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

Hungary

December 2023

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

This type of scheme does not exist in Hungary. Other national accounts tables record data on individual pension schemes, which are excluded in Table 29 following ESA 2010 definition of social insurance.

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

This type of scheme does not exist in Hungary.

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

This type of scheme does not exist in Hungary.

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

This type of scheme does not exist in Hungary.

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

This type of scheme does not exist in Hungary.

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

This type of scheme does not exist in Hungary.

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	
[Please outline all the schemes recorded under column H, differentiating between mandatory and voluntary schemes, indicating % of the workforce covered. If there are many schemes, they could be meaningfully grouped.]	
[I there are any difficulties to separate pensions schemes from other types of social insurance or other borderline cases, please also mention it here]	

In Hungary, the pay-as-you-go system also finances pensions of the retired age population from the tax-related contributions of current employees. The amount depends on the length of service, that is, the number of years of work (earning income) and previous income. The Hungarian legal background is given in the 1997 Act on Social Security Pensions LXXXI law.
During the calculations, we consider:
- old-age pensions
- disability pensions
- survivors and orphans pensions
- under-age pensions for some professions (military, police)
- miners' pensions
- some other pension-type payments that are classified as pensions by the Hungarian pension authority.

b. Institutional set-up	
Data sources/ suppliers	Central Bank of Hungary, Hungarian Central Statistical Office, , Ministry of Finance, State Treasury of Hungary
Which institution is running/managing the calculations?	Central Bank of Hungary

c. Major formulas: Benefit formula; Indexation of benefits	
Benefit formula	*Old age pensions*: B = $AR * AMI * RF * PF$, where "AR" is the accrual rate (depends on the number of service years, its value is 0.8 with 40 service years); "AMI" is the average monthly income, the average of revaluated monthly career earnings from which social security contributions were deducted; "RF" is the retirement factor, and reflects the time of retirement relative to the statutory retirement age (for late retirement, its value is larger than 1, while early retirement is not possible since 2013); "PF" is the pillar factor, its value is 0.75 for mixed pillar members in the years when they paid 25% of their total pension contributions to private pension funds, and 1 for single pillar members.
Indexation of benefits	All pensions are increased with the inflation rate – planned in that year's budget) at the beginning of the year. If actual inflation is higher than the planned, pensions are increased ex post with the difference between actual and planned inflation. Since there is no such correction (deduction) when the actual inflation rate is lower than the planned inflation, this means that on average, pensions are increased by more than the actual inflation rate. Based on evidence from the past 10 years, the average yearly increase (in real terms) of pensions was 0.25% - therefore during the calculations, we assume a 0.25% per year real increase in pensions.

d. Type and structure of the calculation model	

Pension obligations to current pensioners are calculated by applying the benefit indexation formula, and the mortality tables. Current pensions increase by the indexation rules, but the number of recipients decreases by the mortality rules.
Pension obligations to future pensioners are estimated with a simple model. First, the average amounts of future new pensions (which depends on cohorts, genders and the timing of retirement) is estimated from a micro simulation model, in which – based on the contribution history of current workers – future career paths are simulated to all individuals, and the corresponding new pensions are calculated for each individual. The

cohort- and gender-specific averages of simulated new pensions will be the average cohort- and gender-specific initial pensions of future new pensioners. Then these future new pensions are aggregated in a similar way as current pensions were aggregated.
2. Assumptions and methodologies applied
a. Discount rate
In 2015 3% real rate, in 2016-2021 2% real rate. Hungary is using 5% nominal rate (target inflation 3%, real discount rate 2%) for 2016-2021.
b. Wage growth
AWG 2024 (for 2019-2021)
c. Valuation method: ABO/PBO
PBO
3. Data used to run the model
a. Mortality tables
EUROSTAT Europop 2021 zero migration projection (for 2019-2021)
b. Entitlement statistics; other relevant statistics
Pension profiles (i.e. gender- and cohort-specific number of recipients and average amount of benefits) for all existing benefit types; new pensioner's data (types, amounts) – all provided by the Hungarian Pension Authority.
4. Reforms incorporated in the model
In the period 2015-2021, the pension rules changed in 2020 and 2021, which regulated the payment of the 13th month pension. These changes were incorporated in the model.
5. Specific assumptions
a. How are careers modelled?
For each individual, we first simulate whether they were active (i.e. paid contribution or not) in any given year. We estimate age- and gender-specific contribution probabilities with a simple probit model, in which the main explanatory variables are the past 3 years' contribution history. Then for each individual who was simulated to be active, we assume a wage according to this individual's observed relative earnings position (i.e. if an individual, during the period for which we have data, 1998-2021, on average earned 110% of her/his cohort's average earnings, then this individual is assumed to continue to earn 110% if her/his age- and gender-specific average). Since age-specific observed average earnings are considered, the effects of promotions are taken into account.
b. How are survivor pensions calculated?
For current pensioners, we just carry forward the current benefits, similarly to old-age pensions. For new survivor pensioners, we use the actual rules according to which survivor's pensions are calculated. From recent new pensioner's data, we calculate age- and gender-specific probabilities of getting survivor's pensions, and apply the observed average amounts of these new survivors pensions.
c. How is the retirement age modelled over time?
We take into account the gradual increase in statutory retirement ages (from 62 years in 2013 to 65 years in 2022). Since 2013, individuals cannot retire before the statutory retirement age, so we assume that all individuals retire exactly at the statutory retirement age. (The fraction of individuals who retire after the statutory retirement age is neglectable, so we do not take this into account.) There is one exception for early retirement: women with 40 service years can retire before the statutory retirement age without any deductions from their benefits. We use historical data until 2020 to calculate age-specific probabilities for women of using this opportunity, and project these age-specific probabilities to shift in parallel with the statutory retirement age increase until 2022, and stay constant afterwards.
d. Other specific features of the model
6. Any other comments

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

Entitlements of non-resident households are insignificant and not estimated in Hungary.

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

https://www.mnb.hu/en/publications/studies-publications-statistics/working-papers-1-1/wp-2016-2-christoph-freudenberg-tamas-berki-adam-reiff-a-long-term-evaluation-of-recent-hungarian-pension-reforms