



CZECH CORPORATE EFFECTIVE TAX RATE AS INVESTORS COSTS CHANGES WITH TIMES

**Jan Rohan¹, Lukáš Moravec², Gabriela Kukalová³,
Jakub Ječmínek⁴, Jana Hinke⁵**

Abstract

When choosing the appropriate jurisdiction, trading companies need to consider many variables. This can include administrative burdens, the speed of establishment of a company, the granting of some degree of anonymity of ownership, and a friendly tax environment. This article is focused on finding the corporate effective tax rate in the Czech Republic in the period 2005–2017 with the database of the Czech tax administrator. In the light of the international tax law, the information concerning effective tax rates becoming necessary. The results of this study show that the nominal tax rate may not be decisive for the determination of the tax burden, as most countries allow the application of tax allowances and deductions and thus achieve virtually lower taxes.

Keywords

Effective Tax Rate, Nominal Tax Rate, Corporate Tax, Tax Base, Tax Collection Efficiency

I. Introduction

In the theory of taxation, we can see the division of the tax rate into the so-called statutory and effective. While the statutory or nominal tax rate is a tax rate required by the law that applies to the tax base, the effective tax rate is the resulting rate that a given natural or legal person is facing. Although the tax should be proportional under the Czech tax system, the effective tax rate for both legal and natural persons may differ significantly, because items that can reduce or increase the tax base are included in the calculation of the resulting tax liability.

¹ Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic.
E-mail: rohan@pef.czu.cz.

² Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic.
E-mail: moravec@pef.czu.cz.

³ Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic.
E-mail: kukalova@pef.czu.cz.

⁴ Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic.
E-mail: jecminek@pef.czu.cz.

⁵ Czech University of Life Sciences Prague, Kamýcká 129, 165 00 Prague, Czech Republic.
E-mail: hinke@pef.czu.cz.

Differences in corporate effective tax rates distort the competitive environment, as some taxpayers may be disadvantaged by higher tax burdens. This fact has influenced the behavior of advanced economies that have been forced to increase or at least maintain their country's competitiveness in the struggle for foreign investors. The previous thesis can be illustrated by the cases of Apple, Google, Amazon and others that have long-term extremely low corporate effective tax rate. For example, Yang and Metallo (2018) report that Apple company has reduced in Ireland over the years its effective tax rate from 1% to 0.005% between 2003 and 2014, while the nominal tax rate in Ireland is 12.5%.

The disproportion between the nominal and effective tax rate varies depending on the size of the undertaking, the business activity and a number of other aspects. One way to determine the effective tax rate is to use microeconomic data from specialized databases such as Orbis, Amadeus and others for each business separately. The second is to determine the effective tax rate for the whole economy based on aggregate statistics.

According to the authors' findings, this issue is rare in the Czech Republic and has not been addressed in the area of income tax (unlike the topic of value added tax) in the specified period. Therefore, this topic has prompted the article elaboration. The originality of this paper lies in the fact that it presents new findings based on statistics from the Financial Administration of the Czech Republic, which may contribute significantly to further studies of effective tax rates and reveal significant disproportions between the reported economic result and the resulting tax liability. The aim of this article is to find out the corporate effective tax rate in the Czech Republic in the period from 2005 to 2017. The main benefit is the determination of an alternative indicator of total tax liability, which is adjusted for prescribed taxes, allowances and tax deductions. The total tax liability is thus obtained, which is not distorted by tax allowances and tax deductions. This indicator quantifies alternative indicators of corporate effective tax rate and tax collection efficiency, which is currently a hot topic in the context of deep deficits of state budgets. However, the relevance and topicality of this issue also consist in the fact that the corporate effective tax rate is becoming one of the main factors when choosing a jurisdiction for doing business.

II. Theoretical Background

The tax burden and the amount of effective tax rate are one of the factors that may affect taxpayers when allocating a business in a particular jurisdiction. The empirical results of the research by Jaafar and Thornton (2015) show that tax haven operations are associated with lower effective tax rates for private and public firms. The authors also state that the lower corporate effective tax rate is more pronounced in private firms than in public firms. Khour et al. (2019) statistically tested selected indicators (e.g. effective tax rate, taxes per assets, ROE or ROA) of Slovak companies with direct ownership links to tax havens. Aggressive tax planning was confirmed not only by significantly lower reported effective tax rates and taxes per assets, but also by lower ROAs.

A number of studies deal with the issue of amount and changes of corporate effective tax rates. By examining systematic changes in corporate effective tax rates over the past 25 years, Dyreng et al. (2017) determined that effective tax rates have decreased significantly. According to the authors, effective tax rates dropped at approximately the same

pace for multinational and domestic firms. The decrease in corporate income tax rates in recent decades has also been pointed out, for example, by Košťurková (2015). Delgado et al. (2019a) study the development of effective corporate tax rates in the European Union through convergence analysis. The results show that when comparing the effective and statutory corporate tax rates, there are significant differences that show the importance of the tax benefits of this tax. Generally well-accepted profit shifting channel are research and development expenses. The impact of research and development expenses on the effective corporate tax rate addresses in his study Belz et al. (2017). Research by Janský (2019) shows that many multinational enterprises do not pay much tax in many EU countries. The tax burden and corporate effective tax rate are related to a number of factors, including the size of the firm. E.g. Irlacher and Unger (2018) explain in their study why the effective tax rate is smaller for larger firms. The factors that affect the effective corporate tax rate of companies listed on 8 Eastern European stock exchanges (Bulgaria, Estonia, Hungary, Lithuania, Latvia, Poland, Romania and Slovenia) were examined by Onofrei et al. (2018). The authors focused on factors such as profitability, asset composition, indebtedness, liquidity, and statutory tax rate. The results have shown for example that companies with higher overall indebtedness have in the long term a higher level of effective tax rates. A similar analysis was carried out for the companies listed on 5 Eastern European Stock Exchanges in the years (2000–2016). The results provide support for a positive link between corporate effective tax rate and profitability, debt, capital and inventory intensity, firm size, and statutory rate, strengthening the validity of political cost theory (Vintilă et al., 2018). Determinants of corporate effective tax rate were determined on the basis of statistical analysis by Mladineo and Susak (2016), based on a sample of listed companies. Several authors deal with differences between nominal and effective tax rates in specific countries. Jiang et al. (2018) in his study deals with the impact of the effective corporate tax rate on the productivity of enterprises in China, as well as the impact on exports and on research and development. Delgado et al. (2019b) based on data from Germany concluded that the size of corporations has an impact on the effective tax rate. Determinants of the variability of effective tax rates of companies before and during the financial crisis in Greece were examined by Stamatoopoulos et al. (2019). They found that specific company characteristics including corporate size, financial leverage, capital and inventory intensity influenced the corporate effective tax rates. According to Fernández-Rodríguez et al. (2019) there are significant differences in the tax burden in non-state-owned and state-owned enterprises in Spain. According to the mentioned study, the effective tax rate is higher in non-state-owned enterprises. This is probably due to the tax incentives provided by law for state-owned enterprises in order to promote their sustainability. Šimková (2016) describes the effective average tax rate in the Slovak conditions. She also deals with evaluation of development and changes of corporate effective tax rate by different types of assets and ways of financing.

The issue of corporate effective tax rate in the Czech Republic is not subject of other studies. The corporate effective tax rate in the Czech Republic is mostly dealt within the conferences' contributions. E.g. Lisztwanová and Ratmanová (2015) focus on the determination of the effective corporate tax rate in the Czech Republic in the period 2007 to 2014.

Baranová and Janíčková (2015) set the corporate effective tax rate for the period 2002 to 2012, based on NACE classification. Němec and Dulák (2017) report that when comparing the nominal and effective corporate tax rates, a statistically significant average difference of 2 percent can be observed. In their study, the authors identified and quantified the most important factors influencing the corporate effective tax rate. The most significant factors are the size of companies, the ratio of non-current assets to total assets, the rentability of assets, the ratio of inventory to total assets, the economic activity classification CZ-NACE, and the legal form. According to Procházka (2017), the effective taxation of Czech subsidiary companies under the control of listed foreign parent companies is significantly lower than for other Czech companies.

The main aim of this paper is to calculate the corporate effective tax rate in the Czech Republic for the period 2005 to 2017 and to find out the influence of the tax deductions and allowances having on corporate tax rate. In this regard, an alternative corporate effective tax rate is established.

III. Research Methodology

The system of calculating corporate income tax in the Czech Republic has certain specifics (as in other countries). In determining the amount of tax, the first step is based on economic result (profit or loss), which is calculated based on data from financial accounting:

$$ER = R - E, \quad (1)$$

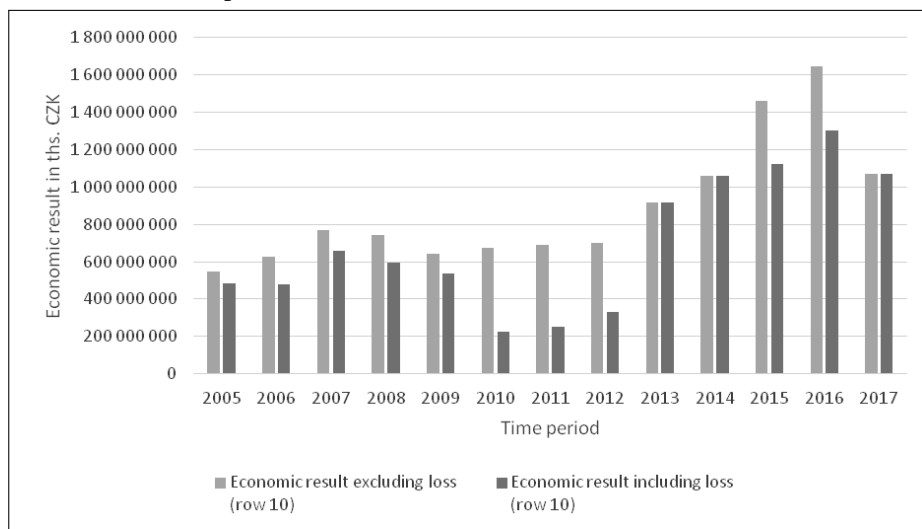
where ER is the economic result, R means revenues and E means expenses.

Furthermore, the calculated economic result (profit or loss) is adjusted for tax purposes, i.e. the economic result is adjusted according to the Act (Act No. 586/1992 Coll. on Income Taxes, as amended). From economic results are deducted certain types of revenues (such as dividends and interest that have been taxed by the withholding tax). Tax non-deductible costs are added to the economic result. The economic result is further adjusted by the difference between accounting and tax depreciation. If the tax depreciation is higher than the accounting depreciation, then the difference from the economic result is deducted, otherwise it is added. Subsequently, the economic result is assumed as a tax base. It is possible to reduce the tax base by some other items whilst complying with the legal conditions. This is the value of free of charge transactions (at least CZK 2,000, but at most 10% of the tax base), interest on loans and membership fees (for trade unions). Subsequently, the tax base is rounded down to the nearest thousand CZK and a 19% tax rate is applied. Tax credits can also be deducted from the calculated tax. One of the possible tax credits is the investment incentive for foreign investors. In addition, tax credits are provided to corporations based on the number of disabled employees. These tax credits are intended for employers but are also important for disabled employees as a comparative advantage. Employment based on the tax credit might provide such employees with a secure income and the disabled employees are not entirely dependent on the welfare system. As a result, welfare expenditure for the disabled might be significantly reduced.

Data

The data were drawn from the open statistics of the Financial Administration of the Czech Republic (2019a, b) (hereinafter FACR) for the period 2005–2017. The data are structured as aggregated data of all enterprises for individual rows of corporate income tax return. Furthermore, the data are divided according to the amount of the tax base of the individual companies, which is shown in row 270. Given that the data are drawn only from the FACR, the validity of individual calculations is guaranteed, as the Financial Administration has the relevant data.

Figure 1: The difference between economic result before and after loss consideration denoted in ths. CZK between period 2005–2017



Source: Authors' own elaboration based on data from Financial Administration of the Czech Republic (2019b)

Figure 1 shows the difference between the economic result before and after loss. The significant difference was in 2010, 2011 and 2012. In 2010 the negative economic result was 447,278,587 ths. CZK. For further calculations, the paper calculates with the economic result excluding loss. The data represents consolidated numbers for all companies. Consideration of the losses would have a negative influence on economic results of companies having the profit, from which they calculate the tax base and subsequently their tax liability. Therefore, there would be a distortion of the results. Moreover, the negative economic result does not enter in a tax liability's calculation for a current period. The loss can be applied in subsequent periods if a company generates profit.

Empirical strategy

Corporate effective tax rate is determined according to the relation:

$$ETR_t = \frac{TTL_t}{ER_t} \quad (2)$$

where ETR_t is (corporate) effective tax rate at time t , TTL_t is total tax liability at time t and ER_t is economic result at time t (row 10 of the corporate income tax return).

The economic result is only calculated with positive values. If a negative economic result is reported, it is not included in the total economic result for the given year because tax is not deducted from the negative economic result. The aggregate amount that the taxpayers had on row 340 of the corporate income tax return was chosen for the total tax liability. Furthermore, the tax collection efficiency was calculated according to Dover et al. (2015), which is calculated as:

$$TCE_t = \frac{TTL_t}{ER_t \times NTR_t} \quad (3)$$

where TCE_t is tax collection efficiency at time t , TTL_t is total tax liability at time t and ER_t is economic result at time t and NTR_t is nominal tax rate at time t .

This calculation is similar indicator of the effective tax rate and shows how many percent of the theoretically expected tax revenues were collected.

Furthermore, an alternative indicator of total tax liability adjusted for prescribed taxes, allowances and tax deductions was constructed for calculations in equations (2) and (3). Since items that reduce the tax base are deducted before applying the tax rate, the relevant deductions must be multiplied by the tax rate. Total tax liability adjusted for prescribed taxes, allowances and deductions shall be calculated as:

$$TTLA = TTL_t + A_t + \frac{G_t \times NTR_t}{100} + \frac{RD_t \times NTR_t}{100} + \frac{L_t \times NTR_t}{100} \quad (4)$$

where $TTLA$ is total tax liability adjusted for prescribed taxes, allowances and deductions, TTL_t is total tax liability at time t , A_t are applied tax allowances at time t , G_t are gifts at time t , RD_t are deduction of expenses incurred for research and development at time t , L is applied tax loss deduction at time t and NTR_t is nominal tax rate at time t .

The alternative total tax liability indicator thus calculated reflects the burden regardless of tax deductions and tax allowances. For determining the alternative corporate effective tax rate is used indicator of total tax liability adjusted for prescribed taxes, allowances and deductions as follows:

$$ETRA_t = \frac{TTLA_t}{ER_t} \quad (5)$$

where $ETRA_t$ is corporate effective tax rate at time t determined by the alternative total tax liability indicator, $TTLA_t$ is total tax liability adjusted for prescribed taxes, allowances and deductions at time t , ER_t is economic result at time t .

On the basis of total tax liability adjusted for prescribed taxes, allowances and deductions is found alternative tax collection efficiency:

$$TCEA_t = \frac{TTLA_t}{ER_t \times NTR_t} \quad (6)$$

where $TCEA_t$ is tax collection efficiency at time t determined by the alternative total tax liability indicator, $TTLA_t$ is total tax liability adjusted for prescribed taxes, allowances and deductions at time t , ER_t is economic result at time t , NTR_t is nominal tax rate at time t .

IV. Research Results

Based on the calculation according to equation (2), it was found that the corporate effective tax rate decreased over the years 2005–2016, up to 9.26%. In 2017, the effective tax rate increased to 14.16%. Analogous results were obtained according to equation (3). Complete results are shown in Table 1.

Table 1: Corporate effective tax rate a tax collection efficiency

| Year | Economic result (ER), row 10* (ths. CZK) | Total tax liability (TTL), row 340* (ths. CZK) | Corporate effective tax rate (ETR) (%) | Nominal tax rate (%) | Tax collection efficiency (TCE) |
|------|--|--|--|----------------------|---------------------------------|
| 2005 | 548,096,824 | 125,189,467 | 22.841 | 26 | 0.878 |
| 2006 | 624,396,539 | 142,851,374 | 22.878 | 24 | 0.953 |
| 2007 | 769,769,745 | 166,186,388 | 21.589 | 24 | 0.899 |
| 2008 | 743,122,649 | 147,042,974 | 19.787 | 21 | 0.942 |
| 2009 | 641,237,261 | 119,840,641 | 18.689 | 20 | 0.934 |
| 2010 | 672,738,479 | 116,912,257 | 17.379 | 19 | 0.915 |
| 2011 | 687,692,813 | 115,709,591 | 16.826 | 19 | 0.886 |
| 2012 | 701,173,456 | 117,221,838 | 16.718 | 19 | 0.880 |
| 2013 | 918,801,557 | 122,521,757 | 13.335 | 19 | 0.702 |
| 2014 | 1,061,291,770 | 133,727,625 | 12.600 | 19 | 0.663 |
| 2015 | 1,463,752,299 | 145,053,288 | 9.910 | 19 | 0.522 |
| 2016 | 1,643,792,576 | 152,243,982 | 9.262 | 19 | 0.487 |
| 2017 | 1,069,467,675 | 151,456,426 | 14.162 | 19 | 0.746 |

Source: Authors' own elaboration based on data from Financial Administration of the Czech Republic (2019a, 2019b)

Note*: indicates the row number in corporate income tax return

Between 2013 and 2016 there was a significant reduction in the corporate effective tax rate. The source data show that this was due to a non-counting of negative economic result. E.g. in 2015 in the tax base in the range of 101–300 ths. CZK, negative economic result –341,294 ths. is recognised. The loss for these purposes was not included because it is not chargeable for tax liability. A similar case occurred in 2016, where the tax base in the range of 2001–5000 ths. CZK registered negative economic result –340,267 ths. CZK, which is not included in the total economic result for 2016. For this reason, there are considerable differences in the efficiency of tax collection in 2015 and 2016 (Table 1).

With respect to the mentioned facts, it is appropriate to construct an alternative indicator of total tax liability (TTLA). The data and results determined on the basis of the alternative indicator of total tax liability are shown in Table 2.

Table 2: Corporate effective tax rate a tax collection efficiency determined by the alternative total tax liability indicator

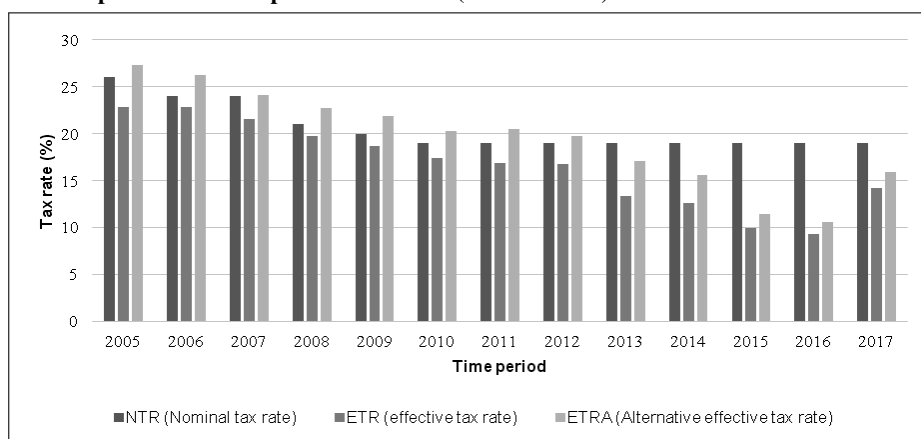
| Year | Total tax liability – alternative (TTLA) (ths. CZK) | Corporate effective tax rate – alternative (ETRA) (%) | Tax collection efficiency – alternative (TCEA) (%) |
|------|---|---|--|
| 2005 | 149,835,121 | 27.337 | 1.051 |
| 2006 | 163,645,788 | 26.209 | 1.092 |
| 2007 | 185,814,352 | 24.139 | 1.006 |
| 2008 | 168,840,514 | 22.720 | 1.082 |
| 2009 | 140,389,873 | 21.894 | 1.095 |
| 2010 | 136,747,057 | 20.327 | 1.070 |
| 2011 | 140,688,849 | 20.458 | 1.077 |
| 2012 | 138,164,428 | 19.705 | 1.037 |
| 2013 | 156,678,118 | 17.052 | 0.897 |
| 2014 | 165,512,757 | 15.595 | 0.821 |
| 2015 | 167,135,400 | 11.418 | 0.601 |
| 2016 | 173,926,235 | 10.581 | 0.557 |
| 2017 | 170,330,012 | 15.927 | 0.838 |

Source: Authors' own elaboration based on data from Financial Administration of the Czech Republic (2019a, 2019b)

When comparing the results from Tables 1 and 2, the corporate effective tax rate established on the basis of the alternative tax liability indicator is higher than the corporate effective rate results shown in Table 1. The largest differences are recorded between 2005 and 2007, where differences in the corporate effective tax rate are approximately 4%. Differences are also evident in the corporate effective tax rate. Between 2005 and 2012, the corporate

effective tax rate established on the basis of an alternative tax liability indicator is higher than the nominal tax rate (Table 2). This can also be observed as regards the indicator of the efficiency of tax collection, which is higher than 1 in the given period (Table 2). One of the main reasons is that in the construction of this alternative indicator, the tax liability was cleansed of prescribed taxes, allowances and deductions. Under both calculation methods used, the corporate effective tax rates are the lowest in 2015 and 2016. In 2016, the corporate effective tax rate determined based on an alternative tax liability indicator was 10.58%. In 2017, the effective tax rate increased by almost 5.4% (Table 2). One of the reasons is the lower application of reductions, tax losses from previous years, etc. in 2017 compared to the 2015 and 2016 periods. A comprehensive comparison of corporate effective tax rate, alternative corporate effective tax rate and nominal tax rate is shown in Figure 2.

Figure 2: Corporate effective tax rate, alternative corporate effective tax rate and nominal tax rate comparison between period 2005–2017 (denoted in %)



Source: Authors' own elaboration based on data from Financial Administration of the Czech Republic (2019a, 2019b)

V. Discussion

The results show that corporate effective tax rates in the Czech Republic between period 2005–2017 were lower than statutory rates. The outcomes support research by Dyreng et al. (2017) and Delgado et al. (2019a) that resulted in effective tax rates' significant decrease compare to statutory tax rates and found out the importance of the tax benefits of corporate tax.

The outcomes of this paper are necessary to compare with the other authors' research using slightly different methodology such as study of Janský (2019) focuses on effective tax rates for the period from 2011 to 2015 for EU countries. The study uses unconsolidated data of multinational enterprises from Orbis database. On the other hand, this study uses data from income tax returns from the Administration of the Czech Republic. In the case

of the Czech Republic Janský (2019) shows 15% effective tax rate, which is almost like this paper except period 2015, when the effective tax rate reached 9.91% in this study. The source data show that this was due to a non-counting of negative economic result. Considering the alternative corporate effective tax rate in 2015 was slightly higher by 1.6% than ordinary corporate effective tax rate thanks to not reflecting tax deductions and allowances.

Effective tax rates are one of the factors for decision making whether start doing business in a jurisdiction or not. For instance, Procházka (2017) shows that the effective taxation of Czech subsidiary companies under the control foreign parent companies is significantly lower than for other Czech companies.

There is also a huge importance of the corporate effective tax rate in the light of European Union law's application. For instance, Council Directive (EU) 2016/1164 of 12 July 2016 laying down rules against tax avoidance practices that directly affect the functioning of the internal market (hereinafter "ATAD") has implemented, among other things, Controlled Foreign Company Rule (hereinafter "CFC rule"). General speaking, CFC rule examines whether actual corporate tax paid by controlled company, seated in other contracted jurisdiction, is lower than the corporate tax that would have been paid according to the Member state's national tax law, from which the controlling entity comes from (Council Directive (EU) 2016/1164).

Moreover, corporate effective tax rate can be used within Council Directive (EU) 2018/822 of 25 May 2018 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation in relation to reportable cross-border arrangements (hereinafter "DAC6"). One of the reportable arrangements is an arrangement that involves deductible cross-border payments made between entities and one of the entities is a tax resident in a jurisdiction that does not impose any corporate tax or imposes corporate tax at the rate of zero or almost zero (Council Directive (EU) 2018/822). Considering that some jurisdiction has high nominal rate, but the effective tax rate is incredibly low, this hallmark could be avoided. For example, Luxembourg's corporate nominal tax rate is 29% but the corporate effective tax rate resulted in 2% (Janský, 2019).

VI. Conclusion

Based on the found results, it can be concluded that in the monitored period 2005–2017 corporate effective tax rates in the Czech Republic were lower than statutory rates. This is due to several options how to reduce the tax base, e.g. by applying tax losses from previous years or the science and research costs. It is also possible to reduce the calculated tax liability through tax credits.

The absolute lowest corporate effective tax rate was found in 2016, when it reached 9.26% and was almost by 10% lower than the nominal tax rate. The second year in which the lowest corporate effective tax rate was reported is 2015, in which it was 9.91%. One of the reasons is that in the given years there was a higher application of items reducing tax base (mainly losses from previous years) and subsequently allowances, which reduce the calculated tax liability. Another possible reason is that the negative economic result was not included in the total economic result for the given year.

In 2015 and 2016, the lowest tax collection efficiency was also found, which was around 50%. The highest tax collection efficiency occurred in 2006, approximately 95.3%. In the given year, one of the lowest differences between the corporate effective tax rate and the statutory tax rate was identified, when the corporate effective tax rate was approximately 1.1% lower than the nominal tax rate.

The results obtained based on the alternative indicator of the total tax liability adjusted for prescribed taxes, allowances and deductions show different values. Quite different result can be seen between period 2005 and 2012, a higher effective corporate tax rate than the statutory tax rate was found between (Table 2). This can also be regarding the tax collection efficiency indicator, which is higher than 1 in the given period. On the other hand, using the alternative indicator of total tax liability, the lowest corporate effective tax rate was found in 2015 (11.4%) and 2016 (10.6%). This is still significantly below the nominal tax rate of 19%.

Based on the results achieved, the corporate effective tax rate differs from the nominal tax rate specified in the Income Tax Act. Corporate effective tax rate becomes one of the main indicators monitored by multinationals for the choice of jurisdiction in which they want to invest or carry on their business because tax conditions in that jurisdiction are one of the reasons for choosing it.

In the light of the international tax law, the information concerning effective tax rates becoming necessary. This study mainly focuses on the corporate effective tax rate within the Czech Republic with the database of the Czech tax administrator. On the other hand, the methodology can be applied by other countries.

Acknowledgements

This study consists of partial results of both research projects [No. 2019B0010 – Czech Social System Fraud Rate Estimation and System Optimization Proposals, financially supported by the Internal Grant Agency (IGA) of Faculty of Economics and Management, CULS Prague and No. TL02000289 – Czech Corporate Tax Gap Importance Identification and Consecutive Original Risk Analysis Model Creation, financially supported by the Technology Agency of the Czech Republic (TAČR)].

References

- Baranová, V., Janíčková, L. (2015). Effective Corporate Tax Rates in the Selected Sectors: The Case of the Czech Republic. In *Proceedings of the 12th International Scientific Conference on Economic Policy in the European Union Member Countries*. Ostravice, Czech Republic, pp. 22–34.
- Belz, T., Von Hagen, D., Steffens, C. (2017). R&D intensity and the effective tax rate: A meta-regression analysis. *Journal of Economic Surveys*, 31(4), 988–1010. <https://doi.org/10.1111/joes.12181>.
- Council of the European Union. (2018). Council Directive (EU) 2018/822 of 25 May 2018 amending Directive 2011/16/EU as regards mandatory automatic exchange of information

in the field of taxation in relation to reportable cross-border arrangements. *Official Journal of the European Union*. Retrieved December 1, 2021, from <https://eur-lex.europa.eu/eli/dir/2018/822/oj>.

Council of the European Union. (2016). Council Directive (EU) 2016/1164 of 12 July 2016 laying down rules against tax avoidance practices that directly affect the functioning of the internal market. *Official Journal of the European Union*. Retrieved December 12, 2021, from https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=uriserv:OJ.L_.2016.193.01.0001.01.ENG&toc=OJ:L:2016:193:TOC.

Delgado, F. J., Fernández-Rodríguez, E., Martínez-Arias, A. (2019b). Corporation effective tax rates and company size: evidence from Germany. *Economic Research – Ekonomika Istraživanja*, 31(1), 2081–2099. <https://doi.org/10.1080/1331677X.2018.1543056>.

Delgado, F. J., Fernández-Rodríguez, E., Martínez-Arias, A., Presno, M. J. (2019a). Club convergence in the corporate income tax: The case of European effective rates. *Physica A – Statistical Mechanics and its Applications*, 523, 942–953. <https://doi.org/10.1016/j.physa.2019.04.212>.

Dover, R., Ferrett, B., Gravino, D., Jones, E. A., Merler, S. (2015). *Bringing transparency, coordination and convergence to corporate tax policies in the European Union: Part I: Assessment of the magnitude of aggressive corporate tax planning*. European Union, Brussels. <https://doi.org/10.2861/386200>.

Dyreg, S. D., Hanlon, M., Maydew, E. L., Thornock, J. R. (2017). Changes in corporate effective tax rates over the past 25 years. *Journal of Financial Economics*, 124(3), 441–463. <https://doi.org/10.1016/j.jfineco.2017.04.001>.

Fernández-Rodríguez, E., García-Fernández, R., Martínez-Arias, A. (2019). Influence of Ownership Structure on the Determinants of Effective Tax Rates of Spanish Companies. *Sustainability*, 11(5), Article Number: 1441. <https://doi.org/10.3390/su11051441>.

Financial Administration of the Czech Republic. (2019a). *Daňová statistika [Tax statistics]*. Retrieved December 11, 2021, from <https://www.financnisprava.cz/cs/dane/analyzy-a-statistiky/danova-statistika>.

Financial Administration of the Czech Republic. (2019b). *Vývoj inkasa vybraných daní v ČR v letech 1993–2018 [Development of collection of collected taxes in the Czech Republic in the years 1993–2018]*. Retrieved December 11, 2021, from <https://www.financnisprava.cz/cs/dane/analyzy-a-statistiky/udaje-z-vyberu-dani>.

Irlacher, M., Unger, F. (2018). Effective tax rates, endogenous mark-ups and heterogeneous firms. *Economics Letters*, 173, 51–54. <https://doi.org/10.1016/j.econlet.2018.08.035>.

Jaafar, A., Thornton, J. (2015). Tax Havens and Effective Tax Rates: An Analysis of Private versus Public European Firms. *International Journal of Accounting*, 50(4), 435–457. <https://doi.org/10.1016/j.intacc.2015.10.005>.

Janský, P. (2019). *Effective Tax Rates of Multinational Enterprises in the EU* (A Report Commissioned by the Greens/EFA Group in the European Parliament, 2019). Retrieved December 13, 2021, from <https://www.greens-fa.eu/files/doc/docs/356b0cd66f625b24e7-407b50432bf54d.pdf>.

- Jiang, Y. F., Li, J., Cheng, Z. Y. (2018). Enterprise effective tax rate, R&D investment, exports and productivity convergence. *Journal of Discrete Mathematical Sciences & Cryptography*, 21(6), 1263–1268. <https://doi.org/10.1080/09720529.2018.1525911>.
- Khour, S., Elexa, L., Istok, M., Rosova, A. (2019). A Study from Slovakia on the Transfer of Slovak Companies to Tax Havens and their Impact on the Sustainability of the Status of a Business Entity. *Sustainability*, 11(10), Article Number: 2803. <https://doi.org/10.3390/su11102803>.
- Koštuříková, I. (2015). Effective Corporate Taxation and Statutory Tax Rate. In *Proceedings of the 7th International Scientific Conference on Finance and Performance of Firms in Science, Education and Practice*. Zlín, Czech Republic, pp. 716–727.
- Lisztwanová, K., Ratmanová, I. (2015). The Effective Tax Rate of the Czech Companies. In *Proceedings of the 10th International Scientific Conference on Financial Management of Firms and Financial Institutions*. Ostrava, Czech Republic, pp. 668–676.
- Mladineo, L., Susak, T. (2016). Determinants of Effective Tax Rate. In *Proceedings of the 16th International Scientific Conference on Economic and Social Development – The Legal Challenges of Modern World*. Split, Croatia, pp. 597–606.
- Němec, D., Dulák, S. (2017). Modelling effective corporate tax rate in the Czech Republic. In *Proceedings of the 35th International Conference Mathematical Methods in Economics (MME 2017)*. Hradec Králové, Czech Republic, pp. 511–516.
- Onofrei, M., Vintilă, G., Gherghina, Ș. C., Păunescu, R. A., Oprea, F. (2018). Do Firm Characteristics Influence Effective Corporate Tax Rate? Empirical Evidence from a Panel of Former Communist Eastern European Markets. *Transformations in Business & Economics*, 17(2B), 622–639.
- Procházka, D. (2017). Financial Performance and Effective Tax Rates of Czech Subsidiaries under Foreign Control. In *Proceedings of the 20th Annual International Conference on Enterprise and Competitive Environment*. Mendel University, Brno, Czech Republic, pp. 683–693.
- Stamatopoulos, I., Hadiidema, S., Eleftheriou, K. (2019). Explaining corporate effective tax rates: Evidence from Greece. *Economic Analysis and Policy*, 62, 236–254. <https://doi.org/10.1016/j.eap.2019.03.004>.
- Šimková, N. (2016). Effective Average Tax Rate of Capital Applied to the Slovak Conditions. *Politická ekonomie*, 64(1), 51–64. <https://doi.org/10.18267/j.polek.1054>.
- Vintilă, G., Gherghina, Ș. C., Păunescu, R. A. (2018). Study of effective corporate tax rate and its influential factors: Empirical evidence from emerging European markets. *Emerging Markets Finance and Trade*, 54(3), 571–590. <https://doi.org/10.1080/1540496X.2017.141-8317>.
- Yang, J., Metallo, V. (2018). The Emerging International Taxation Problems. *International Journal of Financial Studies*, 6(1), 1–10. <https://doi.org/10.3390/ijfs6010006>.