

Abstract

J AŠURKOVÁ, Tatiana: Parental bonus in pension systems [Dissertation Thesis], Comenius University in Bratislava, Faculty of Mathematics, Physics and Informatics, Department of Applied Mathematics and Statistics; Supervisor: doc. Mgr. Igor Melicherčík, PhD., Bratislava, 2023, 158p.

Long-term financial sustainability is a fundamental condition for the stability of the pension system. Due to the current unfavourable demographic development, characterised by population ageing and low fertility levels, pay-as-you-go pension systems face serious difficulties. In the presented thesis, we focus on examining the interdependence of the pension system and fertility. The main goal of the thesis is to study the possibilities of adjusting the pension model with a focus on linking pension benefit claims to individual fertility. Several existing models considering this link are described. Subsequently, we derive four pension system models that include the child factor within the pension benefit formula. Firstly, two alternatives of a simple, one-pillar, three-generation model are introduced. Then the idea is extended to a two-pillar model. Finally, a four-period model with a career growth parameter is considered. Each model is analysed in terms of effects of the child factor on individual fertility, private savings, or lifetime consumption. Numerical results for several settings of model parameters are also presented and analysed. Furthermore, we examine the value of the implied child factor within the framework of the Slovak Republic pension system. The case for the setting of the pension system of the Slovak Republic prior to the introduction of the parental pension in 2023 is considered. In addition, several alternatives are presented. Finally, we compare the results with the optimal pension model settings obtained.

Keywords: pension system, parental benefit, child factor, sustainability, financial stability, fertility