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Political economy of taxation in an overlapping-generations economy

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Abstract

This paper analyzes the effects of intergenerational conflict on capital and labor income tax rates, transfers, and government spending in a model of multidimensional policy choice. The different nature of tax liabilities for the young and the old can explain why the old receive large gross lump-sum transfers through social security, while the young receive little or none. A natural link also emerges between the size of the government as a provider of public goods and the magnitude of transfers that the same government will implement.

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1. Introduction

The demographic changes that are taking place in the developed countries have led to a great interest in the economic implications of an aging population. Most of the interest has concentrated on the social-security systems in place in many countries; because of their pay-as-you-go structure, they may commit the governments to burdensome or even unsustainable transfers to future old generations.[1]

The aim of this paper is to look at the fiscal effects of intergenerational conflicts from a somewhat broader perspective. Differences in age are an important source of heterogeneity across individuals in modern societies: they account for a big component of the variability in asset holdings as well as in sources of income. As a consequence, the conflict between young and old is likely to arise on a broader set of fiscal instruments than the size of social-security transfers. In particular, the young and the old will have very different preferences regarding labor and capital income taxation, the former hitting mostly the young and the middle-aged, the latter hitting disproportionately the old.[2]

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[1] For recent surveys, see De Nardi et al. (2001) and Feldstein and Liebman (2002).
[2] Such a comprehensive view is advocated by Kotlikoff (1992) and Auerbach et al. (1994) in their notion of generational accounting.

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This paper highlights two features of fiscal policies: first, they involve setting several policy parameters at the same time, so the political choice cannot be reduced to a mere unidimensional problem; second, government policies have dynamic implications, as current choices will influence the evolution of the economy and future policies, and this will be taken into account by rational, forward-looking agents. The dynamics of political and economic decisions interact, and we analyze the problem using the techniques of political-economic equilibria devised by Krusell and Ríos-Rull (1996) and Krusell et al. (1997).[3]

The economy I study is characterized by overlapping generations living two periods; the agents spend their first period working and accumulating capital that is used to provide for their old age. Besides their private consumption, both the young and the old value a public good; the presence of a political system is justified by the need to finance the provision of the public good. In order to finance the public good, the government can levy proportional taxes on capital and labor income, at different rates.

The political process by which government policy is chosen involves a sequential bargaining game: in each period, the two generations alive bargain over the provision of the public good, the ways to finance it, and the size of (non-negative) lump-sum transfers from the government to either generation, subject to intra-period budget balance. This bargaining setup captures the consensus in the broad determination of the tax structure and intergenerational transfers that is usually required to undertake major reforms, and the frequent ability of small minorities to forestall them.

The political-economic environment sketched above leads to a novel explanation for the observed prevalence of transfer programs to the old rather than to the young. Since labor-income taxes are distortionary at the moment they are chosen, young households always prefer lower tax rates to bigger transfer programs: lower taxes deliver a higher utility gain for a given cost to the government. We would thus expect few transfer programs targeted to the young. By contrast, the distortions of capital-income taxes are sunk at the moment the policy is selected, and old households are indifferent between lower taxes or higher transfers; hence, it is much easier to induce the old to accept a scheme that includes both taxes and transfers. In the paper, the indifference is broken by a perturbation that introduces small amounts of wealth heterogeneity among the old while preserving the tractability of having (almost) identical households. In this setup, richer old households are willing to give up more of their (larger) private consumption to produce the public good than poorer ones. A "social security" transfer emerges as a way for poor old households to extract rents in exchange for allowing the provision of the public good.[4]

In most previous theories of social security, which are based on voting, the transfers to the old are supported by the threat of a permanent breakdown in social security. As an example, Cooley and Soares (1999) show that social security can be sustained because this threat induces some middle-aged households to support the system, since they already sunk some contributions; similarly, the threat induces low-productivity young households to support the system in Conde-Ruiz and Galasso (2005).[5] The drawback of these theories is that it is difficult to discuss the consequences of demographic transitions: these consequences are driven by ad hoc choices about the level of benefits that triggers a breakdown.[6] By contrast, social security emerges in this paper even in a Markov equilibrium, where the equilibrium policy is a smooth function of demographics and other parameters of the economy, making comparative dynamics straightforward.

The paper predicts that the aging of the population will eventually bring about a reduction in the per capita benefits paid to the elderly by social security, although the early time path depends on the details of the calibration. Some evidence of this reduction appears in many of the recent reforms of social security across the world, although most countries are still far from fully adjusting to the oncoming demographic changes. The expected reduction in benefits follows from a more general robust prediction of the model: that the size of *per capita* social-security transfers to the old is intrinsically linked to the size of other government spending. This happens because the bigger is the equilibrium surplus from operating a government, the more rents the poor households will be able to extract. The latter prediction would not arise directly in a voting model, and is supported by the data. The most direct test comes from Razin et al. (2002), who show that social transfers per capita are positively associated with the ratio of government employment to total employment in a sample of US and European countries. The implications of the model for *total* transfers depend on the source of variation: when it comes from different tastes for the public good, transfers should be positively

[3] These techniques have been widely adopted recently. Notable applications related to this work are Hassler et al. (2003) and Klein et al. (2003).

[4] This mechanism is very similar to the emergence of redistribution in Lindbeck and Weibull (1987).

[5] A recent survey of this literature can be found in Galasso and Profeta (2002).

[6] An exception is contained Razin et al. (2002); however, their paper does not consider age-specific transfers.