AUSTRALIAN CENTRE FOR FINANCIAL STUDIES

MERCER

MELBOURNE MERCER GLOBAL PENSION INDEX

INCLUDING
TRUST AND TRANSPARENCY IN PENSIONS

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CONTENTS

MESSAGE FROM THE MINISTER

The Victorian Government is proud to once again support the Melbourne Mercer Global Pension Index, an outstanding example of government, industry and academia working together on research of global significance.

Now in its sixth year, the Index is tangible evidence of Melbourne's global role within pensions fund investment.

An internationally respected research document, the Index has grown from 11 countries in 2009 to 25 in 2014. It is synonymous with the work of Victoria's financial services research capabilities which include the Australian Centre for Financial Studies, the CSIRO-Monash Superannuation Research Cluster, and the Melbourne APEC Finance Centre.

Home to the major industry private pension funds, asset consultants and leading commercial funds, Melbourne is headquarters to six of Australia's top twelve pension funds, as well as the A$100 billion Future Fund.

Melbourne's role as the Asia Pacific hub for pension management will only continue to grow over the next two decades with Australia's pool of assets forecasted to increase from A$1.9 trillion today to A$6 trillion by 2030.

This growth will coincide with an increased opportunity for international investment managers as the local markets struggle to absorb the ever increasing pool of assets. In fact it is expected that by 2030 over A$1 trillion will be allocated to overseas asset classes.

Already we have seen internationally recognised brands call Melbourne home including Franklin Templeton, Martin Currie, Legg Mason Asset Management, Vanguard, and Kuwait Finance House. In fact our report partners, Mercer, have their third largest global office located in Melbourne.

Key to our future success is the continued hard work by the over 110,000 skilled professionals now working within the financial services sector in Victoria, work that is epitomised by the quality of the 2014 Index.

I commend the Australian Centre for Financial Studies and Mercer on their excellent work in producing the 2014 Melbourne Mercer Global Pension Index.

THE HON LOUISE ASHER MP
Minister for Innovation
Minister for Tourism and Major Events
Minister for Employment and Trade

LETTER FROM ACFS

It is with great pleasure that we publish this sixth edition of the Melbourne Mercer Global Pension Index (the Index). Since its inception in 2009 the Index has become an important reference point in the debate about the adequacy, sustainability and integrity of retirement systems around the world.

As the Index has developed over time the number of countries has increased to 25 in 2014. While some countries have well-established retirement systems that have stood the test of time, others are just developing, especially those within the Asian region. Regardless, as nations and policy makers struggle with the competing needs of an ageing population and achieving an appropriate fiscal balance, our hope is that this report will provide an opportunity for debate and discussion about possible alternative strategies.

In producing the report the Australian Centre for Financial Studies (ACFS) is delighted once again to partner with Mercer. This collaboration between Mercer, a global leader in pension funds management and consulting, and ACFS, an independent not-for-profit research institute, is only possible through funding provided by the Victorian Government.

ACFS specialises in leading edge finance and investment research, aiming to boost the global credentials of Australia's finance industry, bridge the gap between research and industry, and support Australia as an international centre for finance practice, research and education. ACFS draws on expertise from academia, industry and government to facilitate industry-relevant and rigorous research and consulting, thought leadership and independent commentary.

As part of its role in the project, ACFS convenes an expert reference group to assist in the development of the Index and ensure that it represents an independent and unbiased view. Many thanks to the members of the reference group:

- Syd Bone, Chair, Deputy Chair of Australian Centre for Financial Studies and CEO of CP2;
- Professor Keith Ambachtsheer, Director, Rotman International Centre for Pension Management, Rotman School of Management, University of Toronto
- Professor Hazel Bateman, Director, Centre for Pensions and Superannuation, Australian Graduate School of Management, University of New South Wales
- Professor Gordon Clark, Oxford University, and Sir Louis Matheson Visiting Professor, Faculty of Business and Economics, Monash University
- Professor Kevin Davis, University of Melbourne and Research Director ACFS
- Dr Vince FitzGerald, Chairman, ACIL Allen Consulting
- Ian Silk, Chief Executive, AustralianSuper
- Professor Susan Thorp, Faculty of Business, University of Technology, Sydney

Our thanks go to author Dr David Knox and his team at Mercer for their excellent work once again. We are especially grateful to the in-country pension experts at Mercer offices around the world who have assisted with the collection and interpretation of data.

The launch and dissemination of the Index this year has been assisted both in Australia and overseas by many bodies including the Association of Superannuation Funds of Australia. Our thanks go to them also.

Professor Deborah Ralston
Executive 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. Rising life expectancies, increased government debt in many countries, uncertain economic conditions and a global shift to defined contribution (DC) plans mean that a new landscape is developing.

With increased community awareness and growing concern about the future of our retirement income systems it is important that we learn together to understand what best practice may look like, both now and in the years to come. This sixth edition of the Melbourne Mercer Global Pension Index presents such research and compares retirement income systems in 25 countries which encompass a diversity of pension policies and practices.

Many of the challenges relating to ageing populations are similar, 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, the level of funding for retirement, encouraging people to work longer and some benefit design issues that reduce leakage of benefits before retirement. It is pleasing to note that since our work began in 2009, the sustainability of several systems has improved in two key areas:

- Some governments have increased pension ages over the longer term.

- The labour force participation rate of 55-64 year olds in most countries has steadily increased.

Both these trends are important and need to be supported around the world.

The primary objective of this research is to benchmark each country's retirement income system using more than 50 questions. An important secondary purpose is to highlight the shortcoming 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/or a greater trust in the pension system.

In last year's report we discussed the largely unresolved issue of developing robust post-retirement solutions in a DC world. This year we tackle the important topic of trust and transparency in pensions. Our conclusion is that the pension industry must develop efficient methods to be transparent in meaningful and relevant ways to all stakeholders.

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, Professor Deborah Ralston and her team at 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 provides new insights into the provision of financial security in retirement for our older citizens.

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 and economic effects of ageing populations. Yet, a comparison of the diverse retirement income systems around the world is not straight forward. As the OECD (2013) 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]

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1 OECD (2013), p120.

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. There is no perfect system that can be applied universally around the world. However there are certain features and characteristics of retirement income systems that 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 confidence and trust within the community.

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 50 questions. The following diagram highlights some of the topics covered in each sub-index.

Calculating the Melbourne Mercer Global Pension Index

▶ Benefits ▶ Savings ▶ Tax support ▶ Benefit design ▶ Growth assets	▶ Coverage ▶ Total assets ▶ Contributions ▶ Demography ▶ Government debt	▶ Regulation ▶ Governance ▶ Protection ▶ Communication ▶ Costs	indicators including
ADEQUACY	SUSTAINABILITY	INTEGRITY	sub-index
40%	35%	25%	

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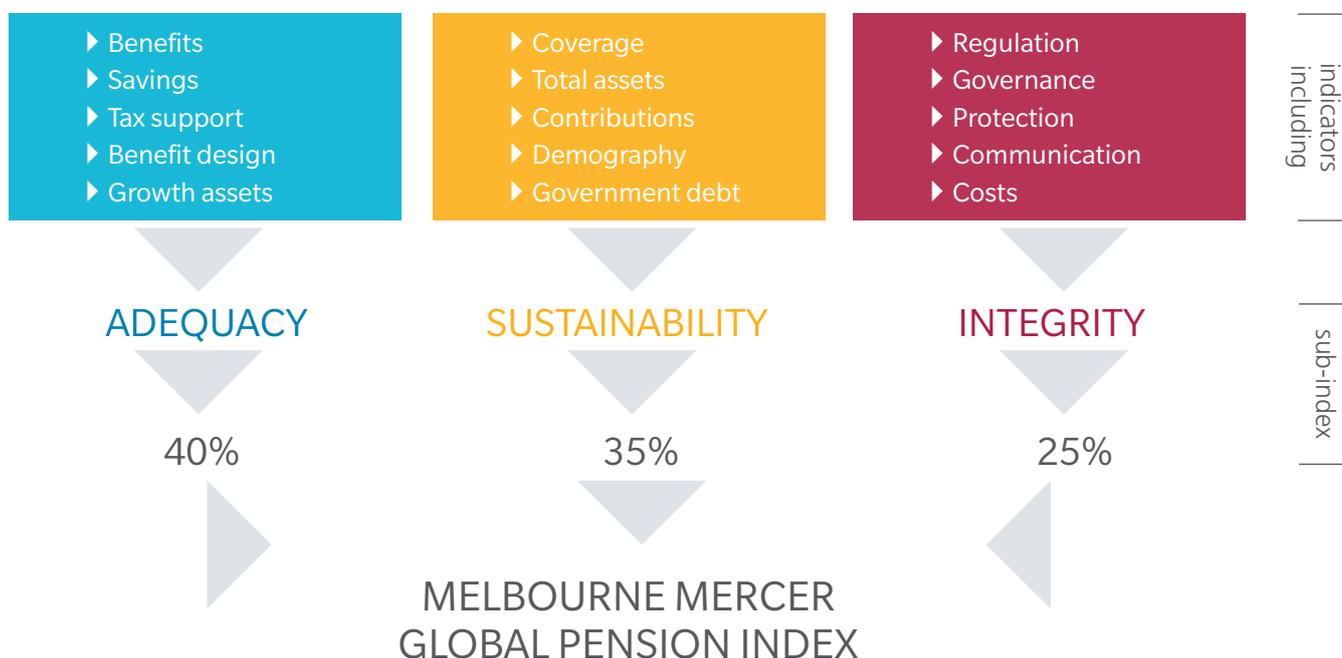
The overall index value for each country's system represents the weighted average of the three sub-indices. The weightings used are 40 percent for the adequacy sub-index, 35 percent for the sustainability sub-index and 25 percent for the integrity sub-index. The different weightings are used to reflect the primary importance of the adequacy sub-index which represents the benefits that are currently being provided together with some important benefit design features. The sustainability sub-index has a focus on the future and measures various indicators which will influence the likelihood that the

current system will be able to provide these benefits into the future. 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 25 countries has confirmed that there is great diversity between the systems around the world with scores ranging from 43.5 for India to 82.4 for Denmark.

The following table summarises the results.

Grade	Index Value	Countries	Description
A	>80	Denmark	A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.
B+	75–80	Australia Netherlands	A system that has a sound structure, with many good features, but has some areas for improvement that differentiates it from an A-grade system.
B	65–75	Finland Switzerland Sweden Canada Chile UK Singapore	
C+	60–65	Germany Ireland	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	USA France Poland South Africa Austria Brazil	
D	35–50	Italy Mexico China Indonesia Japan Korea (South) India	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.

We believe that none of the countries in this study 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, such as in China, India, Indonesia and Korea.

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
Australia	79.9	81.2	73.0	87.8
Austria	52.8	67.5	18.9	76.6
Brazil	52.4	61.8	26.2	74.2
Canada	69.1	75.0	58.6	74.3
Chile	68.2	57.3	68.7	85.0
China	49.0	62.5	33.0	49.9
Denmark	82.4	77.5	86.5	84.5
Finland	74.3	72.2	64.7	91.1
France	57.5	76.4	37.7	54.9
Germany	62.2	75.8	37.6	75.0
India	43.5	37.1	40.6	57.7
Indonesia	45.3	37.5	37.8	68.3
Ireland	62.2	77.6	36.0	74.1
Italy	49.6	68.1	13.4	70.7
Japan	44.4	48.0	28.5	60.9
Korea (South)	43.6	42.6	42.5	46.7
Mexico	49.4	49.9	53.1	43.5
Netherlands	79.2	75.3	76.3	89.4
Poland	56.4	61.7	41.4	68.9
Singapore	65.9	56.4	68.5	77.4
South Africa	54.0	48.3	44.6	76.3
Sweden	73.4	67.2	74.7	81.6
Switzerland	73.9	71.9	69.7	83.1
UK	67.6	69.8	52.4	85.4
USA	57.9	55.2	58.5	61.2
Average	**60.6**	**63.0**	**49.7**	**71.9**

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. 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 the areas for future reforms.

Country	Overall Index Grade	Sub-Index Grades		
		Adequacy	Sustainability	Integrity
Australia	B+	A	B	A
Austria	C	B	E	B+
Brazil	C	C+	E	B
Canada	B	B+	C	B
Chile	B	C	B	A
China	D	C+	E	D
Denmark	A	B+	A	A
Finland	B	B	C+	A
France	C	B+	D	C
Germany	C+	B+	D	B+
India	D	D	D	C
Indonesia	D	D	D	B
Ireland	C+	B+	D	B
Italy	D	B	E	B
Japan	D	D	E	C+
Korea (South)	D	D	D	D
Mexico	D	D	C	D
Netherlands	B+	B+	B+	A
Poland	C	C+	D	B
Singapore	B	C	B	B+
South Africa	C	D	D	B+
Sweden	B	B	B	A
Switzerland	B	B	B	A
UK	B	B	C	A
USA	C	C	C	C+

Chapter 5 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 (2012a) concludes: "there is room for improvement in all countries' retirement-income provision."[2] The challenges that are common to many countries include the need to:

- 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 benefits[3]

- promote higher labour force participation at older ages, which will increase the savings available for retirement and also 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 rebalance 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

- 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."[4] 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.

Karam et al (2011) of the IMF also noted that "The pension reform with the most positive long-term economic effects is one that extends people's working years."[5]

It is noteworthy that the average labour force participation rate for those aged 55-64 in the 16 countries from the 2011 report has, on average, increased by more than four percent during the last three years. Although this result is not uniform across all countries, it is an excellent outcome. Should this trend continue, it will improve the sustainability of many pension systems.

It is also pleasing to note the average scores are gradually increasing over time suggesting that pension reform around the world is having a positive effect. For example, the average score for the 14 countries in 2010 was 61.7 compared to an average of 64.3 for the same countries in 2014.

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2   OECD (2012a), p13.

3   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 age to the ongoing increases in life expectancy.

4   Jackson et al (2013), page V.

5   Karam et al (2011), p15.

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. This situation is improving and the OECD in particular has made significant progress in recent years. Nevertheless it must be recognised that reliable data in respect of some key indicators remains a significant issue. For this reason, this report uses a wide variety of data sources drawing on publicly available data, whenever possible.

These challenges of data and benchmarking should not, however, prevent the comparison of retirement income systems. This topic, within the context of our ageing populations and other long term financial pressures, is too important to be ignored. 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 sixth edition of the Index compares the retirement income systems of 25 countries, highlighting both the considerable diversity and the positive features that are 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 5, 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 of the countries 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, Holzmann and Hinz (2005) of the World Bank have extended this three-pillar system to the following five-pillar approach:

Pillar 0: A basic pension from public finances that may be universal or means-tested

Pillar 1: A mandated public pension plan that is publicly managed with contributions and, in some cases, financial reserves

Pillar 2: Mandated and fully funded occupational or personal pension plans with financial assets

Pillar 3: Voluntary and fully funded occupational or personal pension plans with financial assets

Pillar 4: A voluntary system outside the pension system with access to a range of financial and non-financial assets and support

The multi-pillar approach

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

Benefits of several pillars include risk diversification and efficiency

In effect, they split the original first pillar into the new Pillar 0 and Pillar 1, and also divided the original third pillar by adding a new Pillar 4 which includes personal savings, home ownership and other assets held outside the pension system. 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 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 a distraction from focusing on adequacy for the majority of workers.

Critical to the delivering of adequate benefits are the design features of the private pension system (or Pillars 2 and 3). 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 retirement benefits.

- 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 benefits 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 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 benefits that may be required and the taxation rules 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.

- Are contributions to a funded pension scheme required to be paid if a worker receives income support (or income maintenance) when they are temporarily out of the workforce? 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, Pillar 4 assets can play an important role in providing financial security in retirement. It is also recognised that Pillar 4 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 for the increasing number of members 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 the 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. 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.

Integrity

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

This sub-index therefore considers the role of regulation and governance, the protection provided to participants from a range of risks and the level of communication provided to members. In each case, we consider the requirements set out in the relevant legislation.

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

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 are 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.

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.[6]

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

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6   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 2013 TO 2014

The index has been expanded in 2014 to include five new countries; Austria, Finland, Ireland, Italy and South Africa. These additions continue the theme of considering a variety of retirement income systems from countries with different economic and political backgrounds. This highlights an important characteristic of the index; to enable comparisons of different systems around the world with a wide range of design features and norms. Although four of the new countries are from Europe, these systems generate quite different scores from each other, particularly when the sustainability sub-index is considered.

We have also added two new questions into the adequacy sub-index to provide greater depth.

The first new question asked about the indexation of the minimum State pension, focusing on both the regularity of any indexation and the index used. A primary objective of the State pension, as outlined in the previous chapter, is to provide a minimum level of protection and thereby alleviate poverty amongst the aged. Regular indexation of this pension is therefore an important feature to ensure that the poor are not adversely affected by price rises.

Indexation to prices is used by 15 of the 25 countries and therefore represents the most common approach. Four countries link the indexation to the movement in average wages while four countries use an indexation rate that is not required to reflect price inflation. In the other two countries, there is no State pension or support for the poor aged through other means.

The second new question related to whether contributions to pension schemes are required when the individual continues to receive income through a temporary absence from the workforce. Examples may include workers compensation, sickness, disability, parental leave or unemployment.

Not surprisingly the actual experience is very mixed. In nine countries, contributions are required to continue although they may cease after a certain period. On the other hand, 12 of the 25 countries have no provision for any contributions to be made or benefit accrual to continue. The remaining four countries require contributions to be made under some circumstances (e.g. sickness) but not in other cases.

The best systems will require contributions or benefit accrual to continue during periods when the individual receives income support so that the individual's retirement benefit is not adversely affected during this period out of the workforce. This feature will improve the adequacy of retirement benefits received by a higher proportion of the working population.

Another important change has been in some of the source data used. The adequacy sub-index relies, in part, on OECD data provided in respect of the minimum pension and the net replacement rates. These rates are regularly updated in the Pensions at a Glance publication.

The countries with major changes in their minimum pension (expressed as a percentage of average worker earnings) have been Australia (up 4.9%), France (up 2.3%), Poland (down 2.3%) and Switzerland (down 2.5%).

The calculated net replacement rates allow for a comprehensive set of assumptions including taxation and social security contributions, as well as pension contribution rates, benefit accrual rates, retirement ages and annuity rates. As systems change, it is inevitable that these net replacement rates will also change over time. Since last year, the countries with the largest movements in their net replacement rates for the median-income earner have been Australia (up 6.4%), Chile (down 3.8%), India (down 6.1%), Singapore (down 7.7%) and Switzerland (up 10.2%).

A comparison from 2013 to 2014

The following table compares the results for the 20 countries which were covered in both 2013 and 2014.
Comments in respect of each country are made in Chapter 5.

Country	Total		Adequacy		Sustainability		Integrity	
	2013	2014	2013	2014	2013	2014	2013	2014
Australia	77.8	79.9	75.6	81.2	73.0	73.0	88.1	87.8
Brazil	52.8	52.4	63.3	61.8	26.0	26.2	73.6	74.2
Canada	67.9	69.1	72.4	75.0	57.9	58.6	74.5	74.3
Chile	66.4	68.2	58.6	57.3	65.6	68.7	79.9	85.0
China	47.1	49.0	61.1	62.5	28.9	33.0	50.0	49.9
Denmark	80.2	82.4	75.2	77.5	86.1	86.5	80.0	84.5
France	53.5	57.5	71.7	76.4	31.7	37.7	55.1	54.9
Germany	58.5	62.2	69.7	75.8	36.8	37.6	71.1	75.0
India	43.3	43.5	41.2	37.1	40.8	40.6	50.3	57.7
Indonesia	42.0	45.3	29.8	37.5	37.7	37.8	67.3	68.3
Japan	44.4	44.4	47.9	48.0	28.9	28.5	60.5	60.9
Korea	43.8	43.6	43.7	42.6	41.0	42.5	47.9	46.7
Mexico	50.1	49.4	51.9	49.9	50.8	53.1	46.0	43.5
Netherlands	78.3	79.2	76.6	75.3	74.1	76.3	87.0	89.4
Poland	57.9	56.4	64.4	61.7	42.6	41.4	68.9	68.9
Singapore	66.5	65.9	59.0	56.4	67.5	68.5	77.2	77.4
Sweden	72.6	73.4	65.2	67.2	74.5	74.7	81.5	81.6
Switzerland	73.9	73.9	72.6	71.9	69.0	69.7	82.9	83.1
UK	65.4	67.6	68.2	69.8	48.0	52.4	85.4	85.4
US	58.2	57.9	56.6	55.2	57.8	58.5	61.2	61.2
Average	**60.0**	**61.1**	**61.2**	**62.0**	**51.9**	**53.3**	**69.4**	**70.5**

The results show that the overall index has improved by more than two points for several countries for a variety of reasons as outlined below:

- The improved Australian score was primarily caused by the increase in the legislated minimum contribution rate from 9% to 12% of earnings over the longer term and the higher minimum pension.

- The improved Danish score was caused by several minor factors, including a higher savings rate.

- The improved French score was caused by an increase in the minimum pension, a revision to the taxation result and higher coverage through inclusion of voluntary schemes.

- The improved German score was primarily caused by a reassessment regarding the provision of annuities and the improved benefits provided on resignation.

- The improved Indonesian score was primarily caused by the recognition of a minimum age to access benefits.

- The improved British score was caused by several factors including higher contributions through the continued introduction of auto enrolment.

CHAPTER 4
THE IMPORTANCE OF TRANSPARENCY AND TRUST IN PENSIONS

The benefit provided by a pension plan represents the most important financial asset for most of its members but many plan members have very little understanding of the value of their benefits and the risks that may be involved. Yet the pension system in many countries is gradually transitioning from defined benefit arrangements (where the employer-sponsor bears most of the risks) to defined contribution (DC) arrangements (where the employee bears most of the risks). Increasingly plan members are making decisions relating to contribution levels, investment selection, and even the form of their retirement benefit. Within this environment, it is essential that members have greater clarity and understanding of their pension arrangements so they can make better decisions and have confidence that the plans managing their retirement savings will deliver on their expectations.

One of the ten design principles published by the OECD for the good design of DC pension plans is to "ensure effective communication and address financial illiteracy and lack of awareness."[7] This principle suggests regular communication, clear benefit projections, ready access to comparative information and the use of language that is readily understood. This approach is consistent with the OECD's earlier paper on pension plan governance[8] which noted the plan's governing body should provide relevant information to all parties (including members) in a clear, accurate and timely fashion.

With the ageing of the population occurring in most countries, improved understanding of the pension system is critical as governments decrease their financial support for the aged and individuals bear greater financial responsibilities for their retirement wellbeing in the future. This need for understanding will require greater transparency from all pension plans so that members can gain increased knowledge and appreciation of their pension plan's operations.

"With the ageing of the population occurring in most countries, improved understanding of the pension system is critical."

The need for information

The provision of relevant and timely information from pension plans to members is necessary to improving members' understanding of the pension system. In the Melbourne Mercer Global Pension Index, several indicators within the integrity sub-index have been used to assess the required provision of information to pension plan members. The results are as follows:

- Information for new plan members – In 24 of the 25 countries, new members are required to receive information about their pension plan upon joining the plan. Members should receive clear and relevant information when they join a plan and begin to make personal contributions or become entitled to benefits from their pension plan.

- Annual personal statements – In 23 of the 25 countries, members are required to receive an annual personal statement setting out their current benefits. This annual communication should represent a minimum requirement as it is important for all members to receive regular information about the size of their accrued benefit and its change during the past year.

- Benefit projections – However the accrued benefits are only part of the picture as contributions will normally continue and the level of accrued benefits will therefore continue to increase. Yet only 9 of the 25 countries require projections of future retirement benefits to be part of the member's annual statement. Although there is a valid debate around the assumptions to be used and how the information is presented, the absence of projected benefits in so many countries means these members are provided with almost no information about the likely size of their future retirement benefits. It is also important that these projections express the value of the projected benefits as a future retirement income, expressed in today's value. The alternative of providing a projected accumulated benefit is less useful as most members are unable to assess how much regular income will be provided from a lump sum benefit.

- Annual reports – Members also need to be informed about various aspects of the pension plan and its recent performance. Yet only 12 of the 25 countries require plan members to receive an annual report from their pension plan. This report should cover a

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7   OECD (2012b).
8   OECD (2009c).

range of topics including how the plan is governed, key decisions made by the plan's trustees or fiduciaries, investments, membership, significant events, the past performance of the plan (adjusted for risk and fees), the impact of any recent legislative changes and a summary of the plan's financial position. The development of integrated annual reports, as proposed by the International Integrated Information Council, represents an important step in the production of meaningful reports. Annual reports can easily become lengthy documents which are often ignored by members. It is therefore important that these reports should be presented in an easy-to-understand format rather than be required to follow detailed regulations. The use of technology means that such an outcome is more feasible than previously. Indeed, some of this information should be updated regularly on the plan's website and not wait for the next annual report.

- Disclosures on investments – In addition to the annual report, information about the assets of the pension plan should be available to all members as these assets support the future benefit payments. This is particularly relevant for DC members as their benefits will depend directly on the investment return generated by these assets. The format of the information provided can be debated but as a minimum we suggest that the annual report (or website updates) should show the distribution of the investments across the major asset classes as well as the plan's major investments. It is therefore worth noting that only 12 of the 25 countries require the annual report to show allocation across the major asset classes, including 4 countries requiring the major investments to be shown. From these results, it seems that the disclosure requirements regarding investments held by pension plans are not as strong around the world as may be expected. The timing and amount of detail in investment-related disclosures represent a valid topic for discussion. For example, the publication of every single asset held by the pension plan represents too much information and may make it incomprehensible for most members. Where members have investment choice within a DC system, information regarding the available options should also be presented so that members can make informed choices.

"It seems that the disclosure requirements regarding investments held by pension plans are not as strong around the world as may be expected."

As indicated above, the provision of relevant information to plan members is critical in promoting transparency and developing trust amongst members. However it is also important to distinguish between certain types of information provided to members – they are not all the same. For example, some information provided in the plan's annual report or the member's personal statement is factual, such as the plan's assets, the past investment performance, the member's current balance and past contributions. On the other hand, benefit projections are not factual – they are projections or estimates of the future. As suggested above, they can be very valuable to the member but it must be noted they rely on many assumptions about the future and members should not take them as accurate predictions. There is considerable uncertainty and a range of possible outcomes exist. This difficulty is not a reason to avoid them. One approach is to link the development of benefit projections with the availability of web-based calculators, where members can vary the inputs. We need to learn from examples around the world, such as the Chilean case study discussed by the OECD[9], to develop the best approach in expressing these uncertainties and the associated risks.

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9   Antolin P and Fuentes O (2012).

Comparative information

The OECD good design principle mentioned earlier also suggests that plan members should have "free and ready access to comparative information about costs and performance of different providers". Traditionally many employees have had no choice in their pension provider as the pension was provided by their employer. With many countries now moving towards a market-based DC system, the provision of comparative information is becoming increasingly important. Whilst it would be desirable to have a standardized format showing items such as fees and investment returns (including some allowance for risk), it must be recognized that there is considerable debate about the most appropriate way to present this information, particularly to members who have limited financial understanding.

Nevertheless transparency of costs and performance is important to develop greater confidence in the industry and to provide individuals with information so they can make informed decisions. As the UK Minister for Pensions said earlier this year: "Transparency of costs and charges is fundamental for good scheme governance and to enabling comparisons between schemes."[10]

The Australian Assistant Treasurer agreed with the importance of transparency and commented that "Transparency is critical to the efficiency and operation of a market-based savings system. It improves understanding, awareness and engagement at various levels."[11]

It is also worth noting that different levels of transparency may be appropriate for different stakeholders which can be reflected in the form of communication used. For most plan members, simplicity is the key. The development of comparative plan information and performance represents another area where lessons can be learned from developments and trials around the world.

"Transparency of costs and performance is important to develop greater confidence in the industry and to provide individuals with information so they can make informed decisions."

An independent perspective

A related area of pension system operations that can encourage transparency and confidence among members is the provision of an independent complaints system. It is inevitable that, from time to time, decisions will be made by pension plan fiduciaries, trustees or management that adversely affect the financial position of some members. This does not imply these decisions were wrong or improper as they may be caused by a range of events or influences outside the control of the plan. Nevertheless members can be affected and need an opportunity for the decision to be reviewed by an independent third party. Relying solely on an internal review by the plan's management does not generate the trust or confidence within the plan membership. It is interesting to note that only 16 of the 25 countries have a process whereby members have access to a complaints tribunal which is independent from the pension plan. Such a process need not be costly or litigious; however it does need to be freely available to members as this increases community confidence in the overall pension system.

An additional element of members' trust in the pension system is the question of what happens when there is a failure. Unfortunately failures will occur. Some may be relatively minor, such as an error in a member's statement, whilst others may be very significant events, including a major fraud, theft, mismanagement of funds or inappropriate financial advice. In some of these latter examples, the value of members' benefits could be diminished or, in the extreme case, lost altogether. There is no doubt that the community's confidence in the pension system would be threatened by such events.

It is therefore important to consider whether there is any protection available to members under such a scenario. Only 7 of the 25 countries provide some protection or reimbursement in respect of accrued benefits should an act of fraud or mismanagement occur within the pension plan. However even within these countries there is considerable diversity. In some cases there is a fraud compensation scheme whereas in other cases compensation may be dependent on legal action being

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10   Webb S (2014).
11   Sinodinis A (2013).

taken. It also depends on whether the pension plan is a legal entity in its own right or whether the benefits are provided through a financial institution, such as an insurance company. Whatever the actual event, it is critical that plan members know they will receive reimbursement should their accrued pension benefits be diminished through an illegal activity. Such an outcome is likely to require the intervention of a separate government agency or the regulator but it should also improve the members' trust in the overall pension system.

> "An additional element of members' trust in the pension system is the question of what happens when there is a failure."

The role of the regulator

The involvement of a strong regulator in the private pension system is also a pre-requisite for ongoing community confidence. It is encouraging to note that of the 25 countries in the index, only one country (Korea) does not require a written report from private pension plans to the pension regulator each year. The actual requirements of pension regulators around the world vary considerably and a few of these are addressed by some of the indicators within the integrity sub-index.

It is also important that the regulator is transparent and publishes data in respect of the pension industry so that all the relevant stakeholders can be appropriately informed. Here there is some room for improvement as no data is provided to the public in respect of 4 of the 24 countries where regulators receive these returns. Pension regulators have a critical role to play in not only regulating individual pension plans but also ensuring that the government, policymakers and the media receive relevant information about the state of the pension industry. Such information includes the pension coverage of the workforce, the levels of contributions paid and benefits received, the value of assets, the asset allocation across the industry, as well as some commentary about matters relating to costs, investment performance and governance. However regulators must also recognize that there will be key differences between individual pension plans so that some comparisons are not straightforward.

A summary of the global position

The following table summarises the desirable features of a pension system that encourage transparency and trust and the number of countries within the Melbourne Mercer Global Pension Index that require each feature to be met. It is clear there is scope for considerable improvement around the world.

Desirable feature	Number of countries that have this feature (max 25)
Information required on joining the pension plan	24
An annual personal statement is required	23
This personal statement includes a benefit projection or estimate	9
An annual report must be provided to members	12
The annual report must show asset allocation	12
The annual report must show major investments	4
Members have access to an independent review (or complaints) process	16
Reimbursement (or compensation) is available under certain circumstances	7
Relevant data collected by the regulator is publicly available	20

The individual member's perspective

The fundamental objective of all pension systems is to provide adequate and sustainable retirement benefits to plan members and their dependants. However this is a long term objective over many decades and events can and will occur which threaten or reduce the confidence of the member in the system. These events could include

- A crisis or downturn in financial markets which reduces the value of the member's accrued retirement benefit
- Poor financial advice which leads to investment losses
- Fraud or mismanagement within the pension plan
- Government decisions which adversely affect the member's benefits or expectations
- A conversion from defined benefit to defined contribution which shifts the future risks from the employer-sponsor to the member

In each of these scenarios the member may lose confidence in the overall pension system or their particular pension plan. Such an outcome could lead to reduced voluntary contributions by the member and/or investment switches to more conservative options, both of which could result in reduced retirement benefits over the longer term. These potentially negative responses from members cannot be removed but they can be mitigated by clear and regular communications from the pension plan over many years. Such information should develop a level of trust and understanding in members as well as assisting them in their decisions relating to their retirement income.

This information base can also lead to a stronger emotional connection as members realistically consider their future financial needs. Several tools can be provided by pension plans to help members using a range of technology as well as lessons from psychology and behavioural finance.

Conclusions

During the last decade the benefits provided by pension plans have become more important to many households around the world. This trend will continue as life expectancy continues to increase and many governments reduce the per capita expenditure on their aged population. This development also means that communication to members has never been more important or come under more scrutiny from a range of stakeholders including members, regulators, employers, consumer groups, politicians and the media.

> "The pension industry must develop efficient methods to be transparent in meaningful and relevant ways to all stakeholders."

Each stakeholder may have a different focus and therefore wish to concentrate on different elements of the pension industry or individual plans. That represents a significant challenge for an industry that has often been a little opaque. There is now no alternative. The pension industry must develop efficient methods to be transparent in meaningful and relevant ways to all stakeholders. In particular, we recommend that the pension system must:

- Provide accurate, relevant and timely information to all members in a cost-efficient manner
- Ensure there is an independent review process available to members
- Provide some protection to members in the case of a failure due to fraud

Such features will encourage greater trust and confidence in a system designed to provide retirement benefits over many decades into the future.

CHAPTER 5
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 2013 to 2014.

Global Grades

Grade	Index Value	Countries	Description
A	>80	⬛ (dark red)	A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.
B+	75–80	⬛ (dark green)	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	⬛ (light green)	
C+	60–65	⬛ (dark blue)	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	⬛ (light blue)	
D	35–50	⬛ (orange)	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.

Australia

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

- 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

The Australian index value increased from 77.8 in 2013 to 79.9 in 2014 primarily due to the increase in the legislated minimum contribution rate from 9% to 12% and the higher minimum pension.

Overall Index – Australia
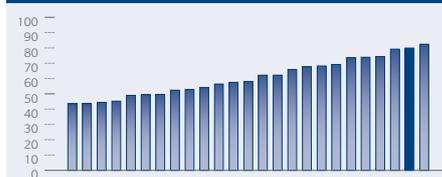
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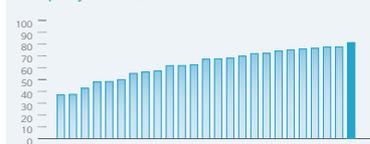
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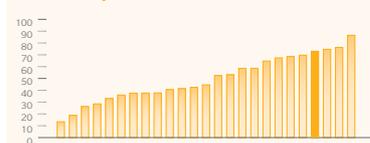
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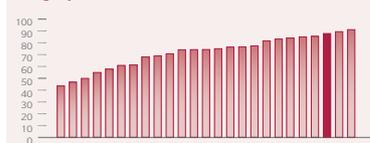
Austria

Austria's retirement income system consists of a 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

- introducing arrangements to protect the pension interests of both parties in a divorce
- enabling individuals to retire gradually whilst receiving a part pension
- increasing the labour force participation rate at older ages

The Austrian index value in 2014 was 52.8.

Overall Index – Austria
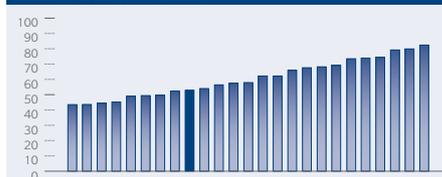
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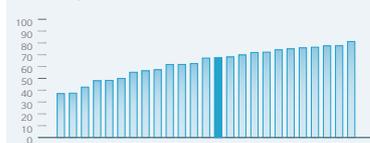
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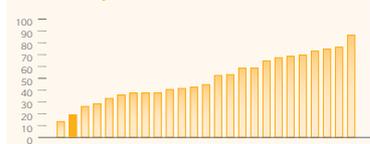
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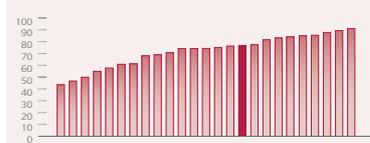
Brazil

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

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

- introducing a minimum access age so that the benefits are preserved for retirement purposes
- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- increasing participation of employees in occupational pension schemes through automatic membership or enrolment
- 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 52.8 in 2013 to 52.4 in 2014 due to a number of small changes.

Overall Index – Brazil
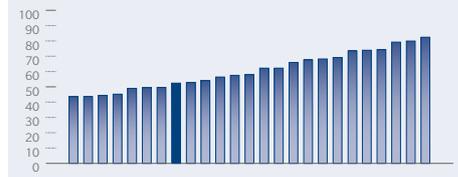
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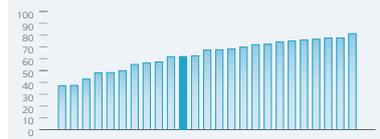
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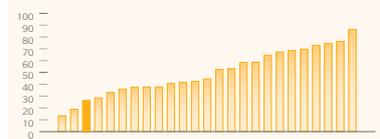
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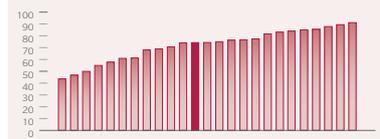
Canada

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

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

- increasing the coverage of employees in occupational pension schemes through the development of an attractive product for those without an employer-sponsored scheme
- increasing the level of household savings
- introducing a national minimum age for accessing pension benefits
- increasing the labour force participation rate at older ages

The Canadian index value increased from 67.9 in 2013 to 69.1 in 2014 primarily due to improved scores in the adequacy sub-index.

Overall Index – Canada
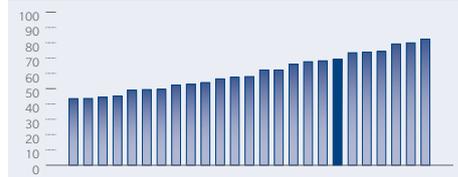
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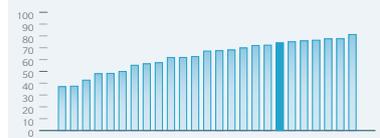
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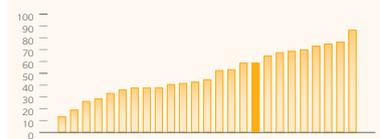
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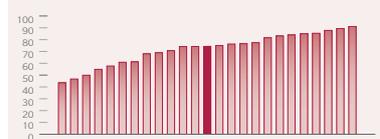
Chile

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

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

- raising the level of mandatory contributions to increase the net replacement rate
- 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 from 66.4 in 2013 to 68.2 in 2014 primarily due to an upward revision in the level of mandatory contributions and improvement in scores in the integrity sub-index.

Overall Index – Chile
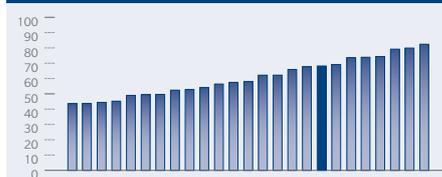
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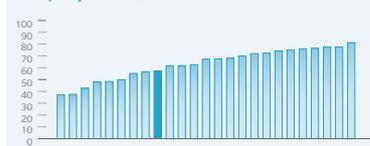
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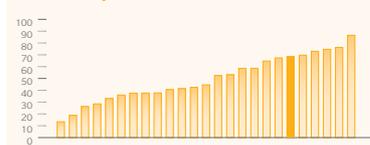
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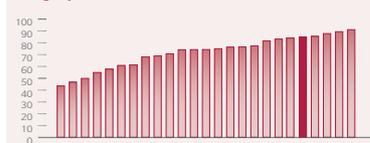
China

China's retirement income system comprises an urban system and a rural system. Both of them have a basic pension consisting of a pooled account (from employer contributions or fiscal expenditure) and individual accounts (from employee contributions). Supplementary plans are also provided by some employers.

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

- 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 47.1 in 2013 to 49.0 in 2014 primarily due to the introduction of tax incentives for employee contributions and improved coverage of workers in pension schemes.

Overall Index – China
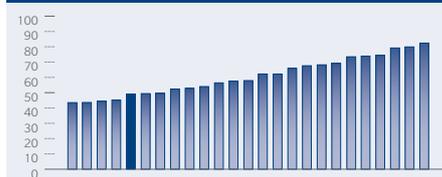
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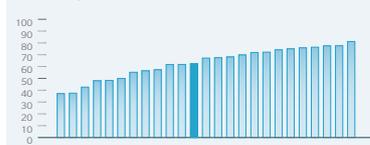
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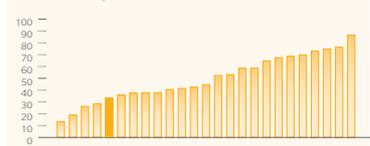
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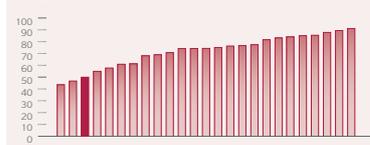
Denmark

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

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

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

- increasing the labour force participation rate at older ages
- providing greater protection of members' accrued benefits in the case of fraud, mismanagement or provider insolvency

The Danish index value increased from 80.2 in 2013 to 82.4 in 2014 caused by several minor factors, including a higher savings rate.

Overall Index – Denmark
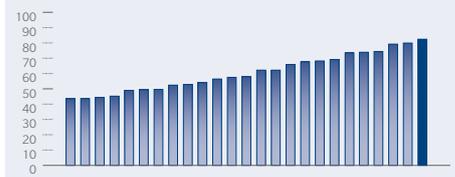
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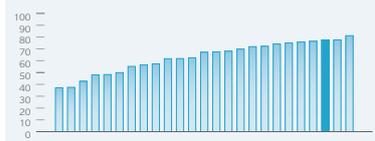
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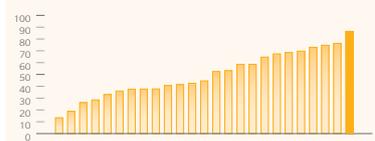
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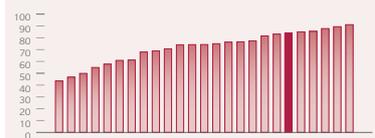
Finland

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

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

- raising the minimum pension for low-income pensioners
- raising the level of mandatory contributions that are set aside for the future

- increasing the labour force participation rate at older ages
- introducing arrangements to protect the pension interests of both parties in a divorce

The Finnish index value in 2014 was 74.3.

Overall Index – Finland
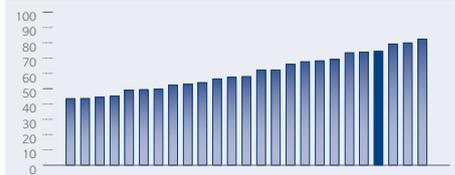
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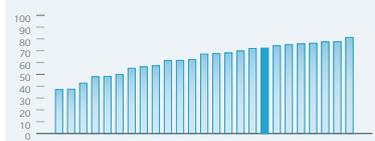
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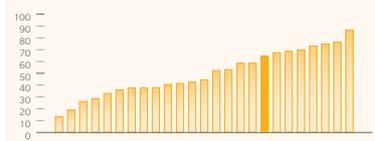
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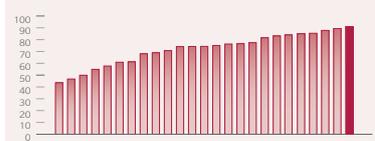
France

France's retirement income system comprises an earnings-related public pension with a minimum pension level; two mandatory occupational pension plans for blue and white collar workers 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 over time
- increasing the labour force participation rate at older ages
- improving the regulatory requirements for the private pension system

The French index value increased from 53.5 in 2013 to 57.5 in 2014 caused by an increase in the minimum pension, a reassessment of the taxation position and higher coverage through inclusion of voluntary schemes.

Overall Index – France
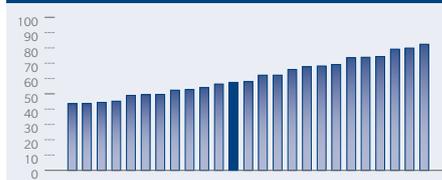
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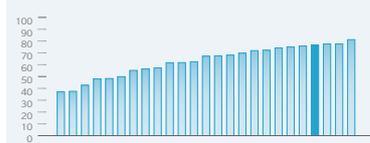
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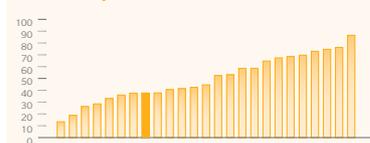
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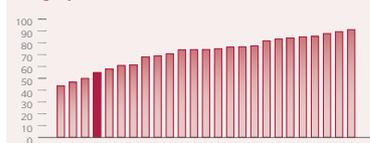
Germany

Germany's retirement income system comprises an earnings-related pay-as-you-go system based on the number of pension points earned during an individual's career; a means-tested safety net for low-income pensioners; and supplementary pension plans which are common amongst major employers. These plans typically either adopt 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
- improving the level of communication from pension arrangements to members

The German index value increased from 58.5 in 2013 to 62.2 in 2014 primarily caused by a reassessment regarding the provision of annuities and the improved benefits provided on resignation.


Overall Index – Germany
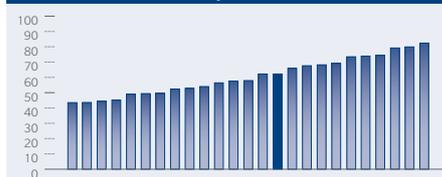
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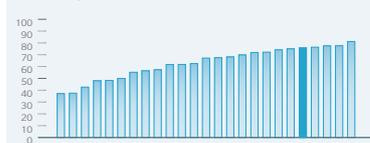
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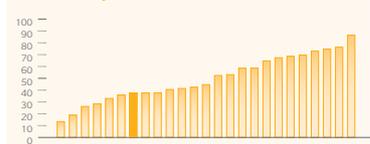
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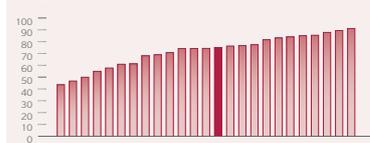
India

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 slightly from 43.3 in 2013 to 43.5 in 2014 due to a number of small changes.


Overall Index – India
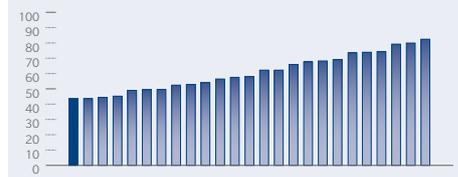
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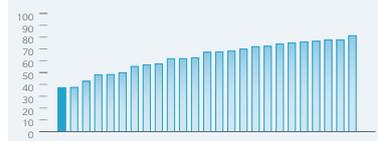
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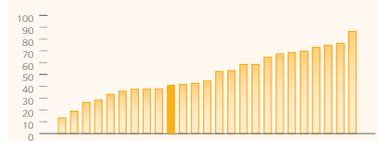
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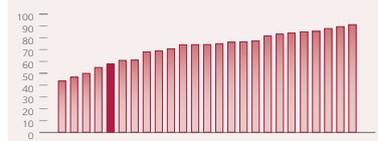
Indonesia

Indonesia's retirement income system comprises earnings-related civil service pensions, mandatory defined contribution plans for private sector workers and voluntary defined contribution plans for other workers. A National Social Security System is currently being implemented.

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 42.0 in 2013 to 45.2 in 2014 primarily caused by the recognition of a minimum age to access benefits.


Overall Index – Indonesia
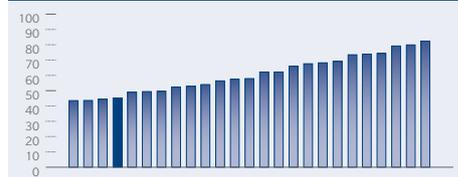
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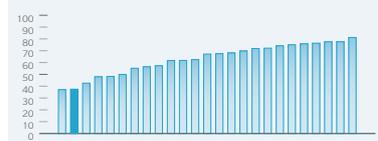
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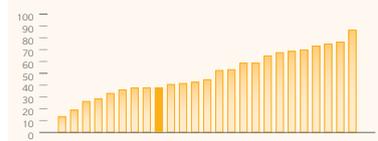
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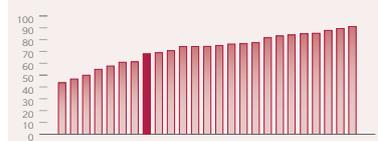
Ireland

Ireland's retirement income system comprises a flat-rate basic scheme and a means-tested top-up. Voluntary occupational pension schemes have limited coverage.

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

- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- introducing a minimum level of mandatory contributions into a retirement savings fund
- introducing limits on the level of in-house assets held by private pension plans
- 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 in 2014 was 62.2.

Overall Index – Ireland
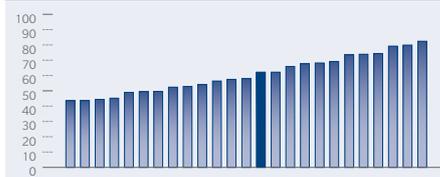
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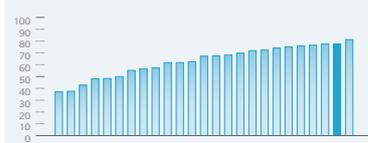
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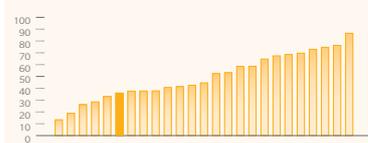
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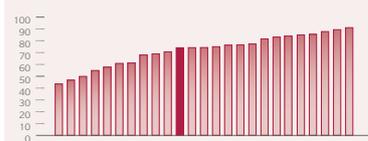
Italy

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

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

- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- increasing the labour force participation rate at older ages
- restricting the availability of benefits before retirement
- reducing government debt as a percentage of GDP

The Italian index value in 2014 was 49.6.

Overall Index – Italy
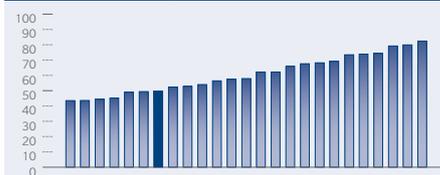
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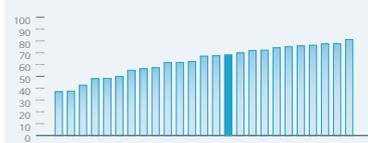
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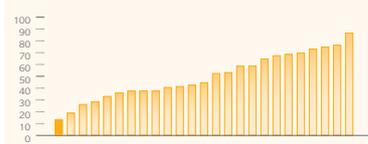
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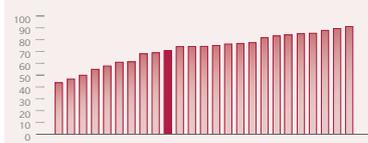
Japan

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

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

- raising the level of household saving
- 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 remained constant at 44.4 from 2013 to 2014.

Overall Index – Japan
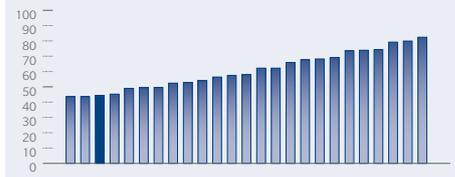
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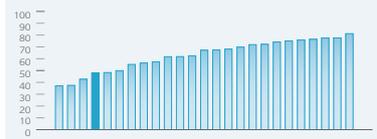
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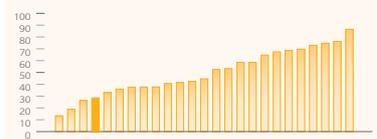
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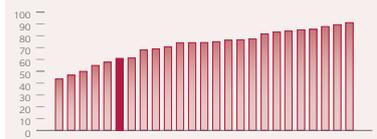
Korea (South)

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 decreased slightly from 43.8 in 2013 to 43.6 in 2014 primarily due to a reduction of the net replacement rate and the net household saving rate.

Overall Index – Korea (South)
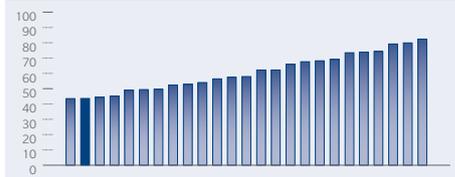
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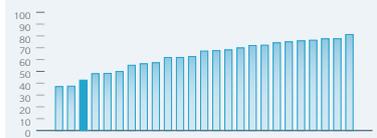
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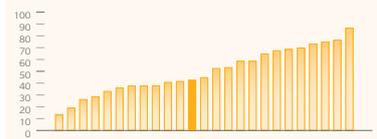
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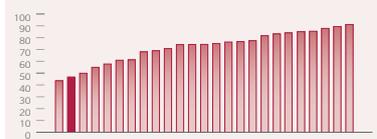
Mexico

Mexico's retirement income system comprises a social security scheme which includes a minimum public pension and mandatory private sector plans.

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

- 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
- raising the level of tax deductibility of employer contributions to increase the level of contribution

The Mexican index value fell from 50.1 in 2013 to 49.4 in 2014 due to a number of small changes.

Overall Index – Mexico
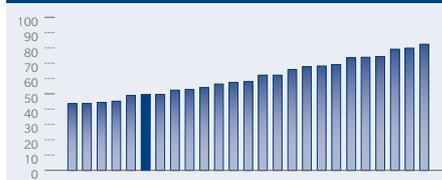
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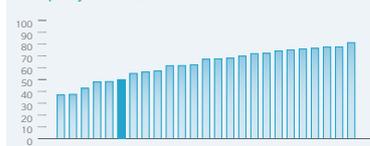
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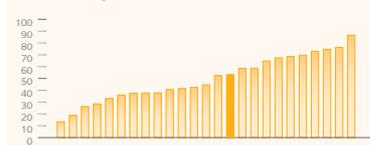
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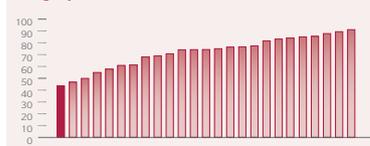
The Netherlands

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

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

- 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
- providing greater protection of members' accrued benefits in the case of fraud, mismanagement or employer insolvency

The Dutch index value increased from 78.3 in 2013 to 79.2 in 2014 due to a revised score in respect of a conflicts of interest policy, as well as a number of small changes.

Overall Index – The Netherlands
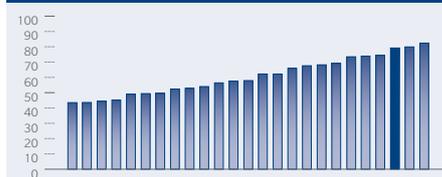
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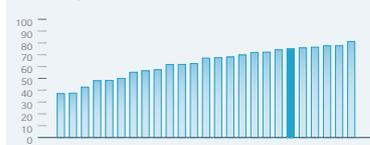
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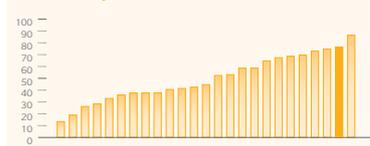
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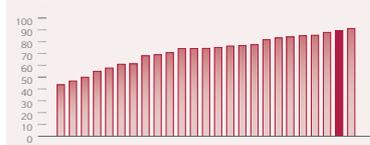
Poland

Poland's retirement income system was reformed in 1999. The new system, which applies to people born after 1968, comprises a minimum public pension and an earnings-related system with notional accounts. The overall system is in transition from a pay-as-you-go system to a funded approach. There are also voluntary employer sponsored pension plans and individual pension accounts. This year the government introduced laws which aim to limit activity of Pillar II 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 II 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

The Polish index value fell from 57.9 in 2013 to 56.4 in 2014 due to a number of small changes.


Overall Index – Poland
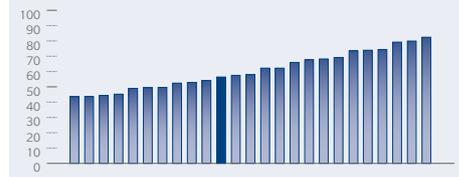
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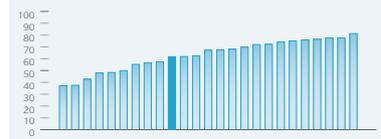
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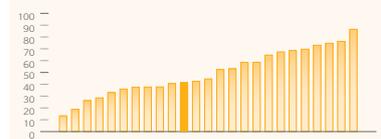
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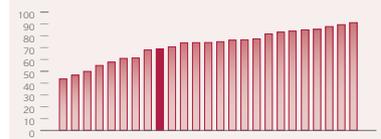
Singapore

Singapore's retirement income system is based on the Central Provident Fund (CPF) which covers all employed Singaporean residents. Some benefits are available to be withdrawn at any time for specified housing and medical expenses with other benefits preserved for retirement. A prescribed minimum amount is required to be drawn down at retirement age in the form of a lifetime income stream (through CPF Life). The Singapore government has announced upcoming changes to CPF for 2014 which include providing minimum pension top-up amounts and more flexibility in drawing down retirement pension amounts.

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

- increasing the minimum level of support for the poorest aged individuals
- 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

The Singaporean index value decreased from 66.5 in 2013 to 65.9 in 2014 due to a number of small changes.

Overall Index – Singapore
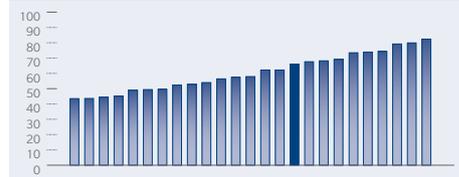
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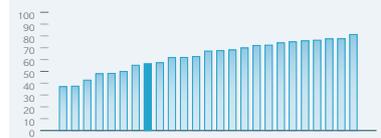
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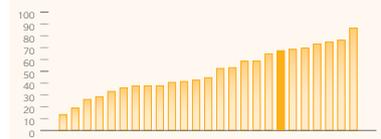
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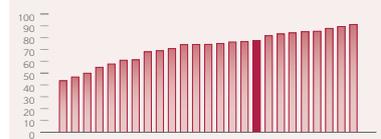
South Africa

South Africa's retirement income system comprises a means-tested public pension and 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

The South African index value in 2014 was 54.0.

**Overall Index – South Africa**
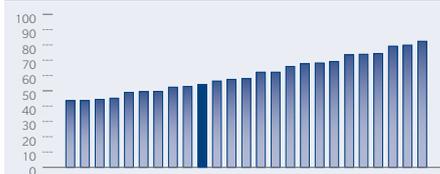
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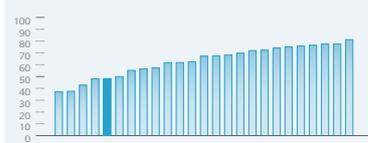
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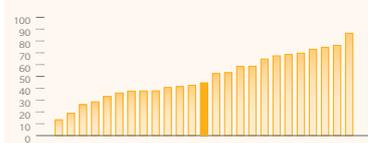
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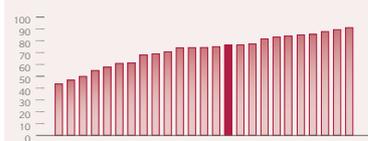
Sweden

Sweden's 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.

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

- increasing the state pension age to reflect increasing life expectancy

- allowing and encouraging employee contributions into employer sponsored plans, as well as private savings

- improving (rather than removing) tax incentives for employee contributions

- requiring annual information about the pension plan as a whole to be provided to plan members, as well as the individual statements

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

The Swedish index value increased from 72.6 in 2013 to 73.4 in 2014 primarily due to increased scores in the adequacy sub-index.

Overall Index – Sweden
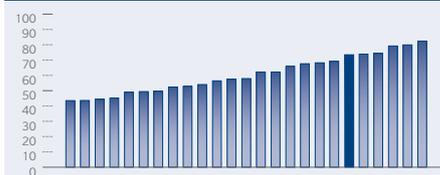
Adequacy Sub-Index
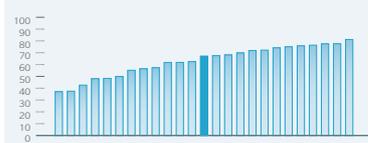
Sustainability Sub-Index
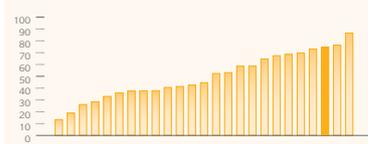
Integrity Sub-Index
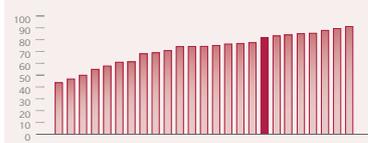
Switzerland

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

- introducing a requirement for the plan trustees to develop a comprehensive risk management policy

- reducing pre-retirement leakage by further limiting access to funds before retirement

The Swiss index value remained constant at 73.9 from 2013 to 2014.

Overall Index – Switzerland
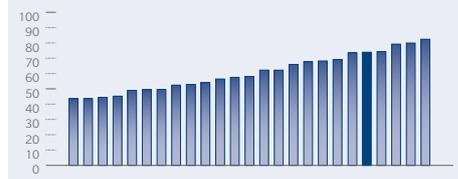
Adequacy Sub-Index
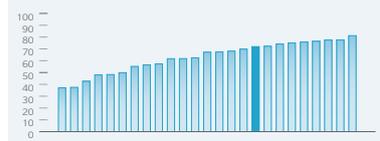
Sustainability Sub-Index
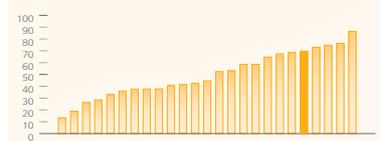
Integrity Sub-Index
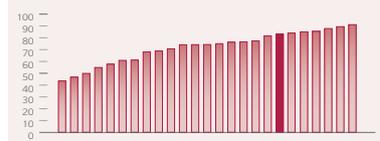
The United Kingdom

The United Kingdom's retirement income system comprises a flat-rate public pension supported by an income-tested pension credit; an earnings-related pension based on revalued average lifetime salary; and voluntary private pensions, which may be occupational or personal. From 2016 the state flat-rate and earnings-related pension components will be replaced with a single tier state pension. Auto enrolment is currently being phased in, requiring employers to enrol employees in pension schemes with minimum contributions (increasing to 8% in 2018), with the facility for employees to opt out.

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

- raising the minimum pension for low-income pensioners

- increasing the coverage of employees in occupational pension schemes

- increasing the level of contributions to occupational pension schemes

- raising the level of household saving

- increasing the labour force participation rate at older ages

The British index value increased from 65.4 in 2013 to 67.6 in 2014 due to several factors including higher contributions through the continued introduction of auto enrolment.

Overall Index – The United Kingdom
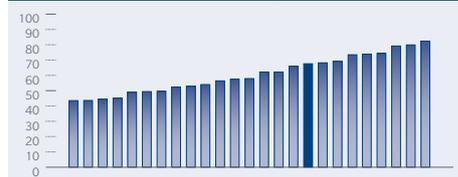
Adequacy Sub-Index
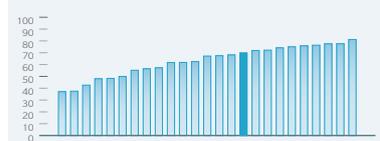
Sustainability Sub-Index
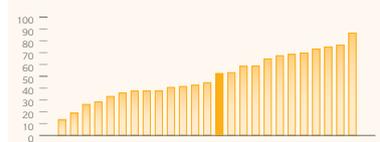
Integrity Sub-Index
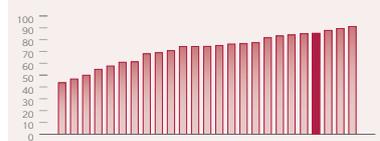
United States of America

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

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

- raising the minimum pension for low-income pensioners
- adjusting the level of mandatory contributions to increase the net replacement for median-income earners

- improving the vesting of benefits for all plan members and maintaining the real value of retained benefits through to retirement
- reducing pre-retirement leakage by further limiting the access to funds before retirement
- introducing a requirement that part of the retirement benefit must be taken as an income stream

The American index value fell slightly from 58.2 in 2013 to 57.9 in 2014 due to a number of small changes.

Overall Index – United States of America
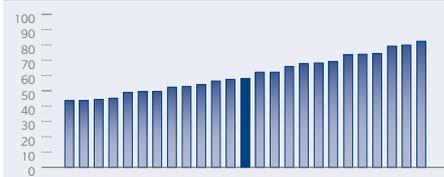
Adequacy Sub-Index
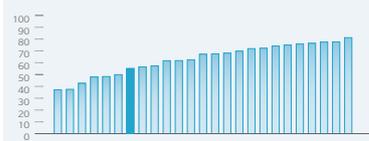
Sustainability Sub-Index
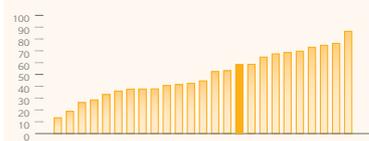
Integrity Sub-Index
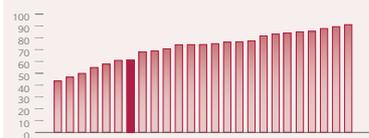
CHAPTER 6
THE ADEQUACY SUB-INDEX

The adequacy sub-index considers the benefits provided to both the poor and the median-income earner as well as several 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 can represent an important source of financial security during retirement.

40%

35%

25%
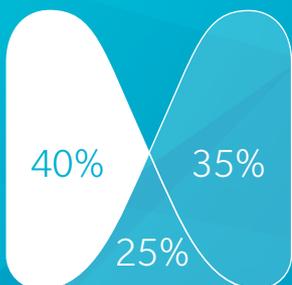
The countries with the highest value for the adequacy sub-index are Australia (81.2) and Ireland (77.6), with India (37.1) and Indonesia (37.5) having the lowest values. Whilst several indicators influence these scores, the level of the minimum pension (expressed as a percentage of the average wage) 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 or Pillar 0, which provides a minimum level of income for all aged citizens. Eligibility for this minimum pension requires no period in the paid workforce, but will often require a minimum period of residency.

This question has been supplemented this year to ask 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 correct answer as to what the minimum pension should be, as it depends on a range of socio-economic factors. However, it is suggested that a minimum pension of about 30 percent[12] of national 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.

The second question was 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 not granted 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.

Calculating A1 Question 1 — Minimum Pension
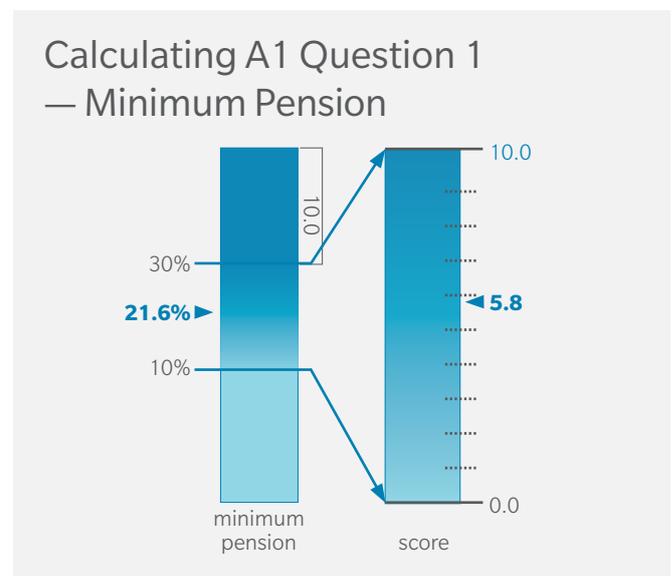
Commentary

The minimum pension for most countries is between 9.6 percent in South Africa and 36.8 percent in Brazil. India and Indonesia do not provide a minimum pension whilst Korea and Singapore provide very modest public assistance. The Chinese results have been modified as the minimum pension is not available throughout the country.

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

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12   This level was chosen in 2009 when it was slightly higher than the OECD average of 27% for first tier benefits as shown in OECD (2009a). The average in OECD (2013a) was 25%.

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 for 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 question and 2.5 percent for the second question.

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."[13] That is, these targets could be met through a combination of mandatory and voluntary provisions.

The OECD 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.

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.

The OECD expresses a target replacement rate of 70 percent of final earnings[14] 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 should only include mandatory components of a retirement income system for private sector workers, as voluntary plans that may include only 30 percent of the working population do not represent a good indicator of the total system.

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13   The World Bank (1994), p295.
14   OECD (2009b), p121.

The target benefits from a mandatory system 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 (i.e. after allowing for personal income taxes and social security contributions) for a median-income earner from a mandatory system should be within the range of 70–100 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 69 percent of lifetime earnings.[15]

Calculation

The maximum score for this indicator is obtained for any country with a result between 70 percent and 100 percent. Australia, Austria, Denmark, Italy and Switzerland are within this range, with only the Netherlands lying above it at 104 percent. Any score outside this range scores less than the maximum with a zero score being obtained for a result less than 20 percent or more than 150 percent.

Calculating A2 — Net Replacement Rate for Median Income Earner
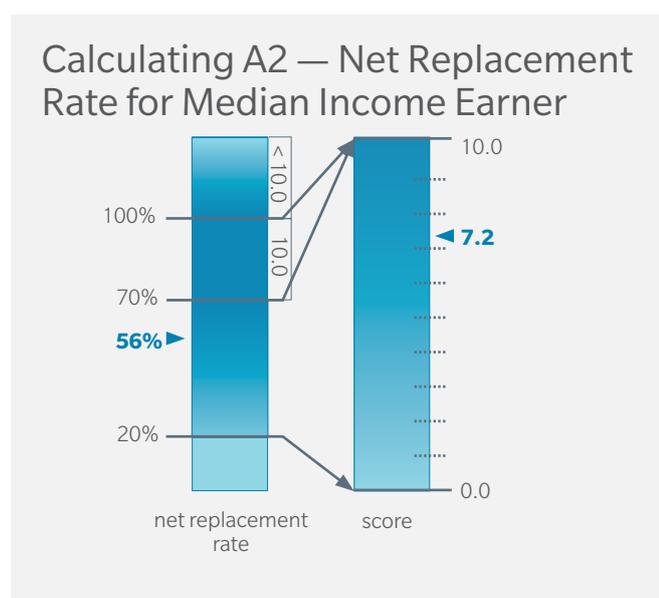
Commentary

With the exception of the Netherlands, Indonesia, South Africa and the countries outlined above that have a result between 70 percent and 100 percent, all countries have a result between 33 percent (India) and 64 percent (Canada). The Netherlands' result may be considered to produce a pension that is slightly too high for a median-income earner, whilst also not providing the appropriate individual flexibility throughout their lifetime. The Chinese figure has been adjusted to reflect the varying levels of replacement rates that exist in practice, as shown in Park (2012). The Indian figure has been adjusted to reflect the low coverage of mandatory pension schemes.

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.

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15   OECD (2014).

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 may represent an important factor in determining the financial security for the aged.

Calculation

We have used data from the Economist Intelligence Unit and calculated the saving rate in the following way:

$$\text{Household Saving Rate} = \frac{(PDIN - PCRD)}{PDIN}$$

PDIN = Personal disposable income

PCRD = Private consumption

To remove some volatility that may occur in annual figures, we have averaged the 2012 and 2013 measurements.

The calculated household saving rates ranged from minus 12.5 percent in Mexico to plus 16.9 percent in South Africa and 17.5 percent in India. 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. 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
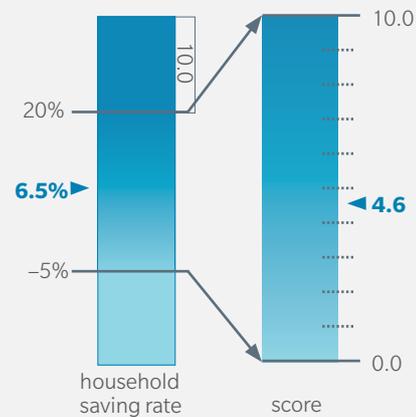
Commentary

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 for 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 ultimate benefit is due to investment earnings and not contributions.

Calculation

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

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

Commentary

All countries, except for Austria, offer some taxation incentive for voluntary contributions. In Japan and Sweden, additional employee contributions are encouraged in certain circumstances. With the exceptions of Australia, Brazil, Denmark, Finland, Italy, Mexico and Sweden, all 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 plans[16] (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. Australia, 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.

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16   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
— Conversion to Income Streams

Chart: y-axis labelled "score" from 0 to 10; x-axis labelled "% of retirement benefit as income stream" from 0 to 100.
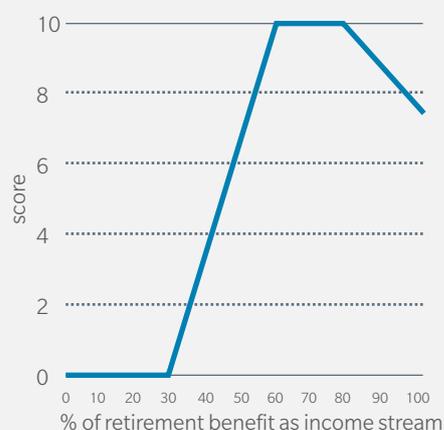
Commentary

There is considerable variety between countries with some countries requiring all of the benefit to be converted into a lifetime annuity (e.g. Chile, Finland, Netherlands and Sweden) whereas many countries have no requirement at all (e.g. Australia, China, Japan, Korea, Mexico, Poland, Switzerland and the United States). Of these countries, only Australia and Korea 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) and 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 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.

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 13 of the 25 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 25 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, 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 in affecting financial security during retirement. Indeed in some countries, such as Singapore, a portion of the member's savings can be used to help purchase a home. In other 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.

Calculating A9 — Home Ownership
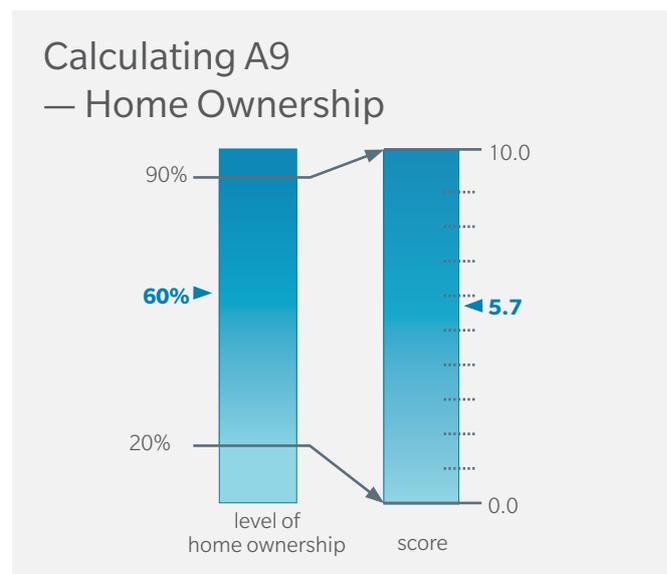
Commentary

The level of home ownership ranged from 37 percent in Switzerland to around 90 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)[17] 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 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 is likely to 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 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 is beyond 60 percent the score is reduced to reflect the higher level of risk and volatility.

17   Hinz R, Rudolph H P, Antolin P and Yermo J (2010), p2.

Calculating A10 — Percentage of Growth Assets
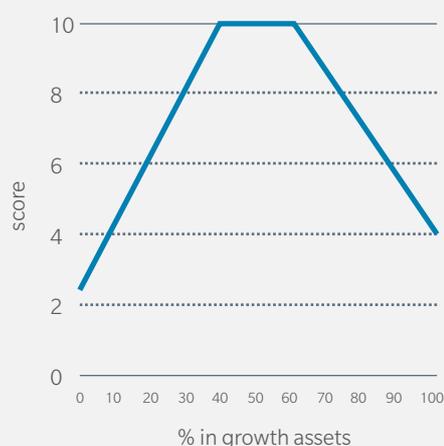
Commentary

The level of growth assets ranges from virtually zero in Singapore to approximately 70 percent in Australia and South Africa. Eight of the 25 countries have a percentage between 40 percent and 60 percent, which indicates a reasonable level of exposure to growth assets. In comparison, India, Korea and Singapore have very low exposures 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.

Question A11

Are contributions to a funded pension scheme required to be paid if a worker receives income support (or income maintenance) when they are temporarily out of the workforce?

Objective

The adequacy of an individual's retirement income can be affected if there is no requirement 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 the actual contributions to a pension scheme may be for a relatively short period, it is desirable that pension contributions (or 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 9 of the 25 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 retirement income systems. 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 (2013a), p123 for OECD countries (except Chile and South Africa)

OECD (2013b), p21 for China, India and Indonesia.

OECD (2014), Chile.

Mercer calculations for Brazil and Singapore using government websites.

Mercer calculation for South Africa using data from OECD (2013).

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

Question A2

OECD (2013a) except Chile, Denmark, France and Singapore.

OECD (2013b) for Singapore.

OECD (2014) for Chile, Denmark and France.

Question A3

Data from the Economist Intelligence Unit was provided for all countries (except Ireland).

OECD StatExtracts Database, Ireland.

Question A9

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

Karasulu M (2008) for Korea.

The 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 7
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 and the current level of government debt.

40%   35%

25
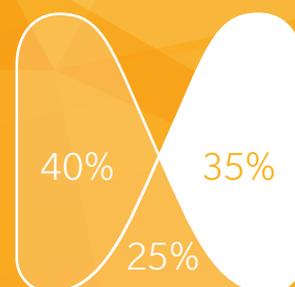
The country with the highest value for the sustainability sub-index is Denmark (86.5) with the lowest values being for Italy (13.4) and Austria (18.9). Whilst several indicators influence these scores, the level of coverage of private pension plans, the level of pension assets as a proportion of GDP and the projected demographic factors 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 government expenditure.

Calculation

The rates of coverage ranged from less than six percent in India and about eight percent in Indonesia to more than 75 percent of the working age population in Chile, Denmark, the Netherlands and Sweden. Each country's score was related to its coverage, with a maximum score for 75 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
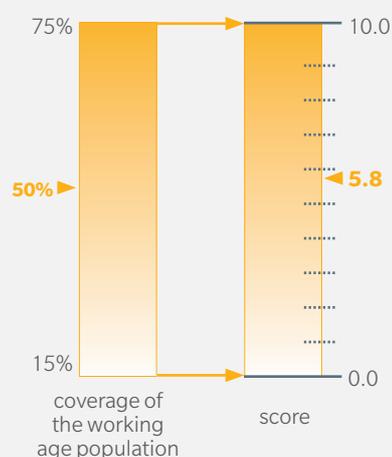
Commentary

Only nine of the 25 countries have coverage rates over 60 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 ten percent of GDP for Austria, China, India, Indonesia and Italy to more than 150 percent for Denmark and the Netherlands. A maximum score was achieved for 150 percent of GDP and a minimum score for zero percent.

Calculating S2 — Level of Assets
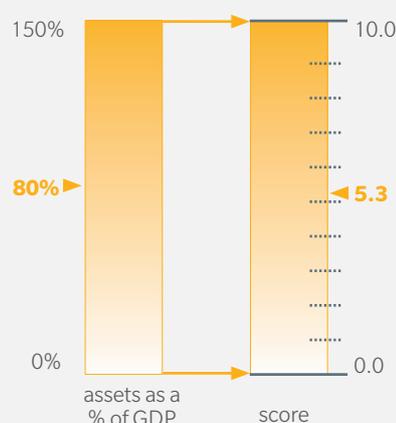
Commentary

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 set aside to provide future retirement benefits.

Weighting

This indicator shows the level of assets 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 20 percent in the sustainability sub-index.

Question S3

a. What is the current gap between life expectancy at birth and the state pension age?

b. What is the projected gap between life expectancy at birth and the state pension age in 2035? (This calculation allows for mortality improvement.)

c. What is the projected old-age dependency ratio in 2035?

d. What is the Total Fertility Rate (TFR) averaged over the last seven 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 in respect of 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

a. 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 negative 2.9 in South Africa and 7.3 in India to 19.7 in France and 21.4 in Korea. 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.

b. For 2035, the results range from 2.8 in South Africa and 11.4 in India to 22.7 years 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
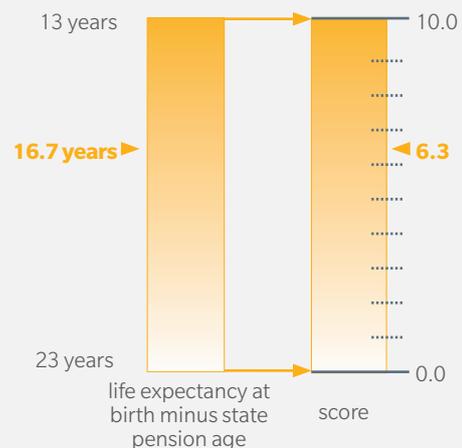
c. The old-age dependency ratio is the population aged 65 and over divided by the population aged between 15 and 64. The projected dependency ratios for 2035 range from 12 percent in South Africa and 13 percent in India to 55 percent in Germany and 58 percent in Japan. A maximum score is achieved with a dependency ratio of 20 percent or less and a zero score with a ratio of 60 percent or higher.

d. The TFR ranges from 1.1 in Singapore to 2.4 in South Africa and Indonesia and 2.6 in India. 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 difference between life expectancy and state pension age of less than 20 years, with the exception of Korea.

The projected results for 2035 differ from the current results with Chile, China, France, Japan, Korea, Singapore and Switzerland having a difference in excess of 20 years.

A TFR of less than 1.5 in Austria, Germany, Italy, Japan, Korea, Poland, Singapore and Switzerland 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.[18]

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 and Denmark the mandatory contributions are fully invested for the individuals concerned. On the other hand, 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.

In China, only the employee contributions are required to be funded but, currently, many of the individual accounts are notional. Hence 50% percent of employee contributions have been used. We have also used 50 percent in Sweden as they are transitioning from a pay-as-you-go approach to a fully funded one.

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18 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.

For India, we have used the level of contributions paid into the Employees Pension Scheme but excluded contributions paid to the Employees Provident Fund Scheme as these benefits can be used for a range of purposes.

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 33 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 and Singapore. In view of this range and likely developments in some countries, a maximum score is achieved with a level of 12 percent with a zero score being obtained where there are no funded mandatory contributions, invested into a fund for future payments.

Commentary

The level of mandatory contributions 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.

Increased scores for Australia and the United Kingdom reflect recent increases in mandatory contributions.

Weighting

This item represents one of several key indicators representing desirable features of a sustainable retirement income system. A weighting of 15 percent in the sustainability sub-index is used for this indicator.

Calculating S4
— Funded Mandatory Contributions

12%   10.0

7.8% ▶   ◀ 6.5

0%   0.0

funded
mandatory
contributions

score
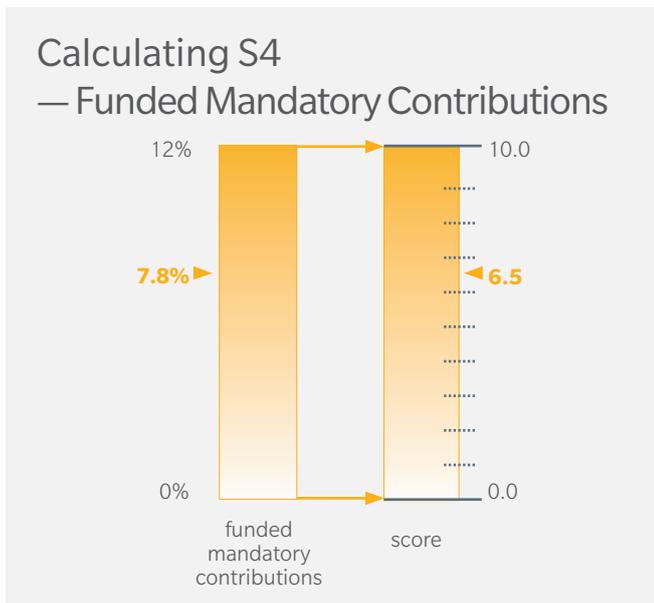
Question S5

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

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

The percentages ranged from 40.1 percent in South Africa and 42.0 percent in Poland to 72.6 percent in Switzerland and 76.8 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.

Calculating S5 — Labour Force Participation Rate

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 rates at older ages. It is pleasing to note that many countries are now experiencing increases in their labour force participation rates at these older ages. This trend should continue to be encouraged.

Weighting

This item has a weighting of 10 percent in the sustainability sub-index.
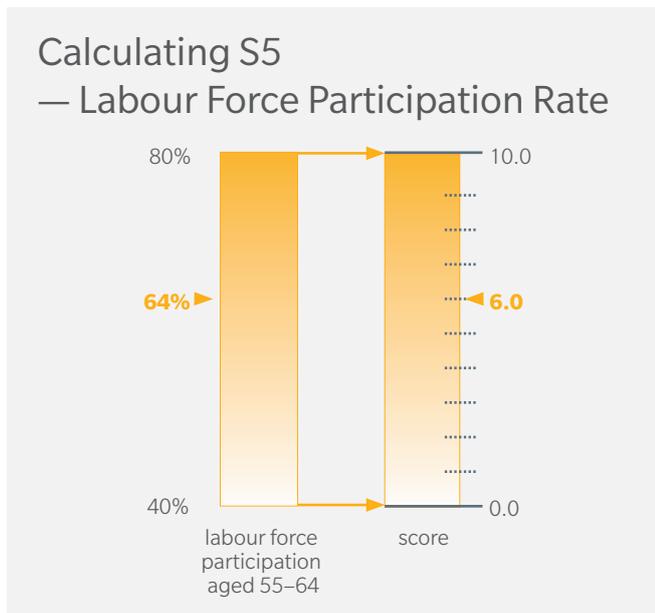
Question S6

What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities[19]), 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 (such as health) 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 Singapore to 243 percent 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.

Calculating S6 — Adjusted Government Debt
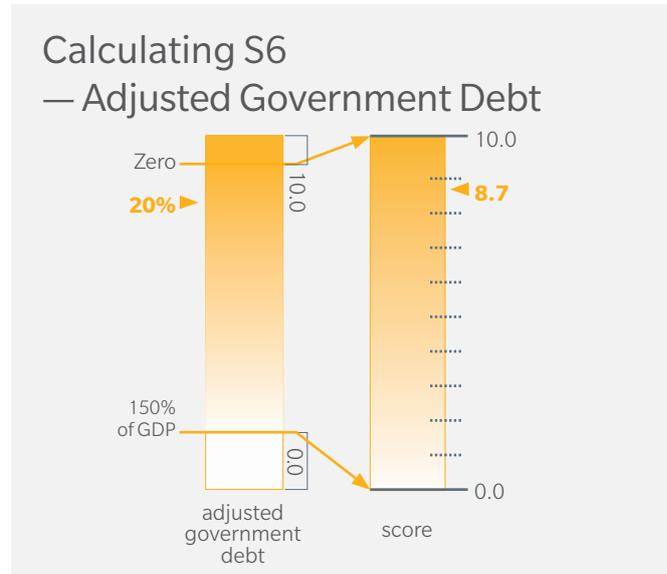
Commentary

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 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.

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19 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 where there is 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 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 4% for the first question and 1% for the second question.

Sources of data for the sustainability sub-index

Question S1

Mercer calculations for Brazil, France and Japan.

OECD (2011), p173 for South Africa

OECD (2012a), p105 for Germany

OECD (2013a), p189 for all other countries although adjustments were needed when data was not available or comprehensive.

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

Question S2

Mercer calculations for China and Singapore.

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

OECD (2013), p195 in relation to private pension plans for India, Indonesia, Japan and South Africa, and in relation to public pension reserve funds for all countries where relevant.

OECD StatExtracts Database, Funded Pensions Indicators 2014, in relation to pension funds (autonomous), book reserve (non-autonomous) and pension insurance contracts for all countries (except where specified above).

Question S3

The life expectancy aged dependency (2010-2015), and total fertility rate (2005-2010) data were from United Nations (2013).

The total fertility rate 2011, 2012 and 2013 data were from CIA, The World Factbook.

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

Question S5

International Labour Organization (2013).

Question S6

International Monetary Fund (2014).

Sovereign Wealth Fund Institute: www.swfinstitute.org

Questions S4 and S7

Answers were sourced from Mercer consultants in each country.

CHAPTER 8
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 private sector pension plans in each country. After all, 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.

40%   35%

25%
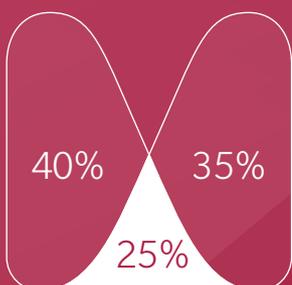
The country with the highest value for the integrity sub-index is Finland (91.1), with the lowest value being for Mexico (43.5). The better scores were achieved by countries with well- developed private pension industries.

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 the sponsoring employer (which usually entails holding assets that are separate from the employer) and is subject to some level of regulatory oversight.

Seventeen of the 25 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

Both questions were given a five percent weighting, giving a total weighting of 10 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.

Weighting

The first and third questions were each given a five percent weighting, with the second question being given a 2.5 percent weighting, resulting in a total weighting of 12.5 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?

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.

Only eight of the 25 countries received the maximum score for these three questions indicating there is scope to improve governance requirements in many countries.

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 and second questions were each given a five percent weighting, with the third question given a 2.5 percent weighting, resulting in a total of 12.5 percent in the integrity sub-index for these three 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 10 of the 25 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 capacity of the government to effectively formulate and implement sound policies?

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

Objective

These questions were designed to assess the integrity of the government which plays a critical role in the ongoing governance, legal framework, regulation and policy development of the country's retirement income system.

Calculation

The World Bank publishes results from the Worldwide Governance Indicators (WGI) project for 215 economies for six dimensions of governance. The following four indicators were considered most relevant to the governance and integrity of retirement income systems:

- Government Effectiveness
- Regulatory Quality
- Rule of Law
- Control of Corruption

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 four scores were summed and then increased by 1.5 to avoid any negative scores. The scores ranged from zero for Indonesia to 9.7 for Finland.

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 regulation and governance results

The scores ranged from 15.8 for Mexico to 48.0 for the Netherlands. The low score for Mexico is indicative of the fact that the regulator has minimal requirements when compared to the more developed pension industries 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, the Netherlands, 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 ten 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 Indonesia, Italy and Japan. In Ireland there are no restrictions but in-house assets are not counted towards minimum funding requirements.

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 considered 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 nine of the 25 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

Whilst 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, Finland, Ireland, Italy, 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

Eleven countries (Australia, Austria, Brazil, Denmark, Finland, Indonesia, Ireland, the Netherlands, South Africa, Switzerland and the UK) have a complaints system that is independent from both the provider and the regulator. However Canada, Chile, France, Germany, India, Italy, Poland and the USA 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 protection and communication results

The scores ranged from 16.3 in France and 17.5 in China to 36.8 in Switzerland and 37.0 in Finland. The low scores in France and China are caused by very limited requirements in these countries 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."[20]

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 proportion of each country's pension industry that is employer-sponsored plans, not-for-profit plans and 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 9.9 for India and 10.0 for Singapore. The high scores for these two countries are not surprising as each country has a central fund which should provide administrative savings with the potential to add value through investment opportunities.

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 (2013).

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20   Hinz R, Rudolph H P, Antolin P and Yermo J (2010), p259.
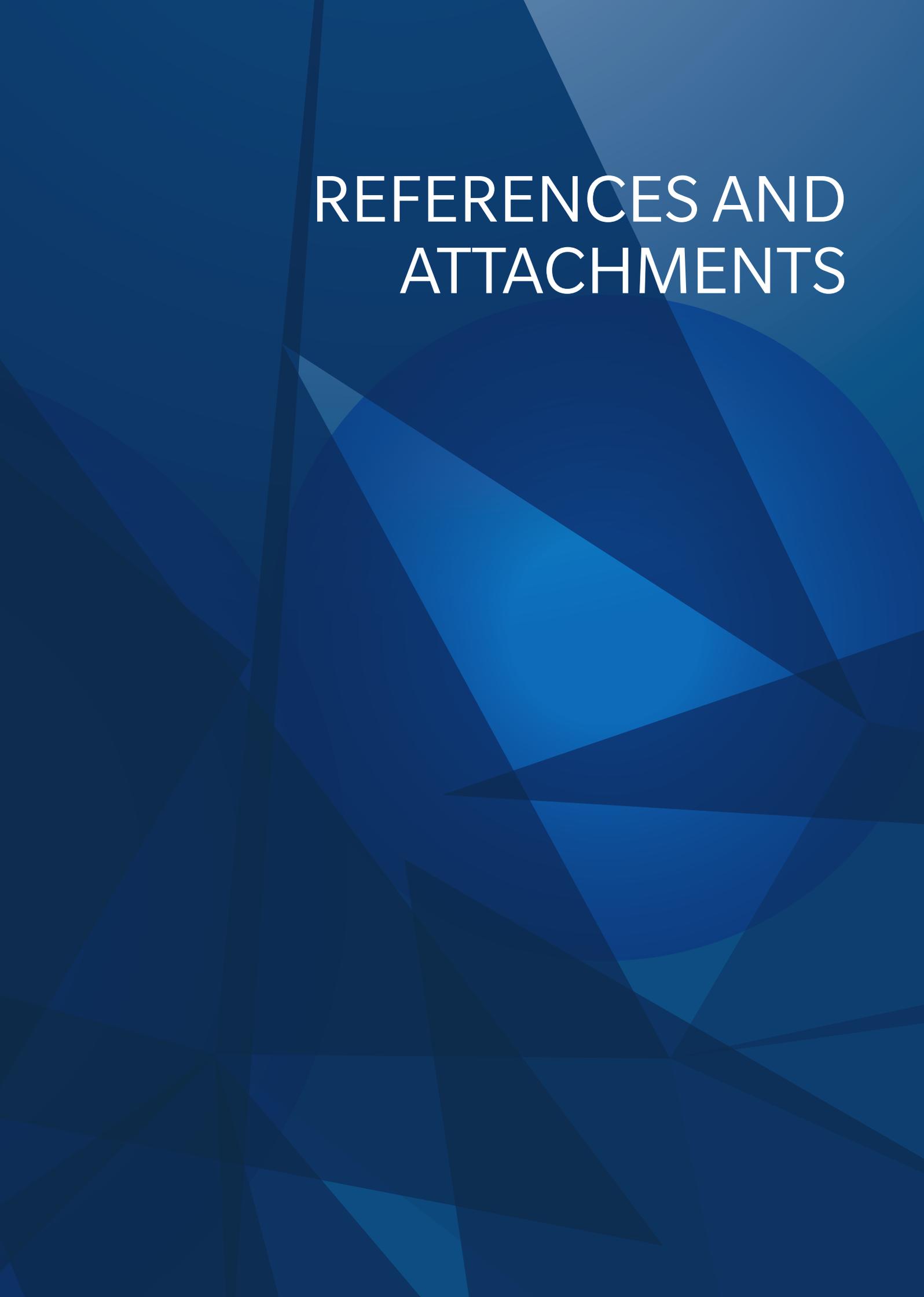
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Attachment 1: Score for each country for each indicator in the adequacy sub-index

	Question	Question weight	Australia	Austria	Brazil	Canada	Chile	China	Denmark	Finland	France	Germany	India	Indonesia	Ireland	Italy	Japan	Korea	Mexico	Netherlands	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA
																											Score for each country
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%	9.4	8.4	9.6	9.6	3.4	6.2	10.0	5.6	7.7	4.9	0.0	0.0	9.3	6.0	5.5	0.0	8.7	9.8	3.1	0.8	0.0	7.2	6.2	5.7	4.3
A2	What is the net replacement rate for a median-income earner?	25%	10.0	10.0	8.1	8.9	5.5	4.8	10.0	8.5	8.2	7.6	2.6	0.0	6.4	10.0	4.5	5.8	5.1	9.2	8.0	3.9	0.0	7.1	10.0	5.6	6.0
A3	What is the net household saving rate in the country?	10%	6.3	4.9	3.0	3.0	0.0	8.3	2.5	3.4	6.8	5.4	9.0	4.0	4.1	3.7	1.8	2.7	0.0	0.9	1.9	8.3	8.8	4.4	7.1	3.3	5.4
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	7.0	5.5	10.0	10.0	10.0	4.0	7.0	10.0	10.0	10.0	10.0	10.0	7.0	8.0	10.0	7.0	10.0	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 private pension plans (except for death, invalidity and/or cases of significant financial hardship)? If so, what is the current age?	10%	8.3	0.0	0.0	3.3	5.0	8.3	10.0	10.0	10.0	10.0	0.0	6.7	6.7	0.0	5.0	6.7	6.7	3.3	10.0	6.7	6.7	6.7	5.3	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%	2.0	6.7	5.5	5.3	7.5	0.0	6.7	7.5	5.0	10.0	2.5	6.7	10.0	6.7	0.0	2.0	0.0	7.5	0.0	7.5	8.7	7.5	0.0	10.0	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	9.0	8.0	10.0	8.0	10.0	10.0	9.0	8.0	10.0	9.0	8.0	10.0	6.0	8.0	4.0	10.0	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	0.0	0.0	10.0	10.0	10.0	0.0	0.0	5.0	10.0	0.0	0.0	10.0	10.0	10.0	0.0	5.0	10.0	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%	7.0	5.4	7.9	6.6	7.4	9.7	5.6	6.5	6.0	4.8	9.5	8.6	7.1	7.4	5.9	5.8	8.1	5.6	7.0	10.0	4.8	7.2	2.5	6.9	6.4
A10	What is the proportion of total pension assets invested in growth assets?	5%	8.2	9.1	5.8	10.0	10.0	6.3	7.0	10.0	6.3	10.0	3.4	6.3	10.0	6.8	9.8	3.6	5.8	8.1	9.1	2.5	8.5	9.8	10.0	10.0	10.0
A11	Are contributions to a funded pension scheme required to be paid if a worker receives income support (or income maintenance) when they are temporarily out of the workforce?	1%	5.0	10.0	0.0	10.0	0.0	0.0	0.0	10.0	7.5	5.0	0.0	10.0	10.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	10.0	5.0	10.0	10.0	0.0
	Adequacy sub-index	40%	81.2	67.5	61.8	75.0	57.3	62.5	77.5	72.2	76.4	75.8	37.1	37.5	77.6	68.1	48.0	42.6	49.9	75.3	61.7	56.4	48.3	67.2	71.9	69.8	55.2

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

Score for each country

	Question	Question weight	Australia	Austria	Brazil	Canada	Chile	China	Denmark	Finland	France	Germany	India	Indonesia	Ireland	Italy	Japan	Korea	Mexico	Netherlands	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA
S1	What proportion of the working age population are members of private pension plans?	20%	8.9	2.3	0.0	5.8	10.0	2.1	10.0	9.9	9.4	5.4	0.0	0.0	2.4	0.0	3.0	3.4	7.4	10.0	6.9	8.2	1.4	10.0	9.3	4.7	5.4
S2	What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts?	20%	6.4	0.4	1.0	6.4	4.1	0.5	10.0	5.9	0.9	1.3	0.4	0.1	3.9	0.4	3.2	3.2	0.8	10.0	1.2	4.6	5.5	6.1	7.6	6.9	7.4
S3	What is the current gap between life expectancy at birth and the state pension age? What is the projected gap between life expectancy at birth and the state pension age in 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%	5.7	3.6	7.3	5.4	5.1	4.2	6.8	5.4	3.7	4.5	10.0	7.5	7.5	4.2	2.0	2.3	8.8	5.5	6.7	3.2	9.9	5.2	4.0	6.0	7.9
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.	15%	7.9	0.0	0.0	6.2	9.6	3.3	10.0	3.9	0.0	0.0	6.9	4.8	0.0	1.5	2.1	3.8	5.2	6.7	0.0	10.0	0.0	7.2	7.5	2.5	3.4
S5	What is the labour force participation rate for those aged 55-64?	10%	5.9	1.3	4.1	5.9	6.4	5.0	5.9	5.4	1.9	6.5	3.9	7.1	3.8	0.6	7.1	6.1	4.2	5.3	0.5	6.5	0.0	9.2	8.1	5.2	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%	8.1	5.1	5.6	4.1	9.4	9.3	7.0	6.2	3.8	4.8	5.6	8.3	1.8	1.2	0.0	7.9	6.9	5.0	6.2	10.0	7.0	7.2	6.7	4.0	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%	10.0	0.0	0.0	8.0	0.0	0.0	10.0	10.0	8.0	8.0	0.0	0.0	6.0	0.0	4.0	10.0	0.0	10.0	10.0	10.0	8.0	10.0	4.0	8.0	6.0
	Sustainability sub-index	35%	73.0	18.9	26.2	58.6	68.7	33.0	86.5	64.7	37.7	37.6	40.6	37.8	36.0	13.4	28.5	42.5	53.1	76.3	41.4	68.5	44.6	74.7	69.7	52.4	58.5

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 weight	Australia	Austria	Brazil	Canada	Chile	China	Denmark	Finland	France	Germany	India	Indonesia	Ireland	Italy	Japan	Korea	Mexico	Netherlands	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA
Question																										
Regulation and Governance (R1–R5)																										
Do private sector pension plans need regulatory approval or supervision to operate? Is a private pension plan required to be a separate legal entity from the employer?	10%	10.0	8.8	10.0	10.0	10.0	10.0	10.0	10.0	5.0	8.8	10.0	10.0	10.0	10.0	7.5	7.5	2.5	10.0	7.5	10.0	10.0	8.8	10.0	10.0	10.0
Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?																										
Does the regulator make industry data available from the submitted forms on a regular basis?	12.5%	9.2	3.4	9.2	8.7	9.2	4.4	10.0	9.2	8.2	7.4	7.4	9.2	8.2	9.2	7.6	3.6	7.6	9.2	7.6	5.6	9.2	9.2	8.4	10.0	7.6
How actively does the regulator discharge its supervisory responsibilities?																										
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?	12.5%	10.0	10.0	9.0	7.0	10.0	4.0	8.0	8.0	6.0	10.0	4.0	8.0	4.0	10.0	4.0	0.0	0.0	10.0	8.0	10.0	10.0	8.0	6.0	9.0	0.0
Are the private pension plan's trustees/executives/fiduciaries required to prepare a conflicts of interest policy?																										
Do the private pension plan's trustees/executives/fiduciaries have to satisfy any personal requirements set by the regulator?	5%	10.0	5.0	10.0	7.5	7.5	10.0	10.0	10.0	10.0	7.5	5.0	10.0	6.3	10.0	7.5	0.0	5.0	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? What respect do citizens and the state have for the institutions that govern economic and social interactions among them?	10%	8.6	7.8	1.3	8.6	7.2	0.3	9.5	9.7	6.8	8.0	0.2	0.0	7.8	3.0	7.0	5.0	1.3	9.0	4.5	9.5	2.1	9.6	9.0	8.0	7.3

Score for each country

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

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

Score for each country

Question	Question weight	Australia	Austria	Brazil	Canada	Chile	China	Denmark	Finland	France	Germany	India	Indonesia	Ireland	Italy	Japan	Korea	Mexico	Netherlands	Poland	Singapore	South Africa	Sweden	Switzerland	UK	USA
For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded?	10.0%	10.0	7.5	8.0	9.0	10.0	7.5	10.0	10.0	5.0	8.0	5.0	6.0	10.0	5.0	9.0	9.0	6.0	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?	5%	10.0	10.0	7.5	8.8	10.0	7.5	10.0	7.5	5.0	8.8	8.8	0.0	2.5	0.0	0.0	10.0	7.5	10.0	7.5	6.3	10.0	10.0	10.0	10.0	5.0
Protection and communication for members (P1–P7) Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?	5%	5.0	5.0	0.0	2.5	7.5	2.5	2.5	10.0	2.5	7.5	2.5	10.0	2.5	0.0	2.5	0.0	0.0	0.0	2.5	5.0	0.0	5.0	7.5	10.0	5.0
Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund?																										
In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?	5%																									
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	0.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Are plan members required to receive or have access to an annual report about the pension plan?																										
Is the annual report required to show: i. The allocation of the plan's assets to major asset classes?	5%	9.0	8.0	10.0	2.5	3.0	0.0	0.0	9.0	0.0	5.0	8.0	0.0	10.0	8.0	3.8	0.0	0.0	8.0	0.0	8.0	0.0	3.8	8.0	4.5	8.0
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%	6.7	10.0	6.7	6.7	6.7	6.7	6.7	8.3	3.3	3.3	3.3	6.7	10.0	10.0	3.3	3.3	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?	2.5%	10.0	10.0	10.0	7.5	7.0	0.0	10.0	10.0	0.0	5.0	5.0	10.0	10.0	5.0	0.0	0.0	0.0	10.0	5.0	0.0	10.0	0.0	10.0	10.0	5.0
Do plan members have access to a complaints tribunal which is independent from the pension plan?																										
Costs What percentage of total pension assets is held in various types of pension funds?	10%	5.6	6.9	5.9	4.6	5.5	6.7	8.7	7.9	4.1	5.4	9.9	8.3	5.5	6.0	8.6	8.2	8.0	7.4	7.4	10.0	7.6	8.2	5.6	6.1	3.7
What percentage of total pension assets is held by the largest ten pension funds/providers?																										
	25%	87.8	76.6	74.2	74.3	85.0	49.9	84.5	91.1	54.9	75.0	57.7	68.3	74.1	70.7	60.9	46.7	43.5	89.4	68.9	77.4	76.3	81.6	83.1	85.4	61.2