Insufficient private savings raise a concern about future level of retirees' consumption. Due to decreasing fertility and increasing longevity future pension benefits will be significantly lower than today's benefits (EC 2018, the channels of these adjustments depend on the design of the pension systems and are different for the defined benefit and defined contribution systems). Increasing the consumption capabilities of future retirees requires an increase in private household savings. Empirical studies show that households compensate the future decrease in consumption due to expected lower pension benefits, but only partially. For example, as a result of the pension system reform carried out in Poland in 1999, future pensions will be lower. This decrease was offset by raising private savings by only 30%. Due to this insufficient reaction of households, many countries (including all OECD countries) have introduced government-subsidized old-age saving instruments with voluntary participation which aim to increase households' private old-age savings.

Theoretical economic literature undermines the potential effectiveness of this type of instruments. Fully rational consumer, who performs life-cycle optimization and has a perfect foresight, adjusts savings according to his preferences. Therefore, the internal consistency of his decisions cannot be modified by incentives to invest. Tax exemptions or direct transfers result in shifting assets from private voluntary savings to those instrument, causing full crowd-out and a deadweight loss of economic welfare. However, empirical economic literature reveals a much more complicated situation. Empirical studies dealing with the crowd-out effect caused by instruments designed to encourage households to save for retirement do not agree on the scale of this phenomenon. Depending on the methodology used, the displacement effect estimates take values between complete crowd-out and complete lack of crowd-out.On the grounds of theoretical models the possibility of savings growth and welfare improvement due to such instruments is provided only within models with incompletely rational consumers, e.g. agents with time inconsistent preferences, agents with limited cognitive abilities, etc.

The proposed project will combine, within one model, behavioral economics with macroeconomics. This approach will allow to achieve two goals. First, a comprehensive assessment of the overall effectiveness of government-subsidized old-age saving instruments with voluntary participation. Second, exploration of the sources of conflicting empirical data regarding the crowd-out effect caused by those instruments.