

## **THE EFFECTIVE LEVEL OF CORPORATE INCOME TAX IN THE EUROPEAN COUNTRIES**

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### **Abstract**

Despite of the fact that European Union economy is the subject to integration process, there has been no harmonization of corporate income taxation. No compulsion to adapt to common tax law requirements makes that many, especially new member states of EU, tends to use corporate income tax to attract capital flows. The tax competition often takes a form of so called “race to the bottom” and consists in reducing tax rates. At the same time fiscal authorities usually broaden their tax bases in favor to increase the neutrality of the corporate income tax. The main goal of this article is to measure the combined effect of reducing statutory tax rates and broadening of tax bases in selected Member States.

**Key Words:** *corporate income taxation, effective tax rate, tax competition*

**JEL Classification:** G38

### **1. INTRODUCTION**

Despite the fact that the economies of Member States are subject to economic integration, corporate income tax has not been harmonized yet. Since it is not obligatory to adjust CIT regulations to the requirements of EU law, many countries take advantage of the aforementioned tax and use it for accomplishing the objectives established as part of their economic policies. In recent years special attention has been paid to using income tax as a factor improving investment attractiveness of states through offering more favourable principles of taxation. This phenomenon is referred to as tax competition and consists mainly in the reduction of statutory tax rates. At the same time, in order to increase fiscal neutrality, tax authorities may extend tax base. One question arises here, namely

about the final effect of these changes for a taxpayer. Changes introduced simultaneously to statutory tax rates and tax bases make it difficult to select country that offers the most favourable principles of taxation. In order to compare tax rates in particular states, one may adopt a number of methods that illustrate the effect of income tax on various aspects of business activity such as the scale of investment activity. In the period of global financial crisis, the problem of finding a source of financing business activity has assumed a profound importance. Self-financing occupies a significant role. Having in mind the existing state of affairs, the present article analyses the effect of income tax on the level of external sources of financing for enterprises operating in the European Union.

## **2. METHODOLOGY FOR DETERMINING EFFECTIVE TAX RATE**

Literature on economics provides various approaches to determining effective tax rate. One may distinguish the following three (Gaetan, 2007:6) :

- approach based on historical macroeconomic data (macro-backward looking approach);
- approach based on historical microeconomic data (micro-backward looking approach);
- microeconomic approach based on ex ante analysis (micro-forward looking approach).

Division into macro and micro approach depends on data used. In macro analysis, effective tax rates are determined on the basis of aggregated data such as information included in national accounts. In this case, effective rates are calculated as a ratio between taxes paid by corporations and tax base that may be gross value added created by enterprises or aggregated profit generated by corporations. The analysis conducted on the basis of aggregated data may be useful in modelling the consequences of changes introduced to fiscal policy, e.g. fiscal harmonization and convergence or budgetary deficit reduction (Mendoza et al.1994:2). Nevertheless, this type of measure cannot be used for the assessment of tax scheme, and in particular of such parameters as amortization rates, method for settling tax loss, way of developing tax base, etc.

As far as the problem under discussion (i.e. effect of taxation on enterprises' capability to self-finance) is concerned, the use of effective tax rate in a macro perspective may lead to serious distortion. When aggregating financial results of enterprises, one takes account of both profit and loss, whereas tax may take

positive value or at least equal zero. As a result, effective tax rates calculated in such a way will usually be underestimated.

The aforementioned information drawbacks associated with effective tax rates determined on the basis of macroeconomic data provide a space for analyses conducted with the use of micro data. Micro approach is based on key parameters appearing in tax regulations or data derived from financial reports published by enterprises. Such analyses often make use of external parameters that are not directly related to tax system. As a result, it is plausible to assess the effect of taxation both taking and not taking account of interaction between tax and other factors affecting environment in which enterprises operate. Unlike analyses based on aggregated data, micro analyses allow for anticipating the effect of taxation on decision made by enterprise about a place to start a business, scale of investments or directions of investment activity.

Differentiation between ex ante and ex post approaches is determined by the type of information used. Ex ante methods are based on theoretical premises that allow for calculating so-called implicit tax rate. It makes use of only some parameters that can be easily quantified and characterize income tax scheme as well as other parameters such as interest rate or inflation. Effective marginal tax rate (EMTR) is the most popular method for determining effective tax rate. It was proposed by Fullerton and King. EMTR is a tax rate that burdens marginal investment project, i.e. project with marginal rate of return on the last unit of invested capital equal to marginal cost of capital for the project. The analysis of EMTR is particularly useful for the assessment of effect exerted by income tax on the scale of investment activity. EMTR measures the degree to which taxation increases the required tax rate before taxation and at the same time allows for determining the influence of incentives to providing new capital (Fullerton, 1984: 15).

The other approach to determining effective tax rate in ex ante perspective is the concept of effective average tax rate (EATR). This method was proposed by M.P. Devereux and R. Griffith. Its main idea involves determining the difference between net present value (NPV) of investment project in case of non-taxation and NPV of the project in case of taxation, and then scaling the difference with NPV of untaxed project. (Devereux, Griffith 2002). The advantage of EATR over EMTR lies in that it has been defined for any profit level before taxation and thus includes effective marginal tax rate (EMTR) determined for economic profit equal zero. As it has been highlighted by the authors of this measure, it is used for defining how the scheme and amount of tax affect decisions concerning the

location of business activity. Just as every tax measure, EATR has its drawbacks. First of all, it cannot take account of every important aspect of tax legislation, due to which the results of analysis of this measure may be misleading when it comes to the identification of incentives that affect particular firms. Tax schemes in particular countries differ not only in such elements as statutory tax rates or amortization rates for certain types of investment assets. Tax regulations may differ considerably in the catalogue of revenues and expenses taken into account while determining tax base by means of income tax. For instance, in Poland tax costs do not include expenses associated with the purchase and running of cars, entertainment, fines and reorganization. On the other hand, tax revenue does not include advances received, certain types of donations or liabilities remitted as a result of banking rectification proceedings. Similar problem may arise with reference to tax reliefs available in particular countries. Such differences in income tax schemes do not allow for making a detailed comparison between corporate income tax rates in particular countries on the basis of the aforementioned methods for determining effective tax rate in ex ante perspective. This is determined by the fact that it is difficult to define the scale of these differences. Therefore, in order to compare actual income tax rate and its effect on enterprises' capability to self-finance, one should use measures based on tax that has been actually paid. This requirement is satisfied by average tax rates determined on the basis of micro data in ex post perspective.

Microeconomic approach, based on historical data, makes use of data derived from financial reports. The advantage of this approach is, just as in the case of macro analysis, the fact that it enables one to use actual data. This allows for complete presentation of factors affecting the final level of taxation. At the same time, this approach does not have the main disadvantage of tax rates based on macro data, i.e. notable aggregation of information. As a result, it is possible to conduct multi-dimensional analysis of effective tax rates paying attention to division by sectors or size of business. Furthermore, this approach allows for examining the changes of tax rates in the function of profit made, which helps state if taxation is progressive or regressive. The advantage of rates based on historical data over rates determined with the use of ex ante perspective lies in the fact that they take account of soft factors and most of all allow for identifying differences as far as the development of tax base is concerned.

Effective tax rates based on micro and historical data may be determined in at least two ways. The first one involves calculating effective tax rates for particular enterprises. This is done through referring the actual amount of tax paid by

enterprises to measure that characterize the results of their operation such as gross profit. Subsequently, values calculated in such a way for particular enterprises are subject to averaging. In the following section of the present article, this rate will be referred to as average effective tax rate (AETR). This measure informs about average income tax rate to be paid by enterprise. Due to the fact that average effective rate is not weighted by the amount of tax or profit level, all enterprises are treated equally, which allows for determining the level of taxation for the majority of enterprises in a given country. Unlike effective tax rates calculated in ex ante perspective, AETR does not inform how taxation affects the profitability of investment activity. However, it allows for determining how income tax affects enterprises' capability to self-finance such an activity. Weighted average effective tax rate (WAETR) is an alternative to AETR. It can be calculated by determining the total amount of corporate income tax paid by enterprises under analysis and then dividing this sum by total gross profit generated by these enterprises. Average tax rate calculated in such a way is weighted by the level of profit yield by firms in question. Therefore, final value of this measure will depend on enterprises that earn the highest profits. Information provided by WAETR is similar to effective tax rate determined on the basis of macro data. This measure allows for defining the extent to which a given country actually participates in profits generated by enterprises. Significant conclusions may be drawn on the basis of the analysis of WAETR against AETR. If WAETR is higher than AETR, tax may be progressive, i.e. firms yielding substantial profits pay higher taxes higher than the profits.

### **3. ANALYSIS OF EFFECTIVE TAX RATES IN SELECTED MEMBER STATES**

Continuing the discussion initiated in the previous section of the present article and attempting to find out in which Member State enterprises pay the lowest income tax as well as how tax affects enterprises' capability to self-finance, it is best to employ average effective tax rates determined on the basis of micro data. In order to do so, the analysis covered 152 013 enterprises paying corporate income tax (CIT) and functioning in 23 Member States. Data used for the sake of the analysis was derived from financial reports for the year 2010. It did not cover countries in the case of which the sample (i.e. enterprises) was not numerous enough and hence did not satisfy certain assumptions. These assumptions will be specified and defined below.

In order to maintain the comparability of effective tax rates determined for particular states, a number of conditions are to be satisfied. The most important is

the necessity to use data derived from standardized financial reports for the purpose of calculation. In this way, it is plausible to eliminate the distortion of results that stem from differences in balance sheet law adopted in particular countries. Therefore, the analysis was based on standardized financial data derived from Amadeus database created by Bureau van Dijk. The other factor that may distort effective tax rates obtained in the course of calculation involves losses suffered by some entities. This problem is mainly the case with determining weighted average effective tax rate that – due to taking account of enterprises that incur losses – may be subject to overestimation. Therefore, the sample includes only those enterprises that have generated positive gross profit and positive income tax. What is more, in order to avoid consequences following from differences between particular countries and resulting from diverse mechanisms for settling tax losses from previous years (Fiekowsky,1977;20) , the sample does not include entities that have not declared income and thus have not paid income tax for five years prior to the analysis. Data obtained in line with the aforementioned procedure allowed for determining average effective tax rates and weighted average effective tax rates.

Analysing average effective tax rates obtained (Table 1), it can be noticed that they depend on statutory tax rate only in about 54%. It appears that the actual level of taxation is to a great extent determined by the broadness of tax base. Therefore, in the case of such countries as Latvia, Ireland or Romania effective tax rates are considerably higher despite extremely low statutory tax rates. In the majority of states under analysis, average effective tax rate is higher than statutory rate. This implies that tax base is broader than balance sheet profit. In a simplified way, the broadness of tax base may be determined by dividing the difference between effective and statutory tax rates by statutory rate. The result informs about how many percent tax base is broader or narrower than gross profit. Calculations suggest that only in seven Member States, i.e. Spain, Hungary, Malta, Great Britain, Sweden, Belgium and Holland, corporate income tax base is narrower than gross profit. On the contrary, the broadest tax base is reported in Italy. The results confirm the aforementioned thesis, namely that the lowest income tax rates are recorded in new Member States. Bulgaria has the lowest corporate tax. As far as ten Member States with the lowest corporate tax are concerned, nine belong to the so-call new EU. With reference to the old EU, the lowest corporate tax is paid in Ireland, whereas the highest one – by enterprises that are to cover their liabilities in line with Italian tax law.

**Table 1. The level of AETR and WAETR in selected Member States**

Country	AETR	WAETR	STR	Wideness of tax base (counted on the base of AETR)	Wideness of tax base (counted on the base of WAETR)
Belgium	32,5%	30,2%	34,0%	-4,4%	-11,3%
Bulgaria	11,5%	11,8%	10,0%	14,8%	17,8%
Czech Republic	21,6%	17,3%	19,0%	13,7%	-8,8%
Estonia	22,7%	15,5%	21,0%	8,3%	-26,4%
Finland	28,2%	23,4%	26,0%	8,6%	-9,8%
France	35,1%	20,8%	34,4%	2,0%	-39,4%
Germany	30,2%	27,9%	29,8%	1,4%	-6,5%
Greece	30,9%	35,0%	24,0%	28,7%	46,0%
Hungary	17,3%	10,9%	20,6%	-16,2%	-47,2%
Ireland	18,2%	17,9%	12,5%	45,7%	43,2%
Italy	55,6%	38,9%	31,4%	76,9%	24,0%
Latvia	23,1%	15,2%	15,0%	53,9%	1,4%
Lithuania	16,5%	13,6%	15,0%	10,3%	-9,6%
Malta	32,0%	24,0%	35,0%	-8,7%	-31,4%
Netherlands	25,2%	32,8%	25,5%	-1,3%	28,7%
Poland	23,1%	18,0%	19,0%	21,6%	-5,2%
Portugal	28,1%	12,7%	26,5%	6,1%	-52,2%
Romania	22,8%	18,1%	16,0%	42,6%	13,3%
Slovakia	22,7%	19,8%	19,0%	19,5%	4,1%
Slovenia	25,1%	19,3%	20,0%	25,5%	-3,7%
Spain	25,0%	24,7%	30,0%	-16,6%	-17,8%
Sweden	25,1%	19,3%	26,3%	-4,4%	-26,6%
United Kingdom	26,2%	25,5%	28,0%	-6,6%	-8,8%

Source: Own elaboration based on data derived from Amadeus database, Taxation trends in the European Union Main results, European Commission :2010:31

If effective tax rate is determined as weighted average effective tax rate, it can be noticed that it depends on statutory tax rate to a lesser extent than average effective tax rate (circa 38%). The result implies that the rate of tax paid by enterprises generating greater profits depends on statutory tax rate to a limited degree. This may be explained by the fact that firms yielding higher profits are much more motivated to seek methods for reducing tax liabilities.

Unlike average effective tax rate, weighted average effective tax rate in the majority of countries under analysis is lower than statutory rate. Hence actual tax base is narrower than gross profit. Only in eight states, namely Greece, Ireland, Holland, Latvia, Slovakia, Bulgaria, Romania and Italy tax base is broader than gross profit. It turns out that income tax revenues earned by countries are generally lower than the product of statutory tax rate and gross profits generated by enterprises. At the same time, nearly in all the countries under analysis (except for Greece and Holland) average effective tax rate is higher than weighted average effective tax rate, which may prove that enterprises yielding greater profits are characterized by a lower level of taxation. Therefore, in the states under consideration, although they employ mechanisms for privileging low income taxpayers, corporate income tax is regressive in nature. This phenomenon is particularly noticeable in countries such as Portugal, Italy or France, which presumably stems from the fact that enterprises generating greater profits have more extensive knowledge and capability to manage taxes. What is more, thanks to proper lobbying large enterprises may exert a more significant effect on tax regulations. The analysis of weighted average effective tax rates in countries under consideration allows for confirming that tax rates are lower in new Member States, which is due to lower statutory tax rates. On the other hand, striking differences cannot be noticed as far as the broadness of tax bases adopted in old and new Member States is concerned.

#### **4. CONCLUSION**

As far as the EU countries are concerned, the analyses suggest that the lowest corporate income tax rates are reported in new Member States. These (lower) rates are determined mainly by lower statutory tax rates. Nevertheless, this does not imply that entrepreneurs should be guided by statutory tax rate when selecting the place for starting a business. Such a criterion could be misleading both in the case of countries with very narrow tax base such as Spain and states with broader (than average) tax base like e.g. Latvia. At the same time, one cannot notice distinct differences between the broadness of tax bases in the old and new Member States. A significant remark is that in the majority of countries under analysis, average effective tax rate (AETR) exceeds weighted average effective tax rate (WAETR), which implies that enterprises with higher level of profits pay relatively lower taxes. At the same time, differences in WAETR between particular countries stem from statutory tax rate only in 38%. Therefore, it can be assumed that firms generating higher profits pay greater attention to the broadness of tax base than to the amount of tax. In other words, enterprises that yield substantial profits to a

significant extent take advantage of the possibility of reducing tax liabilities arising from taxation law. On the other hand, liabilities to be covered by enterprises generating low profits depend on statutory rates to a greater degree. In such a case reduction in tax rates is more favourable to small enterprises.

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