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Conference on Land Economy and Rural Studies Essentials**ASSESSING THE EFFECTIVENESS OF THE INTEGRATION
PROCESSES DEVELOPMENT IN THE AGRO-INDUSTRIAL
COMPLEX**

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Abstract

An important economic problem in the development of integration processes is the assessment of their effectiveness due to an incomplete and inconsistent understanding of the essence of the problem, its main criteria, the system of indicators, the factors determining their development, including fundamental issues of the theory and methodology of production efficiency. In addition, the assessment of economic efficiency is an important economic problem of the integration processes development. Currently, various methods have been developed and tested to determine the effectiveness of various processes development, but in each particular case, it is necessary to take into account several factors specific to certain conditions. The assessment should be based on the following principles: ideological, intrapreneurship, complex, process, program, mutual influence, integrated information systems. The use of assessment framework for evaluating the effectiveness of integration processes is determined by the approaches associated with the theory of transaction costs; competitive advantages; the formation of long-term mutually beneficial business relationships; the theory of financial management; the peculiarities of interaction between shareholders and managers; the "phenomenon of major banks". It is possible to assess the impact of integration processes on the regional economy in the following areas: improving the investment environment, developing investment, scientific and technical potential in the region; reducing their vulnerability to technological processes and changes in market conditions; solving social and regional problems; environmental impact.

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1. Introduction

From a methodological perspective, the criteria for assessing the effectiveness of the integration processes development are:

- identification of the main factors, taking into account their functional dependence;
- a comprehensive approach to assessing the relationship between subsystems;
- the increasing role of integration and cooperation in overcoming imbalances;
- modernization of the agro-industrial complex development, coordination of the functional relationship between interdependent factors (Zhidkov, 2019).

In the development of integration processes, it is possible to distinguish external and internal factors that influence their formation in the agro-industrial complex.

External factors are of objective nature and cannot be changed by the participants of the integration process. Internal factors characterize the economic, social, technological, and environmental components of the activities carried out by participants of the integrated structures (Sutormina & Khaustova, 2020).

2. Problem Statement

At the stage of creating integrated structures, forming their parameters, creating conditions of attractiveness for the unification of market economy entities, external factors play a primary role.

In addition, external factors, including the economic conditions of management, lead to equalization and increase in the attractiveness of investments, which is reflected in the advantages of integrated production while achieving its sustainability (Ivanova & Merkulova, 2018).

However, economic factors can also be considered as internal factors concerning integrated systems that lead to an increase in the profitability of the entire production and its individual participants.

Factors contribute to accelerated growth, gaining competitive advantages and improving the efficiency of integration processes, due to the causal relationship and synergy of action.

The efficiency of integration processes is the effectiveness of all production factors, reflecting the final result achieved in a given period. At the same time, regardless of the size of the effect itself, it does not reflect the real price of the resources spent, since the same effect can be achieved in a variety of ways, using the production potential in different manners.

Therefore, the effectiveness of integration processes should be considered, on the one hand, as a set of factors affecting their development, ensuring their wider reproduction, and on the other hand, providing an effect based on the reasonable use of potential (Kuznetsova et al., 2021).

3. Research Questions

The paper addresses the issues inherent in the hypothesis of the study, which implies that the methodological basis for determining the effectiveness of integration processes in the agro-industrial complex is a systematic approach, taking into account the specific conditions of production and the influence of factors on their effectiveness. Therefore, it is advisable to consider the following issues in the article:

- to determine the basic principles for evaluating the effectiveness of integration processes;
- to establish approaches to assessing the effectiveness of integration processes in the agro-industrial complex;
- to identify the possibility of obtaining a synergistic effect by the participants of the integration process.

4. Purpose of the Study

The purpose of the study is to determine methodological approaches to assessing the effectiveness of the integration processes development in the agro-industrial complex.

5. Research Methods

Works of classics of economic theory, works of domestic and foreign scientists-economists on this topic, policy documents, legislative, normative, and information acts regulating the activities of the agro-industrial complex, publications in periodicals form a basis for research being conducted. The article uses monographic, abstract-logical, and dialectical research methods, including particular techniques: analysis, synthesis, induction, deduction, observation, hypothesis, and scientific abstraction. The reliability of the use of economic research methods, confirm the results obtained, and guarantee the credibility and proof of the conclusions made.

6. Findings

Evaluation of the integration processes effectiveness should be carried out using the basic principles: ideological, intrapreneurship, complex, process, program, mutual influence, integrated information systems.

The algorithm for analyzing and evaluating the effectiveness of processes integration is based on the ideological principle, that is, on determining the idea and value of an integrated formation. The lack of a clear ideology leads to a lack of decision-making criteria.

Thus, ideology acts as an integrating factor in the structure of the formation.

The principle of intra-company entrepreneurship is aimed at the development and implementation of the entrepreneurial spirit in integrated structures.

The process principle is related to obtaining adequate information about current processes in integrated structures. When analyzing integration processes, it is necessary to take into account factors related to resource consumption, restructuring of production and management infrastructure, accelerating financial regulation and reducing the production stages and processed products sale based on rationalization and interaction with stakeholders.

The program principle is aimed at studying the effectiveness of individual participants in the integration process. The cumulative effect consists of several specific effects from the introduction of organizational and administrative, technical and technological, socio-economic innovations, investments at the stages of production and products sales.

The principle of mutual impact of the head integrated structure and its participants in the process of implementing joint activities.

The principle of information systems application aims at improving the competitiveness of integrated formation. A single integrated information system provides access to the general information of all participants of the integrated formation. Workplaces automation with the provision of programs and the necessary system resources contributes to the implementation of current production functions and management of production processes.

The main principle of the economic efficiency of the integration processes development is its synergetic component.

The application of the principles for evaluating the effectiveness of integration processes depends on the chosen approach. There are the following approaches to assessing the effectiveness of integration processes in the agro-industrial complex (Chaplitskaya et al., 2021).

1. An approach related to the theory of transaction costs. The essence of this approach is the possibility of concluding long-term agreements on joint activities of its participants. Establishing a mutually beneficial relationship requires certain transaction costs, which tend to increase in the course of joint activities. According to the theory of transaction costs, the specific characteristics of the resource potential are the main factor of integration, which guarantees the effective integration development.

2. An approach related to ensuring competitive advantages. Under this approach, the competitiveness potential of an integrated formation is determined by a set of factors that ensure long-term benefits from the merger: the quality, price of agricultural products; innovation potential; long-term strategy of activity; the presence of corporate culture.

3. An approach to establishing mutually beneficial long-term business relationships. Among the factors for the development of integrated structures are the following: the formation of intra-company relations; the presence of a single integrated planning system; the system of mutual shares ownership within the formation; the development of investment potential; maintaining the competitive status of products.

4. An approach related to the theory of financial management. The development of integration processes is carried out taking into account the following principles: obtaining a synergistic effect; saving by increasing production volumes; tax payments saving; using temporarily available financial resources; diversification of production.

5. An approach related to the peculiarities of interaction between shareholders and managers. For the benefit of the participants of the integrated formation, valuable technologies of centralized management of the company are used, which guarantee the completeness, transparency and democratic nature of the system.

6. An approach related to the "major banks" phenomenon. The intertwining of the interests of the integrated formation participants and the banks allows skillful management of financial flows, competent navigation of the financial market and optimization of the economic and financial policy of the formation.

The close interweaving of various processes and the specifics of the market relations manifestation in the agro-industrial complex require consideration of different types of efficiency in the integration processes development: technological, economic, social, and environmental.

The criteria for technological efficiency can be an increase in the output of competitive products per unit area, economic efficiency - making a profit sufficient for the implementation of expanded reproduction; social efficiency - creating safe working conditions and a decent standard of living; environmental efficiency - the production of environmentally friendly products and maintaining an ecological balance.

The main influence directions of the integration processes on the regional economy are:

- improving the investment environment;
- development of investment, scientific and technical potential in the region;
- reducing their vulnerability to technological processes and changes in market conditions;
- solving social and regional problems;
- environmental impact.

Depending on the reasons for the merger, the cumulative effect of participation in integrated formations is expressed in expanding opportunities to attract investment capital and innovative developments, increasing production and resource potential, allowing additional revenue generation, diversification of production and improving the financial status of all participants.

The consolidation capital makes it possible to obtain a synergistic effect, which is not typical for separate participants of the formation. As a result of partnership activities of independent participants, new properties appear that contribute to increasing the overall effect of the integrated structure, exceeding the sum of the effects of autonomous enterprises, ensuring an increase in profitability level (Popova & Fetkovich, 2015; Smagin, 2015).

The cumulative effect of integrated formation can be represented as the terms of synergy, which value can be determined by the formula:

$$E_c = \sum_{i=1}^n E_x + E_y + E_i \longrightarrow \max$$

where E_c – is the cumulative effect of the integrated structure;

E_x, E_y, E_i - the effect of integrated formation participants;

n – the number of participants in the integration interaction.

In this regard, the synergistic effect can be represented as the amount of financial savings of the integrated structure, and its assessment is carried out according to the formula:

$$E_{fm} = ((APs)n + (APrr) n + (CS) n) - AI - IT - IF,$$

E_{fm} – effect after the merger of enterprises into an integrated structure;

n - time reference period;

APs- additional profit received due to the scaling-up;

APrr - additional profit received from risk reduction due to the diversification of the integrated structure activities;

CS – current cost saving;

AI – additional investments for reconstruction and expansion;

IT – increase (saving) of tax payments;

IF - investment during the formation of an integrated structure.

An important advantage of this indicator is its suitability for describing the integration effectiveness, regardless of the nature and closeness of integration ties.

If $(AV1 - AV0) > 0$, where AV1, AV0 – added value, respectively, before and after the involvement of enterprises in the integration processes, then we can talk about the effectiveness of contractual, corporate, and managed forms of integration.

In this case, the effect of each participant of the integration formation can be calculated as:

$$E_i = \Delta Pc + \Delta Pl + \Delta Sm + \Delta Pp$$

ΔPc – increase in capital productivity;

ΔPl – increase in labor productivity;

ΔSm – improving the efficiency of the enterprise management system;

ΔPp – increase in the production profitability or a decrease in the production unprofitableness.

The value of each indicator corresponds to the same number of points. The more points the integrated structure receives, the more effective was each company participating in the integrated chain.

The calculations may also include other indicators that characterize the production and financial activities of the participants of the integrated formation: increased material efficiency, reduced costs, increased production and sales, an increase in the share of competitive products in general, an increase in equity, a reduction in the duration of financial and operational cycles, etc.

7. Conclusion

Thus, the methodological basis for determining the effectiveness of integration processes is a systematic approach taking into account the influence of factors on performance indicators, responsive to specific production conditions. The mechanisms ensuring the development of the agro-industrial complex, in accordance with the peculiarities of its development, should, on the one hand, meet modern needs for innovation and on the other - be resource-saving and environmentally friendly.

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