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### THE EFFECT OF INDIRECT TAXES ON THE STATE BUDGET REVENUE

#### **Abstract**

*Taxes are among the key economic instruments by means of which the state fulfils its functions in the economy. Depending on the relation of an object of taxation to a source of tax, two tax types are distinguished: direct taxes, where the nominal (formal) and real taxpayers are clearly identical, and indirect taxes, where such identity is not present, i.e., a formal source of a tax is not the same as its real source.*

*This paper intends to discuss the fiscal significance of indirect taxes to the state budget.*

*The analysis implies the indirect taxes generate high budget receipts not only at times of economic growth but also during economic crises.*

*In 2016-2020, indirect taxation accounted for the largest proportion (an average of 70%) of all the state budget's tax revenue. A dominant status of the value added tax among the overall income of the state budget could be noted as well. It constituted 44% of the total income on average at the time. In addition, the results of a correlation matrix show a strong link between the state budget revenue and indirect taxes. A statistical analysis affirms the research hypothesis that indirect taxation has a considerable impact on the state budget's revenue.*

**JEL Classification:** E62, H24, K34

**Keywords:** state budget, indirect taxes, revenue

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## Introduction

Any entity engaging in business is bound to pay tax, which includes not only economic but also legal content. Tax is a public levy, or a performance for the benefit of the state or another institution under public law (e.g., a local community), whose realisation is enforceable with the means of legal duress by the state. A taxpayer has no direct control over the level of such a charge and is only capable of influencing members of parliament indirectly, through lobbyists or pressure groups.

A tax is defined as a compulsory collection by a public authority, principally designed to defray public spending and distribute it in accordance with the tax capabilities of citizens (Paluch –Dybek, 2018, p. 56).

Tax is a basic and one of the oldest economic, fiscal, legal, political, and social instruments which is highly complex. Taxes collected for public entities fulfil functions that are very important to the economy and society as the convenient instruments of realising a variety of objectives set by the authorities (Ważna, 2018, p. 598). The fiscal function is one of those, consisting in the collection from various entities to the benefit of the state or other institutions under public law of monies required to discharge the latter's duties. Thus, taxes are a tool of collecting monies by authorised entities.

Income and spending taxation play key roles in the contemporary tax system (Litwińczuk, 2017, p. 21). As far as the relation of a taxable object to a source of taxation is concerned, two tax types can be distinguished: direct and indirect taxes.

Direct taxes are imposed on a taxpayer's income or assets. The description 'direct' refers to the identity of a subject paying a tax and incurring its financial burden and the impossibility of transferring the burden to other entities (Black, 2008, p. 317). Indirect taxes, on the other hand, are transferable, which means a legally bound subject does not incur the actual financial or fiscal burden. In this case, this is the consumer who is ultimately taxed (Partyka, 2011, p. 427). In addition, the burden of indirect taxes is not in any strict relation to a taxpayer's income or asset position. As such, they are latent taxes and the taxation burdens are more anonymous (Kosidłowska, 2014, p.159)

This paper intends to discuss the fiscal significance of indirect taxes to the state budget.

The effectiveness of indirect compared to direct taxes has been discussed by the theory of public finances for years. The fundamental argument for universal indirect taxation is that it has a less adverse effect on the supply of labour than direct taxes do and that it interferes with the choice between current and future consumption to a lesser extent (Watrin, Ullmann, 2008).

An easier redistribution of income among income groups is the chief argument for direct taxation, on the other hand (Saez, 2004).

Taxation can be employed as a tool of redistribution and reducing inequalities with the levels of its rates, the scale of progression, the tax-free amount, the system of reliefs and exemptions addressing taxpayers' financial and health standing, the rates of VAT and excise duties, among other ways. It should be also remembered the overall tax burden of a population and enterprises determines the income available to the state to dispose for broadly-defined public purposes, such as cash transfers, science and education, healthcare, national insurance, etc. The research hypothesis (H1) can be posited, therefore, indirect taxes have a significant effect on the state budget's revenue.

### **1. Indirect taxation in the Polish tax system**

A tax system means all the existing taxes collected in a given state at any time. It denotes all the legal and organisational forms of taxation that consist of the particular taxes of varied designs (Sosnowski, 2014, p. 260). It has not only a legal, but also economic, social, and political dimensions (Etel, 2002, p. 38) In economic terms, a tax is paid by businesses to the state or institutions under public law. The economic aspect of a tax not only involves reducing a taxpayer's income or assets but also affects the economic process. The Polish state realising its public duties via its tax system considers taxpayers' family status and thereby their payment capabilities. The public nature of the system gives rise to a variety of reliefs and exemptions (Podstawka, Deresz, 2011, p.194). A tax in its political meaning concerns the relationship between the state and a citizen. The constitutional regulation is the foundation for the application of tax laws.

Tax is an economic category as well as a financial legal concept and institution. The financial legislation defines both the very notion of tax, its status among other public revenues, and its elements. The doctrine has developed a general definition of tax as a monetary performance to a public law institution, that is, the state or a local authority, set unilaterally by that institution, which is general, fundamental, non-returnable, and compulsory (Smoleń, Wójtowicz 2021, p. 7).

By force of Article 6 of the Tax Law of 29.8.1997 (OJ of 2020, item 1325 as amended), tax is defined as a public legal, free, compulsory, and non-returnable monetary performance to the State Treasury, regional, county or local authorities under the tax law.

Both the definitions are essentially similar. The one in the Law does ignore the theoretical characteristics of generality, fundamentality, and unilateral setting the doctrine accords to taxation. It doesn't mean, however,

the Tax Law deprives the tax of the characteristics contemplated by the theory of fiscal law.

In the legal perspective, tax is an abstract legal relationship having some characteristics that help to distinguish it from the remaining public law performances. The definitions of tax offered by diverse authors, though different, invariably indicate certain constant characteristics (Woliński, 2020, p.18).

Taxes are the basic revenue of a state budget. It is of utmost importance, therefore, that a tax system prevailing in a country be correct and effective, since it is the key instrument of development and economic growth.

As part of the Polish tax system, indirect taxes comprise the value added tax (VAT), the excise duty, and the tax on games. This classification is used by the Ministry of Finance to determine the sources of fiscal income to the national budget.

### **The Value Added Tax**

The Value Added Tax is one of indirect taxes, the major sources of state revenue. It is grounded in the Value Added Tax Act of 11 March 2004 (OJ of 2021, item 685 as amended), which became effective on 1 May 2004 and adjusted its design to the requirements of the joint VAT system in the European Union. It is indirect because a taxpayer does not incur the actual financial burden, which is transferred to other entities. It's also a price-forming tax (charged on prices, not costs) for a manufacturer and cost-forming for a final customer (it's not deductible); it's levied on consumption spending, based on turnover (the value of goods and services supplied) and universal, which means it is charged on trade in all kinds of material and non-material goods. It's also deductible (each buyer has the right to deduct it from their purchases) and transferable (the fiscal burden of paying the tax transfers to every successive buyer and is finally charged to private individuals or consumers) (Wyrzykowski, 2008, p. 297). In addition, the VAT is a multi-phase tax charged on each phase of production or distribution. A taxpayer selling their product or services calculates the tax payable in their sales invoice, while the so-called charged tax is already deducted on a material or service purchase invoice. The difference between the output and input tax is paid to a tax authority.

In line with Article 15 of the Value Added Tax Act, taxpayers, payers, and VAT agents are the subjects of the value added tax. Taxpayers are legal entities, organisations without legal personality and self-employed individuals regardless of the purposes or results of their business activities.

Business activities are any activities of producers, traders or service providers, including those extracting natural resource and farmers, as well

as the professions. These activities also comprise a continuing use of resources or intangible assets for gainful purposes

Subjective VAT exemptions are allowed to entities engaged in small-scale activities and having special status. The value of a taxpayer's sales is the basic type of exemption. Entities whose revenue from taxable sales in the preceding fiscal year was below PLN 200,000 net are eligible for subjective VAT exemptions. The limit has been in force since 2017 in connection with a VAT Act amendment (Article 113 Section 1). The relief is also available to taxpayers who commence their business in a given year if they anticipate their sales to be below PLN 200,000 in the annual proportion. The obligation to pay the tax arises as the threshold is exceeded and the excess is taxable.

By force of Article 5 of the VAT Act, the value added tax is levied on:

- a) Paid supply of goods and services in the area of Poland;
- b) Export of goods;
- c) Import of goods into Poland;
- d) Intra community acquisition of goods paid in the area of Poland;
- e) Intra community deliveries of goods.

The base of taxation is defined by Article 29a Section 1 of the VAT Act. Anything that constitutes payment received or to be received by a supplier of goods or services for sales from a purchaser, service recipient or a third party, including any subsidies and similar payments that have direct impact on the prices of goods or services supplied by a taxpayer is the base of taxation.

The rate of the tax is 23% or 8% for the goods and services listed in Appendix 3 to the Act, or 5% for the goods and services listed in Appendix 10 to the Act. 0% is charged on intracommunity delivery of goods (subject to Article 42) and exports by farmers paying the fixed amount of tax, provided such taxpayers keep the records of their transactions.

### **Excise duty**

The structure of excise duty is laid down in the Excise Duty Act of 6 December 2008 (OJ of 2020, item 722 as amended). Excise duty is a one-off sales tax on the production or import of specified goods (thus, it's a selective tax levied on certain types of commodities), normally charged on alcoholic products, tobacco, cigarettes, refinery products, and other luxury consumer goods (Wolański, 2020, p. 257). Excise duty is integrated into the pricing of a product, which means its addition raises the prices of sold goods (Sygut, 2016, p. 55).

Pursuant to Article 13 of the Excise Duty Act, excise duty is paid by legal entities, organisations without legal personality that engage in activities

subject to excise duty or that are involved in situations taxable with excise duty, as well as non-importers bound to pay customs duties.

Entrepreneurs who pay excise duty must register for the purposes of this tax. As a rule, a business must submit their registration application to a competent customs authority before their first transactions subject to excise duty or first activities using products exempt from excise duty due to their purpose (Mastalski, 2021, p. 396)

Excise duty applies to seven major phenomena, most of which involve products subject to excise duty. A sale of excise duty products is the principal civil law transaction taxable with excise duty (Sowa, 2013, p. 73).

Excise duty products are listed in detail in a closed-ended catalogue attached to the Excise Duty Act. They can be divided into six groups (Sowa, 2013, p. 74):

- Luxury goods, e.g. cars,
- The so-called state monopoly products, e.g. tobacco and spirits,
- Fuel, e.g. petrol, gas fuel, bottled gas,
- Plastic packaging,
- Electricity,
- Other excise duty products.

The Act provides for some objective exemptions from excise duty, including in relation to (Article 30 of the Excise Duty Act):

- a) Electricity generated from renewable sources according to a certificate of origin as defined by the Energy Law;
- b) Wastage or destruction of excise duty products as a result of force majeure or acts of God, provided taxpayers prove the occurrence of circumstances entitling to the exemption;
- c) Wastage of excise duty products up to limits set for a given entity by a competent customs authority;
- d) Consumption of electricity in the process of its production or for the maintenance of these processes;
- e) Consumption of electricity generated on board a vessel in shipping, including fishing trips.

Excise duty is levied on trade in excise duty products and, like the value added tax, is not integrated into pricing but added to net prices. The base of excise duty taxation is (Wyrzykowski, 2008, p. 319):

- a) Sums due for the sales of excise duty products in Poland less the amount of the value added tax and excise duty payable on these products;
- b) Sums a buyer is bound to pay for excise duty products in the case of an intra community acquisition;

- c) Sums due on excise duty products in a member state in the case of intra community acquisition;
- d) Customs value of excise duty products plus due customs duty in the case of imports.

Excise duty is a single-phase tax, which means a product subject to it should be taxed once only (Matarewicz, 2014, p. 35). The tax should be collected at the first stage of trade and each subsequent transaction involving excise duty products should be tax-free, while an entity carrying out the transaction should not be treated as an excise duty payer (Kałka, Ksieniewicz, 2013, p. 33).

The rates of excise duty are highly varied as the percentages of tax base, amounts per unit of product, percentages of maximum retail prices, amounts per unit of product, and percentages of maximum retail prices. The European Union laws oblige member states to apply certain minimum rates of excise duty, with states allowed to set higher rates as part of their fiscal policies.

Excise duty products, that is, engine fuels, oils, lubricants, alcoholic drinks, and tobacco products, must be marked as such. This duty serves the control of their sales, tightening of the excise duty system, and is proof of their legal trade in Poland. Excise stamps are evidence of prepayments towards excise duty (confirming the right to trade in a product). Excise stamps may be bands, logos or seal impressions.

### **The tax on games**

The tax on games is, beside the VAT and excise duty, an indirect tax supplementary to the other, fiscally fundamental tax burdens. Its design is laid down in the Games of Hazard Act of 19 November 2009 (OJ of 2009, No. 201, item 1540 as amended).

The tax on games is charged on the organisation and administration of games of hazard, gaming arcades, and mutual betting, as well as participation in poker tournaments. The taxation is not applicable to poker tournaments and the organisation of promotional lotteries, though (Dolata, 2013, p.317).

In line with Article 2 Section 1 of the Games of Hazard Act, the games of hazard are games arranged for cash or material stakes, including those organised via the internet, whose results are particularly dependent on chance. These are: numerical lotteries, cash lotteries, telebingo, cylindrical games, dice, cash bingo, prize bingo, prize lotteries, promotional lotteries, audiotext lotteries.

The specific objective scope of the tax on games applies to activities that require a rigid state rationing. The dependence of licensing on clear requirements concerning: the organisation, ownership, capital levels, technical conditions, as well as statutory location limits on the gaming

centres, i.e., casinos, gaming arcades, and cash bingo parlours, is the basic instrument of this rationing (Wójtowicz, 2008, p. 56).

The base of taxation is related to the nature of a game, mutual betting or lottery. The varied bases of the performance and their thorough regulation for the particular games and bets are characteristic of the tax on games. The legislation provides for percentage and value rates of the tax depending on its object.

## **2. The share of indirect taxes in the revenue of state budget**

A growth trend can be observed of the state budget's revenue levels in the entire period studied. The state budget's revenue totalled PLN 419.8 bn in 2020, PLN 105.1 bn (approx. 25%) more than in 2016. A maximum revenue rise (11.3%) was experienced in 2017 as a result of a range of steps taken by the fiscal administration to tighten the tax system and of an unexpectedly good macroeconomic situation (a GNP growth in real terms of 4.6% in 2017). The share of tax revenue (91.9%) in the total revenue reached its peak in 2019, with the revenue from indirect taxation accounting for 69.6% of tax revenue.

The state budget's revenue was the highest in 2020, reaching PLN 419.8 bn, PLN 19.3bn or 4.8% greater than in 2019.

Tax income was the key source of the state budget's revenue in 2020, totalling PLN 370.3bn and equalling 15.9% of the GNP. The rise over 2019 was derived from the value added tax of PLN 184.6bn and the CIT of PLN 41.3bn. The revenue from both these sources accounted for 53.8% of the overall state budget's revenue. Some declines of tax revenues in 2019 should be noted, too. The personal income tax income reached PLN 63.8bn (a fall by ca.1.6bn YOY) and the excise duty, PLN 71.8bn (a decline by PLN 0.6 YOY) (Sprawozdanie, 2021,p.63).

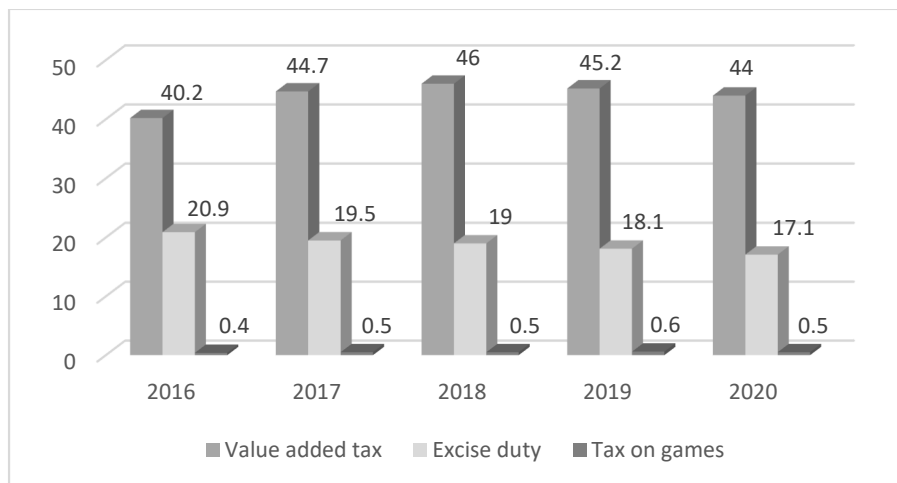


**Table 1. The level and structure of the state budget's revenue in 2016-2020 (bn)**

Specification	2016		2017		2018		2019		2020	
	bn	%	bn	%	bn	%	bn	%	bn	%
<b>TOTAL REVENUE</b>	<b>314.7</b>	<b>100</b>	<b>350.4</b>	<b>100</b>	<b>380.0</b>	<b>100</b>	<b>400.5</b>	<b>100</b>	<b>419.8</b>	<b>100</b>
Tax revenue, including:	<b>273.1</b>	<b>86.8</b>	<b>315.3</b>	<b>90.0</b>	<b>349.4</b>	<b>91.9</b>	<b>367.3</b>	<b>91.7</b>	<b>370.3</b>	<b>88.2</b>
Value added tax	126.6	46.4	156.8	49.7	174.9	50.0	180.9	49.3	184.6	49.9
Excise duty	65.7	24.1	68.3	21.7	72.1	20.6	72.4	19.7	71.8	19.4
Tax on games	1.4	0.5	1.6	0.5	1.9	0.5	2.3	0.6	2.3	0.6
Non-fiscal revenue	<b>40.1</b>	<b>12.8</b>	<b>33.7</b>	<b>9.6</b>	<b>28.9</b>	<b>7.6</b>	<b>31.4</b>	<b>7.8</b>	<b>47.4</b>	<b>11.3</b>
Funds from the European Union and other non-refundable sources	<b>1.4</b>	<b>0.4</b>	<b>1.5</b>	<b>0.4</b>	<b>1.8</b>	<b>0.5</b>	<b>1.9</b>	<b>0.5</b>	<b>2.1</b>	<b>0.5</b>

Source: The author's own compilation of the Ministry of Finance figures

The share of indirect taxation in fiscal revenue was about 70% in the whole period examined, while its share in the total budget revenue averaged 63%. The budget derived the most revenue from the value added tax, <40.2; 46.0> in 2016-2020, followed by the excise duty revenue, which averaged 19%. The income from the tax on games accounted for a minimum share of the state budget's revenue, that is, 0.5% on average.

**Figure 1. The shares of indirect taxes in the state budget's revenue**

Source: The author's own calculations.

To verify the existence of a correlation between the following variables: the state budget's revenue, value added tax, excise duty, and the tax on games, the correlation matrix meeting the following criteria is computed:

- It is a square matrix that is symmetrical to the main diagonal (where elements become 1 as a variable is correlated to itself),
- The values of all the matrix elements are in the range  $<-1,1>$  and the matrix determinant is in the range  $<0,1>$

The values of the matrix determinant are appropriate to the correlation levels of the variables making up the matrix. The higher the determinant's values, the more correlated the individual parameters are to one another.

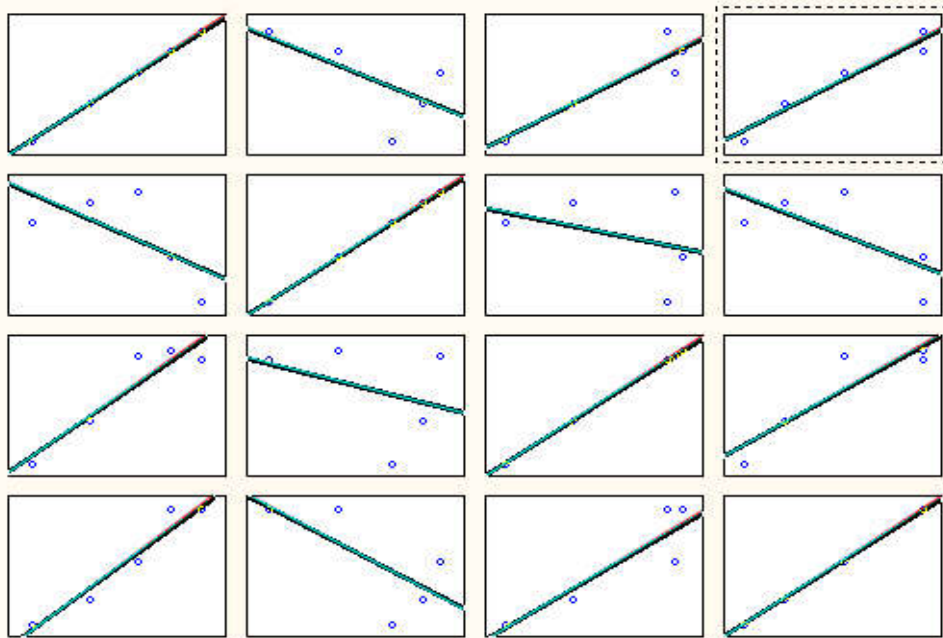
All the variables tested are closely correlated, with the state budget's revenue and the tax on games (the correlation value 0.972) and the state budget's revenue and the excise duty (the correlation value 0.926) being the most correlated. The value added tax and the excise duty are the least correlated.

**Table 2. Correlation matrix**

	Total state budget's revenue	Value added tax	Excise duty	Tax on games
Total state budget's revenue	1,000	-0.657	0.926	0.972
Value added tax	-0.657	1,000	-0.361	-0.707
Excise duty	0.926	-0.361	1,000	0.906
Tax on games	0.972	-0.707	0.906	1,000

Source: The author's own calculations.

The sign of the correlation determinant denotes the direction of correlation and can be positive or negative. If it's positive, the following obtains: lower values of a first variable correspond to lower values of a second variable, while greater values of a first variable correspond to higher values of a second variable. Where the determinant is negative, lower values of a first variable correspond to greater values of a second variable and lower values of a first variable correspond to higher values of a second variable.



**Figure 2. The scattergram matrix for the variables studied**

Source: The author's own calculations.

Graph 2 shows only the dependence between the value added tax and the remaining variables, that is, the state budget's revenue and the excise duty, while the tax on games exhibits a negative determinant of correlation.

This analysis implies the share of indirect taxes in the state budget's revenue averaged more than 60%. The value added tax revenue prevailed, reaching 44% on average. In addition, the correlation matrix suggests a correlation between the state budget's revenue and all the types of indirect taxation, which validates the research hypothesis (H1) that indirect taxes have a significant effect on the state budget's revenue.

## Conclusion

Indirect taxation burdens taxpayers in a way that has no close relation to their property and financial standing. It separates a business entity bound to calculate and pay a tax from an entity that incurs its actual economic burden. The simple design of indirect taxes and the 'latent' method of their inclusion in the values of goods and services make them an instrument of fiscal policy convenient to public authorities.

The level of the state budget's revenue depends on flows from taxable and non-taxable income as well as the funds from the European Union and other non-refundable sources.

This statistical analysis finds tax revenue to be the key source of revenue to the state budget. Indirect taxes prevailed in the structure of fiscal income. The value added tax revenue plays the central role, whereas the share of the tax on games in the state budget's revenue is negligible.

In 2016-2020, the share of fiscal revenue in total revenue ranged <86.8; 91.9>, including an average 70% of indirect taxes. In addition, the share of value added tax averaged 44% of the state budget's revenue. The analysis of the correlation matrix corroborated a strong link between the state budget's revenue and the value added tax, the excise duty, and the tax on games.

It can be concluded from the statistical analysis indirect taxation has a major impact on the levels of state budget's revenue, which upholds the research hypothesis advanced.

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