Regional meat market: a specific structure and development priorities

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Abstract. The relevance of the research topic is determined by the need to meet the needs of the population in meat products, the formation of a reliable balanced source of raw materials, and the implementation of import substitution policies. The purpose of this scientific work is to assess the modern functioning of the meat market in the Voronezh region and to justify the priority directions for the further development of its main segments. The study used the methods of portfolio and economic-statistical analysis, as well as theoretical and practical research results of the authors. The study noted an increase in the market supply due to an increase in regional meat production (with a decrease in imports, including imports of meat and meat products). Also, it found an increase in export volumes, including exports of meat products, which was a result of excess production indicators recommended by the norms of rational consumption of meat products (to some extent). The results of the portfolio analysis indicate a growing market for pork and poultry meat, high rates of growth in the markets for beef, lamb, and goat meat. The effective functioning of the meat market in the Voronezh region is facilitated by the clustering process currently underway, which ensures the use of modern high-performance technologies and enhances the efficiency and competitiveness of the regional agro-industrial complex.

1. Introduction

The meat market is one of the most significant in the structure of the food market of the Russian Federation. Its role is determined not only by the high demand and supply of meat products, but also by their importance as the main source of animal protein in the human diet.

A great contribution to the formation of the methodological and practical components of the development of the meat market was made by the work of such domestic scientists as N. D. Avarsky [1], V. D. Goncharov [2], A. Ya. Kibirov, A. A. Kolesnyak [3], G. I. Panaedova [4], E. V. Rudoy [5], A. M. Sukhorukova [6], O. G. Charykova [7], and others. The scientific and practical aspects of developing the meat market have found sufficient reflection in the relevant scholarly literature, but it is advisable to clarify the regional features of its functioning more fully. This, in turn, makes this scientific paper highly relevant.
2. Methodology

The study was carried out using the methods of economic-statistical and portfolio analysis. The main technique of portfolio analysis is the construction of matrices (in particular, the matrix developed by the Boston Advisory Group, also known as the BCG matrix), by which different types of products can be compared with each other according to criteria such as:

- Sales growth rates;
- A relative competitive position;
- A stage of the life cycle;
- A market share;
- The industry attractiveness, etc.

The information base, which determines the accuracy of the research, is presented by the data of the Federal State Statistics Service.

3. Results

In the Voronezh region, the main component of resources in the meat market is its own production (64.5%) (Table 1). The unambiguous production growth observed in 2010-2016 while reducing imports (including imports of meat products) indicates an effective import substitution policy. In addition, the increase in export volumes confirms the fact that meat production in the region is sufficient for providing food to the population.

Studies have shown that the consumption of meat and meat products by the population of Russia in 2010 was 63 kg per capita, and it was 73 kg per capita in 2016 - 68 kg, with the recommended rational consumption rate [8]. At the same time, in the Voronezh region, which is a major producer of meat and meat products, the actual consumption in 2016 was 79 kg per capita, while this figure was only 62 kg in 2010.

It should be noted that the volume of meat production, as well as the number of farm animals in the region increase annually. The largest share in the production of meat in the Voronezh region belongs to large and medium-sized agricultural organizations (80.5%), households of the population produced 18.4% in 2017, peasant (farmer) farms and individual entrepreneurs made up to 1.1%. According to the results of 2017, the Voronezh region achieved:

- The third place in Russia and the Central Federal District (after the Belgorod and Kursk regions of the Central Black Earth Region) in the number of pigs – 1169.3 thousand heads;
- The fifth place in Russia and fourth place in the Central Federal District for the production of pigs for slaughter in slaughter weight – 132.2 thousand tons;
- The ninth place in Russia and first place in the Central Federal District for the cattle population – 463.7 thousand heads;
- The seventh place in Russia and the first in the Central Federal District for the production of cattle for slaughter in slaughter weight – 55.6 thousand tons [9].

Studies have shown that meat products offered by agricultural producers of the Voronezh region may find favorable demand in the Vladimir, Ivanovo, Kaluga, Kostroma, Moscow, Ryazan, Smolensk, Tula, and Yaroslavl regions of the Central Federal District, in which the consumption of meat products by the population does not meet rational standards or the volume of domestic production is insufficient for providing the population with meat products at recommended rational norms [10].

Despite the fact that the Voronezh region in recent years is the leader among the subjects of Russia in terms of growth rates, the region produced 287.6 thousand tons of meat in 2017 in all categories of farms, which provided the region with only 4 positions in the Central Black Earth Region (table 2) [11].

The main segments of the meat market are: beef market, pork market, poultry market, lamb and goat meat market. The most significant share of the world production and the world meat market is
occupied by pork, beef, and poultry. In 2017, in the structure of world production, according to the International Independent Institute for Agrarian Policy and FAO UN [12], the share of these products was about 70%, and in the structure of world trade - about 75%.

Among the regions of the Central Black Earth Region, the Voronezh Region is the leader in the production of beef, mutton, and goat meat. Studies have found that in the Voronezh region, the production of almost all main types of meat meets rational consumption rates. In particular, in accordance with the rational norms recommended by the Ministry of Health of the Russian Federation, beef consumption should be 20 kg per capita per year, 3 kg of lamb, 18 kg of pork, and 31 kg of poultry meat. In turn, according to the Federal State Statistics Service, in the Voronezh Region in 2017, 23.8 kg of beef per capita per year were produced, pork — 56.6 kg, poultry meat — 41.3 kg, lamb and goat meat 1.1 kg. Thus, the insufficiently produced lamb undeservedly has a much lower consumer demand coming from the population than the already traditional beef, pork, and poultry [13].

Table 1. Resources and use of meat and meat products in the Voronezh region, thousand tons.

| Indicators                        | Years | Rates of growth, % |
|-----------------------------------|-------|---------------------|
|                                   | 2010  | 2015    | 2016    | 2016 to 2010 | 2016 to 2015 |
| **Resources:**                    |       |         |         |             |             |
| Stocks at the beginning of the year | 10,3  | 14,8    | 14,6    | 141,7        | 98,6         |
| Production                        | 185,4 | 231,1   | 259,3   | 139,9        | 112,2        |
| Import                            | 109,6 | 135,5   | 128,3   | 117,1        | 94,7         |
| Total resources                   | 305,3 | 381,4   | 402,2   | 131,7        | 105,5        |
| **Using:**                        |       |         |         |             |             |
| Production consumption (for animal feed and other non-food purposes) | 0,9   | 1,0     | 1,0     | 111,1        | 100,0        |
| Losses                            | 0,9   | 0,7     | 0,5     | 55,6         | 71,4         |
| Export                            | 125,5 | 156,2   | 172,6   | 137,5        | 110,5        |
| Personal consumption              | 168,5 | 208,9   | 213,8   | 126,9        | 102,3        |
| Stocks at the end of year         | 9,5   | 14,6    | 14,3    | 150,5        | 97,9         |

Table 2. Meat production by types and all categories of farms in the areas of the Central Black Earth Region, thousand tons.

| Meat types                        | Years | Rates of growth, % |
|-----------------------------------|-------|---------------------|
|                                   | 2015  | 2016    | 2017    |             |             |
| **Belgorod region**               |       |         |         |             |             |
| Meat, total                       | 1265,1| 1277,6  | 1332,9  | 105,4       |             |
| including: beef                   | 20,1  | 21      | 20,2    | 100,5       |             |
| lamb and goat meat                | 1,2   | 1       | 1       | 83,3        |             |
| pork                              | 632,2 | 663     | 687,6   | 108,8       |             |
| poultry meat of all kinds         | 611,2 | 592,3   | 623,7   | 102,0       |             |
| other types of meat               | 0,4   | 0,3     | 0,4     | 100         |             |
| **Voronezh region**               |       |         |         |             |             |
| Meat, total                       | 231,1 | 259,3   | 287,6   | 124,4       |             |
| including: beef                   | 52,8  | 54,7    | 55,6    | 105,3       |             |
| lamb and goat meat                | 2,3   | 2,5     | 2,6     | 113,0       |             |
| pork                              | 80,9  | 106,1   | 132,2   | 163,4       |             |
Mutton contains less fat and cholesterol than pork. In addition, sheep farming is currently gaining popularity among large Russian meat producers, since the lamb market is promising in terms of exporting this type of meat to countries in the Middle East, which traditionally occupy a leading position in the world in terms of lamb consumption.

The main producers of lamb and goat meat in the Voronezh region as of 2017 are households (74.1%), while the share of agricultural organizations in this segment is small (3.7%). The farms of the population surpassed agricultural organizations in the production of beef (48.9% versus 46.9%). In turn, agricultural organizations produce the largest share of pork (93.5%) and poultry meat (84.8%). The role of peasant (farmer) farms in the development of livestock in the region is insignificant due to its high cost: 4.2% in beef production; 0.2% pork; 22.2% - mutton and goat meat; 0.2% - poultry meat [13].

To establish the priority directions for the development of the regional meat market, it is advisable to use portfolio analysis. This procedure allows assessing the functioning of various segments of the meat market, determining the most profitable and competitive ones, eliminating subsequently inefficient areas, and optimally distributing investment resources. In our study, various types of meat are used as components of a portfolio: beef, pork, poultry, lamb, and goat meat.

For a portfolio analysis of the meat market in the Voronezh region, the commodity items of the main types of meat were analyzed using the BKG matrix [14, 15] (Figure 1).

The data obtained as a result of the construction of the matrix indicate the prospects of the markets for pork and poultry meat, which location on the matrix corresponds to the “Difficult Children” segment. The growing market for these types of meat requires investments to increase the competitiveness of products. Presence in a growing market means an increased need for financial resources for development, including renewal and expansion of production, intensive advertising, etc.

Beef, lamb, and goat meat occupy a segment of “Stars,” which correspond to high rates of market growth. To further stabilize the revenues from these types of products, an increase in investment is also required.
Figure 1. BKG matrix for the meat market of the Voronezh region, 2016.

Thus, according to the results of the construction of the matrix, it can be concluded that meat types are being produced and sold in the region, which provide real income with the right investment.

At present, an active clustering process is underway in the Voronezh region. This, in turn, predetermines the use of modern highly efficient technologies for the production, processing and storage of agricultural products, raw materials, and food, which ultimately leads to an increase in the efficiency and competitiveness of the regional agro-industrial complex and an increase in the efficiency of the meat market. The meat cluster is expanding and improving in the region where the logistic system of beef cattle breeding functions: genetics – production – feed – processing – sale – consumption. In order to develop pig breeding, the construction of breeding and genetic centers, breeding reproducers, feed mills, pig breeding complexes is being carried out. In addition, projects for the construction of poultry farms are being implemented in the region [11].

The following are the most promising areas for further development of the main segments of the region’s meat market:

- The use of marketing (in particular, the formation of demand and sales promotion) and logistics approaches at all stages of the movement of products, starting with production and ending with bringing products to the consumer (including the formation of commodity zones);
- A variety of assortment and quality improvement of meat products [16];
- Development of market infrastructure (in particular, improvement of storage and processing of meat products) [17];
- Technological improvement of poultry and livestock production [18];
- A complex processing of raw materials in the meat industry [19];
- Expansion of interregional relations;
- Optimization of the organizational and economic relations of the market entities with each other on the basis of taking into account the interests of each of them and obtaining mutual benefits [20];
A focus on the production of organic beef cattle; implementation of environmental protection systems [21, 22].

The practical significance of the study lies in the possibility of using the results obtained in the practice of the Department of Agrarian Policy of the region, scientific institutions in the study of problems of regional development of the agro-industrial complex, as well as processing and agricultural organizations in the analysis and evaluation of areas of operation [23]. The proposed scientific developments can be used in the educational process of higher educational institutions, in programs of advanced training and retraining of personnel of subjects of the agrarian market, etc.

4. Conclusion

The Voronezh region in the production of meat of all kinds takes the fourth place in the Central Black Earth Region, only ahead of the Lipetsk region. The assessment of the resources of meat and meat products allows to conclude that one can observe the growth in the volume of meat production and export, including the export of meat products, while reducing the values of export, including import.

According to portfolio analysis, growing pork and poultry markets require investments to increase competitiveness. High growth rates in the beef, lamb, and goat meat markets also justify the need to intensify investment processes in order to generate a stable long-term income.

This is facilitated by the development of competitive industry clusters in modern conditions in the Voronezh region, which implies the introduction of modern highly efficient technologies for the production, processing and storage of agricultural products, raw materials and food, which, in turn, ensures the efficiency and competitiveness of the regional agriculture and the productivity of the meat market.

In the future, in order to optimize meat production, increase the competitiveness of meat products, increase the region’s meat market efficiency, it is necessary to focus on the study and development of principles for the formation of commodity zones, which will take into account the natural and climatic conditions of the region, the availability of processing plants and their capacities, and the location of markets products.

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