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LETTER FROM ACFS

The Australian Centre for Financial Studies (ACFS) is delighted to be a partner in the research which has resulted in the 2011 Melbourne Mercer Global Pension Index (the Index).

ACFS is a not-for-profit consortium of Monash University, RMIT University, the University of Melbourne and Finsia (Financial Services Institute of Australasia) which was established in 2005 with seed funding from the Victorian Government.

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

This is the third edition of the Index and the responses to the 2009 and 2010 editions have indicated its value to government, industry and academia in contributing to the debate on how we best provide for an ageing population. In particular, the nature of the Index provides some insight to the challenge of balancing the adequacy of benefits with the sustainability of pension systems, a matter of increasing concern to governments throughout the world.

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

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

Our thanks to Dr David Knox and his team at Mercer, especially those in-country experts who have assisted with the collection and interpretation of data. Thanks also to the Victorian Department of Business and Industry for supporting this study.



Professor Deborah Ralston

Director
Australian Centre for Financial Studies

PREFACE

In light of the consequence of ageing populations in virtually all countries and increasing government debt in many countries, retirement income systems are coming under greater scrutiny than ever before. Notwithstanding the great diversity of policies towards pensions around the world, it is important that comparisons are made and lessons are learned from the range of approaches. This report presents such research and compares retirement income systems in 16 countries, representing more than half the world's population.

Many of the challenges facing governments relating to ageing populations are similar, irrespective of their social, political, historical or economic influences. Furthermore, many of the desirable policy reforms to alleviate these challenges are also similar and relate to pension ages, the level of saving for retirement, encouraging people to work longer and some benefit design issues that can reduce leakage of benefits before retirement. In recent years some governments have made important decisions which have a positive effect on the country's index value in this report. However in other cases, it has been more difficult, often due to the expectations of those in the workforce.

The immediate objective of this research is to benchmark each country's retirement income against more than 40 indicators. An important secondary purpose is to highlight the shortcoming in each country's system and to suggest possible areas of reform that would provide more adequate retirement benefits, increased sustainability over the longer term and/or a greater trust in the private 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 has agreed to continue to fund this project for another three years, on the basis that we add an extra two countries each year. This year, we have added India and Poland and we look forward to adding Denmark and Korea next year.

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

Third, the Mercer consultants around the world have been invaluable in providing information in respect of their countries' retirement income systems, checking our interpretation of the data, and providing insightful comments.

Naturally, we would value your feedback, suggestions and comments so that next year's report will be of even greater value than this third index report. My hope is that you enjoy reading the report and that it provides new insights into the provision of financial security in retirement for our older citizens.



Dr David Knox

Senior Partner

Mercer

CHAPTER 1

EXECUTIVE SUMMARY

The provision of financial security in retirement is critical for both individuals and societies as most countries are now grappling with the social and economic effects of ageing populations. Yet, a comparison of the diverse retirement income systems around the world is not straightforward. As the OECD (2011) notes: “retirement-income systems are diverse and often involve a number of different programmes. Classifying pension systems and different retirement-income schemes is consequentially difficult.”¹

1. OECD (2011), *Pensions at a Glance: Retirement-income systems in OECD and G20 countries*, OECD Publishing, p106.

Furthermore, comparing these systems is certain to be controversial as every system has evolved from each country's particular economic, social, cultural, political and historical circumstances. There is no perfect system that can be applied universally around the world. However there are certain features and characteristics of retirement income systems that are likely to lead to improved benefits for individuals and households, an increased likelihood of future sustainability of the system, and a greater level of confidence and trust within the community.

This study of 16 countries has confirmed that no system is perfect. Indeed, consistent with our previous two reports, no country's system has received an overall index value above 80, which we consider represents an A-grade retirement income system. However, several countries have an index value between 65 and 80, which represents a B-grade system and — with some adjustments or improvements — these countries could be re-classified

as A-grade systems. (Changes that would raise each of these systems to the A-grade level are discussed in the final chapter.) Furthermore Chapter 4 describes the features of an A-grade system and shows that it is possible for developed economies with appropriate policies to reach this highest or gold standard.

We believe that none of the countries in this pilot study has an E-grade system, which would be represented by an index value below 35. A score between 35 and 50, which represents a D-grade system, indicates a system that has some sound features but where 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 China and India.

This year we have also introduced B+ and C+ grades to highlight that certain countries are approaching A and B grades respectively.

The following table summarises the results.

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

It should also be noted that each country's index value takes into account more than 40 indicators, some of which are based on data measurements which are difficult to compare between countries. For this reason, it is suggested that 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 value indicates a country with a better retirement income system.

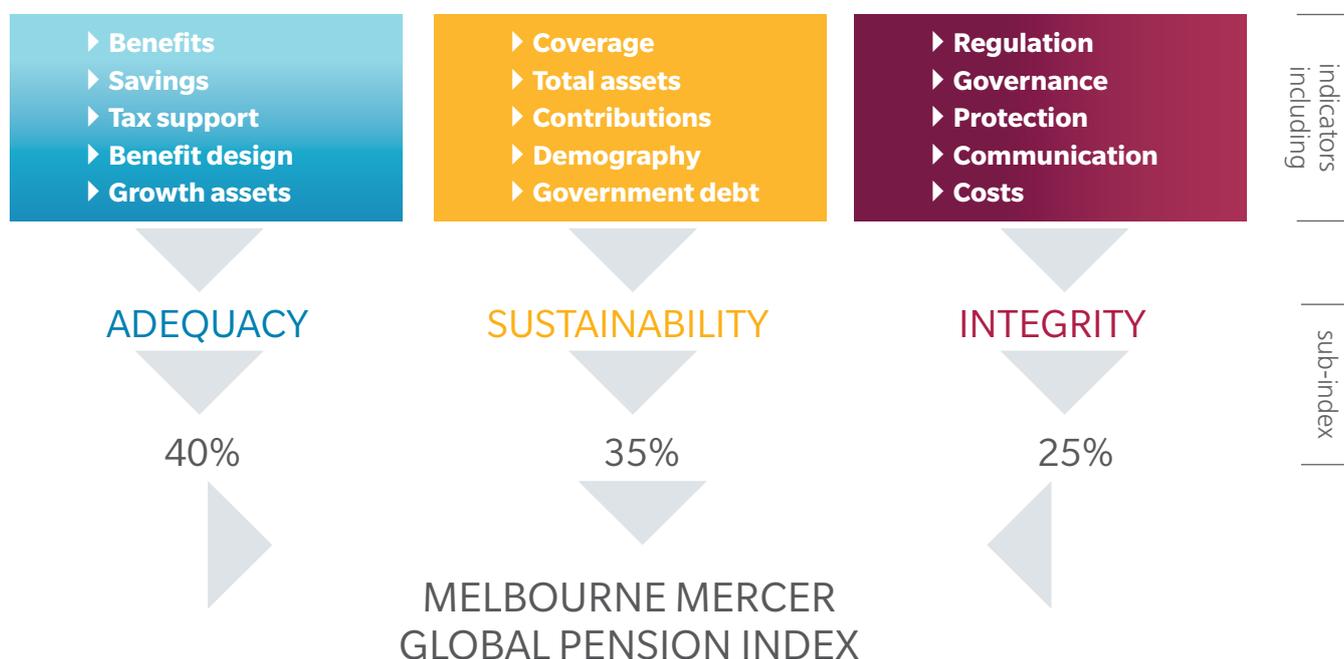
The following table shows the overall index value for each country, together with the index value for each of the three sub-indices: adequacy, sustainability and integrity. Each index value represents a score between zero and 100.

Country	Overall Index Value	Sub-Index Values		
		Adequacy 40%	Sustainability 35%	Integrity 25%
Australia	75.0	73.6	71.4	82.4
Brazil	58.4	71.0	27.3	81.7
Canada	69.1	74.1	55.8	79.7
Chile	64.9	53.1	67.8	79.8
China	42.5	48.1	30.6	50.1
France	54.4	73.6	30.7	56.8
Germany	54.2	63.5	36.4	64.4
India	43.4	37.3	39.4	58.8
Japan	43.9	44.1	28.4	65.2
Netherlands	77.9	75.9	70.8	91.4
Poland	58.6	64.3	40.7	74.5
Singapore	56.7	41.9	60.9	74.5
Sweden	73.4	67.7	75.4	79.9
Switzerland	72.7	70.4	67.7	83.5
UK	66.0	67.8	50.8	84.5
USA	58.1	58.7	54.4	62.5
Average	60.6	61.6	50.5	73.1

The overall index value 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 benefits that are maintained in the future. The integrity sub-index has a focus on the private sector pension system and therefore has a more restrictive scope than the other two sub-indices. Nevertheless the private sector represents a critical component in most country's overall system as the public pillar cannot be expected to provide adequate benefits for all over the longer term.

Four countries, namely Australia, Chile, China and the UK, have improved their index value by at least two points this year for a variety of reasons. Australia raised its base pension and increased its net household saving rate while the pension coverage in Chile has increased significantly. China's improvement was primarily caused by new decrees relating to pension plans. On the other hand, several improvements in the UK including a higher net replacement rate, increased housing savings and an improvement in pension coverage all played their part in the improvement of the index value for the UK.

Calculating — the Melbourne Mercer Global Pension Index



Chapter 8 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. These common challenges include the need to:

- Increase the state pension age and/or retirement age to reflect increasing life expectancy, both now and in the future, and thereby reduce the level of costs of the publicly financed pension pillar
- Promote higher labour force participation at older ages including the provision of phased retirement, particularly as many individuals now remain in good health for longer periods
- Encourage or require higher levels of private saving, both within and beyond the pension system, to reduce the future dependence on the public pension
- 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 the associated taxation support, are used for the provision of retirement income.

These challenges relating to both adequacy and sustainability remain unchanged from our first index report (Mercer (2009)) highlighting the long term nature of these issues.

It is interesting to note that Jackson et al (2010) 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 in particular can be win-win solutions. They are "extending work lives and increasing funded retirement savings." Both these 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.

More recently Karam et al (2011) of the IMF have noted that "The pension reform with the most positive long-term economic effects is one that extends people's working years." They also add that the impact of a cooperative approach to age-related fiscal reform is greater than when only one region undertakes reform. We agree. These challenges are not restricted to a single country or region. They are global and need to be considered within that context.

CHAPTER 2

BACKGROUND FOR THE INDEX

The structure and characteristics of pension systems around the world exhibit great diversity with a wide range of features and norms. Comparisons are not straightforward. In addition, the lack of readily available and comparable data 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.

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 third report of the Index now compares the retirement income systems of 16 countries spread over five continents, 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 8, suggestions are made for improving the efficacy of each country's retirement income system. In that respect it is hoped that 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

More recently, Holzmann and Hinz (2005) of the World Bank have extended this three-pillar system to the following five-pillar approach:

- Pillar 0: A basic pension from public finances that may be universal or means-tested
- Pillar 1: A mandated public pension plan that is publicly managed with contributions and, in some cases, financial reserves
- Pillar 2: Mandated and fully funded occupational or personal pension plans with financial assets
- Pillar 3: Voluntary and fully funded occupational or personal pension plans with financial assets
- Pillar 4: A voluntary system outside the pension system with access to a range of financial and non-financial assets and support

In effect, they split the original first pillar into two and then also split the third pillar by adding a new fourth pillar which includes personal savings, home ownership and other assets held outside the pension system. The recognition of this fourth pillar highlights the important role of these assets in financially supporting the individual or household 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 will encompass each of the pillars. For example, the benefits available from Pillars 0–2 are considered in the level of benefits provided which form part of the adequacy sub-index whereas the level of pension assets also allows for Pillar 3. Similarly, the rate of household saving and level of home ownership allow for the importance of Pillar 4.

Park (2009) in an Asian Development Bank paper suggests that a well designed pension system will have the following characteristics:

- Broad-based in terms of both coverage and the range of risks covered
- Sustainable over time in terms of its actuarial and financial soundness
- Robust so that it can withstand macroeconomic and other shocks
- Affordable from individual, business, fiscal and macroeconomic perspectives
- Providing reasonable levels of post retirement income
- Providing a safety net for the elderly poor

This list suggests a multiple set of objectives for any pension system and as Park correctly notes, different societies will need to decide on the relative importance of each objective at a particular time. Furthermore, these priorities are likely to change over time as a society's economic and demographic circumstances change. Again, these desirable features have influenced the selection of indicators used in the index. For example, the sustainability sub-index considers the level of pension plan coverage and level of fund assets (as a percentage of GDP) whilst the adequacy sub-index considers both the net replacement rate and the level of the safety net (ie Pillar 0).

The 'best' system for a particular country at a particular time must 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. This approach represents the first time that a range of countries' retirement income systems have been considered from these three distinctive but complementary perspectives.

Adequacy

The adequacy of benefits is perhaps the most obvious way to compare different systems. After all, the objective of any pension system must be to provide retirement income. Thus this sub-index will consider both the base level of income provided as well as the net replacement rate for a median-income earner. It is recognised that an analysis focussing 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 replacing a range of income levels. However, a more comprehensive approach would add considerable complexity to the comparison and risk distraction from focussing on adequacy for the majority of workers.

Critical to the delivering of adequate benefits are the design features of the private pension system (or Pillars 2 and 3). Whilst there are many features that could be assessed, we have considered the following five, 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? The objective of this question is to assess whether the government provides any incentives to encourage middle income earners to save for their 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.
- Is there a minimum access age to receive benefits from the private pension plans (except for death, invalidity and cases of financial hardship)? This question determines whether the private pension system permits leakage of the accumulated benefits before retirement or whether the regulations are focussed on the provision of retirement benefits.

- On resignation, are members normally entitled to the full vesting of their accrued benefit? After resignation, is the value of the member's accrued benefit normally maintained (either in real terms by inflation-linked indexation, or through market investment returns)? 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 (or minimum amount), if any, of the retirement benefit from the private pension arrangement is required to be taken as an income stream? Many systems around the world provide lump sum retirement benefits which are not necessarily converted into an income stream. This question allows for the rules affecting the form of benefits actually provided.
- Upon a couple's divorce or separation, are the individuals' accrued pension benefits normally taken into account in the overall division of assets? This question recognises that the financial treatment of accrued pension benefits can have a major effect on the future financial security of one or both partners, following a divorce or separation.

In addition to these design issues, we have factored in savings from outside formal pension programs in recognition of 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 (i.e. after allowing for investment expenses) 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) that also takes into account the increasing risk and volatility associated with higher exposures.

Sustainability

The long-term sustainability of the current retirement income system in many countries has been raised as a concern, particularly in the light of the ageing population, the increasing old age dependency ratio and increasing government debt, in some countries. This sub-index therefore brings together several measures that will 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 that the long-term risks are shared or, to put it another way, involve all the relevant stakeholders. Hence, this sub-index also considers contribution rates, the level of pension assets and the coverage of the private sector system. Finally, given the key role that the provision of a public pension plays in most countries, the existing 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 private sector pension system. After all, as most countries are relying on the private system to play an increasingly important role in the provision of retirement income over the longer term, 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 component of this long term confidence desired from 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 them objective questions to which, in many cases, there is a yes/no answer. Of course, in some countries there is more than one system or different regulations in different parts of the country. In these cases, 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, which have remained constant since the first index in 2009, were adopted with the following factors in mind:

- The major aim of a retirement income system is to provide adequate benefits to retirees; hence this sub-index is the most important as it measures both the current benefits and some important benefit design issues.

- The provision of retirement incomes is a long-term issue, particularly in the context of ageing populations. Hence the sustainability of the current system over the longer term is considered to be very significant.
- The role of the private sector is becoming increasingly important in many countries as governments pass some responsibility in respect of the provision of retirement income onto individuals. In these circumstances, confidence in the private sector system is critical. However as this sector does not encompass the complete retirement income system, this sub-index has the lowest weighting.

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, although most country's index value increases due to the higher average score of the integrity sub-index.²

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.

The only change to the index calculations in 2011 was the introduction of the Total Fertility Rate (TFR) as part of the demographic indicator within the sustainability sub-index. The introduction of the TFR provides a longer term perspective of each country's future age structure. The TFR ranges from 1.25 for Singapore and 1.32 in Japan and Poland to 2.73 in India. Naturally a low TFR has an adverse effect on a country's sustainability sub-index value.

² 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 2010 TO 2011

The index has been expanded in 2011 to include two additional countries; namely India and Poland. These additions mean that the index now covers more than half the world's population. India was included as it is the second most populous country whereas Poland has the largest economy of the former Eastern Bloc countries in Europe. These additions continue the theme of diversity represented by countries in the index. This highlights an important characteristic of the index as it is recognised that retirement income systems around the world have a wide range of design features and norms.

There have been three broad effects that have changed the index value for many countries between 2010 and 2011.

The first is that the OECD has recently updated its models from using the 2002 United Nations population data to its 2008 revised figures. Naturally more recent data is showing lower mortality rates and higher life expectancies for most countries. In turn, this change affects the annuity rates used for defined contribution and notional-accounts components which are used in determining income replacement rates during retirement. This leads to a reduction in the net replacement rate which is used in question A2, which forms an important part of the adequacy sub-index.

The affected countries include Australia, Chile and Sweden where there are defined contribution plans; Sweden where notional accounts form part of the system; and Germany where there are links to life expectancies in other income replacement pensions.

The second effect is the ongoing effect of the Global Financial Crisis which had an adverse effect on the value of equities in the world's capital markets. Due to the inevitable lag in the provision of data, this 2011 report uses the value of assets for countries reported by the OECD for 2009, which excludes the partial recovery which has occurred since that time as well as the market volatility during the second half of 2011.

This means that countries where the pension assets have a significant equity exposure have been adversely affected in respect of question S2 (which considers assets as a percentage of the country's GDP) and which forms an important part of the sustainability sub-index. The countries that have been most affected are Australia, Canada, Switzerland and the United States. Although the decline in asset values is the major cause, it should also be noted that growth in the GDP can also have an adverse effect.

The third effect is a change in the method by which the OECD measures pension coverage, which forms the basis for question S1. Previously the OECD showed the proportion of the employed workforce who are members of private pension plans. Its latest measurement shows the proportion of the working age population (ages 15–64) who are covered. In effect, this means that countries that have lower labour force participation rates have been adversely affected.

Finally, some individual countries passed legislation during the year which affected Social Security benefits, pension ages, taxation support and/or the rules governing pension plans. Naturally these changes affected the relevant countries and these are mentioned in Chapter 8.

A comparison from 2010 to 2011

The following table compares the results for the 14 countries which were covered in both 2010 and 2011. Comments in respect of each country are made in Chapter 8.

Country	Total		Adequacy		Sustainability		Integrity	
	2010	2011	2010	2011	2010	2011	2010	2011
Australia	72.9	75.0	68.1	73.6	71.7	71.4	82.4	82.4
Brazil	59.8	58.4	72.9	71.0	29.1	27.3	81.7	81.7
Canada	69.9	69.1	75.0	74.1	56.8	55.8	80.1	79.7
Chile	59.9	64.9	52.1	53.1	54.7	67.8	79.8	79.8
China	40.3	42.5	48.3	48.1	29.0	30.6	43.4	50.1
France	54.6	54.4	74.9	73.6	29.7	30.7	56.8	56.8
Germany	54.0	54.2	64.1	63.5	42.3	36.4	54.4	64.4
Japan	42.9	43.9	42.2	44.1	27.9	28.4	65.2	65.2
Netherlands	78.3	77.9	76.1	75.9	71.6	70.8	91.4	91.4
Singapore	59.6	56.7	43.7	41.9	63.6	60.9	79.5	74.5
Sweden	74.5	73.4	72.8	67.7	72.9	75.4	79.5	79.9
Switzerland	75.3	72.7	73.1	70.4	71.8	67.7	83.5	83.5
UK	63.7	66.0	64.9	67.8	47.1	50.8	85.3	84.5
USA	57.3	58.1	54.3	58.7	59.0	54.4	60.0	62.5
Average	61.7	62.0	63.1	63.1	51.9	52.0	73.1	74.0

CHAPTER 4

THE GOLD STANDARD — AN A-GRADE SYSTEM

This index has now been prepared for three years and no country has yet attained an A-grade result — that is, an overall index value above 80. Some commentators have therefore raised the following questions:

- What would an excellent retirement income system look like?
- Have you made it too hard?
- Is it possible or unrealistic to receive an A-grade?

This chapter considers these and related questions and shows that it is possible, with appropriate public policy, to develop a framework and system that delivers an A-grade pension system within a developed economy. Of course, it is recognised that no country can suddenly develop such a system but it is valuable to consider the features that are present in a national retirement income system that would have an index value above 80.

Adequacy

The primary objective of any retirement income system is to deliver adequate retirement incomes. The first two indicators of the adequacy sub-index focus on the minimum income level and the median income earner respectively. Higher income earners have a greater capacity to save through their working years and it is therefore more important for the index to focus at the lower end of the income spectrum.

The level of the minimum (or base) income needs to be set at a realistic level that insures aged people against poverty. Recognising that many OECD countries have a basic pension in the order of 20 to 30 percent of the average wage, it is suggested that a base pension of 28 percent³ represents a desirable level of income that offers a level of dignity for the poor in retirement. This level is exceeded by some countries in the index including Brazil, Canada and the Netherlands and would result in a score of 9.

The average net replacement rate amongst OECD countries for a median income earner is 72.0 percent.⁴ It also represents a net retirement income after a full working career that would enable most of these retirees to maintain their living standards in retirement. A replacement rate of 70 percent is therefore considered both desirable and achievable and would result in a score of 10.

The third adequacy sub-index indicator considers the net household saving rate and thereby highlights the important role of savings outside the pension system. Although household saving rates vary enormously, a saving rate of 10 percent is not uncommon and would result in a score of 6. This objective is slightly higher than this year's median saving rate of 8.0 percent with its score of 5.2.

The next four indicators in this sub-index deal with design issues relating to retirement income systems. In each case, the responses depend on legislation.

It is considered that the best retirement income systems have the following features:

- Taxation incentives to encourage middle income earners to make voluntary contributions to funded pension plans, as confirmed by Holzmann and Hinz (2005) who consider that “some preferential tax treatment of standardized retirement-income products as useful.”⁵
- A minimum access (or preservation) age to ensure that the vast majority of pension savings is used for retirement purposes. In view of the increasing life expectancies, this age should be at least 60. Whilst the OECD correctly recognises that there may be occasions when it is appropriate to use part of the savings immediately, they note that “in an ideal world, of course, these assets would be strictly ring-fenced and preserved solely for providing income in retirement.”⁶
- Upon leaving an employer, the member should be entitled to the full value of their accrued benefit. This benefit should be able to be transferred to another pension plan to ensure that its value is maintained in real terms. These requirements relate to vesting and portability of accrued benefits. As the OECD notes, regulation should “promote the protection of vested rights and proper entitlement process” and that “portability rights should be available to members of a pension plan when they separate from service with an employer.”⁷
- A requirement that at least part of the accumulated benefit at retirement be taken as an income stream is consistent with Rocha and Vittas (2010) of the World Bank who state that “it is essential to require a minimum level of annuitization through fixed real annuities.”⁸ They also make the valid comment that “a combination of payout options should ideally be favored, covering different products as well as different payout options over time.”⁹ We recognise that there are many possible forms of income products but suggest that at least 50 percent of any retirement benefit should be taken as income.

3 This level has been selected recognising that half the median income (which is lower than average earnings) is often selected as the poverty line. See for example Dethier et al (2010).

4 OECD (2011), *Pensions at a Glance 2011*, p125.

5 Holzmann and Hinz (2005), *Old Age Income Support in the 21st Century*, The World Bank, p120.

6 OECD (2009b), *Pensions at a Glance*, OECD, p46.

7 OECD (2009d), *OECD Recommendation on Core Principles of Occupational Pension Regulation*, Core Principle 5.

8 Rocha R and Vittas D (2010), *Designing the Payout Phase of Pension Systems*, Policy Research Working Paper 5289, The World Bank, p2.

9 *ibid.*, p29.

It is feasible that a well regulated private pension system can achieve a score of 10 in respect of the first three of these indicators. The income stream requirement can be more difficult and a score of 6.7 is achieved if a 50 percent requirement is imposed.

The final three indicators for the adequacy sub-index consider three different aspects that provide improved retirement outcomes. These are:

- Upon divorce or separation, it is important to allow for each individual's accrued pension benefits in the division of assets.
- Home ownership represents an important factor in providing financial security for many retirees.
- An acknowledgement that some investment in growth assets is likely to provide better outcomes over the longer term.

A full score is achieved in respect of the divorce indicator by many countries and this should be pursued by others to help achieve better retirement outcomes for both individuals involved.

Although home ownership varies greatly between countries, a 65 percent home ownership provides a score of 6.4 which represents slightly less than the median of 6.6 for the 16 countries.

For the last adequacy indicator, a reasonable asset allocation into growth assets is desirable given the long term nature of pensions. A 40 percent allocation would result in a score of 8.5.

The adequacy sub-index value, based on the above suggested values would be 88.4, which exceeds the highest 2011 value of 75.9 achieved by the Netherlands.

Sustainability

As mentioned earlier, it is important that the retirement income system not only produces adequate income but is also sustainable over the future decades, particularly in the context of ageing populations.

The first sustainability sub-index indicator considers the private pension coverage of the working age population. Clearly 100 percent coverage is not practical so the maximum score is achieved with 75 percent coverage.

However coverage in excess of 65 percent is found in several countries and provides a great base for future retirement income security. Coverage at this level results in a score of 8.3.

The second indicator considers the level of pension assets, expressed as a percentage of the country's GDP. Naturally the level of assets depends on the maturity of the system but an objective of 120 percent of GDP represents an attainable goal for a multi-pillar system over the longer term.¹⁰ This outcome achieves a score of 8.0. It is important to note that this indicator represents assets in both the accumulation and pension phases.

The third indicator represents four demographic related topics. Whilst it is recognised that governments can do little, in the short term, to affect their ageing population, it is possible for them to improve the sustainability of their pension system by gradually raising the pension age. A score of 5.5 represents the median score for the 2011 index.

The next indicator considers the level of mandatory contributions that are being set aside now for future benefits in both the public and private sectors. An increasing number of countries have adopted or are considering a level of compulsory contributions in private pensions. Of course, the desirable level of contributions for each country can vary according to their Social Security arrangements, but a minimum level of 8 percent of wages or salaries is considered both reasonable and achievable for many economies. This outcome would score 6.7.

With increasing life expectancies, it is desirable for governments and employers to recognise the need to increase the labour force participation rate at older ages. A 70 percent participation rate for 55-64 year olds¹¹ may appear ambitious for some economies but such an outcome will improve the sustainability of many aspects within the economy, as well as delivering better retirement outcomes. This result would score 7.5.

¹⁰ OECD (2011) notes that three countries have asset-to-GDP ratios greater than 100 percent.

¹¹ This level has already been reached by Sweden with Switzerland, Japan and the USA only slightly below this figure.

The size of a government’s debt has been the focus of much attention since the Global Financial Crisis affected many economies. Indeed, as some governments’ debts have grown significantly, it has restricted the actions of certain governments in terms of other policies, including the provision of benefits. Whilst there is no ‘correct’ size of a government debt, it is suggested that in terms of improving future sustainability, a government debt of no more than 40 percent of GDP¹² is desirable. This would mean a score of at least 7.3.

The final sustainability indicator considers whether the pension legislation enables individuals to gradually transition from employment to retirement. This feature encourages longer working careers and reduces the individual’s immediate need for retirement income. The gold standard system would require this feature.

The sustainability sub-index value based on the above suggested values would be 73.5, which is exceeded by Sweden and is only slightly higher than the sustainability index value for Australia and the Netherlands. It is noted that this score is lower than the ideal adequacy score. This is not surprising as some of these indicators are difficult to change quickly so a more modest approach has been taken here.

Integrity

The integrity sub-index includes many indicators covering prudential regulation, governance, member communication and protection, as well as costs. Several countries achieved an index value above 80, with the Netherlands scoring 91.4 and the UK scoring 84.5. It is therefore suggested that with appropriate legislation and supervision, it is possible to develop a private pension system that has a strong level of confidence amongst employers, employees and retirees.

A score of 88 for the sub-index represents both an achievable and sound objective for a well-governed and trusted private pension system.

Summary

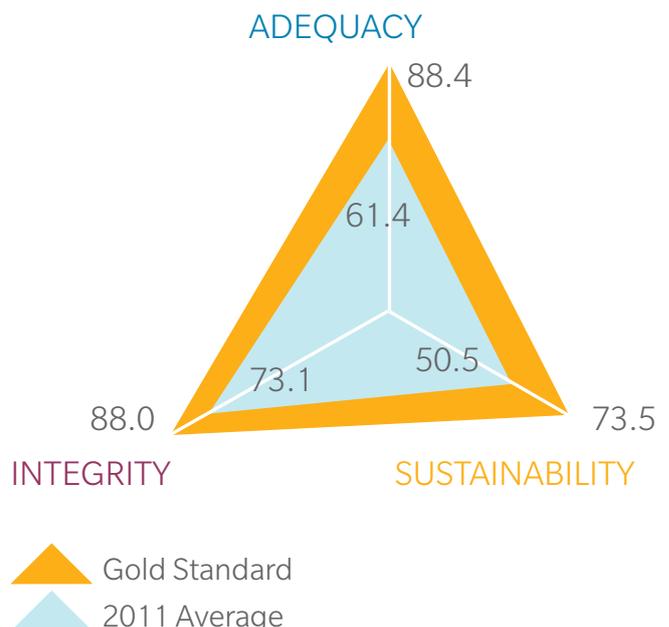
Before concluding, it is recognised that there will be some trade-offs within the pursuit of an A-grade pension system. For example, adequacy could be immediately improved through increases in government-funded age pensions but such a decision is likely to increase government debt and therefore threaten the sustainability of the retirement income system over the longer term. There may also be other tensions with particular indicators that may be related to each other, such as home ownership and saving for retirement.

Notwithstanding these potential trade-offs, the above commentary suggests that a developed economy could enhance and reform its retirement income system and thereby achieve the following index values over the longer term:

- adequacy — 88.4
- sustainability — 73.5
- integrity — 88.0

Such an outcome would represent an overall index value of 83 — very much an A-grade and gold standard system. This system would provide adequate retirement benefits, be sustainable over the longer term and be trusted due to its strong and robust governing structures.

The following diagram highlights the difference between the average value for each sub-index this year and that suggested above by the gold standard values.

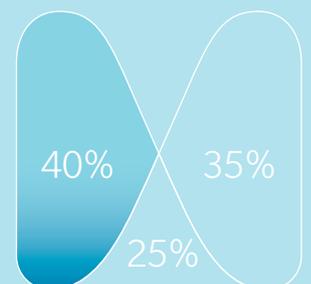


¹²The current average for all countries in the index is 58 percent. Excluding the two extremes of Japan and Singapore the average becomes 56 percent.

CHAPTER 5

THE ADEQUACY SUB-INDEX

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



The countries with the highest value for the adequacy sub-index are the Netherlands (75.9) and Canada (74.1), with India (37.3) and Singapore (41.9) 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 provided 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 percentage of the average wage that a single aged person will receive?

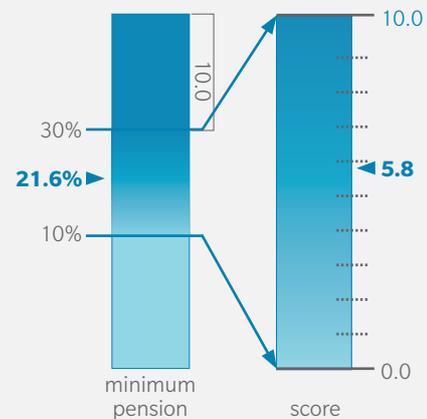
Objective

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 or Pillar 0, which provides a minimum level of income for all aged citizens. It should be noted that this minimum pension assumes no work experience, but will often require a minimum period of residency.

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 percent¹³ of national average earnings adequately meets the poverty alleviation goal. Hence a minimum pension below 30 percent will score less than the maximum value, with a zero score if the pension is 10 percent or less of average earnings, as such a pension offers very limited income provision. Minimum pensions of 30 percent of average earnings or higher receive the maximum score of 10.

Calculating A1 — Minimum Pension



Commentary

The minimum pension for most countries is between 15 percent in Chile and 36 percent in Brazil. India does not provide a minimum pension whilst Singapore provides very modest public assistance. The Chinese results have been modified as the minimum pension is not available throughout the country.

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 income provided for the poorest in the community), together with the next measure (which calculates the 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.

¹³This level was chosen in 2009 when it was slightly higher than the OECD average of 27% for first tier benefits as shown in OECD (2009b), p157–160.

Question A2

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

Objective

In “Averting the Old Age Crisis”, the World Bank suggested that a target replacement rate for middle income earners from mandatory systems should be:

- 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.”¹⁴ That is, these targets could be met through a combination of mandatory and voluntary provisions.

The OECD produces measures of 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 the average earnings, which are skewed upwards by the highest income earners.

It should be noted that 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 earnings¹⁵ 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.

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 72.0 percent of lifetime earnings.¹⁶

Calculation

The maximum score for this indicator is obtained for any country with a result between 70 percent and 100 percent. Interestingly, only Brazil lies within this range, with only the Netherlands lying above it at 103.3 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.

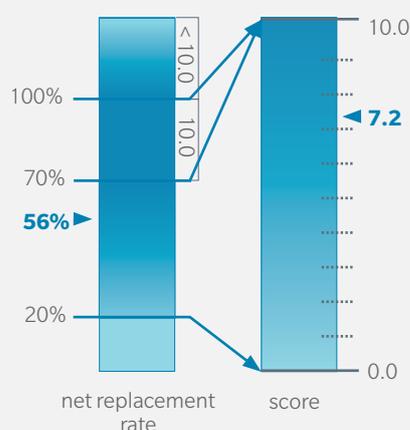
For Singapore, the OECD data lists the net replacement rate for mean income earners; we have therefore performed a positive adjustment to this figure in order to align it with the other results based on median-income earners. Notwithstanding this adjustment, the net replacement rate is less than 20 percent.

¹⁴World Bank (1994), *Averting the Old Age Crisis*, p295.

¹⁵OECD (2009a), *OECD Private Pensions Outlook 2008*, p121.

¹⁶OECD (2011), *Pensions at a Glance 2011*, p125.

Calculating A2 — Net Replacement Rate for Median Income Earner



Commentary

With the exception of Brazil, the Netherlands and Singapore, all countries have a result between about 40 percent (China, India and Japan) and 66 percent (Switzerland). The Singapore result, calculated by the OECD, is low due to the availability to members of most of their savings in the Central Provident Fund prior to retirement. On the other hand, the Netherlands result may be considered to produce a pension that is slightly too high for a median-income earner, whilst also not providing the appropriate individual flexibility throughout their lifetime. The Chinese figures have been adjusted to reflect the varying levels of provision that exist in practice.

Weighting

As noted in the commentary for Question A1, 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 a higher weighting in the adequacy sub-index, namely 25 percent.

Question A3

What is the net household saving rate in the economy?

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 support available to the aged.

Calculation

The rate of household savings is not readily available and we have therefore used data from the Economist Intelligence Unit and calculated the saving rate in the following way:

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

where:

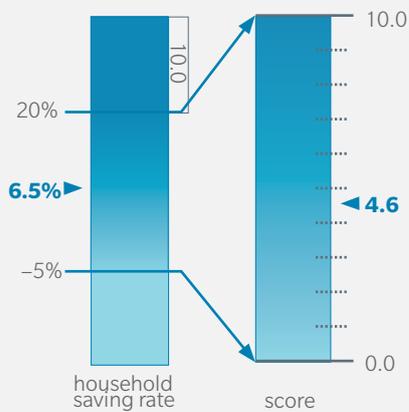
PDIN = Personal disposable income

PCRD = Private consumption

To remove some volatility that may occur in annual figures, we have averaged the 2009 and 2010 measurements.

The calculated household saving rates ranged from 0.4 percent in the Netherlands to 16.8 percent in China and 27.2 percent in India. We have provided a maximum score for any country with a saving rate of 20 percent or higher, and a zero score for any country with a saving rate of less than minus 5 percent.

Calculating A3 — Household Saving Rate



Commentary

The net household saving rate provides some indication of the level of current income that is voluntarily being set aside from current consumption, either for retirement or for other purposes.

Weighting

The weighting for this measure has been set at 10 percent for 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 saving will be carried out by higher income households so that this measure is unlikely to assist those at lower and median 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?

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 which are designed to change personal behaviour.

Calculation

This indicator was based on a two-point scale with a maximum score for “yes” and zero for “no”.

It should be noted that this indicator is concerned with any taxation incentives 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.

Commentary

Most countries offer some taxation incentive for voluntary contributions with China and Japan being the exceptions. In Sweden, employees can contribute into individual retirement savings accounts and receive a tax deduction but they are not allowed to contribute into employer sponsored pension plans.

Weighting

Taxation incentives represent an important measure that governments can introduce to encourage pension saving and long-term investments. Such incentives provide a desirable factor in the design structure of retirement income systems and we have therefore given this measure a weighting of five percent for the adequacy sub-index, which represents the same weighting as some other desirable design indicators discussed below.

Question A5

Is there a minimum access age to receive benefits from the private pension plans¹⁷ (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 scored 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 0 for age 55 to a score of 1 for age 60. Australia, China and Japan scored 0.5 as age 60 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?

Objective

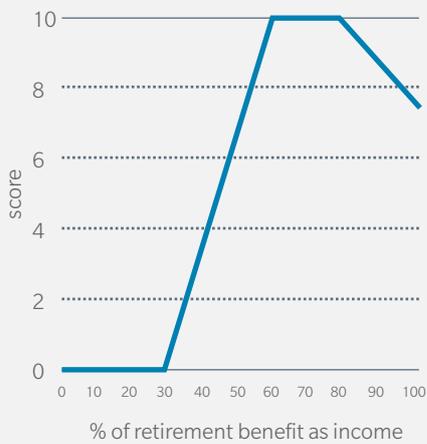
The primary objective of a private pension system should be to provide income during retirement. Of course, this does not imply that a lump-sum payment is not a valuable benefit. It often is. Indeed, in a recent World Bank paper, Rocha and Vittas (2010) suggest that policymakers should target an adequate level of annuitization but should be wary of causing excessive annuitization. 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, and if so, what level of annuitization is required.

Calculation

There is no single answer that represents the correct proportion of a retirement benefit that should be annuitized. However a maximum score should be 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.

¹⁷Private pension plans include both defined benefit and defined contribution plans and may pay lump-sum or pension benefits. They also include plans for public sector and military employees.

Calculating A6 — Conversion to Income Streams



Commentary

There is considerable variety between countries with some countries requiring most or all of the benefit to be converted into a lifetime annuity (e.g. the Netherlands and Sweden) whereas many countries have no requirement at all (e.g. Australia, Chile, China and Poland).

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) represents a desirable feature of a retirement income system and therefore a weighting of 10 percent has been used in the adequacy sub-index.

Question A7

On resignation, are 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?

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 of these three questions were scored with a score of 2 for "yes", 0 for "no" and between 0.5 and 1.5 if it was applied in some cases where 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 nine of the sixteen countries is full vesting present, the real value of the benefits is maintained after resignation, and the accrued benefit can be transferred, where appropriate.

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 scored 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 ten of the sixteen countries, it is normal practice for the accrued pension benefits to be taken into account in the overall division of assets upon a divorce or separation.

Weighting

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

Question A9

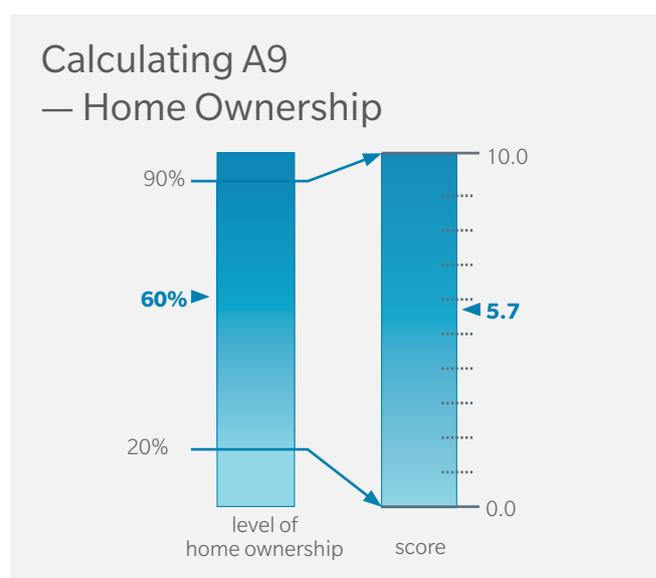
What is the level of home ownership in the country?

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 score is considered to be 90 percent. Hence a home ownership level of 90 percent or more would score maximum results whilst a score of 20 percent or less would score zero.



Commentary

The level of home ownership ranged from 30 percent in Switzerland to slightly less than 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)¹⁸ 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.

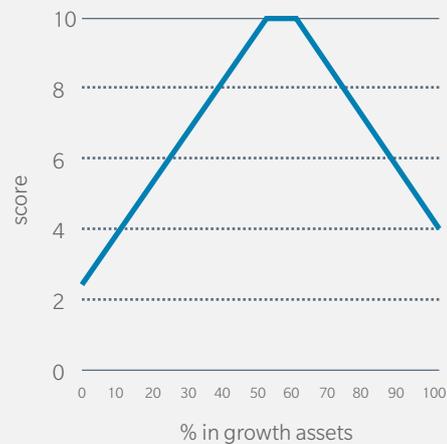
Calculation

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 preferred 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. Therefore a zero percentage 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 increase to 50 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. Ten of the sixteen countries have a percentage between 30 percent and 60 percent which indicates a reasonable level of exposure to growth assets.

Weighting

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

¹⁸Hinz R, Rudolph H P, Antolin P and Yermo J (2010), *Evaluating the Financial Performance of Pension Funds*, The World Bank, Washington, p2.

Sources of data for the adequacy sub-index

Question A1

OECD (2011), *Pensions at a Glance 2011*, p109 for OECD countries.

OECD (2009c), *Pensions at a Glance Asia Pacific Edition 2009*, p24 for China.

Mercer calculations for Brazil, India and Singapore using government websites.

Question A2

OECD (2011), *Pensions at a Glance 2011*, p125 for OECD and G20 countries.

OECD (2009c), *Pensions at a Glance Asia Pacific Edition 2009*, p31 for China and Singapore (adjusted).

Question A3

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

Question A9

The answers were sourced from a variety of sources including World Bank (2011), *World Bank Development Indicators 2011*.

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

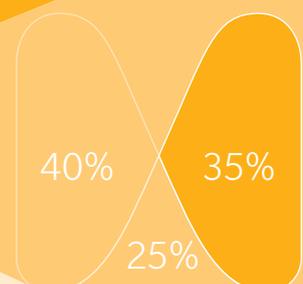
The answers were sourced from Mercer consultants in each country.

CHAPTER 6

THE SUSTAINABILITY SUB-INDEX

The sustainability sub-index is determined by considering a number of indicators which influence the long-term sustainability of current systems. These include factors such as measuring the 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 older workers and the current level of government debt.¹⁹

¹⁹The application of means tests in respect of state pensions also represents an important component of the long-term financial sustainability for many systems. However, the measurement of the financial effect of means testing is problematic and its application varies considerably between countries. It is therefore excluded from this sub-index.



The countries with the highest value for the sustainability sub-index are Sweden (75.4) and Australia (71.4), with the lowest values being for Brazil (27.3) and Japan (28.4). 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 tend to be 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

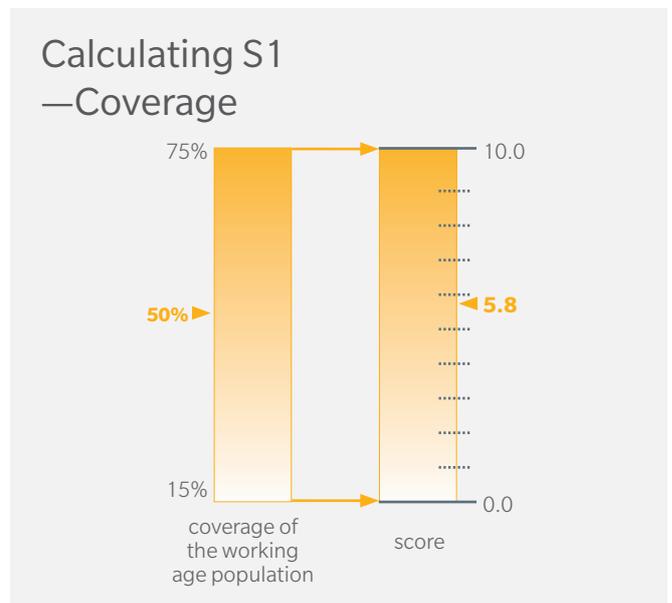
What proportion of the working age population are members of private pension plans?

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 is sustainable as it will reduce reliance on government expenditure in the future.

Calculation

The rates of coverage ranged from less than six percent in India and about 10 percent in Brazil to about 75 percent of the working age population in Chile and Sweden. Each country's score was related to its coverage, with a maximum score obtained for 75 percent coverage and a zero score relating to coverage of 15 percent or less, as such coverage represents minimal contribution to the provision of retirement income.



Commentary

Most countries have coverage rates less than 60 percent of the working age population, indicating a heavy reliance on the social security system in the future for a substantial proportion of the workforce.

As noted previously, this indicator was previously expressed as a percentage of the employed workforce with a slightly different scoring system.

Weighting

The private pillar represents an important characteristic of 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 and protected book reserves?

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.

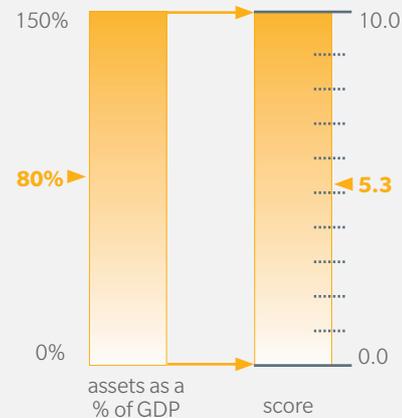
Calculation

We have included assets from private pension funds, public pension funds and protected book reserves 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

The level of assets ranged from less than 5 percent for China to 129.8 percent for the Netherlands. These scores were then scaled to provide a maximum score for 150 percent of GDP and a minimum score for zero percent.

Calculating S2 — Level of Assets



Commentary

There is considerable variety in the size of assets set aside for future pensions around the world, reflecting both the importance of any 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 as part of financial institutions such as Individual Retirement Accounts. These assets have been included as they represent assets set aside for future retirement income.

Weighting

This indicator shows the level of assets set aside to fund future retirement incomes. It therefore represents a key indicator in the future 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 2030? (This calculation allows for mortality improvement.)
- What is the projected old-age dependency ratio in 2030?
- What is the Total Fertility Rate (TFR) averaged over the last five years?

Objective

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

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

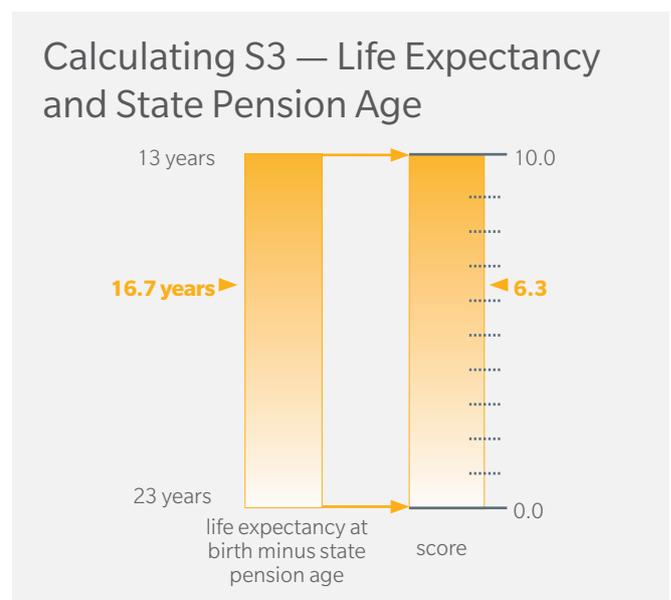
This projected old age dependency ratio question highlights the impact of the ageing population between now and 2030 and therefore the likely effects on the funding requirements for pensions, health and aged care.

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

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 7.0 in India and 12.8 in USA to 21.7 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.
- For 2030, the results range from 12.0 in India and 14.3 years in the USA to 22.3 years in France. The formula used remains unchanged with a maximum score for 13 years or less and a zero score for 23 years.

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



- c. The old-age dependency ratio is the population aged 65 and over divided by the population aged between 15 and 64. The projected dependency ratios for 2030 range from 12.2 percent in India and 20.0 percent in Brazil to 52.9 percent in Japan.

A maximum score is achieved with a dependency ratio of 20 percent or less and a zero score with a ratio of 60 percent or higher.

- d. The TFR ranges from 1.25 in Singapore to 2.1 in the USA and 2.7 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

With the exception of Japan and France, all countries have a difference between life expectancy and state pension age of less than 19.3 years, thereby highlighting the challenge for France and Japan of a relatively low state pension age and longer life expectancy.

The projected results for 2030 differ from the current results, with China, France, Japan and Switzerland having a difference in excess of 20 years.

A TFR of less than 1.5 in Germany, Japan, Poland, Singapore and Switzerland raise 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? This includes mandatory contributions into public or private sector funds.²⁰

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. The 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 and Chile the mandatory contributions are fully invested for the individuals concerned. On the other hand, Germany and the UK adopt a pay-as-you-go basis.

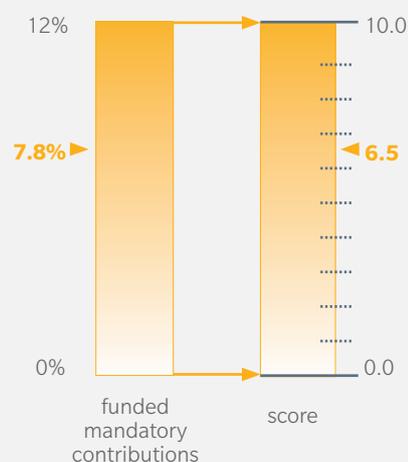
In some cases, neither extreme is adopted. For instance, the Canada Pension Plan adopts a 'steady-state' funding basis so that contributions will remain constant for 75 years. In this case we have assumed that 75 percent of the contributions are invested. In China, only the employee contributions are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

²⁰ 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.

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 and the USA are examples of this approach. In these cases, we have assumed that 15 percent and 33 percent of the contributions are funded respectively. For Singapore we have used 17 percent of the contribution rate which represents the proportion that must be set aside for retirement purposes for 36–45 year olds.

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 10 percent in Chile. 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.

Calculating S4 — Funded Mandatory Contributions



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?

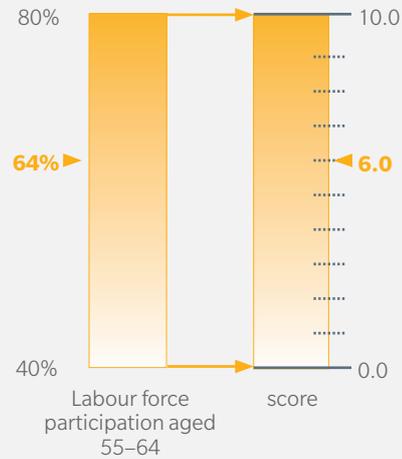
Objective

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 income needed, as well as accumulating greater savings for retirement.

Calculation

The percentages ranged from 29.3 percent in Poland and 41.4 percent in France to 69.1 percent in Switzerland and 74.4 percent in Sweden. A maximum feasible score is considered to be 80 percent for this age bracket. Hence a participation rate of 80 percent or more scores maximum results whilst a participation rate of 40 percent or less scores zero.

Calculating S5 — Labour Force Participation Rate



Commentary

Labour force participation rates at older ages had been declining in many countries until recently. However with the increasing awareness of the pressures associated with an ageing population, it is important that governments continue to encourage higher labour force participation rates at these older ages.

Weighting

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

Question S6

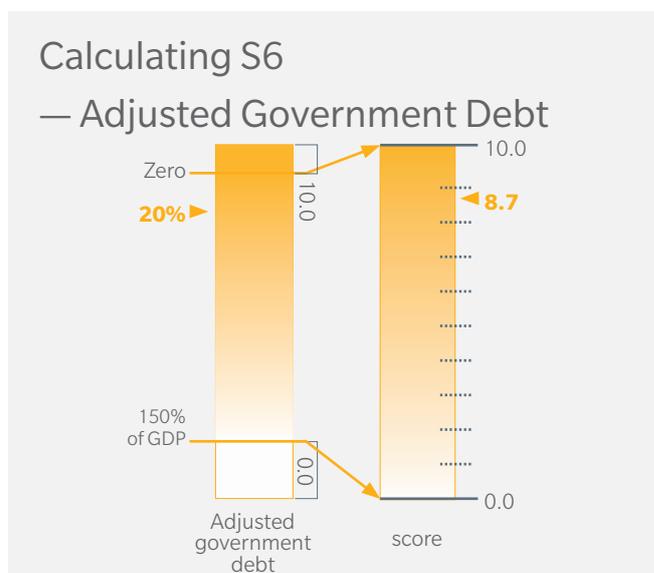
What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities²¹), expressed as a percentage of GDP?

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 an important 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 220 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.



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. It should be noted that the level of debt has increased for many countries due to the Global Financial Crisis. There are also other longer term adverse economic effects of higher government debt which can affect the investment returns received by pension plan members.

Weighting

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

²¹ 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 (eg part time)?

If not, are there other tax advantaged pre-retirement vehicles available to help transition workers into retirement that are commonly used?

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.

Calculation

The first question was given a score of 2 for “yes” and 0 for “no”. However, it is not as simple as that in many countries where it may depend on the particular fund 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 is no, but there are other incentives to encourage similar behaviour, a score between 0.5 and 1 was given depending on the strength of the incentives.

Commentary

In several countries (including Australia, France, the Netherlands, Poland, Singapore and Sweden) employees are able to continue working at older ages whilst also accessing an income stream from their accumulated benefits.

Weighting

This item has a weighting of five percent in the sustainability sub-index as it is not considered as critical as the earlier indicators.

Sources of data for the sustainability sub-index

Question S1

OECD (2011), *Pensions at a Glance 2011*, p173 for OECD countries although adjustments were needed when data was not available or comprehensive.

OECD (2009c), *Pensions at a Glance Asia Pacific Edition 2009*, p 41 for China and India with some adjustments due to lack of private pension data.

Mercer calculations for Brazil and Singapore.

Question S2

OECD (2011), *Pensions at a Glance 2011*, p179 for OECD and G20 countries, with the Chinese data increased to allow for public pension reserve funds and the data updated for Sweden, Switzerland and the UK to allow for 2009 data.

Mercer calculations for Singapore.

Question S3

The life expectancy, aged dependency and total fertility rate data was from United Nations (2011), *World Population Prospects: The 2010 Revision*.

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

Question S5

International Labour Organization (2009), *Key Indicators of the Labour Market*, 6th Edition.

Question S6

International Monetary Fund (2011), *World Economic Outlook Database*, April.

Sovereign Wealth Fund Institute — www.swfinstitute.org

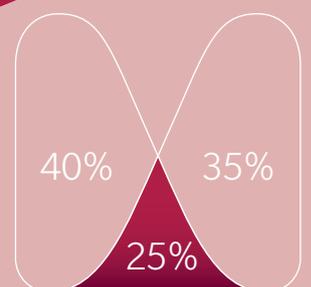
Questions S4 and S7

Answers were sourced from Mercer consultants in each country.

CHAPTER 7

THE INTEGRITY SUB-INDEX

The integrity sub-index is determined by considering three broad areas of the private sector pension system, namely: regulation and governance, protection for members and costs. As this sub-index is only concerned with the private sector pension plans (i.e. Pillars 2 and 3 of the five-pillar World Bank model), it has a more restricted scope than the previous two sub-indices. The private sector pillars are, however, critical because without them the government becomes the only provider, which is not a desirable or sustainable long-term outcome. A sound and well regulated private sector pension system, which has the confidence of the community, represents an important component of retirement income systems in the future.



The country with the highest value for the integrity sub-index is the Netherlands (91.4), with the lowest value being for China (50.1). As noted above, this sub-index covers three broad areas affecting private sector pension plans and the better scores were achieved by countries with well developed private pension industries.

In each of the three broad areas, several questions have been asked to ascertain the requirements that apply to private sector pension plans in each country.

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

Regulation and governance

Calculation

With the exception of Question R2 dealing with the activity of the regulator, each question in this section is scored 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 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?

Is a private pension plan required to have separate assets 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 and hold assets that are separate from the employer.

Eleven countries obtained the maximum score indicating the presence of the basic groundwork needed for a sound governance framework.

Weighting

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

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 (or protector) 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 bt 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 with the industry.

Calculation

The last question was scored on a five-point scale as shown in the 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 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?

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 sector pension plans.

Eight countries obtained the maximum score highlighting the fundamental role of trustees or fiduciaries in pension plan governance.

Weighting

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

Interestingly only Brazil, China, France and the Netherlands received the maximum score indicating that several countries could improve their requirements, particularly in respect of the first question.

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 27.0 for the USA to a near maximum score of 46.5 for the Netherlands.

The low score for the USA highlights the lack of a single pension regulator and the absence of several requirements that are common in other countries.

Protection and communication for members

Calculation

With the exception of question P1 dealing with funding, each question in this section is scored 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

Describe the required minimum level of funding for defined benefit and defined contribution schemes and the requirements to reach full funding when this does not occur.

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.

Commentary

Most 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, such as in the Netherlands and the USA, any deficit requires rectification within a specified period.

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 12.5 percent weighting in the integrity sub-index.

Question P2

What are the limits, if any, on the level of in-house assets (that is, equity or debt investments in the sponsoring employer) held by a private sector pension plan?

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 percent of the plan's assets. The exceptions are France, Germany, Japan, Poland, Singapore and some defined contribution plans in the USA.

Weighting

This requirement represents a key method of protecting the member's accrued benefits and is therefore 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?

In the case of employer insolvency (or bankruptcy), describe how the members' accrued benefits are protected, if at all.

Objective

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

Commentary

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

Weighting

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

Question P4

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

Objective

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

Commentary

All countries, except China and India, 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 an annual report about the pension 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.

Commentary

There is considerable variety in the responses, with China, France, Germany, India and Poland having no requirements in respect of annual reports.

Weighting

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

Questions P6

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

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

Objective

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

Commentary

A majority of countries have a requirement concerning annual personal statements, but only a few require 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

Only four countries (Australia, the Netherlands, Switzerland and the UK) have a complaints system focused on pension plans, although Canada, Chile, Poland and the USA have a process that could 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 an adverse event occur. It is given a 2.5 percent weighting in the integrity sub-index.

Commentary on the protection and communication results

The scores ranged from 11.9 in China and 16.3 in India to 37.5 in the Netherlands and 38.8 in Switzerland.

The low scores in China and India are caused by very limited requirements in these countries to provide information to members.

Costs

Questions

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.”²²

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.

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.

²²Hinz R, Rudolph H P, Antolin P and Yermo J (2010), *Evaluating the Financial Performance of Pension Funds*, The World Bank, Washington, p259.

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 central fund. These scores were then weighted by the pension industry characteristics for each country.

For the second question, we considered the size of the assets held by the ten largest 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 4.1 for France to 10.0 for India and Singapore. The maximum 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 based on the operations of the private sector pension industry in each country, all the answers were sourced from Mercer consultants in the relevant countries, except where noted.

CHAPTER 8

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 that country's current social, political and economic situation. Where relevant, a brief comment is also made about the change in the country's overall index value from 2010 to 2011.



Australia

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

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

- raising the level of mandatory contributions to improve the level of benefits
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- increasing the labour force participation rate amongst older workers
- introducing a mechanism to increase the pension age as life expectancy continues to increase
- reducing the costs of the system by encouraging greater efficiency

The Australian index value increased from 72.9 in 2010 to 75.0 in 2011 due primarily to a real increase in the age pension and a higher net household saving rate.



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 by insurance companies or employers.

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 the level of coverage of employees in occupational pension schemes thereby increasing the level of contributions and assets
- introducing a minimum level of mandatory contributions
- 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 fell slightly from 59.8 in 2010 to 58.4 in 2011 due to a decline in the household saving rate and a small fall in the sustainability sub-index related to several indicators.



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, possibly through a more efficient system
- introducing a mechanism to increase the state pension age as life expectancy continues to increase
- increasing the level of household savings
- maintaining the real value of accrued pension benefits from resignation until retirement

The Canadian index value fell slightly from 69.9 in 2010 to 69.1 in 2011 due to a small decline in every 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
- introducing a minimum access age for the supplementary plans so that it is clear that these benefits are preserved for retirement purposes
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- continuing to review the minimum pension for the poorest pensioners
- introducing arrangements to protect the interests of both parties in a divorce
- enabling individuals to retire gradually whilst receiving a part pension

The Chilean index value rose from 59.9 in 2010 to 64.9 in 2011 due primarily to a material increase in the sustainability sub-index arising from the new OECD data which showed a much higher coverage than was previously used.



China

China's retirement income system comprises a basic pension consisting of a pooled account (from employer contributions) and individual accounts (from employee contributions). Supplementary plans are also provided by some major employers.

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

- broadening the coverage of the national pension system
- introducing taxation incentives for employee contributions to the supplementary plans
- introducing a requirement that part of the supplementary retirement benefit must be taken as an income stream
- increasing the state pension age over time
- enabling individuals to retire gradually whilst receiving a part pension
- improving the level of communication required from pension plans to members

The Chinese index value increased slightly from 40.3 in 2010 to 42.5 in 2011 due primarily to recent decrees which improved the regulatory framework.



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 amongst older workers
- improving the regulatory requirements for the private pension system

The French index decreased very slightly from 54.6 in 2010 to 54.4 in 2011, primarily due to a reduction in the net replacement rate which was partly offset by an increase in the net household saving rate.



Germany

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

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

- raising the minimum pension for low-income pensioners
- increasing the requirement that part of the retirement benefit must be taken as an income stream
- increasing the labour force participation rate amongst older workers
- increasing the level of assets available to support retired workers
- improving the level of communication from pension arrangements to members

The German index value rose very slightly from 54.0 in 2010 to 54.2 in 2011. However this overall stability masked a decline in the sustainability sub-index (arising from a reduced score in three of the indicators) which was offset by an improvement in the integrity sub-index which allowed for the important role of the PSVaG, the German pension insolvency fund.



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

- introducing a minimum level of support for the poorest aged individuals
- 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
- improving the level of communication from pension arrangements to members
- increasing the pension age as life expectancy continues to increase
- increasing the level of contributions in statutory pension schemes



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 minimum pension for low-income pensioners
- increasing the level of pension provision and hence the expected net replacement rate for all income earners
- introducing a requirement that part of the retirement benefit must be taken as an income stream
- introducing taxation incentives for employee contributions to the supplementary plans and other forms of retirement saving
- announcing a further increase in the state pension age as life expectancy continues to increase

The Japanese index value rose slightly from 42.9 in 2010 to 43.9 in 2011 due to small increases in both the adequacy and sustainability sub-indices.



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

The Dutch index value fell very slightly from 78.3 in 2010 to 77.9 in 2011 due to small falls in both the adequacy and sustainability sub-indices.



Poland

Poland's retirement income system was reformed in 1999. The new system, which applies to people born after 1968, comprises a minimum 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.

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

- raising the minimum level of support available to the poorest pensioners
- 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
- increasing the labour force participation rate



Singapore

Singapore's retirement income system is based on the Central Provident Fund which covers all workers, including most public servants. 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 to buy a lifetime income stream.

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

- raising the minimum level of support available to the poorest pensioners
- continuing to increase the prescribed minimum that must be set aside for retirement purposes
- increasing the percentage of contributions required to be saved for retirement
- reducing the barriers to establishing tax-approved group corporate retirement plans
- increasing the labour force participation rate amongst older workers
- investing a portion of the Central Provident Fund in growth assets

The Singaporean index value fell from 59.6 in 2010 to 56.7 in 2011 due to a reduction in each of the three sub-indices. The reasons included a lower net household saving rate, reduced pension coverage as it is now based on population and the effect of some new investment rules.



Sweden

Sweden's retirement income system was reformed in 1999. The new system, which applies to people born after 1953, 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:

- announcing an increase in the state pension age to reflect increasing life expectancy
- encouraging employee contributions into employer sponsored plans, as well as private savings
- improving tax incentives for employee contributions
- requiring annual information about the pension plan as a whole to be provided to plan members
- introducing arrangements to protect all the pension interests of both parties in a divorce

The Swedish index value fell from 74.5 in 2010 to 73.4 in 2011. The main reason is the reduction in the net replacement rate as calculated by the OECD.



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
- increasing the state pension age over time
- introducing a universal requirement to permit individuals to retire gradually whilst receiving a part pension, if recent law changes are not sufficient to achieve this goal

The Swiss index fell from 75.3 in 2010 to 72.7 in 2011 due to a reduction in both the adequacy and sustainability sub-indices. The main reasons are the reduced net replacement rate as calculated by the OECD and a decline in each of the first three sustainability indicators.



The United Kingdom

The United Kingdom's retirement income system comprises a flat-rate basic 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. Most of the larger voluntary occupational pensions are currently contracted-out of the earnings-related social security benefit.

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

- raising the minimum pension for low-income pensioners
- introducing a level of mandatory funded contributions
- increasing the coverage of employees in occupational pension schemes
- raising the level of household saving

The British index value rose from 63.7 in 2010 to 66.0 in 2011 due to an increase in both the adequacy and sustainability sub-indices. The main reasons are an increase in the net replacement rate, a higher household saving rate and an increase in the pension coverage indicator.



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 increased slightly from 57.3 in 2010 to 58.1 in 2011 due to an increase in the adequacy sub-index which was partly offset by a decline in the sustainability sub-index due to a fall in asset values and a rise in government debt.

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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	Brazil	Canada	Chile	China	France	Germany	India	Japan	Netherlands	Poland	Singapore	Sweden	Switzerland	UK	USA
A1	17.5%	6.9	10.0	10.0	2.7	5.0	6.6	5.2	0.0	4.7	9.6	3.5	0.2	7.4	7.2	4.6	4.5
A2	25%	8.9	10.0	8.3	7.8	3.6	8.2	7.7	4.0	4.3	9.3	7.9	0.0	7.5	9.2	5.6	6.7
A3	10%	5.8	3.1	4.8	3.3	8.7	7.1	5.6	10.0	3.6	2.2	3.7	6.7	4.4	6.3	3.1	5.7
A4	5%	10.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0	0.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0
A5	10%	8.3	0.0	3.3	5.0	8.3	10.0	10.0	0.0	5.0	3.3	10.0	6.7	6.7	5.3	6.7	6.3
A6	10%	0.0	5.5	5.0	0.0	0.0	5.0	0.0	2.5	0.0	7.5	0.0	4.6	7.5	0.0	10.0	0.0
A7	7.5%	10.0	10.0	6.0	10.0	8.0	9.0	5.0	4.5	6.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
A8	5%	10.0	0.0	10.0	0.0	0.0	5.0	10.0	0.0	10.0	10.0	10.0	10.0	2.5	10.0	10.0	10.0
A9	5%	6.9	7.7	6.4	6.6	9.7	5.1	3.3	9.6	5.9	4.0	6.7	9.6	5.4	1.4	7.0	6.7
A10	5%	8.5	7.0	10.0	9.4	4.8	5.7	8.5	3.3	8.3	6.4	7.8	2.5	7.0	10.0	10.0	10.0
Adequacy sub-index	100%	73.6	71.0	74.1	53.1	48.1	73.6	63.5	37.3	44.1	75.9	64.3	41.9	67.7	70.4	67.8	58.7

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	Brazil	Canada	Chile	China	France	Germany	India	Japan	Netherlands	Poland	Singapore	Sweden	Switzerland	UK	USA
S1	20%	8.9	0.0	6.3	10.0	0.4	6.6	5.4	0.0	3.0	9.1	6.3	8.7	10.0	9.2	7.2	4.4
S2	20%	5.9	1.1	4.8	4.5	0.2	0.3	1.2	0.4	3.4	8.7	0.9	4.2	6.4	7.5	5.4	5.8
S3	20%	6.1	7.6	5.3	6.1	5.2	3.5	4.9	10.0	1.8	5.5	6.0	3.9	5.4	3.9	5.9	8.2
S4	15%	7.5	0.0	6.2	8.3	3.3	0.0	0.0	6.9	2.0	6.7	1.9	5.0	7.2	7.1	0.0	3.4
S5	10%	4.9	4.2	5.7	4.5	4.1	0.3	5.1	2.9	6.6	3.7	0.0	4.8	8.6	7.3	5.3	6.3
S6	10%	8.5	5.6	4.4	9.8	9.9	4.5	4.7	5.4	0.0	5.8	6.3	10.0	7.4	6.3	4.9	3.8
S7	5%	10.0	0.0	7.5	0.0	0.0	10.0	7.5	0.0	5.0	10.0	10.0	10.0	10.0	5.0	7.5	5.0
Sustainability sub-index		71.4	27.3	55.8	67.8	30.6	30.7	36.4	39.4	28.4	70.8	40.7	60.9	75.4	67.7	50.8	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

		Score for each country																
Question		Question weight	Australia	Brazil	Canada	Chile	China	France	Germany	India	Japan	Netherlands	Poland	Singapore	Sweden	Switzerland	UK	USA
Do private sector pension plans need regulatory approval or supervision to operate?		15%	10.0	10.0	10.0	10.0	10.0	6.7	8.3	10.0	8.3	10.0	8.3	10.0	8.3	10.0	10.0	10.0
Is a private pension plan required to be a separate legal entity from the employer?																		
Is a private pension plan required to have separate assets from the employer?																		
Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?																		
Does the regulator make industry data available from the submitted forms on a regular basis?		12.5%	9.2	8.4	8.7	8.4	2.1	8.2	4.4	6.1	7.6	9.2	7.6	5.6	8.4	8.4	10.0	5.6
How actively does the regulator discharge their supervisory responsibilities?																		
Where assets exist, are the private pension plan's trustees/ executives/ fiduciaries required to prepare an investment policy?		10%	10.0	10.0	7.5	10.0	5.0	5.0	7.5	5.0	5.0	10.0	10.0	10.0	10.0	5.0	10.0	0.0
Are the private pension plan's trustees/executives/ fiduciaries required to prepare a risk management 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?		10%	7.5	10.0	7.5	7.5	10.0	10.0	7.5	5.0	7.5	10.0	7.5	7.5	7.5	7.5	7.5	5.0

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Regulation and Governance (R1 – R4)

Attachment 3: (continued)

Score for each country for each indicator in the integrity sub-index

Question	Question weight	Score for each country																
		Australia	Brazil	Canada	Chile	China	France	Germany	India	Japan	Netherlands	Poland	Singapore	Sweden	Switzerland	UK	USA	
Protection and communication for members (P1-P7)	Describe the required minimum level of funding for DB and DC schemes and the requirements to reach full funding when this does not occur.	12.5%	7.0	8.0	9.0	10.0	5.0	5.0	8.0	6.0	9.0	10.0	10.0	6.0	7.0	8.0	7.0	7.0
	What are the limits, if any, on the level of in-house assets held by a private sector pension plan?	5%	10.0	10.0	10.0	10.0	5.0	5.0	7.5	10.0	0.0	10.0	5.0	0.0	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?	5%	5.0	0.0	2.5	0.0	1.3	2.5	7.5	2.5	2.5	2.5	0.0	2.5	5.0	7.5	10.0	5.0
	In the case of employer insolvency (or bankruptcy), describe how the members' accrued benefits are protected, if at all.	5%	10.0	10.0	10.0	10.0	0.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	When joining the pension plan, are new members required to receive information about the pension plan?	5%	10.0	10.0	10.0	10.0	0.0	10.0	10.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Costs	Are plan members required to receive an annual report about the pension plan?	5%	10.0	10.0	7.5	5.0	0.0	0.0	0.0	0.0	5.0	10.0	0.0	10.0	5.0	10.0	5.0	10.0
	Are plan members required to receive an annual statement of their current personal benefits from the plan?	7.5%	6.7	6.7	6.7	6.7	0.0	3.3	3.3	3.3	3.3	10.0	6.7	6.7	10.0	10.0	6.7	6.7
	Is this annual statement required to show any projection of the individual member's possible retirement benefits?	2.5%	10.0	0.0	7.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	10.0	0.0	5.0
	Do plan members have access to a complaints tribunal which is independent from the pension plan?	10%	4.6	6.2	5.7	5.5	5.6	4.1	6.4	10.0	8.2	7.4	7.5	10.0	8.2	6.7	5.7	5.5
Integrity sub-index		100%	82.4	81.7	79.7	79.8	50.1	56.8	64.4	58.8	65.2	91.4	74.5	74.5	79.9	83.5	84.5	62.5

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

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