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Foreword

This Pension Review provides an assessment of the Czech Republic's retirement income provision from an international perspective and focuses on the capacity of the pension system to deliver adequate retirement income in a financially sustainable way. The review highlights OECD best practices for the design of pensions by covering all components of pension systems: safety nets, public pay-as-you-go schemes and private funded plans. The analysis is based on both OECD flagship pension publications, *Pensions at a Glance* and *Pensions Outlook*, and country-specific sources and research.

The report was prepared by a team of pension analysts from three OECD Directorates: the Directorate for Employment, Labour and Social Affairs, the Directorate for Financial and Enterprise Affairs and the Economics Department: Pablo Antolin, Boele Bonthuis, Hervé Boulhol, Falilou Fall, Christian Geppert and Stéphanie Payet. Paul Cahu, independent consultant, contributed to Chapter 2. Editorial assistance was provided by Liv Gudmundson and Lucy Hulett.

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The authors are very grateful to Stefano Scarpetta (ELS Director), Mark Pearson (ELS Deputy Director), Monika Queisser (ELS Head of Social Policy Division) and Maciej Lis, Tomoko Onoda and Andrew Reilly (ELS Pension Analysts) for their useful comments. The Review was written under the overall supervision of the OECD Secretary-General, Angel Gurría.

The opinions expressed and arguments employed herein should not be taken to reflect the official views of the government of the Czech Republic.

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Executive summary

This review provides a detailed analysis of the different components of the Czech pension system. It assesses the system according to OECD best practices and guidelines, and draws on international experiences to make recommendations for improvement.

While various changes have taken place over the last twenty-five years, the architecture and principles in the design of the Czech pension system have been mainly unaltered since the 1995 Pension Insurance Act. The system works relatively well in ensuring net replacement rates close to the OECD average for average-wage workers. Moreover, there is a high level of redistribution within the pension system, at least within generations, leading to a very compressed benefit structure. Replacement rates are high for low earners while high earners receive very low internal returns on their contributions. For the latter, the boundary between contributions and taxes is blurred.

Overall, the main weaknesses of the system are the following. First, the average income of older people relative to that of the total population is relatively low despite high contribution rates. Second, the build-up of pension entitlements is very complex, making it difficult for contributors to understand their accrued rights (and anticipate their future pension level) and for the administration to manage the system. Third, ageing pressures will lead to financial imbalances driven by higher pension spending. Fourth, funded private pensions play a limited role, which prevents reaping the benefits of a diversified structure.

The agenda for a broad and substantial pension reform should thus include several components. The way to calculate pensions should be simplified so as to identify entitlements when they accrue, enable workers to better anticipate their retirement income and make the management of the system easier and more precise. In addition, eligibility to an old-age pension should be possible for people with shorter contribution periods. Pension financial prospects should also be improved. Moreover, the current financing structure exclusively relies on contributions while some pension components might be better financed by taxes. Finally, voluntary private pensions should be better designed to boost their capacity to complement public pensions.

The review offers various policy options to improve the Czech pension system. The key recommendations are:

- **Simplification.** *Calculate earnings-related entitlements using a constant effective accrual rate across earnings levels (up to a ceiling). Adjust then the basic pension benefit to achieve redistributive objectives.*
- **Eligibility.** *Drastically reduce the minimum number of years required to be eligible to both the basic pension and the earnings-related component at the statutory retirement age, and make the basic pension benefit proportional to the validated contribution period.*
- **Financial sustainability.** *Implement the legislated increases in the retirement ages and their convergence between men and women, and link the unified retirement age to gains in life expectancy. Raise the minimum early retirement age and adjust early retirement ages to life expectancy as well.*

- **Financial structure.** *Consider financing some redistributive components of public pension expenditures by taxes to improve pension finances, boost pensions for people earning more than the average wage, lower mandatory contributions or help finance funded pensions.*
- **Private pensions.** *Improve the performance of pension funds by encouraging or nudging participants to switch to funds without capital guarantee and by promoting the access to an appropriate default investment strategy, as a pre-requisite to make them contribute more to a well-functioning voluntary system.*

These are now presented in greater detail.

- *Calculate earnings-related entitlements using a constant effective accrual rate across earnings levels (up to a ceiling). Adjust then the basic pension benefit to achieve redistributive objectives.*

This is the main feature in the recommended simplification of the benefit calculation. It will allow to clearly identify accrued entitlements earned for a given contribution period rather than waiting for the end of the career to know what was earned in that period. This will also pave the way to creating individual accounts where pension entitlements steadily build up, thus enabling people to better anticipate their future pension level. At the same time, the management of the system will be facilitated as entitlements when accruing do not depend any more on the future part of the career.

The current core formula, although much more complicated in its details, is very close to the sum of a benefit equal to three times the current basic pension level and accruals based on a constant rate of 0.39% across all earnings levels up to the contribution ceiling. These parameter values would preserve the strong progressivity of the current system. The redistribution level is a political choice, however. For a given level of spending, a less (more) progressive system is obtained from a lower (higher) basic pension level combined with a higher (lower) accrual rate.

- *Drastically reduce the minimum number of years required to be eligible to both the basic pension and the earnings-related component at the statutory retirement age, and make the basic pension benefit proportional to the validated contribution period.*

The Czech Republic is an outlier in requiring that either 30 years are contributed or 35 years are validated to be eligible to an old-age pension at the statutory retirement age. This applies to both the basic and the earnings-related components. Currently, those who have contributed or validated fewer years have to wait until five years after the retirement age to claim an old-age pension, provided in addition that they have contributed at least 15 years or validated 20 years. This raises the risk of having to retire very late to access a small pension or to have contributed for nothing.

So far, such a long required period has not raised much concern thanks to high recorded employment in former Czechoslovakia and generous validation of non-contributed periods. However, the transformation of the economy from the 1990s, the welcome tightening of some instruments to validate pension entitlements as well as labour market trends are likely to raise the share of older people not covered by old-age pensions or with short contribution periods. Such a long required period might thus increase the risk of old-age people facing low income in the future. Ideally, eligibility for the basic pension should be possible with only one year of contribution, with the benefit level being pro-rated according to the length of the contributed period.

- *Implement the legislated increases in the retirement ages and their convergence between men and women, and link the unified retirement age to gains in life expectancy. Raise the minimum early retirement age and adjust early retirement ages to life expectancy as well.*

Population ageing pressure will translate into increased pension spending from about 2030 and thus lead to a deterioration of pension finances. Social security contribution rates are relatively high and the income of people older than 65 relative to that of the total population is relatively low. Increasing effective retirement ages is the key instrument to deal with the financial pressure for several reasons, even if additional measures might be needed to close the financing gap. First, the male statutory retirement age will remain significantly below the OECD average. It should thus be raised to 65 years in 2030, as planned, and then linked to life expectancy as is the case in six OECD countries. One key question is the pace of adjustment in this link, which should be decided in conjunction with other instruments that contribute to ensuring financial sustainability, such as the accrual rates, the basic pension level, contribution rates and perhaps tax sources. The initially legislated pace of increase in the retirement age, which was decided in 2011 and cancelled in 2016, was too fast, implicitly transmitting about 2 years of increase in the retirement age for each year of improvements in life expectancy at age 65. For example, assuming retirement takes place at the statutory retirement age, if about two-thirds of changes in life expectancy were transmitted to increasing the retirement age, the balance between time spent working and in retirement would be more or less stabilised.

Second, the Czech Republic is among the few OECD countries that still have gender-specific retirement ages. The planned convergence of retirement ages between men and women by 2037 is welcome. Third, almost one-third of people retire before the statutory retirement age in the Czech Republic. With the planned increase in retirement ages, early retirement will still be possible from age 60. The risk is that too many people might retire very early, generating potentially low pensions. The minimum age of early retirement should thus at least be increased in line with the statutory age, reaching at least 62 in 2030, and then be linked to life expectancy.

- *Consider financing some redistributive components of public pension expenditures by taxes to improve pension finances, boost pensions for people earning more than the average wage, lower mandatory contributions or help finance funded pensions.*

In the Czech Republic, redistribution takes place exclusively within the pension system as all pension revenues come from contributions levied on wages. Social security contributions amounted to almost 15% of GDP in 2018, out of a total of general government tax revenues of 35% of GDP, which is closely associated with the high labour tax wedge. Many countries finance part of pension spending through taxes. This helps lowering the labour income tax wedge – the difference between wage cost and take-home pay – which tends to improve economic performance by raising employment and competitiveness. The high tax wedge might become more detrimental to the Czech Republic as wage levels are catching up towards EU averages. A discussion might thus be welcome about the opportunity to shift – on top of health insurance contributions which generate benefits that are not earnings-related - part of the financing of some redistributive instruments, such as credits for non-employment periods or basic pensions, to general taxes. Using additional tax revenues might allow to increase accrual rates, in particular for high earners who have low replacement rates, or to leave more space to develop funded pensions.

- *Improve the performance of pension funds by encouraging or nudging participants to switch to funds without capital guarantee and by promoting the access to an appropriate default investment strategy, as a pre-requisite to make them contribute more to a well-functioning voluntary system.*

There is a need to improve the net performance of pension funds before encouraging people to contribute more to the system in order to increase their future pension income prospects. Three-quarters of participants are currently in transformed funds that have to provide an annual non-negative return guarantee and therefore invest very conservatively, thereby achieving low performance. The improvement of the net performance could be achieved by encouraging more participants to switch to participating funds, given that these funds have more flexibility to pursue growth investment and have thus far achieved higher

returns on average. In addition, the Czech authorities should promote the access to an appropriate default investment strategy as many people may be unwilling or unable to choose their own strategy. Life-cycle investment strategies can be well suited to protect people close to retirement from the impact of extreme negative shocks in financial markets, while allowing younger participants to invest more in risky assets that yield higher expected returns over the long term. This could be built through the combination of several participating funds, the weights of which would vary as people get closer to the retirement age.

The other main recommendations to improve the public pension system are the following.

- *Remove the double penalty related to the impact of non-validated periods on pension benefits.* Some non-contributed periods generate no entitlements and, in addition, lower both already accrued and future entitlements by lowering the reference wage. When a period is not validated it does not generate, by definition, any accrual. However, the Czech system is unusual in lowering, on top, both already accrued and future entitlements by counting wages as zeroes for these periods in the calculation of the reference wage. In the current system, non-validated periods should not be accounted for in the calculation of the reference wage. The reform proposed above which is based on a constant accrual rate for each period would solve this problem.
- *Eliminate age-specific credits for unemployment periods.* Long periods are currently validated for employment breaks related to childcare. For unemployment, the period that is credited for pension entitlements depends on the length of the unemployment-benefit period plus some extra months for periods without unemployment benefits, both of which are more generous after age 55. Age-specific measures might contribute to stereotypes about working at older ages, which ultimately lower employment prospects at the end of the career and encourage early retirement.
- *Raise the contribution base of the self-employed to better harmonise contributions and entitlements between employees and the self-employed with similar earnings.* The self-employed accrue less pension entitlements as their contribution base is low. In line with the proposal from the Commission on Fair Pensions, the contribution base should be substantially increased from the current level of 50% to 75% of profits, ensuring a better harmonisation with the equivalent of gross wages. Such an increase would also reduce inequity between different forms of work and limit the misuse of self-employment to reduce labour cost, which might develop in the future as new forms of work gain in importance.
- *Avoid encouraging self-employment through lower contributions, which generate lower pension entitlements. If there is a political objective to support self-employment, make any subsidy explicit by financing the contribution gaps compared with employees having similar income through general taxes.* The increase in the contribution base may be perceived as generating a too high burden of contributions paid by the self-employed. However, lower pension contributions generating lower pension entitlements should not be used as an instrument to promote self-employment. The cost of any support to self-employment should be made transparent by subsidising part of these better harmonised contributions through general taxes.
- *Index pensions in payment to price inflation.* Pension replacement rates are high for low-income earners in the Czech Republic. Future pension spending could be reduced if needed by indexing pensions in payment to prices, which would still preserve the purchasing power of pensioners.
- *Separate the account of the pension system and the government budget more clearly*. There is no clear financial separation between the central government budget and the pension account. Net pension surpluses have been transferred to the government account without recording net accumulated revenues. Likewise, in the future, public transfers will have to cover any pension deficits, without properly accounting for the pension-related financial transfers across generations. The effective separation of the pension account from the central government budget would greatly improve transparency and strengthen the credibility of pension management, especially given

financial strain from ageing trends. This would in particular make the transfers from the government budget to cover family- and unemployment-related pension components more transparent.

- *Index the social assistance benefit level to nominal wage growth.* Social assistance provides an income guarantee (living minimum), which is very low in comparison to other OECD countries and might not effectively prevent relative income poverty in old age. Its level is nominally fixed, and it substantially declined from more than 30% of the average wage in 1991 to 10% in 2019.
- *Introduce a higher social assistance benefit level for people reaching the statutory retirement age.* The social assistance scheme does not provide specific benefits to older people. Providing such benefits would open the possibility to provide a higher benefit level for those that have reached the statutory retirement age. While minimum income schemes might generate work disincentives, such concerns are of less importance after the statutory retirement age. Having no specific safety net for older people tends to limit the old-age benefit level as any increase applies to the whole eligible population and therefore generates a high cost.

Additional recommendations to strengthen the role of the funded pension system are the following.

- *Better align fees charged to participants with the costs incurred by the pension management companies.* There is no consensus as to whether fee caps are appropriately defined. The Czech authorities should analyse the cost of investing in different asset classes to form a view of whether the current caps are in line with the objective of having well-diversified portfolios to reach better risk-adjusted returns. Once this is done, a regressive scale for management fees could be adopted to pass on economies of scale to participants as assets under management grow.
- *Encourage participants to contribute more.* Contributions to supplementary pension schemes are generally too low to help individuals complement their state pension significantly. Many participants only contribute the minimum incentivised amount and less than one quarter receive employer contributions. Redesigning some elements of state support could improve incentives to raise voluntary contributions. Employers could also play a bigger role, by contributing more systematically on behalf of their employees and implementing an automatic escalation mechanism, whereby employee contributions would increase gradually in line with pay rises up to a pre-set maximum. Moreover, providing information about expected benefits from the entire pension system could help people identify how much they need to contribute to the funded scheme in order to achieve a given target retirement income.
- *Lengthen the minimum saving period.* The minimum saving period of five years to withdraw retirement benefits and keep the state financial incentives is too low. Countries with comparable schemes have a minimum saving period of at least 10 years.
- *Consider introducing automatic enrolment.* Participation is the lowest for people aged under 30. People tend to delay enrolment in funded pension arrangements because of procrastination and inertia. Automatic enrolment into an occupational pension plan or a participating fund would increase take-up among younger people. Appropriate default contribution rates and investment strategies should be defined.
- *Extend the take-up of products providing lifelong retirement income.* If the previous measures are implemented successfully and the level of assets accumulated at retirement becomes significant, more rules should be put in place to ensure that people actually use their retirement savings as a complementary source of income during retirement. This would imply discouraging the lump sum pay-out option and increasing the attractiveness of lifelong retirement income products.

1 Mandatory earnings-related pensions

This chapter focuses on the mandatory earnings-related pension scheme. The main component of the Czech old-age pension system is a pay-as-you-go defined benefit system. The chapter provides an overview of the demographic and labour market trends in the Czech Republic, as well as pension reforms undertaken over the last three decades. Current pension outcomes are presented. The chapter describes the rules of the current pension system and assesses its capacity to deliver good pensions in a financially sustainable way. While the new reform proposal by the Czech Commission on Fair Pensions is discussed, the chapter concludes with policy recommendations to improve earnings-related pensions.

1.1. Introduction

In the past decades the Czech society and economy and with it the Czech pension system have been significantly transformed. In 1989, Czechoslovakia returned to democracy in the Velvet Revolution, in 1993 the Czech Republic and the Slovak Republic split into two independent countries and, in 2004, the Czech Republic joined the European Union.

The pension reform process started immediately after the political changes in 1989.[1] Czechoslovakia wanted to create a unified social security system, which would provide health, sickness and pension benefits. The three labour categories that existed under communist rule were unified and the self-employed were included in the pension system. In addition, the pension system shifted from a tax-financed to a contribution-financed scheme in 1992. The inception of the new pension system took place in 1995 with

the enacting of the Pension Insurance Act. Since then there have been significant reforms in 2003, 2008, 2011 and 2016.

While various changes have been implemented over the last 25 years, the architecture and principles in the design of the Czech pension system have been mainly unaltered since the 1995 Pension Insurance Act. The mandatory contributory system consists of an earnings-related component and a basic, flat-rate component. The earnings-related component is calculated by multiplying the reference wage with total accrual. A very progressive formula is used to calculate the reference wage as a function of wages throughout the career, effectively reducing accrual rates for high average wages. Some non-employment spells count towards accrual while others do not and enter on top as zeros in the calculation of the reference (average) wage. Everyone who is eligible for the earnings-related component receives the basic pension.

In 2019, the Minister of Labour and Social Affairs established the Commission for Fair Pensions, tasked with reforming the pension system to ensure a financially sustainable pension system that at the same time delivers adequate pensions. The Commission consists of representatives from academia, public bodies, social partners, political parties and interest groups. In January 2020, it published its first pension reform proposal.

The structure of the rest of the chapter is as follows: in Section 1.2 the most recent changes in the Czech pension landscape are described. Section 1.3 discusses current outcomes of the Czech pension system. Section 1.4 describes and evaluates its rules while Section 1.5 describes the proposal for a pension reform by the Czech Commission on Fair Pensions. Finally, 1.6 concludes and presents policy options.

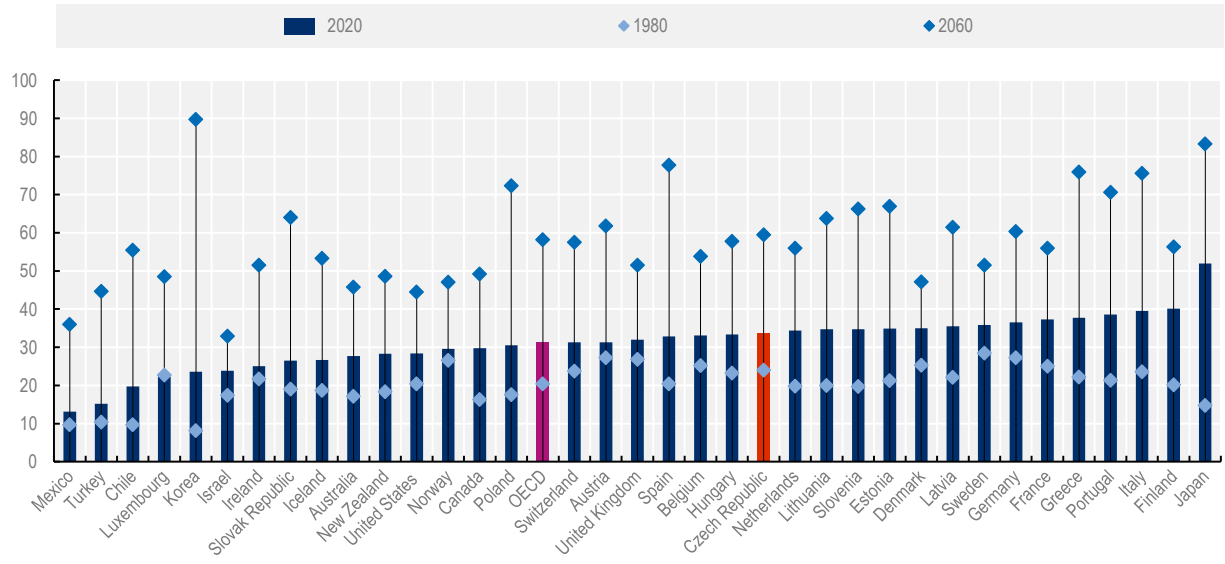
1.2. Changes to the Czech pension landscape

1.2.1. Demographic and labour market trends

Currently the population of the Czech Republic is slightly older than the OECD on average. Population ageing is accelerating in the Czech Republic at a similar pace as the OECD on average. Over the last 40 years, the old-age to working-age ratio – the number of people older than 65 years per 100 people of working age (20 to 64 years) – increased by a little more than 40% in the Czech Republic from 24 in 1980 to 34 in 2020 (Figure 1.1). By comparison, the old-age to working-age ratio for the OECD on average rose from 20 to 31 over the same period. Over the next 40 years, it will rise in the Czech Republic by more than 75% to a projected 60 in 2060 (against 58 for the OECD on average). This rapid shift in the demographic structure is the result of rising life expectancy and low fertility rates.

Figure 1.1. The average old-age to working-age ratio will almost double in the next 40 years

Number of people older than 65 years per 100 people of working age (20-64), 1980-2060

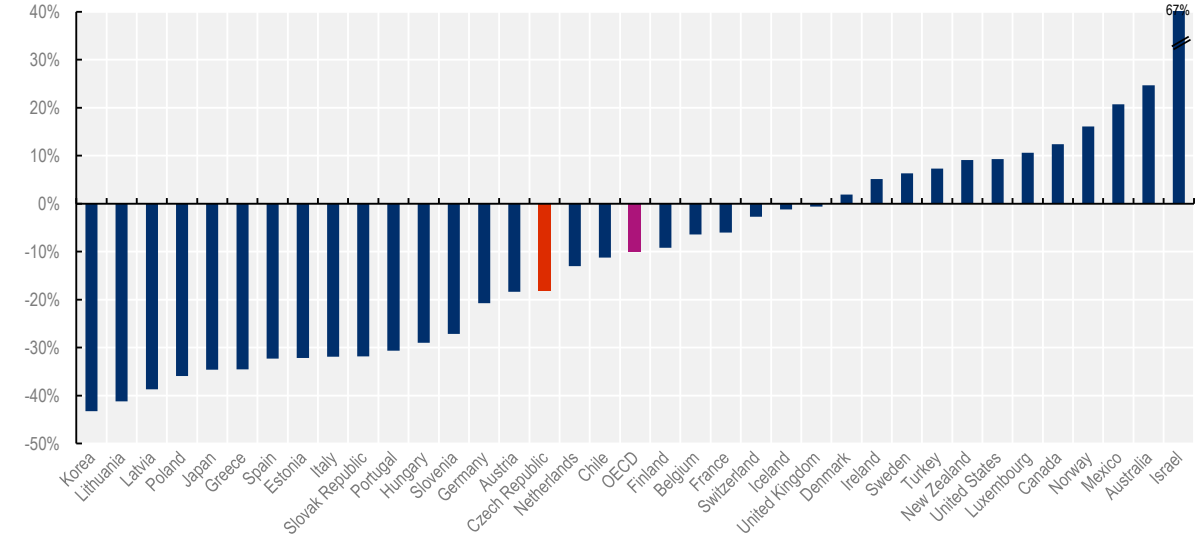


Source: United Nations World Population Prospects: The 2019 Revision.

The working-age population (20-64) is projected to decrease by 10% in the OECD on average by 2060, i.e. by 0.26% per year. However, the fall will be almost double that in the Czech Republic (Figure 1.2). This might have a significant impact on both output growth and on the financing of its pay-as-you-go (PAYGO) system. Lower labour force growth negatively affects internal rates of return of PAYGO pensions, which might weigh on both pension adequacy and financial sustainability.

Figure 1.2. The working-age population will decline in a large number of OECD countries

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



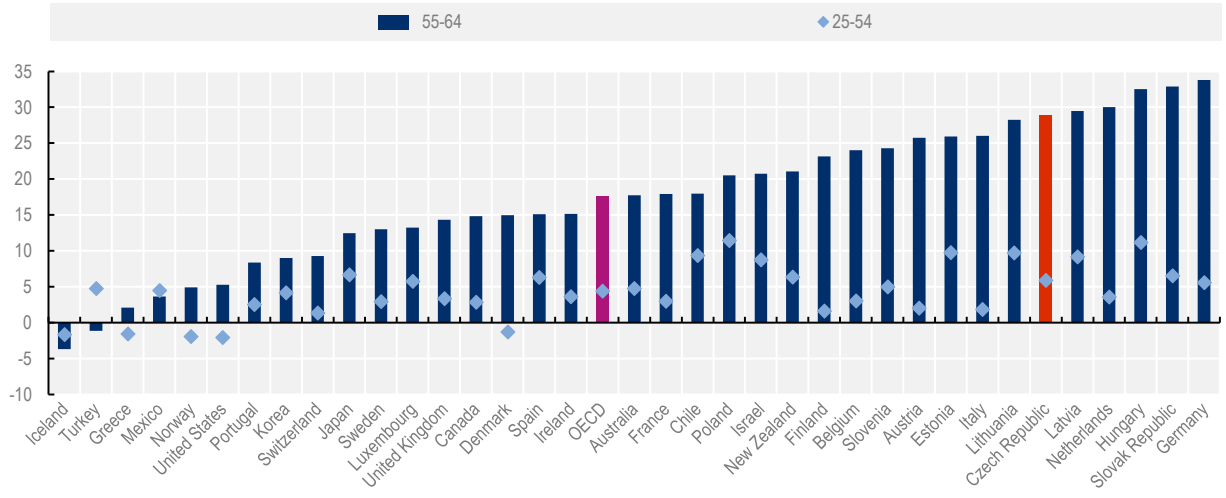
Source: United Nations World Population Prospects: The 2019 Revision.

However, changes in the size of the 20-64 population is a demographic measure only, based on fixed age boundaries. Effective age boundaries, based on effective age of entry in and exit from the labour market, can change as a result of education and pension policies in particular, including measures affecting retirement ages. Moreover, employment rates within specific age groups can change, which might offset part of the negative effects of a shrinking working-age population. Employment of older workers is more directly influenced by pension policies, and is often critical as large margins exist in many countries to expand employment.

Since 2000, labour market participation among older individuals has increased sharply in the Czech Republic while unemployment among this group has remained low. This is a major achievement which will improve pension adequacy while somewhat alleviating pressures on pension finances.[2] The employment rate among individuals aged 55 to 64 increased by almost 30 percentage points, from 36.3% in 2000 to 65.1% in 2018, compared to an increase for the OECD on average from 43.9% to 61.5% (Figure 1.3). During the same period, the employment rate among people aged between 25 and 54 in the Czech Republic increased from 81.6% to 87.5%.

Figure 1.3. Growth of employment rates of older workers has been strong

Change in employment rates, 2000-18, percentage points



Source: OECD.Stats database, Labour Force Survey by gender and age.

Despite this sharp increase, employment rates fall sharply after age 60 in the Czech Republic (Figure 6.6 in (OECD, 2019[1])). The employment rate for the age group 55-59 is well above the OECD average (86% vs 73%), but employment rates for the age groups 60-64 and 65-69 are only 46% and 14% in the Czech Republic, respectively. The OECD average falls by less to 50% and 22%. More than 70% of the age group 60-64 are employed in Iceland, New Zealand and Sweden, and more than 50% of the age group 65-69 in Iceland. Only a small part of the decline in employment after age 60 in the Czech Republic, as in most OECD countries, can be explained by the deterioration of health with age (Chapter 5 in (OECD, 2017[2]). There are therefore large potential gains to be made in the Czech Republic.

As a result of the sharp fall in employment rates after age 60, the effective age of labour market exit is still low in the Czech Republic. In 2018, men exited the labour market on average at exactly the normal retirement age of 63.2 years (Figure 1.4) while women exited two years earlier on average at 61.3 years. Women with children being allowed to retire earlier contributes to this. The effective age of labour market

exit was substantially higher in the OECD on average, at 65.4 and 63.7 years for men and women, respectively.[3]

Figure 1.4. Average effective age of labour-market exit and normal retirement age in 2018

Note: Effective retirement age is shown for the 2013-18 five-year period. Normal retirement age is shown for individuals retiring in 2018 and assuming labour market entry at age 22.
Source: OECD (2019[1]), *Pensions at a Glance 2019: OECD and G20 Indicators*, https://dx.doi.org/10.1787/b6d3dcfc-en.

1.2.2. Recent pension reforms of the Czech system

Over the last decades, the main reforms of the Czech pension system took place in 1995, 2003, 2008, 2011 and 2016. Table 1.1 provides a summary.

In a major overhaul of the Czech pension system, the 1995 Pension Insurance Act established a two-tier contributory benefit structure: a flat-rate part (contribution-based basic pension) and an earnings-related part. The retirement age was gradually increased, from 60 years for men and from 53-57 years for women, depending on the number of children, to 62 and 57-61 years in 2007, respectively.

At the same time, two generous early retirement possibilities were introduced. One was available two years before the statutory retirement age, with the benefit being reduced until reaching the retirement age by 1% for each 90 days of early retirement. Alternatively, early retirement was possible three years before the statutory retirement age with a permanent reduction of 0.6% of the reference wage for each 90 days of early retirement. The penalties were increased in 2001 to 1.3% for temporary benefit reductions and to 0.9% for permanent benefit reduction for each 90 days. The temporary benefit reduction option was abolished in 2007.

Table 1.1. Main recent reforms

Retirement age	Gradual increase from 60 for men and 53-57 for women (depending on the number of children) to 65 for men and women without children or with one child, and from age 62 to 64 for women with more than 2 children (1995, 2003, 2008)	Gradual increase of retirement age after age 65 by two month every year (2011)	Reintroduction of the cap on future retirement age at 65 (2017)
Early retirement	Introduction of 2 possibilities of early retirement: one with higher temporary penalty and one with lower permanent penalty (1995)	Temporary early retirement abolished (2007)	Early retirement is possible 3 years before the retirement age or from age 60, whichever is lower (2008)
Basic pension (flat-rate component)	Pension Insurance Act: Introduction of a two-tier pension system (1995)	The amount of the basic component was fixed at 9% of the average wage (2011)	Raised to 10% (2018)
Contribution rate	Introduction of pension contributions with a contribution rate of 27.2% (1992)	Various changes up to 28% (2003)	
Vesting period	Increase of the required eligibility period from 25 years to 35 years including non-work validated periods or to 30 years without these periods. Increase by 5 years of the required period to retire 5 years later than the statutory retirement age (2008).		
Reference wage	Average wage earned during the last 10 years before the retirement in 1995, rising to 30 years by 2016 (1995)	The target period will gradually increased from 30 years to the whole career (2011)	Reference wage reduction thresholds changed. First and second thresholds were raised as share of average wage. Accrual above the second threshold was abolished (2011)
Indexation rule	Indexation formula introduced. The statutory minimum was set at 100% of the consumer price index plus 1/3 of real-wage growth, but with discretion beyond this without upper limit (1995)	Government's discretion removed from the indexation rule (2011)	Discretion reintroduced with a cap of 2.7%. Share of real wage growth increased to ½ (2016)
Private pensions	Introduction of the retirement savings scheme. Voluntary entry but irrevocable, with 3 percentage points of contribution shifted from the public pension contributions (2013)	Closure of the retirement savings scheme (2016)	

Source: Czech Ministry of Labour and Social Affairs.

In 1995, the reference wage for the earnings-related component was the average wage over the last ten years before retirement. This period has been increasing by one year each year until reaching the average lifetime wage in 2032. Past wages were and still are uprated with average-wage growth.

Before 1995, pensions in payment were indexed on a discretionary basis. In 1995, a minimum indexation formula was introduced, indexing pensions with 100% inflation and one-third of real-wage growth. However, the government could still increase pension benefits with more than the statutory minimum without any upper limit. In 1998, as part of public saving measures, the indexation rule became less generous, using 70% inflation plus one-third of real-wage growth. This was reverted to 100% inflation and one-third real wage growth in 2003.

In the same year, it was decided that the retirement age would be raised to 63 years for both men and women without children, starting the increase from 2007. Pension contributions were raised to 28%. As for self-employed workers, who were previously allowed to decide the contribution base themselves, a minimum contribution base was introduced and gradually increased between 2004 and 2006 from 35% to 50% of taxable income.

In 2008, the minimum years of contributions to receive an old age pension were raised from 25 to 35 years when including some eligible validated periods or to 30 years without. Prior to 1996, secondary education and tertiary education were considered validated periods, and prior to 2010 tertiary education only was considered a validated period. The retirement age was gradually raised to 65 years for men, women without children and women with one child, while lower retirement ages were maintained for women with two or more children. Early retirement can be taken three years before the statutory retirement age or from age 60, whichever is earlier. This means that the number of years of early retirement gradually increases from three to five years as the statutory retirement age approaches 65. As for late retirement, further benefit increases were introduced when people combine pension receipt and work after the statutory retirement age. The age of entitlement to a survivor pension for women (age 55) and men (age 58) was unified and set at four years before the statutory retirement age for men of the same birth year. A cap was introduced for annual pension contributions at 48 times the monthly average wage (i.e. 4 times the annual average wage in case of a constant monthly wage).

New reforms were decided as the thresholds used in the reference-wage formula to reduce accruals for high wages were contested as discrimination against higher income categories at the Constitutional Court in 2011. The Constitutional Court ruled that social insurance has a different function from private insurance and that therefore redistribution within the system is not unconstitutional. However, it also ruled that the income thresholds in the progressive reference-wage formula were in violation of the constitutionally guaranteed right to adequate income replacement. It expressly stated that a solution should be found by adjusting existing parameters rather than a systemic change. As a response, the pension law was amended. The first threshold below which 100% of the wage is taken into account was gradually raised from 35% of the average wage in 2011 to 44% in 2015, and the second threshold was raised from 90% to 400% of the average wage. However, the share of the wage taken into account between the first and second threshold was reduced from 30% to 26%, and above the second threshold wages were not taken into account (previously 10% was taken into account). The thresholds, which previously were fixed on a nominal basis and discretionarily increased, were fixed as a share of the average wage. Similarly, the flat-rate component was fixed at 9% of the average wage.

In addition, it was decided to continue raising the retirement age after age 65 (reached in 2030 for men) by two months every year without any prescribed limit. The penalty rate for early retirement of more than one year increased from 0.9% to 1.2% of the reference wage for every 90 days. Finally, the government's upwards discretion about indexation was removed.

A funded voluntary retirement savings scheme was introduced in 2013. It consisted of transferring 3 percentage points of employee's pension contributions to a private individual retirement account, under the condition that the employee contributed an additional 2% of gross salary. The scheme was voluntary,

but the decision to participate was irrevocable. Participation in the voluntary scheme meant a reduction in the mandatory earnings-related pension. Since part of total pension contributions went to a private pension fund the accrual rate of the earnings related pension was reduced from the usual 1.5% to 1.2% of the reference wage. Entry of new participants stopped in mid-2015 and the scheme was discontinued at the end of that year (see Chapter 4).

In 2016, discretion was reintroduced in the indexation rule, giving the government the option to increase pensions by up to 2.7%. In addition, from 2017, the inflation measure that is used within the indexation rule is the highest of CPI inflation and Pensioner-specific inflation. Finally, the share of real-wage growth included in the indexation formula was increased from one-third to one-half.

In 2016 as well, the cap on the future statutory retirement age was re-established at age 65, reversing the previous decision to continue raising the retirement age two months every year.

In 2018, the basic pension was raised from 9% to 10% of the average wage and a special extra bonus of CZK 1 000 (3.1% of the average wage) was introduced for all people above age 85.

1.3. Current outcomes of the Czech pension system

1.3.1. Contributors

In 2018, around 80% of the population aged 20-64 contributed to the pension system (Table 1.2). About 10 percentage points of those were self-employed. With increases in employment rates, the total share of the working-age population who contributed rose over time from just over 70% in 2010. Over the same period, the statutory retirement age for men rose by one year and two months and for women by two years, also contributing to this increase.

Table 1.2. Contributors

Share of population 20-64

	2010	*2014*	*2018*
Employees	61.8	64.5	71.5
Self-employed	10.8	10.3	10.8
Total	72.6	74.8	82.3

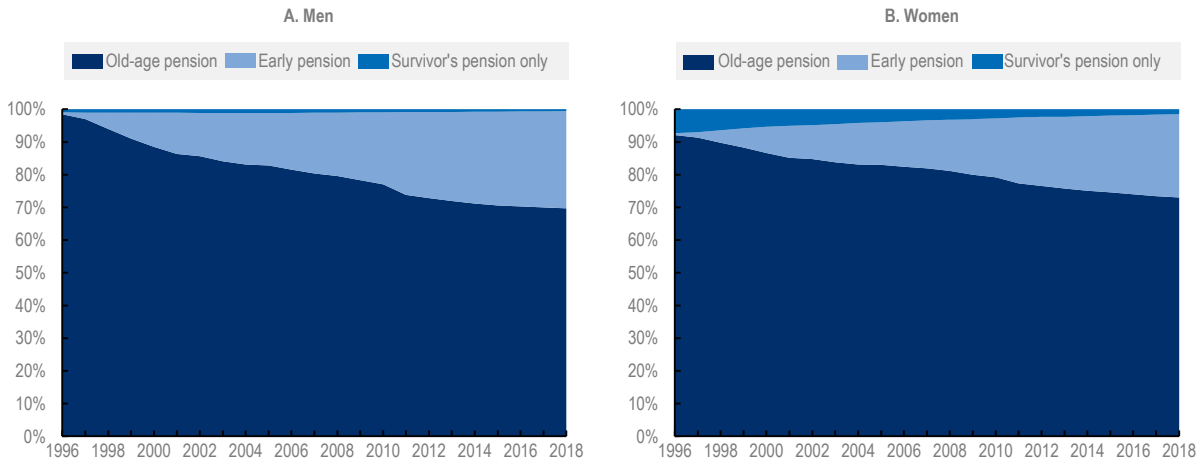
Source: Czech Ministry of Labour and Social Affairs.

1.3.2. Recipients

The majority of pension recipients receive an old-age pension that is claimed at or after the retirement age. In 2018, 70% of male and 73% of female pension recipients (excluding disability pensions) received an old-age pension at or after the retirement age (Figure 1.5). However, in 1996 these shares were larger than 90%. Early pension receipts have steadily become more important rising from less than 1% – as early retirement was only introduced in 1996 – to 30% and 25% for men and women, respectively. These recent shares, applying to all retirees (i.e. to the *stock* of recipients), are very large. Since 1996, early pensions have hovered between 20% and 30% of newly granted pensions. Finally, the share of women only receiving a survivor pension has dropped from 7% to 2%. However, the share of women receiving a survivor pension has been fairly stable around 30% (Section1.4), implying that the majority of recipients receive both their own pension and a survivor pension.

Figure 1.5. Recipients

By type of pension [as share of total pension receipts]



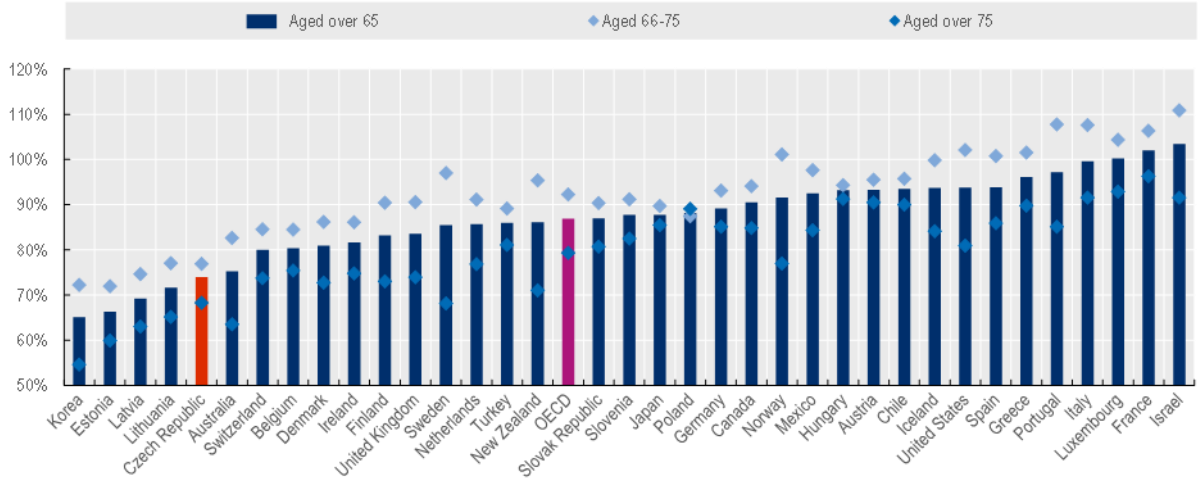
Note: Pensions labelled as old-age are received at or after the statutory retirement age. Early pension is received before the statutory retirement age. Both refer to the age of the recipient at the time of retirement. Both, old-age and early pension categories include people receiving a survivor pension and their own pension.
Source: Czech Ministry of Labour and Social Affairs.

1.3.3. Relative pension levels

On average in OECD countries, people older than 65 have a disposable income equal to 87% of the total population (Figure 1.6). The Czech Republic is well below that with 74%, with old-age pension being the most important component of old-age income. One reason is much lower legacy pensions from the old Czechoslovakian system than new pensions combined with fewer opportunities to save while working.[4] Only in Korea and the Baltic states have older people a lower relative income. Moreover, the fast wage growth over the past decades in the Czech Republic has lowered pensions relative to average income due to less than wage indexation. Wages grew by over 200% between 1996 and 2018 while pensions in payment were only indexed by a total of 150%. As in other OECD countries (with the exception of Poland), income drops further in old age, such that those older than 75 have a significantly lower income than the 66-75. In some countries, currently high old-age incomes (relative to the total population's), compared with the OECD average, might reflect various factors, such as high contribution rates or past pension rules that were not financially sustainable.

Figure 1.6. Disposable incomes of older people

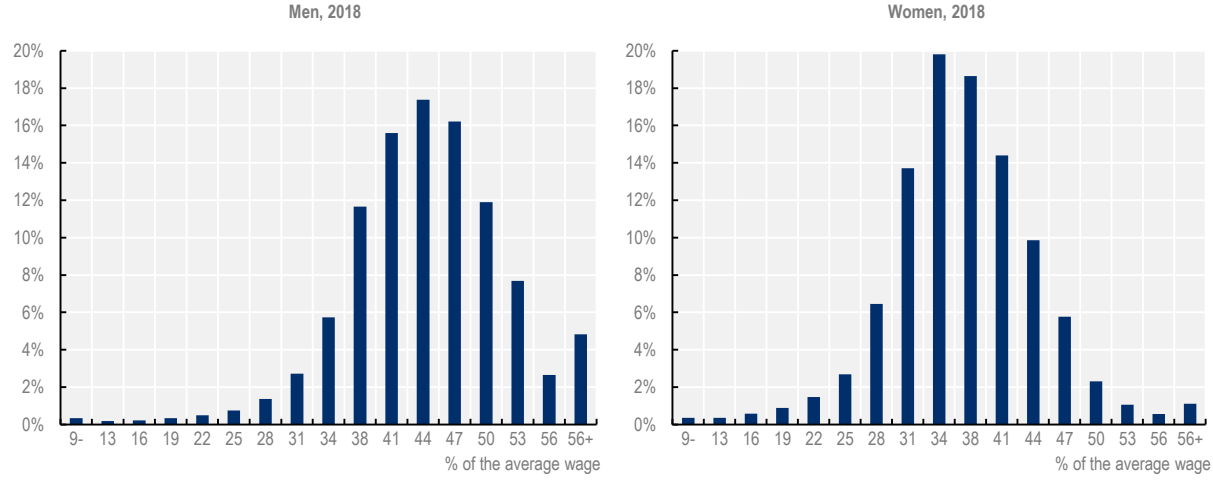
Incomes of people aged over 65, percentage of total population incomes



Note: 2017 or latest available year. All income from employment, self-employment, capital and public transfers are included. Incomes are measured on a household basis and equivalised with the square root equivalence scale to adjust for differences in household size.
Source: OECD Income Distribution Database.

Despite low relative income levels among the elderly, the relative old-age income poverty rate, measured as the share of people over 65 with equivalised income below half median, is relatively low in international comparison, equal to 7.4% in 2017. Moreover, income inequality in the Czech Republic is low too. In 2017, the Gini index of disposable income was below 0.20 for the population aged over 65, the lowest among OECD countries with an average of 0.31 (Chapter 3). Indeed the distribution of pension benefits is very concentrated in the Czech Republic, 83% of men's pensions and 91% of women's pensions lie between 25% and 50% of the gross average wage (Figure 1.7). Moreover, only about 5% of men's pensions and 1% of women's pensions exceed 56% of the average wage.

Figure 1.7. Distribution of pension benefits

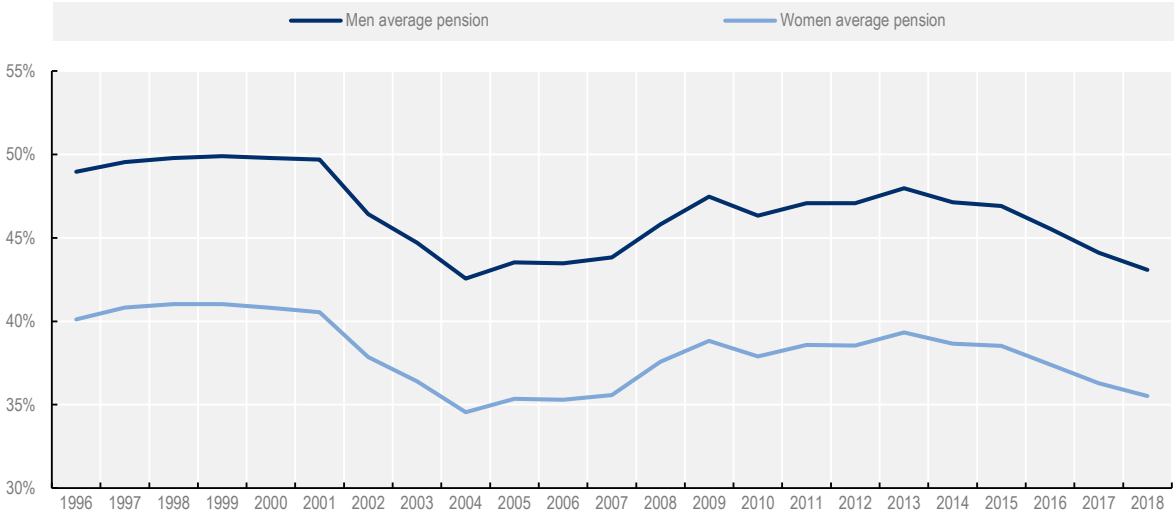


Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

The average old-age pension has fallen from just below 50% of the average wage for men and 40% for women in 1996 to 43% and 36%, respectively in 2018 (Figure 1.8): real wages grew by 65% – or 2.3% per year on average – while real pensions rose by just under 50% for both men and women – or 1.8% per year. Newly granted pensions between 2002 and 2018 were 2.0 percentage points higher for men on average and 2.6 percentage points higher for women, and the pension gap between women and men has been stable at about 18%.

Figure 1.8. Average old-age pension by gender

As share of the economy-wide average wage



Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

Older women often had shorter careers and lower wages than men, resulting in lower benefit entitlements. Using EU-SILC data, the European Commission (2020[3]) shows that, women's average pensions in the EU were about 30% lower than the average pension for men in 2018. However, despite having a large gender pay gap the relatively strong redistribution in the Czech pension system leads to a gender pension gap that is lower at 13%[5], with only Denmark, Estonia and the Slovak Republic having lower gaps. Conversely, the gender gap stood at over 35% in Austria, Germany and the Netherlands.

1.4. Rules of the mandatory contributory old-age pension scheme

The mandatory Czech pension system consists of an earnings-related component and a basic, flat-rate component. The earnings-related component is calculated by multiplying the reference wage with total accrual. Some non-employment spells count towards accrual while others do not and enter on top as zeros in the calculation of the reference (average) wage. Everyone who is eligible for the earnings-related component receives the basic pension, which is equal to 10% of the average wage. The basic component is described in Chapter 3.

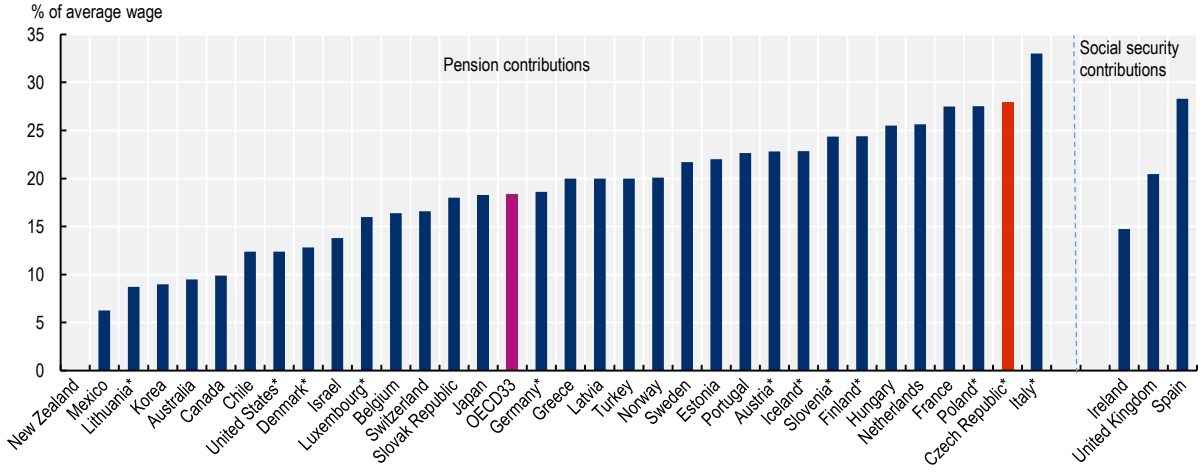
1.4.1. Contribution rates

In the Czech Republic, pension contribution rates are 28%, split between employers (21.5%) and employees (6.5%) (Figure 1.9). These contributions are meant to finance old-age (both earnings-related and basic), survivor and disability pensions. The contribution rate in the Czech Republic is among the

highest in the OECD, along with France, Hungary, Italy, the Netherlands and Poland. At the average wage, the total effective pension contribution rate equalled 18.4% on average in the OECD in 2018. There might be a bias in this comparison as in some countries the contribution rate is earmarked for old-age and survivor pensions. Even taking into account only OECD countries with contribution rates that also finance disability pensions, the Czech contribution rate is 7 percentage points higher than the average.

Figure 1.9. Pension contribution rates

Total effective mandatory and quasi-mandatory pension contribution rates for dependent workers, at the average wage, 2018



Note: *Contribution rate also finances disability or invalidity benefits.
Source: OECD (2019[1]), *Pensions at a Glance 2019: OECD and G20 Indicators*, https://dx.doi.org/10.1787/b6d3dcfc-en.

Pension contribution rates are part of social security contributions in the Czech Republic. In addition to pension contributions, employees and employers pay 4.5% and 9.0% contributions for health insurance, respectively. Employers pay 2.1% for sickness and 1.2% for unemployment insurance. This leads to a very high total social security contribution rate of almost 45%. In addition, pension contributions are subject to personal income tax in the Czech Republic.

Anyone earning less than CZK 3 000 per month in 2020 (8.5% of the average wage) is not subject to social security contributions and does not accrue pension entitlements. Given that the minimum wage is 40% of the average wage, this means that anyone working more than 21% of the time at the minimum wage or above contributes to the pension system.

1.4.2. Accrual and reference wage

Contributions are paid on earnings up to four times the average wage (national definition) (Section 2.2), which is equal to 3.75 times the average wage based on the OECD harmonised definition; this threshold was introduced in 2008.[6] Earnings above the contribution threshold have been subject to a higher income tax rate since 2013 such that the total of the tax rate and contribution rate remains constant above the contribution threshold. The degree of progressivity of the tax system is a political choice; however, this specific nexus between contribution rates and tax rates for high earners might blur the boundaries between pension contributions and taxes.

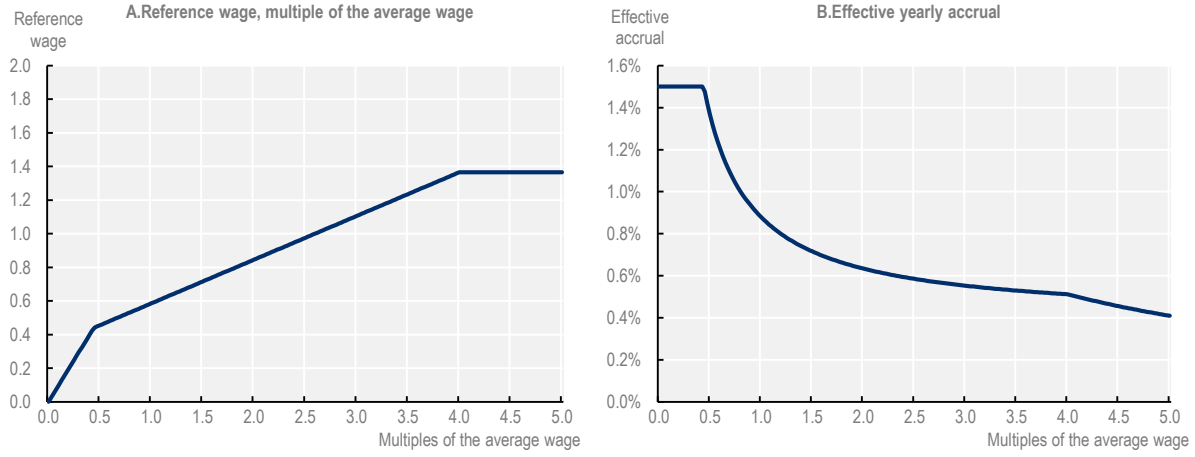
One specificity of the Czech pension system is to accrue entitlements based on the reference wage that is computed for the whole working life, rather than accruing entitlements for each year based on earnings during that period. This makes a big difference because the reference wage is far from being a linear function of (uprated) past wages.

The earnings-related pension gives 1.5% of the reference wage for each full year of service. To calculate the reference wage and therefore pension benefits, a very progressive formula is used under which income thresholds are applied. Up to the threshold of CZK 14 388 in 2019 (44% of the average wage based on the national definition), the wage is fully taken into account. Between this threshold and the pensionable-earnings cap (CZK 130 796, 400% of the average wage), only 26% of the wage is taken into account.[7] Earnings over the cap are not taken into account, neither for contributions nor for the calculation of benefits (Figure 1.10, Panel A). The average of all earned wages since 1986 are taken into account for the reference wage, uprating past wages by the growth of economy-wide average wage. Non-validated periods are included in the reference wage as zeros (see below). Lower accrual rates for higher wages lead to a reduction of the effective accrual rate as wages increase (Panel B). Up to the first threshold, the effective accrual rate is equal to the statutory accrual of 1.5%, then the effective accrual sharply drops to 0.5% at the pensionable-earnings cap, after which it gradually drops further.

Part-time work is treated in the same way as full-time work: accrual is 1.5% of the reference wage for each year of service. This means that if someone works 2.5 days a week for one year, this is counted as one year of contributions. Of course, the reference wage is lower compared to someone working full time for the same hourly wage. However, given the progressive reference wage formula, the impact on pensions is less than proportional. In extreme cases – i.e. someone working less than 21% of the time at the minimum wage – no contributions are made and no accrual takes place.

Figure 1.10. Reference wage and effective accrual

By average wage over the career



Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

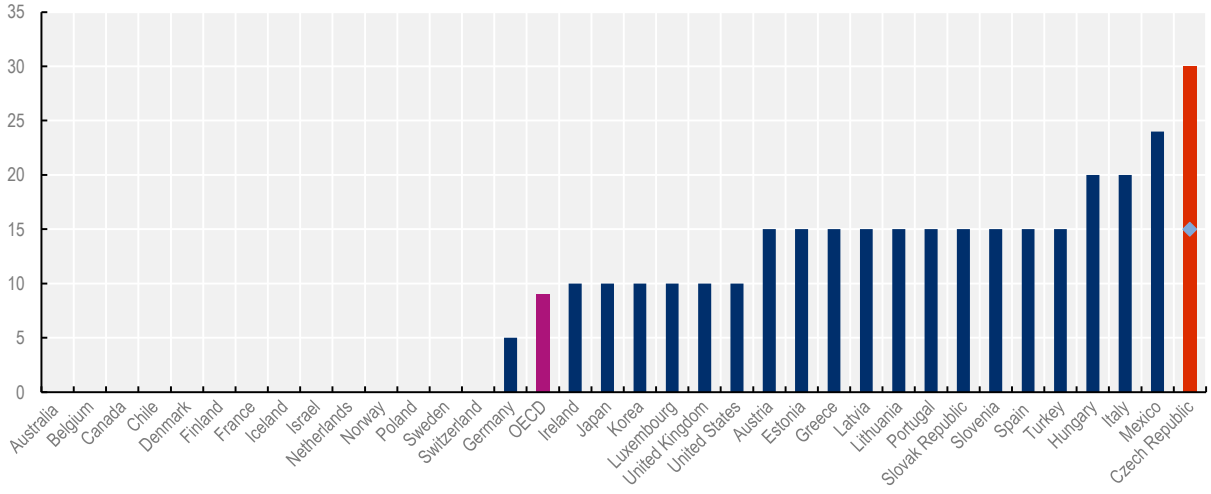
1.4.3. Eligibility and retirement age

The minimum years of required coverage (work and non-work validated periods) to be eligible to an old-age pension at retirement age is 35 years, or 30 years without non-work validated periods (Figure 1.11).[8] Individuals with 20 years of pension coverage or 15 years without non-work validated periods can receive a pension benefit five years later than the normal retirement age that applies to men of the same birth year.

Anyone reaching 35 years of coverage within these five years can retire. However, only a few hundred new pensions are currently claimed five years after the retirement age. Voluntary contributions can be made to make up for missing years of coverage if participants fall short of the required coverage. These voluntary contributions are typically made at the minimum wage, but are not frequent.

Figure 1.11. The minimum years of coverage required is extremely high

Eligibility to earnings-related pensions, in years



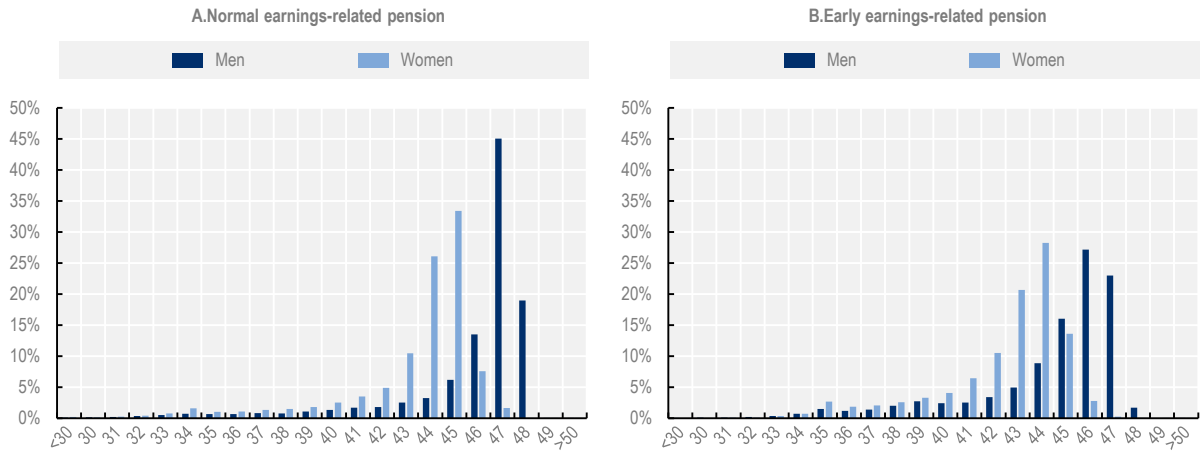
Note: The absolute minimum years of contributions to retire at the statutory retirement age is taken into account for the Czech Republic Individuals with 35 years of validated periods can also retire at the statutory retirement age. Individuals with 20 validated years or 15 years of contributions (the mark) can receive a pension benefit five years later than the normal retirement age.
Source: Pensions at a Glance 2019, country profiles.

In comparison to other OECD countries, the Czech Republic is an outlier with the longest period to be eligible for earnings-related pensions at the statutory retirement age (Figure 1.11). Mexico comes second with “only” 24 years required. On average among OECD countries, it is equal to nine years. In many countries, it is less than one year.

At the moment the majority of people around the retirement age reach the minimum years of coverage. The inclusion of some non-employment spells in the covered period (see below) is one of the reasons why so far only few people have not reached the minimum requirements to receive a pension. The average number of years of coverage for those who claimed a pension in 2018 from the normal retirement age equals 46 years for men and 43 years for women (Figure 1.12, Panel A). For those claiming early pensions, these numbers stood only at one year less (Panel B). Only a minimal share do not reach 35 years, even among women.

Figure 1.12. Coverage period of new pensioners

Share of people claiming pensions by coverage period, 2018

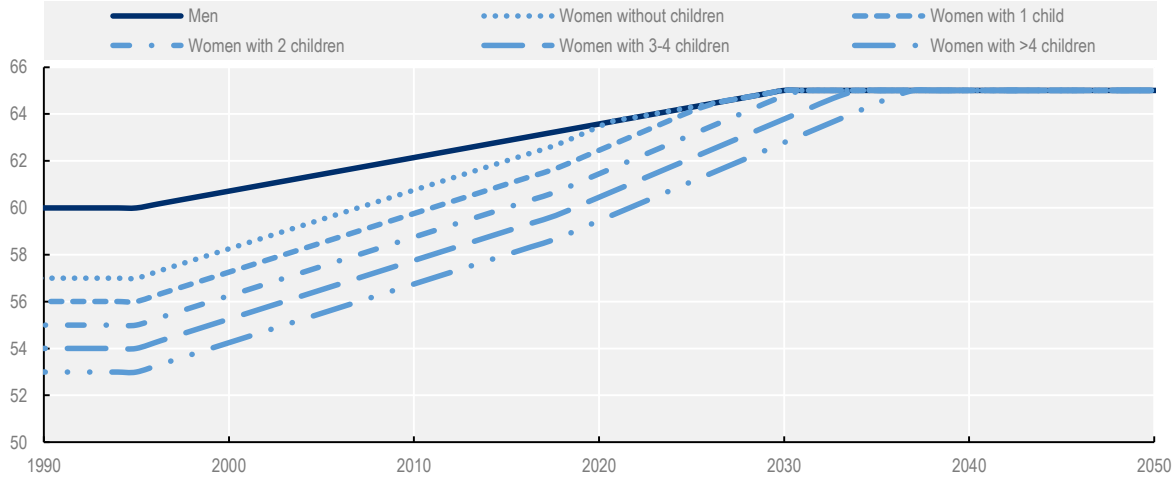


Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

In 2020, the normal retirement age in the Czech Republic is 63.5 years for men and 63 years and two months for women without children (Figure 1.13). According to the OECD definition, used for comparison purposes, the normal retirement age is the age at which individuals are eligible for retirement benefits from all pension components without penalties, assuming a full career from age 22. In the Czech Republic, the normal and the statutory retirement ages are the same. It is gradually increasing by two months per birth cohort for men until reaching age 65. For women without children, it is currently increasing by six months per birth cohort to equalise with the retirement age for men by the end of 2020.

Figure 1.13. The normal retirement age has been rising

By gender and number of children



Source: Czech Ministry of Labour and Social Affairs.

Women who had children can retire earlier. Having one child allows a woman to retire one year earlier, for two children two years earlier, for three or four children three years earlier, and for five or more children four years earlier. The normal retirement age of women with children is also rising by six months per year until catching up with the retirement age for men. The convergence will be completed in 2037 (Figure 1.13).[9]

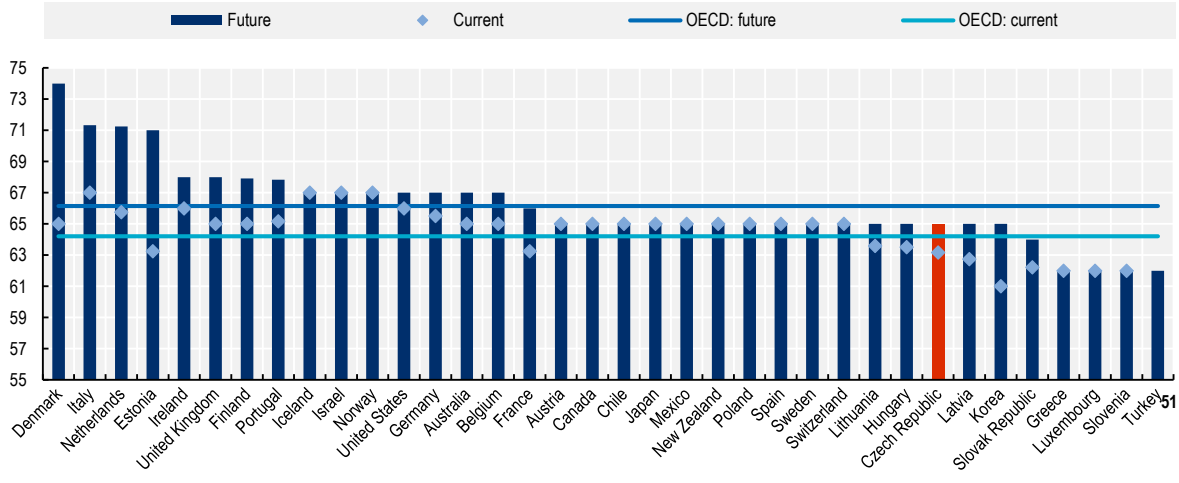
The normal retirement age was below the OECD average in 2018, and it will remain so in the future (Figure 1.14). Only seven OECD countries have and will have a normal retirement age at the same level or below the Czech one. Given current legislation, the future normal retirement age will range from 62 in Greece, Luxembourg, Slovenia and Turkey to 74 in Denmark. On average across OECD countries, it will increase from 64.2 in 2018 to 66.1 in the future – i.e. for someone having entered the labour market in 2018 and therefore retiring after 2060 -, about one year more than in the Czech Republic.

The Czech retirement age was not always projected to remain below the OECD average. In 2011, it was decided to continue raising the retirement age after age 65 by two months every year. This would have meant that for someone who entered the labour market in 2018 at age 22 the retirement age would have been 70 years and two months. However, in 2016 the decision was made to stop increasing the retirement age beyond 65.

Rather than increasing retirement ages with a fixed number of months every year, Denmark, Estonia, Finland, Italy, the Netherlands and Portugal have linked retirement ages to life expectancy. Automatic rules such as these help resist the temptation to make decisions that might be popular but ultimately unsustainable, such as lowering the retirement age from not a particularly high level while life expectancy increases. The design of the automatic link combined with the projected improvements in life expectancy implies an increase in the retirement age of about one month or less per year in Finland, Italy, the Netherlands and Portugal, and of about 1.7 months in Denmark and Estonia. With two months per year, the planned unlimited increase in the Czech Republic was thus very high in international comparison. Similar to the Czech Republic, the Slovak Republic had linked their retirement ages to life expectancy but recently backtracked by abolishing the link, while Italy temporarily suspended it for some occupations.

Figure 1.14. The normal retirement age will remain about one year below the OECD average

Normal retirement age for men entering the labour market at age 22 with a full career

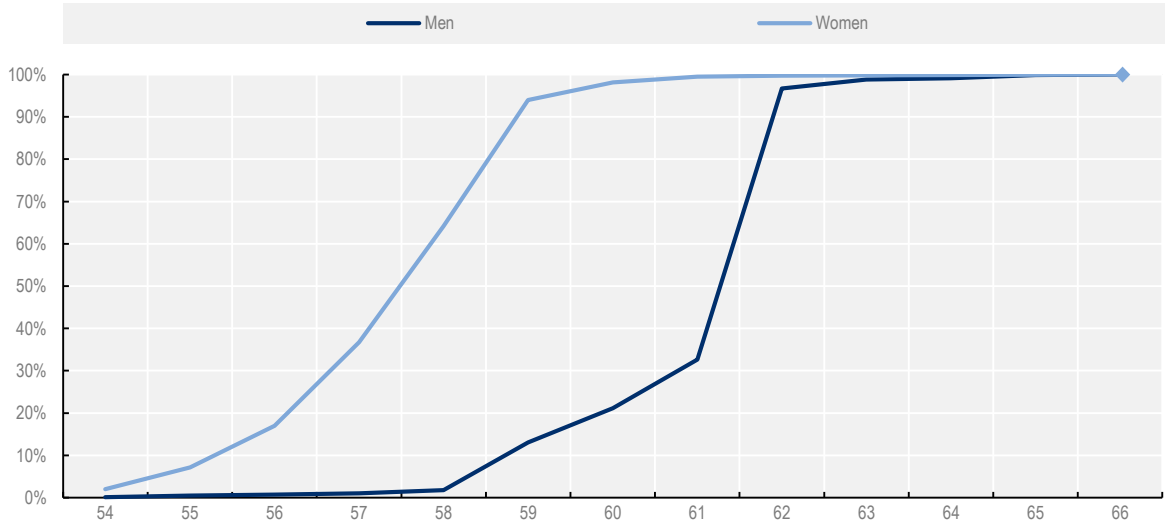


Note: The normal retirement age is calculated for a man with a full career from age 22. Future refers to the year in which someone is eligible for full retirement benefits from all mandatory components, without reduction, assuming labour market entry at age 22 in 2018; this year differs by country. The current retirement age for Italy does not reflect the "quota 100" since that was introduced in 2019.
Source: OECD (2019[1]), *Pensions at a Glance 2019: OECD and G20 Indicators*, https://dx.doi.org/10.1787/b6d3dcfc-en.

The majority of people in the Czech Republic claim their old-age pension exactly at the statutory retirement age. Yet, a significant share claim their pensions early while a minority claim their pension late. For men born in 1952, having retired between 2006-18, while the retirement age was 62 and 10 months, 33% early retired before age 62, more than 60% between age 62 and 63 while only 3% claimed their pension later (Figure 1.15). Among those born in 1952, 7% of women retired before the earliest statutory retirement age (56 and 4 months for women with 4 or more children) and almost all of them had retired after the statutory retirement age for women without children (i.e. beyond 64). In 2018, beyond the 1952 birth cohort, only very few people claimed their pension after age 66, i.e. less than 0.5% of new pensioners.

Figure 1.15. Age of claiming an old-age pension

Cumulative share of cohort born in 1952 retiring between 2006-18



Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

1.4.4. Future replacement rates

Future theoretical replacement rates are computed by the OECD in order to compare key outputs of pension systems across countries based on current legislation. The future replacement rate represents the level of pension benefits from mandatory public and private pension schemes relative to earnings when working. The baseline case assumes a full career starting at age 22 in 2018 until reaching the country-specific normal retirement age. This theoretical replacement rate is equal to the pension benefit at the retirement age as a percentage of the last earnings.

Looking ahead, net pension replacement rates (the net pension benefit at retirement as percentage of the last net earnings) for average wage earners are at 60% in the Czech Republic just above the OECD average (Figure 1.16). At the average wage level, net replacement rates from mandatory schemes are on average 59% in the OECD and range from below 30% in Mexico and the United Kingdom to more than 90% in Italy, Luxembourg and Turkey.

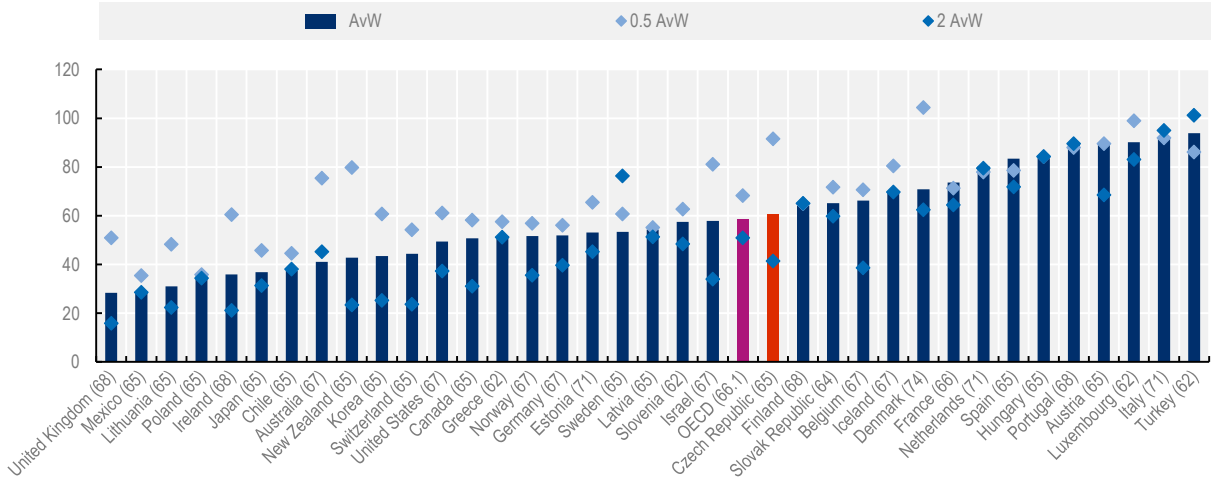
Pension contributions are subject to personal income tax in the Czech Republic, which is fairly unusual. To (partly) avoid double taxation, pensions are not taxed up to a value of CZK 439 200 corresponding to 36 months of the minimum wage (114% of the average wage), while the income tax rate is 15% above this threshold (see Annex Figure 1.A.1 for average tax rates by earnings). Given the strong redistributive nature

of the Czech pension system, which drastically limits high pensions, this threshold level implies that there are no pensions taxed if that is the only source of old-age income.

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 (68% for the OECD on average, Figure 1.16) than for average earners. This is certainly the case for the Czech Republic where net replacement rates for half-average-wage earners are high at 92%. Among other OECD countries only Denmark, Italy (based on a much higher retirement age) and Luxembourg have higher replacement rates for low earners.

Figure 1.16. Future net replacement rate

By earnings level



Note: Future normal retirement age in brackets. Pension entitlements are based on current legislation in OECD countries. The values of all pension system parameters reflect the legislation in 2018 and onwards. The calculations show the pension benefits of a worker who enters the labour market in 2018 at age 22 and retires after a full career. The baseline results are shown for single individuals. See (OECD, 2019[1]) for details.
Source: OECD pension model.

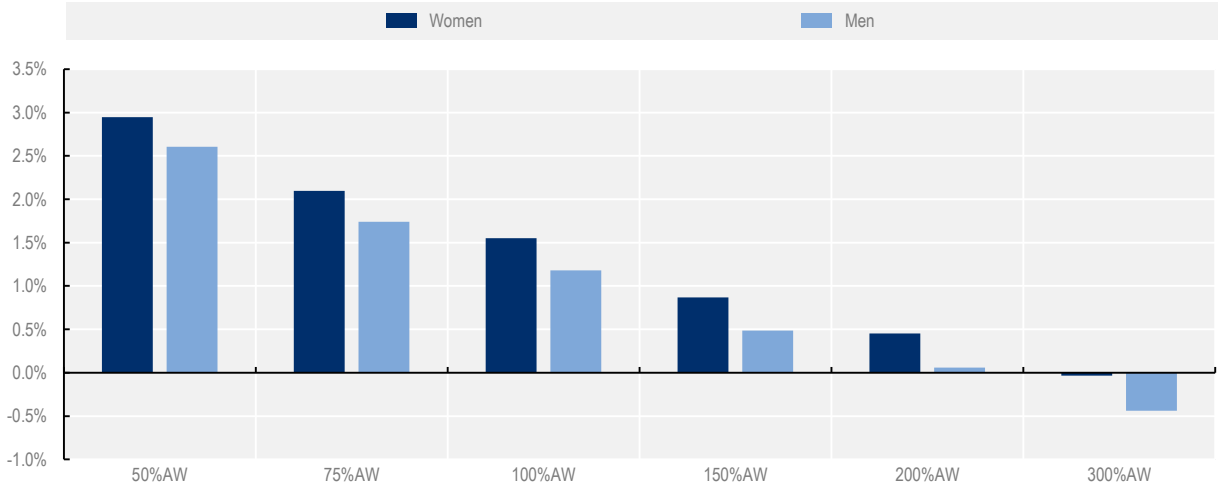
By contrast, higher earners (twice the average wage) have replacement rates well below average-wage earners in the Czech Republic (41% versus 60%). On average in OECD countries, the net replacement rate at twice average earnings is 51%, somewhat below the 59% figure for average earners.

Another way to illustrate the strong redistribution within the Czech pension system even among full-career workers is to compare the internal rates of return across different earnings level throughout the career (Figure 1.17). The internal rate of return is the rate of return on paid contributions that generates the benefit provided by the pension system. A woman earning the average wage during a full career from 2018 will receive, given legislated pension rules and projected life expectancy, pension benefits ensuring a real annual return on paid contributions of 1.55% (assuming real wage growth of 1.25% per year, which is the standard assumption in the OECD pension model). For men this is lower at 1.18% given their lower life expectancy. Given pension rules, the key parameter that influences the internal rates of return is the real-wage growth assumption, with almost a one-to-one relationship.[10] This means that the internal rate of return generated by the Czech pension system at the average wage is about the real-wage growth rate plus 30 basis points for women, and slightly below the real-wage growth rate for men.[11]

A financially sustainable PAYGO system is supposed to generate an internal return equal to the growth of the contribution base, which is closely related to, assuming a constant contribution rate, the wage bill growth. The latter is equal to wage growth (1.25% per year here in real terms here) plus employment growth; the working age population is projected to decrease by 0.5% per year on average by 2060 (Figure 1.2). Hence, if employment growth were to equal the growth of the working-age population, the natural internal rate of return of the Czech PAYGO scheme would be around 1% per year based on the assumptions of the OECD pension model, i.e. the wage-growth rate minus 0.5 percentage points.

While these numbers should be taken as orders of magnitude only, the key feature shown in Figure 1.17 is that internal rates of return on pension contributions differ widely by earnings level. By comparison to the 1.2-1.6% at the average wage, low earners (50% of the average wage) will have a real rate of return on their contributions that is larger than 2.6% while anyone earning above three times the average wage will have negative real returns based on the same assumptions.

Figure 1.17. Real internal rates of return by earnings levels, full-career workers



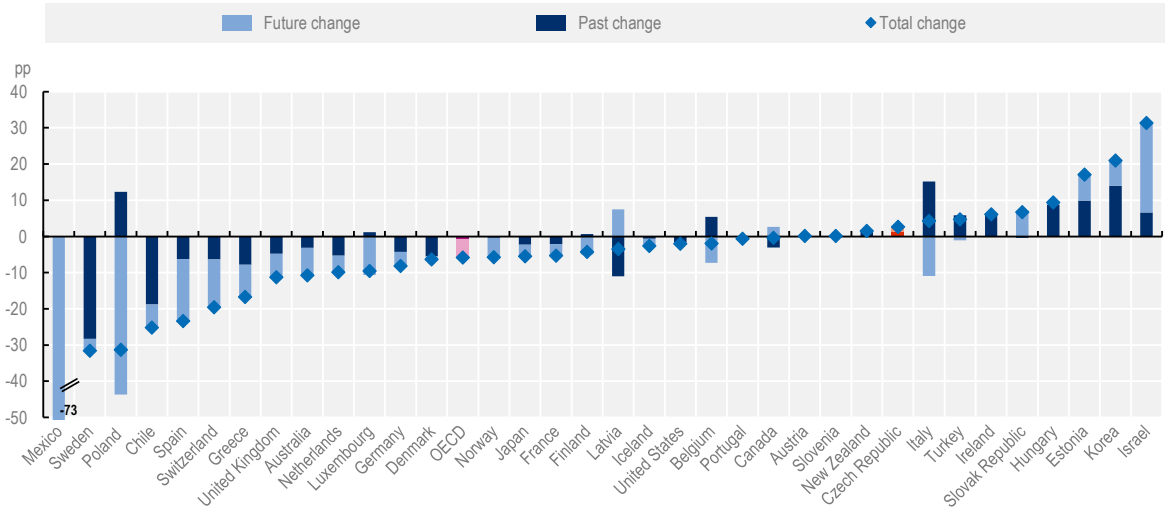
Note: A contribution rate of 21.5% is used to calculate the internal rate of return. This corresponds to share of old-age pensions in total pension spending (76.7%) multiplied by the total contribution rate (28%).
Source: OECD calculations.

Future replacement rates in the Czech Republic will be similar to those of current pensioners among people with uninterrupted careers. More precisely, the theoretical replacement rate of a male worker at the average wage will increase between cohorts born in 1940 and in 1996 by about 3 percentage points (Figure 1.18). This small increase stems from a longer contribution history based on the rise in the retirement age from 61 for the 1940-born cohort to 65 in the future while other reforms had only minor effects. There is no life expectancy adjustment and, despite the increase in the retirement age, the share of adult lifetime spent in retirement is projected to increase among men between the generations born in 1956 and 1996 (OECD, 2019[4]).

In other OECD countries, legislated reforms will have much stronger effects on replacement rates. In particular in Mexico, Sweden and Poland, legislated deep-cutting systemic reforms imply a shift from unsustainable DB to (notional) DC schemes and have caused or will cause a substantial decline in replacement rates. The OECD average will decrease by about 6 percentage points at normal retirement ages, or about 10%.

Figure 1.18. Small change in the Czech replacement rate over time

Percentage point difference in theoretical gross replacement rates for average-wage earners between the cohorts born in 1940 and 1996



Note: Future change refers to the replacement rate difference between the cohorts born in 1996 and 1956 (the cohort retiring about today). Past change is the corresponding difference between the cohorts born in 1956 and 1940. Lithuania is not shown as data for the 1940 cohort are missing, and is not included in the OECD average. The calculations are based on labour market entry age 20 for all cohorts.
Source: OECD (2019[4]), OECD Pension Policy Brief 2019, Fig. 4.

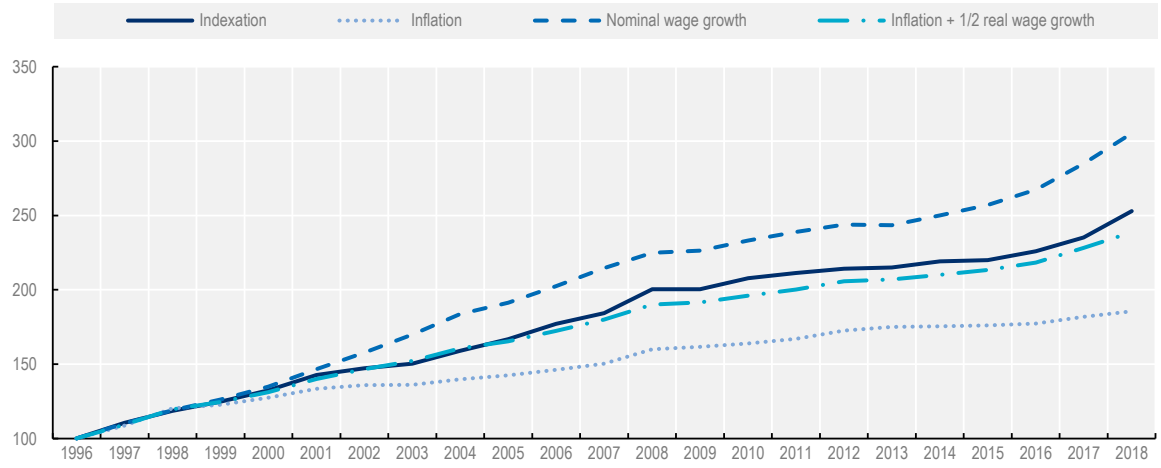
1.4.5. Indexation

Since 1996, minimum indexation was first set at inflation plus one-third of real-wage growth, with the government keeping the right to index pensions above the statutory minimum, with no upper limit. In 2018, the minimum indexation was made slightly more generous to inflation plus half of real-wage growth. During some periods of tight public finances, the indexation of pensions in payment has been reduced below what is implied by the rule; between 1998-2002 and 2013-14, inflation was only taken into account for 70% and 33%, respectively.

Figure 1.19 shows that until 1999 indexation followed largely both price and wage growth given that real-wage growth in that period was subdued. Since 1999, indexation has been de facto largely in line with – even slightly larger than – inflation plus half of real-wage growth, indicating regular discretionary increases beyond the minimum indexation rule.

Figure 1.19. Indexation of pensions in payment

Index, 1996=100



Source: Czech Ministry of Labour and Social Affairs and OECD calculations.

1.4.6. Early and late retirement

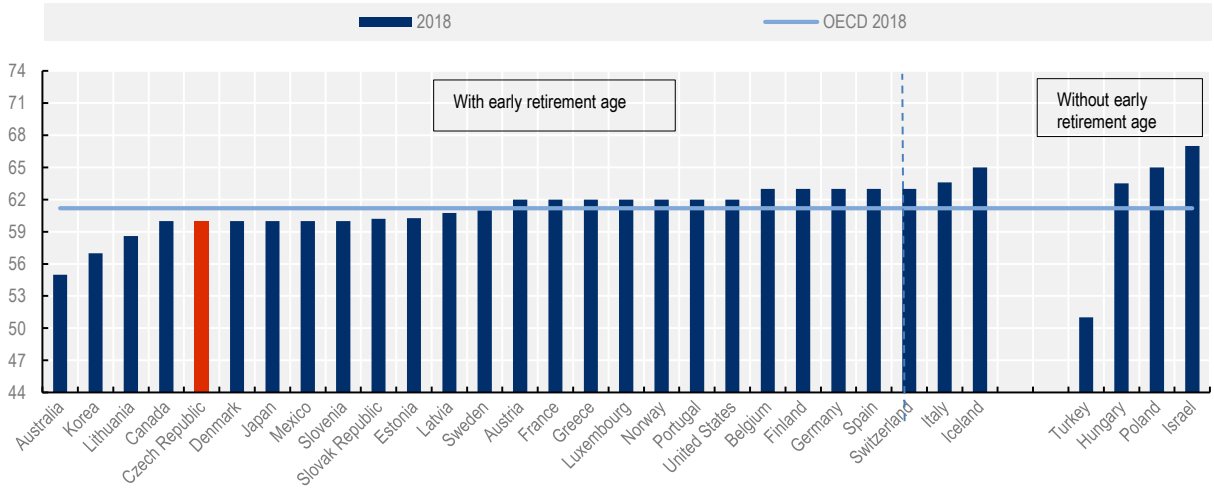
Early retirement in the Czech Republic is allowed up to three years before reaching the statutory retirement age or at 60 years of age, whichever is earlier. The minimum requirements for early retirement are the same as for normal retirement: 35 years of coverage is necessary or 30 years of paid contributions without validated periods. Compared to other OECD countries, the Czech Republic has a relatively low early retirement age of 60 years. For someone entering the labour market at age 22 the early retirement age was 61.2 years in 2018 on average among the 31 OECD countries that have a specific minimum retirement age for mandatory earnings-related pensions (Figure 1.20).

Given longer life expectancy, the age of 60 for the future eligibility to early retirement is too low. This age reference contributes to shaping social norms and influencing behaviours by both employees and employers about working at older ages; it is not consistent with other efforts to enhance the labour supply of older workers.

Every started 90-day period of early retirement decreases pension entitlements. Each of the first four 90-day periods (i.e. roughly a year) lowers pension benefits by 0.9% of the reference wage; retiring another four 90-day periods earlier decreases benefits by 1.2% of the reference wage each; and, any additional 90-day period decreases benefits by a large 1.5% of the reference wage. Combining work and early retirement is not permitted in the Czech Republic. Pensioners have to suspend pension receipts if they want to start working again before reaching the statutory retirement age.

Figure 1.20. Early retirement ages

Early retirement age for earnings-related scheme, men, 2018



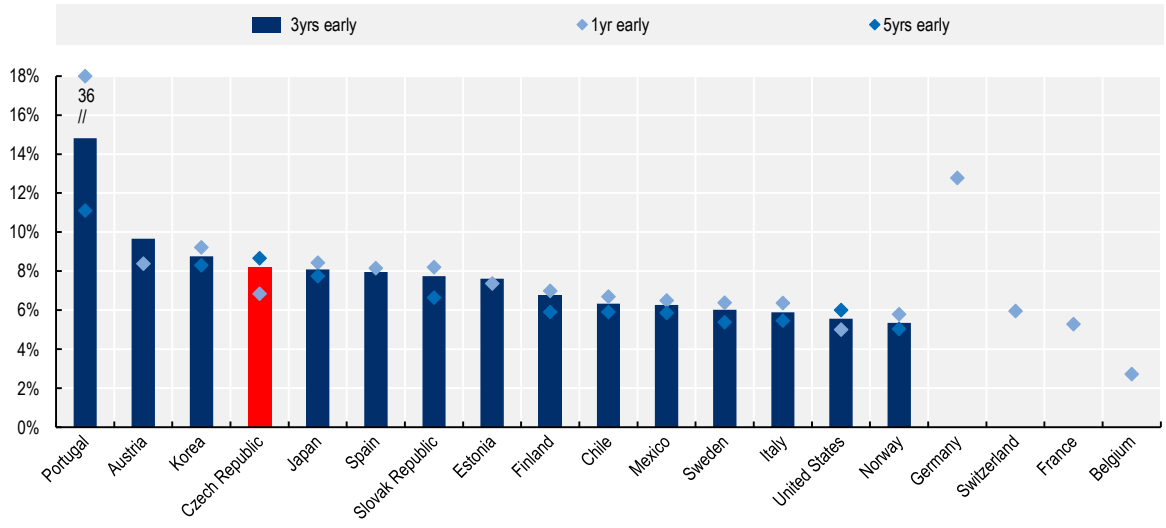
Note: Early retirement ages for earnings-related schemes describe the earliest age at which the receipt of a pension (potentially with penalties) is possible, assuming labour market entry at age 22 and an uninterrupted career.
Source: OECD (2019[1]), *Pensions at a Glance 2019: OECD and G20 Indicators*, https://dx.doi.org/10.1787/b6d3dcfc-en.

For someone entering the labour market at age 22 in 2018, retiring more than one year early results in large pension losses compared with other OECD countries (Figure 1.21). In the Czech Republic, given the increasing penalty by years of early retirement plus additional losses from accruing less pension rights, the pension loss (compared with someone working until the normal retirement age) increases from 6.8% for retiring one year early to about 8.7% per year of early retirement for retiring five years early (in the future, i.e. 5*8.7%=43.3% in total).

Deferring a pension and continuing to work may increase pension benefits through two mechanisms, depending on the specific design of pension systems. First, as the expected time spent in retirement is then reduced, existing accrued entitlements can finance higher monthly benefits that are paid over a shorter period. Second, continuing to work leads in most OECD countries to additional contributions and entitlements. In the Czech Republic, as in most countries with defined benefit schemes, the first mechanism operates through bonuses on past entitlements. On top of additional entitlements for working longer (second mechanism), deferring retirement increases the earnings-related pension component by 1.5% of the reference wage for each 90-day period of postponement. In principle, deferral is possible indefinitely. In practice, few people defer more than a couple of months.

Figure 1.21. Loss of annual total benefits when retiring early

Average wage earners



Note: This chart shows the negative impact on total monthly pensions paid from the retirement age from claiming pensions by up to five years before the normal retirement age relative to someone continuing to work until the normal retirement age. Figures for three and five years late have been annualised, such that a 6% decrease shown in the chart means a total of 18% on benefits from retiring three years and 30% from retiring five years earlier. Some countries have limited flexibility: early retirement is not possible for all mandatory pension components in Australia, Canada, Denmark, Hungary, Iceland, Ireland, Israel, Luxembourg, the Netherlands, New Zealand, Poland, Turkey or the United Kingdom. In addition, early retirement is not relevant in Greece or Slovenia since the normal and early-retirement ages coincide for the baseline case in *Pensions at a Glance*.

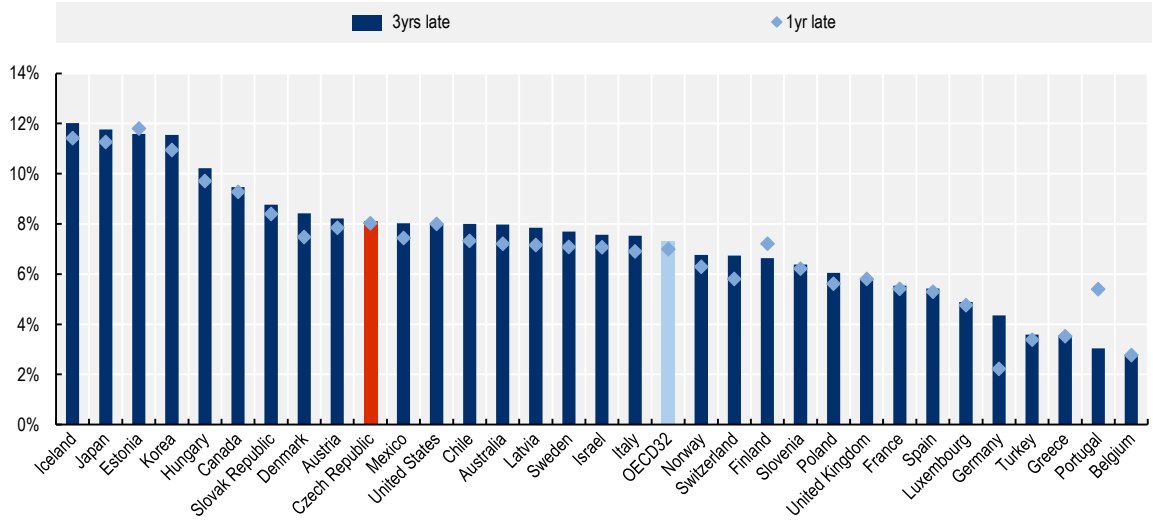
Source: OECD (2017[5]), *Pensions at a Glance 2017: OECD and G20 Indicators*, https://doi.org/10.1787/19991363.

Figure 1.22 shows the impact for a full-career worker of deferring pensions and continuing to work on monthly benefits summed over all pension schemes. Across OECD countries, the combined overall increase – from the deferral rate, additional entitlements and benefit indexation – averages about 7.5% per year of deferral, and depends only slightly on the length of the deferral. The increase in the Czech Republic is just slightly higher at 8%, which is very close to what is implied by actuarial neutrality (OECD, 2017[5]). This suggests that there is limited financial advantage or disadvantage from the pension point of view between retiring at the retirement age and continuing to work and deferring pensions – and that the retirement decision is broadly neutral for public finances. However, Figure 1.15 above shows that few people extend their working life beyond the statutory retirement age. This means that the statutory age plays a big role beyond the financial implications in shaping social norms about when to retire in the Czech Republic and/or that workers value retiring as soon as possible without penalty well beyond what actuarial neutrality suggests.

There are no restrictions to combine pension receipt and work after the retirement age. In this case, the earnings-related pension is increased by 0.4% of the reference wage per year but no regular accrual takes place. Partial pension receipt is also possible. Someone can draw half of their pension and keep working without restrictions. In this case, the earnings-related pension is increased by 1.5% of the reference wage per half a year of work.

Figure 1.22. Impact on annual total benefits when working and deferring pensions by up to three years after the normal retirement age

Full career average earner



Note: Figures for three years late have been annualised, so an 8% increase shown in the chart means a total of 24% for three years. It is not possible to defer the basic pensions in Ireland, the Netherlands or New Zealand so they are not included in the chart.
Source: OECD pension model.

1.4.7. Non-employment spells

To determine accruals and the reference wage the Czech pension system distinguishes three types of periods (Table 1.3). First, there is time working. Each period leads to additional accruals while earned wages are included in the calculation of the reference (average) wage. Second, there are so-called (non-work) validated periods (usually referred to as non-contributory periods), which lead to accruals but are excluded from the reference (average) wage. Third, there are non-validated periods, referred to as uninsured periods in the Czech pension system. These periods do not lead to accruals and are in addition included as zero earnings in the calculation of the reference (average) wage.

Schematically this can be shown as:

Table 1.3. Working, validated and non-validated periods

	Working periods	*Validated periods*	*Non-validated periods*
Accruals	Yes	Yes (Full or partial)	No
Included in the reference wage	Yes (earnings)	No	Yes (0 included)

The system therefore heavily penalises non-validated periods: not only do non-validated periods lead to no accrual (as is common in many countries), they also lower the reference wage, hence actually diminishing “acquired” entitlements.

The non-work validated periods leading to accruals are:

1. Periods of childcare for children up to four years of age
2. Periods of care for a dependent person in their household
3. Compulsory military service

4. Spells of unemployment with unemployment benefit
5. Up to three years of unemployment without unemployment benefit
6. Period of disability of the 3rd degree.

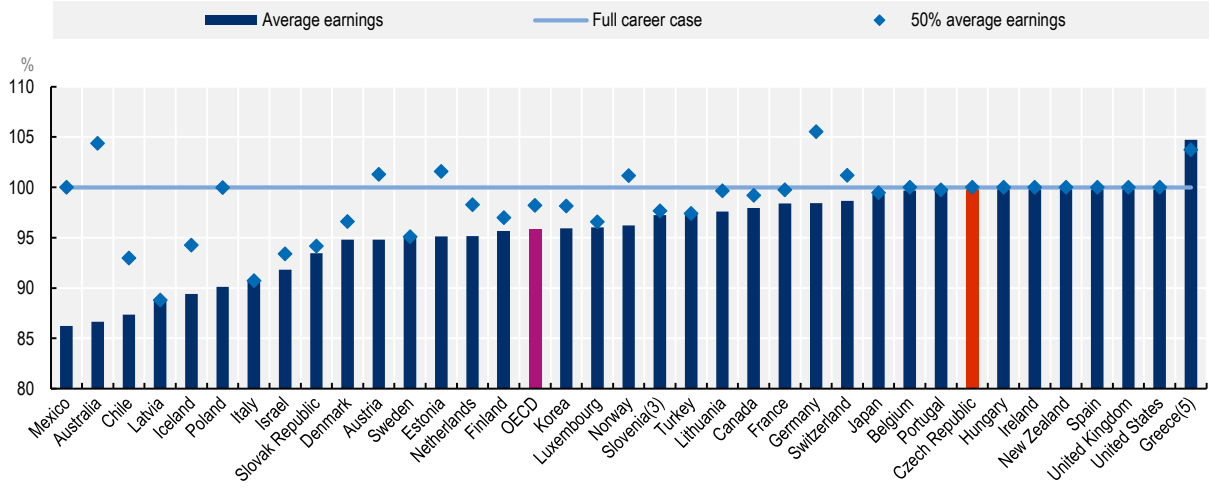
Periods in education are excluded from benefit calculations, including in the computation of the reference wage. Prior to 1996, secondary education and tertiary education were considered validated periods, and prior to 2010 tertiary education only was considered a validated period.

Spells related to care and military service (1-3) are fully taken into account while all other spells (4-6) count only for 80%. In addition, the duration of unemployment benefits varies with age. Therefore, credits to the pension system for unemployment vary with age. Five months of unemployment benefits are available before age 50, eight months from 50 to 55 and 11 months for the over 55s. In addition, up to three years spent unemployed without unemployment benefits are also credited. However, only one of those years can be credited before the age of 55. Hence, for people unemployed from age 55, more than three years can be credited in terms of accruals (80% * (three years + 11 months)) with the reference wage not being affected.

While periods not spent working can significantly affect pension benefits, there are thus big differences between the different types of non-employment periods. First, validated periods lead to lower if any losses than non-validated periods. Second, lower reference-wage brackets typically incur larger losses while within each bracket higher wage earners incur larger losses (Box 1.1 for details).

Figure 1.23. The effect of a childcare career break on pension entitlements for women

Gross pension entitlements of low and average earners with a five-year childcare break versus worker with an uninterrupted career, relative to the pension level of a full-career woman (100) with the same earnings



Note: Figure in brackets refers to increase in retirement age. Individuals enter the labour market at age 22 in 2018. Two children are born when the mother is 30 and 32 with the career break starting at age 30.
Source: OECD pension model.

One example of a non-employment period that leads to limited or no losses in the Czech Republic is childcare. Time spent on childcare for children up to four years of age are fully credited in terms of accrual and are excluded from the reference wage. Figure 1.23 shows the impact of career breaks due to childcare on pension benefits under the assumptions of the OECD pension model.[12] More precisely, it compares pension benefits for women who stop working during five years from age 30 to care for their two children

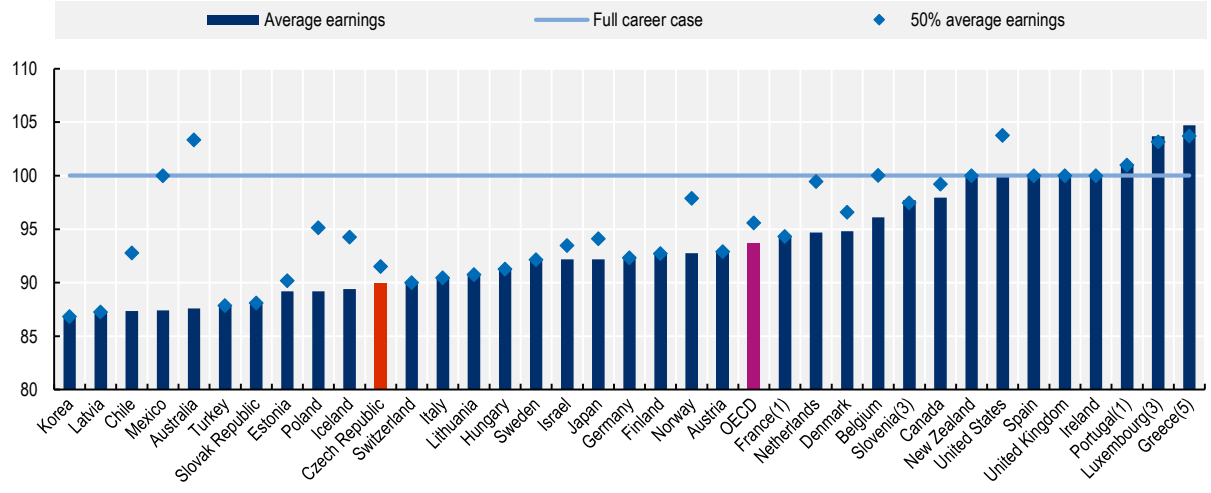
born when the mother was aged 30 and 32 (at age 35 they are assumed to resume full-time work until the normal retirement age) compared with the full-career case.

In the Czech Republic, due to generous childcare credits, such a career break has no impact on future pensions whatever the earnings level. By contrast, this career break generates a loss of 4% on pensions on average across OECD countries for average-wage workers. In countries with funded DC systems, with a one-to-one relationship between actual contributions and pensions, such as Mexico, Australia and Chile the losses from childcare are much larger, resulting in more than 12% lower pensions at the average-wage level.

Spells of unemployment often lower pension benefits. Figure 1.24 illustrates the impact across countries of career breaks due to unemployment on pension benefits for the case of men being unemployed during five years from age 35. They are then assumed to resume full-time work until normal retirement age.

Figure 1.24. Impact of unemployment on pension entitlements from mandatory schemes

Gross pension entitlements of low and average earners with a five-year unemployment break versus worker with an uninterrupted career



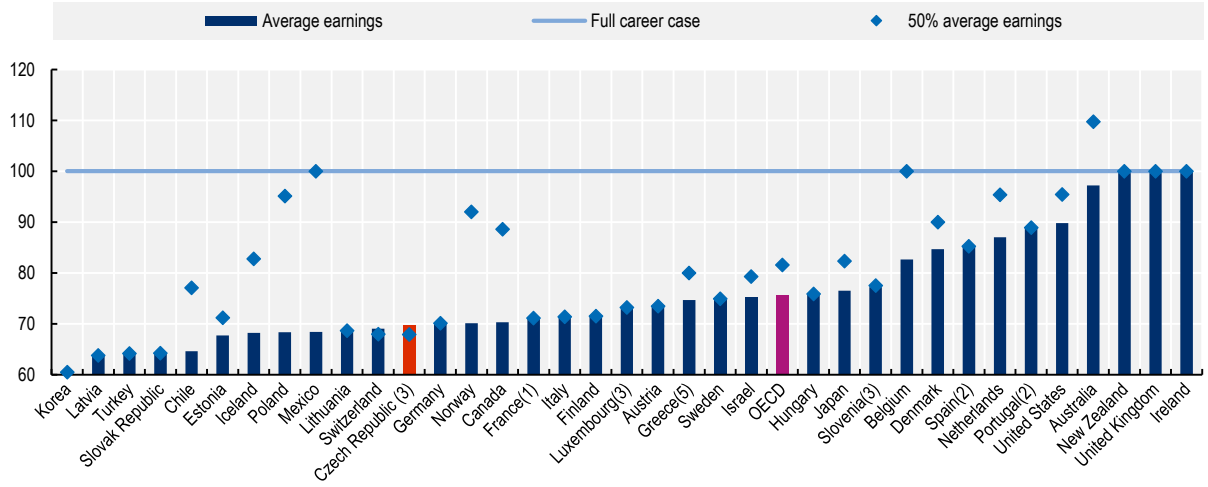
Note: Figure in brackets refers to increase in retirement age due to the career break. Individuals enter the labour market at age 22 in 2018. The unemployment break starts at age 35.
Source: OECD pension model.

Spells of unemployment lead to larger pension losses in the Czech Republic than in many other OECD countries. First, only 80% of the time spent in unemployment is credited towards pensions. Second, once unemployment benefits run out only 80% of one year of unemployment without benefits until age 55 is credited. Finally, once these two options are exhausted no accrual takes place and all additional time out of work is then included as zeros in the reference wage. Therefore, a five-year unemployment break before age 55 leads to only just over a year of credits: 80% of five months of unemployment benefit receipts plus 80% of one year of unemployment without benefits.[13] Moreover, the other three years and seven months, which are not credited at all, and only those, lower the reference wage that is computed when retiring. In the case defined above, this leads to a 10% lower pension for the average-wage worker in the Czech Republic (Figure 1.24). In the OECD on average, it is only 6% lower. Low-wage earners with unemployment breaks in both the OECD on average and the Czech Republic are slightly less affected in terms of relative pensions.

Longer spells of unemployment in combination with later entry into the labour market lead to larger pension losses. The assumptions in Figure 1.25 are largely the same as in the case above but instead of a five-year break, now a break of ten years is considered with the person entering the labour market at age 27 instead of 22. Since at age 65 this person will not have reached the necessary 30 years of employment or 35 years of insurance, she will have to work two more years to get a pension. For average-wage earners, the pension will be 30% lower than for a full-career worker. Most of the period spent out of work will not be validated for, which means both no accrual and a lower the reference wage. For low earners the loss is slightly larger (Figure 1.25). This is uncommon and due to the peculiar and complex interactions between the way the reference wage is computed to account for non-validated periods and the accrual rules (Box 1.1). The impact is significantly larger than in the OECD on average where the pension is 24% lower at the average wage and 18% lower for low earners.

Figure 1.25. The effect of a long unemployment spell in combination with late entry on pension entitlements from mandatory schemes

Gross pension entitlements of low and average earners with a ten-year unemployment break and five-year later labour market entry versus worker with an uninterrupted career



Note: Figure in brackets refers to increase in retirement age due to the career break. Individuals enter the labour market at age 27 in 2023. The unemployment break starts in 2031.
Source: OECD pension model.

Box 1.1 discusses in greater detail the mix of reference-wage and period effects that is at play. Both differ depending on the reference-wage bracket in the benefit formula. Looking at the different cases above by wage level, the losses in pension benefits follow a very erratic pattern. Box 1.1 also shows that pension losses are much lower for unemployment break after age 55.

Box 1.1. Reference-wage effect and period effect of non-employment spells in Czech pensions

Benefit losses from non-employment spells differ widely depending on the type of spell. The total impact of non-employment spells on pension benefits in the Czech system can be decomposed into the reference-wage effect and the period effect. The average wage for pension purposes is computed as total wages divided by the sum of the number of worked years (N_w) and the number of non-validated years (N_{nv}):

$$\bar{w} = \frac{total\ wages}{(N_w + N_{nv})}$$

implying that non-validated years enter as zeros: $\bar{w} = averege\ wage\ while\ working * N_w\ /(N_w + N_{nv})$. The reference wage is a function of the average wage based a non-linear weighted pattern that ensures its slow increase only as the average wage grows (Figure 1.10, Panel A):

$$reference\ wage = F(\bar{w})$$

The earnings-related pension is computed as a function of the reference wage and the total number of validated years, itself broken down into worked years and non-worked validated years (N_v):

$$B = 1.5\% * F(\bar{w}) * (N_w + N_v)$$

The total pension is the sum of the earnings-related pension and the basic pension:

$$Total\ pension = B + Basic\ pension$$

For non-employment spells, the reference-wage effect refers to the impact from induced changes in the reference wage. For example, if the non-employment years are validated, there is no impact on the reference wage (assuming the average wage while working stays the same) and the reference-wage effect is nil. The period effect refers to the impact through changes in the total validated period. Compared to a full-career case, a non-employment validated period has a zero period effect while a non-validated period generates a full period effect. For a technical exploration of the pattern, see Annex 1.B.

Fully validated non-employment spells

Figure 1.26 shows the benefit losses from different non-employment spells compared to the full-career case by the level of the wage while working. It shows there is no loss in benefit for any wage level from a five-year (fully validated) childcare break studied here (bold line in Figure 1.26).[14] This holds for all validated periods that are fully covered (care and military service) and under the strong assumption that, when returning to work, the worker recovers the same wage path, i.e. earns the same wage had she continued her uninterrupted career.[15]

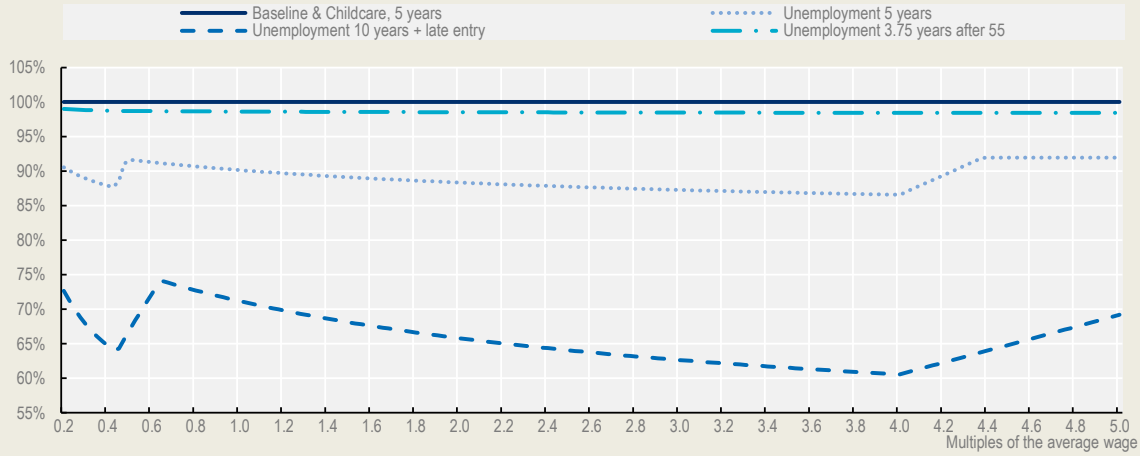
Partially validated non-employment spells

The pension loss from a validated unemployment spell is small but increases with the wage level (dashed line in Figure 1.26).[16] Validated unemployment spells are only credited for 80% of the total time spent in unemployment, within certain limits. In the benefit formula (B), N_w is reduced while this is only 80% offset by a rise in N_v. For people over 55, unemployment benefits last 11 months and unemployment spells without benefits account for pension benefit accrual for a maximum of three years. In the case of someone aged 55+, when the unemployment period is less than three years and 11 months, the reference-wage effect is nil and only the period effect applies for 20% of the period. This is shown in the chart for the case of three years and nine months, for which 80% of the total period of unemployment counts for accrual, i.e. in this case accrual applies for 80% * (three years and nine months) = three years. Partially validated unemployment spells have a slightly larger negative effect

for high earners than for low earners, since the earnings-related component of the total pension plays a larger role for higher earners as the basic pension is the same for everyone.[17]

Figure 1.26. The effects of non-employment by wage level

Gross pension entitlements of career break cases versus worker with an uninterrupted career



Note: Baseline: worker enters the labour market in at age 22 and retires after a full career. Childcare 5 years: individual enters the labour market at age 22. Two children are born at least 1 year apart. Unemployment 3.75 years after age 55: individual enters the labour market at age 22 becomes unemployed for 3.75 years after age 55. Unemployment 5 years: individual enters the labour market at age 22 but has a continuous 5-year unemployment break before age 50. Unemployment for 10 years + late entry: entry 5 years later than baseline and unemployment of 10 years continuously before age 50.
Source: OECD pension model.

Non-validated non-employment spells

If unemployment leads to non-validated periods the losses are larger (dotted line and dashed-dotted line in Figure 1.26). In this case, a pattern emerges that is downward sloping within each reference-wage bracket (up to 44% of average wage; between 44% and 400%; larger than 400% – note the x-axis is the average wage while working, not the reference wage) but is not monotonous overall. Indeed, both the reference-wage effect and the period effect are present. The period effect is directly linked to the non-validation period. The longer the non-validated period, the stronger the effect. The reference-wage effect operates through two mechanisms, one affecting the average wage ($\bar{w}$) and one due to the specific reference-wage pattern ($F(\bar{w})$), affecting each reference-wage bracket differently. On the one hand, non-validated periods have a larger effect for higher earners as basic pensions play a lesser role. This would suggest the negative effect of non-validated periods increases with earnings. This is indeed true within each bracket of the reference wage if individuals remain in the same reference wage bracket. However, some individuals are pushed in a lower bracket because of non-validated periods. For instance, someone earning half the average wage for a full career is in the second reference-wage bracket. However, extended non-validated periods are likely to push this person into the first reference wage bracket. Finally, the share of the average wage that is taken into account for the reference wage ($F(\bar{w})$) falls from bracket to bracket. In the first bracket, the full-career average wage is taken into account, in the second bracket only 26% while wages above the pensionable earnings cap are excluded. This lowers the reference-wage effect for higher brackets compared to lower brackets. Combining these three effects – within brackets, between brackets and changing brackets – lead to the non-monotonous pattern observed in Figure 1.26: an increasing negative effect within each reference-wage bracket, a decreasing effect on average between brackets and an increasing negative effect when pushed into a lower bracket. Whether the within bracket, between bracket or changing bracket effect is stronger

depends on the time spent in each of the states (employment, validated period or non-validated period), the wage level and how close earnings are to a lower reference bracket threshold.

It seems unlikely that this pattern is an intended effect of the pension system. Why penalise someone in a lower reference-wage bracket more than someone with a slightly higher wage in a higher bracket? One simple way to eliminate the uneven pattern is to exclude all non-validated periods from the reference wage. The period effect will still exist (fewer years of employment or validated periods lead to lower accruals). However, the interaction between the average wage used in the reference wage and the share of that wage used in each of the brackets from the reference wage disappears.

1.4.8. COVID-19 related measures

As part of the economic support measures during the COVID-19 global health emergency, the Czech government covered part of the labour cost. Employers have applied for a subsidy to cover part of wages of employees who cannot work because of shutdowns imposed by the government or because of low demand. Employers still pay the wage in full directly to the employee while the government refunds part of the wage cost. In terms of pension contributions and pension accruals nothing changes compared to the pre-crisis situation for individual who kept their job.

There is evidence that some employees (are forced to) claim a temporary sickness insurance benefit by declaring to be temporarily unable to work. In that case, employees receive a benefit that is not subject to social security contributions. However, the periods are validated for pension purposes, meaning that accrual takes place with the period being excluded from the reference wage.

1.4.9. Self-employment

In 2018, self-employment represented 18% of total employment in the Czech Republic, slightly more than the OECD average of 15%. The self-employed are covered by the same pension scheme as employees and the total pension contribution rate is 28% for both employees and self-employed workers. However, compared to employees, the self-employed pay lower contributions for two reasons. First, the tax code allows them to deduct between 30% and 80% (depending on someone's occupation) of revenue as cost in order to set profit, thereby eliminating the need for cost accounting. While this simplified solution reduces the administrative burden for the self-employed, which is highly relevant for those with low income, it lowers taxes and pension contributions of many of them compared to employees with similar earnings. Second, the base for social security contributions is set at 50% of profits (with a minimum of 25% of the economy-wide average wage).

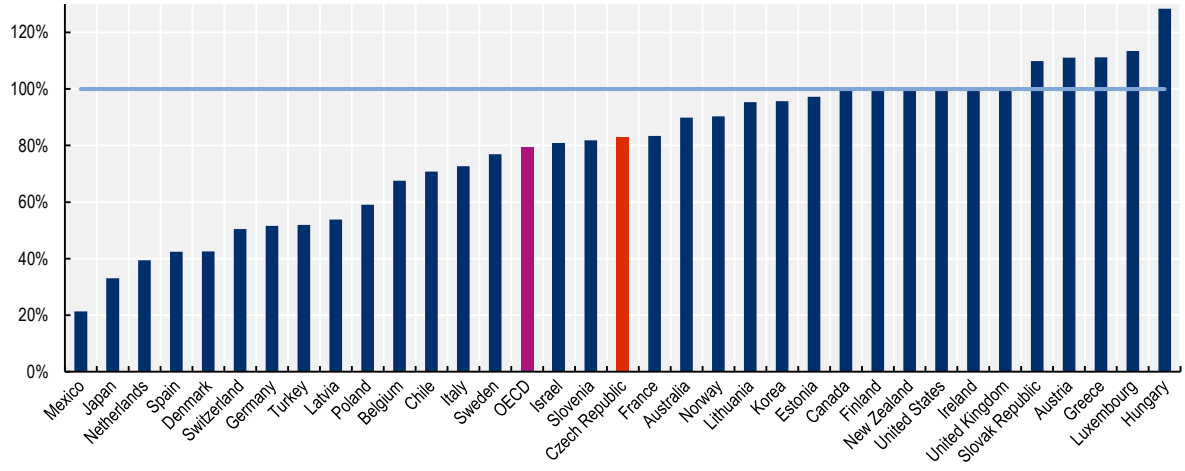
A better harmonisation of contributions between employees and the self-employed would be achieved by setting the contribution base closer to the equivalent of the gross wage for employees. For an employee, total labour cost is equal to gross wages plus employer's social security contributions, which rate is equal to 33.8% in the Czech Republic. Hence, the gross wage is equal to 100/133.8=74.7% of labour cost. Drawing a parallel between profit of a self-employed worker and total labour cost of an employee, a true harmonisation would imply that the contribution base of a self-employed in the Czech Republic is 74.7% of profits (OECD, 2019[1]).

A lower base translates into a lower pension. After contributing what is mandatory during a full career, self-employed workers with income net of social security contributions equal to the pre-tax income of an average-wage worker can expect to receive an old-age pension equal to 83% of the pension of this worker, a ratio that is very close to the OECD average (Figure 1.27). However, given the high progressivity of the Czech pension system, setting the contribution base lower than the harmonised base (i.e. at 50% instead of 74.7%, or 75% to simplify, of profits) implies that in this case the self-employed pay only 67% – 50%/74.7% = 67% – of the contributions paid by employees with similar earnings.

This results in an implicit subsidy benefiting the self-employed as reduced contributions only partially translate into lower pensions. Subsidising the self-employed within the pension system is hard to justify. First, it provides a favourable treatment based only on the contract type. Second, it undermines pension finances or induces other workers to pay higher contributions. Finally, it creates opaque incentives on the labour market, making self-employment attractive in the short term at the cost of weak social protection and/or higher public spending in the long term (OECD, 2019[1]). If support to the self-employed is a policy objective, transparency would be greatly enhanced, and the cost of the subsidy more fairly shared, by explicitly subsidising self-employment – for example financing extra social security contributions – through taxes.

Figure 1.27. Theoretical pensions of the self-employed are lower than those of employees

Theoretical pensions of a self-employed worker relative to an employee with similar pre-tax income

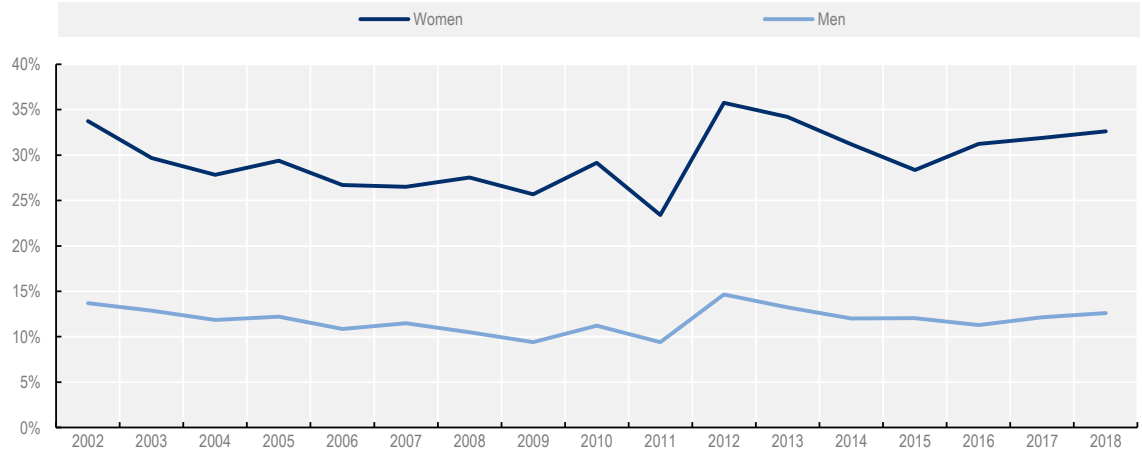


Note: Theoretical pensions of a self-employed worker relative to an employee having both a taxable income (net income or net wage before taxes) equal to the average net wage before taxes, for individuals with a full career from age 22 in 2018 and contributing only the amount that is (quasi) mandatory to pensions.
Source: OECD (2019[1]), *Pensions at a Glance 2019: OECD and G20 Indicators*, https://dx.doi.org/10.1787/b6d3dcfc-en.

1.4.10. Survivor pensions

Spending on survivor pensions account for 0.6% of GDP compared with 1.0% on average in the OECD. One-third of all newly granted pensions paid to women in 2018 and 13% to men were survivor pensions (Figure 1.28). Dependent children might be eligible for a survivor pension as well (in case the child is below 26 years of age and studying), but this is beyond the scope of this chapter. In the Czech Republic, more than 90% of survivor pension recipients are widows or widowers (OECD, 2018).

Figure 1.28. Share of survivor pensions among total newly granted pensions



Source: Czech Ministry of Labour and Social Affairs.

The conditions for claiming a survivor pension in the Czech Republic are twofold. First, the deceased must have had entitlement to either an old-age or a disability pension. Second, the survivor must fulfil certain conditions to be able to draw the pension. The first year of survivor pension benefits are paid out to any current surviving spouse, but after that only to those fulfilling one of the following conditions:

- The recipient is taking care of a child,[18]
- The recipient is taking care of a handicapped relative,
- The recipient is disabled (in the highest degree of disability),
- The recipient has reached a certain age (statutory retirement age of men minus four years or statutory retirement age of self, whichever is lower).

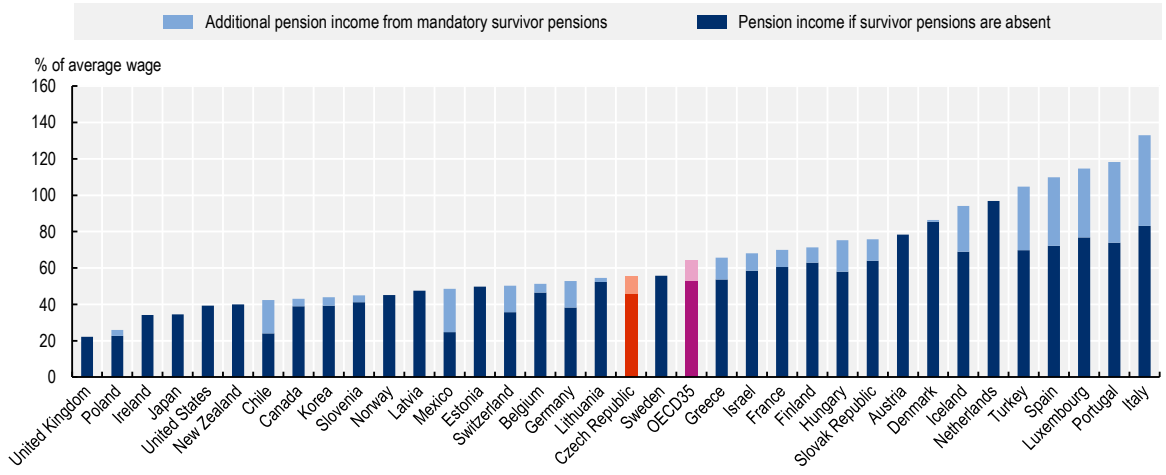
If the recipient does not receive a pension of his/her own, the survivor benefit consists of the basic component and 50% of the earnings-related component of the deceased's pension. In case the recipient has his/her own pension, the total benefit (own pension plus survivor benefit) consists of once the basic component, the higher earnings-related component and 50% of the lower earnings-related component. In the Czech Republic, the survivor receives a lump sum equal to one year of the survivor benefits in case of remarriage.

If a survivor does not have an own pension but the spouse had a full career at the average wage, the survivor will have a gross pension equal to 26% of the average wage in the Czech Republic, lower than the OECD average of 31% (OECD, 2018[6]). Receiving a survivor pension significantly raises the future benefits as without it the surviving spouse would in that case only receive the safety net (7% of the average wage in the future given indexation rules).

However, one specificity of the Czech Republic is that more than 95% of recipients receive their own old-age pensions. If the surviving spouse also had a full career at the average wage, the gross pension is equal to 56% of the average wage in the Czech Republic, compared with 64% in the OECD on average (Figure 1.29). In that case, survivor pension benefits add 10 percentage points in the Czech Republic, just below the 12 p.p. addition for the OECD on average.

Figure 1.29. Gross total pension income of a survivor with own earnings history

Same age couple with an identical full career from age 20 in 2016 at the average wage, deceased died just after having retired at the normal retirement age, mandatory pension schemes



Note: The "pension income if survivor pensions are absent" series calculates total pension income that would be paid if survivor pensions were ignored, taking into account additional benefits from first-tier pensions that would become available. Additional pension income from survivor pensions then displays the effective additional income stemming from survivor pensions. Australia is excluded due to comparability reasons.
Source: OECD pension model.

1.4.11. Special regimes

In the Czech Republic there are two types of special regimes. One is for deep-shaft miners and one for the armed forces comprising the military, the police, the fire brigade, customs officers, judicial guards, prison guards and the secret service. Deep-shaft miners contribute to the general pension scheme administered by the Ministry of Labour and Social Affairs. They can retire seven years before the statutory retirement age once they have worked a certain number of shifts under the earth's surface, and have a more generous benefit formula. In the future, this scheme will apply to a small share of workers as, in 2017, 26 000 people only were employed in the mining and quarrying sector (and not all of them deep-shaft mining), representing significantly less than 1% of total employment.[19]

Pensions for the armed forces are outside the general pension scheme and are administered by the Ministries of Defence, Interior and Justice. They are made of two components. The first is the standard pension, which follows the same rules as other workers. Usually the last employment before claiming a pension determines under which scheme the pensioner falls. The second component is the Retirement Allowance.

The Retirement Allowance for former members of the armed forces can be claimed by individuals who spent at least 15 years in service. With 15 years of service, the pension benefit is equal to 20% of the last year's earnings. One additional year of service generates an additional benefit of: 3% of the last year's earnings between 16 and 20 years over 15; of 2% between 21 and 25 years over 20; and, of 1% from 26 years, up to a maximum of 50% of the last year's earnings, which is reached after 30 years.[20] The Retirement Allowance is indexed in the same way as the earnings-related part of the standard pension. When claiming a standard pension after reaching the statutory retirement age, the Retirement Allowance is reduced, so that the sum of both pensions in payment is equal to the initial Retirement Allowance. That is, the sources of financing and administration change but the total income stays the same.

1.5. New reform proposal by the Czech Commission on Fair Pensions

In January 2020, the Commission for Fair Pensions, tasked with making proposals to reform the pension system, published its first report. This section looks into the basic framework of its reform proposals. The Commission for Fair Pensions set three objectives of the reform: fairness, comprehensibility and financial sustainability. Behind the proposal, there are three different scenarios with differing degrees of generosity and financial sustainability. The main focus of the proposed reforms, however, centres around one scenario, which is discussed in this section.

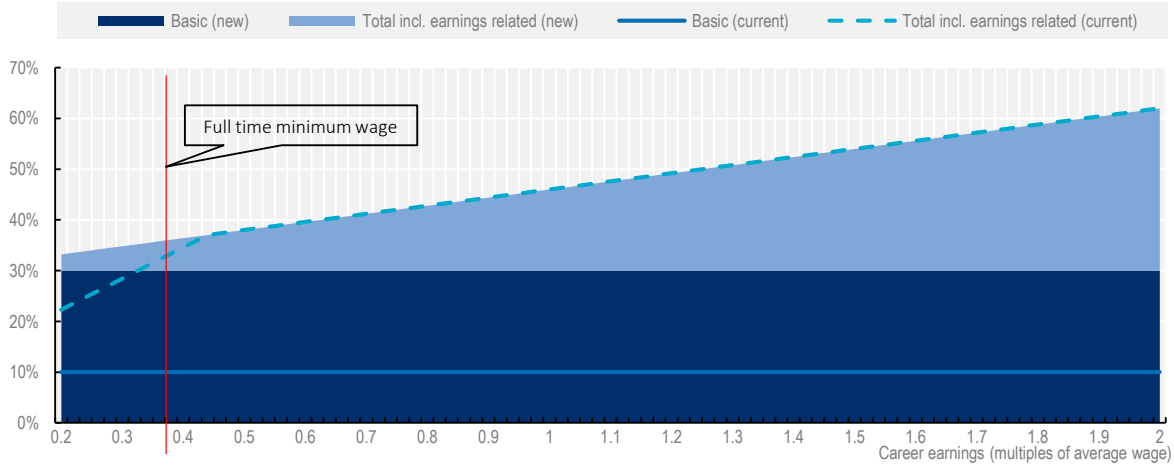
Currently the earnings-related pension has a flat component of 10% of the average wage and an earnings-related part.[21] The big change is to triple the level of the basic component, up to 30% of the average wage, to better reflect the minimum cost of living of pensioners. In the proposals, the basic component is indexed to wages as is currently the case. On top of the basic component, the accrual of the earnings-related component is lower than the current one while the earnings-related component is indexed in payment with prices only. These indexation rules are likely to increase the role played by the basic component as retirees age. One big simplification in the proposed system is that, each year, pension entitlements (whether gained through employment or validated periods) are calculated and communicated to participants. Currently, people only know their entitlements at the time of retirement (Section 2.4). The eligibility conditions are the same as in the current system in terms of retirement age and period of insurance.

In the proposed system, the accrual rate is also simplified and set at 0.39% applied to the full wage up to the ceiling of 400% of the average wage. This compares with 1.5% currently applied to a declining share of wages with thresholds of 44% of average wage and the 400% ceiling. The coefficient of 0.39% is equivalent to the current effective (marginal) accrual rate between the two current thresholds: within this reference-wage bracket, the current accrual rate is 1.5% on 26% of earnings (1.5%*26% =0.39%).

The new pension system would largely provide similar pension benefits for those earning more than 44% of the national average wage (Figure 1.30). The level of the basic component and the accrual rate is such that, for someone with a 41-year career, the pension benefit is the same in the current and proposed system. For those earning less than 44% of the average wage, benefits would go up since the basic component is increased. These will be largely people working part-time given that the minimum wage is 40% of the average wage, only slightly less than the current threshold.

Figure 1.30. Gross pension benefits as share of average wage

Career of 41 years until the retirement age, by earnings levels

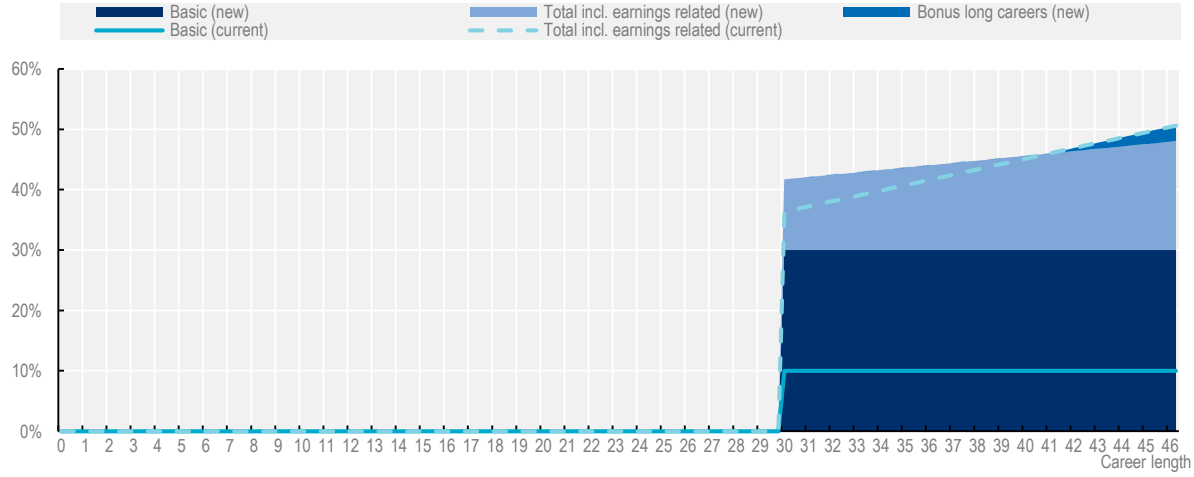


Source: OECD pension model.

Since the basic component does not increase with career length in both the current and proposed system and since the accrual rate for the earnings-related part is lower in the proposed system, the new benefit formula would generate lower pensions for careers longer than 41 years. To compensate for this, a complementary bonus is included in the proposed system for those with coverage of more than 41 years. Each year of insurance above 41 years is awarded with a yearly bonus of CZK 2 880 (0.75% of the average wage). As Figure 1.31 shows, the proposed reform generates higher benefits for workers with shorter careers (but still at least of 30 years). Someone with a 30-year career at the average wage would gain 5 percentage points.

Figure 1.31. The proposed system improves pensions for shorter careers

By career length, for average earners at the statutory retirement age



Source: OECD pension model.

In the reform proposal, credits would also be included for non-employment periods, for example periods of caring for children and dependants, basic military service and unemployment. In addition, rather than leaving the pension benefit to be calculated at the end of someone's career by excluding these non-employment spells from the computation of the reference wage, the new system would credit non-employment periods as they occur, thereby increasing transparency. For each non-employment spell a notional wage is recorded, to which the 0.39% accrual applies, allowing participants to calculate their current entitlements at all times.

Non-employment spells would be credited as the higher value of two options. The first option is based on the economy-wide average wage and the second option is based on previous individual earnings (Table 1.4). It is allowed to work part-time while accruing credits for childcare. The earnings from part-time work will be added to the notional wage for the non-employment spell. In addition to the accrual mentioned above during childcare, the new system also provides inflation-indexed bonuses for each child raised (CZK 6 000 or 1.5% of the average wage).[22]

Table 1.4. Non-employment credits

Type of non-employment activity	Option 1 (Average wage base)	Option 2 (Individual earnings base)
Care for a child up to 4 years of age	100% of average wage	100% of the last personal earnings
Care at dependence level 2	23% of average wage	23% of the last personal earnings
Care at dependence level 3	67% of average wage	67% of the last personal earnings
Care at dependence level 4	100% of average wage	100% of the last personal earnings
Temporary inability to work	100% of average wage	100% of the last personal earnings
Unemployment	40% of average wage	100% of the last personal earnings
Receiving a level 3 disability pension	100% of average wage	0% of the last personal earnings
Mandatory military service	100% of average wage	0% of the last personal earnings
Study	40% of average wage	0% of the last personal earnings

Source: Czech Ministry of Labour and Social Affairs.

The self-employed currently only pay mandatory contributions on half of their profit (difference between revenues and expenditure) with a fixed minimum base of 25% of the average wage (Section 2.4). As a result, the self-employed contribute very little and receive little. The reform proposal stresses the need to boost contributions and pension benefits for the self-employed. The proposal would see the calculation base increase from 50% of profits to 75%. As shown in Section 1.4 this would indeed lead to largely similar pension contributions between the self-employed and employees with similar earnings. The minimum base would increase from 25% to 40% of average wage, i.e. to the current level of the minimum wage.

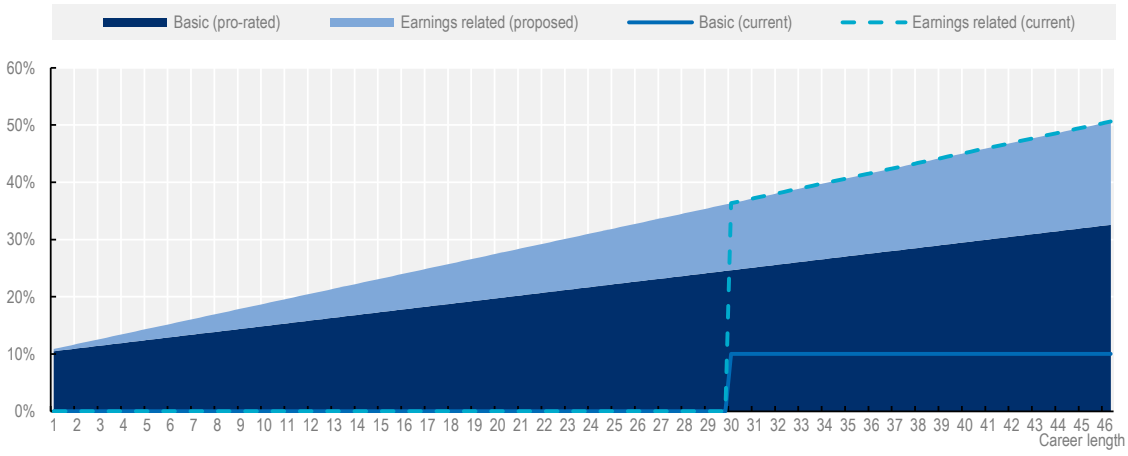
In sum, the proposed pension reform greatly simplifies the system while maintaining its redistributive elements. It would significantly improve transparency and make the system more intuitive, since for each year the earned entitlements can be directly and quite easily calculated, by contrast with the currently situation. The proposal allows to inform the insured every year about their pension entitlements. This would enable them to see the impact of their current situation on entitlements, and to better anticipate their future benefits.

However, by trying to stick too closely to current outcomes and with the inclusion of additional bonuses for childcare and long careers, the pension proposal creates other complications and inequalities. The bonus for careers longer than 41 years makes the system both more complicated again with limited impact (Figure 1.31). There is no compelling reason why total accrual after 41 years should be higher than before 41 years. Moreover, the two options for non-employment credits (based on the average wage or on last earnings) also makes the system unnecessarily complicated. The same holds for adding more childcare related bonuses on top of the already generous ones.

Moreover, one big flaw in the current system, the very high minimum years of coverage needed to be eligible for a pension, is maintained. A combination of a basic component that depends on career length (Chapter 3) and eligibility to a pension with no or low minimum years of coverage required would improve the system. Figure 1.32 shows that a pro-rated basic component in combination with accruals from the first year of contributions can maintain similar benefits as those provided by the current system, consistent with the proposal of the Commission for Fair Pensions, while generating pensions for people with short careers in line with their contributions to the system. All parameters can be adjusted to a given level of total spending.

Figure 1.32. Accrual from the first year in combination with a pro-rated basic component

By career length, for average earners at the statutory retirement age



Source: OECD pension model.

1.6. Policy options

While various changes have been implemented over the last 25 years, the architecture and principles in the design of the Czech pension system have been mainly unaltered since the 1995 Pension Insurance Act. The system works relatively well in ensuring net replacement rates close to the OECD average for average-wage workers. The contribution rate is relatively high and there is a high redistribution within the pension system, at least within generations.

Redistribution is a political choice and operates through a weak link between pension contributions and future benefits: the benefit structure is highly compressed, replacement rates are high for low earners while high earners suffer from very low internal returns on their contributions. For the latter, the boundary between contributions and taxes is blurred. A discussion might be welcome about the opportunity of shifting – on top of health insurance contributions – part of the financing of some redistributive instruments, such as credits for non-employment periods or basic pensions to general taxes. This would allow lowering the currently very high social security contribution rates, increasing accrual rates, in particular for high earners, or leaving more space to develop funded pensions. Moreover, the tax regime underlying the design of the system has unusual features: income taxes are paid on both employee and employer contributions, while pension benefits are mostly untaxed. These features are, however, difficult to reform given that modifying them would generate deep transition issues across generations.

Overall, the main weaknesses of the system are twofold. The average income of retirees relative to that of the total population is relatively low despite high contribution rates; and, the building-up of pension entitlements is complex, making it very complicated for contributors to understand their accrued rights and anticipate their future pension level, and for the administration to manage the system.

1.6.1. Easing eligibility conditions

The Czech Republic is an outlier in requiring that either 30 years are contributed or 35 years are validated to be eligible to an old-age pension, unless one retires five years after the statutory retirement age. This applies to both the basic and the earnings-related components. It implies that contributions might be paid

during many years without generating pension entitlements. Only three other OECD countries require more than 15 years at the normal retirement age: Hungary and Italy (20 years) and Mexico (24 years).

So far, such a long required period has not raised much concern because of high recorded employment in former Czechoslovakia and the generous validation of non-contributed periods. However, the transformation of the economy from the 1990s, the welcome tightening of some instruments to validate pension entitlements, as for example the exclusion of years spent in secondary (from 1996) and tertiary education (from 2010), as well as labour market trends will raise the share of older people not covered by old-age pensions. In short, such a long required period is not suited to a modern pension system: it overly penalises workers with short careers, increases the risk of vulnerabilities faced by future retirees and seriously weakens the attractiveness or consent to contribute. Each contributed period should generate some pension entitlements. The currently long eligibility period should thus be eliminated or at least drastically reduced.

1.6.2. Simplifying the benefit formula

Another characteristic that almost singles out the Czech pension system is the complexity of calculating acquired pension rights. The Czech Republic is among OECD countries where, beyond the uprating of past wages, the accrued entitlements during each year of contributions cannot be determined until the career is completed. In other words, the acquired entitlements depend on the future part of the career. This complexity prevents contributors from understanding how pension entitlements are built and therefore from being able to anticipate their income in old age. It also weakens the good management of the system by making it difficult and more uncertain to project pension flows.

The complexity stems from the calculation of the reference wage, the key input to determine pension benefits. The combination of three properties in this calculation compounds the difficulty. First, effective accrual rates, which are determined based on the weights granted to wages within brackets, diminish sharply in a non-linear way with wages (even below the pensionable earnings ceiling). While this results in a very progressive scheme, it makes the overall pension formula complex and the entitlements difficult to track. Second, the reference wage used to calculate pension benefits is closely related to average lifetime wages. While using lifetime wages might be fairer, its combination with the accrual pattern comes at the price of a lack of transparency in understanding entitlements when they are supposed to accrue. This makes the Czech system unique, except for the Portuguese and Swiss systems which are, however, based on a much smoother accrual-rate pattern (OECD, 2019[7]) and the US public scheme based on the best 35 years. Third, some non-contributed periods not only do not generate entitlements but lower both already accrued and future entitlements by lowering the reference wage (“double penalty”).

There are several options to simplify the pension formula. All of them suppose first either to have a constant effective accrual rate or to eliminate the reference to average lifetime wages such that pension entitlements are clearly identified for each year based on earnings during that period. This allows to create and monitor individual accounts where pension entitlements steadily build up as in Austria. It would significantly improve transparency and make the system more intuitive, since for each year the earned entitlements can be directly and quite easily calculated. It would allow to inform the insured every year about their pension entitlements, enabling them to see the impact of their current situation on entitlements, and to better anticipate their future benefits, thereby increasing trust in the pension system. Of course, this does not prevent from accounting for earnings throughout the whole career. Only six OECD countries do not take into account the whole career.

The various options differ depending on the progressivity of accruals. The current non-linear shape may be kept while applying e.g. to monthly or yearly wages. However, this might not be the fairest solution. Indeed, if that was the case, someone who would spend the whole career earning the average wage might have a very different earnings-related pension from someone earning half the average wage during half of the career and 1.5 times the average wage during the other half, even though both would have contributed

similarly and earned the same lifetime wages. An alternative would be to smooth the weighting pattern in a linear way, but this would come at the price of an additional complexity: the linear formula itself. Perhaps, the simplest solution is to opt for a constant accrual rate for all wage levels while preserving the overall progressivity of the scheme by raising the weight (i.e. the level) of the basic pension. This is what is proposed by the Commission for Fair Pensions. Their proposal simplifies greatly the core of the system while broadly maintaining its progressivity.

A more generous system would be based on a high level of basic pensions and high accruals. This would, however, generate high spending, triggering the usual trade-off between generosity and cost. A second trade-off for a given level of total spending relates to the redistribution objective as the basic pension is more important for low earners while the accrual rate plays a bigger role for high earners. Based on the policy objective, it is possible to make the system less (or more) progressive by opting for a lower (higher) level of the basic pension and a higher (lower) constant accrual rate. In international comparison, consistent with the high level of progressivity in the current system, the Commission for Fair Pensions has opted for both a basic pension level among the highest, at 30% of average wages, and the lowest accrual rate, at 0.39% (except for Lithuania with 0.24%), while the latter is larger than 1.60% in Austria, Italy, Luxembourg, Portugal, Spain and Turkey (OECD, 2019[1]). Still another possibility would be to introduce a tax-financed residence-based basic pension, on top of which contributory pension entitlements can accrue (Chapter 3).

Finally, over-penalising some non-contributed periods should be eliminated. This would directly be achieved by eliminating the way the lifetime reference wage is currently calculated. At least in the current system, non-validated periods should not be accounted for in the computation of the reference wage and should only affect pensions by lowering accruals.

1.6.3. Linking retirement ages to life expectancy

The effective retirement age is relatively low in the Czech Republic for three reasons. First, the statutory (or normal) retirement age is relatively low and the gap to the OECD average will remain in the long term even when based on legislated increases. It is therefore important to implement the planned increase of the retirement age up to age 65 as well as the welcome convergence across genders and family statuses by 2037. Second, in the Czech Republic, perhaps more than in other countries, the statutory retirement age plays a big role in influencing retirement behaviours, and few people retire after the retirement age. Third, early retirement is and will be possible from age 60, with relatively large penalties generating potentially low pensions.

With ageing prospects, extending working lives is crucial to preserve a good level of pensions while limiting financial sustainability issues. Beyond pensions, it lowers the impact of ageing on total output and ultimately on the average standard of living among the whole population. The link between the retirement age and life expectancy at older ages is the key instrument to respond to longevity trends, making increases in the retirement age conditional on effective gains in life expectancy and limiting the political cost to undertake such unpopular measures as raising the retirement age.

In 2011, the Czech Republic introduced a gradual increase in the statutory retirement age by two months per year from 2030 once the retirement age reaches 65 (for most people, Figure 1.13). This mechanism was eliminated in 2017. A link to life expectancy is a better option because if gains in life expectancy stop or slow (or become negative) the retirement age is consistently adjusted.

Possible reform options refer to the pace of the link. One baseline scenario is to maintain the relative share of time spent working and time spent in retirement. This is broadly consistent with passing about two-thirds of life expectancy gains (for example at age 65) into the retirement age. Based on current mortality projections until 2065, this would imply increasing the retirement age by slightly less than one month per year. However, other considerations might also be brought into the picture, such as opting for a faster or

slower adjustment to ensure financial sustainability, depending in particular on other pension measures potentially linking benefits to demographic developments through a sustainability factor.

Not only should such a link be established, but it should be extended to the early-retirement age such that early retirement is possible only a few years before the statutory age. The age of 60 years to still be able to early retire in the future is too low.

It is often argued that such a link is regressive, penalising more over time those with low socio-economic background who tend to have a shorter life expectancy. However, it is important to distinguish the static impact – resulting from the increase in the retirement age – from the dynamic impact – the link aims at responding to overall longevity gains (Chapter 1 in (OECD, 2019[1])). Broadly shared longevity gains with unchanged retirement ages is progressive based on the same argument: they tend to benefit those with shorter expected lives relatively more. In that sense, increasing the retirement age to accompany well-shared life-expectancy gains goes towards restoring neutrality. The relevance of linking the retirement age to life expectancy would be weakened if there were a long-term increase in socio-economic differences in life expectancy. There is no evidence of such a trend in the Czech Republic.

1.6.4. Reforming credits for non-employment periods

The validation of some non-employment periods might drastically limit the impact of career breaks. Currently, these periods are implicitly credited upon retirement at the reference-wage level. With the proposed shift to simplify the system discussed above, the crediting has to be based on conditions applying when the career is interrupted. Pensionable earnings can in that case be based on either the last earnings before the interruption or some economy-wide metric at that time; the latter would be more redistributive.

Long periods are currently validated for employment breaks related to childcare. For unemployment, the period that is credited is 80% of the length of the unemployment benefit period plus some extra months for periods without unemployment benefits (Section 2.4). The length of both unemployment benefit and extra-months periods vary with age, such that much more generous credits are granted for unemployment after age 55 while the impact of unemployment-related career breaks in the middle of the career on future pensions is larger than in the OECD on average. Moreover, long-term unemployment currently has a larger impact, given the “double penalty” once unemployment benefits expire. The above proposed simplification to calculate pension benefits will eliminate the “double penalty”. In addition, the length of the credited period should not depend on age as age-specific measures contribute to stereotypes that eventually lower employment prospects at older ages, especially by encouraging early retirement. Instead, activation and re-employment support policies should be strengthened irrespective of age but closely tailored to individual needs and employment prospects (OECD, 2019[8]). Given that the eligibility period to unemployment benefits is relatively short, pensionable earnings could extend for a longer period although at a reduced rate.

1.6.5. Raising the contribution base for the self-employed

Old-age social protection for the self-employed should also be improved. Despite the harmonisation of their contribution rates with those of employees, the self-employed currently pay low contributions because their contribution base is low. As a result, they accrue less pension entitlements, even if the impact is limited thanks to the progressivity of the pension system. In line with the proposal from the Commission on Fair Pensions, the contribution base should be substantially increased from the current level of 50% to 75% of profits, ensuring a better harmonisation with the equivalent of gross wages.

Such an increase would reduce inequity between different forms of work and limit the misuse of self-employment to reduce labour cost, which might develop in the future as new forms of work gain in importance (OECD, 2019[1]). This increase may be perceived as generating a too high burden of contributions paid by the self-employed. However, lower pension contributions generating lower pension

entitlements should not be used as an instrument to promote self-employment. If it is a policy objective to support self-employment, the cost of such a support should be made transparent by subsidising part of these better harmonised contributions through general taxes. This would avoid that this cost is diluted in an opaque way in terms of future spending on safety nets and/or lower old-age income among the self-employed.

Key recommendations

- Drastically reduce the minimum number of years required to be eligible to both the basic pension and the earnings-related component at the statutory retirement age, and make the basic pension benefit proportional to the validated contribution period; move towards ensuring that the first year of contribution generates entitlements.
- Simplify the benefit formula such that: entitlements earned for each contribution period are clearly identified; the double penalty for non-validated periods is removed; and, people can better anticipate their future pension level. This can be done by calculating earnings-related entitlements using a constant effective accrual rate across earnings levels (up to a ceiling) while adjusting the basic pension benefit to achieve redistributive objectives.
- Implement the legislated increases in the retirement ages and their convergence between men and women, and link the unified retirement age to gains in life expectancy, for example to transmit two-thirds of increases of life expectancy at older ages to the statutory retirement age.
- Raise the minimum early retirement age and adjust early retirement ages to life expectancy as well.
- Eliminate age-specific credits for unemployment periods.
- Raise the contribution base of the self-employed from its current level of 50% to 75% of profits to better harmonise contributions and entitlements between employees and the self-employed with similar earnings.
- Avoid encouraging self-employment through lower contributions, which generate lower pension entitlements. If there is a political choice to support self-employment, make any subsidy explicit by financing the contribution gaps compared with employees having similar income through general taxes.
- Consider shifting part of the financing (of at least some redistributive components) to taxes to boost pensions for people earning more than the average wage.

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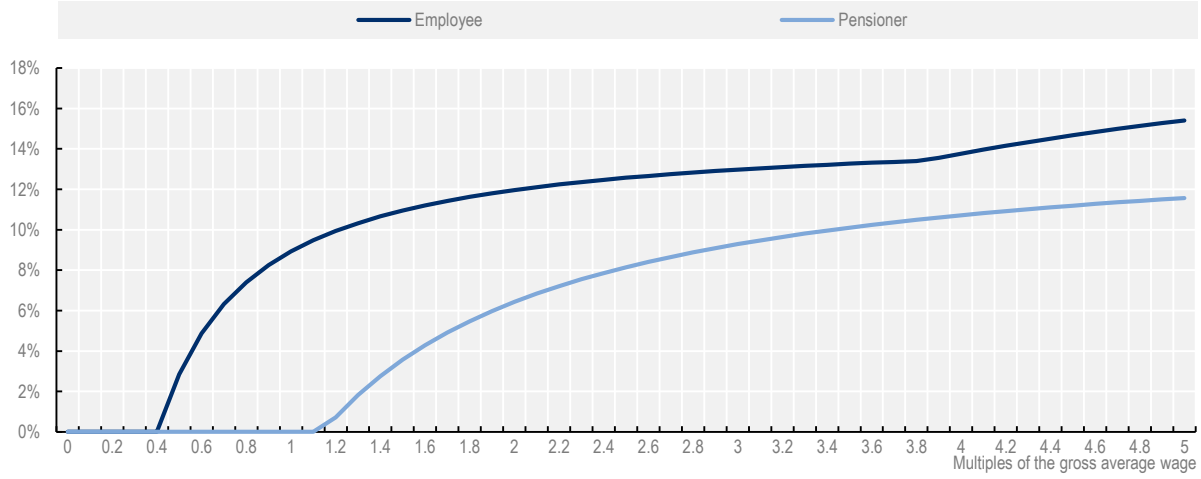
Annex 1.A. Average tax rates for pensioners and employees

Annex Figure 1.A.1. Average tax rate

By earnings/income level



Source: OECD calculations.

Annex 1.B. Penalties for non-employment spells

Benefit losses from non-employment spells differ widely depending on the type of spell. In this Annex, the dynamics behind benefit losses from non-employment spells are explained.

Pension benefits

The denotations are those used in Box 1.1. The earnings-related pension is the product of: the reference wage ($F(\bar{w})$), which is a function of the average wage for pension purposes, $\bar{w}$; the total number of validated years, itself broken down into worked years (N_w) and non-worked validated years (N_v); and, the annual accrual rate (1.5%):

$$B = 1.5\% * F(\bar{w}) * (N_w + N_v) \qquad \text{Equation 1}$$

The average wage for pension purposes is computed as total wages divided by the sum of the number of worked years (N_w) and the number of non-validated years (N_{nv}):

$$\bar{w} = \frac{total\ wages}{(N_w + N_{nv})} \qquad \text{Equation 2}$$

implying that non-validated years enter as zeros: $\bar{w} = w * N_w / (N_w + N_{nv})$, in which w is the average wage while working, assumed not to be affected by non-working years throughout this Annex. Therefore, non-validated periods negatively affect the average wage for pension purposes included in the benefit formula.

The reference wage, shown in Figure 1.10, Panel A, is a function of the average wage based a non-linear weighting pattern that ensures its slow increase only as the average wage grows. More precisely, the reference wage function F is piece-wise linear as a function of $\bar{w}$, implying that it is not differentiable at all points:

$$F(\bar{w}) = \begin{cases} \bar{w}\ if\ \bar{w} \le T_1 \\ \left(T_1 + 0.26 * (\bar{w} - T_1)\right)\ if\ T_1 \le \bar{w} \le T_2 \\ (T_1 + 0.26 * T_2)\ if\ T_2 \le \bar{w} \end{cases} \qquad \text{Equation 3}$$

To calculate the reference wage, a very progressive formula is used under which income thresholds are applied. Up to the threshold (T_1) of CZK 14 388 in 2019, the wage is fully taken into account. Between this threshold and the pensionable-earnings cap (T_2) of CZK 130 796, only 26% of the wage is taken into account. Earnings over the cap are not taken into account. This means that the derivative is equal to:

$$\frac{dF(\bar{w})}{d\bar{w}} = \begin{cases} 1\ if\ \bar{w} \le T_1 \\ 0.26\ if\ T_1 \le \bar{w} \le T_2 \\ 0\ if\ T_2 \le \bar{w} \end{cases} \qquad \text{Equation 4}$$

The total pension is the sum of the earnings-related pension and the basic pension:

$$Total\ pension = B + Basic\ pension$$ Equation 5

The basic pension is only conditional on the sum of work years and non-work validated years reaching the minimum eligibility period. Throughout this Annex it is assumed that these conditions are met. Therefore, the potential effects of non-employment spells on the basic pension are ignored.

From age 18 until retirement, all years are either spent working (N_w), in some forms of validated non-contribution periods (N_v), non-validated periods for accruals but excluded from the computation of the reference wage (N_{nve}), such as time in education and part of unemployment periods, and non-validated periods and not excluded (N_{nv}). It should therefore be noted that N_v and N_{nv} in the benefit Equation 1 and Equation 2 are not independent of N_w. The retirement age, RA, is thus expressed as:

$$RA = 18 + N_w + N_v + N_{nve} + N_{nv}$$ Equation 6

The effects of a change in the number of years worked on benefits

The effects of a change in the number of years worked (N_w) on pension benefits can thus be studied. Assessing changes in B (Equation 1) at the margin (i.e. taking the derivative):

$$\frac{dB}{dN_w} = 1.5\% * \left(\frac{dF(\bar{w})}{d\bar{w}}\frac{d\bar{w}}{dN_w} * (N_w + N_v) + F(\bar{w}) * \left(1 + \frac{dN_v}{dN_w}\right)\right)$$ Equation 7

This expression shows that there is a reference-wage effect (the first element in the large brackets) and a period effect (the second element in the large brackets). The reference-wage effect consists of impact driven by the change in the reference wage ($dF(\bar{w})$) as a result of the change in the average wage for pension purposes ($d\bar{w}$), which itself might be affected by the change in the number of years worked (dN_w). This reference-wage effect is proportional to the total number of years worked and validated ($N_w + N_v$). The period effect consists of the impact driven by the direct change in the number years worked itself (equal to 1) and by the potential related change in the number of validated years (dN_v). This effect is proportional to the reference wage. Therefore, using Equation 3 and Equation 4 in Equation 7, the change in benefits as a result of a change in years worked can be expressed as:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \left(\frac{d\bar{w}}{dN_w} * (N_w + N_v) + \bar{w} * \left(1 + \frac{dN_v}{dN_w}\right)\right) & if\ \bar{w} < T_1 \\ 1.5\% * \left(0.26 * \frac{d\bar{w}}{dN_w} * (N_w + N_v) + (0.74 * T_1 + 0.26 * \bar{w}) * \left(1 + \frac{dN_v}{dN_w}\right)\right) & if\ T_1 < \bar{w} < T_2 \\ 1.5\% * (T_1 + 0.26 * T_2) * \left(1 + \frac{dN_v}{dN_w}\right) & if\ T_2 < \bar{w} \end{cases}$$ Equation 8

in which:

$$\frac{d\bar{w}}{dN_w} = \frac{w * \left(N_{nv} - N_w * \frac{dN_{nv}}{dN_w}\right)}{(N_w + N_{nv})^2} \geq 0$$ Equation 9

Finally, expressing Equation 6 in changes gives:

$$dRA = dN_w + dN_v + dN_{nve} + dN_{nv}$$ Equation 10

For a given retirement age, a decrease in the period of work ($dN_w < 0$) is offset by an increase in either validated or non-validated periods. Of course, if the total number of insured periods ($N_w + N_v$) falls below 35 and the total number of employed periods (N_w) falls below 30, the retirement age needs to increase to be eligible to a pension. This Annex will not analyse the case of a change in the retirement age ($dRA = 0$ throughout this Annex).

With these building blocks, it is possible to study the effects of a decrease in the time spent working. The first scenario looks at an increase in time spent on child-care without any prior non-validated periods. This scenario describes an increase in a validated period that is fully reflected in accrual and excluded from the computation of the reference wage. This scenario corresponds to the five-year childcare case in Box 1.1. The second scenario looks at unemployment spells without previous non-validated periods, this corresponds to the three years and nine months unemployment case after age 55 in Box 1.1. Finally, the third scenario looks at an increase in time spent in inactivity, which corresponds to effects seen in the five-year unemployment and 10-year unemployment with late entry cases in Box 1.1.

Child-care without prior non-validated periods

Fully validated non-employment spells are for instance periods of childcare for a child below the age of four. In this scenario $N_{nv} = 0$, $\frac{dN_v}{dN_w} = -1$ and $\frac{dN_{nv}}{dN_w} = 0$, meaning there were no existing non-validated periods and all extra non-employment spells are full accounted for in validated periods. In that case Equation 8 can be written as:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \left(\frac{d\bar{w}}{dN_w} * (N_w + N_v) + \bar{w} * (1-1)\right) & if\ \bar{w} < T_1 \\ 1.5\% * \left(0.26 * \frac{d\bar{w}}{dN_w} * (N_w + N_v) + (0.74 * T_1 + 0.26 * \bar{w}) * (1-1)\right) & if\ T_1 < \bar{w} < T_2 \\ 1.5\% * (T_1 + 0.26 * T_2) * (1-1) & if\ T_2 < \bar{w} \end{cases}$$ Equation 11

in which:

$$\frac{d\bar{w}}{dN_w} = \frac{w * (0 - N_w * 0)}{(N_w + N_{nv})^2} = 0$$ Equation 12

leading to:

$$\frac{dB}{dN_w} = \begin{cases} 0\ if\ \bar{w} < T_1 \\ 0\ if\ T_1 < \bar{w} < T_2 \\ 0\ if\ T_2 < \bar{w} \end{cases}$$ Equation 13

From these equations, it is clear that there is no effect at all from the fall in employment or the increase in non-employment. Both the reference-wage effect and the period effect are zero. The reason is that, for childcare, accrual continues as before (i.e. the full period is credited), while the period is excluded from the reference wage. This means that accrual is unaffected and the reference wage is unaffected too.[23]

Unemployment without prior non-validated periods

This scenario looks at partially validated non-employment spells for people without previous non-validated periods and relatively a short unemployment period such that $dN_{nv} = 0$. Periods like this include for instance spells of unemployment. This scenario is largely the same as the one above except that in this scenario $\frac{dN_v}{dN_w} = -0.8$ (i.e. only 80% of time spent in unemployment is credited, the rest is excluded from the benefit calculation) while $\frac{dN_{nve}}{dN_w} = -0.2$. The change in benefits as a result of unemployment can be written as:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \left(\frac{d\bar{w}}{dN_w} * (N_w + N_v) + \bar{w} * (1 - 0.8)\right) & if\ \bar{w} < T_1 \\ 1.5\% * \left(0.26 * \frac{d\bar{w}}{dN_w} * (N_w + N_v) + (0.74 * T_1 + 0.26 * \bar{w}) * (1 - 0.8)\right) & if\ T_1 < \bar{w} < T_2 \\ 1.5\% * (T_1 + 0.26 * T_2) * (1 - 0.8) & if\ T_2 < \bar{w} \end{cases} \quad \text{Equation 14}$$

in which:

$$\frac{d\bar{w}}{dN_w} = \frac{w * (0 - 0 * N_w)}{(N_w + 0)^2} = 0 \quad \text{Equation 15}$$

Rewriting all equations leads to:

$$\frac{dB}{dN_w} = \begin{cases} 0.2 * 1.5\% * w & if\ \bar{w} < T_1 \\ 0.2 * 1.5\% * (0.74 * T_1 + 0.26 * w) & if\ T_1 < \bar{w} < T_2 \\ 0.2 * 1.5\% * (T_1 + 0.26 * T_2) & if\ T_2 < \bar{w} \end{cases} \quad \text{Equation 16}$$

From these equations it is clear that there is only a partial period effect and no reference-wage effect.

Inactivity

This scenario reflects for instance periods of inactivity once unemployment benefits run out. It has $N_{nv} = 0$ and $\frac{dN_v}{dN_w} = 0$ and $\frac{dN_{nv}}{dN_w} = -1$. This means that in the past no time was spent in inactivity and the new non-employment spells are non-validated periods. The change in benefits can therefore be written as:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \left(\frac{d\bar{w}}{dN_w} * (N_w + N_v) + \bar{w} * (1 + 0)\right) & if\ \bar{w} < T_1 \\ 1.5\% * \left(0.26 * \frac{d\bar{w}}{dN_w} * (N_w + N_v) + (0.74 * T_1 + 0.26 * \bar{w}) * (1 + 0)\right) & if\ T_1 < \bar{w} < T_2 \\ 1.5\% * (T_1 + 0.26 * T_2) * (1 + 0) & if\ T_2 < \bar{w} \end{cases} \quad \text{Equation 17}$$

and:

$$\frac{d\bar{w}}{dN_w} = \frac{w((0 - (-1) * N_w)}{(N_w + 0)^2} = \frac{w}{N_w} \quad \text{Equation 18}$$

The starting point $N_{nv} = 0$ implies that initially $\bar{w} = w$ (initially the average wage for pension purposes is equal to the average wage while working). Rewriting leads to:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \left(\frac{w}{N_w} * (N_w + N_v) + w\right) & if\ \bar{w} < T_1 \\ 1.5\% * \left(0.26 * \frac{w}{N_w} * (N_w + N_v) + (0.74 * T_1 + 0.26 * w)\right) & if\ T_1 < \bar{w} < T_2 \\ 1.5\% * (T_1 + 0.26 * T_2) & if\ T_2 < \bar{w} \end{cases}$$

Equation 19

This time both a reference-wage effect (below the second threshold) and a period effect are present. Non-validated periods lower both the reference wage and the accrual. Within the first two reference-wage brackets the penalty goes up with the wage. However, between the brackets it goes down.

Notes

[1] The pension system under the communist regime distinguished between three categories of occupations: high risk, medium risk and all other occupations. The high the risk category (such as miners for instance), the shorter the vesting period and the lower the retirement age. For the lowest risk category, the retirement age was fixed at age 60 for men and age 55 for women. Legislation in 1964 differentiated women's retirement age based on number of their children. After this law, the retirement age for men continued to be age 60, and for women it was set at ages 53 to 57 depending on the number of children they raise. In addition, the vesting period was increase from 20 to 25 years.

[2] People working longer also means higher pension entitlements, which would offset some of the rise in contributions.

[3] However, life expectancy is lower in the Czech Republic than in the OECD on average. When accounting for differences in life expectancy between countries, remaining life expectancy at the average labour market exit age is close to the OECD average (OECD, 2019[1]). This suggests that the same length of the retirement period can be achieved in the Czech Republic as in the OECD average while having retired earlier and thus worked during a shorter career.

[4] Legacy pensions were more generously indexed. However, this is unlikely to have offset the shortfall compared to new pensions.

[5] This is lower than the 18% gender gap measured by MoLSA.

[6] Average Wages are estimated by the Centre for Tax Policy and Administration at the OECD. For more information on methodology see (OECD, 2020[9]).

[7] It should be noted that the thresholds of 44% and 400% of the national average wage correspond to 41% and 375%, respectively, when calculated using the OECD harmonised average wage.

[8] One year of coverage consists of 365 insured days. The 365 days do not have to be consecutive or in the same calendar year.

[9] In the past the retirement ages for women rose 4 months per year.

[10] These numbers are based on underlying assumptions in the OECD pension model. The OECD pension model assumes an annual growth rate of 1.25%. Real-wage growth of 0.75% per year leads to a decrease in internal rate of return from 1.6% to 1.1% for women and from 1.2% to 0.8% for men.

[11] If Czech pensioners had the same tax treatment as workers (see above for details about their favourable tax treatment), the gross return generating the same net benefit would be significantly higher than these 1.2-1.6%.

[12] In case of prior non-validated periods there will be a small benefit loss because the non-validated periods (which are included in the reference wage as zero) will gain in relative importance.

[13] Multiple shorter unemployment spells with periods of work in between would lead to much lower losses as in most OECD countries since unemployment benefits would be received for a longer period in total.

[14] A fully validated five-year child-care break is possible in the case of having two children born at least one year apart.

[15] However, losses are only absent if there had not been any prior non-validated periods ($N_{nv} = 0$). In the case of prior non-validated periods ($N_{nv} > 0$), there are some losses due to an increased relative importance of inactivity years in the average wage calculation ($\overline{w} = \frac{total\ wages}{(N_w + N_{nv})}$). However, periods of child-care with prior non-validated periods have no effect on the reference wage (and therefore benefits) above the pensionable-earnings cap since average wages above the threshold are not taken into account (as long as the average wage stays above the earnings cap).

[16] This specifically holds only for people without prior non-validated periods.

[17] If there had been prior inactive periods, the reference wage changes.

[18] Survivor pensions being indirectly linked to family policies is common in OECD countries. Having or caring for a dependent child can increase the survivor benefits or waive some eligibility conditions such as age or length of marriage requirements in Germany, Hungary, Israel, Portugal, the Slovak Republic, Switzerland and the United States.

[19] Eurostat: Annual enterprise statistics by size class for special aggregates of activities (NACE Rev. 2).

[20] For military personnel the rules are slightly different. The initial pension after 15 years of service is lower (5% of the last five years of earnings) but the increase for subsequent years in the career are higher allowing for a maximum of 55% of the last five years of earnings.

[21] In the pension reform proposal, the committee states that the new system will consist of a zero pillar and a first pillar according to the World Bank classification. However, the reform proposal still sticks to the current set-up of a contributory basic component, which is mistakenly framed as zero pillar while it should still be regarded a first pillar pension.

[22] The pension committee introduces three scenarios for the new pension system. In the main one (the so-called fair scenario), the increase of the basic component will increase spending. This is (partially) offset by the lower indexation of the earnings-related component. As is currently the case, any shortfall in contribution revenues has to be matched by tax financing. The pension committee also describes a possible “technical” scenario and an “austere” scenario. These scenarios mainly differ in terms of the level of the basic pension and possible bonuses in the system. In the “technical” scenario, the relative level of the basic pension decreases from 30% of the average wage to 25% of the average wage after 2030 to

maintain financial sustainability estimates of the current system. This scenario of the reform also eliminates certain child-care and long-career bonuses proposed in the "fair" scenario. The so-called austere scenario largely follows the "technical" scenario except that it sets the basic pension at 22% of the average wage to begin with and reduces further child-care credits. Given the chosen names for the different scenarios of the pension reform it seems clear which scenario is preferred by the Commission for Fair Pensions.

[23] In case childcare periods occur with previous inactivity (i.e. $N_{nv} > 0$) the effects are slightly different. This means that in the past some periods were not validated but all extra non-employment spells are full accounted for in validated periods. This time the reference wage effect is not zero:

$$\frac{d\bar{w}}{dN_w} = \frac{w * N_{nv}}{(N_w + N_{nv})^2}$$

which means that the total effect is different too:

$$\frac{dB}{dN_w} = \begin{cases} 1.5\% * \dfrac{w * N_{nv}}{(N_w + N_{nv})} & if\ \bar{w} < T_1 \\ 1.5\% * 0.26 * \dfrac{w * N_{nv}}{(N_w + N_{nv})} & if\ T_1 < \bar{w} < T_2 \\ 0 & if\ T_2 < \bar{w} \end{cases}$$

Increasing validated periods (i.e. decreasing working periods $dN_w < 0$) for the first two reference-wage brackets will have a slightly negative effect on benefits. This is reflected in the reference wage effect only while the period effect is zero (i.e. accrual continues). The wage effect is negative since the non-validated years will gain in relative importance compared to the years spent working $\left(\frac{N_{nv}}{N_w}\right)$. The effects for the highest reference-wage bracket is zero since wages above threshold T_2 are excluded from the reference wage.

The negative effects within the first two reference-wage brackets increase with the wage level, but decreases from the first to the second reference-wage brackets, since only 26% of the wage above the threshold is taken into account for the reference wage.

2 Assessing the financial impacts of ageing

This chapter focuses on the impact of ageing on public pension expenditures and of changes on labour markets on the accumulation of pension rights. It first analyses demographic and labour market trends and then assesses the evolution of pension spending. New pension spending projections are presented and compared with official projections. Different options for policy reforms to close the financing gap are simulated, including an increase of the statutory retirement age, pension indexation rules and tax reforms to increase financial resources of the pension system. The chapter concludes with policy recommendations to improve the financial sustainability and income adequacy of the pension system.

2.1. Introduction

The Czech Republic is ageing fast as many countries in the European Union. The number of elderly people will, according to the Czech Statistical Office population data, increase by more than 50% between now and 2059. In the meantime, the working-age population will decline by 18% in 2059 compared to 2019. Therefore, the economic old-age dependency ratio will increase from 0.39 in 2019 to 0.59 in 2059. The increasing statutory retirement age has so far limited the impact of ageing on pension spending. However, ageing is expected to have important effects on age-related public spending, namely, pensions, health and long-term care expenditures.

This chapter assesses the impact of ageing on pension expenditures and of changes on labour markets on the accumulation of pension rights. In the labour market, different forces contribute to lowering the participation of some categories. In particular, labour participation of women with children is low in the

Czech Republic compared to EU countries. Migration is also limited. Structural policies that increase the labour force would help raise potential economic growth and reduce the share of pension spending in GDP.

A detailed cohort model was developed to simulate and project future pension spending. It incorporates demographic developments and labour market dynamics to estimate and simulate the evolution of the pension system, in particular, the number of old-age pensioners and disability pensioners. It allows to simulate different policy options to close the financing gap of the pension system. In particular, increasing the retirement age, indexing pensions on inflation, and increasing the contributions of the self-employed are simulated.

Pension spending is projected to increase to 11.9% of GDP in 2060 from 8.2% in 2018, leading to increasing deficits of the pension system. To cope with this financial strain, reducing pension levels does not seem adequate as Czech pension levels are relatively low compared to many OECD countries. Among the different options to close the financing gap, further increasing the retirement age after 2030 in line with life expectancy gains appears to be the most efficient measure to boost growth and reduce the financing needed. However, additional measures would be needed to close the financing gap of the pension system. For instance, increasing government budget transfers could finance the redistributive component of the pension system. To finance the additional resources needed the simulations indicate that increasing profits and corporate income taxes would have less negative impacts on GDP and employment than increasing social contributions and value added tax. Increasing social contributions should be avoided, as they are already high and could start to have detrimental effects on employment. Indeed, the Czech Republic's tax wedge is among the highest across the OECD and the average rate of employers' social contributions is the second highest.

The structure of the rest of the chapter is as follows: in Section 2.2, the evolution of the demography and the financial impact of ageing are assessed. In Section 2.3, structural policies that could increase the size of the labour force are analysed. Section 2.4 analyses the different policy options to close the financing gap of the pension system. Finally, the last section concludes and presents policy options.

2.2. Assessing financial challenges of the pension system

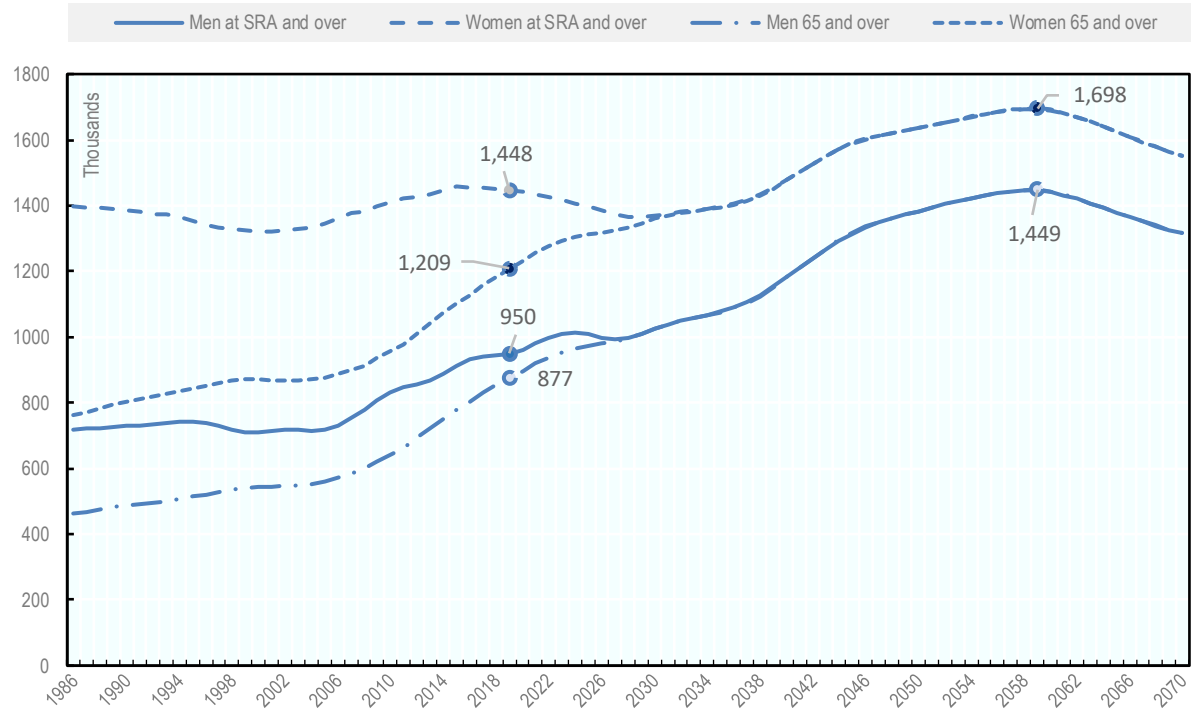
2.2.1. Ageing will weigh on pension spending

The elderly population is increasing

Population ageing is accelerating in the Czech Republic albeit at a slightly slower pace than the OECD on average. The elderly population in the Czech Republic, people aged 65 and over, will increase by over 50% between 2019 and 2060 (Figure 2.1). This increase will be higher for men – about 65% – than for women – about 40% – because male life expectancy is expected to catch up with that of women.

The Czech pension system reforms since 1996 have led to a progressive increase in the statutory retirement age, which will reach 65 years in 2030 based on current legislation. The statutory retirement age is the normal age of opening rights to a pension. There are, however, few exceptions allowing for early retirement. The large increase in the population aged 65 and over, by about 47% between 2000 and 2019, only induced an 18% increase in the population at or beyond the statutory retirement age. The planned increase in the statutory retirement age will continue to contain the growth in the number of potential retirees, especially among women. The number of women at or above the statutory retirement age is expected to slightly decrease between 2020 and 2030.

Figure 2.1. Population at or above the statutory retirement age (SRA) by gender



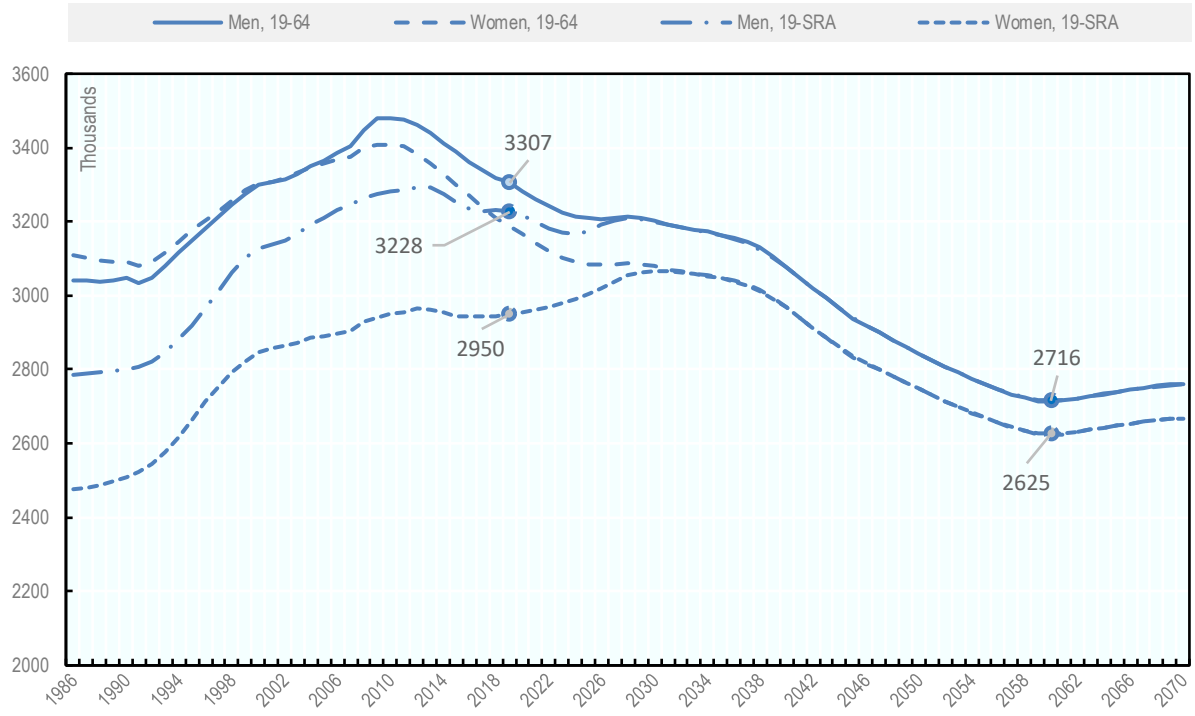
Source: Calculations from the Czech Statistical Office data.

The working-age population is declining

In the meantime, the population aged between 19 and 64 years is expected to decline in the Czech Republic by 18% between 2019 and 2059 (Figure 2.2). However, the working-age population, defined between 19 and the statutory retirement age, with the planned increase in the statutory retirement age force will remain relatively stable until 2030, before trending down slowly until 2040 and faster afterwards. More precisely, the working-age population will increase slightly in the decade to come and peak around 2029 before declining by about 13% below the 2019 level.

Figure 2.2. Projections of the working-age population

Population aged 19-64 and below the statutory retirement age (SRA)



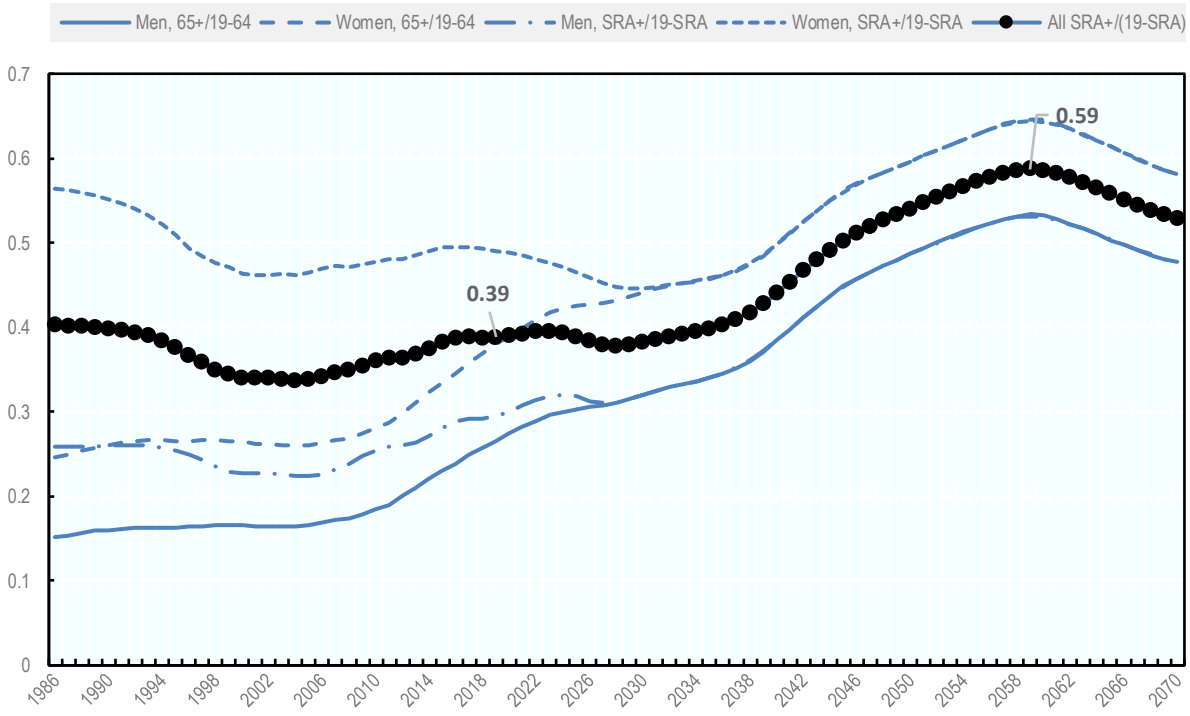
Source: Calculations from the Czech Statistical Office data.

The evolution of the dependency ratio is unfavourable to the pension system

One measure of the old-age dependency ratio is the ratio of the population at and over the retirement age to the working-age population (19 to retirement age). Another measure is the demographic old-age dependency ratios based on a fixed age boundary, e.g. of 65 years. The purely demographic measure has been sharply increasing. However, taking into account the increase in the statutory retirement age, the economic dependency ratio will remain stable until 2035, before increasing until the late 2050s. The dependency ratio is expected to increase from 0.39 in 2035 to 0.59 in 2060, i.e.by 50% (Figure 2.3).

Figure 2.3. The old-age dependency ratio is increasing

Ratio of elderly to working-age adults, thresholds of age 65 and statutory retirement age (SRA)



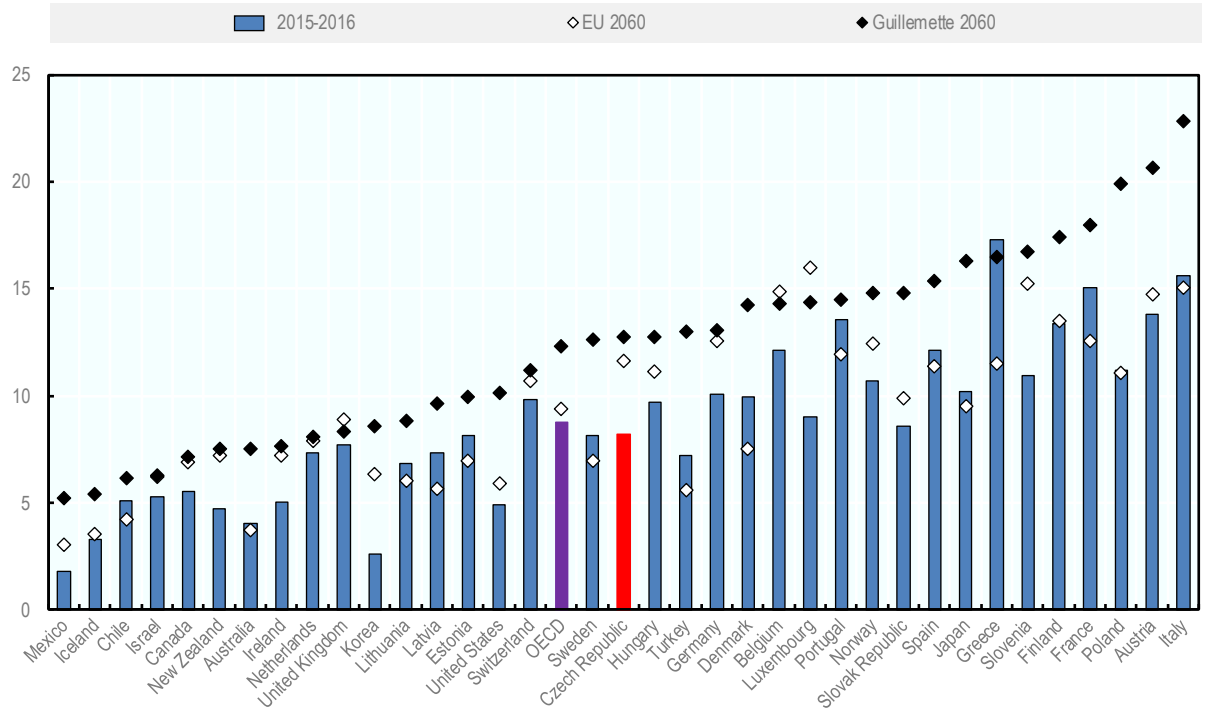
Source: Calculations from the Czech Statistical Office data.

2.2.2. Pension spending is projected to increase

Public pension expenditures as a share of GDP are expected to rise in most OECD countries (Figure 2.4). According to EU projections (European Commission, 2018), the Czech Republic is among the countries with the highest expected increase in pension spending. Projections by Guillemette (2019[1])(2019) also confirm an increase of pension spending in all countries but the United Kingdom and Greece. While EU projections are based on country-specific models, Guillemette's estimates are based on a more aggregate approach also taking into account changes in employment and labour force due to ageing. One key assumption explaining the differences between the two approaches is the projections of the average benefit ratio (average of all pensions in payment over the average wage). In the EU projections, legislated rules of pension indexation are used, implying in most countries a limited increase in pension levels or a decrease in the benefit ratio. In Guillemette (2019[1]), it is supposed that these limited increases in pension levels or decreases of the average benefit ratio are not realistic. The baseline assumption in Guillemette (2019[1]) is to hold constant the benefit ratio for most countries including the Czech Republic, explaining higher pension spending increases in many countries. The Czech Republic's pension spending is expected to rise from 8.2% of GDP in 2016 to 11.6% and 12.7% of GDP in 2060 by the EU (2018) and Guillemette (2019[1]), respectively.

Figure 2.4. Pension expenditures are projected to increase in almost all OECD countries

Public pension spending in percentage of GDP



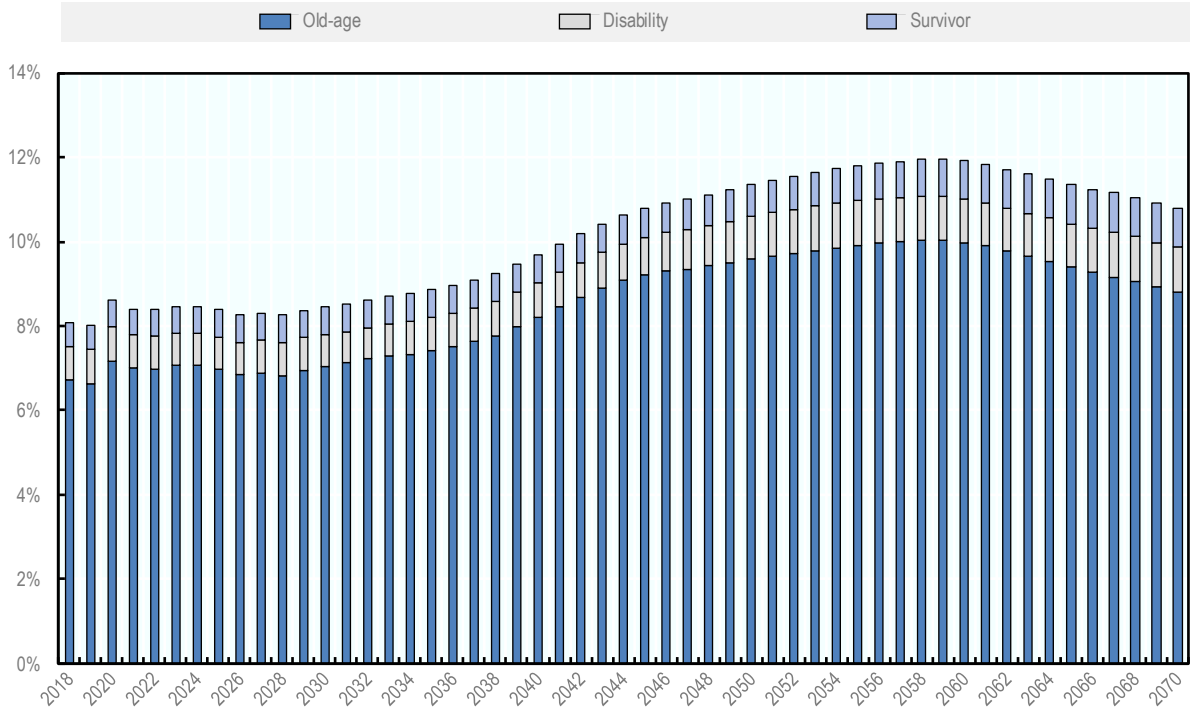
Note: 2050 for Australia, Canada, Iceland Israel, Japan, Korea, Mexico, New Zealand, Switzerland, Turkey and the United States.
Source: (Guillemette, 2019[1]; European Commission, 2018[2]); Standard & Poor's (2016 and 2013), for Canada, Iceland Israel, Japan, Korea, Mexico, New Zealand, Switzerland, Turkey and the United States and for Australia: 2015 Intergenerational Report Australia in 2055.

In order to quantify precisely different pension reform options, a cohort model and a macroeconomic framework have been developed (see Box 2.1 and, for more details, the technical background paper: Fall (Forthcoming[3])).

The cohort model simulates the career path of a sample of representative workers from age 19 to the statutory retirement age. It takes into account participation in the labour market, employment and unemployment status and determines each year the wage of workers. It also calculates the number of contribution periods validated taking into account education and unemployment periods validated and the number of children for women. Disability status is also determined based on projections of disability probabilities using recent trends. To increase the accuracy of the status in the labour market, projections take into account the level of education by gender.

According to the simulations made with the cohort model, pension spending will remain stable around 8.4% of GDP until 2030. It will then increase progressively to peak at 11.9% of GDP in 2059 and then decline slightly until 2070 (Figure 2.5). The increase in the retirement age, which will reach 65 years in 2030, is holding back pension spending. After 2030, the increase in pension spending follows the increase in the size of the elderly population.

Figure 2.5. Projections of pension spending by schemes in percentage of GDP



Note: The figure represents the pension spending by schemes put on top of each other so that the top of the bar of the last category (survivor) indicates the level of total spending.
Source: OECD simulations, Cohort model.

Comparing official EU/Ministry of Finance projections to the cohort model shows a similar dynamic of pension spending between now and 2070 (see Table 2.1 and Table 2.2). In both projections, pension spending in terms of GDP ratios are projected to be stable over the next 10 years, before increasing. In both projections, the pension spending will increase by 3.5 percentage points of GDP by 2059, the peak year, in EU projections and by 3.3 percentage points in the cohort model. However, in the cohort model, the impact of the COVID-19 crisis on GDP in the short run is taken into account, which increases the pension to GDP ratios in the first periods of the projections. After 2060, pension spending is projected to decrease as big cohorts born in the 1970s leave the pension system and, to a lower extent as the average validated contribution period declines.

Table 2.1. EU projections of pension expenditure

Percentage of GDP

	2016	2020	2030	2040	2050	2060	2070	Peak year
Total public pensions	8.2	8.1	8.2	9.2	10.8	11.6	10.9	2059
of which								
old-age pensions	6.8	6.7	6.8	7.7	9.4	10.2	9.5	2059
disability pensions	0.9	0.8	0.8	0.8	0.8	0.7	0.8	2016
survivor pensions	0.5	0.6	0.6	0.7	0.7	0.7	0.7	2062
linked to life expectancy	8.2	8.1	8.0	8.5	9.7	10.2	9.3	2059

Note: The baseline scenario is computed with the fixed ceiling on statutory retirement age. The last row represents a scenario linking the statutory retirement age to the life expectancy.
Source: European Commission (2018).

Table 2.2. Pension spending simulated by the cohort model

Percentage of GDP

	2020	2030	2040	2050	2060	2070	Peak year
Total public pensions	8.6	8.4	9.6	11.3	11.9	10.8	11.9
of which							
old-age pensions	7.2	7.0	8.2	9.6	10.0	8.8	10.0
disability pensions	0.8	0.8	0.8	1.0	1.0	1.1	1.0
survivor pensions	0.6	0.6	0.6	0.7	0.9	0.9	0.9

Source: OECD simulation, Baseline of the cohort model.

Box 2.1. A simulation framework to project the spending of the Czech pension system

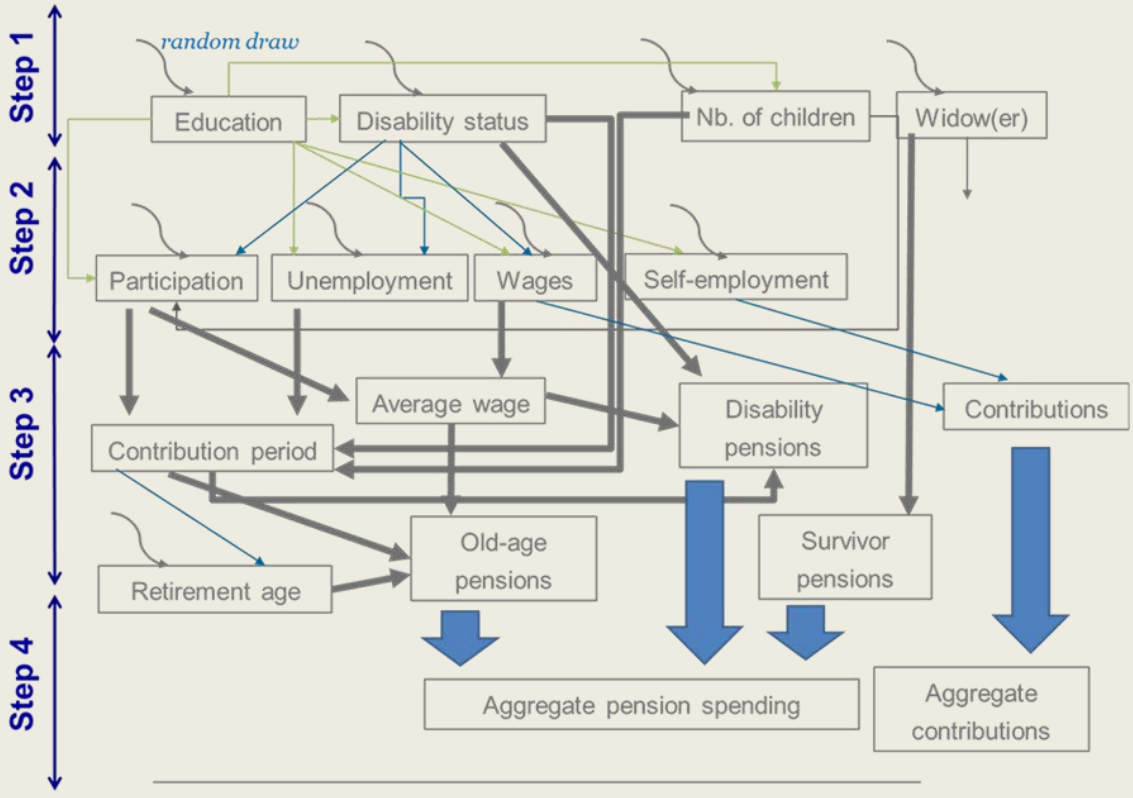
The simulation framework has two components, a macroeconomic model to project the evolution of GDP up to 2070 and a cohort model to project the different schemes of the pension system.

A long-term general equilibrium model is developed including the evolution of the labour force. The model takes into account the impacts of long-term factors on unemployment and GDP, especially demography, productivity and structural factors.

The cohort model simulates the career path of a representative sample of the working-age population and their path in retirement. It is calibrated to match the main features of the labour market and of the pension system. In particular, wage careers are precisely simulated. The cohort model allows to simulate precisely the rules of the pension system, to incorporate non-linearity in the rules (on contributions and wages) and to produce the distributional impacts of reforms.

More precisely, the model simulates for each generation 2000 nationals and 94 immigrant persons, split equally between women and men, and aged each year from 19 to 64 years (94230 individuals in total). Each individual is weighted in the model to reflect the mortality profile. These individuals live from the age of 19 to 99 in the model, subject to expected mortality. The model simulates the system from 1986 to 2070.

Figure 2.6. The cohort model's structure



Source: Fall (Forthcoming[3]), "A simulation Framework to project pension spending: the Czech Pension System", OECD Economics Department Working paper.

The model simulates the career of individuals from the age of 19 to 69, with one observation per year, for labour market participation, unemployment, disability status, self-employment status and wage. Wages are drawn randomly with their level depending on age, gender, disability status and education.

The different sources of validation of contribution periods include contributed periods for employees and self-employed, education periods and maternity and parental leaves for women.

Survivor and disability schemes are simulated based on projections of estimates of current probabilities to be disabled or a widower/widow.

The retirement decision is based on the length of contributions, which is a by-product of the career. Individuals are assumed to retire as soon as the mandatory contribution period and the retirement age are reached, reflecting that only a tiny fraction of each cohort actually choses to work longer. The level of pension is determined according to actual rules.

Figure 2.6 illustrates the structure of the cohort model and the different steps of the simulation. There are four main steps. The first step draws the main characteristics of individuals entering the labour force, including their level of education. The second step simulates the career path by determining each year participation to the labour market, type of activity (employee or self-employed), employment status and wages. The third step determines the number of contribution periods validated. The last step applies the retirement decision rule and establishes the pension status and level.

As for any projection and simulation, there are assumptions and methodological choices that may affect the results at the margin. Overall, the projections are robust but may deviate from other projections due to differences in methodology and assumptions. For instance, our random drawing strategy creates some variance in the distribution of variables like wages, participation and unemployment thus affecting the number of contribution periods validated. Also, we use a yearly modelling strategy which may minimise infra-year retirement decision. Moreover, due to lack of information, some elements like periods validated for family care and military careers are not included, however, that is comparable to EU projections. Moreover, the COVID-19 crisis may have long run effects on potential output which are not taken into account.

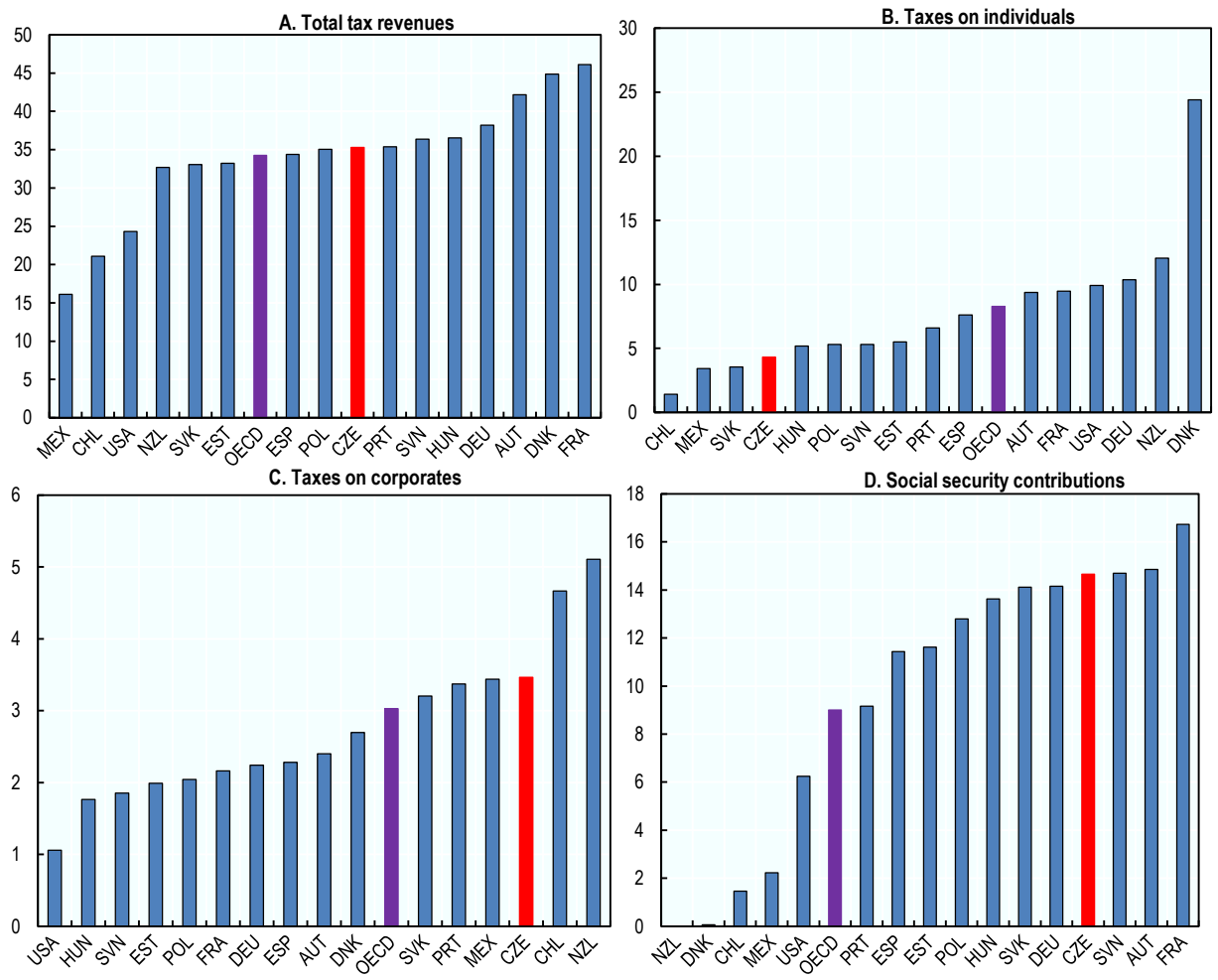
2.2.3. There is little room to increase pension contributions

The Czech pension system needs additional resources to cope with the impact of ageing. The financing of the public pension scheme is wage-based social contributions transiting through the government budget. There is no clear separation between the government budget and the pension scheme account. Therefore, the space for reforming the financing of the pension scheme to cope with the spending pressure due to ageing might imply changes in government financing.

The structure of government revenues is unbalanced, with a heavy reliance on social security contributions. While government tax revenues were 35% of GDP in 2018, social security contributions were almost 15% of GDP (Figure 2.7). In terms of collected social security contributions, the Czech Republic ranks among the highest countries across the OECD. At the same time, personal income tax revenues are low (Figure 2.7, Panel B).

Figure 2.7. An unbalanced structure of government revenues

2018 or latest, percentage of GDP

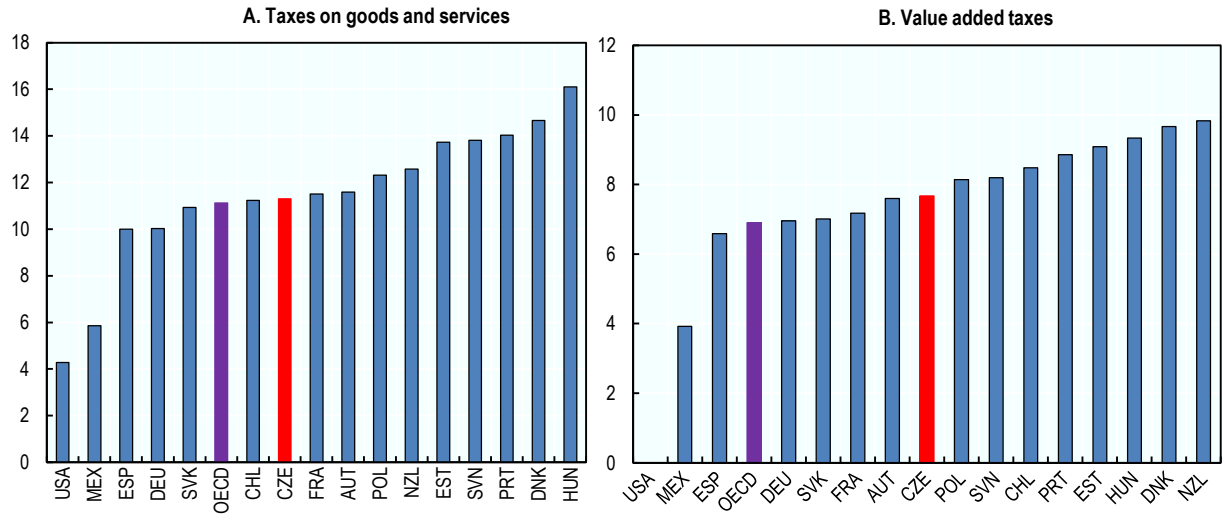


Source: OECD (2019), Revenue Statistics database.

Value added tax (VAT) revenues are above the OECD average, but the revenues on goods and services are more similar to the OECD average (Figure 2.8), indicating that the Czech Republic raises relatively fewer excise duties (possibly on fuels and environmentally related taxes). This revenue structure relies heavily on payroll-based taxes compared to many OECD countries where a shift toward a broader tax base has been initiated on the back of lowering wage costs.

Figure 2.8. An unbalanced structure of government revenues (continued)

2018 or latest, percentage of GDP

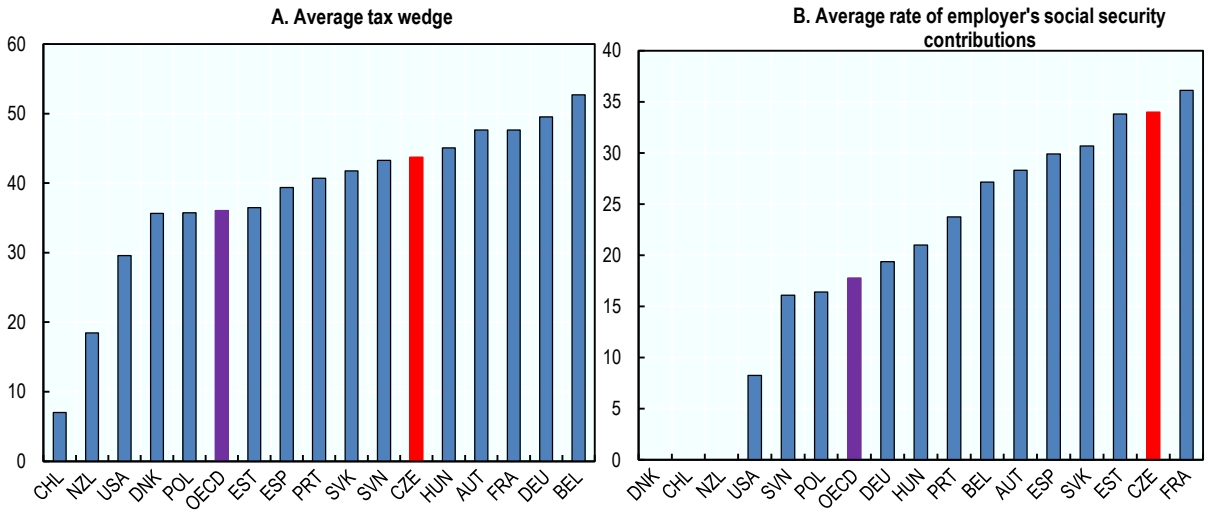


Source: OECD (2019), Revenue Statistics database.

The tax wedge is among the highest across the OECD and the average rate of employers' social contributions is the second highest (Figure 2.9). The tax wedge is the sum of personal income tax and employee and employer social security contributions together with any payroll tax less cash transfers, expressed as a percentage of labour costs for a single person on average earnings. It expresses the average wage-based contributions and the fiscal burden supported by workers. Up to now, this has not been detrimental to labour market performance, in particular to employment, only because the average wage is low compared to other EU countries. Indeed, the Czech Republic has built its comparative advantage by holding wages low to attract foreign direct investment, in particular in manufacturing industries. However, as wage convergence towards OECD and EU averages is continuing and given the recent acceleration of wage growth, the high level of wage taxation could become burdensome. With higher wages, the tax wedge could lower the wage comparative advantage, in particular in the manufacturing industry. It could also affect the structure of employment as firms will be incentivise to substitute labour for capital.

Figure 2.9. The fiscal burden on labour could be lowered

2018, percentage



Note: Single person without child earning 100% of average earnings.
Source: OECD (2019), "Taxing Wages: Comparative tables", OECD Tax Statistics (database).

Given the high level of tax wedge and social contributions, there is little room to increase social security contribution rates in the current settings. The pension contribution rate is high at 28% of the payroll. One aspect of the pension system is to mix contributory and non-contributory benefits blurring the accounting of the pension system. Separating the pension system's accounts from government accounts would increase transparency and clarify the financing of the different benefits. For instance family-related elements of the pension system represent around 5% of old-age pension spending and should be financed from government budget transfers to the pension system (Table 2.3). Indeed, the rationale behind the financing of family-related elements of the pension system by pension contributions is not straightforward. Family policy, which benefits the whole society, should/could be financed by a broader base including all types of revenues, and not only wages.

Table 2.3. Share of family and disability benefits in pension spending

	2020	2030	2040	2050	2060	2070
Family benefits as share of old age	5.0%	4.7%	4.4%	4.0%	3.9%	3.9%
Disability as share of total pension	6.5%	7.0%	6.4%	6.2%	6.9%	7.9%

Source: Simulations from the cohort model.

2.3. Policies to expand the working-age population

2.3.1. Increasing female labour participation

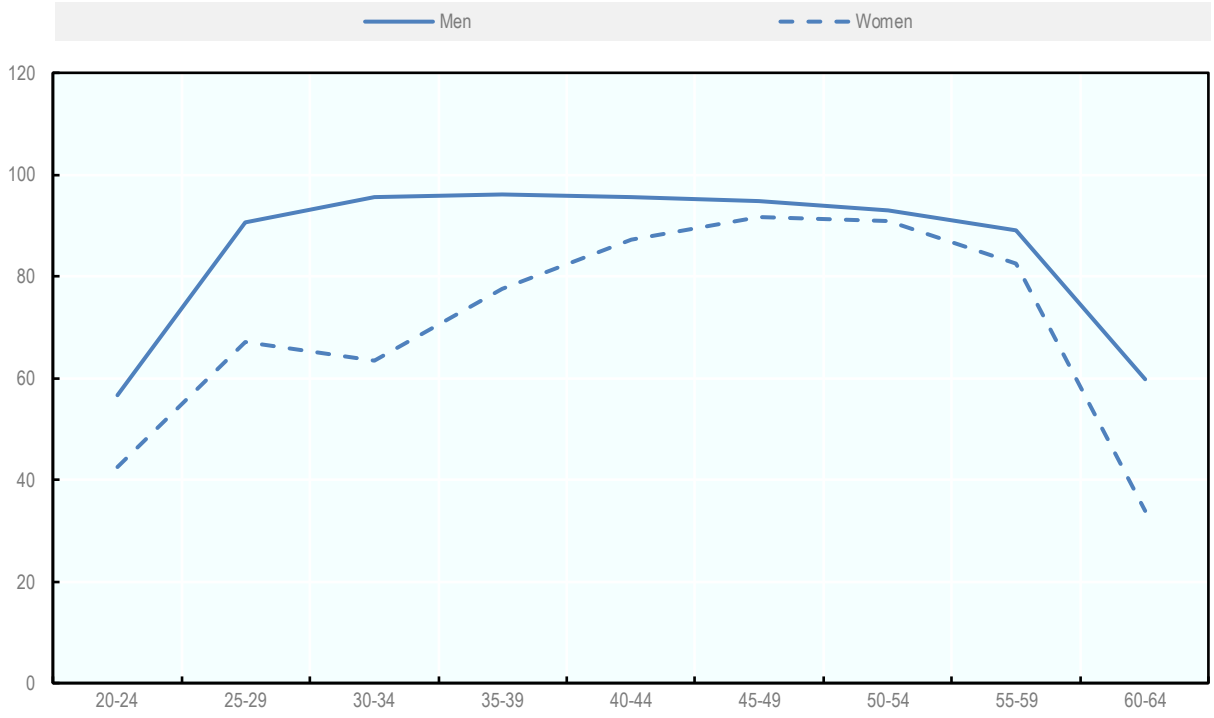
Increasing the labour force participation will raise potential GDP and alleviate the weight of pension expenditures on public finances over time. Labour market participation has been increasing in theyears before the COVID-19 crisis as the economy was booming and experiencing shortages in the labour market. The employment rate in the Czech Republic is above the OECD average. Nevertheless, the employment

rates of the young (15-29-year olds), older persons, people with disabilities and mothers of young children still record significant gaps to those of prime age men (OECD, Forthcoming[4]).

In particular, while the employment rate between men and childless women differs only slightly, female labour force participation drops once women have children (Figure 2.10). The difference between the employment rate of women aged 25-49 without children and women with children under the age of six in 2016 exceeds 30 percentage points (Figure 2.11). This places the Czech Republic among the three EU countries (together with the Slovak Republic and Hungary) with the most significant consequences of childbirth on mothers' employment. The break in the employment history of mothers further translates into both gender gaps in the overall employment rate and low earnings.

Figure 2.10. Age-employment profile by sex, 2018

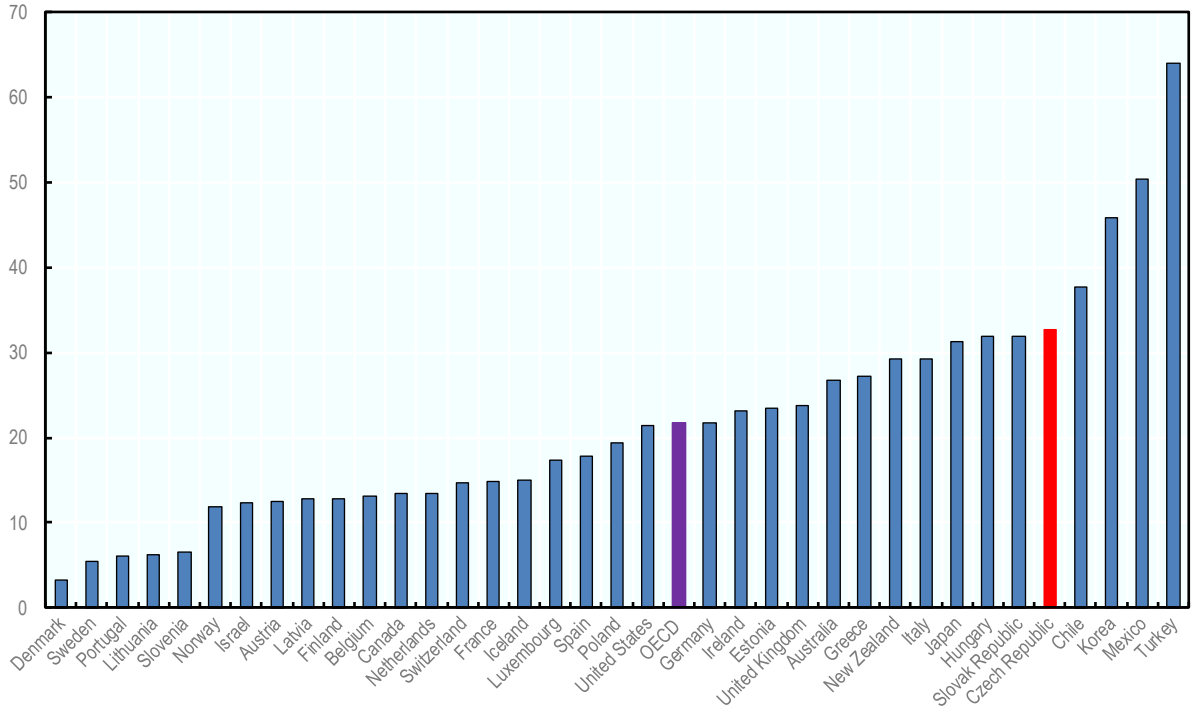
Employment-to-population ratios (%) by sex, and five-year age group



Source: OECD Employment database.

Figure 2.11. Employment gap of women with children

Employment gaps with respect to men aged 25-54, percentage, 2016 or nearest



Note: Mothers with young children refer to working-age mothers with at least one child aged 0 to 14 years.
Source: OECD (2018), *Good Jobs for All in a Changing World of Work: The OECD Jobs Strategy*, https://doi.org/10.1787/9789264308817-en.

The long break in young mothers' employment is partly due to parental leave rules, which do not incentivise resuming work. Spending on maternity and parental leave is the highest among OECD countries, reflecting a public policy preference for home care over formal childcare. Spending on cash benefits are at around 2.4% of GDP among the highest in the OECD, while spending on childcare servicesrepresents only 0.5% of GDP (OECD, 2018[5]). Despite recent efforts to increase access to childcare facilities, childcare supply remains limited. Rebalancing the generous cash benefits for childcare toward more childcare facilities would help women with children participate in the labour market while reducing the incentives to stay at home.

In addition, long parental leaves might reduce women's participation to the labour market. The maximum length of entitlement for parental allowance is until the child is aged up to three years. Childbirth and long maternity/parental leave affect the career opportunities of women. Re-entering the labour market after taking parental leave seems to be especially difficult. Returning to work is partly hindered by inflexible work arrangements, and about 60% of women with children up to six years became unemployed immediately after their parental leave. In 2016, only 9.8% of working women in the 20-64 age group worked part-time, most of them mothers with children of up to six years (OECD, 2018[5]; Forthcoming[4]). Increasing the flexibility of jobs by providing and enforcing existing rights for part-time work, flexible teleworking arrangements and shared jobs can support the re-entering of skilled females into the market.

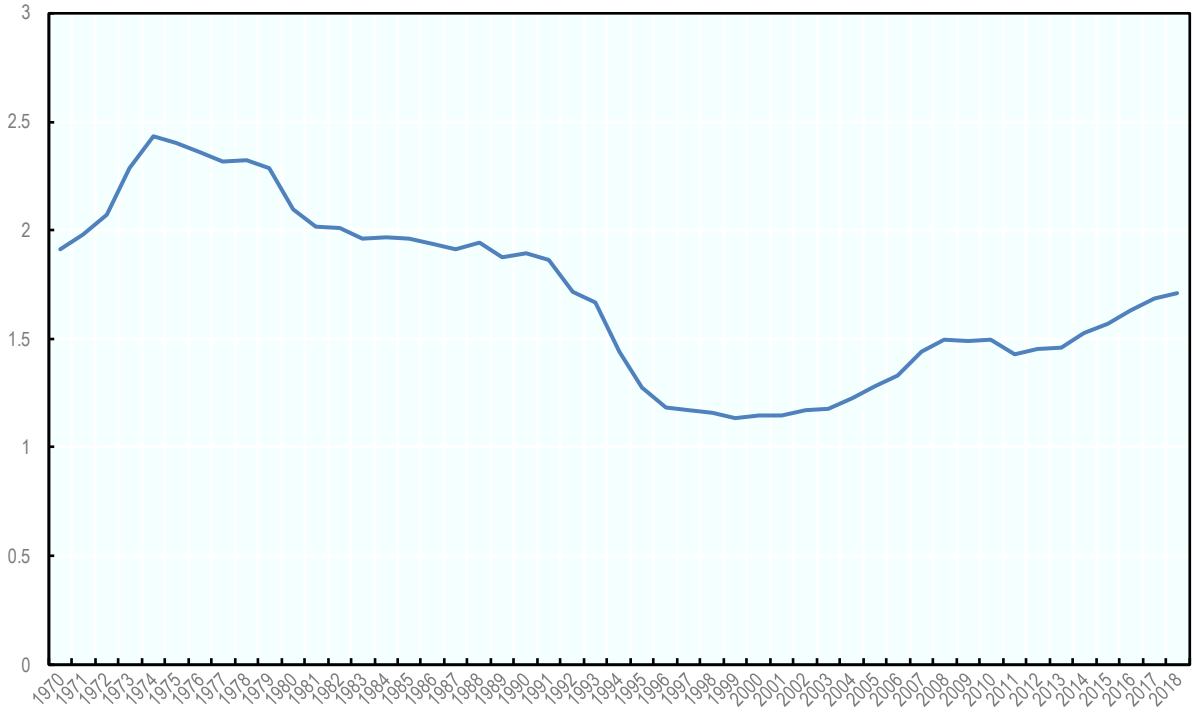
2.3.2. Trying to raise fertility rates further

The fertility rate has been increasing since the low point in 1999 at 1.13 child per women. In 2018, the number of children per women was about 1.71 (Figure 2.12). According to official projections, the fertility

rate will converge to 1.74 in the long-run, assuming that fertility among young women will continue rising at the rate observed during the last eight years for another eight years before stabilising. However, assuming for instance that the upward fertility trend lasts for 15 years would lead to a long-term fertility rate of 1.83. Such levels are far from being unrealistic as they match the most fertile countries in the EU (Table 2.4).

An increase in fertility rate, in the next five years, would bring more people in working-ages before the projected peak in ageing spending in 2059. Current government family policies, though focusing on cash benefits, have the potential to boost maternity. However, facilitating access to childcare services would encourage, in particular, high-skilled women to give birth as in EU countries like France.

Figure 2.12. The fertility rate is increasing



Source: The Czech Statistical Office.

Table 2.4. Total fertility rates in 2018 in selected European countries

EU-27	**Czech Republic**	Denmark	Ireland	France	Slovakia	Sweden	United Kingdom
1.55	**1.71**	1.73	1.75	1.88	1.54	1.76	1.68

Source: Eurostat.

2.3.3. Facilitating migration

Migrants affect pension prospects mainly through their impact on both the workforce and the number of pensioners. To compensate for labour shortages in the context of an ageing society, policies can attract skilled labour into the Czech Republic. However, attracting foreign workers from outside the EU faces several challenges, including language barriers and current migration policies. By 2015, most newly arrived migrants were from Eastern Europe, i.e. from the Slovak Republic, Ukraine and Russia. In November 2015, a special migration procedure was introduced for high-skilled workers from Ukraine. This project

"Special Procedures for Highly Qualified Workers from Ukraine" gave participants priority access to embassies when applying for the Employee Card. The number of beneficiaries was augmented regularly in recent years to cope with shortages in the labour market.

Migration policies should be reconsidered to attract workers from countries other than Ukraine and Eastern Europe. Programmes were put in place to attract workers from Mongolia and the Philippines. Easy accessible information about educational degree verification, work opportunities and the availability of language courses could raise awareness among skilled workers to consider the Czech Republic as a destination. Already, in 13 out of 14 regions of the Czech Republic regional centres for support of the integration of immigrants to co-ordinate the efforts of local authorities, NGOs and other stakeholders have been set up to provide among other things language courses, information, advice, cultural events, welcome and orientation courses. These efforts should be scaled up to facilitate the integration of workers and their families.

2.3.4. Coping with labour market developments

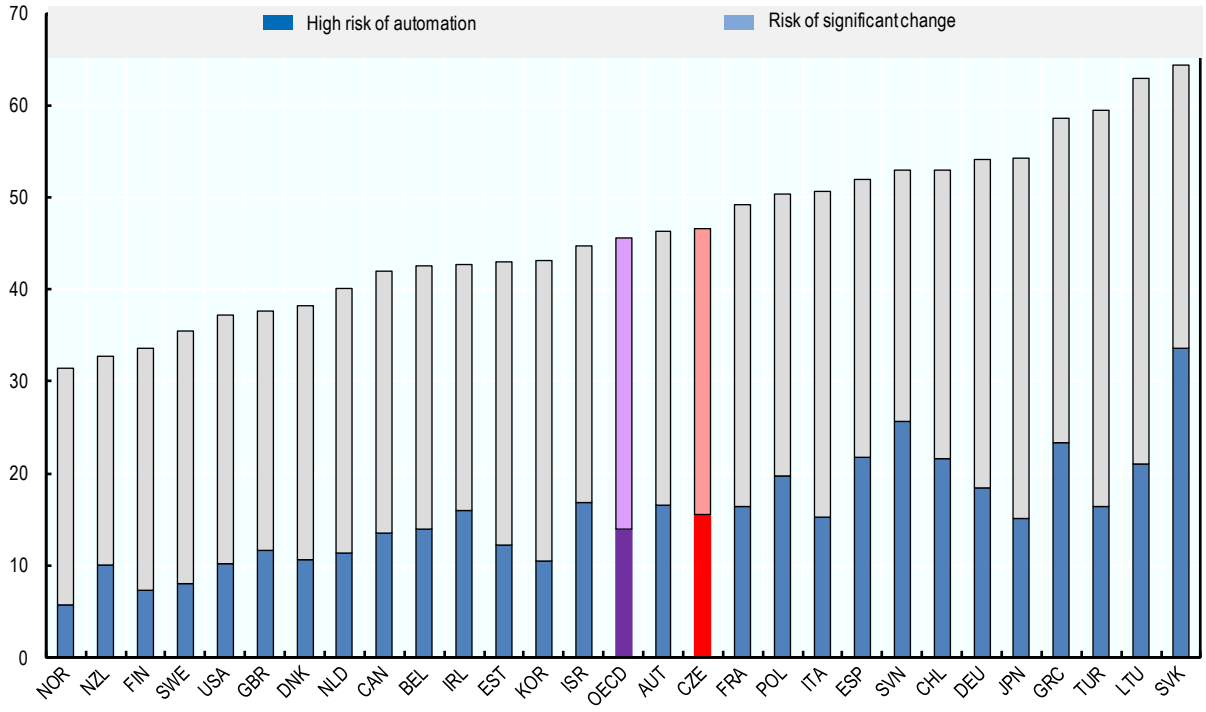
Industry's contribution to GDP in the Czech Republic is one of the largest across OECD countries (32% of GDP). The country has benefitted in recent years from the booming manufacturing sector, which has reduced unemployment to record lows and driven high wage growth. Looking forward, technological change presents risks that could affect the manufacturing sector and therefore the structure of jobs, level of employment and accumulation of pension rights. Technological change can also lift incomes and create new types of jobs.

Realising the opportunities from automation, digitalisation and robotisation will require overcoming their challenges

New technologies also generate large number of jobs. Automation, digitalisation and robotisation are essential for ongoing productivity change. However, they can destroy many jobs, in particular in the industrial sector. The OECD estimates that the share of jobs at high risk of automation (i.e. those with a probability of being automated of at least 70%) is around 14% on average across the OECD (OECD, 2019[6]) (Figure 2.13). The Czech Republic ranks slightly above the OECD average with 15.5% of jobs at high risk of automation. Nevertheless, those who lose their jobs out of automation may not be the beneficiaries of newly created jobs if not prepared or re-skilled adequately. Keeping those people in employment is essential for the accumulation of pension rights and for maintaining participation rates.

Figure 2.13. Jobs at risk of automation in OECD countries

Share of jobs at a high risk of automation or a risk of significant change (%)



Note: Jobs are at high risk of automation if the likelihood of their job being automated is at least 70%. Jobs at risk of significant change are those with the likelihood of their job being automated estimated at between 50 and 70%. Data for Belgium correspond to Flanders and data for the United Kingdom to England and Northern Ireland.
Source: OECD Employment Outlook 2019.

Moreover, countries with relatively low labour costs have witnessed a slower process of automation and for that reason, do not display a similar pattern of job polarisation as more industrialised countries (OECD, 2019[6]). As a relatively low-wage country, the Czech Republic so far has not experienced important investment in labour replacing technologies. Nevertheless, as wages converge to the EU average, there is a risk of further development of automation and job destruction, leading to higher unemployment and lower accumulation of pension rights.

Moreover, the Czech labour market is shifting towards higher-skilled employment. Since transitioning from central planning, the service sector has expanded and manufacturing has become tightly integrated into global value chains, changing the skills needed in the labour market (OECD, 2014[7])). Sectors such as manufacturing, IT and business services will continue expanding, creating new jobs. Employment projections from CEDEFOP (2017) suggest that the need for high-skilled workers will increase, whereas the demand will decrease in low and middle-skilled employment. Antal et al. (2015[8]) who showed that low-skilled jobs are at the greatest risk find similar results. By contrast, the demand for highly skilled workers, especially those with a technical education, is found to increase. Providing workers with the right skill set and training to adapt to a changing environment will also increase the resilience towards automation.

Ensuring non-standard workers also accumulate pension rights

Career length is an important factor for pension entitlements and, short and interrupted careers usually lead to lower pension levels. Pension entitlements are not equally sensitive to incomplete careers across

the OECD, however. Non-standard forms of employment encompass all forms of work that deviate from the "standard" of full-time, open-ended contracts with a single employer (OECD, 2019[6]). They include, therefore, workers with temporary jobs, part-time contracts, and those who are self-employed. Many forms of non-standard work are associated with reduced (or no) access to employer and social benefits, and with lower accumulation of pension rights.

The Czech Republic has not experienced so far an important development of these non-standard forms of work, except for self-employment (OECD, 2019[6]). While temporary employment has increased in half of the OECD countries, it remained stable in the Czech Republic at around 10% between 2000 and 2017. Part-time work is also very low in the Czech Republic, but that may not be seen as a positive indicator as part-time work is often associated with higher labour participation of women with children and old-aged workers. The low development of these non-standard forms of work is associated to the high share of industry in the economy, which in general provides standard forms of employment. The development of non-standard forms of work in many OECD countries is correlated with the expansion of the service sectors and new form of jobs (OECD, 2019[6]).

Part-time workers in the Czech Republic are covered by the general social protection scheme, as are workers in standard employment. The social security contribution rate is identical at 28% for all types of employment contracts, be they part-time or full-time. A low minimum level of earnings equal to 8% of the average wage is imposed for pension entitlements. Given the share of the basic pension component in the total pension, the incidence of these non-standard forms of work on pension levels is limited in the Czech Republic.

Self-employment is high

After the democratic revolution, the number of self-employed workers increased substantially, encouraged by attractive tax and social contributions treatment. The Czech Republic had around 1 million self-employed workers in the mid-90s. The number of self-employed workers has been stable, but their share in total employment increased by 2 percentage points between 2000 and 2017, to 17%.

The Czech pension scheme is relatively generous for the self-employed. There is an important redistribution within the pension system from employees to the self-employed. Theoretical pensions of the self-employed relative to employees reach around 80% in the Czech Republic (see Figure 1.27 in Chapter 1). The justification of such policy is not clear. In addition, given the development of new forms of work such as platform-related jobs, the number of own account/self-employed workers may increase substantially. This calls for reforming the contribution base of the self-employed (Chapter 1).

2.4. Pension reforms are needed to ensure financial sustainability

Different options of policy reform exist to cope with the impact of ageing on public finances. In particular, increasing the retirement age reduces the number of age cohorts in retirement while augmenting the labour force. Indexing pensions in payment on price inflation would reduce spending while preserving the purchasing power of retirees, but it would raise the income gap between retirees and workers. Increasing contribution rates and taxes make workers carry a large burden of financing the impact of ageing. Specific changes to the pension rules can also be made that would affect the level of the first payment by changing for instance the assessment base, the uprating of past wages or the accrual rate (see Chapters 1 and 3 or the proposals of the Fair Commission on Pensions).

The choice between these options is a policy decision that ultimately reflects the degree of fairness and redistribution desired. The simulation exercise focuses on the main parameters to give an overview of the different routes that could be taken to close the financing gap driven by ageing. Due to the planned increase in retirement age until 2030, pension spending will remain stable in the next decade and will start to

increase slowly before accelerating from 2040. This dynamics of pension spending allows to introduce reforms that will progressively affect spending and/or revenues.

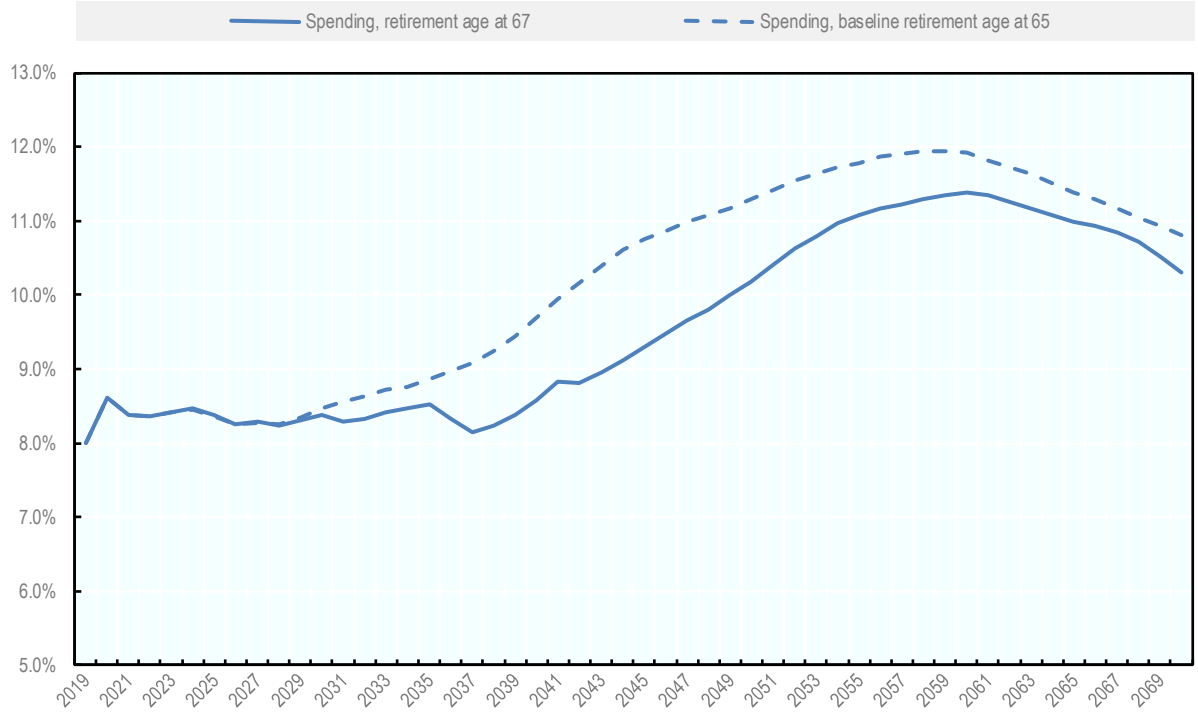
2.4.1. Increasing the retirement age

The current planned increase in the statutory retirement age to 65 in 2030 is prolonged to 67 after 2030. The simulation takes into account the impact of the increase in the retirement age on the active population and on GDP. However, no changes in labour productivity is introduced.

In the increasing retirement age scenario, the projected spending would be stable until 2040 before rebounding and reaching a peak in the late 2050s, albeit at a lower level compared to the baseline: in 2050, pension spending would be lower by 1.1 percentage points of GDP. In 2059, the peak year of pension spending, the reform would lower spending by 0.6 percentage point (Figure 2.14). The impact of increasing the retirement age on spending is higher between 2035 and 2060, it diminishes over time as big cohorts of retirees born in the 1970s leave the pension system.

Figure 2.14. Projection of pension spending with increasing retirement age to 67

Progressive increase in retirement age compared to current legislation, in percentage of GDP

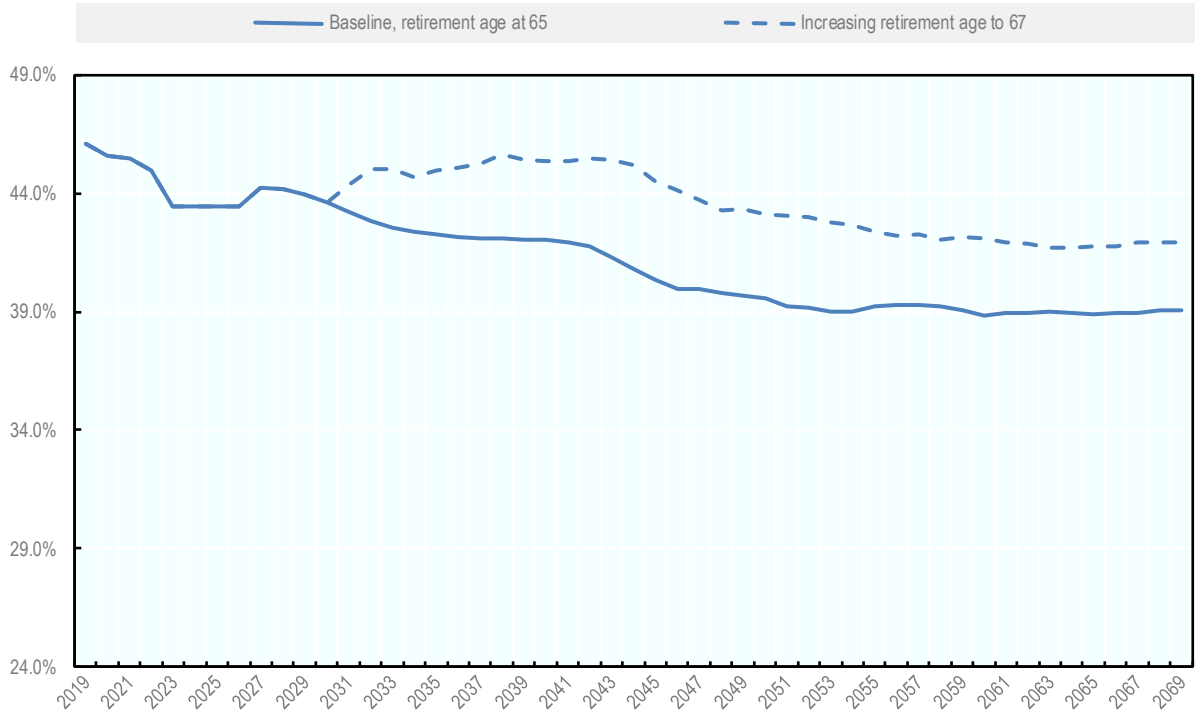


Source: OECD simulation, Cohort model.

These projections include the increase in pension levels induced by higher retirement ages. Under the assumptions that employment and participation rates are translated fully to higher retirement ages, individuals will on average accrue more contribution periods and pension rights. The pension replacement rate, defined as the ratio of newly granted pensions on average wage, would increase on average by 3 percentage points over the projection period (Figure 2.15). Therefore, increasing the retirement age improves the adequacy of the pension system. Also, increasing the retirement age will increase the revenues of the pension system as more people contribute and for longer. Overall, increasing the retirement age will thus reduce the deficit of the pension system (see Fall (Forthcoming[3])).

Figure 2.15. The pension replacement rate increases with retirement age

Ratio of the newly granted pensions to the average wage



Source: OECD simulation, Cohort model.

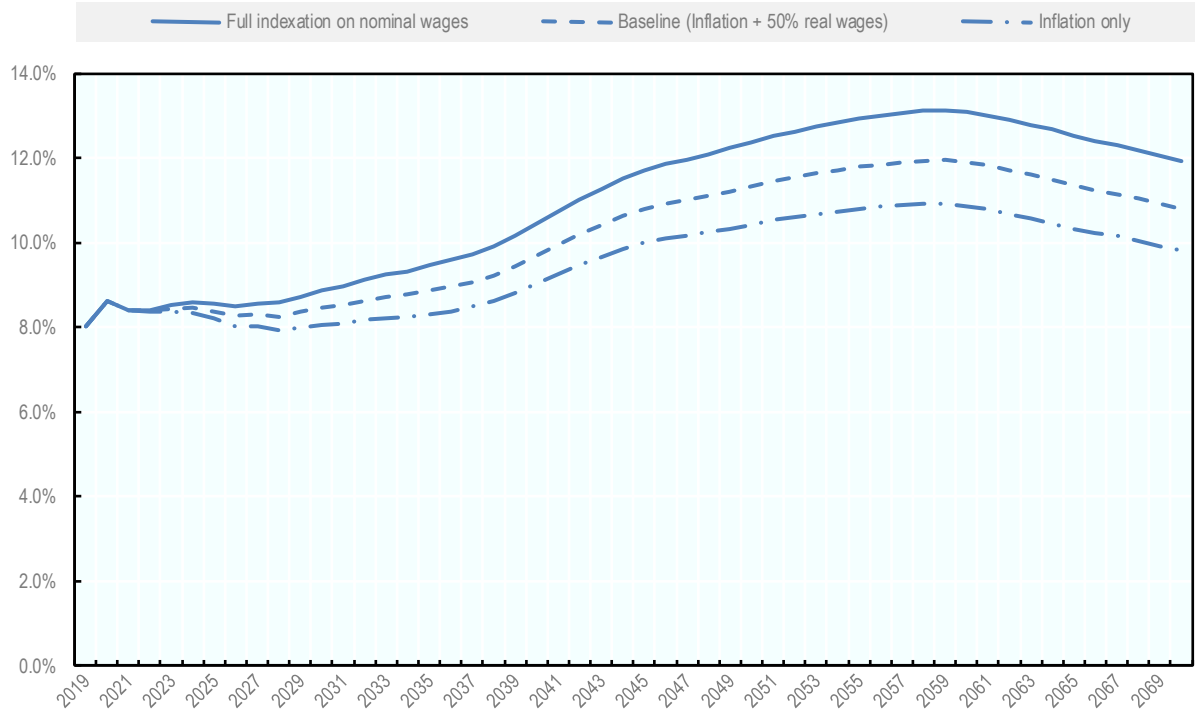
2.4.2. Indexing pensions with inflation

Another reform option is to change the indexation of pensions. In the current legal framework, pensions are indexed with inflation and half of real-wage growth. An alternative scenario would consist in indexing pensions with inflation, preserving only their purchasing power. Overall pension spending is significantly lower when the real-wage indexation component is removed. At the peak in 2059, pension spending would be 0.9 percentage point of GDP lower than in the baseline (Figure 2.16). This impact is comparable to that from increasing the retirement age.

However, in recent years, pension indexation has been more generous than the indexation rule. Guillemette (2019[1]) projections based on estimates of past pension indexation behaviour found that pension spending would reach 12.7% of GDP in 2060 in the Czech Republic. When assuming that old-age pensions are fully indexed on nominal wages in the future, pension spending would reach 13.1% of GDP in 2060 in the cohort model. These simulations underline that indexation is an important tool for pension finances.

Figure 2.16. Indexation of pensions with inflation will reduce expenditures

Pension spending with indexation of pensions with nominal wage, inflation plus 50% real wage growth and on inflation, in percentage GDP



Source: OECD simulation, Cohort model.

2.4.3. Increasing fiscal resources for the pension system

The macroeconomic framework allows simulating increases in taxes on labour, corporate income and value added tax (VAT). One can compare the effectiveness of these policy options by computing the effects of raising each tax separately so that additional revenues collected (ex ante) would represent 1% of GDP. Tax increases have negative effects on the macroeconomic aggregates, which tend to decrease all types of public revenues (Table 2.5). There are negative effects of increasing any tax. For a tax increase targeting 1% of GDP of additional revenues ex ante, the net additional revenues is only between 0.4% to 0.5% of GDP ex post, while wages and employment both decline by 2%, which represents a 4% drop in labour earnings as a whole.

Increasing the value-added tax (VAT) appears to be the less efficient scenario as a large share of household income, and thus consumption depends on labour earnings. At the same time, VAT is levied on investment goods, and thus, a higher VAT increases the cost of capital, so that it is at the same time depressing supply and demand.

Comparable increases of corporate taxes or social contributions are likely to bear the same effect overall on GDP and public revenue collection. However, the negative effect of increasing taxes on corporate earnings on employment is lower than the effect of increasing social contributions.

Because the model functions at the margin, it is linear and one can add the columns of Table 2.5 to analyse the mix of fiscal measures. For instance, shifting part of social contributions to additional taxes on corporate income or other capital income would allow for a given level of public revenue to reduce the pressure on labour tax and thus to boost employment.

Increasing the progressivity of income taxes or differentiating the corporate taxation with size are other options that could be considered. However, high tax collection through progressivity raises distortions and efficiency issues, and therefore needs to be carefully designed. The evaluation of the impact of such reform is beyond the scope of this pension study.

Table 2.5. Long-run impact of tax increases on GDP and tax revenues

Type of tax	Corporate tax	Social contributions	VAT
Real GDP in percentage of long run level	-1.7	-1.8	-1.9
Employment in percentage	-0.8	-2.0	-1.5
Unemployment rate in pp	0.6	1.6	1.1
Real wages in percentage	-0.9	-0.5	-0.4
Public revenues in pp. GDP	0.5	0.5	0.4
Taxes on labour in pp. GDP	-0.3	0.7	-0.3
Taxes on capital in pp. GDP	1.0	0.0	0.0
Indirect taxes in pp. GDP	-0.2	-0.2	0.7
Baseline effective tax rate	*5.5*	*28.8*	*13.3*
Increase in effective tax rate in pp	*2.2*	*2.5*	*1.2*

Note: The table presents the long-term effects of an increase in three types of taxes so that additional revenues before the economy adjust would represent one GDP point. For the corporate tax, such a policy would imply to increase the effective tax rate by 2.2 percentage points (from 5.5%). The long run GDP level would fall by 1.7% compared to where it would have been without the policy, while employment would decrease by 0.8% compared to the baseline scenario and the unemployment rate would increase by 0.6pp – going from 3% to 3.6%. Real wage growth would decrease by 0.9% from the baseline scenario. After the economy would have adjusted to the new measure, the total public revenues collected would be 0.5 percentage points of GDP higher compared to what would have occurred in the absence of tax increase.
Source: Simulations from the macroeconomic framework (Fall, Forthcoming[3]).

2.4.4. Increasing social contributions of the self-employed

A macroeconomic assessment of increasing the social contributions of the self-employed indicates that it is likely to reduce employment and have negative effects on GDP as well (Table 2.6). Increasing social contributions for the self-employed, by expanding their tax base, would have, however, less damaging effects than raising the social contribution rates for all workers. However, a thorough assessment of the effects of changing the taxation of the self-employed requires individual data, and is beyond the scope of this study. For a given gross labour income, the self-employed are indeed less taxed, as they can deduct a large share of their income as costs from their tax base. As a result, their effective social contribution rate is much lower than that of employees.

2.4.5. Relaxing the mandatory contribution period

The mandatory 35 years of validated contribution period or 30 years of contributed period to be eligible for a pension will start to be binding in the late 2050s. The simulations show that on average around 10% of a cohort could reach the statutory retirement age without fulfilling the contribution period requirement (Fall, Forthcoming[3]). Though this is a projection and is subject to variations of career paths depending on the future of the labour market, it gives an indication on the degree of strictness of the contribution period requirement. An alternative is to allow the possibility to retire at the statutory retirement age but with a pension proportionated to the validated contribution period. Relaxing the mandatory contribution period, once the statutory retirement age is set at 65, will increase spending by slightly less than 0.2 percentage point of GDP while revenues will only marginally be affected.

Table 2.6. The impacts of the different policy options

Policy options	Deficit at peak year (in pp)	Impact on employment (in percentage)	Impact on GDP (in percentage of long run GDP level)	Other effects
Relaxing mandatory contribution period	+0.2	Marginal	Marginal	Bridge coverage of "unlucky" workers
Increase effective capital tax rate by 2.2 percentage points.	-0.5 (1)	-0.8	-1.7	Foreign capital losses are fully taken account, but are likely to be lower in practice, as transfer of production units abroad take time.
Increase self-employed effective contribution rate by 5 points	-0.2	-0.7	-0.8	Increase in fairness, increased tax evasion of self-employed
Increase SRA until 67	-0.7	+3	+3	Productivity losses, actual participation likely lower than projected
Old pensions indexed with inflation	-0.8	Limited	Limited	Impact on GDP likely negative but precise estimate would require much more complicated macroeconomic modelling with heterogeneous agents.

Note: 1) The net effective impact on the deficit is slightly lower if the changes in spending to GDP ratio is taken into account.
Source: Calculations from the cohort model and the macroeconomic framework (Fall, Forthcoming[3]).

2.5. Policy options

2.5.1. A need to reform the pension system

The number of old-age people is projected to increase by about 50% between now and 2070. In the meantime, the working-age population, aged 19 to 64 is expected to decline in the Czech Republic by 18% in 2059 compared to 2019. The old-age dependency ratio, defined by using the retirement age as the age boundary, is expected to increase by 50% between 2035 and 2060. However, given the planned increase in the statutory retirement age by 2030, the dependency ratio will remain stable up to 2035.

As confirmed by the simulations, pension spending is projected to increase by 3.3 percentage points by 2060 at 11.9% of GDP. This trajectory calls for a phased-in reform of the pension system to increase its revenues or reduce its spending. Among the different options to help close the financing gap, increasing the retirement age in line with life expectancy gains appears the most efficient component that will need to be completed by other measures. It also has the potential to boost growth.

2.5.2. Rebalancing financing sources and increasing government budget transfers

The financing sources of the public pension system presents some limits. Firstly, by contrast to most OECD countries, it is currently solely wage-based social contributions covering contributory and non-contributory benefits. This leads to an unbalanced structure of government revenues, which heavily rely on social security contributions. While general government tax revenues amounted to 35% of GDP in 2018, social security contributions were almost 15% of GDP. Secondly, there is no clear separation between the government budget and the pension scheme account. This limits the transparency and accountability of the pension system. The non-contributory components of the pension scheme, in particular family benefits, weigh on pension expenditures financed through wage contributions. There should thus be an effective separation of the pension scheme's account and the government budget. This would allow to clarify the transfers from government budget to cover family and other benefits decided by the government. The

simulations indicate that increasing corporate or capital income taxes might be the most indicated instruments to finance increased government transfers to the pension system to compensate for family benefits for instance.

2.5.3. Mandatory contribution period

The Czech Republic is an outlier by requiring that either 30 years are contributed or 35 years are validated to be eligible to an old-age pension, unless one retires up to five years after the statutory retirement age. So far, such a long required period has not been binding because of high-recorded employment for old generations and generous validation of non-contributed periods (education, unemployment and parental leave). However, the tightening of the validation of contribution periods, as for example the exclusion of years spent in secondary and tertiary education (from 2010), as well as labour market trends will raise the share of older people not fulfilling the mandatory contribution period. Pensions could be proportionate to the validated contribution period out of the required contribution period for a full pension. Therefore, those who reach the statutory retirement age without 35 years validated or 30 years contributed but do not want or are not able to wait five more years to retire would still have a reduced pension.

2.5.4. Preparing to labour market changes

Changes in the occupational structure driven by digitalisation and automation require a holistic policy framework to contain the risk of increasing inequality and lower pension rights. The social security system needs to adapt to new forms of employment and ensure adequate coverage for workers on non-standard work contracts. For instance, contribution rules of the self-employed should be better aligned with rules for dependent workers. Long-term strategies need to be complemented by short- and medium-term solutions focusing on skill upgrading of the existing workforce. As shifting the skill composition of the labour force through young entrants takes time, the current labour force should be provided with adequate training options to adapt to new skill demands. Vocational education should be further developed to play a significant role in overcoming skill mismatches through the involvement of employers to supply workers with the needed skill set.

2.5.5. Key recommendations

- Phase in a reform of the pension system to cope with the expected increase in pension spending by increasing progressively the retirement age in line with life expectancy gains.
- Separate budget and pension accounts and increase government budget transfers to the pension system to finance redistributive components of the pension system.
- Reduce the length of the contribution period to be eligible to old-age pensions at the statutory retirement age and/or introduce a proportional pension to the validated contribution period out of the required contribution period for a full pension.
- Further develop reskilling, vocational training and flexible systems to ease transitions from job-to-job and between sectors.

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3 First layer of social protection for older people

This chapter focuses on the first layer of old-age social protection in the Czech Republic. Schemes discussed here help protect older people with insufficient work history to be eligible to a contributory pension or, more generally, with low retirement income against falling into poverty. The chapter investigates the interaction of the different first-tier schemes and concludes with policy recommendations to improve them.

3.1. Introduction

The first layer of social protection for older people in the Czech Republic consists of first-tier benefits from the contributory pension scheme and several non-contributory safety-net benefits. Currently, nearly all of the about 2 million people aged 65 or older receive contributory old-age or survivor pensions (or both), which include the basic pension amounting to about 10% of the average wage. In addition, 465 000 safety-net benefits support people aged 65+, some of whom receive several benefits. Among these schemes, health-related benefits are predominant while social assistance plays a minor role. Overall, the effective coverage of older people by the first layer of social protection in the Czech Republic is universal.

The contributory old-age pension includes two first-tier components: a flat benefit (basic pension, which is thus independent of earnings), and a minimum amount for the earnings-related benefit (minimum pension). In total, the contributory pension sets a floor on pension income for old-age pensioners – depending on eligibility conditions – independent of their previous earnings levels, equalling about 12% of the average wage, which is roughly half the average value among the 24 OECD countries with such schemes.

In addition, all residents may be eligible to benefits from the safety net, which guarantees a minimum income to all Czech residents in need. The guaranteed income is equal to about 10% of the average wage, slightly below what is offered by the first-tier elements of the contributory pension but only about half the average level in the OECD. The safety net provides care and mobility allowances for people with disabilities, a housing allowance for low earners and social assistance ("*assistance in material need*") in case of both low income and low assets.

The guaranteed minimum income, which is the calculation base for the social assistance benefit, is nominally fixed and, unless passing a new law, can only be changed if inflation exceeds 5% or in case of extraordinary circumstances. As only limited adjustments have been made since the introduction of the scheme in the early 1990s, its value has decreased substantially relative to wages, from more than 30% of the average wage in 1991 to about 10% in 2019. A further fall back of the social assistance relative level would further question whether it can ensure an adequate living minimum when own earnings capacity is limited as in old age.

Today, recipient numbers of non-health related safety-net benefits are low. The reasons for this are complete employment histories in the former Czechoslovakia, record-low income inequality since then, generous validation of non-contributory periods for old-age pensions, especially in the past, and high homeownership rates. The number of pensioners that spent (parts of) their career in former Czechoslovakia will continue to steadily decline while higher reported unemployment, in particular in the 1990s and 2000s, will have more impact on pension benefits. Consequently, a growing share of older people may not reach the high number of minimum contribution years in the Czech contributory scheme in the future and may have to rely on safety nets.

This chapter analyses the schemes that provide the first layer of social protection for older people in the Czech Republic. The following section gives an overview of the current income situation of older Czech people and compares it to other OECD countries. Section 3.3 shows recipient numbers for pensions and safety-net benefits and related expenditure. Section 3.4 presents the different schemes that form the first layer of social protection while Section 3.5 analyses their future challenges and discusses policy options for reform.

3.2. Low inequality and low incidence of income poverty among older people

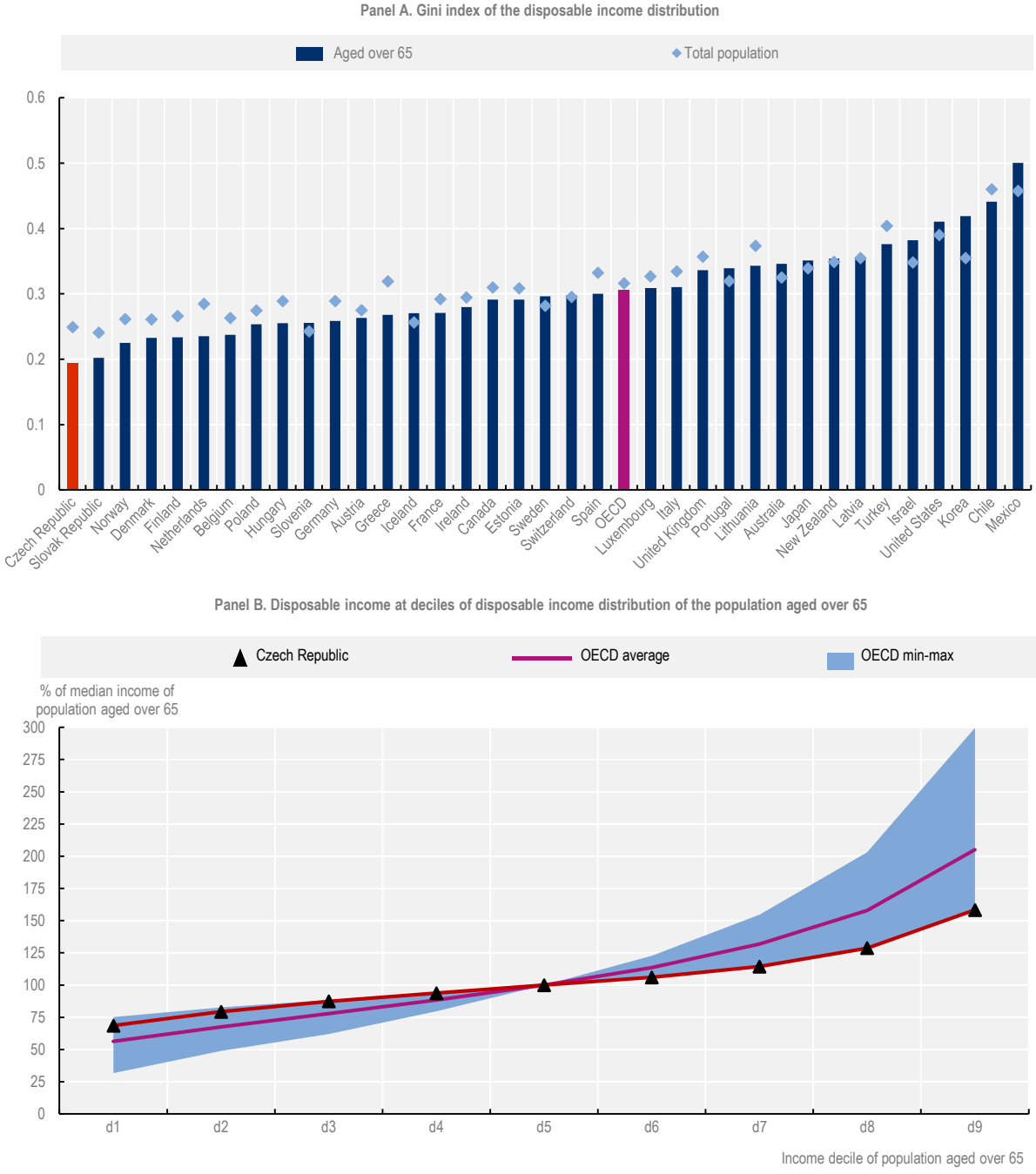
3.2.1. Income inequality among older people is low

Income inequality in the Czech Republic is low. In 2017, the Gini index of disposable income – an inequality indicator that equals 0 if every person receives the same income and 1 if one person receives all income – was below 0.20 for the population aged over 65, the lowest among OECD countries with an average of 0.31 (Figure 3.1, Panel A). It is below the inequality level (measured by the Gini index) in the total Czech population, which is equal to 0.25.

The very low inequality among the Czech elderly results from a flat distribution of income across all income deciles. The income at the first decile, below which are the lowest 10% of incomes among people aged over 65, is relatively high, equalling 69% of the median income of the 66+. The income level at the other end of the income distribution is relatively low, at 158% for the ninth decile, above which are the highest 10% of incomes (Figure 3.1, Panel B). As a result, the 50-10 and 90-10 percentile ratios equal 1.5 and 2.3, respectively, far below the corresponding OECD averages of 1.9 and 3.9. The key explanatory factors for the flat distribution of old-age income are the low wage inequality both in former Czechoslovakia and since then, which has generated a very compressed distribution of pension entitlements, and a highly redistributive pension system (Chapter 1).

Figure 3.1. Low old-age income inequality among OECD countries

2017 or latest available data



Note: OECD min-max shows the minimum and maximum values observed among OECD countries. Disposable income refers to equivalised household disposable income. Data refer to 2017 except for Australia and Israel (2018), Denmark, Mexico, Netherlands and the Slovak Republic (2016), Iceland, Japan, Switzerland and Turkey (2015), and New Zealand (2014).
Source: OECD Income Distribution Database, http://www.oecd.org/social/income-distribution-database.htm (February 2020 version).

3.2.2. Low incidence of relative income poverty at older ages

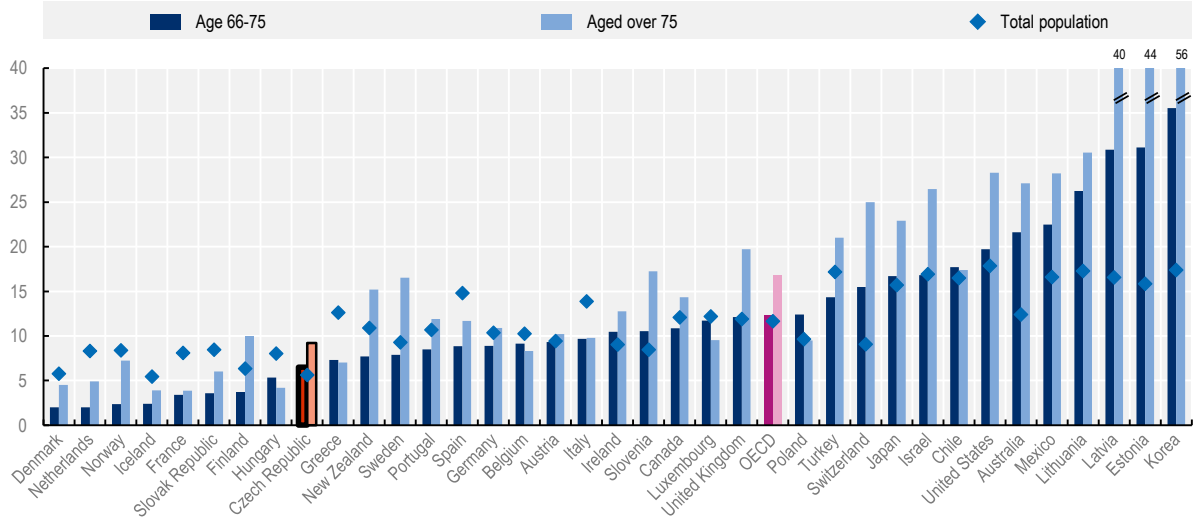
The average disposable income of the Czech population aged over 65 was 26% below that of the total population in 2017. This compares with 13% below in the OECD on average and is one of the lowest relative old-age income levels among OECD countries (Figure 1.6 in Chapter 1). Among the older Czech population, almost four-fifths of disposable income comes from public transfers. The remainder is mostly work income while income from savings or other capital plays only a minor role OECD (2019, p. 185[1]).

Despite low relative income levels of the older population, the old-age income poverty rate, measured as the share of people older than 65 with income below half the Czech median income, is relatively low in international comparison, equal to 7.4% in 2017. As in most other OECD countries, the risk of relative poverty rises with age among the elderly, from 6.5% for the 66-75 year-olds to 9.2% for those aged 76+ (Figure 3.2). Moreover, older women are much more likely to be income-poor than older men (11.0% of women versus 2.7% of men among the 66+) as in nearly all other OECD countries, with the OECD average rates equalling 16.5% and 11.6%, respectively. As in almost all countries, this higher poverty risk of older women compared to older men is largely driven by a larger poverty risk of one-member households that are more common among women than men (MOLSA, 2019[2]).

Extreme vulnerabilities are rare in the Czech Republic as among the elderly living in relative poverty the average income is “only” 11% below the relative-poverty threshold (50% of median income): this so-called poverty depth is among the lowest in the OECD where it is more than twice as large at 23% on average (Figure 3.3).

Figure 3.2. Old-age relative income poverty rate is comparatively low in the Czech Republic

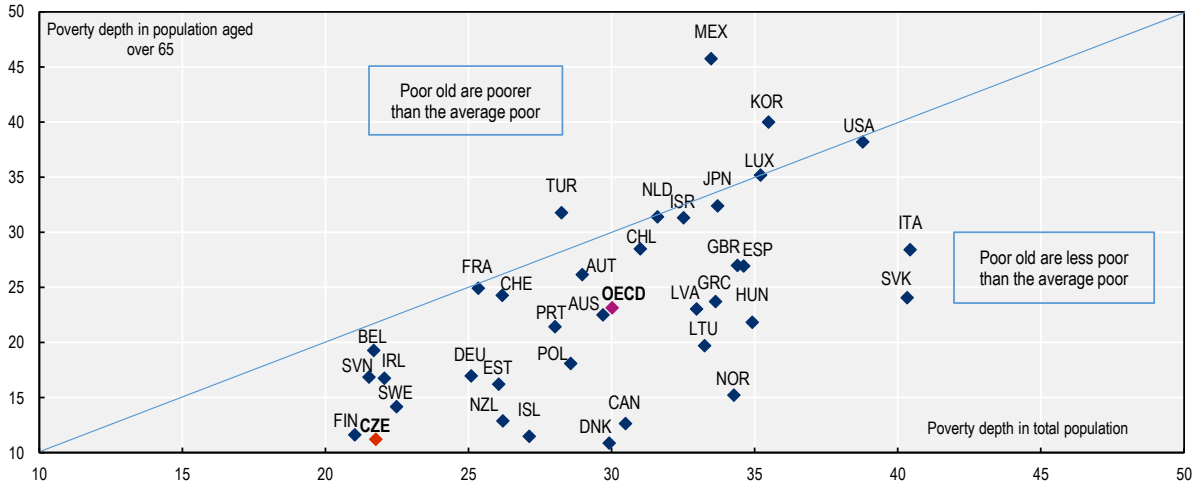
Share of people with less than 50% of the median disposable income in the population, 2017 or latest available data



Note: For better visibility, the scale of this chart excludes the highest observed values, which equal 40, 44 and 56 for people aged over 75 in Latvia, Estonia and Korea, respectively. Disposable income refers to equivalised household disposable income. Data refer to 2017 except for a few countries (see Figure 3.1).
Source: OECD Income Distribution Database, http://www.oecd.org/social/income-distribution-database.htm (February 2020 version).

Figure 3.3. Poverty depth of people aged over 65 is particularly low in the Czech Republic

Gap of the mean income of the relative income poor to the relative poverty line, in percentage of the relative poverty line, 2017 or latest available data



Note: The poverty threshold is defined as 50% of the median disposable income in the total population. Disposable income refers to equivalised household disposable income. Data refer to 2017 except for a few countries (see Figure 3.1). In Germany, for example, the poverty depth of the poor aged over 65 is 17.0%: their average income is 17.0% below the poverty threshold. That is, their average income is equal to 41.5% of median income. The average income of all poor in Germany is 25.1% below the poverty line (poverty depth is 25.1% for the total population).
Source: OECD Income Distribution Database, http://www.oecd.org/social/income-distribution-database.htm (February 2020 version).

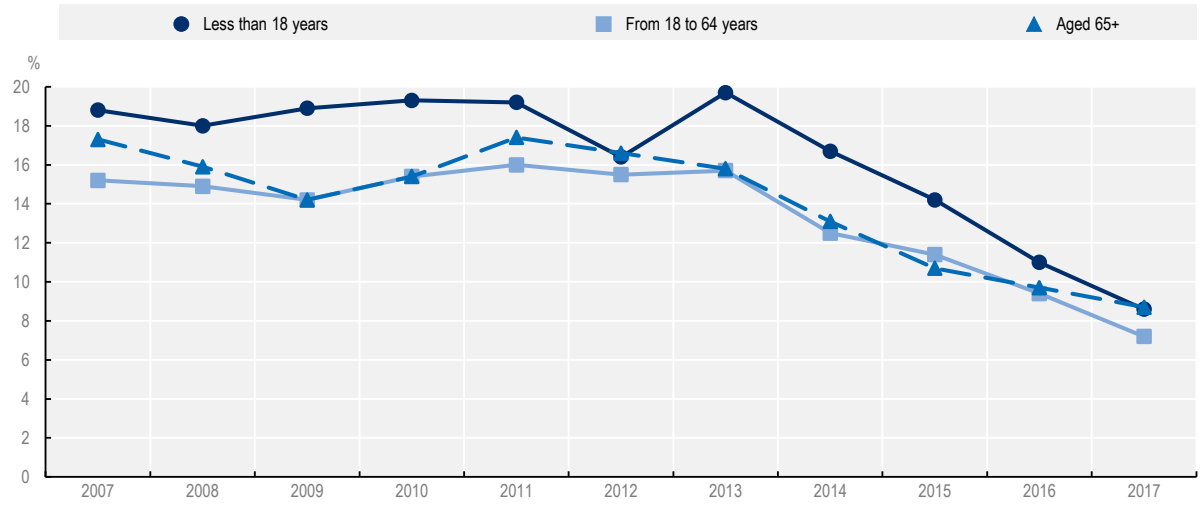
3.2.3. Living standards have improved but old-age relative income poverty has increased

Living standards in the Czech Republic have benefitted from the strong development of the economy, which led to a marked increase in real wages, in particular since 2015.[1] Most people have also experienced a rising disposable income in real terms and the incidence of material deprivation – an indicator of *absolute* poverty – has plummeted in all age groups (Figure 3.4).

In the Czech Republic, as in most OECD countries, average wage gains are only partly transmitted to pensions in payment as earnings-related pensions are indexed to a mix of price inflation and wage growth rather than fully to wage growth (Chapter 1). Therefore, the mean disposable income of older Czech people has risen less strongly between 2004 and 2017 than among other age groups (Figure 3.5, Panel A). Consequently, relative income poverty, which is measured relative to the median income in the total population, has risen among older people – in particular for women (MOLSA, 2019[2]) – unlike in all other age groups (Figure 3.5, Panel B). Moreover, a flat old-age income distribution leads to comparatively strong fluctuations in relative poverty measures over time.

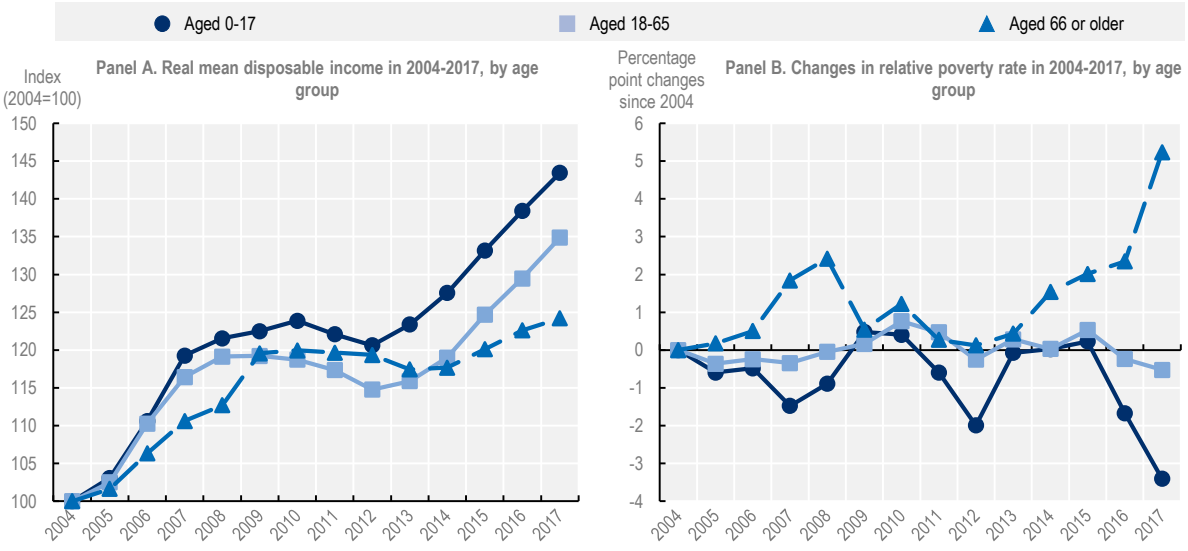
Figure 3.4. Material deprivation has plummeted among all age groups

Percentage of population by age group with enforced lack of at least three out of nine material deprivation items



Note: The nine items of material deprivation relate to economic strain, durables, housing deprivation and environment of the dwelling.
Source: Eurostat, Material Deprivation rate by age group based on EU-SILC survey [TESSI082], https://ec.europa.eu/eurostat/databrowser/product/page/TESSI082 (accessed 8 April 2020). Note that Eurostat reports the year of the survey rather than the year to which the data refer.

Figure 3.5. Incomes have grown substantially among older people, yet at a slower pace than among other age groups



Note: The poverty threshold is defined as 50% of the median disposable income in the total population. Disposable income refers to equivalised household disposable income.
Source: OECD Income Distribution Database, http://www.oecd.org/social/income-distribution-database.htm (February 2020 version).

3.3. Recipients of pensions and safety-net benefits and related expenditure

3.3.1. Recipients

In December 2018, about 2 million people aged 65+ received a contributory pension in the form of an old-age pension, survivor pension or both.[2] This implies that almost everyone aged 65+ is covered.[3] Only a small number of people has to rely on other personal or household income, assets or the safety net.

There were about 465 000 non-contributory safety-net benefits paid to people aged 65 or older in 2018, most receiving on top the contributory pension as the latter achieves almost full coverage. This would correspond to about 22% of the population in this age group, yet the effective coverage ratio is lower as some receive several non-contributory benefits.

Care allowances make up more than half of all safety-net non-contributory benefits among older people (Figure 3.6). Another third are mobility allowances for people with disabilities. Only about 50 000 older people received a benefit unrelated to health in 2018, a vast majority being beneficiaries of the housing allowance. Less than 6 000 people aged 65+ received social assistance, which is based on stricter means testing than the housing allowance, including the evaluation of both income and assets.[4] Consequently, receivers of social assistance are usually also beneficiaries of the housing allowance unless they live in a form of housing that does not qualify for the benefit. Additional safety-net schemes are available for people aged 65 or older, but they play a minor role.[5]

Overall, old-age safety-net benefits that are unrelated to health are almost irrelevant in the Czech Republic today. A low level of income inequality and a high coverage rate from contributory pensions are the main drivers of this pattern. However, changes in contribution histories combined with potential measures to improve financial sustainability (Chapter 2) are factors that may increase the number of people that will have to rely on the safety net in the future (Section 3.4).

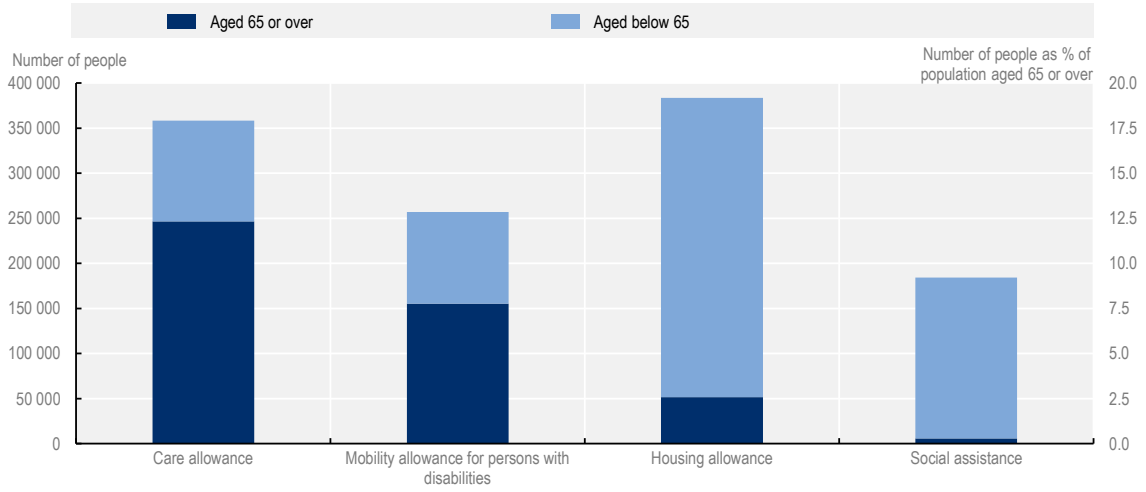
3.3.2. Public expenditure

Public spending on safety-net benefits paid to older people is low. In 2019, the expenditures for care and mobility allowances – the two main health-related safety-net benefits – equalled 0.36% of GDP. Less than 0.02% of GDP were spent on the housing allowance and an even much smaller amount on social assistance. This compares to slightly more than 6.3% of GDP spent on contributory old-age and survivor pensions for people aged 65+, including about 1.5% of GDP for the flat component (basic pension).[6] Total spending on old-age and survivor pensions irrespective of age was 7.3% of GDP. The comparatively low spending on old-age safety-nets is primarily due to low recipient numbers, but also to low social assistance benefits.

Housing allowance expenditures for older recipients have substantially increased in recent years, from an extremely low level, while social assistance spending although increasing has remained negligible from a public-finance perspective (Figure 3.7). Housing and living costs have strongly increased over the last decade while the social assistance benefit level has only slightly been raised in nominal terms.

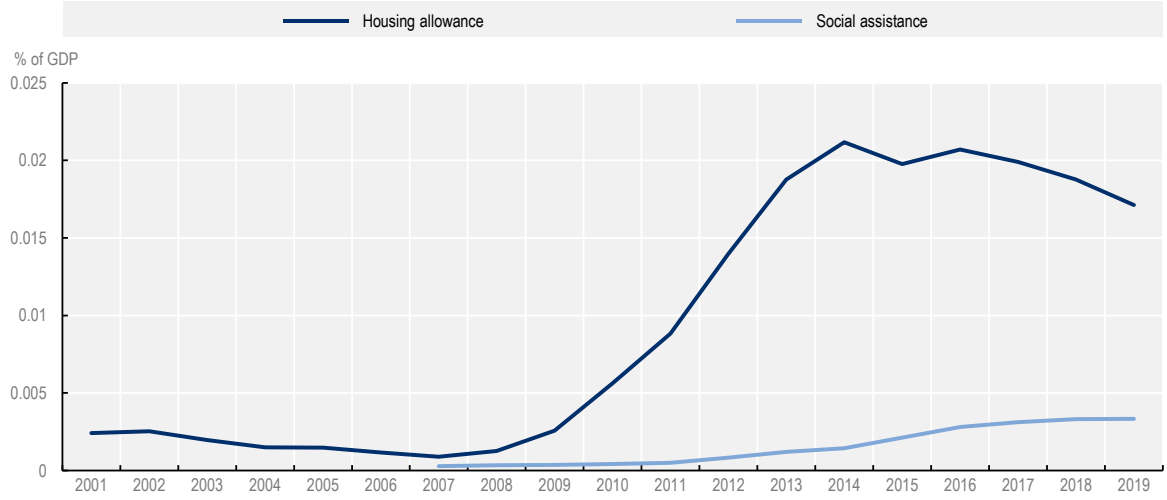
Figure 3.6. Few recipients of non-health related safety-net benefits in older age

Recipients by type of benefit in 2018, number of people (left axis) and percentage of population aged 65 and older (right axis)



Note: For the purpose of this chart, the population aged 65 or over in 2018 is approximated by 2 million people while the number at 31 December 2018 reported by the CZSO equalled 2 086 617. For housing allowance and social assistance, which are household-based benefits, recipients include all persons sharing the household with the official benefit holder. Not shown are schemes with less than 2 500 recipients aged 65 and older (Special Aid Allowance for persons with disabilities, Immediate Emergency Assistance which is a component of the Assistance in Material Need, Parental Allowance, Foster Allowance) and those that are likely to have less than 2 500 recipients equal to or older than 65, though unknown (e.g. a funeral grant).
Source: Own calculations based on data from the Ministry of Labour and Social Affairs of the Czech Republic and Czech Statistical Office (2020), Population of the Czech Republic – Year 2019, https://www.czso.cz/csu/czso/population-of-the-czech-republic-year-2019, (accessed on 26 March 2020).

Figure 3.7. Expenditures on housing allowance and social assistance for people aged 65 or older



Note: Data for social assistance are not available before the introduction of the current scheme in 2007. For 2018, the data shown represents 4 506 living allowances from the social assistance scheme and 43 302 housing allowances, which were paid to people aged 65 or older in pure senior households. Not covered are those older people that share a household with a younger adult. While precise data are not available the number of such persons cannot exceed 1 101 for the living allowance and 8 337 for the housing allowance. Effective numbers should be only a small fraction of this. Moreover, expenditure data on the emergency assistance benefit from the social assistance scheme are not included as unavailable, yet the benefit has negligible recipient numbers (73 in 2018).

Source: Own calculations based on data from the Ministry of Labour and Social Affairs of the Czech Republic and Czech Statistical Office (2020), Gross Domestic Product by Type of Expenditure at Current Prices. https://www.czso.cz/csu/czso/hdp_ts, (accessed on 28 April 2020).

3.4. Benefits in the first layer of social protection for older people

3.4.1. First-tier pensions in the contributory pension scheme

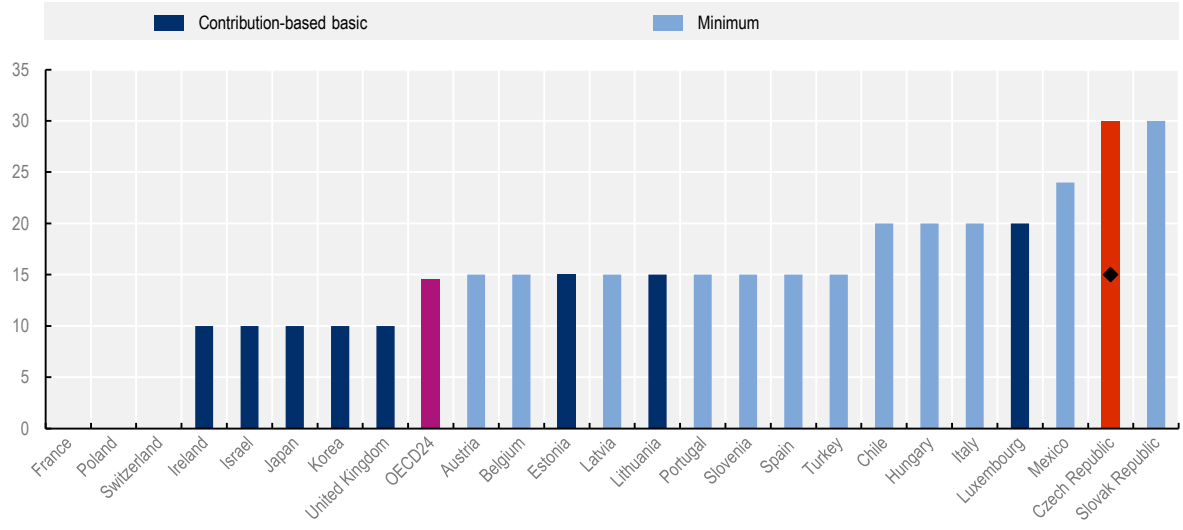
All pensioners receive the basic pension, the level of which is independent of prior earnings and length of contribution history. A minimum pension for the earnings-related component combined with the basic pension sets a floor to the pension benefit level. Eligibility for the old-age pension (both basic and earnings-related components) is based on the length of the contribution history. Retiring at the statutory retirement age requires a contribution length of 30 years or 35 years including validated non-contributory periods (Chapter 1). People with more than 15 years of contributions (or 20 including validated non-contributory periods) can retire 5 years after the statutory retirement age for men.

The Czech Republic – together with the Slovak Republic – stands out among OECD countries with a very long minimum contribution period of 30 years to receive a contribution-based basic or minimum pension at the statutory retirement age. Among the 24 countries with such schemes – the 12 other OECD countries rely exclusively on non-contributory benefits for first-tier pensions – only Chile, Hungary, Italy, Luxembourg and Mexico also request 20 years or more (Figure 3.8). The other 17 countries with contribution-based basic or minimum pensions set considerably lower period thresholds, with the OECD24 average equalling about 14½ years. In some countries, the lower threshold is combined with providing prorated benefits that grow with the length of the contribution period. Pensioners in Ireland, for example, receive a pension with at least 10 years of contributions while the full benefit is paid from 40 years. Among the nine countries with a contribution-based basic pension, the Czech Republic is the only one that does not provide a prorated benefit. About half of the countries with a minimum pension, including the Czech Republic, do not prorate benefits either.[7]

Almost the whole population aged 65 and older receives a pension from the contributory scheme as they fulfil this very high required number of contribution years (Figure 1.12 in Chapter 1). The large coverage of the contributory scheme relates to two main factors. First, periods without contributions such as for education, unemployment, disabilities, care tasks and others are – or were in the past – largely credited as contribution years in the contributory pension scheme (Chapter 1). Second, pensioners, who retire today and especially those who are already in retirement, have spent a large part of their career in former Czechoslovakia with employment rates close to 100%. Those work periods have been fully credited as contribution years in the current contributory pension scheme.

Figure 3.8. Very high minimum number of contribution years for basic and minimum pensions in the Czech Republic

Minimum number of contribution years for contributory first-tier benefits at the statutory retirement age, 2018



Note: For the Czech Republic, individuals with 35 years including validated non-contributory periods can also retire at the statutory retirement age. Individuals with 20 validated years or 15 years of contributions (the mark) can receive a basic (and minimum) pension benefit five years later than the statutory retirement age for men. Pension systems in the Czech Republic and Luxembourg combine contribution-based basic pension with minimum pensions. Australia, Canada, Denmark, Finland, Germany, Greece, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States do not provide contributory first-tier benefits, and are therefore not included in the OECD24 average.
Source: OECD (2019[1]), country profiles, http://oe.cd/pag.

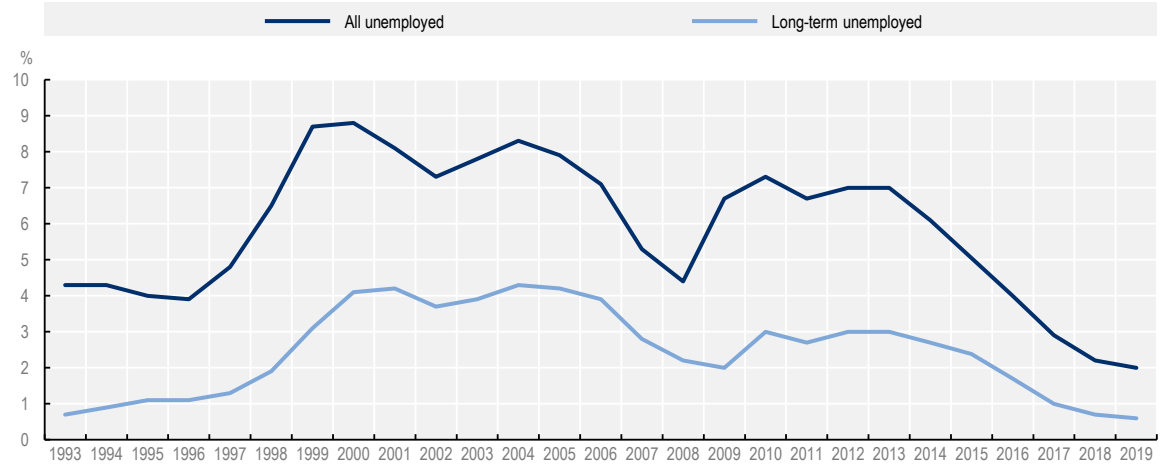
Future pensioners, however, may have faced more disrupted contribution histories. Validation of secondary and tertiary education periods stopped in 1996 and 2010, respectively (Chapter 1). Moreover, over time, the part of the career that a new pensioner has spent in former Czechoslovakia will have steadily diminished. The fall of the Soviet Union and the installation of market-based economies implied some significant disruption. In the transition years in the 1990s and early 2000s many people working in sectors with technologies far from the technological frontier lost their jobs and unemployment rates rose (Figure 3.9).

Based on projections by the Ministry of Labour and Social Affairs (MOLSA), people would reach the minimum number of contribution years two to eight years later in 2050 than in 2017. While in 2017 nearly all people aged 60 (hence born in 1957) reached the minimum number of years contributed or validated for the old-age pension, this is projected to be the case for 99% in 2030 (1970 birth cohort) and 89% in 2050 (1990 birth cohort). OECD simulations presented in Chapter 2 suggest that a substantially smaller share of people will reach the minimum contribution period for an old-age pension, equalling about 90% at the statutory retirement age in 2060 compared to 97% according to MOLSA projections. Moreover, non-standard forms of work, which may be rising, are not as well covered by the contributory scheme as standard employees (Chapter 1 and OECD (2019[1])). In sum, more people may have to rely on the safety net in the future.

In 2019, the contribution-based basic pension was increased from 8.5% to 9.6% of the average wage (OECD definition – from 9% to 10% according to the national definition)[8] compared to 13.6% on average among OECD countries with such a scheme (in 2018). Based on its indexation to the average wage, it will remain at this relative level of 9.6%. The minimum pension level in 2019 was equal to 2.2% of the average wage.[9] It has no indexation mechanism, neither to wages nor to prices and is therefore likely to lose value

in relative and real terms over time. In sum, the contributory pension guaranteed in 2019 a pension income of 11.8% of the average wage, far below the OECD24 average of 22.1% (in 2018, Figure 3.10). This is much lower than in the late 1990s where it was close to 17% of the average wage (Figure 3.13 below). The sharp fall in relative terms in the 2000s is due to both rather few discretionary increases to the basic pension before wage indexation was introduced in 2011 and the stability of the minimum pension in nominal terms. The number of recipients benefiting from the minimum pension is very low today, implying that the vast majority of eligible retirees have pension income beyond the guaranteed level.

Figure 3.9. The unemployment rate peaked in the after-math of former Czechoslovakia

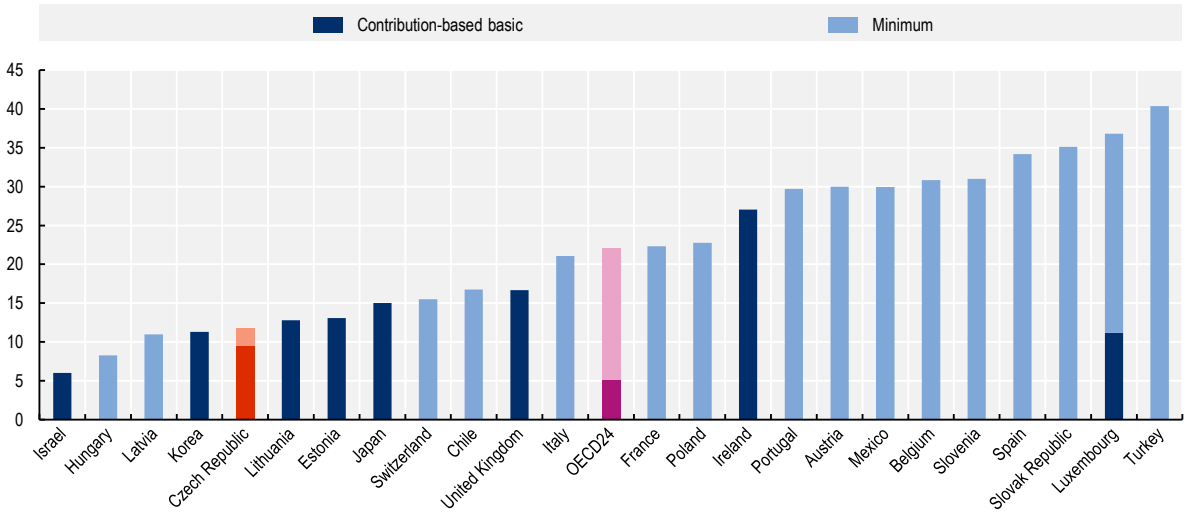


Source: Czech Statistical Office (2020), Key Macroeconomic Indicators, https://www.czso.cz/csu/czso/hmu_ts (accessed on 5 May 2020).

According to projections by MOLSA, the risk of poverty will continue to grow for future pensioners under the current pension rules, with a break around 2040 when a large number of elderly pensioners with low pensions is expected to be replaced by new pensioners that enter retirement with higher pensions (Figure 3.11). The reform proposal of the Commission for Fair Pensions proposes to triple the basic component from 10% to 30% of the average wage, which would bring the Czech Republic closer to countries like Austria, Slovenia and the Slovak Republic.[10] Implementing this proposal would lift pensions in particular for part-timers at the lower end of the earnings distribution (Figure 1.30 in Chapter 1). Rising relative poverty risks might thus be contained.

Figure 3.10. Contributory first-tier benefit level in OECD countries

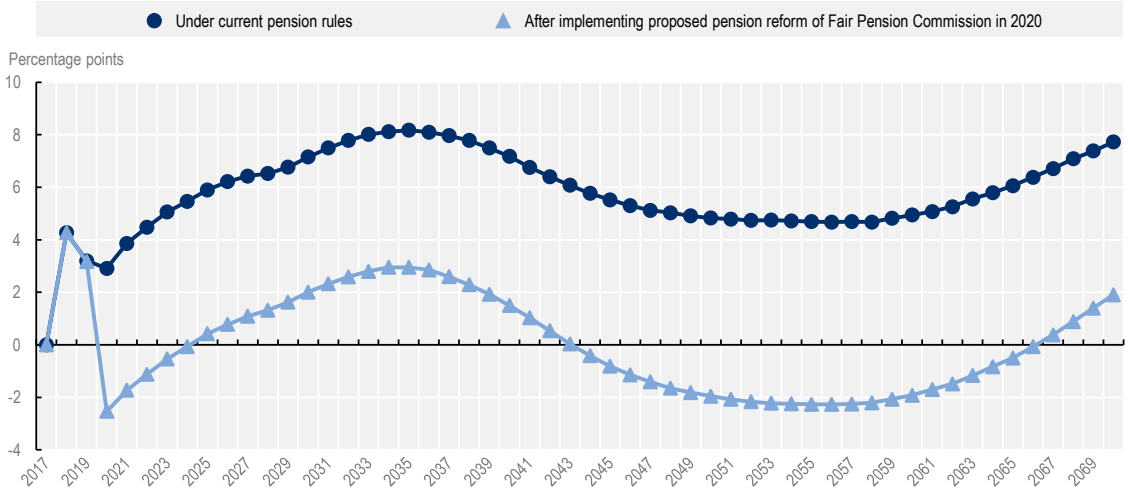
Percentage of the gross average wage, 2018 (2019 for the Czech Republic)



Note: Australia, Canada, Denmark, Finland, Germany, Greece, Iceland, the Netherlands, New Zealand, Norway, Sweden and the United States do not provide contributory first-tier benefits.
Source: OECD (2019[1]), Fig. 4.2, updated with data from the country profile for the Czech Republic (same publication) and wage growth data from Czech Statistical Office.

Figure 3.11. Reforming the pension system could contain the risk of rising relative old-age poverty

Projected change in share of population aged 65 or older at risk of poverty, base year: 2017



Note: At risk of poverty are people with an equivalised household income of less than 60% of median income in the total population. "After implementing proposed pension reform of Fair Pensions Commission in 2020" refers to the pension reform scenario described in Section 1.5 of this report whose central element is an increase of the basic pension to 30% of the average wage.
Source: Fair Pensions Commission, Czech Ministry of Labour and Social Affairs.

3.4.2. Housing allowance

The housing allowance is a more broadly accessible social benefit as it is not based on asset or health tests in contrast to the other main safety-net benefits available to older people. Only household income is tested, potentially after checking the claimed housing costs.[11] The benefit is paid to both homeowners and renters.[12] Every household that could not cover justified housing costs with 30% of net household income (35% in Prague) receives the benefit to fill the gap. Justified housing costs are the true costs up to a prescribed ceiling for energy, housing-related services and the rent or comparable costs given by law for homeowners. This ceiling depends on the type of housing (homeowner or renter), the size of the municipality and the number of people living in the household (Table 3.1). It is adjusted every year according to changes in housing prices.

For example, the ceiling amount for one person living alone in a rental accommodation in Prague in 2019 equalled 25.8% of the average wage. Hence, such a person with true housing costs at least equal to the ceiling receives a housing allowance if her net income is lower than 74% (=25.8%/35%) of the average wage. By contrast, the same person living in her own house receives a housing allowance when income is less than 42% (=14.6%/35%) of the average wage. The lower amount for homeowners reflects lower running housing costs due to the absence of a rent payment. Similarly, lower housing costs than the prescribed ceiling lower the income threshold up to which the housing allowance is paid (and the level of the housing allowance).

Table 3.1. Prescribed housing costs determine the eligibility to and the level of housing allowance

Prescribed ceiling housing costs for rental accommodations and residential property 2019, percentage of gross average wage

Number of persons in household	Size of municipality				
	Prague	over 100 000 inhabitants	50 000 – 99 999 inhabitants	10 000 – 49 999 inhabitants	under 9 999 inhabitants
Residential property					
1	14.6	14.6	14.6	14.6	14.6
2	20.9	20.9	20.9	20.9	20.9
3	28.3	28.3	28.3	28.3	28.3
4+	35.3	35.3	35.3	35.3	35.3
Rental accommodation					
1	25.8	20.5	19.5	16.6	16.0
2	35.8	28.6	27.3	23.3	22.5
3	47.9	38.4	36.7	31.5	30.4
4+	58.9	47.4	45.4	39.2	37.8

Note: The income test associated with applying for the housing allowance evaluates income in the previous quarter. The gross average wage used here refers to 2018, thereby reflecting most closely a test situation in January 2019.
Source: Information provided by the Czech Ministry of Labour and Social Affairs and OECD (2019[3]).

3.4.3. Social assistance (Assistance in Material Need)

The social assistance scheme in the Czech Republic (*Assistance in Material Need*) guarantees a legally defined living minimum after housing cost. It is open to all age groups, hence not generating specific entitlement for people at older ages. It provides a living allowance (which may be topped up by a housing supplement as further explained below) and extraordinary immediate assistance, subject to a strict means

test that involves evaluating both income and assets. Moreover, real property other than the main residence has to be sold or rented out, and eligible entitlements accrued within private pension contracts have to be claimed, before eligibility to social assistance can be granted. People who have not reached age 68 and do not receive a contributory old-age or disability pension are required to search actively for a job. Social assistance benefits are non-taxable.

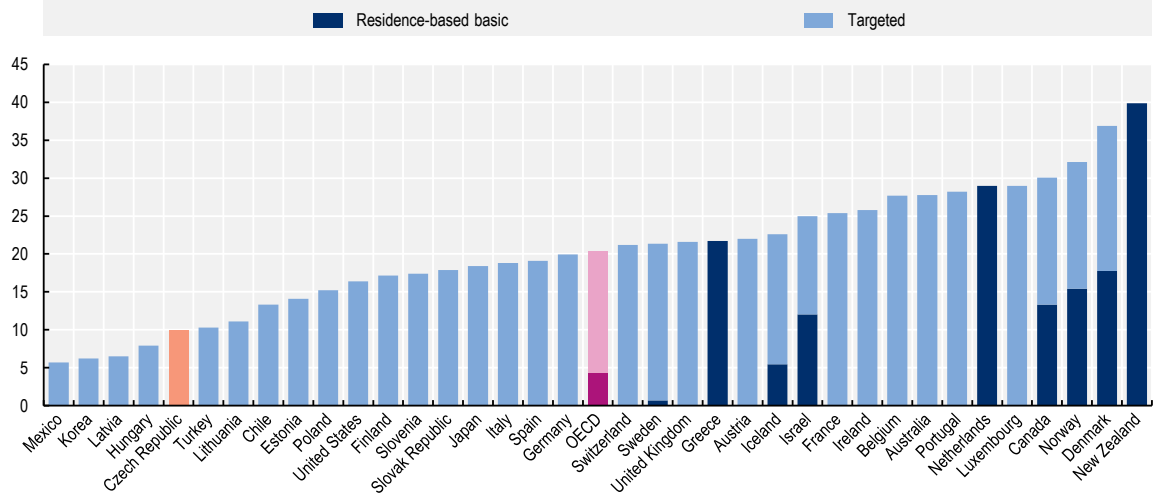
The living allowance is calculated as the sum of the legal living minimum and "reasonable" housing costs, less the relevant household income. The legal living minimum increases with the number of adults (and dependent children) in the household. "Reasonable" housing costs are equal to the justified housing costs, as defined above in the housing allowance rules up to a ceiling of 30% (35% in Prague) of relevant household income. The latter is made of 70% of net earnings from work, 80% of pensions and benefits from unemployment and sickness insurances, and 100% of all other income excluding disability and housing allowances.

A housing supplement to the living allowance is only paid to the lowest-income households who either also receive the housing allowance or cannot qualify for the latter as they live in non-standard housing forms. It guarantees that the total household income, including the housing and living allowances, cover both justified housing costs and the legal living minimum.

Currently, the legal living minimum is equal to CZK 3 860 per month for a single-person household (or about EUR 142). It was last raised in April 2020 from its previous level of CZK 3 410, which is about 10% of the 2019 average wage. This is one of the lowest levels in the OECD and equal to about half of the OECD average (Figure 3.12). The safety-net benefit level is below 15% of the average wage in only one-quarter of OECD countries, while it is larger than 25% in about one-third.

Figure 3.12. Non-contributory first-tier benefit level

Percentage of the gross average wage, 2018 (2019 for the Czech Republic)



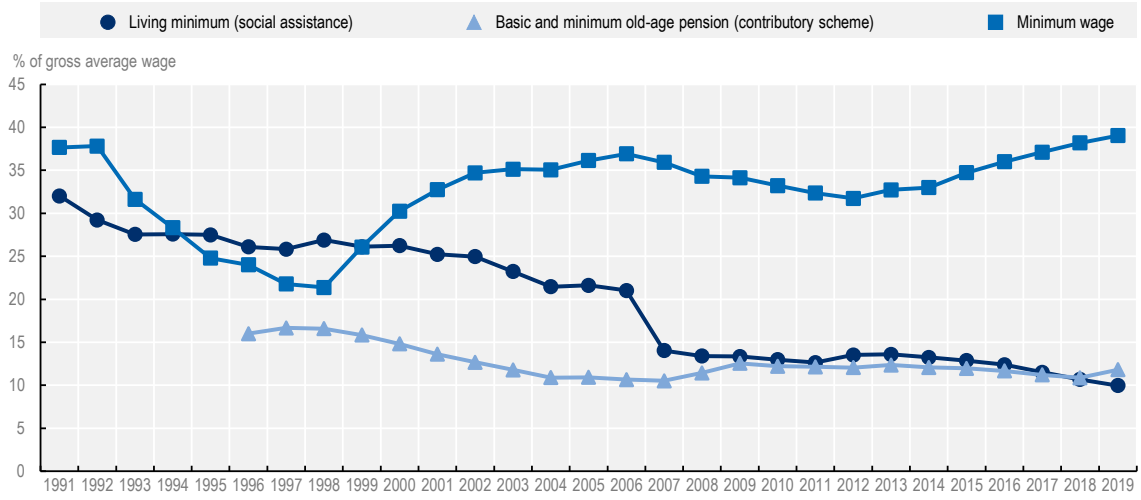
Source: OECD (2019[1]), Fig. 4.2.

The legal living minimum is only modified on a discretionary basis. The government can adjust its level by decree, i.e. without passing a new law, only if price inflation exceeds 5% or in case of extraordinary circumstances. By contrast, the housing allowance is adjusted every year according to the evolution of housing prices in the rental and residential property markets.

Few changes to the living minimum have been made since the introduction of the social assistance scheme at the beginning of the 1990s, and so its nominal value has increased much less than the wage level. The social assistance level has also not kept pace with growth in the minimum wage and the level of first-tier contributory pensions (the sum of basic and minimum earnings-related components) (Figure 3.13).

The living minimum was last adjusted in April 2020 after having remained unchanged since January 2012. The increase of about 13% since 2012 is lower than price inflation and average wage growth, which amount to about 15% and more than 30%, respectively. Overall, the living minimum lost two-thirds of its relative value, falling from 32% of average earnings in 1991 to 21% in 2006 and 10% in 2019.

Figure 3.13. The safety net protects less and less against old-age poverty



Note: The benefit calculation in the contributory scheme before 1996 was different such that a basic and minimum pension level cannot be specified.
Source: OECD calculations based on information provided by the Czech Ministry of Labour and Social Affairs and OECD (2019[3]).

3.4.4. Interaction between housing allowance and social assistance

The social assistance benefits and the housing allowance are closely connected. While the benefits from the two schemes are managed independently, the design of the means tests implies that every person eligible for the living allowance is also eligible for the housing allowance (with the exception of non-standard renters as explained above). The opposite is not true as the means test for the living allowance is stricter. The housing supplement to the living allowance guarantees that the net income after justified housing costs (see above) always remains above the living minimum. Its design is complex but it ensures that total income keeps growing with pension income – that is, benefits are not fully withdrawn against pension income including for low earners.[13]

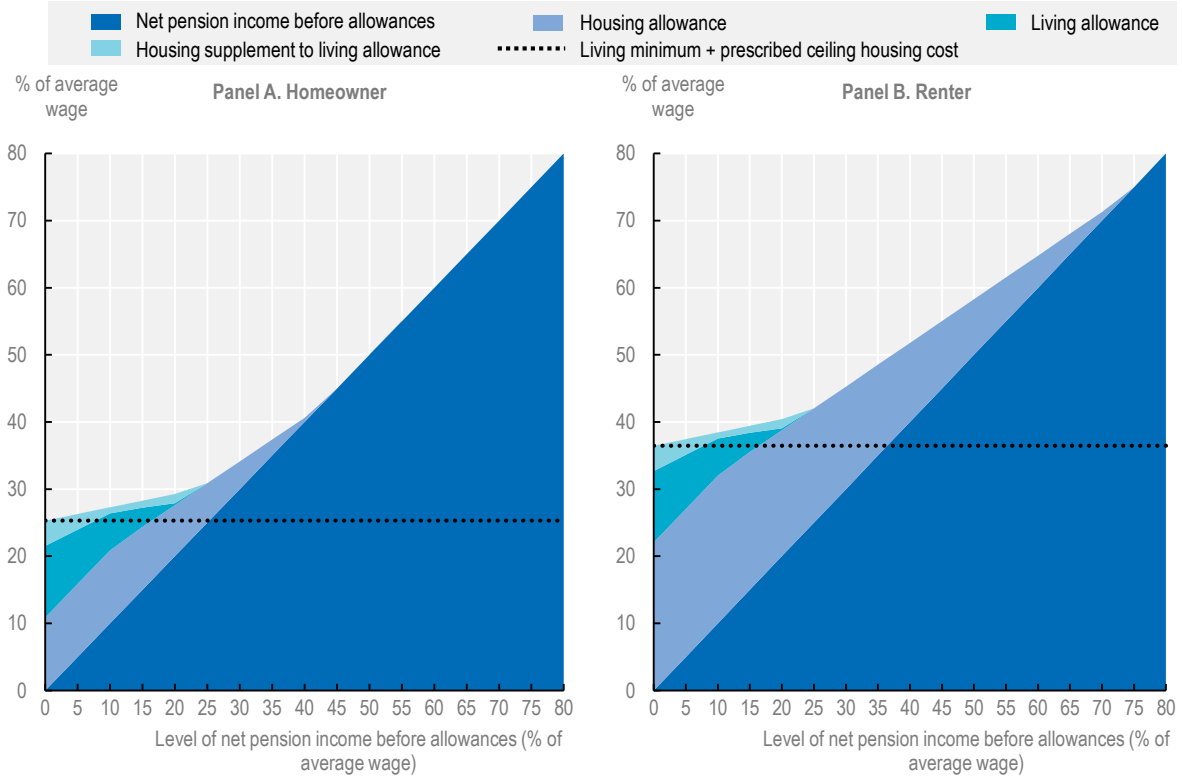
Figure 3.14 shows the benefit levels of housing allowance, living allowance and housing supplement for retirees with different levels of net pension income, assuming that they have no additional income and that their true housing costs equal the prescribed cost ceiling. As explained before, the housing allowance is paid to pensioners living alone with a net pension income lower than 42% of the gross average wage for homeowners and 74% for renters. The maximum housing allowance is paid to pensioners with net income below the living minimum (about 10% of average wage; Figure 3.12), and declines beyond the living minimum with a withdrawal rate of 35% (i.e. CZK 35 of the housing allowance benefit is withdrawn for any CZK 100 of additional income). Retirees with income below about 25% of the average wage receive the living allowance from social assistance. The living allowance might be topped up by the housing

supplement. To put things in perspective, Figure 1.7 in Chapter 1 shows that a large majority of pensioners get pension benefits between 28% and 53% of the gross average wage.

In sum, current older beneficiaries of non-contributory benefits are most likely renters. For those living in Prague, total non-contributory benefits are withdrawn against net pension income at a rate of 65% up to about one-quarter of the average wage and then at a rate of 35%. Withdrawal rates outside Prague deviate slightly. The income thresholds for homeowners are lower. This structure with two withdrawal rates (a higher then a lower) is similar to that in Norway and Sweden, although the Czech rates are lower, avoiding sharp withdrawals against pension income (Valdes-Prieto, 2009[4]).

Figure 3.14. Interaction between housing allowance and social assistance for current pensioners

Total income by component, for different levels of pension income



Note: Shown is the case of a person living alone in Prague in 2019 with only income from contributory pensions other than the safety net benefits. Her true housing costs are assumed to equal the prescribed ceiling housing costs of Table 3.1.
Source: OECD calculations based on information provided by the Czech Ministry of Labour and Social Affairs and OECD (2019[3]).

Eligibility to the housing allowance until relatively high levels of pension income could imply a large number of recipients. However, households composition and high homeownership rates – between 60% for low-income earners (bottom quintile) and almost 90% for high-income earners (top quintile) according to OECD Affordable Housing Database (2019[5]) – limit the number of recipients to about 2.5% of people aged 65 or older (Figure 3.6).

Looking forward, potentially lower relative pensions from more interrupted contribution histories may raise the number of allowance recipients among the elderly. Among individuals entering the labour market today, even those working over a complete career up to the statutory retirement age will be eligible to the housing allowance unless they have very high wages or are homeowners (Table 3.2) (or share the household with

other income receivers). By contrast, workers who start their career five years later and experience a 10-year career break will have net pension income below 42% of the average wage even in case of high earnings and will, therefore, receive the housing allowance whether they are renters or homeowners.

Table 3.2. Net pension income and safety-net benefits of future pensioners

For full and interrupted careers at three earnings levels, in percentage of the gross average wage

Earnings level at work	Net pension income	Housing allowance	Living allowance incl. housing supplement	Net pension income	Housing allowance	Living allowance incl. housing supplement
	Panel A. Homeowner			Panel B. Renter		
	Full career after entry at age 22					
50	37.5	1.5	0.0	37.5	12.7	0.0
100	45.5	0.0	0.0	45.5	9.9	0.0
200	59.7	0.0	0.0	59.7	4.9	0.0
	Interrupted career: entry at age 27 + 10 years of unemployment					
50	25.3	5.8	0.0	25.3	16.9	0.0
100	32.1	3.4	0.0	32.1	14.6	0.0
200	38.9	1.0	0.0	38.9	12.2	0.0

Note: For the cohort entering the labour market at age 22 in 2018 (or 27 in 2023), assuming that housing costs and parameters of both housing allowance and social assistance all grow with the rate of the gross average wage. A more comprehensive version of the table is in Annex Table 3.1.
Source: OECD Pension Model.

3.4.5. Health-related allowances and other safety-net benefits

On top of the benefits described above, older people may be eligible to several non-taxable disability and family allowances. While those benefits are not related to past contributions, they are subject to additional eligibility requirements. Care and mobility allowances are restricted to people with disabilities. They make up the major part of safety-net non-contributory benefits paid to older beneficiaries. Other safety-net schemes play a minor role. The family of an older person with a dependent child is eligible to a child allowance, subject to an income test. Parental and foster care allowances or a funeral grant are accessible for older people too, but there is a very small number of beneficiaries.

3.5. Future challenges and policy options

The population aged 65 and above is projected to rise by almost 50% by 2050 (or 1.0 million) while the total population would shrink by 6% (or 0.6 million) over the same period. The number of old-age pensioners will thus increase substantially and the number of people in institutional care facilities and receiving care at home are expected to more than double (European Commission, 2018[6]). Demand for care allowances, which are already the most frequently received safety-net benefit among older Czech people today, is therefore likely to rise further. This will increase the pressure on public finance (Chapter 2).

The number of recipients of safety-net (non-contributory) benefits is currently low among the elderly in the Czech Republic. Low income inequality, large coverage of older people through the contributory pension scheme and high homeownership rates are the most important explanatory factors. Today the low level of these safety-net benefits therefore has a limited incidence on poverty rates. The fact that the Czech Republic does not have a specific safety net for older people tends to limit the old-age benefit level as any increase applies to the whole eligible population generating a higher cost.

While the vast majority of current retirees validated enough contributions to be eligible to old-age pensions, future pensioners are likely to have faced more disrupted contribution histories during their whole career. The record-long contribution period to be eligible to the basic pension will therefore have an increasingly negative impact on preventing old-age poverty in the Czech Republic. This means that safety nets might play a bigger role. Their current level is very low in international comparison.

The first line of defence is to drastically reduce the minimum number of contribution years required to receive a pension. Ideally, eligibility for the basic pension should be possible with only one year of contribution, with the benefit level being pro-rated depending on the length of the contributed period. The principle is to ensure that additional contributions generate additional benefits. In Ireland, for example, basic pension entitlements rise proportionately with the length of the contribution period, from 10 years for the minimum benefit to 40 years for the full benefit. Moreover, the validation of non-contributed periods, which is complex and relatively generous, should be reformed, in particular relative to unemployment after age 55 (Chapter 1).

In terms of benefit levels, the current basic pension at 10% of the average wage is low in international comparison, and very low when taking into account that a long contributory period of 30 years is required at the statutory retirement age. Hence, with the introduction of a prorated benefit structure providing higher benefits for longer contribution histories, the full basic pension level should be significantly higher than 10% of the average wage. However, as discussed in detail in Chapter 1, the benefit level has to be assessed within the nexus of flat and earnings-related pensions. In particular, the substantial increase in the basic pension has to be combined with a lowering of accrual rates (and a simplification of the system). Moreover, the minimum pension is a redundant policy instrument given the contribution-based basic scheme. It currently plays a small role and, with the implementation of the recommended reform of the basic pension, it should be eliminated.

Social assistance provides an income guarantee (living minimum) to all Czech residents with insufficient work histories or low earnings in general. Its level is nominally fixed, and it substantially declined from more than 30% of the average wage in 1991 to 10% in 2019. This is very low in comparison to other OECD countries and might not effectively prevent relative income poverty in old age nor in working age. Social assistance and the contribution-based basic pension thus currently provide a very similar level of benefits. Such a combination is close in its effect to a residence-based basic pension provided to all older people, independent of prior contributions.[14] Introducing a residence-based basic pension, on top of which contributory entitlements could apply, is part of the policy options the Czech Republic might consider to reform its first-tier schemes. Moreover, and in any case, social assistance benefits should be indexed to wage growth, especially given the larger role they are likely to play in the future, especially against the background of ageing prospects.

The social assistance scheme does not provide special benefits to older people. Providing such benefits would open the possibility to differentiate the benefit level between age groups and provide a higher level for those who have reached the statutory retirement age. While minimum income schemes might generate work disincentives, such concerns are of less importance to older people. With falling labour supply driven by population ageing, those older than the statutory retirement age who still want (or need) to participate in the labour market should be supported by adequate employment policies, which are, however, beyond the scope of this review (OECD, 2019[7]).

Among non-contributory schemes, housing benefits actually play a bigger role in terms of safety net than social assistance per se in the Czech Republic. The current combination of social assistance benefits and the housing allowance generates a good benefit structure based on a relatively low withdrawal rate at very low incomes and a higher rate thereafter.

Another policy option, which is also beyond the realm of pension policies, refers to the simplification of non-contributory benefits to avoid the multiplication of instruments with similar objectives. Housing allowance and social assistance are closely intertwined schemes that provide benefits to low-income individuals. The dual structure may create confusion about eligibility and benefit levels, generate strenuous effort and cost, for both individuals and the administration. Social assistance in the Czech Republic already includes components covering living, housing and exceptional needs, which would facilitate an integration with the housing allowance. However, potential social stigma associated with social assistance may then transmit to the housing allowance.

Key recommendations

- Drastically reduce the minimum number of contribution years to be eligible to the basic pension.
- Increase the basic pension level with the length of the contribution period (while adjusting accordingly the earnings-related component, see Chapter 1), ensure that the level acquired for 30 years of contributions is significantly higher than the current basic pension, and eliminate the minimum pension.
- Index the social assistance benefit level to nominal wage growth.
- Introduce a higher social assistance benefit level for people reaching the statutory retirement age.

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Annex 3.A. Income of future pensioners before and after safety-net benefits and housing costs

Annex Table 3.1. Income of future pensioners before and after safety-net benefits and housing costs

Percentage of the gross average wage

Earnings level at work	Benefits upon retirement						
	Gross pension income	Net pension income	Housing allowance	Living allowance incl. housing supplement	Total net income	Prescribed ceiling housing costs	Total net income after housing costs
Panel A. Homeowner							
Full career after entry at age 22							
50	37.5	37.5	1.5	0.0	39.0	14.6	24.4
100	45.9	45.5	0.0	0.0	45.5	14.6	30.9
200	62.6	59.7	0.0	0.0	59.7	14.6	45.1
Interrupted career: entry at age 27 + 10 years of unemployment							
50	25.3	25.3	5.8	0.0	31.0	14.6	16.4
100	32.3	32.1	3.4	0.0	35.5	14.6	20.8
200	40.8	38.9	1.0	0.0	39.9	14.6	25.3
Panel B. Renter							
Full career after entry at age 22							
50	37.5	37.5	12.7	0.0	50.1	25.8	24.4
100	45.9	45.5	9.9	0.0	55.3	25.8	29.6
200	62.6	59.7	4.9	0.0	64.6	25.8	38.8
Interrupted career: entry at age 27 + 10 years of unemployment							
50	25.3	25.3	16.9	0.0	42.2	25.8	16.4
100	32.3	32.1	14.6	0.0	46.6	25.8	20.8
200	40.8	38.9	12.2	0.0	51.1	25.8	25.3

Note: For the cohort entering the labour market at age 22 in 2018 (or 27 in 2023) assuming that housing costs and parameters of both housing allowance and social assistance all grow with the rate of the gross average wage.
Source: OECD Pension Model.

Notes

[1] Like in all other European countries, the COVID-19 crisis has led to severe economic disruptions that have put the recent trend of strong wage growth to an abrupt end in 2020.

[2] Only very few cases of disability pensioners aged 65 or older exist as disability pensions usually end at the statutory retirement age and are replaced by an old-age pension if the eligibility criteria are met.

[3] Most pensioners (97.5% of the 65+ population) are covered under the administration of the Ministry of Labour and Social Affairs (MOLSA). There are in addition pensioners who are ex-members of the armed forces administered by the Ministries of Defence, Interior and Justice (Chapter 1). The latter might account for a couple of percentages of the 65+ population. Indeed, according to the OECD Social Recipients Database, the total number of old-age and survivor pensions of all ages administered by MOLSA in 2016 equalled 3 083 177 while the corresponding number for pensions administered by the Ministries of Defence, Interior and Justice was equal to 61 514. Based on these data, approximately 1.9% (= 97.5% * 61 514 / 3 083 177) of the 65+ population received an old-age or survivor pension from the Ministries of Defence, Interior and Justice.

[4] Among those, 3 000 people received an additional housing supplement as part of social assistance, which is only paid to the poorest beneficiaries (Section 3.4).

[5] The number of older recipients of the Special Aid Allowance for persons with disabilities, the Immediate Emergency Assistance (component of the Assistance in Material Need), the Parental Allowance and the Foster Allowance remains below 2 500. Other benefits like a funeral grant for survivors are likely to have less than 2 500 recipients equal to or older than 65 too; yet data by age group are not available.

[6] 6.3% of GDP (including 1.5% for the basic pension) are spent in the main contributory scheme administered by the Ministry of Labour and Social Affairs, which covers 97.5% of the 65+.

[7] Austria, Belgium, France, Latvia, Portugal, the Slovak Republic and Switzerland follow a staggered approach, providing two or more benefit levels that rise with the length of the contribution period.

[8] The OECD uses the concept of “average-worker” earnings from OECD (2019[3]) defined as the average full-time equivalent gross earnings. This deviates slightly from the concept used by the Czech social security administration.

[9] Since 2019, the earnings-related component of the monthly pension is raised by CZK 1 000 once a pensioner turns 85. This bonus exceeds the level of the minimum pension, thereby effectively ruling out the receipt of the minimum pension above age 84.

[10] The minimum pension would be eliminated (Section 1.5 in Chapter 1).

[11] The relevant household income is measured net of social security contributions and income tax. It equals the sum of all income including child and parental allowances but excluding social assistance and health-related allowances. If the relevant household income is lower than the living minimum of the household as defined under the social assistance scheme (see below), the relevant household income equals the living minimum.

[12] Except for non-standard rental forms such as sub-leases, hostels and lodging or boarding houses.

[13] By contrast, for income other than pensions, against which the housing allowance is fully tested, social assistance is fully withdrawn against income for the lowest earners.

[14] A preliminary version of the reform proposal by the commission for Fair Pensions recommends introducing such a scheme though at a substantially higher level of about 30% of the average wage. The latest reform proposal does not include such an option any more (Fair Pension Commission, 2019).

4 Voluntary funded pension arrangements

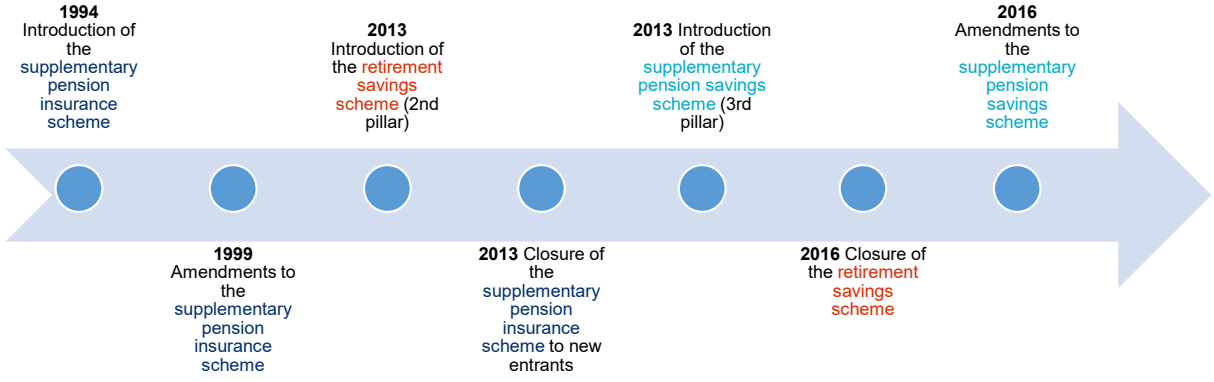
This chapter examines the Czech Republic's voluntary funded pension system and evaluates it against OECD international best practices on various aspects including coverage and contribution levels, financial incentives, investments, capital requirements, pay-out options, competition and communication. The last section provides policy options to improve the design of the funded pension system.

The Czech Republic has had a voluntary funded pension system since 1994. It covers 52% of the working-age population and the assets under management represent 9% of GDP. Section 4.1 presents briefly the changes that have led to the current system. The following sections then assess the performance of the voluntary funded pension system with respect to different criteria, such as coverage and contribution levels (Section 4.2), financial incentives (Section 4.3), assets and investments (Section 4.4), capital requirements (Section 4.5), pay-out options (Section 4.6), competition (Section 4.7) and communication (Section 4.8). Finally, Section 4.9 provides policy options to improve the design of the funded pension system.

4.1. The funded pension system has experienced several changes since 1994

Since its creation in 1994, the Czech funded pension system has experienced several parametrical and structural changes. Figure 4.1 presents the timeline of the main changes to the Czech funded pension system.

Figure 4.1. Timeline of changes to the Czech funded pension system



4.1.1. The voluntary funded pension system up to 2013

The Czech Republic established a voluntary funded defined contribution (DC) personal pension system in 1994, called the supplementary pension insurance scheme. Anyone over the age of 18 with permanent residence in the Czech Republic, and after the Czech Republic entered the EU also with residence in another EU country, and participating in pension insurance or public health insurance in the Czech Republic could conclude a contract with a pension fund. This has been a very popular system from the beginning, with more than 1 million participants in the first 3 months, growing steadily until reaching 4 million in 2008 and 5 million in 2012.

Since the beginning, participants with a minimum monthly contribution have received a state contribution. Initially, the monthly state contribution was determined according to the following schedule:

- CZK 40 + 32% of the amount over CZK 100 if the participant contributes CZK 100-199
- CZK 72 + 24% of the amount over CZK 200 if the participant contributes CZK 200-299
- CZK 96 + 16% of the amount over CZK 300 if the participant contributes CZK 300-399
- CZK 112 + 8% of the amount over CZK 400 if the participant contributes CZK 400-499
- CZK 120 if the participant contributes at least CZK 500.

The supplementary pension insurance scheme required pension funds to guarantee a non-negative return on annual basis. Pension funds had to contribute 5% of profits to build a reserve fund.[1] This reserve fund and other funds should be used to offset losses from negative returns, given the non-negative return

guarantee. If such sources were insufficient, the loss had to be covered by a reduction of registered capital, which could not fall below a certain amount.[2]

In 1999, an amendment increased the attractiveness of the supplementary pension insurance scheme by raising by 25% all the parameters to define the level of state contribution and introducing tax concessions for contributions from participants and employers. At the same time, the amendment increased the minimum age for eligibility for an old-age pension from 50 to 60 years old and the minimum contribution period from three to five years. Because of the impossibility to apply the changes retroactively, the stricter eligibility conditions only applied to new participants or to the existing participants who agreed to modify their contract. As of December 2000, 172 902 participants (8% of the total number of participants by the end of 1999) had signed amendments to their original contracts to accept the new conditions.

In 2011, a main reform changed substantially the structure of the funded pension system. The main changes were implemented from 2013. Back then, the pension system comprised a mandatory pay-as-you-go public scheme (first pillar) and the supplementary pension insurance scheme described above. In December 2011, the government decided to conduct a main reform of the pension system, primarily due to the long-term unfavourable demographic development of the country's population and the potentially unsustainable nature of a pension system based solely on the pay-as-you-go component. The main objectives of the pension reform were to ensure the sustainable development of public finances, diversify the sources of retirement income, and increase individual responsibility. In order to fulfil these objectives, the reform changed the structure of the funded pension system by:

- Adding a new component called the retirement savings scheme (second pillar) that lasted between 2013 and 2016; and
- Restructuring the supplementary pension system (third pillar), with the conversion (in 2012) and closure (from 2013) of the existing funds to new members and the introduction of a new supplementary scheme in 2013.

4.1.2. The retirement savings scheme (second pillar): 2013-16

The retirement savings scheme was introduced on 1 January 2013. It consisted of transferring 3% of the employee's gross salary that was deducted for national pension insurance (28% in total) to a private individual retirement account managed by a pension management company, under the condition that the employee contributes an additional 2% of gross salary. The scheme was voluntary, but the decision to participate, once made, was irrevocable. Entry into this system was limited to individuals up to the age of 35 in January 2013. Individuals older than 35 interested in joining this system had to decide to participate in this scheme within six months after the launch of the reform (i.e. by 1 July 2013).[3]

Pension management companies had to offer their clients four investment funds with varying levels of risk, a government bond fund, a conservative fund, a balanced fund and a dynamic fund. Between ten and five years before retirement, participants' funds had to be transferred gradually into a conservative fund. For the retirement phase, a life insurance company selected by the participant provided choice between a lifelong annuity (with the possibility to add an option paying a survivor pension during three years), and a 20-year annuity.

However, the introduction of the retirement savings scheme lacked broad political consensus. In November 2014, a new government decided to end the retirement savings scheme. The reasons were that it would weaken the state pension and reduce solidarity in the pension system, while only benefitting a limited group of people given its voluntary nature. Entry of new participants ended on 1 July 2015. The retirement savings scheme was discontinued from 1 January 2016. As of 1 July 2016, retirement funds entered into liquidation and ceased to exist after they paid-out all of the participants' funds. Participants had to inform their pension management company by the end of September 2016 how they wanted their savings to be paid out. The options were to receive the funds (in cash through a postal order or in a bank account), or to transfer the account to a supplementary pension fund.

Most of the participants received a payment to their bank account, and approximately one-fifth had their money transferred to a supplementary pension fund, according to the Association of Pension Management Companies of the Czech Republic (APS CR). At the time of closure of the retirement savings scheme, 7 943 participants (9% of the total) had failed to inform their pension management company about their decision regarding the settlement of their retirement savings. Their funds were sent to their personal tax account maintained by the Financial Administration. Individuals could request the payment of their funds from the locally competent tax office as of 2017. However, the tax office could use the funds to cover any tax arrears of the individuals. By October 2019, 2 245 participants had still not claimed their funds. Uncollected money by 2023 (currently CZK 18 million according to the APS CR) will be transferred to the state budget.

Former participants could also pay back the part of the pension insurance contributions paid into the retirement savings scheme (3% of gross salary) to the Czech Social Security Administration in order to get a full state pension. As the retirement savings scheme was funded with part of the national pension insurance contribution that initially financed solely the state pension, former participants' state pension will be reduced for the time they participated in the retirement savings scheme. For them, the state pension accrues at 1.2% of the earnings base for the years of participation in the retirement savings scheme, instead of 1.5%. To avoid this reduction, every former participant in the retirement savings scheme could request from the Czech Social Security Administration, by 30 June 2017, information about the amount of pension insurance contributions transferred to the retirement savings scheme, and pay the calculated amount by 29 December 2017 to that institution. Only 518 participants did (0.6% of all participants), meaning that nearly every former participant will get a reduced state pension.

Overall, the take-up of the retirement savings scheme was relatively low, with 84 495 participants (1.2% of the working-age population) and CZK 3.42 billion of accumulated assets (0.1% of GDP) as of 30 June 2016. By far, the most important reason has been the threat from the CSSD party to close the scheme, since the discussions about the creation of the retirement savings scheme started. Other factors include the requirement for workers to contribute an additional 2%, their inability to withdraw their funds before retirement and the legally capped low commission that pension companies could pay to financial intermediaries.

4.1.3. The supplementary pension system (third pillar) since 2013

The 2011 reform first aimed at increasing the safety of the participants' funds. The supplementary pension system initially only consisted in the **supplementary pension insurance scheme** created in 1994 described earlier. The 2011 reform closed all the pension funds as of 30 November 2012 and transferred automatically the savings of the participants to new "transformed funds". The original features of the supplementary pension insurance contracts were retained, however. Transformed funds still offer an annual non-negative return guarantee, the ability to receive an old-age pension from age 50, and the possibility to terminate the contract and receive payments. The main purpose behind this institutional change was to guarantee the safety of the participants' funds through separating the assets of the participants from the assets of the shareholders, i.e. the fund managers.

The reform also created a new supplementary scheme for new participants. Since 1 January 2013, new participants in the supplementary pension system can only join the **supplementary pension savings scheme**. They are not allowed to join transformed funds but can choose to contribute into one of the "participating funds", with different risk profiles and investment strategies. Pension management companies manage the participants' assets in both participating and transformed funds.

Participants in the supplementary pension insurance scheme may switch to the supplementary pension savings system at any time and select the participating fund of their choice (i.e. select an investment strategy). By the end of 2019, only 3.1% of the participants in the supplementary pension insurance scheme in 2012 had switched to the supplementary pension savings scheme. The ones that switched were

in particular older participants who wanted to benefit from the pre-retirement option (see Section 4.6 for more details). The main motivations to remain in the supplementary pension insurance scheme are the non-negative return guarantee and the possibility to withdraw funds without losing the state contribution from age 50 for those who joined before 1999.

The aim of introducing the supplementary pension savings scheme in 2013 was to achieve higher long-term performance. Indeed, this scheme is characterised by the absence of a return guarantee, the separation of the pension fund manager's assets from the savings of its clients, and the implementation of a regulatory framework for the remuneration of pension management companies. Because of the return guarantee, transformed funds mainly invest into low-risk bonds with low expected rates of return. Participating funds do not have this constraint and can therefore expect to achieve higher returns.

In addition, modifications in the state incentives aimed at increasing the level of contributions paid by participants. For all participants (in transformed and participating funds), the minimum amount of monthly contributions from which the state contribution is paid increased from CZK 100 to CZK 300 in 2013. At the same time, the maximum state contribution increased from CZK 150 to CZK 230, for those contributing at least CZK 1 000 per month. In addition, the range of contributions subject to tax deductibility changed from CZK 500–1 500 to CZK 1 000–2 000 monthly, meaning that people need to contribute more in order to be able to deduct the amounts from their taxable income.

Following the abolishment of the retirement savings scheme in 2016, the government decided to increase further the attractiveness of the supplementary pension savings scheme for both individuals and pension management companies. Since 1 January 2016, workers younger than 18 are able to join the system, while parents can set up a participating fund for their children. The age at which members are able to take their retirement income was established at 60 years old, instead of being linked to the age requirement in the state pension. In order to decrease the proportion of lump-sum withdrawals and encourage a long-term drawing of benefits, pension payments taken over a period of more than ten years will be tax exempt. In order to increase contribution levels, on 1 January 2017, the tax relief on members' contributions increased from CZK 12 000 to CZK 24 000 annually (i.e. contributions between CZK 1 000 and CZK 3 000 monthly are tax deductible), and the level of employer contributions not considered as taxable income increased by CZK 20 000 to CZK 50 000.

The 2016 amendment also makes the supplementary pension schemes more attractive for providers. This led to an increase in costs to participants. To enhance the distribution of pension products, the cap on the commission of intermediaries increased from 3.5% to 7% of the national average salary for each new contract. In the case of transformed funds, the cap on management fees increased from 0.6% to 0.8% of total assets. Meanwhile, the cap on performance fees decreased by 5 percentage points to 10% of the profit. The concern of pension management companies of not being able to meet the return guarantee in the then financial market environment justified the fee increase. In the case of participating funds, the maximum management fee increased from 0.8% to 1% of total assets, and the cap on performance fees increased by 5 percentage points to 15% of the outperformance above the initial pension unit value. There was an exception for the mandatory conservative fund, for which the management and performance fees did not increase; they are lower than for the other participating funds. Raising fee limits aimed at allowing more investment opportunities that may be more costly.

4.2. Large coverage of the population but small contributions

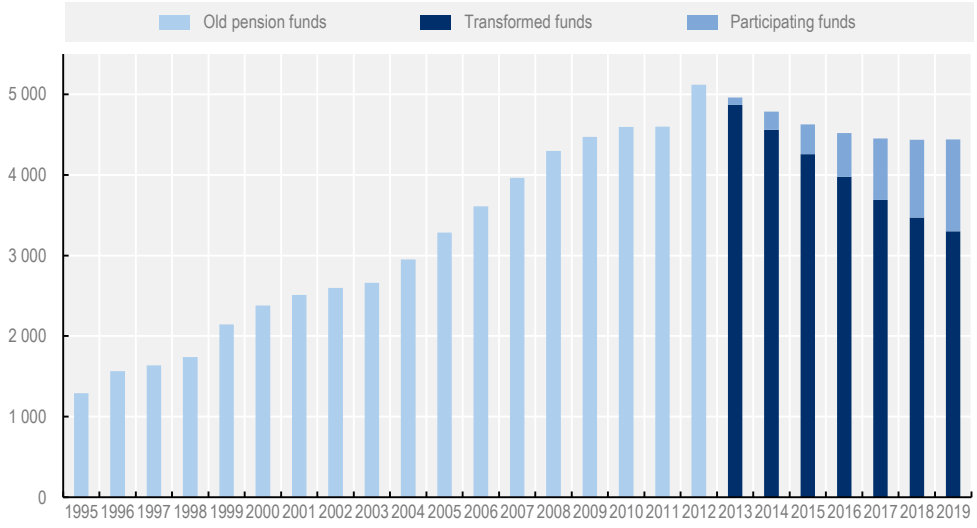
4.2.1. Coverage

The number of participants in the supplementary pension schemes has been declining since 2012. At the end of 2019, 4.4 million individuals had a supplementary pension plan, 3.3 million (74%) in transformed funds and 1.1 million in participating funds. Overall, the system has lost 679 000 participants since a peak

of 5.1 million in 2012 (Figure 4.2). This peak was due to people willing to benefit from the rules of the transformed funds, before these funds became closed to new entrants.

Figure 4.2. Number of participants in the supplementary pension schemes, 1995-2019

Thousands of people



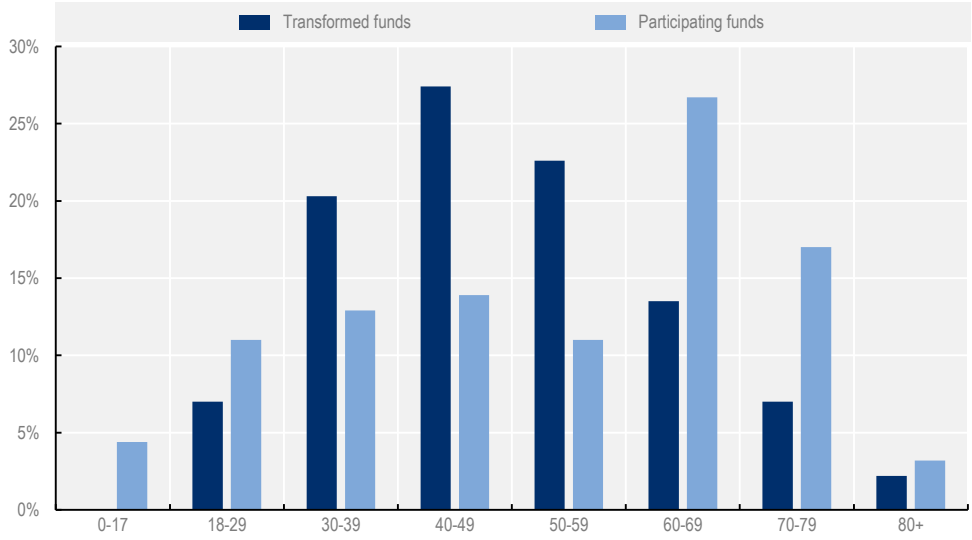
Source: APS CR, https://www.apfcr.cz/grafy/.

Since 2016, individuals under 18 years old can participate in the supplementary pension savings scheme. At the end of 2019, there were 60 584 minor participants according to the APS CR, representing 5% of all contracts in the supplementary pension savings scheme. Around two-thirds of such contracts are for children up to nine years old. An important incentive to bring children in the system is that, at the age of 18, the child can withdraw up to one-third of the savings (excluding any employer and state contributions), provided the saving period lasted for at least ten years. The contract can be cancelled at any time and the money saved can be withdrawn, but without the state contributions.

The age structure of the participating funds is skewed towards older ages. Figure 4.3 shows that, in 2018, 70% of participants in transformed funds were aged 30 to 60, with a pick of 27% aged 40 to 49. By contrast, in the participating funds, the dominating age group was the 60-69 years old (27%), followed by the 70-79 years old (17%). This is possible because there is no maximum age to join the system or to start withdrawing benefits. For these older participants, supplementary pension savings represent an interesting form of investment, as they can withdraw the funds, including the state contributions, after only five years of participation, because they have already reached the normal retirement age of the scheme. Still, the proportion of participants over the age 60 is declining and 2018 is the first year since the establishment of participating funds when they represented less than half of all participants (47%). Among new participants who entered participating funds in 2018, people aged over 60 accounted for 38%.

Figure 4.3. Age structure of participants in the supplementary pension schemes, 2018

As a percentage of all participants



Source: Ministry of Finance of the Czech Republic, Report on Financial Market Developments in 2018.

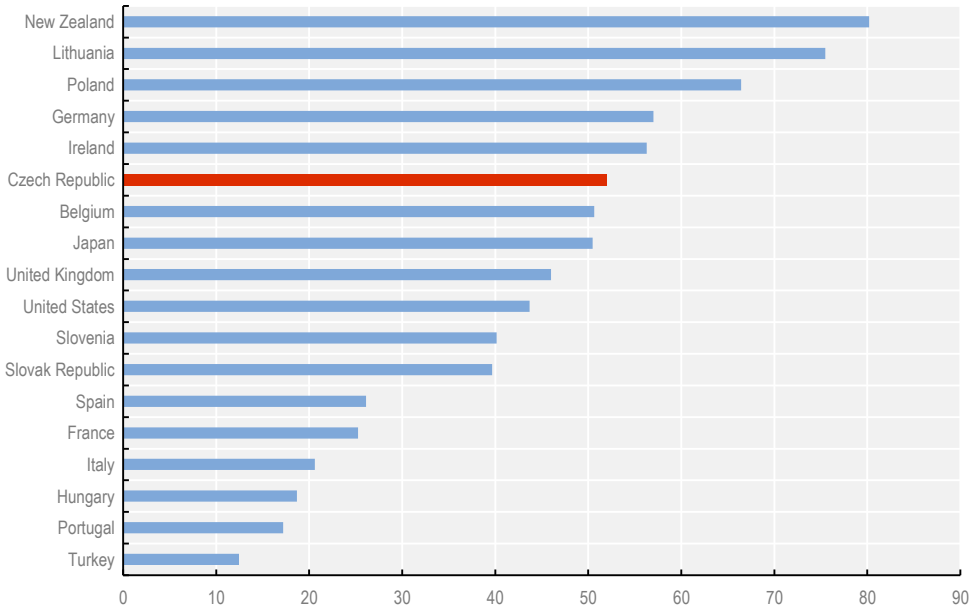
A majority of participants are women. At the end of 2018, women represented 53% of all participants in the supplementary pension schemes. They were slightly more represented in participating funds (54%) than in transformed funds (52%).[4]

The coverage of the supplementary pension schemes is quite high. In 2019, 52% of the working-age population (aged 15-64) participated in the supplementary pension system. This is in the upper range when comparing internationally across voluntary funded pension systems (Figure 4.4).

Participation in supplementary pension schemes increases with age and income. Participation is below 20% for individuals aged 20 to 24 and below 40% for those aged 25 to 29. It is the highest for individuals aged 40 to 60, at or above 60%. Participation then declines, but remains high. For example, in the 65-69 age group, around a third of seniors save. Participation also increases with income. More than 40% of individuals in the first quintile participate. It is about 70% for those in the last quintile. In addition, participation is higher for employees (61%) than for the self-employed (55%).[5]

Figure 4.4. Coverage of funded and private pension plans in voluntary pension systems

As a percentage of the working age population



Source: Own calculations with data from the Ministry of Finance of the Czech Republic and OECD (2019), *Pension Markets in Focus*, https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2019.pdf.

4.2.2. Contributions

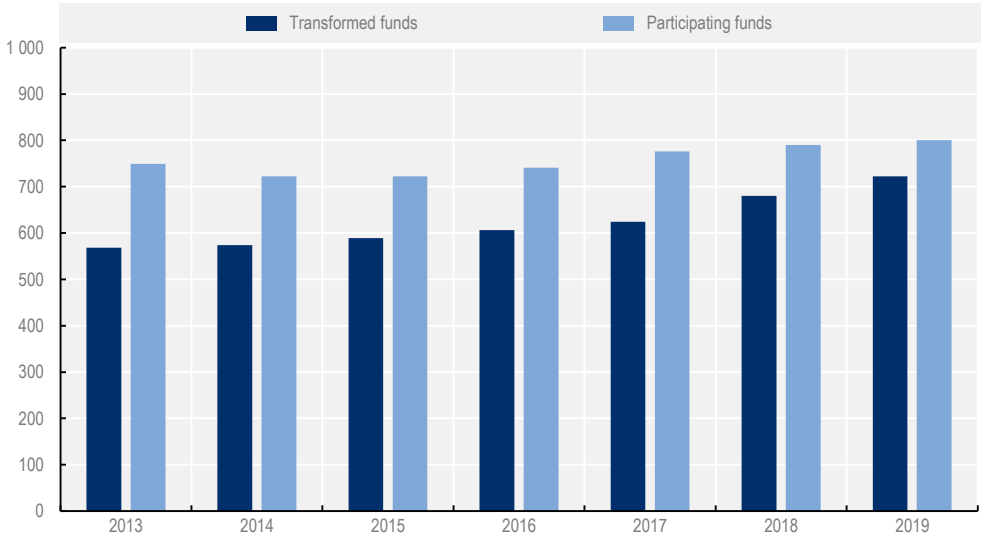
Total contributions paid by participants, employers and the state have increased steadily since 2013. Overall, contributions increased from CZK 47 426 million in 2013 to CZK 57 195 million in 2019. Consistent with the evolution of the number of participants in each scheme, the volume of contributions paid in transformed funds is declining and the one in participating funds is growing. In 2019, total contributions represented 1% of GDP. This is below the levels in voluntary systems in Canada, Portugal, New Zealand and the United Kingdom (between 2% and 3% of GDP), but above those in Austria, Hungary and Poland (0.3% of GDP).

Participants pay the largest share of total contributions. In 2019, contributions from participants represented 68% of the total, employers' 20% and the state's 12%. In transformed funds, the composition of contributions has been similar to the overall composition since 2013. By contrast, the composition of contributions in participating funds has changed significantly between 2013 and 2019. The weight of contributions from participants declined (from 91% in 2013 to 69% in 2019), while those of employer contributions (from 6% in 2013 to 18% in 2019) and state contributions (from 3% in 2013 to 13% in 2019) increased.

The average level of contributions paid by participants remains low despite existing incentives. Around 92% of participants contribute to their individual accounts. The minimum contribution for the participant is CZK 100 per month. However, average monthly contributions in both transformed and participating funds remain below CZK 1 000 (around 3% of the national average wage in 2018), which is the maximum amount that the state matches and above which contributions are tax deductible (Figure 4.5). Participants contribute more on average in participating funds than in transformed funds. However, average contributions have increased steadily between 2013 and 2019 in transformed funds. Overall, average contributions from participants represented around 2% of the national average wage in 2018.

Figure 4.5. Average monthly contributions by participants in the supplementary pension schemes, 2013-19

In CZK



Source: Ministry of Finance of the Czech Republic, Basic indicators of the development of supplementary pension insurance and supplemntary pension savings as at 31 December 2019, https://www.mfcr.cz/cs/soukromy-sektor/soukrome-penzijni-systemy/iii-pilir-doplnkove-penzijni-sporeni-a-p/vyvoj-penzijniho-pripojisteni/2019/zakladni-ukazatele-vyvoje-penzijniho-pri-37750.

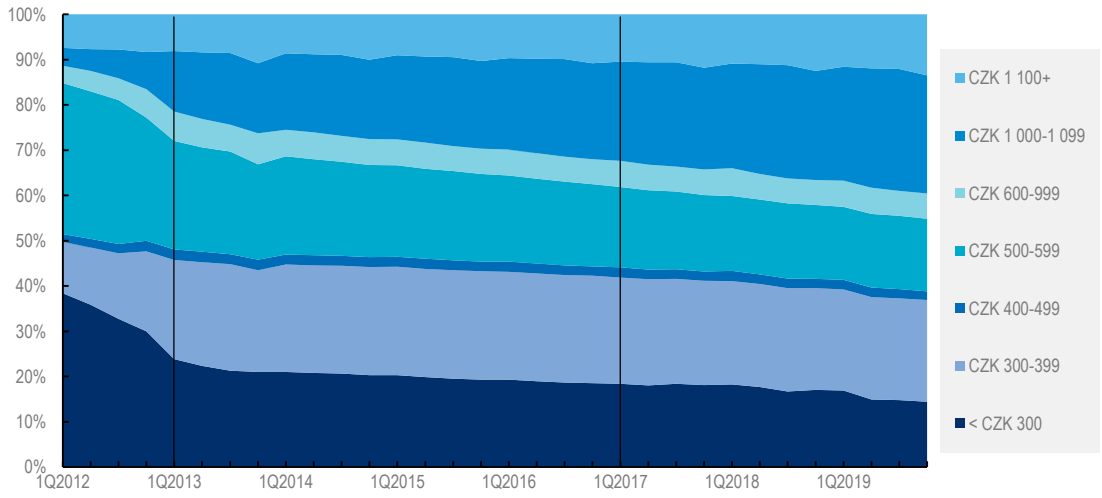
Accordingly, state contributions are on average well below the maximum of CZK 230 monthly. In 2019, 86% of participants in the supplementary pension system received a state contribution by contributing themselves at least CZK 300 in a month. On average in 2019, participants received a state contribution of CZK 139.

Older participants, higher income earners and self-employed workers pay higher contributions. Average contributions by participants tend to increase with age. In 2018, participants aged 18-39 contributed CZK 402 monthly on average, while participants aged 55-64 contributed CZK 1 029. Interestingly, average contributions made for minor participants were higher than those made by participants aged 18-39, at CZK 433. In addition, the average contribution made by participants who had reached retirement age (65+) was lower than that of persons aged around 60, but remained relatively high at almost CZK 900. In addition, participants in the last income quintile contribute on average above CZK 800 per month, compared to around CZK 600 for the other quintiles. Finally, despite a lower participation, the self-employed contribute more on average than employees do.

Participants' contributions are sensitive to the design of the state contribution. As the minimum contribution required to get the minimum state contribution increased from CZK 100 to CZK 300 in 2013, the share of participants contributing below CZK 300 dropped from 30% in 2012 to 21% in 2013 (14% in 2019), while the share of those contributing CZK 300-399 increased from 18% to 22% (22% in 2019) (Figure 4.6). At the same time, the level of contribution necessary to receive the maximum state contribution increased from CZK 500 to CZK 1 000. This translated into a reduction in the share of participants contributing CZK 500-599 (from 27% in 2012 to 21% in 2013 and to 16% in 2019) and into an increase in the share of those contributing CZK 1 000-1 099 (from 8% in 2012 to 15% in 2013 and to 26% in 2019). Overall, the share of participants receiving the maximum state contribution dropped from 50% in 2012 to 21% in 2013, but increased afterwards to reach 40% in 2019, showing that people adjusted to the new rules. The 2017

tax reform had a lower impact on contribution levels. The range of contributions subject to tax deductibility changed from CZK 1 000-2 000 to CZK 1 000–3 000. However, the share of participants contributing at least CZK 2 000 has only marginally increased from 6% in 2016 to 7% in 2019.

Figure 4.6. Distribution of participants by contribution level, 2012-19 (in %)

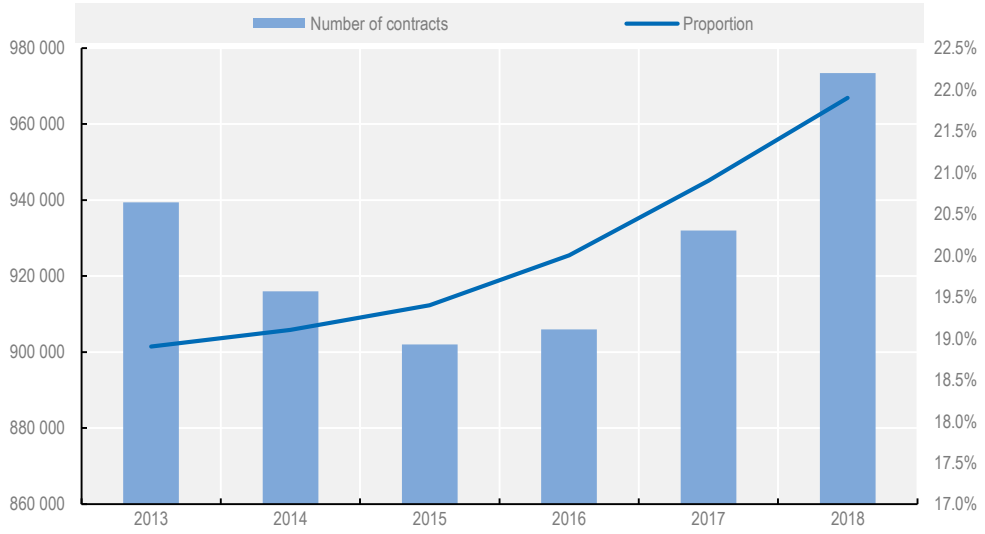


Source: Ministry of Finance of the Czech Republic.

Less than a quarter of participants receive contributions from employers, although the trend is upward since 2016. Figure 4.7 shows that the number of contracts with an employer contribution went down between 2013 and 2015 and has been increasing since 2016. This increase may be linked to the raise in 2017 in the level of employer contributions that are not considered as taxable income for employees and employers by CZK 20 000. Improving economic conditions and the growing shortage of skilled labour may also contribute to explain this trend. At the end of 2018, 22% of participants received an employer contribution. Employers' contributions are, on average, higher than that of the participants (CZK 877 in transformed funds and CZK 973 in participating funds in 2018, around 3% of the national average wage).

Figure 4.7. Supplementary pension contracts with an employer contribution, 2013-18

Number (left-hand scale) and proportion (right-hand scale) of contracts



Source: Ministry of Finance of the Czech Republic, Reports on Financial Market Developments, 2013-2018.

4.3. The state provides significant financial incentives

State support for the supplementary pension system consists in incentives for individuals, in the form of a favourable tax treatment and direct state contributions, as well as incentives for employers, by exempting employers' contributions from social insurance payments.

4.3.1. Tax treatment of supplementary pension savings

The tax treatment of supplementary pension savings can be qualified as "tEE", as contributions are partially taxed, while returns on investment and pension payments are tax free under certain conditions.

Contributions from participants into transformed and participating funds are paid from after-tax income. Contributions of CZK 300 up to CZK 1 000 a month are matched by state contributions. Contributions above CZK 12 000 a year are tax-deductible up to CZK 24 000 a year.

Employer contributions are not considered as taxable income for the employee up to CZK 50 000 a year.

Returns on investment are not subject to income tax during participation in the system but taxed according the rules described below in out payments from the system.

If the participant wants to withdraw money but does not fulfil the conditions to receive a lump sum or a pension, this closes the contract and any state contributions are returned to the state.[6] If the participant made tax-deductible contributions, the amount previously deducted must be taxed. In addition, the returns on investment and the employer contributions paid after January 2000 are taxed at 15%.

Life annuities are tax-free, including when starting up to five years before the official age of retirement. Programmed withdrawals are taxed at 15%, except if they last for more than ten years, in which case payments are tax-free. Lump sums are taxed at 15% but the tax base consists only of the returns on investment and the employer contributions payed after January 2000.

4.3.2. State contributions

The state matches contributions from participants in the supplementary pension schemes each month as follows:

- Nothing if the individual contributes less than CZK 300.
- CZK 90 + 20% of the amount above CZK 300 if the individual contributes CZK 300-999.
- CZK 230 if the individual contributes at least CZK 1 000.

The state does not match employer contributions. State contributions are not subject to income tax. The contribution thresholds and the corresponding state contributions have not been updated since 2013.

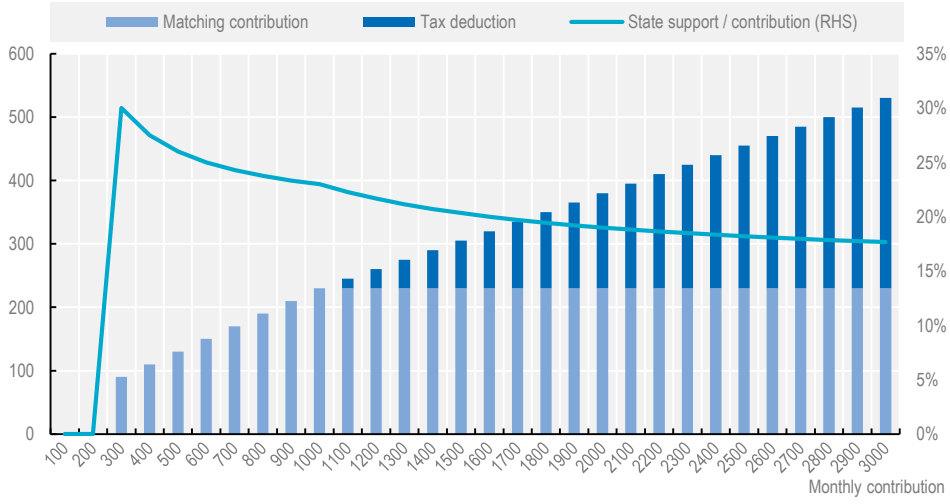
4.3.3. Total state support to individuals

As the personal income tax system in the Czech Republic applies a fixed tax rate of 15%, state support does not vary with the income level of the participant for a given level of contribution. It does vary, however, with the amount contributed and the length of the contribution period.

State support increases in nominal terms with the level of contributions, but declines in relative terms (Figure 4.8). Monthly contributions between CZK 300-1 000 are paid from after-tax earnings and matched by the state, while those between CZK 1 000-3 000 do not get a matching but are tax deductible. The nominal value of total state support therefore increases with contributions. In relative terms, however, state support declines with the level of contribution. For someone contributing the minimum incentivised amount (CZK 300), state support is the maximum and represents 30% of the participant's contribution. Relative state support then decreases to 20% for the part of the contribution between CZK 301-1 000 and to 15% for the part of the contribution between CZK 1 001-3 000. Overall, state support represents 18% of the participant's contribution for someone contributing the maximum incentivised amount (CZK 3 000).

Figure 4.8. State support by level of contributions to supplementary pension schemes

In CZK and in %



Note: RHS = righ-hand scale.

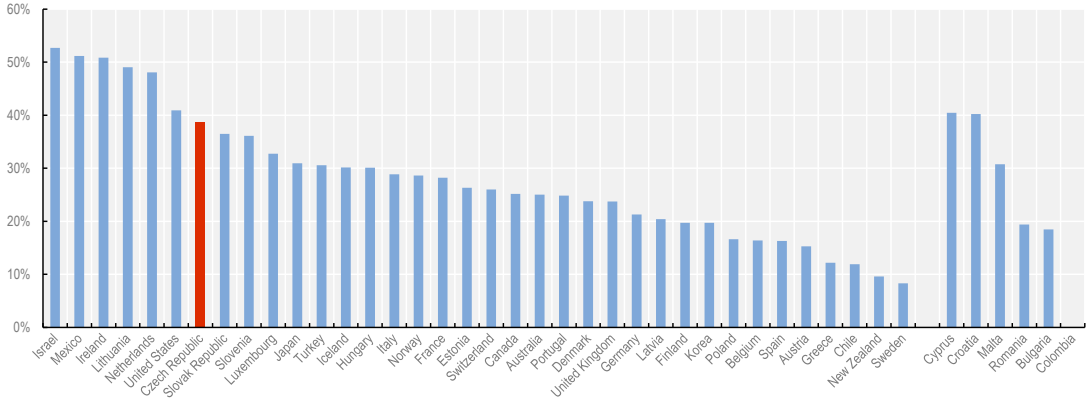
Shorter contribution periods reduce overall state support. This can be evidenced by calculating the overall tax advantage provided to an average earner when contributing to a supplementary pension scheme

instead of to a traditional savings vehicle. The overall tax advantage is the difference between the present value of taxes paid over a lifetime (i.e. during accumulation and payout) with the traditional savings vehicle (with a "TTE" tax treatment) and with the supplementary pension scheme (with a "tEE" tax treatment and state contributions). The overall tax advantage declines with shorter contribution periods (e.g. by starting contributing later) because individuals save less in taxes paid on investment returns. Indeed, the longer is the investment period, the higher is the investment income that gets taxed in the traditional savings account and grows tax free in the pension account. By contrast, if the parameters to calculate the level of state contributions are not indexed over time (e.g. by inflation or wage growth), as has been the case since 2013, the advantage stemming from those state contributions declines for longer contribution periods because the value of the state contributions relative to the individual's income declines over time.

In international comparison, the overall tax advantage provided to an average earner in the Czech Republic is in the upper range (Figure 4.9). For an average earner contributing 5% of wages between 20 and 65 years old, the overall tax advantage represents 39% of the present value of contributions. It reflects the fact that participants in the Czech Republic cumulate the advantage on contributions described above (state contributions plus tax deduction), with the non-taxation of returns on investment, without paying taxes on pension payments when assuming the individual receives a life annuity at retirement.

Figure 4.9. Overall tax advantage provided to an average earner

Present value of taxes saved over a lifetime, as a percentage of the present value of contributions



Note: The calculations assume a 5% contribution rate in voluntary systems.
Source: OECD (2018), *Financial Incentives and Retirement Savings*, https://dx.doi.org/10.1787/9789264306929-en.

Overall, the design of state support is unusual when compared to other OECD countries. First, state support mixes direct contributions and tax deductions. Germany (Riester pensions) is the only other OECD country with such a mix. In addition, the calculation of the direct state contribution is different from what other countries do. As shown in Table 4.1, there are two main ways to calculate state contributions in OECD countries. Australia, Austria, Chile, Hungary, New Zealand and Turkey express the state contribution as a percentage of the individual's own contribution, from the first unit of contribution. This allows state contributions to increase linearly as individuals contribute more, up to a maximum level to limit the budget cost. Alternatively, in Germany, Lithuania and Poland, the state contribution is a fixed nominal amount, conditioned by a minimum contribution rate in Germany and Lithuania. The key difference between the two models is that the former is income neutral up to the maximum entitlement, while the latter offers larger incentives to low-income earners, as the fixed amount represents a larger share of their income. The schedule in the Czech Republic mixes features of both models, with an initial fixed nominal

amount of CZK 90 conditioned by a minimum contribution level of CZK 300 per month, and a 20% match rate for contributions between CZK 300-1 000.

Table 4.1. State contributions into funded pension arrangements in OECD countries

Countries	Description
Australia	50% of voluntary contributions up to AUD 500 per year, for individuals having a total income up to AUD 52 697. For every dollar that the individual earns above AUD 37 697, the maximum entitlement is reduced by 3.333 cents.
Austria	4.25% of contributions to a state-sponsored retirement provision plan (fixed rate of 2.75% plus a variable rate depending on the annual general level of interest rate, 1.5% for 2019). The maximum personal contributions considered to calculate the state contribution is EUR 2 875.18.
Chile	50% of the mandatory pension contribution for workers aged 18 to 35 with an income below 1.5 times the minimum wage during the first two years of participation, up to 50% of the mandatory contribution over the minimum wage.
Czech Republic	CZK 90 + 20% of the amount above CZK 300 monthly if the individual contributes between CZK 300-999
Hungary	20% of contributions, up to HUF 100 000 per year in the case of individual retirement accounts, HUF 150 000 per year in the case of voluntary pension funds and HUF 130 000 per year in case of pension insurance.
Germany	EUR 175 per year if the sum of the tax-deducted member's contributions to Riester plans and the state contributions equals to at least 4% of previous year's annual income before taxes (up to a maximum of EUR 2 100). If below 4%, the state contribution is reduced pro-rata.
Lithuania	1.5% of the pre-last year's average gross salary in Lithuania for individuals contributing at least 3% of gross income in the second pillar.
New Zealand	50% of contributions to a KiwiSaver plan, up to NZD 521.43.
Poland	PLN 250 when the member joins the automatic enrolment plan, plus PLN 240 annually whenever the individual contributes
Turkey	TRY 1 000 when the member joins the automatic enrolment plan and do not opt out within the first two months, plus 25% of contributions up to 25% of the annual minimum wage.

Source: OECD (2019), *Financial incentives for funded private pension plans – OECD country profiles*, http://www.oecd.org/finance/private-pensions/Financial-Incentives-for-Funded-Pension-Plans-in-OECD-Countries-2019.pdf.

4.3.4. Incentives for employers

Employers' contributions to supplementary pension schemes are exempt from insurance payments. Employer contributions are not considered as taxable income for the employee up to CZK 50 000 per year. The same ceiling applies for the exemption of employer contributions from insurance payments.

4.3.5. Budget costs

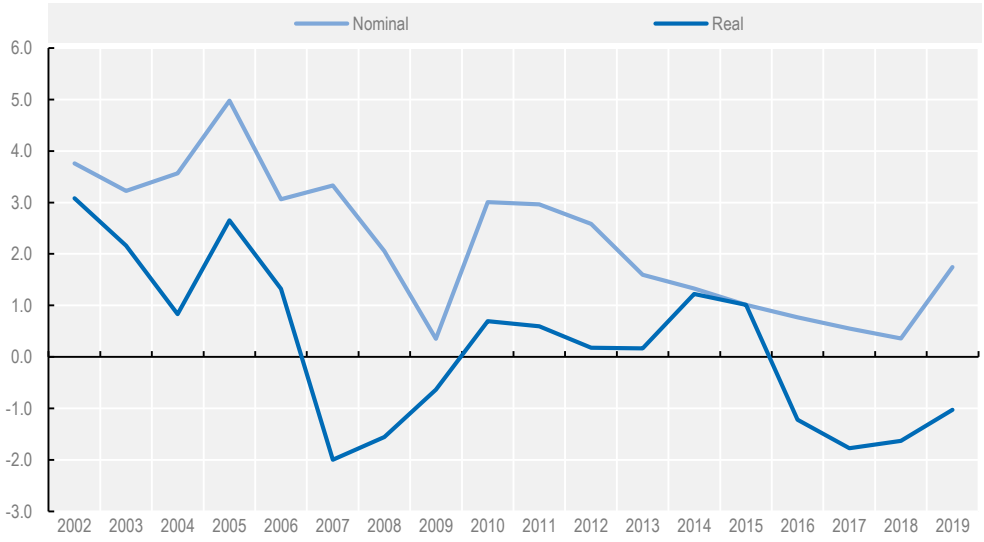
Overall, state support for the supplementary pension system consists in the state contributions, the tax deductibility of participants' contributions and the exemption of employers' contributions from income tax and social insurance. Annual state contributions have increased from CZK 6.86 billion in 2013 to CZK 7.25 billion in 2019. The tax expenditure related to participants' contributions can be estimated at approximately CZK 1.2 billion for 2018. The cost of employer contributions (income tax and social insurance) can be estimated at approximately CZK 6.6 billion per year. Total budget costs thus correspond to approximately CZK 15 billion per year (0.3% of GDP in 2018). Of this, almost 50% is support for employer contributions, even though employer contributions only represent 20% of all contributions paid. Given that participation and contribution levels are the highest among older and higher income individuals, they are also the ones getting the most out of this total budget cost.

4.4. Low performance stems from conservative investment strategies due to the annual non-negative return guarantee

4.4.1. Investment performance

Investment returns have been mostly declining in the Czech Republic over the years, both in nominal and real terms (Figure 4.10). While, in nominal terms, the average performance of pension funds was 2.0% over the last 15 years (December 2 004-December 2019), it was only 0.9% for the last five years (December 2 014-December 2019). In real terms, the average performance has been null over the last 15 years and - 0.9% over the last five years. Since 2002, real returns have been negative in seven years, from 2007 to 2009 and from 2016 to 2019. The downward trend may in part be explained by declining bond yields over the period (for example the yield from Euro area AAA 10-year government bonds went down from 3.7% in January 2005 to -0.14% in December 2019).[7]

Figure 4.10. Nominal and real net investment returns achieved by pension funds, 2002-19 (in %)



Note: Yearly returns calculated as the ratio between the investment income at the end of the year, net of investment expenses, and the average level of assets during the year.
Source: OECD Global Pension Statistics.

In international comparison, the Czech Republic is among the OECD countries with the lowest average performance over the 5-15 years ending in 2018 (Table 4.2). In nominal terms, among countries with available data up to December 2018, pension funds in the Czech Republic recorded the lowest five-year average annual performance, and the second lowest in real terms after Turkey.

Table 4.2. Nominal and real geometric average annual investment rates of return of pension assets, net of investment expenses, over the last 5, 10 and 15 years ending in 2018

Selected OECD countries, in %

	Nominal			Real		
	5-year annual average	10-year annual average	15-year annual average	5-year annual average	10-year annual average	15-year annual average
Australia	8.7	6.6	7.3	6.7	4.4	4.7
Austria	2.7	3.8	3.1	1.2	1.9	1.2
Belgium	4.3	6.0	5.3	2.8	4.1	3.3
Canada	6.5	7.5	6.6	4.7	5.7	4.8
Chile	6.5	7.4	6.7	3.1	4.7	3.3
Czech Republic	0.8	1.4	2.1	-0.5	-0.1	0.0
Denmark	4.9	5.9	5.8	4.2	4.6	4.2
Estonia	2.3	4.2	2.6	0.7	2.2	-0.7
Finland	4.5	..	..	3.9	..	..
Germany	3.5	3.9	4.0	2.5	2.7	2.5
Greece	3.8	..	..	4.1	..	..
Hungary	5.0	..	..	3.6	..	..
Iceland	6.4	7.2	7.6	4.2	3.7	2.7
Israel	4.1	7.1	..	4.2	5.8	..
Italy	2.2	3.2	3.2	1.7	2.0	1.7
Korea	3.6	4.1	4.0	2.3	2.2	1.7
Latvia	1.5	3.6	2.8	0.0	2.2	-1.0
Lithuania	3.1	..	..	1.7	..	..
Luxembourg	2.5	3.7	..	1.5	2.0	..
Mexico	4.2	6.4	..	0.0	2.3	..
Netherlands	6.1	7.7	6.1	4.9	6.0	4.4
Norway	4.9	6.2	5.9	2.3	4.0	3.7
Portugal	2.8	3.3	3.7	2.2	2.2	2.2
Slovak Republic	1.8	1.7	..	1.1	0.4	..
Slovenia	5.0	5.1	..	4.3	3.8	..
Spain	2.2	3.4	..	1.6	2.1	..
Switzerland	3.1	4.2	3.3	3.1	4.2	2.9
Turkey	9.8	9.5	..	-1.5	0.1	..
United States	2.3	4.8	2.6	0.8	3.0	0.5

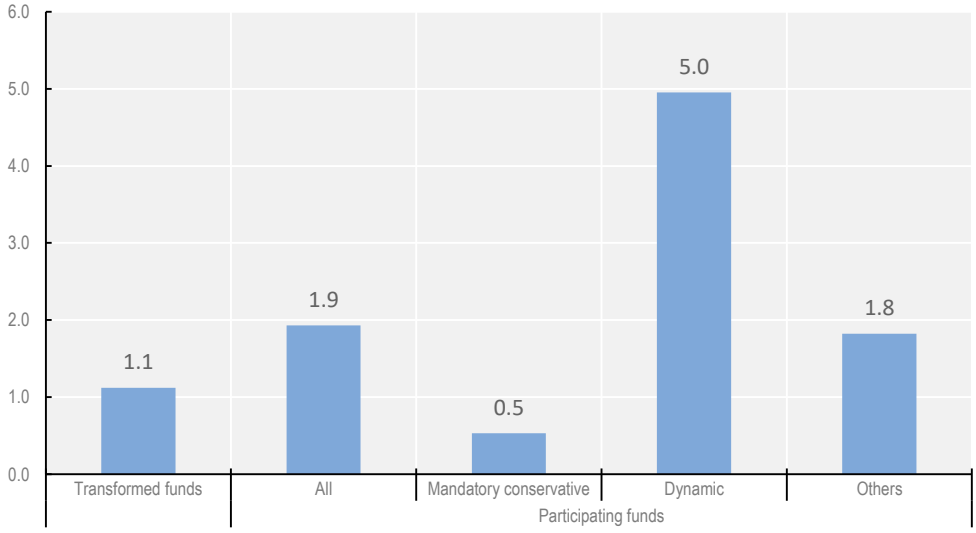
Note: Yearly returns calculated as the ratio between the investment income at the end of the year, net of investment expenses, and the average level of assets during the year.
Source: OECD (2019), *Pension Markets in Focus*, https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2019.pdf.

Finally, performance varies according to the type of fund. Figure 4.11 presents the average nominal returns credited into individual accounts over 2013-19 by type of fund, weighted by the total assets in each fund at the end of 2019. This return includes the part of the profit that pension management companies share with participants. Pension management companies offer members of the supplementary pension savings scheme a range of participating funds with different portfolio structures and investment risk profiles, including the mandatory conservative participating fund. They also manage transformed funds, were participants do not have investment choice but have a non-negative return guarantee. Accordingly, transformed funds always credit positive returns into individual accounts (1.1% on average over 2013-19). As there is no guarantee in participating funds, returns can be negative, as was the case in 2018 for most of them. However, since the start of the supplementary pension savings scheme, participating funds have

produced positive annual returns, at 1.9% on average. Dynamic funds have recorded the highest average annual performance at 5.0%, while mandatory conservative funds only returned 0.5%.

Figure 4.11. Weighted average nominal returns credited into individual accounts over 2013-19, by type of fund

In percent



Note: Average returns weighted by total assets in each fund at the end of 2019.
Source: OECD calculations based on APS CR data.

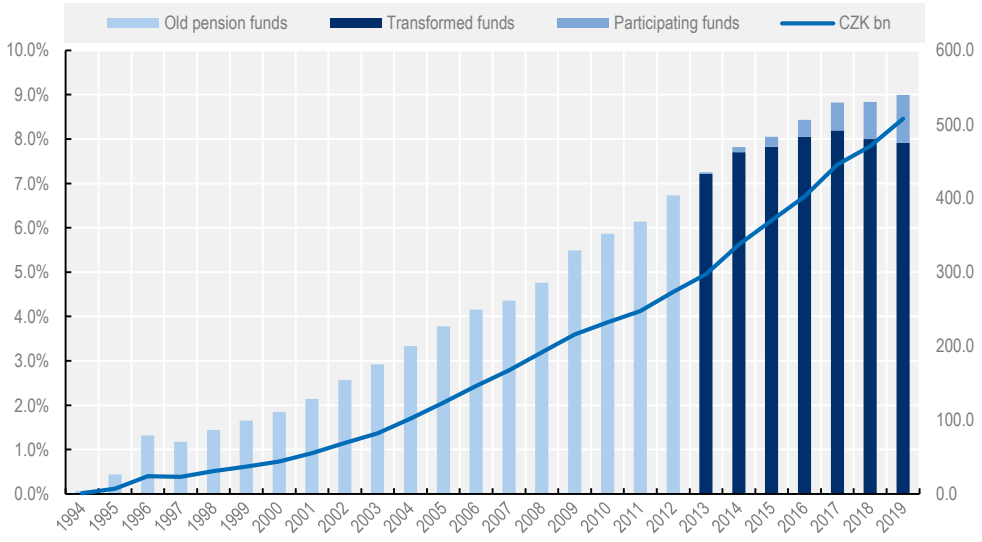
Several factors may contribute to explaining this low overall performance. Performance is indeed the result of many factors, predominantly, the proportion of assets in guaranteed and non-guaranteed funds, asset allocation strategies, investment restrictions and fees.

4.4.2. Assets under management

Most of the assets in the supplementary pension system are in funds providing an annual non-negative return guarantee. Overall, transformed and participating funds managed assets totalling CZK 507.7 billion, or 9% of GDP, at the end of 2019. Transformed funds gathered 88% of the total (Figure 4.12).

Figure 4.12. Total assets in the supplementary pension schemes, 1994-2019

As a percentage of GDP and total in CZK billion (right-hand scale)

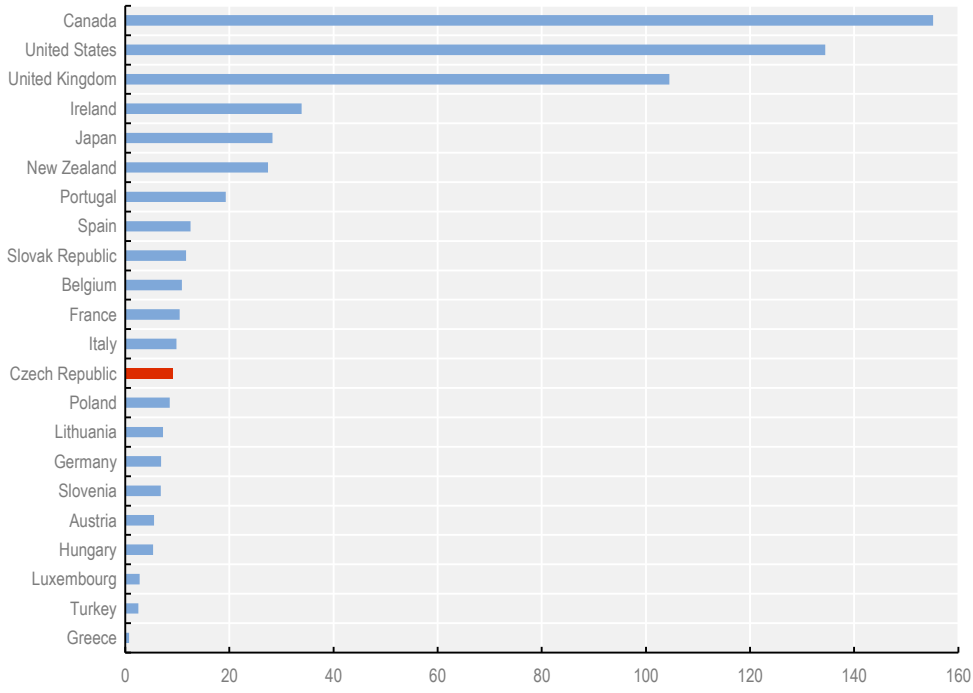


Source: Ministry of Finance of the Czech Republic State Supervision in Pension Funds Annual reports 2000-2004, CNB Financial market supervision reports 2005-2018, OECD GDP database.

The Czech funded pension system ranks towards the bottom when compared with other voluntary systems in the OECD. With respect to the size of the economy, assets managed by transformed and participating funds only represent 9% of GDP. This is well below the average pension assets as a percentage of GDP of other OECD countries with only voluntary funded pension systems, which was 28% in 2018 (Figure 4.13).[8] Beyond the fact that some systems are older than the Czech one (e.g. the United Kingdom, the United States), low contribution levels and low performance contribute to this low ranking.

Figure 4.13. Total assets in OECD voluntary funded pension systems, 2018

As a percentage of GDP



Source: OECD (2019), *Pension Markets in Focus*, https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2019.pdf.

4.4.3. Investment allocation

Members of the supplementary pension savings scheme have investment choice. Pension management companies are legally obliged to offer one conservative participating fund. In addition, they can offer a range of other participating funds with different portfolio structures and investment risk profiles. Participants select one or more participating funds offered by their pension management company. Participants in the supplementary pension insurance scheme do not have investment choice in transformed funds.

There is no default investment strategy in the supplementary pension savings scheme. Participants may follow the recommendation by the pension management company based on their reply to an investment questionnaire, which assesses their risk profile and investment horizon. If they do not want to reply to the questionnaire, the pension management company has to recommend the conservative fund, which in that case could be seen as the default. According to the APS CR, as at 30 September 2019, 88% of participants in the supplementary pension savings scheme aged under 50 were in a fund other than the conservative one. Participants can mix different participating funds and can change their allocation at any time. Some pension management companies also offer life-cycle investment strategies, which change the weight of different participating funds over time. Pension management companies also have to transfer automatically the assets of the participants into the conservative participating fund at the latest when participants are five years before retirement age. The transfer can be gradual over several years before, but pension funds seem to make the transfer all at once just before the cut-off age. This practice would penalise participants who have suffered investment losses just before the transfer occurs. However, the participant may ask the pension management company in writing not to apply the transfer, although this does not seem to happen in practice according to the APS CR.

At the end of 2019, 37% of the assets in participating funds were in one of the mandatory conservative funds. This is down from 62% in 2013. According to the Ministry of Finance, this is probably related to changes in the participants' age structure, which saw an increase in the share of participants under the age of 49. These participants may prefer dynamic investment strategies due to their longer investment horizon. Assets in balanced funds represented 23% of the assets in participating funds and assets in dynamic funds 18%.

Transformed funds' portfolios are very conservative due to the non-negative return guarantee. At the end of 2019, transformed funds had placed the bulk of their assets into bills and bonds (78.4% of total assets), while investing just 0.1% of total assets in equities, 1.3% in collective investment schemes and 19.4% in cash and deposits.

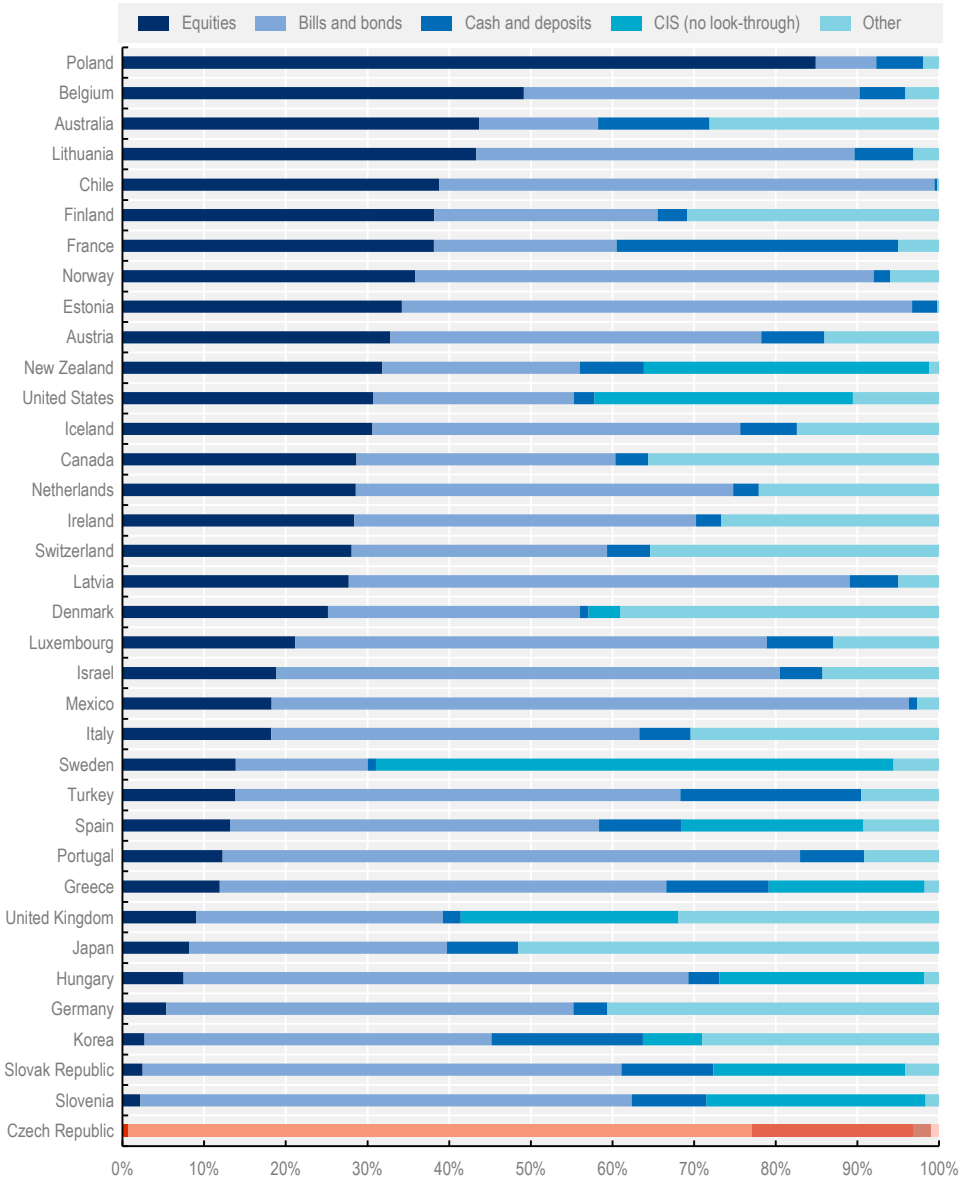
The asset structure of participating funds is generally less conservative than that of transformed funds. At the end of 2019, participating funds had 32.0% of their assets invested in bills and bonds, 48.3% in cash and deposits, 7.5% in equities and 11.5% in collective investment schemes.[9] In 2018, obligatory conservative participating funds' investments in debt securities accounted for 40.8% of their assets and investments in deposits for 59.1%. By contrast, other participating funds had higher proportions of investment in equities (10.0%) and collective investment schemes (16.3% of assets). Their investments in debt securities amounted to 36.2% and their investments in cash and deposits to 37.2% of their total assets.

Of all the OECD countries, the Czech Republic was the country with the lowest allocation to equities at the end of 2018. Figure 4.14 shows the allocation of pension assets in selected investment categories in OECD countries at the end of 2018. The Czech Republic is at the bottom of the chart with an allocation to equities of 0.7%. It is also the country with the largest allocation to bills and bonds (76.5%). This is obviously driven by the weight of transformed funds in the supplementary pension system.

Foreign investment by pension funds represented 13.9% of total investment at the end of 2018. The bulk of foreign investment was in the European Union (76%), followed by North America (11%). Foreign currency exposure stood at 8.1%. Foreign investment has increased significantly over time for participating funds, from 5.0% in 2013 to 25.3% in 2018. Over the same period, foreign investment of transformed funds has varied between 10% and 15% of total investment.

Figure 4.14. Allocation of pension assets in selected investment categories in OECD countries, 2018

As a percentage of total investment



Note: The "Other" category includes loans, land and buildings, unallocated insurance contracts, hedge funds, private equity funds, structured products, other mutual funds (i.e. not invested in equities, bills and bonds or cash and deposits) and other investments. The OECD Global Pension Statistics database gathers information on investments in Collective Investment Schemes (CIS) and the look-through of these investments in equities, bills and bonds, cash and deposits and other. Data on asset allocation in these figures include both direct investment in equities, bills and bonds, cash and deposits and indirect investment through CIS when the look-through of CIS investments is available. When the look-through is not available, investments in CIS are shown in a separate category and data only show the direct investments of assets in equities, bills and bonds and cash and deposits.

Source: OECD (2019), *Pension Markets in Focus*, https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2019.pdf.

4.4.4. Investment restrictions

Regulation imposes certain limits on investment for transformed funds and participating funds (Table 4.3). Within participating funds, specific limits apply to the mandatory conservative funds. Equity investment is not allowed for conservative participating funds, while there is no limit for other participating funds and a ceiling of 70% for transformed funds. Conservative funds are also more restricted than the other funds on their investments in private bonds and retail investment funds (30% for both asset classes together). In addition, conservative funds cannot have the duration of the portfolio exceeding five years. Finally, the law provides for conditions for concluding transaction with financial derivatives. These are restricted only to the purpose of effective asset management.

Table 4.3. Portfolio limits as at December 2019

	Transformed funds	Conservative participating funds	Other participating funds
Equity	- Maximum 70% on equity traded on OECD regulated markets (maximum 5% otherwise) (1) - Maximum 10% per single issuer/issue	Not allowed	- No limit for equity traded on regulated market or multilateral trading facility (MTF) verified by the CNB - Maximum 5% per single issuer/issue
Real estate	10%	Not allowed	Not allowed
Bills and bonds issued by public administration	No limit for bonds and money market instruments of OECD members or international institutions Czech Republic belongs to (maximum 70% otherwise)	- No limit for EU and OECD member states' bonds and money market instruments of which the rating is among the best 5 rating categories - Maximum 5% in securities and money market instruments issued by one issuer (except bonds and money market instruments issued by the Czech Republic or the CNB)	- No limit for bonds traded on EU regulated market or EU MTF verified by CNB - Maximum 5% in securities and money market instruments issued by one issuer (except bonds and money market instruments issued by the Czech Republic or the CNB)
Bonds issued by the private sector	- Maximum 70% for bonds issued by the private sector traded on OECD market (maximum 5% otherwise) (1) - Maximum 10% per single issuer/issue	- Maximum 30% for bonds of which the rating is among the best 5 rating categories - Maximum 5% per single issuer/issue	- No limit - Maximum 5% per single issuer/issue
Retail investment funds	- Maximum 70% for open-ended funds traded on OECD regulated market (maximum 5% otherwise) (1) - Maximum 10% per single issuer/issue	- Maximum 30% for money market funds with qualified rating - Maximum 10% per single issuer/issue	- Maximum 60% for collective investment funds authorised to be publically offered in the Czech Republic - Within the limit for the collective investment funds, investments in specialised investment funds are allowed up to 20% but no more than 10% can be invested in securities that do not replicate the composition of a financial index, which may be the underlying of a derivative - Maximum 10% per single collective investment fund and 35% for a group of issuers
Private investment funds	- Maximum 70% for private investment funds traded on OECD markets (Maximum 5% otherwise) (1) - Maximum 10% per single issuer/issue	Not allowed	Not allowed

Loans	Maximum 5%	Not allowed	Maximum 5%
Bank deposits	- Not limit for deposits and deposits certificate in OECD banks - Maximum 10% or CZK 20 million per single issuer/issue	- No limit for regulated banks - Maximum 10% per single issuer/issue	- No limit for regulated banks - Maximum 10% per single issuer/issue
Foreign currency	Maximum 50%	No limit but full hedging against currency risk is required	No limit
Derivatives	Only hedging derivatives	Only derivatives for hedging currency and interest rate risks	- Maximum 80% of the value of the fund's own capital for open position of financial derivatives - If the counterparty is the regulated bank, the risk must not exceed 10% of the value of the fund's assets - If the counterparty is another body, the risk must not exceed 5% of the value of the fund's assets

Note: (1) According to applicable legislation, at most 5% of a transformed fund's assets may be invested in categories of assets not listed in the law. It means that the mentioned 5% limit is common to all relevant asset categories in the table.
Source: OECD (2019), *Annual Survey of Investment Regulation of Pension Funds*, http://www.oecd.org/daf/fin/private-pensions/annualsurveyofinvestmentregulationofpensionfunds.htm.

4.4.5. Fees

The main fees that pension management companies charge to members are the management fee and the performance fee (Table 4.4). Additionally, if the participant asks for a change of participating fund more than once a year, the pension management company may charge a fee, up to CZK 500. Likewise, if the transfer of assets to another pension management company occurs less than five years after the conclusion of the contract, the pension management company may charge of fee, up to CZK 800. Pension management companies are also entitled to charge a fee for sending a pension benefit statement more than once a year.

Table 4.4. Main types of fees charged by pension management companies

	Transformed funds	Conservative participating funds	Other participating funds
Management fee	Up to 0.8% of the average annual value of the fund	Up to 0.4% of the average annual value of the fund	Up to 1% of the average annual value of the fund
Performance fee	Up to 10% of the profit	Up to 10% of (the average value of the pension unit in t – the highest annual average value of the pension unit since t_0) × the average number of pension units in t	Up to 15% of (the average value of the pension unit in t – the highest annual average value of the pension unit since t_0) × the average number of pension units in t
Change of fund		Up to CZK 500	Up to CZK 500
Transfer of funds to a different pension management company	Up to CZK 800	Up to CZK 800	Up to CZK 800

Note: t is the current period and t_0 is the time since the creation of the fund.

The performance fee for participating funds uses a high-water mark mechanism. If the average value of the pension unit is lower than its historic maximum, the pension fund does not receive any performance fee. Otherwise, the performance fee is a percentage (10% or 15%) of the outperformance compared to the high-water mark. This mechanism was introduced to motivate pension management companies to focus

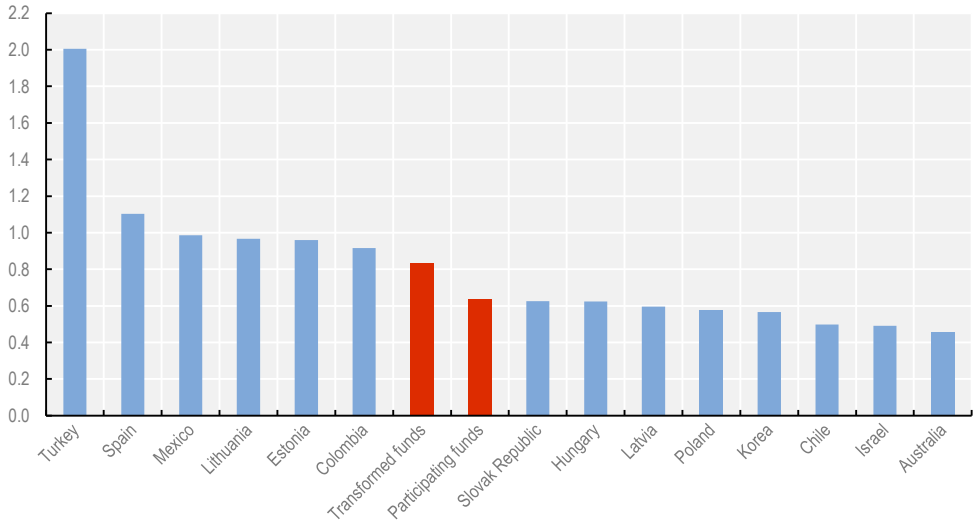
on long-term performance. So far, it is difficult to appreciate an improvement in performance, but this type of measure takes time to produce results.

Pension management companies may not have an incentive to invest in certain asset classes that may require them to pay a higher investment fee to external asset managers. Investing in alternative asset classes with higher investment fees may reduce the margins of pension management companies, as they cover all the expenses of the funds they offer with the income from management and performance fees they charge to participants. However, investing in alternative asset classes may increase returns net of fees, which would allow pension management companies to receive higher performance fees and to provide better risk-adjusted, net of fees returns to participants.

Fees charged by pension management companies are middle-ranged in international comparison. Figure 4.15 compares the total amount of fees paid as a percentage of the total amount of assets under management for DC pension plans in selected OECD countries. It accounts for all fees directly paid by members, independently of the flow on which they are charged (salary, contributions, assets, performance or fixed amount). In 2018, pension management companies charged members total fees amounting to 0.8% of assets under management (0.8% for transformed funds and 0.6% for participating funds). This level lies in the middle of the range of the countries shown.

Figure 4.15. Fees or commissions charged to members of DC plans in selected OECD countries, 2018

As a percentage of total investment



Note: Data for the Czech Republic only refer to management and performance fees.
Source: OECD (2019), *Pension Markets in Focus*, https://www.oecd.org/daf/fin/private-pensions/Pension-Markets-in-Focus-2019.pdf.

This total fee comparison may be partially misleading, however, when fees in the different countries do not cover the same cost items. Countries where fees explicitly charged to members cover a large range of costs may indeed look more expensive than countries where a smaller range of costs is covered. In the Czech Republic, fees cover all investment and administrative costs. Han and Stanko (2018[1]) analyse the extent to which various cost and fee elements are covered by fees charged to pension plan members and group jurisdictions by clusters with identical or very similar items actually covered by fees. It shows that, in many jurisdictions, explicit fees only cover costs partially, implying an under-estimation of the total charges

for members.[10] This nuances the middle ranking of the Czech Republic in international comparison, as countries with lower fees may not be as comprehensive.

The 2016 reform affected the fees charged for transformed funds, while fees for participating funds are catching up. As shown in Figure 4.16, the structure of the fees charged for transformed funds changed in 2016, with the share of the management fee in the total jumping from 76% to 90%. The 2016 law indeed increased the cap on management fees (from 0.6% to 0.8% of assets) and reduced the cap on performance fees (from 15% to 10% of returns). In the case of participating funds, fee caps have increased in 2016 for non-conservative funds, from 0.8% to 1% of assets for the management fee and from 10% to 15% of outperformance for the performance fee. In addition, the proportion of assets in conservative funds has declined over time (from 62% of the assets in participating funds in 2013 to 37% in 2019), explaining further the increase in fees charged for participating funds, as fee caps for conservative funds are lower than for the other funds (Table 4.4). This upward trend also suggests that pension management companies charge the maximum allowed.

Figure 4.16. Evolution of management and performance fees charged by pension management companies, by type of fund, 2013-19

As a percentage of total assets

Source: CNB-ARAD.

4.5. The annual non-negative return guarantee forces pension management companies to fulfil certain capital requirements

Legislation requests pension management companies to hold an initial capital of CZK 50 million. A pension management company has to maintain a value of capital in line with the assets under management. The capital should be at least the sum of:

- CZK 50 million increased by 0.05% of the value of assets in participating and transformed funds in excess of CZK 5 billion (this sum stops increasing when it reaches CZK 500 million);

- 25% of the sum of depreciation costs of tangible and intangible assets, and administrative costs of the pension management company for the previous accounting period.[11]

There is also a special capital requirement to cover the risks associated with the assets and liabilities of transformed funds. The liabilities include the return guarantee, which applies to participants', employers' and state contributions, and the benefits to individuals choosing a lifelong retirement income. This capital requirement is 8% of the sum of risk-weighted exposure amounts. If the liabilities of the transformed fund are higher than the assets, the pension management company is obliged to transfer to the transformed fund the assets necessary to offset this difference from its own capital, no later than 30 days after the end of the quarter in which liabilities exceeded the assets.

The capital ratio of pension management companies has increased in recent years. Table 4.5 presents the ratio of the pension management companies' capital to their cumulative capital requirements between 2013 and 2019. This ratio fell between 2013 and 2016. The Ministry of Finance saw this development as not favourable, particularly due to the possible future risk of reduction in the market price of bonds, which make up the majority of the portfolio of transformed funds managed by the pension management companies. Due to the statutory guarantee that the transformed funds cannot decrease in value, if interest rates increase from their currently low levels, and, as a result, there is an associated decrease in the price of the bonds held at market value, the pension management companies would have to make up any losses from their own equity.[12] The capital ratio increased in 2017, 2018 and 2019. This increase was due to an increase in pension management companies' capital and a reduction in the capital requirements (at least in 2017 and 2018). This reduction of capital requirements was due to a less risky profile of assets resulting from an increased allocation into deposits placed with credit institutions.

Table 4.5. Capital and capital requirement, 2013-19

In CZK billion

	2013	2014	2015	2016	2017	2018	2019
Capital	9.1	8.3	8.8	8.9	9.0	9.3	10.5
Capital requirement	6.1	6.0	6.6	7.4	6.5	6.1	6.2
Capital ratio (percentage)	148.5	139.7	132.6	119.9	139.7	153.8	168.0
Combined capital surplus	14.2	18.1	18.0	16.9	12.6	9.1	14.7

Source: CNB-ARAD.

The increased of the capital ratio since 2017 may not be a sign of a better resilience of pension management companies to unfavourable developments in financial markets. The combined capital surplus can complement the assessment (last line of Table 4.5). It is the sum of the equity of the transformed funds, and the excess of capital actually held over the capital requirements applicable to pension management companies. This combined capital surplus represents the maximum possible level of losses that would result in a decline in pension management companies' capital to the level of their capital requirements. This indicator has been divided by two between 2015 and 2018, essentially due to a reduction in the equity of transformed funds. This indicates a lower safety cushion and a reduced capacity of pension management companies to maintain their capital above the regulatory requirement in case of unfavourable market developments. This trend was reversed in 2019, but the combined capital surplus is still below the level of 2016.

One of the main challenges in the Czech pension sector continues to be a low-yield environment stemming from a large proportion of low-risk debt securities in the pension funds' assets. Furthermore, macroeconomic developments, especially a rise of interest rates in Europe, could have possible negative

impacts on pension funds' returns. Since pension management companies cannot deliver negative returns in transformed funds, a depreciation of transformed funds' assets would trigger the injection of additional capital, which would negatively affect the capital ratio of pension management companies.

In addition, the yearly guarantee carries a significant implicit cost. OECD (2012[2]) compares the price of different types of minimum return guarantees. While the price of a capital guarantee valid only at retirement would be equivalent to six basis points annually of the accumulated net asset value of the portfolio, it increases to 39 basis points when the capital guarantee is valid annually, like in the Czech Republic.[13] This price is not charged explicitly to participants, as it is included in the total management fee of 0.8% of assets for transformed funds.

4.6. Participants have low retirement income and mostly withdraw lump sums

The rules differ for the pay-out options available to participants in the supplementary pension insurance scheme and in the supplementary pension savings scheme.

Table 4.6. Pay-out options for transformed funds

	Minimum age	Minimum savings period	Payment of state contributions	Taxation	Other terms
Old-age pension (lifelong)	60 years old	5 years	All	Tax free	Possibility to have a guaranteed period and a survivor pension
Lump sum	60 years old	5 years	All	15% tax on investment income and employer contributions paid after 01/01/2000	
Service pension		15 years	All	Lifelong pension: tax free Lump sum: 15% tax on investment income and employer contributions paid after 01/01/2000	Possibility to have a guaranteed period and a survivor pension Up to 50% of the funds can be withdrawn at once
Disability pension		3 years	All	Tax free	Required degree of disability depend on contract
Surrender (early termination)		1 year	Returned	15% tax on investment income and employer contributions paid after 01/01/2000	

For transformed funds, retirement benefits can take two forms, lifelong retirement payments or a lump sum (Table 4.6). The pension management company pays the benefits in both cases, which means that there is no transfer to an insurance company in the case of lifelong payments. The lifelong retirement income (called "old-age pension") can have a guaranteed period and a survivor option. There is no legal requirement for the mortality tables that pension management companies can use for the calculation of lifelong retirement payments. Entitlement to a retirement benefit requires a minimum saving period of five years and a minimum age of 60. In addition, 69% of participants have a service pension contract, which allows them to get a lump sum or lifelong payments at any age after 15 years of contributions.[14] Unmodified contracts concluded before 2000 provide an additional pay-out option paying benefits for a predefined period of time and have looser requirements for retirement benefits (three years of contributions

and age 50). These more lenient rules apply to 8% of participants in the supplementary pension insurance scheme.

For members of participating funds, retirement benefits can take the form of programmed withdrawals, an annuity, a lump sum, or a combination of the three (Table 4.7). Participants need to contribute for at least five years and reach the age of 60 before being entitled to receive retirement benefits. When choosing an annuity (lifelong or fixed-term), the pension management company transfers the assets to a life insurance company. There is no legal requirement for the mortality tables that insurance companies can use for the calculation of annuities. Programmed withdrawals can be of a specified amount (minimum CZK 500 monthly) or for a predefined period (minimum three years). In the case of death of the plan holder, the accumulated assets are assigned to a person chosen by the participant or subject to inheritance rules.

Table 4.7. Pay-out options for participating funds

	Minimum age	Minimum savings period	Payment of state contributions	Taxation	Other terms
Programmed withdrawals	60 years old or up to 5 years before pension eligibility age	5 years	All	Tax free if the payment period lasts > 10 years, 15% tax on investment income otherwise	
Lump sum	60 years old	5 years	All	15% tax on investment income and employer contributions paid after 01/01/2000	
Single premium for life insurance (fixed-term or lifetime annuity)	60 years old or up to 5 years before pension eligibility age	5 years	All	Tax free if lifelong or if the payment period lasts > 10 years, 15% tax on investment income otherwise	Possibility to have a guaranteed period and a survivor pension
Pre-retirement pension	Up to 5 years before pension eligibility age	5 years	All	Tax free if the payment period lasts > 10 years, 15% tax on investment income otherwise	Minimum pay-out period of 2 years
Disability pension		3 years	All	Tax free	Third degree of disability
Partial pay-out at age 18		10 years	Not paid	15% tax on investment income	Up to 1/3 of deposited funds can be withdrawn, excluding employer and state contributions
Surrender (early termination)		2 years	Returned	15% tax on investment income and employer contributions paid after 01/01/2000	

One of the new features available since 2013 is the ability to use all or part of the assets in participating funds in the form of a pre-retirement pension. This solution targets participants who are nearing retirement age, are having a difficult time finding a job and have already saved enough within the supplementary pension savings system.[15] Up to 2013, the only option these individuals had was to apply for an early retirement pension from the public system. This, however, led to a permanent reduction of the public pension they received. By taking advantage of the ability to draw a pre-retirement pension from their

participating fund, the individual retains the right to a higher public pension, as he/she does not begin drawing an early retirement pension. However, participants must meet certain requirements:

- It is not possible to start drawing a pre-retirement pension more than five years prior to the time the individual reaches the pension eligibility age[16]
- Participants must have saved during at least 60 calendar months (including the period of participation in the supplementary pension insurance scheme for those who switched)
- The pre-retirement pension must be drawn for at least two years
- The monthly amount of the pre-retirement pension must be equal to at least 30% of the average wage in the Czech Republic[17]
- The pre-retirement pension must be paid out as a fixed monthly amount. Once the pre-retirement pension starts being drawn, it is not possible to interrupt or terminate the process.

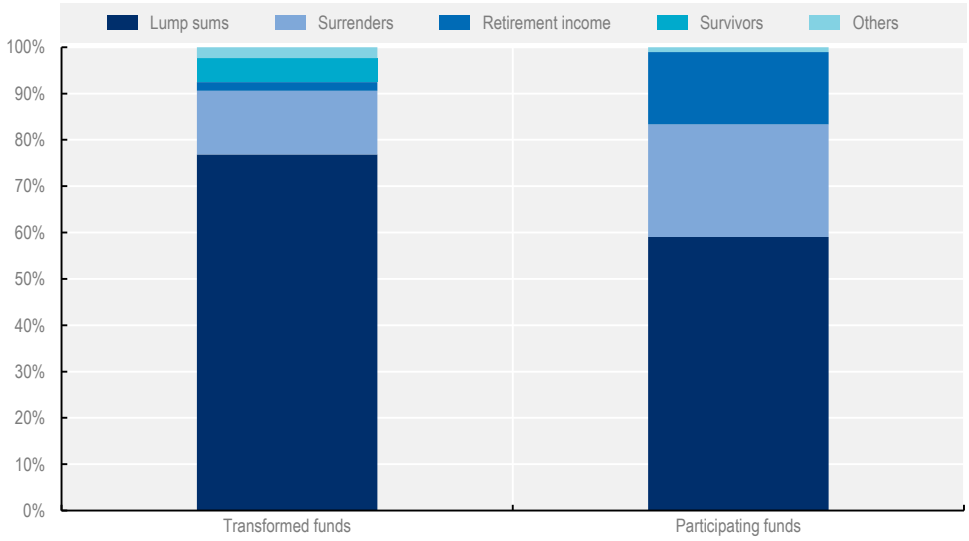
Individuals drawing a pre-retirement pension get public health insurance paid by the state but do not accumulate further rights in the state pension. The benefits in the public health insurance system are valid for the period of receiving the pre-retirement pension. The individual does not have to pay health insurance contributions but has the "state insured" status. For pension insurance, however, the pre-retirement period is excluded for the calculation of the pension from the public pension system, which is paid when the individual reaches his/her pension eligibility age.[18]

A participant who becomes disabled and classified as fully disabled is entitled to take a pension (either for a limited period of time or lifelong) or a lump sum from the supplementary pension system (both transformed and participating funds). A minimum participation of three years is required, and the disabled individual does not have to wait until the pensionable age to receive benefits. In the contract, the required contributory period could be longer, but no more than five years.

Benefits paid to plan holders are mostly in the form of lump sums, in particular for transformed funds (Figure 4.17). The majority of the benefits paid by transformed funds in 2019 were lump sums (76.8%), followed by surrenders (13.7%). Lump sums also represented the most common form of benefits paid by participating funds (59.0%), followed by surrenders (24.3%). However, retirement income benefits (i.e. programmed withdrawals and pre-retirement pensions), were also significant, representing 15.6% of total benefits paid in 2019. One explanation is the possibility, with participating funds only, to use the pre-retirement pension or to choose the payment of the pension for a specific period of time that can be as short as three years. The number of recipients of pre-retirement pensions has steadily increased since 2013. In 2018, 1 239 pre-retirement pensions were in payment. By contrast, virtually no one purchases an annuity.

Low contribution levels, short contribution periods and low investment returns translate into low levels of assets accumulated and low retirement income. In 2019, pension management companies paid out a total of CZK 23.3 billion to plan holders (0.4% of GDP), of which 80% originated from participants in the supplementary pension insurance scheme. Overall, only 4% of pensioners' income come from the supplementary pension schemes. The selection of the lump-sum option despite the tax penalty may be justified by the low levels of assets accumulated by the time people take their benefits. People receiving their retirement benefits as a lump sum pay a 15% tax on employer contributions and investment income, while those choosing a payment option lasting for more than ten years do not pay tax. However, the average amount of benefits received corresponds to no more than 2.5 times the national average gross monthly wage, even in the case of lump sums. With such low levels of assets, people have no incentive to take an annuity or a lifelong option.[19]

Figure 4.17. Benefits paid to plan holders, 2019



Note: The category "Retirement income" refers to lifelong retirement benefits in the case of transformed funds, and to programmed withdrawals and pre-retirement pensions in the case of participating funds. The category "Others" include service pensions (for transformed funds only), premiums paid to life insurance companies (for participating funds only), disability pensions and inheritances.
Source: CNB-ARAD.

4.7. Pension management companies compete through their distribution network, not on fees

A pension management company (joint-stock company) entering the market must obtain a licence from the supervisory authority, the Czech National Bank (CNB). The pension management company must obtain a separate licence for each of the participating funds it offers. There are standard legal and professional requirements whose fulfilment must be met by the applicant (capital adequacy, fit and proper requirements for the management and other personnel, adequate business plan, requirements for reporting and transparency, requirements for authorisation of prospective acquisition, prudency and soundness of management). Assets of the participants in the funds are separated from the pension management company and must be kept by a custodian (bank-depositary with an adequate permission from the CNB). Investments into the pension management company or into a company from the same financial group are not allowed. These requirements seem to follow the main messages from the OECD Core Principles of Private Pension Regulation (OECD, 2016[3]).[20]

The Czech market of pension management companies is moderately concentrated. Since 2015, eight pension management companies are active in the supplementary pension schemes. After the 2013 reform, there were ten pension management companies in the market, of which one decided to terminate its activities (2014), and two companies merged (2015). At the end of 2019, the pension management companies were managing assets in 36 pension funds, of which 28 participating funds and eight transformed funds. In addition, the two largest companies managed 45% of the assets for 46% of the participants. The Herfindahl-Hirschman Index (HHI), which measures the market concentration of a certain industry, stood at 0.16 when calculating it based on both assets and members, indicating a moderate concentration in the market.[21]

Participants join the supplementary pension schemes through bank branches and regulated intermediaries. Three of the pension management companies are subsidiaries of banks and use the banks'

network for the distribution of their funds. The other pension management companies are subsidiaries of insurance companies and investment funds and rely more on intermediaries, which can charge a commission of up to 7% of the national average salary for each new contract. This commission cannot be charged to the participant and is paid by the pension management company from the total fees paid by participants. However, intermediaries have an incentive to sell other types of products, given that only pension plans have a cap on commissions. The three pension management companies that are subsidiaries of banks hold 48% of participants, suggesting that it may be easier for these companies to attract clients.

Participants can change participating funds and pension management companies at any time. The pension management company determines the composition of the portfolio based on approved fund rules. If the participant is not satisfied with the strategy, he/she may change the participating fund within the same pension management company or may transfer assets to another pension management company by terminating the contract and signing a new one. Switches are uncommon, only 0.7% of participants in the supplementary pension savings scheme changed fund or company in 2019. This may be because bank subsidiaries have an important role and participants in these pension management companies may not want to switch as they have other financial products with the bank, such as loans or savings accounts.

Participants in transformed funds can only switch to the supplementary pension savings system through their pension management company. They can later on change the pension management company if the selection of participating funds in that company does not suit their needs, but this may imply a transfer fee.

Pension management companies usually charge the maximum allowed by law with few exceptions. In particular, the management and the performance fees correspond to the statutory limits, except in the three following cases:

- Allianz: The management fee for the balanced participating fund is 0.8% of assets instead of the 1% maximum;
- NN: The management fee for the balanced participating fund is 0.8% of assets instead of the 1% maximum, and there is no performance fee charged for the conservative fund;
- CS-PS: The performance fee for the ethical participating fund is 10% of annual returns instead of the 15% maximum.

Pension management companies have increasing profits due to higher fee income. They generated a net after-tax profit of CZK 1.9 billion in 2019 (around EUR 69 million). This represented 87% of operating expenses and 18% of total equity. The main income item for pension management companies is income from fees paid by participants. This income has grown constantly over the period 2013-19, and in particular in 2016 (+19%), due to the increase in the statutory limits on fees for the management and appreciation of assets. Meanwhile, fee and commission expenses (e.g. remuneration of the depositary, for portfolio management, or for contract intermediation) have declined. Especially, expenses related to the remuneration for contract intermediation declined by 34% between 2015 and 2016, despite the increase of the related cap in 2016. Finally, administrative expenses have remained broadly constant after a decline in 2014. As a result, the net profit after tax of pension management companies increased by 82% in 2016 to CZK 1.4 billion and increased again by 35% in 2019 to CZK 1.9 billion.

4.8. Communication with plan members do not include projections

Participants receive a pension benefit statement free of charge once a year within one month after the end of the calendar year. Besides that, participants can also require a pension statement anytime and the pension management company has to send the statement within 15 working days. The pension management company can charge a fee for this service.

The pension benefit statement contains the following information:

- Information about the participant's personal pension plan (identification of the participant, saving period, the value of the plan);
- Information about the appreciation of the participant's funds for the period since the last statement;
- The annual net performance of the participating fund, in which the participant's funds have been placed over the period since the last statement;
- The amount of fees paid to the pension management company, clearly divided into management and performance fees.

Participants receive the written statement by mail on the mailing address stated in their contract. The pension management company and the participant can arrange for different channels, such as email for example. At retirement, pension management companies inform the participants about all their pay-out options either by mail or email.

Participants have little information about the future level of pension from the supplementary pension schemes. The pension benefit statement does not obligatorily include forward-looking projections. Neither the Ministry of Finance nor the Czech National Bank offer calculators. Some pension management companies do. In order to receive an approximate calculation of the anticipated level of benefits, the participant must enter the information about the amount of estimated monthly contributions and the estimated saving period. The output is not guaranteed, it only shows the probable outcome according to the expected performance of the participating fund. Additionally, there is no dashboard system in the Czech Republic, where individuals could visualise their pension entitlements from the public and private components together.

4.9. Policy options to improve the design of the funded pension system

This section presents a series of policy options to address the issues identified previously in order to improve the design of the Czech funded pension system. The options presented here are in line with the main OECD guidelines regarding funded DC pension arrangements (OECD, 2018[4]; 2018[5]; 2016[6]; 2014[7]; 2018[8]) and the OECD Roadmap for the Good Design of DC Pension Plans (OECD, 2012[9]).

The Czech authorities could consider two alternatives to strengthen the role of the funded system in the overall pension system: introducing a new, occupational pension scheme, or improving the design of the existing supplementary pension schemes. The Czech Republic is the sole OECD country where the funded pension system only consists of a voluntary personal pension scheme. All the other countries have several pension schemes, sometimes combining mandatory and voluntary, occupational and personal plans. This allows pure voluntary personal schemes to have rules that are more lenient with respect to participation, contributions and withdrawals. The Czech Republic lacks this intermediate layer between public pensions and voluntary personal pensions. One option could be to introduce a voluntary occupational pension scheme, where employers could elect to establish a plan for their employees, and employees could choose whether to join that plan. This would help increasing the role of employers in retirement income provision.

Alternatively, the Czech authorities could build on the strength of the current supplementary pension scheme and improve it. A large share of the population already participates in supplementary pension schemes. Moreover, the retirement savings scheme (second pillar) introduced in 2013 did not last long. The Czech population may thus fear that a new occupational pension system may not last long as well, especially if there is a lack of political consensus.

How to improve the design of the Czech funded pension system depends on the policy objective. The main policy objective should be to have a strong complementary pension system that helps people to build an additional source of retirement income, on top of their state pension. Whether through occupational or

personal schemes, this goal requires a multipronged strategy: i) improving net performance; ii) encouraging higher contribution levels; iii) lengthening contribution periods; and iv) extending the take-up of lifelong retirement income products. The objective may only be achieved by acting on the four fronts together, as for example the take-up of lifelong pensions cannot be extended if assets accumulated at retirement are still as low as today.

The introduction of long-term investment accounts may jeopardise some of these efforts. The Ministry of Finance has recently submitted a draft act amending certain laws in connection with the development of the capital market.[22] The legislative measures include the introduction of long-term investment accounts. These accounts would be subject to the same withdrawal rules as supplementary pension schemes. Tax-deductible contributions to all types of retirement savings products (i.e. supplementary pensions, private life insurance and long-term investment accounts) would be jointly limited to CZK 48 000 per year. These long-term investment accounts would not enjoy the state matching contribution, but would not be subject to the same investment restrictions and fee regulations as supplementary pension schemes. The introduction of these competing products subject to different rules could dilute the potential positive impact of the strategy to improve the design of the funded pension system and may bring confusion in people's mind about the appropriate product to choose to save for retirement.

4.9.1. Improving net performance

Before encouraging people to contribute more into the system to increase their future pension income prospects, efforts are needed to improve the net performance of pension funds. The Czech Republic could use two levers: encourage investment strategies that yield higher expected risk-adjusted returns, and better align the fees charged to participants with the costs incurred by the pension management companies.

Although the yearly non-negative return guarantee in transformed funds is attractive for participants who fear they may lose the money they put in, it is a serious impediment to investment. Investment regulation allows pension management companies to invest the money within transformed funds in various asset classes. In practice, however, these companies have an incentive to invest mostly in government bonds that provide secured flows of income and do not increase their capital requirement. In the current low interest rate environment, participants barely get more than the guarantee and their savings do not keep up with inflation. In addition, the yearly guarantee carries a significant implicit cost that pension management companies cannot charge to participants (it is included in the cap of 0.8% of assets). This reduces further the capacity of these companies to invest in more sophisticated asset classes to get better returns. A guarantee to recoup contributions at the time of retirement rather than annually would be less costly and would give more room for pension management companies to diversify their investments.

Participants in the supplementary pension insurance scheme should therefore be further encouraged to switch to the supplementary pension savings scheme, where investment returns are higher (Figure 4.11). As changing the contract of participants in transformed funds to modify the guarantee could be legally challenging, the Czech authorities should seek to increase the number of switches to participating funds. For example, pension management companies could send regularly a transfer form to all participants in transformed funds. This would remove the effect of procrastination from people who intend to switch to participating funds but have not done so yet. Alternatively, the state could differentiate the financial incentives for contributions into transformed funds and participating funds, favouring the later. A further option would be the automatic transfer to participating funds for new contributions, possibly with an opt-out option for people willing to keep the yearly guarantee for all contributions.[23] In that case, each participant would have two accounts. The money already accrued in transformed funds would continue to be guaranteed in the same way, but all new contributions would flow to participating funds without guarantee. This is consistent with the recent proposal by the Ministry of Finance to allow individuals to participate simultaneously in a transformed fund and a participating fund.

The government should also promote the access to an appropriate default investment strategy to all participants. The OECD Roadmap for the Good Design of DC Pension Plans encourages the establishment of default investment strategies for people unwilling or unable to choose their own strategy. The establishment of a default is important if the funded pension system is expected to play a bigger role in retirement income provision. In addition, in case the Czech authorities decide to implement an automatic transfer from transformed to participating funds, a default investment strategy becomes essential as people are more passive and less likely to make choices. Life-cycle investment strategies can be well suited to protect people close to retirement from the impact of extreme negative shocks in financial markets, while allowing younger participants to invest more in risky assets that yield higher expected returns. In the OECD, pension providers have to offer a life-cycle investment strategy as a default in Australia, Canada, Chile, Israel, Lithuania, Mexico, Poland, Slovenia, Sweden, the United Kingdom and the United States. In the Czech Republic, some pension management companies already offer life-cycle investment strategies by mixing different participating funds. The regulatory framework could require all companies to offer such strategies as a default option.

The supervisor should monitor how pension management companies transfer the assets of the participants into the conservative participating fund before retirement. This transfer should be gradual and delays could be considered when asset values drop just before the planned transfer, to avoid that participants materialise the losses. However, it seems that pension management companies transfer the assets all at once when participants are just five years before retirement age. The CNB should monitor the situation to see whether legislative changes are necessary.

Investment restrictions could be relaxed for participating funds to allow pension management companies to offer riskier investment strategies for less risk-averse participants. Regulation forbids investment in real estate and private investment funds for participating funds. These asset classes could be allowed within certain limits and restricted to very well identified participating funds that participants willing to take more risk could select. According to the OECD Annual Survey of Investment Regulation of Pension Funds, most OECD countries allowed at least limited investment in real estate and private investment funds in 2019 (OECD, 2019[10]). The recent proposal by the Ministry of Finance would introduce a new alternative participating fund, which could invest in real estate, private equity and infrastructure investments.

The second lever to increase net performance is to ensure that fees are aligned with the costs incurred by the pension management companies to run the funds. Market mechanisms should theoretically align the costs and charges of funded private pensions and keep them at competitive levels. However, there is a number of reasons why private pension markets may fail to work (OECD, 2018[8]). If policies to increase contribution levels and periods are successful (see next sections), pension management companies will have substantially more assets under management and there may be room to reduce fees to pass on economies of scale to participants.

The Czech authorities should carefully assess the need to increase the fee cap for the new alternative participating fund using empirical evidence. They should study the cost of investing in different asset classes to check whether the current fee caps are appropriately defined for existing and planned new funds. Pension management companies claim that they cannot invest in certain asset classes that could provide better returns but at a higher cost, as they have to cover all of their costs within the fee caps. Yet, higher returns could attract more participants and larger performance fees. The regulator and supervisor should check whether the claim from pension management companies is accurate before changing the fee regulation. This requires gathering data about the fee structures of different asset managers in the Czech Republic and in the main foreign markets to better understand the costs incurred when investing in different asset classes. This data-driven analysis would allow to form a view of whether the current caps are in line with the objective of having well-diversified portfolios to reach better risk-adjusted returns.

The Czech Republic could adopt a regressive scale for management fees as assets under management grow to share economies of scale with participants. This mechanism exist in Estonia, Latvia and Lithuania

for example. In Estonia, the management fee must decline by 10% after each EUR 100 million of assets under management.[24] In Latvia, the fee cap is 0.6% of assets, for assets up to EUR 300 million, and 0.4% for the part of assets above EUR 300 million. In Lithuania, maximum asset management fees are going down gradually, from 1% of assets to 0.8% in 2019, 0.65% in 2020, and 0.5% from 2021. In addition, for pension management companies managing more than EUR 2.5 billion, the maximum management fee drops to 0.4% of assets for all the funds they offer. This mechanism ensures that economies of scale are passed on to plan members.

The Czech Republic could also consider structural solutions to improve cost-effectiveness. Structural solutions entail an intervention in the structure of the market by strengthening market mechanisms or imposing new organisational structures (OECD, 2018[8]). The Czech Republic could allow non-profit providers to enter the market to increase competitive pressure. For example, Italy has non-profit private providers in its occupational pension system. The introduction of a low-cost public pension management company managing a participating fund is in line with this, as long as this public provider is supervised by the CNB and is subjected to the same regulatory and supervisory rules as private providers. However, the Fair Pension Commission discussed the possibility for such a fund to guarantee at least inflation protection. This could result in the state (and therefore taxpayers) having to fill any gap and it is questionable whether public money should be used for that purpose. In addition, the arm's length principle should apply, meaning that the public management company should be fully independent from the government in its investment decisions.

In case the Czech Republic were to implement automatic enrolment into occupational pension plans or participating funds, a default allocation of new participants to a subset of authorised private providers could be envisaged. This is implemented in Chile, Israel and New Zealand. In Chile, the pension provider offering the lowest fee receives all new entrants in the mandatory pension system for a period of two years. In Israel, all members of the mandatory pension system can join one of the four low-cost providers selected by the Ministry of Finance and the Capital Market Authority. In New Zealand, the selection of default providers for the automatic enrolment system is based on several criteria: investment capability, corporate strength, administrative capability, track record, stability, and fee levels.

4.9.2. Encouraging higher contribution levels

There is broad consensus among all stakeholders in the Czech Republic that contributions to supplementary pension schemes are too low to help individuals complement their state pension during retirement.

Redesigning some elements of state support could improve incentives to raise contribution levels. The current system actually encourages many participants to contribute only the minimum level of CZK 300 (Figure 4.6 and Figure 4.8). In addition, only around 12% of participants make use of tax deductions. This could be due to the lack of affordability to contribute more than CZK 1 000 a month for most participants, but could also reflect a lower attractiveness of tax incentives, as opposed to matching contributions, which are paid directly in the account of the participant. This raises the question of whether the tax deductibility of contributions between CZK 1 000-3 000 a month is effective. Finally, the state contribution is defined based on the participant's contribution level, rather than the contribution rate. As was done in 2013, increasing the minimum level of contributions necessary to get the state contribution (for example from CZK 300 to CZK 500) would probably encourage participants who can afford it to shift their contribution up. However, policy makers could envisage a more radical change of the entire state support, according to the following points:

- First, the Czech authorities should check whether the mix of direct contributions and tax deductions actually succeeds in encouraging different income groups to contribute. This could be achieved by running a survey to assess the attractiveness of the different components of state support among the population.

- If the current structure of state support is kept, the state contribution could be linked to the contribution ***rate*** of the individual, rather than to the contribution ***level***. This would reinforce the link between the contributions and the earnings that these contributions will eventually substitute at retirement. For example, the full state contribution could be paid only if the participant has contributed at least say 4% of the previous year's earnings, with a pro-rated state contribution for lower contribution rates. This would require the Ministry of Finance to adapt its monitoring system to calculate the level of the state contribution.
- Alternatively, the structure of state support could be changed into a simple matching contribution. A matching contribution from the first crown of contribution up to the maximum incentivised amount would eliminate the decline in relative terms of the state support with the level of contributions. For example, keeping the 20% match rate, the state could pay 20 cents for every crown contributed by the participant, up to a maximum entitlement of CZK 600. This would equalise the incentive for all contribution levels up to CZK 3 000. It would reduce the incentive for lower contribution levels and increase the incentive for higher contribution levels compared to the current situation.
- In any case, the earnings thresholds used to define the state support and the state contribution levels should be regularly updated in line with wage growth to make sure that the incentive remains relevant over time. The potentially resulting rise in the budget cost of state support could be limited by not allowing individuals aged 60 and over (the age from which participants can start withdrawing retirement benefits) to join the system.

Automatically increasing contributions could also help people to achieve their target contribution rate gradually. Studies show that many individuals would like to increase their contributions but lack the willpower to do it (OECD, 2018[5]). Automatic increases in contributions remove the effect of inertia. For example, the Save More Tomorrow™ ("SMarT") programme in the United States allows employees participating in occupational pension plans to commit themselves in advance to increasing their contribution rate in the future up to a pre-set maximum, with increases happening each time they receive a pay raise (Thaler and Benartzi, 2004[11]). The default mechanism avoids procrastination and the link to pay rises mitigates the perceived loss aversion of a cut in take-home pay. In the Czech Republic, this could be organised more easily in the context of occupational pension plans as employers can identify pay rises.

The government could further promote employer contributions. The tax deductibility limit for employer contributions does not need to be increased further, as it already allows employers to contribute up to around 13% of the average wage. Rather, the Czech authorities could encourage social partners to arrange contractual collective agreements stipulating terms of employer and employee contributions to a pension plan. This could be organised though occupational pension plans, or continue to be channelled through supplementary pension schemes. These agreements could be mutually beneficial. Employers would be able to attract and retain good workers while receiving a tax deduction for the contributions. Employees would receive higher income in retirement. The state would reduce people's over reliance on the state pension for their retirement.

Finally, providing information about expected benefits from the entire pension system could encourage participants to contribute more into the complementary pension schemes. Giving easy access to simulators and calculators could help achieving this (OECD, 2018[5]). By providing forward-looking information under different scenarios, these tools allow users to assess how their retirement income would change if they change some of the parameters (e.g. the age of retirement, the contribution rate in complementary plans, the investment strategy). Moreover, by combining information about the public and private pensions, they could help people realise whether their overall target retirement income can be realistically achieved given their current saving behaviour. Such calculators and simulators are available for instance in Chile, Latvia, Mexico, the Netherlands, the United Kingdom and the United States. They are more effective when based on personalised rather than general information.

4.9.3. Lengthening contribution periods

The minimum saving period to withdraw assets accumulated in retirement plans is too low. Pension products are long-term savings products and participants should contribute into them for most of their career in order to produce adequate retirement income. Unfortunately, current rules are not in line with this objective, as the minimum saving period required to be able to withdraw benefits without returning the state contributions is only five years, together with reaching age 60. This minimum saving period is even lower than for "building savings" accounts, which allow people to get favourable housing loans and require six years of participation before being able to withdraw the money for any purpose.[25] As a result, many participants join the supplementary pension schemes when already close to the eligibility age of 60 and participate for the minimum period.

Increasing the minimum saving period could encourage people to contribute for longer. For example, the minimum saving period for voluntary personal pension plans equals ten years in Austria, Hungary, Japan, Luxembourg, the Slovak Republic, Spain and Turkey. In occupational pension plans, there is usually no minimum saving period, only a minimum age requirement, as participation is linked to employment.

To encourage younger people to join the complementary pension system, the Czech authorities could introduce an automatic enrolment mechanism in occupational pension plans or in participating funds. Today, participation is the lowest for people aged under 30. People tend to delay enrolment in funded pension arrangements because of procrastination and inertia. Automatic enrolment takes advantage of these behavioural traits to enrol people as early as possible. It involves signing people up automatically to a pension plan while giving them the chance to opt out with specified timeframe and conditions. The Czech authorities could draw on the experience of ten OECD countries that already permit automatic enrolment (OECD, 2019[12]). Employers could be required to enrol their employees in an occupational or personal pension plan, although other arrangements could be possible to enrol automatically the self-employed as well.[26] Default contribution rates could be defined for both employees and employers, and state support would help keeping the opt-out rate low. The system should also have a default investment strategy for people not willing or not able to choose their own.

4.9.4. Extending the take-up of lifelong retirement income products

If the previous measures are implemented successfully and the level of assets accumulated at retirement becomes significant, more rules should be put in place to ensure that people actually use their retirement savings as a complementary source of income during retirement. This includes further discouraging lump sum payments and increasing the attractiveness of alternative products that provide lifelong retirement income.

Once the level of assets accumulated by participants by the time they retire reaches a certain level, the Czech authorities should more strictly curtail the take-up of full lump sums. The Czech Republic already taxes lump sums and programmed withdrawals of up to ten years, while lifelong retirement income and programmed withdrawals of more than ten years are tax free. Full lump sums should be, however, even more restricted once participants have accumulated enough at retirement, to make sure that pension savings are used to produce a complementary income during retirement. Some countries do not permit full lump sums for members with accumulated assets above a certain level. For example, in Lithuania, the full lump-sum option is restricted to individuals who have accumulated less than EUR 3 000. Some countries recognise that members may value the possibility to get a lump sum to address specific needs when they retire, for example to reimburse a housing loan. In the United Kingdom for instance, individuals can have a tax-free lump sum up to 25% of the total value of assets accumulated when they take a pension or annuity. Another way to discourage lump sums would be to require pension management companies to return the state contributions in case the participant chooses a full lump sum option, as it is already done when participants leave the scheme before being entitled to a retirement benefit. For example, Austria takes back 50% of the state subsidies when the member chooses a lump sum. In Chile, the matching

contribution for individuals making voluntary contributions is lost if the member withdraws the funds instead of using them to finance a retirement income.

To encourage participants to select lifelong retirement income products and protect themselves from longevity risk, the Czech authorities could consider allowing life insurance companies to offer different types of annuity products. For example, life insurance companies could advertise the possibility to combine a lifelong pension with a guaranteed period and a survivor pension option. A guaranteed period ensures that, even if the participant dies early, payments will continue during the agreed period to the beneficiary. A survivor option to protect the beneficiary over his or her remaining lifetime may also reassure participants that they are getting value for money from their annuity product. However, the higher cost of these options will reduce the income people would get in retirement. In addition, some annuity products allow insurance companies to share profits with individuals, who can therefore get bonuses on top of the guaranteed payments in well performing years. OECD (2016[6]) provides an overview of annuity products and the guarantees they provide in order to optimise the role that these products can play in financing retirement.

Finally, the Czech authorities should establish clear rules to build appropriate mortality tables including future improvements in mortality and life expectancy, and check that providers of retirement income products apply these rules properly. As lifelong retirement income products and annuities become more widespread, the Czech authorities should strengthen the supervision of pension management companies and insurance companies regarding the mortality tables used for reserving. Today, there is no minimum requirement for mortality tables. As discussed in OECD (2014[7]), the regulatory framework should ensure that pension management companies and insurance companies use appropriate mortality tables. In particular, mortality tables should include expected future improvements in mortality; be regularly updated to accurately reflect the most recent experience; and be based on the mortality experience of the relevant population.

Key recommendations

- Strengthen the role of the funded system in the overall pension system by introducing a new, occupational pension scheme, or by improving the design of the existing supplementary pension schemes.
- Improve the performance of pension funds by encouraging or nudging participants to switch to participating funds as they have more flexibility to pursue growth investment strategies because they do not have to provide an annual non-negative return guarantee, and by promoting the access to an appropriate default investment strategy.
- Better align fees charged to participants with the costs incurred by the pension management companies by analysing the cost of investing in different asset classes and applying a regressive scale for management fees to pass on economies of scale to participants as assets under management grow.
- Encourage participants to contribute more by redesigning some elements of state financial incentives, setting up a mechanism where contributions increase automatically up to a pre-set maximum, promoting employer contributions, and providing information about expected benefits from the entire pension system.
- Lengthen contribution periods by increasing the minimum saving period to withdraw retirement benefits and keep the state financial incentives.
- Consider introducing automatic enrolment into an occupational pension plan or a participating fund, with appropriate default contribution rates and investment strategies.
- Extend the take-up of products providing lifelong retirement income by discouraging the lump sum pay-out option and increasing the attractiveness of life annuities through additional product features (e.g. guaranteed period, survivor option, or profit sharing).

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Notes

[1] A pension fund could distribute its profit as follows: minimum 5% into a reserve fund, maximum 10% distributed to shareholders, and the rest used for the benefit of the participants.

[2] The pension management company would have had to contribute with its own capital to keep registered capital at least at the minimum level.

[3] For the unemployed or economically inactive persons, the six-month period started from the time when they became contributors to the pension insurance system following the launch of the reform.

[4] Source: OECD Global Pension Statistics.

[5] Source: Fair Pension Commission, Introduction to the third pillar, 24 May 2019. EU-SILC data.

[6] It is not possible to withdraw a lump sum before the age of 60. Early withdrawal is possible as an annuity or programmed withdrawal up to five years before the official retirement age.

[7] Source: ECB, http://sdw.ecb.europa.eu/quickview.do?SERIES_KEY=165.YC.B.U2.EUR.4F.G_N_A.SV_C_YM.SR_10Y

[8] Source: OECD (2019), Pension Markets in Focus. Simple average of assets as a percentage of GDP for OECD countries with only voluntary funded pension systems, including the Czech Republic.

[9] The large allocation to cash and deposits stems from the fact that, recently, bank deposits have provided a better return than government bonds.

[10] In Han and Stanko (2018[1]), the Czech Republic should actually be classified in cluster A, the group of countries with the most comprehensive fees and charges.

[11] If a pension management company has entered the market less than a year ago, it shall use 25% of the value of depreciation costs of tangible and intangible assets and administrative costs stated in the business plan for the calculation.

[12] There is currently a limit of 35% to the proportion of bonds valued at maturity. This limit will disappear following the application of the IFRS 9 accounting standard, which allows each company to decide which asset to held to maturity and value it accordingly.

[13] The calculations rely on a stochastic financial market model using 10 000 Monte-Carlo simulations of different asset returns and inflation. This model assumes that a representative individual contributes 10% of wages each year during 40 years and invests in a life-cycle investment strategy with an initial equity exposure of 80%.

[14] The service pension is a separated contract. The funds for determining the level of benefits under the service pension have to be kept separately and the contributions for this contract shall not exceed contributions intended for retirement pension.

[15] A pre-retirement pension is also compatible with people working, or receiving unemployment or sickness benefits.

[16] In 2020, the pension eligibility age is 63.5 years for men, gradually rising by two months per birth cohort until reaching age 65. For women without children, it is 63 years and two months, gradually rising by six months per birth cohort until equalising the retirement age for men and then evolving at the same pace until age 65. Women with children can retire up to four years earlier depending on the number of children raised. In assessing women's entitlement for a pre-retirement pension, however, they are assumed to have the same pension eligibility age as men born the same year, regardless of the number of children.

[17] In 2019, this meant that at least CZK 224 820 had to be saved in the supplementary pension savings system in order to be able to receive a pre-retirement pension for the minimum period of two years.

[18] The pre-retirement period is not considered as insured unless the recipient engages in gainful activity.

[19] Similarly, insurance companies are not interested to offer annuity products.

[20] A thorough study of Czech pension management companies' compliance with the OECD Core Principles could be conducted in the next stage of this project.

[21] An HHI below 0.01 indicates a highly competitive industry; an HHI below 0.15 indicates an un-concentrated industry; an HHI between 0.15 and 0.25 indicates moderate concentration; and an HHI above 0.25 indicates high concentration.

[22] https://www.mfcr.cz/en/themes/capital-market/capital-market-in-the-czech-republic/initiation-of-an-inter-ministerial-comme-38422.

[23] The automatic transfer to participating funds may be legally challenging to implement, as changes cannot be applied retroactively to already established contracts in the Czech Republic.

[24] For example, if a management company charges 1% of assets and manages EUR 220 million, the actual fee will be 1% on the first EUR 100 million, 0.9% on the second EUR 100 million and 0.81% on the last EUR 20 million, thus an overall fee rate of 0.937% (=(100×1%+100×0.9%+20×0.81%)/220).

[25] Building savings accounts allow people to save at a higher interest rate than in current accounts and to obtain a favourable loan to buy, build or reconstruct a property after two years of participation. The state contributes up to CZK 2 000 per year if the individual contributes at least CZK 20 000 in the previous year.

[26] For example, in Lithuania, the State Social Insurance Fund Board enrols all types of workers.

OECD Reviews of Pension Systems

CZECH REPUBLIC

This review provides policy recommendations on how to improve the Czech pension system, building on the OECD's best practices in pension design. It details the Czech pension system and identifies its strengths and weaknesses based on cross-country comparisons. The Czech pension system consists of a mandatory pay-as-you-go public scheme and a voluntary private scheme. The public defined-benefit scheme has two main components: a contribution-based basic pension and an earnings-related pension. The review also describes the first layer of old-age social protection in the Czech Republic. The OECD Reviews of Pension Systems: Czech Republic is the sixth in the pension review series.

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