

## Original Paper

# Revenue-Raising Potential of Alcohol and Tobacco Excise

## Duties in Germany and Poland

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### **Abstract**

*Accumulation of funds to cover government spending is the primary purpose of taxation. According to multiple authors, excise duties are classified as taxes with the highest revenue-raising potential. In the OECD member states, excise duties constitute a considerable source of state revenue. They account on average for 7.6% of total taxation. The European Union member states apply a harmonized structure for excise duties on selected products. They include, above all, alcoholic beverages and tobacco products. The average share of alcohol and tobacco taxation in GDP and total taxation for EU-28 in 2014 equaled, respectively, 0.8% and 2.2%. Although taxes on alcohol and tobacco are in no small extent harmonized, their design may still vary between member states and strongly affect their collection efficiency. The primary purpose of this article is to compare excise duties imposed on alcohol and tobacco in Germany and Poland. The article is divided into three parts. The first addresses theoretical aspects concerning excise taxation. The second reviews the design of alcohol and tobacco excise duties in Germany and Poland. The third evaluates the revenue-raising potential of these duties in both countries.*

### **Keywords**

*tax revenue collection, alcohol excise duty, tobacco excise duty, Poland, Germany*

### **1. Introduction**

Excise duties are definitely less commonly addressed and analyzed in the economic literature than other taxes. Their origin may be traced back to the Han dynasty in China and to the Mauryan period in India (Laffer, 2014, p. 3). In their more current form, they were introduced in the course of the 1570's in the towns of Holland to cover war expenses and applied to a wide variety of products, such as beer,

wine, peat, meat, milling of bread grains, woolen cloth, fish or soap (Fritschy, 2003, p. 68). In the XVII century, excise duties were also implemented in France, England and Saxony as a reliable method of raising urgent revenue (Carsten, 1961, pp. 31-33). Their application caused resentment and on a few occasions led to tax rebellions, e.g., their introduction in England gave rise to a riot at Smithfield market in London as early as in 1647, where the butchers burnt down the excise office and destroyed the fiscal records.

Today, excise duties are levied both for fiscal and non-fiscal purposes. However, it must be emphasised that over time governments rely to a diminishing extent on the revenue collected from these taxes due to the increasing importance of broad-based taxes such as personal income tax, corporate income tax and general sales taxes, such as value-added tax. According to OECD statistics, in the last fifty years, the share of excise duties in GDP recorded a downfall of 2,3 percentage points and their share of total taxation declined by 14,7 percentage points. Although in the OECD member states excise duties generally apply to alcoholic beverages, tobacco and energy products, they may also be used to tax other goods like means of transport, soft drinks, coffee and beverage packages. Among the OECD member states, there exist differences concerning the calculation of the excise tax base and excise tax rates. These differences reflect historical practice and local culture. They are also noticeable among excise duties applied in the European Union member states, where the harmonisation process of these taxes is rather advanced.

Since the 1970s, the European Union has been making attempts to adopt harmonisation measures in regard both to the structure and to the rates of excise duties. These attempts concern, in particular, alcohol and tobacco taxation. Common provisions were implemented in relation to categories of goods subject to excise duties, the production, storage and movement of excise products and certain elements of their tax design. Excise duties imposed on alcohol and tobacco are the subject of analysis in this article. It compares its application in two neighbouring European Union member states—Germany and Poland—taking into account especially their collection efficiency. It also considers certain theoretical aspects mentioned in the economic literature and related to excise duty imposition.

## **2. Theoretical Aspects of Excise Taxation**

Excise duties are usually differentiated from other taxes on the basis of specific features. They are imposed on a limited number of products (excise goods), are not due until the goods enter free circulation and are generally assessed by reference to diversified characteristics, such as weight, volume, quantity or strength and combined with *ad valorem* taxes (*Consumption Tax Trends*, 2016, p. 23). Excise duties are essential components of contemporary tax systems due to a wide array of their advantages, which comprise, in particular, convenience of assessment and collection, low administration and compliance costs, easily predictable revenue yield, high flexibility and simplicity of design.

As it is indicated in the economic literature, four motives may justify the application of excise duties; they include revenue-raising, progressivity-enhancing, externality-correcting, and harmful consumption-discouraging. Excise duties revenue potential should be viewed from the perspective of the Ramsey rule, which is commonly illustrated using the following formula:

$$\frac{t_G}{t_S} = \frac{\varepsilon_{SS}}{\varepsilon_{GG}}, \text{ where}$$

$t_S, t_G$ —excise tax rates for commodity G and S,  $\varepsilon_{GG}, \varepsilon_{SS}$ , —compensated own-price elasticities of demand.

Pursuant to this rule under certain conditions (absence of any income or profit taxes; identical individuals) raising revenue so as to minimize the deadweight loss requires imposing taxes in inverse relationship to the elasticity of demand and supply. It implies that high tax rates should be imposed on commodities with low price elasticities (Stiglitz, 2000, p. 566). As it is emphasised by S. Cnossen, since goods that have low price elasticities will tend to have low-income elasticities, the inverse-elasticity rule would result in heavier taxation being imposed on necessities rather than on luxuries and as a consequence would counter the concerns about equity (Smith, 2005, p. 61). A different implication may be drawn from the so-called Corlett and Hague rule, which is a transformation of the Ramsey rule, and which may be expressed by the following equation:

$$\frac{t_S / P_S}{t_G / P_G} = \frac{\varepsilon_{GG} + \varepsilon_{SS} + \varepsilon_{SL}}{\varepsilon_{GG} + \varepsilon_{SS} + \varepsilon_{GL}}, \text{ where}$$

$t_S, t_G$ —excise tax rates for commodity S and G,  $P_S, P_G$ —consumer prices paid for commodity S and G,  $\varepsilon_{GG}, \varepsilon_{SS}$ , —compensated own-price elasticities of demand,  $\varepsilon_{SL}, \varepsilon_{GL}$ —compensated cross-price elasticities between leisure and the demand for the two commodities.

Conforming to this equation, the commodity which is more complementary to leisure should carry a relatively high tax burden in order to offset the tendency of the tax system to induce substitution towards leisure (Sørensen, 2007, s. 386). Although the tax authorities cannot tax leisure, they can tax commodities that are consumed jointly with leisure, indirectly lowering the demand for leisure (Rosen & Gayer, 2008, p. 357). Multiple authors indicate that it is unclear whether tobacco and alcohol consumption is complementary to leisure. From one side, smoking and drinking may be associated with leisure; from the other, however, it may help some people to cope with stress and socialise with co-workers. As it was found in a study conducted by Crawford, Keen and Smith (2010, p. 319) that at a low consumption level alcohol may be complementary with work and at a higher level with leisure.

According to many studies, taxes imposed on tobacco and alcohol are assumed to be regressive with respect to income. They are also perceived as highly discriminatory. This regressivity in relation to tobacco taxation stems from two factors: proportionately, the poor spend a higher share of their income on cigarettes than the rich and as a group the poor smoke more than the rich (Cnossen & Smart, 2005, p. 41). A similar situation may be observed in the case of alcohol usage. Household alcohol spending as a percentage of income for the poorest income quintile was found to be five times that for the richest

quintile (Smith, 2005, p. 66). Excise duties, however, may also be rationalised as an instrument to improve the progressivity of the tax system. The promotion of progressivity by use of excise duties requires the fulfilment of the following conditions (Cnossen, 2010, p. 11):

- excise should be imposed on (luxury) goods or services whose income-elasticity of demand is higher than unity,
- consumption of higher income classes should be significant,
- it should be possible to break income-elastic goods (services) into sub-groups, allowing the application of graduated rates diversified on the basis of the price of taxable products.

Imposing excise taxation together with various forms of regulations may be considered as one of two possible ways to solve the problem of externalities caused by smoking and drinking. The literature reviewing the topic of externalities related to smoking and drinking is reasonably extensive. The most widely discussed are social costs of their addiction. Multiple authors and institutions provide for estimations of these costs. For instance, according to the National Social Marketing Centre in England, the social cost of alcohol in this country itself in the years 2006-2007 equaled nearly £ 55.1 billion (*Alcohol*, 2009, p. 31). Comprehensive analysis concerning the external cost of tobacco use was presented among others by Lightwood et al. (2000, pp. 63-99). The authors show that the costs of tobacco use (expressed in the cost of extra health needs of smokers) range yearly in the high-income countries from 0,1 to 1,1% of GDP.

The externalities caused by drinking alcohol or smoking may take the three following forms (Cnossen, 2009, pp. 21-22): direct externalities experienced by other individuals (especially family members), collectively born costs (e.g., costs of publicly funded medical treatment), revenue externalities arising through the tax system (smoking or drinking may have consequences for the customers' income, inter alia through a higher rate of sickness absence). Charging consumers or producers for external costs should induce them to reduce their activities to the socially optimal level. In order to achieve this purpose, excise tax rates should be equal to marginal external damages (Hines, 2007, p. 5). This principle of tax design is called Pigouvian prescription. Marginal costs of the damage caused to others are difficult to identify and measure; that is why in practice average external costs are estimated and a pooling approach is usually taken while charging for these costs (Albi & Martinez-Vazquez, 2011, p. 281). Particular problems may arise while designing the optimal taxes on alcohol. As it is pointed out by Griffith, O'Connell and Smith, the marginal externality of alcohol consumption varies across people (heavy drinkers buy a different mix of alcoholic products in comparison to the lighter drinkers); therefore, a single tax rate can no longer achieve the first best solution. In order to improve welfare, the authors suggest imposing higher tax rates on strong spirits than on the light ones (Griffith et al., 2017, online).

The excise on alcohol and tobacco may be advocated in terms of its role in discouraging consumption that has consequences beyond the immediate pleasure of the consumer itself (Crawford, Keen, & Smith, 2010, p. 319). Few authors consider the psychological considerations of excise duties imposed on alcohol and tobacco. Inter alia B. Frey characterizes three aspects in which excise duties depend on psychic

influences, namely (2005, pp. 234-238) fairness, weakness of will and crowding-out intrinsic motivation. The first is related to social acceptance of excise duties which tends to be higher when taxes are perceived to be fair. The second concerns rationalization of excise duties. They are not only meant to reduce externalities but also to restrict self-destructive tendencies. The third is based on crowding theory. A crowding-out effect may be observed after the introduction of a new excise duty or after excise rate increases when the application of this excise duty is by individuals considered to be controlling and when they previously had reduced, for intrinsic motives, their consumption. Moreover, the excise may be seen as a “licence to do” and may lead individuals to lose their “bad conscience” (Frey, 2005, p. 238).

Shughart suggests another motive for the application of excise duties. They can be used instead of fees when their proceeds are dedicated to financing the construction and maintenance of public goods or the provision of public services from which the taxpayers directly benefit (1997, p. 13). This motive, primarily mentioned with reference to road charges and environmental duties, was also extended to justify inter alia the taxation of alcohol and tobacco.

### **3. Main Features of Excise Tax Design in Germany and Poland**

The process of harmonization of excise duties in the European Union was initiated in the early 1970s by the issue of Directive 72/464/EEC, which outlined the key structure of tobacco taxation. This structure was redesigned and supplemented several times since its first introduction and in the current form is specified by Directive 2011/64/EU. This directive classifies different types of tobacco products, taking into account their features, and indicates the minimum level of excise duty for these products. The concept to create the foundations for a common excise system on beer, wine and spirits materialized with the implementation of Directive 92/83/EEC and Directive 92/84/EEC. The first directive provides for the catalogue of alcoholic beverages subject to taxation and the basis to calculate the duty; it also includes certain regulations concerning reduced tax rates for certain producers, products and geographical regions. The second directive sets out the minimum rates that are applied in European Union member states to each category of alcoholic beverage. Common provisions—horizontal rules—which apply to production movement and storage of excise goods are included in the Council Directive 2008/118/EC.

The harmonized system of excise duties and the abolition of fiscal frontiers in the 1990s was aimed at facilitating the trade and free movement of goods. Within the common system of excise, taxation goods are being moved from the country of origin to the country of destination under the duty suspension arrangement, placed under fiscal supervision and taxed in the country where they are released for consumption. Legislation harmonizing excise duties on tobacco, alcohol and energy products is one of the prerequisites for the proper functioning of the internal market. Application of the principle of subsidiarity authorizes some margin of tax sovereignty. As a result, there exist some national peculiarities within the system of excise duties applied in the European Union member states, which include the retention or introduction of duties other than the harmonized ones (Schröer-Schallenberg,

2012, p. 10).

**Table 1. Excise Duty Rates Imposed on Alcohol and Tobacco Products in Germany (Applicable in the Year 2017)**

Specification	Excise product	Unit	Rate
Excise duty on beer ( <i>Biersteuer</i> )	Full beer	hl/Plato	8.65 Euro
	Strong beer		12.59 Euro
	Wheat beer		10.23 Euro
Duty on distilled spirits ( <i>Branntweinsteuer</i> )	Distilled spirits produced in small bonded domestic distilleries with a yearly production of up to 4 hL of pure alcohol	hl of pure alcohol	730.00 Euro
	Distilled spirits produced by small domestic distilleries selling to the alcohol monopoly or distilling for individuals who provide their own raw materials		1022.00 Euro
	Other distilled spirits		1303.00 Euro
Duty on sparkling wine ( <i>Schaumweinsteuer</i> )	Sparkling wine, 6% alcohol by volume or over	hl of product	136.00 Euro
	Sparkling wine, below 6% alcohol by volume		51.00 Euro
Duty on intermediate products ( <i>Zwischenerzeugnis-steuer</i> )	Intermediate products, not exceeding 15% alcohol by volume and contained in bottles with “mushroom stoppers”, held down by ties or fastenings, or which have extra pressure, due to carbon dioxide in solution of three or more bars	hl of product	136.00 Euro
	Other intermediate products not exceeding 15% alcohol by volume		102.00 Euro
	Intermediate products exceeding 15% alcohol by volume		153.00 Euro
Duty on alkopops ( <i>Alkopopsteuer</i> )	Alkopops (pre-mixed beverages)	hl of pure alcohol	5550.00 Euro
Duty on tobacco ( <i>Tabaksteuer</i> )	Cigars and cigarillos	Euro/1000 pieces,	14.00/1000
		plus % of retail selling price	pieces, plus 1.47%
	Cigarettes		98.20/1000
			pieces, plus 21.69%
Fine-cut smoking tobacco	Euro/kg, plus % of retail selling price	Euro/kg, plus % of retail selling price	48.49/kg, plus 14.76%
	Pipe tobacco		15.66/kg, plus 13.13%

Source: (*Verbrauchssteuern*, 2017, online).

In Germany, excise duties on particular types of products are regulated by separate acts. These acts define the subject, the object, the tax base, the tax rates, the tax exemptions and the rules of paying the excise duty. Excise duties are collected everywhere in Germany, except the Island of Heligoland and the territory of B üsingen. They are levied on few non-harmonised excise products. These include coffee, alcopops, and electricity produced in nuclear power plants. By the end of 1992, the excise duty was also levied on sugar, salt, tea or lighting.

A tax that has a relatively long history in the group of taxes levied on alcoholic products in Germany is the excise duty on beer. It was collected already in the 13th century in the free imperial city of Ulm. Its current design is governed by the act on the excise duty on beer (Biersteuergesetz, 2009). Pursuant to section 1 of this act, the products to be taxed are beer and drinks which are the mixture of beer and soft drinks. Taxpayers are the operators of tax warehouses in which the product is produced, stored or reloaded or into or out of which this product is shipped. The provisions of the act quote a number of tax exemptions. Among the products exempt from taxation is, for example, beer used for the production of vinegar, flavours and flavouring substances, medicines and foodstuffs, provided that the content of pure alcohol in them does not exceed the legally specified limits (e.g., 8.5 litres per 100 kg of the product in the case of pralines). Exempt from the tax is also beer and drinks which are the mixture of beer and soft drinks earmarked for technological research or given for free to the employees of the producer. The tax due depends on the share of hop wort in a hectolitre of beer and varies along with the category of beer (full, strong, wheat beer). Standard rates of excise duties on alcohol and tobacco products applied in Germany are shown in Table 1. Reduced rates apply to breweries that meet certain statutory requirements, where the quantity of beer produced in a calendar year does not exceed 200 000 hectolitres.

Another harmonized excise duty is the tax on distilled spirits. It was introduced in Germany in the 19th century. The rules regarding this tax are codified in the Spirits Monopoly Act (Branntweinmonopolgesetz, 1922). It is levied on rectified spirit and other spirits containing more than 1.2% of alcohol, wine and beverages produced in the process of fermentation and a mixture of these beverages containing over 22% of alcohol. Just as in the case of the duty on beer, the taxpayers are entities running tax warehouses. The tax is levied at the time of collecting the taxed product from the tax warehouse. Alcohol used for the production of vinegar, flavourings, medicines, cleaning and heating products, as well as the one collected in order to determine the quality of the product and used in technological studies, is exempt from the duty on distilled spirits. The excise duty is determined based on the hectolitre of pure alcohol at 20 °C and calculated by reference to the number of hectolitres of pure alcohol. The rate of this tax is determined in euro per hectolitre of pure alcohol. A reduced rate is applied in the case of distilled spirits produced in small bonded domestic distilleries with a yearly production of up to 4 hL of pure alcohol.

The duty on sparkling wine is levied in accordance with the provisions of the Sparkling Wine and Intermediate Products Act (Schaumwein-und, 2009). It is levied on champagnes, sparkling wines of

high quality and wines produced on the basis of fruits. The alcohol content in the taxed product should be minimum 1.2% and maximum 15%. Products collected for the purpose of production of drinks that are not sparkling wines are exempt from taxation, as are those collected for the purpose of checking the quality of the product and for industrial purposes. Alcohol intermediate products are alcoholic liqueurs and wine-like products containing between 1.2% and 22% of alcohol and not classified as sparkling wines or beer (for example, Sherry or Porto). Both the subject of taxation and tax exemptions are similar in nature, as in the case of the previously discussed duty on distilled spirits. The tax rates on alcoholic intermediate products are reduced for products in which the alcohol content does not exceed 15%.

The tax on alcopops was introduced in Germany as of 1 July 2004 (Gesetz, 2004) for the purpose of better protection of young people from the harmful effects of alcohol consumption and tobacco smoking. This tax is also payable in the other member states of the European Union, for example, in France, Denmark and Luxembourg. Alcopops are defined as drinks (also in the frozen form) that are a mixture of beverage containing 1.2% of pure alcohol and drinks produced in the fermentation process containing more than 1.2% of pure alcohol with products taxed with duty on sparkling wines and intermediate products, and drinks of pure alcoholic content from 1.2% to 10%, sold in sealed packages and ready to drink right after opening. In the case of alcopops, the legislature envisages no tax exemptions. The amount of tax depends on the content of pure alcohol in the product.

Another excise duty subject to harmonisation in the European Union is the tax on tobacco products. This excise duty is regulated by the Act on duty imposed on cigarettes, cigars and tobacco (Tabaksteuergesetz, 2009). As it is the case with many other excise duties, the taxpayer is the operator of a tax warehouse and the tax is levied at the time of collecting the taxed item from a tax warehouse (Steuern, 2016, p. 124). The tax base is 1000 pieces in the case of cigarettes, cigars and cigarillos, and, in the case of other tobacco products, a kilogram of tobacco leaves used for the production of a particular product. The products exempt from tax are, inter alia, tobacco products collected or used as samples for scientific, industrial or official research, or given to employees by their manufacturer as allowances in kind.

In Poland, the principles of excise taxation are specified by the Act of 6 December 2008 on excise duty. The Act contains seven chapters governing the scope of taxation, the general tax design, the conditions for the movement of excise products under excise duty suspension arrangement and when excise duty is paid, the issues related to tax warehouses, the detailed rules of taxation of the particular types of products subject to excise duty, the marking procedures of products subject to these duty.

**Table 2. Excise Duty Rates Imposed on Alcohol and Tobacco Products in Poland (Applicable in the Year 2017)**

Excise product	Unit	Rate
Beer	hl/Plato	7.79 PLN
Ethyl alcohol	hl of pure alcohol	5704.00 PLN
Wine and other fermented beverages	hl of product	158.00 PLN
Cider & Perry ≤ 5% vol.	hl of product	97.00 PLN
Intermediate products	hl of product	318.00 PLN
Cigarettes	PLN/1000 pieces, plus % of retail selling price	206.76 PLN + 31.41%
Fine-cut smoking tobacco	PLN/kg, plus % of retail selling price	141.29 PLN + 31.41%
Cigars and cigarillos	Kg	393.00 PLN
Pipe tobacco	Kg	229.32 PLN

*Source: (Stawki podatku akcyzowego (stan na 1 stycznia 2017 r.), online).*

Excise taxpayers are, in particular, natural persons, legal persons and non-legal entities if they carry out taxable transactions, i.e., producers and importers of excise goods, operators shipping excise goods into tax warehouses or entities making intra-Community purchases of these products. Subject to taxation is the circulation of excise goods which, pursuant to Art. 2 of the Act, include energy products and electricity, alcoholic beverages, tobacco products and dried tobacco. The legislator also levies special taxes on trading coal products used for heating purposes and—using the right to tax products other than the ones mentioned in the Community regulations—imposes taxation on the trading of passenger cars. Due to the excise duty suspension arrangements, a number of events may be subject to taxation. Generally, the scope of taxation includes production, intra-community acquisition and import of excise products. Tax is also imposed, inter alia, on the shipment of excise goods into and out of a tax warehouse, as long as the procedure of excise duty suspension does not apply (the legislator provided in this case for certain additional conditions). Also, losses of excise goods are taxed, as well as their total destruction and use for the production of other goods.

In the case of the excise duty, the so-called principle of one-time taxation applies, which means that only one stage of trading is taxed. Tax liability generally arises from the date of the transaction or from the occurrence of an event subject to taxation. However, the Act provides for a number of special chargeable events, depending on the nature of the activity. The excise duty act defines each category of alcoholic and tobacco products subject to taxation. The first group includes ethyl alcohol, beer, wine, fermented beverages (e.g., Cider, Perry), intermediate products. The other group includes cigarettes, cigars, cigarillos and tobacco. The units for measurement of the tax base and the tax rates imposed on alcohol and tobacco products are included in Table 2.

The legislator has introduced a series of tax exemptions, some examples of which include—import of

tobacco products or alcoholic beverages in a consignment sent from a third country by an individual (natural person) to another individual resident in Poland if the following conditions are fulfilled: it is an occasional consignment; it includes excise goods intended exclusively for the personal use of the recipient or his family; the quantity and type of the excise goods do not indicate that they might be used for commercial purposes; the total value of the excise goods contained in the consignment does not exceed the equivalent of 45 euro; the consignee is not obliged to pay any fees to the sender in connection with the receipt of the consignment:

- import of tobacco products or alcoholic beverages brought in the personal luggage of a traveller, who must be at least 17, under statutory norms,
- imported undenatured ethyl alcohol purchased within the Community or produced domestically,
- taxable activities whose objects are excise goods that are intended to be used by the institutions of the European Union for the purpose of diplomatic or consular relations with statutorily defined international organizations.

#### 4. Collection Efficiency of Excise Duties on Alcohol and Tobacco

In Poland, indirect taxes play, by far, a more important role as a source of public revenue than direct taxes, whereas in Germany these two tax groups have similar fiscal significance. The primary sources of tax revenue in Germany are the wage withholding tax (*Lohnsteuer*) and the value added tax (*Umsatzsteuer*). In 2015, the revenue from these two taxes accounted for nearly 58.2% of total tax revenue of the general government. In Poland, the share of the most efficient taxes—the value added tax and the excise tax—in the tax revenue of the state budget reached 71.6%.

**Table 3. Revenue from Excise Duties in Germany in the Years 2006-2015**

Year	Unit of measurement	of Excise product								Excise duty in total
		Distilled spirits	Sparkling wine	Intermediate products	Alkopops	Beer	Tobacco products	Energy products	Other excise products	
2006	million euro	2160.0	421.0	26.0	6.0	779.0	14 387.0	46 189.0	973.0	64 941.0
	% of excise duties	3.3	0.6	0.0	0.0	1.2	22.2	71.1	1.6	100.0
2007	million euro	1959.0	371.0	25.0	3.0	757.0	14 254.0	45 310.0	1 086.0	63 765.0
	% of excise duties	3.1	0.6	0.0	0.0	1.2	22.2	71.1	1.8	100.0
2008	million euro	2126.0	430.0	27.0	3.0	739.0	13 575.0	45 509.0	1 008.0	63 417.0
	% of excise duties	3.4	0.7	0.0	0.0	1.2	22.1	71.4	1.4	100.0
2009	million euro	2101.0	446.0	26.0	2.0	730.0	13 366.0	46 100.0	997.0	63 768.0
	% of excise duties	3.2	0.6	0.0	0.0	1.1	22.1	71.6	1.4	100.0
2010	million euro	1990.0	422.0	22.0	2.0	713.0	13 492.0	46 009.0	1 002.0	63 652.0
	% of excise duties	3.1	0.7	0,0	0.0	1.1	22.2	71.3	1.6	100.0
2011	million euro	2149.0	454.0	16.0	2.0	702.0	14 414.0	47 283.0	1 950.0	66 970.0

	% of excise duties 3.2	0.7	0.0	0.0	1.0	21.6	70.6	2.9	100.0	
2012	million euro	2121.0	450.0	14.0	2.0	697.0	14 143.0	46 278.0	2 631.0	66 336.0
	% of excise duties 3.2	0.7	0.0	0.0	1.1	22.2	68.8	4.0	100.0	
2013	million euro	2102.0	434.0	14.0	2.0	669.0	13 820.0	46 373.0	2 306.0	65 720.0
	% of excise duties 3.2	0.7	0.0	0.0	1.0	22.2	69.6	3.3	100.0	
2014	million euro	2060.0	412.0	15.0	1.0	684.0	14 612.0	46 396.0	1 724.0	65 904.0
	% of excise duties 3.1	0.6	0.0	0.0	1.0	23.2	69.6	2.5	100.0	
2015	million euro	2070.0	429.0	14.0	2.0	676.0	14 921.0	46 187.0	2 403.0	66 702.0
	% of excise duties 3.1	0.5	0.0	0.0	1.0	23.1	69,2	3.1	100.0	

Source: (*Kassenmäßige Steuereinnahmen*, 2017, pp. 4-7).

**Table 4. Revenue from Excise Duties in Poland in the Years 2006-2015**

Year	Unit of measurement	Excise product					Excise	
		Ethyl alcohol	Wine	Beer	Tobacco products	Fuels	Other excise products	duty in total
2006	million PLN	4610.9	503.4	2734.0	11 248.0	17 667.7	5314.0	42 078.0
	% of excise duties	11.2	1.2	6.5	26.7	42.0	12.4	100.0
2007	million PLN	5309.7	499.1	3011.9	13 483.0	21 257.3	5464.5	49 025.5
	% of excise duties	10.8	1.0	6.1	27.5	43.4	11.2	100.0
2008	million PLN	5880.7	454.7	2984.2	13 460.1	21 949.6	5760.8	50 490.1
	% of excise duties	11.6	0.9	5.9	26.7	43.5	11.4	100.0
2009	million PLN	6393.5	464.9	3176.2	16 057.8	22 529.9	5304.6	53 926.9
	% of excise duties	11.9	0.9	5.9	29.8	41.8	9.7	100.0
2010	million PLN	6500.2	444.8	3298.3	17 436.3	22 675.4	5329.5	55 684.5
	% of excise duties	11.7	0.8	5.9	31.3	40.7	9.6	100.0
2011	million PLN	6445.1	428.9	3422.4	18 264.2	24 156.6	5246.5	57 963.7
	% of excise duties	11.2	0.8	5.9	31.5	41.6	9.0	100.0
2012	million PLN	6612.4	391.8	3579.5	18 578.7	26 126.9	5160.6	60 449.9
	% of excise duties	10.9	0.6	5.9	30.7	43.3	8.6	100.0
2013	million PLN	7158.8	372.7	3504.4	18 205.6	26 021.9	5389.7	60 653.1
	% of excise duties	11.8	0.6	5.8	30.0	42.9	8.9	100.0
2014	million PLN	6614.1	371.1	3565.9	17 922.7	27 457.6	5639.0	61 570.4
	% of excise duties	10.7	0.6	5.8	29.1	44.6	9.2	100.0
2015	million PLN	7509.4		3608.6	17 789.7	27 898.6	6002.3	62 808.6
	% of excise duties	12.0		5.7	28.3	44.4	9.6	100.0

Source: (*Analiza wykonania budżetu państwa*, 2008, p. 53, 2010, p. 56, 2012, p. 61; *Biuletyn Statystyczny Służby Celnej*, 2015, p. 8).

In both countries analysed, the excise duty has a relatively high revenue-raising potential. In Poland, all the revenue from the excise duty feeds the state budget. In Germany, all excise duties go to the federation's budget except for the beer tax, which feeds the budgets of particular states (*Länder*). In Germany, in 2015, the revenue from excise duties accounted for about 23.7% of the federal tax revenue. In the same year in Poland, the share of the revenue from the excise duty in the state budget's tax revenue amounted to nearly 24.2%. Judging from the OECD statistics, it should be noted that the efficiency of excise duties in Poland is higher than in Germany. In 2014, the share of excise duties in tax revenue in Poland was 4.4 percentage points higher than the OECD average of 7.6%. Poland and Estonia are the two EU countries with the highest excise duty share in the total tax revenue. In Germany, this share is slightly lower than the average for the OECD and was 6.1% in 2014. Between 1995 and 2014, this share was relatively stable in Poland and fluctuated by a maximum of 1.2 percentage points. In Germany, in the same period, it decreased by 1 percentage point.

The amount and structure of the revenue from excise duties depends on many factors, among which the key role is played by the type and the number of excise goods, the volume of sales in a country and the value of imports, tax rates, the range of tax reliefs and exemptions, the tax arrears and the scale of tax evasion. The crucial role is played by the level of the tax rates. If the legislator concentrates mainly on the fiscal efficiency of alcohol and tobacco duties, a moderate rate structure may be sufficient to generate stable revenue. If the tax is intended to have a significant impact on customer behavior, the higher tax rate may be required.

Research shows that in the case of tobacco and alcohol taxation, higher rates may reduce both the prevalence and intensity of abuse (*Consumption Tax Trends*, 2016, p. 125). When it comes to alcohol excise taxation, it must be noted that in Poland excise duties are imposed on still wine, sparkling wine and low alcohol still wine, while in Germany only sparkling wine is taxed. Tax rates for sparkling wine expressed in US dollars are in Germany more than three times higher than in Poland. Higher tax rates in Germany than in Poland (expressed in US dollars) also apply in the case of cigarettes and rolling tobacco.

In the countries analysed, the key role, when it comes to the collection efficiency of excise duties, is played by the harmonised excise products. In 2006-2015, the highest share of the revenue from the excise duty in Germany came from taxation of energy products. Its share in the total excise duty revenue ranged between 72.3% and 69.2% (Table 3). In Poland, the most fiscally efficient in the group of excise duties is the tax on motor fuels (Table 4). As it is, however, indicated by Cnossen, although, over the years, revenues from taxes on tobacco have declined in relative terms, they cannot be neglected as an important revenue source in the EU (Cnossen, 2003, p. 16). The same holds true for the excise duties on alcohol. In Germany, in 2015 the share of the excise duty on tobacco products in the total revenue from excise duties was lower than in Poland by about 5.2 percentage points. Between 2006 and 2015, the share of the excise duty on alcoholic products in Germany was also significantly lower. In both countries, the excise tax on tobacco products was the second most fiscally efficient of all

excise duties. In Germany, additional public revenue is generated by the excise tax on coffee, while in Poland, the excise tax is on passenger cars. In Germany, since 2011, the federation's budget has been additionally fed by the tax on electricity produced by nuclear power plants. In 2011, it brought the budget as much as 1371 million euros.

## 5. Conclusions

The share of the revenue from excise duties in the tax revenue of the state budget in Poland is several percentage points higher than in the case of the federal budget in Germany. In the group of excise duties, the dominant fiscal role in both countries is played by the tax on energy products. It should be noted that, in Germany, the share of revenue from the excise duty on energy products in the total revenue from the excise duty in the years 2006-2015 amounted to 70%. In Poland, this share of the tax on fuel did not exceed 45%.

The excise duty is collected in Poland from such alcoholic products as ethyl alcohol, wine (still, sparkling and low-alcohol) and beer. In Germany, it is not collected from still wine and low-alcohol wine. However, in Germany, the excise duty is imposed on the so-called alcopops. The purpose of this tax is to protect young people from the negative consequences of alcohol abuse, as the sugar contained in alcopops suppresses the taste of alcohol and facilitates its absorption into the blood. Therefore, they constitute a significant incentive for the consumption of alcohol, in particular by the underage. The tax rates imposed on sparkling wine expressed in dollars are several times higher in Germany than in Poland. But they are lower in Germany than in Poland in the case of beer and other alcoholic products. What is more, beer tax rates in Germany are among the lowest in Europe. In addition, the legislator has introduced different tax rates depending on the type of beer. Cigarettes and rolling tobacco are taxed higher in Germany than in Poland, but the tax rates on cigars in Germany are lower.

The excise tax on alcoholic and tobacco products is in Poland more fiscally efficient than in Germany. While the excise duty on these two groups of goods in Poland in 2006-2015 brought in 45% of the excise tax revenue, in Germany, it was only 28%. The total revenue from the taxation of excise goods was in this period significantly higher in Poland than in Germany. The share of revenue from the taxation of alcoholic beverages in Germany did not exceed 5% of the total revenue from excise duty, and approximately 1% of this revenue came from the tax on beer.

## References

- Albi, E., & Martinez-Vazquez, J. (2011). *The Elgar Guide to Tax Systems*. Cheltenham. Northampton: Edward Elgar. <https://doi.org/10.4337/9780857933898>
- Alcohol*. (2009). *First Report of Session 2009-2010*. London: House of Commons. Health Committee.
- Analiza wykonania budżetu państwa i założeń polityki pieniężnej w 2007 roku*. (2008). Warszawa: NIK.
- Analiza wykonania budżetu państwa i założeń polityki pieniężnej w 2009 roku*. (2010). Warszawa: NIK.
- Analiza wykonania budżetu państwa i założeń polityki pieniężnej w 2011 roku*. (2012). Warszawa: NIK.

- Biersteuergesetz vom 15. Juli 2009. (BGBl. I S. 1870, 1908), Das durch Artikel 1 des Gesetzes vom 16. Juni 2011 (BGBl. I S. 1090) geändert worden ist. (n.d.)*
- Biuletyn Statystyczny Szluby Celnej. (2016). I-IV kwartał 2015. Szluba Celna. Warszawa: Ministerstwo Finansów.*
- Branntweinmonopolgesetz in der im Bundesgesetzblatt Teil III, Gliederungsnummer 612-7, veröffentlichten bereinigten Fassung, das zuletzt durch Artikel 5 des Gesetzes vom 10. März 2017 (BGBl. I S. 420) geändert worden ist. (2017).*
- Carsten, F. L. (Ed.). (1961). *The New Cambridge Modern History. The Ascendancy of France*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CHOL9780521045445>
- Cnossen, S. (2003). *Taxing Tobacco in the European Union*. Rotterdam: Erasmus University Rotterdam.
- Cnossen, S. (2009). *Taxation and Regulation of Smoking, Drinking and Gambling in the European Union*. The Hague: CPB Netherlands Bureau for Economic Policy Analysis.
- Cnossen, S. (2010). *The Economics of Excise Taxation*. Georgia State University. Atlanta: Andrew Young School of Policy Studies.
- Cnossen, S., & Smart, M. (2005). Taxation of Tobacco. In S. Cnossen (Ed.), *Theory and Practice of Excise Taxation. Smoking, Drinking, Gambling, Polluting, and Driving*. Oxford: Oxford University Press. <https://doi.org/10.1093/0199278598.003.0002>
- Consumption Tax Trends. VAT/GST and excise rates. Trends and policy issues. (2016). Paris: OECD.*
- Council Directive 2008/118/EC of 16 December 2008 concerning the general arrangements for excise duty and repealing Directive 92/12/EEC (pp. 12-30). (2009).*
- Council Directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco (pp. 24-36). (2011).*
- Council Directive 72/464/EEC of 19 December 1972 on taxes other than turnover taxes which affect the consumption of manufactured tobacco (pp. 1-3). (1972).*
- Council Directive 92/83/EEC of 19 October 1992 on the harmonization of the structures of excise duties on alcohol and alcoholic beverages (pp. 21-27). (1992).*
- Council Directive 92/84/EEC of 19 October 1992 on the approximation of the rates of excise duties on alcohol and alcoholic beverages (pp. 29-31). (1992).*
- Crawford, I., Keen, M., & Smith, S. (2010). Value Added Tax and excises. In A. Stuart et al. (Eds.), *Dimensions of Tax Design: The Mirrlees Review*. New York: Oxford University Press.
- Frey, B. S. (2005). Excise Taxes: Economics, Politics and Psychology. In S. Cnossen (Ed.), *Theory and Practice of Excise Taxation. Smoking, Drinking, Gambling, Polluting, and Driving*. Oxford: Oxford University Press. <https://doi.org/10.1093/0199278598.003.0008>
- Fritschy W. (2003). A "Financial Revolution" Reconsidered: Public Finance in Holland during the Dutch Revolt 1568-1648. *The Economic History Review*, 56(1), 57-89. <https://doi.org/10.1111/1468-0289.00242>

- Gesetz über die Erhebung einer Sondersteuer auf alkoholhaltige Süßgetränke (Alkopops) zum Schutz junger Menschen, Alkopopsteuergesetz vom 23. Juli 2004 (BGBl. I S. 1857), das durch Artikel 6 des Gesetzes vom 21. Dezember 2010 (BGBl. I S. 2221) geändert worden ist.* (n.d.).
- Griffith, R. et al. (2017). *Designing alcohol taxes: Evidence from the UK market*. Retrieved April 30, 2017, from <http://www.voxeu.org/article/designing-alcohol-taxes>
- Hines, J. R. (2007). *Excise Taxes*. Ann Arbor: University of Michigan and NBER.
- Kassenmäßige Steuereinnahmen nach Steuerarten in den Kalenderjahren 2000-2015.* (2017). Berlin: BMF.
- Laffer, A. B. (2014). *Tobacco Taxation: Theory and Practice*. San Francisco: The Laffer Center at the Pacific Research Institute.
- Lightwood, J. et al. (2000). Estimating the costs of tobacco use. In P. Jha, & F. Chaloupka (Eds.), *Tobacco Control in Developing Countries. Executive Summary*. Oxford: Oxford University Press.
- Rosen, H. S., & Gayer, T. (2008). *Public Finance*. New York: McGraw-Hill/Irwin. [https://doi.org/10.1007/978-0-387-75870-1\\_22](https://doi.org/10.1007/978-0-387-75870-1_22)
- Schaumwein-und Zwischenerzeugnissteuergesetz vom 15. Juli 2009 (BGBl. I S. 1870, 1896), das zuletzt durch Artikel 8 des Gesetzes vom 10. März 2017 (BGBl. I S. 420) geändert worden ist.* (n.d.).
- Schröer-Schallenberg, S. (2012). The legality of non-harmonized excise duties in the European internal market using the Federal Republic of Germany as an example. *World Customs Journal*, 6(2), 9-18.
- Shughart II, W. F. (Ed.). (1997). *Taxing Choice. The Predatory Politics of Fiscal Discrimination*. London: Transaction Publishers, New Brunswick.
- Smith, S. (2005). Economic Issues in Alcohol Taxation. In S. Cnossen (Ed.), *Theory and Practice of Excise Taxation. Smoking, Drinking, Gambling, Polluting, and Driving*. Oxford: Oxford University Press. <https://doi.org/10.1093/0199278598.003.0003>
- Sørensen, P. B. (2007). The theory of optimal taxation: What is the policy relevance? *International Tax and Public Finance*, 14(4), 383-406. <https://doi.org/10.1007/s10797-007-9024-1>
- Stawki podatku akcyzowego (stan na 1 stycznia 2017 r.)*. (n.d.). Retrieved April 10, 2017, from <http://www.finanse.mf.gov.pl/documents/766655/927897/Stawki++akczyzy+2017.pdf>
- Steuern von A bis Z*. (2016). Berlin: Bundesministerium der Finanzen.
- Stiglitz, J. E. (2000). *Economics of the Public Sector*. New York: W. W. Norton & Company Inc.
- Tabaksteuergesetz vom 15. Juli 2009 (BGBl. I S. 1870), das zuletzt durch Artikel 6 des Gesetzes vom 4. April 2016 (BGBl. I S. 569) geändert worden ist.* (n.d.).
- Ustawa z dnia 6 grudnia 2008 roku o podatku akcyzowym, Dz. U. z 2017 r., poz. 43.* (n.d.).
- Verbrauchssteuern.* (n.d.). Retrieved April 10, 2017, from [http://www.zoll.de/DE/Fachthemen/Steuern/Verbrauchssteuern/verbrauchssteuern\\_node.html](http://www.zoll.de/DE/Fachthemen/Steuern/Verbrauchssteuern/verbrauchssteuern_node.html)