

ASSESSMENT OF FACTORS AFFECTING THE COMPETITIVENESS OF DAIRY PRODUCTS IN KAZAKHSTAN AND MANAGEMENT ITS EXPORT

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ABSTRACT

The problem of increasing the competitiveness of milk and dairy products, raising competition in the market is important for the development of dairy products of domestic producers. Therefore, it is necessary to increase the competitiveness of dairy products.

The purpose of the study is to assess the current market situation in the dairy industry in Kazakhstan, identify key factors aimed at increasing the competitiveness of milk and dairy products and promote its exports, study their impact and make recommendations for their improvement.

The study uses quantitative methods of research, is the method of economic and mathematical modeling using statistical data. Mathematical models are created on the basis of statistical data using numerical methods of research.

The article highlights the need to identify the key factors that affect the competitiveness of milk and dairy products in the promotion of export, first of all, in the promotion of export. This issue is especially important in the agricultural sector in the food market, including for dairy companies. This is because agriculture is an important sector of the country's economy that provides food for the population.

It is necessary to increase milk reserves in our country. For this purpose it is necessary to open milk processing points in the country, and to ensure its logistics, it is planned to purchase milk carriers.

The article analyzes and analyzes factors that contribute to the competitiveness of milk production in the country and its export shift.

Keywords: Competitiveness, Dairy Products, Milk Production, Import Substitution, Export Promotion, Main Factors.

INTRODUCTION

For the state's economy to be competitive, it is important to be competitive primarily for extractive industries and industrial enterprises, and large national companies

The first President of the Republic of Kazakhstan in the next Epistle told the people: "Our country shows need of development of the appropriate measures on increase in the

competitiveness in the world environment, and the state is ready to enter the World Trade Organization, especially pays special attention to competitiveness of domestic agricultural production". Besides, the head of state in the Message noted the following: *"a main goal - increase in labor productivity and export of the processed agricultural products by 2.5 times by 2022"* (Nazarbayev, 2018).

In this regard, in the country the *"National Export Strategy of the Republic of Kazakhstan"* program for 2018-2022 is approved.

The competitiveness is a many-sided economic category which can be investigated at several stages.

The competitiveness is the general, relative concept. Therefore it can be defined only by the mutual comparison of the enterprises or products in the market.

During globalization the competitiveness of products is one of the main indicators of profitability of the enterprise, the competitiveness of products defines a financial condition of firm and situation in the market.

The competitiveness is of great importance in ensuring national economic security which forms long-term sustainable development of national economy by the accelerated rates. This circumstance will provide full value of the raw materials necessary for production, the productive and useful way competitive in the internal and external markets, made in enough per capita and its continuous realization. Therefore the most important plan of ensuring competitiveness of products has to become the development strategy of each economic entity and its tactics (National Export Strategy of the Republic of Kazakhstan, 2017).

Production of competitive goods in the Republic of Kazakhstan, within the country, import substitution and promotion of export are the difficult and long-term task now. Today the era of globalization and the competitive environment demand this task, the country sets a task to make competitive goods. For this purpose it is necessary to reduce as much as possible costs of production, as much as possible to increase efficiency and labor productivity and also usefulness of production of goods.

In conclusion, a position of any state in world economy, the intensity of innovative development and also economic stability, economic security depend on its general competitiveness.

LITERATURE REVIEW

The review of the literature was carried out according to the systematic review process defined by Centobelli et al. (2020) and Altarawneh et al. (2020) that are well-known in the field of literature reviews concerning managerial topics.

In addition, on this research topic, scientific works and works of a number of domestic and foreign scientists-economists are presented.

Studying of various bases of a problem of competitiveness covers a set of works of domestic and foreign scientists-economists. For example, Porter (2008); Simo et al. (2016); Lajdová et al. (2017) works of such scientists-economists as Couillard & Turkina (2015); Sabden (2008), Toleugalieva (2021) made the significant contribution to a theoretical and methodological basis of increase and assessment of competitiveness of products.

Porter gave definition to concept competitiveness: *"the competitiveness is an object which has the particular share of the market characterizing the parameters answering to performance, economic, organizational and other specification"*. He grouped 5 main efforts of the competition characterizing all-branch benefits, created Porter's theory (Porter, 2008).

Besides, Porter in 2008 published the scientific research “*competitive advantages of the countries*” in which emphasized that in the international competition the competition not the state, but the enterprises compete, and the place of the country on this position depends on competitiveness of firms.

For example, Ratinger & Bošková (2013) I in the scientific works the following innovations on improving competitiveness of products, import substitution and promotion of export:

- Development of the state program of import substitution;
- Perfecting of national programs of promotion of export;
- Formation of the production program;
- Assessment of production efficiency of milk;
- Creation of a food supply in the country (Couillard & Turkina, 2015).

And Simo et al. (2016) made the ideas and proposals, the bound to agricultural policy and production of dairy products on the basis of studying of indexes of competitiveness of foreign trade of lactic and modular group (RCA, RCA 1, RCA 2, RMA, RXA and RTA).

Generally, the competitiveness of the product is based on two main directions. First of all, it is the opportunity to conquer the market, the advantages of increasing its competitiveness, and the adaptation of individual elements of the enterprise in the context of competitive environment directly to the protection service (Ratinger & Bošková, 2013).

All these domestic and foreign scientists studied the competition and competitiveness, emphasized their types, forms, the taken position in market economy which formulated an essence of these relations, defined features of an agrarian complex in economy and also developed key indicators and approaches to improving competitiveness of products and firm.

The competitiveness of goods or the provided service reflects the level of competitiveness of this industry. As a result the competitiveness of the country consists of competitiveness of special economic sectors. Special attention will be paid to sectors of an agricultural complex and the food industry.

All above-mentioned editions are intimately bound to my research problem. Within a subject of my scientific research, that is several scientists on promotion of export, import substitution and improving competitiveness of milk and dairy products in the Republic of Kazakhstan presented the researches.

However, problems of improving competitiveness and assessment on production and sales of products of an agricultural complex, in particular milk and dairy products are till today not studied in general, that is insufficiently studied and even particular shortcomings are observed.

Given these circumstances, as part of my research, I conduct research on the competitiveness of milk and dairy products in the country, using mathematical modeling methods based on statistics.

The article analyzes and analyzes factors that contribute to the competitiveness of milk production in the country and its export shift.

METHODOLOGY

Now issues of improving competitiveness of products of the enterprise and import substitution, inducing (advance) of export become a current problem. The empirical researches

directed to the solution of these problems are especially founded on developing countries and the large states with developing economy.

Milk and dairy products are of particular importance for formation of food fund of the country. For Kazakhstan citizens, milk and dairy products, first, a national product, secondly, enter the range of products of daily consumption. However this sphere loses the scale every day.

Now, in connection with conditions of the Customs union, the market of Kazakhstan bought milk and dairy products of various origins, especially from Kyrgyzstan, Russia, Belarus, is much lower in comparison with domestic dairy products, and the quality is much higher in comparison with domestic dairy products. The mean price range of milk in the market makes about 290 tenge for liter (Official site of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan, 2019).

This situation not only negatively influences development of dairy production, but also reduces tax revenues in the state treasury. It has negative effect on volumes of the state budget, i.e. significantly negatively influences the infrastructure and the state payments financed by the budget.

In general, within the Customs union in 2020 the term of export of milk and the dairy products which aren't conforming to requirements of technical regulations comes to the end according to the Quality Management System, 90% of the milk produced by private farms can be excluded from the market. In Kazakhstan annually 5.6 million tons of dairy and dairy products 4.1 million tons are produced in private farms, and the remaining 1.5 million tons are produced at peasant farms. Finally, milk production has increased by 50% over the period 2015-2019 (Kalieva, 2015).

Today in the country the volume of demand for milk and dairy products according to rates of national consumption is - 4.8 million tons (268 kg per capita). For the expired 2018 on the republic 5.6 million tons of milk and dairy products are produced. This index provides the necessary level of 118%. The enterprises which are engaged in production of milk in a year will process only 1.3-1.5 million tons of milk. It means that only 30% of the milk produced in the country is processed. This situation requires an optimal solution.

The balance of consumption of milk and dairy products in the Republic of Kazakhstan is given below in Table 1.

Years	2012	2013	2014	2015	2016	2017	2018	2019
Resources, thousand ton.	15693,4	11638,3	6344,48	6750,39	6432,6	6992,3	5400,2	5463.38
Production, thousand ton.	5232.5	4851.6	4930.3	5067.9	5182.4	5299.9	5498.4	5686.2
Import, thousand dollars.	10460.9	6786.66	1414.18	1682.49	1250.2	1692.4	1.836	1.9876
Usage, thousand tons	15693,4	11638,3	6344,48	6750,39	6432,6	6992,3	5400,2	5463.38
Export, thousand dollars.	915,1	1176,8	1056	1091,1	1112,4	1167,8	1213,4	1320
Share of sales in the domestic market,%	77	73	75	76	76,3	78	80	83

Source: Republic of Kazakhstan (2019)

From this Table 1 we can see that during 2012-2019 the volume of the milk manufactured in Kazakhstan annually increases, and the volume of import of milk in the country is reduced. Demand for "milk" of the Kazakhstan producers of milk in 2019 was 83%, and in comparison

with the same period of 2013 provided 73%, i.e. increased by 10% (Republic of Kazakhstan, 2019).

But, unfortunately, the sales prices of the processed milk and dairy products grow more than once until through carriers' hair don't reach the consumer, and, respectively, is much more expensive than him to the main prime cost.

Therefore one of current problems in our country is improving competitiveness of production of milk and dairy products and also monitoring of a supply chain of milk through transporters.

The structure and characteristic of export (behavior) are the main conditions for economic body height of the country.

For this purpose a specific place is held by national programs of promotion of export. Development of specific national programs of inducing of export optimizes export resources and possibilities of the enterprise.

The products of the Kazakhstan milk-processing enterprises show that despite the general increase in production, many neighboring countries (Russia, Kyrgyzstan, Belarus and others) are noncompetitive in comparison with dairy products. Falloff of growth rates of the industry of dairy production testifies to the beginning of import in the country (Kalieva, 2015).

Therefore today in the country a current problem is providing with quality and safe dairy products, import substitution, promotion of export and improving competitiveness of this industry.

It is necessary to stimulate export of the Kazakhstan dairy and dairy products under the brands Made in KZ. 6 dairy companies in Kazakhstan are currently exporting dairy products to China. The volume of milk produced in the country is growing from year to year. Let's show the volume of milk produced in 2018-2019 in Table 2.

Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2018	225.7	264.9	372.9	478.9	600.6	765.6	624.6	555.0	521.2	382.3	333.8	334.0
2019	231.1	271.3	383.5	493.2	613.4	798.3	649.2	574.7	541.7	397.9	340.2	347.8

Source: Republic of Kazakhstan (2019)

Milk production in Kazakhstan increased from 231.1 thousand tons in January to the lowest level in January 2019, up to 798.3 thousand tons in June. Then the decline in milk production began and lasted until November - 340.2 thousand tons, and in December the volume of milk production increased to 347.8 thousand tons. As can be seen from the table, growth of milk production in December 2019 is much higher than in 2018. Now, let's show the growth dynamics of milk production in our country for 2018-19 months every month (Figure 1).

Milk production in Kazakhstan has grown in the same dynamics since January. Increased by 231.1 thousand tons in January 2019, up to 798.3 thousand tons in June this year. The same dynamics was in the past in 2018, i.e. in 2018 milk production increased from 225.7 thousand tons to 765.6 thousand tons, respectively. Then milk production began to decline. In July, to 624.6 thousand tons, in August to 555 thousand tons, in September to 521.2 thousand tons. In October the production of milk increased again to 382.3 thousand tons, in November - 333.8 thousand tons and in December - 334 thousand tons.

Analysis of the Dairy Union of Kazakhstan shows that the consumption of milk in the dairy market has grown by an average of 5.2% for several years. The East Kazakhstan, Turkestan and Almaty oblasts are leaders in milk production. Only in 2019 these regions produced about

750 thousand tons to 805 thousand tons of products. According to the Ministry of Agriculture, last year about 5.6 million tons of milk was produced in the Republic of Kazakhstan, 85% of which were produced in private farms. At the same time, domestic consumption has increased.

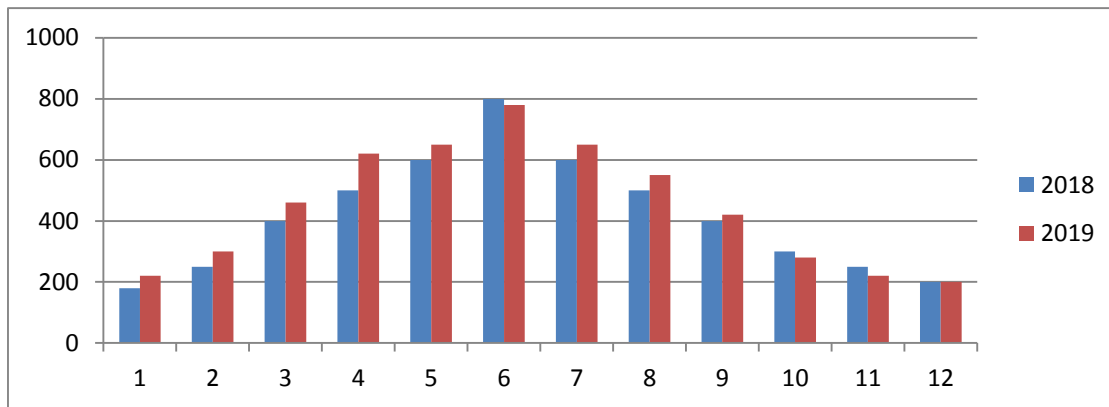


FIGURE 1
MONTHLY GROWTH OF MILK PRODUCTION IN KAZAKHSTAN FOR 2018-2019,
THOUSAND TONS

Milk consumption level is a very important indicator for the milk market in Kazakhstan. For the last 10-15 years the milk consumption in the Republic of Kazakhstan has doubled, but the milk consumption is three times lower than the norm (medical norm is 340 kg per person per year). If the level of consumption increases and the recommended medical norms, for example by 2020, the state's support and support will allow Kazakh producers to develop and strengthen their position on the milk market (Official site of the Ministry of Agriculture of the Republic of Kazakhstan, 2018)

RESULTS AND DISCUSSION

In this scientific research, when determining prices of milk and dairy products in the Republic of Kazakhstan, for studying and monitoring of a line-up of their deliveries to the end user, collect qualitative research techniques, i.e. by carrying out questioning necessary data and information. This information allows revealing divergences between the main prime cost of milk and dairy products and at the price of its realization. In particular, development of profit and expenses in dairy production, the analysis of cost of production of milk and the analysis of efficiency at the level in the course of processing are considered.

The estimation of competitiveness is based on particular comparative advantages (RCA) and indicators of level of the comparative price (CPL). Besides, by means of the quantitative and qualitative methods the ratio of import and export of milk and dairy products in the country by means of data and official statistical information is defined (Lajdová et al., 2017) thanks to these researches, I try to increase competitiveness of products, to analyse the factors explaining dynamics of body height of its export, to fill a gap in literature.

During exercise of above-mentioned researches, for the analysis statistical data of Committee on statistics of the Ministry of national economy of RK, the World Trade Center of the WTO and UNCTAD are used.

During the research methods were used it is correlative - the regression analysis. Communication between the milk output, population in the country and tariffs for import of milk to the country was for this purpose defined.

Within the research of the relation between these factors allowed investigating an economic situation of the dairy industry in Kazakhstan before accession to WTO (World Trade Organisation) and after accession to WTO.

In this scientific research necessary data and information for studying and monitoring of a supply chain of milk and dairy products are also going to the Republic of Kazakhstan to the end user. This information allows revealing divergences between the main prime cost of milk and dairy products and at the price of its realization. In particular, development of profit and expenses in dairy production, the analysis of cost of production of milk and the analysis of efficiency in a process of manufacture is considered (Naglova et al., 2017).

In Kazakhstan export of milk and dairy products promotes the following factors:

- Y-export of milk and dairy products on commodity position "0401" (thousand dollars, the USA));
- X1- volume of the produced milk (one thousand tons);
- X2 - population (one thousand people);
- X3- import tariff for milk in Kazakhstan (%);
- X4- Import volume (thousand US dollars, USA).

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5$$

Years	Volume of the produced milk (thousand ton)	Number of population (thousand people)	Tariff of the exported milk (%)	Volume of import (thousand the USA dollar)
2006	4926	15310	0.168	8845.6
2007	5073.2	15480	0.168	7659.2
2008	5198	15670	0.168	8967.3
2009	5303	16090	0.168	9876.1
2010	5381.2	16222	0.168	10460.9
2011	5232.5	16463	0.168	6786.66
2012	4851.6	16698	0.168	1414.18
2013	4930.3	16934	0.168	1682.49
2014	5067.9	17187	0.168	1250.21
2015	5182.4	17439	0.168	1692.4
2016	5299.9	17693	0.15	1.836
2017	5398.4	18 040	0.15	1.9024
2018	5461.4	18 324	0.15	1.9876
2019	5686.2	18 611	0.5	2.0002

Note: it is created by the author on the basis of literature Republic of Kazakhstan (2019)

On the basis of these factors we carry out a component analysis of export of milk in Kazakhstan.

We will begin the analysis with the assumption that a null hypothesis ($H_0=0$), regression with the probability of 95% in statistical size ($F < 5.40$), that is it means that these factors aren't

bound among themselves and these factors don't influence export of milk of the country, on a static significance of regression it is possible to exclude a hypothesis 1 (h1 1).

For carrying out the linear regression analysis we obtain the following basic data influencing export of milk and dairy products (Table 3).

The following coefficients allowing predicting the following stage were determined by calculation results (Table 4).

Factors	Coefficients
Const.	1940.26
The volume of the produced milk	1.860.81
Population	1.338.01
Import tariff for milk	384.7396
Import volume	-177.5

Note: it is created by the author on the basis of literature Republic of Kazakhstan (2019)

On the basis of the carried-out analyses we draw the following conclusions (interpretations):

- 1) In case of increase in volume of the milk produced in the country by 1000 tons, volume of import expenses will decrease by 1.860 thousand dollars of the USA;
- 2) Increase in population at 1000 people, volume of import expenses will increase by 1.338 thousand dollars of the USA,
- 3) Increase in a tariff for 1%, import expenses will be cut down for 384.7 thousand dollars of the USA.
- 4) If the volume of import is reduced by 1000 tons, import expenses will decrease by 177.5 thousand dollars of the USA.

Probability of this forecast is high (over 95%) and Fischer's criteria are higher than tabular (tabular) value. Therefore it allows to exclude the forecast of a null hypothesis (Ho) of non-stationary regression and to accept H1 hypothesis of a statistical significance of regression.

Further, now we analyze interrelation of a coefficient of correlation with factors (Table 5).

Factors	The volume of the produced milk (one thousand tons)	Population (one thousand people)	Import tariff (%)	Import volume (in thousand dollars, the USA)
The volume of the produced milk (one thousand tons))	1.0000			
Population (one thousand people)	0.4555	1.0000		
Import tariff for milk (%)	-0.6101	-0.7519	1.0000	
Import volume (thousand dollars of the USA)	-0.0094	0.8748	0.6072	1.0000

Note: It is created by the author on the basis of literature of Republic of Kazakhstan (2019)

We see that the most close connection between factors is a communication between the population and volume of import which averages 87%, the volume of import and import tariffs

are 60%, and an average feed-back between the population and a tariff makes 75%, an average feed-back between an import tariff and volume of the produced % milk-61, other factors poorly interact, but there is a feed-back: communication between the population and volume of the produced milk averages 45%, the volume of made in this way, the analysis of cost of export of milk in Kazakhstan from 2006 for 2019 is carried out.

By dependences on the level of body height of the population demand for milk and dairy products in the country will increase during the predicted period. Consumption of milk and dairy products increases according to forecasts. At the same time, in connection with body height of number of children in Kazakhstan, the volume of realization of children's sweet milk increased.

According to the above-mentioned reasons decrease in import of milk in the country and, as a result, increase in its export is expected.

However, the growing demand of the population for dairy and dairy products needs to be satisfied by increase and increase in domestic dairy production. The main competitors are EurAsEC member countries. In this case a number of actions have to be offered. For example, engaging of foreign investments into an agricultural complex.

According to several experts, by means of rural cooperatives domestic manufacturers of milk can compete with foreign producers within WTO membership. Besides, for increase in processing of high-quality milk it is possible to buy the expensive equipment, a forage for the cattle, fertilizer, effective breeds of the cattle (National Export Strategy of the Republic of Kazakhstan, 2017).

By this research numerical methods, in particular, methods of mathematical-econometric model operation with use of statistical data are used. The factors increasing competitiveness of dairy products are defined by the quantitative research techniques; mathematical models on the basis of statistical data are created.

Besides, by means of the quantitative and qualitative methods the ratio of import and export of milk and dairy products in the country by means of data and official statistical information will be established.

CONCLUSION

The food industry of Kazakhstan is one of strategically important industries aimed at providing the population with quality food. One of these industries is production of milk and dairy products. In the current year retail prices for liter of pasteurized milk were 290 tenge that is 5.5% more, than last year. Milk for 2.5% of fat content increased by 5.9% a year, the price for 1 liter was 260.2 tenge of them, and fat content for 3.2% increased up to 281 tenge for milk 1 liter, i.e. by 4.8%. Increase in prices for raw milk made 6.1% a year. Practically all resources (production and import) were consumed within the country but only 3.3% from them are exported. For the last year export grew at once.

Therefore, along with improving competitiveness of milk and dairy products in the country, it is necessary to open numerous milk receiving points, and when providing a logistics it is supposed to buy suppliers of milk. It is necessary to increase milk reserves in our country. For this purpose it is necessary to open milk processing points in the country, and to ensure its logistics, it is planned to purchase milk carriers. At the same time, the price of milk and dairy products sold in the country will be several times higher than the cost of the product, which will vary considerably from the time the carriers reach the end consumers. Therefore, it is important to keep track of the milk processing chain.

The following recommendations are offered to solve these problems:

- 1) It is necessary to move from small to large production, i.e. create accredited centralized organizations that meet all the requirements of the Customs Union, since small producers are not competitive. This will improve the quality and safety of milk, reduce logistics costs, and control the activities of milk producers.
- 2) Integration of small farms into cooperatives will help Kazakhstan to ensure a common domestic market and large-scale exports.
- 3) The state should support milk producers and processors through financing to increase production
- 4) In addition, it is necessary to limit the domestic market to imported goods. To do this, it is necessary to prevent the entry of counterfeits at checkpoints at the border, to strengthen strict discipline.
- 5) It is necessary to increase modern and practical knowledge in the dairy industry, increase the capacity of high-level specialists and local dairy consultants.
- 6) Dairy product labeling contributes to its export.

In general, this article identifies the main factors that contribute to improving the competitiveness of dairy products and their exports, analyzes their impact and makes recommendations.

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