

RELATED NATIONAL-ECONOMIC IMPACTS AND PARTICULARITIES OF THE CONSUMPTION TAXATION (CASE OF THE SLOVAK REPUBLIC)

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Abstract

Goods burdened by excise duty are liable to tax already when they are produced, transported or imported. Together with the increase in the tax rate and the state budget revenue there occurs an expected decrease in domestic production of a given commodity, which also affects the related sectors. It should be compensated by increasing imports, which will be reflected in a negative trade balance and lead to other economic consequences. The political and legal implications should also be taken into consideration, as excise duties are highly harmonised. The main objective of the

paper is to analyse excise duties on alcoholic beverages in relation to selected macroeconomic indicators in the Slovak Republic. The comparative analyses were carried out to capture the evolution of individual quantities and their changes over a period of time, highlighting the breakthrough periods. Our research shows that a positive relationship may not always be observed between total consumption of alcoholic beverages and revenue from excise duty on alcoholic beverages. The paper concludes with the outline of political and social recommendations for practice in the field of alcoholic beverage taxation.

Key words: *Excise Duty, Alcoholic Beverages Consumption, Domestic Production*

INTRODUCTION

Tax policy is related to the use and application of taxes and their instruments which serve to influence the macroeconomic and microeconomic processes in the economy. Tax policy of the state is largely influenced by the normative measures taken and effective procedures for the collection of taxes and the elimination of tax evasion and fraud [Schultzová 2020].

A substantial and regular part of public budget revenue consists of excise duties. It relates only to specific types of products, such as alcoholic beverages, tobacco products, mineral oils and energies. Excise duties represent indirect taxes of selective nature which apply only to the selected types of products. This type of taxes brings stable revenue to states. Revenue can be well estimated and the taxes are directed to national budgets. That is why they are also an important political and social instrument, because governments can redistribute resources from them according the needs of the population. Political and legal sciences also respond to their application. The term “signalling effect of taxes” is used in relation with them. Additional taxation brings an effort of sending a signal to the consumer that the consumption of alcohol and tobacco products causes health problems, or the use of the selected types of energies means an environmental burden. They should discourage from their harmful consumption. When analysing their impact, the characteristics of the individual goods demand must be considered. Actually, it often happens that an increase in tax rate and the consequent effects of tax incidence on various market levels leads to a potential change in the final price ultimately paid by the consumer.

Altogether with increasing rate and state budget revenue there occurs an expected decrease in domestic production of a given commodity, which also relates to the associated sectors. It should be compensated by the increase in the import of a given commodity. Therefore, it is necessary to examine this issue in a wider context, know the mechanisms of the transfer influence and the impact of excise duties, be aware

of the chain reaction in the economy and continuously point at the macroeconomic relations in terms of these taxes rates.

In the economy one has to be aware of the fact that e.g. small changes in consumption or investments cause big changes in the output of GDP. The market is globalizing and the term “national economic” gets in the background. The protection of internal market by the use of subventions undermines justice, therefore the tax system seems to become suitable regulatory means for levelling out inequalities. Little attention is paid in the literature to the level of excise duty rates and their national-economic impacts. The state budget revenue is rather taken in consideration when increasing them.

1. LITERATURE REVIEW

The subject of the researches of many empirical studies is the impact of the prices and the income level on the consumption of the products subject to the excise duty taxation. Different taxation of goods which are subject to excise duty and higher rates imposed on them are economically justifiable, if the issue is looked at from the fiscal point of view. A consumer decides to buy them optionally. It means that the tax is characteristic by optionality, too. The consumer himself decides whether to buy or not to buy the goods. Despite the growth of the prices the consumption and demand for these goods remain the same due to the addictiveness. Therefore, distortion caused by the imposition of tax is quite small. Behaviourism, which is based on the knowledge of human psyche, agrees with the opinion of the simplicity of tax structure. Simple tax collection and gaining tax information are important for this theory. The success of taxation is attributed especially to the sense of justice and honesty each person has, and the effort to avoid penalties. While there are many exceptions and exemptions in case of direct taxation, everybody is subject to excise duties because of their consumption.

However, a key factor is the determination of the taxation of luxurious and common commodities. The increase of their tax rate should lead to the decrease of the consumption. The goods which are beneficial for health should be taxed by lower rates, since they can prevent impaired health and therefore increase the productivity of people and time spend at work. It will increase the total economic growth [Prammer 2011]. Economic growth is stimulated through fiscal policy instruments which, in addition to maintaining aggregate fiscal discipline, promote the economic and efficient use of public resources [Belkovicsová & Boór 2021].

In case of indirect taxes, the negative impact on the long-term economic growth has not been proved. They have rather positive impact. It is necessary to implement green taxes and increase consumption tax if necessary [Vrábliková 2016]. It is necessary to pass from income tax burden to excise duties, which should be progressive. It represents the way to solve growing property inequality. Such taxes do not tax savings and motivate companies to invest more [Rogoff & Cabot 2019]. Until recently the

motivation for the collection of these taxes has been higher fiscal income. However, nowadays contribution to public health is much more emphasized. Countries try to change consumption behaviour of people by the means of higher taxes. Taxes on tobacco and alcoholic beverages have been applied for a long time in all EU countries. Countries have currently started to introduce taxes also on unhealthy food and non-alcoholic drinks. These taxes generally have a good impact on health and they reduce the costs of health care [Sassi et al. 2014]. The demand is not significantly sensitive to price changes, but the tax rates are on such a high level that they cause a shift in the consumption. They are also generally accepted by the society. On the other hand, the taxes imposed on new types of food and drinks are unpopular and governments use them very rarely.

The adverse effects of the excessive alcohol consumption on the income and investments to human capital are studied, while alcohol drinking is an activity done in leisure time [Mullahy & Sindelar 2000]. The consumption of beer in relation to the income was studied by the means of regressive analysis. The relation between the income and beer consumption has inverse shape [Colen & Swinnen 2010]. It means that the beer consumption initially increases with the growing income but it decreases at the higher level of income. The fact that trade and globalisation are more open actually contributed to the convergence in the structure of alcohol consumption in separate countries and climatic conditions, religion and relative price also influence the beer consumption. The demand for alcoholic drinks is non-flexible for all classes of alcoholic beverages, i.e. beer, wine and spirits [Heien & Pompelli 1989]. In 1993 it was assumed that the implementation of the EU single market would lead to the increase of tax competition, mostly the interaction in the regulation of excise duties in the EU countries. From the data of the selected EU countries from 1987 to 2004 it follows that it happened in case of non-sparkling and sparkling wine, beer and ethyl alcohol [Lockwood & Migali 2009]. The high degree of harmonisation provides countries with a secure legal framework and the need for continuous alignment with supranational directives. Similar experiences in other Member States ensure a high level of effective collection and application of excise duties. Also increasing demands for quality communication with the financial administration in Slovakia are related to new digital projects that increase the efficiency of tax collection [Ihnatišinová 2021].

2. RESEARCH OBJECTIVE, DATA AND METHODOLOGY

Taxes, which are the result of political decisions in each country, influence the behaviour of taxpayers. Therefore, it is necessary to pay more attention to increasing excise duty rates in relation to the national-economic impacts on the economy, with the emphasis on the effective tax collection.

The main objective of this paper is to analyse excise duties on alcoholic beverages in relation to selected macroeconomic indicators in the Slovak Republic, whether it is the relationship of changes in the excise duty rate on alcoholic beverages to the level

of state budget revenues, to the trade balance, domestic production and consumption. We focused on two research questions: (i) Is there a positive relationship between the consumption of alcoholic beverages and the revenue from the excise duty on alcoholic beverages? (ii) Is it possible to change consumer behaviour by increasing excise duty rates in order to improve public health?

The period monitored is 1999-2021. The analysed data were obtained from the Ministry of Agriculture and Rural Development of the Slovak Republic (MPRV SR) – e.g. Green Reports or data obtained on the basis of a request for access to information according to Act No. 211/2000 Coll. on Free Access to Information and on Amendments and Additions to Certain Acts (hereinafter referred to as “requested data”); The Statistical Office of the Slovak Republic (ŠÚ SR) and The Central Control and Testing Institute in Agriculture (ÚKSÚP).

During the research, inductive-deductive method was used for sorting information, the method of analysis and synthesis for processing the statistical data. The correlation was used to examine and prove the direct, indirect and null relationship between the examined quantities. The comparative analyses were carried out to capture the evolution of individual quantities and their changes over a period of time, highlighting the breakthrough periods. The current situation as well as the situation from the previous years was analysed, i.e. ex post and ex ante - the estimated future development. Long-term analyses were used (within the horizon of 23 years), which consider the share of individual selected excise duties on the state budget revenue and the total income of excise duties, too. Short-term analyses pointed out the way the changes of the height of excise duty rate influenced the state budget revenue. Partial analyses were also done, such as the effect of selected excise duties on macroeconomic indicators and summary analyses, i.e. examination of excise duties complexly. On the basis of the results of the analyses, measures and recommendations were formulated in the conclusion.

3. RESULTS

If we want to monitor and analyse individual macro-economic indicators in relation to excise duties we have to be aware of the situation on the market as well as in the sectors and related sections which have a significant impact on their behaviour. Agriculture and food industry are such sectors. The share of consumption spending on food, beverages and tobacco in the total consumer spending of Slovak households has not significantly changed in course of the analysed period (table 1).

Table 1. The Share of Food, Beverages and Tobacco in Consumption Expenditure, in %

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Food and Non-Alcoholic Beverages	28.44	26.67	26.48	25.75	25.96	26.3	24.8	24.5	24.6	24.1	24.8
Alcoholic Beverages and Tobacco	3.36	3.12	3.10	3.00	3.09	3.0	2.9	2.9	2.8	3.0	3.4
Total	31.80	29.80	29.58	28.75	29.06	29.3	27.7	27.4	27.4	27.1	28.2
	2011	2012	2013	2014	2015	2016	2017	2018	2019		
Food and Non-Alcoholic Beverages	24.4	24.9	25.7	25.6	21.7	21.87	22.41	22.77	23.16		
Alcoholic Beverages and Tobacco	3.3	3.2	3.3	3.5	3.12	3.11	3.05	3.07	3.02		
Total	27.7	28.1	29.0	29.1	24.82	24.98	25.46	25.85	26.18		

Note: National Agricultural and Food Centre – Research Institute of Agriculture and Food Economics (NAFC-RIAFE) calculations.

Source: MPRV SR and NAFC-RIAFE, 2022, Reports on Agriculture and Food Sector in the Slovak Republic (Green Reports 2009-2021).

The position of agricultural and food products within the foreign market has been continuously worsening and the negative balance has been increasing. A higher dynamic of the decrease in export in comparison to import increased the negative trade balance in 2009 to the value of - 950 million EUR and the negative balance continued to deepen. In 2015 it reached the level of - 1,096 million EUR and in 2018 it was - 1,648.1 million EUR. It means the annual drop by 19.3 %. Continuously negative balance can be also seen within the monitored commodities. The factors which has had an influence on the negative development of the foreign trade include the drop of the demand resulting from the world economy crisis, the uncertainty in financial markets which caused the devaluation of the currencies of neighbouring countries. It led to the reduction of the price of imported products and overpricing of export. More stable and stronger EURO temporarily made the re-exported products more expensive. It led to the temporary loss of competitiveness. Other factors which influence the negative development of the foreign trade and they have persisted till now include insufficient domestic production, poor harvest and bad climatic conditions.

Commodities subject to excise duty are usually not regular consumption products. The market is oversaturated, i.e. it is not a problem to produce them, but it is a problem to sell them. The market capacity of domestic producers stagnates, but the contrary can be seen in case of grower distilleries and small breweries. The space for foreign suppliers opens in compliance with the free market principles. However, the economic power is misused against producers during business negotiations and

contractual relations. Foreign investors are given tax holidays as a bonus for job creation, while there is the support of travelling for work in the form of transport allowance. The production of the studied commodities is closely related to the agricultural production. In the current situation we import commodities we are able to produce. Slovak production is difficult to promote. It is observable on the fact that Slovak foods are represented in retail chains in 38.6 % (August 2019) and passive trade balance with this commodity in 2018 was 1.648 billion EUR. In 2019, it was at the level of 1.5 billion EUR. The highest share in the representation of Slovak products in Slovak shops have the categories of milk (70 %), water and mineral water (58 %), wine and beer (51 %) and spirits and liqueurs (49 %). Until 2018 the employment rate in agriculture was declining, but in the course of 2019, it increased after the long-term decline and is now about 75,000 people. This development has a negative impact on the development of country, landscaping, settlement maintenance - the development of housing infrastructure and use of state investments in countryside; and last but not least domestic production. Many enterprises feel that they have no stimulation for investments into innovation of assortment, packages or marketing. They are only aimed at the maintenance of the market with the assortment available.

Breakthrough periods within the determination of the tax rate on alcoholic beverages in the Slovak Republic:

- The tax rate was modified in March 2010 the last time and thanks to this modification the year 2010 was one of the worst years in the history for distilleries (the statistics of the Ministry of Agriculture states the annual decrease in the alcohol production in 2010 by 14.2 % - related to the period after the economy crisis). It was intensified by the bad harvest and the decline in the interest in the distillation of fermented fruit as well as frontloading of retail. Since the tax change was announced in advance of 7 months, retail had enough time to frontload. The increase in rate resulted in the shopping tourism to neighbouring states, the transfer of consumption abroad. The reduction of consumption also reduces the savings and the reduction of production reduces employment.
- In 2003 the excise duty on beer doubled. The first increase happened on 1st January 2003, when the core of taxation changed and the other increase of rate happened on 1st August 2003. The increase in the excise duty on beer is not as frequent as in case of spirit in the monitored period. It is caused by the fact that the rate changed twice within one year. It is assumed that if the increase divided in several years the impact on the brewing industry would not be so significant.
- The only commodity with the zero rate (since 2001) is currently still wine. The introduction of non-zero excise duty would be a stimulus for many producers to search for the ways of circumventing the laws. It would increase the administration burden and it would mean the increase in funding the administration and controlling of such a non-zero tax. On the other hand, still wine with zero rate has a big competitive advantage against other types of alcohol. The importers of

cheap foreign wine benefit from it the most. They consequently compete with the domestic producers of spirits, beer and the domestic producers of wine in the end.

3.1. Specifications Related to the Taxation of Alcoholic Beverages Consumption

Since 1999, the distilling industry has undergone a turbulent development, while after 2010 and after the last increase of the rate the situation became stable. As the revenue from the excise duty on spirit was growing, the import of a given commodity was growing too and the production and export were going down. The increase in the rates of the excise duty of spirit in the monitored period generally represented the growing revenue for the state budget. However, the above mentioned fact had a negative effect on the domestic production and trade balance. The production of raw spirit from 1999 (15,065,000 l/year) to 2016 (5,859 l/year) dropped rapidly and its production was ceased in 2017 and 2018.

In the monitored period the beer production in the Slovak Republic dropped from 1999 (from 4.411 hl) to 2018 (to the level of 2.615 hl of beer). In 2002, a year before the double increase in the rate of the excise duty on beer, 4.829 million hl of beer was produced. The excise duty on beer which was paid to the state budget was 44.4 million EUR. In 2004, a year after the double increase of the rate, the production dropped by 585,443 hl of beer to 4,243 million hl and the state collected 67.7 million EUR on the tax on beer. In 2009, when the production was at the level of 3.506 million hl, the collection of the beer tax reduced to 59.2 million EUR and the decrease in the collection also continued in 2010, when the amount of 55.9 million EUR was collected on the excise tax on beer. In the recent years the production has been moving around 3 million hl. The decreasing production has been substituted by the import. The turning years for brewing industry were 2008 and 2009. In 2009 the import was annually growing quicker by 198 % than export which grew by 7 % in comparison to 2008. The double increase in the rate of the excise duty on beer in 2003 which reflected in the price of beer meant the administrative intervention in the Slovak beer market. In a short-time horizon (one or two years) the commodity gets more expensive within the multiple price increase. It will reflect in the production drop. Currently, a potential increase in the excise duty rate on the alcoholic beverages - beer had a more significant effect on small breweries which has registered the growth in Slovakia.

The area of vineyards in Slovakia gets smaller due to the road construction and reclassification to building lands. Vineyards are set to grow at least for thirty years and it cannot be done on unsettled lands (an agreement of more than a half of the owners is necessary for a new planting). The fertility of older vineyards decreases from year to year and it reaches only the half of European average. In 2018, the Central Control and Testing Institute in Agriculture (ÚKSÚP, 2018) registers in the vineyard register the vineyard area of 15,358 ha and the Statistical Office of the Slovak Republic states the vineyard area of 10,625 ha. The domestic production had a 25 % share on the total vine offer in 2018. It is 6.5 percentage points more than a year before.

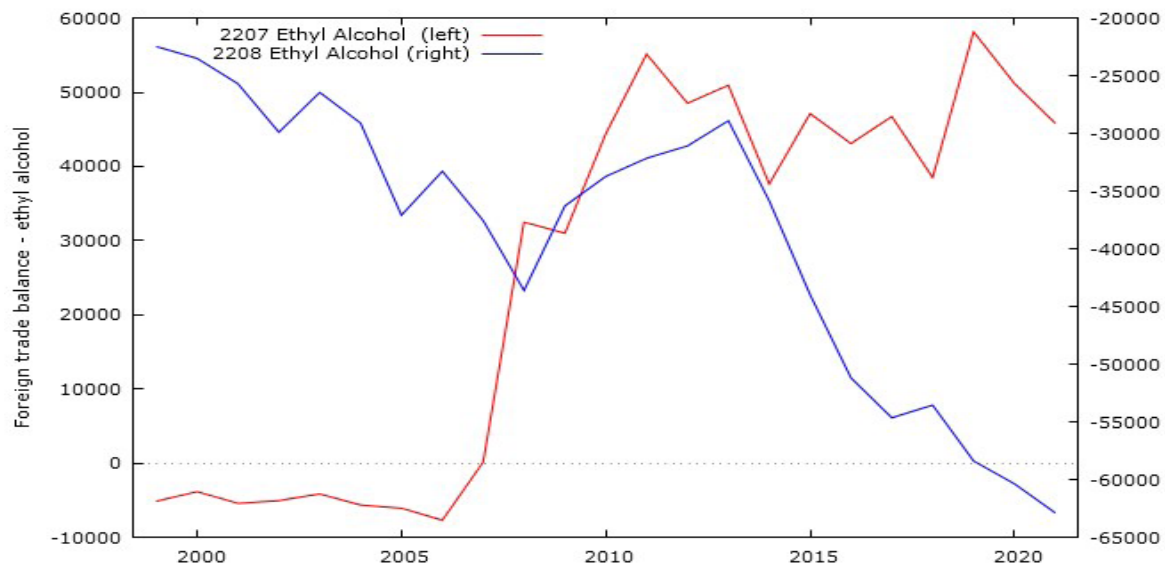
In case of the excise duty on alcoholic beverages in the Slovak Republic we can observe that the increase of the rate strangled the export and supported the import, on the other hand. In case of all monitored commodities which are subject to excise duty on alcoholic beverages we reach the negative trade balance. Domestic producers ceased to exist and foreign investors came to the market. They fused the production and support the import of their brands from abroad. It generally applies that producers have the possibility not to assign the increased rate of excise duties to the price of goods. A question arises about a potential reaction of retail chains which could be interested in the compensation of the loss from the reduced volume of alcohol sales this way. It had to be considered that the policy of retail chains is also the sale of certain products for subsidized price to attract customers who would then buy other goods, too. It can be concluded that the system of taxation by excise duties does not differ between domestic and exported goods. However, an increase in the rate indirectly affects producers. In the case of imports, we can also observe an increasing trend towards globalisation and an open economy.

Since 2004, the annual increase of the state budget revenue from the excise duty on alcohol has been done by increasing the tax rate and importing the commodity of HSN Code 2208. Domestic production of raw spirit went down in the monitored period and the production of refined spirit and spirits was stable till the end of 2008 (in 2008 the capacities for the production of raw spirit were used only up to 3.71 % and in case of spirits only to 47.09 %). The increase in the rate on tax on spirit, which a customer will pay in the end in the price of the goods, can mitigate the purchases in the retail chain. It will reflect into the mitigation of domestic production as well as the legal import for the retail chain. The negative development is reflected in the efficiency of production capacities. If the production capacity significantly decreases, as it happened in distilling factories in 2014 in case of raw spirit, then the % of the efficiency of production capacities will rise.

In the alcohol trade balance, the system of terminology of the customs tariff is applied (HSN Codes): 2207 (undenatured ethyl alcohol of an alcoholic strength by volume of 80 % vol. or higher; ethyl alcohol and other spirits, denatured of any strength) and 2208 (undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol., liqueurs and other spirituous beverages).

In the figure 1, the permanently negative trade balance for commodity of HSN Code 2208 can be seen.

Negative trade balance for 2208 ethyl alcohol deepened even more after 2014. Only in the period from 2009 to 2013 the negative balance was reduced due to the reduced import. This trend was being monitored mainly after the economic crisis which had caused the mitigation of production abroad, too. The adverse trend of the production was also reflected in the trade balance of the commodity of the customs tariff 2207 till 2006. In 2007 technical spirit which is added to fuels started to be produced. However, it is denatured. It means that it is exempt of the excise duty.

Fig. 1. Foreign Trade Balance of Commodities 2207 and 2208 from 1999 to 2021 (thousand EUR)

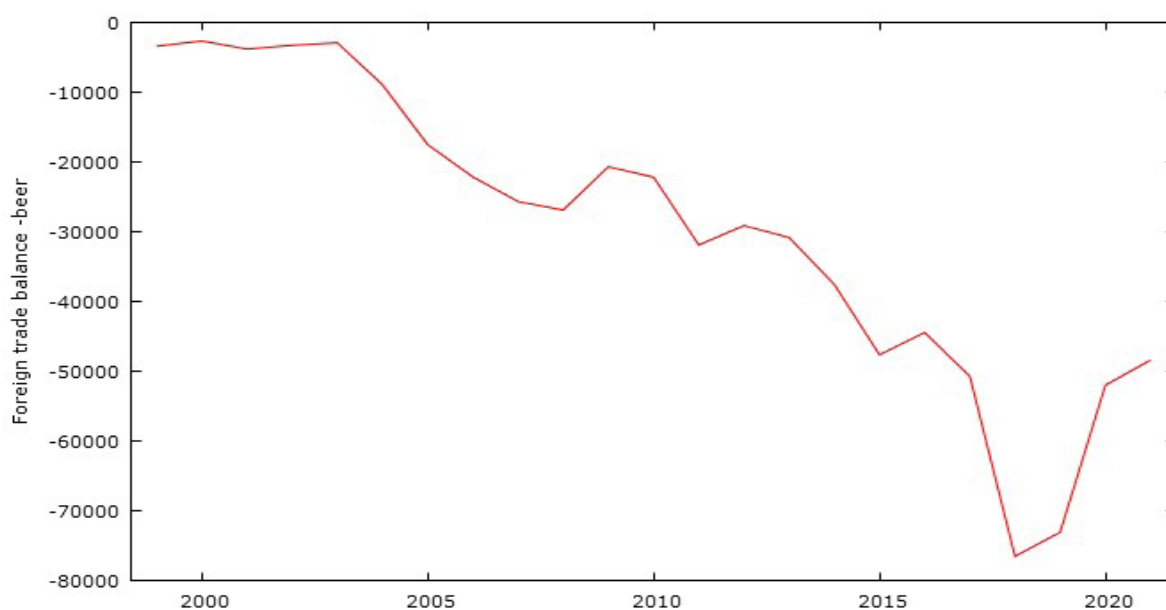
Note: The increase in the rate of the excise duty on alcohol in 2000, 2004, 2006 and 2010. Own figure.

Source: Ministry of Agriculture and Rural Development of the Slovak Republic (MPRV SR), requested data.

After 2008, the economic crisis resulted in the bigger pressure mainly on the quality of provided services in case of beer. It meant the decrease of unified types of beer and the increase of the types of beer with an own specific character.

Small breweries with annual beer production at the level of several thousand hectolitres build on the local-patriotism of the beer drinkers of their area and specific taste. The beer production in big breweries is continuously going down. The efficiency of production capacities was at the level of 63.9 % in 2018. Since the double increase in the rate in 2003 the production has been going down and it dropped by 2,068,501 hl of beer in comparison to 2018. Apart from the rate increase the reason for the production drop in domestic breweries is also the change of the behaviour of consumers, i.e. preference for other beverages, prices of primary raw materials which are mainly influenced by poor harvest. Therefore, from the point of view of employment in the region the support of small breweries seems to be reasonable.

In the trade balance of the commodity with the HSN Code 2203 beer made of malt, the Slovak Republic has a permanent negative balance as evidenced in the figure 2. In the year-on-year terms the negative balance of foreign trade deepened the most in 2018, when it increased almost by 25.798 million EUR in comparison to 2017. Therefore, the foreign trade balance deepened by 73,624.11 thousand EUR from 2003 to 2018, the import increased by 68,113.23 thousand EUR and the export decreased by 5,510.88 thousand EUR. Especially due to the growing import of the commodity 2203 in the recent fifteen years the state budget revenue from this excise duty has been growing. Since 2019, the opposite trend can be observed, which is due to a rise in exports and a fall in imports. The COVID-19 pandemic also had a positive impact on the situation, due to a more significant decrease in imports.

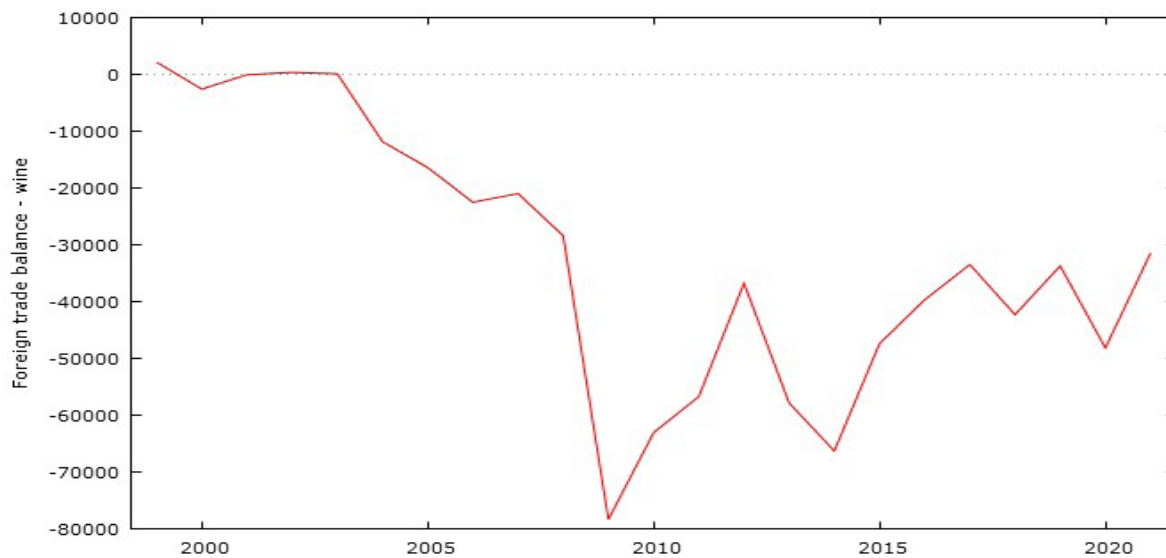
Fig. 2. Foreign Trade Balance - Beer made of Malt from 1999 to 2021 (thousand EUR)

Note: The increase in the rate of the excise duty on beer in 2000 and 2003. Own figure.

Source: Ministry of Agriculture and Rural Development of the Slovak Republic (MPRV SR), requested data.

The unfavourable trend in the development of wine sector is proved by the fact that the production of grape wine was in loss of 1 million EUR in 2009. The production capacities went down as well as their efficiency. Since 2011 the growth has been observed in comparison to the previous period from 2005 to 2010. The growth was not only linked to the production, but also to production capacities in grape wine. This production growth fully reflects the consumer preferences, since the consumption of wine per a person made from the domestic raw material was growing from 15.4 l/person in 2010 to 20.9 l/person in 2014. Since 2014 the decrease in consumption as well as import can be registered. On the contrary, the export of wine has been growing. The import of wine made of fresh grapes grew 14.68-times in the period from 1999 to 2015 from the level of 5,082.38 thousand EUR to the level of 74,592.3 thousand EUR. The export grew 4.46 times in the monitored period.

In 1999, we had positive foreign trade balance of 2,156.19 thousand EUR in the monitored commodity. The unfavourable situation in viticulture in the Slovak Republic after joining the EU linked to the continuous deepening of negative foreign trade balance culminated in 2009 as evidenced by the following figure 3. The highest negative balance (-78,351.64 thousand EUR) was reached that year. In 2021, we had the negative foreign trade balance of -31,457.5 thousand EUR. According to the data of the Association of grape and wine producers from 2017 up to 70 % of exported wine belongs to the category of the cheapest wine (Green Report 2018 of Ministry of Agriculture and Rural Development of the Slovak Republic). At the same time, 85 % of total Slovak production is made up of quality wines and quality wines with attributes.

Fig. 3. Foreign Trade Balance - Wine made of Fresh Grapes from 1999 to 2021 (thousand EUR)

Note: The increase in the rate of the excise duty on wine in 2001, 2002, 2003 and 2012. Own figure.

Source: Ministry of Agriculture and Rural Development of the Slovak Republic (MPRV SR), requested data.

3.1.1. Alcoholic Beverages Consumption

The increase in the excise duty rate reduces the attraction of investing in the given sector, so it became less competitive, especially in the Central European region. Based on the analysis and observation the decreasing trend in the alcohol and alcohol beverages consumption is shown from the long-term point of view. Their consumption varies in individual years. Since 2009 we can observe the gradual decreasing trend with slight fluctuations in individual years. The decrease in the consumption of alcoholic beverages is caused by the trend of healthy lifestyle as well as the improved public healthcare. This development can be observed in case of spirit. If the rate of the tax increases the consumption goes down. It can be documented using the data from 2000 to 2001, when the decrease in the spirit and spirit beverages as well as state budget revenue went down following the increase of the rate.

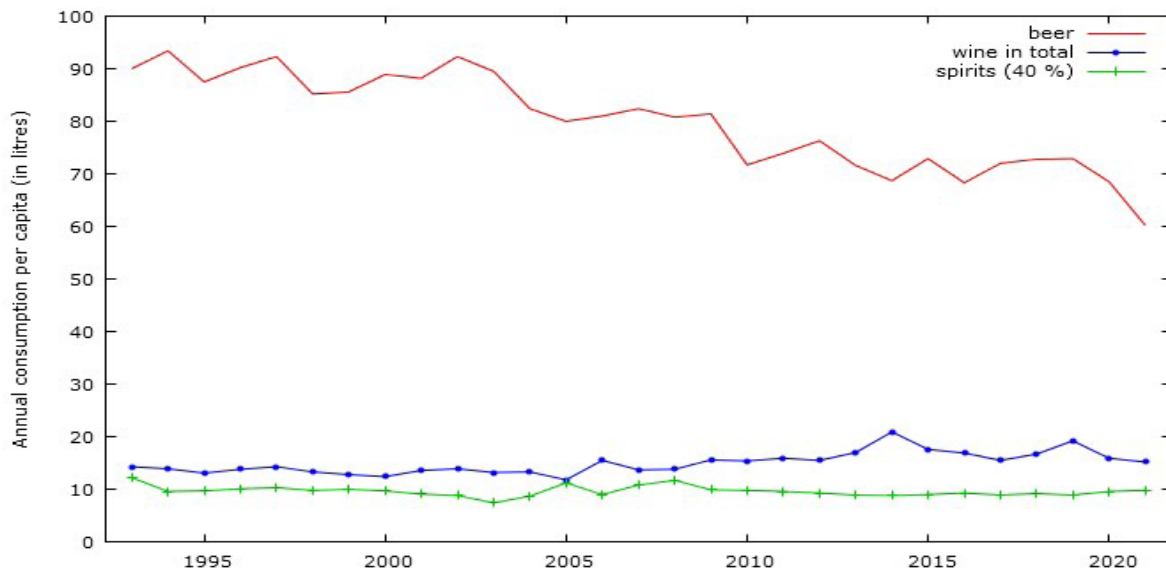
A similar situation happened in case of liquors in the production period following the increase of the rate, i.e. 2001/2002, 2005/2006, 2007/2008. The budget does not have to correspond to the expectations and the statement “if I increase the tax, I will increase the state budget revenue” might not be valid. Therefore, the increase of the excise duty reflected in the prices and the demand for alcohol went down or was substituted.

The opposite trend occurred after the increase of the rate on alcoholic beverages, i.e. spirit in 2004 (the change of the taxation system, a basic and reduced rate started to be applied, the basic one remained the same, the expression of volume changed from l/year to hl/year) and 2006, when a year after the consumption as well as the state budget revenue grew. In the following year a more significant drop of trade balance happened in case of the commodity of spirit, i.e. the increase in the import and the

decrease in the export. It happened only once in case of liquors in the production period following the rate increase (in 2011/2012). The departure from the consumption of hard alcohol is confirmed by the data of the Statistical Office. From 1993 to 2018 the total annual alcohol consumption calculated per a person reduced by 18 litres. The increase in the tax rate reflects in the prices of alcoholic beverages. The demand for alcohol consequently goes down or is substituted. It follows from the performed analyses that in case of alcoholic beverages it is necessary to consider the possibility of substitution. Consumers modify their behaviour within the given commodity for a cheaper alternative (e.g. with a lower alcohol content or lower quality from export), e.g. for another commodity. Wine is often a substitution commodity due to the zero rate. The substitution in consumption can be observed in case of wine and beer (the negative correlation was measured, i.e. -0.755197), and in case of wine and spirit (the negative correlation was measured, i.e. -0.312944). On the contrary, a minor substitution can be observed in case of beer and spirit (the negative correlation was measured, i.e. -0.015740).

More considerable frontloading linked to the increase in excise duties brings problems to the state as well as to producers, whereas after the introduction of the higher rate producers have a large influx of orders before the increase itself, but their demand significantly decreases after the increase of the rate. According to the Financial Directorate of the Slovak Republic in case of the commodity of spirit, spirits and liqueurs, the black market with alcohol has been growing following the rate increase. The optimal taxation system the governments try to reach is disrupted by the difference rate in comparison to the theoretical optimal model.

The consumption of wine made of domestic and foreign raw materials per person evidenced the growing trend until 2014. Then the decrease followed. While the annual consumption of beer and 40 %-spirits per person was going down, the wine consumption was growing. However, the opposite trend has been observed since 2014. If the wine consumption goes down, the consumption of beer and spirits grows. Wine has become relatively more available than other alcoholic beverages for consumers in the monitored period. Slovak winemakers use marketing strategies to convince consumers that quality wine is better and healthier than hard alcohol. We can say that the consumption of spirit and beer is in indirect proportion with the wine consumption as evidenced in the figure 4. Despite the above mentioned, the wine consumption in the Slovak Republic in 2018 (14.8 litres) was well below the EU average (26 litres). During the COVID-19 pandemic (2020-2021), it was possible to observe a decline in consumption for both the commodity beer and wine. In contrast, spirits consumption had an upward trend.

Fig. 4. Annual Consumption of Wine, Beer and 40 % Spirits per capita in Slovakia from 1993 to 2021 (in litres)

Note: own figure

Source: Statistical Office of the Slovak Republic (ŠÚ SR), 2023.

The state budget revenue is reduced by the consumption as well as by the growth of the illegal distillation of alcohol, the growth of the purchasing tourism and informal import, substitution for the goods taxed by the zero rate and the substitution for a drink with a lower alcohol content. Based on the analysis the division of the rates of the excise duties on alcoholic beverages divides into shock rates and the increase resulting from international agreements and contracts. Alcohol industry lacks the economic motivation for new investors and the market is over-saturated. From the business perspective the concentration of the production to one factory or the import of finished commodity might be considered economically more effective. However, originality and uniqueness disappear this way. Despite this fact, the growth of small breweries and grower distilleries was being registered in the monitored period from 1999 to 2018. They are able to find their place on the market and succeed. They benefit from originality as well as history and unique taste. Therefore from the point of view of national economy it is necessary to support uniqueness and quality of produced products and emphasize employment in regions.

From the point of view of the efficiency of the excise duty collection the biggest tax evasions on the monitored commodities are observed in case of spirit. The increase of the rate results in the illegal production, since the risk is low in comparison to potential profit. It especially weakens the domestic production of spirits and liqueurs. The drop in the domestic production is substituted by the import and negative trade balance deepens even more. We can observe the situation when a multiple increase of the excise duty rate in a short-term horizon results in the growth of the alcohol price and the decrease of legal (monitored) consumption. The state budget revenue decreases and stagnates. Tax evasions in the excise tax on alcoholic beverages, such

as beer, also follow from the purchasing tourism and informal import. Still wine is subject to zero tax rate. We can state that the illegal production of this product does not actually exist.

3.1.2. Relation between Total Consumption of Alcoholic Beverages and Revenue from Excise Duty on Alcoholic Beverages

The excise duty which is not a significant price-setting component represents the same burden for domestic producers as well as foreign ones who only import alcoholic beverages. The taxation is generated at the moment of the release of the product in the circulation from the mode of tax suspension, or in case of the production immediately after the commodity the excise tax is imposed on, is produced apart from the tax suspension. Therefore the tax increase itself has not a direct impact on the development of the trade balance. However, according to the observation and the analysis of the previous development it can have an indirect impact. It also applies to the consumption of the given commodity. Therefore if the rate of the excise duty on alcoholic beverages is planned to be applied it is necessary to know the previous development, consider the emphasis on the amount of the tax especially in the neighbouring countries and also know the development of the situation in the given industry and the secondary sectors bound to it, too. It follows from the table 2 that a positive relation might not always been observed between the studied quantities, i.e. it does not always apply that if the total consumption of alcoholic beverages grows (decreases), the revenue from the excise tax on alcoholic beverages grows (decreases). Table 2 describes the years 1999 to 2021 in more detail. In this period there occurred negative relations between quantities. In certain years from 2005 to 2021 we can observe the situation that despite the decrease of the total consumption of alcoholic beverages, the revenue from the excise duty on alcoholic beverages has a slightly increasing trend or vice versa.

Table 2. Year-on-Year Growth Rates of Alcoholic Beverages Consumption in the Value of 100 % of Spirit and Revenue from Excise Duty on Alcoholic Beverages

Year	Consumption	Revenue	
1999	0.83%	-12.45%	change of the spirit taxation system
2000	9.79%	24.83%	growth of excise duty on beer; growth of excise duty on spirit
2001	-1.31%	-6.82%	change of the wine taxation system (zero rate on still wine)
2002	0.81%	-6.60%	
2003	-8.21%	-3.71%	change of the beer taxation system - double growth of excise duty on beer; growth of excise duty on intermediate product
2004	3.27%	18.87%	change of the spirit taxation system - growth of excise duty on spirit; growth of excise duty on intermediate product
2005	8.30%	19.57%	
2006	-4.10%	7.27%	growth of excise duty on spirit
2007	3.89%	5.57%	
2008	6.19%	6.78%	

2009	-4.91%	-11.84%	
2010	-4.76%	4.11%	growth of excise duty on spirit
2011	-0.08%	-0.11%	
2012	-0.54%	-2.00%	growth of excise duty on intermediate product; decrease of excise duty on sparkling wine with a lower alcohol content
2013	-2.32%	-0.12%	
2014	3.23%	0.38%	
2015	0.60%	1.72%	
2016	-3.03%	2.07%	
2017	-2.07%	1.40%	
2018	4,04%	3,86%	
2019	2,23%	-0,60%	
2020	-1,83%	-4,97%	COVID-19 pandemic
2021	-5,66%	2,12%	

Source: own calculations according to data of Statistical Office of the Slovak Republic (ŠÚ SR), 2023.

In 2000, the growth of the excise duty on beer also reflected in the increase of the state budget revenue. On the contrary, that year the revenue from the excise duty on spirit reacted to the change of the taxation system and the increased rate by a drop. In 2001, the zero rate on still wine was introduced. It also reflected in the decrease of the state budget revenue from the excise duty on alcoholic beverages, while the decrease was going on in the following years until 2003 (inclusive). In 2004, the state budget revenue grew due to the double increase of the rate of the excise duty on beer and the increase of the rate on spirit and intermediate product. In 2006, the increase of the rate on spirit reflected in the decrease of the consumption, while the revenue gradually stabilized.

After the drop in the budget revenue in 2009 the rate of the excise duty on spirit grew in 2010. It helped to stop the decrease in the revenue of this tax, but it did not reverse the decrease in the consumption in the following years until 2014 (inclusive). From 2010 to 2012 the beer consumption grew from 70.7 l/person/year to 76.3 l/person/year. The consumption of wine stagnated in the same years. It also showed in the consumption of alcoholic beverages, 100 % spirit and the state budget revenue. The decrease of the consumption and the revenue increase in 2010 can be interpreted just by the increase of the rate on spirit and the decrease of its consumption (higher strength of alcohol in comparison to other beverages). Since 2013 the decrease of the beer consumption and the increase of the wine consumption might have been seen. Spirit has been stagnating till now after the noticeable drop in 2012. From 2016 to 2018 the wine consumption decreased by 2.1 l/person from 16.9 l to 14.8 l. The beer consumption grew by 6.2 l from 68.3 l to 74.5 l/person in the same years. The consumption of spirits stagnated in the same time (9.3 l; 8.9 l; 9.2 l). It also showed in the consumption of alcoholic beverages, 100 % spirit and the state budget revenue. The decrease in the consumption and the increase of revenue in 2016 and 2017 can be interpreted right by the decrease of the wine consumption (higher strength of alcohol and the zero rate on still wine) and the growth of the beer consumption (lower strength and non-existence of zero rate).

In the case of the excise duty on alcoholic beverages, such as beer, we can actually see the double increase of the rate within one year, in 2003. In the following years the beer production started to decrease, while a year-on-year production growth was registered only in 2012 by 0.7 %, in 2016 by 5.1 % and in 2017 by 2.1 %. In 2018 the beer production was lower by 44.2 % in comparison to 2003. The export also decreased. On the contrary, the import increased. It was 48.2 % more in 2004 than in 2003. In 2018 the export was higher by 497.7 % in comparison to 2003. In year-on-year terms it went down only in 2010 by 3.5 % and in 2016 by 1 %. The domestic production decreased and it was substituted by import. Foreign investors unified the production into one place and closed the other production sites. It had the impact on the beer quality. The production started to focus more on unified beer brands. In 2003 there were 11 breweries in Slovakia. In 2011 there were only 5 and nowadays there are 4. The production and consumption of beer has been having a decreasing trend in the monitored period. Consumption has been declining in 2020 and 2021, which has also been reflected in a decrease in revenue to the state budget. This was mainly due to the COVID pandemic, which caused the closure of restaurants and pubs where alcohol consumption was significant.

4. DISCUSSION

Nowadays governments try to expand the use of tax instruments in order to support healthier consumption. They include the increase in the tax rate on commodities such as tobacco products and alcoholic beverages which are significantly harmonized and the examination of the possibilities of their future taxation. They are e.g. alcoholic beverages or the selected foods with the high content of salt, sugar or fat. It is the way of motivating people for healthier lifestyle. Frequent consumption of alcoholic beverages lead to aggressive behaviour, it is the cause of accidents and it is harmful for our health (organ damage, congenital defects). However it represents the cost savings, e.g. in the form of payment of pensions due to premature death. External costs which are generated by the excessive alcohol consumption should be included in the price of the commodity by the means of the excise duty. Its purpose is to ensure that all costs are taken in consideration within the decision-making about consumption. Therefore the increase in the rate should send a signal about the harmful effect in case of the excessive consumption. The aim is to discourage the consumption. The issue of externalities is one of the big problems and failures in economy which do not affect only one subject but they have a negative impact on the whole society. Negative externalities lead to the reduction of GDP and so the economic efficiency decreases, too. The increase in the tax rate results in influencing consumers about the potential purchase or consumption of the products. On the other hand, they represent stable and regular state budget revenue.

A key reason for the use of the excise duties in relation to the improvement of the public health lies in the ability to change the behaviour of consumers. The increase

in the rates could motivate the producers to reduce the alcohol content in beverages and therefore to prevent the increase in the prices of these commodities. The introduction of the taxes on so called “unhealthy food” is only one of the measures and does not produce the desired results on its own. A more complex issue solving is necessary. It should include the summary of social, cultural, economic and biological factors. The taxes can influence people in the choice of food and drinks and their behaviour in relation to consumption, but only to certain extend. They have their limits and costs. The thoughts about the tax policy operation and tax reform contribute to the uncertainty in the society. Other factors which can significantly influence the behaviour of people depend on the specifications of social and economic environment, the methods of the introduction, respectively the increase of the tax rate as well as the extent of other available political measures in this sector. One of other negative externalities of the existence of alcoholic beverages is their packages and bottles, so called excessive waste production and related environmental burden. The fundamental problems linked to the waste management is land filling - the big amount of waste as well as a big number of landfill sites. The support activities mainly include the deposit option and the option of further processing of bottles and packages for recycling the secondary raw materials and the change of plastic bottles to the glass ones, so called deposit of PET bottles, cans and glass. The packages accumulated this way will not be returned back for the repetitive usage after they are cleaned but they will be recycled directly for the processor. It is about the savings of washing water polluted by chemical additional substances and environmental protection, but also the use of secondary raw materials including the effective stimulation of consumers to the pointed and sorted recycling. Responsibility for recycling (material and formal one) is transferred to the producers of goods who pack them to easily or hardly recyclable packages as a service for a consumer, but they have no direct impact on recycling those packages. It is necessary to stimulate and force a consumer to recycling, so that it becomes a part of their everyday life and routine by the introduction of the system of the deposit of some more easily recyclable packages, such as glass bottles, PET bottles and cans.

In recent years no bigger fluctuations in the state budget revenue and in the consumption of these commodities have been monitored. It can be attributed to the fact that no change in the rate of the excise duty on alcoholic beverages happened. Producers and consumers adequately adapted to the amount of the excise duty and gradual consolidation followed otherwise unchanged conditions. The development of the studied indicators including the state budget revenue, the commodity consumption, trade balance and domestic production signaled the necessity of the realisation of the aims which should relate to the improvement of the position of the products on the market. On the basis of the examined facts the following measures might be proposed:

- Tax relief for smaller breweries, since the reduced rate determined for the producers up to 200-thousand hl is rather suitable for a medium industrial brewery. Classification of breweries into several categories according to the size of production and the use of this classification for the determination of the tax amount.
- The increased tax control especially in the regions with a low number or no registered grower distilleries. Realize the controls in pubs and restaurants where there exists a suspected sale of illegally produced alcohol.
- Higher degree of control and consequent restriction of the import of non-quality wine.
- The support and promotion of Slovak wine routes, wine festivals and the tastings of fruit spirits, as well as the existence of small breweries and therefore the contribution to the development of tourism in Slovakia.
- The introduction of national tax ceilings of the alcoholic beverages taxation within the EU member states which would be able to reduce economic and fiscal costs related to cross-border shopping.

CONCLUSIONS

The existence of selective taxes is one of the reasons for increasing the state budget revenue, respectively reducing the deficits. The main aim of these taxes is a fiscal function. High rates of the selective taxes with a low elasticity of the demand represent the stable public budget revenue. Another reason for the taxation is also the influence of the final consumption. The different rates of taxation result from the fiscal reasons and they are economically justified. However, there exists a factor of negative externalities, when the goods with a negative impact on the public health and the environment are taxed by a higher rate. Non-existence of substitutes causes the situation when the demand for these goods, such as tobacco, alcohol and energies, is not elastic. The substitution effect does not occur. It means that the consumer does not substitute the taxed goods but they try to reduce the consumption of other goods. The high rates of these taxes and their low elasticity provide stable revenue. However, there exists the substitution within commodities. Alcoholic beverages, i.e. wine, beer, spirits and liqueurs substitute one another.

The search for the optimal combination of the taxation of income and consumption in the Slovak Republic also lead to the transfer of the tax burden from direct taxes to indirect one, which is positive for the state in the end. The need for the study of the sector of excise duties is confirmed by the fact that the current consumption is more complementary to leisure time. The combination of the reduction of costs and the increase of revenue is a frequent method for achieving the balance of the state revenue and costs. The increase of the revenue by the means of the increase of excise duties and VAT has shown to be the most effective as well as the introduction of new indirect taxes, such as tax on electronic cigarettes, environmental taxes. The growth

of tax evasions can be observed if the rate of the tax on alcoholic beverages or tobacco products is inadequate.

The development of the excise duty rate on alcoholic beverages was compared to the development of the consumption, production and trade balance, highlighting the breakthrough periods. Every increase in the tax rate does not necessarily mean the increase in the state budget revenue. The decrease of the domestic production is substituted by the growth of the import. It results in the negative trade balance. It can also cause the overpricing of goods and a consequent decrease of the consumption or its substitution for lower quality goods. The decrease in the employment in the given sector as well as bound sectors, especially in the agricultural sector, would be only another negative result of disproportional increase in the rate of the excise duty on alcoholic beverages.

On the basis of the findings the main principles can be formulated. They should be considered within further increase of the excise duty rate on alcoholic beverages. They can also be seen as a political-social recommendation for practice. These are:

- The taxation by a higher tax rate can motivate producers to reduce the alcohol volume in the products (e.g. the increase consumption of non-alcoholic beer was observed) or to produce healthier products.
- Increasing the rate on alcoholic products only to the certain extent considering the purchasing power of people as well as the efficiency of the economy (and so preventing the tax evasions in the form of shopping tourism and illegal domestic production).
- A multiple tax increase within a short time period (in course of one year) can be threatening for domestic producers from the point of view of their existence.
- The possibility of the substitution within the taxed commodities, while wine with its zero rate has a competitive advantage over other types of alcohol.
- Considering the prices and rates of the excise duties on alcoholic beverages in the neighbouring countries.

Apart from the increase in the rates of indirect taxes, there are other factors with a significant impact, such as the negative development and economic situation in the country and in the world, the reduced quality of goods, social situation of people, national habits, shopping behaviour of consumers, the harvest in the given year, the state of surpluses of agricultural raw materials and colder weather, too. The energy crisis will have a significant impact on the policy context, including on energy prices and consumption. Considering domestic production, the increase in the rates of excise duties and during the negative development is risky. The production of alcoholic beverages has a positive impact on the economy, even when considering the employment development, job creation by business partners and suppliers. The support of regions within the existence of small breweries, grower distilleries and family wineries is also important. For these reasons the increase in rates should be approached with

the emphasis on the situation in the sector considering broader national-economic relations.

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