

PRICE OF ALCOHOL IN EU MEMBER STATES – AFFORDABILITY OF ALCOHOLIC PRODUCTS AND ROLE OF EXCISE DUTIES

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Abstract: *This research paper focuses on alcoholic beverages and their price affordability between 2000-2016 in the member states of the European Union. Based on the data from OECD, WHO, Eurostat, and the European Commission, the paper primarily discusses development of prices and consumption of alcoholic products, level of excise duties, and the development of average wages. Overall alcohol consumption has decreased in most EU member states over the past two decades, even though price affordability has increased due to relatively dynamic development of average wages. As consumption of alcohol products is decreasing, producers of alcoholic beverages are now pushed to increase the prices of alcoholic products to keep their level of revenues, which means that the price of alcohol is growing naturally. Those facts raise a question about the role of excise duties on alcohol, whether it is an effective tool for reducing alcohol consumption or just a fiscal tool, whose further increases might lead to market distortions.*

Keywords: *Alcohol, Consumption, Excise duties, Price affordability.*

1. INTRODUCTION

The overall consumption of alcoholic beverages in individual member states of the European Union differs significantly from state to state, a fact also supported by regularly updated data from internationally recognized organizations such as the WHO (World Health Organisation) or the OECD (Organisation for Economic Co-operation and Development). Globally, irresponsible consumption of alcohol causes up to three million deaths annually and is connected to approximately 5.1% of worldwide health complications. This is among the reasons why one of the most crucial recommendations for correct regulation of addictive behavior is to tighten up restrictive measures, meaning increasing excise duties, limiting sales of alcohol (locations and opening hours), restricting advertising alcohol, etc. (WHO, Global status report on alcohol and health 2018, 2018).

Regulating addictive behavior can more broadly be understood on two fundamental levels – restrictive and preventive (Babor & Robaina, 2013). Evaluating the efficiency of individual regulatory tools is however very complicated, mostly due to a number of other social phenomena (healthy lifestyle, change in patterns of consumption, etc.) that also determine the access of inhabitants to alcohol consumption (Collins, George, & Marlatt, 1985). The impact of such socio-economic phenomena can then only with difficulty be cleansed of the influence of regula-

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tions which makes it more complicated to determine which of the many regulatory tools should be implemented into national policies and thereby decreasing the negative impacts of irresponsible behavior (Alemanno & Garde, 2013). In other words: something that works or does not work elsewhere is not necessarily a guaranty that it will be effective in a different country or region.

Experiences of EU member states provide a wide variety of regulatory frameworks that are different not only in the number of implemented regulatory tools but also in the intensity of their settings. Excise duty is one of the most common tools for regulating addiction industries, which functions as a certain price barrier for both consumers and producers (Bareker, 2002). Commonly, excise duties are used for alcoholic beverages and tobacco products across all EU member states. Such duties can be applied either according to the content or weight of the given alcohol content in the final product, for which value added tax is also added. Conclusions of many studies show the positive impact of the amount of excise duty on the average consumption of alcoholic beverages in society, which is also associated with the decrease of negative socio-economic elements in connection with irresponsible alcohol consumption (Wagenaar, Salois, & Komro, 2009, Frieden, 2013, Pogue & Sgontz, 1989 or Cook, Ostermann, & Sloan, 2005). Such duty is however not only a tool to regulate unwanted consumption and negative socio-economic elements it causes but also a very effective fiscal tool that generates large additional income for state budgets (Grossman, 2005 or Harris, 1982).

Social wealth across all EU member states has increased significantly over the past two decades, as well as the market prices of alcoholic beverages. The goal of this paper is to evaluate how important of a role excise duty actually plays in regulating alcohol consumption within the context of continuous growth of market prices of alcoholic beverages and growing average wages of consumers. Is excise duty still an effective regulatory tool decreasing alcohol consumption or is its function purely fiscal? Do government increase its rates continuously only as a fig leaf for protecting public health?

2. METHODOLOGY

Via comparative analysis, the paper compares the development of alcoholic beverages consumption, the affordability of alcohol, and changes of rates of excise duties for alcohol in nine member states of the European Union between 2000 and 2016. The sources of data are the databases of the OECD and WHO (alcohol consumption and its breakdown into beer, wine, and spirits in liters per person and year that are available only until 2016), as well as Eurostat (development of prices of alcoholic beverages – breakdown of the HICP index and development of the amount of average wages), the Euromonitor International – Passport database (current prices of alcoholic beverages), and the European Commission database (rates of excise duties). The resulting affordability of alcohol is measured as a ratio of average wage in the member state and the price of the given alcoholic beverage, meaning how much of the alcoholic beverage can a consumer purchase with his/her average wage in the member state. All data and information (including the rates of excise duties) have been analyzed until 2016 for the purposes of a comparison.

3. EXCISE DUTIES IN EU COUNTRIES

The European Commission Directive 92/84/EEC determines the minimum rate of excise duties for all categories of alcoholic beverages. EU members states, therefore, can determine their own rates of excise duties according to the national policies; they have to be at least on the level

of the determined minimum. These minimum rates have been as follows in 2016: beer – 0.748 EUR per hl/degree Plato of finished product, wine (still and sparkling) – 0 EUR, ethyl alcohol (spirits) – 550 EUR per hectoliter of pure alcohol (European Commission, 2016).

First, we will analyze the changes of rates of excise duties for alcohol between 2004-2016. The rate of the duty differs across different EU member states, as well as its rate according to the type of alcoholic beverage. The development of excise duties for alcoholic beverages between 2004-2006 in selected EU member states is shown in Table 1.

3.1. Beer

There has been a relative increase (184.6%) in excise duties for beer in France, in Italy (91.2%), Finland (64.5%), and the Czech Republic (57.3%). The highest excise duty for beer was in Finland in 2016 (12.8 EUR/hl/°Plato). On the other hand, the lowest rates of excise duty for beer were in the CEE countries – in the Czech Republic (1.18 EUR/hl/°Plato), Slovakia (1.44 EUR/hl/°Plato), and Hungary (2.07 EUR/hl/°Plato).

3.2. Wine

Similarly to beer, the rates of excise duties for wine differ in the selected member states as well. The southern member states (Italy and Portugal) have a zero rating for still and sparkling wines (zero ratings for both wine types are also in Spain, Croatia, Cyprus, Lithuania, Poland, and Slovenia). A zero rating for still wines is also applied in CEE countries – Czech Republic, Hungary, and Slovakia. However, these member states do apply excise duties to sparkling wines (similarly, excise duties are applied to sparkling wines in Germany, Austria, and Romania). On the other, the highest rates of excise duty are applied in northern member states – Finland and Sweden, as well as in Ireland. The relative biggest growth of the duties was in Ireland and Finland – more than 50%.

3.3. Ethyl alcohol (spirits)

For spirits, there are also higher rates in northern Europe and Ireland; the rates in Finland increased by 61.2% between 2004-2016. On the other, the lowest and most comparable rates of excise duties are in CEE member states, as well as in southern Europe, where the rates almost doubled over the analyzed period.

Table 1. Excise duties on alcohol in selected EU countries

	Beer (EUR/hl/°Plato)*			Wine (EUR/hl)						Ethyl alcohol (spirits) (EUR/hl)		
				Still			Sparkling					
	2004	2016	Inc. (%)	2004	2016	Inc. (%)	2004	2016	Inc. (%)	2004	2016	Inc. (%)
<i>Western Europe</i>												
FR	1.04	2.96	184.6	3.4	3.77	10.9	8.4	9.33	11.1	1,450	1,738	19.9
IE	7.95	9.02	13.5	273	424.8	55.6	546	849.7	55.6	3,925	4,257	8.5
<i>Northern Europe</i>												
FI	7.78	12.8	64.5	212	339	59.9	212	339	59.9	2,825	4,555	61.2
SE	6.74	8.27	22.7	243	268.5	10.5	243	268.5	10.5	5,519	5,455	-1.2

<i>Southern Europe</i>												
IT	1.59	3.04	91.2	0	0	-	0	0	-	731	1,036	41.7
PT	2.47	3.19	29.1	0	0	-	0	0	-	898	1,328	47.9
<i>Central and Eastern Europe</i>												
CZ	0.75	1.18	57.3	0	0	0	73.37	86.11	17.4	831	1,049	26.2
HU	1.65	2.07	25.5	3.15	0	-100	35.91	52.62	46.5	756	1,066	
SK	1.21	1.44	19	0	0	0	58.15	79.65	37.0	606	1,080	78.2

* For the sake of comparison, 1 degree Plato is equivalent of 0.4 % Alcohol.

Source: European Commission, 2016

4. AFFORDABILITY OF ALCOHOLIC PRODUCTS

The affordability of alcoholic beverages is among other determined by the level of wages in the member states and the price level – the prices of purchased products. The development of average wages between 2000-2016 in selected EU member states is shown in Table 2. The relatively highest growth of average wages happened in CEE Europe where the wages almost doubled; the lowest increase was in Italy.

Table 2. Average monthly net wage in selected EU countries, single person without children, 100% of AW (EUR, net earnings)

	2000	2016	Change (%)
<i>Western Europe</i>			
France	1,577	2,243	42
Ireland	1,746	2,779	59
<i>Northern Europe</i>			
Finland	1,453	2,526	74
Sweden	1,724	2,809	63
<i>Southern Europe</i>			
Italy	1,274	1,758	38
Portugal	706	1,067	51
<i>Middle and Eastern Europe</i>			
Czech Republic	292	787	170
Hungary	224	595	166
Slovakia	338	702	108

Source: Eurostat, 2020

The growth of prices of alcoholic beverages between 2000-2016 is illustrated by the HICP index in Table 3. For beer, the highest price growth was in Portugal (51.99 p.b.) and Hungary (42.64 p.b.). In Ireland, the price of beer remained the same between 2000 and 2016; the relatively lowest growth happened in Sweden and Finland. When it comes to wine, the highest price growth was in Hungary (41.75 p.b.) and Italy (29.7 p.b.). On the other hand, the highest increase was in Ireland. The price of spirits grew the fastest in Hungary (55.08 p.b.), the slowest in Finland (3.16 p.b.) and Sweden (7.11 p.b.).

Table 3. HICP - Annual average index (beer, wine, and spirits) in selected EU countries (2015=100)

	Beer			Wine			Spirits		
	2000	2016	Change (%)	2000	2016	Change (%)	2000	2016	Change (%)
<i>Western Europe</i>									
France	74.68	99.86	25.18	75.96	101.56	25.6	81.93	100.13	18.2

Ireland	97.9	97.9	0	88.1	95.7	7.6	80.4	99.8	19.4
<i>Northern Europe</i>									
Finland	80.93	99.52	18.59	82.67	100.02	17.35	96.98	100.14	3.16
Sweden	84.17	100.14	15.97	89.54	100.62	11.08	93.16	100.27	7.11
<i>Southern Europe</i>									
Italy	68.9	100.1	31.2	70.2	99.9	29.7	74.0	100.9	26.9
Portugal	50.45	102.44	51.99	86.13	99.92	13.79	77.24	102.76	25.52
<i>Middle and Eastern Europe</i>									
Czech Re- public	73.8	103.9	30.1	85.8	101.5	15.7	69.9	104.6	34.7
Hungary	55.36	98.00	42.64	58.78	100.53	41.75	44.47	99.55	55.08
Slovakia	62.37	99.16	36.79	77.25	99.30	22.05	75.62	99.43	23.81

Source: Eurostat, 2020

The series of the following graphs illustrates the changes of affordability, meaning how much of a given alcoholic beverage can a consumer buy for his/her average wage in a specific member state between 2000 and 2016.

4.1. Beer (0.5 l bottle of domestic beer)

From the perspective of affordability of beer, the highest increase was in the Czech Republic (92%). The average consumer in Ireland could purchase 59% more beer in 2016 than in 2000; in Hungary, the growth of affordability was 50%. A relatively significant growth was also experienced in Finland (41%) and Sweden (37%). The only analyzed member states that experienced a decrease of affordability of beer were Portugal (-26%) and Italy (-5%).

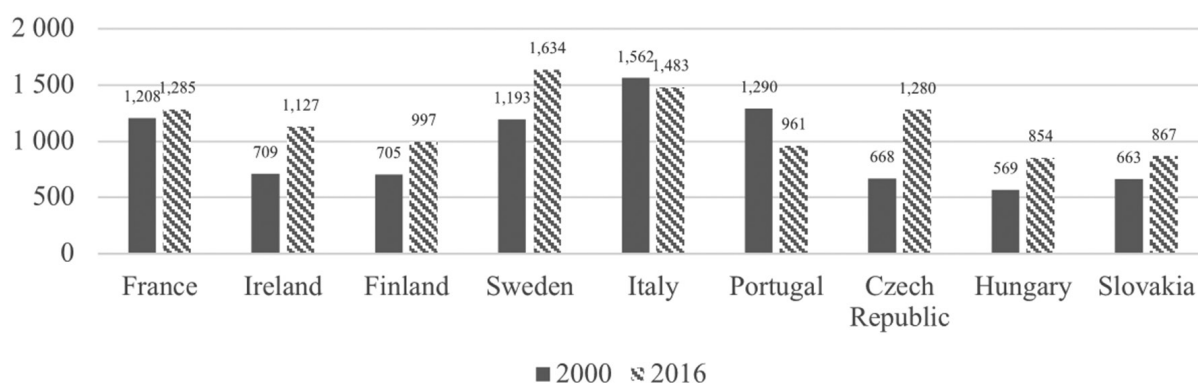


Figure 1. Price affordability of beer in selected EU countries
 (number of bottles of beer per average wage)

Source: Eurostat, 2020, Euromonitor International, 2020, own calculations

4.2. Wine (0.75 l bottle of red wine – mid range)

The highest growth of affordability of wine happened in CEE member states, the highest in the Czech Republic (128%). On the other hand, the lowest growth was in France (6%); there was a decrease in Italy (-3%). Almost a comparable growth of affordability of wine was in all northern member states – Finland (44%), Sweden (45%), and Ireland (46%).

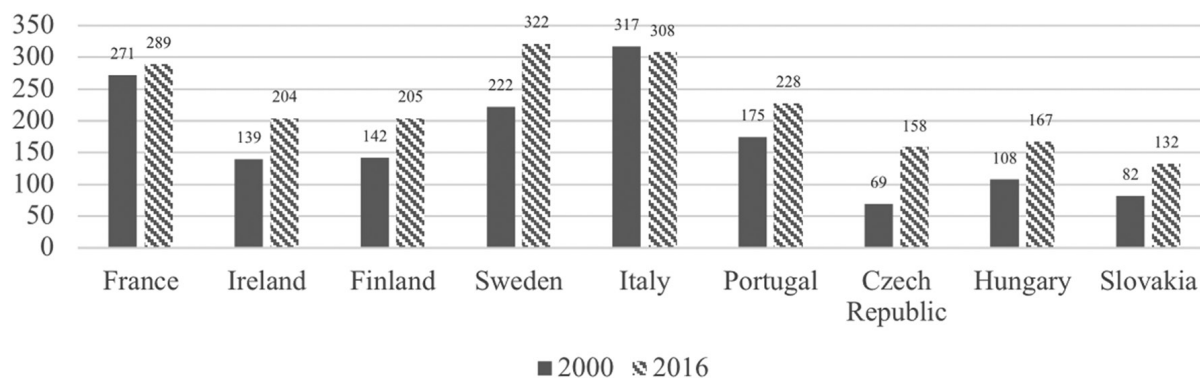


Figure 2. Affordability of wine in selected EU countries
 (number of bottles of wine per average wage)

Source: Eurostat, 2020, Euromonitor International, 2020, own calculations

4.3. Spirits (1 l bottle of vodka – mid range)

The affordability of spirits increased the most in the Czech Republic (80%), Finland (68%), Slovakia (58%), and Sweden (51%). On the other hand, the lowest growth was in Italy (1%), Portugal (14%), and Hungary (19%).

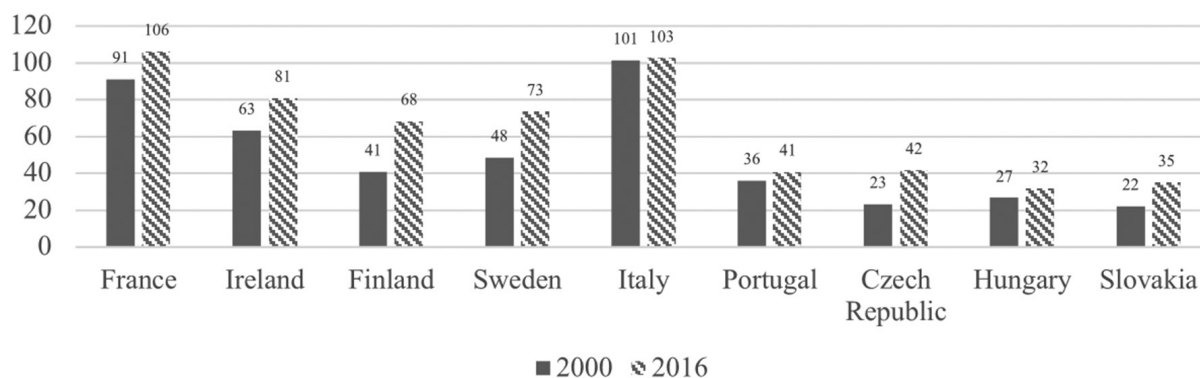


Figure 3. Affordability of spirits in selected EU countries
 (number of bottles of vodka per average wage)

Source: Eurostat, 2020, Euromonitor International, 2020, own calculations

5. ALCOHOL CONSUMPTION

Now, let us focus on the development of the index of average alcohol measured in liters of pure alcohol per person and year. This and many other indicators that are connected to alcohol consumption are regularly processed and monitored by international recognized organizations, such as the OECD or WHO. Although the methodological tools for data collections of these two organizations are the same or very well comparable, their statistics are in many cases different. The development of these values is shown in Table 4.

As part of WHO's statistic, the largest decrease in average alcohol consumption (liter of pure alcohol/person/year) was in Italy (-27.6%), Portugal (-18.3%), and Ireland (-17.3%). On the other hand, the consumption increased in Sweden (by 16.1%). The relatively lowest decrease was in Finland (-2.3%).

Table 4. Overall alcohol consumption in selected EU countries (l of pure alcohol/ person / year)

	OECD			WHO		
	2000	2017	Change (%)	2000	2016	Change (%)
<i>Western Europe</i>						
France	13.9	11.7	-15.8 %	13.6	11.7	-14.0
Ireland	14.2	11	-22.5 %	13.9	11.5	-17.3
<i>Northern Europe</i>						
Finland	8.6	8.4	-2.3 %	8.6	8.4	-2.3
Sweden	6.2	7.1	14.5 %	6.2	7.2	16.1
<i>Southern Europe</i>						
Italy	9.8	7.6**	-22.4 %	9.8	7.1	-27.6
Portugal	13.1	10.7**	-18.3 %	13.1	10.7	-18.3
<i>Middle and Eastern Europe</i>						
Czech Republic	11.8	11.6	-1.7 %	13.9	12.9	-7.2
Hungary	12	11.1**	-7.5 %	12.2	10.9*	-10.7
Slovakia	11	9.7	-11.8 %	11.1	10.1	-9.0

* The latest available data from 2015

** The latest available data from 2016

Source: OECD, 2020, WHO, 2020

The WHO database additionally offers (unlike the OECD statistics) a breakdown of alcohol consumption according to the type of the alcoholic beverage – beer, wine, and spirits (see Table 5).

Table 5. Beer, wine, and spirits consumption in selected EU countries (l of pure alcohol/ person / year)

	Beer			Wine			Spirits		
	2000	2016	Change (%)	2000	2016	Change (%)	2000	2016	Change (%)
<i>Western Europe</i>									
France	2.08	2.21	6.3	8.59	6.90	-19.7	2.71	2.43	-10.3
Ireland	7.89	5.39	-31.7	1.76	3.21	82.4	2.98	2.15	-27.9
<i>Northern Europe</i>									
Finland	4.27	4.11	-3.7	1.07	1.74	62.6	2.22	1.81	-18.5
Sweden	2.7	2.61	-3.3	2.20	3.43	55.9	1.30	1.01	-22.3
<i>Southern Europe</i>									
Italy	1.64	1.80	9.8	7.06	4.58	-35.1	1.07	0.69	-35.5
Portugal	3.75	2.79	-25.6	7.74	6.55	-15.4	1.57	0.82	-47.8
<i>Middle and Eastern Europe</i>									
Czech Republic	7.64	6.92	-9.4	2.39	2.77	15.9	3.94	3.30	-16.2
Hungary	4.3	3.93*	-8.6	4.08	3.41*	-16.4	3.85	3.57*	-7.3
Slovakia	4.47	3.42	-23.5	1.49	2.12	42.3	4.85	4.24	-12.6

* The latest available data from 2015

Source: WHO, 2020

6. DISCUSSION

Based on the stated data, we can compare the development of rates of excise duties for alcohol, affordability of alcoholic beverages, and their average consumption in given member states. As part of the comparative analysis, we came to the following findings:

Beer

- Even though the excise duty for beer increased by 184% in France and its affordability remained practically unchanged (increase by 6%), the overall consumption of beer increased by 6.3% (the only analyzed member state with this phenomenon).
- When it comes to beer consumption, a similar phenomenon also happened in Italy. Here, the excise duty for beer increased by 91.2% and its overall affordability decreased by 5%. Despite the relatively high increase in excise duty, the average consumption of beer increased by 9.8%.
- An opposite phenomenon was in Ireland. Here, the excise duty for beer relatively increased (13.5%); beer affordability increased by 59% and the average consumption decreased by 31.7% - the most in all analyzed member states.
- The relatively lowest decreases of average beer consumption happened in Finland (-3.7%) and Sweden (-3.3%) which are member states of the EU known for their high excise duties. In Finland, the increase of excise duty for beer was 64.5%, in Sweden 22.7%.

Wine

- The highest increase of excise duty for still wine was in Ireland (55.6%) and Finland (59.9%). In these countries, the affordability of wine also comparably increased – Ireland (46%) and Finland (44%). Despite the relatively high increase in excise tax for wine, the average wine consumption also increased – in Ireland by 82.4% and in Finland by 62.6%.
- In Italy and Portugal, there is a zero excise duty rating for still wines. In Italy, the affordability of wine decreased by 3%; in Portugal it increased by 3%, which is a below-average result among the analyzed member states. Despite the zero rating of excise tax, the average wine consumption decreased in both member states – in Italy by 35.1% and in Portugal by 15.4%.
- On the other hand, in the Czech Republic and Slovakia, where there are also zero ratings for still wine, the affordability increased significantly – in the Czech Republic by 128%, in Slovakia by 62%. In both countries, the increase of average wine consumption also increased – in the Czech Republic by 15.9%, in Slovakia by 42.3%.

Spirits

- Sweden was the only from the analyzed member states where the excise duty rate for spirits decreased by 1.2%. The affordability increased by 51%; however, the average consumption of spirits decreased by 22.3%.
- The highest increase of excise duty for spirits happened in Slovakia (78.2%) where the affordability of spirits increased by 58%. The average consumption of spirits decreased by 12.6%, which is a below-average results in comparison with the other analyzed member states. On the other hand, in Portugal, there was an increase of excise tax by 47.9% but the affordability of spirits increased only by 14% and the average consumption decreased by 47.8%. A similar development happened in Italy.

The affordability of alcohol across all analyzed EU member states increased (with the only exception being Italy), meaning that the prices of alcoholic beverages increase slower than the growth of the average wages in said countries. This does however not mean that the average alcohol consumption increased in the analyzed member states. On the contrary, in all analyzed member states, the average alcohol consumption decreased, except in Sweden. The above-mentioned results prove that significantly increasing the excise duty rate on specific alcoholic beverages does not guarantee the decrease in its consumption – proven by the fact that in some cases the zero rating of excise duty was upheld over the entire analyzed period, however the consumption did not naturally decrease.

7. FUTURE RESEARCH DIRECTIONS

Beside the average alcohol consumption in society, it is also crucial to observe the development of negative socio-economic indicators that are connected to irresponsible alcohol consumption, e.g. traffic accidents caused by driving under influence, deaths by alcohol-related illnesses, alcohol consumption by minors, etc. These are the social phenomena that can be decreased and eliminated using an appropriate mixture of regulatory tools; we should not focus only on the often-cited indicator of average alcohol consumption. One of the future research directions could therefore be analyzing and statistically evaluating the effectiveness of regulatory frameworks within the context of the development of these unwanted socio-economic phenomena connected to alcohol consumption, including the statistical relevancy of the impact of increasing the rate of excise duties for alcohol on the development of alcohol consumption.

8. CONCLUSION

In the case of alcohol, a restrictive tool such as the excise duty cannot be simply understood as a time-tested tool for effectively regulating addictive behavior, which is why it is incredibly crucial when implementing and defining regulatory frameworks to also further analyze the reactions of consumers to restrictive and preventive measures. A socially desired decrease of alcohol consumption as well as the elimination of undesired health and social impacts can only be achieved via an appropriate setting of regulatory and preventive measures that have to also match the overall context of social developments and current approach of the inhabitants to alcohol in the given region.

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