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Assessment of the Factors Affecting Corporate Income Tax in Selected Sectors in the Czech Republic

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Abstract

The taxation of corporations influences their decisions and has an impact on their profits. This fact is a reason to gain a better understanding of individual aspects of corporate income tax. The determination of the final tax liability is a process that works with a few variables, such as the tax base, tax deductions, tax rate, and tax relief. Details of corporate income tax can be described via their changes. The role and impact of individual variables can be explained through the pyramidal decomposition of the total tax liability with determining relationships among individual indicators of the decomposition. With regard to the details of the total tax liability calculation, additive and multiplicative relationships can be identified among individual variables. The paper concentrates on the above-mentioned facts and uses data from selected sectors in the Czech Republic during a specific period to establish the importance of these individual variables. With real data and calculations of individual variables, the adjusted tax base is identified as the indicator with the largest impact on the total tax liability in all the studied sectors. Conversely, research and development activities, as a kind of tax deduction, are identified as having the smallest impact.

Keywords

Corporate income tax, total tax liability, pyramidal decomposition, functional method

JEL Classification: H20, K34, H25

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1. Introduction

Tax is one kind of income of public budgets. It is a mandatory and usually regularly recurring payment, which decreases the nominal income of the entity on a non-refundable basis according to the tax law. The main aim of taxation is to create sources to finance government expenditures, to redistribute the income and wealth of individual subjects, and to support or eliminate certain activities (Radvan et al., 2014). From this point of view, it is clear that the impact of taxation on the development of the gross domestic product can be identified as well (Šíroky et al., 2016). Recently, considering the decreased effect of monetary policy on the economy, the role of fiscal policy has been irreplaceable. More than ever, all aspects of a good tax system, such as fairness, effectiveness, flexibility, legal perfection, and administrative simplicity, should be respected, according to Ďurínová (2017), Kubátová (2018), Musgrave and Musgrave (1994), and Šíroky (2008).

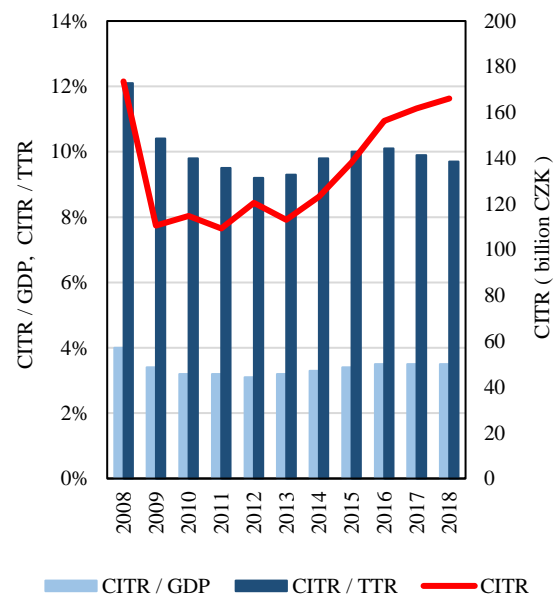
The tax system can be described as the sum of all the taxes that exist in an economy, including other revenues of public budgets (e.g. duties and social security contribution) and charges of a fiscal nature (administrative, judicial, and local fees, etc.) (Kuznetsova et al., 2017). It can be concluded that the tax system reflects the existing economic relations in a society and is one of the means for the implementation of the financial goals and aims of a state (Nerudová and Solilová, 2018).

Regarding the possibility of unequivocally identifying subjects whose income, property, or consumption are burdened by tax, direct taxes and indirect taxes can be identified (Vančurová and Láčov, 2018). Income and property taxes belong to direct taxes, and consumption taxes can be described as indirect taxes.

Income tax (James and Nobes, 2018) may be levied on the income of natural entities (f.i. individuals) or legal entities (f.i. corporations). Regarding corporations, income tax is imposed on the trading income or income derived from the usage of their assets (Lipková et al., 2017). The taxpayer or the subjects of decision making

optimize their tax liability by making their tax payments as low as possible. Corporate income tax is volatile over time because of variables such as the tax rate, the method of assessing the tax base, and other aspects of tax regulations.

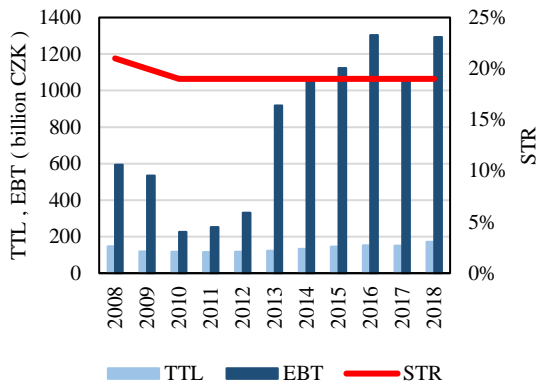
The role of the taxation of corporations' profits in the Czech Republic is clear from Figure 1-1, which provides information about the corporate income tax quota (CITR/GDP), the ratio of corporate income tax revenues (CITR) to total tax revenues (TTR), and the value of total corporate income tax revenues. From the data, it is apparent that the taxation of corporations' earnings does not constitute the most important tax source in the Czech Republic. The CIT revenues did not exceed 15% of the total tax revenues in the observed period. The value of the CIT tax quota did not exceed 5% of the value, and the development of the total tax revenue reflected the impact of economic crises and the later recovery of the economy.



Source: Authors' processing of data from the European Commission and Finanční správa

Figure 1-1 Corporate income tax revenues/GDP, corporate income tax revenues/TTR, and corporate income tax revenues

Figure 1-2 provides information about the ratio between the total tax liability (TTL) and the earnings before income tax (EBT) of all the entities burdened by corporate income tax in the Czech Republic. The decrease in the statutory tax rate (STR), which is observable in the selected period, is unsurprisingly accompanied by decreasing tax revenues for the state.



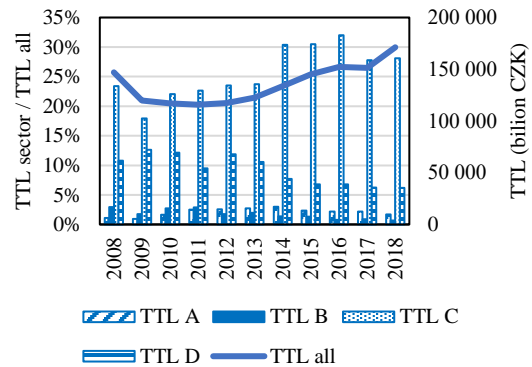
Source: Authors' processing of data from Finanční správa

Figure 1–2 Total tax liability, earnings before tax, and statutory tax rate of all sectors

Improving the knowledge about aspects that may cause changes in the total corporate income tax liability is possible by pointing out those with the highest and the lowest impact on the total tax liability. Many research studies have focused only on macroeconomic indicators, which are able to influence tax revenues derived from corporations' tax liability (Andrejovská and Puliková, 2018; Jones et al., 1997; Sobotovičová and Blechová, 2017). Nevertheless, the main aim of taxing corporations is not only to tax their profit but also to encourage them to engage in desirable activities or behaviour (Hamáček, 2011). These intentions are clear from the individual adjustments of profit in the tax base, from the deductions of the tax base, or from the tax relief. Nevertheless, studies analysing the effect of the above-mentioned variables on the corporate income tax liability of enterprises are lacking. Assessments of the real impacts of individual variables on corporate income tax have been conducted by Lisztwanová and Ratmanová (2017), using data from all the economic sectors, and eventually by Lisztwanová and Ratmanová (2018), using data from selected sectors.

The following Figure 1-3 provides information about the total tax liability of four selected sectors and the ratio of their tax liability to the tax liability of all sectors. The selection was influenced by the input data and by emphasizing the elemental sectors of the Czech economy. The agricultural sector (A), mining and quarrying sector (B), processing industry sector (C), and energy sector (D) are at the centre of the observations. The details about the changes in their tax liabilities show

that the processing industry sector creates the highest tax revenues of the selected sectors. Moreover, a gradual increase in its total tax liability is noticeable during the period 2008–2018, with a slight decrease at the end. The agricultural sector is undoubtedly also able to generate a significant amount of tax revenue for the state. In the case of the two remaining sectors, significantly lower potential for tax revenue generation is evident.



Source: Authors' processing of data from Finanční správa

Figure 1–3 Total tax liability of the selected sectors

The goal of the paper is to assess the impact of tax-deductible costs, changes in the tax rate, items reducing the tax base, and tax relief on the final tax liability of taxpayers in the above-mentioned selected sectors. Pyramidal decomposition and analysis of variances will be used to assess the influence of individual items on the top indicator in the selected time period (2008–2018) using data from Finanční správa.

2. Methodology and Data

As mentioned above, a decline in the statutory tax rate can mean a decrease in the corporate income tax liability. The question is whether it is possible to express the power of the impact not only of the statutory tax rate but also of another individual element affecting the corporate income tax via public published information provided by Finanční správa in the Czech Republic.

Generally, to assess the final tax liability of enterprises, it is important to know the value of the accounting result (profit or loss), income, amounts that are tax exempt or that may reduce the accounting profit if they are included in the accounting profit, expenses that are not recognized as expenses or other amounts that increase the accounting profit if they are included in the accounting profit, the tax base, the items reducing the tax base (deductions), and the tax relief. The items reducing the tax base (IRTB) cut the taxable profit, whereas the tax relief only influences the final value of tax. It can be stated that reductions of the tax base and the tax relief influence the tax liability but moreover are

considered as a way to stimulate enterprises to prefer certain activities.

The relationship among the tax base, the deductions of the tax base, the tax relief, and the final value of tax can be expressed via the following formula (Lisztwanová and Ratmanová, 2017):

$$ATB \cdot STR - IRTB \cdot STR - TR = TTL, \quad (1)$$

where *ATB* is the adjusted tax base, that is, the altered accounting profit or loss, *STR* is the statutory tax rate, *IRTB* are the items reducing the tax base, *TR* is the tax relief, and *TTL* is the total tax liability.

The details of the items reducing corporations' tax base have changed several times over the last 27 years. Within the observed period (2008–2018), only one kind of deduction has been used all the time – tax loss. Tax loss occurs if the adjusted accounting profit or loss is lower than zero. The tax loss carry forward is a provision that allows a taxpayer to move a tax loss to future years to decline the tax base and finally to reduce the future tax liability (The Act. 586/1992 Coll., on Income Taxes). The period during which taxpayers may apply this type of the deduction was decreased from seven years to five years.

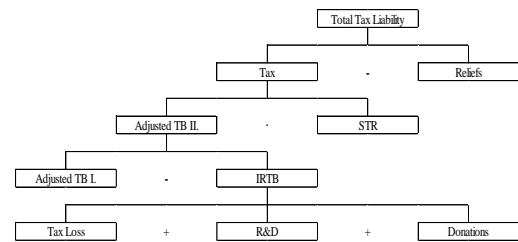
The research and development expenses of enterprises (R&D) were used as a deduction for the first time in 2005. Research expenses decrease the taxable earnings twice, firstly as expenses as part of the accounting profit and secondly as the item reducing the tax base. Taxpayers reduce their tax base through projects in the form of experimental or theoretical works of design or construction work, calculations, designs, technologies, and the production of functional samples or product prototypes (Hamáček, 2011). This deductible item can be applied for up to three tax years that immediately follow the taxable period incurring the deduction.

The aim of the third reduction of the tax base is, via the value of gratuitous transactions (donations), to support the financing of education, culture, social, medical, environmental, humanitarian, or charitable purposes. The value of the donations can decrease the tax base in the taxable period in which the gift is demonstrably provided. Moreover, the tax law specifies the minimum and the maximum value of these donations.

The tax relief affects the final tax differently from the above-mentioned adjustments of the tax base. It reduces the value of tax. The first type of tax relief, according to the Czech tax law, concerns investment incentives. Incentives are one of the forms of public business support and can be applied up to the amount of the total tax liability. This kind of tax relief can be used for five consecutive tax periods. The second type of tax relief is connected with employing people with disabilities and can decrease the corporate tax as well. Its total

impact is influenced by the number of employees with a disability.

As is clear from formula 1, the corporate tax depends on the changes in the adjusted tax base, the statutory tax rate, the items reducing the tax base, and the tax relief. Figure 2-1 shows details of the pyramidal decomposition of the value of the corporate income tax as the top indicator. The pyramidal decomposition of a certain indicator is derived from the idea that the top indicator can be decomposed into individual partial indicators (Dluhošová et al., 2010). Moreover, it is possible mathematically to identify certain relationships among these individual indicators and to explain the change in the top indicator via the changes in the individual indicators.



Source: Authors' processing of data from Finanční správa

Figure 2-1 Pyramidal decomposition of total tax liability

The way to assess changes in individual indicators is to understand their impact on the total tax liability. It can be stated that the change in the top indicator can be explained through the changes in the individual indicators (Dluhošová, 2004):

$$\Delta y_x = \sum_i \Delta x_{a_i}, \quad (2)$$

where *x* is the analysed indicator, Δy_x is the increment in the influence of the analysed indicator, *a_i* is the indicator through which Δy_x can partially be explained, and Δx_{a_i} is the influence of indicator *a_i* on the analysed indicator *x*.

The relationship among individual indicators can be expressed mathematically. Regarding the details of the pyramidal decomposition of the total tax liability, two types of operations can be identified – additive and multiplicative. The additive operation is stated as

$$\Delta x_{a_i} = \frac{\Delta a_i}{\sum_i \Delta a_i} \cdot \Delta y_x, \quad (3)$$

where $\Delta a_i = a_{i,1} - a_{i,0}$, *a_{i,0}* and *a_{i,1}* is the value of indicator *i* regarding the starting (0) and ending (1) state (Dluhošová, 2004).

The multiplicative operation can be ascertained through different methods. One of them is the functional method, which expresses the combined simultaneous impact of all the indicators, explaining their influence on the top indicator (Zmeškal et al., 2004). As

input data, the relative changes in the items are used. Regarding the multiplicative operation between two indicators, the influences can be formulated as follows:

$$\Delta x_{a_1} = \frac{1}{R_x} \cdot R_{a_1} \cdot \left(1 + \frac{1}{2} \cdot R_{a_2}\right) \cdot \Delta y_x, \quad (4)$$

$$\Delta x_{a_2} = \frac{1}{R_x} \cdot R_{a_2} \cdot \left(1 + \frac{1}{2} \cdot R_{a_1}\right) \cdot \Delta y_x, \quad (5)$$

where R_{a_i} and R_x are relative changes in the indicators.

3. Assessment of the Impact of Indicators in Selected Sectors

As already mentioned, expressing more details about the facts that influence the changes in the total tax liability is possible via the description of the development of the individual indicators. Their impact, including all the subjects of corporate income tax, has already been identified via data from Finanční správa during the period 2005–2015 (Lisztwanová and Ratmanová, 2017). The details mentioned there show that the indicator of the adjusted tax base I influenced the total tax liability of most of them. This means that the adjustments of profit or loss were the most important among the selected indicators and that this indicator of decomposition was more important than the rest of the indicators. When it comes to the tax loss, it influenced the changes in the value of the total tax more than the changes in relief, research and development expenses, and gratuitous transactions (donations). Nevertheless, it is interesting that the impact of the research and development expenses on the changes in the total tax liability grew during the period 2005–2015. This increase can be explained, for example, by the changes made by the Ministry of Finance of the Czech Republic that revaluated research activities not only as a subject of interest of research and development organizations but also as research activities of ordinary businesses. The final impact of the changes in the statutory tax rate as a whole was not so important in all the selected years. The largest impact was observed only during the year-to-year change, when the statutory tax rate was reduced from 20% to 19%, but its importance decreased later.

The following text provides an assessment from the same point of view relating to the selected sectors. The details from the tax returns of individual entities collected by Finanční správa are used as a source of information. The period that is assessed covers the years 2008–2018. The selected real data not only show the impact of the individual indicators on the top indicator but moreover reflect the consequences of economic crises and recovery. Every sector is assessed first with data on the year-on-year changes and later according to the details of the pyramidal decomposition of the total tax liability in the individual years, emphasizing the percentage change in the indicator. Regarding the results presented in the individual tables, it is important

to stress that the power of influence can have positive or negative values. The highest positive value of a variable shows the strongest impact on the top indicator and the lowest negative value refers to the weakest impact.

3.1 Assessment of the Impact of Indicators in the Agriculture Sector

The agriculture sector was the first sector to be analysed. The economic position of the sector is significantly affected by the production of inputs needed for other sectors. Nevertheless, the agricultural sector is part of the national economy with a steadily declining trend. Table 3-1 provides information about the development of the selected indicators during the observed period and highlights their changes. The analysis starts with data from the year 2008, and these data are used as input for emphasizing the changes in the individual indicators.

Table 3-1 shows the year-on-year changes in individual selected indicators of the pyramidal decomposition. The total tax liability grew after first declining in 2009, and the same trend was observed in the following years (2010–2014). Each year generated higher tax than the previous year. A second decline is observable in 2015. Moreover, it can be stated that the tax liability in all of the following years was lower than that in the previous year. Regarding adjusted tax base I, it can be confirmed that its changes mirror the developments of the total tax except those in 2012. In the case of tax loss, the situation is different. Growth can be observed in 2010, 2011, 2014, and 2016. The year-to-year changes in the case of R&D activities are interesting. Enterprises in the agricultural sector invest in this area and use instruments of tax policy to affect their tax. The years 2010, 2011, 2013, 2014, 2015, and 2018 are connected with year-to-year increases in this kind of deduction. However, the highest value was reached in 2011, which shows more than 225% growth. In the case of gratuitous activities (donations), the willingness to support other subjects in this way does not generate any clear trend compared with the rest of the indicators. Nevertheless, it cannot be claimed that these activities are always muted with a decrease in the sector's profitability.

The data concerning the assessment of individual indicators' impact on the total tax liability in the case of the agricultural sector are presented in Table 3-2. Positive and negatives changes in the indicators and changes in the total tax liability are apparent. Nevertheless, the greatest impact of the items reducing tax base I was confirmed. This means that, whether the total tax grows or whether it declines, ATB I always plays a significant role in it. The indicator tax relief, which is second in terms of the power of influence, was identified

during the selected period. R&D deductions were identified as the third indicator, followed by the changes in the statutory tax rate and donations. The tax loss was

the indicator with the smallest impact on the changes in the total tax.

Table 3–1 Year-to-year changes in the selected items during the period 2008–2018 in the agricultural sector (sector A) (%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TTL	100.0	68.0	168.7	154.4	103.4	109.4	121.8	83.7	98.7	99.0	86.5
STR	100.0	95.2	95.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ATB I.	100.0	73.2	176.1	148.2	99.4	106.8	120.6	83.6	99.3	99.1	88.1
Tax Loss	100.0	83.7	188.3	121.8	68.8	76.6	104.1	76.5	112.9	99.2	109.9
R&D	100.0	60.1	117.9	225.1	66.5	163.7	187.5	164.4	50.0	81.8	113.8
Donations	100.0	69.9	119.6	107.5	93.8	130.6	124.4	90.3	105.5	136.0	107.6
Reliefs	100.0	79.2	107.5	88.5	94.3	96.0	104.1	97.1	104.3	97.1	105.0

Source: Authors' calculation according to data from Finanční správa

Table 3–2 Power of influence of individual indicators in the agricultural sector (sector A) (%)

	08–09	09–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18
Reliefs	-2.64	-0.51	0.64	2.85	0.66	-0.26	-0.21	4.55	-4.22	0.53
STR	13.33	-10.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATB I.	96.41	130.27	106.01	-20.19	79.27	101.94	107.32	54.97	98.22	95.21
Tax Loss	-6.48	-19.12	-6.50	116.24	21.11	-1.12	-7.32	46.57	-4.08	3.93
R&D	-0.10	-0.02	-0.10	0.64	-0.29	-0.25	0.38	-7.40	-1.76	0.08
Donations	-0.52	-0.15	-0.05	0.46	-0.76	-0.31	-0.17	1.31	11.86	0.25
Δ TTL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' calculation according to data from Finanční správa

3.2 Assessment of the Impact of Indicators in Mining and Quarrying

The sector mining and quarrying of raw materials is affected by the loss or gradual loss of mining capacity for some of the raw materials – hard coal and brown coal. Moreover, it has endure the conflict between environmental protection and exploration, mining, and processing activities. These facts reflect changes in the total tax. The following Table 3-3 shows individual year-to-year data. It can be confirmed that the decline in mining has seeped into changes in the total tax. The changes in ATB I are very close to the changes in the total tax. An interesting but understandable issue is the gradual year-to-year increase in the tax loss. In spite of the fact that this sector can be evaluated as a sector facing many troubles, the growth of R&D expenses, which

was observed mostly between 2013 and 2017, must not be overlooked.

Table 3-4 shows the details of individual indicators' impact on the changes in the total tax liability in this kind of industry. The identified trend is the same as in the case of the agricultural industry. ATB I most affected the changes in the total tax, followed by the tax losses. The impact of tax relief was not as strong but was bigger than the changes in the statutory tax rate and donations. In spite of the fact that a higher intensity of R&D deductions was observed, their impact on tax liability was the lowest of the indicators. Accordingly, it can be stated that entrepreneurs in this industry invest in R&D, but this does not generate the most significant impact on their tax liability.

Table 3–3 Year-to-year changes in selected items within the period 2008–2018 in mining and quarrying (sector B) (%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TTL	100.0	47.6	153.4	105.2	60.5	119.6	75.1	105.9	60.9	112.7	87.7
STR	100.0	95.2	95.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ATB I.	100.0	49.2	164.0	105.6	60.6	119.4	75.8	110.0	68.8	139.6	64.9
Tax Loss	100.0	116.0	60.1	35.2	176.4	111.0	110.9	422.1	202.4	281.8	15.9
R&D	100.0	79.3	36.1	76.4	0.0	-	51.9	165.4	156.8	237.0	28.7
Donations	100.0	90.2	84.9	285.1	44.4	102.3	96.7	84.6	76.0	112.8	102.2
Reliefs	100.0	89.5	103.3	91.8	58.9	93.9	120.2	85.9	95.2	98.3	104.0

Source: Authors' calculation according to data from Finanční správa

Table 3-4 Power of influence of individual indicators in mining and quarrying (sector B) (%)

	08–09	09–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18
Reliefs	-0.05	-0.03	0.54	-0.31	0.09	0.19	0.87	-0.04	0.06	0.13
STR	6.84	-12.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATB I.	92.97	109.85	109.87	102.17	101.37	99.76	174.04	85.59	376.60	430.04
Tax Loss	0.37	2.11	13.35	0.70	-0.59	0.43	-77.82	14.99	-271.72	-326.48
R&D	0.00	0.01	0.01	0.00	-0.71	-0.23	-0.88	0.18	-3.48	-3.95
Donations	-0.13	0.35	-23.77	-2.55	-0.16	-0.15	3.80	-0.72	-1.47	0.26
Δ TTL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' calculation according to data from Finanční správa

3.3 Assessment of the Impact of Indicators in the Processing Industry

The processing industry is an important segment of the economy and a significant driver of the development of technology, knowledge, and job opportunities. It has a long tradition in the Czech Republic, and, in its development, it has demonstrated the ability to maintain its position in a competitive environment. Using real data from Finanční správa, it can be confirmed that the processing industry created the highest tax source of all the sectors. Considering the year-to-year changes in the total tax liability (Table 3-5), an increase in the tax liability is observed except for the years 2009 and 2017. The development of ATB I is similar to the changes in the total tax. An increasing influence of tax loss is visible first in the years immediately following 2008, in 2013 and 2014, and at the end of observed period, in 2018. The R&D deductions grew in most years, especially at the beginning of the period. This development was very close to the year-to-year development of tax relief as well. The changes in donation activities were not so strong, and the greatest acceleration is apparent in 2018.

Regarding the data in Table 3-6, a deep influence of the adjusted tax base I and the changes in the statutory tax rate on the changes in the total tax liability is clear. Items reducing tax donation activities show the strongest impact, followed by tax loss. However, throughout the entire period between 2008 and 2018, the power of change was not as significant as for the

two previous indicators. Tax relief generated the weakest influence.

3.4 Assessment of the Impact of Indicators in the Energy Sector

Energy is a segment of the national economy on which the operation of many other activities in the economy (manufacturing, agriculture, operation services, the transport of people and material, etc.) relies. The role of the energy sector is above all to provide energy in the required quantity and quality, in environmentally acceptable conditions, and at affordable prices for industry and the population. The use of solid and liquid fuels is declining in the energy sector in the Czech Republic. On the contrary, the use of nuclear energy, natural gas, and renewable energy sources is increasing. Table 3-7 presents the year-to-year changes in the assessed indicators and the total tax liability. Real numbers mostly document a decline in the total tax liability during the observed period. The value of the total tax falls except in the years 2016 and 2018. The data concerning the impact of the tax loss and R&D as a tax deduction are interesting, and, comparing them with the rest of the sectors, the largest changes are observed in these cases. Interesting values for the tax loss are apparent in 2013, and the highest ever value is clear in 2018 in the case of R&D. It can be concluded that the changes in this sector were the most extreme in the observed period.

Table 3-5 Year-to-year changes in selected items within the period 2008–2018 in the processing industry (sector C) (%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TTL	100.0	62.5	119.7	101.8	105.2	105.6	139.8	108.8	110.2	86.4	114.4
STR	100.0	95.2	95.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ATB I.	100.0	71.4	132.7	103.2	105.2	87.1	160.0	107.1	106.1	83.8	113.9
Tax Loss	100.0	123.9	168.1	86.9	69.8	100.1	143.4	80.9	66.5	79.4	109.0
R&D	100.0	94.6	153.5	127.7	108.5	116.2	98.4	111.2	91.3	76.2	158.6
Donations	100.0	69.8	113.1	122.3	90.8	99.8	159.4	90.5	108.2	80.4	140.5
Reliefs	100.0	92.9	141.5	134.0	143.0	58.7	171.6	112.5	100.3	66.0	98.1

Source: Authors' calculation according to data from Finanční správa

Table 3–6 Power of influence of individual indicators in the processing industry (sector C) (%)

	08–09	09–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18
Reliefs	-1.18	-19.33	-212.09	-116.42	144.14	-19.13	-18.48	-0.42	-30.64	1.21
STR	11.29	-31.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATB I.	86.10	203.13	241.08	135.65	-30.66	129.64	101.64	74.01	142.86	112.90
Tax Loss	4.33	-44.30	130.96	87.40	-0.15	-10.26	20.98	23.55	-6.55	-2.50
R&D	-0.28	-7.72	-55.95	-7.30	-13.34	0.21	-4.52	3.10	-5.26	-10.85
Donations	-0.26	-0.23	-4.00	0.68	0.01	-0.46	0.38	-0.23	-0.41	-0.75
Δ TTL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' calculation according to data from Finanční správa

Table 3–7 Year-to-year changes in selected items within the period 2008–2018 in the energy sector (sector D) (%)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
TTL	100.0	95.4	93.9	77.4	126.5	93.2	79.4	95.8	105.2	91.4	111.9
STR	100.0	95.2	95.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ATB I.	100.0	100.7	97.9	77.7	125.9	119.2	64.3	94.9	112.8	89.2	110.9
Tax Loss	100.0	127.1	36.4	127.5	68.4	4768.1	10.8	74.7	366.3	68.2	96.3
R&D	100.0	147.4	2043.4	30.7	222.8	325.3	66.5	65.5	277.7	10.9	4549.4
Donations	100.0	153.7	126.9	65.9	135.0	84.5	118.7	83.4	83.0	98.1	105.5
Reliefs	100.0	105.9	104.5	81.0	114.9	89.7	115.9	97.6	104.1	105.5	101.5

Source: Authors' calculation according to data from Finanční správa

Table 3–8 Power of influence of individual indicators in the energy sector (sector D) (%)

	08–09	09–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18
Reliefs	0.06	0.04	-0.05	-0.03	-0.08	0.04	-0.04	-0.06	0.05	-0.01
STR	102.67	80.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ATB I.	-13.92	34.26	100.22	99.49	-284.63	224.65	126.53	254.33	139.68	99.25
Tax Loss	7.70	-17.32	0.77	1.24	385.77	-125.11	-23.39	-155.98	-39.28	2.47
R&D	0.00	0.13	-0.03	-0.02	0.20	-0.04	-0.15	-0.42	-0.34	-1.46
Donations	3.49	2.02	-0.92	-0.69	-1.25	0.45	-2.95	2.13	-0.11	-0.26
Δ TTL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' calculation according to data from Finanční správa

Table 3-8 provides data about the changes in the total tax liability and the impact of individual indicators on the top indicator in the energy sector. The power of influence was the highest in the case of the indicator ATB I, but the impact of the statutory tax rate was significant in this sector too. The individual types of the tax deduction importantly affected the total tax liability, but the tax loss was the indicator with the highest impact. Less power of impact was observed in the case of donations and R&D expenses. Nevertheless, the indicator tax relief affected the total tax more than individual deductions.

4. Conclusion

The total tax liability in the case of income tax can be influenced by many factors. The GDP, export policy, inflation, exchange rates, interest rates, unemployment, and government expenditures are all expected to affect the tax liability. Conversely, there are factors that contribute to determining the total tax liability but that can be used to explain the changes to it as well with respect to the detailed separate parts of the tax liability calculation. This method was used in the paper to describe the

changes in the corporate tax and to emphasize the most important indicators influencing the changes. Table 4-1 presents the conclusions in the case of the four selected sectors.

Table 4–1 Ranking of indicators' impacts in the selected sectors

	Sector A	Sector B	Sector C	Sector D
Reliefs	2	2	6	3
STR	3	4	2	2
ATB I.	1	1	1	1
Tax Loss	6	2	4	3
R&D	3	6	5	6
Donations	5	5	3	5

Source: Authors' processing using data from Finanční správa

To finalize the data in this table, the following procedure was used. The value of the influence of individual indicators was determined as the sum of the numbers of all the orders of influence identified during the observed period. The indicator that generated the lowest value was assessed as the indicator with the highest impact on the total tax liability, and the indicator with

the highest value was identified as the indicator with the lowest impact on the total tax liability.

As can be seen from the data in the table above for all the sectors, the indicator ATB I influenced the total tax liability the most. The impact of the statutory tax rate decreased from 21% to 19%, and it was especially important in the observed period in the case of the processing industry (sector C) and the energy sector (sector D). The tax relief was generally more significant than the tax loss, and, in the case of the mining sector (sector B) and the energy sector (sector D), the impact was the same. In contrast, tax relief was the least significant in the processing industry (sector C). Surprisingly, donations (gratuitous activities) exhibited a stronger influence than the R&D indicator in this sector. Comparing the impact of the R&D indicator with that of other indicators, its weak influence on the changes in the total tax liability can be explained as resulting from the most complicated way of meeting tax requirements. Nevertheless, the data on the agricultural sector (sector A) showed this to be the sector with the highest impact of R&D among all the sectors.

Considering the methodology used, it can be confirmed that the method of processing was able to determine the power of influence of individual indicators and to emphasize the ones with the highest and the lowest impact on the final tax liability.

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