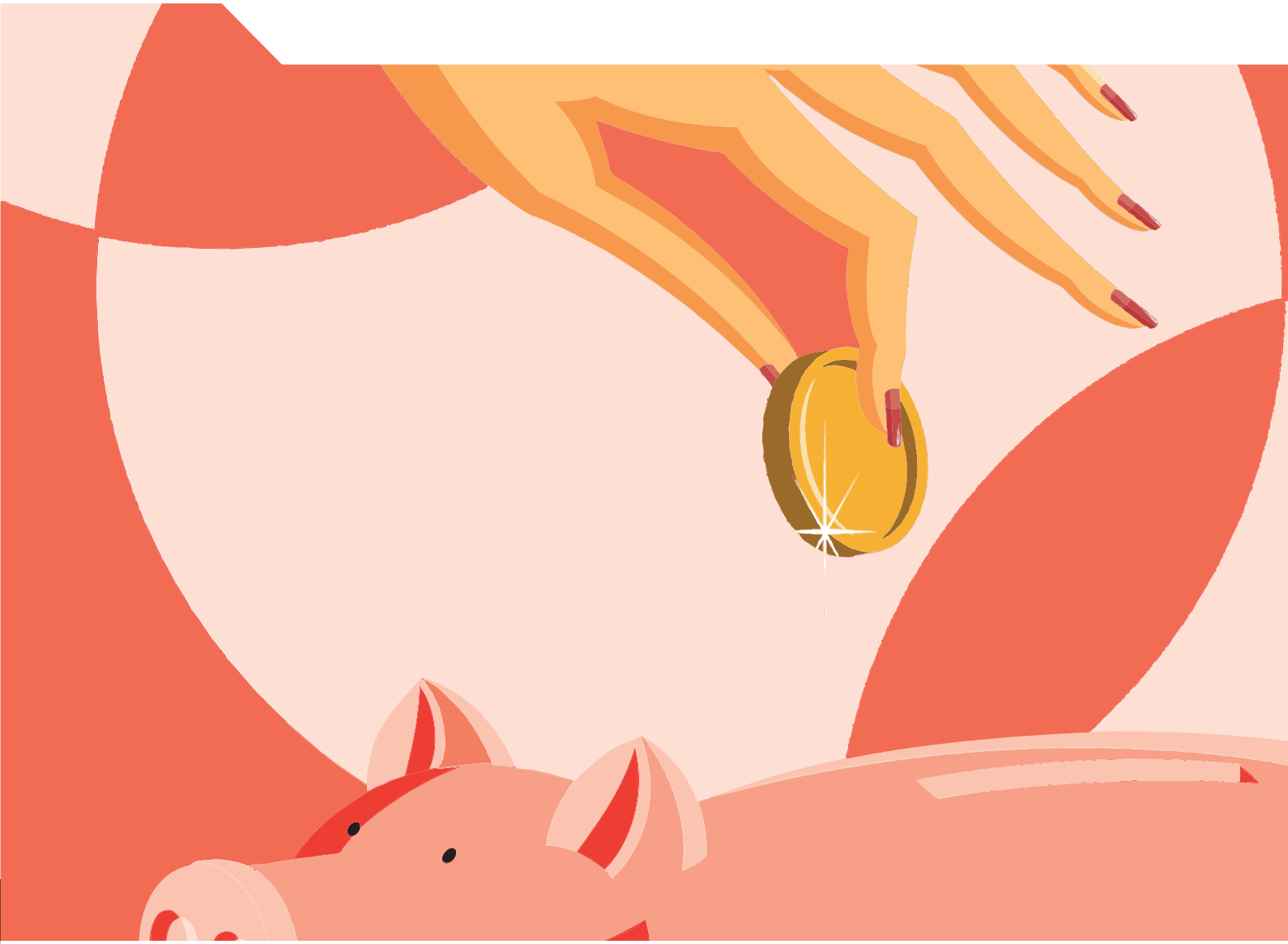
Pensions at a Glance Asia/Pacific 2011



OECD

Pensions at a Glance Asia/Pacific 2011

OECD

This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Please cite this publication as:
OECD (2012), *Pensions at a Glance Asia/Pacific 2011*, OECD Publishing.
http://dx.doi.org/10.1787/9789264107007-en

ISBN 978-92-64-10699-4 (print)
ISBN 978-92-64-10700-7 (PDF)

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Corrigenda to OECD publications may be found on line at: *www.oecd.org/publishing/corrigenda*.

© OECD 2012

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgement of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to *rights@oecd.org*. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at *info@copyright.com* or the Centre français d'exploitation du droit de copie (CFC) at *contact@cfcopies.com*.

Foreword

Accurate presentation of pension systems of an economy and the comparison of systems across economies are crucial parts of policy analysis. Yet such presentations and comparisons are far from easy. They require a well-thought-out methodology, access to detailed information on national systems, verification of information and results by a network of pension experts to provide feedback to improve the quality and applicability of the research over time.

This study presents a range of indicators to enable comparisons between the economies of the Asia/Pacific region. It also includes data for key countries that are members of the Organisation for Economic Co-operation and Development (OECD). It builds on the first Pensions at a Glance: Asia/Pacific *which was also a joint project between the World Bank and the OECD, along with the OECD/Government of Korea Research Centre on Health and Social Policies (RCHSP).*

The report was drafted by Andrew Reilly and Edward Whitehouse of the Social Policy division of the OECD Secretariat.

For this second report we are again indebted to the national experts who have contributed to the updating of the models used, many of whom also assisted with the initial publication. They are too numerous to mention here but details of attendees to the annual pension meetings in Seoul can be found on the Korea Centre website www.oecdkorea.org/social/board/list_eng.asp?BoardCd=5011.

The pension models use the APEX (Analysis of Pension Entitlements across Countries) infrastructure originally developed by Axia Economics, with the help of funding from the OECD and the World Bank.

Table of Contents

Executive Summary 7

Introduction 17

Overview of Retirement-income Systems 19

Methodology and Structure of the Report 22
- Future entitlements under today's parameters and rules 22
- Career length 23
- Coverage 23
- Economic variables 23
- Taxes and social security contributions 24
- Average earnings 24

Part I

Comparing Pension Policies

- Key Features of Pension-System Design 26

Chapter 1. **Retirement-income Indicators** 29
- Gross replacement rates 30
- Net replacement rates 32
- Gross replacement rates with entry at age 30 34
- Gross pension wealth 36
- Net pension wealth 38
- Pension-earnings link 40
- Coverage 42
- Life expectancy 44
- Support ratio 46

Part II

Economy Studies

Introduction 50

China 52
Hong Kong 57
Indonesia 61
Malaysia 66
Philippines 71
Singapore 76
Thailand 80
Viet Nam 85

India 90
Pakistan 95
Sri Lanka 101

This book has...

StatLinks

A service that delivers Excel® files from the printed page!

Look for the *StatLinks* at the bottom right-hand corner of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the ***http://dx.doi.org*** prefix.
If you're reading the PDF e-book edition, and your PC is connected to the Internet, simply click on the link. You'll find *StatLinks* appearing in more OECD books.

© OECD 2012

Executive Summary

Many of Asia's retirement-income systems are ill prepared for the rapid population ageing that will occur over the next two decades. The demographic transition – to fewer babies and longer lives – took a century in Europe and North America. In Asia, this transition will often occur in a single generation. Asia's pension systems need modernising urgently to ensure that they are financially sustainable and provide adequate retirement incomes.

In some economies – China, Viet Nam and Pakistan – pension levels are high relative to earnings. Early retirement ages, especially for women, provide additional financial pressure. These systems are unlikely to be sustainable as populations' age and retirement-income provision matures.

Yet many Asia/Pacific economies also face a problem of adequacy of retirement incomes. There are four reasons why current pension systems are unlikely to deliver a secure income in old age.

- Coverage of formal pension systems is relatively low.
- Withdrawal of savings before retirement is very common.
- Pension savings are often taken as lump sums with the risk that people outlive their resources.
- Pensions in payment are not automatically adjusted to reflect changes in the cost of living.

Ageing Asia must face these pension problems to deliver secure, sustainable and adequate retirement incomes for today's workers.

Asia's ageing will be at its most rapid between 2010 and 2030. Given the long lag in pension-policy planning, there is now a narrow window for many Asian economies to avoid future pension problems and repeating many of the mistakes made in Europe and North America. But it will soon be too late.

Pensions in Asia/Pacific

National pension provision in Asia/Pacific is very diverse. Nine economies have public schemes that pay earnings-related pensions. They are called "defined-benefit" (DB) schemes because the value of the pension is defined relative to individual earnings.

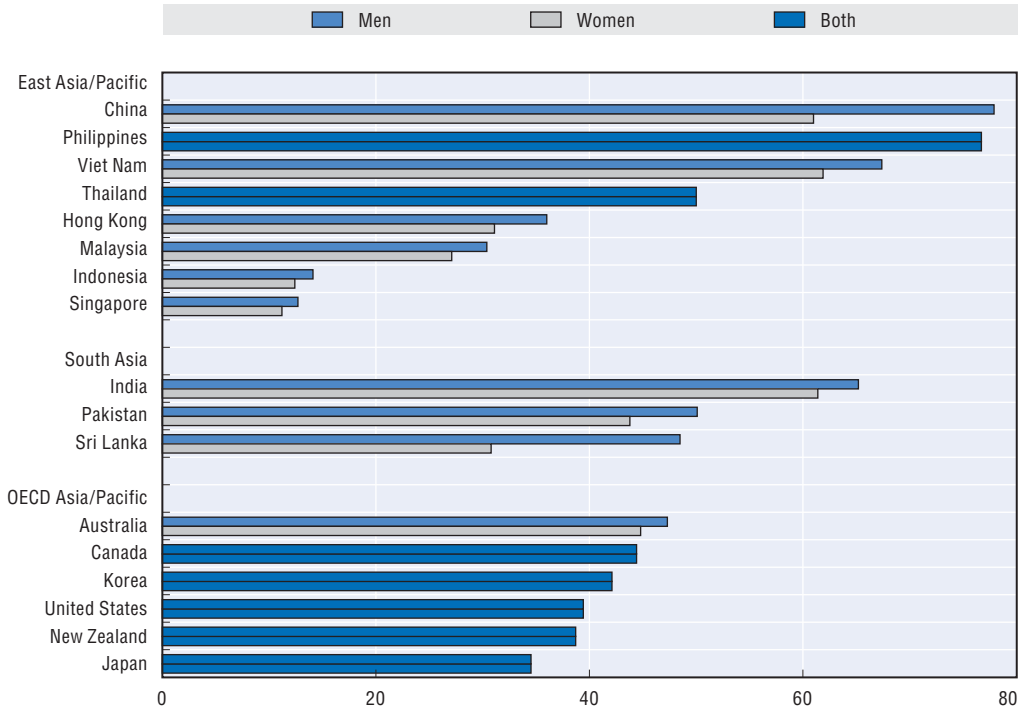
The next most common kind of scheme is again publicly managed, but benefits depend on the amount contributed and the investment returns earned. These are known as "defined-contribution" (DC) schemes. Two economies also have defined-contribution pensions, but managed by the private sector. Finally, New Zealand does not have compulsory pension contributions, but instead pays a flat-rate benefit to all retirees. This diversity makes it hard to compare pension systems between economies and evaluate their performance. Nevertheless,

Table 1. **Pensions in Asia/Pacific**

Country	Type of pension scheme			Country	Type of pension scheme		
	Public		Private		Public		Private
	DB	DC	DC		DB	DC	DC
East Asia/Pacific				**South Asia**			
China		●		India	●	●	
Hong Kong, China			●	Pakistan	●		
Indonesia		●		Sri Lanka		●	
Malaysia		●					
Philippines	●			**OECD Asia/Pacific**			
Singapore		●		Australia			●
Thailand	●			Canada	●		
Viet Nam	●			Japan	●		
				Korea	●		
				New Zealand			
				United States	●		

StatLink http://dx.doi.org/10.1787/888932554413

Figure 1. **Replacement rates**



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932553919

there are valuable lessons to be learned from different economies' pension-system design and their experience with reforming retirement-income regimes. A key indicator of pension systems is the "replacement rate". This shows the value of the pension for specific individuals as a percentage of their earnings when working. The calculations are shown for a worker entering the labour market today and spending a full career under the set of pension parameters and rules that includes all legislated changes. Figure 1 shows the calculated replacement rates for average earners. The OECD Asia/Pacific economies all have very similar

replacement rates, bunched around 40%. However, this is well below the average for the 34 OECD countries as whole, which is 57%. For men, replacement rates in most other Asia/Pacific economies are substantially above the levels in the OECD. They are around two-thirds or more in China, Pakistan, the Philippines and Viet Nam, for example.

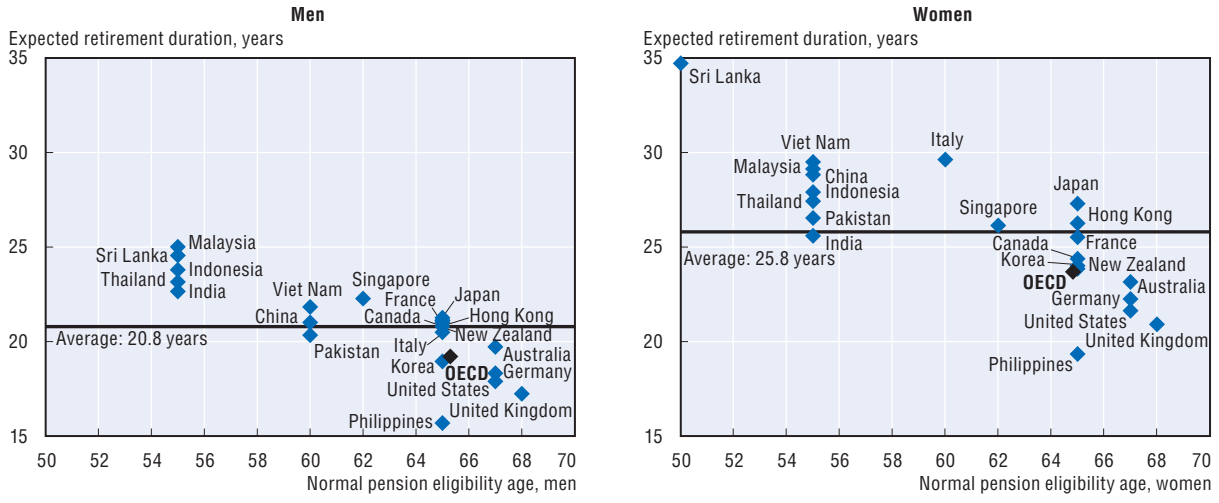
On the other hand, there are also economies in Asia/Pacific with very low replacement rates. In Singapore, for example, only a small part of the contribution to the provident fund is ring-fenced to provide retirement income. In practice, people might not spend the maximum allowed on other things, such as housing and healthcare meaning that retirement incomes in practice may well be higher than those shown.

The low replacement rate for Indonesia reflects the small size of the mandatory contribution. The average replacement rate is 46% in East Asia/Pacific, 55% in South Asia and 41% in the OECD countries of the region. Replacement rates for women tend to be lower than men's in Asia/Pacific, which, as we shall see, is primarily a result of women having earlier pension ages than men. In OECD countries, in contrast, pension ages for men and women are (or will be) the same.

Pension ages and retirement

The most common pension age in OECD countries is 65, although Germany, the United Kingdom and the United States will all increase pension age to at least 67 in the future. In contrast, the average pension age for men in Asia/Pacific economies outside the OECD is around 59 while for women it is just 57. However, economies outside of the OECD are projected to have somewhat shorter life expectancies and so it might be reasonable for them to have earlier pension ages. Combining information on national pension ages and life expectancy, it is possible to calculate the expected amount of time that people will spend in retirement. Figure 2 shows that this averages 20.8 years for men across the economies studied. However, in OECD countries the average is just 19.7 years, compared with 22.1 years in the Asia/Pacific economies outside the OECD. The average pension age for men is six years earlier in non-OECD economies than in OECD members shown. Shorter life expectancy cuts

Figure 2. **Expected time in retirement**



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932553938

the difference in retirement duration between the two groups of economies, but does not eliminate it. For women, the differences are starker: pension age is seven years younger on average for women in economies outside the OECD. Expected retirement duration is 24.3 years for women in the OECD countries, compared with 19.7 years for men.

This mainly reflects differences in life expectancy between the sexes. But for the other Asia/Pacific economies, expected retirement duration for women is 27.3 years, a full three years longer than in the OECD countries shown. This reflects both women's longer life expectancy and earlier pension age in a number of economies. Figure 2 shows that pension eligibility ages are exceptionally low for both men and women in Malaysia and Sri Lanka. Indeed, women in Sri Lanka, who can retire at age 50, can expect nearly 35 years of retirement, most likely a longer period than they were working and contributing. In addition, women's pension ages are conspicuously low in China and Thailand. Furthermore, these results almost certainly understate the differences in retirement durations between economies. In the OECD countries, an average of 70% of the working-age population is a member of the pension system, equivalent to more than 90% of people who are economically active (see discussion below).

In South Asia, coverage of the pension system is just 10.6% of the working-age population or 17% of the economically active. Coverage is higher on average in East/Asia Pacific than in South Asia: 26% of people of working age or 36% of labour-market participants. But this is still well short of the experience in OECD countries.

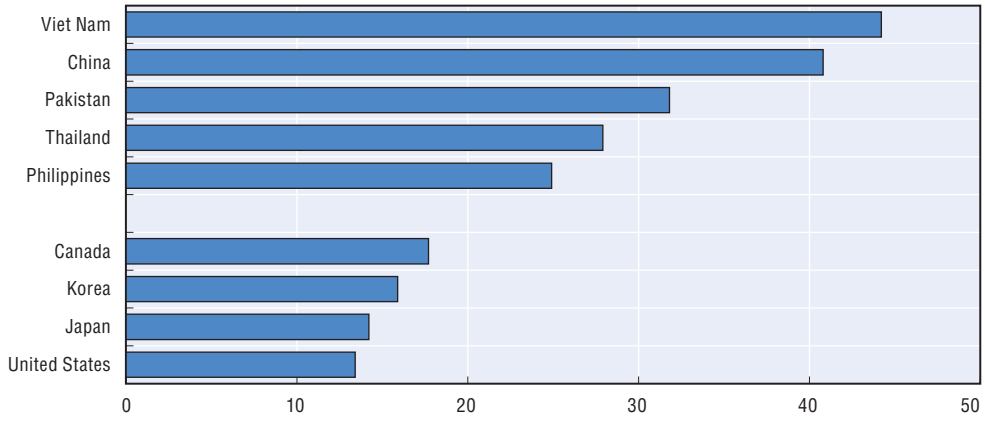
The results in Figure 2 are based on population mortality data. This is not a problem when analysing OECD countries that have near-universal coverage. However, the groups that are covered by the pension system outside the OECD are a minority, and a privileged one. Their life expectancy is therefore higher than that of the population as a whole. Figure 2 therefore understates the differences in expected retirement duration between OECD and non-OECD economies: in practice, they will be larger than the two years for men and three years for women calculated.

Financial sustainability

A simple indicator of long-term costs of providing retirement incomes is the steady-state rate of contributions that would be needed to pay for pensions. Figure 3 demonstrates that many of the Asia/Pacific pension systems are unlikely to prove sustainable in the long term. For example, China currently aims to pay a replacement rate of 78% for men and 51% for women from age 60 and 55 respectively. Allowing for the costs of mixed price/earnings indexation of pensions in payment, the cost of providing such a benefit is over 40% of earnings (assuming contributions from age 20 to the normal pension age of 55 or 60). This measure of the steady-state contribution rate is also high in other Asia/Pacific economies. In many cases – China, Viet Nam and Pakistan – this is due to high target replacement rates. However, early pension ages – especially for women – also have an important effect. Also, indexation of pensions in payment to a mix of wages and prices rather than prices alone in China and the Philippines adds to costs.

Furthermore, this simple measure of financial sustainability tends to understate the costs of retirement incomes. First, pension entitlements are calculated for a single person, and so the cost of paying couples' and survivors' benefits is not taken into account. Secondly, the analysis does not allow for differences between economies in the evolution of the size

Figure 3. **Required contribution rates**



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932553957

of the working-age population. The necessary contribution rates will tend to be higher than those shown because of declines in workforce size.

Modernising pensions

There are a number of features of Asia/Pacific pension schemes that fall short of international standards and best practice. Three issues stand out. First, nearly all defined-benefit schemes are based on final salaries. Secondly, people can and do withdraw benefits early, leaving little money for retirement. This begs the question whether these are really pension plans at all. Similarly, many systems pay lump-sum benefits rather than a regular retirement income, exposing pensioners to the risk of outliving their retirement savings. Thirdly, the adjustment of pensions in payment to reflect changes in costs of living is discretionary or *ad hoc*, leading to the risk that inflation erodes retirement income over time, leaving the very old in poverty.

Earnings measures

Calculating retirement benefits in earnings-related pension plans on the basis of "final" salary is readily understandable and used to be common practice around the world. It is much more difficult to maintain lifetime salary records and to do the requisite pension calculations than to base benefits on the last salary. Moreover, basing pensions on final pay offers an easy way of dealing with the effect of inflation on pension entitlements earned earlier on in the career. Of the Asia/Pacific economies, only Viet Nam will in future base pensions on average salary. India, Pakistan, the Philippines and Thailand use final salaries. Most OECD countries have now shifted to calculating pension entitlements using lifetime average earnings. Some 18 of them use the full lifetime, and a further three – including Canada and the United States – use 30-35 years of earnings. The motivation for this change was the undesirable effects of final-salary plans. The higher paid tend to have earnings that rise more rapidly with age, while age-earnings profiles for lower paid manual workers tend to be flat. There is thus redistribution from low to high earners with final salary plans. Having lifetime earnings as the contribution base and final earnings as the benefit base

also discourages compliance in earlier years with large incentives to under-report earnings. It encourages strategic manipulation, with employees and employers artificially boosting pay in the final years to secure higher pensions. These effects both reduce contribution revenues and lead to higher expenditures.

Furthermore, record-keeping has improved through the adoption of information technology, allowing files covering longer periods to be maintained rather than relying on final salary. Secondly, computerisation allows "valorisation or indexation of earlier years' earnings to be calculated easily to protect pensions from inflation during the time from when rights are earned to when benefits are received". This means that pension formulae based on final salary are no longer needed as a way of protecting against inflation.

Withdrawals

The word "pension" to most people means a regular payment. In this sense, many Asian economies do not provide pensions. In Malaysia and Sri Lanka, benefits are paid as a lump sum at the time of retirement. Workers in Indonesia receive a mix of a single lump sum or an annual payment over five years. A certain minimum amount has to be taken as annual payments over 20 years in Singapore, but the rest can be taken as a lump sum. Workers in Hong Kong also have a lump-sum option. Most economies around the world, however, pay out pensions in the form of "annuities": regular payments until the death of individual members or of their survivors. Economists believe that annuities make people better off. The intuition is straightforward. Individual life expectancy is uncertain. So people would have to spend accumulated wealth slowly after retirement to ensure an adequate income should they live a long time. But this kind of self-insurance is costly because it increases the chances that people will consume less than they could have if they knew when they were going to die. This cost can be reduced with annuities, which pool risk across individuals.

An annuity is a kind of insurance against the risk of exhausting savings in old age. The benefit of this "longevity insurance" depends on how risk-averse people are. The more cautious would spend less of their savings in the early years of retirement if there were no annuities to avoid running out of money toward the end of their lives. The benefit of an annuity also depends on interest rates, life expectancy and how much people plan for the long term. Under reasonable assumptions, access to an annuity has been shown to improve welfare at age 65 by 50-100% compared with a world of pure lump-sum pension payments. There are some good reasons why people might not want to convert their retirement savings into an annuity. The first is bequests. Annuities are, by definition, exhausted when people die. Yet people often want to leave some of their wealth to their family. Bequests can also be used to encourage relatives to look after them in their old age in exchange for the promise of the inheritance. The desire for bequests, whether "strategic" or "altruistic", reduces the value of annuities to individuals. A second motive is precautionary savings. A sudden medical emergency requires liquidity and flexibility that is impossible if wealth is fully annuitised. Nonetheless, some degree of annuitisation of retirement savings is desirable, from both the individual's and the policy-makers perspective. Developing a means of achieving this is challenging: for example, annuity markets perform poorly even in some economies with sophisticated financial markets, such as Australia. But the resulting pooling of risks across individuals could improve everyone's welfare in retirement. Some schemes do not even require people to reach retirement before withdrawing money from their accounts. In India, for example, members can withdraw their balances when they change jobs, up to three

years' of earnings for housing (after five years' contributions) and 50% of the employee's share for marriage, education healthcare, etc. (after seven years' contributions). Historically, around 8.5% of balances were withdrawn annually, of which less than one-fifth was for retirement at the normal age.

Saving for the short term is obviously of value to individuals, meeting important needs and risks that are not insured by a welfare system. They were particularly important in the past, when India lacked secure financial institutions able to guarantee individuals' savings and a positive real interest rate. If Indians did not make early withdrawals from their accounts, then the replacement rate for a full-career worker would be virtually 100%. Singapore's provident fund also provides savings for different purposes, with three different accounts: one earmarked for retirement, one for healthcare expenses and the other with broader uses, most notably housing. The retirement account receives a share of the total contribution – which is 34.5% for people under age 50 – that varies with age. This is just under 15% for under 35s, rising to 25% for 50-55 year-olds. However, there are no additional earmarked contributions after 55. The healthcare account also receives a contribution that increases with age: from less than 20% for under 35s to 30% for 50-55 year-olds and higher still after age 55. The relatively low replacement rate for Singapore shown in Figure 1 of 13% is because the calculations only consider the earmarked retirement account. If an individual were to put the general account towards retirement-income provision as well, then the replacement rate would be 82%. It would, of course, be foolish to say that one Singaporean who withdrew the account balance to buy a house is worse off than another who built up a larger retirement income but then had to use some of it to pay rent. Nonetheless, there is a risk that older people find themselves asset-rich and income-poor in retirement and facing difficulty in unlocking the value of their housing assets to pay for essentials. Some Asia/Pacific economies' rules for early withdrawals are therefore likely to lead to low retirement incomes. Improved protection or "ring-fencing" of savings for retirement might be appropriate. Also, greater transparency in the rules for early withdrawals – perhaps through the designation of earmarked accounts as in Singapore – is needed.

Inflation and indexation

Indexation refers to the automatic adjustment of pensions in payment to reflect changes in costs of living or standards of living. Without adjustment, the purchasing power of the pension can decline quickly and, over a period of retirement of 20 years or more, by a large amount. Few economies around the world had automatic adjustments until the 1970s. High inflation following the oil-price shocks led virtually all industrialised economies to adopt automatic indexation. The effect of such a policy is to protect pension values and produce greater certainty in retirement incomes. In Asia/Pacific, only China and the Philippines have automatic indexation of pensions, in both cases to a mix of price inflation and wage growth. In Viet Nam, pensions increase in line with the minimum wage. In contrast, adjustments to pensions in India, Pakistan and Thailand are purely discretionary.

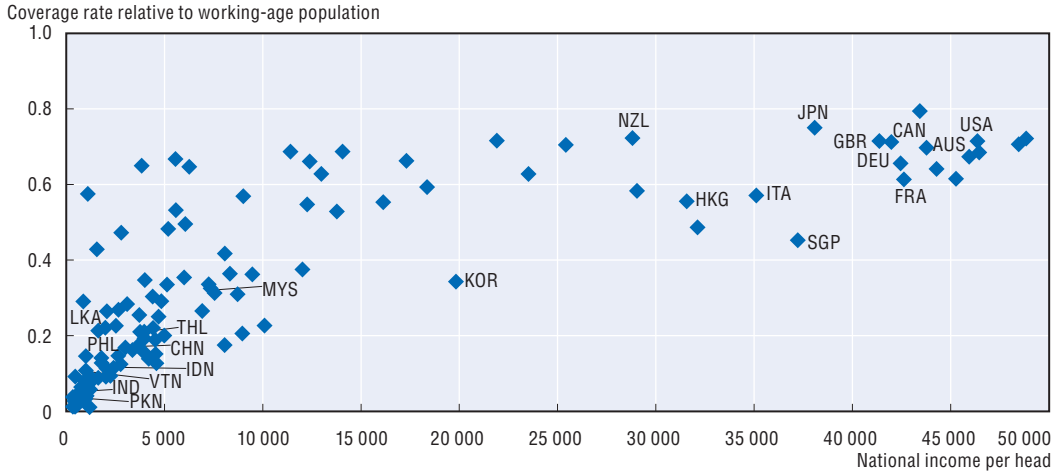
Asia's coverage gap

Coverage of formal pension systems in Asia/Pacific is much lower than in OECD countries. This is unsurprising given the different way the economies work. Economies with large rural populations predominantly engaged in small-scale agriculture and high degrees of

absolute poverty are unlikely to have high coverage. Moreover, networks of family support obviate the need for formal pension systems.

Figure 4 therefore compares coverage of formal pension systems – defined as the percentage of people of working age who are members – with the level of national income per head. The chart shows data for well over 100 economies, with the Asia/Pacific economies highlighted. There is obviously a strong relationship between coverage of formal pension schemes and national income.

Figure 4. **Pension coverage**



Source: World Bank Pension Database.

StatLink http://dx.doi.org/10.1787/888932553976

However, the chart shows that some economies – Sri Lanka, the Philippines and Viet Nam – have higher coverage than most economies with similar national income per head. Others – such as China, India, Pakistan and Thailand – have low coverage, given their level of economic development.

Furthermore, few economies in Asia/Pacific have social pensions to provide safety-net retirement incomes for people who were not members of formal schemes. Such schemes cover only around 5% of retirees in Hong Kong and less than 1% in Singapore. Other economies do not have such programmes (or they have very low coverage). Only in India are social pensions significant: around 10-15% of older people are beneficiaries. As networks of family support weaken and coverage of formal pension systems remains low, stronger systems of social pensions will be an important way of avoiding high and growing levels of old-age poverty.

Ageing Asia

Around 16% of the total population is currently aged over 65 in the OECD Asia/Pacific and other major developed economies. This ranges from 12/13% in Australia, New Zealand and the United States to 21/22% in Italy and Japan. Outside the OECD, the Asia/Pacific economies are much younger, with an average of 6% of people aged over 65. This share is less than 4% in Pakistan to around 8% in China and Singapore. Between now and mid-century, the population over age 65 will increase from 16 to 27% in the 11 OECD countries

under study. But the increase in other Asia/Pacific economies will be twice as fast: from 6% to 17% on average.

Meeting challenges, making changes

Ageing Asia needs to face up to its pension problems and needs to do so soon. Early retirement ages and relatively high pension levels threaten financial sustainability. Yet, at the same time, low coverage, early withdrawals and lump-sum payments mean that adequacy will also be a challenge.

Introduction

Pensions are a major policy issue in developed and developing economies alike. However, pension reform is challenging and controversial because it involves long-term planning by governments faced with numerous short-term pressures. It often provokes heated ideological debates and, sometimes, street protests.

Economies can learn valuable lessons from others' pension systems and their experiences of retirement-income reforms. However, national pension systems are very complicated, involving much institutional, technical, and legal detail. Consequently, international comparisons are very difficult to undertake, making it impossible to transfer policy lessons between economies.

This study combines rigorous analysis with clear, easy-to-understand presentation of empirical results. It does not advocate any particular kind of pension system or type of reform. The goal is to inform debates on retirement-income systems with data that people with different visions for the future of pensions can all use as a reference point.

International comparisons of retirement-income regimes to date have mainly focused on *financial* sustainability: whether the pension promises made to today's workers will be affordable in the future. Much less attention has been paid to the future adequacy of pension benefits, the impact of pension reforms on the distribution of income among older people and ways of combating old-age poverty. These issues, which may be termed *social* sustainability, are a core concern of this study.

This second edition of *Pensions at a Glance: Asia/Pacific* provides a reference for pension comparison throughout the region. The format of the report follows that of the first report which itself was based on the OECD's *Pensions at a Glance* series, which covers the 34 OECD member countries.

The values contained within reflect the pension parameters at 2008. As with the original publications the report is concerned with single pensioners rather than family units.

The report begins by showing the different schemes that make up each national retirement-income provision, including a summary of the rules that apply. This is then followed by a brief summary of several indicators that are the benchmarks of any pension system analysis, namely replacement rates and pension wealth. Both of these indicators are examined on both a gross and net basis. The subsequent sections then look further at both the characteristics of Asian pension systems as well as the population as a whole, through coverage, life expectancy and general demographics. Finally the second part of the report provides detailed background information for all of the non-OECD economies covered as well as economy specific tables and charts. Information on the OECD countries is available in the *Pensions at a Glance* series.

In order to enable comparison between the non-OECD economies and specific OECD countries the results have been grouped by region and OECD status. The largest such

grouping is East Asia/Pacific which covers China, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. Within South Asia the remaining non-OECD economies are listed, *i.e.* India, Pakistan and Sri Lanka. Furthermore the OECD countries themselves have been divided into two distinct groups. Firstly, there are the Asia-Pacific economies of Australia, Canada, Japan, Korea, New Zealand and the United States to enable a more regional comparison. Secondly there are four additional OECD countries included, France, Germany, Italy and the United Kingdom, all of which have well established pension systems and are major economic powers. By including this latter group clear differences should be evident between them and the non-OECD economies in Asia.

The results within this report are specifically analysed at three distinct earnings levels so that a more comprehensive portrayal of the individual pension systems is given. Firstly results are given for workers at average earnings, where it is assumed that the worker earns this level throughout their entire career without any period of interruption. The remaining two earnings levels are 50% of average earnings, commonly called low earners and 200% of average earnings, known as high earners, again where this level of earnings applies to the entire working life of the individual. Entry to the pension system is assumed to be at age 20 and the models are based on a full career until the standard retirement age within that economy, so for China, for example, it is assumed that a man will have to work for 40 years until age 60 before being eligible for retirement pension.

Overview of Retirement-income Systems

Retirement-income regimes around the world are diverse and they often involve a number of different programmes. As a result, classifying pension systems and different retirement-income schemes within those systems is difficult. Perhaps the most well known of these taxonomies is the "multipillar" one of the World Bank (1994). In its current versions, this comprises five different pillars (Holzmann and Hinz, 2005). The focus of this report, however, is on mandatory retirement-income provision and so some of these pillars are not necessary here.

The framework consists of two mandatory "tiers": a redistributive part and an insurance part. The redistributive part is designed to ensure that pensioners achieve some absolute, minimum standard of living. Insurance components are designed to achieve some target standard of living in retirement compared with that when working.

The focus of the pension modelling is on workers that are covered by formal-sector pension schemes. The analysis of the structure of pension systems in Table 1, therefore, only covers retirement-income programmes relevant to this group. More general safety-net benefits, often called social pensions, are not therefore covered in the table (see Palacios and Sluchynsky, 2006, on such schemes).

Starting with the first tier, all the OECD countries have redistributive schemes that affect some or all workers with full careers in the pension system. In contrast, only a third of the Asia/Pacific economies outside the OECD have comparable provisions.

The most common kind of redistributive scheme in the 21 economies as a whole are resource-tested programmes, which grant a higher payment to poorer pensioners, with the amount reduced as the level of other income during retirement increases. The most important of these types of scheme in a national context is the Australian plan, but these also play a significant role in providing retirement incomes in many other OECD countries and Hong Kong.

Minimum pensions are similar to resource-tested schemes, in that they pay a higher benefit to lower-income retirees. However, the crucial difference is that the value of the entitlement depends only on income from a particular pension scheme and not income as a whole (including capital income, earnings, rents, etc.). Normally they are provided as part of the earnings-related pension scheme, whereas resource-tested schemes are institutionally separate. There are minimum pensions in the Philippines and Pakistan.

The third type of first-tier pension is a basic scheme, in which the amount paid is either a flat rate or it depends on the number of years of contributions; it is not dependent on individual earnings. For example, the basic pension in China pays a fixed percentage of average, city-wide earnings for each year of coverage. The pension system of Korea has a similar basic component: the pension is based on a mix of individual and economy-wide earnings.

Table 2. **Structure of pension systems**

	First tier Universal coverage, redistributive			Second tier Mandatory, insurance	
	Public			Public	Private
	Resource tested	Basic	Minimum	Type	
East Asia/Pacific					
China		●		DC	
Hong Kong, China	●			DC	
Indonesia				DC	
Malaysia				DC	
Philippines		●	●	DB	
Singapore				DC	
Thailand				DB	
Viet Nam				DB	
South Asia					
India				DB + DC	
Pakistan			●	DB	
Sri Lanka				DC	
OECD Asia-Pacific					
Australia	●				DC
Canada	●	●		DB	
Japan		●		DB	
Korea		●		DB	
New Zealand		●			
United States	●			DB	
Other OECD					
France	●		●	DB + points	
Germany	●			Points	
Italy	●			NDC	
United Kingdom	●	●	●	DB	

DB = defined benefit.
DC = defined contribution.
NDC = notional defined contribution.
Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554432

The second tier in this typology of pension schemes plays an "insurance" role. These plans play a particularly important role in retirement income systems outside of the OECD countries because of the relatively limited extent of redistributive schemes. They are designed to provide an adequate income relative to previous earnings, rather than just providing a minimum living standard (as with the first tier). Again, they are mandatory.

Seven of the eleven non-OECD economies have a defined-contribution (DC) plan, where the contributions are saved over time and either paid as a lump sum or as pension-income stream at retirement. The remaining four economies, as well as India which has both, all have defined-benefit (DB) schemes. In these plans the amount of income received at retirement is dependent on the number of years of contributions and on the level of individual earnings.

There are also notional-accounts (NDC) schemes: the public pension in Italy is the only example listed. This scheme records each worker's contributions in an individual account and applies a rate of return to that account. The accounts are "notional" in that both the incoming contributions and the interest charged to them exist only in the books of the

managing institution. At retirement, the accumulated notional capital in each account is converted into a stream of pension payments using a formula based on life expectancy.

References

Holzmann, R. and R. Hinz (2005), "Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform", World Bank, Washington, DC.

Palacios, R.J. and O. Sluchynsky (2006), "Social Pensions Part I: Their Role in the Overall Pension System", Pension Reform Primer Series, *Social Protection Discussion Paper*, No. 0601, World Bank, Washington, DC.

World Bank (1994), *Averting the Old-Age Crisis: Policies to Protect the Old and Promote Growth*, Oxford University Press, Oxford.

Methodology and Structure of the Report

This report builds on the approach adopted in the last *Pensions at a Glance Asia/Pacific* publication, and is a "microeconomic" one looking at prospective individual entitlements under all 21 of the economies pension regimes.

The report is divided into two main parts. Part I presents the information needed to compare pension policies in a clear, "At a glance" style. It starts by showing the different schemes that together make up national retirement-income provision. Next, there is a summary of the parameters and rules of pension systems.

This is followed by four main indicators that are calculated using the OECD pension models.

- The first two are the most familiar to pension analysts. Both replacement rates, *i.e.* the ratio of pension benefits to individual earnings. These are given in gross and net terms, taking account of taxes and contributions paid on earnings and on retirement incomes.
- The next two indicators are pension wealth, again given in gross and net terms. Pension wealth is a more comprehensive measure of pension entitlements than replacement rates because it takes account of pension ages, indexation of pensions to changes in wages or prices and life expectancy.

The remainder of Part I consists of at a glance analyses of the pension-earnings link, coverage, life expectancy and the old-age support ratio, each of which play a key role in pension modelling.

Part II provides detailed background information on each of the 11 non-OECD economies' retirement-income arrangements. These include pension eligibility ages and other qualifying conditions; the rules for calculating benefit entitlements; and the treatment of early and late retirees. The economy studies summarise the national results in standard charts and tables under both the economic assumptions used for OECD countries and for economy specific assumptions. Also within this section results are provided on set durations of employment rather than using the economy specific retirement ages. The country chapters for the OECD countries are contained within the *Pensions at a Glance* series.

The remainder of this section describes the methodology used to calculate pension entitlements. It outlines the details of the structure, coverage and basic economic and financial assumptions underlying the calculation of future pension entitlements on a comparative basis.

Future entitlements under today's parameters and rules

The pension entitlements which are compared are those that are currently legislated in the OECD countries and where possible for the non-OECD economies. Changes in rules that have already been legislated, but are being phased-in gradually, are assumed to be fully in place from the start.

The values of all pension system parameters reflect the situation in the year 2008 for both the OECD countries and the non-OECD economies. The calculations show the pension entitlements of a worker who enters the system today and retires after a full career. The results are shown for a single person only.

Career length

The standard OECD definition is used for both the OECD and non-OECD economies. Therefore a full career is defined here as entering the labour market at age 20 and working until standard pension-eligibility age, which, of course, varies between economies. The implication is that length of career varies with the statutory retirement age: 35 years for retirement at 55, 40 years for retirement at 60, etc. As mentioned above the economy chapter section at the end of the publication includes results for set career lengths, namely 30 and 40 years.

Coverage

The pension models presented here include all mandatory pension schemes for private-sector workers, regardless of whether they are public (*i.e.* they involve payments from government or from social security institutions, as defined in the System of National Accounts) or private. For each economy, the main national scheme for private sector employees is modelled.

Pension entitlements are compared for workers with earnings between 0.5 times and twice the average. This range permits an analysis of future retirement benefits of both the poorest and richer workers.

Economic variables

The comparisons are based on a single set of economic assumptions for all the economies covered. Although the levels of economic growth, wage growth and inflation vary across economies, using a single set of assumptions enables comparison without economic affects. Differences in pension levels therefore reflect differences in actual pension systems and government policies. This covers the results in the main section of the publication, but additional results with economy specific assumptions, where appropriate, are included in the economy chapter section.

The baseline assumptions for the indicators are:

- Real earnings growth: 2% per year (given the assumption for price inflation, this implies nominal wage growth of 4.55%).
- Individual earnings: assumed to grow in line with the economy-wide average. This means that the individual is assumed to remain at the same point in the earnings distribution, earning the same percentage of average earnings in every year of the working life.
- Price inflation: 2.5% per year.
- Real rate of return after administrative charges on funded, defined-contribution pensions: 3.5% per year.
- Discount rate (for actuarial calculations): 2% per year.

The calculations assume the following for pay-out of pension benefits: when DC benefits are received upon retirement, they are paid in the form of a price-indexed life annuity at an actuarially fair price. This is calculated from mortality data. Similarly, the notional annuity rate

Table 3. **Average annual earnings**

Individual earnings (% average)	Average earnings			Exchange rates with USD	
	National currency	USD, market price	USD, PPP	Market price	PPPs
East Asia/Pacific					
China	28 900	4 200	7 600	6.95	3.80
Hong Kong, China	243 500	31 400	45 000	7.75	5.41
Indonesia	13 125 000	1 400	2 400	9 698.96	5 454.52
Malaysia	25 400	7 200	14 400	3.52	1.76
Philippines	85 900	1 800	3 600	47.96	23.62
Singapore	53 700	37 200	50 200	1.44	1.07
Thailand	128 200	3 800	7 600	34.09	16.76
Viet Nam	17 980 000	1 000	2 800	17 802.00	6 413.04
South Asia					
India	154 400	3 500	9 600	43.51	16.01
Pakistan	82 700	1 000	2 800	81.10	30.05
Sri Lanka	228 600	2 000	4 500	114.89	50.90
OECD Asia-Pacific					
Australia	60 400	50 400	40 900	1.20	1.48
Canada	43 000	40 300	34 900	1.07	1.23
Japan	5 000 500	48 400	42 700	103.39	117
Korea	33 500 000	30 400	42 600	1 100.86	786
New Zealand	46 700	32 800	31 300	1.43	1.49
United States	40 300	40 300	40 300	1.00	1.00
Other OECD					
France	32 700	47 800	37 300	0.68	0.877
Germany	41 400	60 500	50 600	0.68	0.818
Italy	26 300	38 500	32 800	0.68	0.801
United Kingdom	33 600	61 500	53 200	0.55	0.632

n.a.: Not available.
PPP = Purchasing power parity.
PPP at 2009 and market price at 2008.
Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554451

in notional accounts schemes is (in most cases) calculated from mortality data using the indexation rules and discounting assumptions employed by the respective economy.

Taxes and social security contributions

The modelling assumes that tax systems and social security contributions remain unchanged in the future. This implicitly means that "value" parameters, such as tax allowances or contribution ceilings, are adjusted annually in line with average earnings, while "rate" parameters, such as the personal income tax schedule and social security contribution rates, remain unchanged.

Average earnings

The values for the OECD countries are based on the earnings of an "average worker" as used in the last *Pensions at a Glance* publication. Estimates for China, India and Indonesia are also those contained in the last edition of *Pensions at a Glance* whilst those for the other non-OECD economies are based on estimates of GNI per capita in 2008 so that a consistent source is used.

PART I

Comparing Pension Policies

This part starts with an overview of the different schemes that together make up national retirement-income systems. A summary of the key features of pension systems – the parameters and rules – follows. The main empirical results, consisting of four indicators calculated using the pension models, are then presented.

The first two indicators are both replacement rates; that is, the ratio of pension benefits to individual earnings. These are given in gross and net terms, taking account of taxes and contributions paid on earnings and on retirement incomes.

The next two indicators are based on pension wealth, again in gross and net terms. Pension wealth, reflects not just pension entitlement but also differences in pension ages, indexation of pensions in payment and national life expectancy.

The remainder of Part I consists of at a glance analyses of coverage, life expectancy, demographics and pension spending, each of which play a key role in pension modelling.

The features of the pension systems of the economies covered in this report are summarised in the table below. These follow the typology of the previous section, dividing the pension system into two tiers. The summary necessarily leaves out much of the institutional details. More complete descriptions are provided in the economy studies (Part II).

First-tier, redistributive schemes

The level of benefits under first-tier, redistributive schemes is expressed as a percentage of average earnings in each economy (average earnings is covered in detail in the methodology section above).

In the cases of minimum pensions and basic schemes, the benefit entitlement is shown for a worker who enters at age 20 and works without interruption until normal retirement age. In most OECD countries, this is at least age 65, but for the non-OECD economies it is generally either 55 or 60, as shown in the last lines of the table below. The final row shows the total, first-tier benefit for a full-career worker. In some cases, workers can receive several different types of first-tier benefits, while in other cases they are only eligible for one programme.

Second-tier, insurance schemes

The information on the second tier, insurance based schemes, is shown separately for earnings-related and defined-contribution (DC) plans.

The information on earnings-related schemes begins with the scheme type: defined benefit (DB), points or notional accounts (NDC). The main differences within this type are due to the accrual rate per year of contribution, that is, the rate at which a worker earns benefit entitlements for each year of coverage. The accrual rate is expressed as a percentage of the earnings that are covered by the pension scheme.

For points systems, the effective accrual rate shown is the ratio to the cost of a pension point to the pension-point value, expressed as a percentage of individual earnings. In notional-accounts schemes, the effective accrual rate is calculated in a similar way to obtain the annual pension entitlement as a proportion of earnings in a given year.

For the non-OECD economies four of the five with DB schemes use final year earnings in the determination of pension entitlement rather than lifetime earnings. In comparison, the OECD countries with DB schemes are either based on lifetime earnings or the best years, but none of them use final years. In a number of economies in Asia the accrual rates change depending on the contribution period or they can be different for men and women. For example, in Viet Nam the first 15 years have an accrual rate of 3%, but subsequent years have an accrual rate of 2% for men and 3% for women.

Defined-contribution plans

The key parameter for DC plans is the proportion of earnings that must be paid into the individual account by employees, employers or the government. The contribution rates

within Asia range from 2% for Indonesia to 20% for Singapore, though the remainder are all between 5 and 12%. For the OECD countries only Australia has a DC scheme, with a contribution rate of 9%.

Valorisation

This is process whereby past earnings are adjusted to take account of changes in living standards between the time pension rights accrued and the time they are claimed. For DB schemes in India and Pakistan, there is no need for valorisation as the benefit is based on the final year's salary. Most of the non-OECD economies do not have formal systems in place for this because their pension systems make a lump sum payment. So for this report price valorisation has been used along with the assumption that payments are made over the full pension period.

Ceilings on pensionable earnings

Most OECD countries have an earnings limit for which no further contributions need to be made to the pension system, though only half of those non-OECD economies have ceilings.

Pension eligibility ages

The majority of the OECD countries have a retirement age of 65 for men, with some countries now starting to introduce higher retirement ages of 67 or even eventually 68, as in the case of the United Kingdom. For women the recent trend has been for the standardising of retirement ages irrespective of sex, though normally over a considerable time period. Outside the OECD countries the retirement ages are generally lower at 55 in five economies, 60 in four others and 62 in Singapore. Only the Philippines and Hong Kong currently have retirement ages of 65 for men. Furthermore in five of the non-OECD economies the retirement ages for women are five years below that for men, meaning that in Sri Lanka the standard retirement age is 50.

Indexation of pension-system parameters

Linking pension systems to prices instead of earnings has led to a steady decline in their value relative to average earnings at today's prices, and this trend will only continue unless the indexation procedures are changed. As it is unlikely to be politically possible to continue to pay smaller amounts over time, relevant to earnings it is assumed here that these policies will not continue. Therefore for the purpose of this report it has been assumed that benefits and parameters are linked to average earnings rather than to prices, even if that is the current legislative system. Obviously this assumption has a big effect on the results when calculating the value of the pension promise.

Summary of pension-scheme parameters and rules

	China	Hong Kong, China	Indonesia	Malaysia	Philippines	Singapore	Thailand	Viet Nam	India	Pakistan	Sri Lanka
First tier (% average earnings)											
Resource-tested	–	4.9	–	–	–	–	–	–	–	–	–
Basic	40	–	–	–	4.2	–	–	–	–	–	–
Minimum	–	–	–	–	33.5	–	–	–	–	29	–
Overall entitlement (full-career worker)	40	4.9	–	–	33.5	–	–	–	–	29	–
Second tier											
Earnings-related											
Type	None	None	None	None	DB	None	DB	DB	DB	DB	None
Accrual rate (% indiv. earnings)	–	–	–	–		–	1.33/1.5	3		2	–
Earnings measure	–	–	–	–	Max. (f5, L)	–	f5	L	f1	f1	–
Valorisation	–	–	–	–	p	–	p	w	d	p	–
Indexation	–	–	–	–	p	–	p	w	d	p	–
Defined contribution											
Contribution rate (% indiv. earnings)	8	5	2	11	–	20	–		12	–	8
Ceilings (% average earnings)											
Public	–	98.6	–	–	–	100.6	–	868	50.5	87.1	–
Private/occupational	–	–	–	–	–	–	–	–	–	–	–
Pension age											
Normal (women)	60 (55)	65	55	55	65	62	55	60 (55)	55	60 (55)	55 (50)
Early (women)	55 (50)	60		50	60			55 (50)	50	55 (50)	

	Australia	Canada	Japan	Korea	New Zealand	United States	France	Germany	Italy	United Kingdom
First tier (% average earnings)										
Resource-tested	23.7	17.9	19.4	3	–	19	23.1	20.3	20.2	19.2
Basic	–	14.2	15.8	7.1	38.7	–	–	–	–	14
Minimum	–	–	–	–	–	–	23.3	–	19.9	10.5[1]
Overall entitlement (full-career worker)	23.7	32.1	19.4	7.1	38.7	19	23.3	20.3	20.2	24.5
Second tier										
Earnings-related										
Type	None	DB	DB	DB	None	DB	DB/Points	Points	NDC	DB
Accrual rate (% indiv. earnings)	–	0.63	0.55	0.89	–	0.91 [w][2]	1.75 [w][3, 4]	1.00	1.75	0.89 [w]
Earnings measure	–	b34	L	L	–	b35	b25/L	L	L	L
Valorisation	–	w	w	w	–	w[6]	p/p	w [c][5]	GDP	w
Indexation	–	p [c]	p	p	–	p	p/p	w [c]	p[7]	p
Defined contribution										
Contribution rate (% indiv. earnings)	9	–	–	–	–	–	–	–	–	–
Ceilings (% average earnings)										
Public	–	104	149	129	–	253	102	154	337	119
Private/occupational	244	–	–	–	–	–	305	–	–	–
Pension age										
Normal (women)	67	65	65	65	65	67	61	67	65 (60)	68
Early (women)	60	60	60	60		62		63	60	

Parameters are for 2006 but include all legislated changes that take effect in the future. For example, some countries are increasing pension ages and extending the earnings measure for calculating benefits; pension ages for women are shown only if different from those for men. Early pension ages are shown only where relevant.

–: not relevant; [w]: varies with earnings; [y]: varies with years of service; [a]: varies with age; L: lifetime average; b: number of best years; f: number of final years; w: valorisation/indexation with average earnings; p: valorisation/indexation with prices; d: discretionary indexation; DB: defined benefit; DC: defined contribution; NDC: notional accounts.

1. United Kingdom: minimum benefit calculated from minimum credit.
2. United States: higher accrual rates on lower earnings, lower accruals on higher earnings.
3. France: data shown combines two different programmes.
4. France: higher accrual rate on higher earnings.
5. Germany: valorisation can be reduced by any increase in contribution rates and for the potential contribution to private pensions. Indexation can be reduced by any increase in contributions.
6. United States: earnings valorisation to age 60; no adjustment from 60 to 62; prices valorisation from 62 to 67.
7. Italy: indexation is fully to prices for low pensions, 90 per cent of prices or 75 per cent of prices for higher pensions.

StatLink http://dx.doi.org/10.1787/888932554470

© OECD 2012

PART I

Chapter 1

Retirement-income Indicators

The first two indicators are both replacement rates; that is, the ratio of pension benefits to individual earnings. These are given in gross and net terms, taking account of taxes and contributions paid on earnings and on retirement incomes.

The next two indicators are based on pension wealth, again in gross and net terms. Pension wealth, unlike replacement rates, reflects differences in pension ages, indexation of pensions in payment and national life expectancy.

The remainder of Part I consists of at a glance analyses of coverage, life expectancy, demographics and pension spending, each of which play a key role in pension modelling.

Gross replacement rates, showing pension benefit as a share of individual lifetime average earnings, vary greatly across Asia, from 12.7% in Singapore to 77.9% in China. These are the extremes for average earners but estimates are also given at 50% and 200% of average earnings. Replacement rates generally decline as earnings increase and are usually higher for men than for women.

Often, the replacement rate is expressed as the ratio of the pension over the final earnings before retirement. However, the indicator used here shows the pension benefit as a share of individual lifetime average earnings (re-valued in line with economy-wide earnings growth). Under the baseline assumptions, workers earn the same percentage of economy-wide average earnings throughout their career. In this case, lifetime average re-valued earnings and individual final earnings are identical.

For workers at average earnings, the average for the OECD countries of the gross replacement rate from mandatory pensions is 57.3% for men and 55.7% for women. There is little variation across Asia-Pacific OECD economies, with Australia at the top of the range, offering replacement rates of 47.3% and Japan at the bottom with only 34.5%. The rates for the non-OECD economies do have a wide range, going from 78% for China to 13% for Singapore and 14% for Indonesia, though the next lowest is Malaysia at 30%, meaning both Singapore and Indonesia are clear outliers. Regional variation also exists with India having a replacement rate approximately one-third higher than both Pakistan and Sri Lanka, whilst the majority of the remaining Asia-Pacific economies have replacement rates between 50 and 80%. The non-Asian OECD economies normally have lower replacement rates with Italy and, to a lesser degree, France being slight exceptions with replacement rates of 65% and 49% respectively.

Low earners – workers earning only half the mean – have higher replacement rates than mean earners: on average, 72% for the OECD. This reflects the fact that most economies attempt to protect low income workers from old-age poverty. The cross-economy variation of replacement rates at this earnings level is much higher than it is for pensions of those who earn twice the average. The highest gross replacement rates for low earners are found in the Philippines at 122% and China at 98%, which means that in both economies full-career workers with permanently low earnings have approximately the same income, upon retirement, as when they were working. The lowest rate is again observed in Singapore, which has a replacement rate of 13% for low earners. New Zealand has the highest replacement rate amongst Asian OECD economies at 78%, nearly twice that of Germany.

For high earners – working earning twice the mean – China offers the highest pensions, with a replacement rate of 68%, closely followed by Viet Nam which has a steady replacement rate of 67% across all the earnings levels. The variation across economies in replacement rates for high earners is much smaller than it is for people on low or average pay. Singapore is again at the bottom of the rankings though it is closely followed by Indonesia and New Zealand both with replacement rates less than 20%. Again the majority of the non-OECD economies have higher replacement rates than their OECD counterparts, with the exception of Italy. Five of the eleven non-OECD economies have a higher replacement rate than the OECD average of 47.3%, compared to only one of the ten OECD countries listed. The replacement rates in the Philippines, Australia and Korea are approximately half the level for low earners in the first two economies and well below half in Korea. For the United Kingdom the replacement rates are at one-third of the level for low earners, while for New Zealand they are only at one-quarter of the level.

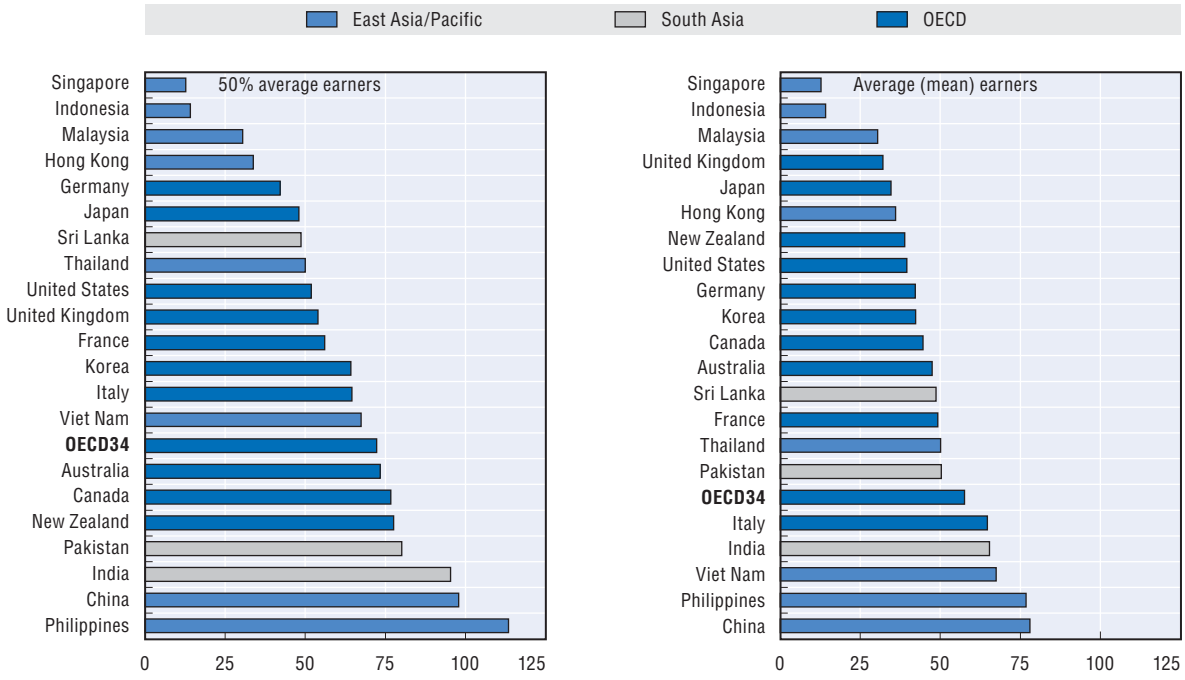
For women the replacement rates are below, or at best equal to, those for men, without exception. Whilst most OECD countries have the same replacement rates for men and women it is noticeable that all the non-OECD economies, apart from Thailand and the Philippines, have lower replacement rates for women than for men. The majority of non-OECD economies are now actually below the OECD average across all the earnings levels, which is the opposite of the findings for men. This is particularly the case for low earners where eight of the eleven non-OECD economies listed are below the OECD average, with the exceptions being China, the Philippines and India.

Gross replacement rates by earnings

	Men			Women		
Individual earnings (% average)	*50*	*100*	*200*	*50*	*100*	*200*
East Asia/Pacific						
China	97.9	77.9	67.9	78.5	61.0	52.2
Hong Kong	38.7	34.1	17.0	34.2	32.8	16.4
Indonesia	14.1	14.1	14.1	12.4	12.4	12.4
Malaysia	30.4	30.4	30.4	27.1	27.1	27.1
Philippines	121.8	80.9	60.4	121.8	80.9	60.4
Singapore	12.7	12.7	6.4	11.2	11.2	5.6
Thailand	50.0	50.0	35.1	50.0	50.0	35.1
Viet Nam	67.4	67.4	67.4	61.9	61.9	61.9
South Asia						
India	95.2	65.2	49.9	90.9	61.4	46.3
Pakistan	80.0	69.6	34.8	70.0	60.9	30.5
Sri Lanka	48.5	48.5	48.5	30.8	30.8	30.8
OECD Asia-Pacific						
Australia	73.3	47.3	35.4	70.8	44.8	31.8
Canada	76.6	44.4	22.2	76.6	44.4	22.2
Japan	47.9	34.5	27.0	47.9	34.5	27.0
Korea	64.1	42.1	23.9	64.1	42.1	23.9
New Zealand	77.5	38.7	19.4	77.5	38.7	19.4
United States	51.7	39.4	29.7	51.7	39.4	29.7
Other G7						
France	55.9	49.1	37.1	55.9	49.1	37.1
Germany	42.0	42.0	32.3	42.0	42.0	32.3
Italy	64.5	64.5	64.5	50.6	50.6	50.6
United Kingdom	53.8	31.9	16.9	53.8	31.9	16.9
OECD34	**72.1**	**57.3**	**47.3**	**70.6**	**55.7**	**45.6**

StatLink http://dx.doi.org/10.1787/888932554489

Gross replacement rates by earnings



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932553995

Net replacement rates show greater diversity than the gross replacement rates. They range from 14.9% in Indonesia to 96.6% in the Philippines. These are the extremes for average earners but findings are also given at 50% and 200% of average earnings. Replacement rates generally decline as earnings increase, though Malaysia, Viet Nam and Italy do not follow this premise, and are usually higher for men than for women. Results for China and the Philippines are amongst the highest especially for low and average earners. As with gross replacement rates Indonesia and Singapore are at the bottom of the rankings.

The net replacement rate is defined as the individual net pension entitlement divided by net pre-retirement earnings, taking account of personal income taxes and social security contributions paid by workers and pensioners. The personal tax system plays an important role in old-age support. Pensioners often do not pay social security contributions and, as personal income taxes are progressive and pension entitlements are usually lower than earnings before retirement, the average tax rate on pension income is typically less than the tax rate on earned income. In addition, most income tax systems give preferential treatment either to pension incomes or to pensioners, by giving additional allowances or credits to older people. Therefore, net replacement rates are usually higher than gross replacement rates.

For average earners, the net replacement rate across OECD countries is 68.8% for men and 67.1% for women, which is 11% higher than for gross replacement rates. Four of the non-OECD economies are higher than this average for men, whereas out of the OECD countries listed only Italy has a value higher than the average. Replacement rates within Asia are similar across the different geographical regions and also between OECD and non-OECD economies. Only Australia and Canada have replacement rates that are greater than that of most of the non-OECD economies, with China, the Philippines, Viet Nam and India being the exceptions.

Low earners – workers earning only half the mean – have higher replacement rates than average earners: on average, 82.8% for the OECD. This reflects the fact that most countries attempt to protect low income workers from old-age poverty. The cross-economy variation of replacement rates at this earnings level is much lower within the OECD than for the Asian economies. The highest net replacement rate for low earners is found in the Philippines at 140.2%, which means that full-career workers with permanently low earnings have more money when they retire than when they were working. China also has a replacement rate at this earnings level that is just above full replacement, at 106.4%. The lowest rates are again observed in Indonesia and Singapore where full career workers on half average earnings have only a 15% or 16% replacement rate, respectively. The replacement rates in Indonesia, Malaysia, Singapore and Thailand are lower at this earnings level when compared to average earners.

For high earners – workers earning twice the mean – the OECD average drops to 58.2%, with all OECD countries, with the exception of Italy, having lower replacement rates at this earnings level than at average or 50% average earnings. For Asia the same trend applies with Viet Nam being the only exception, and in fact the replacement rate in Viet Nam at this earnings level is the third highest for all the non-OECD economies, just behind China and the Philippines. The lowest replacement rate is now found in Singapore, though it is closely followed by Indonesia. The gap to the other economies has narrowed compared to other earnings levels, with Hong Kong now having a rate less than double that of Indonesia. On comparison with the 50% average earnings figure, the replacement rate for the Philippines is just over half at 75.8% and that for New Zealand is less than one-third of its earlier level.

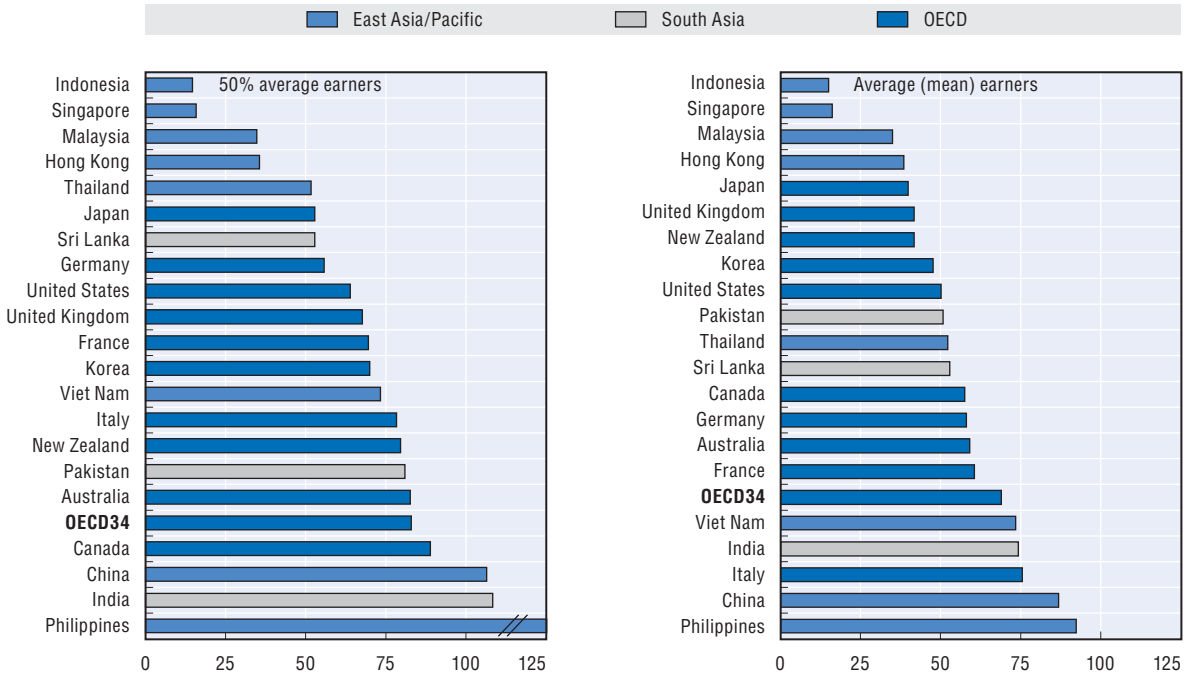
For women the net replacement rates are at best equal to those for men, but are generally lower, and this is the case for all the economies listed. The rates in the Philippines and Thailand are identical to those of men, whereas in Sri Lanka the replacement rates for women are less than two-thirds those for men across all the earnings levels. This lower level in Sri Lanka is mainly due to the lower retirement age for women than men.

Net replacement rates by earnings

	Men			Women		
Individual earnings (% average)	*50*	*100*	*200*	*50*	*100*	*200*
East Asia/Pacific						
China	106.4	86.8	77.3	85.3	69.2	61.6
Hong Kong	40.8	37.3	19.5	36.1	35.9	18.8
Indonesia	14.7	14.9	14.8	13.0	13.2	13.2
Malaysia	34.8	35.1	36.4	31.0	31.3	32.5
Philippines	140.2	96.6	75.8	140.2	96.6	75.8
Singapore	15.8	16.2	8.4	14.0	14.3	7.4
Thailand	51.8	52.2	36.4	51.8	52.2	36.4
Viet Nam	73.3	73.3	73.3	67.3	67.3	67.3
South Asia						
India	108.2	74.1	59.2	103.3	69.8	54.3
Pakistan	80.8	70.3	35.2	70.7	61.5	30.8
Sri Lanka	52.7	52.7	54.4	33.5	33.5	34.6
OECD Asia-Pacific						
Australia	82.5	58.9	42.0	79.7	56.9	39.2
Canada	88.7	57.3	31.1	88.7	57.3	31.1
Japan	52.7	39.7	31.7	52.7	39.7	31.7
Korea	69.8	47.5	28.5	69.8	47.5	28.5
New Zealand	79.4	41.5	23.0	79.4	41.5	23.0
United States	63.8	50.0	40.3	63.8	50.0	40.3
Other G7						
France	69.4	60.4	49.0	69.4	60.4	49.0
Germany	55.6	57.9	43.4	55.6	57.9	43.4
Italy	78.2	75.3	76.7	63.4	62.1	63.3
United Kingdom	67.5	41.5	23.9	67.5	41.5	23.9
OECD34	**82.8**	**68.8**	**58.2**	**81.2**	**67.1**	**56.3**

StatLink http://dx.doi.org/10.1787/888932554508

Net replacement rates by earnings



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554014

Gross replacement rates, for those starting their career at age 30 vary greatly across Asia, from 9.3% in Indonesia and Singapore to 80.9% in the Philippines. These are the extremes for average earners but findings are also given at 50% and 200% of average earnings. Replacement rates generally decline as earnings increase and are usually higher for men than for women.

Under the baseline assumptions used in this report, workers enter the labour market at age 20 and work until the standard retirement age. For the OECD countries this generally results in a career of at least 45 years. For the non-OECD economies this can lead to a career of between 30 and 45 years depending on sex and economy.

The reality though is that the career length is shorter than this baseline assumption: some workers start paid work later than age 20, and many spend time out of the labour market for various reasons. In addition, early retirement is common, particularly in the OECD economies. As a sensitivity analysis, therefore, gross replacement rates are presented here for a shorter career. The alternative assumption is that workers enter the labour market at age 30. This results in a career length of between 20 and 35 years again depending on sex and economy, though the career length is slightly longer in a few OECD countries with retirement ages beyond 65 years.

For workers at average earnings, the average gross replacement rate for the 34 OECD countries is 48.2% for men and 46.9% for women. There is very little variation across Asia-Pacific OECD economies, with Canada at the top of the range, offering replacement rates of 43% and Japan lowest with only 28%. It is noticeable though that all the economies in that region are well below the OECD average. For South Asia the replacement rates in India and Pakistan are well above those of Sri Lanka, with Pakistan and India having the fourth and fifth highest replacement rate in Asia at 52.2% and 47.4%, respectively, still below the OECD average. The only economies higher than that for average earners are the Philippines, Viet Nam and China. In contrast the replacement rate in Indonesia and Singapore is only 9.3%. In fact, the replacement rates in East Asia/Pacific are below 30% in four of the eight economies and above 55% in another three, with Thailand at 35% being the exception.

For low earners the replacement rates are at least equal to those for average earners. The OECD average at this earnings level is 63.4% for men, though of the OECD countries listed, only New Zealand, Canada and Australia have higher replacement rates. Australia is only slightly above at 67.8% and it should be noted that the pensions in both Canada and New Zealand are based on residency and not earnings. Within South Asia, India has a replacement rate well above that in Pakistan and it is more than twice that of Sri Lanka, which has a constant replacement rate irrespective of earnings level. For East Asia/Pacific the trend is again similar to that for average earners with the Philippines having the highest, at 121.8%, meaning low earners have an income in retirement that is virtually equivalent to that when working, and lowest in Indonesia and Singapore, at 9.3%. As with the average earners there is variation in the rates with four economies below 30% and three economies above 65%, with Thailand at 35%.

High earners have an average replacement rate of 38.8% for the 34 OECD countries, with Italy being the only country listed with a replacement rate higher than this average, at 51.2%. For the Asia-Pacific OECD economies there is little variation in the replacement rates with just over 3% separating four of the economies with Australia and the United States higher at 28.7% and 29.7% respectively. In South Asia Pakistan has a replacement rate about two-thirds of that of India. The replacement rate in the Philippines is again higher than that in India, but for this earnings level the rate in Viet Nam, at 65% is the highest. As before there are three economies in East Asia/Pacific with substantially higher replacement rates, namely Viet Nam, the Philippines and China, than the remaining five. The lowest replacement rate is in Singapore at only 4.7% for twice average earners.

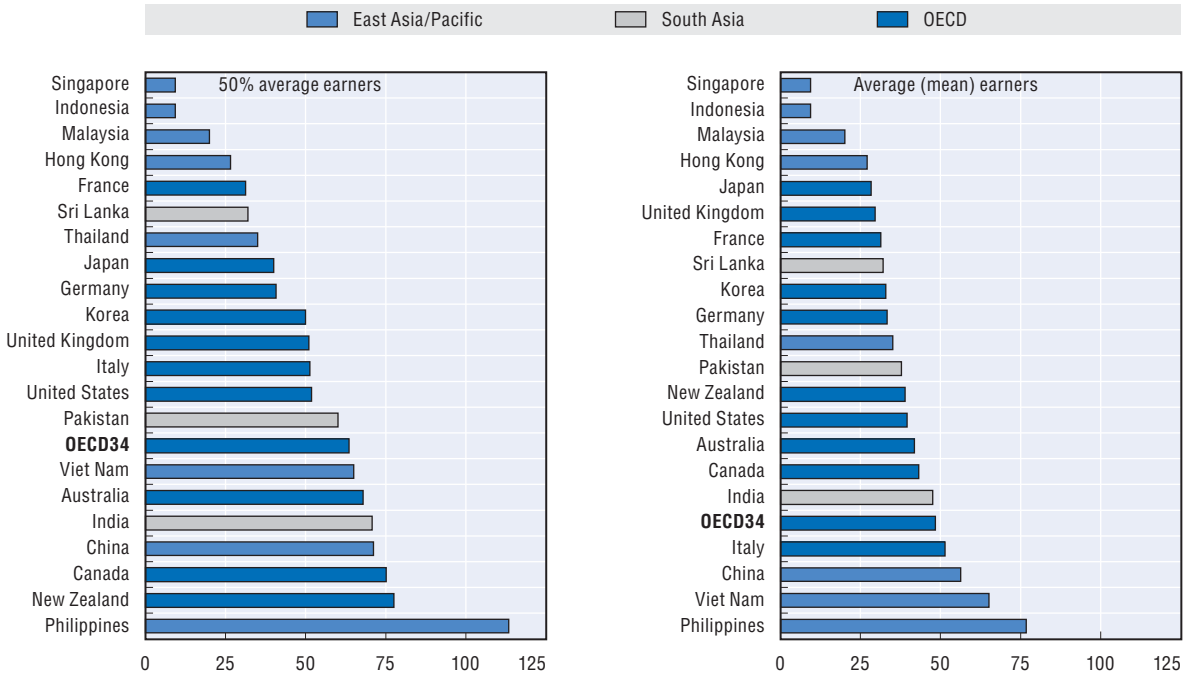
For women the replacement rates are below, or at best equal to, those for men, without exception. Whilst most OECD countries have the same replacement rates for men and women it is noticeable that all the non-OECD economies, apart from Thailand and the Philippines, have lower replacement rates for women than for men.

Gross replacement rates by earnings: entry at age 30

	Men			Women		
Individual earnings (% average)	*50*	*100*	*200*	*50*	*100*	*200*
East Asia/Pacific						
China	71.2	56.2	48.7	54.6	42.1	35.9
Hong Kong	30.5	28.5	14.3	27.3	24.9	12.4
Indonesia	9.3	9.3	9.3	8.2	8.2	8.2
Malaysia	20.0	20.0	20.0	17.8	17.8	17.8
Philippines	121.8	80.9	60.4	121.8	80.9	60.4
Singapore	9.3	9.3	4.7	8.2	8.2	4.1
Thailand	35.0	35.0	24.6	35.0	35.0	24.6
Viet Nam	65.0	65.0	65.0	60.0	60.0	60.0
South Asia						
India	70.7	47.4	35.4	67.8	44.7	33.0
Pakistan	60.0	52.2	26.1	58.0	43.5	21.8
Sri Lanka	31.9	31.9	31.9	19.0	19.0	19.0
OECD Asia-Pacific						
Australia	67.8	41.7	28.7	65.9	39.9	26.9
Canada	75.0	43.0	21.7	75.0	43.0	21.7
Japan	39.9	28.1	21.7	39.9	28.1	21.7
Korea	49.9	32.7	18.6	49.9	32.7	18.6
New Zealand	77.5	38.7	19.4	77.5	38.7	19.4
United States	51.7	39.4	29.7	51.7	39.4	29.7
Other G7						
France	31.2	31.2	25.1	31.2	31.2	25.1
Germany	40.7	33.1	25.4	40.7	33.1	25.4
Italy	51.2	51.2	51.2	40.4	38.7	38.7
United Kingdom	50.9	29.4	15.7	50.9	29.4	15.7
OECD34	**63.4**	**48.2**	**38.8**	**62.5**	**46.9**	**37.6**

StatLink http://dx.doi.org/10.1787/888932554527

Gross replacement rates by earnings: entry at age 30



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554033

Gross pension wealth, indicating the magnitude of the pension promise, ranges, for men, from a high of 18.7 in China for low earners to a low of 1.1 in Singapore for high earners. The value for women in China is actually even higher at 20.0, meaning that someone on 50% average lifetime earnings has a mandatory pension worth 20.0 their earnings level at retirement. China has considerably higher levels than for any other Asian economy, though the values for men in India, Pakistan and Viet Nam are still over 10 at both average and 50% average earnings levels.

Pension wealth shows the size of the lump sum that would be needed to buy a flow of pension payments equivalent to that promised by the mandatory pension system in each economy. Pension wealth is measured and expressed as a multiple of gross annual individual earnings. It is shown here for workers with earnings of 50%, 100% and 200% of the average, separately for men and women. For a fuller picture though consideration needs to be given to both retirement ages and life expectancy variation across economies. For example, the general retirement age within OECD countries is 65, whereas for the non-OECD economies it is generally either 55 or 60 for men. Whilst it is shown later that the life expectancy levels in non-OECD economies are lower than for OECD countries the actual duration of retirement is longer in the non-OECD economies for those who reach retirement age.

The average pension wealth for the OECD is 9.6 for average earners, 12.2 for 50% average earners and 7.9 for 200% average earners. The other OECD economies are generally below these averages apart from Italy at the 100% and 200% earnings levels. For the Asian/Pacific OECD economies they are all lower than the OECD average at all earnings levels, with the exception of Australia and New Zealand at the low earners level. For the non-OECD economies China, India and Viet Nam are higher at all earnings levels, with Sri Lanka also having a higher pension wealth at 200% average earnings.

China has the highest pension wealth of all for each of the earnings levels, with the exception of the 200% level where Viet Nam is slightly higher. The lowest pension wealth figures are found in Singapore and Indonesia, the latter of which has a constant rate of 2.6 for all earnings levels. The value for China is nearly nine times that of Singapore for men with lifetime earnings equivalent to 50% average within their economy.

The level of pension wealth either remains steady or declines as the level of earnings increases in all the other economies. In China for 200% average earners the level of pension wealth is less than two-thirds that for 50% average earners. The same applies in Japan, Korea, the United States and the Philippines, though in all cases the actual lump sum value for 200% average earners is at least double. For example the lump sum in China for 50% average earners is 18.7 * 0.5 = 9.4 times average earnings, compared to 13.0 * 2.0 = 26.0 times average earnings for those at the 200% earnings level. For New Zealand the pension wealth at 200% average earnings is half that for average earnings, which in turn is half that for 50% average earnings. This is expected as the mandatory pension in New Zealand is not dependent on earnings and so for all earnings levels the pension wealth is worth 8.0 times individual earnings for men and 9.2 individual earnings for women. The difference between sexes is due to the difference in life expectancies.

There is limited regional variation with South Asia being relatively consistent with India and Pakistan having virtually identical values at average earnings levels with India higher for low and high earners. In contrast Sri Lanka has a constant rate and is lowest for both low and average earners but highest for high earners.

As mentioned earlier the levels of pension wealth for women are generally higher than those for men. Only Sri Lanka has higher levels for men than women, though the levels are identical for Indonesia, Malaysia and Singapore across all earnings levels. The variation for women is also greater than that for men, ranging from 20.0 in China for 50% average earnings to 1.1 in Singapore for twice average earners. The rate of decline in pension wealth as earnings increase is virtually identical between the sexes for all the economies included.

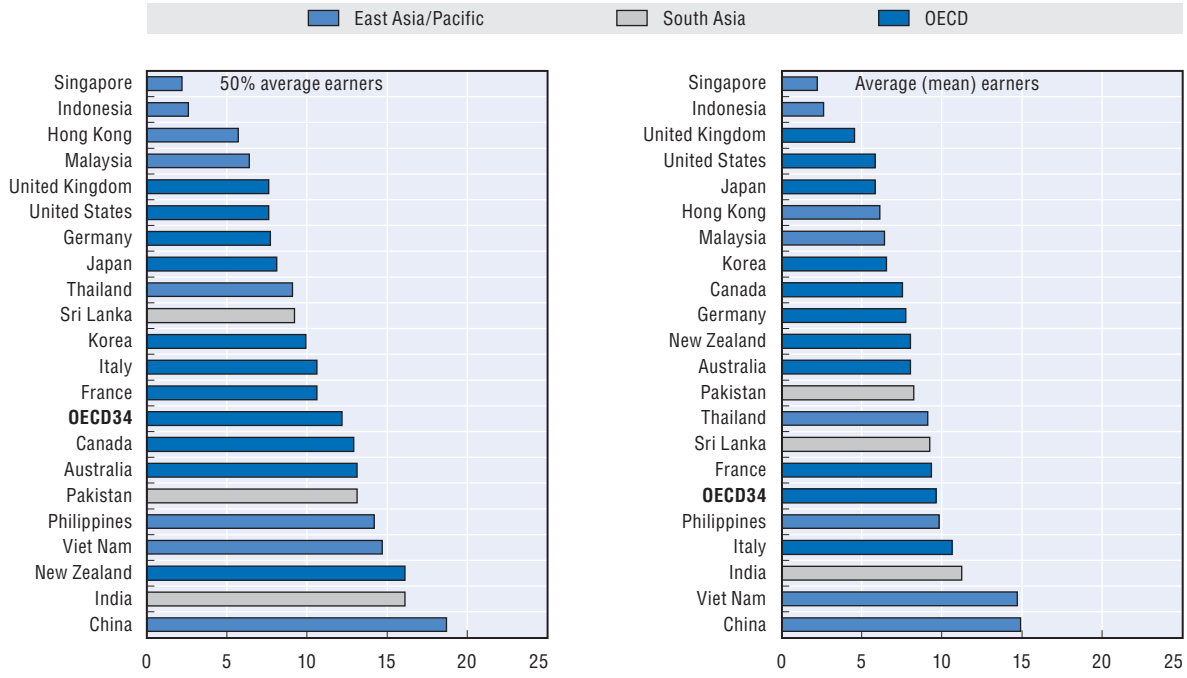
Gross pension wealth by sex and earnings

Multiple of individual annual gross earnings

	Men			Women		
Individual earnings (% average)	*50*	*100*	*200*	*50*	*100*	*200*
East Asia/Pacific						
China	18.7	14.9	13.0	20.0	15.5	13.3
Hong Kong	6.5	5.7	2.9	6.8	6.5	3.3
Indonesia	2.6	2.6	2.6	2.6	2.6	2.6
Malaysia	6.4	6.4	6.4	6.4	6.4	6.4
Philippines	15.2	10.3	7.8	17.9	12.1	9.2
Singapore	2.2	2.2	1.1	2.2	2.2	1.1
Thailand	9.1	9.1	6.4	10.4	10.4	7.3
Viet Nam	14.7	14.7	14.7	18.1	18.1	18.1
South Asia						
India	16.1	11.2	8.7	17.1	11.7	8.9
Pakistan	13.1	11.4	5.7	14.2	12.3	6.2
Sri Lanka	9.2	9.2	9.2	7.6	7.6	7.6
OECD Asia-Pacific						
Australia	13.1	8.0	5.7	14.7	8.7	5.8
Canada	12.9	7.5	3.7	14.4	8.4	4.2
Japan	8.1	5.8	4.6	9.7	7.0	5.5
Korea	9.9	6.5	3.7	12.0	7.8	4.5
New Zealand	16.1	8.0	4.0	18.3	9.2	4.6
United States	7.6	5.8	4.4	8.9	6.8	5.1
Other G7						
France	10.6	9.3	7.1	12.1	10.6	8.0
Germany	7.7	7.7	5.9	9.2	9.2	7.1
Italy	10.6	10.6	10.5	11.1	11.1	11.1
United Kingdom	7.6	4.5	2.4	9.0	5.3	2.8
OECD34	**12.2**	**9.6**	**7.9**	**14.1**	**11.1**	**9.0**

StatLink http://dx.doi.org/10.1787/888932554546

Gross pension wealth by sex and earnings



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554052

Net pension wealth, the present value of the flow of pension benefits, again varies by economy, ranging from 18.7 for men in China (20.0 for women) to 1.1 in Singapore, for both men and women. As with gross pension wealth the values in China are well above every other economy and are now approximately double the OECD average at every earnings level. However Viet Nam is higher than China at the 200% earnings level, followed by Sri Lanka and India.

Net pension wealth shows the size of the lump sum that would be needed to buy the flow of pension payments, net of personal income taxes and social security contributions, promised by the mandatory pension system in each economy. It is measured and expressed as a multiple of gross annual individual earnings in the respective economy. Gross earnings are used as the comparator to isolate the effects of taxes and contributions paid in retirement from those paid when working. This means that gross and net pension wealth are the same where people are not liable for contributions and income taxes on their pensions. The charts compare gross and net pension wealth for men and women respectively. In economies that lie on the 45-degree line, gross and net pension wealth are the same because there are no taxes due on pension income.

For average earners net pension wealth is identical to that of gross pension wealth in only the two American OECD countries, namely Canada and the United States, which have identical values of pension wealth, net and gross, for each of the earnings levels. The same is not the case for the non-OECD economies as the majority here have identical pension wealth, net and gross. For average earners the only non-OECD economy that differs is China. In fact no matter which level of earnings is chosen, there are the only one non-OECD economy that has a different value for net and gross pension wealth, namely China.

The average for the OECD countries is 11.2 for low earners, 8.2 for average earners and 6.2 for high earners. France and Italy have a higher value for average earners, with only Italy having a higher value at the 200% earnings level, and Australia, Canada and New Zealand have higher values at 50% average earnings. As with the gross pension wealth the values for New Zealand half on each doubling of earnings as the mandatory pension is not affected by earnings but rather residency rules.

For high earners the non-OECD Asian economies dominate with China, Malaysia, Thailand, Viet Nam, India and Sri Lanka having values above the OECD average, with none of the Asian OECD countries having a higher value than the OECD average. The values in both China and Viet Nam are approximately twice that of the OECD average, closely followed by Sri Lanka. Even the variation within the other OECD countries is apparent with Italy having a net pension wealth over three times that of the United Kingdom for high earners.

For low earners China, the Philippines, Viet Nam, India and Pakistan all have a net pension wealth higher than the OECD average. The value in China at 18.7 is nearly nine times the value in Singapore. For the OECD it is only three of the six Asia-Pacific economies, namely Australia, Canada and New Zealand that have a net pension wealth above the OECD average. The remaining OECD countries all have similar values between 7.3 and 9.9, but all are below the 11.2 OECD average.

For women the same pattern is repeated as for the gross pension wealth, in that only Sri Lanka has higher net pension wealth figures for men than women, with Indonesia, Malaysia and Singapore again being identical for both sexes. The remaining economies, both OECD and non-OECD all have net pension wealth estimates that are higher for women than for men.

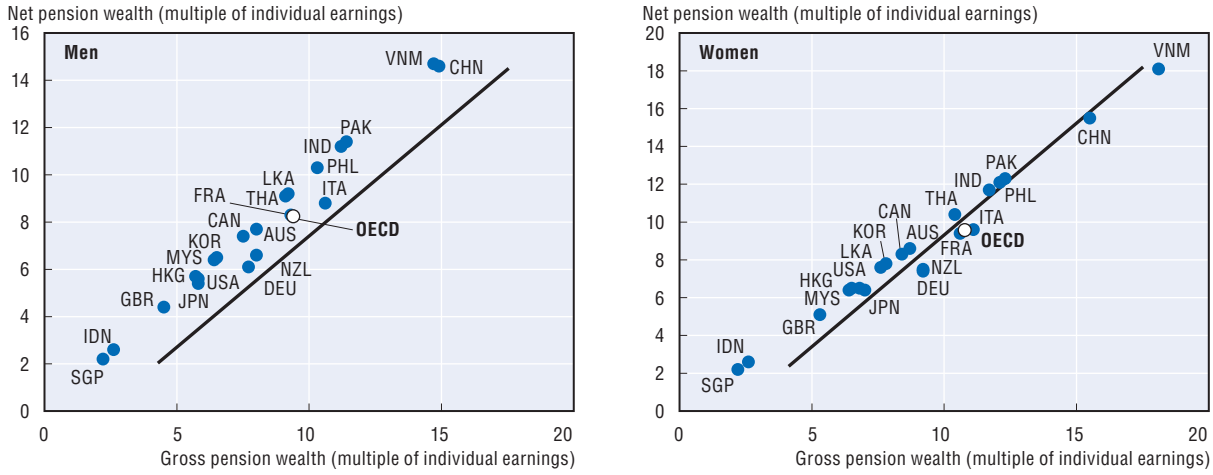
Net pension wealth by sex and earnings

Multiple of individual annual gross earnings

	Men			Women		
Individual earnings (% average)	*50*	*100*	*200*	*50*	*100*	*200*
East Asia/Pacific						
China	18.7	14.6	11.8	20.0	15.5	12.5
Hong Kong	6.5	5.7	2.9	6.8	6.5	3.3
Indonesia	2.6	2.6	2.6	2.6	2.6	2.6
Malaysia	6.4	6.4	6.4	6.4	6.4	6.4
Philippines	15.2	10.3	7.8	17.9	12.1	9.2
Singapore	2.2	2.2	1.1	2.2	2.2	1.1
Thailand	9.1	9.1	6.4	10.4	10.4	7.3
Viet Nam	14.7	14.7	14.7	18.1	18.1	18.1
South Asia						
India	16.1	11.2	8.7	17.1	11.7	8.9
Pakistan	13.1	11.4	5.7	14.2	12.3	6.2
Sri Lanka	9.2	9.2	9.2	7.6	7.6	7.6
OECD Asia-Pacific						
Australia	13.1	7.7	4.6	14.7	8.6	4.9
Canada	12.9	7.4	3.7	14.4	8.3	4.1
Japan	7.3	5.4	4.0	8.8	6.4	4.8
Korea	9.9	6.5	3.7	11.9	7.8	4.4
New Zealand	13.2	6.6	3.3	15.1	7.5	3.8
United States	7.6	5.6	4.1	8.8	6.5	4.7
Other G7						
France	10.0	8.3	6.1	11.4	9.4	6.9
Germany	6.9	6.1	4.3	8.3	7.4	5.2
Italy	10.3	8.8	7.7	11.1	9.6	8.5
United Kingdom	7.6	4.4	2.3	9.0	5.1	2.7
OECD34	**11.2**	**8.2**	**6.2**	**13.1**	**9.6**	**7.2**

StatLink http://dx.doi.org/10.1787/888932554565

Gross *versus* net pension wealth by sex, average earner



Note: The scales of both charts have been capped at gross pension wealth of 15 times individual earnings, which excludes Luxembourg and the Netherlands from both charts and Greece, Hungary and Iceland from the chart for women.

Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554071

The pension-earnings link, showing the link between pension entitlements and individual earnings, varies widely between economies. Levels in Indonesia, Hong Kong and particularly New Zealand show that there is virtually no link, whereas Viet Nam, China and Sri Lanka display a strong link between pension entitlements and individual earnings. The relative pension levels are used here to illustrate the link between individual pre-retirement earnings and pension benefits in each economy. They are shown for individual earnings from 0.5 to 2 times average earnings levels.

The strength of the link between pension entitlements and individual earnings is measured using the relative pension level, that is, the gross individual pension divided by average earnings (rather than by average earnings as in the replacement rate results). It is best seen as an indicator of pension adequacy, since it shows the benefit level that a pensioner will receive in relation to average earnings in the respective economy. Individual replacement rates may be quite high, but the pensioner may still receive only a small fraction of economy-wide average earnings. If, for example, a low-income worker has a replacement rate of 100%, the benefit will only amount to 50% of economy-wide average earnings. For an average earner, the replacement rate and the relative pension level will be the same.

The charts show relative pension levels in the economies on the vertical axis and individual pre-retirement earnings on the horizontal. Economies have been grouped by region and by membership of the OECD. As there are eight economies in East Asia/Pacific they have been divided into three groups on the basis of results.

In the first set of economies (Panel A), there is little or no link between pension entitlements and pre-retirement earnings for any of the three economies listed. The ranges are small for all of the economies in the chart, particularly for Hong Kong and Singapore. The graphs for these economies reach a steady value between average and twice average earnings. This is in contrast to the findings for the other five economies in the region (Panel B and Panel C) which show a much stronger link between pension entitlements and pre-retirement earnings. In Viet Nam for example the range is 34% to 135% compared to only 6% to 13% for Singapore. For Viet Nam there is also no ceiling to pensionable earnings as it is paid in a lump sum which we have converted to an annual entitlement. Singapore has a different system in that the maximum contribution level applies for earnings not much above the average, which explains why the graph levels at just over 100% of average earnings. The same also happens for Thailand but at a much higher earnings level.

Panel D covers the economies in South Asia, all of which indicate a link between pension entitlements and pre-retirement earnings, but to different degrees. In both India and Sri Lanka there is a clearly linear relationship between earnings and pension entitlement, as for these results the ceiling in the Indian pension system has not been modelled. In Pakistan the graph levels much earlier at only 88% of average earnings because of the contribution limit.

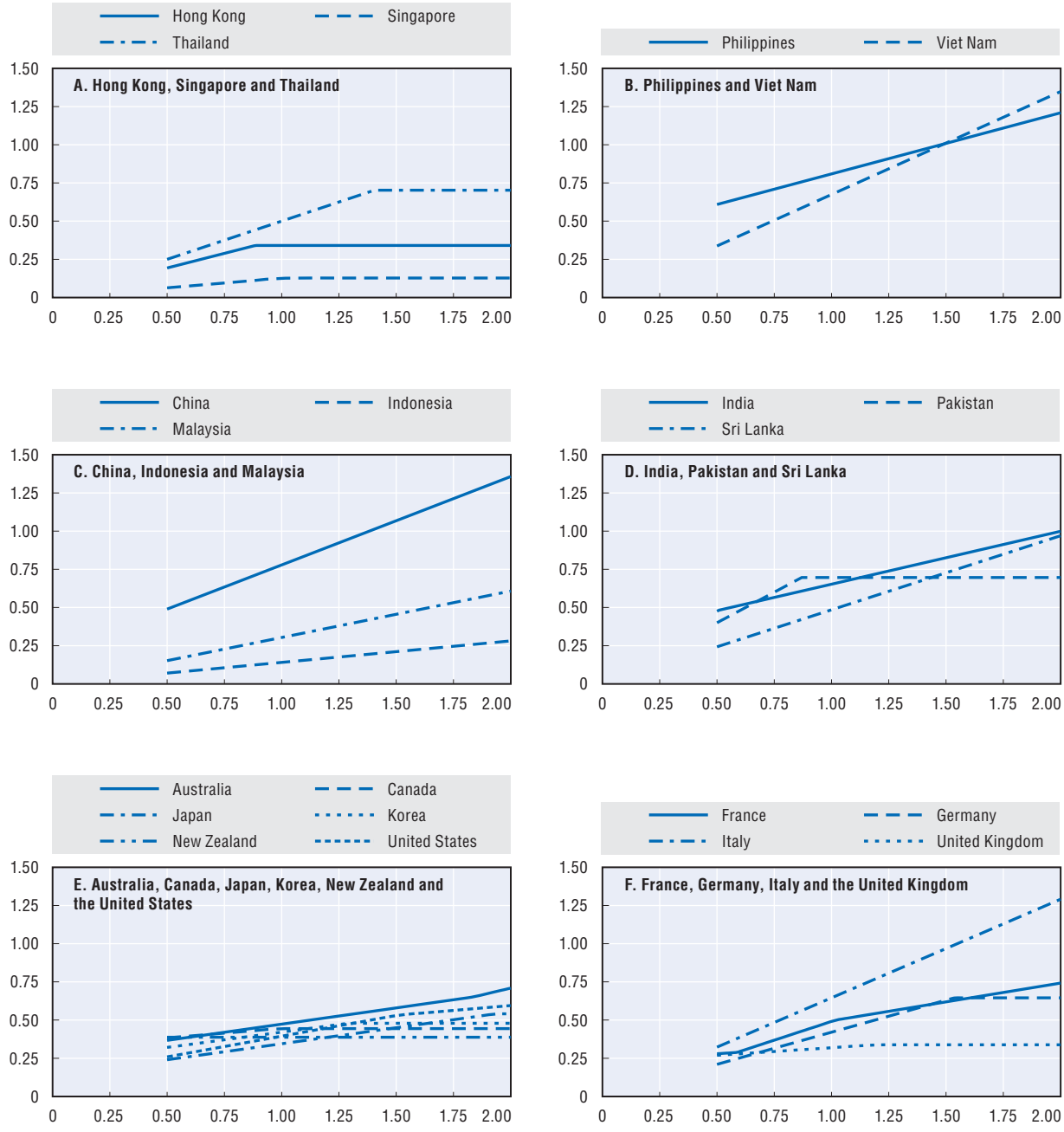
The remaining two charts, Panel E and Panel F, are for the OECD countries, with the first covering the Asia/Pacific economies and the second the other OECD countries. In Panel E it is clear that there is virtually no link between pension entitlement and pre-retirement earnings in Australia, Japan and New Zealand. In fact in New Zealand there is absolutely no link as the pension is paid at a flat rate based on residency and is not dependent on earnings at all. In Korea though there is a slight link but it levels off around 130% of average earnings because there is a ceiling to pensionable earnings in Korea, which comes into effect at that level.

For the other OECD countries there is very little link in Germany, and particularly in the United Kingdom. In France there is a slightly greater link as the range is 28% to 74%, but the country with the greatest link is Italy (In Italy as with other economies mentioned previously the ceiling on pensionable earnings is set above three times the average economy-wide earnings).

With some economies applying limits to pension incomes, and others to the levels of contributions, the link between pension entitlements and individual earnings will be broken at some earnings level, even though it evidently existed prior this level.

The link between pre-retirement earnings and pension entitlements

Gross pension entitlement as a proportion of economy-wide average earnings



Source: OECD pension models.

StatLink http://dx.doi.org/10.1787/888932554090

The level of coverage, the proportion covered by mandatory pension schemes, in non-OECD economies ranges from 55.6% in Hong Kong to only 4.0% in Pakistan, for the population aged 15 to 64. In contrast the OECD average is 62.9% and is as high as 75.0% in Japan. For the labour force the non-OECD economies range from 78.0% to 7.2%, whilst the OECD average increases to 82.8%, with Japan again highest at 95.2%.

Coverage is defined as the proportion of people that are covered by mandatory pension schemes. For the purposes of this report the measures used are: *i*) the population aged 15 to 64; and *ii*) the active labour force. The coverage percentage is a measure of how effectively a pension system is being utilized by the pre-retirement population and can act as an indicator of future trends. The coverage value is expressed as the percentage of the population or labour force that is classified as active members of a mandatory pension system during the indicated year. For this purpose active members include those that have either contributed or accrued pension rights in any of the major mandatory pension schemes during the indicated year.

For OECD countries as a whole there is very little variation between countries using either the population or labour force measurement. The average coverage percentage within the OECD is 63% for the population measure and 83% using the labour force methodology. The exception within the listed OECD countries is Korea which has noticeably lower values compared to the OECD average, though it is still considerably higher than most of the other economies within the region, with the exception of Hong Kong and Singapore. It is worth noting though that the figures for both Hong Kong and Singapore are the most recent of the non-OECD economies at 2008.

The remaining Asian, non-OECD, economies vary considerably in the levels of coverage using either measurement. Of these economies only Sri Lanka of the South Asian economies having more than 20% of the population aged 15 to 64 covered by a mandatory pension scheme, whereas its neighbours, India and Pakistan, have less than 6% covered by a scheme. The picture improves slightly for the East Asia/Pacific economies with Hong Kong, Malaysia and Singapore having over 30% of their populations aged 15 to 64 covered by at least one mandatory pension scheme. When considering the size of the populations in this region of the world it becomes apparent that the lack of coverage is a global rather than regional issue.

The level of coverage does improve in Asia when looking at the labour force measure but non-OECD increases are generally less than those of the OECD countries listed, despite them starting from a higher base. This is especially the case for those economies with data prior to 2008. Sri Lanka again for South Asia has the highest level of coverage, at 35%, with Pakistan and India still having less than 10% coverage. The position of the economies is generally unchanged between measures. The gap between the Asian economies and the OECD as a whole widens when looking at the labour force measure, 65.6%, as opposed to the population measure, 50.3%.

The average figures for Asia for both the population aged 15 to 64 and the labour force are heavily influenced by the low percentage values for India. Because of the high population within India if it was to be removed from the calculation of the Asia average, the value would increase by over 4% for both the population aged 15 to 64 and the labour force.

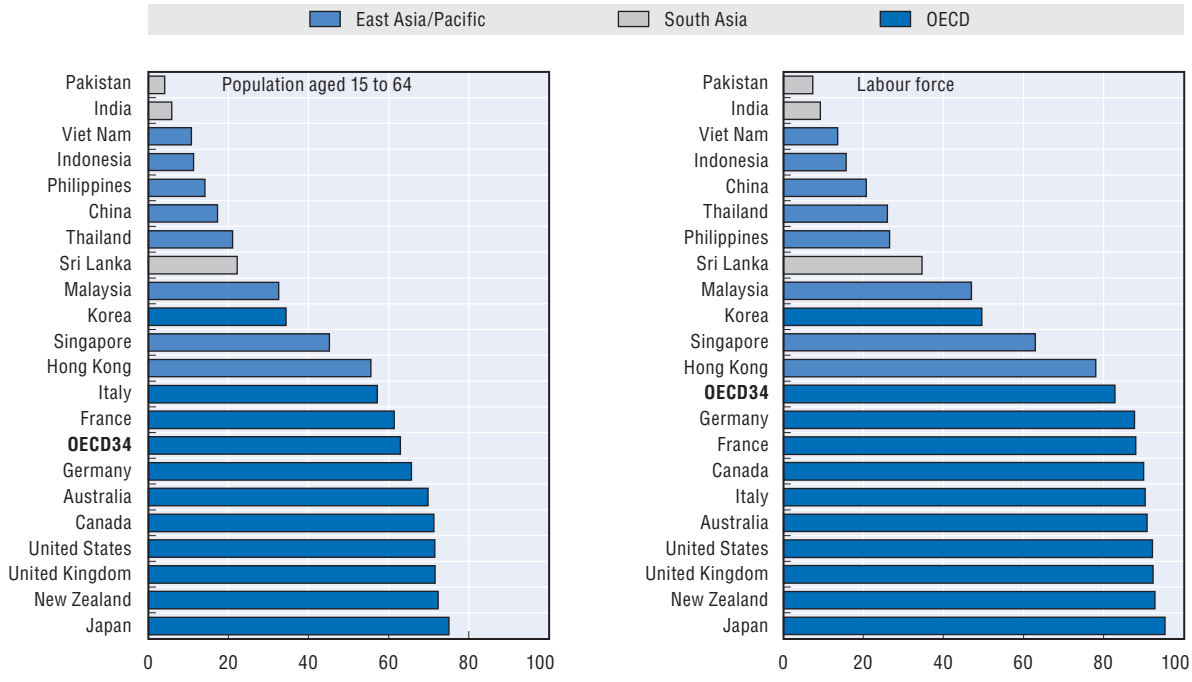
Coverage statistics are better analysed in conjunction with life expectancy and population projections, in order to estimate the numbers of people actually involved rather than percentage. Analysis of these characteristics will highlight the problems that may arise if nothing is done to combat the poor levels of coverage that exist within a number of economies across Asia.

Coverage of mandatory pension schemes by population and labour force

Country	Year	Members	Percentage of population aged 15 to 65 (%)	Percentage of labour force (%)
East Asia/Pacific				
China	2005	159 032 000	17.3	20.7
Hong Kong, China	2008	2 921 815	55.6	78.0
Indonesia	2002	15 683 000	11.3	15.7
Malaysia	2008	5 746 477	32.5	47.0
Philippines	2008	7 863 340	14.1	26.5
Singapore	2008	1 610 000	45.3	62.9
Thailand	2005	9 700 000	21.0	25.9
Viet Nam	2005	5 805 000	10.8	13.5
South Asia				
India	2004	38 650 000	5.8	9.2
Pakistan	2004	3 465 400	4.0	7.2
Sri Lanka	2004	2 945 000	22.1	34.6
OECD Asia-Pacific				
Australia	2005	9 578 000	69.8	90.7
Canada	2005	15 950 000	71.3	89.8
Japan	2005	63 560 000	75.0	95.2
Korea	2005	11 832 710	34.3	49.5
New Zealand	2003	1 921 300	72.3	92.7
United States	2005	141 129 000	71.5	92.1
Other G7				
France	2005	24 319 400	61.4	87.9
Germany	2005	36 156 000	65.6	87.6
Italy	2005	22 146 000	57.1	90.2
United Kingdom	2005	28 402 200	71.5	92.3
OECD34			**62.9**	**82.8**

StatLink http://dx.doi.org/10.1787/888932554584

Coverage of mandatory pension schemes by population and labour force



Source: World Bank Pension Database.

StatLink http://dx.doi.org/10.1787/888932554109

Life expectancy at birth in virtually all non-OECD Asian economies is lower than for all the OECD countries covered. The exception is Hong Kong and Singapore which have life expectancies higher than Korea, Germany, New Zealand, the United Kingdom and the United States, and is also above the OECD average. In fact, only Japan has a higher life expectancy than Hong Kong. Life expectancy for women in India is over 20 years less than in Japan but if survival to 65 is assumed then the difference drops to approximately ten years, which will impact greatly on future pension systems.

Information on life expectancy predictions is essential to pension modelling as a guide to the duration that pensions will be claimed. Recently, in many OECD countries life expectancy data has been used to determine future retirement ages and its consideration in any analysis is therefore worthwhile.

Information is available at 2005-10 for men and women separately and is calculated at two different points in time, namely, at birth and age 65. The latter is obviously conditional upon surviving to age 65 but gives a greater indication of the duration of pension receipt. In addition to this life expectancy estimates for 2045-50 are also provided, again dependent on survival to age 65 initially. These are particularly relevant when considering the ageing of the population which is covered at various points throughout this publication.

The graphs below for all three indicators show that the life expectancy in the non-OECD Asian economies is well below that of the OECD countries.

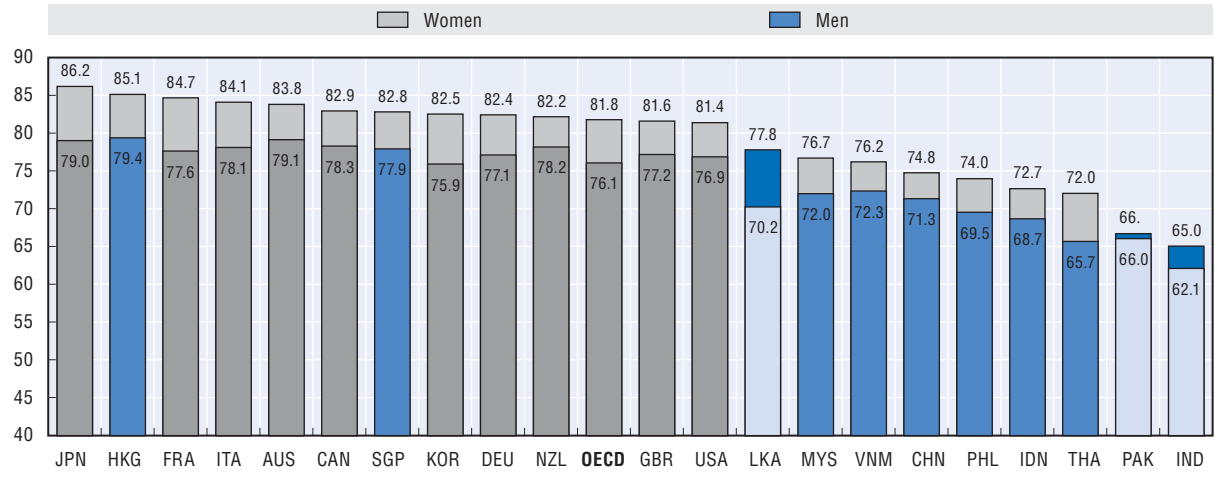
The first graph covering life expectancy at birth indicates that the average life expectancy for both men and women in India is below 65 years of age. Considering that the normal pension age in India is 55 years for the defined contribution element then this shows that the average duration for pension receipt is actually only seven years for men and ten for women. In contrast life expectancy in Sri Lanka is approximately eight years higher for men and 13 years higher for women implying that the duration of pension receipt in Sri Lanka is much greater than that for India. However the general trend is that the non-OECD economies represented are all at the lower end of the scale with male life expectancy generally under 70 years, compared to the OECD average of 76 years, and it is as high as 79 years for Japan, though even this is below the value for Hong Kong at 79.4. It is also noticeable that there is quite a difference in the gender gaps of life expectancy, with women as expected always being higher. However women are only expected to live 0.7 years longer in Pakistan, whereas the difference in Sri Lanka is 7.6 years. For the OECD as a whole the difference is 5.7 years with most countries having at least a four-year difference.

The second graph takes the analysis one step further as survival to age 65 is now assumed, which is the maximum normal retirement age for all but a handful of economies. Therefore the findings at this age level provide more accurate estimates of average duration for pension claimants than the previous indicators. Once again the difference in life expectancy estimates between the highest, Japan, and the lowest, India, has reduced further and is now five years for men and under nine years for women. Although the non-OECD economies are again at the lower end the results for men are all within four years of the OECD average.

The second part of this graph is the forecast information based on 2045-50 estimates from the United Nations population database. This clearly shows that the trend in the future will be for the life expectancy gap to decrease for all non-OECD economies in comparison to the OECD average. Whilst life expectancy for the OECD countries continues to increase, it is at a much slower rate than the Asian economies. With retirement ages currently being well below 65 in many of these economies the pressures on the pension system will only increase.

Although life expectancy results are a useful tool in pension analysis they have limited use when used alone. They can provide estimates of average duration of pension receipt for those that actually begin claiming a pension, but they do not assist with providing any information about the actual numbers involved. For this population projections are required and this will now be covered in the following section.

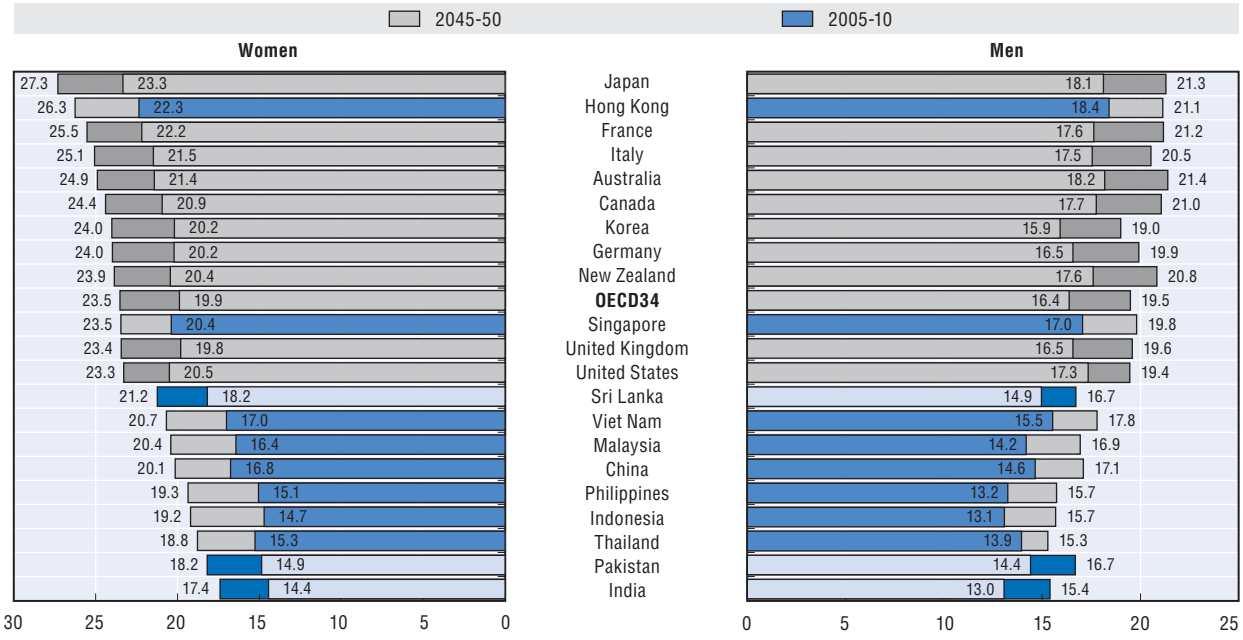
Life expectancy at birth, in years, men and women, in 2005-10



Source: United Nations, *World Population Prospects – 2008 Revision.*

StatLink http://dx.doi.org/10.1787/888932554128

Life expectancy at age 65, in years, men and women, in 2005-10 and 2045-50



Source: United Nations, *World Population Prospects – 2008 Revision.*

StatLink http://dx.doi.org/10.1787/888932554147

Asia is predicted to have a higher rate of increase in the old-age support ratio than the OECD as a whole, though Korea is a notable exception. The percentage of the population aged 65 and over in Malaysia, Pakistan and the Philippines is projected in 2090 to be about five times the level in 2010. All of the remaining non-OECD economies have a projected increase of at least 180% over the 80 year period, compared to the OECD countries which all have an estimated increase of less than 100%.

Age projections are obviously a key component of any pension modelling. They enable estimation of pension costs and recipient numbers as well as providing governments with baseline assumptions upon which future pension policy can be structured.

For the support ratio information is provided for 2010 and 2050 to clearly show the trend that is apparent across the region. The summary is that the number of pensioners relative to workers is going to change dramatically over the next 40 years. As can be clearly seen all the OECD countries are already at the bottom of the graph, with the exception of Korea which is just above Hong Kong. However Korea is a clear example of one of the world's most rapidly ageing societies and by 2050 only Japan will be lower representing a drop in the support ration from 6.6 in 2010 to 1.6 in 2050. Although this decline is extremely rapid there are other economies in the region with similar patterns emerging. For example, Sri Lanka will decrease from 8.8 in 2010 to 2.9 in 2050 and given that the retirement age in Sri Lanka is well below 60 the proportion of pensioners to workers will be even lower. Generally the support ration values in the non-OECD economies in 2050 will be about one-third of their value in 2010.

Data for the population projections is available for 2010 to 2090 at five yearly intervals for those aged 65 and over. This therefore covers the eligible pensionable population in all but a few economies that have normal retirement beyond age 65. Unfortunately it obviously under-estimates the pension population for those economies that have pensions commencing at age 60, for example, though it is still an extremely useful tool in any modelling exercise.

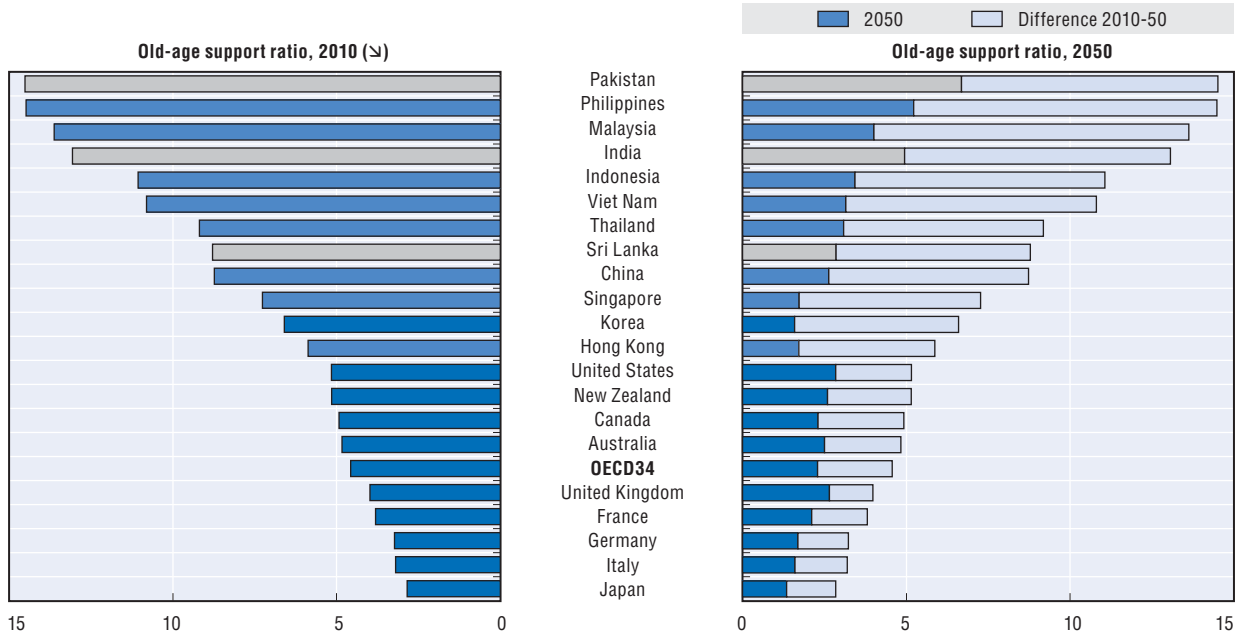
The next two graphs show the age projection statistics, and to enable easier interpretation have been divided into OECD and Asia.

The second graph is for the OECD countries included in this report, with the exception of Korea, for which no data was available. Germany, Italy and Japan generally have the highest percentage across all the projected years, though after 2050 the proportion for these economies is in decline, from estimated highs of approximately 33%, for Japan and Italy, of the population being age 65 and over. This is only to be expected because of the lower fertility rates that have been prevalent in these economies within the last few decades. All economies generally converge at approximately 25% of their population being aged at least 65 years in 2090, with the United States slightly lower at just below 24%.

The third graph covers the non-OECD economies. An increasing elderly population is the highlight of this picture, with the proportion in Pakistan increasing more than five fold over the eighty year period. A similar pattern occurs across the other non-OECD Asian economies with the proportion of people aged 65 and over estimated to at least treble in virtually every economy between 2010 and 2090. After the projection period it is clear that estimates indicate at least 19% of the population will be aged 65 and over in all the Asian economies. This means that the majority of non-OECD economies will be directly comparable with most OECD countries. As the retirement ages in the non-OECD economies are currently generally lower than those within the OECD then the proportion of pensioners in Asia will be considerably higher than within the OECD if the current systems remain in place.

When these results are considered alongside the coverage material it becomes evident that unless the issue of coverage is addressed quickly, the scale of the problem is going to increase dramatically. As the percentage of the population of pensionable age continues to increase then the necessity to provide support for them also increases. This places further pressure on national governments to act sooner rather than later to increase the coverage of the mandatory pension schemes. If action is not taken in the short term it may spiral out of control and become unmanageable.

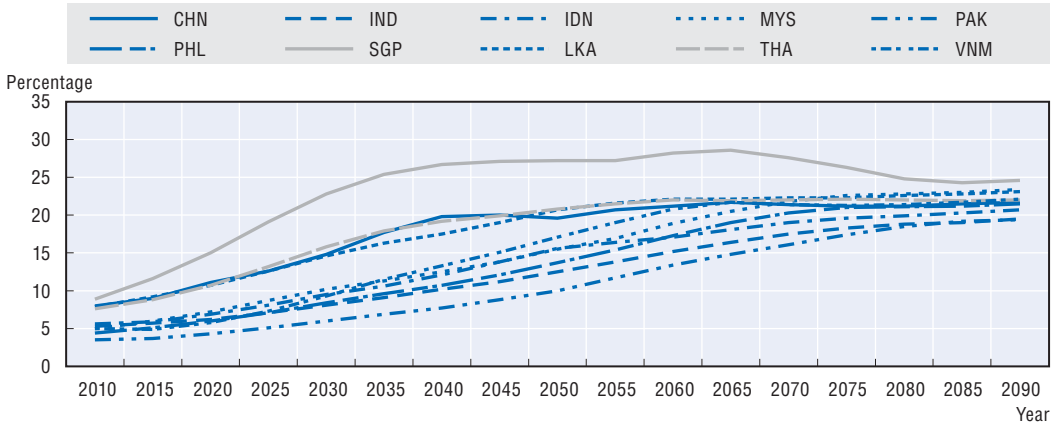
Old-age support ratio in 2010 and 2050



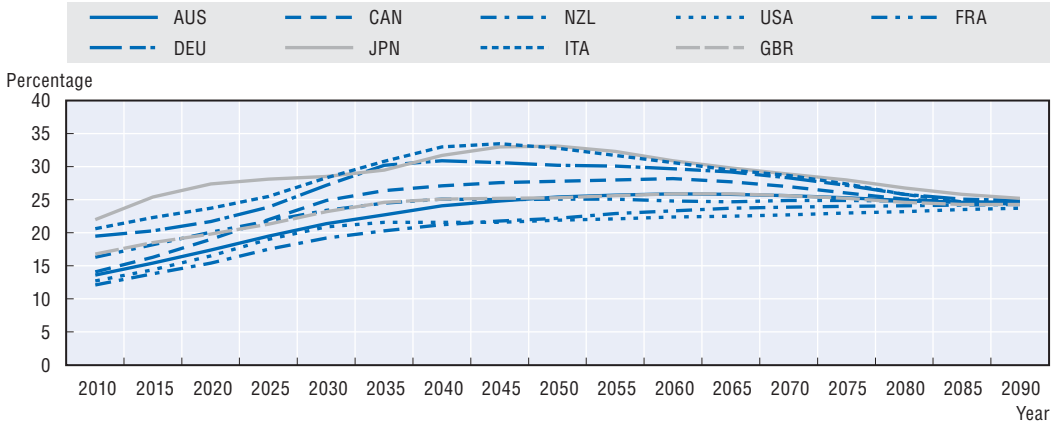
StatLink http://dx.doi.org/10.1787/888932554166

Pensioner population projections

Projected percentage of population aged 65 and over (Asian economies)



Projected percentage of population aged 65 and over (OECD countries)



StatLink http://dx.doi.org/10.1787/888932554185

PART II

Economy Studies

This part provides detailed background information on each of the 11 non-OECD economies' retirement-income arrangements. These include pension eligibility ages and other qualifying conditions; the rules for calculating benefit entitlements; the treatment of early and late retirees. The economy studies summarise the national results in standard charts and tables. The country chapters for the OECD countries included can be found in the Pensions at a Glance *series.*

Introduction

The economy studies follow a standard schema. First, there is a detailed description of the rules and parameters of the pension schemes:

- Qualifying conditions: pension eligibility (or "retirement") age and years of contributions required to receive a pension.
- Benefit calculation: the rules for each of the schemes making up the pension system, such as earnings-related schemes, mandatory private plans and resource-tested schemes.
- Early and late retirement: the rules and conditions under which workers can retire early or continue to work beyond the standard retirement age.
- Treatment of pensioners under the personal income tax and social security contributions, including any relief for pension income.

Values of all pension parameters and other relevant figures, such as minimum wages, are given in the national currencies as a proportion of average earnings.

A summary results table gives expected relative pension values, replacement rates and pension wealth at different individual levels of earnings for mandatory pension schemes (see Part I of this report for the definition and measurement of the different indicators). These are given in both gross and net terms (the latter taking account of taxes and contributions paid when working and when drawing the pension).

Summary charts show the breakdown of the gross relative pension value into the different components of the pension scheme (the first row of the charts). As far as possible, the same terminology is used to describe these schemes. The particular national scheme that is described can be found in the text of the economy study. Some standard abbreviations are used in the legends of the charts:

- SA: social assistance.
- Targeted: separate resource-tested schemes for older people.
- Minimum: a minimum pension within an earnings related scheme.
- Basic: a pension based only on number of years of coverage or residency.
- Earnings-related: all public earnings-related programmes, including notional accounts and points schemes as well as traditional defined-benefit plans.
- DC: defined-contribution, mandatory private plans.
- Occupational: mandatory pensions, which can be provided by employers, industry-wide schemes, profession-based schemes or publicly.

The second row of economy charts shows the effect of personal income taxes and social security contributions on relative pension values and replacement rates, giving the gross and net values. The final row of economy charts shows, for reference, the taxes and contributions paid by pensioners and workers. This illustrates the source of any

concessions to older people in these systems since the values are shown for workers and pensioners with the same income. The effect of taxes and contributions on net replacement rates is more complex than illustrated here. Since replacement rates are usually less than 100%, the normal progressivity of the tax system means that people tend to pay fewer taxes when retired regardless of any concessions.

The final row also shows the sources of the net replacement rate. In addition to the components of the pension system shown in the first two charts, this includes the effect of taxes and contributions. This is computed using results of the tax models on the amount of taxes paid on earnings of a particular level and the amount of taxes due on the pension entitlement calculated for someone earning at that level.

The charts use a standard scale to ease comparisons between economies: the scale for replacement rates runs to 125% while that for relative pension values runs to 2.5 times average earnings. In some cases, pension benefits exceed these maxima and so the measure has been capped at these levels.

Additional Asia specific information

Specifically for this edition of the *Pensions at a Glance* series we have also added alternative career scenarios to try and be more realistic to the situation that actually occurs within the Asian economies. Where possible we have modelled career lengths of 30 and 40 years using the OECD economic assumptions in addition to the standard national retirement age table. In addition we have also modelled these different career lengths using economy specific assumptions were appropriate.

China

China: pension system in 2008

China has a two-tier pension system, consisting of a basic pension and a mandatory employee contribution to a second-tier plan. This system, which was introduced in 1998, was significantly revised in 2006. It covers urban workers and many of the parameters depend on province-wide (rather than national) average earnings.

Key indicators

		China	OECD
Average earnings	CNY	28 900	282 100
	USD	4 200	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	73.0	78.9
	At age 65	80.7	83.1
Population over age 65	% of working-age population	11.4	23.6

StatLink http://dx.doi.org/10.1787/888932554603

Qualifying conditions

Normal pension age is 60 for men, 50 for women blue collar, and 55 for women white collar.

Benefit calculation

Basic

The basic pension pays 1% of the average of the indexed individual wage and the province-wide average earnings for each year of coverage, subject to a minimum of 15 years of contributions. The pension in payment is indexed to a mix of wages and prices, which may be between 40 and 60% of average earnings growth. The modelling assumes 50% indexation to wages.

Defined contribution (funded or notional accounts)

The second-tier system comprises individual accounts. In addition to the north-eastern provinces (Liaoning, Jilin and Heilongjiang), a further eight have funded individual account systems. In other cases, the accounts are largely notional and are credited with a notional interest rate.

Employees pay 8% of wages to the individual account system. The accumulated balance in the fund or the notional account is converted into a stream of pension payments at the time of retirement by dividing the balance by a government-determined annuity factor, depending on individual retirement age and average national life expectancy. In all provinces, these annuity factors for both males and females (for monthly benefits) are:

Age	40	45	50	55	60	65	70
Factor	233	216	195	170	139	101	56

Pensions in payment are indexed to a mix of wages and prices (see the description of the basic pension above).

Variant careers

Early retirement

It is possible to claim pensions at 55 for men and 50 for women if the individual is engaged in physical work. If the individual is totally disabled, pensions will commence at 50 for men and 45 for women subject to 15 years of contributions.

Late retirement

It is possible to defer pension payments until after normal pension age, but the pension benefit is not valorised.

Personal income tax and social security contributions

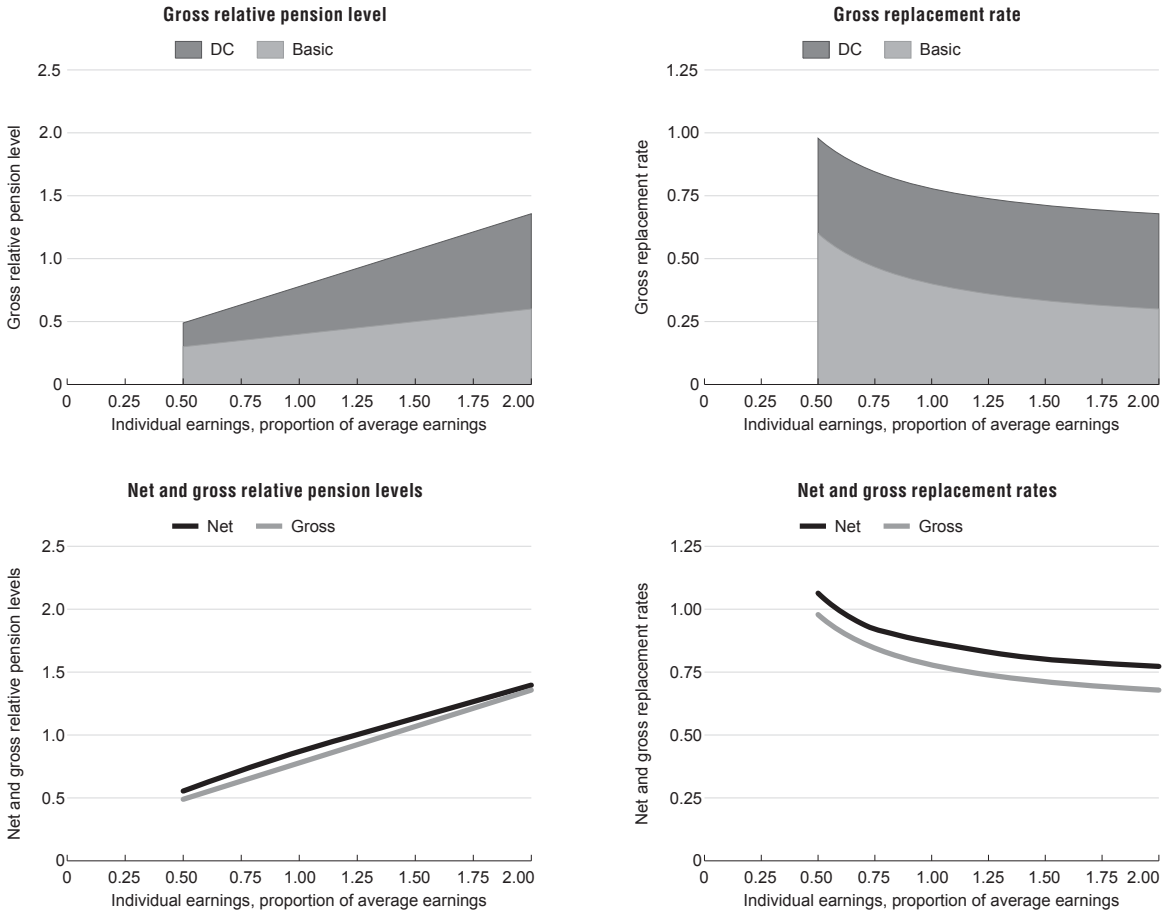
There is a standard income-tax allowance of CNY 1 600 per month. Employees are allowed to deduct 20% of earnings for work-related expenses. If earnings are less than CNY 4 000, then the worker is allowed to deduct a flat rate of CNY 800. The income-tax schedule is

CNY, per annum	0	500	2 000	5 000	20 000	40 000	60 000	80 000	100 000
Rate (%)	5	10	15	20	25	30	35	40	45

The social security contributions to individual accounts are exempt from income taxes. On the other hand, pension benefits are taxed according to the personal income tax rate.

Under the revised system, employers contribute about 20 of earnings to cover the basic pension. The second-tier pension is financed by an 8% contribution from employees. These contributions are capped at an earnings level of three times the local average wage.

Pension modelling results: China



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	66.9	48.9	63.4	77.9	106.8	135.7
(% average gross earnings)	52.7	39.2	50.1	61.0	82.7	104.5
Net relative pension level	75.8	55.5	71.9	86.8	113.4	139.6
(% net average earnings)	59.8	44.5	56.8	69.2	91.5	111.3
Gross replacement rate	82.5	97.9	84.5	77.9	71.2	67.9
(% individual gross earnings)	65.1	78.5	66.8	61.0	55.2	52.2
Net replacement rate	90.6	106.4	92.1	86.8	80.1	77.3
(% individual net earnings)	71.5	85.3	72.8	69.2	64.7	61.6
Gross pension wealth	15.8	18.7	16.1	14.9	13.6	13.0
(multiple of individual gross earnings)	16.6	20.0	17.0	15.5	14.0	13.3
Net pension wealth	15.8	18.7	16.1	14.6	12.7	11.8
(multiple of individual gross earnings)	16.6	20.0	17.0	15.5	13.7	12.5

StatLink http://dx.doi.org/10.1787/888932554204

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	66.9	48.9	63.4	77.9	106.8	135.7
(% average gross earnings)	61.3	45.5	58.2	71.0	96.4	121.9
Net relative pension level	75.8	55.5	71.9	86.8	113.4	139.6
(% net average earnings)	69.5	51.6	66.0	80.0	104.0	127.1
Gross replacement rate	82.5	97.9	84.5	77.9	71.2	67.9
(% individual gross earnings)	75.6	91.0	77.6	71.0	64.3	61.0
Net replacement rate	90.6	106.4	92.1	86.8	80.1	77.3
(% individual net earnings)	83.1	98.9	84.6	80.0	73.5	70.3
Gross pension wealth	15.8	18.7	16.1	14.9	13.6	13.0
(multiple of individual gross earnings)	19.2	23.1	19.8	18.1	16.4	15.5
Net pension wealth	15.8	18.7	16.1	14.6	12.7	11.8
(multiple of individual gross earnings)	19.2	23.1	19.8	18.0	15.6	14.3

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	48.3	35.6	45.9	56.2	76.8	97.3
(% average gross earnings)	44.5	33.2	42.3	51.4	69.6	87.8
Net relative pension level	54.8	40.4	52.0	63.7	85.8	104.8
(% net average earnings)	50.4	37.6	48.0	58.3	78.7	96.2
Gross replacement rate	59.7	71.2	61.2	56.2	51.2	48.7
(% individual gross earnings)	54.9	66.4	56.4	51.4	46.4	43.9
Net replacement rate	65.6	77.4	66.6	63.7	60.6	58.0
(% individual net earnings)	60.3	72.2	61.5	58.3	55.5	53.2
Gross pension wealth	11.4	13.6	11.7	10.7	9.8	9.3
(multiple of individual gross earnings)	14.0	16.9	14.4	13.1	11.8	11.2
Net pension wealth	11.4	13.6	11.7	10.7	9.6	8.8
(multiple of individual gross earnings)	14.0	16.9	14.4	13.1	11.8	10.8

StatLink http://dx.doi.org/10.1787/888932554622

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	58.6	43.8	55.7	67.6	91.4	115.3
(% average gross earnings)	54.5	41.3	51.9	62.6	83.9	105.2
Net relative pension level	66.4	49.7	63.2	76.6	99.5	121.1
(% net average earnings)	61.8	46.8	58.9	71.0	92.6	112.0
Gross replacement rate	72.3	87.6	74.3	67.6	61.0	57.6
(% individual gross earnings)	67.3	82.6	69.3	62.6	55.9	52.6
Net replacement rate	79.4	95.2	81.0	76.6	70.3	67.0
(% individual net earnings)	73.9	89.8	75.5	71.0	65.4	61.9
Gross pension wealth	19.9	24.1	20.5	18.6	16.8	15.9
(multiple of individual gross earnings)	27.7	34.0	28.5	25.8	23.0	21.7
Net pension wealth	19.9	24.1	20.5	18.6	16.1	14.7
(multiple of individual gross earnings)	27.7	34.0	28.5	25.8	22.4	20.3

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	43.9	32.9	41.8	50.7	68.6	86.4
(% average gross earnings)	40.9	31.0	39.0	46.9	62.9	78.9
Net relative pension level	49.8	37.3	47.4	57.5	77.6	95.0
(% net average earnings)	46.3	35.1	44.2	53.2	71.3	87.8
Gross replacement rate	54.2	65.7	55.7	50.7	45.7	43.2
(% individual gross earnings)	50.5	61.9	51.9	46.9	41.9	39.4
Net replacement rate	59.6	71.4	60.7	57.5	54.8	52.5
(% individual net earnings)	55.4	67.3	56.6	53.2	50.4	48.6
Gross pension wealth	14.9	18.1	15.3	14.0	12.6	11.9
(multiple of individual gross earnings)	20.8	25.5	21.4	19.3	17.3	16.3
Net pension wealth	14.9	18.1	15.3	14.0	12.6	11.5
(multiple of individual gross earnings)	20.8	25.5	21.4	19.3	17.3	16.0

Real earnings: 12% per year converging steadily to 2%, giving an average of 7%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 10.5% per year converging steadily to 3.5%, giving an average of 7%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932554641

Hong Kong

Hong Kong: pension system in 2008

Employees including part-time and self-employed workers are required to join Mandatory Provident Fund (MPF) scheme. MPF is a defined contribution scheme.

Key indicators

		Hong Kong	OECD
Average earnings	HKD	243 500	314 600
	USD	31 400	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	82.3	78.9
	At age 65	85.4	83.1
Population over age 65	% of working-age population	17.0	23.6

StatLink http://dx.doi.org/10.1787/888932554660

Qualifying conditions

For the modelling the pension age is 65 for men and women.

Benefit calculation

Defined contribution

For the private sector employee, the amount of contribution depends on the income levels. Employees do not need to pay contribution if the monthly income is lower than HKD 5 000 and they pay at least 5% of earnings if the income is between HKD 5 000 and HKD 20 000. The maximum contribution is capped at HKD 1 000. Employers contribute at least 5% of employee's earnings up to the maximum level of HKD 1 000. Slightly different rules are applied to the self-employed. Indexation of pensions in payment is discretionary; the model uses price indexation. The scheme members can withdraw all their accrued benefits in a lump sum at retirement. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

Targeted/Basic

The old-age allowance has two levels. Normal old age allowance (NOAA) is means-tested and provided to those between 65 and 69. For a single person, the asset limit is HKD 169 000 and monthly income limit is HKD 5 910 (after which benefits are withdrawn). Limits for married couples are higher (HKD 254 000 and HKD 9 740, respectively). The full benefit is HKD 1 000 per month, which is about 4.9% of average earnings.

Higher older age allowance (HOAA) is for those aged 70 and above. It is a basic plan: paying a flat amount of HKD 1 000 per month with no claw-back. Again, there is no formal indexation rule, so the modelling assumes price indexation.

Variant careers

Early retirement

It is possible to retire and to receive the DC lump sum benefit at age 60. However, the targeted/basic programme does not provide benefits until 65.

Late retirement

It is possible to continue working after receiving the lump sum benefit.

Personal income tax and social security contributions

Taxation of workers

There are various tax relief systems in Hong Kong but they are not relevant to the standard individual (single without a child) used for the model. MPF contributions are tax deductible up to HKD 12 000 per year.

Taxation of worker's income

The lower of the following two tax rules is applied. The first rule is described in the following tax schedule. This is applied to taxable income (after deductions and allowances). The basic allowance for a single person in 2008 is HKD 108 000.

Annual taxable income (HKD)	Tax rate (%)
40 000	2
40 000-80 000	7
80 000-120 000	12
> 120 000	17

The second rule is a standard rate of 15% multiplied by assessable income after deductions but before allowances.

Social security contributions payable by workers

The employed contribute to the MPF system with a contribution of 5% of their earnings up to the maximum level of HKD 1 000 per month.

Taxation of pensioners

There is no additional tax relief for pensioners.

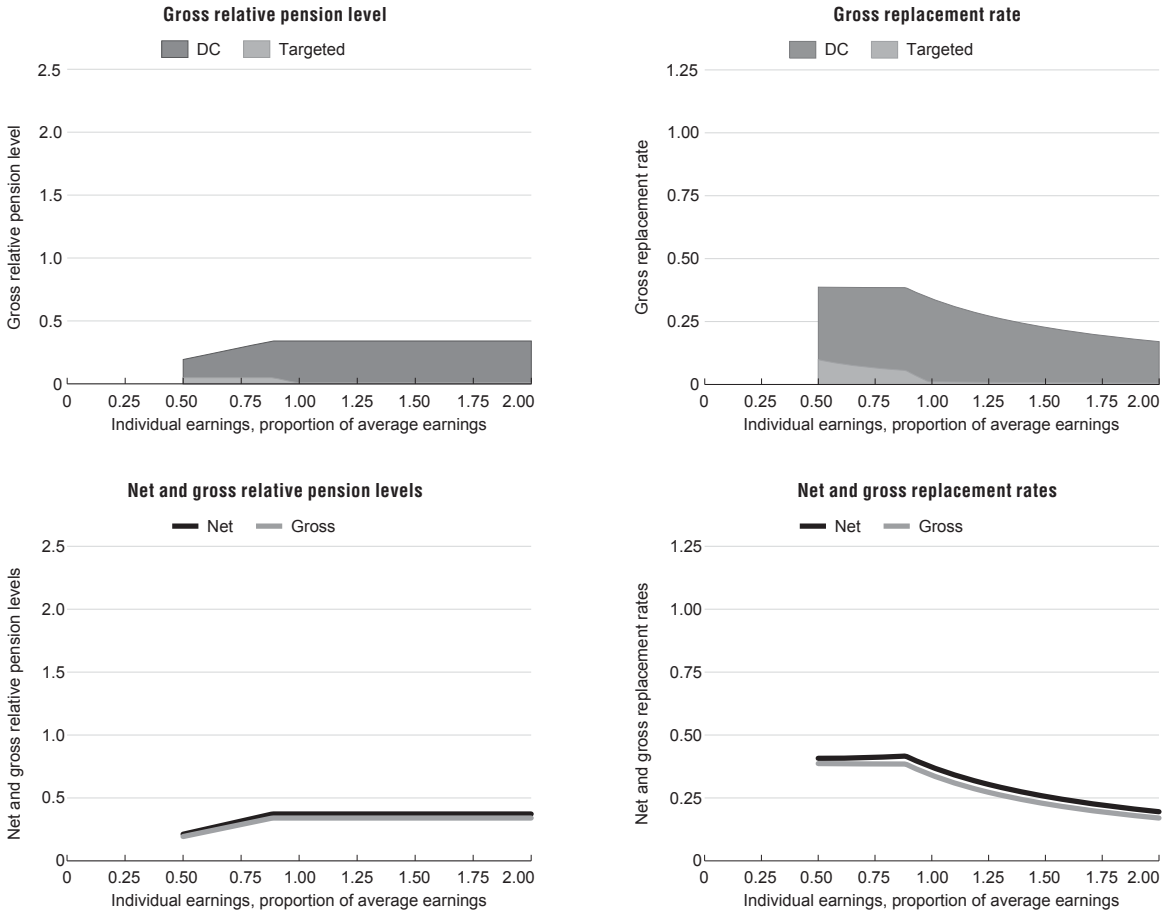
Taxation of pension income

The same taxation rule is applied to pension benefits.

Social security contributions payable by pensioners

Pensioners do not pay any social security contribution.

Pension modelling results: Hong Kong



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	31.2	19.3	28.9	34.1	34.1	34.1
(% average gross earnings)	27.1	17.1	25.2	32.8	32.8	32.8
Net relative pension level	34.1	21.2	31.6	37.3	37.3	37.3
(% net average earnings)	29.7	18.7	27.6	35.9	35.9	35.9
Gross replacement rate	38.5	38.7	38.5	34.1	22.7	17.0
(% individual gross earnings)	33.5	34.2	33.6	32.8	21.9	16.4
Net replacement rate	41.3	40.8	41.2	37.3	25.6	19.5
(% individual net earnings)	35.9	36.1	35.9	35.9	24.7	18.8
Gross pension wealth	6.5	6.5	6.5	5.7	3.8	2.9
(multiple of individual gross earnings)	6.7	6.8	6.7	6.5	4.3	3.3
Net pension wealth	6.5	6.5	6.5	5.7	3.8	2.9
(multiple of individual gross earnings)	6.7	6.8	6.7	6.5	4.3	3.3

StatLink http://dx.doi.org/10.1787/888932554223

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	27.3	17.2	25.4	33.0	33.0	33.0
(% average gross earnings)	23.9	15.3	22.2	28.7	28.7	28.7
Net relative pension level	29.9	18.8	27.8	36.2	36.2	36.2
(% net average earnings)	26.1	16.8	24.3	31.4	31.4	31.4
Gross replacement rate	33.7	34.4	33.8	33.0	22.0	16.5
(% individual gross earnings)	29.4	30.6	29.6	28.7	19.1	14.3
Net replacement rate	36.2	36.3	36.1	36.2	24.9	18.9
(% individual net earnings)	31.6	32.3	31.6	31.4	21.6	16.5
Gross pension wealth	5.7	5.8	5.7	5.6	3.7	2.8
(multiple of individual gross earnings)	5.9	6.1	5.9	5.7	3.8	2.9
Net pension wealth	5.7	5.8	5.7	5.6	3.7	2.8
(multiple of individual gross earnings)	5.9	6.1	5.9	5.7	3.8	2.9

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	20.4	13.4	19.1	24.4	24.4	24.4
(% average gross earnings)	18.0	12.1	16.9	21.4	21.4	21.4
Net relative pension level	22.3	14.7	20.9	26.7	26.7	26.7
(% net average earnings)	19.7	13.2	18.5	23.4	23.4	23.4
Gross replacement rate	25.2	26.8	25.4	24.4	16.2	12.2
(% individual gross earnings)	22.2	24.2	22.5	21.4	14.2	10.7
Net replacement rate	27.0	28.3	27.1	26.7	18.3	14.0
(% individual net earnings)	23.9	25.5	24.0	23.4	16.1	12.2
Gross pension wealth	4.2	4.5	4.3	4.1	2.7	2.0
(multiple of individual gross earnings)	4.4	4.8	4.5	4.2	2.8	2.1
Net pension wealth	4.2	4.5	4.3	4.1	2.7	2.0
(multiple of individual gross earnings)	4.4	4.8	4.5	4.2	2.8	2.1

StatLink http://dx.doi.org/10.1787/888932554679

Indonesia

Indonesia: pension system in 2008

Employees in private sectors are covered by defined contribution plan.

Key indicators

		Indonesia	OECD
Average earnings	IDR (million)	13.10	393.78
	USD	1 400	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	72.4	78.9
	At age 65	82.5	83.1
Population over age 65	% of working-age population	11.3	23.6

StatLink http://dx.doi.org/10.1787/888932554698

Qualifying conditions

Normal pension age is 55.

Benefit calculation

Defined-contribution

Employees contribute 2% of earnings and employers pay 3.7% of the payroll. Pension is paid in lump sum or payable monthly up to a maximum of five years if the balance is more than IDR 3 million. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

Variant careers

Early retirement

It is possible to start claiming pension at any age with a minimum of five years of contribution.

Late retirement

It is not possible to start claiming pension after normal pension age.

Personal income tax and social security contributions

Taxation of workers

There is a deduction of IDR 2 880 000 for a single individual. In addition, work-related expense is tax deductible and the amount is 5% of earnings up to a ceiling of IDR 1 296 000. Social security contribution is tax deductible.

Taxation of worker's income

Following table shows the tax rule applied to worker's income.

Annual income (millions IDR)	Tax rate (%)
Up to IDR 25	5
Over IDR 25 up to IDR 50	10
Over IDR 50 up to IDR 100	15
Over IDR 100 up to IDR 200	25
Over IDR 200	35

Social security contributions payable by workers

Employees contribute 2% of payroll to the pension plans.

Taxation of pensioners

There is no additional tax relief for pensioners.

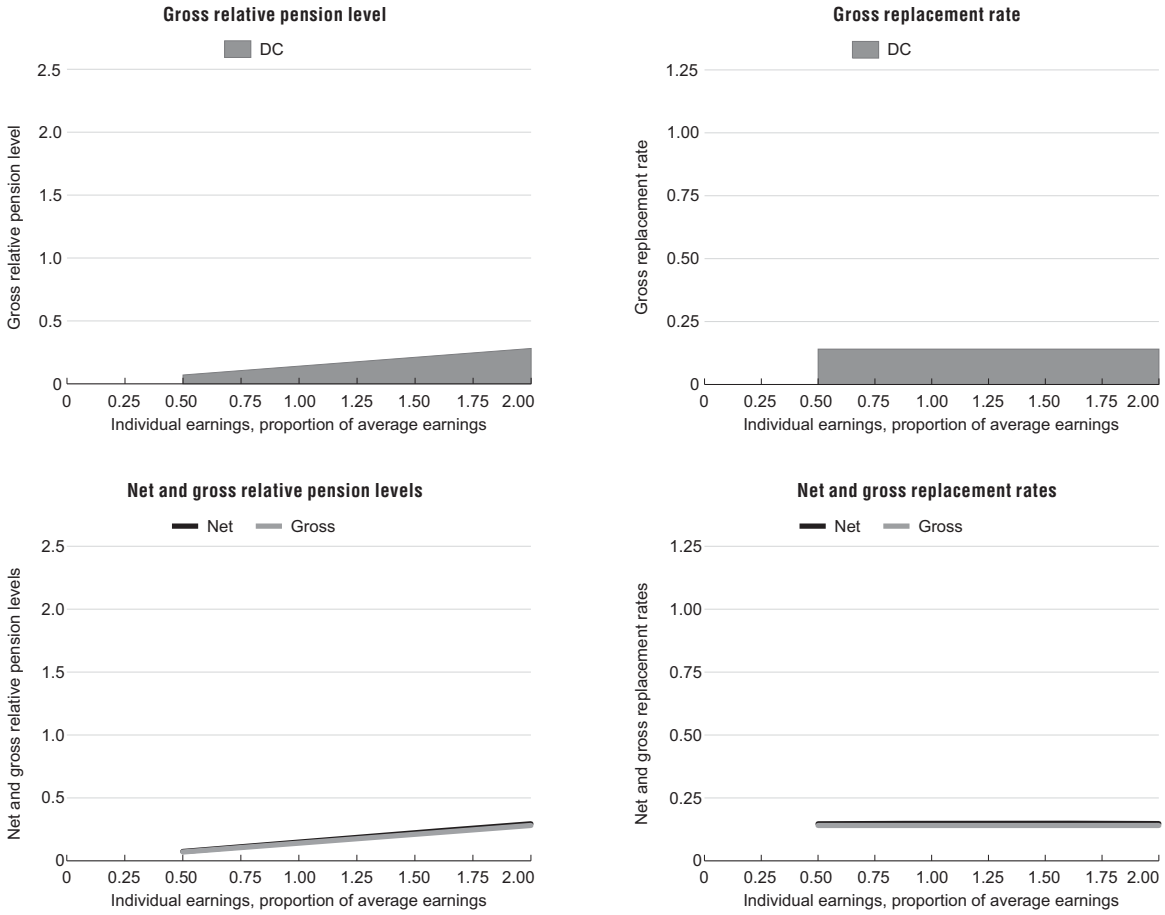
Taxation of pension income

The same tax rules are applied to pensioners.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Indonesia



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	11.4	7.0	10.5	14.1	21.1	28.1
(% average gross earnings)	10.1	6.2	9.3	12.4	18.7	24.9
Net relative pension level	12.1	7.4	11.2	14.9	22.3	29.4
(% net average earnings)	10.7	6.6	9.9	13.2	19.8	26.2
Gross replacement rate	14.1	14.1	14.1	14.1	14.1	14.1
(% individual gross earnings)	12.4	12.4	12.4	12.4	12.4	12.4
Net replacement rate	14.8	14.7	14.8	14.9	14.9	14.8
(% individual net earnings)	13.1	13.0	13.1	13.2	13.2	13.2
Gross pension wealth	2.6	2.6	2.6	2.6	2.6	2.6
(multiple of individual gross earnings)	2.6	2.6	2.6	2.6	2.6	2.6
Net pension wealth	2.6	2.6	2.6	2.6	2.6	2.6
(multiple of individual gross earnings)	2.6	2.6	2.6	2.6	2.6	2.6

StatLink http://dx.doi.org/10.1787/888932554242

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	13.6	8.4	12.6	16.7	25.1	33.5
(% average gross earnings)	12.0	7.4	11.1	14.8	22.2	29.6
Net relative pension level	14.4	8.9	13.3	17.7	26.4	34.8
(% net average earnings)	12.7	7.8	11.8	15.7	23.5	31.0
Gross replacement rate	16.7	16.7	16.7	16.7	16.7	16.7
(% individual gross earnings)	14.8	14.8	14.8	14.8	14.8	14.8
Net replacement rate	17.7	17.5	17.7	17.7	17.7	17.5
(% individual net earnings)	15.6	15.5	15.6	15.7	15.7	15.6
Gross pension wealth	3.1	3.1	3.1	3.1	3.1	3.1
(multiple of individual gross earnings)	3.1	3.1	3.1	3.1	3.1	3.1
Net pension wealth	3.1	3.1	3.1	3.1	3.1	3.1
(multiple of individual gross earnings)	3.1	3.1	3.1	3.1	3.1	3.1

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	9.4	5.8	8.7	11.6	17.4	23.1
(% average gross earnings)	8.3	5.1	7.7	10.2	15.4	20.5
Net relative pension level	9.9	6.1	9.2	12.3	18.4	24.4
(% net average earnings)	8.8	5.4	8.1	10.8	16.3	21.7
Gross replacement rate	11.6	11.6	11.6	11.6	11.6	11.6
(% individual gross earnings)	10.2	10.2	10.2	10.2	10.2	10.2
Net replacement rate	12.2	12.1	12.2	12.3	12.3	12.3
(% individual net earnings)	10.8	10.7	10.8	10.8	10.9	10.9
Gross pension wealth	2.2	2.2	2.2	2.2	2.2	2.2
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	2.2	2.2
Net pension wealth	2.2	2.2	2.2	2.2	2.2	2.2
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	2.2	2.2

StatLink http://dx.doi.org/http://dx.doi.org/10.1787/888932554717

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	13.6	8.4	12.6	16.7	25.1	33.5
(% average gross earnings)	12.0	7.4	11.1	14.8	22.2	29.6
Net relative pension level	14.4	8.9	13.3	17.7	26.4	34.8
(% net average earnings)	12.7	7.8	11.8	15.7	23.5	31.0
Gross replacement rate	16.7	16.7	16.7	16.7	16.7	16.7
(% individual gross earnings)	14.8	14.8	14.8	14.8	14.8	14.8
Net replacement rate	17.7	17.5	17.7	17.7	17.7	17.5
(% individual net earnings)	15.6	15.5	15.6	15.7	15.7	15.6
Gross pension wealth	3.1	3.1	3.1	3.1	3.1	3.1
(multiple of individual gross earnings)	3.1	3.1	3.1	3.1	3.1	3.1
Net pension wealth	3.1	3.1	3.1	3.1	3.1	3.1
(multiple of individual gross earnings)	3.1	3.1	3.1	3.1	3.1	3.1

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	9.4	5.8	8.7	11.6	17.4	23.1
(% average gross earnings)	8.3	5.1	7.7	10.2	15.4	20.5
Net relative pension level	9.9	6.1	9.2	12.3	18.4	24.4
(% net average earnings)	8.8	5.4	8.1	10.8	16.3	21.7
Gross replacement rate	11.6	11.6	11.6	11.6	11.6	11.6
(% individual gross earnings)	10.2	10.2	10.2	10.2	10.2	10.2
Net replacement rate	12.2	12.1	12.2	12.3	12.3	12.3
(% individual net earnings)	10.8	10.7	10.8	10.8	10.9	10.9
Gross pension wealth	2.2	2.2	2.2	2.2	2.2	2.2
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	2.2	2.2
Net pension wealth	2.2	2.2	2.2	2.2	2.2	2.2
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	2.2	2.2

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932554736

Malaysia

Malaysia: pension system in 2008

Private sector employees and non-pensionable public sector employees contribute to the provident fund.

Key indicators

		Malaysia	OECD
Average earnings	MYR	25 400	142 900
	USD	7 200	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	74.3	78.9
	At age 65	80.3	83.1
Population over age 65	% of working-age population	7.3	23.6

StatLink http://dx.doi.org/10.1787/888932554755

Qualifying conditions

Normal pension age is 55.

Benefit calculation

Defined contribution

Employees pay 11% of monthly earnings to the provident fund according to wage classes, when aged up to 54 years, and 5.5% between age 55 and 75. Employers pay 12% of monthly earnings according to wage classes, for employees up to 54 years of age, and 6% between ages 55 and 75. Minimum monthly earnings for the contribution are MYR 10 and there is no ceiling for the contribution. Insured persons can make voluntary additional contributions. The contribution is made to two different accounts: 70% of contribution to Account 1 and 30% to Account 2. It is possible to receive pension in a lump sum, monthly instalments or a combination of both. The minimum total amount to be paid in monthly instalments is MYR 250 with the minimum period being 12 months, with a minimum withdrawal at any time of at least MYR 2 000, or a combination of these options. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

Variant careers

Early retirement

It is possible to withdraw savings before age 55 from Account 2.

Late retirement

It is possible to defer retirement and continue to make contributions after normal pension age.

Personal income tax and social security contributions

Taxation of workers

The mandatory and voluntary provident fund contributions up to MYR 5 000 a month are tax deductible. Employees below age 55 earning MYR 2 000 or less a month and casual workers need to be covered by social insurance. The insurance does not cover old-age pension, but disability, survivor and other pensions and grants. The contribution rate is

0.5% of monthly earnings based on 24 wage classes. Social insurance contributions are tax deductible.

Taxation of worker's income

Individual income tax rate ranges from 1 to 28% with eight income brackets.

Chargeable income	MYR	Rate (%)	Tax (MYR)
On the first	2 500	0	0
On the next	2 500	1	25
On the first	5 000	–	25
On the next	15 000	3	150
On the first	20 000	–	475
On the next	15 000	7	1 050
On the first	35 000	–	1 525
On the next	15 000	13	1 950
On the first	50 000	–	3 475
On the next	20 000	19	3 800
On the first	70 000	–	7 275
On the next	30 000	24	7 200
On the first	100 000	–	14 475
On the next	150 000	27	40 500
On the first	250 000	–	54 975
Exceeding	250 000	28	–

Social security contributions payable by workers

Taxation of pensioners

There is no additional tax relief for pensioners.

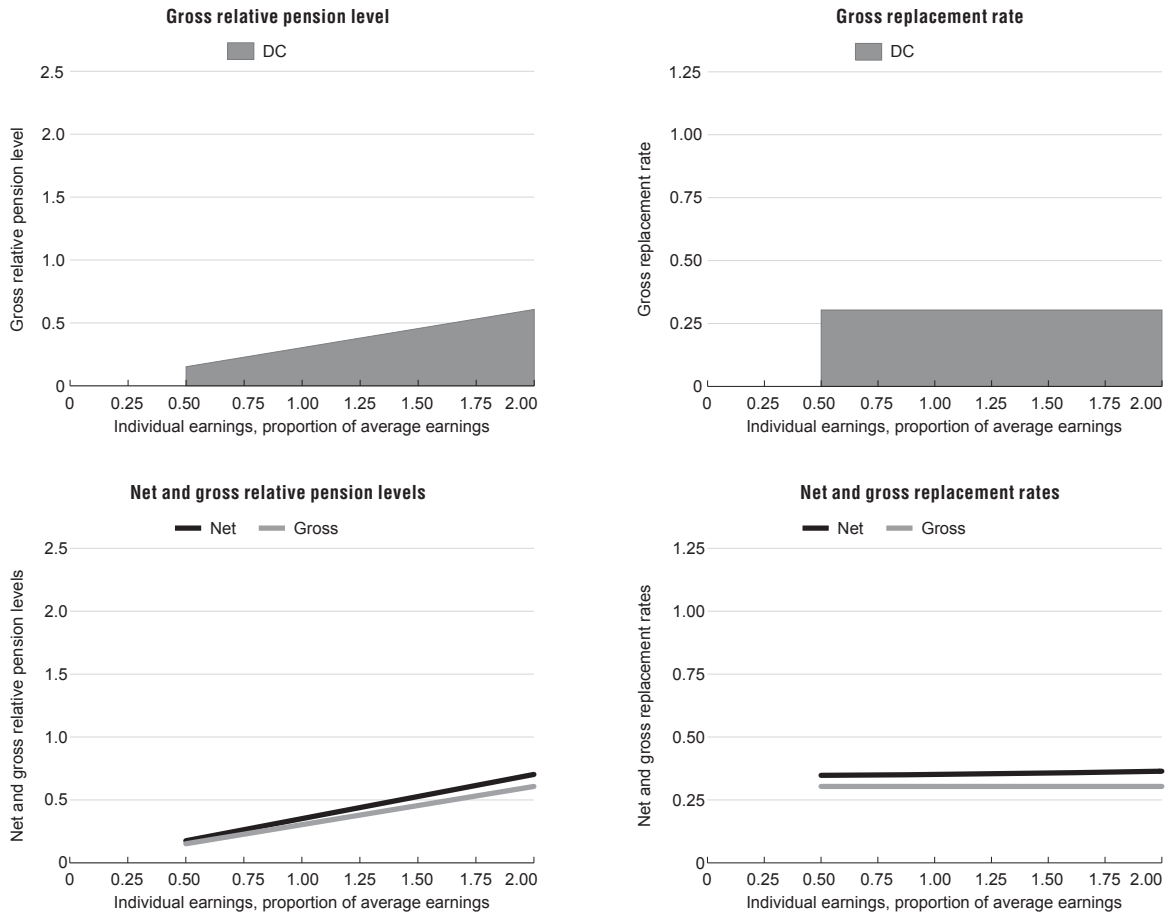
Taxation of pension income

Pension income is tax exempted.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Malaysia



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	24.6	15.2	22.8	30.4	45.5	60.7
(% average gross earnings)	21.9	13.5	20.3	27.1	40.6	54.2
Net relative pension level	28.5	17.6	26.4	35.1	52.7	70.3
(% net average earnings)	25.4	15.7	23.5	31.3	47.0	62.7
Gross replacement rate	30.4	30.4	30.4	30.4	30.4	30.4
(% individual gross earnings)	27.1	27.1	27.1	27.1	27.1	27.1
Net replacement rate	34.9	34.8	34.9	35.1	35.6	36.4
(% individual net earnings)	31.1	31.0	31.1	31.3	31.8	32.5
Gross pension wealth	6.4	6.4	6.4	6.4	6.4	6.4
(multiple of individual gross earnings)	6.4	6.4	6.4	6.4	6.4	6.4
Net pension wealth	6.4	6.4	6.4	6.4	6.4	6.4
(multiple of individual gross earnings)	6.4	6.4	6.4	6.4	6.4	6.4

StatLink http://dx.doi.org/10.1787/888932554261

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	29.3	18.1	27.1	36.2	54.2	72.3
(% average gross earnings)	26.1	16.1	24.2	32.2	48.4	64.5
Net relative pension level	33.9	20.9	31.4	41.8	62.8	83.7
(% net average earnings)	30.2	18.7	28.0	37.3	56.0	74.6
Gross replacement rate	36.2	36.2	36.2	36.2	36.2	36.2
(% individual gross earnings)	32.2	32.2	32.2	32.2	32.2	32.2
Net replacement rate	41.6	41.4	41.6	41.8	42.4	43.4
(% individual net earnings)	37.1	36.9	37.1	37.3	37.8	38.7
Gross pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6
Net pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	20.2	12.5	18.7	25.0	37.5	50.0
(% average gross earnings)	18.1	11.1	16.7	22.3	33.4	44.6
Net relative pension level	23.4	14.5	21.7	28.9	43.4	57.9
(% net average earnings)	20.9	12.9	19.3	25.8	38.7	51.6
Gross replacement rate	25.0	25.0	25.0	25.0	25.0	25.0
(% individual gross earnings)	22.3	22.3	22.3	22.3	22.3	22.3
Net replacement rate	28.7	28.6	28.7	28.9	29.3	30.0
(% individual net earnings)	25.6	25.5	25.6	25.8	26.2	26.7
Gross pension wealth	5.2	5.2	5.2	5.2	5.2	5.2
(multiple of individual gross earnings)	5.2	5.2	5.2	5.2	5.2	5.2
Net pension wealth	5.2	5.2	5.2	5.2	5.2	5.2
(multiple of individual gross earnings)	5.2	5.2	5.2	5.2	5.2	5.2

StatLink http://dx.doi.org/10.1787/888932554774

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	29.3	18.1	27.1	36.2	54.2	72.3
(% average gross earnings)	26.1	16.1	24.2	32.2	48.4	64.5
Net relative pension level	33.9	20.9	31.4	41.8	62.8	83.7
(% net average earnings)	30.2	18.7	28.0	37.3	56.0	74.6
Gross replacement rate	36.2	36.2	36.2	36.2	36.2	36.2
(% individual gross earnings)	32.2	32.2	32.2	32.2	32.2	32.2
Net replacement rate	41.6	41.4	41.6	41.8	42.4	43.4
(% individual net earnings)	37.1	36.9	37.1	37.3	37.8	38.7
Gross pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6
Net pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	20.2	12.5	18.7	25.0	37.5	50.0
(% average gross earnings)	18.1	11.1	16.7	22.3	33.4	44.6
Net relative pension level	23.4	14.5	21.7	28.9	43.4	57.9
(% net average earnings)	20.9	12.9	19.3	25.8	38.7	51.6
Gross replacement rate	25.0	25.0	25.0	25.0	25.0	25.0
(% individual gross earnings)	22.3	22.3	22.3	22.3	22.3	22.3
Net replacement rate	28.7	28.6	28.7	28.9	29.3	30.0
(% individual net earnings)	25.6	25.5	25.6	25.8	26.2	26.7
Gross pension wealth	5.2	5.2	5.2	5.2	5.2	5.2
(multiple of individual gross earnings)	5.2	5.2	5.2	5.2	5.2	5.2
Net pension wealth	5.2	5.2	5.2	5.2	5.2	5.2
(multiple of individual gross earnings)	5.2	5.2	5.2	5.2	5.2	5.2

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932554793

Philippines

Philippines: pension system in 2008

Employees up to age 60 earning more than PHP 1 000 a month are covered by the basic, earnings-related and minimum pensions. There are special systems for government employees and military personnel.

Key indicators

		Philippines	OECD
Average earnings	PHP	85 900	1 947 300
	USD	1 800	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	71.8	78.9
	At age 65	79.1	83.1
Population over age 65	% of working-age population	6.9	23.6

StatLink http://dx.doi.org/10.1787/888932554812

Qualifying conditions

Normal pension age is 65 with 120 months of contribution.

Benefit calculation

Basic

The monthly basic pension is PHP 300.

All pension payment is made 13 times per year in the Philippines. Indexation rule for all pension payment is decided periodically based on price inflation and wage growth and on the financial state of the fund. In a long run, it is assumed that this *ad hoc* adjustment will be in line with price inflation.

Earnings-related

Earnings-related pension benefit depends on the greater one between the following two average earnings: the average earnings over five years at six months prior to pension claim or the average earnings for the period in which contribution was paid. The benefit is 20% of workers' average monthly earnings plus 2% of workers' average monthly earnings for each year of service exceeding ten years or 40% of the workers' average monthly earnings, whichever is greater.

Minimum

The minimum pension for both basic and earnings-related components is PHP 1 200 a month with a contribution period of between 10 years and 20 years and PHP 2 400 for more than 20 years of contribution.

Variant careers

Early retirement

People could start receiving pension as early as age 60 with 120 months of contributions at 6 months before retirement. The pension is suspended if an old-age pensioner resumes employment or self-employment before age 65.

Late retirement

People can start claiming pension later than normal pension age, but there is no increment for the delayed pension benefits.

Personal income tax and social security contributions

Taxation of workers

Taxation of worker's income

Over	But not over	Tax rate
PHP 0-10 000	PHP 10 000	5%
PHP 10 000	PHP 30 000	PHP 500 + 10% of the excess over PHP 10 000
PHP 30 000	PHP 70 000	PHP 2 500 + 15% of the excess over PHP 30 000
PHP 70 000	PHP 140 000	PHP 8 500 + 20% of the excess over PHP 70 000
PHP 140 000	PHP 250 000	PHP 22 500 + 25% of the excess over PHP 140 000
PHP 250 000	PHP 500 000	PHP 50 000 + 30% of the excess over PHP 250 000
PHP 500 000		PHP 125 000 + 32% of the excess over PHP 500 000

Social security contributions payable by workers

Workers pay 3.33% of monthly gross insured earnings as social security contribution for pension, sickness and maternity and funeral benefits and the gross insured earnings are set based on 29 income classes. The maximum insured monthly earnings for contribution are PHP 15 000.

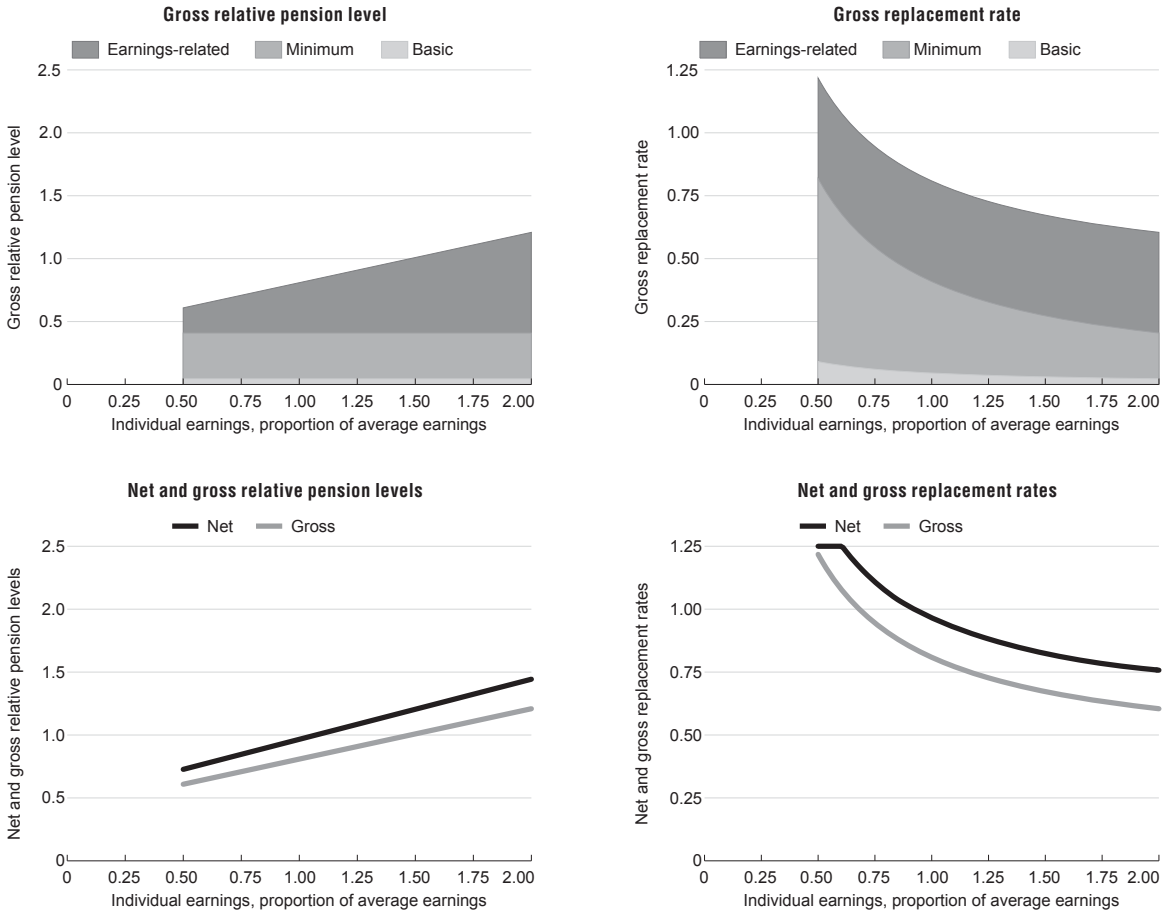
Taxation of pensioners

Under the Expanded Senior Citizens Act of 2003, senior citizens (resident citizens of the Philippines at least 60 years old) are exempted from paying individual income taxes provided their annual taxable income does not exceed the poverty level as determined by the National Economic and Development Authority (NEDA) for that year. They are also entitled to a 20% discount on the price of some services and products, including medical services and medicines. The 20% discount then becomes a tax credit for the establishment concerned.

Taxation of pension income

All pension incomes are exempt from taxation.

Pension modelling results: Philippines



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	73.3	60.9	70.9	80.9	100.9	120.9
(% average gross earnings)						
Net relative pension level	87.5	72.7	84.6	96.6	120.5	144.4
(% net average earnings)						
Gross replacement rate	90.5	121.8	94.5	80.9	67.3	60.4
(% individual gross earnings)						
Net replacement rate	106.4	140.2	110.8	96.6	82.4	75.8
(% individual net earnings)						
Gross pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2
Net pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2

StatLink http://dx.doi.org/10.1787/888932554280

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	73.3	60.9	70.9	80.9	100.9	120.9
(% average gross earnings)						
Net relative pension level	87.5	72.7	84.6	96.6	120.5	144.4
(% net average earnings)						
Gross replacement rate	90.5	121.8	94.5	80.9	67.3	60.4
(% individual gross earnings)						
Net replacement rate	106.4	140.2	110.8	96.6	82.4	75.8
(% individual net earnings)						
Gross pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2
Net pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	73.3	60.9	70.9	80.9	100.9	120.9
(% average gross earnings)						
Net relative pension level	87.5	72.7	84.6	96.6	120.5	144.4
(% net average earnings)						
Gross replacement rate	90.5	121.8	94.5	80.9	67.3	60.4
(% individual gross earnings)						
Net replacement rate	106.4	140.2	110.8	96.6	82.4	75.8
(% individual net earnings)						
Gross pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2
Net pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2

StatLink http://dx.doi.org/10.1787/888932554831

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	73.3	60.9	70.9	80.9	100.9	120.9
(% average gross earnings)						
Net relative pension level	87.5	72.7	84.6	96.6	120.5	144.4
(% net average earnings)						
Gross replacement rate	90.5	121.8	94.5	80.9	67.3	60.4
(% individual gross earnings)						
Net replacement rate	106.4	140.2	110.8	96.6	82.4	75.8
(% individual net earnings)						
Gross pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2
Net pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	73.3	60.9	70.9	80.9	100.9	120.9
(% average gross earnings)						
Net relative pension level	87.5	72.7	84.6	96.6	120.5	144.4
(% net average earnings)						
Gross replacement rate	90.5	121.8	94.5	80.9	67.3	60.4
(% individual gross earnings)						
Net replacement rate	106.4	140.2	110.8	96.6	82.4	75.8
(% individual net earnings)						
Gross pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2
Net pension wealth	11.4	15.2	11.9	10.3	8.6	7.8
(multiple of individual gross earnings)	13.5	17.9	14.1	12.1	10.2	9.2

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932554850

Singapore

Singapore: pension system in 2008

The Central Provident Fund (CPF) covers all workers including most civil servants. CPF is a defined contribution scheme.

Key indicators

		Singapore	OECD
Average earnings	SGD	53 700	58 600
	USD	37 200	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	80.4	78.9
	At age 65	83.7	83.1
Population over age 65	% of working-age population	13.8	23.6

StatLink http://dx.doi.org/10.1787/888932554869

Qualifying conditions

Normal pension age is 55 for CPF withdrawal in lump sum and 62 for phased withdrawal.

Benefit calculation

Defined-contribution

Maximum contribution for the private sector is calculated based on a basic salary ceiling of SGD 4 500 per month for both the employer and the employee. Benefits are paid as lump-sum for the amount over a maximum sum, while the amount up to the maximum sum can be drawn down over 20 years. The maximum sum is SGD 106 000 in 2008 and it will be raised to SGD 120 000 (in 2003 dollars) in 2013. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

The contribution rates vary depending on the age as indicated below.

Employee age (years)	Contribution by employer (% of wage)	Contribution by employee (% of wage)	Total contribution (% of wage)	Credited into ordinary account (ratio of contribution)	Special account (ratio of contribution)	Medisave account (ratio of contribution)
35 and below	14.5	20	34.5	0.6667	0.1449	0.1884
35-45	14.5	20	34.5	0.6088	0.1739	0.2173
45-50	14.5	20	34.5	0.5509	0.2028	0.2463
50-55	10.5	18	28.5	0.4562	0.2456	0.2982
55-60	7.5	12.5	20	0.575	0	0.425
60-65	5	7.5	12.5	0.28	0	0.72
Above 65	5	5	10	0.1	0	0.9

Variant careers

Early retirement

It is not possible to withdraw pension before normal pension age, unless it is for approved items such as housing and education.

Late retirement

It is possible to defer the pension claim after normal retirement age and during this period people can continue to contribute to the fund. People can also combine pension receipt with continuing to work.

Personal income tax and social security contributions

Taxation of workers

Compulsory CPF contributions are fully tax-exempt. There is also relief for "cash top-up" of CPF retirement account up to a maximum of SGD 7 000 per year.

There is also tax deductible "earned income relief", and the relief amount depends on the worker's age as described below.

Age	Relief amount
Below 55 years old	SGD 1 000
55 to 59 years old	SGD 3 000
60 years old and above	SGD 4 000

Taxation of worker's income

For resident individuals income tax rates and bands (in 2008) are as follows:

Chargeable income	Tax rate (%)
Up to SGD 20 000	0
Over SGD 20 000 up to SGD 30 000	3.5
Over SGD 30 000 up to SGD 40 000	5.5
Over SGD 40 000 up to SGD 80 000	8.5
Over SGD 80 000 up to SGD 160 000	14
Over SGD 160 000 up to SGD 320 000	17
Over SGD 320 000	20

Social security contributions payable by workers

Workers pay contribution to the CPF as described above.

Taxation of pensioners

There is no additional tax relief for pensioners.

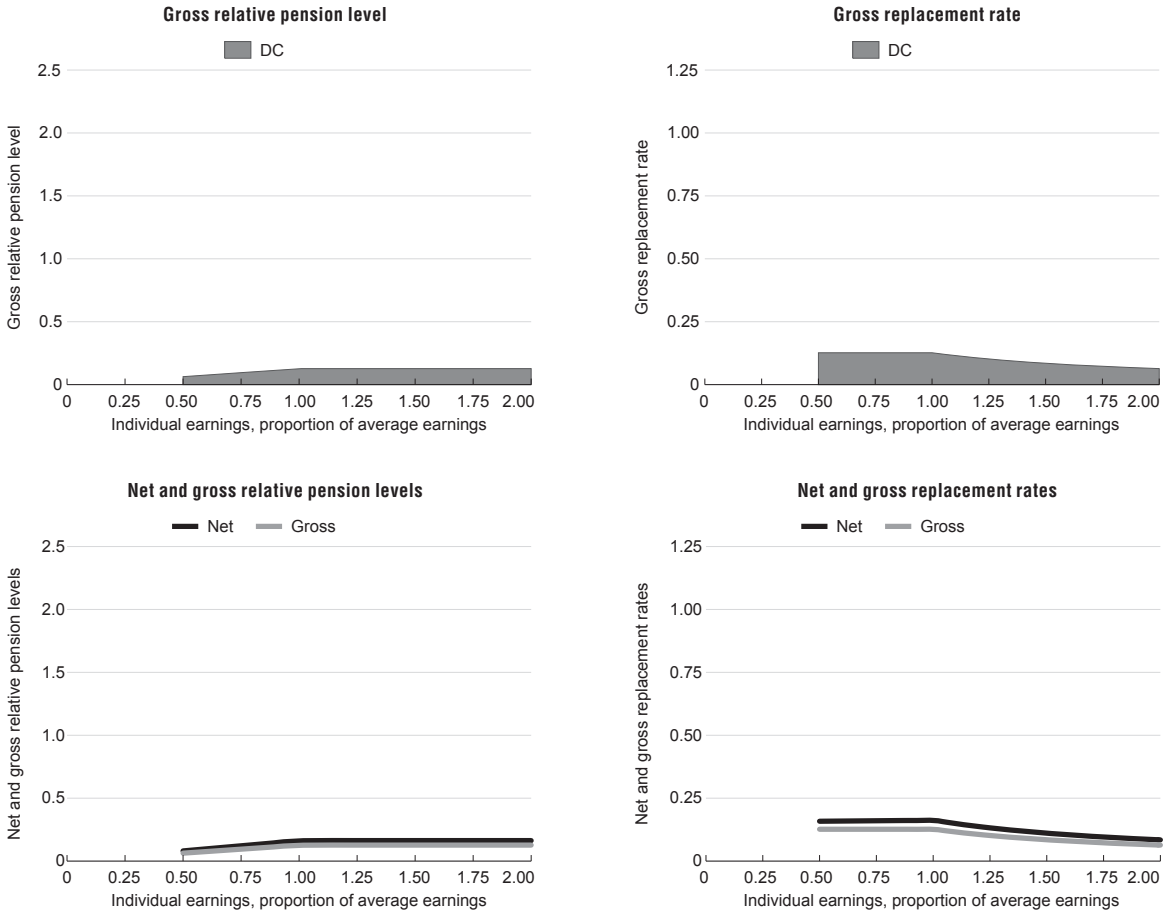
Taxation of pension income

Pension income from approved annuity providers is exempted from personal income tax.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Singapore



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	10.3	6.3	9.5	12.7	12.7	12.7
(% average gross earnings)	9.0	5.6	8.4	11.2	11.2	11.2
Net relative pension level	13.1	8.1	12.2	16.2	16.3	16.3
(% net average earnings)	11.6	7.1	10.7	14.3	14.4	14.4
Gross replacement rate	12.7	12.7	12.7	12.7	8.5	6.4
(% individual gross earnings)	11.2	11.2	11.2	11.2	7.5	5.6
Net replacement rate	16.1	15.8	16.0	16.2	11.1	8.4
(% individual net earnings)	14.2	14.0	14.1	14.3	9.8	7.4
Gross pension wealth	2.2	2.2	2.2	2.2	1.5	1.1
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	1.5	1.1
Net pension wealth	2.2	2.2	2.2	2.2	1.5	1.1
(multiple of individual gross earnings)	2.2	2.2	2.2	2.2	1.5	1.1

StatLink http://dx.doi.org/10.1787/888932554299

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	9.7	6.0	9.0	12.0	12.0	12.0
(% average gross earnings)	8.5	5.3	7.9	10.5	10.6	10.6
Net relative pension level	12.4	7.7	11.5	15.3	15.4	15.4
(% net average earnings)	10.9	6.8	10.1	13.5	13.6	13.6
Gross replacement rate	12.0	12.0	12.0	12.0	8.0	6.0
(% individual gross earnings)	10.5	10.5	10.5	10.5	7.1	5.3
Net replacement rate	15.2	15.0	15.1	15.3	10.5	8.0
(% individual net earnings)	13.4	13.2	13.3	13.5	9.2	7.0
Gross pension wealth	2.1	2.1	2.1	2.1	1.4	1.1
(multiple of individual gross earnings)	2.1	2.1	2.1	2.1	1.4	1.1
Net pension wealth	2.1	2.1	2.1	2.1	1.4	1.1
(multiple of individual gross earnings)	2.1	2.1	2.1	2.1	1.4	1.1

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	7.1	4.4	6.5	8.7	8.8	8.8
(% average gross earnings)	6.2	3.8	5.8	7.7	7.7	7.7
Net relative pension level	9.1	5.6	8.4	11.2	11.3	11.3
(% net average earnings)	8.0	4.9	7.4	9.9	9.9	9.9
Gross replacement rate	8.7	8.7	8.7	8.7	5.9	4.4
(% individual gross earnings)	7.7	7.7	7.7	7.7	5.2	3.9
Net replacement rate	11.1	10.9	11.1	11.2	7.7	5.8
(% individual net earnings)	9.8	9.6	9.7	9.9	6.7	5.1
Gross pension wealth	1.5	1.5	1.5	1.5	1.0	0.8
(multiple of individual gross earnings)	1.5	1.5	1.5	1.5	1.0	0.8
Net pension wealth	1.5	1.5	1.5	1.5	1.0	0.8
(multiple of individual gross earnings)	1.5	1.5	1.5	1.5	1.0	0.8

StatLink http://dx.doi.org/10.1787/888932554888

Thailand

Thailand: pension system in 2008

Private sector employees in the formal sectors are covered under the Social Security Fund (SSF). The old-age pension scheme under SSF is a defined benefit scheme.

Key indicators

		Thailand	OECD
Average earnings	THB	128 200	1 383 900
	USD	3 800	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	68.8	78.9
	At age 65	79.6	83.1
Population over age 65	% of working-age population	10.9	23.6

StatLink http://dx.doi.org/10.1787/888932554907

Qualifying conditions

Normal pension age for private sector workers is 55 for men and women. At least 15 years of contributions is required for monthly pension receipt and the pension benefit is adjusted for a longer contribution period. For people with a contribution period less than 15 years, a lump sum payment equivalent to the total contributions is made. In both cases employment must cease.

Benefit calculation

Earnings-related

Workers accrue 20% of their earnings for the first 15 years and then 1.5% for every year thereafter. The base wage used for benefit calculation is the average wage over the last 5 years prior to retirement. Indexation rules are discretionary and the modelling assumes price indexation of pensions in payment. Hence for the full career workers who enter labour market at age 20 in 2008 and earn average earnings throughout the career, the benefit is a little over THB 53 700 plus price inflation.

Variant careers

Early retirement

It is not possible to claim the earnings-related pension before the normal age of 55.

Late retirement

It is possible to retire later than normal pension age. People who continue to work beyond 55 will receive 20% of average wage of the last 60 months or 20% and 1.5% per additional 12 months of contributions above 180 months.

Personal income tax and social security contributions

Taxation of workers

There are various tax relief systems and the employed receive tax deduction of 40% of assessable income up to THB 60 000. Single people receive a personal allowance of THB 30 000. Social security contributions are tax deductible.

Taxation of worker's income

The following tax schedule is applicable to taxable income (assessable income after deductions and allowances).

Annual taxable income	Tax rate (%)
0-THB 150 000	0
THB 150 001-THB 500 000	10
THB 500 001-THB 1 000 000	20
THB 1 000 001-THB 4 000 000	30
THB 4 000 001 and over	37

Social security contributions payable by workers

Workers pay social security contributions. For old age pension, the contribution rate is 3% subject to the floor of THB 1 650 per month and the ceiling of THB 15 000 per month. They also pay 1.5% of earnings for sickness, maternity, invalidity and death benefits and 0.5% of earnings for unemployment insurance scheme.

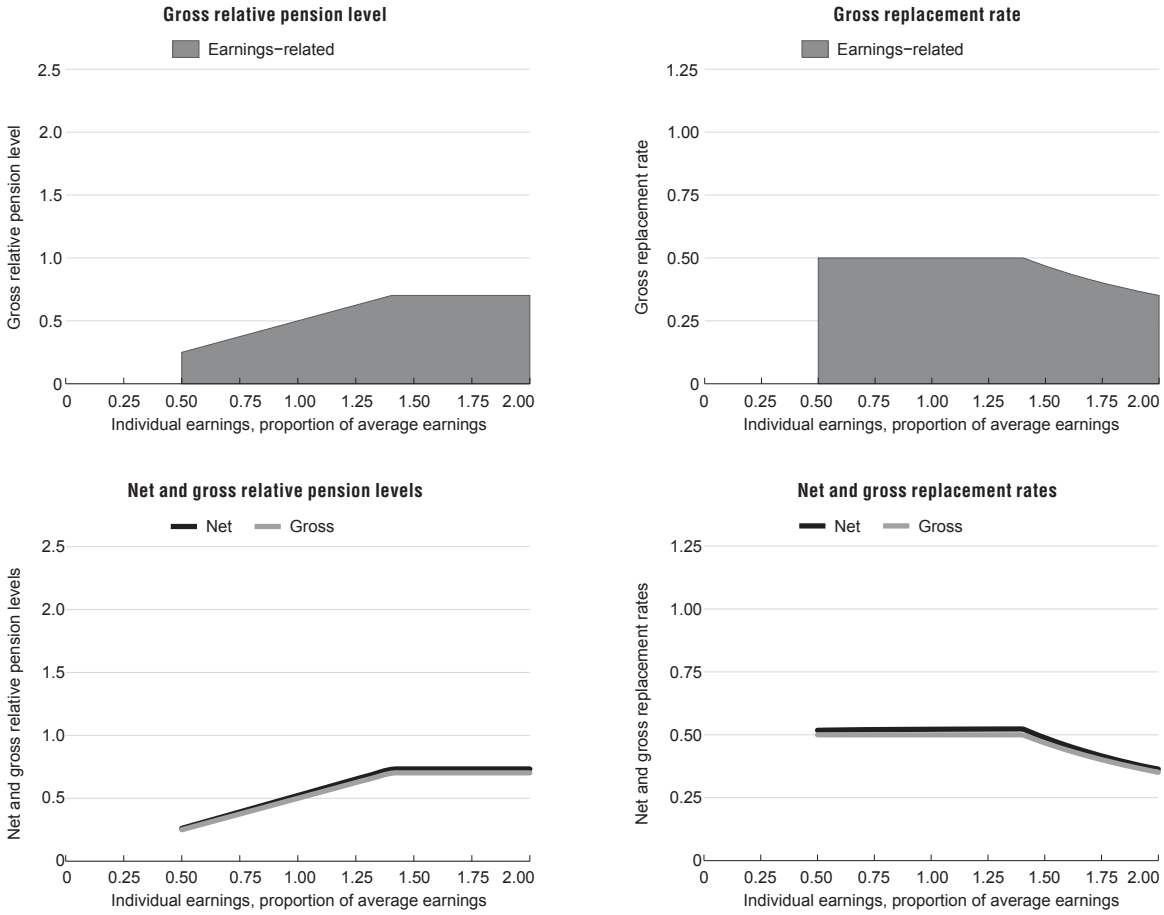
Taxation of pension income

All pension incomes are exempted from taxation. The elderly above 65 who continue working receive old age allowance of THB 190 000 as a tax allowance.

Social security contributions payable by pensioners

Pensioners do not pay social security contributions.

Pension modelling results: Thailand



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	40.5	25.0	37.5	50.0	70.2	70.2
(% average gross earnings)						
Net relative pension level	42.3	26.1	39.2	52.2	73.3	73.3
(% net average earnings)						
Gross replacement rate	50.0	50.0	50.0	50.0	46.8	35.1
(% individual gross earnings)						
Net replacement rate	52.1	51.8	52.1	52.2	48.8	36.4
(% individual net earnings)						
Gross pension wealth	9.1	9.1	9.1	9.1	8.5	6.4
(multiple of individual gross earnings)	10.4	10.4	10.4	10.4	9.7	7.3
Net pension wealth	9.1	9.1	9.1	9.1	8.5	6.4
(multiple of individual gross earnings)	10.4	10.4	10.4	10.4	9.7	7.3

StatLink http://dx.doi.org/10.1787/888932554318

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	46.6	28.8	43.1	57.5	80.8	80.8
(% average gross earnings)						
Net relative pension level	48.6	30.0	45.0	60.0	84.3	84.3
(% net average earnings)						
Gross replacement rate	57.5	57.5	57.5	57.5	53.8	40.4
(% individual gross earnings)						
Net replacement rate	59.9	59.6	59.9	60.0	56.2	41.8
(% individual net earnings)						
Gross pension wealth	10.5	10.5	10.5	10.5	9.8	7.4
(multiple of individual gross earnings)	12.0	12.0	12.0	12.0	11.2	8.4
Net pension wealth	10.5	10.5	10.5	10.5	9.8	7.4
(multiple of individual gross earnings)	12.0	12.0	12.0	12.0	11.2	8.4

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	34.4	21.3	31.9	42.5	59.7	59.7
(% average gross earnings)						
Net relative pension level	35.9	22.2	33.3	44.4	62.3	62.3
(% net average earnings)						
Gross replacement rate	42.5	42.5	42.5	42.5	39.8	29.8
(% individual gross earnings)						
Net replacement rate	44.3	44.0	44.3	44.4	41.5	30.9
(% individual net earnings)						
Gross pension wealth	7.8	7.8	7.8	7.8	7.3	5.4
(multiple of individual gross earnings)	8.8	8.8	8.8	8.8	8.3	6.2
Net pension wealth	7.8	7.8	7.8	7.8	7.3	5.4
(multiple of individual gross earnings)	8.8	8.8	8.8	8.8	8.3	6.2

StatLink http://dx.doi.org/10.1787/888932554926

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	46.6	28.8	43.1	57.5	80.8	80.8
(% average gross earnings)						
Net relative pension level	48.6	30.0	45.0	60.0	84.3	84.3
(% net average earnings)						
Gross replacement rate	57.5	57.5	57.5	57.5	53.8	40.4
(% individual gross earnings)						
Net replacement rate	59.9	59.6	59.9	60.0	56.2	41.8
(% individual net earnings)						
Gross pension wealth	10.5	10.5	10.5	10.5	9.8	7.4
(multiple of individual gross earnings)	12.0	12.0	12.0	12.0	11.2	8.4
Net pension wealth	10.5	10.5	10.5	10.5	9.8	7.4
(multiple of individual gross earnings)	12.0	12.0	12.0	12.0	11.2	8.4

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	34.4	21.3	31.9	42.5	59.7	59.7
(% average gross earnings)						
Net relative pension level	35.9	22.2	33.3	44.4	62.3	62.3
(% net average earnings)						
Gross replacement rate	42.5	42.5	42.5	42.5	39.8	29.8
(% individual gross earnings)						
Net replacement rate	44.3	44.0	44.3	44.4	41.5	30.9
(% individual net earnings)						
Gross pension wealth	7.8	7.8	7.8	7.8	7.3	5.4
(multiple of individual gross earnings)	8.8	8.8	8.8	8.8	8.3	6.2
Net pension wealth	7.8	7.8	7.8	7.8	7.3	5.4
(multiple of individual gross earnings)	8.8	8.8	8.8	8.8	8.3	6.2

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932554945

Viet Nam

Viet Nam: pension system in 2008

Viet Nam Social Security (VSS) manages and administers social security contributions and benefits (including pensions) for both private sector workers and government workers. The current pension scheme is a defined benefit scheme.

Key indicators

		Viet Nam	OECD
Average earnings	VND (million)	17.98	722.76
	USD	1 000	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	74.3	78.9
	At age 65	81.3	83.1
Population over age 65	% of working-age population	9.3	23.6

StatLink http://dx.doi.org/10.1787/888932554964

Qualifying conditions

Normal pension age is 60 for men and 55 for women with a minimum of 20 years of contributions, or age 50 for men with at least 30 years contributions. A lump sum payment is made for people with shorter contribution periods.

Benefit calculation

Earnings-related

Pension benefit formulae are different depending on total years of contribution. Up to the 15 years of contribution, the pension accrual rate is 3%, and is then 2% for males and 3% for females each additional year. Insured persons with more than 30 years of contributions also receive a lump sum equal to 50% of their average monthly earnings in the last 5 years before the pension is first paid for each year of contributions exceeding 30 years, up to five times the minimum monthly wage. The model assumes that this lump sum amount is paid as monthly price-indexed pension for life-time. The maximum pension is equal to 75% of the insured's average earnings in the last five years before the pension is first paid. If total contribution years are less than 20, retirees can only receive a lump sum payment of one month's average salary for each year of contribution payment. Pension in payment changes in line with minimum wage which is set to increase at 5% per annum in the long run but the model assumes that it is indexed to average wage growth. The minimum and maximum monthly earnings for contribution and benefit calculation purposes are VND 650 000 and VND 13 million respectively.

Variant careers

Early retirement

It is possible to retire and to start claiming the pension at age 55 for men and 50 for women under specific requirements. The pension is reduced by 1% of the insured's average earnings in the last 5 years before the pension is first paid for each year the pension is taken before the insured's normal pensionable age.

Late retirement

It is not possible to start claiming pension after normal pension age. It is possible to combine working and receiving pension.

Personal income tax and social security contributions

Taxation of workers

There are various tax relief systems in Viet Nam but they are not relevant to the standard individual (single without a child) used for the model. The personal income tax regulations do not specify the deductibility of social security contributions.

Taxation of worker's income

Tax rates applicable to regular income are as follows:

Taxed income per year	Tax rate (%)
VND 0-60 000 000	5
VND 60 000 000-VND 120 000 000	10
VND 120 000 000-VND 216 000 000	15
VND 216 000 000-VND 384 000 000	20
VND 384 000 000-VND 624 000 000	25
VND 624 000 000-VND 960 000 000	30
Above VND 960 000 000	35

Social security contributions payable by workers

Employees in 2008 paid 5% of monthly salary/wage for retirement benefits. From 2010, the contribution rate will increase by 1% every 2 years until it reaches to 8%. Moreover, if the monthly salary/wage, which is based for contribution, is greater than 20 times of the minimum wage, the contribution will be 20 times of the minimum wage.

Taxation of pensioners

There is no additional tax relief for pensioners.

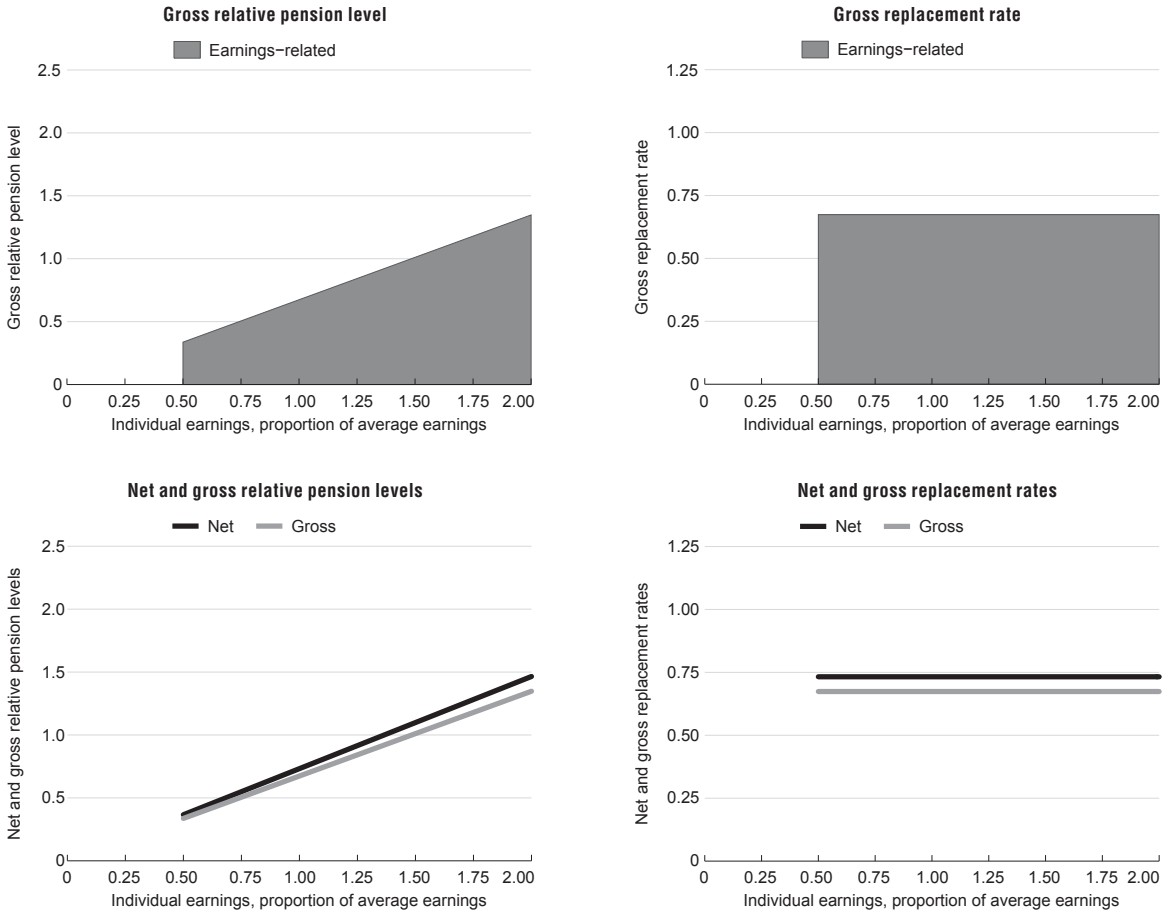
Taxation of pension income

The same taxation rule is applied to pension benefits.

Social security contributions payable by pensioners

Pensioners do not pay any social security contribution.

Pension modelling results: Viet Nam



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	54.6	33.7	50.5	67.4	101.1	134.8
(% average gross earnings)	50.1	30.9	46.4	61.9	92.8	123.8
Net relative pension level	59.3	36.6	54.9	73.3	109.9	146.5
(% net average earnings)	54.5	33.6	50.5	67.3	100.9	134.6
Gross replacement rate	67.4	67.4	67.4	67.4	67.4	67.4
(% individual gross earnings)	61.9	61.9	61.9	61.9	61.9	61.9
Net replacement rate	73.3	73.3	73.3	73.3	73.3	73.3
(% individual net earnings)	67.3	67.3	67.3	67.3	67.3	67.3
Gross pension wealth	14.7	14.7	14.7	14.7	14.7	14.7
(multiple of individual gross earnings)	18.1	18.1	18.1	18.1	18.1	18.1
Net pension wealth	14.7	14.7	14.7	14.7	14.7	14.7
(multiple of individual gross earnings)	18.1	18.1	18.1	18.1	18.1	18.1

StatLink http://dx.doi.org/10.1787/888932554337

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	54.6	33.7	50.5	67.4	101.1	134.8
(% average gross earnings)	50.1	30.9	46.4	61.9	92.8	123.8
Net relative pension level	59.3	36.6	54.9	73.3	109.9	146.5
(% net average earnings)	54.5	33.6	50.5	67.3	100.9	134.6
Gross replacement rate	67.4	67.4	67.4	67.4	67.4	67.4
(% individual gross earnings)	61.9	61.9	61.9	61.9	61.9	61.9
Net replacement rate	73.3	73.3	73.3	73.3	73.3	73.3
(% individual net earnings)	67.3	67.3	67.3	67.3	67.3	67.3
Gross pension wealth	14.7	14.7	14.7	14.7	14.7	14.7
(multiple of individual gross earnings)	18.1	18.1	18.1	18.1	18.1	18.1
Net pension wealth	14.7	14.7	14.7	14.7	14.7	14.7
(multiple of individual gross earnings)	18.1	18.1	18.1	18.1	18.1	18.1

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	52.6	32.5	48.7	65.0	97.5	130.0
(% average gross earnings)	49.4	30.5	45.7	60.9	91.4	121.9
Net relative pension level	57.2	35.3	53.0	70.7	106.0	141.3
(% net average earnings)	53.7	33.1	49.7	66.2	99.4	132.5
Gross replacement rate	65.0	65.0	65.0	65.0	65.0	65.0
(% individual gross earnings)	60.9	60.9	60.9	60.9	60.9	60.9
Net replacement rate	70.7	70.7	70.7	70.7	70.7	70.7
(% individual net earnings)	66.2	66.2	66.2	66.2	66.2	66.2
Gross pension wealth	14.3	14.3	14.3	14.3	14.3	14.3
(multiple of individual gross earnings)	17.9	17.9	17.9	17.9	17.9	17.9
Net pension wealth	14.3	14.3	14.3	14.3	14.3	14.3
(multiple of individual gross earnings)	17.9	17.9	17.9	17.9	17.9	17.9

StatLink http://dx.doi.org/10.1787/888932554983

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	54.6	33.7	50.5	67.4	101.1	134.8
(% average gross earnings)	50.1	30.9	46.4	61.9	92.8	123.8
Net relative pension level	59.3	36.6	54.9	73.3	109.9	146.5
(% net average earnings)	54.5	33.6	50.5	67.3	100.9	134.6
Gross replacement rate	67.4	67.4	67.4	67.4	67.4	67.4
(% individual gross earnings)	61.9	61.9	61.9	61.9	61.9	61.9
Net replacement rate	73.3	73.3	73.3	73.3	73.3	73.3
(% individual net earnings)	67.3	67.3	67.3	67.3	67.3	67.3
Gross pension wealth	18.8	18.8	18.8	18.8	18.8	18.8
(multiple of individual gross earnings)	25.1	25.1	25.1	25.1	25.1	25.1
Net pension wealth	18.8	18.8	18.8	18.8	18.8	18.8
(multiple of individual gross earnings)	25.1	25.1	25.1	25.1	25.1	25.1

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	52.6	32.5	48.7	65.0	97.5	130.0
(% average gross earnings)	49.4	30.5	45.7	60.9	91.4	121.9
Net relative pension level	57.2	35.3	53.0	70.7	106.0	141.3
(% net average earnings)	53.7	33.1	49.7	66.2	99.4	132.5
Gross replacement rate	65.0	65.0	65.0	65.0	65.0	65.0
(% individual gross earnings)	60.9	60.9	60.9	60.9	60.9	60.9
Net replacement rate	70.7	70.7	70.7	70.7	70.7	70.7
(% individual net earnings)	66.2	66.2	66.2	66.2	66.2	66.2
Gross pension wealth	18.4	18.4	18.4	18.4	18.4	18.4
(multiple of individual gross earnings)	24.8	24.8	24.8	24.8	24.8	24.8
Net pension wealth	18.4	18.4	18.4	18.4	18.4	18.4
(multiple of individual gross earnings)	24.8	24.8	24.8	24.8	24.8	24.8

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 8% per year converging steadily to 2.5%, giving an average of 5.25%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932555002

India

India: pension system in 2008

Workers are covered under the earnings-related employee pension scheme and defined contribution employee provident fund administered by the Employees Provident Fund Organisation (EPFO) and other employer managed funds.

Key indicators

		India	OECD
Average earnings	INR	154 400	1 766 300
	USD	3 500	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	63.6	78.9
	At age 65	78.7	83.1
Population over age 65	% of working-age population	7.7	23.6

StatLink http://dx.doi.org/10.1787/888932555021

Qualifying conditions

Normal pension age for earnings related pension scheme is 58 with minimum of ten years of contribution and for earnings related provident fund schemes, it is 55 years.

The average annual earnings of covered workers were estimated to be INR 154 418 in 2007.

Benefit calculation

Employees Provident Fund Scheme (EPF)

The employee contributes 12% of his monthly salary towards this fund and the employer matches this contribution. 3.67% of the employer's share goes towards the EPF. This combined 15.67% accumulates as a lump sum.

There is no annuity and full accumulations are paid on retirement from service after attaining 55 years of age. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

Employees Pension Scheme (EPS)

Of the 12% contribution payable by the employer as mentioned above, 8.33% is diverted to EPS and the Central Government contributes a subsidy of 1.17% of the salary into the EPS. This accumulation is used to pay various pension benefits on retirement or early termination. The kind of pension a member gets under the scheme depends upon the age at which they retire and the number of years of eligible service.

Monthly pension = (pensionable salary × pensionable service)/70

The maximum possible replacement rate is roughly 50%. To obtain the maximum benefit, a member would not only need to be in the scheme for 35 years, but would also need to opt for contributions at higher salary at the time of joining the scheme. This option cannot be exercised retrospectively. Otherwise, there is a ceiling to contributions of INR 6 500.

Variant careers

Early retirement

The EPS can be claimed from age 50 with ten years of contribution and the benefits are reduced by 3% per year of early retirement. If a member leaves his job before rendering at least ten years of service, he is entitled to a withdrawal benefit. The amount he can withdraw is a proportion of his monthly salary at the date of exit from employment. This

proportion depends on the number of years of eligible services he has rendered. No pension is payable in cases where there is a break in service before ten years.

In case of EPF, there are multiple scenarios which allow for early access to the accumulation. Partial withdrawals relate to marriage, housing advance, financing life insurance policy, illness of members/family members, withdrawals are also permitted one year before retirement, etc. In addition to various permitted partial withdrawals, employees can close their account and withdraw the full corpus in case they move from one employer to another or decide to retire early.

No gratuity can be claimed before five years of service.

Late retirement

It is not possible to delay claiming pension after normal pension age.

Personal income tax and social security contributions

Taxation of workers

Health insurance premium up to INR 15 000 is deductible (not included in the model). Transport allowance of INR 800 per month is exempted from taxation (included in the model). Total deduction of up to INR 100 000 is applied to social security contribution.

Taxation of worker's income

India follows a financial year beginning April. Given below are the rates applicable for 2008-09.

Annual income from all sources (INR)	Income tax rates for:		Education cess (%)
	Male below 65 years (%)	Women below 65 years (%)	
Up to 150 000	Nil	Nil	Nil
150 001-180 000	10	Nil	3
180 001-300 000	10	10	3
300 001-500 000	20	20	3
500 001 and above*	30	30	3

* There is a surcharge of 10% on incomes above INR 1 000 000.

Taxation of pensioners

Health insurance premium of up to INR 20 000 is deductible for senior citizens over 65 years.

Taxation of pension income

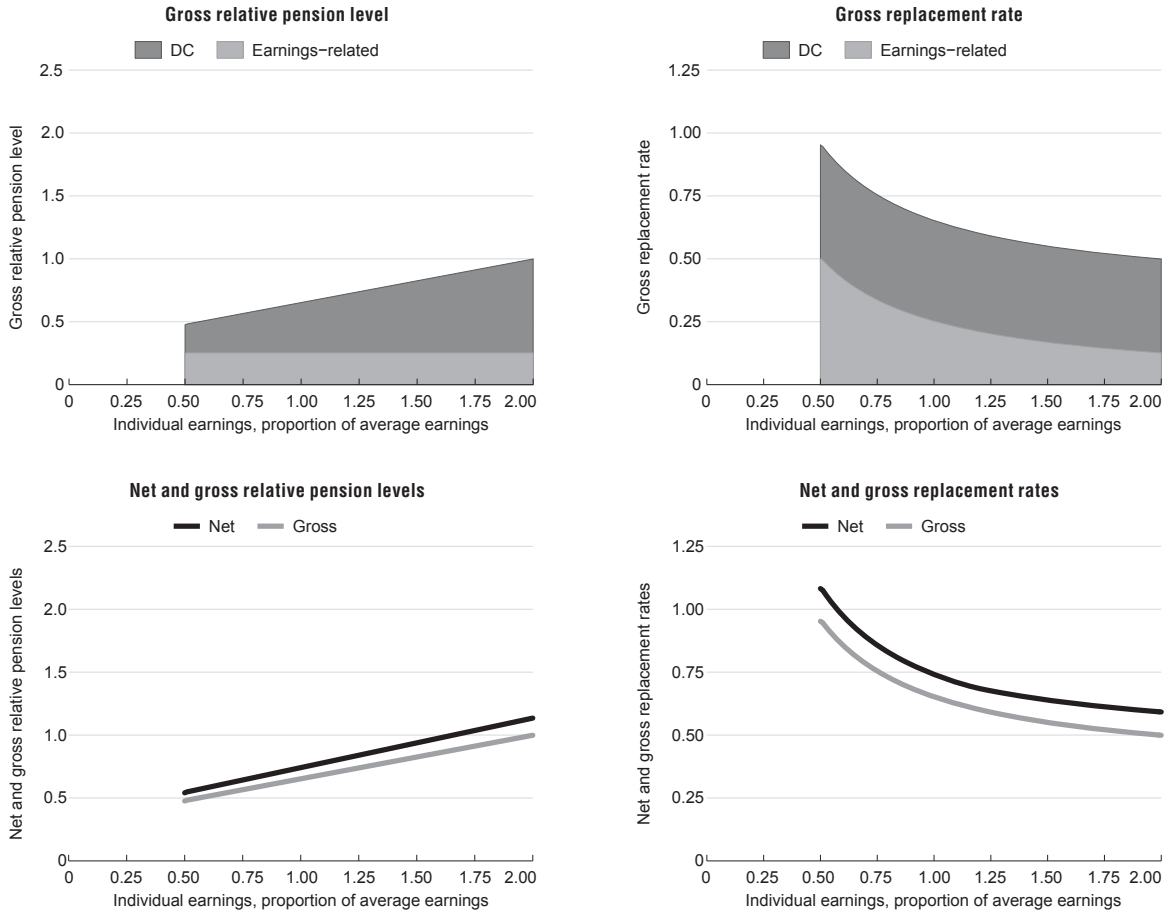
Defined contribution pension is tax exempted. The following tax rules apply to senior citizens over age 65. An education cess of 3% is charged on the total tax amount.

Annual income (INR)	Tax rate
Where the total income does not exceed INR 225 000	Nil
Where the total income exceeds INR 225 000 but does not exceed INR 300 000	10% of the amount by which the total income exceeds INR 225 000
Where the total income exceeds INR 300 000 but does not exceed INR 500 000	INR 7 500 + 20% of the amount by which the total income exceeds INR 300 000
Where the total income exceeds INR 500 000	INR 47 500 + 30% of the amount by which the total income exceeds INR 500 000

Social security contributions payable by pensioners

Pensioners do not pay any social security contribution.

Pension modelling results: India



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	58.7	47.6	56.6	65.2	82.6	99.9
(% average gross earnings)	55.4	45.4	53.6	61.4	77.0	92.7
Net relative pension level	66.7	54.1	64.3	74.1	93.8	113.5
(% net average earnings)	63.0	51.6	60.9	69.8	87.5	105.3
Gross replacement rate	72.4	95.2	75.4	65.2	55.0	49.9
(% individual gross earnings)	68.4	90.9	71.4	61.4	51.4	46.3
Net replacement rate	82.3	108.2	85.7	74.1	63.9	59.2
(% individual net earnings)	77.8	103.3	81.1	69.8	58.8	54.3
Gross pension wealth	12.4	16.1	12.9	11.2	9.5	8.7
(multiple of individual gross earnings)	13.0	17.1	13.5	11.7	9.8	8.9
Net pension wealth	12.4	16.1	12.9	11.2	9.5	8.7
(multiple of individual gross earnings)	13.0	17.1	13.5	11.7	9.8	8.9

StatLink http://dx.doi.org/10.1787/888932554356

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	61.0	49.2	58.8	68.0	86.6	105.1
(% average gross earnings)	57.6	46.9	55.5	63.9	80.7	97.4
Net relative pension level	69.3	55.9	66.8	77.3	98.4	119.4
(% net average earnings)	65.4	53.3	63.1	72.6	91.7	110.7
Gross replacement rate	75.3	98.4	78.4	68.0	57.7	52.6
(% individual gross earnings)	71.1	93.7	74.1	63.9	53.8	48.7
Net replacement rate	85.6	111.8	89.1	77.3	67.0	62.3
(% individual net earnings)	80.7	106.5	84.2	72.6	61.5	57.1
Gross pension wealth	12.9	16.7	13.4	11.7	10.0	9.1
(multiple of individual gross earnings)	13.5	17.6	14.0	12.2	10.3	9.4
Net pension wealth	12.9	16.7	13.4	11.7	10.0	9.1
(multiple of individual gross earnings)	13.5	17.6	14.0	12.2	10.3	9.4

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	46.4	38.2	44.8	51.2	64.0	76.8
(% average gross earnings)	44.0	36.5	42.6	48.4	59.9	71.5
Net relative pension level	52.7	43.4	50.9	58.2	72.8	87.3
(% net average earnings)	50.0	41.5	48.4	55.0	68.1	81.3
Gross replacement rate	57.2	76.3	59.8	51.2	42.7	38.4
(% individual gross earnings)	54.3	73.1	56.8	48.4	40.0	35.8
Net replacement rate	65.0	86.7	67.9	58.2	49.6	45.5
(% individual net earnings)	61.7	83.0	64.5	55.0	45.7	41.9
Gross pension wealth	9.8	12.9	10.2	8.8	7.4	6.7
(multiple of individual gross earnings)	10.2	13.7	10.7	9.2	7.6	6.9
Net pension wealth	9.8	12.9	10.2	8.8	7.4	6.7
(multiple of individual gross earnings)	10.2	13.7	10.7	9.2	7.6	6.9

StatLink http://dx.doi.org/10.1787/888932555040

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	56.0	45.8	54.1	62.1	78.0	93.9
(% average gross earnings)	53.0	43.8	51.3	58.5	72.9	87.3
Net relative pension level	63.6	52.1	61.5	70.5	88.6	106.7
(% net average earnings)	60.3	49.8	58.3	66.5	82.8	99.2
Gross replacement rate	69.1	91.6	72.1	62.1	52.0	47.0
(% individual gross earnings)	65.5	87.6	68.4	58.5	48.6	43.7
Net replacement rate	78.6	104.1	82.0	70.5	60.4	55.7
(% individual net earnings)	74.4	99.6	77.7	66.5	55.6	51.2
Gross pension wealth	11.8	15.5	12.3	10.6	9.0	8.1
(multiple of individual gross earnings)	12.4	16.4	12.9	11.1	9.3	8.4
Net pension wealth	11.8	15.5	12.3	10.6	9.0	8.1
(multiple of individual gross earnings)	12.4	16.4	12.9	11.1	9.3	8.4

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	43.8	36.4	42.4	48.1	59.6	71.0
(% average gross earnings)	41.6	35.0	40.4	45.6	55.9	66.3
Net relative pension level	49.7	41.4	48.2	54.7	67.7	80.7
(% net average earnings)	47.3	39.7	45.9	51.8	63.5	75.3
Gross replacement rate	54.0	72.8	56.5	48.1	39.7	35.5
(% individual gross earnings)	51.4	69.9	53.8	45.6	37.3	33.1
Net replacement rate	61.4	82.7	64.2	54.7	46.1	42.1
(% individual net earnings)	58.4	79.4	61.2	51.8	42.7	38.8
Gross pension wealth	9.2	12.3	9.6	8.2	6.8	6.1
(multiple of individual gross earnings)	9.7	13.1	10.1	8.6	7.1	6.3
Net pension wealth	9.2	12.3	9.6	8.2	6.8	6.1
(multiple of individual gross earnings)	9.7	13.1	10.1	8.6	7.1	6.3

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 4% per year going to 6% over 15 years before converging steadily to 3.5%, giving an average of 4.8%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932555059

Pakistan

Pakistan: pension system in 2008

Workers of an industry or establishment with 5 or more employees are required to be insured under earnings-related pension called employees' old-age benefit scheme.

The model assumes that workers are covered by earnings-related pension (EOBI).

Key indicators

		Pakistan	OECD
Average earnings	PKR	82 700	3 292 700
	USD	1 000	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	66.4	78.9
	At age 65	79.6	83.1
Population over age 65	% of working-age population	6.9	23.6

StatLink http://dx.doi.org/10.1787/888932555078

Qualifying conditions

Normal pension age for earnings-related pension is age 60 for men and 55 for women with 15 years of contribution (relaxation is provided for those joining the scheme at older ages).

Normal pension age for employees is 60 for both men and women. Civil servants could retire any time once minimum service period of 25 years is fulfilled.

Benefit calculation

Earnings-related

The pension is calculated as 2% of the insured's average monthly earnings in the last 12 months multiplied by the number of years of covered employment. Indexation rule for pension in payment is discretionary and the model assumes price-indexation.

Minimum pension

Minimum pension is PKR 2 000 per month in 2009. Indexation for pension in payment is discretionary and the model assumes price-indexation.

The amount of (both maximum and minimum) insured monthly wage is PKR 6 000.

Earnings-related pension for civil servants

Accrual rate is 7/300 for each year of service subject to a maximum of 70% (*i.e.* maximum 30 years service). Earning base is last drawn basic pay plus (in some cases small element of) non-wage pay. Various allowances that are part of the compensation package are not included in the earning base for pensions. The relevant earning measure is about 54% of the total wage. Indexation for pension in payment is discretionary and the model assumes price-indexation. The pensioners are entitled to commute 35% of their gross pension at retirement calculated as per the defined commutation factors.

Variant careers

Early retirement

For the private sector employees, the earliest age at which men can start claiming pension is 55 and this is 50 for women. In the civil service pension, individuals could start claiming pension after 25 years of service.

The reduction applied (for EOBI) is 0.5% for each completed month by which age at retirement falls short of 60 (55 years for women). This reduction is also applicable to the minimum pension. However, no reduction is applied to government workers. They are entitled to receive 100% of their accrued pension after 25 years service.

Late retirement

It is possible to start receiving pension after normal pension age.

Personal income tax and social security contributions

Taxation of workers

The amount paid to Workers' welfare fund and Workers' participation fund by the employer is deductible allowance (expense) for employer.

Taxation of worker's income

Taxable income	Tax rate (%)
Where taxable income does not exceed PKR 180 000	0
Where taxable income exceeds PKR 180 000 but does not exceed PKR 250 000	0.5
Where taxable income exceeds PKR 250 000 but does not exceed PKR 350 000	0.75
Where taxable income exceeds PKR 350 000 but does not exceed PKR 400 000	1.5
Where taxable income exceeds PKR 400 000 but does not exceed PKR 450 000	2.5
Where taxable income exceeds PKR 450 000 but does not exceed PKR 550 000	3.5
Where taxable income exceeds PKR 550 000 but does not exceed PKR 650 000	4.5
Where taxable income exceeds PKR 650 000 but does not exceed PKR 750 000	6
Where taxable income exceeds PKR 750 000 but does not exceed PKR 900 000	7.5
Where taxable income exceeds PKR 900 000 but does not exceed PKR 1 050 000	9
Where taxable income exceeds PKR 1 050 000 but does not exceed PKR 1 200 000	10
Where taxable income exceeds PKR 1 200 000 but does not exceed PKR 1 450 000	11
Where taxable income exceeds PKR 1 450 000 but does not exceed PKR 1 700 000	12.5
Where taxable income exceeds PKR 1 700 000 but does not exceed PKR 1 950 000	14
Where taxable income exceeds PKR 1 950 000 but does not exceed PKR 2 250 000	15
Where taxable income exceeds PKR 2 250 000 but does not exceed PKR 2 850 000	16
Where taxable income exceeds PKR 2 850 000 but does not exceed PKR 3 550 000	17.5
Where taxable income exceeds PKR 3 550 000 but does not exceed PKR 4 550 000	18.5
Where taxable income exceeds PKR 4 550 000 but does not exceed PKR 8 650 000	19
Where taxable income exceeds PKR 8 650 000	20

For female tax payers, no tax shall be charged if the income does not exceed PKR 240 000.

Social security contributions payable by workers

Employer pays 5% of the minimum wage (PKR 6 000) and employee pays contribution at the rate of 1% of minimum wage.

Taxation of pensioners

The additional tax relief for older people is 50% for taxable income less than or equal to PKR 750 000.

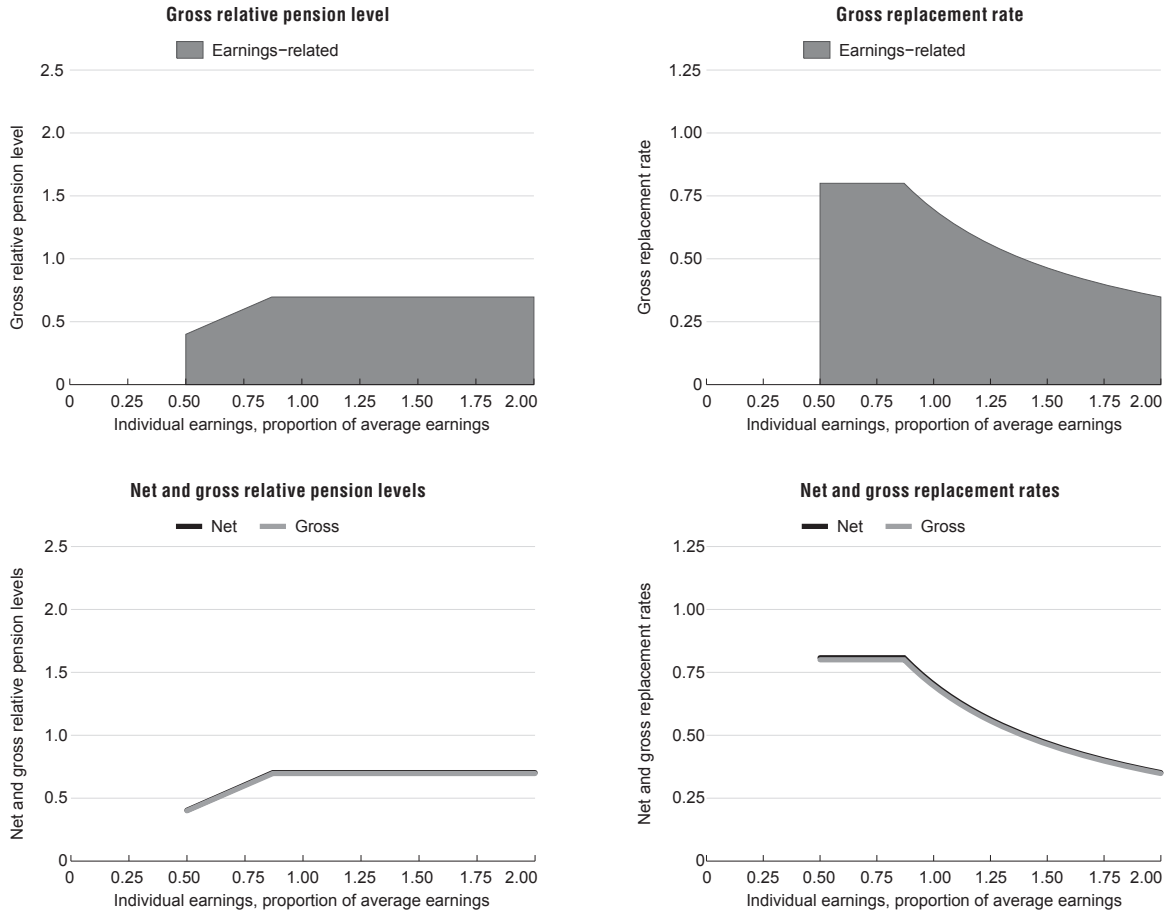
Taxation of pension income

All benefits received from the government pension scheme or from a registered private sector superannuation (Pension) scheme on retirement or death are not taxed. Lump sum withdrawal on death and retirement from an approved pension fund under the Voluntary Pension System is tax free up to 25% of account balance, but regular monthly drawdown even after retirement or death is taxable income. Pension payments from EOBI are nominal and do not cross taxable limits although they are not exempt by any specific provision.

Social security contributions payable by pensioners

Pensioners do not pay any social security contribution.

Pension modelling results: Pakistan



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	64.8	40.0	60.0	69.6	69.6	69.6
(% average gross earnings)	56.7	35.0	52.5	60.9	60.9	60.9
Net relative pension level	65.5	40.4	60.6	70.3	70.3	70.3
(% net average earnings)	57.3	35.4	53.0	61.5	61.5	61.5
Gross replacement rate	80.0	80.0	80.0	69.6	46.4	34.8
(% individual gross earnings)	70.0	70.0	70.0	60.9	40.6	30.5
Net replacement rate	80.8	80.8	80.8	70.3	46.9	35.2
(% individual net earnings)	70.7	70.7	70.7	61.5	41.0	30.8
Gross pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	14.2	14.2	14.2	12.3	8.2	6.2
Net pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	14.2	14.2	14.2	12.3	8.2	6.2

StatLink http://dx.doi.org/10.1787/888932554375

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	64.8	40.0	60.0	69.6	69.6	69.6
(% average gross earnings)						
Net relative pension level	65.5	40.4	60.6	70.3	70.3	70.3
(% net average earnings)						
Gross replacement rate	80.0	80.0	80.0	69.6	46.4	34.8
(% individual gross earnings)						
Net replacement rate	80.8	80.8	80.8	70.3	46.9	35.2
(% individual net earnings)						
Gross pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	16.2	16.2	16.2	14.1	9.4	7.0
Net pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	16.2	16.2	16.2	14.1	9.4	7.0

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	48.6	30.0	45.0	52.2	52.2	52.2
(% average gross earnings)						
Net relative pension level	49.1	30.3	45.5	52.8	52.8	52.8
(% net average earnings)						
Gross replacement rate	60.0	60.0	60.0	52.2	34.8	26.1
(% individual gross earnings)						
Net replacement rate	60.6	60.6	60.6	52.8	35.2	26.4
(% individual net earnings)						
Gross pension wealth	9.8	9.8	9.8	8.5	5.7	4.3
(multiple of individual gross earnings)	12.1	12.1	12.1	10.6	7.0	5.3
Net pension wealth	9.8	9.8	9.8	8.5	5.7	4.3
(multiple of individual gross earnings)	12.1	12.1	12.1	10.6	7.0	5.3

StatLink http://dx.doi.org/10.1787/888932555097

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	64.8	40.0	60.0	69.6	69.6	69.6
(% average gross earnings)						
Net relative pension level	65.5	40.4	60.6	70.3	70.3	70.3
(% net average earnings)						
Gross replacement rate	80.0	80.0	80.0	69.6	46.4	34.8
(% individual gross earnings)						
Net replacement rate	80.8	80.8	80.8	70.3	46.9	35.2
(% individual net earnings)						
Gross pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	16.2	16.2	16.2	14.1	9.4	7.0
Net pension wealth	13.1	13.1	13.1	11.4	7.6	5.7
(multiple of individual gross earnings)	16.2	16.2	16.2	14.1	9.4	7.0

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	48.6	30.0	45.0	52.2	52.2	52.2
(% average gross earnings)						
Net relative pension level	49.1	30.3	45.5	52.8	52.8	52.8
(% net average earnings)						
Gross replacement rate	60.0	60.0	60.0	52.2	34.8	26.1
(% individual gross earnings)						
Net replacement rate	60.6	60.6	60.6	52.8	35.2	26.4
(% individual net earnings)						
Gross pension wealth	9.8	9.8	9.8	8.5	5.7	4.3
(multiple of individual gross earnings)	12.1	12.1	12.1	10.6	7.0	5.3
Net pension wealth	9.8	9.8	9.8	8.5	5.7	4.3
(multiple of individual gross earnings)	12.1	12.1	12.1	10.6	7.0	5.3

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 10.5% per year converging steadily to 3.5%, giving an average of 7%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932555116

Sri Lanka

Sri Lanka: pension system in 2008

Employees in the formal private sector are covered by defined contribution plans: employee private fund, which is used in the model, employee trust fund or approved private sector provident fund. Civil servants were formally covered by public sector pension scheme, but since 2003 they contribute to defined benefit type social security scheme called contributory pension scheme.

Key indicators

		Sri Lanka	OECD
Average earnings	LKR	228 600	4 664 600
	USD	2 000	40 600
Public pension spending	% of GDP		7.0
Life expectancy	At birth	74.0	78.9
	At age 65	81.6	83.1
Population over age 65	% of working-age population	11.4	23.6

StatLink http://dx.doi.org/10.1787/888932555135

Qualifying conditions

Age 55 for men or 50 for women and retire from covered employment. At any age if the company is closed by the government or the employed women who get married.

Normal pension age for public sector workers is 60.

Benefit calculation

Defined contribution

Employee provident fund is a fully-funded defined-contribution plan and employees contribute 8% of wage and employers pay 12%. The entire lump sum is paid at the time of exit. For comparison with other economies, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates. It is possible to withdraw funds from the account every five years.

Variant careers

Early retirement

At any age if the government closes the place of employment, if emigrating permanently, or for employed women who marry.

Late retirement

It is not possible to start claiming pension after the normal pension age.

Personal income tax and social security contributions

Taxation of workers

There is no income tax relief and the deduction of work-related expenses.

Taxation of worker's income

Following taxation rules are applied in 2008.

Annual income ban	Tax rate (%)
Up to LKR 300 000	0
LKR 300 001-LKR 500 000	10
LKR 500 001-LKR 700 000	15
LKR 700 001-LKR 900 000	20
LKR 900 001-LKR 1 100 000	25
LKR 1 100 001-LKR 1 600 000	30
Over LKR 1 600 000	35

Social security contributions payable by workers

Employees' contributions are deductible up to a limit of LKR 25 000 per annum.

Taxation of pensioners

All purchased annuities of retirees are exempt.

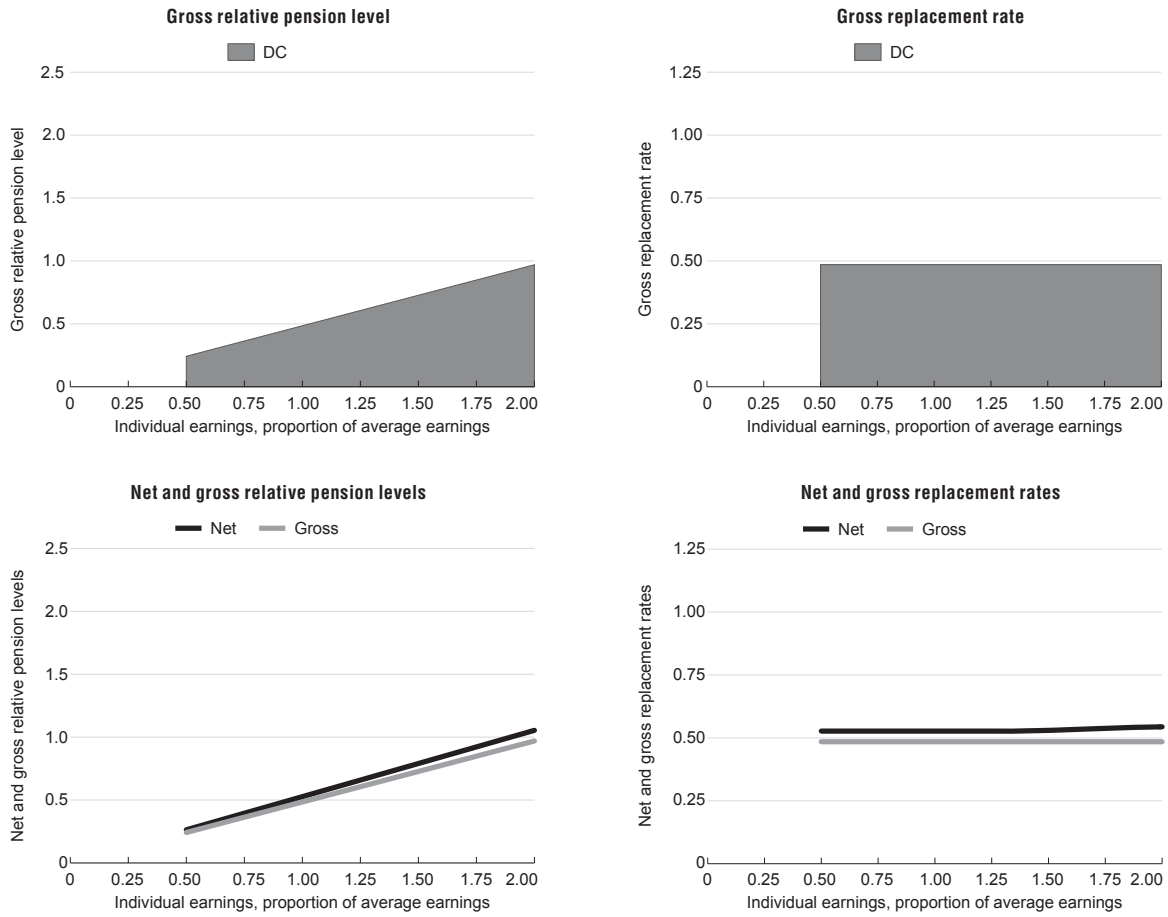
Taxation of pension income

Annual income band	Tax rate (%)
Up to LKR 2 000 000	0
LKR 2 000 001-LKR 2 500 000	5
LKR 2 500 001-LKR 3 000 000	10
Over LKR 3 000 000	15

Social security contributions payable by pensioners

Pensioners do not pay any social security contribution.

Pension modelling results: Sri Lanka



Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	39.3	24.2	36.4	48.5	72.7	97.0
(% average gross earnings)	25.0	15.4	23.1	30.8	46.2	61.6
Net relative pension level	42.7	26.3	39.5	52.7	79.0	105.4
(% net average earnings)	27.1	16.7	25.1	33.5	50.2	67.0
Gross replacement rate	48.5	48.5	48.5	48.5	48.5	48.5
(% individual gross earnings)	30.8	30.8	30.8	30.8	30.8	30.8
Net replacement rate	52.7	52.7	52.7	52.7	53.0	54.4
(% individual net earnings)	33.5	33.5	33.5	33.5	33.7	34.6
Gross pension wealth	9.2	9.2	9.2	9.2	9.2	9.2
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6
Net pension wealth	9.2	9.2	9.2	9.2	9.2	9.2
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6

StatLink http://dx.doi.org/10.1787/888932554394

Alternative economic and career length assumptions

40 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	46.8	28.9	43.3	57.7	86.6	115.4
(% average gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net relative pension level	50.8	31.4	47.1	62.7	94.1	125.5
(% net average earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross replacement rate	57.7	57.7	57.7	57.7	57.7	57.7
(% individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net replacement rate	62.7	62.7	62.7	62.7	63.1	64.8
(% individual net earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross pension wealth	11.0	11.0	11.0	11.0	11.0	11.0
(multiple of individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net pension wealth	11.0	11.0	11.0	11.0	11.0	11.0
(multiple of individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

30 year career under OECD economic assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	32.3	20.0	29.9	39.9	59.9	79.8
(% average gross earnings)	25.0	15.4	23.1	30.8	46.2	61.6
Net relative pension level	35.1	21.7	32.5	43.4	65.1	86.7
(% net average earnings)	27.1	16.7	25.1	33.5	50.2	67.0
Gross replacement rate	39.9	39.9	39.9	39.9	39.9	39.9
(% individual gross earnings)	30.8	30.8	30.8	30.8	30.8	30.8
Net replacement rate	43.4	43.4	43.4	43.4	43.6	44.8
(% individual net earnings)	33.5	33.5	33.5	33.5	33.7	34.6
Gross pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6
Net pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6

StatLink http://dx.doi.org/10.1787/888932555154

Economy specific assumptions

40 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	46.8	28.9	43.3	57.7	86.6	115.4
(% average gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net relative pension level	50.8	31.4	47.1	62.7	94.1	125.5
(% net average earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross replacement rate	57.7	57.7	57.7	57.7	57.7	57.7
(% individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net replacement rate	62.7	62.7	62.7	62.7	63.1	64.8
(% individual net earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Gross pension wealth	11.0	11.0	11.0	11.0	11.0	11.0
(multiple of individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net pension wealth	11.0	11.0	11.0	11.0	11.0	11.0
(multiple of individual gross earnings)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

30 year career under economy specific assumptions

Men Women (where different)	Median earner	Individual earnings, multiple of average				
		0.5	0.75	1	1.5	2
Gross relative pension level	32.3	20.0	29.9	39.9	59.9	79.8
(% average gross earnings)	25.0	15.4	23.1	30.8	46.2	61.6
Net relative pension level	35.1	21.7	32.5	43.4	65.1	86.7
(% net average earnings)	27.1	16.7	25.1	33.5	50.2	67.0
Gross replacement rate	39.9	39.9	39.9	39.9	39.9	39.9
(% individual gross earnings)	30.8	30.8	30.8	30.8	30.8	30.8
Net replacement rate	43.4	43.4	43.4	43.4	43.6	44.8
(% individual net earnings)	33.5	33.5	33.5	33.5	33.7	34.6
Gross pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6
Net pension wealth	7.6	7.6	7.6	7.6	7.6	7.6
(multiple of individual gross earnings)	7.6	7.6	7.6	7.6	7.6	7.6

Real earnings: 6% per year converging steadily to 2%, giving an average of 4%.
Price inflation: 5% per year converging steadily to 2.5%, giving an average of 3.75%.
Real rate of return: 7.5% per year converging steadily to 3.5%, giving an average of 5.5%.
Discount rate (for actuarial calculations): 2% per year.

StatLink http://dx.doi.org/10.1787/888932555173

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Union takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(81 2011 09 1 P) ISBN 978-92-64-10699-4 – No. 59715 2012

Pensions at a Glance Asia/Pacific 2011

Table of contents

Executive summary
Introduction
Overview of retirement-income systems
Methodology and structure of the report
References

Part I. Comparing pension policies
Key features of pension-system design
Retirement-income indicators
Gross replacement rates
Net replacement rates
Gross replacement rates with entry at age 30
Gross pension wealth
Net pension wealth
Pension-earnings link
Coverage
Life expectancy
Support ratio

Part II. Economy studies
Introduction
China
Hong Kong
Indonesia
Malaysia
Philippines
Singapore
Thailand
Vietnam
India
Pakistan
Sri Lanka

Please cite this publication as:
OECD (2012), *Pensions at a Glance Asia/Pacific 2011*, OECD Publishing.
http://dx.doi.org/10.1787/9789264107007-en
This work is published on the *OECD iLibrary,* which gathers all OECD books, periodicals and statistical databases.
Visit ***www.oecd-ilibrary.org***, and do not hesitate to contact us for more information.

OECD*publishing*
www.oecd.org/publishing

WORLD BANK

ISBN 978-92-64-10699-4
81 2011 09 1 P

9 789264 106994