.

Critical to the delivery of adequate benefits is the design features of the private pension system (i.e. the Second and Third Pillars). Whilst there are many features that could be assessed, we have considered the following six, each of which represents a feature that will improve the likelihood that adequate retirement benefits are provided:

- Are *voluntary member contributions* by an average-income earner to a funded pension plan treated more favourably 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. It is recognised that the taxation treatment of pensions varies greatly around the world so this question assesses whether an incentive exists or not, not the value of the concession. The second question recognises that the level of investment earnings is critical, especially for defined contribution plans. A tax on investment income reduces the compounding effect and will therefore reduce the adequacy of future benefits.
- 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 leakage of the accumulated benefits before retirement or whether the regulations are focused on the provision of benefits for retirement.
- 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 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 pension designs penalised resigning members which, in turn, affected the level of benefits available at retirement.

- What proportion, if any, of the retirement benefit from the private pension arrangement is required to be taken as an *income stream*? Are there any tax or other incentives that exist to encourage the taking up of income streams? Many systems around the world provide lump sum retirement benefits which are not necessarily converted into an income stream. These questions review the rules affecting the form of retirement benefits and any arrangements that can provide incentives for income streams.
- 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 recognises 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.
- Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive *income support* (or income maintenance) such as a disability pension or are on paid parental leave? This question recognises that the adequacy of an individual's retirement income can be affected if there is no requirement for benefits to continue to accrue when a worker is temporarily out of the workforce and receives income support, for example due to parental leave, ill health or disability.

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. It is also recognised that this pillar includes access to informal support (family) but the importance of this support is very difficult to measure in an objective manner.

Finally, we recognise 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 defined contribution plans. While investment and administrative costs are considered part of the integrity sub-index, the long-term return is likely to be affected by the diversity of assets held by the pension fund. Hence 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 ageing population, the increasing old age dependency ratio and, in some countries, substantial government debt. This sub-index therefore brings together several measures that affect the sustainability of current programs. Whilst 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 labour force participation rate amongst 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 where the ratio of workers to retirees is declining. Hence, 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.

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

## 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 system. As most countries are relying on the private system 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 plans.

In addition, the Worldwide Governance Indicators published by the World Bank are used 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 international comparison of the total costs of operating each system is difficult, this sub-index includes some proxy measures relating to industry structure and scale which should provide a good indication.

## The construction of the Index

In the construction of the Index, we have endeavoured to be as objective as possible in calculating each system's index value. Where international data is available, we have used that data. In other cases, we have relied on information provided by relevant Mercer consultants. In these instances, we have not asked them to assess the quality of their system. Rather we have asked objective questions to which, in many cases, there is a "yes" or "no" answer. In some countries there is 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.

On occasions, the answers to some of these objective questions may be neither "yes" nor "no", but "to some extent". In these cases, we have compared responses from other countries and ranked each country accordingly, after receiving additional detail.

Each system's overall index value is calculated by taking 40 per cent of the adequacy sub-index, 35 per cent of the sustainability sub-index and 25 per cent 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 results.<sup>6</sup>

It is acknowledged that living standards in retirement are also affected by a number of other factors including the provision and costs of health services (through both the public and private sectors) and the provision of aged care. However some of these factors can be difficult to measure within different systems and, in particular, difficult to compare between countries. It was therefore decided to concentrate on indicators that directly affect the provision of financial security in retirement, both now and in the future. Therefore 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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<sup>6</sup> The attachments provide the results for the indicators in each sub-index so that readers may calculate the effects of changing the weights used for each sub-index or, indeed, the weights within each sub-index.

# CHAPTER 3

## CHANGES FROM 2018 to 2019

The Index has been expanded in 2019 to include three new systems — Philippines, Thailand and Turkey — adding a further three per cent of the world's population. These additions continue our longstanding theme of considering a variety of retirement income 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 37 retirement income systems covering more than 63 per cent of the world's population.

## Revised questions

### *Net replacement rate*

Replacement rates are a commonly used measure to determine the adequacy of benefits provided by a retirement income system. They represent the level of retirement income divided by a measure of pre-retirement earnings. In essence, they measure the level of retirement income provided to replace the previous level of employment earnings. Of course, there is debate as to what the “correct” level or objective of a system should be, and there is no single answer, as to the “best” answer. At any given point in time, it can depend on several economic and social factors.

Notwithstanding this uncertainty, it is reasonable to suggest that replacement rates should be higher for lower income earners than average or above-average income earners. As the OECD comments:

“Most OECD countries aim to protect low-income workers from old-age poverty, which results in higher replacement rates than for average worker earners.”<sup>7</sup>

This general approach is also consistent with the target replacement rates discussed by the World Bank (1994) where there is a higher target for low-income earners than for middle-income or high-income earners.

The most heavily weighted question in the Index since the first report in 2009 has been the net replacement rate based on OECD data (Question A2). After all, the primary objective of all retirement income systems is to provide adequate retirement incomes.

In most of the previous Index reports, the net replacement rate was based on the median income earner, as calculated by the OECD for each retirement system on a uniform set of assumptions. However, in recent years the OECD has ceased to publish this figure so that in 2018 the Index used the net replacement rate for the average income earner as distinct from the median income earner.

Following a suggestion made at one of the public presentations after the release of the 2018 report, we are now calculating the net replacement rates across a range of income levels. This approach means that the 2019 Index allows for net replacement rates at three different income levels rather than concentrating on a single income point (namely, the average income).

In particular, we are now using the OECD net replacement rates for those with incomes equal to 50 per cent, 100 per cent and 150 per cent of the average wage<sup>8</sup>. The inclusion of this range of results means that this indicator within the Index now represents a broader group of retirees rather than focusing on a particular income.

The weightings used for these three points are 30 per cent, 60 per cent and 10 per cent respectively. These weightings mean that the weighted income is 90 per cent of the average wage, which is approximately the median income for a full time worker in many economies.

Of course, this new approach has implications for the index score for many systems. That is, those systems with relatively higher replacement rates at lower incomes will be advantaged whereas those systems which have the same (or similar) net replacement rates across all incomes will suffer a relative disadvantage.

The systems with the larger increases from this change were the same countries which received the greatest reductions when the Index previously moved from the use of median to average incomes. Similarly, the scores which reduced had received an increase from the previous change. The systems which receive the greatest increase from this change in their overall index score are Australia (+2.8), New Zealand (+1.5), Ireland (+1.0) and the United Kingdom (+1.0). On the other hand, the systems which received the greatest reduction are Singapore (-1.1), Finland (-0.9) and Saudi Arabia (-0.9). The average score for this net replacement indicator across the 34 systems in the 2018 Index increased by 0.1 from 2018 to 2019.

7 OECD (2017a), p100.

8 OECD (2018) deals with systems in the Asia-Pacific region and publishes net pension replacement rates for 50 per cent, 100 per cent and 200 per cent of average earnings. Given the data available, we have averaged the 100 per cent and 200 per cent results to estimate the net replacement rate for 150 per cent of the average income.

### *The measurement of coverage*

An important measure in the sustainability sub-index is the extent of private pension plan coverage (Question S1) that provides retirement income beyond the Government-funded pay-as-you-go arrangements. Most of the coverage figures used in the Index are published by the OECD and require individuals to have assets or accrued benefits in a private pension plan.

However, the definition of coverage for individuals with accrued assets is not always clear cut. For example, Singapore has a fully funded Central Provident Fund (CPF) which is managed by a government agency. We have consistently treated this as a funded arrangement and included the CPF membership as part of the Singapore coverage figure, even though it is not a private pension arrangement.

There are several other systems where there is a partially-funded earnings-related scheme managed by a government agency. That is, individuals have rights to pension benefits arising from assets held by these funds. These arrangements are different from other government arrangements where there are virtually no funds as they operate on a pay-as-you-go basis.

The coverage percentage in the sustainability sub-index has been increased for systems which meet the following two criteria:

- The public pension reserve fund exceeds 10 per cent of GDP. That is the assets are material and have been set aside for the future. It should also be noted that these assets have always been counted as part of the assets set aside for future pensions (Question S2).
- The payment of pensions from these funds are not restricted to a particular section of the workforce. Rather, they are available to most, if not all, of the workforce.

If these conditions are met, the coverage figure for the particular system has been increased to represent the average of the private pension coverage (which was previously used) and 80 per cent (which is the coverage percentage that receives the maximum score). The reason for this averaging is that these public schemes generally provide limited earnings-related benefits and are therefore not expected to fully provide for retirement. On the other hand, membership of these schemes provide future pensions backed by existing assets.

The systems which receive increases to their overall Index score from this adjustment are Canada with the Canada Pension Plan (+2.2), Korea with the National Pension Scheme (+2.1) and the USA with the Social Security Trust Fund (+1.9).

## Updated Reports

Since publication of the previous Index, the OECD has published *Pensions at a Glance Asia/Pacific 2018* which updated replacement rates and pension coverage for several pension systems. In particular, the following changes have had a positive impact on the respective index scores:

- The net replacement rates for Hong Kong SAR and Singapore increased materially so that their overall index scores increased by 2.4 and 3.2 respectively, ignoring any other changes.
- The pension coverage rates for Japan and Korea increased so that their overall index scores increased by 2.6 and 1.4 respectively, ignoring any other changes.

The United Nations has also updated their *World Population Prospects* which includes life expectancy figures used in the sustainability sub-index. The latest life expectancy at birth, averaged over the 34 systems in the 2018 Index, was 0.8 years higher than the previously used figures. Colombia, Indonesia and Peru all had increases in excess of two years. However, decreases in life expectancy at birth were shown for Mexico and the USA.

## A comparison from 2018 to 2019

Table 4 compares the results for the 34 systems from 2018 to 2019. Comments in respect of each system are made in Chapter 4.

Table 4: Comparison index values for each system, including the three sub-indices

Country	Total		Adequacy		Sustainability		Integrity	
	2018	2019	2018	2019	2018	2019	2018	2019
Argentina	39.2	39.5	40.8	43.1	33.8	31.9	44.1	44.4
Australia	72.6	75.3	63.4	70.3	73.8	73.5	85.7	85.7
Austria	54.0	53.9	68.1	68.2	21.5	22.9	76.7	74.4
Brazil	56.5	55.9	72.5	71.8	28.5	27.7	70.1	69.8
Canada	68.0	69.2	72.1	70.0	56.0	61.8	78.2	78.2
Chile	69.3	68.7	59.2	59.4	73.3	71.7	79.7	79.2
China	46.2	48.7	53.4	60.5	38.0	36.7	46.0	46.5
Colombia	62.6	58.4	68.4	61.4	50.1	46.0	70.9	70.8
Denmark	80.2	80.3	77.5	77.5	81.8	82.0	82.2	82.2
Finland	74.5	73.6	75.3	73.2	61.0	60.7	92.1	92.3
France	60.7	60.2	79.5	79.1	42.2	41.0	56.5	56.8
Germany	66.8	66.1	79.9	78.3	44.9	44.9	76.6	76.4
Hong Kong SAR	56.0	61.9	39.4	54.5	54.9	52.5	84.2	86.9
India	44.6	45.8	38.7	39.9	43.8	44.9	55.2	56.3
Indonesia	53.1	52.2	47.3	46.7	49.5	47.6	67.4	67.5
Ireland	66.8	67.3	79.0	81.5	45.9	44.6	76.6	76.3
Italy	52.8	52.2	67.7	67.4	20.1	19.0	74.5	74.5
Japan	48.2	48.3	54.1	54.6	32.4	32.2	60.7	60.8
Korea	47.3	49.8	45.4	47.5	48.1	52.6	49.3	49.6
Malaysia	58.5	60.6	45.2	50.5	60.5	60.5	77.1	76.9
Mexico	45.3	45.3	37.3	37.5	57.1	57.1	41.6	41.3
Netherlands	80.3	81.0	75.9	78.5	79.2	78.3	88.8	88.9
New Zealand	68.5	70.1	65.4	70.9	63.4	61.5	80.6	80.7
Norway	71.5	71.2	71.5	71.6	58.1	56.8	90.2	90.6
Peru	62.4	58.5	68.0	60.0	54.2	52.4	65.1	64.7
Poland	54.3	57.4	53.8	62.5	46.2	45.3	66.4	66.0
Saudi Arabia	58.9	57.1	61.6	59.6	53.3	50.5	62.6	62.2
Singapore	70.4	70.8	64.4	73.8	69.5	59.7	81.2	81.4
South Africa	52.7	52.6	41.9	42.3	46.8	46.0	78.2	78.4
Spain	54.4	54.7	68.7	70.0	27.8	26.9	68.6	69.1
Sweden	72.5	72.3	67.6	67.5	72.6	72.0	80.2	80.2
Switzerland	67.6	66.7	58.0	57.6	67.5	65.4	83.2	83.0
UK	62.5	64.4	57.8	60.0	53.4	55.3	82.9	84.0
USA	58.8	60.6	59.1	58.8	57.4	62.9	60.2	60.4
<b>Average</b>	<b>60.5</b>	<b>60.9</b>	<b>61.1</b>	<b>62.5</b>	<b>52.0</b>	<b>51.3</b>	<b>71.6</b>	<b>71.7</b>

The results show that the average score for the overall index has increased by 0.4 with an increase in the average adequacy sub-index of 1.4 but a fall in the average sustainability sub-index of 0.7. The adequacy sub-index increased for several reasons including the updated net replacement rates in Asia, new taxation and benefit requirements in some countries and an increase in the relative importance of growth assets. The reduction in the sustainability sub-index was primarily caused by the updated demographic data which, on average, showed increasing life expectancies and declining fertility rates.

# CHAPTER 4

## 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. Where relevant, a brief comment is also made about the change in the system's index value from 2018 to 2019.

As detailed in Chapter 3, many of these changes were due to revisions to some questions in the adequacy sub-index as well as improvements to the sustainability sub-index.



# Global Grades

Figure 2: Global grades



Table 5: Summary of the 2019 results

Grade	Index Value	Countries	Description
<b>A</b>	>80	Denmark Netherlands	A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.
<b>B+</b>	75–80	Australia	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>B</b>	65–75	Canada Chile Finland Germany Ireland New Zealand Norway Singapore Sweden Switzerland	
<b>C+</b>	60–65	France Hong Kong SAR Malaysia UK USA	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.
<b>C</b>	50–60	Austria Brazil Colombia Indonesia Italy Peru Poland Saudi Arabia South Africa Spain	
<b>D</b>	35–50	Argentina China India Japan Korea Mexico Philippines Thailand Turkey	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.
<b>E</b>	<35	Nil	A poor system that may be in the early stages of development or non-existent.

## Argentina

Argentina's retirement income system comprises a pay-as-you-go social security system together with voluntary occupational corporate and individual pension plans which may be offered through employer book reserves, insurance companies or pension trusts.

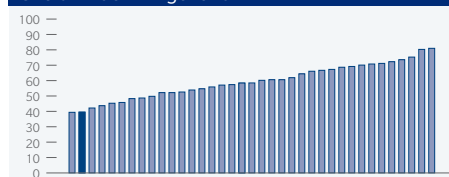
The overall index value for the Argentinian system could be increased by:

- raising the minimum pension available to the poorest aged individuals
- raising the level of household savings

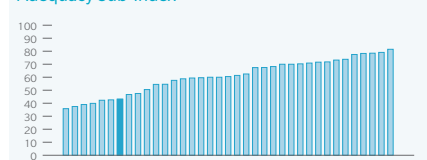
- increasing coverage of employees in occupational pension schemes through automatic membership or enrolment, thereby increasing the level of contributions and assets
- introducing a minimum level of mandatory contributions into a retirement savings fund
- improving the regulatory requirements for the private pension system

The Argentinian index value increased from 39.2 in 2018 to 39.5 in 2019 primarily due to an introduction of tax incentives to encourage voluntary member contributions to increase retirement savings.

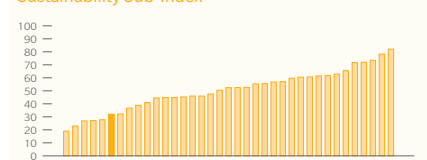
Overall Index – Argentina



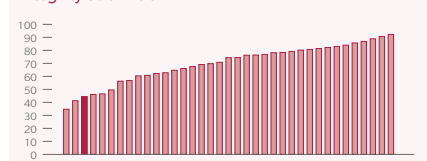
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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.

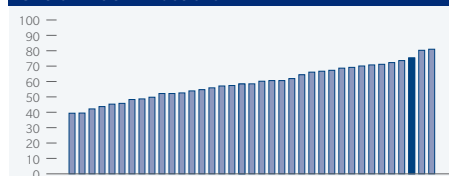
The overall index value for the Australian system could be increased by:

- moderating the asset test on the means-tested age pension to increase the net replacement rate for average income earners
- raising the level of household saving and reducing the level of household debt

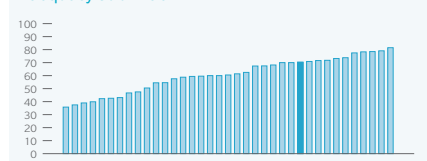
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing the labour force participation rate at older ages as life expectancies rise
- introducing a mechanism to increase the pension age as life expectancy continues to increase

The Australian index value increased significantly from 72.6 in 2018 to 75.3 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate as discussed in Chapter 3.

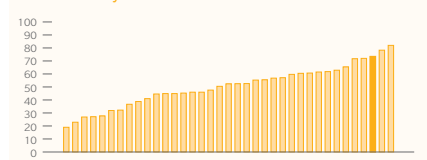
Overall Index – Australia



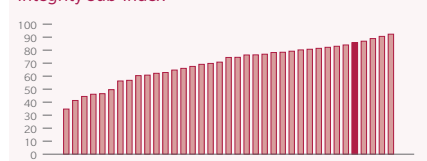
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Austria

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

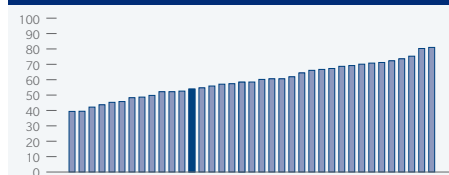
The overall index value for the Austrian system could be increased by:

- introducing a minimum access age so that 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)

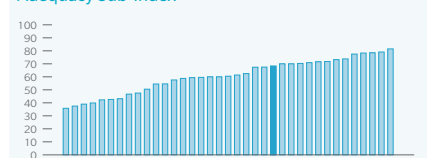
- reducing the level of government debt
- increasing the labour force participation rate at older ages

The Austrian index value fell slightly from 54.0 in 2018 to 53.9 in 2019 due to some minor changes in each sub-index.

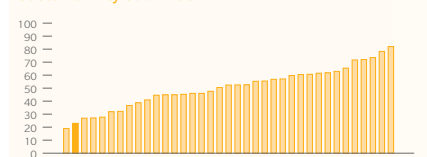
Overall Index – Austria



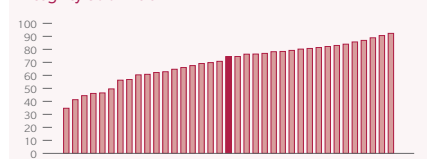
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Brazil

Brazil's retirement income system comprises a pay-as-you-go social security system with higher replacement rates for lower income earners; and voluntary occupational corporate and individual pension plans which may be offered through insurance companies or pension trusts.

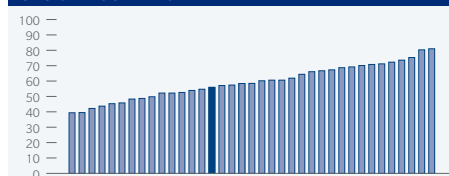
The overall index value for the Brazilian system could be increased by:

- introducing a minimum level of mandatory contributions into a retirement savings fund
- increasing coverage of employees in occupational pension schemes through automatic membership or enrolment, thereby increasing the level of contributions and assets

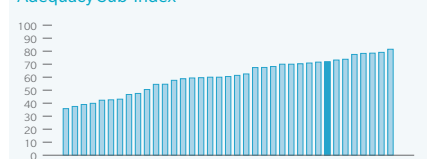
- introducing a minimum access age so that the benefits are preserved for retirement purposes, mainly for the pension plans implemented in insurance companies
- enabling individuals to retire gradually whilst receiving a part pension
- introducing arrangements to protect the pension interests of both parties in a divorce

The Brazilian index value fell slightly from 56.5 in 2018 to 55.9 in 2019 due to small deteriorations in each sub-index. New legislation, which is due to be implemented later this year, is expected to improve Brazil's score in the future.

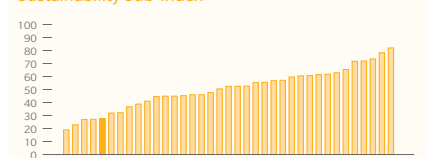
Overall Index – Brazil



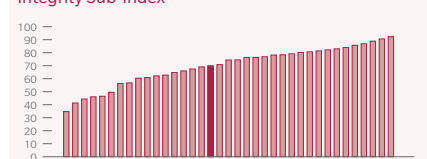
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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; voluntary occupational pension schemes (many of which are defined benefit schemes); and voluntary individual retirement savings plans.

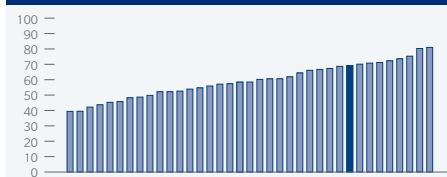
The overall index value for the Canadian system could be increased by:

- increasing the coverage of employees in occupational pension schemes through the development of an attractive product for those without an employer-sponsored scheme

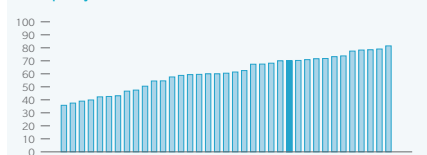
- increasing the level of household savings and reducing the level of household debt
- reducing government debt as a percentage of GDP
- increasing the labour force participation rate at older ages as life expectancies rise

The Canadian index value increased from 68.0 in 2018 to 69.2 in 2019 primarily due to an allowance for the Canada Pension Plan in calculating the coverage percentage, as discussed in Chapter 3.

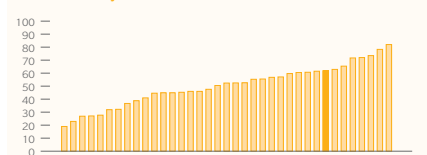
Overall Index – Canada



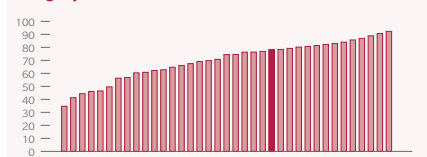
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Chile

Chile's retirement income system comprises means-tested social assistance; a mandatory privately-managed defined contribution 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).

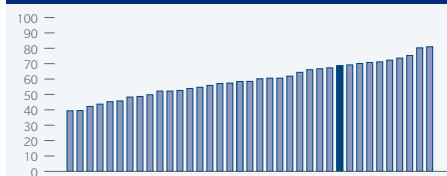
The overall index value for the Chilean system could be increased by:

- increasing the minimum level of support for the poorest aged individuals
- increasing retirement ages for both men and women

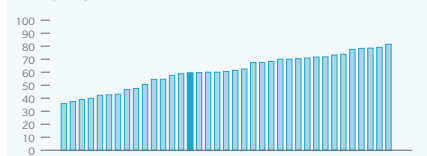
- requiring annual reports of pension plans to be made available to all members

The Chilean index value fell slightly from 69.3 in 2018 to 68.7 in 2019 primarily due to an increased life expectancy as reported by the UN used in the sustainability sub-index.

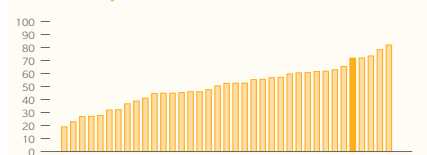
Overall Index – Chile



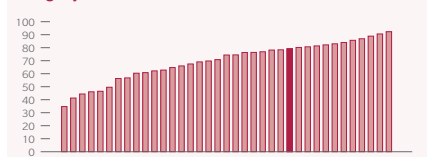
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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, more so in urban areas.

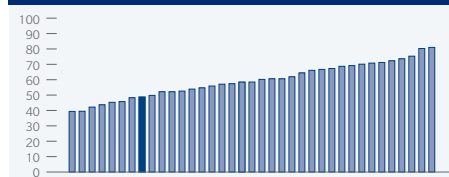
The overall index value for the Chinese system could be increased by:

- continuing to increase the coverage of workers in pension systems
- increasing the minimum level of support for the poorest aged individuals

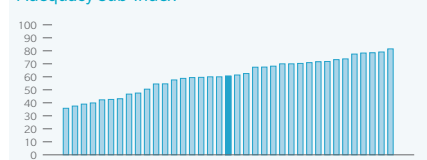
- introducing a requirement that part of the supplementary retirement benefit must be taken as an income stream
- increasing the state pension age over time
- offering more investment options to members and thereby permitting a greater exposure to growth assets
- improving the level of communication required from pension plans to members

The Chinese index value increased from 46.2 in 2018 to 48.7 in 2019 due to increases in the net replacement rate and increased coverage of workers in the pension systems.

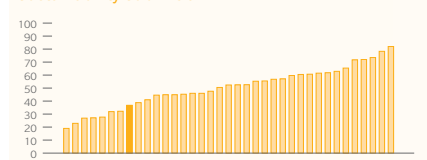
Overall Index – China



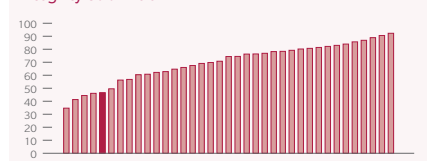
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Colombia

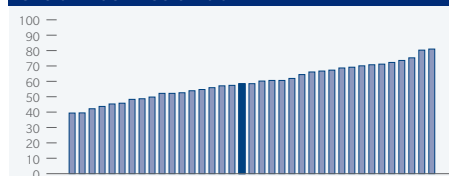
Colombia's retirement income system comprises a means-tested pension paid to the needy (BEPS & Colombia Mayor); and two parallel and mutually exclusive pension systems. The first of these is a pay-as-you-go defined benefit plan and the second is a system of funded individual accounts offered through qualified financial institutions; individuals can make additional voluntary contributions in order to increase retirement benefits and/or reduce taxes. An employee elects to join one system although there is the option to change later, within certain restrictions. The employer and employee contribution rates are the same for both systems.

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

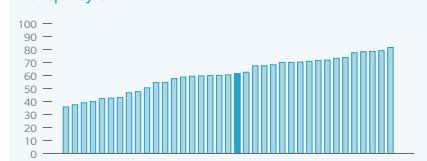
- increasing the minimum level of support for the poorest aged individuals
- raising the level of household saving
- increasing coverage of employees in the pension schemes
- raising the state pension age over time
- improving strategic asset allocation to gain better outcomes from the system

The Colombian index value fell from 62.6 in 2018 to 58.4 in 2019 due to a corrected net replacement rate and updated data as reported by the UN used for the demographic questions within the sustainability sub-index.

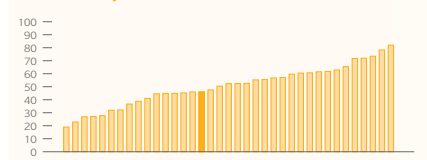
Overall Index – Colombia



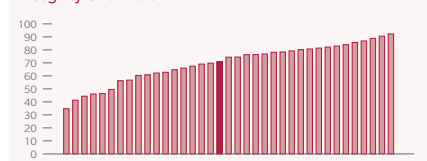
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Denmark

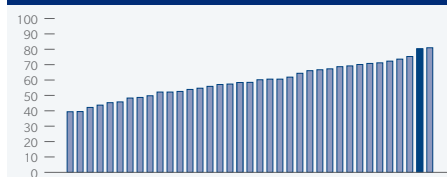
Denmark's retirement income system comprises a public basic pension scheme, a means-tested supplementary pension benefit, a fully funded defined contribution scheme and mandatory occupational schemes.

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

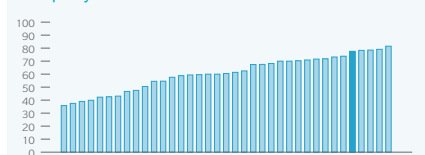
- raising the level of household saving and reducing household debt
- introducing arrangements to protect the interests of both parties in a divorce
- increasing the labour force participation rate at older ages as life expectancies rise

The Danish index value increased slightly from 80.2 in 2018 to 80.3 in 2019 due to a small improvement in the sustainability sub-index.

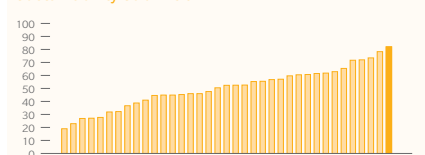
Overall Index – Denmark



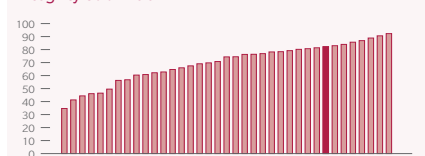
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Finland

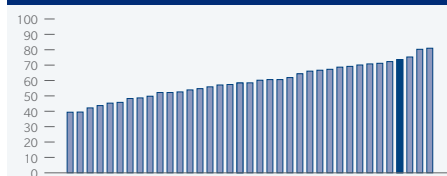
Finland's retirement income system consists of a basic state pension, which is pension income-tested, and a range of statutory earnings-related schemes.

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

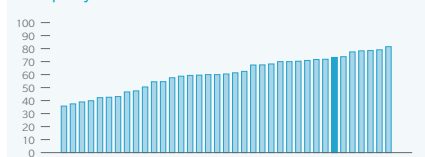
- continuing to increase the minimum pension for low-income pensioners
- continuing to raise the level of mandatory contributions that are set aside for the future
- introducing arrangements to protect the pension interests of both parties in a divorce
- increasing the labour force participation rate at older ages as life expectancies rise

The Finnish index value fell from 74.5 in 2018 to 73.6 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate as discussed in Chapter 3.

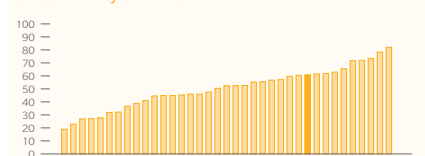
Overall Index – Finland



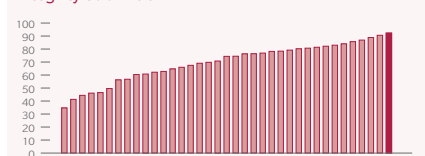
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## France

France's retirement income system comprises an earnings-related public pension with a minimum pension level; two mandatory occupational pension plans for blue and white collar workers which merged on 1 January 2019 (AGIRC-ARRCO); and voluntary occupational plans. The required pension contributions have increased from January 2019 to maintain the long-term financial balance for the AGIRC-ARRCO plan.

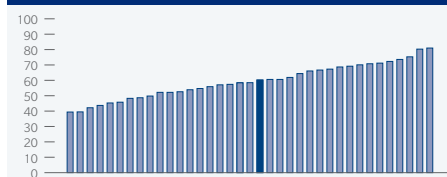
The overall index value for the French system could be increased by:

- increasing the level of funded contributions thereby increasing the level of assets over time
- increasing the state pension age

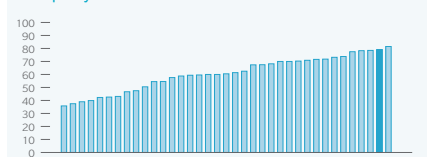
- increasing the labour force participation rate at older ages as life expectancies rise.
- improving the regulatory requirements for the private pension system

The French index value fell slightly from 60.7 in 2018 to 60.2 in 2019 due to small changes in the adequacy and sustainability sub-indices.

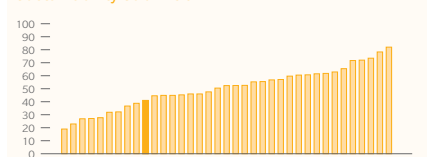
Overall Index – France



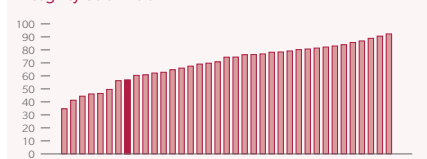
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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 amongst major employers. These plans typically adopt either a book reserving approach, with or without segregated assets, or an insured pensions approach.

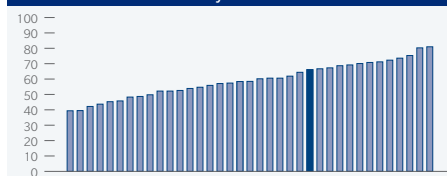
The overall index value for the German system could be increased by:

- increasing the level of funded contributions thereby increasing the level of assets over time

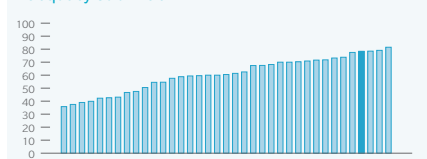
- increasing the minimum pension for low-income pensioners
- increasing coverage of employees in occupational pension plans
- increasing the labour force participation rate at older ages as life expectancies rise
- improving the level of communication from pension arrangements to members

The German index value fell slightly from 66.8 in 2018 to 66.1 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate as discussed in Chapter 3.

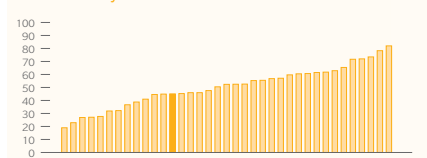
Overall Index – Germany



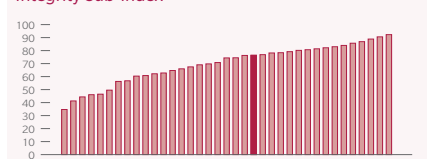
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Hong Kong SAR

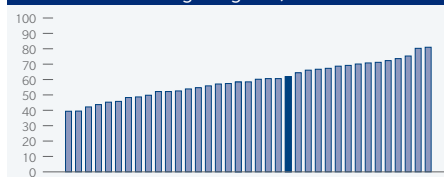
Hong Kong's retirement income system consists of mandatory provident funds where employers, most employees and the self-employed are each required to make mandatory contributions of 5% of relevant income to the MPF scheme, subject to the minimum and maximum relevant income levels. Scheme members who have reached the age of 65, or who have reached the age of 60 and have decided to early retire can choose to either withdraw their MPF benefits in lump sum or by 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:

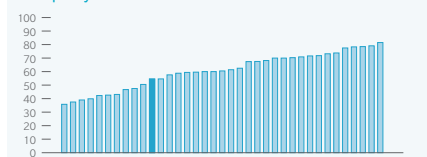
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing the level of household savings and reducing the level of household debt
- increasing the labour force participation rate at older ages as life expectancies rise

The index value for Hong Kong SAR improved from 56.0 in 2018 to 61.9 in 2019 primarily due to increased net replacement rates published by the OECD.

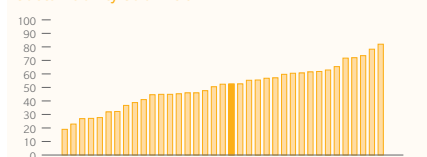
Overall Index – Hong Kong SAR, China



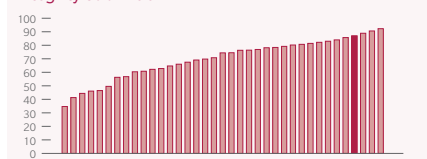
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## India

India's retirement income system comprises an earnings-related employee pension scheme, a defined contribution employee provident fund, and supplementary employer managed pension schemes that are largely defined contribution in nature.

Government schemes have been launched as part of universal social security program aimed at benefiting the unorganised sector. The National Pension System is gradually gaining popularity.

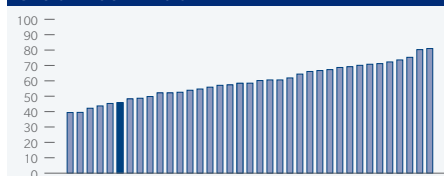
The overall index value for the Indian system could be increased by:

- introducing a minimum level of support for the poorest aged individuals

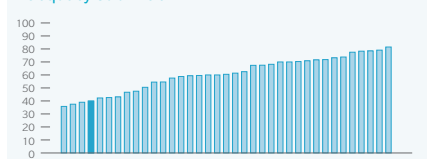
- increasing coverage of pension arrangements for the unorganised working class
- introducing a minimum access age so that it is clear that benefits are preserved for retirement purposes
- improving the regulatory requirements for the private pension system
- continuing to improve the required level of communication to members from pension arrangements
- increasing the pension age as life expectancy continues to increase
- increasing the level of contributions in statutory pension schemes

The Indian index value increased from 44.6 in 2018 to 45.8 in 2019 due to small increases in each sub-index.

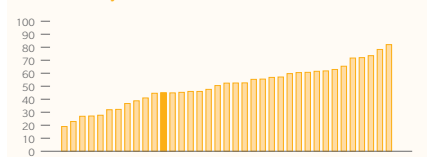
Overall Index – India



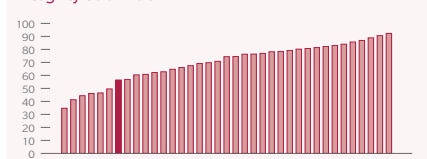
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## Indonesia

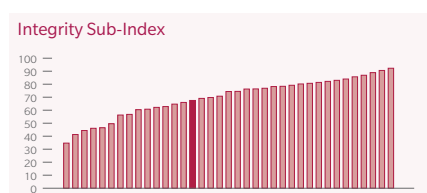
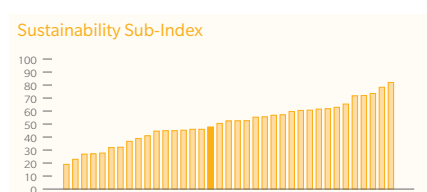
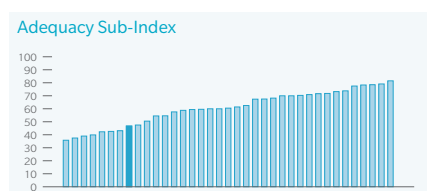
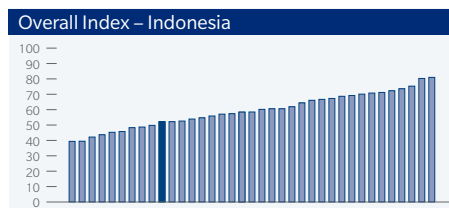
Indonesia's retirement income system comprises earnings-related civil service pensions, mandatory defined contribution plans for private sector workers and voluntary defined contribution plans for other workers. A new national pension scheme, launched in July 2015, will provide a defined benefit scheme funded through employer and employee contributions of a fixed percentage of the monthly salary.

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

- introducing a minimum level of support for the poorest aged individuals

- increasing the level of pension provision within the workforce
- improving the regulatory requirements for the private pension system
- improving the required level of communication to members from pension arrangements
- increasing the pension age as life expectancy continues to increase

The Indonesian index value fell slightly from 53.1 in 2018 to 52.2 in 2019 primarily due to increased life expectancy as reported by the UN and used for the demographic questions in the sustainability sub-index.



## Ireland

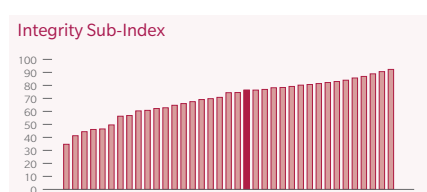
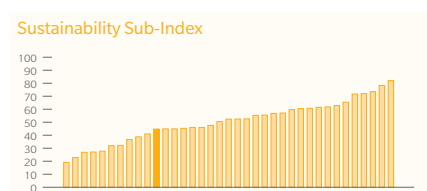
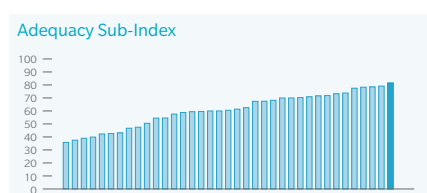
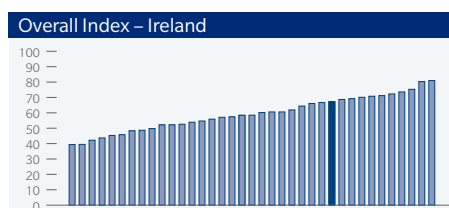
Ireland's retirement income system comprises a flat-rate basic social security scheme and a means-tested benefit for those without sufficient social insurance contributions. Voluntary occupational pension schemes provide supplementary income in retirement but currently only cover about 50% of the working population.

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

- continuing to increase coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- introducing a minimum level of mandatory contributions into a retirement savings fund

- providing greater protection of members' accrued benefits in the case of employer insolvency
- reducing government debt as a percentage of GDP

The Irish index value increased slightly from 66.8 in 2018 to 67.3 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate as discussed further in Chapter 3.



## Italy

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

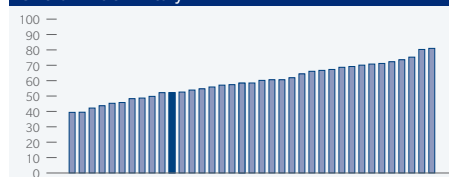
The overall index value for the Italian system could be increased by:

- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- continuing to raise the labour force participation rate at older ages as life expectancies rise

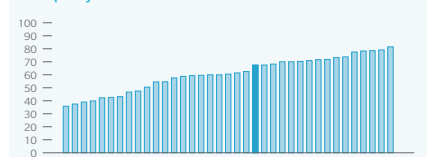
- restricting the availability of benefits before retirement (other than bridge pensions)
- reducing government debt as a percentage of GDP

The Italian index value fell slightly from 52.8 in 2018 to 52.2 in 2019 due to small reductions in the adequacy and sustainability sub-indices.

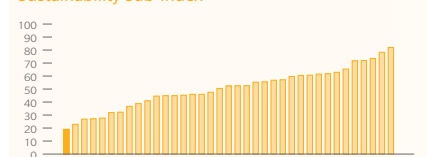
Overall Index – Italy



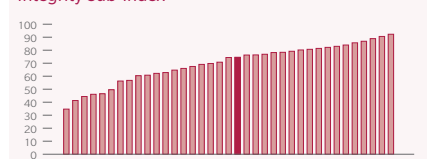
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Japan

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

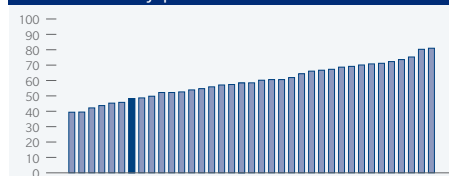
The overall index value for the Japanese system could be increased by:

- raising the level of household saving
- continuing to increase the level of pension coverage and hence the level of contributions and assets
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- announcing a further increase in the state pension age as life expectancy continues to increase

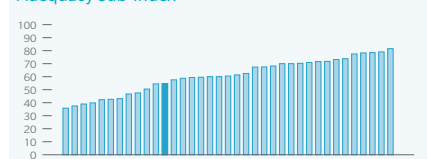
- reducing government debt as a percentage of GDP

The Japanese index value increased slightly from 48.2 in 2018 to 48.3 in 2019 due to small increases in the adequacy sub-index.

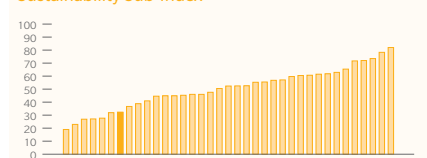
Overall Index – Japan



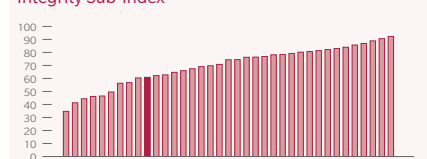
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Korea

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.

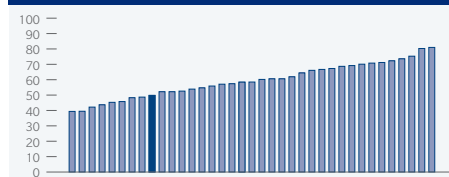
The overall index value for the Korean system could be increased by:

- 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 must be taken as an income stream

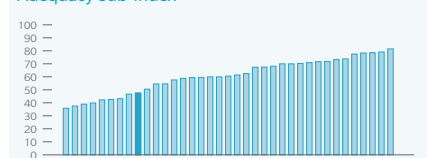
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving portfolio diversification and thereby increase the level of growth assets
- improving the level of communication required to members from pension plans

The Korean index value increased from 47.3 in 2018 to 49.8 in 2019 primarily due to an allowance for the National Pension Scheme in calculating the coverage percentage, as discussed in Chapter 3.

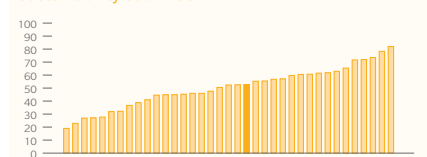
Overall Index – Korea



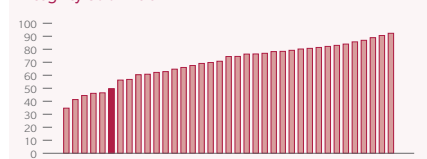
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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 pre-defined circumstances including education, home loans, or severe ill health) with other benefits preserved for retirement.

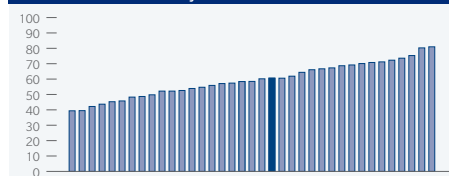
The overall index value for the Malaysian system could be increased by:

- increasing the minimum level of support for the poorest aged individuals
- raising the level of household saving and lowering the level of household debt

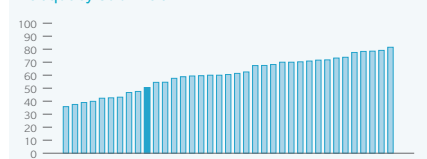
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing the pension age as life expectancy continues to increase

The Malaysian index value increased in value from 58.5 in 2018 to 60.6 in 2019 primarily due to the updated data on the net replacement rate published by the OECD.

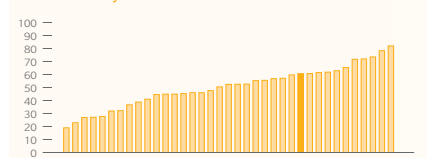
Overall Index – Malaysia



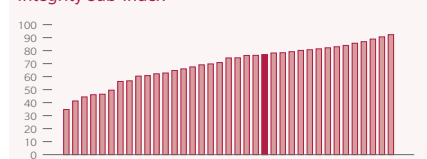
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Mexico

Mexico's retirement income system comprises a mandatory and funded scheme which is in transition since 1997 from a defined benefit to a defined contribution scheme for private companies and a 2007 transition from a defined benefit into a defined contribution scheme for government employees; these schemes include a minimum public pension and in some cases non mandatory supplemental private sector plans.

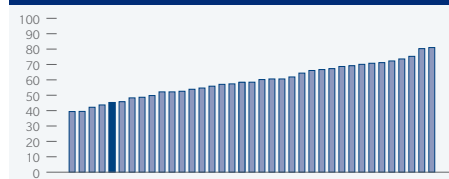
From 2019 there is a new universal retirement pension that is paid to all Mexicans from age 68.

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

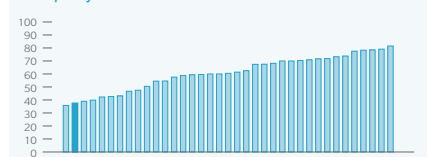
- introducing a requirement that part of the retirement benefit from private pension arrangements must be taken as an income stream
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving the regulatory requirements for the private pension system
- improving the governance requirements for the private pension system, including the need for minimum levels of funding in defined benefit plans
- improving the level of communication required to members from pension plans

The Mexican index value remained unchanged at 45.3 from 2018 to 2019.

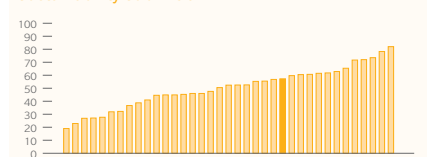
Overall Index – Mexico



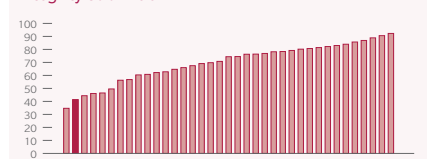
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## The Netherlands

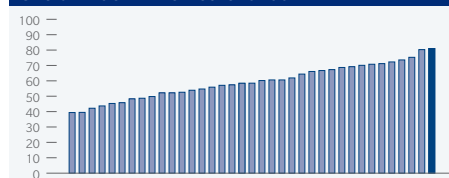
The Netherlands' retirement income system comprises a flat-rate public pension and a quasi-mandatory earnings-related occupational pension linked to industrial agreements. Most employees belong to these occupational schemes which are industry-wide defined benefit plans with the earnings measure based on lifetime average earnings.

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

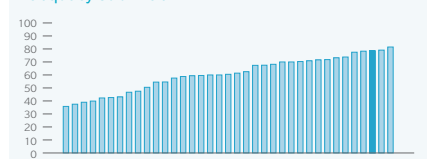
- reducing the level of household debt
- increasing the labour force participation rate at older ages as life expectancies rise

The Dutch index value increased from 80.3 in 2018 to 81.0 in 2019 due to the change in the methodology used to calculate the net replacement rate and an increase in the net household saving rate.

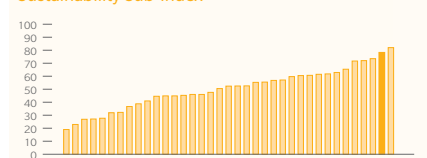
Overall Index – The Netherlands



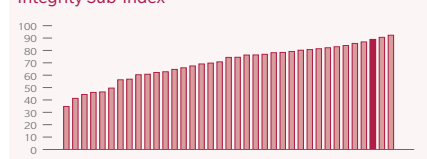
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## New Zealand

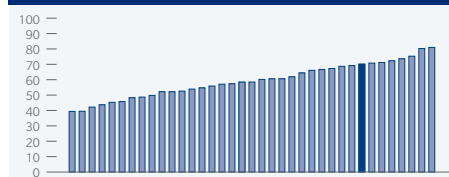
New Zealand's retirement income system comprises a universal public pension, voluntary private pensions, and the KiwiSaver direct contribution retirement savings schemes. KiwiSaver is a voluntary scheme with contributions from the Government, employers and members. New employees who are not already members of KiwiSaver are automatically enrolled by their employer and can remain in KiwiSaver unless they elect to opt out within a limited time of joining. KiwiSaver allows all members, once they've 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:

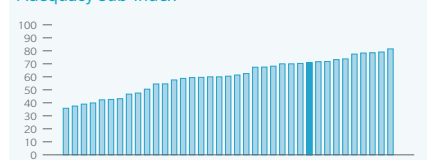
- increasing the level of KiwiSaver contributions
- raising the level of household savings and reducing the level of household debt
- increasing the focus on income streams in place of lump sums
- continuing to expand the coverage of KiwiSaver

The New Zealand index value increased from 68.5 in 2018 to 70.1 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate, as discussed in Chapter 3.

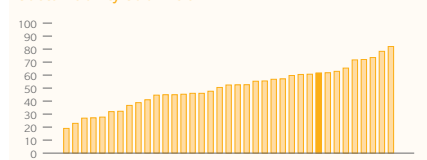
Overall Index – New Zealand



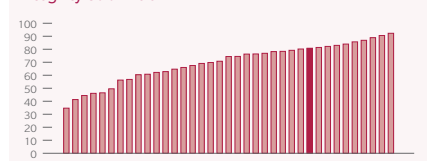
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Norway

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

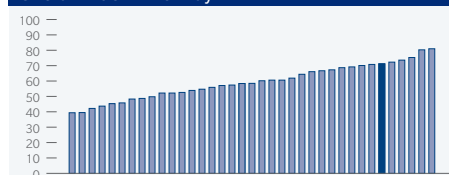
The overall index value for the Norwegian system could be increased by:

- raising the level of household saving and reducing the level of household debt
- increasing the level of mandatory contributions into the defined contribution plans thereby raising the level of pension assets

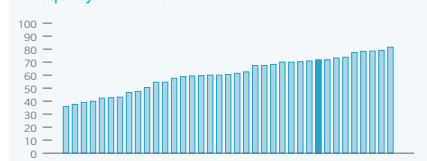
- introducing the option for voluntary contributions with tax relief for members of defined contribution plans
- introducing arrangements to protect all the pension interests of both parties in a divorce
- allocating a specific portion of the government based fund for retirement purposes

The Norwegian index value fell slightly from 71.5 in 2018 to 71.2 in 2019 due to a number of changes, primarily in the sustainability sub-index.

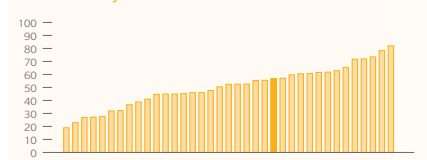
Overall Index – Norway



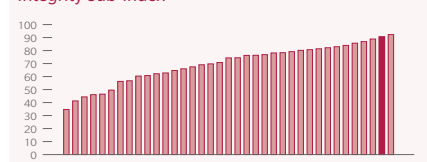
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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 between a pay-as-you-go defined benefit public system and a fully funded defined contribution system managed by the private sector. Only people under the defined benefit scheme can change, as it is an irreversible decision. Employers don't contribute to the system, all contributions are made by the employee; however, voluntary employer contributions are permissible.

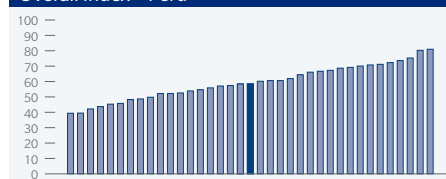
The overall index value for the Peruvian system could be increased by:

- introducing a minimum level of support for the poorest aged individuals

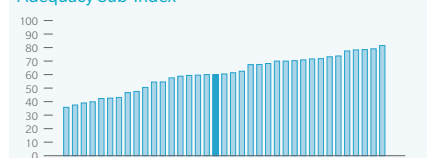
- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- enabling individuals to retire gradually whilst receiving a part pension

The Peruvian index value fell from 62.4 in 2018 to 58.5 in 2019 due to an update in the minimum access age to receive benefits from private pension plans and updated data published by the UN used for the demographic questions within the sustainability sub-index.

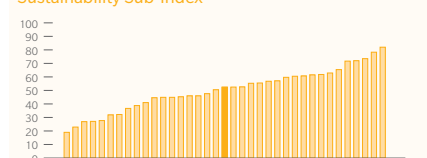
Overall Index – Peru



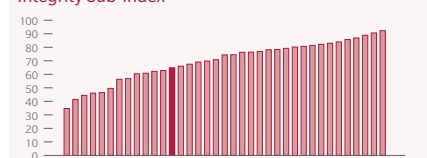
Adequacy Sub-Index



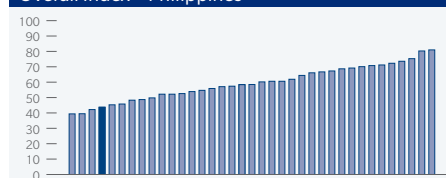
Sustainability Sub-Index



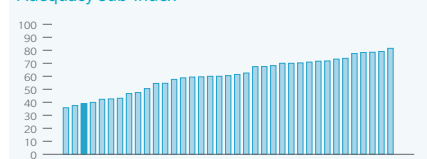
Integrity Sub-Index



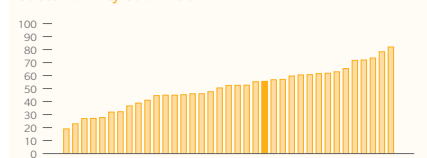
Overall Index – Philippines



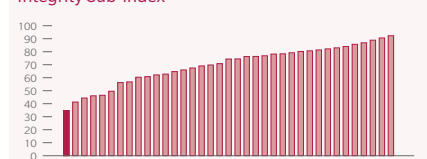
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Philippines

The Philippines retirement income system comprises a small basic pension and an earnings-related Social Security System (SSS). 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

The Philippines index value for 2019 is 43.7.

## Poland

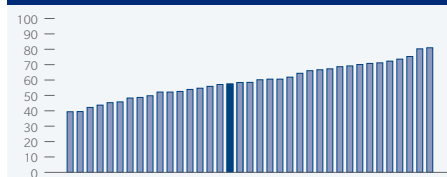
Poland's retirement income system was reformed in 1999. The new system, which applies to people born after 1968, comprises a minimum public pension and an earnings-related system with notional accounts. The overall system is in transition from a pay-as-you-go system to a funded approach. There are also voluntary employer sponsored pension plans and individual pension accounts but due to limited incentives they are unpopular, even though the new system provides low replacement rates. In 2014 the government introduced laws which aim to limit activity of Pillar 2 pension funds through transferring 51.5% of their assets invested in bonds to fund the Social Security Institution.

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

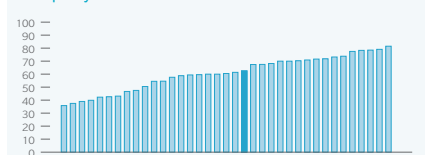
- introducing auto enrolment into the private pension system
- raising the minimum level of support available to the poorest pensioners
- raising the level of household saving
- increasing the level of funded contributions thereby increasing the level of assets over time
- increasing the labour force participation rate at older ages as life expectancies rise

The Polish index value increased from 54.3 in 2018 to 57.4 in 2019 primarily due to a new legislation which requires members to take 75 per cent of assets as an income stream.

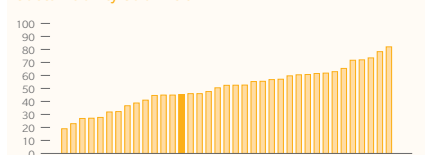
Overall Index – Poland



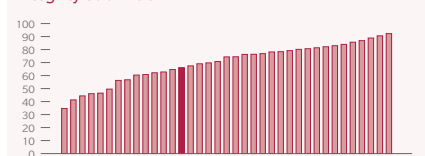
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Saudi Arabia

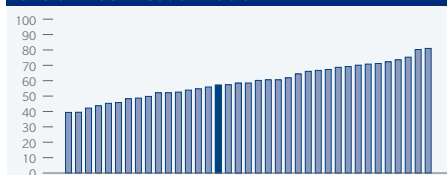
Saudi Arabia's retirement income system comprises an earnings-related pension or an earnings-related lump sum retirement benefit for individuals who do not fulfil any of the retirement conditions.

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

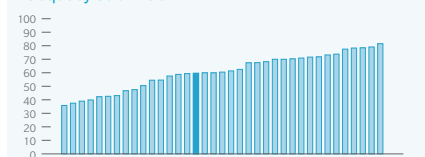
- increasing the state pension age
- increasing the labour force participation rate at older ages as life expectancies rise
- improving the required level of communication to members from pension arrangements

The Saudi Arabian index value fell from 58.9 in 2018 to 57.1 in 2019 due to a number of movements in the adequacy and sustainability sub-indices.

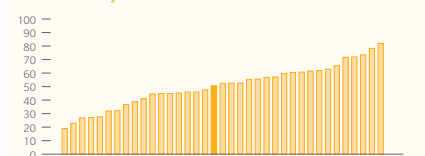
Overall Index – Saudi Arabia



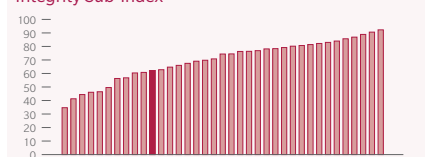
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Singapore

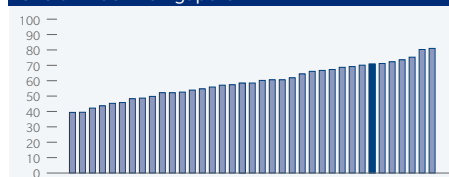
Singapore's retirement income system is based on the Central Provident Fund (CPF) which covers all employed Singaporean residents. Under the CPF, some benefits are available to be withdrawn at any time for specified housing and medical expenses with other benefits preserved for retirement. A prescribed minimum amount is required to be drawn down at retirement age in the form of a lifetime income stream (through CPF Life). The Singapore government has implemented changes to CPF in 2016 which include providing minimum pension top-up amounts for the poorest individuals, more flexibility in drawing down retirement pension amounts and increases to certain contribution rates and interest guarantees.

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

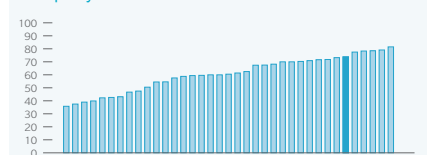
- reducing the barriers to establishing tax-approved group corporate retirement plans
- opening CPF to non-residents (who comprise a significant percentage of the labour force)
- increasing the age at which CPF members can access their savings that are set aside for retirement, as life expectancies rise

The Singaporean index value increased slightly from 70.4 in 2018 to 70.8 in 2019 due to updated data from the OECD increasing the net replacement rate. This was partially offset by the decreased coverage reported by the OECD.

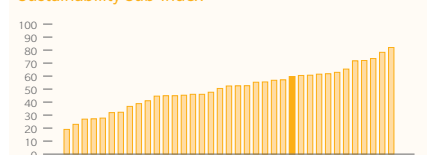
Overall Index – Singapore



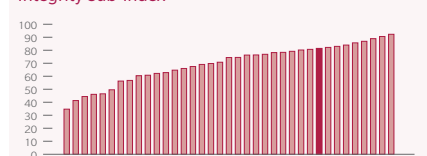
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## South Africa

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

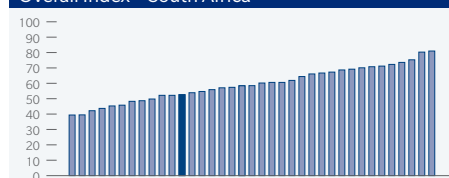
The overall index value for the South African system could be increased by:

- 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

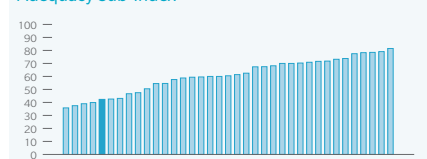
- increasing the level of preservation of benefits when members withdraw from occupational funds
- introducing a requirement that part of the retirement benefit from provident fund arrangements must be taken as an income stream (this requirement currently only applies to pension funds and retirement annuities)

The South African index value fell slightly from 52.7 in 2018 to 52.6 in 2019 due to a number of small changes in the sustainability sub-index.

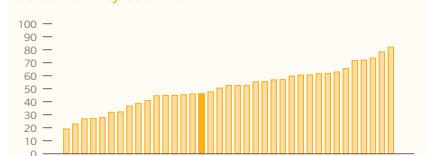
Overall Index – South Africa



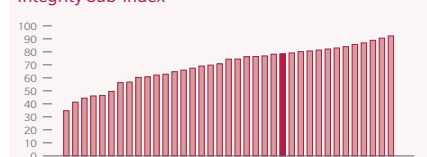
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## Spain

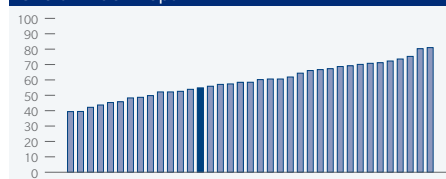
Spain's retirement income system comprises an earnings-related public pension system and a minimum means-tested social assistance benefit. Voluntary personal and occupational pension schemes exist but coverage is low compared to the public pension.

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

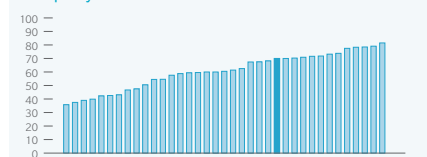
- increasing coverage of employees in occupational pension schemes through automatic membership or enrolment, thereby increasing the level of contributions and assets
- continuing to increase the labour force participation rate at older ages as life expectancies rise
- raising the level of household saving

The Spanish index value increased slightly from 54.4 in 2018 to 54.7 in 2019 primarily due to an update in the level of home ownership.

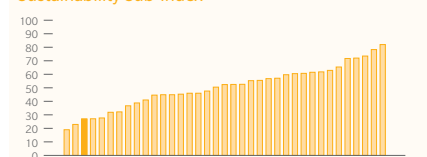
Overall Index – Spain



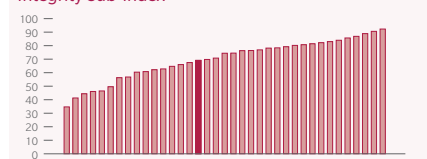
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Sweden

Sweden's national retirement income system was reformed in 1999. The new system is 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 is also an income-tested top-up benefit which provides a minimum guaranteed pension. Occupational pension schemes also have broad coverage.

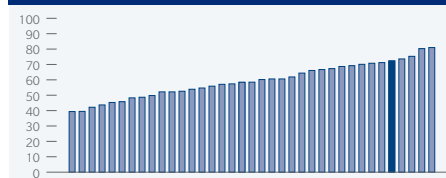
The overall index value for the Swedish system could be increased by:

- further increasing the state pension age to better reflect increasing life expectancy
- ensuring that all employees can make contributions into employer sponsored plans

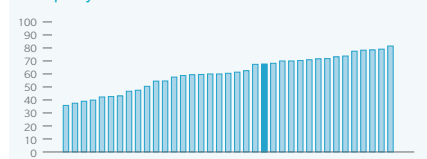
- reintroducing tax incentives for individual contributions
- introducing arrangements to protect all the pension interests of both parties in a divorce

The Swedish index value fell slightly from 72.5 in 2018 to 72.3 in 2019 due to the updated data published by the UN used for the demographic questions within the sustainability sub-index and a fall in the real economic growth reported by the IMF. This was partially offset by an increase in the level of pension assets held in private pension arrangements, public pension reserve funds and protected book reserves.

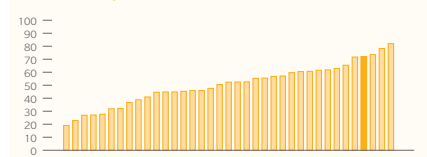
Overall Index – Sweden



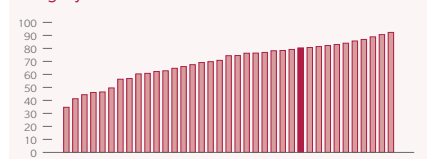
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Switzerland

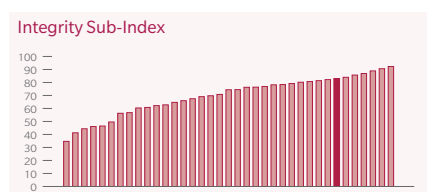
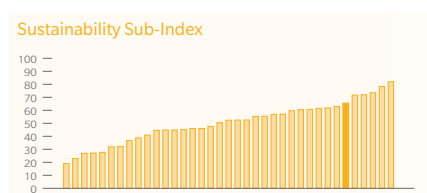
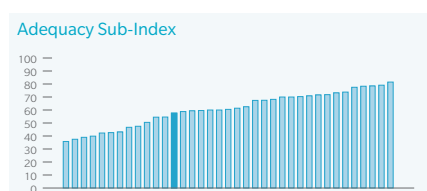
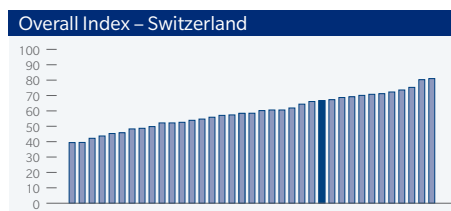
Switzerland's retirement income system comprises an earnings-related public pension with a minimum pension; a mandatory occupational pension system where the contribution rates increase with age; and voluntary pension plans offered by insurance companies and authorised banking foundations.

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
- reversing the preferential tax treatment of lump sum payments in comparison to pension payments
- increasing the state pension age over time

- reducing the level of household debt
- increasing the rate of home ownership
- reducing pre-retirement leakage by further limiting access to funds before retirement

The Swiss index value fell slightly from 67.6 in 2018 to 66.7 in 2019 primarily due to a decrease in the reported level of pension assets held in private pension arrangements, public pension reserve funds and protected book reserves and the updated data published by the UN used for the demographic questions within the sustainability sub-index.



## Thailand

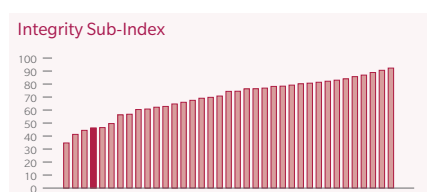
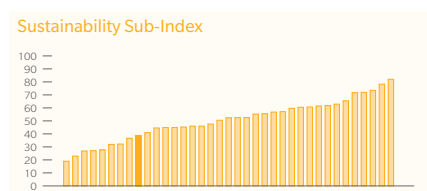
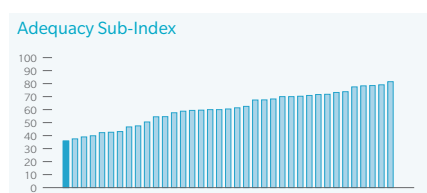
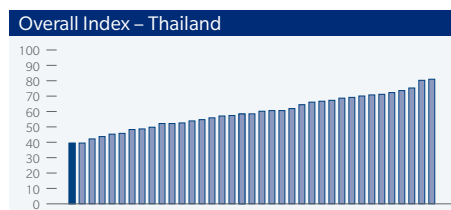
Thailand's retirement income system provides broad coverage across 3 pillars, comprising of 1) a means-tested old-age pension, a Social Security Fund for private sector employees in the formal sectors, 2) Provident Fund, a voluntary-basis employer-sponsored DC plans, and 3) individual savings product including Retirement Mutual Fund which provides a tax free lump sum upon retirement and a large market of insurance/endowment products.

The overall index value for Thailand's 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 must be taken as an income stream
- introducing a minimum level of mandatory contributions into a retirement savings fund

The Thai index value for 2019 is 39.4.



## Turkey

Turkey's retirement income system comprises an income-tested public pension and an earnings-related public scheme. There are voluntary private pension systems which people can join to supplement their income in retirement, but coverage is currently low.

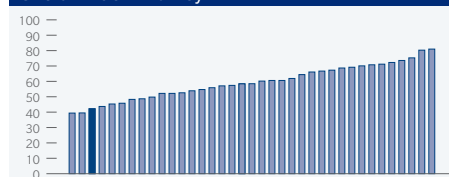
The overall index value for Turkey's system could be increased by:

- 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

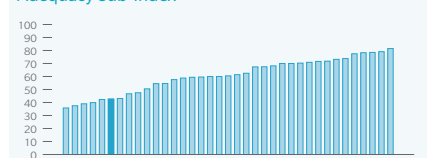
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- reducing pre-retirement leakage by limiting the access to private pension funds before retirement

The Turkish index value for 2019 is 42.2.

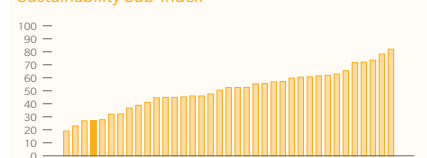
Overall Index – Turkey



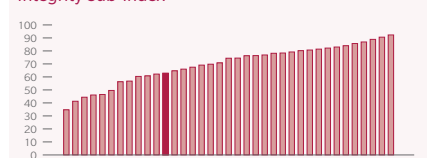
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## United Kingdom

The United Kingdom's 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 enrolment now covers all employers, requiring them to enrol eligible employees (who can then choose to opt out) in pension schemes. Minimum contributions are currently 8%.

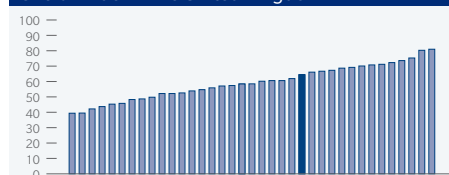
The overall index value for the British system could be increased by:

- restoring the requirement to take part of retirement savings as an income stream
- raising the minimum pension for low-income pensioners

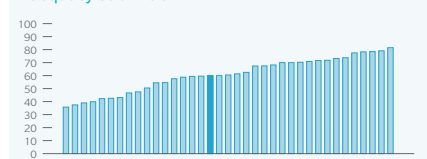
- further increasing the coverage of employees and the self-employed in pension schemes
- increasing the level of contributions to occupational pension schemes
- raising the level of household saving and reducing the level of household debt

The British index value increased from 62.5 in 2018 to 64.4 in 2019 primarily due to the change in the methodology used to calculate the net replacement rate as discussed in Chapter 3 and the increase in the level of auto-enrolment contributions.

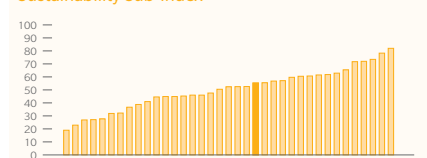
Overall Index – The United Kingdom



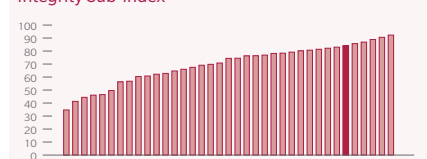
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## United States of America

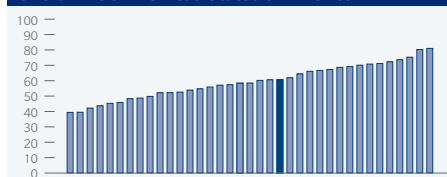
The United States' retirement income system comprises a social security system with a progressive benefit formula based on lifetime earnings, adjusted to a current dollar basis, together with a means-tested top-up benefit; and voluntary private pensions, which may be occupational or personal.

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

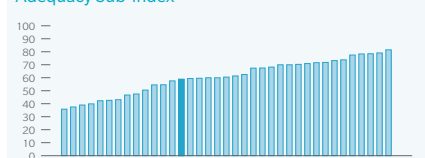
- raising the minimum pension for low-income pensioners
  - adjusting the level of mandatory contributions to increase the net replacement for median-income earners
  - improving the vesting of benefits for all plan members and maintaining the real value of retained benefits through to retirement
  - reducing pre-retirement leakage by further limiting the access to funds before retirement
- introducing a requirement that part of the retirement benefit must be taken as an income stream
  - increasing the funding level of the social security program
  - raising the state pension age and the minimum access age to receive benefits from private pension plans
  - providing incentives to delay retirement and increase labour force participation at older ages
  - providing access to retirement plans on an institutional group basis for workers who don't have access to an employer sponsored plan

The American index value increased from 58.8 in 2018 to 60.6 in 2019 primarily due to an allowance for the Social Security Trust Fund in calculating the coverage percentage, as discussed in Chapter 3.

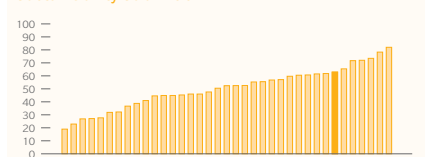
Overall Index – United States of America



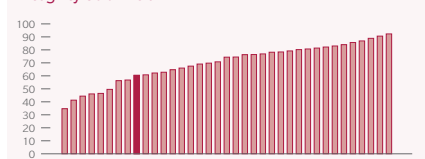
Adequacy Sub-Index



Sustainability Sub-Index



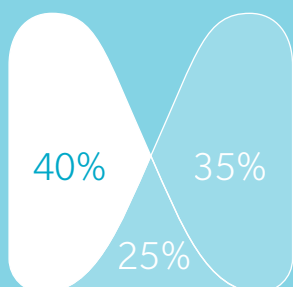
Integrity Sub-Index



# CHAPTER 5

## 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 which 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 the non-pension savings situation and, as such, are important indicators of financial security during retirement.



The countries with the highest value for the adequacy sub-index are Ireland (81.5) and France (79.1) with Mexico (37.5) and Thailand (35.8) having the lowest values. Whilst 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 Attachment 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 pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?

### Objective

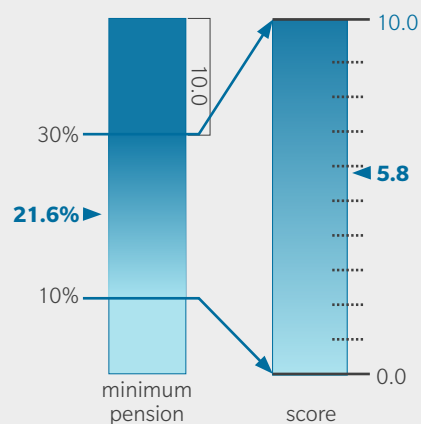
An important objective of any retirement income system is to provide a minimum pension to the aged poor. In terms of the World Bank's recommended multi-pillar system, it represents the non-contributory basic pension or Pillar 0, which provides a minimum level of income for all aged citizens. Eligibility for this minimum pension requires no period in the paid workforce, but will often require a minimum period of residency.

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 that the real value of the minimum pension is maintained.

### Calculation

There is no single answer as to the correct level of the minimum pension, as it depends on a range of socio-economic factors. However, it is suggested that a minimum pension of about 30 per cent<sup>9</sup> of average earnings adequately meets the poverty alleviation goal. Hence for the first part of this question a minimum pension below 30 per cent will score less than the maximum value of 10, with a zero score if the pension is 10 per cent or less of average earnings, as such a pension offers very limited income provision.

### 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 where the minimum pension is not increased.

A maximum score is achieved for this question if the minimum pension is 30 per cent 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 per cent of the average wage in China, India, Malaysia, Philippines, Saudi Arabia and Thailand to 40 per cent or more in Brazil and New Zealand. Indonesia does not provide a minimum pension.

<sup>9</sup> 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 (2009a). The average basic pension in 18 OECD countries (OECD (2017a) p88) is 19.9% whereas the average minimum pension is 25.6% of average worker earnings. Hence a range of 10% to 30% remains reasonable.

## 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. Hence 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), represent the two most important components within the adequacy sub-index. This indicator is therefore given a weighting of 17.5 per cent in the adequacy sub-index with 15 per cent for the first part of the question and 2.5 per cent for the second part.

## Question A2

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

### Objective

In *"Averting the Old Age Crisis"*, the World Bank (1994) suggested that a target replacement rate for middle income earners from mandatory systems can be expressed in any of the following ways:

- 78 per cent of the net average lifetime wage
- 60 per cent of the gross average lifetime wage
- 53 per cent of the net final year wage
- 42 per cent 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."<sup>10</sup> 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 his/her working career.

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

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

<sup>10</sup> World Bank (1994), p295.

The OECD expressed a target replacement rate of 70 per cent of final earnings<sup>11</sup> which includes mandatory pension for private sector workers (publicly and privately funded) and typical voluntary occupational pension plans for those countries where such schemes cover at least 30 per cent 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 include more than 30 per cent of the working age population. This allowance takes into account the level of coverage above 30 per cent and the increase in the net replacement rate due to the voluntary schemes.<sup>12</sup>

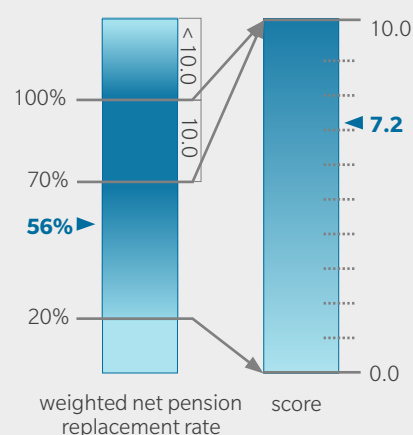
The target benefits should be less than 70 per cent of final earnings to allow for individual circumstances and some flexibility. An objective of between 45 per cent and 65 per cent of final earnings is considered reasonable. Using the ratios between lifetime earnings and final earnings, the target for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

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

## Calculation

The maximum score for this indicator is obtained for any country with a result between 70 per cent and 100 per cent. Argentina, Austria, Brazil, Denmark, France, Italy, Philippines, Spain and Turkey are within this range. Any score outside this range scores less than the maximum with a zero score being obtained for a result of less than 20 per cent.

## Calculating A2 — Weighted Net Pension Replacement Rate



## Commentary

With the exception of the countries that have a result between 70 per cent and 100 per cent, most countries have a result between 21 per cent (South Africa) and 65 per cent (Saudi Arabia). The exception is the Netherlands at 102 per cent. 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 represents 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 per cent.

11 OECD (2012) p 161.

12 OECD (2017c), p109.



## 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 (which was covered in the previous two questions) as well as the level of household savings outside the pension system. In some countries, these savings represent an important factor in determining the financial security for the aged.

### Calculation

For countries where the Economist Intelligence Unit (EIU) data was 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 2017 and 2018 measurements.

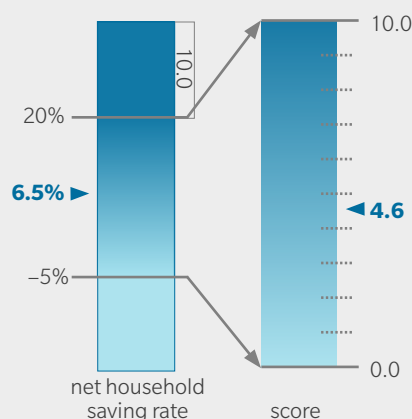
The EIU data for Singapore was adjusted to remove the impact of the estimation method change.

OECD measures were used for Ireland and South Africa due to EIU data not being available or due to changes in data sources and estimation methods.

The calculated household saving rates ranged from minus 6.3 per cent in New Zealand to plus 24.4 per cent in Saudi Arabia. A maximum score is obtained for any system with a saving rate of 20 per cent or higher, and a zero score for any country with a saving rate of less than minus 5 per cent.

It is noted that the EIU's calculation excludes contributions to pension plans. 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.

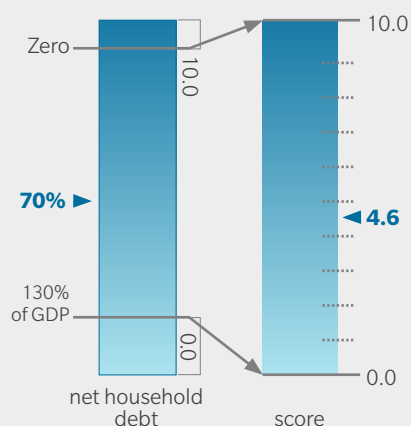
### Calculating A3a — Net Household Saving Rate



While the level of household savings represents the current flow of household savings, 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 as discussed in Chapter 1.

The level of household debt ranges from 7 per cent of GDP in Argentina and 10 per cent in the Philippines to 125 per cent of GDP in Australia and 129 per cent 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 per cent of GDP or higher.

### 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, either for retirement or other purposes while 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 have been set at 5 per cent each of the adequacy sub-index. This indicates the importance of both net household savings 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 favourably 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 behaviour. The investment earnings (and the related compounding effect over decades) are critical in respect of adequacy as most of an individual's retirement benefits are 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 as 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 three cases where 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, Turkey and Saudi Arabia (where there is no income tax). In Norway and Sweden, additional employee contributions are encouraged in certain circumstances. Twenty-nine 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 per cent in the adequacy sub-index, split into 2 per cent for the first question and 3 per cent for the second question.

## Question A5

Is there a minimum access age to receive benefits from private pension plans<sup>13</sup> (except for death, invalidity and/or cases of 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; hence 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, while 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 behaviour.

### Weighting

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

## Question A6

What proportion, if any, of the retirement benefit from the private pension arrangements is required to be taken as an income stream?

Are there any tax incentives that exist to encourage the taking up of income streams?

### Objective

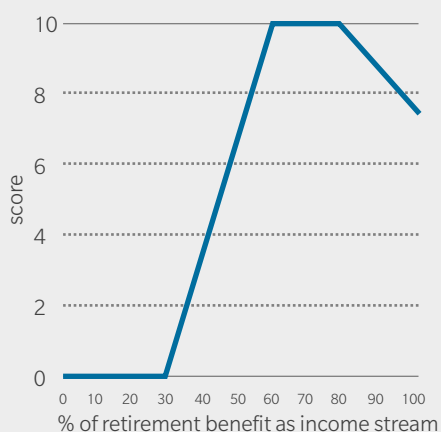
The primary objective of a private pension system should be to provide income during retirement. Of course, this does not imply that a lump-sum payment is not a valuable benefit; it often is. Indeed, both Rocha and Vittas (2010) and the OECD (2012b) suggest that policymakers should target an adequate level of annuitisation but should be wary of causing excessive annuitisation. Hence, this indicator focuses on whether there are any requirements in the system for at least part of the benefit to be taken as an income stream, or if there are any tax incentives to encourage the take-up of income streams.

### Calculation

There is no single answer that represents the correct proportion of a retirement benefit that should be annuitised. For the first question, a maximum score is achieved where between 60 per cent and 80 per cent of the benefit is required to be converted into an income stream. A percentage above 80 per cent reduces the flexibility that many retirees need whilst an answer below 60 per cent is not converting a sufficient proportion of the benefit into an income stream. A percentage below 30 per cent results in a score of zero. For the second question, where there is no requirement for an income stream, half the maximum score could be achieved where significant tax incentives exist to encourage income streams.

<sup>13</sup> Private pension plans include both defined benefit and defined contribution plans and may pay lump-sum or pension benefits. They also include plans for public sector and military employees.

## Calculating A6 Question 1 — Conversion to Income Streams



### Commentary

There is considerable variety between countries with some countries requiring all of the benefit to be converted into a lifetime annuity (e.g. Colombia, Finland, the Netherlands, Norway, Saudi Arabia, Singapore and Sweden) whereas many countries have no requirement at all (e.g. Argentina, Australia, China, France, Hong Kong SAR, Japan, Korea, Malaysia, Mexico, New Zealand, the Philippines, Spain, Switzerland, Thailand, Turkey, the United Kingdom and the United States). Of these countries, only Australia and Korea have direct tax incentives to encourage income streams.

### Weighting

The requirement that part of a member's accumulated retirement benefit be turned into an income stream (which need not necessarily be a lifetime annuity) or the existence of tax incentives to encourage the take up of income streams represent desirable features of a retirement income system and therefore a weighting of 10 per cent has been used 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 actual score depended on the actual circumstances.

### Commentary

There is considerable diversity to the extent that the real value of members' benefit entitlements can be transferred or retain their real value after changing employment. That is, in only 18 of the 37 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. Hence, this desirable feature has been given a 7.5 per cent 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, the female can be adversely affected as most of the accrued benefits may have accrued in the male's name during the marriage or partnership. It is considered 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 can be considered to be both equitable and provide 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 17 of the 37 systems, it is normal practice for the accrued pension benefits to be taken into account in the overall division of assets upon a divorce or separation.

### Weighting

With a relatively high level of divorce or separation occurring 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 been given a 4 per cent weighting in the adequacy sub-index.

## Question A9

What is the level of home ownership in the country?

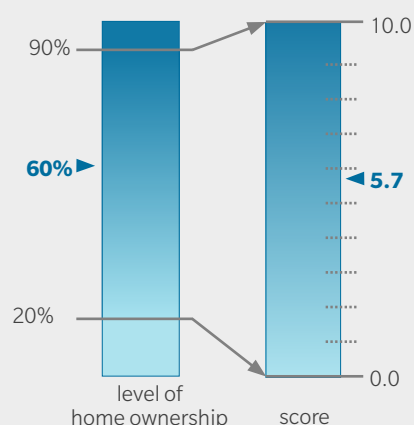
### Objective

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 per cent. Hence a home ownership level of 90 per cent or more scores maximum results whilst a level of 20 per cent or less scores zero.

### Calculating A9 — Home Ownership



### Commentary

The level of home ownership ranged from 38.2 per cent in Switzerland to more than 85 per cent in China, India and Singapore.

### Weighting

Home ownership represents an important feature of financial security in retirement. Hence, this indicator has been given a 5 per cent weighting in the adequacy sub-index.

## Question A10

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

### Objective

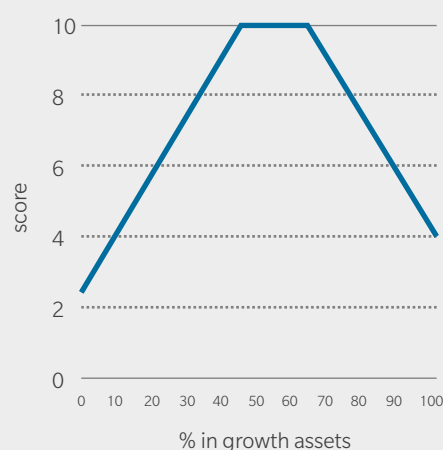
The investment performance of funded pension funds over the long-term, after allowing for costs and any taxation, represents a key input into the provision of adequate retirement income. Yet, as Hinz et al (2010)<sup>14</sup> noted, international comparisons of investment returns might not be totally meaningful. 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. It is apparent that there is no ideal asset allocation that is appropriate for all members at all ages. The growing interest in life cycle funds suggests that the best approach may be a changing asset allocation during an individual's lifetime.

It is also important to recognise 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 that it is appropriate for the investments of pension funds to be diversified across a range of asset classes, thereby providing the opportunity for higher returns with reduced volatility.

### Calculation

Many systems 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.

### Calculating A10 — Percentage of Growth Assets



A zero percentage in growth assets highlights the benefit of security for members but without the benefits of diversification and the potential for higher returns. In some emerging markets, it is also recognised that the capital markets are underdeveloped. No exposure to growth assets scores 2.5 out of 10. This score increases to the maximum score of 10 as the proportion in growth assets increases to 45 per cent of all assets. If the proportion in growth assets exceeds 65 per cent the score is reduced to reflect the higher level of risk and volatility.

### Commentary

The level of growth assets ranges from less than ten per cent in India to approximately 70 per cent in South Africa. Fourteen of the 37 systems have a percentage between 45 per cent and 65 per cent, which indicates a reasonable level of exposure to growth assets.

### Weighting

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

<sup>14</sup> Hinz R, Rudolph H P, Antolin P and Yermo J (2010), p2.

## Question A11

Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or paid maternity leave?

### 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 receives 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, it is desirable that pension contributions (or the ongoing benefit accrual) are a compulsory component of income support payments.

### Calculation

The question was 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 17 of the 37 systems, it is a normal practice for contributions to be paid to a pension scheme if a worker receives income support when they are temporarily out of the workforce.

### Weighting

The requirement for contributions to be paid while a worker is receiving income support when they are temporarily out of the workforce represents a desirable feature for those individuals affected. Therefore this feature has been given a one per cent 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 the following sources:

OECD (2017a), country profiles for Argentina, Brazil, Saudi Arabia and South Africa;

OECD (2018), unpublished data for Colombia;

OECD (2018a), p13 for Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines and Thailand,

OECD (2017a), p89 for all other OECD countries;

Mercer calculations for Singapore using government websites;

Mercer calculation for Peru using websites; and

Mercer calculations for China using data sourced from Mercer consultants.

The answers for the second question were sourced from relevant Mercer consultants.

### Question A2

OECD (2018a) for China, Hong Kong SAR, India, Indonesia, the Philippines, Singapore and Thailand

OECD (2018) unpublished data for Colombia, Malaysia and Peru.

OECD (2017a) for all other countries.

### Question A3

Data from the Economist Intelligence Unit was used for the first question for all systems except Ireland and South Africa;

OECD (2019) for Ireland; and

OECD (2018b) for South Africa.

The answers for the second question used an average of data taken from Trading Economics (2019) and CEIC (2018).

### Question A9

The answers were sourced from relevant Mercer consultants except China.

World Bank (2012) for China.

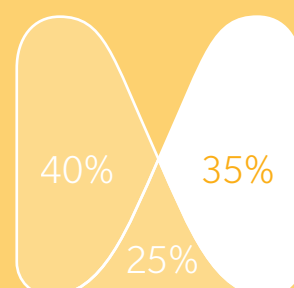
## Questions A4, A5, A6, A7, A8, A10 and A11

The answers were sourced from relevant Mercer consultants.

# CHAPTER 6

## THE SUSTAINABILITY SUB-INDEX

The sustainability sub-index considers a number of indicators which influence the long-term sustainability of current retirement income systems. These include factors such as the economic importance of the private pension system, its level of funding, the length of expected retirement both now and in the future, the labour force participation rate of the older population, the current level of government debt and the level of real economic growth.





The system with the highest value for the sustainability sub-index is Denmark (82.0) with the lowest value being for Italy (19.0). Whilst several indicators influence these scores, the level of coverage of private pension plans, the projected 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 Attachment 2.

## Question S1

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

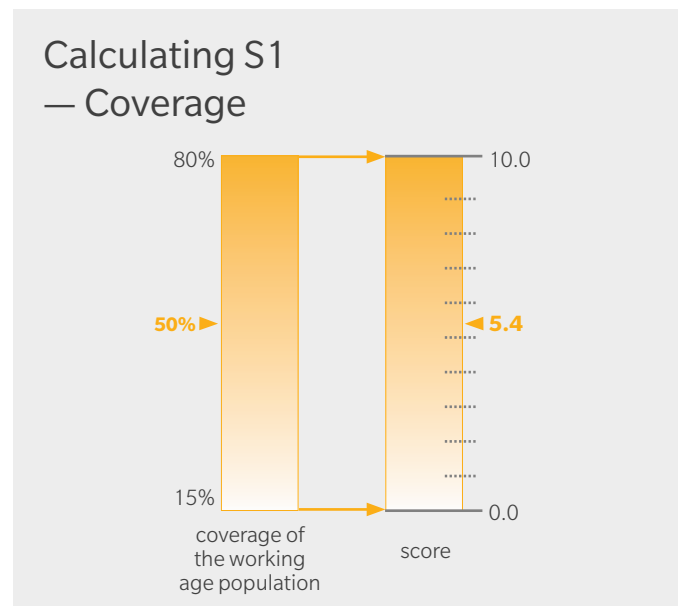
### Objective

Private pension plans (including pension plans for public sector employees and the military) represent an important pillar within all retirement income systems. Hence, a higher proportion of coverage amongst the workforce increases the likelihood that the overall retirement income system will be sustainable in the future as it reduces pressure on future government expenditure.

### Calculation

The rates of coverage ranged from nil in Argentina and about six per cent in India to more than 80 per cent of the working age population in Chile, Denmark, Finland, the Netherlands and Sweden. Each system's score is related to its coverage, with a maximum score for 80 per cent or above and a zero score relating to coverage of 15 per cent 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 where the public pension reserve fund exceeds ten per cent of GDP and the arrangements are available to most of the workforce.



### Commentary

Only 10 of the 37 systems have coverage rates over 64 per cent 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 countries.

### Weighting

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

## 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.

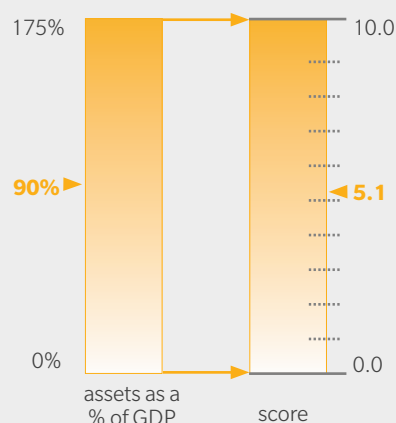
### Calculation

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. After all, in many systems an individual's retirement income includes both a public pension and a private pension. The types of funds that have been included are:

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

The level of assets ranged from less than 10 per cent of GDP for Austria, China, India, Indonesia, the Philippines, Thailand and Turkey to more than 175 per cent for Denmark and the Netherlands. A maximum score was achieved for 175 per cent of GDP and a minimum score for zero per cent.

### Calculating S2 — Level of Assets



### Commentary

There is considerable variety in the size of assets set aside for future pensions around the world, reflecting the relative importance of pay-as-you-go social security and funded pension funds. In addition, many systems are part-way through a reform process which is expected to increase the level of assets over many decades. In these cases, we would expect the score for this indicator to gradually increase 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 as 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. Hence, this indicator was given a weighting of 15 per cent in the sustainability sub-index.

## Question S3

- What is the current gap between life expectancy at birth and the state pension age?
- What is the projected gap between life expectancy at birth and the state pension age in 2040? (This calculation allows for mortality improvement.)
- What is the projected old-age dependency ratio in 2040?
- What is the estimated Total Fertility Rate (TFR) for 2015-2020?

### Objective

A retirement income system is designed to provide benefits to an individual after the person leaves the workforce to his/her death. The longer the period, the larger the total value of benefits that will be needed and hence there will be an increased 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.

In the second question, we project to 2040 to highlight the fact that many governments have already taken action and increased the state pension age, thereby reducing the forthcoming pension burden. The projected old age dependency ratio question highlights the impact of the ageing population between now and 2040 and therefore the likely effects on the funding requirements for pensions, health and aged care.

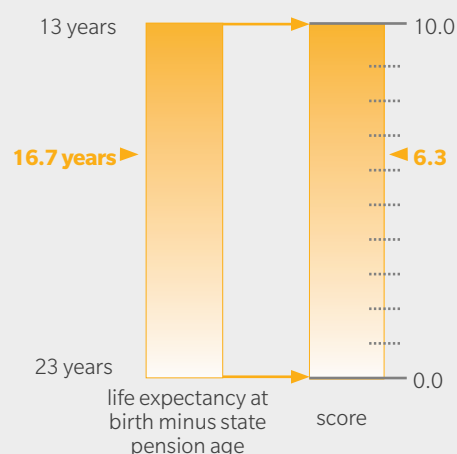
Consideration of the TFR provides an even longer term perspective as it provides an indication of the likely balance between workers and retirees in future decades.

## Calculations

- We have calculated the difference between the life expectancy at birth and the existing state pension age, as used in Park (2009). The answers provide an indicator of the average period of pension payments and range from 4.9 in South Africa and 10.4 in Mexico to 24.5 in Japan. A maximum score is achieved with a difference of 13 years or less and a zero score with a score of 23 years or more.
- For 2040, the results range from 7.8 in South Africa and 12.8 in Indonesia to 23.7 in China and 23.1 in France. The formula used remains unchanged with a maximum score for 13 years or less and a zero score for 23 years or more.

The calculations for these two questions are averaged for males and females.

### Calculating S3 — Life Expectancy and State Pension Age



- 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 2040 vary from 12 per cent in South Africa to 61 per cent in Italy and 66 per cent in Japan. A maximum score is achieved with a projected dependency ratio of 20 per cent or lower and a zero score with a ratio of 60 per cent or higher.
- The TFR ranges from 1.11 in Korea to 2.58 in the Philippines. In view of these scores and the likely range in the future, a minimum score of zero is achieved for a TFR of 1.0 or less with a maximum score for a TFR of 2.5 or higher.

## Commentary

All systems have a current difference between life expectancy and state pension age of less than 23 years, with the exception of Japan.

A TFR of less than 1.5 in Hong Kong SAR, Italy, Japan, Korea, Poland, Singapore and Spain raises serious issues for their future age structures. Whilst 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 per cent in the sustainability sub-index with a five per cent weighting for each question.

## Question S4

What is the level of mandatory contributions that are set aside for retirement benefits (i.e. funded), expressed as a percentage of wages? These include mandatory employer and/or employee contributions towards funded public benefits (i.e. social security) and/or private retirement benefits.<sup>15</sup>

### 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 Central Provident Fund or a 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.

### Calculation

There is considerable variety 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, New Zealand and Norway the mandatory contributions are fully invested for the individuals concerned. On the other hand, Argentina, Austria, Brazil, France, Germany, Ireland, Poland, South Africa, Spain and Thailand 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 per cent of the contributions are invested.

For India and Indonesia, we have used 50 per cent 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 used the contributions to the defined contribution funded system plus the contributions to the quasi-mandatory occupational schemes.

<sup>15</sup> This question does not include contributions arising from statutory minimum levels of funding for defined benefit plans as these plans do not represent mandatory arrangements.

While Italy's mandatory scheme is funded on a pay-as-you-go basis we have assumed that 25 per cent of the mandatory contributions required to fund termination indemnity benefits are invested. For Finland, we have assumed that 20 per cent of the mandatory contributions paid by employers and employees are invested with the remainder used to fund pensions in payment.

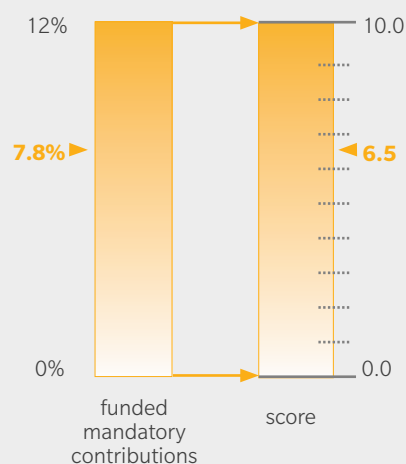
In line with OECD data, we have assumed that 35 per cent of all contributions to Singapore's Central Provident Fund are invested which gives them the maximum score. For Malaysia, we have assumed that 70 per cent of all contributions to the Employee Provident Fund are invested for retirement which also gives them the maximum score.

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

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. Japan, Korea and the USA are examples of this approach. In these cases, we have assumed that 15 per cent, 50 per cent and 20 per cent of the contributions are funded respectively.

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

## 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 a better level of 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 per cent in the sustainability sub-index is used for this indicator.

## Question S5

What is the labour force participation rate for those aged 55–64?

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

### Objective

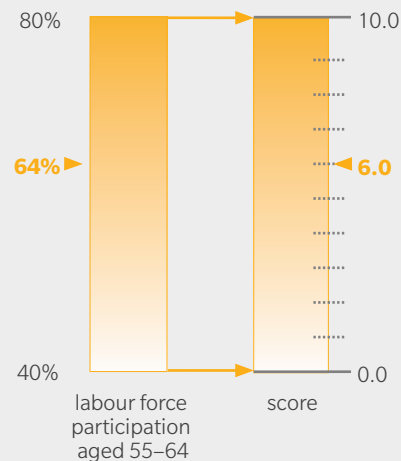
Higher labour force participation at older ages means that individuals are retiring later thereby reducing both the number of years in retirement and the level of retirement benefits needed, as well as accumulating greater savings for retirement during the working years.

### Calculation

For those aged 55 to 64, the percentages range from 37.8 per cent in Turkey to 81.6 per cent in Sweden. A maximum feasible score is considered to be 80 per cent for this age bracket. Hence a participation rate of 80 per cent or more scores maximum results whilst a participation rate of 40 per cent or less scores zero.

For those aged 65 and over, the percentages range from 2.3 per cent in Spain to 41.2 per cent in Indonesia. A maximum feasible score is considered to be 30 per cent or more. Hence a participation rate of 30 per cent or more scores maximum results whilst a participation rate of nil at these ages scores zero.

### Calculating S5a — Labour Force Participation Rate aged 55–64



### Commentary

With the increasing awareness of longer life expectancies and the pressures associated with an ageing population, it is important that governments continue to encourage higher labour force participation at older ages. It is pleasing to note that many countries are now experiencing increases in their labour force participation rates at these ages. This trend should continue to be encouraged.

### Weighting

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

## Question S6

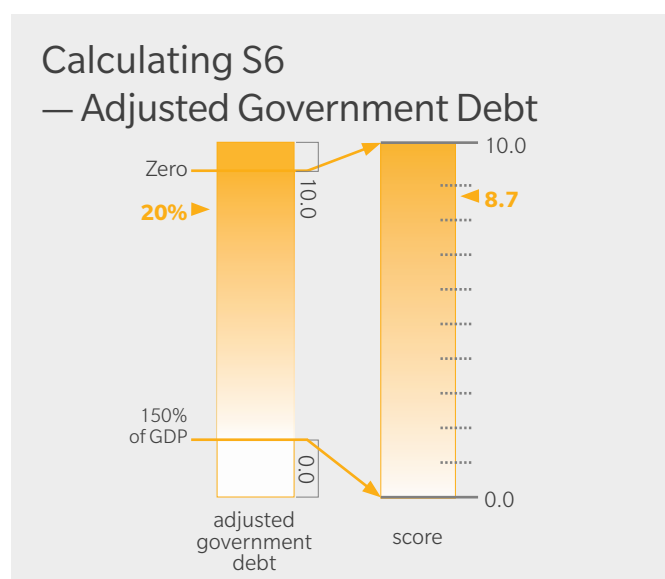
What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities<sup>16</sup>), expressed as a percentage of GDP?

### 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. Clearly, higher government debt increases the likelihood that there will need to be reductions in the level or coverage of future benefits.

### Calculation

The level of the adjusted government debt ranges from less than zero for Norway and Singapore to 235 per cent of GDP in Japan. A maximum score was achieved for countries with a zero or negative level of adjusted government debt (i.e. a surplus), with a zero score for countries with an adjusted government debt of 150 per cent of GDP or higher.



### 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 or aged care. Hence, 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 into the future. The level of debt increased in many countries following the global financial crisis. There are also other longer term economic effects of higher government debt which can adversely affect the investment returns received by pension plan members.

### Weighting

This item has a weighting of 10 per cent in the sustainability sub-index.

<sup>16</sup> This reduction does not include sovereign wealth funds that have been set aside for future pension payments as these have been considered in Question S2.

## Question 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?

### Objective

A desirable feature of any retirement income system, particularly with ageing populations, is to permit individuals to phase into retirement gradually by reducing their reliance on earned income whilst at the same time enabling them to access part of their accrued retirement benefit through an income stream. It is also important that such individuals can continue to contribute or accrue benefits whilst 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 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 the transition period.

### Commentary

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

### Weighting

This item has a weighting of 5 per cent in the sustainability sub-index as it is not considered as critical as the previous indicators. The total weighting was split into 4 per cent for the first question and 1 per cent for the second question.

## Question S8

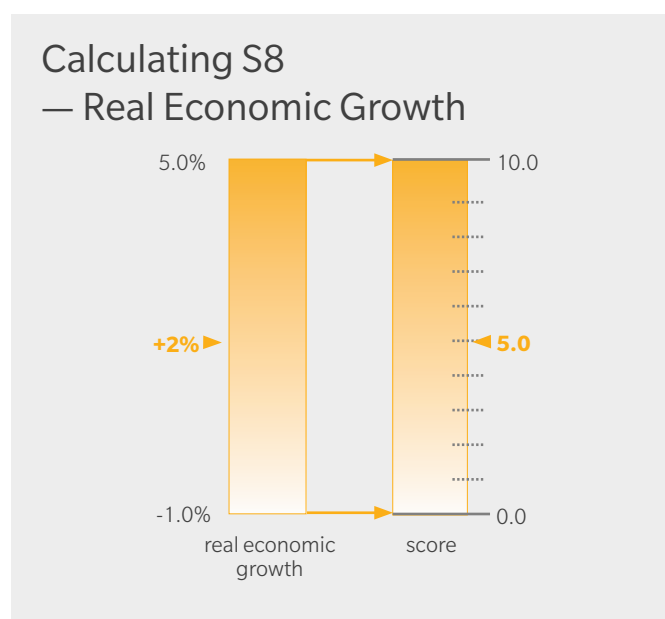
What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?

### 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, range from 0.3 per cent in Brazil to 7.8 per cent in Ireland. A maximum feasible score over the long term is considered to be 5 per cent per annum. Therefore, real growth of 5 per cent or more scores the maximum whilst a rate of minus 1 per cent or lower scores zero.





## Commentary

Long term real economic growth means that 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 which, in turn, provides more sustainable pension benefits.

## Weighting

This item has a weighting of 10 per cent in the sustainability sub-index.

## Sources of data for the sustainability sub-index

### Question S1

Mercer calculations for Brazil, Colombia, France, Saudi Arabia and Sweden.

OECD (2011), p173 for South Africa.

OECD (2014), p69 for Argentina and Peru.

ECD (2018a) p13 for China, Hong Kong SAR, India, Indonesia, Malaysia, the Philippines, Singapore and Thailand.

OECD (2017a), p151 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 and Singapore.

OECD (2011), p179 in relation to pension insurance contracts for Germany.

OECD (2015), p191 in relation to pension insurance contracts for Norway.

OECD (2017a) in relation to public pension reserve as % of GDP.

OECD (2018c) in relation to all retirement vehicles as % of GDP for all countries.

### Question S3

Life expectancy (2020-2025 and 2035-2040), aged dependency (2040) and total fertility rate (2015-2020) data were from United Nations (2019).

State pension ages were sourced from relevant Mercer consultants.

### Question S5

International Labour Organization (2016), for China, India and 65+ age group for Malaysia.

International Labour Organization (2019), for all other systems.

### Question S6

International Monetary Fund (2019).

Sovereign Wealth Fund Institute: [www.swfinstitute.org](http://www.swfinstitute.org)

### Question S8

International Monetary Fund (2019).

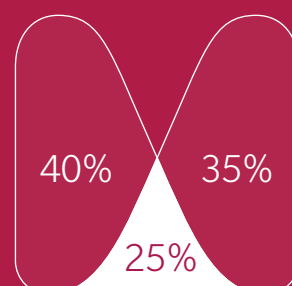
### Questions S4 and S7

Answers were sourced from relevant Mercer consultants.

# CHAPTER 7

## THE INTEGRITY SUB-INDEX

The integrity sub-index considers three broad areas of the pension system, namely regulation and governance; protection and communication for members; and operating costs. This sub-index asks a range of questions about the requirements that apply to funded pension plans which 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. Hence they represent a critical component of a well-governed and trusted pension system, which has the long term confidence of the community.



The system with the highest value for the integrity sub-index is Finland (92.3), with the lowest value being for the Philippines (34.7). The 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 Attachment 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 were 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 that are separate from the employer) and is subject to some level of regulatory oversight.

Twenty-seven of the 37 systems obtained the maximum score indicating the presence of the basic groundwork needed for a sound governance framework.

#### 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 that the score may be between 0 and 2 depending on the actual circumstances.

#### Weighting

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

## Question 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 discharge its supervisory responsibilities? Please rank on a scale of 1 to 5.

The following table was provided to assist in answering the third question.

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 were 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 may be between 0 and 2 depending on the actual circumstances.

The last question was assessed on a five-point scale as shown in the above table. It is important to note that this question did not assess the quality of the supervision; rather it considered 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. In Malaysia and Singapore the activity of the authority overseeing their central funds has been recognised.

## Weighting

The first and third questions were each given a 4 per cent weighting, with the second question being given a 2 per cent weighting, resulting in a total weighting of 10 per cent 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:

- one or more independent members included in the governing body?
- equal member and employer representation on the governing body?

## Objective

These questions are designed to assess the regulatory requirements in respect of certain functions that may be required in respect of the fiduciaries who oversee private pension plans.

The third question takes into account 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 that pension plans should have a clear policy to handle such situations.

The two parts of the fourth question reflect 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 and/or a balance between employer and member representatives on the governing board.

## Calculation

The first three 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 may be between 0 and 2 depending on the actual circumstances.

The fourth question was scored out of 2, with an answer of "yes" to the first part immediately scoring 2 out of 2. If the answer to the first part was "no" but the answer to the second part was "yes" to equal member representation, then the score was 1 out of 2. All other answers score 0, even if there is a member representation requirement but it is less than equal representation.

Malaysia, Norway, Peru, Saudi Arabia and Singapore received the maximum score of 10.0 for these questions while twelve systems scored less than 6.0. This indicates that there is still scope to improve governance requirements in many systems.

## Weighting

The first and second questions were each given a 4 per cent weighting, with the third question given a 2.5 per cent weighting and the fourth question given a 2 per cent weighting, resulting in a total of 12.5 per cent 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 recognised professional?

### Objective

These questions were designed to assess the regulatory requirements in respect of these two aspects of the governance of private sector pension plans.

### 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 that the score may be between 0 and 2 depending on the actual circumstances.

Twenty of the 37 systems received the maximum score indicating that several systems could improve their requirements, particularly in respect of the first question.

### Weighting

Each question was given a 2.5 per cent weighting in the integrity sub-index, resulting in a total of 5 per cent 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 were designed to 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 country in the standard normal units, ranging from approximately -2.5 to +2.5. These six scores were summed and then increased by 3 to avoid any negative scores. The scores ranged from 0.16 for Turkey to 14.17 for New Zealand out of a maximum score of 15.

### Weighting

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

## Commentary on the total regulation and governance results

The scores ranged from 13.6 for Mexico to 48.1 for Norway out of a maximum of 50. The low score for Mexico is indicative of the fact that the regulator has minimal requirements when compared to the more developed pension industries.

## Protection and communication for members

With the exception of question P1 dealing with funding, each question in this section was 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 may be between 0 and 2 depending on the actual circumstances.

### Question 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?

### Objective

These questions are designed to assess the level of funding required in respect of both defined benefit (DB) and defined contribution (DC) plans. Funding levels are critical in 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 where funding requirements included regular actuarial involvement and funding of a 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, Chile, Denmark, Finland, Hong Kong SAR, Ireland, Korea, the Netherlands, Norway, Poland, South Africa and Spain 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 per cent of the plan's assets. A maximum score was given where in-house assets are restricted to 5 per cent. There are no restrictions in Argentina, Indonesia, Italy, Japan, the Philippines and Thailand.

### Weighting

This requirement represents an important way of protecting the member's accrued benefits and is given a 5 per cent 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

There are many risks faced by members of pension plans. These two questions consider what protection, if any, the members receive in the case of fraud, mismanagement or employer insolvency. In the latter case, the employer may not be able to pay any contributions that are owed.

### Commentary

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

### Weighting

Whilst these issues are very important where 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 the weighting of 2.5 per cent in the integrity sub-index, resulting in a total of 5 per cent for these two questions.



## Question P4

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

### Objective

It is important that members 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 China, India (for some DB plans), the Philippines and Thailand require information to be provided when members join the plan.

### Weighting

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

## Question P5

Are plan members required to receive or have access to the annual report from the pension plan?

Is the annual report required to show:

- the allocation of the plan's assets to major asset classes?
- the major 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 the members.

As defined contribution arrangements become more prevalent, it is becoming even more important for members to receive information about the investments in which their accumulated benefits are invested.

### Commentary

There is considerable variety in the responses, with eight of the 37 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 disclosure of all investments. A maximum score was given where major investments of the plan's assets are required to be disclosed.

### Weighting

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

## Questions P6

Are plan members required to receive an annual statement of their current personal benefits from the plan?

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

### 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, whilst the second question considers whether this requirement includes any projections about the member's future retirement benefit.

### Commentary

The majority of systems have a requirement concerning annual personal statements with Austria, Chile, Finland, Ireland, Italy, the Netherlands, Norway, Sweden and Switzerland requiring some form of 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.

### Weighting

The first question was given a 5 per cent weighting in the integrity sub-index whilst the second question was given a 2.5 per cent weighting in this sub-index, resulting in a total of 7.5 per cent for these two 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 organisation (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 private sector pension plans.

### Commentary

Twenty-one 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

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

### Commentary on the total protection and communication results

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

## Costs

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 ten pension funds/providers?

## Objective

As noted by Luis Viceira in Hinz et al. (2010), costs are one of the most important determinants of the long run efficiency of a pension system. He goes on to comment 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.”<sup>17</sup>

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

Yet, in the final analysis many costs will be borne by members and thereby affect the provision of their retirement income. We have therefore 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, it is likely that as funds increase in size, their costs as a proportion of assets will reduce and some (or all) of these benefits will be passed onto members.

## Calculation

For the first question, each type of plan was given a weight ranging from 1 for individual retail or insurance contracts to 10 for a centralised fund. These scores were 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 ten providers or funds. A score of 1 was given when these assets were less than 10 per cent of all assets rising to a maximum score of 5 when these assets represented more than 75 per cent of all assets.

## Weighting

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

## Commentary on the costs results

The scores for these two indicators ranged from 4.0 for the USA and 4.1 in France to 9.8 for India and 10.0 for both Malaysia and Singapore. The high scores for these three countries are not surprising as each country 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.

It is recognised 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 where individuals have greater choice and freedom. The ideal system should encourage competition and flexibility to suit members' needs whilst at the same time encouraging economies of scale (as illustrated by this question) to minimise costs and improve benefits.

## 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. The exception was Question R5 which used Worldwide Governance Indicators from The World Bank (2018).

<sup>17</sup> Hinz R, Rudolph H P, Antolin P and Yermo J (2010), p259.

# REFERENCES AND ATTACHMENTS

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## Attachment 1: Score for each country for each indicator in the adequacy sub-index

Question	Question weight	Score for each country																		
		Argentina	Australia	Austria	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	India	Indonesia	Ireland	Italy	Japan	Korea
A1 What is the minimum pension, as a percentage of the average wage, that a single aged person will receive? How is the minimum pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?	17.5%	0.7	9.0	8.4	9.6	9.6	2.8	1.1	1.1	10.0	5.4	7.3	5.7	3.8	0.0	0.0	9.3	4.9	4.9	1.4
A2 What is the net replacement rate for a range of income earners?	25.0%	10.0	7.4	10.0	10.0	7.7	4.2	8.4	7.2	10.0	9.1	10.0	7.6	5.2	3.7	2.4	7.1	10.0	5.7	5.9
A3 What is the net household saving rate in the country? What is the net household debt to GDP ratio?	10.0%	7.1	2.0	5.4	6.4	1.9	6.1	6.5	5.7	1.1	3.3	6.3	5.5	4.2	7.1	8.2	5.6	4.6	4.5	3.1
A4 Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favourably 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?	5.0%	4.0	7.0	7.0	10.0	10.0	10.0	10.0	10.0	4.0	7.0	10.0	10.0	10.0	10.0	10.0	10.0	7.0	10.0	10.0
A5 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)? If so, what is the current age?	10.0%	0.0	8.7	0.0	0.0	3.3	5.0	8.3	9.7	10.0	10.0	10.0	10.0	10.0	0.0	6.7	6.7	0.0	5.0	6.7
A6 What proportion, if any, of the retirement benefit from the private pension arrangements is required to be taken as an income stream? Are there any tax incentives that exist to encourage taking up of income streams?	10.0%	0.0	2.0	6.7	5.5	4.5	7.5	0.0	7.5	6.7	7.5	5.0	10.0	0.0	2.5	6.7	10.0	6.7	0.0	2.0
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?	7.5%	2.0	10.0	7.0	9.0	8.0	10.0	8.0	10.0	10.0	10.0	9.0	9.0	10.0	10.0	9.0	9.0	10.0	7.0	8.0
A8 Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?	4.0%	0.0	10.0	0.0	0.0	10.0	10.0	10.0	0.0	0.0	0.0	5.0	10.0	0.0	5.0	0.0	10.0	10.0	10.0	0.0
A9 What is the level of home ownership in the country?	5.0%	7.4	6.5	5.1	6.9	6.6	6.9	9.7	3.6	5.4	6.4	5.4	4.6	4.1	9.5	8.6	6.9	7.4	6.0	5.4
A10 What is the proportion of total pension assets invested in growth assets?	5.0%	5.0	9.7	8.4	5.7	10.0	9.1	5.8	6.7	10.0	10.0	5.8	9.5	10.0	3.3	4.5	10.0	7.7	10.0	7.5
A11 Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or on paid maternity leave?	1.0%	0.0	5.0	10.0	0.0	10.0	10.0	0.0	10.0	0.0	10.0	7.5	10.0	10.0	0.0	10.0	10.0	0.0	0.0	10.0
Adequacy sub-index	40%	43.1	70.3	68.2	71.8	70.0	59.4	60.5	61.4	77.5	73.2	79.1	78.3	54.5	39.9	46.7	81.5	67.4	54.6	47.5

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

Continues next page

## Attachment 1: (continued) Score for each country for each indicator in the adequacy sub-index

Question	Question weight	Score for each country																	
		Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland	Saudi Arabia	Singapore	South Africa	Spain	Sweden	Switzerland	Thailand	Turkey	UK	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 pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?	17.5%	0.0	1.1	8.4	10.0	9.6	0.1	0.0	3.3	0.0	4.3	3.0	4.7	6.3	6.5	0.0	1.1	6.7	4.0
A2 What is the net replacement rate for a range of income earners?	25.0%	7.4	2.1	9.6	8.0	6.6	7.4	10.0	3.3	9.1	6.8	0.2	10.0	7.7	5.4	3.7	10.0	3.9	7.9
A3 What is the net household saving rate in the country? What is the net household debt to GDP ratio?	10.0%	2.4	6.8	2.7	1.4	2.3	7.4	6.8	4.4	9.6	6.8	4.5	3.4	4.5	3.0	4.3	6.2	2.8	5.1
A4 Are voluntary member contributions made by a median-income earner to a funded pension plan treated by the tax system more favourably 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?	5.0%	10.0	7.0	10.0	4.0	8.0	10.0	0.0	10.0	5.0	10.0	10.0	10.0	2.0	10.0	7.0	6.0	10.0	10.0
A5 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)? If so, what is the current age?	10.0%	6.7	6.7	5.0	10.0	10.0	1.7	0.0	10.0	7.0	6.7	0.0	10.0	6.7	6.0	6.7	0.0	6.7	6.3
A6 What proportion, if any, of the retirement benefit from the private pension arrangements is required to be taken as an income stream? Are there any tax incentives that exist to encourage taking up of income streams?	10.0%	0.0	0.0	7.5	0.0	7.5	7.5	0.0	10.0	7.5	10.0	7.5	0.0	7.5	0.0	0.0	0.0	3.5	0.0
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?	7.5%	10.0	4.0	10.0	10.0	7.0	9.0	0.0	10.0	4.0	10.0	10.0	10.0	10.0	10.0	6.0	2.0	10.0	5.0
A8 Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?	4.0%	4.0	5.0	10.0	10.0	0.0	10.0	0.0	10.0	0.0	10.0	10.0	5.0	2.5	10.0	0.0	0.0	10.0	10.0
A9 What is the level of home ownership in the country?	5.0%	7.6	7.9	6.1	6.2	8.1	8.0	6.4	7.0	4.6	10.0	4.8	8.2	7.0	2.6	8.6	5.6	6.3	6.3
A10 What is the proportion of total pension assets invested in growth assets?	5.0%	10.0	6.8	10.0	10.0	8.3	10.0	7.0	8.3	10.0	7.5	9.1	7.5	10.0	10.0	4.9	4.5	10.0	9.7
A11 Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or on paid maternity leave?	1.0%	0.0	10.0	0.0	5.0	10.0	0.0	5.0	0.0	0.0	5.0	10.0	10.0	5.0	10.0	10.0	0.0	10.0	0.0
Adequacy sub-index	40%	50.5	37.5	78.5	70.9	71.6	60.0	39.0	62.5	59.6	73.8	42.3	70.0	67.5	57.6	35.8	42.6	60.0	58.8

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

## Attachment 2: Score for each country for each indicator in the sustainability sub-index

Question	Question weight	Score for each country																			
		Argentina	Australia	Austria	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	India	Indonesia	Ireland	Italy	Japan	Korea	
S1	What proportion of the working age population are members of private pension plans?	20.0%	0.0	9.3	1.2	0.0	6.8	10.0	3.8	3.1	10.0	10.0	9.5	6.2	5.7	0.0	0.0	2.9	0.8	5.5	7.0
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?	15.0%	0.6	7.9	0.3	1.4	9.8	5.5	0.2	1.4	10.0	4.0	0.7	1.2	2.5	0.3	0.2	2.1	0.6	3.4	3.4
S3	What is the current gap between life expectancy at birth and the state pension age? What is the projected gap between life expectancy at birth and the state pension age in 2040? (This calculation allows for mortality improvement.) What is the projected old-age dependency ratio in 2040? What is the Total Fertility Rate (TFR) averaged over 2015 - 2020?	20.0%	8.1	5.3	3.3	8.0	4.2	4.4	3.0	5.2	6.2	4.3	2.7	4.7	1.7	9.3	8.9	6.0	3.5	0.9	1.3
S4	What is the level of mandatory contributions that are set aside for retirement benefits (ie funded), expressed as a percentage of wages? These include mandatory employer and/or employee contributions towards funded public benefits (ie social security) and/or private retirement benefits.	10.0%	0.0	7.9	0.0	0.0	6.4	9.6	0.0	5.0	10.0	3.9	0.0	0.0	8.3	3.5	3.6	0.0	1.5	0.0	3.8
S5	What is the labour force participation rate for those aged 55-64? What is the labour force participation rate for those aged 65+?	10.0%	5.8	6.3	3.6	3.1	6.2	7.4	5.3	7.1	7.2	6.5	3.4	7.2	4.0	4.6	7.8	5.4	3.7	9.0	7.8
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?	10.0%	6.2	7.3	4.8	4.4	4.0	8.5	7.6	6.7	7.7	5.9	3.5	5.7	10.0	5.3	8.1	5.4	1.2	0.0	7.9
S7	In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (eg part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?	5.0%	0.0	10.0	0.0	0.0	8.0	6.0	0.0	4.0	10.0	10.0	9.0	8.0	10.0	5.0	0.0	6.0	0.0	4.0	10.0
S8	What is the real economic growth averaged over the last four years and projected for the next three years?	10.0%	2.9	6.0	4.9	2.2	4.5	6.2	10.0	6.4	4.9	4.7	4.1	4.3	6.5	10.0	10.0	10.0	3.1	3.2	6.4
Sustainability sub-index		35%	31.9	73.5	22.9	27.7	61.8	71.7	36.7	46.0	82.0	60.7	41.0	44.9	52.5	44.9	47.6	44.6	19.0	32.2	52.6

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



## Attachment 2: (continued) Score for each country for each indicator in the sustainability sub-index

Question	Question weight	Score for each country																		
		Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland	Saudi Arabia	Singapore	South Africa	Spain	Sweden	Switzerland	Thailand	Turkey	UK	USA	
S1	What proportion of the working age population are members of private pension plans?	20.0%	2.8	7.4	10.0	9.2	6.4	0.3	0.6	8.2	6.4	5.3	1.3	0.6	10.0	9.0	2.1	0.0	4.3	7.4
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?	15.0%	4.0	1.0	10.0	2.1	3.2	1.3	0.4	0.6	1.1	3.9	5.4	0.9	6.8	7.6	0.4	0.1	6.0	9.2
S3	What is the current gap between life expectancy at birth and the state pension age? What is the projected gap between life expectancy at birth and the state pension age in 2040? (This calculation allows for mortality improvement.) What is the projected old-age dependency ratio in 2040? What is the Total Fertility Rate (TFR) averaged over 2015 - 2020?	20.0%	6.8	9.3	5.1	4.9	5.6	8.8	9.8	5.5	5.6	2.1	9.9	3.3	4.5	3.0	3.9	5.5	5.6	7.4
S4	What is the level of mandatory contributions that are set aside for retirement benefits (ie funded), expressed as a percentage of wages? These include mandatory employer and/or employee contributions towards funded public benefits (ie social security) and/or private retirement benefits.	10.0%	10.0	5.2	10.0	4.2	1.7	7.5	10.0	0.0	10.0	10.0	0.0	0.0	5.7	7.5	0.0	0.0	6.7	2.1
S5	What is the labour force participation rate for those aged 55-64? What is the labour force participation rate for those aged 65+?	10.0%	3.5	5.1	6.7	9.6	7.4	8.6	6.7	2.4	1.1	7.7	1.5	4.3	9.2	7.9	7.2	0.8	6.2	6.3
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?	10.0%	6.9	6.4	6.2	7.9	10.0	8.3	7.3	6.6	8.9	10.0	6.5	3.5	7.3	7.2	7.2	8.1	4.2	2.9
S7	In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (eg part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?	5.0%	10.0	0.0	10.0	3.0	9.0	0.0	0.0	0.0	0.0	10.0	8.0	8.0	10.0	6.0	8.0	0.0	10.0	6.0
S8	What is the real economic growth averaged over the last four years and projected for the next three years?	10.0%	9.8	5.5	5.1	6.9	4.6	7.8	10.0	8.0	4.9	6.4	3.6	6.0	5.6	4.3	7.7	7.0	4.4	5.4
Sustainability sub-index		35%	60.5	57.1	78.3	61.5	56.8	52.4	55.5	45.3	50.5	59.7	46.0	26.9	72.0	65.4	38.8	27.1	55.3	62.9

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

# Attachment 3: Score for each country for each indicator in the integrity sub-index

Question	Question weight	Score for each country																			
		Argentina	Australia	Austria	Brazil	Canada	Chile	China	Colombia	Denmark	Finland	France	Germany	Hong Kong SAR	India	Indonesia	Ireland	Italy	Japan	Korea	
Regulation and Governance (R1 – R5)	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	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	6.7	8.3	
	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%	0.8	9.2	4.2	9.2	8.7	10.0	4.4	9.2	10.0	9.2	8.2	9.0	10.0	8.2	9.2	8.2	9.2	7.6	3.6
	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? i) Are the private pension plan's trustees/executives/fiduciaries required to have an independent member included in the governing body? ii) Are the private pension plan's trustees/executives/fiduciaries required to have equal member and employer representation on the governing body?	12.5%	8.4	9.2	9.2	8.2	8.4	8.4	3.6	9.0	7.4	9.0	5.2	8.4	6.8	3.2	7.4	3.2	9.2	4.0	0.0
	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 recognised professional?	5.0%	10.0	10.0	5.0	10.0	7.5	7.5	10.0	7.5	10.0	10.0	10.0	7.5	10.0	5.0	10.0	6.3	10.0	7.5	2.5
	What is the capacity of the government to effectively formulate and implement sound policies? 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?	15.0%	2.0	8.1	7.7	1.2	8.7	5.7	0.7	1.2	8.6	9.1	6.4	7.9	7.8	1.4	1.3	7.4	4.0	7.5	5.2
	For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded? For defined contribution schemes, are the assets required to fully meet the members' accounts?	10.0%	5.0	10.0	7.5	9.0	9.0	10.0	7.5	5.0	10.0	10.0	6.0	8.0	10.0	5.0	7.0	10.0	9.0	9.0	10.0
	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%	0.0	10.0	5.0	7.5	8.8	10.0	7.5	7.5	10.0	7.5	5.0	8.8	7.5	8.8	0.0	10.0	0.0	0.0	10.0
	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%	0.0	5.0	5.0	0.0	2.5	7.5	2.5	10.0	2.5	10.0	2.5	7.5	10.0	2.5	5.0	3.8	5.0	2.5	0.0
	When joining the pension plan, are new members required to receive information about the pension plan?	5.0%	10.0	10.0	10.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0
	Are plan members required to receive or have access to an annual report about the pension plan? 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?	5.0%	2.5	9.0	8.0	10.0	6.5	0.0	0.0	10.0	0.0	9.0	0.0	7.0	9.0	8.0	8.0	10.0	8.0	3.8	0.0
Are plan members required to receive an annual statement of their current personal benefits from the plan? Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?	7.5%	3.3	6.7	10.0	6.7	6.7	10.0	6.7	6.7	6.7	10.0	3.3	3.3	6.7	5.0	6.7	10.0	10.0	3.3	3.3	
Do plan members have access to a complaints tribunal which is independent from the pension plan?	2.5%	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	5.0	10.0	10.0	5.0	0.0	0.0	
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 ten pension funds/providers?	10.0%	8.8	5.8	6.9	5.8	5.0	5.9	6.7	6.0	8.8	7.4	4.1	5.4	8.5	9.8	8.6	5.5	6.1	8.6	8.2	
Integrity sub-index	25.0%	44.4	85.7	74.4	69.8	78.2	79.2	46.5	70.8	82.2	92.3	56.8	76.4	86.9	56.3	67.5	76.3	74.5	60.8	49.6	

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

Continues next page

# Attachment 3: (continued) Score for each country for each indicator in the integrity sub-index

Question	Question weight	Score for each country																	
		Malaysia	Mexico	Netherlands	New Zealand	Norway	Peru	Philippines	Poland	Saudi Arabia	Singapore	South Africa	Spain	Sweden	Switzerland	Thailand	Turkey	UK	USA
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	1.7	10.0	10.0	10.0	8.3	6.7	6.7	10.0	10.0	10.0	10.0	8.3	10.0	10.0	10.0	10.0	10.0
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%	7.2	7.6	9.2	9.2	9.2	3.2	0.8	7.6	6.2	7.2	9.2	9.2	9.2	8.4	6.1	10.0	10.0	7.6
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? i) Are the private pension plan's trustees/executives/fiduciaries required to have an independent member included in the governing body? ii) Are the private pension plan's trustees/executives/fiduciaries required to have equal member and employer representation on the governing body?	12.5%	10.0	1.0	9.2	4.8	10.0	10.0	3.2	7.2	10.0	10.0	9.2	3.2	7.2	6.0	0.0	6.4	9.2	0.0
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 recognised professional?	5.0%	10.0	5.0	10.0	10.0	10.0	10.0	10.0	7.5	10.0	7.5	10.0	5.0	7.5	7.5	10.0	10.0	7.5	5.0
What is the capacity of the government to effectively formulate and implement sound policies? 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?	15.0%	3.1	0.6	8.7	9.4	9.3	1.5	0.6	4.7	0.9	8.5	2.6	5.2	8.8	9.1	0.9	0.1	7.5	7.0
For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded? For defined contribution schemes, are the assets required to fully meet the members' accounts?	10.0%	5.0	6.0	10.0	8.0	10.0	5.0	5.0	10.0	6.0	5.0	10.0	10.0	8.0	9.0	5.0	5.0	9.0	8.0
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%	10.0	7.5	10.0	10.0	10.0	8.8	0.0	7.5	10.0	7.5	10.0	10.0	10.0	10.0	0.0	10.0	10.0	5.0
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%	10.0	0.0	2.5	5.0	5.0	5.0	5.0	2.5	5.0	7.5	5.0	0.0	5.0	7.5	5.0	0.0	10.0	5.0
When joining the pension plan, are new members required to receive information about the pension plan?	5.0%	10.0	10.0	10.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0
Are plan members required to receive or have access to an annual report about the pension plan? Is this annual report required to show: i. The allocation of the plan's assets to major asset classes? ii. The major investments of the plan?	5.0%	10.0	0.0	8.0	9.0	5.3	10.0	0.0	0.0	3.3	8.0	8.0	7.0	3.8	8.0	5.0	8.0	4.5	8.0
Are plan members required to receive an annual statement of their current personal benefits from the plan? Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?	7.5%	6.7	6.7	10.0	6.7	10.0	6.7	0.0	6.7	0.0	6.7	6.7	6.7	10.0	10.0	6.7	6.7	6.7	6.7
Do plan members have access to a complaints tribunal which is independent from the pension plan?	2.5%	0.0	0.0	10.0	10.0	10.0	10.0	10.0	5.0	0.0	5.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	5.0
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 ten pension funds/providers?	10.0%	10.0	8.0	7.3	6.3	7.4	6.0	9.0	7.4	9.5	10.0	7.4	7.1	8.8	5.5	8.6	5.6	6.2	4.0
<b>Integrity sub-index</b>	<b>25.0%</b>	<b>76.9</b>	<b>41.3</b>	<b>88.9</b>	<b>80.7</b>	<b>90.6</b>	<b>64.7</b>	<b>34.7</b>	<b>66.0</b>	<b>62.2</b>	<b>81.4</b>	<b>78.4</b>	<b>69.1</b>	<b>80.2</b>	<b>83.0</b>	<b>46.1</b>	<b>62.8</b>	<b>84.0</b>	<b>60.4</b>

Each question is scored for each country 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
Argentina	na	na	na	na	na	na	na	37.7	38.8	39.2	39.5
Australia	74.0	72.9	75.0	75.7	77.8	79.9	79.6	77.9	77.1	72.6	75.3
Austria	na	na	na	na	na	52.8	52.2	51.7	53.1	54.0	53.9
Brazil	na	59.8	58.4	56.7	52.8	52.4	53.2	55.1	54.8	56.5	55.9
Canada	73.2	69.9	69.1	69.2	67.9	69.1	70	66.4	66.8	68.0	69.2
Chile	59.6	59.9	54.9	63.3	66.4	68.2	69.1	66.4	67.3	69.3	68.7
China	48.0	40.3	42.5	45.4	47.1	49.0	48.0	45.2	46.5	46.2	48.7
Colombia	na	na	na	na	na	na	na	na	61.7	62.6	58.4
Denmark	na	na	na	82.9	80.2	82.4	81.7	80.5	78.9	80.2	80.3
Finland	na	na	na	na	na	74.3	73.0	72.9	72.3	74.5	73.6
France	na	54.6	54.4	54.7	53.5	57.7	57.4	56.4	59.6	60.7	60.2
Germany	48.2	54.0	54.2	55.3	58.5	62.2	62.0	59.0	63.5	66.8	66.1
Hong Kong SAR	na	na	na	na	na	na	na	na	na	56.0	61.9
India	na	na	43.4	24.4	43.3	43.5	40.3	43.4	44.9	44.6	45.8
Indonesia	na	na	na	na	42	45.3	48.2	48.3	49.9	53.1	52.2
Ireland	na	na	na	na	na	62.2	63.1	62.0	65.8	66.8	67.3
Italy	na	na	na	na	na	49.6	50.9	49.5	50.8	52.8	52.2
Japan	41.5	42.9	43.9	44.4	44.4	44.4	44.1	43.2	43.5	48.2	48.3
Korea	na	na	na	44.7	43.8	43.6	43.8	46	47.1	47.3	49.8
Malaysia	na	na	na	na	na	na	na	55.7	57.7	58.5	60.6
Mexico	na	na	na	na	50.1	49.4	52.1	44.3	45.1	45.3	45.3
Netherlands	76.1	78.3	77.9	78.9	78.3	79.2	80.5	80.1	78.8	80.3	81.0
New Zealand	na	na	na	na	na	na	na	na	67.9	68.5	70.1
Norway	na	na	na	na	na	na	na	na	74.7	71.5	71.2
Peru	na	na	na	na	na	na	na	na	na	62.4	58.5
Philippines	na	na	na	na	na	na	na	na	na	na	43.7
Poland	na	na	58.6	58.2	57.9	56.4	56.2	54.4	55.1	54.3	57.4
Saudi Arabia	na	na	na	na	na	na	na	na	na	58.9	57.1
Singapore	57.0	59.6	56.7	54.8	66.5	65.9	64.7	67.0	69.4	70.4	70.8
South Africa	na	na	na	na	na	54.0	53.4	48.6	48.9	52.7	52.6
Spain	na	na	na	na	na	na	na	na	na	54.4	54.7
Sweden	73.5	74.5	73.4	73.4	72.6	73.4	74.2	71.4	72.0	72.5	72.3
Switzerland	na	75.3	72.7	73.3	73.9	73.9	74.2	68.6	67.6	67.6	66.7
Thailand	na	na	na	na	na	na	na	na	na	na	39.4
Turkey	na	na	na	na	na	na	na	na	na	na	42.2
UK	63.9	63.7	66.0	64.8	65.4	67.6	65.0	60.1	61.4	62.5	64.4
USA	59.8	57.3	58.1	59.0	58.2	57.9	56.3	56.4	57.8	58.8	60.6
Number of systems	11	14	16	18	20	25	25	27	30	34	37

## Melbourne Mercer Global Pension Index

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