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PECULIARITIES OF MANAGEMENT IN REGULATION OF
MINIMUM PRICES FOR STRONG ALCOHOLIC BEVERAGES

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Abstract

The article reflects the results of research in the field of ensuring the possibility of coordinating the social and economic interests of the subjects of the strong alcoholic beverages market. The authors conducted a study of the state and trends of the alcoholic products market of the Republic of Belarus and the Russian Federation. The conducted research allowed to identify problems of regulation of the alcoholic production market, to justify ways of harmonizing the economic interests of manufacturers and organizations engaged in sales of strong alcoholic beverages. The authors calculated the difference between the minimum retail price and the minimum sale price and concluded that the government's restrictions of the minimum retail price cease to fulfill the functions assigned to them – the retailers do not even have an economic opportunity, buying the products at the minimum selling prices, to sell them at prices below the minimum retail. Trade networks are forced to sell vodka on the national market at prices close to the minimum prices established by the government, while part of the sales costs is passed on to the manufacturer, which leads to unreasonable redistribution of marginal income in favor of retail chains. The need to change the mechanism for coordinating the interests of business entities and linking restrictions on the minimum selling and minimum retail prices, as well as determining the optimal difference between them, has been identified. An approach to regulating the minimal selling and retail prices for strong alcoholic beverages has been developed by the authors.

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1. Introduction

The creation of the Customs union and of the Common Economic Space (CES) on its basis requires coordinated streamlining of the volume, structure and movement of the commodity mass, intended for realization on the domestic integration market and changing approaches to managing commodity markets, taking into account the interests of all its counterparties.

Unlike most consumer goods markets, the alcohol production market has specific features. On the one hand, the development of the alcohol production market allows for the realization of the economic interests of not only participants, ensuring the growth of income of organizations engaged in the production and sales of alcohol, organizations of related industries, suppliers and intermediaries, but also contributes to the formation of the state budget, provides an increase in the number of jobs, stimulates the development of agricultural production. On the other hand, an increase in alcohol consumption is associated with negative social consequences caused by increase in mortality, decrease in life expectancy, increase in the number of traffic accidents, criminalization, and production of low-quality alcohol. Given the multidirectional socio-economic interests represented in the alcoholic production market and the irrational nature of some of them, the importance of state interest management is increasing.

2. Problem Statement

Within the framework of the state policy, tools are being developed to regulate the alcohol market. The policy of establishing minimum prices for alcohol products (based on the “unit” of alcohol, minimum unit pricing – MUP) is considered one of the innovative approaches to market regulation, providing a different level of impact on different groups of the population. The establishment of minimum prices for alcohol is used in some countries. In 2012, Scotland passed a law on alcohol pricing, setting the MUP at 50 pence. The formula for calculating the minimum price for a bottle is determined by the product of the volume of the bottle, the degree of alcohol and the value of MUP. This approach allowed to unify the minimum prices for alcoholic beverages with varying percentage of alcohol volume. The Republic of Ireland announced plans to introduce legislation modeled on the Scottish method of MUP in 2015. The European Parliament adopted a resolution supporting alcohol policy actions, including the use of minimum prices per unit of alcohol (Stockwell et al., 2017). Stockwell and his co-authors note that in many Canadian provinces minimum prices for alcoholic beverages were introduced, mainly to increase income and for economic reasons, and not for public health and safety (Stockwell et al., 2017).

The introduction of minimum retail prices is due to the need to reduce the consumption of cheap alcohol, i.e. the realization of the social interests of society. The result of introduction of the minimum price per unit of alcohol is a slight change in purchases by groups of people characterized by low alcohol consumption and, at the same time, a significant reduction in consumption by the most drinking groups (Holmes et al., 2014).

In regards to the conditions of the CES, several additional aspects of the problem should be noted:

- the increase of retail prices for strong alcohol is accompanied by certain groups of the population switching to consumption of other alcohol-containing products;

- trade organizations are interested in obtaining maximum benefits, which in the context of reducing alcohol consumption implies an ambition to purchase alcohol at low selling prices;
- the existing surplus of production capacity, low degree of their loading in conditions of declining consumption leads to increased competition among alcohol producers;
- in conditions of greater market power that trade networks possess compared to alcohol producers in the Republic of Belarus (as in other CES countries), networks are able to impose transaction conditions;
- producers are interested in reducing the cost of alcoholic beverages production, sometimes they choose to achieve it at the expense of quality deterioration.

The introduction of minimum retail prices for alcohol can lead to a decrease in its consumption, but it is unable to ensure the growth of quality and the balance of market entities' economic interests. Solution of these problems requires the development of methods for establishing not only minimum retail prices, but also minimum selling prices for alcoholic beverages. Realization of the economic interests of the alcohol market entities in conditions of increasing competition in this case should be ensured not by reducing costs, but by increasing the quality of products.

During the study the need and possibility of regulating minimum prices for strong alcoholic beverages in order to create equal competitive conditions, taking into account the interests of market participants, but with the preservation of the priority of sustainable development, was determined as a hypothesis. For this the following tasks were posed and solved: the mechanisms for determining marginal minimum prices were investigated; the structure of the cost of production of alcoholic beverages was analyzed; a survey was conducted on a test of a hypothetical monopolist in the alcohol industry; a procedure has been developed for determining and revising the maximum minimum selling prices for alcohol products with alcohol volume of 28%.

3. Research Questions

The main objectives of the study are:

- identifying features and trends in the development of the Belarusian alcohol market;
- identification of problems in the field of state regulation of the alcohol market in terms of accounting the economic interests of entities;
- determination of cause–effect relationships that determined the formation of the identified problems;
- determination of interrelations and contradictions in the field of regulation of the minimum selling and minimum retail prices in the national market;

Determination of ways to improve the regulation of minimum prices for strong alcoholic beverages, ensuring the creation of similar competitive conditions.

4. Purpose of the Study

One of the reasons for regulating the alcohol market is the need to reduce the negative effects associated with its use. According to the World Health Organization, the average global consumption of alcohol per person per year is about 6.4 liters. and during the period of 2005–2016 it increased by 16.3%. The highest rates of alcohol consumption are typical for European countries. At the same time, alcohol consumption in European countries is declining, from an average of 12.3 liters in 2005 to 9.8 liters in 2016 (World Health Organization, 2018). Over the corresponding period, the dynamics of alcohol consumption in the Republic of Belarus and the Russian Federation was heterogeneous. In 2010, there was an increase of consumption in Belarus (in 2010, Belarus became the country with the highest per capita consumption of alcohol in the world), but the measures taken to strengthen control over the production and sale of alcoholic beverages led to a decrease in 2016 (Table 01):

Table 01. Alcohol consumption per person in the Republic of Belarus and the Russian Federation

Indicators	year	Belarus	Russia
Total consumption, liter/person.	2005	15.13	15.76
	2010	17.5	15.8
	2016	11.2	11.7
% of average global consumption	2005	275	287
	2010	273	247
	2016	175	183

Note: according to the World Health Organization, 2018.

WHO studies have shown that people in Belarus and Russia prefer strong alcoholic beverages (Table 02).

Table 02. Structure of alcohol consumption in the Republic of Belarus and the Russian Federation

Types of alcoholic production	Belarus		Russia	
	2010	2016	2010	2016
Beer, %	17.3	23	37.6	39
Wine, %	5.2	2	11.4	13
Hard liquors, %	46.6	49	51	39
Other alcohol, %	30.9	26	0	9

Note: according to the World Health Organization, 2018.

Peculiarities of the alcohol market in the Republic of Belarus are:

- high proportion of strong alcoholic beverages in the structure of consumption;
- high proportion of other types of alcohol in the structure of consumption (primarily, fruit and berry wines).

The low price of fruit and berry wines with a sufficiently high alcohol content stimulates their consumption by the population, even despite low quality of some.

When developing approaches to setting minimum prices for alcohol, special attention should be paid to the issues of regulating the prices of strong alcoholic beverages, stimulating the production of quality products and reducing the motivation of customers to consume other types of alcohol.

Table 03. Characteristics of the capacity of the market of the Republic of Belarus in 2016

Types of alcoholic production	Unit of measure	Production	Export	Import	Consumption	Capacity of the market
Beer	Thousand dal	43 818	8 627	9 024	43 039	44215
Grape and sparkling wines	Thousand dal	4	232	954	5	5
Strong alcoholic beverages	Thousand dal	14 151	3 761	532	10 923	10 922
Fruit wines	Thousand dal	8 371	0	0	8 389	8 371
Types of alcoholic production	Unit of measure	Production	Export	Import	Consumption	Capacity of the market

The production volumes of most types of alcoholic beverages in the Republic of Belarus do not exceed the capacity of the national market, however, the production of vodka and strong alcoholic beverages, in many respects, is export-oriented. The key market is the Russian market. In conditions of the reduction of alcohol consumption in Russia, and also (unlike Belarus) of the decline in the share of strong alcoholic beverages in the consumption structure (Table 2), there are risks of producers switching to the domestic Belarusian market, which leads to increased competition in the manufacturing sector.

The issues of demand switching lie in the plane of estimating the elasticity of demand for alcohol products by price. Research of the elasticity of demand for alcohol in conditions of price changes were carried out in many studies, in particular, Gallet (2007) conducted a meta-analysis of 393 studies of elasticity, Wagenaar and co-authors analyzed the results of 112 research papers (Wagenaar, Salois, & Komro, 2009). In both meta-studies, higher elasticity of demand for strong alcoholic beverages compared to beer was registered, which indicates that the regulation of minimum prices can give the greatest effect particularly in the segment of strong alcoholic beverages. Gallet (2007) also noted a lower sensitivity of young people to changes in the price of alcohol, which is due to differences in consumption patterns, on the one hand, and lower alcohol consumption by young people, on the other. Interconnection between the prices of alcohol and its consumption by young people was considered, in particular, Norström & Raninen (2015) on materials from Sweden for the period of 1972–2012. Stockwell and Zhao note that an increase in minimum prices for alcohol leads to a reduction in alcohol consumption by the population (Stockwell, Auld, Zhao, & Martin, 2012; Stockwell et al., 2017).

In Russia and Belarus, the state price regulation of alcohol products is carried out in accordance with the agreement on the regulation of the alcohol market within the framework of the Eurasian

Economic Union. The agreement is aimed at eliminating barriers, discriminatory exemptions in mutual trade, and discrepancies in legal acts. In the Russian Federation, the establishment of minimum selling and retail prices is the responsibility of the Ministry of Finance of the Russian Federation. Minimal prices for purchase, supplies (excluding exports) and retail sales of vodka, hard liquor and other alcoholic beverages with alcohol volume of over 28% are established by order of the Ministry of Finance. The established minimum price for vodka is calculated based on the cost of alcohol and its content, the difference between the cost of production and the cost of ethyl alcohol of alcohol volume of 40% per 0.5 l, the profitability of the manufacturer, taxes, and the wholesale and retail mark-up.

The objectives of the application of minimum prices for alcoholic beverages in different countries are suggested both as protection against alcoholization of the population, protection of the market, protection of business entities in conditions of a changing market environment and are an element of economic security. Taking into account only one of the directions cannot provide a balance between the development of the industry market and health of the population.

5. Research Methods

In order to solve the task, a study was conducted on the state of the alcohol market of the Republic of Belarus, the dynamics and structure of selling prices for strong alcoholic beverages, the level of competition in the market, the ability of customers to switch demand between different types of alcoholic beverages, in particular:

- analysis of the state of the alcohol market, its capacity, dynamics and production structure was carried out according to the National Statistical Committee and materials of the Ministry of Antimonopoly Regulation and Trade of the Republic of Belarus for 2011–2016;
- analysis of dynamics and structure of the selling price of national producers is based upon the study of materials of 14 industrial organizations engaged in the production of strong alcoholic beverages in 50 commodity items, as well as 10 organizations producing the key raw material – alcohol. The analysis of volume indicators of production and sales, the cost structure and the selling price of alcohol and strong alcoholic beverages, pricing mechanism in the market of alcoholic production;
- analysis of the product market boundaries and customer behavior patterns is based on the results of a hypothetical monopolist test conducted by the authors and a survey of 607 Belarusian consumers in a non–repetitive random sampling.

6. Findings

A study of the Belarusian market of alcoholic beverages revealed the following trends:

- general reduction in the production of alcoholic beverages (by 20% over 5 years);
- increase in the production of vodka and brandy with a decrease in the production of other strong alcoholic beverages;

- relatively stable scale of beer production while reducing the production of non-alcoholic beverages;
- in 2011-2016 there was a tendency to sales reduction: vodka (over 5 years - by 19%, while exports grew by 53.7%, imports - by 122.1%); alcoholic beverages (over 5 years - by 38.4%); wine (over 5 years - by 26%); beer (over 5 years - by 9.8%);
- trade organizations form 100% of the retail turnover of vodka, alcoholic beverages, wine, cognac and brandy, 83-89% of the turnover of beer;
- principles and tools for regulating sales of alcohol remained unchanged.

According to the results of a hypothetical monopolist test conducted by the authors in 2017, the following conclusions can be drawn:

- based on the analysis of individual preferences of customers and linear interpolation of demand, the authors determined the geographical and product boundaries of the market (alcohol; vodka; cognac, cognac drinks and brandy; alcoholic beverages; grape wines; sparkling wines; beer; low-alcohol drinks);
- vodka and alcoholic beverages with alcohol volume of over 25%, according to consumers, can act as interchangeable goods, but not by price, but by quality characteristics;
- after the price increase by 10%, 75% of respondents will continue to buy vodka; 76.1% - alcoholic beverages with alcohol volume of over 25%; 77.2% - alcoholic beverages with alcohol volume of less than 25%, other respondents will switch to another type of drink;
- the price increase impacts the change in preferences in the choice of brand of vodka insignificantly, in contrast to the presence/absence of the preferred brand in the shopping facility at the time of purchase.

As a part of the research, an analysis of the indicators of production and sale of alcoholic beverages, the cost structure and selling price of alcohol and strong alcoholic beverages, the pricing mechanism in the alcoholic production market was conducted, and it made it possible to draw the following conclusions:

- alcohol producers use different approaches to the formation of production prime cost and different methods for the distribution of indirect costs;
- in the structure of selling prices for alcohol used for the production of alcoholic beverages, a large proportion (72%) is occupied by direct costs, the value of which is determined by material costs (more than 90% in the structure of direct costs), which indicates a low impact of the economies of scale on the performance of the industry;
- in the structure of selling price for vodka, predominant share is occupied by taxes (61%);
- the production of vodka in the lower price segment is characterized by a large share of marginal revenue in price compared to the production of alcohol (62% vs. 28%). In the structure of marginal revenue, the share of profits is significantly higher (68% versus 39%);

- the effect of production leverage in the sphere of vodka production is much lower than in the sphere of alcohol production. With the growth in revenue by 1%, vodka producers could have achieved profit growth of 1.48% (against the 2.07% for alcohol producers);
- low marginal profitability of alcohol evens out the conditions of competition in the alcohol market between organizations that have their own capacities to produce alcohol and organizations that do not have such capacities;
- there is a close interconnection between the selling price of vodka in the lower price segment and the cost of the main raw materials, as well as between the cost of the main raw materials and the amount of marginal revenue. This conclusion is also supported by a high correlation rate of the cost of the main raw materials and profitability of outlay (0.86);
- an increase in expenses for auxiliary materials (bottles, etc.) does not lead to a proportionate increase in the selling price (the correlation coefficient is less than 0.3), but to a decrease in the share of marginal revenue in the price (correlation coefficients are -0.85)
- profitability is characterized by high variability, which, in many respects, is caused by dependence on the method of distribution of indirect costs adopted by the enterprise.

At the time of the study, the difference between the minimum retail and minimum selling prices established in the Republic of Belarus was 10.33%, and the sales expenses of trade organizations exceeded the specified amount. Trade networks do not have an economic opportunity to sell products at prices below the minimum retail prices while buying them at the lowest selling prices. Considering the fact that the key factor of choice in the segment of cheap alcohol is the price, retailers are forced to sell vodka at prices close to the minimum set by the state, while transferring part of the cost of sales to the manufacturer.

Thus, there is a need to change the mechanism for coordinating the interests of market entities, to link the minimum selling and minimum retail prices and to determine the optimal difference between them.

7. Conclusion

The international practice of establishing minimum prices per unit of alcohol confirms efficiency for reducing consumption - when one is buying vodka from the lower price segment, the key selection criterion is the retail price. The calculation of the minimum retail price for strong alcoholic beverages can be carried out taking into account the retail price per unit in the calculation of 1% of alcohol content:

$$\text{MRP} = \text{SpRP} \times C \times \text{Cap.} \quad (1)$$

where MRP is the minimum retail price for strong alcoholic beverages, in rubles, SpRP is the specific retail price per 1 liter of 1% alcohol content, determined on the basis of the market of strong alcoholic beverages conditions, market of substitutes conditions, the sensitivity of customers, taking into account the need to reduce alcohol consumption, in rubles, C - factual alcohol content,%; Cap. – factual capacity, in liters.

According to the results of the study, the authors concluded that it is necessary to observe the following inequality as a mandatory condition for the realization of the economic interests of the alcohol market entities:

$$MRP \geq MRP \geq \frac{MSP}{100\%} \times (100\% + MTM) \times \left(\frac{100\% + VAT}{100\%} \right) \quad (2)$$

where MSP is the minimal selling price for the corresponding strong alcoholic beverages, in rubles; MTM is the minimum trade mark-up that ensures the realization of the economic interests of trade organizations, %.

The state's establishment of minimum selling prices for strong alcoholic beverages taking into account the economic interests of market entities can be based on the following calculation options:

7.1. Minimum selling price = average industry expenses for manufacturing and sale of a unit of production + the minimum required profit + taxes:

- in the industry there is no regulation of the procedure for determining indirect costs per unit of production, different organizations can use different approaches, which leads to low comparability of the values of indirect costs and cost price in general;
- the profitability included in the selling price is dependent on the chosen method of indirect costs distribution;
- by adjusting their accounting policies organizations have the opportunity to make an impact at the level of minimum selling prices set by the state;
- the organizations producing alcohol have no interest in increasing the efficiency, since the increase of expenses leads to an increase in cost price, and, ultimately, to a comparable increase in the minimum selling price.

In case of implementation of such a mechanism for setting minimum selling prices, the government should solve the following tasks:

- establishing a procedure for collecting information on industry average comparable values of direct expenses;
- regulating the content and distribution order of indirect expenses when justifying the price, the procedure of determining them per unit of production;
- establishing the industry average value of indirect expenses per unit of production as a standard;
- establishing the standard value of production and sales profitability.

7.2. Minimum selling price = average industry direct expenses for manufacturing and sale of a unit of production + the minimum required marginal revenue + taxes.

The advantages of this approach are as follows:

- in the absence of regulation of the procedure for distribution of indirect expenses per unit of production, the transition to calculation of marginal revenue reduces the dependence of the final result on the market entities' accounting policy;
- organizations, by adjusting their accounting policy, lose the opportunity to make an impact on the level of minimum selling prices set by the state;
- the interest of organizations producing products in increasing its efficiency remains, since an increase in indirect expenses leads to a redistribution of the amount of marginal revenue, and not to an increase in the minimum selling price.

With this approach the government needs to solve the following tasks:

- establishing a procedure for collecting information on industry average comparable values of direct expenses per production unit;
- establishing the standard minimum amount of marginal revenue.

In conditions of overcapacity in the industry, price competition is intensifying, and the factual selling prices for vodka in the lower price segment will gravitate to set minimum selling prices. The establishment of minimum selling prices for alcohol on the basis of the direct expenses necessary for manufacturing of quality products and the standard minimum marginal revenue required for the realization of economic interests of producers allows for an increase in the quality of alcohol in the national market. Linking the value obtained with the minimum retail price, including the economically reasonable amount of the trade mark-up, allows not only to ensure the absence of cheap alcoholic production on the market, but also to realize the economic interests of trading organizations.

Developments and proposals of the authors were taken into account in the “Method for Establishing Limit Minimum Prices for Alcohol Products with Alcohol Volume of over 28%” approved by order of the Ministry of Antimonopoly Regulation and Trade of the Republic of Belarus of August 10, 2018 No. 190.

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