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Average effectiveness of corporate income tax on the example of companies listed on the Belgrade Stock Exchange

Просечна ефективност пореза на добит на примеру компанија на листингу Београдске берзе

Miloš Đaković*
University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia,
milos.djakovic@ef.uns.ac.rs

Milica Inđić
University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia,
milica.indjicic@ef.uns.ac.rs

Danica Cicmil
University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia,
danica.cicmil@primevestcp.com

Abstract: The fiscal policy of a country is a crucial source of successful and normal functioning of that country's economy. The implications of fiscal policy can be reflected in both the private and the functioning of the public sector of a country's economy. Public finance is an area of economics dealing with the analysis of tax policy and government spending policy. One of the important areas of public finance research is corporate income tax. Corporate income tax is a direct tax imposed at the national level for the purpose of taxing the profits of certain companies, whether state-owned or privately owned. The aim of this paper is to look at the actual amount of profit tax paid, i.e. by observing the profit before taxation of companies listed on the Belgrade Stock Exchange. The paper considers the effective tax rate of companies and points out the deviation of the same from the legally prescribed corporate income tax rate in the Republic of Serbia and the implications of corporate income tax on the company's business results. The paper presents graphical and tabular representations of the effective tax rates of each company as well as the average effective tax rate of companies listed on the Belgrade Stock Exchange in relation to the law in the period from 2013 to 2020 in the Republic of Serbia. Finally, a statistical analysis of the presented results is given in order to understand more precisely the deviation of the effectiveness of corporate income tax of companies listed on the Belgrade Stock Exchange as well as the analysis of the correlation between the growth of the average pre-tax profit and the growth of the average effective corporate income tax rate.
Keywords: taxation, corporate income tax, effectiveness of corporate income tax, Belgrade stock exchange
JEL classification: G10, H20, H25

Сажетак: Фискална политика једне земље представља круцијалан извор успешног и нормалног функционисања економије те земље. Импликације фискалне политике се могу огледати како на

* Corresponding author

приватном тако и на функционисању јавног сектора привреде једне земље. Јавне финансије представљају област економије која се бави анализом пореске политике и политике државне потрошње. Један од важних подручија истраживања јавних финансије јесте управо порез на добит. Порез на добит предузећа представља директни порез који се намеће на националном нивоу ради опорезивања добити одређених предузећа, била она у државном власништву или у приватном власништву. Циљ рада је да посматрањем добити пре опорезивања компанија које се налазе на листингу Београдске берзе сагледа стварни износ пореза на добит који је плаћен тј. сагледа ефективна пореска стопа компанија и укаже на одступање исте од законски прописане стопе пореза на добит у Републици Србији и да се сагледају импликације пореза на добит на резултате пословања компаније. У раду су графичким и табеларним приказима представљене кретања ефективних пореских стопа сваког предузећа као и кретање просечне ефективне пореске стопе компанија које су листиране на Београдској берзи у односу на законски прописану и то у периоду од 2013 до 2020 године у Репулици Србији. На крају је и дата статистичка анализа изнетих резулатата ради прецизнијег разумевања одступања ефективног пореза на добит компанија на листингу Београдске берзе као и анализа корелације између раста просечне добити пре пореза и раста просечне ефективне стопе пореза на добит предузећа.
Кључне речи: Порез, порез на добит, ефективна пореска стопа, Београдска
ЈЕЛ класификација: G10, H20, H25

Introduction

The subject of the study of Public Finance is sometimes unclear. Harvey S. Rosen, Ted Gayer (2011) stated that economists dealing with public finances analyse not only the effects of actual state activities in the field of taxation and consumption, but also analyse what those activities should be. Opinions on how the state should function in the field of economy are influenced by ideological attitudes regarding the relationship between the individual and the state. Engen and Skinner (1992) argue that there is a significant debate about the effects of government fiscal policy on economic growth, especially in developing countries. One view suggests that the reduction in government spending is justified by low productivity and inefficiency of government spending and high tax costs. An alternative view is that government plays a central role in economic development by providing public goods, encouraging productive investment, and providing a socially optimal direction for economic growth. This is followed by the contention of Gruber (2016), who stated that in the simplest terms, public finance is the study of the role of the government in the economy. This represents a very broad definition. Gruber (2006) also argues that there are four main questions of public finance: When should the government intervene in the economy, how might the government intervene, what is the effect of those interventions on economic outcomes and why do governments choose to intervene in the way that they do? Kalaš (2017) states that tax policy is one of the most important segments of economic policy, and its relevance is manifested through the process of taxation and collection of public funds. Easterly and Rebelo (1993) said that if you ask an economist to explain the growth performance of a particular country he is likely to mention fiscal policy as being an important growth determinant. This deep-seeded belief that taxation, public investment, and other aspects of fiscal policy can contribute to growth miracles as well as to enduring stagnation has been articulated in the context of growth models during the past three decades.

Kornhauser (1990) stated that various views can be applied to the notion of tax itself. Governments continue to rely on corporate income taxes as important revenue sources, the product of uneasy compromises between some forces that would reduce, and others that would increase, the tax burden on corporations (Auerbach, Hines & Slemrod, 2007). While Harvey S. Rosen, Ted Gayer (2011) believe that companies are independent legal entities, and are therefore often referred to as artificial legal entities. A company can enter into contracts, own property, borrow, sue and be sued. Like any other person, a company must pay tax on its income, that is, the realized profit, and that the corporate income tax protects the integrity of the personal income tax. Also, since the companies listed on the Belgrade Stock Exchange are the subject of this paper, we should also mention the importance of financial markets. Šoškić (2010) said that the concept of the financial market starts from the organized market as a way of trading financial instruments and that the financial market from this point of view is an organized confrontation of supply and demand of financial instruments in a certain place. We can conclude from the previous statements that taxes are legally prescribed obligatory benefits that the state takes from people and without direct and immediate counter-service of companies in order to use the collected money to finance public spending. In other words, all people, as part of society, must pay a part of our income to the state in order for it to provide us with public services, such as education, health care, public safety, care for old and poor members of the company, etc. From this, we can conclude that two determinants are important: taxes are mandatory and there is no direct compensation for taxes paid. This notion is followed by a statement by James C. Van Horne, John M. Wachowicz, JR. (2007) that taxes directly or indirectly influence many business decisions. Through their tax policies, federal, state, and local governments strongly influence the behavior of businesses and their owners. What can be a very important business decision in a situation where no tax is paid, in a situation where tax is paid can be insignificant (and some vice versa). The introduction presents the scientific problem of the article, its novelty, exploration of the problem, aim, objective, research methods).

The paper includes the following: It first consists of a review of companies on the financial market, meaning the Capital Market of the Republic of Serbia (Belgrade Stock Exchange). After that, the authors review the financial performance of listed companies, observing their profit before tax in the period from 2013 to 2020. In the following section, authors also reviewed the taxes actually paid by the same companies in the same period for further analysis. The second part consists of calculating the effective (actual) tax rate based on the previously presented data and also comparing the calculated data with the legally prescribed corporate income tax rate in the Republic of Serbia. The analysis and comparisons were performed not only for the total average effective tax rate of all listed companies, but also the analysis and review of the average effective tax rate for each individual company analysed in the period from 2013 to 2020, and at the end of the second part of the calculation, data is presented graphically. In the third and last part, the authors looked at statistical calculations such as mean, standard deviation, minimum, maximum and variation of the effective tax rate of listed companies on the Belgrade Stock Exchange in the period 2013 to 2020 and also calculated the correlation between growth of average income before tax and growth of average effective tax rates. The aim of this paper is to

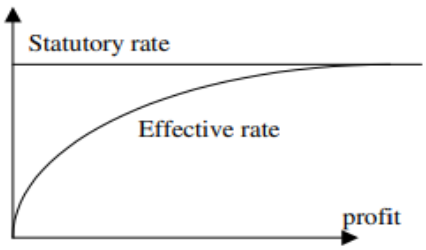
understand the difference between effective and legal tax rates and their impact on the financial results of listed companies.

1. Theoretical background of corporate income tax

The economic essence of a state is reflected in taxes and they manifest economic expression of the state's existence. In this way, they are determined as the price that must be paid for public services. The modern approach to public finance emphasizes that taxes give a contribution to economic efficiency and fair income distribution (Andrašić, Kalaš, Milenković, Mirović & Pjanić, 2018). There are many research papers regarding corporate income tax. Research conducted by Vržina and Dimitrijević (2019) showed that effective corporate income tax rates (ETRs) in agricultural companies are significantly lower than the statutory corporate income tax rate. Furthermore, nearly 69% of observations have both a current ETR and cash ETR of 0%, which indicates that agriculture is an industry with an exceptionally low corporate income tax burden. Panel regression showed that agricultural companies with lower ETRs are more profitable than companies with higher ETRs. Results of the analysis are not sensitive to changes in corporate income tax burden and profitability proxies.

Salaudeen and Eze (2018) stated that the statutory tax rate has been severely criticized for its inability to reflect the actual tax burden borne by firms. Their study showed that effective tax rates in Nigeria were lower than the statutory tax rate during the period of their study and that there are differences in effective tax rates from one sector of the economy to another. The study further reveals that larger and more profitable firms are faced with high tax burden while firms with high leverage and capital intensity are faced with lower effective tax rates. Government expenditures are supposed to be financed by increasing taxes, changing the consumption of expenditures or raising public debt (Iyidoğan, Balikçioğlu & Yilmaz, 2017). Petrin and Martin (2018) argue that contemporary corporate taxation is justified as a means to curb corporate power – in the political, economic, and social sense – by limiting the resources, in the form of accumulated corporate profits at the disposal of managers, and incentivizing or disincentivizing particular corporate activates.

Figure 1: Statutory and effective rate



Source: based on https://mpra.ub.uni-muenchen.de/id/eprint/3808

Nicodeme and Gaetan (2001) argue that first, comparing statutory and effective tax rates gives an idea of tax incentives given by authorities. These incentives can be either a lower tax base or a lack of enforcement. Second, the comparison of effective tax rates across countries gives indications whether there are substantially different tax treatments of companies with the same characteristics but located in different countries. These figures can indicate whether or not a large dispersion in statutory tax rates may hide little differences in effective taxation. Indeed, countries with high statutory rates can lower the base and/or decrease tax enforcement. According to research by Luković, Vržina, Grbić & Pjanić (2021), tax treatment of investment projects in Serbia is nondiscriminatory. Marginal effective tax rates for different types of investment projects do not vary widely; that is, there are no investment projects that have a markedly favourable (unfavourable) tax treatment compared to the other types of investment projects. According to Andrašić et al. (2018), corporate income tax consists of the net profit and capital gains of enterprises. Taxes as instruments of fiscal policy in modern economies are often used in acting to change the economic structure. Taxes are a forced method of payment, given by the taxpayer. In modern countries with a regulated legal and legislative framework, coercive character is reflected in the impossibility of non-fulfilment of tax obligations, because otherwise the prescribed sanctions are applied.

Mirović (2019) states that personal income tax and corporate income tax have the greatest impact on unemployment, investment and government expenditures. It is now widely accepted in public economics that empirical work on the role of corporate taxation for the production and investment decisions of multinational firms should rely on a broader set of tax components rather than only on statutory corporate tax rates. (Egger, Loretz, Pfaffermayr and Winne, 2009). When determining the distribution of tax burden on companies as legal entities, it is necessary to emphasize the model of taxation profit through individual income tax and corporate income tax. Namely, corporate income tax includes the profits of businesses that are organized in a corporate form, a form of company based on a joint stock capital, as well as forms of public enterprises. When taxing corporate profits, the problem of double taxation may arise. The company can keep realized profit or pay dividends to shareholders, whereby paid dividends cannot be deducted from realized profits. That means paid off dividends are subject to taxation and there is a double economic phenomenon taxation. It implies that the realized profit is taxed at the level of companies, as well as at the level of shareholders at the time of distribution of profits to shareholders. Corporate income tax represents income tax on the income of companies (OECD). Corporate income tax represents the main form of taxation of corporate profits, thus affecting incentives to invest and innovate, with effects for growth and employment (Arnold, Brys, Heady, Johansson, Schwellnus & Vartia, 2011; Djankov, Ganser, McLiesh, Ramalho & Shleifer, 2010).

Heshmati, Johansson and Bjuggren (2010) stated that corporate tax affects the expected return after tax on investments and therefore shapes the incentives of entrepreneurs to establish and run enterprises. Tax systems include deductions and loopholes which make the statutory corporate tax rates differ from the effective corporate tax rates. In all their complexity, tax systems may introduce distortions concerning firm

size, for instance, because small firms are short of organizational and financial resources to take full advantage of incentives and loopholes in the law. Their research analysed the effects of effective corporate tax rates on the size distribution of firms in Sweden and the results suggested that effective corporate tax rates differed by firm size, industry and over time. They concluded that effective corporate tax rates affect the size distribution of firms as well as the composition of industries. Tax forms should take an important place in the economic policy of each country. The level and share of taxes in the economy must be adequately defined so that taxes would be in function of growth and enable optimum functioning of the economy. Any increase in taxes can potentially have a negative influence on the main macroeconomic indicators. However, tax cuts can result in lower revenues, which mean lower public funds, or resources needed to meet public expenditures. There are numerous tax forms that are related to income, profits, ownership and value of assets, turnover, consumption, as well as to imports and exports in the course of performing economic activities. (Mirović, Andrašić & Kalaš, 2019). Panda & Nanda (2021) stated that effective tax rate (ETR) is significantly explained by company size, profitability, growth rate and innocent tax shield in most sectors, and the debt ratio, tangible assets and age of companies have different effects on ETR in different sectors. In the case of the entire manufacturing sector, the size of the company, profitability, growth and a tax shield that is not in charge of debt have a positive effect on ETR, and the tangibility of assets has a negative effect on ETR and also the response is very marginal following shocks to debt ratio, interest cover ratio and age of the firm.

This research is also backed by Andrejovska (2019) who monitored enterprises in the EU member states, and pointed that microeconomic indicators are all important determinants for effective corporate tax rate. The leverage effect, the capital intensity and the profitability of the company had a negative impact, and the nominal rate and R & D spending had a positive effect on the effective rate. In accordance with that, Andrejovska also concluded that macroeconomic determinants such as the nominal rate and the gross domestic product are statistically significant. Her research showed that an increase of 1% in gross domestic product resulted in an increase in the effective rate of 0.4869% and an increase of 1% in unemployment resulted in an increase in the effective rate by 6.421%. On the other hand, the tax revenues of corporations had a negative impact. An increase of 1% caused a decline in the effective rate of 13.75%. Also Rodriguez, Fernandez & Arias (2021) researched the determinants of Effective Tax Rate (ETR) in emerging economies from a joint perspective, focusing on the BRICS (Brazil, Russia, India, China and South Africa) and MINT (Mexico, Indonesia, Nigeria and Turkey) countries. They considered both traditional business characteristics (size, leverage, asset composition and profitability) and other newer ones (firm growth, earnings management and deferred tax), as well as the specific institutional factors of each country (Statutory Tax Rate, level of development, index of economic freedom, GDP growth and institutional quality). They concluded that both business variables and institutional factors have a significant effect on the tax burden for firms in emerging countries.

2. Methodology overview

For the purposes of this study, the authors used data on profit before tax and actual tax paid in the period from 2013 to 2020 obtained from the website of the Belgrade Stock Exchange in combination with data from the Business Registers Agency to calculate the effective tax rate and compare it with the statutory tax rate. According to Law on Corporate Income Tax the corporate income tax base is taxable profit. Taxable profit is determined in the tax balance by adjusting the taxpayer's profit shown in the income statement, which is made in accordance with international accounting standards (hereinafter: IAS), or international financial reporting standards (hereinafter: IFRS), or international financial reporting standard for small and medium-sized legal entities (hereinafter: IFRS for SMEs) and regulations governing accounting, in the manner prescribed by Law on Corporate Income Tax. Taxable profit of taxpayers, which is, according to the regulations governing accounting, determined in the tax balance by adjusting the taxpayer's profit, expressed in accordance with the method of recognition, measurement and assessment of income and expenses prescribed by the Minister of Finance in the manner determined by this law. For the determination of taxable profit, expenses are recognized in the amounts determined by the income statement, in accordance with IAS, IFRS and IFRS for SMEs, as well as regulations governing accounting, except for expenses for which this law prescribes another method of determination.

The definition above is the basis for calculating and obtaining the results that are the subject of this paper. The official legally prescribed corporate income tax rate in Serbia is 15%. The companies that are the subject of this paper are the companies that are in the basket of the Belex15 stock exchange index. The following companies are Aerodrom Nikola Tesla a.d., Nis a.d., Komercijalna banka a.d., Metalac a.d., Jedinstvo a.d., Dunav osiguranje a.d., Energoprojekt holding a.d., Impol Seval a.d. and Alpha Flame Inc. For the purposes of this study, the authors used the symbols of companies used on the Belgrade Stock Exchange in tabular representations.

Model estimation is presented:

$$Ef = (Tx / Ix) * 100$$

Where explanatory variables are determined as:

Ef – effective tax rate

Tx – real tax paid

Ix – income before tax

An overview of the data used to calculate the effective tax rate is given in the following tables:

Table 1: Income before tax of listed companies from 2013-2020

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
AERO	21375	3762705	3953390	3784805	3880644	62611189	-499872	-789471
NIIS	58309325	36456884	20455884	18601544	34956787	31642961	22014007	-7623436
KMBN	4588375	4757589	-6175885	-8377636	7187250	8121073	8268685	4192846
MTLC	397203	236006	254935	258332	291267	270729	284243	254854
TGAS	683194	856971	1743388	1133525	2271939	2064461	2127396	2276817
JESV	267154	281994	159585	188886	212078	251291	362086	380284
DNOS	99560	-1381997	327733	1060828	1223081	1723608	3412618	3593985
ENHL	420244	73579	252025	245681	438763	810194	-26346	269880
IMPL	273930	53775	925656	1257934	777933	897724	504793	13655
ALFA	394067	762154	770662	791216	800047	429930	120550	91825

Source: the authors' calculation based on https://www.belex.rs/trgovanje/indeksi/belex15/korpa

This segment above allows us to see the amounts of profit before tax on the example of companies that are in the basket of the Belex15 index of the Belgrade Stock Exchange and provides us with a basis for further analysis. In accordance with the data above regarding the listed companies, in the next table we can see the overview of tax paid in the period of 2015 to 2020 for all of the listed companies. Deferred tax assets and deferred tax liabilities are a very important item in the calculation of the actual tax liability. Recording of deferred tax liabilities and funds can be done on several grounds and is conditioned by the Law on Corporate Income Tax of the Republic of Serbia. Deferred tax assets / liabilities based on fixed (fixed assets) are in fact deferred taxes, which arise on the basis of the difference between the calculated accounting and tax depreciation. In accordance with tax regulations for the purposes of calculating taxable profit (income tax bases), accounting depreciation is not recognized (and added to gross profit), while tax depreciation is recognized and deducted from gross profit. In theory, when the tax depreciation is higher, the taxable profit is lower (the amount of income tax is lower) and vice versa. Accounting depreciation is depreciation that we calculated in accordance with accounting regulations by applying the appropriate amortization rates obtained by the formula based on the service life: 100 / service life. The calculation of tax assets and liabilities (temporary tax differences) that arise as the difference between accounting and tax depreciation, determined by applying) the prescribed corporate income tax rate of 15% on the amount of temporary difference. When the tax depreciation is higher than the accounting depreciation, the temporary tax difference between them represents deferred tax assets, while the reverse

relationship represents deferred tax liabilities. We conclude that deferred tax arises as a result of temporary differences that exist at the balance sheet date between accounting and tax depreciation. It is with the help of these explanations that we can see why the actually paid income tax (effective rate) deviates from the legally prescribed corporate income tax rate.

Table 2: Tax paid by listed companies from 2013 to 2020

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
AERO	5170	340571	662904	594066	614970	9455739	-46015	9651
NIIS	5984959	5897647	4351217	2519675	7166327	5575472	4313942	-1714938
KMBN	-87950	-27988	-114527	-314453	-930118	-24109	-687074	1264085
MTLC	-5239	-4980	508	-125	-846	-865	7534	-213
TGAS	205465	197774	-33081	120211	217751	241766	337690	383920
JESV	18083	37900	11828	27166	5516	23363	21430	55153
DNOS	83584	-8054	-42585	163062	72593	150090	410802	395532
ENHL	21156	29712	15052	13567	-170	46721	1916	6602
IMPL	6815	44705	23338	55397	10842	1953	-83	1714
ALFA	1850	-3157	9423	-5478	-5036	-6921	-10366	-16803

Source: the authors' calculation based on https://www.belex.rs/trgovanje/indeksi/belex15/korpa

3. Effectiveness of corporate income tax

In the next section of the paper we can see data on the amounts of the effective tax rate of all companies that are the subject of this paper, calculated based on the methodology mentioned in the previous section of the paper. We can see that all companies in the basket of the Belgrade Stock Exchange have differences in the effective tax rate, as previously stated in the method of calculation and payment of taxes according to the law on corporate income tax.

Table 3: Effective tax rate of listed company for the period2013-2020

Effective tax rate	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
AERO	24.19%	9.05%	16.77%	15.70%	15.85%	15.10%	9.21%	-1.22%
NIIS	10.26%	16.18%	21.27%	13.55%	20.50%	17.62%	19.60%	22.50%
KMBN	-1.92%	-0.59%	1.85%	3.75%	-12.94%	-0.30%	-8.31%	30,15%
MTLC	-1.32%	-2,11%	0.20%	-0.05%	-0.29%	-0.32%	2.65%	-0.08%
TGAS	30.07%	23.08%	-1.90%	10.61%	9.58%	11.71%	15.87%	16.86%
JESV	6.77%	13.44%	7.41%	14.38%	2.60%	9.30%	5.92%	14.50%

DNOS	83.95%	0.58%	-12.99%	15.37%	5.94%	8.71%	12.04%	11.01%
ENHL	5.03%	40.38%	5.97%	5.52%	-0.04%	5.77%	-7, .27%	2.45%
IMPL	2.49%	83.13%	2.52%	4.40%	1.39%	0.22%	-0.02%	12.55%
ALFA	0.47%	-0.41%	1.22%	-0.69%	-0.63%	-1.61%	-8.60%	-18.30%

Source: the authors' calculation based on https://www.belex.rs/trgovanje/indeksi/belex15/korpa

This chapter focuses on an overview of the effective tax rates of listed companies in the period from 2013 to 2020. Also below are the results of the research where we will be able to see the average effective tax rate of all listed companies individually and for each year in the period from 2013 and 2020. We will also be able to view the obtained results graphically where a certain trend rates in relation to the legally prescribed corporate income tax rate.

3.1 Empirical results

The aim of this paper is to review the amount of the effective tax rate of listed companies in relation to the legally prescribed corporate income tax rate and also analyse the trend of the effective tax curve of these companies and statistical analysis to see the deviation of the same.

Table 4: Descriptive statistics – effective tax rates

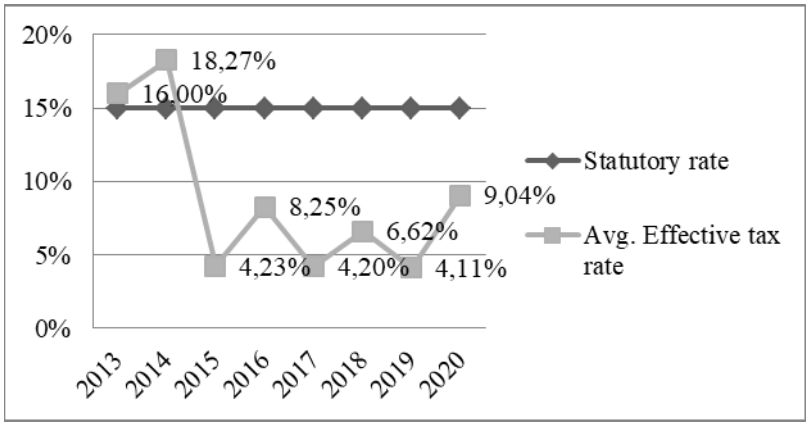
	Mean	**Std. dev.**	**Median**	**Min.**	**Max.**
2013	16	26.17	15	-1.92	83.95
2014	18.27	26.38	15	-2.11	83.13
2015	4.23	9.6	15	-12.99	21.27
2016	8.25	6.4	15	-0.69	15.7
2017	4.2	9.42	15	-12.94	20.5
2018	6.62	6.96	15	-1.61	17.62
2019	4.11	10.19	15	-8.6	19.6
2020	9.04	13.8	15	-18.3	30.15

Source: the authors' calculation

Table 4 shows the mean effective tax rate of all listed companies for all years of study. We can also see the amount of the standard deviation together with the calculated rate as the median with the maximum and minimum amounts of the average effective tax rates. As we can see, the highest average effective tax rate was present in 2014 in the

amount of 18.27%, which is a much higher amount compared to other years, except in 2013, where the rate is slightly lower and amounts to 16%. Similarly, the maximum amount of standard deviation is 26.38 in 2014 which can be attributed to a wide range minimum and maximum effective tax rates in 2014, where it ranged from -2.11% to even 83.13%. Approximately in 2013, we get similar results where we see that the standard deviation is 26.17, where the average rate ranged from -1.92% to 83.95%. Looking at other years, the average effective corporate income tax rate is lowest in 2015, 2017 and 2019, where the average rate ranges from 4% to 5%, while in 2016, 2018 and 2020 it ranges from 6% to 10%. In the following section the authors used the previous results and presented it in the next figure.

Figure2: The ratio of the effective tax rate to the legal rate



Source: the authors' calculation

Figure 2 below shows the curve of effective tax rate of listed companies in contrast to the statutory tax rate in Republic of Serbia calculated using the previous table. We can see that in 2013 and 2014 the curve of the average effective tax rate of listed companies exceeds the legally prescribed corporate income tax rate (Blue Curve) while in other years the curve moves below the legal rate. We can conclude from this that in the previous 6 years, the companies listed on the Belgrade Stock Exchange paid taxes at a lower rate than the legally prescribed rate, thanks to the deferred tax funds they accumulated. The biggest disparity is observed in 2019, where the average effective rate is as much as 4.11%, which is significantly lower than the average. We also notice that in 2020 there is a growth trend of the rate and that it is at the highest level since 2014, so it is expected that at the end of 2021 the average effective rate will be slightly increased.

Table 5 below presents the calculated average effective tax rates for each company listed on the Belex15 index in order to better understand the deviation of the total average effective tax rates from the legal one in the period from 2013 to 2020. As we can see, the highest average rate, in the amount of 17.69%, is attributed to the company NIS a.d. which

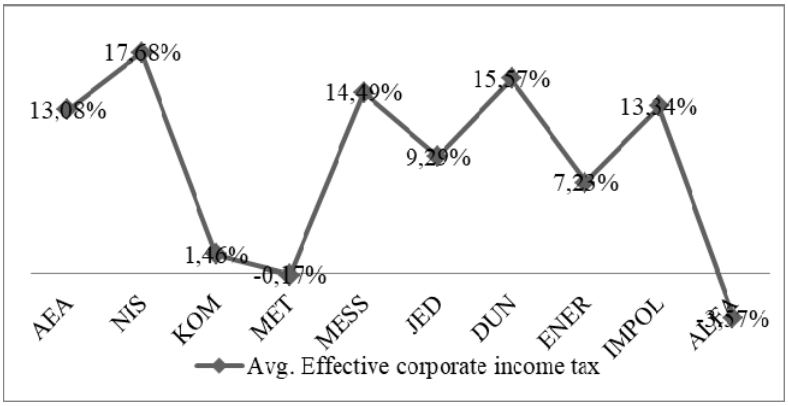
was followed by companies such as Aerodrom Nikola Tesla a.d., Messer Tehnogas a.d., Dunav Osiguranje a.d. and Impol Seval a.d. where average effective rates range from 13% to 16%. We also note that the largest amount of standard deviation is present in the company Dunav Osiguranje a.d. and Impol Seval a.d. where they are 29.01 and 28.48 respectively, which is attributed to the large range between the maximum and minimum average effective rates for both companies. The company Alfa plam a.d. has the lowest amount of the average effective rate of -3.57% and is followed by the companies Metalac a.d. and Komercijalna banka a.d. where the average effective corporate income tax rate ranges from -0.5% to 2%. Based on the previous explanations of the concepts of calculating the effective income tax rate, such a low amount of the average effective rate can be attributed to the large amount of deferred tax assets in relation to deferred tax liabilities due to higher tax depreciation compared to accounting depreciation in these companies.

Table 5: Descriptive statistics

	Mean	**Std. dev.**	**Median**	**Min.**	**Max.**
AERO	13.08	7.48	15.00	-1.22	24.19
NIIS	17.69	4.18	15.00	10.26	22.50
KMBN	1.46	12.82	15.00	-12.94	30.15
MTLC	-0.16	1,38	15.00	-2.11	2.65
TGAS	14.48	9.56	15.00	-1.90	30.07
JESV	9.29	4.41	15.00	2.60	14.50
DNOS	15.58	29.01	15.00	-12.99	83.95
ENHL	7,23	14.12	15.00	-7.27	40.38
IMPL	13.33	28.48	15.00	-0.02	83.13
ALFA	-3.7	6.68	15.00	-18.30	1.22

Source: the authors' calculation in SPSS

Figure 3: Average effective tax rate



Source: the authors' calculation

Figure 3 manifests graphically the previously calculated average effective tax rates of listed companies and gives us a more precise insight into the movement of average effective rates in relation to the legally prescribed rate. What we notice is that only for two companies that are in the basket of the Belex15 index, the effective rates for the period from 2013 to 2020 exceed the amount of 15%, while for the rest of the company this is not the case. As we have previously mentioned in theory, the reason why the effective income tax is lower than the prescribed rate is precisely because of the disparity between deferred tax assets and deferred tax liabilities.

Table 6: Correlation

		Avg. Income	Avg. Eff tax
Avg. Income	Pearson correlation	1.000	.103
	Sig. (2-tailed)		.809
	n	8	8
Avg. Eff tax	Person Correlation	.103	1.000
	Sig. (2-tailed)	.809	
	n	8	8

Source: the authors' calculations in SPSS

Finally, we can see that Table 6 represents the calculated correlation between the growth of average pre-tax profit and the growth of the average effective income tax rate of listed companies using Pearson's correlation test. We can see that there is a weak positive but not significant correlation between profit before tax and the effective income tax rate because the Pearson test shows a score of .103 which indicates a weak positive relationship but Sig two- tailed score show us a result of .809 that is higher than .05 which is required

for a significant correlation to exist. So, we conclude that if a company makes high profits it does not necessarily mean that it will have a large amount of effective income tax.

Conclusion

Income tax is one of the basic types of direct tax applied in the business world. In addition to value added tax, it is the most commonly used form of business tax. We can also notice how companies use legislation to provide a higher amount of financial results, but we can also detect the use of income tax as a tool of fiscal policy of the Republic of Serbia. As the subject of the study, we used the capital market of the Republic of Serbia, which still belongs among less developed markets in Europe and in the world. The financial results of listed companies have a direct effect on their movement on the stock exchange, so we can conclude the importance of the impact of corporate income tax on their financial results and movement of their value in the capital market of the Republic of Serbia.

As the paper concludes, we note that the amount of the effective rate of listed companies (joint stock companies) in only two of the eight years that are the subject of the study exceeded the legal rate. As we could see, the effective corporate income tax rate in 2013 and 2014 was 16% and 18.27%, respectively, while in other years that are the subject of the study, the effective rate was 4.23%, 8.25%, 4.20%, 6.62%, 4.11% and 9.04% which is below the legal rate, which leads us to the conclusion that there is a significant discrepancy between the actual income tax rate and the legal rate of 15% through the use of tax depreciation prescribed Law on Corporate Income Tax in the Republic of Serbia, and accordingly we can also conclude that there is no significant correlation between the growth of income before corporate taxation and increase the effective corporate income tax.

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