

TESTING THE DIFFERENCES BETWEEN EFFECTIVE TAX RATES OF LEGAL ENTITIES WITHIN A GROUP AND INDIVIDUAL LEGAL ENTITIES

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ABSTRACT

Tax strategy and tax policy should align with the business strategy and goals pursued by a legal entity in order to achieve an optimal effective tax rate, representing the actual tax burden. Without a proper tax strategy, the entity exposes itself to the risk of missing opportunities for tax cost savings. The Republic of Serbia is one of the countries that prescribes tax incentives for groups of entities if they report income tax on a consolidated basis (group taxation). The main goal of this paper is to investigate whether there are differences in the effective tax rate of individual entities and those that belong to a group of entities. The research sample consists of 1,585 entities split into two groups. The first group includes entities that are part of a group (parent entities or subsidiaries), while the rest of the sample comprises individual entities that are not part of a group. To test the differences between the groups, the following statistical methods were applied: descriptive statistics, normality tests to assess the distribution of the data sample, and Welch's t-test. The research results show a minimal difference between the effective tax rates of legal entities that are not part of a group and those belonging to a group of entities. This suggests that groups of entities do not utilize prescribed tax incentives to a greater extent.

Keywords: tax policy, effective tax rate, group of entities, tax incentives

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INTRODUCTION

The effective tax rate measures the actual tax burden, often diverging from the statutory tax rate due to adjustments in taxable revenues and costs mandated by the Corporate Income Tax Law. Within this framework, tax policy not only shapes these adjustments but also delineates potential tax incentives and subsidies offered by the state. For example, if the state introduces subsidies for entities that invest in specific industries, this reduces the effective tax rate for those entities. Additionally, there are different ways to account for costs in the tax balance, often doubling the value recognized in the income statement [1]. On a state level, if the government imposes a higher income tax rate, this directly increases the effective tax rate for individuals with a higher annual income. The effective tax rate also depends on how individuals and entities comply with the tax rules set by the authorities and how effectively the state implements its tax policies. Thus, in countries with significant tax evasion, the effective tax rate may be lower than it would be if all taxes were paid as required. The deferral of tax obligations emerges as a protective measure for small and medium-sized enterprises, especially in times of crisis, aligning with various fiscal policies implemented globally to address the economic challenges posed by the recent COVID-19 pandemic [2]. It is important to note that multinational companies might resort to tax policies, including establishing subsidiaries in countries with relaxed taxation or lower tax rates and shifting their cash flows and income to those countries [3]. In this context, the Republic of Serbia is one of the countries that prescribes tax incentives for groups of entities if they choose to report income tax on a consolidated basis (group taxation). Therefore, it can be expected that the effective tax rate will differ between individual entities and those belonging to a group of entities. This paper examines variations in effective tax rates between parent entities and subsidiaries within a group, on the one hand, and independent entities on the other. Building on previous research, the main research question has been defined as follows: Does the effective tax rate of legal entities within a group differ from the effective tax rate of economically independent legal entities? The contribution of this paper lies in providing additional information for shaping the tax policy of the state, bearing in mind that 80% to 90% of the budget revenues of the Republic of Serbia come from taxes [4]. Furthermore, it addresses a notable research gap by examining variations between entities within a group and economically independent entities. The remaining part of the paper is structured as follows. The next section presents a literature review on the topic, mostly focusing on the trend of effective tax rates abroad and in the Republic of Serbia. Existing literature on differences between effective tax rates of entities within a group and independent entities is particularly modest. The third section presents the methodology used to perform the research and the main findings as results of the research. Finally, the paper concludes with recommendations for future work.

LITERATURE REVIEW

As mentioned earlier, the effective tax rate can also be regarded as an instrument of economic policy, i.e., as an indicator of a country's competitive advantage in attracting foreign economic operators [5], [6], [7]. Some researchers indicate that entities conducting specific business activities abroad (through subsidiaries, affiliated entities, joint ventures, etc.) tend to have lower effective tax rates due to the possibility of implementing strategies aimed at reducing the tax burden [8]. Similarly, [9] emphasized that multinational companies with significant business operations abroad tend to have lower effective tax rates. Overall, research confirms a decreasing trend in effective tax rates. A study examining the evolution of effective tax rates over 25 years (1988–2012), focusing on entities in the United States market, revealed a substantial decline in effective tax rates for both domestic and multinational companies during this period. The authors attribute this trend to diminishing statutory tax rates, modifications in the tax system, and changes in the characteristics of legal entities [10].

In an analysis of statutory tax rates in European Union member states between 1990 and 1996, various sources were used to determine annual STRs, revealing multiple corporate tax rates in certain member states [11]. The results showed that Italy, Germany, and Belgium had the highest statutory tax rates, while Greece, Sweden, and Ireland had the lowest. Despite tax incentives, effective tax rates did not exhibit greater uniformity between countries than statutory tax rates. Further analyses using alternative ETR measures, including ETR2 and ETR3, and examining different sets of countries, confirmed the persistence of differences in effective corporate tax burdens compared to statutory rates.

In a paper investigating the impact of a worldwide tax system in a multinational corporation's home country on the tax management behavior of foreign subsidiaries, the authors revealed that foreign subsidiaries of worldwide-parent multinational corporations exhibit higher effective tax rates than those of territorial-parent multinational corporations [12]. In addition, after the abolishment of the worldwide tax system, worldwide-parent subsidiaries reduced their effective tax rates. The study contributes by identifying the effects of a worldwide tax system on tax management in foreign subsidiaries, emphasizing that the shift from a worldwide to a territorial tax system can influence the profitability, investment decisions, and financing structures of multinational corporations and their affiliates.

Regarding the Republic of Serbia, a study of Belex15 companies from 2013–2020 found that the effective tax rate differed from the statutory rate in all observed periods. In almost every analyzed year, the effective tax rate was significantly lower than the statutory rate (up to four times lower), except in 2013 and 2014, when it amounted to 16% and 18.27%, respectively [13]. Several years later, research indicated that the average effective tax rate of sampled legal entities listed on the Belgrade Stock Exchange (BELEX) in 2017 was approximately 12% [14]. The authors [13] concluded that there is no significant correlation between the growth of pre-tax results and the increase in effective corporate income tax.

A three-year study showed that legal entities in Serbia actively engage in profit tax management, as results indicate that a significant number of entities with positive outcomes did not bear a tax burden [15]. Additionally, it was observed that the effective tax rate, based on a sample of 9,549 financial statements from 2016–2018, ranged between 16% and 18%, which is higher than the statutory tax rate. The authors suggested that, in addition to traditional determinants such as entity size, leverage, profitability, asset structure, entity growth, earnings management, etc., future research should also include statutory tax rates (considering their variation across countries), gross domestic product growth, level of development, and the economic freedom index. This observation raises the question of which determinants truly influence the effective tax rate and in what direction (increase or decrease) these values are changing.

METHODOLOGY AND RESEARCH RESULTS

An answer to the defined research question was determined using an initial sample of 2,000 business entities operating in the Republic of Serbia (the final sample includes 1,585 entities). From the official website of the Business Registers Agency, the income statement for each analyzed entity was obtained individually (for 2019 as the reporting period) to enable the calculation of the effective tax rate and the analysis of actual tax liabilities during the observed period. In the research, the following formula was applied [16] to calculate the effective tax rate for all observed entities:

$$\text{Tax effective rate} = \text{Tax expense (AOP1060)} / \text{Profit before tax (pre-tax profit) (AOP1058)}$$

The percentage of the effective tax rate for each entity was compared with the statutory (legal) tax rate, which is set at 15% in the Republic of Serbia. When an entity had a negative pre-tax profit, calculating the effective tax rate was not possible, and such entities were excluded from the analysis. Therefore, the final sample includes only entities with a positive pre-tax profit (the rest were excluded to avoid negative effective tax rates, which would be impractical in the context of this study). Considering the defined research question—testing the differences between the effective tax rates of legal entities within a group and economically independent legal entities—the sample was divided into two categories. The first category consists of 798 entities that are part of a group of legal entities, while the remaining 787 are entities that do not belong to a group. The statistical software SPSS (Statistical Package for the Social Sciences) was used for statistical data processing. The following tables (Tab. 1 and Tab. 2) present the results of descriptive statistics for the main variables included in the research for both observed groups.

Table 1. Descriptive statistics for economically independent legal entities

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Effective tax rate	787	0.0000	6.0650	0.1855	0.1536	0.3258
Difference between the effective and statutory tax rates	787	-0.1500	5.9150	0.0355	0.0036	0.3258
Profit before tax	787	6	6,776,515	80,871.01	20,132.00	362,280.12
Tax expense	787	0	881,526	10,088.15	2,712.00	41,218.97

Source: Authors' data

Based on the results of descriptive statistics, the highest calculated effective tax rate for individual legal entities is 607%. In the case of entities that are part of a group of legal entities, the maximum effective tax rate is higher, reaching 727%. The minimum calculated effective tax rate for both categories of analyzed entities is 0%, which indicates that certain legal entities did not pay taxes even though they reported a profit in their income statements. For legal entities that did not achieve a positive tax/financial result, the difference between the effective and statutory tax rates is -15%, confirming that they had no obligation to pay taxes. In addition, most entities in the sample have a positive net result and, consequently, paid a certain amount of taxes, constituting approximately 83% of the final sample. It is also notable that certain legal entities incurred a negative result (loss) during the observed period and still reported a tax liability.

Additionally, within both observed groups, there are entities with positive net results but no tax liability (amount 0). This raises the question of whether these entities have found suitable strategies for managing tax obligations and, in a legal (statutory) manner, utilized specific tax incentives that led to such outcomes. These entities represent approximately 17% of the final sample.

In 2019, it is noticeable that the average amount of tax paid by economically independent legal entities was 11,939,000 dinars, while for entities that are part of a group, this amount is almost three times higher on average (31,321,000 dinars). The average values of paid tax for both categories are significantly above the median values (2,712,000 dinars for economically independent legal entities and 5,970,000 dinars for entities within a group).

Table 2. Descriptive statistics for legal entities within a group of entities

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Effective tax rate	798	0.0000	7.2749	0.1709	0.1514	0.3546
Difference between the effective and statutory tax rates	798	-0.1500	7.1249	0.0209	0.0014	0.3546
Profit before tax	798	7	22,014,007	278,220.61	53,709.50	1,070,431.05
Tax expense	798	0	4,076,794	33,976.41	5,970.00	187,652.89

Source: Authors' data

In both categories of legal entities, a standard deviation was obtained—0.3258 for individual entities and 0.3546 for entities within a group. This implies that the effective tax rates are relatively close to each other, indicating slight variability in the amount of taxes paid by the sampled legal entities and suggesting that most of them have very similar tax rates. The mean values of the variables pre-tax profit and tax expense are approximately 3.4 times higher for entities within a group compared to economically independent entities. Although the minimum value of both variables is similar or identical, substantial differences appear in the maximum values. Based on the standard deviation values, it can be concluded that there is considerable variability in the analyzed dataset. Since the standard deviation is higher than the mean in both categories of legal entities, it is assumed that most analyzed entities have pre-tax profit and tax expense values closer to the maximum.

Table 3. Welch t-test results

F-value	Sig.	T-stat.	Df	Sig.	Mean Diff.	Std. Error Diff.	F-value	95% Confidence Interval	
								lower	upper
Equal variances assumed	0.06	0.80	0.89	158	0.37	0.015	0.01	-0.01	0.05
Equal variances not assumed			0.89	1,575.18	0.37	0.015	0.017	-0.01	0.05

Source: Authors' data

The F-value is 0.062 with a corresponding p-value of 0.803, suggesting that no significant variation exists between the mean effective tax rates of entities within a group and individual entities under the assumption of equal variances. Even when variances are not assumed equal, the results remain consistent, with a t-value of 0.897 and a p-value of 0.370. The mean difference of 0.01534, with a standard error of 0.01711, falls within the confidence interval of -0.01822 to 0.04889, indicating that the observed differences are not statistically significant. Based on the Welch t-test results, no substantial evidence suggests a significant disparity in effective tax rates between entities within a group and individual entities. This supports the conclusion that the two groups do not differ statistically significantly regarding their tax burden.

DISCUSSION

Studies such as those by [8] and [9] highlight that businesses engaged in international operations, especially through subsidiaries, tend to report no or lower effective tax rates, including cash effective tax rates [17]. Emerging as a result of gaps in international tax regulations, the establishment of subsidiaries in countries/jurisdictions known as tax havens is one of the most common strategies employed by multinational companies [18], [19]. This aligns with findings from [10], whose authors noted a substantial decline in effective tax rates for multinational entities in the U.S. over a 25-year period, partly due to the growing sophistication of tax planning strategies. According to [20], most companies listed in the Fortune 500 (approximately 73%) have subsidiaries in one or more tax haven jurisdictions, while [21] suggested that full benefits are achieved when a group of entities has an international presence in at least five tax jurisdictions. In [22], the authors argued that the development of these activities has been aided by the rise of globalization and capital mobility, and they highlighted the reduction in the ability of developing countries to generate revenue as a consequence of such practices. It is estimated that tax avoidance through tax havens allows multinational companies to save approximately USD 90 billion annually [23]. Furthermore, an analysis of 1,500 multinational companies operating in India found that those with subsidiaries in tax havens reported 1.5% less profit (and accordingly paid less tax) compared to companies without affiliated legal entities [24]. Similarly, [25] noted that companies in Malaysia with subsidiaries in tax havens reported 39% less profit and paid 23% less in tax liabilities. An interesting conclusion was made by [26], who pointed out that any country with a relatively low tax burden could be a potential location for profit shifting, highlighting Eastern European countries with corporate tax rates below 20%, such as Serbia. The research conducted in this paper confirms similar trends within the Serbian context, where entities within a group (such as subsidiaries) and economically independent entities do not show statistically significant differences in their effective tax rates, despite having different profit structures. The median effective tax rate for entities within a group was slightly lower (0.1514) compared to independent entities (0.1536), suggesting that although a marginal difference exists, it is not sufficient to conclude that group entities consistently engage in more aggressive tax avoidance. However, one significant finding is that the tax expense for entities within a group is substantially higher—approximately three times that of economically independent entities. This higher reported tax expense likely reflects the larger scale of operations and greater profitability of multinational subsidiaries compared to independent entities, even if their effective tax rates appear similar.

CONCLUSION

The analysis of the effective tax rate represents a highly relevant and attractive research topic for many authors worldwide. What is specific in the Serbian context is that only a limited number of detailed studies have examined the effective tax rate of business entities within and outside groups of entities. From the initial sample of 2,000 legal entities, the majority (almost 80%) achieved a positive financial result in 2019, allowing for the calculation of the effective tax rate. However, the results show no statistically significant difference in the effective tax rates between the two observed groups, which is confirmed by the fact that their average effective tax rates are very close (a difference of only one percentage point). What has been observed is that the level of tax expense declared in the income statements of legal entities within a group is about four times higher than that of economically independent legal entities. Tax consolidation allows the offsetting of losses and gains within the group, reducing the tax liability at the group level, which raises the question of whether legal entities in Serbia adequately utilize the possibility of group taxation. In addition, current literature shows that multinational companies, particularly through subsidiaries in tax havens, tend to report lower effective tax rates as a result of sophisticated tax planning strategies. Although this trend is consistent across various international studies, the findings from this research show no significant difference in effective tax rates between subsidiaries and independent entities in Serbia. Since this research did not determine the home country of the parent entity, future research could focus on this aspect and explore whether additional factors influence the effective tax rate. These additional factors could include incorporating macroeconomic and microeconomic variables and examining their impact on shaping the effective tax rate of Serbian legal entities. By integrating these determinants, all specific characteristics of business operations (domestic regulations, level of development, financing methods, inflation, etc.) could be taken into account, providing answers to which factors—and to what extent— influence the actual tax burden on legal entities.

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