

Social Security Reform in a Dynastic Life-Cycle Model with Endogenous Fertility

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Non-Technical Summary

This paper analyzes the effects of a fully funded social security reform on welfare, efficiency and inequality in a dynastic, life-cycle general equilibrium model with endogenous fertility. The previous literature suggests that there is a strong correlation between fertility rate and social security size. Most of the existing models, however, have worked with endogenously imposed fertility decisions. This paper examines a general equilibrium, overlapping generations model with altruistic individuals whose differences in skills and life-time expectancy lead to heterogeneity in income, wealth, and therefore, fertility. Old age security and parental altruism, together with the social security system, are the major forces behind fertility decisions.

The findings suggest that:

- in a pay-as-you-go system savings-fertility differences lead to a 20% higher aggregate capital stock than in an otherwise identical steady state but with exogenous fertility (high skill agents invest relatively more in terms of assets and intergenerational transfers than in children)
- a fully funded reform increases fertility by 10.3% and decreases the capital stock by 8.3% (high skill agents shift from investment in capital to investment in children)
- children are used relatively more for insurance against survival uncertainty while assets are used for insurance against skill risk in future generations

These results indicate that models assuming exogenous fertility might be misleading with respect to the behavior of different groups of the population, aggregate outcomes, welfare gains and political support for the reform.

Finally, endogenous fertility is also important for the transition analysis. In the literature with exogenous fertility, agents usually prefer the fully funded steady state but the transition to it is too costly as they need to invest a lot during the transition. However, in our endogenous fertility model, the capital-output ratio and the capital stock are already high in the pay-as-you-go system and both fall after the reform. The high initial stock of capital provides an additional consumption source for households who would otherwise suffer from the transition. This is important for theoretical purposes as well as for policy recommendations. Transition costs could be lower or could even turn into gains as there is no need to accumulate a higher capital stock for the new steady state.

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