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Interregional tax competition and intraregional political competition: The optimal provision of public goods under representative democracy ☆

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ABSTRACT

This paper explores the implications of the interaction between *inter*regional tax competition and *intra*regional political competition for the optimal provision of public goods under representative democracy *à la* Osborne and Slivinski (1996) and Besley and Coate (1997). As an extension of Hoyt's (1991) finding that intensified tax competition is always harmful and aggravates the extent to which public goods are undersupplied in a region, we show that intensified tax competition can be beneficial if political as well as tax competition is considered. In particular, we identify plausible conditions under which (i) there is an optimal intensity of tax competition such that the interaction between interregional tax competition and intraregional political competition will result in the optimal provision of public goods and (ii) intensified tax competition will be beneficial if and only if the degree of tax competition is less than this optimal intensity.

1. Introduction

Competition can be economic or political in nature. Economics tends to focus on the economic competition, while political science tends to focus on the political competition. Either focus alone may be incomplete, if not misleading.

Policy-makers are selected by voters via political competition between citizen candidates. This form of representative democracy is prevalent in the real world. Osborne and Slivinski (1996) and Besley and Coate (1997) emphasize the importance of this political competition, since citizen candidates who possess different policy preferences will implement different policies once selected to become policy-makers. In this paper we incorporate the stylized representative form of political competition into the stylized model of tax competition. Our focus is on the implications of the interaction between *inter*regional tax competition and *intra*regional political competition for the optimal provision of public goods. This focus echoes Frey and Eichenberger's (1996) emphasis that both economic and political distortions should be considered in the analysis of tax competition.

A fundamental result in the literature on tax competition is that interregional tax competition for mobile capital generates fiscal externalities and tends to result in an undersupply of public goods in a region. This result is originally articulated by Oates (1972) and formally modeled by Wilson (1986) and Zodrow and Mieszkowski (1986).[1] In an important contribution, Hoyt (1991) explores the impact of a number of competing regions on the provision of public goods, showing that the extent to which public goods are undersupplied is monotonically increasing in the number of competing regions. Following Epple and Zelenitz (1981), Hoyt (1991), Sato (2003), Keen and Kotsogiannis (2004) and others, an increase in the number of local regions (jurisdictions) can be viewed as increased fiscal decentralization, which induces intensified intergovernmental tax competition. Along this view, Hoyt's finding dictates that intensified tax competition is always harmful in that it aggravates the extent to which public goods are undersupplied. As an extension of this always-harmful finding, we show that intensified tax competition can be beneficial if political as well as tax competition is considered.

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[1] See Wilson (1999), Wilson and Wildasin (2004), and Fuest et al. (2005) for surveys of the literature.

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On the basis of his finding, Hoyt (1991, p. 130) concludes:

> The existence of wasteful tax competition suggests that the optimal number of jurisdictions is one, thereby eliminating the externalities created by capital taxation. The traditional Tiebout literature argues that having many independent jurisdictions promotes efficiency and taste stratification by increasing the competition among jurisdictions. Thus, a tradeoff is faced, more jurisdictions increase the sorting of residents but at a cost of decreasing the public service provision because of tax competition.

He highlights the harmful aspect of tax competition on the provision of public goods. We show that the tradeoff may be mitigated once political as well as tax competition is considered. Specifically, our results suggest that more jurisdictions can be beneficial to not only the sorting of residents but also the public service provision. In this sense, our paper is an interesting extension of Hoyt's paper.

The literature on tax competition for mobile factors largely leaves out the stylized representative form of political competition as emphasized in this paper.[2] Persson and Tabellini (1992) is a notable exception, but their focus is not on the provision of public goods. In the presence of tax competition and in the context of public good provision, Edwards and Keen (1996) and Rauscher (1998) consider Leviathan models while Wilson (2005) considers a self-interested-government-official model. These papers take into account some elements of politics within a region, but they do not touch on the selection of policy-makers in a representative democracy. Perroni and Scharf (2001) consider a direct-democracy model in which the number of jurisdictions is endogenous. Our paper is complementary in the sense that we focus on: (i) representative rather than direct democracy and (ii) the optimal number rather than the equilibrium number of jurisdictions.

There are two studies that are most related to our paper. Brueckner (2001) considers a model in which both tax and political competition are present, and individuals are heterogeneous with respect to their valuation of public goods. He shows that, due to the voters' strategic delegation, capital tax rates under tax coordination may be lower than those under tax competition. Fuest and Huber (2001) compare tax competition with tax coordination in a median-voter model. They find that there may be an overprovision of public goods under tax competition and that tax coordination need not be welfare-improving. Although the two papers and our paper each consider both tax and political competition in a framework, there are several crucial differences in modeling between our paper and these other two. First of all, strategic delegation is indispensable for the results derived in the former paper, while we show that strategic delegation is not indispensable but may reinforce our results. Second, the latter paper addresses direct democracy, while we address representative democracy. Finally, and perhaps most importantly, the number of competing regions is fixed at two (a two-country model) in Brueckner (2001), and at infinity (a small-country model) in Fuest and Huber (2001). As a result, the degree of tax competition or fiscal decentralization (i.e., variations in the number of competing regions) plays no role in either paper. By contrast, as in Hoyt (1991), Sato (2003), and Keen and Kotsogiannis (2004), the degree of tax competition or fiscal decentralization is the key focus of our paper.

Some papers such as Burbidge and Myers (1994) and Kessler et al. (2002) have shown that tax competition need not imply a race to the bottom. Our paper contributes to this line of the literature, showing further that it is likely that there is an optimal intensity of tax competition to support the optimal provision of public goods in a region, and that the over- or undersupply of public goods can be "corrected" through various intensities of tax competition or degrees of fiscal decentralization.

The remainder of the paper is organized as follows. Section 2 presents our model. Section 3 exposes the connection between political competition and tax policy, and Section 4 explores the implications of tax-cum-political competition. Section 5 concludes.

2. Economy with tax competition

Our model of the economy is standard in the tax competition literature[3], except for the extension from homogeneous to heterogeneous individuals.

Consider an economy in which there are n identical regions, where $n \in \{1, \dots, \infty\}$.[4] Each region is inhabited by N individuals. There are two factors of production: an interregional immobile factor and a perfectly mobile factor. This is a caricature of the real world situation in which some factors have much higher interregional mobility than others. We will refer to the former as "labor" and to the latter as "capital." Each individual in each region has the same claim to labor, but unequal claims to capital. Specifically, individual j in region i supplies $\theta \equiv 1/N$ units of labor and $\bar{k}_{ij}$ units of capital. This inequality feature in individual endowment is again a caricature of the real world situation in which incomes from mobile capital are typically more unequally distributed than incomes from immobile labor. Since positively skewed distributions of capital income are typically observed in the real world, we shall also impose the feature that the median claim to capital in a region is smaller than the mean claim.

Let $\bar{k}_i = \sum_j \bar{k}_{ij}$. By denoting the amount of capital employed in region i by k_i, capital market clearing requires

$$\sum_i k_i = \sum_i \bar{k}_i. \tag{1}$$

All regions produce a single private good whose price is normalized to unity. This private good can either be consumed directly as a private commodity, c, or be used to provide the regional public service, g. One unit of the private good produces one unit of the public service. The production in each region is given by $f(k_i)$ with $f'(k_i) > 0$ and $f''(k_i) < 0$, where a unit of the labor input in the region is suppressed. All markets are assumed to be perfectly competitive.

Each region levies a source tax at rate t_i on each unit of capital employed within the region. Perfectly mobile capital implies

$$f'(k_i) - t_i = r(t_1, \dots, t_n) \quad \forall i \tag{2}$$

where r is the after-tax rate of return on capital, which depends on $t_1, \dots, t_n$ and is equalized across the economy. Using (1), (2) and the assumption that all regions are identical, we have[5]

[2] For surveys of political economy approaches to tax competition, see Wilson (1999) and Fuest et al. (2005).

[3] The model is built on Wildasin (1988) and Hoyt (1991). It is a textbook, workhorse model of tax competition; see, for example, Wellisch (2000, Section 4.1) and Haufler (2001, Section 4.3).

[4] Regions can be referred to as "jurisdictions" in fiscal federalism or "countries" in the world. An increase in n is a "scaled up" version or replica of a smaller economy. This replica seems to be feasible in theory if the smaller economy is a proper subset of a country (say, an expanding metropolitan area) or of the world (say, the expanding European Union).

[5] See Hoyt (1991).