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 51.8% for men and 50.9% for women in OECD countries, with substantial cross-country variation. At the bottom of the range, future gross replacement rates from mandatory schemes are below 30% at the average wage in Estonia, Ireland and Lithuania. Colombia, Denmark, Italy and Luxembourg offer replacement rates at 75% 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. Denmark has an estimated long-term retirement age of 74 years for those starting in 2020, whilst in Colombia it will be 57 for women and 62 for men, and in both Luxembourg and Slovenia retirement will still be possible with a full pension at age 62 for both men and women (Table 4.1).

Full career male workers will have a replacement rate of 51.8% on average across OECD countries, with a high of 75% or more in Colombia, Denmark, Italy and Luxembourg and a low of under 30% in Estonia, Ireland and Lithuania. The average for women is slightly lower, at 50.9%.

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 65%. Some countries, such as Australia and Ireland, pay relatively small benefits to average earners, but are closer to or even above average for low-income workers. Australia, the Czech Republic, Denmark and Ireland record the largest difference between gross replacement rates applying to low-wage and average-wage workers, of about 30 percentage points or more. However, projected replacement rates in eight countries are the same for a full career at average and half-average pay: Austria, Finland, France, Hungary, Italy, Latvia, Spain and Turkey.

At the top of the range, based on current legislation, low earners in Denmark will receive a future gross replacement rate of 125% after a full career; retirement benefits are thus higher than their earnings when working. At the other end of the scale, Lithuania and Poland offer gross replacement rates of 32% to low-income earners, thus implying a gross retirement income around 16% of average earnings after a full career. On average, the gross replacement rate at twice average earnings (here called "high earnings") is 44%. Replacement rates for these high earners equal 70% or more in Colombia, Italy, Portugal and Turkey, while at the other end of the spectrum, Estonia, Ireland, Korea, Lithuania and New Zealand offer a replacement rate lower than 20%.

Gross pension replacement rates differ for women in eight countries, due to a lower future pension eligibility age than for men (Colombia, Hungary, Israel, Poland and Turkey) and the use of sex specific mortality rates to compute annuities (Australia, Chile and Mexico). The replacement rates are expressed as percentage of earnings which are not gender specific. Differences between the sexes are substantial in Australia, Chile, Hungary, and especially Israel and Poland, with replacement rates (i.e. monthly benefits) for women being between 7% and 26% lower than for men.

Gross pension replacement rates fall with age from 52% on average at the time of retirement to 46% at age of 80, a fall of 11% relative to average wages. This difference is due to the indexation of pension benefits in payment, which do not follow wages in many countries. With price indexation from a normal retirement age of 65, the fall is equal to 17% based on the OECD model assumptions. The earlier the normal retirement age the larger the fall with price indexation. The largest fall of about 20% is found in Sweden because the indexation of the NDC schemes is wages minus 1.6%, which is less than price indexation in the OECD model. Countries where the indexation of pension benefits follows wages – Ireland and New Zealand – have the same replacement rate at age 80 than at the normal retirement age. Australia actually shows a large increase in the replacement rate at age 80 compared to normal retirement age, because the means-tested component is not available for average earner retirees at the retirement age as their DC pension has a capital value over the ceiling, but as the capital diminishes eligibility to the Age Pension increases.

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.

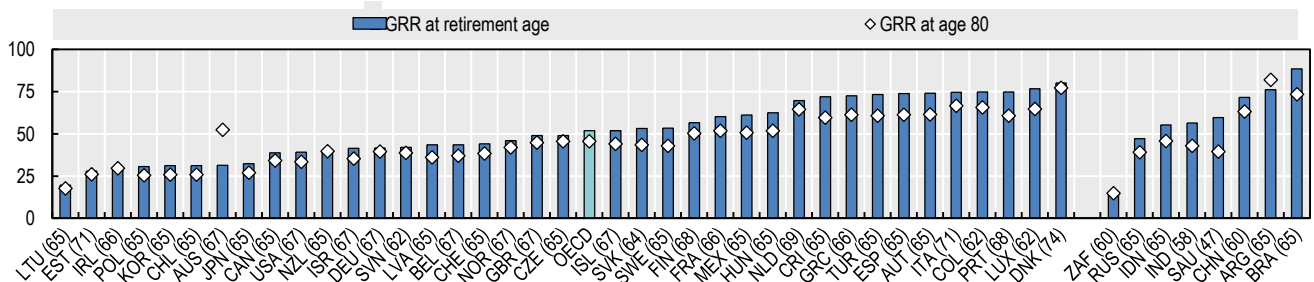Table 4.1. **Gross pension replacement rates by earnings, percentage, mandatory schemes**

Individual earnings, multiple of mean for men (women where different)																	
	Pension age		0.5		1		2			Pension age		0.5		1.0		2	
Australia	67		62.7	(59.8)	31.3	(28.4)	31.3	(28.4)	Netherlands	69		73.1		69.7		68.0	
Austria	65		74.1		74.1		57.3		New Zealand*	65		65.9		39.8		19.9	
Belgium	67		67.5		43.4		29.2		Norway	67		60.6		46.0		28.9	
Canada	65		53.2		38.8		22.3		Poland	65	(60)	31.8	(31.9)	30.6	(23.4)	30.0	(22.8)
Chile	65		41.9	(40.4)	31.2	(28.8)	31.3	(28.8)	Portugal	68		76.3		74.9		72.5	
Colombia*	62	(57)	100.0		74.8	(73.4)	74.8	(72.4)	Slovak Republic*	64		62.6		53.1		46.7	
Costa Rica	65		73.1		71.9		68.0		Slovenia*	62		62.3		42.0		41.4	
Czech Republic	65		81.2		49.0		32.9		Spain	65		73.9		73.9		67.0	
Denmark	74		125.1		80.0		61.3		Sweden	65		61.4		53.3		67.2	
Estonia	71		47.6		27.9		18.1		Switzerland	65	(64)	53.1	(52.5)	44.1	(43.5)	23.0	(22.7)
Finland	68		56.6		56.6		56.6		Turkey	65	(63)	73.3	(70.3)	73.3	(70.3)	73.3	(70.3)
France	66		60.2		60.2		51.9		United Kingdom	67		70.6		49.0		38.2	
Germany	67		46.5		41.5		33.0		United States	67		49.6		39.2		27.9	
Greece	66		84.7		72.6		66.5		*OECD*	*66.1*	*(65.5)*	*64.5*	*(64.0)*	*51.8*	*(50.9)*	*44.4*	*(43.7)*
Hungary	65	(62)	62.5	(58.1)	62.5	(58.1)	62.5	(58.1)									
Iceland	67		72.9		51.8		51.8										
Ireland	66		59.4		29.7		14.9		Argentina	65	(60)	99.0	(92.7)	76.1	(72.9)	64.6	(63.0)
Israel	67	(62)	61.7	(52.4)	41.5	(34.1)	20.7	(17.0)	Brazil	65	(62)	88.4	(93.3)	88.4	(93.3)	84.8	(90.6)
Italy	71		74.6		74.6		74.6		China	60	(55)	90.6	(72.2)	71.6	(55.7)	62.1	(47.5)
Japan	65		43.2		32.4		26.9		India	58		56.4	(55.6)	56.4	(55.6)	37.7	(36.9)
Korea	65		43.1		31.2		18.6		Indonesia	65		55.3	(53.0)	55.3	(53.0)	55.3	(53.0)
Latvia	65		43.4		43.4		43.4		Russian Federation	65	(60)	56.9	(53.8)	47.2	(43.4)	42.3	(38.2)
Lithuania	65		31.5		19.7		13.8		Saudi Arabia	47		59.6		59.6		59.6	
Luxembourg	62		90.4		76.6		69.7		South Africa	60		29.8		14.9		7.4	
Mexico	65		80.9		61.2	(58.2)	53.6	(50.5)	EU27	66.0	(65.9)	63.6	(63.4)	53.4	(52.8)	48.1	(47.6)

Note: *Low earners in Colombia, New Zealand, the Slovak Republic and Slovenia are at 66%, 60%, 53% and 55% of average earnings, respectively, to account for the minimum wage level. Due to a change in methodology, the Korean replacement rates are lower than in previous editions (see country profile at *http://oe.cd/pag*).
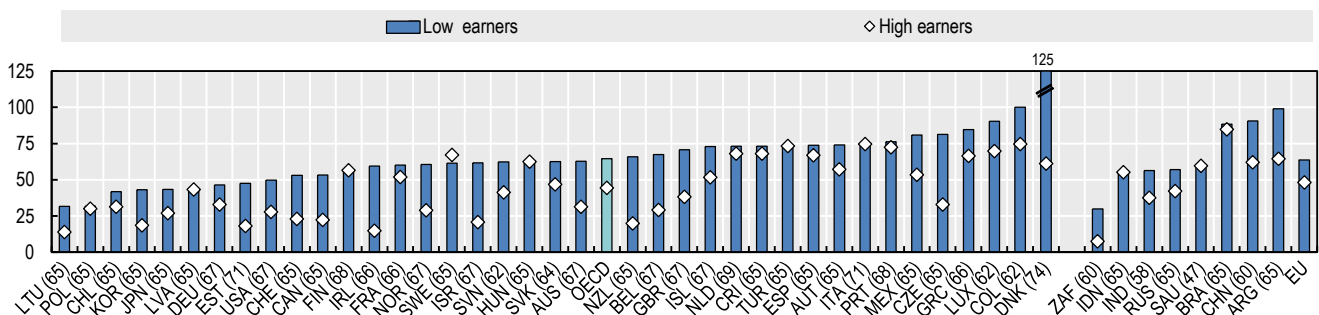Source: OECD pension models.

Figure 4.1. **Gross pension replacement rates, percentage: Average earners at retirement age and age 80**

Source: OECD pension models.

Figure 4.2. **Gross pension replacement rates, percentage: Low and high earners**

Source: OECD pension models.