

## INDIRECT TAXATION: ASSESSING THE IMPACT OF THE SUGAR TAX IN POLAND

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### INDIRECT TAXATION: ASSESSING THE IMPACT OF THE SUGAR TAX IN POLAND

#### ABSTRACT

**The purpose of the article.** In 2019, Poland introduced a sugar tax that encompassed food products, including beverages. Since the sugar tax is a form of indirect taxation, consumers bear its burden in the price of the purchased product. In response, businesses often adjust prices or reduce product quantities to offset their costs. This article aims to characterize the fiscal and non-fiscal significance of the sugar tax and to illustrate its impact on the financial situation of a selected soft drink industry enterprise.

**Methodology.** The applied research methods include a literature review analysis, analysis of legal acts and financial data analysis.

**Results of the research.** The impact of the sugar tax on a company can be diverse and dependent on various factors. Its fiscal and non-fiscal nature means that, on the one hand, the goal is to reduce the consumption of "harmful products" to improve public health by reducing sugar intake and addressing health problems related to excessive consumption of sugary beverages. On the other hand, it aims to generate additional revenue for the state budget. It also has implications for the financial situation of the company. The results of the analysis indicate that the sugar tax, due to its pass-through nature, remains neutral for businesses, without adversely affecting revenue, profitability or financial liquidity.

**Keywords:** sugar tax, fiscal and non-fiscal function, indirect tax.

**JEL Class:** K2, H30.

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## INTRODUCTION

Sugar taxes were introduced as a fiscal measure aimed at generating revenue for the state budget, thereby serving a fiscal function in taxation. Sugar taxes are also attributed with a non-fiscal function. The products subject to this tax have adverse effects on citizens' health, and therefore, the state's objective is to reduce their consumption through price intervention using indirect taxation. In Poland, as in other countries, the consumption of sugar has been on the rise, as indicated by reports and statistical data published by the World Health Organization, the National Health Fund, and the Central Statistical Office. In 2021, Poland introduced a sugar tax that encompassed food products, including beverages. Since this tax exhibits characteristics of an indirect tax, consumers feel the burden in the product price. To offset their costs, businesses decide to either raise prices or reduce the quantity of the product. The sugar tax can also lead to a decrease in production, resulting in economic losses. Therefore, it is crucial to discuss this issue and illustrate the impact of the sugar tax on the financial situation of food industry enterprises. The aim of this article is to characterize the fiscal and non-fiscal significance of the sugar tax and to demonstrate its impact on the financial situation of a selected soft drink industry enterprise. Financial data of the chosen company before and after the introduction of the sugar tax will be subjected to analysis, with particular attention to cost levels, revenues, profitability and financial liquidity.

### 1. THE ESSENCE, PURPOSE AND CHARACTERISTICS OF THE SUGAR TAX

Taxes on sugar were documented as early as the 1920s and 1930s in countries like Norway and Denmark, implemented as a fiscal measure to generate revenue (Fernandez and Raine, 2019: 333–339). Currently, an increasing number of countries worldwide are introducing food-related taxes on products that have adverse effects on health. Economists believe that the aim of implementing such taxes is to improve the health of citizens and increase government revenue. In Poland, as in other countries, the consumption of sugar is on the rise. This is evidenced by reports and statistical data published by the World Health Organization, the National Health Fund, and the Central Statistical Office. Therefore, the Polish government has followed the lead of other nations and decided to introduce a tax on food items to reduce its consumption.

The sugar tax has been in effect in Poland since January 1, 2021. The legal basis for the sugar tax is the Act of February 14, 2020, amending certain laws in connection with the promotion of health-conscious consumer choices. This legislation introduced the sugar tax into the Polish tax system, with provisions

regarding the tax outlined in the Public Health Act of September 11, 2015. This tax is an indirect tax, meaning that it is paid by individuals purchasing products subject to this tax through an increase in prices that includes the tax. The taxable items include beverages containing sweetening substances such as sugars and sweeteners, as well as taurine or caffeine in the final product. The purpose of this levy is to discourage consumers from buying harmful products while simultaneously encouraging businesses to reduce the content of sugar, taurine, and caffeine in their products. These actions have been taken because the consumption of sweetened beverages is a primary factor contributing to obesity, diabetes, and dental decay (www.1). This levy also aims to discourage consumers from producing and purchasing harmful products. At the same time, it is intended to encourage companies to reduce the content of sugar, taurine and caffeine in their products. These actions were taken because the consumption of sugary drinks is a major factor contributing to obesity, diabetes and tooth decay (www.1).

Ninety-six point five percent (96.5%) of the sugar tax serves as a source of revenue for the National Health Fund, with the legislated goal of financing education and prevention efforts related to nutrition, as well as the treatment of lifestyle diseases associated with improper dietary habits, such as overweight, diabetes, and obesity. The remaining three and a half percent (3.5%) constitutes income for the state budget (Act of September 11, 2015, article 12c).

In accordance with the provisions of the food and beverage tax law, the tax does not apply to the following products:

- medical devices;
- specialized medical foods;
- beverages in which the content of vegetable, fruit, or fruit-vegetable juice exceeds 20%, and sugar content is equal to or less than 5 g per 100 ml of the beverage;
- infant formula for initial and continued nutrition;
- dietary supplements;
- carbohydrate-electrolyte solutions where the carbohydrate content is below 5 g per 100 ml of the liquid;
- beverages primarily composed of milk, buttermilk, yogurt, sour milk, kefir, etc. (Act of September 11, 2015, article 12b).

This tax applies to individuals, legal entities, as well as unincorporated entities, including:

- entities that sell beverages to retail outlets or engage in retail sales of beverages. This includes manufacturers, entities that acquire beverages through intra-community supplies of goods, or importers of beverages;
- entities placing orders when the composition of the beverage subject to the tax is part of a contract entered into by the manufacturer, specifically pertaining

to the production of that beverage for the ordering entity (Act of September 11, 2015, article 12d).

This tax consists of two components. The first is a fixed fee of PLN 0.5 when the product contains less than or exactly five grams of sugar per 100 ml of beverage or when it contains at least one sweetening substance. The second component is a variable fee, which amounts to PLN 0.05 per liter for each additional one gram of sugar above five grams per 100 ml of beverage. In the case where the beverage contains taurine or caffeine, the fee is PLN 0.1 per liter. The maximum fee is PLN 1.2 per liter of beverage (Act of September 11, 2015, article 12f).

Table 1. Basic Tax Rate on Sweetened Beverages in Selected Countries

Country	Basic Rate per Liter	Year of Introduction
Finland	€ 0.22	1940
Norway	€ 0.23	1981
Latvia	€ 0.07	2004
Hungary	€ 0.24	2011
France	€ 0.08	2012
Belgium	€ 0.07	2016
Spain	€ 0.12	2017
Portugal	€ 0.16	2017
United Kingdom	€ 0.18 or € 0.24	2018
Ireland	€ 0.30	2018
Estonia	€ 0.1 or € 0.3	2018
Poland	€ 0.11	2021

Source: own study based on: [www.6](#); [www.4](#); Faraulello and Costelli (2022).

Table 1 presents the variations in tax rates and the years of introduction of the food and beverage tax in European countries. Notably, this tax was introduced over decades ago in some nations. It is observed that the highest tax rate is in Ireland and Estonia, while the lowest rate is in Belgium. In the United Kingdom and Estonia, there are two primary tax rates for food and beverages. In the United Kingdom, if a beverage contains between five and eight grams of sugar per 100 milliliters, the tax rate is € 0.18. If it contains over eight grams per 100 milliliters, the rate increases to € 0.24 ([www.2](#)). In Estonia, beverages with sugar content ranging from five to eight grams per 100 milliliters or those sweetened with

sweeteners are subject to a tax rate of € 0.1. For beverages with over eight grams of sugar per 100 milliliters, the tax rate rises to € 0.3 (www.3).

It appears that in many countries, the tax is calculated in various ways. However, regardless of the specific tax structure chosen by legislators, it is the consumers who bear the primary burden of this tax, and this is indeed the desired outcome. This taxation is intended to encourage dietary changes among citizens, which is a favorable objective (Adamic, 2020: 1–4).

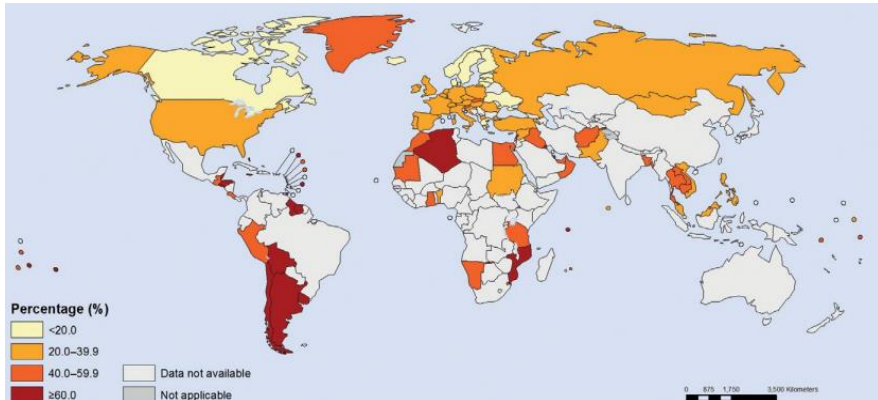


Figure 1. Percentage of teenagers consuming non-alcoholic beverages daily worldwide

Source: based on www.1.

Figure 1 depicts the percentage of teenagers consuming non-alcoholic beverages daily worldwide. Unfortunately, it does not provide a comprehensive view of beverage consumption in all countries. However, it is noteworthy that the highest consumption rates are not observed in developed countries. The highest prevalence of teenagers consuming sugary beverages is found in countries such as Chile, Argentina, Guyana, Algeria, and Mozambique. In European countries and the USA, the prevalence is comparatively lower. This might suggest that individuals from developed countries are more educated and aware of the consequences of excessive sugar consumption. The food and beverage tax in place in some developed countries could also be a contributing factor. The focus here is on beverage consumption among teenagers because childhood and adolescent obesity is associated with significant long-term health consequences, and its prevalence has been rising sharply. Non-alcoholic beverage consumption has also risen dramatically, to the extent that non-alcoholic beverages are currently the largest single contributor to energy intake (Frisvold, Fletcher and Tefft, 2010: 967–974).

The increasing number of people suffering from diabetes is leading to rising treatment costs for this condition. The prevalence of obesity or overweight

negatively impacts the state budget as it results in increased expenses related to the necessary actions for treating obesity-related diseases. The discussed tax can discourage consumers from purchasing additional sugary beverages in favor of water, reducing the risk of sugar-related diseases. It also contributes to financing the costs associated with treating the consequences of obesity (Budna, 2019: 13–32).

Strong support for fiscal policies is based on the premise that changing the price of a product can alter its consumption. Moreover, raising the price of sugar-sweetened beverages can reduce the price gap with healthier alternatives like milk, encouraging people to opt for healthier choices more frequently (Fernandez and Raine, 2019: 333–339).

According to the World Health Organization (WHO), the introduction of a tax on sugary beverages offers several benefits, including:

- effective sugar consumption reduction: taxing sugary beverages is an effective intervention to reduce sugar consumption;
- impactful health benefits: evidence suggests that a tax on sugary beverages, raising prices by 20%, can lead to a reduction in consumption by around 20%, thus preventing obesity and diabetes;
- healthcare cost savings: it is estimated that over ten years, a tax of 1 cent per ounce on sugary beverages in the United States could result in over \$17 billion in healthcare cost savings. Revenue generated from taxes can be used to promote public health;
  - revenue generation: such taxes can generate revenue for governments;
  - allocation of funds: revenues generated by these taxes can be directed towards efforts to improve healthcare systems, encourage healthier eating, increase physical activity, or enhance tax administration capabilities, thereby increasing the value of this policy;
  - benefits for low-income and young consumers: low-income individuals and young people can reap the most significant health benefits from these taxes (www.1).

These benefits underscore the potential positive impact of taxing sugary beverages on public health and fiscal policies.

This tax, like any burden imposed on businesses, has sparked discontent and opposition. Entities involved in beverage production had to adapt to the newly established regulations (www.5). This tax was met with negative perceptions not only among entrepreneurs but also from other concerned parties (Dahms, 2021: 3–8). As a counterargument, it was pointed out that data from other countries (such as Finland, the United Kingdom, France, and Hungary) where similar taxes were introduced showed no decrease in demand for high-sugar beverages containing caffeine and taurine. This suggests that the tax only resulted in increased government revenue (Majchrzycka-Guzowska, 2021: 16).

## 2. THE SIGNIFICANCE OF SUGAR TAX FOR THE FINANCIAL SITUATION OF BUSINESSES

Entrepreneurs strive to ensure the financial well-being of their businesses. Maintaining financial liquidity is also crucial for businesses as it is one of the primary short-term goals. Taxes, on the other hand, are compulsory payments, so it is essential to analyze whether tax laws regarding their amount and payment deadlines negatively affect the ability to meet other obligations, including the short-term ones. Entrepreneurs do not always have the opportunity to receive payment for goods before tax deadlines (Kluzek, 2014: 267–275). Thus, taxes can be a limiting factor for entities in meeting short-term obligations. Current actions by government authorities related to tax introductions are inconsistent with the principle of neutrality. An example of such a tax that undoubtedly affects businesses is the Value Added Tax (VAT). It is noticeable that this tax is transferable, meaning that consumers, not businesses, bear the burden of this tax (Felis, 2006: 33–42). The same applies to the food and beverage tax. However, this tax does not specify a fixed rate for a particular beverage; it determines it per liter of beverages containing more than a set sugar threshold. If a company still wants to sell its product at a particular price point, it can lower the beverage's price before taxation (and earn less on each sale), sell smaller portions of the product, or adjust the recipe to contain just enough sugar to avoid paying the tax. In other words, the primary responsibility of businesses is to meet customer preferences while respecting the law (Véliz et al., 2019: 22–31). Hypothetically, this tax was intended to have a neutral impact on the operation of a business. Unfortunately, there are circumstances when starting to settle this tax can reduce financial liquidity (Obrzeźgiewicz, 2016: 253–264). This occurs because the sugar tax can lead to a reduction in production by industrial enterprises, eventually resulting in economic losses because demand and production have a cause-and-effect relationship. The sugar tax is an indirect tax, which means that although the consumer ultimately bears this additional expense, the tax must first be paid by the production facility, and consequently, production costs within the company will increase. This leads to a reduction in the supply of the product sold and undoubtedly leads to losses for businesses connected to the industry. This implies that the sugar tax should not be excessively high to minimize its negative impact on businesses (Zeng, 2019: 39–41). The sugar tax affects all stages of food product delivery.

Every business involved in production or distribution strives to meet the requirements set by government authorities. Producers of such beverages face significant pressure, and their task is to find the optimal balance between product price and the production costs involved. This can be a challenging endeavor, and they must take into account factors such as consumer buying trends, market tendencies, and the size of expenditures incurred by consumers. By understanding economic mechanisms, producers can make decisions that help maintain or

enhance the desired financial liquidity within the company. They can also avoid undesired consequences by implementing strategies that enable them to achieve planned and satisfactory results through the initial link in the distribution chain. These actions have been introduced as a response to the imposition of the food and beverage tax (Małecka-Ziemińska, 2022: 87–88).

From a fiscal perspective, for example, in Portugal, the food and beverage tax is financially beneficial for public finances, even after accounting for the lost corporate income tax (Goncalves et al., 2022: 2–14).

### 3. THE IMPACT OF THE SUGAR TAX ON THE FINANCIAL SITUATION OF A SELECTED BUSINESS

The subject of this research is a Polish company specializing in the production and bottling of non-carbonated, carbonated, isotonic, energy, and alcoholic beverages. Initially, this company was one of the few facilities in Europe that produced energy drinks under clients' private labels. The company was founded in 2001. At the beginning, this company was one of the few plants in Europe that produced energy drinks under customers' own brands. The company's customers included Polish plants as initially, the company's clients were Polish firms, and after Poland's accession to the European Union, its operations expanded to international markets. The research will examine the financial situation of the company before and after the introduction of the sugar tax in Poland.

Chart 1 presents the components of sugar tax for a sample beverage containing sugar and caffeine/taurine produced by the examined company.



Chart 1. Components of the food and beverage tax for a selected beverage containing sugar and caffeine/taurine in the examined company

Source: own study based on financial reports from the examined company.



In the sample beverage containing sugar and caffeine/taurine produced by the company, the fixed component of the sugar tax amounts to 55.56%. It constitutes the largest portion of the sugar tax, being 1.67 times more than the variable tax and five times more than the caffeine or taurine supplement. The variable tax comes in second place, accounting for 33.33% of the tax. The smallest portion of the sugar tax is the caffeine or taurine supplement, which amounts to 11.11%.

The sugar tax is recorded in the general ledger account of "Taxes and fees". Analyzing the cost side of the examined company's situation, the food and beverage tax in 2021 accounted for 9.19% of the costs related to the total costs in the "Taxes and fees" category. Chart 2 illustrates the rate of change in costs within the "Taxes and fees" category, both with and without the inclusion of the food and beverage tax for the years 2020–2021.

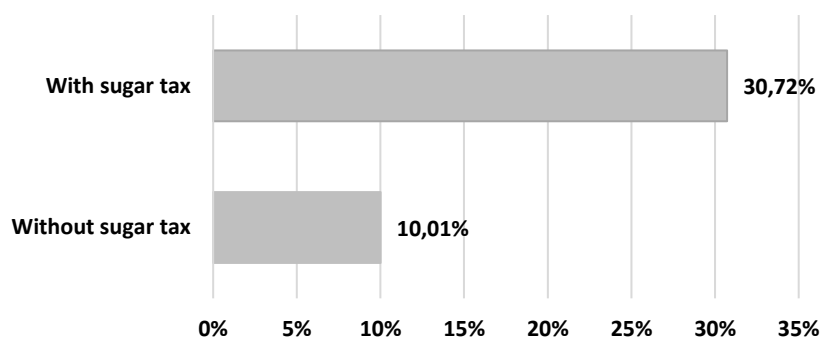


Chart 2. Rate of change in costs in the "Taxes and fees" category with and without the food and beverage tax in the examined company for the years 2020–2021

Source: own study based on financial reports from the examined company.

From the presented data, it can be observed that the sugar tax significantly impacted the dynamics of costs in 2021. The rate of change in costs within the "Taxes and fees" category increased from 10.01% to 30.72% in 2021, which is more than a threefold increase.

Chart 3 illustrates the share of domestic sales, intra-community sales, and exports in the examined company for the years 2020–2021.

The company saw its highest product sales outside the European Union during the examined period. In 2020, exports accounted for 73.66%, while in 2021, it was 67.22%. Although domestic sales had the smallest share of total sales, it increased in the examined years from 12.93% to 15.23% of the overall structure. This data is significant concerning the introduction of the sugar tax because only domestic sales are subject to taxation. Therefore, it can be observed that the introduction of the sugar tax did not lead to a decrease in the share of domestic sales.

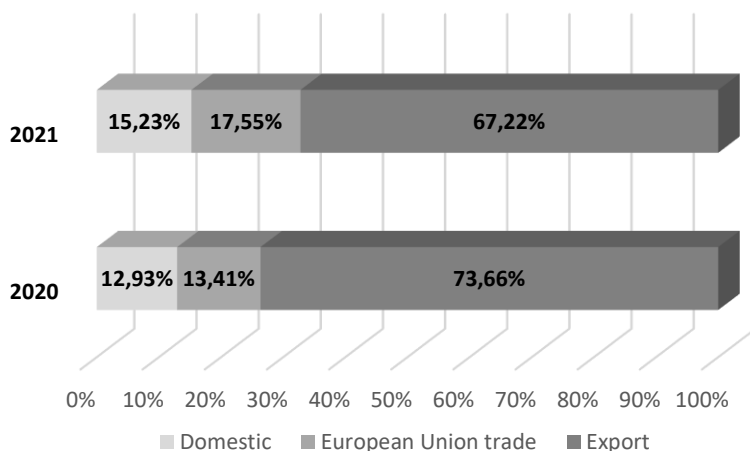


Chart 3. Structure of domestic, intra-community, and export sales in the examined company for the years 2020–2021

Source: own study based on financial reports from the examined company.

Table 2 shows the pace of changes in revenue and cost positions in the income statement.

Analyzing the revenue and cost data for the examined years, we can observe a faster growth in total revenues, i.e., by 33.3%, compared to costs, i.e., by 25.33%, indicating a positive financial situation for the company. When considering the operating activity, in this case, operating costs increased slightly faster than net sales revenues, by 2.3 percentage points.

Table 2. Rate of changes in revenues and costs in the profit and loss statement of the examined company in 2020/2021

Income Statement Items	2021/2020
Net Sales Revenues and Related	23,01%
Other Operating Revenues	2120,11%
Financial Revenues	-25,64%
<b>Total Revenues</b>	<b>33,30%</b>
Operating Costs	25,35%
Other Operating Costs	-76,29%
Financial Costs	720,56%
<b>Total Costs</b>	<b>25,33%</b>

Source: own study based on financial reports from the examined company.

Table 3 presents the share of the sugar tax in relation to revenue and cost items in the income statement for the year 2021.

Table 3. The share of the sugar tax in the income statement of the selected company in 2021

<b>Income Statement Item</b>	<b>Share of the sugar tax</b>
Net Sales and Equivalent	0,29%
Other Operating Revenues	3,10%
Financial Revenues	47,66%
<b>Total Revenues</b>	<b>0,27%</b>
Operating Costs	0,33%
Other Operating Costs	85,25%
Financial Costs	17,05%
<b>Total Costs</b>	<b>0,32%</b>

Source: own study based on financial reports from the examined company.

The sugar tax had the largest share in "Other Operating Costs", accounting for 85.25% of that category. Its smallest share was in the total revenues, representing 0.27% of the total value. In the line of "Operating Costs" item to which it belongs, it accounted for 0.33%. Considering all cost categories combined, the tax on foodstuffs makes up 0.32% of the total costs.

Table 4 presents selected financial liquidity and profitability ratios for the company in the years 2020–2021.

Table 4. Selected financial liquidity and profitability ratios for the company in the years 2020–2021

<b>Selected Ratios</b>	<b>2020</b>	<b>2021</b>
Current Ratio	4,16	4,04
Quick Ratio	3,14	3,03
Return on Sales (ROS)	0,09	0,15
Return on Assets (ROA)	0,07	0,13
Return on Equity (ROE)	0,09	0,16

Source: own study based on financial reports from the examined company.

The data presented indicates that the company has financial liquidity, and the introduction of the sugar tax has not negatively affected the company's financial liquidity. In terms of profitability, compared to the year before the introduction of

the tax and after its introduction, profitability has significantly improved across all profitability ratios. For example, the return on sales ratio increased from 0.09 to 0.15.

## SUMMARY

The impact of the sugar tax on a company can be diverse and dependent on various factors. Its fiscal and non-fiscal nature means that, on the one hand, the goal is to reduce the consumption of "harmful products" to improve public health by reducing sugar intake and addressing health problems related to excessive consumption of sugary beverages. On the other hand, it aims to generate additional revenue for the state budget. It also has implications for the financial situation of the company. In the analyzed company, the sugar tax led to an increase in costs, tripling the cost of taxes compared to the year before the tax was introduced. However, in the overall cost structure, it represents a relatively small share. When evaluating the overall financial situation related to financial liquidity and profitability, the sugar tax did not have a negative impact on the company's operations, and profitability improved. It is also worth noting that the introduction of the sugar tax did not lead to a decrease in the share of domestic sales, and net sales revenue increased. Taking into account the above data, it can be concluded that the sugar tax, due to its indirect taxation nature, is neutral for the examined company.

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