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Interjurisdictional tax competition for domestic and foreign capital

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Abstract

This paper examines the efficient provision of local public goods when jurisdictions compete for both domestic and foreign capital. Capital is freely mobile between jurisdictions in the home country, but capital owners will incur migration costs if investing abroad. Since the supply of foreign capital is not completely elastic, the traditional result of under-provision of local public goods found in the literature on tax competition may not hold. Furthermore, the less mobile that foreign capital is, the more likely it is that foreign capital will be taxed more heavily than domestic capital. If both types of capital are complementary to the locally untaxed labor, then jurisdictions will always tax foreign capital, and they may even subsidize domestic capital if it is sufficiently difficult to move the capital abroad.

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1. Introduction

Issues of tax competition are often examined in models in which an economy is composed of either jurisdictions or countries, but not both. In one avenue of the studies on tax competition, jurisdictions within the same federation compete for interjurisdictionally freely mobile capital. For instance, Beck (1983), Zodrow and Mieszkowki (1986), Wilson (1986, 1987), Oates and Schwab (1988), and Hoyt (1991) restricted labor to being immobile and assumed that a large number of identical jurisdictions impose taxes on freely mobile capital to fund local spending. Since capital is freely mobile across jurisdictions, the supply of capital is completely elastic to any single jurisdiction. Therefore, jurisdictions have incentives to cut their own tax rates to attract capital, and thus local expenditures will be kept at an inefficiently low level. Wildasin (1988) explored interjurisdictional capital tax competition in an economy consisting of a small number of identical jurisdictions. Although jurisdictions are relatively large as opposed to the whole economy, they are still competing for a fixed amount of capital that is completely elastic in supply. As a result, he also found that there existed an under-provision of local public goods.

The settings above obviously ignore the fact that in the absence of complete capital controls, capital taxes imposed by jurisdictions affect not only the movement of domestic capital, but also the flow of foreign capital. This paper takes up this issue and examines interjurisdictional tax competition in a model where domestic and foreign capital enters the production function as two distinct factors, and jurisdictions compete for both types of capital. As pointed out by Gordon and Bovenberg (1996), empirical findings of high correlations between a country’s saving and investment, real interest-rate differentials across countries, and the lack of international diversification of individual portfolios all suggest that capital is quite immobile internationally. Based on these findings, it is assumed in the model that capital is freely mobile between jurisdictions within the home country, but that capital owners will incur migration costs if they invest abroad. The migration costs capture all the disadvantages for foreign investors as compared with domestic investors.

Smith (1999) also examined interjurisdictional tax competition in a model composed of two types of capital. However, besides being treated as two distinct factors in production, the two types of capital exhibit no other difference. Besides reconfirming the result of under-provision of the local public good found in the literature on tax competition, Smith also found that the capital that is more complementary to the locally untaxed factor should be taxed more heavily.

Contrary to the traditional result and Smith’s findings, this paper shows that in equilibrium local public goods may not be under-provided. Furthermore, even if the domestic capital is more complementary to the local labor as compared with the foreign capital, domestic capital may be taxed less heavily than foreign capital, and jurisdictions may even tax foreign capital and subsidize domestic capital if capital is sufficiently immobile internationally.

2. The Model

The model introduced here is a symmetric one, as is usually examined in the literature on interjurisdictional tax competition. Consider a large economy, which is composed of n identical countries, where each country consists of m identical jurisdictions. Each jurisdiction is inhabited by a fixed number of individuals, who are immobile either across jurisdictions or across countries. Since individuals are immobile, the population in each jurisdiction is normalized to one for simplicity.

The problem of tax competition is examined mainly from the viewpoint of the jurisdictions, but it will be shown later that the model and conclusions from this paper can be completely applied to international tax competition. Without loss of generality, country 1 is called the home country and all other countries are foreign countries. Since this paper examines symmetric tax competition, the model will be described mainly from the aspect of a representative jurisdiction, say, jurisdiction 1 in country 1. The stories for other jurisdictions in the home country and jurisdictions in foreign countries can be analyzed analogously.

Individuals have identical preferences, which are represented by the utility function $u(g,x)$, where g is the local public good and x is the private good. The utility function is strictly quasi-concave and twice continuously differentiable. Each individual owns one unit of labor and an equal share of the country's capital endowment. In contrast to the immobility of individuals, capital can be invested in any jurisdictions in the world, but capital owners will bear migration costs if they invest their capital endowment abroad. Jurisdictions manipulate the tax rates on domestic and foreign capital to influence capital migration, and thereby to affect the marginal productivity of the locally immobile labor, the level of local expenditures, and the level of residents' utilities.

Denote k^{1j}, j = 1, …, m, as the amount of capital that is owned by residents of country 1 and is invested in jurisdiction j of country 1. Therefore, $k^1 = \sum_{j=1}^{m} k^{1j}$ is the total amount of capital invested domestically by residents of country 1. Similarly, denote b_{ih}^{1j}, i = 2, …, n and h, j = 1, …, m, as the amount of capital that is owned by residents of jurisdiction h in country i and is invested in jurisdiction j of country 1. Denote further $b_i^{1j} = \sum_{h=1}^{m} b_{ih}^{1j}$ as the amount of capital that is owned by residents of country i ($i \neq 1$) and is invested in jurisdiction j of country 1. Hence, the amount of foreign capital that is invested in jurisdiction j of country 1 is written as $b^{1j} = \sum_{i=2}^{n} \sum_{h=1}^{m} b_{ih}^{1j} = \sum_{i=2}^{n} b_i^{1j}$.

Since capital owned by the residents in country 1 can be invested domestically or abroad, the capital supply condition for country 1 is

$$\overline{K}^1 = \sum_{j=1}^{m} k^{1j} + \sum_{j=2}^{n} \sum_{h=1}^{m} b_1^{ih}, \tag{1}$$

where $\overline{K}^1$ is the fixed amount of country 1's capital endowment, $\sum_{j=1}^{m} k^{1j}$ is the amount of capital that is owned by the residents of country 1 and is invested domestically, and $b_1^{ih} = \sum_{j=1}^{m} b_{1j}^{ih}$ is the amount of capital that is owned by the residents of country 1 and is invested in jurisdiction h of country i, $i \neq 1$. The capital supply conditions for countries 2 through n can be written analogously, for a total of n capital supply conditions. Notice that since the countries are identical, we have $\overline{K}^1 = \overline{K}^2 = ... = \overline{K}^n$.

Firms in each jurisdiction employ labor (l) and capital to produce the private good (x). The private good can be transformed into the local public good (g) at the rate of one-to-one. The prices of both x and g are normalized to one. The two types of capital are treated as distinct factors in production. Domestic capital is referred to as the type-k capital and foreign capital is referred to as the type-b capital. The production function for jurisdiction 1 in country 1 is written as $f^{11}(k^{11}, \sum_{i=2}^{n} \sum_{h=1}^{m} b_{ih}^{11}, l^{11})$, which exhibits constant returns to scale and is twice continuously differentiable and strictly concave.

Notice that although the net export or net import of capital will be zero in the symmetric Nash equilibrium, cross-investment does not contradict this symmetric outcome. If there exists no cross-investment, i.e., $\sum_{i=2}^{n} \sum_{h=1}^{m} b_{ih}^{11} = 0$ in the symmetric Nash equilibrium, then capital is invested only in own countries. The results of tax competition will be exactly the same as those found in the traditional models in which capital can only move between jurisdictions within the same country. On the contrary, in the case of complete cross-investment, i.e., $k^{11} = 0$ in the symmetric Nash equilibrium, capital invested in jurisdiction 1 of country 1 is completely acquired from foreign countries. In this case the main results from this paper will still hold. The two cases are obviously unrealistic and are therefore excluded from the analysis.

Both type-*k* capital and type-*b* capital are paid based on the value of their marginal products, and the residual is obtained by labor. Therefore, in jurisdiction 1 of country 1, the gross return on type-*k* capital is $r_k^{11} = f_k^{11} = \partial f^{11} / \partial k^{11}$, and that on type-*b* capital is $r_b^{11} = f_b^{11} = \partial f^{11} / \partial b^{11} = \partial f^{11} / \partial b_{ih}^{11}$.

Jurisdictions tax capital on a source-based principle to fund local public goods. According to this principle, jurisdictions only tax capital invested within their boundaries, regardless of the origin of the capital. By letting t_k be the tax rate on type-*k* capital and t_b the tax rate on type-*b* capital, the balanced budget constraint for jurisdiction 1 in country 1 is

$$g^{11} = t_k^{11} k^{11} + t_b^{11} \sum_{i=2}^{n} \sum_{h=1}^{m} b_{ih}^{11}. \quad (2)$$

Besides paying capital taxes, if capital owners invest their capital abroad, they will then incur a migration cost, which depends on the amount of capital exported. The migration cost captures the disadvantages of investing abroad, for instance, asymmetric information regarding foreign markets and the lack of knowledge associated with the laws in foreign countries. The migration cost function is written as $M(b_{11}^{ih})$, where b_{11}^{ih} is the amount of capital that is owned by residents of jurisdiction 1 in country 1 and is invested in jurisdiction *h* of country i. It is assumed that $M(b_{11}^{ih})$ is twice-continuously differentiable and is strictly convex in b_{11}^{ih}, namely, $M'(b_{11}^{ih}) > 0$ and $M''(b_{11}^{ih}) > 0$.

Since capital is mobile across jurisdictions and countries, in the capital migration equilibrium capital owners in country 1 will earn the same net return ρ^1, no matter where they invest. Therefore, the arbitrage condition for capital owners in jurisdiction *j* of country 1 is

$$r_k^{1j} - t_k^{1j} = \rho^1,\ j = 1, ..., m, \quad (3)$$

if they invest their capital endowments within their home country, and is

$$r_b^{ih} - t_b^{ih} - M'(b_{1j}^{ih}) = \rho^1,\ i = 2, ..., n,\ h, j = 1, ..., m, \quad (4)$$

if they invest their capital endowments in jurisdiction *h* of country *i*. Similarly, we can write the arbitrage conditions for capital owners in countries 2 through *n*. By combining (3) and (4), there are $m + (n-1) \cdot m \cdot m = m[1 + m(n-1)]$ equations for country 1, and $nm[1 + m(n-1)]$ equations for all countries.

The capital migration equilibrium is characterized by *n* equations for the capital supply conditions, $nm[1 + m(n-1)]$ arbitrage conditions, and one capital market clearance condition. Therefore, there are a total of $n + nm[1 + m(n-1)] + 1$ equations. Notice that one equation among the *n* + 1 equations for the capital supply conditions and the capital market clearance condition is redundant, since if *n* of these *n* + 1 equations hold, then the last equation must hold as well. Thus, solving the remaining $n + nm[1 + m(n-1)]$ equations simultaneously results in the allocation of the type-*k* capital [including *nm* variables] and type-*b* capital [including $n \cdot (n-1) \cdot m \cdot m$ variables] across jurisdictions and countries, as well as the net returns on capital for capital owners from various countries [including *n* variables], for a total of $nm + n(n-1)m^2 + n = n + nm[1 + m(n-1)]$ variables. Notice that in the Nash equilibrium the allocation of type-*k* capital and type-*b* capital will be functions of tax rates in all jurisdictions in the world. Furthermore, since both types of capital migrate within a large economy, changes in any jurisdiction's tax rates will have only a negligible effect on the net returns on capital. That is, the net returns on capital are given in any jurisdiction.

The symmetric Nash equilibrium in which jurisdiction 1 in country 1 unilaterally changes its tax rates will be examined. Because jurisdictions are identical, as jurisdiction 1 in country 1 changes its t_k^{11} and t_b^{11}, the effects on the amount of capital from all foreign jurisdictions will be the same in the symmetric Nash equilibrium. Therefore, we can write $d(\sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{1j}) = m(n-1)db_{ih}^{1j}$. Next, every jurisdiction will also have the same amount of capital coming from each jurisdiction in foreign countries. Therefore, we can write $\sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{1j} = m(n-1)b_{ih}^{1j} = m(n-1)b$. Furthermore, the amount of capital invested by domestic capital owners will be the same in all jurisdictions, that is, $k^{1j} = k^{1h} = k^{2j} = k^{2h} = ... = k^{nj} = k^{nh} = k$, $h, j = 1, \ldots, m$, $h \neq j$.

Under these settings, it is as if two types of capital are invested in jurisdiction 1 of country 1: type-k capital is owned by residents of country 1 and type-b capital is owned by foreign investors. By substituting $r_k = f_k$ and $r_b = f_b$, the arbitrage conditions of the two types of capital invested in jurisdiction 1 of country 1 can be written as

$$f_k^{11}(k^{11}, \textstyle\sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{11}, l^{11}) - t_k^{11} = \rho^1 \tag{5}$$

and

$$f_b^{11}(k^{11}, \textstyle\sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{11}, l^{11}) - t_b^{11} - M'(b_{ih}^{11}) = \rho^i,\ i = 2, ..., n. \tag{6}$$

Equation (5) states that in the capital migration equilibrium, capital owners in country 1 will earn the net return ρ^1 if they invest their capital endowments in their home countries. Equation (6) says that although capital owners in foreign country i, $i = 2, ..., n$, invest their capital endowments in country 1, they will earn the net return in their own country ρ^i. Notice that due to the assumption of a large economy, in the symmetric Nash equilibrium all capital owners will eventually earn the same world net return, say, ρ, regardless of their origins. Therefore, $\rho^1 = \rho^2 = ... = \rho^n = \rho$.

The individual's budget constraint is

$$x^{11} = [f^{11}(k^{11}, \textstyle\sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{11}, l^{11}) - k^{11}(\rho^1 + t_k^{11}) - \sum_{i=2}^{n}\sum_{h=1}^{m} b_{ih}^{11}(\rho^i + t_b^{11} + M'(b_{ih}^{11}))] + \rho^1(\overline{K}^1 / m), \tag{7}$$

where x^{11} is the individual's private good consumption, the terms in brackets represent her labor income, and the last term is her after-tax capital income. The jurisdiction's objective is to maximize its residents' utilities $u(g, x)$. Therefore, the efficient provision of the local public good is characterized by the Samuelson condition that the marginal rate of substitution (MRS) between g and x equal one.

The tax competition model can be illustrated by the following multi-stage game. In the first stage, jurisdictions throughout the world simultaneously choose their own tax rates on domestic and foreign capital. In the second stage, after observing the tax rates in all jurisdictions, capital owners choose where to invest. In the third and final stage, jurisdictions collect taxes and provide local public goods.

The equilibrium for tax competition in this multi-stage game includes the following two components. (i) The equilibrium for capital migration: Given the tax rates chosen by all jurisdictions in the world, capital owners pursue the maximum possible net returns. In the equilibrium for capital migration, the world capital market clears and all capital owners earn the same world net return ρ. (ii) Nash competitive equilibrium: Given the tax rates in all other jurisdictions and the responses to capital migration, each jurisdiction chooses the tax rates on domestic and foreign capital such that in the competitive Nash equilibrium the resident's utility is maximized. The equilibrium for capital migration has been analyzed above. Section 3 will start to solve the Nash competitive equilibrium.

3. The Nash Competitive Equilibrium

Before studying the Nash competitive equilibrium, we first examine the migration responses of both types of capital to changes in tax rates in the representative jurisdiction. Totally differentiating (5) and (6) and applying symmetry yields:

$$f_{kk}(k,m(n-1)b,l)dk^{11}+m(n-1)f_{kb}(k,m(n-1)b,l)db_{ih}^{11}-dt_k^{11}=0, \tag{8}$$

$$f_{bk}(k,m(n-1)b,l)dk^{11}+m(n-1)f_{bb}(k,m(n-1)b,l)db_{ih}^{11}-M''(b)db_{ih}^{11}-dt_b^{11}=0. \tag{9}$$

The migration responses of capital to changes in tax rates from (8) and (9) are the following:

$$\frac{dk^{11}}{dt_k^{11}}=\frac{m(n-1)f_{bb}-M''}{H}<0, \tag{10}$$

$$\frac{db_{ih}^{11}}{dt_k^{11}}=\frac{-f_{bk}}{H}, \tag{11}$$

$$\frac{dk^{11}}{dt_b^{11}}=\frac{-m(n-1)f_{kb}}{H}, \tag{12}$$

$$\frac{db_{ih}^{11}}{dt_b^{11}}=\frac{f_{kk}}{H}<0, \tag{13}$$

where $H=m(n-1)[f_{kk}f_{bb}-(f_{kb})^2]-f_{kk}M''>0$.

Next, we solve the Nash competitive equilibrium. When jurisdiction 1 in country 1 chooses its t_k^{11} and t_b^{11}, it considers the ensuing migration of type-*k* capital and type-*b* capital in response to changes in its tax rates, but not responses in tax rate changes in other jurisdictions. The problem faced by jurisdiction 1 in country 1 is $\max_{t_k^{11},t_b^{11}} u^{11}(g^{11},x^{11})$, s.t. (5) and (6). By substituting (2) and (7) into this objective function and using (10) through (13), Nash equilibrium capital tax rates are obtained from the first-order conditions:

$$\hat{t}_k=f_{kl}l\left(1-1/MRS\right), \tag{14}$$

$$\hat{t}_b=f_{bl}l\left(1-1/MRS\right)+bM'', \tag{15}$$

where $MRS=u_g/u_x$. Substituting (14) and (15) into (2), we have

$$MRS=\frac{f_{ll}l^2}{f_{ll}l^2+g-m(n-1)b^2M''}. \tag{16}$$

As observed from (16), whether the provision of the local public good is efficient or not depends on the relative magnitudes of g and $m(n-1)b^2M''$. Two cases will certainly result in $MRS>1$, that is, an under-provision of the local public good. The first case occurs when $n=1$, i.e., there is only one country in the world economy. This is then reduced to the situation in which jurisdictions compete only with jurisdictions within the same country, and thereby the traditional result of under-provision of the local public good applies. The second case occurs when there exists no migration cost associated with foreign capital or when the marginal migration cost is constant. Both situations will result in $M''=0$ and thereby $MRS>1$.

Except for the above two cases, the magnitude of MRS is nonetheless ambiguous. As shown by (16), the higher the M'' or the larger the n or both, the more likely it is that $MRS<1$, i.e., the local public good will be over-provided. A high M'' means that the cost of investing one more unit of capital abroad (the marginal cost) will increase sharply. As a result, capital is less mobile across countries and jurisdictions face a less elastic supply of foreign capital. On the other hand, when n is large, the capital endowment of any country accounts for only a small share of the world capital stock. Any single jurisdiction will then compete mostly for foreign capital, which is less mobile than domestic capital. Since jurisdictions no longer face a completely elastic supply of capital, they need not cut the tax rates on capital to an inefficiently low level to attract capital, and therefore local public goods are not necessarily under-provided and may even be over-provided.

Notice that Smith (1999) also assumed two types of capital, but she obtained a certain result of under-provision of local public goods. In her model, besides being treated as two distinct factors in production, the two types of capital exhibit no other difference. Smith's model is then a special case of this paper in which M''=0 or n = 1. As a consequence, although jurisdictions compete for capital in two different markets, they still face completely elastic supplies of both types of capital. Therefore, local public goods are definitely under-provided.

Let us now look at the magnitudes of the Nash equilibrium tax rates on domestic and foreign capital. Substituting (16) back into (14) and (15), the Nash equilibrium capital tax rates can be also written as

$$\hat{t}_k = \frac{f_{kl}[m(n-1)b^2M''-g]}{f_{ll}l}, \tag{17}$$

$$\hat{t}_b = \frac{-bM''f_{kl}k - gf_{bl}}{f_{ll}l}. \tag{18}$$

We can see that the signs of both $\hat{t}_k$ and $\hat{t}_b$ are ambiguous without knowing the specific signs of f_{kl} and f_{bl}. In the extreme case where M''=0, (17) and (18) reduce to $\hat{t}_k = (-f_{kl}g)/f_{ll}l$ and $\hat{t}_b = (-f_{bl}g)/f_{ll}l$. It follows that $\hat{t}_k > \hat{t}_b$ if and only if $f_{kl} > f_{bl}$. In other words, the factor that is more complementary to the locally untaxed labor should be taxed more heavily. This result is also shown by Smith (1999). As Smith mentioned, this finding is consistent with the optimal tax rule that the commodity that is more complementary to the untaxed leisure should be taxed more heavily.[1] However, the optimal commodity tax rule in Smith (1999) may not hold if one type of capital is not completely elastic in supply. This can be observed by combining (17) and (18) and is shown in (19) below:

$$\hat{t}_k \mathop{\gtreqless} \hat{t}_b \quad \text{if and only if} \quad g[f_{kl} - f_{bl}] - bM''f_{kl}[k + m(n-1)b] \mathop{\gtreqless} 0. \tag{19}$$

Equation (19) indicates that $f_{kl} > f_{bl}$ is only a necessary, but not a sufficient, condition for $\hat{t}_k > \hat{t}_b$. The relative magnitudes of $\hat{t}_k$ and $\hat{t}_b$ depend on both the magnitude of M'' and the sign of f_{kl}. If f_{kl} is positive and if capital is sufficiently immobile across countries, i.e., M'' is sufficiently large, then interjurisdictional tax competition may result in $\hat{t}_k < \hat{t}_b$ even if $f_{kl} > f_{bl}$. By (19), we can also observe that the result $\hat{t}_k = \hat{t}_b$ only exists in some extreme situations. For instance, both types of capital are equally complementary to the immobile labor and no migration cost is associated with foreign capital, or the production function is additively separable between capital and labor so that $f_{kl} = f_{bl} = 0$.

Another implication from (17) and (18) is that as long as both f_{kl} and f_{bl} are positive, $\hat{t}_b$ is always positive, while $\hat{t}_k$ can be negative if M'' is sufficiently large. In other words, if both types of capital are complementary to the locally untaxed labor, then the jurisdiction will always tax the less elastic (less mobile) foreign capital, and the jurisdiction may even subsidize domestic capital if capital is sufficiently (but not completely) immobile internationally. This result corresponds to the inverse elasticity rule that the commodity with

[1] The optimal commodity taxation and the inverse elasticity rule that will be discussed later can be referred to in Sandmo (1972).

the lower elasticity of demand or supply should be taxed more heavily.

The above results can be observed from a numerical example. Let the utility function be $u(g,x) = g^c x^d$, in which $c + d = 1$, the production function be $f(k,(n-1)mb,l) = k^p[(n-1)mb]^q l^z$, in which $p + q + z = 1$, and the migration cost function be $M(b) = ab^2$. If $\overline{K}^1 = 100$, $a = 1$, $l = 1$, $n = 2$, $m = 2$, $p = 0.4$, $q = 0.4$, $z = 0.2$, $c = 0.2$, and $d = 0.8$, then the simulation result is $b = 0.8543$, $k = 49.1457$, $t_k = -0.01256$, $t_b = 0.9858$, $g = 1.0669$, $x = 1.8459$, and MRS = 0.4326. That is, the local public good is over-provided, and the jurisdiction subsidizes the domestic capital (k) and taxes foreign capital (b).

An application related to the inverse elasticity rule can be observed from (14) and (15). The efficient level of the local public good, which is characterized by MRS =1, can be achieved by setting $\hat{t}_k = 0$ and $\hat{t}_b = bM''$. It follows that $g = \hat{t}_b b = b^2 M''$, that is, the public good is completely funded by taxes collected from foreign capital. Substituting $\eta = M'/bM''$ yields $\hat{t}_b = M'/\eta$. This indicates that the tax rate on foreign capital is positively related to the marginal migration cost and negatively related to the elasticity of supply of the foreign capital with respect to its marginal migration cost.

So far we have examined tax competition from a representative jurisdiction's point of view. However, the model can be extended to international tax competition by simply setting $m = 1$ and all the results apply. Specifically, countries should impose higher tax rates on foreign capital if capital is sufficiently immobile internationally, and because the capital market faced by a country is not completely elastic in supply, public goods will not necessarily be under-provided.

4. Conclusion

This paper examines the efficient provision of local public goods when jurisdictions compete for both domestic and foreign capital. Because foreign capital is not completely elastic in terms of its supply to jurisdictions, jurisdictions need not cut tax rates to attract foreign capital. As a consequence, the traditional conclusion of under-provision of local public goods reached in the literature on interjurisdictional tax competition may not hold. In the Nash equilibrium, the levels of the local public goods depend essentially on the shape of the migration cost function of foreign capital. If the marginal migration cost increases sharply with the amount of capital exported or, in other words, if foreign capital is sufficiently inelastic in supply, then interjurisdictional tax competition may even result in the over-provision of local public goods.

The relative magnitudes of the tax rates on domestic and foreign capital are also highly related to the mobility of foreign capital. The less mobile the foreign capital, the more likely it is that the foreign capital will be taxed more heavily than the domestic capital. Furthermore, if both domestic capital and foreign capital are complementary to the locally untaxed labor, then jurisdictions will always tax foreign capital, and they may even subsidize domestic capital if capital is sufficiently immobile internationally. To provide the local public good efficiently, the optimal tax rule requires a zero tax rate on domestic capital and a positive tax rate on foreign capital.

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