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Tax Burdens**

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Contents

List of Tables and Figures

Abstract

Within the EU, taxation and the EU's eastern enlargement are currently seen as one of the most important problems to be solved and projects to be realized. Each of these two topics covers a vast set of issues which have to be dealt with. At the same time only few attempts have been made to answer those questions that arise if the two topics are combined – namely, what effects will EU enlargement have on taxation matters and how will EU tax regulations affect the accession countries economically.

In this study we try to answer the question which fiscal and non-fiscal economic effects one can expect in the case of EU eastern enlargement, solely on account of differences in the tax structures of the incumbent EU member states and the accession countries. The aim of this study is thus to (partly) fill the gap between EU eastern enlargement and tax-related aspects.

In answering that question we proceed as follows. We point up the differences in the tax structures and tax systems in the two blocs. This is done by using several measures of the 'tax burden' in the individual countries on the one hand, and by summarizing the past, current and future tax policy strategies of both the EU and the CEECs on the other. Then, by combining that information, we derive some economic implications that are useful for a broader discussion of our topic.

Keywords: comparative study, fiscal policy, integration, transitional economies

JEL classification: E62, E63, H2, P5

Executive summary

Within the EU, taxation and the EU's eastern enlargement are currently seen as one of the most important problems to be solved and projects to be realized. Each of these two topics covers a vast set of issues which have to be dealt with. At the same time only few attempts have been made to answer those questions that arise if the two topics are combined – namely, what effects will EU enlargement have on taxation matters and how will EU tax regulations affect the accession countries economically.

In this study we try to answer the question which fiscal and non-fiscal economic effects one can expect in the case of EU eastern enlargement, solely on account of differences in the tax structures of the incumbent EU member states and the accession countries. The aim of this study is thus to (partly) fill the gap between EU eastern enlargement and tax-related aspects.

In answering that question we proceed as follows. We point up the differences in the tax structures and tax systems in the two blocs. This is done by using several measures of the 'tax burden' in the individual countries on the one hand, and by summarizing the past, current and future tax policy strategies of both the EU and the CEECs on the other. Then, by combining that information, we derive some economic implications that are useful for a broader discussion of our topic.

In a stepwise approach we first had to find appropriate measures for the tax burdens. In fact literature offers several measures which we had to choose from:

1. *Nominal tax rates and tariffs*. However, these are crude measures of the actual tax burden, because these measures do not take into account tax laws concerning the tax base and do not pay regard to any interdependencies between the tariffs of different taxes levied on the same tax base.

2. *Tax quotas*, which are given by the ratio of an economy's tax revenue from a particular resource – such as labour – and an indicator of the value added created by the economy as a whole or this resource.

3. *Effective tax rates*, which have become the standard tools for measuring the tax burden. Effective tax rates however can themselves be subdivided into several measures:

   – Marginal and average *forward*-looking tax rates, which are 'micro-level' rates, because a hypothetical investment project of a firm is analysed.

   – *Backward*-looking rates, which are always average rates, but can be separated into micro- and macro-level rates. They are 'micro-level' rates if the firm-specific average rate is calculated, but they are 'macro-level' rates if implicit rates valid for the whole economy are calculated.

With respect to effective tax rates, the measures which were the most appropriate for our purpose were backward-looking average effective tax rates, and we decided to follow the standard method for calculating effective average tax rates as it was proposed by Mendoza, Razin and Tesar (1994).

In a second step we compared the tax systems of the current EU members and those of the CEECs.

Regarding the EU member countries it can be said that all have modern tax systems, but these systems differ considerably due to differences in the political and consequently in the social systems of the individual EU countries. This can be seen e.g. in the cross-country variations in the tax-to-GDP-ratios, the differing income tax tariffs, inhomogeneous tax bases and especially in the taxation of corporate profits. But since the apparent differences between the tax laws and tax structures within the EU are seen as a major obstacle for a further integration, it appears to be necessary to create a system of more homogenous tax structures within the EU.

Thus in the field of indirect taxation the EU has taken certain steps towards harmonization, such as the sixth VAT-directive of 1977 and detailed regulations in the field of excise taxes. In the long term the EU plans to implement the 'origin principle', which would require a complete harmonization of tax rates. Given certain problems associated with the origin-principle, this has yet to be achieved. However, the member states have already agreed upon minimum VAT rates.

With respect to direct taxation, few legally binding regulations have been passed: one being the Parent/Subsidy directive and another the Merger directive.

Only lately the increasing tax competition forced the EU to enhance the co-ordination of EU direct tax systems, resulting in a policy package containing a 'Code of Conduct', measures for eliminating distortions to the taxation of capital income and measures to eliminate withholding taxes on cross-border interest and royalty payments between companies. With respect to the taxation of savings income, the ECOFIN agreed that all member states would have to introduce a system for transmitting information to the member state in which the taxpayer is resident.

Regarding the CEECs it can be said that prior to 1989 they had tax systems which were ill-suited to any market-oriented economy. Thus, with the collapse of the communist systems in the Central and East European countries, tax reform became a task of highest priority.

Bound by the constraints of a limited tax administration capacity and given the need to secure revenue, consumption taxes became the most important source of tax revenue in

the transition period on account of its relatively simple administration and revenue potential. On the other hand, the importance of taxes on corporate income declined significantly, primarily because the pre-transition levels of corporate taxation were inviably high and also because some allowance had to be made for general economic developments. The share of personal income taxes increased in the course of the tax reforms, partly because of changes in accounting systems plus the need to offset revenue cuts in corporate taxation. Social security contributions still display high shares in total tax revenue on account of the funding requirements of the social welfare systems, which were already well established prior to 1989.

A comparison of the tax systems in the EU countries and the CEECs shows that as far as total tax-to-GDP ratios are concerned, the CEECs should fit into the current EU tax system. However, EU and CEE tax structures differ, viz. the share of direct taxes in total tax revenues in the EU countries is much higher than in the CEECs. On the other hand, indirect taxes play a more prominent role in the CEECs than in the EU, and the CEECs also depend to a considerable degree on foreign trade taxes. These differences are also reflected to a certain extent in the differences in the statutory tax rates, where the CEECs have higher-than-average consumption tax rates, but lower-than-average corporate tax rates.

These differences become even more pronounced if average effective tax rates are considered, particularly in the field of corporate taxation. Thus, the inspection of average effective tax rates reveals that although certain CEECs operate statutory corporate tax rates similar in size to the average EU rate, the CEECs effectively tax corporate income at a much lower rate than the EU.

Following these steps we finally were able to derive some economic implications: The main short-run implications of an EU accession of the CEECs with respect to indirect taxation are as follows:

1. Upward pressure on certain CEE VAT rates and excise duties which is supposed to lead, *ceteris paribus*, also to an increase in tax revenues. On the other hand, the CEECs will lose a large portion of their tariff revenues so that the overall fiscal effects of EU enlargement on the CEECs might even be negative.
2. A net loss of revenues which means fewer funds for discretionary policy, thus limiting fiscal policy.
3. A possible increase in inflation which might also push the CEE currencies towards real and nominal appreciation against the euro, which might adversely affect CEE competitiveness.
4. Adoption of EU external tariffs by the CEECs which will change their relative foreign trade prices, possibly leading to trade-creating or trade-redirecting effects.

5. A slowdown in the development of small-sized enterprises owing to the EU requirement that the CEECs lower the VAT threshold level above which entrepreneurs are subject to VAT legislation.

6. Negative impact on income distribution, especially for the lowest income groups, since goods such as heating and electricity will have to be taxed at higher rates.

7. The supply of public goods and services might be affected negatively, and we might also observe a shift in the structure of the supply of public goods and services.

Assuming that the EU will have introduced the origin-principle and thus harmonized indirect tax rates, which are supposedly lower than the indirect tax rates the CEECs used to have prior to accession, the long-run implications are as follows:

1. *Ceteris paribus*, a shortfall in revenues for many CEECs.

2. A shift from indirect to direct taxes in order to offset those losses, thereby bringing CEE tax structures closer to average tax structures in current EU member states.

3. An increase in disposable income, if the loss in tax revenues is not offset, and hence an acceleration of economic growth.

4. A cut in government spending or more efficient collection of revenue.

5. A shift in tax revenues from net-importing to net-exporting countries.

6. An increase in imports and a drop in CEE exports.

The main implications of an EU accession of the CEECs with respect to direct taxation are as follows:

1. Expanding effects on tax revenue from corporate profits.

2. Only minor impact on FDI inflows from the EU to CEECs.

3. A shift in FDI inflows between the high- and low-tax CEECs, with positive economic effects for the low-tax countries and negative effects for high-tax countries.

4. A shift in FDI inflows between regions within individual CEECs.

5. An increase in tax competition within the CEECs.

In the long run EU accession could have the following effects:

1. A shift in tax revenues from low-tax countries to high-tax countries.

2. Acceleration of tax competition within an enlarged EU.

3. As long as the current EU member states do not react to the low CEE corporate taxes, the CEECs might be able to increase the pace of their convergence process.

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Comparison of Tax Burdens

1   Introduction

Taxes and tax laws play an important role as a device for achieving economic policy goals. This can be seen if one considers the role tax theories play, even in introductory text books on public economics.[1] Despite the theoretical importance of taxation, empirical findings as to the importance taxes take on as an economic policy device are mixed. The findings hinge crucially on the methodology and data used (see, for example, Triest, 1998). Moreover, many other factors influence the behaviour of economic agents such as households' labour supply decisions and the investment decisions taken by firms.

In the ongoing academic and political discussion on the effects of taxes a current 'hot topic' is the role taxes play in locational decisions taken by companies and investors. Admittedly, taxes are not the sole factor and probably not the most important determinant in this respect, yet as the literature shows taxes or tax rates can play a prominent role (see, e.g., Devereux and Griffith, 1998, pp. 351ff; Richter et al., 1996, pp. 39f). Moreover, Schneider and Winner (2001) mention surveying company representatives on the impact that tax differences had on their locational decisions. Indeed, those surveys show that tax burdens would seem to bear some relevance in this respect. An older, yet important survey was published in 1992 as part of the Ruding-Report; it focused on the impact of taxation on real and financial international activity. The survey was distributed at the time to businesses in the countries of the Economic Community (EC) and a number of EFTA countries (Austria, Switzerland, Finland and Sweden). One of the main findings was that 48% of the respondents replied that taxation was a major factor in deciding on the country in which to locate the production plant (Commission of the EC, 1992, pp. 100 and 102) because, *ceteris paribus,* taxes are an important cost factor. One can thus speak of a directly[2] measurable burden of taxation. Hence by varying the tax burden – via changes in tax laws – taxes can be used as tools to achieve economic policy targets.

Another 'hot topic' in the EU is the major change in the Union's economic environment which will come about once the planned eastern enlargement of the EU is put into effect. Within the EU and the countries of Central and Eastern Europe (CEECs) countless efforts have been undertaken in preparation for enlargement. These attempts have been made in various fields, such as state aid legislation, EU funding, the EU budget ('Agenda 2000'), and introduction of the *acquis communautaire* in the CEECs. Both taxation and eastern

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[1]   See, e.g., Stiglitz (2000) or Atkinson and Stiglitz (1980).

[2]   As distinct from the 'excess burden' of taxation which is not directly measurable (see, for example, Atkinson and Stiglitz (1980), pp. 367ff).

enlargement can thus be seen as one of the most important problems to be solved and one of the most important projects to be realized. Both topics give rise to a vast series of questions and problems that call for answers and solutions. At the same time, however, only few attempts have been made to answer those questions that arise upon merging the two topics: (a) what effects will EU enlargement have on taxation matters?; and (b) what economic effect will EU tax regulations have on the accession countries ?

To our mind, questions such as these are of pivotal pertinence to both parties in the integration process. Moreover, we think that any discussion of EU enlargement that fails to address taxation issues is incomplete, given the decisive role that taxes play in both an individual economy and an economic or political union. This opens up an enormous volume of tax-related topics which, to our mind, have to be considered in the discussion of EU eastern enlargement.

In this study we will answer the question about the fiscal and non-fiscal economic effects to be expected in the event of eastern enlargement, solely on account of differences in the tax structures of the incumbent EU member states and the accession countries. The aim of this study is thus to fill (partly) the above mentioned gap between EU eastern enlargement and tax-related aspects.

In answering the question we shall proceed as follows. We will point up the differences in the tax structures and tax systems in the two blocs. This will be done by using several measures of the 'tax burden' in the individual countries on the one hand, and by summarizing the past, current and future tax policy strategies of both the EU and the CEECs on the other. Thereafter, by combining the information gathered, an answer can be found to the research question stated above.

The study thus starts (chapter 2) by describing the various measures of tax burdens. The advantages and disadvantages of the various measures are presented, three of which are used in later chapters (chapter 3) to calculate the tax burdens for a range of EU countries and CEECs. In particular, we will – to our knowledge for the first time ever – calculate average effective tax rates on several 'goods' (labour, capital and consumption) for the CEECs.

Before doing that, however, we will give an illustrative summary of past, current and future tax policy strategies in the EU and the CEECs. This section (chapter 3.1 to 3.3) of the study are significant since, together with the measurement of tax burdens, they permit us to draw conclusions about the potential tax-related effects that eastern enlargement will have on the CEECs in particular. These conclusions are drawn in the final section of the study (chapter 4), where an answer is given to the research question stated above.

It should be pointed out that we will not use any econometric device to answer the research question for reasons explained in detail below. Instead, we will draw conclusions in qualitative terms, based on both our own findings in this study and various economic theories.

2   Measures and methods for calculating tax burdens

Several measures for tax burdens are given in the literature. A recent OECD survey provides an overview (see OECD 2000b, p. 7ff). According to the OECD a systematic structuring of the various measures is as follows:

1. Nominal tax rates and tariffs

2. Tax quotas

3. Effective tax rates
    – Ex-post ('backward-looking') effective tax rates
      Average effective tax rates
    – Ex-ante ('forward-looking') effective tax rates
      Average and marginal effective tax rates

re 1   Nominal tax rates and nominal tariffs

Nominal tax rates and tariffs are crude measures of tax burdens as they do not take into account tax laws pertaining to the tax base, nor do they usually pay any regard to interdependences between the tariffs of different taxes levied on the same tax base.[3]

For these reasons, nominal tax rates and tariffs can only be used to give an initial rough measure of tax burdens. Using nominal tax rates to measure the tax burden would result in an upward bias.

re 2   Tax quotas

Tax quotas are another crude measure of the tax burden levied on a particular production factor or other resource. Usually, these quotas are given by the ratio of an economy's tax revenue from a particular resource, such as labour, and an indicator of the value-added created by the economy as a whole or that resource. An important tax quota is the tax revenue accruing from a resource relative to GDP or relative to a narrower indicator of the value-added generated by that resource. Usually, this indicator is part of the GDP and follows the nomenclature of the System of National Accounts. One example is the ratio of the labour tax revenue in a particular year to the sum of labour income generated during that year.

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[3]   For example, in Austria interdependence prevails between corporate income tax and personal income tax.

Particularly those measures which use a value-added indicator as a denominator are better measures of tax burdens than nominal tax rates, since the tax base is taken into account. None the less, they remain simply rough indicators for several reasons. First, several different types of taxes -- not just one – can be levied on a particular resource. The nominator is therefore crude. Secondly, the value-added indicators – in particular those relating to corporate profits – of the System of National Accounts are sometimes debatable – particularly on account of the differences between the definitions of income or value-added as used in the System of National Accounts and as applied in tax laws. Average effective tax rates based on the System of National Accounts ('backward-looking' rates) are, as we will see, concerned with the adjustment of the nominator and the denominator of those tax quotas.

Another often used quota is the ratio of tax revenue from a particular resource to total tax revenues. This is an even cruder measure of the tax burden levied on a particular resource, because no allowance is made for the tax base.

re 3   Effective tax rates

Today effective tax rates are the standard tools for measuring tax burdens.

As mentioned above, effective tax rates can be distinguished in two ways. First, a distinction is made between backward- and forward-looking rates, and secondly a distinction has to be made between marginal and average effective tax rates.

Backward-looking means that the tax liability ratio on a particular resource is divided by an (effective) measure of the value-added generated by those resources in the past. For example, tax revenues from capital taxation are based on the profit accruing from previously accumulated capital stock (OECD 2000b, p. 35). Backward-looking measures are available for a range of resources and goods – such as labour, capital and consumption. Forward-looking measures are suited to measuring the future tax burden that corporations will have to bear. They assess corporate taxes as a percentage of the pre-tax profit of a prospective – hence 'forward-looking' – investment project (OECD, 2000b, p. 35).

Marginal effective tax rates (METRs) are forward-looking tax rates; they are based on neo-classical investment theory (Spengler and Lammersen, 2001, p. 11). They are thus theoretically based on equilibrium conditions equating the marginal benefits and costs of a particular prospective investment project of a particular firm.

Average effective tax rates (AETRs) can be backward- or forward-looking. In the case of backward-looking AETRs, one has to distinguish between rates based on aggregate (National Accounts and government revenue) data or on firm-level data (OECD, 2000b,

p. 35). Aggregate level rates are termed 'implicit rates' and measure the average tax burden on all economic agents who generated portions of the total value-added, such as corporations. Moreover, these tax rates aggregate information on statutory taxes, credits, deductions and exemptions implicit in National Accounts and revenue statistics (Mendoza et al., 1994, p. 302).

Firm-level average rates measure the average ex-post tax burden on corporation profits and are based upon data drawn from corporation balance sheets.

Average forward-looking tax rates are usually project-based; the rates are determined by calculating the net value of pre- and post-tax corporate profits in each period over the life of a hypothetical investment project. The difference between these net values is divided by the net value of pre-tax profits. The outcome is the forward-looking average tax rate and its value depends upon the assumptions about profits, costs, interest rates, tax relief regulations, etc (OECD, 2000b, p. 47). Here again, these measures are based on neo-classical investment theory.

Given the many different ways of calculating effective tax rates, each of which has certain advantages and disadvantages, the question arises as to which measure to use for which purpose.

In order to answer that question a distinction has to be made once more between backward- and forward-looking and marginal vs. average rates. Furthermore, it is important to observe a distinction between 'macro-level' and 'micro-level' rates.

All forward-looking rates are 'micro-level' rates, with analysis being carried out of a hypothetical prospective investment project at the firm level. Furthermore, these methods can only be used to calculate effective corporation tax rates. Effective marginal tax rates can only be calculated by assuming a special type of investment in a certain branch. The results depend on the assumptions concerning deprecation rates and discount rates (because future cost and profits have to be discounted); they also depend heavily on the assumptions made about future tax systems. Moreover, in calculating effective marginal tax rates, it has to be assumed that firms do not adjust their assets and financial structures in response to tax incentives. The construction of such rates is thus very difficult and open to criticism (Martinez-Mongay, 2000, p. 8; Carey and Tchilinguirian, 2000, p. 4). Furthermore, the different degrees of complexity in tax credits, exemptions and deductions that exist between countries make such marginal effective rates inappropriate for macroeconomic modelling, especially in an international context (Mendoza et al.,1994, pp. 298 and 300).

Moreover, it is important to note that marginal rates are calculated in order to ascertain whether an additional investment project is profitable after accounting for taxation. In short, these rates only affect marginal investment decisions (Richter et al., 1996, p. 39).

The standard method for calculating forward-looking marginal tax rates was provided by King and Fullerton (1984). This approach was used extensively, for example, in an OECD study (1991) or more recently in a study by Baker and McKenzie (1999).

A method for calculating forward-looking and project-based average tax rates, which is an extension of the King-Fullerton approach, was provided by Devereux and Griffith (1998a). This approach was also used in a recently published study of the Commission of the European Communities (2001e). However, a detailed presentation of those methods is beyond the scope of this study. The basic approach is to construct a forward-looking hypothetical marginal investment project. The effective average tax rates on this investment are a weighted average of an effective marginal tax rate and an adjusted statutory tax rate, where the weights depend on the profitability of the investment (see Devereux and Griffith, 2002, p. 1). The definition of the Devereux/Griffith-AETR indicates that the rates should be close to the statutory tax rate.[4]

If one is concerned about the impact taxes have on companies' locational decisions, one has to calculate average effective tax rates (Richter et al., 1996, p. 14). Where locational decisions are concerned, it is immaterial whether a marginal investment is profitable, but a firm has to choose between a number of valuable investments: firm locations. For locational decisions the decisive factor is the difference in the average effective tax burden of a number of projects (Spengel and Lammersen, 2001, p. 9).

All backward-looking rates are average rates. Furthermore, they are 'micro-level' rates if the firm-specific average rate is calculated, yet they are 'macro-level' rates if implicit rates are calculated. Being ex-post rates, no assumptions have to be made about future tax systems or future tax laws.

Backward-looking micro-level rates have been growing in importance since 1985 when the Directorate-General for Economic and Financial Affairs of the European Commission started building up a databank for the annual accounts, with the aim of analysing the financial structures of European companies and American/Japanese corporations. This database called 'Bank for the Accounts of Companies Harmonized' (BACH) is, therefore, of use in calculating micro-level average effective rates on corporations (see Nicodeme, 2001, p. 18). This database only allows for effective average tax rates on corporation profits.

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[4]   For such rates see Commission of the EC (2001d), Table 2-5.

As mentioned above, this study is not only concerned with the tax burdens borne by corporations, but also with the tax burdens borne by other factors and resources. Furthermore, the study is intended to highlight the differences in the distribution of tax burdens between the EU and the CEECs and to pinpoint the implications they bear for the eastern enlargement of the EU. We thus need a macro-level measure which permits the calculation of the tax burdens borne by several different factors; for the purposes of this study, it could be used to calculate backward-looking macro-level average tax rates.

As if the complexity of the alternative ways of calculating effective tax rates were not enough, a number of (slightly) different methods can be used to estimate backward-looking macro-level average tax rates.

The standard method for calculating effective average tax rates at the macro-level was proposed in a seminal article by Mendoza, Razin and Tesar (1994).

This method – hereafter termed MRT – is used in its pure form or in slightly modified versions by several institutions publishing data. For instance, the European Commission regularly publishes implicit tax rates on a base conceptually equivalent to the MRT approach in 'Structures of the Taxation Systems in the European Union'. The OECD publishes effective average rates based on the MRT approach as well as on an approach proposed by Carey and Tchilinguirian (2000), which is merely an updated version of the MRT methodology. Moreover, the ECFIN also publishes implicit rates.

One of the main differences between the various implicit tax rates published by these institutions is that they use different data bases. The OECD uses its Revenue Statistics and its National Accounts. The European Commission uses the new Cronos Databank set up by EUROSTAT and the rates published by ECOFIN are based upon the AMECO-Databank. As the detailed study by Martinez-Mongay shows, the differences between the various methods used and the differences between the rates published are negligible or relatively small. Sensitivity analyses suggest that the main consequences of applying alternative criteria for calculating effective tax rates are changes in the levels of the rates, without affecting the evolution over time or cross-country comparisons' (Martinez-Mongay, 2000, pp. 5, 11 and 57).

In our study we are going to use the 'pure' MRT methodology to calculate effective tax rates. The main reasons for this are the negligible differences between the results of the pure approach and those of the modified versions, and especially the data restrictions.[5]

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[5] This last point is explained below.

In order to show how we calculated the average effective tax rates, the following section presents a short introduction to the method developed by MRT.

MRT considered an economy with three 'goods', consumption, labour and capital, and three different economic agents, households, firms and the government. These agents are linked by supply and demand decisions as well as by government spending and financing. By distinguishing between post-tax prices and pre-tax prices, MRT deduced explicitly three different ad valorem tax rates on labour, consumption and capital. By using the household budget constraint, MRT deduced appropriate quantitative measures that permit the calculation of effective average tax rates on the basis of tax revenues and the tax base. They conclude 'The issue – for calculating effective average tax rates (the authors) – [...] is, therefore, the determination of measures of tax revenues and tax bases that reflect closely the corresponding measures of post-tax and pre-tax valuations of income and expenditure' (Mendoza et al., 1994. p. 302).

MRT go on to derive effective average tax rates by using the OECD Revenue Statistics and OECD National Accounts (SNA68) nomenclature. For calculating tax revenues, they suggest using the following variables from the Revenue Statistics:

> 1100 = Taxes on income, profits and capital gains of individuals
>
> 1200 = Taxes on income, profits and capital gains of corporations
>
> 2000 = Total social security contributions
>
> 2200 = Employer's contribution to social security
>
> 3000 = Taxes on payroll and workforce
>
> 4100 = Recurrent taxes on immovable property
>
> 4400 = Taxes on financial and capital transactions
>
> 5110 = General taxes on goods and services
>
> 5121 = Excise taxes

For calculating a measure of the tax bases, they suggest using the following variables from the National Accounts (SNA68):

> C = Private final consumption expenditure
>
> G = Government final consumption expenditure
>
> GW = Compensation of employees paid by producers of government services
>
> OSPUE = Operating surplus of private unincorporated enterprises
>
> PEI = Household's property and entrepreneurial income
>
> W = Wages and salaries
>
> OS = Total operating surplus of the economy

From these variables, effective average tax rates on consumption, labour and capital can be easily calculated.

It has to be noted that the Net Domestic Product at factor cost consists of the sum of compensation of employees (gross wages and salaries) and net operating surplus, which is a residual item that cannot be calculated directly. Thus, the compensation of employees represents the value-added generated by the production factor, labour; net operating surplus represents the value-added generated by the production factor, capital.

Effective tax rate on consumption

The effective tax rate on consumption, τ_C is the percentage difference between the post-tax consumer price and the pre-tax consumer price for an aggregate consumer good. It is measured as follows:

$$\tau_C = \left[\frac{5110 + 5121}{C + G - GW - 5110 - 5121} \right] * 100 \qquad (1)$$

The nominator is the sum of indirect taxes. Inclusion of G-GW in the denominator is necessary, because government final consumption expenditure includes the compensation of employees paid by suppliers of government services. Indirect taxes are not levied on that compensation. 5110 and 5121 have to be subtracted, because C represents post-tax consumption expenditures.

Effective tax rate on labour income

This rate τ_L is calculated as:

$$\tau_L = \left[\frac{\tau_H * W + 2000 + 3000}{W + 2200} \right] * 100 \qquad (2)$$

Whereby as an intermediate step

$$\tau_H = \left[\frac{1100}{OSPUE + PEI + W} \right] * 100 \qquad (3)$$

The second formula represents the average statutory tax rate on total income from profits, wages and salaries and capital gains of individuals. Therefore, one has to assume that all income components of households are taxed at the same rate: i.e. one has to assume a synthetic personal income tax, where all sorts of personal income are taxed at the same tariff τ_H that is not directly observable in the OECD-statistics. It has to be calculated first.

On using it in the first formula, it gives the effective average tax rate on labour income, including social security contributions.

Effective tax rate on capital income of households and all firms

Assuming that all income components are taxed at the same rate, the effective tax rate on capital income τ_K can be calculated as:

$$\tau_K = \left[\frac{\tau_H * (OSPUE + PEI) + 1200 + 4100 + 4400}{OS} \right] * 100 \qquad (4)$$

The nominator is the sum of capital taxes paid by both households and corporations. The denominator is the total net operating surplus of the economy, which is a measure of the value-added generated by existing capital stock. It is to be noted that the inclusion of OSPUE in the nominator and exclusion of this variable in τ_L implies that capital income is the sole source of income that 'private unincorporated enterprises' – i.e. self-employed persons – have.

Effective tax rate on income of corporations

Mendoza et al. do not provide an explicit formula for calculating the average tax rate on corporate income (corporate capital), but footnote 9 (in their article) offers an overview of how to calculate such a rate.

$$\tau_{KC} = \left[\frac{1200}{OS - OSPUE} \right] * 100 \qquad (5)$$

The nominator is the sum of taxes on income, profits and capital gains of corporations. The denominator is that share of the value-added derived from enterprises that belongs to corporations.

The MRT approach offers a host of advantages, one of the most important being that it yields effective average rates at the macro-level. The calculated rates are, therefore, suitable for comparing the distribution of tax burdens in a number of economies. Furthermore, it is easily done and the use of OECD data streams ensures international comparability of rates. Moreover, these effective average rates include all taxes levied on a special good – not just the one tax included in nominal tax rates. By using an appropriate denominator as distinct from tax quotas, the effective tax base is better approximated.

The main drawback to the MRT methodology is that it assumes that all types of income streams (labour income and capital income) are taxed at the same average statutory tax rate. This is due to MRT using the total personal income tax ratio as an intermediate step

in calculating labour and capital income tax ratios. MRT defend this assumption on the grounds that in the OECD member countries statutory tax rates on different types of income do not differ greatly within the individual countries (Mendoza et al., 1994, p. 304). Therefore, one modification of the MRT rates is to account for differences in the average statutory tax rate on the different types of income. Following Jarras and Obermair (1997) this task can be handled in three ways. First, it is possible that the Revenue Statistics provide detailed information on the taxes levied on both capital and labour; however, as Jarras and Obermair mention, this is rarely the case. The OECD Revenue Statistics provide that information for a few countries such as the Netherlands and Greece. A second way out can be to draw on detailed information that national authorities provide on the average statutory tax rate on labour and capital income. Thirdly, one can approximate the average statutory tax rate on labour[6] by dividing the sum of the compensation of employees by the sum of the compensation of employees and the operating surplus of private unincorporated enterprises (see Jarras and Obermair, 1997, p. 7). It should be mentioned that this third approach, *inter alia*, implicitly assumes that non-self employed and self-employed use the legal possibilities of current tax laws to the same extent so as avoid taxation. This would also seem to be a major assumption. Since all three possible ways of accounting for differences in the average statutory tax rates are either impractical for most EU countries and all CEECs or – like the third approach – are also implicitly predicated on sweeping assumptions, we cannot or will not carry out modifications of this sort.

Another drawback to the MRT approach is that the formulae use highly aggregated variables, as a result of which some debatable assumptions have to be made. Examples of this are the assumptions that:[7]

– Self-employed income is wholly capital income,

– A synthetic personal income tax is assumed for each and every country,[8]

– In the case of social security contributions, no distinction is made between pay-as-you-go systems and funded pension systems.

A further drawback of the MRT approach – and likewise all of the modified versions – is that the denominator still does not provide an exact measure of the value-added created by a resource or good. The reasons for this are to be found in the different definitions of tax bases in the National Accounts nomenclature and the tax laws. Implicit tax rates are measured on the basis of National Accounts data, but the tax bases effectively applied are

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[6]   As the sum of taxes on labour and capital have to be equal to 1, the average statutory tax rate on capital is 1 – the average statutory tax rate on labour.

[7]   For a series of other aspects of this kind see Carey and Tchilinguirian (2000), pp. 10f and pp. 23f.

[8]   For example, Austria has a kind of dual personal income tax; in Austria capital gains tax is excluded from the general income tax and calculated at a tariff of its own.

deduced from tax laws. Therefore, one has to adjust the National Accounts data so as to account for its main differences to tax laws and calculate 'adjusted implicit effective average tax rates'. That, however, is no easy task, especially if one wants to compare the tax burdens in several independent countries with different national accounts systems and/or tax laws.[9] In this study, therefore, no adjustments of this sort are made.

The practical disadvantages are that: (a) the MRT approach is based upon SNA68 and not SNA93; (b) the MRT approach is not directly applicable to non-OECD countries; and (c) OECD data streams lag several years behind.

That notwithstanding, the approach is very useful if one is trying to highlight the main differences in tax burden distribution across groups of countries. All the more so, if :(a) the rates are averaged over the several country groups and the averages are compared; (b) if the rates trend is being analysed; and (c) one bears in mind the drawbacks to the MRT approach.

After having specified how the tax burden can be measured, it only remains to highlight the theoretical and empirical effects of variations in the tax burden.

As for the theoretical effects, we are not (solely) concerned with the microeconomic effects taxes have on labour supply, labour demand, savings, investments, risk taking, etc, but (more particularly) with the macroeconomic effects of taxation. This is because we have tried to reveal the differences between the tax burdens in the EU and the CEECs and point up the potential economic implications these differences bear. Hence, our conclusions will itemize the main theories relating to tax competition between systems (countries).

As for the microeconomic effects of taxes, any conclusions to be drawn depend on interaction between the substitution- and income-effects generated via a variation (and/or introduction) of a (new) tax rate. Models of this kind are part and parcel of almost any textbook on public economics.[10] Therefore, we shall not elaborate further on these theoretical topics.

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[9]   For an attempt to meld Austria's National Accounts (ESA 79) and Austria's tax laws see Kostal (2000), pp. 28ff.

[10]   See, for example, Wellisch (2000), chapter 4; Stiglitz (2000), chapters 19 and 20.

Summary

Literature offers several measures of tax burdens from which to choose:

1. *Nominal tax rates and tariffs. However, these are crude measures of the actual tax burden, because they fail to take into account tax laws concerning the tax base and do not pay any regard to interdependences between the tariffs of different taxes levied on the same tax base.*

2. *Tax quotas. These are given by the ratio of an economy's tax revenue from a particular resource – such as labour – to an indicator of the value-added created by the economy as a whole or that resource.*

3. *Effective tax rates. These have become standard tools for measuring tax burdens. Effective tax rates, however, can themselves be subdivided into several measures:*

   – *Marginal and average forward-looking tax rates. These are 'micro-level' rates as they are based on the analysis of a hypothetical investment project of a firm. These tax rates can only be used to calculate effective corporation tax rates. The different degrees of complexity in tax credits, exemptions and deductions that exist between countries make such marginal effective rates inappropriate for macroeconomic modelling, especially in an international context.*

   – *Backward-looking rates. These are always average rates, but can be broken down into micro- and macro-level rates. They are 'micro-level' rates if the firm-specific average rate is calculated, yet 'macro-level' rates if implicit rates are calculated. Being ex-post rates, no assumptions have to be made about future tax systems or future tax laws.*

With respect to effective tax rates, the measures most appropriate to our purpose were backward-looking average effective tax rates. We decided to follow the standard method for calculating effective average tax rates as proposed by Mendoza, Razin and Tesar (1994). Although average effective tax rates in general and the method developed by Mendoza et al. in particular are open to criticism, it is still the most useful approach if one is trying to highlight the main differences in tax burden distribution across groups of countries. Furthermore, the method we have chosen enables one to distinguish between four different ad valorem tax rates on: labour, consumption, capital and corporations.

3 Aspects of taxation in the EU and the countries of Central and Eastern Europe (CEECs) and ex-post tax rates for the CEECs and the EU

In this section we will enter into a discussion about the general features of EU tax systems, which will be followed first by an historical and then theoretical (albeit informal) overview of the manner in which taxation was, and should ideally have been, handled before and after the transformation of the CEECs from centrally planned economies to market economies along more or less Western lines. Thereafter, we should be able make some projections about the main differences between EU and CEEC tax-structures prior to putting those projections to an initial empirical test comparing statutory tax rates and tax quotas.

Tax systems within the European Union

Tax systems in the EU countries create the general impression that they are rather inhomogeneous and differ significantly from each other. That notwithstanding, basically all EU tax systems have two features in common:

1. They are tax systems as applied by more or less developed countries and rely on market forces as the primary resource allocation tool ; and

2. They have evolved over time.

These two characteristics are only of minor importance in the current tax-related debate sweeping the EU: they are equally insignificant in the debate surrounding future tax- policy strategies within the EU. However, those very same characteristics are the underlying source of the current tax-related problems facing the EU; they are thus also of importance to any assessment of tax-related problems arising in connection with the eastern enlargement of the Union. Hence it would seem appropriate to discuss both characteristics in greater detail.

re 1

Tax structures differ substantially in developed and less developed countries. Examination of empirical data from industrial and developing countries reveal some 'stylized facts' which can be summarized as follows (Tanzi and Zee, 2001, p. 5).

The ratio of income to consumption taxes in developed countries is about double the corresponding ratio in developing countries. Stated differently, less developed countries draw heavily on indirect taxes, whereas industrial countries rely on direct taxes.

Developed countries raise about four times more revenue from personal income tax than from corporate income tax. This difference is based on such factors as the ability to control and forecast taxable behaviour (e.g. official labour supply) as well as the ability to collect taxes. Both factors reflect other stylized facts typical of less developed countries: the importance of the informal market; and the low rate of literacy that prevents potential

taxpayers from declaring their tax liabilities. On the other hand it is difficult to establish an efficient tax administration without a well-educated and well-trained staff (Tanzi and Zee, 2001, p. 1). Moreover, other factors such as the highly skewed income distribution in those countries can also help to explain the 'stylized facts'. This stems from the fact in developing countries political power usually rests with the rich, who – in keeping with their utility-maximizing behaviour – refrain from hurting themselves by increasing taxes on personal income.

Less developed countries generate a far larger share of their tax revenue from taxes on trade. This is borne out by the ongoing integration process in developed economies, leading to the reduction and abolition of trade tariffs and/or taxes.

All in all, economic development tends to induce a relative shift in the composition of revenue from indirect to direct taxes (Tanzi and Zee, 2001, p. 5).

re 2

Up until the nineteenth century, taxes played a minor role as sources of a state's fiscal revenues in those countries that constitute the EU membership today. In earlier times non-monetary payments such as liabilities in form of subservience and monetary revenues from import tariffs were most important.

It was not until the beginning of the seventeenth century when excise taxes entered the scene (e.g. 'window tax' in England) that taxes started to become a state's most important source of revenue. The trend was reinforced by the growing importance of taxes on profits. Hence, for a major part of history 'objective taxes' levied on, for example, the purchase or ownership of special goods played the dominant role in Europe.

Furthermore, it was not until 1799 that income tax came on the scene for the first time. At that time, Great Britain started to levy taxes on four different types of income: i.e., it levied a schedule tax. That tax, however, was classified as an 'odious impost', only to be abolished in 1816 (Homburg, 1997, p.45f).

It was not until the end of the nineteenth century that income tax experienced a renaissance, followed by a steep rise to its current importance. It was the German economist, Adolph Wagner, who distinguished between the 'fiscal aims' and 'non-fiscal aims' of taxes (Homburg, 1997, p. 48). Within the non-fiscal category, concerns about a fair and equal (both horizontally and vertically) income distribution played, and still plays, a major role. To achieve this goal a new form of tax was established: direct and progressive income tax. It took into account the tax payer's personal characteristics and can thus be classified as a 'subjective tax (cf. the Prussian reform under Minister of Finance Miquel in

1891 or the Austrian tax reform of 1896) (Bachinger et. al., 1987, p. 33; Kolms, 1988, pp. 320ff).

The growing importance of progressive income tax is based on several factors that relate directly to the 'stylized facts' of tax systems in developing countries mentioned above:

Income tax took on increasing importance as society changed its value judgments in favour of a fair income distribution. The 'ability to pay principle' gradually grew in importance up until the end of the nineteenth century – even in liberal nations such as the United Kingdom (Homburg, 1997, p. 47).

In countries where political power rests solely with the rich – as in many developing countries – shifts in value judgments are less likely to occur. At the end of the nineteenth century, parts of Europe witnessed a process of 'social revolution', resulting in a gradual increase in the political influence of the working class.[11]

Furthermore, the importance of income tax grew because developments in economic structures – such as the process of industrialization which brought about a shift from the informal agricultural sector to the formal industrial sector – made it easier to collect taxes that could accommodate the taxpayers' personal characteristics.

In summary, we can conclude that in many current EU member states direct and indirect taxes have constituted the most important sources of a state's revenues since the beginning of the twentieth century.[12] Although the historical process of taxation went in the basically same direction throughout Europe, the speed and extent of the shift towards income taxation in particular and the extent of changes in tax structures in general differed considerably from country to country. Today, all of the EU member countries more or less rely on taxes levied on income and profits (especially personal income tax), as well as on taxes on goods and services (OECD, 1999, p. 70).

All EC member countries have introduced value-added tax (VAT); almost all of them – except Sweden[13] – levy a federal income tax with increasing marginal tax rates, as well as one of various forms of tax on corporation profits. The laws concerning tax rates and tax bases, however, differ substantially among EU member countries (see, for example, Mennel and Förster, 2000, pp. 3ff and 27ff). These variances in tax laws are due to

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[11]   See Bachinger et al. (1987), pp.14ff for the developments in Austria.

[12]   It should be mentioned that during World War II in the Third Reich and during the fascist period in Italy the 'non-fiscal aims' of (direct) taxes were suppressed in favour of the 'fiscal aims' of financing the direct costs of the war (Homburg, 1997, p. 51).

[13]   Sweden has a constant tariff of 25% of taxable income combined with a 'zero rate' for low income brackets and a relatively high income tax of 31% of taxable income accruing to the local authorities (Mennel and Förster, 2000, p. 27).

differences in both the political and hence social systems of the individual EU countries. For example, the tax-to-GDP-ratio in Austria is about 29% (1997); that in Denmark about 48% (1997) (OECD, 1999,. p. 68). This difference is due to the fact that Austria funds its social security expenditures through personal social security contributions, whereas Denmark finances these expenditures via the general budget. One, thus, has to include social security contributions when comparing tax-to-GDP-ratios. If the contributions are included, the tax-to-GDP-ratios in both countries are similar (Austria about 44% and Denmark about 49%; OECD, 1999, p. 67); that notwithstanding, the structures are different, despite the fact that both countries are examples of 'welfare-states'.

The various income tax tariffs across the EU member countries are another example of the differences in current tax laws. For instance, Table 1 below shows that at the federal level most of the countries seem to rely on a progressive income tax tariff, yet the tax brackets vary substantially in terms of rates, number and volume. For instance, Luxembourg has 18 tax brackets, the lowest tax rate being 6% of taxable income and the highest rate 46%, whereas the United Kingdom has 3 tax brackets, the lowest rate being 20% of taxable income and the highest 40%. Furthermore, the variations in federal structures in the EU countries compound the differences in the tax systems. For example, Austria has just one income tax; it is collected at the federal level and distributed to the nine Austrian provinces and a number of communities via the special system of fiscal federalism in Austria. In Italy or Belgium, on the other hand, public authorities at a lower level are empowered to levy income tax of their own (Mennel and Förster, 2000, p. 27).

It should be mentioned that not only do income tax rates differ, but also the definitions of tax bases.

Where the taxation of corporate profits is concerned, the situation is even worse because not only do different rates and tax bases apply, but the EC also applies heterogeneous systems of corporate taxation.[14]

This brief outline of current tax structures in the EC should provide some indication of the situation whereby, depending on whether a country was dominated by liberal or paternalistic views of the state, the size and structure of the states in general, and their tax systems and tax laws in particular, vary greatly across the EU.

Within an integrated economic area such as the EU, however, it is necessary to create by some means or other a more homogenous tax structure system. The EC is trying to achieve greater homogeneity through its current tax strategies.

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[14]   This was one of the main findings of the Ruding-Report. See below.

Table 1

Bandwidth of income tax rates applied in the EU

(federal level, in per cent of taxable income base, end of 2000)

	First rate	Highest rate
State		
B	25	55
DK	5	35
GER	25,9	53
EL	5	45
E	18	48
F	9,5	54
IR	22	44
IT	18,5	45,5
LUX	6	46
NL	41,2	60
A	21	50
P	14	40
FIN	5,5	38
S	25	25
UK	20	40

Source: Mennel and Förster (2000), p. 27.

Current tax policy strategies pursued by the European Union

The apparent differences between tax laws and tax structures within the EU are seen as a major obstacle to further EU integration, because 'in open economies linked by trade and capital flows, the tax policy of one country may affect economic activity and public revenue in other countries' (Sørensen, 2001, p. 431).

Indeed, despite the fact that the EU as an supranational legal authority implements economic policy at the level of the European Community (EC), particularly in the form of special legal provisions (e.g. directives and regulations), only a few legally binding regulations have been adopted in the important and inhomogeneous sphere of taxation. Furthermore, the regulations and directives that were passed applied almost exclusively to indirect taxes.

One of the main obstacles to speeding up the tax-co-ordination process is the unanimity requirement in the field of taxation; this unanimity rule enables a single member state to veto proposals for tax law changes. These vetoes are quite likely to occur, if one recalls that tax policy is one of the few economic tools available to a member country within an integrated European monetary union based on a supranational monetary and exchange rate policy, as well as a growth and stability agreement, both of which restrict active fiscal

policy measures. That notwithstanding, some (supranational) tax law measures have been adopted.

In the field of indirect taxation, important regulations include the sixth VAT-directive of 1977, which established a harmonized tax base for VAT within the EU, and Article 93 of the EU Treaty, which stipulates a harmonization of the tax systems with respect to indirect taxation. Particularly in the field of excise taxes (e.g. 'sin taxes' such as duty on alcohol and tobacco), detailed regulations, viz. minimum tax rates, have been enacted since 1992. These regulations are necessary since the EU budget is funded in part through revenue derived from VAT, and excise taxes are an important factor impacting on competition in a common market.

One can conclude that as far as indirect taxation is concerned, the EC pursues a policy of full tax harmonization (Randzio-Plath, 1999, p. 665; Commission of the EC, 2001, p. 10). This strategy was stipulated in Article 93 of the EC-Treaty. Full harmonization, however, has yet to be achieved as the current variations in VAT rates within the EU would seem to indicate.

The EC plans to implement the 'origin-principle'. Owing to friction that arose during the transition period, i.e. revenue shortfalls in some member states, following the adoption of the 'origin-principle' and given the disagreement on potential remedies for such shortfalls (clearing mechanism), current arrangements are still based on a 'system of deferred payments': a variant of the 'destination-principle'. However, the member states have already agreed, in the form of directive 92/111 of December 1992, on two minimum VAT rates: 15% of the tax base (minimum standard rate) and 5% (reduced or lower rate) of the tax base[15], respectively. Furthermore, special rates (e.g. 'super reduced rates', 'parking rates'[16] and 'zero rates') can be levied on purchases in special product groups.[17] Moreover, the member states are entitled to levy a reduced rate on certain labour-intensive services (Official Journal of the EC, 2000, p. 10; Commission of the EC (1999), Proposal 1999/62-final). The minimum standard rates are binding up until the end of December 2005 (Commission of the EC (2000b), Proposal 2000/537-final; Official Journal of the EC, 200b, p. 265; Directive 2001/41/EC).

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[15] The product groups which qualify for reduced VAT taxation are listed in Annex H of Directive 77/388/EEC.

[16] This is a special rate for those countries which initially applied a reduced rate on goods that are no longer eligible (Commission of the EC, 2000a, p.13).

[17] For example, Greece, Spain, France, Ireland, Italy and Luxembourg levy a 'super reduced rate' on book prices and Belgium, Greece and Luxembourg levy a 'parking rate' on certain energy products (Commission of the EC, 2001b, document 2905/2001). See Table 2.

Table 2 below shows the current (May 2001) structure of VAT tax rates within the EC. As can be seen, the standard rate varies between 15% of tax base (Luxembourg) and 25% of tax base (Denmark and Sweden). The lower rates vary considerably, too.[18]

Table 2

List of VAT rates applied in EC Member States

(in per cent of tax base)

State	Super-reduced rate	Reduced rate	Standard rate	Parking rate
B	-	6	21	12
DK	-	-	25	-
GER	-	7	16	-
EL	4	8	18	-
E	4	7	16	-
F	2.1	5.5	19.6	-
IR	4.2	12.5	20	12.5
IT	4	10	20	-
LUX	3	6	15	12
NL	-	6	19	-
A	-	10/12	20	-
P	-	5/12	17	-
FIN	-	8/17	22	-
S	-	6/12	25	-
UK	-	5	17,5	-

Source: Commission of the EC, Doc/2905/2001b, p. 2.

The longer run aim is to introduce the origin-principle. However, as mentioned above, given the combination of friction during the transition period and the unanimity rule, it will be no easy task to effect the shift to the origin-principle as it requires full harmonization of tax bases and tax laws so as to avoid distortions due to inhomogeneous tax structures. Therefore, the EC strategy is to optimize the *status quo* (system of deferred payment) by harmonizing current tax laws within the member states (Commission of the EC, 2001a, p. 12).

In the field of direct taxation, however, only a limited number of legally binding regulations had been passed by the end of the twentieth century. In 1990 two important directives were passed: the parent/subsidy directive and the merger directive (Nias and Purcell, 1999, p. 11). They were designed to bring the bilateral double taxation agreements into line with a formal European legal basis. Furthermore, the 'state aid article' 87-89 of the

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[18] These lower rates are especially levied on the purchase of foodstuffs, books and newspapers, as well as medical and dental care services (Commission of the EC, 2001b, Doc/2905/, pp. 3f).

EU Treaty stipulates that depending especially on the impact the above regulations have on the functioning of the common market, special tax benefits for particular groups of tax payers designed solely to attract (foreign) capital shall be subject to the control and sanction of the Commission of the European Communities, which pursues a rigid policy in this respect (Blumenberg and Lausterer, 1999, p. 2). Article 87 also provides for some exemptions. For example, in January 2002 the Commission published three new 'block exemption regulations'. One of them relates to aid given to small and medium-sized enterprises (SMEs). This is of importance to some EU countries such as Austria and the CEECs which are dominated by SMEs. Under the 'block exemptions' ruling, as long as state aid meets all the terms of the exemption, the funding body need not go through the full notification procedure and await the approval of the Commission (see The Scottish Parliament, 2001, p. 3).[19] In brief, there is room for state aid to SMEs.

Moreover, in December 1990 the Commission of the EC set up a committee chaired by Onno Ruding (Ruding Report) and entrusted it with the task of evaluating the need for greater harmonization of business taxation within the EC. The committee found major differences in both the corporate tax systems and the tax treatment of cross-border income flows (dividends, interest and royalty payments) that bore severe implications for the goal of further integrating Europe. Under separate headings 'elimination of double taxation', 'corporate taxes' and 'other issues', the committee put forward detailed recommendations for equalizing the inhomogeneous tax structures (see Commission of the European Communities, 1992, pp. 13ff). One main conclusion was that market forces and tax competition alone cannot achieve the goal of non-distorting (direct) tax systems within the EC. The committee emphasized the need for an active EU tax harmonization strategy at a minimal level essential to removing discrimination and major distortion[20]. Following those recommendations, the EC adopted a tax co-ordination strategy as distinct from a tax harmonization strategy with respect to direct taxation (Randzio-Plath, 1999, p. 665).

The ever increasing tax competition in the field of direct taxation since the start of the common market has resulted in numerous attempts to co-ordinate direct taxation systems not only within the EC, but also in a global context. On the one hand, the OECD Committee of Fiscal Affairs set out recommendations for dealing with harmful tax competition in 1998.[21] On the other hand, on 11 December 1997 the ECOFIN – the council of EC finance ministers – adopted a tax package to combat harmful tax competition, which

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[19] An overview of the situation in the field of 'state aid' is provided by the Commission of the EC (2001c), pp. 6f. Ireland is the EU country with (in 1999) both the highest level of state aid grants and the highest growth rate in state aid grants.

[20] Economists are currently disputing the need for an active tax harmonization strategy. 'Neo-classical public economists stress economic distortions induced by differential taxation and therefore favour harmonization; political economists focus on political distortions and therefore reject harmonization' (Frey and Eichenberger, 1996, p. 335). See the theories of tax competition above.

[21] See in particular OECD (2000a) and Recommendations by the Committee on Fiscal Affairs.

had been proposed to the Council by the Commission of the EC in October 1997. The package contained (Commission of the EC, 1997, p. 5):

1. A code of conduct designed to eliminate harmful tax competition in the field of business taxation

2. Measures for eliminating distortions in the taxation of capital income;[22] and

3. Measures to eliminate withholding taxes on cross-border interest and royalty payments between companies.

As mentioned above, the ECOFIN approved the code of conduct on 1 December 1997 and called upon the Commission to put forward proposals for: (a) a directive on the taxation of savings; and (b) a directive on interest and royalty payments between companies (Official Journal of the EC, 1 January 1998, p. 1ff). Furthermore, in the same agreement in December 1997, the Commission of the EC committed itself to publishing guidelines on the application of the state aid rules, which were subsequently adopted on 11 November 1998 (Van den Abeele, 2001, p. 2). They stipulate rigid control of state aid measures via tax privileges (Blumenberg and Lausterer, 1999, p. 3).[23]

It should be stressed that the code of conduct is a political commitment and does not affect the Member States' rights and obligations or the spheres of competence of the Member States and the Community resulting from the Treaty'[of the EC] (Official Journal of the EC, 1998, p. 2f).[24] However, it does bear substantial political weight because by adopting the code the member states agreed to roll back those current tax measures that constitute harmful tax competition and to refrain from introducing any new measures of that kind (Van den Abeele, 2001, p. 3). A list of harmful measures was published in February 2000 on the Council's website.[25]

On 26 and 27 November 2000 the ECOFIN Council reached agreement on key elements of the topics approved on 1 December 1997. The main points of agreement were (Van den Abeele, 2001, pp. 4f):

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[22] The Commission proposed that the member countries might either introduce a system of information exchange or a withholding tax of at least 20% of the tax base (Commission of the EC, 2001a, p. 32).

[23] It should be mentioned that from a theoretical point of view it is possible that 'preferential regimes', with which the code of conduct deals, can ease the effects of tax competition. With 'preferential regimes', countries can confine their most aggressive tax competition to individual sectors of the tax system: specifically to the most mobile tax bases. This means that the taxation of less mobile tax bases is less distorted by tax competition (see Keen, 2001, p. 758).

[24] For a detailed description of the contents of the code of conduct see *Official Journal of the EC*, 1 January 1998, p. 3ff.

[25] See http://ue.eu.int/newsroom under miscellaneous and Code of Conduct (Business Taxation): Primarolo Group, Annex A (valid on March 15th, 2002).

With respect to the taxation of savings[26] income, the ECOFIN agreed that, with the exception of Austria, Belgium and Luxembourg, which would be allowed to apply a withholding tax over a seven-year transitional period at a rate of 15% of the tax base for the first three years and a rate of 20% for the last four years, all Member States would have to introduce a system of sending information to the member state in which the tax payer is resident. In essence, the ECOFIN agreed to introduce a 'coexistence model' in the short term (Official Journal of the EC, 1998, p. 6)[27], while retaining the 'information exchange' system as its ultimate goal (Official Journal of the EC, 2002, p. 55).

As for the code of Conduct, the ECOFIN stipulated that all harmful tax measures – as listed in Annex A of 'Code of Conduct (Business Taxation): Primarolo Group – must be dismantled by 1 January 2003 and cease by the end of 2005.

As for the taxation of interest and royalties payments between companies, the ECOFIN agreed upon very detailed measures such as the list of companies to be included in the directive, as well as the possible transition periods.

The whole tax package outlined above has to be implemented (i.e., all the requisite legal steps have to be adopted) by the end of December 2002.

Recently in October 2001, the Commission of the EC published a working paper entitled 'Company Taxation in the Internal Market'. It highlights differences in the effective level of corporate taxation and identifies the main tax provisions that tend to hamper cross-border economic activity in the EU. The study used the Devereux/Griffith methodology for calculating forward-looking effective average tax rates. The findings show that the levels of effective average tax rates within the EU differ greatly, with Germany at the high end and Ireland at the low end in 1999 (see Commission of the EC, 2001e, p. 6).[28] According to the study, the main reason for this divergence in effective taxation is due to the coexistence of 15 different tax systems. Therefore, it is necessary to reduce these differences (see Commission of the EC, 2001d, p. 18). As the EU follows a strategy of 'tax co-ordination' and not 'tax harmonization', the solution to these problems rests to a great extent with jurisdiction at the national level. The main policy advice offered in the study is that significant benefits would be generated by providing a common consolidated tax base for EU-wide activities related to companies (see Commission of the EC, 2001e, p. 17). The introduction of a consolidated tax base means that companies conducting EU-wide

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[26] Because financial capital is highly mobile and the EC is surrounded by countries classified as 'tax havens', it is of special interest that those countries adopt similar measures. For instance, Switzerland proposed introducing a withholding tax on interest from savings deposited by foreigners.

[27] This agreement will receive a legal basis in form of a directive.

[28] It has to be mentioned that in 2000 Germany carried out a substantial tax reform, with the aim of lowering the effective tax burden on corporate profit.

business would be allowed to calculate the profits of the company as whole on the basis of a single nomenclature and so compile a consolidated balance sheet for all parts of the company. This last point is especially important because the study claims that a serious problem occurs in the area of transfer pricing. The problem comprises high compliance costs and potential double taxation for intra-group transactions (see Commission of the EC, 2001e, p. 10). The study also proposes alternative ways of implementing a consolidated tax base (e.g. residence (of the parent) principle or harmonized tax base). The alternatives imply different degrees of tax harmonization; however, all of them call for the introduction of some sort of 'clearing mechanism' because each country in which the company operates needs to receive that part of the profit tax payments generated within its borders. Determining the best alternative and the final configuration of the clearing mechanism calls for further elaboration (see Commission of the EC, 2001d, p. 19). As with the origin-principle in the field of indirect taxation, the introduction of a consolidated tax base is a long-term task. In the short run, the code of conduct and the state aid rules should obviate harmful tax competition.

In summary, we can conclude that current tax structures within the EC are still inhomogeneous. Especially in the field of indirect taxation, however, a series of measures has been adopted for harmonizing the systems since the EC Treaty of 1992.[29] In the field of direct taxation, only a limited number of legally binding steps have been adopted. However, the process of tax co-operation – as distinct from harmonization – has been picking up speed since the turn of the century. For both types of taxes, the regulations have the same aim – helping to establish a properly functioning, highly integrated common market.[30]

This target seems to be jeopardized by the prospective eastern enlargement of the EU, because as former centrally planned economies, the candidate countries of Central and Eastern Europe would appear not only to have adopted different tax laws, but also as transitional economies, to be applying tax laws that are not fully compatible with current EC tax strategies. Integration into the EC, however, is predicated on full-scale adoption of the current provisions of law ('acquis') within the EC.

Tax systems in the CEECs

The tax systems of the EU countries were described above as having two features in common: they are tax systems as applied by developed countries, and they have evolved over time. In our analysis of the evolution of current CEEC tax systems, it would seem useful to maintain this dual distinction, which can be seen as being common to all CEECs and bearing close resemblance to features in the EU countries. Hence, in the following

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[29] Article 93 of this treaty is especially important.

[30] For further information on the prospective tax policy strategies of the EC see Commission of the EC (2001a).

section we will discuss the fact that the CEECs cannot be considered developed counties, but rather transition countries and the implications this bears for the tax systems and tax structures in those countries. Furthermore, we will also describe the historical taxation situation (prior to 1989) in the CEECs, which set important preconditions for their current tax systems.

Prior to 1989 the CEECs, which were centrally planned economies (CPEs) at the time, had tax systems quite different from and basically incompatible with tax systems in the Western market economies. Thus, the CPE tax structures were dominated by other taxes than those in market economies. This per se did not make the CPE tax systems incompatible with Western systems, but it was the combination of the CPE tax structures with the peculiarities of their tax administration that made the tax systems in Eastern Europe look strange to Western eyes. To make this argument more vivid and comprehensible, the characteristic features of the main taxes in the CPEs are presented below.

In the CPEs fiscal revenue derived mainly from three taxes: enterprise profit taxes, payroll taxes and turnover taxes.

As far as the *enterprise profit taxes* are concerned, they typically had the following features:

(a) the determination of the tax base (profits) was quite different from that in market economies. Thus, in certain cases it was defined as a fixed percentage of production and distribution expenses; in other cases, a minimum amount of general profits that a state enterprise might accrue was set by the government;

(b) Tax bases were often completely arbitrary because a vague formulation of permissible expenses, deductions and exemptions left room for bargaining. As a consequence, tax bases differed from industry to industry, and sometimes even from firm to firm (within the same branch of industry);

(c) In addition to the tax bases, the applied tax rates also differed between industries and sometimes even between enterprises;

(d) The actual tax rates applied were much higher than in Western countries (e.g. 75-80% in Czechoslovakia and Poland, see Gandhi and Mihaljek, 1992);

(e) Sometimes, if an enterprise demonstrated financial need, no profit tax whatsoever was levied.

Payroll taxes in the CPEs included social security contributions and in some countries wage taxes; they were collected direct from the enterprises. The reason for the latter two taxes being payroll taxes and not – as is customary – personal income taxes was that workers in the CPEs were usually offered wage 'net' of tax, because wages did not change with a change in the rate of wage tax. Although gross wages theoretically existed (by

adding social security contributions and wage taxes to net wages), they merely remained an entry in the accounts, serving as a device for calculating retirement and other benefits. In fact, enterprises paid their share of social security contributions and wage taxes out of different accounting entries, which were payroll-based. Nevertheless, to a certain extent personal income taxes did exist as such; they were applicable to writers, artists and athletes, as well as small retailers and goods and service providers. However, the rates were extremely progressive and it was so structured as to make any private activity as unattractive as possible and so stop any unwanted activity in its tracks. One of the methods used was to fix the tax base in such a way that the derived tax was confiscatory.

In addressing *turnover taxes*, the first thing to mention is that the actual tax liability was calculated in a variety of ways: (a) as the difference between producer and consumer prices; (b) as a fixed amount per unit; and (c) as a percentage of the retail price. As (a) was the most common approach and since prices were strictly regulated, it was common for turnover tax rates to differ greatly between individual commodities (there were almost as many tax rates as commodities) and for the tax rates to change when different prices were set. Moreover, there were a large number of transactions where only a reduced rate was applied or which were completely exempt from taxation; thus, the tax base was quite small and turnover taxes were only raised on a few commodities[31]. Nevertheless, the collection of turnover tax was remarkably efficient over time. This has much to do with the fact that the only legal form of payment between retailers and producers was via transfers on accounts held in a state bank. Moreover, with prices being generally fixed and turnover volume closely monitored, there was virtually no room for tax evasion or arrears.

Apart from the peculiarities of individual taxes, CPE tax administration did display some *general features*. Their presentation is essential to obtaining a sufficiently picture of the conditions under which (tax) transformation began. First of all, given only a relatively small number of taxpayers, it was possible to audit each and every one of them to ensure compliance every year. Secondly, given the state banks' monopoly and (by law) limited methods of payment, mostly via accounts held in state banks, tax administration and enforcement were greatly facilitated. Thirdly, the state quite often changed tax procedures, tax rates, tax exemptions and deduction ex post in order to meet its expenses. Finally, the dualism of the state as both tax authority and entrepreneur ensured agreement to the prevalent, though otherwise doubtful, tax measures. Hence, although the conditions and practices of the CPE tax systems seem to have been somewhat at odds with Western standards, they made taxation a much easier process and thus required only a relatively unsophisticated form of tax administration.

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[31]   E.g. Gandhi and Mihaljek (1992) mention that in the USSR the tax on alcohol generated 40% of the turnover tax revenue or 13% of total tax revenues in the early 1980s. They further note that a public anti-alcohol campaign resulted in severe budgetary problems in the period 1985-88.

The description of the general features of the CPE tax systems makes it obvious that they were ill-suited to a market oriented economy. Thus, with the collapse of Communism in the CEECs, previous tax systems became obsolete and tax reform became a task of highest priority. The questions that immediately arose were what to reform and how to do it. The trivial answer to that was, of course, basically everything. So, the question was more along the lines of what tax system should replace the old system and at what pace should the new system be introduced (thus addressing the how question at the same time). Since all the countries being dealt with here in our study seemed to harbour the one long-term goal of accession to the EU, it appeared advisable to adopt tax systems similar to those in the EU. This meant that the tax systems had to undergo the following changes (see Hussain and Stern, 1993): (a) introducing a personal income tax together with social security contributions; b) shifting from the taxation of enterprises to the taxation of personal income combined with a Western-style corporation tax integrated with taxes on persons; (c) replacing the old form of turnover tax and government regulated prices by wide-ranging VAT and excise taxes; and (d) introducing property tax.

Although the need to introduce these changes found little opposition in the literature, it was the speed of their implementation that became the subject of discussion. Hence, one could find some arguments favouring a 'big bang' solution, i.e. introducing a new system very swiftly. The advantages of going straight to a Western-type tax system were assumed to be that the governments would be able to economize on decision-making and legal implementation; more important though, it seemed that rapid introduction of a proper tax system might stabilize expectations, thus facilitating economic agents' decision-making right from the outset.

However, in the light of certain constraints on CEEC tax reforms, the arguments favouring 'big bang' solutions were found to be very weak. One of the two major constraints that emerged was the limited capacity of the tax administration institutions; they were not considered capable of coping with the more complicated tax procedures, such as levying personal income tax (especially when combined with a corporate income tax). The other major constraint was the difficulty of securing enough revenue to fund (restructuring) expenditures. Thus, in the absence of such prerequisites as a properly prepared administration and standardized accounting practices, the introduction of a full-fledged Western-style tax system all at once would have caused severe and unwelcome revenue shortfalls.

As a consequence and as an alternative, it was proposed to adopt the stepwise introduction of a tax system suited to a modern market economy. Taking this route was thought to make it easier to focus on introducing new, 'modern' and easy-to-administer taxes, securing revenues and rationalizing current taxes, thereby preparing the ground for the long-run goal of a modern tax system. As a matter of fact, the proposals for a tax

structure in transition were numerous, not only in publications but also in terms of the variety of opinions (see Martinez-Vazquez and McNab, 1999, for a survey, additionally Gandhi and Mihaljek, 1992, Hussain and Stern, 1993, Tanzi, 1993). Although it is not possible to cite the individual approaches to a transitional tax structure here, most of the proposals contained some specific measures that were similar. Most authors favoured the rapid introduction of value-added tax (VAT) and excise taxes on specific goods because taxes of that kind were supposed to be easy to administer and would generate sufficient revenue. The abolition of export taxes and the lowering of import taxes met with no criticism for obvious reasons. Furthermore, the pre-transition practice of profit taxation undisputedly required a rapid reform of corporate taxation, although no consensus prevailed on the precise form of corporate tax. The introduction of a broad-based personal income tax (in combination with social security contributions) was considered to be somewhat more difficult to implement, especially with respect to the risk of double taxation of certain incomes and the incomes of the new self-employed. Thus, it seemed advisable to delay the introduction of a global personal income tax, while in the interim reforming the previous taxes or introducing simple intermediate taxes would suffice. It was agreed, however, as far as personal income tax was concerned, to withhold taxes at source and to keep the administrative process as simple as possible.

As for property taxes, their assessment was considered difficult because the market for land and buildings either did not exist or was only in its infancy at the onset of transition. Nevertheless, given the ease of their administration and stable revenues, it was suggested that property taxes be introduced (at least partially) apace with the privatization of land and housing; property values would be roughly estimated and subject to constant revision.

While we have outlined above the prior state and possible transformation paths of the tax systems in the CEECs, we have done so on a very general plane, omitting a whole series of theoretical and practical problems associated with the introduction of a market-oriented tax system. We have also largely neglected the individuality of the single CEECs, thus ignoring their political, social, economic peculiarities by offering a blueprint of tax transformation that *grosso modo* was claimed to be valid for all countries. We hope that the reader will excuse these shortcomings. First, the points we omitted are well documented in the literature. Secondly, it is not the aim of the study (and it would certainly be beyond its scope) to describe past tax transformation processes in detail. On the contrary, we simply wanted to show the general direction tax transformation took. Thirdly, it would appear futile to elaborate in detail on possible transformation paths, when everything has already happened and we have the data to document the actual route taken.

Consequently, the next section is dedicated to tracing in empirical terms the transformation of the CEEC tax systems. We will present some data on the timing of tax reforms as well as the changes in the tax structure. Although we will not go into the details of

transformation taxes (i.e. we will not dwell on a country's initial personal income tax rates), because it is all well documented in the literature, our approach will ultimately lead the reader to the current tax structures in the CEECs, upon which we will elaborate at greater length. Finally, having proceeded thus, we should be prepared to draw a first comparison between EU and CEEC tax structures.

Table 3

Timing of tax reforms (year tax law adopted or enforced)

laws on: **country**	**VAT**	**personal income tax**	**corporate income tax**
Bulgaria	1994		
Croatia	1998		
Czech Republic	1992	1992	1992
Estonia	1994	1994	1994
Hungary	1992	1995	1996
Latvia	1995	1994	1995
Lithuania	1994	1990	1990
Poland	1993	1991	1992
Romania	1993	2000	1991
Slovakia	1992	1992	1997
Slovenia	1992*/1998	1993	1993

Source: For Estonia, the Czech Republic, Hungary, Poland, Slovenia: Jarass and Obermair (2000), pp. 99ff; all others: International Bureau of Fiscal Documentation (2001).

From the description of CEEC tax systems prior to 1989, we have learned that tax reforms were a *sine qua non* for the transformation from centrally planned economies to market economies. Thus, for all the differences between the individual countries in terms of their economic development and administrative capacities and despite the host of proposals about the way tax transformation should go, each CEEC (dealt with in this study) gradually introduced Western-style tax systems. Furthermore, at least at an aggregate level the main features of their tax reforms were distinctly similar to each other.

Hence, it is possible to derive some stylized facts relating to the empirical transformation of CPE tax systems to market-economy tax systems:

The importance of taxes on corporate income in total tax revenues became significantly lower in the transition period. Since the pre-transition levels of corporate (profit) taxation were unviably high for companies supposed to operate in market economies, a prime task of all tax reforms in transition was to lower the level of corporate taxation, a second objective being to accommodate general economic development. Thus, ten years after the

Table 4

Development of tax structures in CEECs, 1989-1999

(share of taxes in total tax revenue)

		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bulgaria	TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	54.4	52.0	53.5	37.8	25.6	26.0	28.7	33.3	36.4	27.9	25.7
	on individuals	*7.6*	*9.5*	*17.9*	*15.9*	*16.4*	*13.1*	*13.4*	*14.5*	*13.9*	*15.2*	*15.2*
	corporate	*46.8*	*42.6*	*35.6*	*21.9*	*9.2*	*12.9*	*15.3*	*18.8*	*22.5*	*12.7*	*10.5*
	Social security contributions	20.3	24.0	22.1	30.9	32.5	25.6	24.6	24.4	24.0	24.7	26.5
	Payroll taxes	0.3	0.3	1.9	4.3	4.7	3.6	3.5	2.6	2.4	0.0	0.0
	Property taxes	0.7	0.6	0.3	0.5	0.9	1.2	1.0	0.9	0.3	1.9	1.3
	Dom. consumption taxes	22.1	20.4	18.4	18.3	24.9	33.7	32.5	30.7	29.2	37.5	37.9
	Taxes on foreign trade	1.7	1.9	2.9	6.4	10.0	9.1	9.4	7.9	7.4	6.6	3.7
	Other taxes	0.5	0.7	0.9	1.9	1.4	0.8	0.4	0.2	0.1	1.4	4.9
Croatia	TOTAL	.	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	*17.4*	*9.8*	*7.1*	16.3	16.3	17.9	17.1	17.8	17.4
	on individuals	.	.	*14.6*	*8.2*	*5.5*	*14.0*	*13.1*	*14.2*	*12.5*	*12.4*	*12.0*
	corporate	.	.	*2.9*	*1.6*	*1.6*	*2.2*	*3.2*	*3.7*	*4.6*	*5.4*	*5.3*
	Social security contributions	.	.	53.3	37.6	36.1	30.7	32.0	32.3	33.2	30.0	31.5
	Payroll taxes	.	.	*0.0*	*0.0*	*0.0*	0.0	0.0	0.0	0.0	0.0	0.0
	Property taxes	.	.	*0.0*	*0.3*	*0.5*	1.0	1.1	1.1	1.4	1.3	1.2
	Dom. consumption taxes	.	.	*25.3*	*40.5*	*46.4*	42.3	40.8	39.2	38.3	43.4	42.1
	Taxes on foreign trade	.	.	*3.6*	*11.6*	*9.3*	9.2	9.0	8.2	8.7	6.6	7.1
	Other taxes	.	.	0.3	0.3	0.5	0.6	0.8	1.4	1.3	0.9	0.8
Czech Republic[1]	TOTAL	100.0	100.0	100.0	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	*33.7*	*34.5*	*44.3*	.	25.4	26.4	26.3	24.8	23.3	24.7	23.9
	on individuals	*13.0*	*12.2*	*13.6*	.	*7.5*	*12.2*	*13.3*	*14.1*	*14.3*	*14.4*	*13.8*
	corporate	*20.6*	*22.3*	*30.7*	.	*17.9*	*14.2*	*12.9*	*10.8*	*9.0*	*10.3*	*10.1*
	Social security contributions	*0.0*	*0.0*	*0.0*	.	34.0	36.8	38.0	39.5	40.8	40.8	39.8
	Payroll taxes	*23.7*	*21.9*	*19.7*	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Property taxes	*0.1*	*0.0*	*3.5*	.	1.1	1.3	1.4	1.4	1.4	1.6	1.6
	Dom. consumption taxes	*33.4*	*32.9*	*28.7*	.	31.0	30.7	30.4	30.8	31.9	30.8	32.9
	Taxes on foreign trade	*3.4*	*5.7*	*2.7*		3.8	3.9	3.4	3.4	2.4	2.1	1.7
	Other taxes	5.7	5.0	1.1		4.6	1.0	0.6	0.0	0.0	0.0	0.0
Estonia	TOTAL	.	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	42.7	41.8	36.4	31.4	31.3	28.7	28.3	31.7	32.0
	on individuals	.	.	*15.5*	*21.9*	*23.2*	*22.4*	*24.2*	*23.9*	*22.9*	*24.2*	*25.6*
	corporate	.	.	*22.6*	*18.4*	*13.1*	*9.0*	*7.1*	*4.9*	*5.4*	*7.4*	*6.4*
	Social security contributions	.	.	21.1	27.9	30.1	29.6	29.7	31.0	30.1	30.8	30.5
	Payroll taxes	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Property taxes	.	.	1.2	0.0	0.3	1.5	1.0	1.3	1.3	1.3	1.4
	Dom. consumption taxes	.	.	33.5	28.2	31.4	35.6	37.6	38.9	40.3	36.2	36.2
	Taxes on foreign trade	.	.	0.6	1.9	1.5	1.7	0.4	0.0	0.0	0.0	0.0
	Other taxes	.	.	1.0	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0
Hungary	TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	27.1	27.2	30.6	23.4	22.9	23.5	23.2	24.4	23.7	24.4	24.1
	on individuals	*10.9*	*13.7*	*16.3*	*16.7*	*17.6*	*17.4*	*17.8*	*19.4*	*18.3*	*18.4*	*18.0*
	corporate	*16.2*	*13.5*	*11.4*	*5.2*	*3.7*	*4.8*	*4.9*	*5.0*	*5.4*	*6.1*	*6.1*
	Social security contributions	31.4	32.0	30.9	32.9	31.6	31.2	29.5	28.4	30.0	29.9	30.9
	Payroll taxes	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3
	Property taxes	0.7	0.1	0.8	0.9	0.9	0.7	0.8	1.1	2.1	2.2	2.1
	Dom. consumption taxes	34.8	34.3	30.4	31.6	33.1	33.4	33.1	34.8	37.3	38.5	38.5
	Taxes on foreign trade	5.7	6.3	6.0	8.1	8.7	8.6	11.6	9.8	5.3	3.7	3.3
	Other taxes	0.3	0.0	1.3	2.9	2.6	2.5	1.7	1.4	1.3	1.0	0.8
Latvia	TOTAL	.	.	.	.	.	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	.	.	.	28.5	24.5	23.4	23.6	24.2	25.7
	on individuals	.	.	.	.	.	*15.0*	*18.0*	*17.0*	*16.5*	*16.9*	*18.6*
	corporate	.	.	.	.	.	*13.1*	*6.4*	*6.4*	*7.1*	*7.3*	*7.1*
	Social security contributions	.	.	.	.	.	29.9	31.7	30.1	30.9	30.9	31.8
	Payroll taxes	.	.	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0
	Property taxes	.	.	.	.	.	3.6	3.5	4.1	3.3	3.8	3.7
	Dom. consumption taxes	.	.	.	.	.	34.1	37.5	40.3	40.2	39.4	37.6
	Taxes on foreign trade	.	.	.	.	.	3.9	2.5	2.1	2.0	1.6	1.2
	Other taxes	.	.	.	.	.	0.0	0.3	0.0	0.1	0.0	0.0

Table 4 (continued)

		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Lithuania	TOTAL	.	.	100.0	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	32.4	.	40.6	34.8	31.5	30.5	29.2	29.6	29.9
	on individuals	.	.	*14.0*	.	*19.9*	*23.7*	*23.7*	*23.8*	*23.9*	*25.4*	*27.2*
	corporate	.	.	*18.4*	.	*20.7*	*11.1*	*7.8*	*6.7*	*5.3*	*4.3*	*2.7*
	Social security contributions	.	.	25.8	.	23.1	26.8	23.9	25.5	23.0	25.5	25.7
	Payroll taxes	.	.	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Property taxes	.	.	3.2	.	0.9	0.8	2.2	2.0	1.9	1.7	1.9
	Dom. consumption taxes	.	.	37.1	.	32.0	31.9	39.4	39.2	43.5	41.2	40.9
	Taxes on foreign trade	.	.	0.7	.	3.2	5.6	2.6	2.4	2.3	1.8	1.5
	Other taxes	.	.	1.0	.	0.1	0.2	0.4	0.4	0.2	0.1	0.2
Poland[2]	TOTAL	.	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	*19.7*	*32.2*	*31.7*	*32.3*	*32.2*	*30.7*	*30.6*	*30.7*	*22.6*
	on individuals	.	.	*2.1*	*20.2*	*21.7*	*23.9*	*24.1*	*23.0*	*22.5*	*22.9*	*15.1*
	corporate	.	.	*17.7*	*12.0*	*10.0*	*8.4*	*8.1*	*7.8*	*8.1*	*7.9*	*7.4*
	Social security contributions	.	.	*37.0*	*29.7*	*29.2*	25.3	26.2	27.6	28.2	29.1	26.9
	Payroll taxes	.	.	*7.7*	*5.0*	*2.1*	0.9	0.7	0.7	0.8	0.8	0.6
	Property taxes	.	.	*3.2*	*2.9*	*2.8*	2.9	3.0	3.0	3.1	3.1	3.2
	Dom. consumption taxes	.	.	*20.3*	*23.5*	*26.7*	29.4	29.7	31.4	33.1	33.1	35.3
	Taxes on foreign trade	.	.	*0.0*	*6.1*	*6.6*	8.7	7.9	6.5	4.1	3.1	2.6
	Other taxes	.	.	*12.0*	*0.7*	*0.8*	0.6	0.3	0.1	0.1	0.0	8.8
Romania	TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	.	.
	Income taxes	3.2	20.9	37.7	38.6	29.7	32.2	30.3	28.6	30.3	.	.
	on individuals	*0.7*	*0.4*	*23.4*	*22.8*	*17.6*	*18.6*	*16.8*	*16.5*	*14.2*	.	.
	corporate	*2.5*	*20.5*	*14.3*	*15.8*	*12.0*	*13.6*	*13.5*	*12.1*	*16.1*	.	.
	Social security contributions	47.2	22.2	30.8	31.7	31.9	30.4	27.8	28.0	26.4	.	.
	Payroll taxes	35.8	14.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.	.
	Property taxes	1.6	0.6	0.6	0.3	0.9	0.8	2.0	1.5	0.9	.	.
	Dom. consumption taxes	0.7	33.5	24.8	20.8	26.0	24.5	24.5	24.2	26.7	.	.
	Taxes on foreign trade	0.0	0.5	3.3	3.9	4.8	4.6	5.7	6.3	5.7	.	.
	Other taxes	11.6	7.8	2.7	4.7	6.7	7.5	9.7	11.3	10.1	.	.
Slovakia	TOTAL	.	.	.	.	.	.	.	100.0	100.0	100.0	100.0
	Income taxes	.	.	.	.	.	.	.	28.7	25.3	27.2	26.4
	on individuals	.	.	.	.	.	.	.	*11.1*	*12.8*	*13.8*	*13.8*
	corporate	.	.	.	.	.	.	.	*14.9*	*10.0*	*10.3*	*8.8*
	Social security contributions	.	.	.	.	.	.	.	32.4	33.9	33.5	33.1
	Payroll taxes	.	.	.	.	.	.	.	0.0	0.0	0.0	0.0
	Property taxes	.	.	.	.	.	.	.	1.7	1.7	1.8	1.9
	Dom. consumption taxes	.	.	.	.	.	.	.	32.3	32.9	32.1	33.1
	Taxes on foreign trade	.	.	.	.	.	.	.	4.9	6.1	5.4	5.6
	Other taxes	.	.	.	.	.	.	.	0.0	0.0	0.0	0.0
Slovenia	TOTAL	.	.	.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Income taxes	.	.	.	18.1	17.3	18.1	17.4	19.0	19.6	19.3	18.2
	on individuals	.	.	.	*16.7*	*16.2*	*16.2*	*16.0*	*16.8*	*16.7*	*16.3*	.
	corporate	.	.	.	*1.4*	*1.1*	*1.9*	*1.4*	*2.2*	*2.9*	*3.0*	.
	Social security contributions	.	.	.	46.4	45.9	41.4	39.9	36.7	34.9	34.7	33.4
	Payroll taxes	.	.	.	0.0	0.0	0.8	0.4	1.8	3.2	3.5	3.7
	Property taxes	.	.	.	0.7	0.7	0.6	1.3	1.4	1.7	2.1	1.8
	Dom. consumption taxes	.	.	.	26.8	27.6	30.9	32.4	33.7	35.5	36.7	40.0
	Taxes on foreign trade	.	.	.	7.8	8.5	8.3	8.5	7.4	5.0	3.6	3.0
	Other taxes	.	.	.	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Notes: 1) Data from 1989 to 1991 for Czechoslovakia. - 2) for 1991 Data from the Ministry of Finance (1998) and OECD, 1992 and 1993 OECD.

Source: IMF, Government Finance Statistics, OECD Revenue Statistics, Polish Ministry of Finance, own calculations.

start of transition corporate taxes account for only less than 10% of total tax revenues in the CEECs; in some countries, the share of corporate taxes is even below 5%.

The share of taxes on individual incomes in total tax revenues increased during the period of tax reform. This happened partly because of changes in accounting; wage taxes which

were formerly included in payroll taxes were now being explicitly calculated as personal income taxes. Furthermore, increasing administrative capacities (especially with respect to the taxation of the self employed) plus the need to offset cuts in revenue accruing from corporate taxation made personal income a prime target for taxation. This is revealed in the gradual rise in the share of personal income in total tax revenues.

Taxes on domestic consumption became the most important source of tax revenue. As many blueprints for taxation in transition suggested, the CEECs placed emphasis on taxing domestic consumption (through the introduction of VAT and excise duties) on account of the relatively simple administration and revenue potential. Thus, today consumption-related taxes account for approximately 35% or more of total tax revenue; as such, they constitute the single most important source of revenue.

Property taxes account only for a small fraction of total tax revenue; however, their share has grown since the beginning of transition. Through the establishment of a real estate market as well as the emergence of capital and financial markets (plus the enhancement of tax administration) it has become increasingly possible to exploit various sources via property tax and so generate tax revenue. As the numbers show, the share of property taxes is still relatively low (less than 4% throughout, but mostly below 2% of total revenues); the general trend, however, is pointing clearly upwards.

Taxes on foreign trade have diminished in importance. Increasing economic integration with world markets and the abolition of export taxes (as proposed by many authors) has led to a (in some countries significant) decline in the share of foreign trade tax revenues. It can be assumed that this share will decline still further in the future, especially in those countries, which are going to join the EU. Upon EU accession, the revenue from this source will flow direct to the EU budget so that the foreign trade tax revenues for a EU-CEE country will tend towards zero.

The stylized facts we derived cover all important taxes, with the exception of social security contributions. In general, all countries display high shares (in total tax revenues) where these contributions are concerned. This is due to the financing requirements of their social systems which even prior to 1989 were already well established and offered broader coverage than Western systems. In fact, social security contributions are now the second most important individual source of tax revenue in the CEECs. However, the development of these contributions in the different countries during transition was quite mixed. Thus, although for many countries the development of the share of the social security contributions can be characterized as being relatively stationary (at a high level), some countries registered significant drops in the share of social security contributions, whereas others recorded an increase. Ultimately, it would seem that the shares of CEEC social

security contributions have converged to a level ranging between 30% and 40% of total tax revenues.

4   Comparing tax burdens in the EU and CEECs

4.1 Nominal tax rates and tax quotas

The above description of the tax systems in the EU and the CEE countries has revealed that the tax structure in the current EU is in itself an inhomogeneous set of individual, country-specific tax systems. Although in the case of indirect taxes it is an explicit long-term goal of the Union and in the case of direct taxes it took on the weak and limited form recommended by the Ruding report, tax harmonization within the EU is still at a rudimentary stage of development owing to its explosive political content. Nevertheless, some progress has been made: in indirect taxation, through the harmonization of taxable bases and through the introduction of bandwidths for VAT rates; and in direct taxation, through increased efforts at tax co-ordination, although the situation remains unsatisfactory since there is still room enough for distortion and discrimination.

However, as long as common EU tax regulation is as disparate as it is now, one might be tempted to think, from a legal point of view, that including the CEECs in the EU might be less of a problem as long as they apply the *acquis communautaire*. Thus, as one might argue further, the mandatory adoption of the *acquis* should at least guarantee that the CEECs move within the common boundaries of tax legislation and therefore not incur additional problems related to fiscal law.

Indeed, such is the impression won when following the ongoing negotiations on EU enlargement. Furthermore, one gains the general impression that the only things that matter where taxation issues are concerned are indeed juridical questions, such as: Is their VAT system in line with the sixth VAT directive of 1977? Are their VAT rates within the range set in directive 92/11? Are they subject to the Article 87ff of the EU Treaty? How can this Article be enforced?

Hence in taxation issues, unlike other topics such as environmental conservation, occupational health and safety and transport regulations or common agricultural policy, the possible economic and financial, as well as the political and institutional, problems arising out of eastern enlargement would seem to have been completely ignored.

This fact is even more astonishing in the light of the current EU debate on (harmful) tax competition and tax harmonization. Though held with strong academic backing on issues relating to the economic consequences of both topics, the debate totally excludes the topic of EU enlargement. It is also strange that such topics are not brought up by the CEECs

themselves, since adoption of EU tax regulation as well as acceptance of the EU long-term goals (e.g. complete VAT harmonization, Article 93 EU Treaty) will certainly change their current tax structures and possibly lead to undesirable economic effects. From the description above, we have seen that the tax systems in the transition countries differ conceptually from those in the EU countries. Thus, when generating tax revenues, the accession countries attach relatively more weight than the EU countries to indirect taxes, given their favourable properties.

Having completed the investigation of those points relevant to the objective of our study, we will now commence with a comparison of the EU and CEEC tax systems. This, we trust, will give a first hint of how the CEECs might fit into current EU tax structures and what tax-related problems might arise in the wake of EU eastern enlargement.

In the following section we will compare tax systems in the EU and CEECs. Thus, we will first let the data speak for themselves while (empirically) analysing the tax-to-GDP ratios, even though those ratios provide only limited information on possible discrepancies between EU and CEEC tax structures. Secondly, we will investigate the tax structures of the EU and CEECs (i.e. the shares of individual taxes in total taxation); this will help to highlight certain tax system differences in the EU and CEECs, thus providing an important tool for assessing possible tax-related problems associated with EU eastern enlargement. Thirdly, although we will refrain from going too deeply into legal issues pertaining to taxation, we will briefly comment on tax rates (of the main taxes) in the EU and CEECs, given the obvious nexus to tax structures. Furthermore, this will provide another tool for evaluating how CEEC tax systems might fit into current EU structures.

As far as the data are concerned, we have unfortunately had to restrict ourselves to a comparison of tax data dating back to 1997, the last year for which uniform comparison is possible (this shortcoming is mainly due to a lack of data from EU countries). Furthermore, we have also had to exclude three EU countries (Greece, Finland and Italy) because data were not available at the (consolidated) general government level. However, since we have 1999 data for most of the CEECs (except Romania), we will of course comment on the most important changes since 1997.

Turning to the analysis of the data, Figure 1 shows the tax-to-GDP ratios for eleven CEECs and the 12 EU countries available.

The total tax-to-GDP ratios shown by the numbers in Figure 1 do not actually provide us with much insight into the compatibility of tax systems in the EU and the CEECs. They only allow us to draw conclusions on such things as how paternalistic certain states are or how much of a country's GDP is allocated politically. Furthermore, as can be read from Figure 1, all but three of the CEECs fall within the bandwidth of the EU country tax ratios;

adding to this the fact that tax administration in many accession countries is still far from working efficiently and noting that their tax-to-GDP ratios are likely to increase in the future merely through improvements in tax administration, it can be concluded that as far as total tax-to-GDP ratios are concerned, the CEECs should fit into the current EU tax system .

Figure 1

Tax-to-GDP ratios, EU and CEECs, 1997
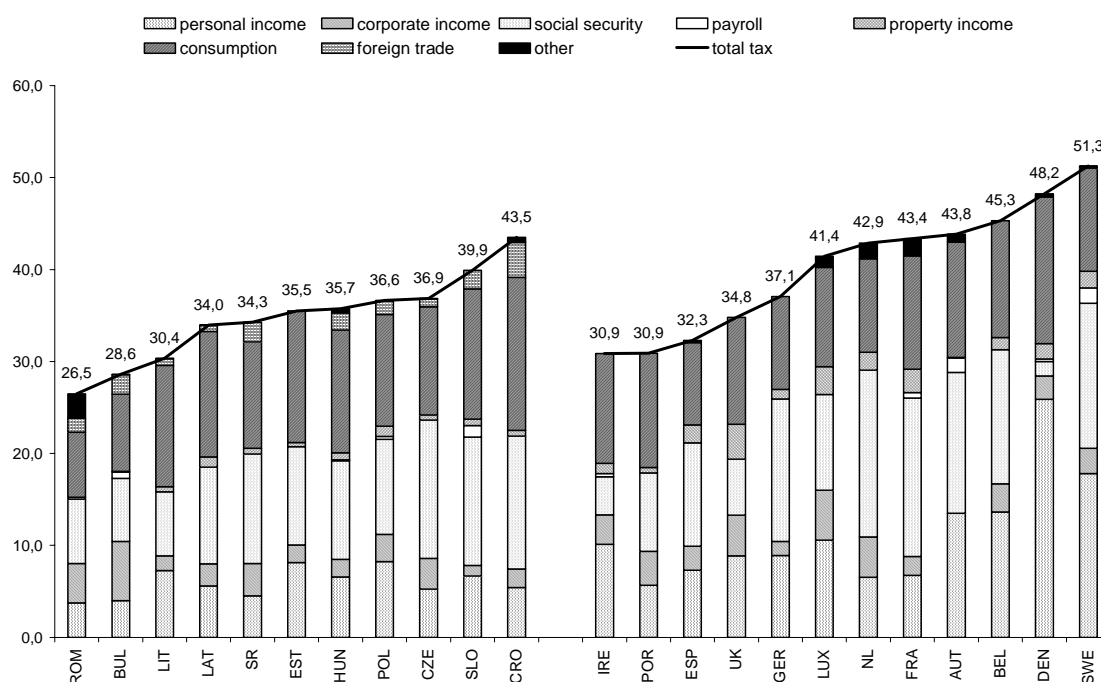
Source: IMF, Government Finance Statistics, WIIW Database, Eurostat New Cronos Database.

The three CEECs that fall outside the EU range, i.e. Romania, Bulgaria and Lithuania, are interesting. The countries in question obviously experience greater problems than others in generating tax revenues. This is primarily due to extremely poor tax administration as noted in Chapter 10 of the Commission's progress reports (EC Commission, 2000c) on those countries. However, as things improve (not only in administrative terms), one can count on tax ratios in those three countries sooner or later reaching levels comparable to the EU level. Thus, this should not be an obstacle to those countries' entry into the EU.

Apart from the total tax-to-GDP ratios, Figure 1 also shows the ratios of different tax types to GDP in order to highlight the importance of certain taxes. One might draw certain conclusions on the various countries' tax structures, although this would be somewhat clumsy owing to the distortions caused by the different levels of taxation. Therefore, we will undertake such an analysis at a later juncture with the help of two additional graphs which, to our mind, are better suited to describing the differences perceived. Nevertheless, we

might draw on Figure 1 again later in order to quantify possible tax-related changes attributable to EU enlargement.

Let us now turn to the description of the tax structures in the EU and the CEECs. Compact pictures of these structures are presented in Figures 2 and 3. Relating to 1997, they show the share of individual taxes in total tax revenues for the EU and CEEC averages and for individual countries, respectively.

Closer inspection of the (unweighted) averages in Figure 2 already reveals some interesting divergences in EU and CEEC tax structures. As put forward in our description of the development of the tax systems in the EU and the CEECs, the share of direct taxes[32] in total tax revenues is on average much higher in the EU countries than in the CEECs Thus, on average 68.7% of total tax revenues are collected through direct taxes in the EU, whereas those taxes contribute on average only 58.8% to total tax revenues in the CEECs.

This is of interest insofar as one often finds in the literature on taxation and development a benchmark (albeit more a rule of thumb) for evaluating whether a tax system is that of a developed or developing country. The benchmark in question says that in a developed country the ratio of direct to indirect taxes is approximately 2 to 1: a mark the average EU country easily surpasses, although it is still beyond the reach of the candidate countries. Thus, although one should not qualify the accession countries as developing countries, the design of their tax systems cannot be deemed EU-like either. At best, it can be said that although there is every intention that the tax systems will move in the direction of developed country tax systems, that movement is still constrained by both insufficient administrative capacity (to make that point once more) and a relatively low stage of economic development (e.g. limiting the extent of personal taxation). Thus, although one of our stylized facts in the transition of CEEC tax structures was that personal income taxes were taking on greater importance, they still diverge significantly from the average EU share[33], as can be seen from the graph. Furthermore, property taxes are of relatively minor importance in the CEEC compared to countries in the EU.

The other side of the coin is, of course, that indirect taxes (including VAT, excise taxes and taxes on foreign trade) have to play a more prominent role in the CEECs than in the EU. This is obvious for taxes on consumption (VAT and excise taxes), where the average share in total tax revenues was 35.4% in the CEECs, but only 29.7% in the EU countries. More interesting, however, and a source for future concern is the fact that on average the CEE countries are still appreciably dependent on foreign trade taxes – a source which is not available to EU country governments, since that revenue goes into the EU budget.
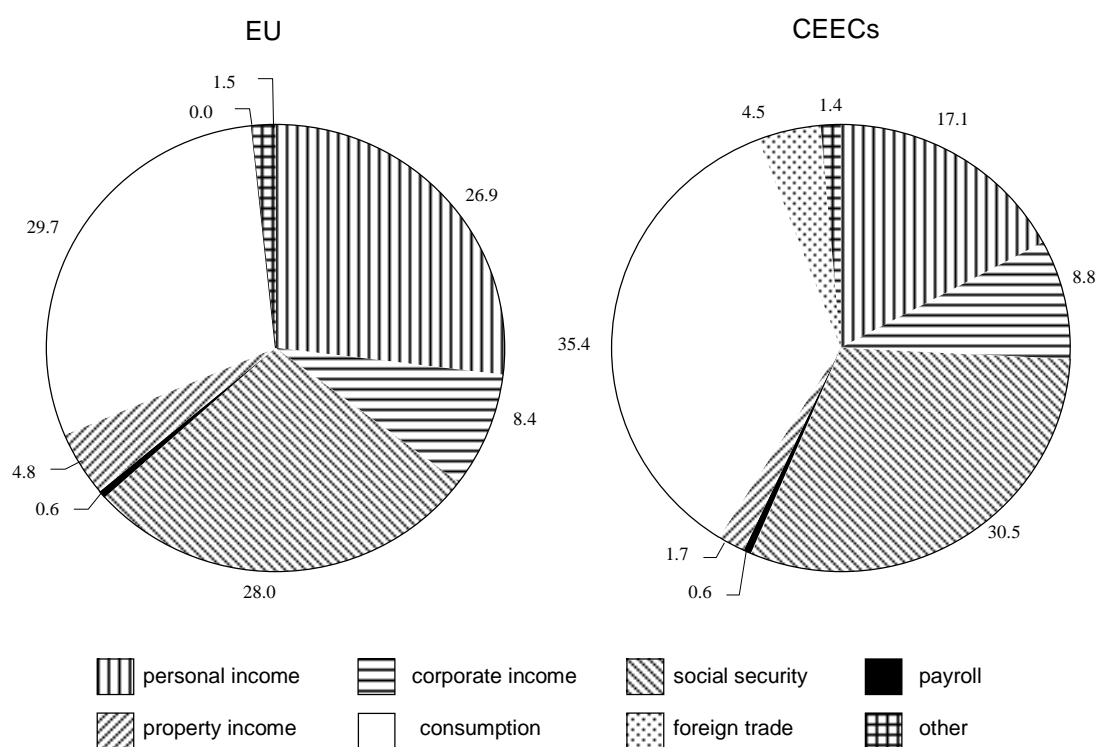
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[32] Direct taxes include: personal and corporate income taxes, social security contributions, payroll and property taxes.

[33] This divergence is reduced somewhat when personal income taxes and social security contributions are combined, although the change is only marginal.

However, there are also some indications that current tax structures in the CEECs are not driven by these constraints, but are pursued intentionally to accommodate economic development. In the light of this argument, it appears somewhat strange that the share of corporate tax revenues is higher in the CEECs than in the EU. As a matter of fact, however, the pre-transformation tax system, in which the taxation of enterprise profits formed the major part, has not fully lapsed in some countries. Moreover, since a relatively low number of enterprises are easier to tax than individuals, corporate income taxes are still relatively important – at least in some countries.

Figure 2

Average shares of individual taxes in total taxation for the EU and CEECs, 1997

EU

CEECs

1.5
0.0
26.9
29.7
8.4
4.8
0.6
28.0

4.5
1.4
17.1
35.4
8.8
1.7
0.6
30.5

|||| personal income   ≡ corporate income   ▨ social security   ■ payroll

▨ property income   ☐ consumption   ⠿ foreign trade   ⊞ other

Source: IMF, Government Finance Statistics, own calculations.

Turning away from an average perspective to a country-specific analysis, Figure 3 provides an overview of the tax structures in the individual CEECs and countries of the EU.

Although it is clear that the general picture does not deviate from the picture we derived from the description of the country group averages, the analysis of the tax structures in individual countries reveals some aspects worth discussing.

As we stated above, every CEEC seems to harbour the goal of becoming a member of the EU sooner or later. Besides many other things, this implies that CEEC tax structures have

to become increasingly similar to the tax structures in the EU or Western industrialized countries. In addition, we (implicitly) postulated that with increasing (economic) development and with the end of the transition phase in sight, the CEECs will be ever more able to establish EU-like tax systems and structures.

Seen from this angle, closer inspection of Figure 3 reveals some quite surprising facts.

Figure 3

Tax shares in total tax revenue: EU and CEECs 1997
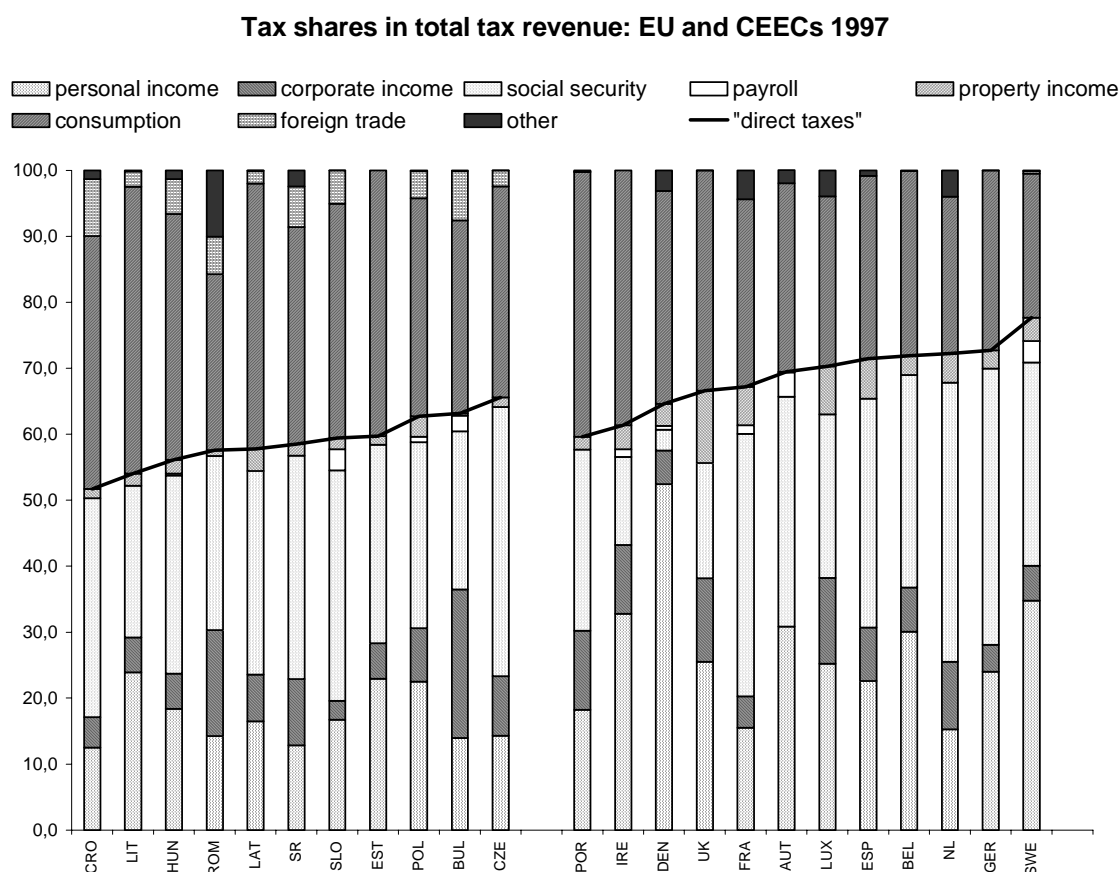
Source: IMF: Government Finance Statistics.

It can be seen that within the EU the lowest share of direct taxes (indicated by the black line) is to be found in Portugal (59.6%). By the way, of the EU countries we have covered, this is the country with the lowest GDP per capita (at PPS). In 1997, only four (out of eleven) CEECs (Czech Republic, Bulgaria, Poland and Estonia) outstripped Portugal, while all other countries registered lower, and occasionally much lower, shares of direct taxes in total taxation.

Whereas the presence of the Czech Republic, Estonia and Poland in the group of countries lying within the EU bandwidth would confirm our prior statements concerning development and tax structures, as those countries are among the most progressive CEE

countries, the appearance of Bulgaria comes somewhat as a surprise. Closer inspection of the graph reveals, however, that in Bulgaria the share of corporate taxes was much higher than in every other country, thus skewing Bulgaria's direct tax share upwards.

Nevertheless, even the Czech Republic as the CEEC with the highest share of direct taxes (65.6% of total taxes) would rank only tenth (between Denmark and the UK) within the EU countries (covered). Thus, even the most 'advanced' CEECs (in terms of tax structures) are to be found at the lower end of the EU scale.

A truly unexpected finding emerging from Figure 3 was that Slovenia and especially Hungary (probably also Slovakia), which are among the most developed CEECs (Slovenia has in fact the highest GDP per capita at PPS of all CEECs), display tax structures quite different from the EU average. This is even more surprising since the Commission's progress reports (EC Commission, 2000c) on these two countries seem to be quite satisfied with tax administration practices there (especially for Slovenia). Thus, from that point of view they should be capable of introducing EU-like tax structures.

However, where Slovenia is concerned, it has to be said that future tax reforms might alter the share of direct taxes as reforms are planned pertaining to property taxation, corporate taxation and personal taxation (Slovene Ministry of Finance, 2000). For all three tax types, it is planned to broaden the tax base; this would result in an increased share of direct taxes. Nevertheless, in terms of corporate taxation Slovenia is also thinking of raising the tax rate for distributed profits, while simultaneously lowering the tax rate for undistributed profits. As for personal taxation, it is mooting a reduction in the number of low income tax payers. Thus, the direction taken by Slovene tax reforms seems to be ambiguous; it is not clear whether their tax structure will move more towards the EU average.

In Hungary no major tax changes are envisaged prior to 2002 (European Commission DG Economic and Financial Affairs, Government of the Republic of Hungary, 2000). Thus, the tax structure will not change much in the near future. Furthermore, given the inherent inertia of tax structures it can be assumed that in the medium to long term the Hungarian tax structure will remain distinctly different from the average EU tax structure.

As the CEECs regularly pass amendments to their current tax laws in order to adapt them more and more to their needs, tax structures in certain countries underwent some changes in the period 1997-1999.

Hence, in both 1998 and 1999 Bulgaria reformed its personal, corporate and consumption taxation, resulting in a significant reduction in the share of corporate tax revenues (which had previously been unusually high) in total tax revenue. Simultaneously, the share of consumption taxes rose, including a rise in the VAT share by 6 percentage points and a

rise in excise taxes by 2 percentage points. The share of personal income grew only marginally.

In 1999 Poland introduced a change in personal income taxation. It included a reduction in the number of tax brackets from three to two, combined with a reduction in the highest personal income tax rate to 32% (formerly 40%), a broadening of the tax base and a raising of the exempt income. This reform resulted in a significant drop in the share of personal income tax revenues in total tax revenue (minus 7 percentage points), shifting the tax structure further away from reliance on direct taxes. The change in the Polish tax structure was soaked up by a simultaneous increase in the share of local taxes, especially through the introduction of a tax on civil law transactions (Polish Ministry of Finance, 1998).

More important changes also occurred in Latvia and Estonia, in 1998 and 1999, respectively. In both countries the importance of personal income taxes in the tax structure grew, thus driving the share of direct taxes in total taxes to 61.1% and 63.8%, respectively.

The tax structure differences between the CEECs and the EU that we have described above are also reflected in the difference to a certain extent in the statutory tax rates. Although comparison of statutory tax rates is rendered somewhat inaccurate by the variances in tax bases across countries, similar to the divergences in the treatment of tax deductions and tax exemptions especially in Central and Eastern Europe, a juxtaposition of EU and CEEC tax rates offers a relatively good reflection of the differences in tax structures.

In the previous section we saw that consumption taxes play a much more important role in the CEECs than in the EU. Inspection of Table , which shows the VAT rates for both the EU and the CEECs, confirms this conclusion because, although not readily obvious from the table, the VAT rates (which are part and parcel of consumption taxes) are generally higher in the CEECs than in the EU. Thus, in terms of normal rates alone, the (unweighted) average statutory tax rate in the EU is 19.3% as against 20.8% in the CEECs; similarly, the median VAT rate in the EU is 18.8% as against 22% in the CEECs.

As for the tax bases applied in consumption taxes (including VAT and excise taxes) it should be mentioned that they vary substantially within the CEECs given the many different exemptions granted. The one exception is Slovenia; it has established a VAT base according to the sixth EC directive ('VAT directive') and has thus harmonized its VAT (and more or less the excise tax) base with EC standards[34], The bases for VAT and excise taxes in all other CEECs are still too narrow, as noted in the progress reports (EC Commission, 2000c) on those countries. Consequently, it can be assumed that indirect tax

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[34]   For further details see Jarass and Obermair (2000), pp. 99ff.

revenues and indirect tax shares in total revenue will increase as the countries move closer to accepting the tax *acquis communautaire*.

Table 5

VAT rates in the EU and the CEECs

	Super reduced rate	Reduced rate	Normal rate	Intermediate rate
EU				
Austria	-	10/12	20	-
Belgium	-	6	21	12
Denmark	-	-	25	-
Finland	-	8/17	22	-
France	2.1	5.5	19.6	-
Germany	-	7	16	-
Greece	4	8	18	-
Ireland	4.2	12.5	21	12.5
Italy	4	10	20	-
Luxembourg	3	6	15	-
Netherlands	-	6	17.5	-
Portugal		5/12	17	-
Spain	4	7	16	-
Sweden	-	6/12	25	-
United Kingdom	-	5	17.5	-
CEECs				
Bulgaria	-	-	20	-
Croatia	-	-	22	-
Czech Republic*	-	5	22	-
Estonia	-	5	18	-
Hungary*	-	6.8/12	25	-
Latvia	-	-	18	-
Lithuania	-	-	18	-
Poland	-	7	22	-
Romania	-	11	22	-
Slovak Republic	-	6	23	
Slovenia	3	8	19	-

Sources: CEECs: International Bureau of Fiscal Documentation (2001), *Taxation & Investment in Central Europe*; *EU:* European Commission (2000), *Die Mehrwertsteuersätze in den Mitgliedstaaten der Europäischen Gemeinschaft*, DOC/2206/2000 – DE.

Thus, for example, a medium-term forecast of general government revenues issued by the Czech Ministry of Finance (Czech Ministry of Finance, 2001) that included planned tax reforms, the main part of which is designed to bring the VAT and excise taxes more in line with EU regulations together with a two percentage point reduction in VAT rates, sets out

Table 6

Corporate and individual income tax rates in the CEECs

Country	Taxes on company profits	Taxes on individual incomes
Bulgaria	The standard corporate income tax rate is 25%. In addition, a municipal corporate income tax of 10% is levied on corporate incomes, while a reduced rate of 20% is granted to companies with low profits..	A progressive tax structure is in operation, with tax rates of 20%, 26%, 32% and 40%.
Czech Republic	Two main rates are applied: one levied on profits of legal entities (38%) and the second on the profits of investment funds and pension funds (25%). Furthermore, a number of withholding taxes ranging from 25% to 20% are levied on special taxable bases.	The tax structure is progressive with rates ranging from 15% to 32%. Special withholding rates ranging from 25% to 20% are levied on dividends, for example.
Estonia	No tax on reinvested profits. The rate on distributed profits equivalent to the personal income tax rate	A miscellaneous income tax exists, but no municipality has introduced a local personal income tax.
Hungary	The main rate is 18% on taxable base; a withholding tax of 20% is levied on dividends.	The rate is progressive with rates ranging from 20% to 40%.
Latvia	The main rate is 25% (capital gains included).	A single flat tax rate of 25% is levied on the base.
Lithuania	The main rate is 24%; special lower rates are applied (e.g. 19% on reinvested profits).	A tax rates of 20%-35% are applied.
Poland	The main tax rate is 28% on taxable base. That rate will be reduced to 22% by 2004. A withholding rate of 20% applies to several taxable bases (e.g. on profits earned from copyrights).	A progressive tax with only three rates, 20%, 30% and 40%, respectively, is levied on the taxable basis which lies beyond that amount of income exempt from taxation.
Romania	The basic rate is 38%, but rates of 25%, 60% and 80% are also levied on profits of special companies.	The following rates apply: 18%, 23%, 28%, 34% and 40%; i.e., the structure is progressive. Dividends and interest earnings are treated separately: the first being taxed at a rate of 5% and the latter at a rate of 1%, both of which are withholding taxes.
Slovak Republic	The main rate is 40% on taxable base. Special withholding rates ranging from 25% to 0% apply to several taxable bases (e.g. interest on loans).	The rate structure is progressive with rates ranging from 15%, 20%, 25%,32%, 40% to 42%. Several taxable bases are excluded from the main rate structure and a withholding tax is levied on those bases. Withholding tax rates are equal to the corresponding withholding rates on profits.
Slovenia	The main rate is 25% on taxable base. Special withholding rates are granted: 25% on dividends paid to residents and 15% on dividends paid to non-residents;	The rate structure is progressive with rates ranging from 17% to 50%. Advance tax payments - on several taxable bases (e.g. on capital gains: 25%) are deductible.

Source: International Bureau of Fiscal Documentation (2001); Bulgarian Ministry of Finance (2001), Taxation of the Income of Natural Persons Act; Polish Ministry of Finance (1998); White Paper for Taxes.

Table 7

Corporate and individual income tax rates in the EU

Country	Taxes on company profits	Taxes on individual income s (federal level)
Austria	The rate is 34% on taxable base.	The structure is progressive with rates ranging from 0% to 50%.
Belgium	The standard rate is 39%. Several reduced rates are granted.	The structure is progressive with rates ranging from 25% to 55%.
Denmark	The standard rate is 32%; a reduced rate of 14,3% pertains to several specified companies;	Three rates are levied, depending on the amount of taxable income and the source of income. The rates are 7.5% up to a maximum of 59%.
Finland	The main rate is 29% of taxable base.	The rate is progressive, with rates ranging from 5.5% to 38%.
France	The rate is 37.87%. Special lower rates are granted.	The structure is progressive, with rates from 0% to 54%.
Germany	The main rate is 25% for reinvested and distributed profits.	The structure is progressive, with rates from 0% to 51%.
Greece	The main rates range from 10% to 40%, depending on type of company.	The structure is progressive, with rates ranging from 0% to 45%.
Ireland	The main rate is 32%, with a rate of 25% on the first IRP 50000.	Rates are fixed annually. In 2000 two rates were applied, 24%/ and 46%.
Italy	The main rate is 37%. Special lower rates are levied;	The structure is progressive, with rates ranging from 18.5% to 45.5%.
Luxembourg	The structure is progressive, with rates ranging from 20% to 32%. Lower rates are levied on special types of company.	The structure is progressive, with rates ranging from 0% to 46%.
The Netherlands	The main rate is 35% of taxable base.	The structure is progressive, with rates ranging from 35.75% to 60%.
Portugal	The main rate is 34%. Several lower rates are levied.	The structure is progressive, with rates ranging from 15% to 40%.
Spain	The main rate is 35%. Lower rates are also levied.	The structure is progressive, with rates ranging from 15% to 48%.
Sweden	The rate is 28% on taxable base.	A dual income tax exists. The rate on labour income is 20% (+5% on higher incomes); the rate on capital gains is 30%.
United Kingdom	The main rate is 30%, with lower rates on the first £300 000.	Rates are fixed annually by the so-called 'finance acts'; the current rates are 20%, 23% and 40%.

Sources: CEECs: International Bureau of Fiscal Documentation (2001), *Taxation & Investment in Central and Eastern Europe*, Amsterdam. *EU:* A. Mennel and J. Förster (eds.) (2000), *Steuern in Europa, Amerika und Asien*, Verlag Neue Wirtschafts-Briefe, Herne-Verlag, Berlin; Bundesministerium für Finanzen (ed.) (2000), *Volks- und Finanzwirtschaftliche Berichte*, Berlin; Commission of the EC (ed.) (2000), Inventory of Taxes, Luxembourg.

to increase the total tax-to-GDP ratio by 2.8% by 2004. Despite the decrease in the VAT rate, two thirds of this projected growth will be due to a significant increase in VAT and excise tax revenues.

Just as the VAT tax rates in the CEECs (which on average are higher than those in the EU) reflect the importance of indirect taxes in CEEC tax structures, a comparison of direct tax rates (tax rates on corporate and personal incomes) mirrors the variances pertaining to direct taxes in EU and CEEC tax structures. Although the argument that pure statutory tax rates do not tell the whole story on account of numerous exemptions and scope for deductions holds even more true for direct taxes, closer study of Tables 6 and 7 yields some notable results.

In general, it can be said that in the CEECs the main tax rates for corporate taxation are significantly lower than those in the EU. Of course, there are some outliers among the CEECs, such as the Czech Republic, Romania or Slovakia whose tax rates are comparable to those in EU countries. Nevertheless, in a comparison of the (unweighted) main corporate tax rates, the CEECs display an average tax rate of 28.9% as against the EU average tax rate of 34.4%; similarly, the median of CEEC corporate tax rate lies at 25.5% compared to 34.5% in the EU.

We have also compared the tax rates on personal income. We only used the tax rates applied in the highest tax brackets (except in those instances where a flat tax rate applies) in the hope that they would provide a sufficiently useful indicator for the purposes of our comparison.

The result we obtained was quite similar to the result yielded by our comparison of corporate taxation. On average, the highest applicable tax rate in the CEECs is 36.6% compared to 48.8% in the EU; the median in the CEE countries is 40% as compared to 48% in the EU.

4.2 Comparing tax systems in the EU and CEECs – average effective tax rates

As outlined above, for the purposes of evaluating the differences in tax burdens within countries, effective tax rates are more suitable than nominal tariffs and tax quotas. Hence, we shall proceed to calculating effective average tax rates for the EU and the CEECs on basis of the Mendoza-Razin-Tesar (MRT) methodology introduced earlier.

The MRT method is especially useful if one wants to calculate effective average tax rates for OECD member countries or for the 1968 System of National Accounts. However, most CEECs are not members of the OECD and the SNA68 has since been replaced by the SNA93 and ESA95, respectively. Under these circumstances, we had to deviate slightly

from Mendoza's et al. procedure insofar as we did not take the OECD revenue statistics as our database for tax data, but drew on the government finance statistics (GFS) issued by the IMF. This choice was made because unlike the OECD source, the GFS contain data for virtually every country and hence for the transition countries as well. Nevertheless, one major drawback of the GFS is that for certain countries the statistics do not provide data at the general government level essential to our work, but only provide data at the central government level, thus excluding, for example, local government revenues. To our understanding, this was less of a problem where the CEECs were concerned, as data coverage met our requirements; however, it did cause problems in respect of certain EU countries (e.g. Finland and Greece). In those cases, we had to rely on the information contained in the OECD revenue statistics[35] in order to obtain a more comprehensive set of information.

However, the problems we faced with tax revenue data were minor compared to the trouble we had in compiling a useable set of national accounts data.

The first difficulty was also the hardest to overcome: changing the national accounting system from the old SNA68/ESA79 system to the new SNA93/ESA95 system. Indeed, the problems associated with this change were threefold: first, figures reported for total GDP and operating surplus sometimes differed considerably between the old ESA79 and the new ESA95 system. Thus, depending on the system it was possible to get two completely different figures (especially) relating to gross operating surplus for one and the same country in one and the same year. According to Carey and Tchilinguirian (2000) and our findings, gross operating surplus figures tend to be (much) higher on an ESA95 basis compared to ESA79 data. This, of course, hampered the derivation of a consistent time-series for a country, but it was also linked to the second problem that occurred with the change in the national accounting systems. This latter problem related to the comparability of national accounting time-series across different countries. With the statistical offices in various countries at different stages of revising their national accounts data in line with the new ESA95 basis, certain countries were unable to supply the data we required along the new lines. As a consequence, our data set consists partly of data according to the old ESA79 data and partly of data according to the new basis. Thirdly, given the change in the national accounting systems, the data reported in the most common databases (OECD National Accounts – Detailed Tables, New Cronos) underwent an unfavourable change where our work was concerned: certain time-series were no longer available. This held

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[35] We took the daring step of merging two different tax revenue data bases, since both the IMF GFS and the OECD revenue statistics show data on a cash basis. We assumed that the margin of error would be small. Moreover, cross checking the data for countries for which we had both IMF and OECD data showed that although there were deviations, they were minor and at an acceptable level.

especially true for the series 'property income of households'[36] which is an essential input to the calculation of all AETRs, except consumption tax.

The second difficulty we faced when using national accounts data was data availability per se. Thus, even prior to the introduction of the new ESA95, some countries did not publish (at least not in the sources available to us) certain national accounts time-series (once again mostly 'property income of households') that were of importance to our AETR calculations.

The third difficulty we encountered was rooted in the two prior difficulties. Because the data coverage in the databases available to us was either heterogeneous or incomplete, we sought to fill the gaps by establishing direct contact with all the statistical offices in the EU as well as the offices in the Slovak Republic and Slovenia. The WIIW provided an excellent source of data for all other CEECs. The answers we received were equally heterogeneous. Thus, whereas certain countries such as Finland, Ireland, the UK, Germany, Spain, the Netherlands, Sweden, Denmark and even, with a five-month delay, Greece were very helpful (either sending us the appropriate data direct or showing us where we could find it), other countries such Portugal, Italy, Slovenia and especially Austria were simply unable to supply useful data. In the case of Portugal and Austria, we did not even get a reply to our enquiry[37], unlike the Slovene Statistical Office which at least was kind enough to inform us that the data we sought would only be available at some future date.

As a consequence, the coverage of AETRs in the EU and CEECs is not as comprehensive as we would have liked. Nevertheless, we managed to compile data for the most important EU countries and almost all the CEECs.

Our findings in respect of the AETRs in 11 EU member states and 9 CEECs are given in Table 8. The AETRs in the table are calculated according to four categories shown above, with the qualification that we did not report AETRs on household income because of their minor importance to our study. Although the table only cites average figures for the period 1993-1998, the information loss is low because AETRs were very stable over that period.

As mentioned above, national accounts data gave rise to severe problems when estimating the AETRs. For France we had only ESA79 data to hand and for other countries we only had ESA95 data, while for yet another group of countries we had both.

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[36]   This changed to 'interest, dividends and investment receipts' (according to Carey and Tchilinguirian, 2000).

[37]   Although we wrote to the Portuguese Statistical Office in Portuguese!

From our experience, we can say that where AETRs on consumption and labour income are concerned, the different bases are of minor importance since AETRs calculated using either ESA79 based data or ESA95 data are very close to each other.

In Table 8, we report AETRs according to ESA95 for those countries where we had ESA95 data for the whole period 1993-1998. In the case of France we report data for ESA79 only; for those countries where we did not have a complete 1993-1998 time-series in either ESA79 or ESA95, we report a mixture of the two national accounts systems. The initial years are mostly reported according to ESA79, the final years according to ESA95 and the interim years as an average of ESA79 and ESA95 AETRs. Here again, because AETRs for consumption and labour income calculated using either ESA79 or ESA95 data are very close to each other, the bias in those AETRs arising by virtue of that data mix is very low. The figures shown in the table are thus suitable for the purposes of comparison.

Table 8

Average effective tax rates, 1993-1998

on:	Consumption	Labour Income	Capital Income		Corporate Income	
EU countries			ESA79	ESA95	ESA79	ESA95
Belgium	22.8	46.9	35.5	26.9	27.6	15.1
Denmark	36.3	40.9		33.4		10.9
Finland	27.6	51.9	37.4	39.8	20.4	23.4
France	18.9	45.7	17.0	.	21.3	.
Germany	18.1	40.9	25.1	26.4	.	17.6
Greece	18.8	37.8	.	10.1	.	14.2
Ireland	22.4	24.9		20.1	17.2	15.7
Netherlands	17.6	50.0	31.0	21.3	24.1	14.7
Spain	14.9	33.7	20.7	17.4	19.2	11.1
Sweden	23.0	51.3	46.6	46.1	31.6	27.6
United Kingdom	16.5	24.6	45.8	31.9	38.4	16.2
CEEC						
Bulgaria	13.2	28.4		16.0		28.1
Czech	21.6	37.8		15.8		17.0
Estonia	23.1	33.5		15.7		14.4
Hungary	24.5	36.2		12.5		9.5
Latvia	20.5	32.0		13.4		10.0
Lithuania	17.2	28.2		12.8		10.2
Poland	20.2	37.8		20.6		19.8
Romania	10.7	31.9		12.3		13.9
Slovenia	27.5	.		.		6.4

Source: Government Finance Statistics, IMF; National Account Statistics from EU countries' statistical offices; WIIW; own calculations.

However, when it comes to the AETRs on capital income and corporate income, things are different. Because the ESA95 data tend to show higher total gross operating surplus figures than the ESA79 data, the AETRs on capital and corporate income, calculated using the ESA95 data are (partly) much lower than the AETRs using the ESA79 basis. Therefore, for those countries where we had the appropriate data we show both the ESA79 and ESA95 AETRs in order to highlight the differences.

Thus, despite the heterogeneity of AETR structures in the EU, with certain high-tax countries at the one extreme and particularly low-tax countries at the other, AETRs (for labour, capital and corporate income) in the CEECs still tend (on average) to be below the lower EU extreme or at least below those tax rates to be found at the lower end of the EU tax rate scale.

Obviously this holds true for taxes on capital income, where the AETRs for almost all CEECs are well below EU tax rates, with the exception of Greece. As far as labour AETRs are concerned, CEEC tax rates do not have such an extreme position; nevertheless, as can be seen from the table, those CEEC tax rates are generally at the lower end of the EU tax range

In consumption taxes, things run almost counter to the other taxes, in so far as CEEC tax rates take up a position at the higher end of the EU AETRs related to consumption.

The ultimate impression we get from comparing AETRs in the EU and CEECs is hardly surprising, since it is *grosso modo* a reflection of the differences we already encountered when using statutory tax rates and tax quotas as measures.

Nevertheless, we might have expected the differences in the AETRs on consumption to be a little bit higher, since value-added and excise taxes are much more important in the CEECs than in the EU. The absence of major differences in AETRs on consumption for some CEECs (such as Poland, Latvia and Lithuania) compared to EU countries might be explained by the fact that the (VAT and excise) tax bases are still too narrow and tax collection might still pose some problems. This is especially true for Bulgaria and Romania, which are in the peculiar position of having much lower AETRs on consumption than any other EU country or CEEC.

Another point worth mentioning in the comparison of AETRs in the EU and CEECs are the partly major differences in the AETRs on capital income tax. An explanation for these differences is not readily given since when calculating this tax rate, several factors[38] such as enterprise profits, profits from unincorporated enterprises, household property income

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[38]   See the formula for the AETR on capital income above.

as well as property income in general play a role. Thus, we cannot simply say, for example, that those figures represent differences in company taxation in the EU and CEECs.

Analysis of the factors flowing into the capital income tax shows a clear distinction between the CEECs and the EU; this might explain the differences in this particular AETR. As a matter of fact, tax revenues on corporate profits are much more important when calculating the AETRs for the CEECs than for the EU. This is also reflected by the fact that in the EU countries, with the exception of Greece, the AETRs on corporate income are well below the AETRs on capital income, whereas in the CEECs the AETRs on corporate income are very close to or even surpass the tax rates on capital income.

On the other hand, property tax revenues and the (household income) tax paid out of the profits of unincorporated enterprises and (household) property income are more significant in the EU countries.

Thus, the major differences in the capital income tax might again be explained by the backwardness of the CEEC tax system, because it seems easier to tax (a few) companies than to collect taxes from property income (especially in countries where property is a relatively new experience) or from (small, but numerous) households.

Finally, it is also worth mentioning, especially with respect to the public discussion on tax competition, the differences in corporate income AETRs in the EU and the CEECs. Focusing solely on ESA95 data, Table 8 shows that, regardless of their influence on capital income tax rates, the AETRs on corporate income in the CEECs (with the exception of Bulgaria and Poland) are once again to be found at the lower end of the EU tax rate scale. Moreover, although not visible in the table, the time-trend for tax rates on corporate income in most CEECs slopes downwards, i.e. the AETRs decrease over time, whereas in the EU these tax rates remained constant in part and even increased in part over the period 1993-1998.

Having outlined the tax structure, tax strategies and the tax burden in both the EU and the CEECs, it is important to use the information so obtained and analyse the potential tax-induced effects that EU eastern enlargement could have, especially on the CEECs.

Summary

Although all EU member states today have modern tax systems, the systems differ considerably owing to differences in the individual countries' political and social systems. This can be seen, for example, in the cross-country variations in the tax-to-GDP-ratios, the various income tax tariffs, the inhomogeneous tax bases and especially in the taxation of corporate profits. But since the apparent differences between the tax laws and tax structures within the EU are seen as a major obstacle to further integration, it would appear necessary to create a system of more homogenous tax structures within the Union.

Thus, in the field of indirect taxation, the EU has undertaken certain steps towards harmonization, such as the sixth VAT-directive of 1977 and detailed regulations in the field of excise taxes. In the long term, the EU plans to implement the 'origin-principle': a step that calls for the wholesale harmonization of tax rates. Given certain problems associated with the origin-principle, this has yet to be achieved. However, the member states have already agreed upon minimum VAT rates.

With respect to direct taxation, few legally binding regulations have been passed: one being the parent/subsidy directive and another the merger directive.

Only recently has ever increasing tax competition forced the EU to enhance the co-ordination of EU direct tax systems, resulting in a policy package containing a 'code of conduct', measures for eliminating distortions in the taxation of capital income and measures to eliminate withholding taxes on cross-border interest and royalty payments between companies. With respect to the taxation of savings income, the ECOFIN agreed that all Member States would have to introduce a system for transmitting information to the member state in which the taxpayer is resident. Furthermore, the EU is also thinking of introducing a consolidated tax base for multinational enterprises in order to avoid the problem of transfer pricing and double taxation, as well as reduce compliance costs.

Prior to 1989 the CEECs had tax systems which were ill-suited to any market-oriented economy. Thus, with the collapse of the Communist system in the CEECs, tax reform became a task of highest priority.

Bound by the constraints of a limited tax administration capacity and given the need to secure revenue, consumption taxes became the most important source of tax revenue in the transition period on account of its relatively simple administration and revenue potential. On the other hand, the importance of taxes on corporate income declined significantly; primarily, because the pre-transition levels of corporate taxation were inviably high and some allowance had to be made for general economic developments. The share of personal income taxes increased in the course of the tax reforms, partly because of changes in accounting systems plus the need to offset revenue cuts in corporate taxation.

Social security contributions still display high shares in total tax revenue on account of the funding requirements of the social welfare systems that were already well established prior to 1989.

Comparisons of the tax systems in the EU countries and the CEECs show that as far as total tax-to-GDP ratios are concerned, the CEECs should fit into the current EU tax system. However, EU and CEEC tax structures differ, viz. the share of direct taxes in total tax revenues in the EU countries is much higher than in the CEECs. On the other hand, indirect taxes play a more pronounced role in the CEECs than in the EU, and the CEECs also depend to a considerable degree on foreign trade taxes. These differences are also reflected to a certain extent in the differences in the statutory tax rates, where the CEECs have higher-than-average consumption tax rates, but lower-than-average corporate tax rates.

These differences become even more pronounced if average effective tax rates are considered, particularly in the field of corporate taxation. Thus, upon study of average effective tax rates, it becomes obvious that although certain CEECs operate statutory corporate tax rates similar in size to the average EU rate, the CEECs effectively tax corporate income at a much lower rate than the EU.

5 Differences in tax structures and tax burdens in the EU and the CEECs: some economic implications

In deducing particular policy implications based on the information given above, we do not rely on an econometric model for essentially two reasons. First, in order to conduct an econometric analysis of the potential effects that the differences in tax burden could have on eleven EU countries and nine CEECs, one would have to use a macro-econometric model that encompasses all of those countries. Or one would have to carry out a 'time-series-cross section' analysis to quantify potential effects. The first approach is impossible; we do not have access to such a macro-econometric model. The second approach could be adopted. However, we would posit that for all its technical elegance, this approach is not really adequate to the problem – not for want of economic theory, but in the light of the data situation. Admittedly, data are the main obstacle to most empirical work, but in the case of this particular study the situation is even worse on account of the CEECs continuing to operate zones with special provisions for tax reductions. As we only have aggregate data for the whole country, an econometric study would not be very informative in this respect.

Instead we will present some qualitative arguments based upon economic theory. First, we will adopt an 'eclectic' approach; secondly, we will structure our arguments along the lines of Musgrave's 'Multiple Theory of the Public Budget' (see Musgrave, 1974 – German translation, chapter 1).

According to Musgrave any public sector action has to be legitimized within an economic system relying on market forces as the primary mechanism for resource allocation and distribution of income and wealth. Musgrave postulates three 'branches of government action': government action for realizing allocative goals, necessary because of market failures; government action for realizing distributive goals, necessary because the primary income distribution generated through the (efficiently working) market mechanism is found to be unequal; and government action, necessary because the market mechanism results in stabilization policy failures at a macroeconomic level. Furthermore, in order to realize these goals the 'state' requires financial resources. Therefore, another goal of government action is fiscal: generating enough financial resources to achieve public goals.[39]

Whenever possible, we will structure our arguments in terms of fiscal and non-fiscal effects. The latter group is divided into effects on: the allocation of resources; the distribution of income and wealth; and stability. Furthermore, we shall divide the arguments into (very) short-term and long-term effects on the one hand and into effects on indirect and direct taxation on the other.

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[39] Implicitly we assume that government is a 'black box' operating solely to achieve public goals.

Questions related to indirect taxation

If necessary, we shall subdivide the implications regarding short run effects up into very short-term effects (in our context this means immediately after entry into the EU) and short-term effects (in our context this means after a transition period of several years).

Questions related to indirect taxation – short-run

Our working hypothesis for the short run is that EU legislation remains unchanged. Thus, in the following section we will briefly evaluate the fiscal and non-fiscal aspects of the CEECs' adoption of the indirect taxation acquis.

Turning to the *fiscal aspects* first, it has to be recalled that the CEECs in general have higher VAT rates (both statutory and average effective) than the EU countries. However, assuming that the EU will continue to apply the destination-principle and only prescribe minimum VAT rates (5% for the reduced rate and 15% for the normal rate), the CEECs will be able to maintain their high tax rates; hence neither tax rates nor tax revenues will be subject to downward pressure.

On the contrary, it would seem that EU accession will exert an upward pressure on tax rates because although *grosso modo* VAT legislation in the CEECs is in line with the sixth VAT directive of the EU as well as other legislation pertaining to VAT, some points of divergence still remain that might have some undesirable fiscal and non-fiscal effects on the CEECs.

The first aspect to mention in this regard is the fact that contrary to EU legislation many CEECs still have zero or reduced VAT rates on certain goods and services. For example, the Czech Republic, Estonia and Hungary apply reduced VAT rates to heating and in another instance the Czech Republic, Slovakia and Slovenia impose reduced VAT rates on construction operations. In both examples, however, each country would have to apply its normal VAT rate in the event that they join the EU. All other things being equal, this would mean that EU accession would exert a positive fiscal effect on the CEECs as they would be able to collect higher tax revenues.

A similar need for upward adjustment is to be found in the CEEC excise tax legislation. In many CEECs excise duties, especially those on cigarettes and alcohol, are still too low compared to EU regulations. Thus, EU membership would also necessitate an increase in those duties.

A third aspect in this regard is that adopting current EU legislation would force the new entrants to lower the turnover ceiling below which entrepreneurs are not subject to VAT. Actually, on this particular point the differences between the CEECs and the EU are quite

substantial, since the CEECs deviate considerably from the EU threshold (EUR 5,000) (for example, Slovakia approx. EUR 40,000, Lithuania approx. EUR 28,000, Latvia and Romania approx. EUR 20.000 each). Thus, application of the tax acquis by the CEECs would result in an increase in business entities subject to VAT legislation in the respective countries: this in turn would also increase VAT revenues.

One notably important aspect will reduce the indirect tax revenues in the CEECs: the changes in the foreign trade tariff system induced by EU accession. As a result not only will tariff rates for foreign trade be altered on joining the single market, but the tariff revenues will also have to be transferred to the EU for funding purposes (with the exception of 10% of the tariff revenues, which the countries retain to cover administrative overheads). Bearing in mind that on average tariff revenues account for over 4% of total tax revenues in the CEECs, the changes in the tariff system will obviously have drastic negative fiscal effects on those countries.

Overall, in the very short run EU accession can be expected to have a negative fiscal impact on indirect taxation in the CEECs. For reasons relating to points below, many countries have requested in respect of open issues in VAT and excise tax legislation that in the event of EU accession, they be granted transitional periods prior to the full introduction of the acquis. Thus, whereas the revenue-creating effects of taxation will be postponed to a later point in time, the reduction in revenue through the change in the tariff system will come into effect from the very beginning of EU membership. Although in principle the new members will also have access to sources of finance through the various EU funds[40], thereby providing some fiscal relief, evidence from other EU member states shows that in the early stages of EU membership the ability to exploit those funds is generally low. As a result, newcomers were only able to secure but a small fraction of the funds to which they were entitled. A reduction in fiscal revenue on this scale could severely weaken the already weak budgetary situation prevailing in most CEECs and thus jeopardize those countries' plans to consolidate their budgets[41].

In the short run, the positive fiscal effects of fully adopting the acquis together with expected increase in economic growth will offset the initial loss in indirect tax revenues.

As for the *non-fiscal effects* of the CEECs' adopting the indirect tax acquis, we will first consider stability issues, followed by distributional aspects before finally highlighting allocation issues.

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[40] At present, however, the extent to which the new EU member will have access to EU funds is quite uncertain.

[41] See the medium-term fiscal outlook (plans) of the respective CEECs for details.

If one thinks of *stability* and taxes, one of the first things that comes to mind is the role of taxes as automatic stabilizers; however, in the case of indirect taxes, it has to be pointed out that they are not expected to play such a role, given the inelasticity of indirect tax revenues. Therefore, automatic stabilization is not really a topic here. It would appear more worthwhile to address the issue of indirect taxes providing the means to operate discretionary policy measures. However, this point relates directly to the fiscal effects mentioned above, whence we can conclude that in the very short run fewer discretionary policy means might be available. Only at a later stage in their EU membership would the CEECs be able to expand this line of fiscal policy.

Apart from this point, two other far-reaching effects arising out of the adoption of indirect tax legislation might be of interest.

We have previously mentioned that the CEECs will be obliged to raise their excise taxes on specific goods and adjust their VAT rates for certain goods and services.

A point in question common to both aspects is how much of the requisite increase in tax rates will spill over into increases in consumer prices. Thus, depending on the intensity of the competition in specific goods and services markets, price changes will more or less reflect the increase in the tax rate. Although it is highly speculative (at least from our position) to provide an estimate of the expected tax incidence, it can be safely assumed that such an increase in indirect taxes will at least have some effect on prices and hence on inflation. Therefore, it seems possible – and it is also advanced[42] as an argument in favour of transition periods – that full application of the acquis in this respect would potentially endanger the inflation targets set in those countries. Actually, this point bears some major implications, keeping in mind that some CEECs are already showing signs of real and nominal appreciation against the euro; thus, an increase in inflation would mean an additional push towards real appreciation which, in turn, might run counter to the CEECs' competitiveness.

The second effect, which in fact turns out to be rather an open issue, is attributable to the change in the tariff system subsequent to EU accession. When dealing with non-EU countries the EU applies tariff rates other than those it applies to the CEECs; hence, adoption of EU external tariffs will change the relative foreign trade price structure for the EU entrants and thus exert trade-creation or trade-redirection effects. Regrettably, given the scope of this study, we are merely confined to addressing this issue and leaving any estimate of its effects to further research.

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[42] See, for example, the negotiation position of the Government of the Republic of Hungary on Chapter 10 – Taxation.

A third related aspect that comes to mind is the need to lower the VAT threshold [above which entrepreneurs are subject to VAT] might jeopardize the development of small-sized enterprises, since it imposes additional burdens on them in terms of administrative costs, even if the firms are able to pass the tax burden on to the consumers. Bearing in mind that the CEECs are still not as developed in this field as the current EU member states and given that small-sized enterprises are a not unimportant source of economic growth, the immediate introduction of this EU law might exert a negative impact on economic development and growth in the CEECs.

Coming to *distributional effects*, we should first mention the well-known fact that indirect taxes are assumed to exert a regressive impact on income distribution. Therefore, it can be assumed that the necessary increase in VAT and excise tax rates already mentioned will in the short run have a negative impact on (secondary) income distribution, insofar as it will become more unequal. Furthermore, knowing that many CEECs will have to adjust VAT rates in particular for goods such as heating and electricity, the lowest income groups in those countries will be most affected by the adoption of the EU acquis: all the more so as in the short run CEEC governments might not be able to take countermeasures for want of budgetary means.

Furthermore, since tariffs exert the same impact as VAT, the change in the tariff systems might also have some distributional effects since we have assumed that such a change might work as a (foreign) trade-creating or trade-redirecting force. Thus, changes in income distribution will depend on the development of relative prices between goods consumed (and imported) by upper income segments and those consumed by lower segments. Hence, if goods for the upper segments become relatively cheaper, the (secondary) income distribution will become (ceteris paribus) more unequal, and vice versa. However, just as with stability issues, we can only point out that such effects might occur, but it is not feasible to predict which direction they might ultimately take.

The main issue regarding the *allocation* effects of applying the EU tax acquis in the CEECs is how the supply of public goods and services might be affected by EU accession. Since indirect taxes are the most important source of revenue for the CEEC governments, it can be assumed that changes in indirect tax legislation might alter the supply of public goods. As we have already seen with fiscal aspects, we expect that in the very short run the CEECs might incur a decrease in tax revenues. This would have a negative impact on their capacity to supply public goods, and only in the short run might things change for the better. Seen from the perspective of current budgetary deficits in the CEECs and given the plans to reduce those deficits via cuts in expenditure, the argument that the already existing undersupply of goods may even become more severe.

Apart from this, EU membership of the CEECs might bring about a shift in the structure of the supply of public goods and services, since the CEECs will, on the one hand, be obliged to finance the EU (partly) via tariff and VAT revenues and, on the other, they will be entitled to receive financial resources from the various EU funds. The point here is that prior to EU enlargement, CEEC tariff and tax revenues, which will now have to be transferred to the EU, could have been used to fund virtually any kind of public good or services, whereas funding from EU sources are for the most part directly targeted towards infrastructure and environmental investments. Thus, it seems highly probable that in the event of EU enlargement, the structure of public goods might well shift, all the more so as co-financing requirements have to be met by the CEEC governments, even though ultimately the total volume of public goods might not be jeopardized and could even expand.

Another point concerning allocation issues is that the enforcement of EU indirect tax legislation depends heavily on administrative capacity. Thus, for example, the need to adjust codes and lower the VAT threshold above which entrepreneurs are subject to the value-added tax in the respective countries will impose an additional administrative burden on CEEC governments.[43] Similar things might occur in other areas so that those countries' ability to supply public goods will be reduced or at least shifted.

Questions related to indirect taxation – long-run

For the analysis of the long-term effects of CEEC Union membership on indirect taxation, our working hypothesis is that the EU is moving towards a taxation scheme that is less demanding in administrative terms. Hence, we assume that the EU will introduce the origin-principle in indirect taxation. We further assume that current tax policy and tax rates in the CEECs will not change until then.

First, it has to be said that since possible tax-related effects are manifold and only predictable to a limited extent, we will not subdivide the following section into fiscal and non-fiscal aspects, nor will we split up the non-fiscal aspects still further into stability, allocation and distribution issues. Instead and in order to avoid over-speculation we will focus on effects relating to changes in VAT legislation and on readily foreseeable issues that which have already been partly discussed in the EU.

We begin our analysis with a general notion of ours: we expect the main long-run effects to be on the fiscal side, since indirect taxes are generally regarded to be more a financing tool than a steering tool in fiscal policy.

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[43]   The CEECs often bring this point up in EU accession negotiations when they ask for transitional periods in this respect.

At the outset, we repeat two facts: (a) the majority of the CEECs operate VAT rates that are higher than the average EU; (b) indirect tax revenues account for a greater share in total tax revenues in the CEECs.

Assuming that at some date in the future the EU does indeed introduce the origin-principle, its introduction would have to go hand in hand with full harmonization of indirect tax rates in order to avoid market distortions. The first question that arises therefrom is: what will the uniform VAT rate be in that case? In this study we assume that when choosing a tax rate, the EU countries are bound to the lower end of the scale by the minimum tax rates stipulated under EU law and to the upper end by the highest VAT rate currently applied in a EU country. Since we further believe that in order to minimize adjustment costs as well, the EU members are likely to agree on an intermediate VAT rate instead of choosing some (high or low) extreme tax rate, most CEECs (perhaps with exception of the Baltic states) might well have to accept a harmonized tax rate lower than the VAT rate they used to have prior to accession.

An immediate consequence of all this would be, all other things being equal, a (drastic) shortfall in revenue for many CEECs which would have to be offset – at least to some extent.

The first alternative to keeping tax revenues at the levels prior to the introduction of a uniform VAT rate is, of course, to increase other taxes; in this case, this would be confined to increasing direct taxes. In very general terms, this would mean that in the CEECs the tax burden would shift from indirect to direct taxes, bringing CEEC tax structures closer to average tax structures in current EU member states. Thus, in a broad sense the introduction of the origin-principle and hence a convergence of indirect tax rates may also lead indirectly to a convergence in terms of direct taxes and hence to a convergence of tax structures throughout the EU.

However, it is less clear whether such a shift to direct taxes might manifest itself in an increase of the tax burden on labour or capital. However, since this will be discussed in the long-run aspects of direct taxation, we refer the reader to that section of the study.

The second alternative facing the CEECs would be that the decrease in VAT and the following loss of tax revenue would not be (fully) offset by increases in other taxes. Although in the short run this would entail a loss of revenue, it would on the other hand mean an increase in disposable income; hence, it might act as a stimulus for economic growth that could work through two different channels. First, if there is enough competition in the goods and services markets, the decrease in VAT rates will be passed on to the consumers via lower prices which – all other things being equal – could result in an increase in consumption and hence accelerate growth. Furthermore, via the increase in

consumption the decrease in indirect tax revenues would be less than proportional to the decrease in the tax rates (given that the price elasticity of demand is close to 1). This would also contribute to offsetting revenue losses.

Secondly, if competition is weak and the change in tax rates is not transferred to lower prices, it will lead to an increase in producer profits. This, in turn, might have a positive impact on private investment and hence lead to increased economic growth.

The third alternative in this respect is euphemistically speaking an increase in government efficiency. This could be achieved either through a cut in government expenditures or via the more efficient collection of revenues. Seen from today's point of view, we could argue that on the one side cuts might be effected by reducing inefficiencies in governmental action that could arise, for example, on account of such factors as an inefficiently large complement of government employees or inefficient methods of transferring funds to the private sector. On the other hand, the more efficient collection of current revenues could be achieved by adopting stricter auditing processes or introducing interest payments on unsettled tax arrears, as has been the practice in Austria since 2000.

However, since we do not know the future state of governmental efficiency, we cannot really say whether a reduction in expenditures or a rise in existing revenues might be a feasible way of offsetting the loss in VAT revenues.

Hitherto, we have confined our analysis to purely domestic effects; as a matter of fact, however, the introduction of the origin-principle could also have a severe impact on foreign trade. Currently, under the destination-principle, imported goods are taxed in the recipient country at that country's tax rate and the tax revenue accrues to that country. The application of the domestic tax rate obviates any discrimination between domestic and imported goods and will also hold under the origin-principle as fully harmonized tax rates will apply. However, the tax revenue will no longer accrue to the importing country, but to the exporting country. As a result, tax revenues would shift from the net importing countries to the net exporting countries. Since the CEECs are net importing countries in general, this would mean that upon introduction of the origin-principle they would suffer a loss of revenue. However, the EU already seems to be aware of these problems since together with the origin-principle it plans to introduce a clearing mechanism to ensure that tax revenues from both imports and exports are fairly distributed between trading partners. A problem that may arise in the course of introducing this clearing mechanism lies in the actual distribution rules which will be subject first to a bargaining process and secondly to a voting process. Seen from today's standpoint, this would require a unanimous vote on the part of the EU member states. Whether the CEECs gain, lose or remain unchanged upon the introduction of the origin-principle will thus be a question of their bargaining power in the EU decision-making processes,.

That, however, is not the sole point pertaining foreign trade. As the majority of the CEECs are assumed to have higher-than-average VAT rates prior to the introduction of the origin-principle, full harmonization of VAT rates (which as before are assumed to be lower than CEEC VAT rates), if passed to the consumer via lower prices, will not only affect domestic prices, but also the prices of imported goods. If this leads to an increase in imports, the CEECs' trade balances –- *ceteris paribus* – will deteriorate. That, however, is only half the story as import prices might also undergo a change in other EU countries that are important trading partners for the CEECs, viz. Germany. If we assume that the VAT rate in Germany prior to harmonization was lower than the harmonized rate, this might lead to an increase in import prices in Germany followed by a reduction of German imports. Since Germany is the CEECs' most important trading partner, this might, in turn, lead to a reduction of CEEC exports, thus worsening those countries' trade balances still more.

We have to admit, however, that we do not know what the uniform VAT rate will be; hence, the impact described above could also work in the opposite direction (at least as far as Germany is concerned). None the less, the example shows that simple things can quickly become very complicated. Perhaps one should have second thoughts about the effects that might arise upon introducing the origin-principle.

For other effects, which we could imagine but appear highly speculative, we may refer to the short-run effects described above, with the rider, however, that in the short run we have assumed that indirect taxes will increase, whereas in the long run they are supposed to decrease. Thus, the effects might work in the opposite direction.

Questions related to direct taxation

Since future developments in the field of direct taxation within the EU are not readily foreseeable, our analysis of the tax-related impact on the CEECs of EU eastern enlargement will draw for the most part on the two EU tax policy strategies mentioned above.

Basically, we will proceed along the same lines as in the section on indirect taxes. We will start with the short-run issues and then go on to discuss long-run topics. As before, we will also subdivide the effects of EU membership on direct taxes into fiscal and non-fiscal effects, the latter being further subdivided into allocation, distribution and stability aspects, too.

Hence, we assume that in both the short and long run the system for the exchange of information relating to the taxation of income from savings will be up and running. As for FDI we assume that in the short run no substantial progress will have been achieved with respect to tax harmonization within the EU prior to the CEECs joining the Union. That means we wish to extend the status quo in terms of EU direct taxation principles. For FDI

in the long run, our point of departure is the projected introduction of a consolidated corporate tax base.

Questions related to direct taxation – short-run

In general, it has to be said that EU tax legislation focuses much more on indirect taxes than on direct taxes, as indirect taxes are more likely to hamper free trade within the Union. Thus, the bulk of EU tax legislation and directives can be seen to deal with indirect taxation. Only since the 90's has the EU started to adopt legislation on direct tax issues (i.e. the parent/subsidy directive and the merger directive); the main objective, however, was to establish a legal basis for bilateral double taxation. Only recently has the EU begun to worry seriously about the distorting and discriminating effect of direct taxation on EU-wide competition. To date this has resulted in a draft code of conduct for business taxation and a review of the state aid articles with respect to harmful tax practices.

In the light of the above, we will commence with the fiscal and non-fiscal effects relating to direct taxation issues. Thereafter we will split our arguments into aspects concerning savings flows (i.e. financial capital), FDI flows and the movement of labour.

Fiscal effects

As for the *flows of financial capital*, no major changes are expected to arise on the tax revenue side on account of EU membership for a number of reasons. First, tax revenues from savings constitute only a minor portion of total revenue. Secondly, it now seems very likely that EU legislation will change and introduce the residence-principle via a system for the exchange of information on savings taxation. It is assumed that this will have only a marginal impact on the flows of financial capital since it only provides compensation for tax differentials. For the CEECs this should be of far less relevance than the current interest rate differentials between the EU and the CEECs. The latter, however, depend much more on other factors than taxes. Thus, EU enlargement might have an effect on financial capital flows, but presumably not via taxes.

As for *FDI*, it can be said that the countries entering the EU following eastern enlargement generally display significantly lower corporate income tax rates (statutory as well as average effective). Furthermore, some countries (e.g. Poland, Hungary, Slovenia and Slovakia) have set up special economic zones (also termed enterprise zones) over the years. The zones were designed to attract investors (both foreign and domestic) to certain, mostly backward regions by offering – in addition to other incentives – favourable tax schemes. However, it seems these economic zones and especially the tax incentives associated with them are at odds with EU legislation, especially with the regulations pertaining to state aid (Article 87 ff. EU treaty). As was the case with Ireland, prospective EU members will have to abandon these tax measures at least in the short to medium

term. (This point is currently being discussed in the negotiations on EU accession.) As such, the abolition of harmful CEEC tax practices should – *ceteris paribus* – augment tax revenue from corporate profits. This, however, might not be the case, if the CEE countries react as Ireland did to the requirement that they no longer grant special tax concessions. In fact, Ireland has had to change its 10% corporate tax on profits from eligible goods and certain services; now it plans to introduce in 2003 a general corporate tax of 12.5% instead. This means halving today's 'normal' corporate tax rate (25%). Indeed, there might be some arguments in favour of the CEECs following suit (which we will discuss below). Although there are also some counterarguments why this might not happen, we can already observe such an 'Irish' phenomenon in the countries of Central and Eastern Europe. Thus, with EU membership in sight, Poland plans to reduce (or has already partly reduced) its corporate tax rate stepwise from 34% in 1999 to 22% in 2004. That a reduction in the tax rate of this scale also reduces tax revenue is obvious.[44]

On the other hand, tax revenues might also increase following EU accession provided that it induces additional growth in the CEECs and, as a consequence, increases company profits, for instance, on account of freer access to EU markets.

As far as *labour* is concerned, EU legislation does not provide much in this respect: thus, no fiscal effects are to be expected on this account.

Mention should be made, however, of the (stylized) fact that over the past few years one could observe a trend common to EU countries: a shift in the tax burden from capital to labour. This trend is borne out by a rise in the AETRs on labour and a decline in the AETRs on capital. Sooner or later, we might also experience a similar shift in the CEECs on two counts: not only do they want to support the installation of real capital in their countries, but they also dispose of some potential to increase labour taxes without endangering their competitiveness, since labour is (and will be for some time to come) relatively cheap in the CEECs compared to the EU.

Non-fiscal effects

As for non-fiscal effects relating to the *flows of financial capital* not much can be said since given the plan to introduce the residence-principle, no major effects are to be expected on the allocation, stability and distribution side – at least as far as the fiscal impact is concerned.

Still more interesting, however, are the non-fiscal effects on the *flows of FDI*, in particular on the *allocation* side. Allocation in this respect refers to the distribution of FDI between

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[44] Theoretically, though, it is possible that tax revenues might increase via the Laffer-effect, but this effect is not very well founded empirically.

countries, i.e. either between the EU and the CEECs or only among the CEECs themselves

As already mentioned, some CEECs operate special economic zones with favourable tax arrangements or generally offer discriminatory tax incentives to foreign investors. In the event of their joining the EU, these arrangements will have to be abolished. Consequently, one is tempted to suggest that the removal of tax incentives, which also had the function of compensating the investor to the detriment of investment in the CEECs, might well constitute a future obstacle to the inflow of FDI.

To counter that argument, attention can be first drawn to the fact that some countries (such as Estonia and Hungary) already offer far more favourable tax regimes or tax rates to foreign investors than most EU countries. However, leaving this argument to one side for the present, it should also be said that differences in tax rates are by no means the only variables that influence investment decisions.

Economic theory offers many more variables than pure monetary costs (of which taxes are merely part) as an explanation for the location decisions taken by investors. Thus, for example, new economic geography (see e.g. Fujita, Krugman and Venables, 1999), which is basically far from new, tells us that factor endowments (natural resources, skilled labour force, etc.) are one of the driving factors in decisions governing the location of a plant. Moreover, Marshall (1890) has already pointed to the importance of such determinants as the existence of specialized suppliers or the availability of forward-backward production linkages at a specific location. Furthermore, he also went on to mention that possible intellectual spillover and access to a labour market, suited to a specific branch of activity, are added attractions for firms in such branches. Newer schools of thought also highlight the fact that potential for economies of scale and economies of scope as well as positive networking externalities are significant considerations when deciding on location. The literature also mentions other major decisive factors such as the current or projected infrastructure in a region, distance from major markets or the purchasing power of a region itself. This latter point determines the market potential of the region which, in turn, can attract producers (and consumers) on account of good market access (and other points mentioned above).

In fact, two studies confirm the importance of non-tax determinants to location decisions in the CEECs. Thus Holland and Pain (1998), for example, found out that the inflow of FDI into a CEEC was determined by the country's trade links to Western countries, labour costs (relative to other CEECs), the degree of macroeconomic stability the country had achieved as well as the privatization policy it pursued . Similar results were obtained by Bevan and Estrin (2000); however, they also found out that gravity factors (distance to

Western markets) and especially the host country's market size are likewise important factors governing FDI inflows into a CEEC.

A slightly different approach to estimating the determinants of foreign direct investment in the CEECs was adopted by Resmini (2000). She performed a sectoral analysis of FDI, focusing on the manufacturing sector. She found out that FDI is driven by market considerations, a factor that is stronger in traditional sectors. She also established that the host country's progress towards a market economy took on importance for science-based and capital-intensive FDI, while wage differentials seemed to be important for scale-intensive and science-based sectors. Furthermore, openness (in terms of foreign trade) and current agglomerations (either major cities or industrial clusters) are important, especially in traditional sectors. Finally, Resmini also states that proximity to the EU is an important determinant for science-based and capital-intensive FDI in the CEECs.

Unfortunately, the studies cited hitherto completely disregarded taxes as a decision-making factor. Nevertheless, Resmini had already homed in exclusively on the manufacturing sector. This might well prove important, since in his survey of Austrian firms investing in the CEECs Altzinger (1998) discovered that FDI in the (traditional) manufacturing sector is indeed cost- (and consequently tax-) sensitive, whereas FDI in services or more modern manufacturing is guided much more by the market potential of the host country.

The cost- and/or tax-sensitivity of FDI in (traditional) manufacturing is also confirmed by Woodward et al. (1997) whom we have already cited above.

Following these theoretical predictions and the empirical evidence, we might conclude that adoption of the EU tax (and competition[45]) acquis and hence abolition of discriminatory tax benefits to (foreign) investors might be less harmful to the inflow of FDI than assumed. All the more so as almost all CEE regions (with the exception of the capital city regions of Prague and Bratislava; Budapest in this respect is questionable) will be Objective 1 areas in an enlarged EU. They will thus enjoy access to the various EU funds, which might assume the role of tax incentives and possibly serve to support FDI. As such, one important fund in this respect will be the Cohesion Fund, designed to co-finance infrastructure and environmental investments (sewage treatment, water purification, etc.) in backward regions. Another important fund will be the European Regional Development Fund (ERDF), one of the four EU structural funds designed to support small and medium-sized enterprises (SMEs), productive investment, infrastructure and local development.

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[45] Being granted in a discriminatory manner in these special economic zones, tax incentives are not treated in the tax chapter, but in the competition chapter!

Furthermore, it is assumed that CEEC accession to the EU will reduce the investment risks associated with those countries. As we have seen in the empirical evidence, risk does indeed seem to be a factor when deciding on location; hence in this context EU membership could even have positive effects on the inflow of FDI into the CEECs.

Furthermore, in the light of the empirical evidence, we might also argue that even in the cost-sensitive fields of FDI, the change in the CEECs' tax behaviour might have little effect on FDI inflows. As far as costs in a narrow sense are concerned, the CEECs still have (much) lower labour costs than the EU countries; this should thus offset possible increases in tax rates.

It is important to note, however, that the last point is only valid if we compare CEECs with EU countries. If we only compare the CEECs with each other, things could well be different. In this respect, we might argue that hitherto (and probably in the near future, too) a CEEC does not engage in tax competition for FDI with the EU because preconditions in the CEECs and EU member states are so different. Instead we might see CEECs using tax incentives (and other non-tax incentives) to compete with each other for FDI, as they are much more similar to each other in terms of labour costs, macroeconomic stability, etc.

Evidence that this has indeed happened is possibly to be found in the wide divergence among statutory tax rates on corporate profits across the CEECs, whereas the AETRs have converged across almost all countries to a low level (compared to the EU level). Since the AETRs detract from any kind of tax incentives or similar benefits, we might take this as indicating that the CEECs did indeed offer investors discriminatory tax benefits in combination with special economic zones so as to stay competitive in this respect.

If this is true, the requirement that unfair tax incentives be abolished could be bad news for those CEECs applying higher-than-average statutory tax rates, such as the Czech Republic and Slovakia (As already mentioned, Poland will reduce its tax rate by 2004). The countries concerned could find themselves facing a competitive disadvantage.

This disadvantage might even be compounded by the fact that current differences in non-tax legislation relevant to firms, such as environmental, health and safety standards, will cease to exist after enlargement; hence, investors might become even more sensitive to differences in tax rates.

Therefore, although the tax-related effects of EU enlargement might not bring about a standstill or slowdown in FDI inflows into the CEECs overall, it might well induce a shift in volume within the CEECs countries from high-tax to low-tax countries – unless, of course, countries such as the Czech Republic follow the example of Poland and counter these trends by reducing their statutory tax rates.

By now, however, the ability to reduce tax rates seems to be questionable, since the countries in question are already recording relatively high budget deficits. One positive aspect in this respect is that in its pre-accession economic programme the Czech Republic (at least) plans to reduce its deficit, mostly via cuts in spending, in order to have some room to manoeuvre at the time of accession. It remains an open question, however, whether this will be enough for the Czech Republic to be able to engage in tax competition with the other EU candidates.

A shift in FDI flows from one CEEC to another on account of tax differentials might well be an obvious possibility. Less obvious, however, is the possibility of there being a regional shift of FDI inflows within any one CEEC. As mentioned before, the CEE countries used tax incentives in part to direct investment to regions with poor economic performance in order to stimulate growth there. If these incentives now have to be abolished, the CEECs can still rely on transfers from the EU funds already mentioned. The only catch is that all CEE regions except two will be regarded as Objective 1 areas. Thus, for regions that perform well the scope for attracting funds will be the same as for those that perform badly. We also know from the new economic geography that investors tend to prefer locations that are already developed for the various reasons mentioned above. Consequently, EU accession might trigger of a shift in FDI inflows to the more developed regions, as FDI will enjoy the same support regardless of the region's stage of development (in the short run), unless economic policy adopts countermeasures.

As for the *stability* aspects relating to FDI flows and EU accession, it has to be said that stability largely depends on allocation effects. If indeed there is a redirection of investment, those countries that are net gainers (of investment) should also be net gainers in terms of growth and employment.

Thus, if because of tax differentials FDI really shifts away from the Czech Republic and Slovakia to other CEECs, this would mean that – ceteris paribus – growth in those countries will be potentially slower than in such countries as Hungary, Poland or the Baltic States which already offer (or will offer in the near future) more favourable corporate tax rates.

Relating this to past developments within the EU, we can see that tax differentials of this kind might result in quite dramatic effects as can be seen from examples of previous accession countries such as Ireland, Greece, Portugal and Spain. As we already know, Ireland was the only country in that group to offer large-scale tax incentives to foreign investors. In so doing, it managed to attract FDI to an extent that drove its average annual

GDP growth to almost 6% (GNP 5.4%[46]) over 15 (!) years (over the period 1986-2000) (see Laski and Römisch, forthcoming), thus allowing Ireland to catch up with the EU average (and beyond) in an impressively short time. The other countries (Greece, Portugal and Spain) adopted a more conservative approach to tax incentives and FDI. Although they ultimately caught up with the EU average, they did so at a much slower pace.

If something similar were to happen in Central and Eastern Europe, we might see the CEECs developing at different speeds, leading to an economic segmentation of the group. Although this presumably will not endanger economic stability in any one CEEC, since it is also assumed that the high-tax countries would grow[47], it might impinge on the political stability of an enlarged Union. Basically the CEECs share the same historical background and geographic space, and those countries lagging behind in the catching-up process might ask themselves sooner or later whether EU membership is as beneficial to them as they had expected.

Although this might be somewhat exaggerated, the fear that things might develop along these lines is visible in academic literature on this topic as well as in the future fiscal plans of the transition countries. Thus, these plans have as a general notion that a main goal of future fiscal policy is to create an environment conducive to investment. In fiscal terms, this would include appropriate corporate tax rates being offered by the CEEC governments. Then, of course, the possibility arises that the high-tax countries will embark on a course of tax competition and start lowering their statutory tax rates.

Somehow, this situation would then resemble a prisoner's dilemma game. The countries now applying low tax rates would have already 'confessed' to offering low taxes, thereby expecting to gain a higher payoff in terms of economic growth than those countries that have 'not confessed'. But since the high-tax countries might not regard such a situation as very compelling as it would entail them forgoing some growth, they might also think of lowering their taxes (on corporate profits). Then, of course, as we all know from the prisoner's dilemma game, no one in fact is better off; it could well happen that all countries are ultimately worse off. However, it cannot be said with any surety whether deterioration of this kind would have an impact on economic growth and hence on stability in the CEECs. Nevertheless, what we can assume happening in this case is that the CEECs would undoubtedly forgo tax revenues, were they to lower their tax rates. Hence, somehow they have to offset those financial losses in order to fund essential public investment or

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[46]   As far as Ireland is concerned GNP seems to be the right measure for growth, because of the huge current account deficit. The deficit mainly stems from repatriated profits from FDI; hence the Irish growth performance is not without its costs.

[47]   If, as could be assumed, the current growth performance is partly dependent on FDI, a shift of FDI flows away from high-tax countries might even decelerate growth in those countries.

social welfare expenditure, etc. The effects arising therefrom, however, relate more to distributional aspects (see below).

As for the possible *distributional* effects following the adoption of the EU acquis as it pertains to FDI, mention should first be made of the fact that such effects hinge largely on both the allocation effects and stability effects already mentioned.

Thus, where income distribution within the CEEC group (if we can put it that way) is concerned, it depends on whether tax differentials persist in the short run and whether FDI inflows shift on that account from high-tax to low-tax countries. If both are the case, it might lead, as mentioned above, to an increasingly uneven economic development across the CEECs and hence to a change in income distribution within the CEEC group in favour of the low-tax countries. However, just as before, if the high-tax countries adjust their tax rates in order to stay competitive, the effects on inter-country income distribution remain unclear; it appears likely, however, that distribution will not change too much (as far as tax-related effects are concerned).

None the less, this second development might have an impact on income distribution, not between countries, but within countries. As we stated above, engaging in tax competition is not without its costs; hence for the countries so involved, they have to compensate somehow for the loss in revenue from taxes on corporate profits. Drawing on the past experience of the EU countries, where a shift in the tax burden from capital to labour was to be observed over time, we can assume that something similar is also conceivable in the CEECs, all the more so as those countries would only jeopardize their labour cost advantages to a small extent. This shift in distribution might come from the government revenue side through an increase in labour taxes or more likely from the expenditure side, insofar as social expenditures, for example, are reduced. Evidence that this might be the case is given in a paper on the strategy of public finance and development published by the Polish Ministry of Finance. The paper states, for example, that a reform (as is planned) of public spending on disability and retirement benefits could reduce expenditures by approximately 4% of GDP!.

Another aspect is the effect on the regional distribution of income arising out of the CEECs' adoption of the acquis relating to FDI. Since this also depends on shifts in the allocation of FDI between regions within a country, the conclusions in this respect are analogous to the regional FDI allocation effects. Hence, what we might well observe in the post- accession period is a relatively marked increase in FDI in those regions that are already better developed regions to the detriment of the neglected lesser developed regions, resulting in an increase in regional disparities within the CEECs.

As far as non-fiscal tax effects on *labour* are concerned, we can be very brief. We assume that given the limited number of EU labour tax regulations, EU accession will not exert any direct effects (be it allocation, stability or distribution effects) on labour. What we might observe instead are indirect effects on labour caused by the changes in FDI inflows following adoption of the acquis. Therefore, all things being equal we can make labour a function of FDI and simply state that indirect tax effects on labour will move apace with the possible direct tax effects on FDI.

Questions related to direct taxation – long-run

As in our analysis of the long-run implications pertaining to indirect taxation and for similar reasons, we will once again not discriminate explicitly between fiscal and non-fiscal effects nor between stability, allocation and distribution effects. However, we will maintain the distinction between flows of financial capital (i.e. flow of savings) and flows of non-financial capital (i.e. FDI) and labour.

Where flows of *financial capital* are concerned, long-run aspects are hard to assess since the EU is already planning to introduce the residence-principle in taxation combined with a system of information exchange that we already mentioned in the section on short-run aspects above. Assuming that this system does not change in the long run, the conclusions are identical to the short-run conclusions, except that we expect the interest rate differentials to disappear when the CEECs join the EU and the EMU.

Our analysis of *FDI* flows is based on a recent communication from the Commission to the Council, the European Parliament and the Economic and Social Committee (COM, 2001d), in which the Commission suggests lifting current tax obstacles in the internal market.

In fact, the Commission proposes introducing a consolidated corporate tax base for multinational enterprises covering their EU-wide activities. Using a single company taxation framework, it would supposedly systematically tackle most of the tax obstacles to cross-border economic activity in the single market (see COM, 2001d, p. 17). Thus, companies with cross-border and international activities within the EU should be allowed to: (a) compute the income of the entire group according to one set of rules; and (b) establish consolidated accounts for tax purposes. In order to avoid interfering in the EU member states' sovereignty to set corporate tax rates, the EU proposes that member states apply their tax rates to the specific share of the tax base to be computed according to a commonly agreed allocation mechanism.

According to the Commission, a consolidated corporate tax base would, *inter alia*, serve to: (a) do away with the transfer pricing problems; (b) avoid many instances of double

taxation; and (c) remove many discriminatory situations and restrictions (see COM, 2001d, p. 18).

Basing ourselves on the political and practical difficulties of introducing such a scheme[48], we assume that given this basis, its immediate effect would be a shift of tax revenues from low-tax countries such as Ireland to high-tax countries which previously suffered from transfer pricing[49]. A second effect attributable to the introduction of a consolidated corporate tax base would be that by removing obstacles to cross-border economic activity, the mobility of non-financial capital increases. However, it does not rule out countries still being able to attract foreign companies via favourable tax rates; hence, it does not rule out tax competition.

To stress this argument even more, the main question is one of how countries might react to the gain or loss of tax revenues attributable to the consolidated tax base. It should be obvious that the countries experiencing revenue shortfalls have to compensate for that somehow , but it is less clear how countries benefiting from such a scheme will react.

Admittedly, answers to questions such as these are not very clear-cut. However, we can at least provide some hints on what possible developments might look like.

A starting point could be that of Devereux and Griffith (2002) who show that the more important the tax rate becomes as a factor behind the effective tax burden levied on investment, the more profitable that investment is. Thus, as we said previously, tax competition is not ruled out and the mobility of non-financial capital is increased by introducing a consolidated corporate tax base which constrains the individual countries' scope to react.

A second point could be that the statutory tax rates are unlikely to become an even more important factor in locational decisions since transfer pricing will no longer be possible. Thus, whereas it is now feasible for a multinational enterprise to locate to a high-tax country owing to the favourable environment in that location and transfer profits to low-tax countries, the exclusion of transfer pricing restrains multinational enterprises from shifting profits to low-tax countries. Thus, multinational enterprises might become more sensitive to

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[48]   In fact, the main practical problem is that of establishing a proper clearing mechanism for apportioning the tax basis among individual countries. At present, the EU is facing this problem as it negotiates a clearing mechanism for introducing the origin-principle. So far no agreement has been reached because of diverging opinions among EU member states and because of the unanimity requirement. To our mind, with respect to the consolidated tax base clearing mechanism, the problem of finding an agreement is much more serious since the tax bases of a multitude of enterprises have to be allocated individually, instead of relatively few tax bases from foreign trade as is the case in the clearing mechanism for the origin-principle.

[49]   It has to be said, however, that with its introduction of a consolidated corporate tax base, the EU is not targeting this macroeconomic goal primarily, but intends rather to reduce compliance costs for enterprises via this regulation (see COM(2001) 582 final, 2001e, p. 16).

tax-rate differentials and consider relocating highly profitable segments of their operations to low-tax countries.

As a consequence and assuming that the countries suffering losses in tax revenue will increase other taxes rather than cut expenditures (which is, of course, another alternative), they might prefer to increase taxes on immobile factors, most notably labour, instead of raising corporate taxes. In so doing, such countries might also hope that multinational enterprises will indeed relocate highly profitable segments to their countries; thus, they might even think of lowering their tax rates still further. This form of behaviour might also spill over to those enjoying gains in tax revenue. Since thanks to increased revenues, they can lower their tax rates, competition for corporate tax bases by means of altering tax rates will probably intensify.

Thus, we can see that the introduction of a consolidated corporate tax basis does not impede tax competition at all (which anyway is not the aim of this tax basis), but rather it changes the characteristics of tax competition. The reason being that without a consolidated corporate tax basis, tax competition manifests itself not only in low tax rates but also, for example, in exempting some part of the tax base from taxation. Since it is one aim of the consolidated corporate tax basis to prevent harmful tax competition by exempting parts of the tax bases, this will make the tax systems more transparent in this respect; however, it will also intensify tax competition via tax rates.

In turn, we might experience an even faster 'race to the bottom' in tax rates, unless the EU decides to introduce minimum corporate tax rates such as is the case with VAT today.

Hitherto we have not mentioned special aspects that relate specifically to the CEECs. This is because the conclusions would have been drawn whether the CEECs join the EU or not. However, as we have shown above, the CEECs have lower AETRs and lower statutory tax rates; therefore they will exert some pressure on the incumbent EU members, all the more so as in the long run the CEECs will become increasingly competitive in terms of other locational factors (probably except labour). Moreover, as long as the existing EU members do not react to that pressure, the CEECs might benefit from their tax rate differentials as that will enhance their profile as a favourable location for foreign investments. This, in turn, might result in an acceleration of the convergence process.

If the incumbent member states start to react to the low-tax pressure from the CEECs countries, the result could be the tax competition via tax rates highlighted above.

Given the EU's adoption of a tax co-ordination policy as distinct from a tax harmonization policy in the field of direct taxation, it is assumed that tax competition might also prevail in the long run. If that is the case, additional effects to those already mentioned might

emerge. However, reference is made once again to certain short-run effects mentioned above, as they are presumed to be of a similar type.

As far as *labour* is concerned, finding qualitative arguments and aspects is even more difficult because the EU does not have a clear idea about the manner in which taxation of labour should be co-ordinated between the member countries. Therefore, we have no 'point of departure' on which to base our arguments. However, we are sure of one thing: the effects on labour in the long rung once again depend on the effects on FDI. Therefore, we can deduce that the stylized fact of an increase in the effective tax burden on labour will also be experienced by the CEECs of today.

Summary

From the standpoint of indirect taxation*, the main short-run implications of an EU accession for the CEECs are as follows:*

1. *Upward pressure on certain CEEC VAT rates and excise duties which, it is assumed, will also lead – ceteris paribus – to an increase in tax revenues. On the other hand, the CEECs will lose a large portion of their tariff revenues so that the overall fiscal effects of EU enlargement on the CEECs might even be negative;*

2. *A net loss of revenues which means fewer funds for discretionary policy, thus limiting fiscal policy;*

3. *A possible increase in inflation which might also push the CEEC currencies towards real and nominal appreciation against the euro, which might adversely affect CEEC competitiveness;*

4. *Adoption of EU external tariffs by the CEECs which will change their relative foreign trade prices, possibly leading to trade-creating or trade-redirecting effects;*

5. *A slowdown in the development of small-sized enterprises owing to the EU requirement that the CEECs lower the VAT threshold level above which entrepreneurs are subject to VAT legislation;*

6. *Negative impact on income distribution, especially for the lowest income groups, since goods such as heating and electricity will have to be taxed at higher rates.*

7. *The supply of public goods and services might be affected negatively and a shift might also be observed in the structure of the supply of public goods and services.*

Assuming that the EU will have introduced the origin-principle and thus harmonized indirect tax rates, which are supposedly lower than the indirect tax rates the CEECs used to have prior to accession, the long-run implications are as follows:

1. *Ceteris paribus, a shortfall in revenues for many CEECs;*

2. *A shift from indirect to direct taxes in order to offset those losses, thereby bringing CEEC tax structures closer to average tax structures in current EU member states;*

3. *An increase in disposable income, if the loss in tax revenues is not offset, and hence an acceleration of economic growth;*

4. *A cut in government spending or more efficient collection of revenue;*

5. *A shift in tax revenues from net-importing to net-exporting countries;*

6. *An increase in imports and a drop in CEEC exports.*

From the standpoint of direct taxation*, the main implications of EU accession for the CEECs are as follows:*

1. *Expanding effects on tax revenue from corporate profits;*

2. *Only minor impact on FDI inflows from the EU to CEECs;*

3. *A shift in FDI inflows between the high- and low-tax CEECs, with positive economic effects for the low-tax countries and negative effects for high-tax countries;*

4. *A shift in FDI inflows between regions within individual CEECs;*

5. *An increase in tax competition within the CEECs.*

In the long run, EU accession could have the following effects:

1. *A shift in tax revenues from low-tax countries to high-tax countries;*

2. *Acceleration of tax competition within an enlarged EU;*

3. *As long as the current EU member states do not react to the low CEEC corporate taxes, the CEECs might be able to increase the pace of their convergence process.*

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