Abstract - A key feature of the recent EU and OECD standards for good behavior in international taxation is a presumption against preferential tax regimes (such as those offering advantageous treatment to non-residents or enterprises not active in the domestic market), which are seen as especially corrosive forms of tax competition. This paper shows that, on the contrary, preferential regimes may serve a useful strategic purpose in enabling countries to confine their most aggressive tax competition to particular parts of the tax system. Proscribing them therefore may—in the model here, certainly will—actually worsen tax competition.

INTRODUCTION

The major innovation in international tax matters in recent years has been the development, by both the OECD (1998) and the European Union (European Commission, 1998), of standards for good behavior in international taxation and the attempt to exert sufficient peer pressure for their implementation. At the heart of this exercise is the difficult task of identifying with some precision the kinds of tax practice likely to prove mutually damaging if unchecked by some form of coordination. In this context both reports identify as prima facie particularly harmful tax regimes that offer preferentially advantageous treatment to non-residents, or to activities that do not impinge on domestic markets. For brevity, we refer to these—and other tax arrangements that offer distinct treatment to distinguishable tax bases—as ‘preferential’ regimes. Thus both the OECD Guidelines and the EU

1 The two standards have somewhat different focus, in that the OECD work relates essentially to the taxation of financial services while the EU Code is more general.
3 There are semantic issues here. The OECD report describes the two practices listed in the preceding sentence as instances of ‘ring-fencing.’ The European Commission, however, seems to use this term more narrowly. To avoid confusion, and to emphasize the generality of the result, we use the somewhat broader notion of preferential treatment. (The language of the OECD report leaves open the possibility that preferential regimes may not be harmful, but not for the reasons addressed here.) An alternative would be to speak in terms of ‘discrimination,’ that, however, might connote differential treatment of residents and non-residents, which is not of the essence to the more general point being made here.
Code of Conduct see measures of this sort as socially undesirable, with these organizations attempting to prevent (in the short–term) the emergence of new tax measures of this kind and to ensure (in the longer term) the removal of those already in place.

This paper argues that, to the contrary, preferential regimes of the kind singled out for criticism in the standards may actually be socially desirable, making tax competition not more but less harmful than it would otherwise be. Proscribing preferential regimes may therefore be counter–productive. This argument does not rest on any notion that the downward pressure on tax revenue from tax competition is in itself desirable as a check on wasteful governments, which has been one of the main lines of criticism of the OECD and EU initiatives (a much–cited example being Wright (1998)). Instead the analysis presumes—for argument’s sake—that downward pressure on tax revenues is undesirable, and a proper policy concern. Rather the point developed here is that preferential regimes actually shape the tax competition game not so as to erode revenues, but so as to protect them. Once seen, the reason is straightforward: by offering preferential regimes countries can confine the most intense tax competition to particular parts of the tax system. Most obviously, by offering preferential regimes they can compete for the most mobile bases without unduly distorting their taxation of less mobile ones. If countries were instead forced to treat all bases alike, then the incentive to compete for the more mobile bases would intensify the tendency to compete for the less mobile bases to such an extent that the equilibrium outcome could be—i.e., in the model used below—even worse for all concerned. Simply put, eliminating preferential regimes can plausibly make tax competition more harmful by generalizing it throughout the system.

The next section sets out a stylized but natural model of inter–jurisdictional tax competition over distinct bases; those following present and discuss the key result.

THE MODEL

The model is of a world comprising two identical countries, home and foreign, competing over two tax bases. The aggregate amount of each base is fixed, but its allocation across the two countries is affected by the difference in tax rates between the two. The amount of the first base located in the home country is thus \( b(t^* – t) \), where \( t \) and \( t^* \) denote the source–based taxes on this base in the home and foreign countries, respectively (the latter being indicated by an asterisk). The two countries being symmetric, the amount of this base located in the foreign country is \( b^*(t – t^*) = b(t^* – t) \). The base, it is assumed, does not simply locate itself entirely wherever the tax rate is lowest: there is no discontinuity at \( t = t^* \). Rather, and more plausibly, there are assumed to be forces at work—a declining marginal product in the productive use of the base, informational or other mobility costs—that imply a smooth response of the tax base allocation to the difference in tax rates. Thus it is assumed that \( b \) is differentiable everywhere, with \( b' > 0 \) (so that an increase in the foreign tax rate increases the domestic tax base) and (for reasons that will become clear) that:

\[ b(x)b''(x)/(b'x)^2 < 2, \quad \forall x, \]

which requires that \( b \) not be ‘too convex’.\(^4\) The features of the other tax base, indicated by upper case letters, are analogous: the amount of this base located in the home country, for example, is \( B(T^* – T) \).

The assumptions being made on the tax

\[^4\] It is sufficient for [1], for example, that \( \ln(b) \) be concave.
Preferential Regimes Can Make Tax Competition Less Harmful

bases are evidently extreme: not only are they both fixed in total amount, they are also independent of one another in the sense that the location of each is unaffected by the tax on the other. But the purpose here is not maximum generality. Rather it is to bring out the particular consideration to which attention is being drawn with as little clutter as possible.

The two bases might be interpreted in any of several ways. One leading interpretation, for example, is that each corresponds to the stock of savings of residents of one of the countries. The home country might be France, for instance, and the foreign Germany; \( b \) might then be the savings of the French invested in France, and \( b^* \) the savings of the French invested in Germany, with \( B \) and \( B^* \) referring similarly to the savings of the Germans invested in France and Germany. In this way any differentiation by either country in the rates applied to the two bases would correspond exactly to differential treatment of residents and non–residents, which both Guidelines and Code single out as an indicator of potentially harmful tax competition. On a second interpretation, \( b \) might refer to highly mobile financial capital attracting passive income and \( B \) to a less mobile direct investment to be shared between the two countries. Alternatively, the two bases might correspond to different types of sector–specific capital: one base might be, for example, capital specific to textile manufacture and the other capital specific to banking activities.

For the main analysis, we assume that the objective of each country is to maximize the tax revenue it collects from the two bases. It will also be shown, however, that the main result survives entirely intact in considerably more general circumstances.

THE DESIRABILITY OF PREFERENTIAL REGIMES

The first–best in this model requires the two countries to harmonize the taxes on each base (setting \( t = t^* \) and \( T = T^* \)) and then realize unbounded revenue by setting those harmonized rates as high as they please. The essence of tax competition, however, is non–cooperative tax–setting, and it is the consequences of such behavior under different ‘rules of the game’ that are most relevant for policy, and at issue here. Specifically, the question is whether or not it would desirable to require each country to set the same tax rate on both bases (so that \( t = T \) and \( t^* = T^* \)). Answering this requires comparing two non–cooperative equilibria. One equilibrium is that which emerges when each country may offer preferential treatment, in the sense that the tax rates it sets on the two bases may differ: we refer to this as the ‘unconstrained’ regime. The other is that which emerges when each must charge the same rate on both bases; we refer to this as the ‘non–preferential’ regime.

In the unconstrained regime, the objective of the home country is to choose \( t \) and \( T \) to maximize:

\[
R \equiv tb(t^* – t) + TB(T^* – T).
\]

The first–order condition on the home country’s choice of \( t \) is:

\[
b(t^* – t) – tb'(t^* – t) = 0,
\]

while that on \( T \) is analogous. Rearranging [3] gives:

\[
t = \frac{b(t^* – t)}{b'(t^* – t)}.
\]

which is the familiar condition that revenue–maximization requires a tax rate equal to the reciprocal of the elasticity of the tax base. Similarly, \( T = B(T^* – T) / B'(T^* – T) \). Necessary conditions for the foreign country are analogous.

The condition in [1] ensures the existence of a single symmetric equilib-
rium, and it is on this that we focus. From [4], taxes in this equilibrium are \( t = t^* = b(0)/b'(0) \) and analogously for \( T \) and \( T^* \).

Using this in [2], the home country’s revenue in the unconstrained Nash equilibrium—and of course equilibrium revenue is exactly the same in the foreign country—is thus

\[
R = \frac{[b(0)]^2}{b'(0)} + \frac{[B(0)]^2}{B'(0)}.
\]

Consider next the non–cooperative equilibrium of the non–preferential regime, each country now being constrained to set the same tax rate on both bases. The home country’s problem thus becomes that of choosing \( \tau \) to maximize \( \tau b(\tau^* - \tau) + \tau B(\tau^* - \tau) \). By an argument analogous to that for the unconstrained case, there exists a single symmetric equilibrium, with revenue of:

\[
R_{NP} = \frac{[b(0) + B(0)]^2}{b'(0) + B'(0)}
\]

in each country.

Which of these two equilibria leaves each country with the most revenue? Taking the difference between [6] and [5] one finds, after some rearrangement, that:

\[
R^U - R_{NP} = \frac{b^2 B^2}{b' B'(b' + B)} \left( \frac{b'}{b} - \frac{B'}{B} \right)^2
\]

and hence:

**PROPOSITION:** Preventing countries from offering preferential treatment strictly reduces the tax revenue that each receives in the non–cooperative equilibrium (unless the two bases are equally elastic (in the sense that \( b'(0)/b(0) = B'(0)/B(0) \)), in which case revenues are unaffected).

This result—that removing the ability to offer preferential regimes actually leads to a *worsening* of the inefficiency from non–cooperative behavior—is strikingly unambiguous. It requires no further restriction, for instance, on the shapes of \( b(\cdot) \) or \( B(\cdot) \): so long as both bases are mobile, the result holds irrespective of how mobile they are.

The proposition has a straightforward second–best interpretation: given that countries do not cooperate in tax–setting, it may be better not to cooperate over two tax rates than over one. The basic intuition, as set out in the introduction, is even clearer: it may be desirable to limit the domain of tax competition by protecting countries’ ability to tax less mobile bases more heavily. The sharpness of the result naturally reflects the strong assumptions underlying the model from which it is derived, and which have been emphasized above (that, indeed, was their purpose). More general treatments will naturally give more nuanced conclusions: what is

5 To see this, note first that by the implicit function theorem [1] implies a continuous solution \( t(t^*) \) to [3]; and the solution to [3] must then be unique (since multiple local maxima would then imply the existence of a local minimum, contradicting [1]). None of this precludes the existence of asymmetric equilibria.

6 And assuming that \( b + B \) satisfies the analogue of [1].

7 If, on the contrary, \( b' = 0 \), for instance, then the equilibrium tax rate on that base and, consequently, equilibrium revenue, are infinitely large whether or not preferential treatment is proscribed.

8 It is important to guard against two misinterpretations of the result. The first would be to see it merely as saying that imposing constraints on governments in their optimization leads to a worse outcome: although one is indeed imposing constraints in requiring the same tax to be charged on both bases, it is the effect on the final equilibrium that is at issue. Indeed the intuition behind the proscription of preferential regimes intended in the standards (as described in the introduction) is precisely that while restricting the set of instruments may be against the interest of each country if adopted only by that country, all gain if all are restricted. A second mis–reading would be to see the result as reflecting a Ramsey–type gain from differentiating tax rates according to the elasticity of the base. Such considerations do of course explain the policy that each country adopts in pursuit of its own national interest (taking the policy of the other country as given), but in terms of the collective interest at issue here it is the elasticity of the base to the countries together that is relevant: and since that is the same (zero) for both bases, there is here no rationale for taxing them differentially.
important for present purposes, however, is that the strategic considerations identified very starkly here will clearly retain some force—even if, as will surely be the case, they cease to be the overwhelming consideration—in wider contexts.

FURTHER DISCUSSION

In one important respect, moreover, the result above generalizes without any further qualification. The proposition presumes that governments care only about tax revenues. A more complete analysis would also take account of possible distortionary effects associated with the taxation of these bases. Suppose then, to take a simple instance of this, that the two governments derive some benefit not merely from tax revenue but also from the location of tax base within their country. It is not entirely clear why this should be so—perhaps there are perceived to be externalities from attracting skilled workers, or enhanced tourism earnings are expected—but the zero tax rates in some tax havens suggest that it is. Suppose then that each government perceives some non–revenue gain from the location of tax base in its own jurisdiction, with a constant revenue–equivalent value of $\lambda$ per unit. Thus an additional term $\lambda \cdot (b + B)$ is added to the home country’s objective function in [2], reflecting these non–tax benefits. Adding and subtracting $\lambda$ inside the functions defining the tax base, the objective function can now be written:

$$[8] \quad R \equiv sb(s^* - s) + SB(S^* - S),$$

where $s \equiv t + \lambda$, and other terms are analogous. Thus the problem is formally identical to that addressed above, but with all tax rates amended by the addition of $\lambda$. The conclusion in the Proposition—that welfare is increased by the possibility of differentiation—thus holds unchanged.

The issue of preferential treatment has received little attention in the formal literature on tax competition (recently surveyed by Wilson (1999)). Closest in its concerns to the present analysis is Janeba and Peters (1999), whose conclusion is apparently quite different from that here: in their model, enforcing nondiscrimination is broadly desirable. There are many differences between the Janeba–Peters model and that used here—neither is a special case of the other—so that a direct comparison is hard. The key distinction, however, is that the Janeba–Peters model has only one mobile tax base (in addition to an immobile base in each country) and so simply cannot address the notion, essential to the argument here, that restricting countries’ ability to compete for one mobile base will in general affect the intensity with which they compete for others. Non–discrimination in the Janeba–Peters model serves as a device for raising the tax on all mobile capital in a way that does not trigger any further direct fiscal externalities between countries. The results here, in contrast, reflect the more complex pattern of effects on fiscal externalities that arise from precluding preferential treatment when—as has clearly been a central concern in the debate on tax competition—different kinds of mobile capital can be treated differently.

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Note that the point being made is quite different from the possibility—established by Fuest (1995) and Huizinga and Nielsen (1998)—that harmonizing a subset of tax instruments across countries may be undesirable: here the ‘harmonization’ at issue is across instruments within countries, not within instruments across countries.

The location of the tax base in their model is discontinuous in tax rates, for instance, whereas here it is smooth; there the countries are asymmetric, here they are identical; there the game is sequential, here we do not endogenize country’s choices as to whether or not to discriminate. The most fundamental difference, however, seems to be that discussed in the text.

Recall that while the proposition above requires both bases to be mobile to some degree the precise extent of that immobility is qualitatively irrelevant.
CONCLUSION

The model underlying the unambiguous finding of a loss from the elimination of preferential regimes is clearly extremely simple, and does not capture the full richness of discriminatory regimes observed in practice. For example, it does not have the feature that each country systematically sets a lower rate on non-residents: the preferentially advantageous treatment simply goes to whichever base is more mobile. Clearly too the difference between the results obtained here and in Janeba–Peters (1999) calls for some caution in drawing policy conclusions.

Nevertheless, the present analysis suggests quite strongly that the debate on harmful tax competition has neglected a potentially important consideration: preferential regimes may serve a useful purpose in limiting the scope of tax competition, and prohibiting them may lead to tax competition that is less dramatic, but also more pervasive and consequently also more harmful. These effects could be significant. For instance, Ireland currently12 has a general rate of corporation tax of 20 percent, but offers a preferential corporate tax rate of 10 percent for (in particular) manufacturing and international financial services in the Dublin Customs House Docks Area. Under pressure from the EU, the preferential regimes are to be eliminated over the coming years; but at the same time the regular rate of corporate tax—already reduced from 32 percent at the start of 1999—is also to be lowered very considerably, to 12.5 percent (for trading income) and 25 percent for non–trading income. Preferential treatment is thus being reduced, but the wider tax system is also becoming more aggressively competitive. This is precisely the kind of response to pressure for the elimination of preferential regimes that one should expect; and it is not entirely obvious that it leads to a net social improvement.

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REFERENCES


12 For the tax year from 5th April 2001.