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Will future pensioners work for longer and retire on less?

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Key results

- **Pension systems have undergone major reforms** in recent decades affecting pensioners now and in the future. There have been **three broad reform trends** over the last 50 years. First, some countries including Chile, Italy, Latvia, Mexico and Sweden opted for a radical change as the old system was not financially sustainable. Second, other countries like Estonia, Israel and Korea have developed a system that will be maturing, thereby better covering a larger share of retirees. Third, many countries changed the parameters of their system to deal with the challenges triggered by population ageing.

- Based on legislations adopted by mid-2017, **normal retirement ages will have slowly increased by about 3 years**, from 63 years for men born in 1940 to 66 years for those born in the middle of the 1990s in the OECD on average. The largest increases are recorded in countries that have linked the retirement age to life expectancy, such as Denmark, Italy, the Netherlands and the Slovak Republic, and in Turkey, which started from a very low age. **The gender gap in normal retirement ages, which existed in 18 countries for the 1940 cohort, is being eliminated**, except in Colombia, Israel, Poland and Switzerland.

- **Between these generations, life expectancy at 65 is projected to increase by 6 years** on average. The split between the length of the working life and of the retirement period is in essence a political choice. It is a crucial one to help sustain replacement rates despite increasing longevity. The legislated increase in retirement ages is smaller than needed to stabilise the balance between the working and retirement periods. **The share of adult life spent in retirement is projected to increase by almost 10%** between the 1940 and the 1996 cohorts. This means that, to stabilise that share at the current level of the 1956 cohort, the normal retirement age should equal 67.2 years on average for the 1996 cohort against 65.8 based on current legislation. Austria, Belgium, Chile, Germany, Luxembourg, Poland and Slovenia have the largest increases in the share of time spent in retirement.

- **Gross replacement rates at the normal retirement age are projected to fall in 21 OECD countries and to increase in 10 of them.** Average replacement rates will fall by 6 percentage points, implying that pensions of full-career workers born in 1996 **will be 10% lower relative to their past wages** than those of workers born in 1940. There is convergence in replacement rates, with country differences being reduced by one-fifth between these two generations.

- **Replacement rates will decline substantially in countries that had a high level for the 1940 cohort**, such as Mexico and Sweden, as well as Spain where they will, however, remain relatively high. Large falls are also projected in Chile, Greece, Poland and Switzerland. Conversely, countries such as Estonia, Israel and Korea, which started from a low level, will record large increases. Some other countries, including the Czech Republic, Denmark, France, Italy and Turkey, will avoid sharp reductions provided individuals manage to work until the increased retirement age.

This short publication compares income replacement rates provided by pension systems across generations for all OECD countries. While *Pensions at a Glance*, one of OECD's flagship pension publications, routinely computes future replacement rates based on current legislation, it is the first time such an exercise is undertaken from generations who retired about 15 years ago up to generations entering the labour market now. Moving so far back is indeed difficult because it requires collecting pension rules that applied several decades ago. The purpose is to identify the impact of both past pension reforms and changing economic conditions.

The focus of this Policy Brief is to study changes in normal retirement ages across generations and in gross replacement rates at the normal retirement age for full-career private-sector workers. These changes of course capture only one aspect of changes affecting pension systems. Many other trends matter to assess retirement income prospects, such as changes in early-retirement ages, in instruments used to cushion career breaks, in non-contributory benefits, etc. This exercise while providing insightful information should therefore be seen as a simple illustration of the key impacts of pension reforms and evolving economic conditions.

Pension systems went through major reforms

Over the last decades, OECD countries have enacted many pension reforms, especially to improve financial sustainability given the challenges triggered by population ageing. Some reforms were systemic, changing the whole nature of a system, while others were parametric. Both may cause marked differences in pension eligibility and benefit levels across generations.

One common, fairly recent trend has been the increase in statutory retirement ages, either directly or through the introduction of an automatic link to life expectancy. At the same time, retirement ages of men and women have been converging. Among other automatic adjustment mechanisms, sustainability factors introduced in Finland, Germany, Japan and Spain will automatically adjust benefit levels at a given age in response to demographic changes.

In the 1990s, Italy, Latvia, Poland and Sweden chose another way of introducing automatic adjustments by reforming their public pay-as-you-go (PAYGO) pension system from defined benefit (DB) into notional (non-financial) defined contribution (NDC). Norway did so in 2011. The core of the NDC design mimics funded DC schemes with strong links between individual lifetime contributions and benefits. For given accumulated contributions, rising life expectancy reduces pensions at any given age.

The move to NDC has been part of a trend towards more individualised pension benefits. Chile in 1981 and Mexico in 1997 replaced their public PAYGO DB schemes by private funded mandatory DC schemes. More recently, as a complement to their public pension schemes, Estonia, Israel and some other countries introduced mandatory private DC schemes or raised the contribution rates that fund them. To increase coverage, Korea created an earnings-related public pension scheme in 1988, which is still maturing, meaning that not all retirees have access to full benefits yet.

Some countries have tightened the link between earnings and benefits within their PAYGO DB schemes. For example, Estonia, Lithuania and the Slovak Republic switched from traditional DB to points systems, in which benefits are proportional to contributions. Austria, France, Portugal and Spain increased the number of contribution years used to calculate the reference wage; only Austria, France, Slovenia, Spain and the United States do not currently take into account the whole career, although Austria will do so progressively from the cohort born in 1955. The United Kingdom went in the opposite direction by entirely disconnecting the public pension benefit level from past earnings, similar to the current situation in Denmark, Ireland, the Netherlands and New Zealand. Earnings-related occupational pension schemes, which are voluntary private, are widespread in those countries and play an important role for retirement income.

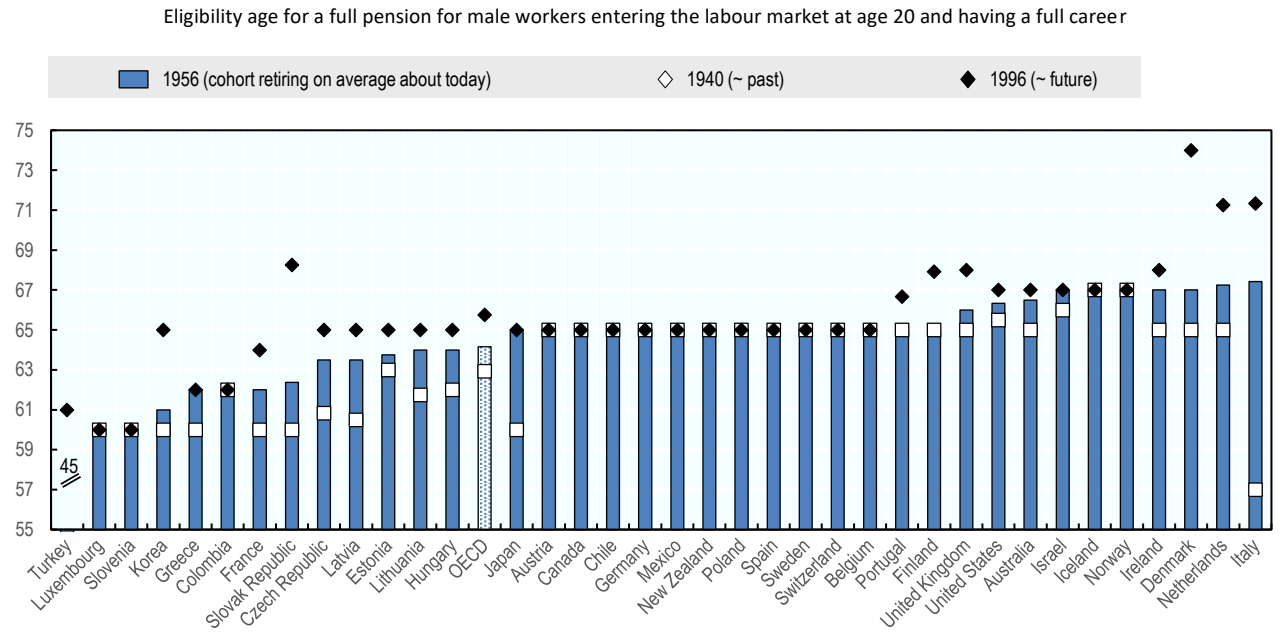
From the 1990s early-retirement conditions have also been tightened while bonus/penalty schemes were introduced, providing incentives to work longer and allowing some flexibility in the retirement decision without weighing on public finances. Countries have also been closing down special regimes, and, for example, schemes covering public-sector and private-sector workers are fully integrated or will progressively be in Israel, Japan, New Zealand and Southern European countries.

Retirement ages are slowly increasing while gender gaps are being eliminated

On average in the OECD, retirement ages followed a slow downward trend from the middle of the 20th century, reached a trough in the mid-1990s and have been drifting upward since then, recovering their 1950 level only recently. In the meantime (i.e. since the middle of the 20th century) period life expectancy at age 65 increased by about 6½ years on average, resulting in pressure on pension finances. Financial sustainability of PAYGO schemes has also been challenged by the fall in fertility rates in many countries until the late 1990s, when they started to stabilise; they remain below levels ensuring the replacement of populations, however.

Over the last decades, statutory retirement ages have been raised in the majority of OECD countries. On average, a full-career male worker born in 1940 who entered the labour market at age 20 could retire with a full pension (i.e. without penalty) from all mandatory components at age 62.9 (Figure 1). For individuals born in 1996 this normal retirement age will be about 3 years higher at 65.8. Starting from very low levels, Italy and Turkey record the strongest increases, of about 15 years, while fifteen OECD countries did not legislate any change affecting the normal retirement age. Between people retiring now (1956 cohort) and those entering now in the labour market (1996 cohort) the average increase in the normal retirement age is 1.6 years. The future normal retirement age is below 65 years in only Colombia, France, Greece, Luxembourg, Slovenia and Turkey.

Figure 1. Normal retirement ages have increased across the three selected birth cohorts



Note: * marks countries that legislated a link between statutory retirement ages and life expectancy leading to rising normal retirement ages over time. Recently, Estonia legislated such a link. Also, some countries have recently suspended or limited the previously introduced link. This came after the cut-off date for this Policy Brief, and could therefore not be taken into account. This will be analysed in greater detail in the next edition of *Pension at a Glance* (2019). For better visibility, the left scale excludes the lowest value, which equals 45 years for the cohorts born in 1940 and 1956 in Turkey.

Source: OECD based on information provided by countries.

One substantial policy innovation has been the introduction of a link between retirement ages and life expectancy as a way to remove the political pressure resulting from the repeated need to adjust retirement ages. Denmark, Finland, Italy, the Netherlands, Portugal and the Slovak Republic have done so, although there are signs that maintaining such a link in the long term might be a political challenge (OECD, 2019). The Czech Republic also decided to steadily increase the retirement ages in 2012 and then backtracked in 2017. The exact impact of changes in longevity depends on the formula used in each country. If duly implemented, the normal retirement age will exceed 70 years in Denmark, Italy and the Netherlands in half a century.

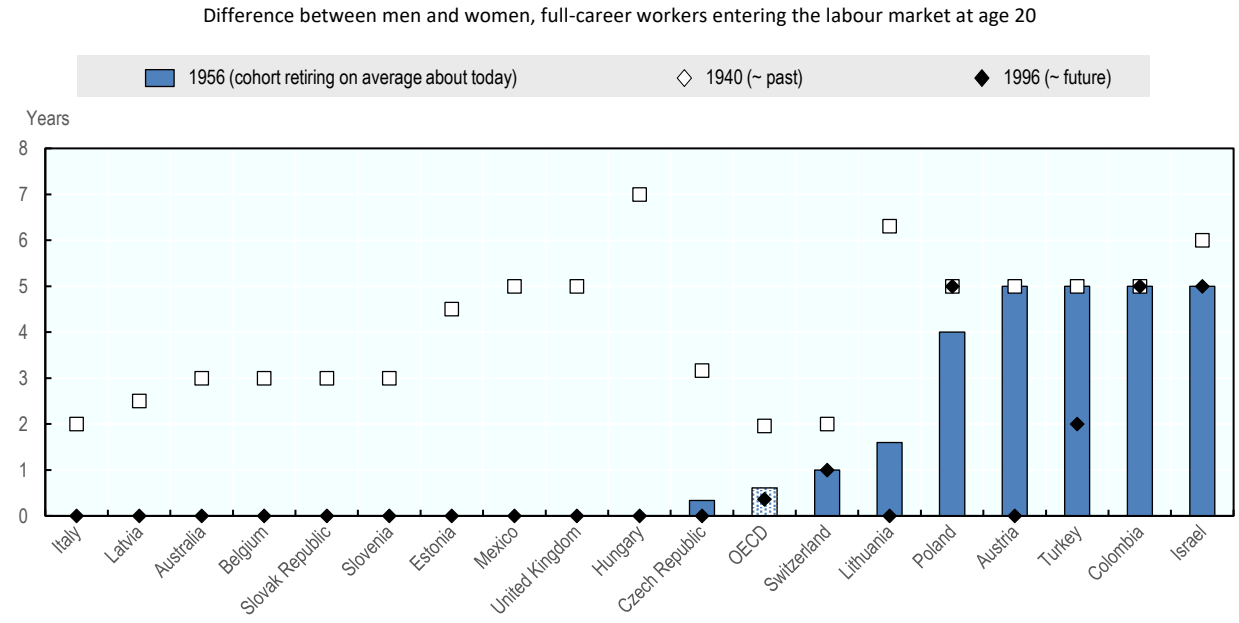
In half of OECD countries, the normal retirement age has been the same for men and women, at least for people born since 1940. In the 18 countries where there has been a gender difference, 10 have already eliminated it (Figure 2); Austria, the Czech Republic, Lithuania and – for people born from the late 2000s - Turkey will join that group for future generations. In EU countries, this is consistent with the 1984 EC Directive requiring the progressive implementation of equal treatment between men and women in social security matters. Only Colombia, Israel, Poland, Switzerland and Turkey will maintain a lower retirement age for women now entering the labour market, based on current legislations.

Rising share of adult life spent in retirement

Stabilising the split between time spent working and in retirement across generations is crucial to help finance similar replacement rates in a sustainable way for a given contribution rate. The increase in normal retirement ages documented above is not sufficient to preserve that balance and keep pace with rising life expectancy on average in the OECD.

Remaining life expectancy at the normal retirement age equals 19.7 years for men born in 1940 and 23.7 years for those born in 1996. This represents 31.5% of adult lifetime for the 1940 cohort, predicted to increase to 32.3% for the 1956 cohort and 34.1% for the 1996 cohort, so by almost one-tenth in total (Figure 3).[1] The share would be reduced in only Italy and Turkey, albeit from high levels, and, to a small extent, in Denmark, the Netherlands and the Slovak Republic, provided the link these three countries have implemented between the normal retirement age and life expectancy is effectively applied. In addition, Japan shows a very small decline. Countries having among the largest increases and an above-average future share of time spent in retirement are Austria, Belgium, Chile, Germany, Luxembourg and Slovenia. An average increase in the normal retirement age of 3.0 years between the cohorts born in 1956 and 1996 would be needed to stabilise the share of adult life spent in retirement based on this measure, to be compared with an already legislated increase of 1.6 years.

Figure 2: Gender difference in the normal retirement age are being eliminated



Note: Only countries with some gender differences are shown. The chart shows the gender gap for workers without children, as in some countries, including the Czech Republic, there might be a (larger) gender gap for people with children.

Source: OECD based on information provided by countries.

Large impact of systemic reforms and of big changes in retirement ages

In recent decades, to deal with increasing ageing pressure some countries undertook systemic reforms while others increased mandatory pension coverage by creating new schemes. Moreover, changes in statutory retirement ages and other pension reforms, as well as shifts in economic conditions, have led to large differences in pension replacement rates between individuals born in 1940 and those retiring about today (1956 birth cohort) in a few countries. According to current legislation, larger changes will affect those born in 1996 - which enter the labour market about today.[2]

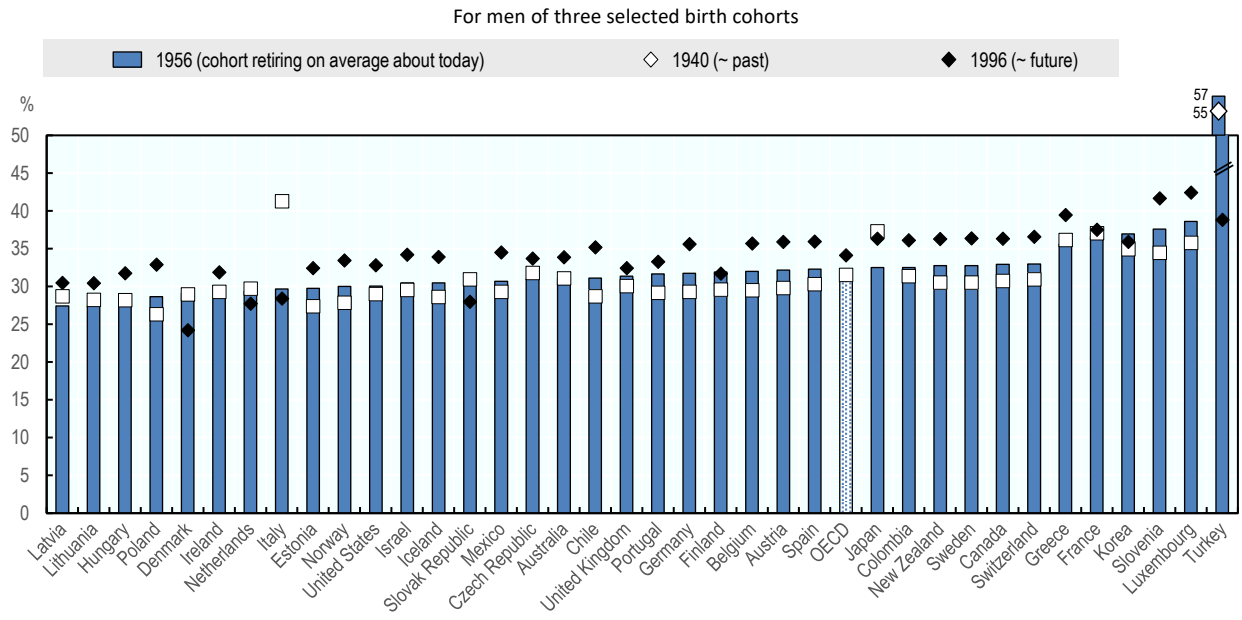
Replacement rates will be lower for full-career workers born in 1996 relative to those born in 1940 in about 60% of OECD countries, but higher in about 30%; they will be stable in the remaining 10% (Figure 4). The OECD average falls by one-tenth from 57.4% to 51.5%. There are large declines in countries that started from a comparatively high level for the 1940 birth cohort, such as Mexico, Spain and Sweden.

In 1997, Mexico replaced its financially unsustainable public DB scheme by a privately managed funded DC scheme. While the DB scheme pays high pensions, ensuring almost a full replacement of past earnings for those born before 1977, the DC scheme would yield low replacement rates given low contribution rates. In 2011 and 2013, Spain introduced a sustainability factor that would automatically reduce pensions with increasing longevity.[3]

The introduction of NDC schemes in Sweden and Poland has resulted in substantially lower replacement rates for future cohorts of retirees while it has a much smaller impact in Norway. In Latvia, the impact of the new NDC pensions was large as well, but the 1940 cohort was already affected. Declines of more than 30 percentage points (p.p.) between full-career average-wage workers born in 1940 and 1996 are projected in Sweden and Poland, and of 6 p.p. in Norway. As NDC schemes are by construction supposed to ensure actuarial fairness, the fall in replacement rates mostly reflects the extent of the financial unsustainability of the pre-reform systems. In Italy, the other OECD country having introduced an NDC pension system, a fall in the replacement rate at the normal retirement age is only avoided by the sharp increase in the retirement age.

On top of the countries listed above, the baseline replacement rate will fall by more than 15 p.p. in Chile, Greece and Switzerland. Chile replaced its complex public DB scheme by a privately managed fully funded DC scheme based on low contribution rates while issuing recognition bonds to account for accrued entitlements in the DB scheme. Greece lowered the accrual rates in the DB system and changed the indexation of basic pensions from wage growth to price inflation. In Switzerland, basic pension components and pensionable earnings thresholds are indexed to the average of wage growth and price inflation, thereby falling relative to wages over time. Moreover, in occupational pensions

Figure 3: The length of the retirement period as a share of adult lifetime is still increasing



Note: Here, the length of the retirement period is measured as expected remaining life years after the normal retirement age while the length of adult life is measured from age 20 and conditional to surviving until the retirement age. The normal retirement age is defined as the eligibility age to a full pension after a full career from age 20 (male case is shown here). For future periods, this relies on cohort-specific medium mortality projections by the UN, starting from base year 2015. For better visibility, the scale of this chart excludes the highest observed values, which equal 55% and 57% in Turkey for the cohorts born in 1940 and 1956 respectively.

Source: OECD based on mortality data from United Nations World Population Prospects: The 2017 Revision and normal retirement age data provided by countries.

increasing longevity combined with the low interest rate environment led to a reduction in the legal minimum rates of return, which are now binding.

Among countries with a replacement rate larger than the OECD average for the 1940 birth cohort, only Austria and Portugal (on top of Italy) would not lower it for future retirees based on current legislation. Changes in pension policies in Austria over the last decades have a limited effect on pension benefits of average-wage full-career workers. Like Italy, Portugal linked retirement ages to life expectancy. However, the increase of 1.7 years between generations born in 1940 and 1996 is moderate leading to an increase in the expected share of adult lifetime spent in retirement by 15% (Figure 3).

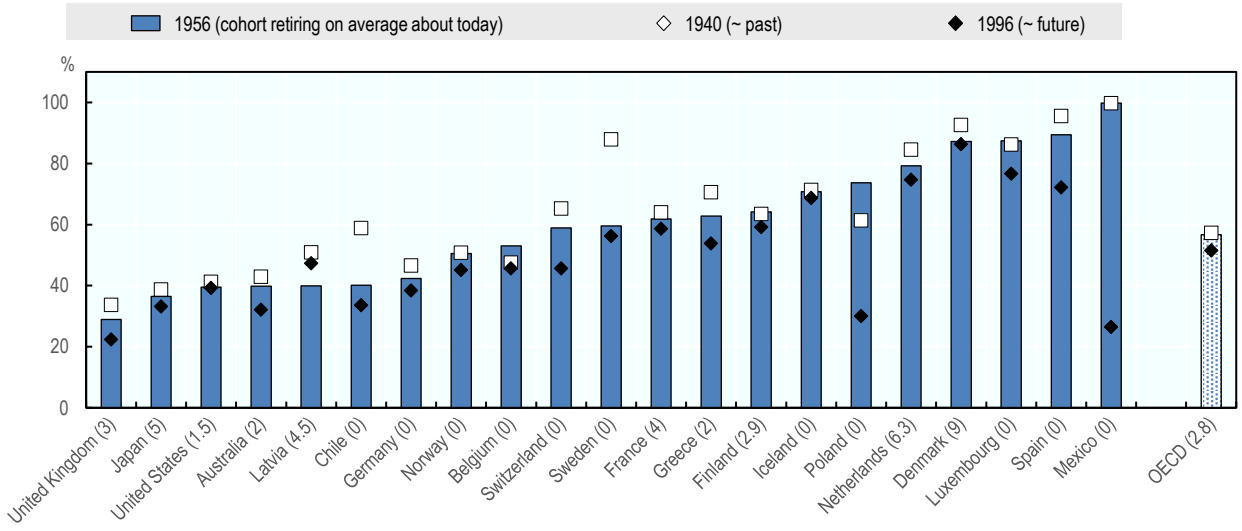
Replacement rates have tended to increase in countries with a low level for the 1940 cohort (Panel B). In particular, Estonia, Israel and Korea are expanding their pension systems. Estonia and Israel introduced a mandatory DC scheme in 2002 and 2008, respectively, and Korea created its public DB scheme in 1988. All these schemes are still maturing taking full effect only for future pensioners. Replacement rates in Colombia have been increasing due to structural changes in economic conditions, as further explained below. Overall, replacement rates have converged across countries, with country differences being reduced by one-fifth between the 1940 and the 1996 birth cohorts.[4]

Absolute changes in replacement rates between the 1940 and 1996 cohorts are lower than 5 p.p. in 13 OECD countries. This is because pension reforms have been more limited in these countries or, like in the Czech Republic, Finland, France, Latvia, Portugal or the United States, because the increase in retirement ages have at least partly offset the impact of reforms affecting generations born after 1940. Actually, in Denmark, Italy and Turkey the comparatively small changes in the replacement rate go along with large increases in the normal retirement age, implying that younger generations can expect similar benefit levels as older generations in percent of last wages, only if they work longer and retire at a much later age.[5]

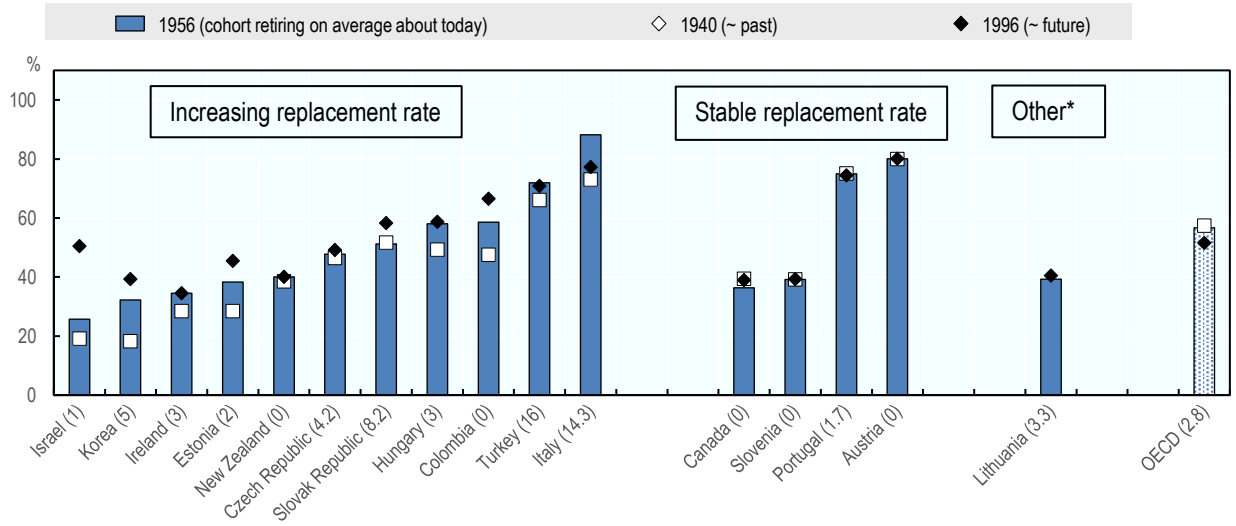
Figure 4. Gross replacement rates by country for three selected birth cohorts

Full-career average earners retiring at the normal retirement age of the respective cohort, men

Panel A. Countries with declining replacement rate from 1940-born to 1996-born cohorts



Panel B. Remaining countries



Note: *Lithuania is classified under 'Other' as data for the 1940 cohort are missing. Therefore, the OECD average excludes Lithuania along with Colombia, which is not a member. Countries grouped in Panel A exhibit a decline in the replacement rate between the cohorts born in 1940 and 1996 of more than 1 percentage point. The normal retirement age is based on a full career after labour market entry at age 20. Numbers in parenthesis show the change in the normal retirement age between the cohorts born in 1940 and 1996 in years.

Source: OECD pension model.

In some countries, economic factors such as financial market returns, real-wage growth, GDP growth and price inflation affect replacement rates significantly. Large differences in replacement rates across cohorts might follow.[6] The most obvious effect results from the impact of financial returns in funded DC schemes. One key parameter here is the difference between financial rates of return and wage growth.[7] This difference peaked in the early 1990s across the globe. For example, the rates on long-term government bonds exceeded wage-growth rates by 4 to 5 percentage points in most countries between the mid-1980s and the mid-1990s before drifting in negative territory recently.

These financial market effects are estimated to have a large impact in several countries. This is the case in particular in Chile, Denmark and Switzerland. In the Netherlands, the impact is indirect but large also. There, the low interest rate environment has weakened the solvency of funded occupational DB schemes, and as a result the calculation of benefits was changed. Replacement rates are now based on uprating past earnings with price inflation – and even less than price inflation in the last decade – rather than wage growth while accrual rates were reduced.

In public DB schemes, economic developments affect replacement rates upon retirement when past earnings are uprated with less than wage growth.

Colombia is the extreme example as past earnings are not uprated at all, and thus past nominal values are used. Periods over the last decades with low nominal wage growth have led to higher replacement rates. Belgium, Finland, France, Portugal, Spain, Switzerland and Turkey also uprate past earnings with less than wage growth (when real-wage growth is positive) potentially leading to substantial replacement rate effects.

To conclude, the short answers to the questions asked in the title of this Brief are the following. Retirement ages are increasing so future retirees will work for longer. However, a crucial question to help finance pension replacement rates relates to the split between the length of working and retiring periods. The share of adult lifetime spent after the retirement age slightly increased from generations born in 1940. Based on current legislation, it will rise further and by almost 10% in total between those born in 1940 and 1996. This means that to stabilise the share of adult life spent working and in retirement, the normal retirement age for the 1996 generation should equal 67.2 years on average against 65.8 based on current legislation. At the same time, pension replacement rates for full-career workers would fall in 21 OECD countries and increase in 10 of them. On average, they would fall by 6 percentage points, representing about 10% lower pensions relative to career wages.

Endnotes

[1] Here, the length of the retirement period is measured as expected remaining life years after the normal retirement age while the length of adult life is measured from age 20 and conditional to surviving until the retirement age.

[2] The cut-off value for reforms taken into account in this *Policy Brief* is mid-2017. Recently, Estonia legislated a link of statutory retirement ages to life expectancy, which is therefore not included. This is also the case, for example, for the suspension of such a link in the Slovak Republic once the retirement age reaches 64. The impact of these recent reforms will be analysed in the 2019 edition of *Pensions at a Glance*.

[3] In 2019, the government suspended the sustainability factor until 2023. A commission should be put in place to work on a proposal how to proceed with the sustainability factor beyond 2023. The impact of this measure could not be accounted for in this brief, but will be in the 2019 edition of *Pensions at a Glance*.

[4] Country differences are measured here by the standard deviation of replacement rates among OECD countries. The linear correlation coefficient between replacement-rate levels for the 1940 birth cohort and changes to the 1996 birth cohort is strongly negative at -0.65.

[5] Replacement-rate data for Turkey were provided by the country for the 1940 and 1956 cohorts.

[6] In Latvia, for example, the fall in employment due to both emigration after the accession to the European Union and the financial crisis moved the notional interest rate in the NDC scheme, which is equal to the growth rate of the contribution base (wage bill), below the level of wage growth. This lowered the replacement rate of the 1956 cohort by 10 percentage points relative to a situation with equal rates.

[7] See Chapter 4 in the 2015 edition of *Pensions at a Glance*.

References

OECD (2017), *Pensions at a Glance 2017: OECD and G20 Indicators*, OECD Publishing, Paris, https://doi.org/10.1787/pension_glance-2017-en, and other editions.

OECD (2019), *Pensions at a Glance 2019: OECD and G20 Indicators*, OECD Publishing, Paris, November, forthcoming.

United Nations, Department of Economic and Social Affairs, Population Division (2017), *World Population Prospects: The 2017 Revision*, United Nations, New York.

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OECD in figures refers to unweighted average of OECD countries for which data are available.

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