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Published: 01/01/2009

Document Version

Publisher's PDF, also known as Version of record

[Link to publication](#)

Citation for published version (APA):

Zagler, M. (2009). *The EU CCCTB proposal. A critical appraisal*. SFB International Tax Coordination, WU Vienna University of Economics and Business. Discussion Papers SFB International Tax Coordination Vol. 31

Discussion Paper No. 31

The EU CCCTB Proposal: A Critical Appraisal

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FWF

The EU CCCTB Proposal: A Critical Appraisal*

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Abstract

With the ambition to reduce compliance costs for multinational enterprises within the European Union, but also in order to reduce the erosion of the tax base through transfer pricing and harmful tax competition among member states, the European Commission has promised to deliver a proposal for a Common Consolidated Corporate Tax Base (CCCTB) by the end of 2008. A vast literature has since emerged on the advantages and disadvantages of a move towards formulary apportionment (CCCTB). Whilst no official proposal has yet been submitted by the European Union, several documents have since been released. It is the novel contribution of this paper to critically evaluate the proposal itself. We argue that the formula is overly complex and should be simplified to source and destination based revenue weights only.

JEL-Codes: H25

Keywords: Tax Coordination, Formulary Apportionment, Common Consolidated Corporate Tax Base, European Union.

* The author would like to acknowledge financial support from the FWF SFB Project F2008 on International Tax Coordination and would like to thank Manfred Haas, Markus Leibrecht, Josef Schuch, participants of the National Tax Association Annual Meeting and the SFB Research Seminar for helpful comments.

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1. Motivation

The current international system of corporate income taxation is coming under more and more scrutiny. Evidence for this fact is ranging from case study evidence to empirical macroeconomic considerations. Jean Pierre Vidal (2009) has recently presented the Glaxo Smith Kline case study, which clearly identifies theoretical problems of the current system. In brief, the case, currently under investigation in the Canadian judicial system, is about pharmaceutical product, which Glaxo Smith Kline Canada is importing from Singapore. The price of the imported substance is significantly above the price of imported generic medicines, so that the district court has ruled that Glaxo Smith Kline is transferring profits outside Canada according to arms-length transfer pricing rules.

However, as Vidal (2009) argues, the reason is that the Glaxo Smith Kline medicine is the original product, and costs approximately 250% more than the generic medicine. The product has been innovated in Switzerland, the brand name is British, production has been in Singapore, and only distribution and marketing happened in Canada. It is therefore economically justified to transfer part of the rent of the product outside Canada. Indeed, without the innovation, but probably even without the brand name, profits from sales of the product in Canada would probably be zero, which brings the entire concept of transfer pricing and thus the current international system of corporate income taxation under scrutiny, at least for innovative products sold monopolistic competition, with or without a fringe. The question then arises how to split the profit among the involved countries.

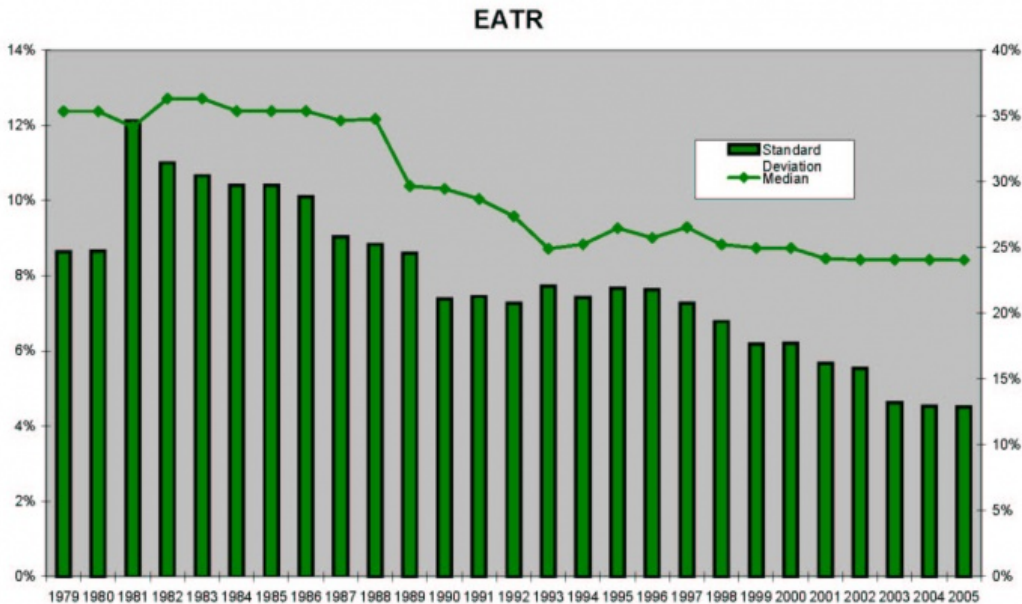
A second piece of evidence comes from the peculiarities of the now obsolete difference between Austrian commercial and taxation law. Whilst the prior followed the principle of the “ordentliche Kaufmann” (scrupulous merchant), the latter is the basis for corporate income taxation. The difference lies in a large number of allowances, in particular for depreciations. The difference should not be systematic.

The certainly not unbiased globalization critical non-governmental organization Atac Austria has compared corporate income tax rates for Austrian firms with commercial law instead of tax law as the tax base for the year 2002, when commercial law still existed, and the statutory corporate income tax rate in Austria was 34%. Several firms did not pay any corporate income tax at all, despite positive profits according to commercial law, notably Baxter, Kraft, IBM, and Wienstrom (the Vienna Electricity Utility). Novartis and Römerquelle (bottled water) nearly missed the mark, with a corporate income tax rate of 0.1%. They are followed by NÖM (milk and milk products) with 6.2% and Baumax, a hardware reseller with 6.3%.

Clearly, there may be good reasons for the difference between commercial and tax law profits. Following the logic of the the Glaxo Smith Kline case described above, several

multinational companies operating in Austria may rightfully repatriate profits to their origin, as these profits are derive from patents or brands that are foreign, and not domestic production. However, the list contains several companies with a predominantly domestic orientation, such as Wienstrom, Römerquelle, NÖM and Baumax. The question arises whether firms do not systematically use aggressive methods of tax planning in order to reduce corporate income taxation. Apart from tax planning, this of course requires the existence of low tax countries, where profits can be relocated.

Firms certainly rely on transfer pricing to reduce profits. Some striking cases were collected by Pak and Zdanovicz (2002), who find that a US company pays paid \$ 3,050 per liter mineral water imported from the Netherlands, \$ 8,252 per wristwatch imported from China, but sold airplane seats for only 10 cents to China. Countries can fight the decline in the tax base by reducing the scope of tax planning, which is a tedious activity, and by reducing tax rates. The latter of course leads to a race to reduce tax rates amongst countries, which should be empirically observable. The following graph indicates the median effective average corporate income tax rate of the OECD economies as computed by the Devereux-Griffith method (1998), and the standard deviation. A similar pattern can be observed for effective marginal tax rates and statutory tax rates. The latter would actually be sufficient to motivate profit shifting.

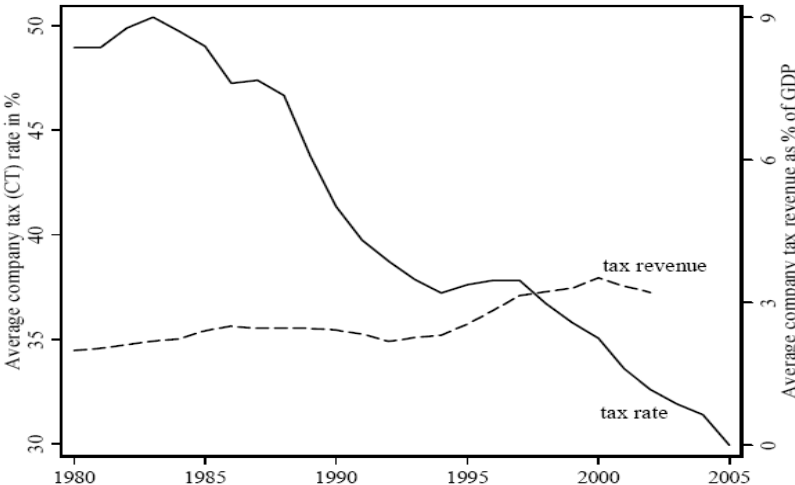


Source: Vondra (2008)

We observe that over time the effective average tax rates have declined from a median above 35% to a median below 25%. More importantly, we also observe that the standard deviation has also declined, indicating that countries reduce their tax rates in order to set rates more in line with international competitors. Whilst the decline in rates can be explained by efficiency gains due to a reduction in the excess burden of taxation, the decline in the standard deviation can only be interpreted by the race to the bottom in international corporate income taxation. A similar pattern can also be found for effective marginal corporate income tax rates (Vondra, 2008).

Surprisingly, we do not yet see declining corporate income tax revenues. With falling tax rates, this implies that the tax base must have been growing at an even larger velocity. Several reasons can help to explain this phenomenon. First, profitability of corporations may have increased over the years. Second, corporations may have switched from debt finance to equity. Whilst thin capitalization rules have encouraged this move, we see little empirical evidence for this. Third, countries may have reduced the tax rate but increased the tax base. Clearly this process is bound to end when the tax base has reached 100%. Fourth, lower tax rates could stimulate economic activity and thus lead to an enlargement of the tax base. This effect can only be triggered by individuals deciding to move from dependent labor to self-employment and corporatization. Indeed, the number and size of corporations has been growing rapidly over the past decades. This effect can explain part of the increase in the profit share with respect to the labor share in most industrialized economies. But a higher profit share also implies more profits per value added, and thus higher revenues from profit taxation.

Figure 1: Average corporate tax rates and revenues of EU-15 countries, 1980-2005



As the increase in profit shares and the corporatization of the economy cannot go on forever, tax revenues are bound to decline in the future. These three pieces of evidence, from individual case studies to empirical macroeconomic observations, imply that the current international system of corporate income taxation requires reform.

The European Union has seen this trend for a long time, and several initiatives have been set in place in order to reform the current system of corporate income taxation. The first proposals, the Neumark Report from 1962 and the Van den Tempel Report from 1970 call for a harmonization of corporate income tax rates across the European Union. They were unsuccessful, just like their followers, the Draft Directive (1975), and the Ruding Report (1992). The Bolkestein Report (2001) was the first to propose a single common tax base for all EU-wide operations, and can be seen as the precursor of the current initiative.

This latest EU initiative is the proposal for a European wide common consolidated corporate income tax base. Initially the commission promised to publish a proposal in Fall 2008, but failed to do so. However, a series of Working Papers of the CCCTB Working Group have been published, which allows a discussion of the current state of the EU proposal. Whilst there is a vast literature on the advantages and disadvantages of the introduction of a CCCTB in Europe (e.g. Weiner, 2007), this paper will focus on the advantages and disadvantages of the current EU proposal. The next chapter will briefly present the apportionment formula and a small model that can help to interpret the effects. We will then use the model to interpret the EU CCCTB proposal.

2. The EU CCCTB

The European Union aims at introducing a Common Consolidated Corporate Tax Base (CCCTB). The ideas are not new, and have been successfully applied in the United States for a long time. The idea is that instead of separate accounting in each state of operation, firms can have consolidated accounting, and profits are taxed in each state where the firm has a nexus, i.e. either sales or workers or physical capital. (Wildasin 2002).

The ideas have been analyzed in depth (e.g. Lang et. al, 2008). In a recent working paper, (CCCTB WG, 2007) the European Commission have finally specified some ideas about the division of profits of multinational European enterprises among member states.

The European Commission presents four firm specific criteria which should split the CCCTB among its member states. The first element is the share of sales which a company makes in a member state. Revenues are destination based, cover only core business and only if the firm has an establishment in the country. The second element is the payroll paid to all workers, excluding outsourcing of jobs. This weight is sourced based. The third element is

the number of full-time equivalent employees. Finally, immobile, material property is used to capture physical capital. This last weight is once again source based. We can represent country i 's tax revenues T of the CCCTB with the following apportionment formula,

$$(1) \quad T^i = t^i \left[a \frac{R^i}{R^{all}} + b \frac{w^i L^i}{w^{all} L^{all}} + c \frac{L^i}{L^{all}} + d \frac{K^i}{K^{all}} \right] * CCCTB = t^i \Phi^i \pi$$

where each country can choose an individual tax rate t on the common consolidated tax base π , with the sharing factor Φ expressed in square parenthesis. The weights a , b , c , and d , which should add up to unity, attached to revenues R , the payroll wL , labor L , and property K are supposed to be identical across all member states. The working paper so far gives no indication with respect to specific weights, except for identical weights on payroll and labor, $b = c$.

The apportionment formula differs from the idealized "Massachusetts formula", which assigns equal weights to all factors except labor, with $c = 0$. It also differs from the current Canadian formula, which only uses revenues and payroll at equal weights, $a = b = 1/2$ and $c = d = 0$. It finally differs from the individual US state formulae, which on average have $a = 1/2$, $b = d = 1/4$ and $c = 0$. The European Union thus wishes to introduce a new factor.

The apportionment formula contains both input measures (K and L) and output measures (R). It also contains source based measures (K and L) and destination based measures (R). The formula contains nominal measures (R , wL) and real measures (K and L). Still, several potential candidates are missing from the equation, most notably a source based revenue measure.

3. The Model

In order to analyze the proposal of the European Union Common Consolidated Tax Base (EU CCCTB), we will construct a small model. We assume that firms produce output using capital and labor as sole inputs,

$$(2) \quad Y = F(K, L).$$

We will further assume that firms may have some market power, so that their choice of quantity supplied may have an influence on the price, so that revenues will be

$$(3) \quad R = YP(Y).$$

Firms maximize net profits, which are defined as revenues minus labor and capital costs and taxes,

$$(4) \quad \pi = R - wL - rK - T .$$

Maximization of profits with respect to capital yields after some manipulation,

$$(5) \quad \alpha R = (1 + \mu)[rK + \tau^K T],$$

where α is the output elasticity of capital, $(dY/dK) K/Y$, the capital elasticity of taxation τ^K is given by $(dT/dK) K/T$. Finally, the mark-up μ depends on the price elasticity of demand, with $\mu = -1/(\varepsilon + 1) > 0$ and $\varepsilon = (dY/dP) P/Y$. The equation states that the marginal value product $\alpha R/K$ must equal marginal costs times the mark-up. An increase in taxation T can be offset either by an increase in the marginal product of capital $\alpha R/K$, which typically requires a lower level of the capital stock due to the law of the diminishing marginal product, or a decline in the rental cost of capital rK . In both cases, an increase in taxation will lead to a decline in the capital stock.

Equivalently, maximization with respect to labor inputs yields,

$$(6) \quad \alpha R = (1 + \mu)[wL + \tau^L T],$$

where τ^L is the labor elasticity of taxation. It is important to note that the current corporate income tax system is independent of the allocation of production factors, or $\tau^K = \tau^L = 0$. With a CCCTB, the tax elasticities are different from zero. A CCCTB is therefore not neutral with respect to the allocation of factors of production. The larger the tax elasticities, the larger will be the impact of the CCCTB on factor allocation. Indeed, a CCCTB should not be considered a tax on profits, but instead a tax on the interaction term between profits and production factors. It has been noted that the advantages of eliminating the problem of exporting profits through transfer prices can only be achieved by allowing the reallocation of factors of production due to the distortionary effects of the common consolidated corporate taxation. (Wagener and Pethig, 2007) The EU initiative for a common consolidated tax base has been driven by the ambition to target immobile factors was taken in order to reduce the deadweight loss of taxation.

Substituting the first order conditions (5) and (6) into profits (4) yields

$$(7) \quad \pi = [1 - (\alpha + \beta)/(1 + \mu)]R - (1 - \tau^K - \tau^L)T .$$

Net profits are a function of total revenues and taxes. With constant returns to scale and under the absence of market power, the first term equals zero. The larger the diseconomies of scale and obviously the higher market power, the larger will be the share of revenues going to profits. Market power is of course preventing the social optimum, so that an optimal corporate income tax rate can be established.

Indeed, we can ensure input optimality by setting $\tau^K T = \alpha\mu/(1 + \mu)R$ and $\tau^L T = \beta\mu/(1 + \mu)R$. This implies that optimal apportionment factors b and d can be established.

We also observe from (6) that net profits decline with an increase in taxation unless $\tau^K T + \tau^L T > 1$. Net profits fall by less than unity as the possibility to shift production factors allows firms to reduce the tax burden. We can use the apportionment formula to find

$$(8) \quad \pi = \frac{1 - (\alpha + \beta)/(1 + \mu)}{1 + (1 - \tau^K - \tau^L)t\Phi} R.$$

As total tax revenues are proportional to profits (CCCTB) profits are proportional to revenues. In that respect a large differentiation of weighting factors overly complicates the system with little gain, unless α , β , μ , and τ vary a lot. The major difference, as established before, remains the distinction between source based and destination based weights. In that respect, a formula which would be solely based on revenues, both source and residence based, would serve just as well as an overly complicated system. As this may lead to the reintroduction of transfer pricing, using production costs instead of source based revenues would work just as fine. Substituting the first order condition for labor (6) and the apportionment formula (1) into profits (7) yields,

$$(9) \quad \pi = \frac{1 + \mu - \alpha - \beta}{\alpha + \alpha(1 - \tau^K)t\Phi - (1 + \mu - \beta)\tau^L t\Phi} wL.$$

In this respect, the payroll can be used as a good proxy for source based revenues, so that the Canadian system is indeed a smart candidate for a simple but effective candidate for a consolidated corporate income tax base taxation system.

4. A critical appraisal

With this model established, we can now focus on the discussion of the current EU proposal for a CCCTB. In doing so, it is important to note that countries that for economic reasons have a higher share in the weighting structure will receive higher revenues, and can therefore reduce their tax rates. Tax competition under CCCTB is therefore alive, and depends on the particular weighting structure. Note that the European Union, as opposed to the US, does not allow different weights across member states.

4.1. Inclusion of property

The first interesting aspect of the European Union proposal is the inclusion of property, or capital in the apportionment formula. Capital is extremely difficult to measure and therefore induces high compliance costs for firms. As shown in the model above, capital is closely related to a source based revenue measure (5), which can be further tracked back to payroll (6). In that respect, there is little gain from including capital in the formula, with large associated costs. Indeed, the Canadian system, which is known to perform much better than the US alternative, does not include capital.

4.2. Inclusion of labor

The second interesting and novel aspect of the EU formula is the inclusion of full-time equivalent workers in the measure. Apart from the obvious difficulties arising by the fact that firms can outsource part of the workforce, which they will do in high tax countries but not in low tax countries, thus generating inefficient decisions, this weight deserves some merit.

Including labor is consistent with the inclusion of capital (see 4.1), as both are factors of production. Together, capital and labor are inputs in production, so that an input measure of company activity can be fully established. There is, however, already another measure of labor inputs present, which is payroll. The latter is once again a function of source-based revenues (6). Labor in full-time equivalents is the real analog to payroll. Dividing equation (5) by prices P , we find that labor is a proxy for real source based output, weighted at the real wage.

This allows us to make two observations. First, as long as prices are fairly homogenous across European Union member states, there is little difference between labor and payroll weights. Different prices are probably not present in the Euro area, but may matter vis-à-vis new member states. These countries will probably have lower price levels, so that the revenue measure will under weigh the part of profits going to these economies. The labor measure can partially compensate for that.

Second, according to equation (6), labor is weighted by real wages. Real wages can vary for several reasons across European Union members. On the one hand, this may reflect the degree of market power present in these economies. The higher market power of firms, the lower will the real wage be. This therefore attributes a relatively high weight to labor as a proxy for a source based revenue measure. In that respect, it punishes labor-intensive non-competitive economies. On the other hand, low wages may be the result low productivity industries, which would also exhibit low profits.

A possible intention of the European Union may be that by including labor low-wage economies gain some weight in the formula, and thus a larger share of the CCCTB. If wages and profits are low due to low productivity industries, this would be in clear contrast to existing practice of international profit assignment. With a high weight, this implies under identical tax rates, that these economies would receive a relatively larger share of the revenues. The new member states have already proven that they will exploit these advantages by reducing the tax rate, thus triggering a new wave of tax competition in statutory rates.

4.3. Identical weights for payroll and labor

Interestingly, the EU proposal has not yet established the targeted weights for the four factors in the formula. They have only agreed that they should be identical across Europe. However, they have fixed the relative weights between labor and payroll at 50:50, without giving any reason at all. With identical weights, we can add these two factors in the formula (1) to give

$$(10) \quad \frac{w^i L^i}{wL} + \frac{L^i}{L} = \left(1 + \frac{w}{w^i}\right) \frac{w^i L^i}{wL}.$$

The second weight in (10) measures the average wage cost in the multinational company, the prior attributes a higher weight for a higher than average national wage. Moving the weight from the prior to the latter would increase tax revenues for the low wage economies, and thus “punishes” high wage countries. However, there is no evidence that an equal share would be the optimal punishment. This particular feature can lead to reduction in wages in order to secure competitiveness.

4.4. Identical weights for all members

As noted above, the EU CCCTB proposal attributes identical weights (a , b , c , and d) to all weighting factors. In the United States, these weights are aggressively used to attract different kind of firms. Until recently, the payroll weight was reduced in order to attract jobs, and the capital weight was reduced in order to attract high tech firms that bring high wage jobs. This has actually lead to a tendency to shift more and more towards revenue taxation. As shown in the model here, this leads to a simple but powerful formula which is revenue based only. Thus, CCCTB would turn out to be an interaction tax between VAT and CIT.

Within Europe, competition over the optimal formula is not permitted. This will make competition over the tax rate certainly much fiercer, as the only option for countries to attract business of any kind is to reduce the statutory rate, which they are free to do.

5. Conclusions

With the ambition to reduce compliance costs for multinational enterprises within the European Union, but also in order to reduce the erosion of the tax base through transfer pricing and harmful tax competition among member states, the European Commission has promised to deliver a proposal for a CCCTB by the end of 2008. A vast literature has since emerged on the advantages and disadvantages of a move towards formulary apportionment (CCCTB). Whilst no official proposal has yet been submitted by the European Union, several documents have since been released. It is the novel contribution of this paper to critically evaluate the proposal itself.

Starting from the proposed EU formula, this paper has presented a little model which proves that most of the four weighting factors, revenues, payroll, labor and capital, can be tracked back to revenue measures, which are much simpler to identify. The merit of a complex formula lies in the fact that manipulation is not as lucrative, and that the market power externality can be overcome. As the more complex weighting factors, in particular capital, is easiest to manipulate, the first argument has little merit. As market power is certainly not homogenous across Europe, and difficult to estimate, a CCCTB formula that eliminates market power altogether will not be found and would require different weights across EU member states.

For these reasons, we argue that a simpler formula, relying on a source based and a destination based revenue measure alone would achieve very similar results without introducing a lot of complexity and would therefore make the introduction of a CCCTB in Europe more likely.

Appendix

Derivation of the first order condition (5):

$$\frac{\partial \pi}{\partial K} = \frac{\partial Y}{\partial K} P(Y) + Y \frac{\partial P}{\partial Y} \frac{\partial Y}{\partial K} - r - \frac{\partial T}{\partial K} = 0$$

$$\frac{Y P(Y)}{K} \left[\frac{K}{Y} \frac{\partial Y}{\partial K} + \left(\frac{Y}{P(Y)} \frac{\partial P}{\partial Y} \right) \left(\frac{K}{Y} \frac{\partial Y}{\partial K} \right) \right] = r + \frac{\partial T}{\partial K}$$

$$\frac{R}{K}[\alpha + \alpha(\frac{Y}{P(Y)} \frac{\partial P}{\partial Y})] = r + \frac{\partial T}{\partial K}$$

$$\alpha R[1 + \frac{Y}{P(Y)} \frac{\partial P}{\partial Y}] = rK + \frac{K}{T} \frac{\partial T}{\partial K} T$$

$$\alpha R = [1 + \frac{Y}{P(Y)} \frac{\partial P}{\partial Y}]^{-1} [rK + \tau^K T]$$

$$\alpha R = (1 + \mu)[rK + \tau^K T]$$

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