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GLOBAL  
PENSION  
INDEX

INCLUDING  
CAN PENSION  
SYSTEMS KEEP  
DELIVERING? | OCTOBER 2015

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# MESSAGE FROM THE TREASURER OF VICTORIA, AUSTRALIA

The Victorian Government is once again pleased to support the 2015 Melbourne Mercer Global Pension Index. In its seventh year, the Index is testimony to a constructive partnership between government, industry and academia, who together provide valuable insights on pension systems around the world.

The Index now spans a broad cross-section of countries across the Americas, Europe, and the Asia-Pacific. Accordingly the Index is increasingly relevant in the current global policy context, as governments seek to secure and sustain long-term economic resilience in the face of complex fiscal pressures.

With 110,000 skilled professionals working across the sector in Victoria, Melbourne is home to six of Australia's top twelve pension funds as well as the AUD116 billion Future Fund. As Asia Pacific continues to experience significant growth, and as individual economies become more discerning in their preferences for financial services and funds management, Melbourne's financial services capabilities, regulatory structures and investment leadership position the city well to capitalise on this increasing demand.

The Index is the preeminent publication of its kind and affirms Melbourne's global standing as a location for pension funds management as well as our capacity to undertake internationally regarded financial services research, tapping into expertise found across institutions like the Australian Centre for Financial Studies, the CSIRO-Monash Superannuation Research Cluster, and the Melbourne APEC Finance Centre.

I commend the Australian Centre for Financial Studies and Mercer on their excellent work in producing the 2015 Melbourne Mercer Global Pension Index, and encourage the industry to use it as a basis to further explore cooperative investments and to promote industry and international best practice.

**TIM PALLAS MP**

Treasurer



# LETTER FROM ACFS

The Australian Centre for Financial Studies (ACFS) is pleased to present the 2015 Melbourne Mercer Global Pension Index (the Index) in partnership with Mercer. Currently in its seventh year, the Index provides a valuable contribution to the global debate about how best to provide for an ageing population.

Looking back at results from the past seven years, we can now begin to compare pension systems through time as well as across countries. It is encouraging to see countries adopt recommendations made in Index reports over the years to strengthen their pension systems. The Index encompasses countries with pension systems at varying stages of maturity – some systems are well established while others (particularly in the Asian region) are still developing – yet all have scope for improvement. Balancing financial sustainability with the needs of ageing populations remains a global challenge, and we hope that the Index supports and encourages a focus on longer-term outcomes and policy leadership to address the difficulties we face. Simply maintaining the status quo is not enough; the Index provides practitioners and policymakers alike with evidence of how strategic decisions impact retirement outcomes for future generations.

The Index is produced each year through a collaboration between Mercer, a global leader in pension funds management in consulting, and ACFS, an independent not-for-profit research centre, with funding provided by the Victorian Government as part of its ongoing support for leadership in the pension and superannuation industry. ACFS specialises in leading-edge financial research and dialogue to support Australia as a centre for finance practice, research and education. Drawing on expertise from academia, industry and government, we facilitate industry-relevant and evidenced-based research and dialogue, thought leadership and independent commentary.

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

Our thanks go to lead author Dr David Knox and his team at Mercer for their work on the Index. We are especially grateful to the in-country experts at Mercer offices around the world who assisted with the collection and interpretation of the data. Thanks also to the Victorian Government's Department of Economic Development, Jobs, Transport and Resources for its long-term support of this study.



**Amy Auster**

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

- their ageing populations arising from lower fertility rates and increasing life expectancies
- increased government debt in some countries
- uncertain economic conditions
- record low interest rates
- a global shift towards greater individual responsibility with defined contribution plans

Within this global environment of change, it is important that we learn together to understand what best practice may look like, both now and into the future. This seventh 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, encouraging people to work longer, the level of funding set aside for retirement, and some benefit design issues that reduce leakage of benefits before retirement.

This year we have looked back over the last seven years to check if pension systems can keep delivering into the future. It is both interesting and insightful as some countries have increased their labour force participation at older ages whereas in other countries this has remained steady. We also witness considerable variation in the movement of the value of pension assets (when expressed as a percentage of GDP) caused by the global financial crisis and the differences in asset allocation.

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

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, Amy Auster 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 continues to encourage pension reform to improve the provision of financial security for retirees around the world.



**Dr David Knox**  
Senior Partner  
Mercer



# CHAPTER 1

## EXECUTIVE SUMMARY

The provision of financial security in retirement is critical for both individuals and societies as most countries are now grappling with the social, economic and financial effects of ageing populations. The major causes of this demographic shift are declining birth rates and increasing longevity. Inevitably this is placing financial pressure on current retirement income systems. Yet, a comparison of the diverse systems around the world is not straightforward. As the OECD (2013a) 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.”<sup>1</sup>

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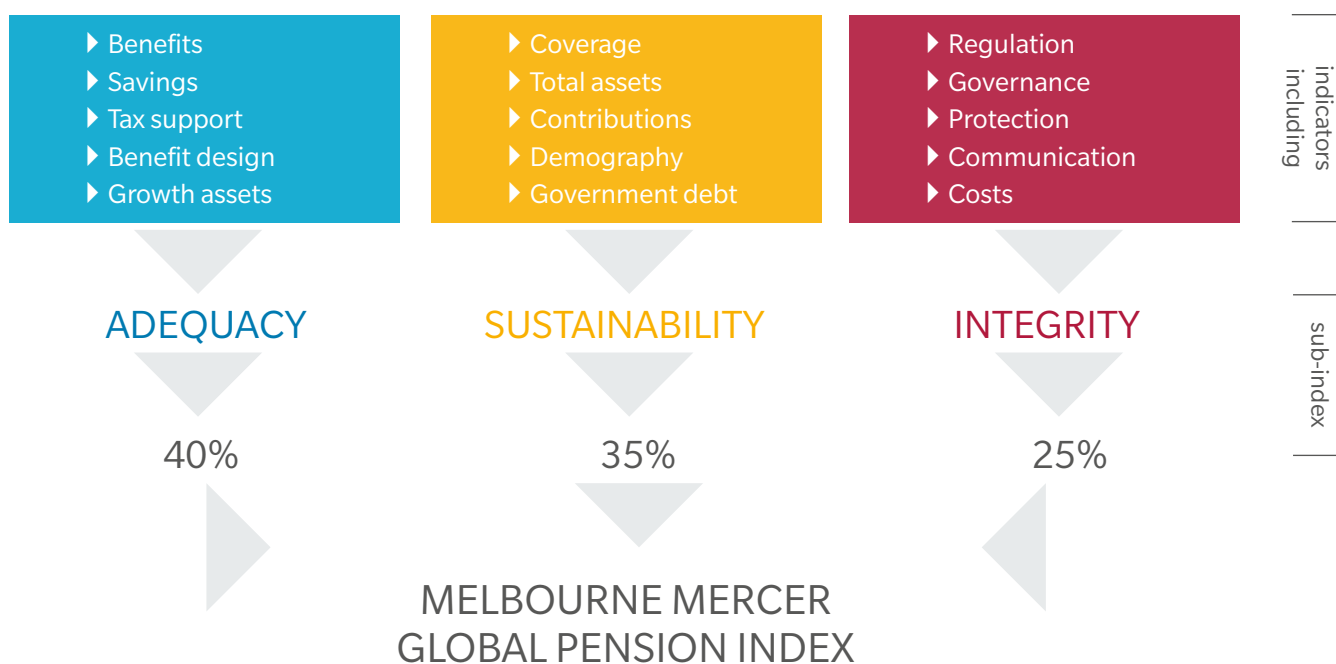
<sup>1</sup> OECD (2013a), p120.

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. That means there is no single system that can be transplanted from one country and applied, without change, to another country. However there are certain features and characteristics that, across the range of systems, are likely to lead to improved financial benefits for aged individuals and households, an increased likelihood of future

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

With these desirable outcomes in mind, the Melbourne Mercer Global Pension Index uses three sub-indices – adequacy, sustainability and integrity – to measure each country's retirement income system against more than 40 indicators. The following diagram highlights some of the topics covered in each sub-index.

## Calculating the Melbourne Mercer Global Pension Index



The overall index value for each country's system represents the weighted average of the three sub-indices. The weightings used are 40 percent for the adequacy sub-index, 35 percent for the sustainability sub-index and 25 percent for the integrity sub-index. The different weightings are used to reflect the primary importance of the adequacy sub-index which represents the benefits that are currently being provided together with some important 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 40.3 for India to 81.7 for Denmark.



The following table summarises the results.

| Grade | Index Value | Countries   | Description  |
|-------|-------------|---|--|
| A     | >80         | Denmark<br>Netherlands  | A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.   |
| B+    | 75–80       | Australia   | A system that has a sound structure, with many good features, but has some areas for improvement that differentiates it from an A-grade system.  |
| B     | 65–75       | Sweden<br>Switzerland<br>Finland<br>Canada<br>Chile<br>UK                       |  |
| C+    | 60–65       | Singapore<br>Ireland<br>Germany   | A system that has some good features, but also has major risks and/or shortcomings that should be addressed. Without these improvements, its efficacy and/or long-term sustainability can be questioned. |
| C     | 50–60       | France<br>USA<br>Poland<br>South Africa<br>Brazil<br>Austria<br>Mexico<br>Italy |  |
| D     | 35–50       | Indonesia<br>China<br>Japan<br>Korea (South)<br>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 non-existent.  |

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.

For this year's Index a number of countries have changed grade, with the Netherlands joining Denmark with an A-grade. Mexico and Italy improved to a C-grade.

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      | 79.6                | 81.2             | 72.1           | 87.6        |
| Austria        | 52.2                | 67.6             | 17.2           | 76.8        |
| Brazil         | 53.2                | 64.6             | 24.5           | 75.1        |
| Canada         | 70.0                | 79.4             | 56.2           | 74.3        |
| Chile          | 69.1                | 62.8             | 65.0           | 84.8        |
| China          | 48.0                | 62.7             | 29.8           | 50.0        |
| Denmark        | 81.7                | 77.2             | 84.7           | 84.5        |
| Finland        | 73.0                | 70.7             | 61.8           | 92.4        |
| France         | 57.4                | 77.2             | 36.6           | 54.9        |
| Germany        | 62.0                | 76.0             | 36.8           | 75.0        |
| India          | 40.3                | 30.0             | 39.9           | 57.6        |
| Indonesia      | 48.2                | 41.3             | 40.1           | 70.8        |
| Ireland        | 63.1                | 77.0             | 36.2           | 78.5        |
| Italy          | 50.9                | 68.4             | 12.1           | 77.4        |
| Japan          | 44.1                | 48.8             | 26.5           | 61.2        |
| Korea (South)  | 43.8                | 43.9             | 41.6           | 46.8        |
| Mexico         | 52.1                | 56.4             | 53.5           | 43.4        |
| Netherlands    | 80.5                | 80.5             | 74.3           | 89.3        |
| Poland         | 56.2                | 61.8             | 40.6           | 69.0        |
| Singapore      | 64.7                | 55.7             | 65.9           | 77.2        |
| South Africa   | 53.4                | 47.3             | 43.0           | 77.7        |
| Sweden         | 74.2                | 71.1             | 72.6           | 81.5        |
| Switzerland    | 74.2                | 73.9             | 68.4           | 82.9        |
| UK             | 65.0                | 64.2             | 51.3           | 85.5        |
| USA            | 56.3                | 55.1             | 54.4           | 61.1        |
| <b>Average</b> | <b>60.5</b>         | <b>63.8</b>      | <b>48.2</b>    | <b>72.6</b> |

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 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              | C         |
| Denmark       | A                   | B+               | A              | A         |
| Finland       | B                   | B                | C+             | A         |
| France        | C                   | B+               | D              | C         |
| Germany       | C+                  | B+               | D              | B+        |
| India         | D                   | E                | D              | C         |
| Indonesia     | D                   | D                | D              | B         |
| Ireland       | C+                  | B+               | D              | B+        |
| Italy         | C                   | B                | E              | B+        |
| Japan         | D                   | D                | E              | C+        |
| Korea (South) | D                   | D                | D              | D         |
| Mexico        | C                   | C                | C              | D         |
| Netherlands   | A                   | A                | B              | A         |
| Poland        | C                   | C+               | D              | B         |
| Singapore     | C+                  | C                | B              | B+        |
| South Africa  | C                   | D                | D              | B+        |
| Sweden        | B                   | B                | B              | A         |
| Switzerland   | B                   | B                | B              | A         |
| UK            | B                   | C+               | 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."<sup>2</sup> 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<sup>3</sup>
- promote higher labour force participation at older ages, which will increase the savings available for retirement and limit the continuing increase in the length of retirement
- encourage or require higher levels of private saving, both within and beyond the pension system, to reduce the future dependence on the public pension 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
- review the level of public pension indexation as the level and frequency of increases are critical to ensure that the real value of a pension is maintained, balanced by its long term sustainability
- improve the governance of private pension plans and introduce greater transparency to improve the confidence of plan members

It is interesting to note that Jackson et al (2013) of the Center for Strategic and International Studies concluded from their work on the Global Aging Preparedness Index that whilst there are many strategies available to address the economic and social challenges of an ageing population, two strategies in particular are crucial. They are "extending work lives and increasing funded pension savings."<sup>4</sup> These two developments would improve a country's adequacy and sustainability sub-index values through higher retirement ages, increased labour force participation at older ages, greater pension coverage, higher contribution rates, increased savings and a higher level of pension assets.

Recently, Marianne Thyssen (2015) of the European Commission commented that "Reforms to lengthen working lives are the key to achieving adequacy and financial sustainability in both the public and private pension schemes."<sup>5</sup> She went on to say that: "While prolonging working lives addresses one part of the adequacy question, it is also essential to enhance the coverage and quality of supplementary (private) pensions." We agree that the significant consequences of our ageing populations need to be addressed in several ways.

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 four 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. Further analysis of this trend can be found in Chapter 4.

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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 pension age to the likely ongoing increases in life expectancy.

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4 Jackson et al (2013), page V.

5 Thyssen M (2015).

# 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, wherever 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 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.

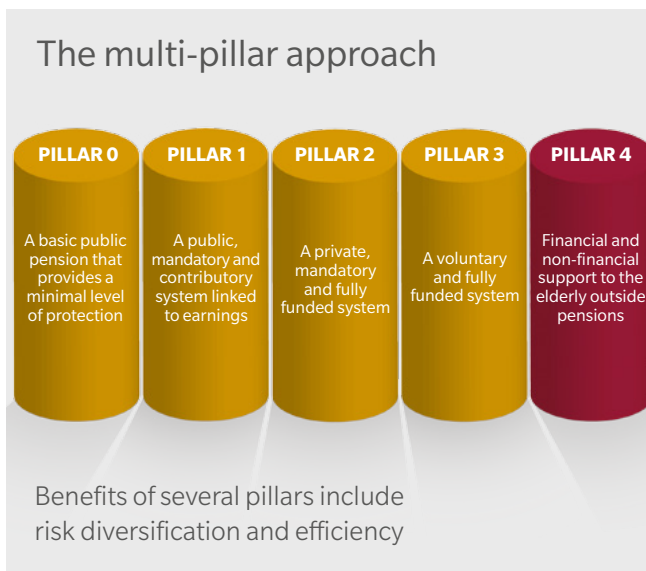
In its influential report "Averting the Old Age Crisis", the World Bank (1994) recommended a multi-pillar system for the provision of old-age income security, comprising:

- 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 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



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 delivery 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 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.<sup>6</sup>

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

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<sup>6</sup> The attachments provide the results for the indicators in each sub-index so that readers may calculate the effects of changing the weights used between the sub-indices or, indeed, within each sub-index.

# CHAPTER 3

## CHANGES FROM 2014 TO 2015

The 2015 Index reviews pension systems in the same 25 countries as the 2014 Index. There were no changes to questions asked this year.

This consistency enables comparisons to be made easily from year to year.

However there was a change to the scoring system used for Question S2.

The level of pension assets, expressed as a percentage of each country's GDP, represents an indicator of how much money has been put aside to pay future retirement benefits. It represents one of the key indicators within the sustainability sub-index.

When the Index commenced in 2009, no country had pension assets that exceeded 150% of GDP. Hence the maximum score was given at that level. Since that time, and despite the effects of the global financial crisis, Denmark and the Netherlands now have pension assets between 160% and 170% of GDP. We have therefore increased the level of pension assets required to receive the maximum score from 150% to 175% of GDP. This change means that the score for this indicator will be reduced slightly for most countries, unless there was a significant increase in the level of pension assets.

There have been two significant changes in the data provided by international agencies which have had a material impact on certain scores for a few countries.

First, the Economist Intelligence Unit conducted a major review of their Personal Disposable Income data for a number of countries to make estimates in a more robust manner and thereby improve the quality of this data. This data is used to estimate the net household saving rate (Question A3).

For Chile, Indonesia, Mexico, the Netherlands and Sweden, this change resulted in a significant increase in the household saving rate whereas for India there was a material reduction. For the Netherlands and Sweden, the increased rates are now consistent with those produced by the OECD.

Second, the United Nations updated life expectancies in the World Population Prospects: The 2015 Revision. Current life expectancies at birth increased in most, but not all, countries by an average of 1.1 years, with the largest increases for Chile and India. Projected life expectancies in 20 years also increased. These changes adversely affected the scores for most countries as the expected period of retirement increased (Question S3).

## A comparison from 2014 to 2015

The following table compares the results for the 25 countries from 2014 to 2015. Comments in respect of each country are made in Chapter 5.

| Country        | Total       |             | Adequacy    |             | Sustainability |             | Integrity   |             |
|----------------|-------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|
|                | 2014        | 2015        | 2014        | 2015        | 2014           | 2015        | 2014        | 2015        |
| Australia      | 79.9        | 79.6        | 81.2        | 81.2        | 73.0           | 72.1        | 87.8        | 87.6        |
| Austria        | 52.8        | 52.2        | 67.5        | 67.6        | 18.9           | 17.2        | 76.6        | 76.8        |
| Brazil         | 52.4        | 53.2        | 61.8        | 64.6        | 26.2           | 24.5        | 74.2        | 75.1        |
| Canada         | 69.1        | 70.0        | 75.0        | 79.4        | 58.6           | 56.2        | 74.3        | 74.3        |
| Chile          | 68.2        | 69.1        | 57.3        | 62.8        | 68.7           | 65.0        | 85.0        | 84.8        |
| China          | 49.0        | 48.0        | 62.5        | 62.7        | 33.0           | 29.8        | 49.9        | 50.0        |
| Denmark        | 82.4        | 81.7        | 77.5        | 77.2        | 86.5           | 84.7        | 84.5        | 84.5        |
| Finland        | 74.3        | 73.0        | 72.2        | 70.7        | 64.7           | 61.8        | 91.1        | 92.4        |
| France         | 57.5        | 57.4        | 76.4        | 77.2        | 37.7           | 36.6        | 54.9        | 54.9        |
| Germany        | 62.2        | 62.0        | 75.8        | 76.0        | 37.6           | 36.8        | 75.0        | 75.0        |
| India          | 43.5        | 40.3        | 37.1        | 30.0        | 40.6           | 39.9        | 57.7        | 57.6        |
| Indonesia      | 45.3        | 48.2        | 37.5        | 41.3        | 37.8           | 40.1        | 68.3        | 70.8        |
| Ireland        | 62.2        | 63.1        | 77.6        | 77.0        | 36.0           | 36.2        | 74.1        | 78.5        |
| Italy          | 49.6        | 50.9        | 68.1        | 68.4        | 13.4           | 12.1        | 70.7        | 77.4        |
| Japan          | 44.4        | 44.1        | 48.0        | 48.8        | 28.5           | 26.5        | 60.9        | 61.2        |
| Korea (South)  | 43.6        | 43.8        | 42.6        | 43.9        | 42.5           | 41.6        | 46.7        | 46.8        |
| Mexico         | 49.4        | 52.1        | 49.9        | 56.4        | 53.1           | 53.5        | 43.5        | 43.4        |
| Netherlands    | 79.2        | 80.5        | 75.3        | 80.5        | 76.3           | 74.3        | 89.4        | 89.3        |
| Poland         | 56.4        | 56.2        | 61.7        | 61.8        | 41.4           | 40.6        | 68.9        | 69.0        |
| Singapore      | 65.9        | 64.7        | 56.4        | 55.7        | 68.5           | 65.9        | 77.4        | 77.2        |
| South Africa   | 54.0        | 53.4        | 48.3        | 47.3        | 44.6           | 43.0        | 76.3        | 77.7        |
| Sweden         | 73.4        | 74.2        | 67.2        | 71.1        | 74.7           | 72.6        | 81.6        | 81.5        |
| Switzerland    | 73.9        | 74.2        | 71.9        | 73.9        | 69.7           | 68.4        | 83.1        | 82.9        |
| UK             | 67.6        | 65.0        | 69.8        | 64.2        | 52.4           | 51.3        | 85.4        | 85.5        |
| USA            | 57.9        | 56.3        | 55.2        | 55.1        | 58.5           | 54.4        | 61.2        | 61.1        |
| <b>Average</b> | <b>60.6</b> | <b>60.5</b> | <b>63.0</b> | <b>63.8</b> | <b>49.7</b>    | <b>48.2</b> | <b>71.9</b> | <b>72.6</b> |

The results show that the average for the overall index has hardly changed although this stability hides a number of countries where the score changed by more than one point for a variety of reasons as outlined below:

- The decline in Finland's score was caused by a combination of factors including a fall in the saving rate, increasing life expectancy and the change to the scoring methodology relating to pension assets.
- The decline in India's score was primarily caused by the revision in the household saving rate.
- The improved Indonesian score was primarily caused by the higher household saving rate and a decline in life expectancy.
- The improved Italian score was primarily caused by an improvement in the integrity sub-index due to the availability of additional information.
- The improved Mexican score was primarily caused by the higher household saving rate.
- The improved Dutch (Netherlands) score was primarily caused by the higher household saving rate. This improvement shifted the Dutch ranking from third to second and from B+ to A-grade.
- The decline in Singapore's score was primarily caused by an increase in life expectancy and the projected old-age dependency ratio.
- The decline in the British (UK) score was primarily caused by the removal of any requirement for retirees to purchase an annuity. The expected increased coverage from auto enrolment to occupational pension plans has not yet come through in the international data.
- The decline in the American (USA) score was primarily caused by increasing life expectancy and a lower estimate of funding from social security contributions.

# CHAPTER 4

## CAN PENSION SYSTEMS KEEP DELIVERING? SOME TRENDS IN SUSTAINABILITY INDICATORS OVER RECENT YEARS

One of the advantages of conducting an annual review of pension systems around the world is that we can observe changes over time. This provides the opportunity to go beyond the immediate assessment of particular pension systems and assess whether there has been any improvement or deterioration over recent years.

In this chapter we will consider several indicators relating to the sustainability of pension systems including:

- the level of pension fund assets, expressed as a percentage of a country's GDP (Question S2);
- the period of retirement (Question S3);
- the labour force participation rate at older ages (Question S5); and
- the level of government debt, again expressed as a percentage of GDP (Question S6).

These represent the indicators within the sustainability sub-index that are likely to change over time, even in the absence of any significant pension reform. Improvement in these indicators will show increasing sustainability of pension systems.

## Pension fund assets

The first indicator measures the level of assets held in private pension arrangements, public pension reserve funds, protected book reserves and pension insurance contracts in each country expressed as a percentage of the country's GDP. It shows the level of funds set aside today to pay future retirement benefits so that the expected pensions are not a financial strain on the next generation.

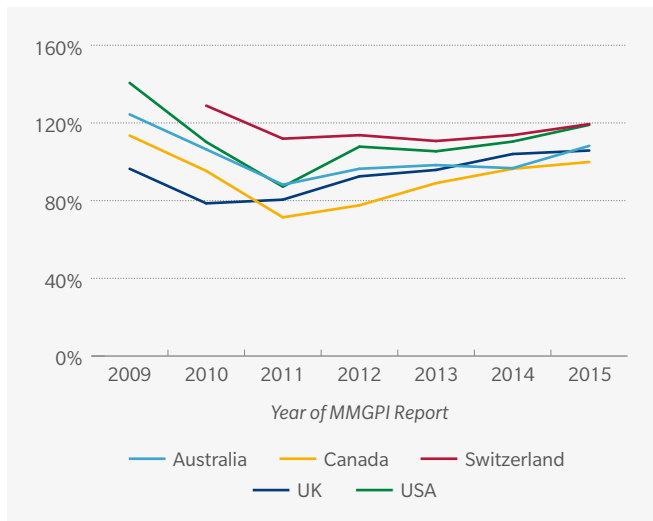
Before considering the trends over recent years, it needs to be recognised that there is a lag in obtaining the relevant data. The latest data available from the OECD for this year's report relates to the assets held at the end of 2013. Notwithstanding this lag, the available data over several years provides some valuable insights into the different approaches adopted around the world.

There is an enormous variety in the level of pension assets held ranging from 1.8% of GDP in Indonesia and 6.0% of GDP in Austria to 160.6% of GDP in the Netherlands and 168.9% of GDP in Denmark. This diversity recognises that some countries have very limited funded pension arrangements whereas others have well-developed and mature pension systems with significant assets.

An interesting angle is the different asset allocation adopted for the investments of pension fund assets. Whilst recognising there is no perfect or ideal asset allocation for every pension system as a whole, it is worth noting that the exposure to growth assets (including equities and property) varies and ranges from less than 10 per cent in India, Korea and Singapore to about 70 percent in Australia and South Africa.

Figure 1 shows that for countries with a relatively high exposure to growth assets, there was significant declines in the value of assets in 2010 and 2011 reflecting the consequences of the global financial crisis in 2007 and 2008. However, since that time there has been a steady recovery in the level of pension assets in each country as equity markets recovered. Furthermore, following the strong investment returns in most markets since December 2013, we would expect the current position to be above 120% of GDP for most of these countries. Despite this recovery, there is no doubt that this volatility can have a direct impact (both positive and negative) on the adequacy of assets accumulated for the provision of retirement benefits.

Figure 1: Assets as a % of GDP for countries with more than 50% in growth assets<sup>7</sup>



In contrast to Figure 1, Figure 2 shows the results for countries with a relatively low exposure to growth assets. Not surprisingly, we do not see the fall in the value of assets following the global financial crisis as these assets are predominantly fixed interest, including government bonds. However, it is also worth observing that with the exception of Singapore (with its long-established Central Provident Fund), the assets are less than 20 per cent of GDP and therefore do not play a significant role in the economy compared to the countries shown in Figure 1.

Figure 2: Assets as a % of GDP for countries with less than 30% in growth assets<sup>7</sup>

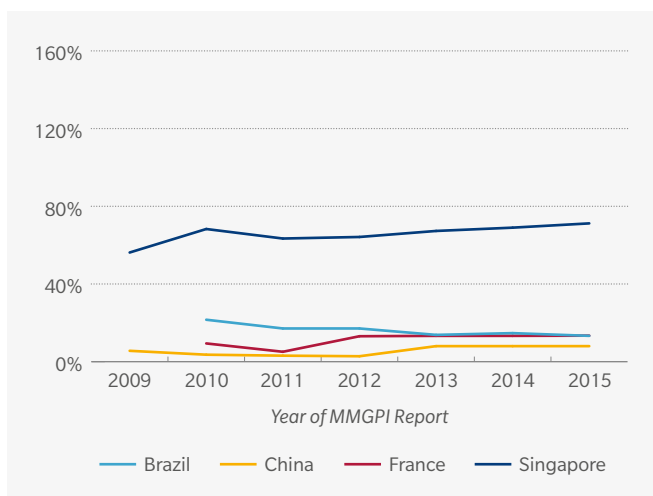
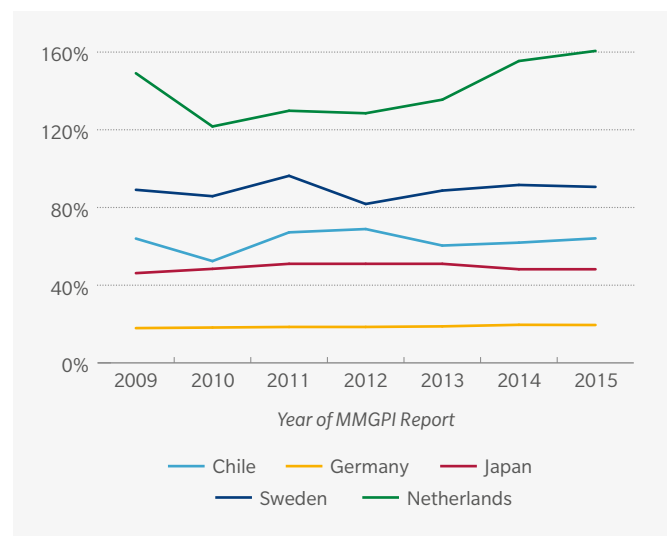


Figure 3 shows the results for countries with 30 to 50 per cent invested in growth assets. Here we see a variety of results with the Netherlands showing the dip due to the global financial crisis and then the subsequent recovery compared to virtually flat lines for other countries. One explanation is that the Dutch assets mainly relate to autonomous pension funds whereas the Swedish assets primarily relate to pension insurance contracts, where there may be some smoothing in the asset values.

Figure 3: Assets as a % of GDP for countries with 30% to 50% in growth assets



The balance between pay-as-you-go pensions and funded pension arrangements will continue to be debated as there is no correct answer to cover all circumstances. However, whichever approach is adopted, the assets of pension funds represent a key contribution towards retirement incomes into the future. A natural follow-up question is: what is the best or most appropriate asset allocation for each system? Again, a balance is normally required and will depend on the circumstances, including the local capital markets and the characteristics of the liabilities.

<sup>7</sup> Brazil, France and Switzerland were added to the index in 2010.

Reviewing this evidence since the Index began in 2009, we observe that:

- those countries which have a higher exposure to growth assets have experienced greater volatility in their asset values, when expressed as a percentage of the economy. This result is not surprising given the movement in some investment markets. The presence of insurance contracts may have reduced this effect for members in some countries although we note that any guarantees also come with a cost;
- the countries with higher growth exposures tend to have a higher level of assets when expressed as a percentage of GDP. It is not clear whether this outcome is caused by the stronger focus on growth assets with their higher long term returns, the existence of mature pension arrangements and/or stronger capital markets, or some other factors, such as the design of the state pension. In fact, it is likely to be caused by a combination of factors that vary between countries.

Assets of pension funds represent an important contributor to the ongoing sustainability of pension systems.

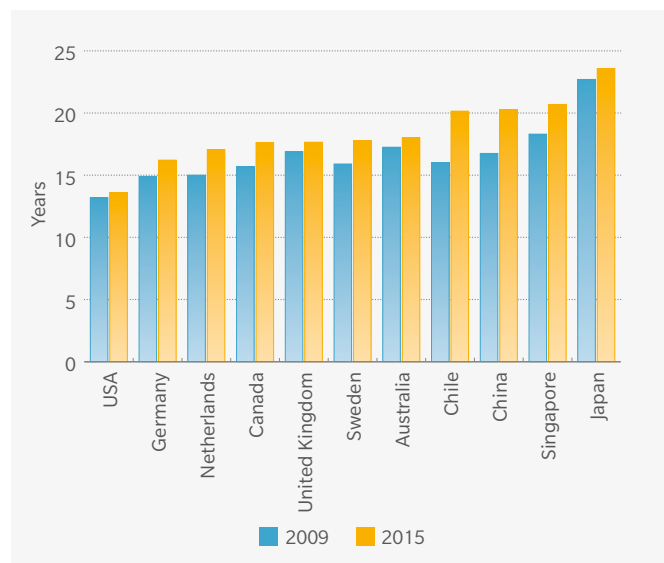
## The retirement period

Another measure of assessing the pension system sustainability is to consider the projected length of retirement. Although individuals retire at many ages for many different reasons, the difference between life expectancy at birth and the state pension age represents a useful proxy to estimate the normal retirement period. For example, if life expectancy is 80 years and the pension age is 65, then the projected average length of retirement is 15 years.

As life expectancy rises, this measure will increase. On the other hand, if the pension age increases and there is no change to life expectancy, this indicator will fall.

Figure 4 shows the estimated length of retirement<sup>8</sup> in 2009 and 2015 for the 11 countries which were included in the original Index.

Figure 4: The expected length of retirement in 2009 and 2015



Two trends are obvious:

1. All countries have experienced an increase in the expected length of retirement from 2009 to 2015 with the average length rising from 16.6 to 18.4 years.
2. The increase is far from uniform with the USA experiencing an increase of less than 0.4 years while Chile has experienced an increase of more than 4 years due to their significant increase in life expectancy.

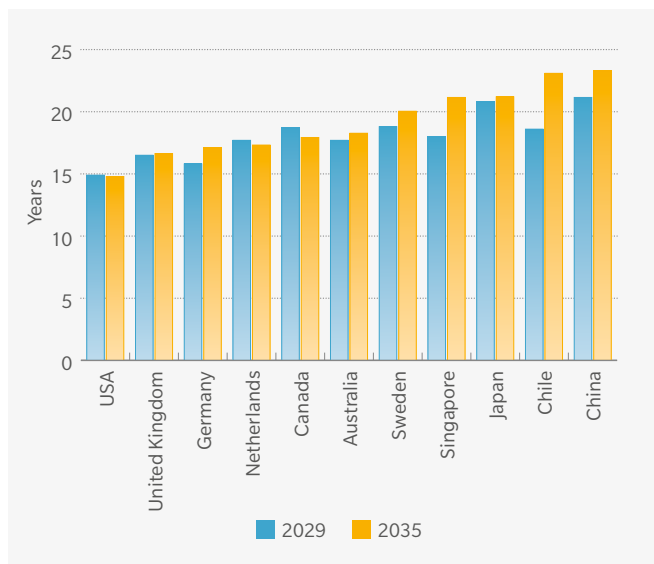
<sup>8</sup> The latest life expectancy figures come from the 2015 revision of the UN's publication *World Population Prospects*.



It is also worth noting that during this six-year period, five countries (namely Australia, Germany, Japan, Singapore and the UK) have increased their current pension age which acted to offset the increase that would have otherwise occurred from increasing life expectancies. Despite these increases, life expectancy has increased at a faster rate thereby lengthening the period of retirement.

Figure 5, uses the same calculation as Figure 4, except that it projects the position in 20 years.

Figure 5: The expected length of retirement 20 years after 2009 and 2015



The average projected period of retirement in 20 years, estimated in both 2009 and 2015, has increased from 18.1 to 19.2 years during that period.

It is noteworthy that three countries have witnessed a reduction in their projected period of retirement; namely Canada, the Netherlands and the USA. For Canada and the Netherlands this was due to the projected increase in the State pension age from 65 to 67 during the 20 years whilst for the USA, life expectancy has reduced slightly.

By contrast, the other eight countries have experienced an increase ranging from 0.1 years in the UK (where the pension age is also increasing) to 3.2 years in Singapore and 4.5 years in Chile, where there have been significant increases in the projected life expectancies.

This brief summary of the experience of 11 countries over six years highlights the importance of adjusting the state pension age, funding additional retirement income or reducing post-employment expectations as life expectancies rise. Without ongoing changes, as life expectancies continue to rise, the sustainability of pension systems and the delivery of adequate retirement benefits will come under threat.

# Labour force participation rate at older ages

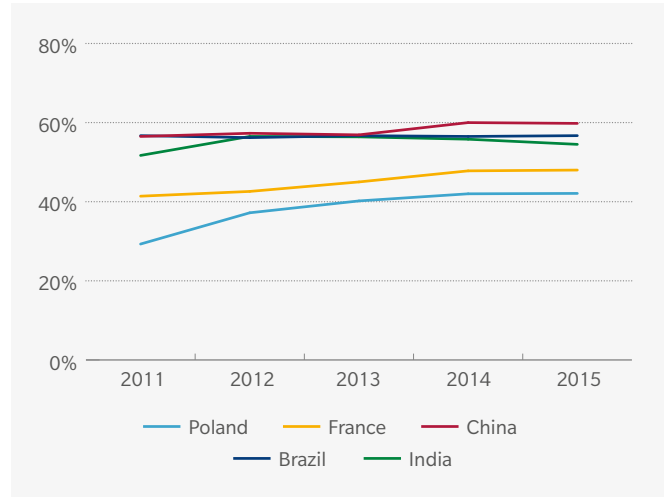
As noted in Chapter 1, the extension of working years represents one of the most positive ways of developing sustainable retirement systems, as life expectancies increase around the world. Therefore, a sustainability indicator used in the Index since its inception has been the labour force participation rate for those aged 55-64, as measured by the International Labour Organization.

The evidence is encouraging. For example, if one considers the 16 countries that comprised the Index in 2011 and compares their labour force participation rates for 55-64 year olds in 2011 and 2015, the average has increased from 57.9% to 62.2% or just over 1% per year. However, averages can be misleading and do not tell the full story.

There are countries that have lower participation rates and therefore are expected to have more scope for such increases. Figure 6 shows the labour force participation rates from 2011 to 2015 for the five countries that have participation rates below 60% in 2015.

Three of these countries (Brazil, China and India) showed increases of less than 4% during the period even though the current rate remains below 60%. However, the data may not reflect the actual experience as these economies have significant informal labour markets and may also have some cultural impediments restricting the growth. In contrast, France and Poland have both increased their labour force participation rates of 55-64 year olds by more than 6% during the period.

Figure 6: Labour force participation rates for ages 55-64 where the current rate is less than 60%



Figures 7 and 8 show the labour force participation rates for the countries where the current rate for 55-64 year olds is above 60% and again the results are varied. Figure 7 illustrates countries where the increase in the participation rate has been less than 4% from 2011 to 2015 whereas Figure 8 is for countries that have had an increase of more than 4% during the period.

Figure 7: Labour force participation rates for ages 55-64 where the current rate is more than 60% with an increase of less than 4% from 2011 to 2015

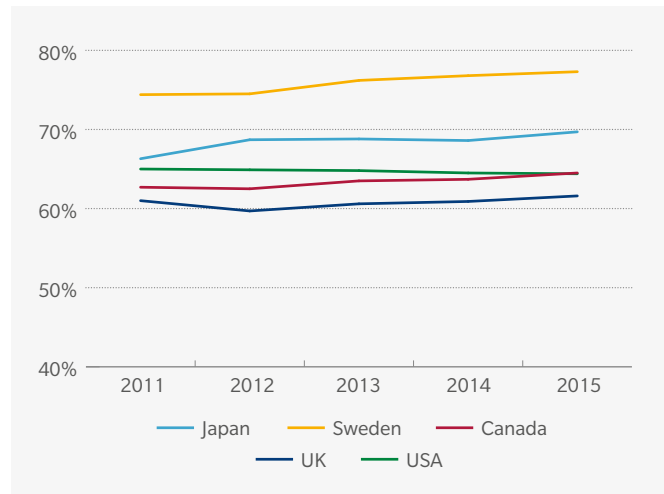
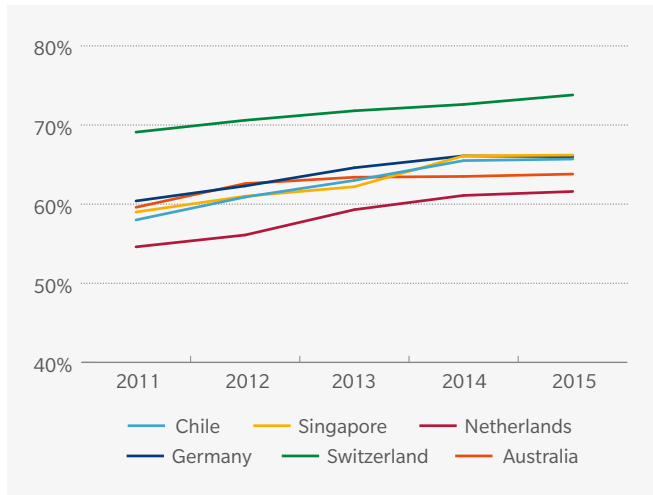


Figure 8: Labour force participation rates for ages 55-64 where the current rate is more than 60% with an increase of more than 4% from 2011 to 2015



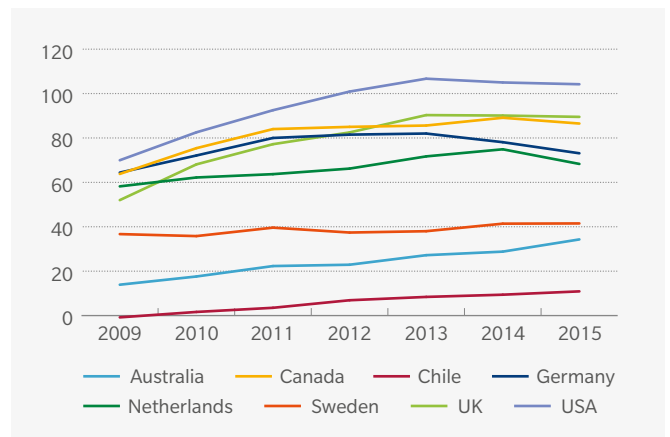
It is pleasing to see the increase in older labour force participation rates for the six countries shown in Figure 8. Switzerland is worthy of a comment given that its participation rate was almost 70% in 2011. Since that time it has increased its participation rate for 55-64 year olds on a steady basis each year to 74%.

This is in contrast to the countries in Figure 7 where the increases have been somewhat limited, including the USA where the rate has actually fallen. Of course, it must be recognised there is a natural limit to the participation rate at older ages and it may be that Sweden (currently at 77.3%) may be approaching the limit. However, with most countries below 70%, it is clear there is scope for labour force participation rates at older ages to be increased around the world, thereby improving the sustainability of many pension systems.

## Government debt

The level of net national government debt, using IMF data for gross debt offset by any sovereign wealth fund, represents a proxy for the ability of the government to pay unfunded pensions in the future. The government debt of many countries increased materially during the global financial crisis which placed many government budgets under significant pressure. Figure 9 shows the trends from 2009 to 2015 for eight<sup>9</sup> of the 11 countries which were in the original index.

Figure 9: The level of net government debt 2009-2015



It is apparent that during and immediately after the global financial crisis the level of government debt increased in each of these countries (with the exception of Sweden). However, with the exceptions of Australia and Chile, the level of debt has now stabilised and in many cases is decreasing gradually.

<sup>9</sup> The three countries excluded from the graph are China with its low government debt, Japan with its very high debt, and Singapore which has a negative debt.

In the context of this higher debt and the longer retirement period, many governments are now tackling social security expenditure, including public pension payments. This has resulted in countries introducing different measures, such as increasing the entitlement age for the pension, increasing social security contributions, reviewing the pension level and indexation arrangements and/or restricting access to means tested or universal payments. Such developments may improve the sustainability of the pension system but inevitably some of these changes also affect the adequacy of the pension itself. This highlights the natural tension in all retirement income arrangements between adequacy and sustainability.

# 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 2014 to 2015.

As detailed in Chapter 3, some of these changes were due to significant revisions to some data provided by international agencies and a small change to the scoring system for one question.

# Global Grades



| Grade | Index Value | Countries   | Description  |
|-------|-------------|---|--|
| A     | >80         |  | A first class and robust retirement income system that delivers good benefits, is sustainable and has a high level of integrity.   |
| B+    | 75–80       |  | 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       |  |  |
| C+    | 60–65       |  | 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       |  |  |
| D     | 35–50       |  | 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, employees or the self-employed paid into these private sector plans.

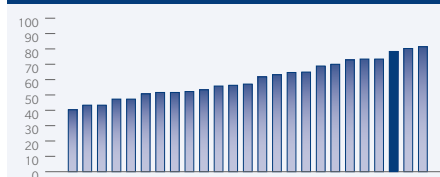
The overall index value for the Australian system could be increased by:

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

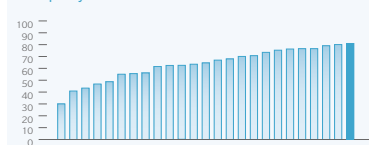
- increasing the labour force participation rate at older ages
- introducing a mechanism to increase the pension age as life expectancy continues to increase
- increasing the minimum access age to receive benefits from private pension plans so that access to retirement benefits is restricted to no more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

The Australian index value fell slightly from 79.9 in 2014 to 79.6 in 2015 due to a number of small changes.

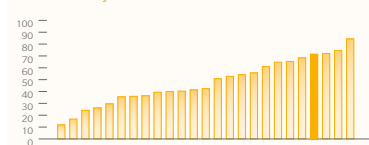
Overall Index – Australia



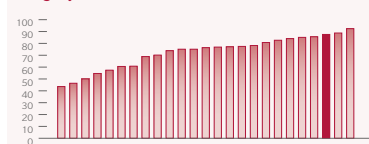
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Austria

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

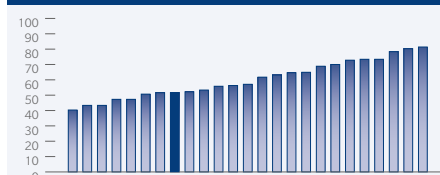
The overall index value for the Austrian system could be increased by:

- introducing a minimum access age so that the benefits from private pension plans are preserved for retirement purposes
- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets (can be done by collective bargaining)

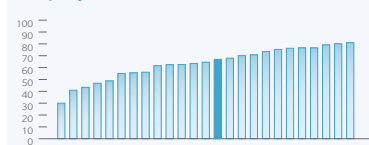
- introducing arrangements to protect the pension interests of both parties in a divorce
- enabling individuals to retire gradually whilst receiving a part pension
- increasing the labour force participation rate at older ages

The Austrian index value fell slightly from 52.8 in 2014 to 52.2 in 2015 due to a number of small changes.

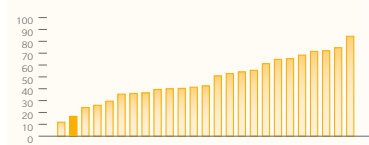
Overall Index – Austria



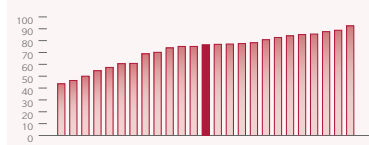
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





# Brazil

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

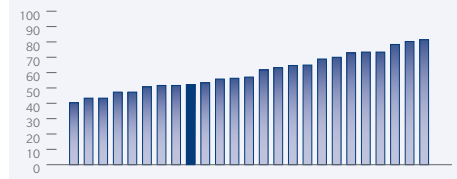
The overall index value for the Brazilian system could be increased by:

- introducing a minimum 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
- introducing a minimum level of mandatory contributions into a retirement savings fund

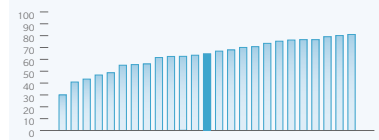
- increasing participation of employees in occupational pension schemes through automatic membership or enrolment
- increasing the state pension age over time
- introducing arrangements to protect the pension interests of both parties in a divorce
- enabling individuals to retire gradually whilst receiving a part pension

The Brazilian index value increased from 52.4 in 2014 to 53.2 in 2015 primarily due to a higher household saving rate and an upward revision in the proportion in growth assets.

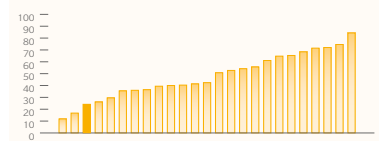
Overall Index – Brazil



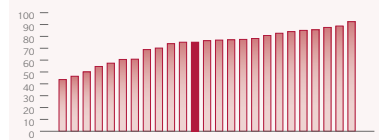
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



# Canada

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

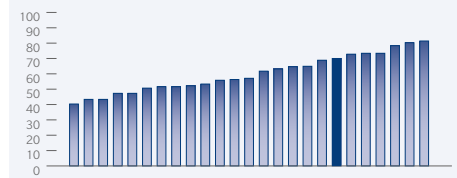
The overall index value for the Canadian system could be increased by:

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

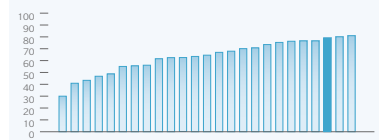
- increasing the level of household savings
- increasing the labour force participation rate at older ages

The Canadian index value increased from 69.1 in 2014 to 70.0 in 2015 primarily due to recognition of a minimum access age partly offset by a decrease in the sustainability sub-index score.

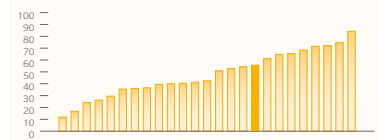
Overall Index – Canada



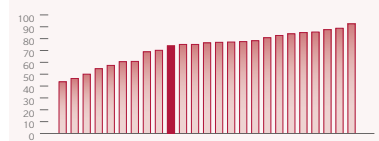
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index







## Chile

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

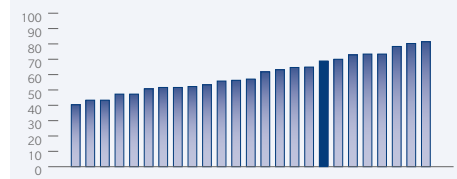
The overall index value for the Chilean system could be increased by:

- raising the level of mandatory contributions to increase the net replacement rate
- continuing to raise the level of household savings

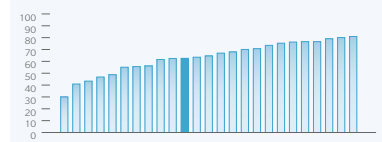
- increasing retirement ages for both men and women
- continuing to review the minimum pension for the poorest pensioners

The Chilean index value increased from 68.2 in 2014 to 69.1 in 2015 due to the increase in the household saving rate which was partly offset by the impact of increased life expectancy.

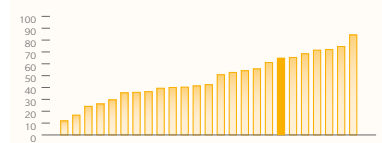
Overall Index – Chile



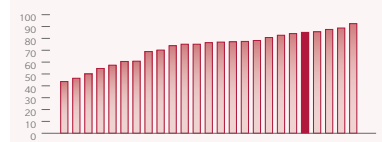
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## China

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

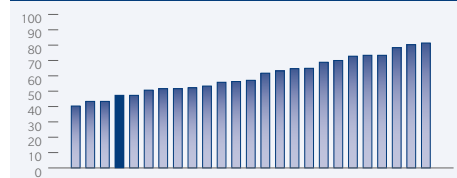
The overall index value for the Chinese system could be increased by:

- continuing to increase the coverage of workers in pension systems

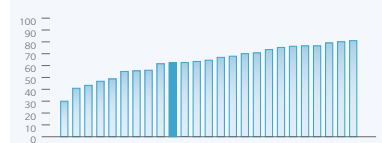
- introducing a requirement that part of the supplementary retirement benefit must be taken as an income stream
- increasing the state pension age over time
- offering more investment options to members and thereby permitting a greater exposure to growth assets
- improving the level of communication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

The Chinese index value fell from 49.0 in 2014 to 48.0 in 2015 primarily due to the increase in life expectancy.

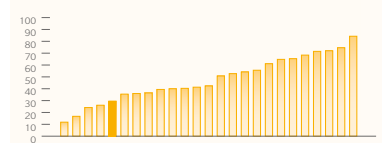
Overall Index – China



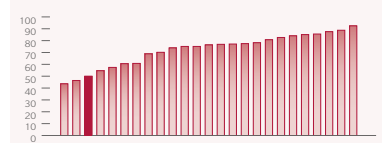
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## Denmark

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

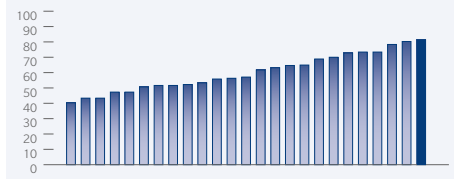
The overall index value for the Danish system could be increased by:

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

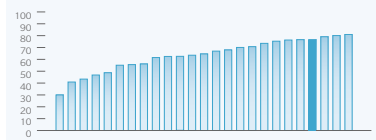
- increasing the labour force participation rate at older ages
- providing greater protection of members' accrued benefits in the case of fraud, mismanagement or provider insolvency

The Danish index value fell slightly from 82.4 in 2014 to 81.7 in 2015 due to a number of small changes.

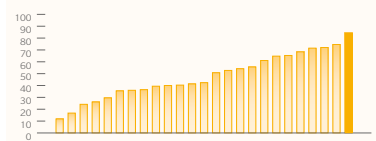
Overall Index – Denmark



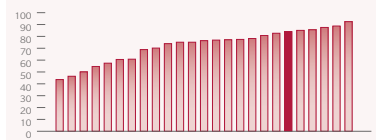
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Finland

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

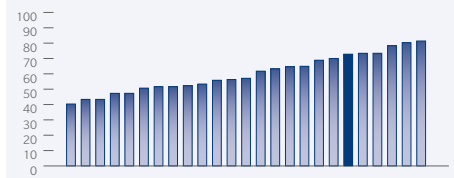
The overall index value for the Finnish system could be increased by:

- continuing to increase the minimum pension for low-income pensioners
- continuing to raise the level of mandatory contributions that are set aside for the future

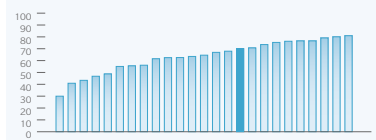
- increasing the labour force participation rate at older ages
- introducing arrangements to protect the pension interests of both parties in a divorce

The Finnish index value fell from 74.3 in 2014 to 73.0 in 2015 caused by a combination of factors including a fall in the household saving rate, increasing life expectancy and the change to the scoring methodology relating to pension assets.

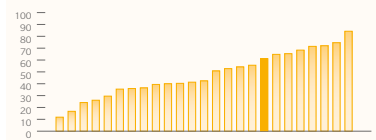
Overall Index – Finland



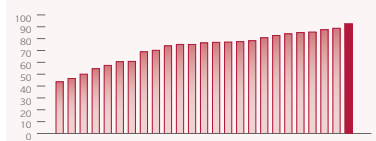
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## France

France's retirement income system comprises an earnings-related public pension with a minimum pension level; two mandatory occupational pension plans for blue and white collar workers respectively; and voluntary occupational plans.

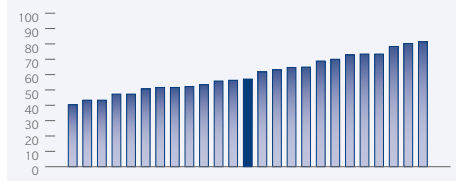
The overall index value for the French system could be increased by:

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

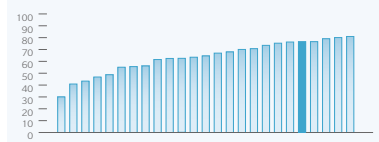
- increasing the labour force participation rate at older ages
- improving the regulatory requirements for the private pension system

The French index value fell slightly from 57.5 in 2014 to 57.4 in 2015 due to a number of small changes.

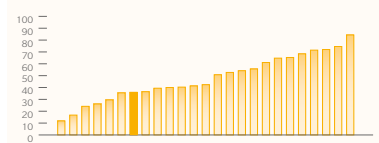
Overall Index – France



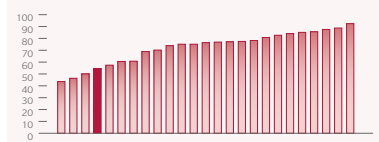
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## Germany

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

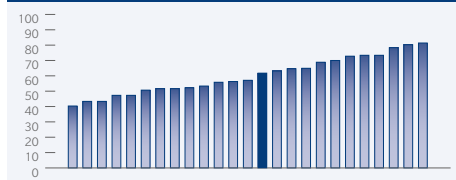
The overall index value for the German system could be increased by:

- increasing the minimum pension for low-income pensioners

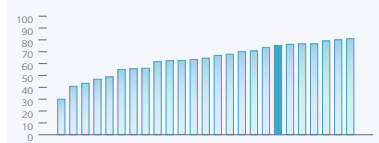
- increasing coverage of employees in occupational pension plans
- increasing the labour force participation rate at older ages
- improving the level of communication from pension arrangements to members

The German index value fell slightly from 62.2 in 2014 to 62.0 in 2015 due to a number of small changes.

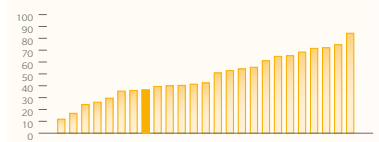
Overall Index – Germany



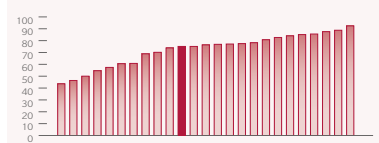
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## India

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

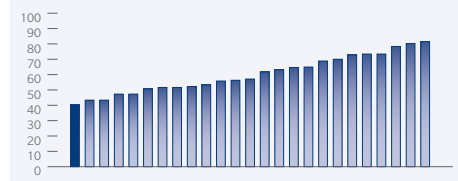
The overall index value for the Indian system could be increased by:

- 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

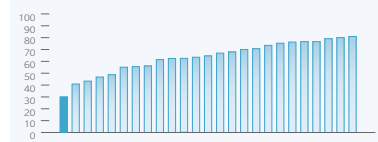
- improving the regulatory requirements for the private pension system
- continuing to improve the required level of communication to members from pension arrangements
- increasing the pension age as life expectancy continues to increase
- increasing the level of contributions in statutory pension schemes

The Indian index value fell from 43.5 in 2014 to 40.3 in 2015 primarily due to the revision in the household saving rate.

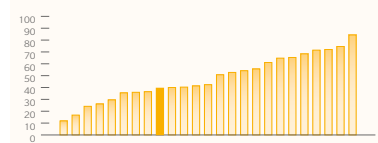
### Overall Index – India



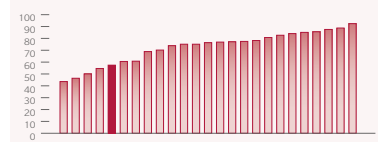
### Adequacy Sub-Index



### Sustainability Sub-Index



### Integrity Sub-Index



## Indonesia

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

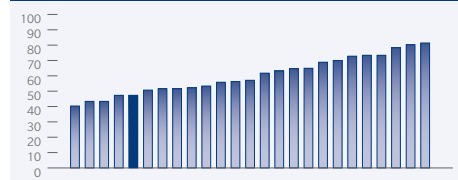
The overall index value for the Indonesian system could be increased by:

- introducing a minimum level of support for the poorest aged individuals
- increasing the level of pension provision within the workforce

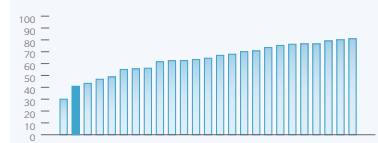
- improving the regulatory requirements for the private pension system
- improving the required level of communication to members from pension arrangements
- increasing the pension age as life expectancy continues to increase

The Indonesian index value increased from 45.2 in 2014 to 48.2 in 2015 primarily due to a higher household saving rate and a decline in life expectancy.

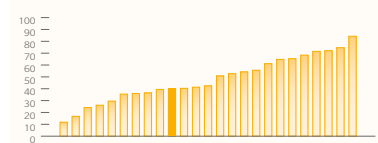
### Overall Index – Indonesia



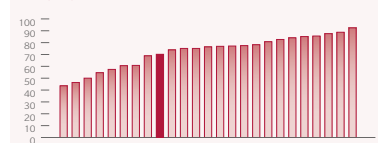
### Adequacy Sub-Index



### Sustainability Sub-Index



### Integrity Sub-Index





## 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.

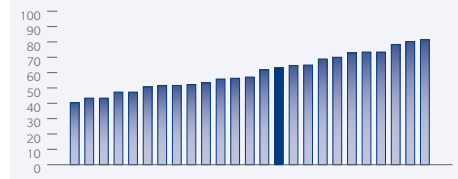
The overall index value for the Irish system could be increased by:

- 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

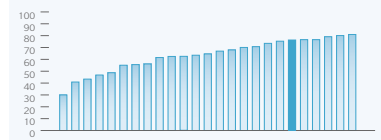
- providing greater protection of members' accrued benefits in the case of employer insolvency
- reducing government debt as a percentage of GDP

The Irish index value increased slightly from 62.2 in 2014 to 63.1 in 2015 primarily due to recognition of in-house asset limits.

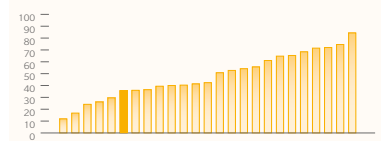
Overall Index – Ireland



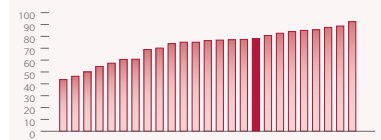
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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 but gradually increasing.

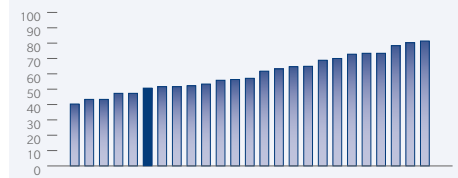
The overall index value for the Italian system could be increased by:

- increasing coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets

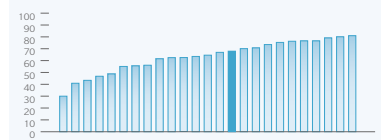
- increasing the labour force participation rate at older ages
- restricting the availability of benefits before retirement
- reducing government debt as a percentage of GDP

The Italian index value increased from 49.6 in 2014 to 50.9 in 2015 primarily caused by an improvement in the integrity sub-index due to the availability of additional information.

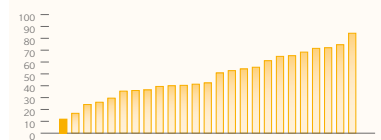
Overall Index – Italy



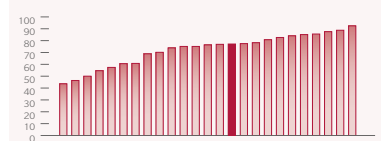
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## Japan

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

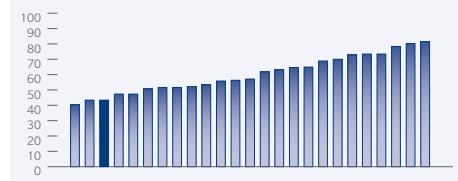
The overall index value for the Japanese system could be increased by:

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

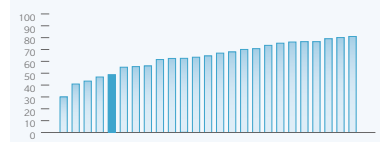
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- announcing a further increase in the state pension age as life expectancy continues to increase
- reducing government debt as a percentage of GDP

The Japanese index value fell slightly from 44.4 in 2014 to 44.1 in 2015 due to a number of small changes.

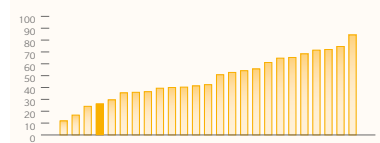
Overall Index – Japan



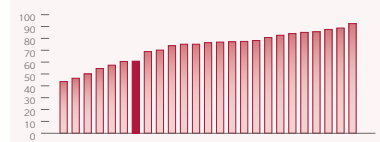
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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.

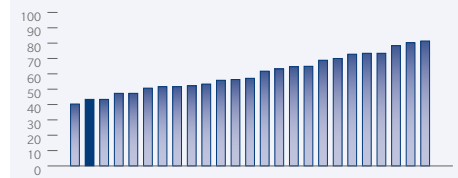
The overall index value for the Korean system could be increased by:

- 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

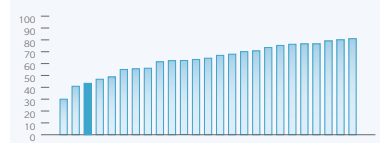
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving the governance requirements for the private pension system, including the need for an audit
- improving the level of communication required to members from pension plans

The Korean index value increased slightly from 43.6 in 2014 to 43.8 in 2015 due to a number of small changes

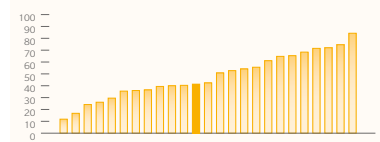
Overall Index – Korea (South)



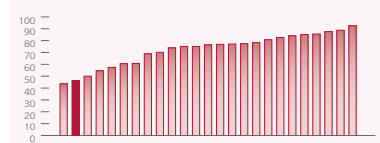
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index





## Mexico

Mexico’s retirement income system comprises a mandatory and funded scheme which is in transition from a defined benefit to a defined contribution scheme and includes a minimum public pension and supplemental private sector plans.

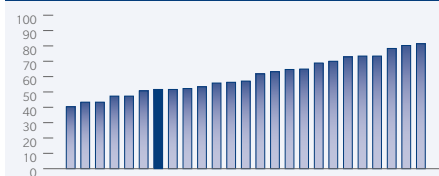
The overall index value for the Mexican system could be increased by:

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

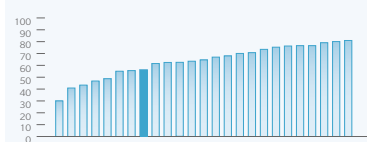
- increasing the level of funded contributions thereby increasing the level of assets over time
- improving the regulatory requirements for the private pension system
- raising the level of tax deductibility of employee and employer contributions to increase the level of contributions

The Mexican index value increased from 49.4 in 2014 to 52.1 in 2015 primarily due to a higher household saving rate.

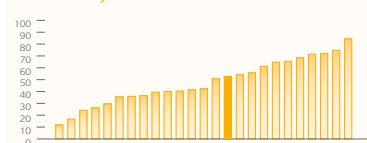
Overall Index – Mexico



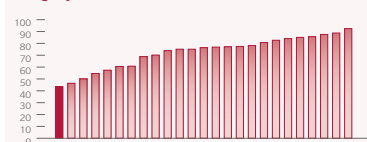
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## The Netherlands

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

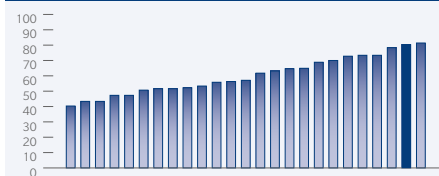
The overall index value for the Dutch system could be increased by:

- introducing a minimum access age so that it is clear that benefits are preserved for retirement purposes
- raising the level of household saving

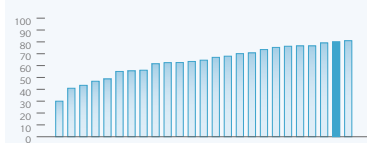
- increasing the labour force participation rate at older ages
- providing greater protection of members’ accrued benefits in the case of fraud, mismanagement or employer insolvency

The Dutch index value increased from 79.2 in 2014 to 80.5 in 2015 primarily due to a higher household saving rate.

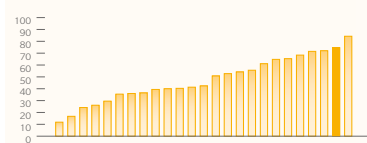
Overall Index – The Netherlands



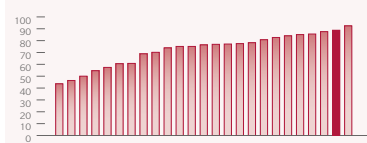
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index







## Poland

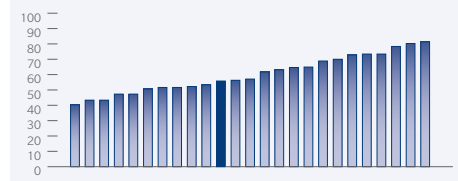
Poland's retirement income system was reformed in 1999. The new system, which applies to people born after 1968, comprises a minimum public pension and an earnings-related system with notional accounts. The overall system is in transition from a pay-as-you-go system to a funded approach. There are also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

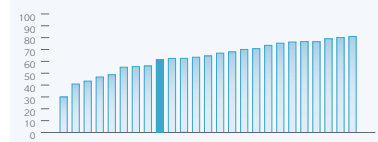
- maintaining a significant role for Pillar II pension funds in the system
- raising the minimum level of support available to the poorest pensioners
- introducing a requirement that part of the retirement benefit from private pension arrangements must be taken as an income stream
- raising the level 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 slightly from 56.4 in 2014 to 56.2 in 2015 due to a number of small changes.

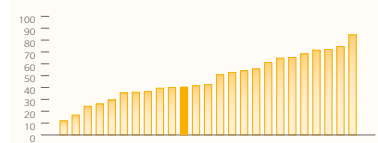
### Overall Index – Poland



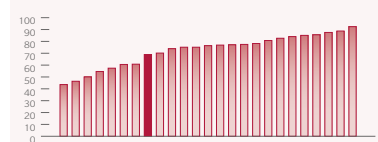
### Adequacy Sub-Index



### Sustainability Sub-Index



### Integrity Sub-Index



## Singapore

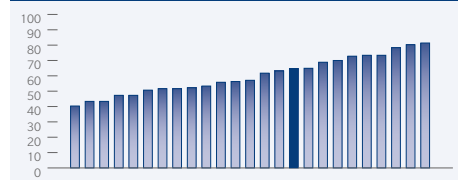
Singapore's retirement income system is based on the Central Provident Fund (CPF) which covers all employed Singaporean residents. Under the CPF, some benefits are available to be withdrawn at any time for specified housing and medical expenses with other benefits preserved for retirement. A prescribed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

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

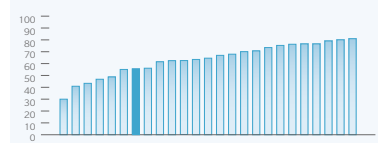
- reducing the barriers to establishing tax-approved group corporate retirement plans
- opening CPF to non-residents (who comprise more than one-third of the labour force)
- increasing the labour force participation rate at older ages

The Singaporean index value decreased from 65.9 in 2014 to 64.7 in 2015 primarily caused by an increase in life expectancy and the change to the scoring methodology relating to pension assets.

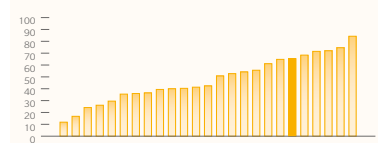
### Overall Index – Singapore



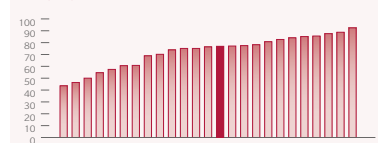
### Adequacy Sub-Index



### Sustainability Sub-Index



### Integrity Sub-Index







## South Africa

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

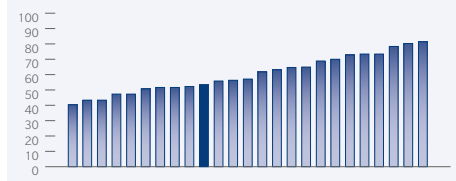
The overall index value for the South African system could be increased by:

- 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

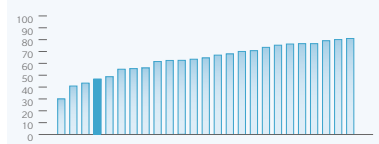
- introducing a minimum level of mandatory contributions into a retirement savings fund

The South African index value decreased slightly from 54.0 in 2014 to 53.4 in 2015 due to a number of small changes.

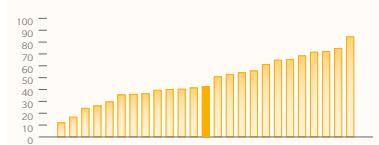
Overall Index – South Africa



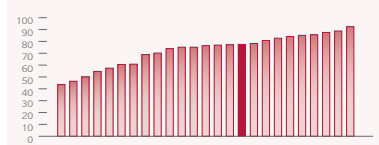
Adequacy Sub-Index



Sustainability Sub-Index



Integrity Sub-Index



## 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.

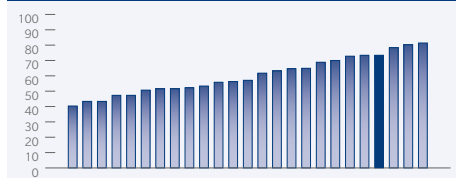
The overall index value for the Swedish system could be increased by:

- increasing the state pension age to reflect increasing life expectancy
- allowing and encouraging employee contributions into employer sponsored plans, as well as private savings

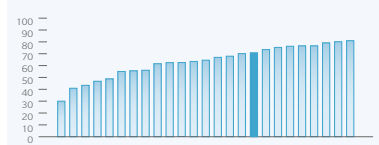
- retaining (rather than removing) tax incentives for employee contributions
- requiring annual information about the pension plan as a whole to be provided to plan members, as well as the individual statements
- introducing arrangements to protect all the pension interests of both parties in a divorce

The Swedish index value increased from 73.4 in 2014 to 74.2 in 2015 primarily due to an increase in the household saving rate.

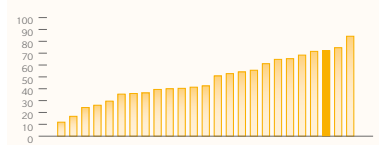
Overall Index – Sweden



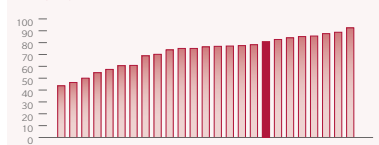
Adequacy Sub-Index



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.

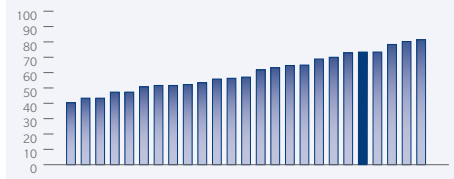
The overall index value for the Swiss system could be increased by:

- 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

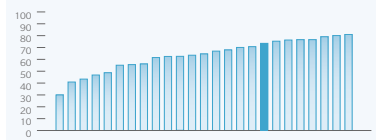
- increasing the state pension age over time
- increasing the rate of home ownership
- reducing pre-retirement leakage by further limiting access to funds before retirement

The Swiss index value increased slightly from 73.9 in 2014 to 74.2 in 2015 due to a number of small changes.

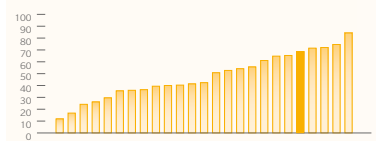
Overall Index – Switzerland



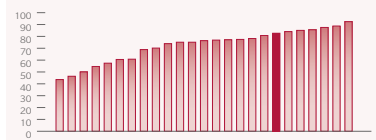
Adequacy Sub-Index



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.

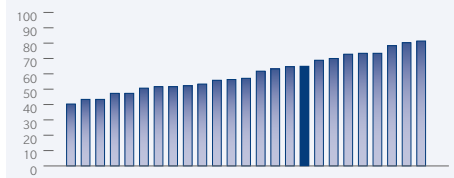
The overall index value for the British system could be increased by:

- restoring the requirement to take part of retirement savings as an income stream

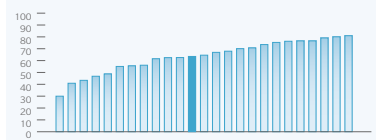
- raising the minimum pension for low-income pensioners
- further increasing the coverage of employees in occupational pension schemes
- increasing the level of contributions to occupational pension schemes
- raising the level of household saving
- increasing the labour force participation rate at older ages

The British index value fell from 67.6 in 2014 to 65.0 in 2015 primarily due to the removal of any requirement for retirees to purchase an annuity. The expected increased coverage from auto enrolment to occupational pension plans has not yet come through in the available international data.

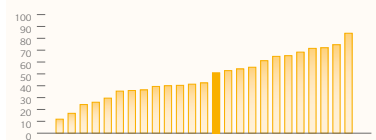
Overall Index – The United Kingdom



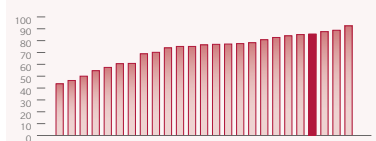
Adequacy Sub-Index



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.

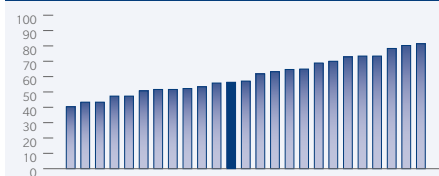
The overall index value for the American system could be increased by:

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

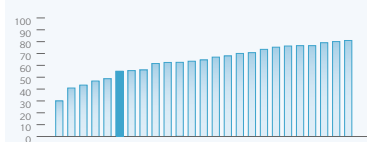
- improving the vesting of benefits for all plan members and maintaining the real value of retained benefits through to retirement
- reducing pre-retirement leakage by further limiting the access to funds before retirement
- introducing a requirement that part of the retirement benefit must be taken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

The American index value fell from 57.9 in 2014 to 56.3 in 2015 primarily caused by increasing life expectancy and a reduced estimate of funding available from social security contributions.

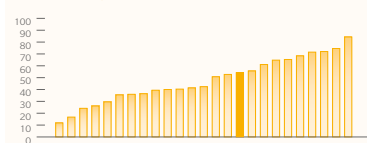
Overall Index – United States of America



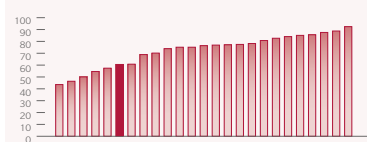
Adequacy Sub-Index



Sustainability Sub-Index



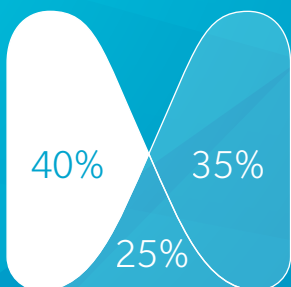
Integrity Sub-Index



# 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 represent an important source of financial security during retirement.



The countries with the highest value for the adequacy sub-index are Australia (81.2) and the Netherlands (80.5), with India (30.0) and Indonesia (41.3) 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.

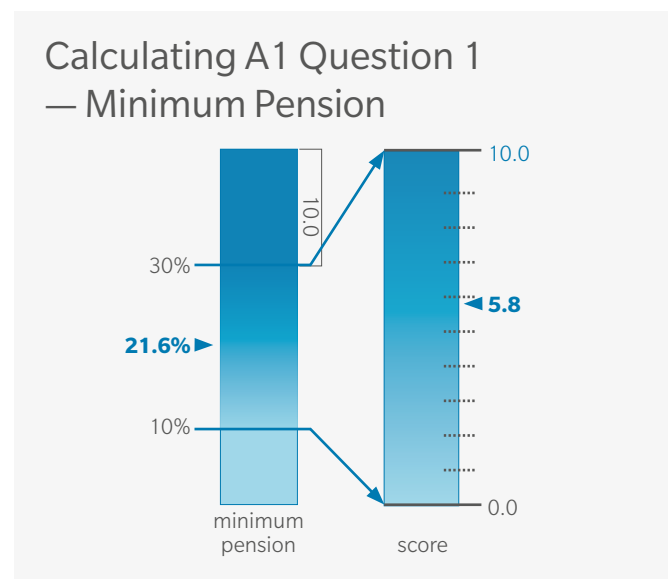
This question also considers how the minimum pension is increased or adjusted over time. The level and frequency of increases or adjustments are critical to ensure that the real value of the minimum pension is maintained.

### Calculation

There is no 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<sup>10</sup> 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 is assessed on a four-point scale with the maximum score of 2 for increases granted on a regular basis related to wage growth, 1.5 for increases granted on a regular basis related to price inflation, 1 for increases 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.



### Commentary

The minimum pension for most countries is between 9.6 percent in South Africa and 45.2 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.

<sup>10</sup> This level was chosen in 2009 when it was slightly higher than the OECD average of 27% for first tier benefits as shown in OECD (2009a). The average 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."<sup>11</sup> 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<sup>12</sup> which includes mandatory pension for private sector workers (publicly and privately funded) and typical voluntary occupational pension plans for those countries where such schemes cover at least 30 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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<sup>11</sup> The World Bank (1994), p295.

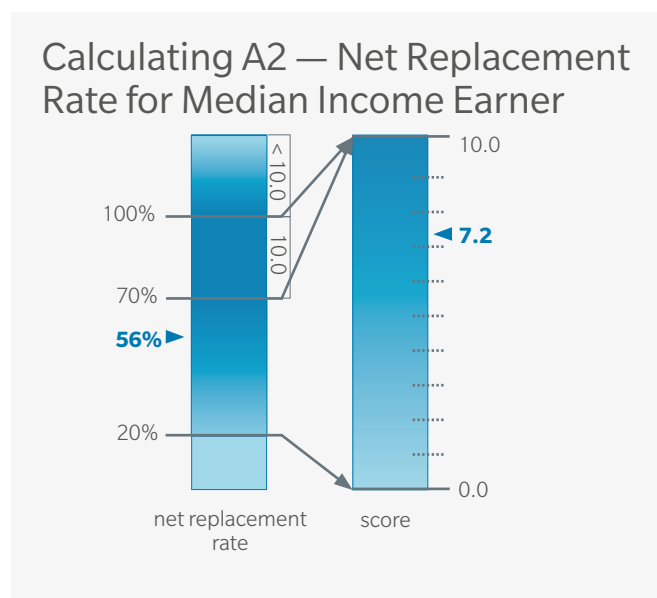
<sup>12</sup> OECD (2009b), p121.

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.<sup>13</sup>

## 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.



## 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 27 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 flexibility throughout an individual's 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.

13 OECD (2014a).

# 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:

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

PDIN = Personal disposable income

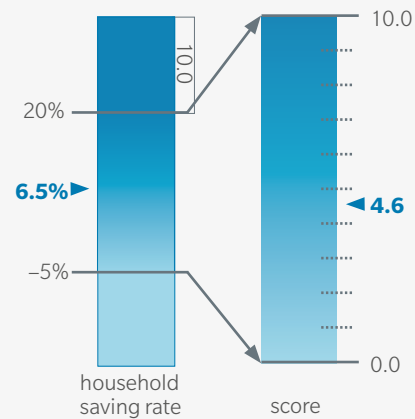
PCRD = Private consumption

To remove some volatility that may occur in annual figures, we have averaged the 2013 and 2014 measurements.

The calculated household saving rates ranged from minus 0.1 percent in Poland to plus 16.2 percent in China and 17.4 percent in Switzerland. 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 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 offer some taxation incentive for voluntary contributions. In Japan and Sweden, additional employee contributions are encouraged in certain circumstances. Sixteen countries offer a tax exemption on investment earnings of pension plans in both the pre and post-retirement periods while the other nine countries tax investment earnings in one or both of these 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<sup>14</sup> (except for death, invalidity and/or cases of significant financial hardship)? If so, what is the current age?

### Objective

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

### Calculation

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

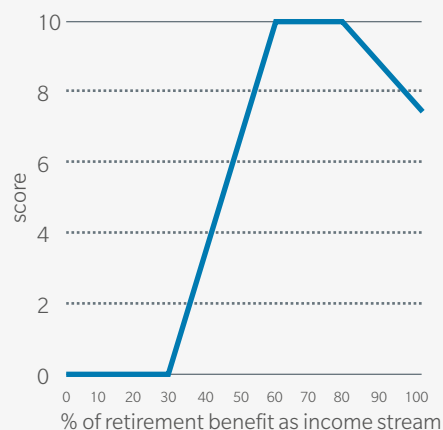
### Calculation

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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<sup>14</sup> Private pension plans include both defined benefit and defined contribution plans and may pay lump-sum or pension benefits. They also include plans for public sector and military employees.

## Calculating A6 Question 1 — Conversion to Income Streams



### Commentary

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

### Weighting

The requirement that part of a member's accumulated retirement benefit be turned into an income stream (which need not necessarily be a lifetime annuity) or the existence of tax incentives to encourage the take up of income streams represent desirable features of a retirement income system and therefore a weighting of 10 percent has been used in the adequacy sub-index.

## Question A7

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

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

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

### Objective

Most individuals 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 the adequacy of retirement income for the lower income partner is improved if pension assets are considered in the overall division of assets. This desirable feature has been given a four percent weighting in the adequacy sub-index.

## Question A9

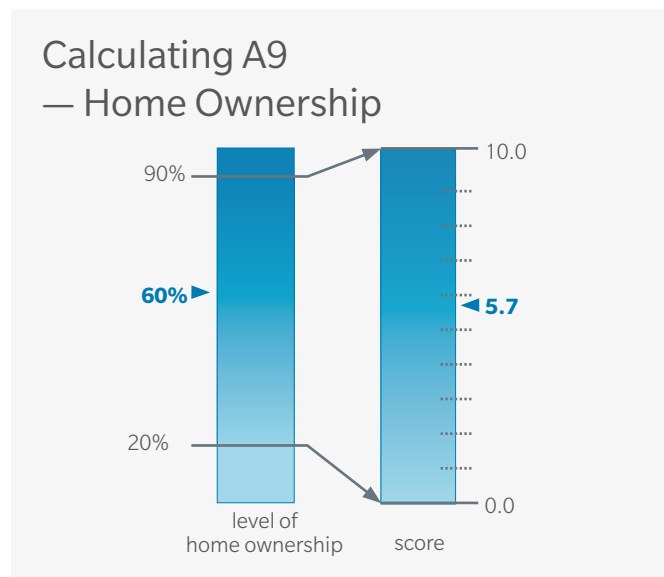
What is the level of home ownership in the country?

### Objective

In addition to regular income, home ownership represents an important factor 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.



### Commentary

The level of home ownership ranged from 37.5 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)<sup>15</sup> 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.

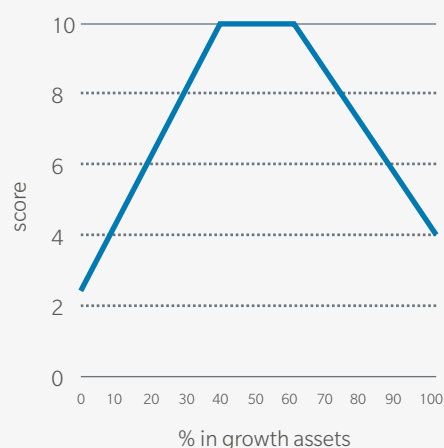
It is also important to recognise that the investment performance of a pension fund needs to focus on the longer term and not be focused on short term returns. With this in mind, we believe that it is appropriate for the investments of pension funds within any country to be diversified across a range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

### 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. Eleven 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.

<sup>15</sup> Hinz R, Rudolph H P, Antolin P and Yermo J (2010), p2.

## Question A1 1

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 nine 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)

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

OECD (2014a), for Chile.

OECD (2014b), for Brazil

Mercer calculations for Singapore using government websites.

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

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 (2014a) for Chile, Denmark and France.

### Question A3

Data from the Economist Intelligence Unit was provided for all countries.

### 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.

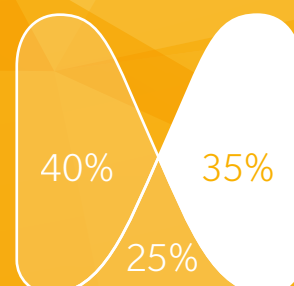
## Questions A4, A5, A6, A7, A8, A10 and A11

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.



The country with the highest value for the sustainability sub-index is Denmark (84.7) with the lowest values being for Italy (12.1) and Austria (17.2). 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?

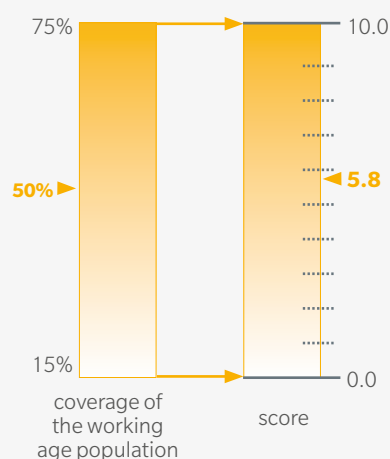
### Objective

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 about 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

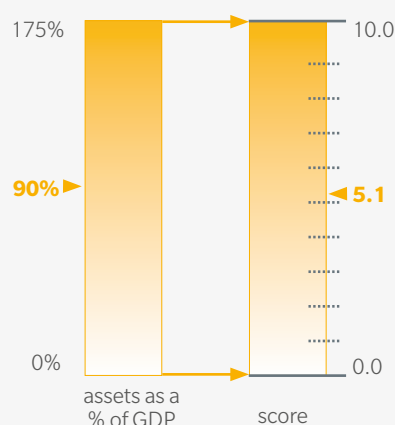
We have included assets from private pension funds, public pension reserve funds, protected book reserves and pension insurance contracts to calculate the total level of assets held within each country to pay future pensions, irrespective of whether the pensions are paid through public pension provision 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

Of the Index countries at commencement in 2009, none had pension assets that exceeded 150% of GDP. Hence the maximum score was given at that level. Since that time, and despite the effects of the global financial crisis, Denmark and the Netherlands have pension assets between 160% and 170% of GDP. For 2015 we have therefore increased the level of pension assets required to receive the maximum score from 150% to 175% of GDP. This change means that the score for this indicator will be reduced slightly for most countries, unless there was a significant increase in the level of pension assets.

The level of assets ranged from less than 10 percent of GDP for Austria, China, India, Indonesia and Italy to more than 160 percent for Denmark and the Netherlands. A maximum score was achieved for 175 percent of GDP and a minimum score for zero percent.

### Calculating S2 — Level of Assets



### Commentary

There is considerable variety in the size of assets set aside for future pensions around the world, reflecting the importance of both social security reserve funds as well as the second and third pillars in each country's system. In addition, many countries are part-way through a reform process which is expected to increase the level of assets over many decades. In these cases, we would expect the score for this indicator to gradually increase in future years.

The level of private pension assets goes beyond pension funds and includes book reserves, pension insurance contracts and funds managed by financial institutions such as Individual Retirement Accounts. These assets have been included as they represent assets 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

- 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?

### Objective

A retirement income system is designed to provide benefits to an individual from when the person leaves the workforce to his/her death. The longer the period, the larger the total value of benefits will need to be and hence there will be an increased financial strain placed on the overall system. Although individuals retire for many reasons, the state pension age represents a useful proxy that guides many retirement decisions. As life expectancy increases, one way of reducing the strain is to encourage later retirement.

In the second question, we project two decades ahead to highlight the fact that many governments have already taken action and increased the state pension age, thereby reducing the forthcoming pension burden.

The projected old age dependency ratio question highlights the impact of the ageing population between now and 2035 and therefore the likely effects on the funding requirements for pensions, health and aged care.

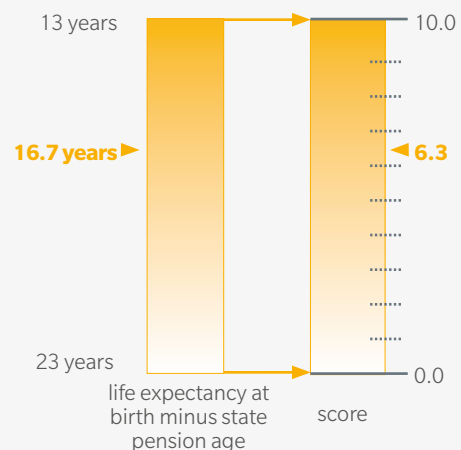
Consideration of the TFR provides an even longer term perspective as it provides an indication of the likely balance between workers and retirees in future decades.

## Calculations

- We have calculated the difference between the life expectancy at birth and the existing state pension age, as used in Park (2009). The answers provide an indicator of the average period of pension payment and range from negative 2.3 in South Africa and 10.1 in India to 22.8 in Korea and 23.6 in Japan. A maximum score is achieved with a difference of 13 years or less and a zero score with a score of 23 years or more.
- For 2035, the results range from 2.8 in South Africa and 13.9 in India to 23.3 years in China. The formula used remains unchanged with a maximum score for 13 years or less and a zero score for 23 years or more.

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

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



- The old-age dependency ratio is the population aged 65 and over divided by the population aged between 15 and 64. The projected dependency ratios for 2035 range from 11 percent in South Africa and 14 percent in India to 57 percent in Japan and 56 percent in Italy. 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.
- The TFR ranges from 1.2 in Singapore to 2.5 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 23 years, with the exception of Japan.

The projected results for 2035 differ from the current results with Chile, China and France having a difference in excess of 23 years.

A TFR of less than 1.5 in Austria, Germany, Italy, Japan, Korea, Poland and Singapore raises serious issues for the future age structure of these countries. Whilst immigration can assist in the short term it is unlikely to provide sound long term solutions.

## Weighting

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

## Question S4

What is the level of mandatory contributions that are set aside for retirement benefits (i.e. funded), expressed as a percentage of wages? These include mandatory employer and/or employee contributions towards funded public benefits (i.e. social security) and/or private retirement benefits.<sup>16</sup>

## 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.

<sup>16</sup> This question does not include contributions arising from statutory minimum levels of funding for defined benefit plans as these plans do not represent mandatory arrangements.

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.

While Italy’s mandatory scheme is funded on a pay-as-you-go basis we have assumed that 25 percent of the mandatory contributions required to fund termination indemnity benefits are invested. For Finland, we have assumed that 20 percent of the mandatory contributions paid by employers and employees are invested with the remainder used to fund pensions in payment. In line with OECD data, we have assumed that 35 percent of all contributions to Singapore’s Central Provident Fund are invested which gives them the maximum score.

In other countries, social security reserve funds are funded by the difference between contributions and current benefit payments or through top-up contributions from the government. Japan, Korea and the USA are examples of this approach. In these cases, we have assumed that 15 percent, 50 percent and 20 percent of the contributions are funded respectively.

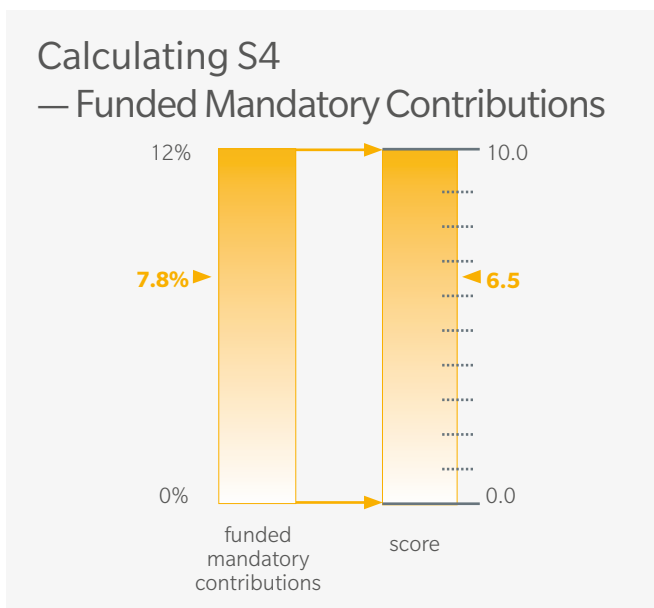
The results of the above calculations have meant that the net funded level of mandatory contributions (expressed as a percentage of earnings) range from zero percent in several countries to 12 percent or more in Denmark and Singapore. In view of this range and likely developments in some countries, a 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.

## 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.



## 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

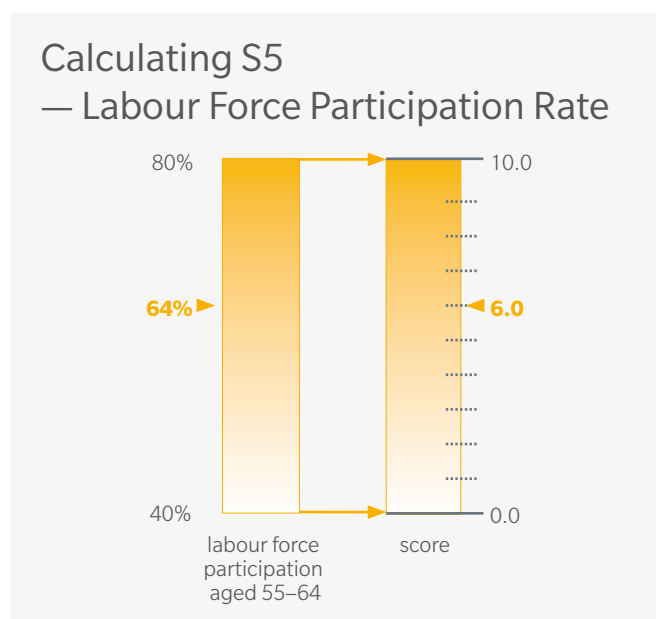
The percentages range from 40.2 percent in South Africa and 42.1 percent in Poland to 73.8 percent in Switzerland and 77.3 percent in Sweden. A maximum feasible score is considered to be 80 percent for this age bracket. Hence a participation rate of 80 percent or more scores maximum results whilst a participation rate of 40 percent or less scores zero.

### Commentary

With the increasing awareness of longer life expectancies and the pressures associated with an ageing population, it is important that governments continue to encourage higher labour force participation at older ages. It is pleasing to note that many countries are now experiencing increases in their labour force participation rates at these 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<sup>17</sup>), expressed as a percentage of GDP?

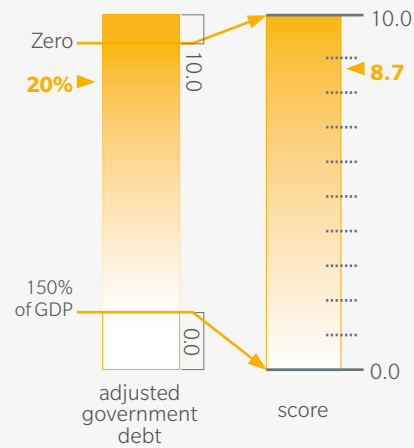
### Objective

As social security payments represent an important source of income in most retirement income systems, the ability of future governments to pay these pensions and/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 246 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.

<sup>17</sup> This reduction does not include sovereign wealth funds that have been set aside for future pension payments as these have been considered in Question S2.

## Question S7

In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (e.g. part time)? If yes, can employees continue to contribute and accrue benefits at an appropriate rate?

### Objective

A desirable feature of any retirement income system, particularly 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 four percent for the first question and one percent 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, Finland and Singapore.

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

OECD (2013a), 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 2015, 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 (2015-2020 and 2030-2035), and total fertility rate (2005-2010 and 2010-2015) data were from United Nations (2015).

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

### Question S5

International Labour Organization (2013).

### Question S6

International Monetary Fund (2015).

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

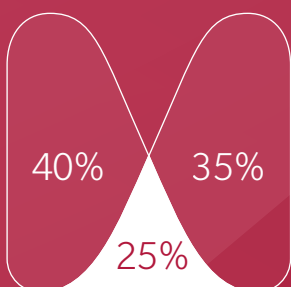
### Questions S4 and S7

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. Well operated and successful private sector plans are critical because without them the government becomes the only provider, which is not a desirable or sustainable long-term outcome. Hence they represent a critical component of a well-governed and trusted pension system, which has the long term confidence of the community.





The country with the highest value for the integrity sub-index is Finland (92.4), with the lowest value being for Mexico (43.4). 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 that 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 9.6 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 15.7 for Mexico to 47.9 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 10 percent of the plan's assets. A maximum score was given where in-house assets are restricted to five percent. There are no restrictions in Indonesia, Italy and Japan.

### Weighting

This requirement represents a key method of protecting the member's accrued benefits and is given a five percent weighting in the integrity sub-index.

## Question P3

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

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

### Objective

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

### Commentary

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

### Weighting

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

## Question P4

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

### Objective

It is important that members receive information when joining a pension plan, including a description of the benefits and the risks they may face, particularly with the global growth of DC plans.

### Commentary

All countries, except China and India (for some DB plans), require information to be provided when members join the plan.

### Weighting

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

## Question P5

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

Is the annual report required to show:

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

### Objective

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

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

### Commentary

There is considerable variety in the responses, with 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

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

### Commentary

The majority of countries have a requirement concerning annual personal statements with Austria, 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, 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 36.9 in Ireland 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.”<sup>18</sup>

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 9.8 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 (2014).

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



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

| Question           | Question weight | Score for each country |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |     |
|--------------------|-----------------|------------------------|---------|--------|--------|-------|-------|---------|---------|--------|---------|-------|-----------|---------|-------|-------|-------|--------|-------------|--------|-----------|--------------|--------|-------------|------|------|-----|
|                    |                 | 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  |     |
| A1                 | 17.5%           | 9.4                    | 8.4     | 9.6    | 9.6    | 3.4   | 6.2   | 10.0    | 5.3     | 7.7    | 4.9     | 0.0   | 0.0       | 9.3     | 6.0   | 5.5   | 0.0   | 8.7    | 9.8         | 3.1    | 0.7       | 0.0          | 7.2    | 6.2         | 5.7  | 4.3  |     |
| A2                 | 25%             | 10.0                   | 10.0    | 8.1    | 8.9    | 5.5   | 4.8   | 10.0    | 8.5     | 8.2    | 7.6     | 1.3   | 0.0       | 6.4     | 10.0  | 4.5   | 5.8   | 5.1    | 9.2         | 8.0    | 8.0       | 3.9          | 0.0    | 7.1         | 10.0 | 6.0  |     |
| A3                 | 10%             | 6.1                    | 5.0     | 5.0    | 3.9    | 5.5   | 8.5   | 2.2     | 2.6     | 7.9    | 5.6     | 5.2   | 7.8       | 3.4     | 3.7   | 2.4   | 4.1   | 6.0    | 5.2         | 2.0    | 7.7       | 7.7          | 8.3    | 9.0         | 4.1  | 5.3  |     |
| A4                 | 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                 | 10%             | 8.3                    | 0.0     | 0.0    | 6.7    | 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                 | 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         | 3.5  | 0.0  |     |
| A7                 | 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                 | 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                 | 5%              | 6.7                    | 5.4     | 7.8    | 6.9    | 7.4   | 9.7   | 5.4     | 6.5     | 5.4    | 4.7     | 9.5   | 8.5       | 7.1     | 7.4   | 6.0   | 5.8   | 8.1    | 5.6         | 7.0    | 10.0      | 10.0         | 4.8    | 7.1         | 2.5  | 6.9  | 6.4 |
| A10                | 5%              | 8.8                    | 9.1     | 7.3    | 10.0   | 10.0  | 6.3   | 7.4     | 10.0    | 6.3    | 10.0    | 3.4   | 6.3       | 10.0    | 7.4   | 10.0  | 3.4   | 6.8    | 10.0        | 9.1    | 2.5       | 8.5          | 10.0   | 10.0        | 10.0 | 10.0 |     |
| A11                | 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       | 0.0          | 5.0    | 10.0        | 10.0 | 0.0  |     |
| Adequacy sub-index | 40%             | 81.2                   | 67.6    | 64.6   | 79.4   | 62.8  | 62.7  | 77.2    | 70.7    | 77.2   | 76.0    | 30.0  | 41.3      | 77.0    | 68.4  | 48.8  | 43.9  | 56.4   | 80.5        | 61.8   | 55.7      | 47.3         | 71.1   | 73.9        | 64.2 | 55.1 |     |

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

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

| Question                 | Question weight | Score for each country |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
|--------------------------|-----------------|------------------------|---------|--------|--------|-------|-------|---------|---------|--------|---------|-------|-----------|---------|-------|-------|-------|--------|-------------|--------|-----------|--------------|--------|-------------|------|------|
|                          |                 | 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                       | 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                       | 20%             | 6.2                    | 0.3     | 0.8    | 5.7    | 3.7   | 0.5   | 9.7     | 5.0     | 0.8    | 1.1     | 0.3   | 0.1       | 3.7     | 0.4   | 2.8   | 2.9   | 0.9    | 9.2         | 1.1    | 4.1       | 4.7          | 5.3    | 6.8         | 6.0  | 6.7  |
| S3                       | 20%             | 5.7                    | 3.1     | 6.6    | 4.8    | 3.8   | 3.3   | 6.0     | 4.9     | 3.2    | 4.1     | 9.8   | 8.7       | 7.0     | 3.4   | 1.3   | 2.0   | 9.1    | 5.0         | 6.1    | 2.5       | 9.9          | 4.8    | 3.3         | 5.8  | 7.5  |
| S4                       | 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  | 2.1  |
| S5                       | 10%             | 5.9                    | 1.4     | 4.2    | 6.1    | 6.4   | 4.9   | 6.1     | 5.5     | 2.0    | 6.5     | 3.6   | 7.1       | 4.4     | 0.9   | 7.4   | 6.4   | 4.2    | 5.4         | 0.5    | 6.5       | 0.1          | 9.3    | 8.5         | 5.4  | 6.1  |
| S6                       | 10%             | 7.7                    | 4.2     | 5.7    | 4.2    | 9.3   | 8.1   | 7.2     | 6.0     | 3.7    | 5.1     | 5.7   | 8.3       | 2.7     | 1.2   | 0.0   | 8.0   | 6.7    | 5.4         | 6.7    | 10.0      | 6.9          | 7.2    | 6.9         | 4.0  | 3.1  |
| S7                       | 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   | 6.0         | 10.0 | 6.0  |
| Sustainability sub-index | 35%             | 72.1                   | 17.2    | 24.5   | 56.2   | 65.0  | 29.8  | 84.7    | 61.8    | 36.6   | 36.8    | 39.9  | 40.1      | 36.2    | 12.1  | 26.5  | 41.6  | 53.5   | 74.3        | 40.6   | 65.9      | 43.0         | 72.6   | 68.4        | 51.3 | 54.4 |

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  | Score for each country |           |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
|---|------------------------|-----------|---------|--------|--------|-------|-------|---------|---------|--------|---------|-------|-----------|---------|-------|-------|-------|--------|-------------|--------|-----------|--------------|--------|-------------|------|------|
|   | 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  |
| Do private sector pension plans need regulatory approval or supervision to operate?   | 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    | 7.5   | 7.5   | 2.5   | 10.0   | 7.5         | 7.5    | 10.0      | 10.0         | 8.8    | 10.0        | 10.0 | 10.0 |
| Is a private pension plan required to be a separate legal entity from the employer?   |                        |           |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
| Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?             | 12.5%                  | 9.2       | 3.4     | 9.2    | 8.7    | 9.2   | 10.0  | 10.0    | 9.2     | 8.2    | 7.4     | 9.2   | 8.2       | 9.2     | 7.6   | 3.6   | 7.6   | 9.2    | 7.6         | 7.6    | 5.6       | 9.2          | 8.4    | 10.0        | 10.0 | 7.6  |
| Does the regulator make industry data available from the submitted forms on a regular basis?                                      |                        |           |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
| 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  | 8.0   | 9.0     | 6.0     | 10.0   | 4.0     | 9.0   | 4.0       | 10.0    | 4.0   | 0.0   | 0.0   | 10.0   | 8.0         | 8.0    | 10.0      | 10.0         | 6.0    | 9.0         | 10.0 | 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?     |                        |           |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
| Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognised professional? | 5%                     | 10.0      | 5.0     | 10.0   | 7.5    | 7.5   | 10.0  | 10.0    | 10.0    | 10.0   | 7.5     | 10.0  | 6.3       | 10.0    | 7.5   | 0.0   | 5.0   | 10.0   | 7.5         | 7.5    | 7.5       | 10.0         | 7.5    | 7.5         | 5.0  | 5.0  |
| What is the capacity of the government to effectively formulate and implement sound policies?                                     |                        |           |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |
| What respect do citizens and the state have for the institutions that govern economic and social interactions among them?         | 10%                    | 8.4       | 7.9     | 1.3    | 8.6    | 7.1   | 0.4   | 9.6     | 9.6     | 6.8    | 8.0     | 0.2   | 0.0       | 7.8     | 3.0   | 7.3   | 5.1   | 1.2    | 8.9         | 4.6    | 9.4       | 2.3          | 9.5    | 8.9         | 8.1  | 7.1  |

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

Continues next page

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

| Question   | Question weight   | Score for each country |         |        |        |       |       |         |         |        |         |       |           |         |       |       |       |        |             |        |           |              |        |             |      |      |      |      |
|--|---|------------------------|---------|--------|--------|-------|-------|---------|---------|--------|---------|-------|-----------|---------|-------|-------|-------|--------|-------------|--------|-----------|--------------|--------|-------------|------|------|------|------|
|  |   | 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  |      |      |
| Protection and communication for members (P1-P7) | For defined benefit schemes, are there minimum funding requirements? What is the period over which any deficit or shortfall is normally funded?<br>For defined contribution schemes, are the assets required to fully meet the members' accounts?   | 10%                    | 10.0    | 7.5    | 9.0    | 9.0   | 10.0  | 10.0    | 10.0    | 5.0    | 8.0     | 5.0   | 7.0       | 10.0    | 9.0   | 9.0   | 9.0   | 6.0    | 10.0        | 10.0   | 5.0       | 10.0         | 8.0    | 9.0         | 9.0  | 8.0  | 8.0  |      |
|  | Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?  | 5%                     | 10.0    | 10.0   | 7.5    | 8.8   | 10.0  | 7.5     | 10.0    | 5.0    | 8.8     | 8.8   | 0.0       | 10.0    | 0.0   | 0.0   | 0.0   | 7.5    | 10.0        | 7.5    | 6.3       | 10.0         | 10.0   | 10.0        | 10.0 | 10.0 | 5.0  |      |
|  | Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund?<br>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%                     | 5.0     | 5.0    | 0.0    | 2.5   | 7.5   | 2.5     | 10.0    | 2.5    | 7.5     | 2.5   | 10.0      | 3.8     | 5.0   | 2.5   | 0.0   | 0.0    | 0.0         | 0.0    | 2.5       | 5.0          | 2.5    | 5.0         | 7.5  | 10.0 | 5.0  | 5.0  |
|  | When joining the pension plan, are new members required to receive information about the pension plan?<br>Are plan members required to receive or have access to an annual report about the pension plan?   | 5%                     | 10.0    | 10.0   | 10.0   | 10.0  | 10.0  | 0.0     | 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 | 10.0 | 10.0 |
|  | Is the annual report required to show:<br>i. The allocation of the plan's assets to major asset classes?<br>ii. The major investments of the plan?  | 5%                     | 9.0     | 8.0    | 10.0   | 2.5   | 3.0   | 0.0     | 0.0     | 0.0    | 5.0     | 8.0   | 0.0       | 10.0    | 8.0   | 3.8   | 0.0   | 0.0    | 8.0         | 0.0    | 0.0       | 8.0          | 0.0    | 3.8         | 8.0  | 4.5  | 8.0  | 8.0  |
|  | Are plan members required to receive an annual statement of their current personal benefits from the plan?<br>Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?  | 7.5%                   | 6.7     | 10.0   | 6.7    | 6.7   | 10.0  | 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        | 10.0 | 6.7  | 6.7  | 6.7  |
|  | Do plan members have access to a complaints tribunal which is independent from the pension plan?  | 2.5%                   | 10.0    | 10.0   | 10.0   | 7.5   | 7.0   | 0.0     | 10.0    | 0.0    | 5.0     | 5.0   | 10.0      | 10.0    | 5.0   | 0.0   | 0.0   | 0.0    | 0.0         | 5.0    | 10.0      | 0.0          | 0.0    | 0.0         | 10.0 | 10.0 | 5.0  | 5.0  |
|  | What percentage of total pension assets is held in various types of pension funds?<br>What percentage of total pension assets is held by the largest ten pension funds/providers?   | 10%                    | 5.7     | 6.9    | 5.8    | 4.6   | 5.5   | 6.7     | 8.0     | 4.1    | 5.4     | 9.8   | 8.5       | 5.5     | 6.1   | 8.6   | 8.2   | 8.0    | 7.4         | 7.4    | 10.0      | 7.6          | 8.1    | 5.6         | 6.1  | 6.1  | 3.7  | 3.7  |
|  | Integrity sub-index   | 25%                    | 87.6    | 76.8   | 75.1   | 74.3  | 84.8  | 50.0    | 84.5    | 54.9   | 75.0    | 57.6  | 70.8      | 78.5    | 77.4  | 61.2  | 46.8  | 43.4   | 89.3        | 69.0   | 77.2      | 77.7         | 81.5   | 82.9        | 85.5 | 61.1 | 61.1 |      |

# NOTES



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## Melbourne Mercer Global Pension Index

The Melbourne Mercer Global Pension Index is published by the Australian Centre for Financial Studies (ACFS), in collaboration with Mercer and the State Government of Victoria who provides most of the funding. Financial support has also been provided by The Finnish Centre for Pensions, Agenda Austria, Irish Association of Pension Funds, Irish Association of Investment Managers, Irish Brokers Association and Publicpolicy (Ireland).

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