ACCRUED-TO-DATE PENSION ENTITLEMENTS IN SOCIAL INSURANCE: FACT SHEET

Czech Republic

February 2024

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1. Table 29 column A: Defined contribution schemes (funded, non-general government)

1. General description of the scheme and the calculation model

a. Coverage of the scheme

Defined contribution scheme (so called 3rd pillar in the Czech republic pension system) is run by pension companies. The pension companies are joint stock companies, incorporated in the Czech Republic under the provisions of the Commercial Code. Pension companies must be licensed by the Ministry of Finance, in agreement with the Ministry of Labour and Social Affairs and the Securities Commission.

Main features:

- Voluntary participation Participation in the scheme is voluntary, it is based on individual decision. However, state strongly encourages citizens to participate in this contribution scheme.
- State contribution A participant is entitled to receive state contribution when his/her monthly payment to the scheme is at least CZK 300. The amount of state contribution depends on the amount of participant's monthly payment, maximum state contribution of CZK 230 per month is reached if the participant's monthly payment is at least CZK 1000. State contributions are financed from state budget.
- Employers' contributions any employer can support his employees with additional contributions to the employee's fund on voluntary bases.
- Tax benefits 1) Employers can deduct their contributions from their tax base without a limit. However, if the total annual employer contribution per employee exceeds CZK 50 thousands (in total with life insurance contribution), the exceeding amount is subject to social and health insurance payment. 2) Employer contributions of up to CZK 50 thousands per annum (in total with life insurance contribution) are exempt from personal income tax.
- The minimum age at which payments can be received from a pension fund is 60, provided a minimum number of contributory years, which is regulated by each pension fund. If money is withdrawn from the account before this age, the state matching contributions have to be repaid and there is additional taxation.
- The pension funds invest according to one of offered investment strategies, chosen by the participant (with exception of transform funds, which guarantee return of amount of contributions, investment strategy is reserved for the pension fund with regulatory restriction).
- Participants are entitled to pension payment in the form of an annuity or a lump sum (this option is used by approximately 55 % of participants) according to pension plan, dependent on period of contributions and amount of contributions.
- The number of participants in the pension scheme is approximately 4.31 million as at 31 December 2022 (40 percent of the population in the Czech republic) of which 2.7 million in transformed funds and 1.61 million in participant funds. In total, they have saved about CZK 583 billion. Transformed funds were part of original pension insurance system created in 1994. Since 2013 it is not possible to enter into a new agreement with them. It was completely replaced by supplementary pension savings system. However, it is still possible to save money under old agreements signed before 2013 within transformed funds.

b. Institutional set-up		
Data sources/	Czech National Bank (Balance sheet of pension funds; Profit and loss statement of	
suppliers	pension funds; Supplementary balance sheet pension funds; Balance of assets and	
	liabilities of pension funds). There are no estimates for calculations.	
Which institution is		
running/managing the	Czech Statistical Office	
calculations?		
2. Any other comments		
State contributions to the define contribution schemes described above are recorded in row 2.3.		

2. Table 29 column B: Defined benefit schemes and other non-defined contribution schemes (funded, non-general government)

This pension scheme is not available in the Czech Republic.

3. Table 29 column D: Defined contribution schemes (funded, general government)

This pension scheme is not available in the Czech Republic.

4. Table 29 column E: Defined benefit schemes (funded, for general government employees, classified in financial corporations)

This pension scheme is not available in the Czech Republic.

5. Table 29 column F: Defined benefit schemes (funded, for general government employees, classified in general government)

This pension scheme is not available in the Czech Republic.

6. Table 29 column G: Defined benefit schemes (unfunded, for general government employees, classified in general government)

This pension scheme is not available in the Czech Republic.

7. Table 29 column H: Social security pension schemes (unfunded)

1. General description of the scheme and the calculation model

a. Coverage of the scheme

The first pillar includes the mandatory basic pension insurance, defined by benefits (DB) and funded on a running basis (pay-as-you-go system). The system is universal and involves all economically active individuals. In this system pension scheme is managed by the general government, benefits payable in the current period are financed by the social contributions receivable from current employees in the same period. In case the expenditures are higher than income the difference is financed from other caption of the state budget. The social contributions are deducted from wages. In the Czech Republic, there are 3.58 million pensions paid to the beneficiaries. Most pension payments are realized by the Czech Social Security Administration (96 %). The remaining part of pensions is provided by the Ministry of Justice, the Ministry of Interior and the Ministry of Labour and Social Affairs. If we focus on the different types of pensions, the largest share of pensions is paid in the form of old-age pensions (73 %). Other types of pensions are survivor pensions (14 %) and disability pensions (13 %).

There are two basic conditions for receiving a retirement pension. The first is to reach the statutory retirement age and the second condition is to obtain the necessary insurance period.

1) Retirement age: In 2022, the average retirement age was 63 years for men and 62 years for women. It is in line with the retirement age determined in the law. We use the average retirement age to define the maximum age of current contributors to become a retiree. The retirement age is gradually

increasing each year in order to reach 65 years for both men and women in 2031. The impact of the change of the average retirement age in the calculation is shown in the Other changes in volume.

2) In 2022, the required period of insurance was 35 years. An employee contributes 6.5% of his gross wage to pension insurance, another 21.5% of gross wages is paid by his employer. These contributions are used to pay off all existing pensions (disability pensions, survivor pensions, old-age pensions).

b. Institutional set-up	
Data sources/ suppliers	Number of pensions and amount paid in the base year according to age and gender for each type of a pension received from: Czech Social Security Administration Department of Justice Ministry of Interior Ministry of Labour and Social Affairs Demographic projection of population by age units and gender received from: Czech statistical office
Which institution is running/managing the calculations?	Czech Statistical Office
	it formula; Indexation of benefits
Benefit formula	The benefit formula used by Czech social security administration: The earnings-related pension gives 1.5 % of earnings for each service year. The earnings measure currently averages across all years starting from 1986, but it will gradually reach lifetime average. Earlier years earnings are indexed by the growth of economy-wide average earnings. The benefit formula used in our model: As we do not have detailed information about contribution career of each current contributor we use following assumptions/approaches to estimate the pension liability: - PBO approach - ADL approach - When calculating the 'starting pension' to which a current contributor is entitled we apply homogenous contribution career approach – i.e. Future accrued-to-date pension benefits of current contributors are not directly calculated on the basis of past contribution data. In fact, it is estimated from current pension levels. - Retirement age – heterogeneous retirement behaviour – different retirement behaviour between men and women and within cohort as well Constant retirement behaviour - i.e. We assume that future pensioners will retire at the same age as their current counterparts.
Indexation of benefits	In the Czech republic we have a mixed indexation system. In our annual pension indexation changes, we consider both inflation and wage growth: - Inflation is determined at the level of inflation target of Czech national bank (which is 2%). - Until 31 July 2017 one third of general wage growth in the economy was taken into calculation of indexation coefficient, since then it is one half.

d. Type and structure of the calculation model

Czech model of pension liabilities is inspired by the Freiburg model.

The calculation of liabilities is based on several steps:

- 1) Population projection
- 2) Projecting the pension of existing retirees

- a) Generating age-specific pension
- b) Rescaling the pension benefits of existing retirees
- c) Projecting the pension benefits of existing retirees
- 3) Projecting the pensions of future new retirees
 - a) Estimation of pension benefits for new retirees in the base year
 - b) Estimation of pension benefits for new retirees in a future year
 - c) Added value of the pension benefit for a future new retiree
 - d) Estimating the cumulated benefits of future new retirees
- 4) Considering the proportion of full pensions accrued-to-date
- 5) Aggregating and discounting pension benefits

2. Assumptions and methodologies applied

a. Discount rate

For closing balance 2022, 2021, 2020, 2019, 2018, 2017 and 2016 in the Table 2900 (base scenario) we applied a discount rate of 4% in nominal terms and an inflation rate of 2%.

Table 2901 - discount rate 3%; inflation rate 2 %

Table 2902 - discount rate 5%; inflation rate 2 %

For closing balance 2015 we used following rates:

Table 2900 (base scenario) – discount rate 5%, inflation rate 2%

Table 2901 – discount rate 4%, inflation rate 2%

Table 2902 – discount rate 6%, inflation rate 2%

b. Wage growth

Inflation (2%) and one half of average wage growth (calculated on average of five years) are taken into account in the growth of pensions.

c. Valuation method: ABO/PBO

PBO

3. Data used to run the model

a. Mortality tables

The probability of death in Year X is taken into account in the demographic projection of population by age units.

b. Entitlement statistics; other relevant statistics

Population projection for the Czech Republic up to the year 2101 prepared in 2018 – used in the model for closing balances 2018, 2019, 2020, 2021 and 2022; Population projection for the Czech Republic to the year 2101 prepared in 2013 – used in the model for closing balance 2015-2017; main macroeconomic indicators published by CZSO.

4. Reforms incorporated in the model

No reforms.

5. Specific assumptions

a. How are careers modelled?

Estimating by applying homogenous contribution careers.

b. How are survivor pensions calculated?

Survivor pensions are calculated on the basis of actual pension payments. There are many conditions for entitlement to a survivor's pension, and in most cases paid only one year after the death of a spouse. The main condition for a permanent widow's pension is to reach at least an early pension. For these reasons, pension liabilities related to survivors' pensions are calculated as follows. One-year survivors' pensions are taken into account for up to 50 years of age, and over the age of 50 years a permanent survivor's pension (considering the Lambda factor for future retirees).

c. How is the retirement age modelled over time?

Retirement age is not considered in our model. Calculations are based on actual data on paid pensions in the base year. We expect people to retire (old age, widow, disability, orphan) in the same age pattern as in the base year.

d. Other specific features of the model

We take into account the population projection according to the CZSO, which includes migration and death rates. This projection may take into account the numbers of individuals of the generations up to their 100 years of age.

6. Any other comments

Row 8 – revaluations:

The amount reported in row 8 is resulting from:

2022:

- 1) Change of valorization factor from 0.053 to 0.050
- 2) Change of wage growth from 0.0368 to 0.0114

2021:

- 1) Change of valorization factor from 0.050 to 0.053
- 2) Change of wage growth from 0.0404 to 0.0368

2020:

- 1) Change of valorization factor from 0.0412 to 0.050.
- 2) Change of wage growth from 0.0434 to 0.0404.

2019:

- 1) Change of valorization factor from 0.0426 to 0.0412.
- 2) Change of wage growth from 0.0372 to 0.0434.

2018:

- 1) Change of valorization factor from 0.0369 to 0.0426 has minor effect on increase of pension liabilities.
- 2) Change of wage growth from 0.0236 to 0.0372 on one hand and change of calculation of indexation coefficient (given by law) on the other hand results also in increase of pension liabilities. The coefficient of indexation was determined as inflation plus one third of wage growth in the Czech Republic till 31 July 2017 and as inflation plus one half of wage growth onwards.

2017:

- 1) Change of valorization factor from 0.297 to 0.0369 has significant effect on increase of pension liabilities.
- 2) Change of wage growth from 0.0136 to 0.0236 on one hand and change of calculation of indexation coefficient (given by law) on the other hand results also in increase of pension liabilities. The coefficient of indexation was determined as inflation plus one third of wage growth in the Czech Republic till 31 July 2017 and as inflation plus one half of wage growth onwards.

2016:

- 1) Change of discount rate from 5% to 4% in the base case scenario major impact on increase of pension liabilities.
- 2) Change of valorization factor from 0.0265 to 0.0297 has effect on increase of pension liabilities.
- 3) Change of wage growth from 0.0064 to 0.0136 results also in increase of pension liabilities.

Row 9 - Other changes in volume:

2022:

The amount reported in row 9 is resulting from change of the average retirement age of women (regarding oldage pension) from 61 years to 62 years. It will be growing gradually until it reaches 65 years in around 2030. Other minor changes in volume refer to change of average pension paid per capita at each age cohort in the base year as a result of one regular and two extraordinary valorization of all types of pensions in 2022.

2021:

The amount reported in row 9 results from change in number of pensions paid and change of the amount of average pension in each age cohort. These changes affect the amount of the average pension accruing to one representative of the calculated generation, from which the pension obligations are then modeled.

The effect of individual types of pensions on the overall amount of Other changes in volume is as follows:

- Old age pensions -1 480 billion CZK
 In both men and women the average pension slightly increased almost in all cohorts but on the other hand there was significant decrease in the amount of pensions paid (increased mortality refer to https://www.czso.cz/csu/czso/umrtnostni-tabulky) which led to decrease of the amount of the average pension accruing to one representative of the calculated generation, from which the pension obligations are then modeled.
- Survivors pensions +181 billion CZK
 Higher death rate in 2021 compared to 2020.
- 3. Disability pensions +113 billion CZK

2020:

The amount reported in row 9 results from change in number of pensions paid and change of the amount of average pension in each age cohort. These changes affect the amount of the average pension accruing to one representative of the calculated generation, from which the pension obligations are then modeled.

2019:

The amount reported in row 9 is resulting from change of the average retirement age of women (regarding oldage pension) from 60 years to 61 years. It will be growing gradually until it reaches 65 years in around 2030. The retirement age of women with date of birth before 1971 depends on the number of raised children and the year of birth, the retirement age for women birth after 1971 is 65 years.

Other minor changes in volume refer to change of average pension paid per capita at each age cohort in the base year, this data is used as basis for estimation of pension entitlements of both current and future pensioners.

2018:

Majority of the amount reported in row 9 is resulting from change of demographic assumptions used in the 2018 calculation. We use the population projection prepared by CZSO. It is updated every 5 years – the newest projection was done in 2018. Other minor changes in volume refer to change of average pension paid per capita at each age cohort in the base year, this data is used as basis for estimation of pension entitlements of both current and future pensioners.

2017:

No other changes in volume.

2016:

Majority of the amount reported in row 9 is resulting from change of the average retirement age from 67 years to 63 years for men and from 67 years to 60 years for women. These values are in line with the retirement age determined in law. Other minor changes in volume refer to change of average pension paid per capita at each age cohort in the base year, this data is used as basis for estimation of pension entitlements of both current and future pensioners.

Row 3 – other changes – it is estimated as a residual of the column H.

8. Table 29 column K: Entitlements of non-resident households

1. General description and the calculation model				
a. Coverage of the scheme				
Non-resident liabilities pension schemes.	could be analyzed only in the first pension pillar. There are no data sources about other			
b. Institutional set-up				
Data sources/methods	Czech social security administration (The number of benefits paid by other institutions is very low)			
Which institution is running/managing the calculations?	Czech Statistical Office			
2. Any other comments				
Pension liabilities of non-residents are calculated in a similar way as the calculation of pension liabilities of residents in the first pension pillar.				

9. Links to (national) publications providing further information on the pension schemes

• https://www.mpsv.cz/web/en/pensions