



Projections on poverty in old age – improved analytical ability of the Hungarian pension authorities

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Since mid-2015, the Hungarian pension administration is equipped with a dynamic microsimulation model, which has enhanced its ability to make projections about the future stability of the pension system as well as to test the aggregate and distributive consequences of various policy measures.

Description

Up until 2015, the analytical abilities of the pension administration were limited to projections on indicators at the aggregate level, such as the total number of contributors and beneficiaries; aggregate contribution revenues and pay-outs; or theoretical replacement rates (benefits compared to previous wages of theoretically constructed life courses). Critically, these tools could not be used to project income distributions. So, for instance, a projection on the cost of a reform improving long-term financial sustainability in terms of pension adequacy was limited to the effects on theoretical lives or on averages at best. The impact on specific social groups (such as people with fragmented labour market careers, older women living in single households or the lower end of the income distribution in general) were beyond the reach of the old analytical tools.

Since mid-2015, the Hungarian pension administration is equipped with a dynamic microsimulation model which allows for such analyses. Its development required the transformation of raw data generated by the administrative processes into a dataset ready for analysis. The dataset is prepared in such a way that it is able to absorb newly processed information as well. This feature keeps the dataset permanently updated. This phase of the

work was carried out by experts from the Central Administration of the National Pension Insurance of Hungary (CANPI). In addition, CANPI bought the rights to use a microsimulation model, MIDAS (Microsimulation for the Development of Adequacy and Sustainability), for the Hungarian pension system from the Belgian Federal Planning Bureau (FPB). FPB experts also assisted CANPI during the development process.

The resulting model (MIDAS-HU) can handle data on several hundred thousand individuals. It can project the events of their life courses including birth, family formation (marriage/common-law-marriage and divorce/separation), labour market events (activity/inactivity, employment/unemployment, wage dynamics), retirement and benefits (entry pensions for new retirees and indexation of established benefits), and death.

Both phases of the project, completed between 2013 and 2015, were financed by the European Commission (80%) and the Hungarian pension authorities (20%).

The first results were published in connection with the 2015 Pension Adequacy Report of the European Commission, which assessed the future of pension systems in the 28 Member

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States. A cooperative effort by experts from Belgium, Sweden and Hungary aimed to go beyond aggregate results and extend the scope of analysis to indicators on expected poverty among the elderly (Dekkers et al 2015). The results of the latter study reveal that Hungary is expected to see practically unchanged gross pension expenditure, more specifically 0.1% decrease in terms of GDP up until the end of the simulation period, in contrast to Sweden, where the deteriorating demographic dependency ratio (the rate of old to working-age people) is more than offset by improvements in employment and decreases in benefits, and Belgium, where pension expenditure is expected to rise sharply. However, the seeming stability in Hungary hides a short-to-medium-term decrease in expenditure and increase in poverty risk among the elderly (from the current less than 5% to about 14% by the mid-2030s). This level will be stabilised and partially counterbalanced in the long run by lengthening labour market careers.

Outlook & Commentary

MIDAS-HU is not the first such development in Hungary. The Prime Minister's Office commissioned the preparation of a

dataset for a one-off analysis and the development of a microsimulation model in 2007. The project, which was connected to the work of the Pension and Old-Age Roundtable, an ad hoc expert team operating between 2007 and 2009, bore fruit (Holtzer 2010). However, it was not embedded in the pension administration and relied heavily on external developers, making its permanent operation prohibitively expensive.

CANPI's choice in 2012 to build up in-house expertise, buy the microsimulation model from a not-for-profit entity and invite assistance from a government agency was based on its previous experience.

If this capacity-building strategy succeeds, the dataset is kept updated and the model remains operational, the pension administration will be able to predict the consequences of external shocks and various policy measures on fiscal stability and poverty.

In addition, the model can be extended by incorporating further life events, such as education/training and migration; it can also be enriched with further administrative data, such as public spending on health at the individual level.

Further reading

Central Administration of the National Pension Insurance (2015): MIDAS-HU manual:

https://mikroszimulacio.onyf.hu/attachments/article/35/Midas_HU%20manual_final_ENG.pdf

Dekkers G, Desmet R, Rézmovits Á, Sundberg O, Tóth K (2015): On using dynamic microsimulation models to assess the consequences of the AWG projections and hypotheses on pension adequacy: Simulation results for Belgium, Sweden and Hungary:

https://mikroszimulacio.onyf.hu/attachments/article/35/REP_SIMUBESEHU0515_11026_270815.pdf

European Commission (2015): The 2015 Pension Adequacy Report: current and future income adequacy in old age in the EU. Luxembourg: Publications Office of the European Union.

Holtzer P. (ed.) (2010): Report on the activities of the Pensions and Old-Age Roundtable. Budapest: Prime Minister's Office.

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