

Is tax competition harmful and is the EU an optimal tax area?

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Abstract This paper examines the issue of harmfulness of tax competition commenting on issues like welfare, growth, redistribution, harmonization and individual freedom. A simple game theoretical approach is formulated, where for the first time the two players start from unequal initial conditions, thus influencing strategy and outcomes. Next we propose the new criterion of Optimal Tax Area under which the possibility and feasibility of tax harmonization is examined. The policy implication of our paper is that we do not expect harmonization for direct taxes like corporate taxes in the EU in the near future and if so, harmonization of corporate tax rates on low levels. We conclude that both more theoretic research and empirical evidence are needed before we can answer with certainty whether tax competition is harmful or not.

Keywords Tax competition · Harmonization · Welfare

JEL Classification A1 · D6 · H0

1. Introduction

After the achievement of EMU by twelve Member States in 2002, we believe that the next most important challenge facing the EU is the issue of tax harmonization of direct taxes (corporation and income taxes). Linked with this is tax competition and whether it is harmful or not.

The issue of tax competition gains (or losses) is important within the European Monetary Union (EMU), since Member States have lost the independence of monetary policy after the introduction of the euro in the EMU in 2002. So, any adaptation in the economies of the individual EMU Member States can be effected only through fiscal policy—taxation and incomes policy. Tax competition on the other hand is a constraint that limits the juridical

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independence that Member States still possess in many areas of taxation as for example concerning tax rates on incomes, profits and savings (Joumard, 2001).

Tax competition is an important issue also due to the fact that the tax to GDP ratio in the EU area is very high by international standards. Similarly, average effective tax rates on labor and consumption are much higher in the EU area than in most other OECD countries. This gives incentives to producers and consumers to find legal and illegal means of avoiding it, thus possibly increasing capital outflows from some countries, the underground economy and compliance and monitoring costs. From a level broadly at par with the USA in 1970 for example, the tax to GDP ratio for the EU area increased by 8 percentage points up to 1993 while it remained broadly stable in the EU (Joumard, 2001).

Since the late 1990's, recognizing the adverse effects of high taxation, most EU countries have started reducing taxation, introducing a new round of tax competition, which still continues. This has implied a slight decline in tax wedges on labor, and a more general reduction in corporate income taxes, in order to attract foreign capital and keep domestic capital in, due to the higher mobility of capital. Due to new technologies, which facilitate e-commerce, tax competition is increasing and may further increase also for till now less mobile goods and services, putting pressure on revenues from VAT and excise duties.

New information and communication technologies also make a physical location of management and service activities much less important, thus increasing the mobility not only of savings but also of corporate income tax bases. For example, the newly formed Airbus Company (it had till now the form of a <<groupement d'intérêts>>) has chosen as its location the Netherlands, a country that does not participate in the company's production activities (Germany, Great Britain, Italy, Spain). Further, some banks already undertake their clearing activities outside the country where their headquarters and main activities are located, while American and European companies have moved their call centers to Asian countries like for example India.

Tax harmonization efforts in the EU have more or less failed, due to conflicts of interests and to the fact that unanimity is required at the Council level. In December 1, 1997, an agreement was reached at Council level, concerning four elements. Namely, a voluntary code of conduct in business taxation, a commitment to ensure the minimum effective taxation of savings within the EU, closer book at state aid policy and to resume proposals for a directive for a corporate tax directive on interest and royalty payments across borders (Radaelli, 1999).

The paper is organized as follows: The first section introduces the problem and the second contains a short review of the existing literature. Then the third section presents a theoretical game theory model of tax competition in a bilateral level, followed by re-examination of the question whether tax competition is harmful or not and the introduction for the first time of the criterion of Optimal Tax Rate. Our conclusions and policy implications follow.

2. Review of the literature

A perennial question in the existing literature is whether tax competition results in under provision of public goods, i.e. tax rates and expenditure levels that are lower than optimal, a common (but by no means universal) result being that in the "purely competitive case" public goods are underprovided. Here, an equilibrium with tax competition means a situation where each jurisdiction is choosing its tax rate optimally, given the tax rates chosen by all other jurisdictions, i.e. we have a Nash equilibrium where tax rates are the strategic variables (Beck, 1983; Wilson, 1986; Zodrow and Miezowski, 1986).

On the other hand, tax rates are only one aspect of fiscal policy, so that jurisdictions that find themselves in a competitive posture with respect to one another must be expected to consider the competitive implications of all aspects of policy, including expenditure policy (Wildasin, 1988). Tax rates and expenditure will ordinarily be one to one: an increase in expenditure will require an increase in the tax rate and conversely, i.e. the choice of one is tantamount to the choice of the other. Fiscal competition would show up in a reluctance to raise expenditures because the higher tax rates this would entail would reduce the amount of local capital. Wildasin (1988) formulates a model with tax rates as the strategic variable in which Nash equilibria are compared to a model with expenditure as the strategic variable. He shows that the two types of equilibria, do not in general coincide. The difference between the two goes to zero as the number of jurisdictions becomes large, because then the impact of changes in the strategic variable of one jurisdiction becomes negligible for the others.

Giovannini (1989) considers the effects of the liberalization of capital markets on taxation. The liberalization will force tax authorities to lower the taxation of capital, otherwise financial and productive capital would move abroad. Lowering taxation may result first in an inadequate provision of public goods and second, the objective of redistribution, to which European tax systems pay so much attention, will be jeopardized, because with the completion of the internal market, a much larger number of individuals or corporations will be in a position to pursue these strategies. This will happen because the removal of physical, technical and fiscal barriers will probably multiply the number of Europe-wide corporations, which, by their nature, are best suited to undertake tax arbitrage. This again could result in some countries adopting “beggar the neighbor” policies, by lowering their tax rates in order to attract foreign direct and financial capital.

In fact, Giovannini’s prediction has been realized to a great extent. New EU Member States as for example Lithuania and Latvia have opted for low corporate tax rates of 15%, Hungary for 16% while prospective members Bulgaria and Romania have opted respectively for 15% and 16%. In 2005 Germany has reduced its corporate tax rate from 25% to 19% and even Greece, which faces a high public debt—budget deficit situation will reduce its corporate tax rate from 35% in 2004 to 25% in 2007.

An optimum coordinated agreement, through the harmonization of tax rates is not achievable due to practical difficulties like imperfect information, together with imperfections in the bargaining process. Giovannini, instead of tax harmonization, proposes the introduction of a general “worldwide system of taxation” whereby each country taxes all capital income at the same rate. He argues that the welfare cost of raising a given amount of tax revenue is lower when domestic and foreign investments are subject to the same treatment. He also claims that high capital mobility would lead to disruptive tax competition: countries impose taxes on capital income which are too low whenever investors can escape taxes by investing abroad. The losses from uncoordinated tax setting can thus be large in the presence of territorial tax discrimination, but are likely to be negligible when capital export neutrality is preserved.¹

This proposal seems utopic under the present day conditions, since it presupposes a general agreement among states, both within and outside the EU. States that have sound finances, like Luxembourg (with a public debt of only about 6%) or states that want to attract foreign direct investment in order to promote growth, employment and competitiveness, would have to forfeit under such an agreement their competitive advantage due to their lower corporate

¹ This worldwide system of taxation is investment neutral. It is worth mentioning that multinational corporations may change their headquarter location under this regime instead of the location of real activity and profits; tax competition will still be possible.

tax rates. Why should they do it, if no “compensation” is given to them under such a system? We examine this issue in more detail in our game theoretical approach.

Ghosh (1991) discusses the optimal provision of public goods when governments do not have non-discretionary taxes at their disposal. In the model, an increase in equity taxes used to finance the public good leads mobile capital to re-locate internationally, thus decreasing the tax base and depressing wages at home. Governments must therefore compete to raise the requisite equity taxes. The possibility of cooperative behavior comes from the recognition that a joint increase (or decrease) in taxes will not lead to any capital outflows or inflows. It is established that if tax policies are chosen non-cooperatively then, relative to the coordinated regime, there will be an inappropriate provision of public goods, a result similar to that of earlier models cited above. The model adopts an explicitly general equilibrium two period model with capital and labor as production factors, in which the interests of wage earners do not coincide with those of capital owners and shows that a non-cooperative equilibrium may result in a too low or too high tax rate for both economies.

The model distinguishes between the two and the multi-country case. In the two-country case each country is “large” in the world capital market and the world after tax rate of return is endogenous. This means that the capital outflow when one country unilaterally raises its tax rate will be limited. When countries are many and small, the world interest rate is essentially exogenous and there will be large capital out-flow if one country raises its taxes.

Since the inefficiency of the non-cooperative equilibrium results from countries ignoring the repercussions of the capital flows to the rest of the world, the smaller each country, the greater the need for coordination. The result is therefore in sharp contrast to the view that macro-economic coordination is important because there are a few “oligopolistic” players in the game and that, as each country becomes atomistic, the uncoordinated equilibrium becomes Pareto efficient. Following this, the general equilibrium nature of the model shows that there are two conflicting effects on the magnitude of the non-cooperative relative to the cooperative tax rate. Specifically, to the extent that the government cares about wage earners it fears capital flight and is led to choose a lower tax rate under non-cooperative behavior. Conversely, the temptation to export taxes to foreign capitalists for their direct investments may lead the government to impose excessively high tax rates. Lastly, welfare losses from non-cooperative behavior become more severe as countries become smaller and the world interest rate becomes parametric to any individual country. This result is obtained because the inefficiency of the non-cooperative equilibrium arises from countries ignoring the global repercussions of capital flows and a small country is likely to suffer a larger capital outflow in response to a rise in its tax rate.

Persson and Tabellini (1992) formulate a two country, two period model with policy-makers and voters endowed with initial wealth. Fiscal policy and taxes redistribute income among the voters as equal lump-sum payments. The reaction functions in the model include a parameter that measures the mobility or transaction costs for investing capital in the other country (the parameter for investing in the home country taking the value zero). As in previous models, (e.g. Ghosh) a higher domestic tax on capital increases capital flight thereby reducing domestic savings and investment. The creation of the internal market of the EU decreases transactions costs for investment abroad and increases the elasticity of capital movements with respect to tax differentials. The authors distinguish two effects, the economic and the political. Concerning the economic, the general conclusion is that lower mobility costs certainly lead to lower taxes in the home (high tax) country but they may lead to either lower or higher taxes in the foreign country (assumed to be the low-tax country). Moreover, even if taxes fall in both countries, they certainly fall more in the high-tax country, so leading to some economic convergence as capital becomes more mobile within Europe.

Concerning the political effect,² in the presence of an export incentive constraint (capital outflow if taxes are raised) the political equilibrium endogenously delegates policy choices to an agent whose preferences differ from those of the majority of the voters. Lower mobility costs influence the voters to elect a poorer policy maker more to the left. The political effect partially offsets the direct economic effect of lowering capital taxes, since a poorer policymaker sets higher ones, but the political effect is dominated by the economic effect. So, higher capital mobility leads to lower capital tax rates, but not as large as they would be if one neglected the political repercussions. It is likely but not certain that this will bring about also political convergence.³

Bacchetta and Caminal (1992) develop a two-country model with overlapping generations and explicit financial intermediation. In this model governments derive revenues from seignorage (an inflation tax on cash holdings and the ratio of non or low interest bearing required reserves on bank deposits held at the central bank) and set optimally but non-cooperatively, the rate of inflation and the level of reserves. According to the model, financial liberalization leads to lower reserve ratios, higher inflation rates and larger stocks of government debt, being welfare reducing! The actual relevance of this in the EMU context is only that it points out to a possible loss of revenue of some ex high inflation countries like Italy, Spain, Greece and Portugal, after they have joined the EMU and thus have lost the independence of monetary policy.

Using a model similar to that of Person and Tabellini reviewed above, Bacchetta and Espinosa (1995) focus on information sharing between governments which find themselves in tax competition, in which the degree of information transmission among the governments can be considered as a strategic variable. They use a two stage-two country model with restrictive assumptions⁴ where governments first decide the level of information on foreign investment provided to the other government and then the level of taxation. The results are that: (1) the amount of information transmitted by the foreign government modifies the effect of tax rates and negatively effects foreign investment. (2) There is no direct gain from giving information to the foreign country whatever the tax system. (3) The higher is the level of information shared, the higher are government revenues and the lower are private consumption and foreign investment. (4) The higher level of utility is not necessarily reached with full information sharing. (5) The model's results are sensitive to the type of tax system adopted. Thus, when there is a predetermined withholding tax on foreign investment, governments have fewer incentives to provide information than in the case of an initial source tax. (6) Even if governments cooperate to determine the optimal level of information sharing, they will decide to provide less than full information to each other, because imperfect

² The results are established under restrictive assumptions such as: (a) Once a policy maker is elected, he moves simultaneously with his foreign counterpart, (b) elections take place simultaneously in the two countries, (c) whereas voters evaluate the policy ex-ante before the move of the foreign policy-maker, the policy maker evaluates it ex-post (implying a lower-degree of rationality, of the policy-maker vis-à-vis the voter?), (d) The policymakers decide on fiscal policy (taxation of capital) only according to their own initial wealth endowment, i.e. if they are poorer, they will raise taxes in order to benefit from redistribution.

³ With hindsight it seems that the "political" predictions of the model have not been validated. Center and socialist governments have embarked in increasing efforts to lower their capital tax rates, with socialist governments like G. Schröder's in Germany doing it more forcefully than the previous Christian Democratic one.

⁴ These being that (a) the tax system is given at the outset and is not chosen optimally by governments, (b) countries are symmetric, (c) constant – return to scale technology, (d) no cost in collecting and transmitting information (i.e. the ideal of zero-transaction costs of the Coase theorem), (e) individuals have perfect foresight and (f) there is no incentive to governments to attract foreign capital.

tax credits cause distortions in consumers and governments decisions. In some cases the incomplete supply of information to other governments can reduce the distortions. (7) Large countries have bigger incentives to share information, because for them the tax base of residents is large compared with foreign investment, so that the gains from increasing taxes at home will more easily offset the loss of revenues from foreign investment. The restrictive assumptions make the results of the model for the most part irrelevant. In particular, recent experience has shown, that governments have a very strong incentive to attract foreign direct investment, which contradicts assumption (*f*) of the model (see note 4).

Radaelli (1999) investigates the dynamics of the European Union direct tax policy process by drawing attention to the political power of policy narratives, defined as representing a form in which knowledge about policy is cast. They have the shape of casual stories, where the plot hinges on sequentiality rather than the truth or falsity of the elements of the story (and so could be even characterized as “pseudo-science”). Their strong appeal lies into that under conditions of uncertainty, policy narratives make problems amenable to human action, suggesting one course of action instead of others. In the case under examination, the Commission has tried to reintroduce the discussion of direct tax policy measures at EU level, having as a crucial element in this strategy the narrative of harmful tax competition. The Commission has presented itself as a forum where problem solving (rather than conflict) is the dominant style of discussion, so breaking down the barriers of different (adverse) coalitions (of Member–States). It has persuaded Member States Ministers of Finance by new arguments (e.g. that harmful competition can aggravate unemployment) new instruments (the code of conduct instead of minimum rates) and a new forum (the Commission itself).

In theoretic terms, the model could be recast in terms of bounded rationality, where “narratives” which represent “satisfying” according to Simon (1982) take the place of optimizing, which would take place under full rationality. Experience again seems to negate their results: Member States of Finance do not seem to have been persuaded by arguments about harmful tax competition. Those states that benefit from lower corporate tax rates (both EU and non-EU) have continued to keep their rates low, and states with higher rates like Germany and Greece have been forced to reduce them, rather than the other way around.

What seems to be absent from the models reviewed briefly above is the present day EU situation of tax competition under unequal starting conditions. Unequal means here, that although all EMU and prospective EMU Member States have to satisfy the two conditions of the stability pact (i.e. public debt lower than 60% of GDP and budget deficit lower than 3% of GDP) they do not start from equal starting positions concerning public debt and budget deficit, as seems to be the silent assumption of all the models reviewed above.

But these unequal starting conditions give different degrees of freedom concerning fiscal policy to the various states. States like Luxembourg and Ireland with “sound” financial stand do not face a serious constraint and so are successful in tax competition. They can keep low rates of corporate taxes, thus attracting new foreign direct investment and keeping capital within their boundaries. Countries with an “unsound” financial stand cannot do this so easily, because they fear to lose revenue and thus further worsen their financial stand. Even if they are convinced that lower corporate tax rates will attract in the long run more foreign direct investment and thus increase the tax base (more profits generated by more companies established within their borders) they may fear the timing of the two effects: A lower corporate tax rate induces an almost immediate reduction of revenue, while the maturing of new foreign direct investment and the resulting increase in the tax base in the form of profits, may take some years. This means that the fiscal situation may deteriorate in the short run before it ameliorates in the long run. The stability part of the EMU does not take such a situation into account.

Thus, we may even speak of a virtuous fiscal cycle for some countries and a vicious for others. Tax competition is probably the most important dimension influencing this issue under present conditions. We turn now to a formulation of a simple game theory model under unequal starting conditions.

3. Two-country games and different equilibrium solutions

A game-theoretic framework can be formalized in the following way. The country’s objective function can be determined as:

$$\begin{aligned}
 &\text{Maximize}_{t_i} \quad \text{FR}(t_i) \\
 &\text{subject to} \quad \alpha_i \text{GD}_i + B_i \leq \text{TR}_i \\
 &\quad \quad \quad \text{FR}(t_i) + \text{DR}(t_i) = \text{TR}_i
 \end{aligned} \tag{1}$$

Where GD_i is the government debt in country i ; B_i is the budget deficit in country i ; t_i is the tax rate. α_i is the fraction of government debt which must be reduced per year; this fraction can be approximated by the difference between actual and targeted outstanding debt (according to the stability path, which must be lower than 60%) divided by the targeted outstanding debt. $\text{FR}(t_i)$ and $\text{DR}(t_i)$ are the foreign and domestic revenues respectively.⁵ The former can be approximated by the exports while the latter by the tax income.

The following non-cooperative solutions may be considered formally:⁶

- (a) *Nash*: As a base case, we may first compute the Nash solution taking the tax rates from all other countries other than 1 and 2 (the countries of interest) as given. The computed optimal tax rates will be different from the actual, which are assumed optimal for calibration purposes, but provide a basis for comparing gains from 2-country cooperation. The solution is obtained from

$$\begin{aligned}
 &\text{TR}'_1(t_1^*, t_2^*, R_{13}) = 0 \\
 &\text{TR}'_2(t_1^*, t_2^*, R_{23}) = 0
 \end{aligned} \tag{2}$$

where $\text{TR}'_i = (\partial \text{TR}_i / \partial t_i)$ and R_{i3} are foreign residents living in country i . t_1^* and t_2^* are the optimal tax rates.

- (b) *Von-Stackelberg*: This solution is obtained from

$$\begin{aligned}
 &\text{maximise}_{t_1, t_2} \text{TR}_1(t_1, t_2, R_{13}) \\
 &\text{subject to } \text{TR}'_2(t_1, t_2, R_{23}) = 0 \\
 &0 \leq t_1, t_2 \leq 1
 \end{aligned} \tag{3}$$

if country 1 is the Stackelberg leader, choosing t_1 such that country 2, behaving in a Nash manner, chooses t_2 . The Stackelberg case is of some interest in the context of tax revenues, modelling the situation where one country induces its neighbour to adopt higher tax rates. That is, its interest relies on the context of modelling the situation where

⁵ Although this is not the most accurate way of measuring foreign revenues it can be considered as a good approximation.

⁶ As mentioned, co-operative games like Social Welfare maximisation and Nash Bargaining seem to be utopian as there is no redistribution mechanism of tax revenues in the EU.

the first country benefits both from revenues generated from the lower tax rates and due to higher tax levels in the second country. Generally, the Stackelberg leader thereby increases revenues relative to the Nash solution.

- (c) The “*super-sophisticated*” case may arise if both countries attempt to be Stackelberg leaders, each choosing low tax rates in an unsuccessful attempt to force up its neighbour’s tax policy, resulting in a global worst case. For the case to be plausible, one clearly requires that each country “tries to attract” a significant number of customers/investors from the other. In this case the policy may fail for both countries, and thus may find themselves in a Prisoner’s Dilemma from which they can only escape by a form of cooperation allowing them to return, paradoxically, to the Nash non-cooperative solution.

The country which lowers its tax rate may be able to reduce its debt, by attracting more “foreign” tax revenue, if the other country does not follow, while if both do the same, the outcome is invariant, since there are no changes in “foreign” tax revenue. Countries with high budget deficit would probably try to increase corporate tax rates in order to reduce the deficit but they cannot do it, because due to tax competition, they would lose revenue to the other country; i.e. their own FR and DR would be reduced and the other country’s FR would increase. The dynamic of the game is that the reduction in tax by one country induces the other to reduce its tax rate too.

4. Is tax competition harmful?

As Radaelli (1999, p. 671) has put it vividly “Harmful tax competition. . . plays out a vivid dramatic scene of villains (avid capitalist who deprive their countries of revenue by investing in morally suspect tax havens) potential victims (the ordinary people who need the welfare state) and heroes (the European governments who decide to take action and protect welfare state”. Actually of course reality, especially concerning taxation, is much more complicated and necessitates much deeper analysis before coming to conclusions. We examine the issue grouping the arguments under some—interdependent— headings.

4.1. Welfare

The main criticism here maintains that tax competition puts pressure towards lower taxes on mobile capital, lowering tax revenue and thus leading to the under provision of public goods and lowering welfare. The correctness of this argument rests on two hypotheses: First we know exactly the true preferences of consumers in respect of the private and the public goods (i.e., we know their utility functions) and second, the initial situation, i.e. before the erosion of the tax base, was characterized by an optimum (or at least a “good” approximation) provision of the public good.

Both hypotheses are at least empirically problematic. Since consumers do not have the possibility to choose the consumption of public goods in the same way that they choose private goods (due to the well known problems of indivisibility of public goods etc) we do not know their exact preferences for them. So, an increase in available income due to the lowering of taxes could increase their welfare. Further, the initial situation could be characterized by an over-provision of the public good, i.e. consumers might want to consume less of it, than they are forced to. A lowering of taxes, with redistribution between available and taxed income would thus increase the welfare of the individual consumer and so, also total welfare. Additionally, in order to know the optimum level of provision of public goods, we must assume that governments are efficient, benevolent—altruistic and know their citizens

preferences. These assumptions are open to criticism, Governments are not always efficient and their policies lead often to wasteful use of resources,⁷ and not benevolent – altruistic being subject to pressure by pressure groups, lobbies etc. Benson (1999), for instance, remarks that international traders avoid nationalized legal systems, in part because these legal systems are frequently less concerned with fairness and justice than political power, while coercive imposed discriminatory laws and taxation also drive many activities under-ground.

Lastly, citizens can express their preferences only indirectly every four years by electing that party to government, whose program presumably satisfies better their preferences, but this is only an approximation to their true preferences.

Theoretical and empirical work on this also does not come with clear answers. Chamley (1986) and Judd (1985) have analyzed the problem of a social planner whose objective is to maximize the welfare of an infinite—lived representative for tax policies. They find that whenever the optimal policy leads the economy to a balanced growth path, capital taxes must converge to zero. A policy plan that maximizes the welfare of an infinite—lived consumer therefore implies high initial taxation of capital stocks and subsequently a reduction of all capital taxes to zero. Lucas (1990) in his endogenous growth model of the US economy finds also significant welfare gains in the long run from the abolition of capital taxes. Gruner and Heer (2000) using the basic Lucas model but distinguishing between physical and human capital and their taxation, show that the optimal tax rate on capital is positive and sensitive to the government expenditure rule.⁸

Wilson (1986) for example models inefficiency in public production explicitly and shows that the amount of capital used to produce a given level of public service output is greater than that which is required to minimize costs evaluated at the prices facing private firms.

4.2. Growth

The arguments can be summarized as follows: Consider a two sector (public – private) economy, where the overall growth rate is given by $g = ag_p + bg_g$, with g_p the growth rate of the private sector and g_g the growth rate of the public sector and a and b the relative shares of the two sectors in the economy. The crucial assumption for the effects of tax competition on growth hinges on g_p compared to g_g . If $g_p > g_g$, then tax competition, by eroding the tax base, leads to a smaller share of the public sector and correspondingly a bigger share of the private, i.e. increases a and reduces b , so that the total rate of growth increases.

Thus, the results depend on how the state is seen. If politicians are modeled as rent-seeking Leviathans (Radaelli, 1999, p. 670) then the most typical conclusion is that tax competition is necessary to tame the tendency towards the big and uncontrollable state (McLure, 1986; Siebert and Koop, 1993). Persson and Tabellini (1992) for example also recognize in their model that in the presence of an ex-post incentive constraint, the political equilibrium endogenously delegates policy choices to an agent whose preferences differ from those of the majority of the voters.

Brennan and Buchanan (1985) in their extensive analysis of what they call “constitutional political economy” criticize many traditional views of the state’s prerogatives concerning

⁷ The continuing surpluses of agricultural goods due to the Common Agricultural Policy and the abolition through law of outstanding debt of football teams in Greece are just two blatant examples of wasteful policies that are certainly not welfare and growth promoting.

⁸ The reason being that a higher capital income tax rate permits a reduction of the labor income tax. As a consequence, the opportunity cost of leisure increases and individuals spend more time working and more time on education, thus increasing human capital accumulation, which increases the growth rate.

taxation and redistribution, calling that “the myth of benevolence”. Buchanan (1986, p. 170) even goes as far as to suggest as a benchmark of individual’s freedom versus the state’s activities, the liberty of individuals to form new polities from within the existing one – the liberty to secede. Thus the collectivity cannot ethically justify a claim on the economy’s valued product that is over and beyond the level of taxation that would encourage any subset of the community membership to form their-own separate polities. This idealized internal exist option places ethical limits on the absolute level of taxation.⁹

Also, another fundamental question is the one referring to the achievement of European unification while maintaining national autonomy (Mintz and Tulkens, 1986). The point here is that while tax competition may be harmful for some governments and states, it is beneficial for others, as we show in our game theory model. Some states gain from increasing revenue from non-residents, which results in higher growth-welfare and sounder finances for them. In the absence of an inter-EU redistributive system of fiscal revenue, why should they abandon their successful policies? More, since governments are elected by “national” voters and not on a European level, why should voters vote a party that promises to undertake tax measures which are perhaps for the common European good but represent a national loss or cost? This is a case of “political externality” of tax competition, so long as national political and fiscal autonomy is maintained.

Lastly, even the question “does competition lead to too little taxation”, taken as given above, has by no means found a definite answer. It is still the object of much uncertainty (Swan, 1998; Goodspeed, 1998). The papers cited above in relation to welfare come also to different conclusions concerning the growth effects of taxation.

4.3. Redistribution

The argument that tax competition is harmful can be summarized in the following way. In open and efficient markets, international investors are able to shift taxation fully on to immobile factors, thus increasing inequality, the effective burden on labor and unemployment. Wildasin (1988) interprets this as a fiscal externality, because residents of country j will be made better off because country i increases its taxes, since they can have either more public goods at the existing tax rate, or a lower tax-rate at the existing level of public good provision, or some combination of the two.

Theoretic and empirical studies come to the conclusion that the effects on employment are in fact uncertain. The economics of employment in Europe are much more complicated (Zee, 1996; Nickel, 1998; Sorensen, 1997). First, if tax competition leads to a smaller public and a larger private sector, and if the growth rate of the private sector is higher (as examined in Section 2 above) then this could lead to higher growth rate, bringing with them higher employment. Second, if some countries gain from tax competition (as in our model) by attracting more capital and revenue, then this again could lead them to higher growth and employment. Third, if we abandon the artificial dichotomy between individuals who supply either capital or labor, and postulate individuals that do both at the same time (even if to a different degree), then the question of benefits and costs becomes blurred. The same individual

⁹ We suspect that the extend of the underground economy in southern European EU Member States is due both to the traditional “free-rider” problem (the individual takes the benefits from the provision of the public goods without paying the cost, due to less efficient fiscal control mechanisms combined also with a higher degree of corruption) but also to the dissatisfaction of the provision of public goods per se, i.e. a manifestation of the right to secede and choose different combinations of public – private goods than those imposed by the state, as shown in our model above.

could lose something out of the redistribution process due to the erosion of the tax base (if he lives in one of the less competitive countries) but at the same time gain because as an investor he can invest in a country with lower capital taxation.

4.4. Harmonization

Tax competition does not permit tax harmonization within the EU to proceed. Harmonization is positive because it eliminates distortions in a Single Market with a unique currency. Harmonization should achieve capital export and import neutrality and since the advances in e-commerce and the advent of EMU, also goods and services export and import neutrality.¹⁰ Harmonization does not concern only tax rates, but tax systems in general. The question, which arises here, is if harmonization should be imposed by any authority's decision (e.g. the Council of EU Ministers) or if the operation of market forces should be left unhindered to find out the best solution. Tax systems competition is a variant of regulatory competition and studies on regulatory competition show that the results depend on the socio-political amalgam of politics, ideas and interests and differ widely (Sun and Pelkmans 1995). The main point of tax competition here is that it may lead to the adoption by government of more prudent and less wasteful or subject to interest groups – pressures policies.

In addition to the traditional points 1–4 above we propose to enhance the discussion with two more criteria, individual freedom and Optimal Tax Area.

4.5. Individual freedom

Tax competition in any case, seen either from the investor's or the consumer's point of view increases personal freedom by giving more possibilities of choice, choice being one of the main elements of freedom. This is not something that is measured easily when considering for example welfare effects, but it still is one important point for democratic societies.

5. Is the EU an optimal tax area?

Here we introduce a new general criterion under which to evaluate the advantages and disadvantages and the feasibility of direct tax harmonization in the EU. We define an Optimal Tax Area (OTA) as a benchmark area with:

- (1) Similar economic structures of countries, "similar" including characteristics as for example sectoral distribution of GDP, GDP per capita etc. Obviously, two countries like Germany and France, with near equal GDP per capita and similar economic structures concerning the contribution of services, industry and agriculture to GDP, could more easily participate in an OTA than for example two countries like Luxembourg and Turkey, where Luxembourg has a GAP per capita that is ten times that of Turkey and Turkey's agricultural sector contributes as a percentage about four times more than Luxembourg's to their respective total GDP's. These structural differences imply great differences in the

¹⁰ Capital export neutrality (CEN) is achieved when there is no tax incentive to locate investment in one country rather than another. Capital import neutrality (CIN) ensures that in a given country there is no tax-induced competitive advantage of a domestic company over a foreign one. The same concepts apply for goods and services with respect to VAT and excise duties.

fiscalities of the two states, i.e. their revenues and expenditures and thus also taxation. This again implies that the two countries cannot belong to the same Optimal Tax Area.

- (2) Similar “tax culture”. This takes over a very important point raised by North (1981) and his followers, that customs and norms are slow to change, being at the same time one (if not the) most important element of growth. Laws may be changed, but they may not be implemented if they encounter strong resistance due to established customs and norms. This of course applies also to fiscal law. Thus, “tax culture”, as culture in general show strong path dependence or lock-in. It takes a long time and effort to change norms and customs, as the recent experience of ex-communist countries indicate (Kyriazis and Zouboulakis, 2005).

“Tax culture” in particular shows the citizens attitude towards fiscal administration, varying from “trust” to “mistrust”. Within the EU, Sweden would be a country characterized by high “trust”, while southern EU countries like Italy and Greece are characterized by “mistrust”. The existence of a small or large underground economy is a parallel of this trust – mistrust attitude. In Sweden the underground economy is small, while in Greece it is estimated to as high as 30–40% of measured GDP. Obviously countries with very different “tax cultures” cannot form an OTA.

- (3) “Fiscal stance”. This point captures the past and is again an element of path-dependence. Today’s fiscal policy is not free of the constraints of past decisions, which are seen on outstanding public debt and budget deficits. We have illustrated this point in our game theoretical approach of Section 3. It is clear that countries with similar “fiscal stances” can form part of an OTA, countries with dissimilar not. What applied to EMU (the two “fiscal” criteria of debt and deficit) applies with more force to OTA.
- (4) Effectiveness of tax administration, which combines two elements, first tax collection costs, corruption of the administration etc. that could be labeled the “quality” of the fiscal administration, and second the effectiveness of fiscal policy itself, i.e. the degree to which policy aims are achieved, through expenditure, the “correctness” of the aims set by the government etc.

Economists would probably find “strange” policy aims in all countries, imposed in part by pressure groups, which are not promoting total welfare. We have mentioned before the example of Greek governments taking over outstanding loan debts of football teams. This is certainly a fiscal measure that may win some votes of football teams fans, but we have strong doubts as to the welfare and growth effects of such measures! Wasteful policies and expenditures are to be found to a higher or lesser degree in all states.

What the above suggests is the need for the EU Statistical Office and the Commission to introduce common measures of calculating the fiscal collection cost across the Member States, in order to answer the question: What percentage of tax revenues collected is taken by the administration and what percentage is used to further policy aims? We need exact and comparable figures for the cost of government across the EU Member States.

Obviously, states whose governments show the same degree of “quality” and effectiveness can form part of an OTA, while those which show high divergence cannot. Thus the criterion of OTA forms the basis of a discussion on the feasibility of tax harmonization. If the EU, or some EU Member States satisfy the benchmark of OTA, then they should be able to harmonize their tax rates and systems. But then again in this case, tax harmonization is less necessary and could proceed without the necessity to take administrative decisions centrally. OTA implies also that within it, tax competition is less severe due to the similarity of the elements of an OTA as suggested above.

On the other hand, if the EU is not an OTA, then harmonization may be more pressing for the Member States that are the losers of tax competition, but also we believe, impossible to agree upon under the present circumstances. We suggest that OTA is a research agenda in order to lead us to clearer answers as to the feasibility of tax harmonization within the EU.

In the present situation we are convinced that present 25 (and the 2007 prospective 27) Member-States EU is not an OTA. Taking this into account, a possible policy option could be the formalization of a “small” tax harmonization area, to include Member States willing and being able to participate. This of course follows the model of EMU. In the future, the European Tax Union (ETU) as we may call it, would be open to new participants.

The Member States that would not participate from the beginning in ETU have not many policy options left: Tax competition forces them to implement restrictive fiscal policies in order to reduce debt and deficits, and at the same time not loose competitiveness in attracting foreign direct investment and keeping domestic profits within the country’s boundaries. This means again, that the burden of adaptation falls mainly on a reduction of expenditure and in the long run in a reduction of the state’s percentage of GDP.

6. Conclusions and policy implication

Cooperative games seem to be utopian as there is no redistribution mechanism of tax revenues in the EU. So the gainer of a game has no incentive to play the game cooperatively if there is no distribution of the gains. Additionally, we may think of a form of international cooperation in the case of countries coordinating the exchange of information on say corporate tax rates. In this way investing abroad will no longer allow households to evade domestic taxation by investing abroad. But this information exchange may create other problems. Countries may be unwilling to relax their bank secrecy laws in order to make feasible this information exchange. Luxembourg for example opted recently not to do this, subject to levying a higher tax on deposits of non-residents, to be transferred to the fiscal authorities of the countries of residence.

Countries will probably prefer to reduce tax rates compared to providing information to foreign tax authorities. This is because the former policy will increase tax revenues whereas the provision of information will probably increase only tax revenues abroad. In this way and given that countries will not prefer to proceed to the exchange of information our formulation can be valuable.

Our proposed formulation can be used in two stages. In the first stage, countries decide if they will reduce their, say, corporate tax rate according to the various constraints (as the outstanding debt) while in the second stage they will decide which option to undertake given the behavior of the other countries. Having different initial conditions, the higher the outstanding debt of a country is, the more difficult is for this country to reduce tax rates. Thus, in the tax competition game countries with high outstanding debt start with a competitive disadvantage. In this way they have an obvious difficulty in following up a leader with a lower outstanding debt who reduces his tax rate.

Reducing corporate tax implies a reduction in domestic revenues and an increase in the foreign revenues. For a small country this may be beneficial as the State may face losses domestically but also larger capital inflow from abroad. In this way, the total effect may be positive with higher total revenues as foreign revenues are expected to be greater than domestic revenues.

This is probably not the case for Greece. Due to high outstanding debt Greece cannot follow with substantial reductions in tax rates. In this case, Greece may face a negative result

as it may loose revenues in the domestic market because of the tax reduction and due to the fact that foreigners will not prefer Greece as a place for investment. This implies that outstanding debt plays the role of inertia-lock-in as it reduces the flexibility of the player to follow the leader's first move. It is clear that tax competition favors countries with low initial outstanding debt and it is disadvantageous for counties with high initial outstanding debt.

Following our introduction of the concept of an Optimal Tax Area, we conclude that the EU is not in its totality an ETA, but that some Member States may be able to form an European tax Union where direct taxes will be harmonized. The policy implication of our paper is that we do not expect harmonization for direct taxes like corporate taxes in the EU in the near future. We conclude that both more theoretic research and empirical evidence are needed before we can answer with certainty whether tax competition is harmful or not.

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