

WHO PAYS LESS? CORPORATE INCOME TAX BURDEN OF LISTED CORPORATIONS IN SERBIA AND NORTH MACEDONIA

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ABSTRACT

Serbia and North Macedonia are two transition countries with relatively low statutory corporate tax rates (STRs) of 15% and 10%, respectively. As tax planning and legal tax avoidance became a factor of corporate competitiveness, it is important to measure and compare corporate tax burden between corporations. Therefore, the main objective of the paper is to calculate and compare corporate tax burden for corporations listed on Belgrade and Macedonian stock exchanges, included in BELEX15 and MBI10 stock exchange indices. On the other side, many measures of corporate tax burden have been developed in the past decades, though the ideal measure of corporate tax burden is yet to be designed. We have calculated effective corporate income tax rates (ETRs), as the most widely used measure of corporate tax burden. ETR is calculated as a relation between current corporate income tax expense and pre-tax profit. We have showed that corporations in Serbia have lower ETRs than corporations in North Macedonia, despite the STR being higher in Serbia. Contrary to the North Macedonian corporations, the difference between ETR and STR is statistically significant in Serbian corporations. However, we argue that ETRs do not enable cross-national comparison of corporate income tax burden when countries impose different STRs. In this regard, we propose several options to overcome such obstacle, but argue that the relation between ETR and STR is the best measure of corporate income tax burden in such environment. We have reached several conclusions and addressed recommendations to many interest groups, though we emphasize the relatively small sample as the largest limitation of our research.

Keywords: *Corporation, Corporate tax, Tax avoidance, Effective tax rate, Stock exchange, Transition economies*

JEL classification: *H25, H26, M41*

1. INTRODUCTION

The ideal scenario for the growth and development of the corporation is that the whole earnings stay in the corporation. Such closed circle of the funds flow maximizes the corporation potential to save or invest. However, in the real world, many factors break the closed circle and lead to the outflows from the corporation. Corporate income tax may be one of the best examples as it accounts for the portion of the profit paid outside of the corporation to the national tax authorities. Therefore, it is not surprising that corporations often seek for the strategies of tax planning and tax avoidance in order to minimize their corporate income tax burden.

The significance of the corporate income tax has grown in the last few decades both from the microeconomic and macroeconomic aspect. Namely, successful management of corporate income tax became the factor of the corporation competitiveness, so corporations started to compare tax burden among themselves (Dyreng *et al.*, 2010). Therefore, corporations strive to ensure compliance with the corporate income tax regulation, but also to minimize the tax burden as much as possible.

From the macroeconomic point of view, national governments (in particular those of developing transition and post-transition countries) use corporate income tax as an instrument to attract foreign direct investments and accelerate economic growth and development. Ali Abbas and Klemm (2013) point out at global "race to the bottom" as countries reduce statutory corporate income tax rates (STRs) to become more attractive than other countries for foreign investors.

The subject of the paper is corporate income taxation of corporations in Serbia and North Macedonia. There are many reasons to explain the comparison between corporations from Serbia and North Macedonia. Both countries were part of the former Socialist Federal Republic of Yugoslavia and are developing transition European countries that are recognized candidates for membership of the European Union. Serbia and North Macedonia also have many similarities regarding the corporate taxation. Both Serbia (Marjanović and Domazet, 2021) and North Macedonia (Gruevski and Gaber, 2020) aim to attract more foreign capital and foster the investment, so they impose, compared with other European countries, relatively low STRs – 15% in Serbia and 10% in North Macedonia.

The paper has two main objectives. The first objective of the paper is to measure corporate income tax burden of listed corporations on Belgrade Stock Exchange and Macedonian Stock Exchange. The second objective of the paper is to compare the corporate income tax burden of these corporations that operate in countries with different STRs.

Corporate income tax research based on microeconomic data is relatively scarce in transition and post-transition European countries (Vržina *et al.*, 2020; Bubanić and Šimović, 2021). Therefore, our research aims to contribute to the existing literature on measuring tax burden and the research results may be useful both from microeconomic and macroeconomic aspect. First, we believe that management of corporations may benefit from the findings on the corporate income tax burden in different countries, with the results being particularly useful for managers of multinational corporations that operate in both Serbia and North Macedonia. Second, national tax authorities may benefit from the information on effective tax burden in neighboring countries. Usually, national tax authorities may directly rely only on the information on STRs in these countries. However, STRs may be significantly different to the effective corporate income tax burden.

Besides the introduction and conclusion, the paper consists of three parts. In the first part is given the theoretical background on the issues of corporate income tax avoidance and measures of tax burden. The second part explains the research methodology, while research results are presented in the third part of the paper.

2. THEORETICAL BACKGROUND

Since STR does not capture the effects of tax planning (those prescribed by the tax law) and tax avoidance (those based on using the tax loopholes), tax researchers developed several corporate income tax measures. Probably the most widely used measure is effective corporate income tax rate – ETR (Hanlon and Heitzman, 2010). However, several variations of ETR exist in tax theory and practice. For instance, International Accounting Standard (IAS) 12 – Income Taxes, requires the calculation of the ETR as a relation between total corporate income tax expense (sum of current and deferred tax expense, reduced for deferred tax

income) and pre-tax profit. On the other hand, in the numerator of the ETR may also be used current corporate income tax expense or outflow for the corporate income tax from the cash flow statement. In addition, in the denominator may be used different results instead of pre-tax profit, such as earnings before interest and taxes (EBIT) or earnings before interest, taxes, depreciation and amortization (EBITDA).

ETR does not have any standard absolute value that should be used for comparison. However, ETR should be interpreted bearing in mind STR as a reference. In this regard, researchers usually employ the following logic:

- if $ETR < STR$, the corporation is successful in managing its corporate income tax burden;
- if $ETR = STR$, the corporation has corporate income tax burden as prescribed by the tax law and
- if $ETR > STR$, the corporation is not enough successful in managing its corporate income tax burden.

Tax researchers and practitioners should bear in mind that ETRs are related to the STR (Dias and Reis, 2018). Therefore, relying on the ETRs for comparison purposes may be dubious when the STRs are different. There may be identified at least four circumstances in which the employment of ETRs is not appropriate:

- comparison of ETRs for the corporations headquartered in the same country, but in the different regions of country, with the country imposing different STRs for corporations headquartered in different regions;
- comparison of ETRs for the corporations headquartered in the same country, but operate in different industries, with the country imposing different STRs for corporations operating in different industries;
- comparison of historical ETRs for the same corporation, but the STR was changed during the period of analysis and
- comparison of ETRs for the corporations headquartered in different countries, with different countries imposing different STRs.

Assume that the corporation reported ETR of 12% and its foreign competitor reported ETR of 11%. It is clear that the corporation has higher corporate income tax burden as it should pay one percent of the pre-tax profit more to the national tax authorities. At the first, it seems that the foreign competitor is better in managing the corporate income tax burden. It may be, however, assumed that the corporation is headquartered in a country imposing STR of 15%, while on its foreign competitor is imposed STR of 10%. Different STRs lead to the fact that the corporation lowered their tax burden three percent below the STR, while its foreign competitor has ETR even one percent higher than the STR. As a result, it may be concluded that the corporation is more successful in managing tax burden than its foreign competitor.

Due to presented weakness of the ETRs, some additional measures of corporate income tax burden have been developed. Some authors use the difference between STR and ETR (STR-ETR) in order to overcome the problem of different STRs. In this regard, corporations intend to have as higher as possible STR-ETR. Reference value for the measure STR-ETR is null percent and researchers usually employ the following logic:

- if $STR-ETR < 0\%$, the corporation is not enough successful in managing its corporate income tax burden as ETR is higher than STR;
- if $STR-ETR = 0\%$, the corporation has ETR equal to STR and
- if $STR-ETR > 0\%$, the corporation is successful in managing its corporate income tax burden as ETR is lower than STR.

For instance, Chen *et al.* (2014) use STR-ETR to measure corporate income tax burden in a single-country analysis, but in the country that imposes different STRs for countries in different regions. Thomsen and Watrin (2018) and Tang (2019) use STR-ETR to measure

corporate income tax burden for corporations headquartered in different countries across the world.

However, we argue that STR-ETR measure is not the best way to overcome the problem of different STRs as it may lead to unreliable conclusions. Assume that the corporation headquartered in the country with STR of 10% reports the ETR of 5% and its foreign competitor headquartered in the country with STR of 15% reports the ETR of 10%. Using the STR-ETR measure, it may be concluded that both corporations had ETR five percent lower than STR, implying that corporations are equally successful in managing their corporate income tax burden. However, this measure ignores the fact that the corporation lowered its corporate income tax burden from 10% to 5%, thus lowering the tax burden by one half (5%/10%), while its foreign competitor lowered corporate income tax burden from 15% to 10%, thus lowering the tax burden by only the one third (10%/15%).

Based on previous argument, we argue that the relation between ETR and STR (ETR/STR) is better measure to compare corporate income tax burden for corporations with different STRs. Similar to the ETR measure, corporations intend to have as lower as possible ETR/STR. Reference value for the measure ETR/STR is one and researchers usually employ the following logic:

- if $ETR/STR < 1$, the corporation is successful in managing its corporate income tax burden as ETR is lower than STR;
- if $ETR/STR = 1$, the corporation has ETR equal to STR and
- if $ETR/STR > 1$, the corporation is not enough successful in managing its corporate income tax burden as ETR is higher than STR.

Despite the fact that the ETR/STR is a more recent measure than ETR and STR-ETR, it has already been employed in some important studies. Tang *et al.* (2017) use ETR/STR in a single-country context to measure corporate income tax burden for corporations in a country that imposes different STRs for different types of corporations. Fernandez-Rodriguez *et al.* (2021) use ETR/STR in a multi-country context to compare corporate income tax burden for corporations headquartered in countries with different STRs.

3. RESEARCH METHODOLOGY

3.1. Context analysis

Taxation of the corporate income in Serbia and North Macedonia has many similarities. Besides the fact that both countries impose relatively low STRs, they have significantly lowered STRs in the last three decades. At the beginning of the XXI century, Serbia imposed STR of 20%. During the past two decades, STR is changed several times with the minimum of 10% and, from 2013, the STR is set at 15%. On the other hand, North Macedonia had STR of 15% at the beginning of the XXI century and, from 2008, the STR is set at 10%. In addition, in neither country are imposed municipal nor local government corporate income taxes.

The process of corporate income taxation in both countries is regulated by national Corporate Income Tax Law. The basis for the calculation of tax burden is pre-tax profit from the income statement that is adjusted according to the tax law provisions. Taxable period in both countries is one year. Corporations are obliged to monthly pay in advance corporate income tax. If advance payments are bigger than the calculated tax burden, corporations may request the refund of overpaid tax.

Like most of the European countries, no tax loss carryback is allowed in both Serbia and North Macedonia. On the other hand, tax losses may be carried forward in Serbia up to five

years, while standard tax loss carryforward period in North Macedonia is three years. Due to the global pandemic, tax losses reported in 2020 and 2021 may be carried forward up to five years.

However, corporate income taxation systems of Serbia and North Macedonia differ in some aspects. For instance, Serbia allows group taxation (tax consolidation) for parent entity and subsidiaries when parent entity has more than 75% of control in subsidiary. On the contrary, group taxation is not allowed in North Macedonia.

Both countries offer important, albeit different, investment tax incentives. In Serbia is offered investment tax incentive to the corporations that invest in certain non-current assets more than one billion Serbian dinars and employ a hundred workers on a permanent basis. On the other hand, in North Macedonia is offered investment tax relief that allows corporations to reduce the taxable profit for the amount of profit reinvested in certain tangible and intangible assets.

3.2. Corporate income tax data and measures

One of the most important pillars for each national economy is the stock exchange (Miller, 1998). In this regard, we have compared the ETRs for the corporations quoted on the Belgrade Stock Exchange – the only financial stock exchange in Serbia, and Macedonian Stock Exchange – the only financial stock exchange in North Macedonia. Although the number of quoted corporations in both countries significantly declined in the last decade (Marinković *et al.*, 2013; Boshkovska *et al.*, 2017), some of the most important corporations for the economic growth of these countries are still quoted on the stock exchanges. We have opted to compare ETRs for corporations from the main indices of both stock exchanges as it covers blue chips from the market. Therefore, we have sampled corporations from Serbia from the *BELEX15* index and North Macedonia from the *MBI10* index.

As of 1 July 2022, each index covered ten corporations, listed in the Table 1. Data from the table indicates that *BELEX15* covers nine non-financial and one financial (insurance) corporation, while *MBI10* covers five non-financial and five financial (banking) corporations. In addition, *BELEX15* covers only five corporations from the capital of Serbia – Belgrade, while *MBI10* covers nine corporations from the capital of North Macedonia – Skopje. However, both countries impose equal corporate income tax provisions on financial and non-financial corporations and on corporations from different regions, so differences in indices structure should not distort research results.

Table 1: List of sampled corporations

<i>BELEX15</i>	<i>MBI10</i>
Aerodrom Nikola Tesla, Belgrade	Alkaloid, Skopje
Alfa Plam, Vranje	Granit, Skopje
Dunav Insurance, Belgrade	Komercijalna Bank, Skopje
Energoprojekt Holding, Belgrade	Makedonijaturist, Skopje
Fintel Energija, Belgrade	Makedonski Telekom, Skopje
Impol Seval, Sevojno	Makpetrol, Skopje
Jedinstvo, Sevojno	NLB Bank, Skopje
Messer Tehnogas, Belgrade	Stopanska Bank, Bitola
Metalac, Gornji Milanovac	Stopanska Bank, Skopje
NIS, Novi Sad	TTK Bank, Skopje

We have retrieved the financial data of the sampled corporations from the official Internet presentations of the Belgrade Stock Exchange (www.belex.rs) and Macedonian Stock

Exchange (www.mse.mk). The paper covers the period between 2018 and 2020, so the sample initially consists of 30 observations per country. However, observations with negative pre-tax result are eliminated as they do not have clear economic meaning (Hanlon and Heitzman, 2010). We have used the data from individual financial statements in order to mitigate the impact of non-resident related party entities on corporate income tax (Lazar, 2014).

Since listed corporations in both countries are required to follow the full version of International Financial Reporting Standards (IFRS), including the IAS 12 – Income Taxes, we believe that data on corporate income tax, presented in income statement of corporations, is generally comparable on cross-national level. Reliability of the data has also been ensured by the fact that financial statements of each listed corporation in both countries have to be audited.

Since the reliability of reported deferred tax expense may be dubious (Brouwer and Naarding, 2018), we have opted to use current ETR. Hazir (2019) argues that current tax expense, used in the numerator of current ETR, is the "real" tax expense, as it represents the amount of tax burden from the tax return filed to the national tax authorities. In addition, pre-tax profit, used in the denominator of current ETR, may be considered as the nearest approximation of taxable profit.

Since the corporations in neither Serbia nor North Macedonia are allowed to use tax loss carryback, the current tax expense may not be negative, so the current ETR takes the value between 0% to $+\infty$. This also implies that STR-ETR measure takes the value between $-\infty$ and STR, while ETR/STR measure takes the value between 0 and $+\infty$.

Besides descriptive statistics, we have also used statistical tests to examine the statistical significance of the difference between employed measures of corporate income tax burden (ETR, STR-ETR and ETR/STR) and their referent values (STR, 0 and 1, respectively) for each country. Such methodology is applied in previous research (Vržina and Dimitrijević, 2020). Since the sample size is relatively small, we have used Shapiro-Wilk test to examine the normality of the distribution of employed measures. In the case of normal distribution, we use parametric t-test for independent samples, and nonparametric Mann-Whitney U test otherwise.

4. RESEARCH RESULTS

Table 2 presents the descriptive statistics for ETR for corporations that are part of *BELEX15* and *MBI10* stock indices. Indicators presented in the table are calculated for 23 observations for Belgrade Stock Exchange and 29 observations for Macedonian Stock Exchange as seven and one observation, respectively, were removed due to negative pre-tax result.

Table 2: Descriptive statistics for ETR

<i>BELEX15</i>	Stock index	<i>MBI10</i>
7.216%	Arithmetic mean	9.031%
6.068%	Median	9.635%
0.000%	Minimum	0.000%
20.154%	Maximum	13.631%

(Source: authors' calculation)

Presented results indicate that Serbian corporations have lower both arithmetic mean and median than North Macedonian corporations, although STR being higher in Serbia. Unlike for North Macedonia, the median of ETR for Serbian corporations is significantly lower than arithmetic mean, thus indicating observations with relatively high ETRs.

In both countries are recorded observations with the ETR of 0% - the corporations that did not report the current corporate income tax expense despite reporting positive pre-tax result. In this regard, only one observation from North Macedonia reported ETR of 0%, while as much as seven observations from Serbia reported the ETR of 0%. Two corporations from Serbia reported ETR of 0% in each sampled year, although they reported positive pre-tax result in each year. On the other hand, 13 observations from North Macedonia reported ETR higher than STR (10%), while only four observations from Serbia reported ETR higher than STR (15%).

A specific feature of the sample lies in the fact it captures the year 2020, remembered for the beginning of the global virus pandemic. It is interesting to notice that nine sampled North Macedonian corporations reported lower ETR for 2020 than for 2019, while for tenth corporation it was not possible to calculate ETR for 2020 due to pre-tax loss. On the other hand, four Serbian corporations reported higher ETR for 2020 than for 2019, two corporations reported the ETR of 0% in both years, while for four corporations it was not possible to study the change in ETR as they reported pre-tax loss in at least one of the two mentioned years.

As Serbia and North Macedonia impose different STRs, it is necessary to control the variability of ETR for the differences in STRs. Therefore, the descriptive statistics for the STR-ETR measure are presented in Table 3. Results from the table confirm the findings from the previous table – however, using STR-ETR measure leads to some more detailed conclusions. Namely, descriptive statistics of the ETR showed that arithmetic mean of ETR for Serbian corporations is only 1.8% lower than arithmetic mean of ETR for North Macedonian corporations. The inclusion of the STR in the analysis shows that arithmetic mean of ETR for Serbian corporations deviates as much as 7.784% from the STR, while arithmetic mean of ETR for North Macedonian corporations deviates only 0.969% from the STR, implying that Serbian corporations are significantly more successful in managing their corporate income tax burden.

Table 3: Descriptive statistics for STR-ETR

<i>BELEX15</i>	Stock index	<i>MBI10</i>
7.784%	Arithmetic mean	0.969%
8.932%	Median	0.365%
-5.154%	Minimum	-3.631%
15.000%	Maximum	10.000%

(Source: authors' calculation)

Table 4: Descriptive statistics for ETR/STR

<i>BELEX15</i>	Stock index	<i>MBI10</i>
0.481	Arithmetic mean	0.903
0.405	Median	0.964
0.000	Minimum	0.000
1.344	Maximum	1.363

(Source: authors' calculation)

As argued in the theoretical background of the paper, ETR/STR measure is better than STR-ETR to compare tax burden of corporations with different STRs imposed. Therefore, in the Table 4 is presented the descriptive statistics for the ETR/STR measure. It may be concluded that corporations from Serbia are nearly twice as successful as the North Macedonian corporations in managing the corporate income tax burden. Namely, Serbian corporations have, on the average, real corporate income tax burden equal to 48.1% of the statutory

corporate income tax burden. On the contrary, North Macedonian corporations have, on the average, real corporate income tax burden equal to 90.3% of the statutory corporate income tax burden.

In the Table 5 are presented the results of Mann-Whitney U tests for the difference between ETR and STR in both countries. Nonparametric tests are used since Shapiro-Wilk test showed that no one employed variable follows the normal distribution.

Results of the Mann-Whitney U test show that the difference between ETR and STR in Serbia is statistically significant. In other words, Serbian corporations have statistically significantly lower ETRs than STR. On the other hand, the difference between ETR and STR in North Macedonia is not statistically significant. Therefore, North Macedonian corporations have statistically insignificantly lower ETRs than STR. Such findings confirm that Serbian corporations are more successful in managing corporate income tax burden than North Macedonian corporations. In addition, the results of the Mann-Whitney U tests are same if STR-ETR is compared with 0% (as a referent value) or if ETR/STR is compared with one (as a referent value), so the results of these statistical tests are not tabulated.

Table 5: Significance of difference between ETR and STR

	Serbia	North Macedonia
Mann-Whitney U	92.000	377.000
Z-statistic	-4.059	-0.723
p-value	***0.000	0.470

(Note: statistically significant at the 10% (), 5% (**) and 1% (***) levels)*

Although each observation may be treated as the separate issue, there can be identified some common features at the whole sample level to explain the significant differences in ETRs of Serbian and North Macedonian corporations. First, it is possible that the difference in ETRs is due to differences in tax loss carryforward practices. Corporations in Serbia are allowed to significantly longer carry forward their tax losses – currently, this period is five years, but tax losses reported prior to 2010 are allowed to be carried forward up to ten years, so such tax losses may be used to reduce corporate income tax burden in the sampled years. In addition, a fact that more sampled observations (seven) from Serbia than from North Macedonia (one) reported pre-tax loss implies that corporations from Serbia more frequently experience losses than North Macedonian corporations and, consequently, use tax loss carryforward to the higher extent.

It is also possible that differences in ETRs between corporations in Serbia and North Macedonia stem from different investment tax incentive rules. From the large corporation perspective, Serbian corporations are in better position than North Macedonian ones, as they may use investment tax incentive in the ten-year period. Theoretically, it implies that investment by Serbian corporation in only one year enable it to reduce its corporate income tax burden in the next ten years.

Group taxation (tax consolidation) may be the additional reason of the differences in ETRs. Many sampled Serbian corporations have parent entity headquartered in Serbia and/or have subsidiaries in which they have more than 75% (usually the whole 100%) of the control. Therefore, it is possible that taxable profits and tax losses are netted between group members. However, the extent to which Serbian corporations use group taxation is not known, as the data on group taxation is not publicly available.

It is important to recognize that the share of financial institutions in North Macedonian sample is significantly higher than the share in Serbian sample. Although the corporate income tax system in both countries is not different to financial institutions, it is possible that they have different ETRs than non-financial corporations due to the different nature of their

industries. However, previous research (Vržina, 2019) shows that the arithmetic mean and median values of current ETRs for banks in Serbia is even lower than reported in this research, so different structure of the samples should not distort the research results.

5. CONCLUSION

Research in this paper has been conducted with the aim to measure and compare corporate income tax burden of listed corporations in Serbia and North Macedonia as two low-tax transition European countries. Therefore, we have sampled corporations covered by main stock indices of Belgrade Stock Exchange and Macedonian Stock Exchange, using the period between 2018 and 2020.

The research results showed that ETRs of sampled corporations are, on the average, below the STRs. However, ETRs of the North Macedonian corporations are only slightly lower than STR of 10%, while ETRs of Serbian corporations are significantly lower than STR of 15%. We have also calculated STR-ETR measure as well as ETR/STR measure to include the impact of different STRs in studied countries on research results.

We proved both theoretically and practically that ETR/STR is the best measure of corporate income tax burden when studied corporations are headquartered in different countries with different STRs. For instance, we found that corporations in Serbia, on the average, have only 1.8% lower ETR than corporations in North Macedonia. However, ETR/STR measure showed that corporations in Serbia have real corporate income tax burden of only 48% of the statutory corporate income tax burden, while corporations in North Macedonia have real corporate income tax burden of 90% of the statutory corporate income tax burden. Therefore, we have concluded that Serbian corporations are nearly twice as successful as the North Macedonian corporations in managing the corporate income tax burden.

We believe that the results of our research may be of interest to many interest groups. We show that researchers and managers of multinational corporations should use ETR/STR measure to compare corporate income tax burden of corporations or subsidiaries when there are imposed different STRs. In addition, managers of multinational corporations should ignore STR, but use expected ETRs, when deciding on the location of the foreign investments. National governments should also strive to calculate effective corporate tax burden, rather than using STRs, when comparing tax burden with neighboring countries.

Results of this research should be used in the light of certain limitations. The research sample is very small and covers only blue chips of stock exchanges of both countries. It is possible that research results would be different if number of corporations or sampling period are changed. In addition, sample includes both financial and non-financial corporations, although they have completely different nature of their industries.

Future research should also include limited liability corporations as many largest corporations, employers and exporters of both countries are registered in that legal form. It might be useful to include corporations from other neighboring countries to compare research results. In addition, the separate analysis for financial and non-financial corporations may be useful.

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