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Social security benefit rules, growth and inequality

Frédéric Docquier [a,b,*], Oliver Paddison [c,d]

[a] *CADRE, University of Lille 2, F-59024 Lille, France*
[b] *SES, Ministère de la Région Wallone, B-5100 Jambes, Belgium*
[c] *CREPP, University of Liege, B-4000 Liege, Belgium*
[d] *CORE, Université Catholique de Louvain, B-1348 Louvain-la-Neuve, Belgium*

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Abstract

We examine the balanced growth effects of pension plans on the rate of growth and on income dispersion in a closed economy where individual decisions about education are the engine of growth. We distinguish between pay-as-you-go and fully funded pension systems and differentiate between three different benefit rules: a Beveridgean regime, a Bismarckian regime depending on one's entire earnings history and on one's partial earnings history. Our analysis shows that social security generally reduces the long-run growth rate and our inequality measure. Growth can only be stimulated under a fully funded scheme based on partial earnings history.

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1. Introduction

There is a large body of research on the expenditure and provision of education. For one, countries spend a significant proportion of public expenditure on this item (more than 5.6% of GDP on average in OECD countries). Furthermore, education is also considered to be not only a major contributor to growth (see e.g. Barro and Sala-i-Martin (1995), Benhabib and Spiegel (1994) and Mankiw et al. (1992) who

* Corresponding author. Address: CADRE, University of Lille 2, 1 Place Deliot, 59024 Lille, France.
E-mail address: f.docquier@mrw.wallonie.be (F. Docquier).

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all spell this more or less out), but also to changes in inequality. In fact, various studies have looked at the role of public expenditure on either one or in fact both of these issues (we mention only a few papers): Kaganovich and Zilcha (1999) show that there is a double benefit of public funding of education which consists in reducing income inequality and yielding a positive growth effect. Bearse et al. (1998) investigate how the degree of centralization of education funding influences income distribution. Fernandez and Rogerson (1999) examine the effect on growth and income distribution of different education financing systems and show that there may be no simple trade-off between equity and resources to financing. Glomm and Ravikumar (1992) look at the effects of education on inequality and concentrate on comparing public vis-à-vis private education in terms of levels of wealth and income inequality.

This paper also investigates the effects on growth and equality where education is involved. We adopt an approach that is a little less straightforward, however at least as appealing and relevant: we investigate how growth and equality are affected by the choice of a public pension system.

Over the last years, research on public pension schemes has become a major player in the field of public economics as well as of late an important issue in actual public policy. The reasons for this are fairly straightforward: public pension plans not only represent a large proportion of total GDP (OECD countries already spend more than 10% of GDP on public pensions), moreover, given the demographic change that is taking place, this proportion is forecast to increase to over 16% in the next 30 years if no action is taken. Hence, it is of no surprise that numerous implications of pension policies have already been examined in the literature (e.g. induced distortions on the labor markets, effects on saving rates and capital accumulation, and consequences for the provision of public goods, see World Bank, 1994).

An important aspect of pensions is how they affect growth in the economy. Hence, from a normative point of view the implications of pension plans has found some attention. Saint-Paul (1992) investigates e.g. the case for public debt in an Arrow–Romer endogenous growth model (i.e. an 'AK' model) and shows that the introduction of an unfunded social security system reduces capital accumulation and hence the growth rate, such that it cannot be Pareto-improving. In such an endogenous growth setting, Marchand et al. (1996) show that the case for ascending transfers (i.e. transfers from the young to the old) is rather weak on the balanced growth path.

It seems surprising that there have been few attempts to combine both aspects, education and public pension schemes, in a single model and investigate the effect of one on the other. This is not to say that education and public pensions have not been combined. Turning to theoretical models first, in an endogenous growth framework Docquier and Michel (1999) examine a similar problem to Marchand et al. (1996), yet do so in a Lucas–Uzawa setting where education is the engine of growth. They reach quite a similar result to Marchand et al. (1996) regarding the weak case for ascending net transfers. Glomm and Kaganovich (1999) investigate the growth and inequality effects of increased spending on public provision of education that comes at a cost of decreased pension outlays and show that higher spend-