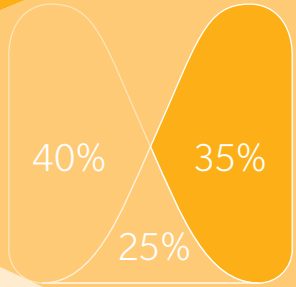
CHAPTER 6
THE SUSTAINABILITY SUB-INDEX

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]

19 The 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?

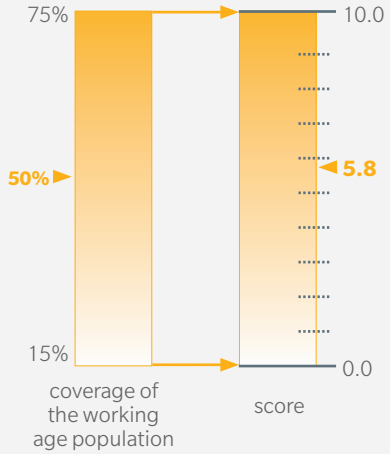
Objective

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.

Calculating S1 —Coverage



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

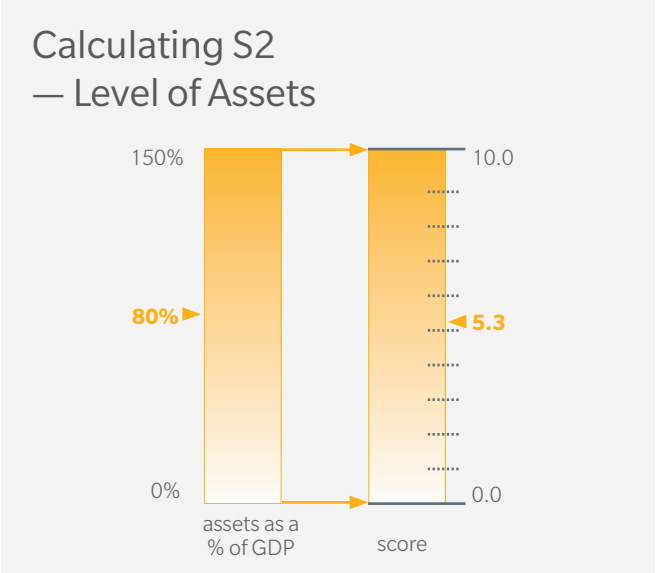
The level of current assets set aside for future pensions, when expressed as a percentage of a country's GDP, represents a good indicator of an economy's ability to meet these payments in the future.

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.



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

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

b. What is the projected gap between life expectancy at birth and the state pension age in 2030? (This calculation allows for mortality improvement.)

c. What is the projected old-age dependency ratio in 2030?

d. 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.

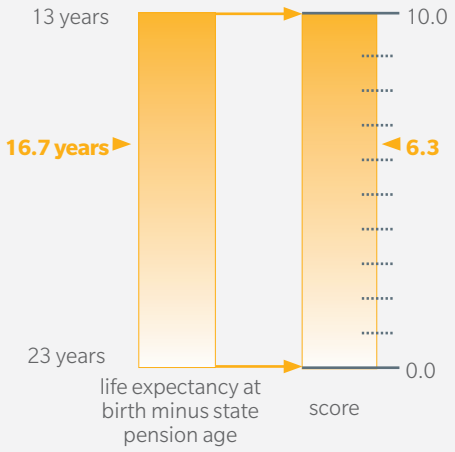
Calculations

a. We have calculated the difference between the life expectancy at birth and the existing state pension age, as used in Park (2009). The answers provide an indicator of the average period of pension payment and range from 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.

b. 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.

Calculating S3 — Life Expectancy and State Pension Age



c. The old-age dependency ratio is the population aged 65 and over divided by the population aged between 15 and 64. The projected dependency ratios for 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.

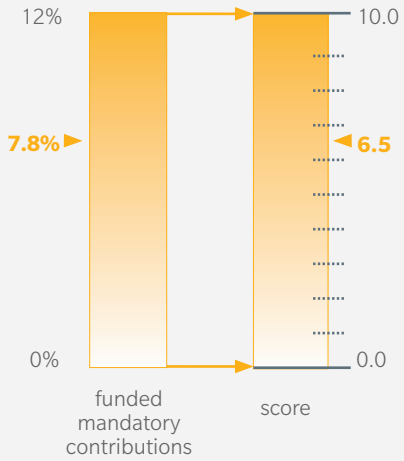
In some cases, neither extreme is adopted. For instance, the Canada Pension Plan adopts a 'steady-state' funding basis so that contributions will remain constant for 75 years. In this case we have assumed that 75 percent of the contributions are invested. In China, only the employee contributions are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

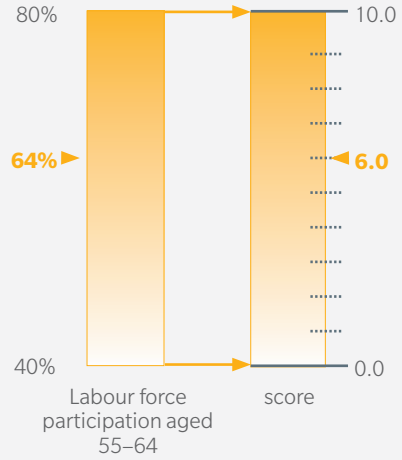
Objective

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 of 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 liabilities[21]), expressed as a percentage of GDP?

Objective

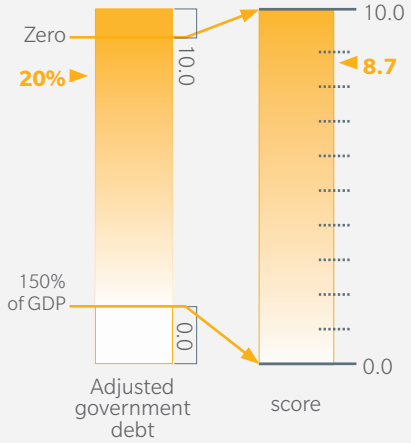
As social security payments represent an important source of income in most retirement income systems, the ability of future governments to pay these pensions and/or other benefits (such as health) represents an important factor in the sustainability of current systems. Clearly, higher government debt 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.

Calculating S6

— Adjusted Government Debt



Commentary

Government debt is likely to restrict the ability of future governments to support their older populations, either through pensions or through the provision of other services such as health or aged care. Hence, governments with lower levels of debt are in a stronger financial position to be able to sustain their current level of pension payments into the future. 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.