IFIR WORKING PAPER SERIES

Fiscal Competition*

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IFIR Working Paper No. 2005-05

June 2005

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Abstract

The theory of fiscal competition seeks to ascertain how fiscal policymaking is affected by competitive pressures faced by governments. This requires a theory of policy choice, and, as such, the theory of fiscal competition lies squarely in the realm of political economy. This essay presents a concise overview of some of the principal themes that have figured prominently in economic analyses of fiscal competition and identifies significant gaps that warrant further attention and that may occupy the attention of investigators in the years to come.   It first sketches a model that has been used frequently in theoretical and empirical analyses of fiscal competition, emphasizing how fiscal policies affect the welfare (real incomes) of various groups and how these impacts depend on the mobility of resources. Subsequent sections address parts of the subject that are less well-settled, highlighting, for example, the fact that exit (or entry) options for mobile resources alters the payoffs from alternative fiscal policies among those who participate actively in the political process and, thus, participation incentives.

Two intertemporal aspects of fiscal competition are emphasized: the determination of the "degree" of factor mobility, especially for the purposes of empirical analysis, and the issue of time-varying policies, commitment, and dynamic consistency.   The paper also discusses the role of institutions, and particularly of higher- and lower-level governments (i.e., the vertical and horizontal structure of government), in fiscal competition.

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1 Introduction

Analyses of fiscal competition seek to ascertain how fiscal policymaking is affected by competitive pressures faced by governments. Such analyses may be useful for normative evaluation, but, at base, the theory of fiscal competition requires a theory of policy choice. As such, it lies squarely in the realm of political economy. Does this theory have any operationally-meaningful content? Does it offer useful guidance for empirical analysis? As will become clear, the answers to these questions are definitely "yes": models of governments operating in a competitive environment typically predict policy outcomes different from those chosen by governments not facing competition. This is a far cry from saying that these implications are *readily* testable, however. At the most fundamental level, there is no settled operational basis on which to determine whether or to what degree any set of governments can be said to "compete", or whether the extent of competition has changed over time. The development of empirical tests for the effects of fiscal competition is an area of ongoing research, and will no doubt remain so for some time to come.

To help readers get their bearings in a rapidly-developing branch of literature, this essay presents a concise overview of some of the principal themes that have figured prominently in economic analyses of fiscal competition.[1] In addition to surveying some of the contours of existing research, I also try to identify significant gaps that warrant further attention and that may occupy the attention of investigators in the years to come.

What Is Fiscal Competition?

The term "fiscal competition" may evoke images of one state pitted in a contest with another for a high-stakes manufacturing project, with politicians serving up juicy packages of tax holidays, infrastructure projects, regulatory relief, and direct subsidies to entice a firm and advance the cause of "economic development," "jobs," or other supposedly desirable economic outcomes. However, events of this sort, sometimes rich in political drama, are not the only form of fiscal competition, just as the tales of buyouts, takeovers, and boardroom struggles that crowd the business pages are only one part of the process of commercial competition among business firms. The numerous producers in the wheat or corn industries, each reacting to market conditions that they cannot individually influence, are textbook examples of perfect competition in a market setting. Perfect competition, in a market context, limits the power of individual producers to affect market prices, creates powerful incentives to control costs and to respond to fluctuating market conditions, limits profits only to those pure rents that arise from the ownership of unique and non-replicable assets, and produces efficient allocations of resources in an otherwise undistorted economy. This type of market competition differs markedly from the rivalrous behavior that sometimes characterizes much more concentrated industries, in which a handful of captains of industry wheel and deal to snuff out, or perhaps to buy out, one or two other major competitors and thus secure market dominance. Textbook perfect competition deals with the rather more routine business of providing regular supplies of goods and services to numerous small customers who, though unable to dictate terms to any one supplier, can always turn to numerous competing suppliers.

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[1] There are several literature surveys that interested readers may consult. These include Cremer et al. (1996), Wildasin (1998), Wilson (1999), Wilson and Wildasin (2004). Many key ideas can be found in Oates (1968).

Similarly, fiscal competition occurs, in its purest and probably most important form, in the routine daily decisions of numerous and usually small businesses, workers, consumers, and governments. To be sure, fiscal competition, like market competition, can certainly be investigated in cases of "imperfect competition," where governments, market agents (like firms), or both, are small in number and large in size. The analysis of strategic interactions among small numbers of large agents -- small numbers of governments, small numbers of firms, or small numbers of both -- forms a rich and interesting branch of the literature on fiscal competition, but the case of perfect competition is always a useful and even essential benchmark. In order to limit its scope, most of the discussion in this essay focuses on this benchmark "perfectly competitive" case in which many small governments compete for many small households and firms. In doing so, game-theoretic complexities arising from strategic interactions among governments are de-emphasized -- undoubtedly a significant limitation in some contexts.[2]

Competition among governments can take many forms. The present essay focuses just on those aspects of competition that arise from the (actual or potential) movement of productive resources -- especially labor and capital, in their many forms -- across jurisdictional boundaries. This type of fiscal competition is of great importance because the revenues of fiscal systems so often depend critically on the incomes accruing to capital and labor (or their correlates, including consumption) and their expenditures are so often linked to labor and capital (or their demographic and economic correlates, including populations and subpopulations of all ages). However, it should be kept in mind that competition may also result from trade in goods and services or simply from the flow of information among jurisdictions, as discussed in other branches of literature. In practice, these many types of competition should be expected to occur simultaneously. Analyses of these different types of competition are potentially complementary and are certainly not mutually exclusive.

Outline

This paper is organized as follows. Section 2 discusses the basic economics of fiscal competition. Section 2.1 sketches a model that has been used frequently in theoretical and empirical analyses of fiscal competition, emphasizing how fiscal policies affect the welfare (real incomes) of various groups and how these impacts depend on the mobility of resources and thus providing the economic foundation for subsequent discussion. Section 2.2 shows how alternative versions of this model allow it to be exploited in diverse application contexts. The normative implications of fiscal competition are discussed briefly in Section 2.3.

Subsequent sections of the paper address parts of the subject that are less well-settled. Section 3 focuses on the political economy of fiscal competition, highlight the fact that exit (or entry) options for mobile resources alters the payoffs from alternative fiscal policies among those who (rationally, under the circumstances) participate actively in the political process Section 4 analyzes two intertemporal aspects of fiscal competition: the determination of the "degree" of factor mobility, especially for the purposes of empirical analysis, and the issue of time-varying policies, commitment, and dynamic consistency. Finally, Section 5 turns to the role of institutions, and particularly of higher- and lower-level governments (i.e., the vertical and horizontal structure of government), in fiscal competition. Section 6 concludes.

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[2] Brueckner (2000, 2003) surveys both the basic theory and the empirical testing of models of strategic fiscal competition in several different contexts.

2 Models of Fiscal Competition: From Simple to Complex

Perhaps the most frequently utilized model of *tax* competition is one in which there is a *single* mobile factor of production, usually called "capital", that is the *single* source of revenue for a government that provides a *single* public good or service. Capital mobility implies that heavier taxation will drive capital to other jurisdictions, creating incentives for the government to limit the local tax burden. Since capital taxation is the sole source of local government revenue, capital mobility limits government expenditure.

In this model, competition for mobile capital may lead to underprovision of public services (sometimes described, with excessive rhetorical flourish, as a "race to the bottom") and can be harmful to economic welfare. At least, this can be true if public expenditures are used by *benevolent* local political decisionmakers to provide public services valued by local residents -- in the simplest case, by a *single* representative local resident. If, by contrast, self-interested politicians use government expenditure inefficiently -- e.g., to overstaff the public sector, to overcompensate public-sector workers, or to make sweetheart deals with the friends of corrupt officials -- then capital mobility, by limiting public expenditures, also limits waste, e.g. by "Leviathans" (Brennan and Buchanan (1980); see also Keen and Kotsogiannis (1993)). In this case, the welfare implications of capital mobility are ambiguous and it is possible that mobility of the tax base may be welfare-improving.

As will be seen, it is easy to sketch a model in which these ideas can be developed more formally. However, it should already be apparent that simple "bottom line" conclusions about the implications of "tax competition," such as the two opposing conclusions contained in the preceding paragraph (to state them as simply as possible, "tax competition puts downward pressure on public expenditures and is welfare-harmful" and "tax competition puts downward pressure on public expenditures and is welfare-improving"), rest on equally simple and highly debatable hypotheses. These hypotheses, when stated explicitly, are clearly anything but self-evident. In fact, it is possible to construct an entire series of models of fiscal competition that yield a wide range of positive and normative implications. As already suggested by the emphases in the preceding paragraphs, different assumptions may be made about the *types* of fiscal instruments utilized by governments, the *number* of fiscal instruments that they use, the underlying local economic structure (such as the *type* and *number* of mobile productive resources), and the *type* and *number* of agents in whose interest(s) policies are formulated. The present essay cannot provide an exhaustive enumeration of all possible models of fiscal competition. However, equipped with a basic model, built on standard assumptions, it is relatively easy to see how the implications of fiscal competition can vary widely as critical assumptions are altered.

2.1 A Benchmark Model

The literature on fiscal competition owes much to the study of local government finance in the US. It is worth recalling a few basic facts about these governments. First, they are numerous and, generally, small: there are about 90,000 local governments, including more than 3,000 counties, about 14,000 school districts, more than 20,000 municipalities, and tens of thousands of special districts and townships. Local education spending accounts for about 40% of all local public expenditures (about half of all expenditures excluding public utility expenditures). Local property taxes account for about two-thirds of all local tax revenues. Historically, the local property tax has been, by far, the dominant element in local fiscal systems; even today, when many local governments have broadened their tax systems, it accounts for about 72% of local

government own-source tax revenue. Because property taxes have played such a dominant role as a source of local government revenues in the US, and because education accounts for such a large part of local government spending, numerous early contributions to the literature on fiscal competition build upon the stylized assumption that governments use a *single* tax instrument to finance a *single* public service.

Modern studies of property tax incidence (that is, of the real economic burden of the property tax) provide much of the analytical foundation for the study of fiscal competition. The property tax is commonly viewed partly as a tax assessed on "raw" land and partly as a tax on the structures built on land. Land, per se, is perfectly inelastically supplied, but all of the other value of property -- perhaps 90% of the value of residential, commercial, and industrial property, in a modern urban setting -- derives from investment in its improvement and development. These capital investments are durable resources that, while fixed in the short run (residential subdivisions, shopping malls, or industrial parks cannot be created instantaneously, and, once built, only depreciate gradually), are variable in the long run. A conventional view is that the burden of local property taxes falls on property owners in the short run because the supplies of both land and capital are inelastic. In the long run, however, the property tax discourages investment in the local economy, resulting in reduced local economic activity and lower returns to land or other fixed local resources, possibly including labor. Because of the quantitative importance of capital relative to land and because the variability of capital in the long run plays a critical role in the analysis of tax incidence, much of the literature on local property taxation simply ignores the land component of the property tax, treating it simply as a local tax on capital investment.

Figure 1 illustrates this model. Let *k* represent the amount of capital investment in the local economy. In the long run, this is determined by the profitability of local investment relative to investment opportunities elsewhere. The MP_K schedule shows the before-tax or gross rate of return on capital in the locality, based on its marginal productivity. Because capital combines with land, labor, or other immobile resources, this schedule is downward-sloping, reflecting the idea that investments are very profitable when there is almost no capital in the local economy but that successive units of investment are decreasingly profitable as the local capital stock expands. If *r** is the *net* rate of return on investment elsewhere in the economy, and if there were no local property tax or other local policies that would influence investment, *k** would be the long-run equilibrium level of the local capital stock because the return on capital in the local economy would be just equal to the return earned elsewhere and there would therefore be no incentive for capital to flow into or out of the locality. The total value of local economic activity -- all production of goods and services, including the rental value of residential property -- is represented by the area *0ABk**, of which the amount *0r*Bk** is the return accruing to capital invested in the local economy and the remainder, *r*AB*, is the income earned by local landowners, workers, or owners of other local resources.

If the capital stock is fixed at k* in the short run and a local property tax is imposed, collecting *t* per unit of capital, the owners of local capital would suffer a loss in net income as the net rate of return falls to *r* - t*. This is not a long-run equilibrium, however, since more profitable investments, earning *r**, are available outside the locality. Over time, the local capital stock would shrink to *k'*, at which point the gross or before-tax rate of return in the local economy would have risen to *r'*, that is, by the amount of the local tax *t*. With this higher local *before-tax* rate of return, the local *net* rate of return is equal to that available externally. In this post-tax situation, local production will have been reduced to *0ACk'*. The outflow of capital reduces the gross income of land, labor, or other local resources to *r'AC* while the local government raises *r* r'CB* in tax revenues.

If the entirety of this tax revenue is paid over to landowners or workers, either in cash or in the form of public services equal in value to the amount of tax revenue, their loss of income will be partly but not completely offset. On balance, they will lose the amount *DCB* in net income, that is, the collection of revenue through this tax is costly, on net, to local residents. To express this observation in a slightly different terminology, the (local) "marginal cost of public funds" is greater than 1, that is, local residents suffer more than $1 in loss for every dollar of tax revenue raised. In still other language, the (local) "marginal excess burden" of the local tax is positive.

Within the context of this simple model, a local tax on capital has very different consequences, depending on whether capital is immobile (identified here as the "short run") or mobile (the "long run"). To summarize the essential points:

(i)   In the short run, the stock of capital within a locality is fixed. The imposition of a tax on capital, such as a local property tax, does not affect the real resources available within the locality or the real output and income generated by those resources. It does reduce the net rate of return to the owners of the local capital stock, and thus their incomes.

(ii)   In the long run, a local property tax cannot reduce the net return to capital, either inside or outside of the locality[3] (because capital flows into or out of the locality so as to equalize internal and external net rates of return). Hence, the net incomes of capital owners of capital are not (significantly) affected by the local tax.

(iii)   The local property tax *does* affect the owners of *immobile* resources within the jurisdiction, such as landowners or perhaps workers. The tax-driven reduction in the stock of capital reduces the demand for complementary factors of production and reduces their gross or before-tax returns.

(iv)   The loss of income to the immobile resource owners exceeds the amount of tax revenue collected. This means that the tax is harmful to them, on balance, if it is used merely to finance transfer payments or other expenditures that are no more valuable than their cost. As a corollary, the only expenditures that will benefit local residents are those whose benefits exceed their direct cost.

So far, this analysis merely illustrates the effects of hypothetical policies without addressing the political economy of policy choice. But because it shows how different groups are affected by alternative policies, its potential lessons for politics are immediate. In particular, it shows how the mobility of a taxed resource changes the impact of fiscal policies on different groups, and thus on their incentives to influence the political process.

Assume for the moment that the local political process chooses policies that maximize the incomes of owners of resources other than capital -- workers, say, or landowners. (Perhaps local residents elect politicians who pursue this goal on their behalf.) In the short run, a local tax on capital provides an opportunity for these agents to capture rents from the owners of capital -- unless of course the capital is owned entirely by these agents themselves, in which case a tax on capital is just a tax on themselves. Provided, however, that there is some "foreign ownership" of capital, the local property tax is an

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[3] More precisely, a local property tax does not *perceptibly* affect the net rate of return outside of the locality.

attractive revenue instrument with which to finance local public services like schools. It can even provide a tool to transfer rents from capital owners to workers or landowners via direct cash transfers or equivalent in-kind public expenditures. From a long run perspective, however, the local economy has to compete for capital, and the incentive for local residents to use this tax to capture rents for themselves changes dramatically: in fact, it disappears altogether.

To forestall possible confusion, note that it is still *possible* to tax capital in the long run, even though it is freely mobile, and to use it to generate tax revenue. Mobility of the tax base does *not* mean that taxes cause the entire tax base to disappear; in Figure 1, the capital stock only shrinks to *k'*, not *0*, due to the tax, and the tax produces revenue equal to *r'CDr**. Mobility of capital does imply, however, that the *economic burden* of the tax on capital does not fall on the owners of capital, who must, in equilibrium, earn the same net rate of return *r** within the locality as without. Instead, the real burden of the tax now falls on the owners of land, labor, and other immobile resources, even though the tax is not imposed on these agents. The *economic incidence* of the tax is *shifted* from the owners of capital to the owners of resources that are "trapped" within the locality and cannot escape the burden of taxation. From a long-run perspective, the latter have no incentive to tax property in order to capture rents from the former. Indeed, a tax on capital that is used to finance transfers to the owners of locally-fixed resources is not only not advantageous to them; on balance, it is harmful, because of the "deadweight loss" of the tax. This loss is absorbed by local residents -- landowners or workers -- in the form of reduced land rents or wages resulting from the flow of capital investment out of the local economy. If local residents *must* use the property tax to finance public service provision, they have an incentive to limit these services because raising local tax revenues is costly to them. They may end up providing lower levels of public services than would be true if they could, instead, use a tax on land rents or wages.

This discussion has relied on a series of highly stylized assumptions and a very simple model. In a stark form, it shows how the owners of immobile resources end up bearing the burden of local taxes imposed on mobile resources, including any (local) deadweight loss or excess burden associated with local taxes. This is true even if the owners of the immobile resources are not directly affected by the local tax. Likewise, capital mobility protects the owners of mobile capital from having to bear the burden of any local taxes imposed upon them. In this model, politicians acting on behalf of "immobile local residents" -- landowners or workers -- would not wish to impose taxes on mobile capital, even if the owners of this capital are outsiders with no voice whatsoever in local politics.

2.2 Further Interpretations and Applications of the Basic Model

These observations have important implications for the political economy of public policy. Before discussing these implications, however, let us pause to consider some variations on the very simple model developed above.

First, as we have seen, a tax on mobile capital that is used to finance transfer payments to local landowners or workers ends up harming the recipients of these payments, on net, by an amount equal to the excess burden from the tax on capital. They would therefore prefer a zero tax rate on capital to any positive tax. They would not, however, wish to *subsidize* capital investment, if they had to pay the taxes required to finance these subsidies. This policy, which is the reverse of a tax on capital used to finance transfer payments to the owners of immobile resources, is also harmful to the latter. It would attract capital and thus increase the level of before-tax income accruing to immobile resources (the size of the triangle in Figure 1) but this increased income would be more

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than offset by the taxes needed to finance the investment subsidy: in other words, this policy, too, creates an excess burden to be absorbed by local residents. If a tax or subsidy on capital investment merely involves offsetting transfers of cash (or its equivalent) to the owners of immobile resources, it imposes a net burden on them; from their viewpoint, such a policy should be eliminated. Competition for mobile capital does not imply that local governments will seek to *subsidize* capital investment.

Second, although the basic model can be applied to the analysis of property taxes levied by local school districts in the US, nothing prevents its application to different types of tax or expenditure policies undertaken by higher-level governments. For instance, corporation income taxes are often viewed as source-based taxes on the income produced by business investment. These taxes are often imposed by state, provincial, and national governments. The benchmark model suggests that such taxes may impose net burdens on the incomes of corporations, and thus their owners, in the short run, but that their long-run burden falls on the owners of other, less mobile resources. Thus, the same model that has been used to analyze the taxation of property by local governments within a single country can also be used to analyze the taxation of business income by countries in an international context.

Third, although the mobile resource in the discussion so far has been called "capital", it should be clear that it is the mobility of the taxed or subsidized resource relative to other, immobile local resources that matters for the analysis. Depending on the context, the (potentially) mobile resource could also be people. In this case, the model shows that the real net income of mobile households is not affected by local fiscal policies, in the long run. A local tax on the incomes of the rich, for instance, would reduce their net incomes in the short run but, if they can move freely to other jurisdictions in the long run, the burden of such a tax would eventually fall on other, less mobile resources within the taxing jurisdiction.

Fourth, although the taxing powers of local school districts in the US are often limited, both by law (for instance, a state constitution or statute may prohibit them from imposing any taxes other than a property tax) and by their limited capacity to administer income or other relatively complex taxes, higher-level governments, such as states, provinces, and nations, commonly have much more revenue autonomy and administrative capacity. On the expenditure side, higher-level governments can and do provide a wide array of public goods and services. Thus, although school districts in the US may plausibly be described as jurisdictions that utilize a single tax (on property) to finance a single type of public good (primary and secondary education), most governments have many more fiscal policy instruments at their disposal. In such a context, the mobility of a single resource, such as capital, *may* result in a lower tax on that resource, but this need not imply a reduction in government spending; instead, it may mean that other sources of revenues are utilized more heavily. That is, fiscal competition may result not in less government spending but in a different *structure* of taxation, as governments substitute away from taxation of mobile resources and rely more heavily on taxation of less-mobile resources (Bucovetsky and Wilson (1991)).[4]

Fifth, as a corollary of the preceding observation, note that fiscal competition may lead to *higher* public expenditures. In the simple model of Figure 1, there is only one fiscal

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[4] As one simple illustration of this possibility, note that few governments tax highly liquid financial assets such as bank account balances. When imposed, these taxes are usually levied at very low rates and they generate only modest revenues by comparison with taxes on household incomes, consumption, or fixed assets. This type of tax mix is readily understandable as a consequence of fiscal competition.

instrument, a tax, that is applied to mobile capital. Often, however, government expenditures for public transportation, water, power, waste disposal, and other infrastructure may raise, rather than lower, the return to capital investment These expenditures may partially offset, or even more than offset, the negative impact of taxes on capital investment.I It is the combined impact of *all* fiscal policies, positive and negative, that affect the location of capital or other mobile resources. The key message of the simple basic model is that fiscal competition provides incentives to reduce the *net* fiscal burden on a mobile resource; in practice, this may occur through tax reductions, subsidies that offset taxes, higher expenditures on selected public services that attract mobile resources, or possibly through even more complex policy bundles.

Finally, the simple model focuses on extreme polar cases in which one resource or another is either completely immobile or freely mobile, possibly depending on the time horizon under consideration (the "short run" or "long run"). Some resources, like mineral deposits, natural harbors, or rivers may truly be immobile. Most other resources, like labor, capital, or cash in bank accounts are at least potentially mobile but are seldom, if ever, truly costlessly mobile. Exactly how to determine the degree of resource mobility is not obvious, an issue that is discussed again in Section 4 below. In general terms, however, the fact that the extreme polar assumptions of the simple model are violated merely means that its predictions are expected only to be approximately rather than literally true.

In summary, the benchmark model of fiscal competition sketched in Section 2.1 lends itself to many variations and alternative interpretations, allowing it to be applied in a wide variety of contexts. Models of this type can thus be (and have been) used to study such diverse issues as welfare competition among US states, competition for highly-skilled or educated, competition for young workers, competition for old workers, or the effects of increased labor mobility in Europe resulting from successive expansions of EU membership or the prospective accession of still more countries -- all in addition to the study of the competition among local governments in the US, including school districts.

2.3 Normative Implications of Fiscal Competition

The normative implications of fiscal competition warrant at least brief mention. Early contributions to the literature on fiscal competition highlighted its potential benefits for economic efficiency as well as the constraints that it imposes on redistribution. Tiebout (1956) suggests that the sorting of people among localities (i.e., competition among localities for mobile households) could improve the efficiency of public expenditures. People with high demands for public services would be drawn to localities with high levels of public services and high levels of taxation, while low demanders would gravitate to localities with low taxes and low spending. Stigler (1957) argues that the mobility of resources limits the capacity of governments to redistribution income. A locality may tax the rich to subsidize the poor (in cash or in kind), but this policy will not effectively reduce the net incomes of the rich, nor raise the net income of the poor, if either or both groups are freely mobile.

These two ideas are related. Insofar as competition limits redistributive policies, it leads to public expenditures that are closely matched to taxes. Closer alignment between taxes and expenditures can result in greater efficiency of resource allocation. In the context of local public schooling in the US, competition among jurisdictions for mobile households would be expected to lead to an equilibrium in which educational quality and

expenditures vary among localities, with high-demanders grouped in high-tax jurisdictions with good schools and low-demanders grouped in low-tax jurisdictions with poor schools. This equilibrium, in which the benefits and costs and costs of education are closely matched, may well be more efficient than one with no mobility of households. Given the abundant empirical evidence that education is a normal good (i.e., people demand more of it as their incomes rise), this equilibrium is also one in which children from rich families receive better educations than those from poor families. The same competitive forces that contribute to efficiency also preclude redistribution from rich to poor. Thus, the efficiency and equity effects of fiscal policy cannot, in general, be cleanly separated.

3 Fiscal Competition: Exit and Voice

Political decisions involve the resolution of conflicting interests. The mobility of labor, capital, or other resources is relevant for the analysis of political economy because it affects the payoffs to alternative fiscal policies, and thus the nature and extent of conflict. The Hirschman (1970) distinction between "voice" and "exit" provides a convenient lexicon with which to describe the key observations.

First, the payoffs to owners of resources that are truly freely mobile are unaffected by the policy choices of small jurisdictions. On the one hand, they are not adversely affected by local policies because they have an exit option: by relocating elsewhere, they can enjoy the same level of real income as is available externally. On the other hand, they cannot benefit from local policies, either, because others can enter from outside the jurisdiction to take advantage of the same benefits, and will have incentives to do so until those benefits are dissipated. The owners of freely-mobile resources thus have no incentive to participate in or to influence the local political process, i.e., to exercise "voice". In one sense, they exert substantial power in the local political process: they do not need to defend their interests through voting, lobbying, or any other form of political action because market forces "do all the work" for them. In another sense, they are powerless: even full control over local policymaking does them no good. For the owners of truly immobile resources, the story is reversed. They have (by definition) no exit option: their resources are trapped in the local economy. For these agents, "voice" is essential. These agents do stand to gain or lose, depending on the outcome of the local political process.

To illustrate: consider the influences that may be brought to bear on policymaking in a town or city that is part of a major metropolitan area, and how this may depend on such factors as demographic structure and the form of housing tenure. One can imagine a city in which most residents are relatively young single people who rent their dwellings. Suppose that these dwellings, and the land on which they are situated, are owned by large real estate developers: individuals or businesses whose incomes depend on the profitability of local real estate investments. The people involved in these real estate activities may or may not reside in the city, but in any case have a powerful incentive to influence local policies in ways that improve the profitability of the real estate sector. One way to do this is to support taxes on real estate that are used to provide public services that are highly valued by renters, or to urge the restructuring of public expenditures toward services valued by renters, while limiting taxes and expenditures that are devoted to other uses. Landowners may influence local policy through lobbying, campaign contributions, or bribes, acting, in effect, as agents for the households from whom they collect rent. Renters may not vote or otherwise participate actively in the local political process and have little incentive to do so; nevertheless, their interests may be well-represented in the local political process. Indeed, localities whose policies are, in

effect, chosen by profit-maximizing landowners may produce fully-efficient outcomes in which levels of public-good provision satisfy the Samuelson condition.

As a variation on this model, residents could be homeowners rather than renters. Homeowners, too, might seek to maximize property values, if they are freely mobile. Homeownership may, however, raise the costs of moving, tying homeowners to the locality so that their personal preferences for local policy play a larger role and concern for property values diminishes. Of all the groups who exercise voice, however, none can impose burdens on the owners of freely mobile resources.

As a cautionary note, it should be remembered that resources that are relatively mobile in one context may be less so in a different context. Households newly arriving in a major metropolitan area can easily choose one locality over another in that area, almost at zero cost; the assumption that they can choose freely among them may be very plausible. The proportion of people who can easily relocate among much larger jurisdictions (like states, provinces, or countries) is normally much smaller, however. For such jurisdictions, it might be more appropriate (at least in the "short run") to assume that households are immobile rather than freely mobile. Even at the scale of larger jurisdictions, simple generalizations about the mobility of "labor" as a whole may be misleading, since mobility often differs by age, education, or other demographic types. In recent US experience, young and more highly educated people relocate relatively frequently than those who are older and less educated, but this does not mean that such people are always intrinsically more mobile. For instance, black Americans exhibited a considerable degree of mobility during the period approximately 1915--1950 , which saw a substantial movement of low-skilled and poorly-educated workers from the rural South into the industrial cities of the North, Midwest, and West. Observed flows of migration or capital are not necessarily good indicators of the degree of resource mobility.

4 Resource Mobility: The Importance of Dynamics

The theory of international trade conventionally draws a sharp distinction between "traded" and "non-traded" goods and services. Similarly, as noted earlier, much of the theoretical and empirical literature on fiscal competition sharply distinguished "mobile" and "immobile" resources. In neither case, however, can we be assured that reality falls neatly into line with these convenient distinctions. In particular, observed trade patterns do not necessarily determine whether or to what degree a commodity is tradable, nor do flows of labor and capital among jurisdictions necessarily reveal the degree of factor mobility. In the simplest trade models, identical countries or regions will not trade simply because there is no incentive to do so, even if commodities can be transported across boundaries at zero cost. The same is true for factor mobility. Even if labor or capital is freely mobile among jurisdictions, there may be no differences in (net) rates of return and thus no incentive for resources to move. In Figure 1, the final equilibrium is indeed one in which net rates of return for capital or other mobile resources are equalized among jurisdictions; if and when such an equilibrium is reached, no further factor flows would be observed.

In general, then, how is one to determine which resources are mobile, and which are immobile? As the preceding discussion has made clear, this is a fundamental question for the analysis of fiscal competition. Building on the classical distinction between "short run" and "long run", it is reasonable to argue that the "degree" to which a resource is mobile depends critically on the time horizon over which mobility is to be assessed, and on the resource in question. For instance, modern technologies and the development of

modern financial markets makes it possible for financial capital to shift very rapidly within regions of a country as well as among countries. From the viewpoint of most aspects of fiscal policymaking, which occurs as a result of relatively slow-moving legislative or institutional change, a resource that can flow across jurisdictional boundaries within less than a year presumably qualifies as "mobile".

Far less mobile are the labor and capital, public and private, that constitute large urban agglomerations. These entities, though continuously evolving, grow or decline over decades or centuries. The slow pace of this process reflects the costs of adjustment both of stocks of real capital assets like factories, office buildings, apartment buildings, or houses, and of population and labor forces. For example, the growth of major modern cities -- any of the largest 100 cities in the world, for example -- can usually be traced to protracted periods of investment in real capital as well as inflows of population from other (often rural) areas. The size of a city's residential and nonresidential capital stocks, population, and labor force certainly may and sometimes does decline over time, but sudden large scale abandonment of existing stocks of real capital assets is rarely if ever observed. Annual growth or decline of populations and capital stock in the range of 2--10% are not uncommon, however, and faster rates of change are certainly feasible.

Labor and capital are mobile on the largest geographic scales, as well, but, generally, over longer time horizons than is true for small geographical units. International migration and international flows of capital have played an important role in the economic and political development of the Western hemisphere, as is well illustrated by the work of Williamson (1998) and co-authors, who examine the simultaneous determination of capital and labor flows and wage and rate-of-return differentials between the Old and New Worlds during the nineteenth century. Of course, different *types* of labor and capital may be more or less mobile, to a degree that depends on information, transportation costs, the organization of markets, and other factors. For instance, world-class athletes, musicians, and other entertainers now commonly provide their services in more than one country, and perhaps in many different countries, in a single year. The same is true of world-class authors, scientists, entrepreneurs, and managers. These and other high-income people, or at least the taxable income streams that accrue to them, can probably relocate on a global basis with comparative ease. [5]

The above considerations suggest that the degree of factor mobility may be usefully characterized, operationally, by the speed with which factor movements occur. The geographic scope over which resources are mobile is likely to be rather small over very short time horizons, whereas mobility on a global scale is much less costly over long time horizons. In this perspective, polar extreme assumptions about "mobile" and "immobile" resources presumably bracket, but only imperfectly, most of the empirically-relevant cases of resources that are "partially" mobile.

In a dynamic setting, many of the basic implications of Section 2's benchmark model continue to hold, but in qualified form. Mindful of Keynes' observation that "in the long run we are all dead", we must note that participants in the political process care not only the long-run effects of policies but also their short-run effects. In a world where economic agents discount the future, changes in incomes in the near term can be more important than long-run changes, even if the latter are larger in an undiscounted sense. A

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[5] The locational choices of such elite groups are of vital importance for the public policy, far out of proportion to their numbers. In the US, less than 0.2% of taxpayers receive about 10% of taxable income in the US and pay about 20% of all personal income taxes.

policy of taxation of capital investment or of high-income households may, in the long run, lead to outflows of capital or of high-income households. In the short run, however, it may be difficult for the owners of these taxed resources to escape the real burden of taxation. A policy that uses taxes on capital or high-income households to finance transfers to poor immobile or elderly households may thus be advantageous to the latter in present-value terms, even it is harmful "in the long run." Quasi-rents can be extracted from imperfectly mobile resources until the stock of these resources is gradually depleted sufficiently to raise their gross rate of return enough to equalize net rates of return with those available elsewhere. In a simple model of fiscal competition similar to that of Section 2, the optimal net fiscal burden on an imperfectly mobile resource is inversely proportional to the "half life" of the dynamic adjustment process, i.e., very small, for a resource that adjusts very rapidly, but possibly very high for a resource that responds only sluggishly (Wildasin (2003)).

Section 3's discussion of the political economy of fiscal competition can be reinterpreted in the context of dynamic factor mobility. Resources that are very mobile, such as highly liquid financial assets not subject to regulatory controls, earn very small quasi-rents. Those who can influence fiscal policy will not view these resources as very good fiscal policy "targets": the modest gains from imposing significant fiscal burdens on them would be outweighed by the deadweight losses that ensue.   Direct participation in the political process is unprofitable for the owners of such resources. Fixed capital investments or human resources, though perhaps highly mobile in the long term, adjust somewhat less rapidly to changes in policy. Favorable fiscal policies can produce positive changes in their incomes, in present value terms, and adverse policies may harm them. Their owners have diminished "exit" or "entry" options and thus have a greater incentive to use "voice" -- voting, lobbying, campaign financing -- to affect fiscal policy.

These observations suggest that the time dimension of fiscal competition is of crucial importance, both because the speed with which resource stocks can adjust determines the degree of resource mobility and because policy-setting may involve tradeoffs between short-run and long-run effects. This also implies that the problem of time-consistency and credibility policymaking is likely to play a critical role both in the economic analysis of fiscal competition and in the analysis of its implications for political economy.

Indeed, the problem of time consistency and commitment is already well-recognized in the literature (Kydland and Prescott (1977)). A now-classical problem in public finance concerns the means by which a government can commit itself not to expropriate capital investments either directly, or, indirectly, through confiscatory taxation. A capital owner must incur the up-front costs of investment before a stream of returns can materialize, and these returns may be subject to taxation in future periods after the cost of investment is sunk. Today's incentive to invest depends on the expected tax treatment of the returns to capital investments in the future; the expectation of high tax burdens in the future would discourage investment in the present. To commit credibly not to tax capital heavily in the future is difficult because, when revenues are needed at future dates, the government will face the tradeoff between taxing other revenue sources, such as earnings, or taxing the by-then historically-determined stock of capital. A future tax on earnings or consumption would impose efficiency costs on the economy through distortions of behavior whereas a tax on the historically-given stock of capital would not do so. Rational investors anticipate this problem and today's incentives to save and invest are harmed accordingly.

Kehoe (1989) explains how capital mobility can help to "solve" the problem of time consistent taxation if capital is sufficiently mobile that it cannot be "trapped" in a high-

tax jurisdiction. Specifically, Kehoe assumes that tax policies must be set prior to the decision about where to locate capital. In this case, fiscal competition prevents governments from capital expropriation. Other means by which governments can effectively "commit" to limited *ex post* taxation include up-front subsidies, investments in public infrastructure, or other special incentives that offset anticipated future increases in taxation (see, e.g., Keen and Marchand (1997)), the development of reputation, and, of course, through constitutional constraints. These might include many forms of limits on governmental powers (e.g., enumeration of powers, due process, separation of powers) so as to constrain future demands for revenue or the capacity of government to collect it. It should be noted, however, that some commitment mechanisms might shift the balance of taxation *toward* rather than away from durable assets. For example, the establishment of an unfunded social security (public pension) system defers taxation to future periods and thus can undermine incentives for savings and investment.

5 Competition and Institutional Change

Fiscal competition has significant implications for the organization of the public sector. In particular, jurisdictions with limited geographic scope (like the governments of small municipalities) are, in general, likely to face greater competitive pressures than larger ones (like large countries). While competition may limit the ability of small jurisdictions to redistribute income, it does not limit the underlying desire or demand for redistributive transfers. If interest groups or their representatives are unsuccessful at pursuing redistributive transfers at one level of government, they may move the locus of redistributive politics to a higher level of government at which such transfers may be more effective. Indeed, in his classic 1957 discussion, Stigler argued that the redistributive functions of government *should* be shifted to higher levels of government -- in the US context, to the national government, away from local governments -- precisely because of competitive pressures at the local level.

Normative arguments aside, it is empirically true that a great deal of the redistributive activities of the public sector do occur at the level of national governments rather than at the subnational level. In the US, welfare programs like Aid to Families with Dependent Children/Temporary Assistance to Needy Families and Medicaid, though implemented by state governments, have traditionally been generously supported by fiscal transfers (especially by open-ended matching grants) from the national government. Since World War II, state governments have taken a prominent role in local school finance, providing fiscal transfers to local governments in order to achieve greater uniformity of expenditures on elementary and secondary education -- another instance in which higher-level governments pursue redistributive objectives that lower-level governments shun.

By providing insight into the comparative advantage of different levels of government in the redistributive activities of the public sector, the theory of fiscal competition can shed light on the organization of a federal system and thus into the institutions of the public sector. These evolve over time, and a topic worthy of further research concerns the relationship between institutional structures and changes in the degree of factor mobility over time. For example, the shifting balance of school financing away from local and toward state governments may be attributable, in part, to the increased stratification of metropolitan areas arising from increased mobility of households at the local level since the widespread introduction of automobiles and other forms of low-cost local transportation, and concomitant limits on the ability of local governments to finance relatively uniform levels of education to poor households by taxation of higher-income households. Over long historical periods, the mobility of labor and capital falls due to technological progress and it may also fall, sometimes rapidly, due to political change.

These (possibly) exogenous changes provide a basis for an exploration of the effects of factor mobility on the institutions through which redistributive policies are implemented. As a broad working hypothesis, "upward reassignment" of redistributive functions over time would be anticipated. If no effective higher level of government is available to carry out redistributive functions, pressures may arise to bring new, higher-level governments into existence or to add new responsibilities to existing institutions. Recent debates and referenda concerning the EU constitution can be interpreted, at least partially, in this light.

6 Conclusion

The preceding discussion has shown how the economic impacts of fiscal policies depend on the mobility of the resources to which these policies are applied. Competition for resources changes the constraints under which governments operate, and the payoffs -- to resident and non-resident households, the owners of firms, politicians, and political parties -- from alternative fiscal policies. In this way, it affects the political economy of policymaking. Of course, it goes without saying that the political economy of policymaking is influenced by a host of other considerations, most notably the political institutions (dictatorships, parliamentary or "presidential" democracies), transparent or corrupt systems, etc.) through which policies are made.[6] In emphasizing the importance of resource mobility, I have focused on the *constraints under which* policies are made rather than on the *mechanisms through which* policies are made, but both are clearly important (and, as suggested in Section 5, interdependent).

Despite the considerable attention that it has recently received, there is much scope for fruitful additional analysis of fiscal competition. Clarifying the nature of "resource mobility" (perhaps through dynamic modeling, as suggested in Section 4) seems to be of fundamental importance. At present, conflicting and inconsistent assumptions about resource mobility are commonplace in both theoretical and empirical research. Perhaps the most challenging task on the research horizon is to investigate the nature of institutional change in a competitive environment. We live in a world in which the mobility of labor and capital appear to be increasing over time, in part due to secular trends (ever-falling transportation and communication costs, in particular), in part due to momentous political upheavals (especially the collapse of the Soviet Union and its satellite systems), and in part due to the liberalization of economic policies throughout the world (EU expansion, economic reforms in countries large and small). Students of institutional change are in the enviable position of being able to watch these events as they unfold. If successful in their efforts, they may succeed in better understanding ongoing institutional evolution; they may even, in a modest way, help in the fashioning of new institutions and the policies that emerge from them.

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[6] See, e.g., Persson and Tabellini (2000) or Mueller (2003) for thorough treatments of this broad topic.

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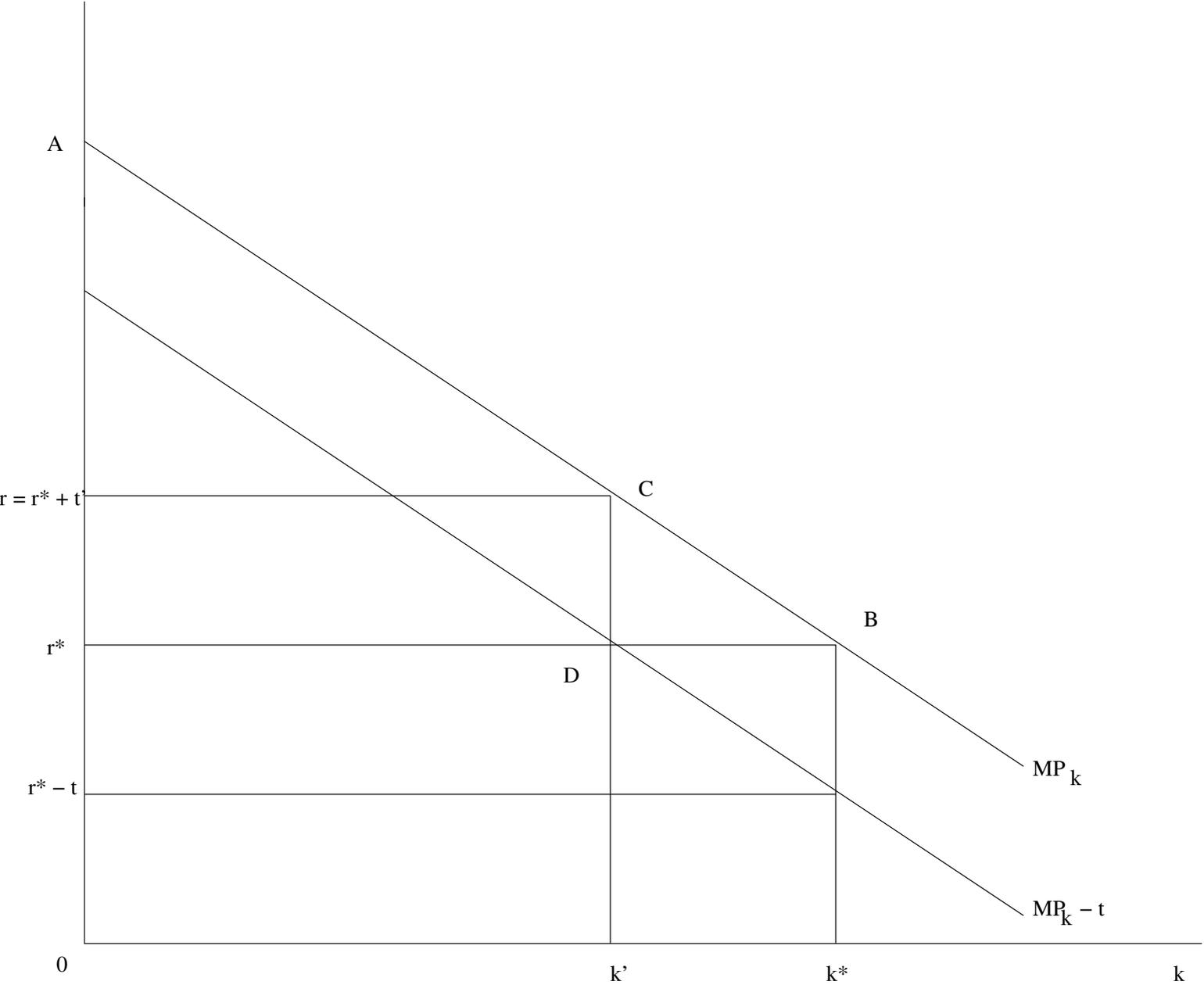
FIGURE 1

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