Dependence of Corporate Income Tax Revenue on the Gross Domestic Product in Particular EU Countries

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Abstract: The presented research deals with corporate income tax in the countries of the European Union. Specifically, the subject of the investigation was the income tax base, tax rates, and income tax revenue in particular EU countries. The ratio of corporate income tax revenues to gross domestic product (GDP) is compared using correlation analysis tools. The research outputs mean that the volume of corporate income tax revenue is strongly dependent on the size of the given economy. Luxembourg has the highest corporate income tax revenue ratio to gross domestic product. In Luxembourg, this ratio is 5.92%. Lithuania has the lowest value of the ratio, where a decreasing trend can be noted between 2009 and 2019, down to 0.16%. Based on the prediction based on the values in the numerical series, a steady increase in the ratio of corporate income tax revenue to GDP can be predicted in the Czech Republic in the next five years up to 3.87%.

Keywords: corporate income tax; gross domestic product; tax rate

JEL Classification: E42

1. Introduction

The tax rate is the procedure by which can be determined the tax amount from the tax base. The tax rate has several types. For corporate income tax, there are the following types:

*   Differentiated tax rate, which differs according to the tax subject. The lower rate applies to, for example, pension companies or investment funds.
*   The relative tax rate is used where the tax base is expressed in monetary units, so the tax rate is expressed in percentages.

The relative tax rate is divided into a linear rate, where the amount of tax increases proportionally with the tax base, and a progressive rate, where the algorithm continuously increases the rate of taxation for individual increments of the tax base. (Vančurová et al., 2020). Malta has the highest corporate tax rate, but limited companies can claim 6/7 back. Thus, Malta's tax rate would move to the other end of the scale. (Parker & Hill, 2021). The relative tax rates are shown in Table 1.

Markle and Shackelford (2012) examined the impact of domicile on corporate taxes. They found that the country where the parent of a multinational is located and, to a lesser extent, its subsidiaries are located substantially affects its worldwide effective tax rate (ETR).

Table 1. Relative corporate income tax rate in EU countries – source: (Tax Foundation, 2020)

2018		2019		2020	
MT	35%	MT	35%	MT	35%
FR	33%	FR	31%	DE	30%
DE	30%	DE	30%	BE	29%
BE	29%	BE	29%	FR	28%
EL	29%	EL	28%	EL	24%
LU	26.01%	AT	25%	AT	25%
AT	25%	NL	25%	NL	25%
NL	25%	ES	25%	ES	25%
ES	25%	LU	24.94%	LU	24.94%
IT	24%	IT	24%	IT	24%
SE	22%	SE	21.40%	SE	21.40%
DK	22%	DK	22%	DK	22%
PT	21%	PT	21%	PT	21%
SK	21%	SK	21%	SK	21%
LV	20%	LV	20%	LV	20%
FI	20%	FI	20%	FI	20%
EE	20%	EE	20%	EE	20%
CZ	19%	CZ	19%	CZ	19%
SI	19%	SI	19%	SI	19%
PL	19%	PL	19%	PL	19%
HR	18%	HR	18%	HR	18%
RO	16%	RO	16%	RO	16%
LT	15%	LT	15%	LT	15%
IE	12.5%	IE	12.5%	IE	12.5%
CY	12.5%	CY	12.5%	CY	12.5%
BG	10%	BG	10%	BG	10%
HU	9%	HU	9%	HU	9%
MT	35%	MT	35%	MT	35%
FR	33%	FR	31%	DE	30%
DE	30%	DE	30%	BE	29%
BE	29%	BE	29%	FR	28%
EL	29%	EL	28%	EL	24%
LU	26.01%	AT	25%	AT	25%
AT	25%	NL	25%	NL	25%
NL	25%	ES	25%	ES	25%
ES	25%	LU	24.94%	LU	24.94%

Corporate income tax rates also affect the amount of corporate tax revenue in individual sectors of the economy, as well as the contribution of a given economic sector to the national budget. Cheben et al. (2021) found that in the period 2011–2015 the tax revenue of Agriculture, forestry and fishing companies in Slovakia constituted 1.6% of the Slovak state budget.

Souillard (2022) shows the impact of the corporate income tax rate on employment tax optimization. Souillard (2022) summarizes the research results as follows: "Study reveals that all other things being equal, the establishment of tax haven subsidiaries is followed by a 4 percent rise in firm employment in the subsequent years. This finding offers greater insight into how corporate income taxes affect employment levels."

Malecka-Ziembinska and Siwiec (2020) dealt with the differentiation of corporate income tax bases in EU countries. They investigated the possibilities of harmonization of the bases of this tax. Their research results show that despite significant differences in tax rates some EU states show convergence in tax bases. Similar research, but with a much broader index of the countries examined, was also published by Steinmuller et al. (2019). Uniformity versus diversity corporate income tax was also investigated by McLure (2008). McLure (2000) also published an interesting article analyzing aspects of corporate income tax in the digital age. McLure (2020) deals with the choice between separate reporting and formula apportionment, the role of unitary combination, and the choice of apportionment factors). Several European countries are now discussing a digital tax, so this article can inspire these considerations.

Gupta and Jalles (2021) deal with the tax implications of the COVID-19 pandemic (as well as other pandemics). It states: „We estimate that the short- to medium-term fiscal impact of previous pandemics has been significant in 170 countries (including low-income countries) during the 2000–2018 period. The impact has varied, with pandemics affecting government expenditures more than revenues in advanced economies, while the converse applies to developing countries."

The structural deficits of the state budgets lead several European countries to discussions about the rate of taxation of corporations and the rate of taxation of employees. An exciting conception of this dilemma from a non-European environment (from Colombia) is offered by Bernal et al. (2017): „The 2012 Colombian tax reform reduced payroll taxes and employer contributions to health insurance by 13.5 percent, while also increasing corporate income taxes and leaving untouched the benefits to workers financed through these taxes… We find a positive average effect of 4.3 percent on employment and 2.7 percent on average firm wages, for the average firm. The employment effect is found only for micro and small firms, whereas the bulk of the employment is concentrated in medium and large firms, which show no significant effect. According to these estimates, about 145,000 new jobs were created between January and May of 2015 by virtue of the reform."

Park and Lee (2019) also investigated the relationship between corporate income tax and household taxation. It states the following: „We find that corporate income tax (CIT) rates are significantly positively associated with corporate debt and negatively associated with household debt, using panel data of 28 OECD countries between 1995 and 2015. The found association between CIT and debt comes from small countries where CIT is more exogenous due to tax competition. The tax deductibility of interest payments encourages firms to use more debt when CIT is high."

Lee (2020) compared the tax burden of corporate income tax and personal income tax. Lee (2020) states as a result of this comparison: "This paper empirically investigates tax competition in corporate income taxes (CIT) and personal income taxes (PIT) in 67 countries between 1981 and 2015. We find that tax competition in PIT is weaker than that in CIT, and various domestic considerations appear to act strongly in determining PIT. "

Gong and Ligthart (2015) show the effects of corporate income tax on bank behavior: "Using a sample of OECD banks over the period 1999–2006, we find that corporate income

taxation led to more securitization at banks that are constrained in funding markets, while it did not affect securitization at unconstrained banks."

Prochazka and Cerna (2022) draw attention to the fact that the corporate income tax rate affects the rate of reinvestment: „Our research shows that the corporate income tax (CIT) rate and ETRs significantly correlate with the reinvestment rate. The same applies to three Ease of Doing Business sub indicators (Starting a business, Getting credit, and Contract enforcement)."

However, the corporate income tax revenue does not depend only on the tax rate. Tahlova and Banociova (2019) analyze the influence of several other tax determinants. This article describes the impact of tax legislation and specific non-tax factors on the amount of tax revenue.

Table 2 below contains the value of GDP in billions of USD for particular European countries.

Table 2. GDP in billions of USD (OECD, 2020)

EU country	2016	2017	2018	2019	2020
AT	394.22	417.72	456.17	447.72	432.89
BE	469.93	495.95	532.27	517.61	503.42
BG	53.81	58.97	66.23	68.56	69.11
CY	20.95	22.73	25.31	24.95	23.8
CZ	195.09	215.91	245.23	246.95	241.98
DE	3,496.61	3,664.51	3,951.34	3,863.34	3,780.55
DK	311.99	329.87	352.06	347.18	339.63
EE	23.99	26.85	30.76	31.04	30.47
EL	195.30	203.49	218.23	214.01	194.38
ES	1,238.01	1,317.10	1,427.53	1,397.87	1247.46
FI	239.15	252.87	274.21	269.65	267.86
FR	2,466.15	2,591.78	2,780.15	2,707.07	2,551.45
HR	51.60	55.48	61.38	60.75	55.97
HU	126.01	139.84	161.18	170.41	149.94
IE	301.97	335.21	382.75	384.94	399.06
IT	1,869.97	1,950.70	2,075.86	2,001.44	1,848.22
LT	27.71	30.53	34.88	35.05	33.02
LU	58.99	62.45	69.55	69.45	68.61
LV	42.99	47.65	53.30	53.64	55.06
MT	11.72	13.22	14.86	15.22	14.65
NL	783.85	833.58	914.52	902.36	886.34
PL	471.84	526.75	585.82	565.85	580.89
PT	206.36	221.28	240.90	236.41	221.72
RO	188.10	211.70	241.50	249.7	248.7
SE	512.21	540.55	556.07	528.93	529.05
SI	44.66	48.55	54.06	54.15	51.8
SK	89.89	95.82	106.57	106.55	101.892
UK	2,693.00	2,662.00	2,662.00	2,831.00	2,708.00

Gechert and Heimberger (2022) remind us that „The empirical literature on the impact of corporate taxes on economic growth reaches ambiguous conclusions: corporate tax cuts increase, reduce, or do not significantly affect growth."

Shao and Xiao (2019) point to the causality of corporate tax policy on firm innovation in a developing country.

Dunaev (2019) analyzes the relationship between the optimal corporate income tax rate and GDP. Dunaev (2019) determines the optimal production income tax rate at which net profit and state budget revenue steadily increase and stable growth of production is ensured. Dunaev (2019) states: "For a lower rate, there is an accelerated growth in production, and for a higher rate, the budget revenue increases due to a slowdown in production growth."

Table 3 contains the 2017–2019 corporate income tax revenue in billions USD.

Table 3. Corporate income tax revenue in billions of USD (OECD, 2020)

EU country	2017	2018	2019
AT	114.65	126.52	124.42
BE	113.11	125.23	115.52
BG	1.36	1.49	1.58
CY	1.33	1.47	1.41
CZ	41.73	47.65	47.55
DE	409.88	450.91	439.18
DK	110.34	114.66	118.47
EE	7.17	8.27	8.54
EL	52.72	57.03	53.78
ES	182.56	205.13	194.51
FI	52.89	57.46	55.55
FR	407.50	429.63	407.29
HR	1.26	1.37	1.40
HU	33.62	36.45	35.72
IE	62.95	71.80	72.75
IT	472.98	495.88	484.00
LT	5.05	5.66	5.38
LU	16.24	19.27	18.92
LV	7.93	9.01	10.85
MT	0.81	0.78	0.83
NL	192.09	210.58	218.6
PL	88.41	102.18	103.31
PT	50.62	56.11	54.51
RO	4.26	4.85	5.24
SE	125.74	127.34	117.99
SI	8.88	10.03	9.95
SK	18.30	20.31	20.42
UK	660.65	708.24	698.29

The volume of corporate income tax revenue in particular EU countries strongly depends on the size of the given economy. It can be stated that in most states, corporate income tax revenue increases over time. The volume of tax revenue increased the most in Great Britain and the Netherlands. On the contrary, the largest decrease occurred in Sweden, by almost 8 billion USD. The same trend can be seen in all the decreases, namely that in 2018 the volume of tax revenue was the highest of the monitored years and only decreased in 2019.

The Laffer curve describes the dependence of the tax revenue on the tax rate. Its conventional shape, including only one peak, is subject to reservations by several contemporary economists. Tavor et al. (2021) examine a modification of the Laffer curve with three peak points. Tavor et al. (2021) conclude their research as follows: "Such a shape may

be due to the three heterogeneous population groups of younger workers, adult males, and adult females. These groups respond differently to net wage rate changes, thus reducing the applicability of the changing of tax rates by policymakers."

Factors affecting income tax revenue are described by Garcia (2022). These factors include technological outdatedness, the effects of inflation, and the lack of compliance and accountability from taxpayers.

2. Methodology

The objective of the research was to determine the dependence of the corporate income tax of companies operating on the territory of particular EU countries on GDP.

The formula for the general correlation coefficient was used to calculate the dependence mentioned above. The correlation coefficient measures the strength of the linear relationship between two variables. In the case of the presented research. the compared variables are tax revenues and gross domestic product.

The following formula was used to calculate the general correlation coefficient:

$$r_{yx} = r_{xy} = n\ \Sigma x_i * y_i - \Sigma x_i\ \Sigma y_i / \sqrt{[n\ \Sigma x_i^2 - (\Sigma x_i^2 - (\Sigma x_i)^2]\ *\ [n\ \Sigma y_i^2 - (\Sigma y_i)^2]} \qquad (1)$$

where n is the number of assessed EU countries. x is the explanatory variable (GDP) and y is the explained variable (corporate income tax).

Time series analysis was used to forecast the ratio of corporate income tax to gross domestic product. The following general equation formula for a linear trend function was applied:

$$u_i = a + b * t_i \qquad (2)$$

$$\Sigma t \neq 0:\ an\ +\ b\ \Sigma t_i\ =\ y_i\ \Sigma t_i\ +\ b\ \Sigma t_i^2\ =\ \Sigma t_i y_i \qquad (3)$$

where n is the number of monitored years. t_i is the numbered monitored years. and y_i is the ratio of corporate income tax to GDP in percent.

Input data is from the period before 31 January 2020. So, the United Kingdom is also included.

The following abbreviations of the names of particular European countries are used in the presented research (Table 4).

To analyze the numerical series, the values for the period affected by a factor that did not influence the values reported in the other periods were discarded. In 2020, the coronavirus pandemic emerged as a significant factor. Particular states had different reactions to the coronavirus pandemic. Particular countries differed in the length and regimes of lockdowns and the amount of compensation. Therefore, the analysis did not include data for such an atypical period.

3. Results

Corporate income tax revenue is essential to the economic growth of any national economy. From the opposite point of view, the increasing share of tax revenues in GDP leads to poverty reduction in individual states. Therefore, according to the authors of this research,

Table 4. Abbreviations of particular EU countries included in the research

Abbreviation	EU country name
AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EC	Spain
EE	Estonia
EL	Greece
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Latvia
LU	Luxembourg
LV	Lithuania
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
UK	United Kingdom

it is beneficial to deal with the relationship between GDP and individual types of tax revenues. This was the primary motive for analyzing the dependence between the amount of corporate income tax revenue and GDP. The ratio of these two variables is shown in Table 5.

The number of evaluated countries is equal to 28.

The correlation coefficient was calculated as follows: (28 * 6 583 295.12 – 18 401.80 * 3 425.96) / $\sqrt{[(28 * 38\ 739\ 478.25 – 18\ 401.80^2) * (28 * 1\ 252\ 611.23 – 3\ 425.96)]}$ = 0.9192.

The correlation coefficient was calculated according to the formula (1) given in the methodology. The value of the correlation coefficient was 0.9192. Since the correlation coefficient is in the range of 0.8 and above corresponds to a strong direct dependence, it can be stated that the collection of corporate income taxes strongly depends on GDP.

Furthermore, a prediction of the ratio of corporate income tax revenue to GDP in the Czech Republic for the next five years was compiled. Prediction is based on time series analysis. Table 6 represents columns of values with partial calculations.

Table 5. The degree of dependence of corporate income tax revenue on GDP (Ruprechtová, 2022)

Country	GDP	CIT	GDP²	(CIT)²	GDP*CIT
AT	447.72	124.42	200,453.20	15,480.34	55,705.32
BE	517.61	115.52	267,920.11	13,344.87	59,794.31
BG	68.56	1.58	4,700.47	2.50	108.32
CY	24.95	1.41	622.50	1.99	35.18
CZ	246.95	47.55	60,984.30	2,261.00	11,742.47
DE	3,863.34	439.18	14,925,395.96	192,879.07	1,696,701.66
DK	347.18	118.47	120,533.95	14,035.14	41,130.41
EE	31.04	8.54	963.48	72.93	265.08
EL	214.01	53.78	45,800.28	2,892.29	11,509.46
ES	1397.87	194.51	1,954,040.54	37,834.14	271,899.69
FI	269.65	55.55	72,711.12	3,085.80	14,979.06
FR	2,707.07	407.29	7,328,227.98	165,885.14	1,102,562.54
HR	60.75	1.4	3,690.56	1.96	85.05
HU	170.41	35.72	29,039.57	1,275.92	6,087.05
IE	384.94	72.75	148,178.80	5,292.56	28,004.39
IT	2,001.44	484	4,005,762.07	234,256.00	968,696.96
LT	35.05	5.38	1,228.50	28.94	188.57
LU	69.45	18.92	4,823.30	357.97	1,313.99
LV	53.64	10.85	2,877.25	117.72	581.99
MT	15.22	0.83	231.65	0.69	12.63
NL	902.36	218.6	814,253.57	47,785.96	197,255.90
PL	565.85	103.31	320,186.22	10,672.96	58,457.96
PT	236.41	54.51	55,889.69	2,971.34	12,886.71
RO	249.7	5.24	62,350.09	27.46	1,308.43
SE	528.93	117.99	279,766.94	13,921.64	62,408.45
SI	54.15	9.95	2,932.22	99.00	538.79
SK	106.55	20.42	11,352.90	416.98	2,175.75
UK	2831	698.29	8,014,561.00	487,608.92	1,976,858.99
Total sum	18,401.80	3,425.96	38,739,478.25	1,252,611.23	6,583,295.12

Note: CIT = corporate income tax

Table 6. Prediction of CIT yield to GDP ratio

ti	Year	Ratio of CIT to GDP in %	ti2	ti * ratio of CIT to GDP in %
1	2009	3.37	1	3.37
2	2010	3.21	4	6.42
3	2011	3.19	9	9.57
4	2012	3.31	16	13.24
5	2013	3.39	25	16.95
6	2014	3.5	36	21.00
7	2015	3.57	49	24.99
8	2016	3.73	64	29.84
9	2017	3.69	81	33.21
10	2018	3.62	100	36.20
11	2019	3.45	121	37.95
12	2020	3.71	144	44.48
13	2021	3.75	169	48.72
14	2022	3.79	196	53.05
15	2023	3.83	225	57.47
16	2024	3.87	256	61.96
136		56.98	1,496	498,42

Linear trend function equation (n =11):

$$11 * a + b * 136 = 56.98$$
$$a * 136 + b * 1496 = 498.42$$
$$u_i = 3.21 + 0.04 * t_i$$

- Forecast for 2020: $3.21 + 0.04 * 12 = 3.71$
- Forecast for 2021: $3.21 + 0.04 * 13 = 3.75$
- Forecast for 2022: $3.21 + 0.04 * 14 = 3.79$
- Forecast for 2023: $3.21 + 0.04 * 15 = 3.83$
- Forecast for 2024: $3.21 + 0.04 * 16 = 3.87$

The prediction ratio of corporate income tax revenue to GDP was calculated using methodological formulas (2) and (3). If unexpected influences (e.g., the Covid-19 pandemic) are not taken into account, a steady increase in the ratio of corporate income tax to GDP can be predicted. Suppose it is based on the assumption that the rate of corporate income tax will not increase in the Czech Republic. In that case, the fulfillment of the prediction assumes that the government will continue with similar measures in the area of income tax until 2019 – primarily in the streamlining of tax collection, disclosure of tax evasion both domestically and internationally, and the consistent streamlining of tax controls. Furthermore, the set of DAC measures and ATAD directives can also play their role in fulfilling the prediction, which ultimately should contribute to higher tax collection and the prevention of tax fraud. In the event of stagnation or decline in GDP due to unexpected effects such as the Covid-19 pandemic, it can be expected that the CIT selection will similarly decrease due to the high dependence, which was calculated with a correlation coefficient of 0.9192.

4. Discussion

To analyze more closely the relationship of the ratio of corporate income tax to the gross domestic product, it is good to see its development over the years. For this purpose, the dependence between 2009 and 2019 was selected. The following Table 7 shows the ratio of the DPPO collection to GDP between the years 2009–2019 in percentage.

It is clear that between 2009 and 2019, the ratio of corporate income tax to GDP does not have a uniform trend. It has an upward trend in part of the monitored period. In the next part of the observed period, the trend decreases. This can be the result of many factors, e.g.:

- Changes in corporate income tax rates in particular EU countries. However, this factor is refuted by Fuest et al. (2022), who published interesting research on corporate tax revenues and declining tax rates. While corporate tax rates have declined in OECD countries in recent decades, corporate tax revenues relative to the gross domestic product have remained remarkably stable.
- Changes in other parameters of the tax system in particular EU countries.
- Other factors affecting business conditions in particular EU countries - for example, a study by the authors Andrejovská and Glova (2022) demonstrated the connection between corporate taxes and the level of investment in a given country.

Table 7. Ratio of CIT revenue to GDP in percentage – own processing based on (OECD, 2020; European Commission, 2022)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AT	1.63	1.87	1.99	2.00	2.15	2.11	2.23	2.35	2.46	2.67	2.67
BE	2.34	2.55	2.84	3.01	3.10	3.12	3.27	3.40	4.06	4.30	3.74
BG	2.11	1.78	1.77	1.72	1.90	2.01	2.18	2.23	2.30	2.25	2.30
CY	5.87	5.54	6.20	5.73	6.51	6.38	5.85	5.53	5.83	5.80	5.67
CZ	3.37	3.21	3.19	3.31	3.39	3.50	3.57	3.73	3.69	3.62	3.45
DE	1.33	1.50	1.69	1.72	1.77	1.73	1.72	1.97	2.03	2.14	2.01
DK	1.90	2.25	2.17	2.60	2.74	2.78	2.76	2.82	3.24	2.87	3.03
EE	1.80	1.30	1.20	1.40	1.72	1.71	2.04	1.68	1.53	2.00	1.81
ES	2.22	1.84	1.78	2.15	2.00	1.99	2.20	2.22	2.24	2.46	2.07
EL	2.51	2.53	2.07	1.09	1.15	1.88	2.14	2.49	1.95	2.16	..
FI	1.92	2.42	2.60	2.10	2.35	1.91	2.15	2.21	2.71	2.54	2.52
FR	1.43	2.34	2.63	2.58	2.64	2.31	2.08	2.03	2.32	2.10	2.24
HR	2.54	1.91	2.29	1.98	2.01	1.74	1.85	2.18	2.27	2.24	2.30
HU	2.19	1.21	1.19	1.28	1.34	1.60	1.73	2.28	1.99	1.34	0.72
IE	2.29	2.35	2.20	2.26	2.38	2.37	2.62	2.71	2.76	3.21	3.14
IT	2.37	2.28	2.17	2.38	2.55	2.17	2.03	2.13	2.08	1.87	1.94
LT	1.82	0.99	0.81	1.30	1.36	1.37	1.54	1.61	1.49	1.53	1.57
LU	5.61	5.75	4.98	5.12	4.76	4.30	4.41	4.48	5.11	6.32	5.92
LV	1.55	0.98	1.40	1.61	1.62	1.54	1.59	1.69	1.60	1.06	0.16
MT	5.83	5.56	5.32	5.71	5.99	5.86	5.86	6.15	6.11	5.27	5.44
NL	2.13	2.28	2.16	2.10	2.16	2.55	2.67	3.35	3.28	3.50	3.70
PL	2.24	1.95	2.02	2.08	1.77	1.75	1.84	1.84	1.93	2.09	2.23
PT	2.75	2.74	3.14	2.75	3.25	2.85	3.12	3.04	3.20	3.33	3.14
RO	2.27	2.05	2.29	1.88	2.02	2.12	2.35	2.22	2.01	2.01	2.10
SE	2.79	3.24	3.03	2.53	2.62	2.66	2.91	2.73	2.78	2.85	2.89
SI	1.80	1.84	1.65	1.23	1.19	1.41	1.46	1.60	1.78	1.94	2.12
SK	2.46	2.44	2.39	2.33	2.85	3.28	3.66	3.48	3.46	3.28	3.09
UK	2.51	2.85	2.57	2.53	2.56	2.85	2.84	2.82	2.65	2.63	2.49

Analogous to our research, Cheben (2022) et al. state that corporate income tax significantly affects total government tax revenue. Cheben et al. (2022) found a significant degree of dependence between selected evaluated variables in all groups in the monitored period. This dependence, especially between the total income and the tax base, as well as between the total income and corporate income tax, is an essential part of the economic result found in double-entry bookkeeping. However, this area will require a solution in subsequent research.

5. Conclusions

It can be stated that the highest corporate income tax rate is in Malta, which has a value of 35%. Conversely, on the other side of the ranking is Hungary, where the rate is only 9%. In none of the mentioned countries did the rate change in any way between 2018 and 2020.

The Czech Republic maintains the same constant rate – the rate is 19%. This rate is rather among the lower values within the EU. Great Britain has the highest corporate income tax revenue in billions of USD, while Latvia has the most insufficient tax revenue.

The volume of corporate income tax collection strongly depends on the size of the given economy. The highest ratio of corporate income tax revenue to GDP is in Luxembourg, where this value is 5.92%. Lithuania has the lowest value of the ratio, where a decreasing trend can be noted in the years 2009–2019 down to 0.16%.

Based on the results of the time series analysis, a steady increase in the ratio of corporate income tax revenue to GDP can be predicted in the Czech Republic to up to 3.87% over the next five years. The dependence of corporate income tax on GDP is direct and strong, so it can be stated that the collection of corporate income tax strongly depends on GDP.

According to the authors of this research, DAC I - DAC VI (Directive on Administrative Cooperation) determines the rules for the automatic exchange of tax information between European countries, and the ATAD (Anti Tax Avoidance Directive) is perceived positively by the professional public. For effective harmonization, which will bring comparable tax conditions for all EU states, these measures are not sufficient, and some are also too complex. According to the authors of this research, a significant step in ensuring equal tax conditions across all EU countries would be the introduction of a uniform methodology for determining the corporate income tax base. However, implementing a specific directive regulating the common tax base is not in sight. The Czech Republic has been dealing with a structural deficit for many years. The Czech Republic will likely have to adopt several austerity measures that will lead to a reduction in government expenditures.

Furthermore, it can be expected that the Czech Republic will make changes to the tax system leading to an increase in the income of some taxes. This will also increase the ratio of tax revenues to GDP. Therefore, the question of the shares of corporate income tax on GDP is a current topic. This topic can be addressed in further research.

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