ADAM ADAMCZYK

adam.adamczyk@usz.edu.pl
University of Szczecin. Institute of Economics and Finance
64 Mickiewicza St., 71-101 Szczecin, Poland
ORCID ID: https://orcid.org/0000-0002-0491-5502

SŁAWOMIR FRANEK

slawomir.franek@usz.edu.pl
University of Szczecin. Institute of Economics and Finance
64 Mickiewicza St., 71-101 Szczecin, Poland
ORCID ID: https://orcid.org/0000-0002-9698-4918

Analysis of Determinants of Corporate Income Tax Revenues in Poland[*]

Abstract

Theoretical background: The literature highlights the dynamic nature of corporate income tax (CIT), which undergoes frequent changes. Recent trends include efforts to minimize its adverse economic effects through policies expanding the tax base while lowering tax rates. Additionally, growing international tax competition has prompted countries to introduce tax preferences, affecting the tax base and effective tax

---

rate. This raises the question of how these trends influence CIT revenues in Poland. Answering this requires identifying the key determinants of CIT revenues.

Purpose of the article: This study aims to determine the factors influencing changes in CIT revenues in Poland. Two research questions are posed: 1) Which factors have the most significant impact on changes in CIT revenues?; 2) What role do large taxpayers (revenues > EUR 50 million) play in CIT revenues?

Research methods: The study considers factors such as the number of taxpayers, their average revenues, profitability, the relationship between the taxable base and income, and the effective CIT rate. The analysis covers the 2009–2022 period using data from the Polish Ministry of Finance. The logarithmic method was employed to evaluate the impact of individual factors on CIT revenue changes.

Main findings: Results indicate that the number of taxpayers is the primary driver of CIT revenue changes, consistently contributing to revenue growth. The second most important factor is firm size, measured by average revenue levels, although this factor shows greater variability. Profitability levels also positively influence CIT revenues. Significant differences in these factors were observed based on taxpayer size.

Introduction

Understanding the determinants of tax revenues enables the design of public revenues to ensure the financing of public tasks while maintaining economic growth. In the structure of tax systems, corporate income tax (CIT) plays a significant role. In 2021, the average share of corporate tax revenues in total tax revenues across 123 jurisdictions was 16.0%, and these revenues accounted for an average of 3.2% of gross domestic product (GDP) (OECD, 2024). In Poland, CIT holds a smaller share in overall tax revenues. In 2023, this tax accounted for 7.3% of total tax burdens, corresponding to 2.6% of GDP (Eurostat, 2024).

Among the factors influencing CIT revenues, macroeconomic and institutional variables such as GDP, trade openness, inflation, political stability, and corruption are emphasized (Gupta, 2007; Nandi et al., 2014). Empirical research findings suggest that in developed countries, the responsiveness of CIT revenues to GDP changes is stronger during recessions than during periods of economic expansion.

In addition to macroeconomic factors, numerous studies on CIT revenue determinants focus on factors that directly affect tax inflows. Key attention is given to the tax rate, tax base, and the number and structure of taxpayers (Auerbach & Poterba, 1987; Clausing, 2007; Devereux et al., 2004). When analyzing the role of the tax rate, particular interest is directed at cases where a reduction in the CIT rate does not lead to a decrease in tax revenues. Consequently, many studies examine the elasticity of the CIT tax base to changes in the tax rate (Dwenger & Steiner, 2012; Gruber & Rauh, 2007; Riedl & Rocha-Akis, 2012; Suárez Serrato & Zidar, 2018).

The specificity of CIT revenue analysis stems from the fact that volatility of tax inflows is considerably higher for CIT than for other taxes (Karpowicz, 2023a), particularly during economic downturns (Dudine & Jalles, 2018). This raises the question of which determinants of CIT revenues contribute to this volatility and which are characterized by stability.

The study aims to determine the impact of changes in specific factors on variations in CIT revenues in Poland during 2009–2022. Data for the study were obtained from the Ministry of Finance. The logarithmic method was applied to determine the influence of changes in individual components on changes in CIT revenue. This method allows the total value of changes to be expressed as the sum of its components.

The study addresses two research questions: 1) Which factors play the most significant role in CIT revenue changes?; 2) What is the role of large taxpayers (revenue > EUR 50 million) in CIT revenues?

The research employed a pyramidal analysis method, which enables the decomposition of changes in CIT revenues into constituent factors. Unlike the studies of Auerbach and Poterba (1987) and Douglas (1990), which identified the tax rate and profit rate as determinants of CIT revenues, this study considered the following factors: number of taxpayers, average taxpayer income, profitability of taxpayers, ratio of the tax base to taxpayer income, effective tax rate.

This approach to examining CIT revenue determinants allows for identifying the key elements of tax structure design from the perspective of maximizing budgetary inflows.

Literature review

Among the macroeconomic factors influencing tax revenues, including those from CIT, the following are highlighted: GDP per capita, trade openness, political stability, and the share of agriculture in GDP (Gupta, 2007). Nandi et al. (2014) confirm that GDP, trade openness, government deficit, the number of enterprises, foreign direct investment (FDI), and corruption are critical determinants of tax revenues. At the same time, research by Dudine and Jalles (2018) indicates that higher GDP volatility reduces the ability to collect CIT revenues, as investment decisions are heavily reliant on future expectations. Inflation also has a more detrimental effect on CIT stability, as it quickly erodes profit margins. Their findings also suggest that in developed countries, the responsiveness of CIT revenues to changes in GDP is stronger during recessions than in periods of economic expansion. This indicates that CIT functions more effectively as an automatic stabilizer during economic downturns.

Beyond macroeconomic factors, many studies on the determinants of CIT revenues focus on direct factors affecting tax inflows. Among these, particular attention is paid to the tax rate, tax base, and the number and structure of taxpayers.

In traditional approaches, the tax rate has a positive relationship with CIT revenues, meaning that as the tax rate increases, revenues grow – a predictable relationship. This implies that CIT revenues can be enhanced by raising tax rates (Greening et al., 2019). Karpowicz (2023b), based on studies conducted for EU countries from 1995 to 2020, shows a strongly positive impact of statutory CIT rates on corporate tax revenues. The author also highlights that higher corporate profitability leads to greater CIT revenues, consistent with expectations and numerous studies.

Clausing (2007), analyzing data from a large group of OECD countries between 1979 and 2002, regressed CIT revenues on the national statutory CIT rate. The results suggest that the revenue-maximizing statutory CIT rate is 33%, meaning that reductions in rates from levels above 33% should, on average, lead to higher CIT revenues. Auerbach and Poterba (1987) examined the sources of the decline in corporate income tax revenues in the U.S. from 1959–1985. Douglas (1990) conducted a similar analysis for Canada from 1960–1985. Both studies decomposed the share of tax revenues into the tax rate and the profit margin, using the formula

Taxes/Assets = Taxes/Profits* Profits/Assets.

Their findings indicate that declining profitability, rather than lower tax rates, explains most of the drop in corporate income tax revenues.

Helcmanovská and Andrejovská (2021), based on research on EU countries, indicate that lowering tax rates in most countries did not lead to a decline in tax revenues. On the contrary, revenues increased. This implies that tax rates are not the most critical variable affecting CIT revenues. Devereux et al. (2002), examining data on corporate income tax revenues as a proportion of GDP in developed economies between 1960 and 1999, concluded as follows: statutory tax rates decreased; tax bases were broadened; effective tax rates fell, especially for high-return investments; tax revenues remained stable as a share of GDP; tax revenues declined as a share of total tax revenues since the 1960s but stabilized in the 1980s, while marginal tax rates remained nearly unchanged. Devereux et al. (2004) also studied corporate tax revenues in the UK from 1980–2004, focusing on the puzzling combination of reductions in statutory corporate tax rates and increases in corporate tax revenues. Upon closer examination of the data, they concluded that this puzzle partly resulted from measures that expanded the corporate tax base. They also identified higher profitability rates as an additional factor influencing CIT revenues, offsetting the effect of lower tax rates, particularly in the financial services sector.

Similar results were obtained by Sørensen (2007) for OECD countries between 1982 and 2004. Thus, among the sources of variability in corporate income tax revenues and the paradox of rising tax revenues despite lowering tax rates, the following are considered: the shifting of income between personal and corporate income (de Mooij & Nicodème, 2008; Sørensen, 2007), fluctuations in corporate profitability (Auerbach & Poterba, 1987), the size (expansion) of the corporate income tax base or the level of deductions (Creedy & Gemmell, 2008; Devereux et al., 2004).

Gruber and Rauh (2007) used accounting data from publicly traded U.S. C corporations between 1960 and 2003 and found strong evidence that the corporate tax base is elastic concerning the marginal effective tax rate. They estimated the elasticity of the corporate tax base with respect to the rate at -0.2. Dwenger and Steiner (2012) used microdata from German corporate tax declarations for two time periods coinciding with the introduction of tax reforms. These data allowed for the

consideration of the specificity of the German tax system and enabled the calculation of corporate profits subject to Germany's CIT rate. The authors estimated elasticity at approximately -0.5 for taxable corporate income relative to the average national effective CIT rate. Overall, these findings imply that, on average, reductions in the national CIT rate lead to a less-than-proportional increase in the CIT base, resulting in lower tax revenues. A similar relationship is highlighted by Riedl and Rocha-Akis (2012). They reveal that, in the long term, reductions in the statutory CIT rate lead, on average, to less-than-proportional increases in reported domestic corporate profits, and therefore to lower CIT revenues. Their research, conducted for 17 OECD countries between 1982 and 2005, shows that the long-term elasticity of the CIT base with respect to the statutory CIT rate ranges from -0.8 to -0.9.

Kawano and Slemrod (2016) noted that changes in the corporate tax base in OECD countries more frequently occur in years when the statutory corporate tax rate is altered. Changes in the corporate tax base are less common in years when the statutory CIT rate remains unchanged. They emphasize the importance of tax reforms that simultaneously lower the corporate tax rate and broaden the corporate tax base. Using data from OECD countries between 1980 and 2004, they confirm that reductions in tax rates are usually accompanied by reforms broadening the legal tax base. Suárez Serrato and Zidar (2018) analyzed U.S. data and found that the tax base explains more variation in corporate tax revenues than tax rates. They also observed that as tax authorities narrowed corporate income tax bases, the relationship between tax rates and revenues weakened.

Nicodème et al. (2018), based on research on EU countries from 1995 to 2015, indicated that while reductions in statutory tax rates initially led to revenue losses, this effect was more than offset by broadening the tax base and a modest increase in the corporate sector size. However, this result did not persist throughout the entire study period, as since 2005, base broadening has been unable to counterbalance further rate reductions.

Another strand of literature explains the relative stability of corporate income tax revenues despite rate cuts by pointing to the lower revenues from personal income taxes due to a shift in the legal form of businesses from non-corporate to corporate. In the context of high progressivity in personal income taxes, a reduction in CIT rates, particularly for firms with high profit expectations, incentivizes entrepreneurs to choose corporate taxation. Clausing (2007) estimated that a ten-percentage-point higher top personal income tax rate compared to the corporate tax rate increases CIT revenues as a percentage of GDP by 0.1 percentage points – a small but statistically significant effect. Thus, a low CIT rate relative to PIT can encourage businesses to adopt corporate forms, resulting in the transfer of taxable income to the corporate tax base. This phenomenon was explored by Gordon and Slemrod (1998), Devereux et al. (2014), le Maire and Schjerning (2013), van Ganzen (2023), and Robinson and De Beer (2021). Similarly, Cozmei (2015) observed that differences between PIT and CIT rates are determinants of CIT revenues.

Karpowicz (2023b), based on research on EU member states between 1995 and 2020, argues that in reality, there are not many businesses that choose their organizational form based on income tax rate levels (comparing PIT and CIT legislation). In his view, tax authorities tend to align PIT and CIT rates to maintain balance and not incentivize entities to operate in a specific legal form solely for tax optimization purposes.

Another factor considered as a determinant of CIT revenues is firm size. Delgado et al. (2018) examined the relationship between the effective tax rate and firm size in Germany. Their findings indicate a nonlinear relationship, with a positive sign for the lower quantiles and a negative sign for the upper part of the distribution. This means that as firms grow in size, their effective tax rates initially increase; however, for the largest enterprises, effective tax rates decrease with increasing assets, with the decline being more pronounced as firm size grows.

Additionally, the growing share of the financial sector in the economy is seen as a reason for the rise in CIT revenues (Devereux et al., 2004). According to their research, important determinants of CIT revenues include the size of the corporate sector, high profitability of financial institutions, and the breadth of the legally established tax base.

Research methods

Understanding the factors influencing corporate income tax revenues provides an opportunity to determine whether it is possible to increase these revenues and, if so, how. The method applied in this study is based on the so-called pyramid analysis, which enables the decomposition of observed changes into their constituent factors. In the context of this study, the decomposition focuses on the revenues generated from corporate income tax (CIT). The method of decomposing CIT revenues is presented in equation (1).

Equation (1):

$$CIT\ revenue = Number\ of\ taxpayers \times \frac{Revenues}{Number\ of\ taxpayers} \times \frac{Income}{Revenues} \times \frac{Tax\ base}{Income} \times \frac{CIT\ revenue}{Tax\ base}$$

The first component of the equation describing tax revenues reflects the scope of entities subject to corporate income tax. It should be emphasized that changes in the number of taxpayers can result from an increase in the number of enterprises in the economy or from amendments to tax laws. Legislative changes may extend the tax base by incorporating entities previously taxed under different rules or, conversely, exclude certain entities from the scope of the tax.

The second component represents the average revenue generated by a taxpayer. This indicator illustrates the scale of economic activity undertaken by taxpayers. It is important to note that this measure may also be influenced by inflation levels.

The third component of the equation, which expresses the ratio of taxable income reported by taxpayers to their revenues, represents the profitability of economic activities. This element reflects the financial health of enterprises but also accounts for potential manipulations, such as underreporting taxable income.

The next measure, the ratio of the tax base to income, captures the impact of tax preferences on the taxable base. A higher value of this indicator signifies a broader taxable base, implying a reduced significance of tax preferences deducted from income. In other words, an increase in this ratio indicates a decline in the use of income deductions.

The final component of the decomposition equation is the effective tax rate, defined as the ratio of tax liability to the tax base. The effective tax rate primarily reflects the impact of reduced tax rates (e.g. the 9% rate for small taxpayers or the 5% IP BOX rate) on CIT revenues. Additionally, deductions applied directly to the tax liability can influence the effective tax rate.

The next stage of the study involved analyzing changes in tax revenues during the period from 2009 to 2022. The time frame was determined by the availability of data published by the Ministry of Finance regarding CIT revenues. To assess the impact of changes in individual components on the growth of CIT revenues, the logarithmic method was employed. This approach allows the total value of changes to be expressed as the sum of its components (Equation 2)

Equation (2):

$$\Delta CIT = \Delta CIT \frac{log\left(\frac{NoT_{t1}}{NoT_{t0}}\right)}{log\left(\frac{CIT_{t1}}{CITk_{t0}}\right)} + \Delta CIT \frac{log\left(\frac{Rev_{t1}}{Rev_{t0}}\right)}{log\left(\frac{CIT_{t1}}{CIT_{t0}}\right)} + \Delta CIT \frac{log\left(\frac{Inc_{t1}}{Inc_{t0}}\right)}{log\left(\frac{CIT_{t1}}{CIT_{t0}}\right)} + \Delta CIT \frac{log\left(\frac{Tbase_{t1}/Inc_{t1}}{Tbase_{t0}/Inc_{t0}}\right)}{log\left(\frac{CIT_{t1}}{CIT_{t0}}\right)} + \Delta CIT \frac{log\left(\frac{ETR_{t1}}{ETR_{t0}}\right)}{log\left(\frac{CIT_{t1}}{CITk_{t0}}\right)}$$

where:

ΔCIT – absolute change in CIT revenue in year $t1$ compared to year $t0$

NoT – number of taxpayers

Rev – taxpayers' revenues

Inc – taxpayers' incomes

$Tbase$ – taxpayers' tax base

ETR – effective tax rate

The final stage of the study focuses on analyzing changes in corporate income tax revenues, taking into account the size of taxpayers. Taxpayer size is determined based on the level of revenue generated.

Results and discussion

During the analyzed period, corporate income tax revenues experienced significant growth. By 2022, CIT revenues were nearly three times higher than in 2008, with an average annual growth rate of 7.5% over the period.

The analysis of the impact of identified components on CIT revenues from 2008 to 2022 reveals that the most significant driver of revenue growth was the increase in the number of taxpayers. This finding aligns with previous research, confirming that changes in the tax base play a pivotal role in CIT revenue trends (Devereux et al., 2014; Nicodème et al., 2018). As shown in the data presented, the increase in CIT revenues attributable to this factor exceeded PLN 28 billion. It is noteworthy that this component was also the most stable driver of revenue growth. During the analyzed years, only one year (2018) saw a decline in the number of taxpayers.

One of the reasons for the stable growth in CIT taxpayer numbers was tax reforms that encouraged many entrepreneurs previously taxed under personal income tax (PIT) rules to switch to CIT. Similar to other countries, the reallocation of taxable income to the corporate tax base is a fundamental driver of CIT revenue growth (Gordon & Slemrod, 1998; le Maire & Schjerning, 2013; Robinson & De Beer, 2021; van Ganzen, 2023).

The second most significant factor influencing CIT revenues was the growth in average revenue per taxpayer. However, this measure exhibited considerable fluctuations over the analyzed period, a characteristic typical of this tax, given the multitude of factors affecting average revenue levels (Auerbach & Poterba, 1987; Banociova & Tahlova, 2019). These fluctuations may partly reflect the expansion of the taxpayer base, consistent with findings from other countries (Devereux et al., 2004; Suárez Serrato & Zidar, 2018). As the number of CIT taxpayers increased, smaller taxpayers, who were previously taxed under PIT, entered the group.

The most significant growth in average revenue occurred during 2021–2022, with annual dynamics of 27% and 29%, respectively. While part of this growth can be attributed to high inflation, even after adjusting for price level increases, the real growth in revenues per taxpayer amounted to 21% in 2021 and nearly 13% in 2022.

Table 1. Impact of selected factors on CIT revenues (in thousands PLN)

Year	Number of taxpayers	Average revenue	Profitability	Taxbase/ Income	Effective tax rate	CIT revenue change
2009	1,316,574	2,873,802	-8,685,256	-1,898,587	571,584	-5,821,883
2010	1,283,773	-1,431,861	3,850,116	541,693	-703,369	3,540,352
2011	1,199,365	-80,788	2,181,665	-44,874	-647,099	2,608,270
2012	1,782,204	-1,897,190	-1,808,650	-1,027,899	-155,522	-3,107,058
2013	1,589,521	-5,268,951	4,882,550	-1,007,431	-643,830	-448,140
2014	2,335,888	-3,605,046	3,027,910	-225,775	856,789	2,389,766
2015	1,504,405	-1,443,033	1,300,491	-596,371	-11,198	754,294
2016	1,865,530	-1,344,999	822,440	849,546	539,262	2,731,779
2017	1,871,324	-379,923	27,950,850	-24,372,005	-876,019	4,194,226
2018	-165,455	4,133,448	-16,864,306	19,508,629	616,833	7,229,149
2019	4,060,532	-2,664,333	-6,884,622	2,618,400	3,103,662	233,639
2020	1,122,114	-68,420	6,059,011	1,961,834	-3,820,195	5,254,344
2021	3, 916,730	10,229,752	-3,999,350	7,929,197	-700,676	17,375,653
2022	4,701,486	14,834,721	-3,535,259	2,424,732	138,349	18,564,029
Overall	28,383,992	13,887,178	8,297,590	6,661,091	-1,731,430	55,498,420

Source: Authors' own study based on data from the Ministry of Finance.

Another factor influencing CIT revenues is the profitability of enterprises. The importance of this factor has been highlighted in studies conducted in other countries (Auerbach & Poterba, 1987; Devereux et al., 2014; Douglas, 1990; Sørensen, 2007). During the analyzed period, improvements in the ratio of taxpayer income to revenue contributed to an increase in CIT revenues by over PLN 8.3 billion. However, it is worth noting that profitability levels experienced significant fluctuations. Alongside a long-term upward trend, there were periodic declines in the profitability of CIT taxpayers. Notably, such a decline was observed in the last two years of the analysis, possibly indicating deteriorating business conditions. Paradoxically, however, profitability increased in 2020, during the COVID-19 pandemic.

The factors analyzed so far were predominantly exogenous, primarily considering external (non-tax-system-related) determinants of tax revenues. However, CIT revenues are also influenced by internal factors related to the tax structure. One such factor is the breadth of the tax base, measured by the ratio of the tax base to taxable income. As shown in Table 1, the expansion of the tax base (e.g. through the limitation of available tax deductions) contributed to an increase in CIT revenues by nearly PLN 7 billion. This finding is consistent with research conducted in other countries (Creedy & Gemmell, 2008; Devereux et al., 2004).

Another internal factor affecting CIT revenues is the effective tax rate. The analysis shows that this was the only factor with a negative cumulative impact on CIT revenues during the study period. This indicates that reforms resulting in changes to the effective tax rate were not a primary determinant of budget revenues. It should be emphasized, however, that the decline in revenues was relatively small, considering the introduction of reduced CIT rates for small taxpayers and the 5% rate for taxing intellectual property rights during the analyzed period.

The second phase of the study examined the factors influencing CIT revenues, with a distinction between small and medium-sized enterprises (Table 2) and large enterprises (Table 3).

Table 2. Factors affecting CIT revenues – small and medium enterprises (revenues < EUR 50 million)

Year	Number of taxpayers	Average revenues [thousands PLN]	Profitabilty	Taxbase/ Income	Effective tax rate	CIT revenue [thousands PLN]
2012	377,383	3,723	7.71%	63%	19.13%	13,121,300
2013	399,116	3,084	8.52%	62%	18.78%	12,300,946
2014	432,468	3,022	8.86%	61%	19.67%	13,932,667
2015	454,188	2,968	9.33%	64%	19.17%	15,457,155
2016	481,086	2,832	8.88%	68%	19.65%	16,166,296
2017	506,680	2,733	10.65%	60%	19.30%	17,230,518
2018	504,535	2,972	11.70%	57%	19.80%	19,749,282
2019	551,697	2,859	11.15%	51%	24.03%	21,455,088
2020	564,768	2,789	12.82%	68%	18.65%	25,570,602
2021	603,195	4,003	10.22%	69%	17.67%	30,179,240
2022	640,726	4,156	10.65%	69%	17.83%	35,017,639

Source: Authors' own study based on data from the Ministry of Finance.

A comparison of both taxpayer groups reveals significant differences. Large enterprises, relative to small and medium-sized enterprises (SMEs), are considerably fewer in number, comprising only 0.4% to 0.6% of all taxpayers. However, due to their average size, their fiscal significance far outweighs that of SMEs. Tax revenues generated by this group of large enterprises account for as much as 60% of total CIT revenues. This dominance stems from the fact that, on average, firms within the large taxpayer group are several hundred times larger than other taxpayers.

Interestingly, SMEs are, on average, twice as profitable as large firms. This finding is surprising, as large enterprises are typically expected to benefit from economies of scale, resulting in higher profitability. One possible explanation for this discrepancy is that large corporations may be more effective at optimizing their tax liabilities. This phenomenon might also indicate a larger CIT gap within the group of large enterprises.

The lower profitability of large enterprises is partially offset by a higher ratio of the tax base to taxable income within this group. A broader tax base for large taxpayers is a consequence of the design of tax preferences deducted from the tax base. Many of these tax mechanisms are subject to quantitative limits, which restrict their utilization by entities with substantial business operations.

Table 3. Factors affecting CIT revenues – large enterprises (revenues > EUR 50 million)

Year	Number of taxpayers	Average revenues [thousands PLN]	Profitabilty	Taxbase/ Income	Effective tax rate	CIT revenue [thousands PLN]
2012	1,581	2,858,780	2.42%	74%	18.90%	15,296,089
2013	1,828	2,171,168	3.08%	68%	18.90%	15,668,303
2014	1,930	1,902,267	3.42%	69%	18.93%	16,426,348
2015	2,002	1,818,399	3.47%	66%	18.81%	15,656,154
2016	2,090	1,773,436	3.83%	66%	18.93%	17,678,792
2017	2,349	1,659,878	11.52%	24%	18.93%	20,808,796
2018	2,471	1,745,853	6.08%	51%	18.92%	25,519,181
2019	2,761	1,600,060	4.80%	60%	18.93%	24,047,014
2020	2,782	1,636,435	5.44%	54%	18.87%	25,185,844
2021	3,298	1,629,149	5.34%	70%	18.89%	37,952,859
2022	3,931	1,875,473	5.07%	74%	18.79%	51,678,489

Source: Authors' own study based on data from the Ministry of Finance.

The relatively higher taxation of large entities is influenced by the higher effective tax rate observed within this group, partially corroborating the findings of Delgado et al. (2018) for the German market. However, the observed difference in effective tax rates between SMEs and large enterprises in Poland primarily stems from the ability of small taxpayers to apply the reduced 9% tax rate.

Conclusions

Corporate income tax is considered one of the most harmful taxes for economic growth (Macek, 2015). This is primarily due to its distortion of taxpayers' decisions, leading to suboptimal resource allocation and disruption of competition. Consequently, in the early 21st century, reforms were introduced aimed at neutralizing the impact of CIT on business decisions. These reforms focused on lowering CIT rates while simultaneously broadening the tax base. This approach allowed for maintaining overall CIT revenues while mitigating the negative economic consequences of taxation.

This trend is also evident in Poland. Our analysis indicates that changes in CIT taxation were not neutral, as the impact of changes in the effective tax rate on CIT revenues was less significant than the impact of broadening the tax base. In fact, the primary drivers of changes in CIT revenues are tied to the economy's performance rather than tax regulation changes. The most important factor is the number of taxpayers, which has consistently contributed to the growth of tax revenues. The second most significant factor is the size of enterprises, measured by their average revenue levels, although this factor exhibited greater variability compared to the number of taxpayers. Profitability levels also positively influence CIT revenues.

We also observed substantial differences in these factors based on taxpayer size, particularly regarding profitability. SMEs exhibit higher profitability than large enterprises, likely due to the greater prevalence of tax optimization practices among larger firms. At the same time, it is noteworthy that large enterprises are the primary source of CIT revenues. Despite representing a small fraction of the total taxpayer population, they account for over half of tax revenues. Thus, the primary focus of tax authorities should be directed toward large taxpayers.

The presented results suggest that CIT revenues in Poland have not declined due to tax competition, as evidenced by the positive dynamics in the number of taxpayers. Additionally, tax base erosion has not significantly affected revenue levels, as indicated by the positive impact of both profitability and the tax base-to-income ratio on CIT revenues. No significant revenue losses were observed following the introduction of the IP BOX regime, as reflected in the analysis of the impact of changes in the effective tax rate on CIT revenues.

In conclusion, the main drivers of changes in CIT revenues were factors related to the growth of the domestic economy rather than tax policy reforms.

References

Auerbach, A.J., & Poterba, J.M. (1987). *Why Have Corporate Tax Revenues Declined?* [Working Paper]. National Bureau of Economic Research. **https://doi.org/10.3386/w2118**

Banociova, A., & Tahlova, S. (2019). European states in a bout of corporate tax competition. *Journal of Competitiveness*, *11*(3), 19–34. **https://doi.org/10.7441/joc.2019.03.02**

Clausing, K.A. (2007). Corporate tax revenues in OECD countries. *International Tax and Public Finance*, *14*(2), 115–133. **https://doi.org/10.1007/s10797-006-7983-2**

Cozmei, C. (2015). Is it any EU corporate income tax rate-revenue paradox? *Procedia Economics and Finance*, *23*, 818–827. **https://doi.org/10.1016/S2212-5671(15)00372-X**

Creedy, J., & Gemmell, N. (2008). Corporation tax buoyancy and revenue elasticity in the UK. *Economic Modelling*, *25*(1), 24–37. **https://doi.org/10.1016/j.econmod.2007.04.007**

Delgado, F.J., Fernández-Rodríguez, E., & Martínez-Arias, A. (2018). Corporation effective tax rates and company size: Evidence from Germany. *Economic Research-Ekonomska Istraživanja*, *31*(1), 2081–2099. **https://doi.org/10.1080/1331677X.2018.1543056**

Devereux, M.P., Griffith, R., & Klemm, A. (2002). Corporate income tax reforms and international tax competition. *Economic Policy*, *17*(35), 449–495. **https://doi.org/10.1111/1468-0327.00094**

Devereux, M.P., Griffith, R., & Klemm, A. (2004). Why has the UK corporation tax raised so much revenue? *Fiscal Studies*, *25*(4), 367–388. **https://doi.org/10.1111/j.1475-5890.2004.tb00543.x**

Devereux, M.P., Liu, L., & Loretz, S. (2014). The elasticity of corporate taxable income: New evidence from UK tax records. *American Economic Journal: Economic Policy*, *6*(2), 19–53. **https://doi.org/10.1257/pol.6.2.19**

Douglas, A.V. (1990). Changes in corporate tax revenue. *Canadian Tax Journal*, *38*, 66.

Dudine, P., & Jalles, J.T. (2018). How buoyant is the tax system? New evidence from a large heterogeneous panel. *Journal of International Development*, *30*(6), 961–991. **https://doi.org/10.1002/jid.3332**

Dwenger, N., & Steiner, V. (2012). Profit taxation and the elasticity of the corporate income tax base: evidence from German corporate tax return data. *National Tax Journal*. (world). **https://doi.org/10.1086/NTJ41791115**

Eurostat. (2024). *Tax revenue statistics*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Tax_revenue_statistics

van Ganzen, B. (2023). Determinants of top personal income tax rates in 19 OECD countries, 1981–2018. *Journal of Public Policy*, *43*(3), 401–426. **https://doi.org/10.1017/S0143814X23000028**

Gordon, R.H., & Slemrod, J. (1998, May). *Are "Real" Responses to Taxes Simply Income Shifting Between Corporate and Personal Tax Bases?* [Working Paper]. National Bureau of Economic Research. **https://doi.org/10.3386/w6576**

Greoning, E., Zivanomoyo, J., & Tsaurai, K. (2019). Determinants of company tax revenue in Swaziland (1990–2015). *Acta Universitatis Danubius: Œconomica*, *15*(5), 7–37.

Gruber, J., & Rauh, J. (2007). How elastic is the corporate income tax base? In A.J. Auerbach, J.R. Hines Jr., & J. Slemrod (Eds.), *Taxing Corporate Income in the 21st Century* (pp. 140–163). Cambridge University Press. **https://doi.org/10.1017/CBO9780511510823.011**

Gupta, A.S. (2007). *Determinants of Tax Revenue Effort in Developing Countries*. IMF Working Paper WP/07/1184, Washington DC: IMF. **https://doi.org/10.5089/9781451867480.001**

Helcmanovská, M., & Andrejovská, A. (2021). Tax rates and tax revenues in the context of tax competitiveness. *Journal of Risk and Financial Management*, *14*(7), 284. **https://doi.org/10.3390/jrfm14070284**

Karpowicz, A. (2023a). Unstable government revenues in uncertain times: Which taxes are especially volatile? *Ekonomia i Prawo. Economics and Law*, *22*(3), 555–577.

Karpowicz, A. (2023b). What impacts the value of revenues from taxation of income of corporations? Evidence from European Union Member States. *Wroclaw Review of Law, Administration & Economics*, *12*(1), 30–53. **https://doi.org/10.2478/wrlae-2022-0003**

Kawano, L., & Slemrod, J. (2016). How do corporate tax bases change when corporate tax rates change? With implications for the tax rate elasticity of corporate tax revenues. *International Tax and Public Finance*, *23*(3), 401–433. **https://doi.org/10.1007/s10797-015-9375-y**

Macek, R. (2015). The impact of taxation on economic growth: Case study of OECD countries. *Review of Economic Perspectives*, *14*(4), 309–328. **https://doi.org/10.1515/revecp-2015-0002**

le Maire, D., & Schjerning, B. (2013). Tax bunching, income shifting and self-employment. *Journal of Public Economics*, *107*, 1–18. **https://doi.org/10.1016/j.jpubeco.2013.08.002**

de Mooij, R.A., & Nicodème, G. (2008). Corporate tax policy and incorporation in the EU. *International Tax and Public Finance*, *15*(4), 478–498. **https://doi.org/**10.1007/s10797-008-9072-1

Nandi, B.K., Chaudhury, M., & Hasan, G.Q. (2014). *Univariate Time Series Forecasting: A Study of Monthly Tax Revenue of Bangladesh*. EWUCRT Working Paper No 9. East West University, Dhaka, Bangladesh. http://dspace.ewubd.edu/handle/2525/900

Nicodème, G., Caiumi, A., & Majewski, I. (2018, December 1). *What Happened to CIT Collection? Solving the Rates-Revenues Puzzle* [SSRN Scholarly Paper]. Social Science Research Network. https://papers.ssrn.com/abstract=3302626

OECD. (2024).*Corporate Tax Statistics 2024*. OECD Publishing. **https://doi.org/10.1787/9c27d6e8-en**

Riedl, A., & Rocha-Akis, S. (2012). How elastic are national corporate income tax bases in OECD countries? The role of domestic and foreign tax rates. *Canadian Journal of Economics/Revue Canadienne d'économique*, *45*(2), 632–671. **https://doi.org/10.1111/j.1540-5982.2012.01713.x**

Robinson, Z., & De Beer, J. (2021). Revisiting corporate income tax determinants in Southern Africa. *Development Southern Africa*, *38*(4), 564–579. **https://doi.org/10.1080/0376835X.2020.1842175**

Sørensen, P.B. (2007). Can capital income taxes survive? And should they? *CESifo Economic Studies*, *53*(2), 172–228. **https://doi.org/10.1093/cesifo/ifm010**

Suárez Serrato, J.C., & Zidar, O. (2018). The structure of state corporate taxation and its impact on state tax revenues and economic activity. *Journal of Public Economics*, *167*, 158–176. **https://doi.org/10.1016/j.jpubeco.2018.09.006**