

# *Macroeconomic Implications of Population Ageing and Pension Reform in Romania*

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## **- Non-technical Summary -**

The paper investigates the macroeconomic and welfare effects of a gradual transition from a pay-as-you-go (PAYG) pension system to a mixed system comprising a PAYG pillar and a fully-funded (FF) pillar. The analyzing framework consists of an overlapping generations (OLG) model with lifetime uncertainty characterized by perpetual youth households. Agents engage in educational activities at the start of their life, create human capital that is used during the working period to rent it to firms, and, later on in life, retire and are paid a pension benefit. The constructed model allows for a hump-shaped human capital age profile and for a realistic method for computing pension benefits using a pension point scheme.

The model is calibrated to capture some features of the Romanian economy and eight pension reform scenarios are analyzed. The first set of two scenarios explores the effect of increasing the retirement age in the context of the current PAYG system. The next set of four scenarios investigates an “orthodox” shift between a PAYG system to a mixed PAYG-FF system. In that respect, it is supposed that the new cohorts entering the workforce are expected to pay a lower Social Security Contribution rate than the workers already enrolled in the public pension system. The last set of two scenarios corresponds to a “reverse-sequencing” shift, in which the pre-retirement generations would enter the reformed system first. In each scenario in a set, a different policy variable is employed to keep the economy on the path of converging to the long-run equilibrium.

The findings indicate that:

- the reforms covered in the first set of scenarios are Pareto improving, but there is an increase of public debt of approximately 8% in the long-run, with a maximum of 9% during the transition period;
- an “orthodox” shift to a mixed pension system is Pareto improving and alleviates the burden of public debt only if accompanied by an increase in retirement age;
- a “reverse-sequencing” shift accompanied by an increase in retirement age is Pareto improving, but also gives the government more flexibility, since there is an increase of public debt by less than 1% in the long run and, in the first part of the transition period, there is a decrease in public debt.

To keep the model parsimonious, the analyzing framework does not incorporate labor-leisure choice. Due to the lack of disutility of labor in the model, it is feasible to increase the retirement age as long as the gap between the wage and the pension benefit is positive. In reality such an increase is impossible since at some point this positive gap is counterbalanced by the disutility of working. However, if only a small increase in the retirement age is considered, as in the current paper, the results obtained are believed to be a reasonable approximation of the results of a more complex model that takes explicitly into account the disutility of labor.

**Keywords:** *overlapping generations model, uncertain life, small open economy, pension reform, hump-shaped human capital profile*