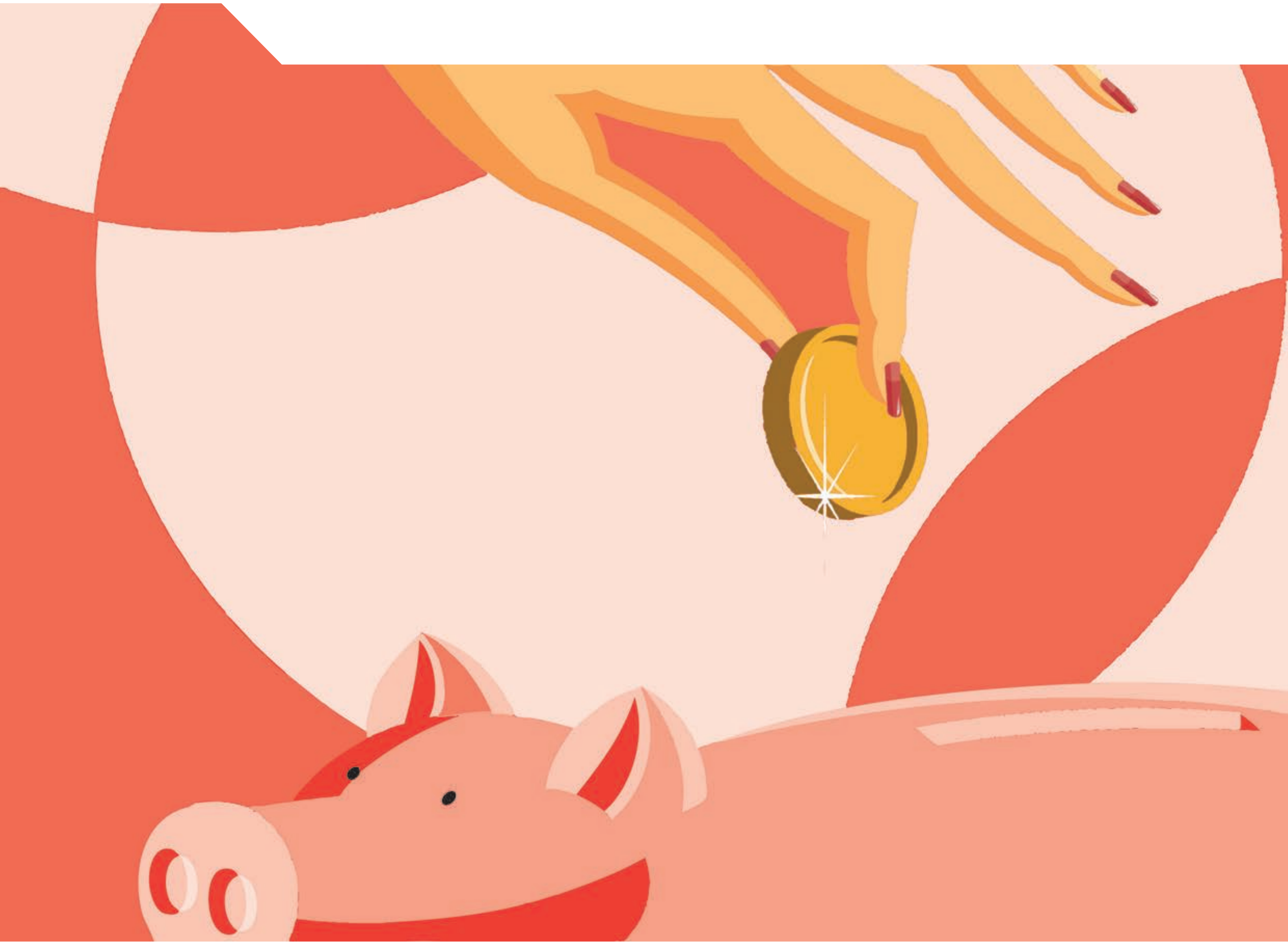
Pensions at a Glance Asia/Pacific 2022



OECD

Pensions at a Glance Asia/Pacific 2022

BETTER POLICIES FOR BETTER LIVES

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Foreword

This study presents a range of indicators to enable comparisons between the pension systems of economies in the Asia/Pacific region. It also includes data for the larger countries that are members of the Organisation for Economic Co-operation and Development (OECD). The report was drafted by Andrew Reilly of the Social Policy Division of the OECD Secretariat. Natalie Corry prepared the manuscript for publication. For this fifth report we are again indebted to the national experts who contributed to the updating of the models used, many of whom also assisted with previous publications. We are also indebted to the Korea Policy Centre staff for all their assistance in organising the annual meetings and for co8ordinating contacts with national experts.

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Executive summary

The biggest challenges facing pension systems in non-OECD Asian economies are rapid population ageing and low coverage. Efforts to close the coverage gap by expanding eligibility to larger shares of the labour force or through non-contributory pensions are at the heart of most discussions. Increasing life expectancy may weaken financial sustainability as people live longer in retirement and the number of pensioners relative to contributors grows. Moreover, as in other regions, reforming pensions is politically challenging as it often entails unpopular measures, such as increasing the retirement age, lowering benefits or increasing contribution rates.

The international exchange of pension reform approaches and experiences can provide valuable lessons for the design and implementation of future reforms. However, it is not always easy to compare the functioning of national pension systems, due to significant differences in institutional, technical, and legal details.

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

The format of this fifth report follows that of the previous editions that were based on the OECD's *Pensions at a Glance* series now covering the 38 member countries. The values contained within reflect the pension parameters in 2020. As with the original publications the report refers to single pensioners rather than family units.

The results are specifically analysed at three distinct earnings levels so that a more comprehensive portrayal of individual pension systems is given. Firstly, results are given for workers at average earnings, where it is assumed that the worker earns this relative 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, referred to as high earners. Entry to the pension system is assumed to be at age 22 and the models are based on a full career until the normal retirement age within that economy; for China, for example, it is assumed that a man will have to work for 38 years until age 60 before being eligible for retirement pension.

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. 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, Chapter 4 of the report provides detailed background information for all of the non-OECD economies covered. Comparable information on OECD countries is available online in the *Pensions at a Glance* series at http://oe.cd/pag.

To enable comparison between the non-OECD economies and specific OECD countries, the results are grouped by region and OECD status. The largest such grouping is East Asia/Pacific, which covers China, Hong Kong (China), 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: the Asia/Pacific countries of Australia, Canada, Japan, Korea, New Zealand and the United States; the largest European economies of France, Germany, Italy and the United Kingdom.

1 Design of pension systems

The indicators in this section detail the design of the national retirement income systems in the economies studied. The first indicator shows the taxonomy of the different kinds of retirement-income programmes found around the world. It uses this framework to describe the architecture of the 11 economies' pension systems. The second indicator covers basic, targeted and minimum income systems, showing the values of these systems. The third indicator looks at the mandatory earnings-related pension systems showing how benefits are determined in these schemes and the range of earnings that are covered. The final two indicators present the current and future retirement ages by pension scheme for individuals. Current ages are for those who retired in 2020 after a full career from age 22, whilst future retirement ages are for those entering the labour market at age 22 in 2020.

Architecture of national pension systems

Key results

Retirement-income regimes are diverse and often involve a number of different programmes. The taxonomy of pensions used here consists of two mandatory “tiers”; the first generates retirement income independent of past earnings level with the second covering earnings-related components. Voluntary provision, be it personal or employer-provided, makes up a third tier.

Figure 1.1 is based on the role of each part of the system. The first tier comprises programmes offering the first layer of social protection in old age, and for which past earnings are irrelevant in the calculation of retirement income. Such schemes often target some absolute, minimum standard of living in retirement. Mandatory earnings-related components (second-tier) contribute to smoothing consumption, and therefore standards of living, between working life and retirement. *Pensions at a Glance* focuses mainly on these mandatory components, although information is also provided on some widespread voluntary, private schemes (third tier).

Table 1.1 shows the architecture of pension systems in Asian economies based on the rules that determine eligibility and benefit level while categorising mandatory earnings-related pensions as public or private in accordance with national accounts. Panel A describes the latest legislation applying to future retirees while Panel B shows where those rules have changed compared to current retirees.

Basic pensions can take two different forms: a residence-based benefit or a benefit that is only available to those who contributed during their career. The level of the benefit may vary with the number of residence or contribution years but is independent of the earnings level during the career. Out of the Asian economies only Thailand has a residence-based basic pension for future retirees, with payment rates that vary by age. Two of the listed OECD countries have such a scheme, namely Canada and New Zealand.

Eligibility for ***targeted*** plans requires meeting some residence criteria. In these plans, the value of the benefit depends on income from other sources and possibly also assets. Hence, poorer pensioners receive higher benefits than better-off retirees. All countries have general safety nets of this type but only those countries are marked in which full-career workers with very low earnings (30% of average) would be entitled. This does not hold for any of the Asian economies.

Minimum pensions can refer to either the minimum of a specific contributory scheme, or to all schemes combined and are currently found in six Asian economies. In most countries, the value of entitlements only takes account of pensions rather than testing for other income. Minimum pensions either define a minimum for total lifetime entitlements, which may increase in level once the length of the contribution period exceeds certain thresholds, or they are based on minimum pension credits that calculate year-by-year entitlements of low earners based on a higher earnings level.

For the Asian economies, they all have mandatory second-tier earnings-related pensions, with New Zealand being the only country shown that does not have such a system. There are four kinds of scheme.

For future retirees public pay-as-you-go schemes will follow a general ***defined benefit*** (DB) format in six Asian economies and five of the listed OECD countries, with pension’s dependent on the number of years of contributions, accrual rates and individual pensionable earnings.

There are no ***points*** schemes in any of the Asia economies and amongst the OECD countries shown only France has such a system. Workers earn pension points based on their earnings. At retirement, the sum of pension points is multiplied by a pension-point value to convert them into a regular pension payment.

There are ***notional defined contribution*** (NDC) schemes at the core of the pension system in one of the Asian economies, China, and one of the listed OECD countries, Italy. These are pay-as-you-go public schemes with individual accounts that apply a notional rate of return to contributions made, mimicking Funded defined contribution (FDC) plans. The accounts are “notional” in that the balances exist only on the books of the managing institution. At retirement, the accumulated notional capital is converted into a monthly pension using a formula based on life expectancy.

Funded defined contribution (FDC) plans are compulsory for future retirees in six Asian economies and two OECD countries. In these schemes, contributions flow into an individual account. The accumulation of contributions and investment returns is usually converted into a monthly pension at retirement.

Figure 1.1. Taxonomy: Different types of retirement-income provision

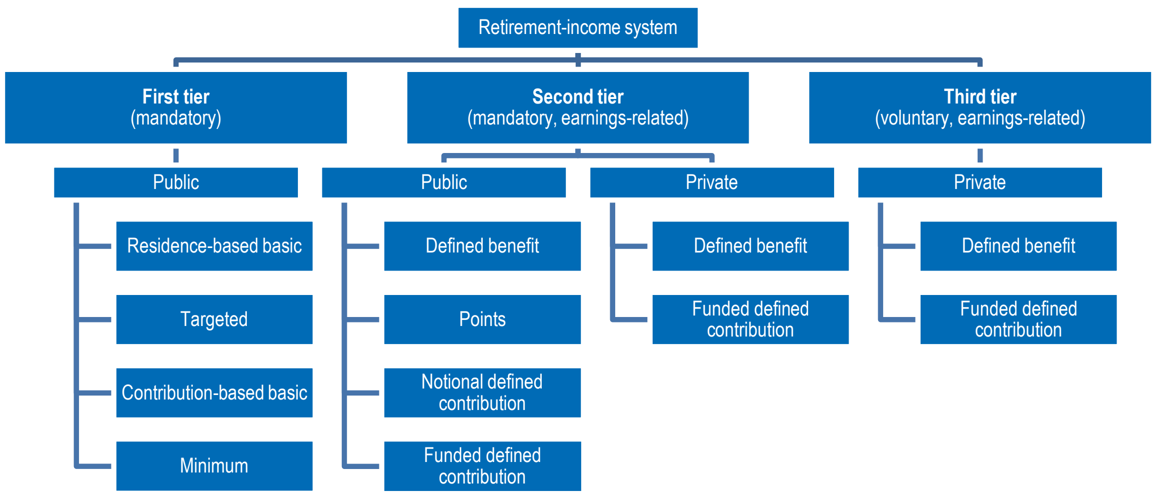

Table 1.1. Structure of future mandatory retirement-income provision

	First tier				Second tier			First tier				Second tier	
	Residence-based		Contribution-based					Residence-based		Contribution-based			
	Basic	Targeted	Basic	Minimum	Public	Private		Basic	Targeted	Basic	Minimum	Public	Private
East Asia/Pacific							**OECD Asia/Pacific**						
China				✓	NDC + FDC		Australia		✓				FDC
Hong Kong (China)			✓		FDC		Canada	✓	✓			DB	
Indonesia				✓	DB + FDC		Japan			✓		DB	
Malaysia					FDC		Korea			✓		DB	
Philippines			✓	✓	DB		New Zealand	✓					
Singapore					FDC		United States					DB	
Thailand	✓				DB								
Viet Nam				✓	DB		**Other OECD**						
							France				✓	DB + Points	
South Asia							Germany					Points	
India				✓	DB + FDC		Italy					NDC	
Pakistan				✓	DB		United Kingdom			✓			FDC [q]
Sri Lanka					FDC								

Note: A tick for the column "Targeted" is only shown if a full-career worker at 30% of the average wage is eligible. [q] = Quasi-mandatory scheme based on collective agreements with very high coverage rate. DB = defined benefit, FDC = funded defined contribution, NDC = notional defined contribution.
Source: Chapter 4 for Asian economies and "Country Profiles" available at http://oe.cd/pag for OECD countries.

Basic, targeted and minimum pensions

Key results

Basic and minimum pensions along with social assistance are defined as the first layer of protection for the elderly within the pension system. They make up the first tier of the taxonomy of pension systems, which was set out in the previous indicator of the architecture of national pension schemes.

Basic pensions only exist in two non-OECD economies compared to five of the OECD countries listed. Five Asian economies provide a social assistance benefit equivalent to 8.1% of average earnings. Furthermore, five economies provide a minimum pension benefit, most often above the basic or social assistance level. For a full-career worker, the average minimum pension is 24.5% of average earnings.

There are four main ways in which economies might provide retirement incomes to meet a minimum standard of living in old age (Table 1.2). The left-hand part of the table shows the value of benefits provided under these different types of scheme. Values are presented in relative terms – as a percentage of countries' gross average wages – to facilitate comparisons between countries (see the "Average wage" indicator in Chapter 3). The right-hand part of the table shows the number of total recipients as a share of the population aged 65 and over.

Benefit level

Benefit values are shown for a single person. In some cases – usually with minimum contributory pensions – each partner in a couple receives an individual entitlement. In other cases – especially for targeted schemes – the couple is treated as the unit of assessment and generally receives less than twice the entitlement of a single person.

The analysis of benefit values can be complicated by the existence of multiple programmes in some economies. However, in non-OECD Asian economies this is very rarely the case as only India and Viet Nam have dual systems.

There are four economies that do not have either a basic or minimum pension within their system (China, Malaysia, Singapore and Sri Lanka). Basic pensions exist in only Hong Kong (China), the Philippines and Thailand, with the Philippines also having a minimum pension along with India, Indonesia, Pakistan and Viet Nam.

Coverage

The importance of first-tier benefits varies across Asian economies. The percentage of over-65s receiving such benefits is shown in the final four columns of Table 1.2. Different approaches of reporting the number of recipients, for example in case of benefits paid to couples or even households, may blur the data comparability across countries to some extent. Naturally, residence-based basic pensions have on average the highest coverage. However, contribution-based basic pensions also have very high recipient numbers in most countries that have such a scheme. Sometimes recipient numbers exceed 100% of the population aged 65 and older hinting to recipients younger than 65 or living abroad. Targeted schemes in Asian economies show the greatest variation, being claimed by only 7% of those aged 65 or over in Malaysia but by 56% of those in the Philippines and 42% in Hong Kong (China). These higher rates are primarily due to historically low coverage rates in mandatory pension schemes.

Table 1.2. Current level and recipients of first-tier benefits

	Benefit value in 2020 (% of gross AW earnings)				Recipients in 2020 (% of population aged 65 and over)					Benefit value in 2020 (% of gross AW earnings)				Recipients in 2020 (% of population aged 65 and over)			
	Residence-based basic	Targeted	Contribution-based basic	Minimum	Residence-based basic	Targeted	Contribution-based basic	Minimum		Residence-based basic	Targeted	Contribution-based basic	Minimum	Residence-based basic	Targeted	Contribution-based basic	Minimum
East Asia/Pacific									**OECD Asia/Pacific**								
China									Australia		27.0				63		
Hong Kong (China)		14.6				42			Canada	12.9	19.2			98	32		
Indonesia				12.3					Japan		18.0	15.1			3	92	
Malaysia		8.5				7			Korea		7.8	11.9			69	43	
Philippines		3.3	2.0	8.4		56	35		New Zealand	39.8				105			
Singapore									United States		15.6				2		
Thailand	4.1				100												
Viet Nam		5.2				21			**Other OECD**								
									France		28.4		20.2		4		38
South Asia									Germany		19.3				1		
India				5.6					Italy		19.8		22.7		7		
Pakistan				35.4					United Kingdom		21.6	16.7			16	105	
Sri Lanka		5.0				19											

Note: Data are not available. The benefit level shown is for new pensioners in 2020. The contribution-based basic amounts refer to the benefit level for a full career. People in New Zealand cannot receive a targeted benefit on top of a full residence-based basic pension.
Source: Information provided by countries and OECD's Social Recipients database.

Figure 1.2. Non-contributory first-tier benefits

Percentage of gross average earnings, 2020

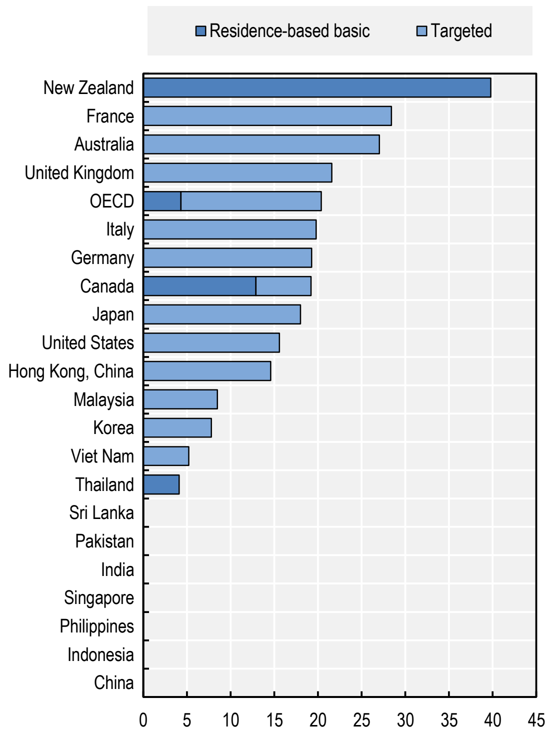

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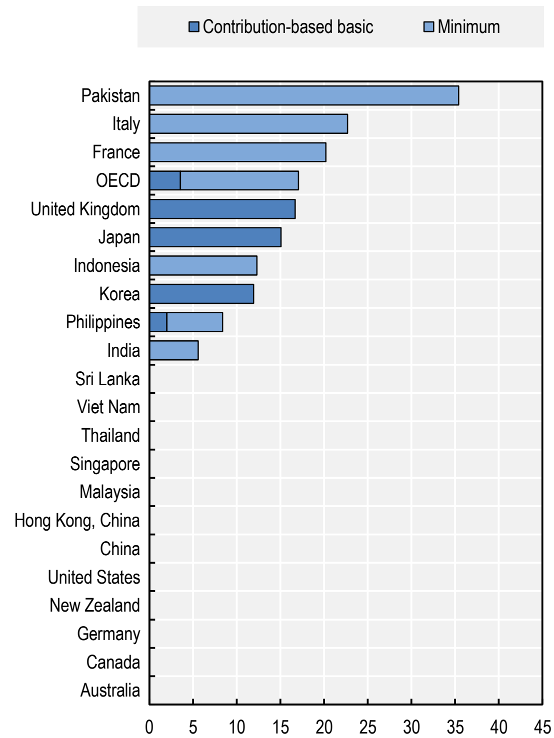
Figure 1.3. Contributory first-tier benefits

Percentage of gross average earnings, 2020



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Mandatory earnings-related pensions

Key results

The second tier of the OECD's taxonomy of retirement-income provision comprises mandatory earnings-related pensions. Key parameters and rules of these schemes determine the value of entitlements, including the long-term effect of pension reforms that have already been legislated.

Earnings-related schemes can be of four different types: defined benefit (DB), points, notional defined contribution (NDC), or defined contribution (DC). The accrual rate shows the rate at which benefit entitlements build up 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 is calculated as the ratio of the cost of a pension point to the pension-point value. In notional accounts schemes, the effective accrual rate is calculated in a similar way; it depends on the contribution rate, notional interest rate and annuity factors. In Thailand and Viet Nam, the accrual rates are not constant, in contrast to all the other economies that have DB systems. In Thailand the first 15 years of contribution give 20% with each subsequent year giving 1.5%. In Viet Nam the accrual rates have been different for men and women but these have being equalised from 2018.

Earnings measures used to calculate benefits also differ. Three economies solely use lifetime earnings to calculate benefits, China, Indonesia and Viet Nam, with the Philippines using the higher of lifetime earnings the final five years. Thailand also uses the final five years for the calculation of benefits whilst Pakistan just uses the last year of salary.

Closely linked with the earnings measure is valorisation, 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 (sometimes called pre-retirement indexation). The uprating of the pension-point value and the notional interest rate in points and notional-accounts systems, respectively, are the exact corollaries of valorisation in DB plans. The most common practice is to revalue earlier years' pay with price inflation, used in four economies compared to the growth of average earnings, which is used in only two.

One key parameter for defined contribution (DC) plans is the proportion of earnings that must be paid into the individual account, as this is directly linked to size of the pension pot at retirement. Seven Asian economies have defined contribution systems, and the average contribution rate is 17% across the economies, ranging from a high of 37% in Singapore to a low of 5.7% in Indonesia.

Some economies set a limit on the earnings used to calculate both contribution liabilities and pension benefits. The average ceiling on public pensions for the three economies is 175% of average economy-wide earnings, though this excludes the other eight economies that do not have a ceiling.

Indexation refers to the uprating of pensions in payment. Price indexation is most common, being applicable for three economies. Viet Nam uses wage indexation with both China and Thailand having a discretionary indexation to a combination of wages and prices.

Table 1.3. Future parameters and rules of mandatory earnings-related pensions, latest legislation

At the normal retirement age of a full-career worker who entered the labour market at age 22 in 2020

	Type of scheme	DB schemes	DB, points or NDC schemes			FDC or NDC schemes	Ceiling for pensionable earnings (multiple of average earnings)	Effective accrual rate of a male full-career average earner (% of earnings)
		Nominal accrual rate (% of individual pensionable earnings)	Earnings measure	Valorisation rate	Indexation rate	Total contribution rate (%)		
East Asia/Pacific								
China	NDC + FDC	1.00	L	w	d	20.0/8.0	3.00	1.00/0.88
Hong Kong (China)	FDC					5.0-10.0	1.54	0.82
Indonesia	DB + FDC	1.00	L	p	p	5.7	3.15	0.77/0.56
Malaysia	FDC					23.0-24.0		1.24
Philippines	DB	2.00	max (f5,L)				1.20	1.86
Singapore	FDC					37.0	1.51	1.20
Thailand	DB	1.33/1.5	f5	p	p		1.03	1.37
Viet Nam	DB	2.0/3.0	L	p	p		4.28	1.47
South Asia								
India	DB + FDC	1.43	f5		p	15.67	0.84/None	0/1.46
Pakistan	DB	2.00	f1	p	p		0.54	1.08
Sri Lanka	FDC					20.0		1.13
OECD Asia/Pacific								
Australia	FDC					12.0	2.51	0.70
Canada	DB	0.83	L	w	p [c]		1.02	0.73
Japan	DB	0.55	L	w	p or w [a]		2.37	0.50
Korea	DB	0.51	L	w	p		1.31	0.51
New Zealand	None							
United States	DB	1.23 [w]	B35	w or p	p		2.29	0.87
Other OECD								
France	DB / points	1.16	B25 / L	p / w	p / p		1.08 / 8.62	1.02 / 0.35
Germany	Points		L	w	w – x		1.59	0.92
Italy	NDC		L	g	p	33.0	3.41	1.52
United Kingdom	FDC					8.0		0.61

Note: Empty cells indicate that the parameter is not relevant. [a] = varies with age, [c] = valorisation/indexation conditional on financial sustainability, [w] = varies with earnings, B = number of best years, f = number of final years, L = lifetime average, d = discretionary valorisation/ indexation, g = growth of gross domestic product; p = price inflation, w = growth of average earnings. Germany: x depends on changes in both sustainability and contribution factors. Italy: indexation is to price inflation for low pensions and 75% of price inflation for high pensions. Japan: indexation is to earnings growth until age 67 and to price inflation after age 68. United States: valorisation with earnings growth to age 60, no adjustment from 60 to 62, valorisation with price inflation from 62 to 67. Accrual rates applied to average earnings measure at retirement rather than annual earnings in the years of contribution. In some countries accrual stops after a certain number of contribution years or when a certain total accrual rate is reached. This is the case in Canada (40 years) and the United States (35 years). In other countries a maximum pension or a late retirement age may stop accrual too.
Source: Chapter 4 for Asian economies, OECD "Country Profiles" available at http://oe.cd/pag.

Current retirement ages

Key results

The rules for eligibility to retire and withdraw a pension benefit are complex and often reflect conflicting objectives. This is all mirrored in the different criteria for pension benefit withdrawal in different schemes. The 2020 average normal retirement age across OECD countries for an individual with a full career and who entered the labour market at age 22 was equal to 63.4 years for women and 64.2 years for men. For the Asian economies the average is 59.5 years for men and 57.7 years for women.

In many Asian economies, different rules apply to different components of the overall retirement-income package. The normal retirement age reflects the age of eligibility to all schemes combined without penalty after a full career from age 22. Therefore, where normal retirement ages differ across pension schemes the maximum across schemes defines the normal retirement age of the country. The exception for this rule are targeted schemes which may not apply to full career workers at low earnings levels.

Table 1.4 shows the rules for both normal and early retirement for mandatory pension schemes. “Normal” retirement is defined as receiving a full pension without penalties. In some schemes, a pension can be claimed earlier, from the “early” retirement age onwards, implying benefit penalties that adjust for the longer retirement spell. The indicated ages are theoretical, applying to a person entering the labour force at age 22 and working without interruption.

Early age

A very early pension withdrawal is often only possible in occupational pension plans, like in Australia and France at age 55, for OECD countries. In the Asian economies, it is possible to retire early at age 50 in Malaysia under the FDC scheme. The non-occupational public schemes in both Korea and Lithuania allow receiving benefits before age 60. In the FDC schemes of Chile, Colombia and Mexico and the DB scheme in the Slovak Republic, early retirement requires that the pension entitlements exceed a floor that is a proxy for the subsistence level. In the Slovak Republic, this is only possible within two years to the normal retirement age while no age condition apply in Chile, Colombia and Mexico.

In general, most DB and points schemes specify an early retirement age next to the normal retirement age. Public DB or points schemes typically allow withdrawing a pension between 2 and 5 years earlier than the normal retirement age. In Greece and Luxembourg, the early and normal retirement ages coincide for the case of an uninterrupted career from age 22.

Only in Austria (for women), Costa Rica, Hungary, Republic of Türkiye and the United Kingdom do DB schemes currently not include an early-retirement option. Basic pensions and targeted schemes often exclude such a possibility as well. Exceptions are found where the public pension consists of both a basic and a DB component, like in the Czech Republic and Japan.

For comparison across countries, it is assumed that all pension pots within DC schemes are annuitised, even if this is not the case in practice. Then there is an automatic actuarial adjustment to the remaining life expectancy at the point of initial claim.

Normal retirement age

In many OECD countries, different normal retirement ages apply to different components of the overall retirement-income package. In particular, in those countries where targeted schemes have a higher eligibility age than the earnings-related scheme, the age of pension benefit withdrawal may in practice differ across earnings levels – individuals with high earnings-related pensions might afford to retire before having access to first-tier components. Pension schemes in 4 Asian economies still specify normal retirement ages by gender setting a lower age for women than for men.

The OECD defines the normal retirement age in a given country as the age of eligibility of all schemes combined without penalty, based on a full career after labour market entry at age 22. However, at retirement not all of the different components actually apply. For example, men and women in Malaysia, are eligible for the defined contribution component at age 55 but they are not eligible to the targeted pension before age 60. As they would be ineligible for the targeted scheme at age 60 with a full career their normal retirement age is therefore age 55 in 2020 (Figure 1.4).

In 2020, the OECD average normal retirement age was equal to 64.2 years for men and 63.4 years for women. For the Asian economies it was much lower at 59.5 years for men and 57.7 years for women. It ranges from a low of 50 for women in Sri Lanka and 55 for men in Malaysia, Thailand and Sri Lanka to 65 in Hong Kong (China), the Philippines and Singapore for both men and women. The largest gender difference of 5 years are in China, Pakistan, Sri Lanka and Viet Nam (Figure 1.4).

Table 1.4. Current early and normal retirement ages by type of pension scheme

For an individual retiring in 2020 after an uninterrupted career from age 22

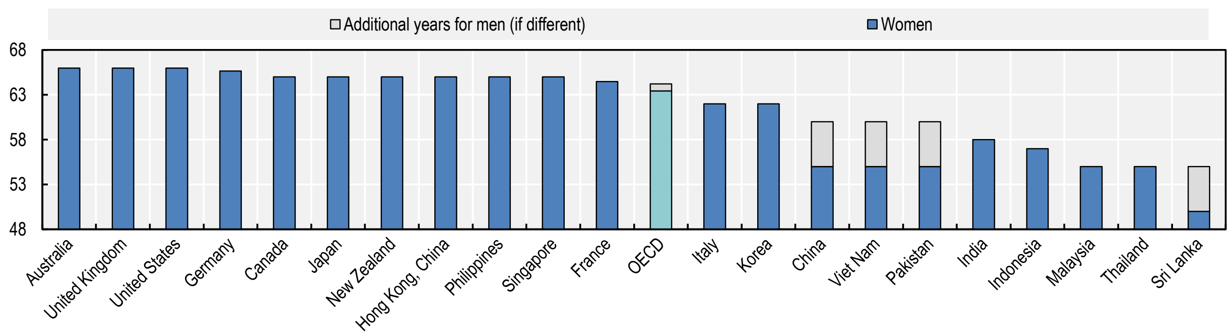
		Scheme	Early	Normal		Scheme	Early	Normal
East Asia/Pacific					**OECD Asia/Pacific**			
China	men	NDC, FDC	n.a.	60	Australia	T	n.a.	66
	women	NDC, FDC	n.a.	50/55		FDC	55	..
Hong Kong (China)		FDC	60	65	Canada	Basic, T	n.a.	65
		T	n.a.	65		DB	60	65
		Basic	n.a.	70	Japan	Basic, DB	60	65
Indonesia		DB, FDC	n.a.	57	Korea	Basic, DB	57	62
Malaysia		FDC	50	55	New Zealand	Basic	n.a.	65
		T	n.a.	60	United States	DB	62	66
Philippines		Basic, DB	60	65				
Singapore		FDC	n.a.	65	**Other OECD**			
Thailand		Basic, DB	n.a.	55	France	DB, Min	62	63.5
Viet Nam	men	DB	55	60		Points	55	64.5
	women	DB	50	55	Germany	Points	63. 7	65.7
						T	n.a.	65. 7
South Asia					Italy	NDC + DB	62	62
India		DB	50	58	United Kingdom	Basic, DB	n.a.	66
		FDC		55				
Pakistan	men	DB	55	60				

		Scheme	Early	Normal		Scheme	Early	Normal
	women	DB	50	55				
Sri Lanka	men	FDC	n.a.	55				
	women	FDC	n.a.	50				

Note: n.a. = early retirement or deferral of pension is not available; Occ = occupational, Min = minimum pension, T = targeted,. = no normal retirement age indicated as benefits automatically adjusted to the age of retirement in an actuarially neutral way. Normal and early retirement ages for a scheme describe the ages at which the receipt of a pension, respectively, with and without penalties is first possible, assuming labour market entry at age 22 and an uninterrupted career. Credits for educational periods are not included.
Source: Chapter 4 for Asian economies, OECD "Country Profiles" available at http://oe.cd/pag.

Figure 1.4. Current normal retirement age by gender

For an individual retiring in 2020 after an uninterrupted career from age 22



Note: The retirement age for women in China depends on the type of work and lies between 50 and 60.
Source: Chapter 4 for Asian economies, OECD "Country Profiles" available at http://oe.cd/pag.

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Future retirement ages

Key results

Future normal and early retirement ages will rise on a limited basis in the Asian economies. Assuming labour market entry at age 22 in 2020 the normal retirement age will increase to 66.1 for men and 65.5 for women on average across all OECD countries against 64.2 and 63.4 years, respectively, for retirement in 2020. For the Asian economies the normal retirement age will increase from 59.5 to 60.5 for men and from 57.7 to 58.9.

Normal retirement age

Across countries, the average normal retirement age for a man with a full career from age 22 equalled 64.2 years in 2020 (Figure 1.5). For the generation entering the labour market in 2020, this age will increase to 66.1 years (hence around 2064). For the Asian economies there is less movement in retirement ages, with an increase from 59.5 to 60.5 years for men and from 57.7 to 58.9 years for women, as only two countries, Indonesia and Viet Nam, have any plans to increase the ages.

Indonesia has a current retirement age of 57 years but will be 65 years for those entering the labour market at age 22 in 2020. Viet Nam will move to 62 years for men and 60 years for women, compared to 60 years and 55 years, respectively, for current retirees.

For the OECD the normal retirement age will increase in seven out of ten OECD countries listed, with Canada, Japan and New Zealand being the exceptions. The largest increase is projected for Italy, from 62 currently (the retirement age in 2020 was temporarily lowered from 64.8 years) to 71 years.

The lowest future retirement age for men equals 55 in Malaysia, Sri Lanka and Thailand, with women being able to retire at age 50 in Sri Lanka and age 55 in China, Malaysia, Pakistan and Thailand.

In 2020, gender differences in the normal retirement age existed in four Asian economies (Table 1.5). These gender gaps are all at least five years and will remain so for those entering the labour market in 2020, with the exception of Viet Nam, where the gender gap will be reduced to two years.

Early retirement

Under the assumption of full annuitisation, FDC schemes benefits are automatically actuarially adjusted to the age at retirement and, therefore, only an early retirement age is specified, like in Australia. However, in the Asian economies the FDC schemes in China, Hong Kong (China), India, Indonesia, Malaysia, Singapore and Sri Lanka still specify a standard retirement age indicated as normal age in the table.

The DB schemes in India, Pakistan, the Philippines and Viet Nam allow to claim a pension early. Only Pakistan has a penalty with the other countries just calculating the pension as normal, with fewer years of contribution.

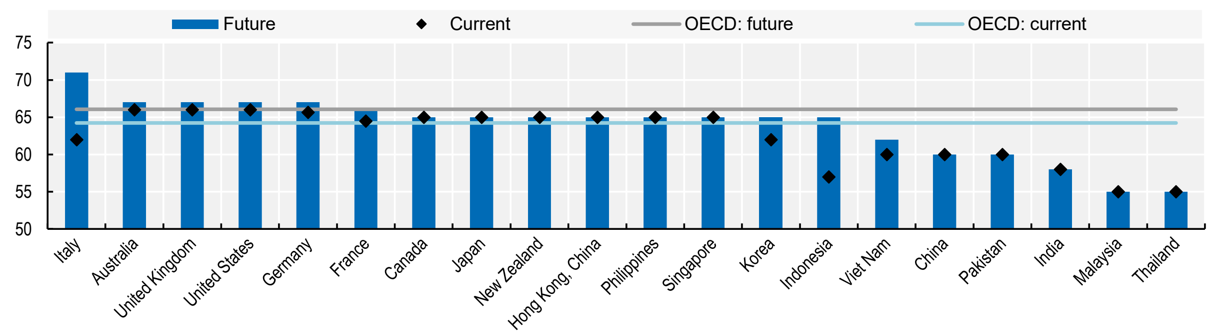
Countries that combine basic or targeted schemes with occupational pensions typically set a comparatively low retirement age in the occupational scheme while the basic or targeted scheme assures a certain minimum retirement income only above 65.

Late retirement

Options for retirement deferral often mirror those for early pensions. DB, FDC and points schemes usually compensate the shorter expected retirement spell by bonuses which tend to be higher than the penalties for early retirement. Amongst the Asian economies only India has a bonus for deferral, equating to 4.0% for one year and 8.16% for two years, with no further bonus. Pension deferral is not possible in many countries as the pension has to be claimed at the normal retirement age (see country chapters for further details).

Figure 1.5. Current and future normal retirement ages for a man with a full career from age 22

Current and future refer to retiring 2020 and entering the labour market in 2020, respectively



Source: Chapter 4 for Asian economies, OECD "Country Profiles" available at http://oe.cd/pag.

StatLink https://stat.link/fmcdat

Table 1.5. Future ages, penalties and bonuses for early, normal and late retirement by type of pension scheme

For an individual with an uninterrupted career after entering the labour market at age 22 in 2020

		Scheme	Early age	Penalty (p.a.)	Normal age	Bonus (p.a.)		Scheme	Early age	Penalty (p.a.)	Normal age	Bonus (p.a.)
East Asia/Pacific							**OECD Asia/Pacific**					
China	(M)	NDC, FDC	n.a.		**60**		Australia	T	n.a.		**67**	0.0%
	(W)	NDC, FDC	n.a.		50/**55**			FDC	60	..		..
Hong Kong (China)		FDC	60		**65**		Canada	Basic	n.a.		**65**	7.2%
		T	n.a.		**65**			T	n.a.		65	0.0%
		Basic	n.a.		70			DB	60	7.2%	65	8.4%
Indonesia		DB, FDC	n.a.		**65**		Japan	Basic, DB	60	6.0%	**65**	8.4%
Malaysia		FDC	n.a.		**55**		Korea	Basic, DB	60	6.0%	**65**	7.2%
		T	n.a.		60		New Zealand	Basic	n.a.		**65**	0.0%
Philippines		Basic, DB	60		**65**		United States	DB	62	6.7-5.0% [l]	**67**	8.0%
Singapore		FDC	n.a.		**65**							
Thailand		Basic, DB	n.a.		**55**		**Other OECD**					
Viet Nam	(M)	DB	55		**62**		France	DB, Min	62	5.0%	65	5.0%
	(W)	DB	50		**60**			Points	57	4-5.7.0% [l,y]	**66**	0.0%
							Germany	Points	65	3.6%	**67**	6.0%
South Asia							Italy	NDC	68	..	**71**	..
India		DB	50		**58**	4.0%	United Kingdom	Basic	n.a.		**67**	5.8%
		FDC			55			FDC (Occ)	57		67	FDC (Occ)
		T	n.a.		60							
Pakistan	(M)	DB	55	6.0%	**60**							
	(W)	DB	50	6.0%	**55**							
Sri Lanka	(M)	FDC	n.a.		**55**							
	(W)	FDC	n.a.		**50**							

Note: (M) = men, (W) = women, [l] = depending on length of anticipation or deferral, [y] = depending on number of contribution years, n.a. = early retirement is not available, Min = minimum pension, Occ = occupational, T = targeted,. = no data indicated as benefits in DC schemes automatically adjusted to the age of retirement in an actuarially neutral way. Normal and early retirement ages for a scheme describe the ages at which the receipt of a pension, respectively, with and without penalties is first possible, assuming labour market entry at age 22 and an uninterrupted career. Where retirement ages for men and women differ they are shown separately. The reference retirement age used in the modelling has been bolded. Credits for educational periods are not included.
Source: Chapter 4 for Asian economies, OECD "Country Profiles" available at http://oe.cd/pag.

Coverage

Key results

The level of coverage, the proportion covered by mandatory pension schemes, in non-OECD economies ranges from 90.8% in Hong Kong (China) to only 6.6% in Pakistan, for the population aged 15 to 64. In contrast the OECD average is 75.8% and is as high as 95.6% in Australia. For the labour force the non-OECD economies range from 120.6% to 12.4%, whilst the OECD average increases to 95.1%, with Australia again highest at 117.2%.

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 utilised 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 countries listed is 76% for the population measure and 95% using the labour force methodology (Table 1.6). The lowest levels are found in Germany, Italy and Korea at under 70% of the population aged 15 to 64. However, when looking at the labour force percentage Italy increases to 96%, well above Germany (87%) and Korea (80%). All of these levels are still well beyond all of the Asian economies, with the exception of Hong Kong (China) and Singapore for the population percentage and also the Philippines is added when considering the labour force.

The remaining Asian, non-OECD, economies vary considerably in the levels of coverage using either measurement. Pakistan is the lowest on either measure with coverage less than half of that of any other economy. Only the Philippines and Singapore along with the aforementioned Hong Kong (China) have coverage above 50% for the population measure and over 80% for the labour force. India, Malaysia and Viet Nam are around 25-30% for the population measure with Indonesia and Sri Lanka both under 20%. 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.

In a number of countries and economies the percentage of coverage for the labour force is well above 100%. This results from it being possible for individuals to have multiple accounts and also for those currently outside the labour force to have previously being a paid member of an account. In general, for these reasons the numbers for the labour force are particularly inflated, but the multiple account scenario also inflates the population statistic. Conversely, as the retirement age is below 65 in many of the economies listed the population base of 15-64 is not the most appropriate for all the economies and will underestimate the relevant coverage figure. For example, the retirement age in Thailand is 55 years, so if the population base of 15 to 54 was used instead of 15 to 64 then the coverage figure would increase from 47.6% to 59.6%.

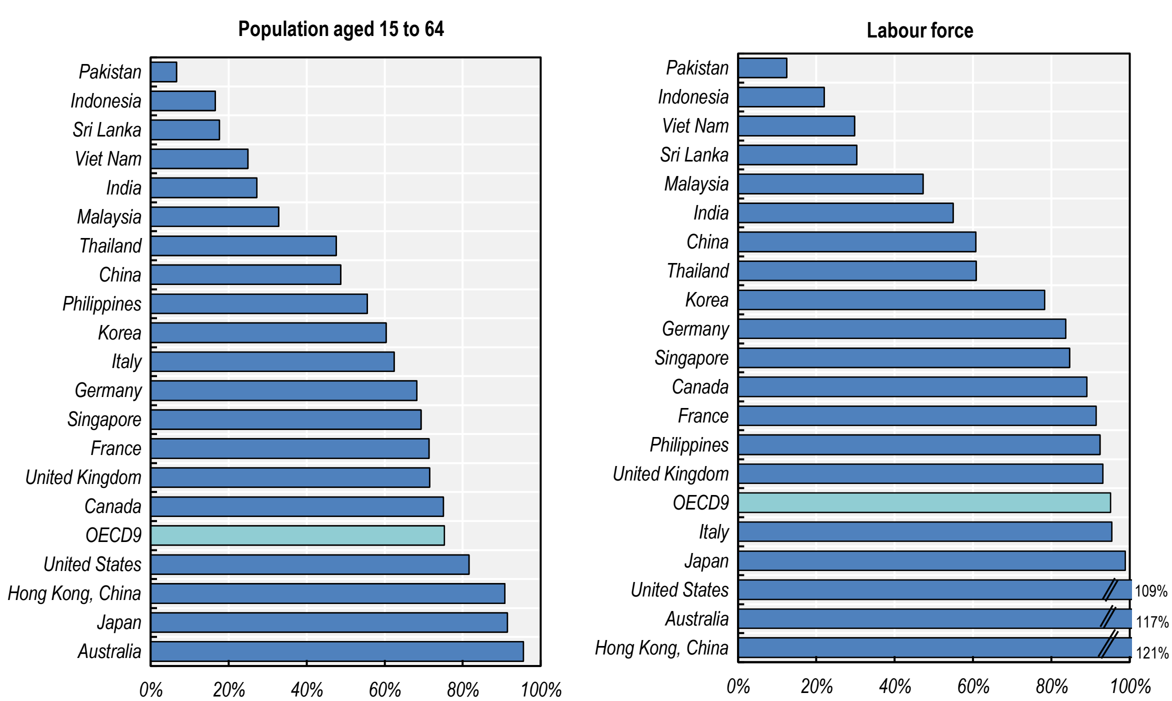
Coverage statistics are better analysed in conjunction with life expectancy and population projections, in order to estimate the numbers of people actually involved rather than percentage (see Chapter 3). Analysis of these characteristics will highlight the problems that may arise if nothing is done to combat the poor levels of coverage that exist within a number of economies across Asia.

Table 1.6. Membership of mandatory pension schemes by population and labour force

Country	Year	Members	Percentage of population aged 15 to 65	Percentage of labour force	Country	Year	Members	Percentage of population aged 15 to 65	Percentage of labour force
East Asia/Pacific					**OECD Asia-Pacific**				
China	2021	480 700 000	48.7%	60.7%	Australia	2020	16 000 000	95.6%	117.2%
Hong Kong (China)	2022	4 590 000	90.8%	120.6%	Canada	2019	18 723 000	75.1%	89.1%
Indonesia	2021	30 660 901	16.5%	22.0%	Japan	2019	67 460 000	91.4%	98.9%
Malaysia	2021	7 690 000	32.8%	47.2%	Korea	2021	22 350 000	60.3%	78.3%
Philippines	2021	40 490 000	55.5%	92.4%	New Zealand				
Singapore	2021	2 770 600	69.3%	84.6%	United States	2022	179 256 000	81.6%	108.8%
Thailand	2021	23 740 954	47.6%	60.8%					
Viet Nam	2021	16 700 000	24.9%	29.7%	**Other OECD**				
					France	2019	28 322 400	71.4%	91.4%
South Asia					Germany	2019	36 694 000	68.3%	83.7%
India	2021	258 786 358	27.2%	54.9%	Italy	2019	23 823 000	62.4%	95.5%
Pakistan	2022	9 176 081	6.6%	12.4%	United Kingdom	2005	28 402 200	71.5%	93.2%
Sri Lanka	2019	2 500 000	17.6%	30.3%	**OECD9**			**75.8%**	**95.1%**

Source: National reports.

Figure 1.6. Coverage of mandatory pension schemes by population and labour force



Source: National reports.

StatLink https://stat.link/5k4c8a

2 Retirement-income indicators

Pension entitlements are calculated using the OECD pension models. The theoretical calculations relate to workers entering the labour market in 2020 aged 22 including the full impact of legislated pension reforms. A note on the methodology used and assumptions made precedes the pension indicators. The indicators begin with the gross pension replacement rate in mandatory pension schemes: the ratio of pensions to individual earnings. Thereafter follows an analysis of the tax treatment of pensions and pensioners. The third indicator shows the net replacement rate, taking account of taxes and contributions. After this follows two indicators of pension wealth: the lifetime discounted value of the flow of retirement benefits. This indicator also accounts for the retirement age, indexation rules, and life expectancy, and is presented in gross and net terms.

Methodology and assumptions

The indicators of pension entitlements that follow here in Chapter 2 use the OECD cohort-based pension models. The methodology and assumptions are common to the analysis of all economies, allowing the design of pension systems to be compared directly. This enables the comparison of future entitlements under today's parameters and rules.

The pension entitlements that are presented are those that are currently legislated in the Asian economies. Reforms that have been legislated before publication are included where sufficient information is available. Changes that have already been legislated and are being phased-in gradually and yearly are modelled from the year that they are implemented and onwards. The values of all pension system parameters reflect the situation in the year 2020 and onwards. The calculations show the pension benefits of a worker who enters the system that year at age 22 and retires after a full career. The main results are shown for a single person. All indexation and valorisation rules follow what is legislated in the baseline scenario.

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 22 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: 33 years for retirement at 55, 38 years for retirement at 60, etc.

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 richest 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. The baseline assumptions for set out below.

Price inflation is assumed to be 2% per year. Real earnings are assumed to grow by 1.25% per year on average (given the assumption for price inflation, this implies nominal wage growth of 3.275%). Individual earnings are 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. The real rate of return on funded, defined-contribution pensions is assumed to be 3% per year. Administrative charges, fee structures and the cost of buying an annuity are assumed to result in a defined contribution conversion factor of 90% applied to the accumulated defined contribution wealth when calculating the annuity. The real discount rate (for actuarial calculations) is assumed to be 2% per year.

The baseline modelling uses economy-specific projections of mortality rate from the United Nations population database for every year from 2020 to 2100.

The calculations assume that benefits from defined contribution plans are paid in the form of a price-indexed life annuity at an actuarially fair price assuming perfect foresight. This is calculated from the mortality projections once the conversion factor is taken into account. If people withdraw the money in alternative ways, the capital sum at the time of retirement is the same: it is only the way that the benefits are spread that is changed. Similarly, the notional annuity rate 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.

Gross pension replacement rates

Key results

The future gross replacement rate represents the level of pension benefits in retirement from mandatory public and private pension schemes relative to earnings when working. For workers with average earnings and a full career from age 22, the future gross replacement rate at the normal retirement age averages 52.9% for men and 47.3% for women in the Asian economies, with substantial cross-country variation. At the bottom of the range, future gross replacement rates from mandatory schemes are below 40% at the average wage in Hong Kong (China) and Sri Lanka. China and the Philippines offer replacement rates at 70% or more.

All of the replacement rates are calculated for full-career workers from the age of 22, which means that career lengths differ between countries. Hong Kong (China), Indonesia, the Philippines and Singapore have an estimated long-term retirement age of 65 years for those starting in 2020, whilst in Malaysia, Sri Lanka and Thailand it will be 55 for men, while it will be 50 for women in Sri Lanka (Table 2.1).

Full career male workers will have a replacement rate of 52.9% on average across Asian economies, with a high of 70% or more in China and the Philippines and a low of under 40% in Hong Kong (China) and Sri Lanka. The average for women is slightly lower, at 47.3%. For OECD countries, the average is 51.8% for men and 50.9% for women, at average earnings. All six OECD Asia/Pacific countries have replacement rates below 40%, whilst they are all above 40% for the other OECD countries, with a high of 74.6% in Italy.

Most OECD countries aim to protect low-income workers (here defined as workers earning half of average worker earnings) from old-age poverty, which results in higher replacement rates for them than for average earners. Low-income workers would receive gross replacement rates averaging 64.5%. Some countries, such as Australia, pay relatively small benefits to average earners, but are closer to or even above average for low-income workers.

In Asian economies 5 of the 11 countries have the same replacement rate for low and average earners. With the exception of Pakistan, where the replacement rate is double, low earners in the other Asian economies have a replacement rate for low earners only slightly above that for the average earner.

At the top of the range, based on current legislation, low earners in China will receive a future gross replacement rate of 90.6% after a full career; retirement benefits are thus just below their earnings when working. At the other end of the scale, Sri Lanka offers a gross replacement rate of 37.4% to low-income earners, thus implying a gross retirement income around 19% of average earnings after a full career. On average, the gross replacement rate at twice average earnings (here called "high earnings") is 42.5%. Replacement rates for these high earners equals 62% in China, and above 50% in India, Indonesia and Viet Nam, while at the other end of the spectrum, Pakistan and Thailand offer a replacement rate lower than 25%.

Gross pension replacement rates differ for women in nine economies, due to a lower future pension eligibility age than for men (China, Pakistan, Sri Lanka and Viet Nam) and the use of sex specific mortality rates to compute annuities (Hong Kong (China), India, Indonesia, Malaysia and Singapore). The replacement rates are expressed as percentage of earnings which are not gender specific. Differences between the sexes are substantial in China, Malaysia, Pakistan and Sri Lanka, with replacement rates (i.e. monthly benefits) for women being between 13% and 34% lower than for men.

Definition and measurement

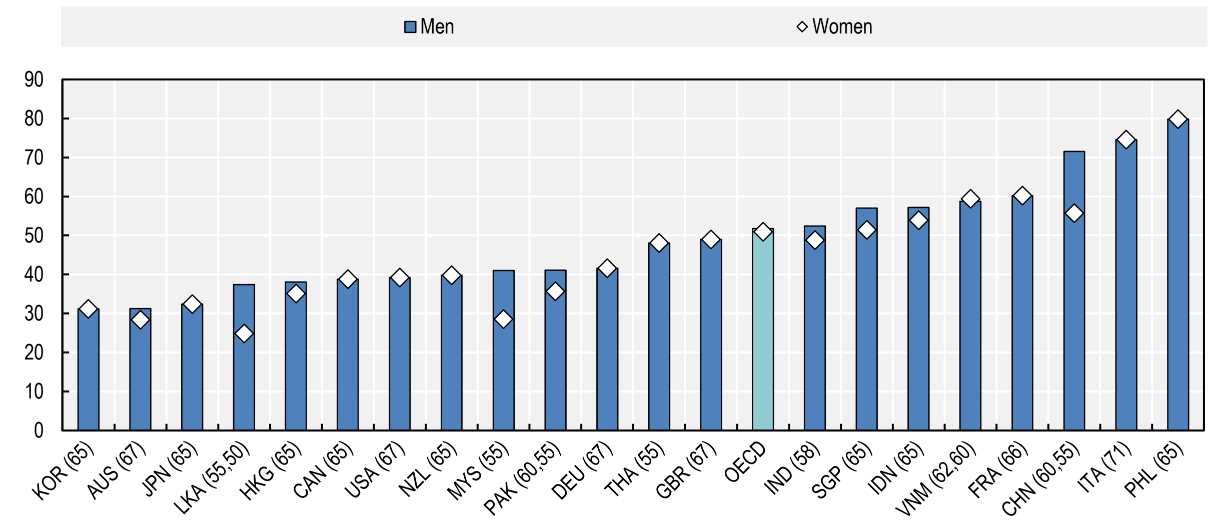
The old-age pension replacement rate measures how effectively a pension system provides a retirement income to replace earnings, the main source of income before retirement. The gross replacement rate is defined as gross pension entitlement divided by gross pre-retirement earnings. Under the baseline assumptions, workers earn the same percentage of average worker earnings throughout their career. Therefore, final earnings are equal to lifetime average earnings revalued in line with economy-wide earnings growth. Replacement rates expressed as a percentage of final earnings are thus identical to those expressed as a percentage of lifetime earnings.

Table 2.1. Gross pension replacement rates by earnings, in percentage, mandatory schemes

Individual earnings, multiple of mean for men (women where different)																	
	Pension age		0.5		1		2			Pension age		0.5		1.0		2	
East Asia/ Pacific									**OECD Asia/ Pacific**								
China	60	(55)	90.6	(72.2)	71.6	(55.7)	62.1	(47.5)	Australia	67		62.7	(59.8)	31.3	(28.4)	31.3	(28.4)
Hong Kong (China)	65		47.4	(45.1)	38.1	(35.1)	26.8	(24.3)	Canada	65		53.2		38.8		22.3	
Indonesia	65		57.2	(53.9)	57.2	(53.9)	56.9	(53.6)	Japan	65		43.2		32.4		26.9	
Malaysia	55		41.0	(28.5)	41.0	(28.5)	40.8	(28.4)	Korea	65		43.1		31.2		18.6	
Philippines	65		81.5		79.8		47.6		New Zealand	65		65.9		39.8		19.9	
Singapore	65		57.0	(51.4)	57.0	(51.4)	39.7	(35.8)	United States	67		49.6		39.2		27.9	
Thailand	55		50.8		48.0		24.3										
Viet Nam	62	(60)	58.7	(59.4)	58.7	(59.4)	58.7	(59.4)	**Other OECD**								
									France	66		60.2		60.2		51.9	
South Asia									Germany	67		46.5		41.5		33.0	
India	58		80.9	(78.6)	52.4	(48.8)	52.4	(48.8)	Italy	71		74.6		74.6		74.6	
Pakistan	60	(55)	82.2	(71.4)	41.1	(35.7)	20.6	(17.9)	United Kingdom	67		70.6		49.0		38.2	
Sri Lanka	55	(50)	37.4	(24.8)	37.4	(24.8)	37.4	(24.8)	**OECD**	**66.1**	**(65.5)**	**64.5**	**(64)**	**51.8**	**(50.9)**	**44.4**	**(43.7)**

Note: *Low earners in New Zealand are at 60% of average earnings, to account for the minimum wage level.
Source: OECD pension models.

Figure 2.1. Gross pension replacement rates in percentage: Average earners, men and women



Source: OECD pension models.

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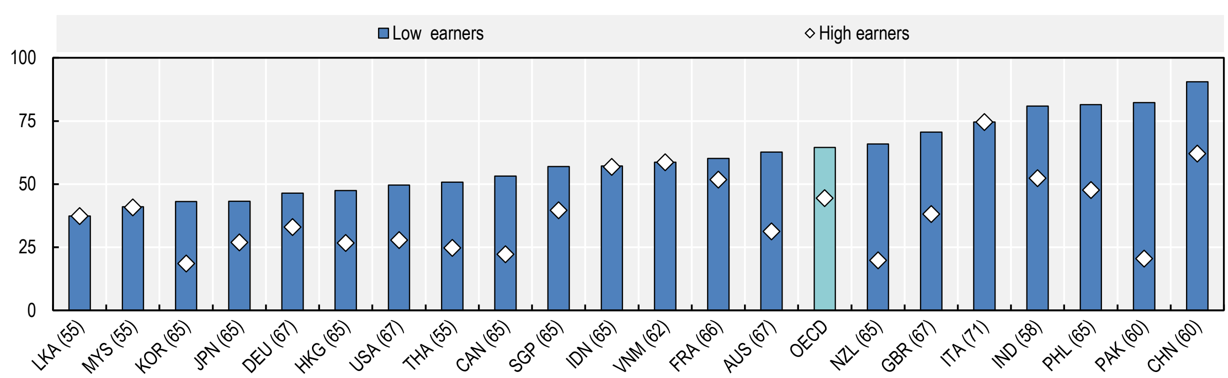
Figure 2.2. Gross pension replacement rates in percentage: Male low and high earners



Source: OECD pension models.

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Tax treatment of pensions and pensioners

Key results

The personal tax system plays an important role in old-age support. Pensioners do not pay social security contributions in any of the Asian economies. Personal income taxes are progressive and pension entitlements are usually lower than earnings before retirement, so the average tax rate on pension income is typically less than the tax rate on labour income. In addition, most of the Asian economies give additional tax concessions to pensioners through either increased personal allowances or extra tax credits or pension income is completely exempt from taxation.

Most Asian economies provide either higher personal allowances or extra tax credits to older people. This relief is irrespective of the source of income and so will include earned income at older ages. Beyond this over half of the economies do not tax pension income.

In addition, some OECD countries have specific tax rules for income from pensions, from either public or private schemes. For example, between 15% and 50% of income from public pensions in the United States (social security) is not taxed, depending on the total income of the pensioner. In Australia, benefits derived from pension contributions and investment returns, which have both been taxed, are not taxable in payment for over 60s. This applies to the mandatory defined contribution scheme and voluntary contributions to such plans.

Virtually all OECD countries levy employee social security contributions on workers: Australia and New Zealand are the only exceptions.

Empirical results

Figure 2.3 shows the percentage of income paid in taxes and contribution by workers and pensioners. Starting with workers, countries have been ranked by the proportion of income paid in total taxes (including social contributions paid by employees) at the average-wage level. This is then compared to the total tax rate paid by a pensioner after a full-career at the average wage, hence receiving the gross replacement rate in the base case (Table 2.1, as set out in the indicator “Gross pension replacement rates” above).

In all Asian economies, such a pensioner would not pay any tax in retirement. In most cases this is because pensions are not taxable. In others, such as India, for example, it is because the pension income would be less than the income-tax personal allowance offered to older people. Pensioners with the gross replacement rate of a full-career average earner would pay 10% of their income in taxes and contributions on average across the OECD. By comparison, taxes and contributions paid by an average earner – so not including any contributions from the employer – average 26% of the gross wage in OECD countries and 9% in the Asian economies.

The last series in the chart shows how much a pensioner would pay if her income before tax is equal to the gross average wage. The total tax rate is 16% on average in OECD countries, some 10 percentage points lower than what workers pay with the same level of income. For the Asian economies the average is 1%, but only China at 1% and Hong Kong (China) at 9% actually have any payments.

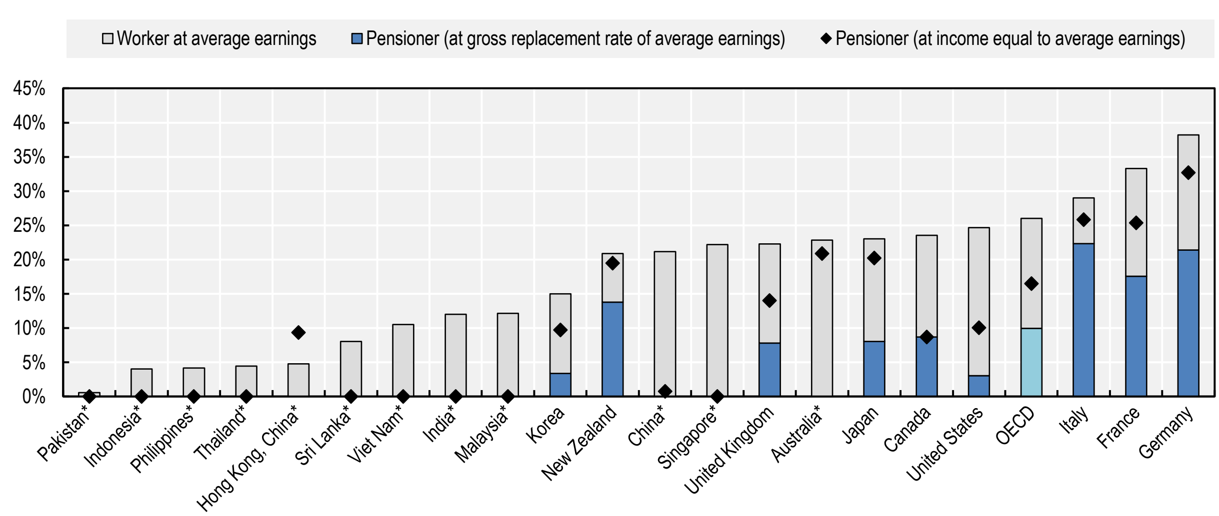
The difference between this 16% rate for pensioners with an income equal to average earnings and the 10% paid in taxes and contributions paid on the income which is equal to the gross replacement rate for an average earner illustrates the impact of progressivity in income-tax systems for pensioners.

Table 2.2. Treatment of pensions and pensioners under personal income tax and mandatory public and private contributions

	Extra tax Allowance/ credit	Full or partial relief for pension income		Mandatory contributions on pension income		Extra tax Allowance/credit	Full or partial relief for pension income		Mandatory contributions on pension income
		Public scheme	Private scheme				Public scheme	Private scheme	
East Asia/Pacific					**OECD Asia/Pacific**				
China				None	Australia	✓	✓	✓	None
Hong Kong (China)			✓	None	Canada	✓	✓	✓	None
Indonesia		✓		None	Japan	✓	✓	✓	Low
Malaysia		✓		None	Korea	✓	✓		None
Philippines		✓		None	New Zealand				None
Singapore		✓		None	United States	✓	✓		None
Thailand	✓	✓		None					
Viet Nam				None	**Other OECD**				
					France				Low
South Asia					Germany		✓	✓	Low
India				None	Italy	✓		✓	None
Pakistan	✓	✓		None	United Kingdom	✓			None
Sri Lanka	✓	✓		None					

Source: See online "Country Profiles available at http://oe.cd/pag.

Figure 2.3. Personal income taxes and social security contributions paid by pensioners and workers



Note: *Pensioners at the gross replacement rate of average earnings have zero income tax and social security.
Source: OECD pension models; OECD tax and benefit models.

StatLink https://stat.link/8wbsko

Net pension replacement rates

Key results

Whilst the gross replacement rate gives a clear indication of the design of the pension system, the net replacement matters more to individuals, as it reflects their disposable income in retirement in comparison to when working. For average earners with a full career, the net replacement rate from mandatory pension schemes at the normal retirement age averages 58.1% across the Asian economies, which is 5.2 percentage points higher than the average gross replacement rate. This reflects the higher effective tax and social contribution rates that people pay on their earnings than on their pensions in retirement, mostly due to the progressivity of tax systems, some tax advantages to pensions and lower social contributions on pension benefits. Net replacement rates vary across a large range, from around 40% in Hong Kong (China), Pakistan and Sri Lanka to over 80% in China and the Philippines for average-wage workers. For low earners (with half of average worker earnings), the average net replacement rate across the economies is 68.0% while it is 48.1% for high earners (200% of average worker earnings).

The previous indicator of the “Tax treatment of pensions and pensioners” showed the important role that the personal tax and social security contribution systems play in old-age income support. Pensioners often only pay health contributions and receive preferential treatment under the income tax. Tax expenditures and the progressivity of income taxes coupled with gross replacement rates of less than 100% also mean that pensioners have a lower income tax rate than workers. As a result, net replacement rates are generally higher than gross replacement rates.

For average earners, the net replacement rate across the Asian economies averages 58% for mandatory schemes, from a low of around 40% in Hong Kong (China), Pakistan and Sri Lanka to over 80% in China and the Philippines. Moreover, the pattern of replacement rates across countries is different on a net rather than a gross basis.

On average, for average earners, the net replacement rate is 5 percentage points higher than the gross replacement rate. The difference is 19 percentage points in China and around 5-7 percentage points in India, Malaysia and Viet Nam. In Hong Kong (China), Malaysia, the Philippines, Singapore, Sri Lanka and Thailand pension income is neither liable for taxes nor social security contributions.

For low earners, the effect of taxes and contributions on net replacement rates is slightly more muted than for workers higher up the earnings scale. This is because low-income workers typically pay less in taxes and contributions relative to average earners. In many cases, their retirement incomes are below the level of the standard reliefs in the personal income tax (allowances, credits, etc.). Thus, they are often unable to benefit fully from any additional concessions granted to pensions or pensioners under their personal income tax.

The difference between gross and net replacement rates for low earners is 6 percentage points on average. China and India have much higher replacement rates for low earners on a net basis than in gross terms, by 24 and 10 percentage points respectively. The net replacement rate for workers earning 200% of the average is highest in China. The lowest replacement rates for high earners are found in Hong Kong (China), Pakistan and Thailand where workers earning 200% of the average will receive net pensions that amount to less than 30% of their net earnings when working.

Definition and measurement

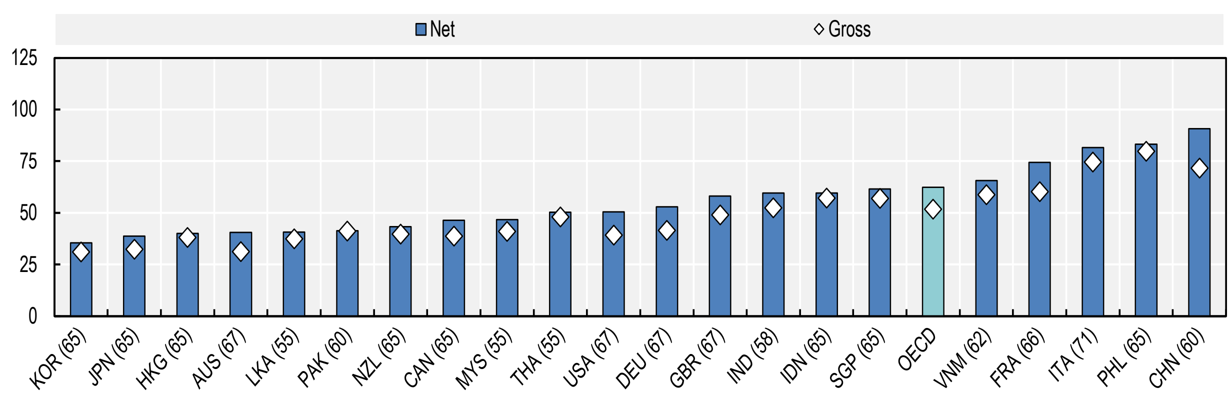
The net replacement rate is defined as the individual net pension entitlement divided by net pre-retirement earnings, taking account of personal income taxes and social security contributions paid by workers and pensioners. Otherwise, the definition and measurement of the net replacement rates are the same as for the gross replacement rate. Details of the rules that national tax systems apply to pensioners can be found in the online Country Profiles available at http://oe.cd/pag.

Table 2.3. Net pension replacement rates by earnings, in percentage

Individual earnings, multiple of mean for men (women where different)																	
	Pension age		0.5		1		2			Pension age		0.5		1.0		2	
East Asia/ Pacific									**OECD Asia/ Pacific**								
China	60	(55)	114.8	(91.6)	90.8	(70.7)	80.1	(61.8)	Australia	67		70.3	(67.1)	40.5	(36.8)	39.1	(36.4)
Hong Kong (China)	65		48.1	(45.7)	40.0	(36.8)	30.0	(27.2)	Canada	65		62.0		46.4		28.4	
Indonesia	65		59.5	(56.1)	59.5	(56.1)	59.5	(56.1)	Japan	65		49.5		38.7		31.6	
Malaysia	55		46.4	(32.3)	46.7	(32.5)	48.0	(33.4)	Korea	65		45.8		35.4		22.5	
Philippines	65		85.0		83.3		52.5		New Zealand	65		68.0		43.3		23.7	
Singapore	65		60.1	(54.3)	61.6	(55.6)	44.1	(39.8)	United States	67		61.0		50.5		39.0	
Thailand	55		52.8		50.3		25.5										
Viet Nam	62	(60)	65.6	(66.4)	65.6	(66.4)	66.6	(67.3)	**Other OECD**								
									France	66		71.3		74.4		64.5	
South Asia									Germany	67		57.9		52.9		41.9	
India	58		92.0	(89.3)	59.5	(55.4)	61.1	(56.8)	Italy	71		78.4		81.7		84.6	
Pakistan	60	(55)	83.1	(72.2)	41.3	(35.9)	20.6	(17.9)	United Kingdom	67		79.2		58.1		47.7	
Sri Lanka	55	(50)	40.7	(27.0)	40.7	(27.0)	41.7	(27.7)	**OECD**	**66.1**	**(65.5)**	**74.4**	**(73.7)**	**62.4**	**(61.3)**	**54.9**	**(54.0)**

Note: *Low earners in New Zealand are at 60% of average earnings, to account for the minimum wage level.
Source: OECD pension models.

Figure 2.4. Net pension replacement rates: average earners, in percentage



Source: OECD pension models.

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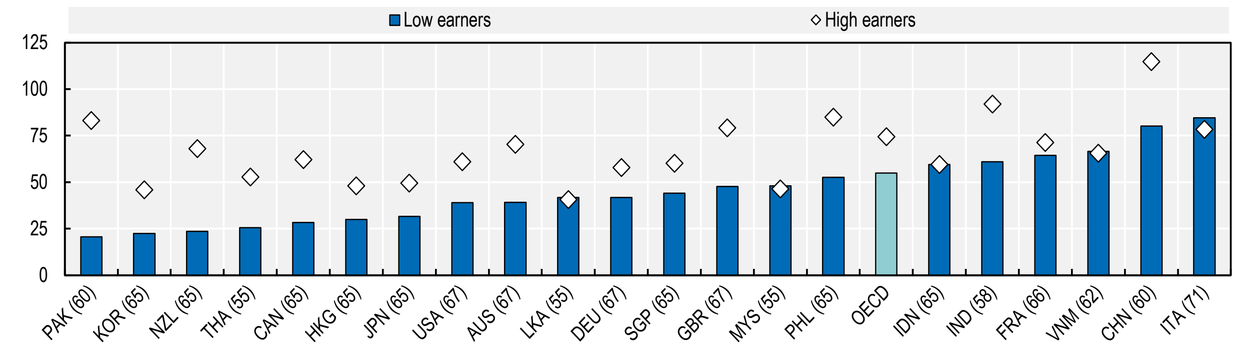
Figure 2.5. Net pension replacement rates: low and high earners, in percentage



Source: OECD pension models.

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Gross pension wealth

Key results

Pension wealth relative to individual earnings before retirement measures the total discounted value of the lifetime flow of all retirement incomes in mandatory pension schemes at retirement age. For average earners, pension wealth for men is 10.1 times and for women 10.7 times annual individual earnings on average in Asian economies. Gross pension wealth relative to annual individual earnings is higher for women because of their longer life expectancy. The main determinants of differences across countries are differences in the gross replacement rate, in the length of the retirement period measured by remaining life expectancy at the normal retirement age, and in indexation rules.

Replacement rates give an indication of the pension promise relative to individual earnings, but they are not comprehensive measures of cumulated pension payments; they look only at the benefit level relative to individual earnings at the point of retirement, or more generally at a given, later age. For a full picture, life expectancy, normal retirement age and indexation of pension benefits must also be taken into account. Together, these determine for how long the pension benefit is paid, and how its value evolves over time. Pension wealth – a measure of the stock of future discounted flows of pension benefits – takes account of these factors. It can be thought of as the lump sum needed at the retirement age to buy an annuity giving the same flow of pension payments as that promised by mandatory retirement-income schemes.

In defined benefit systems there is often no or a weak link between the replacement rate and the expected duration of benefit withdrawal. However, in the long run, ensuring financial sustainability imposes a trade-off between the replacement rate and the duration of retirement. When retirement ages and pension benefits are held constant, pension wealth increases with longevity gains. In defined contribution systems there is a more direct link between the size of the benefit and the expected duration of benefit withdrawals. In these systems the pension wealth measure is equal to the accumulated assets and therefore independent of longevity increases as these automatically reduce the monthly benefits.

Gross pension wealth at individual earnings equal to the average wage is highest in China at 16.2 times annual individual earnings for men and 15.6 times for women. It is also larger than 11 times for men and women in the Philippines, Singapore and Viet Nam. The lowest pension wealth for both men and women is found in Pakistan at 5.8 and 6.8, respectively, due to low replacement rates, while Hong Kong (China), Indonesia and Sri Lanka are all around 8 times for men and women.

This indicator is built based on the gender-specific average mortality rates within countries. It thus assumes away differences in life expectancy across income levels. Given that individuals with low (high) income generally have a lower (higher) life expectancy, this implies that the computed numbers overestimate pension wealth for low earners and underestimate it for high earners. With this caveat in mind, higher individual replacement rates for low earners than for average earners mean that the computed pension wealth relative to individual earnings is also higher for low earners. For men with individual earnings equal to half average-earnings, pension wealth is 11.8 times their annual earnings on average and it is 12.5 times for women. In the economies where pension wealth for low earners is highest (China and India), its value is 20 and 16 times individual earnings for men, respectively and 20 and 17 times individual earnings for women.

Impact of life expectancy

In countries where the duration in retirement is shorter, such as Indonesia and Pakistan, pension wealth is smaller. The effect is the opposite in Hong Kong (China) and Singapore, where life expectancy is high. Similarly, since women's life expectancy is longer than men's, pension wealth for women is higher in all countries that use unisex mortality tables to compute annuities or that have defined benefit systems. In addition, some countries still have lower retirement ages for women; this extends the payment period even further.

Impact of indexation

Pension wealth is affected by indexation rules at a given initial replacement rate level. China has a discretionary indexation to a mix of wages and prices but all other Asian economies index to prices when they have a withdrawal system in place. Those with lump-sum withdrawals are assumed to have a price indexed annuity for comparison purposes.

Definition and measurement

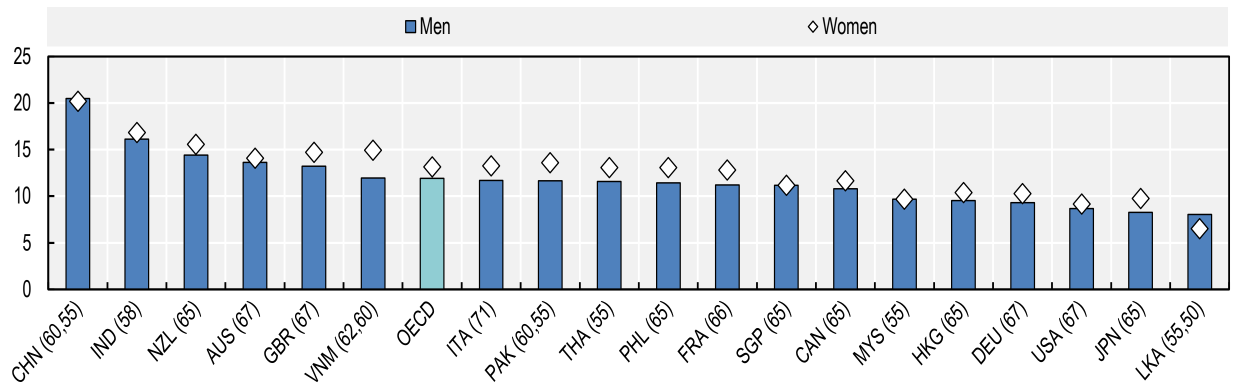
The calculation of pension wealth uses a uniform real discount rate of 2%. Since the comparisons refer to prospective pension entitlements, the calculations use country-specific mortality rates by age and sex at the year of retirement. Pension wealth is expressed as a multiple of gross annual individual earnings.

Table 2.4. Gross pension wealth by earnings, multiple of annual earnings

	Individual earnings, multiple of mean							Individual earnings, multiple of mean					
	0.5	1.0	2	0.5	1.0	2		0.5	1.0	2	0.5	1.0	2
	Men			Women				Men			Women		
East Asia/Pacific							**OECD Asia/Pacific**						
China	20.5	16.2	14.0	20.2	15.6	13.3	Australia	11.3	5.7	5.7	11.9	5.7	5.7
Hong Kong (China)	9.5	7.7	5.4	10.4	8.1	5.6	Canada	10.0	7.3	4.2	10.3	7.5	4.3
Indonesia	7.8	7.8	7.8	8.5	8.5	8.5	Japan	8.3	6.2	5.2	9.7	7.3	6.1
Malaysia	9.7	9.7	9.6	9.7	9.7	9.6	Korea	8.0	5.8	3.5	9.4	6.8	4.1
Philippines	11.4	11.2	6.7	13.1	12.8	7.7	New Zealand*	13.7	13.1	12.7	14.9	14.2	13.9
Singapore	11.2	11.2	7.8	11.2	11.2	7.8	United States	8.7	6.8	4.9	9.2	7.2	5.1
Thailand	11.6	10.9	5.6	13.1	12.4	6.4							
Viet Nam	11.9	11.9	11.9	14.9	14.9	14.9	**Other OECD**						
							France	11.2	11.2	9.9	12.8	12.8	11.3
South Asia							Germany	9.3	8.3	6.6	10.3	9.2	7.3
India	16.1	10.8	10.8	16.8	10.8	10.8	Italy	11.7	11.7	11.7	13.2	13.2	13.2
Pakistan	11.6	5.8	2.9	13.6	6.8	3.4	United Kingdom	13.2	8.9	6.8	14.7	9.9	7.6
Sri Lanka	8.1	8.1	8.1	6.5	6.5	6.5	**OECD**	**11.8**	**9.4**	**8.0**	**13.0**	**10.3**	**8.8**

Note: *Low earners in New Zealand are at 60% of average earnings, to account for the minimum wage level.
Source: OECD pension models.

Figure 2.6. Gross pension wealth for lower earners by gender, multiple of annual earnings



Source: OECD pension models.

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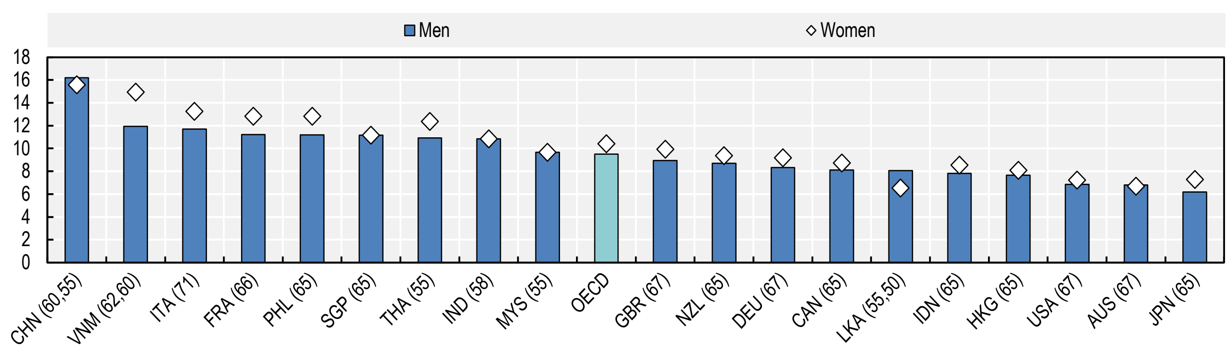
Figure 2.7. Gross pension wealth for average earners by gender, multiple of annual earnings



Source: OECD pension models.

StatLink https://stat.link/hqflen

Net pension wealth

Key results

As with gross pension wealth, net pension wealth relative to individual net earnings measures the total discounted value of the lifetime flow of all retirement incomes in mandatory pension schemes at retirement age. For average earners, net pension wealth for men is 11.2 times and for women 11.8 times annual individual net earnings on average in Asian economies. Net pension wealth relative to annual individual earnings is higher for women because of their longer life expectancy. The main determinants of differences across countries are differences in the net replacement rate, in the length of the retirement period measured by remaining life expectancy at the normal retirement age, and in indexation rules.

Replacement rates give an indication of the pension promise relative to individual earnings, but they are not comprehensive measures of cumulated pension payments; they look only at the benefit level relative to individual earnings at the point of retirement, or more generally at a given, later age. For a full picture, life expectancy, normal retirement age and indexation of pension benefits must also be taken into account. Together, these determine for how long the pension benefit is paid, and how its value evolves over time. Net pension wealth – a measure of the stock of future discounted flows of pension benefits after taxes and social contributions – takes account of these factors. It can be thought of as the total net benefits that will be received on average from the mandatory retirement-income schemes.

In defined benefit systems there is often no or a weak link between the replacement rate and the expected duration of benefit withdrawal. Of course, in the long run, ensuring financial sustainability imposes a trade-off between the replacement rate and the duration of retirement. When retirement ages and pension benefits are held constant, pension wealth increases with longevity gains. In defined contribution systems there is a more direct link between the size of the benefit and the expected duration of benefit withdrawals. In these systems the pension wealth measure is equal to the accumulated assets and therefore independent of longevity increases as these automatically reduce the benefits.

Net pension wealth at individual earnings equal to average worker earnings is highest in China at 20.5 times annual individual net earnings for men and 19.8 times for women. The lowest pension wealth is found in Pakistan at 5.9 and 6.8 times for men and women respectively, due to low replacement rates.

Higher individual replacement rates and the increased tax allowance for many pensioners mean that net pension wealth relative to individual net earnings tends to be higher for low earners than for average earners as well, at least as the estimations here abstract from differences in life expectancy across income levels. For men with individual earnings equal to half-average earnings, net pension wealth is 13.0 times their net earnings on average, compared with 11.2 times for average wage workers. Similarly, for women with low earnings, net pension wealth of 13.8 compares with 11.8 times individual earnings for average earners.

For higher earners net pension wealth is on average 9.4 for men and 9.8 for women, only slightly lower than that for average earners, with China and Pakistan again being highest and lowest, respectively.

Impact of life expectancy

In countries where the duration in retirement is shorter and where pension benefits are defined benefit, such as Indonesia and Pakistan, the individual pension wealth is smaller. The effect is the opposite in Hong Kong (China) and Singapore, where life expectancies are high. Similarly, since women's life expectancy is longer than men's, pension wealth for women is higher in all countries that use unisex mortality tables or that have defined benefit systems. This is simply because in that case the same level of pension benefits can be expected to be paid over a longer retirement period. In addition, some countries still have lower retirement ages for women; this extends the payment period even further. Pension wealth is also affected by pension ages.

Definition and measurement

Net pension wealth is the present value of the flow of pension benefits, taking account of the taxes and social security contributions that retirees have to pay on their pensions. It is measured and expressed as a multiple of net annual individual earnings in the respective country.

Taxes and contributions paid by pensioners are calculated conditional on the mandatory pension benefit to which individuals are entitled to at different levels of earnings. The calculations take account of all standard tax allowances and tax reliefs as well as concessions granted either to pension income or to people of pension age.

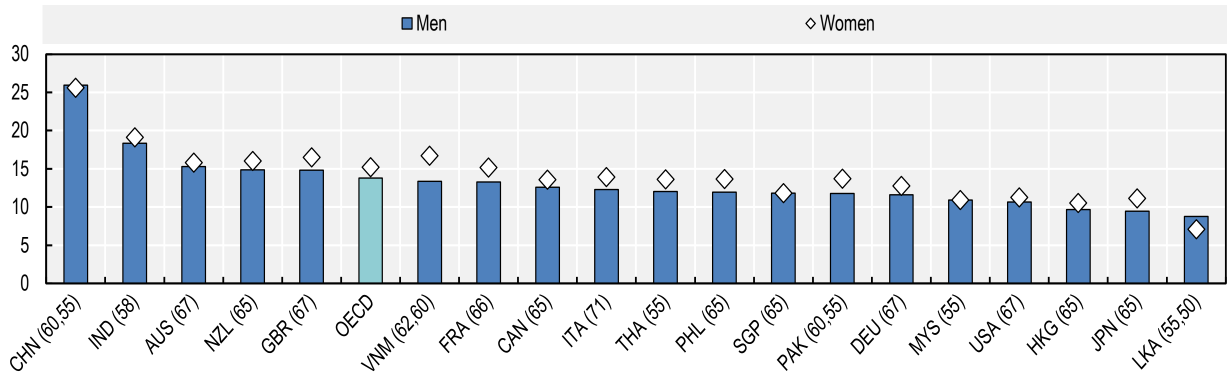
Details of the rules that national tax systems apply to pensioners can be found in Chapter 4 for the Asian economies and in the online "Country Profiles" available at http://oe.cd/pag for OECD countries.

Table 2.5. Net pension wealth by earnings

	Individual earnings, multiple of mean							Individual earnings, multiple of mean					
	0.5	1.0	2	0.5	1.0	2		0.5	1.0	2	0.5	1.0	2
	Men			Women				Men			Women		
East Asia/Pacific							**OECD Asia/Pacific**						
China	26.0	20.5	18.1	25.6	19.8	17.3	Australia	12.7	7.3	7.1	13.3	7.3	7.2
Hong Kong (China)	9.7	8.0	6.0	10.5	8.5	6.3	Canada	11.6	8.7	5.3	12.0	9.0	5.5
Indonesia	8.1	8.1	8.1	8.9	8.9	8.9	Japan	9.5	7.4	6.0	11.1	8.7	7.1
Malaysia	10.9	11.0	11.3	10.9	11.0	11.3	Korea	8.6	6.6	4.2	10.0	7.7	4.9
Philippines	11.9	11.7	7.4	13.6	13.4	8.4	New Zealand	14.9	9.5	5.2	16.0	10.2	5.6
Singapore	11.8	12.1	8.6	11.8	12.1	8.6	United States	10.7	8.8	6.8	11.3	9.3	7.2
Thailand	12.0	11.4	5.8	13.6	12.9	6.6							
Viet Nam	13.3	13.3	13.5	16.7	16.7	16.9	**Other OECD**						
							France	13.3	13.9	12.3	15.2	15.8	14.0
South Asia							Germany	11.6	10.6	8.4	12.8	11.7	9.2
India	18.3	12.3	12.6	19.1	12.3	12.6	Italy	12.3	12.8	13.3	13.9	14.5	15.0
Pakistan	11.8	5.9	2.9	13.7	6.8	3.4	United Kingdom	14.8	10.6	8.5	16.5	11.8	9.4
Sri Lanka	8.8	8.8	9.0	7.1	7.1	7.3	**OECD**	**13.6**	**11.3**	**9.9**	**15.0**	**12.5**	**10.9**

Note: *Low earners in New Zealand are at 60% of average earnings, to account for the minimum wage level.
Source: OECD pension models.

Figure 2.8. Net pension wealth for lower earners by gender, multiple of annual earnings



Source: OECD pension models.

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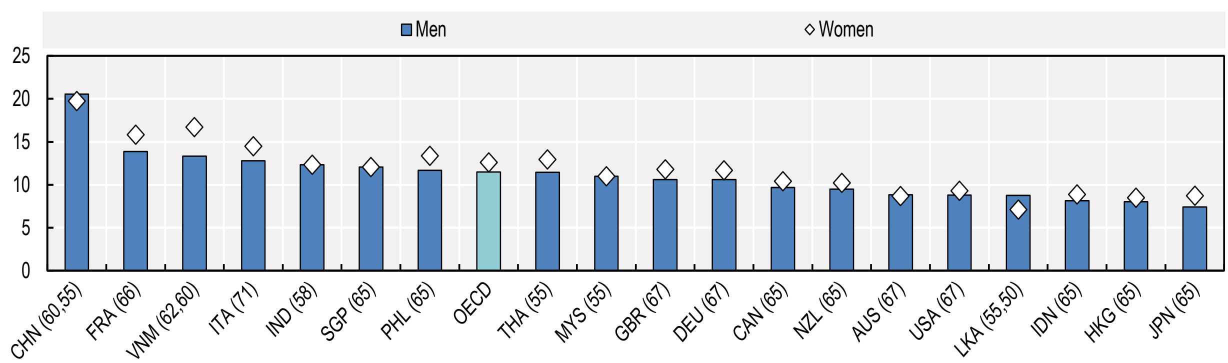
Figure 2.9. Net pension wealth for average earners by gender, multiple of annual earnings



Source: OECD pension models.

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3 Demographic and economic context

Population ageing has been one of the main driving forces behind changes in pension policies. Ageing is the result of demographic trends in fertility and life expectancy. The first indicator looks into the number of births per woman and its development over the last 60 years. Changes in life expectancy – at birth and at age 65 – are shown as the second indicator. The third looks into the degree of ageing measured as the level of and change in the number of people aged 65 and above relative to the number of people of working age (20-64). The last indicator shows the level of the average wage across countries.

Fertility

Key results

The total fertility rate is below the estimated replacement level – the number of children per woman needed to keep the total population constant – of about 2.1 in developed countries, in half of the Asian countries. Exceptions are Indonesia and the Philippines as well as all the South Asian countries, with Malaysia and Viet Nam just below the replacement level. Fertility rates fell sharply in the second half of the 20th century, and are forecast to continue declining in most Asian countries over the next 20 years, though a few rebound slightly by 2060.

Fertility rates currently average 2.07 across the Asian countries, fractionally below the level that ensures population replacement, but well above the OECD average of 1.68 (Table 3.1). The trend to fewer children has been going on since the late 1950s, but stopped around the turn of century on average. The fall in fertility rates reflected changes in individuals' lifestyle preferences, in family formation, and in the constraints of everyday living, such as those driven by labour market insecurity, difficulties in finding suitable housing and unaffordable childcare.

Another effect might come from changes in women's aspiration regarding partnership and childbearing norms, especially in countries such as Japan and Korea where there is a strong link between marriage and maternity. However, the childbearing patterns of unmarried men and women have also changed. For example, half or more of births now occur outside of marriage in France. The average proportion of births outside marriage in OECD countries is now one-third of the total.

Since 2000, the fertility rate has fallen by 0.66 on average across the Asian economies with only China and Hong Kong (China) showing slight increases over the last 20 years. Across the OECD there was only a decline of 0.07 but the starting point was at a much lower level.

This recent decrease in fertility rates is forecasted to continue in all the Asian economies, with the exception of Singapore which will see an increase from 1.00 to 1.19 between 2020 and 2040. By 2040 the average across all economies will be 1.73, well below the replacement rate of 2.1. For the OECD the average will decline to 1.61 by 2040, with a low of 1.08 in Korea, and only France among the countries listed being above 1.7.

However, forecast uncertainty is considerable, with the 20th percentile of probabilistic projections for the Asian economies average at only 1.18 and the 80th percentile above the replacement rate at 2.18 for 2060, with the 50th percentile at 1.66 (Figure 3.1). The OECD average is 1.62 with the 20th percentile at 1.12 and the 80th percentile at 2.13, just above the replacement rate.

Low fertility rates have wider social and economic consequences. The old-age to working-age ratio will increase sharply placing additional burdens on the working-age population to finance pay-as-you-go pensions and health care for older people. Moreover, the workforce will also age over time and so might be less adaptable to technological change.

Definition and measurement

The total fertility rate is the number of children that would be born to each woman if she were to live to the end of her child-bearing years and if the likelihood of her giving birth to children at each age was the currently prevailing age-specific fertility rate. It is generally computed by summing up the age-specific fertility rates defined over a five-year interval. A total fertility rate of 2.1 children per women – the replacement level – broadly ensures a stable population size, on the assumptions of no migration flows and unchanged mortality rates.

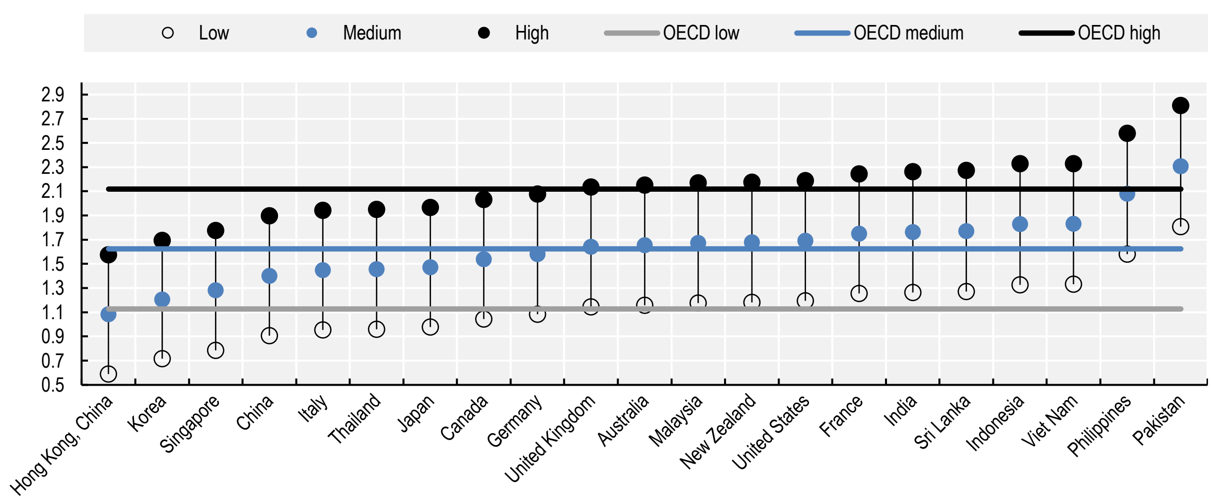
Table 3.1. Total fertility rates, 1960-2060

	1960	1980	2000	2020	2040	2060		1960	1980	2000	2020	2040	2060
East Asia/Pacific							**OECD Asia/Pacific**						
China	5.86	3.26	1.57	1.78	1.35	1.41	Australia	3.29	2.06	1.80	1.79	1.64	1.66
Hong Kong (China)	4.61	2.51	1.19	1.22	0.96	1.10	Canada	3.82	1.82	1.63	1.53	1.52	1.54
Indonesia	5.35	4.86	2.76	2.30	1.93	1.81	Japan	2.23	1.87	1.43	1.43	1.43	1.48
Malaysia	6.46	4.40	3.27	1.98	1.69	1.66	Korea	6.12	3.14	1.60	1.14	1.08	1.25
Philippines	7.27	5.49	3.97	2.89	2.31	2.02	New Zealand	3.94	2.27	1.95	1.86	1.69	1.67
Singapore	6.44	2.10	1.44	1.00	1.19	1.29	United States	3.51	1.73	1.95	1.81	1.68	1.69
Thailand	6.31	4.13	1.89	1.43	1.39	1.47							
Viet Nam	5.63	5.42	2.44	1.94	1.86	1.82	**Other OECD**						
							France	2.72	1.86	1.73	1.89	1.77	1.75
South Asia							Germany	2.21	1.48	1.32	1.59	1.55	1.59
India	5.88	5.08	3.55	2.27	1.83	1.75	Italy	2.34	2.04	1.21	1.33	1.41	1.46
Pakistan	6.74	6.76	5.74	3.85	2.66	2.22	United Kingdom	2.41	1.74	1.72	1.80	1.62	1.65
Sri Lanka	5.42	3.76	2.25	2.08	1.83	1.76	**OECD**	**3.36**	**2.43**	**1.75**	**1.68**	**1.61**	**1.62**

Source: OECD calculation based on United Nations, Department of Economic and Social Affairs, (2022); World Population Prospects 2022, Online Edition (for future periods: medium-variant forecast).

Figure 3.1. Uncertainty about total fertility-rate projections

Low, medium and high variant projections for 2055



Note: Low, medium and high variant projections correspond to the 20%, 50% and 80% percentiles of probabilistic projections, respectively.
Source: OECD calculations based on United Nations, Department of Economic and Social Affairs (2022). Probabilistic Population Projections based on the World Population Prospects 2022: http://population.un.org/wpp/.

StatLink https://stat.link/pdlenv

Life expectancy

Key results

The remarkable increase in life expectancy is one of the greatest achievements of the last century. Lives continue to get longer, and this trend is predicted to continue although the pace of improvement in old age has slowed slightly. In 2020, life expectancy at birth averaged 72.7 years for men and 78.4 years for women. Among women, the figure was highest in Hong Kong (China) (88.3 years) and lowest in Pakistan (68.8 years). For men, life expectancy at birth was again highest in Hong Kong (China) (82.2 years) and again lowest in Pakistan (63.9). On average across the Asian economies, remaining life expectancy at age 65 is projected to increase by 3.7 years among women and 4.0 years among men by 2060.

Life expectancy at birth averaged 72.7 years for men and 78.4 years for women among the Asian economies in 2020 (Figure 3.2). For the OECD the average was 77.5 years for men and 82.9 years for women.

Remaining life expectancy at 65 significantly contributes to well-being at older ages. It also influences the finances of retirement-income systems. In 2020, on average in the Asian economies, women aged 65 could expect to live an additional 18.7 years, which is forecast to increase to 22.4 years by 2060 (Figure 3.3). Men of the same age could expect to live 15.3 more years in 2020, with a projected increase of 4.0 years by 2060 to reach about 19.3 years (Figure 3.4). Gender gaps are therefore expected to decrease slightly over the next 40 years (from 3.4 to 3.1 years on average).

There is considerable variation between economies in life expectancy at older ages. Women in Hong Kong (China) are predicted to live another 29.1 years on reaching age 65 in 2060, followed by Singapore (27.1 years). In contrast, women in Pakistan are expected to live an extra 15.9 years. For men there is less variation between economies than there is for women. Hong Kong (China) and Pakistan are again at the extremes for life expectancy at age 65 in 2060 at 24.5 and 13.5 years respectively.

In 2020, on average in OECD countries, women aged 65 could expect to live an additional 20.8 years, which is forecast to increase to 25.1 years by 2060 (Figure 3.3). Men of the same age could expect to live 17.4 more years in 2020, with a projected increase of 5.0 years by 2060 to reach about 22.4 years (Figure 3.4).

Women in Japan are predicted to live another 28.6 years on reaching age 65 in 2060, followed by Korea (27.6 years). In contrast, women in the United States are expected to live an extra 24.7 years. For men there is less variation between countries than there is for women. New Zealand will have the longest life expectancy at age 65 in 2060 (24.0 years), followed by Australia and Canada (23.9 and 23.8 years). By contrast, Korea (22.4), Germany and the United States (both 22.9) are ranked at the bottom.

The gender gap in life expectancy at age 65 is predicted to be between almost two and four years in favour of women in nearly all Asian economies in 2060. Larger gender gaps of 4.3 and 4.7 years are observed in Thailand and Hong Kong (China), respectively. The smallest gender gap are forecasted for Malaysia and India at 1.9 and 2.2 years, respectively.

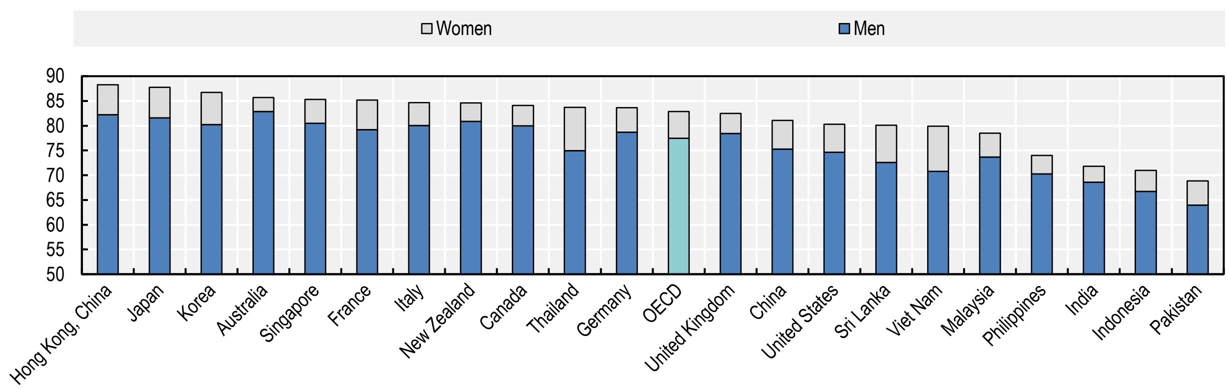
The gender for OECD countries is also forecast to be between almost two and four years in favour of women in 2060. Larger gender gaps of 5.0 and 5.2 years are observed in both Japan and Korea, respectively. The smallest gender gap are forecasted for the United Kingdom and the United States at 1.7 and 1.8 years respectively.

Given this trend, many OECD countries have increased or legislated to increase their pension benefit eligibility ages. Others have introduced elements into their retirement-income provision that will automatically adjust the level of pensions as people live longer. Overall longevity gains are due to rising living standards, but also greater access to quality health services.

Definition and measurement

Life expectancy is defined as the average number of years that people of a particular age could expect to live if they experienced the age- and sex-specific mortality rates prevalent in a given country in a particular year: in this case, 2020 and 2060. Since the determinants of longevity change slowly, life expectancy is best analysed over a long-time horizon.

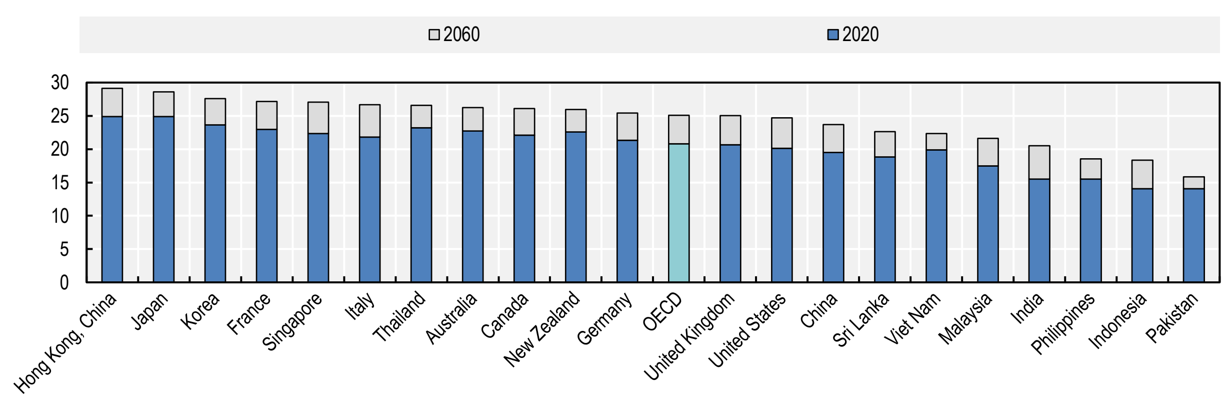
Figure 3.2. Current life expectancy at birth for men and women, in years



Note: Shown is period life expectancy that is computed from mortality rates that apply in a specific period, here 2020, rather than to a specific birth cohort.
Source: United Nations, Department of Economic and Social Affairs, (2022). World Population Prospects 2022, Online Edition.

StatLink https://stat.link/mlrsxf

Figure 3.3. Remaining life expectancy at age 65 for women, current and projections, in years



Source: United Nations, Department of Economic and Social Affairs, (2022). World Population Prospects 2022, Online Edition.

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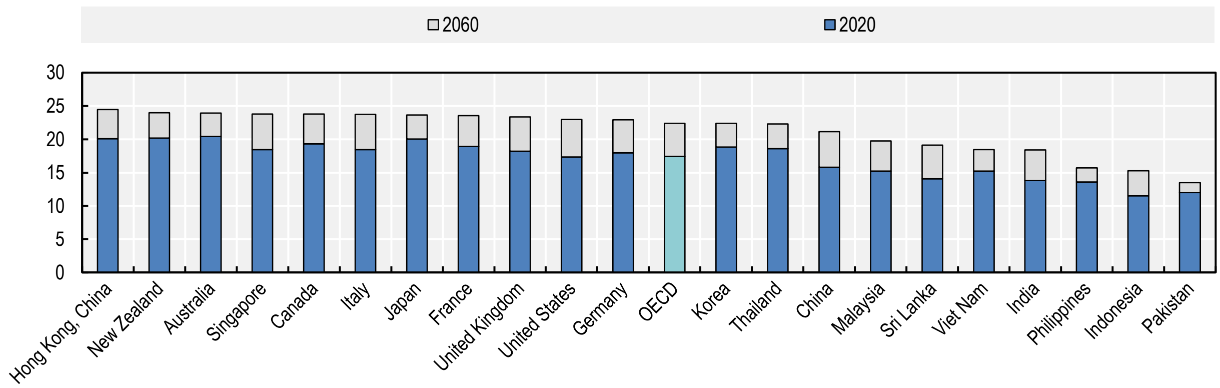
Figure 3.4. Remaining life expectancy at age 65 for men, current and projections, in years



Source: United Nations, Department of Economic and Social Affairs, (2022); World Population Prospects 2022, Online Edition.

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Demographic old-age to working-age ratio

Key results

There are 16 individuals aged 65 and over for every 100 persons of working age (ages 20 to 64) on average across all the Asian economies countries, while there were only about nine 30 years ago. Population ageing has been accelerating as this average old-age to working-age demographic ratio – computed by keeping age thresholds constant – is projected to reach 41 over the next 30 years.

The evolution of old-age to working-age ratios depends on mortality rates, fertility rates and migration. Both the Asian economies and OECD countries have seen prolonged increases in life expectancy that most analysts project to continue, implying an increasing number of older people and most likely of pensioners too.

Currently, the demographically oldest Asian economy is Hong Kong (China), with an old-age to working-age ratio equal to 28.7 (meaning 28.7 individuals aged 65 and over for 100 persons of working age defined as 20 to 64) (Table 3.2). Thailand is the only other economy with an old-age to working-age ratio above 20, at 21.6. By 2050, the old-age to working-age ratio is expected to reach more than 50 in China (55.0), Hong Kong (China) (83.2), Singapore (65.1) and Thailand (59.9).

By contrast, all the other economies are currently between 10 and 20, with the exception of Pakistan (8.7) and the Philippines (9.6). In the second half of this century both of these countries are expected to remain considerably younger than the other economies, at 11.2 in Pakistan and 18.5 in the Philippines, with India and Indonesia being next at around 25. By 2080, the old-age ratio will only increase to 22.3 in Pakistan, 10 percentage points below any other economy.

For the OECD there are 30 individuals aged 65 and over for every 100 persons of working age (ages 20 to 64) on average while there were only about 20 30 years ago. Population ageing has been accelerating as this average old-age to working-age demographic ratio – computed by keeping age thresholds constant – is projected to reach 53 over the next 30 years.

Four Anglo-Saxon OECD countries – Australia, Canada, New Zealand and the United States – have relatively low old-age ratios, between 25 and 30. This is partly due to inward migration of workers and – except for Canada – to comparatively high fertility rates just below replacement level in recent decades.

For the OECD as a whole, the increase in the old-age to working-age ratio is projected to continue according to the medium forecast of United Nations Populations Prospects, from 30.2 in 2020 to 52.5 in 2050 and 65.3 in 2080. By far, Korea is facing the most rapid population ageing among OECD countries. The old-age ratio would increase from 7.4 in 1960, 23.6 in 2020 to 116.2 in 2080 and Korea would move from being the fifth youngest country in the OECD in 2020 to the oldest in 2080.

The projected working-age population (20-64) will increase by 8% in the Asian economies on average by 2060, i.e. by 0.2% per year. It will fall by 30% or more in China, Hong Kong (China) and Thailand, and also by 27% in Singapore (Figure 3.5). This will have a significant impact on the financing of pay-as-you-go (PAYGO) systems as it is closely related to their internal rates of return. Even funded pension systems might be negatively affected by rapidly declining working-age populations through its effect on labour supply, in turn potentially lowering output growth and equilibrium interest rates.

By contrast it is projected to increase by more than 15% in Indonesia and Malaysia and by 22% in India, 61% in the Philippines and by over 120% in Pakistan.

For the OECD the projected working-age population will decrease by 10% on average by 2060, i.e. by 0.26% per year. It will fall by 35% or more in Japan and Korea, and also by more than 25% in Italy. It is projected to increase by more than 20% in Australia.

Definition and measurement

The old-age to working-age demographic ratio is defined as the number of individuals aged 65 and over per 100 people of working age defined as those at ages 20 to 64.

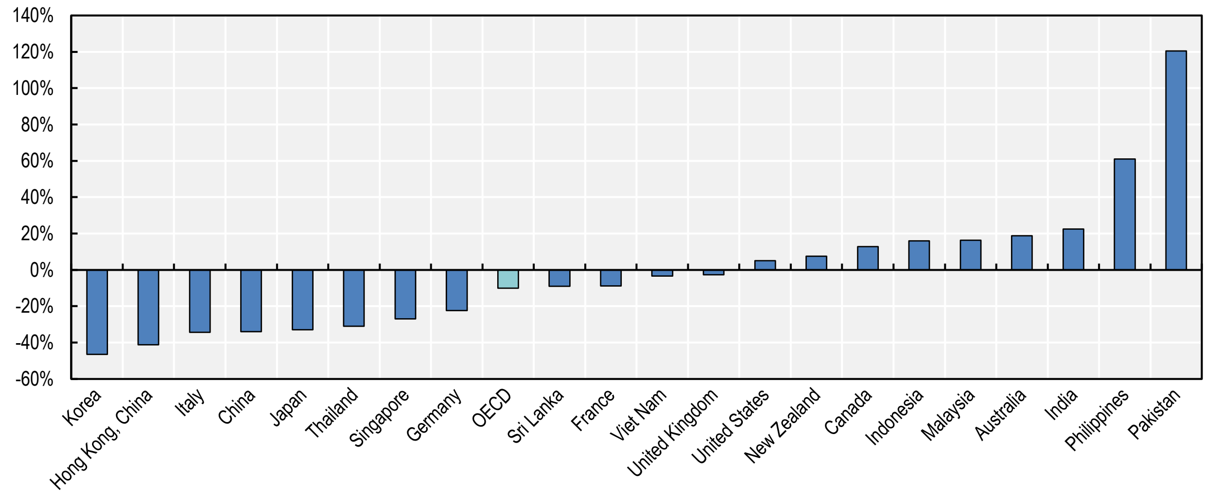
Table 3.2. Demographic old-age to working-age ratio: Historical and projected values, 1950-2080

	1950	1960	1990	2020	2050	2080		1950	1960	1990	2020	2050	2080
East Asia/Pacific							**OECD Asia/Pacific**						
China	10.0	8.4	9.6	19.7	55.0	88.4	Australia	14.0	16.0	18.9	27.3	42.4	58.4
Hong Kong (China)	4.4	5.3	13.8	28.7	83.2	97.7	Canada	14.1	15.1	18.4	29.7	45.7	59.1
Indonesia	3.8	5.1	8.2	11.3	25.4	38.4	Japan	9.9	10.6	20.1	54.8	79.2	85.4
Malaysia	11.0	6.2	7.4	11.4	28.9	52.3	Korea	6.1	7.4	8.3	23.6	80.1	116.2
Philippines	8.4	6.4	7.3	9.6	18.5	32.3	New Zealand	16.6	17.2	19.4	26.4	43.9	61.4
Singapore	4.8	3.6	8.7	18.8	65.1	77.8	United States	14.1	17.5	20.8	27.6	42.7	57.1
Thailand	7.3	6.7	7.7	21.6	59.9	84.5							
Viet Nam	7.8	10.5	12.3	13.7	34.9	51.3	**Other OECD**						
							France	19.5	20.8	24.2	37.9	56.3	67.6
South Asia							Germany	16.0	19.2	23.6	36.9	58.3	64.2
India	6.4	7.0	8.5	11.5	24.7	49.2	Italy	14.3	16.4	24.6	39.6	77.7	82.9
Pakistan	12.4	8.2	8.0	8.7	11.2	22.3	United Kingdom	17.9	20.2	26.9	32.3	48.1	62.7
Sri Lanka	20.1	10.6	11.7	18.7	39.3	61.3	**OECD**	**13.6**	**15.2**	**20.0**	**30.2**	**52.5**	**65.3**

Note: The demographic old-age to working-age ratio is defined as the number of individuals aged 65 and over per 100 people aged between 20 and 64.
Source: United Nations, Department of Economic and Social Affairs (2022), World Population Prospects 2022, Online Edition (for future periods: medium-variant forecast).

Figure 3.5. The working-age population will decline in a large number of Asian countries

Change in the working age population (20-64), 2020-60



Source: United Nations World Population Prospects: The 2022 Revision.

StatLink https://stat.link/0m5gka

Average wage

Key results

"Average wage (AW)" is an important metric as all pension modelling results are presented as multiples of this measure. The average for all Asian economies was USD 10 925 in 2020 and USD 20 521 in PPP terms.

Table 3.3 reports the Asian economies average wage for 2020, based primarily on survey data. The OECD's full-time average wage (AW) levels are also given. The wage earnings are defined as gross wages before deductions of any kind (including personal income taxes and social security contributions), but including overtime pay and other cash supplements paid to employees.

Average wages are displayed in national currencies and in US dollars (both at market exchange rates and at purchasing power parities, PPP). The PPP exchange rate adjusts for the fact that the purchasing power of a dollar varies between countries: it allows for differences in the price of a basket of goods and services between countries.

Wage earnings across the Asian economies averaged USD 10 925 in 2020 at market exchange rates. Singapore has the highest at USD 48 596, with Hong Kong (China) next at USD 30 194, China at USD 11 295 (Table 3.3). The lowest levels are found in Pakistan, at USD 860 with India, Indonesia and Sri Lanka also under USD 3 000.

At PPP wages averaged USD 20 521. Singapore is again highest amongst the Asian economies, at USD 80 414, with Hong Kong (China) next at USD 38 614. Pakistan is again the lowest at USD 3 439 but India, Indonesia and Sri Lanka are also under USD 10 000, with the other Asian economies around USD 20 000 or lower. The higher figure for PPP wages suggests that many economies exchange rates with the US dollar were lower than the rate that would equalise the cost of a standard basket of goods and services.

Average wages for the OECD countries are much higher, averaging USD 39 178 at market exchange rates. Australia has the highest wages at market exchange rates for those OECD countries listed at USD 62 530, with Germany and the United States also around USD 60 000. The lowest values among the OECD countries listed are in Italy at USD 34 532 and Korea at USD 38 991.

At PPP wages averaged USD 46 520 across the OECD. Germany is now highest of the countries listed at USD 69 968, with Australia and the United States also over USD60 000. New Zealand is lowest at USD 43 965 with Canada and Italy being the only other OECD countries, of those listed, below USD 50 000. Again, the higher figure for PPP wages suggests that many OECD countries' exchange rates with the US Dollar were lower than the rate that would equalise the cost of a standard basket of goods and services.

Definition and measurement

The "average worker" earnings series (AW), defined as the average full-time adult gross wage earnings, was adopted from the second edition of *Pensions at a Glance* (OECD, 2007[1]). This concept is broader than the previous benchmark of the "average manual production worker" (APW) because it covers more economic sectors and includes both manual and non-manual workers. The new AW measure was introduced in the OECD report *Taxing Wages* and also serves as benchmark for *Benefits and Wages*. The third edition of *Pensions at a Glance* (OECD, 2009[2]) also included a comparison of replacement rates under the old and new measures of earnings for eight countries where the results were significantly different.

Table 3.3. Average wage (AW), 2020

	OECD measures of average wages			Exchange rate, national currency per USD	
	National currency	USD, market exchange rate	USD, PPP	Market rate	PPP
East Asia/Pacific					
China	79 854	11 295	19 104	7.07	4.18
Hong Kong (China)	234 000	30 194	38 614	7.75	6.06
Indonesia	34 080 000	2 390	7 289	14 260.59	4 675.22
Malaysia	35 196	8 223	22 136	4.28	1.59
Philippines	197 832	3 977	10 320	49.75	19.17
Singapore	67 548	48 596	80 414	1.39	.84
Thailand	174 002	5 635	14 452	30.88	12.04
Viet Nam	83 488 800	3 589	11 274	23 262.63	7 405.19
South Asia					
India	215 400	2 852	9 795	75.53	21.99
Pakistan	144 168	860	3 439	167.64	41.92
Sri Lanka	477 576	2 564	8 893	186.24	53.70
OECD Asia/Pacific					
Australia	90 861	62 530	62 166	1.45	1.46
Canada	57 292	42 718	47 819	1.34	1.20
Japan	5 185 181	48 562	50 141	106.77	103.41
Korea	46 020 316	38 991	52 954	1 180.28	869.06
New Zealand	64 150	41 600	43 965	1.54	1.46
United States	60 220	60 220	60 220	1.00	1.00
Other OECD					
France	38 188	43 618	51 569	0.88	0.74
Germany	52 104	59 513	69 968	0.88	0.74
Italy	30 233	34 532	45 190	0.88	0.67
United Kingdom	41 807	53 599	58 369	0.78	0.72
OECD		**39 178**	**46 520**		

Note: USD = the United States of America Dollar, PPP = purchasing power parity.
Source: OECD pension models.

References

OECD (2009), *Pensions at a Glance 2009: Retirement-Income Systems in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/pension_glance-2009-en. [2]

OECD (2007), *Pensions at a Glance 2007: Public Policies across OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/pension_glance-2007-en. [1]

4 Pensions at a Glance Asia/Pacific: Pension profiles

This chapter 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 pension profiles summarise the national results in standard charts and tables. The chapters for the OECD countries included can be found at http://oe.cd/pag.

China

China: Pension system in 2020

China has a two-tier pension system, consisting of a basic pension and a mandatory second-tier plan. It covers urban workers and many of the parameters depend on province-wide (rather than national) average earnings.

Key indicators: China

		China	OECD
Average worker earnings (AW)	CNY	79 854	276 988
	USD	11 295	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	78.2	80.2
	at age 65	17.7	19.1
Population over age 65	% of working- age population	19.7	30.2

Qualifying conditions

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

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 has been about 6% in recent years. The modelling assumes 50% indexation to wages.

Defined contribution (funded or notional accounts)

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

The modelling results are based on a funded defined contribution system.

Variant careers

Early retirement

It is possible to claim a pension benefit from the age of 55 years for men and 45 years for women if the individual engaged in physical work in certain industries or posts.

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

Taxation of workers

There is a standard income-tax allowance of CNY 42 000. Employees are allowed to deduct social insurance and housing fund contributions to calculate taxable income.

Taxation of worker's income

Individual Income Tax Rates (applicable to income from wages and salaries)

Annual taxable income	Tax-rate (%)
Less than CNY 36000	3
The portion of income in excess of CNY 36 000 to CNY 144000	10
The portion of income in excess of CNY 144 000 to CNY 300000	20
The portion of income in excess of CNY 300 000 to CNY 420 000	25
The portion of income in excess of CNY 420 000 to CNY 660 000	30
The portion of income in excess of CNY 660 000 to CNY 960 000	35
The portion of income in excess of CNY 960 000	45

Note: "Monthly taxable income" mentioned in this schedule refers to the amount remaining from the gross income in a month after the deduction of CNY 5 000.

Social security contributions payable by workers

Under the revised system, employers contribute a maximum of 16% of earnings to cover the basic pension. The second-tier pension is financed by an 8% contribution from employees. These contributions are capped at three times the local average wage. The social security contributions to individual accounts are exempt from income taxes.

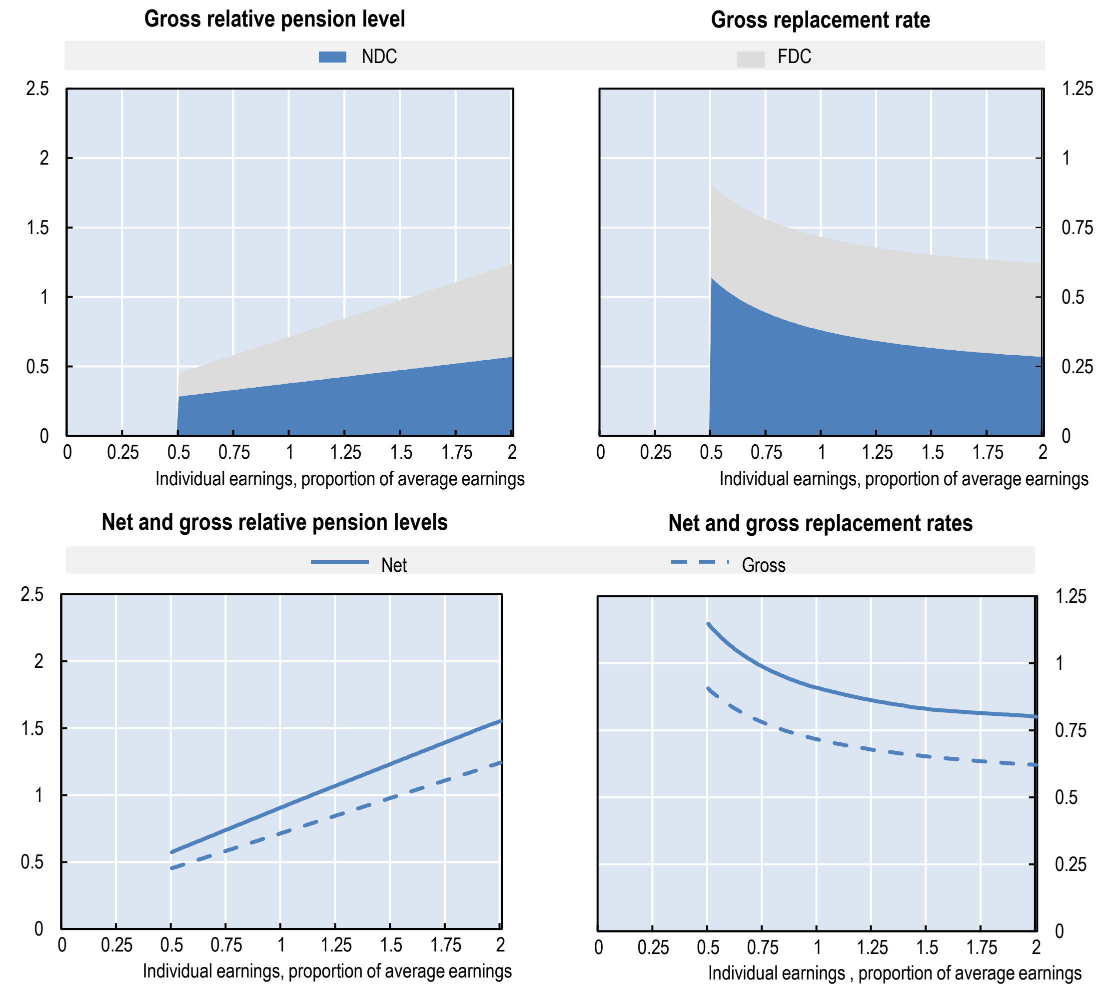
Taxation of pensioners

There is no additional tax relief for pensioners.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: China in 2058 retirement at age 60 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	45.3	58.4	71.6	97.9	124.2	176.7
(% average gross earnings)	*36.1*	*45.9*	*55.7*	*75.4*	*95.0*	*134.2*
Net relative pension level	57.4	74.1	90.8	123.3	155.3	215.3
(% net average earnings)	*45.8*	*58.3*	*70.7*	*95.6*	*119.7*	*166.8*
Gross replacement rate	90.6	77.9	71.6	65.2	62.1	58.9
(% individual gross earnings)	*72.2*	*61.2*	*55.7*	*50.2*	*47.5*	*44.7*
Net replacement rate	114.8	98.7	90.8	83.0	80.1	75.8
(% individual net earnings)	*91.6*	*77.6*	*70.7*	*64.3*	*61.8*	*58.7*
Gross pension wealth	20.5	17.6	16.2	14.8	14.0	13.3
(multiple of individual gross earnings)	*20.2*	*17.1*	*15.6*	*14.0*	*13.3*	*12.5*
Net pension wealth	26.0	22.3	20.5	18.8	18.1	17.1
(multiple of individual net earnings)	*25.6*	*21.7*	*19.8*	*18.0*	*17.3*	*16.4*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/1jnyxe

Hong Kong (China)

Hong Kong (China): Pension system in 2020

The Mandatory Provident Fund (MPF) system is an employment-based retirement protection system. Except for exempt persons, employees and self-employed persons who are at least 18 but under 65 years of age are required to join an MPF scheme. MPF schemes are, privately managed, fully funded defined contribution schemes.

Key indicators: Hong Kong (China)

		Hong Kong (China)	OECD
Average worker earnings (AW)	HKD	234 000	303 630
	USD	30 194	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	85.3	80.2
	at age 65	22.5	19.1
Population over age 65	% of working- age population	28.7	30.2

Qualifying conditions

Withdrawal of accrued benefits from the MPF System is allowed when scheme members reach the retirement age of 65.

Benefit calculation

Defined contribution

Employees and employers who are covered by the MPF System are each required to make regular mandatory contributions calculated at 5% of the employee’s relevant income to an MPF scheme, subject to the minimum and maximum relevant income levels. For a monthly paid employee, the minimum and maximum relevant income levels are HKD 7 100 and HKD 30 000 respectively.

Accrued benefits in the MPF System are withdrawn in a lump sum when scheme members reach the retirement age of 65.

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 living allowance (Normal OALA) is means-tested and provided to those between 65 and 69. For a single person, the asset limit is HKD 365 000 and monthly income limit is HKD 10 330 (after which benefits are withdrawn). Limits for married couples are higher (HKD 554 000 and HKD 15 620, respectively). The full benefit is HKD 2 845 per month, which is about 14.6% of average earnings.

Higher older age living allowance (Higher OALA) is for those aged 70 and above. For a single person, the asset limit is HKD 159 000 and monthly income limit is HKD 10 330 (after which benefits are withdrawn). Limits for married couples are higher (HKD 241 000 and HKD 15 620, respectively). The full benefit is HKD 3 815 per month, which is about 19.6% of average earnings.

From 1 September 2022 the normal and higher old age allowances will be merged. The merged old age live allowance (OALA) will adopt the more relaxed asset limits of the Normal OALA and the payment rate of the Higher OALA, while the monthly income limits will remain unchanged.

Variant careers

Early retirement

For the MPF System, it is possible to withdraw the benefits from age 60 if ceasing employment permanently. However, the targeted/basic programme does not provide benefits until 65.

Late retirement

It is possible to combine working and receiving pension. For the MPF System, upon reaching age 65, if an individual continues to work, no further mandatory contributions will be required and the individual may withdraw the benefits derived from mandatory contributions.

Personal income tax and social security contributions

Taxation of workers

Employees can claim tax deductions for their mandatory contributions made to an MPF scheme, to a maximum of HKD 18 000.

Any voluntary contributions made by employees are not tax deductible.

Taxation of worker's income

The lower of the following two tax rules are applied. The first rule is described in the following tax schedule. This is applied to taxable income (after deduction and allowance). The basic allowance for a single person in 2020 is HKD 132 000.

Annual taxable income (HKD)	Tax-rate
Up to 50 000	2%
50 001 to 100 000	6%
100 001 to 150 000	10%
150 001 to 200 000	14%
Over 200 000	17%

Social security contributions payable by workers

The information of mandatory contributions made by employees and self-employed persons to the MPF System are provided in the section of "Defined contribution".

Taxation of pensioners

There is no additional tax relief for pensioners.

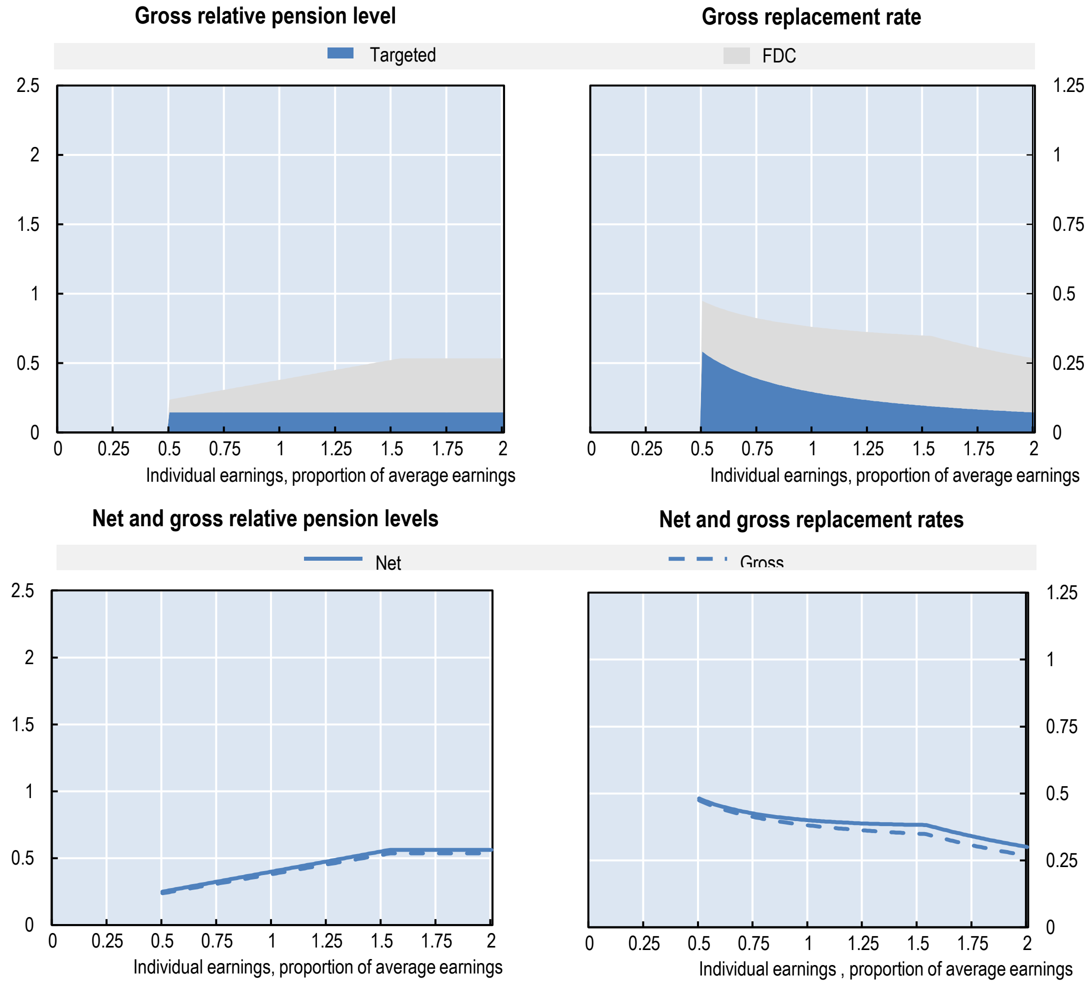
Taxation of pension income

MPF benefits derived from mandatory contributions are not subject to tax on withdrawal (only lump sum withdrawal is allowed).

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Hong Kong (China) in 2063 retirement at age 65



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	23.7	30.9	38.1	52.4	53.5	53.5
(% average gross earnings)	*22.6*	*28.8*	*35.1*	*47.6*	*48.6*	*48.6*
Net relative pension level	24.9	32.4	40.0	55.0	56.2	56.2
(% net average earnings)	*23.7*	*30.3*	*36.8*	*50.0*	*51.0*	*51.0*
Gross replacement rate	47.4	41.2	38.1	35.0	26.8	17.8
(% individual gross earnings)	*45.1*	*38.4*	*35.1*	*31.7*	*24.3*	*16.2*
Net replacement rate	48.1	42.5	40.0	38.3	30.0	20.5
(% individual net earnings)	*45.7*	*39.6*	*36.8*	*34.7*	*27.2*	*18.6*
Gross pension wealth	9.5	8.3	7.7	7.0	5.4	3.6
(multiple of individual gross earnings)	*10.4*	*8.8*	*8.1*	*7.3*	*5.6*	*3.7*
Net pension wealth	9.7	8.5	8.0	7.7	6.0	4.1
(multiple of individual net earnings)	*10.5*	*9.1*	*8.5*	*8.0*	*6.3*	*4.3*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/h1a7s5

India

India: Pension system in 2020

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

Key indicators: India

		India	OECD
Average worker earnings (AW)	INR	215 400	2 959 114
	USD	2 852	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	70.2	80.2
	at age 65	14.7	19.1
Population over age 65	% of working- age population	11.5	30.2

Qualifying conditions

The normal pension age for earnings-related pension benefits from the Employees' Pension Scheme is 58 years with a minimum of ten years of contributions. The pension age for the earnings-related Employees Provident Fund scheme is 58 years.

About 12% of the workforce (or approximately 58 million people) are covered under various pension systems according to the 2011 census. Covered individuals belong to the organised sectors and are employed by the government, government enterprises, public and private sector enterprises, which are mandatorily covered by the Employees Provident Fund Organization (EPFO). Employers with 20 or more employees are covered by EPFO.

The remaining 88% of the workforce are mainly occupied in the unorganised sector (self-employed, daily wage workers, farmers etc.) and some are in the organised sector, but are not mandatorily covered by the EPFO. For this share of the workforce the Public Provident Fund (PPF) and Postal Saving Schemes have traditionally been the main long-term savings instruments, but these have only catered to a relatively small section of this population.

Benefit calculation

Employees Provident Fund Schemes (EPF)

For employees with basic wages less than or equal to INR 15 000 per month, the employee contributes 12% of the monthly salary and the employer contributes 3.67%. This combined 15.67% accumulates as a lump-sum.

For employees with basic wages greater than INR 15 000 per month, the employee contributes 12% of the monthly salary and the employer also contributes 12%. This combined 24% accumulates as a lump-sum.

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

Employees' Pension Scheme (EPS)

Starting from September 2014 new members with basic wage above INR 15 000 per month no longer have the option of contributing to the EPS. Existing participants who have until now been contributing over the earlier INR 6 500 wage cap have an option to continue contributing over the increased wage cap of INR 15 000 but they would also have to contribute the government subsidy of 1.16% on the excess amount.

For the existing and new subscribers who are within the new basic wage cap of INR 15 000, the employer contributes an amount equal to 8.33% of the basic wage to the EPS fund and the Central Government contributes a subsidy of 1.16% 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 x pensionable service)/70.

The pensionable salary will be calculated on the average monthly pay for the contribution period of the last 60 months (as against 12 months earlier) preceding the date of exit from the membership.

The maximum possible replacement rate is roughly 50%.

With effect from September 2014, a minimum pension level of INR 1 000 per month has been provided under the scheme.

Targeted Social Safety Net

There is no population wide social safety net.

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 the normal pension age.

Personal income tax and social security contributions

Taxation of workers

From 2020 onwards, India introduced a new tax regime that lowered tax rates but also removed all tax deductions with no additional allowances for those aged over 60. As not all deductions were applied within the pension model the new regime has been adopted.

Taxation of worker's income

India's financial year begins in April. The following rates apply for 2020:

Annual income (INR)	Income tax Rates	Education Cess
Up to 250 000	Nil	Nil
250 001-500 000	5%	4%
500 001-750 000	10%	4%
750 001-1 000 000	15%	4%
1 000 001-1 250 000	20%	4%
1 250 001-1 500 000	25%	4%
1 500 001 and above	30%	4%

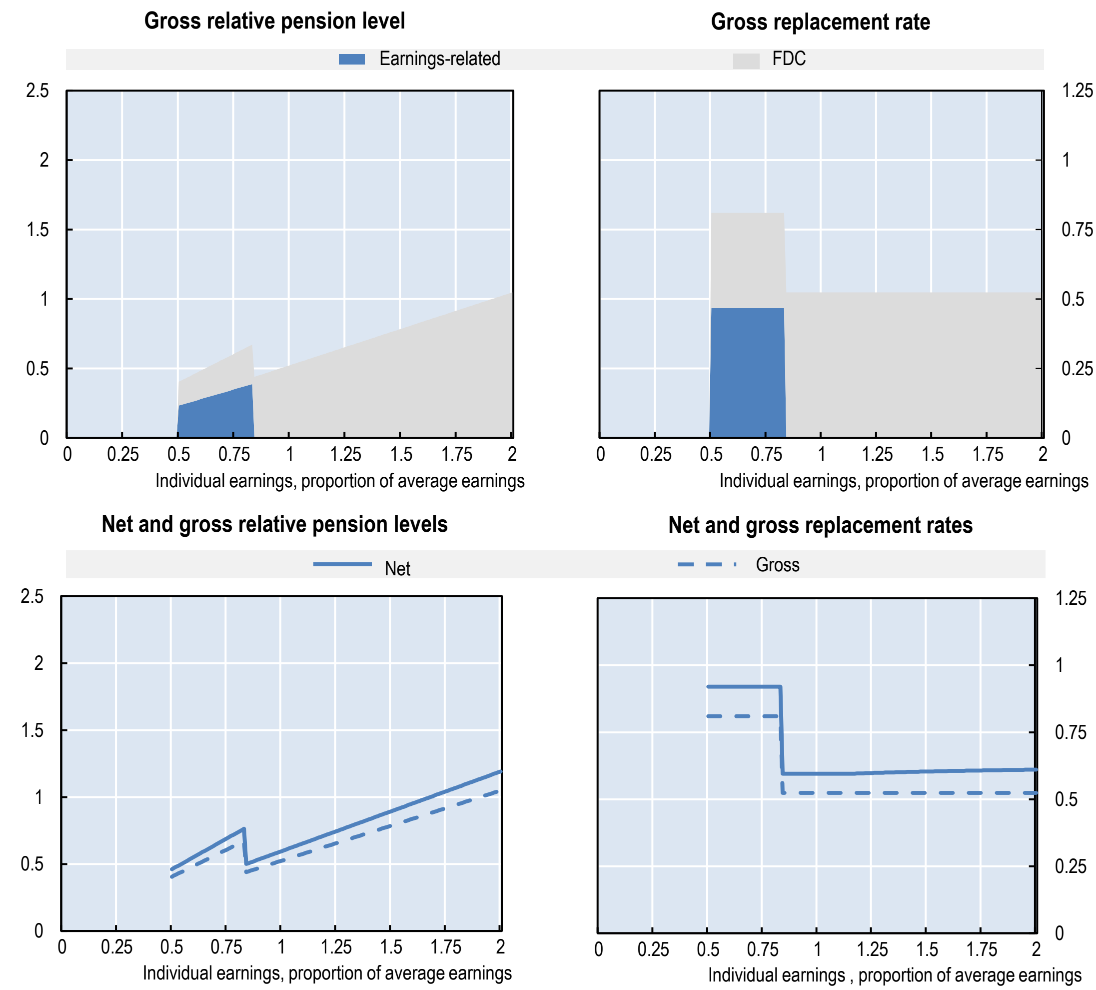
Taxation of pensioners

There is no additional tax relief for pensioners.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: India in 2056 retirement at age 58 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	40.5	60.7	52.4	78.6	104.8	157.2
(% average gross earnings)	*39.3*	*58.9*	*48.8*	*73.2*	*97.5*	*146.3*
Net relative pension level	46.0	69.0	59.5	89.3	119.1	178.6
(% net average earnings)	*44.6*	*67.0*	*55.4*	*83.1*	*110.8*	*166.3*
Gross replacement rate	80.9	80.9	52.4	52.4	52.4	52.4
(% individual gross earnings)	*78.6*	*78.6*	*48.8*	*48.8*	*48.8*	*48.8*
Net replacement rate	92.0	92.0	59.5	60.3	61.1	62.6
(% individual net earnings)	*89.3*	*89.3*	*55.4*	*56.2*	*56.8*	*58.3*
Gross pension wealth	16.1	16.1	10.8	10.8	10.8	10.8
(multiple of individual gross earnings)	*16.8*	*16.8*	*10.8*	*10.8*	*10.8*	*10.8*
Net pension wealth	18.3	18.3	12.3	12.5	12.6	13.0
(multiple of individual net earnings)	*19.1*	*19.1*	*12.3*	*12.5*	*12.6*	*13.0*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/k03cfr

Indonesia

Indonesia: Pension system in 2020

Employees are covered by both an earnings-related social insurance scheme and a defined contribution plan.

Key indicators: Indonesia

		Indonesia	OECD
Average worker earnings (AW)	IDR (million)	34.08	558.70
	USD	2 390	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	68.9	80.2
	at age 65	12.8	19.1
Population over age 65	% of working- age population	11.3	30.2

Qualifying conditions

Normal pension age is 57 years in 2020 gradually rising to 65 by 2043, increasing by one year every three years. Retirement is not required and employees with 15 years of contributions are qualified for a periodical pension benefit while those having less than 15 years qualify for lump-sum payments.

Benefit calculation

Earnings-related

The pension benefit currently accrues at 1%. Past earnings are valorised in line with inflation. Contributions are payable up to a ceiling of IDR 8 939 700 per month. The minimum pension after 15 years of contribution is IDR 350 700 per month, with a maximum benefit of IDR 4 207 200 per month. Pensions in payment are indexed to prices.

Defined contribution

Employees in the private sector are covered by defined contribution pension plans. From 1993 to 2013 this refers to one of the Employees Social Security Programmes (PT Jamsostek) and in this case the Jaminan Hari Tua (JHT) or Old Age Security (OAS). The JHT is a compulsory programme for all employees and the retired may opt for part lump-sum with a periodical payment until death or a full lump-sum payment. Employees contribute 2% of earnings and employers pay 3.7% of the payroll. The pension is paid as a lump sum or monthly up to a maximum of five years if the balance is more than IDR 3 million. For comparison with other countries, 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 the pension at any age with a minimum of five years of contribution, if unemployed for at least 6 months.

Late retirement

The benefit may be deferred with no maximum age.

Personal income tax and social security contributions

Taxation of workers

There is a deduction of IDR 54 000 000 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 6 000 000. There is also a tax-deductible amount of 5% or up to IDR 2 400 000 for pension payments. Social security contributions are tax deductible.

Taxation of worker's income

Individual Income Tax Rates 2020 (workers)

Annual Income (IDR millions)	Tax Rate
Up to 60	5%
Over 50 up to 250	15%
Over 250 up to 500	25%
Over 500 to 5 000	30%
Over 5 000	35%

Social security contributions payable by workers

Employees contribute 1% of payroll to the pension plans and 1% to health care.

Taxation of pensioners

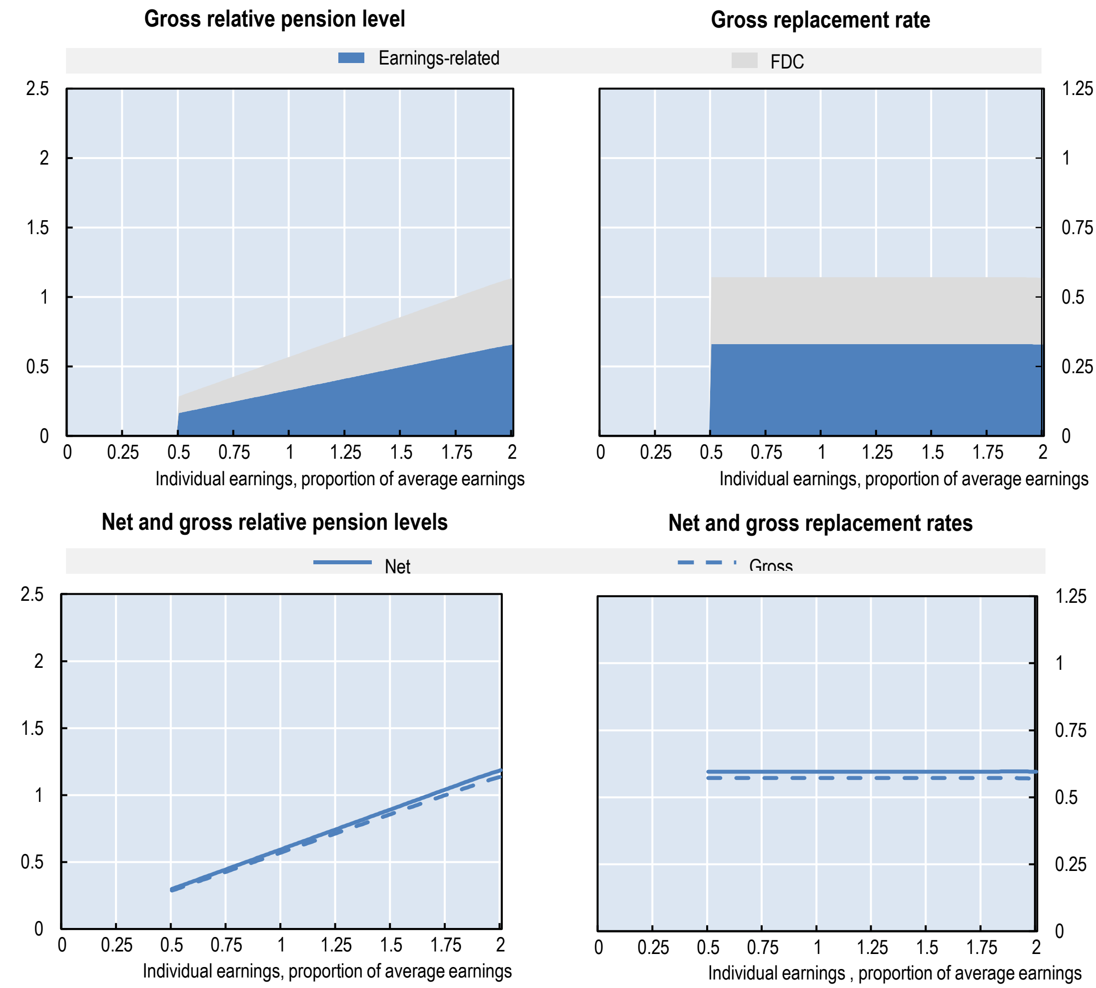
Individual Income Tax Rates 2020 (pensioners)

Annual Income (IDR millions)	Tax Rate
Up to 50	Nil
Over 50	5%

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Indonesia in 2063 retirement at age 65 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	28.6	42.9	57.2	85.8	113.7	139.8
(% average gross earnings)	*26.9*	*40.4*	*53.9*	*80.8*	*107.2*	*131.5*
Net relative pension level	29.8	44.7	59.5	89.3	118.5	145.6
(% net average earnings)	*28.1*	*42.1*	*56.1*	*84.2*	*111.6*	*137.0*
Gross replacement rate	57.2	57.2	57.2	57.2	56.9	46.6
(% individual gross earnings)	*53.9*	*53.9*	*53.9*	*53.9*	*53.6*	*43.8*
Net replacement rate	59.5	59.5	59.5	59.5	59.5	49.5
(% individual net earnings)	*56.1*	*56.1*	*56.1*	*56.1*	*56.1*	*46.5*
Gross pension wealth	7.8	7.8	7.8	7.8	7.8	6.4
(multiple of individual gross earnings)	*8.5*	*8.5*	*8.5*	*8.5*	*8.5*	*6.9*
Net pension wealth	8.1	8.1	8.1	8.1	8.1	6.8
(multiple of individual net earnings)	*8.9*	*8.9*	*8.9*	*8.9*	*8.9*	*7.4*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/5mpjgu

Malaysia

Malaysia: Pension system in 2020

Private sector employees and non-pensionable public sector employees contribute to the provident fund, with social assistance paid to those with insufficient income.

Key indicators: Malaysia

		Malaysia	OECD
Average worker earnings (AW)	MYR	35 196	167 682
	USD	8 223	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	76.1	80.2
	at age 65	16.4	19.1
Population over age 65	% of working- age population	11.4	30.2

Qualifying conditions

The normal pension age is 55, but retirement is not necessary.

Benefit calculation

Defined-contribution

Employees pay 11% of monthly earnings to the provident fund according to wage classes, when aged up to age 60, and 5.5% between age 60 and 75. Employers pay 13% of monthly earnings according to wage classes for employees up to 60 years of age and earning under MYR 5 000 per month, and 12% for earnings above MYR 5 000 per month. Employer contributions are 6% for those aged 60 to 75 for earnings above MYR 5 000 per month and 6.5% below. There is no ceiling for the contribution. Insured persons can make voluntary additional contributions.

For those aged under 55 the contribution is made to two different accounts: 70% of contribution to Account 1 (funding retirement) and 30% to Account 2 (can be accessed early for education, home purchase, certain critical illness and other approved expenses). Once an EPF member reaches age 55, Accounts 1 and 2 are consolidated into a single account (Akaun 55), and a separate account (Akaun Emas) is created for contributions made after age 55.

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 countries, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

The guaranteed minimum interest rate is 2.5% a year. If funds remain in the accounts after age 55, fund members continue to earn compound interest until age 100.

Old-age assistance

A monthly benefit of MYR 350 is paid to those aged 60 and assessed as needy (below poverty line), with no financial support from other family members.

Variant careers

Early retirement

It is possible to make a one-time withdrawal of savings at age 50 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

Mandatory and voluntary provident fund contributions up to MYR 6 000 a year are tax deductible.

Taxation of worker's income

Individuals have a personal tax allowance of MYR 9 000 per year with additional income taxed as follows:

Individual Income Tax Rates (applicable to income from wages and salaries)

Chargeable income in MYR	Tax-rate (%)
0-5 000	0%
5 001-20 000	1%
20 001-35 000	3%
35 001-50 000	8%
50 001-70 000	14%
70 001-100 000	21%
100 001-250 000	24%
250 001-400 000	24.5%
400 001-600 000	25%
600 001-1 000 000	26%
1 000 001-2 000 000	28%
2 000 001 and above	30%

Social security contributions payable by workers

In addition to the EPF contribution employees below age 55 pay 0.5% of earnings up to MYR 4 000 a month to be covered by social insurance. The insurance does not cover old-age pension, but disability, survivor and other pensions and grants.

Taxation of pensioners

There is no additional tax relief for pensioners.

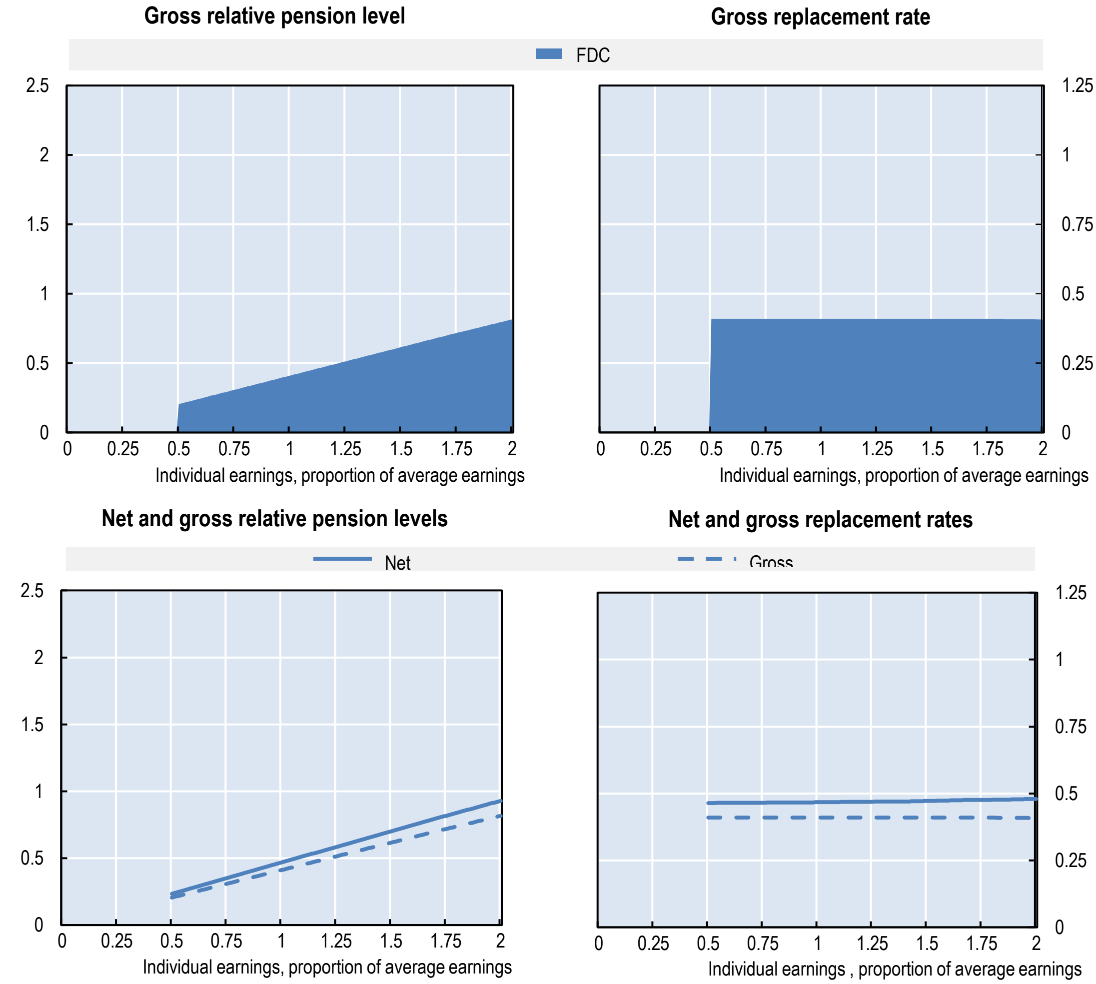
Taxation of pension income

Pension income is tax exempted.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Malaysia in 2053 retirement at age 55 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	20.5	30.8	41.0	61.6	81.6	120.9
(% average gross earnings)	*14.3*	*21.4*	*28.5*	*42.8*	*56.7*	*84.1*
Net relative pension level	23.3	35.0	46.7	70.0	92.8	137.5
(% net average earnings)	*16.2*	*24.4*	*32.5*	*48.7*	*64.5*	*95.7*
Gross replacement rate	41.0	41.0	41.0	41.0	40.8	40.3
(% individual gross earnings)	*28.5*	*28.5*	*28.5*	*28.5*	*28.4*	*28.0*
Net replacement rate	46.4	46.6	46.7	47.2	48.0	50.2
(% individual net earnings)	*32.3*	*32.4*	*32.5*	*32.8*	*33.4*	*34.9*
Gross pension wealth	9.7	9.7	9.7	9.7	9.6	9.5
(multiple of individual gross earnings)	*9.7*	*9.7*	*9.7*	*9.7*	*9.6*	*9.5*
Net pension wealth	10.9	11.0	11.0	11.1	11.3	11.8
(multiple of individual net earnings)	*10.9*	*11.0*	*11.0*	*11.1*	*11.3*	*11.8*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/d9nvtf

Pakistan

Pakistan: Pension system in 2020

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 the earnings-related pension (EOBI).

Key indicators: Pakistan

		Pakistan	OECD
Average worker earnings (AW)	PKR	144 168	6 567 800
	USD	860	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	66.4	80.2
	at age 65	13.0	19.1
Population over age 65	% of working- age population	8.7	30.2

Qualifying conditions

Normal pension age for earnings-related private sector 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).

Benefit calculation

Earnings-related

The pension is calculated as average monthly wages multiplied by number of years of insurable employment divided by 50. The indexation rule for pension in payment is discretionary and the model assumes price-indexation.

Minimum pension

Minimum pension is PKR 8 500 per month. Indexation for pension in payment is discretionary and the model assumes price-indexation.

Old age grant

A lump sum of one month of the insured's average monthly earnings for each year of contributions is paid for those with at least two but fewer than 15 years of contributions.

Variant careers

Early retirement

The earliest age at which men can start claiming pension is 55 and this is 50 for women.

The reduction applied 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.

Late retirement

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

Personal income tax and social security contributions

Taxation of worker's income

Taxable Income in PKR	Rate of Tax
0 to 600 000	0%
600 001 to 1 200 000	5%
1 200 001 to 1 800 000	10%
1 800 001 to 2 500 000	15%
2 500 001 to 3 500 000	17.5%
3 500 001 to 5 000 000	20%
5 000 001 to 8 000 000	22.5%
8 000 001 to 12 000 000	25%
12 000 001 to 30 000 000	27.5%
30 000 001 to 50 000 000	30%
50 000 001 to 75 000 000	32.5%
Above 75 000 000	35%

Social security contributions payable by workers

Employer pays 5% of the minimum wage (PKR 13 000) and employee pays contribution at the rate of 1% of minimum wage.

Taxation of pensioners

The additional tax relief for those aged 60+ is 50% for taxable income less than or equal to PKR 1 000 000.

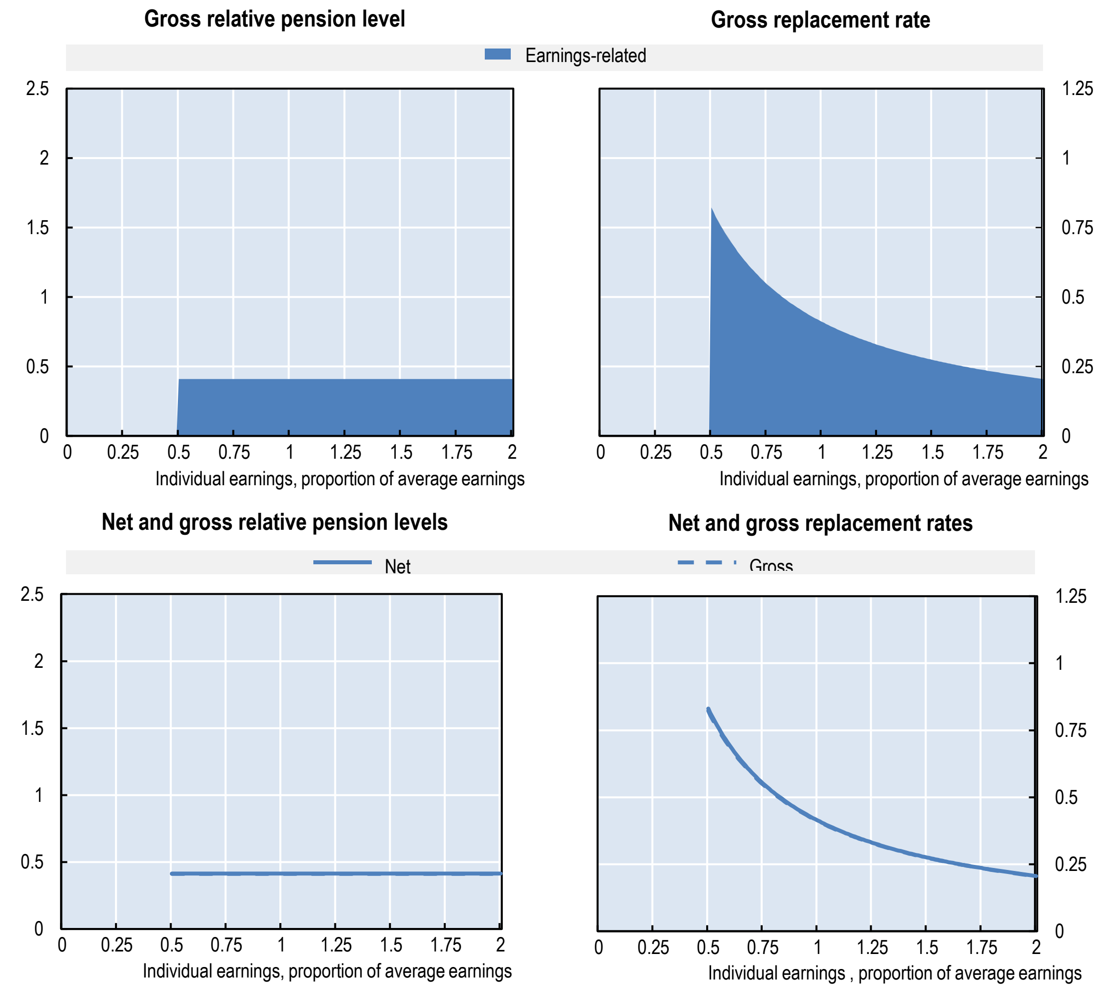
Taxation of pension income

All benefits received from the EOBI on retirement or death are not taxed. Lump-sum benefit from Voluntary Pension System is exempt however, pension payments are taxed.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Pakistan in 2058 retirement at age 60 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	41.1	41.1	41.1	41.1	41.1	41.1
(% average gross earnings)	*35.7*	*35.7*	*35.7*	*35.7*	*35.7*	*35.7*
Net relative pension level	41.3	41.3	41.3	41.3	41.3	41.3
(% net average earnings)	*35.9*	*35.9*	*35.9*	*35.9*	*35.9*	*35.9*
Gross replacement rate	82.2	54.8	41.1	27.4	20.6	13.7
(% individual gross earnings)	*71.4*	*47.6*	*35.7*	*23.8*	*17.9*	*11.9*
Net replacement rate	83.1	55.2	41.3	27.5	20.6	13.9
(% individual net earnings)	*72.2*	*48.0*	*35.9*	*23.9*	*17.9*	*12.1*
Gross pension wealth	11.6	7.8	5.8	3.9	2.9	1.9
(multiple of individual gross earnings)	*13.6*	*9.1*	*6.8*	*4.5*	*3.4*	*2.3*
Net pension wealth	11.8	7.8	5.9	3.9	2.9	2.0
(multiple of individual net earnings)	*13.7*	*9.1*	*6.8*	*4.5*	*3.4*	*2.3*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/bf5xwt

Philippines

Philippines: Pension system in 2020

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

		Philippines	OECD
Average worker earnings (AW)	PHP	197 832	1 949 106
	USD	3 977	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	72.1	80.2
	at age 65	14.5	19.1
Population over age 65	% of working- age population	9.6	30.2

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 of the following two average earnings: the average earnings over 5 years at 6 months prior to pension claim or the average earnings for the period in which contribution was paid. The benefit is the highest of the basic pension plus 20% of workers' average monthly earnings plus 2% of workers' average monthly earnings for each year of service exceeding 10 years + PHP 1 000 or 40% of the workers' average monthly earnings + PHP 1 000, 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 + PHP 1 000.

Social assistance

There is a social assistance payment of PHP 500 per month for those that do not have a pension from any source.

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 worker's income

For resident individuals, income tax rates and bands are as follows for 2020:

Annual taxable income	Tax-rate
Up to 250 000	0%
250 001 to 400 000	20%
400 001 to 800 000	25%
800 001 to 2 000 000	30%
2 000 001 to 8 000 000	32%
Over 8 000 000	35%

Social security contributions payable by workers

Workers pay 4.13% 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 31 income classes. The maximum insured monthly earnings for contribution are PHP 20 250.

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.

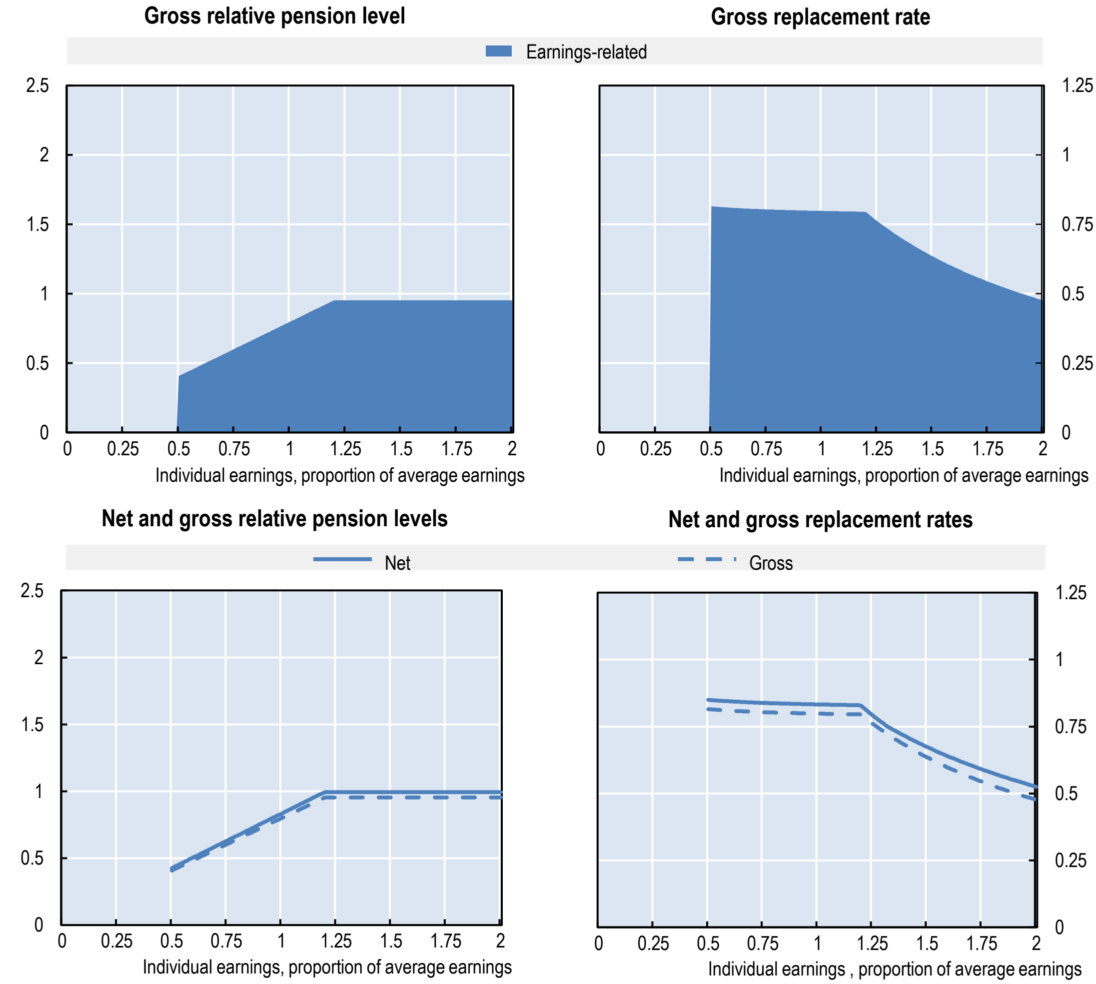
Taxation of pension income

All pension incomes are exempt from taxation.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Philippines in 2063 retirement at age 65 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	40.7	60.3	79.8	95.3	95.3	95.3
(% average gross earnings)						
Net relative pension level	42.5	62.9	83.3	99.4	99.4	99.4
(% net average earnings)						
Gross replacement rate	81.5	80.4	79.8	63.5	47.6	31.8
(% individual gross earnings)						
Net replacement rate	85.0	83.8	83.3	67.4	52.5	37.1
(% individual net earnings)						
Gross pension wealth	11.4	11.3	11.2	8.9	6.7	4.5
(multiple of individual gross earnings)	*13.1*	*12.9*	*12.8*	*10.2*	*7.7*	*5.1*
Net pension wealth	11.9	11.8	11.7	9.5	7.4	5.2
(multiple of individual net earnings)	*13.6*	*13.5*	*13.4*	*10.8*	*8.4*	*6.0*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/opkr65

Singapore

Singapore: Pension system in 2020

The Central Provident Fund (CPF) covers all Singaporean and permanent resident workers earning a monthly wage of at least SGD 50. CPF is a defined contribution scheme.

Key indicators: Singapore

		Singapore	OECD
Average worker earnings (AW)	SGD	67 548	54 457
	USD	48 596	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	82.9	80.2
	at age 65	20.4	19.1
Population over age 65	% of working- age population	18.8	30.2

Qualifying conditions

The minimum age to start receiving payouts from the national life annuity scheme is 65.

Benefit calculation

Defined contribution

The maximum contribution is calculated based on a salary ceiling of SGD 6 000 per month for both employer and employee contributions. The contribution rates vary with age as indicated below. Contributions to the Ordinary Account and Special Account are for retirement, while contributions to the MediSave Account are for medical expenses. Savings in the Ordinary Account can also be used to buy a home but amounts withdrawn must be refunded with interest upon sale of the property.

Currently, savings in the Ordinary Account earn an interest rate of 2.5% per annum while savings in the other accounts earn an interest rate of 4% per annum. Individuals below 55 years old will be paid an extra 1% interest per annum on the first SGD 60 000 of their combined balances, while individuals aged 55 and above will be paid an extra 2% interest on the first SGD 30 000 of their combined balances, and an extra 1% on the next SGD 30 000. As a result, those aged 55 and above will earn up to 6% interest per annum on their retirement balances.

At age 55, savings in the Ordinary Account and Special Account are set aside in the Retirement Account to meet the Full Retirement Sum (FRS), which is SGD 181 000 in 2020. Savings above the FRS can be withdrawn in a lump sum from age 55. Individuals who own their homes may choose to set aside half the FRS called the ‘Basic Retirement Sum’ (SGD 90 500 in 2020). There is also an ‘Enhanced Retirement Sum’ (SGD 271 500 in 2020) for those who wish to set aside a larger specified sum and receive higher monthly payouts for retirement.

Savings in the Retirement Account are used to purchase a life annuity for the member. The amount of Ordinary Account savings the individual uses to buy a home affects the total amount of savings available to purchase the life annuity and in turn the retirement payouts received. As such, the modelling results below are based on Retirement Account savings from the Ordinary Account, net of housing withdrawals, and Special Account savings.

For the purposes of comparing replacement rates with other countries, this report uses a standardised set of macro assumptions. These results do not take into account other institutional features unique to Singapore. For example, many homeowners in Singapore do not need to pay rent in old age, given the high home ownership rate at 90.4% nationally. In addition, elderly homeowners also have various options to monetise their public housing flat to supplement their retirement income. These options include renting out their spare bedrooms or flats, right-sizing to a smaller flat and taking up the Silver Housing Bonus scheme, or selling back part of their remaining lease under the Lease Buyback Scheme (LBS). The LBS is a scheme unique in Singapore's context, and is available for all HDB flat types. As such, an alternative modelling scenario where the CPF member monetises his public housing flat in retirement via the LBS has also been provided below. In this scenario, proceeds from the lease sale are used to top up savings in the Retirement Account for a larger annuity stream.

Lower-income members receive additional support. In their working years, the Workfare Income Supplement Scheme tops up the salaries and boosts the retirement savings of Singaporean lower-income workers by up to 30%. Older workers receive greater support. In their retirement years, Singaporeans aged 65 and above who had low incomes and CPF contributions during their working years may qualify for the Silver Support Scheme. Under the scheme, eligible elderly Singaporeans automatically receive a quarterly cash supplement of SGD 180 to SGD 900 (from 1 January 2021), based on their household monthly income per person and place of residence.

Employee age (years)	Contribution rate (for monthly wages ≥ SGD 750)			Credited to		
	Contribution by employer (% of wage)	Contribution by employee (% of wage)	Total contribution (% of wage)	Ordinary Account (% of wage)	Special Account (% of wage)	MediSave Account (% of wage)
35 and below	17	20	37	23	6	8
Above 35-45	17	20	37	21	7	9
Above 45-50	17	20	37	19	8	10
Above 50-55	17	20	37	15	11.5	10.5
Above 55-60	13	13	26	12	3.5	10.5
Above 60-65	9	7.5	16.5	3.5	2.5	10.5
Above 65	7.5	5	12.5	1	1	10.5

Variant careers

The retirement age in Singapore is age 62, but employers must offer re-employment to eligible employees who turn 62, up to age 67.

Withdrawals

From age 55, individuals can make lump sum withdrawals of their CPF Ordinary Account and Special Account savings in excess the of Full Retirement Sum, and any Retirement Account savings in excess of the Basic Retirement Sum if they own a property. From age 65, individuals can start monthly payouts from their CPF Retirement Account. They also have the option to defer the start of their monthly payouts to age 70 and for higher monthly payouts. Individuals can receive payouts from CPF while continuing to work.

Personal income tax and social security contributions

Taxation of workers

Compulsory CPF contributions are fully tax-exempt. Individuals can also receive tax relief of up to SGD 7 000 per year for voluntary contributions made by their employers or themselves to their own CPF Special or Retirement Accounts, and an additional tax relief of up to SGD 7 000 per year for voluntary contributions that they make to their family members' CPF Special or Retirement Accounts.

Taxation of worker's income

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 6 000
60 years old and above	SGD 8 000

Individuals who wish to save more for their old age can participate in the Supplementary Retirement Scheme (SRS), a scheme operated by the private sector. SRS contributions are voluntary, and are eligible for tax relief. Annual SRS contributions for Singaporeans and foreigners are capped at SGD 15 300 and SGD 35 700 respectively. SRS investment returns are accumulated tax-free and only 50% of the withdrawals from SRS are taxable at retirement.

For resident individuals, income tax rates and bands are as follows for income earned from 2017 onwards:

Chargeable income	Rate (%)
Up to SGD 20 000	0
Over SGD 20 000 up to SGD 30 000	2
Over SGD 30 000 up to SGD 40 000	3.5
Over SGD 40 000 up to SGD 80 000	7
Over SGD 80 000 up to SGD 120 000	11.5
Over SGD 120 000 up to SGD 160 000	15
Over SGD 160 000 up to SGD 200 000	18
Over SGD 200 000 up to SGD 240 000	19
Over SGD 240 000 up to SGD 280 000	19.5
Over SGD 280 000 up to SGD 320 000	20
Over SGD 320 000	22

Social security contributions payable by workers

Workers make contributions to the CPF as described above.

Taxation of pensioners

There is no additional tax relief for pensioners.

Taxation of pension income

Retirement income from CPF is exempted from personal income tax.

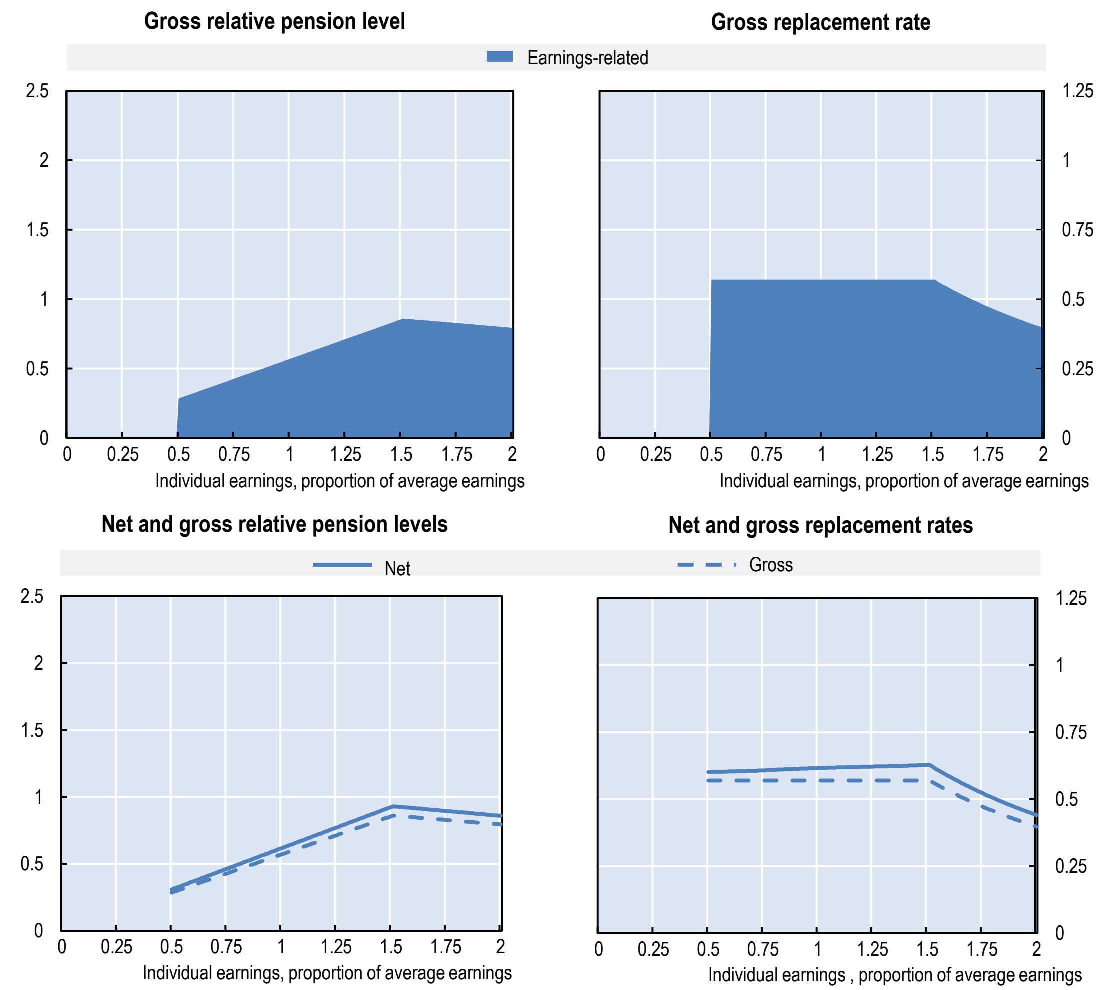
Pensions from approved pension schemes may be taxed. The amount of pension accrued up to 31 December 1992 in the approved funds in Singapore is exempt from tax if the person retired at the retirement age stated in the pension or provident funds/schemes.

Pensions paid out of contributions made to the funds after 31 December 1992 will be taxed.

Social security contributions payable by pensioners

Individuals who work while receiving retirement income from CPF continue to make CPF contributions.

Pension modelling results: Singapore in 2063 retirement at age 65 (men)



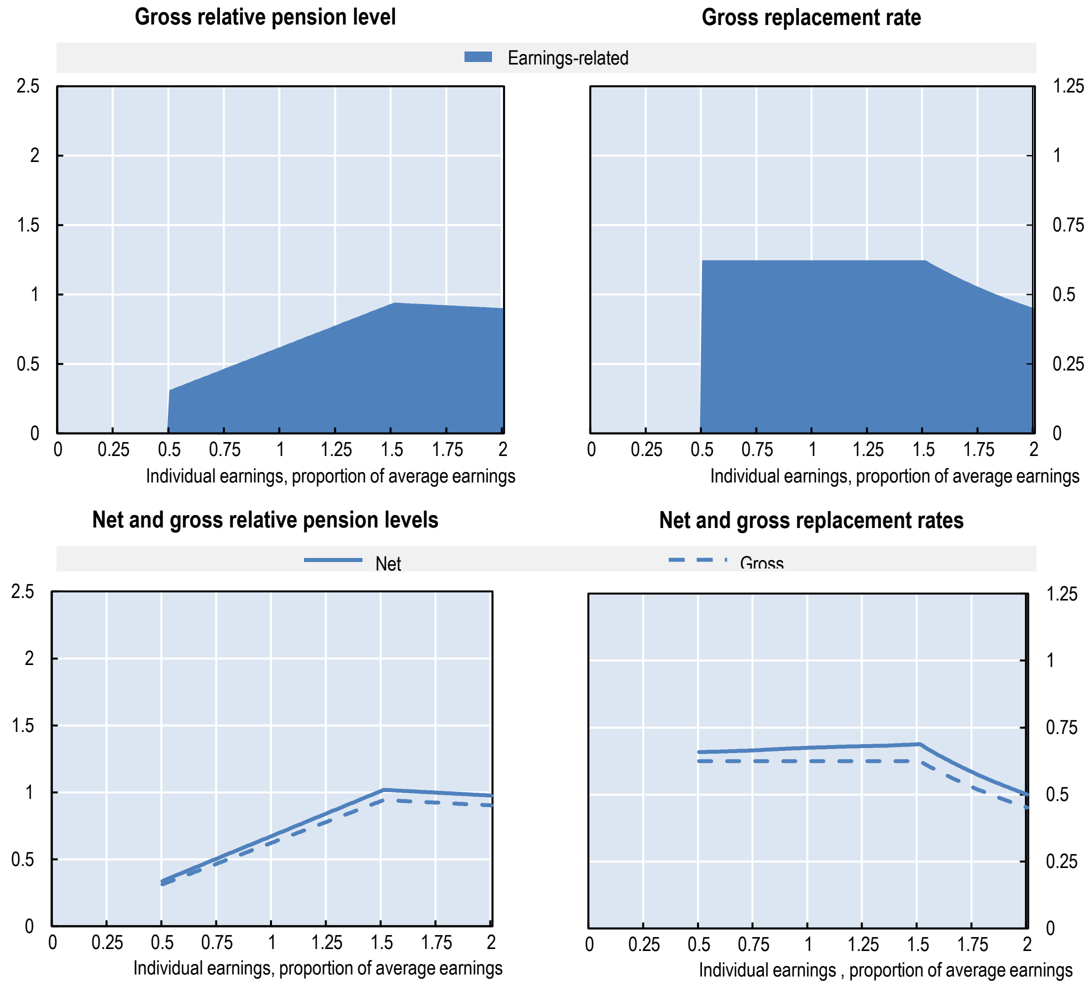
Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	28.5	42.7	57.0	85.5	79.4	65.9
(% average gross earnings)	*25.7*	*38.6*	*51.4*	*77.1*	*71.7*	*59.5*
Net relative pension level	30.8	46.2	61.6	92.4	85.9	71.2
(% net average earnings)	*27.8*	*41.7*	*55.6*	*83.4*	*77.5*	*64.3*
Gross replacement rate	57.0	57.0	57.0	57.0	39.7	22.0
(% individual gross earnings)	*51.4*	*51.4*	*51.4*	*51.4*	*35.8*	*19.8*
Net replacement rate	60.1	60.7	61.6	62.8	44.1	25.0
(% individual net earnings)	*54.3*	*54.8*	*55.6*	*56.7*	*39.8*	*22.5*
Gross pension wealth	11.2	11.2	11.2	11.2	7.8	4.3
(multiple of individual gross earnings)	*11.2*	*11.2*	*11.2*	*11.2*	*7.8*	*4.3*
Net pension wealth	11.8	11.9	12.1	12.3	8.6	4.9
(multiple of individual net earnings)	*11.8*	*11.9*	*12.1*	*12.3*	*8.6*	*4.9*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equals 90% but is not applicable to CPF as CPF Board does not charge any fees. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/5ypidt

Pension modelling results: Singapore in 2063 retirement at age 65 (men)

Alternative scenario including the Lease Buyback Scheme



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	31.2	46.8	62.4	93.6	90.3	82.2
(% average gross earnings)	*28.2*	*42.2*	*56.3*	*84.5*	*81.5*	*74.2*
Net relative pension level	33.7	50.6	67.4	101.2	97.6	88.8
(% net average earnings)	*30.4*	*45.7*	*60.9*	*91.3*	*88.1*	*80.2*
Gross replacement rate	62.4	62.4	62.4	62.4	45.1	27.4
(% individual gross earnings)	*56.3*	*56.3*	*56.3*	*56.3*	*40.7*	*24.7*
Net replacement rate	65.8	66.5	67.4	68.8	50.1	31.1
(% individual net earnings)	*59.4*	*60.0*	*60.9*	*62.1*	*45.2*	*28.1*
Gross pension wealth	12.2	12.2	12.2	12.2	8.9	5.4
(multiple of individual gross earnings)	*12.2*	*12.2*	*12.2*	*12.2*	*8.9*	*5.4*
Net pension wealth	12.9	13.0	13.2	13.5	9.8	6.1
(multiple of individual net earnings)	*12.9*	*13.0*	*13.2*	*13.5*	*9.8*	*6.1*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equals 90% but is not applicable to CPF as CPF Board does not charge any fees. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/er5z7g

Sri Lanka

Sri Lanka: Pension system in 2020

Employees in the formal private sector are covered by defined contribution plans: Employees Provident Fund, which is used in the model, Employees Trust Fund or approved private sector provident fund. Civil servants were formally covered by public sector pension scheme.

Key indicators: Sri Lanka

		Sri Lanka	OECD
Average worker earnings (AW)	LKR	477 576	7 296 511
	USD	2 564	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	76.4	80.2
	at age 65	16.4	19.1
Population over age 65	% of working- age population	18.7	30.2

Qualifying conditions

At age 55 for men and 50 for women.

Benefit calculation

Defined contribution

Employee’s provident fund is a fully-funded defined-contribution plan and employees contribute 8% of wage and employers pay 12%. The entire lump sum, including interest, is paid at the time of exit. The annual interest rate must be at least 2.5%. For comparison with other countries, for replacement rate purposes the pension is shown as a price-indexed annuity based on sex-specific mortality rates.

Social assistance

Senior Citizens over 70 years old, and whose monthly income is below LKR 3 000 are eligible for a monthly payment of LKR 2 000.

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

There is a personal allowance of LKR 500 000 with additional income taxed as follows:

Annual income band	Tax rate
Up to LKR 3 000 000	6%
LKR 3 000 001- LKR 6 000 000	12%
LKR 6 000 001 and above	18%

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.

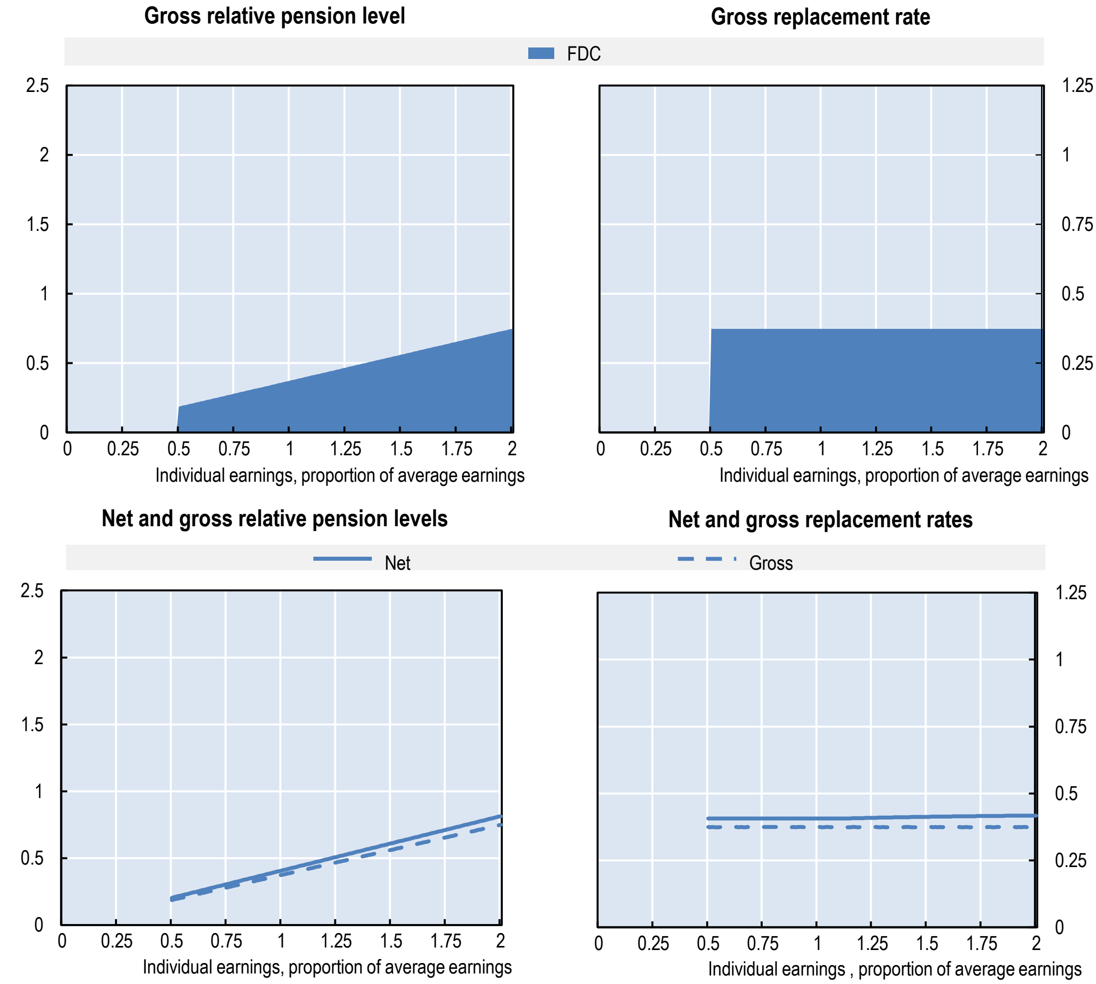
Taxation of pension income

Annual income band	Tax rate
Up to LKR 10 000 000	0
LKR 10 000 001- LKR 20 000 000	6%
LKR 20 000 001 and above	12%

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Sri Lanka in 2053 retirement at age 55 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	18.7	28.1	37.4	56.1	74.8	112.2
(% average gross earnings)	*12.4*	*18.6*	*24.8*	*37.2*	*49.6*	*74.5*
Net relative pension level	20.3	30.5	40.7	61.0	81.3	122.0
(% net average earnings)	*13.5*	*20.2*	*27.0*	*40.5*	*54.0*	*81.0*
Gross replacement rate	37.4	37.4	37.4	37.4	37.4	37.4
(% individual gross earnings)	*24.8*	*24.8*	*24.8*	*24.8*	*24.8*	*24.8*
Net replacement rate	40.7	40.7	40.7	41.3	41.7	42.2
(% individual net earnings)	*27.0*	*27.0*	*27.0*	*27.4*	*27.7*	*28.0*
Gross pension wealth	8.1	8.1	8.1	8.1	8.1	8.1
(multiple of individual gross earnings)	*6.5*	*6.5*	*6.5*	*6.5*	*6.5*	*6.5*
Net pension wealth	8.8	8.8	8.8	8.9	9.0	9.1
(multiple of individual net earnings)	*7.1*	*7.1*	*7.1*	*7.2*	*7.3*	*7.4*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/87dklx

Thailand

Thailand: Pension system in 2020

Private sector employees and non-pensionable public sector employees contribute to the provident fund, with social assistance paid to those with insufficient income.

Key indicators: Thailand

		Thailand	OECD
Average worker earnings (AW)	THB	174 002	1 209 817
	USD	5 635	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	79.3	80.2
	at age 65	20.9	19.1
Population over age 65	% of working- age population	21.6	30.2

Qualifying conditions

The insured (both men and women) who have reached the age of 55 are qualified to get old age benefit. At least 180 months (15 years) of contributions are required for monthly pension receipt and the pension benefit is adjusted for a longer contribution period. For the insured persons with less than 180 months of contribution a lump sum payment equivalent to the total contributions is made. In both cases employment must cease.

Benefit calculation

Basic

Initially introduced as a targeted scheme the pension became universal to all apart from civil servants or permanent government employees from 2009. The monthly amounts vary by age, THB 600 is paid to persons aged 60 to 69; THB 700 if aged 70 to 79; THB 800 if aged 80 to 89; and THB 1 000 if aged 90 or older.

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 five years prior to retirement. Indexation rules are discretionary and the modelling assumes price indexation of pensions in payment.

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 the age of 55 and the pension continues to accrue by 1.5%.

Personal income tax and social security contributions

Taxation of workers

There are various tax relief systems and the employed receive a tax deduction of 50% of assessable income up to THB 100 000. Single insured persons receive a personal allowance of THB 60 000. 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
1-THB 150 000	0%
THB 150 001-THB 300 000	5%
THB 300 001-THB 500 000	10%
THB 500 001-THB 750 000	15%
THB 750 001-THB 1 000 000	20%
THB 1 000 001-THB 2000 000	25%
THB 2000 001-THB 5 000 000	30%
THB 5 000 001 and over	35%

Social security contributions payable by workers

Insured persons pay social security contributions. For old age pension, the contribution rate is 3% between 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 the unemployment insurance scheme.

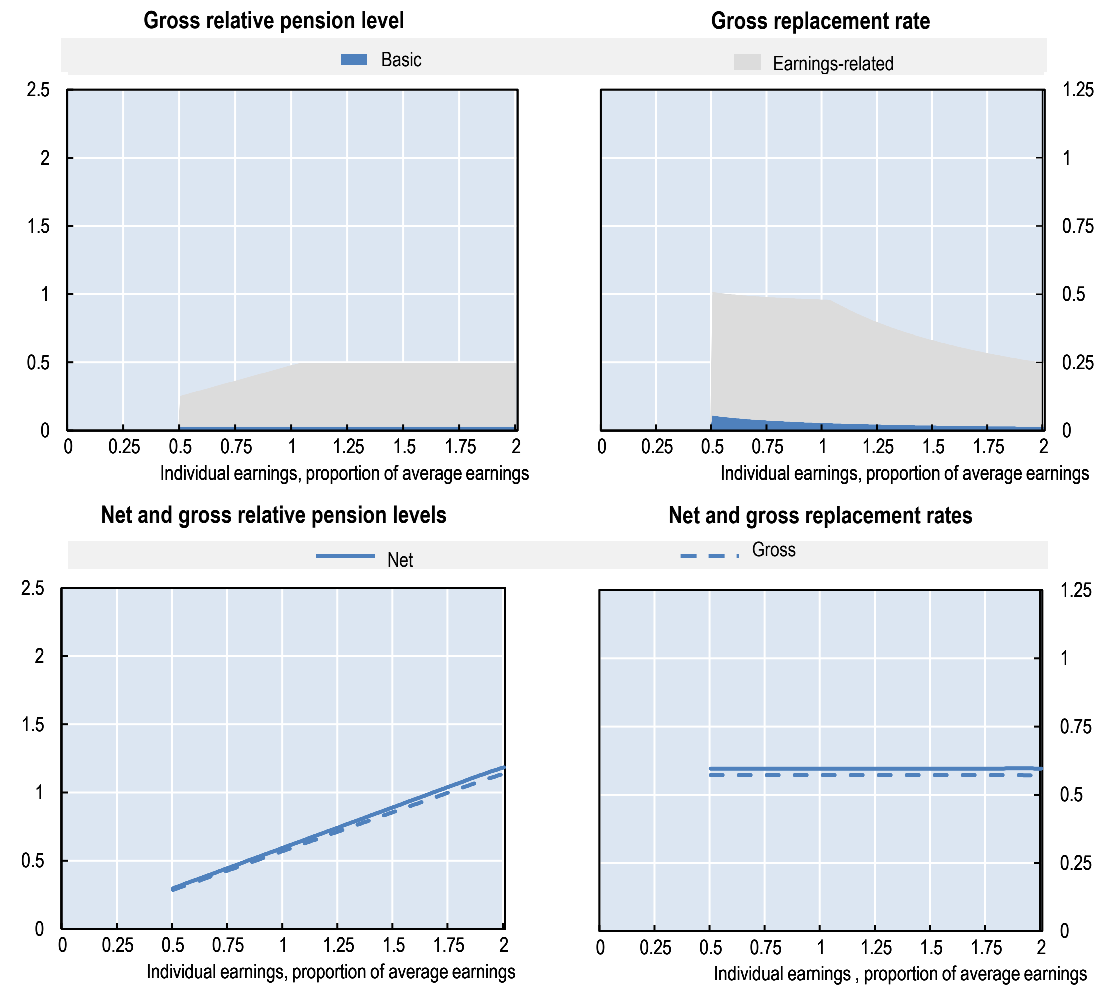
Taxation of pension income

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

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Thailand in 2053 retirement at age 55 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	25.4	36.7	48.0	49.6	49.6	49.6
(% average gross earnings)						
Net relative pension level	26.6	38.4	50.3	51.9	51.9	51.9
(% net average earnings)						
Gross replacement rate	50.8	48.9	48.0	33.1	24.8	16.5
(% individual gross earnings)						
Net replacement rate	52.8	51.1	50.3	34.1	25.5	17.2
(% individual net earnings)						
Gross pension wealth	11.6	11.1	10.9	7.5	5.6	3.8
(multiple of individual gross earnings)	*13.1*	*12.6*	*12.4*	*8.5*	*6.4*	*4.3*
Net pension wealth	12.0	11.6	11.4	7.8	5.8	3.9
(multiple of individual net earnings)	*13.6*	*13.2*	*12.9*	*8.8*	*6.6*	*4.4*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/z61j3f

Viet Nam

Viet Nam: Pension system in 2020

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 pay-as-you-go defined benefit (PAYG DB) scheme.

Key indicators: Viet Nam

		Viet Nam	OECD
Average worker earnings (AW)	VND (million)	83.49	911.38
	USD	3 589	39 178
Public pension spending	% of GDP		7.7
Life expectancy	at birth	75.4	80.2
	at age 65	17.6	19.1
Population over age 65	% of working- age population	13.7	30.2

Qualifying conditions

The normal pension age was 60 for men and 55 for women in 2020, with a minimum of 20 years of contributions. From 1 January 2021 the retirement age will increase by 3 months per year for men, reaching 62 in 2028 and 4 months per year for women, reaching 60 in 2035.

A lump sum payment is made for people with shorter contribution periods.

Benefit calculation

Earnings-related

45% of the insured's average monthly covered earnings is paid for the first 18 years (men, gradually rising to 20 years by 2022) or 15 years (women) of contributions plus 2% of the insured's average monthly covered earnings for each year of contributions exceeding 18 years (men, gradually rising to 20 years by 2022) or 15 years (women). The maximum accrual is 75%.

Old-age grant

If total contributions are less than 20 years, retirees receive a lump sum is paid of 1.5 times the insured's covered average monthly earnings in the last five years for years of contributions before 2014, plus 2 times the insured's covered average monthly earnings in the last five years for contributions since 2014.

Old-age social assistance

According to the Decree 20/2021/NĐ-CP dated 15 March 2021 with effect from 1 July 2021, a minimum social pension is VND 360 000. A multiplier is applied with this minimum level: (i) 1.5 (or benefit is VND 540 000) for those aged 60 to 79 who are living in poor households without family members, or with support from family members who are also receiving social assistance benefits; (ii) 2 (or benefit is VND 720 000) for those aged 80 and over who are living in poor households without family members, or with support from family members who are also receiving social assistance benefits; and 1 (or benefit is VND 360 000) for those aged 80 and over who do not have any social insurance and assistance benefits; and (iii) 3 (or benefit is VND 1 080 000) for any older people who are living in poor households without family members but receiving support from community.

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 2% of the insured's covered average monthly earnings for each year the pension is taken before the insured's normal pensionable age due to reduced working capacity.

Late retirement

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

Personal income tax and social security contributions

Taxation of workers

There is a personal allowance of VND 9 million per month.

Taxation of worker's income

Tax rates applicable to regular annual income are as follows:

Annual taxable income	Tax-rate
Up to VND 60 000 000	5%
From VND 60 000 000 up to VND 120 000 000	10%
From VND 120 000 000 up to VND 216 000 000	15%
From VND 216 000 000 up to VND 384 000 000	20%
From VND 384 000 000 up to VND 624 000 000	25%
From VND 624 000 000 up to VND 960 000 000	30%
From VND 960 000 000	35%

Social security contributions payable by workers

Employees pay 8% of monthly salary/wage for retirement benefits. The minimum and maximum monthly earnings for contribution and benefit calculation purposes are the minimum wage and 20 times of the minimum wage, respectively. From 1 July 2019 onwards they are VND 1 490 000 and VND 29 800 000, respectively. In addition, employees pay 1.5% health contributions and 1.0% for unemployment insurance.

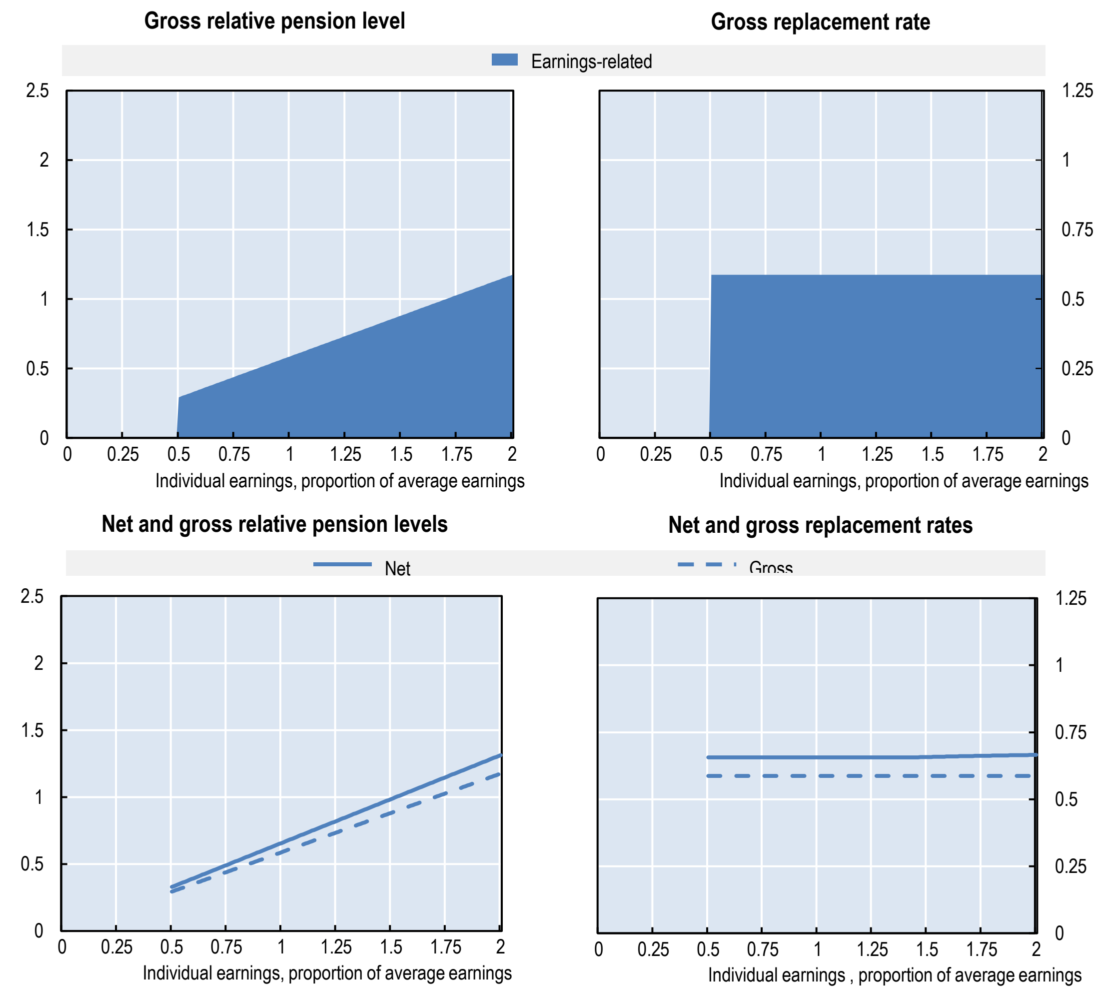
Taxation of pension income

There is no additional tax relief for pensioners.

Social security contributions payable by pensioners

Pensioners do not pay any social security contributions.

Pension modelling results: Viet Nam in 2060 retirement at age 62 (men)



Men	Individual earnings, multiple of average					
Women (where different)	0.5	0.75	1	1.5	2	3
Gross relative pension level	29.4	44.1	58.7	88.1	117.5	176.2
(% average gross earnings)	*29.7*	*44.6*	*59.4*	*89.1*	*118.8*	*178.2*
Net relative pension level	32.8	49.2	65.6	98.4	131.3	194.3
(% net average earnings)	*33.2*	*49.8*	*66.4*	*99.6*	*132.8*	*196.4*
Gross replacement rate	58.7	58.7	58.7	58.7	58.7	58.7
(% individual gross earnings)	*59.4*	*59.4*	*59.4*	*59.4*	*59.4*	*59.4*
Net replacement rate	65.6	65.6	65.6	65.7	66.6	67.3
(% individual net earnings)	*66.4*	*66.4*	*66.4*	*66.5*	*67.3*	*68.1*
Gross pension wealth	11.9	11.9	11.9	11.9	11.9	11.9
(multiple of individual gross earnings)	*14.9*	*14.9*	*14.9*	*14.9*	*14.9*	*14.9*
Net pension wealth	13.3	13.3	13.3	13.4	13.5	13.7
(multiple of individual net earnings)	*16.7*	*16.7*	*16.7*	*16.7*	*16.9*	*17.1*

Note: Real rate of return 3%, real earnings growth 1.25%, inflation 2%, and real discount rate 2%. All systems are modelled and indexed according to what is legislated. Transitional rules apply where relevant. DC conversion rate equal 90%. Labour market entry occurs at age 22 in 2020. Tax system latest available: 2020.
Source: OECD pension model.

StatLink https://stat.link/ku59xn

Pensions at a Glance Asia/Pacific 2022

Many of Asia's retirement-income systems are ill prepared for the rapid population ageing that will occur over the next two decades. Asia's pension systems urgently need to be reformed to ensure that they are both financially sustainable and provide adequate retirement incomes. This report examines the retirement-income systems of 11 non-OECD countries in the region, comparing the results with a selection of OECD countries. The report provides new data for comparing pension systems of different countries. It combines the OECD's expertise in modelling pension entitlements with a network of national pension experts who provided detailed information at the country level, verified key results and provided feedback and input to improve the analysis.

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