Assessing the concentration of agricultural producers

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Abstract. The relevance of the study is due to the high dependence of industry efficiency on the level of concentration of agricultural producers. The purpose of the study is to determine trends in the concentration and integration of agricultural producers in the Sverdlovsk region. The research method used was a comparison of the Herfindahl-Hirschman index and the dynamics of the organizational status of the functioning of existing farms. The results of the study show a decrease in the level of concentration of agricultural producers. This trend leads to a lack of manifestation of the benefits of economies of scale both at the level of individual producers and within the regional economy.

1 Introduction

High integration of the agricultural production market is the result of consistent actions aimed at obtaining integration effects at all stages of food production. Manufacturers are primarily looking to take advantage of economies of scale. Reducing fixed costs per unit of production allows farms to form reserves for updating the material and technical base, attracting narrow-profile specialists, and introducing innovations. Along with factors of production efficiency, integrated forms of management make it possible to exclude a significant number of intermediaries from the food supply chain, which creates additional prospects for increasing efficiency. The indicated effects allow large farms to gain competitive advantages over small forms of business. Comparative studies presented in [1, 2] allow us to draw a conclusion about the advantages of operating large farms in the same natural and climatic conditions. The authors emphasize that the level of integration is directly related to the volume of agricultural production; in regions with a low level of market concentration, a decrease in the total volume of agricultural production is observed.

At the same time, an analysis of works [3, 4] devoted to assessing the level of concentration and integration of agricultural production in the Sverdlovsk region shows that at the moment there are no trends in the integration of agricultural producers. The purpose of the study is to determine trends in the concentration and integration of agricultural producers in the Sverdlovsk region.

2 Materials and Methods

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Theoretical works [5, 6] present numerous justifications for the advantages of the integration model for agricultural producers. In particular, one of the basic postulates of the firm theory states that an increase in production volumes leads to a reduction in unit costs, which in turn makes it possible to use the resulting reserves in competition. The company can use cost reductions either to reduce prices and displace competitors as part of price competition, or create reserves for the implementation of active measures of non-price competition.

As a method for assessing the concentration and integration of agricultural producers in the Sverdlovsk region, a comparison of the Herfindahl-Hirschman index and the dynamics of organizations operating within the framework of the organizational status of small business forms was used. The research information base consists of more than 6,000 agricultural producers in the Sverdlovsk region. The indicators were assessed for the period from 2012 to 2022. The stages of the study are presented in Figure 1.

**Fig. 1.** Processes of concentration and integration can be assessed using market and organizational characteristics

- **Stage 1** Assessment of market characteristics of market concentration is carried out using the Herfindahl-Hirschman index
- **Stage 2** The assessment of organizational characteristics is carried out by monitoring changes in the organizational status of agricultural producers

3 Results and Discussion
The results of calculating the Herfindahl-Hirschman index for the main sectors of agriculture, 2012-2022. The figure shows that in a number of industries there is a decrease in the Herfindahl-Hirschman index. To the greatest extent, this trend is manifested in the cultivation of grains, legumes and oilseeds, floriculture and poultry farming; the opposite trend is observed in the industries of growing grain crops, seedlings and breeding other breeds of cattle.

The verification of the organizational characteristics of the disaggregation of farms was carried out on the basis of an assessment of the organizational status of the functioning of agricultural producers. The assessment results are presented in Figure 3.
Fig. 3. Changes in the organizational status of the functioning of agricultural producers in the Sverdlovsk region, 2012-2022. The assessment shows that in the period from 2012 to 2022 there was a gradual replacement of organizations operating in an organizational status characteristic of large businesses with small forms of business. The most common organizations at the moment are those operating in the status of heads of peasant farms and individual entrepreneurs. Thus, unidirectional trends are observed both when assessing market characteristics and when assessing organizational characteristics.

4 Conclusion

The presented research results confirm the conclusions presented in studies of the level of concentration and integration of the market of agricultural producers in the Sverdlovsk region. The observed situation indicates that the benefits of large-scale agricultural production are being abandoned. This trend leads to a sectoral decrease in efficiency, which requires additional support measures from the state budget. An alternative option is the development of the industry on the basis of large vertically and horizontally integrated structures, represented in the Russian economy in the status of agricultural holdings. As noted in the work of V.N. Kurochkin, who examined the genesis of integrated structures in agriculture [7] “the creation of holding structures in the modern dynamically developing economy is a way to reduce commercial risks and reduce costs,”
advantages for working in an open market.”

As for measures of state support for agricultural producers, a set of measures is needed to stimulate the development of large farms in the Sverdlovsk region, given the limited resources and complexity of this activity, the efficiency of each farm becomes especially important.

The undoubted advantages of the integrated structure of this market include financial opportunities for updating the material and technical base, and pronounced effects of the scale of activity, the possibility of using scientific achievements, investment attractiveness in terms of investing funds, and finally, in an integrated structure, government support funds will be spent more efficiently.

References

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