Assessment of Corporate Income Tax Revenues in the Light of Their Current Determinants

SLAVOMIRA TAHLOVA¹ and ANNA BANOCIOVA²

¹Assistant professor with PhD., Technical University of Košice, Faculty of Economics, Department of Finance, Košice, Slovakia; e-mail: slavomira.martinkova@tuke.sk (corresponding author)
²Associate professor with PhD., Technical University of Košice, Faculty of Economics, Department of Finance, Košice, Slovakia; e-mail: anna.banociova@tuke.sk

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ABSTRACT

Purpose: Based on the literature review, the purpose of the paper is to determine tax and non-tax determinants of corporate income tax revenues and assess their impact. The purpose of this paper is to point out to the current determinants that have a link to the amount of corporate income tax revenues and play an important role in tax policy making, through an empirical assessment. Methodology: The empirical assessment of the research purpose specifies an econometric model draft of panel regression. The model is based on the decomposition of the share of corporate income tax revenues in relation to GDP into individual components that affect these revenues. Approach: Corporate income tax revenues, dynamic variables affected in time by multiple factors are researched through mathematical and statistical methods in Excel and R program environments using regression analysis panels (Pooling, FEM, and REM models). The subject of the research is the EU-28 states over the period 2007-2016. Significant tax and macroeconomic factors are identified. Findings: The determinants of corporate income tax revenues, defined through the empirical research, include tax determinants, which have a direct link to the corporate tax structure itself and affect the size and profitability of the corporate sector, and specific non-tax determinants in the form of cyclical and international factors. Based on the analysis carried out it can be stated that corporate income tax revenues are determined by elements of tax legislation and specific non-tax factors.
INTRODUCTION

In accordance with economic theory, the tax is considered to be an important fiscal policy tool. Tax as a flow of revenues fulfills the allocation, stabilization and redistributive function for the implementation of the budgetary policy in connection with the maximum tax revenue collection into the state budget (Jackson and Brown, 2003; Devereux, 2006; Zodrow, 2010; Kawano and Slemrod, 2012). The income tax of legal person (further referred to as “LP”) is generally a stable source of income for the European governments (e.g. Kubatova, 2010; Siroky, Strilkova and Krajnak, 2016). However, in the development of corporate income tax revenues over the last 25 years, it has been observed their increasing, more precisely a stagnating trend with decreasing statutory tax rates and with increasing amount of actions taken to expand the tax base.

There are several studies concerning the optimal tax rates settings, which are considered to be the main determinant of the corporate income tax revenues. Literature devoted to the overall research of the corporate income tax revenues determinants is diversified from a time perspective and also among the states. However, tax and macroeconomic aspects and the nature of corporate income tax revenues are specific for each state, constantly evolving and influencing each other. The degree of interaction of the determinants is influenced by the intensity of the relation between them as well as the differences resulting from the used methodology (Bezdek and Stiller, 2000; Kubatova and Rihova, 2009; Kawano and Slemrod, 2012).

The basic principles of tax systems were applied at the time of relatively closed economies. What are the current determinants that affect the development of corporate income tax revenues? The current literature highlights the growing importance of non-tax factors, supported by the period of increasing internationalization and globalization (Clausing, 2016). The implementation of internal market in the EU in 1993, the possibility of companies to operate within a coherent economic zone, as well as the implementation of the European Monetary Union, have significantly changed the scope of LP’s corporate income tax and thus the traditional determinants of corporate income tax revenues.

Based on the literature overview, the goal of the paper is to determine the tax and non-tax determinants of corporate income tax revenues and assess their impact. The purpose of the paper is to point out to the current determinants, which currently have a link to the amount of corporate income tax revenues and play an important role in the tax policy making. The analytical part researches the defined hypothesis H1: Corporate income tax revenues are determined by the elements of tax legislation and specific non-tax factors.

1. DETERMINANTS OF CORPORATE INCOME TAX REVENUES

Determinants of the corporate income tax revenues are divided into two main categories - tax and macroeconomic, having a link to the creation of tax policy and corporate income tax policy of LP. Tax determinants result from the structure of the corporate tax itself. They are reflected in the corporate income tax revenues (further referred to as “CITR”) in the form of tax rates, in the short and long term period, and consequently in the form of affection the corporate sector. The beginning of the 1980s was associated with a decrease in CITR flowing into the state budgets of states in both the absolute and the relative amounts. Studies of that period were focused on research of economic factors, particularly in the form of tax rates. Tax rates were compared to the trend of corporate tax revenues in relation to GDP or in relation to tax revenues (further referred to as “TR”), within one state, or more precisely in a group of states (Auerbach and Poterba, 1987; Slemrod, 1990). The CITR variable was analyzed a traditional way by M. Devereux, R. Griffith and A. Klemm (2002).

According to them, in most states the CITR were decreasing due to legislative changes in the statutory tax rates (further referred to as “STR”). In the meantime, effective average tax rates (fur-
ther referred to as “EATR”) were increasing. M. Devereux, R. Griffith and A. Klemm (2004) showed by CITR research that their decrease was accompanied by offsetting other changes in the tax system, by beneficial depreciation, by the expansion of the corporate sector (mainly the financial services sector and the financial sector) and by increase of the corporate sector profitability. In the 1990s, the stagnating development of CITR was recorded in relation to GDP, perhaps even their slight growth. By implementing legislative adjustments concerning the reduction of tax rates, the trend was associated with the expansion of the tax base, the necessity of tax legislation coordination, and lower STR. Lower STR encouraged natural person (further referred to as “NP”) entrepreneurs to move their income to the corporate sector, making CITR slightly growing and expanding the sector.

**Macroeconomic determinants** affecting the level of CITR can be divided into structural factors such as nominal GDP, economic performance of the state, economic development and unemployment, and international factors such as level of foreign investments, openness, globalization, and internationalization.

Studies of authors M. Devereux (2006) and M. Devereux, B. Lockwood and M. Redoano (2008) were focused on research of tax and macroeconomic determinants of CITR. The authors, using panel regression, observed with a slight increase in CITR only a slight impact of a sharp decline in STR. As CITR determinant was considered the transfer of variable capital because of more preferable tax legislation and a reduction of the corporate sector. Tax rates themselves have led to a multiplication of many other factors, which reflected the differences between taxable profits. The relation between CITR and foreign direct investments (further referred to as “FDI”) was specifically analyzed by R. Gropp and K. Kostial (2000). The authors presented a strong dependence between FDI growth, choice of tax regime in the host state, and CITR (analogous to Slemrod, 1990; Devereux and Freeman, 1995; Bénassy-Quéré, Fontagné and Lahréche-Révil, 2000). If FDI increased, also tax revenues grew, thereby CITR were increasing. Simulation of FDI transfers in the context of current trend and efforts to harmonize the EU suggests that states with a high tax burden would benefit from harmonization, while states with a lower tax burden would probably lose their competitive advantage.

K. Clausing (2007) researched CITR determinants in relation to GDP. By the theoretical framework decomposition, she has set the CITR dependence on the applicable tax rates, the tax base range, the profitability of companies and the share of the corporate sector in relation to GDP. CITR were increasing at lower rate levels, and at higher rate levels the elasticity of taxable income exceeded value of one, therefore CITR were decreasing. The growth of the corporate sector in the economy, the profitability of companies and the existence of a territorial tax system led to higher CITR. Small open economies had more flexible capital and that was a prerequisite for their higher CITR sensitivity to tax rates. States with a greater international integration disposed of higher CITR at low STR due to the higher tax base sensitivity (Clausing, 2007; Clausing, 2008; Dahlby and Ferede, 2012; Brill and Hassett, 2007). Similarly, P. Sørensen (2007) decomposes the CITR determinants in relation to GDP into EATR indicator, the increase in share of total profits attributable to the corporate sector, and the increase in profit itself in relation to GDP. J. Piotrovská and W. Vanborren (2008) and R. De Mooij and G. Nicodême (2007) also concurred with his conclusions.

## 2. RESEARCH OBJECTIVE, DATA AND METHODOLOGY

In accordance with the main purpose of the paper, the object of interest (CITR) is researched in the EU-28 member states over the period 2007-2016 in order to verify the hypothesis: Corporate income tax revenues are determined by the elements of tax legislation and specific non-tax factors. The econometric model is set based on the empirical research of tax variables and factors affecting the corporate tax environment. The model is based on the decomposition of the share of
corporate income tax revenues in relation to GDP, analogous to K. Clausing (2007). The relation is as follows:

\[
\frac{\text{CITR}}{\text{GDP}_{LT}} = \frac{\text{TaxDue} \times \text{CorporateProfit}}{\text{CorporateValueAdded}} \times \frac{\text{GDP}}{\text{TaxBase}}
\]

where \( \text{TaxBase} \) represents the tax base that is excluded from analysis due to data unavailability (analogous to Clausing, 2007), \( \text{CITR} \) represents the corporate income tax revenues, \( \text{CorporateProfit} \) represents a profitability of the corporate sector, \( \text{CorporateValueAdded} \) represents a value added in the corporate sector, and \( \text{TaxDue} \). The amount of corporate income tax revenues is affected by a change in the tax rates, by a change in the activities in the corporate sector, which are the subject of taxation, and the size of the corporate sector.

The regression model is based on an empirical research of corporate income tax revenues with the purpose to determine their determinants, consequently determine the tax, corporate, cyclical, and external macroeconomic factors that dispose of a link to corporate income tax revenues and their amount. The model is expressed by the following relation:

\[
\frac{\text{CITR}}{\text{GDP}_{LT}} = \beta_0 + \sum_{k=1}^{n} \beta_k \text{Tax}_{k,LT} + \sum_{m=1}^{n} \beta_m \text{Corporate}_{m,LT} + \sum_{r=m+1}^{s} \beta_r \text{Cyclical}_{r,LT} + \sum_{u=m+1}^{s} \beta_u \text{International}_{u,LT} + \mu_T + \epsilon_T
\]

where \( \frac{\text{CITR}}{\text{GDP}_{LT}} \) are corporate income tax revenues in relation to GDP, \( \text{Tax}_{k,LT} \) represents a set of tax variables, \( \text{Corporate}_{m,LT} \) represents a set of variables affecting the corporate sector, \( \text{Cyclical}_{r,LT} \) represents a set of cyclical variables, \( \text{International}_{u,LT} \) represents a set of external macroeconomic variables affected by current development, \( \beta \) represents individual regression coefficients, \( \mu_T \) are annual effects, \( \epsilon_T \) represents a random independent error, states are labeled with index \( T \), and the time is labeled with index \( T \). The input explanatory variables of each category and their expected impact are included in the table below (Table 1).

The first group of explanatory variables forms the \( \text{Tax} \) set. Statutory tax rate in % (STR) is a part of this group. Statutory tax rate to the power of 2 in % and in decimal format (STR\(^2\)) is applied due to control testing of a nonlinear relation between the tax rate and the amount of corporate income tax revenues. The impact of tax rates can also be researched by the difference between the maximum income tax rate applicable for NP and the maximum income tax rate applicable for LP in % (PIT-STR). In case that income tax of NP is higher than income tax of LP, the fact affects entities that tend to move their taxable income from the private to the corporate sector, which ultimately may impact the growth of the CITR.

The second group of explanatory variables forms the \( \text{Corporate} \) set. Variables characterizing the corporate sector, its size and profitability, which could have an impact on the change of CITR\(_{GDP}\), are categorized to this group. A growth of the corporate sector, as well as its profitability, lead to a growth of CITR. Variables affecting the size of the corporate sector include the share of the corporate sector on economy, expressed by secondary data sources on net operating surplus of corporate value added in % of GDP (NetSurplus). Corporate sector profitability is expressed by secondary data sources on Gross value added in the corporate sector in % (GrossValueAdded). In addition, Gross value added in agriculture in % of GDP (GVA_Agri), Gross value added in industry and manufacturing in % of GDP (GVA_Industry), Gross value added in real estate activities in % of GDP (GVA_Reality), and Gross value added in trade in % of GDP (GVA_Trade) take part in the analysis through secondary data sources.
The size of the corporate sector is expressed by the secondary data sources on GDP growth in % (Growth), the relative share of GDP to total GDP of the EU-28 states sample in % (Relative) and the natural logarithm GDP per capita (Ln(GDP_PC)). The change in the corporate sector profitability is indirectly observed via labor productivity through secondary data in the form of number of hours worked per employee per year expressed in hours (Worked). Higher number of hours worked per employee per year means a greater added value in the corporate sector, which leads to CITR growth. Corporate sector profitability is expressed by secondary data on gross fixed capital, expressed in % of GDP (FixedCapital).

Table 1. Determinants of corporate income tax revenues and their expected impact

| Set          | Variable                                                                 | Labeled as | Effect | Relation                                                                 |
|--------------|---------------------------------------------------------------------------|------------|--------|--------------------------------------------------------------------------|
| Tax          | Statutory tax rate                                                       | STR        | +      | Higher tax rate leads to higher CITR.                                    |
|              | Effective average tax rate                                               | EATR       | +      |                                                                          |
|              | Statutory average tax rate to the power of 2                             | STR²       | -      | Confirmation of nonlinear relation between tax rate and CITR.           |
|              | Effective average tax rate to the power of 2                             | EATR²      | -      |                                                                          |
|              | The difference between the maximum tax rate for NP and LP                 | PIT-STR    | +      | Higher tax rate for NP may lead to an increase of the corporate sector and CITR growth. |
|              | Net operating surplus as % of net added value                            | NetSurplus | +      | Growth in the operating surplus in the sector leads to higher CITR.     |
|              | Share of GDP of the state in relation to total GDP                        | Relative   | +      | Size variable of the corporate sector, growth leads to higher CITR.     |
|              | GDP growth                                                                | Growth     | +      | Higher GDP growth leads to higher CITR.                                 |
| Corporate    | Gross fixed capital as % of GDP                                         | Fixed Capital | + | Gross fixed capital growth leads to higher CITR.                         |
|              | Gross value added as % of GDP in agriculture, fishing, and forestry      | GVA_Agri   | +      | Value added growth in the corporate sector according to specialization leads to higher CITR. |
|              | Gross value added as % of GDP in industry and manufacturing              | GVA_Industry | +   |                                                                          |
|              | Gross value added as % of GDP in real estate activities                  | GVA_Reality | +   |                                                                          |
|              | Gross value added as % of GDP in wholesale and retail trade              | GVA_Trade  | +      |                                                                          |
|              | Number of hours worked per employee per year                             | Worked     | +      | Higher number of hours worked per employee per year means higher value added in the corporate sector and that leads to higher CITR. |
|              | Natural logarithm GDP per capita                                         | Ln(GDP_PC) | +      | The size of corporate sector affects CITR change.                      |
| Cyclic       | Unemployment rate                                                        | Unempl     | -      | Higher unemployment rate leads to a decline in the corporate sector profitability and to lower CITR. |
|              | Inflation                                                                | Infl       | +      | Higher inflation rate leads to higher CITR.                             |
| International| The inflow of foreign direct investment in relation to GDP               | FDI        | +      | Growth of foreign direct investments increases capital reserves and that leads to higher CITR. |
|              | Land area above sample average (dummy = 1)                               | Factor (Big) | +   | State with the larger land area has the potential to reach higher CITR. |
|              | Openness (dummy = 1)                                                     | Factor (Inter) | + | Open state has the potential to reach higher CITR.                     |
|              | Index of tax attractiveness                                              | TaxAttractive | + | Better conditions for taxation lead to higher CITR.                    |
|              | Globalization Index                                                       | Global     | +      | Better conditions for taxation lead to higher CITR.                    |
| Time effect  |                                                                           |            |        | CITR may change over the period, which is caused by the unmeasured facts. |

Source: Authors’ own elaboration
The third group of explanatory variables forms the cyclical set. This group is created by variables affecting the cyclical trend of the economy and the economic growth are observed in the form of inflation in % (Infl) determined by the consumer price index with the reference year 2010, and also in the form of unemployment rate in % (Unempl). An increase in inflation affects the growth of CITR, an increase in unemployment rate directly affects decline in CITR.

The fourth group of explanatory variables forms the international set. This group includes the perception of LP taxation observed by the secondary data on tax attractiveness index with values from the interval <0;1> (TaxAttractive). Growth of the tax attractiveness index assumes more preferable legislative and tax conditions, and the tax environment for LP in the state, making it more attractive to domestic and foreign LP, which is the causing factor of the increase of the corporate sector and consequently increasing CITR. Another variable is globalization index with values from the interval <0;100> (Global). Growth of the globalization index is a reflection of three dimensions - economic, social, and political, and is also a manifestation of the growing interdependence of states, but also of multinational corporations. This index may, under certain conditions, lead to the corporate sector growth and growth of CITR. The international attribute affecting the amount of CITR is the inflow of FDI in % of GDP (FDI), while an increase in the share of FDI in relation to GDP leads to a capital growth in the state, and that leads to the growth of the corporate sector and thus to the growth of the CITR.

Part of the model are the dummy variables - the land area of the state (Factor(Big)) with value one, in case the land area of the state is larger than the land area of states according to the average sample of all EU-28 member states. The second dummy variable is openness (Factor(Inter)) that results from the volume of FDI inflow into the state expressed in % of GDP. In case that the state disposes of a larger FDI inflow than the average FDI inflow in a given year across all EU-28 member states then the binary variable is equal to one in the given year.

The sample database of the EU-28 member states is derived from Eurostat, OECD, UNCTAD, IMF, and also from the tax attractiveness index compiled by authors Schanz et al. (2017). Corporate income tax revenues, dynamic variables influenced by multiple factors in time, are researched through mathematical and statistical methods in Excel and the R program environment by using the packages psych, tseries, plm and aTSA. Prior to modeling, the stationarity of time series data of explanatory variables based on the KPSS test and on the extended DF test over the period of time 2007-2016 is tested. In the analysis there are combined regression model, fixed effects model, and random effects model constructed. The significance of the selected variables entering the models is verified by the Kaiser-Mayer-Olkin criterion (KMO). Criteria values below significance level (0.5) are considered as insufficient and therefore are excluded from the models.

3. RESULTS AND DISCUSSION

The basic model of the equation takes into account four sets of considered explanatory variables in relation to the explained variable that is corporate income tax revenues in relation to GDP across the EU-28 over the period 2007-2016. Based on the results, it can be stated that the variables chosen in the models are statistically significant determinants that can affect the amount of corporate income tax revenues (Table 2). The first model (Model 1) is based on the underlying assumption of economic theory confirming conclusion that corporate income tax revenues are affected by the level of tax rate. For this reason, two variables are included in the Tax set, and those are a statutory tax rate (STR) and its second power (STR²). Growth in the tax rates affects corporate income tax revenues proportionally under the ceteris paribus condition. The positive sign with the regression coefficient β within the STR confirms conclusion of the economic theory. With increasing levels of tax rates, growth of corporate income tax revenues is expected. In case that taxable in-
come is inelastic in relation to the tax rates, it leads only to a change of the rates and not of CITR. The tax rate can not be considered as affecting the amount of CITR proportionally and linearly. This fact is confirmed by the Laffer curve, which at a certain level (optimal or more precisely maximum) records a decrease in CITR. The second power of STR variable points to the negative impact of high tax rates in relation to the trend of CITR.

Significant relation between the tax rates and CITR affects profitability and size of the corporate sector (Clausing, 2007). This fact is researched in the second model (Model 2) that is compiled by size and profitability variables of the corporate sector. The resulting model confirms the significance of the five considered variables that includes GDP growth (Growth), natural logarithm GDP per capita (Ln(GDP_PC)), and relative share of state’s GDP in relation to total GDP of the EU-28 states sample in % (Relative). In case the size of the corporate sector can be expressed by the size of the Ln(GDP_PC), then with the growth of this variable we expect the growth of the corporate sector that influences the growth of the explained variable. With increasing GDP levels, the growth of the corporate sector is expected, which leads to an increase in CITR. Statistically significant determinant in the corporate sector group is a relative share of state’s GDP in relation to total GDP of the EU-28 states sample in % (Relative). Auerbach (2006) researched the stagnant trend of corporate income tax revenues from a different point of view. The assumption of his conclusion was trend invariability of the profit rate and closely related to that is the method of assessing CITR. As it is possible to compare CITR in relation to GDP or in relation to TR, the implied trend is characteristic by volatility due to reasons others than the tax systems themselves. They depend on the size of the corporate sector and on the relative size of corporate income in relation to GDP.

An alternative to the added value of the corporate sector in relation to GDP is a gross fixed capital (FixedCapital). It affects the amount of taxable income. CITR increases with increase of taxable income. Contrary to the expected assumption represents a gross added value is in industry (GVA_Industry). As it is a secondary variable, its trend may be affected by other facts of other turbulent trend. Some significant dependencies that determine the development of corporate income tax revenues in relation to GDP through tax or corporate variables are affected by cyclical variables. The influence of these variables is researched in the third model (Model 3) that includes two variables. The low level of inflation can be identified as a mechanism generating additional income for governments (Sackey, 1981). It can be stated that its increase determined by the consumer price index, with the year 2010 as the reference period, leads to an increase in CITR. The second determinant is an unemployment rate (Unempl). The variable may affect cyclicity and therefore profitability within the corporate sector. The increase in the unemployment rate affects decrease in CITR. The fourth model (Model 4) demonstrates the fact that current international influences determine the trend of corporate income tax revenues. As statistically significant variables are established the inflow of FDI, the index of tax attractiveness (TaxAttractive), and the globalization index (Global). In the model, the effects of international action on the changes in corporate income tax revenues are assessed by their positive relation. With the growing impact of international influences observed through the inflow of foreign direct investments, the index of tax attractiveness, and the globalization index lead to a growth of the observed explained variable.

States respond to changes in the corporate environment and to the tax legislation that can also be consequently reflected in the change of the inflow of foreign direct investments. Despite of this, the coherence of interpretations between the Global as well as the TaxAttractive and CITR is still so rare, these indices offer a reflection of the political, economic, social, tax, and corporate environment. Indices have a positive effect on the trend of corporate income tax revenues, which means that their growth, thus the improvement of the conditions within individual categories considered leads to an increase of the corporate income tax revenues.

Overall Model 5 is compiled for all EU-28 member states as a whole based on the determinants of corporate income tax revenues in relation to GDP, also the variable PIT-STR, Factor (Big) and the state’s openness Factor(Inter).
The previous conclusions from Models 1-4 provided an overview of the individual variables significance, their regression coefficients and the level of their significance individually for each observed set in relation to the explained variable. Based on a comprehensive view of results (Model 5), it is possible to confirm the expected impacts of determinants in majority of cases in relation to the explained variable.

Table 2. Determinants of the corporate income tax revenues

| Corporate income tax revenues in relation to GDP | Independent variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|-------------------------------------------------|-----------------------|---------|---------|---------|---------|---------|
|                                                 | REM Pooling | FEM Pooling | FEM | REM Pooling | FEM | REM Pooling | FEM | REM Pooling | FEM | REM Pooling | FEM | REM Pooling | FEM |
| STR                                             | 0.144996 (6,062e-10) *** |                      |          |          | 0.2541351 (4.941e-08) *** |                      |          |          | 0.6116772 (3,063e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| STR²                                            | -0.151274 0.01791 * |                      |          |          | -0.6116772 (3,063e-09) *** |                      |          |          | -0.976374 (4,210e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| PIT-STR                                         | 0.0410396 (0,0050216) ** |                      |          |          | -0.0318592 (1,830e-08) *** |                      |          |          | -0.0976374 (4,210e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| FixedCapital                                     |                      |          |          |          |                      |          |          |          |                      |          |          |          |          |
| GVA_Industry                                     | -0.0595411 (< 2,2e-16) ** |                      |          |          | -0.0623900 (4,991e-08) *** |                      |          |          | -0.0976374 (4,210e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| Relative                                         | -0.0623900 (4,991e-08) *** |                      |          |          | -0.0623900 (4,991e-08) *** |                      |          |          | -0.0976374 (4,210e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| Ln(GDP_PC)                                       | 0.0037293 (< 2.2e-16) *** |                      |          |          | 0.0037293 (< 2.2e-16) *** |                      |          |          | 0.0037293 (< 2.2e-16) *** |                      |          |          | 0.0135684 (0,003231) ** |
| Growth                                           | 0.0538081 (0,0003589) *** |                      |          |          | 0.0538081 (0,0003589) *** |                      |          |          | 0.0538081 (0,0003589) *** |                      |          |          | 0.0135684 (0,003231) ** |
| Infl                                             | 0.0414118 (0.001465) ** |                      |          |          | -0.0241274 (0.045334) * |                      |          |          | 0.0241274 (0.045334) * |                      |          |          | 0.0135684 (0,003231) ** |
| Unempl                                           | -0.0578716 (7,344e-09) *** |                      |          |          | 9,2137e-03 (3,330e-09) *** |                      |          |          | 9,2137e-03 (3,330e-09) *** |                      |          |          | 0.0135684 (0,003231) ** |
| FDI                                              |                      |          |          |          | 0.0034328 (0.012471) * |                      |          |          | 0.0034328 (0.012471) * |                      |          |          | 0.0135684 (0,003231) ** |
| TaxAttractive                                    | 5,4337e-02 (1,002e-11) *** |                      |          |          | 5,4337e-02 (1,002e-11) *** |                      |          |          | 5,4337e-02 (1,002e-11) *** |                      |          |          | 0.0135684 (0,003231) ** |
| Global                                           | 2,2492e-04 (0,0023878) ** |                      |          |          | 2,2492e-04 (0,0023878) ** |                      |          |          | 2,2492e-04 (0,0023878) ** |                      |          |          | 0.0135684 (0,003231) ** |
| Factor(Big)                                      |                      |          |          |          | 0.0053524 (0.004380) ** |                      |          |          | 0.0053524 (0.004380) ** |                      |          |          | 0.0135684 (0,003231) ** |
| Factor(Inter)                                    |                      |          |          |          | 0.0040528 (0.023922) * |                      |          |          | 0.0040528 (0.023922) * |                      |          |          | 0.0135684 (0,003231) ** |
| Number of observations                           | n = 28, T = 10, N = 280 | n = 23, T = 10, N = 230 | n = 28, T = 10, N = 280 | n = 28, T = 10, N = 280 | n = 28, T = 10, N = 280 |                      |          |          | n = 28, T = 10, N = 280 |                      |          |          | 0.0135684 (0,003231) ** |
| p-value of F-statistic                           | 0.00012596 < 2,22e-16 | 8,5648e-14 < 2,22e-16 | < 2,22e-16 | < 2,22e-16 | < 2,22e-16 |                      |          |          |                      |          |          |          | 0.0135684 (0,003231) ** |
| R²                                               | 0.064771 0.3666 0.21393 0.3198 0.59428 |                      |          |          |                      |          |          |          |                      |          |          |          | 0.0135684 (0,003231) ** |
| Adjusted R²                                      | 0.061407 0.35738 0.12274 0.31241 0.56463 |                      |          |          |                      |          |          |          |                      |          |          |          | 0.0135684 (0,003231) ** |

Notes: The table shows the values of the coefficients for the individual models and the p-values of the t-statistics in brackets. The significance of the model is indicated at the significance level of 0.001 '***', at the significance level of 0.01 '***' at the significance level of 0.05 '*', at the significance level of 0.1'.

Source: Authors' own elaboration
In connection with the determinants of corporate income tax revenues specified so far, the literature also meets with their criticism. Gravelle and Hungerford (2012) proved that while respecting fixed effects of individual states, tax rates are not important determinants of CITR. The unobserved heterogeneity provided a bias against the analyses based on panel data. According to authors, fixed effects displayed the importance of non-tax variables of individual states. A reduction in STR could therefore trigger a greater behavioral response from LP side in states where more complex tax evasion has been expected than a reduction in STR in states where LP were more adaptable to the tax compliance.

The results summary of the analyses carried out confirms the hypothesis H1: Corporate income tax revenues are determined by the elements of tax legislation and specific non-tax factors.

Despite of the correctly formulated conclusions, however, it is necessary to implement CITR determinants in addition to the above mentioned determinants into analyses carried out in the future researches, with the insistence on the until now unobserved tax base and the system of taxation of LP in individual states. CITR are the proportionality of tax rate and taxable income determined primarily by the tax base. The tax base also depends on the non-tax aspects of tax system.

CONCLUSION

This paper is concerned with the determination of the current tax and non-tax determinants of corporate tax revenues and the assessment of their impact. Based on the analysis of the research purpose and the specification of econometric model draft, the panel regression is carried out in the EU-28 states over the period 2007-2016. The model is based on the decomposition of the share of corporate income tax revenues in relation to GDP into individual components that affect these revenues. Based on the analysis carried out, besides the traditional tax indicators, there are other elements implemented in the tax structures influencing the range of the tax base, which change the tax burden of the LP, size and profitability of the corporate sector, and the specific non-tax determinants in the form of cyclical and international factors that determine the amount of corporate income tax revenues. An increase in the statutory tax rate affects the growth of corporate income tax revenues. However, the tax rate cannot be considered as proportionally and linearly affecting corporate income tax revenues. It is a non-linear relation between tax rates and corporate income tax revenues that affects the profitability and size of the corporate sector. Significant determinants include inflation and unemployment rate, which has a negative effect on corporate income tax revenues. Compiled international indices reflecting the political, economic, social, tax and corporate environment in the state and the variable of the foreign direct investment inflow bring the element of international and economic relations into the nature of corporate income tax revenue trend. By empirical research, the determinants of corporate income tax revenues therefore include tax determinants that dispose of a direct link to the corporate tax structure itself and affect the size and profitability of the corporate sector, and the specific non-tax in the form of cyclical and international factors. Despite of the correctly formulated conclusions, however, it is necessary to implement CITR determinants in addition to the above mentioned determinants into analyses carried out in the future researches, with the insistence on the until now unobserved tax base and the system of taxation of LP in individual states.
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