Key development directions of the milk market of the region

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Abstract. The relevance of the research topic is determined by the importance of the milk market and its role in ensuring the food security of the country, as well as the current conditions created by the increasing complexity of the political and economic situation (the introduction of economic sanctions, increased competition, reduced product quality). In this regard, the purpose of the study is to substantiate the main directions of improving the organizational and economic mechanism of the milk market, ensuring the reduction of the impact of risks, the balance of mutual interests of market actors, the solution of the strategic task of food safety. The study used the balance, economic and statistical, monographic methods, the method of system analysis, theoretical and practical approaches developed by the authors. On the basis of the identified market conditions (demand, supply, and prices) and organizational and economic assessment of the milk market, positive (growth in retail trade, reduction in dairy product imports, large-scale modernization of the dairy industry) and negative (decrease in per capita consumption, reorientation of consumers to cheaper dairy products with low added value, reduced consumption of cheese and butter) trends are identified and described. The article substantiates the promising directions and mechanisms for the development of the milk market: improving production efficiency and competitiveness of dairy products, timely regulating market conditions (maintaining a balance of supply and demand), developing the market supply infrastructure, establishing industry clusters, reducing dependence on imports, growing organic production, digitization of production and sales of products, the expansion of interregional relations and export support, stimulated creation of marketing structures and improvement of marketing technologies.

1. Introduction
The market of milk and dairy products, being an important socially significant submarket of the agro-food market, is a rather large segment both in capacity (21.4 million tons in the Russian Federation) and in terms of the number of participants (6453 agricultural organizations in the Russian Federation in 2017 from 21,157 units). Significant production volumes (30,759 thousand tons in the Russian Federation in 2016) and consumption (34,666 thousand tons in the Russian Federation in 2016) of milk justify a special place of the milk market in food supply of the population. Milk and products made from it are traditional for the Russian population, playing the role of one of the main sources of animal proteins. Despite the measures taken by the Government aimed at developing the dairy cattle breeding, one may observe a low efficiency and inconsistency of certain elements and instruments of state regulation of the market and mechanisms of market activation of business. The current conditions can be characterized by the strengthening of existing and the emergence of new threats that lead to the
accelerated development of negative trends for the dairy industry: a decrease in volume (from 244 to 236 kg per capita in the Russian Federation) and a deterioration in the structure of consumption of milk and dairy products in 2014-2016, narrowing the market capacity (from 39,179 thousand tons to 37,860 thousand tons); high dependence on imported dairy products (the share of imports in personal consumption in 2016 was more than 21.8%); difficulties in providing raw materials to the dairy industry; high proportion of counterfeit products [1-4]. Considering the importance of the milk market and the current situation, it is necessary and expedient to work on an effective organizational and economic mechanism for the development of the milk market, ensuring its balanced functioning and taking into account the specifics of the regions. The importance and necessity of finding solutions to the above problems are justified by the importance of achieving the criteria of the Doctrine of Food Security of the Russian Federation and indicators of the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials, and Food Markets for 2013-2020. In this regard, it is very timely, in our opinion, to improve the organizational and economic mechanism for the development of the milk market in the regions of the Central Black Earth region (Belgorod, Voronezh, Kursk, Lipetsk, and Tambov regions), stimulating the growth of dairy production, increasing the profitability of agricultural producers, providing the population with dairy products at affordable prices and high quality, leveling out sharp price fluctuations in the market.

Problems of the development of the milk market have always been the focus of attention of economists. The development of scientific regulations on the milk market and its effective functioning is carried out by both domestic and foreign scientists.

Issues of functioning of the milk market are reflected in the scholarly works written by Bespakhotnyy, G. V., Boev, V. R., Buzdalov, I. N., Velken, E., Gordeev, A. V., Dobrosotsky, V. I., Dobrynin, V. A., Ishmuratov, M. M., Kireeva, N. A., Kiselev, S. V., Loginov, V. G., Magomedov, A.-N. D., Miloserdov, V. V., Ognivtsev, S. B., Petrikov, A. V., Sergeev, V. N., Serova, E. V. Regional aspects of the problem are considered in the works written by Zakshevskaya, E. V., Surovtsev, V. N., Charykova, O. G., and others.

The most significant contribution to the study of the functioning of the mechanism for regulating the market for milk and dairy products was made by such Russian scientists as Bulatov, A. E., Gerasimenko, V. V., Dolzhenkova, V. G., Esipov, V. E., Novoselov, Yu. A., Utkin, E. A., Chernikova, A. A., Chubakov, G. N., Tsatsulina, A. N., Shuliak, P. N., Yarkin, E. V., and others.

The theoretical and methodological issues of the interaction of supply and demand in the milk market, as well as the development of the economic relations of agricultural producers and dairy processing enterprises are addressed in the scholarly work of many economists: Belkina, E. N., Burobkin, I. N., Gataulin, A. M., Gryakov, S. I., Dugin, P. I., Kuminov, A. A., Zlobin, E. F., Nuraliev, S. U., Pozhidaeva, E. S., Romanov, A. E., Trikoza, R. S., Chetvertakova V. P., and others.

At the same time, research shows that the insufficient development of these issues confirms the need for further comprehensive research on the problems of balanced development of the milk market and providing recommendations for creating an effective organizational and economic mechanism for developing the milk market in the Central Black Earth regions.

The relevance and importance of solving the problem of improving the organizational and economic mechanism for the development of the milk market and the insufficient study of certain issues have justified the novelty of the study.

2. Methods

In the process of research, general scientific methods of cognition were used, first of all, dialectical, deduction, decomposition, methods of economic analysis and synthesis, as well as computational-constructive, economic, statistical and strategic analysis, monographic and balance methods that allowed to substantiate the key areas of developing the region’s milk market. The empirical base of the research is the analytical data published in the scientific literature and periodicals, expert assessments
and developments of Russian and foreign economic scientists, as well as analytical and calculated materials of the authors.

The scientific hypothesis of the study is based on the assumption that the timely improvement of the organizational and economic mechanism for the development of the milk market, adequate to changing external and internal conditions and based on the results of the analysis of the milk market situation, will contribute to its effective functioning. This, in turn, implies the establishment of a balance between supply and demand, competitive functioning of agricultural organizations, quality and sufficient supply of milk and dairy products.

3. Contemporary Development of the Milk Market

The development of the milk market is closely interrelated with the state of agricultural organizations and milk producers. A dairy cattle breeding is the most important sub-branch of animal husbandry, the development of which is important for ensuring not only food independence of the country but also social stability. Suffice it to say that this is one of the few branches of agriculture that brings daily income.

The generalization and systematization of the scholarly works of domestic scientists [5-8], as well as the many years of scientific research conducted by the authors [9], made it possible to clarify the structure, disclose the content, identify elements, and develop a structural-functional model scheme of the organizational-economic mechanism of developing the milk market. The performance of the milk market depends on the effectiveness of the organizational and economic mechanism of its development, which is a certain set of elements that ensure the functioning of the milk market with a view to its positive transformation. The modern organizational and economic mechanism of the milk market is based on the equivalence of market, administrative levers and government influence, along with the market self-regulation [10].

| Market elements | Content | Measures to enhance positive and reduce negative impacts |
|-----------------|---------|---------------------------------------------------------|
| Demand          | The demand for milk is conditionally constant and is guaranteed by the physiological needs of the population. The demand for milk has a relatively low price and is income elastic; and the demand for milk products is highly elastic. Widespread demand for milk with limited milk production areas. | Support for low-income groups. Infrastructure development. |
| Sentence        | Seasonality of production due to dependence on natural and climatic conditions. High competition between agricultural producers of raw milk with the simultaneous presence of conditions for the existence of monopolies in the areas of processing and sale. Specific infrastructure for the production and processing of milk. High risks (production, financial) with a relatively low profitability of dairy production. Price spikes (due to seasonality of production, market factors, low producer cooperation) increase dependence on processing enterprises. Impossibility of a separate raw milk producer to influence purchase prices. Dynamics of prices on the world market affects the prices of domestic producers due to the presence on the market of import substitution, state support for agricultural producers. | Specialization and placement of milk production in areas with favorable climatic conditions. Overcoming price disparity, rationalization and regulation of relations between market entities. Cluster creation, government support. Risk management, government regulation. State regulation. |

Table 1. Features of the milk market by market element.
imported raw materials.

The significant role of state support and regulation of the market is a significant difference between the agri-food markets and, in particular, the milk market, from other markets-subsystems of the national economy. This is manifested in the conceptual management decisions of organizational and economic nature [11]. Decomposition of the market into separate elements allowed to identify the features of milk production, the formation of its supply and demand, to evaluate the factors affecting prices.

The identified features (Table 1) and the strategic importance of the market under investigation substantiate the need for close government attention to its functioning. The specific features of the milk market identified in the research process determine the need for effective correction of the methods and tools of state regulation.

The study and systematization of many years of foreign experience in the development of the milk market allow us to state that the organizational and economic mechanism for the development of the milk market in developed agricultural countries receives considerable attention [12-18]. The generalization of foreign experience allows us to conclude that for the domestic milk market, it is expedient to use it in the direction of developing cooperation, greening, regulating pricing and product distribution, protectionism of domestic producers, introducing innovations.

4. Organizational and Economic Assessment of the Development of the Milk Market in the Central Black Earth Region

On the basis of monitoring and integrated organizational and economic assessment (of the situation and the existing regulatory mechanism) of the development of the milk market in the regions of the Central Black Earth Region, a number of trends were identified and development prospects were determined [19] (Table 2).

Table 2. Trends and prospects of development of the milk market in the regions of the Central Black Earth.

| Positive trends | Negative trends |
|-----------------|-----------------|
| 1. Growth in retail turnover of the market (from 2011 to 2016, by 2.8 times in dairy drinks). | 1. Reduction in the consumption of dairy products in 2016 (in the whole of the Central Black Earth Region by 43.4 thousand tons) (not in the Voronezh Region); the highest level of per capita consumption of milk is observed in the Voronezh region (271 kg), the lowest one is in the Tambov region (167 kg). |
| 2. Reduction of the import of milk products, including imports in 2016 (by 67.8 thousand tons if compared to 2015). | 2. Consumer reorientation to cheaper dairy products with low added value, reduced consumption of cheese and butter. |
| 3. Innovative development and modernization of the dairy industry (in particular, the Voronezh region) as the main supplier of resources to the market (construction and reconstruction of livestock complexes of the dairy direction), the growing share of private investment. | 3. Reduction of the livestock of the dairy herd in 2016 (as a whole in the Central Black Earth Region by 8.4 thousand heads) (not in the Belgorod and Voronezh Regions). |
| 4. The growth of milk marketability in agricultural organizations of the Central Black Earth region (from 81.9% in 2015 to 91.3% in 2016). | 4. Low price competitiveness of domestic producers. |

Perspectives
1. Creating clusters.
2. Import substitution, export expansion.
3. The growth of the market for organic products.
4. Development of market infrastructure.

Source: Compiled by the authors using data from http://www.gks.ru/.
An effective tool for ensuring the development of the milk market is government support for the commodity supply of milk and ensuring the formation of effective demand, implemented through the development and implementation of targeted programs. State support of the product offer is manifested in assisting agricultural producers through the implementation of measures aimed at increasing milk production, increasing the investment attractiveness of dairy cattle breeding, reducing the negative impact of seasonality of milk production, increasing the number of cows, encouraging milk marketability in all farm categories [20].

Currently, many of these measures are reflected in the subprogram “Development of dairy cattle breeding” of the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials, and Food for 2013-2020. At the present, the measures of state support main implemented in dairy cattle breeding include (a) subsidizing agricultural producers with interest rates on loans for modernization, reconstruction, and construction, and (b) providing subsidies for purchasing livestock and maintaining one milk production.

In recent years, the agrarian policy of the state largely contributes to the development of animal husbandry, including through the promotion of dairy cattle breeding. Corresponding target programs are being implemented in the regions of the Central Black-Earth (the state program of the Belgorod region “Development of Agriculture and Fish Farming in the Belgorod region for 2014-2020”, the state program of the Voronezh region “Development of Agriculture, Food Production, and Infrastructure of the Agri-Food Market”, etc.). However, the level of state support continues to be extremely low compared with developed foreign countries. For instance, support per 1 kg of milk in Russia is 0.89 rubles, while it is about 5.1€ in France and about 4.5 € in the USA).

5. Key Directions and Mechanisms for the Development of the Milk Market
The theoretical and analytical studies served as the basis for working on the main measures to improve the organizational and economic mechanism for the development of the contemporary milk market of the Central Black Sea Region. In particular, for the milk market of the CBER, the priority development areas are the following: improving the efficiency and competitiveness of the milk-product subcomplex of the agro-industrial complex; active regulation of the situation (maintaining a balance of supply and demand); development of the market supply infrastructure.

The main methods and mechanisms for implementing these areas are:

1. Formation and development of competitive industry clusters, in which a complete closed loop is carried out, which would ensure an increase in milk production. The functioning of clusters allows us to solve one of the main problems preventing effective functioning of the milk market, which is the disparity of prices, the main cause of which is the lack of equivalent relations between agriculture and processing [21].

2. Reduction and elimination of dependence on imports, which provides for the construction of breeding and genetic centers in dairy cattle breeding; development of the breeding farm base for raising dairy cattle [22].

3. Mastering and entering the market for organic products that have a growing demand in the national market and in the world. The CBER areas have real opportunities to unleash the potential of organic agriculture and milk production in particular [21].

4. The introduction of digital technology in production and marketing. Thus, the digitalization of the transport monitoring system will provide opportunities for remote integrated monitoring of compliance with the certification requirements of organic agriculture and electronic milk quality control. The use of digital technologies in dairy cattle breeding obviously provides an increase in economic efficiency.

5. Development of interregional relations, infrastructure of the milk market and export support, which would allow building a federal agrological network and, thus, connecting the South, Central Russia, the Urals, Siberia and the Far East. Studies have shown that in the Voronezh and Belgorod regions, milk production per capita exceed rational consumption rates, which
predetermines the need for the development of interregional relations. The main consumers of dairy products produced in the Belgorod and Voronezh regions can be in the following areas: Kursk, Lipetsk, Tambov, Bryansk, Rostov, Volgograd, Saratov, Penza, Tula, Orlov. In these areas, the level of milk production per capita does not reach a rational consumption rate. In addition, in such regions of the Central Federal District as Ivanovo, Kostroma, Moscow, and Tver, production does not cover actual consumption, which may be a factor in expanding the interregional ties of the regions of the Central Black Earth Region, particularly Belgorod and Voronezh. The cooperative infrastructure should cover a significant niche in the distribution network for milk and dairy products, covering the entire chain of goods from milk production to supplying milk and dairy products to the final consumer.

6. Stimulating the development of marketing structures (marketing centers, services, units at the federal and regional levels) and the improvement of marketing technologies, which would contribute to an active impact on the market situation. In particular, it is advisable to implement measures to stimulate sales of milk products and creating demand by providing subsidies for the purchase of dairy products.

Currently, there is a decrease in the demand for dairy products among the population due to rising prices and costs. In this regard, it is advisable to support the poor in order to expand the demand for milk and dairy products [22]. The research clearly shows that the total number of citizens who received monetary compensation for food in the regions of the Central Black Earth Region in 2016 was 12,197 people in the Voronezh region, 37,056 in the Lipetsk region, 135 in the Tambov region. This population received monetary compensation in accordance with the regulatory legal acts and regional programs. Such a situation predetermines the need to assist the poor population in increasing their consumption of dairy products. To this end, the amounts of the budgetary funds necessary for the provision of milk to the poor are calculated. The calculation was based on data on insufficient consumption of dairy products by the poor. Payments can be made in several ways:

1. Compensation payments for dairy products by poor working people in an enterprise, which, in turn, can expect to receive certain benefits from taxation.
2. Compensations from local social welfare agencies by working-able non-working people, who are subject to confirmation of their participation in government programs for training, retraining, and job search.
3. Issuing cards with money which can be withdrawn in stores that sell dairy products. Retail checks can be redeemed by retailers through banks that have an agreement with the state. This will provide targeted spending.
4. Providing the citizens in needs with food packages made up of dairy products from local producers.

Here it is necessary to emphasize that the practical implementation of the presented schemes of assistance to the poor population will allow maintaining a balanced state of the milk market, without distorting the essence of the market processes, and contribute to the growth of the milk market capacity. At the same time, artificially created additional demand will become a factor of production growth [24, 25].

6. Conclusion
The analysis of the organizational and economic mechanism for developing the milk market in the regions of the Central Black Earth Region allowed us to identify the main measures for its improvement: (a) improving the efficiency and competitiveness of the dairy-food subcomplex of the agro-industrial complex; (b) active regulation of the situation (maintaining a balance of supply and demand); (c) development of the market supply infrastructure. All this can be done through the development of industry clusters and establishment of equivalent relations between market entities on the basis of parity prices (relying on the methodical approach developed by the authors).
measures include (a) the construction of breeding and genetic centers and the development of breeding farms in order to eliminate dependence on imports; (b) market development of organic products; (c) introducing digital technologies into production and sales; (d) developing interregional relations with respect to dairy products in the nearest regions that do not produce milk in sufficient volumes for rational consumption; (e) stimulating the demand for dairy products by supporting the low-income population through the provision of subsidies for the purchase of dairy products. Implementation of the proposed measures will contribute to the effective development of the milk market, which will manifest itself in establishing a balance between supply and demand, efficient allocation of resources, quality management, increasing the profitability of the main actors market, fair distribution of income, and increasing the competitiveness of milk products through the introduction of innovative activities.

At the same time, an important place is given to the state as well as non-governmental public organizations. These provisions can be used in the practical activities of federal and regional authorities in the development of programs and activities for the development of the milk market; in research on the development of the organizational and economic mechanism for developing the milk market; in the educational process of higher educational institutions and in training and retraining programs for managerial personnel in the activities of regional branches of industry unions (National Union of Milk Producers, Dairy Union of Russia, Union of Wholesale Food Markets of Russia) in developing measures to improve the performance of industry markets. The developed directions make it possible to more fully take into account certain peculiarities of the regions and respond promptly and adequately to market fluctuations.

The results of the study are presented in research work, information about which is included in the unified state information system for recording civilian research, developmental and technological works, used in developing the draft Strategy for Socio-Economic Development of the Voronezh Region for the Period until 2035.

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