

MELBOURNE
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PENSION
INDEX

2017

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A MESSAGE FROM THE MINISTER FOR INDUSTRY AND EMPLOYMENT



The Victorian Government is once again pleased to support the 2017 Melbourne Mercer Global Pension Index. Now in its ninth year, the Index continues to bring together government, industry and academia to provide valuable insights on pension systems around the world.

The Index is the foremost publication of its kind and internationally regarded amongst global policy makers. Since its inception in 2009, the Index has grown in scope and global reach, having expanded from an initial 11 countries to the current 30. The Index now spans a broad cross-section of countries across the Americas, Europe, the Asia-Pacific and for the first time this year, has been extended to include Norway, New Zealand and Colombia.

As an internationally regarded report, the Index is testament to Victoria's financial services capabilities and research expertise. Financial services accounts for over 10 per cent of Victoria's total economic output, the largest contribution of any sector, and employs over 116,000 Victorians. As Australia's premier funds management market, Victoria is home to six of Australia's top twelve pension funds and 60 per cent of Australian industry pension funds under management. Victoria is also home to Australia's sovereign wealth fund, the \$133 billion Future Fund, as well as the Victorian Funds Management Corporation and Treasury Corporation Victoria, each with \$52 billion funds under management. With Australia's pension system the fourth largest in the world, Victoria's capabilities are world leading.

The Victorian Government recognises the strength of Victoria's financial services sector and the vital role it plays in ensuring our State's future economic prosperity. We are continuing to work closely with the financial services sector to deliver continued expansion, investment and jobs growth.

The 2017 Melbourne Mercer Global Pension Index reflects the collaborative efforts of the Victorian Government, industry and academia. I commend the Australian Centre for Financial Studies and Mercer on the 2017 Melbourne Mercer Global Pension Index, and the continued success of the Index in promoting international policy reform and best practice.

A handwritten signature in blue ink, appearing to read 'Wade Noonan', written over a light blue grid background.

WADE NOONAN MP

Minister for Industry and Employment



LETTER FROM ACFS



Monash Business School's Australian Centre for Financial Studies (ACFS) is delighted to present the 2017 Melbourne Mercer Global Pension Index (the Index). Produced annually with the support of the Victorian Government, the Index is now in its ninth iteration.

The Index - a research partnership between ACFS and Mercer - continues to provide a unique means to benchmark national pension systems. Without fact-based research of this type our worldwide understanding of financial provisions for ageing populations would be significantly poorer.

ACFS specialises in financial research and dialogue to promote the public interest. We support practice, research and education with our in-house expertise and links to academia, industry and government, both in Australia and abroad. Our industry-relevant and evidenced-based research represents a valuable source of independent commentary.

The Index, for example, has become an important reference for government planners and academics studying pension systems. It provides a basis to ask questions about the sustainability of current pension planning - both in countries that enjoy demographic dividends, as well as those with rapidly ageing populations. We encourage participating countries to draw on the Index, exchange ideas and proactively formulate questions that addresses the inevitable difficulties associated with demographic change. Please share these ideas with us so that we can improve.

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.

Many thanks to 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, University of Melbourne and Research Director ACFS
- Dr Vince FitzGerald AO, Chairman, ACIL Allen Consulting
- Professor Deborah Ralston, Chair, Digital Finance Advisory Committee - ASIC, Part-time member, Payments System Board, Reserve Bank of Australia
- Ian Silk, Chief Executive. AustralianSuper
- Professor Susan Thorp, Professor of Finance, University of Sydney Business School, University of Sydney

The lead author Dr David Knox and his team at Mercer have once again delivered an outstanding set of findings for which we are most grateful. The in-country experts at Mercer who assisted with the collection and interpretation of the data, deserve special mention because these insights provide context and depth, which is critical for understanding the big picture.

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 to its staff for their assistance and guidance.

The Index represents a multinational achievement. Thank you to each of the countries that have joined us in creating this report.

PROFESSOR EDWARD BUCKINGHAM
Interim Director
Australian Centre for Financial Studies

PREFACE



Pension systems around the world, whether they be social security systems or private sector arrangements, are now under more pressure than ever before. Rapid ageing of our population is a fact of life in many countries. 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 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

Significant pension reform is being considered or implemented in many countries.

Within this global environment of change, it is important that we learn together to understand what best practice may look like, both now and into the future. This ninth edition of the Melbourne Mercer Global Pension Index presents such research and compares retirement income systems in 30 countries which encompass a diversity of pension policies and practices.

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

Many of the challenges relating to ageing populations are similar around the world, irrespective of each country’s 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.

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 Australian Centre for Financial Studies have played a pivotal role in this project, particularly in establishing an expert reference group of senior and experienced individuals who provided helpful suggestions and comments throughout the project.

Third, the Mercer consultants around the world have been invaluable in providing information in respect of their countries’ 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.

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

A handwritten signature in blue ink, appearing to read 'David Knox'.

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. Inevitably these developments are placing financial pressure on current retirement income systems. Indeed, the sustainability of some current systems is under threat. The primary objective of this research is to benchmark each country's retirement income system so we can all learn from each other and thereby improve our systems and generate better outcomes for our present and future retirees. Yet, an assessment of the different pension systems around the world is not straightforward. As the OECD (2015) comments: "Retirement-income systems are diverse and often involve a number of different programmes. Classifying pension systems and different retirement-income schemes is consequentially difficult."¹

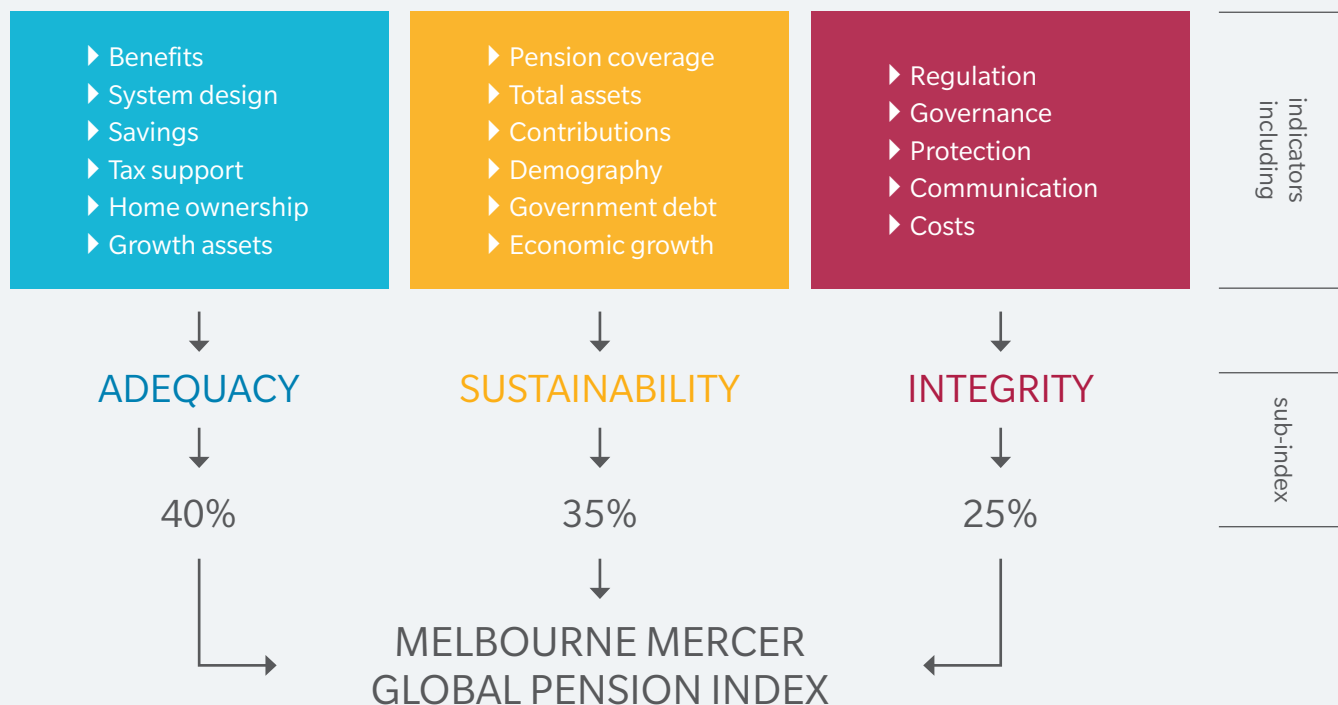
¹ OECD (2015), p124.

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. That 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 that, across the range of systems, are likely to lead to improved financial benefits for aged individuals and households, an increased likelihood of future

sustainability of the system, and a greater level of community confidence and trust.

With these desirable outcomes in mind, the Melbourne Mercer Global Pension Index uses three sub-indices – adequacy, sustainability and integrity – to measure each country's 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 country's system represents the weighted average of the three sub-indices. The weightings used are 40 percent for the adequacy sub-index, 35 percent for the sustainability sub-index and 25 percent for the integrity sub-index. 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 continue to provide these benefits. The integrity sub-index considers 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 retirement income systems in 30 countries has confirmed that there is great diversity between the systems around the world with scores ranging from 38.8 for Argentina to 78.9 for Denmark.

The following table summarises the results.

Grade	Index Value	Countries	Description
A	>80	Nil	A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.
B+	75–80	Denmark Netherlands 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	Norway Finland Sweden Singapore Switzerland New Zealand Chile Canada Ireland	
C+	60–65	Germany Colombia UK	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	France USA Malaysia Poland Brazil Austria Italy	
D	35–50	Indonesia South Africa Korea (South) China Mexico India Japan Argentina	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.

This study of 30 countries has confirmed that no country has a first class or A-grade system. This is a different result from previous years when Denmark and the Netherlands both received an A-grade. This change has not been caused by significant changes to either system; rather we have now included real economic growth into the sustainability sub-index as discussed in Chapter 3.

We also believe that none of these countries 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 exist major omissions or weaknesses. A D-grade classification may also occur in the relatively early stages of the development of a particular country's retirement income system.

The following table shows the overall index value for each country, 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.

Country	Overall Index Value	Sub-Index Values		
		Adequacy	Sustainability	Integrity
Argentina	38.8	42.4	33.1	41.2
Australia	77.1	75.3	73.0	85.7
Austria	53.1	67.6	19.9	76.4
Brazil	54.8	67.8	29.2	70.0
Canada	66.8	69.9	55.4	77.7
Chile	67.3	58.0	69.1	79.7
China	46.5	54.2	38.2	46.0
Colombia	61.7	66.4	49.9	70.7
Denmark	78.9	76.5	79.8	81.3
Finland	72.3	70.2	61.3	91.0
France	59.6	80.4	38.6	55.8
Germany	63.5	76.5	40.9	74.0
India	44.9	39.5	43.8	55.1
Indonesia	49.9	40.1	49.3	66.4
Ireland	65.8	77.9	43.9	77.2
Italy	50.8	66.2	16.4	74.3
Japan	43.5	48.0	26.0	60.7
Korea	47.1	46.9	46.8	47.9
Malaysia	57.7	42.3	61.2	77.6
Mexico	45.1	38.5	55.9	40.5
Netherlands	78.8	78.0	73.5	87.5
New Zealand	67.4	66.2	61.5	77.8
Norway	74.7	77.0	61.0	90.3
Poland	55.1	58.1	43.1	67.1
Singapore	69.4	65.2	66.2	80.7
South Africa	48.9	34.0	45.7	77.1
Sweden	72.0	67.7	71.0	80.3
Switzerland	67.6	60.2	64.7	83.3
UK	61.4	58.2	49.4	83.5
USA	57.8	57.0	57.1	60.1
Average	59.9	60.9	50.8	71.2

As noted earlier, each country's index value takes into account more than 40 indicators, some of which are based on data measurements which can be difficult to compare between countries. For this reason, one should not be too definite that one country's system is better

than another when the difference in the overall index value is less than two or three. On the other hand, when the difference is five or more it can be fairly concluded that the higher index value indicates a country with a better retirement income system.

The following table shows the grade for each country's sub-index values as well as the overall grade. This approach highlights the fact that some countries may have a weakness in one area (eg sustainability) whilst being much stronger in the other two areas. Such a weakness highlights areas for future reforms. In particular, countries with a sustainability score below 30, namely Austria, Brazil, Italy and Japan must tackle pension reform sooner rather than later.

Country	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+	B	D	B
Denmark	B+	B+	B+	A
Finland	B	B	C+	A
France	C	A	D	C
Germany	C+	B+	D	B
India	D	D	D	C
Indonesia	D	D	D	B
Ireland	B	B+	D	B+
Italy	C	B	E	B
Japan	D	D	E	C+
Korea	D	D	D	D
Malaysia	C	D	C+	B+
Mexico	D	D	C	D
Netherlands	B+	B+	B	A
New Zealand	B	B	C+	B+
Norway	B	B+	C+	A
Poland	C	C	D	B
Singapore	B	B	B	A
South Africa	D	E	D	B+
Sweden	B	B	B	A
Switzerland	B	C+	C+	A
UK	C+	C	D	A
USA	C	C	C	C+

Of course, there is a natural tension between adequacy and sustainability. For example, a system providing very generous benefits is unlikely to be sustainable whereas a system that is sustainable over many years could be providing very modest benefits. The appropriate trade-off between these two objectives will depend on many

factors including the country's social, economic and financial position both now and in the longer term. As Marianne Thyssen of the European Commission noted in 2016: "Pension adequacy and financial sustainability are mutually reinforcing objectives."²

² Thyssen M (2016). Keynote speech at the public hearing on personal pensions, 24 October.

Another tension is the balance between pay-as-you-go and funded pension arrangements. Again there is no correct answer to cover all circumstances. However, whatever mix is adopted, the assets of pension funds represent a key contribution towards sustainable retirement incomes in the future, particularly in the context of ageing populations.

Chapter 4 makes several suggestions to improve each country's retirement income system. Although each system reflects a unique history, there are some common themes as many countries face similar problems in the decades ahead. As the OECD (2014c) notes: "Despite all the reforms already implemented, a lot of work remains to be done to address the challenges that population ageing and the global economic environment pose for pension systems."³

There continue 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, and thereby reduce the level of costs of the publicly financed pension benefits⁴
- 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 and adjust 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

It is interesting to note that Jackson et al (2013) of the Center for Strategic and International Studies concluded from their work on the Global Aging Preparedness Index that whilst there are many strategies available to address the economic and social challenges of an ageing population, two strategies in particular are crucial. They are "extending work lives and increasing funded pension savings."⁵ These two developments would improve a country's adequacy and sustainability sub-index values through higher retirement ages, increased labour force participation at older ages, greater pension coverage, higher contribution rates, increased savings and a higher level of pension assets.

Recently 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 factors are critical and have always be 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."⁶

3 OECD (2014c), p10.

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

5 Jackson et al (2013), page V.

6 World Economic Forum (2017), We'll Live to 100 How Can We Afford It?, p4.

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 countries provides additional challenges for such a comparison. For this reason, 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 and the current economic environment, 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 the retirement income systems of 30 countries, 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 country's retirement income system. In that respect it is hoped this study will act as a stimulus for each country in the study (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

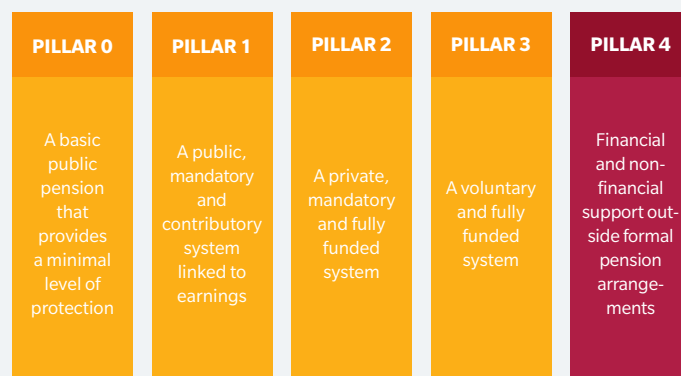
Third Pillar:

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



In effect, the original first pillar was split into a Zero Pillar and a mandatory First Pillar. A new Fourth Pillar was also added and includes access to informal support and formal social programs. The addition of the new Pillar 4 recognises the important role that these 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.

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.

The Melbourne Mercer Global Pension Index has grouped these desirable characteristics into adequacy, sustainability and integrity.

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. Thus this sub-index considers the base (or safety-net) level of income provided as well as the net replacement rate for a median-income earner. It is recognised that an analysis focusing exclusively on benefits provided to a median-income earner does not represent the full spectrum of different income levels and that a more complete picture could be provided by considering benefits for a range of income levels. However, a more comprehensive approach would add considerable complexity to the comparison and risk distraction from focusing on adequacy for the majority of workers.

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 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? The first question assesses whether the government provides any incentives to encourage median-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 members. 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 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 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 maternity 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. 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 as 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 sector pension system. In addition, real economic growth over the long-term has a significant impact on 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 level of these future 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 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 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 a few plans.

In addition, use of the Worldwide Governance Indicators published by the World Bank provides 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. Given that a fair international comparison of the total costs of operating each country's system is very 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 country's index value. Where international data is available, we have used that data. In other cases, we have relied on information provided by Mercer consultants in each country. In these instances, we have not asked them to assess the quality of their country's 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 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 country's overall index value is calculated by taking 40 percent of the adequacy sub-index, 35 percent of the sustainability sub-index and 25 percent 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 of each sub-index equally does not provide any significant changes to the results.⁷

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, 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.

⁷ The attachments provide the results for the indicators in each sub-index so that readers may calculate the effects of changing the weights used between the sub-indices or, indeed, within each sub-index.

CHAPTER 3

CHANGES FROM 2016 TO 2017

The index has been expanded in 2017 to include three new countries – Colombia, New Zealand and Norway. These additions continue our longstanding theme of considering a variety of retirement income systems from countries with 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.

Two new questions

The Index aims to maintain its relevance as many countries tackle pension reform and to broaden the application of its questions thereby encouraging a holistic view of retirement income systems which need to operate over many decades. This year, two new questions have been added.

The first is to add a new question in the sustainability sub-index relating to real economic growth. Long term real economic growth means that the country's GDP is growing faster than inflation. This can have several benefits including higher average incomes, lower unemployment, reduced government borrowing, higher levels of saving and often improved investment returns. Most of these outcomes lead to a stronger retirement income system and a more sustainable pension system. That is, the addition of a real economic growth indicator provides for a more robust and relevant sustainability sub-index for retirement income systems around the world.

Naturally, the addition of a new indicator means that some of the other indicators within the sustainability sub-index have had their weightings reduced. The two indicators with a reduced weighting are the level of pension assets (Question S2) and the level of mandatory pension contributions that are invested for the future (Question S4). To some extent there is double counting with these two indicators as contributions that are invested naturally raise the level of pension assets.

The reduction in the weighting of these two indicators does not imply they are not important. They are both very important but so is real economic growth. The combined weighting of the assets and contribution indicators in the sustainability sub-index decreases from 35 percent to 25 percent with the economic growth indicator having a weighting of 10 percent.

This change leads to some material changes in the sustainability sub-index values. Countries that have seen a significant improvement in their value are those which have had high real economic growth during the last three years and where this is projected to continue during the next three years. These include China, India, Indonesia, Ireland and Malaysia. Conversely, countries with significant pension assets and high mandatory contributions but with much lower real economic growth have seen a decline in their sustainability sub-index value. These include Canada, Denmark and the Netherlands.

The second additional question makes some allowance for voluntary pension systems in the net replacement rate indicator within the adequacy sub-index (ie Question A2). Previously, we have only allowed for mandatory systems in the net replacement rate indicator. This new allowance for voluntary systems is restricted to countries where the coverage of the voluntary system exceeds 30 percent of the working age population. The countries that have received the largest improvement in their score for this indicator are Germany, the UK and the USA. As with the addition of the economic growth indicator, the introduction of an allowance for voluntary pension systems, where they are significant, ensures that the overall index is more comprehensive and provides an improved overall comparison.

A comparison from 2016 to 2017

The following table compares the results for the 27 countries from 2016 to 2017. Comments in respect of each country are made in Chapter 4.

Country	Total		Adequacy		Sustainability		Integrity	
	2016	2017	2016	2017	2016	2017	2016	2017
Argentina	37.7	38.8	42.3	42.4	30.1	33.1	40.9	41.2
Australia	77.9	77.1	76.0	75.3	74.1	73.0	86.1	85.7
Austria	51.7	53.1	67.4	67.6	16.0	19.9	76.7	76.4
Brazil	55.1	54.8	67.9	67.8	29.2	29.2	70.7	70.0
Canada	66.4	66.8	68.0	69.9	58.8	55.4	74.5	77.7
Chile	66.4	67.3	56.5	58.0	68.4	69.1	79.6	79.7
China	45.2	46.5	58.2	54.2	29.7	38.2	46.0	46.0
Denmark	80.5	78.9	75.8	76.5	85.3	79.8	81.4	81.3
Finland	72.9	72.3	70.6	70.2	62.2	61.3	91.5	91.0
France	56.4	59.6	75.2	80.4	35.2	38.6	55.8	55.8
Germany	59.0	63.5	70.4	76.5	35.8	40.9	73.1	74.0
India	43.4	44.9	39.5	39.5	40.9	43.8	53.4	55.1
Indonesia	48.3	49.9	41.0	40.1	43.0	49.3	67.3	66.4
Ireland	62.0	65.8	76.2	77.9	34.8	43.9	77.3	77.2
Italy	49.5	50.8	65.5	66.2	13.5	16.4	74.4	74.3
Japan	43.2	43.5	48.5	48.0	24.4	26.0	60.9	60.7
Korea	46.0	47.1	46.5	46.9	43.9	46.8	48.1	47.9
Malaysia	55.7	57.7	40.3	42.3	57.1	61.2	78.3	77.6
Mexico	44.3	45.1	38.5	38.5	53.6	55.9	40.7	40.5
Netherlands	80.1	78.8	78.2	78.0	77.0	73.5	87.7	87.5
Poland	54.4	55.1	57.9	58.1	41.2	43.1	67.3	67.1
Singapore	67.0	69.4	61.4	65.2	66.8	66.2	76.1	80.7
South Africa	48.6	48.9	34.0	34.0	44.7	45.7	77.3	77.1
Sweden	71.4	72.0	67.6	67.7	69.5	71.0	80.3	80.3
Switzerland	68.6	67.6	60.5	60.2	67.4	64.7	83.5	83.3
UK	60.1	61.4	55.5	58.2	48.8	49.4	83.2	83.5
US	56.4	57.8	53.5	57.0	57.1	57.1	59.9	60.1
Average	58.1	59.1	59.0	59.9	48.5	50.1	70.1	70.3

The results show that the average score for the overall index has increased by 1.0 with an increase in all sub-indexes. The introduction of the real economic growth indicator into the sustainability sub-index and the subsequent reweighting of two indicators caused an increase of 1.7 in the average sustainability sub-index and an increase of 0.6 in the average overall index. The allowance for voluntary pension schemes in the net replacement rate increased the average adequacy sub-index by 0.4 and the average overall index by 0.2.

CHAPTER 4

A BRIEF REVIEW OF EACH COUNTRY

This chapter provides a brief summary of the retirement income system of each country in this study, together with some suggestions that would — if adopted — raise the overall index value for that country. Of course, whether such developments are appropriate in the short term depend on the country's current social, political and economic situation. Where relevant, a brief comment is also made about the change in the country's index value from 2016 to 2017.

As detailed in Chapter 3, many of these changes were due to the new economic growth question in the sustainability sub-index together with the related changes, and some allowance for voluntary occupational pension plans in the adequacy sub-index.

Global Grades



Grade	Index Value	Country	Description
A	>80	Nil	A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.
B+	75–80	Denmark Netherlands 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	Norway Finland Sweden Singapore Switzerland New Zealand Chile Canada Ireland	
C+	60–65	Germany Colombia UK	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	France US Malaysia Poland Brazil Austria Italy	
D	35–50	Indonesia South Africa Korea China Mexico India Japan Argentina	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 a non-existent system.



Argentina

Overall Index Score: 38.8

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.

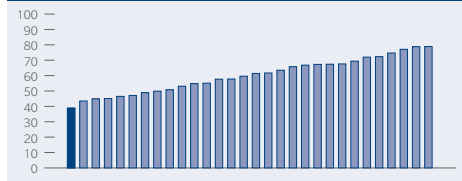
The overall index value for the Argentinian system could be increased by:

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

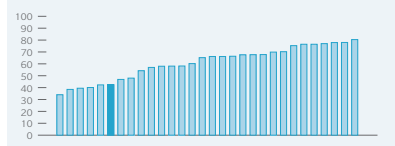
- introducing tax incentives to encourage voluntary member contributions to increase retirement savings
- increasing coverage of employees in occupational pension schemes through automatic membership or enrolment, thereby increasing the level of contributions and assets
- introducing a minimum level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

The Argentinian index value increased from 37.7 in 2016 to 38.8 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

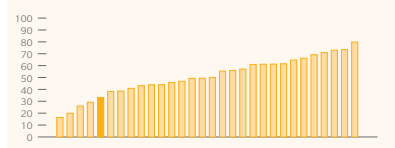
Overall Index – Argentina



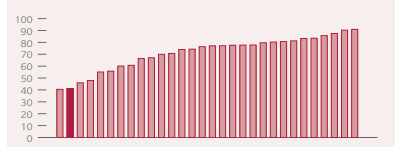
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Australia

Overall Index Score: 77.1

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.

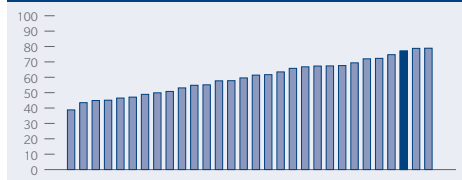
The overall index value for the Australian system could be increased by:

- introducing a requirement that part of the retirement benefit must be taken as an income stream

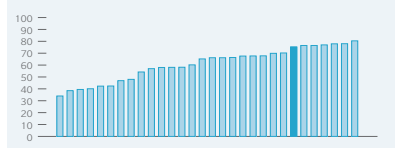
- increasing the labour force participation rate at older ages as life expectancies rise
- introducing a mechanism to increase the pension age as life expectancy continues to increase
- increasing the minimum access age to receive benefits from private pension plans so that access to retirement benefits is restricted to no more than five years before the age pension eligibility age

The Australian index value fell slightly from 77.9 in 2016 to 77.1 in 2017 primarily due to a reduction in the household saving rate and the inclusion of the new economic growth question in the sustainability sub-index.

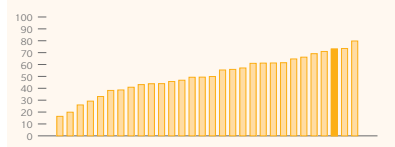
Overall Index – Australia



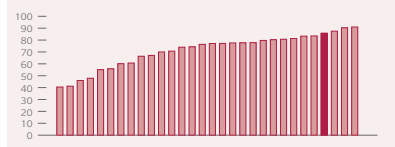
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Austria

Overall Index Score: 53.1

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.

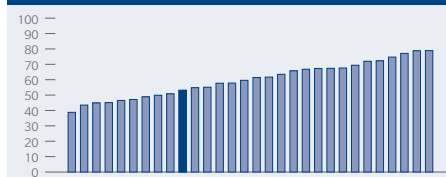
The overall index value for the Austrian system could be increased by:

- introducing a minimum access age so that the benefits from private pension plans are preserved for retirement purposes

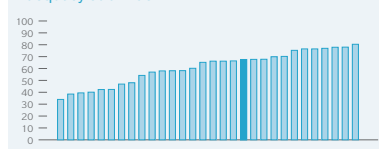
- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets (which could be done by collective bargaining agreements or tax effective regulation)
- raising the level of household savings
- increasing the labour force participation rate at older ages as life expectancies rise

The Austrian index value increased from 51.7 in 2016 to 53.1 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

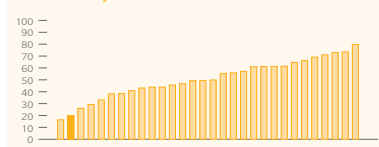
Overall Index – Austria



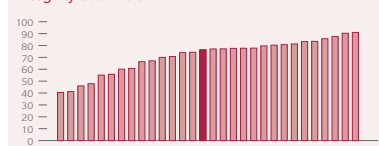
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Brazil

Overall Index Score: 54.8

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.

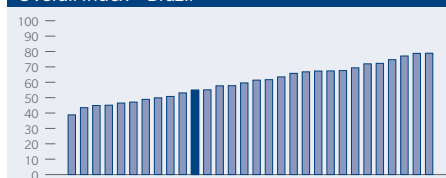
The overall index value for the Brazilian system could be increased by:

- introducing a minimum access age so that the benefits are preserved for retirement purposes
- increasing coverage of employees in occupational pension schemes through automatic membership or enrolment, thereby increasing the level of contributions and assets

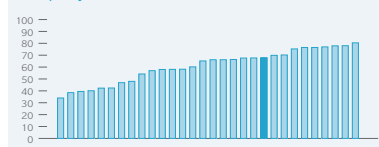
- introducing a minimum level of mandatory contributions into a retirement savings fund
- increasing the state pension age over time
- introducing arrangements to protect the pension interests of both parties in a divorce
- enabling individuals to retire gradually whilst receiving a part pension

The Brazilian index value fell slightly from 55.1 in 2016 to 54.8 in 2017 primarily due to a reduction in the score relating to the Worldwide Governance Indicators.

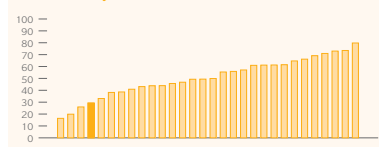
Overall Index – Brazil



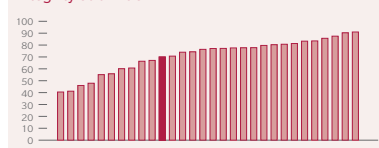
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Canada

Overall Index Score: 66.8

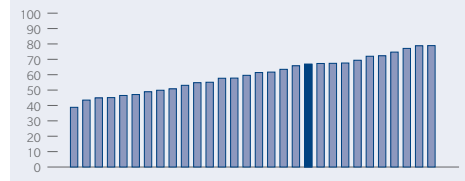
Canada’s retirement income system comprises a universal flat-rate pension, supported by a means-tested income supplement; an earnings-related pension based on revalued lifetime earnings; voluntary occupational pension schemes (many of which are defined benefit schemes); and voluntary individual retirement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

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

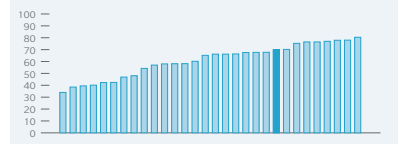
- increasing the coverage of employees in occupational pension schemes through the development of an attractive product for those without an employer-sponsored scheme
- increasing the level of household savings for middle income earners
- increasing the labour force participation rate at older ages as life expectancies rise

The Canadian index value increased slightly from 66.4 in 2016 to 66.8 in 2017 due to the introduction of improved governance guidelines and the allowance for voluntary occupational pension plans, which were partly offset by the inclusion of the new economic growth question in the sustainability sub-index.

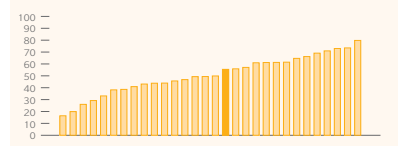
Overall Index – Canada



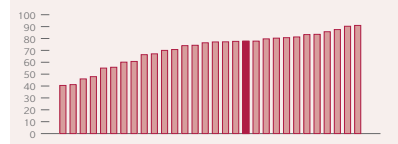
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Chile

Overall Index Score: 67.3

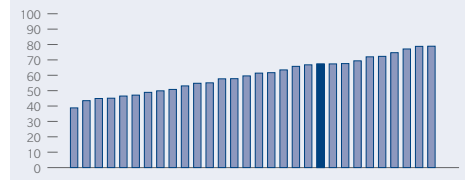
Chile’s retirement income system comprises means-tested social assistance; a mandatory privately-managed defined contribution system based on employee contributions with individual accounts managed by a small number of Administradoras de Fondos de Pensiones (AFPs); and a framework for supplementary plans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

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

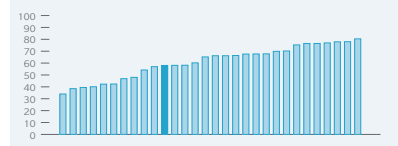
- raising the level of household savings
- increasing retirement ages for both men and women
- continuing to review the minimum pension for the poorest pensioners

The Chilean index value increased slightly from 66.4 in 2016 to 67.3 in 2017 due to small improvements in each sub-index.

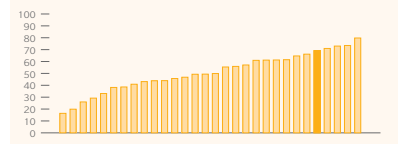
Overall Index – Chile



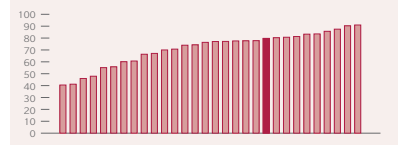
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



China

Overall Index Score: 46.5

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.

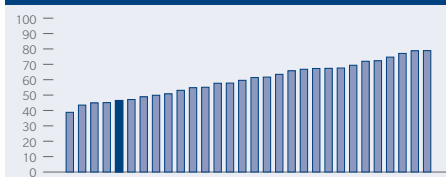
The overall index value for the Chinese system could be increased by:

- continuing to increase the coverage of workers in pension systems

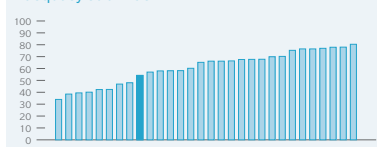
- introducing a requirement that part of the supplementary retirement benefit must be taken as an income stream
- increasing the state pension age over time
- offering more investment options to members and thereby permitting a greater exposure to growth assets
- improving the level of communication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

The Chinese index value increased from 45.2 in 2016 to 46.5 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

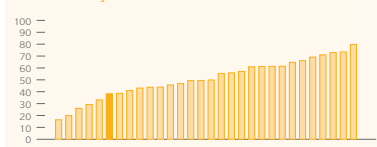
Overall Index – China



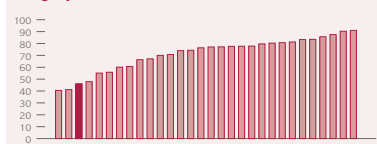
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Colombia

Overall Index Score: 61.7

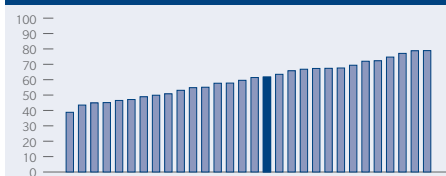
Colombia's retirement income system comprises a basic pension; and two parallel and mutually exclusive pension systems. The first of these two systems is a pay-as-you-go defined benefit plan and the second is a system of funded individual accounts offered through qualified financial institutions. An 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:

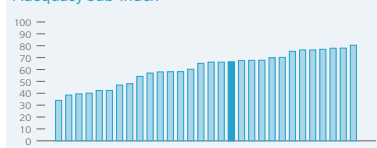
- increasing the minimum level of support for the poorest aged individuals
- raising the level of household saving
- increasing coverage of employees in the pension schemes
- raising the state pension age over time

The Colombian index value in 2017 is 61.7.

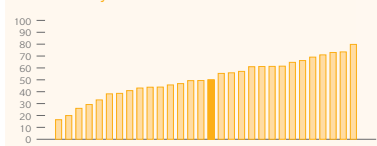
Overall Index – Colombia



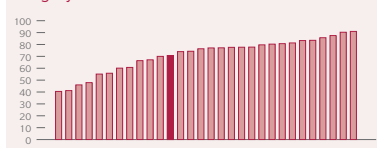
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Denmark

Overall Index Score: 78.9

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.

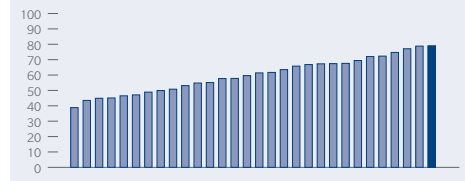
The overall index value for the Danish system could be increased by:

- raising the level of household saving
- introducing arrangements to protect the interests of both parties in a divorce

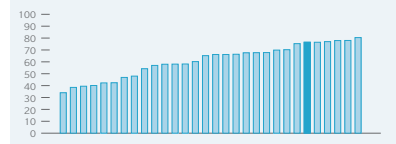
- increasing the labour force participation rate at older ages as life expectancies rise
- improving integration between the various pillars within the Danish system

The Danish index value fell from 80.5 in 2016 to 78.9 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

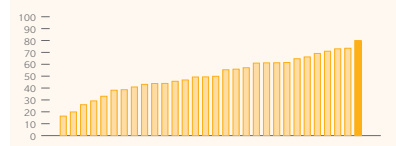
Overall Index – Denmark



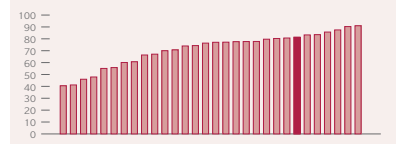
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Finland

Overall Index Score: 72.3

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

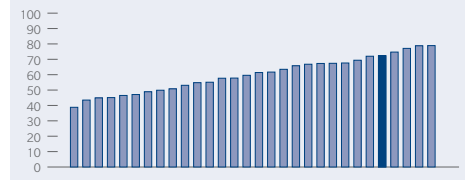
The overall index value for the Finnish system could be increased by:

- continuing to increase the minimum pension for low-income pensioners

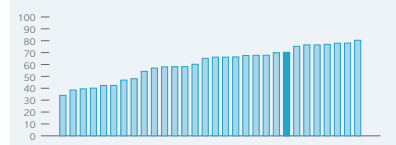
- continuing to raise the level of mandatory contributions that are set aside for the future
- increasing the labour force participation rate at older ages as life expectancies rise
- introducing arrangements to protect the pension interests of both parties in a divorce

The Finnish index value fell slightly from 72.9 in 2016 to 72.3 in 2017 due to a small reduction in each sub-index.

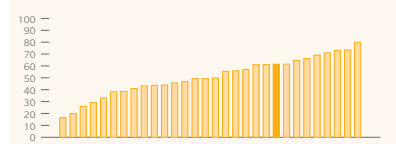
Overall Index – Finland



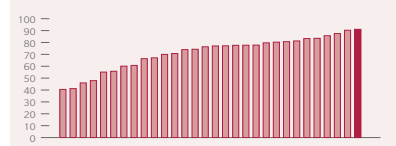
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



France

Overall Index Score: 59.6

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 respectively; and voluntary occupational plans.

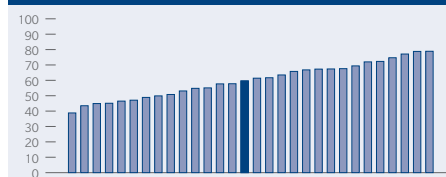
The overall index value for the French system could be increased by:

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

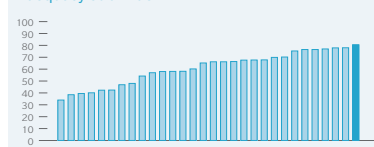
- increasing the labour force participation rate at older ages as life expectancies rise
- improving the regulatory requirements for the private pension system

The French index value increased from 56.4 in 2016 to 59.6 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

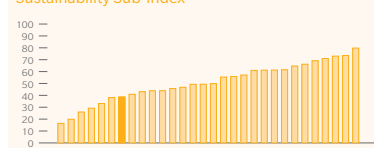
Overall Index – France



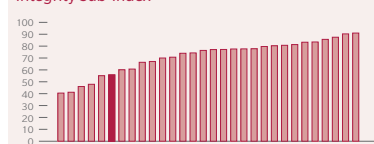
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Germany

Overall Index Score: 63.5

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.

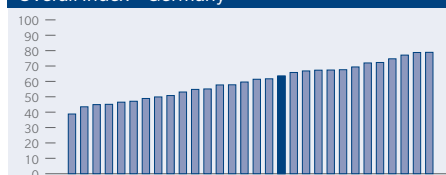
The overall index value for the German system could be increased by:

- increasing the minimum pension for low-income pensioners

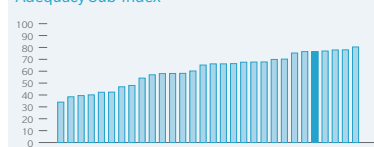
- increasing coverage of employees in occupational pension plans
- increasing the labour force participation rate at older ages as life expectancies rise
- improving the level of communication from pension arrangements to members

The German index value increased from 59.0 in 2016 to 63.5 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index and the allowance for voluntary occupational pension plans. It is noted that recent legislation introducing defined ambition plans is likely to increase the index value over time due to several improvements.

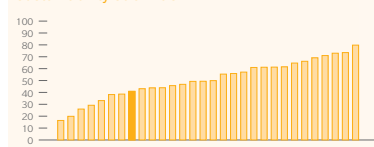
Overall Index – Germany



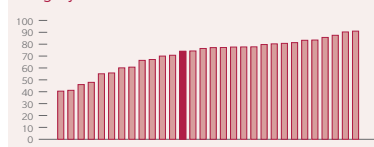
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



India

Overall Index Score: 44.9

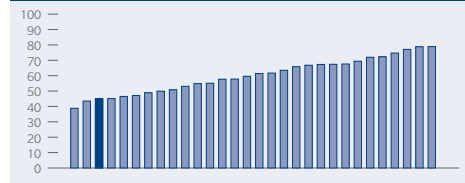
India's retirement income system comprises an earnings-related employee pension scheme, a defined contribution employee provident fund and voluntary employer managed funds. The National Pension System is gradually gaining popularity.

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

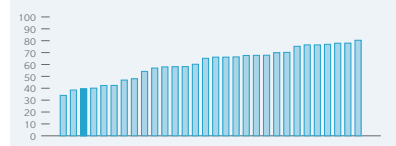
- introducing a minimum level of support for the poorest aged individuals
- increasing coverage of pension arrangements for the unorganised working class
- introducing a minimum access age so that it is clear that benefits are preserved for retirement purposes
- improving the regulatory requirements 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 43.4 in 2016 to 44.9 in 2017 primarily due the inclusion of the new economic growth question in the sustainability sub-index.

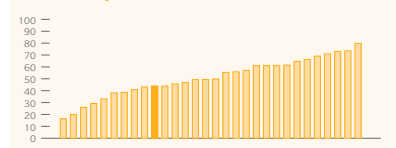
Overall Index – India



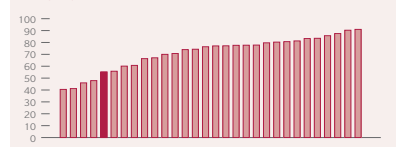
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Indonesia

Overall Index Score: 49.9

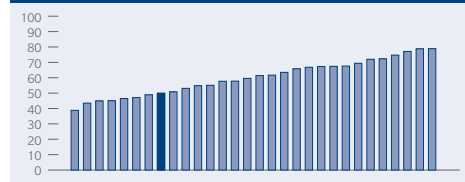
Indonesia's retirement income system comprises earnings-related civil service pensions, mandatory defined contribution plans for private sector workers and voluntary defined contribution plans for other workers. A new national pension scheme, launched in July 2015, will provide a defined benefit scheme 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:

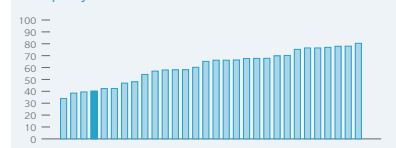
- introducing a minimum level of support for the poorest aged individuals
- increasing the level of pension provision within the workforce
- improving the regulatory requirements for the private pension system
- improving the required level of communication to members from pension arrangements
- increasing the pension age as life expectancy continues to increase

The Indonesian index value increased from 48.3 in 2016 to 49.9 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

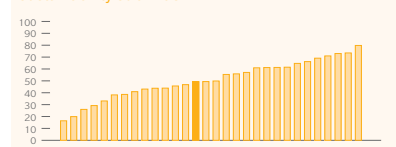
Overall Index – Indonesia



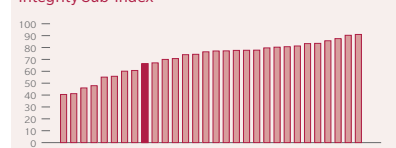
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Ireland

Overall Index Score: 65.8

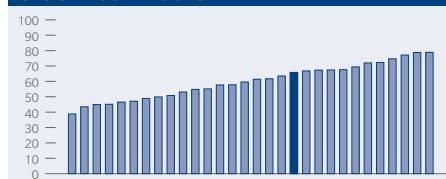
Ireland's retirement income system comprises a flat-rate basic scheme and a means-tested benefit for those without sufficient social insurance contributions. Voluntary occupational pension schemes have limited coverage.

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

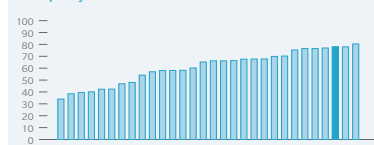
- introducing a minimum level of mandatory contributions into a retirement savings fund
- providing greater protection of members' accrued benefits in the case of employer insolvency
- reducing government debt as a percentage of GDP

The Irish index value increased from 62.0 in 2016 to 65.8 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

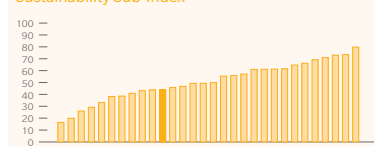
Overall Index – Ireland



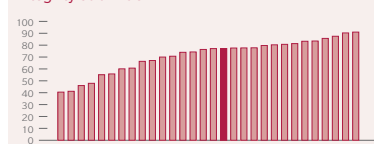
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Italy

Overall Index Score: 50.8

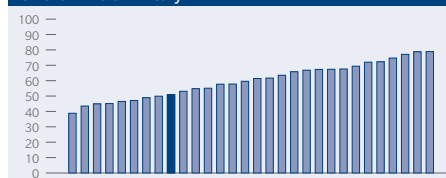
Italy's retirement income system comprises a notional defined contribution scheme for workers and a minimum means-tested social assistance benefit. Voluntary supplementary occupational schemes also exist; however coverage is low but gradually increasing.

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

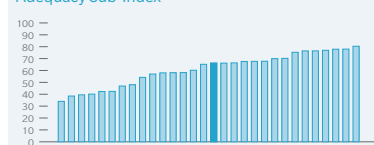
- increasing the labour force participation rate at older ages as life expectancies rise
- restricting the availability of benefits before retirement
- reducing government debt as a percentage of GDP

The Italian index value increased 49.5 in 2016 to 50.8 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

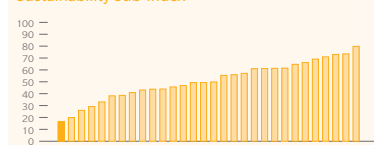
Overall Index – Italy



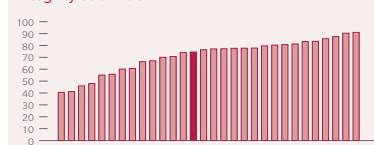
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Japan

Overall Index Score: 43.5

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

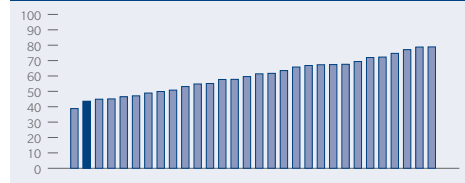
The overall index value for the Japanese system could be increased by:

- raising the level of household saving
- increasing the level of pension coverage and hence the level of contributions and assets

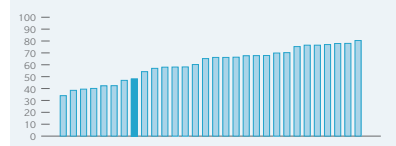
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- announcing a further increase in the state pension age as life expectancy continues to increase
- reducing government debt as a percentage of GDP

The Japanese index value increased slightly from 43.2 in 2016 to 43.5 in 2017 due to a number of small changes.

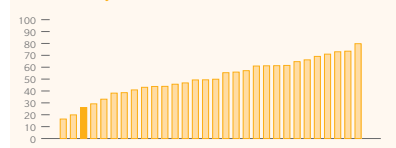
Overall Index – Japan



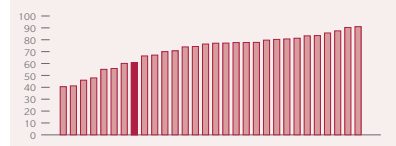
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Korea (South)

Overall Index Score: 47.1

Korea's retirement income system comprises a modest basic pension and 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.

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

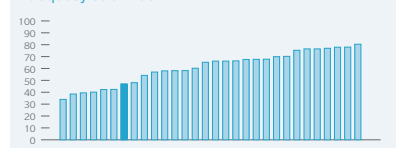
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving the governance requirements for the private pension system, including the need for an audit
- improving the level of communication required to members from pension plans

The Korean index value increased from 46.0 in 2016 to 47.1 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

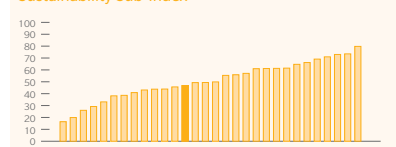
Overall Index – Korea (South)



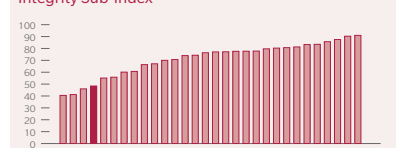
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Malaysia

Overall Index Score: 57.7

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 with other benefits preserved for retirement.

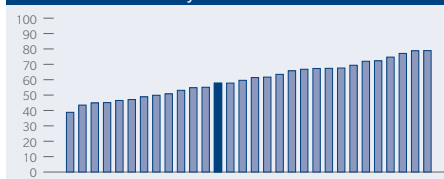
The overall index value for the Malaysian system could be increased by:

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

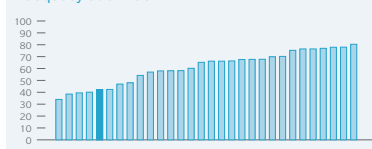
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- increasing the pension age as life expectancy continues to increase
- increasing the labour force participation rate at older ages as life expectancies rise

The Malaysian index value increased in value from 55.7 in 2016 to 57.7 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

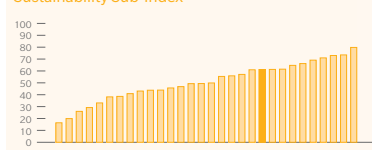
Overall Index – Malaysia



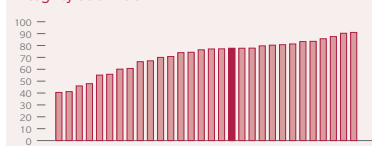
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Mexico

Overall Index Score: 45.1

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 and includes a minimum public pension and supplemental private sector plans.

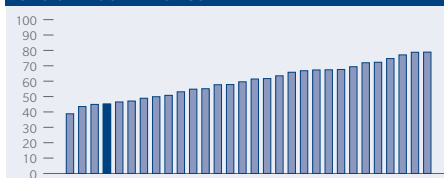
The overall index value for the Mexican system could be increased by:

- raising the minimum pension available to the poorest aged individuals
- raising the level of household saving
- introducing a requirement that part of the retirement benefit from private pension arrangements must be taken as an income stream

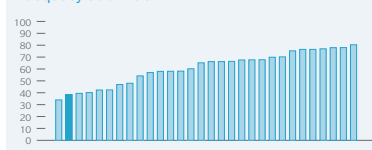
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving the regulatory requirements for the private pension system
- improving the governance requirements for the private pension system, including the need for minimum levels of funding in defined benefit plans
- improving the level of communication required to members from pension plans

The Mexican index value increased slightly from 44.3 in 2016 to 45.1 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

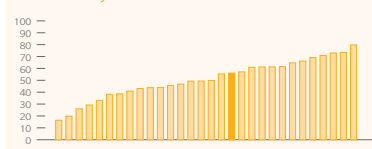
Overall Index – Mexico



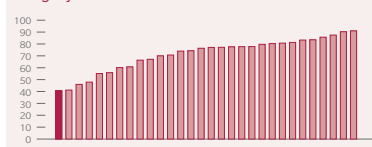
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



The Netherlands

Overall Index Score: 78.8

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.

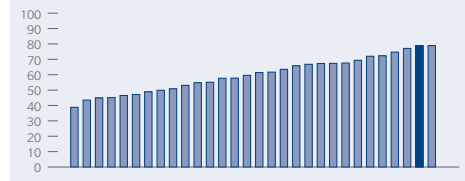
The overall index value for the Dutch system could be increased by:

- introducing a minimum access age so that it is clear that benefits are preserved for retirement purposes

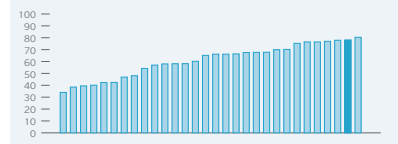
- raising the level of household saving
- increasing the labour force participation rate at older ages as life expectancies rise
- providing greater protection of members' accrued benefits in the case of fraud, mismanagement or employer insolvency

The Dutch index value fell from 80.1 in 2016 to 78.8 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

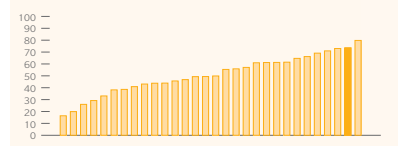
Overall Index – The Netherlands



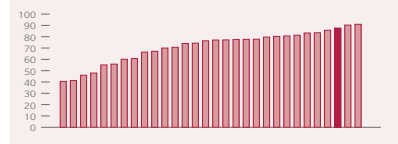
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



New Zealand

Overall Index Score: 67.4

New Zealand's retirement income system comprises a flat-rate public pension and the voluntary KiwiSaver workplace savings schemes which receive contributions from both employers and employees.

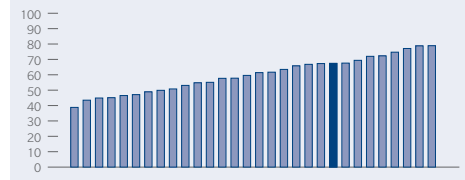
The overall index value for the New Zealand System could be increased by:

- increasing the level of KiwiSaver contributions

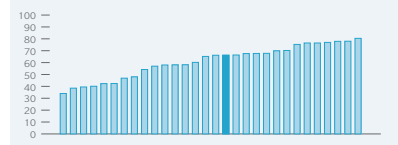
- raising the level of household savings
- increasing the focus on income streams in place of lump sums
- continuing to expand the coverage of KiwiSaver

The New Zealand index value in 2017 is 67.4.

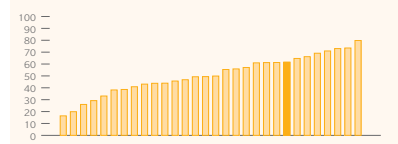
Overall Index – New Zealand



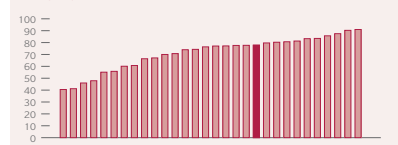
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Norway

Overall Index Score: 74.7

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

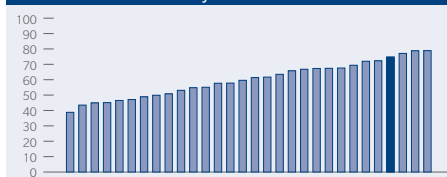
The overall index value for the Norwegian system could be increased by:

- raising the level of household saving
- increasing the level of mandatory contributions into the defined contribution plans

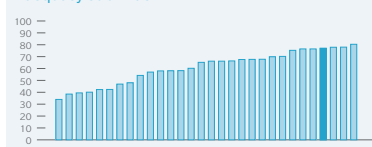
- introducing arrangements to protect all the pension interests of both parties in a divorce

The Norwegian index value in 2017 is 74.7.

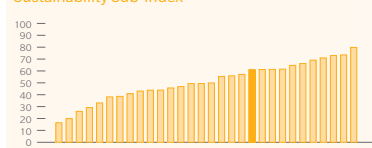
Overall Index – Norway



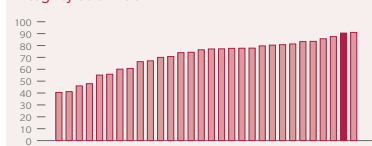
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Poland

Overall Index Score: 55.1

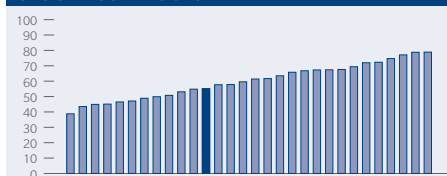
Poland's retirement income system was reformed in 1999. The new system, which applies to people born after 1968, comprises a minimum public pension and an earnings-related system with notional accounts. The overall system is in transition from a pay-as-you-go system to a funded approach. There are also 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:

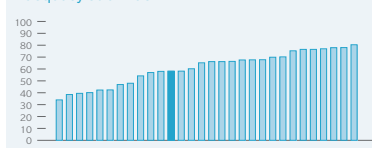
- maintaining a significant role for Pillar 2 pension funds in the system
- raising the minimum level of support available to the poorest pensioners
- introducing a requirement that part of the retirement benefit from private pension arrangements must be taken as an income stream
- raising the level 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 slightly from 54.4 in 2016 to 55.1 in 2017 due to an increase in the sustainability sub-index.

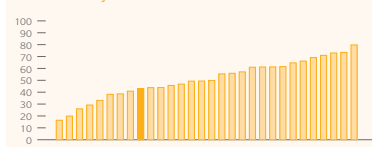
Overall Index – Poland



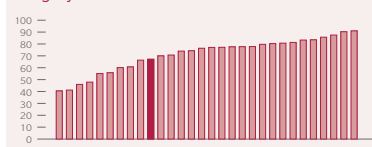
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Singapore

Overall Index Score: 69.4

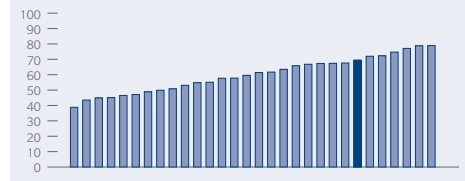
Singapore's retirement income system is based on the Central Provident Fund (CPF) which covers all employed Singaporean residents. Under the CPF, some benefits are available to be withdrawn at any time for specified housing and medical expenses with other benefits preserved for retirement. A prescribed 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 implemented changes to the 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:

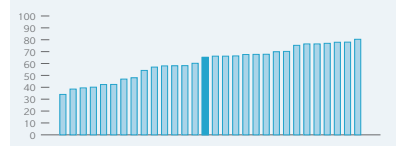
- reducing the barriers to establishing tax-approved group corporate retirement plans
- opening CPF to non-residents (who comprise more than one-third of the labour force)
- increasing the labour force participation rate at older ages as life expectancies rise

The Singaporean index value increased from 67.0 in 2016 to 69.4 in 2017 primarily due to improvements in both the adequacy and sustainability sub-indices.

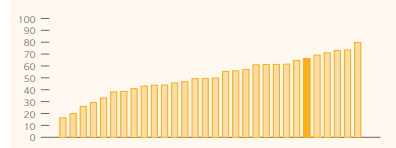
Overall Index – Singapore



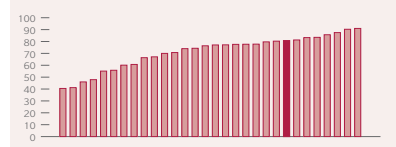
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



South Africa

Overall Index Score: 48.9

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

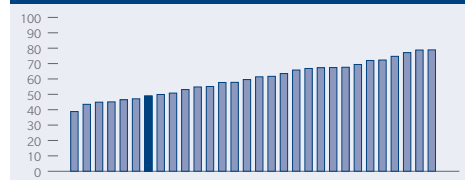
The overall index value for the South African system could be increased by:

- 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

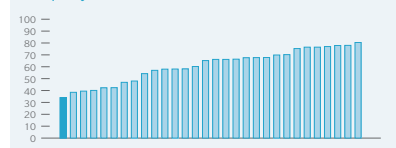
- increasing the level of preservation of benefits when members withdraw from occupational funds
- introducing a requirement that part of the retirement benefit from provident fund arrangements must be taken as an income stream (this requirement currently only applies to pension funds and retirement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

The South African index value increased slightly from 48.6 in 2016 to 48.9 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

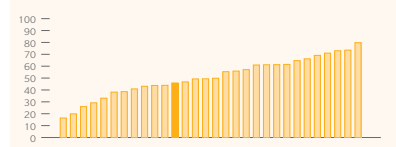
Overall Index – South Africa



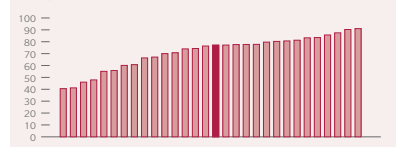
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Sweden

Overall Index Score: 72.0

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.

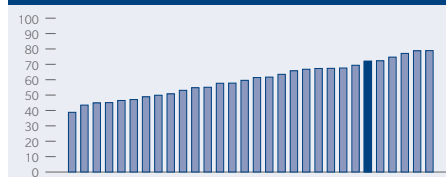
The overall index value for the Swedish system could be increased by:

- increasing the state pension age to reflect increasing life expectancy

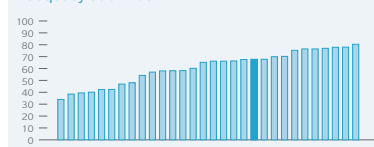
- ensuring that all employees can make contributions into employer sponsored plans
- redesigning salary sacrifice arrangements so that it is attractive to all employees
- reintroducing tax incentives for individual contributions
- introducing arrangements to protect all the pension interests of both parties in a divorce

The Swedish index value increased slightly from 71.4 in 2016 to 72.0 in 2017 due to a number of small changes.

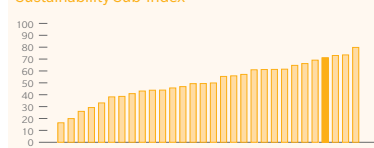
Overall Index – Sweden



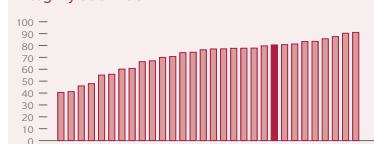
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



Switzerland

Overall Index Score: 67.6

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

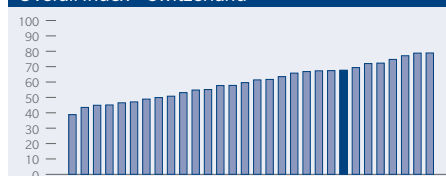
The overall index value for the Swiss system could be increased by:

- introducing a requirement that part of the retirement benefit must be taken as an income stream

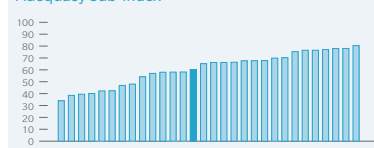
- reversing the preferential tax treatment of lump sum payments in comparison to pension payments
- increasing the state pension age over time
- increasing the rate of home ownership
- reducing pre-retirement leakage by further limiting access to funds before retirement

The Swiss index value decreased from 68.6 in 2016 to 67.7 in 2017 primarily due to the inclusion of the new economic growth question in the sustainability sub-index.

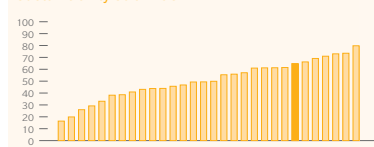
Overall Index – Switzerland



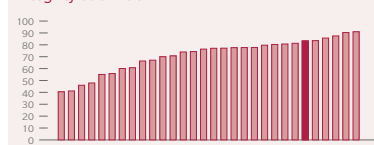
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





The United Kingdom

Overall Index Score: 61.4

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 covers nearly all employers from 1 April 2017, requiring employers to enrol employees in pension schemes with minimum contributions (currently 2% but planned to increase to 8% from April 2019) but employees can opt out.

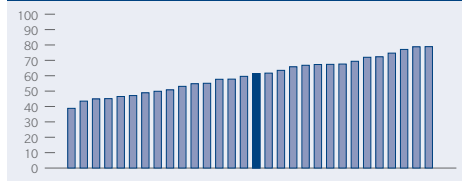
The overall index value for the British system could be increased by:

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

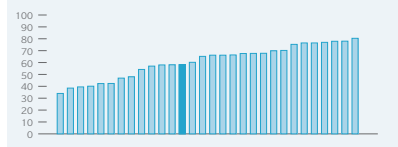
- further increasing the coverage of employees in occupational pension schemes
- increasing the level of contributions to occupational pension schemes
- raising the level of household saving
- accelerating the intended increases in the state pension age

The British index value increased from 60.1 in 2016 to 61.4 in 2017 primarily due to the allowance for voluntary occupational pension plans. The ongoing introduction of the auto-enrolment process should improve the index value in future years with broadening coverage and an increase in the level of funded retirement benefits.

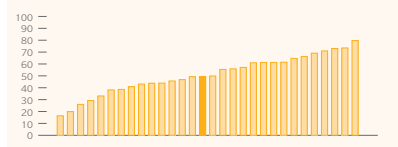
Overall Index – The United Kingdom



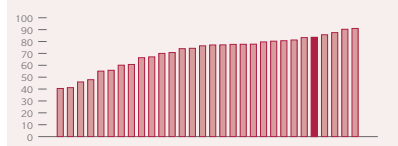
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



United States of America

Overall Index Score: 57.8

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.

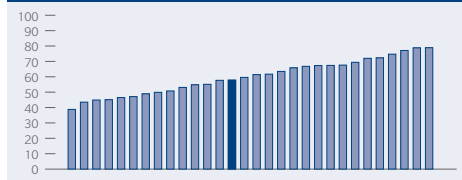
The overall index value for the American system could be increased by:

- 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

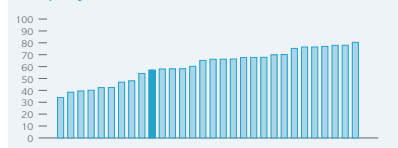
- reducing pre-retirement leakage by further limiting the access to funds before retirement
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing the funding level of the social security program
- raising the state pension age and the minimum access 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 56.4 in 2016 to 57.8 in 2017 primarily due to the allowance for voluntary occupational pension plans.

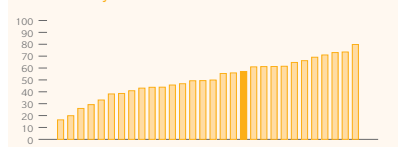
Overall Index – United States of America



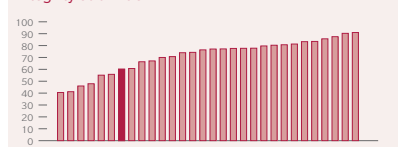
Adequacy Sub-Index



Sustainability Sub-Index



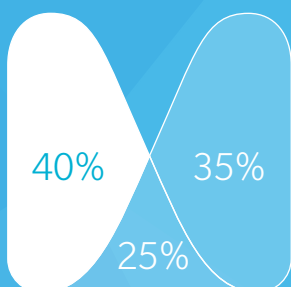
Integrity Sub-Index



CHAPTER 5

THE ADEQUACY SUB-INDEX

The adequacy sub-index considers the benefits provided to both the poor and the median-income earner as well as several system design features and characteristics which enhance the efficacy of the overall retirement income system. The net household saving rate and home ownership rate are also included as non-pension savings represent an important source of financial security during retirement.



The countries with the highest value for the adequacy sub-index are France (80.4) and the Netherlands (78.0) with South Africa (34.0) and Mexico (38.5) 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 median-income earner 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 of the Zero Pillar, which provides a minimum level of income for all aged citizens. Eligibility for this minimum pension requires no period in the paid workforce, but will often require a minimum period of residency.

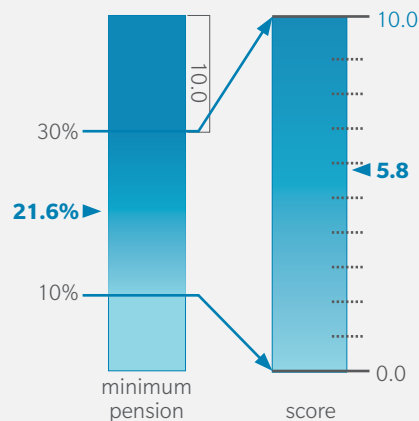
This question also considers how the minimum pension is increased or adjusted over time. The level and frequency of increases or adjustments are critical to ensure that the real value of the minimum pension is maintained.

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 percent⁸ of average earnings adequately meets the poverty alleviation goal. Hence for the first part of this question a minimum pension below 30 percent will score less than the maximum value of 10, with a zero score if the pension is 10 percent or less of average earnings, as such a pension offers very limited income provision.

⁸ This level was chosen in 2009 when it was slightly higher than the OECD average of 27% for first tier benefits as shown in OECD (2009). The average basic pension in 18 OECD countries (OECD (2015) p126) was 20.1% so a range of 10% to 30% remains reasonable.

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 0 where the minimum pension is not increased.

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

Commentary

The minimum pension for most countries is between 6 percent in Korea and 45 percent in Brazil. India, Indonesia and Malaysia do not provide a minimum pension whilst Korea and Mexico provide very modest public assistance.

The minimum pension is increased to some extent in all countries except for South Africa where no increases are applied.

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 calculates the retirement income for a median-income earner), represent the two most important components within the adequacy sub-index. This indicator is therefore given a weighting of 17.5 percent in the adequacy sub-index with 15 percent for the first part of the question and 2.5 percent for the second part.

Question A2

What is the net replacement rate for a median-income earner?

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 percent of the net average lifetime wage
- 60 percent of the gross average lifetime wage
- 53 percent of the net final year wage
- 42 percent 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."⁹ That is, these targets could be met through a combination of mandatory and voluntary provisions.

The OECD normally calculates the net replacement rate for an individual earning the median income (revalued with earnings growth) throughout his/her working life. Median income is used as it is a better representation than average earnings, which are skewed upwards by the highest income earners. The OECD *Pensions at a Glance 2015* only published net replacement rates for multiples of average income earnings. For the 2017 Index, the relationship between the median and average measures in *Pensions at a Glance 2013* for each individual country has been used to estimate the net replacement rate for median income earners based on the OECD 2015 data.

These calculations assume no promotion of the individual throughout their career; that is, the individual earns the median income throughout. Therefore replacement rates based on lifetime median income will be higher than when expressed in terms of final salary for most individuals.

9 World Bank (1994), p295.

The OECD expresses a target replacement rate of 70 percent of final earnings¹⁰ 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 percent 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 percent of the working age population. This allowance takes into account the level of coverage above 30 percent and the increase in the net replacement rate due to the voluntary schemes.¹¹

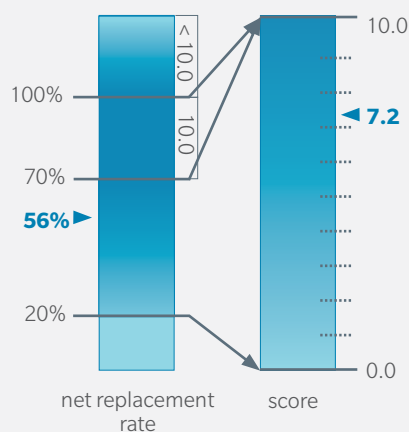
The target benefits should be less than 70 percent of final earnings to allow for individual circumstances and some flexibility. An objective of between 45 percent and 65 percent of final earnings is considered reasonable. Using the ratios between lifetime earnings and final earnings, the target for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

A net replacement rate below 70 percent of lifetime earnings suggests a significant reliance on voluntary savings whereas a figure above 100 percent does not provide the flexibility for individual circumstances and may suggest overprovision. The OECD average for a median-income earner is 66 percent of lifetime earnings.¹²

Calculation

The maximum score for this indicator is obtained for any country with a result between 70 percent and 100 percent. Argentina, Austria, Colombia, Denmark, Italy and the Netherlands 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 percent.

Calculating A2 — Net Replacement Rate for Median Income Earner



Commentary

With the exception of Indonesia, South Africa and the countries outlined above that have a result between 70 percent and 100 percent, all countries have a result between 37 percent (the United Kingdom) and 69 percent (France). The Chinese and Indian figures have been adjusted to reflect the varying levels of replacement rates that exist in practice.

Weighting

These results represent a major outcome in the assessment of any retirement income system. As this indicator is likely to reflect the benefits provided to a broader group of retirees than the previous question, this indicator is given the highest weighting in the adequacy sub-index, namely 25 percent.

¹⁰ OECD (2012a), p161.

¹¹ OECD (2015), p147.

¹² Estimate based on the change in average net replacement rates for 34 OECD countries reported in OECD (2013a) p141 and OECD (2015) p145.

Question A3

What is the net household saving rate in the country?

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 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 2015 and 2016 measurements.

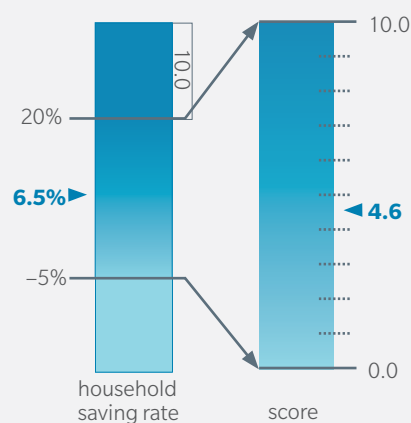
The EIU data for Singapore was adjusted to remove the impact of the estimation method change.

OECD measures were used for Ireland, Mexico 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 6.1 percent in New Zealand to plus 15.4 percent in Singapore. We have provided a maximum score for any country with a saving rate of 20 percent or higher, and a zero score for any country with a saving rate of less than minus 5 percent.

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 A3 — Household Saving Rate



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.

Weighting

The weighting for this measure has been set at 10 percent of the adequacy sub-index. This indicates the importance of household savings, although it is noted that some of this saving will be used for other purposes. It is also recognised that most voluntary household savings will be carried out by higher income households so that this measure is unlikely to assist those at lower and middle income levels.

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 was one case where the response to the first question was neither a clear "yes" or "no", so a score of 1 was given.

Commentary

All countries except Argentina offer some taxation incentive for voluntary contributions. In Norway and Sweden, additional employee contributions are encouraged in certain circumstances. Twenty three countries 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 five percent in the adequacy sub-index, split into two percent for the first question and three percent for the second question.

Question A5

Is there a minimum access age to receive benefits from private pension plans¹³ (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. China and Japan scored 0.5 as age 55 applies to some members. 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 a working life represents an important design feature of all pension arrangements. Hence, this desirable feature has been given a 10 percent 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

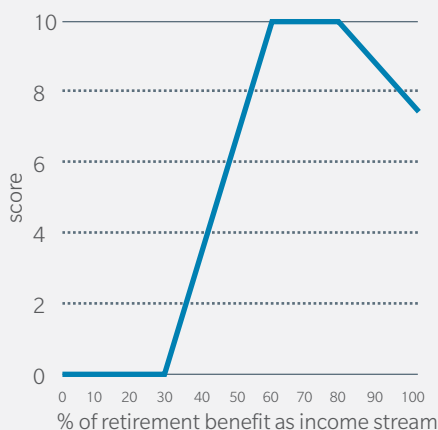
The primary objective of a private pension system should be to provide income during retirement. Of course, this does not imply that a lump-sum payment is not a valuable benefit. It often is. Indeed, both Rocha and Vittas (2010) and the OECD (2012b) suggest that policymakers should target an adequate 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 percent and 80 percent of the benefit is required to be converted into an income stream. A percentage above 80 percent reduces the flexibility that many retirees need whilst an answer below 60 percent is not converting a sufficient proportion of the benefit into an income stream. A percentage below 30 percent 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 the take up of income streams.

¹³ 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. Chile, Colombia, Finland, the Netherlands, Norway, Singapore and Sweden) whereas many countries have no requirement at all (e.g. Argentina, Australia, China, Japan, Korea, Malaysia, Mexico, New Zealand, Poland, Switzerland, the United Kingdom and the United States). Of these countries, only Australia, Korea and the United Kingdom have tax incentives to encourage the take up of 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 percent 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 16 of the 30 countries is full vesting present, the real value of the benefits maintained after resignation, and the accrued benefit can be transferred.

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 percent 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 to 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 15 of the 30 countries, 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 four percent weighting in the adequacy sub-index.

Question A9

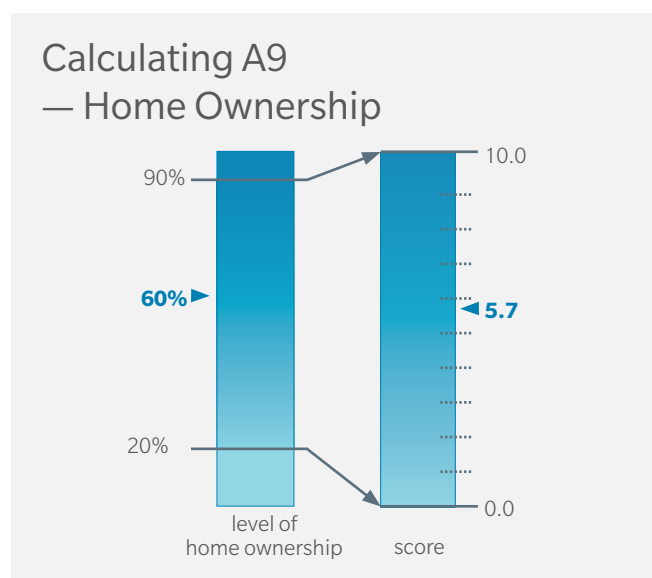
What is the level of home ownership in the country?

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



Commentary

The level of home ownership ranged from 38.4 percent in Switzerland to more than 85 percent in China, India and Singapore.

Weighting

Home ownership represents an important feature of financial security in retirement. Hence, this indicator has been given a five percent 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)¹⁴ have noted correctly, 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.

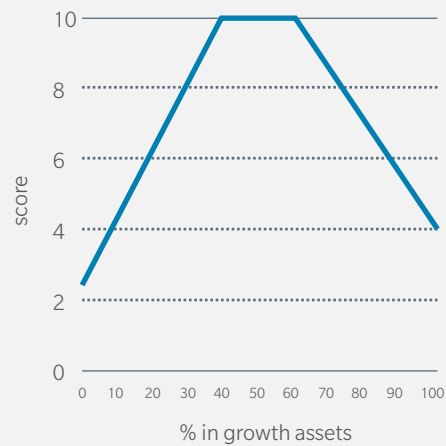
It is also important to recognise that the investment performance of a pension fund needs to focus on the longer term and not be focused on short term returns. With this in mind, we believe that it is appropriate for the investments of pension funds within any country to be diversified across a range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

Calculation

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

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 a maximum score of 10. This score increases to the maximum score of 10 as the proportion in growth assets increases to 40 percent of all assets. If the proportion in growth assets is beyond 60 percent the score is reduced to reflect the higher level of risk and volatility.

Calculating A10 — Percentage of Growth Assets



Commentary

The level of growth assets ranges from less than ten percent in India, Indonesia and Korea to approximately 70 percent in South Africa. Thirteen of the 27 countries have a percentage between 40 percent and 60 percent, 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 five percent weighting in the adequacy sub-index.

¹⁴ 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 are on 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 twelve of the 30 countries, 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 percent 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 (2013b), p21 for China, India, Indonesia and Malaysia.

OECD (2014a), for Brazil

OECD (2015), p127 for OECD countries and p346 for South Africa.

Mercer calculations for Singapore using government websites.

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

Question A2

OECD (2015) except for Malaysia and Singapore.

OECD (2017), unpublished data for Malaysia and Singapore

Question A3

Data from the Economist Intelligence Unit was used for all countries except Ireland, Mexico and South Africa.

OECD (2017c) for Ireland, Mexico and South Africa.

Question A9

The answers were sourced from Mercer consultants in each country except China.

World Bank (2012) for China.

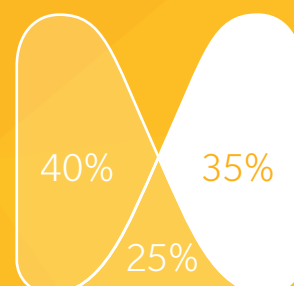
Questions A4, A5, A6, A7, A8, A10 and A11

The answers were sourced from Mercer consultants in each country.

CHAPTER 6

THE SUSTAINABILITY SUB-INDEX

The sustainability sub-index considers a number of indicators which influence the long-term sustainability of current 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 rate of real economic growth.



The country with the highest value for the sustainability sub-index is Denmark (79.8) with the lowest values being for Italy (16.4) and Austria (19.9). 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?

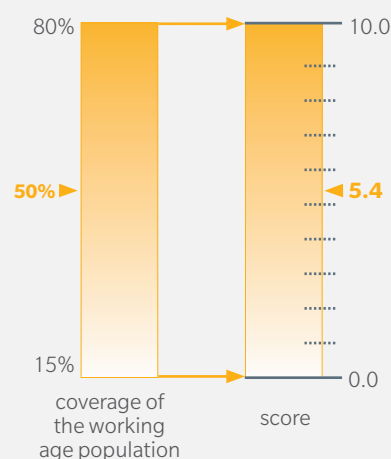
Objective

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 percent in India to more than 80 percent of the working age population in Denmark, Finland, the Netherlands and Sweden. Each country's score is related to its coverage, with a maximum score for 80 percent or above and a zero score relating to coverage of 15 percent or less, as such coverage represents a minimal contribution to the future provision of retirement income.

Calculating S1 — Coverage



Commentary

Only eleven of the 30 countries have coverage rates over 64 percent 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 percent 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 a country's GDP, represents a good indicator of an economy's ability to meet these payments in the future.

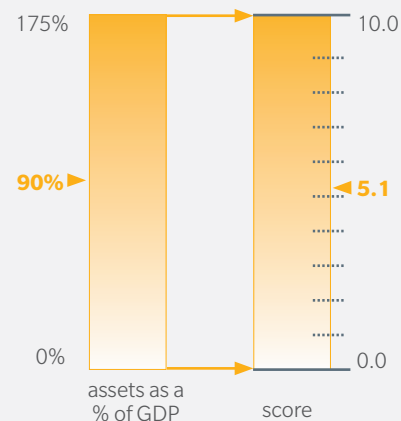
Calculation

We have included assets from private pension funds, public pension reserve funds, protected book reserves and pension insurance contracts to calculate the total level of assets held within each country to pay future pensions, irrespective of whether the pensions are paid through public pension provision or from private pension plans. After all, in most countries an individual's retirement income can include both a public pension and a private pension. The types of funds that have been included are:

- assets held in 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 percent of GDP for Argentina, Austria, China, India, Indonesia and Italy to more than 175 percent for Canada, Denmark and the Netherlands. A maximum score was achieved for 175 percent of GDP and a minimum score for zero percent.

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 importance of both social security reserve funds as well as the second and third pillars in each country's system. In addition, many countries 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 future years.

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 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 country's system to pay future benefits. Hence, this indicator was given a weighting of 15 percent 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 2035? (This calculation allows for mortality improvement.)
- What is the projected old-age dependency ratio in 2035?
- What is the Total Fertility Rate (TFR) averaged over the last five years?

Objective

A retirement income system is designed to provide benefits to an individual from when the person leaves the workforce to his/her death. The longer the period, the larger the total value of benefits will need to be 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 two decades ahead 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 2035 and therefore the likely effects on the funding requirements for pensions, health and aged care.

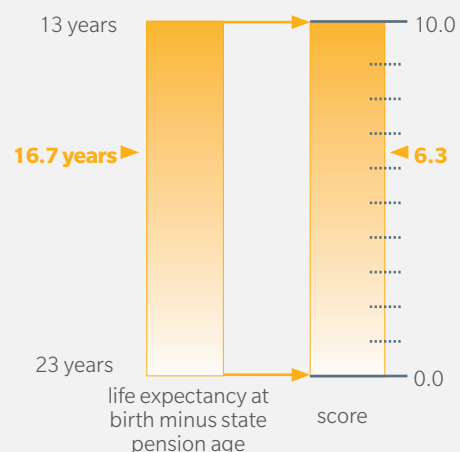
Consideration of the TFR provides an even longer term perspective as it provides an indication of the likely balance between workers and retirees in future decades.

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 payment and range from 3.7 in South Africa and 9.9 in India to 21.4 in Korea and 23.5 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 2035, the results range from 7.3 in South Africa and 9.6 in Indonesia to 22.6 in China and 22.8 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 2035 range from 11 percent in South Africa to 57 percent in Japan and 56 percent in Italy. A maximum score is achieved with a projected dependency ratio of 20 percent or lower and a zero score with a ratio of 60 percent or higher.
- The TFR ranges from 1.23 in both Korea and Singapore to 2.45 in Indonesia and 2.55 in South Africa. 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 countries 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 Austria, Germany, Italy, Japan, Korea, Poland and Singapore raises serious issues for the future age structure of these countries. Whilst immigration can assist in the short term it is unlikely to provide sound long-term solutions.

Weighting

These demographic-related indicators have a weighting of 20 percent in the sustainability sub-index with a five percent 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.¹⁵

Objective

Mandatory contributions from employers and/or employees represent a feature of every country's retirement income system. In some countries 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, 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 and South Africa 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 percent of the contributions are invested.

For China, India and Indonesia, we have used 50 percent 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.

¹⁵ 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.

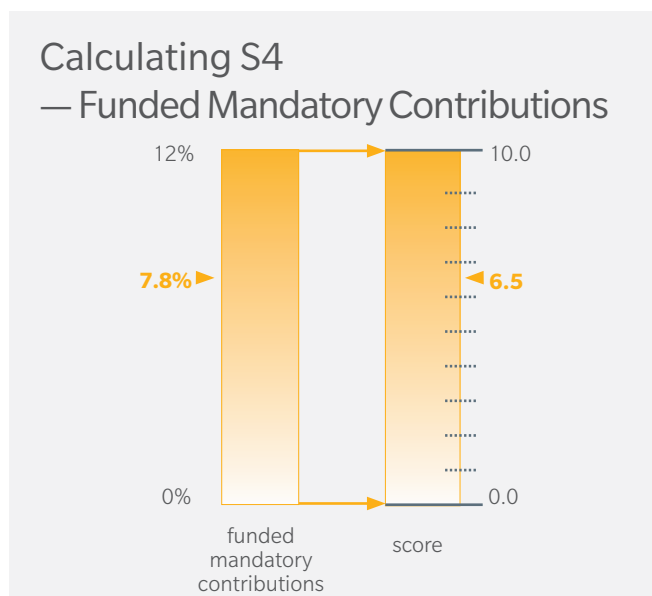
While Italy’s mandatory scheme is funded on a pay-as-you-go basis we have assumed that 25 percent of the mandatory contributions required to fund termination indemnity benefits are invested. For Finland, we have assumed that 20 percent of the mandatory contributions paid by employers and employees are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

In line with OECD data, we have assumed that 35 percent of all contributions to Singapore’s Central Provident Fund are invested which gives them the maximum score. For Malaysia, we have assumed that 70 percent 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 percent. Assuming that about half the contributions are in the funded system and allowing for less than full coverage, we have used 6 percent.

In other countries, 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 percent, 50 percent and 20 percent 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 percent in several countries to 12 percent or more in Denmark, Malaysia and Singapore. In view of this range and likely developments in some countries, a maximum score is achieved with a contribution level of 12 percent invested into a fund for future payments with a zero score being obtained where there are no 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 percent 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+?

Objective

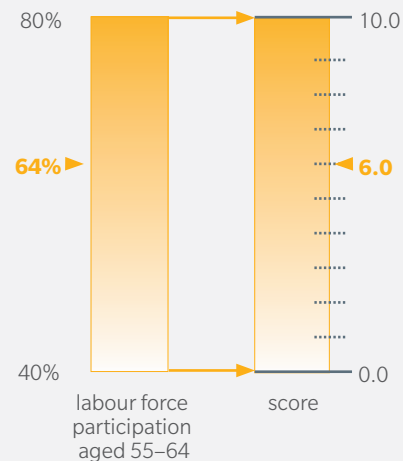
Higher labour force participation at older ages means that individuals are retiring later thereby reducing both the number of years in retirement and the level of retirement benefits needed, as well as accumulating greater savings for retirement during the working years.

Calculation

For those aged 55 to 64, the percentages range from 41.7 percent in South Africa and 45.8 percent in Poland to 78.1 percent in New Zealand and 78.4 percent in Sweden. A maximum feasible score is considered to be 80 percent for this age bracket. Hence a participation rate of 80 percent or more scores maximum results whilst a participation rate of 40 percent or less scores zero.

For those aged 65 and over, the percentages range from 2.6 percent in France and 4.0 percent in Italy to 40.2 percent in Indonesia and 31.3 percent in Korea. A maximum feasible score is considered to be 30 percent or more. Hence a participation rate of 30 percent or more scores maximum results whilst a participation rate of nil scores zero.

Calculating S5 — 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 percent in the sustainability sub-index, split into eight percent for the first question and two percent for the second question.

Question S6

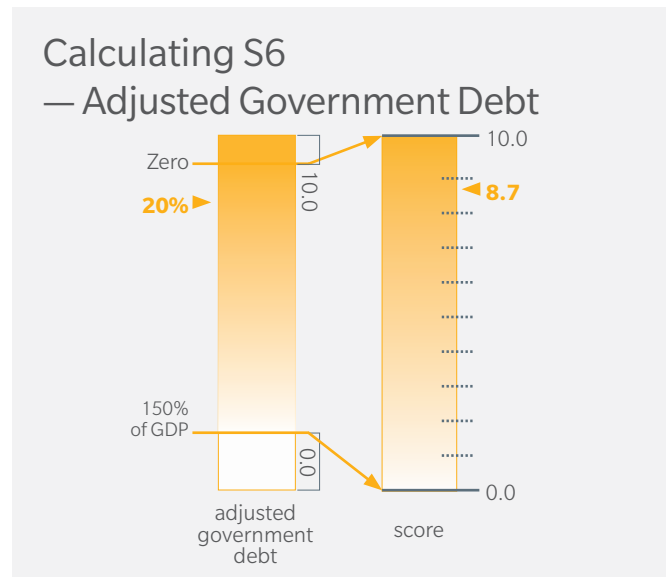
What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities¹⁶), expressed as a percentage of GDP?

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/or 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 238 percent of GDP in Japan. A maximum score was achieved for countries with a negative level of adjusted government debt (i.e. a surplus), with a zero score for countries with an adjusted government debt of 150 percent 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 percent in the sustainability sub-index.

¹⁶ 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 an ageing population, is to permit individuals to phase into retirement by gradually 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 countries 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 countries 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 five percent in the sustainability sub-index as it is not considered as critical as the previous indicators. The total weighting was split into four percent for the first question and one percent for the second question.

Question S8

What is the real economic growth averaged over the last three years and projected for the next three years?

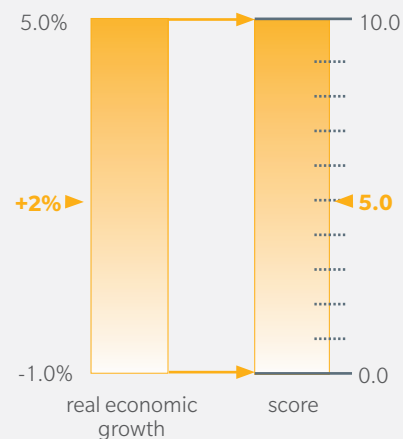
Objective

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, averaged over the last three years and the projected rates for the next three years, range from minus 0.4 percent in Brazil to 6.7 percent in China and 7.4 percent in India. A maximum feasible score over the long term is considered to be 5 percent per annum. Therefore a real growth rate of 5 percent or more scores maximum results whilst a rate of minus 1 percent or lower scores zero.

Calculating S8 — Real Economic Growth



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 stronger and more robust retirement income system leading to more sustainable pension benefits.

Weighting

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

Sources of data for the sustainability sub-index

Question S1

Mercer calculations for Brazil, Colombia, France and Japan.

OECD (2011), p173 for South Africa

OECD (2013b), p37 for China, India, Indonesia, Malaysia and Singapore.

OECD (2014a), p69 for Argentina

OECD (2015), p187 for all other countries although adjustments were needed when data was not available or comprehensive.

Question S2

Mercer calculations for China, Malaysia and Singapore.

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

OECD StatExtracts Database, Pension Insurance Contracts 2014 in relation to pension insurance contracts for Finland.

OECD (2015) in relation to public pension reserve funds for all countries where relevant and for private pension funds for South Africa.

OECD (2017a) in relation to all retirement vehicles as % of GDP for all countries except, China, Indonesia, Malaysia, Singapore and South Africa.

Question S3

Life expectancy, aged dependency (2015-2020 and 2030-2035), and total fertility rate (2010-2015) data were from United Nations (2015).

State pension ages were sourced from Mercer consultants in each country.

Question S5

International Labour Organization (2016).

Question S6

International Monetary Fund (2017).

Sovereign Wealth Fund Institute: www.swfinstitute.org

Questions S4 and S7

Answers were sourced from Mercer consultants in each country.

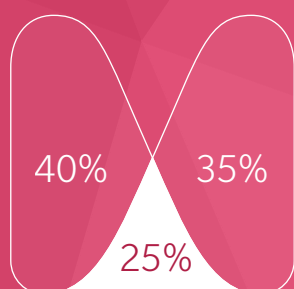
Question S8

World Bank (2017)

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 costs. This sub-index asks a range of questions about the requirements that apply to the funded pension plans in each country, normally 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 country with the highest value for the integrity sub-index is Finland (91.0), with the lowest value being for Mexico (40.5). The better scores were achieved by countries 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-two of the 30 countries 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 percent weighting and the second question was given a 5 percent weighting, giving a total weighting of 7.5 percent 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 four percent weighting, with the second question being given a 2 percent weighting, resulting in a total weighting of 10 percent 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 were 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 that fiduciaries 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 would mean 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.

Malaysia, Norway and Singapore received the maximum score of 10.0 for these questions and 16 of the 30 countries had a score of 8.0 or above, indicating that there is still scope to improve governance requirements in many countries.

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.

Weighting

The first and second questions were each given a four percent weighting, with the third question given a 2.5 percent weighting and the fourth question given a 2 percent weighting, resulting in a total of 12.5 percent 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. Only 14 of the 30 countries received the maximum score indicating that several countries could improve their requirements, particularly in respect of the first question.

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

Each question was given a 2.5 percent weighting in the integrity sub-index, resulting in a total of five percent for these two questions.

Question R5

What is the government's capacity to formulate and implement quality policies and to promote private sector development?

What confidence do citizens have in the rules of society and the institutions that exercise power?

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 country's retirement income system.

Calculation

The World Bank publishes results from the Worldwide Governance Indicators project for 215 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

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 0.3 for China to 14.2 for New Zealand.

Weighting

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

Commentary on the total regulation and governance results

The scores ranged from 12.7 for Mexico to 47.8 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 systems in other countries.

Protection and communication for members

Calculation

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?

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

Objective

These questions were 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 countries 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 countries whereas in other countries any deficit requires rectification within a specified period. Australia, Chile, Denmark, Finland, Ireland, Korea, the Netherlands, Norway, Poland and South Africa 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 percent 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 state of the member's employer.

Commentary

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

Weighting

This requirement represents a key method of protecting the member's accrued benefits and is given a five percent 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 by country. In some cases, there are some restricted arrangements in place to support the member whereas in the UK 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 percent in the integrity sub-index, resulting in a total of five percent 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 countries, except China and India (for some DB plans), require information to be provided when members join the plan.

Weighting

The weighting for this question is five percent in the integrity sub-index.

Question P5

Are plan members required to receive or have access to an annual report about 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 also becomes important for members to receive some information about the investments in which their accumulated benefits are invested.

Commentary

There is considerable variety in the responses, with seven of the 30 countries 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 investments representing more than 1% of plan assets are required to be disclosed. Nearly half of the countries have no requirements relating to the plan's major investments.

Weighting

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

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 individual 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 countries have a requirement concerning annual personal statements with Austria, Chile, Finland, Ireland, Italy, Norway, the Netherlands, Sweden, Switzerland and the UK 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 five percent weighting in the integrity sub-index whilst the second question was given a 2.5 percent weighting in the integrity sub-index, resulting in a total of 7.5 percent 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

Fifteen countries (Argentina, Australia, Austria, Brazil, Colombia, Denmark, Finland, Indonesia, Ireland, the Netherlands, New Zealand, Norway, South Africa, Switzerland and the UK) have a complaints system that is independent from both the provider and the regulator. Canada, Chile, Germany, India, Italy, Poland and the USA also 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 of the better pension systems as it provides all members with access to an independent body, should any disputes arise. It is given a 2.5 percent weighting in the integrity sub-index.

Commentary on the total protection and communication results

The scores ranged from 16.3 in Argentina and 17.3 in France to 36.9 in Ireland and 37.0 in Finland out of a maximum of 40. The low score in Argentina is caused by limited requirements regarding in-house assets and limited protection for accrued benefits and unpaid contributions. The low score for France is caused by very limited requirements to provide information to 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.”¹⁷

This is absolutely 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 of each country’s 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 the pension industry in each country.

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 percent of all assets rising to a maximum score of 5 when these assets represented more than 75 percent of all assets.

Weighting

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

Commentary on the costs results

The scores for these two indicators ranged from 3.7 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 in each country, answers to all but one of the questions were sourced from Mercer consultants in the relevant countries. The exception was Question R5 which used Worldwide Governance Indicators from The World Bank (2016).

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

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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	India	Indonesia	Ireland
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%	3.0	8.8	8.5	9.6	9.6	3.1	1.8	1.1	10.0	5.3	7.4	5.3	0.0	0.0	9.3
A2	What is the net replacement rate for a median-income earner?	25%	10.0	8.5	10.0	9.4	7.1	3.8	5.1	10.0	10.0	8.6	9.9	7.3	5.2	0.0	6.5
A3	What is the net household saving rate in the country?	10%	4.8	4.7	4.9	5.0	3.0	5.5	7.0	3.2	0.5	1.6	7.4	4.9	5.0	7.5	4.3
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%	0.0	7.0	7.0	5.5	10.0	10.0	10.0	10.0	4.0	7.0	10.0	10.0	10.0	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	8.7	0.0	0.0	3.3	5.0	8.3	9.7	10.0	10.0	10.0	10.0	0.0	6.7	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	2.0	6.7	5.5	4.5	7.5	0.0	7.5	6.7	7.5	5.0	10.0	2.5	6.7	10.0
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	6.0	9.0	8.0	10.0	8.0	10.0	10.0	10.0	9.0	9.0	10.0	9.0	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	10.0	0.0	0.0	10.0	10.0	10.0	0.0	0.0	0.0	5.0	10.0	0.0	0.0	10.0
A9	What is the level of home ownership in the country?	5%	6.7	6.5	5.1	7.7	6.7	7.4	9.7	4.1	5.4	6.4	5.4	4.6	9.5	8.9	6.9
A10	What is the proportion of total pension assets invested in growth assets?	5%	4.9	9.3	9.1	7.3	10.0	10.0	6.3	7.2	9.3	10.0	6.3	10.0	3.4	4.0	10.0
A11	Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or are on paid maternity leave?	1%	0.0	5.0	10.0	0.0	10.0	0.0	0.0	10.0	0.0	10.0	7.5	10.0	0.0	10.0	10.0
Adequacy sub-index		40%	42.4	75.3	67.6	67.8	69.9	58.0	54.2	66.4	76.5	70.2	80.4	76.5	39.5	40.1	77.9

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														
			Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Poland	Singapore	South Africa	Sweden	Switzerland	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%	5.0	5.4	1.4	0.0	1.1	8.8	10.0	9.6	3.2	3.8	0.7	6.7	5.9	6.4	4.2
A2	What is the net replacement rate for a median-income earner?	25%	10.0	4.4	5.8	4.7	4.0	10.0	7.5	8.2	6.6	4.2	0.0	7.2	5.7	3.4	6.7
A3	What is the net household saving rate in the country?	10%	3.1	1.0	5.2	1.0	4.1	2.3	0.0	4.2	1.4	8.1	1.0	5.4	5.8	2.8	5.6
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%	7.0	10.0	10.0	10.0	7.0	10.0	4.0	8.0	10.0	10.0	10.0	2.0	10.0	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	5.0	6.7	6.7	6.7	3.3	10.0	10.0	10.0	6.7	0.0	6.7	6.0	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%	6.7	0.0	2.0	0.0	0.0	7.5	0.0	7.5	0.0	7.5	7.5	7.5	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	6.0	8.0	10.0	4.0	10.0	10.0	7.0	10.0	10.0	10.0	10.0	10.0	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%	10.0	10.0	0.0	4.0	5.0	10.0	5.0	0.0	10.0	10.0	10.0	2.5	10.0	10.0	10.0
A9	What is the level of home ownership in the country?	5%	7.4	6.0	4.8	7.6	8.1	6.1	6.1	6.2	7.0	10.0	5.0	7.0	2.6	6.1	6.3
A10	What is the proportion of total pension assets invested in growth assets?	5%	7.9	10.0	3.4	10.0	6.8	10.0	10.0	9.1	9.1	8.1	8.5	10.0	10.0	10.0	10.0
A11	Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or are on paid maternity leave?	1%	0.0	0.0	10.0	0.0	0.0	0.0	5.0	10.0	0.0	0.0	10.0	5.0	10.0	10.0	0.0
Adequacy sub-index		40%	66.2	48.0	46.9	42.3	38.5	78.0	66.2	77.0	58.1	65.2	34.0	67.7	60.2	58.2	57.0

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	India	Indonesia	Ireland	
S1	What proportion of the working age population are members of private pension plans?	20.0%	0.0	9.0	1.4	0.0	3.5	9.8	2.0	3.1	10.0	10.0	8.7	4.9	0.0	0.0	2.3
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	7.4	0.3	1.3	10.0	5.3	0.5	1.3	10.0	5.4	0.7	1.1	0.4	0.2	2.3
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 2035? (This calculation allows for mortality improvement.) What is the projected old-age dependency ratio in 2035? What is the Total Fertility Rate (TFR) averaged over the last seven years?	20.0%	8.4	5.7	3.3	8.4	4.4	5.4	3.5	7.2	6.1	5.1	3.3	4.6	9.9	9.8	6.9
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	6.2	9.6	3.3	5.0	10.0	3.9	0.0	0.0	3.5	3.6	0.0
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%	5.4	5.7	2.0	4.5	5.9	7.0	5.3	7.2	5.9	5.2	2.4	6.4	4.6	7.6	4.3
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%	6.5	7.5	4.3	5.2	3.9	9.0	7.9	6.6	7.4	5.8	3.7	5.3	5.4	8.2	4.8
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	0.0	0.0	4.0	10.0	10.0	8.0	8.0	0.0	0.0	6.0
S8	What is the real economic growth averaged over the last three years and projected for the next three years?	10.0%	3.6	6.3	3.8	0.9	4.7	5.0	10.0	6.7	4.3	3.1	3.7	4.4	10.0	10.0	10.0
Sustainability sub-index		35%	33.1	73.0	19.9	29.2	55.4	69.1	38.2	49.9	79.8	61.3	38.6	40.9	43.8	49.3	43.9

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

Continues next page

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

Question	Question weight	Score for each country															
		Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA	
S1	What proportion of the working age population are members of private pension plans?	20.0%	0.1	2.7	3.4	2.0	6.8	10.0	8.9	8.2	7.2	7.5	1.3	10.0	8.9	4.4	4.9
S2	What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?	15.0%	0.5	3.2	3.2	4.4	1.0	10.0	1.9	2.9	0.6	5.2	5.4	5.7	7.3	5.4	8.7
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 2035? (This calculation allows for mortality improvement.) What is the projected old-age dependency ratio in 2035? What is the Total Fertility Rate (TFR) averaged over the last seven years?	20.0%	3.7	1.4	2.4	7.5	9.1	5.5	5.6	6.2	6.3	2.7	10.0	4.9	3.4	5.7	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%	1.5	0.0	3.8	10.0	5.2	6.7	4.2	1.7	0.0	10.0	0.0	5.7	7.5	1.7	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%	2.2	7.7	7.1	3.7	5.3	5.7	9.0	7.4	1.5	7.2	0.7	8.4	7.7	5.5	6.1
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%	1.2	0.0	8.0	6.9	6.4	5.7	8.0	10.0	6.6	10.0	6.7	7.1	6.9	4.1	3.0
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	4.0	10.0	10.0	0.0	10.0	3.0	9.0	0.0	10.0	8.0	10.0	6.0	10.0	6.0
S8	What is the real economic growth averaged over the last three years and projected for the next three years?	10.0%	3.1	3.2	6.5	10.0	5.5	4.4	6.9	4.4	7.1	5.7	3.6	6.4	4.2	4.9	5.2
Sustainability sub-index		35%	16.4	26.0	46.8	61.2	55.9	73.5	61.5	61.0	43.1	66.2	45.7	71.0	64.7	49.4	57.1

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	India	Indonesia	Ireland
Do private sector pension plans need regulatory approval or supervision to operate?	7.5%	0.0	10.0	8.3	10.0	10.0	10.0	10.0	10.0	10.0	10.0	6.7	10.0	10.0	10.0	10.0
Is a private pension plan required to be a separate legal entity from the employer?																
Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?	10%	0.8	9.2	3.4	9.2	8.7	10.0	4.4	9.2	10.0	9.2	8.2	7.4	7.4	9.2	8.2
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?																
Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy?	12.5%															
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?																
Do the private pension plan's trustees/executives/fiduciaries have to satisfy any personal requirements set by the regulator?	5%	10.0	10.0	5.0	10.0	7.5	7.5	10.0	7.5	10.0	10.0	10.0	7.5	5.0	10.0	6.3
Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognised professional?																
What is the capacity of the government to effectively formulate and implement sound policies?	15%	0.6	8.2	7.9	1.3	8.6	6.3	0.3	1.1	8.9	9.1	6.5	8.1	1.2	0.6	8.0
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?																
For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded?	10%	5.0	10.0	7.5	9.0	9.0	10.0	7.5	5.0	10.0	10.0	6.0	8.0	5.0	7.0	10.0
For defined contribution schemes, are the assets required to fully meet the members' accounts?																
Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?	5%	0.0	10.0	10.0	7.5	8.8	10.0	7.5	7.5	10.0	7.5	5.0	8.8	8.8	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?	5%	0.0	5.0	5.0	0.0	2.5	7.5	2.5	10.0	2.5	10.0	2.5	7.5	2.5	5.0	3.8
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?																
When joining the pension plan, are new members required to receive information about the pension plan?	5%	10.0	10.0	10.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0
Are plan members required to receive or have access to an annual report about the pension plan?	5%	2.5	9.0	8.0	10.0	6.5	0.0	0.0	10.0	0.0	9.0	0.0	5.0	8.0	8.0	10.0
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?																
Are plan members required to receive an annual statement of their current personal benefits from the plan?	7.5%	3.3	6.7	10.0	6.7	6.7	10.0	6.7	6.7	6.7	8.3	3.3	3.3	5.0	6.7	10.0
Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?																
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	0.0	5.0	5.0	10.0	10.0
What percentage of total pension assets is held in various types of pension funds?	10%	7.8	5.7	6.9	5.8	4.6	5.5	6.7	6.0	8.8	7.4	4.1	5.4	9.8	8.5	5.5
What percentage of total pension assets is held by the largest ten pension funds/providers?																
Integrity sub-index	25%	41.2	85.7	76.4	70.0	77.7	79.7	46.0	70.7	81.3	91.0	55.8	74.0	55.1	66.4	77.2

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																
		Italy	Japan	Korea	Malaysia	Mexico	Netherlands	New Zealand	Norway	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA		
Regulation and Governance (R1-R5)	Do private sector pension plans need regulatory approval or supervision to operate?	7.5%	10.0	6.7	8.3	10.0	1.7	10.0	10.0	10.0	6.7	10.0	10.0	8.3	10.0	10.0		
	Is a private pension plan required to be a separate legal entity from the employer?																	
	Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?	10%	9.2	7.6	3.6	7.2	7.6	9.2	9.2	9.2	7.6	7.2	9.2	9.2	8.4	10.0	7.6	
	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?																	
	Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy?	12.5%																
	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?		9.2	4.0	0.0	10.0	0.0	9.2	3.2	10.0	7.2	10.0	9.2	7.2	6.0	8.2	0.0	
	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?																	
	Do the private pension plan's trustees/executives/fiduciaries have to satisfy any personal requirements set by the regulator?	5%	10.0	7.5	0.0	10.0	5.0	10.0	10.0	10.0	7.5	7.5	10.0	7.5	7.5	7.5	5.0	
Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognised professional?																		
What is the capacity of the government to effectively formulate and implement sound policies?	15%	3.8	7.4	4.9	3.6	0.9	8.6	9.5	9.1	5.4	8.4	2.7	9.0	9.2	8.1	7.0		
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?																		
Protection and communication for members (P1-P7)	For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded?	10%	9.0	9.0	10.0	5.0	6.0	10.0	7.0	10.0	10.0	5.0	10.0	8.0	9.0	9.0	8.0	
	For defined contribution schemes, are the assets required to fully meet the members' accounts?																	
	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	0.0	10.0	10.0	7.5	10.0	10.0	10.0	7.5	6.3	10.0	10.0	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?	5%	5.0	2.5	0.0	10.0	0.0	0.0	5.0	5.0	2.5	7.5	2.5	5.0	7.5	10.0	5.0	
	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?																	
	When joining the pension plan, are new members required to receive information about the pension plan?	5%	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
	Are plan members required to receive or have access to an annual report about the pension plan?	5%	8.0	3.8	0.0	10.0	0.0	8.0	9.0	5.3	0.0	8.0	7.0	3.8	8.0	4.5	8.0	
	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?																	
	Are plan members required to receive an annual statement of their current personal benefits from the plan?	7.5%	10.0	3.3	3.3	6.7	6.7	10.0	6.7	10.0	6.7	6.7	6.7	10.0	10.0	6.7	6.7	
	Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?																	
Do plan members have access to a complaints tribunal which is independent from the pension plan?	2.5%	5.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	5.0	5.0	10.0	0.0	10.0	10.0	5.0		
Costs	What percentage of total pension assets is held in various types of pension funds?	10%	6.1	8.6	8.2	10.0	8.0	7.3	6.3	7.3	7.4	10.0	7.6	8.8	5.6	6.1	3.7	
	What percentage of total pension assets is held by the largest ten pension funds/providers?																	
Integrity sub-index		25%	74.3	60.7	47.9	77.6	40.5	87.5	77.8	90.3	67.1	80.7	77.1	80.3	83.3	83.5	60.1	

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

HISTORICAL PERFORMANCE

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Argentina	na	na	na	na	na	na	na	37.7	38.8
Australia	74.0	72.9	75.0	75.7	77.8	79.9	79.6	77.9	77.1
Austria	na	na	na	na	na	52.8	52.2	51.7	53.1
Brazil	na	59.8	58.4	56.7	52.8	52.4	53.2	55.1	54.8
Canada	73.2	69.9	69.1	69.2	67.9	69.1	70.0	66.4	66.8
Chile	59.6	59.9	64.9	63.3	66.4	68.2	69.1	66.4	67.3
China	48.0	40.3	42.5	45.4	47.1	49.0	48.0	45.2	46.5
Colombia	na	na	na	na	na	na	na	na	61.7
Denmark	na	na	na	82.9	80.2	82.4	81.7	80.5	78.9
Finland	na	na	na	na	na	74.3	73.0	72.9	72.3
France	na	54.6	54.4	54.7	53.5	57.5	57.4	56.4	59.6
Germany	48.2	54.0	54.2	55.3	58.5	62.2	62.0	59.0	63.5
India	na	na	43.4	42.4	43.3	43.5	40.3	43.4	44.9
Indonesia	na	na	na	na	42.0	45.3	48.2	48.3	49.9
Ireland	na	na	na	na	na	62.2	63.1	62.0	65.8
Italy	na	na	na	na	na	49.6	50.9	49.5	50.8
Japan	41.5	42.9	43.9	44.4	44.4	44.4	44.1	43.2	43.5
Korea	na	na	na	44.7	43.8	43.6	43.8	46.0	47.1
Malaysia	na	na	na	na	na	na	na	55.7	57.7
Mexico	na	na	na	na	50.1	49.4	52.1	44.3	45.1
Netherlands	76.1	78.3	77.9	78.9	78.3	79.2	80.5	80.1	78.8
New Zealand	na	na	na	na	na	na	na	na	67.4
Norway	na	na	na	na	na	na	na	na	74.7
Poland	na	na	58.6	58.2	57.9	56.4	56.2	54.4	55.1
Singapore	57.0	59.6	56.7	54.8	66.5	65.9	64.7	67.0	69.4
South Africa	na	na	na	na	na	54.0	53.4	48.6	48.9
Sweden	73.5	74.5	73.4	73.4	72.6	73.4	74.2	71.4	72.0
Switzerland	na	75.3	72.7	73.3	73.9	73.9	74.2	68.6	67.6
UK	63.9	63.7	66.0	64.8	65.4	67.6	65.0	60.1	61.4
USA	59.8	57.3	58.1	59.0	58.2	57.9	56.3	56.4	57.8
Number of countries	11	14	16	18	20	25	25	27	30

Melbourne Mercer Global Pension Index

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