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Capital Taxation after EU Enlargement

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Editorial

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The Oesterreichische Nationalbank (OeNB), the Austrian Institute of Economic Research (WIFO) and the University of Vienna organized a full-day workshop on "Capital Taxation after EU enlargement", which was hosted by the OeNB on January 21, 2005.

The potential implications of significant regional differences in corporate tax burdens in the enlarged European Union for capital allocation have been dominating the tax policy debate in Austria for some time. After all, some of the New Member States have only recently announced or implemented sweeping company and income tax reforms that aim at making their regions more attractive for FDI and firms' location decisions in general. As a result there have been calls for further decreases in company tax rates also in the Old Member States. For instance, the considerable difference of the Austrian corporate income tax (CIT) rate compared to its neighboring countries, especially Hungary and the Slovak Republic, has already led to a significant cut of the CIT rate in Austria's most recent tax reform.

This workshop centered on several questions: Which implications do significant regional tax differentials have for foreign direct investment (FDI)? Should (and for what reasons) CIT be levied in the first place? Which efficiency problems are linked with capital taxation? Moreover, it was looked into the issue of the rapidly intensifying tax competition and the increased need for coordinating CIT and capital tax policies as well as generally into the future of company taxation in the enlarged European Union.

Peter Mooslechner (OeNB) emphasized in his introductory remarks that intended and unintended spillover effects have to be taken into account in designing tax reforms in small, open economies and that in an "open environment"

the problem of levying taxes on mobile tax bases in general hinges on the possibility of an induced tax base flight (positive externality to other countries) or a tax induced tax base import (negative externality to other countries). He pointed out that the focus of tax reforms has significantly changed over the decades. Whereas in the 1980s, efficiency, simplicity and equity considerations were the keywords of tax reform proposals the tax reforms have been aiming at reducing the tax burden since the 1990s, in particular for more profitable and mobile firm.

Karl Aiginger (WIFO) underlined in his opening address that company taxation is a topic of high relevance for growth and employment in general and in particular for financing the European model of the welfare state, and also for the goal to decrease the income and productivity gap between Old and New Member States. He stated that this workshop may be viewed as a follow-up to the international conference on "Tax Competition and Coordination of Tax Policy in the European Union" that was held in Vienna in 1998 under the Austrian EU presidency. As there are still problems and questions in the realm of capital taxation in the European context that have not been resolved seven years after that first conference and as the enlargement has increased the complexity of the competition-versus-coordination debate further research is essential.

Since the accession of the ten New Member States in May 2004, transnational corporations have to cope with 25 different systems of company taxation in the EU. Statutory tax rates in the New Member States are lower on average than in the EU-15. However, compared to the EU-15, not only statutory tax rates, but also effective average tax rates (EATR) are significantly lower in almost all New Member States. Tax incentives, such as reduced CIT rates or CIT rebates and tax holidays in special economic zones, still play an important role in the New Member States. Thus, they offer a highly attractive tax environment in general. In the first session, *Christian Bellak (Vienna University of Economics and Business Administration)*, *Markus Leibrecht (OeNB)* and *Roman Römisch (Vienna Institute of International Economic Studies (WIIW)* inquired into the implications of company taxation for FDI. The empirical literature is highly controversial on this topic. According to Bellak et al., methodological differences are, among other things, responsible for the highly divergent outcomes of past empirical analyses. Obtaining valid empirical results on the interrelationship of company taxation and FDI requires an adequate computation method. In their view, firms' location decisions are influenced by EATR. More exactly, it is the bilateral EATR that impacts on FDI, as they account for the CIT provisions of the host country as well as international tax rules and the CIT provisions applicable in the parent company's home country. The bilateral EATR calculated by them for seven important home countries and five New Member States for the period from 1996 to 2004 show that statutory CIT rates in general are higher than domestic EATR and that bilateral EATR are usually higher than the statutory CIT rates of the host country. Using bilateral EATR in the empirical determination of the FDI tax rate elasticity yields

significantly higher (negative) tax elasticities for the five New Member States examined. The estimated tax rate elasticities are, however, likely to decrease when other business location factors (e.g. public infrastructure and agglomeration effects) are considered.

In his comment of the pros and cons of the existing methodological approaches to computing the effective corporate tax burden, *Christian Beer (OeNB)* emphasized that the existing tax burden indicators shed light on different aspects. The macro-backward looking approach should be used to analyze the burden imposed on different tax bases (e.g. capital and labor) or to measure changes of the tax burden over time. The micro-backward looking approach – while inappropriate for isolating the influence of the different company tax systems – can be used to compute the effective corporate tax burden on enterprises of different sizes and sectors. Beer maintained that the micro forward looking approach neglects key elements of the tax systems and is based on – often rather arbitrarily chosen – restrictive assumptions. In *Otto Farny's (Vienna Chamber of Labor)* view, the micro-forward looking approach to computing effective tax rates, which is based on model investment projects and the respective tax laws, disregards the fact that the difference between the notional and the actual tax burden may be significant (especially in the New Member States); this problem is avoided by using the backward looking approach, which uses actual tax payments and may therefore point at the significance of tax avoidance. Furthermore, he criticized the fact of stylizing the corporate tax burden as the key determinant of business location and investment decisions and called for further empirical analyses of the influence of wage-based taxes and charges on FDI.

Session 2 revolved around two central aspects of corporate and capital taxation. *Alfons Weichenrieder (University of Frankfurt)* questioned in his presentation the need for corporate taxation and underscored the relevance of this issue for small open economies in particular, since tax theory seems to suggest that the best solution for them would be to abolish capital taxation altogether. He stated that despite an international trend in recent years to lower CIT rates, the GDP share of CIT revenues remained relatively stable; admittedly, owing to an increase in the number of incorporated enterprises and to the measures to broaden the tax base. However, international comparisons show that EATR were lowered to a considerable extent during the last decades. Analyzing the arguments given in the public finance literature in favor of the separate taxation of legal persons, Weichenrieder concluded that neither the classic argument of a benefit tax, i.e. a "quasi fee" for the use of the public infrastructure, nor the argument of a fee for the privilege of the shareholders' limited liability (and limited risk) sufficiently justify the separate taxation of incorporated enterprises. A further argument, namely that CIT can be used as a way to tax foreigners in a system of liberalized capital markets is only valid on the condition that taxes levied in the host country may be refunded in the home country of the multinational company. If, on the other hand,

CIT is regarded as a prepayment of the personal income tax (PIT), precautions have to be taken to avoid double taxation. Should PIT on capital income be desired, a positive CIT rate is essential according to Weichenrieder, as CIT is supposed to function as a "backstop" to prevent shareholders from escaping capital income taxation via profit retention and to reduce the attraction of declaring labor income as capital income. However, if CIT is more favorable than PIT, taxpayers will try to save money via the corporate shelter, especially if capital gains are not subject to taxation during the retention period.

Christian Keuschnigg (University of St. Gallen) focused on the interrelations of capital income taxation and long-term economic growth on the basis of his complex proposal for a capital taxation reform in Switzerland. This proposal essentially aims at the elimination of tax-induced distortions of investment and saving decisions by combining a specific variant of the dual income tax (as implemented in Northern Europe) with a change in the taxation of equity. Keuschnigg recommends reducing the double taxation of dividends while at the same time introducing effective taxation of capital gains with a view to reducing tax-induced distortions that are adversely affecting investment decisions (and thus also the accumulation of capital) and tax-induced distortions concerning the choice of both organizational form and type of financing. He advocates leveling the tax burden on all types of capital income at the personal level by introducing a uniform proportional tax. He claims that this will in all probability not cause any tax-induced distortions to private investors' behavior and will furthermore result in comparable tax burdens on enterprises independent of their organizational form. As only company rents and excess profits should be subject to taxation this would constitute a reduction of the average tax burden on enterprises and should, in turn, improve the competitiveness of a country as EATR play a key role in multinational enterprises' choice of business locations. At the same time, a more effective taxation of capital income would eliminate a tax loophole that exists in almost all countries and makes retentions profitable (lock-in effect). If the tax rate is chosen accordingly, entrepreneurs will not be encouraged to record labor income as capital income (tax arbitrage). In his presentation, Keuschnigg also touched on the taxation of venture capital (VC)-funded startups. Challenging the current practice of subsidizing VC-funded startups, he claimed that levying taxes on startups combined with a tax break would raise their quality, i.e. their net worth. In his opinion, replacing a non-performance related capital subsidy by a performace related tax break would be welfare improving.

Anton Rainer (Austrian Federal Ministry of Finance) commented that the significance of corporate taxes, and especially their role in business location decisions, is generally overestimated. However, he concided that tax competition is important and is likely to lead to a race to the bottom with respect to capital taxes. He also agreed with the speakers that reducing the CIT might be a "profitable strategy" for small open economies. Besides, he generally wondered about the

relevance of (quantitative) analyses based on dynamic equilibrium models since such models rest upon numerous and restrictive implicit assumptions. *Alex Stomper (University of Vienna)* emphasized the impact of the perspective (corporate finance versus public finance) on the approach to analyzing the company tax issue. He argued that Keuschnigg's tax reform proposals could actually seriously hamper the supply of equity capital to start-ups and to those firms in general that are rarely in the position to issue equity, irrespective of the way equity financing is taxed. In his view, it is most important to find out which financing alternatives are available to a certain type of company in imperfect capital markets and which financing structure serves best, as well as to determine the impact of the various types of funding on investment decisions and the influence of tax provisions on the various financing alternatives.

The leading question for the third session was whether tax policies in an economically integrated area should be coordinated or left to the discretion of national governments. In the EU, this question is particularly relevant for direct taxes since indirect taxes are already harmonized to a considerable extent. *Bernd Genser (University of Konstanz)* outlined the achievements and failures of the EU in harmonizing corporate taxation. During the past four decades, the EU commissioned a series of reports on the harmonization of CIT, with the aim of leveling the playing field within the Common Market, abolishing discriminatory tax practices, and avoiding fiscal externalities. However, none of the blueprints included in these reports was ever implemented. Genser stressed that this must not be interpreted as a failure of coordination policies, since numerous issues tackled in these reports were actually incorporated into the relevant EU provisions, e.g. the Parent-Subsidiary Directive (1990), the Merger Directive (1990), and the Code of Conduct (1997). Nevertheless, several key issues have yet to be resolved. A case in point are the highly heterogeneous statutory and effective marginal and average CIT rates across Europe, which generates distortions in the allocation of capital and creates inefficient incentives for national governments to use their tax instruments in a strategic manner. Some of these problems are addressed in the Bolkestein Report of 2001, which proposes various approaches to harmonize the CIT base for EU-wide operations of multinationals in combination with an allocation system for the distribution of the tax revenues among the EU Member States. While leaving tax autonomy to the national governments, the proposal aims at substantially reducing compliance costs, eliminating incentives for cross-border profit shifting, implementing capital export neutrality, and crowding out many incentives for unfair or strategic tax practices. However, as Genser pointed out, the Bolkestein proposals give rise to new problems: Member States need to agree on a reasonable allocation key, the system might produce negative fiscal externalities, and the issue of non-EU activities has not been addressed at all. However, the Bolkestein proposals deserve credit for demonstrating that CIT harmonization is not

necessarily accompanied by the loss of national tax autonomy, as it allows for various ways of CIT/PIT integration along national tax traditions.

Lars P. Feld (University of Marburg) discussed the issue of tax competition within the Common Market, where companies can choose to locate mobile factors in the country offering the most attractive package of tax rules and public services. This fact invariably leads to competition among Member States. According to the Tiebout hypothesis, such a "voting by feet" would serve as an incentive to improve the efficiency of public services. Feld argues that this effect unfortunately is only of academic value since externalities between countries render decentralized tax policies inefficient. Moreover, public services are in many ways not comparable with "normal" goods. Even if a Tiebout World led to increased efficiency, it would still be incompatible with the large-scale redistribution policies of the European welfare states. All these aspects cast doubt on the viability or desirability of tax competition. On the other hand, tax competition may appear attractive from a political-economy perspective: the potential abusive behavior of politicians and governments will be limited by taxpayers' mobility. Under the pressure of yardstick competition in an open economy, best-practice solutions and political reforms might be adopted more quickly and effectively. Hence, there is no conclusive evidence in favor of or against tax competition from a theoretical perspective. Therefore, Feld compared the actual performance of decentralized and centralized tax policies and came to the insight that there is sufficient evidence to substantiate the hypothesis that fiscal competition enhances economic efficiency and that the assumption that decentralization will lead to a collapse of the welfare state and put an end to redistribution policies was not sustained. Also the impact of fiscal decentralization on economic growth is unclear. Finally, some evidence suggests that fiscal decentralization will increase political innovation and higher citizen satisfaction. On the basis of these observations, Feld concluded that fiscal competition, if appropriately controlled by political procedures, has some advantages over harmonization.

The discussants basically agreed with Genser's and Feld's analyses but added some qualifications. *Daniele Franco (Banca d'Italia)* warned of taking political-economy arguments in favor of tax competition too seriously since democratic systems had a range of built-in mechanisms apart from tax competition to control government opportunism. He advocated a gradual approach to the design of new tax systems as the benefits and costs of neither tax competition nor tax coordination were certain or quantifiable for the time being. *Martin Zagler (Vienna University of Economics and Business Administration)* questioned whether tax competition is (or will ever be) compatible with the welfare state concept. Thus, tax coordination is predominantly an issue of distribution. This, however, means that tax coordination will only arise if countries have similar preferences over redistributive policies. He further argued that eliminating capital tax competition

does not necessarily preclude "tax competition", as competition could merely shift to "commodity tax competition".

In the last session *Sijbren Cnossen (University of Maastricht)* gave an overview of current tax practices and focused on the question if (and how) capital income should be taxed in the future. As levying taxes on economic rents is commonly accepted as justified, the answer to the remaining question, if (and to what extent) taxes should be levied on normal returns hinges on efficiency, equity and enforcement issues. Cnossen specified three relevant models apart from the existing capital income tax systems: the dual income tax model, the comprehensive business income tax model, and a net wealth tax. The existing capital income tax systems are characterized by the trend of levying higher taxes on labor income than on capital income and of tax discrimination against dividend payouts and in favor of debt financing. Cnossen recommended the introduction of a dual income tax system that includes comprehensive withholding taxes on interest income and the approximation of capital income tax rates. He voiced doubts about the current tax harmonization plans under discussion in the EU, especially with regard to the introduction of a common tax base and a harmonized European CIT. In his view, tax coordination is indispensable for effective capital income taxation, but he also underscored the importance of the subsidiarity principle.

In his comment, *Ewald Nowotny (Vienna University of Economics and Business Administration)* agreed with *Sijbren Cnossen* on the necessity for further tax coordination in Europe. He emphasized that the concept of comprehensive income taxation is advocated in theory only and that it is no longer very relevant in the EU as today taxes on labor income are generally (in part significantly) higher than those on capital income. He stated that taking into account that EU competition policy has been more sensitive towards direct subsidies than against tax transfers. This results in a clear incentive for Member States to substitute direct subsidies by tax incentives. He acknowledged the Nordic system of dual income taxation favored by Cnossen as an interesting solution, but he pointed out that Norway, Sweden and Finland have also effective wealth taxation systems. In his view, above all the distributional aspects have to be considered in economic policy assessments as tax competition applies particularly to the taxation of corporate profits and high labor incomes. According to Nowotny, the possibility for legal tax evasion and thus free-riding by big multinational companies creates massive allocative inefficiences as tax competition leads to distortions in the tax burden for international enterprises and local SMEs.

The workshop "Capital Taxation after EU Enlargement" covered a broad range of topical issues; the accession of ten New Member States with ten different tax systems makes these issues all the more important for the future economic development within the EU and for the design of the EU's economic policies. Due to varying methodological approaches, however, the analysis of the 25 different CIT systems based on the effective tax burden failed to furnish final and conclusive

data of their effects on FDI. Aligning a CIT reform (or a comprehensive capital taxation reform) with the aim of increasing the long-term growth was generally acknowledged as a highly complex challenge both from an economic and a social perspective. Even if it is not possible to prove conclusively whether tax competition or tax harmonization is more advantageous in the field of corporate taxation, a certain degree of tax coordination between EU countries seems indispensable. The bottom line of this intensive workshop was that more research work is clearly needed to create a firm basis for fiscal policy decisions at the EU level.

Competition – Location – Harmonization:
The Challenges of Capital Taxation after
EU Enlargement

Peter Mooslechner

Oesterreichische Nationalbank

Welcome Address

Joseph Schumpeter wrote in his essay "Die Krise des Steuerstaates"[1] (1918) that public finance is one of the best starting points to analyze the social and political situation. And he continues that this is particularly true for periods of fundamental change and of transformation because this is usually reflected in problems of public finances. Taking the current European situation as it is and given the ongoing political discussions concerning capital taxation all over Europe, one – at least – cannot rule out that he might be right again.

Taxation, in general, is at the core of public action since centuries. It affects the propensity of work, the propensity to save, risk taking and innovation. It influences cyclical developments, long-term growth via effects on investment and capital accumulation and the taxation of income and wealth. One basic tax principle is that taxation, when intended to correct market failures or to generate revenues for public tasks, should not (excessively) distort economic decisions and reduce incentives to work, invest and take risks. This principle is of particular interest in the context of open economies as openness offers mobile factors of production the possibility to move – to move to those places which promise them, ceteris paribus, the highest rate of return after taxation. However location decisions, if based dominantly on the basis of tax differences, distort the international allocation of capital and reduce international welfare.

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[1] J. Schumpeter (1976) Die Krise des Steuerstaates, in R. Hickel (ed.), R. Goldscheid, J. Schumpeter, Die Finanzkrise des Steuerstaates, Beiträge zur politischen Ökonomie der Staatsfinanzen, Frankfurt am Main.

Six Questions to Address the Relevant Issues

In this highly topical workshop a number of issues is pointed out which are at the core of today's academic discussion. Approaching issues of capital taxation under the specific conditions of EU-enlargement very much sharpens the importance and the relevance of this topic.[2]

In general, six questions may be seen as the main points to be addressed in the overall context of capital or corporate income taxation:

(i)   Is it justified to collect corporate income taxes?

(ii)   If yes, which effects they may have on growth?

(iii)   What are the arguments for tax competition versus tax harmonization?

(iv)   Is there an – economic or political – need for coordinating corporate tax and capital tax policies in the European Union?

(v)   What are the relevant differences in effective tax rates between Old and New Member States of the enlarged EU?

(vi)   And, finally, how important are effective tax rates and/or differences in corporate tax rate as a location factor for FDIs?

Keeping these elements in mind, what is the overall starting point for all these issues? Significant regional differences in the corporate tax burden currently dominate the tax policy debate not only in Austria but all over Europe. In particular, some of the New Member States have only recently implemented or announced tax reforms that aim at making them more attractive for FDI and as a business location in general. For example, in Austria – as in many other countries – the recent tax reform included a significant cut of the corporate income tax rate, which was mainly triggered by considerable differences in tax burdens compared to some neighboring countries.

This illustrates that in small and open or in open and integrating economies, the policy makers introducing tax reforms have to take into account that spillover effects tend to be important. In the end, tax policy can be used as a form of beggar-thy-neighbor policy, including all kinds of negative macroeconomic consequences. In nowadays political reality, concerns about the effects of tax rates on international competitiveness are obviously the driving forces behind corporate tax reforms.

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[2] For an excellent overview of the relevant issues see Devereux, M. P., Griffith, R., Klemm, A., Corporate income tax reforms and international tax competition, Economic Policy 35 (2002).

The situation becomes further complicated by the argument raised in the public debate that (large) corporations tend to evade taxation by shifting profits from high-tax to low-tax countries. On today's globalized markets it is not only easier for investors and corporations to shift assets or activities across borders but definitely harder for a state not to participate in the competition for internationally mobile capital. The ongoing integration process evidently restricts the room for taxing mobile tax bases on the cost of immobile tax bases.

Hence, the ongoing integration process has – considered from the perspective of governments - an impact, not only in terms of creating scope for proactive measures in global location competition. This process evidently restricts the room for tax increases on mobile tax bases on the cost of immobile tax bases. In an open economy, the problem of levying taxes on mobile tax bases hinges on the possibility of an induced tax base flight (positive externality to other countries) or a tax induced tax base import (negative externality to other countries). The latter implies the strategic use of tax policy measures designed to attract tax bases, such as financial capital, by offering foreign investors favorable tax treatment of capital income. However, we all are aware, that the empirical findings, about tax-induced location decision of FDI are rather inconclusive.

Tax Reforms and the History of the Corporate Taxation Debate in Europe

Discussing the challenges of capital taxation today, one needs to ask first for a definite understanding of what has happened in the field of corporate taxation in Europe over the last two decades. Empirically, statutory tax rates on corporate income declined significantly since the early 1980s in all EU Member States. At the same time, effective taxation has decreased much less but it converged somewhat across countries.

In the 1980s, efficiency, simplicity and equity were the keywords of tax reform proposals – based on the consensus for a need to broaden tax bases and reduce dispersion of tax rates in order to reduce tax induced distortions. In the late 1990s, somewhat contrary to the reforms a decade before, the reforms also aimed at reducing the overall tax burden. Specific targets of the reforms in the 1980s were (i) to promote employment and investment via lower marginal taxation, (ii) to increase tax neutrality with respect to savings and financing instruments, (iii) to improve the efficiency of tax administration and, last but not least, (iv) to simplify tax codes. However, tax-cutting and base-broadening reforms have had the effect that, on average across EU Member States, effective tax rates on marginal investment have remained fairly stable.

In parallel to this empirical developments, one has also to be aware of important historical changes in European corporate tax policy as well, on the one hand influencing and on the other hand reflecting changing policy attitudes towards

capital taxation. In 1992, the EU's Ruding Committee proposed a minimum statutory corporation tax rate of 30%. At that time, only Ireland had a lower rate than this – and then only for the manufacturing industry. Now, 12 years later, not only most of the New Member States but also about one third of the Old EU Member States have tax rates at or below this level. In contrast, the Bolkestein Report of 2001 suggested implementing a common consolidated corporate tax base and home state taxation for small and medium sized enterprises. However, empirical studies asking whether European countries have engaged in some form of tax competition in corporate income taxation over the past decades show that no strong conclusions can be drawn and that one has to be very cautious in interpreting the evidence. If anything, effective tax rates seem to have in fact converged across countries.

Last but not least, in order to prevent harmful tax competition and to tackle the tax avoidance practice of multinational corporations, the EU Council has adopted a resolution on a Code of Conduct for business taxation – although this is not expected to produce significant results in the short term. On the face of it all these reforms seem consistent with the predictions of economic theory. It has been argued that increasing capital mobility will lead to a "race to the bottom" as countries compete with each other to attract capital (based on source-based capital income taxes). Policy makers have been concerned that this downward pressure on corporate income taxes might lead to a loss of revenue, and thus provide a constraint on government activity. In 1997 the European Commission also expressed concern that this process is forcing governments to rely more heavily on taxes on labor which will in turn increase unemployment. The European Commission and the OECD have made attempts at international coordination to counter what they see as "harmful" tax competition.

The view that corporate income tax rates have fallen in response to increased mobility of capital, as countries compete to lower the cost of capital within their jurisdictions, is not generally borne out by data. However, countries may instead compete for the activities of mobile multinational firms, which have access to valuable proprietary assets, rather than simply for mobile capital. The literature on multinational firms emphasizes that such firms make discrete investment choices: for example, whether to export to a new market or to produce locally, or within a new location to site a new production facility. The impact of taxes on such discrete decisions is not captured by the effective marginal tax rate. Instead, it depends on the proportion of total profit taken in tax, measured by the effective average tax rate. This measure also depends on both, the tax rate and the tax base, so that the effect of the rate-cutting, base-broadening reforms could be either to increase or decrease this effective rate. The evidence point to a fall in the effective average tax rate averaged across countries. This however, means, that the "standard" model from the theoretical tax competition literature does not explain the reforms, since it

(implicitly) focuses on only one aspect of the tax schedule – the effective marginal tax rate.

The finding that there has been a decline in the effective average tax rate may indicate a process of competition to attract more profitable and mobile firms as a fall in this rate benefits more profitable firms. If such firms also tend to be more mobile – and if their mobility has increased over time – then governments may gain by shifting the shape of the tax schedule in order to attract them.

A different explanation for the observed reforms is the idea that governments also compete for flows of taxable profit as well as for inward flows of capital. That is, conditional on where they locate their real activities, firms may be able to shift their profit between countries in order to reduce their worldwide tax liabilities. A reduction in the cost of profit shifting would provoke governments to lower the tax rates and also the tax allowances in order to recoup the tax revenue lost from being obliged to have a lower tax rate.

Tax Competition versus Tax Harmonization – Is there a Clearcut Policy Advise for the Reality of Tax Policy?

One of the current hot topics as well from a theoretical as, in particular, from a policy point of view is the issue of tax competition versus tax harmonization. The well known standard result of the literature on tax competition is that countries have an incentive to reduce taxes on locally invested capital. The intuitive explanation behind is that a small country cannot influence the world rate of return available to domestic investors. In this setting, if countries compete to attract foreign capital, they have an incentive to reduce taxes on capital and keep them at a low level.

This basic result needs to be further qualified by specifying the tax principle applied in taxing cross-border investment, namely whether capital income is taxed according to the source-based or the residence-based principle of taxation. In reality, the enforcement of the residence principle in taxing worldwide corporate income is confronted with a number of administrative and practical difficulties. Therefore, capital in most countries is taxed on the basis of the source principle. This departure from the residence-based tax principle and the application of the source principle lies at the heart of the worries expressed within the EU over the last decades.

Under these conditions, it is not surprising that the economic debate and the political process have moved forward to discuss issues of tax harmonization, thereby avoiding negative effects of tax competition. Surprisingly little research has yet been undertaken on the economic effects of tax harmonization, which – of course - has its specific problems as for example moral hazard or differences in preferences. Hence, it might be reasonable to go into the direction of some hybrid

form between tax competition and tax harmonization which tries to establish some fundamental common rules across countries by "tax coordination".

No doubt, issues of capital and corporate taxation are at the core of the European tax policy debate and will continue to stay there for some time. Today's workshop offers the opportunity to shed light on a number of important aspects in this context. It is my particular pleasure to welcome you all and to thank you for joining us today here at Oesterreichische Nationalbank, first of all those who have accepted our invitation to act as speakers or discussants. Special thanks, of course, go to the organizers of the workshop who have invested a lot of efforts over the last month to make this event possible. I am quite sure that we will see fascinating and stimulating discussions.

Company Taxation – an Unsolved Issue
of EU Policy Making

Karl Aiginger

Austrian Institute of Economic Research

Welcome Address

Insufficient Growth in Europe

The European Union is currently facing numerous problems. Focussing on the economic problems alone, let us recall slow growth, high unemployment, and the increasing diversity of Member States since the last enlargement round.

In 2004 the world economy enjoyed its fastest expansion since 1988, growing by 4.2%, with Europe contributing a sluggish rate of a little more than 2% only. For 2005 the world economy is expected to grow by 3.5%, China by 8%, U.S.A. 3.8%, EU-25 will be trailing again with a growth rate of 1.9%. Fortunately the New Member States are growing a few percentage points faster, thus representing one of the growth poles in Europe (the second one are the Scandinavian countries). The unemployment rate in Europe is persistently high at 8%; and even higher in the accession countries (12%). The gap between rich and poor countries is large, New Member States have on average only 60% of per capita GDP of the Old Member States, the incomes in the top regions of the EU are now 4.4 times larger than in those of the poorest 10%.

The Impact of Taxation

The impact of taxes on growth is controversial. Many economists relate the higher growth rate of the U.S.A. relative to Europe to lower tax rates in the U.S.A. But growth in Europe had been higher than in the U.S.A. in the decades before, at a time when also taxes were higher in Europe. Moreover, several high growth countries in Europe have comprehensive welfare systems with high overall tax burdens. While the direct relation between growth and taxes is not easy to

establish, there is increasing evidence that the tax structure and the structure of government revenues are important for growth. Taxes can support or slow down economic activity (depending on incentives to work and to invest, to establish new firms, or to relocate business). Government expenditures financed by taxes can support or decrease growth (depending on whether they are spent for education, research or public inputs for firms on the one hand or on consumption or military spending on the other). Overall, there is weak evidence that lower taxes are supportive to growth, but the relation is not robust and clear-cut, and other growth determinants are at least as important.

The Topic of the Workshop

The general topic of the workshop is the future of company taxation in Europe after EU enlargement. This topic is of high relevance for growth and employment, for financing the European model of the welfare state, and for decreasing the income and productivity gap between old and New Member States.

In a certain sense this workshop may be viewed as a follow-up to the international conference on "Tax Competition and Coordination of Tax Policy in the European Union" that was held in Vienna in 1998 under the Austrian EU presidency. Two speakers of that conference are present also today, Professor Bernd Genser from Konstanz, and Professor Sijbren Cnossen from Maastricht.

The issues that will be discussed today, however, have been selected from a more narrow perspective: This workshop will focus on the *taxation of companies*, instead of dealing with the implications of the increasing *European integration for national tax systems* in general, as the 1998 conference did.

What Has Happened on the Positive Side?

A review of the measures implemented since then to coordinate capital taxation in the EU shows that some progress could be achieved in the fight against harmful tax competition: Obviously the European directive on the *effective taxation of interest income* will finally come into effect in the middle of this year. Also the *code of conduct on business taxation*, which aims at the elimination of unfair tax practices distorting fair tax competition, has brought about considerable success in the last few years.

However, one *fundamental debate* is still being led with undiminished intensity among economists: Is tax competition within regular company taxation systems harmful and should it be restricted therefore, or is it to be regarded as beneficial and thus should not be subjected to any constraints: and the positions taken in this dispute seem to be as irreconcilable as ever.

One strand in the literature regards tax competition as efficiency-enhancing, as it prevents Leviathan-governments from exploiting tax-payers and therefore creates

a barrier to inefficiently large public sectors. The proponents of capital tax coordination or harmonisation point out potential economically harmful effects of an unbridled tax competition: In particular, they fear an inefficient allocation of capital, the shift of the tax burden to labour or the under-provision of public goods or welfare payments and negative effects on income distribution.

I think it is not biased to say that the majority of economists and politicians favour some limits to tax competition, may it be with the purpose to limit budget deficits, to finance the European model of the welfare state, or to retain money for research, education or infrastructure (investment into the future). The former Austrian Minister of Finance Rudolf Edlinger claimed in his Opening Speech in 1998: "We have invited you to this conference because one of the main issues on the agenda of the Austrian presidency is an increased coordination and harmonisation of tax policies within the EU." And Mario Monti had added: "Only two years ago, perhaps one year ago, a conference like this would have been just a high-level academic conference. Today, it is an event from which we expect policy-oriented reflections on how to make further progress in implementing a strategy of tax coordination in the European Union that has been clearly set and agreed upon."

The Changing Environment

Comparing some of the titles of the 1998 conference (e.g. "The Pros and Cons of Tax Competition" or "Perspectives of Capital Taxation") with the headings of today's speeches (for example "The Case for Tax Competition", "The Case for Tax Coordination", "The Future of Capital Taxation") suggests that there are still problems and questions in the realm of capital taxation in the European **context** that have not been resolved almost seven years after our first conference.

However, one important element for this debate has changed after the accession of ten New Member States to the European Union in May 2004. The enlargement has increased the complexity of the competition-versus-coordination debate. The old EU Member States by and large can be regarded as a rather homogeneous country club, at least in the meantime. The accession of eight Central and Eastern European countries that are in a different economic situation and have differing institutions and traditions, however, has transformed the EU into an economic area which is characterised by an unprecedented degree of (economic) heterogeneity. This may make it necessary to re-think and to question established knowledge and convictions concerning the coordination and the design of capital taxation in the European Union. Today's workshop does not only aim at solving the debate on the necessity and the options of capital tax coordination in the EU. It will also put the taxation of capital into a new perspective, that of European enlargement. If we assess the European problems, the different options how to return to a higher

growth path, and the conflicting views on the impact of corporate taxation, I am sure that the workshop will become very interesting and stimulating.

The workshop is jointly organised by the Oesterreichische Nationalbank (OeNB), the University of Vienna, and the Austrian Institute of Economic Research. Since I will not be able to attend all sessions and specifically not the last one I may take the opportunity to thank the organisers and particularly Margit Schratzenstaller from the Austrian Institute of Economic Research, Walpurga Köhler-Töglhofer from the OeNB, and Andreas Wagener from the University of Vienna for their work. We are also grateful to the OeNB for hosting and co-financing the workshop. And last but not least I would like to thank all speakers and discussants; some of them travelled long distances to participate in today's workshop.

FDI and Taxation:

Some Methodological Aspects and New Evidence for Central and Eastern European Countries (CEE-NMS)[1]

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1. Introduction

Recent company taxation policies in the Central and Eastern European New Member States (CEE-NMS) have been frequently characterised as tax-cutting strategies in order to attract Foreign Direct Investment[2] (FDI; Dobrinsky, 2003; Jarass and Obermair, 2000). Such policies are usually based on predictions that the tax burden levied upon corporate profits will have a substantial influence on (real)

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[1] Abbreviations used in the text are explained in section 7.

[2] In what follows FDI and real multinational activity are normally used interchangeably. The important exception is when we are dealing with FDI-flows or -stocks (see below).

investment of Multinational Companies (MNCs). Whether there is a relationship between the tax burden levied on corporate profits and FDI is an entirely empirical question.[3] Answers are usually based upon the estimation of "tax rate elasticities".[4] But for reaching reliable results several pre-requisites must be fulfilled. These include adequate measures of FDI and a valid indicator of the tax burden levied on FDI as well as a sound theoretical framework on which the choice of explanatory variables included in an econometric specification rests.

   This paper[5] is concerned with the first two pre-requisites. Specifically, the purpose is to discuss the choice of appropriate FDI data and the choice of an appropriate measure of the tax burden levied upon FDI in studies analysing the determinants of FDI in general and in the CEE-NMS in particular. The paper is structured as follows. First, the results of earlier studies on the value of econometrically estimated tax rate elasticities are briefly reviewed, thereby separating evidence on CEE-NMS and "periphery countries" from evidence on "core countries". Second, it is discussed which indicators of tax burden should be used as well as disadvantages of using FDI-flow and -stock data as an indicator of MNC real activity. Third, a description and an empirical analysis of the theoretical measures of the tax burden is provided, which are thought to be a reliable indicator for the tax burden levied upon FDI of seven home countries[6] in the CEE-NMS (i.e., Slovenia (SI), Hungary (HU), Poland (PL), the Czech Republic (CZ) and the Slovak Republic (SK)). These host countries have been selected, since they became members of the EU recently and thus, their tax policies may have provoked taxation related reactions by incumbent EU Member States even more directly than in the past. The seven home countries are the largest investors in these countries on average, ranked by their shares of FDI stocks.[7]

2. Survey of Empirical Studies: Does Tax Policy Work to Attract FDI?

This paper focuses on tax rate elasticities explicitly or implicitly provided by several empirical studies. The studies are grouped into those which deal with FDI mainly within the group of developed or "core" countries (homogenous group) and

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[3] So far only few studies dealing with this topic have a regional focus on the CEE-NMS.

[4] These are defined as the percentage change in FDI following a percentage point change in some measure of the tax burden (DeMooij and Ederveen 2001, Appendix).

[5] This study has been prepared under FWF (Austrian Science Fund) contract Nr. 1008, Sonderforschungsbereich "International Tax Coordination":
http://www2.wu-wien.ac.at/taxlaw/sfb/

[6] Austria, France, Germany, Netherlands, United Kingdom, U.S.A., Italy.

[7] On average these countries are among the most important investors in all the host countries considered. Other countries like Switzerland and Belgium are important for single host countries, only (see OECD 2004 and Bank of Slovenia for details).

those which exclusively analyse FDI originating in developed countries and directed to countries with a relatively lower level of development, like the CEE-NMS and periphery countries (heterogeneous group). The separation of these two country groups is based on the idea that motives for FDI directed into the two groups of countries may differ, and hence FDI could react differently to changes in the tax rate. Thus, if cost and efficiency-related motives are predominant, FDI in "core-periphery" pairs of countries should be rather responsive to changes in tax rates, since this affects directly their production costs. Since empirical results suggest a dominance of market-related motives for FDI in both country groups and thus a low share of purely efficiency-related FDI, we do not expect significant differences in tax rate elasticities. However, apart from the motivation, there are a number of FDI related peculiarities of the CEE-NMS and periphery countries, which might lead to differences in tax rate elasticities between the two country groups (core group and the heterogeneous group). Some such peculiarities of the CEE-NMS will be discussed below (section 2.2).

2.1 FDI within Core Countries (Homogenous Group)

Concerning homogenous countries we rely upon the detailed meta-analysis of 25 empirical studies carried out by DeMooij and Ederveen (2001, 2003). Their findings suggest a median value of the tax rate elasticity of −3.3 (excluding extreme values).[8] That is, a 1 percentage point reduction in the host country tax rate raises FDI in that country by 3.3%. In order to compare different empirical studies, the reported results have been standardised (see below for the various definitions of elasticities and how they are inter-related). The authors note, however, a large variability by type of FDI, by source of finance, by sector, by year etc. A result, which is of particular relevance for our study is that "FDI seems more responsive to effective or average tax rates than to Statutory tax rates" (ibidem 2003, p. 690). Since the publication of DeMooij's and Ederveen's paper, several important studies, some of them are listed in column three of table 1 (see below), have been published. Since our focus here is on CEE-NMS, these studies are not reviewed here in greater detail.

2.2 FDI from Core to Periphery Countries (Heterogeneous Group)

From table 1 it is evident that the empirical evidence on the effects taxation has on FDI to the CEE-NMS is still limited. This is in marked contrast to ongoing public debates, both in incumbent EU Member States and CEE-NMS. Before presenting a median tax rate elasticity deduced from the available studies it is insightful to

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[8] An extreme value is defined as a value which is more than 2 standard deviations from the mean value (DeMooij and Ederveen, 2001).

discuss some FDI related peculiarities of the CEE-NMS as these differences may result in a higher propensity of the CEE-NMS to use company taxation as an instrument to attract FDI.

2.2.1 The Share of Efficiency-Related FDI

Following a number of surveys (Lankes and Venables, 1996, Altzinger 1998 on Austrian FDI; Lankes and Wes, 2001; for an overview see Szanyi, 1999) on the motives for manufacturing FDI in the CEE-NMS foreign investment enterprises grosso modo can be separated into re-export-oriented and market-oriented companies. According to this classification by motives the most important motives for FDI were low production costs in the CEE-NMS on the one hand and gaining market access (to the host market or to the CEE-NMS region in total) on the other hand. Up to 1996, these surveys indicate that approximately two thirds to three fourth of manufacturing FDI have been market-oriented. Given that returns for host-market related FDI will diminish the more non-export-oriented companies are established in the CEE-NMS it appears likely that the share of efficiency-oriented FDI in terms of enterprises will increase in the future. Since taxes directly impact on the costs of production, it is conceivable that efficiency-oriented FDI is more responsive to tax changes than market-oriented FDI. Consequently, the probability that CEE-NMS countries *inter alia* use corporate taxation as an instrument to attract FDI will also increase.

2.2.2 The Share of Greenfield FDI in Total FDI

There are two main channels of FDI in the CEE-NMS: either through mergers and acquisitions of existing firms (M&A or brownfield FDI, including privatisation) or through establishing a new firm (greenfield FDI). According to Lankes and Wes (1999) the proportion of greenfield FDI to M&A is approximately 50% if the number of manufacturing investment projects is considered. Yet, the proportion of greenfield FDI to total FDI is considerably lower in terms of the actual amount of FDI or in employment terms – approximately 25% to 33% according to several authors (Lankes and Wes, 2001, Antalóczy and Sass, 2001, Zemplinerová and Jarolím, 2001).[9] Greenfield FDI is expected to be more responsive to tax rate changes than acquisitions, where the location of the target object is given. Since a major part of M&As in the CEE-NMS was due to privatization and the number of privatization objects decreases over time, the proportion of greenfield FDI will

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[9] It should be mentioned, however, that the distinction between greenfield FDI and M&A is somewhat artificial, as the latter do not differ from the former in many cases, if the acquired firm has been totally restructured.

increase. This may raise the importance of corporate taxation as a determinant of FDI.

2.2.3 Maturity of FDI

The profitability of affiliates in CEE-NMS is related to their age. For example, Dell'mour (2003) reports for Austrian FDI in the CEE-NMS that the profitability of affiliates, which existed for five or more years, is significantly higher (7.3% median value) than for younger affiliates (2.7%) (see also Altzinger, 2003). Since FDI in today's CEE-NMS generally were not possible before 1989, the foreign affiliates are mostly young firms. The increase of the profitability over time might lead to a change in the financing of the affiliate abroad. The parent company might increasingly rely on reinvested profits rather than on own capital transfers and thus through the interaction of home and host country legislation, taxation becomes a more prominent determinant of FDI.

2.2.4 Small Country Property

With respect to tax policy, the probability that small countries engage in tax competition is higher than for larger countries. This argument is based upon theoretical considerations by Bucovetsky and Wilson (1991) and Wilson (1999), who find that small countries engaging in tax competition might receive net welfare gains from lowering taxes. Related to this Krogstrup (2003) argues that larger countries are less sensitive to tax competition as their agglomeration advantages allow them to set higher taxes than smaller countries. These arguments suggest that the CEE-NMS might find it beneficial to lower their tax rates further, since with the exception of Poland the CEE-NMS are small to medium-sized countries.

2.2.5 Strong Preference of CEE-NMS for FDI

With the start of the transition process FDI was considered to be one of the main vehicles to accelerate economic development in the CEE-NMS. Besides compensating for the lack of domestic investment, the role of FDI was to facilitate restructuring via transferring technology and know-how, removing inefficiencies etc. Though the restructuring aspects might have lost importance over the years, the possibility that FDI generate employment and growth still induces a high preference for foreign capital in CEE-NMS. This might have become even more important, through the recent EU-accession, because of a facilitated access to the EU Common Market and an induced growth of political stability. The high preference for FDI makes CEE-NMS' governments especially prone to tax cuts as a means to attract FDI.

Based upon this FDI related peculiarities of the CEE-NMS we expect the tax rate elasticities to be larger in absolute value in CEE-NMS compared to those of OECD countries. However there also exist several arguments against the existence of a close correlation between taxes and FDI (based on Büttner, 2001). Since the mobility of firms is limited, few re-locations or shifts of profits to low tax countries should occur in the short term due to tax (rate) changes. Therefore, quick success of tax-lowering strategies is not to be expected. A (debated) indication is the fact that despite generally lower tax rates, corporate tax income as percentage of GDP has risen in European countries on average.

2.2.6 Recent Studies on Taxation and FDI

Building on the meta-analysis by DeMooij and Ederveen (2003) reported above, we add and review the following papers (table 1, column 1 and 2)[10]:

Table 1: Recent Studies on Taxation and FDI by Country Group

Eastern Europe	*Periphery Countries*	*Core countries*
Alfano (2004)	Mintz and Tsiopoulos (1994)	Beaulieu, McKenzie and Wen (2004)
Beyer (2002a)		Benassy-Quere, Fontange and Lahreche-Revil (2003)
Carstensen and Toubal (2004)		Desai, Foley and Hines (2004)
Edmiston, Mudd and Valev (2003)		Hansson and Olafsdotter (2004)
Javorcik (2004)		

For reaching at comparable elasticities a standardisation of different types of elasticities reported in empirical studies (see DeMooij and Ederveen 2001, Appendix) is warranted:

$$\varepsilon = \frac{\partial \ln K}{\partial \ln t}, \text{ the tax elasticity (1)}$$

$$\varepsilon_S = \frac{\partial \ln K}{\partial t}, \text{ the tax rate elasticity or semi-elasticity (2)}$$

$$\varepsilon_a = -\frac{\partial \ln K}{\partial t}(1-t), \text{ the elasticity of the after-tax rate of return (3)}$$

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[10] Here, only the results for the CEE-NMS and periphery countries are reported.

$$\varepsilon_S = \frac{\varepsilon}{t} = -\frac{\varepsilon_a}{(1-t)}$$, describes how these elasticities are inter-related (4)

K … measure of foreign capital, t … tax on K in the foreign country

As some of the studies mentioned in table 1, column 1 and 2 used a specification in levels the following transformation was additionally made:

$$K = a + b * t \text{ (5)}$$

The *b*-coefficient was transformed into a semi-elasticity by $(100 * b)/K$ where K was evaluated at its sample mean value, which is either directly provided in the studies or is derived from the information provided there.

On the basis of these six empirical studies[11] a tax rate elasticity of –0.22 (median value, semi-elasticity) was derived. Clearly, this tax rate elasticity with respect to FDI is smaller in absolute terms in CEE-NMS than in the core countries reported above. This is contrary to our expectations. However, these results are questioned for several reasons:

- methodological shortcomings of the surveyed studies, especially an omitted variable bias as only few studies base their choice of right-hand side variables explicitly on economic theory (notably Carstensen and Toubal,2004)[12]
- the definition of MNC real activity and
- the lack of a suitable measure of the corporate tax burden.

In this paper we concentrate on the last two issues.

2.3 Measuring Corporate Tax Burden and FDI

This section discusses three features which are of particular importance in deriving tax rate elasticities: first, how to measure company tax burden appropriately, second, how to measure MNC real activity and third, to what extent these two points are interrelated.

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[11] Several other studies on location choice of MNCs in CEE-NMS (see, e.g. Janicky and Wunnava, 2004) and on taxation in CEE-NMS have been published recently (see, e.g. Dobrinsky, 2003), yet these studies do not combine the aspects of taxation and FDI, which is a serious shortcoming, if location choice is to be explained.

[12] Other methodological shortcomings in one or more of these studies include: static panel data models instead of dynamic models (omitted variable bias) and endogenity between the endogenous variable and the measure of tax burden used (simultaneity bias).

2.3.1 Measurement of Corporate Tax Burden

Which measures of tax burden should be used in empirical analysis as a determinant of FDI? In order to answer this question, it is split into two sub-questions:

(i) Which measures of tax burden are available in general?

Apart from the statutory corporate tax rates (STRs) and tax quotas the measures of tax burden may be split into backward-looking and forward-looking tax rates on the one hand and marginal and average rates on the other hand (see chart 1).[13] Each of these measures has advantages and disadvantages. Clearly, the choice of the measure of tax burden should be guided by the underlying research question, in our case the sensitivity of FDI to changes in the tax burden. It should be evident that STRs and tax quotas are no good choice if one wants to examine the tax burden levied upon FDI as these measures do not capture the tax base (STRs) or do so only in an insufficient way (tax quotas). Moreover, backward-looking tax rates are inappropriate, since profits from national and international activities cannot be disentangled and backward-looking rates can be seriously flawed due to data problems. Notably, National Accounts Data do not provide reliable data on corporate profits. Advantages of backward-looking tax rates are that they are easily calculated from real data and include tax planning activities of MNCs.

Forward-looking effective tax rates (ETRs) on the other hand focus on hypothetical ("future") investments and *inter alia* carry three conceptual advantages for analyzing taxation and FDI: (i) They distinguish between domestic and international investments (domestic vs. bilateral rates). (ii) They are calculated as either effective average tax rates (EATRs), measuring the tax burden of an infra-marginal (i.e. profitable) investment or as effective marginal tax rates (EMTRs), measuring the tax burden of an investment which just covers the cost of capital. (iii) They are suited to study FDI decisions of an MNC, which are "forward-looking", too. Disadvantages are the relatively high degree of complexity in the calculation of these rates – the net present value of a hypothetical investment has to be calculated with and without taxation – and the fact that tax planning activities of MNCs cannot be addressed with those rates. [14]

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[13] Chart 1 shows only seminal papers as references.

[14] For a detailed description of advantages and disadvantages of these rates consult *inter alia* OECD (2000) or Leibrecht and Römisch (2002).

Chart 1: Tax Burden Measures

Statutory corporate tax rates

       — Tax quotas

                Tax to GDP

                Tax to total tax revenue

Effective tax rates

Forward-looking ("hypothetical, tax code based") effective tax rates (domestic and bilateral rates)

Backward-looking ("observable from real data") effective tax rates

<u>Average effective tax rates (AETR)</u>
National-Accounts Data & OECD Revenue Statistics:
- Mendoza et al. (1994)
Firm-level data:
- Nicodeme (2001)

<u>Effective marginal tax rates (EMTR)</u>
- King/Fullerton (1984)
- OECD (1991)

<u>Effective average tax rates (EATR)</u>
- Devereux/Griffiths (1998)

<u>Marginal effective tax rates (METR)</u>
- Gordon et al. (2003)

(ii) Which forward-looking measures are appropriate?

In order to answer the second question, we start from a description of the investment decision by an MNC, following Devereux and Griffith (2003; 2002; and 1998). According to Devereux and Griffith as well as the established literature on MNCs, the investment decision should be split into three levels:

- "Level 1" is concerned with the discrimination between different types of market servicing, most importantly whether to produce at home or abroad via FDI.[15]

- "Level 2" includes the decision where to locate (where to invest), given that level 1 resulted in the decision to invest abroad. Level 2 thus

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[15] Here, we are not concerned with the choice between FDI and other types of foreign market servicing, since our dependent variable is some measure of FDI or the activity of an MNC in a host country. Thus, we take the MNC as given. Needless to mention, the first decision level in Table 2 below is explained by the OLI paradigm.

comprises *discrete* investment decisions (all-or-nothing, Mutti and Grubert 2004, p. 342).

- "Level 3": production is already in place and adjustment decisions are taken, i.e. expansion or downscaling of an existing investment abroad.

Table 2 summarises the three different decision levels described:

Table 2: Parent Company's Decision Tree for FDI

	MNC decision	*Result*
Level 1	Domestic or Abroad	FDI or home production
Level 2 conditionally upon FDI	Where?	Choice of foreign location
Level 3 conditionally upon location	How much?	Scale of production abroad

Source: based on Devereux and Griffith (2002), p. 87.

The two forward looking ETRs mentioned under (i) above are directly related to level 2 and level 3 decisions in the following way: EATRs are related to the decision where to locate (level 2), ranking the locations according to the after-tax profitability. EMTRs explain the optimal scaling of an investment (level 3), conditional on the choice of location (Devereux and Griffith, 2003, p. 108).

The conclusions from the foregoing discussion for the analysis of FDI and taxation are:

- From a conceptual point of view ETRs are superior to STRs as indicators of tax burden.
- When dealing with FDI ETRs need to be derived on a bilateral basis, which includes host and home country as well as inter- and supranational tax codes.
- When dealing with location decisions bilateral average effective rates (BEATRs) are appropriate.
- When dealing with scale decisions bilateral marginal effective tax rates are appropriate.
- EATRs and EMTRs should ideally be used in empirical studies, if the dependent variable is a measure of *aggregate FDI data*.

The last conclusion merits a short explanation: Ideally, one would have separate data on "level 2" decisions and on "level 3" decisions. However, in most cases only aggregate FDI data are available. These data typically do not allow a separation of FDI into new FDI and expansionary FDI.[16] Therefore, aggregate FDI measures

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[16] Empirically this problem of non-separability of certain types of FDI data is mitigated by the fact that the semi-elasticities do not differ significantly between studies separating or not separating these two types of FDI (DeMooij and Ederveen (2001, p. 32).

should be related to both, average and marginal effective tax rates, the former explaining new FDI (where to locate) and the latter explaining expansionary FDI (the scaling of the investment; Devereux and Griffith 1998, p. 344). Virtually all studies reviewed above use only one single measure of tax burden – most of them the STR –, despite the fact that almost all of these studies use aggregate FDI data. Most studies do not even comment on the suitability of the STR or argue that these rates and average effective tax rates behave similar empirically (e.g., Javorcik 2004).

In section 3 it will be shown that using the STR is likely to result in biased estimates of tax rate elasticities of the *location choice* of MNCs. This is simply done by comparing the level and variability of BEATRs[17] with that of the STRs.

2.3.2 The Measurement of Multinational Activity

Despite of several official and internationally agreed definitions of FDI, the choice of the appropriate indicator in empirical research is a difficult task and no commonly agreed measure exists (e.g. Bellak 1998, 1999). Here, the advantages and disadvantages of several commonly used measures are discussed briefly (see also Devereux and Griffith 2002, p. 84f.).

FDI-flows and -stocks as a measure of real multinational activity: FDI-flow and -stock data can be obtained from international databases like UNCTAD, EUROSTAT[18] or OECD. These data have been used in many empirical studies on taxation and FDI for the simple reason of data availability as they have the advantage of covering a broad range of countries and time. However these data should be used with caution:

FDI-flows may reflect only net cross-border capital flows between parent company and the subsidiary and thus exclude reinvested earnings (a problem which was particularly relevant for several Central and Eastern European countries during the early years of transition). Furthermore they may include reinvested earnings of the affiliate, which, by definition, do not cross borders, but constitute an important share of capital invested in many cases (Bellak 1998). For an insightful report, see the Magyar Nemzeti Bank (2004).

FDI stock data are either built from accumulated FDI-flows taken from the annual balance of payments (Eurostat, 2003), in which case the annual differences in stocks (i.e. FDI position data; e.g. Gorter and Parikh, 2003, p. 197) equal the

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[17] Since we are concerned with location decisions in this paper, we do not show EMTRs, which we have calculated for the same range of countries and period, yet which refer to "level 3" decisions.

[18] Gorter and Parikh (2003, p. 197), report that Eurostat constructs end of period positions and adjusts this information by correcting for inflation, exchange rate changes as well as for the revaluation of the assets and liabilities. An end of period position should thus represent the market value of the capital stock at current prices at exchange rates.

flows; or they reflect book-values, in which case the annual flows from the balance of payments may be larger or smaller than differences in annual stocks. This is due to valuation issues and the share of locally raised funds, which are not included in the balance of payments definition of FDI issued by the IMF manual. FDI stocks are ideally measured in book values, originating from company accounts. They are closer to measures of real activities than FDI-flows as they measure the capital stock which by definition in the simplified balance sheet includes real and financial assets. FDI stock data suffer, however, from the valuation at historical values, which "can be especially misleading when there has been significant inflation in some countries but not in others" (Mutti, 2003). Yet, FDI stock data carry the advantage that local borrowing in the host country is included. For a more detailed discussion and the empirical relevance of the valuation problem, see Cantwell and Bellak (1998); and Bellak and Cantwell (2004).

Among the measures thought to better reflect real activities of MNCs, the following are the most widely used measures:

Plant, property and equipment (PPE): These are referred to as "fixed assets". In other words, they are a firm's real estate, buildings, machines, factories etc. and consist of physical assets. They are carried in the balance sheet as cost, regardless of their actual value, which is the main critique to the use of PPE as reflecting the real activities of MNCs. Even if intangible assets are also carried in the balance sheet, they should be excluded as measures of real activities, since their valuation is largely meaningless. (Rather, the profit and loss account (income statement) gives an insight into the "real" value of intangibles.)

Differently from FDI stocks which reflect book values of ownership claims of controlling foreign investors (debit side of balance sheet) and thus exclude equity supplied by host country investors, PPE reflect book values of real productive assets. As Hines (1996b, p. 11) states: "PPE probably more closely corresponds to capital that enters production functions." PPEs thus exclude those components of FDI, which are financial investments. The advantage, therefore, is to exclude differences in the behaviour of real and financial assets (e.g. degree of volatility), which are well known from studies comparing portfolio investment vs. FDI. However, these measures suffer from three disadvantages, related to the valuation of capital stock, i.e. exchange rate fluctuations, inflation and the exclusion of intangible assets.

Gross product of affiliates (GPA): This measure is available almost exclusively for the U.S.A. (although other countries like Germany have similar data on sales of affiliates). Gross product is derived from financial and operating data. GPA measures the value of goods and services produced by MNCs. The measure thus differs from "sales", because sales include the inputs that the company purchases from outsiders as well as what it produces itself. Sales therefore have a drawback, since they may lead to overestimations of the real activity of MNCs in the host country. On the other hand, the drawback of GPA as reported in the BEA (Bureau

of Economic Analysis) statistics is that it does not allow inclusion of industry detail or different types of affiliate ownership.

Number of affiliates (NOA): For several countries, the number of newly established affiliates annually is available. The use of count data has several methodological implications for empirical analysis. The main advantage of this measure is that it addresses the issue of firm location more directly than FDI-flow studies (Beaulieu et al. 2004, p. 7). Also, new foreign firms may be related to the entrepreneurial activity in the host country on the whole. A certain drawback is that this measure excludes expansionary investment, yet the question is whether location choice for new investments and location choice for expansionary investments can be expected to follow the same logic. But the exclusion of expansionary investments implies, too, that there is only one measure of tax burden necessary, namely the BEATR.

The discussion shows that from a conceptual point of view PPE data represent real multinational activity best. Due to data restrictions many studies rely upon FDI-flows or -stocks. As most of the studies in column 1 and 2 of table 1 use aggregate FDI-flow or -stock data, the calculated median tax rate elasticity hence must be interpreted cautionary with respect to the impact taxation in the heterogeneous country group has upon *real* activity of foreign MNCs.

Moreover it should be mentioned that even FDI-flow and -stock data may (partly) not be available for a range of countries. One way to overcome the lack of data in this respect is to use mirror statistics, i.e. the outward FDI originating in the home country, if outward FDI is classified by host countries. But one has to be aware that there exist substantial differences between data reported by home and host countries.

3. Effective Average Tax Rates in CEE-NMS

In this section it will be shown that the usage of STRs is likely to result in biased estimates of tax rate elasticities of new FDI. This is done through a comparison of the variability of the STR and that of the conceptually superior BEATRs.

The variability of the tax rates is considered here, because it matters in an econometric estimation, rather than the absolute value of the regressor. Our prior is that replacing the conceptually appropriate effective tax rates by the STR, which is easily available, is only justified, if the variability in the STRs is not statistically different from that of the BEATR.

We calculated forward-looking ETRs based upon the Devereux and Griffith methodology as no such data have been available so far concerning the CEE-NMS. This amounts to 423 single effective average tax rates (domestic and bilateral) for seven home and five host countries for the time period 1996 to 2004.

3.1 Assumptions

Following Devereux and Griffith (1998 and 2003)[19] we do not consider personal income taxes as for MNCs the majority shareholder[20] is not known and/or she may not have the majority vote amongst shareholders and, more importantly, because we do not believe that for the managers of the MNCs the personal income tax position of the shareholders is an important factor for location decisions. We also exclude any other fiscal or non-fiscal incentives which might be provided to MNCs. In line with other studies (e.g. Yoo 2003; Devereux and Griffith 2003), the assumptions and parameters used in our calculation of ETRs are the following:

- 3 types of assets (machinery, building and inventory in the manufacturing sector)
- 3 ways of financing a hypothetical domestic investment of 1 with a pre-tax financial return of 20%[21]: retained earnings, new equity and debt
- 7 ways of financing a cross border investment of 1 with a pre-tax financial return of 20%: (i) retained earnings subsidiary; (ii) new equity subsidiary and retained earnings parent; (iii) debt subsidiary and retained earnings parent; (iv) new equity subsidiary and new equity parent; (v) debt subsidiary and debt parent; (vi) new equity subsidiary and debt parent; (vii) debt subsidiary and new equity parent.
- economic depreciation rates of the various assets: 3.61% for buildings, 12.25% for machinery, 0% for inventory
- nominal interest rate of 7.625%
- common inflation rate of 2.5% and constant nominal exchange rate
- a weighted average structure of assets (buildings / machinery / inventory) of 55% / 35% / 10%
- a weighted average structure across the various types of financing (retained earnings / equity / debt): 55 / 10 / 35 for parent and 1/3 / 1/3 / 1/3 for subsidiary.

Our assumptions about the asset structure differ from those of other studies, which mainly follow OECD (1991), because data on inventories in the CEE-NMS show

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[19] The model allows deriving effective tax rates for an average firm. Two limitations should be emphasized: First, effective tax rates are derived upon a fixed pre-tax profitability (see below) and second, profits are assumed to be equal in each location. Despite both limitations are clearly not given *in praxi*, the advantage is to better isolate the effects of changes in effective tax rates (ceteris paribus).

[20] This is the person who determines the return required on each asset. Her personal sphere needs to be considered in the calculation of "shareholder-level-EATRs" (see Devereux, 2003).

[21] In the appendix we show how the bilateral effective average tax rates depend on this assumption.

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that they are far less important than within the OECD in 1991. In particular, we assign a higher weight to investment in buildings.[22]

3.2 Data Description and Analysis

3.2.1 Statutory Corporate Tax Rates and Domestic Effective Average Tax Rates

We start from a simple comparison of overall STRs and domestic effective average rates (DEATRs). The "overall" STRs (that is including local and central government profit taxes) reported in table 3 and 4 suggest that all host countries but Slovenia face a fall in the overall STR over the period under consideration. In Slovenia the rate remained constant. With respect to the home countries only Germany and Italy see a remarkable fall in the STR. These two countries show by far the highest STR in 1996. Furthermore, while in 1996 three host countries had higher STRs than the average rate of 37.6%, all of them have below average rates (average of 29.6%) in 2004. The largest drop occurred in Slovakia and Poland within host countries and Germany within home countries, respectively. No changes in the overall STR occurred in Austria, the U.S.A. and as mentioned in Slovenia.

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[22] For explanatory notes about other assumptions consult the respective studies directly.

*Table 3: Overall Statutory Corporate Tax Rates 1996–2004, CEEC-5,
(in %)*

	CZ	HU	PL	SK	SI
1996	39.0	19.00	40.0	40.0	25.0
1997	35.0	19.00	36.0	40.0	25.0
1998	35.0	19.14	36.0	40.0	25.0
1999	35.0	19.40	34.0	40.0	25.0
2000	31.0	19.64	30.0	29.0	25.0
2001	31.0	19.64	28.0	29.0	25.0
2002	31.0	19.64	28.0	25.0	25.0
2003	31.0	19.64	27.0	25.0	25.0
2004	28.0	17.66	19.0	19.0	25.0

Source: KPMG (1996–2004) authors' calculations.

*Table 4: Overall Statutory Corporate Tax Rates 1996–2004, Home
Countries, (in %)*

	AUT	FR	GER	NL	UK	USA	IT
1996	34.0	36.7	57.40	35.0	33.0	40.0	52.20
1997	34.0	36.7	57.40	35.0	31.0	40.0	53.20
1998	34.0	41.7	56.70	35.0	31.0	40.0	41.30
1999	34.0	40.0	52.30	35.0	31.0	40.0	41.30
2000	34.0	36.6	51.85	35.0	31.0	40.0	41.25
2001	34.0	35.3	38.67	35.0	30.0	40.0	40.25
2002	34.0	34.3	38.67	34.5	30.0	40.0	40.25
2003	34.0	34.3	39.58	34.5	30.0	40.0	38.25
2004	34.0	34.3	38.67	34.5	30.0	40.0	37.25

Source: KPMG (1996–2004), authors' calculations.

Turning to DEATRs, that is ETRs which cover the host country tax code (STR as
well as allowances) only, one observes a similar development as for the overall
STR (tables 5 and 6). The DEATR fell in almost all countries. In the U.S.A. there
was no change due to a constant overall STR and constant allowances. In Austria
and Slovenia there was a slight increase due to a change in allowances combined
with a constant overall STR. One may conclude that the development of the
DEATR and the overall STR are very similar. This is not surprising as the DEATR
usually is more sensitive to changes in the overall STR than to changes in
allowances (e.g. Devereux and Griffith 2002).

Table 5: DEATRs 1996–2004 (Selected Years, in %)

	CZ	HU	PL	SK	SI	AUT	FR	GER	NL	UK	USA	IT
2004	24.5	13.6	17.9	16.3	20.5	26.8	26.8	31.1	29.2	24.9	32.9	29.6
2002	27.1	15.7	26.4	22.9	19.2	26.8	26.8	32.8	29.2	24.9	32.9	32.0
2000	27.1	15.7	28.3	26.6	19.2	26.4	28.4	41.6	29.7	24.9	32.9	32.8
1998	32.2	15.3	34.0	36.7	19.2	26.4	32.4	45.6	29.7	25.7	32.9	32.8
1996	35.9	15.2	37.8	36.9	19.2	26.4	28.5	46.1	29.7	27.4	32.9	41.5

Source: Authors' calculations.

It is important to note that tables 3 to 5 show large differences in the levels of the overall STRs and the DEATRs. This is explained by the fact that the tax base matters for the calculation of a valid indicator of the tax burden levied upon corporate profits. The STR may thus be misleading. For example, the STR for Germany is above 55% in 1996, but the DEATR is below 50%.

From these two tables a country ranking of the level of the tax burden levied upon corporate profits is easily deduced.

Table 6: Country Ranking 1996 and 2004

	STR 1996	DEATR 1996	STR 2004	DEATR 2004
Rank				
1	HU	HU	HU	HU
2	SI	SI	PL, SK	SK
3	UK	AUT	.	PL
4	AUT	UK	SI	SI
5	NL	FR	CZ	CZ
6	FR	NL	UK	UK
7	CZ	USA	AUT	FR
8	PL, SK, USA	CZ	FR	AUT
9	.	SK	NL	NL
10	.	PL	GER	IT
11	IT	IT	IT	GER
12	GER	GER	USA	USA

Source: Authors' calculations.

Table 6 shows that despite the level differences, the ranking of countries is almost independent of the indicator (STR or DEATR). It also shows that the CEE-NMS lowered their tax burden levied upon profits much more than the home countries. Especially Slovakia and Poland improved in the ranking between 1996 and 2004. Furthermore it is evident that the Czech Republic lost grounds within the CEE-

NMS. To conclude, despite the differences in absolute levels one may well use the overall STR if the aim is a simple ranking of countries.

Yet, as mentioned before, for an econometric estimation of tax rate elasticities the variability of the indicator of tax burden is more important than the absolute level of the indicator. Therefore, the standard deviations (STD) of the various rates are compared (table 7).

Table 7: Standard Deviations I (1996–2004)

	STD STR	STD DEATR
Country	percentage points	percentage points
CZ	3.33	3.61
HU	0.64	0.66
PL	6.31	5.97
SK	8.22	7.94
SI	0.00	0.55

Source: Authors' calculations.

The STDs reveal that the variability in the overall STR and the DEATR are similar for most countries.[23] Yet, as has been mentioned already the DEATR is not the relevant rate for an analysis of the response of FDI to changes in the tax burden, rather the STR has to be compared to the BEATR, which will be described in the following subsection.

3.2.2 Statutory Corporate Tax Rates and Bilateral Effective Tax Rates

The crucial point here is that in case of FDI and MNCs one has to consider the international tax code (double taxation agreements, supranational agreements as the parent-subsidiary directive) and the tax code of the home country (home country corporate income tax rate) in addition to the host country tax system. In order to answer the question whether STRs can be used for estimations of tax rate elasticities we now compare its variability to those of the BEATR. Table 8 shows the BEATRs for the seven home countries and Slovenia.

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[23] Testing the null hypothesis of equal variability using the median-version of the Levene-Test (e.g. Eckstein, 2000) gives p-values above 20 percent for each country.

Table 8: BEATRs with Slovenia

	AUT	FR	GER	IT	NL	UK	USA	SI (STR)
Year				%				
2004	18.3	19.5	19.7	18.4	18.3	22.8	32.5	25.0
2003	21.8	23.0	30.3	25.4	21.8	22.8	32.5	25.0
2002	18.9	20.1	27.7	22.7	18.9	19.9	30.0	25.0
2001	18.9	20.2	27.7	22.7	18.9	19.9	30.0	25.0
2000	18.9	20.3	28.6	22.7	18.9	19.9	30.0	25.0
1999	18.9	20.5	28.7	22.7	18.9	19.9	30.0	25.0
1998	26.1	20.6	26.9	22.7	18.9	20.9	30.0	25.0
1997	26.1	20.3	27.0	23.1	18.9	20.9	30.0	25.0
1996	26.1	20.3	27.0	23.1	18.9	22.9	30.0	25.0

Source: Authors' calculations.

Table 8 shows that the levels of BEATRs are different from the level of the STR (25%). Also, a substantial drop in almost all bilateral rates occurred. An exception is the BEATR for the U.S.A.-Slovenia country pair, which increased slightly. This increase is due to the constant overall STR in the U.S.A. and in Slovenia compared with constant allowances in the U.S.A. and a change in allowances in Slovenia (in 2003). The exceptional increase in 2003 and the subsequent fall in 2004 are due to a remarkable reduction of allowances in Slovenia and the adoption of the parent-subsidiary directive in 2004, which reduces the BEATRs for countries which apply the exemption method.[24]

Concerning other BEATRs not shown here, Slovakia had the highest BEATR vis-à-vis all home countries in 1996 (the first year of examination). Hungary (vis-à-vis two) and Slovenia (vis-à-vis five) home countries had the lowest BEATRs. In 2004 the Czech Republic has the highest BEATR vis-à-vis all home countries and again Hungary and Slovenia the lowest. Now Hungary has the lowest rate vis-à-vis five and Slovenia vis-à-vis two home countries. Hungary and Slovenia changed ranks. Why Hungary does not have the lowest rate vis-à-vis the UK and the USA is explained by the credit system combined with a relatively low overall STR. The resulting tax on dividends is therefore higher for dividends from Hungary than from Slovenia.

A comparison of the average BEATR (averaged across home countries) vis-à-vis each single host country for the years 1996 and 2004 shows that in 1996 the host country with the lowest average BEATR is Slovenia, followed by Hungary, Poland, the Czech Republic and Slovakia (table 9). The STD is about 9.4

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[24] For this reason, the development is different in the UK and the U.S.A., two countries which apply the credit system.

percentage points (pp) in 1996. Until 2004 the ranking has changed: Hungary is in first place, Slovenia in second, Poland remains in third, Slovakia is in fourth and the Czech Republic in fifth place. In 2004 the STD is much lower than in 1996, thus the CEE-NMS-5 converged substantially in BEATRs (see chart 2). This convergence of the BEATRs suggests that the CEE-NMS engage in tax competition among each other and not only vis-à-vis the old EU Member States. The largest drop in the average bilateral rate occurred in Slovakia and Poland. The smallest drop occurred in Slovenia, but Slovenia had relatively low STRs and BEATRs throughout the period 1996–2004.

Moreover, the ranking within the CEE-NMS is different to the ranking by the STR and the DEATR. With respect to the BEATR Hungary is the most tax favourable host country and the Czech Republic is the least favourable host country in 2004. On a bilateral basis Slovenia is more favourable than Slovakia and Poland in 1996 and 2004 which is an important difference to the ranking resulting from STRs or DEATRs.

Table 9: BEATRs 1996–2004 (in %)

	CZ	HU	PL	SK	SI
2004	27.97	19.76	21.92	22.25	21.34
2003	33.86	24.52	29.59	30.49	25.36
2002	33.87	25.00	30.74	31.44	22.59
2001	33.88	25.02	30.76	34.20	22.60
2000	34.02	25.17	32.26	34.47	22.75
1999	36.96	25.05	35.07	43.13	22.79
1998	38.25	24.82	36.33	42.78	23.74
1997	38.27	24.76	36.35	43.11	23.75
1996	41.68	25.02	39.69	43.09	24.04
	change −13.71 pp	change −5.27 pp	change −17.77 pp	change −20.84 pp	change −2.70 pp
	STD 2004 3.12 pp			STD 1996 9.37 pp	

Source: Authors' calculations.

Chart 2: Convergence in BEATRs 1996–2004

average over 7 most important home countries
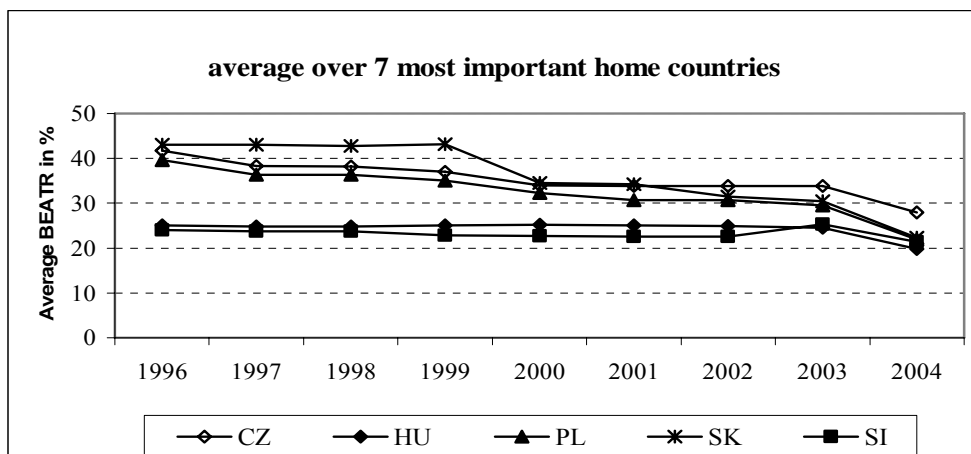
Source: Authors' calculations.

BEATRs are surely better indicators of the tax burden faced by MNCs than STRs. Yet, if their variability is the same as those of the STRs one could also use the latter in an econometric specification. This, however, need not be the case, notably for host countries with relatively stable STRs. For a particular country pair Austria – Slovenia, table 10 shows that the variability of the BEATR is much higher than those of the STR (which in this extreme case is zero).[25] This is because BEATRs cover all important tax codes and hence include more potential sources of variability than the DEATRs and STRs. For the bilateral relationship Austria – Slovenia the main sources of variability are the adoption of the double taxation agreement which entered into force 1999, the changes in allowances in Austria from 2001 and in Slovenia from 2003 onwards as well as the adoption of the parent-subsidiary directive in 2004 by Slovenia. It is important to note that the calculated variability is high despite both countries have constant STRs during the sample period. Note also that one may find several other country pairs with quite different STDs in the BEATRs and the STRs (e.g. Germany-Slovenia (2.98 pp vs. 0.0 pp); Austria-Hungary (3.02 pp vs. 0.65 pp), Italy-Hungary (3.10 pp vs. 0.65 pp)).[26]

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[25] In the case of the DEATRs both the STR and DEATR series had no or a very low variability.

[26] Using the Levene-Test again we reject the hypotheses of equal variances for several country pairs (e.g. AUT-Sl, GER-SI, U.S.A.-SK).

Table 10: Standard Deviations II (1996–2004)

Year	BEATR AUT-SI %	SI STR %
2004	18.28	25.00
2003	21.77	25.00
2002	18.85	25.00
2001	18.85	25.00
2000	18.85	25.00
1999	18.85	25.00
1998	26.12	25.00
1997	26.12	25.00
1996	26.12	25.00
	Percentage points	Percentage points
STD	3.58	0.00

Source: Authors' calculations.

4. Summary and Further Steps

The purpose of this paper was to discuss the appropriateness of measures of tax burden as a factor explaining the location decisions of MNCs. First, on the basis of a survey of six empirical studies a median value of the tax rate elasticities of FDI of –0.22 in CEE-NMS and Mediterranean periphery countries was derived. Second, building on our criticism of FDI-flows or -stocks as a measure reflecting real multinational activity and of the STR as a measure of corporate tax burden, we present EATRs for seven home and five host countries.

Our descriptive data analysis shows:

1. ETRs are warranted as a measure of the tax burden levied upon capital, whereas the STR may be very misleading.
2. BEATRs are better indicators of the tax burden on new FDI than DEATRs or STRs.
3. Empirical estimates of tax rate elasticities of new FDI should be based on BEATRs, which usually have a different variability than STRs and DEATRs. This is in marked contrast to authors who argue that the differences between the STRs and EATRs are negligible (e.g. Javorcik, 2004). However, such a comparison is flawed, since the host country's STR must not be compared to the host country's DEATR, but to the host country's BEATR.
4. As no study has used BEATRs for calculating tax rate elasticities of new FDI in the CEE-NMS so far, one should to be cautionary in deriving policy conclusions from the available elasticities (magnitude and sign). In principle at

least two relevant policy implications[27] may be derived from valid tax rate elasticities:

- If tax rate elasticities with respect to FDI are low, lowering corporate tax rates leads to a loss of tax revenues, without increasing the amount of inward FDI.
- If tax rate elasticities with respect to FDI are high, then either the "Leviathan" view (i.e. overprovision of public goods) or the traditional view (i.e. under provision of public goods) may be taken. In the first case, tax competition will be viewed favourably, in the second case, tax coordination or even harmonization will be preferred.

First results from a panel analysis show that using similar exogenous and endogenous variables as the studies listed in table 1 and using BEATRs instead of the STRs increase the estimated tax rate elasticities substantially. Depending on the model estimated the elasticities lie between –4 and –9. But they probably suffer (in absolute values) from an upward omitted-variable bias as relevant location factors like the quality of public infrastructure have not yet been included. This last point suggests that economic theory should be used to select the other right-hand-variables in order to prevent an omitted-variable bias. Our reading of the literature and the empirical evidence that has been produced so far is that one has to include a large number of factors which may affect FDI besides taxes (e.g. Bernard et al. 2004; Bevan et al. 2004; Mudambi 2002). These factors include firm characteristics as well as home and host country characteristics, defined in relative terms on a bilateral level. The selection of these explanatory and control variables should be guided e.g. by the OLI-paradigm.

Moreover, as almost all studies listed in column 1 and 2 of table 1 rely upon aggregate FDI-flow or -stock data one has to be additionally careful in interpreting the available tax rate elasticities with respect to *real* multinational activity as FDI-flow and -stock data suffer from severe shortcomings in this respect. Hence, for further research we suggest using PPE data and bilateral ETRs instead of FDI-flow or -stock data and STRs when analysing the effects taxation has upon FDI to the CEE-NMS.

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[27] Since the tax elasticities have been derived under the *ceteris paribus* condition, a caveat seems to be in order here: (a) If despite the tax rate has been lowered, FDI does not react, this could be a sign of a high share of market-oriented FDI or that the tax burden accounts only for a small share in total costs concerning efficiency-oriented FDI. (b) If, despite the tax rate has been increased, FDI does not react this could be interpreted as MNCs engaging in transfer-pricing and like activities.

5. References

Alfano M .R. (2004) Government Policy and Inward FDI Flows within Transition Countries: a TSCS Analysis, Paper presented at IIPF, Milano, pp. 1–22.

Altzinger W. (1998) Austria's Foreign Direct Investment in Central and Eastern Europe: "Supply Based" or "Market Driven"? Wirtschaftsuniversität Wien, Vienna, mimeo.

Altzinger W. (2003) Returns on Equity of Austrian Affiliates in Central and Eastern Europe, unpublished paper prepared for the Conference on „EU Enlargement and Social Cohesion", Budapest, 7–9 March 2003.

Antalóczy K., M. Sass (2001), Greenfield Investments in Hungary: Are They Different from Privatization FDI? Transnational Corporations, Vol. 10 No. 3, pp. 39-60.

Bank of Slovenia (various years), Foreign Direct Investment in Slovenia, http://www.bsi.si/

Bureau of Economic Analysis (2004) A Guide to BEA Statistics on U.S. Multinational Companies, (web http://www.bea.gov/bea/articles/internat/USINVEST/1995/0395iid.pdf).

Beaulieu E., K. J. Mckenzie and J.-F. Wen (2004) Do Taxes Matter for Firm Location? Paper presented at IIPF, Mailand, pp. 1–29.

Bellak C. (1998) The Measurement of Foreign Direct Investment – A Critical Review, International Trade Journal, Vol. 12, No. 2, pp. 227–257.

Bellak C. (1999) Kritische Einschätzung der Erfassung und Verwendung von Direktinvestitionsdaten, in: Döhrn, R. and G. Heiduk (eds.) Theorie und Empirie der Direktinvestitionen, Duncker & Humblot: Berlin, pp. 103–128.

Bellak C. and J. Cantwell (2004) Revaluing the Capital Stock of International Production, International Business Review, Vol. 13, No. 1, pp. 1–18.

Benassy-Quere A., L. Fontagne and A. Lahreche-Revil (2003) Tax Competition and Foreign Direct Investment, CEPII Working Paper, No. 2003–17, December.

Bernard A., S. Redding, P. Schott and H. Simpson (2004) Relative Wage Variation and Industry Location, CEPR Discussion Paper Series, No. 4213.

Bevan A., S. Estrin and K. Meyer (2004) Foreign Investment Location and Institutional Development in Transition Economies, International Business Review, Vol. 13, pp. 43–64.

Beyer J. (2002a) Wie erfolgreich sind Maßnahmen zur Förderung von ausländischen Direktinvestitionen? Empirische Befunde aus den Transformationsländern, Zeitschrift für Wirtschaftspolitik, 51/1, pp. 63–83.

Beyer J. (2002b) Please Invest in Our Country. How Successful were the Tax Incentives for Foreign Direct Investment in Transition Countries? in: Communist and Post-Communist Studies, 35/2, pp. 191–211.

Bucovetsky S. and J. D. Wilson (1991), Tax Competition with Two Tax Instruments, Regional Science and Urban Economics, 21, pp. 333–350.

Büttner T. (2001) Empirie des Steuerwettbewerbs: Zum Stand der Forschung, in: Regeln für den europäischen Wettbewerb: Steuern und soziale Sicherungssystem (W. Müller, ed.), Metropolis, pp. 53–70.

Carey D. and J. Rabesona (2004) Tax Ratios on Labor and Capital Income and on Consumption, in: Sørensen, P. B. (ed.) Measuring the Tax Burden on Capital and Labor, CESifo Seminar Series, MIT Press, Cambridge (Mass.), pp. 213–262.

Cantwell J. A. and C. Bellak (1998) How Important is Foreign Direct Investment? Oxford Bulletin of Economics and Statistics, Vol. 60, pp. 99–106.

Carstensen K. and Toubal F. (2004) Foreign Direct Investment in Central and Eastern European Countries: a Dynamic Panel Analysis, Journal of Comparative Economics 32, 2004, pp. 3–22.

Dell'mour R. (2003) Direktinvestitionen Österreichs – Ergebnisse der Befragung 2001 und Entwicklung ausgewählter Indikatoren, Berichte und Studien, OeNB, Nr. 4, pp. 73–87.

DeMooij R. A. and S. Ederveen (2001) Taxation and Foreign Direct Investment: a Synthesis of Empirical Research, Paper presented at the OCFEB Conference, October, The Hague, pp. 1–40.

DeMooij R. A. and S. Ederveen (2003) Taxation and Foreign Direct Investment: a Synthesis of Empirical Research, International Tax and Public Finance, Vol. 10, pp. 673–693.

Desa, M. A., C.F. Foley and J. R. Jr. Hines (2003) Chains of Ownership, Regional Tax Competition, and Foreign Direct Investment, in: Herrmann, H. and Lipsey, R. (eds.) Foreign Direct Investment in the Real and Financial Sector of Industrial Countries, Springer-Verlag, pp. 61–98.

Desai M. A., C. F. Foley and J. R. Jr. Hines. (2004) Foreign Direct Investment in a World of Multiple Taxes, Journal of Public Economics, Vol. 88, pp. 2727–2744.

Devereux M. P. (2003) Measuring Taxes on Income from Capital. CESifo Working Paper No. 962, pp. 1–35; in: Sørensen (ed. 2004), pp. 35–71.

Devereux M. P. and R. Griffith (1998) Taxes and the Location of Production: Evidence from a Panel of U.S. Multinationals. Journal of Public Economics, Vol. 68, pp. 335–367.

Devereux M. P. and R. Griffith (1999) The Taxation of Discrete Investment Choices, IFS Working Paper Series No. W98/16, pp. 1–46.

Devereux M. P. and R. Griffith (2002) The Impact of Corporate Taxation on the Location of Capital: a Review, Swedish Economic Policy Review, Vol. 9, No. 1, pp. 79–102.

Devereux M. P. and A. Klemm (2003) Measuring Taxes on Income from Capital: Evidence from the UK, CESifo Working Paper No. 968, pp. 1–26; in: Sørensen (ed; 2004), pp. 73–98.

Devereux M., B. Lockwood and M. Redoano, (2002) Do Countries Compete over Corporate Tax Rates? CEPR Discussion Paper Series, Public Policy, No. 3400, May.

Dobrinsky R. (2003) Tax Structures in Transition Economies in a Comparative Perspective with EU Member States, in: G. Tumpel-Gugerell and P. Mooslechner (eds.) Structural Challenges for Europe, Edward Elgar, pp. 298–328.

Eckstein P. P. (2000) Angewandte Statistik mit SPSS, Gabler, Wiesbaden.

Edmiston K., S. Mudd and Valev, N. (2003) Tax Structure and FDI: The Deterrent Effects of Complexity and Uncertainty, Fiscal Studies 24, pp. 341–359.

Ekholm K. (2002) Comment on Michael P. Devereux and Rachel Griffith: The Impact of Corporate Taxation on the Location of Capital: a Review, Swedish Economic Policy Review, Vol. 9, No. 1, pp. 103–105.

Eurostat (2003) Foreign Direct Investment Compilation Guide, Statistical Office of the European Communities, February.

Feld L. P. and Kirchgässner G. (2001) Vor- und Nachteile des internationalen Steuerwettbewerbs, in: W. Müller (ed.) Regeln für den europäischen Wettbewerb: Steuern und soziale Sicherungssystem Metropolis, pp. 21–52.

Gordon R., L. Kalambokidis and J. Slemrod (2003) Do We Now Collect Any Tax Revenue from Taxing Capital Income? Journal of Public Economics, 88, pp. 981–1009.

Gorter J. and A. Parikh (2003) How Sensitive is FDI to Differences in Corporate Income Taxation within the EU, De Economist 151, No. 2, pp.193–204.

Grubert H. and J. Mutti (2000) Do Taxes Influence where U.S. Corporations Invest? National Tax Journal, Vol. 53, No. 4, Part 1, pp. 825–839.

Hall R. E. and D. W. Jorgenson (1967) Tax Policy and Investment Behavior, The American Economic Review, Vol. 57, pp. 391–414.

Hansson A. and K. Olofsdotter (2004) Integration and Tax Competition: an Empirical Study for OECD countries, Paper presented at IIPF, Milano, pp. 1–31.

Hartman D. G. (1985) Tax Policy and Foreign Direct Investment, Journal of Public Economics, Vol. 26, pp. 107–121.

Haufler A. and S. Stöwhase (2003) Taxes as a Determinant for Foreign Direct Investment in Europe, CESifo DICE Report, No. 2, pp. 45–51.

Hines J. R. Jr. (1996a) Altered States: Taxes and the Location of Foreign Direct Investment in America, The American Economic Review, Vol. 86, No. 5, pp. 1076–1094.

Hines J. R. Jr. (1996b) Tax Policy and the Activities of Multinational Corporations. NBER Working Paper Series, No. 5589, pp. 1–53.

Hines J. R. Jr. (1999) Lessons from Behavioral Responses to International Taxation, National Tax Journal, Vol. 52, No. 2, pp. 305–322.

International Bureau of Fiscal Documentation (ed., 1996–2004) European Tax Handbook.

Jacobs O. H., C. Spengel, M. Finkenzeller and M. Roche (2003) Company Taxation in the New EU Member States, Ernst & Young and ZEW, 54 p.

Janicki H. P. and P. V. Wunnava (2004) Determinants of Foreign Direct Investment: Empirical Evidence from EU Accession Candidates, Applied Economics, Vol. 36, pp. 505–509.

Jarras L. and G. M. Obermair. (2000) Structures of the Tax Systems in Estonia, Poland, Hungary, the Czech Republic and Slovenia, Final Report for the Commission of the EC, DG XXI, Wiesbaden.

Javorcik B. S. (2003) The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies, European Economic Review, 48, pp. 39–62.

King M. A. and D. Fullerton (1984) The Taxation of Income from Capital, The University of Chicago Press, Chicago and London.

KPMG (ed., 1996–2004) Corporate Tax Rate Survey, (http://www.us.kpmg.com/microsite/global_tax/ctr_survey/)

Krogstrup S. (2003) Are Capital Taxes Racing to the Bottom in the European Union? HEI Working Paper No. 01/2003.

Lankes H. P. and A. Venables (1996) Foreign Direct Investment in Economic Transition: The Changing Pattern of Investment, Economics of Transition, Vol. 4, No. 2, pp. 331–348.

Lankes H. P., Wes M. (2001) FDI in economies in transition: mergers and acquisitions versus greenfield investment, Transnational Corporations, Vol. 10 No. 3, pp.113–130.

Leibrecht M. and Römisch R. (2002) Comparison of tax burdens. WIIW Research Report No. 292, 80p.

Magyar Nemzeti Bank (2004) Recorded Reinvested Earnings in Balance of Payments Statistics:
http://english.mnb.hu/Engine.aspx

Mendoza E. G. Razin A., Tesar L. L. (1994) Effective Tax Rates in Macro-Economics, Cross-Country Estimates of Tax Rates on Factor Incomes and Consumption, in: Journal of Monetary Economics 34, p. 297–323.

Mintz J. M. and T. Tsiopoulos (1994) The Effectiveness of Corporate Tax Incentives for Foreign Investment in the Presence of Tax Crediting, Journal of Public Economics, Vol. 55, pp. 233–255.

Mintz J. M. and T. Tsiopoulos (1997) Taxation of Foreign Capital in the Mediterranean Region, Transnational Corporations, Vol. 6, No. 2, pp. 51–94.

Morisset J. and N. Pirnia (2000) How Tax Policy and Incentives Affect Foreign Direct Investment, in: B. Bora (ed.) New Directions for Research in FDI, Routledge.

Mudambi R. (2002) The Location Decision of the Multinational Enterprise, in: P. McCann (ed.), Industrial Location Economics, Edward Elgar, pp. 263–285.

Mutti J. H. (2003) Foreign Direct Investment and Tax Competition, Institute for International Economics, 118p.

Mutti J. and Grubert H. (2004) Empirical Asymmetries in Foreign Direct Investment and Taxation, Journal of International Economics, Vol. 62, pp. 337–358.

Nicodeme G. (2001) Computing Effective Corporate Tax Rates: Comparisons and Results, Directorate General for Economic and Financial Affairs, Economic Paper No. 153.

OECD (1991) Taxing Profits in a Global Economy: Domestic and International Issues, Paris.

OECD (2000) Tax Burdens – Alternative Measures, OECD Tax Policy Studies, No. 2, Paris.

Sedmihradsky M. and S. Klazar (2003) Tax Competition for FDI in Central-European Countries, mimeo, 8p.

Sørensen, P. B. (2004) Measuring the Tax Burden on Capital and Labor, CESifo, The MIT Press.

Szanyi M (1999) The Role of FDI in Røestructuring and Modernization: an Overview of Literature, in: Hunya G. (ed), Integration Through Foreign Direct Investment, Edward Elgar, Cheltenham, UK, pp. 50–80.

Volkerink B. and J. DeHaan (2002) Tax Ratios in Macroeconomics: Do Taxes Really Matter? Empirica, 29, pp. 209–224.

Wilson J. D. (1999), Theories of Tax Competition, National Tax Journal, Forum on Mobility and Tax Analysis Vol. LII, No. 2, pp. 269–304.

Yoo K.-Y. (2003) Corporate Taxation of Foreign Direct Investment Income 1991–2001, OECD Economics Department Working Papers, No. 365, 47p.

Zemplinerová A. and A. Jarolím (2001) Modes of FDI Entry and Firm Performance: the Czech Case, Transnational Corporations, Vol. 10 No. 3, pp. 95–112.

Zodrow G. R. (2003) Tax Competition and Tax Coordination in the European Union, International Tax and Public Finance 10, pp. 651–671.

6. Data Sources

- The main source for tax data are the European Tax Handbook (various years) of the International Bureau of Fiscal Documentation; KPMG's Corporate Tax Rate Surveys (various years); and Yoo (2003).
- Information about the asset structure in the CEE-NMS is taken from the Vienna Institute of International Comparative Studies' database.

7. Abbreviations

AETR   **A**verage **E**ffective **T**ax **R**ate
BEATR   **B**ilateral **E**ffective **A**verage **T**ax **R**ate
BEMTR   **B**ilateral **E**ffective **M**arginal **T**ax **R**ate
CEE-NMS **C**entral and **E**astern **E**uropean **N**ew **M**ember **S**tates
DEATR   **D**omestic **E**ffective **A**verage **T**ax **R**ate
EATR   **E**ffective **A**verage **T**ax **R**ate
EMTR   **E**ffective **M**arginal **T**ax **R**ate
ETR   **E**ffective **T**ax **R**ate
FDI   **F**oreign **D**irect **I**nvestment
GPA   *G*ross *P*roduct *of A*ffiliates
METR   **M**arginal **E**ffective **T**ax **R**ate
MNC   **M**ulti**n**ational **C**ompany
NOA   **N**umber *O*f *A*ffiliates
PP   **P**ercentage **P**oints
PPE   **P**lant, **P**roperty and **E**quipment
STD   **St**andard **D**eviation
STR   **S**tatutory Corporate **T**ax **R**ate

8. Appendix: Impact of the Pre-Tax Financial Return upon the Bilateral Effective Average Tax Rate

The calculation of forward looking ETRs using the Devereux-Griffith methodology requires several assumptions. One crucial assumption is the value of the fixed pre-tax financial return *(p)*. Devereux and Griffith (1998, p. 29) show that in the absence of personal taxes on interest income and capital gains the BEATR approaches an adjusted STR with increasing *p*. Moreover they show that the BEATR increases with *p* if the bilateral EMTR is below the adjusted STR and decreases in the other case. The adjusted STR is thereby defined as[28]:

$$t^{adjusted} = t_{host}^{Statutory} + tax\_div * (1 - t_{host}^{Statutory})\ (6)$$

As an example the impact of changes in *p* upon the BEATR of FDI from Austria to Slovenia for the year 2003 is demonstrated. In 2003 the host country STR was 25% and the tax on repatriated dividends (*tax_div*) was 5%. Therefore the adjusted STR

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[28] We additionally assume that their discrimination parameter between new equity and retained earnings is one. This is possible as we are excluding the personal sphere of the shareholder (see Yoo, 2003).

is 28.75%. As the BEMTR lies below this value,[29] the BEATR should increase with *p*.

Table 11: Effect of Increasing p on BEATR

p (%)	EATR (%)	p (%)	EATR (%)
5	0.84	80	27.01
10	14.79	90	27.20
20	21.77	100	27.35
30	24.10	1000	28.61
40	25.26	10000	28.73604
50	25.96	100000	28.74860
60	26.42	1000000	28.74986
70	26.76	10000000	28.74998

Table 11 shows that the BEATR indeed approaches the adjusted STR with increasing p.

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[29] Due to generous allowances for investments in machinery this rate is very low.

Comment on "FDI and Taxation: Some Methodological Aspects and New Evidence for Central and Eastern European Countries"

Christian Beer

Oesterreichische Nationalbank

1. Introduction

I will start this discussion with some remarks on effective tax rates. I will focus here on different methods to compute effective tax rates, their respective field of application, their advantages and disadvantages. Thereafter, I will comment on the relationship between tax rates and FDI.

2. Effective Tax Rates

It is widely accepted that statutory tax rates do not appropriately reflect the tax burden on companies. For example, they do not take into account the tax base, or different depreciation allowances. As a consequence, various measures of effective tax rates were introduced.

The methods to compute effective tax rates can be distinguished on a time dimension and on an aggregation dimension. With regard to time forward and backward looking methods are distinguished, the former compute the effective tax rates for a hypothetical project whereas the latter use data to compute effective tax rates. Depending on whether aggregate data or firm level data are used, we speak respectively from macro and micro methods. Since the combination macro and forward is not possible, the following three combinations remain: macro-backward looking, micro-backward looking, and micro-forward looking. The decision on which of this measures should be used hinges on the question one wants to answer.

Another approach is to simulate the activities of a firm and compute the resulting tax payments. A well known example is the European Tax Analyzer (Jacobs and Spengel, 2001). Since this approach differs somewhat from the other approaches, I will not consider it here.

2.1 Macro-Backward Looking

This method calculates the effective tax rate by dividing tax payments by a measure for corporate earnings. Tax payments are taken from the corporate income tax statistics and the tax base is derived from the System of National Accounts or a similar statistic.

Macro-backward looking effective tax rates are a useful tool to analyze the distribution of the tax burden. For example, by calculating the effective tax rates on capital and labor it can be analyzed whether they are different across countries or whether their proportion has changed over time.

But, this method has several disadvantages. With regard to the tax base an appropriate measure must be identified. Here a candidate is the gross operating surplus. A problem arises due to the specification of the System of National Accounts as it is not possible to disentangle the contribution of corporations from those of other companies to this tax base.

In the present context the more severe drawback is that a backward looking method is not useful to analyze the effects of the tax system on FDI decisions, because investment projects are forward looking decisions. Hence, taxation in the past is not of much help.

2.2 Micro-Backward Looking

Micro-backward studies compute the effective tax rate from financial statements of companies. The method allows for example to compare the effective taxation of companies with different size or in different sectors. The micro-backward looking method does not allow isolating different tax systems, since the taxes a multinational company pays do not only depend on the tax system of its home country but also on the tax systems of the other countries the company is active in. Since this is also a backward looking measure, it may likewise lead to an incorrect characterization of the tax burden on new investment projects.

2.3 Micro-Forward Looking

This is the method used in the paper by Bellak, Leibrecht and Römisch, therefore I will discuss it in more detail. This method derives effective tax rates for a hypothetical investment project using the provisions of the tax code. It originates in King and Fullerton (1984) who introduced the effective marginal tax rate (EMTR) for marginal investments projects (i.e. investments that just cover the cost of capital). A modification due to Devereux and Griffith (2003) allows assessing the effective tax burden on inframarginal (i.e. profitable) investments. The latter measure is called effective average tax rate (EATR). Since the depreciation allowances of the tax code depend on the type of asset (e.g. machinery, buildings)

and deals differently with the forms of financing (retained earnings, debt, new equity) effective tax rates for each type of asset and each form of financing are calculated in a first step. The overall effective tax rate is a weighted average of these rates.

As a result of its forward-looking character this effective tax measure should be the most appropriate one for determining the impact of the tax system on investment. But, it also suffers from a number of shortcomings.

Since the calculations are somewhat complex anyway, important aspects of the tax system are usually not taken into account. These are for example untaxed reserves, risk, tax enforcement and the treatment of losses. The possibility that losses may occur is not even considered.

Many parameters are chosen somewhat arbitrarily and are taken as the same across countries and over time. These are for example the after tax rate of return required by the investor, the types of assets to include, the weights for the assets and the sources of finance, the nominal interest rate, the economic depreciation rate, the inflation rate and the exchange rate. Assuming an equal and constant rate of inflation may be justifiable for the EU-15 countries but it is certainly not an appropriate assumption for the New EU Member States.

The same weights of assets and sources of finance are used in all countries to derive the overall effective tax rate. This is done to isolate the effects of the tax system, i.e. to analyze how the effective taxation of two companies with the same characteristics would differ in two countries. But, this neglects that the financing and asset structure of a company is also influenced by the tax system. Hence, it is quite likely that a company would choose different asset and financing structure depending on the host country.

3. Taxes and FDI

Bellak, Leibrecht and Römisch point out that the elasticity of FDI flows with respect to taxes requires both an appropriate measure of the tax burden and of the investment activities of multinational companies. Concerning the measure of the tax burden the meta-analysis by De Mooij and Ederveen (2003) shows that the median of the semi-elasticities in the studies they consider is –3.3 in the sample without outliers, but the semi-elasticities range from –22.8 to +13.2. The elasticity clearly hinges on the tax measure used. For example the typical semi-elasticity in studies that use the statutory tax rate is –1.2 whereas for the EMTR this value is –4.2 and for the EATR –9.3. Hence, according to this analysis effective tax measures have a more pronounced impact on FDI than the statutory corporate tax rate. These numbers clearly indicate that – even though it may be controversial which tax measure is the most appropriate one – the choice of the tax rate clearly matters.

Additionally, it would be interesting to account for tax incentives in the computation of the effective tax rates. Tax incentives for investment are offered by many of the New Member States and they can have a non negligible effect on effective tax rates. Since a company that knows whether it is eligible for some tax incentives will use this information in its investment decision, the effects of tax incentives should be taken into account in the analysis of FDI flows. Thereby one has to account for that the attractiveness of such tax incentives depend on whether the home country uses a credit system or an exemption system. A problem one can cope with by using bilateral effective tax rates. Furthermore, the tax incentives vary according to the requirements for eligibility. To some of them nearly all companies have access others require a substantial investment. Analyzing the investment decision of companies would therefore require firm level data.

4. Probability of Investment

Another strand of literature analyzes the impact of taxation on the probability that a Multi National Company chooses a certain location for its investment. For example Devereux and Griffith (1998) showed that the EATR has a significant negative impact on the probability that a U.S. firm chooses France, Germany or the UK as a location.

Buettner and Ruf (2004) use firm level data to investigate the impact of taxation on the decision of a German multinational to invest abroad. They reach the interesting result that EMTRs have no predictive power for location decision whereas statutory tax rates and EATRs exert strong effects. Concerning the effective tax rates this result is consistent with the common view that EMTRs are an important determinant of the size of a plant but the location decision itself depends on EATRs.

An analysis for Austria (Beer et al., 2004) showed that the drop in the EATR resulting from the lowering of the corporate income tax by 9 percentage points increases the probability that Austria is chosen as an investment location by 1 percentage point. The low impact of the reduction in the corporate income tax rate is due to tax cuts in neighboring countries.

References

Beer, C., B. Felderer, G. Grohall, C. Helmenstein, E. Krylova, A. Schnabl and L. Strohner (2004) Ökonomische Wirkungen aktueller Steuerreformmaßnahmen, Studie des Instituts für Höhere Studien im Auftrag des Österreichischen Wirtschaftsbundes, Wien.

De Mooij R. A. and S. Ederveen (2003) Taxation and Foreign Direct Investment: A Synthesis of Empirical Research, International Tax and Public Finance 10, p.673–693.

Büttner T. and M. Ruf (2004) Tax Incentives and the Location of FDI: Evidence from a Panel of German Multinationals, ZEW Discussion Paper No. 76–04, Mannheim.

Devereux, M. and R. Griffith (1998) Taxes and the Location of Production: Evidence from a Panel of U.S. Multinationals, Journal of Public Economics, 68, 335–367.

Devereux, M. and R. Griffith (1999) The Taxation of Discrete Investment Choices, Institute for Fiscal Studies, Working Paper Series W98/16.

Devereux, M. and R. Griffith (2003) Evaluating Tax Policy for Location Decisions, International Tax and Public Finance 10, 107–126.

Jacobs, O. and C. Spengel (2001) Effective Tax Burden in Europe, Heidelberg/New York.

King, M. A. and D. Fullerton (1984) The Taxation of Income from Capital, Chicago.

Comment on "FDI and Taxation:

Some Methodological Aspects and New Evidence for

Central and Eastern European Countries"

Otto Farny

Chamber of Labor

I would like to start my comments with a general note on the issue discussed. Surveys examining the effects of the New Member States' different corporate tax systems are mostly based on a presentation of the given statutory tax rates and a comparison of the effective average tax rates applied in these countries. The effective average tax rate may be derived in two different ways: it may be derived from a model based on the existing tax law ("forward-looking method"), or it may be measured by empirical observation ("backward-looking method").

In the case of the Eastern European countries, these two measures might yield rather different results. Friends of mine operating in these countries tell me that the statutory tax laws are mainly "something for the European Commission" and/or the international presentation of these countries, since the actual effective tax burden is largely the result of a bargaining process with the fiscal authorities. However, this does not necessarily mean that the tax burden in these countries is lower than that of Austria, for instance – as was shown by the consultancy firm KMPG, which did some interesting empirical research: They applied the tax codes of the Czech Republic, Slovakia and Hungary to a particular Austrian production firm, taking into account all tax planning strategies offered by the respective countries. They found the tax burden of this firm to be almost as high in Slovakia as in Austria, but nearly twice as high in the Czech Republic and in Hungary.

I am grateful that Mr. Bellak and his colleagues in their presentation showed us two things: First that "bilateral effective average tax rates" can explain foreign direct investment much better than domestic tax rates and second, that foreign direct investment is affected by a large number of factors, not by taxes alone. Numerous regression analyses have been undertaken to investigate the impact of taxes on industrial investment. The speakers presented us a long list of literature on this subject. The Chamber of Labor, for example, investigated the impact of payroll taxes and social security contributions on industrial investments. We found that insufficient research has been done on this issue in the past – an astonishing result,

if one takes into account that a typical Austrian industrial firm pays ten times more taxes of this kind than corporate tax. Thus the question arises why the research interest in this specific issue is so small? Would you think that the reasons for this phenomenon are of a political nature or that scientific reasons may explain it? Another angle to look at the issue at hand: how does an industrial firm view corporate tax payments? I would say, for a company, corporate taxes are simply costs. For a typical Austrian industrial firm, corporate tax represents about 2% of the overall costs. Do you think that policymakers actually believe that 2% of the overall costs will determine investment decisions? Of course, the investment decision can be influenced by the tax laws and by the tax burden, respectively, but they are not the key factors for investors in my eyes. Thus, my last question to the speakers is whether they are aware of any empirical studies which test for the impact of factors other than taxes that would explain foreign industrial investment decisions?

(Why) Do We Need Corporate Taxation?

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1. The Corporate Income Tax: An Endangered Species?

The question of why we need a tax on corporations would receive much less attention if it were not that many economists and politicians believe that this tax is on the endangered species list. If it is relevant to tax competition and a race to the bottom, we should expect to see results in the area of corporate taxation.

Chart 1: Average Corporate Tax Rates (1985–2004)
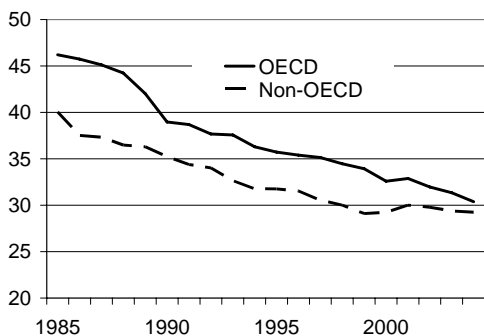
Note: The dashed line represents the mean corporate income tax rate in up to 45 non-OECD countries, the normal line represents the average for up to 29 OECD countries. The rates include average local taxes plus federal rates on retained earnings.
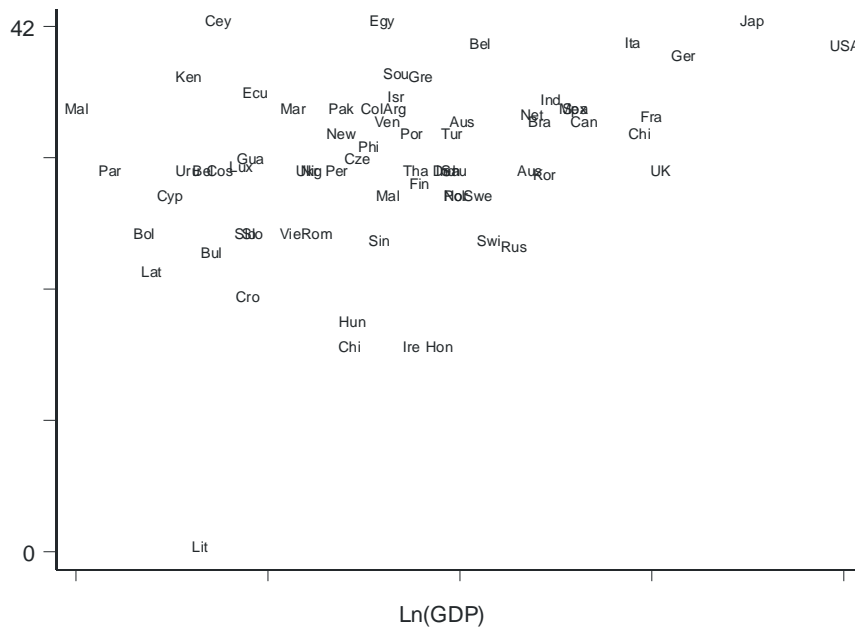
Source: PricewaterhouseCoopers, KPMG, Office of Tax Policy Research (University of Michigan).

This largely represents a source based taxation of mobile capital, the type of taxation that is bound to vanish completely in standard theoretical models of tax competition among small jurisdictions. Looking at the rates of corporate taxes around the world, a downward trend is clearly visible for both OECD countries and other countries. For OECD countries, the average rate in the mid 1980s was around 45%, while in 2004 it came down to some 30%. Extrapolating this linear trend implies that tax rates will come down to zero by the middle of the century.

*Chart 2: Corporate Tax Rates and Country Size (2002)*

It is not only that empirically rates have declined in the process of globalization. The empirical evidence also supports tax competition models in their prediction that smaller countries should have lower rates than larger countries.[2] The reason for this prediction is that small countries have much more elastic tax bases. In these countries, tax reductions can attract a huge amount of new capital but they cost little in terms of less tax revenue from the small existing stock of capital. Conversely, large countries have a large stock of capital and, to compensate for the

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[2] See Bucovetsky (1991), Wilson (1991), Wellisch (2000), Haufler (2004) or, for the case of sales taxes, Kanbur and Keen (1993).

revenue loss from old capital, reducing rates must attract much more new capital. This is an economic explanation for the well-known fact that in general tax havens are small. Chart 2 illustrates the correlation between statutory tax rates and the logarithm of GDP for the year 2002 on a broader basis of 70 countries. The positive correlation turns out to be highly statistically significant.

Chart 3: Corporate Tax Revenues in OECD Countries
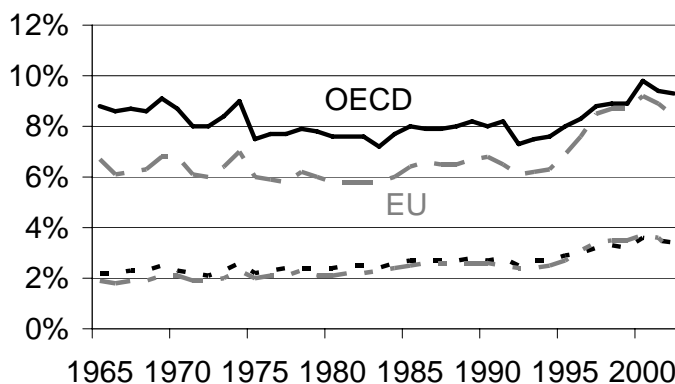
Note: The upper two lines measure the unweighted average of tax revenues as a fraction of total tax revenues. The two lower lines show the ratio of corporate taxes to GDP in OECD and EU countries.

Source: OECD Revenue Statistics.

However, the picture given by the observed tax rates across time and across countries may not give the whole story. A possible counter argument against the vanishing corporate tax hypothesis is that, while rates have decreased empirically, tax revenues derived from corporate taxes on average have become quite stable in the OECD countries.[3] This fact is illustrated by chart 3. The upper two lines reflect the average ratio of corporate tax revenues to total tax revenues in OECD and EU countries. For the OECD as a whole, the long run average figure is 8% of total tax revenues. The lower lines give the average ratios when GDP is the denominator. From this overall picture there is little evidence that tax competition has eroded corporate taxes. A possible explanation is that the efforts to broaden the tax base by cutting exemptions and depreciation have more than compensated the cuts in tax rates. The empirical development may simply be a reflection of a levelling of the playing field rather than evidence of tax competition.

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[3] For a similar observation see Devereux, Griffith and Klemm (2002).

On the other hand, base broadening may not have occurred only because of active policy measures. It may also be a side effect of an underlying time trend. Such a time trend could reflect the fact that more and more enterprises have to incorporate if they are to carry out their business more efficiently. Unfortunately, only a few countries have official statistics that make it possible to evaluate the existence of such an empirical trend. Chart 4 depicts three exceptions: Germany, Austria and the U.S.A. In each of the charts, the line represents the corporate income tax revenues as a fraction of GDP, measured on the right hand scale. The columns depict the share of turnover of incorporated businesses, which is plotted against the left hand scale. Since the early 1970s, corporate tax revenues as a fraction of GDP have come down in the U.S.A., have increased in Austria and have stayed roughly constant in Germany. The development in Austria and Germany that illustrates a sharply increasing role for corporations makes it particularly clear that, by looking at the development of revenues, the role of corporations relative to non-incorporated businesses should be kept in mind. The observation of a nearly constant revenue-to-GDP ratio is not sufficient to dismiss a race to the bottom. The increased role of corporations in Germany and Austria (and presumably in other countries) seems to blur the footprints of tax competition on the revenue side.[4]

Chart 4: The Relative Importance of Incorporated Businesses
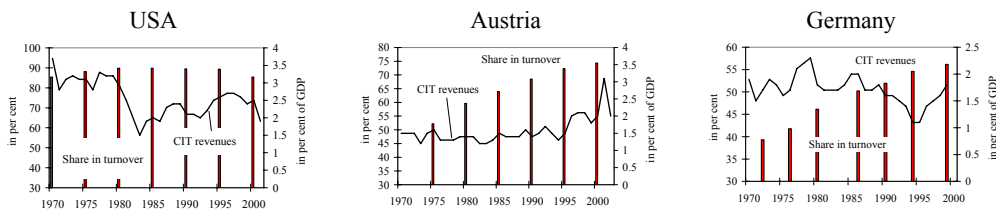
Note: In each of the charts, the line represents the corporate income tax revenues as a fraction of GDP, measured on the right hand scale. The columns depict the share of turnover of incorporated businesses measured on the left hand scale.

Source: OECD Revenue Statistics, U.S. Census Bureau, Bundesanstalt Statistik Österreich, Statistisches Bundesamt.

Additional evidence that the picture given by tax revenues is distorted comes from forward looking measures of effective taxation as calculated by Devereux, Griffith and Klemm (2002). The authors clearly show that the effective average taxation of corporate profits, as implied by the tax codes, has decreased since the 1980s in

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[4] A similar argument was made recently by Peter Birch Sörensen at the 2001 meeting of the German Economic Association, but without supporting evidence.

most countries. These forward looking measures of the tax burden are in line with empirical evidence for U.S. multinationals: over the years the average tax on a dollar of income earned by subsidiaries around the world has declined (Altshuler, Grubert and Newlon 2001).

So yes, from the evidence presented above, corporate income tax does look like an endangered species. This brings up the natural next question: what would be the costs if we were to lose this tax instrument in the process of tax competition? To address this question in the next sections we will review the various arguments that have been put forward to justify a corporate income tax.

2. The Arguments for a Corporate Income Tax

2.1 The Corporate Income Tax as a Benefit Tax?

Like individuals, corporations certainly profit from the legal system, the public infrastructure and public security. So why they should not pay taxes just like individuals? One answer is that corporations are owned by individuals who already are subject to taxation. Therefore, taxing corporations separately implies a double burden. Another counter argument against using the corporate income tax as a benefit tax is that there are usually other, more targeted, instruments available for internalizing the cost of providing public inputs (Mintz, 1995). If corporations eject dirty water and air, then it is better, and normally possible, to tax these unwanted activities directly. If corporations congest roads by using trucks, then a toll or a gasoline tax is the adequate answer.

Even if we came to the conclusion that those more direct instruments are unavailable, several problems with a corporate income tax as a benefit tax remain. Why should it be a sensible application of the benefit principle that a highly leveraged corporation, which, because of the tax deductibility of interest payments, has lower profits than an equity-financed corporation, should pay fewer benefit taxes? The crowding caused by a company truck is hardly dependent on the way it is financed. Even worse, it is not even related to the profits before interest and tax.

An argument proposed by legal scholars, but sometimes also considered by economists (Meade, 1978, p. 145), is that limited liability, which is a result of incorporation, is a benefit that justifies special benefit taxation. This argument overlooks the fact that it is only in some settings that limited liability is an advantage. When a business partner is contracting with a limited liability corporation the partner will be well aware of the potential loss from a non-performing corporation. The partner could therefore offer better conditions to an individual entrepreneur who offers unlimited liability and therefore a lower chance of default. An entrepreneur therefore bears a cost of incorporating that will internalize a sizeable fraction of possible external costs. External cost of

incorporation may prevail if there is a non-market relationship. For example, a corporation may take higher environmental risks if it is isolated from the possible cost by limited liability. But again, the adequate reaction to this problem would be a regulation against excessive risk taking, e.g. compulsory insurance for environmental hazards, rather than a general corporate income tax.

2.2 The Corporate Income Tax as a Tax on Foreigners?

When Bill Clinton ran for his first U.S. presidency in the early 1990s, a mocking phrase that was used to describe his tax agenda was: "Don't tax you, don't tax me, tax the guy from overseas." In fact, a tax that falls on voters outside the own constituency is politically tempting and the corporate tax may be used as an instrument for "tax exporting". Expressing it less negatively, it can be argued that a corporate tax is necessary to make sure that foreign owners of domestic corporations pay taxes in the host country of a foreign-owned corporation.

In some cases the cost of the tax on foreigners is minimal. This applies where the home country of a multinational allows a tax credit for taxes paid abroad. Some part, or even all, of the taxes levied in the host country may be refunded in the home country of a multinational. For this reason, a tax increase may not turn away foreign investors: the tax is like a free lunch. The argument for a corporate tax may also be strong in cases where foreigners are able to earn a pure economic rent. Insofar as the corporate tax is a tax on those pure rents, adverse investment reactions will also be absent.

Empirical studies, however, have made it clear that the free lunch hypothesis is only a faint approximation of reality. In reality, higher taxes do turn away foreign investors (see the survey by Ederveen and de Mooij, 2001), although tax elasticities may be even larger if home countries exempt foreign income instead of using a tax credit to alleviate double taxation (Desai, Foley and Hines, 2003).

The tax exporting motive is not completely absent when countries make their corporate tax decisions. A recent study by Huizinga and Nicodeme (2003) shows that countries with a large fraction of foreign-owned corporations tend to have a higher corporate tax than other countries. Nevertheless, if tax exporting was the main driving force in international tax competition, it would be hard to reconcile it with the observed downward trend in corporate taxation. Moreover, tax exporting measures that discriminate against foreigners may come under the scrutiny of the EU Court of Justice and this may limit their applicability.

2.3 The Corporate Income Tax as a Prepayment of Income Taxes

Once we dismiss the idea of a corporate tax as a benefit tax, the rationale for a separate corporate tax largely vanishes. But we may still want to keep the corporate

tax as a withholding device for the personal income tax. Ideally, the corporate tax should then reflect the personal tax rates of the owners of a corporation. This idea has been argued strongly by Engels and Stützle (1968) who suggested a system in which retained and distributed earnings of a corporation are effectively taxed at the personal tax rates of its shareholders. Corporate tax schemes that have been implemented in practice have been somewhat less ambitious. A real world corporate tax system that comes closest to the withholding idea is a full imputation system that aligns the corporate tax rate with the (top) personal income tax rate. When a dividend is paid by the corporation, the underlying corporate taxes are credited against the personal taxes of the shareholder. If the credit exceeds the personal tax that is due on the dividend income, there is a tax refund. If the corporation retains part of its earnings, then the effective tax on this part of its earnings reflects at least the personal income tax rate for those investors that are in the highest personal income tax bracket.

Globalization has brought up several problems for such a scheme. A first issue is that cross border ownership of shares makes it difficult to align the corporate tax rate with the investors' top personal tax rates. When investors come from different countries, there are different top personal rates. Even worse, countries may refuse to grant a tax credit for cross-border dividends. If the credit is given by the host country of the corporation, this implies that fewer or no taxes are collected on corporate profits when there is foreign ownership. Conversely, if the credit is given by the home country of the investor, then this country has to give a credit for taxes that another country has levied. In a recent ruling, the European Court of Justice (ECJ) has condemned exactly this latter reluctance and found that the corresponding asymmetry in the Finnish rules is in contradiction with the right of free capital movements.[5] Under the Finnish imputation system, a tax credit for underlying corporate taxes is granted to a Finnish personal tax payer if the dividend is paid by a Finnish corporation but is refused if the dividend is paid by a corporation from another EU Member State.

If a government is reluctant to refund corporate taxes that have been charged by other governments, the easiest way to react to the ECJ decision is to abolish imputation. Therefore, the ECJ decision seems to be the formal death sentence for imputation systems within Europe. The abolition of the imputation system in Germany for fiscal years after 2000 already anticipated this ruling. An "appeal" against this death sentence required multilateral coordination to implement a system of mutually extended tax credits.

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[5] ECJ decision of September 7, 2004 (C 319/02).

2.4 A Safeguard against Erosion of Personal Capital Taxation

Although globalization and European integration have made integration of corporate and personal tax systems more difficult, other reasons to stick to corporate taxation prevail. As long as countries continue to tax personal capital income there will be a demand for instruments that prevent evasion and avoidance. The European Directive on Interest Income (2003/48/EEC) can be seen as such an instrument: capital income should not be exempt simply because it derives from a foreign, rather than a domestic bank account. Leaving corporate income untaxed, while taxing personal capital income would generate another loophole.

Indeed there is empirical evidence that this loophole is important. Several studies on U.S. time series data (see MacKie-Mason and Gordon, 1997, Gordon and MacKie-Mason, 1994a, Goolsbee, 1998) show that the decision to incorporate is significantly related to the difference between the income tax rates on personal and corporate income, and a recent study using cross section tax differentials among U.S. states points in the same direction (Goolsbee, 2004).

Chart 5: Cuts in Top Personal Tax Rates and Corporate Tax Rates (1985–1999)
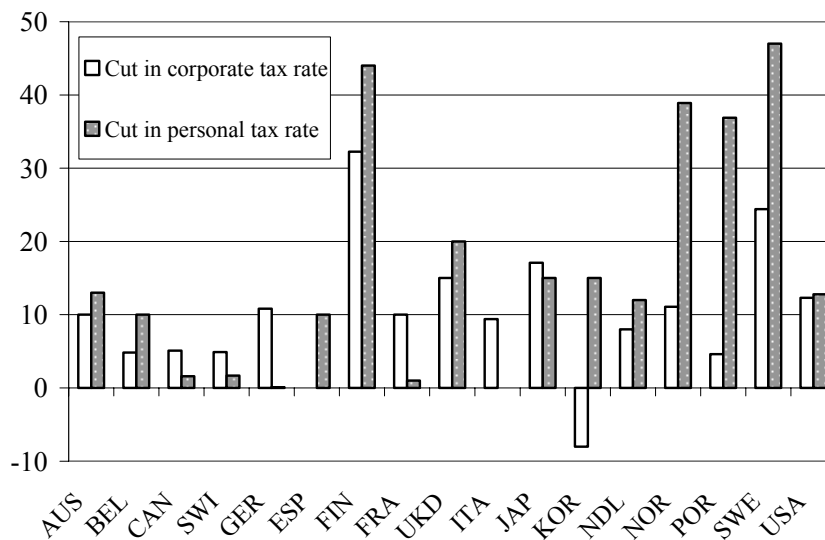
Note: The cuts in personal tax rates between 1985 and 1999 refer to the top personal tax rate that is applicable to interest income. The rates for Switzerland (SWI) refer to Zurich, the rates for the U.S. refer to the state New York.

Source: Fuest and Weichenrieder (2002), Institut der deutschen Wirtschaft, several national ministries.

Empirical evidence is also presented in Fuest and Weichenrieder (2002). The paper uses panel data on 13 countries and looks at the fraction of total savings that occurs in the corporate sector. The study finds that a 1 percentage point increase in the difference between the top personal income tax rate and the corporate tax rate increases the fraction of savings that occur in the corporate sector by some 2%.

Table 1: The Vanishing of the Comprehensive Personal Income Tax

Country	1985	2002
Austria		I/D
Belgium	I/D	I/D
Canada		D
Denmark		D
Finland		I/D/P
France	I	I
Germany		HK
Greece		I/D
Ireland		
Italy	I	I
Japan	I/D	I/D
Luxembourg		HK
Netherlands		I/D/P
Norway		I/D/P
Portugal		I/D
Spain		
Sweden		I/D/P
Switzerland		
U.K.		
U.S.A.		

Source: IBFD, European Tax Handbook, several issues.

The empirical evidence suggests that the decline in corporate tax rates may bring up problems in the taxation of personal capital income. For tax reasons, savers may prefer corporations rather than bank accounts if the corporate rates fall well below the personal rates. It is unclear, however, whether such a gap between personal and corporate tax rates is developing. As illustrated by chart 5, in many OECD countries, cuts in top personal tax rates on interest income have been even more pronounced than cuts in corporate tax rates. To some part this reflects a shift in income tax systems. While in 1985 a large majority of OECD countries used a comprehensive income tax under which all incomes were taxed at the same rate, many countries have changed to separate taxation of various income types with

lower rates on interest income. Table 1 gives a picture of the vanishing comprehensive income tax that is associated with this development by comparing the years 1985 and 2002. Countries marked with an *I* have a system that uses a scheduled tax on personal interest income. In the case of a *D* or a *P,* dividends/profits fall under a flat rate that is lower than the top income tax rate on labor income. The remaining shaded fields indicate countries that used a comprehensive system in the respective year. In some countries in this latter group only half of a received dividend is included in the personal tax base. This is denoted by *HK*.

The fact that in many countries tax rates on personal capital income have decreased by more than the rates on corporate income may hint at tax competition effects that are even more pronounced for the personal income tax than for the corporate income tax. Slemrod (2002, p. 1182) finds that, depending on the details of his exploratory regressions, the decline in personal tax rates can explain a large fraction of the decline in international corporate tax rates.

2.5 A Safeguard against Erosion of Personal Labor Taxation

Although the corporate income tax is a tax on capital and not on labor, it may act as an important instrument for protecting labor taxation from erosion. If tax policy implements different rates on different income baskets, tax payers are tempted to relabel income that falls in the high tax basket in order to shift it into the low tax one. Empirically, these incentives may be important. Gordon and Slemrod (2000) find that, for the U.S.A., a 1 percentage point increase in the difference between the corporate and personal taxes increases reported labor income by some 3%. In a similar vein, evidence from Norway provided by Fjaerli and Lund (2001) shows that the reduced rate on capital income significantly increased dividends and reduced wages of manager owners. Since the study by Fjaerli and Lund looks at a time period before Norway adapted a formal income splitting rule to avoid income shifting between baskets, it is difficult to say whether this result of huge income shifting is generally valid for dual income tax systems.[6]

It should be noted that a corporate income tax is just one way to curb income shifting. Alternatively, a cash flow tax on pure economic rents could be used to do the same job. The reason is that the instrument for curbing income shifting does not necessarily have to raise income on intra marginal units of capital invested. It is sufficient that a marginal euro shifted from the labor income basket to the corporate income basket is taxed the same in the two baskets and therefore that

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[6] A dual income tax system combines progressive taxation of labor income with a low flat rate on capital income.

shifting brings no tax savings.[7] In addition, more analysis on the Nordic models of income splitting would be welcome to see whether income shifting can be effectively curbed in the face of differing tax rates on labor and capital income.

3. Conclusion

Corporate income taxes in OECD countries account for some 8% of total tax revenues. From the point of view of a treasury department, this may suffice to conclude that the corporate tax is needed. In this paper I have discussed some more subtle reasons that may justify a corporate tax. Several studies have pointed out that the corporate income tax may have an important backstop function that helps preserve the tax base of other taxes and the erosion of the corporate tax in the process of tax competition may therefore have severe additional effects.

The importance of the backstop function for capital taxation in general largely depends on whether capital taxation continues to be demanded in the first place. If the answer is yes, then reduced corporate taxes, keeping other taxes on capital constant, seem to lead to sizable income shifting towards the corporate sector and away from the higher taxed sectors. The importance of the corporate tax as a backstop for labor taxation largely depends on the functioning of alternative measures to avoid income shifting. More empirical analysis in this area would be very welcome.

References

Altshuler, R., H. Grubert and T. S. Newlon (2001), Has U.S. Investment Abroad Become More Sensitive to Tax Rates?, in: J. R. Hines (ed.) International Taxation and Multinational Activity. Chicago: University of Chicago Press, 9–32.

Bucovetsky, S. (1991), Asymmetric Tax Competition, Journal of Urban Economics 30, 167-181.

Desai, M. A., C. F. Foley, and J.R. Hines (2003), Chains of Ownership, Regional Tax Competition, and Foreign Direct Investment, in: H. Herrmann und R. Lipsey (eds.), Foreign Direct Investment in the Real and Financial Sector of Industrial Countries. Berlin: Springer, 61–98.

Devereux, M.P., R. Griffith and A. Klemm (2002), Corporate Income Tax Reforms and International Tax Competition, Economic Policy 35, 451–495.

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[7] Given that the tax on corporations is expected to raise revenues, a pure cash flow tax may be more vulnerable to international income shifting by multinational firms via transfer pricing than a corporate income tax. See Gordon and MacKie-Mason (1994b) and Haufler and Schjelderup (2000).

Ederveen, S. and R. de Mooij (2001). Taxation and Foreign Direct Investment: a Metaanalysis. Quarterly Review of CPB Netherlands Bureau for Economic Policy Analysis.

Engels, W. and W. Stützle (1968), Teilhabersteuer. Ein Beitrag zur Vermögenspolitik zur Verbesserung der Kapitalstruktur und zur Vereinfachung des Steuerrechts. Frankfurt a.. M.

Fjaerli, E. and D. Lund (2001), The Choice between Owner's Wages and Dividends under the Dual Income Tax, Finnish Economic Papers 14, 104–119.

Fuest, C. and A. J. Weichenrieder (2002), Tax Competition and Profit Shifting: On the Relationship between Personal and Corporate Tax Rates, Ifo Studien 48, 611–632.

Goolsbee, A. (1998), Taxes, Organizational Form, and the Deadweight Loss of the Corporate Income Tax, Journal of Public Economics 69, 143–152.

Goolsbee, A. (2004), The Impact of the Corporate Income Tax: Evidence from State Organizational Form Data, Journal of Public Economics 88, 2283–2299.

Gordon, R. H. and J. K. MacKie-Mason (1994a), Tax Distortions to the Choice of Organizational Form, Journal of Public Economics 55, 279–306.

Gordon, R. H. and J. K. MacKie-Mason (1994b), Why is there Corporate Income Taxation in a Small Open Economy? The Role of Transfer Pricing and Income Shifting, in: M. Feldstein and J. Hines (eds.), Issues in International Taxation. Chicago: University of Chicago Press, 67–91.

Gordon, R. H. and J. Slemrod (1998), Are 'Real' Responses to Taxes Simply Income Shifting between Corporate and Personal Tax Bases?, in: J. Slemrod (ed.), Does Atlas Shrug? The Economic Consequences of Taxing the Rich. Cambridge: Harvard University Press, 240–280.

Haufler, A. (2004), Taxation in a Global Economy. Cambridge: Cambridge University Press.

Haufler, A. and G. Schjelderup (2000), Corporate Tax Systems and Cross Country Profit Shifting, Oxford Economic Papers 52, 306–325.

Huizinga, H. and G. Nicodeme (2003), Foreign Ownership and Corporate Income Taxation: An Empirical Evaluation, CEPR Discussion Paper 3952.

Kanbur, R. and M. Keen (1993), Jeux sans Frontières: Tax Competition and Tax Coordination When Countries Differ in Size, American Economic Review 83, 877–892.

MacKie-Mason, J. K. and R. H. Gordon (1997), How Much Do Taxes Discourage Incorporation?, Journal of Finance 52, 477–505.

Meade, J. (1978), The Structure and Reform of Direct Taxation, the Meade Report. Boston: Allen & Unwin.

Mintz, J. (1995), The Corporation Tax, Fiscal Studies 16, 23–68.

Slemrod, J. (2004), Are Corporate Tax Rates, or Countries, Converging? Journal of Public Economics 88, 1169–1186.

Wellisch, D. (2000), Theory of Public Finance in a Federal State. Cambridge: Cambridge University Press.

Wilson, J. D. (1991), Tax Competition with Interregional Differences in Factor Endowments, Regional Science and Urban Economics 21, 423–451.

Company Taxation and Growth:
The Role of Small and Large Firms

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1. Introduction

Human capital formation, technological innovation and accumulation of physical capital are the engines of growth that ultimately determine a country's income per capita. Human capital formation is presumably the most important driver of growth as the returns to technological innovation and physical investment tend to be higher in a country that is endowed with a better educated workforce. In this sense, innovation and capital accumulation are largely induced by human capital investments. In most countries, taxes are probably not a very important impediment to skill formation. The most important private cost of education is foregone wages, net of the wage tax. The returns to education accrue in terms of future wage increases and are subject to wage taxation. A proportional wage tax would thus lower the cost of education today by the same factor as it reduces the wage gains in the future. The government thus shares in the costs and returns to education proportionately, making taxes largely neutral with respect to education decisions. Tax progression will impair education incentives because a progressive tax takes a larger share in higher future wages while it subsidizes only a relatively smaller share of education costs in terms of foregone wages today.[2] Other costs of education are largely free. In most developed countries, public schools and even universities are free which corresponds to a large subsidy on the real cost of education and skill formation.

[2] See Keuschnigg (2005) for a simple and illustrative analysis.

Matters are different with respect to capital accumulation and innovation where the returns to investment accrue as capital income in one form or the other. Taxes tend to distort these decisions in many respects. As a consequence, capital income taxes not only tend to suppress the level of capital accumulation but also impair the efficiency in the allocation of capital across competing uses. Capital income taxes on the company and personal level push a wedge between the pre tax rate of return that firms must earn before taxes, and the net of tax rate of return that investors receive after taxes. In reducing net returns, taxes discourage savings and the supply of capital by investors. In raising gross returns, they impair investment and the demand for capital by firms.[3] Depending on which effect is stronger, taxes may contribute as well to a country's net foreign assets or debt. In addition to these level effects, taxes distort the allocation of savings and investment across different uses and thus result in a further growth retarding efficiency loss.

The impact of taxes on the level of savings and investment and on the efficiency in the allocation of capital is the theme of this essay. Section 2 first discusses a number of efficiency and equity problems of comprehensive income taxation as it is currently practiced. Section 3 reviews the most important behavioural margins that determine the impact of taxes on growth. A particular focus is on the differential effects of taxes on different types of firms such as small and large firms and home owned and multinational companies. The discussion will also show what would be required to ensure tax neutrality on various margins. Section 4 then proposes a growth oriented version of a dual income tax, the SDES system proposed by Keuschnigg (2004a). SDES stands for Swiss Dual Income Tax (Schweizerische Duale Einkommensteuer). This fundamental tax reform is designed to achieve a substantial impact on growth by eliminating tax barriers to investment and innovation, to strengthen the attractiveness for the location of international investment, and to ensure tax neutrality in as many margins as possible. In section 5, I turn to an evaluation of the short- and long-run quantitative impact of the reform. Section 6 discusses how the tax system affects start-up investment and how tax reform could improve the quality and quantity of venture capital financing of young firms. Section 7 concludes.

2. Problems of Income Taxation

In most countries, income taxation follows the traditional Schanz Haig Simons model of a comprehensive income tax which subjects all types of income to the same tax rate. Taxable income is broadly defined and should include all increases in wealth that accrue from the beginning to the end of a period. Fairness requires that the income tax fulfils the principles of horizontal and vertical equity.

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[3] The effects of capital income taxes at the firm and personal level were analysed in much detail in Sinn (1987,1991). Auerbach (2002) reviews the recent literature.

Horizontal equity means that different people with the same income, or increase in wealth, should pay the same tax. Vertical equity is associated with the ability to pay principle, requiring that people with more income pay more tax. How much more tax they should pay remains largely in the realm of philosophical judgement rather than purely economic reasoning. It is very often claimed that vertical equity requires a progressive tax schedule although this is by no means a necessary implication of the ability to pay principle. The vast majority of countries have indeed implemented a progressive income tax. In practice, the income tax is riddled with important loopholes and elements of double taxation at the same time. This statement is particularly true in the taxation of capital income as part of the income tax.

Capital income earned by corporate firms gets taxed by the corporate income tax at the company level and different forms of personal income taxes. At the personal level of the investor, capital income is usually taxed at differential rates, depending on whether capital income accrues in the form of interest, dividends and capital gains. Many countries, including Austria, have departed from the comprehensive personal income tax which taxes all forms of income at the same tax rates. Instead, countries increasingly apply separate, proportional tax rates on personal capital income while labour income remains subject to the progressive income tax schedule. In an important economic sense, even the comprehensive personal income tax subjects different types of capital income to different effective tax rates, despite of applying the same statutory tax rate. According to the realization principle, capital gains remain untaxed during the entire holding period until they are realized. The interest gains on taxes postponed until realization result in a considerably lower effective tax burden as compared to income that gets continuously taxed upon accrual.

Another important aspect of unequal taxation of labour and capital income under the comprehensive income tax results from inflation and the fact that tax rates are applied to nominal rather than real income. Even at a low inflation rate, a given tax rate applied to nominal capital income means a much higher effective tax rate on real capital income and thereby raises the effective tax rate on capital income over that on wages. This problem is important even for a low inflation rate. Suppose the nominal interest rate is 4% and the inflation rate is 1%, implying a real interest of 3% before tax. If a 25% tax on interest is levied, the nominal and real interest rates net of tax are 3% and 2%, respectively. In real terms, interest is 3% before tax and 2% after tax, giving a tax wedge of 1 percentage point. The effective tax rate on real interest, defined by the tax wedge as a share of the real pre tax return, is 33%, 8 percentage points higher than the nominal tax rate of 25%!

Taking an intertemporal perspective reveals another equity problem with interest taxation, and capital income taxation more broadly. One of the principles of income taxation is that the tax liability should depend only on income, and not how this income is used. It is, and should be, irrelevant for the income tax liability

whether income is spent on cars, clothes or any other useful consumption goods. The comprehensive income tax discriminates, however, in one important way between alternative uses of income: consumption of income today or in the future. Consider two employees both with the same income, subject to the same top tax rate of 50%. Suppose they have gross income of EUR 20,000 , or 10,000 net of tax, available either for consumption right now or 10 years in the future. The spendthrift spends and consumes immediately. No further income tax is due. The income tax reduces her consumption by 50%, from EUR 20,000 to EUR 10,000. The other worker is of a more saving type, puts aside 10,000 out of her taxed income, and consumes it only 10 years later. With an interest rate of 4% gross of tax and 2% after tax (with a 50% tax rate), savings before tax would be worth $20,000 \times 1.04^{10} = 29,600$ and only $10,000 \times 1.02^{10} = 12,200$. Her consumption in 10 years gets reduced by (29,600 – 12,200)/ 29,600 or 58%, compared to 50% for the spendthrift!

The reason for this much higher tax burden on the saving type is the taxation of interest income which amounts to double taxation of saved wages. Savings was already taxed by 50% when it was set aside. Even though the spendthrift and the saving type are exactly the same in terms of their current income, the saving type is punished by a much higher tax rate simply because she chose to use her income ten years later than the spendthrift. This discrimination is exacerbated by the progressive nature of the income tax. It is alleviated in countries which apply a separate, lower tax rate on personal capital income. Proponents of a consumption oriented tax system argue that the double taxation of savings should be eliminated completely. This could be done by applying a zero tax rate on interest income, or by deducting new savings from the personal income tax base.

In fact, many countries have partly done so. Apart from the general savings deduction which is meant to keep small amounts of savings tax free, individual contributions to funded pension plans and life-insurance schemes as well as savings for owner occupied housing are often tax deductible up to a certain limit. These tax incentives for certain types of savings means that a considerable part of aggregate savings already gets consumption tax treatment. Double taxation of savings is eliminated if savings today are tax deductible while future returns such as pension payments from funded pension plans are subject to the income tax. Savings is taxed once. With owner occupied housing, however, not only savings today but also future returns are tax favoured since the imputed income from living in one's own house is often not taxable.[4] Such tax treatment more than eliminates double taxation but results in an outright tax loophole.

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[4] In Switzerland, savings for owner occupied housing is tax deductible only to a very minor extent while the imputed value of rental income is subject to the income tax. In addition, interest from credit financing of housing can be deducted. Hence, residential savings gets double taxed if it is not financed with credit. This tax treatment may partly explain the

Another form of double taxation of capital income is the wealth tax. The wealth tax is, in fact, equivalent to an income tax on the normal return on capital. Suppose an asset generates a normal return of 4% gross of tax, and the maximum rate of the wealth tax is 0.7% as in Switzerland. Subtracting the wealth tax leaves a private return of only 3.3%. The tax wedge of 0.7% as a share of the pre tax return amounts to 17.5%! The wealth tax of 0.7% is equivalent to an interest tax of 17.5% since both lead to the same net of tax return. The wealth tax thus leads to substantial double taxation since it comes on top of other taxes on capital income. The wealth tax is, however, even more problematic than normal capital income taxation since it must be paid also in periods when the asset generates only a low or even no return at all. In a less prosperous period, the asset may generate a return of only 1% and the government takes 70% of that return by imposing the wealth tax. If there is no return at all, the wealth tax effectively confiscates part of the asset. The wealth tax substantially raises the downside risk of asset income.

The ideal of comprehensive income taxation is further eroded in reality, leading to even more cases of differential taxation of capital income. Entrepreneurial income from small non-corporate firms is taxed once as part of the entrepreneur's personal income tax. Income derived from corporate equity ownership is often double taxed. Profits are first subject to the corporate tax at the firm level and then at the personal level by dividend and capital gains taxation. Full tax relief from double taxation by means of complete integration of the corporate tax is the exception rather than the rule. If investors hold corporate debt instead of equity, interest on corporate debt is taxed only once at the personal level since interest is tax deductible at the company level. Compared to holding debt, corporate equity gets taxed twice when tax integration is incomplete.

To sum up, the practice of income taxation deviates substantially from the ideal of a comprehensive income tax. Some parts of capital income get taxed twice and much higher than labour income while other parts essentially go tax free. This practice not only violates horizontal equity as a basic principle of fair taxation. It also imposes considerable efficiency costs on the economy, leading to lower income and growth than would be possible with a more efficient tax system. Taxes not only distort the level but importantly also the allocation of savings and investment towards alternative uses. More neutrality in the taxation of alternative forms of capital income can probably generate substantial efficiency gains.

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very low share of owner occupied housing and the very high fraction of credit financing of residential investment in Switzerland.

3. Taxes and the Level and Efficiency of Capital Accumulation

3.1 Extensive and Intensive Investment

The impact of taxes on investment is probably the most important channel how taxes can affect the level and growth of income per capita. Investment, however, can occur in many different forms and is managed by different types of firms. The impact of taxes matters in different ways for different types of investment. A key distinction is between extensive and intensive investment. Investment on the extensive margin refers to discrete, lumpy investment decisions such as the location choice of multinational firms or the start-up decision of new entrepreneurs. Extensive investment reflects a comparison among discrete alternatives such as allocating a new plant to one or the other country or the career choice of starting one's own firm versus remaining employed in established firms. The average effective tax rate (AETR), i.e. the share of total taxes paid as a fraction of profits, matters for the location decision for subsidiaries of multinational companies or for the location of internationally mobile firms. The AETR is dominated very much by the size of the statutory rates. The rate of new business creation depends on the career choice of potential entrepreneurs. The tax impact depends on the comparison of the AETR on the two alternative occupations, i.e. on the relative average tax burden on labour and entrepreneurial capital income.

Multinational companies often belong to the technologically most advanced firms. New entrepreneurial firms are considered to be more innovative and to have more profitable investment opportunities compared to large established companies. The AETR, and thus the size of statutory tax rates, indeed matters for important parts of aggregate investment and innovation. The size of the statutory tax rate also matters for profit shifting of multinational firms which might importantly erode the corporate tax base in high tax countries. The larger the difference in the absolute tax rates of a high and low tax country, the stronger are the incentives of multinational firms to shift profits away from high tax to low tax countries. Companies may do so, for example, by manipulating transfer prices. The importance of discrete investment decisions and of profit shifting explains why the magnitude of statutory as compared to marginal tax rates plays such an important role in the policy discussion.

Investment on the intensive margin refers to the follow on investments of established firms which may grow larger by investing more in plant and equipment, or neglect investment to shrink in size. The profitability of marginal investment projects depends on the effective marginal tax rate (EMTR) which importantly depends on the extent of depreciation allowances, investment premiums and other investment related deductions from the tax base. For example,

the EMTR may be zero despite of a large statutory tax rate if new investment expenditure is fully deductible from taxable profits. The intensive investment margin refers to the variable investments of established firms. The EMTR is thus the classical measure for tax barriers towards investment.[5]

In the aggregate, both personal and company level taxes determine the total tax wedge between a company's pre tax rate of return and the required net of tax return to investors. However, different taxes play a very different role for different types of firms. Obviously, corporate taxes are not directly relevant for small non-corporate firms which are, in fact, responsible for a substantial part of aggregate employment.[6] More surprisingly, personal taxes on dividends and capital gains are not necessarily relevant for investment of corporate firms. This very much depends on the ownership structure of corporate firms. Small, closely held corporations such as family firms are entirely home owned and necessarily have to take into account the domestic investors' personal taxes. Multinational companies and large domestic corporations listed on stock markets may be owned by foreigners or domestic institutional investors such as pension funds (important in Switzerland) which are not subject to domestic personal taxation. The larger the ownership share of these tax free investors, the less significant the potential impact of personal taxes on the companies' cost of capital.

How broad is the impact of tax reform on investment? Unfortunately, numbers are scarce. I am in fact not aware of any readily available data or empirical work that would decompose domestic employment in non-corporate firms, domestically owned, listed and non-listed corporations, and multinational corporations. Taking Switzerland as an example, a rough estimate is that about 30% of the workforce is employed in non-corporate firms and, in the absence of any other guideline, one may think that 30% of the aggregate capital stock is managed by non-corporate firms. This would imply that large firms are simply a scaled up version of small firms, with no systematic difference in capital labour ratios. A cut in the corporate tax obviously provides no tax relief to non-corporate firms and is thus relevant for about 70% of aggregate investment. Being a source tax, the corporate tax reaches

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[5] Sørensen (2004) contains a number of contributions on the measurement of effective marginal and average tax rates. European Commission (2001) reports extensive comparisons of marginal and average rates across EU Member States. Devereux and Griffith (1998) have shown empirically that direct multinational investment depends more on average rather than marginal effective tax rates. De Mooij and Ederveen (2003) provide a survey of empirical estimates and find that direct investment is around two times more tax sensitive than marginal domestic investment. Hasset and Hubbard (2002) review the estimates on intensive investment and report an elasticity of about −1. A tax induced reduction of the user cost by 1% would boost the capital stock by 1% in the long-run. Rosen (2005) and Cullen and Gordon (2002) show empirically that taxes significantly affect start-up entrepreneurship and entrepreneurial activity.

[6] In Switzerland, roughly 30% of total employment, see Keuschnigg and Dietz (2003).

all corporate firms with domestic operations, irrespective of whether they belong to domestic corporations or domestic or foreign multinationals. The personal income tax is relevant only for non-corporate entrepreneurial firms, creating about 30% of aggregate employment. Dividend and capital gains taxes take from the income of corporate ownership at the personal level. Note, however, that a significant part of corporate shares are owned by foreign private and institutional investors, or domestic institutional investors, that are not subject to domestic personal taxes. One can safely assume that dividend and capital gains taxes are relevant only for part of aggregate investment in the corporate sector. They should matter most for family firms with concentrated domestic ownership.

There is a debate about whether dividend taxes are able to affect investment, see Zodrow (1991), for example. The "old view" assumes that firms follow a well determined dividend policy and thus must finance investment at the margin with both retained earnings and new equity. The dividend tax then reduces investment. The "new view" claims instead that investment is largely financed by retained earnings at the margin, with dividends being the residual use of profits. The dividend tax is then irrelevant for investment. Note, however, that even staunch supporters of the new view concede that the dividend tax depresses the start-up investment of new firms, see Sinn (1991), for example. It is probably more useful to distinguish small growth firms that tend to be financially constrained and need external equity capital, and large mature firms with large free cash flow that can easily finance marginal investment with retained earnings. The empirical analysis of Auerbach and Hassett (2003) and Dietz (2005) points to this direction and implies that dividend taxes reduce investment by smaller firms but are not particularly important for large corporations.

International tax competition reflects the countries' desire to attract physical and portfolio capital to generate more labour and capital income at home and to protect the domestic tax base needed to finance the public sector. How should countries adjust their tax system to advance national welfare in the face of intensive tax competition and high capital mobility? Roughly spoken, personal taxes matter for international portfolio investment. Company taxes, and most importantly the corporate tax, are relevant for the location and level of physical investment which is a precondition for high wages and employment.[7] It seems more important for a country's welfare to reduce these source taxes on physical investment to strengthen the attractiveness of the domestic economy as a location of international investment. In boosting capital formation, a reduction of these taxes must eventually also benefit domestic workers and will ultimately have a broad beneficial impact on the home economy.

The optimal taxation literature in theoretical public finance suggests that a country should reduce source taxes, i.e. the corporate tax, to zero while it may tax

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[7] See Devereux (2000) for an overview of the literature and a stylized analysis.

domestic savings and portfolio capital at a positive rate. The predictions with respect to the zero corporate tax rate are reflected in the prolonged downward trend in corporate tax rates by international comparison. The optimal size of that personal tax rate on savings depends on the magnitude of the savings elasticity relative to the labour supply elasticity.[8] Furthermore, low interest and dividend taxes help to attract portfolio investment and generate employment in the domestic financial sector. A high international mobility of portfolio capital thus limits a country's ability and desire to levy high personal taxes on savings.

The result of a zero source tax does not necessarily mean that the statutory corporate tax rate should be zero. A positive statutory rate is in fact called for in order to tax economic rents and the returns of location specific fixed factors which can be taxed without efficiency costs and thereby contribute valuable tax revenue. The corporate tax rate also serves as a backstop for the taxation of income that is difficult to reach at the personal level. The zero tax result only suggests a zero EMTR which essentially leaves a normal rate of return to capital tax free. A zero EMTR is achieved either by allowing for immediate investment expensing (cash flow tax)[9] or by deducting all costs of finance, including an imputed return on equity (ACE, allowance for cost of equity). Both ways of reducing the EMTR to zero would also substantially reduce the AETR and thereby strengthen a country's attractiveness for international investments since only supernormal returns get effectively taxed while a normal return remains tax free.

3.2 Financial Decisions of Firms

Firms my finance new investment either with debt or with equity. Corporate firms can raise equity finance either from internal self-financing via retained profits or by issuing new shares. The debt equity choice determines the firm's leverage and vulnerability with respect to negative profit shocks. If taxes favour debt over equity, they contribute to high financial leverage resulting in a larger aggregate rate of business failure during recessions. Taxes do influence the firm's debt equity choice in important ways. At the firm level, interest on debt financed investment is tax deductible while the cost of equity is not. The tax advantage of debt increases with the size of the profit tax rate.[10] The tax advantage of debt is partly offset by taxation on the personal level if interest on directly held business debt is taxed more heavily than the return to equity in terms of dividends and capital gains.

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[8] See Keuschnigg (2005) for a simple statement and Gordon (2000) for a review of the literature. Devereux, Griffith and Klemm (2002) document the international downward trend in the corporate tax.

[9] With a cash flow tax, tax deductibility of interest must be eliminated in order to prevent a subsidy on debt financed investment. This would create difficult transitional problems.

[10] For example, Gordon and Lee (2001) estimate that a reduction of the corporate tax rate by 10 percentage points would reduce the debt asset ratio by 3 to 4%.

Capital gains are almost universally taxed on realisation rather than accrual. Accrued capital gains remain tax free until the date when the asset is sold and the capital gain is realised (realisation principle). During the holding period, the investor essentially receives an interest free credit on postponed taxes which much reduces the effective, accruals equivalent capital gains tax rate. In many cases, capital gains remain entirely tax free, and the dividend tax rate is reduced as a means of integrating corporate and personal taxes to avoid double taxation.

As a result of the realisation principle, dividends are taxed much more heavily at the personal level than capital gains. This tax disadvantage of dividend payments favours equity financing by retained earnings compared to dividend payments combined with new share financing of investment. On the positive side, this strengthens the firm's equity base and helps to offset the tax advantage of debt at the firm level. On the negative side, however, the tax penalty on dividend payouts makes it profitable to retain profits and finance investment internally, even if much more profitable investment opportunities are available outside the firm. Thereby, the tax system favours investment in large mature firms which have large profits relative to their own investment opportunities and which tend to invest less profitably than young, fast growing companies. Young growth companies belong to the most dynamic firms and are particularly important for innovation and growth in the aggregate economy. These fast growing firms have more profitable investment opportunities than they can finance out of own profits, and necessarily require external debt as well as risk capital. The tax penalty on dividends, however, discourages dividend distributions and thereby hinders the role of the capital market to allocate scarce investment funds to their most profitable uses. There is much empirical evidence that the dividend tax penalty reduces dividend payouts[11] which are a precondition to make profits available for reinvestment in other firms. It is also well established that large mature firms, on average, tend to invest less profitably than young growth companies. Hence, the tax preference for retained earnings stands in the way of efficient capital allocation.

One can further argue with good reason that the tax preference for retained profits stands in the way of good corporate governance. The existence of large free cash flow within big firms allows management to divert resources and pursue non-value maximising investment strategies to enhance their own personal interests. The need to raise external capital reduces the scope for such inefficient management activities since new external financing usually comes together with monitoring and an assessment of the firm's prospects. The tax system exacerbates the inefficiency of free cash flow because investors, for tax reasons, tend to demand less dividends and prefer instead capital gains from internally financed investments. One may thus expect that more tax neutrality with respect to dividend

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[11] According to Poterba (2004), taxes significantly and quite strongly reduce dividend payouts.

distributions versus profit retentions would strengthen the investors' position against management and thereby improve the quality of corporate governance.

3.3 Organizational Form and Entrepreneurship

Taxes affect the efficiency of capital allocation also by their impact on the firms' choice of organizational form. Profits of non-corporate firms are taxed only once. They are part of the entrepreneur's personal income and thereby subject to the income tax. In as far as corporate tax integration is incomplete, corporate profits are double taxed. This tax disadvantage discourages the firms' decision to incorporate even though it might be advised for economic reasons such as limited liability, improved access to capital etc. These advantages of the corporate form become more important once the firm expects to grow beyond a certain size. The (partial) double taxation of corporate profits prevents some firms to incorporate even though they could grow larger and earn higher profits by transforming into a corporation. Taxes thus can distort the allocation of capital between corporate and non-corporate sectors. The efficiency cost is not to be ignored as recent empirical literature shows.[12]

Finally, taxes can discourage risk taking and start-up entrepreneurship. A proportional income tax may actually encourage risk taking if it is combined with full loss offset. When the government shares proportionately in profits as well as losses, it provides via the tax transfer system a welcome insurance effect that is often not possible on the private capital market. In this case, taxes actually encourage the pursuit of risky activities such as investing in risk capital for new firms or pursuing a risky entrepreneurial career. Most tax systems, however, limit the extent of loss offset or loss carry forward and thereby discourage risk taking. This insurance effect might be particularly important for small and medium sized firms with a dominating entrepreneur who is not sufficiently diversified but has concentrated her wealth mostly in her own firm.[13] Apart from this welcome insurance effect, entry into entrepreneurship and the rate of business creation depend on the relative magnitude of the average tax burden on profit and labour income, the two alternatives of this career choice.[14] The higher is the total tax burden from corporate and personal taxes that falls on profit income relative to wage income, the less attractive is to give up employment for an entrepreneurial career.

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[12] MacKie-Mason and Gordon (1997) estimate the deadweight loss from the tax distortion of organizational form to amount to 16% of the sum of the tax payments of corporate and non-corporate firms.

[13] See Keuschnigg and Nielsen (2004a) and Cullen and Gordon (2002) on taxes, entrepreneurship and risk taking.

[14] See Keuschnigg and Nielsen (2004b) for a formal analysis.

4. A Dual Income Tax for More Tax Neutrality and Growth

Income taxation in practice is riddled not only with preferential tax treatments of certain types of income or even complete exemptions, but comes with elements of double taxation as well. These features plainly violate the principle of horizontal equity for fair taxation but also give rise to important efficiency costs. The ideal of comprehensive income taxation is far from achieved. Furthermore, from a theoretical viewpoint, the fundamental goals of public policy, efficiency and redistribution, stand in conflict with each other. Rational tax policy must find an optimal trade-off between efficiency and redistribution which generally does not imply that all types of income should be taxed at the same rate. Instead, if capital income responds with a much higher elasticity to taxes compared to labour income, capital income should be taxed at a lower effective rate. In a globalised economy, capital is much more mobile internationally than labour which raises the elasticity of the tax base. This development has put strong downward pressure on corporate and personal tax rates which would otherwise drive direct and portfolio investments out of the country. Many open countries have thus strongly cut corporate taxes and have proceeded to tax personal capital income at low, proportional rates separate from the progressive income tax schedule.

In Keuschnigg (2004), I have worked out the elements of a fundamental tax reform for Switzerland, consisting of a growth oriented version of a dual income tax.[15] The SDIT system (Swiss Dual Income Tax) consists of the following elements:

1. progressive wage taxation with a top marginal rate of 37%
2. proportional profit tax at a flat tax rate equal to the current average rate of 23%. The tax applies uniformly to all firms, corporate and non-corporate
3. deduction of a normal rate of return on equity, equal to a long-run average of the risk free return on government bonds
4. a proportional "shareholder" tax at the personal level on all types of capital income (interest, dividends, and realized capital gains) at a rate of 18%. A surcharge on realized capital gains is levied to compensate for interest gains due to tax deferral during the holding period. The tax allows for full loss offset.

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[15] The study was commissioned by Avenir Suisse. The full text of the report in German is available on the internet at www.iff.unisg.ch. Keuschnigg and Dietz (2005) contains a more formal analysis of the proposal. The dual income tax (DIT) was favored early on by Sørensen (1994). It was suggested by Cnossen (1999) as a model for the EU. Nielsen and Sørensen (1997) discussed the optimality of a dual income tax. Gordon (2000) discusses many conceptual issues that are also related to the DIT. Recently, a version of the DIT was suggested by the Sachverständigenrat (2003) for Germany which originated a discussion in Germany, for example, Boadway (2004) and other contributions in the same issue of CESifo Dice Reports, and Eggert and Genser (2005). None of these proposals combined an allowance for corporate equity with dual taxation at the personal level.

The SDIT system shares with any other form of dual income taxation the fact that labour income is subject to a progressive tax schedule while capital income is taxed separately at a moderate, proportional rate. As table 1 shows, the SDIT system departs quite substantially from the current Swiss tax system. It is meant as a long-run guideline for tax policy aiming at tax neutrality to the fullest possible extent, rather than a compromise reform that is constrained by the status quo and the need to appeal to diverse interest groups for maximal political support. As a first element, SDIT subjects all firms, corporate and non-corporate, to the same profit tax while at the personal level a flat tax rate of 18% on all income received from the firm is applied. Currently, entrepreneurs with non-corporate (NC) firms are subject to the personal income tax which amounts to 37% on average in the top income bracket, including all layers of government, with considerable variations across different locations in Switzerland. In addition, capital gains from sale of the firm etc. are fully subject to the income tax which amounts to an effective accruals equivalent rate of 15% on realized capital gains after discounting for the interest gains during the holding period. Under SDIT, the entrepreneur would first pay the profit tax of 23%, after allowing for an imputed cost of equity and interest on debt. He further pays a shareholder tax of 18% whenever she pays out a profit or realizes a capital gain. In receiving exactly the same tax treatment as corporate firms (DC, domestic corporations), the system is neutral by construction with respect to organizational choice.

Table 1: Tax Rates: Status Quo versus Swiss Dual Income Tax (SDIT)

	DC	NC	DC	NC
Profits	23.2%	37.33%	23.2%	23.2%
Allowance for Equity	no	no	yes	yes
Capital Gains	4.3%	15.3%	18.4%	18.4%
Dividends	37.3%		18.4%	18.4%
Interest	37.3%	37.3%	18.4%	18.4%
Wages	37.3%	37.3%	37.3%	37.3%
Value Added	7.6%	7.6%	–	–
Property	0.7%	0.7%	0.7%	0.7%

Source: Keuschnigg (2004) and Keuschnigg and Dietz (2005).

With corporate firms, SDIT introduces a new allowance for corporate equity (ACE) at the firm level, thereby extending the tax deductibility of interest on debt to the opportunity cost of equity financing as well. At the personal level, shareholders will receive a tax cut on dividends. Up to now, dividends are fully subject to the personal income tax in Switzerland, with no dividend tax relief

whatsoever. Switzerland is one of the very few countries where dividends are subject to full double taxation. Under SDIT, the shareholder tax applies which is about half the current top income tax rate. On the other hand, capital gains on privately held shares are, in principle, tax free with a number of exceptions where the normal income tax applies. Taking account of these exceptions, the effective capital gains tax rate on personally held shares is only about 4.3%. SDIT closes this tax loophole and subjects such capital gains to exactly the same effective tax rate of 18% under the shareholder tax that applies to any other form of personal capital income as well.

Chart 1 illustrates how the implementation of SDIT would reduce EMTRs on investment by domestic corporate and noncorporate firms, separately for each mode of finance. The EMTRs are uniform across sectors and modes of finance which illustrates the attractive neutrality properties of SDIT. Any remaining small differences are due to slight differences on risk premia on equity and debt rather than tax differentials. The height of the bars shrinks substantially which reflects the broad based investment stimulus to be expected. The remaining height of the bars shows the continued taxation of capital income at the personal level on account of the shareholder tax and the wealth tax. One must finally appreciate that the fully uniform tax treatment of different types of personal capital income is a major improvement in terms of horizontal equity over the current Swiss tax system.

Chart 1: Effective Marginal Tax Rates: Status Quo versus SDIT
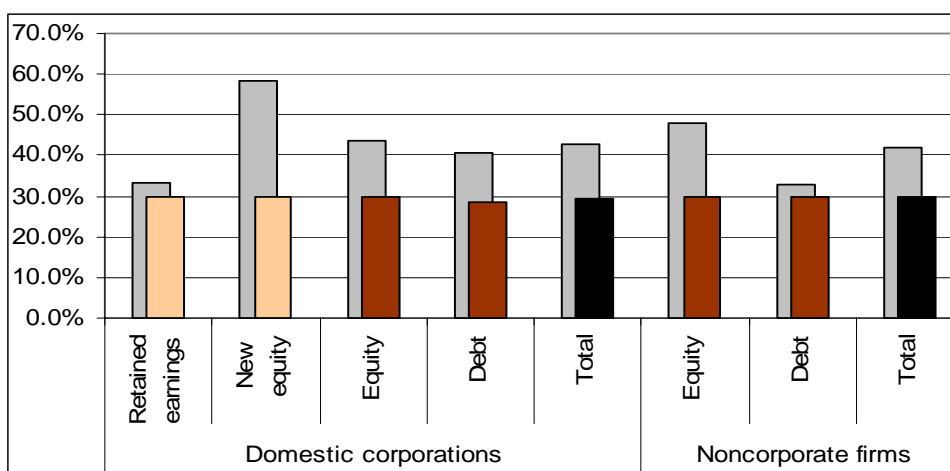
Source: Keuschnigg (2004) and Keuschnigg and Dietz (2005).

From a growth perspective, the deduction of an imputed cost of equity (ACE) is the most important feature of SDIT. A normal return on capital thus remains tax free at the level of the firm. It is taxed exclusively at the personal level with a moderate,

proportional rate. Only supernormal profits in excess of the normal return such as rents on fixed factors or monopolistic profits are effectively taxed by the profit tax. These excess profits can be taxed without damaging the prospects of marginal investments. The ACE allowance thus reduces the EMTR to zero at the firm level and provides a big stimulus to the variable investments of established firms with operations at home. On the other hand, it reduces the profit tax on a normal return to capital to zero and, thus, substantially reduces also the AETR of firms. Since direct investment by multinational firms depends primarily on the AETR, the ACE deduction is also a decisive element to strengthen the attractiveness of home country as a location of international investment.

The SDIT is neutral with respect to financial behaviour of firms. It eliminates the tax discrimination of equity capital at the firm level since it allows all costs of finance, interest on debt and imputed interest on equity, to be deducted from the profit tax. At the personal level, the shareholder tax includes all forms of capital income symmetrically, irrespective of whether it is received as interest, dividends or capital gains. The tax advantage of capital gains on account of the realisation principle is offset by a surcharge on the interest gains due to tax postponement during the holding period. Hence, the system treats debt and equity financing entirely symmetrical and eliminates any existing distortion with respect to debt equity choice. It also eliminates the tax penalty on corporate distributions and thereby avoids the tax discrimination of young growth companies. These firms do not have sufficient free cash flow to finance their expansion purely from retained profits but rather need new risk capital to finance further growth. In eliminating the tax penalty on dividends, SDIT encourages increased dividend payments and facilitates the allocation of scarce investment funds to those firms with the most profitable investment opportunities and the highest growth potential, rather than locking capital into large firms with only moderate returns to investment. The flat tax rate on personal capital income combined with full loss offset strengthens the tax system's role in encouraging entrepreneurial risk taking as it makes government share in success and failure of risky investments proportionately.

Under SDIT, the shareholder tax comes on top of the wealth tax which can be viewed as an additional, presumptive capital income tax. Both taxes add up to an effective tax on capital income which is by no means exceptionally low by international standards even though it implies a substantial reduction in capital income taxes in Switzerland. The shareholder tax is no more than half of the current tax on dividends, and capital gains if they are taxed at all. This raises the question whether SDIT suffers from the same problem of labour tax avoidance as most existing variants of dual income taxation. Sole proprietors and entrepreneurs might want to declare high taxed labour income as low taxed capital income which would erode the labour tax base and loose significant parts of tax revenue. Note, however, that any profit in excess of a normal return to capital is subject to the

cumulative burden of the shareholder and profit taxes which add up to the top tax rate on labour income. For this reason, tax arbitrage does not pay under SDIT.

Suppose a person earns labour income from her personal activities and gets taxed at the top personal tax rate of 37%. To save taxes, she decides to establish her own firm, does not pay herself any salary but receives her income as profits. Such profits do not reflect the return on assets but result from labour inputs. Since there is no ACE allowance available in this case, these profits appear as supernormal profits that are fully subject to the profit tax at a rate of 23%, and to the personal shareholder tax at a rate of 18%. Since the tax rates under SDIT satisfy the condition $(1–0.18)$ x $(1–0.23) = (1–0.37)$, the cumulative tax burden is equal to the top rate of the progressive wage tax. Tax arbitrage doesn't pay with SDIT.

5. Quantitative Impact of Tax Reform

The potential short- and long-run effects of implementing the SDIT system were calculated with a computational growth model for Switzerland. The model takes account of investment, financing and savings decisions of households and firms and differentiates between non-corporate, domestically owned corporate firms as well as domestic and foreign multinational firms with their operations in Switzerland. Depending on the form of revenue compensation (either an increase in the value added tax or a cut in transfer expenditure)[16], the long-run level effects of GDP range between 2.5% and 3.5%. After completing the transitional adjustment period required to attain the new growth path, GDP would permanently exceed the levels pertaining to the growth path without tax reform by 2.5% to 3.5%. The reader is referred to the full report in Keuschnigg (2004) and the more formal analysis in Keuschnigg and Dietz (2005) for more detailed documentation of the quantitative results.

At first sight, the magnitude of these GDP gains may appear moderate, given the extent of the reform. Partly, they reflect two aspects which are rather specific to the Swiss situation. First, the revenue losses are substantial in the short-run since interest and dividends are fully subject to the income tax in Switzerland while other countries, such as Austria among others, or the Nordic countries, have already introduced a lower final tax on these types of income in the past. Financing these revenue losses reduces the growth effects of the tax reform. Second, capital gains on privately held shares are tax free in Switzerland, although there are numerous exceptions to this principle which mainly contribute to substantial tax uncertainty. The SDIT system, however, requires equal effective taxation of capital gains not

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[16] These two scenarios were motivated by two considerations: First, the normal rate of the value added tax is only 7.6% in Switzerland and is, thus, extremely low by international comparison. Second, social spending has grown by far the most vigorously in the last decade.

only for reasons of horizontal equity but also for efficiency reasons. The increase in capital gains tax also retards the growth effects of the reform.

There is no tax reform without redistribution. The implementation of SDIT would also involve redistributive effects to a considerable extent. They do depend, however, on the specific situation prior to the reform. If a reform removes the multiple and cumulative taxation of certain types of capital income, then a correction of such multiple taxation necessarily benefits those who had an overly high tax burden before the reform. In Switzerland, capital income gets taxed cumulatively by a high wealth tax, an inflation tax resulting from the principle of nominal taxation, and by full double taxation of dividends. The loss in tax revenue must then be raised elsewhere. A main argument for the dual income tax in an open economy is, however, that the burden of capital income taxes, in particular company taxes, mostly falls on labour. Capital income escapes taxation on account of high international mobility. In depressing investment in the domestic economy, capital income taxation reduces labour productivity and wages. Implementing the SDIT system boosts market wages by between 3% and 4% in the long-run which suffices just to protect the net disposable wage, despite of the necessary increase in the value added tax. In the short-run, this is not possible, however, since the losses in tax revenues materialize instantaneously while the wage increasing gains from induced growth become available only rather slowly. In the short-run, workers loose. The benefits are in the long-run.

6. Start-up Investment and Venture Capital Finance

Young innovative firms are a particularly important part of the business sector. They provide a more productive environment to develop new products and commercialize them, compared to large existing companies. Successfully starting up a new firm not only requires considerable capital but also commercial know-how. Start-up entrepreneurs are often more competent on the technological side but lack money and commercial experience. These firms can be very innovative but are also very risky. They need external risk capital which is difficult to obtain from banks since these firms do not have sufficient collateral or a past track record that banks could rely on to secure their credit. Further, the firms' know-how is concentrated in the founder's person whose cooperation cannot be contracted in all matters. Hence, the investor must expect important incentive problems and the possibility of opportunistic behaviour of the entrepreneur. Venture capital is specialized in financing young innovative start-up firms. Venture capitalists provide not only capital but also commercial advice, business contacts and monitoring services that promote the firms' commercialization. Due to these value added activities, venture capital backed firms on average grow significantly larger and create more value and jobs than other firms. This type of investment is thus particularly important for aggregate innovation and job creation. Although venture

capital investments represent only a small part of overall investment and R&D, they are responsible for a disproportionately large share of industrial innovation.[17]

The life-cycle of a start-up firm begins with a seed phase where a business plan is developed. Often, the firm can be started only when a venture capitalist decides to provide the money for further research and investments. The entrepreneur and venture capitalist agree on a contract that typically includes equity like financial instruments (such as straight equity, or convertible debt) and pays particular intention to maintaining strong incentives for both entrepreneur and venture capitalist to fully engage in the development of the company. During the subsequent start-up phase, the product or service is refined to become marketable and production is prepared. The firm reaches a mature growth stage when the product is successfully introduced in the market. At this more mature stage, the firm has sufficient access to other forms of finance and the venture capitalist typically exits, for example by selling her shares in an IPO, or by a trade-sale. Many investments simply fail and have to be written off, testifying to the high risk of start-up financing.

While there are other important policy areas that determine the development of a healthy venture capital industry, taxes and subsidies do play an important role in various stages of the venture capital process.[18] The key message of our formal policy analysis is that taxes are important to determine two margins of entrepreneurial behaviour that determine both the quantity and quality of venture capital investments: the start-up decision to determine the rate of business creation, and incentive driven effort of entrepreneurs and venture capitalists that determine the quality of venture capital investments. In line with traditional public finance analysis, the relative taxation of labour and capital income importantly influences entrepreneurial entry. When dependent employment is taxed more heavily than capital income, potential entrepreneurs are more likely to give up employment and start their own firm.

A number of different taxes is relevant to determine the overall net tax burden on a new firm. At the beginning, governments often provide various subsidies to the cost of capital such as direct investment subsidies or research grants to innovative firms, or credit guarantees that allow banks to discount their risk and charge a lower interest rate. During the start-up phase the firm does not pay dividends but rather needs more capital to finance further expansion. The return to entrepreneur and investor accrues in terms of capital gains when the value of a successful company increases rapidly. Hence, for young start-up firms the capital gains tax is particularly relevant. When the firm records losses or fails, the

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[17] See Kanniainen and Keuschnigg (2005) and Gompers and Lerner (1999) for an analysis of the venture capital industry and innovative start-up activity. Kortum and Lerner (2000) estimate the impact of venture capital on aggregate innovation in the U.S.

[18] I refer to Keuschnigg (2004b,c) and Keuschnigg and Nielsen (2004a,c) for a more detailed discussion of the empirical and theoretical literature on venture capital.

provisions of the tax code with respect to loss offset and loss carry forward are important. Finally, when the firm grows mature, dividend taxes and corporate taxes become relevant. Irrespective of whether they distort mature firm investment, they are capitalized in firm values. All these taxes have in common that they reduce the private value of a company and thereby discourage entrepreneurial entry and via this margin also the demand for venture capital.

The success and value of new firms quite decisively depend on the entrepreneur's due diligence and effort, as well as on the engagement and strategic support of the venture capitalist. Such effort is not contractible ex ante but must rather be secured by making remuneration of entrepreneurs and investors sufficiently sensitive to success or failure. Profit and capital gains taxes diminish the private income that can be gained in case of success, and thereby reduce the incentives for effort, in addition to discouraging entry. In contrast, a start-up subsidy to the cost of capital is given at the start irrespective of whether the investment will be successful or not. Such subsidies therefore cannot directly influence the incentives for effort and have no direct bearing on the quality of venture capital.

This key distinction has important consequences for the relative usefulness of selective tax breaks and subsidies as alternative policy instruments to promote venture capital backed investments. A start-up subsidy is effective in boosting the rate of business creation but is not useful in strengthening incentives for higher quality of venture capital investments. A tax break, in contrast, becomes available only in case of success and thereby induces private effort to raise the likelihood of success. In reducing the net tax burden in present value, a tax break also encourages extra entry. The key result of our formal policy analysis is, thus, that the same amount of public money is more effective if it is given as a tax break on young firms, rather than as a start-up subsidy. On the normative side, some subsidy to the venture capital industry might be justified in the presence of positive spillovers that industrial innovation involves for the entire economy. Further, the need to share the returns to success among entrepreneur and venture capitalist might result in too low effort in private competitive equilibrium. This argument creates a case to pay particular attention not only for the quantity, but also the quality of venture capital backed investments. These arguments favour selective tax breaks over subsidies to venture capital backed start-ups.

Compared to the status quo, the SDIT tax reform proposal of the preceding section has probably ambiguous effects on venture capital investments. On the one hand, the allowance for corporate equity and the reduction of the dividend tax represents a major tax reduction for corporate firms which substantially raises the value of mature firms and should thus encourage both the quantity and quality of venture capital investments. On the other hand, this beneficial effect is probably largely offset in the case of Switzerland by the increase in the effective capital gains tax. The quality and quantity of venture capital investments would benefit, in

the interest of aggregate innovation and growth, if the tax reform was complemented by a selective tax break on the capital gains tax. As shown by Keuschnigg and Nielsen (2004a,c), this amendment to the SDIT reform could be made self-financing if this tax break were combined with an elimination of the existing subsidies to start-up investments. This strategy would replace a non-performance related capital subsidy by a performance related tax break, and would be welfare improving.

7. Conclusions

A growth oriented tax policy must surely concentrate on the taxation of capital income. Company and firm level taxes on capital income not only reduce the level of capital accumulation but also stand in the way of an efficient allocation of capital across alternative uses. Apart from the growth reducing burden on extensive and intensive investment, the practice of capital income taxation also tends to favour debt over equity, making firms more vulnerable against adverse profit shocks. It also favours internal investment financing via retained earnings, instead of external financing with new risk capital. In preventing dividend distributions and favouring internal investment, taxes tend to lock capital into large existing firms and discourage dividend payments to investors which would facilitate the reinvestment of scarce funds in other firms with more profitable investment opportunities. The tax discrimination of external equity financing particularly hurts young growth companies which do not have sufficient free cash-flow to self-finance all their profitable investment opportunities and therefore need external equity capital.

Taxes affect large and small firms as well as domestic and multinational firms quite differently. For example, personal taxes on dividends and capital gains are mainly relevant for domestically owned family firms but are of rather minor importance for multinational companies that are listed on international stock markets. These firms must pay attention to large institutional investors and foreign investors that are not subject to domestic personal taxes. Firm level taxes such as the corporate tax, however, reach all corporations, irrespective of whether they are domestically or foreign owned. A growth oriented tax policy must thus consider company level taxes with priority. Tax theory also suggests that small open countries should optimally reduce source taxes at the firm level, such as the corporation tax.

Given intense international tax competition in the face of high international capital mobility, a dual income tax allows small countries to flexibly react to these international pressures. The Swiss Dual Income Tax (SDIT) reform proposed in this paper is broadly in line with the results of optimal tax theory. In introducing a tax allowance for the cost of equity, it reduces the effective marginal tax rate at the firm level to zero but continues to tax economic rents and monopolistic profits that

have no bearing for the marginal investment projects. It also substantially reduces the average effective tax rate, thus making the home economy a more attractive location for international investment from a tax perspective. The SDIT system continues to tax capital income at the personal level with a low flat tax rate. This flat rate is a major simplification of the existing tax code. The SDIT system has many attractive neutrality properties with respect to financial structure, organizational form, and entrepreneurship. In addition to strengthening the level of investment, it should also assure a more efficient allocation of capital to alternative uses. It was estimated that the implementation of the SDIT system might add between 2.5% and 3.5% of GDP permanently. This is probably a very conservative estimate that does not take account of the potential gains to innovation and the long-run growth rate.

References

Auerbach, Alan J. (2002), Taxation and Corporate Financial Policy, in: A. J. Auerbach and M. Feldstein (eds.), *Handbook of Public Economics III*, Amsterdam: Elsevier, 1251–1292.

Auerbach, Alan J. and Kevin H. Hassett (2003), On the Marginal Source of Investment Funds, *Journal of Public Economics 87*, 205–232.

Boadway, Robin (2004), The Dual Income Tax System, An Overview, *CESifo Dice Report 2(3)*, 3–8.

Cnossen, Sijbren (1999), Taxing Capital Income in the Nordic Countries: A Model for the European Union?, *FinanzArchiv 56*, 18–50.

Cullen, Julie B. and Roger H. Gordon (2002), *Taxes and Entrepreneurial Activity: Theory and Evidence for the U.S.*, NBER DP 9015.

Devereux, Michael P. (2000), Issues in the Taxation of Income from Foreign Portfolio and Direct Investment, in: S. Cnossen (ed.), Taxing Capital Income in the European Union, Oxford: Oxford University Press, 110–134.

Devereux, Michael P. and Rachel Griffith (1998), Taxes and the Location of Production: Evidence from a Panel of U.S. Multinational Firms, *Journal of Public Economics 68*, 335–367.

Devereux, Michael P., Rachel Griffith and Alexander Klemm (2002), Corporate Income Tax Reforms and International Tax Competition, *Economic Policy 35*, 451–495.

De Mooij, Ruud A. and Sjef Ederveen (2003), Taxation and Foreign Direct Investment: A Synthesis of Empirical Research, *International Tax and Public Finance 10*, 673–693.

Dietz, Martin D. (2005), *Capital Income Taxation, New Firm Creation, and the Size Distribution of Firms*, University of St. Gallen, IFF-HSG DP 0501.

Eggert, Wolfgang and Bernd Genser (2005), Dual Income Taxation in EU Member Countries, *CESifo Dice Report 3(1)*, 41–47.

European Commission (2001), Company Taxation in the Internal Market, Commission Staff Working Paper (COM(2001)582), Brüssel.

Gompers, Paul and Josh Lerner (1999), *The Venture Capital Cycle*, Cambridge: MIT Press.

Gordon, Roger H. (2000), Taxation of Capital Income vs. Labour Income: An Overview, in: S. Cnossen (ed.), *Taxing Capital Income in the European Union. Issues and Options for Reform*, Oxford: Oxford University Press, 15–45.

Gordon, Roger H. and Young Lee (2001), Do Taxes Affect Corporate Debt Policy? Evidence from U.S. Corporate Tax Return Data, *Journal of Public Economics 82*, 195–224.

Hasset, Kevin A. and Glenn R. Hubbard (2002), Tax Policy and Business Investment, in: A. J. Auerbach and M. Feldstein (eds.), *Handbook of Public Economics III*, Amsterdam: Elsevier, 1293–1343.

Kanniainen, Vesa and Christian Keuschnigg (eds.) (2005), *Venture Capital, Entrepreneurship and Public Policy*, CESifo Seminar Series, Cambridge: MIT Press.

Keuschnigg, Christian (2004a), *Eine Steuerreform für mehr Wachstum in der Schweiz*, Avenir Suisse, www.iff.unisg.ch

Keuschnigg, Christian (2004b), Venture Capital Backed Growth, *Journal of Economic Growth 9*, 239–261.

Keuschnigg, Christian (2004c), Taxation of a Venture Capitalist With a Portfolio of Firms, *Oxford Economic Papers 56*, 285–306.

Keuschnigg, Christian (2005), *Öffentliche Finanzen: Einnahmenpolitik*, Tübingen: Mohr Siebeck, in print.

Keuschnigg, Christian and Martin D. Dietz (2003), *Unternehmenssteuerreform II. Quantitative Auswirkungen auf Wachstum und Verteilung*, Bern: Haupt Verlag.

Keuschnigg, Christian and Martin D. Dietz (2005), *A Growth Oriented Dual Income Tax*, University of St.Gallen (IFF-HSG), DP.

Keuschnigg, Christian and Soren B. Nielsen (2004a), Taxation and Venture Capital Backed Entrepreneurship, *International Tax and Public Finance 11*, 369–390.

Keuschnigg, Christian und Soren B. Nielsen (2004b), Progressive Taxation, Moral Hazard and Entrepreneurship, *Journal of Public Economic Theory 6*, 471–490.

Keuschnigg, Christian und Soren B. Nielsen (2004c), Start-ups, Venture Capitalists, and the Capital Gains Tax, *Journal of Public Economics 88*, 1011–1042.

Kortum, Samuel and Josh Lerner (2000), Assessing the Contribution of Venture Capital to Innovation, *Rand Journal of Economics 31*, 674–692.

MacKie-Mason, Jeffrey K. and Roger H. Gordon (1997), How Much Do Taxes Discourage Incorporation?, *Journal of Finance 52*, 477–505.

Nielsen, Soren B. and Peter B. Sørensen (1997), On the Optimality of the Nordic System of Dual Income Taxation, *Journal of Public Economics 63*, 311–329.

Poterba, James (2004), Taxation and Corporate Payout Policy, *American Economic Review 94*, 171–175.

Rosen, Harvey (2005), Entrepreneurship and Taxation: Empirical Evidence, in: V. Kanniainen and C. Keuschnigg (eds.), *Venture Capital, Entrepreneurship and Public Policy*, CESifo Seminar Series, Cambridge: MIT Press, 251–279.

Sachverständigenrat (2003), *Staatsfinanzen konsolidieren- Steuersystem reformieren*, Jahresgutachten 2003/2004, Wiesbaden.

Sinn, Hans-Werner (1987), *Capital Income Taxation and Ressource Allocation*, Amsterdam: North-Holland.

Sinn, Hans-Werner (1991), The Vanishing Harberger Triangle, *Journal of Public Economics 45*, 271–300.

Sørensen, Peter B. (2004), *Measuring the Tax Burden on Capital and Labor*, CESIfo Seminar Series, Cambridge: MIT Press.

Sørensen, Peter B. (1994), From the Global Income Tax to the Dual Income Tax: Recent Reforms in the Nordic Countries, International Tax and Public Finance 1, 57–79.

Zodrow, George R. (1991), On the "Traditional" and "New" Views of Dividend Taxation, *National Tax Journal 44*, 497–509.

Comment on "(Why) Do We Need Corporate Taxation? and Company Taxation and Growth: The Role of Small and Large Firms"

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Both contributions have in common that they argue for a lower capital taxation, especially for a lower corporate taxation (CT), whether by lowering CT rates or introducing a dual income taxation with a lower flat rate on capital income. They go, however, not so far as to propose to abolish these taxes at all, mainly because CT is a significant source of public revenue.

The main reason for reducing CT is seen to be international tax competition. Countries seem to be in a prisoner's dilemma game, playing a beggar-my-neighbour policy, where eventually all of them are worse off. Economists and politicians overestimate the role of CT for real investment and capital accumulation. This may partly be due to the different meanings of the term "investment", which are often mixed up.

If one looks, for example, at the Austrian Joint Stock Companies Statistics (2002), it is obvious that CT is of minor importance compared to other cost components and taxes.

Table 1: Cost Structure, Taxes and Net Profits of Joint Stock Companies

Turn-over of Austrian Joint Stock Companies 2002:	*EUR 62 billion*
Inputs (including excises)	*60%*
Wage (salary) cost of which taxes and SSC	*18–19%* *3–4%*
Other non-profit-related taxes	*1%*
Corporate tax	*1%*

Source: Austrian Joint Stock Companies Statistics (2002).

Employers' social security contributions and payroll taxes are more than three times as high as the corporate tax. Reducing payroll taxes of corporations by about EUR 1.5 billion (with constant prices meaning an increase of taxable profits and – applying the Austrian CT rate for 2004 of 34% – an increase of CT by about EUR 0.5 billion) would have a similar effect on net profits and public budgets as a CT reduction of EUR 1 billion (which is the cost of reducing the CT rate to 25% in 2005). Nevertheless the CT reduction is politically more attractive. As the base of payroll taxes is much higher than corporate profits, the percentage reduction for CT is, of course, much more pronounced, meaning a stronger "signal effect".

Although CT rates seem to play a minor role for real investment (some investment promotion instruments, like investment allowances or accelerated depreciation, are even less effective with lower rates), tax competition is important and is likely to lead to a race to the bottom. Differences of rates between countries offer an incentive for tax planning, i.e. there is a tendency to shift taxable profits to low-tax-jurisdictions. As Weichenrieder points out, for smaller countries (or countries with a relatively small tax base in the past) it is, in general, less costly to reduce profit tax rates, because the potential of "imported" profits compared to domestic profits is much higher than for a large country. The following chart shows a comparison of the tax situation of corporations and non-incorporated firms which are due to Corporate Income Tax (CIT).

Chart 1: Individual and Corporate Income Tax
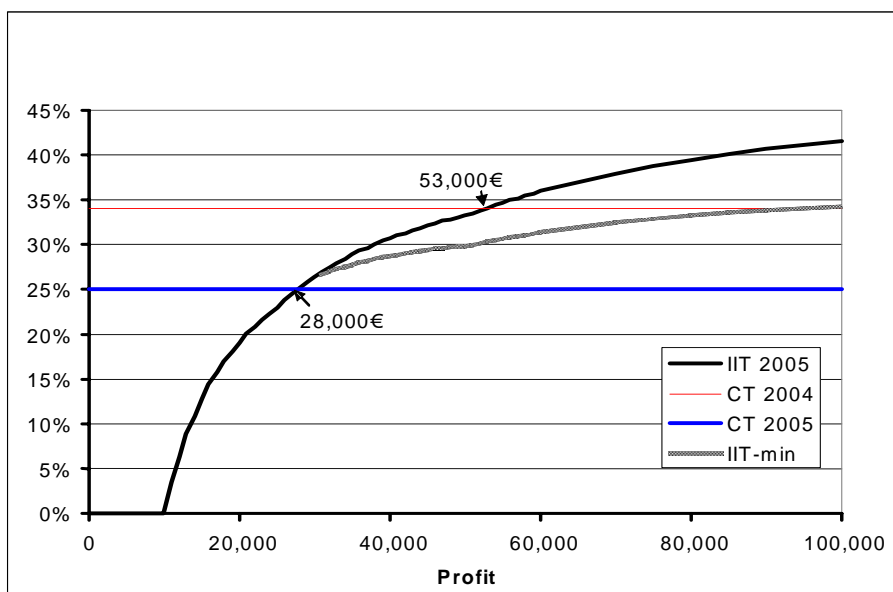
Source: Author's calculations.

One can see (from average taxation) that, because of the reduction of the CT rate, the break-even-point between firms taxed by individual income tax (IIT) and corporations fell from an annual taxable profit of about EUR 53,000 to EUR 28,000. Even taking into account the half-rate taxation for non-distributed (non-withdrawn) profits introduced in 2004 (under realistic consumption behaviour; IIT-min), leaves a significant gap. A trend towards incorporation can, therefore, be expected in the future.

According to Weichenrieder, the CT is mainly justified by the fact that the residence principle is not applicable for companies. But even in the closed economy case, where this principle is valid by definition, there are arguments for CT. Because IIT on dividends leaves withheld profits of companies untaxed, a missing CT would mean non-neutrality. Maybe that Weichenrieder's shareholder tax ("Teilhabersteuer") would avoid that, but it seems that such a system could be unnecessarily complicated.

The CT is not only important to make sure that income tax (IT) on profits is paid, but also that other taxes, like employers' social security contributions (SSC), payroll taxes and taxes on other inputs, are fully declared without too much control by the tax authorities.

Table 2: Profit Taxation and Wage Cost

Net earnings		437
Wage tax		383
Employees' SSC		180
Gross earnings		1000
Employer's SSC		219
Payroll taxes		75
Wage cost		**1294**
After-tax wage cost with IT-rate or CT-rate of		
(=wage cost of 1294 x (1-tax rate)	50%	647
	34%	854
	25%	971

Source: Author's calculations.

This example shows that, with a low tax rate on profits, the after-tax wage cost is considerably higher, meaning a stronger incentive for "unofficial" (non-taxed) wage payments.

Both, Keuschnigg and Weichenrieder use 2-period general equilibrium models for supporting their arguments. Like many (most?) mainstream models, they are based on utility- or profit-maximising representative (=identical) agents or firms, respectively. These assumptions seem highly unrealistic, especially for analysing income (profit) taxation, where income (re)distribution and the differences between individuals or firms play a major role. These models also assume full employment which does not seem feasible nowadays. And finally, the assumption that people consume their total wealth before they die is very unrealistic, too. Therefore, the results of the models are not really reliable.

Comment on "Company Taxation and Growth: The Role of Small and Large Firms"

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It is with great pleasure that I comment on Professor Keuschnigg's interesting proposals for a tax reform to boost economic growth through enhanced entrepreneurial activity and the accumulation of human and physical capital. As a researcher in the field of corporate finance, my views on the subject matter are of course not those of a specialist in public finance. Instead, I will comment on those aspects of Keuschnigg's proposal that are more in the realm of my own field. From this perspective, two points seem particularly noteworthy. The first of these concerns the proposed reform of the taxation of dividend income and capital gains. Keuschnigg proposes to harmonize the taxation of dividends and capital gains in order to induce profitable firms to pay out higher dividends, thus allowing for the firms' profits to be reinvested into the equity of other firms with more valuable growth options than those of the dividend-paying firms. This argument is obviously built on the premise that dividends enable investors to supply capital to young firms with valuable growth options. Investors of publicly listed companies could however also realize capital gains in order to free up financial resources. Thus, it is quite unclear whether the supply of capital to young and growing firms depends more on the taxation of dividends than on the taxation of capital gains. The answer to this question depends on the ease with which investors can realize capital gains, given the liquidity of the relevant financial markets. However, it seems that investors would have to realize only a small fraction of their gains on the ATX in the year 2004 in order to cover the entire demand for capital of Austrian start-ups.

In addition to the above-stated argument, there is also another case to be made against raising the tax levied on capital gains. This argument is based on the fact that equity investors of start-up companies realize most of the returns on their investments in the form of capital gains. Dividend income is a relatively minor part of these investors' returns since the need to finance growth typically bars start-ups from paying any dividends. It could thus seriously hamper the supply of equity capital to start-ups if the capital gains tax were raised in order to set this tax equal to the tax on dividend income.

The second comment of mine concerns the proposal to eliminate tax-induced distortions of firms' capital structures towards debt financing. I agree that it would be highly desirable to treat debt- and equity financing more symmetrically in order to avoid the potentially high costs of firms' excessive reliance on debt financing. However, it is important to recognize that the introduction of more stringent capital adequacy regulation (Basel II) discourages debt financing even in the absence of a tax reform since the costs of bank loans increase for many firms. The firms affected are however rarely in the position to issue equity, irrespective of the way equity financing is taxed. Instead, these firms would have to settle for close substitutes to debt financing, such as Mezzanine financing and the financing through profit-participation certificates or preferred stock. This insight motivates my suggestion: to make the tax system more neutral with respect to firms' choice between *similar* forms of financing. Such a tax reform would be a very desirable first step towards a tax system that is completely neutral with respect to all forms of financing. Relative to the tax reform required to achieve the latter goal, the success of my proposal would also depend less on the validity of views about the way firms choose between different forms of financing.[1]

Besides raising the points stated above, I would also like to add a comment concerning the question whether the Swiss SDIT proposal could serve as a leading example for a similar tax reform in Austria. It is not clear to me whether the Austrian tax system is sufficiently comparable to the Swiss system. There are in fact some striking differences, such as the relatively high Swiss wealth tax. It would be important to check how the consequences of a tax reform along the lines proposed by Keuschnigg depend on specific features of the Swiss tax code. This is not only important in order to assess the redistributive consequences of a tax reform. Instead, the specifics of the Swiss tax code may matter also for the efficiency of taxation after the reform. In fact, the Swiss wealth tax may be motivated by the insight that certain economic decisions are distorted less by the taxation of wealth than by the taxation of capital income (dividends, interest payments).

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[1] It is widely documented that many firms cannot issue equity, mostly due to fixed costs. A so-called "equity-gap" exists in many countries; in Austria the problem is particularly acute since many Austrian firms are small and fall into the equity gap.

Capital Taxation in an Enlarged EU:
The Case for Tax Coordination

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Abstract

The paper reviews coordination steps in European capital income taxation (CIT) in the past and hints at unsolved problems of capital taxation in the EU-25. Based on this experience we argue that there is room for further coordination which properly implemented should be beneficial to the Member States without sacrificing national fiscal autonomy in capital taxation.

1. Introduction

Tax coordination as a measure against potentially harmful tax competition has been and will most likely remain a controversial topic in the political as well as in the academic arena (see, e.g., Cnossen 2001, 2003; Eggert and Genser, 2001). Within the EU, the principle of subsidiarity has been strengthened by the Treaty of Maastricht and again in the European Constitution. This principle guarantees the national parliaments an entitlement to set tax rates in line with national objectives, e.g., to cover the costs for an efficient pattern of public services, or to redistribute income equitably by a progressive tax-transfer scheme. Following Tiebout tax competition is beneficial, since it forces governments to balance efficiently tax revenue collected from and public services provided to societal groups. Furthermore, tax competition is regarded as a desirable means to tame "Leviathan" behavior of nonbenevolent governments. The European Commission, on the other hand, has frequently brought to the fore the issue of distortionary effects through tax competition. VAT and excise harmonization measures have been introduced to prevent distortion in intra EU trade and to fight fiscal externalities on neighbor countries through trade diversion (Cnossen, 2001; Genser, 2003). Moreover, the European Commission is afraid of governments who follow unfair tax practices by offering tax preferences to attract foreign capital investment. The 1997 Code of Conduct was a measure to cope with this phenomenon (European Commission 1997). Finally, tax competition may give rise to a race to the bottom in national tax

rates on internationally mobile tax bases and national governments may end up with sub-optimally low levels of public services.

In the light of the arguments for and against tax competition, it seems fair to say that there is no simple solution to the dispute (cf., e.g., Cnossen, 2004; European Commission, 1992, 2001; Homburg, 1998; Mintz, 1999, 2002; Sørensen, 2000). There are certainly welfare gains and welfare losses associated with tax competition and the justification of a measure in favor of or against tax competition depends on the economic environment of the tax in question. While in the founding days of the EU income tax competition was not a pressing issue, being aware of the fact that the production factors labor and capital as well as the related income tax bases were regarded largely immobile between countries, the situation has changed in the last decades. Capital mobility has increased dramatically after the liberalization of the European capital market in the early nineties, and the global financial market as well as the growing importance of multinational firms with subsidiaries spread all over the world have created a new economic environment for national capital taxation.

Capital tax competition implies that national governments strategically adjust their tax policy to pay attention to new situations, particularly to tax rate changes of their competitors. In effect, national corporate income tax systems have undergone major changes in the EU as in most OECD countries which might be regarded as tax competition effects. Nevertheless, for a long time the EU authorities were very reluctant to propose harmonization measures for capital income taxation in Europe. Only after the 2004 enlargement when many of the New Member States reduced their corporate income tax rates to levels well below the traditional levels of the old OECD countries, proposals in favor of minimum corporate income tax rates within Europe became fashionable.

In this paper we try to answer the question whether EU enlargement should give rise to capital income tax coordination on the EU level. The remainder of the paper is organized as follows. In section 2, we review the European view on capital income taxation in the first four decades after the Treaty of Rome and identify proposals, objectives and measures in favor of capital tax harmonization. Section 3 focuses on unsolved problems for capital income taxation in the enlarged EU. In section 4 we provide guidelines for CIT coordination and conclude in section 5 that some CIT coordination steps are desirable from a welfare perspective and should be taken.

2. CIT Coordination in the EU

There is widespread belief that capital income taxation was not a major issue on the European Commission's agenda in the early days of European integration, but this view is biased. On the one hand, one of the basic obligations of the EC Treaty and thus binding for all Member States is the avoidance of international double taxation

(Article 293, EC-Treaty), which requires unilateral or bilateral measures to ensure that factor income earned and taxed at source in one Member State is not subject to additional income taxation in the residence country. The prominent factor exposed to international double taxation is capital, and the usual way to do so is by bilateral treaties following the recommendations of the OECD model treaty. On the other hand, there had been continuing interest in European capital taxation in the Community which can be easily documented by the reports requested by and delivered to the EU Commission.

2.1 Proposals for CIT Harmonization in the EU

Already in 1960 the European Commission required a fiscal and financial committee chaired by Fritz Neumark to deliver a report on the desirability of a coordinated corporation tax to support the establishment of the European common market. The recommendation of the Neumark Report (Commission European Economic Community, 1962; Thurston, 1963) was the introduction of a split rate system in the six founding Member States of the EC, proposing a flat rate around 50% on retained profits and a rate between 15% and 25% on distributed profits. Apparent disagreement on this proposal which favored the then German practice of double taxation relief on dividends but did not eliminate double taxation made the European Commission ask A.J. van den Tempel to deliver another report by end of the 1960s. The van den Tempel Report (Commission of the European Communities, 1970) recommended the classical corporation tax as the best solution for a harmonized system in the EC.

When the Commission realized that no accord was to be attained by abstaining from any form of double taxation relief it changed its strategy and worked out a proposal for a directive concerning the harmonization of company and dividend taxation calling for partial integration of the corporation tax and the personal income tax (Commission of the European Communities, 1975).

Besides partial integration the proposal suggested a rate band for corporation tax rates in Member States of 45% to 55%, partial imputation of the corporation tax paid on distributed profits to PIT on dividends in a band between 45% and 55% and a withholding tax on dividends of 25%. There was never a realistic chance for unanimous support for this draft directive and when the European Commission negotiated the White Book on the completion of the European internal market in the second half of the 1980s, it finally decided to repeal the proposal in 1990. But at the same time the European Commission succeeded in receiving unanimous support on three companion directives targeted at double taxation relief for European companies and the European Commission again installed an expert panel chaired by the former Dutch finance minister Onno Ruding to analyze the situation for company taxation in the EU internal market. The Ruding Committee delivered its report in 1992 and its answer to the crucial question: "Does uncoordinated

capital taxation in the EU Member States provide an obstacle to doing business in the integrated internal market?", was in the affirmative. The Ruding Report (European Commission, 1992) did not only contain a comprehensive list of discriminatory effects of the then existing practice of capital taxation in the 12 Member States, it also proposed a stepwise coordination strategy to be implemented in three phases. The measures concentrated on an abolition of discriminatory taxation of cross country business activities of all enterprises, proposed a band for corporation tax rates between 30% and 40% and called for double taxation relief in phases 1 and 2 and sketched a final target of a common European CIT in phase 3. Remembering the difficulties in reaching a common platform for CIT coordination in the past, the European Commission only picked up the Ruding recommendations for European companies and denied any further coordination requirements. Finally in 2001, the most recent report of an expert panel on European company taxation was released. The Bolkestein Report (European Commission, 2001) can be regarded as a follow up report of the Ruding Report and approved the fundamental sources of distortionary CIT effects on entrepreneurial activities. But opposite to the Ruding committee the Bolkestein expert panel did not release a coordination strategy but provided a menu of four scenarios to overcome distortionary effects of the status quo of company taxation. The focus of these scenarios is profit consolidation of European companies operating in several EU Member States and avoidance of tax engineering incentives by utilizing formula apportionment as the mechanism to allocate the consolidated CIT base to national tax authorities (see, e.g., Devereux, 2004; Hellerstein and McLure 2004; Mintz, 2004).

Since none of these various proposals reviewed above was adopted by the EU the process of CIT harmonization certainly is a failure with respect to formal achievement of binding coordination rules. But such a judgement would be misleading because it ignores two aspects of the ongoing CIT discussion.

One aspect is the driving force behind this discussion. Although the proposals for a coordinated European CIT reviewed above certainly exhibit a broad diversity, it is possible to identify three economic objectives as a common denominator behind all the CIT reform proposals. First, all reports start out from the evidence of highly differing and nonneutral effective tax rates on capital returns as a consequence of uncoordinated national tax practices and call for a tax system which provides a level playing field for business activities across the common European market (Cnossen, 2004; European Commission, 1992). Second, non-discrimination of cross border activities of European companies has been regarded as a desideratum which can be directly derived from the principles of the Treaties of Rome and Maastricht. Third, mitigation of fiscal externalities triggered by strategic tax competition among Member States was regarded desirable, even though the empirical evidence never proved a "race to the bottom" in CIT rates (European Commission, 2004).

A second aspect is that CIT coordination results were achieved outside the CIT reform proposals mentioned above. These results are summarized in the following subsection.

2.2 CIT Harmonization Steps in the EU

When the European Commission released its proposal for a draft directive on harmonizing company and dividend taxation in 1975, three draft directives had already been pending dealing with discriminatory taxation of multinational European companies. The Parent/Subsidiary Directive and the Merger Directive were released in 1969, the Arbitration Directive in 1974. Progress on negotiations on these issues was deplorably slow, but in 1990 all three packages passed.

The Parent/Subsidiary Directive (Council Directive 1990/435/EEC) abolished the international double taxation of dividends between parent company and defined subsidiaries which fulfill, e.g., a substantial ownership condition. The directive requires the elimination of double taxation through exemption or crediting and it does not allow withholding taxes on dividends paid out under the regulations of the directive.

The Merger Directive (Council Directive 1990/434/EEC) postpones the taxation of capital gains which would become due if companies merge, separate or reorganize. Basically, the directive extends going national tax preferences for a reorganization of corporations within a country to analogous reorganization measures when the parent company and its subsidiaries are located in different states.

The arbitration directive was replaced by an Arbitration Convention (Convention 1990/436/EEC), which required a compensating correction of corporate income tax bases under the "arms' length principle" when transfer price corrections by the tax authority in one Member State changed the tax balance of a company. Without compensating changes of tax balances transfer price corrections would lead to international double taxation. In 2004, the Council reemphasized the objective of double taxation avoidance by approval of a Code of Conduct for the effective implementation of the Arbitration Convention (COM (2004) 297).

In 1997, the European Commission Council approved a European Commission proposal (European Commission, 1997) against unfair tax competition. The measures proposed under this "Code of Conduct" for business taxation, however, are not targeted at strategic tax rate reductions per se, but only at discriminatory tax preferences for foreigners that are not available to resident taxpayers. The Member States of the EU commit themselves to refrain from:
– tax preferences which are offered only to nonresidents
– tax advantages granted to firms with no real economic activity in the country
– rules for profit determination that depart from internationally accepted accounting principles

– non transparent administrative practices in enforcing tax measures.
In the following years, the installed Code of Conduct Group (Business Taxation) identified 40 unfair and harmful tax practices in EU Member States (and another 26 in associated territories) which violate the code of conduct. Although the regulations of the code are not mandatory, the EU Member States agreed on eliminating these practices, the bulk of which is associated with services in the financial sector and within multinational groups.

In 2003, the Council adopted a package of three measures affecting European CIT, consisting of the Political Code of Conduct to eliminate harmful tax competition in business taxation, the Interest Savings Directive and the Interest and Royalty Directive.

Whereas the formal adoption of the Code of Conduct for business taxation is an affirmation of the 1997 approval, the two directives directly affect CIT in the Member States.

The Savings Directive (Council Directive 2003/48/EC) backs income tax collection on interest income of residents earned in other Member States. Foreign interest income, which to a large extent was able to escape residential income taxation will become enforceable under the directive by mandatory exchange of information. There is, however, a period of transition when three Member States (Austria, Belgium, and Luxemburg) keep bank secrecy but committed themselves to charge a withholding tax of 15% (increasing to 20% and finally 35% after 3 years respectively) on interest income of foreigners. Three quarters of the revenue of this withheld tax is forwarded to the saver's residence fisk. The three Member States will switch to information exchange, if appropriate arrangements are attained with Switzerland (as well as Andorra, Liechtenstein, Monaco, and San Marino) and the United States.

The Interest and Royalty Directive (Council Directive 2003/49/EC) eliminates withholding taxes on interest payments as well as on royalty payments between associated companies located in different EU Member States.

Moreover, the European Commission has also announced a new proposal for a directive on cross border losses.

An evaluation of the coordination achievement in European capital taxation has to acknowledge that the discrimination of transborder activities has been reduced considerably. International double taxation of income has been abolished for income flows between associated corporations. Transborder mergers, acquisitions and other restructuring measures do no generate taxable capital gains and receive the same preferential treatment as corresponding activities within national boundaries. Effective tax rate differentials on corporate profits were reduced, mainly as a matter of cuts in statutory CIT rates in EU Member States, but are still high. International tax arbitrage has been reduced, as foreign interest income is taxed more effectively, but there are differentials for tax engineering, in particular for shifting paper profits. Tax compliance costs are still high for companies with

subsidiaries in different EU Member States as a matter of separate accounting requirements and coping with a complex network of bilateral double taxation treaties.

3. Unsolved CIT Problems in an Enlarged EU

The ten new members of the EU-25 are forced to adjust their tax system in line with the acquis communautaire, but they are also free to position themselves in the European internal capital market and to attract mobile capital by low tax rates.

Chart 1: Statutory CIT Rates in the EU (2003)
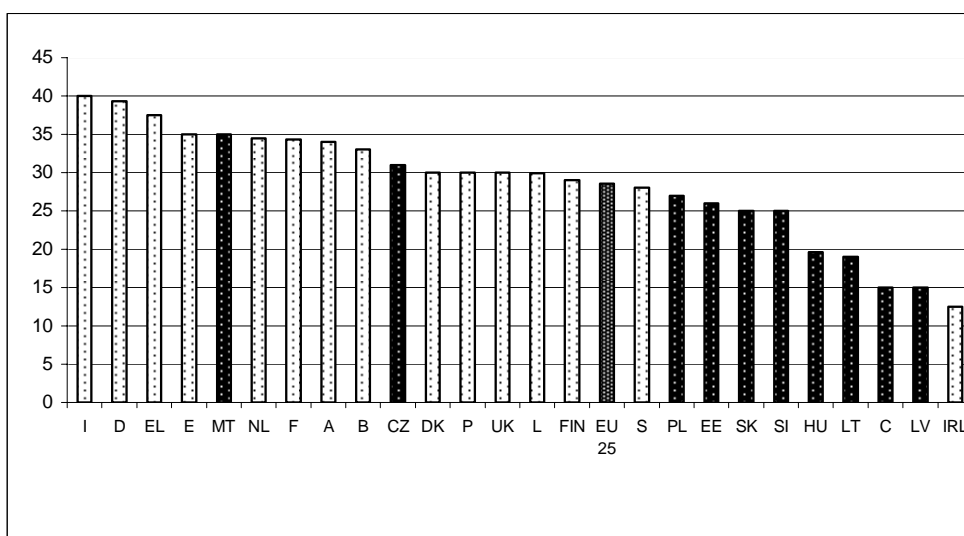
Note: White shaded bars represent the EU-15 Member States, black shaded bars the 10 New Member States, and the grey shaded bar the unweighted EU-25 average.

Source: Bundesministerium der Finanzen (2004).

Chart 1 confirms that the statutory corporate income tax rate in the accession countries (unweighted average in 2004, 23,8%) is significantly lower than in the traditional 15 Member States (2004 31,8%). All accession countries except Malta and the Czech Republic charge a corporate income tax rate, which is lower than the EU-25 average, while all EU-15 states except Sweden and Ireland charge a corporate income tax rate higher than the EU average.

   The span and variance of statutory rates across the EU provides incentives for tax arbitrage in various ways. A lower statutory rate directly affects the shifting of paper profits by transfer pricing, thin capitalization and allocation of overhead costs. But statutory tax rate differentials have also been proven as the most

important determinant for the international dispersion of effective tax rates, marginal and average (European Commission, 2001; Cnossen, 2004).

Chart 2: Statutory and Effective Average CIT Rates (2003)

Note: White shaded bars represent the EU-15 Member States, black shaded bars the 10 New Member States, and the grey shaded bar the unweighted EU-25 average.
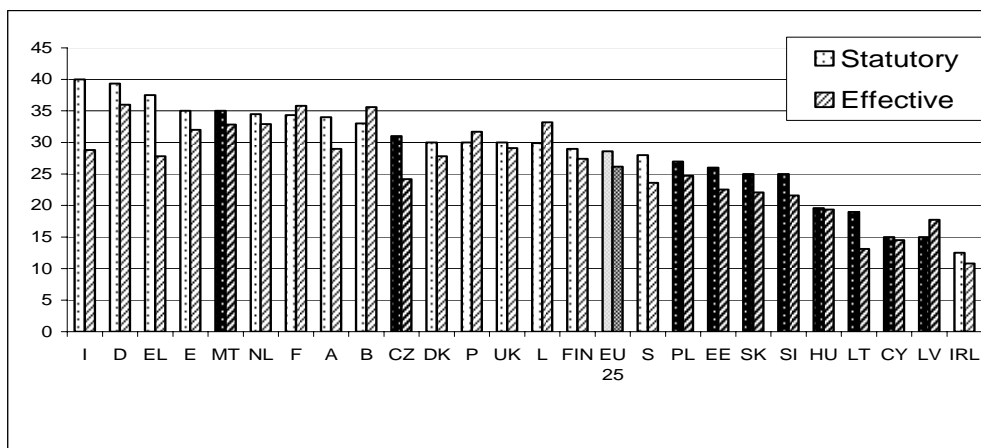
Source: Spengel and Wiegard (2004).

Chart 2 reflects a high correlation between statutory and effective average corporate income tax rates for 2003. Again the effective average tax rates for the accession countries (21,3%) are significantly smaller than those of the EU-15 states (29,4%), and this time nine accession countries, including also the Czech Republic are below the EU-25 average.

Lower marginal effective tax rates provide a rate of return incentive for capital investment, lower average effective tax rates provide an incentive to relocate firms and headquarters to low tax countries.

While channelling capital to the new accession countries is certainly useful as long as there is capital shortage and the marginal capital productivity is high, tax incentives stimulate capital inflows also when the marginal capital productivity in the country of investment is lower than the EU equilibrium level.

With the accession countries being part of the European internal capital market, low transaction costs of capital flows and increasing dispersion in effective marginal tax rates, capital export neutrality will be violated and the allocation of the European capital stock will be distorted.

With an increasing dispersion on effective tax rates on capital returns within EU-25 countries, capital import neutrality will be violated and the allocation of EU capital supply will be distorted.

Finally, the increasing dispersion of statutory CIT rates triggers profit shifting across borders and creates negative fiscal externalities across EU fisks (Haufler and Schjelderup, 2000; Huizinga and Nielsen, 1997).

In the medium run CIT competition in the enlarged internal capital market of the EU-25 is likely to reduce the level of CIT rates in the Member States. Since high tax countries will face the pressure to reduce their CIT rates the variance of CIT rates will go down. The remaining dispersion of statutory tax rates will leave sufficient room for tax arbitrage and tax engineering due to the rapid increase of companies with associated subsidiaries in the New Member States. CIT measures which helped to end tax discrimination to multinational European companies and to establish an efficient European capital market will intensify capital tax competition in the enlarged Europe.

4. CIT Solutions for an Enlarged EU

CIT coordination in the EU has to be evaluated in two dimensions. From a purely economic perspective, CIT coordination should favor the efficient supply and utilization of capital in the enlarged internal capital market. From a political economy perspective, CIT coordination has to pass the unanimity hurdle in the Ecofin Council. Although efficiency as well as political approval are dependent on the economic and political environment, it seems worthwhile to look at the history of CIT reform proposals with respect to three primary targets:
–   a harmonization of statutory corporate income tax rates
–   a harmonization of corporate income tax bases, and
–   introducing a common European corporate income tax.

4.1 Harmonization of Corporate Income Tax Rates

Harmonization of statutory rates has been an element of the reform proposal of the Ruding Committee as well as an element of the Draft Directive of 1975. Both reform proposals included bands for the statutory corporate income tax rates. Rate harmonization would not align statutory rates, its impact on effective tax rates would also contribute to a move towards a level playing field in international capital taxation.

On the other hand, fixing a lower band as a floor to national corporate income tax rates of 45% (as proposed in 1975) or 30% (as proposed in 1992) would certainly have hampered the accommodation of EU countries to the international development, since it would have required an unanimous agreement on a reduction of lower band rate in the Council. Moreover, harmonized tax rates have turned out as a matter of disagreement among EU Member States, not only with respect to the draft directive but also with respect to VAT and excise taxes.

In face of the current broad dispersion of statutory corporate income tax rates it would be certainly more difficult than in the past to reach consensus on a rate band with an appropriate floor which would reduce the dispersion of statutory and subsequently effective CIT rates.

4.2 Harmonization of Corporate Income Tax Bases

Harmonization of tax bases has been addressed in all reform proposals, most prominently in the Bolkestein Report (European Commission, 2001). Base harmonization serves two objectives.

At the national level, the determination of the corporate income tax base affects the tax burden and the effective tax rate on corporate income. If high and low tax countries use the tax base as well as the tax rate to determine their aspired tax burden on corporate profits, then harmonization would cut back one pillar of effective tax rate dispersion und the cross country variance of effective tax rates will decrease. Under this scenario tax base harmonization would contribute to a level playing field. But the effect of tax base harmonization may well be the other way round. If high tax countries grant preferential treatment via generous deductions from taxable corporate income, e.g. investment or depreciation allowances, whereas low tax countries offer less tax preferences, then tax base harmonization will increase the dispersion of effective tax rates across countries (Sørensen, 2004).

For internationally operating companies the tax base of each subsidiary has to be calculated according to the tax code of the country where the subsidiary is located. Dealing with various tax codes and tax administrations increases compliance costs for the company. These costs comprise information, book keeping and filing costs, but there are also costs of consolidation and the risk of double taxation if a tax authority corrects taxable items which enter the tax balances of associated subsidiaries located in different states. Harmonizing the tax base for corporate income taxation is a desideratum of the Bolkestein Report, in order to cut compliance costs for multinational European companies.

The Bolkestein Report offers three scenarios of tax base harmonization. The first two scenarios are optional and allow a multinational company to calculate its own tax base and the tax bases of its associated subsidiaries separately or to calculate a consolidated tax base:

- The "home state taxation" regime denotes a corporate income tax system in which an internationally operating parent company can opt for a consolidated tax balance which includes all its associated subsidiaries and which is calculated according to the tax code of the company's country of residence.
- The "consolidated common tax base" regime denotes a corporate income tax system in which an internationally operating parent company can opt

for a consolidated tax balance, which is calculated according to specific tax rules which are defined independently from the tax rules of the EU Member States.

– The "compulsory harmonized tax base" regime denotes a corporate income tax system in which the corporate tax base is calculated according to the same binding rules for all companies in the EU.

Replacing separate accounting by consolidated accounting does not only reduce compliance costs since a multinational company will have to deal with only one system of tax accounting. Consolidation also eliminates incentives for profit shifting across borders which saves resource costs for companies as well as for tax authorities. Companies will no longer have to invest in tax engineering to shift profits to subsidiaries in low tax countries, tax authorities will be able to reduce efforts in monitoring and control to disclose transfer pricing. Consolidation will also solve the still unsettled problem of cross border loss offsets. Eliminating this remaining element of discrimination for multinational companies is of particular importance to accession states, since startup subsidiaries which usually create losses in the first years, would no longer be disadvantaged.

Consolidation does, however, not come without costs. Consolidation eliminates tax benefits through strategic utilization of tax preferences in specific EU Member States. The Bolkestein Report accounted for this firm-specific cost of consolidation by offering consolidation as an option, which can be declined by companies who prefer to stick to separate accounting. But upholding the separate accounting option is likely to destroy the resource cost saving to companies who would be forced to compare the options, as well as to tax authorities, who will be forced to monitor different systems of tax accounting.

Consolidation does not solve the problem of apportioning the consolidated tax base to the subsidiaries of a multinational corporation. The proposed solution is formula apportionment, a technique which has been applied within federal states. Finding an appropriate formula for international apportionment might turn out a difficult task, but a redistribution based on business figures, e.g. the Massachusetts formula in the U.S. (apportionment formula based on capital assets, wage bill and business sales, each weighted by one third), certainly is a useful candidate. Whenever a consensus on an apportionment formula based on business data is attained there might return an incentive for multinational companies to manipulate the weights for tax purposes. In this case fixed weights for groups of companies or sectors might be discussed to avoid manipulation incentives at the company level (Nielsen, Raymondos-Møller, and Schjelderup, 2003).

4.3 Introducing a Common European Corporate Income Tax

A common corporate income tax for the EU was mentioned as a long-term objective in the Ruding Report. The political reservation towards the staggered

proposals of the Ruding reform may well be based on the fact that the phase 1 and 2 coordination steps were regarded as steps towards a European corporate income tax.

Although tax base and tax rate harmonization in European corporate income taxation seem to be back on the EU agenda, the transfer of the power to tax corporate profits from the national level to the EU will hardly get any support in the Council. Opposition will be even stronger since the European Commission had raised the issue of a further source of EU revenue and referred to a European corporate income tax in the past.

4.4 Guidelines for CIT Coordination in the EU

Experience with past coordination steps in European corporate income taxation and the changing environment for tax competition in the enlarged European capital market support further reform steps.

Consolidated accounting for European multinationals seems an appropriate measure to reduce compliance costs for companies and to fight strategic profit shifting within the EU.

Comparing the proposals of the Bolkestein Report none of these scenarios seems convincing.

The separate accounting option is costly and keeps tax engineering incentives alive, the compulsory common tax base for all companies creates adjustment costs for small scale companies without international subsidiaries. Compulsory "home state taxation" might create a new form of tax competition, viz. attracting headquarters of multinational companies.

Recommendation 1:

Consolidation of company profits should be mandatory for EU multinational companies according to harmonized corporate income tax accounting standards.

Consolidated corporate profits must be allocated to companies in EU Member States according to apportionment factors which should not give rise to strategic manipulation.

Recommendation 2:

The reallocation of consolidated profits to taxable subsidiaries of multinational corporations should be based on an apportionment formula using multiple weights based on easily verifiable business figures.

National autonomy on tax rates offers fiscal autonomy, alignment of company and personal income taxation and complies with the subsidiarity principle. Thus, a coordination of corporate income tax rates does not seem desirable for the moment.

Recommendation 3:

National autonomy in setting corporate income tax rates on taxable corporate profits should prevail.

There are, however, arguments to introduce a floor for corporate income taxes in the EU to prevent a race to the bottom. But there is also an incentive in the other direction once consolidated profits are apportioned among EU Member States. As formula apportionment provides a largely inelastic tax base, there is an incentive to apply a high corporate income tax. Since in each Member State the same corporate income tax rate is applied to apportioned profits and profits of purely domestic firms, a "race to the top" seems unlikely as well.

4.4 Gains from CIT Harmonization

Further steps in CIT Harmonization sketched in section 4.4 are restricted to harmonized tax accounting standards for multinational companies and the approval of an adequate apportionment formula. Since multinationals are important players in the internal market, a common strategy in treating this companies identically for tax purposes and in sharing tax revenue in a transparent and equitable way might be in the interest of all Member States.

But here are additional welfare gains which must be considered in an evaluation of the proposed harmonization scenario. First, consolidation reduces tax compliance costs. Second, reduced or vanishing profit shifting eliminates fiscal externalities and reduces monitoring and control costs of tax authorities. Third, harmonized accounting standards eliminate national tax handles for unfair tax practices. Fourth, consolidation secures full international loss offset. Fifth, consolidation, apportionment, and application of different national tax rates comply with capital export neutrality. Consolidation ensures that a marginal euro earned in any country of the internal market is taxed at the same average tax rate. Seventh, fiscal autonomy in corporate profit taxation is granted, in line with the subsidiarity principle. Eighth, consolidation creates no impairment with the integration of PIT and CIT in Member States.

But we would also like to hint at problems which are associated with the coordination proposals. The negotiation on appropriate weights in the apportionment formula will be difficult and lengthy, although the application of the formula is restricted to the profits of multinational companies. This discussion will also have to deal with company profits in non-EU countries. The usual practice in federal states is to stop formula apportionment "at the water's edge", which would

mean to apply the formula to the consolidated profits within the EU but to keep separate accounting for company profits earned outside the EU.

5. Concluding Remarks

In this paper we tried to show that corporate income tax coordination is not a new agenda for European tax harmonization but a necessary adaptation of tax practices to the new challenges of the internal capital market in the enlarged EU-25.

The recommendations for CIT coordination sketched in the paper concentrate on the treatment of multinational corporations in Europe and can thus be regarded as a consequent extension of coordination steps which have proven useful in the past.

The unanimity requirement for tax coordination makes it necessary to analyze carefully economic as well as political economy effects. We hope to have sketched the scope of welfare gains of further coordination and admit that quantitative analyses are needed to make the beneficial effects transparent to the governments of the member countries.

Welfare gains from the coordination proposal accrue through reduced cost of tax compliance, reduced tax engineering and rent seeking, and reduced costs for tax administration and monitoring. These gains are attained without restricting the right of Member States to set their corporate income tax rates and without interfering in their national tradition of integration capital income taxation at the company and the personal level. Moreover, the proposed coordination steps would not impede further coordination in European capital taxation as addressed in the alternative reform agenda of Sijbren Cnossen (Cnossen 2004, and in this volume).

References

Bundesministerium der Finanzen (2004) Die wichtigsten Steuern im internationalen Vergleich, Monatsbericht des BMF, Januar 2004, 45–58.

Cnossen, S. (2001) Tax policy in the EU, FinanzArchiv 58, 466–558.

Cnossen, S. (2003) How much tax coordination in the EU? International Tax and Public Finance 10, 625–650.

Cnossen, S. (2004) Reform and coordination of corporation taxes in the European Union: An alternative agenda, Bulletin for International Fiscal Documentation, 134–150.

Commission European Economic Community (1962) Bericht des Steuer- und Finanzausschusses (Neumark Bericht), Brüssel.

Commission of the European Communities (1970) Corporation tax and individual income tax in the European Communities (van den Tempel Report), Competition – Approximation of legislation series 15, Luxembourg.

Devereux, M. (2004) Debating proposed reforms of the taxation of corporate income in the EU, International Tax and Public Finance 11, 71–89.

Eggert, W. and Genser. B. (2001) Is tax harmonization useful? International Tax and Public Finance 8, 511–527.

European Commission (1992) Report of the Committee of Independent Experts on Company Taxation (Ruding Report). Luxembourg.

European Commission (1997) A package to tackle harmful tax competition in the EU. COM(97) 564 final. Brussels.

European Commission (2001) Company taxation in the internal market, COM (2001) 582 final (Bolkestein Report).

Genser, B. (2003): Coordinating VATs between EU member countries, International Tax and Public Finance 10, 735–752.

Genser, B. and Haufler, A. (1999) Harmonization of CIT in the EU, Außenwirtschaft 54, 319–348

Haufler, A. and Schjelderup, G. (2000) Corporate tax systems and cross-country profit shifting, Oxford Economic Papers 52 (2), 306–325.

Hellerstein, W. and McLure, C. (2004) The European Commission's report on CIT: What the EU can learn from the experience of the U.S. states, International Tax and Public Finance 11, 199–220.

Homburg, S. (1998) Competition and coordination in international capital income taxation, FinanzArchiv 56, 1–17.

Huizinga, H. and Nielsen, S. (1997) Capital income and profits taxation with foreign ownership of firms, Journal of International Economics 42, 149–165.

Mintz, J. (1999) Globalization of the CIT: The role of allocation, FinanzArchiv 56, 389–423.

Mintz, J. (2002) European company tax reform: Prospects for the future, CESifo Forum, 3–9.

Mintz, J. (2004) Corporate tax harmonization in Europe: It's all about compliance, International Tax and Public Finance 11, 221–234.

Nielsen, S., Raymondos-Møller R. and Schjelderup,G. (2003) Formula apportionment and transfer pricing under oligopolistic competition, Journal of Public Economic Theory 5, 419–437.

Sørensen, P. (2000) The case for international tax coordination reconsidered, Economic Policy 31, 429–472.

Sørensen, P. (2004) Company tax reform in the EU, International Tax and Public Finance 11, 91–115.

Sørensen, P. (2005) Neutral taxation of shareholder income, International Tax and Public Finance, forthcoming.

Spengel, C. and Wiegard, W. (2004) Dual income tax: a pragmatic tax reform alternative for Germany, CESifo Dice Report 3/2004, 15–22.

Thurston, H. (1963) The EEC reports on tax harmonization. The report of the Fiscal and Financial Committee and the reports of the subgroups A, B and C, International Bureau of Fiscal Documentation, Amsterdam.

Zodrow, G. (2003) Tax competition and tax coordination in the EU, International Tax and Public Finance 10, 651–672.

Capital Taxation in an Enlarged EU:
The Case for Tax Competition

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1. Introduction

The enlargement of the European Union by ten new members, mainly from Eastern Europe, in 2004 has again fuelled the discussions about tax competition and coordination in Europe. Although the EU has just established a Code of Conduct for business taxation and is still struggling to complete the agreed system of information exchange with respect to capital income taxation (allowing Austria, Belgium and Luxembourg a minimum source tax on capital income as an alternative), the Commission already proposes a more comprehensive tax harmonization in Europe. The Bolkestein Report (European Commission, 2001) argues that a uniform corporate tax base with formulary apportionment is the most feasible option for the EU. Some Member States, like Germany or France, are keen to achieve such tax harmonization and even aim at the introduction of minimum rates for corporate income taxes in the EU.

What is the background for such policies and policy proposals? The starting point of discussions about tax competition is a supposed "race to the bottom" in company taxation. It is usually argued that the increased capital mobility that is due to globalization provides incentives for states to reduce tax rates in order to attract businesses. Keeping other things equal, firms choose their location in countries with lower corporate income tax rates. The strategic reduction of tax rates of one country induces another country, perhaps the one in which a firm already has branches, to follow suit such that a ruinous competition between states presumably results. Consequently, public services are said to be provided inefficiently and capital owners are accused of not paying their "fair" share of taxes. Income redistribution could not be financed as before and welfare states are under pressure.

At first sight, descriptive empirical evidence appears to support those fears. On average, statutory corporate income tax rates in selected OECD countries (Devereux, Griffith and Klemm, 2002) fell from 47.9% in 1982 to 32.7% in 2004. For some countries, like Austria, Finland and Sweden, but also Germany, the reduction is even more important. The new EU members even have statutory corporate income tax rates of only about 20% on average, ranging from a tax rate of zero for retained earnings in Estonia (26% for distributed profits) and 15% in Lithuania and Latvia, over 19% in the Slovak Republic and in Poland, to 28% in the Czech Republic. Some of the old 15 EU Member States have already reacted with (announced) tax reforms. Austria has reduced statutory corporate income tax rates from 34% to 25% in 2005, the Netherlands will decrease the rates from 34.5% to 29% in 2007, Finland from 29% to 26% in 2007, and the Czech Republic from 28% to 24% in 2006 (BMF, 2005). It looks like tax competition has intensified in recent days.

Investment by firms is however not only influenced by statutory tax rates. Firms also consider any kind of tax deductions and relieves. The actual tax burden levied on new investment projects is measured by *effective* tax rates which are calculated on the basis of tax rate *and* tax base differentials. If a plant has already been established, firms take marginal investment decisions and consider *marginal* effective tax rates. Location choice is influenced by *average* effective tax rates.[2] Average effective corporate tax rates fell even more strongly from 42% in 1982 to 30.0% in 2003 on average (Devereux, Griffith and Klemm, 2002, Sachverständigenrat, 2004, p. 527, ZEW, 2005). Again Finland, Sweden, Austria and Germany, but also Portugal are the countries with strongest reductions in effective tax burdens. Similar to statutory rates, effective average corporate income tax rates of the New EU Member States are even lower than those of the old members in 2004. Aside Estonia, Lithuania has the lowest tax burden of 13.11%, followed by Hungary with 13.95%, Latvia 14.29%, the Slovak Republic 16.82%, the Czech Republic 17.05% and Poland 17.46% (Jacobs et al., 2003). Statutory tax rates are still important for international taxation. They influence in which countries firms locate their profits via transfer pricing. In addition, statutory rates serve as signals for foreign firms which do not sufficiently know the details of another country's tax code. But effective average tax rates finally attract business capital looking for a new location. Thus, the two figures perfectly reflect the concerns of policymakers in the OECD.

This descriptive evidence is taken by governments of EU welfare states as supporting the fears of a race to the bottom. It provides the basis for finance ministers and the Commission to develop far-reaching proposals for tax harmonization

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[2] For a broad discussion on the usefulness of different tax measures in the assessment of a country's tax policy see Giannini and Maggiulli (2002), Devereux and Klemm (2003), Ederveen and De Mooij (2003), Mendoza and Tesar (2003), Becker and Fuest (2004).

in Europe. Additionally, multinational firms argue that international differences in tax laws impose strong transaction costs and hence distort international investment decisions. Neither this descriptive evidence, nor the anecdotal evidence provided by multinationals suffices however to support such claims for tax harmonization. Any honest discussion of tax competition requires instead to, first, find out what impact tax competition *could* have on the allocation of scarce resources and how it *could* affect income redistribution by the state. Second, it is necessary to provide evidence for or against the arguments that are brought forward in the discussion. Hence, empirical evidence should be provided on the existence and the actual economic impact of tax competition. The questions that need to be asked are: How *does* tax competition work? What *is* the impact of tax competition on the efficiency of public goods' provision and on the effectiveness of income redistribution? *Is* there any influence of tax competition on regional convergence and economic growth? And finally: *Does* tax competition, in analogy to competition in private markets, serve as a discovery procedure in the public sector such that better public policies are more quickly detected and diffused?

In this paper, these issues are discussed by starting with the potential influence of tax competition on the efficiency of the public sector, the effectiveness of income redistribution and economic growth (section 2). The hypotheses that follow from this theoretical discussion are confronted with the results from econometric studies that provide more systematic empirical results than the above-mentioned descriptive evidence. In section *3*, the empirical evidence on the existence of tax competition is surveyed, while an overview on empirical tests of the effects of tax competition is presented in section 4. A discussion of the recent EU proposal of a common corporate income tax (CIT) base with formulary apportionment follows in section 5. Finally, a summary and some policy implications follow in section 6.

2. Theoretical Arguments on Fiscal Competition[3]

2.1 The Basics

Although the political discussion is mainly about tax competition, it must be recognized at the outset of the analysis that the state is also offering public services in exchange for the taxes that citizens pay and hence provides a bundle of goods and services for certain *tax prices*. In the following, fiscal competition is therefore discussed instead of tax competition. This switch in the terminology allows to avoid many mis-understandings that often come up in the political and scientific debates. Given that clarification, the analysis of fiscal competition can naturally

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[3] This section draws on Feld (2005). For a somewhat similar perspective on tax competition issues see Griffith and Klemm (2004).

start from drawing an analogy between competition in private markets and competition between states. Since Smith (1776), economists perceive competition as the driving force for efficient market outcomes. The *invisible hand* leads private actors to follow individual preferences. In a dynamic perspective, competition serves as a discovery procedure and induces useful innovation and technological change. Competition is thus necessary for a growing economy. Tiebout (1956) argues that competition between jurisdictions works in a similar fashion. In a global world, different countries offer different tax rates and different levels of public services to mobile factors of production. Mobile production factors can choose their location or residence in a country whose public sector supply best fits their preferences and interests. Individuals and firms *vote by feet* and thereby reveal their preferences for public goods. This leads to an efficient provision of public services under certain conditions.

In addition, decentralized provision and financing of public services allows to use decentralized information to the largest possible extent. The closer a government is to the people, the better it is informed about their wishes and demands. Locally dispersed knowledge about public problem solutions can thus be used efficiently (Kerber, 1998). Finally, the frustration of citizens about public policy solutions is minimized, the more decentralized public goods' provision is. Finding median preferences across the national populace necessarily involves less differentiation among individuals. Decentralization allows to differentiate public goods and services such that those who want to have more or a better quality of public goods can move to the jurisdiction with higher levels of publicly provided goods. Citizens are willing to pay higher prices for that offer and could thus be charged higher tax prices. Similarly those who want to have less can move to jurisdictions with lower levels of public services. The migration process leads to more homogeneous jurisdictions and to lower frustration costs. In general, these arguments hold for competition between national, regional or local jurisdictions, and for labor and capital.

Oates (1972, p. 30) consequently proposes his *decentralization theorem* according to which a decentralized provision and financing of public goods at the lowest possible level is efficient in a world of high mobility of production factors and people with different preferences. However, the decentralization theorem only holds if the *correspondence principle* (Oates, 1972) or the *principle of fiscal equivalence* (Olson, 1969) is respected. Both principles similarly require that the jurisdiction that decides upon the level of public services should comprise the consumers of that good and those that bear the costs as taxpayers. Only in this case, the sum of the marginal willingness to pay for public goods corresponds to the marginal tax price. Whenever the principle of fiscal equivalence is violated, decentralized provision and financing of public goods may lead to inefficiencies. This could be the case if externalities or economies of scale in consumption exist. Likewise, income redistribution may be difficult in a system of fiscal competition.

2.2 Potential Distortions

Externalities from fiscal competition might result in the form of regional or fiscal externalities. Regional externalities are comprised of positive or negative benefit spillovers as well as cost spillovers. *Positive benefit spillovers* come up for example, if Dutch tourists use the German highway system, but do not contribute according to their marginal willingness to pay. Congestion externalities will arise. *Negative benefit spillovers* may exist in the case of cross-border pollution. *Cost spillovers* exist in the case of tax exporting, for example if multinational corporations whose shares are internationally distributed are taxed in a particular country. Because the shareholders of a multinational company cannot participate to the same extent in the political process as those of a national corporation, a government has incentives to raise corporate income taxes to inefficiently high levels above the willingness to pay of the shareholders of multinationals. The costs of public services are externalized because a part of the tax burden is paid by residents from other jurisdictions providing incentives for inefficiently high levels of public services or for excessive taxation (Huizinga and Nielsen, 1997).

Fiscal externalities work in the opposite direction of tax exporting. They may arise from strategic tax competition for mobile capital. Germany is for example in tax competition with Ireland. If Ireland drops the corporate income tax rate, it attracts German firms. This relocation reduces the tax burden of the Irish residents because provision costs can be distributed among more taxpayers. However, the relocation increases the tax burden of German residents because less taxpayers have to finance that given amount of German public services. If both countries do not consider the changes in tax burdens in each country when deciding about the level of public services, fiscal externalities arise (Zodrow and Mieszkowski, 1986, Wilson, 1986). This argument does not hold to the same extent if public infrastructure is becoming an additional parameter for relocation decisions. Infrastructure is then adjusted in the fiscal competition game such that fiscal externalities might finally vanish (Keen and Marchand, 1997, Borck, 2004, Wildasin, 2004). Moreover, cost or benefit spillovers on the one hand and fiscal externalities on the other hand might compensate for each other such that public goods can be efficiently provided (Bjorvatn and Schjelderup, 2002, Sørensen, 2000, 2004, Noiset, 2003). It has also been broadly discussed to what extent the distortions from fiscal competition are more severe under asymmetry conditions, e.g. if relatively small countries compete with relatively large countries. No clear-cut results have emerged however (Bucovetsky, 1991, Arnold, 2001, Eggert and Kolmar, 2001, Stöwhase, 2004, Marceau and Mongrain, 2004).

An inefficient provision of public services might particularly result if *economies of scale* (non-rivalness) in consumption exist, i.e. when the government provides public goods in the Samuelsonian sense (Sinn, 2003). Fiscal competition enforces the benefit principle of taxation such that mobile production factors can only be

charged the marginal costs of their use of public goods. Mobile taxpayers do however not contribute to cover the high inframarginal (fixed) costs of public infrastructure. If this is not to lead to an inefficiently low level of public services, the fixed costs must be covered by immobile taxpayers. This can lead to an undesired income distribution.

2.3 Redistribution Problems

With respect to personal income redistribution, fiscal competition poses more important problems. Continue the Germany-Ireland example: Germany presumably has a higher progressivity of income taxes and pays higher levels of social transfers than Ireland. Income redistribution is hence more pronounced in Germany than in Ireland. This provides incentives for Irish social welfare recipients to move to Germany because they can expect higher transfer payments. High income earners from Germany – ceteris paribus – follow the incentive to emigrate to Ireland. These migration incentives impede the decentralized income redistribution at the national levels (Stigler, 1957, Sinn, 2003).

There do not exist many theoretical arguments against this reasoning. A frequently heard argument is that high income and wealthy people have incentives to voluntarily contribute to the social welfare state in order to obtain social peace (Buchanan 1975). The voluntary income redistribution is the higher the more decentralized the organization of income redistribution is, because recipients are known or can be more easily identified by contributors (Pauly, 1973). Many observers question however whether the funds obtained from voluntary contributions to income redistribution suffice to secure a minimum income of the poor.

Tax competition thus supposedly leads to a more unequal distribution of income. A more unequal income distribution could however alternatively result in jurisdictions with an increased pre-tax income distribution and via the political process also obtain after income redistribution by the government. Bjorvatn and Cappelen (2001) show that tax competition may then exacerbate the adverse effects on distributive goals. A variant of such arguments aims at explaining the impact of fiscal competition on the structure of public spending (Wildasin, 2004) or of public revenue (Huber and Runkel, 2004). If fiscal competition reduces the ability of governments to redistribute income in an economy, then the fiscal instruments most prominently used for income redistribution should become less important in the government budget. With respect to public spending, this means a shift from social transfers to infrastructural spending from which firms supposedly benefit more heavily. In the case of revenue, it could be expected that the government more strongly relies on fees and user charges than on broad-based taxes while the choice of tax structure mainly depends on the elasticity of the tax base. Borck (2003) argues however that much depends on the location of the median voter in

the income distribution such that positive capital tax rates can prevail under tax competition.

2.4 Regional Convergence

In the political discussion, a frequently heard argument focuses on regional instead of personal income positions. It is contended that fiscal competition results in a situation of poor regions becoming poorer and rich regions becoming richer. The more "good" taxpayers reside in a region, the lower the tax burden needs to be to finance a "necessary" amount of infrastructure. Poor regions however need to increase the tax burden to finance such a "necessary" amount of infrastructure. Fiscal competition then perpetuates income differentials and exacerbates the convergence problems of the periphery. Such permanent differences in growth performances will however also prevail if agglomeration economies in central regions exist. The competition between inter-regionally active firms induces a concentration of industrial activities in economic centers because of an interaction between economies of scale in production, agglomeration economies and diseconomies, and transport costs. Economic activity is more concentrated in the center while the periphery has below average economic activity.

Ludema and Wooton (2000), Kind, Knarvik and Schjelderup (2000), Brakman, Garretsen and Van Marrewijk (2002) and Baldwin and Krugman (2004) analyze the impact of tax competition on the economic development of central and peripheral regions under the conditions normally emphasized by the theory of economic geography. Agglomeration economies in the centers allow them to a certain extent to levy relatively higher taxes than the periphery without inducing firms to relocate to the low tax periphery. Agglomeration economies partially compensate for the tax advantages in the periphery. The latter therefore has no alternative to a tax policy that compensates location disadvantages. Even a strong decrease of tax rates is necessary to compensate for agglomeration advantages of the center. For example, Ireland has followed this policy in the EU during the last decade and has been very successful. Tax harmonization would then be harmful because it would exacerbate the resource differences between center and periphery and easily lead to demands for higher fiscal equalization.

2.5 Alternatives to Tax Competition

These arguments deliberately accept the premise that tax competition describes a clear-cut behavior in the international fiscal competition game. This is however only a fiction. If tax rates are not available as policy instruments to attract mobile firms, alternative instruments will be used. The state may attempt to attract firms by offering subsidies or tax holidays. Governments bid for firms. *Subsidy competition* results if tax competition is precluded. Such subsidy competition follows how-

ever a different rationale. Capital already invested in a certain location can be more easily taxed than new investment of multinationals. When considering investment in a country, multinational enterprises anticipate that they will face problems in repatriating location specific investment after it has been undertaken such that a *hold-up* problem results. Firms will also recognize that danger of excessive taxation results from that hold-up and will abstain from investing in a country leading to adverse effects on economic growth. Firms thus aim at obtaining credible commitments from the governments of potential locations that their location specific rents are not taxed in a confiscatory way. Governments use the opportunity to commit themselves in order to induce firms to invest in their jurisdiction. Hence, they offer subsidies or *tax holidays* to compensate firms for the potential loss from the expected hold-up (Doyle and van Wijnbergen, 1994, Bond and Samuelson, 1986, Black and Hoyt, 1989). Haufler and Wooton (2004) show that tax and subsidy coordination is not necessarily leading to welfare improvements in such a political environment although it can. In contrast, Janeba (2000, 2002) argues that tax competition solves the problem of providing credible commitments more efficiently than tax holidays or subsidies. Governments do not need to provide subsidies as credible commitments because tax competition reduces corporate income taxes to a reasonable level.

Another alternative to tax and to subsidy competition is a competition in *tax enforcement* as the most inefficient kind of fiscal competition for firms (Stöwhase and Traxler, 2004). For example, some German federal states offer a lax tax enforcement to firms in order to attract them to their jurisdiction because they do not have the possibility of changing tax rates in the largely harmonized German tax system and are additionally restricted by European law to offer subsidies to firms. The lax tax enforcement invites tax evasion and tax fraud as the most detrimental way of avoiding taxation.

2.6 Political Economy Issues

These arguments shed some light on the actual behavior of governments. The state does not always do what it ought to. Political actors follow their own self-interest and seek to get rents from the political process. If a government of a member country attempts at securing private rents by increasing taxes, taxpayers can avoid excessive taxation by migrating to countries with lower tax burdens. The government cannot increase the tax burden of the mobile factor above the level of migration costs (Brennan and Buchanan, 1980). It therefore has to take the interests of the mobile factors into account. Wilson (2005) shows that the competition for mobile capital between self-interested governments leads to a strengthening of the positive relation between tax revenue and the public input. Tax harmonization would be counter-productive because it would facilitate the exploitation of tax bases to *Leviathan* governments.

In addition, fiscal competition enables citizens to comparatively evaluate the performances of representatives and thereby reduce the information asymmetries in political markets (*yardstick competition*). For example, German voters can compare the performance of the German federal government to that of the French government. If France has a relatively high level or quality of public services under otherwise same conditions, but offers them at lower tax prices than Germany, German voters have incentives to punish the German government at the next election day. The German government will anticipate this threat in its decision to increase tax rates. Hence, fiscal competition does not only work through the migration mechanism, but also improves citizens' ability to exert voice in the political process (Besley and Case, 1995, Bordignon, Cerniglia and Revelli, 2003, Salmon, 2003, Reulier, 2004). The government is forced to provide public services at relatively lower costs and at the level desired by citizens.

2.7 Political Innovation and Economic Growth

Yardstick competition may also be a mechanism to lead to a dispersion of knowledge in politics. It is well-known from private markets that competition induces product and process innovation. Competition between governments may as well lead to *political innovations*. Governments can experiment with new solutions for economic problems in a decentralized fashion. Better solutions succeed in a process of imitation, copycatting and adaptation by other jurisdictions. Competition between jurisdictions thus becomes a discovery procedure which contributes to the progress in the public sector. Supreme Court justice Louis Brandeis already contended in 1932: "*It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country*", (quote by Oates, 1999, p. 1132). In this context Oates (1999) speaks of *laboratory federalism* and points out that the reform of welfare in the U.S.A. in 1996 followed these considerations (Inman and Rubinfeld, 1997).

The higher innovative capacity of fiscal competition as a possible explanation for economic growth of countries is however contested. In a competitive system, a government is re-elected if it provides services that are at least not worse or not more expensive than those in other jurisdictions. Each government has incentives to wait initially in order to imitate only those policies of other jurisdictions that have turned out to be relatively successful. If the government of a state is uncertain about re-election, it has an incentive to act as a free-rider with respect to the policy innovations of other jurisdictions finally reducing their absolute amount (Rose-Ackerman 1980). Schnellenbach (2004) studies the incentives for policy innovations in systems competition by particularly focusing on the incentives of voters. As voters normally have little incentives to be politically informed before elections, policy innovations are mainly possible in times of crises. Citizens' incentives to

become informed on policy innovations are however improved by high mobility and elements of direct democracy in political decision-making processes. Political rents of governments can then be reduced by competition, and politicians can be offered incentives to innovate.

Given these arguments, it could be asked whether fiscal competition or fiscal cooperation between jurisdictions has an effect on their economic growth. Still, fiscal competition theoretically has ambiguous effects because on the one hand it might induce higher efficiency of public goods' provision and higher political innovation and hence a better economic performance of jurisdictions. On the other hand, fiscal competition might lead to a migration of mobile production factors to centers of economic activity where agglomeration economies can be realized such that single poorer regions suffer from that competition.

3. Empirical Evidence on the Existence of Fiscal Competition

All the potential outcomes of fiscal competition discussed in section 2 need not necessarily obtain in the real world. Theoretical arguments do not suffice to assess fiscal competition normatively. Insights as to the empirical validity of the arguments are necessary. In order to observe an impact of fiscal competition on efficiency, redistribution and growth, the existence of fiscal competition should be established. Fiscal competition exists if two conditions are met: First, taxes and public spending play a significant role in the choice of location of industry and/or of residence of individuals (*mobility hypothesis*). If there is no fiscally induced mobility, neither beneficial nor detrimental effects of fiscal competition can result. Second, governments actually use fiscal instruments to attract firms or individuals. If no strategic tax setting can be observed, a race to the bottom cannot develop (*strategy hypothesis*).

3.1 Location Choice

The evidence on fiscally induced capital mobility is clearly speaking in favor of fiscal competition. A large body of evidence that stems from international, regional or local data exists according to which taxes and public spending play a role for location decisions of firms. The weakest evidence is found with respect to foreign direct investments (Feld, 2000). More recent studies by Grubert and Mutti (1991) and Hines and Rice (1994) report that international direct investment of multinational firms depends on corporate income taxes. The higher taxes, the lower is foreign direct investment. Devereux and Freeman (1995) explain foreign direct investment in Germany, France, the U.K., Italy, Japan, the Netherlands and the U.S.A. between 1984 and 1989 by including a rich set of additional explanatory factors. They do however not find a robust influence of taxes on foreign direct investments if labor market characteristics of the countries are additionally

considered. Büttner (2002) reports evidence of a joint impact of marginal and statutory taxes on foreign direct investment (FDI) flows for 15 OECD countries between 1991 and 1998, while only weak evidence for countervailing effects of public expenditures are found. Stöwhase (2002) finds however for FDI of German multinationals in eight OECD countries and the same period that effective tax rates mainly affect real activity while statutory tax rates affect profit shifting activities. These inconclusive results might be grounded in the high aggregation level of FDI figures or may be attributed to the fact that statistics on FDI or on portfolio investment are not reliable.

This has induced an extensive empirical literature on investment behavior of multinational firms that mainly uses large firm level data sets (Hines, 1997). Grubert and Mutti (2000) focus on new investment of multinationals at particular locations in a cross section analysis for 500 firms in 60 countries in 1992. They find that higher average effective corporate income tax rates on distributed earnings reduce the probability that multinationals invest in a location. Mutti and Grubert (2002) present evidence for 728 U.S. multinationals in 1996 that a 10% increase in the cost of capital reduces the probability that a location is chosen by 1.4%. Altshuler, Grubert and Newlon (2001) find a relatively important impact of effective tax rates on investment of multinationals in 58 different countries for the years 1984 and 1992. The relative importance of taxes for international investment has doubled during that period. A very convincing study on location choice of multinationals has been conducted by Devereux and Griffith (1998). For more than 1,600 firms between 1980 and 1994, they analyze the impact of taxes on U.S. multinationals' investment in Germany, France or the U.K. as a two step decision. In the first step, multinationals decide whether to invest at all in Europe. The choice to invest at home or in Europe is largely independent from taxes and follows along long-term sales strategies of firms. The second step of the decision consists in the choice of the particular country if a firm has already decided to invest in Europe. Average effective corporate tax rates have an important impact on that second decision.

Recent meta-analyses on the impact of taxes on location decisions of multinationals have been provided by Gorter and de Mooij (2002), De Mooij and Ederveen (2003) and Ederveen and De Moooij (2003). They review the econometric studies analyzing the impact of taxes on the location of firms and on FDI and establish the characteristics of the study design that affect the size of the estimated tax rate (semi-)elasticities. According to their analyzes, the typical tax rate semi-elasticity of FDI is –1.2 exhibiting an important variation across the studies. Desai, Foley and Hines (2003) use the most extensive data set on multinationals location decisions with 20,346 observations to analyze the investment decision of multinationals. They report a tax rate elasticity of 7.7 for Europe and 2.3 for the countries outside of Europe. A 10% higher tax rate is associated with a 7.7%

reduction in investment. Desai, Foley and Hines (2004) report similar elasticities for indirect taxes.

Evidence corroborating the importance of taxes for location choice is found for federal states (Newman and Sullivan, 1988, Bartik, 1991, Wasylenko, 1991, Feld, 2000). Hines (1996) presents evidence that multinationals locate in U.S. states with lower taxes. Feld and Kirchgässner (2003) study the impact of personal and corporate income taxes on the distribution of firms between the Swiss cantons and on cantonal employment. They report significant negative effects of taxes on the number of small and medium sized firms in different classes of rates of return in 1981/82 and 1991/92 and on cantonal employment between 1985 and 1997. The higher taxes, the lower is the number of firms and employment. All in all, this is strong evidence that international and interregional location decisions are affected by taxes.

Tax rate differentials do however not only affect real investment of multinational corporations. They also have an effect on transfer prices that are set between parent companies and subsidiaries. If the parent locates in a high tax jurisdiction and the subsidiary is located in the low tax jurisdiction, the multinational corporation has incentives to set the prices for services provided by the subsidiary at higher levels in order to reduce profits and thus also taxes paid in the high tax jurisdiction. For the period 1981 to 1988, Swenson (2001) presents evidence that multinationals with parent companies in the U.S.A. and subsidiaries in Germany, France, the U.K., Japan and Canada increased transfer prices by 8.2% on average when foreign tax rates decreased by 1 percentage point. Mintz and Smart (2004) present similar evidence for Canada. Declared taxable profits of firms that have branches in more than one Canadian province declines by 4.3% in the case of tax hikes while otherwise similar firms that only have branches in one province declare profits that are by 1.6% lower. Finally, Grubert and Slemrod (1998) argue that transfer prices are particularly strongly influenced by taxes if a subsidiary's specialization is in research and development. In R&D, the internationally accepted dealing at arm's length principle cannot be used because most of the products of the subsidiary do not exist in the market such that market prices cannot serve for comparisons. They present evidence for U.S. parents with R&D subsidiaries in Puerto Rico that their transfer prices strongly depend on tax rate differentials.

3.2 Residence Choice

Support for the mobility hypothesis is also found with respect to migration and residence choice of individuals. Lower taxes and/or higher levels of public services attract individuals – ceteris paribus. There is however a first notable difference between location choice and residence choice. Because capital is internationally more mobile than labor, the international evidence on fiscally induced migration is not persuasive. This also holds for the EU although mobility between Member

States has considerably increased. Labor market conditions and general economic development of a country may serve as the main pull factors in international migration. Public finance still appears to be too unimportant for most researchers to take it into account. This holds although there is anecdotal evidence from firms which have difficulties to attract highly qualified people to high tax jurisdictions.

Many empirical studies do however exist for regional or local migration and the impact of fiscal policy on residence choice of individuals. These studies have been mainly performed by using U.S. and Swiss data because income tax differentials and differences in public services are high between the jurisdictions in both countries. For example, someone living in the canton and the city of Zurich who earns CHF 1 million taxable income per year pays more than three times the amount of taxes to the canton and the local jurisdiction of Zurich than in the community of Freienbach in the canton of Schwyz which is only half an hour away from Zurich. Looking at the evidence from federal states is also useful for an assessment of international fiscal competition because mobility costs are much lower, the lower the government level such that the potential for fiscal competition strongly increases. If fiscal competition turns out to be at least not harmful to economic outcomes of jurisdictions at the lower level of governments, it is probably having similar effects in international terms.

The studies for the U.S.A. broadly support the migration hypothesis (Feld 2000 for a survey). They find that tax rate differentials and differences in public services across U.S. states and local jurisdictions – *ceteris paribus* – influence individual residence choices. Welfare payments mainly affect migration of the poor. However, many studies also provide evidence that labor market conditions or the housing market are quantitatively more important than fiscal policy. In addition, the attraction of jurisdictions with favorable public or private infrastructure (in particular health and education) as well as a good quality of the natural environment (parks and other recreation facilities) should not be underestimated. The differences in tax rates and public services at state or local levels, moreover, capitalize in housing prices (Feld and Kirchgässner, 1997 and again Feld, 2000 for surveys on the U.S. studies). Higher taxes induce – *ceteris paribus* – lower housing prices, while a higher level of public services is associated with higher housing prices. The tax burden is shifted to the immobile factor land.

Similar evidence on fiscally induced migration is found for Switzerland. Frey (1981) reports only a small or no impact of income tax rate differentials on migration between and within Swiss cantons. Feld (2000) finds stronger effects for cantonal immigration between 1980 and 1990, but the results are not very robust to the inclusion of additional influences on migration. In an alternative approach, the impact of income taxes and public services on the distribution of taxpayers in different income classes across the Swiss cantons and local jurisdictions has been investigated. Kirchgässner and Pommerehne (1996) in a cross section analysis for the Swiss cantons in 1987, Pommerehne, Kirchgässner and Feld (1996), Feld

(1999, 2000, 2000a), Feld and Kirchgässner (2001) in cross section analyses for the Swiss cantons and for 137 Swiss cities and communities for 1990 as well as Feld and Frey (2000) in a panel data analysis for the cantons between 1981/82 and 1993/94 report a strong impact of income taxes on the distribution of taxpayers. The impact of income tax rate differentials is quantitatively more important in higher than in lower income classes. Tax competition appears to be more intense at the local than at the cantonal level and more important for self-employed than for dependent workers and for retirees. These results on the impact of public finance for the regional distribution of taxpayers is corroborated by the Swiss studies on capitalization of tax rate differentials in housing prices. Feld and Kirchgässner (1997), Hilber (1998) and Feld (2000) report that the higher income taxes, the lower are dwelling rents of apartments and houses. The income tax burden of high income taxpayers is capitalized more strongly than that of low income people. Welfare does not play any role. All in all, there is strong evidence from the regional level that fiscally induced migration and residence choice takes place. The *migration hypothesis* can thus not be rejected.

3.3 Strategic Fiscal Policy

Fiscally induced migration is a necessary condition for the existence of fiscal competition. A sufficient condition is the *strategy hypothesis*: Jurisdictions actually engage in strategic tax setting. How strategic tax setting emerges can be easily illustrated in the following example: In his tax policy, the Austrian finance minister has to consider several requirements many of which are derived from Austrian legislation or from EU law, and others stem from the influence of different interest groups on tax policy. In addition, he has to consider the international development in order to make Austria attractive for investments and locations of firms. If the Slovak Republic decreases its tax rate on individual and personal income to, say, 19%, the Austrian finance minister has to take that into account when announcing the next tax reform. Countries apparently look at what happens in other countries, or more generally speaking in other jurisdictions. They identify their competitors and react to their tax rate changes. According to the strategy hypothesis, the correlation between the changes of tax rates in different jurisdictions should be positive, i.e. if a country reduces individual and corporate income tax rates, another country reduces these rates as well.

Evidence on such a strategic tax setting exists, like for the location choice of firms, at all government levels. The first studies have again been conducted for the U.S. states and local jurisdictions (Ladd, 1992, Case, 1993, Brueckner and Saavedra, 2001), but there is meanwhile also evidence on strategic tax setting in Canada (Brett and Pinske, 2000 for municipalities and Hayashi and Boadway, 2000 for provinces), Belgian communities (Heyndels and Vuchelen, 1998), German local jurisdictions (Büttner, 1999, 2001), French regions and départements (Feld,

Josselin and Rocaboy, 2003, Leprince, Madiès and Paty, 2003, Reulier, 2004), Italian cities (Bordignon, Cerniglia and Revelli, 2003), Spanish local jurisdictions (Solé-Ollé 2003) and Swiss cantons (Feld and Reulier, 2001). Most of these studies focus on income, business and property taxation. They find that a reduction of the average tax rates of competitors induces a reduction of tax rates of an observed jurisdiction. Comparable evidence is presented by Figlio, Kolpin and Reid (1999) and Saavedra (2000) on welfare payments in the U.S.A. Again, reductions in welfare payments on average in competitor jurisdictions induce a reduction of welfare payments in an observed jurisdiction. Moreover, Fredriksson and Millimet (2002) provide evidence on strategic interaction in environmental policy. Brueckner (2003) provides a survey of these studies.

Most notably, such evidence could also be found at the international level. Devereux, Lockwood and Redoano (2001) analyze strategic tax setting for ten OECD countries between 1979 and 1999. They find that there is a positive spatial correlation between statutory corporate income taxes of these countries as well as between their effective average corporate income tax rates. The lower these tax rates in the other nine countries on average are, the lower are the tax rates in the remaining ten countries. Besley, Griffith and Klemm (2001) corroborate these results in a study on corporate income tax ratios (tax revenue in % of GDP) for 29 OECD countries between 1965 and 1997. Again, a positive spatial correlation of taxes exists. Altshuler and Goodspeed (2002) provide additional evidence on how the U.S.A. serves as a role model in international tax policy whose tax reforms are imitated by European countries. Evers, De Mooij and Vollebergh (2004) find strategic interaction in the case of European diesel excises for 15 EU Member States plus Norway and Switzerland between 1978 and 2001. Egger, Pfaffermayr and Winner (2004) complete these findings for VAT and excise tax ratios in 22 OECD countries between 1965 and 1997.

On the basis of this evidence, the *strategy hypothesis* cannot be rejected. Fiscal competition exists at the local, regional and international level at different intensities concerning different production factors. It is most intense at the local level in countries with local or regional fiscal autonomy. At the regional level, the intensity is lower compared with the local level, but higher compared to the international level. The evidence provides strong support for the existence of fiscal competition for firms and individual taxpayers and hence for corporate and individual income taxes as well as property taxes (the latter in particular in the U.S.A.). International evidence on fiscal competition is provided for corporate income taxation and indirect taxes, but not for individual income taxation or for public spending.

4. Evidence on the Economic Effects of Fiscal Competition

Stating that fiscal competition exists does not tell anything about its impact on the supply of public services, the welfare state or economic growth. These three classes

of economic outcomes must be considered explicitly. However, not much systematic international evidence on the impact of fiscal competition on these economic outcomes exists. The empirical studies have mainly been conducted for the federal countries Switzerland and the U.S.A., using regional or local data. What has been said in *section 3.2* however also holds with respect to economic outcomes: If fiscal competition is more intense at the local or regional level, the hypothesized positive or negative effects should be more easily observed in studies on federal states. In a *Sinatra-analogy*, we can state: "*If you can make it there, you can make it anywhere*."

4.1 The Efficiency of Public Goods' Provision

To measure economic efficiency in the provision of public goods is not easy. Public services are efficiently provided if the marginal cost of provision is equal to the sum of marginal rates of substitution of users. Though it is not impossible, finding out the marginal cost of provision is difficult, because most statistics on the public sector contain information on expenditure and not on cost. The real difficulty emerges however on the demand side. Consumers have incentives to hide their true willingness to pay for public services in order to get a free ride when they expect to pay actually. Consequently, direct evidence on the impact of fiscal competition on the efficiency of public goods' provision is relatively scarce.

The first evidence stems from a study by Bergstrom, Roberts, Rubinfeld and Shapiro (1988) who directly estimate the equality of marginal costs of provision of public services and the sum of individual marginal willingness to pay for public education (that is financed by property taxes in the U.S.A.). The demand for public services is estimated on the basis of individual survey data. In addition, aggregate data on local jurisdictions is used to assess marginal costs. The authors present evidence that the *efficiency hypothesis* according to which fiscal competition leads to an efficient decentralized provision of public goods cannot be rejected. Hoxby (2000) develops a less ambitious test by comparing the relative efficiency of education in jurisdictions with a higher and those with a lower intensity of fiscal competition. She presents evidence that the performance of students per input unit is increased by fiscal competition although it leads to significantly less spending per student. There is also evidence for Switzerland that fiscal decentralization is associated with a higher individual satisfaction of citizens with their lives in general (Frey and Stutzer, 2000, 2002).

In addition, there is a broad discussion in the literature on the impact of fiscal competition on the size of government. According to Brennan and Buchanan (1980), fiscal competition is a means to restrict Leviathan behavior of governments: "*The potential for fiscal exploitation varies inversely with the number of competing governmental units in the inclusive territory.*" (p. 185). Most studies attempt at testing this hypothesis by looking at the impact of fiscal decentralization

on public spending or revenue. There is mixed evidence on this impact of fiscal decentralization, however. Only the more recent evidence by Shadbegian (1999) for the U.S.A., Schaltegger (2001) and Kirchgässner (2002) for Switzerland and Rodden (2003) in a cross-country study provides unambiguous support for such a relationship. Feld, Kirchgässner and Schaltegger (2003) focus more closely on the transmission channels by which fiscal decentralization in federal states might affect the size of government. They find that a more intense tax competition leads to lower public revenue. Moreover, tax competition shifts the revenue structure from broad-based taxes to user charges and fees. Tax competition thus leads to a stronger enforcement of the *benefit principle of taxation*. Kirchgässner and Feld (2004) provide evidence for the same data set that again tax competition induces lower spending. The estimated reduction of spending for the canton which stands most strongly in tax competition compared to that which is the least affected by tax competition amounts to CHF 2,114.– per capita and year.

In the theoretical discussion, externalities of fiscal competition are focused. Büttner (2003) reports relatively important fiscal externalities for small communities in Germany. Murdoch, Sandler and Sargent (1997) find evidence on the importance of negative benefit spillovers (sulfur and NO_x emissions) for 25 European states. As Sørensen (2000, 2004) in his simulation study shows, these fiscal and regional externalities can easily compensate for each other. Parry (2003) corroborates this analysis and also reports relatively low welfare costs of tax competition even excluding tax exporting. Hence the importance of externalities can be questioned. Pommerehne, Feld and Hart (1994), with evidence on local cross-border pollution, and Pommerehne and Krebs (1991), with evidence on spillovers of public services in the canton of Zurich, show how regional externalities are successfully internalized in Coase-like bargaining processes. On the basis of empirical evidence for the U.S.A., Haughwout (2003) argues as well that Coasian bargaining is particularly suited to internalize fiscal externalities. Swiss federalism is in general characterized by specific inter-jurisdictional compensations for spillovers. Although this leads to high transaction costs it also induces incentive compatibility of public goods' provision. Indeed, Schaltegger (2003) does not find any significant benefit spillovers between Swiss cantons in a panel study for the years 1980 to 1998. All in all, this evidence speaks in favor of fiscal competition. The *efficiency hypothesis* cannot be rejected on the basis of this evidence.

4.2 Income Redistribution

What is really surprising is the evidence on the *redistribution hypothesis* in its strong version according to which fiscal competition leads to a collapse of the welfare state. Remember that the supposed mechanism is a fiscally induced migration of the poor to jurisdictions with high transfers and the rich to jurisdictions with low income taxes – keeping all other factors constant that might attract migrants. As

discussed in *section 3.2*, this fiscally induced migration takes place in the U.S.A. and, to a lesser extent with respect to welfare payments at least, also in Switzerland. There is additional evidence on strategic tax setting in both countries. There is however no evidence that the welfare state in both countries has collapsed – given national redistribution preferences. This is particularly interesting for Switzerland because of its more pronounced income redistribution.

Feld, Kirchgässner and Schaltegger (2003) analyze the impact of tax competition between Swiss cantons on their revenue structure and report evidence that tax competition shifts revenue from broad-based taxes to user charges and fees as hypothesized by the theoretical literature. These results are in line with more recent evidence by Winner (2004) on the impact of tax competition on tax structure. For 23 OECD countries and the time period 1965 to 2000, he finds that capital mobility shifts the tax burden from capital taxation to labor taxes. The less mobile tax base has to bear a higher tax burden. According to the results of Feld, Fischer and Kirchgässner (2003) for the Swiss cantons, welfare spending is however not affected by tax competition such that no unambiguous result is found for the spending structure.

On the basis of data from 1977, Kirchgässner and Pommerehne (1996) indeed present evidence for Switzerland that two thirds of public income redistribution (without considering social security in that analysis) were conducted by sub-federal jurisdictions. The income distribution was not significantly more unequal for Switzerland in 1977 than in Germany in the beginning of the1970s. Since the1970s, the Swiss income distribution has become more unequal than in other European countries. This development can be attributed to the fact that the 10% of the population with the highest income have more than proportionally gained from income growth between 1977 and 1992. Still, excluding social security, the Swiss public sector redistributes as much income in 1992 as in the end of the seventies. The share of sub-federal jurisdictions from this amount of income redistribution has even increased during the same period (Feld, 2000, 2000a). In addition, cantons and local jurisdictions have relied more strongly on taxes than on spending to accomplish income redistribution. Although Feld, Fischer and Kirchgässner (2003) find some evidence that tax competition between cantons is leading to less income redistribution, this effect is not robust to the primary distribution of income. The strong *redistribution hypothesis* must therefore be rejected for Switzerland.

It should be noted that the most important differences between fiscal competition in federal states on the one hand and international fiscal competition on the other hand must be attributed to the distribution branch. The Swiss cantons and local jurisdictions as well as the U.S. states and local jurisdictions are indeed embedded in a system with much income redistribution undertaken by the federal level. The public acceptance of the effects of fiscal competition on the income distribution thus hinges on the fact that there is some redistribution of income at the federal level. In Switzerland, the progressive federal income tax, the source tax on

interest income and the pay-as-you-go part of the Swiss pension system are centralized and have a strong redistributive impact. Similarly, the U.S. federal income tax is most important for income redistribution. In addition, both countries had strong residence requirements for longer time periods. As it is well documented by the U.S. studies on migration and welfare (Moffitt, 1992), residential requirements could be crucial for decentralized redistribution to work. Until 1969, the U.S. states imposed residence requirements on potential welfare recipients according to which they could only obtain welfare payments in a state if they had worked at least two years in the same state in which they applied for social welfare. The residence requirement was declared unconstitutional by the Supreme Court in that year. Evidence for a harmful welfare migration has been provided only for the period after that Supreme Court decision. In Switzerland, a citizenship principle existed until 1979 according to which the places of citizenship were responsible for social welfare of their citizens. Citizenship has been inherited. If the place of residence of a welfare recipient was different from the place of citizenship, he could be forced to move back in the place of citizenship or obtained lower transfer payments than he would have received at the place of residence. Finally, the Swiss political decision-making process plays a role for income redistribution. Since Swiss cantons to differing degrees enable voters to participate directly in fiscal decision-making by referenda on tax rates, spending or budget deficits, and because institutional competition of direct with representative democratic cantons induces the latter to deviate not too much from basic redistributive concerns, fiscal competition in Switzerland may not lead to a collapse of the welfare state as well. Actually, tax competition is less pronounced in cantons with a tax referendum than in those without one (Feld, 1997).

4.3 Economic Growth, Regional Convergence and Political Innovation

The impact of fiscal competition on economic growth is even less intensively studied than that on efficiency or income redistribution. There is a more recent literature mainly with cross-country evidence, but also with evidence on Chinese provinces, German or U.S. states that attempts at analyzing whether fiscal decentralization has a positive or negative impact on economic growth. The main disadvantage of the empirical approach in those studies is that fiscal decentralization is almost exclusively measured by the share of spending (or revenue) of lower level jurisdictions from total spending (or revenue). This share is not measuring fiscal autonomy. It could easily be the case that sub-federal jurisdictions spend a relatively large share, but are forced to do so by federal mandates or do not raise funds autonomously to finance that spending such that they depend on the federal government. This holds for example for Mexico (Feld, 2003). It is thus not surprising that the existing studies do not find any clear-cut evidence on this relation-

ship (Feld, Zimmermann and Döring, 2003). There is one paper in which the impact of tax competition on economic performance is analyzed. Feld, Kirchgässner and Schaltegger (2004) present evidence for the Swiss cantons from 1980 to 1998 that tax competition has not been harmful to economic performance of the cantons. In addition, no evidence on the importance of economies of scale for economic performance is found in that study. The arguments for a merger of cantons are thus not supported by the evidence from this paper. Still no evidence on the impact of fiscal competition on regional convergence exists. However, Desai, Foley and Hines (2004a) analyze the economic effects of regional tax havens and finds that the use of tax havens indirectly stimulates growth of operations in non-haven countries in the same region while Hines (2004) points to the fact that tax havens particularly gain from tax competition. This evidence shows that regional tax havens have effects on economic performance although they do not tell anything about agglomeration effects in central regions and locational disadvantages of the periphery.

With respect to the impact of fiscal competition on political innovation only evidence from case studies can be found. Feld and Schnellenbach (2004) discuss the diffusion of administration reforms (new public management) at the Swiss local level during the 1990s and the welfare reform of the U.S.A. in 1996. In particular, the latter example has been explicitly conducted with the expectation of the federal government that the states as a laboratory for welfare policies are better suited to find the most reasonable solutions for welfare policy. Although the welfare reform is a success story and the expectations are thus not disappointed, it must be noted that there are still federal mandates aiming at a quality control of these reforms. The U.S. welfare reform is hence not exclusively providing evidence for the success of fiscal competition in inducing political innovation. Much needs to be done to get a more conclusive picture in this area.

5. The Common CIT Base and Formulary Apportionment

Summarizing these theoretical arguments and the empirical evidence, a relatively straightforward assessment obtains: As the findings from a large body of empirical literature suggest, fiscal competition exists. While it does apparently not lead to any efficiency problems, at least there is no evidence supporting this hypothesis, its impact on the ability of governments to conduct income redistribution is less favorable. Obviously, the collapse of the welfare state under decentralized income redistribution can be prevented by particular rules, like residence requirements, such that the question emerges as to the proper regulations that shape fiscal competition. Sinn (2003) proposes a kind of residence requirement which he calls a nationality principle for the EU that is supposed to eliminate the adverse effects of fiscal competition on European welfare states. Richter (2003) discusses under

which conditions a delayed integration in national welfare states in the sense of residence requirements leads to efficient policy outcomes.

The recent policy proposals by the Commission to coordinate corporate income taxation have gained more attention than these suggestions, however. As mentioned in the introduction, the Bolkestein Report (European Commission, 2001) argues that a uniform corporate tax base with formulary apportionment could be a feasible solution to problems emerging from tax competition in the EU. Indeed, one of the main problems in European corporate income taxation consists in the possibilities of multinational firms to shift profits to jurisdictions with low tax rates. The international evidence, as surveyed in *section 3*, suggests that profit shifting is not sufficiently restricted by the dealing at arm's length principle because financial transactions or services from R&D subsidiaries are insufficiently captured by this principle. In fact, profit shifting leads to a redistribution problem in the first place because the finance minister has to forego tax payments while no relocation of firms occurs. The Commission proposal aims at resolving these problems from profit shifting. With a uniform corporate income tax base, the incentives for profit shifting are supposedly reduced. The distribution of tax revenue to the different countries that host branches of multinational firms may be accomplished by using formulary apportionment. According to formulary apportionment, the multinational firm attributes the profits of the entire corporate group to the different countries according to a formula that includes factors like, e.g., property, payroll or gross receipts (sales) (Weiner, 2002). This formula is supposed to mimic the geographic incidence of a multinationals economic activity.

Formula apportionment has been criticized heavily by several authors for the distortions it induces. Gordon and Wilson (1986) show that formula apportionment reduces the incentives to manipulate transfer prices, but distorts optimal location choice. If the factor "property" in the formula is too crudely capturing the respective economic activity, an increased incentive for firms producing in different jurisdictions to merge their operations results. The payroll component of a formula discourages merger activities while the factor "sales" may lead to cross-hauling of output, with production in low-tax jurisdictions sold in high tax jurisdictions and vice versa. As Wellisch (2002) emphasizes the corporation income tax degenerates to a tax on the different components included in the formula.

Moreover, formulary apportionment does not discourage single states from reducing tax rates strategically in order to attract tax payments (Anand and Sansing, 2000, Nielsen, Raimondos-Møller and Schjelderup, 2001). Indeed, Pethig and Wagener (2003) argue that tax competition is the sharper the more tax elastic the apportionment formula is. This result is corroborated by Gérard and Weiner (2003) who moreover argue that formula apportionment boosts the sensitivity of firms to tax changes. Nielsen, Raimondos-Møller and Schjelderup (2001a) show additionally that the incentives for multinationals to set transfer prices strategically

are not reduced by formulary apportionment if strategic transfer pricing involves strategic advantages in local oligopolistic markets.

Independently from the ambiguous incentives provided by formulary apportionment, particularly intense difficulties of implementing such a system in international taxation could be expected. In his analysis of formula apportionment in the U.S.A., Kaminski (2001) discusses the potential conflicts that emerge if different formulas are used by the different jurisdictions. Like already McIntyre (1992), he expects positive outcomes from formulary apportionment only if there is a uniform formula in the EU which is not to be taken for granted, given the different distributive outcomes resulting from different formulas for the different Member States. In addition, the German Scientific Council to the Federal Finance Ministry (Wissenschaftliche Beirat beim Bundesfinanzministerium, 1999) points to the necessary re-negotiation of the double taxation treaties of EU Member States which would involve enormous transactions costs. It is thus no surprise that Weiner (2002) believes the time not to be ripe for formula apportionment in the EU. It may rather be both, "a dream come true" and the "EU's worst nightmare" (p. 530).

6. Policy Conclusions

In policy debates across Europe, tax competition is very critically perceived. Most finance ministers would rather harmonize taxes than allow for tax competition. They fear that mobile tax bases will not contribute to the financing of European welfare states anymore. In this paper, the main theoretical arguments are discussed and evaluated as to what impact tax competition has on the provision of public services, on income redistribution by the state and on economic development. Moreover, the arguments from the theoretical analysis are confronted with existing empirical evidence. Several conclusions can be drawn from that analysis:

1. It is misleading to talk about tax competition. Taxes are prices for public services and the public insurance provided by welfare states. Governments find themselves in a locational competition of which *fiscal competition* is an important part. It is also misleading to trace the development of statutory or average effective tax rates over time without controlling other factors that affect location or residence choices.
2. The international and regional evidence provide overwhelming support for the *existence of fiscal competition*. Firms' international or regional location choices – *ceteris paribus* – depend on corporate and personal income tax rate differentials and on differences in public services. Taxes also play a significant role for the choice of transfer prices of multinational firms. The higher taxes, the less attractive a jurisdiction. Residence choices depend on personal income taxes, public infrastructure and welfare payments. The evidence for the latter mainly stems from interregional fiscal competition in federal states. International evidence does not exist. Being aware of fiscally induced migration, governments

engage in strategic tax setting and enter a process of tax and welfare competition.

3. The arguments on the impact of fiscal competition focus on the efficiency of public goods' provision and the sustainability of decentralized income redistribution. While there are contradictory hypotheses on efficiency, fiscal competition is hypothesized to render decentralized income redistribution impossible. The empirical evidence speaks in favor of the *efficiency enhancing effect* of fiscal competition, while the deterioration of income redistribution is not necessarily found. It strongly depends on the rules shaping income redistribution. In particular residence requirements appear to be useful.

4. Not much help should be expected from the proposal of a uniform corporate income tax base with formulary apportionment in the EU. While the first component of this proposal, the uniform tax base, has the potential to reduce transaction costs of multinational firms, to reduce the incentives for profit shifting to low-tax jurisdictions and to increase the possibilities for yardstick competition in Europe, the second component, formulary apportionment, supposedly increases the distortions of corporate income taxation in Europe. It may well become the "EU's worst nightmare" (Weiner, 2002).

References

ALTSHULER, R. and T. J. GOODSPEED (2002), Follow the Leader? Evidence on European and U.S. Tax Competition, Unpublished Manuscript, Hunter College, New York.

ALTSHULER, R., H. GRUBERT and T. S. NEWLON (2001), Has U.S. Investment Abroad Become More Sensitive to Tax Rates?, in: J. R. HINES (ed.), *International Taxation and Multinational Activity*, University of Chicago Press, Chicago 2001, 9–32.

ANAND, B. and R. SANSING (2000), The Weighting Game: Formula Apportionment as an Instrument of Public Policy, *National Tax Journal* 53, 183–199.

ARNOLD, V. (2001), Asymmetric Competition and Coordination in International Capital Income Taxation, *Finanzarchiv* 58, 430–448.

BALDWIN, R. E. and P. KRUGMAN (2004), Agglomeration, Integration and Tax Harmonization, *European Economic Review* 48, 1–23.

BARTIK, T. J. (1991), The Effects of Property Taxes and Other Local Public Policies on the Intrametropolitan Pattern of Business Location, in: H.W. HERZOG, JR. and A.M. SCHLOTTMANN (eds.), *Industry Location and Public Policy*, University of Tennessee Press, Knoxville 1991, 57–80.

BECKER, J. and C. FUEST (2004), A Backward Looking Measure of the Effective Marginal Tax Burden on Investment, CESifo Working Paper No. 1342, Munich 2004.

BERGSTROM, TH. C., J. A. ROBERTS, D. L. RUBINFELD and P. SHAPIRO (1988), A Test for Efficiency in the Supply of Public Education, *Journal of Public Economics* 35, 289–307.

BESLEY, T. and A. C. CASE (1995), Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition, *American Economic Review* 85, 25–45.

BESLEY, T., R. GRIFFITH and A. KLEMM (2001), Empirical Evidence on Fiscal Interdependence in OECD Countries, Unpublished Manuscript, London School of Economics.

BJORVATN, K. and A. W. CAPPELEN (2001), Income Distribution and Tax Competition, Unpublished Manuscript, Norwegian School of Economics and Business Administration, Bergen.

BJORVATN, K. and G. SCHJELDERUP (2002), Tax Competition and International Public Goods, *International Tax and Public Finance* 9, 111–120.

BLACK, D. A. and W. H. HOYT (1989), Bidding for Firms, *American Economic Review* 79, 1249–1256.

BOND, E. W. and L. SAMUELSON (1986), Tax Holidays as Signals, *American Economic Review* 76, 820–826.

BORCK, R. (2003), Tax Competition and the Choice of Tax Structure in a Majority Voting Model, *Journal of Urban Economics* 54, 173–180.

BORCK, R. (2004), Fiscal Competition, Capital-Skill Complementarity, and the Composition of Public Spending, Unpublished Manuscript, DIW Berlin.

BORDIGNON, M., F. CERNIGLIA and F. REVELLI (2003), In Search of Yardstick Competition: A Spatial Analysis of Italian Municipality Property Tax Setting, *Journal of Urban Economics* 54, 199–217.

BRAKMAN, S., H. GARRETSEN and C. VAN MARREWIJK (2002), Locational Competition and Agglomeration: The Role of Government Spending, CESifo Working Paper No. 775, Munich, September 2002.

BRENNAN, G. and J. M. BUCHANAN (1980), *The Power to Tax: Analytical Foundations of a Fiscal Constitution*, Cambridge University Press, Cambridge 1980.

BRETT, C. and J. PINSKE (2000), The Determinants of Municipal Tax Rates in British Columbia, *Canadian Journal of Economics* 33, 695–714.

BRUECKNER, J. K. (2003), Strategic Interaction among Governments: An Overview of Empirical Studies, *International Regional Science Review* 26, 175–188.

BRUECKNER, J. K. and L. A. SAAVEDRA (2001), Do Local Governments Engage in Strategic Property Tax Competition?, *National Tax Journal* 54, 203–229.

BUCHANAN, J. M. (1975), *The Limits of Liberty*, University of Chicago Press, Chicago 1975.

BUCOVETSKY, S. (1991), Asymmetric Tax Competition, *Journal of Urban Economics* 30, 167–181.

BUNDESMINISTERIUM DER FINANZEN (BMF) (2005), *Die wichtigsten Steuern im internationalen Vergleich: Steuerquoten, Abgabenquoten, Tarife, Ausgabe 2004*, Bundesministerium der Finanzen, Berlin.

BÜTTNER, T. (1999), Determinants of Tax Rates in Local Capital Income Taxation: A Theoretical Model and Evidence from Germany, *Finanzarchiv N.F.* 56, 363–388.

BÜTTNER, T. (2001), Local Business Taxation and Competition for Capital: The Choice of the Tax Rate, *Regional Science and Urban Economics* 31, 215–245.

BÜTTNER, T. (2002), The Impact of Taxes and Public Spending on the Location of FDI: Evidence from FDI-flows within Europe, ZEW-Discussion Paper No. 02-17, Mannheim.

BÜTTNER, T. (2003), Tax Base Effects and Fiscal Externalities of Local Capital Taxation: Evidence from a Panel of German Jurisdictions, *Journal of Urban Economics* 54, 110–128.

CASE, A. C. (1993), Interstate Tax Competition after TRA86, *Journal of Policy Analysis and Management* 12, 136–148.

DE MOOIJ, R. and S. EDERVEEN (2003), Taxation and Foreign Direct Investment: A Synthesis of Empirical Results, *International Tax and Public Finance* 10, 673–693.

DESAI, M. A., C. F. FOLEY and J. R. HINES (2003), Chains of Ownership, Tax Competition, and the Location Decisions of Multinational Firms, in: H. HERRMANN and R. LIPSEY (eds.), *Foreign Direct Investment in the Real and Financial Sector of Industrial Countries*, Springer, Berlin 2003, 61–98.

DESAI, M. A., C. F. FOLEY and J. R. HINES (2004), Foreign Direct Investment in a World of Multiple Taxes, *Journal of Public Economics* 88, 2727–2744.

DESAI, M. A., C. F. FOLEY and J. R. HINES (2004a), Economic Effects of Regional Tax Havens, Unpublished Manuscript, Harvard Business School, Harvard.

DEVEREUX, M. P. and H. FREEMAN (1995), The Impact of Tax on Foreign Direct Investment: Empirical Evidence and the Implications for Tax Integration Schemes, *International Tax and Public Finance* 2, 85–106.

DEVEREUX, M. P. and R. GRIFFITH (1998), Taxes and the Location of Production: Evidence from a Panel of US Multinationals, *Journal of Public Economics* 68, 335–367.

DEVEREUX, M. P. and A. KLEMM (2003), Measuring Taxes on Income from Capital: Evidence from the U.K., IFS Working Paper 03/03, Institute of Fiscal Studies, London.

DEVEREUX, M. P., R. GRIFFITH and A. KLEMM (2002), Corporate Income Tax Reforms and International Tax Competition, *Economic Policy* 35, 449–495.

DEVEREUX, M. P., B. LOCKWOOD and M. REDOANO (2001), Do Countries Compete over Corporate Tax Rates?, Unpublished Manuscript, University of Warwick.

DOYLE, C. and S. VAN WIJNBERGEN (1994), Taxation of Foreign Multinationals: A Sequential Bargaining Approach to Tax Holidays, *International Tax and Public Finance* 1, 211–225.

EDERVEEN, S. and R. DE MOOIJ (2003), To Which Tax Rate Does Investment Respond? A Synthesis of Empirical Research on Taxation and Foreign Direct Investment, in: BANCA D'ITALIA (ed.), *Tax Policy*, Banca d'Italia, Rome 2003, 327–354.

EGGER, P., M. PAFFERMAYR and H. WINNER (2004), Commodity Taxation in a 'Linear' World: A Spatial Panel Data Approach, forthcoming in: *Regional Science and Urban Economics*.

EGGERT, W. and M. KOLMAR (2001), The Rich Country's Curse, Unpublished Manuscript, University of Constance.

EUROPEAN COMMISSION (2001), *Company Taxation in the Internal Market*, European Commission, Brussels.

EVERS, M., R. A. DE MOOIJ and H. R. J. VOLLEBERGH (2004), Tax Competition under Minimum Rates: The Case of European Diesel Excises, Tinbergen Institute Discussion Paper No. 2004-062/3, Amsterdam.

FELD, L. P. (1997), Exit, Voice and Income Taxes: The Loyalty of Voters, *European Journal of Political Economy* 13, 455–478.

FELD, L. P. (1999), Allocative and Distributive Effects of Tax Competition: An Empirical Analysis for Switzerland, *Aussenwirtschaft* 54, 503–528.

FELD, L. P. (2000), *Steuerwettbewerb und seine Auswirkungen auf Allokation und Distribution: Ein Überblick und eine empirische Analyse für die Schweiz*, Mohr Siebeck, Tübingen 2000.

FELD, L. P. (2000a), Tax Competition and Income Redistribution: An Empirical Analysis for Switzerland, *Public Choice* 105, 125–164.

FELD, L. P. (2003), Fiscal Federalism and Political Decision Structures, in: R. BLINDENBACHER and A. KOLLER (ed.), *Federalism in a Changing World– Learning from Each Other: Scientific Background, Proceedings and Plenaries of the International Conference on Federalism 2002*, McGill-Queens University Press, Montreal et al. 2003, 461–470.

FELD, L. P. (2005), On Tax Competition: The (Un-)Expected Advantages of Decentralized Fiscal Autonomy, forthcoming in: FRIEDRICH A. VON HAYEK INSTITUT (ed.), *Austrian Economics Today II: Reforms for a Competitive Economy*, FAZ Buch, Frankfurt 2005.

FELD, L. P. and B. S. FREY (2000), *Die Auswirkungen des kantonalen Steuerwettbewerbs auf den Kanton Zürich: Möglichkeiten einer rationalen Reform*, Consulting Report to the Cantonal Tax Administration of the Canton of Zurich, December.

FELD, L. P. and G. KIRCHGÄSSNER (1997), Die Kapitalisierung von Steuern und öffentlichen Leistungen in den Mietzinsen: Eine empirische Überprüfung der Tiebout-Hypothese für die Schweiz, in: H. SCHMID and T. SLEMBECK (eds.), *Finanz- und Wirtschaftspolitik in Theorie und Praxis*, Haupt, Bern et al. 1997, 64–92.

FELD, L. P. and G. KIRCHGÄSSNER (2001), Income Tax Competition at the State and Local Level in Switzerland, *Regional Science and Urban Economics* 31, 181–213.

FELD, L. P. and G. KIRCHGÄSSNER (2003), The Impact of Corporate and Personal Income Taxes on the Location of Firms and on Employment: Some Panel Evidence for the Swiss Cantons, *Journal of Public Economics* 87, 129–155.

FELD, L. P. and E. REULIER (2001), Strategic Tax Competition in Switzerland: Evidence from a Panel of the Swiss Cantons, Unpublished Manuscript, University of St. Gallen.

FELD, L. P. and J. SCHNELLENBACH (2004), Begünstigt fiskalischer Wettbewerb die Politikinnovation und -diffusion? Theoretische Anmerkungen und erste Befunde aus Fallstudien, in: CH. A. and ST. SCHALTEGGER (eds.), *Perspektiven der Schweizer Wirtschaftspolitik*, vdf Hochschulverlag Zürich, 259–277.

FELD, L. P., J. FISCHER and G. KIRCHGÄSSNER (2003), The Effect of Direct Democracy on Income Redistribution: Evidence for Switzerland, Unpublished Manuscript, Philipps-University Marburg.

FELD, L. P., J.-M. JOSSELIN and Y. ROCABOY (2003), Tax Mimicking Among Regional Jurisdictions, in: A. MARCIANO and J.-M. JOSSELIN (eds.), *From Economic to Legal Competition: New Perspectives on Law and Institutions in Europe*, Edward Elgar, Cheltenham 2003, 105–119.

FELD, L. P., G. KIRCHGÄSSNER and CH. A. SCHALTEGGER (2003), Decentralized Taxation and the Size of Government: Evidence from Swiss State and Local Governments, CESifo Working Paper No. 1087, December 2003.

FELD, L. P., G. KIRCHGÄSSNER and CH. A. SCHALTEGGER (2004), Fiscal Federalism and Economic Performance: Evidence from Swiss Cantons, Unpublished Manuscript, Philipps-University of Marburg.

FELD, L. P., H. ZIMMERMANN and TH. DÖRING (2003), Föderalismus, Dezentralität und Wirtschaftswachstum, *Vierteljahreshefte zur Wirtschaftsforschung* 72, 361–377.

FIGLIO, D. N., V. W. KOLPIN and W. E. REID (1999), Do States Play Welfare Games?, *Journal of Urban Economics* 46, 437–454.

FREDRIKSSON, P. G. and D. L. MILLIMET (2002), Strategic Interaction and the Determination of Environmental Policy across U.S. States', *Journal of Urban Economics* 51, 101–122.

FREY, B. S. and A. STUTZER (2000), Happiness, Economy and Institutions, *Economic Journal* 110, 818–838.

FREY, B. S. and A. STUTZER (2002), *Happiness and Economics*, Princeton University Press, Princeton/Oxford 2002.

FREY, R. L. (1981), Bestimmungsfaktoren der inter- und intraregionalen Wanderungen, Eine ökonometrische Untersuchung für die Schweiz und die Region Basel, in: R.L. FREY (ed.), *Von der Land- zur Stadtflucht*,

Bestimmungsfaktoren der Bevölkerungswanderungen in der Region Basel, Lang, Bern/Frankfurt, 13–52.

GÉRARD, M. and J. M. WEINER (2003), Cross-Border Loss Offset and Formulary Apportionment: How Do They Affect Multijurisdictional Firm Investment Spending and Interjurisdictional Tax Competition?, CESifo Working Paper No. 1004, Munich 2003.

GIANNINI, S. and C. MAGGIULLI (2002), Effective Tax Rates in the EU Commission Study on Company Taxation: Methodological Aspects, Main Results and Policy Implications, *Ifo Studien (CESifo Studies)* 48, 633–653.

GORDON, R H. and J. D. WILSON (1986), An Examination of Multijurisdictional Corporate Income Taxation under Formula Apportionment, *Econometrica* 54, 1357–1373.

GORTER, J. and R. A. DE MOOIJ (2002), *Capital Income Taxation in Europe: Trends and Trade-offs*, CPB Netherlands Bureau for Economic Policy Analysis, Den Haag 2002.

GRIFFITH, R. and A. KLEMM (2004), What Has Been the Tax Competition Experience of the Last 20 Years?, IFS Working Paper 04/05, Institute for Fiscal Studies, London.

GRUBERT, H. and J. MUTTI (1991), Taxes, Tariffs and Transfer Pricing in Multinational Corporate Decision Making, *Review of Economics and Statistics* 73, 285–293.

GRUBERT, H. and J. MUTTI (2000), Do Taxes Influence Where U.S. Corporations Invest?, *National Tax Journal* 53, 825–839.

GRUBERT, H. and J. SLEMROD (1998), The Effect of Taxes on Investment and Income Shifting to Puerto Rico, *Review of Economics and Statistics* 80, 365–373.

HAUFLER, A. and I. WOOTON (2004), The Effects of Regional Tax and Subsidy Coordination on Foreign Direct Investment, Unpublished Manuscript, LMU München.

HAUGHWOUT, A. F. (2003), Trade and Tax Policy in the Presence of Market Failures: Lessons from American Regions, in: BANCA D'ITALIA (ed.), *Tax Policy*, Banca d'Italia, Rome 2003, 371–389.

HAYASHI, M. and R. BOADWAY (2000), An Empirical Analysis of Intergovernmental Tax Interaction: The Case of Business Income Taxes in Canada, *Canadian Journal of Economics* 34, 481–503.

HEYNDELS, B. and J. VUCHELEN (1998), Tax Mimicking among Belgian Municipalities, *National Tax Journal* 51, 89–101.

HILBER, CH. (1998), *Auswirkungen staatlicher Massnahmen auf die Bodenpreise: Eine theoretische und empirische Analyse der Kapitalisierung*, Rüegger, Chur and Zürich 1998.

HINES, J. R. (1996), Altered States: Taxes and the Location of Foreign Direct Investment in America, *American Economic Review* 86, 1076–1094.

HINES, J. R. (1997), Tax Policy and the Activities of Multinational Corporations, in: A.J. AUERBACH (ed.), *Fiscal Policy: Lessons from Economic Research*, MIT Press, Cambridge 1997, 401–445.

HINES, J. R. (2004), Do Tax Havens Flourish?, Unpublished Manucript, University of Michigan, Ann Arbor.

HINES, J. R. and E. M. RICE (1994), Fiscal Paradise: Foreign Tax Havens and American Business, *Quarterly Journal of Economics* 109, 149–182.

HOXBY, C. M. (2000), Does Competition among Public Schools Benefit Students and Taxpayers?, *American Economic Review* 90, 1209–1238.

HUBER, B. and M. RUNKEL (2004), Tax Competition, Excludable Public Goods and User Charges, Unpublished Manuscript, LMU München.

HUIZINGA, H. and S. B. NIELSEN (1997), Capital Income and Profit Taxation with Foreign Ownership of Firms, *Journal of International Economics* 42, 149–165.

INMAN, R. P. and D. L. RUBINFELD (1997), Rethinking Federalism, *Journal of Economic Perspectives* 11 (4), 43–64.

JACOBS, O. H., C. SPENGEL, M. FINKENZELLER and M. ROCHE (2003), *Company Taxation in the New EU Member States: Survey of the Tax Regimes and Effective Tax Burdens for Multinational Investors*, ZEW and Ernst & Young, Mannheim and Frankfurt.

JANEBA, E. (2000), Tax Competition when Governments Lack Commitment: Excess Capacity as a Countervailing Threat, *American Economic Review* 90, 1508–1519.

JANEBA, E. (2002), Attracting FDI in a Politically Risky World, *International Economic Review* 43, 1127–1155.

KAMINSKI, B. (2001), Formula Apportionment, in: W. MÜLLER, O. FROMM and B. HANSJÜRGENS (eds.), *Regeln für den europäischen Systemwettbewerb: Steuern und soziale Sicherungssysteme,* Metropolis, Marburg 2001, 133–152.

KEEN, M. and M. MARCHAND (1997), Fiscal Competition and the Pattern of Public Spending, *Journal of Public Economics* 66 (1997), S. 33–53.

KERBER, W. (1998), Zum Problem einer Wettbewerbsordnung für den Systemwettbewerb, *Jahrbuch für Neue Politische Ökonomie* 17, 199–230.

KIND, H. J., K. H. .M. KNARVIK and G. SCHJELDERUP (2000), Competing for Capital in a Lumpy World, *Journal of Public Economics* 78, 253–274.

KIRCHGÄSSNER, G. (2002), Föderalismus und Staatsquote, in: U. WAGSCHAL and H. RENTSCH (eds.), *Der Preis des Föderalismus*, Orell Füssli, Zürich 2002, 71–91.

KIRCHGÄSSNER, G. and L. P. FELD (2004), Föderalismus und Staatsquote, *Jahrbuch für Föderalismus* 5, 67–87.

KIRCHGÄSSNER. G. and W. W. POMMEREHNE (1996), Tax Harmonization and Tax Competition in the European Union: Lessons from Switzerland, *Journal of Public Economics* 60, 351–371.

LADD, H. F. (1992), Mimicking of Local Tax Burdens among Neighboring Counties, *Public Finance Quarterly* 20, 450–467.

LEPRINCE, M., T. MADIÈS and S. PATY (2003), Interactions fiscales horizontales et verticales: Un test sur données départementales, Unpublished Manuscript, University of Lille.

LUDEMA, R. D. and I. WOOTON (2000), Economic Geography and the Fiscal Effects of Economic Integration, *Journal of International Economics* 52, 331–357.

MARCEAU, N. and S. MONGRAIN (2004), Almost Efficient Tax Competition, Unpublished Manuscript, Université du Québec, Montréal.

MCINTYRE, M. J. (1992), Design of a National Formulary Apportionment Tax System, *Proceedings of the 84th Annual Conference 1991 of the National Tax Association,* 118–124.

MENDOZA, E. G. and L. L. TESAR (2003), Winners and Losers of Tax Competition in the European Union, NBER Working Paper No. 10051, Cambridge 2003.

MINTZ, J. and M. SMART (2004), Income Shifting, Investment, and Tax Competition: Theory and Evidence from Provincial Taxation in Canada, *Journal of Public Economics* 88, 1149–1168.

MOFFITT, R. (1992), Incentive Effects of the U.S. Welfare System: A Review, *Journal of Economic Literature* 30, 1–61.

MURDOCH, J. C., T. SANDLER and K. SARGENT (1997), A Tale of Two Collectives: Sulphur and Nitrogen Oxides Emission Reduction in Europe, *Economica* 64, 281–301.

MUTTI, J. and H. GRUBERT (2002), Empirical Asymmetries in Foreign Direct Investment and Taxation, Unpublished Manuscript, U.S. Treasury, Washington, D.C.

NEWMAN, R. J. and D. H. SULLIVAN (1988), Econometric Analysis of Business Tax Impacts on Industrial Location: What Do We Know, and How Do We Know It?, *Journal of Urban Economics* 23, 215–234.

NIELSEN, S. B., P. RAIMONDOS-MØLLER and G. SCHJELDERUP (2001), Tax Spillovers under Separate Accounting and Formula Apportionment, Unpublished Manuscript, Copenhagen Business School 2001.

NIELSEN, S. B., P. RAIMONDOS-MØLLER and G. SCHJELDERUP (2001a), Formula Apportionment and Transfer Pricing under Oligopolistic Competition, CESifo Working Paper No. 491, Munich 2001.

NOISET, L. (2003), Is It Tax Competition or Tax Exporting, *Journal of Urban Economics* 54, 639–647.

OATES, W. E. (1972), *Fiscal Federalism*, Harcourt/Brace/Jovanovich, New York 1972.

OATES, W. E. (1999), An Essay on Fiscal Federalism, *Journal of Economic Literature* 37, 1120–1149.

OLSON, M. (1969), The Principle of 'Fiscal Equivalence': The Division of Responsibilities among Different Levels of Government, *American Economic Review* 59 (2), 479–487.

PARRY, I. W. H. (2003), How Large Are the Welfare Costs of Tax Competition?, *Journal or Urban Economics* 54, 39–60.

PAULY, M. V. (1973), Income Redistribution as a Local Public Good, *Journal of Public Economics* 2, 35–58.

PETHIG, R. and A. WAGENER (2003), Profit Tax Competition and Formula Apportionment, CESifo Working Paper No. 1011, Munich 2003.

POMMEREHNE, W. W. and S. KREBS (1991), Fiscal Interaction of Central Cities and Suburbs: The Case of Zurich, *Urban Studies* 28, 783–801.

POMMEREHNE, W. W., L. P. FELD and A. HART (1994), Voluntary Provision of a Public Good: Results from a Real World Experiment, *Kyklos* 47, 505 – 518.

POMMEREHNE, W. W., G. KIRCHGÄSSNER and L. P. FELD (1996), Tax Harmonization and Tax Competition at State-Local Levels: Lessons from Switzerland, in: G. POLA, R. LEVAGGI and G. FRANCE (eds.), *Developments in Local Government Finance: Theory and Policy*, Edward Elgar, Cheltenham 1996, 292–330.

REULIER, E. (2004), *Choix fiscaux et interactions stratégique,* Ph.D. Thesis, Université de Rennes 1, France.

RICHTER, W. F. (2003), Delayed Integration of Mobile Labor: A Principle for Coordinating Taxation, Social Security, and Social Assistance, in: S. CNOSSEN and H.-W. SINN (eds.), *Public Finance and Public Policy in the New Century*, MIT Press, Cambridge 2003, 495–518.

RODDEN, J. (2003), Reviving Leviathan: Fiscal Federalism and the Growth of Government, *International Organization* 57, 695–729.

ROSE-ACKERMAN, S. (1980), Risk-Taking and Reelection: Does Federalism Promote Innovation?, *Journal of Legal Studies* 9, 593–616.

SAAVEDRA, L. A. (2000), A Model of Welfare Competition with Evidence from AFDC, *Journal of Urban Economics* 47, 248–279.

SACHVERSTÄNDIGENRAT ZUR BEGUTACHTUNG DER GESAMTWIRTSCHAFTLICHEN ENTWICKLUNG (SVR) (2004), *Erfolge im Ausland – Herausforderungen im Inland, Jahresgutachten 2004/05*, Bundestagsdrucksache 15/4300, Bundesanzeiger Verlag, Köln.

SALMON, P. (2003), Assigning Powers in the European Union in the Light of Yardstick Competition among Governments, *Jahrbuch für Neue Politische Ökonomie* 22, 197–216.

SCHALTEGGER, CH. A. (2001), The Effects of Federalism and Democracy on the Size of Government: Evidence from Swiss Sub-national Jurisdictions, *ifo Studien* 47 (2001), 145–162.

SCHALTEGGER, CH. A. (2003), Zum Problem räumlicher Nutzen-Spillover zentralörtlicher Leistungen: Einige empirische Ergebnisse aus dem Schweizer Föderalismus, *Jahrbücher für Nationalökonomie und Statistik* 223, 159–175.

SCHNELLENBACH, J. (2004), *Dezentrale Finanzpolitik und Modellunsicherheit*, Mohr Siebeck, Tübingen 2004.

SHADBEGIAN, R. J. (1999), Fiscal Federalism, Collusion, and Government Size: Evidence from the States, *Public Finance Review* 27, 262–281.

SINN, H.-W. (2003), *The New Systems Competition*, Blackwell, Oxford 2003.

SMITH, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, London 1776.

SOLÉ-OLLÉ, A. (2003), Electoral Accountability and Tax Mimicking: The Effects of Electoral Margins, Coalition Government and Ideology, *European Journal of Political Economy* 19, 685–713.

SØRENSEN, P. B. (2000), The Case for International Tax Coordination Reconsidered, *Economic Policy* 31, 431–472.

SØRENSEN, P. B. (2004), International Tax Coordination: Regionalism versus Globalism, *Journal of Public Economics* 88, 1187–1214.

STIGLER, G. J. (1957), The Tenable Range of Functions of Local Government, in: U.S. CONGRESS, JOINT ECONOMIC COMMITTEE (ed.), *Federal Expenditure Policy for Economic Growth and Stability*, Washington, D.C. 1957, 213–219.

STÖWHASE, S. (2002), Profit Shifting Opportunities, Multinationals, and the Determinants of FDI, Unpublished Manuscript, LMU München.

STÖWHASE, S. (2004), Asymmetric Capital Tax Competition with Profit Shifting, Unpublished Manuscript, LMU München.

STÖWHASE, S. and C. TRAXLER (2004), Tax Evasion and Auditing in a Federal Economy, Arbeitspapier, LMU München.

SWENSON, D. L. (2001), Tax Reforms and Evidence of Transfer Pricing, *National Tax Journal* 54, 7–25.

TIEBOUT, CH. M. (1956), A Pure Theory of Local Expenditures, *Journal of Political Economy* 64, 416–424.

WASYLENKO, M. J. (1991), Empirical Evidence on Interregional Business Location Decisions and the Role of Fiscal Incentives in Economic Development, in: H.W. HERZOG, JR. and A.M. SCHLOTTMANN (eds.), *Industry Location and Public Policy*, University of Tennessee Press, Knoxville 1991, 13–30.

WEINER, J. M. (2002), Would Introducing Formula Apportionment in the European Union Be a Dream Come True or the EU's Worst Nightmare?, *Ifo Studien (CESifo Studies)* 48, 519–532.

WELLISCH, D. (2002), Corporation Income Taxation of Multinational Firms and Capital Mobility: Separate Accounting and Formula Apportionment in Comparison, Unpublished Manuscript, Magdeburg 2002.

WILDASIN, D. (2004), Competitive Fiscal Structures, Unpublished Manuscript University of Kentucky, Lexington.

WILSON, J. D. (1986), A Theory of Interregional Tax Competition, *Journal of Urban Economics* 19, 296–315.

WILSON, J. D. (2005), Welfare Improving Competition for Mobile Capital, *Journal of Urban Economics* 57, 1–18.

WINNER, H. (2004), Has Tax Competition Emerged in OECD Countries? Evidence from Panel Data, forthcoming in: *International Tax and Public Finance*.

WISSENSCHAFTLICHER BEIRAT BEIM BUNDESFINANZMINISTERIUM (1999), *Reform der internationalen Kapitaleinkommensbesteuerung*, Schriftenreihe des Bundesministeriums der Finanzen Heft 65, Stollfuss, Bonn 1999.

Zentrum für Europäische Wirtschaftsforschung (ZEW) (2005), Effektive Steuerbelastung von Unternehmen in Europa, ftp://ftp.zew.de/pub/zew-docs/div/ Effektive_Steuerbelastung_Europa.pdf.

ZODROW, G. R. and P. MIESZKOWSKI (1986), Pigou, Tiebout, Property Taxation, and the Underprovision of Local Public Goods, *Journal of Urban Economics* 19, 356–370.

Comment on "Capital Taxation in an Enlarged EU:

The Case for Tax Coordination and

The Case for Tax Competition"

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1. Introduction

Over the last 20 years increasing economic integration has prompted a debate on the impact of tax competition on the location of economic activities and the need for tax coordination. Two radical views have emerged in the debate:

a) Tax competition is good: it enhances efficiency. Countries should compete globally and public services should also be exposed to competition. Tax competition can help restraining the size and the cost of government.[2]

b) Governments must have the power to raise as much revenue as necessary to finance the expenditure level that is deemed optimal. Tax competition can hamper the achievement of public targets, in particular it is harmful to redistribution policies.[3] Tax competition can also shift the tax burden from highly mobile bases (like capital) to less mobile bases (like labour), thereby inducing distortions and negative effects on

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[1] The views expressed in this paper are those of the author and should not be attributed to the institution he is affiliated with.

[2] "Governments that could not provide good value for money would find their economies shrinking beneath them. For them, arbitrage in taxes and regulation would be a problem. For citizens and companies, though, such competition, even in its extreme form, might seem rather a good way of getting better, if not necessarily cheaper, government." (The Economist, 1998, p. 60).

[3] This point has been made very clearly by some European policymakers: "it is obvious … that undisciplined tax competition is unacceptable, socially and economically." (Strauss-Kahn, 2000, p. 2).

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employment.[4] In the European Union (EU), this view is shared by the supporters of the European Social Model, who point to the need for tax coordination at the EU level.

The papers by Lars Feld and Bernd Genser provide a broad overview of these issues and examine the underlying technical and political dimensions. They highlight the open empirical questions and the controversial policy indications. The papers also consider the specific problems raised by the enlargement of the EU to ten New Member States, which has recently given new prominence to tax competition.

Both papers are very much cautious in highlighting both the benefits and costs of tax competition and tax coordination and in drawing policy prescriptions. However, the views taken by the authors are significantly different. Feld emphasises the benefits of tax competition and points to the problematic features of tax coordination. Genser shows that tax coordination can be useful and that – more specifically – greater tax coordination would be desirable in the EU.

2. Is Tax Competition Relevant?

On one point Feld and Genser fully agree: tax competition exerts important effects on business decisions. Feld, in particular, quotes several studies that point to the importance of tax competition (either deliberate or stemming from different national regimes) in location choices and concludes that the international and regional evidence provide overwhelming support for the existence of tax competition. He notes that governments engage in strategic tax settings and enter a process of tax and welfare competition.

The authors do not tackle directly the issue of the impact of tax competition on public revenues in the EU. In this regard, one should reconcile the evidence concerning the impact of tax competition on location choices with that on revenue trends. So far there is no evidence that corporate income tax (CIT) revenues are collapsing in the EU and OECD countries (European Commission, 2000; Devereux et al., 2002).

The average ratio of the CIT revenues to GDP in OECD countries has been about constant from 1980 to 2002 (at around 2.5% – 3%) in spite of the marked decline of the average CIT rate (from 48% in 1982 to 33% in 2004), implying that governments get more revenues per point of tax rate. This may depend both on the increase in the share of profits out of GDP and on the broadening of tax bases. The estimates of the European Commission concerning the average effective tax rate on capital point to a somewhat similar picture: in the euro-area this rate increased from 15% in 1970 to 17% in 1980 and 20.8% in 1990 and declined thereafter to

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[4] See European Commission (1997).

about 19% in 2002 (Martinez-Mongay, 2003). Effective tax rates on profits recently seem to be on a declining trend, but they are still close to their peak.

In interpreting these results, one should consider that the decline in tax rates and the broadening of tax bases also reflect national policies not necessarily related to tax competition. The issue of tax base broadening was extensively discussed in many countries in the 1980s in a context in which tax competition was not yet prominent. Efficiency, simplicity and equity were the keywords of the reform proposals. There was a wide consensus on the need to broaden tax bases and reduce the dispersion of tax rates. These changes were expected to reduce tax induced distortions (Hagemann et al., 1987; OECD, 1993). In the following years several countries modified the structure of personal and corporate taxation (Hallerberg and Basinger, 1996).

This suggests that changes in CIT rate and structure should not be interpreted only in view of international tax competition. Several other factors are also relevant. It is an open question whether and when the factors which have so far offset the reduction of CIT statutory rates will fade away and revenues will be more significantly affected by tax competition.

3. Is Tax Competition for the New EU Member States Relevant?

Tax competition is evidently not a new phenomenon. Multinational companies have long being taking into consideration and exploiting differences in tax regimes. In the EU the integration of factors and goods markets and monetary union have given growing prominence to differences in tax regimes. As Genser notes, the issue of tax harmonisation is nearly as old as the process of European integration.

Can we expect a sizeable increase of tax competition due to the enlargement of the EU? Genser expects that capital tax competition will indeed intensify in the enlarged EU. He notes that the increased dispersion of effective tax rates on capital returns within EU countries is likely to determine greater distortions in the allocation of the supply of capital and that the increased dispersion of statutory tax rates can create negative fiscal externalities. Genser also notes that in the medium run CIT competition in the enlarged capital market of the EU-25 is likely to reduce the level of CIT rates in the Member States. This is probably one of the considerations that leads him to advocate further tax harmonisation. [5]

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[5] The issue has also raised the interest of policy makers. For instance, in 2000 a former French Finance Minister noted that it is unacceptable that those states most benefiting from the largesse of the Union in order to promote their development …fail to impose minimum tax disciplines. He also stressed that this problem has to be solved before enlargement of the EU. (Strauss-Kahn, 2000).

Without questioning the basic thrust of Genser's argument, some considerations suggest caution concerning the impact of EU enlargement. First, decisions about location depend on the overall tax structure. While CIT rates are relatively low in the New Member States, their overall public revenue to GDP ratios are relatively high (about 45%) in comparison to countries of similar development. Moreover, their public deficit levels do not seem to allow much room for reducing overall tax revenues. Second, the tax structure is just one of the relevant factors in the decisions about the location of business activities. Labour costs are probably more relevant.[6] Finally, before enlargement the EU Member States were already competing in the world market with countries characterised by lower tax rates.

In conclusion, enlargement may significantly increase tax competition in the EU, but this is part of a broader process of economic integration in which several other factors and other areas of the world play an important role.

4. Can We Assess the Revenue Costs of Tax Competition?

In order to properly assess the need for tax coordination, we would need estimates about the impact of competition on tax revenues.[7] The problem here is that we do not have clear-cut quantitative evidence about the size of revenue losses so far. For instance, we do not know what revenues would be cashed by the governments of France, Italy and Germany if Ireland had a CIT statutory rate in the range of those applied in the three countries.

Likewise, we are not in the position to predict future revenue losses, for instance those deriving from EU enlargement. We know that there may be a problem, but without quantitative estimates it is difficult to evaluate the cost of competition and the need for coordination or harmonization. This may partly explain why the lengthy debate on tax harmonization in the EU has not produced major results: as long as the effects of tax competition remain somewhat vague, it is difficult to expect that policy makers take action.

5. What Coordination?

After considering the evolution of the tax coordination debate at the EU level, Genser indicates some guidelines for CIT coordination in the EU. He suggests the introduction of a harmonized CIT base. European multinationals would consolidate profits on the basis of common accounting standards. Consolidated profits would

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[6] One can see in this regard that so far there has been very little debate concerning the Chinese CIT.

[7] Tax coordination has been advocated also for other reasons (e.g. the reduction of distortions in business activity and the cost of tax compliance). Obviously, the need for coordination should be assessed on the basis of all relevant aspects.

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be allocated to each Member State according to an agreed apportionment formula based on easily verifiable business indicators. Each country would set its own tax rate. This solution would reduce profit shifting, compliance costs and the costs of tax administration and control. It would not interfere with different national approaches to the integration of the CIT and the personal income tax. Feld takes a different view and stresses that while a uniform tax base may provide several benefits, formula apportionment introduces relevant distortions and meets difficulties of implementation.

The authors also differ in their evaluation of the impact on revenue. Genser notes that as formula apportionment provides a largely inelastic tax base, it creates an incentive to increase tax rates. Feld quotes some studies that argue that formula apportionment does not discourage Member States to reduce tax rates strategically in order to attract tax payments.

In the end, the two positions largely reflect different opinions concerning the need for tax coordination. Genser believes that tax coordination is necessary and supports a solution that takes into account the lengthy debate at the EU level. Feld criticises the formula apportionment solution and does not offer any alternative solution, since he believes that there is no need for coordination. So, basically, the issue is: can we afford to lose the revenues currently provided by the CIT?

6. Can We Afford to Lose the CIT?

Feld does not worry. He notes that there are no clear-cut indications concerning the impact of tax competition on income distribution. He shows that there is no evidence that tax competition is determining the collapse of the welfare state.[8] On the other hand, Feld notes that there is evidence that fiscal competition induces higher efficiency in the provision of public goods and better economic performance. For these reasons he does not advocate tax coordination.

However, one cannot assume that the budgetary problems created by tax competition will necessarily be modest also in the future. Primary public expenditure in the EU-15 has been about stable over the last 20 years at about 45% of GDP. Without reforms, ageing would increase this ratio by about 5% by the year 2040. Even assuming that spending will be curtailed by new reforms, it is very likely that there will be no much room to absorb sizeable revenue losses. This implies that revenue losses in the taxes affected by competition might either increase deficits or require revenue increases in other areas, such as indirect taxation.

There are economic reasons for considering that in some European countries public sectors are too large and that some retrenchment would be useful. However,

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[8] This contrasts with earlier views pointing to the risk that unmitigated tax competition would determine a crisis of European welfare states (Sinn, 1990).

tax competition is not the only way to improve the efficiency of public sectors. Moreover, if the size of the public sector reflects national preferences as interpreted by government and parliament, tax competition seems a very indirect and poorly targeted way to reach the optimal size of the public sector (Sørensen, 2004). The most direct way would be an open discussion concerning the desirable size of the public sector in each country.

Moreover, tax policy has many objectives and constraints (OECD, 2001). Equity considerations are still very important. The public in EU Member States does not seem to accept that returns on capital are not taxed (although it accepts that rates on capital are lower than those on labour). One can also see that a sizeable part of the tax cuts introduced in recent years in EU Member States have been addressed to personal income taxes (Balassone et al., 2003). This may suggest that if governments want to reduce the burden on companies, they will also have to introduce cuts targeted to households.

This may imply that it is unlikely that we can live without some kind of CIT. It may also suggest that we need some tax coordination, at least to contain profit shifting and to minimise compliance and administrative costs.

7. What Indications from the Debate?

The papers highlight the complexity of international tax competition. They also confirm that there is a mismatch between the rich theoretical insights provided by the extensive literature and the more ambiguous policy indications.[9] The estimates of the impact of tax competition, particularly on public revenues, remain unsatisfactory. There is clearly a need for further empirical work.[10]

In this context it is not surprising that progress at the EU level is relatively modest. Surely the need for unanimity does not help tax coordination, but in other areas of policy (e.g., internal market and monetary union) EU governments have managed to reach agreements leading to greater economic integration. In the end, it is likely that coordination will take place if and when the costs of tax competition appears to be too high.

Although from different perspectives, the papers show that in their extreme forms both tax competition and tax harmonisation are problematic. While European budgets are not in the position to sustain large revenue losses, the case for large scale tax coordination is not self-evident. Moreover, no solution to the coordination issue is evidently optimal on all grounds.

This suggests the need for a pragmatic, cautious, gradual approach, trying to get some benefits both from competition and coordination (Cnossen, 2001). One

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[9] This point is more extensively examined in Zodrow (2003).

[10] Referring to the international aspects of taxation, Kay (1990) stressed that there is probably no area of tax policy where further research effort is so clearly required (p. 69).

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should also keep in mind that international tax competition is surely important, but tax policy has several objectives and constraints.

References

Balassone, F., D. Franco and A. Staderini (2003), Tax Policy in EMU: A Preliminary Assessment, in: Banca d'Italia (ed.), *Tax Policy*, Rome, 429–468.

Cnossen, S., (2001), Tax Policy in the European Union", *FinanzArchiv*, vol. 58, 4, 466–558.

Devereux, M. .P., R. Griffith and A. Klemm (2002), Corporate Income Tax Reforms an International Tax Competition", *Economic Policy*, 451–495.

The Economist (1998), Level-headed, The Economist, December 5th, 60.

European Commission (1997), Towards Tax Coordination in the European Union: A Package to Tackle Harmful Tax Competition, Communication from the European Commission.

European Commission (2000), Public Finances in EMU, European Economy, 3.

Hagemann, R. P., B. R. Jones and R. B. Montador (1987), Tax Reform in OECD Countries: Economic Rational and Consequences, Economic Department Working Papers, OECD.

Hallerberg, M. and S. Basinger (1996), Why Did All but Two OECD Countries Initiate Tax Reform from 1986 to 1990?, CES Working Paper Series, No. 119.

Kay, J. A. (1990), Tax Policy: a Survey, *The Economic Journal*, No. 100, 18–75.

Martinez-Mongay, C. (2003), Labour Taxation in the European Union, in: Banca d'Italia (ed.), *Tax Policy*, Rome, 31–68.

OECD (1993), *Taxation in OECD Countries*, Paris.

OECD (2001), Challenges for Tax Policy in OECD Countries, *OECD Economic Outlook*, No. 69, 169–185.

Sinn, H.-W. (1990), Tax Harmonization and Competition in Europe, *European Economic Review*, 34, 489–504.

Sørensen, P. B. (2004), Company Tax Reform in the European Union, *International Tax and Public Finance*, 11, 91–115.

Strauss-Kahn, D. (2000), Introductory Lecture, *International Conference on Coordination of Taxation in the EU*, Stresa, 19–20 May, Observatory Giordano dell'Amore, Milano.

Tanzi, V. (1995), *Taxation in an Integrating World*, The Brookings Institution, Washington, D.C.

Zodrow, G. R. (2003), Tax Competition and Tax Coordination in the European Union, *International Tax and Public Finance*, 10, 651–671.

Comment on "Capital Taxation in an Enlarged EU: Competition or Coordination?"

second period consumption ($t_1 > t_2$), which implies that young individuals should be taxed higher than old individuals. If young individuals are poorer than old, it also exhibits negative intergenerational distributional implications.

If we wish to include distributional considerations in taxation[1], we need to resort to a third best policy. In such a policy, capital taxation can be an important instrument to redistribute income vertically from capital to labor. If wealth correlates with income (as it empirically does), capital taxation can also contribute to the interpersonal or horizontal redistribution of income.

This suggests that in a closed economy, the predominant argument for capital taxation is redistribution. We cannot immediately carry this argument forward to the open economy, as in this case workers actually suffer from a capital tax increase in a particular country. However, if capital is indeed in inelastic supply globally (which it is at least in the short run), then the surplus to capital owners is equal to the total revenue, or rK. Hence, capital owners do earn rents in the open economy. If all countries introduce a tax on capital, the net interest rate would fall globally. This would not be the case if we tax labour. Hence, internationally capital income taxation still enables the redistribution of income. But it required the joint efforts of all countries, or tax coordination. Both the theory of optimal taxation and the international taxation of capital therefore come to the conclusion that capital taxation is allocatively inefficient, but improves equity within an economy. We should therefore tax capital predominantly because it improves the distribution of income.

According to Genser, from a purely economic perspective, capital income taxation should favor the efficient supply and utilization of capital in the enlarged internal capital market. Distributional questions are therefore not his concern. By contrast, Feld acknowledges the importance of tax competition for redistribution, and devotes both a theoretical and empirical chapter to the issue. He discusses the impact of migration (rich individuals move to countries with low taxes and low social transfers, whereas poor people would move in the opposite direction. He also acknowledges the fact that public expenditure will shift from welfare expenditures to infrastructure expenditures. He notes that firms supposedly benefit more heavily from a shift from social transfers to infrastructural spending.

Feld then reviews empirical literature for both the migration hypothesis, and finds little evidence in Europe, and the redistribution issue. In quoting Winner (1994), Feld notes that in 23 OECD countries and the time period 1965 to 2000, he finds that capital mobility shifts the tax burden from capital taxation to labor taxes. This clearly implies a deterioration in income distribution. Feld then continues to present a lot of evidence for Switzerland, where apparently tax competition among

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[1] In a pure neoclassical economy, distribution is a non-issue. Production factors are rewarded according to their respective marginal product, and interpersonal differences in wealth are due to individual choice, in particular over patience, only.

cantons does not induce a decline in the Swiss welfare state. He uses this as evidence to refute the redistributional argument on empirical grounds. In passing, he notes however, that there is some redistribution at the federal level.

The European Union so far has no tax privileges. Still, there is some redistribution within Europe, particularly through structural and cohesion funds. However, these allow for redistribution only from rich regions in Europe to poor regions, but do not allow for intra-national redistribution. Moreover, they are quantitatively insignificant and certainly cannot replace redistribution through taxes and social transfers as undergone by EU Member States. It is of course illusionary to imagine the European Union to ever redistribute enough income to satisfy the needs of the people (similar to Swiss cantons today), so that indeed tax competition could lead to an outcome that does not correspond to the will of the people.

3. Why Are Capital Income Taxes Set too Low?

The previous chapter has concluded that the reason to coordination capital income taxation is predominantly an issue of income redistribution. Vertical redistribution implies that rich capital owners should pay part of welfare expenses. And, of course, firms should pay for public infrastructure that improves capital productivity. Sinn (2003) has proven that firms will not pay in full for public infrastructure when the public good exhibits increasing returns to scale. In our example, this would be the case if a small increase in the provision of infrastructure leads to a large decline in costs, whereas a small reduction in usage changes costs only little. Most public goods exhibit this property.

Starting from a capital tax rate that represents preferences over redistribution, governments have an incentive to reduce the capital tax rate. If other countries don't react, this reduction would lure in additional capital, leading to an increase in revenues. However, other countries have the same incentive to reduce tax rates, leading to tax competition below the socially preferable level, and in case of public goods with scale economies, even below self-financing of public infrastructure. This is the essence of the fiscal externality present with tax competition. Not only would workers have to bear the entire cost of the welfare state, they would also have to bear part of the infrastructure costs. Therefore, tax competition may not only be negative for equity considerations, but also from an efficiency perspective. (Sinn, 2003)

4. Why Are Capital Income Taxes Set too High?

Clearly, the above analysis has assumed that governments behave optimally when setting policy. However, optimality was constrained, as each government would have taken decisions of other governments as given. Fully benevolent governments

would get together and coordinate on a level of taxation, or a tax policy, which would ensure that at least all public infrastructure is financed through taxes on capital income. However, as Stiglitz (2000) has stated, good government is scarce public good. And this argument is frequently mentioned with respect to tax coordination. "The state does not always do what it ought to do. Political actors follow their own self-interest and seek to get rents from the political process." (Feld, in this volume)

Even if we start from a situation of tax competition with fiscal externalities, raising tax rates may not necessarily improve welfare. As Keen and Edwards (1996) have demonstrated, capital taxation will only increase welfare for the citizens under certain conditions. In particular, tax coordination improves welfare through an income effect which internalizes the fiscal externality, implying higher revenue from capital taxation and a higher level of public expenditures. Tax coordination reduces welfare due to a substitution effect (or relative price effect), which identifies how much of the welfare gain the policymaker is able to divert from private welfare to rents. If the negative substitution effect outweighs the positive income effect, tax coordination may be inefficient from the beginning. Selfish policymakers will agree coordination measures until they can no longer extract private rents. Capital taxation among selfish policymakers may therefore almost certainly end up with capital taxes too high.

Both Feld and Genser address the behavior of policymakers. Feld implies that rent seeking of policymakers is indeed a crucial problem, and competition among policymakers, in particular over capital taxation, could improve welfare. Genser, by contrast, has a more positive view on policymakers. Whilst he does not explicitly express the issue of non-benevolent policymakers, he clearly states his belief that there is room for further coordination which properly implemented should be beneficial to the Member States.

5. Which Form of Tax Coordination Could Improve Welfare?

For the reasons mentioned above, there may be too much or too little capital taxation. Either way, tax coordination can be justified both on efficiency grounds and on distributional grounds. However, depending on the motivation for tax coordination, different regimes of coordination will be implemented. If capital taxation is coordinated in order to internalize fiscal externalities, we can expect countries to suffer from similar levels of externalities, and therefore a similar increase in tax rates will be supported. Even if tax coordination is due to rent-seeking politicians, we would expect similar behavior of politicians in similar constitutional systems (Janeba and Schjelderup, 2002), and therefore again similar increase in tax rates will be supported. However, if tax coordination is aspired in order to alter the vertical distribution, we would expect countries with different

preferences for equality to target different capital tax rates, rendering tax coordination more difficult.

When Genser discusses the sequence of proposals in the European Union to coordinate capital taxation, starting from the Neumark Report (1962), followed by the Van den Tempel Report (1970), the CIT Draft Directive, the Ruding Report (1992), and finally the Bolkestein Report (2001), we can speculate that the reason that policymakers could not agree was not so much the existence of market inefficiencies or the consequence of the political economy, but that agreement over the size of redistribution could not be reached because of differences in the underlying preference structure.

We can find support for this hypothesis in Feld (in this volume), who concludes: "Whilst (fiscal competition) does apparently not lead to any efficiency problems at least there is no evidence supporting this hypothesis, its impact on the ability of governments to conduct redistribution is less favorable." Feld then continues to discuss proposals to mitigate the problem, in particular residence requirements and delayed integration in welfare systems. He acknowledges that some form of tax coordination is required at least for multinationals, when he says: "One of the main problems of European corporate income taxation consists in the possibilities of multinational firms to shift profits to jurisdictions with low tax rates. […] In fact, profit shifting leads to a redistribution in the first place, because the finance minister has to forego tax payments while no relocation of firms occurs."

Genser, too, isolates the taxation of multinationals as the main objective of European corporate income tax coordination. However his motivation is rather different. His three main arguments are the provision of a level playing field for business activities, non-discrimination of cross border activities, and the mitigation of fiscal externalities. Whilst the latter has been discussed at length throughout this comment, the prior two deserve some consideration. Non-discrimination is certainly a central aspect of the common market, and can be traced back to the founding document of the European Union, the Treaty of Rome. However, it is a political argument more than an economic argument. The provision of a level playing field can be traced back to the concept of Ordnungspolitik, which received some attention in the German theoretical debate on economic policy. It postulates that competition between firms is always beneficial, and should therefore be a goal of economic policy. If there is already competition within countries, international competition cannot provide any more efficiency gains.

Starting from a very different background, both authors support the recommendations of the Bolkestein Report (2001) to introduce consolidated accounting for European multinationals. Genser goes even further by suggesting: "Consolidation of company profits should be mandatory for EU multinational companies according to harmonized corporate income tax accounting standards. […] The reallocation of consolidated profits to taxable subsidiaries of multinational

corporations should be based on an apportionment formula using multiple weights based on easily verifiable business figures. […] National autonomy in setting corporate income tax rates on taxable corporate profits should prevail."

The arguments in favor of consolidation typically are a reduction in compliance costs for firms, the ensuring of international loss offset, reduced monitoring and control costs of tax authorities, the elimination of fiscal externalities, and compliance with capital export neutrality (Genser, in this volume). On the other hand, it distorts the optimal location choice of firms (Pethig and Wagener, 2003) and requires national tax authorities to share information. However, following the Parent/Subsidiary Directive (1969 and 1990), the Merger Directive (1969 and 1990) and the Arbitration Directive (1974 and 1990), we find that national tax authorities need to share information even under separate accounting.

6. Concluding Remarks

The aim of this comment was to review and discuss two papers on capital taxation by Feld and Genser, and set those papers in perspective to the vast literature on capital tax competition and coordination. The main argument of this comment has been that capital tax coordination is predominantly an issue of distribution. Capital is in perfectly elastic supply in a small open economy. Therefore the tax incidence falls to the immobile factor, labor. By contrast, capital is in inelastic supply at the international level. Hence coordinated taxation of capital can shift income from labor to capital. If distribution is the main concern, then tax coordination will only arise if countries have similar preferences over redistributive policies, at least under the current European political institutions of unanimity.

This discussion has also shown that fiscal externalities are a concern, and capital tax coordination could also be motivated on efficiency grounds. I think it is fair to say that the focus of the paper by Genser in this volume is clearly on the latter, whereas in the same volume Feld leans more to the explanation of redistribution. Neither author refutes the other assumption completely, however. In my humble opinion, where the authors really differ is their belief over the nature of the political economy. Whereas Genser assumes benevolent policymakers, Feld insinuates a political process that is at least in part driven by self-interest.

This distinction makes all the difference in the position towards tax coordination in the two papers. A benevolent view on public decision-making implies that tax coordination is favorable both to internalize fiscal externality and engage in redistributive policies. By contrast, a negative perspective on the political process induces support of political competition to minimize rent seeking. Despite these differences, both authors agree that consolidation of tax bases for multinationals, as suggested by the Bolkestein Report, is indeed a worthwhile cause. Given that both authors agree on a policy measure, we may indeed assume that this is a welfare enhancing strategy.

The coordination of the tax base does not necessarily imply a reduction competition over tax rates. Indeed, with a common tax base, information over favorable tax regimes is more readily available, and hence competition in tax rates may get fiercer. In addition, this may induce further competition in subsidies, tax holiday regulation, and tax enforcement, as suggested by Feld in this volume.

Finally, we have to be aware that the elimination of capital tax competition does not necessarily preclude tax competition. We know from national accounting identities that capital income plus labor income plus investment is equivalent to consumption plus total savings, or $rK + wL + I = Y = C + S$ (Cnossen, 2001). Rearranging this equation, we find that the capital income tax base, and hence capital income taxation, can be replicated with a consumption tax, a tax on net savings and a wage subsidy, $rK = C - wL + (S - I)$. Instead of capital tax competition, competition could merely shift to commodity tax competition (see Lockwood, 2001) accommodated by an increase in labor taxation.

References

Cnossen, S. (2001), Tax Policy in the European Union: A Review of Issues and Options, Finanzarchiv, Vol. 58(4), 466–558.

Edwards, J. and Keen, M. (1996), Tax Competition and Leviathan, European Economic Review 40, 113–134.

Janeba, E. and Schjelderup, G. (2002), Why Europe Should Love Tax Competition – and the U.S. Even More So, NBER Working Paper 9334.

Lockwood, B. (2001), Tax Competition and Tax Coordination Under Destination and Origin Principles: A Synthesis, Journal of Public Economics, Vol. 81, 279–319.

Nowotny, E. (1999), Der öffentliche Sektor, Springer, Berlin.

Pethig, R. and Wagener, A. (2003), Profit Tax Competition and Formula Apportionment, CESifo Working Paper No. 1011.

Sinn, H.-W. (2003), The New Systems Competition, Blackwell.

Stiglitz, J. E. (2000), Economics of the Public Sector, Norton.

Winner, H. (2005), Has Tax Competition Emerged in OECD Countries? Evidence from Panel Data, International Tax and Public Finance, forthcoming.

The Future of the Corporate Income Taxation
in the European Union

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A. Introduction

The future of capital income taxation in the European Union (EU) hinges importantly on the future of the corporation tax. No doubt, schedular capital (income) taxes on real estate and the earnings of small-businesses will be around for a long time to come, but the base of a comprehensive capital income tax requires the inclusion of corporate earnings, i.e. profits, interest and royalties. Capital income taxation, broadly defined, will wither if the body politic does not want to tax corporate earnings, either deliberately or by ignoring the policy and administrative issues that arise in a globalised capital market.

Accordingly, this paper focuses mainly on corporation tax (CT) regimes. The future of the corporation tax starts now. Therefore, Part B surveys and evaluates the actual CT regimes in the EU to see whether they yield any clues about what the future may hold in store. The survey starts with an analysis of corporation-income tax relationships in the Member States centered on the treatment of distributed and retained profits. Subsequently, there is a comparison between nominal tax rates on various forms of capital income (retained profits, dividends, interest) and labor income. This is followed by a review of the most important tax base features, including the use of tax incentives. Finally, there is a discussion of a number of technical aspects that bear on the enforcement of the taxation of corporate earnings. A rather crazy quilt of CT systems emerges of widely diverging tax bases and tax rates. Tax competition forces are clearly at work. Indeed, the future of capital income taxation in the EU does not look very rosy, unless some form of tax coordination can be found.[1]

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[1] It is often said that rate reductions have not been accompanied by commensurate declines in corporate tax revenues. However, this does not account for the secular rise in profits nor for the greatly increased share of economic activity that is conducted in corporate form. These two factors should have resulted in a rise in corporate tax revenues.

Under the EU treaty, the Member States do not have to harmonize their CT rates or bases. Harmonization is to be "approximated" only if required for the functioning of the internal market. So far, CT harmonization has been confined to various measures aimed at promoting cross-border business cooperation between related companies[2] and to administrative assistance.[3] Furthermore, in 1997, a non-binding Code of Conduct on Business Taxation, purporting to curtail 'harmful tax practices' by the Member States, was adopted (European Commission, 1997). These practices have regard to the tax-favored provision of financial services to third parties, intra-group financing and the licensing of intangible property in return for royalty payments. (They mirror the treaty ban on state aid to private enterprise.) Beyond this, regulations exist on the statutes for a European Company and a European Economic Interest Grouping.[4]

The case for further tax coordination seems strong. Greater approximation of capital income tax systems could promote investment, improve the tax burden distribution and, last but not least, reduce compliance and administrative costs. While the normal return on mobile capital cannot be taxed at the same high rates as labor income, tax coordination should enable the Member States to capture some of that return. After all, capital is less mobile in the EU as a whole than between individual states. Tax coordination should also make it possible to tax firm-specific rents more effectively (although not at the same high rates as location-specific rents, if separately identifiable). Furthermore, there is no reason why foreign share- and bondholders should be completely exempt from tax. Beyond that, the CT is

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Admittedly, some of the revenue foregone has been made up by various base broadening measure.

[2] These measures comprise the parent-subsidiary directive (90/435/EEC, amended by 2003/123/EC) which eliminates the double taxation and withholding taxes on dividends paid to defined parent companies, the merger directive (90/434/EEC amended by COM(2003)613final) which suspends the taxation of capital gains on defined cross-border mergers or reorganisations), and the interest-royalty directive (2003/49/EC) which eliminates withholding taxes on interest and royalty payments between defined related companies. The European Commission has also indicated that a new proposal on cross-border loss-relief will be issued in the near future (COM(2003)614final). Finally, mention should be made of Directive 69/335/EEC, which obliges Member States not to levy capital duty on the issuance of new shares at a rate exceeding 1%.

[3] This has resulted in the mutual assistance directive (77/799/EEC amended by 2004/56/EC) on the exchange of tax information between Member States, and the arbitration convention (90/436/EEC extended by protocol (OJC202/01) of 16 July 1999) on the resolution of the double taxation of profits if adjustments are made to transfer prices by one Member State which have consequences for the amount of taxable profits in other Member States.

[4] See Council Regulations 2157/2001/EC (along with Directive 2001/86/EC) and 2137/85/EEC. In addition, the regulation on the Statute for a European Cooperative Society was adopted on 22 July 2003.

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needed as a backstop to the individual income tax (PT). Without a CT, the labour income of the self-employed would be retained in corporate form and largely escape the PT. In short, effective if moderate taxation of capital income seems desirable.[5]

Although the arguments for coordinating the capital income taxes are overwhelming, the difficulties in reaching agreement are daunting. In the spirit of the subsidiarity principle, a gradual, bottom-up and largely reversible approach seems preferable to a complex, top-down, all-or-nothing approach. Also, a broadly based approach encompassing the taxation of all forms of capital income seems preferable to confining the coordination efforts to corporate profits. In search of the shape of a common coordinated approach, Part C starts with a discussion of various features of the existing CT regimes that could form the building blocks for further coordination. In sequence, the steps that could be taken comprise the introduction of dual income taxes (DITs), the imposition of source withholding taxes on interest and royalties, the approximation of CT rates between Member States, and eventually the harmonization of the various tax bases and the introduction of a European-wide CT, if and when the EU obtains the power to tax.

B. Survey of Corporation Taxes

1. Corporation Tax Regimes[6]

Table 1 shows the CT systems that are found in the various EU Member States. The statutory CT rates range from 12.5% in Ireland to 40.7% in Germany. The average CT rate in the EU (not counting Estonia which exempts retained corporate profits from tax) is slightly more than 27%. Interestingly, CT rates in the 10 New Member States are on average some 7 percentage points lower than in the 15 Old Member States. CT rates have greatly been reduced since the early 1990s when capital markets were liberalised. Generally, the rate reductions have been accompanied by base broadening measures, so that CT revenue contributions changed little in relative terms. It is doubtful, however, whether this situation can be sustained in the years to come.

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[5] For the rationale of retaining the CT, see Bird (2002) and for the arguments for retaining the CT in a globalised capital market, see Zodrow (2004).

[6] This and the next section draw on Cnossen (2004), although the tables have been updated and information has been added about the New Member States. For a recent review, see also Schratzenstaller (2004).

Table 1: European Union: Corporation Taxes (CTs), Individual Income Taxes (PTs) and Wealth Taxes in 2004 (Rates in %)

CT–PT system	CT rate[a,b]	Tax treatment of dividends at shareholder level	PT on capital gains[c]		Net wealth tax	Inheritance and gift tax
			Ordinary shares	Substantial holdings		
Imputation system		Tax credit				
Malta	35	$^{35}/_{65}$ of dividend	—	35	—	—
Spain	35	$^2/_5$ of dividend	15	15	0.2–2.5	7.65–47.6
UK	30	$^1/_9$ of dividend	8–26	8–26	—	20–40
Schedular PT rate		PT rate[d]				
Austria	34	25*[e]	—	½ of gain	—	2–54
Belgium	35	15*[e]	—	—	—	3–27(30)
Cyprus	15	15*	—	—	—	—
Czech Rep.[f]	26	15*	—	—	—	0.5–20
Denmark	30	28/43	28/43	28/43	—	15–36.25
Hungary	16	30.5*	—	—	—	2.5–40
Lithuania	15	15*	—	—	—	5–10
Poland	19	19*	19	19	—	3–12
Sweden	28	30	30	30	1.5	10–30
Dividend exemption		Size of exemption				
Finland[f]	28	Full dividend	29	29	0.9[g]	10–16
France[f]	35.4	½ of dividend[e]	25	25	0.55–1.8	5–40
Germany	40.7	½ of dividend	—	½ of gain	—	7–50
Greece	35	Full	—	20	—	10–40
Italy[h]	33	$^3/_5$ of dividend	12.5	$^2/_5$ of gain	—	—
Latvia	15	Full	—	—	—	—
Luxembourg	30.4	½ of dividend[e]	—	½ of gain	0.5[g]	6.4–48
Netherlands	34.5	Full	—	25	1.2	5–68
Portugal	27.5	½ of dividend	—	10	—	0–10
Slovak Rep.	19	Full	19	19	—	—
Slovenia	25	$^2/_5$ of dividend	—	—	—	5–30
Double Taxation		PT rate				
Ireland	12.5[i]	Full	20	20	—	
No CT		PT rate				
Estonia[f]	0	$^{24}/_{76}$ of dividend	24	24	—	—

[a]*CT rates include (i) a surtax in Cyprus (5%), (ii) surcharges in Belgium (3%), France (3%+3.3%), Germany (5.5%), Luxembourg (4%), Portugal (10%) and Spain (0.75%–0.01%), and (iii) local taxes in Germany (effectively 17.6% – deductible from itself and from the CT) and Luxembourg (7.5% – not deductible from the CT). Spain levies a local tax, not shown in the table, based on the type of business activity and the surface area of the premises. Hungary levies a 2% local tax on*

business sales, which resembles a subtraction type of value–added tax, as well as a 0.2% innovation tax on the same base. These taxes are not included in the Hungarian CT rate.

[b]*Flat minimum taxes, creditable against the final CT, are levied in Austria and France. Lower or graduated CT rates apply to lower amounts of profits or to small businesses in Belgium, Cyprus, France, Ireland, Luxembourg, the Netherlands, Portugal, Spain and the UK.*

[c]*PT rates shown are for long-term capital gains. Short-term gains are taxed at higher (effective) rates in Denmark, Portugal, Spain and the UK. Various Member States exempt small amounts of capital gains or tax them at a lower rate. The Czech Republic, Germany and Slovenia tax speculative capital gains on shares held less than a specified period. Generally, capital gains are not adjusted for inflation.*

[d]*An asterisk (*) indicates that the PT rate is a final withholding tax, which is optional in Austria and Belgium.*

[e]*Austria, Belgium and Luxembourg permit a limited deduction from individual income for the purchase of newly issued shares. France provides a 25% tax credit against the PT (max. €20,000). Austria also exempts dividends paid on newly issued shares.*

[f]*For the Czech Republic, Estonia, Finland and France, the table reflects the situation announced for 2005.*

[g]*In Finland, non-resident companies and domestic legal entities other than corporations are subject to a 1% net wealth tax. In Luxembourg, resident companies are subject to a 0.5% net wealth tax.*

[h]*Italy also levies a 4.25% regional tax on productive activities (IRAP) in the form of an income-type value-added tax. This tax, however, is being reviewed.*

[i]*Ireland applies a 10% rate to the profits of manufacturing companies.*

Source: Author's compilation from Supplementary Service to European Taxation (Amsterdam: IBFD Publications BV, loose-leaf), Vols A and B.

The CT regimes in the Member States can be distinguished depending on whether and to what extent they reduce the double tax on distributed profits – i.e. provide dividend relief – that arises when corporate profits are subjected to the CT and again to the PT when paid out as dividends (section 2.1). Double taxation also occurs when retained profits are subjected to the CT and again to a capital gains tax (CGT) at the shareholder level on increases in share values – increases that, among others, reflect the corporation's greater net worth as a result of profit retention (section 2.2). These two forms of double taxation violate the normative implication of the comprehensive income concept that corporate profits, distributed as well as retained, should be fully integrated with any other income of shareholders and taxed at their marginal PT rates.[7] Also of interest is the existence of other broad-based taxes on capital, i.e. net wealth and inheritance and gift taxes (section 2.3).

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[7] See Musgrave and Musgrave (1984). Note that full integration under a comprehensive income tax implies that, for tax purposes, corporate profits should be allocated to shareholders as they accrue. The CT could then be abolished. If retained, it would function as a withholding tax for the PT (as well as a schedular income tax on the equity income of non-residents).

1.1 Distributed Profits

Imputation systems are the most structured form of dividend relief at the shareholder level.[8] Under imputation systems, shareholders are given a full (or partial) tax credit against their PT for the CT that can be imputed to the dividends (grossed up by the tax credit) received by them. Accordingly, imputation reduces the excess CT+PT burden on profit distributions in proportion to the marginal PT rates of shareholders.[9] Under full imputation, as in Malta, distributed profits would be taxed at the marginal PT rate of shareholders.

The double tax can also be mitigated at shareholder level by subjecting dividend income to a separate or schedular PT rate lower than the top PT rate. Consequently, the relief is proportionately greater for high-income-bracket PT payers than for low-income-bracket PT payers. This regressive result can be mitigated but not eliminated, by permitting low-income-bracket PT payers whose marginal ordinary PT rate is lower than the special PT rate to opt for full double taxation of their dividend income (with a credit for any PT withholding tax imposed at the corporate level).

Furthermore, exempting dividend income from the PT, fully or partially, can provide dividend relief. A full exemption would be equivalent in effect to a schedular PT rate of 0%. More generally, a partial exemption expressed as a fraction, α, of the total dividend, is equivalent to α times the ordinary PT rate under the schedular approach. The exemption approach, however, does not permit the imposition of a (final) withholding tax at the level of the corporation, because the potential tax liability at shareholder level is not known.

As is evident from table 1, the EU Member States treat distributed profits in the following manner:

(1) Three Member States employ an imputation system. The relief is expressed as a fraction (or percentage) of the net dividend.[10] Malta has a full imputation system. Since its CT rate equals the top PT rate, imputation is equivalent to a full dividend exemption at the top rate.

(2) Nine, mainly small Member States provide dividend relief at the shareholder level by taxing distributed profits at a schedular (flat) PT rate separate from the

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[8] Equivalent relief can be provided at the corporate level under a split-rate or dividend-deduction system. For a discussion of the pros and cons, see, among others, U.S. Department of the Treasury (1992), Cnossen (1997), and Graetz and Warren (1998).

[9] More than full relief is possible under the CTs in Member States that permit the payment of dividends out of exempt profits without imposing a compensatory tax at the corporate level. Presumably, for this reason, Malta imposes a 15% tax on dividends paid out of untaxed profits.

[10] Alternatively, the relief can be expressed as a percentage of the CT (indicating the extent to which the double tax is mitigated) or as a percentage of the grossed-up dividend (representing the comparable tax-inclusive PT rate).

PT on other income. Moreover, in all Member States, except Denmark, the schedular PT rate is collected in the form of a (final) withholding tax at the level of the corporation. Austria and Belgium mitigate the regressive impact of the schedular approach by giving shareholders the option to be taxed at their actual marginal PT rate.

(3) Eleven Member States, including France and Germany, exempt dividend income, either fully or partially, in the hands of shareholders. Also, the Netherlands follows the exemption approach, but views the net wealth tax (which it calls income tax) as a substitute for the PT on dividend income (as well as interest and rental income) that it abolished.

(4) One Member State, Ireland, taxes distributed profits fully at corporate and at shareholder level (classical system), although the CT and PT rates are so low that the effective tax rate is still lower than in eight other states.

(5) One Member State, Estonia, does not tax corporate profits, although it subjects dividends to a "distribution tax" of 26%. If qualified as a withholding tax,[11] the distribution tax violates the Parent-Subsidiary Directive with which Estonia must comply by the end of 2008.

Imputation systems, long supported by the European Commission (see Cnossen, 2004, fn. 15), used to dominate the CT picture in the EU, but in recent years most Old Member States have switched to schedular taxes on dividend distributions (as well as other capital income). Perhaps not surprisingly, most New Member States followed this lead. The cross-border implications of imputation were found to be discriminatory and overly complicated. More generally, the Member States do not anymore seem to believe that the normative implications of the comprehensive income concept should be adhered to in the design of corporate-personal income tax relationships.

1.2 Retained Profits

The CT plus the PT on realised capital gains determines the tax treatment of retained profits. Generally, most Member States make a distinction between capital gains realised on the sale of ordinary (widely-held) shares (e.g. quoted on national stock exchanges) and capital gains realised on the sale of other (non-traded) shares, which often represent a controlling interest (called substantial holding) in (closely-held) corporations. Table 1 indicates that 11 out of 25 Member States tax capital gains on ordinary shares, but that 17 states tax gains realised on the sale of substantial shareholdings in closely-held companies. Capital gains on these holdings are more widely taxed than gains on traded shares because they often

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[11] This may be inferred from the decision of the European Court of Justice in Athinaiki Zithopiia v. Elliniko Domosio (C-294/99 [2002] ECR I-3683).

represent labour income sheltered in the corporate form at a CT rate that is lower than the marginal PT rate on other labour income.

The CT rates shown in table 2 are the nominal rates. Deferral and various tax base preferences result in low effective CT rates. Furthermore, it should be noted that no Member State makes a systematic attempt to alleviate the double tax on retained profits (as Norway does) by allowing shareholders to increase the acquisition price of shares by the corporation's retained profits net of CT.

1.3 Net Wealth and Inheritance Taxes

As regards other taxes on capital, only six (old) Member States impose a net wealth tax on individuals. As is well known, a net wealth tax is equivalent to an ex-ante income tax. As under the income tax, returns on wealth are taxed, but in contrast to an ex-post income tax, the personal risk premium is not taxed under a wealth tax (see Cnossen and Bovenberg, 2001). Furthermore, all but 6 Member States tax wealth transfers, i.e. gifts and inheritances. Rates depend on such factors as the degree of sanguinity, the size of the bequest, the type of asset that is bequeathed, and the beneficiary's age. The revenue from net wealth and inheritance and gift taxes is very small. Finally, most Member States tax real estate (not shown in table 2) and/or real estate transfers at widely varying effective rates.

2. Comparison of Nominal Tax Rates

Table 2 compares the CT/PT rates on distributed and retained profits with the rates on interest[12] and labour income. Clearly, the nominal tax rates on retained and distributed profits (the return on equity) as well as interest (the return on debt) diverge widely within and between the Member States. The differences in the (effective) tax rates and diverging opportunities for tax arbitrage imply that profit distributions are discriminated against (section 3.1) and that debt is treated preferentially compared with equity (section 3.2). Of further interest is that labour income appears to be taxed much higher than capital income (section 3.3).

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[12] The tax treatment of royalty income is not shown, because most royalties accrue to corporations and hence are taxed at the CT rate. Also, the tax treatment of rental income is not shown, because rental income arising outside corporations consists mainly of rental values of owner-occupied property, which are treated preferentially under all PT regimes in the Member States.

Table 2: European Union: Corporation Taxes (CTs) and Individual Income Taxes (PTs) on Capital and Labour Income in 2004 (rates in %)

CT–PT system	CT on retained profits[a]	CT+ top-PT on distribut. profits[b]	PT on interest (final)[c]	Taxes on labour income				
				Top-PT[d]	Social security contributions[e]			
					Payroll	Wages[f]		Ceiling (€)
						Employer	Employee	
Imputation system								
Malta	35	35	10/15	35	—	10	10	32,500
Spain	35	50.0	15	45	—	37.2	6.25	—
UK	30	53.3	20	40	—	—	—	—
Schedular PT rate								
Austria	34	50.5	25	50	7.5	9.3	10.85	41,400
Belgium	35	44.7	15	53.6	15	10–15	6.0	—
Cyprus	15	27.7	10	30	2	8	6.3	79,000
Czech Rep.	26	38.7	15	32	—	15.5	6.0	—
Denmark	30	60.1	47.6	59.8	—	—	8	—
Hungary	16	46.5	15/0	38	3	11	5	21,000
Lithuania	15	27.7	15/0	33	—	7.6	0.5	…
Poland	19	34.4	19	40	—	9.06	10.3	…
Sweden	28	49.6	30*	56.5	—	19.28	—	—
Dividend exemption								
Finland	28	28	28*	51.5	—	3.31	1.75	—
France	35.4	54.7	26*	59.9	6.7–16.0	17.4	2.85	19,808
Germany	40.7	54.8	36.9*	47.5	—	11.25	11.25	4,350
Greece	35	35	10/15	40	—	27.96	19.45	24,670
Italy	33	45.2	12.5	45.6	—	35.06	7.44	…
Latvia	15	15	25/0	25	—	24.09	9	…
Luxembourg	30.4	43.9	38.9*	38.9	—	—	8.2	84,177
Netherlands	34.5	34.5	None	52	—	17.64	7.05	43,754
Portugal	27.5	42.0	20*	40	—	23.75	11	4,387
Slovak Rep.	19	19	19	19	—	20.4	9.4	…
Slovenia	25	50.9	25*	50	0–14.8	7.05	6.6	…
Double taxation								
Ireland	12.5	49.2	20*	42	—	10.75	6	42,160
No CT								
Estonia	0	24	24	24	—	33.5	—	…

[a]*See table 1: Rates do not include PTs on capital gains taxes, if levied.*

[b]*Calculated as CT + [(1 – CT – exempt dividend) PT] minus any imputation tax credit if applicable.*

[c]*An asterisk (*) indicates that the country does not apply a final withholding tax to interest. Accordingly, the rates shown are the ordinary (top) PT rates. In Greece and Malta, the PT withholding tax on bank interest is 15%. Hungary, Lithuania and Latvia do not tax interest received from banks.*

[d]*PT rates include the following: (i) surcharges in Germany (5.5%) and Luxembourg (2.5%), (ii) surtaxes in France (CSG – 8.2%; CRDS – 0.5%; prélèvement social – 2.3%); and (iii) local taxes in Belgium (7.25%, surcharge), Denmark (33.3%), Finland (17.5%), Italy (1.4%, surcharges) and Sweden (31.5%).*

[e]*Payroll taxes and employers' social security contributions are generally deductible from corporate profits (except the payroll tax in Cyprus). Similarly, employees' social security contributions are either not taxed or are deductible from PT-liable income (except in Ireland).*

[f]*Not including contributions to (old-age) pension plans (and contributions to dependency schemes), except in Estonia, Greece, Latvia, Italy and Spain where these contributions could not be identified separately.*

Source: Author's compilation from Supplementary Service to European Taxation (Amsterdam: IBFD Publications BV, loose-leaf), Vols. A and B.

2.1 Discrimination of Profit Distributions

Malta, Finland, Greece, Latvia, the Netherlands and the Slovak Republic are the only Member States that tax profit distributions and retentions at the same marginal CT/PT rates. Consequently, the choice between profit retention and distribution is not affected. As table 2 indicates, however, in all the other Member States, the CT+PT on current distributions[13] appears to be (considerably) higher than the CT (plus CGT, if any) on retained profits. There is a presumption, therefore, that the CT+PT regimes discourage the payout of dividends and the financing of investment by the issuance of new shares.

Whether this happens depends on the view that is adopted regarding the impact the PT on dividends has on marginal investments financed with equity, be it retained profits or new share capital (the amount of debt is assumed to be fixed). Under the traditional view, it is assumed that shareholders derive a positive benefit from receiving dividends. Hence, dividends cannot be lowered without cost. Accordingly, the PT results in double taxation of the income attributable to investments financed with retained earnings. In contrast, under the new view, the assumption is that earnings on equity-financed investments can ultimately be

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[13] The following simplifying assumptions have been made in calculating the effective CT+PT rates on distributed profits: (a) CTs are borne by profits; (b) after-CT profits are fully distributed; (c) dividends are received by resident PT-liable individuals; (d) individuals and corporations face the maximum CT and PT rates, inclusive of taxes levied by subordinate levels of government; (e) CT and PT rates remain unchanged; and (f) the amount of pre-tax corporate profits available for distribution remains the same regardless of the level of the tax rates or the degree of dividend relief. See OECD (1991).

distributed to shareholders only in the form of dividends subject to the PT, which is capitalised in share prices.[14] Although the issue is far from resolved, most empirical studies support the traditional view.[15] Whatever view is adopted, taxing dividends twice always harms investment by new businesses, which have to rely on new share issues to provide for their equity needs. This discourages new firms from entering the market.

2.2 Preferential Treatment of Debt

The combined PT/CT on debt equals the PT rate on interest income. Table 2 indicates that most Member States appear to tax interest, deductible in ascertaining taxable profits, at lower rates than profit retentions (which may also be subject to the CGT). Denmark, Sweden, Luxembourg and Ireland are the only exceptions. In some Member States, the favourable treatment of interest vis-à-vis retained profits is somewhat difficult to gauge because the effective CGT rate is not known. Generally, however, the tax-exempt status of institutional investors, such as pension funds, facilitates the preferential treatment of interest. The effect is reinforced by financial innovation, which makes debt and equity close substitutes.

The tax-favoured status of debt discriminates against corporations that face difficulties in attracting debt because they do not yet enjoy a high credit rating, own mainly non-liquid assets (such as firm-specific machinery) against which it is difficult to borrow, or generate insufficient taxable profits to be able to deduct interest. Consequently, these corporations, which tend to be fledgling enterprises, have to incur higher capital costs on account of taxation than older, established corporations with either easier access to debt financing or sufficient retained profits to finance new investments.

2.3 Separate and Higher Taxation of Labor Income

As the right hand side of table 2 shows, invariably, labour income is taxed at much higher nominal (and effective) tax rates than capital income, including profit distributions, particularly if payroll taxes and social security contributions, which also impinge on the work-leisure choice, are taken into account. Generally, labour income is taxed separately from capital income regardless of the normative implication of the comprehensive income concept that the two forms of income should be taxed jointly at the same rate. Apparently, this reflects the view that the greater mobility of capital precludes the application of high CT+PT rates. Indeed if

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[14] Furthermore, earnings distribution in the form of share repurchases is precluded. For more on the traditional vs. new view debate, see Sinn (1991).

[15] See especially Zodrow (1991). For a recent contribution that modifies his findings, see Auerbach and Hassett (2002).

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mobile capital were taxed higher than in other countries, the excess tax would have to be borne by labour. Accordingly, the better policy is to tax labour directly so as to avoid the distortionary effect of the shift in incidence.

3. Tax Base Issues and Tax Incentives

Obviously, the CT base is as important for analysing the effective tax burden on capital as the nominal tax rate. Theory prescribes that corporate profits should be calculated on an accretion basis. In practice, however, taxable profits are determined on the basis of International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP), subsequently adjusted to reflect CT requirements. The accounting principles prescribe that prospective losses should be taken into account in computing taxable profits, but that accrued capital gains – in violation of the normative implication of the accretion concept of income – should not be taxed until they are realised.

Furthermore, revenues and costs should be matched on an annual basis under the accrual system of accounting.[16] Expenses, including interest, in earning taxable profits and in maintaining the assets used in the corporation's activities are deductible (section 4.1). Furthermore, the CT rate should be the same regardless of the type of business or activity. However, this prescription is mostly honoured in the breach. Generally, the "normal" tax base and the "normal" tax rate are eroded by special concessions intended to stimulate "worthy" economic sectors or activities (section 4.2).

3.1 Determination of Taxable Profits

The usual rules for calculating taxable profits regarding depreciation, inventory valuation, the provision of contingencies, and loss offsets, are shown in table 3. In all Member States, capital costs are recovered by way of a variety of straight-line and declining-balance[17] methods, based on historical cost, at widely varying rates. LIFO (last-in-first-out), FIFO (first-in-first-out) and average cost methods are used to value inventories. LIFO tends to be more favourable in times of rising prices, because the last purchased unit is deemed to be sold first which should reduce book profits compared with FIFO which assumes that the first unit bought is deemed to be sold first. Favourable depreciation rules, LIFO and the rollover of capital gains on depreciable assets generally are justified to mitigate the impact of inflation. As a

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[16] Exceptionally, small firms would be allowed to calculate their profits on a cash basis of accounting.

[17] The same result is obtained in the Czech and Slovak Republics through the use of accelerated depreciation methods based on coefficients.

rule, Member States do not explicitly index depreciation allowances and capital gains for the effects of inflation.

Expenses made in the ordinary course of business are deductible, but most Member States limit or preclude the deductibility of entertainment and promotional expenses, donations, and costs of private cars used for business purposes. These expenses combine business and personal aspects that are difficult to disentangle without some arbitrary rule. Furthermore, most Member States permit a general provision for doubtful debts (calculated as a percentage of total accounts receivable). In other states, doubtful debts can only be taken into account on a specific, case-by-case basis. The Czech Republic's CT permits a contingency reserve for future repair and maintenance costs.

Generally, the tax treatment of contingencies tends to vary widely between Member States. While most states adopt a restrictive attitude, some states tend to be rather liberal in permitting companies to set aside funds for potential future obligations. Some estimates, for instance, put the percentage of tax-free provisions as a proportion of balance sheet value at 27% for Germany (European Parliament, 2001), which, incidentally, has the highest CT rate in the EU. Finally, loss carry-forward provisions tend to be generous, but only four countries permit losses to be compensated with profits of earlier years. In many states, however, the impact of this provision is mitigated by allowing groups of related companies (generally defined by reference to ownership criteria) to be taxed on a consolidated basis.[18]

In conclusion, the rules for calculating taxable profits appear to differ rather widely between Member States.

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[18] The same result can be obtained by permitting loss compensation between related companies on a case-by-case basis or by allowing one company to deduct from its taxable profits a capital contribution to a loss making related company. Rules to this effect are found in Cyprus, Finland, Ireland, Malta, Sweden and the U.K.

Table 3: European Union: Corporation Tax Base Rules in 2004

Member State	Methods and Rates (%) of Depreciation[a]			Inventory Valuation[b]	Provision for Doubtful Debts	Loss Carryover (years)		Group Consolidation
	Machinery	Buildings	Intangibles			Forward	Back	
Austria	SL-14.3	SL-3	SL-15	LIFO	Allowed	Unlimited	—	Yes
Belgium	SL-10/33	SL-3/5	SL-20	LIFO	—	Unlimited	—	No
Cyprus	SL-10	SL-4	SL-8	FIFO	—	Unlimited	—	No
Czech Rep.	DB-16^2/$_3$	DB-3^1/$_3$	DB-16^2/$_3$	Average cost	Allowed[c]	5	—	No
Denmark	DB-25	SL-5	100	FIFO	Allowed	Unlimited	—	Yes
Estonia[d]	—	—	—	—	—	—	—	—
Finland	DB-25	DB-7	SL-10	FIFO	—	10	—	No
France	DB-32.1	SL-5	SL-20	Average cost	Allowed	5	3	Yes
Germany	DB-20	SL-3	SL-15	LIFO	Allowed	Unlimited	1	Yes
Greece	SL-14.3	SL-12.5	SL-10	Average cost	—	5	—	No
Hungary	SL-14.5	SL-5	SL-8	LIFO	—[e]	Unlimited	—	No
Ireland	SL-12.5	SL-4	SL-10	FIFO	—	Unlimited	—[f]	No
Italy	SL-13.3	SL-4/8	SL-33.3	LIFO	Allowed	5[f]	—	Yes
Latvia	DB-40	DB-10	SL-20	Average cost	—	5	—	Yes
Lithuania	DB-20	DB-12.5	DB-15	FIFO	Allowed	5	—	No
Luxembourg	DB-30	SL-4	SL-20	LIFO	Allowed	Unlimited	—	Yes
Malta	SL-16^2/$_3$	SL-2	SL-8	FIFO	—	Unlimited	—	No
Netherlands	SL - 14.3	SL-2.5	SL-20	LIFO	Allowed	Unlimited	3	Yes
Poland	SL-10	DB-3	SL-20	LIFO	Allowed	5	—	Yes
Portugal	DB-35.7	SL-5	SL-10	LIFO	Allowed	6	—	Yes
Slovak Rep.	SL-16^2/$_3$	SL-5	SL-20	Average cost	Allowed	5	—	No
Slovenia	SL-25	SL-5	SL-10	LIFO	—	5	—	Yes
Spain	DB-28.6	SL-3	SL-5	LIFO	Allowed	15	—	Yes
Sweden	DB-30	SL-4	DB-30	FIFO	—	Unlimited	—	No
UK	DB-25	SL-4	DB-25	FIFO	—	Unlimited	1	No

[a]SL = straight line (linear) method; DB = declining balance method in the first period. Depreciation rates shown represent the most tax efficient possibility; other possibilities are not shown.

[b]LIFO = last-in-first-out method of inventory valuation; FIFO = first-in-first-out method of inventory valuation. Valuation method shown represents the most tax efficient possibility; other possibilities are not shown.

[c]In the Czech Republic, provision is also allowed for future repair and maintenance costs of tangible assets having a depreciation period of at least 6 years.

[d]Estonia does not levy a CT on retained profits.

[e]In Hungary, a reserve is also allowed for increases in working capital up to 25% of before-tax annual profits or HUF 500 million, whichever is lower; amounts not used by the end of the 4th year become taxable.

[f]Ireland has a 3 year carry back period for losses suffered at the cessation of business and Italy an unlimited carry forward for losses in the first 3 years.

Source: Author's compilation from Supplementary Service to European Taxation (Amsterdam: IBFD Publications BV, loose-leaf), Vols. A and B.

3.2 Tax Incentives

In all Member States, the tax base is eroded by a variety of tax incentives (provisions that provide special treatment to qualified investment projects not available to investment projects in general) primarily to promote specific types of activities, such as research and development (R&D), to stimulate economic activity in backward regions, to attract foreign direct investment or financial operations, or, yet, to reduce unemployment.

As shown in table 4, the tax incentives can be conveniently grouped into those that tax corporate profits at a lower nominal rate, and those that provide more attractive terms of recovering investment costs. CT rate incentives include tax holidays, special enterprise zones, preferential rates for specific sectors or activities, and tax credits that reduce the tax liability. The investment cost-recovery incentives comprise accelerated depreciation, investment allowances and credits, and investment subsidies.[1]

A number of New Member States, notably the Czech Republic, Hungary, Lithuania and the Slovak Republic provide tax holidays for new large companies. Once granted, tax holidays relieve the tax administration and the companies from having to levy or comply with the CT. In addition, tax holidays are neutral between capital- and labour intensive projects. On the other hand, tax holidays tend to attract economically less beneficial short-run projects, stimulate tax avoidance (through transfer pricing manipulation with related companies), and are prone to abuse, because they offer an opportunity to designate existing investment as new investment. The reduced CT rates in Cyprus, Hungary, Lithuania, Malta and Slovenia have similar drawbacks, although their revenue cost is lower and more transparent than the cost of tax holidays.[2] The same is true of the favourable tax regimes that Belgium, France, Luxembourg and the Netherlands apply to holding companies.

Nearly all Member States grant allowances and tax credits (in addition to normal depreciation) for R&D expenditure. Also many Member States promote investments to save energy, protect the environment, reduce waste, or increase employment through the tax system. Compared to tax holidays and preferential CT rates, these incentives are better targeted and more transparent instruments to promote particular types of investment, although they favour short-lived assets and may induce companies to abuse the system, e.g. by selling old machinery

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[1] Note that an investment allowance reduces taxable income, whereas an investment tax credit is set against the tax payable. Thus, with a CT rate of 20%, an investment allowance of 50% of the amount invested equates to an investment credit of 20% of that amount.

[2] It should be noted that preferential CT rates reduce the implicit value of investment recovery incentives, such as accelerated depreciation.

(previously eligible for the tax incentive) at inflated prices to newly incorporated companies that again claim the investment benefit (double dipping). If the CT rate is uniform, investment tax credits are equivalent to investment allowances and to the investment subsidies or cash grants found in Poland. Accelerated depreciation provisions probably are the best-targeted and least distortionary forms of investment incentive.

Table 4: European Union: Tax Incentives in 2004

Member State	Tax Rate Incentives			Investment Recovery Incentives	
	Tax holiday	Reduced rate	Tax credit	Accelerated depreciation	Additional allowance, tax credit, other
Austria				Qualifying assets, small companies	R&D, training
Belgium	Tonnage tax Shipping income	Coordination centers International business companies			Intangibles, specified investments
Cyprus					Tangible fixed assets
Czech Rep.	Large investments		Apprentices or disabled employees		
Denmark	Tonnage tax				
Estonia	No CT				R&D: 150%
Finland	Tonnage tax			Small companies in least developed regions	
France	Tonnage tax Newly created and innovative companies, Corsica, companies in depressed (sub)urban zones	Headquarters and distribution centres			R&D tax credit Corsica: small companies tax credit
Germany	Tonnage tax				Small companies Investment
Greece	Tonnage tax Offshore engineering and construction companies	Large investments: CT rate freeze Aegean islands			Cash grants in development areas
Hungary	Venture capital companies and funds	Offshore companies Specified items of income		R&D Special deductions for	Apprentices and disabled workers Various tax credits, investment reserve
Ireland	Tonnage tax	Manufacturing companies		International Financial Services Centre, Shannon Free Airport Zone, Urban and rural renewal schemes	R&D
Italy	Tonnage tax	Newly quoted companies	New employees	New investments	Double rent relief under renewal schemes
Lithuania	Large investments	Large investments Small companies	Economic zones	R&D	R&D

Table 4 continued: European Union: Tax Incentives in 2004

Luxembourg	Holding companies	"Milliardaire" holding companies New industrial activities	14% tax credit for machinery;	Investments to save energy, reduce waste, protect environment or employ disabled persons	Qualifying assets tax credit Occupational training tax credit
Netherlands	Tonnage tax	Group finance activities		Environmental protection assets, innovative technology	R&D Investments: small scale, energy saving, environmental protection Economic zones: cash grants
Poland				Specified fixed assets	
Portugal	Azores and Madeira	Investment and R&D projects		Investments to save energy, reduce waste or protect environment, and in less developed areas	Basic investment credit
Slovak Rep.	Large joint ventures	Large new business investments			Large projects
Slovenia	Special economic zones				New machinery, equipment and long-term intangible assets, investment reserve
Spain	Tonnage tax Holding companies	Canary Islands Special Zone Basque country			Tax credits: export-related activities, R&D, employee training, cultural assets, environmental preservation, internet and e-commerce
Sweden					Small companies: relief from double taxation
UK	Tonnage tax				R&D

Source: Author's compilation from Supplementary Service to European Taxation (Amsterdam: IBFD Publications BV, loose-leaf), Vol. A.

Although the use of tax incentives is widespread, conventional wisdom is that they distort investment decisions, are often ineffective,[1] erode the tax base, and are prone to abuse and corruption.[2] On the other hand, there is little reason to believe that the tax incentives lead to an increase in the price of elastically supplied (foreign) capital goods.[3] Whatever the case, tax incentives cannot compensate for deficiencies in the design or operation of the tax system or for inadequate physical, financial, legal or institutional infrastructure (Easson and Zolt, 2003). Nor can they correct for unsound macroeconomic or labour market policies. The better part of wisdom would be to correct those deficiencies instead of introducing tax incentives that ameliorate their effects.

After a thorough review, Zee et al. (2002) opine that the only tax incentives worth contemplating are those that permit a faster recovery of investment costs, i.e. investment allowances and tax credits, or accelerated depreciation.[4] An incidental if welcome side effect of these incentives is that they limit the discretionary involvement of the tax office. Investment allowances and credits are not open-ended, the revenue cost is directly related to the amount of the investment, and the maximum cost is more easily estimated. This conclusion finds support in an earlier study by Mintz and Tsiopoulos (1995) who compare the cost effectiveness of tax allowances and credits to tax holidays in attracting foreign investment. The European Commission also favours tax allowances and tax credits if a Member State decides that it should promote investment through the tax system. However, even then, it would be good policy to attach a sunset provision and to monitor and evaluate the success of the tax incentives.

4. Anti-Tax Avoidance Measures

Basically, under the CT, corporate profits are taxed at source. Other things being equal, resident PT payers can only evade the extra PT on corporate distributions by not declaring dividend income. This contrasts with interest, which is not taxed at source but at the level of the recipient of the interest income. Accordingly, the PT

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[1] The effectiveness of an investment project would be greater the lower the marginal effective tax rate or METR. However, the data required to compute METRs are often not available.

[2] See Shah (ed.) (1995), OECD (1995) and UNCTAD (2000). However, Clark (2003) concludes that "[e]mperical work using improved date measuring FDI offers convincing evidence that host country taxation does indeed affect investment flows. Moreover, recent work finds host country taxation to be an increasingly important factor in locational decisions" (at p. 1176).

[3] See Hassett and Hubbard (1998) whose conclusion is disputed by Coolsbee (1998) who finds that much of the benefit of tax incentives is captured by supplies of capital goods through higher prices.

[4] On the other hand, investment allowances and credits favour capital-intensive investment.

(or CT) on interest can be evaded or avoided by not including the income in the return or by paying the interest into tax-exempt institutions. Consequently, corporations have a strong incentive to substitute debt for equity by lending from tax-exempt pension or investment funds. The same applies to royalties, which are also deductible at corporate level and taxable at the level of the recipient. Conversely, tax-exempt institutions have a tax-induced preference for debt, which skews their investment portfolios.

Table 5: New EU Member States: CT/PT Withholding Taxes and Anti-Tax Avoidance Measures in 2004 (Rates in %)

Member State	Residents					Non-residents				
	Withholding taxes[a]			Thin-cap ratio	Pension/inv. funds	Withholding taxes[a] (non-treaty countries)			Transfer pricing rules	CFC legislation
	Dividends	Interest	Royalties			Dividends	Interest	Royalties		
Austria	25*	25*	—	—	Exempt	25	—	20	OECD	—
Belgium	15	15*	—	—	Exempt	15	—	—	Yes	—
Cyprus	15*	10*	—	—	Exempt	—	—	10*	OECD	—
Czech Rep.	15*	15*	—	4:1	15/5%	15*	15*	25	Yes	—
Denmark	28	—	—	4:1	Exempt	28*	—	30	OECD	Yes
Estonia	—	24	24	—	Exempt	24[b]	—	15	Yes	Yes
Finland	28	28	28	—	1% net wealth	28	—	28	No	Yes
France	—	25*	—	1.5:1	Exempt	25*	16*	$33^1/_3$	Yes	Yes
Germany	21.1	31.65*	—	1.5:1	Exempt	21.1	—	21.1	Yes	Yes
Greece	—	10*	—	—	Exempt	—	35*	20	Yes	—
Hungary	20	—	20	3:1	Exempt	20*	20	20	OECD	Yes
Ireland	20	—	20	—	Exempt	20	20	20	No	—
Italy	12.5*	12.5*	25	5:1	Exempt	27*	27	22.5	Yes	Yes
Latvia	—	0	25	4:1	Exempt	10*	25	15	Yes	—
Lithuania	15*	—	15*	4:1	Exempt	15	10	10	OECD	Yes
Luxembourg	20	—	—	—	Exempt	20	—	—	No	—
Malta	—	10*	—	—	Exempt	—	—	—	No	—
Netherlands	25	—	—	3:1	Exempt	25*	—	—	Yes	—
Poland	19*	19*	19	3:1	Exempt	19*	20*	20*	OECD	—
Portugal	15	15	15	—	Exempt	25*	20*	15*	OECD	Yes
Slovak Rep.	—	19*	—	—	Exempt	—	19	19	Yes	—
Slovenia	15[d]	25	15	—	Exempt	15*	—	—	Yes	—
Spain	15	15	15	3:1	Exempt	15	15	25	OECD	Yes
Sweden	30	30	—	—	Exempt	30*	—	28	Yes	Yes
UK	—	20	22	—	Exempt	—	—	22	OECD	Yes

[a] *An asterisk (*) means that the withholding tax represents the final (PT) liability. No withholding taxes apply to intercompany dividend, interest and royalty payments if the conditions of the parent-subsidiary and the interest-royalty directives are met.*

[b] *In Estonia, distributed profits are also subject to the distribution tax of 24% until 2008.*

[c] *In Malta, the withholding tax rate is 15% for bank interest; election for taxation with credit for the tax withheld is possible.*

[d] *In Slovenia, the withholding tax on royalties is actually 25% but only 60% of the gross amount is taxable.*

Source: Author's compilation from Supplementary Service to European Taxation (Amsterdam: IBFD Publications BV, loose-leaf), Vols A and B.

As shown in table 5, most Member States prevent the avoidance or evasion of the tax on interest income through schedular, low-rate withholding taxes on interest and royalties. However, the withholding taxes would be ineffective with respect to exempt pension and investment funds if these funds would be able to obtain a refund of the tax withheld. Apparently, most states prevent this from happening by making the withholding tax the final tax liability, but the exact scope of this measure is not clear.

Restrictions on the use of debt in corporate finance can also prevent the evasion or avoidance of capital income taxation. Table 5 indicates that 11 out of 25 states have adopted thin capitalisation ratios under which the use of debt cannot exceed three or five times the amount of equity in the balance sheet. Of course, thin capitalisation ratios and final withholding taxes both increase the cost of debt finance.

Tax administrations cannot enforce the tax on domestic source income paid to non-residents. Accordingly, (final) withholding taxes on interest and royalties (as well as dividends) paid abroad are even more crucial than on domestic payments. Indeed, as indicated by table 5, half of all Member States have withholding taxes on remittances abroad. An obvious drawback of withholding taxes is that they act as an import tariff on capital by making inbound capital more expensive. But not taxing inbound capital might lead to round tripping, i.e. a foreign parent company would withdraw interest and royalty income from its domestic subsidiary, and reinvest the income on a tax-free basis in the same subsidiary.

Apart from changing the debt/equity ratio, corporations can also evade the CT through transfer pricing manipulation. Profits can be shifted to low-tax countries or tax havens by selling product prices below arm's length prices to affiliated foreign companies or by buying products at higher than arm's length prices. Nearly all Member States have rules to curtail this practice, generally by applying the transfer pricing guidelines of the Organisation of Economic Co-operation and Development (OECD).[1]

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[1] These guidelines promote various methods for determining arm's length prices, including the comparative uncontrolled price (sales of similar products made between unrelated parties in similar circumstances), the resale method (the subtraction of an appropriate mark-up from the price at which the goods are ultimately sold to unrelated parties), and the cost plus method (under which an appropriate profit percentage is added to manufacturing costs). These methods are difficult to apply when the goods sold embody valuable intangible property, which makes them unique. Additional methods which attempt to deal with this situation are the profit split method (under which the worldwide taxable income of related parties engaging in a common line of business is computed) and the transactional net margin method (under which the profits are computed by applying the ratio of profits to some economic indicator of an unrelated party to the profits of the tested party).

Finally, half of all Member States have introduced (CFC) legislation with respect to foreign corporations controlled by resident shareholders. Under CFC legislation, the possibility of deferring domestic tax on foreign source income is prevented by taxing resident shareholders currently on their proportionate share of some or all of the CFC's income. The proper application of CFC legislation as well as the determination of appropriate arm's length prices requires sophisticated tax administrative skills, which are not readily available in some Member States.

5. Summary

This part of the paper has shown that the CTs in the EU Member States are levied at widely differing rates applied to widely differing tax bases. No state heeds the normative implication of the accretion concept of income that the taxation of corporate earnings (profits and interest) should be integrated with the PT. Generally, dividend income is taxed at schedular PT rates and capital gains on shares are exempted or taxed at very low effective rates. Furthermore, interest is taxed at lower rates than apply to retained profits or dividend income. Overall, capital income is taxed separately from and at much lower rates than labour income that is subject to the PT and various hefty, regressive social security contributions.

Corporate profits are determined on the basis of international accounting standards (IAS), the European-wide rule from 1 January 2005 for companies listed on EU stock exchanges. The general rules for ascertaining taxable profits are broadly in line with what can be expected, but extremely generous tax incentives, e.g. the tax holidays in the New Member States, reduce the tax base to on average three-fourths of what it otherwise would be. It is difficult to gauge the effectiveness with which the CTs and PTs on capital income are enforced. In all but two Member States, pension and investment funds are not taxed and can hence be used as conduits for not paying tax on the normal return on capital. To some extent, this may be prevented by the use of final source withholding taxes and thin capitalisation ratios. Little inbound debt capital appears to be taxed. All Member States are reluctant to impose effective withholding taxes on interest for fear of scaring away foreign direct investment. Most states attempt to apply appropriate transfer pricing rules, but half of all Member States do not have CFC legislation.

More generally, tax competition forces appear to be at work. Particularly, the ten new EU Member States seem intend on emulating the Irish economic miracle of promoting economic growth and revenue through low nominal CT rates and generous tax incentives to stimulate domestic and foreign investment. Initially, corporate tax revenues may rise notwithstanding the low rate, because multinational companies channel their income to the low tax states (without necessarily changing their production locations) through transfer pricing

manipulation, thin capitalisation, and royalty payments to low tax states.[2] However, as more Member States join the low-tax club, a no-win situation will emerge. Accordingly, some form of tax coordination has to be put in place if the baby is not to be thrown out with the bath water.

C. Coordination of Corporation Taxes

The CT systems described in Part B have various interesting features in common that yield some clues about desirable CT reform and coordination (section 1). In the spirit of the subsidiarity principle, CT coordination should be a bottom-up process initiated by the Member States rather than a top-down process prescribed by the European Commission, although the Commission could be instrumental in the formulation and dissemination of appropriate advice (section 2).

1. Some Common Features

The current taxation of corporate earnings and other capital income surveyed in Part A yields a number of insights that have a bearing on the future of the CT in the EU. These insights can be summarised as follows.

(a)   All Member States tax capital income and labour income separately, regardless of the normative implications of the accretion concept of income. Often capital income *appears* to be taxed jointly with labour income, but in practice no Member State does so. This situation could be recognised more formally by adopting a dual income tax (Cnossen, 2000), called DIT for short, that would eliminate various ambiguities and tax capital income more effectively (Zee, 2004).

(b)   Capital income is taxed at much lower rates than labour income, by a margin of perhaps as much as one to three. This is due to the greater mobility of capital. If capital would be taxed as high as labour (or, more precisely, at a higher rate than the rate in other countries), the incidence of the excess would almost certainly fall on labour. Also, flat rates seem indicated to limit the countless opportunities for tax arbitrage. For equity reasons, the lower rates on capital income could be supplemented by wealth (transfer) taxes.

(c)   With few exceptions, distributed profits are taxed at higher CT+PT rates than retained profits, which may distort dividend payout and investment policies. Equal treatment seems worth pursuing. This would be possible if dividend

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[2] By following a low rate/large "tax base" philosophy, Ireland has snatched sisable revenues from other Member States. Ireland's CT/GDP ratio is 3.7 compared with a EU-15 ratio of 2.5, although Ireland's CT rate is less than one-third of the EU-15's average rate. Cyprus, the Czech Republic, Luxembourg, Malta and the Netherlands appear to be following a similar strategy.

income would be exempted under the DIT (whose PT rate on capital income equals the CT rate).

(d) Domestic interest income is not taxed if it accrues to tax exempt institutions, such as pension funds. If debt can easily be substituted for equity, this implies that the normal return on capital is not taxed. In the event, the tax on capital income resembles a business cash flow tax, whose tax base is confined to inframarginal profits. Final source withholding taxes (without the possibility of a refund for tax-exempt institutions) or no deduction for interest at the level of the corporation seems the answer if the income tax is to be maintained. This would represent a move toward a comprehensive business income tax (CBIT) under which profits are determined on a normal accrual basis of accounting but interest is not deductible at the corporate level and not taxed at the level of the recipient (U.S. Department of the Treasury, 1992). Accordingly, tax-exempt institutions would be taxed implicitly.

(e) The tax incentives particularly in the New Member States are so generous that investment costs can often be written off immediately. Again, this converts the CT into a cash-flow tax, because the normal return on capital is not taxed (assuming that interest is actually taxed through, say, (final) source withholding). The abolition of the tax incentives but the retention of the *de facto* exemption of interest also would make the CT equivalent to a cash flow tax if equity can be fully substituted by debt.[3] To the extent that full substitution is not possible, an argument can be made in favour of an allowance for corporate equity, called ACE (Institute for Fiscal Studies, 1990).[4] Under an ACE regime, a deduction is allowed from corporate profits of an amount equal to the amount of equity in the balance sheet multiplied by the risk-free rate of interest (normal return on capital). Investment is

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[3] Under a proper cash flow tax, of course, corporations are denied a deduction for interest as well as dividends paid (if not already denied), but they are allowed an immediate write-off of the cost of business assets. As a result, the return on marginal investments, just making a viable economic return, is exempted. For arguments why taxation on cash flow has economic and administrative advantages over a conventional income tax, see McLure and Zodrow (1996).

[4] The ACE system was conceived by Boadway and Bruce (1986) and given hand and feet by the Institute for Fiscal Studies (1991). Until recently, a form of ACE was in use in Croatia, where it was called the interest-adjusted income tax (IAIT). For a favourable discussion of the system and of the criticisms levelled against it, see Keen, M. and J. King (2002). The ACE system is not discussed further, because it is assumed that the body politic wishes to tax the normal return on capital. It should be noted that, whatever the merits of cash-flow taxation or ACE systems, it should be pointed out that taxes on economic rents would still require tax policy coordination in the EU if location decisions are not to be affected.

subsidised if interest is not taxed effectively – the situation in many Member States – and investments are written off immediately.

(f)   Interest on inbound capital generally is not taxed for fear that debt-financed investment costs will rise and foreign investment will decline. Tax coordination is required if this interest is to be taxed. The third country issue remains, but capital is less mobile in the EU as a whole than with respect to (small) individual Member States. Further coordination could be pursued with the U.S.A. and Japan.

It is difficult to choose between these often conflicting directions for change, but – after allowing for the partiality that may be in the eye of the beholder – the common denominator seems to be that the body politic in most Member States appears to want to tax capital income at positive rates, if some way can be found to temper real or perceived tax competition. Another common strand seems to be that capital income should be taxed separately from labour income and at moderate, flat rates.

2. Bottom-Up Approach: Tax Coordination by Member States[5]

This paper proposes that an agenda for capital income tax coordination (and perhaps eventually tax harmonisation) should comprise five sequential steps:

(a)   the introduction of DITs by all Member States under which capital income would be taxed once at a single rate (different for each Member State) to mitigate the distorting effects of the current differential rate CT+PT systems on corporate financial and investment policies;

(b)   the introduction of interest withholding taxes by the Member States at the CT rate (or, alternatively, the treatment of interest on a par with dividends) to effectively tax the normal return on capital and mitigate incentives for thin capitalisation; and

(c)   the close approximation of the CT rates throughout the EU to eliminate incentives for transfer pricing manipulation and thin capitalisation.

    Following these steps, a fresh review should be made of:

(d)   the introduction of EU-wide CBT with formula apportionment and, subsequently,

(e)   the adoption of a European CT if and when the EU is given the power to tax.

These steps are elaborated below.

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[5] This section draws heavily on Cnossen (2004) and an earlier version in Cnossen (2001).

2.1 Dual Income Tax (DIT)[6]

The dual income tax (DIT) is a pragmatic approach to the uniform taxation of capital income, which, in the early 1990s, was successfully introduced in the Nordic countries, especially Norway, Finland and Sweden.[7] In adopting the DIT, these countries argued that, in (small) open economies, any source-based tax on capital income in excess of the real world rate of interest raises the pre-tax return by the full amount of the tax, so that the after-tax return continues to equate to the exogenously given real world rate of interest. Accordingly, caution in setting the CT rate was advisable. Furthermore, capital market innovation in conjunction with tax arbitrage implied that it would not be possible to tax capital income effectively at progressive rates. Since, for revenue and distributional reasons, these countries were not prepared to lower the top PT rate to the level of the lower CT rate, they decided to tax capital income on a schedular basis.

The main features of the Nordic DIT are the following:
(a) *Separation of capital and labour income.* All income is separated into either capital income or labour income. Capital income includes business profits (representing the return on equity), dividends, capital gains, interest, rents and rental values. Labour income consists of wages and salaries (including the value of labour services performed by the owner in his or her business), fringe benefits, pension income and social security benefits. Royalties are taxed as labour income or as capital income (if know-how is acquired or capitalised).
(b) *Tax rates.* Basically, all capital income is taxed at the proportional CT rate (see table 1 regarding the Nordic countries), while labour income is subject to additional, progressive PT rates. To minimise tax arbitrage, the tax rate on labour income applicable to the first income bracket is set at (approximately) the same level as the proportional CT rate.
(c) *Costs of earning income and allowances.* All costs of earning income and all allowances are deductible only from income subject to the basic or proportional tax rate. Accordingly, the tax benefit of costs that incorporate an

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[6] For a review and evaluation of the economic and technical aspects of the DIT on which this section draws, see Cnossen (2000). For an update on developments in Norway, see Christiansen (2004) and for arguments favouring a DIT in Germany, see Spengel and Wiegard (2004).

[7] Generally, the introduction of the DIT caused few political, economic or administrative problems. Over the years, Norway and Finland have adhered closely to the requirements of a pure DIT. In 1995, however, Sweden deviated from the original model by again taxing corporate profit distributions twice. No credit for the CT is provided against the PT on distributed profits. In Sweden, moreover, capital gains are not corrected for the CT already paid on retentions.

element of individual consumption does not rise with income, although the limitation discriminates against wage earners since the self-employed can deduct their business costs against the top marginal tax rate on labour income.

(d) *Offset of capital income against labour income.* Finland and Sweden tax capital and labour income entirely separately. Alternatively, in Norway, the two forms of income are taxed jointly at the CT rate, while net labour income is subsequently taxed at additional, progressive PT rates. Joint taxation permits the offset of negative capital income against positive labour income. But the same effect is achieved in Finland and Sweden by permitting a tax credit for capital income losses (calculated at the basic rate) against the tax on labour income. Furthermore, joint taxation, as in Norway, permits the application of joint basic allowances. Separate taxation, on the other hand, enables the imposition of flat source taxes, if desired, on various forms of capital income, as is done in Finland.

(e) *Avoidance of double taxation.* In Norway, the double taxation of distributed profits at the corporate level and the shareholder level is avoided through a full imputation system. Alternatively but equivalently, double taxation can be avoided by exempting dividend income at the shareholder level, as Finland does. Under either approach, compensatory taxes guarantee that no dividends are paid out of exempt profits without having borne the CT, which would subsequently be exempt from the PT. The double taxation of retained profits at the corporate level in conjunction with the taxation of realised capital gains at the shareholder level is avoided in Norway by permitting shareholders to write up the basis of their shares by the retained profits net of the CT. The system is called the RISK method.[8] Similarly, the basis is written down if losses occur or profits are distributed out of previously accumulated earnings. Appropriate adjustments are also made if capital is paid in or paid out. The first in/first out principle applies if part of the same shareholding is sold. The RISK method deals both with the danger of excessive distributions of retained profits and with the unwarranted exemption of realised gains at the shareholder level due to unrealised gains at the corporate level. The double tax on retained profits is mitigated in Finland (only 70% of capital gains are taxed), but fully maintained in Sweden.

(f) *Withholding taxes.* The single taxation of capital income can be ensured through withholding or source taxes at the corporate level or at the level of other entities paying interest, royalties or other capital income. In principle, withholding or source rates should be set at the level of the CT rate.

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[8] RISK stands for "*Regulering av aksjenes Inngangsverdi med endring i Skattlagt Kapital*" (adjustment of basis by changes in capital subject to tax). The RISK method is not easy to implement, as pointed out by Andersson, et al. (1998).

Consequently, these rates could represent the final tax liability if capital income is taxed separately from labour income and no basic allowance applies. This is the case in Finland and Sweden with respect to interest income. No country, however, imposes a withholding tax on interest or royalties paid to non-residents in treaty countries. Withholding taxes are imposed only on dividends paid to non-resident (portfolio) shareholders.

(g) *Proprietorships and closely-held corporations.*[9] In Finland and Norway, the taxable profits of proprietorships and closely-held corporations, conventionally computed, are split into a capital income component and a labour income component, and these are taxed on a current basis.[10] The capital income component is calculated by applying a presumptive return (the sum of the nominal interest rate plus an entrepreneurial risk premium) to the value of the gross assets of the business (Norway) or to equity (Finland).[11] Residual profits are considered as labour income.[12] The reason for determining capital income first is that the appropriate return on labour is difficult to estimate because diligence, effort and ingenuity may diverge widely, as may the hourly wage rate relating to various kinds of labour and the number of hours worked. Moreover, if labour income were to be determined first, the marginal PT rate on the profits of the self-employed and active shareholders would exhibit a regressive incidence. Additional earnings

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[9] For a detailed description and evaluation of the profit-splitting scheme, see Hagen and Sørensen (1998). This scheme avoids most of the deferral and lock-in effects of the tax that various EU Member States impose on capital gains on substantial shareholdings. Also, the profit-splitting rules of the DIT seem easier to administer than some of the tortuous and arbitrary provisions for preventing the undertaxation of the self-employed currently on the statute books in countries without a DIT. For a different view, see Sørensen (1994) who has labelled the compulsory profit-splitting rules the Achilles heel of the DIT. For a different approach as well as an attempt to tax more of the economic rents earned by corporations at the shareholder level, see Sørensen, 2003.

[10] This is referred to as the "source" model of income splitting. Under the "fence" model in Sweden, labour income retained in the business is taxed at the capital income tax rate. Profits are split, however, upon a subsequent withdrawal or when a capital gain is realised on the shares of an active shareholder. The fence model tends to favour the self-employed over wage earners and produces the familiar lock-in effect.

[11] Basically, the gross method minimises tax arbitrage and hence complexity because the presumptive return is applied to a base – i.e. the business's total assets – that is not influenced by the financing structure of the business. The net (equity) method, on the other hand, is more conducive to investment neutrality because it does not encourage debt-financed investment if the government sets the presumptive rate of return above the going interest rate.

[12] Both Finland and Norway mitigate the tax burden on labour-intensive firms by basically allocating a specified percentage of labour income – 10% of the payroll in Finland and 11% in Norway – to the capital income component of the DIT.

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would then be taxed at the proportional CT rate instead of the progressive PT rate.

(h) *Net wealth tax.* The progressivity of the burden distribution of the capital income tax can be increased by the net wealth tax, which is levied in Norway, Finland and Sweden. This tax implies that residents are taxed differentially higher than non-residents.

2.2 Interest Withholding Taxes

The goal of ensuring single taxation under the current DITs, however, is mostly honoured in the breach with respect to interest (and royalty) payments to exempt entities, such as pension funds, and foreign debt holders (or suppliers of know-how). This hole in the capital income tax bucket can only be plugged by imposing a withholding tax at the CT rate on all interest – in effect, treating interest on a par with dividend income, which is taxed only at the corporate level. Arrangements could then be made under which the tax withheld at the business level would be creditable in the residence Member States (hence, capital income could be taxed at different rates by these Member States).

Alternatively, the tax withheld would not be creditable but would constitute the final liability in the source state (which would require approximation of tax rates if investment location decisions are not to be distorted).[13] Final, source-based, withholding taxes on interest would make the DIT equivalent to a comprehensive business income tax (CBIT). This tax, proposed by the U.S. Department of the Treasury (1992), proceeds from the fundamental equivalence between a CT levied at source and an equal-rate PT on corporate earnings with a full credit for the underlying CT. Accordingly, no deductions are allowed at the corporate level for dividends and interest paid to shareholders and debt holders, but these income items are not taxed at the level of the recipients, be they individuals, corporations, exempt entities or non-residents. This makes the debt-equity distinction irrelevant and greatly reduces the distinction between retained and distributed earnings (depending on the treatment of capital gains).[14]

The CBIT can be introduced while largely maintaining the present rules for determining taxable profits, including those applicable to depreciation and inventory accounting. Exempt entities and non-residents would be treated the same as resident individuals or corporations. They would not be eligible for a refund of the CBIT, nor would they have to pay any additional CBIT in the form of a

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[13] Slemrod (1995) states that "although it is not *desirable* to tax capital income on a source basis [because source-based taxes are distortionary], it is not administratively *feasible* to tax capital on a residence basis".

[14] The CBIT differs from a cash-flow tax in that assets are depreciated over their lifetime, as they would be under a conventional income tax. Hence, the normal return on capital is taxed.

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withholding tax or otherwise. Corporations receiving CBIT income as dividends or interest would also not be taxed on such income. To ensure that dividends and interest are not paid out of exempt earnings, a compensatory tax should be levied on exempt income (made available for distribution as dividends or interest).[15] Capital gains on shares would be taxed only to the extent that they exceed the acquisition cost stepped up by the corporation's retained profits net of the CT.

The main problem of the DIT (final) withholding tax on interest and the CBIT is that they would raise capital costs and dampen (debt-financed) investment, because the normal return on capital (i.e. interest), even if received by exempt entities and non-residents, would be implicitly taxed. Although the introduction of interest withholding taxes would seem a goal worth pursuing, gradual and concerted action is called for. Coordination with the United States and Japan would be essential to prevent tax-induced capital outflows due to the higher cost of capital in the EU.

2.3 Approximation of CT Rates

The exemption of dividend income at the personal level and the taxation of interest income at source should reduce the need for concerted tax harmonisation at the central EU level. The problem of thin capitalisation would be solved and the schemes for CT-PT integration would become redundant. Manipulation of transfer prices, however, could still affect the allocation of the corporate tax base across the Member States. To limit this form of tax arbitrage, a minimum rate, as proposed by the Ruding Committee (1992), would have to be agreed to. Presumably, rate approximation would be easier to achieve following the introduction of DITs and interest withholding taxes.

2.4 Common Base Taxation?

The DIT and CBIT would still proceed from the separate-accounting approach in determining the taxable profits of affiliated corporations in different Member States. Provisions for the removal of cross-border obstacles to economic activity and business restructuring, therefore, would still be needed. As pointed out by the European Commission (2001),[16] a comprehensive solution to these problems, if

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[15] The U.S. Department of the Treasury (1992) advocated imposing the compensatory tax also on foreign-source income, while retaining the current foreign tax credit rules. To avoid double taxation, this should not, of course, be done in the EU, where the exemption method would apply to foreign-source income.

[16] For a brief but useful summary of the Commission proposals, see Weiner (2002). It should be noted that the European Commission does not address the distortions of the CT regimes on financing and investment decisions within the Member States, which should have repercussions on the CTs in the other Member States. Neither does it deal with the

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desired, can only be achieved through common base taxation (CBT), i.e. the joint determination of the profits of firms with cross-border operations on the basis of consolidated accounts and, subsequently, the assignment of those profits to each of the Member States in which the firms carry on business on the basis of the weighted share in various economic activities of the corporation, represented by such factors as its sales, payroll and property (in other words, formulary apportionment – widely practiced in the United States and Canada).

The advantages of CBT with formula apportionment are fewer distortions, less tax arbitrage and lower compliance costs. Cross-border loss offset would occur automatically. But the path to CBT would not be easy, as pointed out by McLure (2004) in a cogent assessment of the European Commission proposals.[17] According to McLure, under CBT, firstly, there would be the problem of the diversity of existing definitions of profits (see Part B) and the lack of an objective standard against which to judge those definitions. Secondly, there is no clearly best way to define groups of firms for purposes of consolidation. Thirdly, no apportionment formula is conceptually and theoretically superior to others. And finally the CBT administration would require unprecedented cooperation among participating Member States.[18] Agreement would probably be easier to reach, however, following the introduction of DITs, the taxation of interest accruing to foreign bondholders, and the approximation of CT/PT rates on capital income.

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appropriate tax treatment of interest (representing the normal return on capital), which mostly escapes tax. Finally, the Commission seems to believe that CT approximation should be achieved through tax competition rather than tax coordination.

[17] McLure (2004) quotes Shön (2002, p. 276) who gives the following sobering assessment of the European Commission's efforts at tax coordination: "Imagine you had met Sisyphus in Hades, confronting the man who had for decades tried to push a stone up a hill, never succeeding and every time starting anew. Imagine further that this man explained to you that he was fed up with this frustrating work and that he would now try another way, choosing a new stone that was much larger and more complicated than the one he had used before. Would you think of him as vain or visionary? Would you think of him as heroic or helpless? That is exactly what comes to mind after working through the European Commission's new communication on company taxation in Europe."

[18] McLure (2004) is even more apprehensive about another proposal of the European Commission, i.e. home state taxation (HST) under which participating Member States would maintain their own rules for determining taxable profits, but firms with cross-border operations would be taxed by the Member State in which their headquarters are located. Subsequently, the consolidated profits would be assigned to each of the participating Member States on the basis of formulary apportionment. According to McLure, HST has no counterpart in the real world and might impede further evolution toward a harmonised CT system. Also, substantial cooperation would be required in the choice of an apportionment formula and perhaps in the rules for consolidation and cross-border loss offsets. Under HST, moreover, competition for headquarters locations would increase.

2.5 A European CT?

EU-wide unitary taxation would fully reduce distortions and compliance costs only if applied by a joint administration under a common code uniformly interpreted by the European Court of Justice.[19] Indeed, CBT would probably not be possible without these conditions. Accordingly, the logical conclusion of the tax coordination and tax harmonisation steps outlined above would be a European CT whose revenue would either be shared by the Member States on the basis of some formula or flow into the EU's budget. A truly European CT, however, would require fundamental changes in the EU's constitution moving it in the direction of a federal (tax) system. For the time being, this seems a bridge too far.

3. Concluding Comments

This paper has developed an approach to the coordination of capital income taxes in the EU, which combines CT reform *in* the Member States with CT coordination *between* the Member States. The centrepiece of this approach is a dual income tax (DIT) as found in the Nordic countries which taxes all capital income at a single, uniform rate, i.e. the CT rate. The DIT does not raise capital costs outright (interest paid to tax-exempt entities and non-residents is not taxed), yet it leaves the door open to taxing the normal return on capital more fully through EU-wide and international tax policy coordination.

Under the DIT, full neutrality will not be achieved unless a withholding tax is imposed on interest (and royalties) at source. This would convert the DIT into a comprehensive business income tax (CBIT) if the withholding tax would not be creditable in the residence states. This source-based tax would require tax rate approximation if investment location decisions are not to be distorted. But, paraphrasing Slemrod (1995), a EU featuring (equal-rate) source-based capital income taxes would be more efficient than a EU featuring fully enforced residence-based taxes (if feasible of implementation) only because the cost of enforcement is lower for the system of source-based taxes.

Agreement on a (minimum) CT rate would reduce the incentive for profit shifting to low-tax jurisdictions. Such a tax would, however, leave separate accounting and the attendant cross-border obstacles to economic activity intact. The tax costs of separate accounting can be reduced only through the introduction of CBT on a EU-wide basis accompanied by a system of formula apportionment. The adoption of a truly European CT whose revenue would flow into the EU's budget would have to wait until the EU acquires the power to tax.

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[19] Of course, even then it would be important to heed the rule that all capital income should be taxed only once and at a uniform rate.

This paper has argued for tax coordination in a form that relinquishes tax subsidiarity gradually but is also reversibly. It has not come out in favour of unbridled tax competition, although it should be acknowledged, particularly in the EU, that tax competition can serve as a discipline on the "profligacy of Princes" (Adam Smith) and present-day governments in the EU (Edwards and Keen, 1996). Neither has this paper advocated the exemption of the normal return on capital by confining the corporate tax base to business cash flow or by introducing a personal consumption tax for which strong arguments can be brought to the fore. It has not taken either of these routes in the belief that the body politic wants to tax all returns on capital – normal as well as above normal – although at a lower rate perhaps than on labour income. In sum, tax coordination reconciles the requirement of fiscal efficiency with the desire to tax capital income more effectively.

References

Andersson, K., V. Kanniainen, J. Södersten and P. B. Sørensen (1998), Corporate Tax Policy in the Nordic Countries, in P. B. Sørensen (ed.), *Tax Policy in the Nordic Countries,* New York: MacMillan 72–137.

Auerbach, A. J. and K. A. Hassett (2002), On the Marginal Source of Investment Funds, 87 *Journal of Public Economics* 205–32.

Bird, R. M. (2002), Why Tax Corporations? *Bulletin for International Fiscal Documentation,* May, 194–203.

Boadway, R. and N. Bruce (1984), General Proposition on the Design of a Neutral Business Tax, 24 *Journal of Public Economics* 231–39.

Bond, S. R. (2000), Levelling Up or Levelling Down? Some Reflections on the ACE and CBIT Proposals, and the Future of the Corporate Tax Base, ch. 7 in S. Cnossen (ed.) *Taxing Capital Income in the European Union: Issues and Options for Reform*, Oxford: Oxford University Press.

Clark, S. (2000), Tax Incentives for Foreign Direct Investment: Empirical Evidence on Effects and Alternative Policy Options, 48 *Canadian Tax Journal* 1139–52.

Christiansen, V. (2004), Norwegian Income Tax Reforms, CESifo Dice Report, 2/3 *Journal for Institutional Comparisons* 9–14.

Cnossen, S. (1997), The Role of the Corporation Tax in OECD Member Countries, in Head, J. and R. Krever (eds.), *Company Tax Systems*, Melbourne: Fiscal Publications 49–84.

Cnossen, S. (2000), Taxing Capital Income in the Nordic Countries: A Model for the European Union? ch. 8 in S. Cnossen (ed.), *Taxing Capital Income in the European Union: Issues and Options for Reform*, Oxford: Oxford University Press.

Cnossen, S. (2001), Tax Policy in the European Union: A Review of Issues and Options, 58/4 FinanzArchiv 466–558.

Cnossen, S. (2004), Reform and Coordination of Corporation Taxes in the European Union: An Alternative Agenda, *Bulletin for International Fiscal Documentation*, April 2005, 134–50.

Cnossen , S. and L. Bovenberg (2001), Fundamental Tax Reform in The Netherlands, 8/4 *International Tax and Public Finance* 471–84.

Easson, A. and E.M. Zolt (2002), Tax Incentives, *World Bank Institute* 1–36.

Edwards, J. S. S. and M. J. Keen (1996), Tax Competition and Leviathan, 40 *European Economic Review* 600–638.

European Commission (1997), *Towards Tax Coordination in the European Union, A Package to Tackle Harmful Tax Competition*, Doc.COM(97)495final.

European Commission (2001), *Company Taxation in the Internal Market*, SEC (2001) 1681, Luxembourg.

European Parliament (2001), Tax Coordination in the EU – The Latest Position, *Working Paper*, Directorate-General for Research, ECON 128 EN.

Goolsbee, A. (1998), Investment Tax Incentives and the Price of Capital Goods, 113 *Quarterly Journal of Economics* 121–48.

Graetz, M. J. and A. C. Warren, Jr. (1998), Integration of Corporate and Individual Income Taxes: An Introduction to the Issues, in *Integration of the U.S. Corporate and Individual Income Taxes*, Arlington, VA: Tax Analysts 3–33.

Hagen, K. P. and P. B. Sørensen, Taxation of the Self-Employed: Taxation Principles and Tax Reforms in the Nordic Countries, in P. B. Sørensen (ed.), *Tax Policy in the Nordic Countries,* New York: MacMillan.

Hassett, K. A. and R. G. Hubbard (1998), Are Investment Incentives Blunted by Changes in Prices of Capital Goods? 1 *International Finance* 103–25.

Institute for Fiscal Studies (1991), *Equity for Companies: A Corporation Tax for the 1990s*, IFS Commentary No. 26 by the IFS Capital Taxes Group.

International Bureau for Fiscal Documentation (loose-leaf), Supplementary Service to European Taxation, Vols A and B, Amsterdam: International Bureau for Fiscal Documentation.

King, M. and D. Fullerton, eds. (1984), *The Taxation of Income from Capital,* Chicago: University of Chicago Press.

Keen, M. and J. King (2002), The Croatian Profit Tax: An ACE in Practice, 23/3 *Fiscal Studies* 401–418.

McLure, Jr., C.E. (2004), Corporate Tax Harmonization in the European Union: The Commission's Proposals, *Tax Notes International*, November 29, 775–801.

McLure, Jr., C. E. and G. R. Zodrow (1996), A Hybrid Consumption-Based Direct Tax for Bolivia, 3 *International Tax and Public Finance* 97–112.

Mendoza, E. G., A. Razin and L. L. Tesar (1994), Effective Tax Rates in Macroeconomics, Cross-Country Estimates of Tax Rates on Factor Incomes and Consumption, 34/3 *Journal of Monetary Economics* 297–323.

Mintz, J. and T. Tsiopoulos (1995), Corporate Tax Holidays and Investment, 4 *The World Bank Economic Review* 97–112.

Musgrave, R.A. and P. B. Musgrave (1984), *Public Finance in Theory and Practice*, 4th ed., New York: McGraw-Hill.

Nicodème, G. (2001), *Computing Effective Corporate Tax Rates: Comparisons and Results*, Economic Paper No. 153, Brussels: European Commission, Directorate General for Economic and Financial Affairs.

OECD (1991), *Taxing Profits in a Global Economy: Domestic and International Issues*, Paris.

OECD (2000), *Average Effective Tax Rates on Capital, Labour, and Consumption*, Working Paper No. 258, Paris: OECD, Economics Department.

OECD (1995), Taxation and Foreign Direct Investment: The Experience of the Economies in Transition, Paris.

Ruding Committee (1992), *Company Taxation in the Internal Market*, COM(2001) 582 final, Brussels.

Shah, A., ed. (1995), *Fiscal Incentives for Investment and Innovation*, New York: Oxford University Press.

Shön. W. (2002), The European Commission's Report on Company Taxation: A Magic Formula for European Taxation? 42/8 *European Taxation* 276-86.

Schratzenstaller, M. (2004), Towards Dual Income Taxes – A Country-Comparative Perspective, CESifo Dice Report, 2/3 *Journal for Institutional Comparisons* 9–14.

Sinn, H-W. (1991), Taxation and the Cost of Capital: The "Old" View, the "New" View and Another "View", in D. F. Bradford (ed.), *Tax Policy and the Economy 5*, Cambridge, MA: MIT Press 25–54.

Slemrod, J. B. (1995), Comment on V. Tanzi, Taxation in an Integrating World, in Tanzi, V., *Taxation in an Integrating World*, Washington, D.C.: Brookings Institution 141–146.

Slemrod, J. B. (1995a), Free Trade Taxation and Protectionist Taxation, 2 *International Tax and Public Finance* 471–489.

Sørensen, P. B., "Neutral Taxation of Shareholder Income: A Norwegian Tax Reform Proposal", CESifo Working Paper No. 1036. CESifo Dice Report, 2/3 *Journal for Institutional Comparisons* 9–14.

Spengel, C. and W. Wiegard (2004), Dual Income Tax: A Pragmatic Tax Reform Proposal for Germany, CESifo Dice Report, 2/3 *Journal for Institutional Comparisons* 9–14.

UNCTAD (2000), *Tax Incentives and Foreign Direct Investment: A Global Survey,* New York: United Nations.

U.S. Department of the Treasury (1992), *Integration of the Individual and Corporate Tax Systems: Taxing Business Income Once*, Washington, D.C.: US Government Printing Office.

Weiner, J. M. (2002), Formulary Apportionment and the Future of Company Taxation in the European Union, 3/1 *CESifo Forum* 10-20.

Zee, H.H. (2002), World Trends in Tax Policy: An Economic Perspective, 32/8–9 *Intertax* 352-64.

Zee, H. H., J.G. Slotsky and E. Ley (2002), Tax Incentives for Business Investment: A Primer for Policy Makers in Developing Countries, 30/9 *World Development* 1497-516.

Zodrow, G. R. (1991), On the "Traditional" and "New" Views of Dividend Taxation, 44 *National Tax Journal* 497–509.

Zodrow, G. R. (2004), Capital Mobility and Source-Based Taxation of Capital Income in Small Open Economies, *forthcoming*.

unique possibility to escape double taxation of profits, i.e. on the corporate and the individual level.

This effect should be taken into account in current discussions about pension reform. In most European countries there exist tendencies to replace – totally or partially – existing public pension schemes of the pay-as-you-go type by privately organized, capital based systems. Such a development, that e.g. is very pronounced in my home country, Austria, will increase the importance of tax-exempt institutions in corporate financing. As the existing systems of corporate taxation in most cases are not fully integrated with individual taxation, this will have important effects on overall effective tax rates and therefore on the financing of investment and specifically on housing construction. This may be an explanation for specific forms of financial flows e.g. in the United States or in the United Kingdom, where capital-based pension systems dominate.

III. Let me conclude with some remarks on an issue, that is a central point in Professor Cnossen's paper, namely the existing system of taxing corporate profits on a separate accounting and source basis that may be replaced by a system of formula apportionment of a consolidated tax base.

Cnossen himself gives a very good overview of the many practical problems involved in a system of formula apportionment. It is therefore no wonder that he himself appears rather skeptical about the practicability of such a system. There is, however, one aspect, that to my opinion is of special importance, namely the treatment of the financial sector. For this sector the problem of transfer pricing is much more important than for industry. On the other hand it is an especially complicated matter to find out the "correct" value of financial services. This is specifically the case for transactions within a multinational concern. I do not think that the method of formula apportionment would be of much help in this respect.

All in all, Professor Cnossen has presented a very profound and stimulating paper that will have an important impact on the future discussion of corporate income taxation in the European Union.

number of opportunities for legal tax evasion, as is shown in this paper. Given the growing importance of these funds this may create substantial effects in further reducing the progressivity of the total income tax system, even if eventually taxation takes place at the level of the individual income earner.

III. Concerning policy proposals Cnossen gives an interesting presentation of the Nordic dual income tax system. This kind of tax system is discussed also in many other countries of Europe and is very similar to the tax system which evolved in Austria.

It is however important, to analyse a dual income tax system in connection with the system of corporate taxation, the existence of a wealth tax and the personal taxation of high income earners. Thus, it is important for the ongoing discussion to point out, that in Norway, Finland and Sweden there exists a net wealth tax – something that does not exist for instance in Austria.

Giving a little "political economy background" as a former chairman of the Finance Committee of the Austrian Parliament, I may add that the introduction of the dual income tax system in Austria was mainly motivated by the fact, that in a system of strict bank secrecy, as we (still) have in Austria, the only way for effective taxation of capital income is via withholding taxes and thus via a dual income tax system with proportional taxation of capital income. In the specific case of Austria, were large parts of capital income had not been reported to tax authorities, this new system also had positive distributional aspects. As the share of capital income in total income rises with rising income, an effective proportional taxation of capital income has a stronger distributional effect as compared to a non-effective progressive taxation of capital income.

Although the new system of taxation of capital incomes resulted in a substantial increase in tax revenues, it is generally accepted and undisputed. This seems to indicate, that withholding taxes are not only technically efficient, but they are obviously seen as "soft-taxes", given their smaller visibility and the absence of any bureaucratic reporting needs. Especially for countries that have no "puritan tradition" of tax "morale", proportional, but technically efficient withholding taxes may be superior compared to progressive, but difficult to administer systems of income, especially capital income taxation.

IV. Concerning tax-competition, one often sees (fortunately not in Cnossen's paper) a strange divergence between theoretical discussions and real-world experiences. We clearly do not live in the idyllic "Tiebout World", that is assumed in the previous paper of Feld, but in a world where multinational companies, helped by armies of highly paid tax consultants and lobbyist exploit (and create) every possibility for "tax arbitrage". As a great number of studies (recently e.g. by Financial Times) have demonstrated, this already now has the effect, that big

multinational companies in many cases avoid all or most of corporate taxation. All this will increase with increasing opportunities for tax competition in the EU.

The real issue thus is not about welfare – driven locational choices a la Tiebout and not even about "voting by feet", but about creating massive new inefficiencies. The distributional inefficiency is obvious, as capital is more mobile, i.e. has "longer feet" to use tax-competition as compared to labour. But there exist also massive allocative inefficiencies. "Legal" tax evasion by big multinational companies in fact means a free-rider strategy, as these companies will continue to use the better physical and institutional infrastructure of the (relatively) high-tax countries, but do not contribute in (tax-) financing this infrastructure. It also has to be noted that the strategies of "tax planning" of big multinational companies are not open to small and medium sized companies, which thus have to bear a higher effective tax burden. This may create huge distortions – which strangely up to now did not attract the attention of the European Commission. On the contrary, EU proposals like Home State Taxation would increase the inefficiencies shown above.

One only can agree with Cnossen's statement that the arguments for coordinating the capital income taxes are overwhelming. Limiting tax competition to me seems to be of utmost importance for a credible, socially accepted system of income, especially capital income taxation in Europe. In his paper Cnossen demonstrates, that there are indeed ways to stop and reverse the present tendency of an ever decreasing role of capital income taxation, especially with regard to high income groups and multinational companies. As Cnossen, however, rightly shows, these alternatives are confronted with a number of administrative and especially political problems. But it is of absolute importance to continue to work on this. Josef Schumpeter, the great Austrian economist and short-term minister of finance once wrote in his essay "Die Krise des Steuerstaates[1]" that the structure of taxation is the best indicator for the political structure of a society. This also holds true for the European Union.

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[1] J. Schumpeter (1976) Die Krise des Steuerstaates, in: R. Hickel (ed.) R. Goldscheid and J. Schumpeter, Beiträge zur politischen Ökonomie der Staatsfinanzen, Frankfurt am Main.

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       "Where Do We Go – Where Should We Go?"
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Monetary Policy & the Economy *quarterly*

This quarterly publication, issued both in German and English, offers analyses of cyclical developments, medium-term macroeconomic forecasts and studies on central banking and economic policy topics. This publication also summarizes the findings of macroeconomic workshops and conferences organized by the OeNB.

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The *Financial Stability Report*, issued both in German and English, contains first, a regular analysis of Austrian and international developments with an impact on financial stability and second, studies designed to provide in-depth insights into specific topics related to financial market stability.

Focus on European Economic Integration *semiannual*

Focus on European Economic Integration, the successor publication to *Focus on Transition* (published up to issue 2/2003), contains a wide range of material on Central and Eastern European countries (CEECs), beginning with a topical economic analysis of selected CEECs. The main part of the publication comprises studies, on occasion several studies focusing on a special topic. The final section provides information about the OeNB's CEEC-related activities and conferences as well as a statistical annex.

Annual Report *annual*

The *Annual Report* of the OeNB provides a broad review of Austrian monetary policy, economic conditions, new developments on financial markets in general and financial market supervision in particular, as well as of the OeNB's changing responsibilities and its role as an international partner in cooperation and dialogue. It also contains the financial statements of the OeNB.

Economics Conference (Conference Proceedings) *annual*

The *Economics Conference* hosted by the OeNB represents an important international platform for exchanging views on monetary and economic policy as well as financial market issues. It convenes central bank representatives, economic policy decision makers, financial market players, academics and researchers. The conference proceedings comprise all papers, most of them in English.

The Austrian Financial Markets *annual*

The publication *The Austrian Financial Markets* provides easy access to continuously updated information on the Austrian capital markets to the international investment community. The brochure is jointly edited by the OeNB and the Oesterreichische Kontrollbank AG (OeKB).

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The proceedings of *OeNB Workshops* were introduced in 2004 and typically comprise papers presented at OeNB workshops at which national and international experts, including economists, researchers, politicians and journalists, discuss monetary and economic policy issues. Workshop proceedings are available in English only.

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(Conference Proceedings) *annual*

(formerly East-West Conference)

This series, published by a renowned international publishing house, reflects presentations made at the OeNB's annual central banking conference on Central, Eastern and Southeastern European issues and the ongoing EU enlargement process.

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