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TAX AVOIDANCE IN V4 COUNTRIES AND SERBIA – INFLUENCE OF COMPANY SIZE ON EFFECTIVE TAX RATE

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Abstract:

The article aimed to check company size's impact on the effective tax rate (ETR) in the Visegrad Group countries and Serbia. The research hypothesis suggested a positive relationship between company size and ETR, in line with the political power theory (PPT). This means that greater tax burdens are transferred to larger companies. The research hypothesis was verified with the use of regression models. The results indicate that in Poland, Slovakia, and Hungary, there was a negative correlation between company size and ETR. The conclusions are consistent with the political cost theory (PCT). This may indicate that in developing countries large companies have the tools to lower the tax burden. In 2018 and 2017, there was no statistically significant correlation between the size of the companies and ETR in the Czech Republic and Serbia. Additionally, it was noted that the companies from Hungary and Serbia use IFRS contributed to lowering the ETR.

Keywords:

Visegrad, tax avoidance, effective tax rate.

1. INTRODUCTION AND HYPOTHESIS DEVELOPMENT

Visegrad Fund

Paying taxes is inevitable in running a business. From the perspective of the country, it is an essential element in finalizing the state budget. However, tax burden should be correctly calculated not to be an excessive burden for companies and hinder their development. There is often the reluctance to pay taxes in practice, and the problem of tax avoidance has been noticed by many researchers (Kovermann 2019, Belz, et al. 2019). Based on the review of 79 scientific publications from 2006-2018 in tax avoidance (Kovermann 2019), it can be concluded that the research covered companies from highly developed countries in most cases. Based on the analysis of scientific studies (Kovermann 2019 a), it can be concluded that European countries were not at the center of interest in tax avoidance research. Out of 79 quoted studies, only three concerned European countries. It is also noticeable that the conducted research is outdated because, in the cited 79 publications (Kovermann 2019), research samples in most cases ended in 2011. The problem of outdated research results is also confirmed in other publications (Akhtar et al. 2017). Based on the research (Thomsen, Watrin 2018), it is concluded that companies from the United States do not avoid taxes to a greater extent than companies from the 12 largest European countries. The study of these authors was limited by the selection of only the largest European countries. There were no smaller countries in the study, including the countries of Central and Eastern Europe.

The hypotheses verification takes place mainly with quantitative variables (Richardson 2007, Akhtar et al. 2019). An in-depth analysis of American companies was also carried out by Dyreng et al. (2017).

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The study results by Dyreng et al. (2017) indicate that international companies did not lower the effective tax rate more than domestic companies.

Many factors contribute to lowering the effective tax rate. It can be concluded that there is no one universal set of factors that would explain the phenomenon of tax avoidance. In different political or economic environments, they will be activated with different intensities of tax avoidance behaviors. The complexity and multifaceted nature of tax avoidance are presented in the research by Badertscher et al. (2013) in terms of the ownership structure's impact. Badertscher et al. (2013) indicate that in companies where the owners influence the company's current affairs, the tax avoidance phenomenon is low. A family business is a particular case of companies in which the ownership and managerial functions are closely related. Mafrolla and D'Amico (2016), Gaaya et al. (2017) come to different conclusions than Badertscher et al. (2013) and indicate that in family companies, there is a greater propensity to avoid taxation.

The analysis of the literature shows the use of various methods of estimating the effective tax rate. The most common methods are using paid corporate income tax (Cash ETR) or tax expense from the profit and loss account (Kovermann 2019). The use of the tax burden from the profit and loss account is related to accepting high-quality accounting procedures. The financial statements' quality is confirmed by the fact that statutory auditors audit the financial statements. There are studies in bibliography showing the impact of selecting an audit company on tax avoidance. In the studies of Kanagaretnam et al. (2016) and Richardson et al. (2013) and Gaaya al. (2017), it is indicated that the selection of certified auditor from "BIG 4" reduces tax avoidance. Choosing an auditor from "BIG 4" is associated with higher costs of auditing financial statements. The research by Hogan, Noga (2015), or Apostol, Pop (2019) shows a positive relationship between the costs of legal and tax services and tax avoidance.

Due to their function in creating the state budget, tax burdens are controlled by various tax administration bodies. Tax administration bodies introduce various methods of monitoring budget revenues. Kubick et al. (2 016), Jiménez-Angueira (2018) studied the impact of internal and external monitoring of tax burdens on the phenomenon of tax avoidance.

In the literature, there is often a relationship between tax avoidance and company size. According to the Political Cost Theory (PCT), large companies are more exposed to state action to increase their tax burden. Beltz et al. (2019) indicate that large companies may be subject to additional regulations and that large companies may be forced to undertake increased social responsibility activities. According to PCT, there is a positive relationship between the size of the companies and the ETR.

The second theory describing the relationship between companies' size and the effective tax rate is Political Power Theory (PPT). In line with this theory, it is noted that large companies can influence on political decisions, for example, in the regulation of tax burdens (Beltz et al. (2019)). As a consequence, large companies may present a lower tax burden. The literature also indicates (Beltz et al. (2019)) that the tax burden's sensitivity to political decisions may pertain to selected sectors of economic activity.

Discrepancies in the research results on the effective tax rate indicate the existence of a research gap. The article discusses the impact of the accounting system and companies' size on the number of tax burdens following the PPT. Therefore, a research hypothesis can be made:

H1: There is a positive correlation between ETR and company size.

H2: There is a positive correlation between the use of IFRS and the amount of ETR.

2. RESEARCH SAMPLE AND METHODOLOGY

The research sample includes companies from the Visegrad countries (Czech Republic, Poland, Slovakia, Hungary) and Serbia. The choice of the research sample results from the minimal publications on the issue of tax avoidance in Central and Eastern Europe, as well as Serbia. Additionally, the selection of the research sample is influenced by the scope of the IVF grant number 22010083.

The research covers two years: 2017 and 2018. The choice of research periods is based on the availability of financial data, at the time of preparing this paper (September 2020), companies should have approved and published financial statements for 2018. Theoretically, there may still be companies that do not have the approved and published financial statements for 2019 in September 2020. The article presents a pilot study that will be continued in the future.

It will be used in the research on the BvD Orbis database. During the preparation of the research sample, the following search criteria were used:

1. Status - active companies
2. World region / Country / Region in country - Czech Republic, Hungary , Poland, Serbia, Slovakia
3. Accounting practice - IFRS, Local GAAP
4. Total assets (m USD) - min = 0, 2018, 2017, 2016, 2015, 2014, for all the selected periods , exclusion of companies with no recent financial data and Public authorities / States / Governments
5. Taxation (m USD) - min = 0, 2018, 2017, 2016, 2015, 2014, for all the selected periods , exclusion of companies with no recent financial data and Public authorities / States / Governments

6. P / L before tax (m USD) - min = 0, 2018, 2017, 2016, 2015, 2014, for all the selected periods , exclusion of companies with no recent financial data and Public authorities / States / Governments
7. Size classification - Large, Medium, Very large

Based on the criteria used, companies were active and came from the Visegrad Group countries and Serbia. Additionally, these companies disclosed tax burdens in the profit and loss account, and their total assets were greater than 0. In the study, the research sample includes medium, large, and very large companies. This assumption stems from the wagered research hypothesis, which will check the relationship between companies' size and the tax burden on the PPT theory. The initial research sample covers 65,376 companies, as shown in Table 1.

Table 1. Initial research sample

Country	number
CZ	14452
HU	21035
PL	15292
RS	5355
SK	9242
total	65376

Source: own study

The next stage is the elimination of companies from the financial and banking sector. This sector, due to specific conditions and regulations, may give incomparable results. Companies without being assigned to the economic activity classification were also removed from the database. Table 2 shows the numbers of companies using additional criteria.

Table 2. Research sample – elimination from the financial and banking sector

Country	number
CZ	14248
HU	20857
PL	15002
RS	5334
SK	9182
Total	64623

Source: own study

The next stage of database preparation concerned eliminating companies that revealed an effective tax rate of over 100%. Such a situation may result from incorrectly determining deferred income tax or a one-off settlement of assets or provisions for deferred income tax. The final research sample covers 61,219 companies, as shown in Table 3.

Table 3. Final research sample

Country	number
CZ	12720
PL	14608
RS	5084
SK	8382
HU	20425
Total	61219

Source: own study

Table 4 presents the research sample divided by economic activity sectors, according to the BvD Sector classification.

Table 4. Research sample – sector classification

Sector	CZ	PL	RS	SK	HU	**Total**
Agriculture, Horticulture & Livestock	777	114	157	290	805	**2143**
Biotechnology and Life Sciences	49	78	29	16	95	**267**
Business Services	1407	1317	472	1398	2463	**7057**
Chemicals, Petroleum, Rubber & Plastic	415	642	178	177	419	**1831**
Communications	85	74	26	34	109	**328**
Computer Hardware	9	7	34	4	8	**62**
Computer Software	354	361	89	159	417	**1380**
Construction	1201	1264	410	697	2292	**5864**
Food & Tobacco Manufacturing	278	530	326	147	602	**1883**
Industrial, Electric & Electronic Machinery	811	672	188	338	761	**2770**
Information Services	2	4	2	2	3	**13**
Leather, Stone, Clay & Glass products	155	220	35	55	159	**624**
Media & Broadcasting	thirty	81	18	11	80	**220**

Metals & Metal Products	787	767	206	449	821	**3030**
Mining & Extraction	43	82	18	22	45	**210**
Miscellaneous Manufacturing	56	40	18	15	43	**172**
Printing & Publishing	79	140	80	50	159	**508**
Property Services	738	862	39	406	943	**2988**
Public Administration, Education, Health Social Services	187	465	15	136	245	**1048**
Retail	461	896	336	883	2736	**5312**
Textiles & Clothing Manufacturing	101	179	153	89	216	**738**
Transport Manufacturing	169	152	31	65	96	**513**
Transport, Freight & Storage	610	713	328	497	1157	**3305**
Travel, Personal & Leisure	309	313	142	286	1091	**2141**
Utilities	416	487	57	125	88	**1173**
Waste Management & Treatment	158	200	57	63	130	**608**
Wholesale	2799	3515	1474	1809	4111	**13708**
Wood, Furniture & Paper Manufacturing	234	433	166	159	331	**1323**
Total	**12720**	**14608**	**5084**	**8382**	**20425**	**61219**

Source: own study

In order to verify the research hypotheses, the following variables will be used in the study:

- ETR - effective tax rate is based on data from financial statements - profit and loss account. This method of calculating the ETR variable is used when making decisions by companies (Graham et al. (2013), Kraft (2014)), so it will act as an independent variable in the study.

$$ETR = \frac{income\ tax\ (actual + deferred)}{gross\ profit\ or\ loss}$$

- LNA - Company size can be measured in many ways. A standard measure of company size applicable to companies listed on regulated capital markets and private companies is a measure based on the size of the balance sheet total (Lazar 2014, Jiménez-Angueira (2018).

$$LNA = \ln(total\ assets)$$

- Accounting practice - a binary variable with a value of 1 for companies using IFRS and a value of 0 for companies applying local GAAP.

The research hypotheses' verification will be carried out using linear regression models for individual countries.

3. THE RESEARCH RESULTS

The analysis of the relationship between the companies' size and the ETR will be conducted for each country separately. This is because the analyzed countries had different income tax rates. This is presented in Fig. 1 for 2018 and Fig. 2 for 2017.

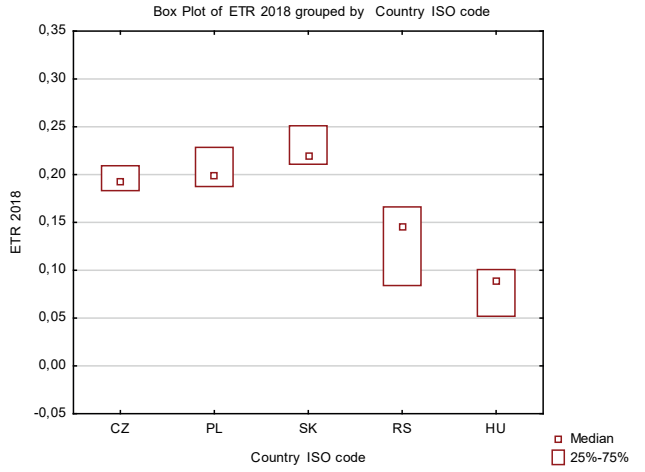

Figure 1. -Effective tax rate in 2018

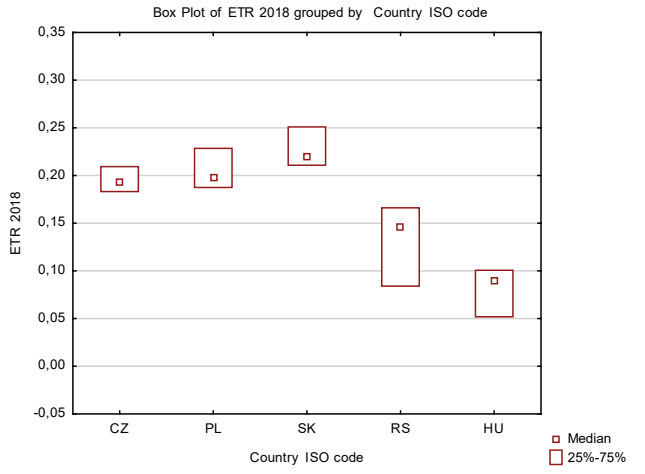

Figure 2. -Effective tax rate in 2017

Based on Figure 1 and Figure 2, it can be seen that in 2018 and 2017, the medians of ETR coincided with the statutory corporate income tax rates. It can, therefore, be concluded that the ETR reflects well the tax burden on companies.

In line with the research hypotheses, it is expected that the coefficients for the LNA and Accounting practice variables will be positive in the analyzed period of 2018 and 2017. The regression analysis results are presented in Table 5 and Table 6.

Table 5. Regression results for 2018

Effect	Aggregate Results Parameter Estimates (date 24.08.2020) Sigma-restricted parameterization				
	Country ISO code	ETR 2018 (Param.)	ETR 2018 (Std.Err)	ETR 2018 (t)	ETR 2018 (p)
Intercept	CZ	0.1824	0.0109	16.7724	0.0000
LNA 2018	CZ	0.0010	0.0006	1.5518	0.1207
Accounting practice 2018	CZ	0.0089	0.0088	1.0047	0.3151
Intercept	PL	0.2467	0.0067	36.6818	0.0000
LNA 2018	PL	-0.0023	0.0006	-3.5546	0.0004
Accounting practice 2018	PL	-0.0047	0.0031	-1.5451	0.1223
Intercept	SK	0.2853	0.0152	18.7665	0.0000
LNA 2018	SK	-0.0034	0.0011	-3.1557	0.0016
Accounting practice 2018	SK	-0.0119	0.0109	-1.0943	0.2738
Intercept	RS	0.1711	0.0119	14.3252	0.0000
LNA 2018	RS	0.0007	0.0012	0.6163	0.5377
Accounting practice 2018	RS	-0.0350	0.0071	-4.8947	0.0000
Intercept	HU	0.3465	0.0244	14.2061	0.0000
LNA 2018	HU	-0.0210	0.0007	-30.8995	0.0000
Accounting practice 2018	HU	-0.0781	0.0236	-3.3146	0.0009

Dependent Variable	Country ISO code	Multiple (R)	Multiple (R2)	Adjusted (R2)	SS (Model)	df (Model)	MS (Model)	F.	p
ETR 2018	CZ	0.01547	0.00024	0.00008	0.03263	2.00000	0.01631	1.52223	0.21827
ETR 2018	PL	0.02991	0.00089	0.00076	0.17565	2.00000	0.08782	6.54079	0.00145
ETR 2018	SK	0.03459	0.00120	0.00096	0.16239	2.00000	0.08119	5.01951	0.00663
ETR 2018	RS	0.07017	0.00492	0.00453	0.32186	2.00000	0.16093	12.57042	0.00000
ETR 2018	HU	0.21155	0.04475	0.04466	16.94004	2.00000	8.47002	478.36311	0.00000

Source: own study

Based on Table 5, it can be concluded that in 2018 in 3 countries: Poland, Slovakia, and Hungary, there was a negative correlation between the size of the companies and ETR. This means that larger companies reported lower tax burdens. Additionally, in 2 countries: Serbia and Hungary, the ETR was influenced by the companies' accounting principles - IFRS.

Table 6. Regression results for 2017

	Country ISO code	ETR 2017 (Param.)	ETR 2017 (Std.Err)	ETR 2017 (t)	ETR 2017 (p)
Intercept	CZ	0.190864	0.010471	18.22702	0.000000
LNA 2017	CZ	0.000961	0.000608	1.57967	0.114208
Accounting practice 2017	CZ	-0.004098	0.008571	-0.47808	0.632599
Intercept	PL	0.242136	0.006463	37.46444	0.000000
LNA 2017	PL	-0.002529	0.000614	-4.12210	0.000038
Accounting practice 2017	PL	0.000809	0.002961	0.27329	0.784631
Intercept	SK	0.296460	0.014764	20.08033	0.000000
LNA 2017	SK	-0.005188	0.001012	-5.12886	0.000000
Accounting practice 2017	SK	-0.011237	0.010764	-1.04392	0.296551
Intercept	RS	0.190895	0.010717	17.81292	0.000000
LNA 2017	RS	-0.000517	0.001057	-0.48934	0.624619
Accounting practice 2017	RS	-0.054669	0.006540	-8.35870	0.000000
Intercept	HU	0.297205	0.022612	13.1438	0.000000
LNA 2017	HU	-0.015821	0.000614	-25.7608	0.000000
Accounting practice 2017	HU	-0.073395	0.021903	-3.3509	0.000807

Dependent Variable	Country ISO code	Multiple (R)	Multiple (R2)	Adjusted (R2)	SS (Model)	df (Model)	MS (Model)	F.	p
ETR 2017	CZ	0.015313	0.000234	0.000077	0.030018	2	0.015009	1.490138	0.225381
ETR 2017	PL	0.035898	0.001289	0.001152	0.236590	2	0.118295	9.422673	0.000081
ETR 2017	SK	0.056021	0.003138	0.002900	0.409765	2	0.204883	13.18976	0.000002
ETR 2017	RS	0.116561	0.013586	0.013198	0.737739	2	0.368869	34.99161	0.000000
ETR 2017	HU	0.177808	0.031616	0.031521	10.19302	2	5.096509	333.3691	0.00

Source: own study

The regression analysis in Table 6 shows similar relationships between the variables in 2018 and 2017. In 2017, for three countries: Poland, Slovakia, and Hungary, there was a negative relationship between the size of companies and ETR. In two countries: Serbia and Hungary, the ETR was dependent on the adopted accounting principles. Companies using IFRS had lower ETRs.

4. CONCLUSION

The aim of the paper was to check the relationship between the companies' size and the effective tax rate in the Visegrad countries and Serbia. Based on the literature review, it was hypothesized that there is a positive correlation between ETR and the companies' size.

The positive relation indicates that larger companies fulfill their socially responsible role through higher tax burdens. In each country in 2017 and 2018 no relationships confirming the research hypotheses were noticed. In many countries it is noted that the tax base is greater than the gross financial result. The adjustment to the tax expense in the income statement relates to the mandatory recognition of deferred income tax under IFRS. It can, therefore, be concluded that companies applying IFRS should disclose a lower tax burden. This has been confirmed in 2 countries: Serbia and Hungary.

The limitation of the study is the analysis of selected variables influencing ETR. The phenomenon of tax avoidance is very complex, and in further research, it will be developed with further factors influencing the formation of the effective tax rate.

5. ACKNOWLEDGMENT

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