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Evidence and Myths about Tax Competition

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Abstract: This paper examines various arguments addressed in favour and against tax competition. We pay attention to definitional matters of tax rates and bases, review empirical evidence concerning development of corporate taxes in the EU and the OECD countries over last decades and investigate whether anything suggests that there has been interdependence in corporate tax rate setting across countries. Furthermore, we recapitulate efforts done both by the OECD and the EU to stop tax competition. Finally, we argue that tax competition is not harmful and that it emerges as a means of constraining governments to discipline.

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1 Introduction

It is rather clear why one should be interested in tax competition. The immediate reason is that tax competition is a phenomenon of utmost relevance in present days and a political issue, most markedly at the EU level. And a related reason is that tax competition is subject to a number of misunderstandings that pervade the debate about its merits and demerits.

In our eyes, answer to the questions how tax competition influences economic performance and whether tax competition is harmful or not depends mostly on the assumptions one makes about the behaviour of government. If one assumes that governments are largely benevolent and efficient institutions, one will probably conclude that tax competition – as the process of uncooperative setting of tax rates in order to attract mobile tax bases – leads to inefficiently low amounts of public goods.¹ Yet, as we will try to show, this indispensable assumption cannot, for a number of reasons, be satisfied. However caricaturing it might sound, present day governments behave more like Leviathans and constraining them to fiscal discipline – whether it should be by means of a fiscal constitution or otherwise – is needed.

This part is an attempt to define cogently the phenomenon of fiscal competition and to review and critically analyze the current state of knowledge of the issue. In the same spirit, we will offer some basic facts about the forms that tax competition might take.

We will show what has been the development of tax rates and tax bases during the past decades and examine whether one can infer that there is an interdependence in tax setting.

Furthermore, we will focus on the question if tax competition decreases welfare, and we will briefly discuss the alleged problem posed by tax havens. Hence the goal of this paper is to demonstrate that tax competition emerges as a praiseworthy phenomenon and that many of the accusations that are being brought against it do not hold.

With these aims, in Section 2 we will propose a definition of tax competition and discuss definitional problems of related terms, in Section 3 we offer a model of tax com-

¹ Yet Kehoe (1989) provides an elegant demonstration that such competition can be efficient in the long run.

petition in which government as a revenue maximiser. The purpose is to show various forms that fiscal interactions among governments might take. In Section 4 we discuss some more or less known facts about tax competition and review existing empirical evidence and in Section 5 we try to answer the question whether tax competition is a harmful thing or whether it should be rather cherished. Section 6 concludes.

2 Definitions and basic characteristics

It might seem that there is little or no controversy when it comes to the definition of tax competition. Yet the issue can become, as we will show, a bit perplexing.

The needed requirement for tax competition is a high mobility of capital and/or labour. Mobility of capital can be increased for instance by technological changes which allow individuals to move their funds electronically across continents or by relaxation of exchange controls. Yet high capital mobility does not mean that capital have to move across borders. The sufficient condition for capital mobility is that capital can move across borders at low costs.

The result of an increase in capital mobility is that jurisdictions can tax capital with more difficulties. The process of tax competition is thus a process of attracting mobile tax bases to jurisdictions by lowering tax rates. By its nature, the process of tax competition is a process of interdependent setting of tax rates and tax bases.

If we narrowed the definition of tax competition, we would require that tax policies influence the allocation of tax revenues across government treasuries. This excludes a broad subgroup of government interactions known as “yardstick competition.” In yardstick competition, voters compare tax system in their own and neighbouring jurisdictions to assess their performances and to vote accordingly. Yet there is no interdependence between government budgets as such, as the competition actually take place within jurisdictions among different political candidates. On the whole, it is clear that yardstick competition is a fairly different phenomenon than tax competition in the strict sense, although in reality difficult to distinguish from the latter, for the two models of government interaction predict much the same results.

As a matter of fact, fiscal interactions among nations entered on the scene of eco-

conomic theory with Tiebout (1956) who presented a model of competition for mobile households, showing that, under certain assumptions including personal mobility, a diversity of competing jurisdictions can bring about an efficient output of public goods – each jurisdiction offering a different bundle of both public goods and tax burden appealing to individuals with different tastes. In economic literature, tax competition is usually associated with the taxation of mobile capital².

Yet it should be stressed that the mobility of labour is a phenomenon that deserves our attention as well. OECD (2001b) finds that there has been a substantial rise in migration for economic reasons. Some of these reasons are personal income taxes which vary between countries, in particular for the high-income individuals.³ Thus, from a realistic perspective, it is not utterly acceptable to distinguish between “mobile capital” and “immobile labour.” There are a number of factors of production with greater or lesser degree of mobility, including various forms of capital and labour. Yet for analytical purposes it is useful to simplify the situation by considering just two factors of production – the mobile one and the immobile one – and by assuming that capital is the mobile factor. This allows us to consider just one tax as susceptible to be the subject of competition for mobile bases – the corporate income tax. Nevertheless, when speaking of tax competition later on in this paper, we will provide at least anecdotal evidence on “brain drain” caused by tax differentials.

2.1 Measures of Capital Taxation

To observe whether there is a competition among states to attract mobile tax bases one needs to make explicit the ways how we can measure taxation of corporate income. The traditional way to measure the impact of corporate taxation is through the cost of capital

² The Tiebout model was applied, almost inalterd, to competition for mobile firms by White (1975) and Fischel (1975).

³ Numerous factors seem to have increased the mobility of labour. As Edwards and de Rugy (2002) put it: “First, the Internet has increased information about foreign opportunities and allowed firms to broaden international job searches. Second, falling travel and communication costs have made it easier for workers to take employment in foreign countries and maintain close contact with their relatives. Third, emigration restrictions in many formerly repressive regimes have been eliminated. A fourth trend is the increased technological ability to performs work in foreign countries while residing elsewhere (...) Fifth, regional trading pacts have allowed increased worker mobility. (...) Sixth, a number of countries have raised immigration limits for highly skilled workers.”

– the latter being equal to the pre-tax rate of return of an investment project. To do so, one is obliged to use the tax rates and tax bases delimited by legislation. The simplest measure of corporate taxation is the statutory rate, i.e. the rate defined by legislation. This is 19 per cent in the case of Slovakia, 12.5 per cent in the case of Ireland and so forth. However widely this measure might be used to compare various tax systems, its applications are limited. To infer that low statutory rates mean low actual tax payments would be grossly erroneous, for these depend equally on the tax base.

The definition of the tax base varies across countries and is usually extremely complex. It covers almost everything from investment allowances to deductibility of pension contributions, the extent to which expenses can be deducted and so on. Hence it is almost impossible to establish a single measure which would stand for tax base. Empirical literature has so far greatly simplified the matters by focusing on one aspect of tax bases – on capital allowances. If a firm invests a sum of money, this usually cannot be fully deduced from the tax base, but is usually spread over the expected life of the asset. The intuitive measure of such allowances is their present discounted value as a percentage of the initial cost of the asset. This is equal to zero if the tax system has no allowances at all and 100 per cent if the legislation permits the deduction of costs immediately. Now it should be clear that the rate of inflation has an impact on the value of allowances, for it changes the nominal interest rate. Thus an increase in inflation would decrease the present discounted value of allowances.

By effective tax rates we understand uniquely measures based on tax legislation, be it effective marginal or average tax rates. As Devereux, Griffith and Klemm (2002) assert, the usual approach to summarise the combined effect of tax rate and tax base is to analyse a hypothetical investment that just breaks even (a marginal investment). In this case, the proportionate difference between the pre-tax and post-tax required rate of return is known as the effective marginal tax rate (EMTR).

It should be noted that the EMTR discerns solely the effect of taxation on marginal investment and permits saying what will be incentives to carry out marginal investments. Thus this measure does not tell us what will be incentives to perform particular investment projects within the set of profitable investments. The impact of taxation on choice between them depends mainly on the proportion of total profit paid in tax. This proportion defines the effective average tax rate (EATR). If a firm has to choose between two

investment decisions, one with a higher pre-tax profit, but also with a higher EATR, then the tax might lead the firm to choose the option with a lower pre-tax rate of return.

Apart from this, one could use alternative measures of corporate taxation, particularly those based on corporate income tax revenue. The virtue of this measure is that it is simple to calculate across a wide range of tax systems and allows to make time series or comparisons easily across countries using the proportion of corporate income tax revenues to GDP or to total tax revenues. This is the method used for instance by Mendoza *et al.* (1994), and with few minor changes by Eurostat (1998) or Carey and Tchilinguirian (2000). Mendoza *et al.* introduce measure called "effective tax rates".⁴ In the case of capital, these are basically the rates found by dividing total tax revenue from capital taxes by an estimate of the operating surplus of the economy.⁵ The substantial problem with this measure is that it would be equivalent to the effective tax rates as described above only if the tax base used by the fiscal legislation was equal to the profit defined by economic criteria; which is not the case in vast majority of empirically relevant cases. As Devereux, Griffith and Klemm (2002) put it, by using aggregate data and data on tax revenue, this measure says nothing about actual incentives individuals face. This should justify, at least in our eyes, certain preference we give to measures based on tax legislation, particularly for the purposes of this work, i.e., for purposes of establishing sound empirical evidence that there actually exists such thing as tax competition.

3 A Simple Model

What do we mean when we say that there is interdependence in tax setting? What exactly should we observe when jurisdictions compete for tax bases? To answer these questions in terms of standard microeconomic theory, one could consider the following simple model of tax competition, inspired by Deheija and Genschel (1998). We use their model as a starting point and elaborate it for instance by studying the properties of capital allocation and by introducing other forms of fiscal interaction than just a simple Nash game of simultaneous rate setting.

⁴ As we will see below, we understand by "effective tax rates" a different measure, based on tax legislation and we prefer rather to call the "effective tax rates", used by Mendoza, Razin and Tesar (1994) implicit tax rates.

⁵ This is a particular definition of pre-tax capital income.

Before introducing the model itself, it might be of interest to underline what assumptions can one make about fiscal behaviour of governments. On the one hand, one can distinguish models of government as a benevolent institution, seeking to maximize welfare of citizens. Following this distinction, one can easily imagine a model of government seeking to attain other ends - reelection, personal income and so on. On the other hand, it is important to distinguish what information do government possess while attaining the given ends. In this respect, one can distinguish between models of a perfectly informed government and government which desperately lacks information. From our perspective, it is realistic to assume that governments are both Leviathan and badly informed. Yet for the purposes of the model which follows, the governments engaged in the revenue maximizing game will be perfectly knowledgeable about what they are doing. This can be excused by the fact that this approach makes the model easier to construct and to follow for the reader.

This model describes revenue maximising governments competing for mobile capital which is the only source of tax revenue. There are two distinct countries indexed by $i=1,2$. Each country uses a production function with decreasing returns to scale

$$Y_i = F_i(K_i), F_i' > 0, F_i'' < 0, \lim_{K_i \rightarrow 0} F_i'(K_i) = +\infty. \quad (1)$$

Different production functions for different countries reflect not so much the differences in technology, but rather differences in population. In the Cobb-Douglas case of $Y_i = A_i \sqrt{K_i}$ the constant A_i could stand for these differences. The total stock of capital is fixed and is distributed among the two countries so that

$$K_1 + K_2 = \bar{K} \quad (2)$$

where \bar{K} is a constant. Government uses one tax instrument solely, a capital tax defined by

$$r_i = (1 - t_i)F_i'(K_i) \quad (3)$$

where r_i is the after-tax return from capital and the price of output is normalised to unity. In other words, the tax puts a wedge between the real return from capital and the after-

tax return. The government is assumed to behave as revenue maximiser and faces the following problem.

$$\max_{t_i} R_i(K_i) = t_i F_i(K_i), i = 1, 2 \quad (4)$$

The revenue-maximising assumption corresponds well to the Niskanen's (1971) characterisation of public servants as budget maximisers. This assumption seems to us as good approximation of a Leviathan-like government without complicating the matters by introducing a model of government decision-making process or a model of voting as in Besley and Smart (2001) or in Janeba and Schjelderup (2004). However interesting their models might be, we find it advisable at this moment to introduce a more simple model showing uniquely the fundamental features of the process of tax competition.

The maximisation problem is trivial if there is no capital mobility, that is, if K_1 and K_2 are constant. In this case, the function maximised is a monotonic transformation of t_i , as the total output $F_i(K_i)$ is constant. In that case both governments will choose t_i equal to one and extract the whole of the output. This situation, however, is not of particular interest for us.

We focus our attention more on the opposite polar case – situation in which there is perfect capital mobility across countries. Common sense compels us to say that the real world situations are somewhere in between, yet what is of interest to us is that they seem to be closer to the situation of capital mobility.

Under perfect capital mobility, capital moves from one country to another until the after-tax return is equalised:

$$(1 - t_1)F'_1(K_1) = (1 - t_2)F'_2(K_2) \quad (5)$$

Now, provided that

$$K_2 = \bar{K} - K_1 \quad (6)$$

the arbitrage condition can be restated as

$$(1 - t_1)F'_1(K_1) = (1 - t_2)F'_2(\bar{K} - K_1). \quad (7)$$

Hence K_i is a function of t_1, t_2 .

Lemma 1. K_i is strictly decreasing in t_i and strictly increasing in t_j for $i, j \in \{1, 2\}, i \neq j$.

Proof. According to (7):

$$\frac{F'_1(K_1)}{F'_2(\bar{K} - K_1)} = \frac{1 - t_2}{1 - t_1}. \quad (8)$$

From (1) it follows that $F'_1(K_1)$ is decreasing in K_1 and $F'_2(\bar{K} - K_1)$ is increasing in K_1 . Hence the term on the left hand side of (8) is a decreasing function of K_1 . Moreover, the term on the right-hand side is increasing in t_1 . Thus if t_1 increases by a Δt_1 , the right hand side of (8) increases. As a result, K_1 must decrease accordingly. In the same way, an increase in t_2 decreases the left-hand side of (8) and K_1 must then increase as well. The proof for K_2 can be done analogously. \square

Now, (4) can be put in the following way:

$$\max_{t_i} t_i F_i(K_i(t_1, t_2)), i = 1, 2 \quad (9)$$

It is important for further analysis to say how governments perceive each other's tax rates. If each government considers the tax rate of its counterpart as a constant, then tax competition will be a Nash game of simultaneous tax rate setting and the outcome can be characterised as a Nash-Cournot equilibrium. This can be the case when the competing jurisdictions are of much the same size.

In a Nash game, both governments face the problem laid in (19). The first order conditions are

$$\frac{\partial R_1}{\partial t_1}(t_1, t_2) = 0 \Leftrightarrow F_1(K_1(t_1, t_2)) + t_1 F'_1(K_1(t_1, t_2)) \frac{\partial K_1}{\partial t_1}(t_1, t_2) = 0 \quad (10)$$

$$\frac{\partial R_2}{\partial t_2}(t_1, t_2) = 0 \Leftrightarrow F_2(K_2(t_1, t_2)) + t_2 F'_2(K_2(t_1, t_2)) \frac{\partial K_2}{\partial t_2}(t_1, t_2) = 0 \quad (11)$$

Solving (10) and (11) gives us reaction functions of both governments

$$t_1 = \varphi_1(t_2), t_2 = \varphi_2(t_1). \quad (12)$$

The solution of (12) yields the uncooperative Nash-Cournot equilibrium tax rates t_1^* , t_2^* . Existence of the equilibrium follows from theorem 4.1.1 of Ichiishi (1983, p.57), as the function of government revenue $R_i(K_i(t_1, t_2))$ is concave.⁶

One can imagine a situation when one of the countries behave as Stackelberg leader. This is the situation described by Altshuler and Goodspeed (2002) who noticed that European countries might well be behaving as Stackelberg followers with respect to the United States, while behaving as Nash players with respect to each other. Formally, the situation when one of our governments is a Stackelberg leader could be formally described as follows.

Without loss of generality, the country 1 is the Stackelberg leader. Hence, his maximisation problem is

$$\max_{t_1} t_1 F_1(K_1(t_1, \varphi_2(t_1))), \quad (13)$$

as he would expect the follower to act according to its reaction function. The solution of (13) yields the Stackelberg equilibrium tax rates \tilde{t}_1, \tilde{t}_2 .

The third situation we would like to depict here is the one in which the governments cooperate in order to maximise the total of their revenues. The equilibrium tax rates \hat{t}_1, \hat{t}_2 would be

$$\arg \max_{t_1, t_2} R_{total}(t_1, t_2) = \arg \max_{t_1, t_2} \{t_1 F_1(K_1(t_1, t_2)) + t_2 F_2(K_2(t_1, t_2))\} \quad (14)$$

It is not straightforward to find the equilibrium tax rates of the maximisation problem governments face when engaged in cooperation. The intuition tells us that government will cooperate to drive tax rates up to one. Moreover, the formulation of the problem might suggest that the governments should simply choose some revenue maximising vector of tax rates \hat{t}_1, \hat{t}_2 .

From an algebraic perspective, it is not true that (1, 1) is the revenue-maximising vector of tax rates. The reason for that is that K_i is not defined for $t_j = 1$ and the allocation of capital between the two countries is in that case a bit perplexing. Common-

⁶ It is not difficult to realise that the function $R_i(K_i(t_1, t_2))$ is concave. It is sufficient to observe the first order conditions given by (20) or (21) and to notice that the first derivative of $R_i(K_i(t_1, t_2))$ is decreasing in t_i .

sense compells us to say that if $t_i = 1$ and $t_j \neq 1$ then $K_i = 0$ and $K_j = \bar{K}$, which can be considered to be a sort of corner-solution. Yet if both tax rates are equal to one, then the allocation of capital between the two countries would be arbitrary. A conceivable - and the simplest - way of understanding it would be to assume that if tax rates are equal to one, then the allocation of capital would remain the same as in *previous* tax setting. The nature of a cooperative equilibrium could be better understood using the following remark.

Remark 2. Under cooperation, $(t_1, t_2) \rightarrow (1, 1)$ and $\frac{1-t_2}{1-t_1}$ is constant.

The function maximised in (14) can be restricted from above as

$$t_1 F_1(K_1(t_1, t_2)) + t_2 F_2(K_2(t_1, t_2)) \leq F_1(K_1(t_1, t_2)) + F_2(K_2(t_1, t_2)) \leq M \quad (15)$$

where M is the maximum of $F_1(K_1) + F_2(K_2)$ for $K_1, K_2 \in \langle 0, \bar{K} \rangle \times \langle 0, \bar{K} \rangle$. Let us denote (K_1^*, K_2^*) the vector of capital allocation maximising $F_1(K_1) + F_2(K_2)$. Furthermore, let us put

$$\frac{F'_1(K_1^*)}{F'_2(K_2^*)} = \alpha. \quad (16)$$

Hence from the arbitrage condition (15) it follows that to attain the maximum of $t_1 F_1(K_1) + t_2 F_2(K_2)$, governments should set tax rates so that

$$\frac{F'_1(K_1^*)}{F'_2(K_2^*)} = \frac{1-t_2}{1-t_1} = \alpha. \quad (17)$$

As we stated previously, for the vector of tax rates $(1, 1)$ the arbitrage condition and subsequently the equation (26) give no information about allocation of capital between the two countries. As a matter of fact, governments always face an initial vector of tax rates (t_1^1, t_2^1) for which it is not necessarily true that $\frac{1-t_2^1}{1-t_1^1} = \alpha$. Hence if both governments immediately chose $t_1 = t_2 = 1$, the outcome would retain the same characteristics as to allocation of capital between the two countries as the previous state. Hence if this allocation was not (K_1^*, K_2^*) , the revenue collected will be inferior to M . To collect maximal revenue, governments will have to ensure that $\frac{1-t_2}{1-t_1} = \alpha$.

Once this condition is satisfied, nothing restrains the governments from driving up their tax rates to one simultaneously and collecting at the limit the whole of the capital returns.

It is of course unrealistic to suppose that the vector $(1, 1)$ can in reality be attained. The reason is that if government taxed away the whole of the return from any investment, no one would embark on any investment activity and, in a longer run, the capital stock \bar{K} would have to change accordingly. Yet this longer-term effect is not depicted in our model.

4 Some Evidence

It is true that since the late 19th century modern welfare states have been funded primarily by levying progressive income taxes, both on corporate and personal income. As a result of increased mobility of capital, one is tempted to assert that taxing mobile factors has become increasingly difficult.

What is the empirical evidence for such claim? To begin, it might be interesting to raise some anecdotal evidence for the effects of taxation on the movement of mobile labour. As Edwards and de Rugy (2002) put it, there are many indications that migration motivated by fiscal reasons has been on the rise. John Roth, the former CEO of top Canadian high tech firm, Nortel, warned the Canadian government on several occasions that high tax rates have lead to an outflow of his best managers and engineers to the United States. In the same manner, one can recall the persistent outflow of young Irish to the United Kingdom and United States. This trend seems to have been reversed by corporate tax cuts in 1981, followed by personal income tax cuts. During the last decade, Ireland has experienced a marked increase in immigration and a fall in emigration.⁷

In the same spirit, one could talk about increased mobility of capital. Relocations of industries between countries for fiscal reasons are abundant and obvious to perceive. More importantly, there is evidence for a markedly high capital mobility that has increased over time, as Leibfritz et al. (1997) argue. Alfano (2001) extends their analysis to

⁷ See Ireland Central Statistical Office (2001).

sensitivity to tax differentials. Yet evidence for capital mobility is not easy to obtain. As Griffith and Klemm (2003) point out, high degree of capital mobility should be translated into rates of return being equalised across countries. However, the rates of return differ for a number of reasons, including country-specific risks or bias to investment, hence testing capital mobility is a non-trivial task.

Nevertheless, the evidence in favour of increased capital mobility is persuasive. And the intuitive reasoning tells us that when taxing mobile factors becomes increasingly difficult, the tax burden is shifted on immobile ones and on consumption. At this moment it should be emphasised that it is problematic to assume that labour behaves as an immobile factor and that personal income tax is a tax on this immobile factor. However, for the purposes of simplicity and keeping this discussion manageable we are forced to distinguish between capital and labour as between mobile and immobile factors. Avi-Yonah (2000) points out that the two fastest growing taxes in OECD countries in last decades have been consumption taxes (from 12 per cent of total revenue in 1965 to 18 per cent in 1995) and payroll taxes (18 per cent to 25 per cent).⁸ Even though the personal income taxes have not risen over that period (from 26 per cent of total revenue to 27), the total tax burden has grown from 28 per cent to almost 40 per cent, which is due mainly to the increase in consumption and payroll taxes, which seems to support our claims.

Devereux, Griffith and Klemm (2002) observe data on tax revenue on corporate income as a proportion of GDP for the OECD countries during 1965-1999 and find that they have remained fairly stable, yet varied strongly across countries. In the same way, Carey and Tchilinguirian (2000) observe a small rise in the implicit tax rates on capital for OECD average during 1980s and 1990s. These data are a bit difficult to interpret reasonably, for they are not entirely consistent with the development of the statutory tax rates and the EATR, as presented below. One explanation might be found in the Laffer curve – lower rates might have boosted profitable investment, rising corporate income tax revenues as a portion of the GDP (or other variable, such as the operating surplus). If we consider data on corporate tax revenues as a portion of total tax revenues, we see a

⁸ It can be of course argued that the increase of payroll taxes has been needed to keep on financing the PAYG pension systems in time of unfavourable demographic changes. Yet for the purpose of this work it is immaterial to study which of the two phenomena had more important impact on the rise of payroll taxes – whether it was the need to finance the PAYG systems or the increased mobility of capital. Suffice it to say that the two factors worked in the same direction – towards an increase in payroll taxes.

marked decrease. This suggests that governments may rely less on corporate taxation as a source of revenue and are shifting the tax burden to other sources of revenue.

Let us turn to measures based on tax legislation. The data for OECD countries are rather clear – statutory tax rates were falling between 1982 and 2001, the unweighted mean statutory rate going from around 48 per cent to around 35 per cent.⁹ Equally important, however, was the development of corporate tax bases. Throughout 1980s and 1990s the weighted mean of rates of allowance fell from 83 per cent to 74 per cent, which means that the tax bases broadened during that period. Nevertheless, the expansion of tax bases was partly compensated by lower rates of inflation.¹⁰ At this moment, the development of the tax burden in recent decades might seem rather unclear. With rates decreased and bases broadened, one cannot conclude unequivocally. But what is the evidence provided by Devereux, Griffith and Klemm (2002) for the EMTR and EATR? The weighted mean of EMTR has remained stable over the 1980s and 1990s. The picture is relatively mixed, with more than half of the countries having decreased their EMTR and some countries having increased it. The weighted mean EATR fell over the period from around 41 per cent to around 34 per cent. For very low rates of profit (investments close to the marginal), it has remained almost unchanged, but for highly profitable investments the rate converges to the statutory rate which has fallen substantially.

On the whole, one can conclude that there has been a decrease in corporate taxation over the recent past. Governments do tax capital less than they did before. This does not mean that the overall tax burden has decreased over the past decades, only that the tax structure has changed, taxing more heavily labour and consumption than capital.

This conclusion in itself, however, is not sufficient to affirm that there has been any form of fiscal competition. To do so, we need to present evidence that tax rates have been changing in a mutually dependent way. Fortunately enough, empirical studies suggest that such evidence exists. Since the pioneering study by Case, Rosen and Hines (1993) who estimate fiscal reaction function for the US states, there has been a growing empirical literature on the subject, basically finding that the EU and the OECD nations have been setting taxes interdependently. Altshuler and Goodspeed (2002) investigate fiscal interdependencies among a subset of EU Countries and find that European countries

⁹ See Devereux, Griffith and Klemm (2002, p.11).

¹⁰ *Ibid*, p.12.

interact strategically in setting their capital taxes. Devereux, Lockwood and Redoano (2002) study data from 21 OECD countries between 1983-1999 to conclude that countries actually compete not only over the statutory tax rates, but also over the EMTR and the EATR. More recently, Redoano (2003) has confirmed previous findings concerning fiscal interaction within the EU. The evidence is aptly summarised by Altshuler and Grubert (2003):

The evolution of country effective tax rates between 1992 and 1998 seems to be driven by tax competition. Countries that had lost shares of U.S. manufacturing affiliate real capital cut their rates the most over the period. Further, smaller countries and those with high initial average tax rates experienced larger declines in effective tax rates relative to the average.

In a nutshell, there appears to be sufficiently robust evidence to claim that there actually exists such thing as tax competition.¹¹

4.1 Multilateral Initiatives

Not only tax competition exists, but it has been an issue at the international level. There have been several initiatives by international bodies to subject tax competition to control and regulation and our account of development of tax systems would hardly be complete without mentioning at least two major international organizations that have attempted to tackle tax competition – the OECD and the EU institutions.

One of the best known initiatives against tax competition was the one started by the OECD in 1998 after publishing OECD (1998). The report focuses on allegedly harmful tax practices in member states and in so-called tax havens. The report was followed by another one, OECD (2000) which monitors the progress accomplished and somewhat elaborates the arguments against what it calls “harmful tax competition.” The report divided harmful tax practices into two categories – “preferential tax regimes in member countries” and practices used by jurisdictions outside the OECD, deemed to be “tax havens.”

¹¹ Though for instance Desai (1999) argues that the “race to the bottom” feature of tax competition seems to be attenuated by foreign tax credit systems

Both categories were defined by roughly the same criteria – by corporate taxes that allowed a significantly lower effective level of taxation than those that applied in member states and a lack of transparency and exchange of information (otherwise known as financial privacy). To qualify as a tax haven, the OECD used the criterion of a “lack of substantial activities” from the part of companies incorporated in the jurisdiction. However, the criterion turned out to be quite impossible to interpret and was eliminated later on.¹² OECD (2000) contained a list of 47 “harmful” practices within member states and 34 jurisdictions meeting the criteria of “tax havens.” Any of these that would have been considered uncooperative – not agreeing to abandon the aspects of their tax systems that were considered harmful – were threatened with “defensive measures.” It is important to note that these were not limited to simple enforcement of existing tax regimes, but went largely beyond that, introducing penalties for dealing with such jurisdictions.¹³

The report recommended to member states deemed to have harmful tax regimes to eliminate features considered harmful which basically meant to raise tax rates and/or restrain financial privacy. A similar advice was given to non-member jurisdictions, deemed to behave as tax havens.

By 2001, 5 jurisdictions had pledged to eliminate their “harmful tax practices.” These were Aruba, Bahrain, the Isle of Man, the Netherlands Antilles and the Seychelles.¹⁴ According to OECD (2004b), all of the 47 “harmful” tax practices within member states, which were mentioned in the 2000 report, have been either abolished or amended so as

¹² See OECD (2001), p.10.

¹³ According to OECD (2000), member states should:

- Disallow deductions, exemptions and credits that would have otherwise been applied to transactions with uncooperative tax havens.
- Adopt controlled foreign corporation legislation and/or apply them in a consistent manner
- Deny any exceptions to the application of regular penalties in the case of transactions involving entities operating in uncooperative tax havens.
- Impose withholding taxes on certain payments to residents of uncooperative tax havens.
- Enhance audit and enforcement activities with respect to transactions with uncooperative tax havens.
- Not enter into tax conventions with uncooperative tax havens and consider terminating such conventions.
- Impose charges or levies on certain transactions involving uncooperative tax havens.

¹⁴ OECD (2001), p.9.

not to be “harmful” any more. Likewise, the overwhelming majority of non-member jurisdictions identified in 2000 as “tax havens” are now “committed to transparency and effective exchange of information.” The remaining unco-operative tax havens were Andorra, the Principality of Liechtenstein, Liberia, the Principality of Monaco and the Republic of the Marshall Islands. With the intention of having competition based on economic rather than on fiscal considerations, the OECD has introduced the concept of “global level playing field.” The campaign aims at stopping business migration to jurisdictions where transparency and effective exchange of information is not at OECD-required level, that is, where financial privacy is respected.¹⁵

In like manner, there were several initiatives at the EU level to regulate tax competition, although the issue of direct taxation is not covered by powers of EU bodies. Furthermore, any decisions the EU might take in the area of direct taxation must be taken at unanimity. Nevertheless, member states are constrained to some degree by provisions of existing treaties that define properties of the single market. According to the Community Law, member states must not:

- Hamper the freedom of movement of persons, businesses and capital and the freedom to provide the cross-border services.
- Distort conditions of competition through the provision of tax breaks and relief in the form of state aid.
- Discriminate on grounds of nationality in areas falling within the scope of the EC Treaty.¹⁶

The first attempt to deal with issues of corporate taxation can be found in the Neumark report of 1962 which concluded that a harmonisation of tax bases was desirable in order to simplify existing European tax systems. The proposal was repeated in the European Commission memorandum of 26 June 1967. More recent attempts to harmonise tax bases include the European Commission (2001).

¹⁵ See OECD (2004a).

¹⁶ See Chetcuti (2001).

More interestingly, in March 1969 the European Commission published a memorandum demanding harmonisation not only of tax bases, but also of tax rates¹⁷, followed by the 1975 Action Programme, which received, however, little attention from the Council. Raising the problem again, a 1992 review done for the European Commission suggested a harmonisation of corporate tax rates at a minimum of 30 per cent, which was perceived as relatively acceptable at the time, yet hardly conceivable nowadays.¹⁸

In 1997, the Council of the EU adopted a code of conduct on corporate taxation, which was marked by a new, voluntary approach. The member states were called to avoid behaviour considered as harmful. By harmful it considered “those business tax measures which affect, in a significant way the location of business activity within the Community.”¹⁹ That is, the code banned tax measures that were giving preferential treatment to a group of firms and offering a significantly lower tax rates than those usually applied in the Community. On 1st December 1998 a joint statement by France and Germany called for “a rapid progress towards tax harmonisation in Europe.” As the code itself contained no mode of its enforcement and was meant as voluntary, it remains unclear what real effects it might have and whether the wishes of French and German politicians can come true.²⁰

Gammie (2003) points out that the European Court of Justice (ECJ) played a important role in forming national tax policies, basically by ruling against certain practices, considered unacceptable under European law, particularly under the European Community Treaty. It is questionable, however, to what degree the ECJ decisions are relevant for the purposes of the present work. Scarcely has the ECJ tackled a lawsuit concerning tax rate differentials as such, more often it has happened that corporations were taking member states to court for limiting the possibility of reporting profits according to their wishes.²¹ In *Hurd v Jones* the ECJ ruled that a member state was justified in levying a tax on remuneration paid to its own nationals where remuneration paid to nationals of

other member states were exempt of tax, provided that the situation was wholly internal to the member state. The same reasoning has been used by the ECJ in situation where nationals of a member state were subject to higher rate because they did not reside in that state yet kept most of their assets or worked there. Nevertheless, this does not mean that member states are free in discriminating against their own nationals if they are seeking to exercise one of the freedoms guaranteed by the EC Treaty. To complicate the matters, the ECJ position on this particular point has not been entirely equivocal – in *Bachmann v Belgian State* it ruled that a business may be required to be established in the host state, if this is deemed to be necessary for attainment of an objective of public interest. On the other hand, in *Asscher v Staatssecretaris van Financiën*, the ECJ held that it was unjustifiable for Netherlands tax authorities to apply a higher rate to a non-resident on the basis that no social security contributions had been levied on the income of the non-resident in Netherlands. On the whole, the history of the ECJ rulings does not give us much information on the core of what interests us in this work – competition in taxing mobile factors of production. More generally speaking, scepticism about the possibility of tax rate harmonisation in Europe under consensual mode of decision-making is in our eyes appropriate. On the other hand, the current status quo is far from being the definitive one. Particularly, if the Constitution for Europe is adopted, a possibility of transferring the issue of direct taxation under majority rule will arise with the famous “flexibility clause.”²² In this case, the Council of the EU might unanimously decide to take majority rule decision powers about any issue deemed necessary.²³

5 Is Tax Competition Harmful?

Given the concerns tax competition raises worldwide, it is appropriate to ask whether it really is something that should be feared, or whether it is a rather harmless or even praiseworthy phenomenon. Before discussing the pros and cons of tax competition, one should clearly say what the alternative to tax competition is - it is tax harmonisation and abolition of preferential regimes. This raises the question whether - once tax competition

²² See Treaty Establishing a Constitution for Europe, Art. I-18.

²³ We subject the EU Constitution to criticism elsewhere, particularly in Roháč(2004).

is abolished - governments do not compete in different, less efficient manners, such as subsidising foreign investments, etc.²⁴

There are many arguments opponents of tax competition put forward. If we skip equity matters for the moment, we can find two main categories of objections raised against fiscal competition. First, it is argued that tax competition changes international allocation of capital in an inefficient manner, with capital as a mobile factor flowing to areas where it is taxed less, regardless of genuine economic considerations. Second, it is asserted that tax competition leads to a deterioration of tax bases, ultimately causing underprovision of public goods. The first argument can be found in a number of publications. Says OECD (2000):

[T]he project (the OECD Project on Harmful Tax Practices) is about ensuring that the burden of taxation is fairly shared and that *tax should not be the dominant factor in making capital allocation decisions*. (OECD 2000, p.5, emphasis added)

The same argument is developed in OECD (2004a). It is claimed that when investment decision are influenced by tax considerations, this results into an inefficient allocation of capital across countries. Peggy Musgrave makes this point this way:

Resources and capital in particular will flow to locations where taxes (or more precisely, net fiscal residuals) are lower, thereby distorting the regional allocation of factor use and thereby impairing the efficiency of the private sector.

(...)

Each jurisdiction taxing on a source basis will tax income accruing to foreigners so as to maximize the advantages it can derive therefrom. Lower rates of tax rates will attract foreign capital and raise the base, while higher rates will increase revenue from a given level of foreign capital. The outcome will depend on the elasticities of capital inflow responses, but there is no reason to expect that they will match the domestic share called for by the rules of international equity. (Musgrave 1991, p.286)

One is compelled to admit that, if capital taxation was coordinated so as to equalise EMTR and EATR across countries, mobile factors would be allocated geographically in

²⁴ Janeba (1998) combines competition over strategic trade policies with tax competition and shows - perhaps surprisingly - that competition leads to elimination of wasteful subsidies. Likewise, Janeba and Smart (2002) finds that a restriction on tax preferences can induce governments to behaviour leading to inefficient outcomes.

an efficient manner. Hence, a coordinated action might seem to be needed to harmonise capital taxes and to bring out the latter outcome. As the European Commission states,

[S]ome harmonisation of business taxation (both corporation tax and the personal taxation of dividends) may be required to prevent distortions of competition, particularly of investment decisions. Where tax systems are non-neutral – i.e. where relative post-tax rates of return do not correspond to relative pre-tax rates of return – resources will be misallocated. (European Commission, cited in: Mitchell (2004, p.14))

The argument has some internal logic. It sees the core of the problem in the existence of tax differentials and it proposes is tax rate harmonisation as remedy. Now the harmonisation is to be achieved by introducing a minimal rate, as in European Commission (1992). But if the problem of capital misallocation is caused by differences in tax rates among countries, than introducing a maximal rate is a solution that would be equally appropriate. Yet we are not aware that anyone who subscribes to the argument against tax competition presented above would ever propose such maximal tax rate. It should be admitted that distortions capital allocation are caused not only by capital tax differentials, but also by the absolute value of tax rates. Capital taxation in itself discourage investment by taxing away corporate profits and individual capital gains, as for instance Alesina *et al.* (1999) demonstrate in their model. In the same manner, capital taxes distort intertemporal allocation of resources by taxing deferred consumption more heavily. As a result, one should underline that in order to reduce distortions caused by capital taxation, it is crucial above all to decrease the tax rates and not to equalise them at an arbitrary level.

In our eyes, tax competition might well offer a solution to the alleged problem of misallocation of capital caused by tax differentials. If tax competition was a “race to the bottom,” then the final outcome would actually be a tax rate harmonised across countries and harmonised at a rate of zero per cent, thus eliminating capital tax distortions altogether.

The second argument used in favour of tax harmonisation is the argument closely related to the idea of a “race to the bottom.” It is argued that if tax competition is unconstrained, competing nations would set lower and lower rates on mobile factors, en-

dangering their own tax revenues and ultimately supplying an inefficiently low level of public goods. Furthermore, if public goods manifest positive externalities across borders, inhabitants of low tax jurisdiction areas bordering with high tax jurisdictions will tend to behave as free riders and elect representatives that will supply them a lower amount of public goods, as they will benefit from cross-border spill-overs. This is an especially strong argument, pervasive in literature on tax competition since Oates (1972) and the pioneering article by Zodrow and Mieszkowski (1986). In this spirit, Avi-Yonah (2000) states:

Tax competition, in turn, threatens to undermine the individual and corporate income taxes, which traditionally have been the main source of revenue (in terms of percentage of total revenue collected) for modern welfare states. The response of developed countries has been first, to shift the tax burden from (mobile) capital to (less mobile) labour, and second, when further increased taxation of labour becomes politically and economically difficult, to cut the social safety net. (Avi-Yonah 2000, p.1)

It is true that competition forces government to increasingly switch from taxation of capital to of taxation of labour income and consumption taxes. But is it something that should be denounced? We do not think so. As we argue in Part 1, capital income taxes are especially harmful for intertemporal allocation of resources and affect significantly growth rates. A transfer of tax burden from taxation of capital for instance to generalised consumption taxation would then be most welcome. But what if tax competition truly endangers the amount of social security services, or public goods in general? Razin and Sadka (1989) find in their model:

If (...) there is not sufficient coordination with the rest of the world to allow each country to tax its residents on their income from capital in the rest of the world, then tax competition leads to no tax whatsoever on capital income (...) Naturally (*sic*) the outcome of tax competition in the case in which the countries cannot tax their residents on capital income from the rest of the world is welfare inferior to the case where they can. Thus there are gains for competing countries from tax coordination. (Razin and Sadka 1989, p.4)

Peggy Musgrave (1991) puts it this way:

Movement, in particular of capital, to low-tax locations permits the owner who resides in a high tax location to act a free rider enjoying a high level of public services without contributing to their cost. As a result, voting patterns will be distorted, burdens will be shifted, and an inefficient level of public provision will result. (Musgrave 1991, p.286)

To arrive at such conclusion, the above mentioned authors must make one important assumption. They must presume that governments behave as benevolent welfare maximizing agents which were initially supplying the efficient amount of public goods. If this was the case, then tax competition would really lead to a welfare-deficient situation.

Yet these assumptions are completely detached from reality. First of all, it should be clear that the vast majority of government activities have little to do with providing public goods and that we are witnessing an important expansion of government spending, which is due mainly to inefficiencies inherent in government operation.

These may include a lack of knowledge on the part of the voters and government officials and lack of incentives to acquire relevant knowledge (rational ignorance). In addition, voting procedures are unstable and competition on the political markets is imperfect (public goods are “sold” in bundles). Furthermore, one should mention the existence of rents and incentives for rent seeking and discretion on the part of public servants and politicians. What is more, interest groups may and do exercise pressure in order to attain state of affairs that is desired by them, usually to the detriment of the general public. It should be noted that judiciary and public servants themselves represent extremely powerful interest groups, mainly by their agenda setting power. Their activities may often be described as behaviour of budget maximising bureaus.

Moreover, government behaviour through time is a source of inefficiency. Governments change periodically, which induces a myopic behaviour like deliberate redistributive manipulations in order to acquire votes and so forth.²⁵

²⁵ Rogoff (1990) describes in detail systematic distortions in public expenditures as a function of elections. Block (2003) provides evidence for this model of government behaviour, using data for a large number for developing countries. In the same spirit, Drazen and Eslava (2005) offer both a model of the Political Budget Cycle and evidence using data from Colombian municipalities.

It is for all of these reasons that democratic governments tend to grow, resembling often to the well known Leviathan. At the current point of time, no reduction in the scope of their activities can possibly affect the quantity of public goods provided and, indeed, each and every reform aiming at this reduction is badly needed. Thus, if tax competition restricts governments in their taxing powers, it is something that should be hailed and not feared.

Another set of arguments raised against fiscal competition is of normative nature. It is unfair, it is alleged, for one group of individuals to be able to switch their income-earning assets to low tax jurisdictions, while the majority of the general public has to pay high taxes in the jurisdiction of residence. It is utmost problematic to refute an argument based on normative assumptions concerning distribution of wealth in a society, for it often boils down to argument about what one believes or not to be morally right and wrong. Nevertheless, several remarks deserve to be pronounced about the above presented normative position.

First, with the increased mobility of capital, it is not that difficult even for the general public to invest abroad and to avoid paying taxes in high-tax jurisdictions. What once was privilege of a few is now a common practice, and thus this argument loses much of its initial appeal.

Second, if we assumed that tax avoidance is practiced mainly by a high-income minority, it is still difficult to say that it would be something morally unacceptable. High income individuals pay a lot more in taxes than low income people do though they consume basically the same public goods. Is this fair? One might respond affirmatively by pointing at a need of solidarity within a society, yet this response would be completely arbitrary. It is equally defensible to say that everyone should pay exactly the same amount in taxes and that a higher taxation of rich people is morally wrong; the latter being the normative position to which we adhere. In that case, tax avoidance is a most justifiable act.

What is of interest for us is that in the real world, tax competition emerges as a means of subjecting governments to more discipline and allows individuals to escape the burden of prohibitively high taxation. That is the commonsense argument we try to put forward in this work. This idea emerges from a particular vision of the government,

notably the one presented in Buchanan and Brennan (2000). This vision does not take the benevolence and the efficiency of government for granted and attempts to provide economic insights into the political processes. As a matter of fact, economic theory of tax competition which overlooks the role of political processes misses what is crucial in the whole issue. There have been several attempts to model effects of tax competition on welfare, taking into consideration the existence and nature of politics. Besley and Smart (2001) for instance consider both yardstick competition and tax competition in the strict sense. The latter is modelled as an increase in marginal costs of public goods. The authors represent the political process as a game with imperfect information from the part of voters, who cannot *a priori* distinguish “bad” (those maximising their own rents) from “good” (those maximising voters’ welfare) politicians. They find that tax competition may enhance welfare if it leads to an increase in the ability of voters to detect bad political incumbents. Yet if there are other means available to discipline officials, tax competition can conceivably decrease welfare.

Among other attempts to represent tax competition within a more general framework of a model of political processes, Janeba and Schjelderup (2004) deserve mentioning. Their paper present a comparative public finance model of both European-style parliamentary democracies and US-like presidential-congressional systems and show that increasing tax competition is likely to improve voter welfare. The main merit of their work is that they speak in the language of standard tax competition theoreticians, uniting in their models both the distorting effects of tax competition and distorting effects of political process itself and they show that increased competition can indeed improve utility.

6 Concluding Remarks

This work attempted at several things. First, it tried to define cogently the subject of tax competition and to show empirical evidence for its existence. Second, we reviewed major reactions to tax competition on the part of international policy-making organisations. We then argued that much of the rationale for restraining tax competition – as proposed by the OECD or the EU – does not hold if one takes into account knowledge of how governments work.

Methodology of our work might have stricken one as being rather idiosyncratic. We attempted to reconcile standard economic analysis with sensible reasoning, inspired in many respects by teachings of the Austrian School. We are aware how risky this attempt is. We know that for instance the model we use can easily be criticised from a number of perspectives. Assumptions made about production, behaviour of government and related technical details such as twice continuous differentiability can be perceived as grossly simplifying and unjustifiably restrictive. From our perspective, however, it would be counter-productive to abandon altogether the mainstream concepts that we use. We want to emphasise that if we did so, we could not say too much about the subject, for purely aprioristic reasoning some Austrian economists employ has its severe limits. The nature of fiscal competition is, in our eyes, to some extent empirical and forces one to employ methods of scientific investigation that do not yield aprioristic conclusions and eternal truths, but only statements of validity limited by the character of model from which they are derived, or by significance of evidence provided. Furthermore, we believe that there could be a broader consensus on the issue of tax competition as its merits can be demonstrated not only in the context of aprioristic reasoning, as suggested by the Austrians, but also in a framework of rather mainstream economic theory.

Hence, we would be happy if this paper helped to bridge cleavages between mainstream public finance theory and the Austrians, as we believe that fiscal behaviour of governments and the need of restraining irresponsibility of elected officials is a theme that should be appealing to economists endorsing a number of different methodological positions.

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