

The Influence of Industry State Support on the Development of the Region

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Abstract— The modern world is characterized by the strengthening of the economic and political expansion of Russia into the world community, expansion of world economic relations, and intensification of international economic relations. At the same time, the Russian Federation runs an active protectionist policy in relation to a number of regions and industries of strategic importance to Russia. They receive financial and non-financial government support aimed to support economic activity. The question of the effectiveness of the resources spent by the state is important and especially urgent in this situation. The object of the research is industry state support. The purpose of the study is to develop an algorithm for assessing the influence of industry state support on the development of the region. The article proves the need to develop an algorithm for assessing the influence of industry state support on the development of the region. The authors have identified four groups of indicators that evaluate the effectiveness of state support according to various criteria. Moreover, the authors have calculated the coefficients of significance of these indicators and developed a methodology for calculating the integral indicator of the effectiveness of industry state support (using agriculture industry as an example).

Keywords: *development of the region, state support, performance evaluation, integrated performance indicator*

I. INTRODUCTION

Agriculture is not only a sector of the world economy, but also the habitat of a significant part of the country's population (approximately 27%), with a special kind of life, a peasant civilization that forms the spiritual and cultural origins of the whole nation. It also plays an important role in preserving and maintaining agrolandscapes that have been developed historically, helps to maintain diversity in the cultural sphere of the country, and to support well-being in the economic sphere. It forms people's moral foundations, their national psychology and historical memory. In order to preserve this industry and to help it survive in difficult market conditions, the state must provide constant and stable support to

agriculture using various economic and financial actions, techniques and methods. It will give an opportunity to provide food for the country's population and to export agricultural products and food products, thereby contributing to the country's food security.

Agricultural organizations need state support to create new production facilities and modernize existing ones, to master new equipment and technologies, to saturate the consumer market with agricultural products and to realize social goals.

The research topic is urgent as it underlines the importance of bringing the state's domestic policy in support of the agricultural producer in accordance with the requirements of the World Trade Organization, the need to improve methods and directions of state support through other economic forms and methods of organization, use, planning, distribution, control and return material and financial resources of the state. It will strengthen the Russian agricultural market and improve villagers' lives through the development of entrepreneurial structures. Moreover, the developed methods for assessing the effectiveness of budgetary funds will be useful for government bodies, agricultural organizations and economic science.

II. LITERATURE REVIEW

The concept of «state support» is ambiguous for economists and specialists. It is often replaced by “public administration system”, “financial assistance”, “budget economic management”, “structure of budget support”, “state assistance to agriculture”, etc.

Russian scientists consider the problem of state intervention in the economy of regions and industries as a complex economic and legal mechanism for regulating public relations, “through which agricultural organizations get various material, financial and advisory assistance and support from the state necessary for doing business” [1]. Moreover, in [2] it is noted that state support is an integral part of the system of state regulation, and the mechanisms of this support

should complement each other at different levels and contribute to the formation and normal functioning of the market.

Russian authors also take into account the political characteristics of state intervention. They point out that state support in the new conditions is necessary “to prevent abuse of economic power” and that it is an objective necessity to agricultural organizations [3]. Financial and non-financial state support for agricultural producers is vital both the industry itself and the country's agricultural regions. It is a “support mechanism of agricultural organizations, aimed to ensure an equivalent exchange between the industry and the agriculture in the conditions of price disparities” [4].

The authors also consider the features of state regulation of the innovation transfer into the Russian real economy, including in the agricultural sector [5].

It is necessary to note that agricultural policy in foreign countries is based on the large-scale state impact on agriculture [6]. The main objectives of this policy are to increase the agricultural production, ensure producers' income and protect them from outside competitors, stabilize food markets, supply the population with affordable prices, maintain ecological and natural balance. The objects of regulation are prices for agricultural products, production and marketing conditions, resource support, industry specialization, environmental protection and social infrastructure of the rural area.

Moreover, the modern agrarian policy of foreign countries provides the transition to a green economy (the Green Economy concept, circular economy). The state support aims to create and use “clean” technologies that reduce the greenhouse effect, preserve and enhance green spaces [7-11].

III. RESULTS AND DISCUSSION

The agro-industrial complex needs additional investment in the acquisition of new equipment and more modern technologies, the modernization of existing and construction of new industries to saturate the consumer market with agricultural products, the realization of public goals. Therefore, budget support is necessary, it should take into account the characteristics of agricultural production as an industry.

As a result of the research, the authors have systematized and grouped the main factors influencing agricultural production, and identified the corresponding methods of state support (Table I).

All these methods can be characterized from the standpoint of their influence on the development of the industry and the region. In this case, it is advisable to distinguish four groups of performance indicators:

1. Financial efficiency characterizes the return on invested funds at the expense of the organization's profit. Within this group, we propose to single out the indicator “coefficient of the effectiveness of agricultural organizations, taking into account state support” (CE), calculated by the formula (1).

$$CE = Pc / AISS, \text{ or } CE = Pc / (Pp + Fc) \quad (1)$$

where Pc is total profit from agricultural products for the current year;

TABLE I. METHODS OF STATE SUPPORT FOR AGRICULTURAL PRODUCTION

Factors of agricultural functioning	Methods of state support	Result of state support
The main factor of agriculture production is land	Financing from budgets at all levels	Conservation of area and quality of agricultural land
Budget support as a factor in financing agriculture	Preferential leasing, subsidies	Agricultural production efficiency
Competitiveness as a factor promoting agricultural products on the market	Tax incentives, soft loans	Increasing the purchasing power of the population
Scientific and technological progress as a factor in agricultural functioning	Development and financing of specialized target programs	Innovative projects that attract investment in the industry
Natural-climatic factor as a cause of risky farming	State insurance of fixed assets	Mitigating the effects of adverse climatic factors
Food price as a factor in the functioning of a market economy	Change in budget expenses, taxes, interest rates for a loan	Changes in costs and prices of products and impact on reproduction processes

AISS is the aggregate indicator of agriculture state support, calculated as the sum of the total profit from agricultural products received during the previous year (Pp) and the appropriations from budgets at all levels for the current year (Fc).

The authors propose evaluating the effectiveness on the basis of the following gradation of the efficiency coefficient of the agricultural organization work:

- $CE \leq 0.3$ – the work of agricultural organizations is not effective;
- $0.3 < CE \leq 0.6$ – the work of agricultural organizations is poorly effective;
- $0.6 < CE \leq 0.9$ – the work of agricultural organizations is at an average level of efficiency;
- $CE > 0.9$ – the work of agricultural organizations is highly effective.

The advantage of the method is that, depending on the data used, calculations can be carried out both for the whole organization and for individual sectors (crop and livestock production), for the country, industry, region, and for an individual organization.

2. Budgetary efficiency characterizes the return on funds spent on the provision of state support due to taxes paid by agricultural organizations to the budget. Within this group, the indicator “Ratio of the amounts paid by agricultural

organizations to the budget and the amount of state support (Kts)”:

$$Kts = Sc / Tc \times 100\% \quad (2)$$

where Sc is the amount of state support actually received during the reporting period, thousand rubles;

Tc is the amount of actually paid payments to the budget, thousand rubles.

3. Technological efficiency characterizes the degree of renewal of fixed assets due to state support. One indicator is “The share of state support in the amount of introduced fixed assets (Ksfa)”:

$$Ksfa = SI / FA \times 100\%, \quad (3)$$

where SI is the amount of state support aimed to finance capital investments, thousand rubles;

FA is the amount of fixed assets introduced in the reporting year, thousand rubles.

The analysis of this indicator makes it possible to assess the influence of state support on the financial and economic life of the enterprise and the industry in general.

4. Production efficiency assesses the influence of government support on the dynamics of agricultural production. Within this group, we propose the calculation of the gross output growth rate by 1% of state support (Ksgo):

$$Ksgo = Sc / GO \times 100\%, \quad (4)$$

where GO is the gross output for the reporting period, thousand rubles.

The calculation of the integral indicator of the effectiveness of state support (IiES) is based on the determination of the weighted average value taking into account the significance of each criterion.

The algorithm for calculating the integral indicator is:

$$IiES = CE \times d_i + Kts \times d_i + Ksfa \times d_i + Ksgo \times d_i, \quad (5)$$

where di is the significance of i - criterion, share.

Based on the obtained values of the integral indicator, we can make the conclusion on the effectiveness of state support based on the following range of values:

- $IiES \leq 0.9$ – state support is not effective;
- $0.9 < IiES \leq 1.1$ – medium degree of state support effectiveness;
- $IiES > 1.1$ – high degree of state support effectiveness.

To assess the significance of the criteria, the authors conducted a survey of managers and specialists working in the field of agriculture. Then the coefficient of significance of each indicator was determined by the expert assessment (table II).

Analyzing the coefficients of significance of indicators for assessing the effectiveness of state support, we can conclude that the most significant were the first and last proposed coefficients; their values were 0.319 and 0.373, respectively.

Thus, formula (5) can be transformed as follows:

$$IiES = 0.319 \times CE + 0.214 \times Kts + 0.094 \times Ksfa + 0.373 \times Ksgo, \quad (6)$$

IV. CONCLUSION

Using the proposed methodology, the authors have calculated the integral indicators of the effectiveness of state support in a number of regions of the Russian Federation in dynamics. Further analysis of cases of ineffective state support revealed the reasons for this inefficiency. In our opinion, state support should take into account the size, efficiency of activities and development strategies of the agricultural organization. These factors can be used in the regional clustering model proposed in [12].

TABLE II. THE COEFFICIENTS OF SIGNIFICANCE OF INDICATORS FOR ASSESSING THE EFFECTIVENESS OF STATE SUPPORT, CALCULATED BY THE EXPERT ASSESSMENT

Indicators	Coefficient of significance
The efficiency ratio of agricultural organizations, taking into account state support	0.319
The ratio of the amounts of taxes paid and the amount of state support	0.214
The ratio of state support in the amount of input fixed assets	0.094
Gross output growth rate by 1% growth in state support	0.373

The proposed algorithm will make it possible to evaluate the effectiveness of budget support for the region’s industry and conduct a comprehensive study of its influence on the activities of regional organizations of the analyzed industry. It will allow redistributing state support resources in order to achieve their maximum return.

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