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Endogenous fiscal policy and capital market transmissions in the presence of demographic shocks

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Abstract

Previous analyses of population aging mainly focused on the social security implications of the aging trend. This paper addresses aging in an open economy framework with two regions that have politically responsive fiscal policy regarding education finance. Demographic shocks start an economic growth process but results are sensitive to a critical parameter in the model that indicates return to education spending. Low values of this parameter are associated with less favorable economic outcomes. Hence, a policy implication emerges that enhancing the education system might pay off in terms of easing the negative growth and welfare consequences of expected demographic shocks.

JEL classification: E62; F21; H30; J10

Keywords: Population aging; Overlapping generations; Endogenous fiscal policy; Education spending; International capital flows

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1. Introduction

The global economy is experiencing major changes as a consequence of the aging of developed nations' populations. According to the 2006 Revision of the World Population Prospects published by the United Nations Population Division, the percent share of population 65 and older in developed countries is expected to rise from 15.3% in 2005 to 26.1% in 2050.[1] An important and widely ignored characteristic of the recent aging trend is that it influences fiscal policy decision making concurrently with rapid global capital market integration. In a world connected by an international capital market, population aging in one region of the world leads to capital flows by altering saving and consumption behavior and, by extension, changes fiscal policy. An endogenously changing fiscal policy, in turn, affects human capital accumulation by changing government spending for public goods such as education that serve as inputs to human capital. Through these channels, population aging may have unexpected strong growth and welfare implications.

Recent discussions of aging have noted the potential generational conflict generated by the need to share society's resources between non-working elderly and the younger working population. While the literature focused on social security as the sole source of conflict between generations, an increasing number of studies, particularly from the U.S., also drew attention to public education as another key government spending program that may bring the young and the elderly into conflict amid an aging population.[2] In the U.S., education is the largest public expenditure in the state and local government budgets. Table 1 shows the size of education expenditures in the U.S. and other OECD countries. Total public education expenditure gets as high as 5.5% of GDP (Iceland) and 16.2% of total public expenditure (Mexico) with OECD averages at 4% and 9%, respectively. OECD average for annual educational expenditures per student relative to GDP per capita is also about 23%, which shows the significance of these expenditures in the economies of developed countries. Empirical studies argued and presented evidence that the elderly has a strong dislike for education spending. In one of the pioneering studies, Button (1992) examined the voting behavior in tax referenda in six Florida counties and suggested that generational conflict between young and elderly voters is quite apparent on education issues. In a broader empirical framework, Poterba (1997) started an interesting literature on aging and education spending by providing empirical evidence from the U.S. using state-level data that older citizens prefer lower levels of public spending for education. Ladd and Murray (2001) did not find a strong evidence of generational conflict in a similar study that used county-level data. Another study by Harris et al. (2001) confirmed Poterba's finding using school-district-level data, however with a smaller estimated impact than Poterba's estimates.

[1]Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2006 Revision* (http://esa.un.org/unpp).

[2]For a selection of general studies on aging and social security, see Börsch-Supan et al. (2005), Feldstein (2001), Elmendorf and Sheiner (2000) and Bohn (1999).